BID BOOKLET
FOR HIGHWAY CONSTRUCTION

OREGON DEPARTMENT OF TRANSPORTATION
SALEM, OREGON

SCOPE OF WORK (match plan title sheet)

PROJECT NAME (match plan title sheet)

HIGHWAY (match plan title sheet)

COUNTY (match plan title sheet)

BID DATE (Month Day, Year)

CLASS OF PROJECT **FEDERAL AID NUMBER OR "STATE (- BUY AMERICA)"**
CLASS OF WORK **FROM CLASS OF WORK SHEET**
BID OF _____

SP00002_BB_Cover (Special Provisions for the 2024 Book)
(Bidding on or after: 05-01-25
Last updated: 02-03-25)

(Use the following for the Bid booklet. Fill in all appropriate blanks.)

DESCRIPTION OF WORK

(Fill in the blanks with the same information that is on the plan title sheet except do not include the date. Remove underline and parentheses.)

_____(Scope of Work)_____
_____(Project Name)_____
_____(Highway Name)_____
_____(County)_____

TIME AND PLACES OF RECEIVING BIDS (BID CLOSING)

(Fill in the blanks with the appropriate day, month and year. Remove underline.)

Bid Closing for the work described above will be at 9:00:00 a.m. on the ____ day of _____, 20__. Bids will be received by BJ McCartney, Construction Contracts Manager.

Submit electronic bids, on-line through Bid Express® (www.bidx.com) before 9:00:00 a.m. on the day of Bid Closing.

Submit paper bids to BJ McCartney, Construction Contracts Manager:

Before 9:00:00 a.m. on the day of Bid Closing.

For Bids submitted by mail or parcel delivery service, send to:

Oregon Department of Transportation
Procurement Construction Contracts, MS #33
355 Capitol Street NE
Salem, Oregon 97301.

For Bids submitted by hand delivery, date stamp the Bid with the provided date stamping device and place into the ODOT Procurement Bid Box located in the 1st floor lobby at the following address:

Oregon Department of Transportation
355 Capitol Street NE
Salem, Oregon 97301.

Bids, Bid modifications, and Bid withdrawals will not be accepted at or after 9:00:00 a.m. on the day of Bid Closing.

PLACE, TIME, AND DATE OF READING BIDS (BID OPENING)

Bid Opening for the work described above will be at the following address: Oregon Department of Transportation, 355 Capitol Street NE, Salem, Oregon, beginning at 9:00:00 a.m. on the day of Bid Closing.

COMPLETION TIME LIMIT

See Special Provisions Subsection 00180.50(h).

CLASS OF PROJECT

(Delete word which does not apply. Remove parentheses.)

This is a *(*Federal-Aid*) (*State*) (*State - Buy America*)* Project.

CLASS OF WORK

(Use one of the following nine paragraphs to list the class of work determined by using the COW Report in the FSCOW "worksheet. The COW and the COW Report must be approved by the State Specifications Engineer if any of the following classes are identified as a class for the Project: Painting, Rock Production, Electrical, Landscaping, Temporary Traffic Control, Buildings or Other. Delete the paragraphs that do not apply. Select the class(es) from the list below (cut and paste). Remove underline and parentheses. Contact the State Specification Engineer if a different combination is required than what is listed below.)

The Class of Work for this Project is: _____.

The Class of Work for this Project is the combination of 1) _____ & 2) _____.

The Class of Work for this Project is either: A) _____, or B) _____.

The Class of Work for this Project is either: A) _____, or B) _____ or C) _____.

The Class of Work for this Project is either: A) _____, or B) the combination of 1) _____ & 2) _____.

The Class of Work for this Project is either: A) _____, or B) _____, or C) the combination of 1) _____ & 2) _____.

The Class of Work for this Project is either: A) _____, or B) the combination of any two classes in the following list: _____, _____, *(*_____,*)* *(*_____,*)* or_____.

The Class of Work for this Project is either: A) _____, or B) _____, or C) the combination of any two classes in the following list: _____, _____, *(*_____,*)* *(*_____,*)* or_____.

The Class of Work for this Project is the combination of any two classes in the following list: _____, _____, *(*_____,*)* *(*_____,*)* or_____.

(Use this list to fill in the blanks above. Delete this list when finished.

Earthwork and Drainage
Bridges and Structures
Painting
Rock Production
Aggregate Bases
Asphalt Concrete Paving and Oiling
Portland Cement Concrete Paving
Pavement Markings
Signing
Electrical
Landscaping
Miscellaneous Highway Appurtenances
Buildings)

APPLICABLE SPECIAL PROVISIONS

The Special Provisions booklet applicable to the above-described work, for which Bids will be opened at the place, time, and date stated above, is that which contains the exact information as shown above on this page.

Bidders are cautioned against basing their Bids on a booklet bearing any different description, date(s), Class of Project, or Class of Work.

SPECIAL PROVISIONS
FOR HIGHWAY CONSTRUCTION

OREGON DEPARTMENT OF TRANSPORTATION
SALEM, OREGON

SCOPE OF WORK (match plan title sheet)

PROJECT NAME (match plan title sheet)

HIGHWAY (match plan title sheet)

COUNTY (match plan title sheet)

BID DATE (Month Day, Year)

If prebid meeting is required, use the following sentence and delete this first sentence, otherwise delete this field. A mandatory prebid meeting has been scheduled for this Project, see 00120.15 for the meeting time and location.

SP00004_SP_Cover (Special Provisions for the 2024 Book)

(Bidding on or after: 05-01-25
Last updated: 02-04-25)

(Use the following with the Special Provisions booklet. Fill in all appropriate blanks.)

DESCRIPTION OF WORK

(Fill in the blanks with the same information that is on the plan title sheet except do not include the date. Remove underline and parentheses.)

____(Scope of Work)____
____(Project Name)____
____(Highway Name)____
____(County)____

TIME AND PLACES OF RECEIVING BIDS (BID CLOSING)

(Fill in the blanks with the appropriate day, month and year. Remove underline.)

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Submit electronic bids, on-line through Bid Express® (www.bidx.com) before 9:00:00 a.m. on the day of Bid Closing.

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COMPLETION TIME LIMIT

See Subsection 00180.50(h).

CLASS OF PROJECT

(Delete the language in purple parentheses that does not apply and delete all purple parentheses.)

This is a *(*Federal-Aid*) (*State*) (*State - Buy America*)* Project.

CLASS OF WORK

(Use one of the following nine paragraphs to list the class of work determined by using the COW Report in the FSCOW worksheet. The COW and the COW Report must be approved by the State Specifications Engineer if any of the following classes are identified as a class for the Project: Painting, Rock Production, Electrical, Landscaping, Temporary Traffic Control, Buildings or Other. Delete the paragraphs that do not apply. Select the class(es) from the list below (cut and paste). Remove underline and parentheses. Contact the State Specification Engineer if a different combination is required than what is listed below.)

The Class of Work for this Project is: _____.

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The Class of Work for this Project is either: A) _____, or B) the combination of any two classes in the following list: _____, _____, *(*_____,*)* *(*_____,*)* or_____.

The Class of Work for this Project is either: A) _____, or B) _____, or C) the combination of any two classes in the following list: _____, _____, *(*_____,*)* *(*_____,*)* or_____.

The Class of Work for this Project is the combination of any two classes in the following list: _____, _____, *(*_____,*)* *(*_____,*)* or_____.

(Use the following list to fill in the blanks above. Delete this list when finished.

Earthwork and Drainage
Bridges and Structures
Painting
Rock Production
Aggregate Bases
Asphalt Concrete Paving and Oiling
Portland Cement Concrete Paving
Pavement Markings
Signing
Electrical
Landscaping
Miscellaneous Highway Appurtenances
Buildings)

PROJECT INFORMATION

Information pertaining to this Project may be obtained from the following:

(Use the following paragraph for ODOT administered projects. Use "Project Manager" if the employee is NOT a licensed PE and "Resident Engineer" if the employee is a licensed PE. Fill in the name, address, city, zip code, and Email. Obtain the information from the Transportation Project Manager. Delete the language in purple parentheses that does not apply and delete all purple parentheses.)

_____(Name)_____, *(*Project Manager*)* *(*Resident Engineer*)*, _____(Address)_____, _____(City and Zip)_____; or Email _____(Email)_____. All requests for information must be in writing with reference to the Project name.

(Use the following paragraph for Consultant or Local Agency administered projects. Fill in the names, addresses, cities, zip codes, and Email. Obtain the ODOT information from the Transportation Project Manager. Delete the language in purple parentheses that does not apply and delete all purple parentheses.)

_____(Consultant or Local Agency Name)_____, Project Manager, _____(Consultant Company Name or Local Agency Name)_____, _____(Address)_____, _____(City and Zip)_____; or Email _____(Email)_____. All requests for information must be in writing with reference to the Project name.

(Use the following paragraph for Consultant or Local Agency administered projects. Fill in the name of the ODOT Consultant Project Manager or ODOT Transportation Project Manager. Use either "Resident Engineer - Consultant Project " or "Transportation Project Manager". Fill in the name, address, city, zip code, and Email. Delete the language in purple parentheses that does not apply and delete all purple parentheses.)

_____(ODOT Name)_____, ODOT *(*Resident Engineer - Consultant Project*)* *(*Transportation Project Manager*)*, _____(Address)_____, _____(City and Zip)_____; or Email _____(Email)_____. All requests for information must be in writing with reference to the Project name.

SP00010-TOC-FED (Special Provisions for the 2024 Book)
(Bidding on or after: 05-01-25
Last updated: 01-14-25)

(Follow all instructions. If there are no instructions above a line, then include the line on all projects. Delete items that are not included in the project special provisions. remove all instructions before preparing the final document.)

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ODOT POLICY STATEMENT DBE PROGRAM
DBE SUPPLEMENTAL REQUIRED CONTRACT PROVISIONS
ASSIGNED DBE CONTRACT GOAL
(Use the following two lines on all Projects when the Region biddables estimate exceeds $2.5 million or the contract amount might exceed $3 million or more. For questions contact the State Specifications Engineer.)
APPRENTICESHIP REQUIREMENTS
OUTREACH, RECRUITMENT AND RETENTION
(Use the following line when there is work within the Umatilla Memorandum of Understanding Exhibit A MOU boundary. Check with the Project Leader.)
TRIBAL EMPLOYMENT RIGHTS OFFICE CODE
(Use the following line with projects in Region 1, Region 2, or Region 4 that have an assigned Grand Ronde or Warm Springs TERO Indian Employment Preference Goal, assigned Indian Subcontractor Goal, or Compliance Fee. Check with the Project Leader.)
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(Use the following line only when plans are included in the Special Provisions.)

PLANS
BID SCHEDULE

Insert Project Name Here

SP00030-DBE (Special Provisions for the 2024 Book) (Bidding on or after: 05-01-25 Last updated: 01-14-25)

ASSIGNED DBE CONTRACT GOAL

The minimum Assigned **DBE** Contract Goal for this Project is **??%**.

(Overall DBE program goal for ODOT is set at 23.43%for FHWA funded Contracts for federal fiscal years 2023, 2024 and 2025.)

A Certification Directory of DBEs is available from the Certification Office of Business Inclusion and Diversity (COBID) website at:
https://oregon4biz.diversitysoftware.com/FrontEnd/SearchCertifiedDirectory.asp

or by telephone at 503-986-0075.

SP00044-TERO-CTGR (Special Provisions for the 2024 Book)
(Bidding on or after: 05-01-25
Last updated: 01-14-25)

INDIAN EMPLOYMENT GOALS AND COMPLIANCE FEE

(Use this specification for Indian goals and fees on Federal-Aid highway projects that are within the Confederated Tribes of Grand Ronde Community Reservation in whole or in part or within the MOU Boundary shown in Exhibit A of the MOU and have an Indian Employment Preference Goal. This only applies to the list of Federal-Aid highway projects that ODOT and the Tribe have agreed to.)

Indian Employment Preference Goal

The assigned Indian Employment Preference goal for this Project is _____ %

Compliance Fee

As established in separate Memorandum of Understanding (MOU) with the Confederated Tribes of the Grand Ronde Community of Oregon (CTGR) a project in which any work takes place within reservation boundary or within the TERO boundary may be subject to a TERO compliance fee. The TERO boundary is described in Exhibit A to the MOU.

(Use one of the following compliance fee paragraphs and figures based on the location of the project. Delete the ones that do not apply.)

[Option 1 - Use this paragraph and figure when the entire project is within the Reservation. DO NOT fill in the blank.]

The Contractor is required to determine the compliance fee for this Project. Use the following calculation to determine the fee. The Compliance Fee for this Project is this calculation*:

Total Contract Amount* x 2.5% ..... = _____

Total COMPLIANCE FEE for this Project is: ..... = _____

* Per Part III.(e)(6)(A) of the Confederated Tribes of the Grand Ronde Community Tribal Employment Rights Ordinance, there is no fee for contracts less than $100,000.

[Option 2 - Use this paragraph and figures when the entire project is off of the Reservation but within the MOU Exhibit A boundary. DO NOT fill in the blanks.]

The Contractor is required to determine the compliance fee for this Project. Use the following calculations to determine the fee. The Compliance Fee for this Project is the summation of the following four calculations:

$1 to $500,000 of Contract Amount × 1.00% ..... = _____
$500,001 to $999,999 of Contract Amount × 0.75% ..... = _____

$1,000,000 to $1,999,999 of Contract Amount × 0.50% ... = _____

$2,000,000 up to the full Contract Amount × 0.25% ..... = _____

Total COMPLIANCE FEE for this Project is: ..... = _____

[Option 3 - Use this paragraph and figures when a portion of the project is on the Reservation and a portion is outside the Reservation but within the MOU Exhibit A boundary. DO NOT fill in the blanks.]

The Contractor is required to determine the compliance fee for this Project. Use the following calculations to determine the fee. The Compliance Fee for this Project is the summation of the (1) On Reservation Compliance Fee and (2) Exhibit A boundary Compliance Fee:

(1) Contract Amount on Reservation

Total Contract Amount on Reservation x 2.5%..... = _____

Total on Reservation COMPLIANCE FEE is: ..... = _____

(2) Contract Amount within Exhibit A boundary and off Reservation

$1 to $500,000 of Contract Amount off Reservation
but within Exhibit A boundary × 1.00% ..... = _____

$500,001 to $999,999 of Contract Amount off Reservation
but within Exhibit A boundary × 0.75% ..... = _____

$1,000,000 to $1,999,999 of Contract Amount off Reservation
but within Exhibit A boundary × 0.50% ..... = _____

$2,000,000 up to the full Contract Amount off Reservation but within
Exhibit A boundary up to the full Contract Amount × 0.25% ..... = _____

Total Exhibit A boundary COMPLIANCE FEE is: ..... = _____

Total COMPLIANCE FEE ((1) + (2)) for this Project is: ..... = _____

[Option 4 - Use this paragraph and figures when the project is not on the Reservation but is within and outside the MOU Exhibit A boundary. DO NOT fill in the blanks.]

The Contractor is required to determine the compliance fee for this Project. Use the following calculations to determine the fee. The Compliance Fee for this Project is the summation of the following four calculations:

$1 to $500,000 of Contract Amount
within Exhibit A boundary × 1.00% ..... = _____

$500,001 to $999,999 of Contract Amount
within Exhibit A boundary × 0.75% ..... = _____

$1,000,000 to $1,999,999 of Contract Amount
within Exhibit A boundary × 0.50% ..... = _____

$2,000,000 up to the full Contract Amount within Exhibit A
boundary up to the full Contract Amount × 0.25% ..... = _____

Insert Project Name Here

Total COMPLIANCE FEE for this Project is: = _____

Insert Project Name Here

SP00045-TERO-CTUIR (Special Provisions for the 2024 Book)
(Bidding on or after: 05-01-25
Last updated: 01-14-25)

INDIAN EMPLOYMENT GOALS AND COMPLIANCE FEE

(Use this specification for Indian goals and fees on Federal-Aid highway projects that are within the Confederated Tribes of the Umatilla Indian Reservation in whole or in part or within the MOU Boundary shown in Exhibit A of the MOU. This applies on all Federal-Aid highway projects in the Exhibit A, MOU Boundary area (also the NEACT area), regardless of value of Indian Employment Preference Goal)

Indian Employment Preference Goal

The assigned Indian Employment Preference goal for this Project is _____ %

Compliance Fee

As established in separate Memorandum of Understanding (MOU) with the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) a project in which any work takes place within reservation boundary or within the TERO boundary is subject to a TERO compliance fee. The TERO boundary is described in Exhibit A to the MOU.

(Use one of the following compliance fee paragraphs and figures based on the location of the project and or the goal. Delete the ones that do not apply.)

[Option 1 - Use the following paragraphs when the Indian Employment Preference Goal is 0% and the entire project is off of the Reservation but within the MOU Exhibit A boundary.]

The Contractor is required to pay a one-time fee of $1,000.

Total COMPLIANCE FEE for this Project is: $1,000.00

(Use one of the following compliance fee paragraphs and figures based on the location of the project. Delete the ones that do not apply.)

[Option 2 - Use this paragraph and figure when the entire project is within the Reservation. <u>DO</u> <u>NOT</u> fill in the blank.]

The Contractor is required to determine the compliance fee for this Project. Use the following calculation to determine the fee. The Compliance Fee for this Project is this calculation:

Total Contract Amount of $25,000 - $99,999 x 4%..... = _____
Total Contract Amount of $100,000 – $999,999 x 3%..... = _____
Total Contract Amount of $1,000,000 - $9,999,999 × 2.0% = _____
Total Contract Amount of $10,000,000 or more x 1.0% ... = _____

Insert Project Name Here

Per Section 6.03.B. of the CTUIR TERO CODE, the maximum fee is $500,000. There is no fee for projects under $25,000.

Total COMPLIANCE FEE for this Project is: ..... = _____

[Option 3 - Use this paragraph and figures when the entire project is off of the Reservation but within the MOU Exhibit A boundary when the Indian Employment Preference Goal is greater than 0%. DO NOT fill in the blanks.]

The Contractor is required to determine the compliance fee for this Project. Use the following calculations to determine the fee. The Compliance Fee for this Project is the summation of the following four calculations:

First $500,000 of Contract Amount × 1.00% ..... = _____

Next $500,000 of Contract Amount × 0.75% ..... = _____

Next $1,000,000 ($1 million to $2 million) × 0.50% ..... = _____

Remaining dollar amount up to the
full Contract Amount × 0.25% ..... = _____

Total COMPLIANCE FEE for this Project is: ..... = _____

[Option 4 - Use this paragraph and figures when a portion of the project is on the Reservation and a portion is outside the Reservation but within the MOU Exhibit A boundary and when the Indian Employment Preference Goal is greater than 0%. DO NOT fill in the blanks.]

The Contractor is required to determine the compliance fee for this Project. Use the following calculations to determine the fee. The Compliance Fee for this Project is the summation of the (1) On Reservation Compliance Fee and (2) Exhibit A boundary Compliance Fee:

(1) Contract Amount on Reservation

Total Contract Amount of $25,000 - $99,999 x 4%..... = _____

Total Contract Amount of $100,000 – $999,999 x 3%..... = _____

Total Contract Amount of $1,000,000 - $9,999,999 × 2.0% = _____

Total Contract Amount of $10,000,000 or more x 1.0%..... = _____

Total on Reservation COMPLIANCE FEE is: ..... = _____

(2) Contract Amount within Exhibit A boundary and off Reservation

First $500,000 of Contract Amount off Reservation
but within Exhibit A boundary × 1.00% ..... = _____

Next $500,000 of Contract Amount off Reservation
but within Exhibit A boundary × 0.75% ..... = _____

Next $1,000,000 ($1 million to $2 million) off Reservation
but within Exhibit A boundary × 0.50% ..... = _____

Remaining dollar amount off Reservation but within
Exhibit A boundary up to the full Contract Amount × 0.25% ..... = _____

Total Exhibit A boundary COMPLIANCE FEE is: ..... = _____

Total COMPLIANCE FEE ((1) + (2)) for this Project is: ..... = _____

[Option 5 - Use this paragraph and figures when the project is not on the Reservation but is within and outside the MOU Exhibit A boundary and when the Indian Employment Preference Goal is greater than 0%. DO NOT fill in the blanks.]

The Contractor is required to determine the compliance fee for this Project. Use the following calculations to determine the fee. The Compliance Fee for this Project is the summation of the following four calculations:

First $500,000 of Contract Amount
within Exhibit A boundary × 1.00% ..... = _____

Next $500,000 of Contract Amount
within Exhibit A boundary × 0.75% ..... = _____

Next $1,000,000 ($1 million to $2 million)
within Exhibit A boundary × 0.50% ..... = _____

Remaining dollar amount within Exhibit A
boundary up to the full Contract Amount × 0.25% ..... = _____

Total COMPLIANCE FEE for this Project is: = _____

SP00046-TERO-CTWS (Special Provisions for the 2024 Book)
(Bidding on or after: 05-01-25
Last updated: 01-14-25)

INDIAN EMPLOYMENT GOALS AND COMPLIANCE FEE

(Use this specification for Indian goals and fees on Federal-Aid highway projects that are within the Confederated Tribes of Warm Springs Reservation in whole or in part or within the MOU Boundary shown in Exhibit A of the MOU and have an Indian Employment Preference Goal. This only applies to the list of Federal-Aid highway projects that ODOT and the Tribe have agreed to.)

Indian Employment Preference Goal

The assigned Indian Employment Preference goal for this Project is _____ %

Compliance Fee

As established in separate Memorandum of Understanding (MOU) with the Confederated Tribes of the Warm Springs Indian Reservation (CTWS) a project in which any work takes place within reservation boundary or within the TERO boundary may be subject to a TERO compliance fee. The TERO boundary is described in Exhibit A to the MOU.

(Use one of the following compliance fee paragraphs and figures based on the location of the project. Delete the ones that do not apply.)

[Option 1 - Use this paragraph and figure when the entire project is within the Reservation. DO NOT fill in the blank.]

The Contractor is required to determine the compliance fee for this Project. Use the following calculation to determine the fee. The Compliance Fee for this Project is this calculation*:

Total Contract Amount* x 2.5% ..... = _____

Total COMPLIANCE FEE for this Project is: ..... = _____

* Per Section 3.10.A. of the Confederated Tribes of the Warm Springs Indian Reservation Tribal Employment Rights Ordinance, there is no fee for contracts less than $10,000.

[Option 2 - Use this paragraph and figures when the entire project is off of the Reservation but within the MOU Exhibit A boundary. DO NOT fill in the blanks.]

The Contractor is required to determine the compliance fee for this Project. Use the following calculations to determine the fee. The Compliance Fee for this Project is the summation of the following four calculations:

$1 to $500,000 of Contract Amount × 1.00% ..... = _____
$500,001 to $999,999 of Contract Amount × 0.75% ..... = _____
$1,000,000 to $1,999,999 of Contract Amount × 0.50% .. = _____

$2,000,000 up to the full Contract Amount × 0.25% ..... = _____

Total COMPLIANCE FEE for this Project is: ..... = _____

[Option 3 - Use this paragraph and figures when a portion of the project is on the Reservation and a portion is outside the Reservation but within the MOU Exhibit A boundary. DO NOT fill in the blanks.]

The Contractor is required to determine the compliance fee for this Project. Use the following calculations to determine the fee. The Compliance Fee for this Project is the summation of the (1) On Reservation Compliance Fee and (2) Exhibit A boundary Compliance Fee:

(1) Contract Amount on Reservation

Total Contact Amount on Reservation x 2.5%..... = _____

Total on Reservation COMPLIANCE FEE is: ..... = _____

(2) Contract Amount within Exhibit A boundary and off Reservation

$1 to $500,000 of Contract Amount off Reservation
but within Exhibit A boundary × 1.00% ..... = _____

$500,001 to $999,999 of Contract Amount off Reservation
but within Exhibit A boundary × 0.75% ..... = _____

$1,000,000 to $1,999,999 of Contract Amount off Reservation
but within Exhibit A boundary × 0.50% ..... = _____

$2,000,000 up to the full Contract Amount off Reservation but within
Exhibit A boundary up to the full Contract Amount × 0.25% ..... = _____

Total Exhibit A boundary COMPLIANCE FEE is: ..... = _____

Total COMPLIANCE FEE ((1) + (2)) for this Project is: ..... = _____

[Option 4 - Use this paragraph and figures when the project is not on the Reservation but is within and outside the MOU Exhibit A boundary. DO NOT fill in the blanks.]

The Contractor is required to determine the compliance fee for this Project. Use the following calculations to determine the fee. The Compliance Fee for this Project is the summation of the following four calculations:

$1 to $500,000 of Contract Amount
within Exhibit A boundary × 1.00% ..... = _____

$500,001 to $999,999 of Contract Amount
within Exhibit A boundary × 0.75% ..... = _____

$1,000,000 to $1,999,999 of Contract Amount
within Exhibit A boundary × 0.50% ..... = _____

$2,000,000 up to the full Contract Amount within Exhibit A
boundary up to the full Contract Amount × 0.25% ..... = _____

Total COMPLIANCE FEE for this Project is: = _____

Insert Project Name Here

Insert Project Name Here

SP00054-MWESBSDV (Special Provisions for the 2024 Book)
(Bidding on or after: 05-01-25
Last updated: 01-14-25)

ASSIGNED MWESBSDV ASPIRATIONAL TARGET

The assigned MWESBSDV Aspirational Target for this Project is %

SP00058-RRS (Special Provisions for the 2024 Book) (Bidding on or after: 05-01-25
Last updated: 01-14-25
This Section requires SP00170.)

(Use this specification for Railroad involvement when Railroad Insurance and Liability Coverage is NOT required. Fill in the blank below with the appropriate railroad company. Obtain all the "fill in the blanks" identified as " " from ODOT's State Utility and Railroad Liaison. Check with the State Utility and Railroad Liaison or State Specifications Engineer before using this specification. Do not make any other changes.)

_____COMPANY

CONTRACTOR REQUIREMENTS

1.01 General

1.01.01 The Contractor shall cooperate with enter Railroad Company name here hereinafter referred to as "Railway" where work is over, under, on, or adjacent to Railway property and/or right-of-way, hereafter referred to as "Railway Property", during the construction of enter project name here.

1.01.02 The Contractor shall plan, schedule and conduct all work activities so as not to interfere with the movement of any trains on Railway Property.

1.01.03 The Contractor is subject to the absolute right of Railway to cause the Contractor's work above Railway Property to cease if, in the opinion of Railway, the Contractor's activities create a hazard to Railway Property, employees, and/or operations.

1.01.04 The Contractor shall notify the Agency Project Manager and notify the Railway's enter Title and name of RR representitive here at enter RR phone No. here, at least 30 working days before commencing any work on Railway Property. The Contractors notification to Railway, shall refer to enter project name here.

1.01.05 Subject to the movement of Railway's trains, Railway will cooperate with the Contractor such that the work may be handled and performed in an efficient manner. The Contractor shall have no claim whatsoever for any type of damages or for extra or additional compensation in the event the Contractor’s work is delayed by the Railway.

1.02 Railway Requirements

1.02.01 The Contractor shall take protective measures as necessary to keep Railway facilities, including track ballast, free of sand, debris, and other foreign objects and materials resulting from the Contractor’s operations. Any damage to Railway facilities resulting from the Contractor's operations will be repaired or replaced by Railway and the cost of such repairs or replacement shall be paid for by the Contractor.

(Use the following subsection 1.02.02 when blasting operations may be required.)

1.02.02 The Contractor shall notify the Railway's enter Title and name of RR representitive here at enter RR phone No. here and provide blasting plans to the Railway for review 7 Calendar Days prior to conducting any blasting operations adjacent to or on Railway Property.

Use the following subsection 1.03 and corresponding subsections when flagging services are required.)

1.03 Protection of Railway Facilities and Railway Flagger Services

1.03.01 The Contractor shall give a minimum of enter days here Calendar Days' notice to the enter Title and name of RR representitive here at enter RR phone No. here, in advance of when flagging services will be required.

1.03.02 Railway flagger services will be required insert appropriate information here such as " during the installation of the traffic signal poles...", but not limited thereto for the following conditions:

1.03.02a When in the opinion of the Railway representative it is necessary to safeguard Railway Property, employees, trains, engines and facilities.

1.03.02b When any excavation is performed below the bottom of tie elevation, if, in the opinion of Railway representative, track or other Railway facilities may be subject to movement or settlement.

1.03.02c When work in any way interferes with the safe operation of trains at timetable speeds.

1.03.02d When any hazard is presented to Railway track, communications, signal, electrical, or other facilities either due to persons, material, equipment or blasting in the vicinity.

1.03.02e Special permission shall be obtained from the Railway before moving heavy or cumbersome objects or equipment which might result in making the track impassable.

1.03.03 Flagging services shall be performed by qualified Railway flaggers.

1.03.03a Flagging crew generally consists of one employee. However, additional personnel may be required to protect Railway Property and operations, if deemed necessary by the Railway representative.

1.03.03b Each time a flagger is called, the minimum period for billing shall be the eight hour basic day.

1.03.03c The cost of flagger services provided by the Railway, when deemed necessary by the Railway representative, will be borne by ODOT according to 00170.01(e).

SP00060_RR_BNSF (Special Provisions for the 2024 Book)

(Bidding on or after: 05-01-25
Last updated: 01-14-25)
This Section requires
SP00170.)

(Use this when Burlington Northern Santa Fe Railway is within project limits. The included requirements and exhibits are for information and reference only. Do not make any modifications to this document.)

BURLINGTON NORTHERN SANTA FE RAILWAY COMPANY

Exhibit C: Contractor Requirements

Exhibit C-1

The following Burlington Northern Santa Fe (BNSF) Railway exhibits are included in this Project for information and reference only. The actual Exhibit C: Contractor Requirements and Exhibit C-1 will be provided and executed by the Burlington Northern Santa Fe Railway Company.

The Contractor shall obtain all necessary permits and licenses and pay all fees and obtain a fully executed copy of the railway agreement according to 00170.01(e). BNSF requires a temporary occupancy permit at the following website: https://bnsf.railpermitting.com.

The Contractor shall review and comply with the following documents as applicable located at https://www.bnsf.com/in-the-community/public-projects/public-projects.page :

- *Public Projects Manual*
- *UPRR-BNSF Joint Guidelines for Railroad Grade Separated Projects*
- *Utility Accommodation Policy*
- *Demolition Guidelines*
- *Shoring Guidelines*

In addition, when Railroad flagger services are required, the Agency will pay for the services according to 00170.01(e).

EXHIBIT "C"

CONTRACTOR REQUIREMENTS

1.01 General:

- **1.01.01** The Contractor must cooperate with **BNSF RAILWAY COMPANY**, hereinafter referred to as "**Railway**" where work is over or under on or adjacent to Railway property and/or right-of-way, hereafter referred to as "Railway Property", during the construction of _____ _____.

- **1.01.02** The Contractor must execute and deliver to the Railway duplicate copies of the Exhibit "C-1" Agreement, in the form attached hereto, obligating the Contractor to provide and maintain in full force and effect the insurance called for under Section 3 of said Exhibit "C-1". Questions regarding procurement of the Railroad Protective Liability Insurance should be directed to Rosa Martinez at Marsh, USA, 2[illegible]-303-85[illegible].

- **1.01.03** The Contractor must plan, schedule and conduct all work activities so as not to interfere with the movement of any train on Railway Property.

- **1.01.04** The Contractor's right to enter Railway's Property is subject to the absolute right of Railway to cause the Contractor's work on Railway's Property to cease if, in the opinion of Railway, Contractor's activities create a hazard to Railway's Property, employees, and/or operations. Railway will have the right to stop construction work on the Project if any of the following events take place: (i) Contractor (or any of its subcontractors) performs the Project work in a manner contrary to the plans and specifications approved by Railway; (ii) Contractor (or any of its subcontractors) in Railway's opinion, prosecutes the Project work in a manner which is hazardous to Railway Property, facilities or the safe and expeditious movement of railroad traffic; (iii) the insurance described in the attached Exhibit C-1 is canceled during the course of the Project; (iv) Contractor fails to pay Railway for the Temporary Construction License or the Easement. The work stoppage will continue until all necessary actions are taken by Contractor or its subcontractor to rectify the situation to the satisfaction of Railway's Division Engineer or until additional insurance has been delivered to and accepted by Railway. In the event of a breach of (i) this Agreement, (ii) the Temporary Construction License, or (iii) the Easement, Railway may immediately terminate the Temporary Construction License or the Easement. Any such work stoppage under this provision will not give rise to any liability on the part of Railway. Railway's right to stop the work is in addition to any other rights Railway may have including, but not limited to, actions or suits for damages or lost profits. In the event that Railway desires to stop construction work on the Project, Railway agrees to immediately notify the following individual in writing:

_____
_____
_____
_____

SAMPLE

- **1.01.05** The Contractor is responsible for determining and complying with all Federal, State and Local Governmental laws and regulations, including, but not limited to environmental laws and regulations (including but not limited to the Resource Conservation and Recovery Act, as amended; the Clean Water Act, the Oil Pollution Act, the Hazardous Materials Transportation Act, CERCLA), and health and safety laws and regulations. The Contractor hereby indemnifies, defends and holds harmless Railway for, from and against all fines or penalties imposed or assessed by Federal, State and Local Governmental Agencies against the Railway which arise out of Contractor's work under this Agreement.

- **1.01.06** The Contractor must notify **(Agency)** at _____ and Railway's Manager Public Projects, telephone number (___)_____at least thirty (30) calendar days before commencing any work on Railway Property. Contractor's notification to Railway must refer to Railway's file _____.

- **1.01.07** For any bridge demolition and/or falsework above any tracks or any excavations located with any part of the excavations located within, whichever is greater, twenty-five (25) feet of the nearest track or intersecting a slope from the plane of the top of rail on a 2 horizontal to 1 vertical slope beginning at eleven (11) feet from centerline of the nearest track, both measured perpendicular to center line of track, the Contractor must furnish the Railway five sets of working drawings showing details of construction affecting Railway Property and tracks. The working drawing must include the proposed method of installation and removal of falsework, shoring or cribbing, not included in the contract plans and two sets of structural calculations of any falsework, shoring or cribbing. For all excavation and shoring submittal plans, the current "BNSF-UPRR Guidelines for Temporary Shoring" must be used for determining the design loads and conditions to be used in shoring design, and all calculations and submittals must be in accordance with the current "BNSF-UPRR Guidelines for Temporary Shoring". All submittal drawings and calculations must be stamped by a registered professional engineer licensed to practice in the state the project is located. All calculations must take into consideration railway surcharge loading and must be designed to meet American Railway Engineering and Maintenance-of-Way Association (previously known as American Railway Engineering Association) Coopers E-80 live loading standard. All drawings and calculations must be stamped by a registered professional engineer licensed to practice in the state the project is located. The Contractor must not begin work until notified by the Railway that they have been approved. The Contractor will be required to use lifting devices such as cranes and/or winches to place or to remove any falsework over Railway's tracks. In no case will the Contractor be relieved of responsibility for results obtained by the implementation of said approved plans.

- **1.01.08** Subject to the movement of Railway's trains, Railway will cooperate with the Contractor such that the work may be handled and performed in an efficient manner. The Contractor will have no claim whatsoever for any type of damages or for extra or additional compensation in the event his work is delayed by the Railway.

1.02 Contractor Safety Orientation

SAMPLE

- **1.02.01** No employee of the Contractor, its subcontractors, agents or invitees may enter Railway Property without first having completed Railway's Engineering Contractor Safety Orientation, found on the web site www.BNSFContractor.com. The Contractor must ensure that each of its employees, subcontractors, agents or invitees completes Railway's Engineering Contractor Safety Orientation through internet sessions before any work is performed on the Project. Additionally, the Contractor must ensure that each and every one of its employees, subcontractors, agents or invitees possesses a card certifying completion of the Railway Contractor Safety Orientation before entering Railway Property. The Contractor is responsible for the cost of the Railway Contractor Safety Orientation. The Contractor must renew the Railway Contractor Safety Orientation annually. Further clarification can be found on the web site or from the Railway's Representative.

1.03 Railway Requirements

- **1.03.01** The Contractor must take protective measures as are necessary to keep railway facilities, including track ballast, free of sand, debris and other foreign objects and materials resulting from his operations. Any damage to railway facilities resulting from Contractor's operations will be repaired or replaced by Railway and the cost of such repairs or replacement must be paid for by the Agency.

- **1.03.02** The Contractor must notify the Railway's Division Engineer _____ at (_____) _____ and provide blasting plans to the Railway for review seven (7) calendar days prior to conducting any blasting operations adjacent to or on Railway's property.

- **1.03.03** The Contractor must abide by the following temporary clearances during construction:
  - 15'-0" Horizontally from centerline of nearest track
  - 21'-6" Vertically above top of rail
  - 27'-0" Vertically above top of rail for electric wires carrying less than 750 volts
  - 28'-0" Vertically above top of rail for electric wires carrying 750 volts to 15,000 volts
  - 30'-0" Vertically above top of rail for electric wires carrying 15,000 volts to 20,000 volts
  - 34'-0" Vertically above top of rail for electric wires carrying more than 20,000 volts

- **1.03.04** Upon completion of construction, the following clearances shall be maintained: **[Note to Drafter: The vertical clearance should mirror the final negotiated design clearance]**
  - 25' Horizontally from centerline of nearest track
  - 23' 6" Vertically above top of rail

- **1.03.05** Any infringement within State statutory clearances due to the Contractor's operations must be submitted to the Railway and to the (Agency) and must not be undertaken until approved in writing by the Railway, and until the (Agency) has obtained any necessary authorization from the State Regulatory Authority for the infringement. No extra compensation

SAMPLE

will be allowed in the event the Contractor's work is delayed pending Railway approval, and/or the State Regulatory Authority's approval.

- **1.03.06** In the case of impaired vertical clearance above top of rail, Railway will have the option of installing tell-tales or other protective devices Railway deems necessary for protection of Railway operations. The cost of tell-tales or protective devices will be borne by the Agency.

- **1.03.07** The details of construction affecting the Railway's Property and tracks not included in the contract plans must be submitted to the Railway by **(Agency)** for approval before work is undertaken and this work must not be undertaken until approved by the Railway.

- **1.03.08** At other than public road crossings, the Contractor must not move any equipment or materials across Railway's tracks until permission has been obtained from the Railway. The Contractor must obtain a "Temporary Construction Crossing Agreement" from the Railway prior to moving his equipment or materials across the Railways tracks. The temporary crossing must be gated and locked at all times when not required for use by the Contractor. The temporary crossing for use of the Contractor will be constructed and, at the completion of the project, removed at the expense of the Contractor.

- **1.03.09** Discharge, release or spill on the Railway Property of any hazardous substances, oil, petroleum, constituents, pollutants, contaminants, or any hazardous waste is prohibited and Contractor must immediately notify the Railway's Resource Operations Center at 1(800) 832-5452, of any discharge, release or spills in excess of a reportable quantity. Contractor must not allow Railway Property to become a treatment, storage or transfer facility as those terms are defined in the Resource Conservation and Recovery Act or any state analogue.

- **1.03.10** The Contractor upon completion of the work covered by this contract, must promptly remove from the Railway Property all of Contractor's tools, equipment, implements and other materials whether brought upon said property by said Contractor or any Subcontractor, employee, agent or contractor or of any Subcontractor, and must cause Railway's Property to be left in a condition acceptable to the Railway's representative.

1.04 Contractor Roadway Worker on Track Safety Program and Safety Action Plan:

- **1.04.01** Each Contractor that will perform work within 25 feet of the centerline of a track must develop and implement a Roadway Worker Protection/On Track Safety Program and work with Railway Project Representative to develop an on track safety strategy as described in the guidelines listed in the on track safety portion of the Safety Orientation. This Program must provide Roadway Worker protection/on track training for all employees of the Contractor, its subcontractors, agents or invitees. This training is reinforced at the job site through job safety briefings. Additionally, each Contractor must develop and implement the Safety Action Plan, as provided for on the web site www.BNSFContractor.com, which will be made available to Railway prior to commencement of any work on Railway Property. During the performance of work, the Contractor must audit its work activities. The Contractor must designate an on-site Project Supervisor who will serve as the contact person for the Railway and who will maintain a copy of the Safety Action Plan, safety audits, and Material Safety

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Datasheets (MSDS), at the job site.

- **1.04.02** Contractor shall have a background investigation performed on all of its employees, subcontractors and agents who will be performing any services for Railroad under this Agreement which are determined by Railroad in its sole discretion **a)** to be on Railroad's property, or **b)** that require access to Railroad Critical Infrastructure, Railroad Critical Information Systems, Railroad's Employees, Hazardous Materials on Railroad's property or is being transported by or otherwise in the custody of Railroad, or Freight in Transit involving Railroad.

  The required background screening shall at a minimum meet the rail industry background screening criteria defined by the e-RAILSAFE Program as outlined at www.verifile.com, in addition to any other applicable regulatory requirements.

  Contractor shall obtain written consent from all its employees, subcontractors or agents screened in compliance with the e-RAILSAFE Program to participate in the Program on their behalf and to release completed background information to Railroad's designee. Contractor shall be subject to periodic audit to ensure compliance.

  Contractor subject to the e-RAILSAFE Program hereunder shall not permit any of its employees, subcontractors or agents to perform services hereunder who are not first approved under e-RAILSAFE Program standards. Railroad shall have the right to deny entry onto its premises or access as described in this section above to any of Contractor's employees, subcontractors or agents who do not display the authorized identification badge issued by a background screening service meeting the standards set forth in the e-RAILSAFE Program, or who in Railroad's judgment, which may not be unreasonable, may pose a threat to the safety or security of Railroad's operations, assets or personnel.

  Contractors shall be responsible for ensuring that its employees, subcontractors and agents are United States citizens legally working in the United States under a lawful and appropriate work VISA or other work authorization.

1.05 Railway Flagger Services:

- **1.05.01** The Contractor must give Railway's **Roadmaster (telephone _____)** a minimum of thirty (30) calendar days advance notice when flagging services will be required so that the Roadmaster can make appropriate arrangements (i.e., bulletin the flagger's position). If flagging services are scheduled in advance by the Contractor and it is subsequently determined by the parties hereto that such services are no longer necessary, the Contractor must give the Roadmaster five (5) working days advance notice so that appropriate arrangements can be made to abolish the position pursuant to union requirements.

- **1.05.02** Unless determined otherwise by Railway's Project Representative, Railway flagger will be required and furnished when Contractor's work activities are located over, under and/or within twenty-five (25) feet measured horizontally from centerline of the nearest track and

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when cranes or similar equipment positioned beyond 25-feet from the track centerline could foul the track in the event of tip over or other catastrophic occurrence, but not limited thereto for the following conditions:

- **1.05.02a** When, upon inspection by Railway's Representative, other conditions warrant.

- **1.05.02b** When any excavation is performed below the bottom of tie elevation, if, in the opinion of Railway's representative, track or other Railway facilities may be subject to movement or settlement.

- **1.05.02c** When work in any way interferes with the safe operation of trains at timetable speeds.

- **1.05.02d** When any hazard is presented to Railway track, communications, signal, electrical, or other facilities either due to persons, material, equipment or blasting in the vicinity.

- **1.05.02e** Special permission must be obtained from the Railway before moving heavy or cumbersome objects or equipment which might result in making the track impassable.

- **1.05.03** Flagging services will be performed by qualified Railway flaggers.

  - **1.05.03a** Flagging crew generally consists of one employee. However, additional personnel may be required to protect Railway Property and operations, if deemed necessary by the Railways Representative.

  - **1.05.03b** Each time a flagger is called, the minimum period for billing will be the eight (8) hour basic day.

  - **1.05.03c** The cost of flagger services provided by the Railway will be borne by (Agency). The estimated cost for one (1) flagger is approximately between $800.00 - $1,600.00 for an eight (8) hour basic day with time and one-half or double time for overtime, rest days and holidays. The estimated cost for each flagger includes vacation allowance, paid holidays, Railway and unemployment insurance, public liability and property damage insurance, health and welfare benefits, vehicle, transportation, meals, lodging, radio, equipment, supervision and other costs incidental to performing flagging services. Negotiations for Railway labor or collective bargaining agreements and rate changes authorized by appropriate Federal authorities may increase actual or estimated flagging rates. **THE FLAGGING RATE IN EFFECT AT THE TIME OF PERFORMANCE BY THE CONTRACTOR HEREUNDER WILL BE USED TO CALCULATE THE ACTUAL COSTS OF FLAGGING PURSUANT TO THIS PARAGRAPH.**

  - **1.05.03d** The average train traffic on this route is _____ freight trains per 24-hour period at a timetable speed _____ MPH and _____ passenger trains at a timetable speed of _____ MPH.

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1.06 Contractor General Safety Requirements

- **1.06.01** Work in the proximity of railway track(s) is potentially hazardous where movement of trains and equipment can occur at any time and in any direction. All work performed by contractors within 25 feet of any track must be in compliance with FRA Roadway Worker Protection Regulations.

- **1.06.02** Before beginning any task on Railway Property, a thorough job safety briefing must be conducted with all personnel involved with the task and repeated when the personnel or task changes. If the task is within 25 feet of any track, the job briefing must include the Railway's flagger, as applicable, and include the procedures the Contractor will use to protect its employees, subcontractors, agents or invitees from moving any equipment adjacent to or across any Railway track(s).

- **1.06.03** Workers must not work within 25 feet of the centerline of any track without an on track safety strategy approved by the Railway's Contract Representative. When authority is provided, every contractor employee must know: (1) who the railway flagger is, and how to contact the flagger, (2) limits of the authority, (3) the method of communication to stop and resume work, and (4) location of the designated places of safety. Persons or equipment entering flag/work limits that were not previously job briefed, must notify the flagger immediately, and be given a job briefing when working within 25 feet of the center line of track.

- **1.06.04** When Contractor employees are required to work on the Railway Property after normal working hours or on weekends, the Railway's representative in charge of the project must be notified. A minimum of two employees must be present at all times.

- **1.06.05** Any employees, agents or invitees of Contractor or its subcontractors under suspicion of being under the influence of drugs or alcohol, or in the possession of same, will be removed from the Railway Property and subsequently released to the custody of a representative of Contractor management. Future access to the Railway's Property by that employee will be denied.

- **1.06.06** Any damage to Railway Property, or any hazard noticed on passing trains must be reported immediately to the Railway's representative in charge of the project. Any vehicle or machinery which may come in contact with track, signal equipment, or structure (bridge) and could result in a train derailment must be reported immediately to the Railway representative in charge of the project and to the Railway's Resource Operations Center at 1(800) 832-5452. Local emergency numbers are to be obtained from the Railway representative in charge of the project prior to the start of any work and must be posted at the job site.

- **1.06.07** For safety reasons, all persons are prohibited from having pocket knives, firearms or other deadly weapons in their possession while working on Railway's Property.

- **1.06.08** All personnel protective equipment (PPE) used on Railway Property must meet applicable OSHA and ANSI specifications. Current Railway personnel protective equipment requirements are listed on the web site, www.BNSFContractor.com, however, a partial list of the requirements include: a) safety glasses with permanently affixed side shields (no yellow

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lenses); b) hard hats; c) safety shoe with: hardened toes, above-the-ankle lace-up and a defined heel; and d) high visibility retro-reflective work wear. The Railway's representative in charge of the project is to be contacted regarding local specifications for meeting requirements relating to hi-visibility work wear. Hearing protection, fall protection, gloves, and respirators must be worn as required by State and Federal regulations. **(NOTE – Should there be a discrepancy between the information contained on the web site and the information in this paragraph, the web site will govern.)**

- **1.06.09** THE CONTRACTOR MUST NOT PILE OR STORE ANY MATERIALS, MACHINERY OR EQUIPMENT CLOSER THAN 25'-0" TO THE CENTER LINE OF THE NEAREST RAILWAY TRACK. MATERIALS, MACHINERY OR EQUIPMENT MUST NOT BE STORED OR LEFT WITHIN 250 FEET OF ANY HIGHWAY/RAIL AT-GRADE CROSSINGS OR TEMPORARY CONSTRUCTION CROSSING, WHERE STORAGE OF THE SAME WILL OBSTRUCT THE VIEW OF A TRAIN APPROACHING THE CROSSING. PRIOR TO BEGINNING WORK, THE CONTRACTOR MUST ESTABLISH A STORAGE AREA WITH CONCURRENCE OF THE RAILWAY'S REPRESENTATIVE.

- **1.06.10** Machines or vehicles must not be left unattended with the engine running. Parked machines or equipment must be in gear with brakes set and equipped with blade, pan or bucket, they must be lowered to the ground. All machinery and equipment left unattended on Railway's Property must be left inoperable and secured against movement. (See internet Engineering Contractor Safety Orientation program for more detailed specifications)

- **1.06.11** Workers must not create and have any conditions at the work site that would interfere with water drainage. Any work performed over water must meet all Federal, State and Local regulations.

- **1.06.12** All power line wires must be considered dangerous and of high voltage unless informed to the contrary by proper authority. For all power lines the minimum clearance between the lines and any part of the equipment or load must be; 200 KV or below - 15 feet; 200 to 350 KV - 20 feet; 350 to 500 KV - 25 feet; 500 to 750 KV - 35 feet; and 750 to 1000 KV - 45 feet. If capacity of the line is not known, a minimum clearance of 45 feet must be maintained. A person must be designated to observe clearance of the equipment and give a timely warning for all operations where it is difficult for an operator to maintain the desired clearance by visual means.

1.07 Excavation:

- **1.07.01** Before excavating, the Contractor must determine whether any underground pipe lines, electric wires, or cables, including fiber optic cable systems are present and located within the Project work area. The Contractor must determine whether excavation on Railway's Property could cause damage to buried cables resulting in delay to Railway traffic and disruption of service to users. Delays and disruptions to service may cause business interruptions involving loss of revenue and profits. Before commencing excavation, the Contractor must contact **BNSF's Field Engineering Representative (_____).** All underground and overhead wires will be considered HIGH VOLTAGE and dangerous until verified with the company having ownership of the line. **It is the Contractor's responsibility to notify any other companies that have underground utilities in the area and arrange**

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for the location of all underground utilities before excavating.

- **1.07.02** The Contractor must cease all work and notify the Railway immediately before continuing excavation in the area if obstructions are encountered which do not appear on drawings. If the obstruction is a utility and the owner of the utility can be identified, then the Contractor must also notify the owner immediately. If there is any doubt about the location of underground cables or lines of any kind, no work must be performed until the exact location has been determined. There will be no exceptions to these instructions.

- **1.07.03** All excavations must be conducted in compliance with applicable OSHA regulations and, regardless of depth, must be shored where there is any danger to tracks, structures or personnel.

- **1.07.04** Any excavations, holes or trenches on the Railway's Property must be covered, guarded and/or protected when not being worked on. When leaving work site areas at night and over weekends, the areas must be secured and left in a condition that will ensure that Railway employees and other personnel who may be working or passing through the area are protected from all hazards. All excavations must be back filled as soon as possible.

1.08 Hazardous Waste, Substances and Material Reporting:

- **1.08.01** If Contractor discovers any hazardous waste, hazardous substance, petroleum or other deleterious material, including but not limited to any non-containerized commodity or material, on or adjacent to Railway's Property, or near any surface water, swamp, wetlands or waterways, while performing any work under this Agreement, Contractor must immediately: (a) notify the Railway's Resource Operations Center at 1(800) 832-5452, of such discovery: (b) take safeguards necessary to protect its employees, subcontractors, agents and/or third parties: and (c) exercise due care with respect to the release, including the taking of any appropriate measures to minimize the impact of such release.

1.09 Personal Injury Reporting

- **1.09.01** The Railway is required to report certain injuries as a part of compliance with Federal Railroad Administration (FRA) reporting requirements. Any personal injury sustained by an employee of the Contractor, subcontractor or Contractor's invitees while on the Railway's Property must be reported immediately (by phone mail if unable to contact in person) to the Railway's representative in charge of the project. The Non-Employee Personal Injury Data Collection Form contained herein is to be completed and sent by Fax to the Railway at 1(817) 352-7595 and to the Railway's Project Representative no later than the close of shift on the date of the injury.

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BNSF RAILWAY

NON-EMPLOYEE PERSONAL INJURY DATA COLLECTION

(If injuries are in connection with rail equipment accident/incident, highway rail grade crossing accident or automobile accident, ensure that appropriate information is obtained, forms completed and that data entry personnel are aware that injuries relate to that specific event.)

Injured Person Type:

- ☐ Passenger on train (C)
- ☐ Non-employee (N)
  (i.e., emp of another railroad, or, non-BNSF emp involved in vehicle accident including company vehicles)
- ☐ Contractor/safety sensitive (F)
- ☐ Contractor/non-safety sensitive (G)
- ☐ Volunteer/safety sensitive (H)
- ☐ Volunteer/other non-safety sensitive (I)
- ☐ Non-trespasser (D) - to include highway users involved in highway rail grade crossing accidents who did not go around or through gates
- ☐ Trespasser (E) - to include highway users involved in highway rail grade crossing accidents who went around or through gates
- ☐ Non-trespasser (J) - Off railroad property

If train involved, Train #: _____

Transmit attached information to Accident/Incident Reporting Center by:
Fax 1-817-352-7595 or by Phone 1-800-697-6736 **or email to:** Accident-Reporting.Center@BNSF.com

Officer Providing Information:

_____ _____ _____
(Name) (Employee No.) (Phone #)

REPORT PREPARED TO COMPLY WITH FEDERAL ACCIDENT REPORTING REQUIREMENTS AND PROTECTED FROM DISCLOSURE PURSUANT TO 49 U.S.C. 20903 AND 83 U.S.C. 490

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BNSF RAILWAY

NON-EMPLOYEE PERSONAL INJURY DATA COLLECTION

INFORMATION REQUIRED TO BE COLLECTED PURSUANT TO FEDERAL REGULATION. IT SHOULD BE USED FOR COMPLIANCE WITH FEDERAL REGULATIONS ONLY AND IT IS NOT INTENDED TO PRESUME ACCEPTANCE OF RESPONSIBILITY OR LIABILITY.

1. Accident City/St: _____ 2. Date: _____ Time: _____

County: _____ 3. Temperature: _____ 4. Weather: _____
(if non BNSF location)

Mile Post / Line Segment: _____

5. Driver's License No (and state) or other ID: _____ **SSN (required):** _____

6. Name (last, first, mi): _____

7. Address: _____ City: _____ St: _____ Zip: _____

8. Date of Birth: _____ and/or _____ Gender: _____
(if available)

Phone Number: _____ Employer: _____

9. Injury: _____ 10. Body Part: _____
(i.e., Laceration, etc.) (i.e., Hand, etc.)

11. Description of Accident (To include location, action, result, etc.): _____

12. Treatment:

- ☐ First Aid Only
- ☐ Required Medical Treatment
- ☐ Other Medical Treatment

13. Dr. Name: _____ Date: _____

14. Dr. Address:

Street: _____ City: _____ St: _____ Zip: _____

15. Hospital Name: _____

16. Hospital Address:

Street: _____ City: _____ St: _____ Zip: _____

17. Diagnosis: _____

REPORT PREPARED TO COMPLY WITH FEDERAL ACCIDENT REPORTING REQUIREMENTS AND PROTECTED FROM DISCLOSURE PURSUANT TO 49 U.S.C. 20903 AND 83 U.S.C. 490

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EXHIBIT "C-1"

Agreement Between

BNSF RAILWAY COMPANY

and the

CONTRACTOR

SAMPLE

Railway File: _____

Agency Project: _____

SUPPLIER LEGAL NAME [Insert contractor's legal name here](hereinafter called "Contractor"), has entered into an agreement (hereinafter called "Agreement") dated _____, 201_, [***Drafter's Note: insert the date of the contract between the Agency and the Contractor here] with [Drafter's Note: insert the name of the Agency here] for the performance of certain work in connection with the following project:_____ Performance of such work will necessarily require Contractor to enter **BNSF RAILWAY COMPANY** (hereinafter called "Railway") right of way and property (hereinafter called "Railway Property"). The agreement provides that no work will be commenced within Railway Property until the Contractor employed in connection with said work for [insert Agency name here] (i) executes and delivers to Railway an Agreement in the form hereof, and (ii) provides insurance of the coverage and limits specified in such Agreement and Section 3 herein. If the agreement is executed by a party who is not the Owner, General Partner, President or Vice President of Contractor, Contractor must furnish evidence to Railway certifying that the signatory is empowered to execute this Agreement on behalf of Contractor.

Accordingly, in consideration of Railway granting permission to Contractor to enter upon Railway Property and as an inducement for such entry, Contractor, effective on the date of the Agreement, has agreed and does hereby agree with Railway as follows:

1) RELEASE OF LIABILITY AND INDEMNITY

Contractor hereby waives, releases, indemnifies, defends and holds harmless Railway for all judgments, awards, claims, demands, and expenses (including attorneys' fees), for injury or death to all persons, including Railway's and Contractor's officers and employees, and for loss and damage to property belonging to any person, arising in any manner from Contractor's or any of Contractor's subcontractors' acts or omissions or any work performed on or about Railway's property or right-of-way. **THE LIABILITY ASSUMED BY CONTRACTOR WILL NOT BE AFFECTED BY THE FACT THAT IT IS A FACT, THAT THE DESTRUCTION, DAMAGE, DEATH, OR INJURY WAS OCCASIONED BY OR CONTRIBUTED TO BY THE NEGLIGENCE OF RAILWAY, ITS AGENTS, SERVANTS, EMPLOYEES OR OTHERWISE, EXCEPT TO THE EXTENT THAT SUCH CLAIMS ARE PROXIMATELY CAUSED BY THE INTENSIONAL MISCONDUCT OR GROSS NEGLIGENCE OF RAILWAY.**

THE INDEMNIFICATION OBLIGATION ASSUMED BY CONTRACTOR INCLUDES ANY CLAIMS, SUITS OR JUDGMENTS BROUGHT AGAINST RAILWAY UNDER THE FEDERAL EMPLOYEE'S LIABILITY ACT, INCLUDING CLAIMS FOR STRICT LIABILITY UNDER THE SAFETY APPLIANCE ACT OR THE LOCOMOTIVE INSPECTION ACT, WHENEVER SO CLAIMED.

Contractor further agrees, at its expense, in the name and on behalf of Railway, that it will adjust and settle all claims made against Railway, and will, at Railway's discretion, appear and defend any suits or actions of law or in equity brought against Railway on any claim or cause of action arising or growing out of or in any manner connected with any liability assumed by Contractor under this Agreement for which Railway is liable or is alleged to be liable. Railway will give notice to Contractor, in writing, of the receipt or dependency of such claim, and thereupon Contractor must proceed to adjust and handle to a conclusion such claims, and in the event of a suit being brought against Railway, Railway may forward summons and complaint or other process in connection therewith to Contractor, and Contractor, at Railway's discretion, must defend, adjust, or settle such suits and protect, indemnify, and save harmless Railway from and against all damages, judgments, decrees, attorney's fees, costs, and expenses growing out of or resulting from or incident to any such claims or suits.

In addition to any other provision of this Agreement, in the event that all or any portion of this Article shall be deemed to be inapplicable for any reason, including without limitation as a result of a decision of an applicable court, legislative enactment or regulatory order, the parties agree that this Article shall be interpreted as requiring Contractor to indemnify Railway to the fullest extent permitted by applicable law. **THROUGH THIS AGREEMENT THE PARTIES EXPRESSLY INTEND FOR CONTRACTOR TO INDEMNIFY RAILWAY FOR RAILWAY'S ACTS OF NEGLIGENCE.**

It is mutually understood and agreed that the assumption of liabilities and indemnification provided for in this Agreement survive any termination of this Agreement.

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2) **TERM**

This Agreement is effective from the date of the Agreement until (i) the completion of the project set forth herein, and (ii) full and complete payment to Railway of any and all sums or other amounts owing and due hereunder.

3) **INSURANCE**

Contractor shall, at its sole cost and expense, procure and maintain during the life of this Agreement the following insurance coverage:

A. Commercial General Liability insurance. This insurance shall contain broad form contractual liability with a combined single limit of a minimum of $2,000,000 each occurrence and an aggregate limit of at least $4,000,000 but in no event less than the amount otherwise carried by the Contractor. Coverage must be purchased on a post 2004 ISO occurrence form or equivalent and include coverage for, but not limit to, the following:

- Bodily Injury and Property Damage
- Personal Injury and Advertising Injury
- Fire legal liability
- Products and completed operations

This policy shall also contain the following endorsements, which shall be indicated on the certificate of insurance:

- The definition of insured contract shall be amended to remove any exclusion or other limitation for any work being done within 50 feet of railroad property.
- Waver of subrogation in favor of and acceptable to Railway.
- Additional insured endorsement in favor of and acceptable to Railway.
- Separation of insureds.

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- The policy shall be primary and non-contributing with respect to any insurance carried by Railway.

It is agreed that the workers' compensation and employers' liability related exclusions in the Commercial General Liability insurance policy(s) required herein are intended to apply to employees of the policy holder and shall not apply to ***Railway*** employees.

No other endorsements limiting coverage as respects obligations under this Agreement may be included on the policy with regard to the work being performed under this agreement.

B. Business Automobile Insurance. This insurance shall contain a combined single limit of at least $1,000,000 per occurrence, and include coverage for, but not limited to the following:

- Bodily injury and property damage.
- Any and all vehicles owned, used or hired.

The policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance.

- Waiver of subrogation in favor of and acceptable to Railway.
- Additional insured endorsement in favor of and acceptable to Railway.
- Separation of insureds.
- The policy shall be primary and non-contributing with respect to any insurance carried by Railway.

C. Workers Compensation and Employers Liability insurance including coverage for, but not limited to:

- Contractor's statutory liability under the worker's compensation laws of the state(s) in which the work is to be performed. If optional under State law, the insurance must cover all employees anyway.

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- Employers' Liability (Part B) with limits of at least $500,000 each accident, $500,000 by disease policy limit, $500,000 by disease each employee.

This policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:

- Waiver of subrogation in favor of and acceptable to Railway

A. Railroad Protective Liability insurance naming only the *Railway* as the Insured with coverage of at least $2,000,000 per occurrence and $6,000,000 in the aggregate. The policy Must be issued on a standard ISO form CG 00 35 12 04 and include the following:

- Endorsed to include the Pollution Exclusion Amendment
- Endorsed to include the Limited Seepage and Pollution Endorsement.
- Endorsed to remove any exclusion for punitive damages.
- No other endorsements restricting coverage may be added.
- The original policy must be provided to the *Railway* prior to performing any work or services under this Agreement.
- Definition of "Physical Damage to Property" shall be endorsed to read: "means direct and accidental loss of or damage to all property owned by any named insured and all property in any named insured' care, custody, and control arising out of the acts or omissions of the contractor named on the Declarations.

In lieu of providing a Railroad Protective Liability Policy, Licensee may participate (if available) in Railway's Blanket Railroad Protective Liability Insurance Policy.

Other Requirements:

Where allowable by law, all policies (applying to coverage listed above) shall contain no exclusion for punitive damages.

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Contractor agrees to waive its right of recovery against ***Railway*** for all claims and suits against ***Railway***. In addition, its insurers, through the terms of the policy or policy endorsement, waive their right of subrogation against ***Railway*** for all claims and suits. Contractor further waives its right of recovery, and its insurers also waive their right of subrogation against ***Railway*** for loss of its owned or leased property or property under Contractor's care, custody or control.

Allocated Loss Expense shall be in addition to all policy limits for coverages referenced above.

Contractor is not allowed to self-insure without the prior written consent of ***Railway***. If granted by ***Railway***, any self-insured retention or other financial responsibility for claims shall be covered directly by Contractor in lieu of insurance. Any and all ***Railway*** liabilities that would otherwise, in accordance with the provisions of this Agreement, be covered by Contractor's insurance will be covered as if Contractor elected not to include a deductible, self-insured retention or other financial responsibility for claims.

Prior to commencing services, Contractor shall furnish to ***Railway*** an acceptable certificate(s) of insurance from an authorized representative evidencing the required coverage(s), endorsements, and amendments. The certificate should be directed to the following address:

BNSF Railway Company
c/o CertFocus
P.O. Box 140528
Kansas City, MO 64114
Toll Free: 877-576-2378
Fax number: 817-840-7487
Email: BNSF@certfocus.com
www.certfocus.com

Contractor shall notify ***Railway*** in writing at least 30 days prior to any cancellation, non-renewal, substitution or material alteration.

Any insurance policy shall be written by a reputable insurance company acceptable to ***Railway*** or with a current Best's Guide Rating of A- and Class VII or better, and authorized to do business in the state(s) in which the service is to be provided.

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If coverage is purchased on a "claims made" basis, Contractor hereby agrees to maintain coverage in force for a minimum of three years after expiration, cancellation or termination of this Agreement. Annually Contractor agrees to provide evidence of such coverage as required hereunder.

Contractor represents that this Agreement has been thoroughly reviewed by Contractor's insurance agent(s)/broker(s), who have been instructed by Contractor to procure the insurance coverage required by this Agreement.

Not more frequently than once every five years, ***Railway*** may reasonably modify the required insurance coverage to reflect then-current risk management practices in the railroad industry and underwriting practices in the insurance industry.

If any portion of the operation is to be subcontracted by Contractor, Contractor shall require that the subcontractor shall provide and maintain insurance coverage(s) as set forth herein, naming ***Railway*** as an additional insured, and shall require that the subcontractor shall release, defend and indemnify ***Railway*** to the same extent and under the same terms and conditions as Contractor is required to release, defend and indemnify Railway herein.

Failure to provide evidence as required by this section shall entitle, but not require, ***Railway*** to terminate this Agreement immediately. Acceptance of a certificate that does not comply with this section shall not operate as a waiver of Contractor's obligations hereunder.

The fact that insurance (including, without limitation, self-insurance) is obtained by Contractor shall not be deemed to release or diminish the liability of Contractor including, without limitation, liability under the indemnity provisions of this Agreement. Damages recoverable by ***Railway*** shall not be limited by the amount of the required insurance coverage.

In the event of a claim or lawsuit involving ***Railway*** arising out of this agreement, Contractor will make available any required policy covering such claim or lawsuit.

These insurance provisions are intended to be a separate and distinct obligation on the part of the Contractor. Therefore, these provisions shall be enforceable and Contractor shall be bound thereby

SAMPLE

regardless of whether or not indemnity provisions are determined to be enforceable in the jurisdiction in which the work covered hereunder is performed.

For purposes of this section, ***Railway*** shall mean "Burlington Northern Santa Fe LLC", "BNSF Railway Company" and the subsidiaries, successors, assigns and affiliates of each.

4) SALES AND OTHER TAXES

In the event applicable sales taxes of a state or political subdivision of a state of the United States are levied or assessed in connection with and directly related to any amounts invoiced by Contractor to Railway ("Sales Taxes"), Railway shall be responsible for paying only the Sales Taxes that Contractor separately states on the invoice or other billing documents provided to Railway; *provided, however,* that (i) nothing herein shall preclude Railway from claiming whatever Sales Tax exemptions are applicable to amounts Contractor bills Railway, (ii) Contractor shall be responsible for all sales, use, excise, consumption, services and other taxes which may accrue on all services, materials, equipment, supplies or fixtures that Contractor and Contractor's use or consume in the performance of this Agreement, (iii) Contractor shall be responsible for Sales Taxes (together with any penalties, fines or interest thereon) that Contractor fails to separately state on the invoice or other billing documents provided to Railway or fails to collect at the time of payment by Railway of invoiced amounts (except where Railway claims a Sales Tax exemption), and (iv) Contractor shall be responsible for Sales Taxes (together with any penalties, fines or interest thereon) if Contractor fails to issue separate invoices for each state in which Contractor delivers goods or provides services or, if applicable, transfers intangible rights to Railway.

Upon request, Contractor shall provide Railway satisfactory evidence that all taxes (together with any penalties, fines or interest thereon) that Contractor is responsible to pay under this Agreement have been paid. If a written claim is made against Contractor for Sales Taxes with respect to which Railway may be liable for under this Agreement, Contractor shall promptly notify Railway of such claim and provide Railway copies of all correspondence received from the taxing authority. Railway shall have the right to contest, protest, or claim a refund, in Railway's own name, any Sales Taxes paid by Railway to Contractor or for which Railway might otherwise be responsible for under this Agreement; provided, however, that if Railway is not permitted by law to contest any such Sales Tax in its own name, Contractor shall, if requested by Railway at Railway's sole cost and expense, contest in Contractor's own name the validity, applicability or amount of such Sales Tax and allow Railway to control and conduct such contest.

SAMPLE

Railway retains the right to withhold from payments made under this Agreement amounts required to be withheld under tax laws of any jurisdiction. If Contractor is claiming a withholding exemption or a reduction in the withholding rate of any jurisdiction on any payments under this Agreement, before any payments are made (and in each succeeding period or year as required by law), Contractor agrees to furnish to Railway a properly completed exemption form prescribed by such jurisdiction. Contractor shall be responsible for any taxes, interest or penalties assessed against Railway with respect to withholding taxes that Railway does not withhold from payments to Contractor.

1) EXHIBIT "C" CONTRACTOR REQUIREMENTS

The Contractor must observe and comply with all provisions, obligations, requirements and limitations contained in the Agreement, and the Contractor Requirements set forth on Exhibit "C" attached to the Agreement and this Agreement, including, but not limited to, payment of all costs incurred for any damages to Railway roadbed, tracks, and/or appurtenances thereto, resulting from use, occupancy, or presence of its employees, representatives, or agents or subcontractors on or about the construction site. Contractor shall execute a Temporary Construction Crossing Agreement or Private Crossing Agreement (http://www.bnsf.com/communities/faqs/permits-real-estate/), for any temporary crossing requested to aid in the construction of this Project, if approved by BNSF.

2) TRAIN DELAY

Contractor is responsible for and hereby indemnifies and holds harmless Railway (including its affiliated railway companies, and its tenants) for, from and against all damages arising from any unscheduled delay to a freight or passenger train which affects Railway's ability to fully utilize its equipment and to meet customer service contract obligations. Contractor will be billed, as further provided below, for the economic losses arising from loss of use of equipment, contractual loss of incentive pay and bonuses and contractual penalties resulting from train delays, whether caused by Contractor, or subcontractors, or by the Railway performing work under this Agreement. Railway agrees that it will not perform any act to unnecessarily cause train delay.

For loss of use of equipment, Contractor will be billed the current freight train hour rate per train as determined from Railway's records. Any disruption to train traffic may cause delays to multiple trains at the same time for the same period.

Additionally, the parties acknowledge that passenger, U.S. mail trains and certain other grain, intermodal, coal and freight trains operate under incentive/penalty contracts between Railway and its customer(s). Under these arrangements, if Railway does not meet its contract service commitments, Railway may

SAMPLE

suffer loss of performance or incentive pay and/or be subject to penalty payments. Contractor is responsible for any train performance and incentive penalties or other contractual economic losses actually incurred by Railway which are attributable to a train delay caused by Contractor or its subcontractors.

The contractual relationship between Railway and its customers is proprietary and confidential. In the event of a train delay covered by this Agreement, Railway will share information relevant to any train delay to the extent consistent with Railway confidentiality obligations. The rate then in effect at the time of performance by the Contractor hereunder will be used to calculate the actual costs of train delay pursuant to this agreement.

Contractor and its subcontractors must give Railway's representative (_____) _____ (__) weeks advance notice of the times and dates for proposed work windows. Railway and Contractor will establish mutually agreeable work windows for the project. Railway has the right at any time to revise or change the work windows due to train operations or service obligations. Railway will not be responsible for any additional costs or expenses resulting from a change in work windows. Additional costs or expenses resulting from a change in work windows shall be accounted for in Contractor's expenses for the project.

Contractor and subcontractors must plan, schedule, coordinate and conduct all Contractor's work so as to not cause any delay to any trains.

SAMPLE

IN WITNESS WHEREOF, each of the parties hereto has caused this Agreement to be executed by its duly authorized officer the day and year first above written.

SUPPLIER LEGAL NAME

By: _____

Printed Name: _____

Title: _____

Contact Person: _____

Address: _____

City: _____

State: _____ Zip: _____

Fax: _____

Phone: _____

E-mail: _____

BNSF Railway Company

By: _____

Name: _____

Manager Public Projects

Accepted and effective this _____day of 20__.

SAMPLE

SP00061-RR-CBRL (Special Provisions for the 2024 Book)

(Bidding on or after: 05-01-25
Last updated: 01-14-25
This Section requires
SP00170.)

(Use this when Coos Bay Rail Link is within project limits. The included requirements and exhibits are for information and reference only. Do not make any modifications to this document.)

COOS BAY RAIL LINK

The following Coos Bay Rail Link document is included in this project for information and reference only. The actual document will be provided and executed by Coos Bay Rail Link.

The Contractor shall obtain all necessary permits and licenses and pay all fees and obtain a fully executed copy of the railway agreement according to 00170.01(e).

In addition, when railroad flagger services are required, the Agency will pay for the services according to 00170.01(e).

Application To Access Railroad Property

Application Information

Application	Associated Fees
New Agreement	$1,200
Adoption of Existing Agreement	$1,500
Expedited Processing, within 10 business days	$1,000
Engineering Review Fee, if applicable	$1,750

Railroad Property Access and/or Occupancy	Associated Fees
Right of Entry, limited access for 90 days	$1,000
Grade Crossing, Farm/Residential, minimum 16 feet	$58 per foot
Grade Crossing, Industrial/Commercial, minimum 24 feet	$65 per foot
Track Lease, Lessee Maintained, minimum 100 feet**	$25 per foot
Pipeline or Wireline Crossing, rate varies with type of crossing	See Rate Schedule*
Outdoor Advertising, rate varies with size of signage	See Rate Schedule*
Land Lease, per square foot, minimum $300 per agreement	$0.80

*For a complete list of applicable fees, please see the current Oregon International Port of Coos Bay Rate Schedule, online at www.portofcoosbay.com. **Additional rate applies to land leased for tracks.

This is an application to access Railroad property. Application fee(s) are non-refundable and due at the time of application. Allow up to six weeks for processing after application fee(s) have been received. Incomplete applications may delay processing. Expedited processing is available for an additional fee, as outlined above. Engineering Review Fee will be determined based upon the potential for impact to Railroad operations. An agreement will be drafted based upon the information provided herein. Access and occupancy fees are due upon execution of that agreement and prior to any access or occupancy. Access to Railroad property is defined as temporary access typically granted for a specific purpose. Occupancy is a permanent structure and/or extended access (not temporary or limited in duration). Occupancy agreements are billed annually in advance and subject to a standard 3% CPI increase annually.

New Installations: Upon approval, the general application is an agreement to reimburse the Port of Coos Bay for any cost incurred, including maintenance and/or supervision necessitated by the installation. Applicant further agrees to assume all liability for accidents and/or injuries that arise as a result of the installation. Plans for the proposed installation shall be submitted to and meet the approval of the Port of Coos Bay prior to construction. Materials and installation are to be in strict accordance with AREMA (current edition) and requirements of the Railroad.

A minimum $500 crossing removal and disposal fee will be assessed should it become necessary for Railroad to remove a crossing due to account delinquency status. Additional labor and equipment charges may be assessed. Should the landowner/user desire reinstallation of the crossing, it will be necessary to reapply. Failure to abide by the provisions of the agreement, including cancellation of the required insurance as provided for in the agreement, will result in account delinquency status.

Please Note: **Contractor crews are not permitted on Railroad and/or Port of Coos Bay property until a Right of Entry Agreement has been fully executed, following the approval of this application and engineering review if applicable. Contingent upon approval, crews are required to provide at least five days advance notice to Railroad prior to work being conducted on Railroad and/or Port of Coos Bay property. Failure to provide the required notice will result in contractor crews being trespassed off Coos Bay Rail Line and/or Port of Coos Bay property, nullifying any previously executed Right of Entry Agreement, and resulting in the forfeiture of all associated previously paid fees.**

Acknowledged By: _____ (Initials)

SAMPLE

Section 1: General Applicant Information. All applicants must complete this section.			
Name of Applicant:		FEIN or SSN:	
Corporate Name:		State Incorporated:	
Name of Contact:	Email Address:		
Telephone Number:	Fax Number:		
Applicant Physical Address:	City:	State:	Zip:
Applicant Mailing Address (if different):	City:	State:	Zip:
Preferred Billing Address (if different):	City:	State:	Zip:
Overnight Delivery Address (if different):	City:	State:	Zip:
Preferred Courier:	Preferred Courier Account Number:		

Section 2: General Agreement Information. All applicants must complete this section.		
Specific Description of Agreement (include type of agreement, location of land area or roadway, nearest city/town/landmark, etc.):		
Physical Address of Agreement Location (GPS coordinates if no address):		
County:	Railroad Mile Post:	DOT Crossing (ENS) #:

Section 3: Adopt Existing Agreement. Complete this section to adopt an existing agreement. Provide as much information as possible. Do not leave boxes blank, write "N/A" if not applicable or "UNK" if unknown. Existing agreement must be in good standing prior to adoption. If an existing agreement is not available, a new agreement must be established. Subject to Railroad approval. ☐ **Check here if section is not applicable and continue to next section.**

Name of Former Lessee/Licensee:		Former Lessee/Licensee FEIN or SSN:	
Name of Former Lessee/Licensee Contact:	Former Lessee/Licensee Telephone Number:		
Former Lessee/Licensee Mailing Address:	City:	State:	Zip:
Former Lease/License Agreement Number:	Original Date of Agreement:	Effective Date of Adoption:	
Changes to Condition of Existing Agreement (i.e., change in use, increase or decrease size of land use, etc. If no changes, specify "None"):			

SAMPLE

Section 4: Roadway or Grade Crossing. Complete this section for all agreements pertaining to a roadway or grade crossing, including installation of a new crossing, adoption of an existing agreement, or improvements to an existing roadway. Do not leave boxes blank, write "N/A" if not applicable or "UNK" if unknown. If construction activity is planned, complete Section 5.

☐ **Check here if section is not applicable and continue to next section.**

Type of Roadway or Grade Crossing (Check all that apply):

☐ New ☐ Existing ☐ Public ☐ Private
☐ Relocation ☐ Reconstruction ☐ Vehicle Crossing ☐ Pedestrian Crossing
☐ Parallel Roadway ☐ Contractor Crossing ☐ Underpass ☐ Overpass
☐ Recreational Crossing ☐ Residential or Farm Crossing ☐ Commercial or Industrial Crossing

☐ Other _____

Roadway or Crossing Usage (Check all that apply):

☐ Passenger Cars ☐ Pickup Trucks ☐ Farm Equipment ☐ Heavy Construction Equipment

☐ Other _____

# of Trips Over Crossing/Roadway Per Day:	# of Property Owners Crossing/Roadway Will Serve:	
Width of Crossing/Roadway:	Length of Crossing/Roadway:	Crossing Angle (90° Preferred):
Distance from Center of Roadway to Track:	Material to be Used:	Is there Alternate Access to the Property?
Location and Lease/License Agreement Numbers of Applicant's Existing Crossings in the Vicinity:		

Section 5: Contractor Access and Right of Entry. Complete this section for any Contractor Access within Railroad Right of Way. Right of Entry agreements allow for limited access for a specified purpose for 90 days. A minimum of five (5) days advance notice must be given to Railroad prior to access after application approval. Do not leave boxes blank, write "N/A" if not applicable or "UNK" if unknown. Extension of access is available for an additional fee, see current Port of Coos Bay rate schedule online at www.portofcoosbay.com. ☐ **Check here if section is not applicable and continue to next section.**

Describe the Purpose and Need for Access:

Describe the Manner and Method of Installation on Railroad Property:

Road Name if Crossing is Within a Public Road Right-of-Way:	Existing Lease/License Agreement Numbers at this Location:		
Name of Property Owner:	Telephone Number:		
Name of Contractor:	Telephone Number:	Name of Contact Person:	
Contractor Physical Address:	City:	State:	Zip:

SAMPLE

Section 6: Use/Lease of Railroad Track. Complete this section for any use or lease of Railroad track, including spurs, sidings, and/or transload facilities. Do not leave boxes blank, write "N/A" if not applicable or "UNK" if unknown.

☐ **Check here if section is not applicable and continue to next section.**

Track to be Maintained by Lessee or Railroad:	Land Lease Associated with Track (Dimensions and Square Footage):

Purpose of Use:

Will track be used for transport or storage of hazardous material? ☐ Yes ☐ No

If yes, additional information will be required including but not limited to: containment plan, SDS for all materials, training and transload procedures, and/or other permits as required. Subject to Railroad approval.

Estimated Length of Track Use:	Estimated Term of Track Use:

Section 7: Wireline or Pipeline Crossing. Complete this section for any installation of new or maintenance of existing wireline or pipeline crossings. Do not leave boxes blank, write "N/A" if not applicable or "UNK" if unknown.

☐ **Check here if section is not applicable and continue to next section.**

Describe the Manner and Method of Installation on Railroad Property:

Size & Type of Wire:	Total Length/Distance of Wire:	Angle of Wire Crossing Track:
A/C or D/C:	Voltage:	Number of Conductors:
Height of Wire Supports:	Type of Wire Supports:	False Dead Ends:
Wire Height at 60°:	Sag in Spans at 60°:	Distance from Pole to Track:

Underground Encasement Material:	Size & Number of Innerducts:
Depth from Base of Rail to Top of Casing:	Length in Roadway Ditches:

Section 8: Land Lease, Outdoor Advertising, or Other Installation/Use. Complete this section for land leases, outdoor advertising, or any other installation or use not specified in previous sections. Do not leave boxes blank, write "N/A" if not applicable or "UNK" if unknown. Fees for any Railroad access or occupancy not specified within the current Port of Coos Bay rate schedule, available online at www.portofcoosbay.com, will be reviewed and rate quoted on an induvial basis.

☐ **Check here if section is not applicable and continue to next section.**

Describe the Purpose of Lease (Check all that apply):

☐ Land Beautification ☐ Land Cultivation ☐ Septic Drainage ☐ Outdoor Advertising
☐ Unloading Platform ☐ Weight Scales ☐ Overheard Conveyor

☐ Other _____

Size of Land Lease (Dimensions and Total Square Footage):	Dimensions of Outdoor Advertising Sign:

Describe the Manner and Method of Installation on Railroad Property:

SAMPLE

Section 9: Applicant Acknowledgement. All applicants must complete this section.	
By signature below, applicant acknowledges they have read and understand the policies and procedures contained herein. Applicant further acknowledges the information provided herein is true and accurate to the best of their knowledge.	
Printed Name:	Title:
Signature:	Date:

☐ **Check here for expedited processing and be sure to include the appropriate payment.**

Application fee(s) are non-refundable and due at the time of application. Allow up to six weeks for processing after application fee(s) have been received. Expedited processing is available for an additional fee and should be indicated above. Engineering Review Fee will be determined based upon the potential for impact to Railroad operations.

Send completed application, along with certificate of general liability insurance, and any applicable plans, drawings, deeds or legal documentation proving property ownership to portcoos@portofcoosbay.com. Questions concerning this application should be directed to this email address.

Mail applicable fees (check or money order payable to the Oregon International Port of Coos Bay) to:

Oregon International Port of Coos Bay
P.O. Box 1215
Coos Bay, OR 97420

The following table includes example applications and associated sections that must be completed. This table does not include all possible applications and is intended as information only. Incomplete applications may delay processing. Questions regarding this application should be directed to the email address above.

Purpose of Application	Complete These Sections
Contractor Access or Right of Entry	1, 2, 3, 9
Adopt Existing Agreement for Roadway or Grade Crossing	1, 2, 3, 4, 9
Installation of New Roadway or Grade Crossing	1, 2, 4, 3, 9
Use of Railroad Track	1, 2, 6, 9
Installation of New Pipeline or Wireline Crossing	1, 2, 7, 9
Installation of New Outdoor Advertising	1, 2, 8, 9
Adopt Existing Agreement, Land Lease	1, 2, 3, 8, 9
New land Lease	1, 2, 8, 9

SAMPLE

Office Use Only, Do Not Write Below This Line.

Application Received Date:	Applicable Fees Paid Date:
Expedited Processing? ☐ Yes, due date: _____ ☐ No	Engineering Review Needed? ☐ Yes ☐ No
Staff Comments:	
Application is ☐ Approved ☐ Denied	Agreement Number Assigned:

SP00062-RR-CORP (Special Provisions for the 2024 Book)

(Bidding on or after: 05-01-25
Last updated: 01-14-25
This Section requires SP00170.)

(Use this when Central Oregon & Pacific Railroad is within project limits. The included agreement, exhibits, and application are for information and reference only. Do not make any modifications to this document.)

CENTRAL OREGON & PACIFIC RAILROAD

Application for Contractors Access/Occupancy on Railroad Property

The following Central Oregon & Pacific Railroad agreement and exhibits are included in this Project for information and reference only. The actual Application for Contractors Access/Occupancy on Railroad Property will be provided and executed by the Central Oregon & Pacific Railroad.

The Contractor shall obtain all necessary permits and licenses and pay all fees and obtain a fully executed copy of the railway agreement according to 00170.01(e).

In addition, when Railroad flagger services are required, the Agency will pay for the services according to 00170.01(e).

Genesee & Wyoming Railroad Services, Inc.

Real Estate Department, 13901 Sutton Park Dr., S, Suite 270, Jacksonville, FL 32224

Contractors Access/Occupancy on Railroad Property

☐ **Check box if Contractor unknown at this time** *(this form will need to be completed with contractor information and submitted prior to any work once bid process is complete)*

Incomplete or Inaccurate Information will delay application request

Section 1 - Applicant Data

Complete Legal Name of Applicant to appear on License Agreement: _____

Applicant Mailing Address: _____

Applicant Overnight Address: _____

Type of Entity: ☐ Corporation ☐ Partnership ☐ Sole Proprietor ☐ Individual ☐ Municipality ☐ Developer ☐ Other

If other please explain: _____

State of Incorporation or Partnership: _____

Contact during Application Process:

Name: _____

Contact Telephone _____ Email Address: _____

Section 2 - Location Data

Railroad Name: _____ Estimated Start Date _____

Specify the amount of time access is required: _____ **Reason for extension of time beyond 60 days _____

****$500 extension fee for each additional 30 days being requested.**

Nearest City: _____ County: _____ State: _____

REQUIRED: Latitude/Longitude (Convert to Decimal Format) (ex 12.3456789/-64.101112): _____

Address of proposed worksite: _____

SAMPLE

Railroad Subdivision - If known _____ US DOT/AAR Crossing Number - If available _____

Section 3 - Existing Agreement Data

Is there an Existing Agreement at this Location which will be affected by this Request?

☐ Yes ☐ No If YES, List Agreement Number(s): _____

Will facility be exclusively used by Applicant? ☐ Yes ☐ No

If YES, List Name of Lessee: _____

Describe the complete scope of work on or around Railroad property (REQUIRED):

_____

_____

_____

_____

Section 4 - Department of Transportation (D.O.T.)

Is this installation associated with a Department of Transportation project? ☐ Yes ☐ No

If Yes, complete the following:

D.O.T. Contract Number: _____ D.O.T. Project Number: _____ D.O.T. Project Name: _____

D.O.T. Contact Information:

Name: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Phone Number _____ Email Address _____

Some important items to note when completing the application:

Checklist prior to submittal

- ☐ Latitude & longitudinal information converted to digital decimal format with an aerial map of location
- ☐ Payment for fees included - check payable to specific railroad
- ☐ If paying fees by credit card a completed signed credit card release is included - only Visa, MasterCard or Discover can be accepted - US Roads only
- ☐ Applications can be emailed with a copy of the check in order to start the approval process. Only the check for the doc prep fees needs to be mailed or overnighted when the complete application packet is emailed. Include a copy of the application to make sure the payment is matched to the correct project.
- ☐ *When returning the signed agreement and proof of insurance for final review and execution please allow 2-3 weeks prior to the start of work. Once all required fees are paid and documentation in place the agreement must go through an approval process before it can be finalized.*

SAMPLE

Section 5 - Insurance Requirements - US Roads

Insurance Requirements prior to any construction project - Both the Utility Owner and the Contractor completing installation are required to provide proof of current Commercial General Liability Insurance. Prior to construction the Contractor is required to provide current proof of Railroad Protective Liability Insurance.

General Liability Insurance must meet the minimum requirements of $2M per occurrence and $6M aggregate per the terms of the written contract.
Automobile Insurance must meet the minimum requirements of $1M bodily injury and property damage per occurrence.
The General Liability certificate is required to show proof of **CG2417 or its equivalent**. *(Contractual Liability Railroads)*
Evidence of **Workers Compensation** must be provided on certificate and meet the minimum requirements of $1M.
Certificate Holder naming *(specified Railroad)* ""Specified Railroad names can be found at www.gwrr.com""

General Liability, Automobile Liability and Umbrella/Excess Liability provides additional insured status to the certificate holder and any other party(ies) specified in or required by written contract between the named insured and the certificate holder.

Where applicable and permitted by law, all policies include a blanket automatic waiver of subrogation endorsement that provides this feature in favor of the certificate holder and any other party(ies) specified in or required by written contract between the named insured and the certificate holder.

Prior to Construction or any access within 50' of Railroad current **Certificate of Railroad Protective Liability Insurance (RPL)** which shows the ***specific Railroad*** as named insured. If the Contractor does not carry a policy of Railroad Protective Liability Insurance, this coverage can be secured through the railroad. An application and current Fee structure for this coverage is available upon request.

""Insurance Requirements for potentially hazardous pipelines such as natural gas, oil, petroleum, etc. to be provided as shown below""

General Liability Insurance which names the ***specific Railroad*** as additional insured and must meet the limits of **$5M per occurrence and $10M aggregate**. Such policy shall be endorsed to provide Waiver of Subrogation in favor of the certificate holder per written contract.

Pollution Legal Liability Insurance with minimum limits of **Five Million Dollars ($5,000,000)** per occurrence naming the ***certificate holder*** as additional insured per written contract. Such policy shall be endorsed to provide Waiver of Subrogation in favor of the certificate holder per written contract.

SAMPLE

Section 6 - Insurance requirements - Canadian Roads

Insurance Requirements prior to any construction project - Both the Utility Owner and the Contractor completing installation are required to provide proof of current Commercial General Liability Insurance.

General Liability Insurance must meet the minimum requirements of $2M per occurrence and $2M aggregate per the terms of the written contract.
Automobile Insurance must meet the minimum requirements of $1M bodily injury and property damage per occurrence.
Where applicable, the General Liability certificate is required to show proof of **CG2417 or its equivalent.** (Contractual Liability Railroads)
Evidence of **Workers Compensation** must be provided on certificate and meet the minimum requirments of $1M.
Certificate Holder naming *(specified Railroad)* ""Specified Railroad names can be found at www.gwrr.com""

General Liability, Automobile Liability and Umbrella/Excess Liability provides additional insured status to the certificate holder and any other party(ies) specified in or required by written contract between the named insured and the certificate holder.

Where applicable and permitted by law, all policies include a blanket automatic waiver of subrogation endorsement that provides this feature in favor of the certificate holder and any other party(ies) specified in or required by written contract between the named insured and the certificate holder.

IMPORTANT

Prior to application submittal, Questions can be answered and additional contact information obtained by visiting the website at www.gwrr.com - select the specific railroad and click on the link for Real Estate.

Plans for proposed installations shall be submitted and approved by the Railroad, on behalf of itself, its subsidiaries, and affiliates, and designated engineer before work can begin! Applications submitted not meeting current specifications as outlined in the General Specifications for Sub-grade and Above grade Utility Crossings of Railway's Right-of-Way will be returned and may incur additional engineering review fees. For your convenience a copy of these specifications can be found on the website at www.gwrr.com.

Materials and installations are to be in strict accordance with specifications of National Electrical Safety Code, AREMA, current edition, and requirements of the Railroad.

Upon application approval, applicant agrees to reimburse Railroad for any cost incurred by Railroad incident to the installation, maintenance and/or supervision necessitated by the installation. Applicant further agrees to assume all liability for accidents or injuries that arise as a result of this installation.

This section must be completed in full, signed and dated prior to submittal to the Real Estate Department for processing. Unsigned applications, incomplete or inaccurate information will delay application request and may incur additional fees.

Date: _____ **Signature:** _____

Phone Number _____ **Printed Name** _____

Fax Number: _____ **Title:** _____

SAMPLE

Please make check payable to the specific Railroad where proposed work is to occur. A list of Genesee & Wyoming, Inc. subsidiary railroads can be found at: www.gwrr.com . W-9 information available upon request.

Mail the application for proposed project, along with the applicable non-refundable fee(s) in U.S. Funds (Canadian Applicants please pay all fee in Canadian Funds plus HST) to:

Genesee & Wyoming Railroad Services, Inc.
Attn: Real Estate Department
13901 Sutton Park Dr. S., Suite 270
Jacksonville, FL 32224

In order for the application to be complete ALL required details pertinent to the proposed installation must be completed in full and submitted along with the following fees:

	# of Copies	Amount Due	Description
☐	1	$2,250	Engineer review fee, plans/drawings no larger than 11 x 17. Larger drawings may incur additional engineering fees.
☐	1	$1,750	Completed Contractor's Access/Occupancy Application and Fee required with ALL application submittals. If the contractor is unknown at time of submittal, just check the box under the heading on the form.
		$4,000	**Full amount due with submittal for new utility installations -** *Unless prior arrangements are made, applications received without payment will not be processed until receipt of payment. This could extend the time frame for the processing of your request.*
Only applicable for projects over 60 days		$500	Extension fee for each additional 30 days over the initial 60 days

SAMPLE

Standard Application processing takes approximately 6-8 weeks. PLEASE READ IN FULL - "Expedited processing" is available and will reduce the processing time to between 1-2 weeks at an additional cost of $3,000. For *all expedited requests*, the application and plans submitted must meet engineering specifications and be approved in order for the applicable agreement(s) to be forwarded to the applicant for signature within 2 weeks *from receipt of all required information and full payment of required fees*. It is important to note that an incomplete application and plans submitted that do not meeting engineering specifications will cause a delay in the processing of expedited request and the two week guarantee no longer applies if revisions are required to be made by the applicant in order for them to meet engineering specs for engineering to approve the request.

The expedited processing of an application does not apply to the final review and execution phase of the agreement process. Once a signed agreement has been received and ALL required fees and insurance has been submitted the agreement(s) is(are) forwarded for final review by a VP of Real Estate, Legal and the signatory for the Railroad. This final review and execution process can take up to 2 weeks from receipt of all required documentation and fees. This part of the agreement process cannot be expedited.

At this time we are unable to expedite requests for the installation of new private grade crossings, industrial track agreements, and track leases. The process for these requests varies somewhat from the review and approval process for new utilities and takes a little longer to secure all required approvals.

Entering or working on the railroad right of way or any other railroad property without the permission of the railroad is trespassing and illegal. Violators risk the possibility of serious, even fatal injury and will be prosecuted.

SAMPLE

SP00066-RR-PNWR (Special Provisions for the 2024 Book)

(Bidding on or after: 05-01-25
Last updated: 01-14-25
This Section requires SP00170.)

(Use this when Portland & Western Railroad Company is within project limits. The included agreements and exhibits are for information and reference only. Do not make any modifications to this document.)

PORTLAND & WESTERN RAILROAD COMPANY

Contractors Access/Occupancy on Railroad Property

The following Portland & Western Railroad Company agreements and exhibits are included in this Project for information and reference only. The actual Contractors Access/Occupancy on Railroad Property will be provided and executed by the Portland & Western Railroad Company.

The Contractor shall obtain all necessary permits and licenses and pay all fees and obtain a fully executed copy of the railway agreement according to 00170.01(e).

In addition, when Railroad flagger services are required, the Agency will pay for the services according to 00170.01(e).

Genesee & Wyoming Railroad Services, Inc.

Real Estate Department, 13901 Sutton Park Dr., S, Suite 270, Jacksonville, FL 32224

Contractors Access/Occupancy on Railroad Property

☐ **Check box if Contractor unknown at this time** *(this form will need to be completed with contractor information and submitted prior to any work once bid process is complete)*

Incomplete or Inaccurate Information will delay application request

Section 1 - Applicant Data

Complete Legal Name of Applicant to appear on License Agreement: _____

Applicant Mailing Address: _____

Applicant Overnight Address: _____

Type of Entity: ☐ Corporation ☐ Partnership ☐ Sole Proprietor ☐ Individual ☐ Municipality ☐ Developer ☐ Other

If other please explain: _____

State of Incorporation or Partnership: _____

Contact during Application Process:

Name: _____

Contact Telephone _____ Email Address: _____

Section 2 - Location Data

Railroad Name: _____ Estimated Start Date _____

Specify the amount of time access is required: _____ **Reason for extension of time beyond 60 days _____

****$500 extension fee for each additional 30 days being requested.**

Nearest City: _____ County: _____ State: _____

REQUIRED: Latitude/Longitude (Convert to Decimal Format) (ex 12.3456789/-64.101112): _____

Address of proposed worksite: _____

SAMPLE

Railroad Subdivision - If known _____ US DOT/AAR Crossing Number - If available _____

Section 3 - Existing Agreement Data

Is there an Existing Agreement at this Location which will be affected by this Request?

☐ Yes ☐ No If YES, List Agreement Number(s): _____

Will facility be exclusively used by Applicant? ☐ Yes ☐ No

If YES, List Name of Lessee: _____

Describe the complete scope of work on or around Railroad property (REQUIRED):

_____

_____

_____

_____

Section 4 - Department of Transportation (D.O.T.)

Is this installation associated with a Department of Transportation project? ☐ Yes ☐ No

If Yes, complete the following:

D.O.T. Contract Number: _____ D.O.T. Project Number: _____ D.O.T. Project Name: _____

D.O.T. Contact Information:

Name: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Phone Number _____ Email Address _____

Some important items to note when completing the application:

Checklist prior to submittal

- ☐ Latitude & longitudinal information converted to digital decimal format with an aerial map of location
- ☐ Payment for fees included - check payable to specific railroad
- ☐ If paying fees by credit card a completed signed credit card release is included - only Visa, MasterCard or Discover can be accepted - US Roads only
- ☐ Applications can be emailed with a copy of the check in order to start the approval process. Only the check for the doc prep fees needs to be mailed or overnighted when the complete application packet is emailed. Include a copy of the application to make sure the payment is matched to the correct project.
- ☐ *When returning the signed agreement and proof of insurance for final review and execution please allow 2-3 weeks prior to the start of work. Once all required fees are paid and documentation in place the agreement must go through an approval process before it can be finalized.*

SAMPLE

Section 5 - Insurance Requirements - US Roads

Insurance Requirements prior to any construction project - Both the Utility Owner and the Contractor completing installation are required to provide proof of current Commercial General Liability Insurance. Prior to construction the Contractor is required to provide current proof of Railroad Protective Liability Insurance.

General Liability Insurance must meet the minimum requirements of $2M per occurrence and $6M aggregate per the terms of the written contract.
Automobile Insurance must meet the minimum requirements of $1M bodily injury and property damage per occurrence.
The General Liability certificate is required to show proof of **CG2417 or its equivalent**. *(Contractual Liability Railroads)*
Evidence of **Workers Compensation** must be provided on certificate and meet the minimum requirements of $1M.
Certificate Holder naming *(specified Railroad)* ""Specified Railroad names can be found at www.gwrr.com""

General Liability, Automobile Liability and Umbrella/Excess Liability provides additional insured status to the certificate holder and any other party(ies) specified in or required by written contract between the named insured and the certificate holder.

Where applicable and permitted by law, all policies include a blanket automatic waiver of subrogation endorsement that provides this feature in favor of the certificate holder and any other party(ies) specified in or required by written contract between the named insured and the certificate holder.

Prior to Construction or any access within 50' of Railroad current **Certificate of Railroad Protective Liability Insurance (RPL)** which shows the ***specific Railroad*** as named insured. If the Contractor does not carry a policy of Railroad Protective Liability Insurance, this coverage can be secured through the railroad. An application and current Fee structure for this coverage is available upon request.

""Insurance Requirements for potentially hazardous pipelines such as natural gas, oil, petroleum, etc. to be provided as shown below""

General Liability Insurance which names the ***specific Railroad*** as additional insured and must meet the limits of **$5M per occurrence and $10M aggregate**. Such policy shall be endorsed to provide Waiver of Subrogation in favor of the certificate holder per written contract.

Pollution Legal Liability Insurance with minimum limits of **Five Million Dollars ($5,000,000)** per occurrence naming the ***certificate holder*** as additional insured per written contract. Such policy shall be endorsed to provide Waiver of Subrogation in favor of the certificate holder per written contract.

SAMPLE

Section 6 - Insurance requirements - Canadian Roads

Insurance Requirements prior to any construction project - Both the Utility Owner and the Contractor completing installation are required to provide proof of current Commercial General Liability Insurance.

General Liability Insurance must meet the minimum requirements of $2M per occurrence and $2M aggregate per the terms of the written contract.
Automobile Insurance must meet the minimum requirements of $1M bodily injury and property damage per occurrence.
Where applicable, the General Liability certificate is required to show proof of **CG2417 or its equivalent.** (Contractual Liability Railroads)
Evidence of **Workers Compensation** must be provided on certificate and meet the minimum requirments of $1M.
Certificate Holder naming *(specified Railroad)* ""Specified Railroad names can be found at www.gwrr.com""

General Liability, Automobile Liability and Umbrella/Excess Liability provides additional insured status to the certificate holder and any other party(ies) specified in or required by written contract between the named insured and the certificate holder.

Where applicable and permitted by law, all policies include a blanket automatic waiver of subrogation endorsement that provides this feature in favor of the certificate holder and any other party(ies) specified in or required by written contract between the named insured and the certificate holder.

IMPORTANT

Prior to application submittal, Questions can be answered and additional contact information obtained by visiting the website at www.gwrr.com - select the specific railroad and click on the link for Real Estate.

Plans for proposed installations shall be submitted and approved by the Railroad, on behalf of itself, its subsidiaries, and affiliates, and designated engineer before work can begin! Applications submitted not meeting current specifications as outlined in the General Specifications for Sub-grade and Above grade Utility Crossings of Railway's Right-of-Way will be returned and may incur additional engineering review fees. For your convenience a copy of these specifications can be found on the website at www.gwrr.com.

Materials and installations are to be in strict accordance with specifications of National Electrical Safety Code, AREMA, current edition, and requirements of the Railroad.

Upon application approval, applicant agrees to reimburse Railroad for any cost incurred by Railroad incident to the installation, maintenance and/or supervision necessitated by the installation. Applicant further agrees to assume all liability for accidents or injuries that arise as a result of this installation.

This section must be completed in full, signed and dated prior to submittal to the Real Estate Department for processing. Unsigned applications, incomplete or inaccurate information will delay application request and may incur additional fees.

Date: _____ **Signature:** _____

Phone Number _____ **Printed Name** _____

Fax Number: _____ **Title:** _____

SAMPLE

Please make check payable to the specific Railroad where proposed work is to occur. A list of Genesee & Wyoming, Inc. subsidiary railroads can be found at: www.gwrr.com . W-9 information available upon request.

Mail the application for proposed project, along with the applicable non-refundable fee(s) in U.S. Funds (Canadian Applicants please pay all fee in Canadian Funds plus HST) to:

Genesee & Wyoming Railroad Services, Inc.
Attn: Real Estate Department
13901 Sutton Park Dr. S., Suite 270
Jacksonville, FL 32224

In order for the application to be complete ALL required details pertinent to the proposed installation must be completed in full and submitted along with the following fees:

	# of Copies	Amount Due	Description
☐	1	$2,250	Engineer review fee, plans/drawings no larger than 11 x 17. Larger drawings may incur additional engineering fees.
☐	1	$1,750	Completed Contractor's Access/Occupancy Application and Fee required with ALL application submittals. If the contractor is unknown at time of submittal, just check the box under the heading on the form.
		$4,000	**Full amount due with submittal for new utility installations -** *Unless prior arrangements are made, applications received without payment will not be processed until receipt of payment. This could extend the time frame for the processing of your request.*
Only applicable for projects over 60 days		$500	Extension fee for each additional 30 days over the initial 60 days

SAMPLE

Standard Application processing takes approximately 6-8 weeks. PLEASE READ IN FULL - "Expedited processing" is available and will reduce the processing time to between 1-2 weeks at an additional cost of $3,000. For *all expedited requests*, the application and plans submitted must meet engineering specifications and be approved in order for the applicable agreement(s) to be forwarded to the applicant for signature within 2 weeks *from receipt of all required information and full payment of required fees*. It is important to note that an incomplete application and plans submitted that do not meeting engineering specifications will cause a delay in the processing of expedited request and the two week guarantee no longer applies if revisions are required to be made by the applicant in order for them to meet engineering specs for engineering to approve the request.

The expedited processing of an application does not apply to the final review and execution phase of the agreement process. Once a signed agreement has been received and ALL required fees and insurance has been submitted the agreement(s) is(are) forwarded for final review by a VP of Real Estate, Legal and the signatory for the Railroad. This final review and execution process can take up to 2 weeks from receipt of all required documentation and fees. This part of the agreement process cannot be expedited.

At this time we are unable to expedite requests for the installation of new private grade crossings, industrial track agreements, and track leases. The process for these requests varies somewhat from the review and approval process for new utilities and takes a little longer to secure all required approvals.

Entering or working on the railroad right of way or any other railroad property without the permission of the railroad is trespassing and illegal. Violators risk the possibility of serious, even fatal injury and will be prosecuted.

SAMPLE

SP00068-RR-UPRR (Special Provisions for the 2024 Book)

(Bidding on or after: 05-14-25
Last updated: 01-14-25
This Section requires
SP00170 and SP00223.)

(Use this when Union Pacific Railroad Company is within project limits. The included agreement and exhibits are for information and reference only. Do not make any modifications to this document.)

UNION PACIFIC RAILROAD COMPANY

Contractor's Right of Entry Agreement

Exhibit B

Exhibit C

Exhibit D

The following Union Pacific Railroad Company agreements and exhibits are included in this Project for information and reference only. The actual Contractor's Right of Entry Agreement with Exhibit B, Exhibit C, and Exhibit D will be provided and executed by the Union Pacific Railroad Company.

The Contractor shall obtain all necessary permits and licenses and pay all fees and obtain a fully executed copy of the Railroad agreement according to 00170.01(e).

The Contractor shall review and comply with the following documents as applicable:

- *UPRR-BNSF Guidelines for Grade Separated Projects* and *Guidelines for Temporary Shoring* located at:
  https://www.up.com/real_estate/roadxing/industry/grade_separation/index.htm
- *Union Pacific Railroad Public Projects Manual* located at:
  https://www.up.com/cs/groups/public/@uprr/@corprel/documents/up_pdf_nativedocs/pdf_up_public_projects_manual.pdf
- *Union Pacific Railroad Engineering Standard Drawings* located at:
  https://www.up.com/emp/engineering/apps/archives/standards/public/index.cfm
- *Union Pacific General Conditions and Specifications* located at:

  https://www.up.com/emp/engineering/mapcontent/standards/UP_GENERAL_SPECIFICATIONS.pdf

When Railroad flagger services are required, the Contractor shall provide Railroad flagger services from a vendor on Union Pacific's approved third party list of Railroad flagger vendors according to 00223.35.

CONTRACTOR'S
RIGHT OF ENTRY AGREEMENT

THIS AGREEMENT is made and entered into as of the _____ day of _____, 20_____, by and between **UNION PACIFIC RAILROAD COMPANY**, a Delaware corporation ("Railroad"); and _____, a _____ corporation ("Contractor").

RECITALS:

Contractor has been hired by _____ to perform work relating to _____ (the "Work") with all or a portion of such Work to be performed on property of Railroad in the vicinity of Railroad's Milepost _____ on Railroad's _____ [Subdivision or Branch] [at or near DOT No. _____ located at or near _____, in _____ County, State of _____, as such location is in the general location shown on the print marked **Exhibit A**, attached hereto and hereby made a part hereof, which Work is the subject of a contract dated _____ between Railroad and _____.

Railroad is willing to permit Contractor to perform the Work described above at the location described above subject to the terms and conditions contained in this agreement

AGREEMENT:

NOW, THEREFORE, it is mutually agreed by and between Railroad and Contractor, as follows:

ARTICLE 1 - DEFINITION OF CONTRACTOR

For purposes of this agreement, all references in this agreement to Contractor shall include Contractor's contractors, subcontractors, officers, agents and employees, and others acting under its or their authority. For purposes of clarity, Contractor agrees that any UC (defined below) hired by Contractor is a subcontractor of Contractor and therefore included in the defined term Contractor pursuant to the foregoing sentence.

ARTICLE 2 - RIGHT GRANTED; PURPOSE.

Railroad hereby grants to Contractor the right, during the term hereinafter stated and upon and subject to each and all of the terms, provisions and conditions herein contained, to enter upon and have ingress to and egress from the property described in the Recitals for the purpose of performing the Work described in the Recitals above. The right herein granted to Contractor is limited to those portions of Railroad's property specifically described herein, or as designated by the Railroad Representative named in Article 4.

ARTICLE 3 - TERMS AND CONDITIONS CONTAINED IN EXHIBITS B AND C.

The terms and conditions contained in **Exhibit B** and **Exhibit C**, attached hereto, are hereby made a part of this agreement.

SAMPLE

ARTICLE 4 - ALL EXPENSES TO BE BORNE BY CONTRACTOR; RAILROAD REPRESENTATIVE.

A. Contractor shall bear any and all costs and expenses associated with any Work performed by Contractor (including without limitation any CIC), or any costs or expenses incurred by Railroad relating to this agreement.

B. Contractor shall coordinate all of its Work with the following Railroad representative or his or her duly authorized representative (the "Railroad Representative"):

_____
_____
_____
_____

C. Contractor, at its own expense, shall adequately police and supervise all Work to be performed by Contractor and shall ensure that such Work is performed in a safe manner as set forth in Section 7 of **Exhibit B**. The responsibility of Contractor for safe conduct and adequate policing and supervision of Contractor's Work shall not be lessened or otherwise affected by Railroad's approval of plans and specifications involving the Work, or by Railroad's collaboration in performance of any Work, or by the presence at the Work site of a Railroad Representative, or by compliance by Contractor with any requests or recommendations made by Railroad Representative.

ARTICLE 5 - SCHEDULE OF WORK ON A MONTHLY BASIS.

The Contractor, at its expense, shall provide on a monthly basis a detailed schedule of Work to the Railroad Representative named in Article 4B above. The reports shall start at the execution of this agreement and continue until this agreement is terminated as provided in this agreement or until the Contractor has completed all Work on Railroad's property.

ARTICLE 6 - TERM; TERMINATION

A. The grant of rights herein made to Contractor shall commence on the date of this agreement, and continue until _____, unless sooner terminated as herein provided, or at such time as Contractor has completed its Work on Railroad's property, whichever is earlier. Contractor agrees to notify the Railroad Representative in writing when it has completed its Work on Railroad's property.

B. This agreement may be terminated by either party on ten (10) days written notice to the other party.

ARTICLE 7 - CERTIFICATE OF INSURANCE.

A. Before commencing any Work and throughout the entire term of this Agreement, Contractor, at its expense, shall procure and maintain in full force and effect the types and minimum limits of insurance specified in **Exhibit C** of this agreement and require each of its subcontractors to include the insurance endorsements as required under Section 12 of **Exhibit B** of this agreement.

B. Not more frequently than once every two (2) years, Railroad may reasonably modify the required insurance coverage to reflect then-current risk management practices in the railroad industry and underwriting practices in the insurance industry.

C. Upon request of Railroad, Contractor shall provide to Railroad a certificate issued by its insurance

SAMPLE

carrier evidencing the insurance coverage required under **Exhibit B**.

D. Contractor understands and accepts that the terms of this Article are wholly separate from and independent of the terms of any indemnity provisions contained in this Agreement.

D. Upon request of Railroad, insurance correspondence, binders, policies, certificates and endorsements shall be sent to:

Union Pacific Railroad Company
_____
[Insert mailing address]
_____
_____
Attn:_____
Folder No. _____

ARTICLE 8 - PRECONSTRUCTION MEETING.

If the Work to be performed by the Contractor will involve the Railroad providing any flagging protection (or if a CIC is approved to provide flagging protection pursuant to the terms set forth herein) and/or there is separate work to be performed by the Railroad, the Contractor confirms that no work shall commence until the Railroad and Contractor participate in a preconstruction meeting involving flagging procedures and coordination of work activities of the Contractor and the Railroad (and any CIC, as applicable.)

ARTICLE 9. DISMISSAL OF CONTRACTOR'S EMPLOYEE.

At the request of Railroad, Contractor shall remove from Railroad's property any employee of Contractor who fails to conform to the instructions of the Railroad representative in connection with the Work on Railroad's property, and any right of Contractor shall be suspended until such removal has occurred. Contractor shall indemnify Railroad against any claims arising from the removal of any such employee from Railroad's property.

ARTICLE 10. ADMINISTRATIVE FEE.

Upon the execution and delivery of this agreement, Contractor shall pay to Railroad One Thousand Twenty Five Dollars ($1,025.00) as reimbursement for clerical, administrative and handling expenses in connection with the processing of this agreement.

ARTICLE 11. CROSSINGS; COMPLIANCE WITH MUTCD AND FRA GUIDELINES.

A. No additional vehicular crossings (including temporary haul roads) or pedestrian crossings over Railroad's trackage shall be installed or used by Contractor without the prior written permission of Railroad.

B. Any permanent or temporary changes, including temporary traffic control, to crossings must conform to the Manual of Uniform Traffic Control Devices (MUTCD) and any applicable Federal Railroad Administration rules, regulations and guidelines, and must be reviewed by the Railroad prior to any changes being implemented. In the event the Railroad is found to be out of compliance with federal safety regulations due to the Contractor's modifications, negligence, or any other reason arising from the Contractor's presence on the Railroad's property, the Contractor agrees to assume liability for any civil penalties imposed upon the Railroad for such noncompliance.

SAMPLE

ARTICLE 12.- EXPLOSIVES.

Explosives or other highly flammable substances shall not be stored or used on Railroad's property without the prior written approval of Railroad.

IN WITNESS WHEREOF, the parties hereto have duly executed this agreement in duplicate as of the date first herein written.

UNION PACIFIC RAILROAD COMPANY

By: _____

Title: _____

_____
(Name of Contractor)

By: _____

Name: _____

Title: _____

Phone: _____

E-Mail: _____

SAMPLE

EXHIBIT A
TO
CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

Exhibit A will be a print showing the general location of the work site.

SAMPLE

EXHIBIT B
TO
CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

Section 1. NOTICE OF COMMENCEMENT OF WORK - RAILROAD FLAGGING - PRIVATE FLAGGING.

A. Contractor agrees to notify the Railroad Representative at least ten (10) working days in advance of Contractor commencing its Work and at least thirty (30) working days in advance of proposed performance of any Work by Contractor in which any person or equipment will be within twenty-five (25) feet of any track, or will be near enough to any track that any equipment extension (such as, but not limited to, a crane boom) will reach to within twenty-five (25) feet of any track.

B. No work of any kind shall be performed, and no person, equipment, machinery, tool(s), material(s), vehicle(s), or thing(s) shall be located, operated, placed, or stored within twenty-five (25) feet of any of Railroad's track(s) at any time, for any reason, unless and until a Railroad approved flagman is provided to watch for trains. Upon receipt of such thirty (30)-day notice, the Railroad Representative will determine and inform Contractor whether a flagman need be present and whether Contractor needs to implement any special protective or safety measures.

C. Contractor shall be permitted to hire a private contractor to perform flagging or other special protective or safety measures (such private contractor being commonly known in the railroad industry as a contractor-in-charge ("CIC")) in lieu of Railroad providing such services or in concert with Railroad providing such services, subject to prior written approval by Railroad, which approval shall be in Railroad's sole and absolute discretion. If Railroad agrees to permit Contractor to utilize a CIC pursuant to the preceding sentence, Contractor shall obtain Railroad's prior approval in writing for each of the following items, as determined in all respects in Railroad's sole and absolute discretion: (i) the identity of the third-party performing the role of CIC; (ii) the scope of the services to be performed for the project by the approved CIC; and (iii) any other terms and conditions governing such services to be provided by the CIC. If flagging or other special protective or safety measures are performed by an approved CIC, Contractor shall be solely responsible for (and shall timely pay such CIC for) its services. Railroad reserves the right to rescind any approval pursuant to this Section 1, Subsection C., in whole or in part, at any time, as determined in Railroad's sole and absolute discretion.

D. If any flagging or other special protective or safety measures are performed by employees of Railroad and/or any contractor of Railroad, Railroad will bill Contractor for such expenses incurred by Railroad, unless Railroad and a federal, state or local governmental entity have agreed that Railroad is to bill such expenses to the federal, state or local governmental entity. If Railroad will be sending the bills to Contractor, Contractor shall pay such bills within thirty (30) days of Contractor's receipt of billing.

E. If any flagging or other special protective or safety measures are performed by Railroad or a CIC, Contractor agrees that Contractor is not relieved of any of its responsibilities or liabilities set forth in this agreement.

F. The provisions set forth in this subsection are only applicable for Flagging Services performed by employees of Railroad: the rate of pay per hour for each flagman will be the prevailing hourly rate in effect for an eight-hour day for the class of flagmen used during regularly assigned hours and overtime in accordance with labor agreements and schedules in effect at the time the Work is performed. In addition to the cost of such labor, a composite charge for vacation, holiday, health and welfare, supplemental sickness, Railroad Retirement and unemployment compensation, supplemental pension, Employees Liability and Property Damage and Administration will be included, computed on actual payroll. The composite charge will be the prevailing composite charge in effect at the time the Work is performed. One and one-half times the current hourly rate is

SAMPLE

paid for overtime, Saturdays and Sundays, and two and one-half times current hourly rate for holidays. Wage rates are subject to change, at any time, by law or by agreement between Railroad and its employees, and may be retroactive as a result of negotiations or a ruling of an authorized governmental agency. Additional charges on labor are also subject to change. If the wage rate or additional charges are changed, Contractor (or the governmental entity, as applicable) shall pay on the basis of the new rates and charges. If flagging is performed by Railroad, reimbursement to Railroad will be required covering the full eight-hour day during which any flagman is furnished, unless the flagman can be assigned to other Railroad work during a portion of such day, in which event reimbursement will not be required for the portion of the day during which the flagman is engaged in other Railroad work. Reimbursement will also be required for any day not actually worked by the flagman following the flagman's assignment to work on the project for which Railroad is required to pay the flagman and which could not reasonably be avoided by Railroad by assignment of such flagman to other work, even though Contractor may not be working during such time. When it becomes necessary for Railroad to bulletin and assign an employee to a flagging position in compliance with union collective bargaining agreements, Contractor must provide Railroad a minimum of five (5) days notice prior to the cessation of the need for a flagman. If five (5) days notice of cessation is not given, Contractor will still be required to pay flagging charges for the five (5) day notice period required by union agreement to be given to the employee, even though flagging is not required for that period. An additional thirty (30) days notice must then be given to Railroad if flagging services are needed again after such five-day cessation notice has been given to Railroad.

Section 2. LIMITATION AND SUBORDINATION OF RIGHTS GRANTED.

A. The foregoing grant of right is subject and subordinate to the prior and continuing right and obligation of the Railroad to use and maintain its entire property including the right and power of Railroad to construct, maintain, repair, renew, use, operate, change, modify or relocate railroad tracks, roadways, signal, communication, fiber optics, or other wirelines, pipelines and other facilities upon, along or across any or all parts of its property, all or any of which may be freely done at any time or times by Railroad without liability to Contractor or to any other party for compensation or damages.

B. The foregoing grant is also subject to all outstanding superior rights (whether recorded or unrecorded and including those in favor of licensees and lessees of Railroad's property, and others) and the right of Railroad to renew and extend the same, and is made without covenant of title or for quiet enjoyment.

Section 3. NO INTERFERENCE WITH OPERATIONS OF RAILROAD AND ITS TENANTS.

A. Contractor shall conduct its operations so as not to interfere with the continuous and uninterrupted use and operation of the railroad tracks and property of Railroad, including without limitation, the operations of Railroad's lessees, licensees or others, unless specifically authorized in advance by the Railroad Representative. Nothing shall be done or permitted to be done by Contractor at any time that would in any manner impair the safety of such operations. When not in use, Contractor's machinery and materials shall be kept at least twenty-five (25) feet from the centerline of Railroad's nearest track, and there shall be no vehicular crossings of Railroads tracks except at existing open public crossings.

B. Operations of Railroad and work performed by Railroad personnel and delays in the Work to be performed by Contractor caused by such railroad operations and Work are expected by Contractor, and Contractor agrees that Railroad shall have no liability to Contractor, or any other person or entity for any such delays. The Contractor shall coordinate its activities with those of Railroad and third parties so as to avoid interference with railroad operations. The safe operation of Railroad train movements and other activities by Railroad takes precedence over any Work to be performed by Contractor.

SAMPLE

Section 4. LIENS.

Contractor shall pay in full all persons who perform labor or provide materials for the Work to be performed by Contractor. Contractor shall not create, permit or suffer any mechanic's or materialmen's liens of any kind or nature to be created or enforced against any property of Railroad for any such Work performed. Contractor shall indemnify and hold harmless Railroad from and against any and all liens, claims, demands, costs or expenses of whatsoever nature in any way connected with or growing out of such Work done, labor performed, or materials furnished. If Contractor fails to promptly cause any lien to be released of record, Railroad may, at its election, discharge the lien or claim of lien at Contractor's expense.

Section 5. PROTECTION OF FIBER OPTIC CABLE SYSTEMS.

A. Fiber optic cable systems may be buried on Railroad's property. Protection of the fiber optic cable systems is of extreme importance since any break could disrupt service to users resulting in business interruption and loss of revenue and profits. Contractor shall visit www.up.com/CBUD to complete and submit the required form to determine if fiber optic cable is buried anywhere on Railroad's property to be used by Contractor. If it is, Contractor will telephone the telecommunications company(ies) involved, make arrangements for a cable locator and, if applicable, for relocation or other protection of the fiber optic cable. Contractor shall not commence any Work until all such protection or relocation (if applicable) has been accomplished.

B. IN ADDITION TO OTHER INDEMNITY PROVISIONS IN THIS AGREEMENT, CONTRACTOR SHALL INDEMNIFY, DEFEND AND HOLD RAILROAD HARMLESS FROM AND AGAINST ALL COSTS, LIABILITY AND EXPENSE WHATSOEVER (INCLUDING, WITHOUT LIMITATION, ATTORNEYS' FEES, COURT COSTS AND EXPENSES) ARISING OUT OF ANY ACT OR OMISSION OF CONTRACTOR, ITS AGENTS AND/OR EMPLOYEES, THAT CAUSES OR CONTRIBUTES TO (1) ANY DAMAGE TO OR DESTRUCTION OF ANY TELECOMMUNICATIONS SYSTEM ON RAILROAD'S PROPERTY, AND/OR (2) ANY INJURY TO OR DEATH OF ANY PERSON EMPLOYED BY OR ON BEHALF OF ANY TELECOMMUNICATIONS COMPANY, AND/OR ITS CONTRACTOR, AGENTS AND/OR EMPLOYEES, ON RAILROAD'S PROPERTY. CONTRACTOR SHALL NOT HAVE OR SEEK RECOURSE AGAINST RAILROAD FOR ANY CLAIM OR CAUSE OF ACTION FOR ALLEGED LOSS OF PROFITS OR REVENUE OR LOSS OF SERVICE OR OTHER CONSEQUENTIAL DAMAGE TO A TELECOMMUNICATION COMPANY USING RAILROAD'S PROPERTY OR A CUSTOMER OR USER OF SERVICES OF THE FIBER OPTIC CABLE ON RAILROAD'S PROPERTY.

SAMPLE

Section 6. PERMITS - COMPLIANCE WITH LAWS.

In the prosecution of the Work covered by this agreement, Contractor shall secure any and all necessary permits and shall comply with all applicable federal, state and local laws, regulations and enactments affecting the Work including, without limitation, all applicable Federal Railroad Administration regulations.

Section 7. SAFETY.

A. Safety of personnel, property, rail operations and the public is of paramount importance in the prosecution of any Work on Railroad property performed by Contractor. Contractor shall be responsible for initiating, maintaining and supervising all safety, operations and programs in connection with the Work. Contractor shall, at a minimum, comply with Railroad's then current safety standards located at the below web address ("Railroad's Safety Standards") to ensure uniformity with the safety standards followed by Railroad's own forces. As a part of Contractor's safety responsibilities, Contractor shall notify Railroad if Contractor

determines that any of Railroad's Safety Standards are contrary to good safety practices. Contractor shall furnish copies of Railroad's Safety Standards to each of its employees before they enter Railroad property.

http://www.up.com/cs/groups/public/@uprr/@suppliers/documents/up_pdf_nativedocs/pdf_up_supplier_safety_req.pdf

B. Without limitation of the provisions of paragraph A above, Contractor shall keep the job site free from safety and health hazards and ensure that its employees are competent and adequately trained in all safety and health aspects of the job.

C. Contractor shall have proper first aid supplies available on the job site so that prompt first aid services may be provided to any person injured on the job site. Contractor shall promptly notify Railroad of any U.S. Occupational Safety and Health Administration reportable injuries. Contractor shall have a nondelegable duty to control its employees while they are on the job site or any other property of Railroad, and to be certain they do not use, be under the influence of, or have in their possession any alcoholic beverage, drug or other substance that may inhibit the safe performance of any Work.

D. If and when requested by Railroad, Contractor shall deliver to Railroad a copy of Contractor's safety plan for conducting the Work (the "Safety Plan"). Railroad shall have the right, but not the obligation, to require Contractor to correct any deficiencies in the Safety Plan. The terms of this agreement shall control if there are any inconsistencies between this agreement and the Safety Plan.

Section 8. INDEMNITY.

A. TO THE FULLEST EXTENT ALLOWED BY APPLICABLE LAW, CONTRACTOR SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS RAILROAD, ITS AFFILIATES, AND ITS AND THEIR OFFICERS, AGENTS AND EMPLOYEES (INDIVIDUALLY AN "INDEMNIFIED PARTY" OR COLLECTIVELY "INDEMNIFIED PARTIES") FROM AND AGAINST ANY AND ALL LOSS, DAMAGE, INJURY, LIABILITY, CLAIM, DEMAND, COST OR EXPENSE (INCLUDING, WITHOUT LIMITATION, ATTORNEY'S, CONSULTANT'S AND EXPERT'S FEES AND COURT COSTS), FINE OR PENALTY (COLLECTIVELY, "LOSS") INCURRED BY ANY PERSON (INCLUDING, WITHOUT LIMITATION, ANY INDEMNIFIED PARTY, CONTRACTOR, OR ANY EMPLOYEE OF CONTRACTOR OR OF ANY INDEMNIFIED PARTY) ARISING OUT OF OR IN ANY MANNER CONNECTED WITH (I) ANY WORK PERFORMED BY CONTRACTOR, OR (II) ANY ACT OR OMISSION OF CONTRACTOR, ITS OFFICERS, AGENTS OR EMPLOYEES, OR (III) ANY BREACH OF THIS AGREEMENT BY CONTRACTOR.

B. THE RIGHT TO INDEMNITY UNDER THIS SECTION 8 SHALL ACCRUE UPON OCCURRENCE OF THE EVENT GIVING RISE TO THE LOSS, AND SHALL APPLY REGARDLESS OF ANY NEGLIGENCE OR STRICT LIABILITY OF ANY INDEMNIFIED PARTY, EXCEPT WHERE THE LOSS IS CAUSED BY THE SOLE ACTIVE NEGLIGENCE OF AN INDEMNIFIED PARTY AS ESTABLISHED BY THE FINAL JUDGMENT OF A COURT OF COMPETENT JURISDICTION. THE SOLE ACTIVE NEGLIGENCE OF ANY INDEMNIFIED PARTY SHALL NOT BAR THE RECOVERY OF ANY OTHER INDEMNIFIED PARTY.

C. CONTRACTOR EXPRESSLY AND SPECIFICALLY ASSUMES POTENTIAL LIABILITY UNDER THIS SECTION 8 FOR CLAIMS OR ACTIONS BROUGHT BY CONTRACTOR'S OWN EMPLOYEES. CONTRACTOR WAIVES ANY IMMUNITY IT MAY HAVE UNDER WORKER'S COMPENSATION OR INDUSTRIAL INSURANCE ACTS TO INDEMNIFY THE INDEMNIFIED PARTIES UNDER THIS SECTION 8. CONTRACTOR ACKNOWLEDGES THAT THIS WAIVER WAS MUTUALLY NEGOTIATED BY THE PARTIES HERETO.

D. NO COURT OR JURY FINDINGS IN ANY EMPLOYEE'S SUIT PURSUANT TO ANY

SAMPLE

WORKER'S COMPENSATION ACT OR THE FEDERAL EMPLOYERS' LIABILITY ACT AGAINST A PARTY TO THIS AGREEMENT MAY BE RELIED UPON OR USED BY CONTRACTOR IN ANY ATTEMPT TO ASSERT LIABILITY AGAINST ANY INDEMNIFIED PARTY.

E. THE PROVISIONS OF THIS SECTION 8 SHALL SURVIVE THE COMPLETION OF ANY WORK PERFORMED BY CONTRACTOR OR THE TERMINATION OR EXPIRATION OF THIS AGREEMENT. IN NO EVENT SHALL THIS SECTION 8 OR ANY OTHER PROVISION OF THIS AGREEMENT BE DEEMED TO LIMIT ANY LIABILITY CONTRACTOR MAY HAVE TO ANY INDEMNIFIED PARTY BY STATUTE OR UNDER COMMON LAW.

Section 9. RESTORATION OF PROPERTY.

In the event Railroad authorizes Contractor to take down any fence of Railroad or in any manner move or disturb any of the other property of Railroad in connection with the Work to be performed by Contractor, then in that event Contractor shall, as soon as possible and at Contractor's sole expense, restore such fence and other property to the same condition as the same were in before such fence was taken down or such other property was moved or disturbed. Contractor shall remove all of Contractor's tools, equipment, rubbish and other materials from Railroad's property promptly upon completion of the Work, restoring Railroad's property to the same state and condition as when Contractor entered thereon.

Section 10. WAIVER OF DEFAULT.

Waiver by Railroad of any breach or default of any condition, covenant or agreement herein contained to be kept, observed and performed by Contractor shall in no way impair the right of Railroad to avail itself of any remedy for any subsequent breach or default.

Section 11. MODIFICATION - ENTIRE AGREEMENT.

No modification of this agreement shall be effective unless made in writing and signed by Contractor and Railroad. This agreement and the exhibits attached hereto and made a part hereof constitute the entire understanding between Contractor and Railroad and cancel and supersede any prior negotiations, understandings or agreements, whether written or oral, with respect to the Work to be performed by Contractor.

Section 12. ASSIGNMENT - SUBCONTRACTING.

Contractor shall not assign or subcontract this agreement, or any interest therein, without the written consent of the Railroad. Contractor shall be responsible for the acts and omissions of all subcontractors. Before Contractor commences any Work, the Contractor shall, except to the extent prohibited by law; (1) require each of its subcontractors to include the Contractor as "Additional Insured" on the subcontractor's Commercial General Liability policy and Umbrella or Excess policies (if applicable) with respect to all liabilities arising out of the subcontractor's performance of Work on behalf of the Contractor by endorsing these policies with ISO Additional Insured Endorsements CG 20 10, and CG 20 37 (or substitute forms providing equivalent coverage; (2) require each of its subcontractors to endorse their Commercial General Liability Policy with "Contractual Liability Railroads" ISO Form CG 24 17 10 01 (or a substitute form providing equivalent coverage) for the job site; and (3) require each of its subcontractors to endorse their Business Automobile Policy with "Coverage For Certain Operations In Connection With Railroads" ISO Form CA 20 70 10 01 (or a substitute form providing equivalent coverage) for the job site.

SAMPLE

EXHIBIT C
TO
CONTRACTOR'S
RIGHT OF ENTRY AGREEMENT

Union Pacific Railroad Company
Insurance Requirements For
Contractor's Right of Entry Agreement

During the entire term of this Agreement and course of the Project, and until all Project Work on Railroad's property has been completed and all equipment and materials have been removed from Railroad's property and Railroad's property has been clean and restored to Railroad's satisfaction, Contractor shall, at its sole cost and expense, procure and maintain the following insurance coverage:

A. **Commercial General Liability** insurance. Commercial general liability (CGL) with a limit of not less than $5,000,000 each occurrence and an aggregate limit of not less than $10,000,000. CGL insurance must be written on ISO occurrence form CG 00 01 12 04 (or a substitute form providing equivalent coverage).

The policy must also contain the following endorsement, which must be stated on the certificate of insurance:

- Contractual Liability Railroads ISO form CG 24 17 10 01 (or a substitute form providing equivalent coverage) showing "Union Pacific Railroad Company Property" as the Designated Job Site.
- Designated Construction Project(s) General Aggregate Limit ISO Form CG 25 03 03 97 (or a substitute form providing equivalent coverage) showing the project on the form schedule.

B. **Business Automobile Coverage** insurance. Business auto coverage written on ISO form CA 00 01 10 01 (or a substitute form providing equivalent liability coverage) with a combined single limit of not less $5,000,000 for each accident and coverage shall include liability arising out of any auto (including owned, hired and non-owned autos).

The policy must contain the following endorsements, which must be stated on the certificate of insurance:

- Coverage For Certain Operations In Connection With Railroads ISO form CA 20 70 10 01 (or a substitute form providing equivalent coverage) showing "Union Pacific Property" as the Designated Job Site.
- Motor Carrier Act Endorsement - Hazardous materials clean up (MCS-90) if required by law.

C. **Workers' Compensation and Employers' Liability** insurance. Coverage must include but not be limited to:

- Contractor's statutory liability under the workers' compensation laws of the state where the Work is being performed.
- Employers' Liability (Part B) with limits of at least $500,000 each accident, $500,000 disease policy limit $500,000 each employee.

If Contractor is self-insured, evidence of state approval and excess workers compensation coverage must be provided. Coverage must include liability arising out of the U. S. Longshoremen's and Harbor Workers' Act, the Jones Act, and the Outer Continental Shelf Land Act, if applicable.

D. **Railroad Protective Liability** insurance. Contractor must maintain "Railroad Protective Liability" (RPL) insurance written on ISO occurrence form CG 00 35 12 04 (or a substitute form providing equivalent coverage) on behalf of Railroad as named insured, with a limit of not less than $2,000,000 per occurrence

SAMPLE

and an aggregate of $6,000,000. The definition of "JOB LOCATION" and "WORK" on the declaration page of the policy shall refer to this agreement and shall describe all WORK or OPERATIONS performed under this agreement. Contractor shall provide this agreement to Contractor's insurance agent(s) and/or broker(s) and Contractor shall instruct such agent(s) and/or broker(s) to procure the insurance coverage required by this agreement. A BINDER STATING THE POLICY IS IN PLACE MUST BE SUBMITTED TO RAILROAD BEFORE THE WORK MAY COMMENCE AND UNTIL THE ORIGINAL POLICY IS FORWARDED TO UNION PACIFIC RAILROAD.

E. **Umbrella or Excess** insurance. If Contractor utilizes umbrella or excess policies, these policies must "follow form" and afford no less coverage than the primary policy.

F. **Pollution Liability** insurance. Pollution liability coverage must be included when the scope of the Work as defined in the agreement includes installation, temporary storage, or disposal of any "hazardous" material that is injurious in or upon land, the atmosphere, or any watercourses; or may cause bodily injury at any time.

If required, coverage may be provided in separate policy form or by endorsement to Contractors CGL or RPL. Any form coverage must be equivalent to that provided by ISO form CG 24 15 "Limited Pollution Liability Extension Endorsement" or CG 28 31 "Pollution Exclusion Amendment" with limits of at least $5,000,000 per occurrence and an aggregate limit of $10,000,000.

If the scope of Work as defined in this agreement includes the disposal of any hazardous or non-hazardous materials from the job site, Contractor must furnish to Railroad evidence of pollution legal liability insurance maintained by the disposal site operator for losses arising from the insured facility accepting the materials, with coverage in minimum amounts of $1,000,000 per loss, and an annual aggregate of $2,000,000.

Other Requirements

G. All policy(ies) required above (except business automobile, worker's compensation and employers liability) must include Railroad as "Additional Insured" using ISO Additional Insured Endorsements CG 20 10, and CG 20 37 (or substitute forms providing equivalent coverage). The coverage provided to Railroad as additional insured shall not be limited by Contractor's liability under the indemnity provisions of this agreement. BOTH CONTRACTOR AND RAILROAD EXPECT THAT UNION PACIFIC RAILROAD COMPANY WILL BE PROVIDED WITH THE BROADEST POSSIBLE COVERAGE AVAILABLE BY OPERATION OF LAW UNDER ISO ADDITIONAL INSURED FORMS CG 20 10 AND CG 20 37.

H. Punitive damages exclusion, if any, must be deleted (and the deletion indicated on the certificate of insurance), unless (a) insurance coverage may not lawfully be obtained for any punitive damages that may arise under this agreement, or (b) all punitive damages are prohibited by all states in which this agreement will be performed.

I. Contractor waives all rights of recovery, and its insurers also waive all rights of subrogation of damages against Railroad and its agents, officers, directors and employees for damages covered by the workers compensation and employers liability or commercial umbrella or excess liability obtained by Contractor required in this agreement where prohibited by law. This waiver must be stated on the certificate of insurance.

J. Prior to commencing the Work, Contractor shall furnish Railroad with a certificate(s) of insurance, executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements in this agreement.

SAMPLE

K. All insurance policies must be written by a reputable insurance company acceptable to Railroad or with a current Best's Insurance Guide Rating of A- and Class VII or better, and authorized to do business in the state where the Work is being performed.

L. The fact that insurance is obtained by Contractor or by Railroad on behalf of Contractor will not be deemed to release or diminish the liability of Contractor, including, without limitation, liability under the indemnity provisions of this agreement. Damages recoverable by Railroad from Contractor or any third party will not be limited by the amount of the required insurance coverage.

SAMPLE

SP00069-RR-UPRR-END (Special Provisions for the 2024 Book)

(Bidding on or after: 06-01-25
Last updated: 02-26-25
This Section requires
SP00170 and SP00223.)

(Use this when Union Pacific Railroad Company is within project limits. The included agreement and exhibits are for information and reference only. Do not make any modifications to this document.)

UNION PACIFIC RAILROAD COMPANY

Contractor Endorsement

The following Union Pacific Railroad Company Contractor Endorsement is included in this Project for information and reference only. The actual Contractor Endorsement will be provided and executed by the Union Pacific Railroad Company.

The Contractor shall obtain all necessary permits and licenses and pay all fees and obtain a fully executed copy of the Railroad's Contractor Endorsement according to 00170.01(e).

The Contractor shall review and comply with the following documents as applicable:

- *UPRR-BNSF Guidelines for Grade Separated Projects* and *Guidelines for Temporary Shoring* located at:
  https://www.up.com/real_estate/roadxing/industry/grade_separation/index.htm
- *Union Pacific Railroad Public Projects Manual* located at:
  https://www.up.com/cs/groups/public/@uprr/@corprel/documents/up_pdf_nativedocs/pdf_up_public_projects_manual.pdf
- *Union Pacific Railroad Engineering Standard Drawings* located at:
  https://www.up.com/emp/engineering/apps/archives/standards/public/index.cfm
- *Union Pacific General Conditions and Specifications* located at:

  https://www.up.com/emp/engineering/mapcontent/standards/UP_GENERAL_SPECIFICATIONS.pdf

When Railroad flagger services are required, the Contractor shall provide Railroad flagger services through a third party flagger according to 00223.35.

Docusign Envelope ID:

REMS Project:
Agency Project:
Consent End Date:

Contractor Endorsement

A. It is the intention of the OREGON DEPARTMENT OF TRANSPORTATION (**Agency**) to perform the scope of work at the location(s) identified in Exhibit A (**Work**) of this Contractor Endorsement (**Endorsement**). As a condition to entering upon UNION PACIFIC RAILROAD COMPANY (**Railroad**) property to perform the Work, contractor acknowledges and agrees to comply with the following conditions.

- Completion of Union Pacific Property Access Training (UP-PAT).
  www.up.com/up-pat
- Compliance with Contractor Endorsement-General Terms and Provisions.
  www.up.com/ce-terms
- Acknowledgement of Third-party Flagging Policy.
  www.up.com/flagging
- Acknowledgement that insurance documentation will be provided to Railroad upon request.

B. Fiber optics and telecommunication facilities can be present on Railroad property. Prior to performing work with the potential to impact Railroad facilities, the Agency or its contractor shall follow the procedures outlined on the Railroad website link below.

Fiber Optics & Telecommunications (Call Before You Dig) - www.up.com/CBUD

C. Prior to performing the Work, contractor agrees to provide forty-five (45) days advance notice to the Railroad Representative identified below.

Lori Craig (817) [illegible]-9560 – lcraig@olsson.com

D. This Endorsement must be executed and sent to the Railroad before the **Consent End Date** above. The terms of this Endorsement shall commence on the date of execution and continue for one (1) year or until such time as contractor has completed the Work. The Work may be terminated within 24 hours' notice by either party. The Work may proceed until the terms of this Endorsement have been met and, the executed Endorsement and the payment of the $2,200 administrative fee is received by the Railroad.

Email a scanned copy of the executed Endorsement to upmaintenance@olsson.com.

The remainder of page intentionally left blank.

SAMPLE

Docusign Envelope ID:

REMS Project:
Agency Project:
Consent End Date:

The administrative fee must be submitted by the Agency or the contractor using one of the payment methods indicated on the attached Bill. If paying by check, the Bill must be included with the check. For ACH or Wire transfers, include the Bill Number in the transmittal notes.

Company Name			
Contact Name			
Address			
City, ST Zip			
Phone		**Email**	
Contact Signature		**Date**	
Payment Method	☐ **Check**	☐ **ACH**	☐ **Wire Transfer**

SAMPLE

Docusign Envelope ID:

REMS Project:
Agency Project:
Consent End Date:

Exhibit A to Contractor Endorsement
Project Scope and Location(s)

Scope of Work

PROJECT WORK TO BE ADDED. Railroad Approved Third Party Flagging Contractor must be present during inspection.

Location

XXX Subdivision

DOT	Milepost	Street Name

SAMPLE

SP00084-PAINT-36 (Special Provisions for the 2024 Book)
(Bidding on or after: 05-01-25
Last updated: 01-14-25)

COATING SYSTEM WARRANTY (36 MONTH)

THIS WARRANTY, made by _____
(Contractor)

_____

of _____ and

_____

of _____

hereinafter called "Warrantors", in favor of the State of Oregon, hereinafter called "State";

W I T N E S S E T H:

RECITALS:

1. State has contracted for preparing and coating structural steel and other metal surfaces on the _____.

(Description of surfaces to be coated)

2. Under the provisions of Contract No. _____ pertaining in part to coating under said Contract of structural steel and other metal surfaces, entered into by State and _____ ("Contractor"), the Contractor is
(Contractor)
required to and hereby furnishes to the State a written warranty for the coating system warranting against defects as provided in said Contract for a period of 36 months beginning at the issuance of the Second Notification under said Contract.

NOW, THEREFORE, in consideration of the foregoing, Warrantors hereby agree and unconditionally warrant to the State that the coating system and all coating work, both above deck and below deck, are and shall be free from all defects as defined in the above-described Contract for a period of 36 months, and that if any such defects occur or are discovered within said 36 month period, Warrantors shall, forthwith upon receipt of written notification of any such defect or defects make repairs to the coating system necessary to meet the original Contract requirements, at no additional cost to the State, within the time limits as specified in the Contract. References herein to the warranty requirements of the Contract include, but are not limited to, the terms, conditions and requirements contained in the Specifications, including, but not limited to, subsections 00130.40, 00170.85(b)(1), and 00594.75 for the Contract, which are incorporated herein by this reference.

It is expressly understood and agreed that the warranty and obligations herein set forth are made and undertaken by Warrantors to and for the benefit of the State.

IN WITNESS WHEREOF, Warrantors have set their hands as of this _____day _____of 20 __.

_____

ATTEST: _____

_____ _____

(Contractor)

SUPPLEMENTAL PERFORMANCE BOND (36 MONTH WARRANTY PERIOD)

KNOW ALL MEN BY THESE PRESENTS, That we _____ as principal, and _____ as Surety, a corporation duly organized and existing under and by virtue of the laws of the State of _____ and duly authorized to transact the business of Surety in the State of Oregon, are jointly and severally held and bound unto the State of Oregon in the sum of _____($_____) Dollars, for the payment of which we jointly and severally bind ourselves, our heirs and executors, administrators, successors and assigns firmly by these presents.

THE CONDITION OF THIS BOND IS SUCH

That, whereas, the principal herein has, on or about the _____ day of _____, 20 __, made and entered into a certain Contract with the State of Oregon, by and through the Oregon Transportation Commission and its Department of Transportation, which agreement is more fully described as _____, Contract No. _____, under which Contract the principal agrees to furnish certain materials and to perform certain work which it agrees to do in accordance with the terms, conditions and requirements as set out in said Contract, and whereas, in connection with said Contract, the principal and others have executed a written warranty, a copy of which warranty is attached hereto and by this reference made a part hereof;

And, whereas, the principal also agrees to furnish materials and perform work according to all authorized modifications of the Contract which increase the amount of work and amount of Contract. Notice to the Surety of any of the immediately foregoing is waived.

And, whereas, the principal has therein undertaken to warrant the work of preparing and coating structural steel and other metal surfaces against any defects, as therein defined, for a period of at least 36 months beginning at the issuance of the Second Notification.

NOW, THEREFORE, if the principal herein shall faithfully and truly observe and comply with the terms of such warranty and shall well and truly perform all matters and things by it undertaken to be performed under said warranty upon the terms proposed therein and shall do all things required of said principal by the laws of this state and shall indemnify and save harmless the State of Oregon, the Oregon Transportation Commission and its Department of Transportation and their respective members, officers, employees, and agents against any direct or indirect damages of every kind and description that shall be suffered or claimed to be suffered in connection with or arising out of the performance of the said warranty by the Contractor or Subcontractors, then this obligation is to be void, otherwise to remain in full force and effect.

In no event shall the obligations under this bond be terminated without written consent of the State of Oregon, by and through its State Transportation Commission and its Department of Transportation.

Nonpayment of the bond premium will not invalidate this bond nor shall the State of Oregon, by and through its Transportation Commission or its Department of Transportation, be obligated for the payment thereof.

Signed and sealed this ____ day of _____, 20 __.

SURETY _____
Attorney-in-fact

BY _____

PRINCIPAL_____

BY _____
(Official Capacity)

Countersigned:

_____
Resident Agent

Attest: _____
Secretary

SP00088-SIG (Special Provisions for the 2024 Book) (Bidding on or after: 05-01-25 Last updated: 01-14-25)

OREGON DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISIONS

FOR

(Fill in the blanks with the same information that is on the plan title sheet except do not include the date. Remove underlines, parentheses, and all instructions when finished.)

_____(Scope of Work)_____
_____(Project Name)_____
_____(Highway Name)_____
_____(County)_____

(The POR stamps, signs, dates, and fills in section numbers in the Professional of Record Certification below.

In accordance with Tech Directive TSB11-01(d), all specification sections, including the technical and material sections, except for Part 00100, Section 00210, and Section 00290, need to be included in the list. If the Special Provisions have been modified after the POR Sheets were originally signed, whether prior to advertisement or by addenda, make sure an updated POR signature sheet is submitted for any spec sections that are affected,)

PROFESSIONAL OF RECORD CERTIFICATION:

Seal w/signature	I certify the Special Provision Section(s) listed below are applicable to the design for the subject project for __(list specific design elements, e.g. "Bridge XYZ" or "Traffic Signals")__ . Modified Special Provisions were prepared by me or under my supervision. Section(s) _____(fill in section number(s) here)_____

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

(To add more POR signature sheets do the following:

1. ***Complete the project information above the Professional of Record Certification.***
2. ***Turn off Track Changes and turn on "Show/Hide" by selecting ¶ from the toolbar above.***

3. Highlight the entire text from the page, including the "Section Break" and the ¶ from the next page then select "copy".
4. Go to the last POR page and place the cursor at the ¶ line then select "paste".
5. Continue the paste process until you have enough POR signature sheets.
6. Turn Track Changes back on then complete the signature page.)

SP00092-002 (Special Provisions for the 2024 Book) (Bidding on or after: 05-01-25 Last updated: 01-14-25)

SPECIAL PROVISIONS

WORK TO BE DONE

(List major items of work. Modify as needed. Add items as necessary. Add a number before the last work item, "Perform additional…".)

The Work to be done under this Contract consists of the following:

1. Construct _____ .
2. Construct _____ .
3. Install _____ .
   Perform additional and Incidental Work as called for by the Specifications and Plans.

(Use the following "Authority of Consultant" heading and paragraph when a Consultant is performing the construction engineering.)

AUTHORITY OF CONSULTANT

The consultant will be directly in charge of the Project. However, the consultant's authority on this Project is as designated in the official "Consultant Agreement" for this Project, and as designated by the Engineer. This does not include authority to approve Contract changes or semifinal and Final Inspection of the Project.

APPLICABLE SPECIFICATIONS

The Specifications that are applicable to the Work on this Project is the 2024 edition of the "Oregon Standard Specifications for Construction", as modified by these Special Provisions. All Sections in Part 00100 apply, whether or not modified or referenced in the Special Provisions.

All number references in these Special Provisions shall be understood to refer to the Sections and subsections of the Standard Specifications bearing like numbers and to Sections and subsections contained in these Special Provisions in their entirety.

CLASS OF PROJECT

(Delete the words which do not apply. Remove the parentheses.)

This is a *(*Federal-Aid*) (*State*) (*State - Buy America*)* Project.

SP00110 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-14-25)**

SECTION 00110 - ORGANIZATION, CONVENTIONS, ABBREVIATIONS AND DEFINITIONS

(Follow all instructions. If there are no instructions above a subsection, paragraph, sentence, or bullet, then include it in the project. All other modifications to this Section will require Department of Justice and State Specifications Engineer approval. Remove all instructions before preparing the final document.)

Comply with Section 00110 of the Standard Specifications modified as follows:

00110.05(e) Reference to Websites - Add the following bullet list to the end of this subsection:

- American Traffic Safety Services Association (ATSSA)
  www.atssa.com
- BidExpress
  www.bidx.com
- EquipmentWatch
  www.equipmentwatch.com
- ODOT Construction Section
  www.oregon.gov/odot/construction/pages/index.aspx
- ODOT Construction Section - Qualified Products List (QPL)
  www.oregon.gov/ODOT/Construction/Pages/Qualified-Products.aspx
- ODOT Construction Surveying Manual for Contractors
  www.oregon.gov/ODOT/ETA/Documents_Geometronics/Construction-Survey-Manual-Contractors.pdf
- ODOT Electronic Bidding Information Distribution System (eBids)
  (Also referred to as ODOT eBids website)
  https://ecmnet.odot.state.or.us/ebidse
- ODOT Estimating
  www.oregon.gov/ODOT/Business/Pages/Steel.aspx

- ODOT Oregon Trucking Online - "Highway Restriction Notice - Size and/or Weight" (Form No. 734-2357)
  www.oregontruckingonline.com/cf/MCAD/pubMetaEntry/restriction/
- ODOT Procurement Office - Conflict of Interest Guidelines and Disclosure Forms
  www.oregon.gov/ODOT/Business/Procurement/Pages/PSK.aspx
- ODOT Procurement Office - Construction Contracts Unit Notice of Intent
  www.oregon.gov/ODOT/Business/Procurement/Pages/NOI.aspx
- ODOT Procurement Office - Construction Contracts Unit prequalification forms
  www.oregon.gov/odot/business/procurement/pages/bid_award.aspx
- ODOT Traffic Control Plans Unit
  www.oregon.gov/ODOT/Engineering/Pages/Work-Zone.aspx
- ODOT Traffic Standards
  www.oregon.gov/ODOT/Engineering/Pages/Signals.aspx
- Oregon Legislative Counsel
  www.oregonlegislature.gov/lc
- Oregon Secretary of State: State Archives
  sos.oregon.gov/archives/Pages/default.aspx

SP00120 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 02-04-25)**

SECTION 00120 - BIDDING REQUIREMENTS AND PROCEDURES

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require State Specifications Engineer approval and the State Specifications Engineer will obtain approval from the Department of Justice.)

Comply with Section 00120 of the Standard Specifications modified as follows:

00120.00 Prequalification of Bidders – Add the following bullet to the end of the bullet list:

- If delivered by electronic mail, the application shall be sent to:

  ODOTProcurementOfficeConstruction@odot.oregon.gov

Replace the bullet that begins “If delivered by mail…” with the following bullet:

- If delivered by mail or parcel delivery service, the application shall be sent to:

  Oregon Department of Transportation
  Procurement Construction Contracts, MS #33
  355 Capitol Street NE
  Salem, OR 97301

00120.01 General Bidding Requirements - Replace the paragraph that begins “If the Bidder submits the Bid…” with the following paragraph:

If the Bidder submits the Bid electronically through BidExpress® as a joint venture, in addition to the joint venture signing with the digital signature and unique ID for the joint venture, the Bidder must also submit the signature pages from the Bid Booklet signed by each member of the joint venture, together with a statement the Bidder adds above or with the signatures as follows: “The following joint venture member signatures are for the Bid for the [Insert Project Name] Project submitted by the joint venture through BidExpress®. The signatures are on behalf of each joint venture member and the joint venture and also confirm that the signatory in BidExpress® was authorized to submit the Bid on behalf of the joint venture.” The Bidder must also email .pdf copies of the signature pages showing the signatures of the joint venture members with the required statement which must be received by BJ McCartney, Construction Contracts Manager, at the ODOT Procurement Office at: ODOTProcurementOfficeConstruction@odot.oregon.gov before the Closing date and time for the Bid. The signature pages with the original signatures must also be mailed or delivered to and received by BJ McCartney, Construction Contracts Manager, at the address given in the Bid Book as a condition of Award.

00120.05 Request for Plans, Special Provisions, and Bid Booklets - Add the following to the end of this subsection:

(Use one of the following options.)

[Option 1 - Use the following when the plans are separate. Fill in the blanks with information exactly as it appears on the plan title sheet. Remove underlines and parentheses. When filling in the "(Bid Month Year)" field below, only enter the Month and Year, but not the day (example: "March 2019"), unless otherwise shown on the plan title sheet.]

[Begin Option 1]

The Plans, which are applicable to the Work to be performed under the Contract, bear title and date as follows:

"____ (Scope of Work) ____
____ (Project Name) ____
____ (Highway Name) ____
____ (County) ____
____ (Bid Month Year) ____"

[End Option 1]

[Option 2 - Use the following paragraph when the plans are included at the end of these Special Provisions.]

[Begin Option 2]

The Plans, which are applicable to the Work to be performed under the Contract, are included in these Special Provisions.

[End Option 2]

(Use subsection .15 when listing personnel qualifications or for projects that include a mandatory prebid meeting.)

00120.15 Examination of Work Site and Solicitation Documents; Consideration of Conditions to be Encountered - Add the following to the end of this subsection:

(Use the following paragraph and list when any of the following Specification Subsections are included in the Project by reference to the Standard Specification or Special Provision. <u>If any additional experience or personnel qualifications are added to Special Provisions, add each subsection number and subsection title to the list</u>. Delete the lines that do not apply to the Project.

Examples of when to list Personnel Qualifications are when experience is listed or there is a requirement of experiences. Personnel Qualifications are not listed if it is a certified technician or a certification requirement only.)

Certain Specifications included in the Project require additional experience or personnel qualifications. Refer to the subsection requirements that may affect bidding considerations, including but not limited to the following:

Subsection	**Title**
00256.30	Personnel Qualifications
00293.30	Personnel Qualifications
00294.30	Personnel Qualifications
00295.30	Personnel Qualifications
00296.30	Personnel Qualifications
00297.30	Personnel Qualifications
00298.30	Personnel Qualifications
00299.30	Personnel Qualifications
00299A.30	Personnel Qualifications
00380.30	Personnel Qualifications
00396.30	Personnel Qualifications
00398.30	Personnel Qualifications
00411.30	Personnel Qualifications
00412.30	Personnel Qualifications
00413.30	Personnel Qualifications
00414.30	Personnel Qualifications
00444.30	Personnel Qualifications
00512.30	Personnel Qualifications
00515.30	Personnel Qualifications

00535.30	Personnel Qualifications
00537.30	Personnel Qualifications
00538.30	Personnel Qualifications
00543.30	Personnel Qualifications
00556.30	Personnel Qualifications
00557.30	Personnel Qualifications
00558.30	Personnel Qualifications
00565.30	Personnel Qualifications
00566.30	Personnel Qualifications
00585.30	Personnel Qualifications
00590.30	Personnel Qualifications
00591.30	Personnel Qualifications
00592.30	Personnel Qualifications
00759.30	Personnel Qualifications
00921.30	Personnel Qualifications
00963.30	Personnel Qualifications
00987.30	Personnel Qualifications
01030.30	Personnel Qualifications

(BEFORE USING THE FOLLOWING PREBID MEETING PARAGRAPHS, provide justification and assure scheduling according to the Prebid Meeting requirements that are outlined in the Phase Gate Delivery Manual. Use of this subsection requires a minimum 5 week project advertisement.)

(Use the following paragraphs only with mandatory prebid meetings. Fill in the blanks with the appropriate office or building, address, city, time, and date.)

Add the following to the end of this subsection:

The Agency will hold a prebid meeting for all holders of Solicitation Documents at the _____(office or building)_____, located at _____(address)_____ in _____(city)_____, Oregon at _____(time)_____ on _____(date)_____, 20__.

All prospective Bidders must attend this meeting. Those not attending will have their Bids declared non-responsive.

Prospective Bidders will be given the opportunity to ask questions relating to any details involved in the performance of the Work under the Contract.

Information distributed, statements made or responses given to questions, by the Agency's representatives at the prebid meeting will not in any way alter or affect any of the provisions contained in the Solicitation Documents or Contract requirements and will not be binding upon the Agency unless confirmed by Addenda.

00120.40(b) Bidding Considerations – Add the following to the end of the list:

00160.20(d)	Build America Buy America Act Requirements

00120.40(f) Disclosure of First-Tier Subcontractors – Replace the paragraph beginning "If no subcontracts subject to the above…" with the following paragraph:

If no subcontracts subject to the above disclosure requirements are anticipated, a Bidder shall so indicate by entering "NONE" or by filling in the appropriate check box. For each Subcontractor listed, Bidders shall provide all requested information. Failure to submit a form or submission of a form that does not include the information required by ORS 279C.370 for each Subcontractor listed, specifically the name of each Subcontractor, the dollar amount of each subcontract and the category of Work that each Subcontractor will perform, will result in the rejection of the Bid. The Agency is not required to determine the accuracy or the completeness of the Subcontractor disclosure. See ORS 279C.370 and OAR 731-005-0420.

Replace both of the bullets that begin “Using the form provided on the Agency’s website…” with the following bullet:

- Using the fillable form provided on the Agency's website, identified in the Bid Booklet on the ODOT eBIDS website, filling the form out and submitting the completed form via email to the email address given in the paper Bid Booklet.

(Use the following subsection .70 on Federal funded projects.)

00120.70 Rejection of Nonresponsive Bids - Add the following bullet to the end of the bullet list:

- The Agency determines that any Pay Item is significantly unbalanced to the potential detriment of the Agency.

SP00130 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-14-25)**

SECTION 00130 - AWARD AND EXECUTION OF CONTRACT

(Follow all instructions and make all edits with “Track Changes” turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require State Specifications Engineer approval and the State Specifications Engineer will obtain approval from the Department of Justice.)

Comply with Section 00130 of the Standard Specifications modified as follows:

00130.40 Contract Submittals - Add the following paragraph to the end of this subsection:

The Agency, in its sole discretion, may require execution of documents identified in subsections (a), (b) and (c) with a form of electronic signature (including but not limited to sealing and signing) acceptable to the Agency.

00130.40(c) Workers' Compensation – Replace this subsection, except for the subsection number and title, with the following:

To certify compliance with the workers' compensation insurance coverage required by 00170.61(a) and 00170.70(e), the successful Bidder shall complete and sign the "Certification of Workers' Compensation Coverage" form bound in the Contract booklet.

00130.50 Execution of Contract and Bonds - Add the following paragraph to the end of this subsection:

The Agency, in its sole discretion, may require execution of documents identified in subsection (a) with a form of electronic signature (including but not limited to sealing and signing) acceptable to the Agency.

SP00140 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-14-25)**

SECTION 00140 - SCOPE OF WORK

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [orange text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all orange text before preparing the final document. All other modifications to this Section will require State Specifications Engineer approval and the State Specifications Engineer will obtain approval from the Department of Justice.)

Comply with Section 00140 of the Standard Specifications.

SP00150 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-14-25)**

SECTION 00150 - CONTROL OF WORK

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require State Specifications Engineer approval and the State Specifications Engineer will obtain approval from the Department of Justice.)

Comply with Section 00150 of the Standard Specifications modified as follows:

> ***(Use the following subsections .15(b) and .15(c) when "Section 00305 - Construction Survey Work is included. Check with Designer. Modify as instructed below.)***
>
> ***[Begin subsections .15(b) and .15(c)]***

00150.15(b) Agency's Responsibilities - Replace this subsection, except for the subsection number and title, with the following:

The Engineer will perform the Agency responsibilities described in the *Construction Surveying Manual for Contractors*, Chapter 1.5 (see Section 00305).

(Use the following paragraph when the Agency will perform slope staking, clearing limit staking, and Right-of-Way and easement staking.

Do not use the following paragraph when slope staking, clearing limit staking, or Right-of-Way and easement staking will be performed by the Contractor, or will not be required on the Project.)

The Engineer will perform slope staking including intersections and set stakes defining limits for clearing which approximate Right-of-Way and easements.

00150.15(c) Contractor's Responsibilities - Replace this subsection, except for the subsection number and title, with the following:

The Contractor shall perform the Contractor responsibilities described in the *Construction Surveying Manual for Contractors*, Chapter 1.6 (see Section 00305).

(Use the following paragraph when the Contractor will perform slope staking, clearing limit staking, and Right-of-Way and easement staking.

Do not use the following paragraph when slope staking, clearing limit staking, or Right-of-Way and easement staking will be performed by the Agency, or will not be required on the Project.)

The Contractor shall perform slope staking including intersections and set stakes defining limits for clearing which approximate Right-of-Way and easements.

[End subsections .15(b) and .15(c)]

00150.50(c) Contractor's Responsibilities – Replace the bullet that begins "In addition to the notification required…" with the following bullet:

- In addition to the notification required in OAR 952-001-0090(7), notify the Engineer and the Utility as soon as the Contractor discovers any previously unknown Utility conflicts or issues. Contrary to the OAR, stop excavating until directed by the Engineer and allow the Utility a minimum of two weeks to relocate or resolve the previously unknown Utility issues; and

(Use the following bullet when requested by the Region Utility Specialist for large Projects with complex Utility issues. Be sure to also include subsection 00180.42.)

Add the following bullet to the end of the bullet list:

- Hold a Utility scheduling meeting and monthly Utility coordination meetings (see also 00180.42)

(Use the following subsection .50(e) when any part of the Project is located outside of Oregon, including temporary signs. Contact the ODOT State Specifications Engineer for alternate language.)

00150.50(e) Notification - Add the following to the end of this subsection:

[When any part of the Project is located outside of Oregon, obtain language from the ODOT State Specifications Engineer]

(Use the following lead-in paragraph and subsection .50(f) when any of the utilities located within the Project limits have no anticipated relocations. Check with the Utility Coordinator.)

Add the following subsection:

00150.50(f) Utility Information (No Anticipated Relocations) - Within the Project limits, there are no anticipated relocations with the Utilities listed in Table 00150-1. The Contractor shall contact those Utilities having buried facilities and request that they locate and mark them for their protection prior to construction.

(List utilities (companies) with no anticipated relocations in the following table. Add or delete rows in the table as necessary to list all applicable utilities If the work order number is not applicable delete the language in parenthesis.)

Table 00150-1

Utility	**Contact Person's Name, Address, Email, *(*and*)* Phone Number *(*and Work Order Number*)***

(Use one of the following options when requested by the Utility Coordinator. Delete the option that does not apply.)

[Option 1 - Use the following paragraph when all Utilities listed above shall be notified.]

The Contractor shall notify, in writing, the Utilities listed above, with a copy to the Engineer, at least 14 Calendar Days before beginning Work on the Project. Utilities may require an on-site observer, at no cost to the Contractor.

[Option 2 - Use the following paragraph when some, but not all, utilities listed above will be notified. Fill in the blank with the names of all utilities that will be notified.]

The Contractor shall notify, in writing, _____, with a copy to the Engineer, at least 14 Calendar Days before beginning Work on the Project. *(*Utility*) (*Utilities*)* may require an on-site observer, at no cost to the Contractor.

(Use the following Gas Utilities subsection when any of the following gas Utility language is used. Replace "(Name of Utility(ies))" with the name of the Gas Utility(ies). Delete this option if Gas Utilities are not listed.)

[Begin Gas Utilities]

(Name of Utility(ies)) - Gas Utilities -

(Use the following paragraph when a Gas Utility is listed above and the Utility Coordinator has requested its use. If more than one Gas Utility is listed above modify the sentence to name the specific Utility.)

The Gas Utility operates a *(*high pressure*)* gas pipeline within the Project limits and may require an on-site safety watcher, at no cost to the Contractor.

(Use the following two paragraphs when all of the following apply:
- ***A Gas Utility is listed in the above table;***
- ***There is a high pressure gas pipeline located within the project limits; and***
- ***The Utility Coordinator requests the use of the paragraphs.***

If more than one Gas Utility is listed above, modify the sentence to name the specific Utility.)

When operating Equipment directly above the high pressure gas pipeline, the Contractor shall keep Equipment on the paved surfaces only.

In the immediate area of the high pressure gas lines, when moving any Equipment, excavating, driving piles, pounding guardrail posts, boring, or other road construction activities, the Contractor shall increase the tolerance zone from 24 inches, as defined in OAR 952-001-010, to 10 feet. Exceptions require written approval from the Gas Utility. The Contractor shall provide the Engineer a copy of the written approval of the exception before beginning Work.

(Use the following paragraphs if a Gas Utility is listed above or may have facilities within the project limits. Delete a Utility and contact phone number below if the Utility Coordinator determines that the Utility is not present within the Project Limits.)

In the event of an emergency, and in addition to the calls required by the Utilities notification system, the Contractor shall call:

- Marathon Petroleum Corporation / Andeavor 1-800-725-1514; or
- Avista Corporation 1-800-227-9187; or

- Cascade Natural Gas Corporation 1-888-522-1130; or
- Kinder-Morgan Energy 503-224-3390; or
- Northwest Natural Gas 1-800-882-3377; or
- Olympic Pipe Line Company LLC 1-888-271-8880; or
- Ruby Pipeline (LNG) 1-877-712-2288; or
- TransCanada GTN 1-800-447-8066; or
- Williams Pipeline 1-801-584-6948.

[End Gas Utilities]

(Use the following Power Suppliers subsection when any of the following power supplier paragraphs are used. Replace "(Name of Utility(ies))" with the name of the Power Suppliers. Delete this option if Power Suppliers are not listed.)

(Name of Utility(ies)) - Power Suppliers -

(Use the following paragraph when power lines overhang Work areas. Use either "18 feet" or "__ feet" and fill in the blank. Delete the language in orange parentheses that does not apply and delete all orange parentheses.)

Energized power lines overhang portions of the Work with a minimum vertical clearance of *(*18 feet*)(*__ feet*)*. The Contractor shall maintain at least 10 feet of safety clearance. Exceptions require written approval from the Power Supplier(s) and may require an on-site safety watcher, at no cost to the Contractor. The Contractor shall provide the Engineer a copy of the written approval of exception before beginning Work.

(Use the following paragraph when power lines are beneath Work areas. For example: Bridge deck rehab.)

The Contractor shall maintain at least 10 feet of safety clearance from energized power lines. Exceptions require written approval from Power Supplier(s) and will require an on-site safety watcher at no cost to the Contractor. The Contractor shall provide the Engineer with a copy of the written approval of exception before beginning Work.

(Use the following paragraph when requested by the Utility Coordinator. Fill in the blanks.)

The Contractor shall coordinate with the Power Supplier(s) to perform Work within ___ feet of the aerial power line during __*(Insert specific dates when the Power Supplier(s) cannot de-energize their system due to high loads)*__ when the Power Supplier(s) cannot de-energize the power facility.

[End Power Suppliers]

(Use the following Telecommunication Utilities subsection when requested by the Utility Coordinator. Replace "(Name of Utility(ies))" with the name of the Telecommunication Utilities. Delete this option if Telecommunication Utilities are not listed. Delete the language in orange parentheses that does not apply and delete all orange parentheses.)

[Begin Telecommunication Utilities]

(Name of Utility(ies)) - Telecommunication Utilities - The Contractor shall obtain written approval from Telecommunication Utilities that have fiber optic communication cable facilities, for excavating *(*or blasting*)* within 10 feet of a buried fiber optic communications cable. Telecommunication Utilities may require an on-site safety *(*watcher*)(*representative*)* at no cost to the Contractor for monitoring purposes. The Contractor shall provide the Engineer a copy of the written approval before beginning Work.

[End Telecommunication Utilities]

(Use the following Bonneville Power Administration subsection when Bonneville Power Administration is listed in the above table. Delete this option if Bonneville Power Administration is not listed.)

[Begin Bonneville Power Administration]

Bonneville Power Administration (BPA) -

(Insert the number of feet in the blank. Any other modifications to the BPA section must be approved by the State Utility Liaison and the State Specifications Engineer.)

Energized transmission power lines may overhang portions of the Work with a minimum vertical clearance of ___ feet. The Contractor shall maintain a safety clearance of at least 20 feet vertically between construction Equipment or vehicles and the transmission power lines.

The Contractor shall maintain a safety clearance of at least 50 feet horizontally between construction Equipment or vehicles and the point where steel lattice tower legs, wood poles, steel poles, concrete poles, concrete foundation and guy wires enter the earth.

(Use the following four paragraphs when a BPA safety watcher is required, as requested by the Utility Coordinator. Include subsections 00223.34, .80(b)(5), & .90 in SP00223.)

BPA operates within the Project limits and requires an on-site safety watcher (see Section 00223). An on-site safety watcher is required when any of the following apply:

- The Contractor is performing Work within the limits of a BPA easement or BPA Right-of-Way; or
- The Contractor is performing Work within 100 feet of a BPA facility.

The Contractor shall keep access to all BPA structures open and unobstructed at all times.

The Contractor shall not store flammable materials or refuel construction Equipment or vehicles on BPA Right-of-Way.

In the event of an emergency, the Contractor shall call BPA Monroe Control Center (MCC) dispatch office at 1-509-465-1837, in addition to calls required by the Utilities notification system.

[End Bonneville Power Administration]

(Use the following lead-in paragraph and subsection .50(g) on Projects with utilities that may require adjustment. Check with the Utility Coordinator.)

Add the following subsection:

00150.50(g) Utility Information (Anticipated Relocations):

The organizations list in Table 00150-2 may be adjusting Utilities within the limits of the Project during the period of the Contract with relocation Work estimated to be completed by the following dates and times:

(List utilities (companies) in the table and subsection(s) below in the following order:

- ***Gas***
- ***Power***
- ***ODOT Electrical***
- ***Local Agency Electrical***
- ***Irrigation***
- ***Sewer***
- ***Telecommunication (including fiber)***
- ***Water***
- ***Joint Use Facilities***
- ***BPA***

Replace the "#" in the "subsection" column, so that it correctly corresponds with the subsection under which requirements for that Utility are specified.

Example: If requirements for a Utility are specified under subsection "(3)" below, the table will list subsection "00150.50(g)(3)".

Add or delete rows in the table as necessary to list all applicable utilities. If the work order number is not applicable delete the language in parenthesis.)

Table 00150-2

Subsection	Utility	Contact Person's Name, Address, Email, (and) Phone Number (and Work Order Number)	Estimated Completion Date
00150.50(g)(#)			
00150.50(g)(#)			
00150.50(g)(#)			
00150.50(g)(#)			

(Use the following paragraph when a utility relocation plan is available and when identified by the Utility Coordinator.)

The Contractor shall contact the Engineer to view the approved utility relocation Plans.

The Contractor shall notify, in writing, the Utilities listed above, with a copy to the Engineer, at least 14 Calendar Days before beginning Work on the Project. Utilities may require an on-site observer, at no cost to the Contractor.

(Use the following paragraphs when applicable for Utilities listed in the above table and when identified by the Utility Coordinator.)

(Begin Option for Gas Utilities - Use this option when Gas Utilities are listed in the above table. Repeat this option if more than one Gas Utility, is listed and delete this option if no Gas Utilities are listed.

Replace "#" with the subsection number, e.g. "(1)", and ensure that all subsections are sequentially numbered. Verify that the subsection numbers in the above table match the subsection numbers listed below. Example: (1) NW Natural Gas – "Gas Utility"

Replace "(Name of Utility)" with the name of the Gas Utility.)

(#) (Name of Utility) - "Gas Utility":

The Contractor shall notify the Gas Utility in writing, with a copy to the Engineer, at least 14 Calendar Days before beginning Work within 10 feet of the gas pipeline.

(Use the following paragraph when the utility must complete adjustment/relocation work in order for the Contractor to have access to perform a specific work activity, and when identified by the Utility Coordinator. Copy and paste the paragraphs as necessary to accommodate all relocation work.

Fill in the first and third blanks with the number of the days required to notify the utility (either 7 or 14 days) plus the time required for the utility to complete the relocation and adjustment work. (Example: Utility needs 7 days' notice and 10 days to complete the adjustment work. 7+10=17 days. Fill in the blanks with "17".) If the number of days for the utility to complete the relocation or adjustment work is greater than 14, it must be approved by the State Utility Liaison and the State Specifications Engineer.

Fill in the second and fourth blanks with the work that needs to be performed by the Contractor after the utility performs their work.)

The Contractor shall notify the Gas Utility in writing, with a copy to the Engineer, __ Calendar Days before the Contractor is scheduled to begin performing _____. After the Gas Utility receives the notification, the Contractor shall then allow the Gas Utility __ Calendar Days to schedule and complete the relocation and adjustment work before the Contractor begins performing _____.

(Use the following paragraph when the Contractor must complete a specific activity in order for the utility to have access to perform relocation/adjustment work, and when identified by the Utility Coordinator. Fill in the first blank with the work that needs to be done by the Contractor in order for the utility to have access to perform their work. Insert the number of days in the second blank; if the number of days is greater than 14, it must be approved by the State Utility Liaison and the State Specifications Engineer. Delete the language in orange parentheses that does not apply and delete all orange parentheses.)

The Contractor shall notify the Gas Utility in writing, with a copy to the Engineer, *(*7*)(*14*)* Calendar Days before the Contractor's estimated completion of _____. After the Contractor has completed this Work or *(*7*)(*14*)* Calendar Days after the Gas Utility receives the notification, whichever occurs later, the Contractor shall then allow the Gas Utility __ Calendar Days to schedule and complete the relocation and adjustment work.

(Use the following paragraph when requested by the Utility Coordinator. Insert the specific location in the blank.)

The Gas Utility operates a *(*high pressure*)* gas pipeline within the Project limits and may require an on-site safety watcher, at no cost to the Contractor. The *(*high pressure*)* gas pipeline is located at __*(Detail location by station and offset, describe if parallel or perpendicular to the highway)*__.

(Use the following two paragraphs only when a high pressure gas pipeline is located within the project limits.)

When operating Equipment directly above the high pressure gas pipeline, the Contractor shall keep Equipment on the paved surfaces only.

In the immediate area of the high pressure gas lines, when moving any Equipment, excavating, driving piles, pounding guardrail posts, boring, or other road construction activities, the Contractor shall increase the tolerance zone from 24 inches, as defined in OAR 952-001-010, to 10 feet. Exceptions require written approval from the Gas Utility. The Contractor shall provide the Engineer a copy of the written approval of the exception before beginning Work.

(Use the following paragraph and bullet list at the very end of the Gas Utilities option. Delete a Utility and contact phone number if the Utility Coordinator determines that the Utility is not present within the Project Limits.)

In the event of an emergency, and in addition to the calls required by the Utilities notification system, the Contractor shall call:

- Marathon Petroleum Corporation / Andeavor 1-800-725-1514; or
- Avista Corporation 1-800-227-9187; or
- Cascade Natural Gas Corporation 1-888-522-1130; or
- Kinder-Morgan Energy 503-224-3390; or
- Northwest Natural Gas 1-800-882-3377; or
- Olympic Pipe Line Company LLC 1-888-271-8880; or

- Ruby Pipeline (LNG) 1-877-712-2288; or
- TransCanada GTN 1-800-447-8066; or
- Williams Pipeline 1-801-584-6948.

[End Option for Gas Utilities]

(Begin Option for Power Suppliers - Use this option when Power Suppliers are listed in the above table. Repeat this option if more than one Power Supplier is listed, and delete this option if no Power Suppliers are listed.

Replace "#" with the subsection number, e.g. "(2)", and ensure that all subsections are sequentially numbered. Verify that the subsection numbers in the above table match the subsection numbers listed below. Example: (2) Pacific Power – "Power Supplier"

Replace "(Name of Utility)" with the name of the Power Supplier.)

(#) (Name of Utility) - "Power Supplier":

The Contractor shall notify the Power Supplier(s) in writing, with a copy to the Engineer, at least 14 Calendar Days before beginning Work within 10 feet of the power line(s).

(Use the following paragraph when the Utility must complete adjustment/relocation work in order for the Contractor to have access to perform a specific work activity, and when identified by the Utility Coordinator. Copy and paste the paragraphs as necessary to accommodate all relocation work.

Fill in the first and third blanks with the number of the days required to notify the utility (either 7 or 14 days) plus the time required for the utility to complete the relocation and adjustment work. (Example: Utility needs 7 days' notice and 10 days to complete the adjustment work. 7+10=17 days. Fill in the blanks with "17".) If the number of days for the utility to complete the relocation or adjustment work is greater than 14, it must be approved by the State Utility Liaison and the State Specifications Engineer.

Fill in the second and fourth blanks with the work that needs to be performed by the Contractor after the utility performs their work.)

The Contractor shall notify the Power Supplier in writing, with a copy to the Engineer, __ Calendar Days before the Contractor is scheduled to begin performing _____. After the Power Supplier receives the notification, the Contractor shall then allow the Power Supplier __ Calendar Days to schedule and complete the relocation and adjustment work before the Contractor begins performing _____.

(Use the following paragraph when the Contractor must complete a specific activity in order for the utility to have access to perform relocation/adjustment work, and when identified by the Utility Coordinator. Fill in the first blank with the work that needs to be done by the Contractor in order for the utility to have access to perform their work. Insert the number of days in the second blank; if the number of days is greater than 14, it must be approved by the State Utility Liaison and the State

Specifications Engineer. Delete the language in orange parentheses that does not apply and delete all orange parentheses.)

The Contractor shall notify the Power Supplier in writing, with a copy to the Engineer, *(*7*)(*14*)* Calendar Days before the Contractor's estimated completion of _____. After the Contractor has completed this Work or *(*7*)(*14*)* Calendar Days after the Power Supplier receives the notification, whichever occurs later, the Contractor shall then allow the Power Supplier __ Calendar Days to schedule and complete the relocation and adjustment work.

(Use the following paragraph when power lines overhang Work areas. Use either "18 feet" or "__ feet" and fill in the blank. Delete the language in orange parentheses that does not apply and delete all orange parentheses.)

Energized power lines overhang portions of the Work with a minimum vertical clearance of *(*18 feet*)(*__ feet*)*. The Contractor shall maintain at least 10 feet of safety clearance. Exceptions require written approval from the Power Supplier(s) and may require an on-site safety watcher, at no cost to the Contractor. The Contractor shall provide the Engineer a copy of the written approval of exception before beginning work.

(Use the following paragraph when power lines are beneath Work areas. For example: Bridge deck rehab.)

The Contractor shall maintain at least 10 feet of safety clearance from energized power lines. Exceptions require written approval from the Power Supplier and will require an on-site safety watcher at no cost to the Contractor. The Contractor shall provide the Engineer with a copy of the written approval of exception before beginning work.

(Use this paragraph when requested by the Utility Coordinator. Fill in the blanks.)

The Contractor shall coordinate with the Power Supplier(s) to perform Work within ___ feet of the aerial power line during *(Insert specific dates when the Power Supplier(s) cannot de-energize their system due to high loads)* when the Power Supplier(s) cannot de energize the power facility.

[End Option for Power Suppliers]

(Begin Option for ODOT Electrical - Use this option when ODOT Electrical is listed in the above table. Delete this option if ODOT Electrical is not listed.

Replace "#" with the subsection number, e.g. "(3)", and ensure that all subsections are sequentially numbered. Verify that the subsection numbers in the above table match the subsection numbers listed below. Example: (3) ODOT Electrical. Delete "(and Intelligent Transportation Systems (ITS))" or orange parentheses as applicable.)

(#) ODOT Electrical *(*and Intelligent Transportation Systems (ITS)*)*:

The Contractor shall notify, in writing, ODOT Electrical *(*and ITS*)* with a copy to the Engineer, at least 14 Calendar Days before beginning Work within 10 feet of the ODOT line(s).

[End Option for ODOT Electrical]

(Begin Option for Local Agency Electrical - Use this option when Local Agency Electrical is listed in the above table. Repeat this option if more than one Local Agency is listed and delete this option if a Local Agency is not listed.

Replace "#" with the subsection number, e.g. "(4)", and ensure that all subsections are sequentially numbered. Verify that the subsection numbers in the above table match the subsection numbers listed below.

Replace "(Name of Local Agency)" with the name of the Local Agency. Example: (4) City of Salem Electrical")

(#) (Name of Local Agency) Electrical:

(Fill in the blank with the name of the Local Agency.)

The Contractor shall notify ____, in writing, with a copy to the Engineer, at least 14 Calendar Days before beginning Work within 10 feet of the line(s).

[End Option for Local Agency Electrical]

(Begin Option for Irrigation Facilities - Use this option when Irrigation Facilities are listed in the above table. Repeat this option if more than one Irrigation Facility is listed, and delete this option if no Irrigation Facilities are listed.

Replace "#" with the subsection number, e.g. "(4)", and ensure that all subsections are sequentially numbered. Verify that the subsection numbers in the above table match the subsection numbers listed below.

Replace "(Name of Utility)" with the name of the Irrigation Facility. Example: (4) Central Oregon Irrigation District – "Irrigation Facility")

(#) (Name of Utility) - "Irrigation Facility":

The Contractor shall notify the Irrigation Facility in writing, with a copy to the Engineer, at least 14 Calendar Days before beginning Work within 10 feet of the Irrigation facilities.

(Use the following paragraph when the utility must complete adjustment/relocation work in order for the Contractor to have access to perform a specific work activity, and when identified by the Utility Coordinator. Copy and paste the paragraphs as necessary to accommodate all relocation work.

Fill in the first and third blanks with the number of the days required to notify the utility (either 7 or 14 days) plus the time required for the utility to complete the relocation and adjustment work. (Example: Utility needs 7 days' notice and 10 days to complete the adjustment work. 7+10=17 days. Fill in the blanks with "17".) If the number of days for the utility to complete the relocation or adjustment work is greater than 14, it must be approved by the State Utility Liaison and the State Specifications Engineer.

Fill in the second and fourth blanks with the work that needs to be done by the Contractor after the utility performs their work.)

The Contractor shall notify the Irrigation Facility in writing, with a copy to the Engineer, __ Calendar Days before the Contractor is scheduled to begin performing _____. After the Irrigation Facility receives the notification, the Contractor shall then allow the Irrigation Facility __ Calendar Days to schedule and complete the relocation and adjustment work before the Contractor begins performing _____.

(Use the following paragraph when the Contractor must complete a specific activity in order for the utility to have access to perform relocation/adjustment work, and when identified by the Utility Coordinator. Fill in the first blank with the work that needs to be done by the Contractor in order for the utility to have access to perform their work. Insert the number of days in the second blank; if the number of days is greater than 14, it must be approved by the State Utility Liaison and the State Specifications Engineer. Delete the language in orange parentheses that does not apply and delete all orange parentheses.)

The Contractor shall notify the Irrigation Facility in writing, with a copy to the Engineer, *(*7*)(*14*)* Calendar Days before the Contractor's estimated completion of _____. After the Contractor has completed this Work or *(*7*)(*14*)* Calendar Days after the Irrigation Facility receives the notification, whichever occurs later, the Contractor shall then allow the Irrigation Facility __ Calendar Days to schedule and complete the relocation and adjustment work.

[End Option for Irrigation Facilities]

(Begin Option for Sewer Facilities - Use this option when Sewer Facilities are listed in the above table. Repeat this option if more than one Sewer Facility is listed and delete this option if no Sewer Facilities are listed.

Replace "#" with the subsection number, e.g. "(4)", and ensure that all subsections are sequentially numbered. Verify that the subsection numbers in the above table match the subsection numbers listed below.

Replace "(Name of Utility)" with the name of the Sewer Company or City Sewer Service. Example: (4) South Suburban Sewer – "Sewer Facility")

(#) (Name of Utility) - "Sewer Facility":

The Contractor shall notify the Sewer Facility in writing, with a copy to the Engineer, at least 14 Calendar Days before beginning Work within 10 feet of the Sewer facilities.

(Use the following paragraph when the utility must complete adjustment/relocation work in order for the Contractor to have access to perform a specific work activity, and when identified by the Utility Coordinator. Copy and paste the paragraphs as necessary to accommodate all relocation work.

Fill in the first and third blanks with the number of the days required to notify the utility (either 7 or 14 days) plus the time required for the utility to complete the

relocation and adjustment work. (Example: Utility needs 7 days' notice and 10 days to complete the adjustment work. 7+10=17 days. Fill in the blanks with "17".) If the number of days for the utility to complete the relocation or adjustment work is greater than 14, it must be approved by the State Utility Liaison and the State Specifications Engineer.

Fill in the second and fourth blanks with the work that needs to be done by the Contractor after the utility performs their work.)

The Contractor shall notify the Sewer Facility in writing, with a copy to the Engineer, __ Calendar Days before the Contractor is scheduled to begin performing _____. After the Sewer Facility receives the notification, the Contractor shall then allow the Sewer Facility __ Calendar Days to schedule and complete the relocation and adjustment work before the Contractor begins performing _____.

(Use the following paragraph when the Contractor must complete a specific activity in order for the utility to have access to perform relocation/adjustment work, and when identified by the Utility Coordinator. Fill in the first blank with the work that needs to be done by the Contractor in order for the utility to have access to perform their work. Insert the number of days in the second blank; if the number of days is greater than 14, it must be approved by the State Utility Liaison and the State Specifications Engineer. Delete the language in orange parentheses that does not apply and delete all orange parentheses.)

The Contractor shall notify the Sewer Facility in writing, with a copy to the Engineer, *(*7*)(*14*)* Calendar Days before the Contractor's estimated completion of _____. After the Contractor has completed this Work or *(*7*)(*14*)* Calendar Days after the Sewer Facility receives the notification, whichever occurs later, the Contractor shall then allow the Sewer Facility __ Calendar Days to schedule and complete the relocation and adjustment work.

[End Option for Sewer Facilities]

(Begin Option for Telecommunication, including Fiber, Utilities - Use this option when Telecommunication Utilities are listed in the above table. Repeat this option if more than one Telecommunication Utility is listed, and delete this option if no Telecommunication Utilities are listed.

Replace "#" with the subsection number, e.g. "(5)", and ensure that all subsections are sequentially numbered. Verify that the subsection numbers in the above table match the subsection numbers listed below.

Replace "(Name of Utility)" with the name of the Telecommunication Utility. Example: (5) Comcast – "Telecommunication Utility"))

(#) (Name of Utility) - "Telecommunication Utility":

The Contractor shall notify the Telecommunication Utility in writing, with a copy to the Engineer, at least 14 Calendar Days before beginning Work within 10 feet of the Telecommunication Utility facilities.

(Use the following paragraph when the utility must complete adjustment/relocation work in order for the Contractor to have access to perform a specific work activity, and when identified by the Utility Coordinator. Copy and paste the paragraphs as necessary to accommodate all relocation work.

Fill in the first and third blanks with the number of the days required to notify the utility (either 7 or 14 days) plus the time required for the utility to complete the relocation and adjustment work. (Example: Utility needs 7 days' notice and 10 days to complete the adjustment work. 7+10=17 days. Fill in the blanks with "17".) If the number of days for the utility to complete the relocation or adjustment work is greater than 14, it must be approved by the State Utility Liaison and the State Specifications Engineer.

Fill in the second and fourth blanks with the work that needs to be done by the Contractor after the utility performs their work.)

The Contractor shall notify the Telecommunication Utility in writing, with a copy to the Engineer, __ Calendar Days before the Contractor is scheduled to begin performing _____. After the Telecommunication Utility receives the notification, the Contractor shall then allow the Telecommunication Utility __ Calendar Days to schedule and complete the relocation and adjustment work before the Contractor begins performing _____.

(Use the following paragraph when the Contractor must complete a specific activity in order for the utility to have access to perform relocation/adjustment work, and when identified by the Utility Coordinator. Fill in the first blank with the work that needs to be done by the Contractor in order for the utility to have access to perform their work. Insert the number of days in the second blank; if the number of days is greater than 14, it must be approved by the State Utility Liaison and the State Specifications Engineer. Delete the language in orange parentheses that does not apply and delete all orange parentheses.)

The Contractor shall notify the Telecommunication Utility in writing, with a copy to the Engineer, *(*7*)(*14*)* Calendar Days before the Contractor's estimated completion of _____. After the Contractor has completed this Work or *(*7*)(*14*)* Calendar Days after the Telecommunication Utility receives the notification, whichever occurs later, the Contractor shall then allow the Telecommunication Utility __ Calendar Days to schedule and complete the relocation and adjustment work.

(Use this paragraph when requested by the Utility Coordinator.)

The Contractor shall coordinate Fiber Optic relocation work with the Telecommunication Utility due to potential restricted work dates.

(Use this paragraph when requested by the Utility Coordinator. Delete the language in orange parentheses that does not apply and delete all orange parentheses.)

The Contractor shall obtain written approval from the Telecommunication Utility for excavating *(*or blasting*)* within 10 feet of a buried fiber optic communications cable. The Telecommunication Utility may require an on-site safety *(*watcher*)* (representative*)* at no

cost to the Contractor for monitoring purposes. The Contractor shall provide the Engineer a copy of the written approval before beginning work.

[End Option for Telecommunication Utilities]

(Begin Option for Water Utilities - Use this option when Water Utilities are listed in the above table. Repeat this option if more than one Water Utility is listed, and delete this option if no Water Utilities are listed.

Replace "#" with the subsection number, e.g. "(6)", and ensure that all subsections are sequentially numbered. Verify that the subsection numbers in the above table match the subsection numbers listed below.

Replace "(Name of Utility)" with the name of the Water Utility. Example: (6) S Water District – "Water Utility")

(#) (Name of Utility) - "Water Utility":

The Contractor shall notify the Water Utility in writing, with a copy to the Engineer, at least 14 Calendar Days before beginning Work within 10 feet of the Water Utility facilities.

(Use the following paragraph when the utility must complete adjustment/relocation work in order for the Contractor to have access to perform a specific work activity, and when identified by the Utility Coordinator. Copy and paste the paragraphs as necessary to accommodate all relocation work.

Fill in the first and third blanks with the number of the days required to notify the utility (either 7 or 14 days) plus the time required for the utility to complete the relocation and adjustment work. (Example: Utility needs 7 days' notice and 10 days to complete the adjustment work. 7+10=17 days. Fill in the blanks with "17".) If the number of days for the utility to complete the relocation or adjustment work is greater than 14, it must be approved by the State Utility Liaison and the State Specifications Engineer.

Fill in the second and fourth blanks with the work that needs to be done by the Contractor after the utility performs their work.)

The Contractor shall notify the Water Utility in writing, with a copy to the Engineer, __ Calendar Days before the Contractor is scheduled to begin performing _____. After the Water Utility receives the notification, the Contractor shall then allow the Water Utility __ Calendar Days to schedule and complete the relocation and adjustment work before the Contractor begins performing _____.

(Use the following paragraph when the Contractor must complete a specific activity in order for the utility to have access to perform relocation/adjustment work, and when identified by the Utility Coordinator. Fill in the first blank with the work that needs to be done by the Contractor in order for the utility to have access to perform their work. Insert the number of days in the second blank; if the number of days is greater than 14, it must be approved by the State Utility Liaison and the State Specifications Engineer. Delete the language in orange parentheses that does not apply and delete all orange parentheses.)

The Contractor shall notify the Water Utility in writing, with a copy to the Engineer, *(7)(*14*)* Calendar Days before the Contractor's estimated completion of _____. After the Contractor has completed this Work or *(*7*)(*14*)* Calendar Days after the Water Utility receives the notification, whichever occurs later, the Contractor shall then allow the Water Utility __ Calendar Days to schedule and complete the relocation and adjustment work.

[End Option for Water Utilities]

(Begin Option for Joint Use Facility Utilities - Use this option when Joint Use Facility Utilities are listed in the above table. Repeat this option if more than one Joint Use Facility is listed and delete this option if no Joint Use Facilities are listed.

Replace "#" with the subsection number, e.g. "(5)", and ensure that all subsections are sequentially numbered. Verify that the subsection numbers in the above table match the subsection numbers listed below.

Replace "(Name of Utility)" with the name of the Joint Use Facility. Example: (5) Comcast – "Joint Use Facility")

(#) (Name of Utility) - "Joint Use Facility":

The Contractor shall notify the Joint Use Facility in writing, with a copy to the Engineer, at least 14 Calendar Days before beginning Work within 10 feet of the Joint Use facility.

(Use the following paragraph when the utility must complete adjustment/relocation work in order for the Contractor to have access to perform a specific work activity, and when identified by the Utility Coordinator. Copy and paste the paragraphs as necessary to accommodate all relocation work.

Fill in the first and third blanks with the number of the days required to notify the utility (either 7 or 14 days) plus the time required for the utility to complete the relocation and adjustment work. (Example: Utility needs 7 days' notice and 10 days to complete the adjustment work. 7+10=17 days. Fill in the blanks with "17".) If the number of days for the utility to complete the relocation or adjustment work is greater than 14, it must be approved by the State Utility Liaison and the State Specifications Engineer.

Fill in the second and fourth blanks with the work that needs to be done by the Contractor after the utility performs their work.)

The Contractor shall notify the Joint Use Facility in writing, with a copy to the Engineer, __ Calendar Days before the Contractor is scheduled to begin performing _____. After the Joint Use Facility receives the notification, the Contractor shall then allow the Joint Use Facility __ Calendar Days to schedule and complete the relocation and adjustment work before the Contractor begins performing _____.

(Use the following paragraph when the Contractor must complete a specific activity in order for the utility to have access to perform relocation/adjustment work, and when identified by the Utility Coordinator. Fill in the first blank with the work that

needs to be done by the Contractor in order for the utility to have access to perform their work. Insert the number of days in the second blank; if the number of days is greater than 14, it must be approved by the State Utility Liaison and the State Specifications Engineer. Delete the language in orange parentheses that does not apply and delete all orange parentheses.)

The Contractor shall notify the Joint Use Facility in writing, with a copy to the Engineer, *(*7*)(*14*)* Calendar Days before the Contractor's estimated completion of _____. After the Contractor has completed this Work or *(*7*)(*14*)* Calendar Days after the Joint Use Facility receives the notification, whichever occurs later, the Contractor shall then allow the Joint Use Facility __ Calendar Days to schedule and complete the relocation and adjustment work.

[End Option for Joint Use facility]

(Use the following subsection .55 when there is a <u>contract</u> (ODOT or Local Agency) that will be performed within the project site during the duration of this Contract and the Contractor is required to cooperate with the other ODOT or Local Agency contractor. Use the following subsection to list all applicable contracts that will be procured through the ODOT Procurement Office, including Region procured Contracts and all applicable Local Agency contracts.

List the contract or project name, the contractor's name and on-site contact number, if known, and the estimated time that the other specific contract work will be taking place within the project limits. Delete the example. Obtain the information from the Project Leader or Area Manager.

Also use the following paragraph when there is a bridge within the project limits that is scheduled to have a safety inspection within the timeframe of the project. Contact ODOT's Senior Bridge Inspector to get the scheduled range the bridge is scheduled to be inspected. List the ODOT Region Bridge Inspector's name, phone number, bridge number, bridge name, and inspection dates for each bridge.)

00150.55 Cooperation with Other Contractors - Add the following to the end of this subsection:

The following contract work will be ongoing within the Project Site during the following times:

Contract Name (Contractor's Name)	**Estimated Times (From - To)**
For Example - Your project's bid opening is July 4, 2025 so:	
OR99E Howell Prairie Rd-Waconda Rd. Contractor, Inc. 541-555-0100 (on-site)	*Aug 2025 to Oct 31, 2025*
Bridge Number: 07333, Columbia R & N Hayden Island Drive, Hwy1 SB John Doe, Region 1 Bridge Inspector 541-555-0100	*Aug 2025 to Oct 31, 2025*

(Use the following subsection .60(a) when bridge weight limits are required by 00220.45.)

00150.60(a) Load and Speed Restrictions for Construction Vehicles and Equipment - Add the following bullet to the end of the bullet list:

- The Contractor shall restrict the combined weights of construction vehicles, Equipment, and Materials on Bridges according to 00220.45.

(Use the following subsection .91 on projects when a mandatory post-construction meeting is required.)

00150.91 Post-Construction Review - Replace this subsection, except for the subsection number and title, with the following:

The Contractor shall attend a Post-Construction Review meeting to be held by the Agency prior to issuance of Third Notification but not earlier than 45 Days following the date of Second Notification. The time and place of this meeting will be announced by the Engineer at least 15 Days prior to the meeting date. The purpose of this meeting is to examine the Project for possible process improvements that may benefit future projects. The Contractor's attendance at the Post-Construction Review meeting is mandatory.

SP00160 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-14-25
This Section requires SP00235 when Agency-furnished material sources are used.)

SECTION 00160 - SOURCE OF MATERIALS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require State Specifications Engineer approval and the State Specifications Engineer will obtain approval from the Department of Justice.)

Comply with Section 00160 of the Standard Specifications modified as follows:

(Use the following subsection .20 when this Contract is state funded and the Work was considered and included in a NEPA decision that also applies to any other work that has any federal funding. This requires 00160.20(a) Option B.)

00160.20 Preferences for Materials - Add the following paragraph to the beginning of this subsection:

Section 1518 of Moving Ahead for Progress in the 21st Century Act provides that Buy America applies to all Contracts eligible for federal assistance under Title 23, United States Code, included within the scope of an applicable National Environmental Policy Act (NEPA) finding, determination or decision, regardless of the funding source of such Contracts, where

at least one Contract is funded with Title 23 funds. This Contract includes Title 23 funds under such a NEPA finding, determination or decision and Buy America under subsection (a) and Build America Buy America under subsection (d) apply to this Contract.

00160.20(a) Buy America - Replace this subsection, except for the subsection number and title, with the following:

(Use one of the following options for 00160.20(a))

[Begin Option A]

(Option A1:
Contracting Agency is not ODOT or DAS (HB3332 does not apply)
Less than $500K in Federal Aid (USDOT Waiver)
The USDOT issued a Public Interest Waiver for De Minimis Costs and Small Grants.

The final waiver can be viewed here:
https://www.federalregister.gov/documents/2023/08/16/2023-17602/waiver-of-buy-america-requirements-for-de-minimis-costs-and-small-grants and this waiver applies to iron and steel covered by Buy America. The public interest waiver includes iron and steel manufactured products and construction materials when the total amount of Federal financial assistance applied to the project, through awards or subawards, is below $500,000.

Option A2:
Contracting Agency is ODOT or DAS (HB3332 may apply)
Estimated Contract price less than $250K (HB3332 does not apply)

Less than $250K necessarily involves less than $500K: (Less than $500K in Federal Aid (USDOT Waiver)

The USDOT issued a Public Interest Waiver for De Minimis Costs and Small Grants.

The final waiver can be viewed here:
https://www.federalregister.gov/documents/2023/08/16/2023-17602/waiver-of-buy-america-requirements-for-de-minimis-costs-and-small-grants and this waiver applies to iron and steel covered by Buy America. The public interest waiver includes iron and steel manufactured products and construction materials when the total amount of Federal financial assistance applied to the project, through awards or subawards, is below $500,000.)

Option A= Buy America for iron or steel does not apply to this Project.)

Buy America for iron and steel does not apply to this Contract.

[End Option A]

[Option B]

(Option B1

Contracting Agency is not ODOT or DAS (HB3332 does not apply)
$500K or more in Federal Aid (USDOT Waiver does not apply)

Option B2
Contracting Agency is ODOT or DAS and estimated contract price is over $250,000 (HB3332 applies)

$500K or more in in Federal Aid (USDOT Waiver does not apply; Federal Buy America is triggered.)

Pursuant to ORS 279A.030, in the event of conflict between the federal and state law, federal law prevails.

Option B= Federal Buy America laws apply.)

If $500,000 or more of federal highway funds are involved on the Project, the Contractor shall limit the quantity of foreign Materials incorporated into the Work as follows. Section 635.410 of Title 23, Code of Federal Regulations, and the Intermodal Surface Transportation Efficiency Act require that all iron or steel manufacturing processes, including, without limitation, the casting of ingots, for iron or steel Materials permanently incorporated into the Project shall occur in the United States, unless the cost of foreign-origin iron or steel Materials does not exceed one-tenth of one percent (0.1%) of the Contract Amount or $2,500, whichever is greater. Buy America requirements apply to any steel or iron component of a manufactured product regardless of the overall composition of the manufactured product (e.g., Buy America applies to the steel wire mesh or steel reinforcing components of a precast reinforced concrete pipe). The Contractor shall not incorporate foreign-origin iron or steel Materials in excess of this amount into the Project. All foreign-origin iron or steel Materials incorporated in the Project in excess of the amount indicated above shall be removed and replaced with domestic iron or steel Materials at the Contractor's expense. For purposes of this Specification, the cost of foreign-origin iron or steel Materials shall be the value of the iron or steel products as of the date they are delivered to the Project Site.

Manufacturing processes include without limitation the casting of ingots and the application of coatings to finished iron or steel products or components. Coatings include epoxy coating, galvanizing, painting, and any other coating that protects or enhances the value of the steel or iron product or component. The Contractor shall provide the Engineer with a Certificate of Materials Origin, on a form furnished by the Engineer, before incorporating any iron or steel products into the Project. Unless a Certificate of Materials Origin has been provided to the Engineer, the Materials shall be considered of foreign origin.

The Contractor shall retain manufacturers' certificates verifying the origin of all domestic iron or steel Materials for 3 years after the date of final payment for the Project, and shall furnish copies to the Engineer upon request.

The Contractor shall include this provision in all subcontracts.

[End Option B]

[Begin Option C]

(Option C

Contracting Agency is ODOT or DAS (HB3332)
Contract value of $250K or more (HB3332)
Less than $500K in Federal Aid (USDOT Waiver)

The USDOT issued a Public Interest Waiver for De Minimis Costs and Small Grants.

The final waiver can be viewed here: https://www.federalregister.gov/documents/2023/08/16/2023-17602/waiver-of-buy-america-requirements-for-de-minimis-costs-and-small-grants and this waiver applies to iron and steel covered by Buy America. The public interest waiver includes iron and steel manufactured products and construction materials when the total amount of Federal financial assistance applied to the project, through awards or subawards, is below $500,000.

The USDOT Waiver waives the requirements of Federal law for Buy America; HB3332 applies.

Option C= Oregon Law (HB3332) applies

DO NOT CHANGE FORMATTING AS THIS IS REQUIRED BY ORS.)

The Contractor shall comply with HB3332 (2023) which specifies that steel, iron, coatings for steel and iron and manufactured products that a contractor purchases for or uses in the public improvement contract or public works contract, and that become part of a permanent structure, must be produced in the United States. For iron and steel products all manufacturing processes, from the initial melting stage through the application of coatings, shall occur within the United States. For manufactured products, the manufacture of the product shall occur within the United States and the cost of the components of the product that are mined, produced or manufactured in the United States shall be more than 55 percent of the total cost of all components of the product.

No de minimis amount has been established for foreign or unknown origin and no list of exempted items has been created. ODOT or DAS may adopt rules or make findings according to HB3332 (2023).

The Contractor shall provide the Engineer with a Certificate of Materials Origin, on a form furnished by the Engineer, before incorporating any iron or steel products into the Project. Unless a Certificate of Materials Origin has been provided to the Engineer, the Materials shall be considered of foreign origin.

The Contractor shall retain manufacturers' certificates verifying the origin of all domestic iron or steel Materials for 3 years after the date of final payment for the Project, and shall furnish copies to the Engineer upon request.

The Contractor shall include this provision in all subcontracts.

[End Option C]

00160.20(d) Build America Buy America Act Requirements – Replace this subsection, except for the subsection number and title, with the following:

If federal highway funds are involved on the Project, the Contractor shall comply with the Build America Buy America Act and implementing regulations (Infrastructure Investment and Jobs Act ("IIJA"), Pub. L. No. 117-58, which includes the Build America, Buy America Act ("the Act"). Pub. L. No. 117-58, Sections 70901-70941).

The Build America Buy America Act requirements apply to construction materials permanently incorporated in the Project. All construction materials permanently incorporated in the Project must be produced in the United States.

Construction materials include an article, Material, or supply that is or consists primarily of only one of the following, with the standard for the material to be considered ''produced in the United States'':

- **Non-ferrous metals -** All manufacturing processes, from initial smelting or melting through final shaping, coating, and assembly, occurred in the United States.
- **Plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables)** - All manufacturing processes, from initial combination of constituent plastic or polymer-based inputs, or, where applicable, constituent composite materials, until the item is in its final form, occurred in the United States.
- **Glass (including optic glass)** - All manufacturing processes, from initial batching and melting of raw materials through annealing, cooling, and cutting, occurred in the United States.
- **Fiber optic cable (including drop cable)** - All manufacturing processes, from the initial ribboning (if applicable), through buffering, fiber stranding and jacketing, occurred in the United States. All manufacturing processes also include the standards for glass and optical fiber, but not for non-ferrous metals, plastic and polymer-based products, or any others.
- **Optical fiber** - All manufacturing processes, from the initial preform fabrication stage through the completion of the draw, occurred in the United States.
- **Lumber** - All manufacturing processes, from initial debarking through treatment and planing, occurred in the United States.
- **Drywall** - All manufacturing processes, from initial blending of mined or synthetic gypsum plaster and additives through cutting and drying of sandwiched panels, occurred in the United States.
- **Engineered wood** - All manufacturing processes from the initial combination of constituent materials until the wood product is in its final form, occurred in the United States.

The classification of an article, material, or supply as construction material is based on its status at the time it is brought to the work site for incorporation in the Project. In general, the work site is the location of the Project at which the construction materials will be incorporated.

Manufactured products assembled outside the Project Site are not subject to the Build America Buy America requirements. Manufactured products means articles, materials, or supplies that have been:

- Processed into a specific form and shape; or
- Combined with other articles, materials, or supplies to create a product with different properties than the individual articles, materials, or supplies.

The USDOT issued a Public Interest Waiver for De Minimis Costs and Small Grants. The final waiver can be viewed here:
https://www.federalregister.gov/documents/2023/08/16/2023-17602/waiver-of-buy-america-requirements-for-de-minimis-costs-and-small-grants and this waiver applies to Materials covered by the Build America Buy America Act.

The public interest waiver is for manufactured products and construction materials for which:

- The total value of the non-compliant products (foreign or unknown origin) is no more than the lesser of $1,000,000 or 5% of total applicable costs for the project*; or
- The total amount of Federal financial assistance applied to the project, through awards or subawards, is below $500,000.

*The “total value of the non-compliant products” includes construction materials only. The “total applicable costs” includes construction materials, iron and steel, and manufactured products. The value of materials are the actual cost of the materials, not the anticipated cost of materials. Furthermore, this bullet does not apply to iron and steel subject to the requirements of 23 U.S.C. 313. The de minimis threshold in 23 CFR 635.410(b)(4) continues to apply for steel and iron. (See 00160.20(a).)

Strict compliance with the Build America, Buy America domestic preferences is required, except to the extent the above public interest waiver applies. The Contractor shall not incorporate construction materials in excess of this amount into the Project. All foreign origin construction Materials incorporated in the Project in excess of the amount indicated above shall be removed and replaced with domestic construction Materials at the Contractor's expense.

The Contractor shall provide the Engineer with a Certificate of Materials Origin, on a form furnished by the Engineer, before incorporating any applicable construction materials into the Project. Unless a Certificate of Materials Origin has been provided to the Engineer, the products and Materials shall be considered of foreign origin.

The Contractor shall retain manufacturers' certificates verifying the origin of all applicable construction materials for 3 years after the date of final payment for the Project, and shall furnish copies to the Engineer upon request.

Iron and steel Materials and manufactured products that are predominately iron or steel are subject to 00160.20(a).

The Contractor shall include this provision in all subcontracts.

(Use the following subsection .21 on Federal funded Projects.)

00160.21 Cargo Preference Act Requirements - Add the following to the end of this subsection:

Additional information may be available at the following websites:

https://www.fhwa.dot.gov/construction/cqit/cargo.cfm
https://www.fhwa.dot.gov/construction/cqit/cargo/qa.cfm.

(Use the following subsection .30 when the Agency will furnish items or materials other than material from a borrow source - for example: poles, timbers, guardrail, etc. Give the location where the items/materials may be picked up. Delete parentheses and the words in parentheses as needed. For aggregates and other similar materials, use 00160.40.)

00160.30 Agency-Furnished Material - Add the following to the end of this subsection:

The Agency will furnish the listed items at the *(*Project Site:*)(*following locations:*)*

(Use the following paragraph when Agency supplied materials need to be returned. Give the location and contact information where the items/materials may be dropped off. Delete parentheses and the words in parentheses as needed.)

Add the following to the end of this subsection:

The Contractor shall return the Agency-furnished items to the *(*following locations:*)*

(Use the following subsection .40 on Projects with Agency-furnished material sources. Include SP00235 when using this subsection.)

00160.40 Agency-Furnished Sources - Add the following paragraph after the paragraph that begins "The Agency may list in the…":

Agency-Furnished Sources for this Project are listed in Section 00235 of the Special Provisions.

SP00165 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-14-25)**

SECTION 00165 - QUALITY OF MATERIALS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require State Specifications Engineer approval and the State Specifications Engineer will obtain approval from the Department of Justice.)

(When the project is by a Local Agency and the work could be done using Type D or Type E Materials testing, get approval from the ODOT Quality Assurance Engineer and Region Quality Assurance Coordinator to use Type D or Type E Materials testing.)

(Obtain language for Type D or Type E testing from the State Specifications Engineer. Do not include language for Type D or Type E testing without first obtaining approval from the State Specifications Engineer.)

Comply with Section 00165 of the Standard Specifications modified as follows:

00165.35(e) Certificate of Origin of Construction Materials – Replace this subsection, except for the subsection number and title, with the following:

When a certificate of material origin for construction materials is specified, complete the form furnished by the Engineer as required by 00160.20(d) for Federal-aid projects.

SP00170 (Special Provisions for the 2024 Book) (Bidding on or after: 05-01-25 Last updated: 01-14-25)

SECTION 00170 - LEGAL RELATIONS AND RESPONSIBILITIES

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require State Specifications Engineer approval and the State Specifications Engineer will obtain approval from the Department of Justice.)

Comply with Section 00170 of the Standard Specifications modified as follows:

> ***(Use the following lead-in paragraph and subsection .01(e) on Projects with Railroad involvement. Obtain information from ODOT's State Utility and Railroad Liaison. Use of this subsection requires SP00058-RRS, SP00060-RR-BNSF, SP00061-RR-CBRL, SP00062-RR-CORP, SP00066-RR-PNWR, or SP00068-RR-UPRR, or SP00069-RR-UPRR_End.***
>
> ***Delete the parentheses and fill in the blank with the appropriate type of agreement listed below and provided by ODOT's State Utility and Railroad Liaison.***
>
> ***UPRR agreement types - contractor right of entry, contractor endorsement, haul road permit or right of entry intrusive or non-intrusive.***
>
> ***BNSF agreement types - temporary occupancy permit, or roadway surfacing/resurfacing permit.***
>
> ***G&W agreement type – right of entry***

All other railroads not listed only have agreements. Delete parenthesis and language within the parenthesis.)

Add the following subsection:

00170.01(e) Railroads - An agreement(and _____) between the Contractor and the Railroad to Work near or within Railroad property is required for this Project. A copy of the Railroad agreement(and _____) and corresponding requirements is included near the front of this Special Provision booklet. The Railroad agreement(and _____) and requirements are subject to change by the Railroad. The Railroad will provide the actual agreement(and _____) and requirements for execution. The Contractor shall obtain all necessary permits and licenses and pay all fees. The Contractor shall obtain a fully executed copy of the agreement(and _____) and requirements between the Contractor and the Railroad and provide a copy of it to the Engineer before beginning Work near or within the Railroad property or Right-of-Way.

The Railroad contact for this Project is:

(Contact the State Railroad Liaison to complete this subsection.)

____(enter name)____
____(enter address)____
____(enter city, state and zip)____
____(enter phone number)____
____(enter website)____

The USDOT Number for this Project is ____(enter USDOT No.)____.
Railroad company owning the track: ____(enter railroad company.)____.
Operating Railroad company at track: ____(enter operating railroad company)____.
Railroad MP: ____(enter railroad MP.)____.
Railroad Subdivision: ____(enter railroad subdivision.)____.
City: ____(enter City)____.
County: ____(enter County)____.

(Use the following paragraph when Union Pacific Railroad Company property is within Project limits.)

The Union Pacific Railroad Folder Number is ____(enter UP Folder Number.)____.

(Use one of the following options when Railroad flagger services are required. Delete the option that does not apply. Check with the State Utility and Railroad Liaison.)

[Option 1 - Use the following paragraph when Railroad flagger services are required on any Railroad, except for UPRR when a third party vendor will be used for flagging.]

When Railroad flagger services are required, the Agency will pay the flagger services costs up to a total of _____(enter number of hours or Days)_____. If this value is exceeded and additional flagging services are needed, the Contractor shall pay the Agency an amount of ____(enter dollar

amount)____ per __(enter "hour" or "Day")__ for each __(enter "hour" or "Day")__ in excess of the total value identified above.

[Option 2 - Use the following paragraph when Railroad flagger services are required on a UPRR Railroad and the Contractor is required to use a third party vendor for flagging. Include SP00068_RR_UPRR or SP00069_RR_UPRR_END and subsections 00223.35, .80(a)(4), & .90 in SP00223.]

The Railroad requires a third party flagging vendor when Work occurs near or within Railroad property. When Railroad flagger services are required, the Contractor shall provide flagger services from a third party flagging vendor from Union Pacific's approved third party list according to 00223.35.

(Use the following lead-in paragraph and subsection .06 on all Federal funded Projects.)

Add the following subsection:

00170.06 Federal-Aid Participation - This Project is to be conducted according to the regulations applying to Federal-Aid Highway Projects.

00170.61(a) Workers' Compensation - Replace this subsection, except for the subsection number and title, with the following:

The Contractor shall provide workers' compensation coverage for on-the-job injuries as required by 00170.70(e).

00170.65(b)(1) Minimum Wage Rates – Replace the paragraph that begins "The Bureau of Labor and Industries (BOLI) …" with the following paragraph:

The Bureau of Labor and Industries (BOLI) determines and publishes the existing State prevailing wage rates in the publication *Prevailing Wage Rates for Public Works Contracts*. The Contractor shall pay workers not less than the specified minimum hourly wage rate according to ORS 279C.838 and ORS 279C.840, and shall include this requirement in all subcontracts.

(The following subsection .65(e) is required only on Federal-Aid Projects that do not require Davis-Bacon prevailing wages. Use according to the following:

- ***Do not use this subsection on Projects that are funded by the Safe Routes to School Program.***
- ***Do not use this subsection on Projects that are required by an environmental document, even if the Project is away from the Federal-aid highway Right-of-Way. Example: wetland mitigation. (This type of project is linked to, or dependent upon, the Federal aid highway Project.)***
- ***Use this subsection on Projects that have a Functional Classification of 08 rural minor collector, 09 rural local, or 19 urban local. (Obtain the Functional Classification from the Project Insurance Risk Assessment.)***

- ***Use this subsection on Projects that are not located within the Federal-Aid highway right-of-way, and are not linked to, nor dependent upon, the Federal-Aid highway. Examples:***
  - ***Restoration of a historic Railroad station***
  - ***Construction of an independent bike path***
  - ***A landscaping or scenic beautification Project that is not on the Federal-Aid highway Right-of-Way and is not required because of a Federal-aid highway Project***

For questions about application of this section contact the ODOT State Specifications Engineer.)

00170.65(e) Additional Requirements When Federal Funds are Involved - Replace this subsection, except for the subsection number and title, with the following:

For this Federal-Aid Project, the Contractor shall comply with 00170.65(a) through 00170.65(d) and the provisions of FHWA Form 1273, *Required Contract Provisions Federal-Aid Construction Contracts*, except Section IV of FHWA Form 1273 does not apply.

(Complete the following subsection .70(a) based on the insurance risk assessment. Obtain risk assessment information from the following:

- ***For Region designed projects, contact the Transportation Project Manager***
- ***For Consultant designed projects, contact the ODOT Resident Engineer Consultant Projects***
- ***For Local Agency designed projects, contact the ODOT Transportation Project Manager)***

00170.70(a) Insurance Coverages -

Add the following to the end of this subsection:

The following insurance coverages and dollar amounts are required pursuant to this subsection:

Insurance Coverages	Combined Single Limit per Occurrence	Annual Aggregate Limit

(Fill in the blanks with the dollar amounts from the insurance risk assessment.)

Commercial General Liability	$_____	$_____
Commercial Automobile Liability	$_____	(aggregate limit not required)

(Include the following commercial automobile liability vehicle transportation for pedestrian circulation item only when it is required by the insurance risk assessment, otherwise delete it.)

Commercial Automobile Liability

(pedestrian transport vehicle) $5,000,000 (aggregate limit not required)

(Include the following pollution liability item and fill in the blanks with the dollar amounts from the insurance risk assessment only when it is required by the insurance risk assessment, otherwise delete it.)

Pollution Liability $_____ $_____

(Include one or both of the following bullets only when they are required by the insurance risk assessment. Delete them if they are not required.)

- With Asbestos Liability Endorsement or separate coverage
- With Lead Liability Endorsement or separate coverage

(Include the following commercial automobile liability with pollution liability item and fill in the blanks with the dollar amount from the insurance risk assessment only when it is required by the insurance risk assessment, otherwise delete it.)

Commercial Automobile Liability
with Pollution Coverage $_____ (aggregate limit not required)

(Marine Coverage - Include the following marine liability item and fill in the blanks with the dollar amounts from the insurance risk assessment, or as provided by the Procurement Office Risk and Compliance Analyst only when it is required by the insurance risk assessment, otherwise delete it.)

Marine Liability insurance with a minimum limit of $_____ per occurrence for bodily injury and property damage is required.

(Marine Coverage - Include the following protection and indemnity insurance item and fill in the blanks with the dollar amounts from the insurance risk assessment, or as provided by the Procurement Office Risk and Compliance Analyst only when it is required by the insurance risk assessment, otherwise delete it.)

Protection and Indemnity Insurance coverage shall be evidenced on the SP-23 form or equivalent, including, by endorsement or otherwise, collision liability, tower's liability, specialist operations, and liability for seepage, pollution, containment and cleanup, with extensions for marine contractual liability, with a minimum limit of liability of $_____.

(Marine Coverage - Include the following pollution liability insurance item and fill in the blanks with the dollar amounts from the insurance risk assessment, or as provided by the Procurement Office Risk and Compliance Analyst only when it is required by the insurance risk assessment, otherwise delete it.)

Pollution Liability Insurance - With a minimum limit of $_____, if pollution coverage is provided outside of a P&I Club entry or outside of Protection and Indemnity Insurance coverage evidenced on the SP-23 form or equivalent.

[End 00170.70(a)]

00170.70(d) Additional Insured - Replace the paragraph that begins "The liability insurance coverages of 00170.70(a)…" with the following paragraph:

The liability insurance coverages of 00170.70(a) shall include an Additional Insured Endorsement endorsing the "State of Oregon, the Oregon Transportation Commission and the Oregon Department of Transportation, and their respective officers, members, agents, and employees" as Additional Insureds, but only with respect to the Contractor's activities to be performed under the Contract. Coverage shall be primary and non-contributory with any other insurance and self-insurance. The liability coverages of 00170.70(a) that are permitted by the Agency to be obtained by an appropriate Subcontractor shall include all of the foregoing as Additional Insureds and shall also include the Contractor and its officers and employees as Additional Insureds.

(Use the following paragraphs and bullets when Project management or inspection duties are performed by other than ODOT forces. Fill in the blanks. Delete "(s)" or parentheses as applicable. Also use the following subsection for Right-of-Way easement conditions if approved by the State Specifications Engineer.)

Add the following paragraph and bullet*(*s*)* to the end of this subsection:

Add the following as Additional Insureds under the Contract:

(Use the following two bullets on a local agency projects when the city will be performing project management or inspection duties on the Project Site.)

- The City of _____ and its officers, agents, and employees
- _____ City Council

(Use the following two bullets on a local agency project when the county will be performing project management or inspection duties on the Project Site.)

- _____ County and its officers, agents, and employees
- _____ County Board of Commissioners

(Use the following bullet when a consultant will be performing project management or inspection duties on the Project Site.)

- _____(Consultant)_____

(Use the following bullet when a sub-consultant will be performing project management or inspection duties on the Project Site.)

- _____(Sub-consultant)_____

(Use the following bullet for Right-of-Way easement conditions if approved by the State Specifications Engineer.)

- _____(entity)_____

[End 00170.70(d)]

00170.70(g) Certificate(s) of Insurance - Replace the bullet that begins "List the "State of Oregon…" with the following bullet:

- List the "State of Oregon, the Oregon Transportation Commission and the Oregon Department of Transportation, and their respective officers, members, agents and employees" as a Certificate holder and endorse as an Additional Insured;

(Use the following subsection .70(j) when Builder's Risk is required. Fill in the blank with the dollar amount from the insurance risk assessment, or as provided by the Procurement Office Risk and Compliance Analyst.)

00170.70(j) Builder's Risk – Add the following to the end of this subsection:

Provide Builder's Risk insurance for an amount equal to at least $_____.

(Use the following sentence, when ODOT is not the owner of the building or Structure and fill in the blank with the owner. Except for the owner, do not make any additions to this sentence. If ODOT is the owner of the Structure, delete the following sentence.)

The policy shall include as loss payee, the Agency and _____(County or City Owner of Building)_____.

(Use the following subsection .70(k) when Builder's Risk installation floater is required. Fill in the blanks with the dollar amounts from the insurance risk assessment, or as provided by the Procurement Office Risk and Compliance Analyst.)

00170.70(k) Builder's Risk Installation Floater - Add the following to the end of this subsection:

Provide Builders' Risk Installation Floater insurance for an amount equal to at least $_____.

(Use the following subsection .72 only when project management is performed by other than ODOT forces. Also use the following subsection for Right-of-Way easement conditions if approved by the State Specifications Engineer. Fill in the blanks. Delete "(s)" or parentheses as applicable.)

00170.72 Indemnity/Hold Harmless - Add the following paragraph and bullet*(s)* to the end of this subsection:

Extend indemnity, defense and hold harmless to the Agency and the following:

(Use the following two bullets on a local agency projects when the city will be performing project management or inspection duties on the Project Site.)

- The City of _____ and its officers, agents, and employees
- _____ City Council

(Use the following two bullets on a local agency project when the county will be performing project management or inspection duties on the Project Site.)

- _____ County and its officers, agents, and employees
- _____ County Board of Commissioners

(Use the following bullet when a consultant will be performing project management or inspection duties on the Project Site.)

- _____(Include on the Project site Consultant only)_____

(Use the following bullet when a sub-consultant will be performing project management or inspection duties on the Project Site.)

- _____(Sub-consultant)_____

(Use the following bullet for Right-of-Way easement conditions if approved by the State Specifications Engineer.)

- _____(entity)_____

SP00180 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-14-25)**

SECTION 00180 - PROSECUTION AND PROGRESS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require State Specifications Engineer approval and the State Specifications Engineer will obtain approval from the Department of Justice.)

Comply with Section 00180 of the Standard Specifications modified as follows:

00180.21(a) General – Replace the bullet that begins " If the Subcontractor is providing any…" with the following bullet:

- If the Subcontractor is providing any of the insurance coverages as permitted under 00170.70(a), the Agency will respond within 35 Calendar Days after the Engineer's receipt of the request. (28 Calendar Days for the Agency to review and approve the Certificates of Insurance required by 00170.70(g) plus 7 Calendar Days to review and approve the subcontract request.)

(Use the following lead in sentence and subsection .40(c) when limitations are included in the Special Provision. Delete the limitations that do not apply.)

Add the following subsection:

00180.40(c) Specific Limitations - Limitations of operations specified in these Special Provisions include, but are not limited to, the following:

Limitations	Subsection
Cooperation with Utilities	00150.50
Cooperation with Other Contractors	00150.55
Railways	00170.01(e)
Contract Time	00180.50(h)

Right-of-Way and Access Delays 00180.65
Closed Lanes ..... 00220.40(e)(1)
Special Events ..... 00220.40(e)(2)(b)
Limited Duration Road Closure ..... 00220.40(f)
Road Closure Using Rolling Slowdown Method..... 00220.40(g)
Regulated Work Areas ..... 00290.34(a)
Noise Control 00290.32
Maintenance Under Traffic 00620.43
Opening Sections to Traffic..... 00744.51
Opening Sections to Traffic 00745.51

(Use the following paragraphs when the Project is within irrigation districts. Obtain information from the Region Utilities Specialist.)

[Begin irrigation paragraphs]

When submitting the supplemental "look ahead" Project Work schedule, the Contractor shall show all Work that impacts the __(insert irrigation district name)__ canals and channels.

Irrigators have legal rights to use irrigation water from the canals and channels of the __(insert irrigation district name)__ in __(insert contact office location of the irrigation district for the project)__ .

During the irrigation season of __(insert date: example April 1)__ through __(insert date: example October 31)__, the Contractor shall not restrict the flow of water or contaminate the water of the __(insert irrigation district name)__ .

During the non-irrigation season of __(insert date: example November 1)__ through __(insert date: example May 31)__, the Contractor shall allow a __(insert number of days)__ Day stock water run approximately every 30 Days. The Contractor shall contact the __(insert irrigation district name)__ for the stock water run times.

[End irrigation paragraphs]

The Contractor shall be aware of and subject to schedule limitations in the Standard Specifications that are not listed in this subsection.

00180.41 Project Work Schedules -

(Use the following paragraphs and bullets on Projects that have curb ramps.)

After the paragraph that begins "The Contractor shall submit a Project Work schedule meeting the requirements…" add the following paragraphs:

Submit an overall sequencing and phasing plan showing the timeline for construction of all curb ramps. Submit a list of individual curb ramps or groups of curb ramps not to exceed 32 curb ramps to include in the schedule for approval by the Engineer.

The Contractor shall include the following curb ramp tasks in the Project Work schedule:

- Contractor initial site visit(s) for ramp existing conditions;

- Submittal of Working Drawings for each ramp, submitted to the Agency according to 00759.03(c);
- Submittal of Curb Ramp Plan(s); and
- Preplacement Conference(s).

(Use the following paragraph and bullets on Projects that have curb ramps.)

In the paragraph that begins "The Contractor shall submit a supplemental “look ahead” Project Work schedule each week to the Engineer.” add the following bullets to the end of the bullet list:

- Identify date of curb ramp site visit to include Contractor and Agency, to review Working Drawings;
- Identify curb ramp resubmittal of Working Drawings, as required according to 00759.03;
- Identify the anticipated date of curb ramp closure;
- Identify the field markings for excavation limits for curb ramps;
- Identify when the curb ramp formwork begins;
- Identify when the curb ramp Concrete placement begins; and
- Identify the anticipated opening curb ramp date.

(Insert the type of schedule ("A", "B", or "C") in the blank. Use the following guidelines for selecting type of schedule:

- ***Type “A” - Single season, simple, small, or short projects***
- ***Type “B” - Projects with several major construction items or moderately complex traffic staging***
- ***Type “C” - Critical Path Method projects, largest / most complex projects with complex staging. Required for any alternative contracting methods.***

Obtain the schedule type from the project Scheduler and the Project Manager. Consult with the ODOT Sr. Cost Engineer or the ODOT Construction Claims Engineer, as needed.)

After the paragraph that begins "One of the following Type…" add the following paragraph:

In addition to the "look ahead" Project Work schedule, a Type _____ schedule as detailed in the Standard Specifications is required on this Contract.

(Use the following subsection .42 when requested by the Utility Coordinator or the Region Environmental Coordinator.)

00180.42 Preconstruction Conference - Add the following to the end of this subsection:

(Use one of the following options when requested by the Utility Coordinator. Delete the option that does not apply.)

[Option 1 - Use the following paragraph when requested by the Utility Coordinator.]

[Begin Option 1]

The Contractor shall conduct a group Utilities scheduling meeting with representatives from the Utility companies involved with this Project and the Engineer before the preconstruction conference. The Contractor shall incorporate the Utilities time needs into the Contractor's schedule submitted at the preconstruction conference.

[End Option 1]

[Option 2 - Use the following paragraphs and bullet lists when requested by the Utility Coordinator for large projects with complex utility issues. Be sure to also include subsection 00150.50(c). Delete the language in orange parentheses that does not apply and delete all orange parentheses.]

[Begin Option 2]

Before beginning On-Site Work and before the preconstruction conference, the Contractor shall conduct a Utility scheduling meeting with representatives from the Utilities involved with this Project and with the Engineer. The Contractor shall incorporate the time needs of the Utilities into the Contractor's schedule submitted at the preconstruction conference.

The Contractor shall submit a written Utility Coordination Report to the Engineer not later than seven Calendar Days after the Utility scheduling meeting. The Utility Coordination Report shall:

- Identify each specific Utility;
- Identify Utility contact names and numbers;
- Identify dates for Utility scheduling for the entire Project;
- Contain documents showing that the Contractor has accomplished Utility locates; and
- Contain documents showing that Utility locates, along with applicable construction activities, have been reviewed and discussed on-site with Utility representatives.

The Contractor shall hold monthly Utility coordination meetings with Utilities and the Engineer to coordinate Project activities with Utilities and on-going Utility relocation work. The Contractor shall hold monthly Utility coordination meetings in the office or in the field, as appropriate. The Utility coordination meetings shall include, but not be limited to:

- Detailed discussions of existing and abandoned Utilities,
- Detailed discussions of de-energizing and re-energizing service lines,
- Detailed discussions of critical locations for potholing of Utilities,
- Detailed discussions of Project activities, and
- Detailed discussions of on-going Utility relocations in upcoming Project activity areas.

During the monthly Utility coordination meetings, the Utilities will provide Utility drawings and discuss the scope, extent, locations, and significance of all Utility facilities before the Contractor begins work in a new activity area. The Contractor shall incorporate this information into the Project schedules and furnish the Utilities copies of the updated Project schedules.

The Contractor shall plan and schedule all Utility adjustment operations well in advance of On-Site Work. When the Contractor becomes aware of Utility conflicts not previously identified, the Contractor shall notify the applicable Utilities in writing the same Calendar Day. The Contractor shall allow Utilities at least *(*___ week*(*s*))(___* Calendar Day*(*s*))* to relocate (adjust) the Utility conflicts not previously identified.

[End Option 2]

(Use the following paragraph and bullet list when sensitive cultural sites require protection during construction.)

At the preconstruction conference, or at a mutually agreed upon time at least 10 Calendar Days prior to beginning ground disturbing activities, the Contractor shall meet with the Engineer to discuss sensitive cultural sites on the Project. In attendance at this conference shall be:

- The Contractor's supervisory personnel.
- Any Subcontractors (including contract archaeological monitors) and supervisory personnel who will be involved in ground disturbing activities.
- Agency archaeology representative or region environmental coordinator.
- When applicable, tribal representative(s) or monitor(s).

Add the following subsection:

(Use one of the following .50(h) lead-in sentence options, according to the number of completion times to be used.

This subsection requires State Specification Engineer approval on ALL Projects.

Note: If either durable pavement markings (00865) or high performance pavement markings (00866) are required, and the completion date is after September 15, check with the Scheduler and request multiple completion times.

Note: If permanent seeding (01030) or planting (01040) is required, and the completion date is outside the planting seasons (see 01030.43(b) or 01040.41 and .42), check with the Scheduler and request multiple completion times.)

[Begin lead-in sentence options]

[Option 1 - Use to specify one completion time.]

00180.50(h) Contract Time - There is one Contract Time on this Project as follows:

[Option 2 - Use to specify two completion times.]

00180.50(h) Contract Time - There are two Contract Times on this Project as follows:

[Option 3 - Use to specify three completion times.]

00180.50(h) Contract Time - There are three Contract Times on this Project as follows:

[End lead-in sentence Options]

(Use one or more of the following paragraphs as needed to specify one or more INTERIM completion dates. Fill in the blanks. Copy one of the paragraphs if needed for Projects with two interim completion times. Delete paragraphs that do not apply. Replace "X" with a sequential number, starting with "1" for the first paragraph used.)

[Begin interim completion date options.]

(X) The Contractor shall complete all Work to be done under the Contract, except for _____, not later than _____.

(X) The Contractor shall complete all Work to be done under the Contract required to _____ not later than _____.

(X) The Contractor shall complete all Work to be done under the Contract, except for _____, before the elapse of ___ Calendar Days, or not later than _____, whichever occurs first.

(X) The Contractor shall complete all Work to be done under the Contract required to _____ before the elapse of ___ Calendar Days, or not later than _____, whichever occurs first.

[Example: "The Contractor shall complete all Work to be done under the Contract required to remove and replace Span 5 of Bridge No. 02025, including reinstalled end panel, final ACP wearing course, and permanent bridge rails; and reopen the Santiam Highway (US20) to two traffic lanes, before the elapse of 110 Calendar Days, or not later than July 31, 2016, whichever occurs first."]

[End interim completion date options.]

(Use ONE of the following paragraphs to specify a single completion time, or as the FINAL paragraph for Projects with multiple completion times. Fill in the blanks. Delete paragraphs that do not apply. Remove parentheses. Replace "X" with a sequential number when there are multiple completion times, or delete "(X)" entirely when there is only one completion time.)

[Begin final completion date options.]

(X) The Contractor shall complete all Work to be done under the Contract, except for (seeding establishment) (and) (plant establishment), before the elapse of ___ Calendar Days, or not later than _____, whichever occurs first.

(X) The Contractor shall complete all Work to be done under the Contract before the elapse of ___ Calendar Days, or not later than _____, whichever occurs first.

(X) The Contractor shall complete all Work to be done under the Contract, except for (seeding establishment) (and) (plant establishment), not later than _____.

(X) The Contractor shall complete all Work to be done under the Contract not later than _____.

[End final completion date options.]

(Use the following subsection .65 when right-of-way access delays are necessary. Fill in the blanks with the appropriate information.)

00180.65 Right-of-Way and Access Delays - Add the following paragraph and bullet to the end of this subsection:

It is anticipated that the ending date of an anticipated delay for the following properties will be as shown:

- File ___(R/W file number) (Stations right and left)_____ not later than ___(Date)___.

(Use the following subsection .85(b)(1) when the Project has been identified as 100% preservation.)

00180.85(b)(1) Single Contract Time - Replace this subsection, except for the subsection number and title, with the following:

The Liquidated Damages per Calendar Day* are 15.0 percent of C divided by T as defined in this Section.

C = The Contractor's Bid amount for the Contract.
T = The total Calendar Days between the latest completion date or time listed under 00180.50(h) in the Solicitation Documents and the Bid Opening that will result in the greatest value for T.

* Calendar Day amounts are applicable when the Contract time is expressed on the Calendar Day or fixed date basis.

(Use the following subsection .85(b)(2) when the Project has multiple Contract Times in 00180.50(h).)

00180.85(b)(2) Multiple Contract Times - Add the following paragraph and bullet list to the end of this subsection:

The Agency determined percentages of the value of Work required to be complete by the Contract Times listed under 00180.50(h) are as follows:

[Include one of the following bullets for each Contract Completion Time in 00180.50(h). Fill in the blank with the percentage of all Work to be done, calculated based on the preliminary Engineer's Estimate and for each listed Contract Time. Show percentages to the nearest 1% and ensure that the last percentage listed is 100 percent.)

- For Contract Time 00180.50(h)(1) the Agency determined percentage of Work is _____ percent.

- For Contract Time 00180.50(h)(2) the Agency determined percentage of Work is 100 percent.

(Use the table below to fill in the dollar amount in the blank in .85(c), (d), or (e).

Facility Type	*AADT Volumes*	*LD per lane, per 15 or 20 minute period*
Freeway	*> 50,000*	*$ 2000*
Freeway	*< 50,000*	*$ 1000*
Other Highways	*> 30,000*	*$ 1500*
Other Highways	*< 30,000*	*$ 500*

(Use the following lead-in paragraph and subsection .85(c) on Projects that have lane restrictions and where there is a need to have Liquidated Damages to encourage the Contractor to finish the work within the time limits. Standard lane restrictions are listed in the Standard Specs subsection 00220.40(e)(1). Any Project Specific restrictions for all appropriate closures must be inserted in the Special Provisions subsection 00220.40(e)(1) Lane Restrictions.

Delete the orange parentheses and use the references to 00220.40(f) only when 00220.40(f) is included in the Project. Otherwise, delete the references and orange parentheses.

DO NOT USE .85(c) for full road closures that are more than 24 hours. Liquidated damages for full road closures require an interim completion time in 00180.50(h).)

Add the following subsection:

00180.85(c) Lane Closures - Lane closures beyond the limits specified will inconvenience the traveling public and will be a cost to the Agency.

It is impractical to determine the actual damages the Agency will sustain in the event Traffic Lanes are closed beyond the limits listed in 00220.40(e) *(*or 00220.40(f)*)*. Therefore, the Contractor shall pay to the Agency, not as a penalty, but as liquidated damages, $____ per 15 minutes, or for a portion of 15 minutes, per lane, for any lane closure beyond the limits listed in 00220.40(e) *(*or 00220.40(f)*)*.

The Engineer will determine when it is safe to reopen lanes to traffic. Assessment of liquidated damages will stop when all lanes have been safely reopened. Any liquidated damages assessed under these provisions will be in addition to those listed in 00180.85(b).

(Use the following lead-in paragraph and subsection .85(d) on Projects that have limited access roadways, allow the Rolling Slowdown Method of traffic control listed in 00220.40(g), and where there is a need to have Liquidated Damages to encourage the Contractor to finish the work on time. Normal limits (weekend closure limitations) are listed in the Standard Specs subsection 00220.40(e)

If subsection .85(c) Lane Closures is not used, delete ", but not in addition to 00180.85(c) above for closure of the same lanes***". Delete all orange parentheses.)***

Add the following subsection:

00180.85(d) Rolling Slowdown Closures - Rolling slowdown closures beyond the limits specified will inconvenience the traveling public and will be a cost to the Agency.

It is impractical to determine the actual damages the Agency will sustain in the event Traffic Lanes are closed by the Rolling Slowdown Method. Therefore, the Contractor shall pay to the Agency, not as a penalty, but as liquidated damages, $____ per 20 minutes, or for a portion of 20 minutes, per lane, for any lane closure beyond the 20-minute limit listed in 00220.40(g).

The Engineer will determine when it is safe to reopen lanes to traffic. Assessment of liquidated damages will stop when all lanes have been safely reopened. Any liquidated damages assessed under these provisions will be in addition to those listed in 00180.85(b)*(*, but not in addition to 00180.85(c) for closures of the same lanes*)*.

(Use the following lead-in paragraph and subsection .85(e) on Projects that will be stopping or holding traffic and where there is a need to have Liquidated Damages to encourage the Contractor not to delay traffic in long queues. Use when requested by the traffic designer or Project Manager.)

Add the following subsection:

00180.85(e) Traffic Delays Beyond 20 Minutes - Stopping or holding vehicles beyond the limits specified will inconvenience the traveling public and will be a cost to the Agency.

It is impractical to determine the actual damages the Agency will sustain in the event traffic is stopped or held longer than the 20-minute limit listed in 00220.02. Therefore, the Contractor shall pay to the Agency, not as a penalty, but as liquidated damages, $____ per 20 minutes, or for a portion of 20 minutes, for stopping or holding traffic longer than 20 minutes.

Assessment of liquidated damages will stop when the Engineer determines that traffic is no longer stopped or held beyond the 20-minute limit. Any liquidated damages assessed under these provisions will be in addition to those listed in 00180.85(b).

SP00190 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-14-25)**

SECTION 00190 - MEASUREMENT OF PAY QUANTITIES

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require State Specifications Engineer approval and the State Specifications Engineer will obtain approval from the Department of Justice.)

(Use the following lead-in paragraph when none of the following subsections are included in the Project.)

Comply with Section 00190 of the Standard Specifications.

(Use the following lead-in paragraph when any of the following subsections are included in the Project.)

Comply with Section 00190 of the Standard Specifications modified as follows:

(Use the following subsection .20(f)(2) when materials are to be weighed to determine pay quantities.)

00190.20(f)(2) Scale Without Automatic Printer - Replace the paragraph that begins "The Contractor shall inform…" with the following paragraph:

If the scales require manual entry of gross weight information, the Agency may periodically have a representative weigh witness at the scales to observe the weighing procedures. The Contractor shall inform the Engineer of their intent to use a scale without an automatic printer at least 3 working days before weighing begins or before the Contractor changes to a scale that does not have an automatic printer. The Contractor shall pay costs for the weigh witness. The hourly cost of the weigh witness will be as stated in the Special Provisions. In addition, the Engineer may periodically check the weight for a load of Materials by directing the haul vehicle to reweigh on a different scale that has been inspected and certified according to 00190.20(b) and 00190.20(d).

Add the following paragraph after the paragraph that begins " If the scales require manual entry…":

Pay costs for the weigh witness at $35.00 per hour.

(Use the following subsection .20(g) when materials are to be weighed to determine pay quantities.)

00190.20(g) Agency-Provided Weigh Technician - Add the following paragraph to the end of this subsection:

Pay costs for the weigh technician at $35.00 per hour.

SP00195 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-14-25)**

SECTION 00195 - PAYMENT

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require State Specifications Engineer approval and the State Specifications Engineer will obtain approval from the Department of Justice.)

Comply with Section 00195 of the Standard Specifications modified as follows:

(Use the following subsection .10 on Projects that have at least 150 Tons of liquid asphalt.)

[Begin subsection .10]

00195.10 Payment For Changes in Materials Costs - Replace this subsection with the following subsection:

00195.10 Asphalt Cement Material Price Escalation/De-escalation - An asphalt cement escalation/de-escalation clause will be in effect during the life of the Contract.

The Agency reserves all of its rights under the Contract, including, but not limited to, its rights for suspension of the Work under 00180.70 and its rights for termination of the Contract under 00180.90, and this escalation/de-escalation provision shall not limit those rights.

(a) Monthly Asphalt Cement Material Price (MACMP) - The Monthly Asphalt Cement Material Price (MACMP) is established by the Agency each month. For the actual MACMP, go to the Agency website at:

https://www.oregon.gov/ODOT/Business/Pages/Asphalt-Fuel-Price.aspx

The MACMP is based on selling prices of asphalt cement published by Poten & Partners, Inc. for primarily PG 64-22 paving grades in the Portland, Oregon area and typical non-modified paving grades in the Boise, Idaho area. The MACMP for a given month is the average of the weekly published prices for each area reported each Friday in that month. If any portion of the Project Site is located within the boundaries of ODOT Maintenance Districts 1 through 10 the MACMP will be based on the prices for the Portland, Oregon area. For Projects entirely in ODOT Maintenance District 13 or 14, the MACMP will be based on the prices for the Boise, Idaho area. For Projects entirely in ODOT Maintenance District 11 or 12 the Contractor may elect to have the MACMP based on the prices of either the Portland, Oregon area or the Boise, Idaho area. If electing to use Boise, Idaho area prices for determination of the MACMP, the Contractor shall notify the Engineer in writing of the Contractor's election before or within 7 Calendar Days after the date of the preconstruction conference. This election, once acknowledged by the Engineer, will be binding for the entire duration of the Contract. If no such written notification is made, the Portland, Oregon area prices will be used as the basis of the MACMP. The area selected as the basis of the MACMP, once chosen, will become the sole area to be used as the basis for all asphalt cement used on the Project.

If the weekly prices cease to be available from Poten & Partners, Inc. for any reason, the Agency, in its discretion will select and begin using a substitute price source or index to establish the MACMP each month. The Agency does not guarantee that asphalt cement will be available at the MACMP.

(b) Base Asphalt Cement Material Price (Base) - The base asphalt cement material price for this Project is the MACMP published on the Agency website for the month immediately preceding the Bid Opening date.

(c) Monthly Asphalt Cement Adjustment Factor - The monthly asphalt cement adjustment factor will be determined each month as follows:

- If the MACMP is within ± 5% of the Base, there will be no adjustment.
- If the MACMP is more than 105% of the Base, then:

  Adjustment Factor = (MACMP) - (1.05 x Base)

- If the MACMP is less than 95% of the Base, then:

  Adjustment Factor = (MACMP) - (0.95 x Base)

(d) Asphalt Cement Price Adjustment - A price adjustment will be made for the items containing asphalt cement listed below. The price adjustment as calculated in (c) above will use the MACMP for the month the asphalt is incorporated into the Project. The price adjustment will be determined by multiplying the asphalt incorporated during the month for subject Pay Items by the Adjustment Factor.

The Pay Items for which price adjustments will be made are:

Pay Item(s)

(List all Pay Items in which price adjustments apply. Use complete and accurate Pay Item names. Add or delete Pay Items as appropriate.)

_____ Asphalt in _____ ACP
Emulsified Asphalt in Fog Coat
Emulsified Asphalt for Tack Coat
Asphalt in Emulsified Asphalt Chip Seal
Asphalt in Multiple Application Emulsified Asphalt Surface Treatment
Emulsified Asphalt in Mixture
Recycling Agent

[End subsection .10]

(Use the following lead-in paragraph and subsection .11 on projects when the Fuel, Steel, Class of Work, and Scheduling program identifies any eligible items for fuel escalation/de-escalation. The estimated fuel usage is for the major Pay Items or for Pay Items under specific Structure Numbers that are listed for coverage under this specification.

[Begin subsection .11]

Add the following subsection:

00195.11 Fuel Cost Price Escalation/De-escalation - A fuel escalation/de-escalation clause will be in effect during the life of the Contract.

The Agency reserves all of its rights under the Contract, including, but not limited to, its rights for suspension of the Work under 00180.70 and its rights for termination of the Contract under 00180.90, and this escalation/de-escalation provision will not limit those rights.

(a) Monthly Fuel Price (MFP) - A Monthly Fuel Price (MFP) is established by the Agency each month. For the actual MFP, go to the Agency website at:

https://www.oregon.gov/ODOT/Business/Pages/Asphalt-Fuel-Price.aspx

The MFP for a given month is the average rack price obtained from the Oil Price Information Service (OPIS) listing dated the first Monday of that month for ultra low sulfur distillate No. 2 diesel fuel for Portland, Oregon. If the average rack price is not posted by OPIS or is otherwise not available to the Agency for the first Monday of any month for any reason, the Agency may use the average rack price posted by OPIS immediately before or after the first Monday of that month. If the average rack prices cease to be available from OPIS for any reason, the Agency in its discretion will select and begin using a substitute price source or index to establish the MFP each month. The Agency does not guarantee that fuel will be available at the MFP.

(b) Base Fuel Price (Base) - The base fuel price for this Project is the MFP published on the Agency website for the month immediately preceding the Bid Opening date.

(c) Monthly Fuel Adjustment Factor - A monthly fuel adjustment factor is determined each month as follows:

- If the MFP is within ± 25% of the Base, there will be no adjustment.
- If the MFP is more than 125% of the Base, then:

  Adjustment Factor = (MFP) - (1.25 x Base)

- If the MFP is less than 75% of the Base, then:

  Adjustment Factor = (MFP) - (0.75 x Base)

(d) Fuel Price Adjustment - A fuel price adjustment for fluctuations in the cost of fuel will apply only to the major fuel usage Pay Items shown in the following list and at the respective fuel factors listed:

(Use the following two tables to list Pay Items or for Pay Items under Structures that are subject to fuel escalation/de-escalation. Use the Fuel, Steel, Class of Work, and Scheduling program to determine the Pay Items or for Pay Items under Structures to which fuel factors apply. Copy and paste lines as needed and delete lines in the tables that do not apply. Check with the ODOT Sr. Cost Engineer.

Use the following table to list all individual Pay Items that are subject to fuel escalation/de-escalation, EXCEPT items that will be included in the Schedule of Items under a Bridge or Structure number listed in the second table. Use complete and accurate Pay Item names. From the fuel escalation worksheet, determine all the appropriate individual Pay Items and list them by Pay Item name under the "Item" heading. Under the "Fuel Factor" heading, fill in the first blank with the fuel

factor from the worksheet and the second blank with the unit of measurement for the specific Pay Item.)

Item	**Fuel Factor**
	_____ Gal/____
	_____ Gal/____

(Use the following paragraph and table for Bridges and Structures that are subject to fuel escalation/de-escalation. List each Bridge or Structure separately as "Bridge No." or "Structure No." and list all the Pay Items associated with that Bridge or Structure separately under the Bridge or Structure.

Fill in the first blank with the Bridge or Structure number for all the Pay Items associated with the entire Bridge or Structure.

List all Pay Items that fuel escalation would apply to under each Bridge or Structure No.

Example:

Bridge No. 12345 19 Gal/$1000

Item

Bridge Removal Work
Bridge Deck Cold Plane Pavement Removal, 0-2 Inches
Furnish Premixed Polymer Concrete
Construct PPC Overlay
Structure Excavation
Granular Wall Backfill
Reinforced Concrete End Panel

Check with the ODOT Sr. Cost Engineer if you have questions.)

The following Pay Items associated with the following Bridges and Structures:

Bridge No. _____ 19 Gal/$1000

Item

Bridge No. _____ 19 Gal/$1000

Item

Structure No. _____ 19 Gal/$1000

Item

Structure No. _____ 19 Gal/$1000

Item

The Contractor is cautioned to consider that its operations may require more or less fuel.

A price adjustment (±) to the Contractor for fuel cost changes will be made monthly if the MFP differs 25% or more from the Base. This adjustment will be the product of the monthly fuel adjustment factor and the estimated monthly fuel used. The monthly fuel used will be determined by multiplying the quantities of Work accomplished during the month for subject Pay Items, by the appropriate fuel factors.

Fuel cost adjustments will continue to be made as specified and will not be revised for any reason, including the Contractor's election to use an alternative fuel (natural gas, wood pellets, propane, or other).

[End subsection .11]

(Use the following subsection .12(d) when the Fuel, Steel, Class of Work, and Scheduling program identifies there are qualifying Pay Items to list under this subsection.

Fill in the table, in .12(d), with only those Pay Items which the Fuel, Steel, Class of Work, and Scheduling program identifies that the project is eligible for steel escalation/de-escalation. Use complete and accurate Pay Item names.)

00195.12(d) Steel Materials Pay Item Selection - Add the following paragraphs to the end of this subsection:

If the Contractor elects not to participate in the steel escalation/de-escalation program for this Project, no response from the Contractor is required.

The Contractor may elect to participate in the steel escalation/de-escalation program for this Project under 00195.12 through 00195.12(d) by marking each check box for each Pay Item in the list below the Contractor is selecting for participation in the program. The completed list must be submitted in writing, signed and dated by the Contractor, to the Project Manager before or within 7 Calendar Days after the date of the preconstruction conference.

PARTICIPATE	PAY ITEM DESCRIPTION	COST BASIS (CB)
☐	Pay Item Name (from the Worksheet)	CB (from the Worksheet)
☐	Pay Item Name (from the Worksheet)	CB (from the Worksheet)
☐	Pay Item Name (from the Worksheet)	CB (from the Worksheet)
☐	Pay Item Name (from the Worksheet)	CB (from the Worksheet)

(Copy and paste the above list to add additional items. Use complete and accurate Pay Item names.)

Regardless of the number of Pay Items listed by the Agency or selected by the Contractor, or if no Pay Items qualify for the steel escalation/de-escalation program for this Project or the Contractor elects not to participate in the steel escalation/de-escalation program for this Project, the steel price escalation/de-escalation clause (and program) contained in 00195.12

through 00195.12(d) are included in this Contract and are the only steel price escalation/de-escalation clause (and program) that apply to this Contract.

_____ _____

Contractor's Signature Date

(Use the following subsection .12(d) on Projects which do not have any qualifying Pay Items. Do not use this subsection when using the subsection 00195.12(d) above.)

00195.12(d) Steel Materials Pay Item Selection - Add the following paragraph to the end of this subsection:

No Pay Items under this Contract qualify for the steel escalation/de-escalation program for this Project.

00195.50(c)(1) Cash, Alternate A – Replace this subsection, except for the subsection number and title, with the following:

Retainage will be deducted from progress payments and held by the Agency until final payment is made according to 00195.90, unless otherwise specified in the Contract.

Except as otherwise provided, the Agency will deposit the cash retainage withheld in an interest bearing account, established through the State Treasurer for the benefit of the Agency, as required by ORS 279C.560(5). Interest earned on the account shall accrue to the Contractor. Amounts retained and interest earned will be included in the final payment made according to 00195.90, unless otherwise specified in the Contract.

Any retainage withheld on Work performed by a Subcontractor will be released to the Contractor according to 00195.50(d).

00195.50(c)(2) Cash, Alternate B (Retainage Surety Bond) - Replace this subsection, except for the subsection number and title, with the following:

The Contractor may submit a Surety bond in lieu of all or a portion of the retainage required under the Contract. The Agency will accept this Surety bond unless the Agency first finds in writing good cause for rejection based on unique project circumstances in accordance with ORS 279C.560(1)(c).

The Surety bond must be in substantially the form specified in ORS 701.435 (4) (Oregon House Bill 4006, 2024), and executed by a Surety bonding company that is authorized to transact Surety business in the State of Oregon and may not be a Surety obligation of an individual. The Surety bond and any proceeds of the Surety bond must be made subject to all claims and liens and in the same manner and priority specified for retainage under ORS 279C.550 to 279C.570 and ORS 279C.600 to 279C.625. Agency will reduce the cash retainage held by an amount equal to the value of the Surety bond and pay the amount of the reduction to Contractor according to ORS 279C.570. Any retainage withheld on Work performed by a Subcontractor will be released to the Contractor according to 00195.50(d).

When the Agency accepts a Surety bond in lieu of retainage from the Contractor, the Contractor shall accept Surety bonds from Subcontractors or Suppliers from which the Contractor has withheld retainage. At any time before final payment a Subcontractor may submit a Surety bond to the Contractor and request that the Contractor submit a Surety bond as described above for the portion of the Contractor's retainage that pertains to the Subcontractor. The Surety bond the Subcontractor provides to the Contractor must meet the Agency requirements specified in the paragraph above. When a Contractor at a Subcontractor's request obtains and submits a Surety bond under this subsection, the Contractor may withhold from payments to the Subcontractor an amount equivalent to the portion of the Contractor's Surety bond premium for which the Subcontractor is responsible in accordance with ORS 279C.560 (Oregon House Bill 4006, 2024).

Within 30 Days after a Subcontractor's request the Contractor shall provide a Surety bond as described above, and the Agency will accept the Surety bond unless:

- the Agency finds in writing good cause for rejection based on unique project circumstances in accordance with ORS 279C.560;
- a Surety bond is not commercially available;
- the Subcontractor refuses to pay to the Contractor the Subcontractor's portion of the Surety bond premium; or
- the Subcontractor refuses to provide the Contractor with a Surety bond that meets the requirements of ORS 279C.560(1)(b).

Notwithstanding 00195.50(d), within 30 Days of receiving a Surety bond from Contractor at a Subcontractor's or Supplier's request, Agency will release to the Contractor the amount held as retainage that is equivalent to the amount the Contractor submitted as a Surety bond. Contractor shall, within 30 Days after receiving a Surety bond from a Subcontractor or Supplier, release to the Subcontractor or Supplier the amount the Contractor holds as retainage that is equivalent to the amount of the Surety bond submitted, in accordance with ORS 279C.560(8).

00195.50(c)(3) Bonds, Securities, and Other Instruments - Replace this subsection, except for the subsection number and title, with the following:

Contractor may deposit bonds, securities or other instruments with the Agency or in a bank or other financial institution, to be held by Agency instead of cash retainage for the benefit of the Agency, which the Agency will accept unless the Agency first finds in writing good cause for rejection based on unique project circumstances, in accordance with ORS 279C.560(1)(c).

If the Contractor deposits bonds, securities or other instruments, and Agency does not reject the bonds, securities or other instruments as permitted by ORS 279C.560(1)(c), the Agency will reduce the cash retainage by an amount equal to the value of the bonds, securities and other instruments. Interest or earnings on the bonds, securities and other instruments accrue to the Contractor.

Bonds, securities and other instruments deposited instead of cash retainage shall be of a character approved by the Director of the Oregon Department of Administrative Services, including, but not limited to:

- Bills, certificates, notes or bonds of the United States;
- Other obligations of the United States or agencies of the United States;
- Obligations of a corporation wholly owned by the federal government;
- Indebtedness of the Federal National Mortgage Association;
- General obligation bonds of the State of Oregon or a political subdivision of the State of Oregon;
- Irrevocable letters of credit issued by an insured institution, as defined in ORS 706.008.

00195.50(f) Prompt Payment Policy - Replace this subsection, except for the subsection number and title, with the following:

Payments shall be made promptly according to ORS 279C.560, ORS 279C.570, ORS 279C.580 and other applicable legal requirements.

SP00196 (Special Provisions for the 2024 Book) (Bidding on or after: 05-01-25 Last updated: 01-14-25)

SECTION 00196 - PAYMENT FOR EXTRA WORK

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require State Specifications Engineer approval and the State Specifications Engineer will obtain approval from the Department of Justice.)

Comply with Section 00196 of the Standard Specifications.

SP00197 (Special Provisions for the 2024 Book) (Bidding on or after: 05-01-25 Last updated: 01-14-25)

SECTION 00197 - PAYMENT FOR FORCE ACCOUNT WORK

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require State Specifications Engineer approval and the State Specifications Engineer will obtain approval from the Department of Justice.)

Comply with Section 00197 of the Standard Specifications modified as follows:

00197.20(e) Standby Time - Replace this subsection, except for the subsection number and title, with the following:

If ordered by the Engineer, standby time will be paid at 50% of the hourly rental rate calculated according to this Subsection, excluding the hourly operating rate. Rates for standby time that are calculated at less than $1 per hour will not be paid. Payment will be limited to not more than 8 hours in a 24-hour period or 40 hours in a 1 week period.

00197.80 Percentage Allowances - Replace the table that shows Subsection and Percent with the following:

Subsection	Percent
00197.10 Materials	19
00197.20 Equipment	19
00197.30 Labor	29
00197.40 Special Services	19

Replace the paragraph that begins "When a Subcontractor performs ordered…" with the following paragraph:

When a Subcontractor performs ordered Force Account Work, the Contractor will be allowed a supplemental markup of 10% on each Force Account Work order.

SP00199 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-14-25)**

SECTION 00199 - DISAGREEMENTS, PROTESTS, AND CLAIMS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [orange text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all orange text before preparing the final document. All other modifications to this Section will require State Specifications Engineer approval and the State Specifications Engineer will obtain approval from the Department of Justice.)

Comply with Section 00199 of the Standard Specifications.

SP00205 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-16-25)**

SECTION 00205 - FIELD LABORATORY, WEIGHHOUSE, ETC.

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project,

unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00205, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00205.00 Scope - This Work consists of providing facilities for Agency use to perform testing, weighing and other necessary functions during the course of the Project.

Materials and Equipment

(Use the following subsection .10 when a contractor furnished field laboratory is required.)

00205.10 Contractor-Furnished Field Laboratory - Provide a leveled field laboratory for Agency use in close proximity to the Contractor's plant at least 5 Calendar Days before Aggregate production, paving, or processing Work begins under the Contract, meeting the safety and health requirements of the Oregon Department of Consumer and Business Services, the Oregon Health Division, the State Fire Marshall, and the following minimum requirements:

- Length - 16 feet
- Width - 8 feet
- Ceiling Height - 7 feet
- Floor
- Insulation - Walls and ceiling - R-11
- Doors - At least one, 3 feet wide, all with locks
- Windows:
  - Four
  - Adequate for good lighting
  - Capable of being opened for adequate ventilation
  - One providing a view of the crushing or processing plant
- Interior Walls and Ceiling - White
- Counter - 20 feet long, 30 inches wide, 36 inches high, with a durable, smooth surface
- Sink - One deep double with adequate supply of cold potable, clear, running water
- Electrical Power System:
  - 120/240 V, single phase, 60 A service
  - Wired according to the *National Electrical Code*
- Electrical Service:
  - Continuous, 24 hours per Day during crushing and Aggregate mixing operations
  - For 24 hours following termination or interruption of operations

- Electrical Outlets - six duplex
- Electrical Light Fixtures - Enough to provide good overall lighting
- Heating and Air Conditioning - Adequate to provide suitable heating and cooling
- Exhaust Ventilation System - Adequate for all activities performed in the laboratory
- Toilet - One, portable, for use by Agency employees

The site will be approved by the Engineer before Work is to begin.

Remove the field laboratory when the Project is complete.

(Use the following subsection .11 when an Agency furnished field laboratory is required.)

00205.11 Agency-Furnished Field Laboratory - Provide a level site for an Agency-furnished laboratory trailer at least 5 Calendar Days before Aggregate production, paving, or processing Work begins under the Contract, at a location in close proximity to the Contractor's plant. The site will be approved by the Engineer before Work is to begin.

Employ a commercial hauler to bring the trailer to the Project, relocate at the site if necessary, and to return the trailer to its storage area. Employ a licensed electrician to connect and disconnect the power source. Provide an adequate supply of potable water, electricity, and a portable toilet for use by Agency employees, according to 00205.10.

(Use the following subsection .12 when a Weighouse is required.)

00205.12 Weighhouse - When Materials are weighed on platform-type scales or by other means and the Contractor chooses to have the Agency provide a weigher, provide a weatherproof weighhouse or other approved shelter for the weighperson. The weighhouse shall meet the safety and health requirements of the Oregon Department of Consumer and Business Services, the Oregon Health Division, the State Fire Marshall and the following minimum requirements:

- Length - 9 feet
- Width - 6 feet
- Ceiling Height - 7 feet
- Floor
- Protect scale recording device and Agency's weigher from weather
- Provide space to store scale testing Equipment
- Provide adequate shelf space
- Provide artificial lighting and good visibility throughout
- Provide adequate heat, as required
- Provide stool and other facilities for keeping records and performing other duties of the weigher
- Doors - At least one, all with locks
- Windows:
  - Capable of being opened for adequate ventilation, unless air conditioning is provided

  - One facing the scale
  - One at each end
  - Adequate size and position to permit view of loading operations and movements of hauling vehicles
- Toilet - One, portable, for use by Agency employees

Remove the weighhouse when the Project is complete.

(Use the following subsection .13 when the contractor is required to provide a job inspector trailer for Agency use.]

00205.13 Job Inspector Trailer - At least 15 Calendar Days before beginning On-Site Work, or as otherwise agreed to by the Engineer, provide a leveled office trailer for sole use by the Agency in close proximity to the Project and the Contractor's trailer, if one is present. Obtain approval of the trailer and the proposed trailer location from the Engineer before delivery and installation. Provide an inspector trailer that meets the safety and health requirements of the Oregon Department of Consumer and Business Services, the Oregon Health Division, the State Fire Marshall, and the following requirements:

- Be at least 20 feet in length.
- Be at least 8 feet in width.
- Have a minimum ceiling height of 7 feet.
- At a minimum, be insulated in the walls, ceiling, and floor.
- Have at least one exterior door with locks. Provide the Engineer with two sets of keys to the exterior door locks.
- Have at least two windows that:
  - Provide adequate lighting to the interior of the trailer.
  - Can be opened for ventilation.
- Have a light colored ceiling and light colored interior walls.
- Have a counter across one end that is a minimum of 30 inches wide and 30 to 42 inches high with a durable smooth surface on top. Alternately, provide a similarly sized table or desk.
- Be wired according to the *National Electrical Code* with 120/240 volt, single phase, 60 amp minimum service.
- Have electrical service 24 hours per Day for the duration of the Project. The Engineer may waive the continuous requirement if it is unavailable.
- Have high-speed internet service 24 hours per Day for the duration of the Project, at no additional cost to the Agency. The Engineer may waive the high speed requirements if it is unavailable
- Have at least four, evenly spaced, 120 volt duplex electrical outlets.
- Have adequate electrical light fixtures to provide good overall interior lighting.
- Have an adequate heater and air conditioning unit to maintain a temperature of 68 to 72 °F.
- Have adequate parking for two Agency vehicles, near the trailer, on an aggregate pad or other surface free of mud and standing water.

- Have a walkway between the Agency vehicle parking area and the trailer, free of mud and standing water.
- Have steps with a handrail at each exterior door.

Provide and maintain a portable toilet for use by Agency employees.

Similar facilities, such as Agency space in a shared trailer or space in a building close to the Project, may be allowed if approved by the Engineer.

Remove the job inspector trailer when the Project is complete.

(Use the following subsection .14 when the contractor is required to provide a job office trailer for Agency use.]

00205.14 Job Office Trailer - At least 15 Calendar Days before beginning On-Site Work, or as otherwise agreed to by the Engineer, provide a leveled office trailer for sole use by the Agency in close proximity to the Project and the Contractor's trailer, if one is present. Obtain approval of the trailer and the proposed trailer location from the Engineer before delivery and installation Provide an office trailer that meets the safety and health requirements of the Oregon Department of Consumer and Business Services, the Oregon Health Division, the State Fire Marshall, and the following requirements:

- Be at least 28 feet in length.
- Be at least 8 feet in width.
- Have a minimum ceiling height of 7 feet.
- At a minimum, be insulated in the walls, ceiling, and floor with R 11 insulation.
- Have at least one 3 foot wide exterior door with locks. Provide the Engineer with two sets of keys to the exterior door locks.
- Have at least two windows, each with an approximate minimum size of 46 by 30 inches, that:
  - Provide adequate lighting to the interior of the trailer.
  - Are equipped with blinds or other window coverings, as approved.
  - Can be opened for ventilation.
- Have a light colored ceiling and light colored interior walls.
- Have a counter across one end that is an approximate minimum of 30 inches wide and 30 to 42 inches high with a durable smooth surface on top.
- Be wired according to the *National Electrical Code* with 120/240 volt, single phase, 60 amp minimum service.
- Have electrical service 24 hours per Day for the duration of the Project. The Engineer may waive the continuous requirement if it is unavailable.
- Have at least four, evenly spaced, 120 volt duplex electrical outlets.
- Have adequate electrical light fixtures to provide good overall interior lighting.
- Have an adequate heater and air conditioning unit to maintain a temperature of 68 to 72 °F.

- Have adequate parking for two Agency vehicles, near the trailer, on an aggregate pad or other surface free of mud and standing water.
- Have a walkway between the Agency vehicle parking area and the trailer, free of mud and standing water.
- Have a minimum of two telephone services, each with local and long distance service at no additional cost to the Agency, a phone number specific to the service, and continuous service at all times during the Project. The Engineer may waive some telephone requirements if they are unavailable.
- Have high -speed internet service 24 hours per Day for the duration of the Project, at no additional cost to the Agency. The Engineer may waive the high speed requirements if it is unavailable.
- Have steps with a handrail at each exterior door.

Provide and maintain a portable toilet for use by the Agency employees.

Similar facilities, such as Agency space in a shared trailer or space in a building close to the Project, may be allowed if approved by the Engineer.

Remove the job office trailer when the Project is complete.

Measurement

00205.80 Measurement - The quantities of Work performed under this Section will be measured according to the following:

(Use the following subsection (a) when a Contractor-Furnished field laboratory is required.)

(a) Contractor-Furnished Field Laboratory - Contractor-furnished field laboratories will be measured on the unit basis.

(Use the following subsection (b) when an Agency-Furnished field laboratory is required.)

(b) Agency-Furnished Field Laboratory - Agency-furnished field laboratory Work described in 00205.11 will be measured on the unit basis for each Agency-furnished field laboratory required to be located at the Contractor's site of operations.

(Use the following subsection (c) when the contractor is required to provide a job inspector trailer for Agency use.]

(c) Job Inspector Trailer - Job inspector trailers will be measured on the unit basis.

(Use the following subsection (d) when the contractor is required to provide a job office trailer for Agency use]

(d) Job Office Trailer - Job office trailers will be measured on the unit basis.

(Use the following subsection (e) when a weighhouse is required.)

(e) Weighhouse - No measurement will be made for providing weighhouses.

Payment

00205.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

(Delete Pay Items from the list that are not included in the Schedule of Items, but do not change the alpha characters next to the Pay Items.)

Pay Item	Unit of Measurement
(a) Contractor-Furnished Field Laboratory	Each
(b) Agency-Furnished Field Laboratory	Each
(c) Job Inspector Trailer	Each
(d) Job Office Trailer	Each

(Use the following paragraph when a Contractor-Furnished field laboratory, job inspector trailer, or job office trailer is required.)

Payment will be payment in full for furnishing facilities for Agency use, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

(Use the following paragraph when an Agency-Furnished field laboratory is required.)

Payment will be payment in full for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

(Use the following paragraph when a weighhouse is required.)

No separate or additional payment will be made for providing weighhouses. Payment will be included in payment made for the appropriate items under which this item is required.

SP00210 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-16-25)**

SECTION 00210 - MOBILIZATION

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00210 of the Standard Specifications.

SP00220 (Special Provisions for the 2024 Book) **(Bidding on or after: 06-01-25 Last updated: 03-03-25)**

SECTION 00220 - ACCOMMODATIONS FOR PUBLIC TRAFFIC

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use the following lead-in paragraph when none of the following subsections are included in the Project.)

Comply with Section 00220 of the Standard Specifications.

(Use the following lead-in paragraph when any of the following subsections are included in the Project.)

Comply with Section 00220 of the Standard Specifications modified as follows:

(Use the following subsection .02(a) when any of the following bullets are included in the Project Special Provisions. Delete "(s)" or parentheses, as applicable.)

00220.02(a) General Requirements - Add the following bullet*(*s*)* to the end of the bullet list:

(Use the following bullet when the pre-construction speed is greater than 35 mph and there is trench excavation or other excavation work to be performed.)

- When performing trench excavation or other excavation across or adjacent to a Traffic Lane on a Roadway having a pre-construction posted speed greater than 35 mph, backfill the excavation, install Surfacing, and open the Roadway to traffic by the end of each work shift. Install a "BUMP" (W8-1-48) sign approximately 100 feet before the backfilled area and a "ROUGH ROAD" (W8-8-48) sign approximately 500 feet ahead of the "BUMP" sign. If this requirement is not met, maintain all necessary lane or shoulder closures and provide additional TCM, including flagging, at no additional cost to the Agency. Do not use temporary steel plating to reopen the Roadway.

(Use the following bullet when flaggers are needed at a single location for 24 or more consecutive hours. Fill in the blanks with appropriate quantities.)

- During stage construction, provide continuous 24-hour flagger operation, with a minimum of ____ flaggers. Occupy the advance flagger stations, as directed.

(Use the following bullet when any of the following apply:

- ***A new temporary or permanent STOP sign is installed at an intersection.***

- ***Modifications are made to lane configurations, lane assignments or Roadway geometry that affects traffic patterns.***
- ***A permanent traffic signal is being installed or modified.***

- Before activating a modified traffic signal, revising lane usage, implementing new roadway geometry, or removing a "STOP" sign, protect traffic by installing "NEW TRAFFIC PATTERN AHEAD" (W23-2) signing according to 00222.40. Keep the signs in place for 30 Calendar Days after completing the modifications.

(Use one of the following two options when excavation creates an abrupt edge. Delete the option that does not apply and Include TM800.)

[Option 1 - Use the following bullet when excavation creates an abrupt edge on a freeway Project that has adequate shoulder width.]

- When an abrupt edge is created by excavation, protect traffic according to the "Excavation Abrupt Edge" and the "Typical Abrupt Edge Delineation" configurations shown on the Standard Drawings. Modify the "Typical Abrupt Edge Delineation" configuration by replacing the tubular markers with temporary plastic drums on 40 foot maximum spacing along the abrupt edge.

[Option 2 - Use the following bullet when option 1 is not used.]

- When an abrupt edge is created by excavation, protect traffic according to the "Excavation Abrupt Edge" and the "Typical Abrupt Edge Delineation" configurations shown on the Standard Drawings.

(Use one of the following three options when paving creates an abrupt edge. Delete the options that do not apply.)

[Option 1 - Use the following bullet when paving operations create an abrupt edge on Multi-Lane, Two-Way Non-Freeways.]

- When paving operations create an abrupt edge, protect traffic by installing a "DO NOT PASS" (R4-1) sign before the Work Area at sign spacing "A" from the TCD Spacing Table" shown on the Standard Drawings. Alternate "ABRUPT EDGE" (CW21-7) signs with appropriate (CW21-8) rider and "DO NOT PASS" (R4-1) signs at 1/2 mile spacings. Install a "BUMP" (W8-1) sign 100 feet prior to the transverse paving edge.

[Option 2 - Use the following bullet when paving operations create an abrupt edge on Two-Lane Freeway Projects. Include Standard Drawing TM861.]

- When paving operations create an abrupt edge, protect traffic by installing signing according to the "Divided Highway or Freeway One Lane Closure" detail shown on the Standard Drawings.

[Option 3 - Use the following bullet when paving operations create an abrupt edge on Multi-Lane Freeway Projects. Include Standard Drawing TM862.]

- When paving operations create an abrupt edge, protect traffic by installing signing according to the "Divided Highway or Freeway Two Lane Closure" detail shown on the Standard Drawings.

(Use the following bullet when longitudinal rumble strips are required. When used, be sure that Standard Drawing TM830 is included in the plans. Include appropriate Pay Items for cold plane pavement removal and surfacing material.)

- Protect traffic by grinding and inlaying existing longitudinal rumble strips before staging traffic across them. Grind and inlay existing rumble strips according to the "Existing Rumble Strip Removal" detail shown on the Standard Drawings. Use Level 2, 1/2 inch ACP, or as directed.

(Use the following bullet any time traffic queues are expected to develop within proximity of a railroad crossing. Include Standard Drawing TM850.)

- When flagging operations may extend traffic queues onto the railroad crossing, protect traffic at the intersection of _____ and _____ by providing an additional flagger. Position additional flagger signs according to the "Advance Flagger for Extended Traffic Queues" configuration shown on the Standard Drawings. Do not allow traffic to stop on the railroad crossing.

(Use the following bullet when pole base excavation covers are required.)

- Protect pedestrians in pole base excavation areas by placing approved covers over all pole base excavations. Place a minimum of two B(II)LR barricades adjacent to and on either side of the excavated area, facing pedestrian traffic, or place covers and barricades as directed.

(Use the following bullet when tow trucks are required.)

- Provide a licensed tow truck service for responding to stranded or disabled vehicles within the Project limits. Provide the tow truck service during the hours designated in 00220.40(h), and as directed by the Engineer.

(Use the following subsection .02(b) if construction staging makes it unsafe for pedestrian or bicycle traffic to travel through the active work area. Delete the language in orange parentheses that does not apply and delete all orange parentheses.)

00220.02(b) Temporary Pedestrian Accessible Route Plan - Add the following bullet to the end of the bullet list:

- For an active Work Area controlled at each end by flaggers and pilot car, provide transportation for pedestrians *(*and bicyclists*)* through the active Work Area according to Section 00223 and Section 00228.

(Use the following subsection .03(b) when public access(es) to a floatable natural waterway have been identified. Originated from HB2835 (2019). Delete "(s)" or parentheses, as applicable.)

00220.03(b) Closures - Add the following bullet*(*s*)* to the end of the bullet list:

- **Floatable Natural Waterway** - A minimum of 35 Calendar Days before restricting or closing the public access site(s), listed below:

(Fill in the blank with the appropriate public access location(s) information and include "as shown" if the access is shown on the Plans. Repeat the bullet as necessary to list all locations. Delete parentheses and the words in the parentheses as needed.)

  - **Public Access Location** - _____ *(*as shown*)*.

(Work Zone Standards Unit and State Specifications Engineer must approve 00220.40(e) on ALL Projects, including Projects where no modifications are made.

Use the following subsection .40(e)(1) <u>only when modifying closed</u> lane restrictions. Fill in the blank with the highway name and insert the route number (e.g. I-5, US97) in the parentheses. When closed lane restrictions apply to a road that is not a highway, delete "Highway (_Route No._)" and insert the street name. Submit a Traffic Analysis Work Request Form to the Region Traffic Office for the closed lane restrictions. It's available on the web at https://www.oregon.gov/odot/Engineering/Pages/Work-Zone.aspx. Copy and paste the paragraph and bullet list as necessary for additional highways or roads. If closures are shown for Roadways under local jurisdiction obtain permits or indicate local coordination is necessary.)

00220.40(e)(1) Closed Lanes - Replace this subsection, except for the subsection number and title, with the following:

Traffic Lanes may be closed on the __*(*<u>Highway Name</u>*)*_____ Highway *(*_<u>Route No.</u>_*)* when allowed, shown, or directed during the following periods of time except as specified in 00220.40(e)(2):

(Delete the language that is not required for this Project. Modify the time and Day's and repeat the bullet as necessary to list all locations. Add additional restrictions such as calendar dates and mile point or segment locations if necessary. Delete the language in orange parentheses that does not apply and delete all orange parentheses.

Example:

- **Daily, Monday through Thursday, between 9:00 a.m. and 4:00 p.m.**
- **Friday, between 9:00 a.m. and 3:00 p.m.**
- **Nightly, Sunday night through Friday morning, between 6:00 p.m. and 7:00 a.m.)**

Single Lane Closures – One Traffic Lane *(*in each direction*)* on the *(*Highway Name*)* *(* Route No. *)* may be closed during the following times:

- Daily, ___*(*Day*)*___ through ___*(*Day*)*___, between ___*(*time*)*___ *(*a.m.*)(*p.m.*)* and ___*(*time*)*___ *(*a.m.*)(*p.m.*)*
- ___*(*Day*)*___ between ___*(*time*)*___ a.m. and ___*(*time*)*___ p.m.
- Nightly, ___*(*Day*)*___ night through ___*(*Day*)*___ morning, between ___*(*time*)*___ p.m. and ___*(*time*)*___ a.m.

Two-lane Closures – Two Traffic Lanes *(*in each direction*)* on the *(*Highway Name*)* *(* Route No. *)* may be closed during the following times:

- Daily, ___*(*Day*)*___ through ___*(*Day*)*___, between ___*(*time*)*___ *(*a.m.*)(*p.m.*)* and ___*(*time*)*___ *(*a.m.*)(*p.m.*)*
- ___*(*Day*)*___ between ___*(*time*)*___ a.m. and ___*(*time*)*___ p.m.
- Nightly, ___*(*Day*)*___ night through ___*(*Day*)*___ morning, between ___*(*time*)*___ p.m. and ___*(*time*)*___ a.m.

(Use the following paragraph and bullets if approved adjacent incidental closures on side streets or ramps are shown or are necessary for the construction of the Project. Designers should verify closure times with Local Agencies and modify the closure times as necessary.)

One Traffic Lane may be closed on all other adjacent Roadways within the Project Site not listed above, when allowed, shown, or directed during the following periods of time except as specified in 00220.40(e)(2):

- Daily, Monday through Thursday, between 9:00 a.m. and 4:00 p.m.
- Friday, between 9:00 a.m. and 3:00 p.m.
- Nightly, Sunday night through Friday morning, between 6:00 p.m. and 7:00 a.m.

(Use the following subsection .40(e)(2)(b) to list special events. List the names, times, and dates of the events.)

00220.40(e)(2)(b) Special Events - Add the following to the end of this subsection:

The following special events will occur during this Project:

- _____

(Use the following lead-in paragraph and subsection .40(f) when blasting, erecting bridge girders, erecting sign structures, or conducting other short duration work that can be done in periods not exceeding 20 minutes. Contact the Region Traffic Analyst for designated peak hours and days when work is allowed. Add applicable

items and delete non-applicable items in the first sentence. Do not change the subsection alpha character (keep it "(f)".)

Add the following subsection:

00220.40(f) Limited Duration Road Closure - The Contractor will be permitted to close all Traffic Lanes for periods not to exceed 20 minutes in duration during blasting or erecting Bridge girders and sign structures over the Traffic Lanes or _____. This Work will only be permitted between the hours of _____ and _____ on the _____ highway.

Succeeding roadway closures will not be allowed until traffic clears from a preceding closure.

(Use the following lead-in paragraph and subsection .40(g) when the Rolling Slowdown Method is used to temporarily close traffic lanes. Use only on full access controlled highways. Obtain the information from the Traffic Control Designer. Include a Pilot Car pay item when using this subsection. Do not change the subsection alpha character (keep it "(g)".)

Add the following subsection:

00220.40(g) Road Closure Using Rolling Slowdown Method - Use a rolling slowdown method (RSM) for slowing traffic and closing all Traffic Lanes on the _____ Highway for periods not to exceed 20 minutes while _____(specify type of work here)_____. This Work will be allowed only between _____ p.m. and _____ a.m.

Provide written notification to the Engineer and all affected emergency services at least 14 Days before using the RSM. Calculate the location where the pilot cars will begin the RSM and the speed at which the pilot cars will travel to accommodate the needed time to complete the Work within 20 minutes.

Perform a RSM as shown on the Supplemental Drawings. Use one pilot car for each lane to be slowed. Use only pilot cars to control the flow of traffic on the freeway. Use one additional pilot car as a chase vehicle to follow the last free-flowing vehicle ahead of the blockade. The pilot cars shall enter the Roadway at the posted speed, form a moving blockade, and slowly reduce traffic speeds to create a gap in traffic to accomplish the work without completely stopping traffic.

Place a PCMS a minimum of 1/2 mile in advance of the start of the rolling slowdown. Place flagger(s), and appropriate devices and signing, at the terminal of all closed on-ramps within the controlled delay area. Establish and utilize radio communications to adjust the speed of the blockade, as necessary. Maintain radio communications at all times among the pilot cars, flaggers, and the construction crew.

Begin Work immediately after the chase vehicle has passed the Work Area. If work is not completed when the pilot cars approach the Work Area, immediately cease all work except what is necessary to clear and reopen the Roadway to traffic. Allow traffic to clear before performing another RSM.

(Use the following lead-in paragraph and subsection .40(h) when tow trucks are required. Do not change the subsection alpha character (keep it "(h)"). Fill in the

blank with the highway name and insert the route number (e.g. I-5, US97) in the parentheses. When closed lane restrictions apply to a road that is not a highway, delete "Highway (_Route No._)" and insert the street name.)

Add the following subsection:

00220.40(h) Tow Truck Operating Hours - During times a lane is closed on the _____ Highway (_Route No._), provide an operated tow truck within the Project limits meeting the requirements of 00223.28. Use the operated tow truck to keep the open traffic lanes of _Route No._ unobstructed and open to traffic. During traffic lane closures on _Route No._, do not remove the operated tow truck from the Project or use the operated tow truck other than to keep the traffic lanes of _Route No._ open, unless otherwise approved or directed.

(Use the following lead-in paragraph and subsection .41 for bridge pavement work or bridge end work.)

Add the following subsection:

00220.41 Bridge Work - Before starting any grading or Pavement removal at Bridge ends or removal of Pavement from Bridge decks, arrange so that all Equipment, labor, and Materials required to complete the Pavement replacement Work and Bridge deck waterproofing Work are on hand or are guaranteed to be delivered. Once grading and Pavement removal begins, vigorously prosecute and complete this Work. Complete paving and membrane waterproofing Work in the shortest possible time.

Temporarily taper or bevel longitudinal and transverse grade changes or drop-offs resulting from grading and Pavement removal and membrane waterproofing Work with asphalt concrete mixture to provide a smooth and safe transition. Construct tapers according to 00620.40.

(Use the following lead-in paragraph and subsection .42 when the road is to be closed to traffic during construction of bridges.)

Add the following subsection:

00220.42 Bridge Site Road Closure - Close the road to traffic at the Bridge site during reconstruction of the Bridge. Do not close the road until all Materials and Equipment are on hand or guaranteed to be delivered so that the Work can be done in an efficient manner with a minimum period of road closure.

The road closure will not be allowed until the area and the detour route are signed according to the TCP and the requirements of Section 00221 and Section 00222.

(Use the following lead-in paragraph and the applicable following four options on all Projects that have a bridge(s) or culvert(s) within the Project limits or Section 00503 is included on the project. For each option identify the bridge(s) or culvert(s) Structure Number where the restriction applies. Delete the options that do not apply. Obtain information from the Bridge Designer.)

Add the following subsection:

00220.45 Load Restrictions on Bridges -

[Option 1 - Use the following subsection .45 for existing bridges with a H20, HS20 or greater load rating.]

For Structure(s) No.(s) _____, limit the combined weight of construction vehicles, Equipment, and daily Material usage to 65,000 pounds for every 1,000 square feet of surface area plus the weight of long term storage of Materials to 25,000 pounds for every 100 square feet of surface area of the Bridge or a total of 200,000 pounds for each span of the Bridge, whichever is less.

The Contractor may request alternate loadings by submitting, 30 Calendar Days before proposed loadings, stamped loading calculations and data according to 00150.35.

[Option 2 - Use the following subsection .45 for existing bridges with a H15- or, HS15 load rating.]

For Structure(s) No.(s) _____, limit the combined weight of construction vehicles, Equipment, and daily Material usage to 45,000 pounds for every 1,000 square feet of surface area plus the weight of long term storage of Materials to 18,000 pounds for every 100 square feet of surface area of the Bridge or a total of 150,000 pounds for each span of the Bridge, whichever is less.

The Contractor may request alternate loadings by submitting, 30 Calendar Days before proposed loadings, stamped loading calculations and data according to 00150.35.

[Option 3 - Use the following subsection .45 for bridges on the Restricted Bridge List or have a condition rating of 4 or less on any part of the bridge.]

Structure(s) No.(s) _____ *(*is*) (*are*)* on the Restricted Bridge List or has a condition rating of 4 or less. If the Contractor plans to park vehicles or Equipment on the Bridge or store Materials on the Bridge submit, 30 Calendar Days before loading, stamped loading calculations and data according to 00150.35.

[Option 4 - Use the following subsection .45 for when Section 00253.46 is included in the Special Provisions.]

For Structure(s) No.(s) _____, limit the combined weight of Equipment, vehicles, and supplies placed in a closed Traffic Lane or Shoulder on the Bridge according to 00253.46.

(Use the following subsection .60(a)(1) on Emulsified Asphalt Chip Seal (00710 or 00715) Projects, provided the following criteria are met:

- ***Compile Field Data Summary***
- ***ADT < 5,000 for roadways with posted speed > 45 mph***
- ***ADT < 10,000 for roadways with posted speed ≤ 45 mph***
- ***Federally funded projects require FHWA approval***

00220.60(a)(1) Contractor Responsibility - Replace this subsection, except for the subsection number and title, with the following:

If this Work is not completed and in place, the Agency may do the Work according to 00220.60(d).

Do the following at no additional cost to the Agency:

- Keep surfaces being used by Public Traffic free of all dirt, mud, gravel, materials, and debris.
- Repair damage to surfaces caused by the Contractor's operations.
- Maintain all detour and stage construction Surfacing as specified or directed.
- During emulsified asphalt chip seal operations, broom the surface being used by bicycles as soon as practicable to keep it free of all dirt, mud, gravel, and other harmful materials. The surface includes bike paths, Bike Lanes, Roadway Shoulders or the outside 6 feet of the Roadway.

(a) Before periods of no active Work that last longer than seven consecutive Days, unless otherwise directed, do the following:

- Provide temporary pedestrian surfaces meeting the requirements of the MUTCD and Section 00228.
- Provide traversable bicycle and pedestrian routes with surfaces free of dirt, mud, gravel, and debris.

(b) Before periods of no active Work that is anticipated to last or lasts longer than 30 consecutive Days, unless otherwise directed, do the following:

- Provide paved Traffic Lanes at least 12 feet wide, with 2-foot wide paved Shoulders for each direction of traffic.
- Do not leave abrupt edges.
- Remove or cover temporary construction signs unless otherwise directed.
- Clean, install, and reinstall all necessary pedestrian, motor vehicle, and bicycle channelization and pavement markings, unless otherwise directed.

SP00221 (Special Provisions for the 2024 Book)

(Bidding on or after: 05-01-25
Last updated: 01-16-25
This Section requires SP00222, SP00223 and SP00226 when mobile barrier is required)

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(NOTE: All Federal-aid Projects, including local government Projects, that are advertised and awarded by ODOT require "Method 'A' Unit Basis" measurement [see Standard Specifications 00221.80].)

SECTION 00221 - COMMON PROVISIONS FOR WORK ZONE TRAFFIC CONTROL

Comply with Section 00221 of the Standard Specifications modified as follows:

00221.06 Traffic Control Plan - Replace this subsection with the following subsection:

00221.06 Traffic Control Plan and Tourist-Oriented Directional and Business Logo Signs –

(a) Traffic Control Plan - Submit one of the following, 5 Calendar Days before the preconstruction conference:

(1) Agency Traffic Control Plan - If the Contractor intends to use the Agency TCP without modification, a written notification indicating that the Agency TCP will be used without modification.

(2) Contractor-Modified Traffic Control Plan - The Contractor may request to use a Contractor-modified Agency TCP, or a TCP developed by the Contractor. Do not use a modified TCP, or a TCP developed by the Contractor, unless approved by the Engineer. Use the Agency TCP unless a modified TCP, or a TCP developed by the Contractor is accepted.

The Engineer is not obligated to consider any modified Agency TCP or a TCP developed by the Contractor. The Agency will not be liable to the Contractor for failure to accept or act upon any request for a modified Agency TCP or a TCP developed by the Contractor.

To conserve time and funds, the Contractor may first submit a written request for a preliminary review by the Engineer. The request should contain a description of the proposal together with a rough estimate of anticipated dollar and time impacts. The Engineer will, within a reasonable time, respond to the Contractor in writing whether or not the request would be considered by the Agency.

If requesting a Contractor-modified Agency TCP, or a TCP developed by the Contractor, at a minimum the request shall meet all requirements of the Contract documents and comply with the Project transportation management plan (TMP). Provide the following information:

- Stamped Working Drawings according to 00150.35 that include the proposed TCP showing all TCM and quantities of TCD.
- A TPAR plan that includes:
  - Details and features used to provide pedestrian accessibility.
  - Pedestrian staging Plans at a scale no smaller than 1 inch = 50 feet.
  - Temporary alternate facilities or detour routes for pedestrian traffic.
- Staging sequences and details for Work affecting vehicular, pedestrian, and bicycle traffic.
- Proposed order and duration of the TCM.
- A detailed temporary striping plan.

If the Contractor's request to use a Contractor-modified Agency TCP, or a TCP developed by the Contractor is approved in whole or in part, acceptance will be made by a Change Order.

The Engineer will establish prices that represent a fair measure of the value of Work to be added, changed, or deleted as a result of any accepted modifications to the Agency TCP or an accepted TCP developed by the Contractor.

Once a TCP has been accepted by the Engineer, any additional modifications must be submitted by the Contractor for Agency review following the procedure described above. The Engineer is not obligated to consider additional modifications to a previously approved TCP.

(b) Tourist-Oriented Directional and Business Logo Signs - Submit one of the following for approval, at least 5 Calendar Days before the preconstruction conference:

(1) No Signs - If there are no tourist-oriented directional (TOD) or business logo signs on the Project, a written notification that no TOD or business logo signs exist within the Project limits or

(2) Signs - Submit one copy of a sketch map of the Project showing all existing TOD and business logo signs and a written narrative describing how these signs will be kept in service and protected throughout all the construction stages. If modifications are necessary, submit updated information to the Engineer for approval at least 21 Calendar Days before the change is needed.

00221.90(b) Temporary Protection and Direction of Traffic – Replace the bullet that begins "Providing, Surfacing, maintain…" with the following bullet:

- Providing, surfacing, maintaining, removing, and restoring the TPAR.

(Use the following paragraph and bullets when Mobile Barrier is required.)

Add the following bullets to the end of the bullet list:

- Mobilization of the mobile barrier to and from the project.
- Moving the mobile barrier from one location of actual use to another or to and from the Contractor's storage site.

(This page is only used to provide a list of standard drawings to the specification writer for listing on the plan title sheet. Remove this page before advance and final.)

NUMBER OF TRAFFIC CONTROL PLAN SHEETS: _____

(Add or delete Standard Drawings, as applicable.)

To be accompanied by Standard Drawings:

RD410 ..... Guardrail Parts (Thrie Beam)
RD420 ..... Energy Absorbing Terminal
RD425 ..... Non Energy-Absorbing Terminal 3' or 4' Flare

RD500 ..... Precast Concrete Barrier Pin and Loop Assembly
RD510 ..... Concrete Barrier Terminal
RD530 ..... Guardrail Transition to Concrete Barrier
RD535 ..... Concrete Barrier (Modified) Around Median Obstacle
RD545 ..... Precast Tall (42") Concrete Barrier
RD560 ..... Cast-in-Place Tall Barrier Transition to Standard Concrete Barrier

BR203 ..... Transition Concrete Bridge Rail to Guardrail

TM204 ..... Flag Board Mounting Details
TM211 ..... Signing Details US & Interstate Route Shields
TM212 ..... Signing Details Oregon Route Signs
TM570 ..... Traffic Delineators
TM575 ..... Traffic Delineator Installation for Freeways
TM576 ..... Traffic Delineator Installation for Non-Freeways
TM670 ..... Wood Post Sign Supports
TM671 ..... 3 Second Gust Wind Speed Map
TM677 ..... Sign Mounts
TM681, TM687, TM688 .. Perforated Steel Square Tube (PSST)Sign Support Installation and Foundation
TM800 ..... Tables, Abrupt Edge and PCMS Details
TM810 ..... Temporary Pavement Markers
TM820 ..... Temporary Barricades
TM821, TM822..... Temporary Sign Supports
TM830 ..... Temporary Concrete Barrier & Rumble Strip Details
TM831, TM832, TM833 .. Temporary Impact Attenuators
TM840 ..... Closure Details
TM841 ..... Intersection Work Zone Details
TM842 ..... Signalized Intersection Details
TM843 ..... Multi-Lane Signalized Intersection Details
TM844 ..... Temporary Pedestrian Access Routing
TM850 ..... 2 Lane, 2-Way Roadways
TM851, TM852, TM853, TM854, TM855 Non-Freeway Multi-Lane Sections
TM860, TM861, TM862 .. Freeway Sections
TM870 ..... Bridge Construction
TM871 ..... Blasting Zones
TM880 ..... Freeway or Divided Highway Speed Reduction (Paving Operations)

SP00222 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-16-25
***Requires SP00221, SP00223 and SP00226 when mobile barrier is required*)**

SECTION 00222 – TEMPORARY TRAFFIC CONTROL SIGNS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use the following lead-in paragraph when none of the following subsections are included in the Project.)

Comply with Section 00222 of the Standard Specifications.

(Use the following lead-in paragraph when any of the following subsections are included in the Project.)

Comply with Section 00222 of the Standard Specifications modified as follows:

(Use the following subsection .15(b) when Freeway or Divided Highway Speed Reduction (Paving Operations) measures (as shown on Standard Drawing TM880) are required.)

00222.15(b) Portable Changeable Message Signs - Add the following paragraph to the end of this subsection:

For PCMS mounted on rollers, use 2-line PCMS from the QPL.

(Use the following subsection .40(e) when adding any of the following temporary signs.)

00222.40(e) Temporary Sign Placement - Add the following to the end of the bullet list:

(Use the following bullet if a flagger is to be used to provide pedestrian guidance through the TPAR during flagging operations.)

- Place a "WAIT FOR FLAGGER" (CR4-23) sign approximately 50 feet in advance of each flagger station, facing incoming pedestrian traffic. Install the sign on a conical marker or other temporary sign support, as shown or as directed. Do not allow the sign installation height or location to block the visibility of the flagger for incoming Public Traffic.

(Use the following two bullets when closing a pedestrian pathway or sidewalk and detouring pedestrians 24 hours per day over an extended period of time. Use either "a pedestrian pathway" or "the sidewalk(s) at ____" and delete the option that is not used. If using "the sidewalk(s) at ____", delete "(s)" or parentheses and fill in the blank with a brief description of the sidewalk location or segment. Delete all orange parentheses.)

- At least ten Calendar Days before closing *(*a pedestrian pathway*) (*the sidewalk*(*s*)* at _____*)*, place a "SIDEWALK CLOSED, Full Time" (CW11-4) sign in advance of each future closure point. Locate the sign so it is legible from the nearest alternate pedestrian pathway facing incoming pedestrian traffic. The sign may be mounted between the panels of a Type II barricade or on a single-post TSS. Do not place the sign or sign support such that it narrows the pedestrian pathway to a width of less than 4 feet.
- Before opening the TPAR, place TPAR signing and other TCM as shown, or as directed. Maintain the "SIDEWALK CLOSED, Full Time" (CW11-4) signs while the TPAR is open to pedestrian traffic.

(Use the following two bullets when closing a pedestrian pathway and detouring pedestrians during specific hours of the day over an extended period of time. Use either "a pedestrian pathway" or "the sidewalk(s) at ____" and delete the option that is not used. If using "the sidewalk(s) at ____", delete "(s)" or parentheses and fill in the blank with a brief description of the sidewalk location or segment. Delete all orange parentheses.)

- At least ten Calendar Days before closing *(*a pedestrian pathway*) (*the sidewalk*(*s*)* at _____*)*, place a "SIDEWALK CLOSED, Daily" (CW11-5) sign in advance of each future closure point. Locate the sign so it is legible from the nearest alternate pedestrian pathway facing incoming pedestrian traffic. The sign may be mounted between the panels of a Type II barricade, or on a single-post TSS. Do not place the sign or sign support such that it narrows the pedestrian pathway to a width of less than 4 feet.
- Before opening the TPAR, place TPAR signing and other TCM as shown, or as directed. Maintain the "SIDEWALK CLOSED, Daily" (CW11-5) signs while the TPAR is open to pedestrian traffic.

(Use the following three bullets when maintaining pedestrian access through the work area using the existing roadway shoulder or other portion of the Roadway.)

- At least ten Calendar Days prior to the start of work, place a "SIDEWALK OPEN" (CW11-3) sign in advance of each end of the Work Area. Locate the sign so it is legible from the nearest alternate pedestrian pathway facing incoming pedestrian traffic. The sign may be mounted between the panels of a Type II barricade, or on a single-post TSS. Do not place the sign or support such that it narrows the pedestrian pathway to a width less than 4 feet.

- Before starting work, place pedestrian-specific TCM as shown in the TCP, or as directed. Maintain "SIDEWALK OPEN" (CW11-3) signs while work is affecting the pedestrian pathway.

- Place a “PEDESTRIANS ON ROADWAY” (CW11-2) sign at the beginning of each end of the Work Area, facing incoming traffic as shown, or as directed.

(Use the following bullet when construction trucks will be leaving or entering the Roadway.)

- Install a 54-inch "TRUCKS LEAVING HIGHWAY XXXX FT" sign in advance of each entrance point to the Work Area at sign spacing “A” from the “TCD Spacing Table” shown on the Standard Drawings. Install a 54-inch "TRUCKS ENTERING HIGHWAY XXXX FT" sign in advance of each exit point from the Work Area at sign spacing “A” from the “TCD Spacing Table” shown on the Standard Drawings.

(Use the following bullet when requested by the Local Agency or when the Project is located on ODOT right-of-way and meets one or more of the following criteria:

- ***Project is on a freeway.***
- ***An engineer's estimate of $5 million or more.***
- ***Project duration longer than one year.***
- ***Other high-profile projects as determined by the ODOT Region or Local Agency.***

The Project Identification sign is normally only applied to the project mainline. Limit placement of additional signs on crossroads to other State highways or roads with ADT > 5,000. Fill in the blank.)

- Install a "PROJECT IDENTIFICATION" (CG20-8) sign with an "ODOT" logo rider on the _____ Highway. Place the sign according to sign spacing "A" from the "TCD Spacing Table" shown on the Standard Drawings or as modified by the Supplemental Drawings, in advance of the "ROAD WORK AHEAD" sign at each end of the Project, facing incoming traffic. The Engineer will determine the sign legend.

(Use the following two bullets when using initial "ROAD WORK AHEAD" and "END ROAD WORK" signing. Fill in the blank.)

- Install "ROAD WORK AHEAD" (W20-1-48) signs with a 36 by 24-inch "FINES DOUBLE" (R2-6aP) rider on the _____ Highway, according to the "TCD Spacing Table" shown on the Standard Drawings or as modified by the Plans except do not install the "FINES DOUBLE" rider on concrete barrier mounted signs.

- Install beyond each end of the Project, facing outgoing traffic, an "END ROAD WORK" (CG20-2A-24) sign a distance of (A ÷ 2) according to the "TCD Spacing Table" shown on the Standard Drawings or as modified by the Plans.

(Use the following bullet when it is necessary to reduce the overall roadway width between positive barriers [for example: concrete barrier, guardrail, and falsework] to less than 19 feet.)

- When the horizontal clearance for the Roadway is less than 19 feet, install horizontal clearance (CW21-12-48) signs, identifying the narrowest width of the Roadway. Locate these horizontal clearance signs as shown or as directed.

(Use the following bullet when it is necessary to reduce the overall vertical clearance to less than 15 feet 6 inches.)

- When the vertical clearance is less than 15 feet 6 inches, install low clearance (W12-2-48) and (OW12-2-36) signs. The clearance shown on the signs shall be 4 inches less than the shortest height of the opening. Locate these low clearance signs as shown or as directed.

(Use the following bullet on 2-mile-long or longer freeway projects when sign flag boards are required to enhance the visibility of the signs.)

- On freeway post mounted signs, install two sign flag boards, as shown on the Standard Drawings, above the "ROAD WORK NEXT XX MILES" (CG20-1) signs and the initial "ROAD (or BRIDGE) WORK AHEAD" (W20-1-48) signs.

(Use the following three bullets on Projects that include a detour route.)

- Install two sign flag boards, as shown on the Standard Drawings, above the following detour and road closed advance warning signs, where applicable:
  - "DETOUR AHEAD", "DETOUR XXXX FT", "DETOUR X/X MILE" (W20-2) signs.
  - "ROAD CLOSED AHEAD", "ROAD CLOSED XXXX FT", "ROAD CLOSED X/X MILE" (W20-3) signs.

(Use the following bullet when the Project will result in ground disturbance within Portland city limits. Fill in the first blank with the highway name and the second blank with the phone number. Check with the Environmental Coordinator.)

- Install an “EROSION CONCERNS” sign on the _____ Highway, at each end of the Project. Place the sign according to sign spacing "A" from the "TCD Spacing Table" shown on the Standard Drawings, or as shown in the Plans. Install the sign so that the sign face is rotated 90 degrees to approaching traffic and faces the Roadway centerline. Replace “(XXX) XXX-XXXX” shown on the sign design detail with “(___) ___-___”.

(Use the following Emulsified Asphalt Surface Treatment language on Emulsified Asphalt Surface Treatment projects, provided the following criteria are met:

- ***Compile Field Data Summary***
- ***ADT < 5,000 for roadways with posted speed > 45 mph***
- ***ADT < 10,000 for roadways with posted speed ≤ 45 mph***
- ***Federally funded projects require FHWA approval***

Fill in all blanks.)

[Begin Emulsified Asphalt Surface Treatment language]

- During Emulsified Asphalt surface treatment operations, protect traffic by installing signing according to the "LOOSE GRAVEL IN ROADWAY SIGNING" detail shown on the Standard Drawings. The maximum length of loose Sand or Gravel shall not exceed 5 miles.
- When the existing centerline striping on the _____ Highway is obliterated, do the following:
  - Place a "NO CENTER LINE" (W8-12) sign with a 24 by 18-inch "NEXT __ MILES" (W7-3aP) plaque, approximately 2,500 feet in advance of each end of the Project.
  - Place "NO CENTER LINE" (W8-12) signs on approximately 2 mile intervals for each direction of traffic.

(In the next two bullets, use the language in the orange parentheses and delete the parentheses when the Project meets the following criteria:

- ***ADT < 1,000;***
- ***Project Length is > 10 miles; and***
- ***Engineering judgment determines the additional "DO NOT PASS" signs are needed.***

Delete the language in the orange parentheses, and the language within them, when the above criteria are not met.)

- Place a "DO NOT PASS" (R4-1) sign on each side of the Roadway at the beginning of each existing no passing zone*(*, as necessary, except, if the length between two consecutive existing no passing zones is 1,300 feet or less, combine the no passing zones and place one "DO NOT PASS" sign on the right side of the Roadway at the beginning of each subsequent no passing zone within the combined zones*)*.
- Place a "PASS WITH CARE" (R4-2) sign on the right side of the Roadway at the end of each existing no passing zone. If the length between no passing zones is 1,300 feet or less, do not install the "PASS WITH CARE" signs*(* within the combined zones. Instead, place one "PASS WITH CARE" sign on the right side of the Roadway at the end of the last no passing zone in a combined zone*)*. Cover the "PASS WITH CARE" signs with a non-transparent weather and wind proof cover each time they are within an active Work Area controlled by flaggers with or without pilot cars, or when directed.

- Install two sign flag boards above "ROAD WORK NEXT __ MILES", "ROAD WORK AHEAD", and "NO CENTER LINE" (with "NEXT __ MILES" rider) post mounted signs.

[End Emulsified Asphalt Surface Treatment language]

(Use the bullet when flaggers are needed at a single location for 24 or more consecutive hours.)

- Install a "24 HR FLAGGING AHEAD" (CW20-9) sign in each direction approximately 250 feet prior to the "BE PREPARED TO STOP" sign. Remove the temporary signs when 24-hour flagging is no longer required, or as directed.

(Use the following bullet when a new temporary or permanent STOP sign is installed at an intersection. Insert with the appropriate distances based on the pre-construction posted speed and according to the TCD Spacing Table in the ODOT Standard Drawings. If the STOP and "Stop Ahead" signs are permanent, the permanent "Stop Ahead" sign may be used in lieu of a temporary sign.)

- Install the following warning signs for each new "STOP" sign installed in the intersection. Install a "Stop Ahead" (W3-1) symbol sign approximately ____ feet in advance of the "STOP" sign. Install a "NEW TRAFFIC PATTERN AHEAD" (W23-2) sign approximately ____ feet in advance of the "Stop Ahead" sign. Keep the "NEW TRAFFIC PATTERN AHEAD" signs in place 30 Calendar Days after installing the "STOP" sign.

(Use the following bullets and bullets for the installation of, or modification to, a permanent traffic signal. Delete the language in orange parentheses that does not apply and delete all orange parentheses. Insert the appropriate distances based on the pre-construction posted speed and according to the TCD Spacing Table in the ODOT Standard Drawings. If a yellow permanent "Signal Ahead" sign is included in the plans, this sign may be installed as the needed temporary sign. Be sure additional language or notes are on the plans to make this intention clear.)

- For each leg of the intersection affected by *(*the new*)(*changes to the*)* traffic signal, install the following warning signs:

  - A "Signal Ahead" (W3-3) symbol sign approximately ____ feet in advance of the intersection, shown on the Standard Drawings or as modified by the Plans.
  - A "NEW TRAFFIC PATTERN AHEAD" (W23-2) sign approximately ____ feet in advance of the "Signal Ahead" sign. Keep the "NEW TRAFFIC PATTERN AHEAD" signs in place 30 Calendar Days after installing the "Signal Ahead" sign.

(Use the following two bullets when modifications are made to lane configurations, lane assignments, or roadway geometry that affects traffic patterns. Insert the appropriate distance based on the pre-construction posted speed and according to the TCD Spacing Table in the ODOT Standard Drawings. Delete the language in orange parentheses that does not apply and delete all orange parentheses. Copy and paste bullets, as necessary, to address all affected directions or legs of the intersection(s).)

- Install a "NEW TRAFFIC PATTERN AHEAD" (W23-2) sign approximately ____ feet in advance of ____*(location details)*_____, facing *(*northbound*)(*southbound*)(*eastbound*)(*westbound*)* incoming traffic.

(Fill in the blank describing the appropriate modification.)

- Keep the "NEW TRAFFIC PATTERN AHEAD" signs in place 30 Calendar Days after installing the _____.

(Use the following bullet when parking restrictions are necessary.)

- Install an 18 by 24-inch "NO PARKING" (R8-3a) sign in every block where on-street parking is prohibited, facing incoming traffic.

(Use the following ACP language on Level 1, 2, or 3 ACP Overlay (00744 or 00745) Preservation projects, provided the following criteria are met:

- ***Obtain Region Technical Center Manager's approval***
- ***Perform and/or document enough traffic analysis to confirm traffic volumes meet the following criteria:***
- ***ADT < 5,000 for roadways with posted speed > 45 mph***
- ***ADT < 10,000 for roadways with posted speed ≤ 45 mph***

Fill in all blanks.)

[Begin ACP Language]

- When the existing centerline striping on the _____ Highway is obliterated, do the following:

  - Place a "NO CENTER LINE" (W8-12) sign with a 24 by 18-inch "NEXT __ MILES" (W7-3aP) rider, approximately 2,500 feet in advance of each end of the Project.
  - Place "NO CENTER LINE" (W8-12) signs on approximately 2 mile intervals for each direction of traffic.
  - Place a "DO NOT PASS" (R4-1) sign on each side of the Roadway at the beginning of each existing no passing zone.
  - Place a "PASS WITH CARE" (R4-2) sign on the right side of the Roadway at the end of each existing no passing zone. If the length between no passing zones is 1,300 feet or less, do not install the "PASS WITH CARE" signs. Cover the "PASS WITH CARE" signs with a non-transparent weather and wind proof cover each time they are within an active Work Area controlled by flaggers with or without pilot cars, or when directed.

- Install two sign flag boards above "ROAD WORK NEXT __ MILES", "ROAD WORK AHEAD", and "NO CENTER LINE" (with "NEXT __ MILES" rider) post mounted signs.

[End ACP Language]

(Use the following bullet for Projects on freeways.)

- For paving operations on freeways, place “ABRUPT EDGE” (CW21-9) and “ROAD WORK XX MPH” (CW20-1a) signs as shown. Use an “XX” value equal to 15 mph below the current posted regulatory speed. If a speed is posted for a temporary regulatory speed reduction, that speed is the current posted regulatory speed.

(Use the following bullet(s) for Projects on non-freeways.)

- For paving operations on non-freeways, place “ABRUPT EDGE” (CW21-9) and “ROAD WORK XX MPH” (CW20-1a) signs as shown. Use an “XX” value equal to 10 mph below the current posted regulatory speed. If a speed is posted for a temporary regulatory speed reduction, that speed is the current posted regulatory speed.
- For all other moving operations that do not create an abrupt edge adjacent to traffic, omit the “ABRUPT EDGE” signs.

(Use the following bullet on all projects 2 miles or greater in length when work is not intermittent. For non-freeway projects, use "a", delete "(s)", and delete the last sentence. For freeway projects, use "two", "s", and the last sentence. Delete the language in orange parentheses that does not apply and delete all orange parentheses. Fill in the blanks.)

- Install *(*a*)(*two*)* 60 by 24-inch "ROAD WORK NEXT ____ MILES" (CG20-1) sign*(*s*)* on the _____ Highway, in advance of the "ROAD WORK AHEAD" (W20-1) sign according to sign spacing "A" from the "TCD Spacing Table" shown on the Standard Drawings. *(*Install the median sign approximately 30 feet ahead of the shoulder sign.*)*

(Use the following bullet on all projects 2 miles or greater in length when work is intermittent. For non-freeway projects, use "a" and delete "(s)". For freeway projects, use "two" and delete parentheses around "(s)". Delete the language in orange parentheses that does not apply and delete all orange parentheses. Fill in the blanks.)

- Install *(*a*)(*two*)* 60 by 36-inch "INTERMITTENT ROAD WORK NEXT ___ MILES" (CG20-13) sign*(*s*)* on the _____ Highway, in advance of the "ROAD WORK AHEAD" (W20-1) sign on each end of the Project according to sign spacing "A" from the "TCD Spacing Table" shown on the Standard Drawings.

(Use the following bullet on urban projects where there is an existing bike lane, designated "Bicycle Route", or when a significant volume of bicycle traffic can be expected and is required to use the travel lane.)

- When construction requires bicycles to use the Traffic Lanes, install a "Bicycle ON ROADWAY" (CW11-1) symbol sign on 1/2 mile spacing through the affected area. Keep the signs in place until completion of the Shoulder or bikeway final surface.

(Use the following bullet on bridge projects where there is an existing bike lane on the bridge, designated "Bicycle Route", or when a significant volume of bicycle traffic can be expected and is required to use the travel lane.)

- When construction requires bicycles to use the Traffic Lanes on Structures, install a "Bicycle ON ROADWAY" (CW11-1) symbol sign according to "Sign Spacing A", from the "TRAFFIC CONTROL DEVICES SPACING TABLE" shown on the Standard Drawings, in advance of the Structure or the initial point where the bicycle facility is impacted by construction. Keep the signs in place until completion of the bikeway final surface.

(Use the following bullet on rural preservation projects where there is a designated "Bicycle Route" or a significant volume of bicyclists can be expected.)

- Install a "Bicycle ON ROADWAY" (CW11-1) symbol sign and a 24 by 18-inch "NEXT XX MILES" (W7-3aP) plaque according to "Sign Spacing A", from the "TRAFFIC CONTROL DEVICES SPACING TABLE" shown on the Standard Drawings, after the "ROAD WORK AHEAD" sign. Install a "Bicycle ON ROADWAY" symbol sign on 1 mile spacing through the affected area. Keep the signs in place until completion of the Shoulder or bikeway final surface.

(Use the following bullet for all Freeway and high-speed, multi-lane projects.)

- Install a 72 by 24-inch "CONSTRUCTION VEHICLE DO NOT FOLLOW" (CW23-14) sign on rigid substrate on the back of all Material or Equipment delivery vehicles.

(Use the following bullet when Speed Reduction measures (as shown on Standard Drawing TM880) are required and when all of the following criteria are met:

- ***Moving operations (e.g. paving) on Interstate freeways or multilane divided highways.***
- ***Pre-construction posted speed ≥ 45mph.***
- ***Workers will be adjacent to live traffic, but not working behind concrete barrier, guardrail or other positive protection barrier system.***
- ***Work will be performed at night or work will be performed during the daytime on freeways or other high-speed facilities with ADT > 10,000.***

NOTE: A "Work Zone Speed Reduction Request" MUST be completed and submitted when using this bullet. See ODOT Traffic Control Plans Unit website for details and the Request Form.)

- During __*(brief work description)*__ operations on the _____ Highway, install temporary signing and other required TCD as shown. Install temporary speed zone signing according to and as shown in the Temporary Speed Zone Order.

(Use the following Pilot Car Language on projects that include a pilot car in the bid schedule. See ODOT Sign Policy & Guidelines, Chapter 6 for application details and sign designs.)

[Begin Pilot Car Language]

(Use one of the following three options, as instructed below. Delete the option that does not apply.)

[Option 1 - Use the following bullet when plan sheets are being developed for the Traffic Control Plan and qualifying side road locations can be shown.]

- During pilot car operations, install a 15 by 24-inch "WAIT FOR PILOT CAR" (CR4-20) sign at stop-controlled side roads and accesses intersecting the Highway within the limits of the pilot car operation, as shown.

[Option 2 - Use the following bullets when plan sheets are not being developed for the Traffic Control Plan. Fill in the blanks with the location of each "WAIT FOR PILOT CAR" sign.]

- During pilot car operations, install a 15 by 24-inch "WAIT FOR PILOT CAR" (CR4-20) sign at stop-controlled side roads and accesses intersecting the Highway within the limits of the pilot car operation at the following locations:
  - ____(Side road name, STA XXX+XX)_____
  - ____(Side road name, STA XXX+XX)_____
  - ____(Side road name, STA XXX+XX)_____
- During pilot car operations, install a 12 by 12-inch "WAIT FOR PILOT CAR" (CR4-20a) sign in private residential driveways accessing the Highway within the limits of the pilot car operation. Place the sign in the driveway facing the private residence and so the sign face is not visible to Public Traffic on the Highway. Do not use the sign for apartments, condominiums or business accesses.
- At accesses, side roads, or residential driveways where "WAIT FOR PILOT CAR" (CR4-20) signs are installed, do not allow traffic to be stopped or held for longer than 20 minutes.
- In addition to the signs, public notification (e.g. flyers, door hangers) may be used to inform the residents that may be affected by the pilot car operations and the "WAIT FOR PILOT CAR" signs.

[End Option 2]

[Option 3 - Use the following bullets when plan sheets are not being developed for the Traffic Control Plan and it is not practical to list all locations of each "WAIT FOR PILOT CAR" sign.]

- During pilot car operations, install a 15 by 24-inch "WAIT FOR PILOT CAR" (CR4-20) sign at stop-controlled side roads and accesses intersecting the Highway within the limits of the pilot car operation.
- During pilot car operations, install a 12 by 12-inch "WAIT FOR PILOT CAR" (CR4-20a) sign in private residential driveways accessing the Highway within the limits of the pilot car operation. Place the sign in the driveway facing the private residence and so the sign face is not visible to Public Traffic on the Highway. Do not use the sign for apartments, condominiums or business accesses.
- At accesses, side roads, or residential driveways where "WAIT FOR PILOT CAR" (CR4-20) signs are installed, do not allow traffic to be stopped or held for longer than 20 minutes.
- In addition to the signs, public notification (e.g. flyers, door hangers) may be used to inform the residents that may be affected by the pilot car operations and the "WAIT FOR PILOT CAR" signs.

[End Option 3]

(Use the following bullet only on preservation projects that include a pilot car in the bid schedule.)

- For each location of the "WAIT FOR PILOT CAR" sign, closely monitor for traffic compliance, operation, and safety at least once per hour during pilot car operations. If operational issues are observed, or if notified of operational issues, at stop-controlled accesses or side roads utilizing the "WAIT FOR PILOT CAR" (CR4-20) sign, remove the sign and replace it with a flagger.

[End Pilot Car Language]

(Use the following lead-in paragraph and subsections .40(f) when a "Support Letter" for a temporary speed zone order has been received from the State Traffic Engineer. The Approval Letter allows you to include sign quantities and determine recommended locations in the Plans only (show signs as a blank sign with dashed outline, no legend). Do not draft specific temporary regulatory speed zone signs into the Plans. Exact signs and locations will be discussed during Pre-Construction Meeting when the actual Order is issued to the contractor.)

Add the following subsection:

00222.40(f) Temporary Speed Zone Reduction - Install a temporary regulatory speed zone, as directed. Use regulatory signs for all required temporary speed zone signage.

(Use the following lead-in paragraph and subsections .40(g) when temporary pedestrian and bicycle route maps are required. Fill in the blank with the number of route maps.)

Add the following subsection:

00222.40(g) Temporary Pedestrian and Bicycle Route Maps - Furnish and mount commercially available brochure boxes to temporary sign posts, as shown. Fill each brochure box with a minimum of ___ temporary pedestrian and bicycle route maps. Furnish 8 ½" x 11" paper copies of the Agency-supplied route maps. Monitor brochure boxes daily and replenish copies as needed to maintain a minimum of ___ copies in each brochure box. Monitor the condition of the brochure boxes and repair or replace, as directed.

(Use the following subsection .45(b) when longitudinal paving operations are included in the scope of work and Freeway or Divided Highway Speed Reduction (Paving Operations) measures (as shown on Standard Drawing TM880) are required OR when a PCMS is used in advance of a roadway closure or ramp closure. Delete "(s)" or parentheses as applicable.)

00222.45(b) Portable Changeable Message Signs - Add the following bullet*(*s*)* to the end of this subsection:

(Use the following two bullets when longitudinal paving operations are included in the scope of work and Freeway or Divided Highway Speed Reduction (Paving Operations) measures (as shown on Standard Drawing TM880) are required.)

- During paving operations, provide one 2-line PCMS on the finish roller. Display the following messages on the PCMS:

Panel 1	**Panel 2**
WORKERS IN ROAD	SLOW TO XX MPH

- During paving operations, provide one 2-line PCMS on the intermediate roller. Display the following messages on the PCMS:

Panel 1	**Panel 2**
SLOW FOR WORKERS	WORKERS IN ROAD

(Use the following bullet when a PCMS is used in advance of a roadway closure or ramp closure. Fill in the blank with the name of the road that will be closed. Modify the PCMS messages to reflect the name of the road that will be closed and the time frame for the closure.)

- At least seven Calendar Days before the _____ closure, place one or more PCMS displaying the following message as shown, or as directed:

Panel 1	**Panel 2**
(Name/# of highway) (Location) CLOSURE	CLOSURE (Time Frame) (Time Frame)

(Use the following subsection .45(c) when including a Radar Speed Trailer on the project, or when Speed Reduction measures (as shown on Standard Drawing TM880) are required.)

[Begin Radar Speed Trailer Language]

00222.45(c) Radar Speed Trailers - Add the following bullet(s) to the end of the bullet list:

(Use the following bullet only when Speed Reduction Measures are required.)

- Place a radar speed trailer approximately 1000 feet beyond the end of the lane closure taper, as shown on Standard Drawing TM880

[Use only one of the following two speed limit sign bullets]

(Use the following bullet on projects using TM880 when a Speed Zone Order will be included in the TCP or Speed Reduction Measures are required.)

- Install a 30 by 36-inch “SPEED LIMIT XX” (R2-1) sign below the trailer display panel. The “XX” value is the legal speed limit as determined by a Speed Zone Order signed by the State Traffic Engineer.

(Use the following bullet for projects when using the Radar Speed Trailer with advisory speed signing. Fill in the blank with a value for "XX" between 10 and 20 mph below the regulatory posted speed for the Work Zone. Contact the Traffic Control Plans designer.)

- Install a 36 by 36-inch "ROAD WORK XX MPH" (CW20-1a) sign below the trailer display panel. Use a value of _____ for "XX" on the sign

[End Option]

(Use the following bullets when Speed Reduction Measures are required and the moving operations involve longitudinal paving on a freeway.)

- When the paving machine reaches a location that is approximately 1/2 mile beyond the start of the work shift paving operations, place a second radar speed trailer as shown on Standard Drawing TM880. Install a 36 by 36-inch "ROAD WORK XX MPH" (CW20-1a) sign above or below the trailer display panel. Use a "XX" value equal to 15 mph below the current posted regulatory speed. If a speed is posted for a temporary regulatory speed reduction, that speed is the current posted regulatory speed.

(Use the following bullet when Speed Reduction Measures are required and the moving operations involve longitudinal paving on non-freeways.)

- When the paving machine reaches a location that is approximately 1/2 mile beyond the start of the work shift paving operations, place a second radar speed trailer as shown on Standard Drawing TM880. Install a 36 by 36-inch "ROAD WORK XX MPH" (CW20-1a) sign above or below the trailer display panel. Use a "XX" value equal to 10 mph below the current posted regulatory speed. If a speed is posted for a temporary regulatory speed reduction, that speed is the current posted regulatory speed.

(When Speed Reduction Measures are required, a temporary speed zone reduction is to be included in the TCP, and the project includes moving, non-paving-related activities, (e.g. barrier replacement, cable barrier installation, guardrail work, etc.) include one of the following bullets, as applicable.)

[For projects on freeways, use the following bullet.]

- When the Work Area for the *(brief work description from subsection .02(a))* extends approximately 1/2 mile beyond the start of the operations, place a second radar speed trailer as shown on Standard Drawing TM880. Install a 36 by 36-inch "ROAD WORK XX MPH" (CW20-1a) sign above or below the trailer display panel. Use a "XX" value equal to 15 mph below the current posted regulatory speed. If a speed is posted for a temporary regulatory speed reduction, that speed is the current posted regulatory speed.

[For projects on non-freeways, use the following bullet.]

- When the Work Area for the *(brief work description from subsection .02(a))* extends approximately 1/2 mile beyond the start of the operations, place a second radar speed trailer as shown on Standard Drawing TM880. Install a 36 by 36-inch "ROAD WORK XX MPH" (CW20-1a) sign above or below the trailer display panel. Use a "XX" value equal to 10 mph below the current posted regulatory speed. If a speed is posted for a temporary regulatory speed reduction, that speed is the current posted regulatory speed.

(Use the following subsection .46 when including Mobile Barrier on the project.)

Add the following:

00222.46 Mobile Barrier - During mobile barrier operations, provide one 2-line PCMS on the rear of the mobile barrier trailer according to the mobile barrier manufacturer's recommendations. Display the following messages on the PCMS:

Panel 1	**Panel 2**
SLOW FOR	WORKERS
WORKERS	IN ROAD

[End Radar Speed Trailer Language]

(Use the following subsection .80(a) for all Freeway and high-speed, multi-lane projects or when a "Support Letter" for a temporary speed zone order has been received from the State Traffic Engineer.)

00222.80(a) Area Basis -

(Use the following two paragraphs for all Freeway and high-speed, multi-lane projects.)

Add the following sentence to the end of the paragraph that begins "Temporary signs will…":

No measurement of quantities will be made for "CONSTRUCTION VEHICLE DO NOT FOLLOW" (CW23-14) signs.

(Use the following two paragraphs when a "Support Letter" for a temporary speed zone order has been received from the State Traffic Engineer. Estimate the worst case square feet of temporary signage required for your application and include this quantity in the pay item, "Temporary Signs".)

Add the following sentence to the end of this subsection:

Temporary signing quantities include temporary regulatory speed zone signage.

(Use the following subsection .80(b) when Speed Reduction Measures are required.)

00222.80(b) Unit Basis - Add the following sentence to the end of this subsection:

PCMS installed on finish rollers or intermediate rollers will be measured on the unit basis.

(Use the following subsection .90 when a project contains multiple Work Zones, multi-lane projects, speed reduction measures or when pay item (e) is included in the pay item list.)

00222.90 Payment -

(Use the following paragraphs to limit the number of signs paid for when a project contains multiple Work Zones. Delete "(s)" or parentheses as applicable.)

Add the following to the end of this subsection:

Payment will be made for not more than _____ set*(*s*)* of Work Area signs. All additional sets of Work Area signs will be at no additional cost to the Agency.

(Use the following paragraph for all Freeway and high-speed, multi-lane projects. If the paragraph above is used delete the sentence in parentheses)

*(*Add the following to the end of this subsection:*)*

No separate or additional payment will be made for furnishing, installing, and maintaining 72 by 24-inch "CONSTRUCTION VEHICLE DO NOT FOLLOW" (CW23-14) signs. Payment will be included in 00221.90(b).

(Use the following pay item (e) when Speed Reduction Measures are required.)

Add the following Pay Item*(*s*)* to the Pay Item list:

(e) Portable Changeable Message Signs, Roller Mounted ..... Each

(Use the following three paragraphs when pay item (e) is included in the pay item list.)

Add the following to the end of the paragraph that begins "Items (b) and (c)…":

Payment for PCMS mounted on rollers will be made separately under payment for the item "Portable Changeable Message Signs, Roller Mounted".

Item (e) includes furnishing, mounting, operating, moving, maintaining, and removing the portable changeable message signs. No additional payment will be made for the roller or roller operator.

(Use the following two paragraphs when mobile barrier is required.)

Add the following paragraph after the paragraph that begins "Items (b) and (c) includes…":

Item (c) includes portable changeable messages signs attached to mobile barrier trailer(s).

(Use the following subsections .90 when temporary pedestrian and bicycle route maps are required.)

00222.90 Payment - Add the following paragraph after the paragraph that begins “No separate or additional payment…”:

No separate or additional payment will be made for furnishing, mounting, maintaining and replenishing brochure boxes with route maps.

SP00223 (Special Provisions for the 2024 Book)

**(Bidding on or after: 05-01-25
Last updated: 01-16-25
This Section requires SP00221, SP00222 and SP00226 when mobile barrier is required)**

SECTION 00223 - WORK ZONE TRAFFIC CONTROL LABOR AND VEHICLES

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use the following lead-in paragraph when none of the following subsections are included in the Project.)

Comply with Section 00223 of the Standard Specifications.

(Use the following lead-in paragraph when any of the following subsections are included in the Project.)

Comply with Section 00223 of the Standard Specifications modified as follows:

(Use the following subsection .26 if construction staging plan does not provide a safe, adequate space for bicycle traffic to ride through the active Work Area and a PTV is included in the Contract Schedule of Items.)

00223.26 Pedestrian Transport Vehicle - Add the following bullet:

- A commercially available bicycle rack capable of securely carrying a minimum of three bicycles. Do not loosely load bicycles onto the pedestrian transport vehicle.

(Use the following lead in sentence and subsection .28 when a tow truck is required. Use only one of the following three options when tow trucks are required. Delete the options that do not apply.)

Add the following subsection:

[Option 1 - Use the following subsection for urban, non-freeway projects to include a Class "A" tow truck.]

00223.28 Tow Truck - Use a Class "A" tow truck conforming to the following:

- 10,000 pounds minimum manufacturers gross vehicle weight rating.
- Single rear axle with dual wheels.
- 6 Ton boom rating - dual or single boom.
- Minimum 100 feet of 3/8" cable.

- In good operating condition.
- Equipped with roof or post mounted rotating red or amber lights or strobe lights that are visible for 360°.
- Equipped with all Equipment and materials necessary to perform the required operation.
- Portable, self-contained two-way radio and repeaters, as required, with a range suitable for communication throughout each Work Zone, unless otherwise directed.

[End Option 1]

[Option 2 - Use the following subsection for rural non-freeway Projects, or freeway Projects to include a Class "B" tow truck.]

00223.28 Tow Truck - Use a Class "B" tow truck conforming to the following:

- 17,000 pounds minimum manufacturers gross vehicle weight rating.
- 10 Ton boom rating - dual or single boom.
- Single or tandem rear axle with dual wheels.
- Minimum 150 feet of 7/16" cable.
- In good operating condition.
- Equipped with roof or post mounted rotating red or amber lights or strobe lights that are visible for 360°.
- Equipped with all Equipment and materials necessary to perform the required operation.
- Portable, self-contained two-way radio and repeaters, as required, with a range suitable for communication throughout each Work Zone, unless otherwise directed.

[End Option 2]

[Option 3 - Use the following subsection for freeways reduced to one lane and where trucks will be on a grade over 3%.]

00223.28 Tow Truck - Use a Class "C" tow truck conforming to the following:

- 27,500 pounds minimum manufacturers gross vehicle weight rating.
- 25 Ton boom rating - dual or single boom.
- Minimum 150 feet of 5/8" cable.
- Tandem rear axle truck chassis (3 axle truck).
- Air brakes and capable of supplying air to towed vehicles.
- In good operating condition.
- Equipped with roof or post mounted rotating red or amber lights or strobe lights that are visible for 360°.
- Equipped with all Equipment and materials necessary to perform the required operation.

- Portable, self-contained two-way radio and repeaters, as required, with a range suitable for communication throughout each Work Zone, unless otherwise directed.

[End Option 3]

(Use the following subsection .31(a) when Speed Reduction measures (as shown on Standard Drawing TM880) are required.

Note: Include sufficient TCS Pay Item quantities to provide at least one construction work shift for each shift where the work described in subsection 00220.40(e), will be active. A TCS is required for the speed reduction measure work.)

00223.31(a) Traffic Control Supervisor - Add the following paragraph and bullets to the end of this subsection:

The TCS shall be available and on site at all times that a temporary regulatory speed zone reduction is in effect for the *(brief work description)* operations. In addition to the duties listed in this subsection, the TCS duties also include the following:

- Inspect temporary TCD used during *(brief work description)* operations immediately following initial placement or installation of TCD. Inspect TCD at least one additional time during each construction work shift.
- When law enforcement will be providing enforcement services for the Project, coordinate and communicate work locations and schedules with the Engineer and law enforcement agency before and during each work shift.

(Use the following subsection .31(a) when Mobile Barrier operations are required.)

00223.31(a) Traffic Control Supervisor - Add the following paragraph to the end of this subsection:

The TCS shall have completed at least 4 hours of training on use and operation of the mobile barrier within the past 2 years. Obtain training from the mobile barrier manufacturer or mobile barrier vendor listed in 00226.16.

(Use the following lead-in paragraph and subsection .34 when a BPA safety watcher is required in 00150.50(f).)

Add the following subsection:

00223.34 Bonneville Power Administration (BPA) Safety Watcher - When Work requires the presence of a BPA-certified safety watcher (see 00150.50(f)), furnish personnel possessing a current, valid certification from BPA. For coordination of BPA Safety Watchers, contact _____ at BPA, _____. The duties of the BPA safety watcher are to watch work that could impact the BPA facilities. Equip each safety watcher according to 00223.21, except that "STOP/SLOW" paddles are not required.

BPA-certified safety watchers can be obtained through the following providers:

Furnish BPA safety watchers when and where required according to 00150.50(f). BPA safety watchers are responsible for limiting the movement of personnel or equipment to prevent electrical contact accidents.

BPA safety watchers have the authority to halt the operation whenever any unsafe act or condition is imminent.

(Insert current BPA providers, as supplied by BPA below. List the firm's name, the firms contact name, and On-Site contact number. Delete the example.)

Example:
Safety Watcher, Inc. - Benny Beaver, 503-555-0100 (office) or 503-555-0111 (cell)

-
-
-

(Use the following lead-in paragraph and subsection .35 when Railroad flaggers are required on UPRR Railroad. Check with the State Utility and Railroad Liaison.)

Add the following subsection:

00223.35 Railroad Flagger Services - Work near or within Railroad property requires Railroad flagger services provided by a third party flagging vendor. Provide Railroad flagger services from Union Pacific's approved third party list of Railroad flagger vendors. A list of Union Pacific's approved Railroad flagger vendors can be found at the following website:

https://www.up.com/real_estate/third-party-flagging/index.htm

(Use the following lead-in paragraph and subsection .38 when tow trucks are required.)

Add the following subsection:

00223.38 Tow Truck Operator - Provide a tow truck operator who has:

- The mental and physical ability to safely operate the tow truck
- The training and experience required to operate the tow truck
- ANSI Performance Class 2 or 3 upper body garment to be worn while on the Roadway retrieving a disabled vehicle
- Valid Commercial Driver License

(Use the following subsection .40 when flaggers are required to escort bicycles and pedestrians through the work area.)

00223.40 Flaggers - Add the following paragraph to the end of this subsection:

During *(Insert a brief description of construction work. Refer to specific phases/stages of traffic control if applicable)*, provide a dedicated flagger station and flagger to escort bicycle and pedestrian traffic through the affected Work Area.

(Use the following lead-in paragraph and subsection .48 when tow trucks are required.)

Add the following subsection:

00223.48 Tow Truck - Position the tow truck in a location as directed. Use the tow truck to remove disabled vehicles from the Traffic Lanes as needed. Tow the vehicles to the nearest off-ramp and out of traffic, or to an alternate site previously arranged with the Engineer. Return the tow truck immediately to the assigned station.

(Use the following subsection .80(a)(1) when Speed Reduction Measures are required.)

00223.80(a)(1) Traffic Control Supervisor - Add the following bullet to the end of the bullet list:

- Freeway or Divided Highway Speed Reduction (Paving Operations) according to TM880 is active.

(Use the following lead-in paragraph and subsection .80(a)(4) when third party Railroad flaggers are required on UPRR Railroad. Check with the State Utility and Railroad Liaison.)

Add the following subsection:

00223.80(a)(4) Railroad Flagger Services - The quantity of Railroad flagger services will be measured on the unit basis. A unit will be considered to be up to 12 consecutive hours in a Day. When more than one flagger is required due to Work at separate locations, each Railroad flagger will be measured as a separate unit. A maximum of two units per Day will be allowed at each separate location or operation where Railroad flagger services are required by the Railroad unless otherwise approved or directed.

(Use the following lead-in paragraph and subsection .80(b)(5) when BPA is listed as Utility with anticipated conflicts in 00150.50(g) and when requested by the Utility Coordinator.)

Add the following subsection:

00223.80(b)(5) BPA Safety Watchers - BPA Safety Watchers will be measured on the time basis, of the actual number of hours BPA Safety Watchers are staffed as required according to 00150.50(f).

(Use the following lead-in paragraph and subsection .80(b)(6) when tow trucks are required.)

Add the following subsection:

00223.80(b)(6) Tow Truck - The quantity for tow trucks will be measured on the time basis, of the actual number of hours tow trucks are operated.

(Use the following subsection .90 when adding Pay Items or when a bicycle rack is included in the PTV. Delete Pay Items not included in the Schedule of Items. Do not change the alpha characters next to the Pay Items. Delete paragraphs not required.)

00223.90 Payment - Add the following Pay Item(s) to the Pay Items list:

(g) Railroad Flagger Services.....Each
(h) BPA Safety Watcher .....Hour
(i) Tow Truck .....Hour

(Use the following two paragraphs if a bicycle rack is included in the PTV)

Replace the paragraph that begins "Item (e) includes…" with the following paragraph:

Item (e) includes fully operated pedestrian transport vehicles, two-way radios, the "CONSTRUCTION VEHICLE DO NOT FOLLOW" sign, the ADA-pedestrian loading/unloading mechanism, the bicycle rack, and the rotating amber lights or strobe lights mounted on each vehicle.

(Use the following two paragraphs when third party Railroad flaggers are required on UPRR Railroad. Check with the State Utility and Railroad Liaison.)

Payment for item (g) performed beyond the quantity shown in the Contract Schedule of Items will be made at the Contract unit price if the Engineer determines that the Contract unit price does not exceed the value of the Work as determined according to Section 00197. If the Engineer determines that the Contract unit price exceeds the value of the Work, payment for the Additional Work will be made according to 00195.20.

Payment for item (g) includes all Equipment, labor, and Incidentals necessary to complete the Work as specified.

(Use the following two paragraphs when a BPA Safety Watcher is required.)

Payment for item (h) performed beyond the quantity shown in the Contract Schedule of items will be made at the Contract unit price if the Engineer determines that the Contract unit price does not exceed the value of the work as determined according to Section 00197. If the Engineer determines that the Contract unit price exceeds the value of the Work, payment for the Additional Work will be made according to 00195.20.

Item (h) includes all necessary Equipment, special apparel, and two-way radios.

(Use the following two paragraphs when a Tow Truck is included in the Project.)

Payment for item (i) performed beyond the quantity shown in the Contract Schedule of items will be made at the Contract unit price if the Engineer determines that the Contract unit price does not exceed the value of the Work as determined according to Section 00197. If the

Engineer determines that the Contract unit price exceeds the value of the Work, payment for the Additional Work will be made according to 00195.20.

Item (i) includes fully operated tow truck, two-way radios, and warning lights on each vehicle.

SP00224 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-16-25)**

SECTION 00224 - TEMPORARY TRAFFIC CHANNELIZING DEVICES

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00224 of the Standard Specifications.

SP00225 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-16-25)**

SECTION 00225 - TEMPORARY PAVEMENT MARKINGS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00225 of the Standard Specifications modified as follows:

(Use the following subsection .40 on Emulsified Asphalt Chip Seal (Section 00710 or 00715) projects, or on Level 1, 2, or 3 ACP Overlay (00744 or 00745) Preservation projects)

00225.40 Temporary Pavement Markers - Replace the paragraph that begins "Unless otherwise shown..." and the three bullets with the following paragraphs and bullets:

(Use one of the following two options as instructed. Delete the option that does not apply.)

[Option 1 - Use the following paragraphs and bullet lists on Emulsified Asphalt Chip Seal (00710 or 00715) projects, provided the following criteria are met:

- ***Compile Field Data Summary***

- ***ADT < 5,000 for roadways with posted speed > 45 mph***
- ***ADT < 10,000 for roadways with posted speed ≤ 45 mph***
- ***Federally funded projects require FHWA approval]***

Install temporary flexible oiling pavement markers for temporary centerline marking as follows:

- Place and maintain one temporary flexible oiling pavement marker on 40-foot spacing in tangent and curve sections except as below.
- Place and maintain one temporary flexible oiling pavement marker on 20-foot spacing in curved alignment sections identified by a speed rider displaying less than the posted speed and channelization areas.

Establish alignment for placing the temporary flexible oiling pavement markers as follows:

- Control markers at:
  - 200-foot intervals on tangents
  - 50-foot intervals on curves
  - 40-foot intervals on curves with speed rider
- Use string line or other appropriate means to maintain proper alignment of the markers. Adjust placement to avoid straddling a longitudinal joint, while maintaining a suitable alignment of markers.
- Remove and replace misaligned markers at no additional cost to the Agency.

[End Option 1]

[Option 2 - Use the following paragraphs and bullet lists on Level 1, 2, or 3 ACP Overlay (00744 or 00745) Preservation projects, provided the following criteria are met:

- ***Perform and/or document enough traffic analysis to confirm traffic volumes meet the following criteria:***
- ***ADT < 5,000 for roadways with posted speed > 45 mph***
- ***ADT < 10,000 for roadways with posted speed ≤ 45 mph]***

Install temporary flexible overlay pavement markers for temporary centerline marking as follows:

- Place and maintain one temporary flexible overlay pavement marker on 40 foot spacing in tangent and curve sections except as below.
- Place and maintain one temporary flexible overlay pavement marker on 20 foot spacing in curved alignment sections identified by a speed rider displaying less than the posted speed and channelization areas.

Establish alignment for placing the temporary flexible overlay pavement markers as follows:

- Control markers at:
  - 200 foot intervals on tangents
  - 50 foot intervals on curves

  - 40 foot intervals on curves with speed rider
- Use string line or other appropriate means to maintain proper alignment of the markers. Adjust placement to avoid straddling a longitudinal joint, while maintaining a suitable alignment of markers.
- Remove and replace misaligned markers at no additional cost to the Agency.

[End Option 2]

(Use the following subsection .40(b) on Emulsified Asphalt Chip Seal (00710 or 00715) projects, provided the following criteria are met:

- ***Compile Field Data Summary***
- ***ADT < 5,000 for roadways with posted speed > 45 mph***
- ***ADT < 10,000 for roadways with posted speed ≤ 45 mph***
- ***Federally funded projects require FHWA approval)***

00225.40(b) Flexible Oiling Pavement Markers - Add the following paragraphs to the end of this subsection:

Remove the markers on underlying surfaces before placing the next full Lift of paving that would obliterate the marker.

Use flexible oiling pavement markers with double covers, as directed, when a surface treatment requires two oil applications for a single Pavement Lift. Remove the marker covers, as directed, before reopening the Roadway to traffic.

00225.90 Payment – Replace the paragraph that begins "Item (a)…" with the following paragraph:

Item (a) includes installation and removal of temporary pavement markers having either one or two reflective faces.

Replace the paragraph that begins "Item (b)…" with the following paragraph:

Item (b) includes installation of flexible temporary pavement markers and removal of flexible temporary pavement markers and temporary flexible pavement marker covers.

Add the following paragraph after the paragraph that begins "Item (b)…":

Items (c) and (e) include removal of the temporary tape.

SP00226 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-16-25
***This Section requires SP00221, SP00222 and SP00223 when mobile barrier is required.*)**

SECTION 00226 - TEMPORARY ROADSIDE BARRIERS AND IMPACT ATTENUATORS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use the following lead-in paragraph when none of the following subsections are included in the Project.)

Comply with Section 00226 of the Standard Specifications.

(Use the following lead-in paragraph when any of the following subsections are included in the Project.)

Comply with Section 00226 of the Standard Specifications modified as follows:

(Use the following subsection .11(a) when concrete barrier terminals or barrier transitions are required. Delete "(s)" or the parentheses as applicable.)

00226.11(a)(2) Temporary Concrete Barrier - Add the following paragraph*(*s*)* after the bullet list:

(Use the following paragraph when cast-in-place concrete barrier transition to Bridge rail or cast-in-place tall concrete barrier transition to Bridge rail are required. Include Standard Drawing RD520 or RD550 (tall concrete barrier). Delete "(tall)" or the parentheses as applicable.)

Provide cast-in-place *(*tall*)* concrete barrier transitions as shown on the Standard Drawings.

(Use the following paragraph when cast-in-place tall concrete barrier transition to standard concrete barrier is required. Include Standard Drawing RD560.)

Provide cast-in-place tall concrete barrier transitions to standard concrete barrier as shown on the Standard Drawings.

(Use the following lead-in paragraph and subsection .15 when Temporary Glare Screens are required. Do not use Temporary Glare Screens on permanent Bridge concrete barrier or rail without Technical Resource approval.)

Add the following subsection:

00226.15 Temporary Glare Screens - Use temporary glare screens from the QPL or Conditional Use List.

(Use the following lead-in paragraph and subsection .16 when mobile barrier is required.)

Add the following subsection:

00226.16 Mobile Barrier - Use a mobile barrier from the QPL or conditional use list.

(Use the following lead-in paragraph and subsection .24 when mobile barrier is required.)

Add the following subsection:

00226.24 Mobile Barrier - Use a semi-tractor truck according to the mobile barrier manufacturer's recommendations to haul and operate the mobile barrier and conforming to the following:

- Equipped to perform with all mobile barrier functions and operations.
- Equipped with portable, self-contained two-way radios with a range suitable for communications throughout each Work Zone, unless otherwise directed.

Equip mobile barrier with a temporary impact attenuator, truck mounted.

(Use the following lead-in paragraph and subsection .30 when mobile barrier is required.)

Add the following subsection:

00226.30 Mobile Barrier - Provide semi-tractor truck operator to haul and operate the mobile barrier and a mobile barrier technician qualified to set up and operate the features of the mobile barrier. Each person has to have completed at least 4 hours of training on use and operation of the mobile barrier within the past 2 years. Obtain training from the mobile barrier manufacturer or mobile barrier vendor listed in 00226.16. Provide a mobile barrier technician on-site while the mobile barrier is in use.

(Use the following subsection .43. On Freeway and Multi-lane highway projects with lane and shoulder closures and no positive protection, provide one Impact Attenuator – Truck Mounted in the quantity of items for each shoulder or each lane closed, not to exceed the maximum number of shoulder or lane closures that will occur at any given time.)

00226.43 Truck Mounted Attenuator – Replace the paragraph that begins "When workers or construction Equipment…" with the following paragraphs:

Use a truck mounted impact attenuator (TMA), when workers or construction Equipment are exposed to Public Traffic on a Freeway or Multi-Lane Highway and are not located behind a rigid barrier system, as follows unless otherwise shown or directed:

- Each Shoulder or each lane closure where the preconstruction posted speed is 45 mph or more.

(Use the following bullet when TMA is required on multi-lane highways where the preconstruction posted speed is 40 mph or less. TMA is required on multi-lane highway projects with lane closures and no positive protection and intermediate duration work is located in the traffic lane. Provide one Impact Attenuator – Truck

Mounted in the quantity of items for each lane closed, not to exceed the maximum number of lane closures that will occur at any given time.)

- Each lane closure, when (_brief description of Work_) on the _____ Highway is occurring in the Traffic Lane, where the preconstruction posted speed is 40 mph or less.

Place the TMA in advance of the exposed workers or Equipment, located as shown in the TMA Support Vehicle Placement tables, or as directed. If the TMA is not available when the Work requires its use, postpone the Work until the TMA is available.

(Use the following lead-in paragraph and subsection .45 when Temporary Glare Screens are required.)

Add the following subsection:

00226.45 Temporary Glare Screens - Install temporary glare screens as shown or directed, and according to the following:

- Install according to manufacturer's instructions.
- Install vertical and true to line.
- Install using a QPL approved pipe from the same manufacturer as the temporary glare screen.
- Install on concrete barrier by drilling holes as shown and placing the manufacturer's QPL approved pipe in the holes. Submit for approval, in writing, any other proposed method of installation.
- Immediately repair any temporary barrier segment that is damaged during temporary glare screen installation at no additional cost to the Agency.
- Do not install on permanent Bridge rail or permanent Bridge barrier.
- Temporary glare screens that are installed in a continuous run shall be from the same manufacturer and of like appearance throughout the entire installation.

For any segment of concrete barrier that will be used for permanent installations, fill holes and repair according to Section 00820 after removing the temporary glare screen.

(Use the following lead-in paragraph and subsection .46 when mobile barrier is required.)

Add the following subsection:

00226.46 Mobile Barrier - Configure, place, and move the mobile barrier according to the manufacturer's recommendations, according to the TCP, or as directed.

(Use the following lead-in paragraph and subsection .65 when Temporary Glare Screens are required.)

Add the following subsection:

00226.65 Temporary Glare Screens - Immediately replace or repair any temporary glare screen segment that is damaged. Repair to the Engineer's satisfaction or replace with an

undamaged segment. If the temporary glare screen segment is damaged by the Contractor, repair or replace at no additional cost to the Agency.

(Use the following lead-in paragraph and subsection .66 when mobile barrier is required.)

Add the following subsection:

00226.66 Mobile Barrier - Maintain the mobile barrier according to the manufacturer's recommendations. Perform routine maintenance of the mobile barrier at no additional cost to the Agency. Be responsible for all necessary service and maintenance of the mobile barrier while in use.

(Use the following subsection .80(b)(2) when temporary barrier is required.)

00226.80(b)(2) Temporary Barrier - Add the following to the end this subsection:

The quantities will be limited to those shown in Table 00226-1. The estimated quantity of Temporary Barrier is:

TABLE 00226-1

Stage/Phase	Location (STA to STA)	Temporary Barrier (foot)	Temporary Barrier, Minimum Deflection (foot)
	Total Quantity		

(Use the following subsection .80(b)(4) when minimum deflection Bridge temporary barrier is required.)

00226.80(b)(4) Minimum Deflection Bridge Temporary Barrier - Add the following to the end this subsection:

The quantities will be limited to those shown in Table 00226-2. The estimated quantity of Minimum Deflection Bridge Temporary Barrier is:

TABLE 00226-2

Stage/Phase	Location (STA to STA)	Minimum Deflection Bridge Temporary Barrier (foot)
	Total Quantity	

(Use the following lead-in paragraph and subsection .80(b)(5) when Temporary Glare Screens are required.)

Add the following subsection:

00226.80(b)(5) Temporary Glare Screens - Temporary glare screens and moving temporary glare screens will be measured on the length basis, determined by measuring from end to end of the devices, as installed on temporary barrier along the line and grade of each separate run.

(Use the following lead-in paragraph and subsection .80(c) when mobile barrier is required.)

Add the following subsection:

00226.80(c) Time Basis - The quantity of mobile barrier will be measured on the time basis, of the number of Days the mobile barrier is in actual use on the Project according to the approved Traffic Control Plan. One mobile barrier will be allowed per Day unless otherwise approved.

(Use the following subsection .90 when Pay Item (g) Temporary Impact Attenuator, mobile barrier or temporary glare screens are required. Delete Pay Items that do not apply, and delete "(s)" or parentheses as applicable.)

00226.90 Payment - Add the following Pay Item*(*s*)* to the end of the Pay Item list:

(o) Mobile Barrier.....Day
(p) Temporary Glare Screens..... Foot
(q) Moving Temporary Glare Screens ..... Foot

(Use the following paragraph when Pay Item (g) Temporary Impact Attenuator is required.)

Add the following paragraphs after the paragraph that begins "In items (g) and (h)…":

Payment for items (g) performed beyond the quantity shown in the Contract Schedule of Items will be made at the Contract unit price if the Engineer determines that the Contract unit price does not exceed the value of the Work as determined according to Section 00197. If the Engineer determines that the Contract unit price exceeds the value of the Work, payment for the Additional Work will be made according to 00195.20.

(Use the following three paragraphs when mobile barrier is required.)

Add the following paragraphs after the paragraph that begins "Item (l) includes…":

Item (o) will be payment in full for all labor, training, Equipment, and Materials required for mobile barrier, regardless of length and number of moves. Item (s) will also be payment in full for operation of the semi-tractor truck in conjunction with the mobile barrier, training, service, maintenance, and all Incidentals necessary to complete the Work as specified.

Items (h) and (j) include truck mounted temporary impact attenuators attached to mobile barrier(s).

(Use the following three paragraphs when temporary glare screens are required.)

Add the following paragraphs after the paragraph that begins "Item (l) includes…":

Item (p) includes furnishing, installing, and removing temporary glare screens.

Item (q) includes moving the temporary glare screens from one location of actual use to another location of actual use on the temporary barrier.

SP00227 (Special Provisions for the 2024 Book) **(Bidding on or after: 06-01-25 Last updated: 02-27-25)**

SECTION 00227 - TEMPORARY TRAFFIC SIGNALS AND ILLUMINATION

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use the following lead-in paragraph when none of the following subsections are included in the project.)

Comply with Section 00227 of the Standard Specifications.

(Use the following lead-in paragraph when any of the following subsections are included in the project.)

Comply with Section 00227 of the Standard Specifications modified as follows:

(Use the following subsection .13 when using portable traffic signals with extra features. Contact the Region Traffic Engineer for extra features that are required. Delete the extra features that are not required.)

00227.13 Portable Traffic Signals - Replace this subsection, except for the subsection number and title, with the following:

Use new or like-new portable traffic signals from the QPL with the following features:

(Use the following subsection (a) when live remote video monitoring of traffic and Work Zone is required.)

(a) Live Remote Video Monitoring - Provide live remote video monitoring of traffic conditions and the work zone. Provide the Engineer remote access to the video monitoring through the internet.

(Use the following subsection (b) when wait time display changeable message sign is required.)

(b) Wait Time Display Changeable Message Sign - Provide wait time display consisting of a changeable message sign (CMS) which is interconnected with the temporary traffic signal. The display provides the motorist with wait time information.

(1) Physical Requirements - Include the following minimum requirements on the CMS:

- Minimum dimensions of 18” H x 28” W
- 1-2 line message capability
- Line 1: characters of 10-1/4” H x 5- 3/4” W (4 per line)
- Line 2: characters of 7” H x 4” W (6 per line)
- Up to 2 screens per message

(2) Operational Requirements - Power the CMS by the power plant used to power the temporary traffic signal. Provide a wait time display (WTD) with the capability to be remotely programmed in real-time and function in traffic signal applications of fixed time operation and actuated operation as follows:

- When the signal displays a green indication, the CMS may display a “SLOW”/ “WORK ZONE” message. When the signal display changes to a yellow indication, display a “WAIT TIME”/ “UP TO # MIN” message on the CMS. When the signal display changes to a red indication, display “WAIT TIME”/ “UP TO # MIN” on the CMS where # is the remaining red time in minutes and changed with 1 minute intervals, holding on 1 minute until the signal display changes back to a green indication.

(Use the following (c) when bicycle clearance time extension pushbutton is required.)

(c) Bicycle Clearance Time Extension Pushbutton - When the pushbutton is pressed, it will call the signal system to provide an extended all-red clearance interval immediately following the green cycle termination. This call will be made whether the signal system is in an active green cycle for the direction of the call, or if it is a state of red. Pushbutton can be hardwired or be a wireless connection to the signal system.

(Use the following subsection .40 only when vehicular traffic will be passing beneath falsework.)

00227.40 Temporary Illumination - Add the following paragraph to the end of this subsection:

Install 25-watt, steady-burning, amber lights on 36-inch spacing around the perimeter of the falsework as shown, facing oncoming traffic.

00227.43(a) Location and Setup - Delete the sentence that begins “Do not install portable…”

(Use the following subsection .43(d) only when portable traffic signals are required to have a wait time display changeable message sign feature.)

Add the following subsection:

00227.43(d) Wait Time Display Changeable Message Signs - Locate the changeable message at a height between 7'-0'' and 18'-6" as measured from the bottom of the CMS to the road surface. Do not locate the CMS over the travelled Roadway. Provide 12 inch minimum separation between the edge of the CMS and the edge of nearest traffic signal head.

For fixed time operation, calculate the initial # for the "WAIT TIME"/ "UP TO # MIN" display by adding the programmed red clearance and yellow times of all signals plus the green time of the opposing signals.

For actuated operation, calculate the initial # for the "WAIT TIME"/ "UP TO # MIN" display by adding the programmed red clearance and the yellow times of all signals plus the maximum green of the opposing signals.

(Add the following subsection .43(e) only when portable traffic signals are required to have a bicycle clearance time extension pushbutton feature)

Add the following subsection:

00227.43(e) Bicycle Clearance Time Extension Pushbutton - Locate the pushbutton installation with sign at the stop bar. Post mount the wired pushbutton. Wireless pushbutton may be post mounted or mounted on a TSS. Furnish a mount with a maximum 24 inch reach to pushbutton. If needed, provide manufacturer supplied pushbutton extension to achieve 24 inch reach.

00227.80 Measurement – Replace this subsection, except for the subsection number and title, with the following:

No measurement of quantities will be made for temporary traffic signals, portable traffic signals, temporary flashing beacons, or temporary illumination.

The Work Zone presence lighting system will be measured on the unit basis, for each complete system, where initially installed on the Project. A complete system consists of the number of flagger station lighting from the "PRESENCE LIGHTING SPACING TABLE" as shown.

(Use the following subsection .90 when temporary traffic signal, portable traffic signal, temporary flashing beacons, or temporary falsework illumination are required.)

00227.90 Payment –

(Delete Pay Item(s) from the list that are not included in the Schedule of Items, but do not change the alpha characters next to the Pay Items.)

Replace the Pay Items (b), (c), (e) with the following Pay Item(s):

Pay Item	**Unit of Measurement**
(b) Temporary Traffic Signal, _____	Lump Sum

(c) Portable Traffic Signal, _____Lump Sum(e) Temporary Flashing Beacons, _____ Lump Sum

Add the following paragraph to the end of this subsection:

Item (a) includes all Materials called for by the Plans and Specifications, and providing electrical power and furnishing, placing, maintaining, adjusting, and removing temporary falsework illumination.

(Use the following when temporary traffic signals are required.)

In item (b), the location(s) will be inserted in the blank.

(Use the following when portable traffic signals are required.)

In item (c), the location(s) will be inserted in the blank.

(Use the following when temporary flashing beacons are required.)

In item (e), the location(s) will be inserted in the blank.

SP00228 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-16-25)**

SECTION 00228 - TEMPORARY PEDESTRIAN AND BICYCLIST ROUTING

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00228 of the Standard Specifications.

SP00229 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-16-25)**

(Use this Specification when a Smart Work Zone System is needed for one or more of the following functions:

- ***Construction Access System: Warns approaching traffic of construction vehicles entering live traffic from the work area (e.g., material hauling, blasting, large earthwork operations, etc.).***
- ***Queue Detection System: Detects traffic queues in work zones, and warns drivers of changed traffic flow conditions in advance of the work area.***
- ***Traffic Information System: Provides real-time advance notification of traffic flow conditions, estimated delay, travel times, and alternate route options.***

NOTE: A Project specific plan sheet is required for all Smart Work Zones showing the generic layout of the system. The Smart Work Zone System Vendor will design the final system. ODOT needs to provide adequate quantities for components in the system. Read all instructional notes carefully.)

SECTION 00229 - SMART WORK ZONE SYSTEMS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00229, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00229.00 Scope - This Work consists of designing, furnishing, installing, moving, operating, maintaining, inspecting, and removing temporary Smart Work Zone Systems.

00229.01 Definitions -

Smart Work Zone System - An automated system composed of a combination of traffic sensors, PCMS, video cameras, communication Equipment, and other hardware and software components. The Smart Work Zone System is used to provide real time work zone information, warnings, and guidance to Public Traffic.

Construction Access System - A smart Work Zone System used for warning Public Traffic of construction vehicles entering into the traffic stream from the construction site.

Queue Detection System - A smart Work Zone System used to warn traffic approaching the Work Zone of slowed or stopped traffic well in advance of the Project Site.

Traffic Information System - A smart Work Zone System used to inform approaching road users about traffic flow conditions, estimated delays, alternate routes, and other information.

Materials

00229.10 Smart Work Zone System - Furnish a Smart Work Zone System from the QPL.

00229.11 Work Zone Traffic Control Devices - Furnish portable changeable message signs (PCMS), barricades and drums according to Section 00222, Section 00224 and the QPL.

(Use the following subsection .12 when a Construction Access System is needed. If construction access locations are known, it is recommended that the placement of the system be shown in the plans.)

00229.12 Construction Access System - Provide and install a Construction Access System for each construction access where Material or Equipment delivery vehicles merge into the live traffic stream. Include the following system components:

- 1 portable traffic sensor
- 1 PCMS
- A dedicated website or other wireless remote system for monitoring Smart Work Zone System functions and remotely managing PCMS messages.

Use the Construction Access System components to provide the following:

- Real-time messages on a dedicated PCMS that warns approaching traffic of construction vehicles entering the Roadway.
- Detection of construction vehicles passing by the traffic sensor to activate the system and trigger the PCMS display.

Locate the traffic sensor so that the PCMS message is displayed no more than 5 seconds after the construction vehicle reaches the access point. Time can be changed as directed by the Engineer.

Traffic sensors shall count each construction vehicle passing the sensor, record the date and time each vehicle passes the sensor, and save the construction vehicle count data.

(Use the following subsection .13 when a Queue Detection System is needed. Show in the plans the "Approximate Limits" for the system. The system should cover from the work site to a (worst-case) point upstream where queuing may develop.

NOTES:

- ***For estimating purposes, the nearest PCMS to the work area may be 3 - 4 miles, or more, from the point where queuing first develops (e.g., due to a lane closure). Work Zone Traffic Analysis should be used to determine the extent of potential queuing.***
- ***Locate traffic sensors approximately 1/2 mile to 1 mile apart.***
- ***Include a minimum of 4 sensors and 1 PCMS in the blanks for each affected direction.***
- ***Include additional sensors and PCMS for queues anticipated to exceed 4 miles. Tighter sensor spacing increases system accuracy for queue detection.***

Assume the first traffic sensor is placed at the beginning of the work area, lane closure, or other point where delays or impacts to speed are likely to begin.

Fill in the blanks with the required number of portable traffic sensors and PCMS.)

00229.13 Queue Detection System - Provide and install a Queue Detection System at each location shown. Include the following system components:

- ___ portable traffic sensors
- ___ PCMS
- A dedicated website or other wireless remote system for monitoring Smart Work Zone System functions, and to remotely manage PCMS messages

(Use the following bullet if a PTZ camera is needed.)

- 1 Pan-Tilt-Zoom (PTZ) camera

Use the Queue Detection System components to provide the following:

- Real-time messages on the PCMS, warning approaching traffic of slowed or stopped traffic ahead, including dynamic advisory speeds based on measured speeds of traffic before and within the work area.
- Traffic sensors to continually monitor and measure traffic speeds before and within the work area.

(Use the following bullet if the PTZ camera bullet was used above.)

- Remote accessibility to live PTZ camera feeds and images being captured by the PTZ camera and, if applicable, remote operation capabilities for the PTZ camera.

Furnish traffic sensors that trigger the system PCMS to display appropriate messages.

Furnish traffic sensors that count vehicles, record speeds for all vehicles passing the sensor, and record the date and time each vehicle passes the sensor.

(Use the following subsection .14 when a Traffic Information System is needed. Show in the plans the "Approximate Limits" for the system.

NOTES:

- ***System traffic sensors are normally set up before (up to 1 mile) and within the work area. PCMS are placed in advance of major junctions, and on intersecting major routes.***
- ***Include a minimum of 4 traffic sensors and 1 PCMS in the blanks for each affected direction. Assume 1/2 - 1 mile spacing for traffic sensors. Tighter sensor spacing increases system accuracy.***
- ***For Projects with long work areas (> 1.5 miles), add 1 additional traffic sensor for every additional 1/2 mile in work area length. Consider 1 additional PCMS for every mile of additional work area length.***
- ***System may extend several miles in advance of the work area, including onto intersecting roads, depending on accesses and interchanges within project limits, available alternate routes, etc.***
- ***Consider including additional traffic sensors (one per 1/2 mile) and additional PCMS in advance of the work zone and on intersecting highways for the following conditions:***
- ***Long projects (> 5 miles) with multiple inputs to mainline – particularly major routes or State highways***

- ***Complex projects with a duration of more than one year***
- ***Projects with the potential for frequent extended queues or excess delays***

Fill in the blanks with the required number of portable traffic sensors and PCMS.)

00229.14 Traffic Information System - Provide and install a Traffic Information System at each location shown. Include the following system components:

- ___ portable traffic sensors
- ___ PCMS
- A dedicated website or other wireless remote system for monitoring Smart Work Zone System functions, and to remotely manage PCMS messages.

(Use the following bullet if a PTZ camera is needed.)

- 1 Pan-Tilt-Zoom (PTZ) camera

Use the Traffic Information System components to provide the following:

- Real-time advance warning messages on PCMS, displaying dynamic work zone travel time information, alternate route options, detour route information, or other project-specific information, as shown or as directed.
- Traffic sensors to continually monitor and measure traffic speeds before and within the work area.

(Include the following bullet if the PTZ camera bullet was used above.)

- Remote accessibility to live PTZ camera feeds and images being captured by the PTZ camera; and, if applicable, remote operation capabilities for the PTZ camera.

Furnish traffic sensors that trigger the system PCMS to display appropriate messages.

Furnish traffic sensors that count vehicles, record speeds for all vehicles passing the sensor, and record the date and time each vehicle passes the sensor.

Labor

00229.30 Smart Work Zone System Technician - Provide a Smart Work Zone System technician skilled in the operation of all system Equipment and software. The system technician shall be locally available while the system is in use, and able to respond to system issues in person within 4 hours of notification. The system technician may be an employee of the Smart Work Zone System vendor. Duties of the system technician include the following:

- Perform all testing and debugging of the system before system turn-on.
- Service and maintain all system components during operation of the system.
- Move portable components, as needed or directed.
- Respond to emergency situations, as needed.
- Maintain all system Equipment maintenance logs.

Construction

00229.40 Smart Work Zone System - At least 48 hours before system turn on:

- Coordinate the installation and operation of the Smart Work Zone System with the Engineer.
- Provide a copy of the TCP showing the location of each Smart Work Zone System.
- Provide a schedule of the anticipated operation times, dates and durations.

Install Smart Work Zone Systems to the "PCMS Installation" detail shown on the Standard Drawings.

(Use one or more of the following three subsections as instructed. Fill in all blanks and replace text that is underlined and in italics.)

[Use subsection .42 when a Construction Access System is needed.]

00229.42 Construction Access System - Use a Construction Access System to monitor the construction access on the *(northbound, eastbound, etc.)* side of the _____ Highway, at approximate engineering station *XXX+XX*, during *(Insert a brief description of construction work. Refer to specific Phases or Stages if applicable.)* activities.

(Use the following paragraph when more than one system is needed in multiple locations at the same or overlapping times.)

Use an additional Construction Access System to monitor the construction access on the *(northbound, eastbound, etc.)* side of the _____Highway, at approximate engineering station *XXX+XX*, during *(Insert a brief description of construction work. Refer to specific Phases or Stages if applicable.)* activities.

(Insert "500" in the blank for low-speed roads (< 45 mph). Insert a value of 1000 to 1500 in the blank for high-speed roads (≥ 45 mph). Use, "LEFT" or "RIGHT" in Panel 2, as appropriate.)

Program the following messages into the PCMS, or as directed:

Panel 1	**Panel 2**
TRUCKS	SLOW FOR
ENTERING	TRUCKS
_____ FT	ON RIGHT (LEFT)

Locate traffic sensors and PCMS as shown, or as recommended by the Smart Work Zone System technician.

[Use subsection .43 when a Queue Detection System is needed.]

00229.43 Queue Detection System - Use a Queue Detection System on the _____ Highway to monitor traffic queuing in the *(northbound, eastbound, etc.)*

direction during *(Insert a brief description of construction work. Refer to specific phases/stages of traffic control if applicable.)* activities.

(Use the following paragraph when more than one Queue Detection System is needed in multiple locations at the same or overlapping times.)

Use an additional Queue Detection System to monitor traffic queuing on the _____ Highway in the *(northbound, eastbound, etc.)* direction during *(Insert a brief description of construction work. Refer to specific phases/stages of traffic control if applicable.)* activities.

(Use the following paragraphs and PCMS message if sporadic queuing is anticipated. Fill in the blank with the same value used in subsection (a) Traffic Sensor Thresholds below.)

[Begin Sporadic Queuing language]

Locate traffic sensors and PCMS as shown, or as directed. Program PCMS messages as shown below, or as directed:

Panel 1	**Panel 2**
PREPARE	SLOW
TO STOP	TO
AHEAD	XX MPH

Program the PCMS to stop displaying the message three minutes after an extended traffic queue is no longer detected.

[End Sporadic Queuing language]

(Use the following paragraphs and PCMS messages if frequent or significant extended traffic queuing is anticipated, and two PCMS are included in the system to manage traffic queues (see 00229.13 above). Fill in the blank with the same value used in subsection (a) Traffic Sensor Thresholds below.)

[Begin Frequent or Significant Queuing language]

Program the following messages into the system PCMS closest to the work area:

Panel 1	**Panel 2**
STOPPED	WARNING
TRAFFIC	PREPARE
AHEAD	TO STOP

Program the following messages into the next closest system PCMS to the work area:

Panel 1	**Panel 2**
SLOWED	SLOW
TRAFFIC	TO
AHEAD	XX MPH

Program the PCMS to stop displaying the message 3 minutes after an extended traffic queue is no longer detected.

[End Frequent or Significant Queuing language]

(a) Traffic Sensor Thresholds - Locate traffic sensors and PCMS as shown or directed. Program traffic sensors as follows:

(Use the following paragraph if using only one PCMS in the system. Fill in the blank with a value as indicated for the pre-construction posted speed and highway type:

- ***> 55 mph, divided highways/freeways: Use 30 mph below posted speed***
- ***45 –55 mph, other high-speed roads: Use 25 mph below posted speed***
- ***< 45 mph, low-speed roads: Use 20 mph below posted speed)***

Program traffic sensors to trigger messages for the PCMS when the average measured traffic speed drops below ____ mph.

(Use the following two paragraphs if using <u>two PCMS</u> in the system. Fill in the blank with a value as indicated for the pre-construction posted speed and highway type:

- ***> 55 mph, divided highways/freeways: Use 40 mph below posted speed***
- ***45 –55 mph, other high-speed roads: Use 30 mph below posted speed***
- ***< 45 mph, low-speed roads: Use 20 mph below posted speed)***

For the PCMS closest to the work area, program traffic sensors to trigger the display of the messages when the average measured traffic speed drops below ____ mph.

(Fill in the blank with a value as indicated for the pre-construction posted speed and highway type:

- ***> 55 mph, divided highways/freeways: Use 35 mph below posted speed***
- ***45 –55 mph, other high-speed roads: Use 25 mph below posted speed***
- ***< 45 mph, low-speed roads: Use 15 mph below posted speed)***

For the next closest PCMS to the work area, program traffic sensors to trigger the display of the messages when the average measured traffic speed drops below ____ mph.

[Use subsection .44 when a Traffic Information System is needed.]

00229.44 Traffic Information System - Use a Traffic Information System to display real-time traffic information on the _____ Highway in the *<u>(northbound, eastbound, etc.)</u>* direction during Stage ___, Phase ___, during *<u>(brief description of construction work)</u>* activities.

(Include the following paragraph when more than one system is needed in multiple locations at the same or overlapping times.)

Use an additional Traffic Information System to display real-time traffic information on the _____ Highway in the *<u>(northbound, eastbound, etc.)</u>* direction during Stage ___, Phase ___, during *<u>(brief description of construction work)</u>* activities.

Locate system PCMS and traffic sensors, and program PCMS messages, as directed.

00229.45 Traffic Data Logs - Maintain a traffic data log with date and time stamps for each Smart Work Zone System. At the completion of the Project, provide all traffic data logs electronically in Microsoft Excel format, or other format acceptable to the Engineer.

00229.46 Agency Access to System and System Data - Provide password protected access to the Smart Work Zone System components and website. Provide passwords to the Engineer and identified Agency personnel. Allow authorized personnel access to:

- Retrieve and graph collected volume and time data
- Within collected data, view when the system sensor was triggered and what message was displayed on the PCMS
- Change PCMS messages
- Operate system cameras

Maintenance

00229.60 Smart Work Zone System - Maintain the required Smart Work Zone System according to the manufacturer's recommendations and as directed. When directed, repair or replace Smart Work Zone Systems that are damaged or destroyed before continuing Work that requires use of the system.

If a Smart Work Zone System or any of its components malfunctions:

- Notify the Engineer.
- Take the Smart Work Zone System out of service and make repairs.
- Place the system back in service within 48 hours of the notification.

While Smart Work Zone Systems are in use:

- Have repair Equipment and parts on hand as recommended by the manufacturer.
- Keep repair Equipment and parts on the Project Site, or other location that allows system repairs to be completed within 48 hours of the notification of malfunction to the Engineer.

Maintain a service and repair log for the Smart Work Zone System that includes dates, times and descriptions for the following information:

- When service and maintenance were performed.
- Equipment that was serviced and why service was necessary.
- Durations of operational and Equipment failures.
- All operational and Equipment failures.
- All repairs that were made.

Keep the log with the Smart Work Zone System.

(Use the following paragraph when a Construction Access System is included.)

If a Construction Access System goes out of service, immediately install temporary signing as directed, or immediately install a “TRUCKS ENTERING HIGHWAY XXXX FT” (CW23-7-54) sign in advance of the construction vehicle access at sign spacing "A" from the "TCD Spacing Table" shown on the Standard Drawings. Locate the sign on the same side of the Roadway as the access. The sign may be installed on a TSS.

(Use the following paragraph and PCMS Message when a Queue Detection System is included. Do not fill in the blank.)

If the Queue Detection System being used to monitor traffic queues goes out of service, immediately provide a PCMS to display the following messages until the system is repaired and functioning properly. Locate the PCMS and program PCMS messages as directed:

Panel 1	**Panel 2**
TRAFFIC	SLOWED
SLOWED	TRAFFIC
AHEAD	NEXT XX MI

Measurement

00229.80 Measurement - The quantities of furnishing Smart Work Zone Systems will be measured on the unit basis. The quantities will be limited to those shown in the approved TCP unless otherwise approved.

The quantities for using the Smart Work Zone System will be measured on the time basis. If the Smart Work Zone System malfunctions for more than a total of 2 hours within a single Day, no measurement will be made for the Smart Work Zone System for that Day unless otherwise approved.

The quantities of PCMS will be measured according to 00222.80.

Barricades, and drums will be measured according 00224.80.

The quantities for Work Zone Traffic Control Measures will be limited to the following, unless otherwise specified:

- The initial installation of quantities necessary to complete the Project based on the Contract Schedule of Items.
- The initial installation of additional TCD and TCM that the Engineer and Contractor agree are necessary to ensure a safe Work Zone.
- The replacement of TCD and TCM except for temporary electrical signs, damaged by Public Traffic and replaced by the Contractor. Temporary electrical signs damaged by Public Traffic and replaced or repaired by the Contractor will not be measured.

Payment

00229.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	**Unit of Measurement**

(a) Furnish Smart Work Zone System.....Each
(b) Smart Work Zone System.....Day

Item (a) includes moving personnel, Equipment, supplies, and Incidentals to and from the Project Site.

(Delete PTZ cameras when not used and delete all purple parentheses.)

Item (b) includes all hardware, software, traffic sensors, (PTZ cameras), and other Equipment needed for the system to operate properly.

If a Smart Work Zone System malfunctions for more than a total of 2 hours within a single Day, no payment will be made for the Smart Work Zone System for that Day unless otherwise approved.

PCMS will be paid for according to 00222.90.

Barricades, and drums will be paid for according to 00224.90.

Payment will be payment in full for designing, furnishing, installing, moving, operating, maintaining, inspecting, and removing the Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for:

- relocating and repositioning the Smart Work Zone System.
- the services of the Smart Work Zone System technician.
- providing and installing temporary signs or PCMS while required systems are out of service.

SP00230 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-16-25
This Section requires SP00730
if emulsified asphalt tack coat is required)

(Use this Section for temporary diversions and cross-overs. Use when a diversion/cross-over is being constructed separate from the main (permanent) alignment [e.g. with temporary bridge]. It may also be used with a diversion that consists of a temporary widening of the existing alignment when most of the temporary diversion will be removed and use of this section will create significant cost savings, earlier completion, or reduced construction times.)

SECTION 00230 – TEMPORARY ROADBED AND SURFACING

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple

text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00230, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00230.00 Scope - This Work consists of constructing, maintaining, and removing temporary Roadbeds and Surfacing, as shown or directed.

Materials

(Delete Materials from the list that are not required.)

00230.10 Materials - Furnish Materials meeting the following requirements:

Aggregate Base.....00640.10
Asphalt Concrete Pavement (ACP).....00745.50
Emulsified Asphalt Tack Coat.....00730.11
Geotextile 02320
Riprap.....00390

00230.11 Earthwork - Furnish Materials required to construct the Roadbed according to Section 00330 and as shown.

Construction

00230.40 Earthwork - Construct temporary embankments and excavation outside the permanent Roadbed according to the applicable parts of Section 00330, except density testing to verify compaction will not be required. Compact the embankment material according to 00330.43(c). Ensure that Earthwork that remains in place as permanent Roadbed meets all requirements of Section 00330.

(Delete any of subsections .41 through .45 when the corresponding Material was deleted from the Materials List.)

00230.41 Geotextile - Place embankment geotextile according to Section 00350.

00230.42 Riprap - Place riprap according to the applicable parts of Section 00390.

00230.43 Aggregate Base - Place and compact Aggregate Base according to the applicable parts of Section 00640.

00230.44 Asphalt Concrete Pavement - Place ACP to the lines and grade shown or directed. Compact ACP according to 00745.49(d).

00230.45 Emulsified Asphalt Tack Coat - Apply Emulsified Asphalt according to the applicable parts of Section 00730.

Maintenance

00230.60 Surface Maintenance - Maintain temporary surfaces according to 00220.60.

Finishing and Cleaning Up

00230.70 General - When temporary surfaces are no longer needed, do the following:

- Remove all related materials.
- Restore the area on which the temporary Surfacing and associated Roadbed occupied to the original ground contours, or as directed.
- Apply permanent seeding to the area occupied by the temporary Surfacing and associated Roadbed, if required, according to Section 01030.
- Dispose of excess materials according to 00330.41(a)(4).

Measurement

00230.80 Measurement - No measurement of quantities will be made for Work performed under this Section. It is estimated that the following approximate quantities of Materials will be required:

(Obtain quantities from the Designer. Delete items that do not apply to the Project.)

Material	Amount
Construct Temporary Roadbed and Surfacing:	
Embankment	_____ cu. yd.
Excavation	_____ cu. yd.
Geotextile	_____ sq. yd.
Riprap	_____ sq. yd.
Aggregate Base	_____ ton
Asphalt Concrete Mixture	_____ ton
Emulsified Asphalt Tack Coat	_____ ton
Remove Temporary Roadbed and Surfacing:	
Embankment	_____ cu.yd.
Excavation	_____ cu.yd.

Quantities include only those quantities placed or removed outside the permanent Roadbed Neat Line.

Permanent seeding will be measured according to 01030.80.

Payment

00230.90 Payment - The accepted quantities of Work performed under this Section, except for permanent seeding Work, will be paid for at the Contract lump sum amount for the item "Construct and Remove Temporary Roadbed and Surfacing".

Payment will be payment in full for constructing, maintaining, and removing Roadbeds and Surfacing, and for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

Permanent seeding will be paid for according to 01030.90.

SP00231 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-16-25)**

SECTION 00231 - TEMPORARY ACCESS ROAD

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00231, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00231.00 Scope - This Work consists of constructing, maintaining, and removing temporary, unpaved access roads for the use of Contractor and Agency Equipment and personnel as needed, shown, or directed.

Materials

00231.11 Geotextile - Furnish subgrade geotextile, embankment geotextile, or riprap geotextile, at the Contractor's option. Geotextile shall meet the requirements of Section 02320, with documentation according to 02320.10(c).

00231.12 Geogrid - Subgrade reinforcement geogrid, if used, shall meet the requirements of Section 02320.

00231.13 Road Material - Furnish crushed Aggregate Base, stone embankment, or other suitable Granular Material capable of supporting the weight of Equipment intended to use the temporary access road.

Construction

00231.41 Clearing - Clearing brush and vegetation for temporary access roads is allowed in the areas shown or where directed. Preserve and protect trees as shown or directed.

00231.42 Temporary Access Road - Construct temporary access roads to the width, grade, profile, and depth of base sufficient to support the weight of Equipment using the road. Install geotextile or geogrid prior to placement of road material.

00231.43 Not for Public Traffic - Do not direct or allow Public Traffic to use temporary access roads constructed according to this Section.

(Use the following subsection .44 when it is anticipated that the ground occupied by a temporary access road will later support permanent embankment. Check with the designer.)

00231.44 Verification of Subgrade - In areas where permanent earthwork construction is required on ground that has been occupied by a temporary access road, rework or replace unstable Materials to avoid and correct, according to 00330.40(c), excessive stress or strain that could be detrimental to the Subgrade.

00231.45 Verification of Original Ground - Test the density of the original ground according to TM 158, in the presence of the Engineer, before beginning construction of the temporary access road and after removing it. If post-removal density testing indicates that the original ground has been weakened by construction activities, or the presence or use of the temporary access road, correct the deficient condition in an approved manner and at no additional expense to the Agency.

Maintenance

00231.60 Surface Maintenance - Maintain temporary access roads so that the road surfaces remain firm, smooth, free of ruts or standing water, and are graded to prevent concentrations of runoff water. Promptly remove accumulations of mud or debris.

Finishing and Cleaning Up

00231.70 General - When a temporary access road is no longer needed, do the following:

- Remove all Materials.
- Restore areas occupied by the temporary access road to the original ground contours or as directed.
- Apply permanent seeding to the area occupied by the temporary access road according to Section 01030.
- Dispose of excess materials according to 00330.41(a)(5).

Measurement

00231.80 Measurement - Except for permanent seeding, no measurement of quantities will be made for Work performed under this Section.

Permanent seeding will be measured according to 01030.80.

Payment

00231.90 Payment - The accepted quantities of Work performed under this Section, except for permanent seeding work, will be paid for at the Contract Lump Sum amount for the item "Construct and Remove Temporary Access Road".

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for removing and disposing of temporary access road materials or for restoring the areas to original ground contours.

Permanent seeding Work will be paid for according to 01030.90.

SP00235 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-16-25
This Section requires SP00270, SP00335, SP01030, and SP01060 if blasting, temporary fence, seeding or cattle guards are required.
This Section requires SP02320 when sediment fence is used*)*

(Use this Section when Agency provided material sources are to be included in projects. If more than one material source is required, subsections may be copied and edited to reflect the conditions/requirements of each source. This boilerplate is set up with tables to demonstrate 2 prospective and 2 mandatory sources. Modify the tables as necessary to only list the prospective and mandatory sources for the Project)

SECTION 00235 - AGENCY PROVIDED MATERIAL SOURCES

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00235, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00235.00 Scope - This Work consists of utilizing Agency provided prospective or mandatory material source*(*s*)* as the Contractor elects or as required for the construction of the Contract.

(Use the following subsection .01 as instructed below when the Agency will provide prospective material sources. When only one prospective material source will be listed, delete "(s)" and "are". Copy and paste subsection .01(b) as necessary to list more than two prospective material sources, but ensure subsections are sequentially labeled (e.g. (a), (b), (c), etc.). Fill in the blanks with the appropriate information. Modify as needed. Delete the language in purple parentheses that does not apply and delete all purple parentheses. Use the source number bullet only if the source is an ODOT identified material source with a recognized source number, otherwise delete.)

(Use this subsection .01 for prospective material sources.)

[Begin Prospective Material Source Option]

00235.01 Material Source Specific Requirements - The following prospective material source*(*s*)*, for the production of __(list the specific aggregate products that are allowed) or state "for all the aggregate products for this Project")____ , that may warrant investigation and consideration for use by the Contractor on this Project *(*is*) (*are*)* as follows:

(a) Prospective Material Source, *(name)*:

- **Source Number** - OR- _____
- **DOGAMI Number** - _____
- **Location** - Approximately _____ miles ____(insert location and direction from the project or closest town here)____ on *(*Interstate*) (*US*) (*OR*)* _____ in the ___ 1/4 of Section ___, T. __(insert N. or S.)__ , R. __(insert W. or E.)__ W.M.
- **Access** - Adjacent __(east, west, north, south)__ of MP _____ of *(*Interstate*) (*US*) (*OR*)* _____, __(if off the highway a distance, include travel directions here)__
- **Available Area for Equipment Setup, Stockpiling, and Processing Aggregate:**
  - **Existing** - _____ acres
  - **Development** - _____ acres

(b) Prospective Material Source, *(name)*:

- **Source Number** - OR- _____
- **DOGAMI Number** - _____
- **Location** - Approximately _____ miles ____(insert location and direction from the project or closest town here)____ on *(*Interstate*) (*US*) (*OR*)* _____ in the ___ 1/4 of Section ___, T. __(insert N. or S.)__ , R. __(insert W. or E.)__ W.M.
- **Access** - Adjacent __(east, west, north, south)__ of MP _____ of *(*Interstate*) (*US*) (*OR*)* _____, __(if off the highway a distance, include travel directions here)__
- **Available Area for Equipment Setup, Stockpiling, and Processing Aggregate:**
  - **Existing** - _____ acres
  - **Development** - _____ acres

If the Contractor elects not to utilize the above listed source(s) 00160.60 applies.

[End Prospective Material Source Option]

(Use the following subsection .02 for mandatory material sources. Delete "(s)" or parentheses as necessary and fill in all blanks. When only one mandatory disposal site will be listed, delete "(s)". Copy and paste subsection .02(b) as necessary to list more than two mandatory disposal sites, but ensure subsections are sequentially labeled (e.g. (a), (b), (c), etc.). Delete all purple parentheses. Use the source number bullet only if the source is an ODOT identified material source with a recognized source number, otherwise delete.)

[Begin Mandatory Material Source Option]

00235.02 Material Source Specific Requirements - The following mandatory material source*(*s*)*, for the production of ___(list the specific aggregate products that are allowed) or state "for all the aggregates products for this Project")____ , *(*is*) (*are*)* to be used on this Project:

(a) Mandatory Material Source, *(name)*:

- **Source Number** - OR- _____
- **DOGAMI Number** - _____
- **Location** - Approximately ____ miles ___(insert location and direction from the project or closest town here)____ on *(*Interstate*) (*US*) (*OR*)* ____ in the ____ 1/4 of Section ___, T. __(insert N. or S.)___ , R. ___(insert W. or E.)___ W.M.
- **Access** - Adjacent ___(east, west, north, south)___ of MP _____ of *(*Interstate*) (*US*) (*OR*)* _____, ___(if off the highway a distance, include travel directions here)___
- **Available Area for Equipment Setup, Stockpiling, and Processing Aggregate:**
  - **Existing** - _____ acres
  - **Development** - _____ acres

(b) Mandatory Material Source, *(name)*:

- **Source Number** - OR- _____
- **DOGAMI Number** - _____
- **Location** - Approximately ____ miles ___(insert location and direction from the project or closest town here)____ on *(*Interstate*) (*US*) (*OR*)* ____ in the ____ 1/4 of Section ___, T. __(insert N. or S.)___ , R. ___(insert W. or E.)___ W.M.
- **Access** - Adjacent ___(east, west, north, south)___ of MP _____ of *(*Interstate*) (*US*) (*OR*)* _____, ___(if off the highway a distance, include travel directions here)___
- **Available Area for Equipment Setup, Stockpiling, and Processing Aggregate:**
  - **Existing** - _____ acres
  - **Development** - _____ acres

[End Mandatory Material Source Option]

00235.03 Laws - Conduct operations within the material source*(*s*)* according to all applicable State, county, and federal laws including mining and fire laws. Provide, operate, and maintain wildland firefighting equipment appropriate for the current fire levels on-site at all times during all material source operations.

00235.04 Permits - Copies of the Plans, permits, agreements and the material source narrative*(*s*)* for the material source*(*s*)* are available for inspection at the Project Manager's office. Operations within the material source*(*s*)* shall conform to the stipulations and conditions of these documents and to all of the requirements of the Contract.

(Fill in the table below with the appropriate permits/plans listed below for each source. Delete the list when finished. Modify the table as needed to add or delete sources.

Department of Geology and Mineral Industries (DOGAMI) Permit
Operating and Reclamation Plan
County Land Use Permit
Intergovernmental Agreement
Cooperative Improvement Agreement
Bureau of Land Management (BLM) Permit
United States Forest Service (USFS) Permit
Division of State Lands (DSL) Permit
Oregon Department of Fish and Wildlife (ODFW) Permit
Oregon Department of Environmental Quality (DEQ) Permit)

Subsection	Source Name	Documents
00235.01(a)	***(name)***	***(from list above)***
00235.01(b)	***(name)***	***(from list above)***
00235.02(a)	***(name)***	***(from list above)***
00235.02(b)	***(name)***	***(from list above)***

00235.05 Pre-Work Meeting - Before occupying a material source, attend a pre-work meeting at the material source with the Engineer and the following owners or representatives:

(In the table below, select representatives from the following list and fill in the blanks with the contact name(s) and phone number(s) as appropriate for each source. Include the items that apply to each source. Add or delete rows in the table as necessary to list all applicable sources.

ODOT Geologist
ODOT Region Environmental Coordinator
U.S. Forest Service representative(s)_____
BLM representative(s) _____
County representative(s)_____
Other _____)

Subsection	Source Name	Contact Names and phone numbers
00235.01(a)	*(name)*	*ODOT Geologist* *ODOT Region Environmental Coordinator* *U.S. Forest Service representative(s)_____* *BLM representative(s)_____* *County representative(s)_____* *Other _____*
00235.01(b)	*(name)*	*(from list above)*
00235.02(a)	*(name)*	*(from list above)*
00235.02(b)	*(name)*	*(from list above)*

00235.06 Source Occupancy - Coordinate material source occupancy with the Engineer. The material source information listed in Table 00235-1 below shall be as shown *(*and as staked*)*. Do not operate beyond the material source Project boundary or in no Work area(s) as shown *(*and as staked*)* unless otherwise directed in writing.

(In the table below, fill in the blank with the appropriate source information listed below for each source. Add or delete rows in the table as necessary to list all applicable sources.

project boundary
reject fines stockpile
scalpings stockpile
overburden storage area(s)
stormwater control berm(s)
slash disposal area
bench access road(s)
access road(s)
excavation area(s)
straw bale sediment barrier(s)
oversize storage area
no work area(s)
safety berm(s)
log deck
stockpile and processing area
sediment fence(s))

Table 00235-1

Subsection	Source Name	Source items shown
00235.01(a)	*(name)*	*(from list above)*
00235.01(b)	*(name)*	*(from list above)*
00235.02(a)	*(name)*	*(from list above)*
00235.02(b)	*(name)*	*(from list above)*

00235.07 Source Development - If proposing changes to a material source development plan, submit a source development plan as an unstamped Working Drawing according to

00150.35. Do not begin Work in a material source until the source development plan has been approved in writing by the Engineer.

Develop a site-specific Erosion and Sediment Control Plan for each material source according to 00280.04 and submit it to the Engineer at or before the pre-work meeting. Construct stormwater control berm(s) as shown *(*and as needed*)* to control runoff. Do not allow any materials, including sediments, Aggregate or crushing by-products to enter into waterways or Wetlands.

Develop a site-specific Pollution Control Plan for each material source according to 00290.30(b), and submit it to the Engineer at or before the pre-work meeting. Include the following requirements in the Pollution Control Plan:

- Do not discharge waste or by-product if it contains any substance in concentrations that could contaminate Soils or result in harm to fish, wildlife, or water sources.
- Store bag-house sludge, lime, and all potentially hazardous materials and solid waste in a manner that prevents seepage into the ground or groundwater sources. Lined sumps or pits are allowable options for storage. If pits or sumps are used, construct adequate berms or provide other measures to prevent breaching of the pits or sumps.
- For materials capable of causing water pollution if discharged, locate storage facilities in an area that prevents spillage into waterways or Wetlands.

Construction

00235.40 General - All vehicles and Equipment, prior to entering the site for the first time, and each subsequent time if the vehicle has left the Roadway outside the construction Project limits, shall be steam cleaned of all debris (soil, dirt, plant parts, and vegetative matter) before being brought back to the site. Notify the Engineer before moving each vehicle onto the site. Certify, in writing, that the Equipment has been steam cleaned.

00235.41 Restrictions and Protection of Resources - Comply with the following for all operations within the material source:

- Protect cultural resources according to 00290.50.
- Protect migratory birds according to 00290.36(a).

(Use the following bullet when clearing, grubbing, and overburden removal is required. Modify dates when directed by Environmental Coordinator. If modified dates are different for different sources list the sources and dates or put them in a table.)

- Clear trees and shrubs and strip and stockpile soil overburden between September 1 and March 1.

- Do not utilize, contaminate, or disperse material from existing stockpiles. If existing stockpiles interfere with the Contractor's operations, move the stockpiles to other locations within the material source area as directed, at no additional cost to the Agency.

(Use the following bullet when specific restrictions are addressed in land use or other permits. If times are different for different sources list the sources and times or put them in a table.)

- Limit mineral and Aggregate extraction, crushing, processing, and Equipment operation activities including drilling activities to the hours of ___:00 a.m. to ___:00 p.m., Monday through Saturday unless modifications to these hours are requested in writing and approved by the Engineer. Do not conduct any operation on Sundays or legal holidays, as defined in ORS 279C.540.

(Use the following subsection (a) when county owned sources are utilized. Fill in the blank of the first paragraph with the name of the county. Fill in the blanks of the second paragraph with the name of the contact person(s), the county name, and the phone number. Fill in the blank of the third paragraph with the royalty fee amount and unit, for example cubic yard, ton. Be sure to include an anticipated item to pay the county royalty fee for each source. Repeat the paragraphs as necessary for each County owned source and number sequentially, (a)(1), (a)(2) etc..)

(a) County Owned Sources - Material source ***(Name) (subsection)*** is under Agency control through an agreement with the _____ County Department of Public Works. Operations within this material source shall conform to the requirements of this agreement, the Plans, and the Specifications.

For information contact _____ or _____ at the _____ County Department of Public Works, at _____, to make arrangements to visit the site.

A $_____ per _(unit)___ royalty charge for all material removed from the Prospective Source will be deducted from monies due the Contractor in the progress payments.

(Use the following subsection (b) on USDA Forest Service owned sources. Use the appropriate agreement. Delete the agreement that does not apply. Fill in the administrative/road use fee amount and unit in the second paragraph. Be sure to include an anticipated item to pay the fee for each source. Repeat the paragraphs as necessary for each Forest Service owned source and number sequentially, (b)(1), (b)(2) etc.)

(b) USDA Forest Service Owned Sources - Material source ***(Name) (subsection)*** is under Agency control through a "Contract for the Sale of Mineral Materials" or a "Special Use Permit" agreement with USDA Forest Service. Operations within this material source shall conform to the requirements of this agreement, the Plans, and the Specifications.

A $ _____ per ___(unit)___ administrative and road use fee charge for material removed from the Prospective Source will be deducted from monies due the Contractor in the progress payments.

(Use the following subsection (c) on BLM owned sites. Repeat the paragraphs as necessary for each BLM owned source and number sequentially, (c)(1), (c)(2) etc)

(c) Bureau of Land Management Sources - Material source*(Name) (subsection)* is under Agency control through a "Free Use Permit" or a "Temporary Use Permit" agreement with the Bureau of Land Management. Operations within this material source shall conform to the requirements of this agreement, the Plans, and the Specifications.

(Use the following subsection (d) on privately owned sources. Fill in the appropriate property owner in the blank of the first paragraph. Fill in the property owner contact and phone number in the second paragraph. Fill in the royalty fee amount and unit in the third paragraph. Be sure to include an anticipated item to pay the royalty fee. Repeat the paragraphs as necessary for each privately owned source and number sequentially, (d)(1), (d)(2) etc.)

(d) Privately Owned ODOT Controlled Sources - Material source *(Name) (subsection)* is under Agency control through a lease agreement with _____. Operations within this material source shall conform to the requirements of this lease agreement, the Plans, and the Specifications.

For information contact _____ at _____, to make arrangements to visit the site.

A $_____ per ___(unit)___ royalty charge for all material removed from the Prospective Source will be deducted from monies due the Contractor in the progress payments.

00235.42 Source Setup - Before proceeding with Work in the material source, the following apply:

(Use the following bullet when fences are required to secure no Work areas. Fill in the blanks with the length, type, and location of fencing. Copy and paste the following bullet as needed. Repeat the bullet for each source that requires fences)

- For material source *(Name) (subsection)* construct approximately ____feet of type _____ fencing along _____ the no Work area as shown *(*and as staked*)*. Do not disturb the no Work area.

(a) Access:

(Use the following bullet when road access is to be constructed. Fill in the blank with the source number if applicable. Repeat the bullet for each source that requires access road development or maintenance.)

- For material source *(Name) (subsection)* develop and maintain an access road from the developed stockpile and processing area to the newly developed excavation floor or from the _____ to the _____ as applicable. Construct this road with a width of 12 feet and reasonably uniform grade, no steeper than a 16 percent grade (1V:6H), for access to the quarry floor. An approximate location for development of this road is shown on the Plans. Determine the exact location in the field. Obtain the Engineer's approval before constructing the access road.

(Use the following bullet when realignment and/or widening of an existing access road is required. Insert the road name or number in the first bullet blank and road

name or access location in the second bullet blank. Repeat the bullet(s) for each source that requires realignment and/or widening of an existing access road.)

- For material source ***(Name) (subsection)*** minor realignment and widening of _____, to accommodate the Contractor's operations in the material source, is anticipated. An approximate location for the minor realignment and widening Work is shown on the Plans. Determine the exact location in the field. Obtain the Engineer's approval before performing this Work.
- For material source ***(Name) (subsection)*** routine road maintenance activities such as grading and watering of the access road do not need review or approval. Maintain or develop drain dips, water bars, road crowning, in-slopes and out-slopes during road maintenance.

(Use the following bullet when bench access roads are to be realigned and regraded. Repeat the bullet for each source that requires bench access road development.)

- For material source ***(Name) (subsection)*** realign and regrade ***(***construct***)*** the bench access road as shown. Construct the road with a width of 12 feet and a reasonably uniform grade, no steeper than 50 percent (1V:2H), for access to the upper bench by tracked vehicles.

(Use the following bullet when a stormwater control berm is required. Repeat the bullet for each source that requires a stormwater control berm.)

- For material source ***(Name) (subsection)*** using existing, loose and non-stockpiled material or clean soil or a combination of clean soil and rock, construct a stormwater control berm(s). Grade and leave level, all areas of the material source disturbed during construction of the stormwater control berm(s). Construct the stormwater control berm 3 feet high, with side slopes of 1V:2H. ***(***Provide erosion control protection for the stormwater control berm by placing, with minimal amount of separation, 3-foot diameter and larger oversize material along the creek-side toe of the berm. Maintain a minimum 10-foot wide buffer strip between the oversize material of the stormwater control berm and the creek, as detailed on the cross sections.***)*** After completion of the stormwater control berm, seed according to 00235.46.

(Use the following bullet when safety berms are required. Repeat the bullet for each source that requires safety berms)

- For material source ***(Name) (subsection)*** use overburden or existing, loose and non-stockpiled material or imported or clean soil or a combination of clean soil and rock, to construct a safety berm along the top edge of the new excavation or existing slopes as shown. Maintain a 10-foot buffer between the top edge of the excavation or slope and the toe of the safety berm. Construct the berm 3 feet high, with side slopes of 1V:2H.

(b) Clearing and Grubbing - Before stripping of overburden clear and grub all trees within the excavation area, to be developed for stockpile and processing and the area to

be developed as access roads. Place all logs in the log decks and other woody debris in the slash disposal area as shown *(*and as staked*)*.

(c) Overburden - Before excavating, including drilling and blasting when required, strip and stockpile all soil overburden from within the excavation area, from the area to be developed for stockpile and processing, and from areas to be developed as access road(s). Incorporate grass and small shrubs into the stockpiles. Do not remove grass or small shrubs from the overburden. Place stockpiles in the overburden storage area(s). Maintain a minimum 10-foot buffer strip between the toe of the overburden storage area(s) and the excavation area. Store overburden stripped from the stockpile and processing area as shown, a minimum of 10 feet from the toe of the Aggregate stockpiles. Smooth and contour overburden storage berms to form side Slopes no steeper than 1V:2H.

(Use the following subsection .43 when blasting is required.)

[Begin Blasting Option]

00235.43 Blasting - Perform blasting operations according to this Section and Section 00335, except that perimeter controlled blasting as described in 00335.40(a) is not required in the material source.

(Use the following paragraph when blasting restrictions are required. Fill in the blanks with the appropriate times. Repeat the paragraph for each source that requires blasting hours.)

For material source ***(Name) (subsection)*** restrict blasting to the hours of ___:00 a.m. to ___:00 p.m. Monday through Friday. Do not blast on Saturdays, Sundays, or legal holidays as defined in ORS 279C.540.

(Use the following paragraph when specific fire precautions are required. Fill in the blank with the name and phone number of the appropriate interagency notification centers. . Repeat the paragraph for each source that requires specific fire precautions.)

For material source ***(Name) (subsection)*** notify and obtain approvals from _____ at least 48 hours before blasting.

(Use the following paragraph when blasting near wells and aquifers and when ground vibrations are anticipated. Fill in the first and third blanks with the number of days required. Fill in the second blank with the location of the well or aquifer. Repeat the paragraph for each source that requires blasting near wells and aquifers.)

For material source ***(Name) (subsection)*** before blasting and within ____ Days after blasting, measure water level or flow rate in the well located at _____. Sample and test water quality for nitrates and total coliform bacteria before blasting and again within ____ Days after blasting. Collect water samples according to OAR 333-061-0335. Have water samples tested for nitrates and total coliform bacteria by a certified laboratory according to OAR 333-061-0330. Notify the well owner 48 hours before conducting the water measurement, sampling, and testing.

[End Blasting Option]

00235.44 Source Operations - The following apply during material source operations:

- Construct slopes, bench*(*es*)*, and floor*(*s*)* of the excavation area*(*s*)* as shown.

- To control dust, apply water to material source access, haul road(s), and crushing and processing operations.

(Use the following bullet when an off-site water source may be available. Use only when water rights are obtained or all permits are secured. If the proposed water source is a natural source, include 00290.34(c)(3) water intake screening if it is required. Repeat the bullet for each source when an off-site water source may be available.)

- For material source ***(Name) (subsection)*** a water source is not available on-site within the material source. A possible water source is located at ___(insert location name, legal description, address, highway and mile point) ____.
- Stockpile scalpings and reject fines in separate and accessible stockpiles as shown.

(Use the following bullet when an existing road is to be maintained for a prospective source. Fill in the blank with the road name. Repeat the bullet for each prospective source when an existing road is to be maintained.)

- For material source ***(Name) (subsection)*** if the Contractor chooses to utilize this material source, maintain the condition of _____ at all times. Provide traffic control related to ingress and egress movements in a manner that allows a safe work zone and safe passage of vehicles.

(Use the following bullet when an existing road is to be maintained for a mandatory source. Fill in the blank with the road name. Repeat the bullet for each mandatory source when an existing road is to be maintained.)

- For material source ***(Name) (subsection)*** maintain the condition of _____ at all times. Provide traffic control related to ingress and egress movements in a manner that allows a safe work zone and safe passage of vehicles.

(Use the following bullet when cattle guards or livestock gates are present. Fill in blank with the appropriate location(s). Repeat the bullet for each source when cattle guards or livestock gates are present.)

- For material source ***(Name) (subsection)*** maintain the cattle guard and livestock gate _____ into the source at all times.

(Use the following bullet when cattle guards installation is required. Fill in the blank with the appropriate locations(s). Be sure to include cattle guard details on the project detail sheet(s). Repeat the bullet for each source when cattle guard installation is required.)

- For material source ***(Name) (subsection)*** construct cattle guard(s) at _____ according to details shown.

00235.45 Source Clean-up - The following apply at the completion of operations:

(Delete "(s)" when only one exception is required. Delete the parentheses when additional exceptions are added.)

- Leave no loose material on the site exceeding 1 foot diameter, except as noted below. Process existing oversize material, and all material loosened in the source by the Contractor that meets quality requirements, with the following exception(s):

(Fill in the blank with the appropriate quantity. Repeat the bullet for each source when stockpiling oversize material is required.)

- For material source ***(Name) (subsection)*** a maximum of _____ cubic yards of oversize material with a maximum dimension of 2.5 feet may be stockpiled in the material source. Consolidate oversize material as shown.
- Place all excess produced Aggregate remaining at the end of operations in separate and accessible stockpiles on Agency owned or controlled property in areas designated by the Engineer, at no additional cost to the Agency.
- Leave the material source haul road and bench access road open. Do not rip or block the roads except a few boulders greater than approximately three feet in diameter may be used to block off access to the upper bench areas.
- Remove all loose, hanging or potentially dangerous Rock on or above the excavated surface.

- Pile and burn all construction slash and combustible debris resulting from use and development of the source, including the preexisting refuse identified at the pre-work meeting, even if it is from outside the material source project boundary except for grass and small shrubs that are incorporated into the overburden. Comply with all open burning regulations in effect at the time of source occupancy. If burning is not allowed, all construction slash and combustible debris become the property of the Contractor, to be treated as noncombustible and removed from material source.

(Use the following bullets and paragraph when placing reject fines on final slope. Fill in the horizontal blank with appropriate number. Modify as needed. Repeat the bullet for each source when placing reject fines on final slope.)

- Before final seeding and mulching, do the following:
  - For material source ***(Name) (subsection)*** place reject fine material against the excavated slope as shown to construct the final 1V:___H Slope.
  - Cover the newly constructed slope with reject fines with at least 6 inches of scalping material.
  - Evenly distribute the stockpiled overburden over the slope(s).

If inadequate reject fines exist to completely construct the slope(s) utilize additional scalpings over top the reject fines to finalize construction of the slope(s) prior to the redistribution of overburden.

00235.46 Seeding:

(In the bullet below, fill in the blank with the appropriate area information listed below. Delete "(s)" or parentheses as appropriate. Delete the list when finished. Repeat the first two bullet(s) for each source.)

excavation area(s) (if being reclaimed in the operation)
overburden storage area(s)
stormwater control berm(s)
safety berm(s)
soil/scalpings stockpile(s)
bench(es) and access road(s)
other)

- For material source ***(Name) (subsection)*** in addition to other areas with soil cover within the site disturbed by the Contractor's operations, stabilize the _____ by seeding, mulching, and tackifying, as directed.
- For material source ***(Name) (subsection)*** provide the following seed mixture:

(Insert seed mix and application rates here. Note: The seed mixture is almost always site specific. Obtain information from the Region Environmental Coordinator. Specify a material source subsection and name if necessary.)

-

(In the following bullet, include the third sentence when clover or alfalfa is required, otherwise delete it.)

- Use only certified weed free seed. Provide copies of the certification to the Engineer. Inoculate the clover and alfalfa prior to incorporation into the seed mixture.
- Provide straw mulch according to 01030.15(b).
- Apply a commercial straw mulch tackifier according to the manufacturer's directions and at the recommended rate.
- Apply seed and mulch according to Section 01030.
- If conditions allow and the Contractor chooses, the area may be stabilized by applying seed using a range drill with a roller attachment. All areas seeded with the range drill and roller do not need to be subsequently covered with mulch and tackifier.
- All variations to these requirements require written approval by the Engineer.

00235.47 Source Vacating - Before vacating the material source the following apply:

- Remove all structures, noncombustible debris, and equipment from the material source, even if it was pre-existing, except for grass and small shrubs incorporated into the overburden.

- Remove solid waste and hazardous material from the site and dispose of properly. These include, but are not limited to, bag-house sludge or fines, lime, excess liquid asphalt, rejected and excess asphalt mixture, plant cleanings, materials placed in sumps, tires, pipes, belts, screens and truck cleanings. Provide documentary evidence of proper disposal and verify the amount of material removed.
- If a spill or dumping has occurred or if a spill or dumping is suspected to have occurred, the Contractor shall clean up the contaminated materials according to Section 00290. After clean up, the Engineer may, sample and test materials at the spill or dumping locations to verify the clean up has been completed. If the Engineer's verification testing demonstrates remaining contamination, the Contractor shall perform additional clean up until the requirements of Section 00290 including 00290.20(g) are met
- Attend a post-work meeting at the material source to evaluate material source rehabilitation work with the Engineer and attendees listed under 00235.05.

(When a mandatory material source is specified and fence or additional Work is required, the additional Work must be measured and paid for in both Section .80 and .90. When a prospective source is specified, fence and additional Work is considered incidental to the prospective source.)

Measurement

00235.80 Measurement - No measurement of quantities will be made for Work performed under this Section, *(*except for seeding, temporary fence, and cattle guard in mandatory material source(s)*)*.

(Use the following paragraph when a mandatory material source is specified and seeding is required.)

Seeding will be measured according to 01030.80.

(Use the following paragraph when a mandatory material source is specified and temporary fence, not orange plastic mesh fence, is required.)

Temporary fence will be measured according to 00270.80.

(Use the following paragraph when a mandatory material source is specified and a cattle guard is required.)

Cattle guards will be measured according to 01060.80.

Payment

(If mandatory material source is specified and seeding, temporary fence and/or cattle guard is required, delete the language in purple parentheses that does not apply and delete all purple parentheses.)

00235.90 Payment - No separate or additional payment will be made for Work performed under this Section. Payment will be included in payment made for the appropriate items under which this Work is required *(*except for seeding, temporary fence, and cattle guard in mandatory material source(s)*)*.

(Use the following paragraph when a mandatory material source is specified and seeding is required.)

Seeding will be paid for according to 01030.90.

(Use the following paragraph when a mandatory material source is specified and temporary fence, not orange plastic mesh fence, is required.)

Temporary fence will be paid for according to 00270.90.

Use the following paragraph when a mandatory material source is specified and a cattle guard is required.)

Cattle guards will be paid for according to 01060.90.

SP00236 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-16-25
This Section requires SP00270, SP01030, and SP01060 if temporary fence, seeding or cattle guards are required. **This Section requires SP02320 when sediment fence is used*)***

(Use this Section when Agency provided disposal sites are to be included in projects. If more than one disposal site is required subsections may be copied and edited to reflect the conditions/requirements of each site.)

SECTION 00236 - AGENCY PROVIDED DISPOSAL SITES

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00236, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00236.00 Scope - This Work consists of utilizing Agency provided prospective or mandatory disposal sites as the Contractor elects or as required for the construction of the Contract.

(Use the following subsection .01 as instructed below when the Agency will provide disposal sites. When only one prospective disposal site will be listed, delete "(s)" and "are". Copy and paste subsection .01(b) as necessary to list more than two prospective disposal sites, but ensure subsections are sequentially labeled (e.g. (a), (b), (c), etc.). Fill in the blanks with the appropriate information. Modify as needed. Delete the language in orange parentheses that does not apply and delete all orange parentheses. Use the source number bullet only if the site is an ODOT identified material site with a recognized source number, otherwise delete.)

[Begin Prospective Disposal Site Option]

00236.01 Prospective Disposal Site Specific Requirements - The following prospective disposal site(s) for __(list acceptable material)____ , as long as the material does not contain hazardous substances, that may warrant investigation and consideration for use by the Contractor on this Project *(*is*) (*are*)* as follows:

(a) Prospective Disposal Site, _*(name)*____:

- **Source Number** - OR- _____
- **Location** - Approximately ____miles ___(insert location and direction from the project or closest town here)_ __ on *(*Interstate*) (*US*) (*OR*)* _____ in the __1/4 of Section ___, T. __(insert N. or S.)__ , R. __(insert W. or E.)__ W.M.
- **Access** - Adjacent __(east, west, north, south)__ of MP _____ of *(*Interstate*) (*US*) (*OR*)* _____, __(if off the highway a distance, include travel directions here)__
- **Disposal Quantity Limit** - __(Insert the quantity that can be disposed of in this site if there is a limit.)__
- **Available Area for Material Disposal of Waste Material:**
  - **Existing** - _____ acres
  - **Development** - _____ acres

(b) Prospective Disposal Site, _*(name)*____:

- **Source Number** - OR- _____
- **Location** - Approximately ____miles ___(insert location and direction from the project or closest town here)_ __ on *(*Interstate*) (*US*) (*OR*)* _____ in the __1/4 of Section ___, T. __(insert N. or S.)__ , R. __(insert W. or E.)__ W.M.
- **Access** - Adjacent __(east, west, north, south)__ of MP _____ of *(*Interstate*) (*US*) (*OR*)* _____, __(if off the highway a distance, include travel directions here)__
- **Disposal Quantity Limit** - __(Insert the quantity that can be disposed of in this site if there is a limit.)__
- **Available Area for Material Disposal of Waste Material:**
  - **Existing** - _____ acres
  - **Development** - _____ acres

If the Contractor elects not to utilize the above listed disposal site(s) and unless otherwise specifically allowed and subject to the requirements of 00280.05, dispose of materials, classed as waste materials in 00330.41(a)(3) and 00330.41(a)(4), outside and beyond the limits of the Project and Agency controlled property according to 00290.20. Do not dispose of materials on Wetlands, either public or private, or within 300 feet of rivers or streams.

[End Prospective Disposal Site Option]

(Use the following subsection .02 as instructed below for mandatory disposal sites. Delete "(s)"and "are" or parentheses as necessary and fill in all blanks. Copy and paste subsection .02(b) as necessary to list more than two mandatory disposal sites, but ensure subsections are sequentially labeled (e.g. (a), (b), (c), etc.). Delete all orange parentheses. Use the source number bullet only if the source is an ODOT identified material source with a recognized source number, otherwise delete..)

[Begin Mandatory Disposal Site Option]

00236.02 Mandatory Disposal Site Specific Requirements - The following mandatory disposal site*(*s*)* for __(list acceptable material)____, as long as the material does not contain hazardous substances, *(*is*) (*are*)* to be used on this Project:

(a) Mandatory Disposal Site, __*(name)*___:

- **Source Number** - OR- _____
- **Location** - Approximately _____miles ____(insert location and direction from the project or closest town here)_ __ on *(*Interstate*) (*US*) (*OR*)* ____ in the __1/4 of Section ____, T. __(insert N. or S.)__ , R. __(insert W. or E.)__ W.M.
- **Access** - Adjacent __(east, west, north, south)__ of MP _____ of *(*Interstate*) (*US*) (*OR*)* _____, __(if off the highway a distance, include travel directions here)__
- **Disposal Quantity Limit** - __(Insert the quantity that can be disposed of in this site if there is a limit or insert the required quantity.)__
- **Available Area for Material Disposal of Waste Material:**
  - **Existing** - _____ acres
  - **Development** - _____ acres

(Delete the language in orange parentheses that does not apply and delete all orange parentheses.

If material contains hazardous substances do not dispose of the material in the mandatory disposal site. Dispose of materials that contain hazardous substances according to *(*Section 00294*)(*00290.20*)*.

(b) Mandatory Disposal Site, __*(name)*___:

- **Source Number** - OR- _____
- **Location** - Approximately _____miles ____(insert location and direction from the project or closest town here)_ __ on *(*Interstate*) (*US*) (*OR*)* ____ in the __1/4 of Section ____, T. __(insert N. or S.)__ , R. __(insert W. or E.)__ W.M.

- **Access** - Adjacent __(east, west, north, south)__ of MP _____ of *(*Interstate*) (*US*) (*OR*)* _____, __(if off the highway a distance, include travel directions here)__
- **Disposal Quantity Limit** - __(Insert the quantity that can be disposed of in this site if there is a limit or insert the required quantity.)__
- **Available Area for Material Disposal of Waste Material:**
  - **Existing** - _____ acres
  - **Development** - _____ acres

(Delete the language in orange parentheses that does not apply and delete all orange parentheses.

If material contains hazardous substances do not dispose of the material in the mandatory disposal site. Dispose of materials that contain hazardous substances according to *(*Section 00294*)(*00290.20*)*.

[End Mandatory Disposal Site Option]

00236.03 Laws - Conduct operations within the disposal site according to all applicable State, county, and federal laws including mining and fire laws. Provide, operate, and maintain wildland firefighting equipment appropriate for the current fire levels on-site at all times during all disposal site operations.

00236.04 Permits - Copies of the Plans, permits, agreements and the disposal site narrative*(*s*)* are available for inspection at the Project Manager's office. Operations within the disposal site*(*s*)* shall conform to the stipulations and conditions of these documents and to all of the requirements of the Contract.

(Fill in the table below with the appropriate permits/plans listed below for each site. Delete the list when finished. Modify the table as needed to add or delete sites.

Department of Geology and Mineral Industries (DOGAMI) Permit
Operating and Reclamation Plan
County Land Use Permit
Intergovernmental Agreement
Cooperative Improvement Agreement
Bureau of Land Management (BLM) Permit
United States Forest Service (USFS) Permit
Division of State Lands (DSL) Permit
Oregon Department of Fish and Wildlife (ODFW) Permit
Oregon Department of Environmental Quality (DEQ) Permit)

Subsection	Site Name	Documents
00236.01(a)	***(name)***	***(from list above)***
00236.01(b)	***(name)***	***(from list above)***
00236.02(a)	***(name)***	***(from list above)***
00236.02(b)	***(name)***	***(from list above)***

00236.05 Pre-Work Meeting - Before occupying a disposal site, attend a pre-work meeting at the disposal site with the Engineer and the following owners or representatives:

(In the table below, select representatives from the following list and fill in the blanks with the contact name(s) and phone number(s) as appropriate for each site. Include the items that apply to each site. Add or delete rows in the table as necessary to list all applicable sources.

ODOT Geologist
ODOT Region Environmental Coordinator
U.S. Forest Service representative(s)_____
BLM representative(s) _____
County representative(s)_____
Other _____)

Subsection	Site Name	Contact Names for pre-work meeting
00236.01(a)	***(name)***	***ODOT Geologist*** ***ODOT Region Environmental Coordinator*** ***U.S. Forest Service representative(s)_____*** ***BLM representative(s)_____*** ***County representative(s)_____*** ***Other _____***
00236.01(b)	***(name)***	***(from list above)***
00236.02(a)	***(name)***	***(from list above)***
00236.02(b)	***(name)***	***(from list above)***

00236.06 Site Occupancy - Coordinate disposal site occupancy with the Engineer. The disposal site items listed in Table 00236-1 below shall be as shown *(*and as staked*)*. Do not operate beyond the disposal site Project boundary or in no Work area(s) as shown *(*and as staked*)* unless otherwise directed, in writing.

(In the table below, fill in the blank with the appropriate site information listed below for each site. Add or delete rows in the table as necessary to list all applicable sites.

project boundary
reject fines stockpile
oversize storage area
no work area(s)
safety berm(s)
log deck
stockpile and processing area
disposal area(s)
scalpings stockpile
overburden storage area(s)
stormwater control berm(s)
slash disposal area
bench access road(s)

access road(s) ***sediment fence(s)***
straw bale sediment barrier(s))

Table 00236-1

Subsection	Site Name	Site items shown and staked
00236.01(a)	***(name)***	***(from list above)***
00236.01(b)	***(name)***	***(from list above)***
00236.02(a)	***(name)***	***(from list above)***
00236.02(b)	***(name)***	***(from list above)***

00236.07 Site Development - If proposing changes to a disposal site development plan, submit a site development plan as an unstamped Working Drawing according to 00150.35. Do not begin Work in a disposal site until the site development plan has been approved, in writing, by the Engineer.

Develop a site-specific Erosion and Sediment Control Plan for each disposal site according to 00280.04 and submit it to the Engineer at or before the pre-work meeting. Construct stormwater control berm(s) as shown and as needed to control runoff. Do not allow any materials, including sediments, or Aggregate to enter into waterways or Wetlands.

Develop a site-specific Pollution Control Plan for each disposal site according to 00290.30(b), and submit it to the Engineer at or before the pre-work meeting. Include the following requirements in the Pollution Control Plan:

- Do not discharge waste or by-product if it contains any substance in concentrations that could contaminate Soils or result in harm to fish, wildlife, or water sources.
- Store all potentially hazardous materials and solid waste in a manner that prevents seepage into the ground or groundwater sources. Lined sumps or pits are allowable options for storage. If pits or sumps are used, construct adequate berms or provide other measures to prevent breaching of the pits or sumps.
- For Materials capable of causing water pollution if discharged, locate storage facilities in an area that prevents spillage into waterways or Wetlands.

Construction

00236.40 General - All vehicles and Equipment, prior to entering the site for the first time, and each subsequent time if the vehicle has left the Roadway outside the construction Project limits, shall be steam cleaned of all debris (soil, dirt, plant parts, and vegetative matter) before being brought back to the site. Notify the Engineer before moving each vehicle onto the site. Certify, in writing, that the Equipment has been steam cleaned.

00236.41 Restrictions and Protection of Resources - Comply with the following for all operations within the disposal site:

- Protect cultural resources according to 00290.50.

- Protect migratory birds according to 00290.36(a).

(Use the following bullet when clearing, grubbing, and overburden removal is required. Modify dates when directed by Environmental Coordinator. If modified dates are different for different sites list the sites and dates or put them in a table.)

- Clear trees and shrubs and strip and stockpile soil overburden between September 1 and March 1.

- Do not utilize, contaminate, or disperse material from existing stockpiles. If existing stockpiles interfere with the Contractor's operations, move the stockpiles to other locations within the disposal site area as directed, at no additional cost to the Agency.

(Use the following bullet when specific restrictions are addressed in land use or other permits. If times are different for different sites list the sites and times or put them in a table.)

- Limit Equipment operation activities and disposal activities to the hours of ___:00 a.m. to ___:00 p.m., Monday through Saturday unless modifications to these hours are requested in writing and approved by the Engineer. Do not conduct any operation on Sundays or legal holidays, as defined in ORS 279C.540.

(Use the following subsection (a) when county owned sites are utilized. Fill in the blank of the first paragraph with the name of the county. Fill in the blanks of the second paragraph with the name of the contact person(s), the county name, and the phone number. Fill in the blank of the third paragraph with the royalty fee amount and unit, for example cubic yard, ton. Be sure to include an anticipated item to pay the county royalty fee.)

(a) County Owned Disposal Sites - This disposal site ***(Name) (subsection)*** is under Agency control through an agreement with the _____ County Department of Public Works. Operations within this disposal site shall conform to the requirements of this agreement, the Plans, and the Specifications.

For information contact _____ or _____ at the _____ County Department of Public Works, at _____, to make arrangements to visit the site.

A $_____ per _(unit)___ royalty charge for all material imported into the Prospective/Mandatory Site will be deducted from monies due the Contractor in the progress payments.

(Use the following subsection (b) on USDA Forest Service owned sites. Use the appropriate agreement. Delete the agreement that does not apply. Fill in the administrative/road use fee amount and unit in the second paragraph. Be sure to include an anticipated item to pay the fee.)

(b) USDA Forest Service Owned Sites - This disposal site ***(Name) (subsection)*** is under Agency control through a "Contract for the Sale of Mineral Materials" or a "Special

Use Permit" agreement with USDA Forest Service. Operations within this disposal site shall conform to the requirements of this agreement, the Plans, and the Specifications.

A $ _____ per ___(unit)___ administrative and road use fee charge for disposal of material will be deducted from monies due the Contractor in the progress payments.

(Use the following subsection (c) on BLM owned sites.)

(c) Bureau of Land Management Sites - This disposal site ***(Name) (subsection)*** is under Agency control through a "Free Use Permit" or a "Temporary Use Permit" agreement with the Bureau of Land Management. Operations within this disposal site shall conform to the requirements of this agreement, the Plans, and the Specifications.

(Use the following subsection (d) on privately owned sites. Fill in the appropriate property owner in the blank of the first paragraph. Fill in the property owner contact and phone number in the second paragraph. Fill in the royalty fee amount and unit in the third paragraph. Be sure to include an anticipated item to pay the royalty fee.)

(d) Privately Owned ODOT Controlled Sources - This disposal site ***(Name) (subsection)*** is under Agency control through a lease agreement with _____. Operations within this disposal site shall conform to the requirements of this lease agreement, the Plans, and the Specifications.

For information contact _____ at _____, to make arrangements to visit the site.

A $_____ per ___(unit)___ royalty charge for all material imported into the Prospective Site will be deducted from monies due the Contractor in the progress payments.

00236.42 Site Setup - Before proceeding with Work in the disposal site, the following apply:

(Use the following bullet when fences are required to secure no Work areas. Fill in the blanks with the length, type, and location of fencing. Copy and paste the following bullet as needed. Repeat the bullet for each disposal site that requires fences.)

- For disposal site ***(Name) (subsection)*** construct approximately ____feet of type _____ fencing along _____ the no Work area as shown and as staked. Do not disturb the no Work area.

(a) Access:

(Use the following bullet when road access is to be constructed. Fill in the blank with the disposal site name and subsection. Delete all orange parentheses. Repeat the bullet for each site that requires access road development or maintenance.)

- For disposal site ***(Name) (subsection)*** develop and maintain an access road from the _____ to the _____ as applicable. Construct this road with a width of 12 feet and reasonably uniform grade, no steeper than a 16 percent grade (1V:6H), for access to the disposal area. An approximate location for development of this

road is shown on the Plans. Determine the exact location in the field. Obtain the Engineer's approval before constructing the access road.

(Use the following bullet when realignment and/or widening of an existing access road is required. Insert the road name or number in the first bullet blank and road name or access location in the second bullet blank. Repeat the bullet(s) for each source that requires realignment and/or widening of an existing access road.)

- For disposal site ***(Name) (subsection)*** minor realignment and widening of _____, to accommodate the Contractor's operations in the disposal site, are anticipated. An approximate location for the minor realignment and widening Work is shown on the Plans. Determine the exact location in the field. Obtain the Engineer's approval before performing this Work.
- For disposal site ***(Name) (subsection)*** routine road maintenance activities such as grading and watering of the access road do not need review or approval. Maintain or develop drain dips, water bars, road crowning, in-slopes and out-slopes during road maintenance.

(Use the following bullet when a stormwater control berm is required. Repeat the bullet for each site that requires a stormwater control berm.)

- For disposal site ***(Name) (subsection)*** using existing, loose and non-stockpiled material or clean soil or a combination of clean soil and rock, construct a stormwater control berm(s). Grade and leave level, all areas of the disposal site disturbed during construction of the stormwater control berm(s). Construct the stormwater control berm 3 feet high, with side slopes of 1V:2H. Provide erosion control protection for the stormwater control berm by placing, with minimal amount of separation, 3-foot diameter and larger oversize material along the creek-side toe of the berm. Maintain a minimum 10-foot wide buffer strip between the oversize material of the stormwater control berm and the creek, as detailed on the cross sections. After completion of the stormwater control berm, seed according to 00236.46.

(Use the following bullet when safety berms are required. Repeat the bullet for each site that requires safety berms.)

- For disposal site ***(Name) (subsection)*** using overburden or existing, loose and non-stockpiled material or imported or clean soil or a combination of clean soil and rock, construct a safety berm along the top edge of the new disposal area or existing slopes as shown. Maintain a 10-foot buffer between the top edge of the disposal or slope and the toe of the safety berm. Construct the berm 3 feet high, with side slopes of 1V:2H.
- For disposal site ***(Name) (subsection)*** place and arrange straw bales and or sediment fences as shown and according to Section 00280. Maintain a 10-foot buffer between the toe of the disposed of material slopes and the straw bales.

(b) Clearing and Grubbing - Before stripping of overburden clear and grub all trees within the disposal area and the area to be developed into access roads. Place all logs in the log decks and other woody debris in the slash disposal area as shown ***(***and as staked***)***.

(c) Overburden - Before disposal activity, strip and stockpile all soil overburden within the disposal area to be developed as access road(s). Incorporate grass and small shrubs into the stockpiles. Do not remove grass or small shrubs from the overburden. Place stockpiles in the overburden storage area(s). Maintain a minimum 10-foot buffer strip between the toe of the overburden storage area(s) and the disposal area. Smooth and contour overburden storage berms to form side slopes no steeper than 1V:2H.

00236.44 Site Operations - The following apply during disposal site operations:

- Construct slopes, benches, top, and floor of the disposal area*(*s*)* as shown.
- Track-walk all slopes with a grade at or flatter than 1V:1.5H so that track impressions run parallel to slope contours. Maintain at least 1 3/8-inch tall track grousers.

(Use the following bullet when lift height is required. Insert lift height in the blank. Repeat the bullet for each site that requires lift height.)

- For disposal site ***(Name) (subsection)*** place material in Lifts of no more than ___ feet, and as shown.
- To control dust, apply water to disposal site access, haul road(s), and disposal operations.

(Use the following bullet when an off-site water source may be available. Use only when water rights are obtained or all permits are secured. If the proposed water source is a natural source, include 00290.34(c)(3) water intake screening in the project special provisions if it is required. Repeat the bullet for each site when an off site water source may be available.)

- A water source is not available on-site within the disposal site. A possible water source is located at ____(insert location name, legal description, address, highway and mile point) ____.

- Place only material that is identified as acceptable for this site in the disposal area as shown. Maintain a minimum 10-foot wide buffer strip between the toe of the disposal area and the property boundary. Smooth and contour the disposal area to form side slopes no steeper than 1V:2H.

(Use the following bullet when an existing road is to be maintained for a prospective site. Fill in the blank with the road name. Repeat the bullet for each prospective disposal site when an existing road is to be maintained.)

- For disposal site ***(Name) (subsection)*** if the Contractor chooses to utilize this disposal site, maintain the condition of _____ at all times. Provide traffic control related to ingress and egress movements in a manner that allows a safe work zone and safe passage of vehicles.

(Use the following bullet when an existing road is to be maintained for a mandatory site. Fill in the blank with the road name. Repeat the bullet for each mandatory disposal site when an existing road is to be maintained.)

- For disposal site ***(Name) (subsection)*** maintain the condition of _____ at all times. Provide traffic control related to ingress and egress movements in a manner that allows a safe work zone and safe passage of vehicles.

(Use the following bullet when cattle guards or livestock gates are present. Fill in blank with the appropriate location(s). Repeat the bullet for each site when cattle guards or livestock gates are present.)

- For disposal site ***(Name) (subsection)*** maintain the cattle guard and livestock gate _____ into the source at all times.

(Use the following bullet when cattle guard installation is required. Fill in the blank with the appropriate locations(s). Be sure to include cattle guard details on the project detail sheet(s). Repeat the bullet for each site when cattle guard installation is required.)

- For disposal site ***(Name) (subsection)*** construct cattle guard(s) at _____ according to details shown.

00236.45 Site Clean-up - The following apply at the completion of operations:

- Leave no loose material on the site exceeding 1 foot diameter, except as noted below.

(Fill in the blank with the appropriate quantity. Repeat the bullet for stockpiling oversized material for each site when required.)

- For disposal site ***(Name) (subsection)*** a maximum of _____ cubic yards of oversize material with a maximum dimension of 2.5 feet may be stockpiled in the disposal site. Consolidate oversize material as shown.

(Use the bullet below if applicable. Modify as needed. Specify a site subsection and name if necessary.)

- Redistribute the stockpiled overburden over the disposed material to a uniform depth as shown.
- Pile and burn all construction slash and combustible debris resulting from use and development of the site, including the preexisting refuse identified at the pre-work meeting, even if it is from outside the disposal site project boundary except for grass and small shrubs that are incorporated into the overburden. Comply with all open burning regulations in effect at the time of site occupancy. If burning is not allowed, all construction slash and combustible debris become the property of the Contractor, to be treated as noncombustible and removed from disposal site.

00236.46 Seeding:

(In the bullet below, fill in the blank with the appropriate area information listed below. Delete "(s)" or parentheses as appropriate. Delete the list when finished. Repeat the first two bullets for each site if required.

disposal area(s) (If being reclaimed in the operation)
overburden storage area(s)
stormwater control berm(s)
safety berm(s)
soil/scalpings stockpile(s)
bench(es) and access road(s)
other)

- For disposal site ***(Name) (subsection)*** in addition to other areas with soil cover within the site disturbed by the Contractor's operations, stabilize the _____ by seeding, mulching, and tackifying, as directed.
- For disposal site ***(Name) (subsection)*** provide the following seed mixture:

(Insert seed mix and application rates here. Note: The seed mixture is almost always site specific.)

(In the following bullet, include the third sentence when clover or alfalfa is required, otherwise delete it.)

- Use only certified weed free seed. Provide copies of the certification to the Engineer. Inoculate the clover and alfalfa prior to incorporation into the seed mixture.
- Provide straw mulch according to 01030.15(b).
- Apply a commercial straw mulch tackifier according to the manufacturer's directions and at the recommended rate.
- Apply seed and mulch according to Section 01030.
- If conditions allow and the Contractor chooses, the area may be stabilized by applying seed using a range drill with a roller attachment. All areas seeded with the range drill and roller do not need to be subsequently covered with mulch and tackifier.
- All variations to these requirements require written approval by the Engineer.

00236.47 Site Vacating - Before vacating the disposal site the following apply:

- Remove all structures, noncombustible debris, and Equipment from the disposal site, even if it was pre-existing, except for grass and small shrubs incorporated into the overburden.
- Remove solid waste and hazardous material from the site and dispose of properly. Provide documentary evidence of proper disposal and verify the amount of material removed.
- If a spill or dumping has occurred, or is suspected to have occurred, the Contractor shall clean up contaminated materials according to Section 00290. After clean up, the Engineer may, sample and test materials at the spill or dumping locations to verify the cleanup has been completed. If the Engineer's verification testing demonstrates remaining contamination, the Contractor shall perform additional clean up until the requirements of Section 00290 including 00290.20(g) are met.
- Attend a post-work meeting at the disposal site to evaluate disposal site rehabilitation work with the Engineer and attendees listed under 00236.05.

(When a mandatory disposal site is specified and fence or additional Work is required, the additional Work must be measured and paid for in both Section .80 and .90. When a prospective disposal site is specified, fence and additional Work is considered incidental to the prospective disposal site.)

Measurement

00236.80 Measurement - No measurement of quantities will be made for Work performed under this Section *(*except for *(*seeding*)*, *(*temporary fence*)*, *(*and*) (*cattle guard*)* in mandatory disposal area(s)*)*.

(Use the following paragraph when a mandatory disposal site is specified and seeding is required.)

Seeding will be measured according to 01030.80.

(Use the following paragraph when a mandatory disposal site is specified and temporary fence, not orange plastic mesh fence, is required.)

Temporary fence will be measured according to 00270.80.

(Use the following paragraph when a mandatory disposal site is specified and a cattle guard is required.)

Cattle guards will be measured according to 01060.80.

Payment

(If mandatory disposal site is specified and seeding, temporary fence and/or cattle guard is required, delete the language in orange parentheses that does not apply and delete all orange parentheses.)

00236.90 Payment - No separate or additional payment will be made for Work performed under this Section. Payment will be included in payment made for the appropriate items under which this Work is required *(*except for *(*seeding*)*, *(*temporary fence*)*, *(*and*) (*cattle guard*)* in mandatory disposal area(s)*)*.

(Use the following paragraph when a mandatory disposal site is specified and seeding is required.)

Seeding will be paid for according to 01030.90.

(Use the following paragraph when a mandatory disposal site is specified and temporary fence, not orange plastic mesh fence, is required.)

Temporary fence will be paid for according to 00270.90.

(Use the following paragraph when a mandatory disposal site is specified and a cattle guard is required.)

Cattle guards will be paid for according to 01060.90.

SP00237 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-16-25
This Section requires SP00270, SP01030, and SP01060 if temporary fence, seeding or cattle guards are required.))

SECTION 00237 - AGENCY-PROVIDED STAGING AREAS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.

If the staging area is an ODOT material source, consider providing a plan sheet delineating the staging area boundaries within the source. If there are specific restrictions or required site work to use the source, list these in subsections .41 and .44.)

Section 00237, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00237.00 Scope - This Work consists of utilizing Agency provided prospective or mandatory staging areas as the Contractor elects or as required for the construction of the Contract.

Locate staging area(s) in previously improved area(s) that have been paved or compacted and graveled, unless otherwise shown or approved.

(This boilerplate is set up with two alternatives, a short simple alternative when none of the optional language applies, and a regular (long) alternative that includes all of the typical optional language. ONLY use one alternative, if in doubt, use the regular (long) alternative. If any improvements like fence or cattle guards are required use the regular (long) alternative.)

[Begin Prospective Staging and Mandatory staging short Alternative]

(Use this subsection .01 for prospective staging areas. Do not use this subsection if subsection .02 mandatory staging area option is used.)

00237.01 Prospective Staging Areas - The following prospective staging area(s) have been cleared for use. If the Contractor elects not to utilize the listed prospective staging

area(s) or elects to use other or additional staging areas, 00290.10 applies. Do not stage Equipment, store Materials, or operate beyond the staging area boundary shown or delineated unless otherwise directed in writing.

(Fill in the first blank with a description/name of the staging area. Fill in the remaining blanks with location, access, and available area. Use the source number bullet only if the source is an ODOT identified material source with a recognized source number, otherwise delete. Copy and paste subsection .01(a) as necessary to list more than one staging area. Ensure subsections are sequentially labeled (e.g. (a), (b), (c), etc.). Modify as needed. Delete the language in orange parentheses that does not apply and delete all orange parentheses.)

(a) Prospective Staging Area, _*(name)*____:

- **Source Number** - OR- _____
- **Location** - _____(Highway/MP, TRS, etc.)_____
- **Access** - _____(directions)_____
- **Available Area** - _____(acreage, dimensions, etc.)_____

[Begin Mandatory Staging Area Option]

(Use this subsection .02 for mandatory staging areas. Do not use this subsection / option if subsection .01 prospective staging area option is used.)

00237.02 Mandatory Staging Areas - No staging areas may be used on this Project, including non-Agency sites, except for the following mandatory staging area*(*s*)* :

(Fill in the first blank with a description/name of the staging area. Fill in the remaining blanks with location, access, and available area. Use the source number bullet only if the source is an ODOT identified material source with a recognized source number, otherwise delete. Copy and paste subsection .02(a) as necessary to list more than one staging area. Ensure subsections are sequentially labeled (e.g. (a), (b), (c), etc.). Modify as needed. Delete the language in orange parentheses that does not apply and delete all orange parentheses.)

(a) Mandatory Staging Area, __*(name)*____:

- **Source Number** - OR- _____
- **Location** - _____(Highway/MP, TRS, etc.)_____
- **Access** - _____(directions)_____
- **Available Area** - _____(acreage, dimensions, etc.)_____

Do not stage Equipment, store Materials, or operate beyond the staging area boundary shown or delineated unless otherwise directed in writing.

Measurement

00237.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

Payment

00237.90 Payment - No separate or additional payment will be made for Work performed under this Section.

[End Prospective Staging and Mandatory staging short Alternative]

[Begin Prospective Staging and Mandatory staging regular (long) Alternative]

(Use the following subsection .01 as instructed below when the Agency will provide staging areas. When only one staging area will be listed, delete "(s)". Copy and paste subsection .01(b) as necessary to list more than two staging areas. Ensure subsections are sequentially labeled (e.g. (a), (b), (c), etc.). Modify as needed. Delete the language in orange parentheses that does not apply and delete all orange parentheses.)

[Begin Prospective Staging Area Option]

(Use this subsection .01 for prospective staging areas. Do not use this subsection if subsection .02 mandatory staging area option is used.)

00237.01 Prospective Staging Areas - If the Contractor elects not to utilize the listed prospective staging area(s) or elects to use other or additional staging areas, 00290.10 applies.

(Fill in the first blank with a description/name of the staging area. Fill in the remaining blanks with location, access, and available area. Use the source number bullet only if the source is an ODOT identified material source with a recognized source number, otherwise delete.)

(a) Prospective Staging Area, _*(name)*____:

- **Source Number** - OR- _____
- **Location** - _____(Highway/MP, TRS, etc.)_____
- **Access** - _____(directions)_____
- **Available Area** - _____(acreage, dimensions, etc.)_____

(Use the following paragraph when the Contractor is required to install fencing around the staging area. Use either "work zone fencing from the QPL" or "temporary fence according to Section 00270", delete the option that does not apply and delete all orange parentheses.)

Delineate the limits of each site with *(*work zone fencing from section 00221.13 of the QPL*)* *(*temporary fence according to Section 00270*)* for the duration of the Project. Remove the fencing when the Project is complete and the site has been restored to preconstruction

conditions. Do not stage Equipment, store Materials, or operate beyond the staging area boundary shown or delineated unless otherwise directed in writing.

If used, restore the site to preconstruction condition, as directed, by:

(Delete bullets that do not apply.)

- Removing all imported fabric, rock, and other construction and non-combustible debris
- Removing all solid waste and hazardous materials, including spills, and dispose properly
- Removing work zone fencing
- Leveling and scarifying the ground
- Applying seed and mulch to all disturbed earth according to Section 01030

(Use the following "Prospective Staging Area, _____" lead-in and bullets when more than one prospective staging area has been identified. Fill in the first blank with a description/name of the staging area. Fill in the remaining blanks with location, access, and available area. Copy and paste as necessary to list all prospective staging areas on the project. Use the source number bullet only if the source is an ODOT identified material source with a recognized source number, otherwise delete.)

(b) Prospective Staging Area, __*(name)*____:

- **Source Number** - OR- _____
- **Location** - _____(Highway/MP, TRS, etc.)_____
- **Access** - _____(directions)_____
- **Available Area** - _____(acreage, dimensions, etc.)_____

(Use the following paragraph when the Contractor is required to install fencing around the staging area. Use either "work zone fencing from the QPL" or "temporary fence according to Section 00270", delete the option that does not apply and delete all orange parentheses. Use additional prospective staging area as needed.)

Delineate the limits of each site with *(*work zone fencing from section 00221.13 of the QPL*)* *(*temporary fence according to Section 00270*)* for the duration of the Project. Remove the fencing when the Project is complete and the site has been restored to preconstruction conditions. Do not stage Equipment, store Materials, or operate beyond the staging area boundary shown or delineated unless otherwise directed in writing.

If used, restore the site to preconstruction condition, as directed, by:

(Delete bullets that do not apply.)

- Removing all imported fabric, rock, and other construction and non-combustible debris

- Removing all solid waste and hazardous materials, including spills, and dispose properly
- Removing work zone fencing
- Leveling and scarifying the ground
- Applying seed and mulch to all disturbed earth according to Section 01030

[End Prospective Staging Area Option]

(Use the following subsection .02 when specifying one or more mandatory staging areas, which means that the Contractor is not allowed to stage anywhere else. Specifying a mandatory staging area on a Federal funded project requires an LPIF.

When only one mandatory staging area will be listed, delete "(a)" before the "Mandatory Staging Area, ____" heading and delete "(s)". Copy and paste subsection .02(b) as necessary to list more than two mandatory staging areas. Ensure subsections are sequentially labeled (e.g. (a), (b), (c), etc.). Delete all orange parentheses.)

[Begin Mandatory Staging Area Option]

00237.02 Mandatory Staging Areas - No staging areas may be used on this Project, including non-Agency sites, except for the following mandatory staging area*(*s*)* :

(Fill in the first blank with a description/name of the staging area. Fill in the remaining blanks with location, access, and available area. Use the source number bullet only if the source is an ODOT identified material source with a recognized source number, otherwise delete.)

(a) Mandatory Staging Area, __*(name)*____:

- **Source Number** - OR- _____
- **Location** - _____(Highway/MP, TRS, etc.)_____
- **Access** - _____(directions)_____
- **Available Area** - _____(acreage, dimensions, etc.)_____

(Use the following paragraph when the Contractor is required to install fencing around the staging area. Use either "work zone fencing from the QPL" or "temporary fence according to Section 00270", delete the option that does not apply and delete all orange parentheses.)

Delineate the limits of each site with *(*work zone fencing from section 00221.13 of the QPL*)* *(*temporary fence according to Section 00270*)* for the duration of the Project. Remove the fencing when the Project is complete and the site has been restored to preconstruction conditions. Do not stage Equipment, store Materials, or operate beyond the staging area boundary shown or delineated unless otherwise directed in writing.

Restore the site to preconstruction condition, as directed, by:

(Delete bullets that do not apply.)

- Removing all imported fabric, rock, and other construction and non-combustible debris
- Removing all solid waste and hazardous materials, including spills, and dispose properly
- Removing work zone fencing
- Leveling and scarifying the ground
- Applying seed and mulch to all disturbed earth according to Section 01030

(Use the following "Mandatory Staging Area, _____" lead-in and bullets when more than one mandatory staging area has been identified. Fill in the first blank with a description/name of the staging area. Fill in the remaining blanks with location, access, and available area. Copy and paste as necessary to list all mandatory staging areas on the project. Use the source number bullet only if the source is an ODOT identified material source with a recognized source number, otherwise delete.)

(b) Mandatory Staging Area, __*(name)*____:

- **Source Number** - OR- _____
- **Location** - _____(Highway/MP, TRS, etc.)_____
- **Access** - _____(directions)_____
- **Available Area** - _____(acreage, dimensions, etc.)_____

(Use the following paragraph when the Contractor is required to install fencing around the staging area. Use either "work zone fencing from the QPL" or "temporary fence according to Section 00270", delete the option that does not apply and delete all orange parentheses.)

Delineate the limits of each site with *(*work zone fencing from section 00221.13 of the QPL*)* *(*temporary fence according to Section 00270*)* for the duration of the Project. Remove the fencing when the Project is complete and the site has been restored to preconstruction conditions. Do not stage Equipment, store Materials, or operate beyond the staging area boundary shown or delineated unless otherwise directed in writing.

Restore the site to preconstruction condition, as directed, by:

(Delete bullets that do not apply.)

- Removing all imported fabric, rock, and other construction and non-combustible debris
- Removing all solid waste and hazardous materials, including spills, and dispose properly
- Removing work zone fencing
- Leveling and scarifying the ground
- Applying seed and mulch to all disturbed earth according to Section 01030

[End Mandatory Staging Area Option]

(Use the following subsection .05 if a pre-work meeting is required.)

00237.05 Pre-Work Meeting - Before occupying a staging area, attend a pre-work meeting at the staging area with the Engineer and the following owners or representatives:

(In the table below, select representatives from the following list and fill in the blanks with the contact name(s) and phone number(s) as appropriate for each source. Include the items that apply to each staging area. Add or delete rows in the table as necessary to list all applicable sources.

ODOT Geologist
ODOT Region Environmental Coordinator
Other _____)

Subsection	Source Name	Contact Names and phone numbers
00237.01(a)	***(name)***	***ODOT Geologist*** ***ODOT Region Environmental Coordinator*** ***Other _____***
00237.01(b)	***(name)***	***(from list above)***
00237.02(a)	***(name)***	***(from list above)***
00237.02(b)	***(name)***	***(from list above)***

00237.40 General - All vehicles and Equipment, prior to entering the site for the first time, and each subsequent time if the vehicle has left the Roadway outside the construction Project limits, shall be steam cleaned of all debris (soil, dirt, plant parts, and vegetative matter) before being brought back to the site. Notify the Engineer before moving each vehicle onto the site. Certify, in writing, that the Equipment has been steam cleaned.

00237.41 Restrictions and Protection of Resources - Comply with the following for all operations within the staging area operations:

- Protect cultural resources according to 00290.50.
- Protect migratory birds according to 00290.36(a).

(Use the following subsection .44 when a pre-work meeting is required or cattle guards or livestock gates are present. Fill in blank with the appropriate location(s). Repeat the bullet for each staging area when cattle guards or livestock gates are present.)

00237.44 Staging Area Operations - The following apply during staging area operations:

(Use the following bullets when a pre-work meeting is required. Delete the bullets that do not apply.)

- Develop a site-specific Pollution Control Plan for the staging area(s) according to 00290.30(b), and submit it to the Engineer at or before the pre-work meeting. In addition to the requirements of 00290.30(b) include the following in the Pollution Control Plan:
  - For materials capable of causing water pollution if discharged, locate storage facilities in an area that prevents spillage into waterways or Wetlands.
- Provide, operate, and maintain wildland firefighting equipment appropriate for the current fire levels on-site at all times during all staging operations.
- To control dust, apply water to staging area access road(s) and staging operations.

(Use the following bullet when cattle guards or livestock gates are present. Fill in blank with the appropriate location(s). Repeat the bullet for each site when cattle guards or livestock gates are present.)

- For staging area ***(Name) (subsection)*** maintain the cattle guard and livestock gate _____ into the site at all times.

(Use the following bullet when cattle guard installation is required. Fill in the blank with the appropriate locations(s). Be sure to include cattle guard details on the project detail sheet(s). Repeat the bullet for each site when cattle guard installation is required.)

For staging area ***(Name) (subsection)*** construct cattle guard(s) at _____ according to details shown.

(Use the following subsection .47 if Staging Area Vacating is required.)

00237.47 Staging Area Vacating - Before vacating the staging area(s) the following apply:

- Remove all structures, construction debris and trash, and equipment from the staging area.
- Remove solid waste and hazardous material from the site and dispose of properly. Provide documentary evidence of proper disposal and verify the amount of material removed.
- If a spill or dumping has occurred or if a spill or dumping is suspected to have occurred, 00290.20(3)(g) applies.
- Attend a post-work meeting at each staging area to evaluate staging area rehabilitation work with the Engineer.

(When a mandatory staging area is specified and fence or additional Work is required, the additional Work must be measured and paid for in both measurement and payment. When a prospective staging area is specified, fence and additional Work is considered incidental to the prospective staging area.)

Measurement

00237.80 Measurement - No measurement of quantities will be made for Work performed under this Section *(*except for *(*seeding*)*, *(*temporary fence*)*, *(*and*) (*cattle guard*)* in mandatory staging area(s)*)*.

(Use the following paragraph when a mandatory staging area is specified and seeding is required as part of the site restoration.)

Seeding will be measured according to 01030.80.

(Use the following paragraph when a mandatory staging area is specified and temporary fence, not orange plastic mesh fence, is required.)

Temporary fence will be measured according to 00270.80.

(Use the following paragraph when a mandatory staging area is specified and a cattle guard is required.)

Cattle guards will be measured according to 01060.80.

Payment

(If mandatory staging is specified and seeding, temporary fence and/or cattle guard is required, delete the language in orange parentheses that does not apply and delete all orange parentheses.)

00237.90 Payment - No separate or additional payment will be made for Work performed under this Section *(*except for *(*seeding*)*, *(*temporary fence*)*, *(*and*) (*cattle guard*)* in mandatory staging area(s)*)*.

(Use the following paragraph when a mandatory staging area is specified and seeding is required as part of the site restoration.)

Seeding will be paid for according to 01030.90.

(Use the following paragraph when a mandatory staging area is specified and temporary fence, not orange plastic mesh fence, is required.)

Temporary fence will be paid for according to 00270.90.

(Use the following paragraph when a mandatory staging area is specified and a cattle guard is required.)

Cattle guards will be paid for according to 01060.90.

SP00240 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-16-25)**

SECTION 00240 - TEMPORARY DRAINAGE FACILITIES

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All

other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00240 of the Standard Specifications.

SP00245 (Special Provisions for the 2024 Book) (Bidding on or after: 05-01-25 Last updated: 01-16-25)

(Use this Section when the Contractor is to provide temporary water management facilities.)

SECTION 00245 - TEMPORARY WATER MANAGEMENT

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00245, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00245.00 Scope - This Work consists of furnishing, installing, operating, maintaining, and removing temporary water management facilities in regulated Work areas.

00245.01 Abbreviations:

TWM - Temporary Water Management
TWMF - Temporary Water Management Facility
TWMP - Temporary Water Management Plan

00245.02 Definitions:

Temporary Water Management Facility - A TWMF that conveys water around or through Work areas, removes water from Work areas, and treats and discharges water at locations outside Work areas.

00245.03 Temporary Water Management Plan - The Agency TWMP is a concept plan. 28 Calendar Days before beginning Work in regulated Work areas, submit stamped Working Drawings of a Contractor-developed TWMP, according to 00150.35, based on either the Agency's concept plan or an independent plan that meets water quality and environmental guideline requirements and does not negatively affect neighboring properties or water rights.

Include the following minimum information in the TWMP:

- The sequence and schedule for dewatering and re-watering. This sequence and schedule must include when to contact the Engineer prior to dewatering and re-watering.
- How the Work area is isolated from the active stream flow upstream, through, and downstream.
- How the stream flow is routed and conveyed around or through the isolated Work area.
- How fish passage is provided around the Work area, if required.
- How the isolated Work area is de-watered.
- How the pumped water is treated, if necessary, before it is discharged downstream.
- Description of all construction stages, including appropriate contact points for each stage.
- A list of on-site backup Materials and Equipment.
- Provide the name of the TWM Subcontractor (if applicable) and Contractor's superintendent, and their 24-hour contact phone number 10 Days before the pre-Work meeting. If changes in the appointment of the TWM Subcontractor or Contractor's superintendent occur during the term of the Contract, provide written notice to the Engineer within 5 Calendar Days of the change.
- Calculations of water withdraw pump's capacity.
- Details of the proposed water intake screen used to isolate in-water Work area and how it meets the requirements of 00290.34(c)(3).

Any change to the TWMP during construction requires approval prior to implementation.

Obtain the Engineer's written approval before beginning Work in in-water Work areas.

00245.04 Pre-Work Meeting - Before beginning any TWM Work, attend a pre-work meeting at the Project Site with the Engineer no more than 8 Calendar Days prior to implementation of TWM. Required meeting attendees include:

- Engineer
- Contractor
- TWM Subcontractor (if applicable)
- Agency Environmental Coordinator or their appointed representative

The pre-Work meeting agenda typically includes the method of TWM, the TWMP, fish salvage plan and strategy, describe environmental risks, turbidity monitoring, energy dissipation, dewatering and re-watering plan and strategy, site clean-up expectations, and the circumstances under which contacting the Engineer is required.

Materials

(Delete Material items that do not apply and include other Materials as necessary.)

00245.10 Materials - Furnish Materials meeting the following requirements:

Concrete Barrier 00820.11
Pipe 00445.11
Plastic Sheeting..... 00280.14(a)
Riprap.....00390.11
Rock Gabion Baskets.....02340
Sandbags ..... 00280.15(a)
Water Intake Screening.....00290.34(c)

Furnish pumps that are:

- Self-priming.
- Equipped with a variable speed governor.
- Equipped with a power source.
- Able to pump water that contains soft and hard solid.

Construction

00245.40 Fish Removal - Qualified Agency, ODFW, or ODOT consultant biologists will remove fish and other aquatic organisms from the isolation Work areas. Coordinate fish removal with the Engineer at least 28 Calendar Days before beginning Work in regulated Work areas. Allow access into the isolation Work areas before, during and after installation of the TWMF to perform the specified tasks as follows:

- **Before Installation of TWMF** - Before any in-water Work, including installing TWMF, qualified personnel will remove fish and other native aquatic organisms from within the proposed isolated Work area.

- **After Installation of TWMF** - After installing TWMF and the reduction of the water level through the isolated Work area has begun, qualified personnel will remove all fish and aquatic organisms as the water level is reduced. Do not completely de-water the isolation area until all fish and aquatic organisms have been removed.

00245.41 Installation - During installation of the temporary water management facility, maintain a downstream water flow rate of at least 50 percent of the upstream water flow rate.

00245.42 Operation - Operate temporary water management as follows:

- Protect fish and fish habitat according to 00290.34.
- Maintain and control water flow downstream of the isolated Work area for the duration of the diversion to prevent downstream de-watering.
- Clean, maintain and repair water intake screening to ensure adequate flows and protection of aquatic organisms.
- In the event of containment failure immediately notify the Engineer so arrangements can be made to remove fish and aquatic organisms from the isolation Work areas prior to the continuation of Work within the ordinary high water limits.

(Use the following bullet when a bypass pump is required.)

- When using a pump for bypassing water during temporary water management, physically monitor the pump in-person and maintain the pump at all times including non-work hours. Provide a back-up pump on-site and ready for use as necessary. Provide the Engineer with a daily report documenting monitoring activities.

Maintenance

00245.60 Maintenance - Monitor water turbidity according to 00290.30(a)(8).

Finishing and Cleaning Up

00245.70 Removal - Prior to removal of the TWMF, obtain approval from the Engineer after completion of all Work within ordinary high water limits. Remove the TWMF and re-water and restore the stream flow. Maintain downstream water flow during removal of the facility. Staged or metered re-watering may be required and will be determined by the Engineer.

Measurement

00245.80 Measurement - No measurement of quantities will be made for temporary water management facilities.

The estimated quantities of Materials required for the temporary water management facility are:

(Identify temporary water management facilities by station and list Materials for each facility. Delete Material items that do not apply and include other Materials as necessary. List each facility separately. Copy and paste for multiple facilities.)

Temporary Water Management Facility at Station _____ :

Concrete Barrier ....._____ Feet
Pipe ....._____ Feet
Plastic Sheeting....._____ Square Yard
Riprap....._____ Cubic Yard
Rock Gabion Baskets....._____ Square Foot
Sandbags ....._____ Each

(Use the following sentence when a bypass pump is required.)

The quantities of bypass pump monitoring will be measured on the time basis, of the actual number of Days the bypass pump is in operation and a daily monitoring report is received.

Turbidity monitoring will be measured according to 00290.80.

Payment

00245.90 Payment - The accepted quantities of temporary water management facilities will be paid for at the Contract lump sum amount for the item "Temporary Water Management Facility at Station _____ ".

The location of the facility will be inserted in the blank.

(Use the following sentence when a bypass pump is required.)

The accepted quantities of bypass pump monitoring will be paid for at the Contract unit price, per Day, for the item “Bypass Pump Monitoring”.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

Turbidity monitoring will be paid for according to 00290.90.

No separate or additional payment will be made for TWMP, maintaining, operating, monitoring, moving, or removing the facility.

SP00250 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-16-25
This Section requires SP00230
When temporary surfacing
is required.)

(Use this Section when the Contractor is to provide a diversion structure. This Section is for diversion bridges.)

SECTION 00250 - DIVERSION BRIDGES

(Follow all instructions and make all edits with “Track Changes” turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00250, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00250.00 Scope - This Work consists of designing, constructing, inspecting, maintaining, and removing diversion bridges as shown or directed.

00250.03 Submittals - Submit the following at least 14 Calendar Days before the preinstallation conference:

- The Diversion Bridge Design Checklist which is to be signed and stamped by the designer (see 00150.35(b)(1)) and is included at the end of this Section.

- Stamped Working Drawings and calculations, including hydraulic, scour, and foundation calculations, according to 00150.35.
- For used material, provide the following:
  - The locations of all acceptable defects on the Working Drawings with supporting design calculations.
  - Documentation that all primary and secondary members to be incorporated into the diversion bridge meet the requirements of 00250.10.
  - A statement that the Design Engineer of Record has inspected the used Material to be incorporated into the diversion bridge.

00250.04 Preinstallation Conference - Hold a preinstallation conference with the Engineer, Contractor personnel, fabricator, Design Engineer of Record, and all other personnel involved in installing the diversion bridge. Meet at a mutually agreed time two weeks before installation work begins. Present and discuss all phases of the diversion bridge installation work.

Materials

00250.10 Material - Furnish new or used material for diversion bridges.

(a) New and Used Material - New and used material for diversion bridges may contain the following defects:

- Precast prestressed concrete members with spalling, cracking, section loss, or other distress that still satisfy the strength and serviceability requirements for the intended use.
- Structural steel members with notches, gouges, flame cuts, welds that have been repaired according to AWS D1.5, or holes meeting the requirements of AWS D1.5 that still meet the structural design and fatigue requirements for the intended use.

(b) New Material - Furnish new material for diversion bridges according to the applicable Sections of Part 00500.

(c) Used Material - Used materials are defined as materials that:

- Are reclaimed from previous projects.
- Performed satisfactorily on previous projects.
- Have no damage that affects the strength or serviceability required for the application intended.
- The Design Engineer of Record can certify for use as a part of the diversion bridge according to 00250.44.

(1) Precast Prestressed Concrete Members - Furnish precast prestressed concrete members that:

- Meet the requirements of Section 00550.

- Are permanently marked, in a location that is visible after assembly, with the manufacture's initials, cast date, job number, piece number, bridge number, and contract number.

Provide copies of the original shop drawings.

(2) Structural Steel Members - Furnish primary and secondary members that meet one of the following criteria:

Documented Steel:

- Meet the requirements of AASHTO M 160 (ASTM A6).
- All existing welds were tested for discontinuities using magnetic particle, ultrasonic, or radiographic testing as appropriate according to AWS D1.5,. Evaluate all full penetration welds using tension criteria. Submit copies of all nondestructive testing (NDT) test reports to the Engineer.
- Meet the requirements of Section 02530. Verify by providing original material test reports or test reports on samples tested for yield and tensile strength, elongation, and Charpy Impact strength (zone 2).

Undocumented Steel:

- Meet the requirements of AASHTO M 160 (ASTM A6).
- For the purpose of this Section, all design calculations for undocumented steel will be limited to the minimum requirements of ASTM A36 steel.
- All existing welds were tested for discontinuities using magnetic particle, ultrasonic, or radiographic testing as appropriate according to AWS D1.5. Evaluate all full penetration welds using tension criteria. Submit copies of all NDT test reports to the Engineer.

(3) Timber Members - Furnish timber members that:

- Meet the requirements of Section 02130.
- Do not contain rot, physical damage, or undue distortion.

(4) Piling:

a. Steel Piles - Furnish steel piles meeting the requirements of Section 02520.

Verify the grade of steel piles by furnishing original material test reports or test reports on samples tested for yield and tensile strength, and elongation.

For the purpose of this Section, all design calculations for undocumented steel will be limited to the minimum requirements of ASTM A252, Grade 1 steel for pipe piles and ASTM A36 steel for H-Piles.

b. Timber Piles - Used timber piles are not allowed.

Construction

00250.41 Design - Design diversion bridges according to the "Bridge Temporary Works" section of the ODOT *Bridge Design Manual*. Use the ODOT *Bridge Design Manual* edition that is current on the date of Advertisement.

Project geotechnical and hydraulic specific reports are available for viewing at the office of the Engineer. Prints of these reports are available upon request.

(Use the following subsection (a) when spread footings are allowed, otherwise delete. Check with the Geotechnical and Hydraulic designers.)

(a) Spread Footings - For diversion bridges supported on spread footings, provide the following information:

- Soil or rock properties, ground water levels and all assumptions used to characterize the subsurface conditions for footing design.
- Estimated scour depths used in the analysis.
- Bearing capacity design calculations and recommendations.
- Recommended footing elevations.
- Estimated footing settlements and differential settlement, if applicable, based on the service conditions.
- Global stability analysis of spread footing locations.
- Method of providing adequate footing scour protection.

(b) Driven Piles - For diversion bridges supported on driven piles:

- Include the following information on the drawings:
  - Pile type, size, and steel grade.
  - Pile layout and spacing.
  - Required ultimate bearing capacity (nominal resistance).
  - Method for field determination of ultimate (nominal) bearing capacity (dynamic formula, wave equation, or dynamic load test).
  - Minimum pile tip elevations.

- Provide the following information and calculations:
  - Subsurface material properties, ground water levels and all assumptions used to characterize the subsurface conditions for pile design.
  - Estimated scour depths used in the analysis.
  - Pile bearing capacity design calculations and recommendations.

- Provide the following analysis and recommendations when applicable:
  - Lateral pile load analysis.
  - Pile tip protection.
  - Pile uplift capacity.

(c) Stream Crossings - For stream crossings, provide vertical and horizontal clearances as required by the applicable permitting agencies, but not less than a 5 year flood. Provide scour calculations to support the estimated scour depth used in the foundation design.

(d) Roadway and Railroad Crossings - For Roadway and Railroad crossings, provide the vertical and horizontal clearances as shown and the following:

(1) Bents Adjacent to Highways - For bents located adjacent to highway traffic openings, provide:

- Temporarily pinned, pin and loop concrete barrier to protect the Structure from damage by adjacent traffic. Provide at least 1.5 feet clearance between the barrier and the bent.
- Posts designed for 150 percent of the calculated vertical loading.
- Mechanical connections (2,000 pounds minimum capacity) between the bottom of post and footing.
- Mechanical connections (1,000 pounds minimum capacity) between the top of post and cap.
- Connections (500 pounds minimum capacity) between the beams and cap.
- 5/8 inch diameter minimum bolts at timber bracing connections.

(2) Bents Adjacent to Railroads - For bents located adjacent to railroad traffic openings, in addition to the requirements of (d)(1) above, provide the following:

- Collision posts as shown.
- For bents located within 20 feet of the centerline of track, solid sheathing 3 feet and 16 feet above top of rail with 5/8 inch thick minimum plywood, properly blocked at the edges.
- For bents located within 20 feet of the centerline of the track, bracing adequate to resist the required horizontal design loading or a minimum 5,000 pounds horizontal loading.

(e) Width - Design diversion bridges to match the temporary roadway width and vertical and horizontal alignment as shown.

(f) Surfacing - Except for concrete decks, provide the Structure with a minimum 2 inch asphalt concrete or equivalent wearing surface. Immediately prior to placing the asphalt concrete:

- Clean and dry the surface to be covered.
- Apply a hot asphalt prime coat at a uniform rate of 0.20 to 0.25 gallons per square yard of deck surface or as directed by the Engineer.
- Apply a spread of aggregate, 1/4 inch to 1/2 inch in size, to give the appearance of 50 percent coverage.
- Roll the surface to secure the maximum embedment of the aggregate into the prime coat and surface.

(g) Roadway Openings - At roadway openings, provide 25 watt amber lights at 3 foot centers around the perimeter of each side of the diversion bridge opening. Illuminate the lights from 30 minutes before sunset to 30 minutes after sunrise.

(h) Bridge Rail - Design diversion bridge rail systems meeting MASH TL-3 performance criteria.

(i) Drainage – Design and detail temporary bridge deck drainage according to *AASHTO Drainage Manual Appendix 17A* and restrict spread to the shoulder width.

00250.43 Construction - Construct diversion bridges according to the applicable Sections of Part 00500 and the requirements of applicable permitting agencies.

Perform structural steel welding according to 00560.26(a) and steel piling welding according to 00520.43(g). Do not begin welding until all of the following have been approved:

- WPS-Welding Procedure Specification
- PQR-Procedure Qualification Records
- WQTR-Welder Qualification Test Records
- MTR-Material Test Report
- CWI-AWS Certified Welding Inspector

Field welding to girders, beams, stringers, crossbeams, and floor beams is not allowed.

00250.44 Opening to Traffic:

(a) Before Opening to Traffic - Before opening diversion bridges to traffic, have the Design Engineer of Record perform the following:

- Inspect the soils to confirm that bearing capacity equals or exceeds design assumptions.
- Accompany the Engineer on an inspection of the Structure to confirm the Structure and Materials conform to the Plans and Specifications.
- Furnish a written statement that the Structure and the Materials used will serve the intended use and that they comply with the Design Engineer of Record's submitted Plans and drawings.

(b) After Opening to Traffic - On diversion bridges that are open to traffic for more than one year, do the following:

- On or before each anniversary of the opening of the diversion structure, have the Design Engineer of Record inspect the Structure and certify that a hands-on inspection of the Structure has been performed and a determination has been made that the Structure is consistent with the approved design and is currently adequate for its design loads.
- Furnish a signed and stamped report of the inspection results and certification within 30 Calendar Days of the inspection.

(Use the following heading and subsection .50 when "diversions" are required.)

Temporary

00250.50 Diversion - Provide temporary Roadbed and Surfacing according to Section 00230.

Maintenance

00250.60 Structure Maintenance - Maintain diversion bridges, including wearing surfaces, in a safe and functional condition. Keep bracing and connections tight and immediately replace any damaged members, as directed or approved by the Engineer. For stream crossings, remove all debris or drift from the Structure.

Finishing and Clean Up

00250.70 Structure Removal - When diversion bridges are no longer needed, remove them according to Section 00310. Unless otherwise shown or specified, all diversion bridge materials will remain the property of the Contractor.

Satisfy all requirements of applicable permitting agencies during bridge removal.

Restore all areas occupied by the diversion bridges to original condition or as shown.

Measurement

00250.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

Payment

00250.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract lump sum amount for the item "Diversion Bridges".

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for designing, constructing, maintaining, inspecting, or removing the diversion bridges.

(Use the following paragraph when "diversions" are required.)

Temporary Roadbed and Surfacing will be paid for according to 00230.90.

DIVERSION BRIDGE DESIGN CHECKLIST

Instructions - This checklist was developed to facilitate the design, review, and erection of diversion bridges. It is intended to remind the Design Engineer of Record to design and to check for specific aspects of construction. It is not a substitute for plan and design criteria or specification requirements.

The checklist is to be completed and signed by the diversion bridge Design Engineer of Record. Answer every question. Attach explanations of all negative responses to this checklist. Submit this checklist with the submittals.

		YES	NO	N/A
A.	**Contract Plans, Specifications, and Permits**			
1.	Are the diversion bridge's plans prepared, stamped and signed by an engineer registered to practice in Oregon?	____	____	____
2.	Are the design calculations signed by both the designer and the checker, and stamped by the designer and included in the submittal?	____	____	____
3.	Have three complete sets (five if railroad approval is required) of the design calculations been included with the diversion bridge drawings submittal?	____	____	____
4.	Are diversion bridge plans in compliance with the requirements of the construction plans and specifications?	____	____	____
5.	Are diversion bridge plans in compliance with the requirements of the Oregon Standard Specifications for Construction, subsection 00150.35?	____	____	____
6.	Are all existing, adjusted or new utilities in proximity with the proposed diversion bridge shown on the diversion bridge plans and is protection of these utilities addressed?	____	____	____
7.	Are clearance requirements satisfied and shown on the diversion bridge plans?	____	____	____
8.	For construction in or over navigable waters, have all requirements for construction of the diversion bridge that are called for in the Coast Guard Permit been incorporated?	____	____	____
9.	Has possible damage from traffic been considered?	____	____	____
10.	Has damage from stream drift been considered?	____	____	____

B. Foundation Requirements

1. Is the diversion bridge supported on driven piling? ____ ____ ____

   a. Are minimum pile tip elevations or penetration depths indicated on the drawings? ____ ____ ____

   b. If timber diversion bridge piles are used, are the lengths sufficient to eliminate the possibility of pile splices? ____ ____ ____

   c. Is a static pile capacity analysis included in the calculations? ____ ____ ____

   d. If lateral loads are applied to the piling by equipment, dead loads, flowing water, or drift, is a detailed lateral load analysis included in the calculations? ____ ____ ____

   e. When piling are in an active waterway, have the potential effects of scour on axial and lateral pile support been addressed in the calculations? ____ ____ ____

   f. If the FHWA Gates Equation is used to determine bearing capacity, does the proposed pile hammer meet the minimum field energy requirements as listed in 00520.20(d)(2)? ____ ____ ____

   g. Will a driving criteria graph, plotting blow count versus stroke for an acceptable pile hammer, be provided for the project inspector? ____ ____ ____

2. Is the diversion bridge supported on spread footings? ____ ____ ____

   a. Are the spread footing elevations shown on the drawings? ____ ____ ____

   b. Has a rational method for determining the ultimate bearing capacity of the foundation materials been presented and described in the calculations? ____ ____ ____

   c. Have the soil parameters used in calculating the ultimate bearing capacity been listed and confirmed by the Design Engineer of Record? ____ ____ ____

   d. Has an appropriate Factor of Safety, or resistance factor, been used for calculating the allowable (or factored) bearing capacity of the foundation materials? ____ ____ ____

e. Are spread footing settlement estimates included in the calculations? ____ ____ ____

f. Have effective stresses been used in the calculations, when applicable? ____ ____ ____

g. When spread footings are founded near the top of a slope or in a slope, have the ultimate bearing capacity calculations been modified accordingly? ____ ____ ____

h. When spread footings may be subjected to flowing water, have the potential effects of scour on ultimate bearing capacity been addressed in the calculations? ____ ____ ____

C. Loads

1. Has the mass of the contractor's heavy equipment units crossing the diversion bridge been included in the calculations? ____ ____ ____

2. Are design loads and material properties used to determine design stresses for each different diversion bridge member shown on the diversion bridge plans? ____ ____ ____

3. Is the worst loading and member property condition, rather than the average condition, used to obtain design loads? ____ ____ ____

4. Are concentrated loads included in the analysis of supporting beams or steel beam caps? ____ ____ ____

D. Allowable Stresses

1. Has the method used for diversion bridge design of all members except for manufactured assemblies been noted in the design calculations? ____ ____ ____

2. Are manufactured assemblies identified as to manufacturer, model, rated working capacity and ultimate capacity? ____ ____ ____

3. Is the allowable stress and the calculated stress listed in the summary for each different diversion bridge member, except for manufactured assemblies? ____ ____ ____

E. Timber Diversion bridge Construction

1. Are timber grades consistent with material to be delivered to the construction site, and noted on diversion bridge drawings, and in accompanying calculations for all timber diversion bridge material? ____ ____ ____

2. If "rough" lumber is used, are the actual lumber dimensions used in the calculations? ____ ____ ____

3. If timber spans are governed by the strength of the timber, are the allowable stress and the calculated stress shown in the calculations? ____ ____ ____

4. If timber spans are governed by the allowable spacing of supporting joists or beams, are the allowable and the proposed spacing shown on the diversion bridge plans? ____ ____ ____

5. Has timber been checked for bending, shear, bearing stresses, and deflection? ____ ____ ____

6. Is deck timber identified as being continuous over three or more spans when they are not analyzed as simple spans? ____ ____ ____

7. Have deck timber and cap beams been checked for bearing stresses perpendicular to the grain as well as for bending and shear stresses? ____ ____ ____

8. Have posts been checked as columns as well as for compression parallel to the grain? ____ ____ ____

F. Prestressed Concrete Members

1. Are manufacturer initials, cast date, job number, piece number, bridge number, and contract number either permanently cast into each member or on a permanently attached stamped steel plate? ____ ____ ____

2. Are members adequate for indented use? ____ ____ ____

3. Are members free of spalls, cracks, section loss or any other distress? ____ ____ ____

4. Is location of each member marked on plans? ____ ____ ____

5. Is location of spalls or section loss of each member marked on plans? ____ ____ ____

G. Steel Diversion Bridge Construction

1. Are steel structural shapes and plates identified by ASTM number on the diversion bridge plans and in the calculations? ____ ____ ____

2. Have exiting holes, notches, gouges, flame cuts, and welds been repaired according to AWS D1.5,? ____ ____ ____

3. Have exiting welds been ground flush and tested for discontinuities? ____ ____ ____

4. Have steel beams been checked for bending, shear, web crippling and buckling of the compression flange? ____ ____ ____

5. Has horizontal plane bracing been shown where required to limit compression flange buckling? ____ ____ ____

6. Are holes meeting the requirement of AWS D1.5, shown in the diversion bridge plans? ____ ____ ____

7. Are supporting calculations showing the adequacy of steel sections with existing holes included? ____ ____ ____

8. Are fatigue category D, E and E' marked on the diversion bridge plans and is supporting analysis showing adequacy for each fatigue category provided? ____ ____ ____

H. Deflections and Settlement

1. Is diversion bridge deflection for concrete dead load shown on the plans for all spans? ____ ____ ____

2. Do stringers supporting cast-in-place concrete compensate for estimated camber? ____ ____ ____

3. Are provisions shown for taking up diversion bridge settlement? ____ ____ ____

I. Compression Members, Connections and Bracing

1. Has general buckling been evaluated for all compression members? ____ ____ ____

2. Has bracing been provided at all points of assumed support for compression members? ____ ____ ____

3. Has bracing in each direction been considered in establishing the effective length used to check post capacity? ____ ____ ____

4. Is bracing strength and stiffness sufficient for the intended purpose? ____ ____ ____

5. If temporary bracing is required during intermediate stages of diversion bridge erection, is it shown on the plans? ____ ____ ____

6. Have all connections been designed and detailed? ____ ____ ____

7. Are web stiffeners required on steel cap beams or steel beams to resist eccentric loads? ____ ____ ____

8. Are wedges required between longitudinal beams and cap beams to accommodate longitudinal slope or to reduce eccentric loading? ____ ____ ____

9. Have sloping diversion bridge members that exert horizontal forces on the diversion bridge been braced or tied to resist these loads? ____ ____ ____

10. Have timber headers set on shoring towers been checked for eccentric loads, and for shear and bending stresses produced by the eccentricity? ____ ____ ____

J. Highway and Railroad Traffic Openings (For diversion bridge over or adjacent to highway or railroad traffic openings.)

1. Does the diversion bridge have a minimum of 25 feet of horizontal clearance from center of the outside track to the bridge abutment? ____ ____ ____

2. Does the diversion bridge have a minimum of 23 feet 6 inch vertical clearance from the top of rail to the bottom of the bridge beam? ____ ____ ____

3. Does the diversion bridge meet all of the railroad permit requirements? ____ ____ ____

_____ _____

Design Engineer of Record Signature Date

SP00251 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-16-25
This Section requires SP00230 when temporary surfacing is required.)

(Use this Section when the Agency is to provide a diversion structure for temporary use by the Contractor. This Section is for temporary highway bridges.)

SECTION 00251 - AGENCY PROVIDED TEMPORARY BRIDGES

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00251, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00251.00 Scope - This Work consists of transporting, erecting, maintaining, removing, and returning to its original location a temporary bridge provided by the Agency as shown or directed.

Materials

(Fill in the blank with the location of the temporary bridge.)

00251.10 Material - The temporary bridge is located at _____.

Provide materials that are not supplied by the Agency according to the applicable Sections of Part 00500.

Construction

00251.40 Construction - Provide stamped Working Drawings and calculations of the support system for the temporary structure according to 00150.35.

Erect the temporary bridge according to the applicable Sections of Part 00500.

Construct the temporary bridge so it satisfies all the requirements of applicable permitting agencies.

(Use the following heading and subsection .50 when " diversions" are required.)

Temporary

00251.50 Diversion - Provide temporary roadbed and surfacing according to Section 00230.

Maintenance

00251.60 Structure Maintenance - Maintain the temporary bridge in a safe and functional condition.

Finishing and Clean Up

00251.70 Structure Removal - When the temporary bridge is no longer needed, remove and return it to its original location. All other temporary bridge materials remain the property of the Contractor and be disposed of according to Section 00310.

Satisfy all requirements of applicable permitting agencies during bridge removal.

Restore all areas occupied by the temporary bridge to original condition.

Measurement

00251.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

Payment

00251.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract lump sum amount for the item " Diversion Bridges, Agency Provided".

Payment will be payment in full for furnishing all Materials, Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for transporting, erecting, maintaining, removing, or returning the temporary bridge to its original location.

(Use the following paragraph when " diversions" are required.)

Roadbed and Surfacing will be paid for according to 00230.90.

SP00252 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-16-25)**

(Use this Section when the Contractor is to construct temporary work bridges or trestles for Contractor workers.)

SECTION 00252 - TEMPORARY WORK BRIDGES

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00252, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00252.00 Scope - This Work consists of designing (if applicable), constructing, maintaining, and removing temporary work bridges or trestles necessary to construct the new structure.

Materials

00252.10 Material - Provide materials for temporary work bridges or trestles meeting the requirements of the applicable Sections of Part 00500.

Construction

00252.40 Construction - Provide stamped Working Drawings and calculations of the work bridges or trestles according to 00150.35.

Design work bridges or trestles according to AASHTO *Guide Design Specifications for Bridge Temporary Works*.

Construct work bridges or trestles at the locations shown and according to AASHTO *Construction Hand Book for Bridge Temporary Works*.

Construct the work bridges or trestles so they satisfy all the requirements of applicable permitting agencies.

Maintenance

00252.60 Maintenance - Maintain work bridges or trestles in a safe and functional condition.

Provide and place suitable approved barriers on or near the work bridges or trestles to prevent public access.

Finishing and Cleaning Up

00252.70 Structure Removal - When the temporary work bridges or trestles are no longer needed, remove them according to Section 00310.

Satisfy all requirements of applicable permitting agencies during work bridge or trestle removal.

Restore all areas occupied by the work bridges or trestles to original condition.

Measurement

00252.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

Payment

00252.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract lump sum amount for the item "Temporary Work Bridges".

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for designing, constructing, maintaining, or removing temporary work bridges.

SP00253 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-16-25)**

SECTION 00253 - TEMPORARY WORK ACCESS AND CONTAINMENT

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00253 of the Standard Specifications modified as follows:

(Use the following subsection .00 to describe the required temporary work access and containment for the project. Repeat the paragraph as necessary to list all work surfaces requiring containment. Delete "(s)" or parentheses as applicable.)

00253.00 Scope - Add the following paragraph(s) to the end of this subsection:

(Insert the Structure No. in the first blank. Insert a description of the work surfaces requiring temporary work access and containment in the second blank. Insert the applicable bridge spans in the third and fourth blanks. Delete the language in purple parentheses that does not apply and delete all purple parentheses.)

On Structure No. ____, provide (temporary work access, containment, barges, heating, and ventilating) system(s) for __*(Insert description of work surfaces requiring work access and containment)*__ (on spans _____ through _____).

(Use the following subsection .01 when work platforms and containment are only allowed on a bridge during a restricted time period. Fill in the blanks with the dates that work platforms and containment are allowed on the bridge.)

00253.01 General - Add the following paragraph to the end of this subsection:

Work platforms and containment are allowed on the Bridge only between ____ and ____.

(Use the following subsection .07 if Section 00252 is included.)

00253.07 Work Bridge Structural Design Requirements - Replace this subsection, except for the subsection number and title, with the following:

Unless otherwise specified in Section 00252, design work Bridges according to *AASHTO Guide Design Specifications for Bridge Temporary Works*. Provide materials for temporary work Bridges meeting the requirements of the applicable Sections of Part 00500. Comply with all requirements of applicable permitting agencies according to Section 00290.

(Use the following lead in paragraph and subsection .09 when the Tier 2 inventory rating factor is less than 1.0 or significant temporary Structures will be suspended from the existing Structure.)

Add the following subsection:

00253.09 Work Platform, Scaffolding and Containment Structural Design Requirements -

Design work platforms, scaffolding, and containment Structures for dead load, live load, and wind load. Obtain basic wind speed as shown on Standard Drawing TM671 and applied in the most critical direction. For Structures with fundamental frequency less than 1 Hz, design for wind loads accounting for structural dynamic effects.

Provide designs with a factor of safety of at least six for wire ropes and connecting hardware and at least four for all other components for containment Structure and work platform components.

Verify structural adequacy of the Bridge with added loading from containment Structures and work platforms using AASHTO *Standard Specifications for Highway Bridges*, Group II, III, V, and VI load combinations.

(Use the following subsection to describe conditions that are allowable without structural analysis of the span if the work platforms and containments are placed symmetrically on the span [i.e. each end of the span is loaded equally]. This language may be repeated as necessary to address different spans of the bridge. List the span description, allowable work platform loading, allowable point loading & spacing, allowable projected area of containment(s) above and below a limiting wind speed for wind transverse to roadway, allowable projected area of containment(s) above and below a limiting wind speed for wind parallel to Roadway, and allowable protrusion of platform(s) & containment(s) below the Structure.)

(a) Containment Structures Positioned Symmetrically on any Span - For containment structures positioned symmetrically on any span, design calculations for the bridge structural members are not required if all of the following conditions are satisfied:

- Total combined live load and dead load of all work platforms and containment Structures supported by the span, including all personnel, Equipment, Materials, and collected debris or water, does not exceed ___ pounds per square foot.
- Point loads do not exceed ___ pounds at each point and point loads are spaced at least ___ feet in both horizontal directions. Point loads are applied to deck within

one foot of a girder, cross beam, or diaphragm, or directly to a girder, cross beam or diaphragm.

(Use the following bullet when a temporary structural system is NOT provided to fully resist transverse wind forces applied to the platform(s) & containment(s). Fill in the first blank with "a single" or a description of a specific span, depending on the need for specific loading requirements.)

- For winds transverse to Roadway, total combined projected area of containments installed on ___ span does not exceed ___ square feet if wind speeds are at or below ___ mph and does not exceed ___ square feet if wind speeds are above ___ MPH.

(Use the following bullet when a temporary structural system is NOT provided to fully resist longitudinal wind forces applied to the platform(s) & containment(s). Fill in the first blank with "a single" or a description of a specific span, depending on the need for specific loading requirements.)

- For winds parallel to Roadway, total combined projected area of containments installed on ___ span does not exceed ___ square feet if wind speeds are at or below ___ mph and does not exceed ___ square feet if wind speeds are above ___ mph.

(Use the following subsection to describe conditions that are allowable without structural analysis of the span if the work platforms and containments are placed asymmetrically on the span [i.e. each end of the span is loaded differently]. This paragraph may be repeated as necessary to address different spans of the bridge. List the span description, allowable work platform loading, allowable point loading & spacing, allowable projected area of containment(s) above and below a limiting wind speed for wind transverse to roadway, allowable projected area of containment(s) above and below a limiting wind speed for wind parallel to roadway, and allowable protrusion of platform(s) & containment(s) below the Structure. Fill in the blank with "a single" or a description of a specific span, depending on the need for specific loading requirements.)

(b) Containment Structures Positioned Asymmetrically on any Span - For containment structures positioned asymmetrically on ___ span, design calculations for the bridge structural members are not required if all of the following conditions are satisfied:

- Total combined live load and dead load of all work platforms and containment Structures supported by the span, including all personnel, Equipment, Materials, and collected debris or water, does not exceed ___ pounds per square foot.
- Point loads do not exceed ___ pounds at each point and point loads are spaced at least ___ feet in both horizontal directions. Point loads are applied to deck within one foot of a girder, cross beam, or diaphragm.

(Use the following bullet when a temporary structural system is NOT provided to fully resist transverse wind forces applied to the platform(s) & containment(s). Fill

in the first blank with "a single" or a description of a specific span, depending on the need for specific loading requirements.)

- For winds transverse to Roadway, total combined projected area of containments installed on ___ span does not exceed ___ square feet if wind speeds are at or below ___ mph and does not exceed ___ square feet if wind speeds are above ___ mph.

(Use the following bullet when a temporary structural system is NOT provided to fully resist longitudinal wind forces applied to the platform(s) & containment(s). Fill in the first blank with "a single" or a description of a specific span, depending on the need for specific loading requirements.)

- For winds parallel to Roadway, total combined projected area of containments installed on ___ span does not exceed ___ square feet if wind speeds are at or below ___ mph and does not exceed ___ square feet if wind speeds are above ___ mph.

(Replace "XX.XXXXX" with the latitude and "XXX.XXXXX" with the longitude of nearest weather station, in 5 decimal place format in degrees (Example: Replace "XX.XXXXX" with "43.381159" and "XXX.XXXXX" with "124.23273").)

(c) High Wind Events - If removal of containment walls is used to comply with projected area limits at high wind speed, removal is required when actual wind speed or predicted wind speed exceeds allowable limits. 24-hour weather watch is required during non-work times. Predicted wind speeds are obtained from:

forecast.weather.gov/MapClick.php?lat=XX.XXXX&lon=-XXX.XXXX&unit=0&lg=english&FcstType=graphical

(Select one of the options in purple parentheses, delete the option that does not apply, and delete all purple parentheses.)

Actual wind speeds are measured using *(*a handheld wind speed measuring instrument with certified accuracy 3% of reading*)(*an ODOT provided wind meter*)*.

(Use the following subsection .40 when there is a limitation on how far the containment or work platform can extend below the Structure.)

00253.40 General - Add the following paragraph to the end of this subsection:

Containment and work platforms do not extend more than ___ feet below bottom of existing Structure.

(Use the following lead in paragraph and subsection .43 when there is a need to list the plan sheets detailing structural repairs that must be completed before platform and containment installation.)

Add the following subsection:

00253.43 Structural Repairs - Complete the structural repairs detailed on plan sheets _____ through _____ before installation of work platform or containment.

(Use the following lead in paragraph and subsection .44 when the project contains a bridge over navigable water.)

Add the following subsection:

00253.44 Marine Traffic Restrictions -

(Use the following paragraph when a bridge may NOT be closed to marine traffic. Fill in the blank with the bridge number.)

Bridge No. _____ may not be closed to marine traffic.

(Use ONE of the following options to list the dates of allowable marine traffic partial closure. Fill in the blank with the bridge number, span number, and the dates of allowable partial closure. Repeat as necessary for multiple Structures.)

[Option 1 – Time restriction only]

U.S. Coast Guard approval has been obtained for partial closure of Bridge No. ____ to marine traffic between ____ and ____.

[Option 2 – Span restriction only]

U.S. Coast Guard approval has been obtained for partial closure of span ____ of Bridge No. ____ to marine traffic.

[Option 3 – Time and span restriction]

U.S. Coast Guard approval has been obtained for partial closure of span ____ of Bridge No. ____ to marine traffic between ____ and ____.

(Use the following sentence if multiple spans can be closed but not all. Fill in the blank with number of spans.)

No more than ___ span(s) may be closed at any time.

(Use the following lead in paragraph and subsection .46 when loads can be placed on Structure(s). Include the language in purple parenthesis when 00253.09 identifies allowed loading. This is in addition to any loading for the containment Structure itself, use caution not to overload the Structure.

Coordinate with 00220.45, suggest using option 4.

Repeat as necessary for multiple Structures. Delete each bullet that does not apply to the respective Structure No. to communicate where loads are allowed/disallowed.)

Add the following subsection:

00253.46 Loads Placed on Structure Roadway, Shoulders, and Sidewalks - When a Traffic Lane, Shoulder or sidewalk is closed the following loading may be applied to the Structure(s) *(*in addition to the loading identified in 00253.09*)*:

When a Traffic Lane or Shoulder closures are allowed on Structure No._____:

- Equipment, vehicles, and Materials may be placed in the closed:
  - Traffic Lane
  - Shoulder
  - Sidewalk
- Equipment, vehicles, and Materials may NOT be placed in or on:
  - Active Traffic Lane
- No more than one vehicle operating under D.O.T. overload permit will be allowed within the closed area on each span of the Structure.

The combined effect of all loads in the closed area(s) will be limited to the lesser of:

(Fill in the blank with allowable loading. Delete the bullet(s) if not required.)

- _____ pounds in any single square foot;
- _____ pounds in any 100 square feet of surface area of the Structure;
- total of _____ pounds for each span of the Structure;
- total of _____ pounds between two adjacent girders;

(Fill in the blank with allowable equivalent vehicle load such as H-20, HS-20, HS20-44, Oregon Type-3S2 etc. This bullet is required.)

- Bending moment and maximum shear produced by one lane of _____ on each span of the Structure;

SP00255 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-16-25)**

SECTION 00255 - TEMPORARY BRIDGE JACKING

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-

number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00255, which is not a Standard Specification, is included in this Project by Special Provision.

Description

(Use the following subsection .00 to describe the Work. For example, removing existing bridge bearings and installing new bearing, or reset rocker bearing, or replace timber caps. Fill in the blanks with the appropriate information. Delete (s) or parentheses as appropriate. Obtain information from the Bridge Designer.)

00255.00 Scope - This Work consists of temporarily raising and shoring the existing Spans located at bents _____, with jacking system for the purpose of _____. Once the Work is completed, the span will be lowered back into place and the jacking system removed.

The term "jacking system" includes jacking equipment, temporary support seat, falsework jacking bent or temporary corbel.

00255.02 Plans - Plans for the existing Structure are available from the Engineer. Prints of these plans are available upon request.

00255.03 Submittals - Submit a stamped and detailed Bridge jacking work plan according to 00150.35, to the Engineer for review four weeks prior to Bridge jacking work. Design the work plan according to with the current AASHTO *LRFD Bridge Design Specifications* and jacking load diagram shown on the Plans. Design the temporary support to carry all Structure dead loads, live loads if allowed and construction loads.

Include the following information in the submittal:

- The proposed method of the jacking, and shoring.
- Descriptions of equipment to be used
- Descriptions and values of all loads, including construction equipment loads
- Justification for allowable bearing stresses used to support the falsework bent.
- Complete details and calculations for jacking and supporting the existing Structure

This review does not relieve the Contractor of the responsibility for the safety of the method or Equipment. Do not perform Work until the work plan has been approved by the Engineer and all comments are adequately addressed.

(Delete bullet items that do not apply.)

00255.04 Methods and Monitoring System - The Bridge jacking work plan includes, but is not limited to, the following:

- Detailed time schedule of the planned operations.

- Details to temporarily strengthen the existing Bridge members. Provide temporary supports to bear directly on girder stems or bent caps or bear on support sills which are structurally adequate to transmit the load to the stems or cap without overstressing any member of the new or existing Structure. Design temporary supports not to induce permanent forces into the completed Structure or produce cracking.
- Contingency plans to address potential malfunctions or interruptions in the work plan.
- Details to ensure stability of the Bridge while the Bridge is being raised, during the removal of the existing bearings, installation of the new bearing and lowering of the Bridge.
- Details of how secondary supports, such as blocking and cribbing, will be installed after the Bridge has been raised.
- Lateral stability of the Bridge and jacking system.
- Equipment that ensures uniform lifting of the Bridge.
- Provide a redundant system of supports during the entire jacking operation for backup should any of the jacks fail. Include stacks of steel plates added as necessary to maintain the redundant supports at each jack location within 1/4 inch of the jacking sill or corbels.
- Descriptions of the displacement monitoring system. Include in the displacement monitoring system, but not limited to:

  - Equipment to be used,
  - Location of control points,
  - Method and schedule of taking measurements,
  - Provisions to jack the Structure if settlement occur in the temporary supports during construction.

Construction

00255.50 Jacking Operations:

(a) General - Control and monitor the jacking operations to ensure that the jacking loads are applied simultaneously to prevent distortion and excessive stresses that would damage the Structure. Jack the Superstructure as necessary to maintain the total vertical displacements at control points to less than 1/4 inch from the elevations recorded prior to jacking or as modified by the Engineer.

Remove attachments from the existing Structure and concrete surfaces to restore to original conditions, except where permanent alterations are shown on the plans.

(b) Unanticipated Displacements - If, during construction, unanticipated displacements, cracking or other damage occur, do the following:

- Discontinue the construction until corrective measures satisfactory to the Engineer are performed.
- Repair damage to the structure as a result of the Contractor's operations.

Measurement

00255.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

Payment

00255.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract lump sum amount for the item "Bridge Jacking at Bent _____".

The Bent number will be inserted in the blank.

Payment will be payment in full for furnishing the Bridge jacking work plan, furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for designing, constructing, maintaining, inspecting, or removing the temporary Bridge jacking.

SP00256 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-16-25)**

(Use this Section when the Contractor is to construct temporary retaining walls.)

SECTION 00256 - TEMPORARY RETAINING WALLS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00256, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00256.00 Scope - This Work consists of designing, furnishing, constructing, maintaining, and removing temporary retaining walls at locations shown or specified.

Temporary retaining wall locations and limits shown are approximate. Adjust wall stationing, vertical alignments, and horizontal alignments as necessary to facilitate construction and staging requirements. Construct the following temporary retaining walls at the location(s) listed in Table 00256-1:

(Use the following table to list all temporary retaining wall(s). Add or delete rows in the table as necessary. Provide location identifier to tie to plans, e.g. Structure XXXX stage construction.)

Table 00256-1

Temporary Retaining Wall name	Location
Temporary Retaining Wall 'A'	
Temporary Retaining Wall 'B'	

00256.04 Working Drawings, Calculations, and Design Submittals - Submit temporary retaining wall stamped Working Drawings and design calculations according to 00150.35, except as modified by this Section. Design temporary retaining walls according to Section 15.3.27, and other applicable sections, of the most current version of the ODOT Geotechnical Design Manual (GDM) at the time of Advertisement.

(Use one of the following two options as instructed.)

[Option 1 - Use the following paragraph if Railroad approval is NOT required.]

Submit five sets of the stamped Working Drawings, and three copies of the design calculations, summary, and checklist.

[Option 2 - Use the following paragraph if Railroad approval is required.]

Submit nine sets of the stamped Working Drawings, and five copies of the design calculations, summary, and checklist.

(Use only one of the following two options as instructed below. Check with the designer)

[Option 1 - Use this option when all temporary retaining wall systems listed in Section 15.3.27 of the GDM are allowed.]

[Begin Option 1]

(a) Defined Temporary Retaining Wall Systems - Select temporary retaining wall systems for construction from the list of defined temporary retaining walls according to Section 15.3.27 of the ODOT GDM.

[End Option 1]

[Option 2 - Use this option when specific retaining wall system types listed in the GDM are required Fill in the blanks to indicate retaining wall system type(s) that will be allowed and the height limitation. Obtain information from the designer.]

[Begin Option 2]

(a) Defined Temporary Retaining Wall Systems - Construct the following temporary retaining walls listed in Table 00256-2 below:

(Use the following table to list temporary retaining walls with specific retaining wall system types. Add or delete rows in the table as necessary.)

Table 00256-2

Temporary Retaining Wall name	Retaining Wall System
Temporary Retaining Wall 'A'	
Temporary Retaining Wall 'B'	

[End Option 2]

(b) Atypical Temporary Retaining Wall Systems - Temporary retaining wall systems which are not on the list of retaining walls according to Section 15.2.4.2 of the ODOT GDM are considered atypical retaining wall systems. If proposing an atypical temporary retaining wall system, submit stamped Working Drawings according to 00150.35. The review and response time allowed for the Agency to return the Working Drawings will be 120 Calendar Days. The submittal of calculations and other data must satisfy the requirements of the Special Provisions and include sufficient detail and explanation of the design for the Agency to process and comment on the Working Drawings. If the Engineer requests additional information or explanation related to the review of the atypical retaining wall system, the Engineer may restart the 120 Calendar Day review period.

Include the following additional information in the atypical retaining wall system submittal:

- If applicable, a list of projects that used the atypical retaining wall system. Include reference contacts.
- A list of supervisory personnel that will be on-site during construction of the atypical retaining wall system and documentation of their experience and qualifications to perform the Work.

Perform temporary retaining wall design according to the most current version at the time of Advertisement of one or more of the following design standard:

- ODOT *Geotechnical Design Manual* (GDM)
- AASHTO *Standard and Guide Design Specifications*
- U.S. Department of Transportation Federal Highway Administration (FHWA) design manuals

Geotechnical and structural analysis and design for the temporary retaining wall shall include but not be limited to the items listed in the temporary retaining wall design checklist. Submit a completed temporary retaining wall design checklist and a written temporary retaining wall design summary, prepared by the retaining wall design engineer, to accompany the stamped Working Drawings and calculations. Include the following in the design summary:

- Identification of the design manuals and specific methodologies used for the analysis and design.
- Identification of the methods of analysis and all computer programs used.
- Soil and material properties used in the retaining wall design. Include any additional boring logs and laboratory test data performed.
- Design loading assumptions and loading diagrams for each wall (including all construction staging loads).
- Design performance requirements, including design life, allowable settlement, and alignment tolerance.
- Performance requirements and methods and frequency for monitoring performance requirements during construction. Performance requirements include actual threshold limits of tolerable differential foundation settlement and lateral movement that could result in structural damage to adjacent construction.
- Construction requirements (specifications), including Materials, Equipment, and labor necessary for construction of the atypical temporary retaining wall system.
- Quality control plan, including required performance and verification tests.
- If applicable, temporary wall removal plan.
- All other applicable information for design, detail, sequencing, and construction of the temporary retaining wall.

Materials

00256.10 General - Furnish Materials with design properties according to the design requirements and reviewed Working Drawings for the temporary retaining wall and applicable subsections of Sections 00596A and 00596B.

Labor

00256.30 Personnel Qualifications - Perform the temporary retaining wall construction Work using personnel experienced in retaining wall construction work. Submit a list to the Engineer for approval identifying the on-site supervisors and Equipment operators assigned to the Project and their experience relevant to the Project. The Engineer will respond within 21 Calendar Days after receipt of the submittal.

Do not begin Work on any temporary retaining walls until the qualifications have been approved. The Engineer may suspend the temporary retaining wall construction if the Contractor substitutes unapproved personnel during construction. Submit requests for substitution of on-site supervisors, Equipment operators, or testing personnel to the Engineer, who will have 7 Calendar Days to respond to each request. Additional costs resulting from the suspension of Work due to the changing of personnel will be at no additional cost to the Agency, and no adjustment in Contract Time resulting from the suspension of Work will be allowed.

Construction

00256.40 General - Construct temporary retaining walls according to the reviewed Working Drawings and the applicable subsections of Section 00596A and Section 00596B.

Maintenance

00256.50 General - Maintain temporary retaining walls in a safe and functional condition as long as the walls are in service. Keep all wall facing elements intact. Repair or replace damaged wall elements as necessary to maintain the retaining walls integrity and safe operational function. Submit stamped Working Drawings for replacement of damaged wall elements or for any wall repairs to the Engineer for review.

Finishing and Cleaning Up

00256.70 General - Temporary retaining walls may be incorporated into the finished embankment only if approved by the Engineer. Bury or remove portions of temporary walls as necessary and according to Section 00310 to accommodate cover requirements.

In areas where temporary retaining walls are to be completely removed, partially removed, or abandoned, restore and mitigate the affected area to meet applicable permitting and project requirements.

Measurement

00256.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

Payment

00256.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract lump sum amount for the item "Temporary Retaining Wall _____ ".

The temporary wall name will be inserted in the blank.

Payment will be payment in full for designing, furnishing Materials, constructing, inspecting, and for providing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for maintaining, removing, repairing, or replacing temporary retaining walls.

TEMPORARY RETAINING WALL DESIGN CHECKLIST

Instructions - This checklist was developed to facilitate the design, review, and construction of temporary retaining walls. It is intended to remind the Design Engineer of Record to design and to check for specific aspects of construction. It is not a substitute for plan and design criteria or specification requirements.

The checklist is to be completed and signed by the temporary retaining wall Design Engineer of Record. Submit a checklist with each temporary retaining wall submittal. Answer every question. Attach explanations of all “No” or ”N/A” responses to this checklist. Submit this checklist with the submittals.

	YES	NO	N/A
A. General			
1. Are the temporary wall stamped Working Drawings and supporting calculations prepared, stamped and signed by an engineer registered to practice in Oregon?	____	____	____
2. Are the temporary retaining wall location, construction sequence, and removal plan compatible with the project construction staging?	____	____	____
B. Design Standards			
1. Does the temporary retaining wall design comply with the standards identified in ODOT GDM 15.3.27 and related sections?	____	____	____
2. Is the design standard and edition identified in the temporary retaining wall design calculations and summary?	____	____	____
C. Loading			
1. Have the anticipated design loads, including live load and construction surcharge loads, and changing conditions, for different stages of construction been considered and included in the calculations?	____	____	____
2. Have the appropriate load and resistance factors or factors of safety on the retaining wall been identified, for all applicable load combinations or load cases?	____	____	____
3. Have construction equipment loads been included in the calculations for the temporary walls?	____	____	____
4. Have the construction loads for different stages of construction been considered and included in the calculations?	____	____	____

5. Have loading diagrams been included? ____ ____ ____

D. Geotechnical and Structural Analysis

1. Has Internal stability been evaluated? ____ ____ ____
2. Has external stability been evaluated? ____ ____ ____
3. Has global stability been evaluated? ____ ____ ____
4. Are all existing, adjusted or new utilities in proximity with the proposed temporary retaining wall shown on the temporary wall stamped Working Drawings and is protection of these utilities addressed? ____ ____ ____
5. Has a rational method for determining the ultimate bearing capacity of the foundation materials been presented and described in the calculations? ____ ____ ____
6. When spread footings are founded near the top of a slope or in a slope, have the ultimate bearing capacity calculations been modified accordingly? ____ ____ ____
7. Are wall settlement and lateral deflection estimates provided, including consideration of any settlement effects on adjacent structures or facilities? ____ ____ ____
8. Are mitigation measures required to limit the amount(s) of wall settlement? ____ ____ ____

E. Materials

1. Have the soil parameters and groundwater elevations used in the design calculations been provided and confirmed by the design EOR? ____ ____ ____
2. Are retaining wall material specifications and dimensions identified in the stamped Working Drawings and calculations? ____ ____ ____

F. Temporary Retaining Wall Working Drawings

1. Is the field verified ground topography above and below the wall shown? ____ ____ ____
2. Are all existing, adjusted or new utilities, structures, “no work zones”, and Right-of-Way in proximity to the proposed retaining wall shown on the temporary retaining wall stamped Working Drawings? ____ ____ ____

3. Are plan view, elevation and cross sections drawn to scale, with dimensions defining location and size of the retaining wall including top and bottom of wall elevations, horizontal and vertical alignment, original and final ground lines, excavation and fill limits? ____ ____ ____

_____ _____

Design Engineer of Record Signature Date

SP00270 (Special Provisions for the 2024 Book) (Bidding on or after: 05-01-25 Last updated: 01-16-25)

SECTION 00270 - TEMPORARY FENCES

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00270 of the Standard Specifications as modified:

00270.10 Material – Replace the sentence that begins "Provide new Material…" with the following paragraph:

Provide new Material meeting the requirements of 01050.10. Used Materials in like new condition may be provided if approved. See 00270.70.

SP00280 (Special Provisions for the 2024 Book) (Bidding on or after: 06-01-25 Last updated: 02-26-25 This Section requires SP02510 when Type 4 inlet protection is used or SP02320 when sediment fence is used.)

(This Section is not required for Projects classed as "No Risk" per Advisory GE12-01(A), i.e., Projects with no ground disturbance. It is required for Projects classed as "Low Risk" and "High Risk" per Advisory GE12-01(A)).

SECTION 00280 - EROSION AND SEDIMENT CONTROL

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All

other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00280 of the Standard Specifications modified as follows:

00280.00 Scope - Replace the paragraph that begins "This Work also consists of providing temporary …" with the following paragraph:

This Work also consists of providing temporary erosion and sediment control (ESC) measures and furnishing, installing, moving, operating, maintaining, inspecting, and removing ESC throughout the Project area according to the Standard Drawings, the erosion and sediment control plan (ESCP), the Specifications, or as directed, until the site is permanently stabilized. Included also is the monitoring of weather, of stormwater and receiving waters, the reporting of monitoring observations, the reporting of corrective actions (when necessary) and the updates and revisions of the ESCP, including ESCP cover sheet, necessary to keep it representative of current site conditions and compliant with the NPDES 1200-CA, 1200-CN, OR 1200-C permit if applicable.

Delete the paragraph that begins “When contaminants, pollutants or hazardous materials…”.

(Use one of the following two options as instructed on Projects that involve one acre of ground disturbance or more. Delete the option that does not apply. Check with the Local Agency Liaison, the Erosion Control Program Leader, or the Region Environmental Coordinator.)

[Option 1 - Use the following paragraph when ODOT's NPDES 1200-CA Permit is applicable to the Project.]

Add the following paragraph to the end of this subsection:

The Agency's NPDES 1200-CA permit is applicable to the Project.

[Option 2 - Use the following paragraph when ODOT's NPDES 1200-CA Permit is NOT applicable to the Project and the Contractor is required to use the Local Agency's NPDES 1200 CA Permit or obtain an NPDES 1200-C Permit.]

Add the following paragraph to the end of this subsection:

The Agency's NPDES 1200-CA permit is not applicable to the Project. Before beginning Work on the Project, obtain a NPDES 1200-CA permit from the applicable local jurisdiction or a NPDES 1200-C permit that is applicable to the Project.

(Use the following for Projects that disturb less than one acre.)

Add the following paragraph to the end of this subsection:

The Agency’s NPDES 1200-CA permit is not applicable to this Project. Comply with all applicable conditions of this Section.

00280.02 Definitions - Delete the definition **Wet Season Work**

00280.04 Erosion and Sediment Control Plan on Agency Controlled Lands - Replace the bullet that begins "Information required under 1200-CA…" with the following bullet:

- Information required under 1200-CA permit, if applicable.

(Use the following three paragraphs when ODOT's NPDES 1200 CA Permit is applicable to the Project.)

Add the following paragraphs to the end of this subsection:

Fill in required information listed on the ESCP cover sheet prior to beginning of construction and submit revised cover sheet to Engineer 10 Days before the preconstruction meeting. Monitor weather, stormwater runoff, and receiving waters, and document monitoring observations. Immediately upon discovery, notify Engineer if a 1200-CA permit non-compliance occurs. Provide updates and revisions of the ESCP, including ESCP cover sheet, necessary to keep it representative of current site conditions and compliant with the 1200-CA permit.

When contaminants, pollutants or hazardous materials are discovered in the Project location in soils or groundwater comply with 00290.20(f) and, provide an environmental management plan (EMP) as required by the 1200-CA permit if applicable.

(Use the following subsection .06 when the NPDES 1200-CA permit is NOT applicable to the Project.)

00280.06 Erosion and Sediment Control Manager - Delete this subsection.

(Use the following subsection .14(e) when Type A matting is applied hydraulically or is a rolled product.)

00280.14(e) Slope and Channel Liner Matting - Replace the bullet that begins "Type A – Slope…" with the following bullets:

- **Type A: Hydraulically-Applied** – Hydraulically-applied material composed of long strand, thermally processed wood fibers, crimped, interlocking fibers and performance enhancing additives meeting the following criteria:
  - Flexural rigidity when wet, and equal to or greater than 5 oz-yd.
  - Permissible shear stress 1.0 lbs/sqft or greater
  - Thermally processed wood fibers – 73%
  - Crosslinked hydro-colloid tackifiers and activators – 10% + 1%
  - Crimped, interlocking fibers - 5% +1%
  - Moisture content – 12% + 3%
  - Fully Biodegradable
  - A cure time of less than 2 hours during wet weather.

(Use the following bullet when Type A matting is a rolled product.)

- **Type A: Rolled** – Rolled slope protection mat, fully biodegradable, for Clay Soil Slopes 1V:3H or flatter.

(Use the following subsection .15(d) when temporary slope drains are used.)

00280.15(d) Temporary Slope Drains – Replace this subsection, except subsection number and title, with the following:

Furnish either plastic pipe and flared end sections meeting the requirements of Section 02415 or metal pipe and flared end sections meeting the requirements of Section 02420.

(Use the following subsection .15(f)(1) when compost filter socks are required. Fill in the blank with the diameter of the filter sock. Obtain information form the Erosion Control Designer.)

00280.15(f)(1) Filter Sock Material - Add the following sentence to the end of this subsection:

Furnish filter sock Material with a diameter of ____ inches.

00280.16(k) Active Treatment System – Add the following sentence to the end of this subsection:

Obtain approval of the active treatment system from DEQ prior to use.

(Use the following subsection .30 on Projects when the ODOT 1200-CA, or other NPDES 1200 permit is applicable.)

00280.30 Erosion and Sediment Control Manager –

Add the following bullet to the beginning of the bullet list under "The ESCM duties include:"

- Be present at the Project Site during all ground disturbing activities.

Replace the bullet that begins "Monitor rainfall, snow melt and runoff …" with the following bullet:

- Visually monitor rainfall, snow melt and runoff at the Project Site.

Replace the bullet that begins "Monitor water quality in receiving streams in …" with the following bullet:

- Visually monitor water quality in receiving streams in the vicinity of the Project Site.

Replace the bullet that begins "Monitor water in sediment traps receiving …" with the following bullet:

- Monitor the pH of the water in sediment traps receiving runoff from soils amended with cementitious material for acidity or alkalinity.

(Use the following bullet when Section 00294 is included on the Project and when the ODOT 1200-CA, or other NPDES 1200 permit is applicable. Must include bullets and caption above as well.)

Add the following bullet to the end of the bullet list:

- Monitor locations identified in Section 00294 for compliance.

00280.41(c) Wet Season Work and Temporary Work Suspension - Replace this subsection with the following subsection:

00280.41(c) Temporary Work Interruption - Update the ESCP and schedule for Work proposed between October 1 and May 31 to ensure that all appropriate controls, including ESC during Work interruption, are implemented and maintained. Submit the updated ESCP and schedule to the Agency and receive approval before beginning any Work between October 1 and May 31.

Between October 1 and May 31, limit excavation and bare ground activities to only those required for immediate operations. Stabilize stockpiles at the end of each workday by diverting flows, placing covers, or installing Sediment barriers.

00280.41(f) Hauling Material – Replace this subsection, except for the subsection number and title, with the following:

Cover loads carrying soil or sediment which may generate dust. Haul saturated loads in water tight beds or drain saturated loads prior to leaving the Project Site.

00280.41(g) Underground Injection Controls (UIC) – Replace this subsection, except for the subsection number and title, with the following:

Do not allow storm water from work area to enter Underground Injection Control (UIC) inlets, UIC catch basins or UIC wells.

(Use the following subsection .48 on Projects that require emergency Materials. Obtain information from the Erosion Control Designer. Include in the Schedule of Items all items listed in this subsection. The listed items do not need to be shown on the plans if they are for emergency replacement use and are not otherwise part of the Agency's ESCP.)

00280.48 Emergency Materials - Add the following paragraphs after the paragraph that begins "Provide, stockpile, and protect...":

Provide and stockpile the following emergency Materials on the Project Site:

Item	Quantity
.....	
.....	
.....	

When emergency materials are used, restock emergency materials within 48 hours of use.

00280.62 Inspecting and Monitoring – Delete the paragraph that begins “Inspect the Project Site…”.

00280.62(a) Inspection - Replace the paragraph that begins "Perform site inspection, complete…" with the following paragraph:

Inspect the Project Site and all ESC devices for Effective Function and potential erosion or sediment movement and complete all applicable parts of the ODOT Erosion Control Monitoring Form, and submit the form to the Agency as follows:

(Use the following subsection .62(b) when a rain gauge is required. Designer to insert the web address of the closest on-line rain gauge to the Project. Replace "XX.XXXXX" with the latitude and "XXX.XXXXX" with the longitude of nearest weather station, in 5 decimal place format in degrees (Example: Replace "XX.XXXXX" with "43.381159" and "XXX.XXXXX" with "124.23273").))

00280.62(b) Rainfall – Add the following to the end of this subsection:

The closest on-line rain gauge is located at:
forecast.weather.gov/MapClick.php?lat=XX.XXXX&lon=-XXX.XXXX&unit=0&lg=english&FcstType=graphical

00280.64(a) Corrective Action Timelines – Delete the bullet that begins “If completion of corrective action is not feasible…”

Delete the bullet that begins “Provide a schedule for clean-up and corrective actions…”

Delete the bullet that begins “Provide all corrective action documentation and photographs…”

(Use the following subsection .64(b) when ODOT’s NPDES 1200-CA, or other NPDES 1200 permit is applicable to the Project.)

00280.64(b) Corrective Action Documentation – Add the following bullets to the beginning of the bullet list:

- If completion of corrective action is not feasible within 24 hours, document the reasons why the time line cannot be met.
- Provide a schedule for clean-up and corrective actions that restores Effective Functioning as soon as feasible. If schedule cannot be met document the reasons for the delay.
- Provide all corrective action documentation and photographs to Agency within 24 hours of completion of corrective actions.

00280.91 Payment – Replace the paragraph that begins “Emergency Materials that are incorporated…” with the following paragraph:

Materials listed in 00280.48 that are incorporated into the Project will be paid for under the appropriate items listed in the Contract Schedule of Items.

SP00290 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-16-25
This Section requires SP00245 when temporary water management is required. Requires SP00253 when a temporary work access/containment system is required.)

SECTION 00290 - ENVIRONMENTAL PROTECTION

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval. Modify these subsections only for site specific conditions.)

(Use the following lead-in paragraph when none of the following subsections are included in the project.)

Comply with Section 00290 of the Standard Specifications.

(Use the following lead-in paragraph when any of the following subsections are included in the project.)

Comply with Section 00290 of the Standard Specifications modified as follows:

(Use the following subsection .10 when Section 00236 or Section 00237 is included in the Special Provisions. Delete the language in purple parentheses that does not apply and delete all purple parentheses.)

00290.10 Staging and Disposal Sites – Replace the paragraph that begins "Locate staging areas…" with the following paragraph:

Locate staging areas and disposal sites in previously improved or disturbed sites, including existing Roadways, pullouts, turnouts, parking lots, and storage yards that have been compacted, and graveled or paved, unless otherwise specified in *(*Section 00236*) (*or*) (*Section 00237*)* or approved, in writing, by the Engineer.

(Use the following subsection .20(c)(2) only when Section 00294 is included in the Special Provisions.)

00290.20(c)(2) Clean Fill - Add the following paragraph to the end of this subsection:

Manage all excavated soil that does not meet the definition of clean fill according to Section 00294.

(Use the following lead-in paragraph and subsection .30(a)(7) when there is Work in, adjacent to, or over a regulated waterway, even if there is no Work within the stream's wetted perimeter and any time that more distant work has the potential to discharge pollutants to a regulated waterway through a ditch, pipe or similar conveyance.)

Add the following subsection:

00290.30(a)(7) Water Quality:

- Do not discharge water contaminated by pollutants including sediment, drilling fluids and waste, concrete, grout, or water contained within a work area isolation, into any waters of the State or U.S. or conveyances draining thereto until it has been treated using Materials such as those listed in 00280.15 or 00280.16 or by pumping to a vegetated upland location. Do not allow Project discharges to increase the concentration of any pollutant in the receiving water to a level that exceeds the limits prescribed by OAR 340-041.
- Do not use permanent stormwater quality treatment facilities to treat construction runoff unless prescribed by an ESCP approved under Section 00280.
- If construction discharge water is released using an outfall or diffuser port, do not exceed velocities more than 4 feet per second, and do not exceed an aperture size of 1 inch.
- Implement containment measures adequate to prevent pollutants from entering waters of the State or U.S. Such pollutants include but are not limited to construction and demolition materials, waste spoils, fuel or petroleum products, detergents, silt, welding slag and grindings, concrete sawcutting by-products and sandblasting abrasives.

(Use the following when there is Work in, adjacent to, or over a regulated waterway, even if there is no work within the stream's wetted perimeter, regardless of whether more distant work has the potential to discharge pollutants to a regulated waterway through a ditch, pipe, or similar conveyance. When this block of text is included, do not delete any individual bulleted items, even if they are not expected to apply to the Project.)

- Do not allow curing concrete or grout to be submerged within waters of the State or U.S. less than 24 hours after placement, except within work area isolation. Do not end-dump riprap into the waters of the State or U.S. Place riprap from above the ordinary high water line.
- Monitor weather and streamflow forecasts and conditions to anticipate high flows that may unintentionally inundate any portion of the Project Site.
- If high flow conditions occur or are anticipated to occur that may unintentionally inundate any portion of the Project Site, remove all potentially affected Equipment, Materials, and debris from the potential inundation area. Cease Work in the area until water recedes and the risk of further high water events passes. The Engineer retains the authority to temporarily halt or modify the Work in case of excessive turbidity or damage to natural resources.

- If Work in or around waters of the State or U.S. violate permit conditions or any requirement of this subsection, stop such Work and notify the Engineer.

(Use the following lead-in paragraph and subsection .30(a)(8) if the Project includes work inundated by, or within dewatered portions of, waters of the State or U.S. (except wetlands). Use one of the following two options as instructed below. Delete any option that does not apply. This subsection may require modification for consistency with applicable regulatory approvals including but not limited to: Clean Water Act Section 401 water quality certification, a programmatic or individual biological opinion, and any applicable local approvals.)

Add the following subsection:

[Option 1 - Use the following subsection if the Project includes work inundated by, or within dewatered portions of, waters of the State or U.S. (except wetlands), but the project does not have a Clean Water Act Section 401 water quality certification or any other permit or regulation requiring meter turbidity monitoring.]

00290.30(a)(8) Turbidity Monitoring - In addition to the requirements of 00280.62(c) to monitor the receiving stream to identify water quality issues, during Work in waters of the State or U.S., implement best management practices (BMPs) to minimize turbidity and monitor turbidity according to the following:

- Every four hours, make observations at an upcurrent location outside the influence of the Project, and at a downcurrent location representative of turbidity caused by the Project.
- Document all turbidity monitoring observations including date, time, and location on form 734-2755, “Turbidity Monitoring Report” or another form approved by the Engineer. Submit reports to the Engineer weekly while working in waters of the State or U.S. and keep copies of the reports at the Project Site.
- A visible downcurrent turbidity plume emanating from the work area requires a presumption that project-caused turbidity is more than 10% above the upcurrent background level and is therefore in violation of DEQ’s turbidity water quality standard (OAR 340-041-0036), unless turbidity meter analyses of samples taken from an upcurrent location and from a location within the visible plume show that the actual turbidity increase is no more than 10% above the upcurrent background level.
- If observations indicate that the Project has increased turbidity to more than 10% above the upcurrent background level, modify work procedures and repair or upgrade BMPs. If turbidity is still more than 10% above the upcurrent background level at the next four-hour observation, stop turbidity-causing Work and repair or upgrade BMPs. Resume such Work when downcurrent turbidity returns to no more than 10% above the upcurrent background level.

[End Option 1]

[Option 2 - Use the following subsection when meter turbidity monitoring is required by a Clean Water Act Section 401 water quality certification or any other permit or regulation.]

00290.30(a)(8) Meter Turbidity Monitoring - In addition to the requirements of 00280.62(c) to monitor the receiving stream to identify water quality issues, during Work in waters of the State or U.S., implement best management practices (BMPs) to minimize turbidity, and monitor turbidity using a turbidity meter that has been maintained and calibrated according to the manufacturer's specifications and according to the following:

- Measure upcurrent and downcurrent turbidity at two-hour intervals and perform work based on turbidity measurements according to the following:
  - Take upcurrent samples at a location representative of background turbidity approximately 100 feet from the work area.
  - Take downcurrent samples at a location approximately 100 feet from the work area at approximately mid-depth of the water body and within any visible turbidity plume.
  - If the downcurrent reading is less than 5 nephelometric turbidity units (NTU) higher than the upcurrent reading, continue to Work and take readings every two hours.
  - If the downcurrent reading is greater than or equal to 5 and less than 30 NTU higher than the upcurrent reading, modify work procedures and repair or upgrade BMPs, continue Work, and continue to take readings every two hours. If after four hours the downcurrent reading is still greater than or equal to 5 NTU higher than the upcurrent reading, stop all work in water and repair or upgrade BMPs. Resume work in water only after the downcurrent reading is less than 5 NTU above the upcurrent reading.
  - If the downcurrent reading is greater than or equal to 30 and less than 50 NTU higher than the upcurrent reading, modify work procedures, repair or upgrade BMPs and continue Work. If, at the subsequent two-hour reading, the downcurrent reading is still more than 30 NTU higher than the upcurrent reading, stop all work in water and repair or upgrade BMPs. Resume work in water only after the downcurrent reading is less than 5 NTU above the upcurrent NTU reading.
  - If the downcurrent reading is 50 NTU or more higher than the upcurrent reading, stop all work in water, repair or upgrade BMPs, and inform the Engineer. Resume work in water only after the downcurrent reading is less than 5 NTU above the upcurrent NTU, as determined by continued readings made no more than two hours apart.
  - Document all turbidity monitoring observations on form 734-2755, "Turbidity Monitoring Report", or another form approved by the Engineer. Submit reports to the Engineer weekly during work in water and keep copies of the reports at the Project Site.
  - Meter turbidity monitoring may be temporarily suspended if all of the following conditions are met:
    - Temporary water management and work area isolation measures have been installed and are functioning as designed.
    - The Engineer, after consultation with DEQ, has authorized the suspension of turbidity monitoring. The Engineer will provide information to be documented on the turbidity monitoring form, including the date of the DEQ authorization and the name of the DEQ employee providing the authorization.
  - Resume the turbidity monitoring protocol if Work during a temporary suspension of meter turbidity monitoring causes a release of a visible turbidity plume.

[End Option 2]

(Use the following subsection .30(b) when the project meets the criteria listed below. Contact the State Specifications Engineer with any questions. State Specifications Engineer must approve the use of 00290.30(b).)

1) ***The Interstate 5 Rose Quarter Project;***
2) ***The Interstate 205 Abernethy Bridge Project;***
3) ***The Interstate 205 Freeway Widening Project;***
4) ***The State Highway 217 Northbound Project;***
5) ***The State Highway 217 Southbound Project.***
6) ***Contracts that have an advertisement date on or after January 1, 2022 when all of the following apply:***
   a) ***The Contract will have a value of $20 million or more; and***
   b) ***The contracting agency is a state contracting agency; and***
   c) ***The majority of the project site is located within Clackamas, Multnomah, or Washington County;***
7) ***Contracts that have an advertisement date on or after January 1, 2025 when all of the following apply:***
   a) ***The Contract will have a value of $15 million or more; and***
   b) ***The contracting agency is a state contracting agency; and***
   c) ***The majority of the project site is located within Clackamas, Multnomah, or Washington County;***
8) ***Contracts that have an advertisement date on or after January 1, 2029 when all of the following apply:***
   a) ***The Contract will have a value of $10 million or more; and***
   b) ***The contracting agency is a state contracting agency; and***
   c) ***The majority of the project site is located within Clackamas, Multnomah, or Washington County.)***

00290.30(b) Pollution Control Plan - Add the following to the end of this subsection:

Comply with the following, and, as applicable, with OAR 731-005-0800 for contracts subject to OAR chapter 731, division 5 or 7 or with OAR 731-149-0020 for contracts subject to OAR chapter 731, division 149.

Prior to beginning On-Site Work, submit a listing of proposed non-road diesel equipment and on-road trucks to the Engineer as required in (1) and (2) below that demonstrates how compliance with OAR 731-005-800 or OAR 731-149-0020 will be achieved. Update the listing of non-road diesel equipment and on-road trucks specified in (1) and (2) below when additional pieces of non-road diesel equipment or on-road trucks, not previously accounted for, are brought onto the Project Site. Provide the updated list to the Engineer upon request.

On a monthly basis certify compliance with OAR 731-005-800 or OAR 731-149-0020 and submit the certification with a list of non-road diesel equipment and on-road trucks specified in (1) and (2) below utilized to date on the Project Site to the Engineer and include calculations demonstrating compliance according to OAR 731-005-800 or OAR 731-149-0020.

Failure to submit the monthly listings, certifications and calculations may result in withholding payments according to 00195.50(e).

Immediately remove from the Project Site, according to 00180.30, non-road diesel equipment and on-road trucks used on the Project Site in violation of OAR 731-005-800 or OAR 731-149-0020, or 00290.30. Update the listing of non-road diesel equipment and on-road trucks with a notation for any that were removed.

(1) Non-Road Diesel Equipment - Demonstrate compliance with OAR 731-005-800 or OAR 731-149-0020 by listing all non-road diesel equipment (as defined in OAR 731-005-0430) that is 25 horsepower or greater utilized to date on the Project Site and including the following:

- Equipment owner and whether the piece of equipment is owned and operated by a COBID certified firm
- Equipment type
- Manufacturer
- Model number
- Vehicle identification number or serial number
- Engine certification (Tier rating)
- If not equipped with a Tier 4 compression ignition diesel engine, specify whether the engine has been retrofitted with a Verified Diesel Oxidation Catalyst or Verified Diesel Particulate Filter
- Specify whether the equipment qualifies for an exemption provided in OAR 731-005-0800(5) or OAR 731-149-0020(4) and which exemption applies
- The above required certifications and calculations

(2) On-Road Concrete Mixer Trucks and Dump Trucks - Demonstrate compliance with OAR 731-005-800 or OAR 731-149-0020, by listing all diesel powered on-road concrete mixer trucks and on-road dump trucks utilized to date on the Project Site that are owned or operated by the Contractor, Subcontractors and those operated under trucking services agreements, including:

- Equipment owner and whether the piece of equipment is owned and operated by a COBID certified firm
- Vehicle identification number or serial number
- Engine model year
- Motor vehicle license plate number
- The above required certifications and calculations

(Use the following subsection .30(c)(1) when the .30(b) is included. Contact the State Specifications Engineer with any questions. State Specifications Engineer must approve the use of 00290.30(c)(1).)

00290.30(c)(1) Vehicle and Equipment Idling - Replace this subsection, except for the subsection number and title, with the following:

Establish truck staging areas for diesel-powered vehicles located where truck emissions have a minimum impact on sensitive populations, such as residences, schools, hospitals and nursing homes.

Ensure that all diesel powered Equipment has a decal visible to the operator, reminding them to limit idling to a maximum of 5 minutes. Post at least 1 notice in a location frequented by employees or workers stating diesel equipment idling is limited to 5 minutes.

Limit idling of trucks and other diesel powered Equipment to 5 minutes, when the Equipment is not in use or in motion, except as follows:

- When safety of contractors, Subcontractors or Suppliers or their employees may be compromised.
- Frequent shutdowns may be detrimental to the exhaust control system.
- When traffic conditions or mechanical difficulties, over which the operator has no control, force the Equipment to remain motionless.
- When operating the Equipment's heating, cooling or auxiliary systems is necessary to accomplish the Equipment's intended use.
- To bring the Equipment to the manufacturer's recommended operating temperature.
- When the outdoor temperature is below 20 °F.
- When needed to repair Equipment.
- Under other circumstances specifically authorized by the Engineer.

(Use one of the following three options for subsection .32 within Local Agency boundaries where applicable.)

00290.32 Noise Control - Add the following paragraph(s) to the end of this subsection:

[Option 1 - Use the following option on Projects within the City limits of Portland where applicable.]

Review City of Portland Title 18 which describes noise control regulations. Comply with the applicable noise control requirements of the permit for Project Work.

Copies of the noise variance permit for this Project are available from the Engineer.

[Option 2 - Use the following option on projects within Local Agency boundaries where applicable. Replace the examples in parentheses and delete parentheses]

Review *(City / County) (list code or title)* which describes noise control regulations. Comply with the applicable noise control requirements of the permit for Project Work.

Copies of the noise variance permit for this Project are available from the Engineer.

[Option 3 - Use the following option within Local Agency boundaries where applicable and where local requirements exist for obtaining a noise variance, and only if the Local Agency will not provide a permit prior to construction or will only provide the permit to the Contractor.]

Review *(City / County) (list code or title)* which describes noise control regulations. Obtain and be responsible for necessary permits described in *(City / County) (list code or title)*. Comply with the applicable noise control requirements for Project Work.

(Use the following subsection .34 when fish or fish habitat resources require protection. Modify as needed for site-specific conditions. Check to make sure applicable and consistent with project permit conditions. Obtain information from the Environmental Coordinator.)

00290.34 Protection of Fish and Fish Habitat - Add the following paragraph:

Meet with the Agency Biologist, Resource Representative, Engineer, and inspector on site, before moving equipment on-site or beginning any work, to ensure that all parties understand the locations of sensitive biological sites and the measures that are required to be taken to protect them.

(Use the following subsections .34(a) when regulated work areas are required. Fill in the blanks as necessary. Obtain information from the Environmental Coordinator.)

00290.34(a) Regulated Work Areas - Add the following to the end of this subsection:

(Use the following three options as instructed below. Delete any options that do not apply.)

[Option 1 - Use the following paragraph when the Agency will delineate the regulated work area on the plans]

The regulated work area is the area at or below the ordinary high water (OHW) elevation shown on the plans.

[Option 2 - Use the following paragraph when the Agency will identify and mark the regulated work area in the field.]

The regulated work area is defined as the area at or below the ordinary high water (OHW) elevation. The Engineer will identify and mark the regulated work area.

[Option 3 - Use the following paragraph when the Agency will <u>NOT</u> identify and mark the regulated work area in the field. Fill in the blanks. If the project has any gradient change through the project area, the elevation could be different from station to station. If gradient is significant this option should not be used.]

The regulated work area is the area at or below _____ feet elevation and between stations _____ and _____.

[End Options]

(Delete the following paragraph if it does not apply. Fill in the blanks with dates.)

Perform work within the regulated work area only during the in-water work period. The in-water work period is from ___*(*date*)*___ to ___*(*date*)*___.

(Delete the following paragraph if it does not apply. Fill in the blank.)

The total volume of material filled or discharged into waters of the State and waters of the U.S. shall not exceed ____ cubic yards.

(Delete the following paragraph if it does not apply. Fill in the blank.)

The total volume of material excavated from the waters of the State and waters of the U.S. shall not exceed _____ cubic yards.

Submit a schedule to complete all work within the regulated work area within the in-water work period at least 10 Days prior to the preconstruction conference.

(Use the following subsection .34(b) when regulated work areas are required. Fill in the blanks as necessary. Delete what does not apply. Obtain information from the Environmental Coordinator.)

00290.34(b) Prohibited Operations - Add the following to the end of this subsection:

- Allow entry within the regulated work area or between stations _____ and _____.

(Use the following bullet for projects permitted under the Endangered Species Act Consultation (ESA) on the Federal-Aid Highway Program (FAHP) or the Standard Local Operating Procedures for Endangered Species (SLOPES), unless modified by consultation with NMFS.)

- Install steel piles greater than 24 inches in diameter or H-pile larger than designation HP 24 within the regulated work area.

(Use the following lead-in paragraph and subsection .34(c) to list required environmental permits. Edit buffer distances as relevant to project permits. Obtain information from the Environmental Coordinator. (Include paragraphs (1) through (14) as necessary. When paragraphs are NOT included, renumber the remaining paragraphs beginning with the appropriate number.)

[Begin subsection .34(c)]

Add the following subsection:

00290.34(c) Aquatic Species Protection Measures Required by Environmental Permits:

(1) General Requirements:

- Do not install fish ladders (for example: pool and weirs, vertical slots, fishways) or fish trapping systems.
- Do not apply surface fertilizer within 50 feet of any stream channel.

Use heavy equipment as follows:

- Choice of equipment must have the least adverse effects on the environment (for example: minimally sized, low ground pressure).
- Secure absorbent material around all stationary power equipment (for example: generators, cranes, drilling equipment) operated within 150 feet of wetlands, waters of the State, waters of the U. S., drainage ditches, or water quality facilities to prevent leaks, unless suitable containment is provided to prevent spills from entering waters of the State or waters of the U.S.
- Do not cross directly through a stream for construction access, unless shown or approved. If shown or approved, cross perpendicular to the stream and do not block stream flow. When a crossing is no longer needed, completely remove the crossing and restore the soils and vegetation to the original condition.
- Store fuel and maintain all equipment in staging areas that are at least 150 feet away from any waters of the State, waters of the U.S., or storm inlet or on an impervious surface that is isolated from any waters of the State, waters of the U.S., or storm inlet.
- If temporary access roads are needed within 150 feet of any body of water, use existing routes unless new routes are shown or approved.
- Before beginning work on temporary access routes that are not shown, submit a proposal to the Engineer for approval.

(Use this subsection (2) when Section 00245 is required.)

(2) Work Area Isolation - Provide work isolation according to Section 00245. Provide safe passage around or through the isolated work area for adult and juvenile migratory fish unless passage did not previously exist.

(3) Water Intake Screening - Install, operate, and maintain fish screens on each water intake used for project construction, including pumps used to isolate an in-water work area. When drawing or pumping water from any stream, protect fish by equipping intakes with screens having a minimum 27 percent open area and meeting the following requirements:

- Perforated plate openings shall be 3/32 inch or smaller.
- Mesh or woven wire screen openings shall be 3/32 inch or smaller in the narrowest direction.
- Profile bar screen or wedge wire openings shall be 1/16 inch or smaller in the narrow direction.

Choose size and position of screens to meet the following criteria in Table 00290-1:

Table 00290-1

Type	Approach Velocity [1] (Ft./Sec.)	Sweeping Velocity [2] (Ft./Sec.)	Wetted Area of Screen (Sq. Ft.)	Comments

Ditch Screen	≤ 0.4	Shall exceed approach velocity	Divide max. water flow rate (cfs) by 0.4 fps	If screen is longer than 4 feet, angle 45° or less to stream flow
Screen with proven self-cleaning system	≤ 0.4	–	Divide max. water flow rate (cfs) by 0.4 fps	–
Screen with no cleaning system other than manual	≤ 0.2	–	Divide max. water flow rate (cfs) by 0.2 fps	Pump rate 1 cfs or less
[1] Velocity perpendicular to screen face at a distance of approximately 3 inches [2] Velocity parallel to screen				

Provide ditch screens with a bypass system to transport fish safely and rapidly back to the stream.

(Use the following subsection (4) when special aquatic habitats are required. Obtain information from the Environmental Coordinator.)

(4) Special Aquatic Habitats - The following exploration or construction activities are not allowed in special aquatic habitats:

- Use of pesticides and herbicides, unless allowed according to Section 01030.
- Use of short pieces of plastic ribbon to determine flow patterns.
- Temporary roads or drilling pads built on steep slopes, where grade, soil type, or other features suggest a likelihood of excessive erosion or slope failure.
- Exploratory drilling in estuaries that cannot be conducted from a work barge, or an existing bridge, dock, or wharf.
- Installation of a fish screen on any permanent water diversion or intake that is not already screened.
- Drilling or sampling in an EPA-designated Superfund Site, a state-designated clean-up area, or the likely impact zone of a significant contaminant source, as identified by historical information, U. S. Army Corps of Engineers representative, or the Agency.

(5) Site Restoration - Restore damaged streambanks to a natural slope, pattern, and profile suitable for establishment of permanent woody vegetation unless precluded by pre-project conditions (for example: natural rock substrate):

- Replant all damaged streambanks before the first April 15 following construction.
- If use of large wood, native topsoil, or native channel material is required for the site restoration according to the roadside development plans, stockpile all large wood, native vegetation, weed-free topsoil, and native channel material displaced by construction. Cut trees or large wood and trees into pieces of no less than 20 feet in length, or as shown on the roadside development plans or as directed. Stockpiled native wood and vegetation remain the property of the Agency.

- Stabilize all disturbed soils, including obliteration of temporary access roads, following any break in work unless construction will resume in 4 Calendar Days.

(6) Surface Water Diversions - Surface water may be diverted to meet construction needs other than work area isolation, consistent with Oregon law, only if water from sources that are already developed, such as municipal supplies, small ponds, reservoirs, or tank trucks, is unavailable or inadequate, and meeting the following conditions:

- When alternative surface sources are available, divert from the stream with the greatest flow.
- Install, operate, and maintain a temporary fish screen.
- Do not exceed a pumping rate and volume of 10 percent of the available flow. For streams with less than 5 cubic feet per second, do not exceed drafting of 18,000 gallons per Day. Do not use more than one pump for each site.

(7) Hydro-Acoustic - Unless otherwise shown or approved, steel piling may be installed below the ordinary high water as follows:

- Minimize the number and diameter of pilings, as feasible.
- Repairs, upgrades, and replacement of existing pilings consistent with these conditions are allowed. In addition, up to 5 single pilings or 1 dolphin consisting of 3 to 5 pilings may be added to an existing facility.
- Whenever feasible, use vibratory hammer for piling installation. Otherwise, use the smallest drop or impact hammer necessary to complete the job, and set the drop height to the minimum necessary to drive the piling.
- For all pile installed or removed, maintain a pile installation and removal log and submit the log when the related work is completed. Include types, sizes, locations, installation or removal methods, and dates in the log.
- When using an impact hammer to drive or proof steel piling within a body of water, or as directed, use one of the following sound attenuation devices to effectively dampen sound:

    - Completely isolate the pile from the waters of the State and waters of the U.S. by dewatering the area around the pile according to Section 00245.
    - If water velocity is 1.6 feet per second or less, surround the pile being driven with a bubble curtain that distributes small air bubbles around 100 percent of the piling perimeter for the full depth of the water column and is in accordance to the guidance in the Appendix of The ODOT-FHWA Federal Aid Highway Program Programmatic User's Guide titled *NMFS and USFWS Impact Pile Driving Sound Attenuation Specifications*. The FAHP User's Guide is available on the Agency's website at:

        https://www.oregon.gov/ODOT/GeoEnvironmental/Pages/Manuals.aspx

    - If water velocity is greater than 1.6 feet per second, surround the piling being driven by a confined bubble curtain (for example: a bubble ring surrounded by a fabric or metal sleeve) that will distribute air bubbles around 100 percent of the piling perimeter for the full depth of the water column and is in accordance to the

guidance in the Appendix of The ODOT-FHWA FAHP User's Guide titled *NMFS and USFWS Impact Pile Driving Sound Attenuation Specifications*.

(8) Drilling, Boring, or Jacking - If drilling, boring, or jacking is used, the following conditions apply:

- Design, build, and maintain facilities to collect and treat all construction and drilling discharge water using the best available technology applicable to site conditions. Provide treatment to remove debris, nutrients, sediment, petroleum hydrocarbons, metals, and other pollutants likely to be present. An alternate to treatment is collection and proper disposal offsite.
- Isolate drilling operations from wetted stream to prevent drilling fluids from contacting waters of the State or waters of the U.S.
- Use casing to prevent loss of drilling fluid to the subsurface formation. Do not drill without a containment method to keep drilling fluids and slurry isolated.
- If it is necessary to drill through an over-water bridge deck, use containment measures to prevent drilling debris from entering the stream channel.
- If drilling fluid or waste is released to surface water, wetland or other sensitive environment, cease all drilling pending written approval from appropriate regulatory agencies through the Engineer to resume drilling.
- Recover all waste and spoils if precipitation is falling or imminent. Recover, recycle, or dispose of all drilling fluids and waste to prevent entry into flowing water.

  - Recycle drilling fluids using a tank instead of drill recovery/recycling pits, whenever feasible.
  - When drilling is completed, make attempts to remove the remaining drilling fluid from the sleeve (for example: by pumping) to reduce turbidity when the sleeve is removed.

(9) Treated Wood - Treated wood includes any wood treated with any pesticide or wood preservatives. Do not use lumber, pilings, or other wood products that are treated or preserved with pesticidal compounds below the ordinary high water (OHW) or as part of an in-water or over-water structure, except as described below:

- Store treated wood shipped to the Project out of contact with standing water and wet soil, and protected from precipitation.
- Visually inspect each load and piece of treated wood. Reject for use in or above aquatic environments if visible residues, bleeding of preservative, preservative-saturated sawdust, contaminated soil, or other matter is present.
- Use pre-fabrication to the extent feasible. When field fabrication is necessary, all cutting and drilling of treated wood, and field preservative treatment of wood exposed by cutting and drilling, shall occur above the OHW. Use tarps, plastic tubs, or similar devices to contain the bulk of any fabrication debris, and wipe off any excess field preservative.
- All treated wood structures, including pilings, shall have design features to avoid or minimize impacts and abrasion by livestock, pedestrians, vehicles, vessels, and floats.

- Treated wood may be used to construct a bridge, over-water structure or an in-water structure, with the exception of the work containment system, provided that all surfaces exposed to leaching by precipitation, overtopping waves, or submersion are coated with a water-proof seal or barrier are maintained. Apply and contain coatings and paint-on field treatment to prevent contamination. Surfaces that are not exposed to precipitation or wave attack, such as parts of a timber bridge completely covered by the bridge deck, are exempt from this requirement.
- During demolition of treated wood, ensure that no treated wood debris falls into the water. If treated wood debris does fall into the water, remove it immediately.
- Store removed treated wood debris in appropriate dry storage areas, at least 150 feet away from the regulated work area.

(10) Piling Removal - Remove temporary or permanent piling according to the following:

- Dislodge the piling with a vibratory hammer, whenever feasible.
- Once loose, place the piling onto the construction barge or other appropriate dry storage site.

(Use the following bullet when future river dredging is anticipated where piles are being removed.)

- When piles are not completely removed, locate each unremoved pile and submit the locations to the Agency. Submitted pile locations shall be accurate to within 10 feet of the actual pile location.

a. Non-Treated Piling - Use the following methods to remove non-creosote piling:

(Use the following bullet when piling will be removed from uncontaminated sediment. Check with the Region HazMat Coordinator.)

- If a pile in uncontaminated sediment cannot be removed or breaks, cut or push the pile or stump off at least 3 feet below the surface of the sediment and cover with a cap of clean, native substrates that match surrounding streambed materials.

(Use the following bullet when piling will be removed from contaminated sediment. Check with the Region HazMat Coordinator.)

- If a pile in contaminated sediment cannot be removed or breaks above the sediment line, cut the pile or stump off at the sediment line. If the pile breaks below the sediment line, make no further effort to remove it.
- Fill holes left by each pile with clean, native sediments whenever feasible.
- Do not excavate to remove piling.

b. Treated Piling - To minimize toxic release, sediment disturbance, and total suspended solids, use the following methods to remove treated piling:

- Install a floating surface boom to capture floating surface debris.

- Keep all equipment out of the water, grip piles above the waterline, and complete all work during low water and low current conditions.
- Dislodge the piling with a vibratory hammer, whenever feasible. Do not intentionally break a pile by twisting or bending.
- Slowly lift the pile from the sediment and through the water column.
- Place the pile in a containment basin on a barge deck, pier, or shoreline without attempting to clean or remove any adhering sediment.

(Use the following bullet when piling will be removed from uncontaminated sediment. Check with the Region HazMat Coordinator.)

- If a pile in uncontaminated sediment cannot be removed or breaks, cut or push the pile or stump at least 3 feet below the surface of the sediment and cover with a cap of clean, native substrates that match surrounding streambed materials.

(Use the following bullet when piling will be removed from contaminated sediment. Check with the Region HazMat Coordinator.)

- If a pile in contaminated sediment cannot be removed or breaks above the sediment line, cut the pile or stump off at the sediment line. If the pile breaks below the sediment line, make no further effort to remove it.
- Fill the hole left by each removed or partially removed pile with clean, native sediments and cap with clean, native substrates that match surrounding streambed materials immediately after removal.
- Dispose of all removed piles, floating surface debris, contaminated supplies, and sediment spilled on work surfaces at a permitted upland disposal site.

(11) Ditch and Culvert Cleaning - Complete ditch cleaning, culvert and trash rack cleaning by working from the top of bank, unless work area isolation would result in less habitat disturbance.

- Do not work more than 20 feet upstream or downstream the culvert or trash rack.
- Remove only the minimum amount of wood, sediment, or other natural debris necessary to maintain the facility's function, without disturbing spawning gravel or changing the configuration of the original ditch, unless the new configuration is part of the project design.
- Place all large wood, cobbles, and gravels recovered from during culvert and trash rack cleaning downstream from the structure.
- Complete drift removal in the following priority, as directed:

  - Pull and release whole logs or trees downstream.
  - Pull whole logs and trees and place in the riparian area, as directed.
  - Remove whole logs or trees only if roadside development plans have been developed for replacement in-kind.
  - Pull, cut only as necessary, and release logs and trees downstream.

(12) Floating Structures - The following types of over-water or in-water structures are not allowed:

- boat house
- boat ramp made of asphalt
- buoy or float in an active anchorage or fleeting area
- covered moorage
- floating storage unit
- houseboat
- marine
- pier
- non-water related facilities (including staging areas) inside riparian management areas
- any other over-water structure more than 6-feet wide unless otherwise approved in writing by appropriate regulatory agencies through the Engineer

The following conditions apply to over-water or in-water structures:

- Concrete boat ramps that consist of pre-cast concrete slabs below the ordinary high water elevation, and higher elevation portions that are completed in the dry so that no wet concrete that has cured less than 24 hours is allowed to contact any wetland or waters of the State or waters of the U.S.
- Rock may be used to construct a boat ramp footing, or other protection necessary to prevent scouring, down-cutting, or failure of the boat ramp, provided that the rock does not extend further than 4 feet from the edge of the ramp in any direction.
- Any replacement roof, wall, or garage door for covered moorages and boat houses must be made of translucent materials or skylights. In addition, each side, except the door, of the boat house shall have windows at least 4 feet wide installed the length of the boat house, subject to breaks only for structural support.
- An existing marina may be modified within the existing footprint of the moorage, or in the water more than 50 feet from the shoreline and more than 20 feet deep, except do not place structures in areas that support aquatic vegetation or areas where boat operations may damage aquatic vegetation.
- Fit all pilings, mooring buoys, and navigational aids with devices to prevent perching by piscivorous birds.
- Permanently encapsulate all synthetic flotation material to prevent breakup into small pieces and dispersal in water.
- Install small temporary floats less than 7 Calendar Days before a scheduled event, remove them 5 Days after a scheduled event is concluded, and do not leave them in place longer than 21 Calendar Days.
- Install mooring buoys and temporary floats (for example: shellfish traps) more than 300 feet from native submerged aquatic vegetation, more than 50 feet from the shoreline, and in water deeper than 20 feet deep at all times, or as necessary to ensure that gear does not ground out unnecessarily, and boats do not prop wash the bottom.

(Use the following barge language when using a barge. Delete bullets within the barge language that do not apply to the project.)

[Begin barge language.]

(Use one of following two bullets depending on permit conditions. Fill in the blank with the barge location (stream, pier, bridge, etc.) and reference the plan sheet(s) that show restricted areas. Delete "(s)" or parentheses as applicable.)

- Prohibit barge use at _____, as shown on sheet*(*s*)* _____ of the Plans.
- Barge use is allowed only at _____, as shown on sheet*(*s*)* _____ of the Plans.

When using a barge:

- Before moving the barge to the Project Site, unless the barge is transported solely by water and entirely within the State, inspect the barge and ballast for invasive species to ensure that invasive species are not brought to the Project Site. Notify the Oregon State Marine Board if invasive species are found.
- Before moving the barge to the Project Site, clean and pressure wash the barge deck.
- Do not use impact hammers for spud placement.
- Install and maintain containment measures to prevent barge surface runoff from flushing oil, fuel, or other contaminants into the water.
- Secure all Equipment, portable toilet facilities, and containers with fuel, hazardous materials, or waste to the barge deck.
- If the barge is equipped with a toilet facility, pump it out into an approved waste removal system when work requiring a barge is complete, or as often as is necessary. Move temporary toilet facilities to shore before pumping them out.
- If a fuel container is used on the barge, provide a double-walled fuel container and place an absorbent containment boom around the container when it is on the barge.
- Remove hand carried fuel containers from the barge at the end of each work shift unless containers are secured to the barge and stored within a secondary containment vessel of sufficient capacity to hold the entire volume of liquid available.
- Refill hand carried fuel containers within a secondary containment vessel of sufficient capacity to hold the entire volume of liquid available.
- Provide individual containment for each piece of Equipment on the barge, including containment pans or absorbent booms to locally contain minor spills.
- Remove waste material from the barge at least every 3 working days and:
  - Before any pause in work that is longer than 1 Day; or
  - Before reaching the calculated safe load weight of the barge according to Section 00253.

[End barge language.]

(13) Temporary Power, Communication and Water Lines - Before installing temporary power, communication, or water lines across streams or bodies of water, submit a

proposed plan to the Engineer for approval. Do not begin installation before receiving approval from the Engineer. Proposed plans for installation of temporary power, communication, and water lines and stream crossings shall utilize the following design methods in the listed order of priority:

1. Aerial lines, including lines hung from existing bridges.

2. Directional drilling, boring and jacking that spans the channel migration zone and any associated wetland.

3. Trenching, which is restricted to intermittent streams and may only be used when the stream is naturally dry. For all sections of trenches below the ordinary high water line, backfill with native material and cap with clean gravel suitable for fish use in the project area.

Align each crossing as perpendicular to the watercourse as possible. For drilled, bored, or jacked crossings, ensure that the line is below the total scour prism. Return any large wood displaced by trenching or plowing as nearly as possible to its original position, or otherwise arranged to restore habitat functions.

(14) Injured Fish Notification - If a dead or injured fish is found in the project area, immediately notify the Agency. If the injured fish is in a location where further injury or stress may take place, attempt to move the fish to a safer location, if one is available, near the capture site while keeping the fish in the water and reducing its stress as much as possible. Do not disturb the fish after it has been moved. If the fish is dead or dies while being captured or moved, save the fish and any tags. The Agency will notify appropriate regulatory agencies about the injured or dead fish and provide additional direction to the Contractor.

[End subsection .34(c)]

(Use the following lead-in paragraph and subsection .35 when the Marine Mammal Protection Act applies to the project. Check with the Environmental Coordinator and the ODOT NMFS Liaison.)

Add the following subsection:

00290.35 Protection of Marine Mammals - ***[Coordinate with the ODOT NMFS Liaison to develop appropriate specification language.]***

(Use the following subsection .36(a) when migratory birds may be encountered. Check with the ODOT Region Environmental Coordinator.)

00290.36(a) Migratory Birds - Add the following to the end of this subsection:

(Use the following paragraph when nesting habitat is within the project limits and there will be no bird management. Obtain information from the Environmental Coordinator.)

Do not disturb migratory bird nesting habitat (shrubs, trees, and structures), or clear vegetation from March 1 to September 1 of each year without prior written approval from the

Engineer. Notify the Engineer, in writing, a minimum of 10 Calendar Days prior to starting activities that could harm nesting birds.

(Use one of the following .36(a)(1) options if bird management is anticipated and as instructed below. Delete the options that do not apply. Obtain information from the Environmental Coordinator.)

[Option 1 - Use this option when the project will be covered under the ODOT Migratory Bird Treaty Act (MBTA) permit and ODOT Biological Staff or USDA APHIS Wildlife Services will oversee bird management on the project.

(1) Bird Management - Bird management activities to comply with the Migratory Bird Treaty Act (16 U.S.C. 703 712) will be performed by the Agency. Ensure that the Agency and its permitted agents have access to the project area, as needed to prevent migratory bird nesting. Nesting prevention may include daily bird harassment and the installation and maintenance of devices that exclude birds.

Do not disturb migratory bird nesting habitats (shrubs, trees, and structures), or clear vegetation from March 1 to September 1 of each calendar year without prior written approval from the Engineer. Notify the Engineer, in writing, a minimum of 10 Calendar Days prior to starting activities that could harm nesting birds.

[Option 2 - Use this option when the project will be covered under the ODOT Migratory Bird Treaty Act (MBTA) permit but ODOT Biological Staff or USDA APHIS Wildlife Services requires contractor assistance with bird management because of the large size and/or complexity of the project. Modify as needed. This option requires approval by the Technical Resource.]

(1) Bird Management - Submit a migratory bird protection plan and implementation schedule for review and approval at least 10 Calendar Days before the pre-construction conference. Do not begin Work until the migratory bird protection plan and implementation schedule are approved.

Do not disturb migratory bird nesting habitats (shrubs, trees, and structures), or clear vegetation from March 1 to September 1 of each calendar year without prior written approval from the Engineer. Notify the Engineer, in writing, a minimum of 10 Calendar Days prior to starting activities that could harm nesting birds.

The migratory bird protection plan shall include the following elements:

(a) The name of the individual who will oversee bird management activities for the project and a summary of their qualifications. This individual must have a biology or related natural resources degree and a minimum of 2 years of work experience identifying nesting birds, preferably in the Pacific Northwest.

(b) A description of measures to prevent birds from nesting on structures or vegetation at the project site, from March 1 to September 1 of each calendar year, that could result in project conflicts; include the timing, intensity and location of the activities. If exclusionary devices will be used (e.g., netting), install them prior to March 1 and remove them at the completion of the project or by September 1 each calendar year, whichever comes first. Include how exclusionary devices will be installed and document

their inspection schedule. Exclusionary devices must be inspected daily to ensure their functionality. Repair damaged exclusionary devices as soon as the damage is discovered. Document inspections and maintain documentation on site.

(c) A description of measures to avoid disturbing active migratory bird nests if they are encountered. The typical avoidance measure is to move project activities away from the active nest until the young have left the nest.

[Option 3 - Use this option when the Project is covered under a non-ODOT Migratory Bird Treaty Act permit, typically a Local Government permit. Insert the name of the permit holder and delete the parentheses.]

(1) Bird Management - Bird management activities to comply with the Migratory Bird Treaty Act will be performed by *(* name of the permit holder *)* and its permitted agents, as documented in the *(* name of the permit holder *)* MBTA permit. Ensure that *(* name of the permit holder *)* and its permitted agents have access to the project area as needed to prevent migratory bird nesting. Nesting prevention may include daily bird harassment and the installation and maintenance of devices that exclude birds.

Do not disturb migratory bird nesting habitat (shrubs, trees and structures) or clear vegetation from March 1 to September 1 each calendar year without prior written approval from the Engineer. Notify the Engineer, in writing, a minimum of 10 Calendar Days prior to starting activities that could harm nesting birds.

(Use the following subsection .36(b) when there is potential disturbance to bat colonies. Delete what does not apply. Obtain information from the Environmental Coordinator.)

00290.36(b) Bats - Add the following bullet*(*s*)* to the end of the bullet list:

- Schedule Bridge Work that may disturb resident bats, including demolition activities, between (__Insert dates outside of maternity roosting/ hibernation _(date)____ to ____(date)____).

(Use one of the following options when bat management is performed.)

[Option 1 – Use the following bullet when bat management is performed by the Agency.]

- Ensure that the Agency and its agents have access to the project area, as needed, to perform bat management activities to prevent bat conflicts.

[Option 2 – Use the following bullets in the event that bat management cannot be performed by the Agency. Modify as needed.]

- Install exclusionary devices to prevent bats from accessing suitable Bridge habitat. An exclusionary device is any item that denies bats physical access to an area (e.g., netting, hole blockers, one-way valves). Exclusionary devices must be approved by the Engineer prior to installation.

- Install exclusionary devices a minimum of 15 Days prior to (_(Insert the date of the beginning of maternity roosting/hibernation_). Do not remove exclusionary devices until approved by the Engineer.
- Regularly inspect, maintain, and repair or replace exclusionary devices to prevent bridge occupancy by bats during the period listed above.

(Use the following lead-in paragraph and subsection .36(c) when there is high noise production work near listed birds. Obtain information from the Environmental Coordinator.)

Add the following subsection:

00290.36(c) Wildlife Avoidance/Harassment (High Noise) - For purposes of this project, "high noise" is defined as sound pressure levels greater than 10 dBA above the ambient as measured by the L_{AFmax} and L_{AFeq} at sensitive habitat as shown:

(Use the following bullets when suitable habitat for marbled murrelet is located within one mile of the project.)

- Non-blasting high-noise producing construction activities are not allowed between April 1 and August 5. Blasting activities within one mile of sensitive habitat shall be conducted only between September 15 and March 31.
- Non-blasting high noise producing construction activities conducted from August 6 to September 15 shall implement a daily limited operating period of daytime work being conducted from two hours after sunrise to two hours before sunset. If night construction is needed, then activity shall be conducted one hour after sunset to one hour before sunrise.

(Use the following bullet when nesting or communal roosting sites for bald and/or golden eagles are within one mile of blasting activities, 0.5 mile line of sight of construction activities, or 0.25 mile of construction activities.)

- Blasting and high-noise producing activities are allowed only between September 1 and October 31.

(Use the following bullets when there is suitable habitat for northern spotted owl near the project site. Delete bullets that do not apply.)

- Blasting and high-noise producing activities shall be prohibited during the following critical nesting period:
  - March 1 to July 7 for the North Coast Province.
  - March 1 to June 30 for the Rogue/Siskiyou National Forest (NF) and Medford District of U.S. Bureau of Land Management (BLM) in the Southwest Province.
  - March 1 to July 15 for the Umpqua NF in the Southwest Province.
  - March 1 to July 15 for the Willamette Province.
  - March 1 to September 30 for the Deschutes NF, Fremont, and Winema NF and unlisted areas.

(Use the following subsection .41 when required by relevant permits. Obtain information from the Environmental Coordinator. Delete the language in purple parentheses that does not apply and delete all purple parentheses.)

00290.41 Protection of Waters of the U.S. or State - Add the following to the end of this subsection:

Permits have been obtained for this project from the *(*US Army Corps of Engineers (Corps)*)* *(*and the*)* *(*Department of State Lands (DSL)*)*. Keep a copy of *(*Corps*)* *(*and*)* *(*DSL*)* permit*(*s*)* at the project site during construction. Changes to the project that may increase the amount of fill placed or material removed in waters of the U.S. or State, or the acreage of waters impacted are not authorized. The following waters of the U.S. or State are present and have been determined to be unavoidable as indicated in Table 00290-2:

(Use the following table to list the information in the table below for each type of water resource, e.g. Waters 1, waters 2, wetlands A, etc. Temporary impacts are restored in less than 24 months. Obtain information from the Environmental Coordinator. Add or delete rows in the table as necessary to list all applicable resources.

Example:

Deer Creek	***20***	***20***	***1+00 Lt. to 2+00 Rt.***	***Temporary***	***0.1***

)

Table 00290-2

Impact Waters of the US or State	Removal Volume (cu yds.)	Fill Volume (Cu yds)	Station	Duration of Impact (Temporary or Permanent)	Area of impact (Acres)

(Use the following lead-in paragraph and subsection .42 when a work containment plan and Section 00253 are required. Obtain information from the Environmental Coordinator and Structural Designer.)

Add the following subsection:

00290.42 Work Containment Plan - A Work Containment Plan (WCP) is required on this Project for _____ activity(ies).

Develop and submit a WCP for approval at least 28 Calendar Days prior to mobilization for ____ activity(ies). Maintain a copy of the WCP on the Project Site at all times during construction, readily available to employees and inspectors. Ensure that all employees comply with the provisions of the WCP. Design the WCP to avoid or minimize disturbance to

protected features (sensitive cultural or natural resources, regulated work areas, aquatic life or habitat in regulated work areas) related to Contractor operations.

Before developing the WCP, meet with Agency to review the Contractor's activities that require the WCP to ensure that all parties understand the locations of protected features to be avoided and the measures needed to avoid and protect them.

Notify the Engineer at least 10 Calendar Days before beginning work access or containment construction activities.

The Agency reserves the right to stop Work and require the Contractor to change the WCP methods and Equipment before any additional Contract Work, at no additional cost to the Agency, if and when, in the opinion of the Agency, such methods jeopardize sensitive cultural or natural resources, regulated work areas, or aquatic life or habitat in regulated work areas.

The WCP shall identify how the Contractor's construction operations will protect regulated features during mobilization, construction, maintenance, and demolition. Include a narrative describing compliance with Section 00290 as related to construction, operation, and demolition activities specified in Section 00253.

Design, construct, maintain, and remove temporary work access and containment systems according to Section 00253.

(Use the following subsection .51 when there are known sensitive cultural sites on the project or an Inadvertent Discovery Plan is requested.)

00290.51 Protection of Sensitive Cultural Sites - Add the following to the end of this subsection:

(Fill in the blank with the number of sensitive cultural sites. Select either "sites were" or "site was" depending on the number of sites. Delete the language in purple parentheses that does not apply and delete all purple parentheses.)

There are sensitive cultural sites or areas of high probability for cultural resources on this Project. At the time of preparation of the Plans, _____ *(*sites were*) (*site was*)* identified.

The Region Environmental Coordinator for this Project is _____.

The Agency Archaeology Representative for this Project is _____.

All contact with the Agency Archaeology Representative and the Region Environmental Coordinator shall be through the Engineer.

(Use the following paragraph if an Inadvertent Discovery Plan is required for the project.)

An Inadvertent Discovery Plan (IDP) has been developed for this project. The IDP is available from the Engineer.

(Use the following paragraphs and bullet list when sensitive cultural sites require protection during construction.)

Meet with the Engineer at least 10 Calendar Days prior to beginning ground disturbing activities to discuss sensitive cultural sites on the Project. Required attendees include:

- The Contractor's supervisory personnel.
- Subcontractors, including contract archaeological monitors, and supervisory personnel who will be involved in ground disturbing activities.
- Agency archaeology representative or region environmental coordinator.
- When applicable, tribal representative(s) or monitor(s).

Prior to beginning On-Site Work, install work zone fencing from section 00221.13 of the QPL, or lath and flagging, around no work zones, as shown or as directed.

(Use the following paragraph when Archaeological and/or Tribal Monitors are required during ground-disturbing activities. Delete the language in purple parentheses that does not apply and delete all parentheses.)

*(*Archaeological*)(* and *)(*Tribal*)* Monitors are required to be on-site during all ground-disturbing activities for this Project, unless otherwise notified. Notify the Engineer 10 Calendar Days before beginning ground-disturbing activities, or 14 Calendar Days if ground-disturbing activities are anticipated to occur simultaneously in more than two locations.

(Use the following six paragraphs when a monitoring report is required for the project)

Provide archaeological monitoring during construction by a professional archaeologist who meets the Secretary of the Interior's professional standards for archaeology (36 CFR 61, Appendix A) and who has completed the ODOT Cultural Resources Consultant Qualification Training Program.

Submit the following reports according to 00150.37. Within 21 Calendar Days after receipt of the reports, the Engineer will review the submittal and accept or return for correction.

Use monitoring reports to document activities and discoveries from the Project according to the State of Oregon Guidelines for Reporting on Archaeological Investigations for monitoring from the Oregon State Historic Preservation Office website at:

https://www.oregon.gov/oprd/OH/Documents/Reporting_Guidelines.pdf

- **Draft Monitoring Report** - Submit the draft monitoring report completed by a professional archaeologist, not later than 21 Calendar Days following completion of the archaeological monitoring.
- **Final Monitoring Report** - Submit the final monitoring report completed by a professional archaeologist, not later than 60 Calendar Days following completion of the archaeological monitoring.

(Use the following subsection .90 when a work containment plan and a work containment system are required, when staging areas are required, when there are known sensitive cultural sites on the project, or when turbidity monitoring is

required. Remove the parentheses in "paragraph(s)" when more than one paragraph below is used. Remove "(s)" when only the plastic mesh fencing paragraph is used.)

00290.90 Payment - Add the following paragraph(s) to the end of this subsection:

(Use the following paragraphs when a work containment plan and a work containment system are required.)

The work containment plan will be paid for at the Contract lump sum amount for the item "Work Containment Plan".

Payment will be payment in full for furnishing all Materials, Equipment, labor, and Incidentals necessary to complete the Work as specified. Payment includes providing and updating the Work Containment Plan.

(Use the following paragraphs when turbidity monitoring is required.)

The accepted quantities of turbidity monitoring will be paid for at the Contract lump sum amount for the item "Turbidity Monitoring".

Payment for turbidity monitoring will be payment in full for furnishing and placing all Materials and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

(Use the following paragraph when staging areas are required or when there are known sensitive cultural sites on the project.)

No separate or additional payment will be made for work zone fencing.

(Use the following paragraphs when an archaeological monitoring report is required.)

The accepted quantities of archaeological monitoring report will be paid for at the Contract lump sum amount for the item “Monitoring Report”.

Payment for archaeological monitoring will be payment in full for providing a professional archaeologist to monitor the Work and for preparing, submitting correcting, and resubmitting the monitoring reports.

SP00293 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-17-25
This Section requires SP00294.)

SECTION 00293 - DECOMMISSION UNDERGROUND STORAGE TANKS

(Follow all instructions and make all edits with “Track Changes” turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple

text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00293, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00293.00 Scope - In addition to the requirements of Section 00290, decommission underground storage tanks according to the following Specifications.

Decommission the following underground storage tanks listed in Table 00293-1:

(Fill in the table with the location, number, contents, volume, Regulated-UST or HOT, and required decommission method.)

Table 00293-1

Location/Station	Number of UST	UST contents	Volume (gallons)	Regulated-UST or HOT	Decommission Method (Removal or In-place)

00293.02 Definitions:

Decommission by Filling In-Place - Decommissioning underground storage tanks by filling them in place with inert material.

Decommission by Removal - Decommissioning underground storage tanks by removing them.

Heating Oil Tank (HOT) - Heating Oil Tanks meeting the requirements of OAR 340-177.

Regulated Underground Storage Tank (Regulated-UST) - Underground storage tanks meeting the requirements of OAR 340-150.

Underground Storage Tank (UST) - Regulated Underground Storage Tanks and underground Heating Oil Tanks.

(Use this subsection .03 when decommissioning regulated underground storage tanks.)

00293.03 Submittals for Regulated Underground Storage Tanks - The following documentation is required:

- Prepare and submit to the Engineer for signing the following DEQ forms:
  - At least 45 Calendar Days before beginning tank decommission work, DEQ's "General Permit Registration Form to Decommission Existing Unregistered Tanks and 30-Day Notice of Intent to Decommission USTs".

(Change the word "Agency" below to the actual owner of the tank when ODOT is <u>not the property owner.)</u>

  - List the Agency as the "Permittee" and the "Property Owner". List "Unknown" as the "Tank Owner".
  - Pay the Registration Fee and all back fees.

(Use the following bullet when the date of original UST installation is unknown or if the UST was installed before May 1, 1988.)

  - Calculate back fees from May 1, 1988 (OAR 340-150-0110).

(Use the following bullet when the date of original UST installation is known insert the date in the blank.)

  - Calculate back fees from the installation date of _____

(Change the word "Agency" below to the actual owner of the tank when ODOT is <u>not the property owner.)</u>

  - Within 20 Calendar Days after finishing tank decommission work, DEQ's "Underground Storage Tank Decommissioning Checklist and Site Assessment Report". The Agency will sign the form as the "Property Owner" and "Permittee".

- Prepare and submit to DEQ, with copies to the Engineer, the following DEQ forms within the DEQ timelines:
  - The Agency signed "General Permit Registration Form to Decommission Existing Unregistered Tanks and 30-Day Notice of Intent to Decommission USTS" (30 Days - OAR 340-150-0110).
  - The Agency signed "Underground Storage Tank Decommissioning Checklist and Site Assessment Report" (30 Days - OAR 340-150-168 and OAR 340-150-0180).

(Use the following bullet when tanks do not contain petroleum substances.)

  - For tanks that do not contain petroleum substances, a site assessment plan (OAR 340-150-0180).
  - When contaminated soil is encountered:
    - The "Initial (Twenty Day) Report Form for UST Cleanup Projects" (20 Days - OAR 340-122-0225).

    - The "Initial Site Characterization Report" (45 Days - OAR-340-122-0230 and OAR 340-122-0235).

- Prepare and submit to the Engineer the following, within 48 hours of receipt or completion:
  - Copies of all signed and completed manifests and bill-of-lading forms for transporting the UST contents.
  - Photographs taken of each UST during excavation and removal.
  - All reuse, recycled, and disposal receipts for the UST and UST contents.

(Use this subsection .04 when decommissioning heating oil tanks.)

00293.04 Submittals for Heating Oil Tanks - The following documentation is required:

- Prepare and submit to DEQ, with copies to the Engineer, the following DEQ forms within the DEQ timelines:
  - Within 30 Calendar Days after finishing decommission work, DEQ's "Certified HOT Decommissioning Report, signed by the licensed Contractor" with its associated documentation. Pay all filing and decommissioning fees.(OAR 340-177-0025 and OAR 340-177-0095)
  - When contaminated soil is encountered:
    - The "Initial (Twenty Day) Report Form for UST Cleanup Projects" (20 Days - OAR 340-122-0225).
    - The "Initial Site Characterization Report" (45 Days - OAR 340-177-0055, OAR 340-122-0230 and OAR 340-122-0235).

- Prepare and submit to the Engineer the following, within 48 hours of receipt or completion:
  - Copies of all signed and completed manifests and bill-of-lading forms for transporting the UST contents.
  - Photographs taken of each UST during excavation and removal.
  - All reuse, recycled, and disposal receipts for the UST and UST contents.

Labor

00293.30 Personnel Qualifications - For all tank decommissioning work, provide contractors and supervisors meeting the following requirements:

- For Regulated-UST decommission work a contractor that has a current UST service providers license and a supervisor that has a current DEQ Underground Storage Tank Services Decommissioning License.
- For HOT decommission work a contractor and a supervisor that have current DEQ Underground Storage Tank Services Licenses for Heating Oil Tank services.

Construction

(Use this subsection .40 when decommissioning regulated underground storage tanks by the removal method.)

00293.40 Regulated Underground Storage Tank Decommission by Removal - Decommission Regulated Underground Storage Tanks according to the following:

- Notify the Engineer and DEQ at least 3 Days before beginning decommission work (OAR 340-150-0168).
- Remove the Regulated-UST according to OAR 340-150-0168 and 40 CFR 280.71.
- Clean and recycle the Regulated-UST.
- Recycle or re-use the Regulated-UST contents.
- Complete and sign all manifests, permits, and bill-of-lading forms for recycling or disposing of the tank and tank contents.
- Collect soil and groundwater samples according to OAR 34-150-0180 and have an Oregon Environmental Laboratory Accreditation Program accredited analytical laboratory test and provide the results in time to complete the required DEQ "Underground Storage Tank Decommissioning Checklist and Site Assessment Report".
- Remove free petroleum product entering the excavation, according to OAR 340-122-0235, before backfilling the excavation. Recycle or dispose of the free petroleum product at a facility permitted to accept petroleum contaminated water.
- When clean or contaminated groundwater or contaminated soil is encountered, notify the Engineer within a time frame to meet DEQ's 24 hour initial notification requirement. The Engineer will either require the Contractor to notify DEQ or will have the Agency notify DEQ.

(Use the following bullet when contaminated soil will need to be removed to facilitate construction of the Project. Fill in the blank.)

- Remove up to _____ Tons of contaminated soil to facilitate construction of the Project.
- Backfill the excavation according to 00330.42.
- Perform all contaminated media work according to Section 00294.

(Use this subsection .41 when decommissioning regulated underground storage tanks by the filling in place method.)

00293.41 Regulated Underground Storage Tank Decommission by Filling in Place - Decommission Regulated Underground Storage Tanks according to the following:

- Notify the Engineer and DEQ at least 3 Days before beginning decommission work (OAR 340-150-0168).
- Clean out the Regulated-UST according to OAR 340-150-0168 and 40 CFR 280.71 and fill it with a compactable inert material that does not react with the tank or it's previous contents.
- Complete and sign all manifests, permits, and bill-of-lading forms for recycling or disposing of the tank contents.

- Collect soil and groundwater samples according to OAR 340-150-0180 and have an Oregon Environmental Laboratory Accreditation Program accredited analytical laboratory test and provide the results in time to complete the required DEQ "Underground Storage Tank Decommissioning Checklist and Site Assessment Report".
- When contaminated soil is encountered, notify the Engineer of the contaminated soil within a time frame to meet DEQ's 24 hour initial notification requirement. The Engineer will either require the Contractor to notify DEQ or will have the Agency notify DEQ.

(Use this subsection .42 when decommissioning heating oil tanks by the removal method.)

00293.42 Heating Oil Tank Decommission by Removal - Decommission Heating Oil Tanks according to the following:

- Remove the HOT according to OAR 340-177-0025 and 40 CFR 280.71.
- Clean and recycle the HOT.
- Recycle or re-use the HOT contents.
- Complete and sign all manifests, permits, and bill-of-lading forms for recycling or disposing of the tank and tank contents.
- Collect soil and groundwater samples according to OAR 340-177-0025 and have an Oregon Environmental Laboratory Accreditation Program accredited analytical laboratory test and provide the results in time to complete the required DEQ "Certified HOT Decommissioning Report".
- Remove free petroleum product entering the excavation according to OAR 340-122-0235 before backfilling the excavation. Recycle or dispose of the free petroleum product at a facility permitted to accept petroleum contaminated water.
- When contaminated soil is encountered, notify the Engineer of the contamination within a time frame to meet DEQ's 24 hour initial notification requirement. The Engineer will either require the Contractor to notify DEQ or will have the Agency notify DEQ.

(Use the following bullet when contaminated soil will need to be removed to facilitate construction of the Project. Fill in the blank.)

- Remove up to _____ Tons of contaminated soil to facilitate construction of the Project.
- Backfill the excavation according to 00330.42.
- Perform all contaminated media work according to Section 00294.

(Use this subsection .43 when decommissioning heating oil tanks by the filling in place method.)

00293.43 Heating Oil Tank Decommission by Filling in Place - Decommission Heating Oil Tanks according to the following:

- Clean out the HOT according to OAR 340-177-0025 and 40 CFR 280.71 and fill them with inert material according to OAR 340-177-0025.

- Complete and sign all manifests, permits, and bill-of-lading forms for recycling or disposing of the tank contents.
- Collect soil and groundwater samples according to OAR 340-177-0025 and have an Oregon Environmental Laboratory Accreditation Program accredited analytical laboratory test and provide the results in time to complete the required DEQ "Certified HOT Decommissioning Report".
- When contaminated soil is encountered, notify the Engineer of the contaminated soil within a time frame to meet DEQ's 24 hour initial notification requirements. The Engineer will either require the Contractor to notify DEQ or will have the Agency notify DEQ.

00293.44 Excavating, Transporting, and Disposing of Contaminated Media - Excavate, transport, and dispose of contaminated medial according to Section 00294.

Measurement

00293.80 Measurement - The quantities of Work performed under this Section will be measured on the unit basis.

Excavating, transporting, and disposing of contaminated media will be measured according to 00294.80.

Payment

(Delete the "(s)" or parentheses from the word "item(s)", as appropriate.)

00293.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following item*(*s*)*:

(Delete Pay Item(s) from the list that are not included in the Schedule of Items, but do not change the alpha characters next to the Pay Items.)

Pay Item	Unit of Measurement
(a) Decommission Regulated Underground Storage Tanks	Each
(b) Decommission Heating Oil Tanks	Each

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

Excavating, transporting, and disposing of contaminated media will be paid for according to 00294.90.

SP00294 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 02-03-25
This Section requires SP00236 if an Agency provided disposal site is required.)

SECTION 00294 - CONTAMINATED MEDIA

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00294, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00294.00 Scope - In addition to the requirements of Section 00290 and the Specifications, this Work consists of the following:

(Use the following bullet and table when disturbing contaminated Soils. List in the table all soil identified as contaminated, including a description of lateral and vertical extent, e.g. all roadside soil from the edge of pavement to the R.O.W. line, from the surface to a depth of 18 inches.

Check with the geotechnical designer to evaluate slope stability before specifying that the Contractor can dispose of excess Soil within the boundaries of the Project Site.

Include the Pay Item "Contaminated Soil Disposal" in the Schedule of Items, with a quantity matching the quantity entered in the table as "to be disposed of at landfill." In the table and in the Schedule of Items, exclude the quantity of contaminated Soil that is expected to be reused on the Project.)

- Excavate, segregate, stockpile, transport, and dispose of Contaminated Soils (, Shoulder Soils,) and contaminated grubbing materials, as defined by 00294.01, from the following locations:

(Fill in the table with the location, depth, quantity, and contents of Soil contaminants.)

Contaminated Soil Location Table 00294-1

From Location/Station to Location/Station	Depth below grade (feet)	Approximate Quantity (cy)	Known Contaminants
Example: "A" 1+00 to 2+00, Rt or Lt, from edge of pavement to the roadwork limits	0 -1.5'		

Approximate Total Quantity	cy
Quantity to be reused on Project	cy
Quantity to be disposed at landfill	Tons

(Use the following bullet when removing contaminated Soil.)

- In areas where excavation is not required, leave contaminated Material (, Shoulder Soils,) and clearing and grubbing Material in place.

(Use the following bullet and table when removing contaminated groundwater.)

- Pump, test, treat, and dispose of contaminated groundwater from the following locations in Table 00294-2:

(Fill in the table with the location, depth, and contents of groundwater contaminants.)

Table 00294-2

Location/Station	Depth below grade (feet)	Known Contaminants

(Use the following bullet when a HASP is required.)

- Prepare a Health and Safety Plan (HASP) for work within the contaminated areas of the Project.

(Fill in the blanks with the date and name of report that will be available from the Engineer.)

The _____ ODOT report, titled _____ documenting the contaminated media identified within the Project, is available from the Engineer.

(Use the following bullet when contaminated Shoulder Soil is the only Material being excavated and lead is present in the Shoulder Soil.)

- Prepare a written lead compliance plan for work within contaminated areas of the Project.

00294.01 Definitions:

Contaminated Soil - Soil that does not meet the DEQ definition of "Clean Fill", as defined by OAR 340-093-0030(18). This Contaminated Soil is a regulated waste, subject to OAR 340-093-0005 through OAR 340-093-0290. If the grubbing Material has been determined to be contaminated, it will be considered and treated as Contaminated Soil for the purposes of this Section.

Shoulder Soil - Soil outside of the existing Highway Pavement and within Highway Right-of-Way generated during Highway maintenance or construction activities. This definition applies to excess Soil generated to a maximum depth of 1.5 feet below ground surface. This definition does not apply to Soil that is covered by existing impervious surfaces, including but not limited to curbs, sidewalks and parking lots constructed of asphalt or concrete.

ODOT Beneficial Use Determination (ODOT BUD) - The statewide ODOT Beneficial Use Determination (ODOT BUD), approved by DEQ (No. BUD-20181204), outlines a series of pre-approved non-residential reuse options for excess Soil Materials that do not meet DEQ's Clean Fill Standards in some circumstances. These options may vary based on project scope and location, and documentation may vary, as directed by the Engineer.

00294.02 Testing of Contaminated Soil (, Shoulder Soil,) and Groundwater - When additional testing of Contaminated Soil or groundwater is required to characterize the Material for reuse, recycle, or disposal, conduct the tests according to 00290.20(c).

Use analytical methods meeting DEQ's Clean Fill Guidance Screening Levels for each analyte. Contaminated Soil (, Shoulder Soil,) and groundwater sampling must be conducted by an Oregon Registered Geologist or Professional Engineer who has experience characterizing contaminated media.

(Use the following paragraph and bullet list when contamination is known and additional sampling by the Contractor is required for making a waste management or disposal decision. Add or delete test methods that will be required for the Project.)

Collect at least 3 composite Soil samples and submit for the following required testing:

- TPH-Gx and TPH-Dx by Northwest methods.
- The following volatile organic compounds (VOCs) by EPA Method 8260.
  - Benzene, toluene, ethylbenzene, xylenes.
  - Iso-propylbenzene and n-propylbenzene.
  - 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene.
  - Ethylene dibromide (EDB), ethylene dichloride (EDC), and Methyl tert-butyl ether MTBE.
- Polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8270SIM.
- Total metals (RCRA 8) by EPA 6000 and 7000 series.

- One TCLP lead by using EPA Method 1311.

00294.03 Submittals - Submit the following documents:

(Use the following two bullets when removal of Shoulder Soil contaminated with metals (i.e., lead, cadmium, chromium) is the only action being completed and awareness level training is all that OSHA requires. Remove all other HASP language and requirements.)

- A Project-specific written lead compliance plan, meeting the project applicable requirements of 29 CFR 1926.62(e)(2), at least 10 Calendar Days before the pre-construction conference. When applicable, include compliance procedures for cadmium and chromium VI, according to 29 CFR 1926.1127 and 29 CFR 1926.1126.
- Modifications to the written lead compliance plan that are requested by the Engineer within 7 Calendar Days of the request.

(Use the following HASP language when a HASP is required.)

- A site specific HASP at least 10 Calendar Days before the pre-construction conference.

(Use the following two bullets when a qualified health and safety professionals required. A qualified health and safety professionals required when the contamination is something other than petroleum, is highly toxic, is a risk to workers, or is unusually complex.)

- The site specific HASP, completed and signed by a qualified health and safety professional meeting the requirements of 00294.30.
- The name and qualifications of the qualified health and safety professional.

Submit all modifications to the HASP that are requested by the Engineer or the qualified health and safety professional within 7 Calendar Days of the request.

[End HASP language]

- Current employee training certificates and medical surveillance information before beginning Work within the contaminated areas.

Submit the following documents within 48 hours of removal of contaminated media:

- Permits, permit applications, and documentation of compliance.
- All reuse, recycled, and disposal receipts.
- Final quantities of Soil *(*and groundwater*)* reused, recycled, and disposed and their final location.
- All analytical test results.

(Use the following bullet when contaminated Soil will be used under the requirements of ODOT BUD No. BUD-20181204.)

- Documentation of final disposition of any reused Soil Material that is reused under ODOT's Beneficial Use Determination.

(Use the following subsection .05 when contamination exceeds applicable DEQ cleanup levels or the site is listed by DEQ as a cleanup site or a leaking underground storage tank site.)

00294.05 Health and Safety Plan - Prepare a site specific HASP that meets or exceeds the requirements of 29 CFR 1910.120 and include a personnel and equipment decontamination plan that details how decontamination media will be contained and disposed.

Maintain a copy of the HASP on site at all times and readily available to employees and Inspectors during construction activities. If additional information becomes available regarding the site specific conditions, revise the HASP and submit the revised version to the Engineer. Review or acknowledgment of the HASP by the Engineer is not an indication or representation that the HASP is fully compliant with State or federal requirements. Compliance is the responsibility of the Contractor. Review by the Engineer will not impose liability upon the Agency or relieve the Contractor of any responsibilities under the Contract.

Do not begin Work in contaminated areas until the Engineer provides written acknowledgement of the HASP.

All personnel entering contaminated areas shall follow the requirements of the HASP.

(Use .30 if one of the options apply. If none of the options apply delete this subsection.)

Labor

00294.30 Personnel Qualifications - Provide employees meeting the following requirements:

(Use one of the following options as instructed. Delete the option that does not apply. Delete both if neither apply.)

[Option 1 – Use this option when Shoulder Soil contaminated with metals (i.e. lead, cadmium, chromium) is the only contaminated Soil on the Project.]

- For removal of Contaminated Soil (and Shoulder Soil), provide employees trained in:
  - Lead awareness according to 29 CFR 1926.62(l).
  - Chromium according to 29 CFR 1926.1126(j)(2).
  - Cadmium according to 29 CFR 1926.1127(m)(4).

[End Option 1.]

[Option 2 - Use the following HAZWOPER and Supervisor bullets and sub-bullets when the contamination is known to be greater than the applicable published DEQ RBC or the contaminated area is listed as (or is adjacent to) a cleanup site and encountering contamination is likely.]

- Hazardous Waste Operations and Emergency Response (HAZWOPER) trained workers (29 CFR 1910.120) that:
  - Have completed a 40 hour HAZWOPER training course.
  - Have completed an 8 hour HAZWOPER refresher training course within the last 12 months.
  - Participates in the HAZWOPER Medical Surveillance Program.

- A Supervisor that:
  - Has at least 2 years of experience cleaning up and managing Contaminated Soil or groundwater in Oregon.
  - Meets the HAZWOPER training requirements plus completed an 8 hour HAZWOPER supervisor training course.

(Use the following bullet and sub-bullets when the contamination is something other than petroleum, is highly toxic, is a risk to workers, or is unusually complex.)

- A qualified health and safety professional that:
  - Has at least 3 years' experience in hazardous waste site work.
  - Meets the HAZWOPER training requirements.

(Use the following bullet when contaminated media requires segregation or field decision making,)

- An Oregon Registered Geologist or Professional Engineer who has experience handling contaminated media.

[End Option 2.]

Construction

00294.40 Contaminated Soil Excavation (and Shoulder Soil) - Excavate and handle Contaminated Soil (or Shoulder Soil) from Project excavations according to the following:

- Notify the Engineer 3 Calendar Days before beginning excavation activities within contaminated areas.
- Allow the Agency to collect Soil *(*and groundwater*)* samples during excavation activities.

(Use one of the following options as instructed. Delete the option that does not apply. Delete both if neither apply.)

[Option 1 - Use the following two bullets when the Contractor will field screen the Soil.]

- Field screen Soil using a portable photo ionization detector, portable flame ionization detector, field test kits, or other instrumentation capable of detecting the contaminants identified for this Soil.

- Segregate non-Contaminated Soil from Contaminated Soil during excavation activities, based on the field screening and the provided Contaminated Soil location information.

[Option 2 - Use the following two bullets when the Agency will field screen the Soil.]

- Allow Agency access to field screen Soils for contaminants during excavation.
- Segregate non-Contaminated Soil from Contaminated Soil during excavation activities, as directed.

[End Option 2.]

- Load Contaminated Soil (or Shoulder Soil) directly into trucks and transport directly to the recycling or disposal facility, or on-site reuse areas or, when approved by the Engineer, temporarily store Contaminated Soil (or Shoulder Soil) on-site.

(Use the following bullet when temporary storage of contaminated soil other than shoulder soil may be allowed on-site. Fill in the blank with the contaminated soil location(s) where contamination is known to be greater that the applicable published DEQ RBC or the contaminated area is listed as (or is adjacent to) a cleanup site.)

- Store Contaminated Soil from (site specific location) in covered water tight containers or place Contaminated Soil on minimum 6 mil thick polyethylene sheeting that has an impermeable berm around the edge. Cover the Contaminated Soil with minimum 6 mil thick polyethylene sheeting. Do not allow precipitation run-off to enter the excavated Contaminated Soil. Label all stored Material with the type of Material, the contaminants, and the dates of accumulation.
- Remove contaminated media from the exterior of all vehicles before they leave the Project Site
- Cover trucks transporting contaminated materials to prevent spillage during transit to the disposal facility according to OAR 340-093-0220.
- Where over excavation is required, backfill the excavation according to 00330.42.

00294.41 Contaminated (and Shoulder Soil) Soil Management - Reuse, recycle, or dispose of Contaminated Soil (and Shoulder Soil) according to any of the following:

(a) Landfill Disposal:

- Obtain the Engineer's approval of the disposal facility before disposing of the Contaminated Soil.
- Transport the Contaminated Soil (or Shoulder Soil) to a DEQ permitted municipal solid waste landfill or a permitted construction and demolition landfill for disposal. Dispose of temporarily stored Contaminated Soils (or Shoulder Soil) within 30 Days of beginning excavation work or before Second Notification, whichever occurs first.
- Complete and sign all manifests and bill-of-lading forms for handling, loading, transporting, and disposing of the Contaminated Soil (and Shoulder Soil).
- Pay all filing and permit fees.

(Use the following "recycling" bullets when recycling Contaminated Soil is allowed.)

(b) Recycling:

- Obtain the Engineer's approval of the recycling facility before disposing of the Contaminated Soil.
- Transport Contaminated Soil to a DEQ permitted recycling facility or asphalt batch plant. Recycle temporarily stored Contaminated Soils within 30 Days of beginning excavation or before Second Notification, whichever occurs first.
- Complete and sign all manifests and bill-of-Lading forms for handling, loading, transporting, and recycling the Contaminated Soil.

(Use the following "Reuse On-Site" bullets when the following 4 conditions are met:

1) The Soil contaminant concentrations are less than DEQ Occupational RBCs or EPA's Regional Screening Levels for protection of groundwater.
2) The Material can be used on the Project.
3) Region approves placing Contaminated Soil or Shoulder Soil within the ODOT ROW.
4) DEQ has agreed, in writing, that placement is acceptable without an SWLA permit. This condition may also be met if the Material is placed on-site according to ODOT's Beneficial Used Determination (No. BUD-20181204).

Fill in the blanks. In the third bullet below, use "(or a permitted recycling facility)" only when the "Recycling" bullets above are included [be sure to remove the parentheses].)

(c) Reuse On-Site:

- Temporarily stockpile the Contaminated Soil (or Shoulder Soil) from ____*location*.
- Reuse the Contaminated Soil (or Shoulder Soil) on the Project between Station ____ and Station _____ as shown. Place the Contaminated Soil _*(site specific restrictions)*__.
- Within 30 Calendar Days of completing on-site reuse or before Second Notification, whichever occurs first, transport all Contaminated Soil (or Shoulder Soil) that is not reused on the Project to a DEQ permitted municipal solid waste landfill or a permitted construction and demolition landfill (or a permitted recycling facility).

(Use the following "Reuse On-Site Under a DEQ..." bullets when the following 4 conditions are met:

1) The Soil contaminant concentrations are greater than DEQ Occupational Worker RBCs and EPA's Industrial Regional Soil Screening Levels.
2) The Material can be used on the Project.
3) Region approves with placing contaminated Soil within ODOT ROW.
4) DEQ has agreed that they will issue an SWLA permit or have processed the permit without actually issuing the permit.
Fill in the blanks.)

(d) Reuse On-Site Under a DEQ Solid Waste Letter of Authorization:

- Obtain a DEQ Solid Waste Letter of Authorization (SWLA) to reuse the Contaminated Soil between Station _____ and Station ____ as shown. Complete all submittals, including the land use compatibility statement (LUCS) from the local planning authority, and pay all fees required to obtain a SWLA. Sign the application form and provide the signed application form to the Engineer.
- Temporarily stockpile the Contaminated Soil referred to in the SWLA.
- Complete all on-site reuse covered by the SWLA, before expiration of the SWLA. Transport all Contaminated Soil that is not reused on the Project within 30 Calendar Days of completing the Soil reuse work, or before Second Notification, whichever occurs first, to a DEQ permitted municipal solid waste landfill or a permitted construction and demolition landfill.

(Use the following "Reuse Under ODOT BUD No. BUD-20181204" bullets when the following 4 conditions are met:
1) The Soil contamination is at concentrations greater than Oregon DEQ Clean Fill Screening Levels, and cannot be made property of the Contractor at the point of generation as Clean Fill according to 00290.20(c)(2).
2) The contamination is at or below DEQ Occupational Exposure RBCs.
3) The Material cannot be used on the Project.
4) Region agrees that the Material source or disposal sites identified in 00235 or 00236 meet the requirements of the ODOT BUD.

[NOTE: Off-site reuse of Soil under ODOT BUD No. BUD-20181204 may require additional Project specific documentation (e.g., DEQ authorization for mine reclamation, non-residential or agricultural fill placement locations, etc.]

Fill in the blanks.)

(e) Reuse Under ODOT BUD No. BUD-20181204:

- Reuse of all Contaminated Soil (or Shoulder Soil) shall follow the requirements of the DEQ Tier 3 Solid Waste Beneficial Use Determination Permit (BUD-20181204).
- Stockpile Contaminated Soil (or Shoulder Soil) at_(site specific location)___.
- Complete all off-site reuse of Soil covered by ODOT BUD No. BUD-20181204, before Project completion.
- Transport and dispose all excess Contaminated Soil that is not reused in the Project within 30 Calendar Days of completing the Soil reuse Work, or before Second Notification, whichever occurs first, to a DEQ permitted municipal solid waste landfill or a permitted construction and demolition landfill.

(Insert disposal placement options here when the Region has identified acceptable locations for use by the Contractor. Do not add disposal placement options without Technical Resource and the State Specification Engineer's approval.)

- Reuse the Contaminated Soil (or Shoulder Soil) at the following location(s) _(site specific address or location(s) approved by the Engineer)_.

00294.43 Contaminated Groundwater Pumping - Remove and handle contaminated groundwater as follows:

- Allow the Agency to collect groundwater samples during pumping activities and subsequent storage.
- Remove contaminated groundwater from the Project Site or, when approved temporarily store contaminated groundwater on-site in water tight containers compatible with the contaminants. Label each container with the contents and dates of accumulation.
- Dispose of stored contaminated groundwater within 30 Days from the date of beginning generation of it or before Second Notification, whichever occurs first, according to 00294.44.

00294.44 Contaminated Groundwater Management - Recycle or dispose of contaminated groundwater according to any of the following:

(Include only the options that are feasible for the Project. This is based on the groundwater analytical results, availability and limitations of local facilities, and the applicable permit requirements. Delete those that do not apply.)

- **Discharge to a Permitted Sanitary Sewer Facility:**
  - Submit all groundwater analytical data and proposed treatment information to the local sewer authority, and obtain written permission or a permit to discharge the contaminated groundwater to the sanitary sewer system.
  - Complete and sign the sewer permit application as the applicant and pay all associated fees.
  - Comply with all permit requirements and all other local sewer authority requirements.
- **Discharge to Surface Water or Storm Sewer:**
  - Register for a general National Pollution Discharge Elimination System (NPDES) permit 1500A.
  - Complete and sign the NPDES permit application as the applicant and pay all associated fees.
  - Comply with all permit requirements.
- **Discharge to ground surface for Infiltration:**
  - Register for a Water Pollution Control Facility (WPCF) permit 1500B.
  - Complete and sign the WPCF permit application as the applicant and pay all associated fees.
  - Comply with all permit requirements.
- **Transport to an Off-Site Recycling or Disposal Facility:**

- Submit all groundwater analytical data to the receiving facility and obtain written acceptance from that Entity.
- Complete and sign bill-of-lading forms and all other documentation required by the receiving facility.
- Pay all permit fees.

Measurement

00294.80 Measurement - Work performed under this Section will be measured according to the following:

(Use the following paragraph when Pay Items (a), (b), (c), or (f) are included in the Pay Item list below.)

No measurement of quantities will be made for the following:

(Use the following bullet when Pay Item (a) is included in the Pay Item list below.)

- HASP.

(Use the following bullet when Pay Item (b) is included in the Pay Item list below.)

- Lead compliance plan.

(Use the following bullet when Pay Item (c) is included in the Pay Item list below.)

- Segregate and stockpile Contaminated Soil.

(Use the following bullet when Pay Item (f) is included in the Pay Item list below.)

- Contaminated groundwater mobilization.

(Use the following paragraph when Pay Item (d) is included in the Pay Item list below.)

Soil sample and analytical testing will be measured on the unit basis for each sample submitted and tested according to 00294.02 when test results are submitted according to 00294.03.

(Use the following paragraph when Pay Item (e) is included in the Pay Item list below.)

The quantities of Contaminated Soil (or Shoulder Soil) disposed will be measured on the weight basis, based on weigh tickets from the recycling or disposal facility.

(Use the following paragraph when Pay Item (g) is included in the Pay Item list below.)

The quantities of contaminated groundwater removed and disposed will be measured on the volume basis, per gallon, based on the receiving facility approved meter tickets or approved on-site meters.

Clearing and grubbing will be measured according to 00320.80.

Payment

00294.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

(Delete Pay Item (s) from the list that are not included in the Schedule of Items, but do not change the alpha characters next to the Pay Items.)

	Pay Item	Unit of Measurement
(a)	Health and Safety Plan	Lump Sum
(b)	Lead Compliance Plan	Lump Sum
(c)	Segregate and Stockpile Contaminated Soil	Lump Sum
(d)	Soil Sample Collection and Analytical Testing	Each
(e)	Contaminated Soil Disposal	Ton
(f)	Contaminated Groundwater Mobilization	Lump Sum
(g)	Contaminated Groundwater Removal	Gallon

(Use the following paragraph when item (c) is included in the Pay Item list above.)

Item (c) includes segregating, handling, and stockpiling Contaminated Soil (or Shoulder Soil) within the Project Site for the purpose of analytical testing, on-site reuse, or disposal.

(Use the following paragraph when item (d) is included in the Pay Item list above.)

Item (d) includes mobilization, Soil sampling, testing, analyses, and preparation of reports for tests required in 00294.02. Additional testing beyond that listed in 00294.02 will only be paid if authorized by the Engineer.

(Use the following paragraph when item (e) is included in the Pay Item list above.)

Item (e) includes all costs involved with the disposal of Contaminated Soil (or Shoulder Soil) at a recycling or disposal facility.

(Use the following paragraph when item (f) is included in the Pay Item list above.)

Item (f) includes all mobilization costs for groundwater removal work.

(Use the following paragraph when item (g) is included in the Pay Item list above.)

Item (g) includes obtaining all permits and furnishing all Equipment and labor necessary to treat and store contaminated groundwater.

No separate or additional payment will be made for the excavation or reuse of Contaminated Soil or contaminated Shoulder Soil. Payment will be included in payment made for the

appropriate items under which the excavation or reuse of Contaminated Soils or contaminated Shoulder Soil is required.

Clearing and grubbing will be paid for according to 00320.90.

Payment will be payment in full for removing and disposing of all Materials, and for furnishing all Equipment, labor, Plans, test results, and Incidentals necessary to complete the Work as specified.

SP00295 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-17-25
This Section requires Pollution Liability Insurance in 00170.70. This Section requires asbestos liability insurance in 00170.70 if materials containing more than 1% asbestos will be disturbed.)

SECTION 00295 - ASBESTOS MATERIALS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00295, which is not a Standard Specification, is included in this Project by Special Provision.

Description

(Use the following subsection .00 when one or more Structures on the Project were inspected for asbestos and the asbestos inspection report indicates that asbestos was NOT found. Fill in the blanks with the names of the Structures that were inspected, the date, and the name of the report that will be available from the Engineer. Delete the language in purple parentheses that does not apply and delete all purple parentheses. Do not include any of the language from subsections .03, .30, .40, .80 and .90. Obtain information on the asbestos inspection report from the Regional HazMat Coordinator.)

00295.00 Scope - *(*An asbestos survey was*)(*Asbestos surveys were*)* performed on _____ that will be repaired or demolished for this Project. No asbestos-containing materials (ACMs) were identified on the inspected Structure*(*s*)*. The _____ ODOT report, titled _____ documenting the asbestos survey*(*s*)* within the Project is available from the Engineer. Maintain a copy of this report and all additional asbestos survey results on site at all times and readily available to employees and inspectors during demolition and repair activities.

(Use the following subsection .00 when asbestos removal is required.)

00295.00 Scope - In addition to the requirements of Section 00290, remove asbestos according to the following Specifications.

Remove asbestos from the following locations in Table 00295-1:

(Fill in the table with the required location, material, quantity, percent, and friable/non-friable information. Add or delete rows as needed.)

Table 00295-1

Location/Address	Material Description	Quantity (ft. or sq.ft.)	Percent Asbestos	Friable or Non-Friable

(Use the following Table 00295-2 when suspected asbestos containing material is identified)

The materials listed in Table 00295-2 were not sampled.

Table 00295-2

Location/Address	Material Description	Quantity (ft. or sq.ft.)	Friable or Non-Friable

(Fill in the blanks with the date and name of report that will be available from the Engineer.)

The _____ ODOT report, titled _____ documenting the asbestos identified within the Project is available from the Engineer. Maintain a copy of this report and all additional asbestos survey results on site at all times and readily available to employees and inspectors during demolition and repair activities.

00295.01 Definitions:

Asbestos Containing Material (ACM) - Any material containing more than 1% asbestos.

00295.03 Submittals - The following forms and reports are required:

(Use the following bullet on projects with suspect asbestos containing material.)

- Asbestos survey report documenting sample locations and analytical results according to Oregon Administrative Rule (OAR) 340-248-0270 (3)(d).

(Use the following bullet on Projects that will disturb materials that contain more than 1% friable asbestos fibers and cover more than 3 square feet.)

- Completed and signed DEQ Project Notification Form and an abatement plan to Agency and DEQ at least 10 Calendar Days before beginning friable asbestos removal.

(Use the following bullet on Projects that will disturb materials that contain more than 1% non-friable asbestos fibers and cover more than 3 square feet.)

- Completed and signed DEQ Notice for Removal of Non-Friable Asbestos to Agency and DEQ at least 5 Calendar Days before beginning non-friable asbestos removal.

(Use the following bullet on Projects that will disturb materials that contain more than 1% asbestos fibers, regardless of the quantity or condition of the material.)

- Completed and signed DEQ Waste Shipment Report Form according to the following:
  - Send the form along with the asbestos waste to the disposal facility.
  - Provide a copy of the form to the Engineer within 48 hours of transportation of the asbestos waste.
  - Obtain the final signed form from the disposal facility along with the disposal receipts and submit them to the Engineer within 3 Calendar Days after receiving them from the waste disposal facility.

(Use the following bullet on Projects that will disturb materials, in buildings or other enclosed spaces, that contain more than 1% asbestos fibers and cover more than 3 square feet.)

- Completed and signed DEQ Air Clearance Sample Results form to the Agency and DEQ within 30 Calendar Days after completing the asbestos removal.

(Use the following bullet on Projects that will disturb materials that contain 1% or less asbestos.)

- Disposal receipts within 72 hours of receipt from the waste disposal facility.

(If none of the conditions are met below, delete the "Labor" heading and the entire subsection .30.)

Labor

00295.30 Personnel Qualifications - Provide employees meeting the following requirements:

(Use the following three bullets on Projects that will disturb materials that contain more than 1% friable or damaged asbestos fibers and covers more than 3 square feet.)

- A current Oregon DEQ Asbestos Abatement Contractor license.
- A current Oregon DEQ Certified Supervisor meeting the requirements of OAR 340-248-0130.
- Current Oregon DEQ Certified asbestos workers meeting the requirements of OAR 340-248-0130

(Use the following bullet on Projects that will disturb materials that contain more than 1% non-friable, undamaged asbestos fibers and covers more than 3 square feet, and when there is non-friable asbestos pipe.)

- A current Oregon DEQ Certified Supervisor meeting the requirements of OAR 340-248-0130.

Ensure the DEQ Certified Supervisor is on site and overseeing work whenever asbestos containing materials are disturbed or removed.

(Use the following bullet on projects that will include follow-up bulk asbestos sampling)

- A current AHERA Inspector Training Certification according to 40 CFR 763, Part 763, Appendix C - TSCA Tile II

(Use the following bullet on Projects that will disturb materials that contain more than 1% friable and non-friable asbestos fibers and covers less than 3 square feet.)

- Workers trained according to 29 CFR 1926.1101.

(Use the following paragraph when a Certified Supervisor is required.)

When a DEQ Certified Supervisor is required, ensure the supervisor is on site and overseeing the work whenever asbestos materials are disturbed or removed.

Materials Testing

00295.35 Testing of Suspect Asbestos Containing Material - When additional testing is needed for suspected ACM listed in Table 00295-2, complete the following with an Asbestos Hazard Emergency Response Act (AHERA) Inspector prior to removal of material listed in the Table 00295-2:

- Collect at least 2 samples of each material listed in the Table 00295-2 to determine if asbestos is present.
- Submit samples to a National Voluntary Laboratory Accreditation Program (NVLAP) certified laboratory for analysis by polarized light microscopy (PLM) following EPA Method 600/R-93/116.

- Submit the laboratory test results to Engineer for review.

If asbestos is detected in any material sample then all similar material are considered asbestos containing material and all similar materials are to be removed according to 00295.40.

Construction

00295.40 Asbestos Removal - Comply with 29 CFR 1910, 29 CFR 1926.1101, 40 CFR 61, 40 CFR 763, OAR 340-248, ORS 468A and the following:

(Use the following bullet on Projects that will disturb materials that have more than 3 square feet of friable and non-friable asbestos, regardless of concentration.)

- Before beginning asbestos removal work, sign and submit all notifications and pay all fees to DEQ. Provide copies to the Engineer.

(Use the following three bullets on Projects that will disturb materials that have friable and non-friable asbestos, regardless of amount or concentration.)

- Complete and sign all manifests and bill-of-lading forms for transporting and disposing the ACM.
- Maintain the ACM in an undamaged and non-friable condition by keeping the material wet during demolition or by using methods approved by DEQ.
- Keep material sealed during transport to the disposal facility. Transport and dispose of all ACM according to OAR 340-248-280 and OAR 340-248-290.

(Use the following bullet on Projects that will disturb materials, in buildings or other enclosed spaces, that contain more than 1% friable and non-friable asbestos fibers.)

- Conduct final clearance air monitoring according to OAR 340-248-0270(13), with a contractor that is National Institute of Occupational Safety and Health (NIOSH) 582 certified and is financially independent from the abatement contractor.

(Use the following bullet on Projects that have non-friable asbestos pipe.)

- Do not crush asbestos containing pipe and do not cut or break each pipe section into more than 3 pieces.
- Handle asbestos containing pipe according to the DEQ Publications *Asbestos Advisory for those who work with AC Water Pipe* and *How to Remove Asbestos (AC) Water Pipe – A Guide for Meeting DEQ Rules*.

(Use the following bullet on Projects that will disturb materials that contain 1% or less friable and non-friable asbestos and, covers more than 3 square feet.)

- Remove and dispose of the materials identified as having less than 1% asbestos according to 29 CFR 1926.1101, where that regulation refers to "asbestos" rather than "asbestos containing material" or "ACM".

Measurement

00295.80 Measurement - The quantities of removing asbestos containing materials will be measured on either the length basis or the area basis.

No measurement of quantities will be made for bulk asbestos sampling, analytical testing, and reporting.

(Use the following paragraph when there are materials containing 1% or less asbestos.)

Materials containing 1% or less asbestos will not be measured.

(Use the following paragraph when there is less than 3 square feet of asbestos.)

Materials containing asbestos that cover less than 3 square feet will not be measured.

Payment

00295.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following item(s):

(Delete Pay Item(s) from the list that are not included in the Schedule of Items, but do not change the alpha characters next to the Pay Items.)

Pay Item	Unit of Measurement
(a) Remove Asbestos Material, _____	Foot
(b) Remove Asbestos Material, _____	Square Foot

(Use the following paragraph when additional asbestos sampling is needed)

(c) Bulk asbestos sampling, analytical testing, and reporting.....	Lump Sum

In item (a) and (b), the type of Material will be inserted in the blank.

Payment will be payment in full for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

(Use the following paragraph when there are materials containing 1% or less asbestos.)

No separate or additional payment will be made for materials containing 1% or less asbestos.

(Use the following paragraph when there is less than 3 square feet of asbestos.)

No separate or additional payment will be made for asbestos covering less than 3 square feet.

SP00296 (Special Provisions for the 2024 Book) (Bidding on or after: 12-01-25

Last updated: 01-17-25
This Section requires lead liability insurance in 00170.70.)

SECTION 00296 - PAINT AND PAINTED MATERIALS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00296, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00296.00 Scope - In addition to the requirements of Section 00290, remove lead, chromium, and cadmium based paints, and materials coated with lead, chromium, and cadmium based paints, according to the following Specifications.

(Use the following paragraph and table when there is lead, chromium, or cadmium paints on concrete structures. Fill in the first blank describing the painted concrete portions of the structure. Fill in the second blank with the structure name and number.)

Lead, chromium and cadmium based paints coat the concrete on the _____ on the _____ Bridge. Analysis of paint samples collected from this Bridge detected concentrations of total lead, cadmium and chromium in the concrete paint indicated in Table 00296-1 below:

(Note to spec writer - The metric values listed below are an industry recognized standard geometry for measuring lead. DO NOT convert the value to an English unit.)

Table 00296-1

Sample Location and Material	Total Lead (mg/kg)	Total Chromium (mg/kg)	Total Cadmium (mg/kg)

ND = not detected above the laboratory detection limit.

(Use the following paragraph and table when a TCLP analysis is available.)

Toxicity Characteristic Leaching Procedure (TCLP) analysis of bulk painted concrete samples, representative of the waste that will be generated during demolition, detected the concentrations of TCLP lead, chromium, and cadmium indicated in Table 00296-2 below:

(Note to spec writer - The metric values listed below are an industry recognized standard geometry for measuring lead. DO NOT convert the value to an English unit.)

Table 00296-2

Sample Location and Material	TCLP Lead (mg/L)	TCLP Chromium (mg/L)	TCLP Cadmium (mg/L)

ND = not detected above the laboratory detection limit.

(Use the following paragraph and table when there is lead, chromium, or cadmium paints on steel structures. Fill in the first blank describing the painted metal portions of the structure. Fill in the second blank with the structure name and number.)

Lead, chromium and cadmium based paints coat the metal on the _____ on the _____ Bridge. Analysis of paint samples collected from this Bridge detected the concentrations of total lead, cadmium, and chromium in the metal paint indicated in Table 00296-3 below:

(Note to spec writer - The metric values listed below are an industry recognized standard geometry for measuring lead. DO NOT convert the value to an English unit.)

Table 00296-3

Sample Location and Material	Total Lead (mg/kg)	Total Chromium (mg/kg)	Total Cadmium (mg/kg)

ND = not detected above the laboratory detection limit.

(Use the following paragraph and table when there is lead, chromium, or cadmium paints on wood structures. Fill in the first blank describing the painted wood portions of the structure. Fill in the second blank with the structure name and number.)

Lead, chromium and cadmium based paints coat the wood on the _____ on the _____ Bridge. Analysis of paint samples collected from this Bridge detected the

concentrations of total lead, cadmium, and chromium in the wood paint indicated in Table 00296-4 below:

(Note to spec writer - The metric values listed below are an industry recognized standard geometry for measuring lead. DO NOT convert the value to an English unit.)

Table 00296-4

Sample Location and Material	Total Lead (mg/kg)	Total Chromium (mg/kg)	Total Cadmium (mg/kg)

ND = not detected above the laboratory detection limit.

(Fill in the blanks with the date and name of report that will be available from the Engineer.)

The _____ ODOT report, titled _____ documenting these analyses, is available from the Engineer.

Unless otherwise tested, assume that all coatings contain lead, chromium, and cadmium and handle paint and painted materials accordingly during demolition.

00296.03 Submittals - Submit the following documents:

- A job specific written compliance program, according to 29 CFR 1926.62(e)(2), at least 10 Calendar Days before the pre-construction conference. When applicable, include compliance procedures for cadmium and chromium VI, according to 29 CFR 1926.1127 and 29 CFR 1926.1126.
- Modifications to the written compliance program within 7 Calendar Days of the modifications.
- Current employee training certificates and medical surveillance information before beginning work that disturbs paint containing lead, cadmium or chromium.
- Within 48 hours of completing or receiving them:
    - Disposal and recycling facility permits.
    - Transport manifests and bill-of-ladings.
    - All reuse, recycling, and disposal receipts.
    - All analytical test results.

00296.04 Documentation - Include paint and painted materials management and planned reuse, recycling, and disposal information in the pollution control plan. Obtain Engineer approval for the specific reuse, recycling, and disposal methods for all materials before beginning demolition work.

Complete, sign and pay all required fees for all required permits, manifests, and bill-of-lading forms for transport and disposal of the paint and painted materials.

Labor

00296.30 Personnel Qualifications - Provide employees trained in lead awareness, according to 29 CFR 1926.62(l), and also trained according to 29 CFR 1926.1126(j)(2) for chromium and 29 CFR 1926.1127(m)(4) for cadmium, during demolition of painted portions of the Structures.

Construction

00296.40 Handling - Minimize employee exposure to the metals contained in the paint. Provide containment that prevents release of paint chips to the environment. Do not remove or separate paint from painted substrates, unless required to accomplish repair activities.

(Use the following subsection .42 when removing painted concrete.)

00296.42 Painted Concrete Debris Management - Reuse, recycle, or dispose of painted concrete debris according to any of the following:

(Use the following bullets as instructed below. Include only the relevant options, based on the paint testing results and the options that are feasible for the specific project based on the scope of work and location. If different portions of the concrete Structure have different types of paint, clearly specify which portions of the concrete each option applies to.)

(Use this bullet for all painted concrete, unless the bulk concrete waste will be a hazardous waste.)

- **Recycle as New Concrete** - Recycle the concrete into new concrete on site or at an off-site fixed facility. Only use concrete containing recycled concrete debris on the Project when testing demonstrates that the mix meets applicable design standards for the intended use and is acceptable to the Engineer. Before beginning on-site crushing, obtain permits required under OAR 340-216-0020 and comply with all the permit conditions.

(Use this bullet and sub-bullets for concrete that has <u>less than</u> 1000mg/kg total lead in the paint and low levels of cadmium and chromium and the project team has determined there are places where crushed concrete can be used on the project site.)

- **Recycle as Aggregate** - Use as aggregate within the road prism or embankment, only when:
  - The concrete debris meets the applicable design standards for the intended use.
  - It is placed on the project between Station ____ and Station _____ as shown.
  - It is placed at least 4 feet above the mean high groundwater table.
  - It is placed more than 50 feet from all surface water body and sensitive environment areas.

- It will be paved over or will be covered with least one foot of clean fill material.

(Use this bullet and sub bullets for concrete that has <u>more than</u> 1000 mg/kg total lead in the paint and where the bulk concrete waste will not be a hazardous waste. Only use when Region approves the use of a SWLA and discussions with DEQ have confirmed that they will likely issue a SWLA for that specific use. Note: SWLA permits are only valid for 6 months with one 6 month extension; therefore, the SWLA permit cannot be obtained by ODOT before construction begins.)

- **Recycle as Fill Material** - Obtain a DEQ Solid Waste Letter of Authorization (SWLA) and reuse the material as fill material within the ODOT road prism. Complete all submittals and pay all fees required to obtain a SWLA. Sign the application form and provide the signed application form to the Engineer to sign on behalf of ODOT, at least 60 Calendar Days before beginning placement of the concrete debris. Submit the completed and signed SWLA application to DEQ. Do not begin placement of the concrete debris until DEQ has issued the SWLA permit. The SWLA permit expires 6 months from the date of issuance. Complete the filling work before the permit expires or obtain a 6 month permit extension from DEQ and pay all associated permit extension fees. Only one 6 month extension is allowed.

- Place fill material:

(Modify these sub-bullets to comply with the SWLA permit conditions or conditions agreed to with DEQ in preparation for issuing a SWLA during construction. Follow the Specification and Writing Style manual when making modifications.)

  - At least 4 feet above the mean high groundwater table.
  - That will be paved over or will be covered with at least one foot of clean fill material.
  - That is more than 50 feet from all surface water body or sensitive environment areas.
  - It is placed on the Project between Station ____ and Station _____ as shown.

(Use this bullet for all painted concrete, unless the bulk concrete waste will be a hazardous waste.)

- **Recycle or Dispose of at Landfill** - Recycle at a permitted municipal solid waste landfill or a permitted construction and demolition landfill as aggregate material for roads or other infrastructures within the landfill area or dispose of at a permitted municipal solid waste landfill or a permitted construction and demolition landfill for disposal.

(Use this bullet when discussions with DEQ have resulted in an alternate management option acceptable to the Region. Follow the Specification and Writing Style manual when editing.)

- **Recycle, Reuse, or Dispose** - Recycle, reuse, and dispose of painted concrete waste according to the following:

(Use the following subsection .43 when removing painted metal.)

00296.43 Painted Metal Management - Reuse, recycle, or dispose of painted metal according to any of the following:

- **Reuse by Others** - Provide or sell painted non-structural scrap metal to the following:
  - Provide to ODOT for use on other projects.
  - Provide to ODOT Maintenance Section.
  - Provide or sell to other government Agencies.
  - Provide or sell to contractors for their reuse.

  Obtain the recipients signature on the attached disclaimer form, acknowledging their awareness that the scrap metal contains lead, chromium, and cadmium based paint before giving them possession.

- **Recycle at Recycling Facility** - Transport the painted scrap metal along with the paint analytical results to a recycling facility. Obtain the recipients signature on the attached disclaimer form, acknowledging their awareness that the scrap metal contains lead, chromium and cadmium based paint.

(Use this bullet for painted metal when reuse or recycling is not feasible or disposal may be the only economic option and the bulk waste will not be a hazardous waste. (For example, there is very little painted metal and it's not worth separating and transporting it to a recycler).

- **Dispose of at Landfill** - Dispose of the painted scrap metal at a permitted municipal solid waste landfill or a permitted construction and demolition landfill.

(Use the following subsection .44 when removing painted wood.)

00296.44 Painted Wood Management - Dispose of painted wood at a permitted municipal solid waste landfill or a permitted construction and demolition landfill, according to the DEQ "Hazardous Waste/Toxics Reduction Policy Clarification: Management of Building Demolition Waste" Policy 1997-PO-002A.

(Use one or both subsections .45 and .46 only for lead-based paint removal that is incidental to other demolition or repair activities. Do not use them where removal of lead-based paint is a primary construction task (removal of lead-based paint for bridge painting projects). For removal of lead-based paint is primary, coordinate paint removal with the Structure Coatings Engineer. Do not duplicate the Structure Coatings Engineer specifications here.)

(Use this subsection .45 when the paint that is not a hazardous waste may be separated from the substrate during construction. Paint may become separated because it is peeling or because the planned repairs may require paint removal.)

00296.45 Non-Hazardous Waste Paint Management - When non-hazardous paint is separated from its substrate, contain all the paint waste and dispose of it at a permitted municipal solid waste landfill.

(Use this subsection .46 when the paint that is a hazardous waste may be separated from the substrate during construction.)

00296.46 Hazardous Waste Paint Management - When hazardous waste paint is separated from its substrate, store all the separated paint waste in labeled, sealed, watertight containers and handle the hazardous waste according to 00290.20(d).

Measurement

(Use one of the following two options when painted concrete removal is required and as instructed below. Delete the option that does not apply.)

[Option 1 - Use the following subsection .80 when separate bid items are required.]

[Begin Option 1]

00296.80 Measurement -

(Use only one of the following two painted concrete options. Delete the option that does not apply.)

[Painted Concrete Option 1 - Use the following paragraph when a pay item for painted concrete is included in the Schedule of Items. Decide whether or not to include an item depending on the project logistics, likely quantities to be generated, and nature of the work.]

The quantities of painted concrete recycled or disposed will be measured on the weight basis, per Ton, based on the recycling or disposal facility weigh tickets.

[Painted Concrete Option 2 - Use the following paragraph when a pay item for painted concrete is NOT included in the Schedule of items.]

No measurement of quantities will be made for recycling or disposing of painted concrete.

(Use the following paragraph when a Pay Item for painted wood is included in the Schedule of items.)

The quantities of painted wood disposed will be measured on the weight basis, per Ton, based on the recycling or disposal facility weigh tickets.

(Use the following paragraph when a Pay Item for separated paint is included in the Schedule of items.)

The quantities of paint separated from substrates will be measured on the weight basis, per pound, at least to the nearest 1 pound, based on the recycling or disposal facility weigh tickets.

No measurement of quantities will be made for reusing, recycling, or disposing of painted metal.

[End Option 1]

[Option 2 - Use the following subsection .80 when no separate measurement will be made for work performed under this Section.)

[Begin Option 2]

00296.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

[End Option 2]

Payment

(Use one of the following options as instructed below. Delete the option that does not apply.)

[Option 1 - Use the following subsection .90 when separate bid items are required.]

[Begin Option 1]

(Delete the "(s)" or parentheses from the word "item(s)" as appropriate.)

00296.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following item*(*s*)*:

(Delete Pay Item(s) from the list that are not included in the Schedule of Items, but do not change the alpha characters next to the Pay Items.)

Pay Item	Unit of Measurement
(a) Painted Concrete	Ton
(b) Painted Wood	Ton
(c) Separated Paint	Pound

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for:

(Include the first bullet below only when no payment will be made for painted concrete. Delete it if payment is included in Pay Item (a) above.)

- Recycling and disposing of painted concrete.
- Reusing, recycling, or disposing of painted metal and related demolition and repair activities necessary to complete the work.
- Containment activities.

[End Option 1]

[Option 2 - Use the following subsection .90 when no separate payment will made for work performed under this Section. Use this option for Structural coating projects.]

[Begin Option 2]

00296.90 Payment - No separate or additional payment will be made for Work performed under this Section. Payment will be included in payment made for the appropriate items under which this Work is required.

[End Option 2]

Attachment A
Lead, Chromium, and Cadmium Based Paint Acknowledgement Form

[Contractor] _____
[Bridge Identification] _____
[Description of Scrap Metal] _____

_____ [Recipient] acknowledges that they are aware that metal and materials received from _____ [Contractor] on _____ [Date(s)] may contain lead, chromium, or cadmium based paint. Recipient further acknowledges that it is aware of the risk to human health and the environment posed by exposure to lead, chromium and cadmium based paint. All storage, use, sale, and disposal of materials containing lead, chromium or cadmium based paint and any removal of lead, chromium, or cadmium based paint from the materials by Recipient will be conducted in compliance with all applicable Federal and State statutes and regulations, including but not limited to 40 CFR 262 through 265 and OAR Chapter 340, Divisions 100 through 106. Recipient acknowledges that they are solely responsible for any liability or damages resulting from the storage, use, sale, and disposal of the materials and removal of lead, chromium or cadmium based paint by Recipient and Recipient will indemnify and hold harmless the Contractor and the Oregon Department of Transportation from any such claims of liability or damages.

_____ [Signature]
_____ [Title]
_____ [Date]

SP00297 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-17-25
This Section requires SP00950.)

SECTION 00297 - PCB AND MERCURY CONTAINING EQUIPMENT

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00297, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00297.00 Scope - In addition to the requirements of Section 00290 and the Specifications, this Work consists of removing and disposing of the following:

(Edit the bullets below to indicate the number and type of PCB and mercury containing items to be removed. Delete what does not apply.)

- ____ Polychlorinated biphenyls (PCB) lamp ballasts assumed to contain PCB at concentrations greater than 50 ppm.
- ___ non-PCB lamp ballasts manufactured after July 1979 and labeled as containing less than 50 ppm PCB.
- ___ electrical transformers containing approximately ___ gallons of fluid of unknown PCB concentration.
- ___ high intensity discharge (HID) lamps that may contain mercury.
- ___ fluorescent lamp tubes that may contain mercury.
- ___ mercury or PCB containing items that _____.

(Fill in the blanks with the date and name of report that will be available from the Engineer.)

The _____ ODOT report, titled _____ documenting the PCB and mercury containing equipment identified for the Project is available from the Engineer.

00297.03 Submittals - Submit the following documents within 48 hours of completing or receiving them:

- Waste characterization and sample analytical data.
- Bill-of-ladings, manifests, disposal and recycling receipts, and destruction certificates.

(Use the following subsection .30 only when removing waste lamps.)

Labor

00297.30 Personnel Qualifications - Provide employees that handle waste lamps meeting the training requirements of 40 CFR 273.16.

Construction

00297.40 PCB Lamp Ballasts - Comply with OAR 340-110, 40 CFR 761, and the following:

- Assume lamp ballasts contain potting materials with a PCB concentration greater than 50 ppm.
- Disconnect and remove the ballasts and store them at a secure location in a sealed, labeled container.
- Remove from site and dispose of within 30 Days of beginning disconnection work or before Second Notification, whichever occurs first.
- Dispose of as a PCB bulk product waste in a Toxics Substances Control Act (TSCA) approved disposal facility or other EPA approved disposal method.
- Complete and sign all manifests and bill-of-lading forms for transporting and disposing of lamp ballasts as the "offeror".

00297.41 Non-PCB Lamp Ballasts - Comply with OAR 340-110, 40 CFR 761, and the following:

- Confirm PCB content labeling indicates less than 50 ppm PCBs. If labeling is not present, remove and dispose of lamp ballasts according to 00297.40.
- Determine if small capacitors are present and if they are broken or leaking.
  - If the capacitor is not broken or not leaking, dispose of it according to this subsection.
  - If the capacitor is broken or leaking and does not have a label or has a label showing a PCB level of 50 ppm or more, dispose of it according to 00297.40.
  - If the capacitor is broken or leaking and has a label showing a PCB level of less than 50 ppm, dispose of it according to this subsection.
- Disconnect and remove the ballasts and store them in a secure location in a sealed, labeled container.
- Remove from site and dispose of within 30 Days of beginning disconnection work or before Second Notification, whichever occurs first.
- Dispose of as solid waste in a DEQ permitted municipal solid waste landfill, in a TSCA approved disposal facility, or other EPA approved disposal method.
- Complete and sign all required manifests and bill-of-lading forms for transporting and disposing of lamp ballasts.

00297.42 Electrical Transformers - Comply with OAR 340-110, 40 CFR 761, and the following:

- Perform a waste characterization for the transformer fluid according to 00290.20(c).
- Disconnect transformers and store them in a secure location in sealed, labeled containers, with secondary containment sufficient to contain the entire contents of the largest transformer in the containment.
- Dispose of transformer and fluids according to the options provided in 40 CFR 761.60, within 30 Days of beginning disconnection work or before Second Notification, whichever occurs first.
- Complete and sign all required manifests and bill-of-lading forms for transporting and disposing of transformers and sign the manifests, as the offeror.

00297.43 Mercury Lamps - Comply with 40 CFR 273, OAR 340-113, and the following:

- Place all waste lamps in closed, labeled, structurally sound and compatible containers that are sufficient to prevent lamp breakage.

(Select one of the following bullets as instructed below. Delete the one that does not apply.)

(Use this bullet when waste lamps will be disposed of at a waste facility.)

- Transport waste lamps to a DEQ registered universal waste destination facility within 60 Days of beginning removal from fixtures or before Second Notification, whichever occurs first.

(Use this bullet when HID mercury lamps will remain the property of ODOT or another entity. Fill in the blank with the address.. Be sure to have Letter of Public Interest done and on file before the lamps remain the property of ODOT or other entity)

- HID mercury lamps remain the property of the Agency. Transport them to the ODOT Maintenance facility at _____ .

Measurement

00297.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

Payment

00297.90 Payment - No separate or additional payment will be paid for Work performed under this Section. Payment will be included in payment made under the appropriate method described in 00950.90.

SP00298 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-17-25
This Section requires SP00294 when contaminated soil or groundwater will be encountered.)

SECTION 00298 - WELL PRESERVATION AND ABANDONMENT

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00298, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00298.00 Scope - In addition to the requirements of Section 00290, protect, preserve, and abandon monitoring wells and water wells according to the following:

(Use the following paragraph and table when protecting and preserving wells.)

Protect and preserve the monitoring wells and water wells indicated in Table 00298-1 below:

(Fill in the table with the location, type ("water well" or "monitoring well"), depth, diameter, and other well information. Be sure that the wells are shown on the plan sheets.)

Table 00298-1

Location/Station	Type	Depth below grade (feet)	Diameter (inches)	Other Well Design Information	Known Contaminants

(Use the following paragraph and table when abandoning wells.)

Abandon existing monitoring wells and water wells indicated in Table 00298-2 below:

(Fill in the table with the location, type ("water well" or "monitoring well"), depth, diameter and other well information. Be sure that the wells are shown on the plan sheets.)

Table 00298-2

Location/Station	Type	Depth below grade (feet)	Diameter (inches)	Other Well Design Information	Known Contaminants

00298.03 Submittals - Provide the Engineer with all Permit applications, permit fees, start cards, well reports, bonds, and letters of credit required by the Oregon Water Resources Department within 48 hours of completing the work.

(If none of the conditions are met below, delete the "Labor" heading and the entire subsection .30.)

Labor

00298.30 Personnel Qualifications - Provide contractors and workers meeting the following qualifications:

(Use this bullet when modifying and abandoning monitoring wells.)

- A contractor with a current Oregon Monitoring Well Constructor's license.

(Use this bullet when modifying and abandoning water wells.)

- A contractor with a current Oregon Water Well Constructor's license

Use this bullet when modifying and abandoning contaminated monitoring wells when the contamination is known or likely to exceed published DEQ cleanup levels or is listed as a cleanup site.)

- Workers meeting the HAZWOPER training requirements of 00294.30.

Construction

(Use the following subsection .40 when protecting and preserving monitoring wells and water wells.)

00298.40 Protect and Preserve Wells - Protect and preserve the wells during construction. Adjust the wells to finished grade with traffic rated metal covers. Notify the Engineer at least 72 hours before beginning work at or near the wells. Keep the wells capped. Do not allow foreign matter to enter the wells.

(Use the following subsection .41 when abandoning monitoring wells.)

00298.41 Abandon Monitoring Wells - Abandon monitoring wells before beginning ground disturbing construction work in the well locations according to OAR 690-240. Notify the Engineer at least 72 hours before beginning abandonment work.

(Use the following subsection .42 when abandoning water wells.)

00298.42 Abandon Water Wells - Abandon water wells before beginning ground disturbing construction work in the well locations according to OAR 690-220. Notify the Engineer at least 72 hours before beginning abandonment work.

(Use the following subsection .43 when contaminated soil or groundwater will be encountered.)

00298.43 Contaminated Media - Excavate, transport, and dispose of contaminated media according to Section 00294.

Measurement

00298.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

(Use the following paragraph when contaminated soil or groundwater will be encountered.)

Excavating, transporting, and disposing of contaminated media will be measured according to 00294.80.

Payment

(Delete the "(s)" or parentheses from the word "item(s)" as appropriate.)

00298.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract lump sum amount for the following item*(*s*)*:

(Delete Pay Item(s) from the list that are not included in the Schedule of Items, but do not change the alpha characters next to the Pay Items.)

	Pay Item	Unit of Measurement
(a)	Protect Monitoring Wells	Lump Sum
(b)	Abandon Monitoring Wells	Lump Sum
(c)	Protect Water Wells	Lump Sum
(d)	Abandon Water Wells	Lump Sum

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

(Use the following paragraph when contaminated soil or groundwater will be encountered.)

Excavating, transporting, and disposing of contaminated media will be paid for according to 00294.90.

SP00299 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-17-25
This Section requires SP00294 when contaminated soil or groundwater will be encountered)

SECTION 00299 - DECOMMISSION UNDERGROUND INJECTION CONTROL SYSTEMS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00299, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00299.00 Scope - In addition to the requirements of Section 00290, decommission underground injection control (UIC) systems according to the following Specifications.

Decommission the UIC systems indicated in Table 00299-1 below:

(Fill in the table with the required location, depth, width, description, and former use information.)

Table 00299-1

Location/Station	Depth (feet)	Width (feet)	Description	Former Use

00299.03 Submittals - Provide the Engineer with the following information and documents for contaminated soil generated on this project, within 48 hours of completing or receiving them:

- DEQ notifications, correspondence, permits and reports.
- Reuse, recycling, and disposal receipts or other related documentation for the UIC systems.
- Sample data and analytical results.

Labor

00299.30 Personnel Qualifications - Provide contractors and workers meeting the following requirements:

- An Oregon Registered Geologist (RG) or Professional Engineer (PE) who has experience decommissioning UIC systems and handling contaminated media.

(Use this bullet when the UIC system contains contamination that is known or likely to exceed DEQ cleanup standards (for example: automotive UIC systems).)

- Workers meeting the HAZWOPER training requirements of 00294.30.

Construction

00299.40 Underground Injection Control System Decommissioning - Decommission UIC systems according to OAR 340-044-0040 and the following:

- Sample UIC contents and bottom materials and characterize for disposal and DEQ UIC closure requirements, based on past use, according to 00290.20(c).
- At least 30 Days before decommissioning, complete, sign and submit to DEQ and the Engineer, DEQ's UIC Registration Pre-Closure Notification Form, along with the UIC content analytical results and, if required by DEQ, a pre-closure plan stamped by a PE or RG.
- Pay all UIC decommissioning fees to DEQ.

- Obtain written approval from DEQ and proceed with decommissioning the UIC within the time frame specified in DEQ's approval.

(Use the following bullet when the UIC system is removed.)

- Remove the UIC by excavation and backfill according to 00330.42.

Use the following two bullets when the UIC system is left in place.)

- Obtain approval from DEQ and fill the UIC in place, using DEQ approved fill materials.
- Backfill the excavation according to 00330.42.

- Complete a closure report, signed and stamped by a PE or RG, and submit it to DEQ and the Engineer within 30 Days of finishing decommissioning work or before Second Notification whichever occurs first.

Information for decommissioning underground injection control systems is available on DEQ's Fact Sheet titled *Closure of an Injection System*.

(Use the following subsection .43 when contaminated soil or groundwater will be encountered.)

00299.43 Contaminated Media - Excavate, transport, and dispose of contaminated media according to Section 00294.

Measurement

00299.80 Measurement - The quantities of decommissioned UIC systems will be measured on the unit basis.

(Use the following paragraph when contaminated soil or groundwater will be encountered.)

Excavating, transporting, and disposing of contaminated media will be measured according to 00294.80.

Payment

00299.90 Payment - The accepted quantities of decommissioned UIC systems will be paid for at the Contract unit price, per each, for the item "Decommission Underground Injection Control Systems".

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

(Use the following paragraph when contaminated soil or groundwater will be encountered.)

Excavating, transporting, and disposing of contaminated media will be paid for according to 00294.90.

SP00299A (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-24 Last updated: 01-17-24)**

(Use this Section 00299A when septic systems do not contain hazardous materials. Use Section 000299 when septic systems contain hazardous materials.)

SECTION 00299A - DECOMMISSION SEPTIC SYSTEMS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00299A, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00299A.00 Scope - In addition to the requirements of Section 00290, decommission septic systems according to the following Specifications.

Decommission the septic systems indicated in Table 00299A-1 below:

> ***(Fill in the table blanks with the location, description, and decommissioning information. For the System description, describe all elements to be removed (for example: 200 gallon concrete tank and 100 by 200 sq. ft. absorption area). For decommissioning method specify "remove", "fill" or "remove or fill".)***

Table 00299A-1

Location/Station	System Description	Decommissioning Method

00299A.03 Submittals - Provide the Engineer with all septage and absorption area material disposal receipts within 48 hours of completing or receiving them.

Labor

00299A.30 Personnel Qualifications - Provide an Oregon licensed sewage disposal service with a pumper license, or a combined installer/pumper license, to pump all septage.

Construction

00299A.40 Septic System Decommissioning - Decommission septic systems according to OAR 340-071-0185 and the following:

- Pump all septage from tanks, cesspools, and seepage pits and transport and dispose the septage at a DEQ approved disposal facility or treatment site.

(Use the following bullet when filling septic systems.)

- Fill the tanks, cesspools, and seepage pits with Sand, bar run gravel, or other material approved by both DEQ and the Engineer, in writing.

(Use the following two bullets when removing septic systems.)

- Excavate and remove the tanks, cesspools and seepage pits and backfill the excavation according to 00330.42.
- Dispose tanks and associated pipes and hardware at a DEQ permitted solid waste landfill.

(Use the following two bullets when excavation of the absorption area (leach field) is required.)

- Excavate all pipes, Structures, filtration material, and fill within the absorption area.
- Dispose all pipes, Structures, filtration material, and fill material at a DEQ permitted solid waste landfill.

Measurement

00299A.80 Measurement - The quantities of decommissioned septic systems will be measured on the unit basis.

Payment

00299A.90 Payment - The accepted quantities of decommissioned septic systems will be paid for at the Contract unit price, per each, for the item "Decommission Septic Systems".

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP00305 (Special Provisions for the 2024 Book)

(Bidding on or after: 05-01-25
Last updated: 01-17-25
This Section requires SP00150 to establish survey responsibilities in 00150.15.)

(Use this Section when Contractor Surveying is required. Check with Designer. Do not modify the* Construction Surveying Manual for Contractors *in these special provisions.)

SECTION 00305 - CONSTRUCTION SURVEY WORK

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use the following lead-in paragraph when none of the following subsections are included in the Project.)

Comply with Section 00305 of the Standard Specifications.

(Use the following lead-in paragraph when any of the following subsections are included in the Project.)

Comply with Section 00305 of the Standard Specifications modified as follows:

(Use the following subsection .00 when requested by the Project Manager. Check with the Project Manager for the distance to establish construction staking. Fill in the blank "__ feet" and delete all orange parentheses.)

00305.00 Scope – Add the following to the end of this subsection:

In addition to the requirements of the ODOT *Construction Surveying Manual for Contractors*, establish Engineering Stationing at *(*__ foot*)* intervals for the length of the project along the Shoulder of the Highway. Maintain the stationing so it is visible throughout construction of the project.

SP00310 (Special Provisions for the 2024 Book) **(Bidding on or after: 06-01-25 Last updated: 03-03-25)**

SECTION 00310 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Note: Only include the "Asphalt Pavement Sawcutting" and "Concrete Sawcutting" Pay Items in the Schedule of Items when the estimated quantity is greater than 100 feet.)

(Note: Include Pay Item for "Removal of Concrete Barrier" when removal of concrete barrier work is included on the Project. Use either Lump Sum or Length unit of measurement. If Section 00820 "Remove and Reinstall Concrete Barrier" is also included in the Project, do not include that quantity of barrier removal in this Section.)

Comply with Section 00310 of the Standard Specifications modified as follows:

00310.80 Measurement - Replace the bullet "Length and Area…" with the following bullet:

- **Length and Area** - The length or area of the Structure or item actually removed, will be measured along the line and grade of the Structure or item for each continuous Structure or item removed. Measurement will be on the length or area basis, limited to the Neat Lines shown or directed.

  Asphalt Pavement Sawcutting and Concrete Sawcutting will be measured by the linear foot of sawcut, limited to the Neat Lines shown or directed unless otherwise specified. Methods other than sawcutting will not be measured. If the depth is greater than shown, the length will be adjusted by converting to an equivalent number of feet on a proportionate-length basis.

  Additional concrete sawcutting beyond what is shown or directed by the Engineer will not be measured.

00310.92 Separate Item Basis - Replace the Pay Item Asphalt Pavement Sawcutting with the following Pay Item:

Pay Item	**Unit of Measurement**
(g) Asphalt Pavement Sawcutting, _____ inches Deep.....	Foot

Replace the paragraph that begins "Item (g) applies…" with the following paragraph:

In item (g), the depth of cutting will be inserted in the blank.

Add the following Pay Item to the Pay Item list:

(i) Concrete Sawcutting, _____ inches Deep..... Foot

Add the following paragraph after the paragraph that begins "Item (g) applies…"

In item (i), the depth of cutting will be inserted in the blank.

Add the following paragraph to the end of the subsection:

No separate or additional payment will be made when methods other than sawcutting are utilized where sawcutting is shown or directed.

(Use the following Pay Item on Projects that have more than 8 curb ramps that are not included in Section 00330, otherwise (8 curb ramps or less not in Section 00330) curb ramp removal work will be included in the lump sum Removal of Structures and Obstructions. Include Pay Item for asphalt pavement sawcutting and concrete sawcutting when removing curb ramps. Do not include Pay Items for items (b), (c), and (d) when using item (j), unless approved by the State Specification Engineer.)

00310.92 Separate Item Basis - Add the following Pay Item to the Pay Item list:

(j) Removal of Surfacings for Curb Ramp Construction ..... Square Yard

Add the following to the end of this subsection:

Item (j) includes all removal of curb ramp, walk, curb, driveway, Pavement, and other Work associated with curb ramp construction, including but not limited to walk and driveway construction between or beyond curb ramps. Item (j) does not include asphalt pavement sawcutting or concrete sawcutting.

SP00320 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-17-25)**

SECTION 00320 - CLEARING AND GRUBBING

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(A letter of public interest finding is required when trees, vegetation, or material will be salvaged by the Agency.)

Comply with Section 00320 of the Standard Specifications modified as follows:

00320.40(c) Tree and Vegetation Trimming - Replace the bullet that begins "Trim branches obstructing sight…" with the following bullet:

- Trim and remove branches, vegetation, or other materials obstructing sight distance at intersections or impairing visibility of signs, signals, illumination, and other TCD.

(Use the following subsection .41 when the Oregon Department of Fish and Wildlife (ODFW) or a local Watershed council has identified a stockpile site close to the job site, and the ODFW or Watershed council is willing to pick up the material and haul it away at the Contractor's request and at no charge to ODOT.

A letter of public interest finding is required when materials will be stockpiled and retained by the Agency.)

00320.41 Grubbing Operations - Add the following to the end of this subsection:

Stockpile stumps and root wads at no additional cost to the Agency. The stumps and root wads will be used by the Oregon Department of Fish and Wildlife to establish fish habitat in stream beds. Stockpile stumps and root wads meeting the following criteria:

- A trunk diameter of 24 inches or greater.
- A root wad, at least 4 to 5 feet in diameter.
- A long stem or tree trunk attached to the root wad.

Stockpile Stumps and root wads at the following location(s):

(List stockpile location(s) here.)

-

(Use the following subsection .42 when salvaging of vegetation or natural materials is required.)

00320.42 Disposal of Matter - Replace this subsection with the following subsection:

00320.42 Ownership and Disposal of Matter - Vegetation and natural material designated for preservation and salvage are the property of the Agency. All other matter and debris accumulated from clearing and grubbing operations become the Contractor's property at the place of origin. Dispose of all matter and debris according to 00290.20.

SP00330 (Special Provisions for the 2024 Book)

(Bidding on or after: 05-01-25
Last updated: 01-17-25
This Section requires SP00236 when using Agency-furnished disposal sites.)

SECTION 00330 - EARTHWORK

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all orange text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00330 of the Standard Specifications modified as follows:

(Use one of the following subsection .03's as instructed below. Choose the "Embankment Basis" subsection when the embankment quantities are greater than the excavation quantities. Choose the "Excavation Basis" subsection when the excavation quantities are greater than the embankment quantities. Delete the one that does not apply. Check with the Designer for information.)

[Use this subsection .03 only for "Embankment Basis" Projects, modified (by filling in the blank) to exclude Ditch Excavation, Foundation Excavation or Toe Trench Excavation if any of these items are included in the Bid Schedule. Delete "except for _____" if it does not apply.]

00330.03 Basis of Performance - Add the following paragraph to the end of this subsection:

Perform all earthwork under this Section except for _____ on the embankment basis.

[Use this subsection .03 only for "Excavation Basis" Projects, modified (by filling in the blank) to exclude Stone Embankment and/or Extra For Selected ____ Material if either is included in the Bid Schedule. Delete "except for _____" if it does not apply.]

00330.03 Basis of Performance - Add the following paragraph to the end of this subsection:

Perform all earthwork under this Section except for _____ on the excavation basis.

(Use the following subsection .41(a)(4) when excess materials are to be used on the Project only when there are sufficient R/W limits. Check with Project Leader and the Geotechnical designer.)

00330.41(a)(4) Excess Materials - Replace this subsection, except for the subsection number and title, with the following:

If the quantities of excavated materials are greater than required to construct embankments and to do all filling and backfilling, the Contractor may use the remaining materials to uniformly widen embankments or to flatten slopes in a manner satisfactory to the Engineer.

(Use only one of the following two .41(a)(5) subsection options as instructed below.)

[Option 1 - Use this subsection .41(a)(5) only when subsection .41(a)(4) above is used.]

00330.41(a)(5) Waste Materials - Replace this subsection, except for the subsection number and title, with the following:

Unless otherwise specifically allowed and subject to the requirements of Section 00280, dispose of materials, classed as waste materials in 00330.41(a)(3), outside and beyond the

limits of the Project and Agency controlled property according to 00290.20. Do not dispose of materials on Wetlands, either public or private, or within 300 feet of rivers or streams.

[Option 2 - Use this subsection .41(a)(5) only for Agency-furnished disposal sites. Include SP00236 when using this subsection.]

00330.41(a)(5) Waste Materials - Replace this subsection, except for the subsection number and title, with the following:

Dispose of waste materials according to Section 00236.

(Use the following subsection .41(a)(9) on excavation Projects which include Section 00331 - Subgrade Stabilization.)

00330.41(a)(9) Excavation Below Grade - Delete subsection 00330.41(a)(9)(c).

(Use the following subsection .42(c)(3) on Projects when directed by the Erosion Control Designer.)

00330.42(c)(3) Embankment Slope Protection - Add the following paragraph to the end of this subsection:

Construct the outer 12 inches of embankments with suitable materials to establish slope stabilization through permanent seeding. If suitable material is not available, provide suitable materials from a Contractor-provided source which conforms to the requirements of 00330.11 or 00330.13 and provides favorable conditions for germination of seed and growth of grass.

00330.43(d) Small, Irregular Fill Areas – Replace the paragraph that begins “The density requirements of 00330.43 do not apply…” with the following paragraph:

The density requirements of 00330.43 do not apply to irregular fill areas outside of the travel lanes that have a total volume of no more than 150 cubic yards at each location. Construct these areas according to the following:

(Use the following subsection .91(d) on excavation Projects that include Section 00331 - Subgrade Stabilization.)

00330.91(d) General Excavation - Delete the bullet that begins "Includes Unsuitable Material…".

(Use the following subsection .92 when either of the bullets under 00330.92 are applicable to the Project. Delete "(s)" or parentheses as applicable.)

00330.92 Kinds of Incidental Earthwork - Add the following bullet*(*s*)* to the end of the bullet list:

(Use the following bullet when subsection 00330.41(a)(4) has been included in the Project Special Provisions and excess materials are to be used on the Project.)

- Excess material used to widen embankments or flatten slopes according to 00330.41(a)(4).

(Use the following bullet on Projects with light grading, especially on urban Projects, and when requested by the Project Leader, to eliminate separate measurement and payment for earthwork for driveways and road approaches. Do NOT use on projects involving driveways or road approaches with significant earthwork quantities.)

- Earthwork required for driveways and road approaches. Earthwork for driveways and road approaches will be that which is outside the Neat Line limits shown on the typical sections.

(Use the following subsection .94 on embankment Projects that include Section 00331 - Subgrade Stabilization.)

00330.94 Embankment Basis Payment - Delete the paragraph that begins "Excavation of unstable…".

SP00331 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-17-25)**

SECTION 00331 - SUBGRADE STABILIZATION

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [orange text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all orange text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00331 of the Standard Specifications.

SP00333 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-17-25)**

SECTION 00333 - AGGREGATE DITCH LINING

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00333, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00333.00 Scope - This Work consists of furnishing and placing aggregate ditch lining at locations shown or directed.

Materials

00333.10 Aggregate Ditch Lining - Provide hard durable rock or gravel with a moisture binder of clay material that provides a tight, erosion-resistant surface meeting the following grading requirements:

Sieve Size Passing	Percentages (by Weight)
6"	100
4"	30 - 50
2"	20 - 30
No. 200	15 - 25

Construction

00333.40 General - Place the aggregate material to the lines and grades established and as shown.

Measurement

00333.80 Measurement - The quantities of aggregate ditch lining will be measured on the area basis of the actual surface area of the wetted perimeter of the lined ditch.

Ditch excavation will be measured according to 00330.80 and 00330.81.

Payment

00333.90 Payment - The accepted quantities of aggregate ditch lining will be paid for at the Contract unit price, per square yard, for the item "Aggregate Ditch Lining".

Payment will be payment in full for furnishing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

Ditch excavation will be paid for according to 00330.90, 00330.91, and 00330.93.

SP00334 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-17-25)**

(Use this Section on highway widening projects only when a small amount of grading is required.)

SECTION 00334 - PREPARATION OF SHOULDERS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00334, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00334.00 Scope - This Work consists of blading, leveling, and compacting shoulders as required to bring the shoulder subgrade to the required widths, grade, and condition to receive the pavement as shown.

Construction

00334.40 General - Sidecast all material resulting from shoulder preparation without obstructing existing ditches.

(Use one of the following options as instructed below. Delete the option that does not apply.)

[Option 1 - Use the following measurement and payment headings and subsections .80 and .90 when measurement is on the length basis.]

[Begin Option 1]

Measurement

00334.80 Measurement - The quantities of preparation of shoulders will be measured on the length basis. When preparation is performed on both shoulders, measurement will be measured along the center line of the highway excluding the length of bridges. Where preparation of shoulders is performed on only one shoulder, the pay length will be one-half the length as measured above.

Payment

00334.90 Payment - The accepted quantities of shoulder preparation will be paid for at the Contract unit price, per mile, for the item "Preparation of Shoulders".

Payment will be payment in full for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for watering.

[End Option 1]

[Option 2 - Use the following measurement and payment headings and subsections .80 and .90 when measurement is lump sum. Fill in the blanks. Delete the language in orange parentheses that does not apply and delete all orange parentheses.)

[Begin Option 2]

Measurement

00334.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

It is estimated that _____ centerline miles of shoulder preparation will be performed on *(*one shoulder*) (*both shoulders*)*.

Payment

00334.90 Payment - The accepted quantities of shoulder preparation will be paid for at the Contract lump sum amount for the item "Preparation of Shoulders".

Payment will be payment in full for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for watering.

[End Option 2]

SP00335 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-17-25)**

SECTION 00335 - BLASTING METHODS AND PROTECTION OF EXCAVATION BACKSLOPES

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all orange text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use the following lead-in paragraph when none of the following subsections are included in the Project.)

Comply with Section 00335 of the Standard Specifications.

(Use the following lead-in paragraph when any of the following subsections are included in the Project.)

Comply with Section 00335 of the Standard Specifications modified as follows:

(Use the following paragraph and subsection .44 when directed by the Geotechnical Group.)

Add the following subsection:

00335.44 Blasting Consultant - Retain a recognized blasting consultant to assist in the blast design. The consultant shall be an expert in the field of drilling and blasting who specializes in providing blasting consulting services. The consultant shall not be an employee of the Contractor, explosives manufacturer, or explosives distributor. A list of approved blasting consultants may be obtained from the Engineer.

If the proposed blasting consultant is not on the approved list, submit the credentials of the proposed blasting consultant not later than the preconstruction conference. Use the blasting consultant only after approval is obtained from the Engineer and before beginning any drilling and blasting work. The blasting consultant shall make an on-site inspection of the Project Site with the Engineer before developing a blasting plan. The blasting consultant shall make additional on-site inspections of the Project Site with the Engineer before revising a blasting plan, before all additional blasts with different conditions than those described in the originally submitted blasting plan, and after any unacceptable test blasts, unless otherwise directed. All blasting plans, including revisions, shall be approved, in writing, by the blasting consultant.

Submit the consultant assisted blast design to the Engineer according to 00335.40(d).

(Use the following paragraph and subsection .45 when directed by the Geotechnical Group.)

Add the following subsection:

00335.45 Vibrations Specialist - Provide a qualified vibrations specialist in vibration monitoring and analysis using seismographs to confirm the safe vibration and air overpressure limits. Submit documentation of prior experience for all personnel involved in monitoring. The vibrations specialist shall also interpret the seismograph records to ensure that the seismograph data is effectively utilized in the control of the blasting operations with respect to the existing Structures.

(Use the following paragraph and subsection .46 when directed by the Geotechnical Group.)

Add the following subsection:

00335.46 Vibration Control and Monitoring - Control ground vibrations by using properly designed blast hole patterns, delay sequences, stemming, and allowable charge weights per delay. Base the allowable charge weights per delay on ground vibration levels which will not cause damage. Establish allowable charge weights per delay by carrying out test blasts and measuring ground vibration levels. Perform test blasts according to 00335.40(f), modified as required to limit ground vibrations to a level which will not cause damage.

Monitor each blast with an approved seismograph located, as approved, between the blast area and the closest Structure, facility, or Utility subject to blast damage. The seismograph used shall be capable of recording particle velocity for three mutually perpendicular components of vibration in the range generally found with controlled and production blasting.

Operate the seismographs according to the recommended guidelines of the International Society of Explosives Engineering Seismograph Section, titled *ISEE Field Practice Guidelines for Blasting Seismographs*. The applicable guidelines are those contained in the current publication on the date the Project is advertised.

Do not allow peak particle velocity of each component to exceed the safe limits of the nearest Structure subject to vibration damage as follows:

Structure	Maximum Peak Particle Velocity at the Structure (Inches/Second)
Standard Construction Timber Frame, Brick, and Concrete Buildings	2.0
Reinforced Concrete Structures	4.0
Steel Structures	4.0
Buried Utilities	2.0
Wells and Aquifers	2.0
Green Concrete (Less than 7 Days)	1.0

If the vibration levels exceed the limits, immediately report the measurements to the Engineer.

(Use the following paragraph and subsections .47 when directed by the Geotechnical Group.)

Add the following subsection:

00335.47 Air Overpressure and Noise Control - Install an air overpressure monitoring system of the type specifically manufactured for that purpose between the main blasting area and the nearest Structure subject to blast damage. Limit air overpressure to 133 dBL (0.013 psi) at nearest Structure, facility, or other designated location. Use appropriate blast hole patterns, detonation systems, and stemming to prevent venting of blasts and to minimize air overpressure and noise levels produced by the blasting operations. Lower the air overpressure limit if it proves too high based on damage or complaints. If the air overpressure levels exceed the limits, immediately report the measurements to the Engineer.

(Use the following paragraph and subsections .48 when directed by the Geotechnical Group.)

Add the following subsection:

00335.48 Vibration and Air Overpressure Monitoring Report - Furnish a vibration monitoring report for each shot before the next blast that includes the following:

- Manufacturer, model, and serial number of blasting-type seismograph for each monitoring location.
- Name of qualified seismograph operator and interpreter.
- Distance and direction of recording station from blast area.
- Geophone coupling method.
- Maximum particle velocity and peak frequency of each component.
- Maximum value of air overpressure and the peak air overpressure frequency.
- A dated and signed copy of time-histories of all seismograph and air overpressure monitoring system readings.

SP00340 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-17-25)**

SECTION 00340 - WATERING

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00340 of the Standard Specifications.

SP00344 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-17-25)**

SECTION 00344 - TREATED SUBGRADE

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00344, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00344.00 Scope - This Work consists of treating the upper layer of Subgrade with water and either lime, chloride, or portland cement to form a stabilized Course of Material at the locations and to the lines, grades, thicknesses, and Cross Section shown or directed.

00344.01 Definitions:

Treated Subgrade - Subgrade that is improved by the addition of Soil stabilizing Materials.

Materials

00344.10 Soil Stabilizing Materials - Furnish Soil stabilizing Materials meeting the following requirements:

Material	Type	Requirements
Hydrated Lime	AASHTO M 216, Type 1	Grade A
Granular Quicklime (CaO)	AASHTO T 27 and AASHTO T 219 (grading and hydroxide content)	100% passing 3/8" sieve 15% max. passing No. 100 sieve min. 85% Calcium Hydroxide
Calcium Chloride	AASHTO M 144 (sampling) AASHTO T 143 (testing)	–
Sodium Chloride	AASHTO M 143	–
Portland Cement	AASHTO M 85	Section 02010

Store Materials according to 00165.75.

00344.11 Water - Furnish water meeting the requirements of Section 00340.

Construction

00344.40 Preparation - Before starting Subgrade Work, including backfill, complete all underground Work contemplated in the area of the Subgrade. This requirement includes Work by the Contractor, by the Agency, or by others. Drain all depressions or ruts which contain water.

00344.41 Addition of Stabilizing Material - Apply stabilizing Materials at a uniform rate as specified using Equipment and methods that will ensure uniformity of distribution. The use of blade graders to distribute lime will not be allowed. Allow only Equipment that is used for watering, applying and mixing the stabilizing Material to pass over the Material until after it is mixed into the Soil. Add water, if necessary, during mixing operations to provide optimum moisture content.

(Fill in the first blank with the percent of stabilizing Material to be used. Fill in the second blank with the type of stabilizing Material being used.)

Add _____ percent _____ to the Subgrade, calculated as a percentage of the in-place dry Soil unit weight, unless otherwise directed.

00344.42 Mixing - Perform mixing operations until the Treated Subgrade Material is uniform and free of streaks or pockets and all Material, other than stones, will pass a 1-inch sieve. Do not allow the content of stabilizing Material to vary by more than plus or minus 1 percent from the amount specified.

00344.43 Finishing - Immediately after mixing the Treated Subgrade, grade the mixture to specified line, grade and Cross Section and compact the mixture to the specified density. Compact and finish within 12 hours after compaction begins. If the Contractor has not compacted and finished the Material within 12 hours, loosen the mixture and add stabilizing Material and water as directed. Remix the freshened Material, regrade and recompact, at no additional cost to the Agency. During compaction, maintain the mixture at proper grade and Cross Section and at optimum moisture content.

00344.44 Curing - Limit traffic over Treated Subgrade to Equipment that does not cause any damage to the Subgrade and that does not visibly deflect, ravel or wear the surface. Keep the finished surface moist and protect from rutting, spalling, displacement and disfiguration for a period of 7 Days, or until a subsequent Course of Material is placed, which will prevent drying of the mixture by evaporation or absorption.

00344.45 Compaction:

(a) Achieve the required density of Treated Subgrade Materials as specified in 00330.43(b).

(b) Compact the Subgrade until it is firm and unyielding. Unyielding means no more than 1/4 inch deflection of the Subgrade when proof-rolled with a fully loaded 10 to 12-cubic yard dump truck. Test and proof-roll within 24 hours prior to placing base Material on the Subgrade.

(c) Over-excavate areas of visible deflection to a depth of 12 inches or more below Subgrade, as directed. Place fabric, backfill the over-excavated Subbase area up to the Subgrade elevation with a single Lift of 1 1/2" - 0 crushed Rock and compact. Apply the compactive effort until the density of the top 6 inches of the Subbase Rock is as specified in 00641.44(a). In addition, proof-roll these areas to verify they are firm and unyielding as specified above.

(d) Notify the Engineer if the specified compaction is not attained. The Contractor may be required to use a modified compaction procedure or apply additional compactive effort. If approved Materials meeting the Specifications cannot be compacted to the required density regardless of compactive effort or method, the Engineer may reduce the required density or direct that alternative Material be used. Do not proceed with finishing or compaction of the Subgrade until the Contractor is able to compact the Material to the satisfaction of the Engineer.

00344.46 Tolerances:

(a) Rework areas found to be deficient in thickness by more than 3/4 inch, and add fresh stabilizing Material in an amount equal to one-half the original amount.

(b) Finish the surface of the Treated Subgrade so that it does not vary by more than 0.06 foot from the established line, grade, and Cross Section and be free of ruts,

depressions, and irregularities. When tested with a 12 foot straightedge, the maximum variation of the finished surface from the testing edge is 3/4 inch.

Measurement

00344.80 Measurement - The quantities of Treated Subgrade will be measured on the area basis, measured along the lines and grades of the area actually treated.

The quantities of Soil stabilizing Materials will be measured on the dry weight basis. Packaged Materials will be accepted at the net weight shown by the manufacturer, subject to periodic verification and approval. Provide a certificate with each shipment together with a certified copy of the weight of each delivery. Measurement of stabilizing Material will not include any which is lost, displaced, used in reworking, used in restoration Work or used contrary to direction.

Payment

00344.90 Payment - The accepted quantities of Treated Subgrade and Soil stabilizing Materials will be paid for at the Contract unit price, per unit of measurement, for the following items:

(Delete Pay Item(s) from the list that are not included in the Schedule of Items, but do not change the alpha characters next to the Pay Items.)

Pay Item	Unit of Measurement
(a) Treated Subgrade, ____ Inches Thick	Square Yard
(b) Lime	Ton
(c) Portland Cement	Ton
(d) Calcium Chloride	Ton
(e) Sodium Chloride	Ton

(Use the following paragraph when Pay Item (a) is included in the Pay Item list above.)

In item (a), the depth of the Treated Subgrade will be inserted in the blank.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for:

- draining water from the Subgrade
- Soil stabilization Work
- smoothing the Subgrade in preparation for staking
- blading, shaping and compacting the Subgrade, including Roadbed Materials, to final line, grade and Cross Section

SP00350 (Special Provisions for the 2024 Book) (Bidding on or after: 05-01-25

Last updated: 01-17-25)

SECTION 00350 - GEOSYNTHETIC INSTALLATION

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00350 of the Standard Specifications.

SP00360 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-17-25)

SECTION 00360 - DRAINAGE BLANKETS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00360, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00360.00 Scope - This Work consists of furnishing and placing drainage blanket material to the lines, grades and dimensions shown, or as directed.

Materials

(Use the following subsection .10 when sand drainage blanket material is required.)

00360.10 Sand Drainage Blanket - Furnish sand drainage blanket Material meeting the following gradation limits determined by AASHTO T 27 and AASHTO T 11:

Sieve Size	Percent Passing
No. 10	95 - 100
No. 40	50 - 100
No. 60	20 - 40
No. 200	0.0 - 5.0

(Use the following subsection .11 when granular drainage blanket material is required.)

00360.11 Granular Drainage Blanket - Furnish granular drainage blanket Material that is clean, free draining, durable crushed or uncrushed Rock, meeting the following gradation limits determined by AASHTO T 27:

Sieve Size	Percent Passing
6"	100
4"	90 - 100
1/2"	60 - 80
No. 10	0 - 10
No. 100	0 - 5

Granular drainage blanket material will be accepted without testing if the Engineer visually determines the material meets the above requirements.

00360.15 Quality Control - Provide quality control according to Section 00165.

Equipment

00360.20 General - Use Equipment capable of hauling, spreading and compacting the material to specified density without segregation.

If drainage blanket material is used to drain areas described in 00360.41, hauling with end dump trucks and spreading with bulldozers and other appropriate Equipment will be allowed.

Labor

00360.30 Quality Control Personnel - Provide technicians having CEBT, CAgT, and CDT technical certifications.

Construction

00360.40 Planned Locations - On prepared excavations or embankments constructed as shown on the Plans or as directed, place the drainage blanket as follows:

- Spread and compact to required depth with no layer exceeding 3 feet.
- If a subsurface drain system is installed immediately under or adjacent to the drainage blanket, place the drainage blanket directly against the subsurface drain system.
- Prevent contamination of drainage blanket material.

00360.41 Other Locations - When used to drain an unstable or wet area, excavate or trench the existing low areas as directed for positive drainage before placement of drainage blanket material.

00360.42 Compaction and Density Requirements - Compact the drainage blanket according to 00330.43.

(Delete the language in orange parentheses that does not apply and delete all orange parentheses.)

Measurement

00360.80 Measurement - The (quantity)(quantities) of (sand) (and) (granular) drainage blanket Material will be measured on the volume basis in place and will be limited to the Neat Lines, grades, and dimensions shown or directed, or on the weight basis.

Payment

(Delete the language in orange parentheses that does not apply and delete all orange parentheses. Delete the "(s)" or parentheses from the word "item(s)" as appropriate.)

00360.90 Payment - The accepted (quantity)(quantities) of (sand) (and) (granular) drainage blankets will be paid for at the Contract unit price, per unit of measurement, for the following item*(*s*)*:

(Delete pay item(s) from the list that are not included in the Schedule of Items, but do not change the alpha characters next to the pay items.)

Pay Item	Unit of Measurement
(a) Sand Drainage Blanket	Cubic Yard or Ton
(b) Granular Drainage Blanket	Cubic Yard or Ton

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP00370 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-17-25)**

SECTION 00370 - FINISHING ROADBEDS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00370 of the Standard Specifications.

SP00380 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-17-25)**

SECTION 00380 - ROCK SLOPE SCALING

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.

Do not use Section 00380 in a Project without prior approval from the ODOT State Specifications Engineer.)

Section 00380, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00380.00 Scope - This Work consists of furnishing Materials, Equipment, labor, Incidentals, supervision, and service personnel required to perform Rock Slope scaling on the Project as shown and directed.

The Work will be done under the direction of the Engineer. The Contractors Rock Slope scaling operations shall at all times be according to the Engineer's instructions.

00380.01 Definitions:

Machine Scaling - Scaling performed using a standard or specialized "high-reach" excavator equipped with a hydraulic hammer as well as a bucket or other attachments approved by the Engineer.

Scaling - Removal of vegetation, loose Rock and Soil from the Slope at locations shown or as directed.

Scaler - A person or machine operator qualified under 00380.02(b) actively performing Scaling.

Scaling Supervisor - A Scaler qualified under 00380.02(b) in direct supervision of Scaling and in direct contact with the Engineer.

Spoils - Any Rock, Soil, vegetation, or other debris generated by Scaling.

Hand Scaling - Scaling using hand tools, hydraulic jacks, pneumatic pillows, or other tools or Equipment approved by the Engineer.

Temporary Rockfall Containment System - A suspended or ground-mounted containment system capable of preventing all Spoils from entering the travel lanes of the Roadway.

00380.02 Submittals - Provide the following submittals to the Agency for review and approval:

(a) Rock Slope Scaling Work Plan - At least 21 Calendar Days before beginning Work on each Slope submit the following:

- The Scaling sequence and schedule.
- The types of tools and Equipment to be used.
- The number of machine Scalers, hand Scalers, and Scaling Supervisor to be employed on the Project.
- Temporary Rockfall Containment System plans and details.
- Debris removal and disposal plans.
- Provisions to protect adjacent facilities.
- Proposed herbicide for stump treatment. Include manufacturer's safety data sheets.

(b) Personnel Qualifications - At least 10 Calendar Days before the preconstruction conference, submit the following:

- Submit the company's experience relevant to the Project.
- Submit a project reference list of at least 3 separate projects, completed in the last 5 years, with scaled slope dimensions equal to or larger than those shown in the Plans. Include a brief description of each project and the owner's contact person's name and current phone number for each project listed.
- Submit a list identifying the Scaling Supervisors and Scaling personnel assigned to the Project. Experience shall be relevant to the anticipated Scaling operations and any special construction techniques required.
- Scaling Supervisor must have at least 3 years of experience in this role and a minimum of 1,500 hours of rope access Scaling experience.
- Each hand Scaler must have at least 1 year of experience in this role and a minimum of 1,000 hours of rope access Scaling experience.
- Each Scaling machine operator must have at least 1 year of experience in this role and a minimum of 1,000 hours of Machine Scaling experience with the Equipment submitted in 00380.02(a).

The Engineer will respond within 21 Calendar Days after receipt of the submittal. Do not begin Work on any Scaling until approved by the Engineer.

Materials

00380.10 Herbicide for Stump Treatment - A solution of Triclopyr herbicide (with at least 40% Triclopyr as the active ingredient).

Equipment

00380.20 Temporary Rockfall Containment System - Provide a Temporary Rockfall Containment System capable of preventing all Spoils from entering the travel lanes of the Roadway. The containment system may be ground-mounted or suspended.

00380.21 Scaling Tools and Equipment - Provide hand tools, portable hydraulic wedges, air pillows or other power tools and associated Equipment necessary to perform Rock Slope Scaling. Other tools or Equipment may include air compressors, hydraulic pumps, and Equipment necessary to access the Slope.

(Fill in the blank for number of machine(s). Delete all orange parentheses.)

Provide a minimum of ____ machine*(*s*)* for each shift.

Provide Equipment, machines and tools customarily used for Scaling. Replace Equipment, machines or tools that are unsatisfactory to the Engineer.

00380.22 Machine Scaling Equipment - Furnish an excavator with sufficient reach to perform the required Scaling. Provide all necessary attachments such as excavator buckets, hydraulic hammers (breakers), rippers, and grapples.

Labor

00380.30 Personnel Qualifications – Provide on-site Scaling Supervisors, Scalers, and Scaling machine operators who meet the experience requirements of 00380.02(b).

(Fill in the blank for number of scalers, machine scalers and supervisor. Do not change the alpha characters before the subsections.)

00380.31 Personnel:

(a) Scaling Supervisor - Provide a minimum of ____ Scaling Supervisor(s) for each shift.

(b) Scaling Personnel - Provide a minimum of ____ Scalers for each shift.

The Engineer may suspend the Scaling if the Contractor substitutes unapproved personnel during construction. Submit requests for substitution of on-site Scaling Supervisor, qualified Scaling personnel or qualified Machine Scaling personnel to the Engineer for approval, who will have 7 Calendar Days to respond. Additional costs resulting from the suspension of Work due to the changing of personnel will be at no additional cost to the Agency.

Construction

00380.41 Vegetation Removal - Except as noted in 00380.42, flush-cut brush and trees on the Slope and within 10 feet of the crest of the Slope and leave the root wad intact for all trees and brush cut from the crest of the slope to 10 feet upslope of the crest. Within 2 minutes of cutting each tree or shrub, wick and saturate stumps with the herbicide listed in the approved work plan. Apply this herbicide to all trees and shrubs cut. Complete initial tree felling prior to performing other Scaling Work.

00380.42 Scaling - Begin Scaling at the top of the Slope and proceed downwards toward the bottom of the Slope, removing loose Rock and Soil as the work progresses. Remove vegetation, including root wads, from the area being scaled.

The Engineer will inspect the Work as Scaling progresses to determine if additional Machine Scaling is needed. If additional Slope Scaling is required, continue to scale the Slope as directed.

Only scale sections of the Slope protected by the approved containment system. If Scaling Spoil escapes the containment system, cease Scaling operations until the containment system is repaired or modified to contain the Spoil.

00380.44 Spoil Removal - Before beginning Work and as Scaling progresses, remove and dispose of all Spoils and reestablish ditch grade to promote drainage. Periodically remove accumulated Spoil produced during the Scaling operation. Do not allow Spoil to accumulate to the point that subsequent Material falling into the ditch is deflected into the travel lanes.

00380.45 Spoil Disposal - Unless otherwise specified and subject to the requirements of 00280.05, dispose of Spoils described in 00380.44, as follows:

(Use the following paragraph if there is no Agency-provided stockpile/disposal site.)

Dispose of Materials, classed as Spoil Materials in 00380.44, outside and beyond the limits of the Project and Agency-Controlled Lands and according to 00290.20. Do not dispose of Materials on Wetlands, either public or private, or within 300 feet of rivers or streams.

(Use the following two paragraphs if designating an Agency-provided stockpile/disposal site.)

Place Spoils in the embankment area as shown or dispose of Spoil Material according to Section 00236.

Dispose of all other deleterious Materials outside and beyond the limits of the Project and Agency-controlled property according to 00290.20. Do not dispose of Materials on Wetlands, either public or private, or within 300 feet of rivers or streams.

Measurement

00380.80 Measurement

(a) Hand Scaler - The quantity of hand Scalers will be measured on the time basis. The measured number of hours will start from the time the hand Scaler is equipped and begins to ascend the Slope to the time the hand Scaler descends the Slope in any Work shift.

(b) Scaling Supervisor - The quantity of Scaling Supervisor will be measured on the time basis. The measured number of hours will start from the time the hand Scalers are equipped and begin to ascend the Slope to the time the hand Scalers descend the Slope in any Work shift. For Machine Scaling, the measured number of hours will start from the time the machine Scaler positions the Equipment and begins Scaling to the time the Scaler moves the Equipment away from the area being scaled.

(c) Machine Scaling - The quantity of Machine Scaling will be measured on the time basis. The measured number of hours will start from the time the operator positions the Equipment and begins Scaling to the time the operator moves the Equipment away from

the area being scaled. No measurement of quantities for the support personnel necessary for the Machine Scaling Equipment will be made.

(d) Temporary Rockfall Containment System - No measurement of quantities will be made for the Temporary Rockfall Containment System.

(e) Spoil Removal - Spoil removal will be measured on the volume basis based on the volume of Material in the hauling vehicle.

Payment

00380.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement
(a) Scaler	Hour
(b) Scaling Supervisor	Hour
(c) Machine Scaling	Hour
(d) Temporary Rockfall Containment System	Lump Sum
(e) Spoil Removal	Cubic Yard

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for:

- Hand Scaling tools and Equipment
- Operator and support personnel necessary for the Machine Scaling Equipment

SP00390 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-17-25)

SECTION 00390 - RIPRAP PROTECTION

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00390 of the Standard Specifications.

SP00396 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-17-25
Requires SP02050 and SP02510*)*

SECTION 00396 - SHOTCRETE SLOPE STABILIZATION

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00396 of the Standard Specifications.

SP00398 (Special Provisions for the 2024 Book) (Bidding on or after: 06-01-25 Last updated: 02-26-25)

SECTION 00398 - ROCK SLOPE STABILIZATION AND REINFORCEMENT

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00398 of the Standard Specifications modified as follows

00398.80 Measurement - Add the following paragraph to the end of this subsection:

Concrete barrier will be measured according to 00820.80.

00398.90 Payment - Delete the paragraph that begins "Item (g) includes…".

Add the following paragraph after the paragraph that begins "Item (k) includes …":

Concrete barrier will be paid for according to 00820.90.

SP00405 (Special Provisions for the 2024 Book) (Bidding on or after: 06-01-25 Last updated: 03-03-25)

SECTION 00405 - TRENCH EXCAVATION, BEDDING, AND BACKFILL

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00405 of the Standard Specifications modified as follows:

(Use the following subsection .41(a) when the open excavation method for installing pipes transversely is not permitted.)

00405.41(a) Within Paved Areas to be Preserved - Add the following to the end of this subsection:

Do not use the open excavation method for installing pipes transversely.

00405.90 Payment - In the paragraph that begins "No separate or additional…" delete the following bullet:

- sawcutting

Add the following sentence to the end of the subsection:

Sawcutting will be paid for according to Section 00310.

SP00406 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25)**

SECTION 00406 - TUNNELING, BORING, AND JACKING

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00406 of the Standard Specifications.

SP00410 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25 This Section requires SP00412, SP00413, or SP00414 as required by Table 00410-1)**

SECTION 00410 - REHABILITATE EXISTING PIPE

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project,

unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00410, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00410.00 Scope - This Work consists of rehabilitating existing pipes according to Section 00412, Section 00413, or Section 00414, as indicated in Table 00410-1 as shown and selected.

00410.01 Installation Options - Choose one of the approved rehabilitation methods indicated in Table 00410-1.

00410.02 Submittals - Submit a pipe rehabilitation summary indicating which method is selected for each location/station as indicated in Table 00410-1. Submit required documentation according to Section 00412, Section 00413, or Section 00414, for the renewal methods indicated in Table 00410-1.

Materials

00410.10 General - Furnish Materials according to Section 00412, Section 00413, or Section 00414, as indicated in Table 00410-1 and selected.

00410.13 Location - Rehabilitate existing pipe(s) according to Table 00410-1:

(Fill in the table for each pipe location with the location of the pipe and the Specification Section that can be used on that pipe. Add or delete rows in the table as necessary to list all pipe locations.

Example:

Location/Station	***Pipe Size (Rise x Span Inches)***	***Length (feet)***	***Specification Section(s) Allowed***
Station 1+00 to 4+00	***18 in x 18 in***	***125 ft***	***SP00412, SP00413***
Station 11+00 to 14+00	***24 in x 24 in***	***200 ft***	***SP00412***

)

Table 00410-1

Location/Station	Pipe Size (Rise x Span Inches)	Length (feet)	Specification Section(s) Allowed

Location/Station	Pipe Size (Rise x Span Inches)	Length (feet)	Specification Section(s) Allowed

Construction

00410.40 General - Construct pipe rehabilitation according to Section 00412, Section 00413, or Section 00414 as indicated in Table 00410-1 and selected.

Measurement

00410.80 Measurement - The quantities of Work performed under this Section will be measured according to the following:

(a) Rehabilitate pipe - The quantities of installed cured-in-place pipe (CIPP) liners or spray applied pipe structural liner (SAPL) liners, will be measured on the length basis. The length will be measured, with no deduction for Structures or fittings, along the pipe flow line from center to center of manholes, inlets, Structures, special sections, or the ends of pipe, whichever is applicable.

(b) Service Line Reconnections - The quantities of service line reconnections will be measured on the unit basis, regardless of size.

Payment

00410.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

(Delete the pay item(s) from the list that are not included in the Schedule of items, but do not change the alpha characters next to the pay item.)

Pay Item **Unit of Measurement**

(a) Rehabilitate, _____ Inch x _____ Inch pipe ..... Foot
(b) Service Line Reconnections .....Each

In item (a), the rise x span size of the host pipe will be inserted in the blanks.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP00411 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25)**

SECTION 00411 - PIPE BURSTING

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00411 of the Standard Specifications.

SP00412 (Special Provisions for the 2024 Book) **(Bidding on or after: 06-01-25**
Last updated: 02-28-25
This Section requires SP00410
when 00412 is listed in Table 00410-1)

SECTION 00412 - CURED-IN-PLACE PIPE LINING THERMO CURE

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00412 of the Standard Specifications modified as follows:

(Use the following subsection .02 to list the CIPP design parameters. Obtain the parameter information from the Designer.)

00412.02 Design Parameters - Add the following to the end of this subsection:

Height of fill from invert ..... _____
Groundwater Elevation above invert..... _____

(Use the following line when chemical resistance parameters are required)

Chemical Resistance ..... ASTM F1743

(Use the following subsection .80 when SP00410 is used and Section 00412 is listed as an option in Table 00410-1.)

00412.80 Measurement - Replace this subsection, except for the subsection number and title, with the following:

CIPP Liner and Service Line Reconnections will be measured according to 00410.80.

(Use the following subsection .90 when SP00410 is used and Section 00412 is listed as an option in Table 00410-1.)

00412.90 Payment - Replace this subsection, except for the subsection number and title, with the following:

CIPP Liner and Service Line Reconnections will be paid for according to 00410.90.

SP00413 (Special Provisions for the 2024 Book) **(Bidding on or after: 06-01-25**
Last updated: 02-28-25
This Section requires SP00410
when 00413 is listed in Table 00410-1)

SECTION 00413 - GRP CURED-IN-PLACE PIPE LINING UV CURE

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00413 of the Standard Specifications modified as follows:

(Use the following subsection .02 to list the GRP CIPP design parameters. Obtain the parameter information from the Designer.)

00413.02 Design Parameters - Add the following to the end of this subsection:

Height of fill from invert ..... _____
Groundwater Elevation above Invert..... _____

(Use the following line when chemical resistance parameters are required)

Chemical Resistance ..... ASTM D5813

(Use the following subsection .80 when SP00410 is used and Section 00413 is listed as an option in Table 00410-1.)

00413.80 Measurement - Replace this subsection, except for the subsection number and title, with the following:

CIPP Liner will be measured according to 00410.80.

(Use the following subsection .90 when SP00410 is used and Section 00413 is listed as an option in Table 00410-1.)

00413.90 Payment - Replace this subsection, except for the subsection number and title, with the following:

CIPP Liner will be paid for according to 00410.90.

SP00414 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25
This Section requires SP00410
when 00414 is listed in Table 00410-1*)*

SECTION 00414 – PIPE RENEWAL – SPRAY APPLIED PIPE STRUCTURAL LINER

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00414 of the Standard Specifications modified as follows:

(Use the following subsection .02 to list the spray applied pipe structural liner design parameters. Obtain the parameter information from the Designer.)

00414.02 Design Parameters - Add the following to the end of this subsection:

Height of fill from invert ..... _____ ft
Groundwater Elevation above Invert..... _____ ft

(Use the following subsection .80 when SP00410 is used and Section 00414 is listed as an option in Table 00410-1.)

00414.80 Measurement - Replace this subsection, except for the subsection number and title, with the following:

SAPL Liner will be measured according to 00410.80.

(Use the following subsection .90 when SP00410 is used and Section 00414 is listed as an option in Table 00410-1.)

00414.90 Payment - Replace this subsection, except for the subsection number and title, with the following:

SAPL Liner will be paid for according to 00410.90.

SP00415 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25)

SECTION 00415 - VIDEO PIPE INSPECTION

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then

include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00415 of the Standard Specifications modified as follows:

Add the following subsection:

00415.02 Definitions:

Flexible Pipe - Pipes constructed of corrugated metal are considered Flexible Pipes.

Rigid Pipe - Pipes constructed of concrete and ductile iron are considered Rigid Pipes.

Thermoplastic Pipe - Pipes constructed of polyvinyl chloride, polyethylene, and polypropylene are considered Thermoplastic Pipe.

00415.20(b) Transporter - Replace the paragraph that begins "Use an all-wheel…" with the following paragraph:

Use an all-wheel drive or track mounted transporter capable of inspecting pipes ranging in size from 12 to 60 inches in diameter. Provide a transporter with an adjustable operating speed while recording not to exceed 30 feet per minute.

00415.41 Pre-Installation Video Inspection - Replace the paragraph that begins "Perform a pre-installation video inspection…" with the following paragraph:

Perform a pre-installation video inspection at least 5 Calendar Days before beginning Work. Begin Inspection at one end of the pipe and proceed through the entire pipe length at a speed not greater than 30 feet per minute. Move the camera through the pipe, along the approximate center of the pipe, and provide a continuous 360 degree pan of each pipe joint. Stop and record all cracks, deformities, and defects to document the pipe condition, including the location of all lateral connections to the mainline.

00415.42 Post Installation Video Inspection - Replace the paragraph that begins "Perform post construction video inspection…" with the following paragraph:

Perform post construction video inspection according to 00415.40 and 00415.41. Video inspect the pipe interior no sooner than 30 Days after the trench backfill and compaction have been completed, and before any paving is performed. If the Contract duration does not permit a 30-Day waiting period, the Engineer may allow the inspection when the compacted backfill reaches a minimum of 2 feet above the pipe crown.

00415.42(a) Deflection Testing for Flexible Pipe - Replace this subsection with the following subsection:

00415.42(a) Post Installation Deflection Testing - Perform post construction deflection testing for all Flexible Pipe and Thermoplastic Pipe as described.

- Flexible Pipe for new pipe installations and extensions greater than 15 feet in length.

- Thermoplastic Pipe for new pipe installations and extensions greater than 10 feet in length.

If any portion of the new pipe interior is not accessible for a visual inspection, then perform deflection testing for the entire installation of new pipe or extension regardless of pipe length.

Use one of the approved following methods:

00415.42(a)(1) Remote Video Inspection with Laser Profiler – Replace the paragraph that begins "Calibrate and perform…" with the following paragraph:

For pipe 48 inches or less in diameter, calibrate, and perform deflection inspection according to ASTM F3080. Use video inspection equipment meeting the requirements of 00415.22.

00415.42(a)(2) Manual Deflection Test - Replace the paragraph that begins "Use equipment meeting…" with the following paragraph:

For pipes larger than 48 inches and when the entire length of the pipe is accessible, use equipment meeting the requirements of 00415.23.

00415.71 Corrections to Deficiencies in Work - Replace the paragraph that begins "Where the pipe deflection…" with the following paragraph:

Where the pipe deflection is greater than 5 percent and less than 7.5 percent of the nominal diameter, submit a remediation plan to the Engineer. The remediation plan must be a stamped Working Drawing according to 00150.35. Replace pipe where the deflection exceeds 7.5 percent of the nominal diameter at no additional cost to Agency.

SP00420 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25)**

SECTION 00420 - SALVAGING PIPE

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00420, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00420.00 Scope - This Work consists of removing, cleaning, and stockpiling or relaying culvert pipe and other pipe.

Acceptable pipe, parts and special sections will be referred to as "salvaged".

Materials

00420.10 Materials - Furnish joint Materials, connecting bands, and other Materials required in relaying pipe meeting the requirements of the Specifications for the type of pipe and materials involved. Salvaged material may be used if approved.

Construction

00420.40 Trench Excavation - Excavate and backfill trenches to remove pipe and to relay salvaged pipe according to Section 00405.

00420.41 Removal of Pipe - Excavate materials over the pipe, and remove, disassemble and clean the exposed pipe without damaging the pipe. Acceptable partial sections of pipe may be cut off for reuse.

00420.42 Stockpiling - Stockpile salvaged materials not used on the Project as directed.

00420.43 Relaying - Install salvaged materials at the locations, in the quantities designated, and conforming to Specifications for new installations. As directed, cut sections of salvaged pipe to obtain the length required for relaying. Make connections to new pipe, inlet and outlet Structures, salvaged or new end sections, or other special sections as provided in the Specifications for new pipe installations.

Measurement

00420.80 Measurement - The quantities of salvaged pipe will be measured on the length basis, regardless of size, kind, or type that is removed, cleaned, and stockpiled or relaid. Stockpiled pipe will be measured from end to end of each pipe. Relaid pipe will be measured according to Section 00445.

The maximum depth to flow line for each run of relaid pipe will be determined along the pipe centerline, by measuring vertically from the flow line to the surface of the original ground, paved surface or Subgrade and slopes of other excavations, whichever is less.

Payment

00420.90 Payment - The accepted quantities of salvaged, stockpiled, and relaid pipe will be paid for at the Contract unit price, per unit of measurement, for the following items:

(Delete Pay Item(s) from the list that are not included in the Schedule of Items, but do not change the alpha characters next to the pay items.)

Pay Item	Unit of Measurement
(a) Salvaging and Stockpiling ____ Inch Pipe	Foot
(b) Salvaging and Relaying ____ Inch Pipe, ____ Depth	Foot

(Use the following paragraph when pay item (a) is included in the pay item list above.)

In item (a), the nominal diameter of pipe will be inserted in the blank.

(Use the following paragraph when pay item (b) is included in the pay item list above.)

In item (b), the nominal diameter of the pipe will be inserted in the first blank, and the maximum flow line depth "5 feet", "10 feet", "20 feet", or "over 20 feet" will be inserted in the second blank.

Payment will be payment in full for furnishing all Materials, Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for removing, cleaning, transporting, and stockpiling or relaying the pipe or for excavation or backfill.

SP00430 (Special Provisions for the 2024 Book) (Bidding on or after: 05-01-25 Last updated: 01-21-25)

SECTION 00430 - SUBSURFACE DRAINS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00430 of the Standard Specifications.

SP00435 (Special Provisions for the 2024 Book) (Bidding on or after: 05-01-25 Last updated: 01-27-25)

SECTION 00435 - PREFABRICATED VERTICAL DRAINS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00435, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00435.00 Scope - This Work consists of furnishing and installing prefabricated vertical drains at locations and according to details shown or directed.

Materials

00435.10 Drains - Furnish new prefabricated vertical drains from the QPL or that meet the requirements of the Specifications.

00435.11 Core - Furnish a continuous plastic core Material with grooved channels, a pattern of protruding studs, or mesh-type materials fabricated to promote drainage along the axis of the vertical drain. Furnish vertical drain Material meeting the requirements of ASTM D638 and ASTM D4716.

$$\frac{(a+b)}{2}$$

00435.12 Jacket - Furnish the jacket Material meeting the following requirements:

- Be a synthetic, nonwoven geotextile capable of resisting all bending, punching and tensile forces imposed during installation.
- Not crack, peel or otherwise become damaged during installation.
- Be sufficiently rigid when embedded to withstand lateral earth pressures and to ensure vertical flow capacity through the core.
- Allow free passage of pore water to the core without passage of Soil material or piping.

Test the jacket material in both saturated and dry conditions. It shall conform to the following:

		Requirement
Test	**Specification**	**Minimum Value**
Grab Tensile	ASTM D4632	80 pounds
Trapezoidal Tear	ASTM D4533	25 pounds
Puncture Strength	ASTM D4833	50 pounds
Burst Strength	ASTM D3786	130 psi
Permeability	ASTM D4491	0.05 mm/sec.

00435.13 Assembled Drain - Furnish assembled drains meeting the following requirements:

- Be resistant against wet rot, mildew, bacterial action, insects, salts, acids, alkalis, solvents and any other significant ingredients in the groundwater.
- Be band-shaped (rectangular Cross Section) with an aspect ratio (width divided by thickness) not exceeding 50.
- Have a minimum equivalent diameter of 2 inches using the following definition of equivalent diameter:

$$d_w =$$

Where:
d_w = diameter of a circular drain equivalent to the band shaped drain
a = width of the band shaped drain
b = thickness of the band shaped drain

00435.14 Acceptance Requirements - Each shipment of prefabricated vertical drain materials shall be accompanied by a manufacturer's Quality Compliance Certificate according to 00165.35.

Submit three samples of any proposed splices for approval at least 21 Calendar Days before the installation of any drains.

Identify the drain materials with labels or tags that include the manufacturer's name, lot or control number, individual roll number and date of manufacture.

Equipment

00435.20 General - Install prefabricated vertical drains using a mandrel or sleeve that:

- Has a maximum cross-sectional area of 10 square inches.
- Is sufficiently stiff to prevent wobble or deflection during use.
- Protects the prefabricated vertical drain material from tears, cuts and abrasion during installation.
- Has an anchor plate or similar arrangement at the bottom to prevent Soil from entering the drain during its installation, and to anchor the drain tip at the required depth at the time of withdrawal. Use anchors conforming to the dimensions of the mandrel or sleeve.

Construction

00435.40 Prefabricated Vertical Drain Installation Requirements:

(a) Acquisition and Storage - During shipment and storage, wrap the drain in heavy paper, burlap or similar heavy-duty protective covering and protect it from sunlight, mud, dirt, dust, debris and other detrimental substances.

Material damaged during shipping, unloading, storing or handling will be rejected.

(b) Proposed Installation Details - Submit full details on the material, Equipment, sequence and method proposed for prefabricated vertical drain installation to the Engineer for review at least 14 Calendar Days before beginning trial prefabricated vertical drain installation.

(c) Trial Installation - Before production installation of prefabricated vertical drains, demonstrate that material, Equipment and methods produce a satisfactory installation, at permanent installation sites. Install at least 5 trial drains totaling approximately 250 feet at locations designated.

(d) Production Installations - The Engineer's approval of the method or Equipment used to install the trial drains does not necessarily constitute acceptance for the remainder of the Project. If at any time the Engineer determines that the method of installation or Equipment does not produce satisfactory prefabricated vertical drains, alter the method or Equipment as directed to comply with the Plans and Specifications.

(e) Installation Procedure - Prefabricated vertical drains will be located, numbered and staked by the Engineer.

- Preserve stakes and protect field instrumentation Equipment. Stakes and instrumentation damaged by the Contractor will be repaired or replaced by Agency forces. The cost of repair or replacement will be deducted from monies due the Contractor. Do not work in the affected area until repair or replacement has been made.
- Locate the prefabricated vertical drains within 6 inches of the staked locations. Prefabricated vertical drains more than 6 inches from the staked locations, damaged or improperly installed, will be rejected and abandoned in place without payment. Replace rejected drains at no additional cost to the Agency.
- Install prefabricated vertical drains in the presence of the Engineer's representative.
- Provide the Engineer with a suitable means to determine the depth of the drains at any time during installation and the final length installed at each location.
- Plumb Equipment for installing prefabricated vertical drains before installing each drain. Do not deviate from the vertical more than 0.2 foot in 10 feet during installation of the drains.
- Install prefabricated vertical drains using a mandrel or sleeve inserted into the Soil using a continuous push static weight or vibration while keeping disturbance of the subsoil to a minimum. Installation by driving will not be allowed. Jetting techniques will be allowed only after receiving written approval from the Engineer. The mandrel or sleeve penetration rate shall normally be between 0.5 and 2 feet per second.
- Install the prefabricated vertical drains from the designated working surface to the depth shown or as directed.
- Perform the installation without damaging the drain while advancing or retracting the mandrel or sleeve. Alternately raising or lowering the mandrel while advancing will not be allowed. Retract the mandrel or sleeve after each drain is installed. Raising the mandrel will be allowed only after completing a drain installation.
- Cut off completed prefabricated vertical drains neatly 1 foot above the designated working surface.

(f) Obstruction Clearance Procedures - Satisfactory installation may require clearing man-made or natural obstructions that prevent the proper insertion of the mandrel or sleeve and installation of prefabricated vertical drains.

Where obstructions are encountered:

- Immediately notify the Engineer before completing the drain and before installing other drains.
- Upon the Engineer's approval, attempt to install a drain adjacent to the obstructed location.

- Based on the results of this attempt and when directed, attempt to install a second offset drain within 2 feet horizontally of the obstructed drain, or if directed, implement obstruction clearance procedures and install the drain at the specified location.

The Contractor may use augering, spudding or other approved methods to loosen the Soil and remove any obstruction material before installing prefabricated vertical drains. Do not penetrate more than 2 feet into the underlying compressible Soil.

If augering, use augers with a minimum outside diameter equal to the largest horizontal dimension of the mandrel sleeve, shoe or anchor, whichever is greatest. The maximum outside diameter of the auger shall not be more than 3 inches greater than the minimum outside diameter.

00435.41 Splicing - Splice prefabricated vertical drain material by stapling to ensure structural and hydraulic continuity of the drain. Overlap the jacket and core a minimum of 6 inches at each splice.

A maximum of one splice per drain installed is allowed.

Measurement

00435.80 Measurement - The quantities of prefabricated vertical drains and obstruction clearance will be measured on the length basis as follows:

(a) Prefabricated Vertical Drains - The length of drains will be the distance the installation mandrel tip penetrates below the specified surface plus the required cutoff length above the designated working surface.

(b) Obstruction Clearance - The length of obstruction clearance will be the length from the designated working surface at the time of installation to the depth penetrated by the auger or spud, or if directed, to the bottom of the obstruction.

Obstruction clearance will be measured for payment only when authorized by the Engineer.

Payment

00435.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement
(a) Prefabricated Vertical Drains	Foot
(b) Obstruction Clearance	Foot

Item (a) includes trial installations and splices.

Item (b) includes pre-augering, spudding or performing other acceptable methods to clear obstructions so that prefabricated vertical drains may be satisfactorily installed, including disposing of any surplus preaugered or obstruction clearance materials.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for:

- unacceptable trial drain installations
- drains that are not installed and anchored to the required depth
- clearing obstructions caused by the Contractor or obstructions within 2 feet of the specified surface
- prefabricated vertical drains placed in excess of the designed length unless additional lengths are directed by the Engineer
- prefabricated vertical drains installed more than 6 inches from the staked location, damaged or improperly installed

SP00442 (Special Provisions for the 2024 Book) **(Bidding on or after: 06-01-25**
Last updated: 02-26-25*)*

SECTION 00442 - CONTROLLED LOW STRENGTH MATERIALS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00442 of the Standard Specifications modified as follows:

00442.14 Acceptance - Replace this subsection, except for the subsection number and title, with the following:

Acceptance will be based on the Engineer's review and approval of the documentation required by 00442.12, and visual inspection during placement.

SP00443 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 02-04-25
Requires SP02011*)*

(Use this Section when a faster setting CLSM is appropriate and future excavation is not likely. If this RSCLSM specification is used in place of 00442 or used as an additional option for some other backfill application (does not currently reference 00442), be sure to obtain the appropriate Technical Resource's approval to allow this RSCLSM and to modify their specific specification. Document the Technical Resource's approval on the Project Specific Special Provision form.)

SECTION 00443 - RAPID SETTING CONTROLLED LOW STRENGTH MATERIALS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00443, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00443.00 Scope - This Work consists of furnishing and placing rapid setting controlled low strength materials (RSCLSM).

00443.01 Definition - RSCLSM is flowable mixture of Sand, cementitious materials, water, and additives.

Materials

00443.10 Materials - Furnish Materials meeting the following:

Chemical Admixtures 02040
Supplementary Cementitious Materials 02030
Portland Cement 02010
Rapid Hardening Hydraulic Cement ..... 02011 Water 02020

00443.11 Fine Aggregates - Furnish Fine Aggregates that are commercial quality concrete Sand.

00443.12 RSCLSM Mixture - Provide a RSCLSM mixture that achieves at least 500 psi, measured by concrete pocket penetrometer, within 5 hours of placement.

00443.13 Submittals - Furnish the following to the Engineer, before using RSCLSM:

- Mix design showing all proportions and additives.
- Time and unconfined compressive strength data using concrete pocket penetrometer from a trial batch or from a previous installation that used a RSCLSM mixture of similar proportioning.

00443.14 Acceptance - Acceptance will be based on the Engineer's review of the mix design and checked by visual observation and concrete pocket penetrometer after placement.

Measurement

00443.80 Measurement - No measurement of quantities will be made for RSCLSM.

Payment

00443.90 Payment - No separate or additional payment will be made for RSCLSM. Payment will be included in payment made for the appropriate items under which this Work is required.

SP00444 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25)**

SECTION 00444 - LOW DENSITY CELLULAR CONCRETE

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00444, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00444.00 Scope - This Work consists of furnishing, placing, and testing Low Density Cellular Concrete at the locations shown.

00444.01 Abbreviations and Definitions:

(a) Abbreviations:

LDCC - Low Density Cellular Concrete
SCM - Supplementary Cementitious Materials
SSD - Saturated Surface Dry
w/cm Ratio - Water-Cementitious Material Ratio

(b) Definitions:

Low Density Cellular Concrete - Concrete made with hydraulic cement, water, and foaming agents, and which may include fly ash, chemical admixtures, and other Materials. LDCC is flowable at the time of placement and has a maximum cast density of 50 pounds per cubic foot.

00444.04 Required Submittals - Submit the following information for each LDCC mix design at least 21 Calendar Days before beginning LDCC placement:

(a) LDCC Placement Plan - Include the following:

- LDCC installation sequence, including production rates, hose or pipe lengths and sizes, depths of lifts, temporary bulkhead locations, and other relevant details
- If the depth of any lift exceeds 2 feet, a written letter of certification from the foaming agent manufacturer stating that the depth of lift may be increased to the maximum depth of lift used. According to 00444.40(d), the depth of a single lift shall not exceed 4 feet.
- Confinement methods required to contain concrete Materials, debris, and other products from contacting sensitive environmental areas, according to Section 00290 and applicable regulatory permits
- A list of proposed mixing and pumping Equipment to be used on the Project and setup locations
- Maximum length of piping run used on a completed project using similar Equipment
- Form types and locations for LDCC installation

(b) LDCC Mix Design - Include the following for each LDCC mix design:

(1) Supplier Information - Supplier's unique mix design identification number and batch plant location

(2) Foaming Agent Manufacturer's Certification - Written certification from foaming agent manufacturer indicating approval of mix design constituents

(3) Proportions:

- Weight per cubic yard (pounds per cubic yard) of cement, SCM, mix water, and chemical admixtures
- Absolute volumes of cement, SCM, mix water, air content, and chemical admixtures
- Dosage rates for chemical admixtures (ounces per cubic yard)
- w/cm Ratio including all chemical admixtures

(4) Cement - For each cement used, provide the following:

- Manufacturer
- Brand name
- Type
- QPL Product number
- Source or location plant

(5) SCM - For each SCM used, provide the following:

- Manufacturer

- Brand name
- Source
- QPL Product number
- Class

(6) Chemical Admixtures - For each admixture used, provide the following:

- Manufacturer
- Brand name
- QPL Product number

(7) Water - Identify the source of water to be used and provide a certificate of compliance certifying that the water meets the requirements of 02020.10.

(8) Trial Batch Compressive Strength Test Results - Report the individual test results and the ASTV of cylinders from the trial batch for new mix designs. For current designs, provide the individual tests and the average of the cylinder sets presented for evaluation.

(c) Personnel:

- **Quality Control Personnel** - Provide the name and certification number of the CCT who prepared the mix design, the QCT who cast the test cylinders, the laboratory where the cylinders were tested, and the CSTT who tested the cylinders.
- **LDCC Personnel Qualifications** - Provide a list identifying the on-site supervisors and mixing operators assigned to the Project, and their relevant experience. On-site supervisors shall have at least 2 years' experience directly supervising the placement of LDCC, with responsibility for on-site construction operations. Mixing operators shall have at least 1 years' experience in the use of LDCC.
- **LDCC Contractor Experience** - Submit a project reference list of at least 3 separate LDCC projects similar in scope and scale to the Project, successfully completed in the last 5 years', involving placement of LDCC in quantities roughly equivalent with the quantities for this Project. For each project listed, include a brief description of each project and the owner's contact person's name and current phone number.

The Engineer will respond to the LDCC submittals within 21 Calendar Days after receipt of all information. Provide any additional information and submit a revised plan, if requested, for approval. All procedural approvals given by the Engineer will be subject to trial in the field and will not relieve the Contractor of the responsibility to satisfactorily complete the work. Submit request for modification of approved procedures to the Engineer and allow 21 Calendar Days for approval of modifications. Do not begin LDCC placement until all submittals have been approved.

Materials

00444.10 Materials - Furnish Materials meeting the following requirements:

Chemical Admixtures 02040

Portland Cement 02010
Supplementary Cementitious Materials.....02030
Water.....02020

00444.11 Chemical Admixtures - When required by mix design, furnish chemical admixtures for accelerating, water reducing, and other specific properties may be used when approved by the foaming agent manufacturer.

00444.12 Portland Cement - When required by mix design, furnish portland cement that has been approved by the foaming agent manufacturer.

00444.13 Supplementary Cementitious Materials - When required by mix design, furnish SCM that have been approved by the foaming agent manufacturer.

00444.14 Foaming Agent - Furnish, use, and test foaming agent according to ASTM C869 and ASTM C796.

00444.15 Properties of LDCC - Furnish a mixture with uniform composition and consistency, which will produce the properties shown below, at point of placement, according to the LDCC Class shown:

Table 00444-1

	Class				
	I	**II**	**III**	**IV**	**V**
Maximum Cast Density (pcf)	24	30	36	42	50
Minimum Compressive Strength at 28 Days (psi)	10	40	80	120	160

00444.16 Quality Control - Maintain quality control according to Section 00165 and this Section.

Labor

00444.30 Personnel Qualifications - Provide on-site supervisors and mixing operators who meet the experience requirements of 00444.04(c).

Provide technicians having CSTT and QCT technical certifications.

Construction

00444.40 Installation - Place the Material according to the Specifications and the foaming agent manufacturer's recommendations.

(a) Placement Conditions - Do not place LDCC when the ambient temperature is lower than 35 °F or when the ambient temperature is expected to be less than 35 °F within 24 hours of placement.

Do not place LDCC when the ambient temperature is higher than 95 °F or is expected to be higher than 95 °F within 24 hours of placement.

Do not place LDCC when it is actively raining. If precipitation occurs during the placement, cover the LDCC with plastic sheeting or other approved methods.

(b) Mixing - Mix LDCC according to the foaming agent manufacturer's specification. Do not mix LDCC in excess of the foaming agent manufacturer's recommendations.

(c) Pre-placement Inspection - Inspect the area and remove all deleterious Material and standing water. Remove crushed or broken LDCC from prior lifts as directed. Ensure that bulkheads are strong enough to retain the LDCC during placement. Tie down or otherwise secure Material that will be covered with LDCC to ensure that it remains in place within the LDCC and does not float.

(d) Placing - Avoid excessive handling of the LDCC. Unless otherwise shown, place LDCC in lifts not to exceed 4 feet in depth. The final surface elevation of LDCC shall be within 0.1 foot of the elevation shown.

Do not drive on or place loads on the LDCC until the LDCC has attained the minimum compressive strength shown in Table 00444-1 or 20 psi, whichever is less.

Remove and replace, at no cost to the Agency, Material that does not conform to the Specifications.

00444.41 Water Removal System - Furnish and operate a system to ensure that no flowing or standing water comes into contact with the LDCC. The water removal system shall remain in operation until the final LDCC lift has been placed and accepted.

00444.42 Quality Control Testing - During placement of the LDCC, perform hourly wet-cast density tests and adjust the mix as necessary to maintain the specified cast density.

At 2-hour intervals, take cylinder specimens for compressive strength testing. Test compressive cylinder specimens according to ASTM C495.

LDCC not meeting the requirements of 00444.15 will be rejected.

Provide the Engineer with daily reports, including cast density reports, within 24 hours of sampling. Provide the Engineer with a final report detailing compression testing and cast density results. Submit final report within 30 Calendar Days after the last LDCC placement.

(Use only one of the following options as instructed below. Delete the option that does not apply.)

[Option 1 - Use the following subsections .80 and .90 when LDCC will be measured on the lump sum basis.]

Measurement

00444.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

The estimated quantities of Low Density Cellular Concrete are:

(List the estimated quantities of LDCC.)

Type and Class	Quantity (Cu. Yd.)

Payment

00444.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract lump sum amount for the item "Low Density Cellular Concrete, Class _____".

[Option 2 - Use the following subsections .80 and .90 when LDCC will be measured on the volume basis.]

Measurement

00444.80 Measurement - LDCC will be measured on the volume basis. Measurement will be limited to the Neat Lines shown or directed.

Payment

00444.90 Payment - The accepted quantities of Low Density Cellular Concrete will be paid for at the Contract unit price, per cubic yard, for the item "Low Density Cellular Concrete, Class _____".

The class of the LDCC will be inserted in the blank.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for:

- required submittals, testing, or test reports
- curing, joint filler, admixtures and other similar items
- additional LDCC placed outside the Neat Lines shown

SP00445 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25
Requires SP02415 and SP02510*)*

(This Section requires SP00415 when constructing new runs or extensions of sanitary sewer, storm sewer, or culvert pipes with any joints, including where the new pipe meets existing pipe or manhole. When SP00415 is used, ensure that a video pipe inspection pay item is included under 00415.90 and in the schedule of items.)

SECTION 00445 - SANITARY, STORM, CULVERT, SIPHON, AND IRRIGATION PIPE

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00445 of the Standard Specifications.

SP00446 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25)**

SECTION 00446 - TRENCH DRAINS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use the following lead-in paragraph when none of the following subsections are included in the Project.)

Comply with Section 00446 of the Standard Specifications.

(Use the following lead-in paragraph when any of the following subsections are included in the Project.)

Comply with Section 00446 of the Standard Specifications modified as follows:

(Use the following subsection .01 when Type 2 or 3 Trench Drains are required. Type 3 Trench Drains are used when any part of the drain is constructed in a walkway, shared use path, pedestrian circulation zone or pedestrian access route.)

00446.01 Definitions – Replace the sentence that begins "Type 2 Trench Drain…" with the following sentence:

Type 2 Trench Drain - A trench drain installation that is constructed in a paved Shoulder and not within a pedestrian access route as defined in 00759.02.

Add the following paragraph to the end of the subsection:

Type 3 Trench Drain - A trench drain installation in which any part is constructed in a walkway, shared use path, pedestrian circulation zone or pedestrian access route as defined in 00759.02.

(Use the following subsection .11 when Type 3 Trench Drains are required.)

00446.11 Trench Drains - Add the following paragraph to the end of the subsection:

Provide the following Type 3 Trench Drains:

- PolyDrain – PD04, manufactured by ABT, Inc.
  P.O. Box 837, 259 Murdock Road
  Troutman, NC 28166
  (704) 528-9806

(Use the following subsection .12 when Type 3 Trench Drains are required.)

00446.12 Frames and Grates - Replace the sentence that begins "Provide Americans with Disabilities Act..."

Provide Type 3 Trench Drains that comply with American with Disabilities Act requirements. Where grates are placed within the designated pedestrian access route, as defined in 00759.02, provide grates without any opening that permits a1/2-inch diameter sphere to pass through in any direction.

Add the following paragraph to the end of this subsection:

Provide the following Type 3 Trench Drain grates:

- Ductile Iron ADA Heel Proof Slotted Grate, 2506, manufactured by ABT, Inc.
  P.O. Box 837, 259 Murdock Road
  Troutman, NC 28166
  (704) 528-9806

SP00450 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25*)*

SECTION 00450 - STRUCTURAL PLATE SHAPED STRUCTURES

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00450 of the Standard Specifications.

SP00460 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25
Requires SP02050 and SP02510*)*

SECTION 00460 - PAVED CULVERT END SLOPES

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [orange text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all orange text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00460 of the Standard Specifications.

SP00470 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25
Requires SP02510*)*

SECTION 00470 - MANHOLES, CATCH BASINS, AND INLETS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00470 of the Standard Specifications.

SP00475 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25)

SECTION 00475 - DRAIN WELLS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Note: The Technical Resource must approve the use of SP00475 for all projects)

Section 00475, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00475.00 Scope - This Work consists of drilling 8 inch diameter drain wells, including furnishing and installing steel well casings, at the locations and to the depths shown, for the purpose of intersecting large voids in underlying Rock.

Materials

00475.10 Well Casing - Furnish NPS 8 inch, Schedule 40 black steel well casing pipe meeting the requirements of ASTM A53.

Construction

00475.40 General - Drill the drain wells at the locations and to the depths directed, before constructing manholes and inlets.

Test each drain well by running water into it to determine if the well has sufficient capacity. The well shall have a capacity of at least 400 gallons per minute for 8 continuous minutes.

Measurement

00475.80 Measurement - The quantities of drain wells will be measured on the unit basis.

The quantities of drain wells deeper than 100 feet will be measured on the length basis, for the amount greater than 100 feet.

The quantities of steel well casings will be measured on the length basis.

Payment

00475.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement
(a) 8 Inch Drain Wells	Each
(b) Extra for 8 Inch Drain Wells Deeper Than 100 Feet	Foot
(c) NPS 8 Inch Steel Well Casing	Foot

Item (a) includes all costs involved in drilling 8 inch drain wells up to 100 feet in depth.

Item (b) includes all extra costs involved in drilling in excess 100 feet in depth. The Contractor will not be entitled to extra or additional payment if it is not necessary to drill deeper than 100 feet.

Item (c) includes all costs involved in furnishing and installing steel well casings.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for testing drain wells or for the water or other Materials used in the Work.

SP00480 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25
This Section requires SP00730
if emulsified asphalt tack coat is required*)*

SECTION 00480 - DRAINAGE CURBS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00480 of the Standard Specifications.

SP00490 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25
Requires SP02510)

SECTION 00490 - WORK ON EXISTING SEWERS AND STRUCTURES

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00490 of the Standard Specifications.

SP00495 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25*)*

SECTION 00495 - TRENCH RESURFACING

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00495 of the Standard Specifications.

SP00501 (Special Provisions for the 2024 Book) **(Bidding on or after: 06-01-25 Last updated: 03-03-25)**

SECTION 00501 - BRIDGE REMOVAL

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00501 of the Standard Specifications modified as follows:

(Use the following subsection .00 to describe the location of the Bridge to be removed or portions of the Bridge to be removed. Delete (s) or parentheses as appropriate. Obtain information from the Bridge Designer.)

00501.00 Scope - Add the following paragraph(s) to the end of this subsection:

(Fill in the blank with the Structure information as described on the Plans and include the Structure number (e.g. BR####). When applicable, provide a description of what the Bridge is going over (roadway, waterway, etc). Copy and paste for multiple Structures.)

Remove (portions) of the existing bridge _____ as shown.

(Use the following lead-in paragraph and subsection .02 when plans are available for viewing. Obtain the Bridge Designer's approval to use.)

Add the following subsection:

00501.02 Plans - Plans of the existing Structure are available from the Engineer. Prints of these plans are available upon request.

(Use the following lead-in paragraph and subsection .03 when removing existing bridge items. Obtain information from the Bridge Designer.)

Add the following subsection:

00501.03 Submittals - Submit unstamped bridge removal plans according to 00150.35 _____ Calendar Days before beginning removal work.

Include the following information in the submittal:

- Removal sequence, including contractor staging and traffic staging.
- Detailed schedule of bridge removal work.

- Type of equipment that will be used, including size and capacity.
- Equipment location during removal operations.

Do not begin bridge removal work until the bridge removal plans have been approved.

(Use the following lead-in paragraph and subsections .45 when salvaging existing bridge items. Obtain information from the Bridge Designer.)

Add the following subsection:

00501.45 Salvage - Salvage the following items and deliver them to _____ :

-
-

(Use the following lead-in paragraph and subsection .90 when salvaging existing bridge items. Obtain information from the Bridge Designer.)

Add the following subsection:

00501.90 Payment - Add the following to the end of this subsection:

The accepted quantities of salvaging and stockpiling portions of the existing bridge will be made at the Contract lump sum amount for the item "Extra for Salvaging and Stockpiling Bridge".

Payment includes removing, salvaging, and stockpiling portions of the existing bridge as shown and specified.

SP00503 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25)**

SECTION 00503 - BRIDGE DECK COLD PLANE PAVEMENT REMOVAL

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use the following lead-in paragraph when none of the following subsections are included in the project.)

Comply with Section 00503 of the Standard Specifications.

(Use the following lead-in paragraph when any of the following subsections are included in the project.)

Comply with Section 00503 of the Standard Specifications modified as follows:

(Use the following subsection .20 when 00220.45 is included in the Project.)

00503.20 Equipment for Grinding on Bridge Decks - Add the following to the paragraph that begins "To remove Pavement from bridge decks…":

Limit the gross operational weight of machines to comply with the load limitations of 00220.45. Limit machines to a forward speed of 2.5 feet per minute. Operate at a drum speed of at least 120 RPM.

SP00504 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25)**

SECTION 00504 - CONCRETE DECK SURFACE PREPARATION

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00504 of the Standard Specifications modified as follows:

00504.01 Definitions: Replace this subsection with the following subsection:

00504.01 Definitions and Acronym:

(a) Definitions:

Bonded Membrane - A polymer or spray-on waterproofing membrane system that is fully or partially bonded to the concrete deck.

Class 1 Preparation - Deck surface preparation for a membrane or overlay system on an existing bridge deck, where the existing concrete is sound, and minimal concrete removal is required to reach sound concrete.

Class 2 Preparation - Deck surface preparation in areas that are determined by the Engineer to have Unsound Concrete that requires concrete removal beyond the limits of Class 1 Preparation.

Class 3 Preparation - Deck surface preparation in areas where concrete removal extends through the full thickness of the deck.

Fabric Membrane - A rolled or sheet waterproofing membrane system that is installed below or between layers of asphalt Pavement.

Unsound Concrete - Delaminated or otherwise deteriorated concrete identified by a deck delamination survey or during surface preparation operations.

(b) Acronym:

ICRI - International Concrete Repair Institute

00504.21(b) Scarifying Equipment – Replace the paragraph that begins "Furnish power-operated diamond grinding…" with the following paragraph:

Furnish power-operated diamond grinding, micro-milling, or shot blasting scarifying Equipment capable of uniformly removing the existing surface to depths required.

00504.21(b)(3) Shot-blasting - Replace this subsection, except for the subsection number and title, with the following:

Furnish mono-directional or bi-directional shot blast machines with single or multiple blast wheels that conform to EPA air pollution requirements by containing dust and steel abrasive media and that can prepare concrete surfaces according to *ICRI Technical Guideline No. 310.2R*, to the project specific Concrete Surface Profiles (CSP) profile. Furnish shot type S-330 or larger diameter. If the Equipment is not equipped for simultaneous bi-directional blasting, make separate passes in opposite directions to ensure equal cleaning on all sides of the exposed aggregate.

00504.21(b)(4) Hydroblasting – Delete this subsection.

00504.40(f) Structural Overlay Removal - Replace the paragraph that begins "Remove the existing Structural Overlay to the parent …" with the following paragraph:

Remove the existing Structural Overlay to the parent deck surface. Use Equipment that can sufficiently remove the overlay without exceeding 1/2 inch of parent deck removal.

00504.41(b) Class 1 Preparation – Replace this subsection, except for the subsection number and title, with the following:

- Roughen the existing concrete surface to an exposed aggregate surface texture meeting the following volumetric profiles and ICRI CSP:
  - Polymer overlays (MPCO's and PPC's) and membranes require minimum profile depth of 1/16 inch and CSP 5.
  - Structural cementitious overlays (SCO's and HESC's) require a minimum profile depth of 1/8 inch and CSP 7.
- Determine profile depth according to ASTM E965 (standard volumetric test). Perform four tests per 500 square yards of concrete surface prepared, with a minimum of four tests per Day. Visually verify CSP profile with ICRI CSP chips.
- Protect visible reinforcing steel and reinforcing steel where the Plans show it to be within 1/2 inch of the surface.
- When not in conflict with this Specification, follow surface preparation requirements in ICRI Technical Guideline No. 310.2R.

00504.42(a) PPC, MPCO, and Membrane Installations – Replace this subsection with the following:

00504.42(a) PPC, MPCO, Deck Seal, and Membrane Installations - Prepare all surfaces that are to be in contact with the membrane, deck seal or overlay, including vertical contact areas, as follows:

- Clean the entire surface by shot-blasting within 24 hours of placing the membrane or overlay.
- Sweep the area magnetically to remove metal residue.
- Blow clean the surfaces with compressed air.
- Immediately after surface preparation is complete cover the prepared deck with clear plastic, overlapping it to prevent contaminants from construction vehicles or other sources from contacting the deck. Maintain the covering until PPC, MPCO, deck seal or membrane installation.
- If the prepared surface becomes contaminated by spills, rain, or other contaminant before placing the membrane or overlay, prepare the surface again according to this Subsection.

00504.42(b) SCO Overlays – Replace the bullet that begins "Clean the entire surface by shot-blasting…" with the following bullet:

- Clean the entire surface by shot-blasting. Shot-blasting is not required on final surfaces that were prepared by chipping or jack hammering.

SP00505 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25)**

SECTION 00505 – CONCRETE DECK HYDRODEMOLITION

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not renumber or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00505, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00505.00 Scope - This Work consists of partial depth removal and preparing of concrete decks for structural concrete overlays and inlays with hydrodemolition Equipment and associated operations.

00505.01 Definitions and References:

(a) Definitions:

Blow-through - An unanticipated full-depth removal of deck concrete during hydrodemolition operations.

Selective Hydrodemolition - Preparation of deck concrete with hydrodemolition Equipment that creates a scarified surface profile and removes approximately 1/2 inch of concrete in areas of sound concrete and Unsound Concrete is removed in the same operation.

Deep Cut Hydrodemolition - Removal of deck concrete to the depth shown or specified.

Unsound Concrete - Delaminated or otherwise deteriorated concrete identified by a deck delamination survey or during surface preparation operations.

(b) References - In these Specifications, the reference ICRI 310.3R refers to Guideline No. 310.3R, *Guide for the Preparation of Concrete Surfaces for Repair Using Hydrodemolition Methods*.

00505.02 Submittals - Submit the following to the Engineer for approval at least 21 Calendar Days before the pre-placement meeting:

- Wastewater control and debris management plan. Include details of water supply system, pumping system, and vacuum Equipment.
- Plan and Materials to be used to shield traffic from hydrodemolition debris.
- Blow-through contingency plan. Provide a written plan for potential Blow-through scenarios. Include Materials used to contain water and debris both above and below the deck.
- Type of Equipment that will be used for deck preparation.

Equipment

00505.20 General - Provide Equipment to perform hydrodemolition of the concrete deck surface. Remove all Equipment that leaks oil or other contaminants from the work area until they are repaired.

00505.21 Hydrodemolition Equipment - Hydrodemolition Equipment consists of a water supply system, a high-pressure pumping system, vacuum Equipment, and a robotic hydrodemolition unit.

(a) Water Supply System and Pumping System - Furnish a water supply system and pumping system compatible with the hydrodemolition units and that supplies water that meets the requirements of Section 02020.

(b) Hydrodemolition Unit - Furnish a hydrodemolition unit that is robotic, computerized, and self-propelled, that is capable of removing concrete at a rate and volume as specified and as accepted by the Engineer without leaving a striated surface. Provide either rotating

or oscillating nozzles. For Selective Hydrodemolition, provide Equipment capable of operating in the pressure range of 14,000-20,000psi.

(c) Vacuum Equipment - Furnish vacuum Equipment suitable for removal of wastewater and construction debris.

00505.22 Wastewater Recycling Equipment - The Contractor may provide a wastewater recycling unit that removes solid waste from the wastewater such that the water may be reused for hydrodemolition operations.

00505.23 Hand Lances - Furnish hand-operated high-pressure lances that operate at pressures of 10,000 to 40,000psi.

00505.24 Micro-Milling Equipment - Furnish cold plane or rotomill grinding machines using carbide cutting tools on a rotary drum. Provide Equipment with tooth spacing of not more than 1/4 inch, capable of leaving a smooth, uniform pattern of striations. Limit machines to a gross operational weight of no more than 35 Tons and a forward speed to 2.5 feet per minute. Operate at a drum speed of at least 120 RPM.

Construction

00505.40 General - When not in conflict with this Specification, perform hydrodemolition according to ICRI 310.3R.

00505.41 Partial Depth Concrete Deck Removal - Perform partial depth concrete deck removal on Bridge No. _(Insert Bridge No.)_____ to the depths shown as follows:

(a) Existing Deck Elevation – Measure and identify existing deck elevations and cross slopes at least every 10 feet, to verify removal depths and to establish final grade. Provide a vertical reference for approval by the Engineer before beginning removal work.

(b) Reinforcement Survey - Using a rebar locator or other approved means, measure and mark the depth of reinforcement at least every 10 feet, in each lane of traffic prior to beginning micro-milling operations.

(c) Existing Repairs - Prior to micro-milling or hydrodemolition operations, remove existing repair patches from the deck using power-driven hand tools. The Contractor may elect to proceed with micro-milling and hydrodemolition operations prior to removing existing repairs if it is demonstrated during hydrodemolition calibration that existing repairs can be removed without increasing the depth of removal at the perimeter of the repairs or causing Blow-throughs.

(d) Micro-milling - Limit micro-milling to the depth shown or within 1/2 inch of reinforcement, whichever is least, measured from the nominal roadway surface. If reinforcement is encountered during milling operations, stop Work immediately and notify the Engineer. Repair any damage to the reinforcement caused by micro-milling operations at no additional cost to the Agency.

(Delete the type of hydrodemolition that does not apply. Specify the Bridge No. and location(s) of each option. Consult the Bridge Design Manual for guidance on both options and removal depths.

Selective Hydrodemolition. This process achieves a roughened profile and removes Unsound Concrete.

Deep Cut Hydrodemolition. Use this when there is a known depth of concrete removal to facilitate removal of chloride contaminated concrete. When selecting this option, identify the depth of removal for both milling and hydrodemolition on the plans.

Remove parentheses.)

(e) Hydrodemolition - Perform *(*Selective Hydrodemolition or Deep Cut Hydrodemolition to a depth of __ inches*)* on Bridge No. _(Insert Bridge No. and location)_____. In the presence of the Engineer, calibrate hydrodemolition Equipment on the deck in a location with sound concrete. Measure the removal depth to the mean paste elevation. Mean paste elevation is defined as the average elevation of parent deck concrete paste, excluding exposed aggregate. Record the calibrated settings, including: water pressure gauge, machine staging control, nozzle size and type, nozzle travel speed, and water usage rate. Provide calibrated settings to the Engineer. Do not adjust calibrated settings without notifying the Engineer. Monitor the removal depths to verify the desired depth of sound concrete and all Unsound Concrete is removed. Perform additional calibration in an area with Unsound Concrete if directed by the Engineer.

Hydrodemolition Equipment is operated in the pressure range of 14,000-20,000 psi during Selective Hydrodemolition operations. During Deep Cut Hydrodemolition operations the prescribed depth of removal is achieved with one or more passes of the hydrodemolition unit.

(1) Depth of Removal - Removal depth is measured from the original parent deck surface, or the top of the milled surface, to the mean paste elevation. When performing Selective Hydrodemolition, remove approximately 1/2" of parent deck concrete. When performing Deep Cut Hydrodemolition, remove parent deck concrete to the depth shown or specified, +/- 1/2". The depth of removal is measured from the original parent deck surface accounting for the depth of milling performed. If shown or specified, remove to a depth below the bottom of the top mat of reinforcement.

(2) Deck Blow-Through - If hydrodemolition operations cause a full depth deck Blow-through, immediately stop Work and notify the Engineer. Contain water and debris above and below deck, as necessary. Use equal to or less than 30 pound class chipping hammers to excavate all remaining Unsound Concrete. Square off the repair area and slope the sides to avoid vertical edges. Perform Blow-through repair Work according to 00140.30.

(3) Wastewater and Debris Management - Contain wastewater and debris as outlined in the wastewater control and debris management plan. Provide sufficient shielding during hydrodemolition process to contain dislodged concrete and prevent damage to surrounding property.

(4) Cleaning - Do not allow debris and slurry to dry. Use pressurized water and vacuum Equipment to remove dislodged debris and slurry from the bridge deck. Repeat cleaning until the wastewater is clear. If slurry dries prior to cleaning, use a minimum

of 7500 psi water to remove dried slurry. Remove standing water from deck surface prior to surveying the deck for additional removal.

(f) Post Hydrodemolition Survey - In the presence of the Engineer, perform a visual inspection and sounding of the concrete surface. Identify locations of Unsound Concrete for removal. Remove additional Unsound Concrete using 15 pound class power-driven hand tools or hand lances. Identify locations of exposed reinforcement that require removal of concrete surrounding the reinforcing bars. Using a straightedge, stringline, or other approved methods, ensure minimum overlay thickness will be achieved. Remove high areas of concrete with power driven hand tools, hand lances, or additional passes of hydrodemolition Equipment to ensure minimum required overlay thickness. Provide reinforcement chairs or blocks to place reinforcement at required elevation and to prevent deformation of the bars from construction vehicle loading.

(g) Removal of Concrete Surrounding Reinforcing Bars - Remove a minimum of 3/4 inch of concrete around and below reinforcing steel in the following scenarios:

- When there is exposed reinforcement that exceeds 24 inches in length, is within the mean paste elevation, and is not bonded to the concrete as identified by hammer sounding.
- When power-driven hand tools are used to remove Unsound Concrete that exposes greater than 50 percent of the reinforcing bar.

(h) Reinforcing Bar Repair – Abrasive blast reinforcing steel that is pitted or has flaking corrosion, that would inhibit adequate bonding to the concrete, to a bright finish. Light rust staining may remain in place.

When exposed reinforcement has greater than 50 percent section loss, required repairs will be designated by the Engineer and performed according to 00140.30.

(i) Surface Preparation Accommodations – Clean the entire surface by using abrasive blast or 7500 psi high pressure water blast. Saturate the surface with water for a minimum of 1 hour before resurfacing. Remove standing water with compressed air or wet-dry vacuum ahead of concrete placement. Repeat cleaning and water saturation on areas that are allowed to dry or become contaminated before resurfacing. Immediately after surface preparation is complete cover the prepared deck with clear plastic, overlapping it to prevent contaminants from construction vehicles or other sources from contacting the deck. Maintain the covering until overlay installation.

(Use the following subsection .43 ONLY when there are special repair zones identified in the Plans. Special repair zones are Project specific. Obtain information from the Bridge Designer and the BDM.)

00505.43 Special Repair Zones – A special repair zone is a specific zone or location on the bridge deck as indicated in the plans. Perform Work in special repair zones as shown according to the following:

(Use the following paragraph when negative moment regions are required. This is sample language and needs to be bridge specific. Obtain information from the Bridge Designer and the BDM.)

(a) Negative Moment Regions - In areas designated as negative moment regions with negative moment reinforcement, do not excavate below the top of the reinforcement. If negative moment reinforcement is exposed, stop Work and re-calibrate the hydrodemolition Equipment in the presence of the Engineer.

(Use the following paragraph when full depth removal is required. This is sample language and needs to be Bridge specific Obtain information from the Bridge Designer and the BDM.)

(b) Full Depth Removal - Perform full-depth removal as shown. Full depth removal requires project specific language based on size, location, containment, and shoring requirements.

Measurement

00505.80 Measurement - The quantities of Work performed under this Section will be measured on the area basis.

(Delete Pay Item(s) from the list that are not included in the Schedule of Items, but do not change the alpha characters next to the Pay Items.)

Payment

00505.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement
(a) Concrete Deck Micro-milling, _____ inch depth	Square Yard
(b) Selective Hydrodemolition	Square Yard
(c) Deep Cut Hydrodemolition, _____ inch depth	Square Yard
(d) Special Repair Zone	Square Yard

(Use the following paragraph when Pay Item (b) is included in the Pay Item list above.)

Payment of item b includes hand tool removal of concrete surrounding reinforcing bars.

(Use the following paragraph when Pay Item (c) is included in the Pay Item list above.)

Payment of item c includes hand tool removal of concrete surrounding reinforcing bars.

Removal of Unsound Concrete is included in the hydrodemolition operations and the associated Pay Item including additional removal of Unsound Concrete following the post hydrodemolition survey.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP00510 (Special Provisions for the 2024 Book) **(Bidding on or after: 12-01-24 Last updated: 09-03-24)**

SECTION 00510 - STRUCTURE EXCAVATION AND BACKFILL

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [orange text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all orange text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00510 of the Standard Specifications modified as follows:

00510.04(a) Defined Shoring Systems – Replace the sentence that begins "Select Shoring systems…" with the following sentence:

Select Shoring systems for construction from the list of defined Shoring systems provided in Section 16.3.26 of the ODOT GDM.

(Use the following paragraphs and table when shoring is required.)

Add the following to the end of this subsection:

Construct shoring at the location(s) listed below:

(Use the following table to indicate the shoring location and the defined system(s) allowed. Include the beginning and ending stations, use either "Lt." or "Rt.", or a separate shoring alignment as required, to locate and provide minimum shoring length, and include the defined type of shoring system type(s) allowed from the list: All, 5A, 5B, 5C, 5D, 5E, 5F, 6A, 6B, 7A. Add or delete rows in the table as necessary to list additional locations and list all applicable defined shoring systems.

Example:

Beginning Station	*Ending Station*	*Shoring System Type(s) Allowed*
Station 1+55 Rt.	*Station 2+45 Rt.*	*All*
Station 4+00 Lt	*Station 4+40 Lt.*	*5A*

)

Beginning Station	Ending Station	Shoring System Type(s) Allowed
Station _____(Lt.)(Rt.)	Station_____ (Lt.)(Rt.)	

00510.04(b) Atypical Shoring Systems – Replace the paragraph that begins "Shoring systems that are not on the list…" with the following paragraph:

Shoring systems that are not on the list of Shoring types published in Section 16.2.4.2 of the ODOT GDM are considered atypical Shoring systems. If proposing an atypical Shoring system, submit stamped Working Drawings according to 00150.35. The review and response time allowed for the Agency to return the Working Drawings will be 120 Calendar Days. The submittal of calculations and other data must satisfy the requirements of the Specifications and include sufficient detail and explanation of the design for the Agency to process and comment on the Working Drawings. If the Engineer requests additional information or explanation related to the review of the atypical Shoring system the Engineer may restart the 120-Calendar Day review period.

(Use the following subsection .80(b)(1) when Structure excavation is paid for on the lump sum basis.)

00510.80(b)(1) Lump Sum - Add the following to the end of this subsection:

The estimated quantity of Structure excavation is:

Location	Structure Excavation (Cubic Yard)

(Use the following subsections .80(d) when granular wall backfill and/or granular Structure backfill will be measured and paid for on the lump sum basis.)

00510.80(d)(1) Lump Sum - Add the following to the end of this subsection:

The estimated *(*quantity*)(*quantities*)* of *(*granular wall backfill*) (*and*) (*granular structure backfill*) (*is*)(*are*)*:

(Delete headings that do not apply. Obtain quantities from the designer.)

Location	Granular Wall Backfill (Cubic Yard)	Granular Structure Backfill (Cubic Yard)

(Include the following cofferdam design checklist when required by the Bridge Designer.)

COFFERDAM DESIGN CHECKLIST

Instructions - This cofferdam design checklist was developed to facilitate the design, review, and erection of cofferdams to be used for ODOT bridge construction projects. This checklist is intended to act as a reminder to design or check for specific important aspects of this construction. It is not a substitute for plan and/or design criteria or specification requirements.

The Checklist is to be completed and signed by the cofferdam design engineer. Answer every question. Attach to the Checklist an explanation of any negative responses.

Submit the Checklist according to 00510.03.

	YES	NO	N/A
A. Contract Plans, Specifications, Permits, etc.			
1. Are the cofferdam Working Drawings prepared, stamped and signed by an engineer registered to practice in Oregon?	____	____	____
2. Have three copies (five copies if railroad approval is required) of the complete design calculations accompanied the cofferdam drawings submittal?	____	____	____
3. Are cofferdam Working Drawings in compliance with the requirements of the construction plans general notes?	____	____	____
4. Are cofferdam Working Drawings in compliance with contract plan structural details?	____	____	____
5. Are cofferdam Working Drawings in compliance with the requirements of the Oregon Standard Specifications for Construction, subsection 00150.35?	____	____	____
6. Are all existing, adjusted or new utilities in proximity with the proposed cofferdam shown on the cofferdam Working Drawings and is projection of these utilities addressed?	____	____	____
7. Are clearance requirements satisfied and shown on the cofferdam Working Drawings?	____	____	____
B. Loads			
1. Are the magnitude and location of all loads, equipment and personnel that will be supported by the cofferdam shown noted on the cofferdam Working Drawings?	____	____	____
2. Are design loads and material properties used to determine design stresses shown for each different cofferdam member shown on the cofferdam Working Drawings?	____	____	____

3. Is the assumed water elevation for seal design shown on the Working Drawings? ____ ____ ____

4. Does the cofferdam design assume water pressure acts on the full height of the cofferdam (from the vent to the bottom of the excavation?) ____ ____ ____

5. Has percolation into the excavation been addressed? ____ ____ ____

C. Allowable Stresses

1. Have the design loads used for cofferdam design of all members been noted in the design calculations? ____ ____ ____

2. Are the allowable stress and the calculated stress listed in the summary for each different cofferdam member? ____ ____ ____

D. Timber Construction

1. Are timber grades consistent with material to be delivered to the construction site, noted on the cofferdam drawings, and in accompanying calculations for all timber cofferdam material? ____ ____ ____

2. If "rough" lumber is specified for the cofferdam, are the actual lumber dimensions used in the calculations shown? ____ ____ ____

E. Steel Construction

1. Are steel structural shapes and plates identified by ASTM number on the cofferdam Working Drawings and in the calculations? ____ ____ ____

2. Have steel beams been checked for bending, shear, web crippling and buckling of the compression flange? ____ ____ ____

F. Compression Members, Bracing Members and Connections

1. Has general buckling been evaluated for all compression members? ____ ____ ____

2. Has bracing been provided at all points of assumed support for compression members? ____ ____ ____

3. Is bracing strength and stiffness sufficient for the intended purpose? ____ ____ ____

4. Have all connections been designed and detailed? ____ ____ ____

_____ _____

Designer Engineer of Record Signature Date

(Include the following shoring design checklist when required by the Bridge Designer.)

SHORING DESIGN CHECKLIST

Instructions - This shoring design checklist was developed to facilitate the design, review, and erection of shoring to be used for ODOT construction projects. This checklist is intended to act as a reminder to design or check for specific important aspects of this construction. It is not a substitute for plan and/or design criteria or specification requirements.

The Checklist is to be completed by the shoring design engineer. Answer every question. Attach to the Checklist an explanation of any negative responses.

Submit this Shoring Design Checklist for each stage and phase of the project, along with the shoring design summary, Working Drawings and calculations according to 00510.04.

	YES	NO	N/A
A. General			
1. Are the shoring Working Drawings and supporting calculations prepared, stamped, and signed by an engineer registered to practice in the state of Oregon?	____	____	____
2. Are the temporary shoring installation plans, construction sequence, and removal plan compatible with the project construction staging/phasing?	____	____	____
B. Design Standards			
1. Does the shoring design comply with standards identified in ODOT GDM 16.3.26.3 and related sections?	____	____	____
2. Is the design standard and edition identified in the shoring design calculations?	____	____	____
C. Loading			
1. Have the design loads, including special loading conditions (e.g. cranes, stockpiles, etc.), used for shoring design of all members been noted in the design calculations?	____	____	____
2. Have the appropriate load and resistance factors or factors of safety on the shoring system been identified, for all applicable load combinations or load cases?	____	____	____
3. If public traffic is near or directly above the shoring system, has a minimum traffic live load surcharge of 250 psf been applied?	____	____	____

4. Have the loads from actual construction equipment and not less than 250 psf been included in the shoring system design? ____ ____ ____

5. Have the construction loads for different stages of construction been considered and included in the calculations? ____ ____ ____

6. Have the effects of any construction activities adjacent to the shoring system on the stability/performance of the shoring system been addressed in the shoring design (e.g., excavation or soil disturbance in front of the wall or slope, excavation dewatering, vibrations and soil loosening due to soil modification/construction activities)? ____ ____ ____

7. Have earth pressure diagrams been included? ____ ____ ____

8. Does the shoring design consider the effect of water saturated soil pressure acting on the full height of the shoring? ____ ____ ____

D. Geotechnical and Structural Analysis

1. Has internal stability been evaluated? ____ ____ ____

2. Has eccentricity/overturning stability been evaluated? ____ ____ ____

3. Has sliding been evaluated? ____ ____ ____

4. Has overall/global stability been evaluated? ____ ____ ____

5. Has bearing capacity been evaluated? ____ ____ ____

6. Have displacement constraints or other performance objectives of the shoring system been identified and evaluated? ____ ____ ____

7. Has each stage of the shoring system construction been evaluated to carry traffic and construction loads and ensure internal and external stability through the construction and loading sequence? ____ ____ ____

8. Are the allowable stress and the calculated stress listed in the summary for each different shoring member? ____ ____ ____

9. Have steel beams been checked for bending, shear, web crippling and buckling of the compression flange? ____ ____ ____

10. Have connections for all phases of construction and removal been designed for all interim loading? ____ ____ ____

11. Has buckling, bracing strength, and stiffness been evaluated for all compression members? ____ ____ ____

E. Materials

1. Are all soil, rock, and other material properties used for the design of the shoring system provided and consistent with GDM and the subsurface field and lab data? ____ ____ ____

2. Are timber grades noted on shoring drawings and in accompanying calculations? ____ ____ ____

3. Are the minimum lumber dimensions shown in the calculations and noted on the Working Drawings? ____ ____ ____

4. Are steel structural shapes, bolts, connections, and plates identified by ASTM number on the shoring Working Drawings and in the calculations? ____ ____ ____

F. Shoring Working Drawings

1. Is the field verified ground topography above and below the shoring wall shown? ____ ____ ____

2. Are all existing, adjusted or new utilities, structures, and “no work zones” in proximity to the proposed shoring shown on the shoring Working Drawings and is protection of these items addressed? ____ ____ ____

3. Are horizontal and vertical clearance requirements identified and shown on the shoring Working Drawings? ____ ____ ____

4. Are plan view, elevation and cross sections drawn to scale, with dimensions defining location and size of the temporary shoring, components, and excavation limits? ____ ____ ____

5. Are the magnitude and location of all loads, equipment and personnel that will be supported by the shoring shown or noted on the shoring Working Drawings? ____ ____ ____

6. Has a dewatering plan been shown? ____ ____ ____

7. Have all connections been detailed? ____ ____ ____

8. Has bracing been detailed? ____ ____ ____

G. Testing and Monitoring

1. If a “yes” response to No. D-6, is a monitoring plan provided to verify adequate performance of the shoring system throughout the design life of the system? ____ ____ ____

2. Has a load testing program been provided for soil nails, tiebacks, or other applicable elements of the shoring system ____ ____ ____

Design Engineer of Record Signature	Date

SP00512 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 02-03-25
Requires SP02510)

SECTION 00512 - DRILLED SHAFTS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00512 of the Standard Specifications modified as follows:

> ***(Use the following subsection .43(a) when the contract requires a minimum shaft penetration into a bearing layer (as opposed to a specified tip elevation) and the bearing layer elevation at each shaft cannot be accurately determined. Obtain the information from the Geotechnical Engineer. Include subsections .45, .80(d), and .80(e).)***

00512.43(a) Drilled Shaft Excavation, General - Add the following paragraph to the end of this subsection:

Variations in the bearing layer elevation from that shown are anticipated. Provide Equipment on-site capable of excavating an additional _____ feet of depth below that shown.

> ***(Use the following lead-in paragraph and subsection .44 when permanent casing is required. Include the outside diameter and the wall thickness under the "Casing Size" column.)***

Add the following subsection:

00512.44 Permanent Casing - Furnish and install permanent casing as follows:

Bridge Number	Bent Number	Casing Size	Elevation for Top of Casing (Feet)	Elevation for Bottom of Casing (Feet)

Perform welding of all permanent casing according to AWS D1.1. Test all full penetration welds using nondestructive methods by either radiograph or ultrasonic methods. Base nondestructive testing acceptance criteria on cyclic tension loading.

After concrete placement, fill all void space between the casing and the shaft excavation with a material that approximates the geotechnical properties of the in-situ materials.

(Use the following subsection .45(e) when the contract requires a minimum shaft penetration into a bearing layer (as opposed to a specified tip elevation) and the bearing layer elevation at each shaft cannot be accurately determined. Obtain the information from the Geotechnical Engineer. Include subsections .43(a), .80(d), and .80(e).)

Add the following subsection:

00512.45(e) Rock Socket - At locations requiring minimum shaft penetrations into specific bearing layers, furnish steel reinforcing bar cages, including CSL access tubes if specified, ___ feet longer than the lengths shown. Add the increased length to the bottom of the cage. Trim the shaft steel reinforcing bar cage to the proper length prior to placing it in the excavation. Shift or trim CSL access tubes (if present) to the revised cage length. If CSL tubes are cut, adapt the ends of the tubes to receive the watertight caps as specified.

(Use the following subsection .80(d) to list the estimated amount of required concrete.)

00512.80(d) Drilled Shaft Concrete - Add the following at the end of this subsection:

The estimated quantity of drilled shaft concrete is:

Structure	Quantity (Cubic Yard)

(Use the following paragraph when additional concrete is required to extend the minimum shaft penetrations. Include subsections .43(a), .45, and .80(e).)

The estimated quantity of drilled shaft concrete includes the concrete required to extend the shafts according to 00512.43(a).

(Use the following subsection .80(e) to list the estimated amount of required reinforcement. Remove the coated reinforcement table if coated steel is not required.)

00512.80(e) Drilled Shaft Reinforcement - Add the following at the end of the paragraph:

The estimated quantity of drilled shaft reinforcement is:

	Uncoated Reinforcement Quantity (Pound)		
Structure Number	Grade 60	Grade 80	Grade 100

Structure Number	Coated Reinforcement Quantity (Pound) Grade 60	Grade 80	Grade 100

(Use the following paragraph when additional reinforcement is required to extend the minimum shaft penetrations. Include subsections .43(a), .45, and .80(d).)

The estimated quantity of drilled shaft reinforcement includes the reinforcement required to extend the shafts according to 00512.45.

SP00515 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-30-25
Requires SP02510*)*

SECTION 00515 - MICROPILES

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00515, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00515.00 Scope - This Work consists of designing, furnishing, constructing and testing Micropiles at the locations shown and specified.

00515.01 Definitions:

Alignment Load (AL): A minimum initial load applied to the Micropile during testing to keep the testing Equipment correctly positioned.

Bond Length: The length of the Micropile that is bonded to the ground and used to transfer the applied axial loads to the surrounding Soil or Rock.

Casing: Steel pipe Casing, generally installed during the drilling process to stabilize the borehole when drilling through Overburden Soils. The Casing may be either temporary and withdrawn during the grouting process, or permanently left in place to provide added Micropile reinforcement.

Centralizer: A device to support and position the steel reinforcement in the center of the drillhole or Casing.

Coupler: A mechanical Coupler or other approved device that transfers load from one partial length of steel reinforcement to another.

Creep: The movement that occurs during the Creep test of a Micropile under a constant load.

Double Corrosion Protection: A system composed of two levels of corrosion protection, usually consisting of either grout filled Encapsulation or epoxy coating and grout.

Encapsulation: A corrugated or deformed tube protecting the steel reinforcement against corrosion.

Factored Design Load (FDL): The maximum load expected to be applied to the Micropile during its design life.

Micropile: A small-diameter, bored, cast-in-place composite pile, in which the applied load is resisted by steel reinforcement, cement grout and frictional grout-ground bond.

Overburden: Natural or placed Material that may require cased drilling methods to provide an open borehole to underlying strata.

Post-Grouting: The injection of additional grout into the load transfer length of a Micropile after the primary grout has set.

Proof Load Test: Incremental loading of a production Micropile, recording the total movement at each loading increment.

Spacer: A device to separate individual elements of multiple-element reinforcement.

Verification Load Test: Pile load test of a sacrificial Micropile performed to verify the design of the Micropile system and the construction methods proposed, prior to installation of production Micropiles.

00515.02 General - Furnish all design, Materials, Equipment, tools, services, labor and supervision required for installing and testing Micropiles and Micropile top attachments for this Project.

Select the Micropile type, dimensions, Bond Length, pile-top attachment(s), and installation method to meet the requirements of the Specifications. Conduct verification and Proof Load Testing that demonstrates the test piles meet or exceed the specified test acceptance criteria.

(Consult with the Geotechnical Designer and modify the following section as needed to describe what subsurface information is available and how to access it.

Also add descriptions of special or unusual subsurface conditions that should be noted.)

00515.03 Subsurface Investigation - The Soils and Geological Exploration Logs are available for review through the Engineer's office. The data shown for each test boring or test pit applies only to that particular boring or test pit. Subsurface conditions may vary between borings or test pits. Core samples and laboratory test results, if obtained and performed for the Project, are available for review by contacting the Engineer.

The Foundation Data shown in the Plans is a compilation of pertinent information including, but not limited to, the Soils and Geological Exploration Logs.

00515.04 Micropile Design Requirements - Design Micropiles to meet the loading conditions provided in Table 00515-1. Design Micropiles and pile top-to-footing connections using the procedures described in the most current version of the AASHTO *LRFD Bridge Design Specifications* at the time of Advertisement.

(Obtain information from designer and fill in Table 00515-1. Add rows or modify as necessary for all micropile locations included in the Project.)

TABLE 00515-1

	Micropile Factored Design Load (FDL),* (kips)	
Location	Right Footing	Left Footing
Bridge XXX – Bent 1		
Bridge XXX – Bent 2		

* Loads are axial compression loads per Micropile unless otherwise noted.

Verification test piles may require additional structural capacity above that required for production piles. Size the structural steel and grouted sections of the Micropiles to ensure that the maximum verification and proof test loads applied to the Micropile do not exceed 80 percent of the structural capacity of the Micropile structural elements, to include steel yield in tension, steel yield or buckling in compression, or grout crushing in compression.

(Use the following paragraph when moment design applies to the Project. Fill in the required nominal (ultimate) moment capacity below. Identify the location of the nominal moment by selecting either the pile top location or the depth below the pile top; delete the unused portion and parentheses. Obtain the moment and depth from designer.)

Design and provide a composite Cross Section of the Micropile capable of developing a nominal moment capacity of _____ kip-ft. The location of the nominal moment is at *(*top of the pile*)(*a depth of _____ feet below the top of the pile*)*.

(Obtain the thickness of the sacrificial steel for permanent steel casings from the designer and fill in the blank.)

Provide corrosion protection of the internal steel reinforcement according to 00515.10. Where permanent Casing is used for a portion of the Micropile, extend the double corrosion system at least 5 feet into the Casing. If the Micropile design relies on the Casing for axial or moment

capacity, incorporate an additional ____ inch thickness of sacrificial steel for corrosion protection of all permanent steel Casing used in Micropile construction.

(Use the following sentence if double-corrosion protection is required on the Project.)

Provide Double Corrosion Protection of all steel reinforcement that is not contained within permanent Casing.

00515.05 Submittals - Before beginning construction of Micropiles, submit the following to the Engineer:

(a) Qualifications - Submit contractor and personnel qualifications according to 00515.30.

(b) Stamped Working Drawings - Submit stamped Working Drawings according to 00150.35 that include all stamped design calculations, details, dimensions, quantities, ground profiles, and Cross Sections necessary to construct the Micropile Structure. Verify the limits of the Micropile Structure and ground survey data before preparing the detailed Working Drawings. Stamped Working Drawings shall include, but not be limited to, the following information:

(1) Stamped Design Calculations and Documentation - Provide design calculations and documentation that includes:

- A written summary report which describes the overall Micropile design, including the type and diameter of Micropiles selected, and if applicable, a discussion of the use of any temporary Casing.
- Applicable code requirements and design references.
- Dimensions of all Micropile structural components, structural design properties, and critical design Cross Sections.
- Geotechnical design parameters and criteria, including Soil and Rock shear strengths (friction angle and cohesion), material unit weights, ground-grout bond values, and group effects if applicable.
- Factored Design Loads, including maximum verification test loads, and nominal and factored resistances used in the design of the ground grout bond values, surcharges, steel, grout, and concrete Materials.
- Minimum grout unconfined compressive strength at 28 Days and at the time of verification and Proof Load Testing.
- Pile to pile cap/footing connection design calculations and construction details.
- Design calculations for design of the Micropiles, including but not limited to analysis performed to determine drillhole diameters, estimated Bond Lengths, total Micropile lengths, design of corrosion protection, type and size of steel reinforcement, and if applicable, permanent Casing.
- Structure (Bridge) number, Micropile Structure location (Bent No. and footing), date of preparation, initials of designer and checker, and page number at the top of each page. Provide an index page with the design calculations.

- Design notes including an explanation of any symbols and computer programs used in the design.

(2) Plan View Drawing - Provide a plan view drawing that shows:

- Reference baseline and elevation datum.
- Overall plan layout of Micropiles showing numbering sequence, pile diameters, position, and horizontal spacing.
- Station and offset from the construction centerline or baseline to the center of all Micropiles or face of Micropile Structure.
- Right-of-Way and permanent or temporary construction easement limits, location of all known active and abandoned existing utilities, adjacent Structures or other potential interferences.
- The centerline and dimensions of any Utility, drainage Structure, or drainage pipe behind, passing through, or passing under the Micropile Structure.
- Locations of all subsurface explorations with appropriate reference base lines to fix the locations of the explorations relative to the Micropile Structure.

(3) Elevation View Drawing - Provide an elevation view drawing that shows:

- Micropile locations and elevations
- Micropile lengths
- Minimum hole diameters, batter and alignment
- Casing dimensions and lengths
- Reinforcement type, sizes and details
- Splice types and locations
- Centralizers and Spacers
- Minimum grout bond zone
- Casing plunge lengths, if used
- Corrosion protection details
- Micropile Structure connection details to Substructure footing
- Micropile Design Loads
- Summary of estimated quantities for each Substructure unit
- If applicable, location of drainage elements

(4) Steel Shop Drawings - Provide steel shop drawings for all structural steel including the details, dimensions, and schedules for all Micropile Casing and steel reinforcement, including steel reinforcement bending details and steel for Substructure and footing connection.

(5) Micropile Load Testing and Reporting - Provide detailed plans for the proposed Micropile load testing method and procedures. Include all drawings, details, and structural design calculations necessary to clearly describe the proposed test method, reaction load system capacity, Equipment setup, and types and accuracy of apparatus

to be used for applying and measuring the test loads and pile top movements according to 00515.47. Submit Micropile Load Test Data Reports according to 00515.48.

Revise the drawings when Plan dimensions are changed due to field conditions or for other reasons. Within 30 Calendar Days after completion of the work, submit corrected stamped Working Drawings and calculations to the Engineer according to 00150.35. Corrected Working Drawings shall represent all design changes made during the construction of the Micropile Structure.

(c) Micropile Installation Plan - At least 21 Calendar Days before beginning Micropile Work, submit a Micropile Installation Plan to the Engineer for review and approval. The Micropile Installation Plan shall include, but not be limited to, the following information:

(1) Detailed step by step description of the proposed Micropile construction procedure, construction sequencing (including but not limited to drilling, grouting and testing procedures), anticipated ground conditions, and any special construction requirements to assure quality control. Include sufficient detail to allow the Engineer to monitor the construction and quality of the Micropiles.

(2) A list of the Equipment to be used for installing Micropiles, including the model, size and type of Equipment, with appropriate manufacturer's literature for review. Provide information on the drilling methods and tools to be used and the proposed method for flushing and removal of spoils. Include information on headroom and space requirements, if appropriate, for installation Equipment that show the proposed Equipment is appropriate for the site conditions and constraints.

(3) Proposed start date(s) and Micropile installation schedule.

(4) Plan describing how surface water, drill flush, and excess waste grout will be contained, controlled and disposed of in accordance with all applicable permits and regulations.

(5) Details for constructing Micropile Structures around drainage or other facilities, if applicable.

(6) Permanent Casing threading connection details. If welding of Casing is proposed, submit a proposed Welding Procedure Specification (WPS) for approval.

(7) Certified mill test reports for the steel reinforcement and permanent Casing, if used. Check sample results for permanent Casing without mill certification may be submitted in lieu of mill certification. Supply two check sample tests per truckload delivered to the fabricator, but not less than two check sample tests per project. Include the ultimate strength, yield strength, elongation, material properties and chemical composition.

(8) Grouting Plan, including complete descriptions, details, and supporting calculations for the following:

- Grout mix design and type of Materials to be used in the grout including certified test data and trial batch reports. Include in the mix designs, certified test results verifying that the mix designs provide the required grout strength, as specified in the submitted design calculations, for the 28-Day strength and the strength

required at the time of verification and Proof Load Testing. Provide grout consistency and density requirements.

- Equipment and procedures used to mix and place the grout, including the grout pressures to be used and descriptions of any post grouting methods, if applicable.
- Estimated grout quantities.
- Methods and Equipment for accurately monitoring and recording the grout depth, grout volume, and grout pressure as the grout is being placed.
- Grouting rate calculations, when requested by the Engineer. Base calculations on the initial pump pressures or static head on the grout and losses throughout the placing system, including anticipated head of drilling fluid to be displaced, if applicable.
- Estimated curing time for grout to achieve specified strength. Previous test results for the proposed grout mix completed within one year of the start of grouting may be submitted for initial verification and acceptance and start of production work. During production, test grout according to 00515.44(e).
- Procedure and Equipment for Contractor monitoring of grout quality.

(9) Calibration reports and data for each test jack, pressure gauge and master pressure gauge and load cell to be used. Provide calibration tests performed by an independent testing laboratory within 60 Calendar Days of the date submitted. Do not begin testing until the Engineer has reviewed and accepted the jack, pressure gauge, master pressure gauge and electronic load cell calibration data.

The Engineer will approve or reject the Micropile Installation Plan within 21 Calendar Days after receipt of the plan. Do not begin Work until all submittals have been received, reviewed, and accepted in writing by the Engineer.

Make revisions or corrections to the Working Drawing submittals as requested by the Engineer and resubmit revised drawings or submittals. Resubmit changes or deviations on the Working Drawings for review and approval.

Materials

00515.10 Materials - Furnish Materials meeting the following requirements:

(a) Admixtures - Furnish admixtures conforming to Section 02040. Admixtures that control bleed, improve flowability, reduce water content, and retard set may be used in the grout, if approved by the Engineer. Only add expansive admixtures to grout used for filling sealed Encapsulations and anchorage covers. Accelerators will not be permitted. Use admixtures compatible with the grout and mixed in accordance with the manufacturer's recommendations.

(b) Cement - Furnish Portland cement (Type I, II or III) conforming to Section 02010.

(c) Grout - Furnish neat cement or Sand/cement grout mixture with a minimum compressive strength at 28 Days as specified in the contractor's design submittal and conforming to 02690.30.

(d) Water - Use water in the grout mix conforming to Section 02020.

(e) Reinforcement:

(1) Furnish deformed bar reinforcement conforming to Sections 00530 and 02510, or furnish all thread, high tensile strength bars conforming to 02515.30. When a bearing plate and nut are required to be threaded onto the top end of reinforcing bars for the pile top to footing anchorage, provide threading that is either continuous spiral deformed ribbing provided by the bar deformations or threading cut into the bar. If threads are cut into a reinforcing bar, provide a bar that is one bar size number larger than the bar size designation shown, at no additional cost to the Agency.

(2) Furnish continuous thread, hollow core steel bars (hollow injection rods) conforming to the quality, ductility and deformation requirements of AASHTO M 31 (ASTM A615).

(3) If required, furnish mechanical splices according to 2510.20.

(f) Permanent Casing - Provide permanent steel Casing with:

- A diameter and minimum wall thickness as shown on the approved Working Drawings.
- Tensile strength meeting the tensile requirements of API 5L Grade X52, API 5 CT Grade N80 or better, using the minimum yield strength in the design submittal.

(g) Plates and Shapes - Furnish structural steel plates and shapes for Micropile top attachments conforming to ASTM A36 or ASTM A572 Grade 50 and Section 02530 and as required to meet the design loads specified in 00515.04 and 00515.05(b).

(h) Centralizers - Fabricate Centralizers from plastic, steel, or Material that is not detrimental to the steel reinforcement. Wood Centralizers are not allowed.

(i) Corrosion Protection - Provide corrosion protection of the steel bar reinforcement by using one or more of the following methods:

(Select one or more of the following three paragraphs as appropriate. Delete any that do not apply.)

- **Encapsulation:** Shop fabricate the Encapsulation from high-density, corrugated polyethylene tubing conforming to the requirements of AASHTO M 252 (ASTM D3350) or corrugated polyvinyl chloride pipe conforming to ASTM D1784 (Class 13464-B) with a minimum wall thickness of 0.03 inches. Provide an annulus opening between the reinforcing bars and the encapsulating tube of at least 0.25 inches and use a grout conforming to 00515.10(c).
- **Epoxy Coating:** Apply epoxy coating according to 02510.11. Bend test requirements are waived. Epoxy coating of bearing plates and nuts encased in pile concrete footings is not required. Provide mechanical Couplers for splicing epoxy coated reinforcing bars that are either epoxy coated with the same thickness as the reinforcing bars or, for bare-steel Couplers, coated with heat-shrink wrap from

section 02510.11 of the QPL. Apply heat-shrink wrap extending at least 6 inches past the ends of the Couplers and 6 inches past any damaged areas.

- **Grout Protection:** For bare steel reinforcing bars, provide a minimum 3 inches of grout cover surrounding the reinforcing bar. For epoxy or galvanized reinforcing bars, provide a minimum of 2 inches of grout cover.

Labor

00515.30 Personnel Qualifications - Use personnel experienced in Micropile construction to perform the work. Relevant experience includes that with similar anticipated subsurface Materials, groundwater conditions, Micropile type, size, loads and any special construction techniques required.

Provide the following information to verify the contractor's experience and the qualifications of personnel scheduled to perform the Micropile construction:

(a) Micropile Contractor Qualifications - Evidence of the firm's experience in the construction and load testing of Micropiles and the successful construction of at least 5 projects in the last 5 years involving construction totaling at least 100 Micropiles of similar size and capacity to those required in these plans and specifications. Evidence of contractor experience in Micropile drilling and grouting in Soil or Rock Materials and conditions similar to project conditions. Provide a project reference list for each of the 5 projects which includes:

- Brief project description with the owner's name and current phone number.
- Date of project.
- Number, size, and capacity of Micropiles successfully installed and tested.
- Types of Soil/Rock Materials and groundwater conditions encountered in the project.

(b) Micropile On-Site Supervisor - Names and detailed experience of on-site supervisors for the Project. On-site supervisors shall have experience on at least 3 projects over the past 5 years installing Micropiles of similar type, size and scope to those shown in the Working Drawings and in similar geotechnical conditions to those described in the project geotechnical report for this project. Experience shall include the direct supervisory responsibility for the on-site Micropile construction operations and load testing.

(c) Micropile Drill Rig Operator - Names and detailed experience of drill operators for the Project. Drill rig operators shall have experience on at least 3 projects over the past 5 years installing the type(s) of Micropiles required for this project and to capacities equal to, or greater than, those required in the Specifications.

(d) Micropile Registered Professional Engineer of Record - Name(s) and detailed experience of the Micropile engineer. Micropile engineers shall be a Professional Engineer registered in the State of Oregon, with experience in the design of at least 3 Micropile projects of similar scope to this project, successfully completed over the past 5 years, and experience designing Micropiles of similar or greater capacity to those required in the Plans and Specifications.

(e) Welder Qualifications - Submit qualification documents for each welder. Use welders qualified according to AWS D1.1 for the position, process and Casing diameter used on the Project.

Include in the personnel list a summary of each individual's experience with sufficient detail for the Engineer to determine whether each individual satisfies the required qualifications.

Submit qualifications of the contractor's Micropile engineer at least 21 Calendar Days before submittal of the stamped Working Drawings. The Engineer will approve or reject the contractor's qualifications within 7 Calendar Days after receipt of a complete submittal.

Do not begin Work or order Materials before the Engineer provides written approval of the Contractor's experience qualifications.

The Engineer may suspend the Micropile construction Work if the Contractor substitutes unapproved personnel during construction. Submit requests for substitution of field personnel to the Engineer, who will have an additional 7 Calendar Days to respond to each request.

Construction

00515.40 General - Contain and dispose of all construction related waste according to 00290.20.

00515.43 Allowable Tolerances - Install Micropile to within the following tolerances:

- Centerline of piling not more than 3 inches from indicated plan location.
- Plumb within 2 percent of total-length plan alignment (vertical piles).
- Top elevation of Micropile no more than 1.0 inch above or 2.0 inches below the vertical plan elevation.
- Centerline of core reinforcement not more than 0.75 inches from centerline of final pile location.

00515.44 Micropile Installation - Select the drilling method, grouting procedure, and grouting pressure used for the installation of the Micropiles. Schedule all Micropile installations such that there will be no interconnection with or damage to previously installed piles.

(a) Drilling - Provide drilling Equipment and methods suitable for drilling through the conditions to be encountered without causing damage to any overlying or adjacent Structures or services. The drillhole must be open to the required nominal diameter along its full length prior to placing grout and reinforcement.

(Use only one of the following two options when micropile construction occurs near settlement-sensitive Structures. Delete both options if neither is applicable. Consult with geotechnical designer.)

[Option 1 - Use the following paragraph when vibratory pile-driving hammers will NOT be allowed.]

Do not use vibratory pile-driving hammers to advance Micropile Casings.

[Option 2 - Use the following paragraph when vibratory pile-driving hammers will be allowed.]

If vibratory pile-driving hammers will be used to advance Micropile Casings, submit a Vibration Monitoring Plan to the Engineer for approval prior to beginning any construction activity. Allow 14 Calendar Days for plan review. Include in the Vibration Monitoring Plan a preconstruction survey of affected Structures and facilities and describe methods and plans to monitor vibrations caused by pile installation Equipment and other construction activities. Demonstrate the use of monitoring Equipment and devices to detect and prevent damage to affected Structures and facilities. Do not begin any construction activity until the Engineer approves the Vibration Monitoring Plan.

Use temporary Casing or other approved method of Micropile drillhole support, in caving or unstable ground to permit the Micropile shaft to be formed to the minimum design drillhole diameter. Do not use drilling fluid containing bentonite. Stabilize and repair detrimental ground movements caused by caving or other unstable drillhole conditions, as determined by the Engineer.

(b) Ground Heave or Settlement - Observe the conditions in the vicinity of the Micropile construction site on a daily basis for signs of ground heave, settlement or other signs of ground displacement during construction. Immediately notify the Engineer if signs of movements are observed. Immediately suspend or modify drilling or grouting operations if ground heave or settlement is observed, if the Micropile Structure is adversely affected, or if adjacent Structures are damaged from the drilling or grouting. If the Engineer determines that the movements require corrective action, take corrective actions necessary to stop the movement or perform repairs.

(c) Reinforcement Placement - Place reinforcement according to the approved Micropile installation plan. Ensure that reinforcement surfaces are free of deleterious substances such as Soil, mud, grease or oil that might contaminate the grout or coat the reinforcement and impair the bond. If applicable, provide pile cages and reinforcement groups with sufficient strength to withstand the installation and grouting process and the withdrawal of the drill Casings without damage or disturbance.

Provide Centralizers and Spacers equally spaced along the length of the Micropile with a maximum center-to-center spacing of 10 feet. Locate the top and bottom Centralizers a maximum of 5.0 feet from the top and bottom of the Micropile. Provide at least two Centralizers per Micropile. For Micropiles less than or equal to 20 feet in length, place Centralizers at the top and bottom quarter points of the Micropile. Ensure that Centralizers and Spacers permit the free flow of grout without misalignment of the reinforcing bars and permanent Casing. Lower the central reinforcing bars with Centralizers into the stabilized drillhole and set to the design elevation and alignment tolerances. Do not force or drive partially inserted reinforcing bars into the hole. Redrill and reinsert steel reinforcement when necessary to facilitate insertion.

(d) Grouting - Measure the grout quantity and pumping pressure during the grouting operations. Provide the Engineer with records showing the quantities, test data, and grout pressures.

After drilling, flush the hole with water or air to remove drill cuttings and other loose debris. Use a stable neat cement grout or a sand cement grout with a minimum 28-Day unconfined compressive strength as required in the Contractor's submitted design. Mix admixtures, if used, in accordance with manufacturer's recommendations. Use grouting Equipment that produces a grout free of lumps and undispersed cement. Equip the pump with a pressure gauge to monitor grout pressures. Place a second pressure gauge at the point of injection. Ensure that the pressure gauges are capable of measuring pressures of at least 150 psi or twice the actual grout pressures used by the contractor, whichever is greater. Size the grouting Equipment to enable the grout to be pumped in one continuous operation. Constantly agitate the grout prior to pumping. Place grout within one hour after mixing the grout or, if admixtures are used, within the time recommended by the manufacturer. Discard grout not placed within the allowed time limit.

Inject the grout from the lowest point of the drillhole by tremie methods until clean, pure grout flows from the top of the Micropile. The grout may be pumped through grout tubes, Casing, hollow-stem augers, or drill rods. Control the grout pressures and grout takes to prevent excess grout take, excessive ground heave, and fracturing of Rock formations. Fill the entire Micropile length with grout containing no voids or inclusions. Subsequent to tremie grouting, all grouting operations must ensure complete continuity of the grout column. The use of compressed air to directly pressurize the fluid grout is not permissible. If required, apply Post-Grouting of Micropiles in accordance with approved Working Drawings and record grout pressures, quantities, mix design, and other relevant Post-Grouting information. Upon completion of grouting, the grout tube may remain in the hole. Fill grout tube with grout if left in place.

(e) Grout Testing - Ensure that grout within the verification and proof test Micropiles attains the minimum required compressive strength, as identified in the Contractor's design submittal, prior to load testing. Previous test results for the proposed grout mix, completed within one year of the start of work, may be submitted for initial verification of the required compressive strengths for installation of pre-production verification test piles and initial production proof test piles.

During production, test the Micropile grout for compressive strength according to AASHTO T 106 (ASTM C109) for grout cubes or AASHTO T 22 (ASTM C39) for cylinders at a frequency of no less than three samples from each grout plant each Day of operation or three samples from each grout plant per every 10 Micropiles, whichever occurs more frequently. Calculate the average of the three samples tested to determine the compressive strength.

Determine grout consistency, as measured by grout density according to AASHTO T 121 (ASTM C138) or API RP-13B-1, at a frequency of at least one test per verification or proof test Micropile, conducted just prior to start of grouting. For production Micropiles, perform grout density testing at a frequency of at least once per each period of continuous grouting operation or once per Day, whichever is more frequent. Ensure that the measured grout density is consistent with the approved Micropile Installation Plan.

Take grout samples directly from the grout plant. Provide grout cube compressive strength and grout density test results to the Engineer within 24 hours of testing.

00515.45 Micropile Splices - Provide steel rebar and permanent Casing splices that develop at least the required compressive, tensile, and bending strengths used in the design

of the Micropile. Provide mechanical bar splices meeting the requirements of 00515.10(e). Secure lengths of Casing and reinforcing bars to be spliced in proper alignment and in a manner to avoid eccentricity or angle between the axes of the two lengths to be spliced. Locate Casing joints at least two Casing outside diameters away from any bar splice, as measured along the vertical axis of the Micropile. When multiple reinforcing bars are used, stagger bar splices at least 3.0 feet.

Provide threaded Casing joints that develop at least the required compressive, tensile, and bending strength used in the design of the Micropile. If welding of permanent high strength steel Casing is required, submit a Welding Procedure Specification (WPS) conforming to AWS D1.1 for review and written approval by the Engineer, prior to any welding operation. Weld all permanent Casing seams and splices using complete penetration welds.

00515.46 Pile Cap Connection - Furnish and install all Materials required to connect Micropiles to pile caps in accordance with the accepted stamped Working Drawings.

00515.47 Pile Load Tests - Perform verification and proof testing of piles at the locations shown, specified, or as directed. Confirm the grout has achieved the minimum required grout compressive strength prior to verification and Proof Load Testing.

(Use the following paragraph when compression load testing is required.)

Perform compression load testing in accordance with ASTM D1143, except as modified by this subsection.

(Use the following paragraph when tension load testing is required.)

Perform tension load testing in accordance with ASTM D3689, except as modified by this subsection.

(Use the following paragraph when lateral load testing is required.)

Perform lateral load testing in accordance with ASTM D3966, except as modified by this subsection.

(Use the following paragraph when compression and tension load testing is required.)

When both compression and tension load testing is to be performed on the same pile, test the pile under compression loads prior to testing under tension loads.

(Fill in the blank in the following paragraph with the number of required sacrificial verification test piles. Obtain information from the designer.)

(a) Verification Load Tests - Perform pre-production verification pile load testing on sacrificial Micropiles to verify the design of the pile system and the construction methods proposed prior to beginning Work on any aspect of production piles. Construct ____ sacrificial verification test piles in conformance with the approved Working Drawings. Install verification test pile(s) at the following locations:

(Provide the location(s) of verification test piles in by filling in the blank. Copy and paste the location line to as required to list all of the locations. Renumber "VT - 1" as necessary. Obtain information from the designer.)

Verification Test Pile	Station	Offset
VT - 1	_____	_____

Verification test pile locations may be adjusted by the Engineer depending on actual site conditions and other factors. If additional verification test piles are needed, the location will be determined by the Engineer.

Perform Verification Load Tests to verify that the Contractor-installed Micropiles will meet the loading requirements in compression and tension and the load test acceptance criteria, and to verify that the length of the Micropile bond zone is adequate. The Micropile Verification Load Test results must verify the Contractor's design and installation methods, and be reviewed and accepted by the Engineer prior to beginning installation of production Micropiles. For each verification test provide the Micropile Load Test Data Report to the Engineer within 5 Calendar Days of completing the testing.

For verification test piles, use the drilling and grouting methods, Casing and reinforcement details, depth of embedment (bond zone), and all other installation Materials and methods specified for the production piles, unless otherwise approved by the Engineer. At the completion of verification testing, remove test piles down to 2 feet below Roadway Subgrade or as directed.

(1) Testing Equipment and Data Recording - Provide dial gauges, dial gauge support, jack and pressure gauges, load cells and a reaction frame for use in testing the Micropiles. The load cell is required only for the Creep test portion of the verification test.

Provide a description of test setup and jack, pressure gauge, and load cell calibration curves according to 00515.05. Design the testing reaction frame to be sufficiently rigid and of adequate dimensions to prevent excessive deformation of the testing Equipment. Align the jack, bearing plates, and stressing anchorage such that unloading and repositioning of the Equipment will not be required during the test.

Apply and measure the test load with a hydraulic jack and pressure gauge. Provide a pressure gauge graduated in 100 psi increments or less. Provide a jack and pressure gauge with a pressure range not exceeding twice the anticipated maximum test pressure. Provide a jack ram travel sufficient to allow the test to be completed without resetting the Equipment. Position the jack at the beginning of the test such that unloading and repositioning during the test will not be required. Monitor the Creep test load hold during verification tests with both the pressure gauge and the load cell. Use the load cell to accurately maintain a constant load hold during the Creep test load hold increment of the verification test.

Measure the pile top movement with a dial gauge capable of measuring to 0.001 inch. Provide a dial gauge having a sufficient travel to allow the test to be completed without having to reset the gauge. Visually align the gauge to be parallel with the axis of the Micropile and support the gauge independently from the jack, pile, or reaction frame.

Use a minimum of two dial gauges when the test setup requires reaction against the ground or single reaction piles on each side of the test pile. Record the required load test data and supply the results to the Engineer.

(2) Verification Test Loading Schedule - Test verification piles designated for compression or tension load testing to a maximum test load of 1.5 times the Factored Design Loads provided in 00515.04 or as shown. Measure the pile top movement at each load increment. Start the load-hold period as soon as each test load increment is applied. Reset dial gauges to zero after the initial AL is applied.

(Obtain information from designer and fill in the table below).

Incrementally load the Micropile in accordance with the following cyclic load schedule for both compression and tension loading as indicated in Table 00515-2:

AL = Alignment Load (≤ 0.04FDL)
FDL = Factored Design Load

TABLE 00515-2

Loading Cycle	Increment	Load	Hold Time (min.)
AL	1	AL	2.5
Cycle 1	2	0.075 FDL	4
	3	0.15 FDL	4
	4	0.225 FDL	4
	5	0.30 FDL	4
	6	0.375 FDL	4
Cycle 2	7	AL	1
	8	0.15 FDL	1
	9	0.30 FDL	1
	10	0.375 FDL	1
	11	0.45 FDL	4
	12	0.525 FDL	4
	13	0.60 FDL	4
	14	0.675 FDL	4
	15	0.75 FDL	4
Cycle 3	16	AL	1
	17	0.30 FDL	1
	18	0.60 FDL	1
	19	0.675 FDL	1
	20	0.75 FDL	1
	21	0.825 FDL	4
	22	0.90 FDL	4
	23	0.975 FDL	60* (Creep Test)
	24	AL	1
	25	0.30 FDL	1
	26	0.60 FDL	1
	27	0.90 FDL	1

Loading Cycle	Increment	Load	Hold Time (min.)
Cycle 4	28	0.975 FDL	1
	29	1.05 FDL	4
	30	1.125 FDL	4
	31	1.20 FDL	4
	32	1.275 FDL	4
	33	1.35 FDL	4
	34	1.425 FDL	4
	35	1.50 FDL	4
	36	1.20 FDL	4
	37	0.90 FDL	4
	38	0.60 FDL	4
	39	0.30 FDL	4
	40	AL	15

* Measure and record pile movement during the Creep test at intervals of 1, 2, 3, 4, 5, 6, 10, 20, 30, 50, and 60 minutes as soon as the test load is applied.

(3) Verification Test Pile Acceptance Criteria - The acceptance criteria for Micropile Verification Load Tests are:

(Obtain information from designer and fill in the blanks. Delete the first bullet if the structural components of the verification test pile haves to be increased to accommodate the maximum required verification test load.)

- The pile sustains the first compression or tension ____ FDL test load with no more than ____ inch total vertical movement at the top of the pile, relative to the top of the pile prior to the start of testing.
- At the end of the ____ FDL Creep test load increment, test pile Creep rate does not exceed 0.04 inch/log cycle time (1 to 10 minutes) or 0.08 inch/log cycle time (6 to 60 minutes or the last log cycle if held longer) and the Creep rate is linear or decreasing throughout the Creep load hold period.
- Failure does not occur at the ____ FDL maximum test load. Failure is defined as the load where the slope of the load versus head deflection curve (at the end of increment) first exceeds 0.025 inch/kip.

Submit a Micropile Load Test Data Report, according to 00515.48. The Engineer will respond within 5 Calendar Days after receipt of the report with either acceptance or rejection of the tested Micropile.

(4) Verification Test Pile Rejection - If a verification-tested Micropile fails to meet the acceptance criteria, modify the design, the construction procedure, or both. These modifications may include modifying the installation methods, increasing the Bond Length, or changing the Micropile type. Submit to the Engineer any modifications that necessitate changes to the Structure. Do not proceed with further Micropile testing or construction without approval from the Engineer.

(b) Proof Load Tests - Perform Proof Load Tests on one production pile at each designated Substructure unit (footing) unless otherwise directed. The Engineer will

determine which pile is to be tested in each Substructure unit. Proof test Micropiles are required at the following Substructure unit locations:

(Identify the micropile locations selected for testing below. Add rows for each micropile location to be proof tested. Obtain information from the designer.)

Proof Test Pile	**Location**	**Footing**
Bridge No. ___,	Bent ___	Right, Center or Left

Proof Load Test locations may be adjusted by the Engineer. The Engineer will designate the location of additional proof test piles.

Perform Proof Load Tests to verify the production Micropiles will meet the loading requirements in compression and tension and the load test acceptance criteria. For each proof test, provide the Micropile Load Test Data Report to the Engineer within 5 Calendar Days of completing the testing.

(1) Proof Test Loading Schedule - Test piles designated for compression or tension Proof Load Testing to a maximum test load of 1.0 times the Micropile Factored Design Load(s) provided in 00515.04 or as shown. Provide testing Equipment and data recording devices in accordance with 00515.47(a)(1). Incrementally load the proof test Micropiles according to Table 00515-3, to be used for both compression and tension loading:

AL = Alignment Load (≤ 0.04FDL)
FDL = Factored Design Load

TABLE 00515-3

Loading Cycle	**Increment**	**Applied Load**	**Hold Time (min.)**
Apply AL	1	AL	2.5
Load Cycle	2	0.10 FDL	4
	3	0.20 FDL	4
	4	0.30 FDL	4
	5	0.40 FDL	4
	6	0.50 FDL	4
	7	0.60 FDL	4
	8	0.70 FDL	4
	9	0.80 FDL	4
	10	0.90 FDL	4
	11	1.00 FDL	10 or 60 minutes*
Unload Cycle	12	0.90 FDL	4
	13	0.75 FDL	4
	14	0.60 FDL	4
	15	0.45 FDL	4

* Where the pile top movement between 1 and 10 minutes exceeds 0.04 inch, maintain the 1.0 FDL increment an additional 50 minutes and measure and record pile movements at 1, 2, 3, 5, 6, 10, 20, 30, 50 and 60 minutes.

Reset dial gauges to zero after the initial AL is applied.

(2) Proof Test Pile Acceptance Criteria - The acceptance criteria for Micropile Proof Load Tests are:

(Obtain information from the designer and fill in the blanks.)

- The pile sustains the compression or tension ____ FDL with no more than ____ inch total vertical movement at the top of the pile, relative to the top of the pile prior to the start of testing.
- At the end of the ____ FDL Creep test load increment, test piles have a Creep rate not exceeding 0.04 inch/log cycle time (1 to 10 minutes) or 0.08 inch/log cycle time (6 to 60 minutes) and the Creep rate is linear or decreasing throughout the Creep load hold period.
- Failure does not occur at the ____ FDL maximum test load. Failure is defined as the load where the slope of the load versus head deflection curve first exceeds 0.025 inch/kip.

Submit a Micropile Load Test Data Report, according to 00515.48. The Engineer will respond within 5 Calendar Days after receipt of the report with either acceptance or rejection of the tested Micropile.

(3) Proof Test Pile Rejection - If a proof-tested Micropile fails to meet the acceptance criteria, proof test additional Micropiles within that footing or Substructure unit as directed by the Engineer. For failed piles and construction of replacement piles, modify the design, the construction procedure, or both. Modifications may include installing replacement Micropiles, incorporating remaining untested piles at reduced load capacities, post grouting, modifying installation methods, increasing the Bond Length, or changing the Micropile type. Submit to the Engineer any modifications that necessitate changes to the Structure design. Do not proceed with further Micropile testing or construction without the Engineer's approval.

00515.48 Micropile Load Test Data Reports - Report the Micropile verification and Proof Load Test data to the Engineer in the form of a summary report which includes, at a minimum, the following information:

- Project description.
- Description of site and subsurface conditions including information on the subsurface conditions encountered at the load test location.
- A listing of key personnel involved with the testing and production of the Micropile including the grout plant operator, drill rig operator, on-site supervisor and Micropile engineer.
- Results of the load test, including completed testing field data records for load increments and time periods in 00515.47(a)(2) and 00515.47(b)(1), and appropriate presentation figures, charts and graphs. Record the required load test data and submit to the Engineer for verification.
- Statement of load testing requirements and acceptance criteria according to 00515.47(a)(3), 00515.47(a)(4), 00515.47(b)(2), and 00515.47(b)(3).
- Comparison of load testing results and acceptance criteria.

- Summary statement of load test results, including whether the load test met or failed to meet the criteria.
- Hydraulic jack pressure gauge and load cell calibration report.
- Material certifications or check sample results for permanent Casing (if used), reinforcement, and grout compressive strength testing.

Submit the Micropile Load Test Data Report as a Stamped Working Drawing according to 00515.05(b)(5).

00515.49 Micropile Installation Log - Prepare and submit a Micropile Installation Log to the Engineer for each Micropile installed, within 24 hours of Micropile installation. A copy of the Micropile Installation Log is available from the ODOT Construction Forms website at:

https://www.oregon.gov/ODOT/Construction/Pages/Forms.aspx

At a minimum, include the following information:

- Micropile drilling duration
- Description of Soil and Rock encountered
- Final tip elevation
- Cutoff elevations for the top and bottom of the Casing
- Nominal Resistance
- Description of unusual installation behavior or conditions
- Grout pressures attained during grouting
- Grout quantities pumped into Micropiles
- Micropile Materials and dimensions

Measurement

(Use subsections (a) through (d) as instructed. Re-alphabetize subsections to be sequential, beginning with (a).)

00515.80 Measurement - The quantities of Work performed under this Section will be measured according to the following:

(Use the following subsection (a) when Pay Item (a) is included in the Pay Item list below.)

(a) Furnish Micropile Equipment - No measurement of quantities will be made for furnishing Micropile Equipment.

(Use the following subsection (b) when Pay Item (b) is included in the Pay Item list below.)

(b) Micropiles - Micropiles will be measured on the unit basis for each production Micropile installed and accepted.

(Use the following subsection (c) when Pay Item (c) is included in the Pay Item list below.)

(c) Micropile Verification Load Test - Micropile Verification Load Tests will be measured on the unit basis for each for Verification Load Test pile constructed, tested, and accepted. Micropile Verification Load Tests performed at the option of the Contractor will not be measured.

(Use the following subsection (d) when Pay Item (d) is included in the Pay Item list below.)

(d) Micropile Proof Load Test - Micropile Proof Load Tests will be measured on the unit basis for each Proof Load Test completed, reported, and accepted. Micropile Proof Load Tests performed at the option of the Contractor will not be measured.

Payment

(Delete the "(s)" or parentheses from the word "item(s)" as appropriate.)

00515.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following item(s):

(Delete Pay Item(s) from the list that are not included in the Schedule of Items, but do not change the alpha characters next to the Pay Items.)

Pay Item	Unit of Measurement
(a) Furnish Micropile Equipment	Lump Sum
(b) Micropiles	Each
(c) Micropile Verification Load Test	Each
(d) Micropile Proof Load Test	Each

(Use the following paragraph and bullets when item (a) is included in the Pay Item list above.)

Partial payments for Item (a) will be made as follows:

- When drilling Equipment is on the job, assembled and Verification Load Test drilling is underway 75%
- When the installation of the Micropiles is complete, accepted and the drilling Equipment has been removed from the site 25%

(Use the following paragraph when item (b) is included in the Pay Item list above.)

Item (b) includes designing, drilling, furnishing, and placing all steel reinforcement and Casing, grouting, and all Micropile top attachments. No payment will be made for Micropiles that fail Micropile Proof Load Tests.

(Use the following paragraph when item (c) is included in the Pay Item list above.)

Item (c) includes payment for furnishing all Materials, Equipment, and labor required to construct sacrificial Verification Load Test piles, conduct the load test, and report the results as specified. No payment will be made for failed Micropile Verification Load Tests.

(Use the following paragraph when item (d) is included in the Pay Item list above.)

Item (d) includes payment for furnishing all Materials, Equipment, and labor required to conduct Proof Load Tests, and report the results as specified. No payment will be made for failed Micropile Proof Load Tests.

Payment will be payment in full for furnishing and placing all Materials, furnishing, erecting, maintaining, and replacing all Equipment, and for all labor and Incidentals necessary to complete the Work as specified.

SP00520 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 02-03-25)**

SECTION 00520 - DRIVEN PILES

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use the following lead-in paragraph when none of the following subsections are included in the project.)

Comply with Section 00520 of the Standard Specifications.

(Use the following lead-in paragraph when any of the following subsections are included in the project.)

Comply with Section 00520 of the Standard Specifications modified as follows:

(Use the following subsection .11 on projects that require steel piles. Insert bridge structure number and bent number under "Location". Insert the number of piles in each bent under "Number". Insert the estimated length of the individual piles in each bent under "Length". Insert the type and dimensions of the pile under "Type and Size". If the piles will be coated, insert the top and bottom elevations of the coating in the "Coating Top Elevation" and "Coating Bottom Elevation" columns, otherwise insert "n/a" Add rows to the table as necessary. Obtain information from the Geotechnical Designer.)

00520.11 Engineer's Estimated Length List - Add the following to the end of this subsection:

The Engineer's estimated lengths of steel piling are:

Location	Number	Length (feet)	Type and Size	Coating Top Elevation[1]	Coating Bottom Elevation[1]

[1] Protective coating system and color requirements according to 00594.10.

(Use the following subsection .13 on projects that require test piles. Insert bridge structure number and bent number under "Location". Insert the number of piles in each bent under "No.". Insert the estimated length of the individual piles in each bent under "Length". Insert the type and dimensions of the pile under "Type and Size". Obtain information from the Geotechnical Designer.)

00520.13 Test Piles - Add the following to the end of this subsection:

The required test piles are:

Location	No.	Length (Feet)	Type and Size

(Use the following subsection .20(c)(4) when required by the Geotechnical Designer.)

00520.20(c)(4) Followers - Add the following to the end of this subsection:

Followers are permitted.

(Use the following subsection .20(d)(3) when WEAP input values are required. Include further explanations if necessary. More than one table may be required to assess pile driving stresses through upper hard or dense soils layers or other conditions. Consult with the Geotechnical Designer regarding the appropriate input(s) to use. Typically supply the highest R_n. value and the worst-case driving conditions that the contractor should use in the WEAP analysis to determine hammer requirements. Supply WEAP input data for a complete "drivability analysis" if appropriate. Obtain information from the Geotechnical Designer.)

00520.20(d)(3) Wave Equation Method - Add the following paragraph and table*(s)* to the end of this subsection:

The input values for the wave equation analyses are:

Bent	Pile Type	Pile Length * (Feet)	Quake (Inches) Skin	Quake (Inches) Toe	Damping (sec./ft.) Skin	Damping (sec./ft.) Toe	% skin (ITYS)	R_n (kips)

* These pile lengths are based on the top of the pile being at the finished cutoff elevation. All additional pile length above the cutoff elevation, that may be required to accommodate the Contractor's pile installation method or site conditions, shall be added to the lengths listed above and appropriate changes made to the skin friction distribution input listed below.

(Use one of the following two options. Delete the one that does not apply.)

[Option 1 - Use this option when either triangular or rectangular distribution is required. Delete the one (triangular or rectangular) that does not apply.]

Use *(*triangular*)(*rectangular*)* skin friction distribution.

[Option 2 - Use this option when providing relative skin friction values in table form. Insert Relative Skin Friction Distribution values in the table. Fill in the bent number. Add or delete rows and columns as appropriate.]

Use the relative skin friction distribution values listed below in the WEAP analysis:

(Repeat the table as needed for each bent)

Bent _____

Depth (Feet)	**Relative Distribution**

Bent _____

Depth (Feet)	**Relative Distribution**

(Use the following subsection .41(d) when augering or wet-rotary drilling is allowed by the Geotechnical Designer.)

00520.41(d) Preboring - Add the following sentence to the end of this subsection:

Use augering, wet-rotary drilling or other approved methods of preboring as directed.

(Use the following subsection .41(e) when jetting is allowed by the Geotechnical Designer.)

00520.41(e) Jetting - Add the following sentence to the end of this subsection:

Jetting is permitted.

(Use the following subsection .42(d) when a minimum "set period" of longer than 24 hours is required or if piles are required to set before redriving. Check with the Geotechnical Designer.)

00520.42(d) Set Period and Redriving -

(Use the following two paragraphs when a minimum "set period" of longer than 24 hours is required. Fill in the blank. Use days or hours as appropriate and delete whichever doesn't apply.)

Replace the sentence that begins "The "set period" shall be…" with the following sentence:

The "set period" shall be a minimum of _____ *(*Days*)(*hours*)* unless otherwise approved by the Engineer.

(Use the following two paragraphs when piles are required to set before redriving.)

Add the following sentence to the end of this subsection:

Piles are required to set before redriving.

(Use the following subsection .43(c) on projects with steel pipe piles that do not require reinforced tips. Delete the end treatment that does not apply and remove the parentheses. Obtain information from the Geotechnical Designer. If reinforced tips are required, do not use this subsection; instead use subsection .43(d) below.)

00520.43(c) End Treatment - Add the following sentence to the end of this subsection:

Drive steel pipe piles *(*open*)(*closed*)*-ended with tip treatment as shown.

(Use the following subsection .43(d) on projects with steel pipe piles that require reinforced pile tips. Delete "inside" or "outside" as appropriate and remove the parentheses. Obtain information from the Geotechnical Designer.)

00520.43(d) Reinforced Pile Tips - Add the following sentence to the end of this subsection:

For steel pipe piling, provide *(*inside*)(*outside*)* fit, open end cutting shoes meeting the requirements of 02520.10(e).

(Add the following lead-in paragraph and subsection .80(g) when protective coatings are required on steel piles.)

Add the following subsection:

00520.80(g) Steel Pile Protective Coatings - The estimated quantities of steel pile protective coatings are:

Coating System	Length of Coated Pile (feet)

SP00530 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 02-03-25
Requires SP02510. Requires
SP02513 when using Stainless Steel.)

SECTION 00530 - STEEL REINFORCEMENT FOR CONCRETE

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00530 of the Standard Specifications modified as follows:

00530.10 Materials - Replace this subsection, except for the subsection number and title, with the following:

Concrete Inserts 02513.35
Deformed Bar Reinforcement 02510.10
Deformed Bar Reinforcement (Stainless Steel) 02513.10
Dowels 02510.50
Dowels (Stainless Steel) 02513.50
Epoxy Coated Reinforcement 02510.11
Galvanized Coating 02510.30
Headed Bar Reinforcement.....02510.25
Mechanical Splices.....02510.20
Mechanical Splices (Stainless Steel) 02513.20
Ties and Supports 02510.60
Ties and Supports (Stainless Steel).....02513.60
Welded Wire Reinforcement 02510.40

00530.41(a) Fabric - Replace this subsection with the following subsection:

00530.41(a) Welded Wire Reinforcement - If welded wire reinforcement is shipped in rolls, straighten it into flat sheets before placing.

00530.41(b) Ties and Supports – Replace the bullet that begins "When stainless steel rebar is specified…" with the following bullet:

- When stainless steel reinforcing is specified, use stainless steel ties and supports meeting the requirements of 02513.60.

Delete the bullet that begins "Tie stainless steel reinforcement …".

Delete the bullet that begins "Support stainless steel reinforcement…".

Replace the bullet that begins "Do not allow direct contact between stainless …" with the following bullet:

- Do not allow stainless steel reinforcement to directly contact ASTM A1035 CS reinforcement. Do not allow stainless steel reinforcement or ASTM A1035 CS reinforcement in direct contact with other reinforcement with a different type of metal. When stainless steel or ASTM A1035 CS reinforcing or dowels are located near other reinforcing with a different type of metal, use nylon or polyethylene spacers to maintain a minimum 1 inch clearance between the two metals and bind them with nylon cable ties. Where insufficient space exists to maintain this minimum, either bar may be sleeved with a continuous polyethylene or nylon tube extending at least 1 inch in each direction past the point of closest contact between the two dissimilar bars.

Add the following bullets to the end of the bullet list:

- When ASTM A1035 CS reinforcing is specified, use epoxy coated ties and supports meeting the requirements of 02510.60(a).

00530.43 Splicing Welded Wire Fabric – Replace this subsection with the following subsection:

00530.43 Splicing Welded Wire Reinforcement - Overlap sheets of welded wire reinforcement as shown or provide edge and end laps not less than one mesh in width. Securely fasten sheets at the ends and edges according to 00530.41.

(Use the following subsection .80(a) when reinforcement is paid for on the lump sum basis. Remove tables that are not applicable to the Project. Add additional rows as necessary. Obtain information from the Bridge Designer. For ASTM A1035, include the chromium content letters (CS, CM, or CL).)

00530.80(a) Lump Sum - Add the following to the end of this subsection:

The estimated quantity for uncoated reinforcement in pounds is:

Structure Number	Grade 60	Grade 80	Grade 100 *ASTM A615*	Grade 100 ASTM A706	Grade 100 *ASTM A1035* (____)
1234	***0***	***0***	***100***	***0***	***1000***

The estimated quantity for coated reinforcement in pounds is:

Structure Number	Grade 60	Grade 80	Grade 100 ASTM A615	Grade 100 ASTM A706	Grade 100 ASTM A1035 (____)
1234	***0***	***0***	***100***	***0***	***1000***

The estimated quantity for stainless steel in pounds is:

Structure Number	Grade 60	Grade 75

The estimated quantity for welded wire reinforcement in pounds is:

Structure Number	Grade____

00530.90 Payment - Replace this subsection, except for the subsection number and title, with the following:

The accepted quantities of reinforcement will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	**Unit of Measurement**
(a) Reinforcement, Grade _____	Lump Sum or Pound
(b) Reinforcement, ASTM A1035 _____.....	Lump Sum or Pound
(c) Coated Reinforcement, Grade ____	Lump Sum or Pound
(d) Coated Reinforcement, ASTM A1035 _____	Lump Sum or Pound
(e) Stainless Steel Reinforcement, Grade ____,.....	Lump Sum or Pound
(f) Welded Wire Reinforcement, Grade ____.....	Lump Sum or Pound

In items (a), (c), (e), and (f) the grade of reinforcement will be inserted in the blank.

In items (b) and (d) the ASTM chromium content, CS, CM, or CL will be inserted in the blank.

Item (a) and (b) include fabricating and placing uncoated reinforcement as specified.

Item (c) and (d) include placing epoxy coated reinforcement as specified.

Item (e) includes fabricating and placing stainless steel reinforcement as specified.

Item (f) includes fabricating and placing welded wire reinforcement as specified.

Payment for reinforcement will be made when the reinforcement is incorporated into the concrete.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for clips, wire, separators, wire chairs, or other Material used in fastening the reinforcement in place.

SP00532 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25)**

SECTION 00532 - REBAR CONTINUITY

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00532, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00532.00 Scope - This Work consists of electrically connecting metal reinforcement and making all bars, strands, and rods electrically continuous. It does not include bars in bridge rails that do not extend into the deck.

Labor

00532.30 Welders - Provide a certified welder to perform all continuity welds.

Construction

00532.40 Electrical Connection - Make electrical continuity connections by welding reinforcing bars at contacting points or by welding a minimum 1/4 inch diameter or 1/4 inch square bare steel bar between reinforcing bars or prestressed strands.

Remove epoxy coating from the reinforcing steel or prestressed strand at the weld point by grinding or other means approved by the Engineer.

Perform all welds according to AWS D1.4. When using shielded metal arc welding (SMAW) use low-hydrogen electrodes.

(Fill in the blanks as appropriate.)

Do not connect reinforcing bars to the prestressed strands. Keep connections to these separate from one another. Bring out separately into the junction boxes on Bents __ through __ as shown.

Make electrical continuity connections at locations of low stress as follows or at locations of low stress as proposed by the Contractor and approved by the Engineer.

(List locations of low stress. Contact the bridge designer.)

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-

00532.41 Deck Reinforcement - Make all longitudinal reinforcement bars continuous by connecting each to a common transverse deck reinforcement bar near a transverse beam. Make all transverse reinforcement bars continuous by connecting each to a common longitudinal deck reinforcement bar near the center of a longitudinal beam.

Make all bridge rail bars that extend into the deck continuous by connecting each to any longitudinal deck reinforcement bar.

00532.42 Prestressed Beam - Make stirrups, full length longitudinal reinforcement bars, structural continuity bars and prestressed strands electrically continuous during manufacturing of the beams or at the Project site.

(a) Connections During Beam Manufacturing - If electrical continuity of the reinforcement bars is made during beam manufacturing, do the following before placing concrete:

- Electrically connect every U-3 bar to a stirrup near the bottom of the beam.
- Electrically connect all U-1 bars near their ends and connect at least one U-1 bar at each beam end to at least one stirrup near the bottom of the beam.
- Electrically connect all full length longitudinal bars to each other by connecting each to the same U-1 bar.
- Electrically connect each U-1 bar to any continuous longitudinal bar.
- Electrically connect each stirrup (both sides of every pair) near the top of the beam to any continuous longitudinal reinforcement bar.
- Electrically connect all structural continuity reinforcement bars in each beam end. Connect near the end of the bar.

Before or after placing concrete, electrically connect all strands. Electrically connect at least one stirrup in each prestressed beam to a deck reinforcement bar at the Project site.

(b) Connections at the Project Site - If electrical continuity is made at the Project site, do the following:

- Extend all prestress strands and full length longitudinal bars 3 inches beyond one fixed end.
- Make all bars and pieces of miscellaneous metal that do not protrude 3 inches outside the beam electrically continuous with each other and with at least one bar

that does protrude. Clearly mark protruding bars that are electrically continuous with covered bars for easy identification at the bridge site. Modify electrical continuity connections given for the condition where all continuity is made during manufacturing of the beams as is necessary.

- Electrically connect all stirrup bars, strands, all longitudinal bars and structural continuity bars at the bridge site.
- Connect at least one stirrup, one longitudinal bar and one structural continuity bar to a cross beam or deck bar.

00532.43 Column - Electrically connect all column reinforcement bars by connecting all vertical column bars to each other near their ends in the cross beam and also connecting one vertical column bar to the column spiral in the cross beam.

00532.44 Drilled Shafts - Electrically connect all drilled shaft reinforcement bars by connecting all drilled shaft bars to each other near their ends in the column or cross beam and also connecting one vertical drilled shaft bar to the drilled shaft spiral or drilled shaft spiral in the cross beam.

00532.45 Transverse Members:

(a) Cross Beams:

- Electrically connect all full length longitudinal reinforcement bars to each other at one end of the cross beam.
- Electrically connect all post tensioned strands to each other by welding a 1/4 inch steel bar to the end of at least one strand from each bundle.
- Electrically connect all partial length longitudinal reinforcement bars in each group to each other.
- Electrically connect at least one full length longitudinal reinforcement bar and at least one partial length longitudinal reinforcement bar in each group to a column bar or drilled shaft bar near its end.
- Electrically connect all stirrups to each other near the bottom of the cross beams.
- Electrically connect at least one stirrup to one longitudinal reinforcement bar near one end of the cross beam.
- Electrically connect all inner reinforcement bars, all U-bars, and all stirrups to each other and connect one of each of these reinforcement bars to any column reinforcement bar or drilled shaft bar near its top.
- Electrically connect the two stirrups and ties at each beam to each other near their ends and connect at least one at each beam to a bottom longitudinal cross beam reinforcement bar.

(b) Diaphragms:

- Electrically connect all longitudinal diaphragm reinforcement bars to each other near their ends.
- Electrically connect all stirrups to each other near their top or bottom.

- Electrically connect at least one stirrup to a longitudinal reinforcement bar near their ends.

00532.46 Other Bars - Electrically connect all other metal reinforcement not mentioned so that all bars are electrically connected together and all strands are electrically connected together.

00532.47 Wire Leads for Future Cathodic Protection - Before concrete is placed for the closure pour at each bent, connect a No. 8 AWG stranded RHW copper wire to the bare steel used to establish continuity of the prestressed strands of the center longitudinal beams, as shown. Connect a separate No. 8 AWG stranded RHW copper wire to the bare steel bar used to establish continuity with the reinforcement in the cross beam, as shown. Make the connections using one of the following ground rod clamps:

- Blackburn J Ground Clamp
- Eritech CWP1JU
- Ilsco BGC-1DB

Tighten ground rod clamps according to the manufacturer's recommendations or as directed.

Completely encapsulate each connection in a non-conductive resin from section 00535.10 of the QPL designated as “high strength”.

(Fill in the blanks with the appropriate span number.)

Route the insulated No. 8 AWG copper wire for both the prestressed strands and the reinforcement bars such that it will not be damaged by placing concrete. Extend out of the finished closure pour for at least 12 inches at the junction box location shown. Identify each wire as either "PRESTRESS STRANDS SPAN _____" or "REINFORCEMENT BARS SPAN _____" with an appropriate non-removable label permanently attached to the wire. Protect the exposed end of the wire from making an electrical connection by wrapping with electrical tape.

Provide 4 inch x 4 inch x 4 inch UL listed, PVC or thermoplastic junction boxes that have mounting feet, gaskets, and a weather tight cover. Attach the cover with brass or stainless steel screws. Attach boxes with brass or stainless steel screws in plastic anchor inserts installed in drilled holes in the surface of the concrete.

Thread the No. 8 AWG copper wires into the junction box through a hole drilled in the bottom of the box. Make a weather proof seal by using a silicone sealer between the box and the concrete.

Make an engraved plastic label and permanently attach it to the cover of each junction box. The label shall be in letters 1/4 inch height and read "REINFORCEMENT CONNECTION FOR FUTURE CATHODIC PROTECTION FOR SPAN ____".

Make two bronze plaques and attach one to the bridge rail at each end of the bridge. Each plaque shall read "METAL REINFORCEMENT IN THIS BRIDGE IS ELECTRICALLY CONNECTED FOR FUTURE CATHODIC PROTECTION IF NEEDED, SEE PLANS".

00532.48 Procedure Approval - Submit a detailed continuity connection procedure to the Engineer for approval.

00532.49 Acceptance Criteria - Choose one full length reinforcement bar as a king bar. Use an ohmmeter to check electrical continuity between the king bar and all other reinforcement bars. Electrical resistance between the king bar and all other reinforcement bars shall be 2.0 ohms or less. If long test leads or wire reels are used, measure the resistance of the wire and subtract that value from value measured between the king bar and other reinforcement bars. Repair all defective welds, complete additional welds and retest until continuity is established.

Measurement

00532.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

(Fill in the blanks with the appropriate quantities.)

There are approximately _____ prestressed strand connections and approximately _____ reinforcement bar connections (including reinforcement in the prestressed beams).

Payment

00532.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract lump sum amount for the item "Rebar Continuity".

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP00535 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25
Requires SP02510*)*

SECTION 00535 - POST-INSTALLED ANCHOR SYSTEMS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00535 of the Standard Specifications modified as follows:

Add the following subsection:

00535.45(c) Anchor Test Summary - Test the installed anchors according to Table 00535-2 and Section 00165.

(Fill in anchor information and test requirements. At minimum, consider specifying a demonstration test to confirm epoxy resin lot quality and for Contractor to practice anchor installation. Add or delete rows in the table as necessary to list all applicable anchor systems.)

Table 00535-2

Str. #	Sheet #	Anchor System (Mech/ Resin)	Anchor Type (bolt/ rebar)	Anchor Size	Anchor Grade	Anchor Sustained Tension (yes/no)	Demo. Test (yes/no)	Prod. Test (yes/no)

Replace anchors that fail at no additional cost to the Agency.

SP00536 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25)**

SECTION 00536 - INTERNAL SHEAR ANCHORS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00536 of the Standard Specifications.

SP00537 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25)**

SECTION 00537 - PENETRATING CONCRETE SURFACE TREATMENT

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00537, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00537.00 Scope - This Work consists of furnishing and placing penetrating sealers on concrete Bridge decks, concrete overlays, and other concrete surfaces as shown.

00537.04 Submittals - Submit the following at least 7 Calendar Days before the pre-placement meeting for each sealer proposed for use:

- Penetrating sealer, including: Brand name, manufacture's name, and a copy of the manufacturer's unabridged application procedures.
- A detailed work plan for the deck sealer preparation, application, and cleanup. Include estimated dates and detailed timelines (sealer installation and opening the Bridge to traffic).
- Plan to shield storm drains, traffic and pedestrians from penetrating sealer application, including overspray.
- Number and size of sample lots for cores. Include a map or drawing of core locations.

Do not proceed with the Work until the proposed work plan has been approved by the Engineer.

00537.05 Pre-Placement Meeting - Hold a pre-placement meeting with the Engineer at least 10 Calendar Days before applying the sealer. Do not proceed with the Work until the proposed work plan has been approved by the Engineer.

Materials

00537.10 Materials:

(a) Silane Sealer - Furnish a water based silane sealer meeting the requirements of 02060.30.

(b) Dye - Furnish a fugitive dye to make the solution visible on the treated concrete surface for at least 5 hours. Ensure the dye is not conspicuous longer than 7 Days after application when exposed to direct sunlight.

Equipment

00537.20 General - Remove all Equipment that leaks oil or other contaminants from the Project Site until they are repaired.

00537.21 Application Equipment - Furnish truck mounted or trailer mounted low pressure airless application Equipment with an application pressure from 15 psi to 40 psi and multiple adjustable nozzles. Prevent overspray or misting. Provide heavy nap rollers or other manufacturer recommended Equipment, as approved by the Engineer. Hand pump sprayers are not permitted.

Labor

00537.30 Personnel Qualifications – Provide a technical representative from the sealer manufacturer must be present during the first application of each approved sealer on the Project. The need for manufacturer's representative may be waived if the Contractor provides evidence and reference contacts for work involving at least 5 Bridges treated with the same products within the last two years.

Construction

00537.40 General - Do not begin sealing Work until all Materials and Equipment necessary to perform the Work are at the job site.

(a) Application Conditions - Apply the sealer when the following conditions exist:

- The ambient and deck surface temperature are between 45 °F and 100 °F.
- The deck surface:
  - Has been dry for at least 72 hours.
  - Has a surface temperature at least 5 °F above the dew point.
- There is no forecasted precipitation during application and less than 12 hours after completion of application. If precipitation occurs during application or 12 hour window, stop work and re-apply sealer at no additional cost to the Agency.
- Wind speeds are 15 mph or less.

(b) Handling Materials - Store sealer at temperatures recommended by the manufacturer. Use penetrating sealer treatment solution from original unopened manufacturers containers with seal(s) intact and the manufacturer's label visible. Do not use Materials that have exceeded their expiration date.

00537.41 Surface Preparation - Prepare all deck surfaces according to Section 00504 modified as follows:

- Perform Class 1 Preparation according to 00504.41(b) with a surface texture depth profile of at least 1/16 inch.
- Perform final surface preparation according to 00504.42(a).
- Block out interior Bridge joints and drains with rigid polyethylene foam or other approved Material to prevent leaking of sealer. Clean the surfaces of dirt, dust, curing compounds, laitance, debris, oil, grease, and foreign matter that would prevent sealer penetration, adhesion, or drying.
- Ensure all foreign Materials are removed from the concrete surfaces.
- Approved solvents and hand tools can be used to remove bonded Materials detrimental to concrete surface treatment.

00537.42 Application:

(a) General - Apply sealer according to the following:

- Use the same sealer for the entire Structure.
- No thinning or alteration of the sealer, with exception of the fugitive dye, is permitted.

- Apply sealer within the same shift as final surface preparation.
- Apply the sealer by brushing, rolling or spraying a flood coat onto concrete surfaces with approved Equipment.
- Avoid sealer running or pooling. Spread treatment from ponded areas to dry areas.
- On sloping and vertical concrete surfaces, apply sealer from bottom to top.
- When possible, apply subsequent coats perpendicular to the previous application.
- Sweep the entire deck surface after the sealer has cured and remove all loose material.

(b) Pre-production Trial Application - Perform a test application on each Structure in the presence of the Engineer. Perform the test with a minimum of 1/2 gallon of sealer. Use the approved Equipment and apply the sealer within the project limits on the surface to be treated. Verify coating application methods and yield rates.

(c) Application of Sealer:

(1) Number of Coats and Yield Rate - Apply a minimum of two coats. Apply at the yield rate verified by the pre-production trial application, or at a minimum rate of 140 square feet per gallon.

(2) Coating Thickness and Coverage Requirements - Coating thickness measurements will not be made. A visual inspection for complete coverage will be made by the Engineer after each coat. If coating coverage of any single coat is incomplete, apply an additional coat at no additional cost to the Agency.

(3) Protection - Protect Public Traffic, pedestrians, exposed metal, and non-concrete appurtenances from overspray using physical barriers or other approved methods.

00537.43 Inspection - The Engineer will inspect Materials and each phase of preparation and coating. Do not proceed with succeeding phases until approved. Provide the Engineer with timely, safe access to areas where Work is being performed. Allow adequate time for inspection at each hold point. Provide hold points at the following times:

- Before cleaning operations begin.
- After cleaning operations are completed and before application of any coating Materials.
- After Pre-production trial application.
- After each full coat.

00537.44 Sampling and Testing of Bridge Decks - For each Structure, determine the number of core locations by dividing the surface area of the Bridge deck by 10,000 square feet. Round to the nearest whole number. A minimum of 2 cores are required per Structure.

Take cores a minimum of 7 Days after silane application. Prior to coring, locate rebar in the Bridge deck to avoid rebar. Make cores 3 inch in diameter by 4 inch in depth. Core the concrete in the Engineer's presence and submit the cores to the Engineer for verification testing.

Repair core locations using Material from 02015.20 of the QPL. Perform core hole repairs the same Day the cores are taken.

Sampling and testing is for informational purposes only. Acceptance will be visual and based off application rates.

Measurement

00537.80 Measurement - The quantities of penetrating concrete sealing will be measured on the area basis, and will be the sealed surface area, excluding curb and rail faces, and will be limited to the Neat Lines and dimensions shown or directed. Field measurement of the area will not be made. The area will be determined by calculating the area from the dimensions shown.

Payment

00537.90 Payment - The accepted quantities of penetrating concrete sealing will be paid for at the Contract unit price, per square foot, for the item "Penetrating Concrete Sealing".

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP00538 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25)

SECTION 00538 - CRACK INJECTING EXISTING BRIDGES

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00538 of the Standard Specifications.

SP00539 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25
This Section requires SP00504)

SECTION 00539 - CONCRETE AND CRACK SEALING

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet

are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00539, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00539.00 Scope - This Work consists of furnishing and placing concrete and crack sealer on concrete Bridge decks, concrete overlays, and other concrete sections as shown.

Materials

(Fill in the blank with the words "Low Modulus", "High Modulus" or "High or Low Modulus". If none of these apply, remove the blank. Obtain information from the Bridge Designer.)

00539.10 Materials - Furnish a _____ concrete and crack sealer meeting the requirements of Section 02060.

Furnish a PCC repair material meeting the requirements of Section 02015 that is compatible with the sealer.

Construction

00539.40 General - Begin sealing work when all materials and equipment necessary to perform the work are at the job site and all required repairs are made.

(a) Placement Conditions - Apply the sealer when:

- The ambient temperature, surface temperature, and relative humidity (RH) meet the requirements on the manufacturer's written data sheet.
- The concrete substrate is dry, and has been dry for at least 24 hrs.
- During the hours of darkness, work areas are illuminated. Submit an illumination plan for approval at the pre-placement conference.

(b) Handling Materials - Store sealer at temperatures recommended by the manufacturer.

(c) Pre-Placement Meeting - Hold a pre-placement meeting with the Engineer at least 10 Calendar Days before applying the sealer. Submit for the Engineer's approval a manufacturer approved procedure for preparing the concrete surface, applying the sealer, and broadcasting the Sand. Include in the procedure the number of persons required, Equipment, installation sequence, sealer application rate, sealer dwell time, sealer gel time, broadcast Sand application rate, traffic control, and the estimated time schedule for installing the sealer and opening the Bridge to traffic. Do not proceed with the Work until the proposed procedure has been approved by the Engineer.

- Area of Application - Apply the sealer full width of the deck and roadway or as directed.
- Protect adjacent surfaces not to be covered with the sealer from spatter or coating.
- Applicator Qualifications - Provide a manufacturer authorized applicator. Re-certify the manufacturer authorized applicators yearly.

00539.42 Preparing Bridge Decks:

(a) Surface Removal - Remove the existing asphalt concrete wearing surface from the bridge decks, according to Section 00503.

(b) Surface Preparation - Prepare all surfaces that are to receive a deck seal according to Section 00504.

00539.45 Installation - Install sealer according to the following:

- Roll, squeegee, or broom the sealer at application rates and procedures recommended by the manufacturer.
- Allow sealer to dwell on the surface for the time recommended by the manufacturer.
- Remove all excess sealer from the surface with a squeegee, broom, or by other methods and within the time limitations recommended by the manufacturer before broadcasting the Sand.
- Before the sealer gels, broadcast the Sand at the rate recommended by the manufacturer or as required to reach refusal.
- Sweep the entire deck surface after the sealer has cured and remove all loose Material.

(Use one of the following Measurement and Payment options as instructed below. Obtain information from the Bridge Designer. Delete the option that does not apply.)

(Option 1: Use this option when sealing existing surfaces.)

[Begin Option 1]

Measurement

00539.80 Measurement - The quantities of concrete and crack sealer will be measured on the area basis, and will be the sealed surface area, excluding curb and rail faces, and will be limited to the Neat Lines and dimensions shown or directed.

(Use the following paragraph when removal of existing asphalt wearing surfaces is required.)

Removal of existing asphalt wearing surfaces will be measured according to 00503.80.

Payment

00539.90 Payment - The accepted quantities of concrete and crack sealer will be paid for at the Contract unit price, per square foot, for the item "Concrete and Crack Sealer".

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

(Use the following paragraph when removal of existing asphalt wearing surfaces is required.)

Removal of existing asphalt wearing surfaces will be paid for according to 00503.90.

[End Option 1]

(Option 2: Use this option when constructing new bridge deck surfaces (00540) or constructing new SFC and LMC overlays(00559).)

[Begin Option 2]

Measurement

00539.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

Payment

00539.90 Payment - No separate or additional payment will be made for Work performed under this Section. Payment will be included in payment made for the appropriate items under which this Work is required.

[End Option 2]

SP00540 (Special Provisions for the 2024 Book) **(Bidding on or after: 06-01-25**
Last updated: 03-03-25
Requires SP02050*)*

SECTION 00540 - STRUCTURAL CONCRETE

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [orange text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all orange text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00540 of the Standard Specifications modified as follows:

Add the following subsection:

00540.10(a) Pigmented Sealer - Furnish a semi-opaque, or opaque, 100% acrylic or acrylic co-polymer resin concrete sealer meeting the following requirements:

Property	Test Method	Requirement
UV Resistance	ASTM D5894	5000 hour exposure
Wind Driven Rain Resistance	ASTM D6904 reference FED TT-P-555B	No visible leaks
Permeance	ASTM E96/E96M or ASTM D1653	Minimum 10 perms
Fungal Growth	FED STD 141	No fungal growth after 21 Days

Provide colors and color samples as shown or directed. Furnish a sealer designated for vertical application when applied to walls. When applied to structures with soffits or overhangs, furnish a sealer that is designated for vertical and overhead application.

Furnish pigmented sealer color that conforms to the following colors:

(In the following list, replace the color and color number if necessary. Delete all orange parentheses.)

Light Gray, conforming to SAE AMS-STD-595C color #*(*36375*)*.
Dark Gray, conforming to SAE AMS-STD-595C color #*(*36176*)*.

(Use the following subsection .41(f) if bolt holes are allowed in the exterior girder web to support form brackets.)

00540.41(f) Concrete Forms on Steel Structures – Add the following to the end of the subsection:

Shop drill bolt holes in the exterior girder web to support form brackets. Fill the holes with fully torqued ASTM F3125 Grade A325 or button-head twist-off bolts ASTM F1852 or F2280 bolts according to Section 02560. Place each bolt head on the exterior side of the web. No holes are to be made in the flanges.

00540.51(b) Curing Concrete Bridge Decks – Replace the bullet that begins “Maintain a continuous water…” with the following bullet:

- Except for HPC(IC), maintain a continuous water cure of the concrete surface for 14 Days. For HPC(IC), maintain a continuous water cure of the concrete surface for 7 Days.

00540.53(d) Concrete Coating – Replace the paragraph that begins “Apply either a concrete paint…” with the following paragraph:

Apply either a concrete paint or a pigmented sealer as shown or specified. Where a Class 1 or Class 2 surface finish is shown, apply a concrete paint unless specified or shown otherwise.

00540.53(d)(2) Penetrating Concrete Stain or Sealer - Replace this subsection with the following subsection:

00540.53(d)(2) Pigmented Sealer - Prepare concrete surfaces and apply 2 coats of the pigmented sealer according to the manufacturer’s recommendations. Follow all

recommended curing schedules for newly placed concrete prior to application and for recoat or repair. Monitor and follow all environmental limitations as published by the manufacturer during application, and curing.

(Use the following subsection .80(a)(1) when concrete is paid for on the lump sum basis. List by bridge number then by bid item name. Add items as appropriate. Delete what does not apply. Obtain information from the Bridge Designer.)

00540.80(a)(1) Lump Sum - Add the following to the end of this subsection:

The estimated quantity of concrete is:

Bridge No. _____

Type and Class	**Quantity (Cu. Yd.)**
Foundation Concrete, Class _____	_____
Deck Concrete, Class _____	_____
General Structural Concrete, Class _____	_____

Bridge No. _____

Type and Class	**Quantity (Cu. Yd.)**
Foundation Concrete, Class _____	_____
Deck Concrete, Class _____	_____
General Structural Concrete, Class _____	_____

(Use the following subsection .80(b) if surface texturing is required.)

00540.80(b) Sawcut Texturing - Replace this subsection with the following subsection:

00540.80(b) Surface Texturing - The quantities of surface texturing will be measured on the area basis and will be the area of each bridge deck or approach slab as shown, less 16 inches along each curb and 6 inches from joint blockouts and bridge ends. Field measurement of surface texturing will not be made.

(Use the following subsection .90 if surface texturing is required.)

00540.90 Payment – Replace the Pay Item Sawcut Texturing with the following Pay Item:

Pay Item	**Unit of Measurement**
(d) Surface Texturing.....	Square Yard

(Include the following falsework design checklist when required by the Bridge Designer.)

FALSEWORK DESIGN CHECKLIST

Instructions - This checklist was developed to facilitate the design, review, and erection of falsework to be used for Oregon Department of Transportation bridge construction projects. This checklist is intended to act as a reminder to design or check for specific important aspects of this construction. It is not a substitute for plan and/or design criteria or specification requirements.

The Checklist is to be completed and signed by the Falsework Design Engineer. Answer every question. Attach to the Checklist an explanation of any negative responses.

Submit the Checklist according to 00540.41(a).

A. Contract Plans, Specifications, Permits, Etc.	**YES**	**NO**	**N/A**
1. Are the falsework plans prepared, stamped and signed by an engineer registered to practice in Oregon?	____	____	____
2. Have three complete sets (five if railroad approval is required) of the design calculations been included with the falsework drawings submittal?	____	____	____
3. Are falsework plans in compliance with the requirements of the construction plans general notes?	____	____	____
4. Are falsework plans in compliance with contract plan structural details?	____	____	____
5. Are falsework plans in compliance with the requirements of the Oregon Standard Specifications for Construction, subsection 00150.35?	____	____	____
6. Are all existing, adjusted or new utilities in proximity with the proposed falsework shown on the falsework plans and is protection of these utilities addressed?	____	____	____
7. Are clearance requirements satisfied and shown on the falsework plans?	____	____	____
8. For construction in or over navigable waters have all requirements for construction of falsework that are called for in the Coast Guard Permit been incorporated in the falsework design?	____	____	____
9. Has possible damage from traffic been considered in the falsework design?	____	____	____

10. Has damage from stream drift been considered in the falsework design?	____	____	____
11. Is the concrete placing sequence shown and is it consistent with the contract plans?	____	____	____
B. Foundation Requirements	**YES**	**NO**	**N/A**
1. Are driven falsework piling provided as called for on the contract plans?	____	____	____
a. Is a minimum pile tip elevation or penetration indicated on the drawings?	____	____	____
b. If timber falsework piles are specified, are the recommended order lengths sufficient to virtually eliminate the possibility of pile splices?	____	____	____
c. Is a detailed static pile capacity analysis included in the calculations?	____	____	____
d. If lateral loads are applied to the piling by equipment, dead loads, flowing water, or drift, is a detailed lateral load analysis included in the calculations?	____	____	____
e. When piling are in an active waterway, have the potential effects of scour on axial and lateral pile support been addressed in the calculations?	____	____	____
f. Does the proposed falsework pile hammer meet the minimum field energy requirements as listed in 00520.20(d)(2)?	____	____	____
g. Will a driving criteria graph [FHWA Gates Equation, in 00520.42(b)] plotting blow count versus stroke for an acceptable pile hammer be provided for the project inspector?	____	____	____
2. Is falsework supported on spread footings or mud sills?	____	____	____
a. Are the spread footing elevations shown on the drawings?	____	____	____
b. Has a rational method for determining the ultimate bearing capacity of the foundation materials been presented and described in the calculations?	____	____	____
c. Have the soil parameters used in calculating the ultimate bearing capacity been listed and confirmed by the designer?	____	____	____

d. Has an appropriate Factor of Safety been used for calculating the allowable bearing capacity of the foundation materials?	____	____	____
e. Are spread footing settlement estimates included in the calculations?	____	____	____
f. Have effective stresses been used in the calculations, when applicable?	____	____	____
g. When spread footings are founded near the top of a slope or in a slope, have the ultimate bearing capacity calculations been modified accordingly?	____	____	____
h. When spread footings may be subjected to flowing water, have the potential effects of scour on ultimate bearing capacity been addressed in the calculations?	____	____	____
C. Loads	**YES**	**NO**	**N/A**
1. Are the magnitude and location of all loads, equipment and personnel that will be supported by the falsework shown and noted on the falsework plans?	____	____	____
2. Has the mass of specific equipment units to be supported by the falsework been included in the calculations or on the falsework plans?	____	____	____
3. Is the deck finishing machine supported in a manner that will not impose load on concrete forms except deck overhang brackets?	____	____	____
4. Are design loads and material properties used to determine design stresses for each different falsework member shown on the falsework plans?	____	____	____
5. Is the worst loading and member property condition, rather than the average condition, used to obtain design loads?	____	____	____
6. Are deck forms for concrete box girders supported from the girder stem and not from the bottom slab?	____	____	____
7. Are diaphragm loads or other concentrated loads included in the analysis of supporting beams?	____	____	____
8. If sloping structural members exert horizontal forces on the falsework, is bracing or ties used to resist these loads?	____	____	____
D. Allowable Stresses	**YES**	**NO**	**N/A**

1. Has the method used for falsework design of all members except for manufactured assemblies been noted in the design calculations?	____	____	____
2. Are manufactured assemblies identified as to manufacturer, model, rated working capacity and ultimate capacity?	____	____	____
3. Is the allowable stress and the calculated stress listed in the summary for each different falsework member, except for manufactured assemblies?	____	____	____
E. Timber Falsework Construction	**YES**	**NO**	**N/A**
1. Are timber grades consistent with material to be delivered to the construction site, and noted on falsework drawings, and in accompanying calculations for all timber falsework material?	____	____	____
2. If "rough" lumber is specified for falsework by the falsework designer are the actual lumber dimensions used in calculations shown?	____	____	____
3. If plywood spans are governed by the strength of the plywood, are the allowable stress and the calculated stress shown on the submitted calculations?	____	____	____
4. If plywood spans are governed by the allowable spacing of supporting joists, are the allowable and the proposed spacing shown on the falsework plans?	____	____	____
5. Have timber stringers been checked for bending, shear, bearing stresses, and 1/240 of the span length deflection?	____	____	____
6. Are joists identified as being continuous over 3 or more spans when they are not analyzed as simple spans?	____	____	____
7. Have stringers and cap beams been checked for bearing stresses perpendicular to the grain as well as for bending and shear stresses?	____	____	____
8. Have posts been checked as columns as well as for compression parallel to the grain?	____	____	____
F. Steel Falsework Construction	**YES**	**NO**	**N/A**
1. Are steel structural shapes and plates identified by ASTM number on the falsework plans and in the calculations?	____	____	____

2. Have steel beams been checked for bending, shear, web crippling and buckling of the compression flange?	____	____	____
3. Has horizontal plane bracing been shown where required to limit compression flange buckling?	____	____	____
G. Deflections and Settlement	**YES**	**NO**	**N/A**
1. Is falsework deflection for concrete dead load shown on the plans for all falsework spans?	____	____	____
2. Is falsework deflection from concrete dead load limited to 1/240 of the span length for all falsework spans?	____	____	____
3. Do stringers supporting cast-in-place concrete compensate for estimated camber?	____	____	____
4. For beam spans with cantilevers, has the upward deflection of the cantilevers due to load placed on the main spans been investigated?	____	____	____
5. Are provisions shown for taking up falsework settlement?	____	____	____
H. Compression Members, Connections and Bracing	**YES**	**NO**	**N/A**
1. Has general buckling been evaluated for all compression members?	____	____	____
2. Has bracing been provided at all points of assumed support for compression members?	____	____	____
3. Was bracing in each direction considered in establishing the effective length used to check post capacity?	____	____	____
4. Is bracing strength and stiffness sufficient for the intended purpose?	____	____	____
5. If temporary bracing is required during intermediate stages of falsework erection, is it shown on the falsework plans?	____	____	____
6. Have all connections been designed and detailed?	____	____	____
7. Are web stiffeners required on steel cap beams to resist eccentric loads?	____	____	____
8. Are wedges required between longitudinal beams and cap beams to accommodate longitudinal slope or to reduce eccentric loading?	____	____	____
9. Has the width to height ratio of wedge packs been verified to fall within the limits given in the special provisions?	____	____	____

10. If overhang brackets are attached to girder webs, has the need for temporary bracing to prevent longitudinal girder distortion been investigated?	____	____	____
11. Have beams and stringers with height/width ratios greater than 2.5:1 been checked for stability?	____	____	____
12. Have sloping falsework members that exert horizontal forces on the falsework been braced or tied to resist these loads?	____	____	____
13. If beams supporting cast-in-place concrete have cantilever spans, have the falsework plans been noted to require the main spans be loaded before loading the cantilever spans?	____	____	____
14. Have timber headers set on shoring towers been checked for eccentric loads, and for shear and bending stresses produced by the eccentricity?	____	____	____
I. Highway and Railroad Traffic Openings (For falsework over or adjacent to highway or railroad traffic openings.)	**YES**	**NO**	**N/A**
1. Do falsework plans satisfy construction clearances shown on the contract plans?	____	____	____
2. Are posts designed for 150% of the calculated vertical loading and increased or readjusted for loads caused by prestressing forces?	____	____	____
3. Are mechanical connections 2,000 pounds minimum capacity shown at the bottom of posts to footing connections?	____	____	____
4. Are mechanical connections 1,000 pounds minimum capacity shown at the top of the post to cap connections?	____	____	____
5. Are beam tie downs 500 pounds minimum capacity shown for all beams?	____	____	____
6. Are 5/8 inch or larger diameter bolts used at connections for timber bracing?	____	____	____
7. Are temporary erection and removal bracing shown?	____	____	____
J. Additional Requirements for Railroad Traffic Openings	**YES**	**NO**	**N/A**
1. Do falsework plans show collision posts as shown on the contract plans?	____	____	____

2. Do posts adjacent to the openings have a minimum section modulus of?

   a. steel - 9.5 cubic inches ____ ____ ____

   b. timber - 250 cubic inches ____ ____ ____

3. Are soffit and deck overhang forming details shown? ____ ____ ____

4. Are falsework bents within 20 feet of centerline of the track sheathed solid between 3 feet and 17 feet above top of rail with 5/8 inch thick minimum plywood and properly blocked at the edges? ____ ____ ____

5. Is bracing on the bents within 20 feet of the centerline of the track adequate to resist the required assumed horizontal load or minimum 5,000 pounds, whichever is greater?

_____ _____

Designer's Signature Date

SP00541 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25)**

SECTION 00541 - ULTRA HIGH PERFORMANCE CONCRETE

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00541, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00541.00 Scope - This Work consists of furnishing, placing, and finishing Ultra High Performance Concrete (UHPC) for Bridges and other Structures according to these specifications and in close conformity to the lines, grades and dimensions shown or established. This Work also includes field cast of UHPC in joints between precast concrete members and existing concrete surfaces.

00541.01 Definitions:

Ultra High Performance Concrete (UHPC) - A cementitious composite material composed of an optimized gradation of granular constituents, a water-to-cementitious material ratio less than 0.25, and a high percentage of discontinuous internal steel fiber reinforcement. The mechanical properties of UHPC include a compressive strength greater than 20 ksi and sustained post-cracking tensile strength greater than 0.72 ksi.

00541.02 Submittals - At least 14 Calendar Days before the UHPC pre-placement conference submit the following:

- Material certifications from the manufacturer
- Manufacturer's requirements for storing, mixing sequence and time, batching sequence, forming, placing, and curing
- Manufacturer's quality control procedures for sampling and testing including test methods and name and location of testing laboratory. Submit quality control test results according to manufacturer's quality control procedures for all UHPC placed.
- Formwork details and construction plan that includes attachment details, top forming, surface coating, joint sealing, and overpressure source according to the UHPC manufacturer's recommendation.
- Formwork repair plan for formwork blowout that can occur during UHPC placement.

- Certification of an ODOT certified laboratory or an AASHTO accredited laboratory approved by the Engineer to perform compressive strength tests according to ASTM C39 or ASTM C1856. For laboratory certified for ASTM C39 tests, ensure that the laboratory has testing machine that can apply a minimum load of 200,000 pounds. Include specifications of testing equipment to be used for testing.

00541.03 UHPC Pre-Placement Conference - Meet on-site with the UHPC manufacturer representative, the Engineer, and the Contractor's staff at least 1 Calendar Day before initial placement of UHPC. Discuss the proposed procedures for mixing, transporting, finishing, and curing of the UHPC material. Provide notification of the meeting to the Engineer at least 7 Calendar Days in advance.

Materials

00541.10 Materials - Furnish UHPC from one of the following list of pre-approved manufacturers.

Manufacturer	Material
Holcim US 8700 West Bryn Mawr Avenue, Suite 300 Chicago, IL 60631 Phone: (734) 489-9555 Email: ductal-na@lafargeholcim.com	Ductal Infrastructure
Steelike, Inc. 7631 Fullerton Road 7G Springfield, VA 22153 Phone: 703-520-2763 US Toll Free: 1-888-364-2541 E-mail: info@steelike.com	Steelike® UHPC

00541.11 Material Sampling and Acceptance of UHPC - Cast 15 - 3 inch diameter x 6 inches cylinder samples according to ASTM C1856 for each Day of placement. Field cure cylinders for 3 Days. After 3 Days, keep cylinders sheltered in open air. A set of samples includes 3 cylinders.

Allow the Engineer to randomly select two sets of the samples for testing by the Agency. The Agency will test one set for compressive strength at 28 Days. The other set will be tested for splitting tensile strength at 28 Days for information only.

Transport three sets of the samples to an ODOT certified laboratory or an AASHTO accredited laboratory approved by the Engineer. A set of the cylinders will be randomly selected and tested for compressive strength at 4 Days, 14 Days, and 28 Days. Acceptance will be based on the results obtained at 28 Days. Results from additional sets of cylinders will be informational only.

Prepare cylinders according to ASTM C1856. Perform compressive strength tests according to ASTM C39 or ASTM C1856.

Meet the following minimum required strength:

- 20,000 psi compressive strength at 28 Days

Perform a flow test before UHPC placement according to ASTM C1437 for each batch of UHPC. The flow range shall be between 7 and 10 inches.

Labor

00541.30 Manufacturer's Representative - Provide a representative of the UHPC manufacturer on-site during placement of UHPC to monitor the quality of UHPC mixing, delivery, placement, and curing of the UHPC material and to conduct a flow test on every batch.

Construction

00541.40 Surface Preparation for Joints - Provide exposed aggregate finish at precast concrete interfaces that are in contact with UHPC by using surface retarders from the QPL to expose Coarse Aggregates up to a 1/4 inch amplitude. For joints between existing concrete surfaces, prepare surfaces according to 00542.46 or other methods approved by the Engineer.

Wet precast concrete interface for a minimum of 8 hours and to a saturated surface dry condition immediately before placing UHPC. Blow out with compressed air any standing water in depressions, holes or low area.

00541.41 Forming - Design and fabricate forms that provide tight seals to prevent leakage of UHPC constituents and are sufficiently rigid to conform to the specified dimensions without appreciable distortion, warping or opening of joints. Use methods and Equipment as required by the manufacturer to ensure all joints are completely filled. Coat forms as recommended by the UHPC manufacturer to prevent water absorption.

00541.42 Batching and Placing - Follow the batching sequence as specified by the UHPC manufacturer and approved by the Engineer. Place UHPC according to 00540.49 and as recommended by the UHPC manufacturer. Overfill joint 1/8 inch maximum using top formwork. Place UHPC in one continuous pour, unless cold joint location is shown.

00541.43 Curing - Cure UHPC according to the manufacturer's recommendations for a minimum of four Days or until UHPC has a compressive strength of at least 14,000 psi before removing forms or applying loading.

00541.44 Grinding Overfilled UHPC - Grind UHPC joint to elevation shown. Grinding of UHPC surface can be performed when compressive strength of 10,000 psi has been achieved. If significant fiber pullout is observed during grinding operations, stop grinding. Resume the grinding with approval of the Engineer.

00541.45 Deck Sealing - Unless deck overlay that includes sealing work is specified for this Project, seal the surface over deck-level joints plus 3 feet around the joints and full width of the Roadway width according to Section 00539 after texturing the deck surface.

Measurement

00541.80 Measurement - No measurement of quantities will be made for UHPC.

The estimated quantity of UHPC is:

Type	Quantity (Cu. Yd.)
Ultra High Performance Concrete	_____

Payment

00541.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract lump sum amount for the item "Ultra High Performance Concrete".

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

Reinforcing steel or other metal incorporated in the Work will be paid for according to the appropriate Section in which the Work is required.

No separate or additional payment will be made for surface preparation for precast members. Payment will be paid for the appropriate items under which the Work is required.

No separate or additional payment will be made for:

- formwork
- leak-tight seal
- corrective work
- manufacturer's representative
- deck sealing
- surface preparation for existing concrete surfaces

SP00542 (Special Provisions for the 2024 Book) **(Bidding on or after: 06-01-25**
Last updated: 02-26-25
Requires SP02510*)*

SECTION 00542 - CONCRETE REPAIR

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before

preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00542, which is not in the Standard Specifications, is included in this Project by Special Provision.

Description

00542.00 Scope - This Work consists of locating and repairing damage concrete and reinforcement in Structures, and providing mortar or resin buildup over shallow reinforcement.

00542.01 Definitions:

(Delete the "Anode" paragraph if no anodes are used on the Project).

Anode - A galvanic unit consisting of a sacrificial zinc core and a cementitious mortar outer cover for corrosion prevention and on-going corrosion control of surrounding reinforcing steel.

Damaged Concrete - Concrete that is spalled or delaminated due to corroded reinforcement or metal appurtenances such as bearing devices, drains, and conduits; concrete that is debonded from corroded reinforcing bars; concrete with near-surface rock pockets; unsound or delaminated existing patches; and concrete that has been drilled, excavated, or removed during prior maintenance work or during the Work of this Contract.

Hand Patch - Installing hand-troweled repair mortar in concrete cavities up to 0.50 square foot surface area.

Metal Detector - A device to measure any type of metal, whether on the surface or buried in concrete.

Pumped Repair - Installing Pumped Repair mortar in concrete cavities greater than 0.50 square foot surface area.

Rebar Locator - A device specifically designed to find reinforcing in concrete.

Saturated Surface Dry Condition - Surface condition where hardened concrete is thoroughly saturated with water, but any free water has been removed from the surface.

Shallow Rebar - Steel reinforcement with 1/2 inch or less of concrete cover.

00542.02 Submittals - Submit the following at least 21 Calendar Days before beginning concrete repair Work according to 00150.37. Within 21 Calendar Days after receipt of submittals, the Engineer will review the submittals and designate them in writing as "approved", "approved as noted", or "returned for correction".

(a) Concrete Repair Mortar - Submit before concrete repair work the following:

- A description of all relevant constituents and properties of the Material. Data published by manufacturer is acceptable unless certifications of the Material characteristics are required by the Specifications.

- For prepackaged products, the manufacturer's certification that the contents include cement and Aggregate and do not include silica fume, fly ash, or any other porosity-reducing admixture. Provide the proportion (by weight) of portland cement to Sand according to the provisions of 00165.35.
- The Specifications subsection with which each repair mortar complies.
- If proposing alternative repair mortar to those specified in 00542.10, test data demonstrating compliance with 00542.10.

For alternate repair mortar submit three 4 by 8-inch cylinders of repair mortar cast in the presence of the Engineer using the proposed mix proportions, admixtures, and mixing and application Equipment, at least 10 Calendar Days before starting concrete repair Work. Cast and cure the cylinders according to AASHTO T 23 or R 39.

Submit records of mix proportions and which mix design was used in each repair location. Maintain and provide records that are complete enough to be able to match repaired areas with the mix records.

(b) Concrete Repair Procedure - Prior to beginning Work under this Section, submit a concrete repair procedure that includes the following:

- Manufacturer's specifications and operating instructions for all Equipment.
- Details of each step to accomplish the Work.
- Steps to regularly maintain quality control of all newly applied mortar.
- Plan to maintain records of verification of proportion (by weight) of Sand to portland cement and quantity of any additives for all mortar mixed on-site.
- Plan to maintain records identifying the mix design for each repaired area.

(c) Repair Damaged Reinforcing Bars - Submit a plan for accomplishing reinforcing bar repair that includes the following:

- Welder certifications according to AWS D1.4
- Pre-approved welding procedure specification (WPS) or procedure qualification record / welding procedure specification (PQR/WPS)
- Detailed procedure for electrode control measures
- Detailed procedure for achieving, maintaining, and monitoring pre-heat and inter-pass temperatures.

00542.03 Pre-welding Conference - Before beginning concrete repair Work, meet with the Contractor's supervisory personnel, concrete repair Subcontractor's supervisory personnel, the Contractor's certified welding inspector (CWI), and the Engineer at a mutually agreed upon time. The pre-welding conference includes discussion of the Contractor's quality control responsibilities, documentation requirements, welding procedures and Equipment, and demonstration of welder skills.

Materials

00542.10 Patch Material:

(a) Pumped Repair Mortar - Provide one of the following mortars with the required admixture as specified in 00542.15.

- Pumped BASF MasterEmaco S 440MC (formerly BASF LA Repair Mortar).

Alternative repair mortar conforming to the following:

- Non-polymer flowable micro-concrete
- Suitable for pumping
- At least 4,000 psi 28-Day compressive strength
- "Low" potential for cracking and no cracking in 28 Calendar Days when tested according to ASTM C1581, including Appendix
- Electrical resistivity in the range of 2,000 to 20,000 ohm-cm

Submit proposed alternative Materials for approval according to 00542.02.

(b) Hand Patch Material - Provide Hand Patching Materials according to 02015.20 or 02015.30. Observe QPL remarks and follow the manufacturer's recommendation for application.

00542.11 Non-conductive Resin - Non-conductive resin is acceptable for filling cavities of 0.05 square feet or less and for resin buildup over Shallow Rebar in sound concrete. Furnish a non-conductive resin from the category "Resin Bonded Anchor System" of the QPL, mixed at a 1:1 ratio with clean abrasive blasting Material.

00542.12 Abrasive - Furnish clean, dry, non-metallic grit abrasive Material with no mineral constituents that break down and remain on the surface in visible quantity. Furnish hard angular shaped abrasives from 16 - 30 mesh.

00542.13 Water - Furnish water according to Section 02020.

00542.14 Reinforcement and Added Steel - Furnish ASTM A706 Grade 60 uncoated reinforcing bars conforming to 02510.10. Furnish uncoated, ungalvanized welded wire fabric conforming to 02510.40. Other metal embedded in the mortar to facilitate concrete replacement shall be uncoated and ungalvanized.

00542.15 Admixtures - Use only admixtures approved by the Engineer.

If using admixtures to reduce the water-cement ratio, or to retard or accelerate the development of strength, use only admixtures compatible with the mortar and at the rate specified by the manufacturer.

(Use the following subsection .16 for corrosive environments and when hollow wall anchors are used on the project. Delete this subsection if using subsection .17.)

00542.16 Hollow Wall Anchors - Furnish the following plastic hollow wall anchors:

- ITW Red Head EZP100 Nylon E-Z Drywall Anchor

(Use the following subsection .17 for non-corrosive environments and when mechanical anchors are used on the project. Delete this subsection if using subsection .16.)

00542.17 Mechanical Anchors - Furnish the following mechanical screw anchors:

- Dewalt Ultracon + (Hex washer head)
- Hilti Kwik Con II + (Hex washer head)
- ITW Red Head Tapcon (Hex washer head)

(Use the following subsection .18 when zinc Anodes are required.)

00542.18 Galvanic Zinc Anode - Furnish one of the following galvanic zinc Anodes:

Galvashield XP2 (100 grams zinc)
Vector Corrosion Technologies
5436 N. Desert Saguaro Ct.
Tucson, AZ 85745
(520) 230-0060
Fax (813) 830-7565
www.vector-corrosion.com

Sentinel Silver (100 grams zinc)
The Euclid Chemical Company
19218 Redwood Rd.
Cleveland, OH 44110
(216) 531-9222
Fax (216) 531-9596
www.euclidchemical.com

MasterProtect 8105 Anode, 105 grams zinc (24 anodes/case)
Master Builders Solutions/MBCC Group
889 Valley Park Drive.
Shakopee, MN 55379
(800) 433-9517 (Customer service)
www.master-builders-solutions.com

Labor

00542.30 Welders - Provide certified welders and welding inspectors according to AWS D1.4.

Construction

00542.40 Work Access, Containment, and Disposal - Provide Work access and debris containment according to Section 00253.

Dispose of waste according to 00290.20.

00542.41 Locating and Marking - Locate and mark the following:

- All concrete having visible spalling or delamination due to corrosion of reinforcement or metal appurtenances such as bearing devices, drains, and conduits. Include within the repair boundaries all Damaged Concrete at the edges of spalls.
- All visible unsound patches of Material.
- All concrete that is visibly loose, or that becomes dislodged or loosened when struck with a 16-ounce masonry hammer or by other approved technique.

Verify the presence of steel with a metal detector.

The Contractor is advised that concrete containing Aggregate larger than 2 inches can cause false readings. If no steel is present, readings in such areas should be disregarded.

Investigate all spots of rust visually and with a metal detector to determine if a metallic object is present. If a metal object is present mark the location.

In areas where spalling or delamination is not visually detectable, but is indicated by sounding, use a rebar locator and mark reinforcing bars and their minimum concrete cover. If rust scale or pitting is found on the exposed reinforcing bar, or if the remaining concrete is separated from the bar, mark the Damaged Concrete area for removal.

Do not use internal angles less than 45 degrees in defining the repair boundaries. Make all repairs at least 2 inches wide in each direction. Within these restrictions, mark boundaries such that repair areas can be efficiently sawed and excavated.

Determine and mark the location and extent of each repair excavation. Do not begin concrete removal until location and extent have been verified by the Engineer.

The Engineer will perform verification surveys of selected sections of the Work and determine the final quantity of repairs. Do not begin excavation until the Engineer has completed the verification surveys.

00542.42 Concrete Removal - Sawcut the boundaries of concrete to be removed, to a depth just missing the reinforcing bars with less than 1/2 inch concrete cover or to a minimum of 1/2 inch, whichever is less. Do not overrun sawcuts at the corners of the marked boundaries. Sawcutting is not required if the Contractor can consistently provide, by another technique, a minimum 1/2 inch deep excavation surface that is uniformly perpendicular to the original concrete surface along the marked boundary.

Remove concrete within the marked boundaries with high-pressure waterjet blasting Equipment, pneumatic hammers, chipping guns, manual picks and chisels, or other Equipment approved by the Engineer. Do not use pneumatic hammers heavier than a nominal 15-pound class. Remove concrete in such a way that removal of sound concrete beyond established boundaries is kept to a minimum. When working around reinforcing bars, avoid loosening the reinforcement or fracturing the concrete around it beyond the repair area.

Remove all Damaged Concrete within the marked boundaries to the depth of sound concrete. In areas where the reinforcing bar lacks bond with the existing concrete, continue to excavate to 1/2 inch beyond the depth of the reinforcing bar. Do not excavate beyond the depth of the

reinforcing bar if area shows the reinforcing bar to be free of rust scale or pitting and the reinforcing bar is not separated from the remaining concrete.

The depth of concrete damage, due to corrosion, in any member is not expected to be substantially greater than 1/2 inch beyond the depth of the reinforcing bar.

Do not remove sound concrete over Shallow Rebar.

00542.43 Repair Damaged Reinforcement Bars - Repair reinforcing bar showing 50 percent or greater section loss according to the following:

- Remove all Damaged Concrete
- Remove sound concrete as necessary so that there is a minimum of 3/4 inch clearance between the concrete and splice bars over entire length of repair
- Blast-clean all exposed reinforcing steel and concrete
- If feasible, place splice bars so as to allow 1/2 inch of concrete cover without raising the concrete surface
- Perform all weld splicing according to ANSI/AWS D1.4, “Structural Welding Code - Reinforcing Steel”. Since the carbon content of existing reinforcement is unknown, assume that preheating is required under ANSI/AWS D1.4. Limit the temperature of reinforcing bar at concrete interface to 500 °F or less, verified using an infrared thermometer.
- Remove any additional concrete that cracks or spalls during welding
- Keep the existing spliced bars in place and avoid gouging and loosening reinforcing bar or damaging sound concrete outside of splice areas
- Keep the splice bar in the proper position during placement of concrete cover

Repair round bars with new splice bars the same size as the original bars. Repair square bars with new round splice bars with a diameter equal to the thickness of the square bars.

00542.44 Shallow Rebar in Sound Concrete - If Shallow Rebar exists in sound concrete and passes the sounding test, no concrete repair is necessary.

00542.45 Shallow Rebar in Damaged Concrete - Where directed, treat prefabricated mesh and other closely spaced shallow metals in the same manner as Shallow Rebar in Damaged Concrete. Place additional cover Material over Shallow Rebar in Damaged Concrete according to the following:

(a) Mortar Buildup over Shallow Rebar - Place additional mortar as needed to achieve at least 1/2 inch of cover over Shallow Rebar repairs.

(b) Resin Buildup over Shallow Rebar - In areas where additional buildup is not feasible, or where buildup would detract from the aesthetic appearance of the Structure, provide additional cover using non-conductive resin conforming to 00542.11. Apply the resin in 2 inch wide strips over the Shallow Rebar.

00542.46 Surface Preparation - Abrasive-blast or water-blast all concrete surfaces that are to receive additional mortar cover or patches, to remove all debris, loose concrete, concrete pulverized during removal, scale, and loose rust. Blast exposed reinforcing bars according to

SSPC Standard SP6 “Commercial Blast Cleaning” or equivalent procedure. Do not allow prepared surfaces to remain exposed more than 36 hours before placing repair mortar.

Prepare surfaces that are to receive additional mortar or resin cover with a surface profile according to International Concrete Repair Institute (ICRI) Guideline 310.2R-2013 surface profile CSP 6 (1/8 inch surface profile).

(Delete the following paragraph if hollow wall anchors are used on the project.)

Provide hollow wall anchors for concrete surfaces that are to receive more than 1 inch of repair mortar and have reinforcing bar spacing greater than 9 inches. Install anchors by drilling 1/4 inch diameter holes 1/2 to 3/4 inch deep on a 9 inch (maximum) grid in the concrete substrate. Apply non-conductive resin and insert anchors. Remove excess resin from the concrete substrate.

(Delete the following paragraph if mechanical anchors are used on the project.)

Provide mechanical anchors for concrete surfaces that are to receive more than 1 inch of repair mortar and have reinforcing bar spacing greater than 9 inches. Install anchors by drilling hole diameter per manufacturer’s specification with 1 inch deep embedment on a 9 inch maximum grid in the concrete substrate.

(Delete the following subsection .47 if no Anodes are used on the Project. Do not re-number subsequent subsections.)

00542.47 Anode Installation - Install galvanic zinc Anodes in Damaged Concrete repair locations that have scaled or pitted reinforcement bar with a high probability of recurring corrosion. Place an Anode in the edge of the patch area within the vicinity of the corroded reinforcement. Securely fasten the Anode to clean reinforcing steel using a suitable wire twisting tool to eliminate free movement, and to ensure electrical continuity. Confirm continuity using an ohmmeter. Electrical resistance between the Anode wire and adjacent reinforcement shall be 2.0 ohms or less. Install Anodes in a 24 inch grid, on center. Adjust spacing where intersecting reinforcement does not allow for 24 inches and maintain 14 inches minimum and 24 inches maximum spacing. Install a single Anode in directions where less than 30 inches of reinforcement is exposed. Install Anodes according to the Anode manufacturer’s recommendations and cover with patch Material within 24 hours after removing the Anode from its original packaging. Provide a minimum of 3/4 inch coverage over Anodes.

00542.48 Patch Installation:

(a) Forms - Provide smooth-surfaced form Materials. Provide adequate support and bracing of forms to prevent deflection under the weight and pressure of new mortar, and to prevent vibration damage to mortar during setting and curing. Leave forms in place for a minimum of 3 Days after mortar placement.

Provide watertight form Materials and a watertight form system to prevent loss of water during presoaking and repair mortar placement. Incorporate enough pumping ports to ensure consistent placement and enough vent holes or vent tubes to allow air to escape extreme surface irregularities and remote cavities. Limit port spacing to prevent mortar segregation.

Provide forms that can readily be removed and reinstalled for presoaking, flushing, blowdown, and for verification of Surface Saturated Dry Condition.

(b) Pre-soak - Saturate the substrate concrete for at least 24 hours before application of repair mortar. Use either a watertight form kept full of water; saturated burlap or foam Material packed inside the forms, in contact with the entire existing concrete surface, and soaked frequently; or any other method demonstrated to produce Saturated Surface Dry Condition.

After the substrate has been saturated, temporarily remove the form and, immediately before placing mortar, remove all dust, dirt, and other debris by flushing the surface with water pressurized to at least 60 psi, followed by blasting with clean compressed air to remove excess water. Provide a damp surface free of standing water and free of contaminants when applying repair mortar. Light surface rust that appears during the pre-soak stage does not need to be removed. When the concrete surface is in Saturated Surface Dry Condition and free of contaminants, and reinforcement is clean or has only light surface rust, immediately reinstall the forms and place mortar.

(c) Mixing - When a package of prepackaged repair mortar is opened, mix the entire contents of the package.

Mix repair mortar according to the manufacturer's instructions including, but not limited to, mixing speed, mixing time, and mixing Equipment.

(d) Placing Repair Mortar - Pump repair mortar and achieve thorough and uniform hydration without the use of excess water.

Do not place mortar before acceptance of Saturated Surface Dry Condition by the Engineer.

Do not place mortar during freezing weather or if temperatures are likely to drop below freezing during the cure period for the mortar. Do not apply mortar to frosted surfaces. Follow the manufacturer's recommendations regarding temperature and weather conditions during mortar placement.

Provide adequate pumping pressure into each port to ensure mortar completely fills the cavity and mortar is observed at all vents. Vibrate only if approved by the Engineer in advance.

(e) Adjacent Surface Protection - Protect surfaces outside the repair area from mortar overshoot and drip. Remove the excess Material from these areas after the application has been completed.

(f) Mix Records - Record proportion (by weight) of Sand to portland cement and the quantity of any additives for all mortar mixed on-site at the start of each mortar placement operation and every time proportions or additives are changed. Keep a record of which mix is used for each repair area.

00542.49 Curing - Take care to avoid cracks in the new mortar due to excessive surface evaporation. Continuously cure all newly applied mortar according to the manufacturer's recommended curing schedule.

00542.50 Finish - Finish all exposed surfaces and surface defects to straight and true lines as shown. Provide a Class 2 surface finish according to 00540.53 on all exposed surfaces and a general surface finish according to 00540.53 on all other surfaces, with no coating on any surface unless otherwise directed.

00542.51 Delamination Survey - After mortar repair Work has cured, conduct a delamination survey of all repaired areas with the Engineer according to the following:

- Sound all repaired areas with a 1-pound masonry hammer or by other approved technique.
- Mark boundaries of all delaminations in the repaired areas.
- Identify the marked delamination that needs Patching.

Make repairs when delamination repair areas do not meet the acceptance criteria of 00542.52.

Upon completion of the survey, prepare and sign a survey report that identifies all areas to be patched. Submit the survey report for review and acceptance by the Engineer. Repair the identified areas in a manner satisfactory to the Engineer.

After Patching the identified areas, repeat the delamination survey. Repeat the delamination survey and repair procedure until all areas of unsound concrete have been repaired and accepted.

Following the bond strength test of cores according to 00542.52(b), the Engineer will visually inspect the cores for sand pockets and voids. If sand pockets or voids are found, the area from which the core was taken will be marked by the Engineer to aid in the Contractor's delamination survey.

00542.52 Production Quality Control Testing - Acceptance of Work performed under this Section will be according to the following tests:

(Fill in the blank in the first sentence below. For small estimated repair work area Projects use an area value that will provide desired number of test samples. For single-span Bridges, use the default value of 100 SF. For medium to large Structures, proportion the estimated repair work area to result in a minimum of three samples taken on each primary Bridge segment, such as approach span or main span.)

(a) Compressive Test - For each _____ square feet of mortar placed on the Bridge, but not less than once per production Work shift, cast at the same time and under the same conditions three 4 by 8 inch cylinders for testing. Cast the cylinders in single-use plastic molds. Cast and cure strength specimens according to AASHTO T 23 or AASHTO R 39. Test the cylinders for compressive strength according to AASHTO T 22 following a 28-Day cure.

(Fill in blank in the sentence below. At a minimum, use the design compressive strength of concrete in the existing Structure (if available) or the value determined for load rating. If field testing on an existing Structure determines a higher concrete strength, use that value.)

The minimum acceptable 28-Day compressive strength of cylinders is _____ psi.

(Fill in the blank in the sentence below. For small estimated area Projects use an area that will provide desired number of test samples. For single-span Bridges, use the default value of 100 SF. For medium to large Structures, proportion the estimated repair work area to result in three samples being taken on each primary Bridge segment, such as approach span or main span.)

(b) Pull-off Test - Following a 7-Day cure of the mortar patch, core one test specimen from each _____ square feet of newly applied mortar placed on the Bridge surface, at locations designated by the Engineer. Locate cores to avoid damaging reinforcing bar. Core approximately 1/2 inch into the original concrete. Do not break cores free before testing. Perform pull-off tests of the cores in the presence of the Engineer.

Measure the core bond strength according to ASTM C1583. Use pull-test dollies with the same diameter as the cores. Conduct the test until failure.

The minimum acceptable bond strength between the new and original concrete is 175 psi.

If the test shows failure at less than 100 psi, retest after checking Equipment and verifying core angle is perpendicular to the surface. If the patch area is too small for another test, use alternate patch location. If the retest shows failure at less than 100 psi, then a pull-off test may be performed on in situ concrete substrate in the vicinity of the patch area to determine the existing concrete substrate tensile strength. If in situ concrete substrate fails at 100 psi or less, the Engineer will re-evaluate the original concrete substrate.

Individually seal the cores taken from the Bridge in plastic bags and tag them for identification.

If any quality control test fails to meet the minimum requirements, any or all repair mortar represented by that test may be rejected by the Engineer.

00542.53 Deficient Repair Mortar - Repair, at no additional cost to the Agency, all mortar patches that show an alligator cracking in the surface or uncontrolled cracks visible without magnification. Perform additional testing as directed to determine the extent of deficient mortar in the production test area represented. If additional patches are found to be deficient, repair the production test area represented according to the Specifications at no additional cost to the Agency. Repairs include, but are not limited to, removal and replacement of patches found to be substandard.

Repair small crevices a maximum of 0.4 inch deep and 0.1 inch wide at the edge of a patch with non-conductive resin mixed with abrasive blasting Material or other approved patch Material, at no additional cost to the Agency. Cut out pockets or other defects and replace with new repair mortar according to this Section.

Measurement

00542.80 Measurement - The quantities of Work performed under this Section will be measured according to the following:

(Delete the items not used on Project. Re-alphabetize the remaining items as needed after deletion. In paragraph (a), insert the estimated quantity provided by the Designer.)

(a) Locate Concrete Repair - No measurement of quantities will be made for locating concrete repairs. The estimated quantity of locating concrete repairs is _____ square feet.

(b) Reinforcing Bar Repair - Repair of damaged reinforcing bar will be measured on the unit basis, per each.

(c) Concrete Repair - Concrete repair will be measured on the area basis. Measurement will be the outside measurement of the area of Work marked for concrete repair, not including areas marked for mortar buildup over Shallow Rebar, after locating concrete repair and before concrete removal Work. The area of Work marked for concrete repair does not include initially sound concrete that is damaged or micro-fractured by the Contractor's operations.

(d) Mortar Buildup over Shallow Rebar - Mortar buildup over Shallow Rebar will be measured on the area basis. Measurement will be the outside measurement of the area of Work marked for mortar buildup after locating concrete repair and before concrete removal Work. The area of Work marked for mortar buildup does not include initially sound concrete that is damaged or micro-fractured by the Contractor's operations.

(e) Resin Buildup over Shallow Rebar - Resin buildup over Shallow Rebar will be measured on the area basis. Measurement will be the outside measurement of the area of resin in place.

(f) Zinc Anodes Installation - Installation of zinc Anodes will be measured on the unit basis, per each.

Payment

00542.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price per unit of measurement for the following item(s):

(Delete Pay Items not used on the Project. Re-alphabetize as needed after deletion.)

Pay Item	Unit of Measurement
(a) Locate Concrete Repair	Lump Sum
(b) Reinforcing Bar Repair	Each
(c) Concrete Repair	Square Foot
(d) Mortar Buildup over Shallow Rebar	Square Foot
(e) Resin Buildup over Shallow Rebar	Square Foot
(f) Zinc Anodes Installation	Each

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for providing mix proportion or mix design records.

No payment will be made for repair of initially sound concrete that is micro-fractured or otherwise damaged by the Contractor's operations.

SP00543 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25
Requires SP00540 when
pigmented sealer is required.)

SECTION 00543 - ARCHITECTURAL TREATMENT

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00543, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00543.00 Scope - This Work consists of applying concrete surface texture and color to the indicated concrete faces, as shown in the Plans.

00543.02 Required Submittals - Submit the following at least 10 Calendar Days before the preconstruction conference:

- Five copies of the form liner manufacturer's pattern details;
- Five copies of manufacturer's instructions for handling, cutting, assembling, and finishing form liners;
- Five copies of the stain manufacturer's written application instructions;
- One color sample for each proposed stain to be used;
- A description of proposed containment methods and plan for disposal of chemical or other residues; and
- Documentation showing that the firm performing the Work of this Section has successfully completed a minimum of 5 projects involving comparable textured and colored concrete construction within the previous 5 years. Include the name, location,

and approximate completion date for each previous project, and the name and phone number of an owner's representative who can attest to the success of the project.

Materials

00543.10 Form Liners - Furnish form lining Materials and patterns according to the Specifications and as approved by the Engineer. Furnish a high-quality form liner product that attaches easily to the forms. Furnish form liners that are:

- Capable of withstanding anticipated concrete pour pressures without compressing more than 1/4 inch or leaking concrete so as to cause physical or visual defects in the finished Work; and
- Removable without causing damage to the concrete surface or the substrate.

(a) General - Furnish all form liners used for a particular pattern from the same manufacturer.

(Use the following subsection (b) when architectural treatment is required on retaining walls. Add, delete, or replace options as necessary. Obtain the approval of Technical Resource for this Section.)

(b) Retaining Walls - For retaining walls, furnish one of the following form liner systems or approved equal:

- Colonial Stone 17014 by Fitzgerald Formliners
  1500 East Chestnut Avenue
  Santa Ana, CA 92701
  Telephone: 1-800-547-7760

- Rocky Mountain Flagstone 1510 by SpecFormliners
  1038 East 4th Street
  Santa Ana, CA 92701
  Telephone: 1-714-429-9500

- Tuscon River Rock 187 by Scott Systems, Inc.
  10777 East 45th Avenue
  Denver, CO 80239
  Telephone: 1-303-373-2500

(Use the following subsection (c) when architectural treatment is required on bridge rails. Add, delete, or replace options as necessary. Obtain the approval of Technical Resource for this Section.)

(c) Bridge Rails - For bridge rails, furnish one of the following form liner systems or approved equal:

- Bush Hammer 17998 by Fitzgerald Formliners
  1500 East Chestnut Avenue
  Santa Ana, CA 92701
  Telephone: 1-800-547-7760

- Medium Bush Hammer 1615 by SpecFormliners
  1038 East 4th Street
  Santa Ana, CA 92701
  Telephone: 1-714-429-9500

- Bush Hammer Stone 1281 by American Formliners
  1567 Frontenac Road
  Naperville, IL 60563
  Telephone: 1-630-615-2170

00543.12 Colored Stain - Furnish a pigmented sealer according to 00540.10(a).
00543.13 Form Release Agents and Patching Materials - Furnish form release agents and patching Materials that are compatible with the form liner system and stain.

00543.14 Form Ties - Furnish form ties with set break-backs at least 1 inch below the finished concrete surface (bottom of rustication groove), so designed that the device can be disengaged and removed without spalling or damaging the concrete.

00543.15 Quality Control - Provide quality control according to Section 00165.

Labor

00543.30 Personnel Qualifications – Perform architectural treatment Work using a company experienced in architectural treatment Work. The firm performing the Work of this Section shall have successfully completed a minimum of 5 projects involving comparable textured and colored concrete construction within the previous 5 years. Submit documentation according to 00543.02.

Construction

00543.40 Pre-Production Tests:

(a) Form Liner Test Panels - Construct vertical, unreinforced test panels for each form liner type specified, to demonstrate the surface texture produced by the form liner. The minimum size for the test panel is 8 inches thick by 8 feet wide by 6 feet high.

Include in the test panel one vertical and one horizontal joint between adjacent sections of form liner to demonstrate that the finished pattern meets the appearance requirement of 00543.41.

Construct test panels in a location designated by the Engineer, using the same concrete class and finishing procedures as proposed for the finished Structure.

The Engineer will examine the surface of the resulting test panel. Remove and dispose of unsatisfactory test panels according to 00290.20(c) and repeat test as required. Do not proceed with the Work prior to receiving the Engineer's approval.

Retain the approved test panel to serve as the standard for accepting subsequent texturing Work.

(b) Coloring Test - Perform one or more color application tests prior to applying stain to the finished Work. Perform test(s) on cured form liner test panel(s) constructed according to 00543.40(a), or other area(s) where directed. If results do not meet Specifications, repeat the test on new test panel(s) until the Engineer approves the results.

The approved test area will serve as the standard for accepting subsequent stain application, and may be incorporated into the finished work if approved.

00543.41 Form Liner Installation - Ensure that form liners are clean and free of concrete build-up, blemishes, tears, or other damage prior to each use.

Attach liner to forms following manufacturer's recommendations. Butt adjoining liners with less than 1/4-inch seams. Fill open cracks prior to placing concrete. Assemble and join form liner panels so that the finished pattern has a continuous appearance, and is not interrupted by visible vertical or horizontal joints between panels.

Coordinate form tie locations with the form liner pattern. Locate form tie holes in the high point of the rustication groove between stone patterns.

00543.42 Coloring - After the textured concrete has cured as recommended by the pigmented sealer manufacturer, but not less than 28 Days after concrete placement unless approved by the Engineer, apply the pigmented sealer to textured surfaces where shown, and according to 00540.53(d)(2).

Methods that reduce the approved surface texture will not be allowed for cleaning concrete surfaces. If using pressure washing, manage wash water according to Section 00290.

Provide a pigmented surface free of blemishes, discoloration, surface voids, and conspicuous form marks.

Measurement

00543.80 Measurement - The quantities of Architectural Treatment will be measured on the area basis and will be the area of treatment on the indicated concrete faces, including faces of approved test panels incorporated into the main concrete surface.

No measurement of quantities will be made for test panels, including architectural treatment of test panels not included in the main concrete surface.

Payment

00543.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement
(a) Architectural Treatment	Square Yard
(b) Test Panels	Lump Sum

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for:

- furnishing and placing formliners
- release agents
- patch mix
- finishing
- caulking compounds
- concrete surface colorant
- concrete sealers

SP00545 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25*)***

SECTION 00545 - REINFORCED CONCRETE BRIDGE APPROACH SLABS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00545 of the Standard Specifications modified as follows:

00545.00 Scope - Replace this subsection, except for the subsection number and title, with the following:

This Work consists of constructing reinforced portland cement concrete bridge approach slabs and sleeper slabs at the locations shown or as directed, and in close conformity to the lines, grades and dimensions shown or established.

(Use the following paragraph and subsection .02 when sleeper slabs are included.)

Add the following subsection:

00545.02 Definitions:

Sleeper Slab - An individual concrete element at the roadway end of an approach slab that provides foundational support, pavement structure transitioning, and accommodations for expansion joint installation.

(Use only one of the following options when Sleeper Slabs are included. Delete the option that does not apply.)

[Option 1 - Use the following subsection .10 when SP00755 is not included in the Project Special Provisions.]

00545.10 Materials - Add the following bullet to the end of this subsection:

- Furnish Foundation Concrete, Class 3300 for sleeper slabs, unless otherwise shown.

[Option 2 - Use the following subsection .10 when SP00755 is included in the Project Special Provisions.]

00545.10 Materials - Add the following bullet to the end of this subsection:

- Furnish concrete according to 00755.11 for sleeper slabs, unless otherwise shown.

(Use the following paragraph and subsection .48 when sleeper slabs are included.)

Add the following subsection:

00545.48 Sleeper Slabs - Construct to the dimensions and details shown.

Vibrate concrete in sleeper slabs until it is completely consolidated and the excavations are completely filled. Construct sleeper slabs at least 24 hours before paving operations, unless otherwise allowed. Cure the surfaces of sleeper slab concrete according to 00755.53.

(Use the following .80 when sleeper slabs are included.)

00545.80 Measurement - Add the following paragraph to the end of this subsection:

The quantities of sleeper slabs will be measured on the length basis. The length will be measured along the joint at the roadway end of the approach slab.

(Use the following .90 when sleeper slabs are included.)

00545.90 Payment - Replace the paragraph that begins "The accepted quantities of reinforced concrete…" with the following paragraphs:

The accepted quantities of Work performed under this Section will be paid for at the Contract unit price per unit of measurement for the following item(s):

Pay Item	Unit of Measurement
(a) Reinforced Concrete Bridge Approach Slabs	Square Yard
(b) Bridge Approach Sleeper Slabs	Foot

SP00550 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25
Requires SP02510*)*

SECTION 00550 - PRECAST PRESTRESSED CONCRETE MEMBERS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use the following lead-in paragraph when none of the following subsections are included in the project.)

Comply with Section 00550 of the Standard Specifications.

(Use the following lead-in paragraph when any of the following subsections are included in the project.)

Comply with Section 00550 of the Standard Specifications modified as follows:

(Use the following subsection .06 when precast members with UHPC connection are specified and Camber correction is required.)

Add the following subsection:

00550.06 Submittals - Submit unstamped plan of differential Camber correction for the adjacent precast concrete members for UHPC joint connections at least 21 Calendar Days before precast member fabrication according to 00150.35. Include step-by-step procedure and identify Equipment, Materials, and any items to be cast into the precast concrete members in the submittal.

(Use the following subsection .50 when precast members with UHPC connection are specified and Camber correction is required.)

00550.50 Tie Rods - Delete this subsection.

(Use the following subsection .51 when precast members with UHPC connection are specified and Camber correction is required.)

00550.51 Keyway Grouting for Slabs, Box Beams, and Integral Deck Members - Delete this subsection.

(Use the following subsection .52 when precast members with UHPC connection are specified and Camber correction is required.)

00550.52 Hot Applied Joint Sealant for Integral Deck Members with AC Wearing Surface - Delete this subsection.

(Use the following subsection .80 when Camber correction is required)

00550.80 Measurement - Replace this subsection, except for the subsection number and title, with the following:

The quantities of Work performed under this Section will be measured according to the following:

(a) Length Basis - Precast prestressed members will be measured on the length basis, and will be the sum of the horizontal lengths shown for each type and size of member. Field measurement of each member length will not be made. The quantities will be determined by calculating the theoretical horizontal length shown, added together for a total for each type and size.

(b) Lump Sum - No measurement of quantities will be made for Camber Correction.

Stirrup extension reinforcement will be measured according to 00530.80. Estimated quantities of reinforcement for the lump sum method will be listed in 00530.80(a).

(Use the following subsection .90 when Camber correction is required.)

00550.90 Payment - Add the following Pay Item to the Pay Item list:

(d) Camber Correction ..... Lump Sum

SP00552 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25
Requires SP02050 and SP02510)

SECTION 00552 - PRECAST REINFORCED CONCRETE MEMBERS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00552, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00552.00 Scope - This Work consists of the manufacture, storage, transportation and installation of precast reinforced concrete pile caps, wingwalls, Bridge approach slabs or other precast concrete members. Precast reinforced concrete members in this Specification will be referred to as "Members".

00552.02 Submittals - Essential elements of design and section dimensions for Members are as shown. Submit unstamped Working Drawings for all Members for approval according

to 00150.35. Include lifting details, storage details, erection plan and bracing plan on the Working Drawings for all Members.

00552.03 Alternate Designs: Agency design specifications will be furnished by the Agency upon request. Do not incorporate alternate Materials or Members into the Work until the proposal is accepted by the Engineer. The Contractor may propose a different steel reinforcing system or different Member dimensions provided the following requirements are met:

- Before manufacturing the Members, submit stamped design calculations, Working Drawings and specifications according to 00150.35.
- With the calculations, show that the Member meets all applicable limit states used for the Agency design.
- Member dimensions are not increased by more than 1 inch. Where overall depth is increased, verify that the required minimum vertical Roadway clearance is maintained.
- Structural changes required to accommodate an approved alternate system or section are made at no additional cost to the Agency.

00552.04 Member Tolerances - Fabricate Members to the dimensional tolerances in the *PCI Manual for Quality Control for Plants and Production of Structural Precast Concrete Products*. Acceptance or rejection of Members outside these tolerances will depend on how the Structure's strength, rideability and appearance are affected.

Materials

00552.11 Materials - Furnish Materials meeting the following requirements:

Concrete Coating 02210
Concrete.....02001
Curing Materials 02050
Deformed Bar Reinforcement.....02510.10
Epoxy Coated Reinforcement 02510.11
Mechanical Splices.....02510.20
High-Strength Anchor Bolts or Rods 02560.30
Corrugated Metal Pipe 02420.10
Portland Cement Concrete Repair Material.....02015
Structural Grout 02080.60

00552.12 Acceptance of Concrete - Acceptance of concrete is according to Section 00165 and the following:

(a) Aggregate - Acceptance of Aggregate is based on the Contractor's quality control testing, if verified, according to Section 00165.

(b) Plastic Concrete - Acceptance of plastic concrete is based on tests performed by the QCT, according to Section 02001.

(c) Hardened Concrete:

(1) General - Acceptance of hardened concrete is based on analysis of compressive strength test results of cylinders cast and cured by the Contractor and tested according to AASHTO T 22 by a CSTT at an ODOT certified laboratory and verified according to Section 00165.

(2) Sampling and Testing - Obtain a sample from a delivery vehicle, selected at random, during placement in each bed. Test the sample for temperature, slump, density and air content and cast at least three cylinders for testing at 28 Days. Cure the cylinders in a manner similar to the Members they represent. Alternately, the cylinders may be cured in a curing chamber correlated in temperature with the concrete in the beds. Leave the cylinders in the bed with the Member or in the curing chamber until the Member is stripped. After the Member is stripped, place the acceptance cylinders in storage in a moist condition according to AASHTO T 23.

(3) Actual Strength Test Value - The ASTV at 28 Days is the average compressive strength of the three cylinders tested.

Discard all specimens that show definite evidence of improper sampling, molding, handling, curing, or testing, except low strength. The average strength of the remaining cylinders are then considered the test result.

(4) Acceptance - Hardened concrete Members with an ASTV meeting or exceeding the specified design strength, $f'c$, are acceptable for strength.

If the ASTV is less than $f'c$ but at least 85 percent of $f'c$, the Engineer may review the results to determine if the Member is suitable for the intended purpose. If suitable, the concrete represented by an ASTV less than $f'c$ may be accepted subject to a price adjustment according to 00150.25.

Concrete that has an ASTV less than 85 percent of $f'c$ will not be accepted. All costs of removal, replacement, and all related Work are the Contractor's responsibility.

Equipment

00552.20 Vibrators - Provide either internal or external vibrators in working condition meeting the manufacturer’s rating. When epoxy coated reinforcement is used, use internal vibrators fitted with a manufactured rubber head to minimize damage to the epoxy coating.

Construction

00552.40 Forming - Provide forms that are mortar-tight and sufficiently rigid to conform to the specified dimensions without appreciable distortion, warping or opening of joints. Before placing concrete in the forms, remove all dirt, sawdust, excess water and other foreign material. Tighten forms before depositing new concrete on or against hardened concrete. Provide a 3/4-inch chamfer on all exposed concrete edges unless otherwise shown.

00552.41 - Placing Reinforcement - Place reinforcement according to the Plans, Section 00530, and these Specifications.

00552.42 Placing Concrete:

(a) General - Place concrete so that the finished Members are uniform and monolithic, free from cold joints.

Do not deposit concrete in the forms until the Engineer has inspected and approved the placement of reinforcement, conduit, and other embedded items.

In preparation for placing concrete, prepare forms according to 00552.40. Remove struts, stays and braces serving temporarily to hold the forms in correct shape and alignment before the placing of concrete or when the concrete placing has reached an elevation rendering them unnecessary. Remove these temporary members entirely from the forms and do not bury them in the concrete.

Place concrete to its final position, without segregation of materials or displacement of the reinforcement.

(b) Consolidation - Consolidate concrete, during and immediately after placing, by mechanical vibration as follows:

- Operate vibrators at frequencies that produce consolidated placements.
- Do not use vibration for shifting concrete to the extent of causing segregation.
- Vibrate at points uniformly spaced and not further than twice the radius over which vibration is visibly effective.
- Continue vibration until the concrete is thoroughly consolidated, but not until segregation occurs or localized areas of grout form.

00552.43 Hot or Cold Weather - Produce and place concrete within the temperature range specified in 02001.20(d). When the air temperature is, or is expected to be, below 40 °F or above 100 °F, observe the following precautions:

- Do not place concrete in forms, on reinforcing steel or on appurtenances when the surface temperature of these facilities is below 40 °F. Provide heat to maintain their temperature at 40 °F minimum.
- Do not place concrete when the surface temperature of forms or reinforcing steel is 100 °F or more.

00552.44 Top Surface Finish - After the concrete is placed and consolidated, strike the concrete to grade and Cross Section shown and float it to produce a uniform surface. Before initial set of the surface concrete and the concrete has hardened sufficiently, provide a surface finish on the top surface as shown or specified.

(a) General Members - Provide a broom finish on top of Members.

(b) Members with Cast-in-place Deck - Provide a rake finish on top of Members. Texture it with a 1/8 inch wide steel-tined rake tool that will mark the finished concrete to a depth of 1/8 inch to 3/16 inch. Space the markings 3/4 inch on centers. Do not overlap the texturing. Produce the texture transverse to the Roadway centerline and full Member width.

(c) Members with ACP Wearing Surface - Provide a broom finish on top of Members.

00552.45 Curing Concrete:

(a) General Requirements - Cure Members with water, wet burlap, curing compound or other approved methods. Begin curing as soon as possible without damaging the freshly placed concrete. Continue curing for a minimum of 7 Calendar Days after placement.

Keep surfaces not covered by waterproof forms damp by applying water with a fog nozzle until the surface has set sufficiently to allow sprinkling with water or covering with wet burlap and plastic.

Do not interrupt curing for more than one hour during cure period.

(b) Additional Cure Time - If, during the cure time period, the surrounding temperature falls below 45 °F, extend the cure for the number of hours the temperature is below 45 °F.

00552.46 Surface Finish Other Than Top Surface - Provide a surface finish as shown or specified.

Where no finish is shown or specified, provide a general surface finish to concrete surfaces.

For concrete surfaces receiving a Class 1 or Class 2 surface finish, finish the surfaces when the Member is in its final position and finish to a point 1 foot below the finished ground line.

(a) General Surface Finish - Apply a general surface finish as a final finish or preparatory to a higher class finish.

Remove all metal form bolts, snap ties and any other metal to a depth of 1 inch below the finished concrete surface. Repair air pockets over 1/2 inch in depth, all form tie removals, rock pockets and unsound concrete, and fill resulting holes or depressions with concrete or a PCC repair Material from the QPL. On exposed surfaces, correct all bulges, fins, depressions, repairs, stains or discolorations to produce a smooth surface with uniform texture, lines, and appearance.

The Engineer will determine the extent of required repairs.

(b) Class 1 Surface Finish (Ground, Sacked, and Coated) - After completion of the general surface finish, grind the surface with a power grinder or an equivalent method to remove laitance and surface film. Sack the surface to fill all holes using a paste of fine mortar sand, cement, water, and bonding agent. The ratio of bonding agent to water is one part bonding agent to two parts water, or as recommended by the manufacturer. Apply coating according to 00540.53(d).

(c) Class 2 Surface Finish (Ground, Floated and Coated or Uncoated) - After completion of the general finish, grind the surface with a power grinder or an equivalent method to remove laitance and surface film. Float the surface with a rubber or sponge float, using a paste of fine mortar sand, cement, water, and bonding agent to fill air holes or voids and to bring the surface to a uniform texture. Keep the textured surface damp a minimum of 12 hours or until the paste has set, whichever is longer. If dusting occurs after the retextured surface sets and is rubbed, refinish the surface.

00552.47 Surface Preparation for Members with Overlay or Membrane - Prepare top surface of Members according to Section 00504, not less than 28 Calendar Days after casting.

00552.48 Exposed Reinforcement - After a Member is removed from the form, clean any projecting reinforcement of dirt, oil, grease, rust and corrosives and protect it from damage until concrete is cast around it.

00552.49 Lifting, Storing, Transporting, Erecting, and Bracing - Be responsible for the safety of precast Members during all stages of construction. Lifting, storage, transporting, erecting and bracing of Members is the sole responsibility of the Contractor subject to the following requirements:

(a) Lifting:

- Lift Members so as to prevent damage.
- Lift Members at the support points specified by the manufacturer.
- Lift Members in a manner that does not cause damaging bending or torsional forces.
- Members will be rejected if not handled as specified.

(b) Storing - Store Members with support points that are level transversely.

(c) Transporting - Transport Members from the casting yard not less than 7 Calendar Days after casting, not less than 7 Calendar Days after all concrete patching and repairing is complete and after 28-Day compressive strengths have been achieved.

Damaged Members will be rejected. Replace damaged Members, or if allowed by the Engineer, repair damaged Members to the Engineer's satisfaction at no additional cost to the Agency.

(d) Erecting and Bracing - After a Member has been erected and until it is secured to the Structure, provide temporary bracing as necessary to resist wind or other loads.

00552.50 Precast Member Connections - Provide connections between Members as shown and specified.

(a) Closure Pour - Provide exposed Aggregate finish up to a 1/4” amplitude at Member interfaces that are in contact with the closure pour Material by using surface retarders from the QPL or other methods approved by the Engineer. Visually verify the surface profile of all prepared surfaces according to *International Concrete Repair Institute (ICRI) Guideline 310.2R-2013 Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair - surface profile CSP 7*.

Provide necessary forms and seal the closure pour space. Wet Member interfaces for a minimum of 8 hours and to a saturated surface dry condition immediately before placing the closure pour Material. Ensure that the surfaces are free of contaminants. Blow out with compressed air any standing water in depressions, holes or low area.

(b) Welding - Perform structural steel welding according to 00560.26(b).

(c) Bolting - After Members are set as shown, mark the position of the nut with a permanent felt tip pen or similar marker. Rotate the nut of each anchor bolt past snug-tight by no more than 1/6 turn, unless shown otherwise.

(d) Mechanical Splice - Use mechanical splice from the QPL. Install mechanical splice in Members and make connection between the Members as shown and according to the manufacturer's recommendation.

(Use the following subsection .51, when pile cap socket connection is required.)

00552.51 Pile Cap Socket Connections - Ensure that surface inside pile cap sockets is free of contaminants. After precast pile caps are erected in place as shown and the bottom of sockets are sealed, fill the sockets with the Material as shown and specified. Allow the Material to flow from the vents until water or entrapped air is removed.

Measurement

00552.80 Measurement - The quantities of Work performed under this Section will be measured according to the following:

Length Basis - The quantities will be the theoretical horizontal length shown for each Member, added together to calculate a total length for each Member type and size.

Area Basis - The quantities of precast approach slabs will be determined by calculating the theoretical top surface area of the Members based on the dimensions shown. The quantities of precast wingwalls will be determined by calculating the theoretical wall face area projected onto a vertical plane along one side of the precast wingwalls based on the dimensions shown.

Field measurement of Member dimensions will not be made.

Payment

00552.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement
(a) _____Precast Pile Cap	Foot
(b) Precast Bridge Approach Slab	Square Yard
(c) Precast Wingwalls	Square Foot

In item (a), the pile cap height and width will be inserted in the blank.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for:

- reinforcement, anchorages, corrugated metal pipe, plates, nuts, mechanical splices, and all other material contained within and extending from the Member

- furnishing and placing sand leveling courses
- furnishing, transporting, and placing Members
- furnishing and placing anchor bolts, dowels, and threaded rods where applicable
- furnishing and grouting bolt blockouts, voids, and socket connections
- providing surface finish on Members
- plant assembly, fit-up and corrective work

SP00555 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25)**

SECTION 00555 - POST-TENSIONING

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00555 of the Standard Specifications modified as follows:

00555.13(b) Bleed – Replace the paragraph that begins "Determine bleed resistance according …" with the following paragraph:

Determine bleed resistance according to ASTM C940 or ASTM C1741 and the PTI *Specification for Grouting of Post-Tensioned Structures M55.1*, modified as follows:

> ***(Use the following subsection .80 to list the estimated quantities of materials. Select the type of material used. Delete the language in purple parentheses that does not apply and delete all purple parentheses. Obtain the information from the Bridge Designer.)***

00555.80 Measurement - Add the following sentence to the end of this subsection:

The estimated quantity of prestressing steel, based on the use of *(*1/2 Inch 7-wire prestressing strands*)(*prestressed bars*)(*cables*)*, is _____ pounds.

SP00556 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25 Requires SP00504)**

SECTION 00556 - MULTI-LAYER POLYMER CONCRETE OVERLAY

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then

include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00556 of the Standard Specifications.

SP00557 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25
Requires SP00504)

SECTION 00557 - PREMIXED POLYMER CONCRETE OVERLAYS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00557 of the Standard Specifications.

SP00558 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25
This Section requires SP00504 or SP00505,
SP00540, SP02001, SP02011, SP02050 and SP02690.)

SECTION 00558 – HIGH EARLY STRENGTH CONCRETE OVERLAY

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00558, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00558.00 Scope - This Work consists of constructing high early strength concrete (HESC) overlays.

00558.03 Submittals – At least 21 Calendar Days before the pre-placement conference, provide the following information and samples to the Engineer for approval:

- Personnel qualifications according to 00558.30 and 00558.31.
- The HESC mix design.
- A detailed work plan, by the hour, for the HESC preparation, resurfacing, and cleanup.
- Equipment specifications for all Work.

00558.04 Preplacement Conferences:

(a) Supervisory Personnel - Hold a pre-placement conference with all supervisory personnel, Subcontractors, Suppliers, QCT, CCT, and all other personnel who will be involved in the resurfacing Work. Meet at a mutually agreed time at least 14 Calendar Days in advance of the Work. Present and discuss all phases of the resurfacing Work.

(b) Placement Crew - Hold a second pre-placement conference with the Engineer and the entire resurfacing work crew and the QCT, at the job site 1/2 hour before resurfacing Work begins to discuss placement duties and procedures. Hold additional pre-placement conferences for additional shifts or changes in personnel. Do not begin the resurfacing Work until this meeting is held.

Materials

00558.10 Materials - Furnish Materials meeting the following requirements:

Concrete.....02001
Rapid Hardening Hydraulic Cement.....02011
Curing Materials 02050
Portland Cement Concrete Repair Material.....02015
Preformed Joint Fillers for Concrete.....02440.10
Synthetic Macro Fiber Reinforcing 02045.20

00558.11 Class of Concrete - Furnish Class HESC4000 - 3/4" concrete designed to attain high early strength, according to Section 02001 except as modified by this Section.

Furnish macro fiber reinforcement according to 02045.20. Introduce and mix the fibers in a way that will achieve uniform distribution.

00558.12 Permeability - Furnish the following permeability reducing admixture, dosed at the manufacturer's recommended rate.

Liquid Low-PTM (Liquid admixture)
CTS Cement Manufacturing Corp.
12442 Knott Street
Garden Grove, CA 92841
Contact: Tony Tomasini
Phone: (360) 607-3553

00558.13 Maturity - Establish a strength-maturity relationship for HESC mix designs according to AASHTO T 276 and AASHTO T 325 during the mix design phase for the purpose of opening to traffic. A minimum of seven early age readings will be taken at 1, 2, 3, 4, 5, 6, and 24 hours. Each reading requires averaging the two maturity cylinders and breaking two compressive strength specimens. Submit the required concrete maturity data outlined in the "Reports" sections 11.1.1 through 11.1.10 of AASHTO T 276 and 11.1.1 through 11.1.5 of AASHTO T 325 for approval by the Engineer.

00558.15 Quality Control - Provide quality control according to Section 00165 and the following:

- Sample and test according to Section 00165, matching the frequencies from Section 00559
- For all HESC, provide personnel according to 02001.50 to sample and test the mix for temperature, air content, water-cementitious ratio, density, and yield when:
  - The first load of each placement is made.
  - There is a visible change in the slump of the concrete.
  - A set of cylinders is obtained.
- Sample and cast maturity cylinders from the last truck of the shift.

If the results of any test are outside of the specification limits, stop placement of the load. Correct the load or, if the load cannot be corrected, do not incorporate it into the Work. Test subsequent loads before any further concrete placement. Correct subsequent loads if any of the tests are still outside the specification limits. Return to the specified test frequency when the test results from two consecutive loads are shown to meet the specification limits.

00558.17 Acceptance of Concrete – Acceptance of concrete will be according to Section 00165 and the following:

(a) Aggregate - Acceptance of Aggregate will be according to 02690.12.

(b) Plastic Concrete - Acceptance of the plastic concrete will be based on the tests performed by the Contractor's QCT, according to the tolerances and limits for water/cementitious ratio, air entrainment, and temperature of Section 02001.

(c) Hardened Concrete - Acceptance of hardened concrete will be based on one set of three cylinders cast from each 50 cubic yards of concrete placed. Cast a minimum of one set per production shift. Cast and cure the test specimens according to AASHTO T 23 in 4 x 8 inch single-use plastic molds and test at 28 Days according to AASHTO T 22.

(1) General - For all HESC, acceptance of hardened concrete will be based on an analysis of compressive strength tests of cylinders cast by the QCT. Test the cylinders at an Agency certified laboratory.

(2) Actual Strength Test Value (ASTV) - The ASTV at 28 Days is the average compressive strength of the three cylinders tested. Discard all specimens that show definite evidence, other than low strength, of improper sampling, molding, handling, curing, or testing. The average strength of the remaining cylinders is considered the test result.

(3) Acceptance - Hardened concrete with an ASTV meeting or exceeding the specified design strength, f'c will be accepted for strength. If the ASTV is less than f'c but at least 85 percent of f'c, the Engineer may review the results to determine if the concrete represented by the cylinders is suitable for the intended purpose. Remove concrete that has an ASTV less than 85 percent of f'c unless otherwise authorized in writing by the Engineer. If the concrete is removed, the cost of removal, replacement and all related Work shall be the Contractor's responsibility. If the Engineer determines that the concrete is suitable for the intended purpose, the concrete may be allowed to remain in place, subject to a price adjustment according to 00150.25.

If an ASTV falls below f'c, the Contractor may submit a written plan outlining a proposed alternate method of evaluating compressive strength. Submit the plan for review by the Engineer within 3 Days of the test. Provide evidence that a reasonable f'cr (over-design) was maintained and that there is credible evidence (besides low strength) which warrants consideration of this option. The Engineer may allow an alternate method of acceptance if the compressive strength test results are determined to be suspect from definable external factors.

Equipment

00558.20 Equipment - Remove all Equipment that leaks oil or other contaminants from the work area until they are repaired.

00558.21 Mobile Mixer for HESC - Furnish self-contained, mobile, continuous mixing Equipment for proportioning, mixing and placing HESC that:

- is self-propelled and carries sufficient unmixed dry bulk cement, Sand, Coarse Aggregate, admixtures, and water to produce a minimum of 6 cubic yards of concrete on site.
- provides positive measurement of cement being introduced into the mix by meter or counter.
- provides positive control of the flow of water into the mixing chamber. Water flow is readily adjustable to provide for minor variations in Aggregate moisture.
- is calibrated to automatically proportion and blend all components according to the mix design on a continuous or intermittent basis as required by the placing operation.

Perform a calibration and yield test on each mixer prior to the first placement to accurately proportion the specified mix. Use a written calibration procedure from the mixer manufacturer, a procedure provided by the Agency or other written procedure acceptable to the Agency. Calibrate the mixer in the presence of the Engineer. Provide the Engineer with information about the scheduled date, time and place for the calibration. Perform a new calibration on every Project and when the source of Materials changes, when the mixer undergoes a major repair, or when requested by the Engineer.

00558.22 Finishing Equipment - Furnish a roller screeds or truss screeds capable of providing a smooth travel surface. Roller screeds are to be of adequate diameter and weight as to not float on the surface of the placement or flex during finishing operations.

00558.23 Miscellaneous Equipment:

(a) Hand Tools - Furnish hand tools for placing and finishing concrete. Use manual type screeds with approved vibrators attached to consolidate and finish smaller areas where it is impracticable to use a finishing machine. Use spud vibrators when depths exceed 2 1/2 inches. Use supplemental vibration along the meet lines where adjacent pours come together at bulkheads, and along curb lines, unless it can be shown that vibration reaches the meet lines.

(b) Straightedge - Furnish a 12 foot metal straightedge.

(c) Recording Thermometer - Furnish a 24 hour recording thermometer accurate to ± 1 °F.

(d) Coring Equipment - Furnish core cutting Equipment that can produce a core at least 3 inches in diameter.

(e) Bond Testing Equipment - Furnish bond testing Equipment that:

- Is compatible with the core tested.
- Can exert a tensile load to the core sufficient to exceed 300 psi.
- Is equipped with a measuring device capable of reading tensile force exerted within 1 percent accuracy.

(f) Wet-dry Vacuum Equipment - Furnish vacuum Equipment that can remove puddled water ahead of the concrete placement.

(g) Strength-Maturity Relationship Testing Equipment - Provide temperature sensors that meet the requirements of AASTHO T 276 and AASHTO T 325.

Labor

00558.30 Personnel Qualifications - Demonstrate the company's qualifications and experience and the qualifications of personnel performing the HESC overlay work by providing the Engineer the following:

- A project reference list of at least three structural overlay projects, successfully completed within the last five years. Include the following information for each qualifying project:
  - A brief description of each project.
  - Each project's name.
  - The owner’s contact person’s name, title, and current phone number for each project.
  - Alternate owner's contact person's name, title, and current phone number for each project.
- Documentation that demonstrates that the mobile mixer operators and the finishing machine operators have completed at least one structural overlay project within the last three years.

The Engineer may suspend the HESC overlay work if the Contractor substitutes unapproved personnel during construction. Submit requests for substitution of mixer operators and finishing machine operators to the Engineer.

00558.31 Quality Control Personnel - Provide certified technicians according to 02001.50.

Construction

00558.40 Trial Overlay Strip - Conduct one or more trial overlays on a concrete base to demonstrate the effectiveness of deck preparation, mixing, placing, and finishing equipment and methods proposed. Construct trial overlay when weather conditions are similar to those expected during the construction of the overlay. Use the same Equipment and personnel, including deck preparation equipment that will be used for the overlay. Hydrodemolition equipment is not required to be demonstrated at the trial overlay. Acceptance of the trial overlay will be based on concrete plastic properties, hardened concrete ASTV, concrete strength-maturity, bond strength, and surface tolerance. Perform testing at locations designated by the Engineer. Construct each trial overlay the same width as the final overlay placement and at least 20 feet long.

(Select either Section 00504 or Section 00505. Delete parentheses and the words in parentheses as needed.)

00558.41 Surface Preparation - Perform surface preparation according to *(*Section 00504 or Section 00505*)*.

00558.42 Placing:

(a) Mixing and Delivering HESC - Mix HESC according to mobile mix supplier's recommendations.

(b) Placement Conditions - Place structural concrete overlays according to 00540.49 and the following:

- The surface temperature of the prepared deck is 40 °F or greater and less than 80 °F.
- If the surface temperature is between 40 °F and 45 °F, the temperature is rising.
- Measure the surface temperature with an infra-red thermometer at a minimum of three locations on the deck in the presence of the Engineer.

(c) Thickness - Place HESC with a minimum thickness of 2 inches, as shown.

(d) Construction Limitations - Place HESC against a firmly fixed bulkhead. Control sagging or running of freshly placed HESC in areas of steep gradient by one or both of the following methods:

- Modifying direction or method of placement
- Modifying slump

Slow traffic in the adjacent lane by flagging for at least 3 hours after completion of the pour. The Engineer may adjust the time limits due to weather or traffic conditions.

(e) Placement Procedures -

(1) Preceding Placement - Each Day before placing concrete operate the finishing Equipment, in the presence of the Engineer, over the deck to check that the required thickness of concrete overlay is achieved. Place concrete working up-grade, unless otherwise approved.

(2) Joints - At transverse and longitudinal joints, sawcut the section previously placed to form a straight, vertical edge before placing any adjacent sections. Sawcutting joints may be omitted if the bulkhead produces a straight, smooth, vertical surface. On both sawcut and formed joints remove all loose material by sand blasting or water blasting the face of the joints.

a. Longitudinal Joint - A longitudinal construction joint will be allowed only at the centerline of the Roadway or at lane lines unless otherwise shown or directed.

b. Transverse Joint - When placement operation is delayed by 1/2 hour or more, form a construction joint by removing all material not up to finish grade, in a straight line.

(3) Grout Coat - After the deck surface has been cleaned and immediately before resurfacing, broom a thin coat of HESC (grout) onto the prepared deck. Remove Coarse Aggregate during the brooming procedures. Ensure that all parts of the prepared deck receive a vigorous brooming that scrubs the grout into the deck surface and results in an even coat with no excess grout collecting in pockets. Broom the grout at a rate to prevent drying and remove excess Aggregate from the deck before being covered by the HESC Overlay. If the grout does dry, stop the overlay, remove the dried grout, clean and prepare the affected area of the deck, and reapply grout according to this subsection. Grout coat is not required on surfaces prepared by hydrodemolition.

(4) Roadway Finish - After the overlay has been struck off with a finishing machine, mist the surface horizontally with water and float it, if necessary, to produce a smooth, uniform, sealed surface. Hand finishing may be required along edges of concrete placement. Use a 12 foot straightedge during placement to verify deck grades and to correct defects in hand finished areas.

(5) Curing - Cure HESC by placing curing blankets and applying water to the deck surface within 15 minutes from placement and continually for a minimum of 3 hours. Prior to opening to traffic, place a curing compound on the deck surface. The Equipment, Materials, and method of curing must be approved by the Engineer.

00558.43 Bond Strength - Perform two bond tests for each placement in the presence of and at locations designated by the Engineer within 28 Calendar Days of overlay placement. Cut 3 inch diameter cores and conduct bond tests on the cores.

The bond tests consist of:

- Coring through the overlay and approximately 1 inch into the existing concrete. Locate reinforcement prior to coring, do not core through reinforcement.
- Attaching a device to the top of the core.
- Exerting a tensile load to the core sufficient to cause failure or achieve 300 psi, whichever occurs first.

A successful test is the failure of the concrete substrate or bond failure at or above 175 psi.

After coring and testing, restore the area voided by the cores by blowing with compressed air and filling with an approved PCC repair material.

00558.44 Delamination Inspection - The Engineer will inspect the surface for delamination, bond failure, or other damage by use of a chain drag, coring, or other devices. Core samples will be at no additional cost to the Agency.

Repair all delaminated areas of 1 square foot or greater as directed by the Engineer. Delaminated areas of less than 1 square foot will not require repair.

00558.45 Surface Finish, Tolerance, and Texturing:

(a) Surface Tolerance - The finished surface, when tested with a 12 foot straightedge, shall not vary by more than 1/8 inch. Furnish the straightedge and operate it under the direction of the Engineer.

If the concrete surface does not meet the surface tolerance, stop the operation until revised methods, changes in Equipment, or correction of procedures are proposed and approved.

Correct all non specification surface tolerance after curing and before texturing with a self propelled diamond grinder. Correct the surface tolerances before opening the Roadway to traffic at no additional cost to the Agency.

(b) Surface Texturing - Texture the concrete according to 00540.50(c) as early as feasible after duration of cure and a minimum of 2,500 psi strength is met, as determined by the strength-maturity relationship.

00558.46 Crack Inspection and Sealing - The Engineer will inspect the surface for cracks.

After correcting non specification surface tolerances and after texturing the deck surface, seal all visible cracks as follows:

- In areas where cracks are 10 feet or more apart, seal each crack separately.
- In areas where the cracks are numerous or are less than 10 feet apart, seal the entire area where the cracks occur.

Seal with a low modulus concrete and crack sealer from the QPL.

Perform all repair and sealing Work at no additional cost to the Agency. Complete all repair and sealing Work as soon as feasible.

00558.47 Use of New Surface - Do not open sections to traffic or allow vehicles or construction Equipment on the new HESC surface until curing is complete and the concrete has met a minimum average compressive strength of 2,500 psi.

Measurement

00558.80 Measurement - The quantities of Work performed under this Section will be measured according to the following:

(a) Furnish HESC Material - Furnishing concrete material will be measured on the volume basis. The quantities will be determined from the delivery vehicle batch tickets and checked using the yield factor according to AASHTO T 121 (ASTM C138).

A deduction will be made for Material placed and removed beyond sawcuts or formed construction joints.

(b) Construct HESC Overlay – Construct HESC overlay will be measured on the area basis. The area will be determined by measuring the actual surface area of the resurfaced bridge deck.

Payment

00558.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement
(a) Furnish High Early Strength Concrete	Cubic Yard
(b) Construct HESC Overlay	Square Yard

Surface texturing will be paid for according to 00540.90.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP00559 (Special Provisions for the 2024 Book)

(Bidding on or after: 06-01-25
Last updated: 02-26-25
This Section requires SP00540
and SP02050. Requires SP00505
When using hydrodemolition.*)*

SECTION 00559 - STRUCTURAL CONCRETE OVERLAYS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00559 of the Standard Specifications modified as follows:

00559.11 Class of Concrete - Replace this subsection, except for the subsection number and title, with the following:

Furnish class HPC(IC)4500 - 3/4 inch according to Section 02001 unless otherwise shown.

(Use the following .41 when hydrodemolition is required.)

00559.41 Surface Preparation - Replace this subsection, except for the subsection number and title, with the following:

Perform surface preparation according to Section 00505.

00559.43(c)(3) Placing - Add the following sentence to the end of the paragraph that begins "After the deck surface…"

A grout coat is not required on decks prepared with hydrodemolition.

00559.80(c) Sawcut Texturing - Replace this subsection with the following subsection:

00559.80(c) Surface Texturing - Surface texturing will be measured according to 00540.80.

00559.90 Payment – Delete the Pay Item Sawcut Texturing.

Add the following sentence to the end of this subsection:

Surface texturing will be paid for according to 00540.90.

SP00560 (Special Provisions for the 2024 Book)

(Bidding on or after: 06-01-25
Last updated: 02-26-25
This Section *requires SP00594 when coating work is required.*
This Section requires 02560 when high strength fasteners are required.)

SECTION 00560 - STRUCTURAL STEEL BRIDGES

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00560 of the Standard Specifications modified as follows:

(Use the following subsection .04 for straight single span bridges less than 150 feet)

00560.04 Erection Plan - Replace this subsection, except for the subsection number and title, with the following:

Submit an erection plan with unstamped Working Drawings according to 00150.35 at least 21 Calendar Days before the start of the steel erection Work. Include the proposed erection method and the amount and character of Equipment to be used for review. Do not perform Work until approval has been obtained. This review does not relieve the Contractor of the responsibility for the safety of the method or Equipment, or from carrying out the Work in full according to the Plans and Specifications.

00560.29(d)(2)(c.) Inspection – Replace Table 00560-3 with the following table:

Table 00560-3
Nut Rotation from Snug-Tight Condition [1,2]

		Disposition of Outer Faces of Bolted Parts	
Bolt Length[3] (underside of head to end of bolt)	**Both faces normal to bolt axis**	**One face normal to bolt axis and other sloped not more than 1:20 (beveled washer not used)**	**Both Faces sloped not more than 1:20 from normal to bolt axis (beveled washer not used)**
Up to and including 4 diameters	1/3 turn	1/2 turn	2/3 turn
Over 4 diameters but not exceeding 8 diameters	1/2 turn	2/3 turn	5/6 turn
Over 8 diameters but not exceeding 12 diameters	2/3 turn	5/6 turn	1 turn

[1] Nut rotation is relative to bolt, regardless of the element (nut or bolt) being turned. For all required nut rotations, the tolerance is plus 60 degrees (1/6 turn) and minus 0 degrees.

[2] Applicable only to joints in which all material within the grip is steel.

[3] No research has been performed by the Research Council on Structural Connections to establish the turn-of-nut procedure for bolt lengths exceeding 12 diameters. Therefore, the required rotation shall be determined by actual test in a suitable tension measuring device according to 00560.29(d)(2).

Add the following subsection:

00560.40(j) Surface Finish (Non-Coated Weathering Steel Only) -

(1) Sandblast and Mill Scale Removal – Sandblast all exposed surfaces of AASHTO M 270 (ASTM A709), non-coated weathering steel, according to SSPC-SP6, *Commercial Blast Cleaning, SSPC's Steel Structures Painting Manual*. Visually verify the appearance of the blast-cleaned surface using Pictorial Standard Sa 2 of SSPC-VIS 1, *Pictorial Surface Preparation Standards for Painting Steel Surfaces*.

(2) Exterior Face of Fascia Girders – Brush-off blast clean, according to SSPC-SP7, *Brush-Off Blast Cleaning, SSPC's Steel Structures Painting Manual* to achieve a uniform surface finish and patina immediately after fabrication and prior to environmental exposure. After brush-off blast, and prior to environmental exposure or shipping, pressure wash exterior faces of fascia girders with a stream of potable water to ensure uniform weathering and patina.

(3) All Non-Coated Weathering Steel – Prior to environmental exposure, clean all exposed surfaces that do not receive a brush-off blast clean according to SSPC-SP 1, *Solvent Cleaning, SSPC's Steel Structures Painting Manual* to remove all visible oil, grease, dust, dirt, drawing and cutting compounds, and other visible contaminants.

(4) Post-Fabrication Sandblast – If, as determined by the Engineer, the uniform weathering properties of the steel have been compromised and solvent cleaning is unable to adequately clean the surface, sandblast all exposed surfaces after fabrication and prior to shipment according to SSPC-SP 6. Pressure wash sandblasted surfaces with a stream of potable water to ensure uniform weathering and patina.

00560.70 Finish (Non-Coated Weathering Steel Only) – Replace this subsection with the following subsection:

00560.70 Surface Finish Cleanup (Non-Coated Weathering Steel Only) – At all times during fabrication, shipping, and installation, promptly clean exposed surfaces of steel contaminated with stains, oil or foreign material to preserve conditions for uniform weathering of steel. The use of acids to remove scale and stains in the field is not allowed.

(Use the following subsection .80 to list the estimated quantities of structural steel. Obtain information from the Bridge Designer.)

00560.80 Measurement - Add the following to the end of this subsection:

The estimated quantity of structural steel is:

(Use the appropriate bid item name as the "Steel Type". List each bridge separately.)

Structure	Steel Type	Quantity (Pound)
Bridge No. _____		

SP00564 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25

SECTION 00564 - FALL ARREST SYSTEM

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00564, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00564.00 Scope - This Work consists of designing, fabricating, installing, and testing wire rope fall protection systems for Bridge ___(Insert Bridge No.)_____as shown.

00564.01 Safety Requirements - Conform Work, Materials, and components provided under this Section according to the following:

- OSHA 29CFR 1926 Subpart M - Fall Protection
- ANSI A 10.32 Personal Fall Protection for Use in Construction and Demolition Operations
- OR-OSHA OAR 437-003 Subdivision M - Fall Protection

00564.02 Submittals - Submit stamped Working Drawings and design calculations for the fall arrest systems according to 00150.35 at least 21 Calendar Days before starting Work that requires a fall arrest system.

Include the following in the Working Drawings:

- Member profiles
- Sizes
- Elevations
- Details for anchorages and connections

Materials

00564.10 Materials - Furnish wire rope fabricated from Materials and sizes to meet a minimum breaking strength of 40,000 lbs.

Furnish fasteners meeting the requirements of Section 02560.

Lanyards and full-body harnesses are not required as part of the fall arrest systems.

Construction

00564.40 Installation - Install fall arrest system as shown and accepted in the Working Drawings. Install anchorages and fasteners according to manufacturer's recommendations. Do not load or stress the fall arrest systems until all Materials and fasteners are installed and ready for service.

Measurement

00564.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

Payment

00564.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract lump sum amount for the item "Fall Arrest System".

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP00565 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25*)***

SECTION 00565 - CARBON FIBER REINFORCED POLYMER STRENGTHENING - WET LAYUP SYSTEM

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00565, which is not in the Standard Specifications, is included for this Project by Special Provision.

Description

00565.00 Scope - This Work consists of the complete installation of Carbon Fiber Reinforced Polymer (CFRP) sheet and laminate material, applied to existing concrete surfaces as shown and specified. This Work also includes the design of the CFRP strengthening by the CFRP system manufacturer's Engineer based on the loading requirements and design parameters as shown.

00565.01 Abbreviations and References:

(a) Abbreviations:

CFRP - Carbon Fiber Reinforced Polymer
ICRI - International Concrete Repair Institute

(b) References:

AASHTO Guide Specifications for Design of Bonded CFRP Systems for Repair

ACI 440.2R, *Guide for the Design and Construction of Externally Bonded FRP Systems for Strengthening Concrete Structures*

ACI 546R, "Guide to Concrete Repair"

ICRI Technical Guideline No. 310.1R, *Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion*

ASTM D3039, *Standard Test Method for Tensile Properties of Polymer Matrix Composite Materials*

ASTM D4541, *Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers*

ASTM D7522, *Standard Test Method for Pull-Off Strength for FRP Laminate Systems Bonded to Concrete Substrate*

00565.02 Submittals:

(a) Materials Certifications - At least 21 Calendar Days prior to starting CFRP system installation Work, provide manufacturer's material certifications for all CFRP materials, the strengthening system, and the surface coating material. Include the supplier's name and ranges of the properties listed below with test methods used for CFRP, epoxy, and system components.

Material	Properties to be Furnished
Primary Fibers	Tensile strength, Elongation, Tensile Modulus
Transverse Fibers	Tensile Strength, Elongation, Tensile Modulus, (Perpendicular to Surface Finishes Primary Fibers)
Epoxy Resin	Tensile Strength, Elongation, Tensile Modulus, Coefficient of Thermal Expansion, Mix Ratio, Pot Life, Shelf Life, UV Resistance
CFRP System	Tensile Properties, including method of reporting properties (net fiber or gross laminate), Test Methods used, and the statistical basis used for determining the properties

Submit the following information from the CFRP manufacturer:

- Installation instructions, inspection instructions, maintenance instructions, and general recommendations regarding each material to be used. Include surface preparation requirements in the installation procedures.
- Manufacturer's Safety Data Sheet (SDS) for all materials to be used
- Quality-control procedure for tracking CFRP materials and material certifications
- Durability test data for the CFRP system in the types of environments expected

(Use the following paragraph and bullets, except when a sand-mix surface finish is used.)

Submit the following information from the surface finish coating manufacturer:

- Manufacturer's product data sheets
- Manufacturer's material safety data sheet (MSDS)
- A manufacturer's letter containing any surface preparation or application recommendations which may differ from the published manufacturer data sheet including but not limited to additional recommended substrates for application or application to partially cured epoxy resin during CFRP installation

(b) Test Results - At least 21 Calendar Days before starting CFRP system installation Work, conduct longitudinal tensile property testing on 5 samples of a single CFRP ply for each CFRP strengthening system according to ASTM D3039 and submit test results including tensile strength, elongation, modulus of elasticity, fabric material, epoxy, thickness, orientation of fibers, and curing method. Ensure CFRP system samples have the same physical properties as and are from the same manufacturer as the system to be installed in permanent Work.

(c) Personnel Qualifications - Submit personnel qualifications at the pre-construction conference according to 00565.30.

(d) Working Drawings and Calculations - Submit stamped Working Drawings, according to 00150.35(b), for each installation of composite material detailing all information required for the proper construction of the CFRP system at each location. The drawings must be accompanied by the design calculations. Design the externally bonded CFRP system according to the requirements of ACI 440.2R or *AASHTO Guide Specifications for Design of Bonded CFRP Systems for Repair* given the design parameters as shown.

On the Stamped Working Drawings include, but not be limited to, the following information:

- Properties and locations of CFRP materials
- Number, thickness and fiber orientation of layers. Except for a complete wrap system, limit a number of CFRP plies to 3 or fewer, unless otherwise shown.
- A separate drawing showing the locations where each CFRP layer is discontinued, if thickness of the CFRP laminate is changed.
- Details of joints and ends
- Anchorage system details to enhance bond and to develop required strength of CFRP laminate. Design anchorage system having tensile capacity at least 5 percent

greater than the design tensile strength of the CFRP strengthening system, unless otherwise shown.

As-constructed plans of the existing structure(s) are available from the Engineer.

Do not begin CFRP work until the stamped Working Drawings and supporting calculations have been reviewed by the Engineer.

Materials

00565.10 General - Select a manufacturer and Materials from the QPL. Furnish all components to construct CFRP strengthening system from a single manufacturer. No substitutions are allowed, except as recommended by the manufacturer and as approved by the Engineer.

00565.11 Acceptance Testing - The following test is required for acceptance of the CFRP strengthening work:

(a) Bond Test - Conduct 5 bond tests to verify adhesion between CFRP laminate and the concrete surface. Prepare specimens at the Project Site, using the same CFRP materials, epoxy and number of CFRP plies used on each type of installation on the bridge. Ensure the test complies with the requirements of ASTM D4541, ASTM D7522 or other approved method. Under the bond test, ensure the bond between CFRP laminate and concrete is stronger than the shear strength of the concrete (the laminate should peel off with concrete still attached to the bond surface).

Submit test results and inspection results including fiber orientation, delaminations, cure of resins and cured thickness to the Engineer for evaluation and acceptance.

(Use the following paragraph, except when a sand-mix surface finish is used.)

00565.12 Surface Finish Coating - Furnish a water based 100% acrylic or acrylic copolymer coating designated for exterior vertical and overhead applications, on concrete, masonry, stucco, and FRP as recommended by the CFRP manufacturer. Provide a color that matches existing concrete.

Labor

00565.30 Personnel Qualifications - Provide a CFRP Application Advisor, certified by the manufacturer of the CFRP materials to have been trained in installation of CFRP, to provide technical assistance prior to and during CFRP Work. Ensure the CFRP Application Advisor remains available for consultation until the completion and acceptance of all CFRP Work.

Provide trained personnel for installation of the CFRP system.

Provide the following information to verify the contractor's experience and the qualifications of personnel scheduled to perform the CFRP system:

(1) CFRP System Application Advisor Certification - Submit the CFRP manufacturer's certification of the Contractor's designated CFRP Application Advisor.

(2) CFRP System Application Advisor Certification Experience - Submit documentation showing that the Contractor's designated CFRP Application Advisor has experience as CFRP Application Supervisor, CFRP Application Advisor, or lead worker on 3 Bridge or building projects using CFRP wet-layup system in the last 5 years. The CFRP material used on projects submitted for experience does not need to be from the same manufacturer as material proposed for this Project.

For each project submitted, include:

- Project name
- Contract number
- Location
- Owner, including contact person's name and telephone number
- Date of contract acceptance (month and year)
- Material used and material manufacturer

(3) Applicators Certification - Submit certification from the CFRP material manufacturer, or from the Contractor's designated CFRP Application Advisor, affirming that the applicators installing the CFRP system have been trained in the installation of CFRP.

Construction

00565.40 Surface Preparation - Prepare surfaces for CFRP application according to the following:

(a) Surface Cleaning - Prepare concrete surfaces to be coated with CFRP according to the manufacturer's recommendations. Grinding, sandblasting, or a combination of both may be necessary. Comply with ACI 546R, *Concrete Repair Guide* and ICRI Technical Guideline No. 310.1R, *Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion*. Provide a minimum concrete surface profile (CSP) 3 according to ICRI. The Engineer will resolve any conflict between the manufacturer's recommendations and the named guides. Ensure the concrete surface is clean, structurally sound, dry and free of standing water. Remove dust, laitance, grease, curing compounds, impregnation, waxes, foreign particles, any disintegrated materials and any other bond-inhibiting matter using abrasive or water-blasting techniques.

Collect material removed during surface-preparation operations on plastic tarps or geotextile fabric, or by other approved methods. Dispose of all materials according to 00290.20.

(b) Crack Repair - Inject cracks that are 1/64 inch and greater in width according to Section 00538.

(c) Surface Repair - Use approved repair mortar recommended by the CFRP manufacturer to repair uneven surfaces and fill voids larger than 1/2 inch diameter or 1/8 inch deep. After the surface is repaired, ensure the residual unevenness is no more than the tolerances recommended by the CFRP manufacturer or 1/32 inch over 1 foot, whichever is smaller.

(d) Concrete Substrate Test - Verify the adhesive strength of the concrete after surface preparation at a random location by using a pull-off test according to 00565.11(b). A minimum tensile strength of 200 psi with concrete substrate failure is acceptable.

(e) Corners - Where CFRP sheet wraps around the corners of rectangular cross sections, round and smooth the corners to a minimum 1/2 inch radius.

(f) Priming Concrete Surface - Apply primer to the concrete surface according to the CFRP manufacturer's recommendations.

(g) Epoxy Resin Undercoating - If required by the CFRP manufacturer, apply epoxy resin undercoating according to the CFRP manufacturer's recommendations and the instructions of the resin manufacturer. The Engineer will resolve any conflict between the CFRP manufacturer's recommendations and the resin manufacturer's instructions. Do not apply epoxy resin, unless surface temperature and ambient temperature are between 50 °F and 90 °F.

00565.41 Curing CFRP Material - Cure CFRP material using the manufacturer's suggested methods and temperatures. Ensure that cured composites have uniform thickness and density, complete bonding between layers, and no porosity.

(Use the following paragraph, except when a sand-mix surface finish is used.)

00565.42 Application of Final Surface Finish - Roughen the surface by lightly sanding with 100 to 150 grit sandpaper using hand or power tool methods or as recommended by the CFRP and coating manufacturers. Do not expose the fibers of the composite. Wipe the surface clean using clean cloths and water or solvent as recommended by the coating manufacturer. The coating may be applied to tacky epoxy surfaces which do not transfer any material and are hard to the touch without surface preparation if approved by the coating manufacturer. All surfaces which have reached full cure, are no longer tacky to the touch, or after 7 Days, whichever is less, must be prepared by hand or power tool methods approved by the Engineer.

Apply 2 surface finish coats, following all manufacturer recommendations. Prior to applying the finish coat, prepare a 3 feet by 3 feet sample for the Engineer's approval on an inconspicuous area of the Structure. Allow to dry. Obtain the Engineer's approval of the color before proceeding with the final surface finish.

Ensure all cured coatings are well adhered by probing edges or surface imperfections with a dull putty knife. Repair all cracked or delaminated coatings by removing the damaged coatings by hand or power tool methods and reapplying the coatings following all manufacturer recommendations. Feather edges 1 to 2 inches.

(Use the following subsection .42 when a sand-mix surface finish is used.)

00565.42 Application of Final Surface Finish - Apply No. 8 sand mix with the final coat of epoxy resin on all exposed surfaces, unless shown otherwise. Broadcast the sand mix to the final coat before epoxy resin solidifies.

After curing of the final coat, float the surface with a rubber or sponge, using a paste of fine mortar sand, cement, water, and bonding agent to fill air holes or voids to bring the surface to a uniform texture. Keep the retextured surface damp a minimum of 12 hours or until the paste has set, whichever is longer. If dustings occur after the retextured surface sets and is rubbed, refinish the surface. Provide a finish color of shade that matches existing concrete.

Prior to applying the finish coat, prepare a 3 feet by 3 feet sample for the Engineer's approval on an inconspicuous area of the structure. Allow to dry. Obtain the Engineer's approval of the color before proceeding with the final surface finish.

00565.43 Repair of Installed CFRP System Defects - Repair delamination areas of installed CFRP strengthening system with epoxy injection for defect size between 1/4 inches and 6 inches in diameter. Replace delamination areas for defect size greater than 6 inches in diameter.

Measurement

(Fill in the blank with the square feet.)

00565.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

The estimated quantity for the proposed CFRP strengthening is _____ square feet despite the number of layers.

(Include the following paragraph when Sand-mix Surface Finish is specified. Fill in the blank.)

The estimated quantity for the sand-mix surface finish is _____ square feet.

Payment

00565.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract lump sum amount for the item "CFRP Strengthening - Wet Layup System."

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, tools, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for:

- Furnishing and applying a surface coating.
- Training and certification of personnel.
- Repair of delamination areas due to installation defects.

SP00566 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25)**

SECTION 00566 - CARBON FIBER REINFORCED POLYMER STRENGTHENING - NEAR SURFACE MOUNTED

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00566 of the Standard Specifications modified as follows:

00566.80 Measurement - Add the following to the end of this subsection:

The estimated length of required CFRP bars is shown below.

(Obtain structure number and quantities from the Bridge Designer.)

Structure	Quantity (Feet)
Bridge No. _____	
Bridge No. _____	

SP00567 (Special Provisions for the 2024 Book) **(Bidding on or after: 06-01-25**
Last updated: 02-28-25

SECTION 00567 - TITANIUM ALLOY REINFORCEMENT SYSTEM

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00567, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00567.00 Scope - This Work consists of furnishing and installing a complete, near surface mounted, titanium alloy reinforcement system as shown or specified. The system is comprised of titanium alloy reinforcement ("bars") embedded in sawcut grooves and anchor holes with epoxy.

00567.01 Submittals - Submit the following to the Agency at least 21 Calendar Days before starting Work. Do not begin Work before receiving written approval of submittals from the Engineer.

(a) Materials Certifications - Submit the manufacturer's Material certifications and mill test certificates for the titanium alloy reinforcement system according to 00150.37. Include the supplier's name, ranges of the properties listed below, and test methods used for titanium alloy reinforcement and epoxy resin.

Material	Properties to be Furnished
Titanium Alloy	Tensile Strength Elongation Tensile Modulus Cross-Sectional Area Chemical Composition
Epoxy Resin	Tensile Strength Elongation Tensile Modulus Coefficient of Thermal Expansion Mix Ratio Pot Life Shelf Life UV Resistance

(b) Titanium Alloy Reinforcement Installation Plan - Before beginning girder preparation submit the following according to 00150.37:

- The sequence of anchor hole and groove preparation as it relates to the overall construction Plan.
- Methods for locating and protecting existing steel reinforcement. Details regarding the Equipment and structural attachments required for installation of the titanium alloy reinforcement. Include rail mount locations and dimensions required for accurate groove placement in bridge elements.
- Details of the proposed method, if different than specified, for ensuring the titanium alloy reinforcement will be installed as shown.
- Details regarding construction tolerances for preparation, including groove depth, width and anchor hole dimensions.

(c) Order Lists and Bending Diagrams - Before ordering Material, submit all order lists according to 00150.37 and unstamped bending diagrams according to 00150.35 for approval. Do not order Material until such lists and bending diagrams are approved.

The review of order lists and bending diagrams by the Engineer will in no way relieve the Contractor of responsibility for the correctness of such lists and diagrams. Revise lists and diagrams as required to make them comply with the Plans at no additional cost to the Agency.

Material

00567.10 Titanium Alloy Reinforcement - Furnish deformed titanium alloy reinforcement conforming to the requirements of ASTM B1009. Unless otherwise specified or shown, all titanium alloy bars shall conform to the following mechanical properties:

Yield Strength	Ultimate Strength	Elastic Modulus	Elongation
130,000 psi	140,000 psi	15,000,000 psi	10%

Calculate elastic modulus using slope of the stress-strain curve between a stress range of 20,000 psi and 60,000 psi. Use 0.2 percent offset of the calculated elastic modulus line to obtain a yield strength of titanium alloy bars.

Furnish uniform deformations equally spaced along the titanium alloy bars with a minimum deformation height of 0.01 inch and a maximum spacing of 0.06 inch. The deformations shall not have sharp stress risers. The final cross-sectional area of the bars including the deformations shall not be less than 96 percent of the nominal area of undeformed bars.

An approved source for titanium alloy reinforcement is Perryman Company, 213 Vandale Drive Houston, PA 15342. Contact the Infrastructure Development Manager, at 724-746-9390.

00567.11 Fabrication - Hot bend reinforcement bars to the shapes shown. Shop bending or field bending is allowed, unless otherwise shown or directed. Heat reinforcement bars to a minimum of 900 °F and a minimum of three inches each side beyond the bend section. At 900 °F, the bars will turn yellow or straw color. Continue heating until the bars turn into blue color approximately equal to 1200 °F, which is the desired color and temperature for bar bending. Do not heat reinforcement bars more than 1300 °F or until the bars turn red hot. Discard the red hot (overheated) bars. After the bending is complete, grind surface of the inside bend radius to remove the deformations. Make bends, tag, mark and ship reinforcement bars according to the current edition of the CRSI *Manual of Standard Practice*. Re-bending of reinforcement bars is not permitted.

00567.12 Material Sampling - Provide sufficient material for the Engineer to select four samples from each lot of titanium alloy reinforcement delivered to the site, for testing by the Agency. Samples will be a minimum of 4 feet in length.

00567.13 Epoxy Resin - Furnish epoxy resin from one of the following list of pre-approved epoxy resins.

Manufacturer	Material
Hilti, Inc. 7250 Dallas Parkway, Suite 1000 Plano, Texas, 75024 Contact: Pete Anderson Phone: (972) 403-5948	HIT-RE 500 V3

Adhesive Technology Corp — Ultrabond HS-1CC
450 East Copans Road
Pompano Beach, Florida, 33064
Contact: Mike Gaffigan
Phone: (954) 541-7091

(Use the following Epoxy resin only for projects with construction on top surfaces due to high flowability. Contact the Bridge Designer.)

Pilgrim Permocoat, Inc. — Magmaflow Grout-Pak CF
402 South 22nd Street
Tampa, Florida, 33605
Contact: Robert Forlong
Phone: (813) 248-3328
FAX: (813) 248-1076

Construction

00567.40 Protection of Material - Protect reinforcement at all times from damage. Ensure reinforcement is free of dirt, detrimental scale, paint, oil and other foreign substances when placed in the Work.

00567.41 Existing Reinforcement Location and Concrete Cover - Use rebar detectors or other approved devices, capable of locating existing reinforcement within 0.1 inch, to locate existing reinforcement and to determine the thickness of concrete cover. Before constructing anchor holes and grooves, provide the Engineer with a summary of cover thickness and clear distance measurements between existing reinforcement and the titanium alloy reinforcement system.

00567.42 Drilling Anchor Holes and Sawcutting Grooves - Drill holes for hook embedment depth and size as shown using a rotary hammer drill with a carbide tipped drill bit. If existing reinforcement is encountered, stop drilling and adjust the hole location. Adjust the location of the holes for the end anchorage up to 3 inches longitudinally and laterally to avoid conflicts. Maintain the titanium bar lengths.

Cut grooves as shown to the designed width and depth ± 1/8 inch. Make grooves deep enough to allow the titanium bar to be installed at least 1/8 inch below the surface in all locations along the length of bars. Do not cut into existing rebar during construction of sawcut grooves. Visually inspect all existing rebar locations after sawcutting grooves. When existing reinforcement is cut, notify the Engineer before installation of titanium alloy reinforcement.

Groove spacing may be adjusted in the field as necessary to avoid existing reinforcement or other unforeseen conflicts; however, the average spacing of all grooves over any 2 foot long section may not be more than the spacing as shown. Maintain a minimum clear spacing greater than three times the diameter of the bar and a minimum clear edge distance of six times the diameter of the bar.

00567.43 Anchor Hole and Groove Preparation - Prepare sawcut grooves and anchor holes for titanium reinforcement installation as follows:

(a) Surface Cleaning - Clean the groove and anchor holes thoroughly with high-pressure water and a nonmetallic brush. Before the groove and anchor holes dry out, blow it free of water and debris with compressed air. Ensure that all dust, sand, laitance, grease, curing compounds, and any other bond-inhibiting matter is removed from the groove and anchor holes. The concrete surface of groove and anchor holes shall be clean and structurally sound prior to installing titanium alloy bars.

(b) Moisture on Groove and Hole Surfaces - Before installation of titanium alloy bars, dry groove and anchor hole surfaces using a drying method approved by the Engineer and according to the epoxy manufacturer's recommendations. Do not directly apply a flame to the groove and anchor holes surfaces.

00567.44 Compressed Air - When using high-pressure air for cleaning, use adequate separators and traps to ensure that the air is free of water, oil, or any other Material detrimental to the titanium alloy reinforcement system. Compressed air cleanliness may be tested by the Engineer according to ASTM D4285.

00567.45 Titanium Alloy Bar Installation - Begin installation only after groove and anchor hole preparation Work is complete.

Install the titanium alloy bars to the embedment depths and in the anchor holes as shown.

Do not install the titanium alloy bars and epoxy resin when the concrete temperature is below 50 °F, unless otherwise advised by the resin manufacturer's recommendations.

Mask the concrete adjacent to the groove to prevent excess epoxy from adhering to the concrete outside the groove.

Place nylon or polyethylene spacer material between the titanium alloy bars and exposed, existing steel reinforcement.

Fill two-thirds of the anchor hole and one-half of the groove with epoxy resin. Press the titanium alloy bar in the anchor holes and in the center of groove using approved centering devices at one-third points along the titanium alloy bar. Centering devices shall not have less than 1/8 inch resin cover when installed.

Ensure epoxy resin is well consolidated around the bars without air pockets. Level epoxy resin flush with the surface of the adjacent concrete.

00567.46 Surface Cleanup - Remove excess epoxy resin outside the groove.

Measurement

00567.80 Measurement - No measurement of quantities will be made for Work performed under this Section. The estimated quantity of titanium alloy reinforcement system is shown below.

(Obtain structure number and quantities from the Bridge Designer. Delete the entire row if the diameter specified is not used on the project.)

Structure	Quantity

(Feet)

Bridge No. _____ - 0.375 Inch Diameter
Bridge No. _____ - 0.500 Inch Diameter
Bridge No. _____ - 0.625 Inch Diameter
Bridge No. _____ - 0.750 Inch Diameter

Payment

00567.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following item*(*s*)*:

(Delete pay item(s) from the list that are not included in the Schedule of Items, but do not change the alpha characters next to the pay items.)

Pay Item	Unit of Measurement
(a) Titanium System, 0.375 Inch Diameter.	Lump Sum
(b) Titanium System, 0.500 Inch Diameter.	Lump Sum
(c) Titanium System, 0.625 Inch Diameter.	Lump Sum
(d) Titanium System, 0.750 Inch Diameter.	Lump Sum

Payment will be payment in full for furnishing, fabricating and placing all Materials and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP00570 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25*)***

SECTION 00570 - TIMBER STRUCTURES

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00570 of the Standard Specifications modified as follows:

(Use the following subsection .10 to list grading requirements. Obtain grading requirements from the Bridge Designer.)

00570.10 Materials - Add the following to the end of this subsection:

Furnish timber and lumber meeting the following grading requirements:

•

(Use the following paragraph when preservative treatment is required but is not shown on the plans. Obtain information from the Bridge Designer.)

Preservative treatment of timber is required. The types of treatments that are allowed are:

-

(Use the following subsection .11 when ACZA preservative treatment is allowed. Check with Bridge Designer.)

00570.11 Metal Parts - Add the following to the end of this subsection:

Galvanized connectors are allowed on ACZA treated timber only when the timbers are kiln dried to 19 percent after treatment. If ACZA treated timber is not kiln dried, use stainless steel connectors only.

(Use the following lead-in paragraph and subsection .15 when lightweight metal connectors are required. Obtain the capacity requirements from the Bridge Designer.)

Add the following subsection:

00570.15 Lightweight Metal Connectors - Furnish lightweight metal connectors according to 02150.10(e), and with the following minimum capacities:

-

SP00581 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25)**

SECTION 00581 - BRIDGE DRAINAGE SYSTEMS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00581 of the Standard Specifications.

SP00582 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25)**

SECTION 00582 - BRIDGE BEARINGS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00582 of the Standard Specifications.

SP00583 (Special Provisions for the 2024 Book) (Bidding on or after: 05-01-25 Last updated: 01-21-25)

SECTION 00583 - ELECTRICAL CONDUIT ON STRUCTURES

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00583 of the Standard Specifications.

SP00584 (Special Provisions for the 2024 Book) (Bidding on or after: 05-01-25 Last updated: 01-21-25 This requires SP00501)

SECTION 00584 - ELASTOMERIC CONCRETE NOSING

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00584 of the Standard Specifications modified as follows:

00584.00 Scope - Add the following paragraph to the end of this subsection:

This Work also includes the replacement of existing elastomeric concrete nosing as shown and specified.

00584.80 Measurement - Replace this subsection, except for the subsection number and title, with the following:

The quantities of Work performed under this Section will be measured according to the following:

(a) Elastomeric Concrete Nosing Material - Elastomeric concrete nosing Material will be measured on the volume basis for Material placed in the nosing. When using a mobile mixer, the quantities will be determined by converting the weight identified on the mixer's automatic metering device to volume, using the manufacturer's published unit weight and yield factor. When hand batching, the quantities will be determined based on volumes calculated by batch weights and published unit weights of the Material. If placed monolithically with a premixed polymer concrete overlay, the volume will be calculated by multiplying the average depth of the nosing by the measured area.

(b) Constructing Elastomeric Concrete Nosing - Constructing elastomeric concrete nosing will be measured on the area basis. The length will be determined by measuring from face of curb to face of curb along the centerline of the joint. The width will be determined by measuring to the outer limits of the installed Material perpendicular to the joint. Subtract the area of the joint opening from the area calculation.

Joint seal Material will be measured according to 00585.80.

00584.90 Payment – Replace this subsection, except for the subsection number and title, with the following:

The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement
(a) Elastomeric Concrete Nosing Material	Cubic Foot
(b) Constructing Elastomeric Concrete Nosing	Square Foot

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

Joint seal Material will be paid for according to 00585.90.

No separate or additional payment will be made for providing the manufacturer's representative.

SP00585 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 02-03-25)**

SECTION 00585 - EXPANSION JOINTS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00585 of the Standard Specifications modified as follows:

(Use the following subsection .00 when replacing a gland in existing strip seals or reconstruction of joint surfaces.)

00585.00 Scope - Add the following paragraphs to the end of this subsection:

(Use the following paragraph when replacing glands.)

This Work also consists of replacing glands in existing strip seals.

(Use the following paragraph when reconstructing joint surfaces.)

This Work also includes concrete removal and reconstruction of joint surfaces and edges as shown.

00585.01 Definitions – Replace the paragraph that begins "Filled Joint…" with the following paragraph:

Filled Joint - A joint using a preformed joint filler placed prior to concrete pour. Hot applied joint sealant or poured joint seal may be placed on top of the joint filler.

Add the following paragraph after the paragraph that begins "**Filled Joint**…"

Hot Applied Joint Seal - A joint filled with hot applied, single component sealant.

Add the following subsection:

00585.02(b) Personnel Qualifications - Replace this subsection, except for the subsection number and title, with the following:

At the pre-construction conference, submit the following:

- Joint installer personnel certifications(s) from the manufacturer affirming that the installers have been trained in application methods of Materials and health and safety to install Closed Joints as detailed.
- A letter from the manufacturer affirming that the technical representative is qualified to provide technical assistance regarding expansion joint installation.

(Use the following subsection .02(d) when replacing a gland)

00585.02(d) Gland Replacement – At least 21 Calendar Days before starting Work, submit the following:

- The manufacturer's recommended gland.
- Material specifications. Published product data sheet is acceptable.
- Preparation plan for gland retainer.
- Installation procedure.

00585.10 Materials – Add the following Material to the Material list:

Portland Cement Concrete Repair Material 02015

00585.11 Concrete for Blockout Opening – Replace this subsection with the following subsection:

00585.11 Material for Blockout Opening - Fill blockout openings with the same class and type of concrete used in the deck, unless otherwise shown.

For joint surface reconstruction, fill openings with Material as shown or specified. If not shown, fill openings with one of the following Materials:

- Structural polymer concrete with a minimum compressive strength of 10 ksi, a minimum tensile strength of 1 ksi, and a minimum modulus of elasticity of 2,500 ksi.
- High early strength concrete (HESC), Class HESC4000 – 3/4 inch, designed according to Section 02001. Incorporate the following:
  - Rapid hardening hydraulic cement meeting the requirements of Section 02011.
  - Aggregate meeting the requirements of Section 02690.
  - Macro fibers meeting the requirements of 02045.20.
- Portland cement concrete repair materials meeting the requirements of Section 02015.

00585.30(b) Expansion Joint Seal Manufacturer's Representative - Replace this subsection with the following subsection:

00585.30(b) Expansion Joint Seal Manufacturer's Technical Representative - Provide a manufacturer's technical representative during the Work. Prior to beginning the Work, discuss with the representative regarding the Work to be done, methods of installation, installation procedures, and required Equipment to assure correct expansion joint installation. Ensure the manufacturer's technical representative remains available for consultation until the completion and acceptance of the Work. For strip seals, the manufacturer's technical representative is required to be on-site during the Work.

00585.42(c) Joint Preparation - Replace the paragraph that begins "For joint replacement, remove… " with the following paragraph:

For joint replacement, remove joint material from existing joints and clean the existing joints full depth and full width as directed by the Engineer. If existing joint surfaces have spalled, cracked, or deteriorated concrete, repair as shown or directed to provide a uniform and smooth surface. Unless otherwise shown or directed, epoxy inject cracks according to Section 00538 and repair surfaces using an approved PCC repair material.

(Use the following two paragraphs when replacing glands.)

Add the following paragraphs to the end of this subsection:

For gland replacement in existing strip seals, remove existing gland and prepare existing joint surfaces as specified and according to the joint manufacturer's recommendations. Ensure

that steel edgebeam and retainer surfaces to receive a new gland are sound, dry, clean, and frost-free at the time of joint installation.

(Use the following two paragraphs when reconstructing joint surfaces.)

Add the following paragraphs to the end of this subsection:

For joint surface reconstruction, remove existing joint surface as shown or specified. Prepare the concrete surface according to the manufacturer's recommendations and ICRI *Guideline No. 310.2R*. Shotblast or sandblast the final surface to a CSP 5-7.

00585.43 Armored Corners – Replace the title of this subsection with "**Armored Corners and Edgebeam"**

Replace the paragraph that begins "Provide joint corner armoring …" with the following paragraph:

Provide joint corner armoring or edgebeam with anchors as shown or specified, and according to the following:

00585.43(a) Tolerance - Replace the paragraph that begins "Install armored corners that are straight…" with the following paragraph:

Install armored corners or edgebeams that are straight and do not deviate from a true line by more than 1/4 inch horizontal and 1/8 inch vertical over the length of the joint, nor more than 1/16 inch in either direction from a 12-foot straightedge.

00585.43(b) Installation - Replace the paragraph that begins "Furnish armored corners in the longest …" with the following paragraph:

Furnish armored corners or edgebeams in the longest practical length as controlled by transportation and installation.

Replace the paragraph that begins "For new construction, install armored …" with the following paragraph:

For new construction, install armored corners or edgebeams with anchors in preformed blockouts at least 14 Days after the deck is cast with the joint opening as shown. Support the armored corners or edgebeams securely in position before placing concrete in the joint blockout. Install the preformed seal at least 7 Days after the concrete blockouts have been cast and after the deck concrete reaches 3,000 psi.

00585.47 Strip Seal - Replace the bullet that begins "Use steel retainers acting …" with the following bullet:

- Use steel retainers acting as the edgebeams according to 00585.43.

00585.50 Control Joint - Replace this subsection, except for the subsection number and title, with the following:

Construct Control Joints as shown. If details of the Control Joint are not shown, sawcut the surface 1 1/2 inches deep and 1/2 inch wide. Flush the sawcut thoroughly with a high-pressure water stream after the cut has been made. Before the cut dries out, blow it free of water and debris with compressed air. Fill the sawcut joint with a hot applied joint sealant from the QPL.

Add the following subsection:

00585.51 Hot Applied Joint Seal Replacement - Remove existing hot applied joint sealant from joint. Clean and repair joint surfaces and edges. Install hot applied joint sealant from the QPL and according to the manufacturer's recommendations.

Add the following subsection:

00585.52 Joint for Sidewalk, Multi-Use Path, or Other Facility Intended for Pedestrian Travel - Provide an expansion joint seal having a firm, stable, and slip resistant top surface, not more than 3/8 inch below finished surface.

For joint seals installed greater than 1/4 inch below finished surface, bevel the joint surface corners with a Slope not steeper than 1V:2H.

For Precompressed Foam Silicone Joint Seals, provide a joint seal having at least double width of the seal designed for the joint size. Install the joint seal according to the manufacturer's recommendations.

For joint openings 3 inches or wider, design and detail a steel cover plate for facilities with a pedestrian access route (as defined in 00759.02), Temporary Pedestrian Accessible Route, Multi -Use Path, or other structures intended for pedestrian travel. Hot-dip galvanize the steel plate and provide a slip-resistant surface or coating. Limit the elevation change between the steel plate and deck surface with a vertical face to 1/4 inch not to exceed 1/2 inch. When the elevation change is greater than 1/4 inch, bevel the steel plate corners to a Slope not steeper than 1V:2H.

(Use the following subsection .53 when replacing a gland.)

Add the following subsection:

00585.53 Gland Replacement - Field verify existing gland cavity profile before ordering new gland and construction. Install a replacement gland in one continuous strip, extending across the full Roadway width and into curb joints without splices and according to the manufacturer's recommendations.

00585.80 Measurement - Replace the paragraph that begins "No measurement of … with the following paragraph:

No measurement of quantities will be made for joints, gland replacement for strip seals, or joint surface reconstruction. Estimated quantities of joints, gland replacement, and joint surface reconstruction are listed below. The listed quantities are based on the theoretical horizontal length from gutter line to gutter line.

Add the following to the end of the subsection:

The estimated quantities of joints are:

(List all applicable joint types, e.g. expansion joints, control joints, or hot applied joint sealant, as the Pay Item name. Obtain information from the Bridge Designer.)

Structure	Joint Type	Quantity (Foot)
Bridge No. _____		
Bridge No. _____		

The estimated quantities of gland replacements are:

Structure	Joint Type	Quantity (Foot)
Bridge No. _____	Strip Seals	
Bridge No. _____	Strip Seals	

The estimated quantities of joint surface reconstruction are:

(List Material type for the joint surface reconstruction, i.e. structural polymer concrete, HESC, or PCC, as the Pay Item name. Obtain information from the Bridge Designer.)

Structure	Material Type	Quantity (Cubic Yard)
Bridge No. _____		
Bridge No. _____		

(Delete pay item(s) from the list that are not included in the Schedule of Items, but do not change the alpha characters next to the pay items. Also delete the paragraph that begins with "Item (x) includes…" for the corresponding pay item(s) that are being deleted. Select the appropriate unit of measurement, delete the one that does not apply, and delete all orange parentheses.)

00585.90 Payment - Replace Pay Item (h) with the following Pay Item:

(h) Hot Applied Joint Seal Replacement..... Lump Sum

Add the following Pay Items to the Pay Item list:

(i) Gland Replacement ..... Lump Sum
(j) Removal of Existing Joint Surfaces..... Lump Sum
(k) Joint Surface Reconstruction ..... Lump Sum

Add the following four paragraphs after the paragraph that begins "In item (d), the….":

Item (g) includes sawcutting and hot applied joint sealant.

Item (h) includes removing existing seal material, cleaning joint, repairing joint surfaces and edges, and installing hot applied joint sealant.

Item (i) includes removing existing gland material, cleaning and repairing steel edgebeam and retainer surfaces, and furnishing and installing the new gland.

Item (j) includes removing concrete and existing armored corner or edgebeams, if applicable, for new blockout opening.

Add the following four paragraphs after the paragraph that begins “Payment will be payment….”:

Elastomeric concrete nosing incorporated in the Work will be paid for according to 00584.90.

Payment for steel reinforcing will be paid for according to 00530.90.

Payment for concrete will be paid for according to 00540.90.

Modification to existing gland retainer edgebeam or expansion joint type change will be paid for according to 00195.20.

Replace the bullet beginning with “elastomeric concrete …” with the following bullet:

- structural patching material used to provide a smooth contact surface with joint seals, to provide a plane surface on which to place the steel bridging plate, or to make level surfaces between joint.

SP00586 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25)**

SECTION 00586 - EXPANSION JOINTS, MODULAR

(Follow all instructions and make all edits with “Track Changes” turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00586, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00586.00 Scope - This Work consists of designing, fabricating, testing, and installing modular bridge joint systems (MBJS) according to the geometry and movements shown and specified.

00586.01 Acceptable Manufacturers - Select one of the following pre-approved manufacturers of MBJS:

(List qualified modular bridge joint system manufacturers. Obtain information from the bridge joint specialist.)

_____(manufacturer name)_____, telephone: _____

_____(manufacturer name)_____, telephone: _____

_____(manufacturer name)_____, telephone: _____

00586.02 Design Requirements - Design MBJS according to the AASHTO *LRFD Bridge Design Specifications* and interim revisions and the following:

- Design and detail MBJS to provide inspection and maintenance access to all internal components.
- Detail MBJS to provide at least 3 inches of concrete, with reinforcement over the top of support boxes. Provide sufficient top plate thickness to prevent concrete cracking over the support boxes.
- Detail MBJS and bridge deck steel reinforcement to assure concrete consolidation can be achieved underneath all support boxes.
- Detail expansion joint seals so that they do not protrude above the top of the expansion joint system under any service condition. Split extrusions may be used at curb upturns.
- Design elastomeric or urethane springs and bearings to be removable and replaceable. Provide extruded elastomeric seals that can be removed and reinstalled from above the joint with at least a 1 1/4 inch gap width. Install seals in one continuous strip, extending across the full roadway width and into the curbs without splices.
- Design MBJS to be watertight.
- Design and detail MBJS to accommodate all movements shown.
- Design and detail a steel cover plate for facilities with a pedestrian access route (as defined in 00759.00), Temporary Pedestrian Accessible Route, or Multi-Use Path intended for pedestrian travel. Hot-dip galvanize the steel plate and provide a slip-resistant surface or coating. Limit the elevation change between the steel plate and deck surface with a vertical face to 1/4 inch not to exceed 1/2 inch. When the elevation change is greater than 1/4 inch, bevel the steel plate corners to a slope not steeper than 1V:2H.

00586.03 Submittals - Submit stamped Working Drawings, design calculations, and the following for the MBJS:

- Plan, elevation, and section of the MBJS for each movement rating and bridge deck width. Specify all dimensions and tolerances.

- Sections showing all materials composing the MBJS with complete details of all individual components including all bolted and welded shop splices and connections.
- All ASTM, AASHTO, or other material designations.
- Installation plan including sequence, lifting mechanisms and locations, details of temporary anchorage during setting, temperature adjustment devices, opening dimensions relative to temperature, installation details at curbs, and seal installation details.
- Plan for achieving and testing water tightness.
- Details and material designations pertinent to the corrosion protection system.
- Requirements and details related to temporary support of the MBJS for shipping, handling, and job site storage.
- Design calculations for all structural elements including all springs and bearings. Include calculations for fatigue design for all structural elements, connections, and splices.
- Welding procedures comply with AWS D1.5.
- A written maintenance and part replacement plan, including drawings, to facilitate replacement of parts subject to wear. Include a list of parts, instructions for maintenance inspection, acceptable wear tolerances, methods for determining wear, procedures for replacing worn parts, and procedures for replacing seals.
- Any required modifications to blockout reinforcing steel to accommodate the MBJS.
- Design and details for MBJS temperature adjustments. Specify each MBJS gap width set to correspond with the ambient temperature at the time of setting.
- Design and details for positioning the MBJS in the block-outs to provide a minimum of 3 inches clearance between the block-out surface and the bottom of support boxes for concrete placement.
- Documentation that the manufacturer is certified through the AISC Quality Certification Program under the category Highway Component Manufacturer.
- Documentation that welding inspection personnel are qualified and certified as welding inspectors according to AWS QC1.
- Documentation that personnel performing nondestructive testing (NDT) are qualified and certified as NDT Level II under the American Society for Nondestructive Testing (ASNT) Recommended Practice SNT-TC-1a.
- Manufacturer's certificate of compliance for all polytetrafluoroethylene (PTFE) sheeting, PTFE fabric, and elastomer.
- Certified mill test reports for all steel and stainless steel in the MBJS assemblies.
- Certified test reports confirming that the springs and bearings meet the design load requirements.
- A Quality Assurance Inspection program performed by an independent inspection agency provided by the MBJS manufacturer. Include the name of the independent inspection agency, details of the proposed inspection program including inspection frequency, and all applicable reporting forms.
- A temporary bridging method for each MBJS where traffic is anticipated to cross before joint concrete has fully cured.

Materials

00586.10 Materials - Furnish MBJS Materials meeting the following requirements:

Elastomeric Strip Seal 02440.20
Lubricant and Adhesive ..... ASTM D4070
Polytetrafluoroethylene (PTFE) 02570.10
Stainless Steel Sliding Surfaces.....02570.10
Structural Steel 02530.20

00586.20 Tests - Test MBJS according to AASHTO *LRFD Bridge Construction Specifications*, Appendix A19. Perform the following tests:

- Open Movement and Vibration (OMV) Test
- Seal Push-Out (SPO) Test
- Fatigue test

Labor

00586.30 Manufacturer's Representative - Provide a manufacturer's representative on-site during installation of each MBJS.

The representative duties include:

- Discussing the Work to be done, the methods of installation, and the required Equipment to use.
- Advise the Engineer and the Contractor on proper installation procedures to assure correct installation of each MBJS.

Construction

00586.40 Installation - Install MBJS according to the manufacturer's approved Working Drawings and the recommendations of the manufacturer's representative and the following:

- Install each MBJS to match the finished bridge deck profile and grades.
- Protect each MBJS from damage and protect concrete blockouts and supporting systems from damage and construction traffic prior to installation. Do not apply any construction loads on the MBJS until installation is complete.
- Set each MBJS gap width to correspond with the ambient temperature at the time of setting.
- Remove all forms and debris that may impede movement of the MBJS.

00586.47 Watertightness Test - Test each MBJS for watertightness after installation. Flood each completed MBJS with water to at least 3 inches deep for 1 hour. If leakage is observed, repair the joint at no additional cost to the Agency according to the manufacturer's recommendations. Repeat the watertightness test after repairs are complete.

00586.48 Manufacturer's Representative Certification - When the MBJS installation is complete and accepted, provide written certification from the manufacturer's representative

stating that each MBJS was installed according to the manufacturer's recommendations and the approved Working Drawings.

Measurement

00586.80 Measurement - No measurement of quantities will be made for modular bridge joints.

The estimated quantities of modular bridge joints are:

(List the structure number and quantities for modular bridge joints. Obtain information from the Bridge Designer.)

Structure	Quantity (Feet)
Bridge No. _____	
Bridge No. _____	

Payment

00586.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract lump sum amount for the item "Modular Bridge Joint Systems".

Payment will not be made before joints have passed the watertightness test. No payment will be made for any Material installed as replacement Material for that removed, unless the Engineer determines that the reason for the removal was beyond the Contractor's control, or that the Plans specifically required the removal.

Payment will be payment in full for designing, furnishing, and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for providing the manufacturer's representative.

SP00587 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25
Requires SP01050 when protective fence is required.)

SECTION 00587 - BRIDGE RAILS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00587 of the Standard Specifications modified as follows:

(Use the following subsection .00 when protective fencing or ornamental protective screening is required.)

00587.00 Scope –

(Use the following two paragraphs when protective fencing is included on the Project)

Replace the paragraph beginning "This Work consists of…" with the following:

This Work consists of constructing bridge rails and protective fence of the Material or combination of Materials shown or specified.

(Use the following two paragraphs when ornamental protective screening is included on the Project.)

Add the following to the end of this subsection:

Work also includes ornamental protective screening, of the Material or combination of Materials, as shown or directed.

(Use the following subsection .01 when protective fence or ornamental protective screening is required.)

Add the following subsection:

00587.01 Definitions –

Panel – A Panel is a portion of screening between adjacent posts.

Run – A Run is the length of fence between end posts, intermediate posts and corner posts.

(Use the following subsection .10 when protective fence or ornamental protective screening is required.)

00587.10 Materials - Add the following to the end of this subsection:

Fasteners 02560
Fencing Materials 03010
Resin Bonded Anchor System 00535.10
Structural Steel 02530

(Add the following paragraph when vinyl coated fabric fencing without exact color matching is required. Indicate the color within the parentheses. Fill in the blank with black, dark green, or brown. Delete all orange parentheses.)

Provide PVC coating of the color (____). Provide coated fencing materials of matching color.

(Use the following subsection .44 when protective fencing is required.)

Add the following subsection:

00587.44 Protective Fence:

(a) Posts and Braces - Set all metal end posts, intermediate end posts, and chain link fence posts as shown.

(b) Chain Link Fence Fabric and Wire - Assemble and install chain link Fence fabric and wire according to 01050.45(c).

(c) Welding - Weld according to AWS D1.1 Structural Welding Code.

(d) Resin Bonded Anchor System – Place posts and fully cure all resin bonded anchors before installation of the screening panels. Install anchors according to Section 00535.

(Use the following paragraph when gates are required)

(e) Gate – Install gates according to 01050.48.

[Option 1 – Use the following option when only one structure requires coating]

(f) Coatings –

(Use the following paragraph when vinyl coated fabric fencing is required.)

Apply coatings from the QPL with approximate top coat color of provided Fencing Material to galvanized or uncoated fasteners and Fencing Material hardware and repair coating damage due to handling and erection according to 00594.60 after installation. Follow all fencing and coating manufacturer recommendations.

(Use the following paragraph when precise top coat color or additional corrosion protection is required. Include SP00593 where top coat color is specified.

Powder coat Fencing Materials according to Section 00593. Apply coatings from the QPL with identical top coat color to fasteners, exposed portions of resin bonded anchors and other uncoated or galvanized components and repair damage due to handling and erection according to 00593.60 after installation. Follow all coating manufacturer recommendations.

[End Option 1]

[Option 2 – Use the following option when multiple structures require coating. Indicate structure number(s) to which each paragraph applies. Insert the structure number(s) and delete all orange parentheses.]

(f) Coatings –

(Use the following paragraph when vinyl coated fabric fencing is required.)

For Structure(s) (_____) apply coatings from the QPL with approximate top coat color of provided Fencing Materials to galvanized or uncoated fasteners and Fencing Material hardware and repair coating damage due to handling and erection according to 00594.60 after installation. Follow all fencing and coating manufacturer recommendations.

(Use the following paragraph when precise top coat color or additional corrosion protection is required. Include SP00593 where top coat color is specified.

For Structure(s) (_____) powder coat Fencing Materials according to 00593. Apply coatings from the QPL with identical top coat color to fasteners, exposed portions of resin bonded anchors and other uncoated or galvanized components and repair damage due to handling and erection according to 00593.60 after installation. Follow all coating manufacturer recommendations.

[End Option 2]

(Use the following subsection .45 when ornamental protective screening is required.)

Add the following subsection:

00587.45 Ornamental Protective Screening –

(a) General - Complete a check assembly for each panel of ornamental protective screening. Include all members except for welded wire mesh panels. Check assemblies based on the specified geometry, alignment and splice locations, proposed order of erection, and similar considerations that affect field erection of screening, as directed. If the check assembly fails to demonstrate that the required accuracy is being obtained, additional check assemblies may be required at no additional cost to the Agency. Acceptance of the check assembly does not relieve the Contractor of the responsibility for assuring accurate fit-up during erection.

The sequence of assembly may start from any location in the Structure and proceed in one or both directions, so long as the preceding requirements are satisfied.

Do not exceed 0.01 foot / foot difference in slope between the longitudinal channels or plates and the bridge rail for any given screening panel. Maintain the vertical alignment of wire mesh and square tubing.

Match-mark connecting parts assembled in the shop for the purpose of reaming holes in field connections, and furnish a diagram showing such marks to the Engineer. Before fabrication, field verify required dimensions.

Erect ornamental fence to the lines and grades shown. The overall height of the fence when erected is the height above the grade as shown.

Place posts and fully cure all resin bonded anchors before installation of the screening panels. Install anchors in new concrete according to 00535.40.

(b) Woven Wire Fabric - Assemble and install woven wire fabric according to 01050.44.

(c) Welding - Weld according to AWS D1.1 Structural Welding Code.

(d) Coatings - Hot dip galvanize all steel frames, panels and hardware according to 02530.70 and 02560.40.

(Use the following paragraph when coatings for aesthetics or additional corrosion protection is required. Include SP00593 where top coat color is specified.)

Powder coat ornamental protective screening according to Section 00593. Apply coatings from the QPL with identical top coat color to fasteners, exposed portions of resin bonded anchors and other uncoated or galvanized components and repair damage due to handling and erection according to 00593.60 after installation. Follow all coating manufacturer recommendations.

(Use the following paragraph when a custom ornamental protective screening requires preassembly due to unique and complex elements.)

(e) Preassembly - Fabricate and preassemble ornamental protective screening components in the shop, and ream holes to specified size while the connections are assembled. Obtain approval for each assembly, including horizontal and vertical curvature, alignment, accuracy of holes, and fit of milled joints before reaming is commenced or before a numerically controlled drilled check assembly is dismantled.

00587.80 Measurement - Add the following to the end of this subsection:

The estimated quantity of bridge rail is:

(List rail type as the Pay Item name. Obtain information from the Bridge Designer.)

Structure	Rail Type	Quantity (Foot)
Bridge No. _____		
Bridge No. _____		

(Use the following paragraph when protective fence or ornamental protective screening is required.)

Bridge protective fence or ornamental protective screening will be measured on the length basis. Measurement will be between beginning and ending locations as shown.

(Use the following subsection .90 when Bridge protective fence or Ornamental protective fence is required.)

00587.90 Payment –

(Use the following paragraphs when Bridge protective fence is required.)

Add the following paragraphs after the paragraph beginning “The accepted quantities…”

Bridge protective fence will be paid for at the Contract unit price, per foot, for the item "____ Foot Type ____ Protective Fence".

The height of the fence will be inserted in the first blank. The type of fence will be inserted in the second blank.

(Use the following paragraphs when ornamental protective screening is required.)

Add the following paragraphs after the paragraph beginning “The accepted quantities…”

The accepted quantities of ornamental protective screening will be paid for at the Contract unit price per foot for the item "Ornamental Protective Screening".

SP00588 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25
Requires SP02510)

SECTION 00588 - PRECAST HISTORIC ORNAMENTAL BRIDGE RAILS

(Follow all instructions and make all edits with “Track Changes” turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00588, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00588.00 Scope - This Work consists of constructing precast historic ornamental Bridge rails (“Stealth Rails”) of the Material or combination of Materials shown and specified.

Precast Work includes:

- Field measurement of all existing rail segment lengths, curves, miter angles, superelevations, and Slopes
- Providing forms for cast-in-place posts
- Providing templates to locate concrete anchors to fasten precast rails to the Bridge

Cast-in-place Work includes:

- Providing and placing concrete according to Section 00530 and Section 00540 for the cast-in-place rail components

- Installing bolted connections according to Section 00560
- Installing anchor bolts and associated nuts and washers
- Applying water repellent concrete sealer

00588.02 Definitions:

Stealth Rail - Structural steel frame encased in a precast ornamental concrete rail section.

00588.03 Working Drawings - Essential elements of design and section dimensions for rail are as shown.

Submit unstamped Working Drawings for approval according to 00150.35. Include details of lifting, storage, transporting, erecting, and bracing.

Materials

00588.10 Materials - Furnish Materials meeting the following requirements:

Concrete.....02001
Keyway Grout.....02080.30
Reinforcement.....02510
Structural Steel.....02530
Structural Steel Tubing.....02810.20
Synthetic Micro Fiber Reinforcing 02045.10
Pipe 02810.30

Furnish concrete containing synthetic micro fiber reinforcing at a rate of 0.75 lb/cu yd or as recommended by the fiber manufacturer.

00588.12 Acceptance of Concrete - Acceptance of concrete will be according to Section 00165 and the following:

(a) Aggregate - Acceptance of Aggregate will be based on the Contractor's quality control testing, if verified, according to Section 00165.

(b) Plastic Concrete - Acceptance of plastic concrete will be based on tests performed by the QCT, according to Section 02001.

(c) Hardened Concrete:

(1) General - Acceptance of hardened concrete will be based on analysis of compressive strength test results of cylinders cast and cured by the Contractor and tested according to AASHTO T 22 by a CSTT at an ODOT-certified laboratory and verified according to Section 00165.

(2) Sampling and Testing - Obtain a sample from a delivery vehicle, selected at random, during each Day's production for each mix design used. Test the sample for temperature, slump, density, and air content and cast at least three cylinders for testing at 28 Days. Cure the cylinders in a manner similar to the members they represent. Alternately, the cylinders may be cured in a curing chamber correlated in temperature

with the concrete in the forms. Leave the cylinders in the form with the member or in the curing chamber until the member is stripped. After the member is stripped, place the acceptance cylinders in storage in a moist condition according to AASHTO T 23.

(3) Acceptance - Concrete members with an Actual Strength Test Value (ASTV) meeting or exceeding the specified design strength, $f'c$, will be acceptable for strength.

If the ASTV is less than $f'c$ but at least 85 percent of $f'c$, the Engineer may review the results to determine if the member is suitable for the intended purpose. If suitable, the concrete represented by an ASTV less than $f'c$ may be accepted subject to a price adjustment according to 00150.25.

Concrete that has an ASTV less than 85 percent of $f'c$ will not be accepted. All costs of removal, replacement, and all related work are the Contractor's responsibility.

Equipment

00588.25 Vibrators - Provide either internal or external vibrators in working condition meeting the manufacturer's rating.

When epoxy coated reinforcement is used, use internal vibrators fitted with a manufactured rubber head to minimize damage to the epoxy coating.

Construction

00588.40 General - Construct Bridge rails:

- True to line, grade and dimensions shown or established, with a smooth and even top rail that does not follow any unevenness in the Superstructure.
- Vertical, rather than normal to the deck, whether the deck is superelevated or not, unless shown otherwise. Constructing rail or baluster normal to the deck requires the Engineer's approval.
- After falsework has been removed, so that the span is self-supporting.

00588.41 Forms:

(a) General - Construct forms for precast and cast-in-place components from metal or polymer Material. Provide forms that are smooth and tight fitting, rigidly held in line and grade, and removable without damage to the concrete. Make form joints in vertical planes. Construct all moldings, panel work, and bevel strips as shown. Make corners in the finished work true, sharp, and free of cracks, spalls, and other defects.

Forms for cast-in-place base may be constructed from high density overlay (HDO) plywood.

Allowable construction tolerance for forms is 1/16 inch.

Construct rail post or transitions with fixed forms as shown.

Remove and replace any unsatisfactory Work at no additional cost to the Agency.

(b) Test Section - Construct a test section of precast historic ornamental Bridge rail at least 5 feet in length to demonstrate accuracy and quality of formwork and finish. With the Engineer's approval, a section of rail of similar design constructed for a previous project may be designated as the test section. Production casting will not be allowed until the test section has been approved by the Engineer.

A test section may be permanently installed in the Work if approved.

00588.42 Placing Reinforcement - Place reinforcement as shown and according to Section 00530.

00588.43 Placing Concrete:

(a) General - Place concrete so that the finished members are uniform and monolithic, free of cold joints.

Do not deposit concrete in the forms until the Engineer has inspected and approved the placement of reinforcement, conduit, and other embedded items.

Prepare forms according to 00588.41. Remove temporary struts, stays, and braces when the concrete has reached an elevation rendering them unnecessary. Remove these temporary members entirely from the forms and do not bury them in the concrete.

Place concrete close to its final position, without segregation of Materials or displacement of the reinforcement.

(b) Consolidation - Consolidate concrete, during and immediately after placing, by mechanical vibration as follows:

- Operate internal vibrators at frequencies that produce consolidated placements.
- Do not use vibration for shifting concrete to the extent of causing segregation.
- Vibrate at points uniformly spaced and not further than twice the radius over which vibration is visibly effective.
- Continue vibration until the concrete is thoroughly consolidated, but not until segregation occurs or localized areas of grout form.
- Use external vibration through a mechanical means other than internal vibrator to consolidate locations not accessible to internal vibrators.

00588.44 Curing - Cure precast members with low-pressure steam or radiant heat inside a suitable enclosure to contain the steam or heat, and minimize moisture and heat loss.

(a) Curing Temperature - Measure cure temperature by one of the following methods:

(1) Measuring Enclosure Temperature - Equip the enclosure with 24-hour recording thermometers at each end of each casting bed. Record the temperature for each thermometer on a single chart for each 24-hour period.

Do not allow the curing temperature within the enclosure to exceed 160 °F. During the initial application of live steam or radiant heat, do not allow the temperature within the enclosure to increase at a rate exceeding 40 °F per hour.

(2) Measuring Concrete Temperature - Embed a thermocouple 6 to 8 inches from the top or bottom of the member on its centerline and near its midpoint.

Record the concrete temperature with a calibrated recorder that provides a continuous record of time and temperature throughout the curing cycle.

Do not allow the concrete temperature to exceed 190 °F. During the initial application of steam or radiant heat, do not allow the concrete temperature to increase at a rate exceeding 80 °F per hour.

(b) Curing with Low-Pressure Steam - Make the initial application of steam after initial set of concrete as determined by AASHTO T 197 (ASTM C403).

Provide a steam supply line to the enclosure equipped with a motor-operated modulating steam control valve operated by a temperature-sensing element located in the enclosure.

Provide steam at 100 percent relative humidity.

Do not apply steam directly on the concrete, form surfaces, or test cylinders.

Distribute the steam within the enclosure through suitable ports located on each side of the units within the enclosure at not more than 30-foot centers, to keep the units being cured completely and uniformly surrounded with steam.

(c) Curing with Radiant Heat - Radiant heat may be applied to beds by means of pipes circulating steam, hot oil, or hot water; by electric blankets or heating elements adjacent to forms; or by circulating warm air under and around forms. Do not allow pipes, blankets, or heating elements to be in contact with concrete, form surfaces, or test cylinders.

(d) General Wet Cure Requirements - Cure precast or cast-in-place Work with water. Begin curing as soon after placement as possible without damaging the freshly placed concrete. Continue curing for 7 Calendar Days after placement.

Keep surfaces not covered by waterproof forms damp by applying water with a fog nozzle until the surface has set sufficiently to allow sprinkling with water or covering with wet burlap and plastic or an approved wet or dry Material.

Do not interrupt curing for more than one hour during the cure period.

If, during the cure time, the surrounding temperature falls below 45 °F, extend the cure for the number of hours the temperature is below 45 °F.

(In the first sentence below, use "coated" for Projects including a concrete sealer. Otherwise, use "uncoated." Delete the unused word and all parentheses.)

00588.45 Surface Finish - Provide all exposed concrete surfaces with a Class 2 surface finish (ground, floated, and *(*coated*) (*uncoated*)*) according to 00540.53(c). Completely fill

holes and depressions at least 1/8 inch or more in depth or diameter by sacking with an approved Patching Material. Hand-scrape the patched surface with a carbide blade to the original plane surface. Color the Patching Material to match the Bridge rail. For concrete surfaces that are not exposed, provide a Class 1 surface finish according to 00540.53(c).

00588.46 Lifting, Storing, Transporting, Erecting, and Bracing - Be responsible for the safety of precast members during all stages of construction. Lifting, storage, transporting, erecting, and bracing details will not be reviewed by the Engineer. Lifting, storage, transporting, erecting, and bracing of members are the sole responsibility of the Contractor.

Lift members at the support points specified by the manufacturer and in a manner that does not cause damage, bending, or torsional forces. Members will be rejected if not handled as specified.

00588.47 Anchor Location Templates - Use fabricator-supplied templates to accurately mark anchor bolt locations for drilling on the Bridge.

(Use the following subsection .48 when a concrete sealer is required.)

00588.48 Water-Repellent Concrete Sealer - Apply a clear water-repellent concrete sealer from Section 02060.30 of the QPL, containing 100 percent silane, to all exposed exterior surfaces. Prepare and coat concrete according to the sealer manufacturer's recommendations. Apply two coats of sealer at the manufacturer's minimum yield.

Apply each coat in a uniform layer, completely covering the preceding coat. Correct runs, sags, skips, and other deficiencies before applying succeeding coats. Such corrective work may require recleaning, application of additional coating Materials, or other measures as directed, at no additional cost to the Agency.

Apply coating Materials by air or airless sprayer, brush, roller, any combination of these methods, or as recommended by the coating Material manufacturer, unless otherwise specified. If air is used for application, ensure that it is free of water, oil, and any other Material detrimental to the coating system. Provide adequate separators and traps and test air cleanliness daily according to ASTM D4285, or as directed. Regardless of the method used to apply the coating, use brushes to push the coating Material into complex details, crevices, gaps, difficult-to-access areas, and where spraying does not adequately cover or penetrate. All application techniques shall conform to Section 7 in SSPC-PA 1 and the applicable sections of SSPC *Paint Application Guide No. 11*.

(Use the following subsection .49 when electrical components are encased in concrete.)

00588.49 Electrical Systems - Install electrical system components permanently encased within the precast or cast-in-place ornamental concrete rail according to Sections 00960, 00970, and 00990.

Measurement

00588.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

The estimated quantity of precast historic ornamental concrete Bridge rail is:

(List the Structure number and quantities of ornamental concrete Bridge rail. Obtain information from the Bridge Designer.)

Structure No.	Quantity (Feet)

Payment

00588.90 Payment - The accepted quantities of precast historic ornamental concrete rails will be paid for at the Contract lump sum amount for the Pay Item "Precast Historic Ornamental Concrete Rail".

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

Payment includes payment for electrical system components permanently encased within the Bridge rail.

No separate or additional payment will be made for anchor bolts and anchorage devices, except those cast in precast concrete members.

Payment for anchor bolt and anchorage devices in cast-in-place concrete members, and for reinforcement extending from a precast unit, cast-in-place deck, wall, or Bridge approach slab into the rail will be included in payment made for the precast unit, cast-in-place deck, wall, or Bridge approach slab, as appropriate.

Payment for guardrail terminal connectors, connection plates, spacer blocks, and other connection hardware will be included in payment for the guardrail transition item according to 00810.90.

SP00589 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 00589 - UTILITY ATTACHMENTS ON STRUCTURES

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00589, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00589.00 Scope - This Work consists of providing for attachment or installation of utilities on new and existing Structures as shown or as directed.

(Use the following two paragraphs when Structures have been designated "Special Structures" by Bridge Engineering Section. List the designated Special Structures by bridge number.)

The following Structures are designated "Special Structures":

- Bridge No. _____
- Bridge No. _____

Utility attachments to Special Structures shall not alter the appearance of the Structure. Make attachments only inside the girder line, as close as possible to the soffit, or as required to make the installation as inconspicuous as practicable.

Materials

00589.10 General - Furnish Utility attachment systems using Materials from the QPL and meeting the following requirements:

Structural Steel 02530
Forgings, Shafting, Castings, and Nonferrous Materials 02540
Fasteners 02560
Reflective Sheeting ..... 02910.20(a)
Resin Bonded Anchor System 00535.10

Furnish brackets constructed of stainless steel or hot-dip galvanized structural steel.

Construction

00589.40 General - Provide sufficient space around utilities for maintenance activities.

Avoid drilling through reinforcing steel. If reinforcing steel is hit, move the anchor location and patch the hole with an approved patching material from the QPL.

Attach conduits or brackets to concrete Structures with resin bonded concrete anchors, unless otherwise shown or approved.

00589.41 Natural Gas Lines - Conform to the portions of CFR 49 Part 192 that are applicable to the Work. Provide isolation valves 200 feet from each end of the Bridge as shown.

(Include the following subsection .42 when a casing is requested by the Utility Coordinator. Delete the item from the subsection that does not apply, but do not

change the alpha characters next to the title. Fill in the blank with the appropriate information.)

00589.42 Casing –

(a) Natural Gas Casing - Install steel pipe casing for natural gas lines below bridge deck as shown. Natural gas line will be installed within casing by others.

(b) Communication Casing - Install (_insert the type of casing as discussed with the Utility Owner_) casings for communications lines below bridge deck as shown. Communication lines will be installed within casings by others.

(Include the following Subsection .43 when a waterline will be attached to a Bridge)

00589.43 Water Line Attachment - Install ductile iron pipe and fittings with restrained joints according to 01140.00 through 01140.52 below the bridge deck as shown and specified.

00589.48 Labeling - Clearly label all piping or conduit systems according to the following APWA color code:

Table 00589-1

Material	Marker Background Color
Electrical Power Lines, Cables, Conduits, Lighting Cables	Red
Gas, Oil, Steam, Petroleum, Gaseous Materials	Yellow
Communications, Alarm, Signal Lines, Cables, or Conduits	Orange
Potable Water	Blue
Reclaimed Water, Irrigation, Slurry Lines	Purple
Sewers, and Drain Lines	Green

Generate purple by placing purple transparent film over white reflective sheeting. The purple tint of the transparent film shall match Federal Standard Color 595B No. 37100.

Minimum length of label shall be as shown in Table 00589-2.

Table 00589-2

Pipe O.D. Min.	Pipe O.D. Max.	Length of Label	Width of Label
3/4"	1 1/4"	8"	3/4"
1 1/2"	2"	8"	1"
2 1/2"	6"	12"	2"
8"	10"	12"	2"
10"	–	12"	2"

Place labels on each pipe or conduit, on each side of every bent, and at each entrance to a box girder.

Where piping is above or below normal line of sight, place pipe labels so that label may be seen from normal eye height.

Measurement

00589.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

Payment

00589.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract lump sum amount for the item "Utility Attachment on Structures, _____".

The type of Utility attachment on Structures will be inserted in the blank.

Payment will payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP00590 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-03-25
Requires SP00504)

SECTION 00590 - POLYMER MEMBRANE

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use this specification only for cast-in-place decks. Obtain information from the Bridge Designer.)

Comply with Section 00590 of the Standard Specifications.

SP00592 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25
Requires SP00504)

SECTION 00592 - ROLLED WATERPROOFING MEMBRANE

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use this specification for cast-in-place or precast slab bridge decks where a minimum 4 inches of asphalt is designed on the bridge. Obtain information from the Bridge Designer.)

Comply with Section 00592 of the Standard Specifications.

SP00593 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25)**

SECTION 00593 - POWDER COATING METAL STRUCTURES

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use the following lead-in paragraph when none of the following subsections are included in the project.)

Comply with Section 00593 of the Standard Specifications.

(Use the following lead-in paragraph when any of the following subsections are included in the project.)

Comply with Section 00593 of the Standard Specifications modified as follows:

(Use the following subsection .10(b) to list topcoat colors that aren't identified in the Standard Specifications. Fill in the blanks as instructed and obtain information from the Designer. Copy and repeat the paragraph as needed. For color number, only use numbers 14159 to 28915 from the SAE AMS-STD-595 color index.

Example:

For the combination rail on Bridge No. 12345A, provide a topcoat color of High Gloss Black that conforms to SAE AMS-STD-595 color # 17038.)

00593.10(b) Color - Add the following to the end of this subsection:

For __*(Structure number or item description)*__, provide a topcoat color of __*(Color Name)*__ that matches SAE AMS-STD-595 color # __*(Color Number)*__.

SP00594 (Special Provisions for the 2024 Book)

(Bidding on or after: 05-01-25
Last updated: 01-21-25
This Section requires SP00084 when a coating system warranty is required in subsection .75. Requires SP00253 when work access/containment is required. Requires SP00296 when lead is anticipated.)

SECTION 00594 - PREPARING AND COATING METAL STRUCTURES

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00594 of the Standard Specifications modified as follows:

(Use the following subsection .00 when coating any structures that require a more detailed scope – e.g. bridges, sign structures, ornamental rail, if lead based coatings are involved, etc.)

00594.00 Scope - Replace this subsection, except for the subsection number and title, with the following:

This Work consists of preparing and coating existing steel on Bridge No. ____.

(Insert bridge/scope description here – i.e. length, number of spans, general area to be coated (above or below deck), etc. Provide previous coating history including materials used and surface preparation if known. Obtain information from the Designer.)

(Use the following paragraph when mill scale will be exposed by this work.)

Mill scale will be exposed by the preparation and coating Work.

(Use the following paragraph when lead-based coating will be affected by the work.)

Lead-based coatings will be affected by the preparation and coating Work.

(Use the following paragraph when chromates will be affected by the work.)

Coatings that contain chromates will be affected by the preparation and coating work.

(Use the following subsection .05 when lead is anticipated on the project.)

00594.05 Waste Handling and Disposal - Add the following paragraph to the end of this subsection:

When lead is contained in the waste, dispose of waste material according to 00290.20, Section 00296, and the applicable requirements of SSPC-Guide 7.

(Use the following subsection .10 to list coating materials. Obtain information from the Designer. Use the appropriate QPL subsection for the classification of work [i.e. non-ferrous, weathering steel, rehab, maintenance, high performance, shop, shop pile].)

00594.10 Materials - Add the following to the end of the subsection:

(Fill in the first blank with a description of the work item and the second blank with the bridge number. Use the appropriate QPL subsection for the classification of work (i.e. non-ferrous, weathering steel, rehab, maintenance, high performance, shop, shop pile).

Example:

For steel pipe pile at Bent No. 1 on Bridge No. 01234A:

Furnish a shop pile coating, 4 coat system with tar from the QPL. Provide top-coat color that conforms to #27038 of SAE AMS-STD-595.

Repeat the following language as necessary for multiple bridges, work items, coating systems, colors, etc.)

For _____ on Bridge No. _____:

Furnish a _____ coating, ___ coat system with ____ from the QPL. Provide top-coat color that conforms to #_____ of SAE AMS-STD-595.

(Use the following paragraph when weatherized guardrail and painting of guardrail transitions and terminals are required according to SP00810.)

Furnish coating materials for metal galvanized guardrail transition and guardrail terminal materials according to Non-Steel Metallic Substrates except the color shall be brown that closely matches aged weatherized steel. Submit samples to the Engineer for review and approval.

(Use the following subsection .40(b) when coating existing steel structures. Obtain information from the Designer.)

00594.40(b) Existing Steel Structures - Add the following paragraphs and bullets to the end of this subsection:

Prepare and coat the following surfaces:

(List below what is to be coated.)

-

Do not coat the following:

(List below what is not to be coated.)

-

(Use the following subsection .40(d) when existing non-steel metallic substrates are to be coated. Obtain information from the Designer.)

00594.40(d) Non-Steel Metallic Substrates - Add the following paragraph and bullets to the end of this subsection:

Existing non-steel metallic substrates to be prepared and coated include:

(List below what existing non-steel metallic substrates are to be coated.)

-

(Use the following subsection .42(e-7) when coating existing steel within 2 miles of a salt water source or when required by the Designer.)

Add the following subsection:

00594.42(e)(7) Soluble Salt Testing and Removal - Conduct soluble salt tests on all cleaned surfaces, except locations where rust inhibitors, chloride removers, or lead/chromate-treating abrasive additives are used, in accordance with SSPC *Technology Guide 15*, Section 4.1.1. Conduct tests after final blow down, before any coating application, and on the same Day as the coating operation. Follow all of the recommendations and instructions from the test equipment manufacturer. Convert soluble salt measurements to a standard temperature of 77 °F using a temperature correction factor of 1.11 percent per °F. Perform three tests for the first 1000 square feet cleaned each Day, and one test for each subsequent 1000 square feet cleaned, with a minimum of two tests per work shift. Perform tests at the locations identified by the Engineer. The Engineer may perform additional soluble salt testing. The maximum acceptable concentration of soluble salts is 70 microsiemen per centimeter. If the total concentration of soluble salts found in any test exceeds allowable limits, the entire area represented by the test will be rejected. Provide additional surface cleaning in rejected areas before repeating the tests. Each area will be accepted when all soluble salt test readings in the area are within acceptable limits.

For areas where rust inhibitors, chloride removers, or lead/chromate-treating abrasive additives are used, test all cleaned surfaces for the presence of soluble salts in accordance with SSPC *Technology Guide 15*, Section 5.2.5.1. Follow all of the recommendations and instructions from the test equipment manufacturer. Perform three tests for the first 1000 square feet cleaned each Day, and one test for each subsequent 1000 square feet cleaned, with a minimum of two tests per work shift. Perform tests at the locations identified by the Engineer. The Engineer may perform additional soluble salt testing. The maximum acceptable concentration of soluble salts is 5 micrograms per square centimeter. If the total concentration of soluble salts found in any test exceeds allowable limits, the entire area

represented by the test will be rejected. Provide additional surface cleaning in rejected areas before repeating the tests. Each area will be accepted when all soluble salt test readings in the area are within acceptable limits.

(Use the following subsection .75 when a coating system warranty and supplemental warranty performance bond are required. Fill in the first blank with the structure number. Fill in the second blank with a discount to the value of the completed coating system work. The value of the coating system work shall include the value of all pay items listed in subsection 00594.90, subsection 00253.90, barges, and any additional painting work, based on the project cost estimate. Contact the Structure Coatings Engineer for the specific discount for the project. Be sure to include SP00084 when a coating system warranty is required.)

00594.75 Coating System Warranty and Supplemental Warranty Performance Bond - Add the following paragraph to the end of this subsection:

Provide a coating system warranty for Structure No. _____ and a supplemental warranty Performance Bond in the sum of $ _____ to the Project Manager.

(Use the following subsection .90(a) when coating new metal structures and payment for the coating will not be made under Section 00594.)

00594.90(a) New Metal Structures - Replace this subsection, except for the subsection number and title, with the following:

No separate payment will be made for preparing and coating new metal Work. Payment for this Work, including correction of damages, will be included in payment made for appropriate items under which this Work is required.

SP00595 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25
Requires SP02510*)*

SECTION 00595 - REINFORCED CONCRETE BOX CULVERTS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00595 of the Standard Specifications modified as follows:

00595.43(a) Repair Cracked or Damaged RCBC - Replace the bullet that begins "Cracks 0.01 inch or wider…" with the following bullet:

- Cracks 0.01 inch or wider and greater than 12 inches long that do not pass through the wall or slab thickness.

(Include the following bullet if welding is to be performed. Select the appropriate 00560.26(a) for bridge size culverts or 00560.26(b) for non-bridge culverts. Check with the designer.)

00595.44 Precast Installation - Add the following to the end of this subsection:

- Perform structural steel welding according to *(*00560.26(a) or 00560.26(b)*)*.

(Use the following .80 for estimated quantities for wing walls and aprons.)

00595.80 Measurement - Add the following to the end of this subsection:

The estimated quantities of reinforcement and concrete for wingwalls and aprons are:

(Fill in the appropriate amount of wingwall and apron reinforcement and concrete. Delete wingwall items that do not apply. Obtain information from the Bridge Designer.)

	Reinforcement (Pound)	**Concrete (Cubic Yard)**
Wingwalls:		
Cast in Place	.....	.....
Precast	.....	.....
Aprons	.....	.....

00595.90 Payment - Add the following paragraph to the end of this subsection:

Item (e) includes CIP wingwalls and precast wingwalls with precast footing.

SP00596A (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25)**

SECTION 00596A - MECHANICALLY STABILIZED EARTH RETAINING WALLS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00596A of the Standard Specifications modified as follows:

(Use the following subsection .01 and bullets when the contractor will be required to select a permanent proprietary MSE wall system. For "Bridge" retaining walls and "Highway" retaining walls, fill in the blank with the structure number. If the

retaining wall does not have a structure number, delete the phrase ", structure no. ____ ,".)

00596A.01 Proprietary MSE Walls - Add the following to the end of this subsection:

Select one of the following preapproved proprietary MSE retaining wall systems for the wall, structure no. ____, as shown:

(Fill in the blanks with the proprietary retaining wall system name (including the "™" symbol), company name and telephone number from the ODOT Geotechnical Design Manual, appendix 15-D.)

- _____ MSE Retaining Wall System, provided by _____ , telephone: _____ .
- _____ MSE Retaining Wall System, provided by _____ , telephone: _____ .
- _____ MSE Retaining Wall System, provided by _____ , telephone: _____ .

(Use the following subsection .04(b) to list proprietary wall geotechnical and seismic design parameters. Obtain information from the designer. Delete what does not apply. Delete the language in orange parentheses that does not apply and delete all orange parentheses. Copy and paste the structure number, station limits, and associated bullets for each separate retaining wall.)

00596A.04(b) Design Calculations - Add the following to the end of this subsection:

The following retaining wall design parameters have been established for this Project:

Structure No. _____ : Sta. _____ to Sta. _____ *(*Lt.*)(*Rt.*)*

- Foundation soil unit density _____ lbs./cu. ft.
- Foundation soil angle of internal friction _____ degrees
- Foundation soil nominal (unfactored)
- bearing resistance _____ lbs./sq. ft.
- Retained soil unit density _____ lbs./cu. ft.
- Retained soil angle of internal friction _____ degrees
- Reinforced soil unit density _____ lbs./cu. ft.
- Reinforced soil angle of internal friction _____ degrees
- Peak ground acceleration coefficient (*PGA*) _____
- Short period spectral acceleration coefficient (S_S). _____
- Long period spectral acceleration coefficient (S_1) _____
- Site class _____
- Peak seismic ground acceleration coefficient
- modified by zero period site factor (A_s) _____
- Horizontal seismic acceleration coefficient (k_h) _____

(Use the following bullet and sub-bullet when the Mononabe-Okabe method is not required. Repeat as necessary for variations in wall height and backslope along the wall.).

- Between Station _____ and Station _____ *(*Lt.*)(*Rt.*)*:
  - Total (static plus seismic) external seismic thrust (P_{AE}) ..... _____ lbs./ft.

(Use the following bullet and sub-bullets to specify minimum length of soil reinforcement. Repeat as necessary for variations in wall height, backslope, bearing resistance and other parameters which can change along the wall.)

- Between Station _____ and Station _____ *(*Lt.*)(*Rt.*)*:
  - Minimum length of soil reinforcement for overall stability _____ft.
  - Minimum length of soil reinforcement for external stability _____ft.

00596A.12(c)(1) Concrete - Replace this subsection, except for the subsection number and title, with the following:

Furnish Class 4000 structural concrete meeting the requirements of Section 02001. Provide aggregate with 3/4 inch or greater maximum nominal aggregate size.

(Use the following subsection .12(e)(1) when precast concrete panel facing is required. Use one of the following options as instructed below. Delete the option that does not apply.)

00596A.12(e)(1) Portland Cement Concrete - Add the following paragraph to the end of this subsection:

[Option 1 - Use the following paragraph when an ARES™ wall system is not specified.]

Furnish Class 4000 structural concrete meeting the requirements of Section 02001.

[Option 2 - Use the following paragraph when an ARES™ wall system is specified.]

For ARES™ retaining wall systems, furnish Class 4500 structural concrete meeting the requirements of Section 02001, except the maximum water-cementitious material ratio shall not exceed 0.44. For all other retaining wall systems use Class 4000 structural concrete meeting the requirements of Section 02001.

(Use the following subsection .16 when KeySystem I™, LANDMARK™, or MESA™ wall systems are specified in 00596A.01.)

00596A.16 Concrete Modular Block Facing Connection Devices - Add the following to the end of this subsection:

(Use the following paragraph when the KeySystem I™ wall system is specified.)

For KeySystem I™ wall systems, furnish connection pins that conform to AASHTO M 32 and are galvanized after fabrication according to AASHTO M 111.

(Use the following paragraph and table when the LANDMARK™ wall system is specified.)

For LANDMARK™ wall systems, furnish lock bars that are made of a rigid, polyvinyl chloride polymer conforming to the following requirements:

Property	Limits	Specification
Specific Gravity	1.4 (min.)	ASTM D792
Tensile Strength (at yield)	2,700 psi (min.)	ASTM D638

(Use the following paragraphs and tables when the MESA™ wall system is specified.)

For MESA™ wall systems, furnish block connectors for block courses with geogrid reinforcement that are glass fiber reinforced, high density polypropylene conforming to the following minimum material requirements:

Property	Limits	Specification
Polypropylene: Group 1, Class 1, Grade 2	73% ± 2%	ASTM D4101
Fiberglass Content	25% ± 3%	ASTM D2584
Carbon Black	2% (min.)	ASTM D4218
Specific Gravity	1.08 ± 0.04	ASTM D792
Tensile Strength (at yield)	8,700 psi ± 1,450 psi	ASTM D638
Melt Flow Rate	(0.37oz. ± 0.16 oz.)/10 minutes	ASTM D1238

For MESA™ wall systems, furnish block connectors for block courses without geogrid reinforcement that are glass fiber reinforced, high density polyethylene (HDPE) conforming to the following minimum material requirements:

Property	Limits	Specification
HDPE: Type III, Class A, Grade 5	68% ± 3%	ASTM D1248
Fiberglass Content	30% ± 3%	ASTM D2584
Carbon Black	2% (min.)	ASTM D4218
Specific Gravity	1.16 ± 0.06	ASTM D792
Tensile Strength (at yield)	8,700 psi ± 725psi	ASTM D638
Melt Flow Rate	(0.11 oz. ± 0.07 oz.)/10 minutes	ASTM D1238

(NOTES to Specification Writer:

(1) The bid item quantity for MSE retaining walls is "Lump Sum," and includes all labor, materials, and inclusive items necessary to complete the work. Items such as excavation, shoring, reinforced backfill, and standard copings are considered inclusive items to the wall pay item.

Items such as sidewalk copings, traffic barrier, moment slabs, guardrail and fencing are considered appurtenances along with the following items and should be included as separate bid items:

Items associated with project specific details such as architectural treatments, geomembrane barriers.

Items associated with incidental work, such as scour protection, dewatering, or foundation improvement, and items that cost more than 5 percent of the lump sum cost.

(2) For proprietary retaining wall systems, where details of wall construction are generally not known until after the construction contract is awarded, do not include estimated quantities for inclusive items.)

00596A.80 Measurement - Add the following to the end of this subsection:

The estimated quantities of retaining walls are:

(Provide wall area below. The wall area is bounded by the beginning and end of the wall, top of the wall (excluding wall coping), and top of the footing or leveling pad. If no footing or leveling pad exists, the bottom of the wall is used. Copy and paste more lines, as necessary, to list estimated areas for each retaining wall.)

Structure Number _____ :

Station Limits	**Area**
Sta. _____ to Sta. _____ *(*Lt.*)(*Rt.*)*	___(Wall area here)___ sq. ft.

(Use the following paragraph to list estimated quantities for nonproprietary retaining wall systems only. Ensure that the Wall (Bridge) Designer provides estimated quantities for all-inclusive items such as excavation, shoring, reinforced backfill, leveling pads, wall drainage backfill/geotextile, and standard coping. Copy and paste more lines, as needed, to list estimated quantities for each nonproprietary retaining wall.)

The estimated quantities of listed Materials are:

Structure No. _____: Sta. _____ to Sta. _____ *(*Lt.*)(*Rt.*)*

Material	**Estimated Quantities**
_____	____ cu. yd.
_____	____ foot

_____ _____ lb.

SP00596B (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25)**

SECTION 00596B - PREFABRICATED MODULAR RETAINING WALLS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00596B of the Standard Specifications modified as follows:

(Use the following subsection .01 and bullets when the contractor will be required to select a permanent proprietary Prefabricated Modular wall system. For "Bridge" retaining walls and "Highway" retaining walls, fill in the blank with the structure number. If the retaining wall does not have a structure number, delete the phrase ", structure no. ____ ,".)

00596B.01 Proprietary Prefabricated Modular Walls - Add the following paragraph and bullet list to the end of this subsection:

Select one of the following preapproved Prefabricated Modular proprietary retaining wall systems for the wall, structure no. ____ , as shown:

(Fill in the blanks with the proprietary retaining wall system name (including the "™" symbol), company name and telephone number from the ODOT Geotechnical Design Manual, appendix 15-D.)

- _____ Retaining Wall System, provided by _____ , telephone: _____ .
- _____ Retaining Wall System, provided by _____ , telephone: _____ .
- _____ Retaining Wall System, provided by _____ , telephone: _____ .

00596B.03 Definitions - Add the following definition after the definition for "Manufacturer":

Minor Retaining Wall - A prefabricated modular retaining wall that meets all of the following conditions for the full length of the wall:

- Wall height (H) from the top of leveling pad to the top of wall does not exceed 4.0 feet.
- Wall fore slope and back slope are both flatter than 1V:4H within a horizontal distance of H, measured from the nearest point on the wall.

- Surcharge loading is not allowed on the retaining wall back slope within a horizontal distance of H, measured from the nearest point on the wall.
- Failure of the wall would not result in significant loss of access and performance of adjacent public or private structures.
- The wall is labeled as a Minor Retaining Wall in the Plans.

Replace the definition that begins "Nonproprietary Retaining Wall System…" with the following definition:

Nonproprietary Retaining Wall System - A Retaining Wall System that is fully designed in the bid documents.

Replace the definition that begins "Preapproved Proprietary Retaining Wall System…" with the following definition:

Preapproved Proprietary Retaining Wall System - A wall system that is listed in Appendix 16-D of the Geotechnical Design Manual (GDM).

00596B.04 Proprietary Retaining Walls - Replace the bullet that begins "Complete stamped Working…" with the following bullet:

- Complete stamped Working Drawings and design calculations according to 00150.35. Minor Retaining Walls do not require stamped Working Drawings unless prepared by a registered professional engineer. Preparation of Working Drawings and design calculations for Minor Retaining Walls does not require professional engineering registration according to ORS 672.060 (See also OAR 820-040-0005(4)(d)(A)).

(Use the following subsection .04(b) to list proprietary wall design parameters. Obtain information from the designer. Delete what does not apply. Copy and paste the structure number and bullets for each separate retaining wall.)

00596B.04(b) Design Calculations - Add the following to the end of this subsection:

The following retaining wall design parameters have been established for this Project:

Structure Number _____

- Foundation soil unit density ..... _____ kips/cu. ft.
- Foundation soil angle of internal friction ..... _____ degrees
- Foundation soil nominal (unfactored)
- bearing resistance ..... _____ kips/sq. ft.
- Retained soil unit density..... _____ kips/cu. ft.
- Retained soil angle of internal friction..... _____ degrees
- Peak ground acceleration coefficient (*PGA*)..... _____
- Long period spectral acceleration coefficient (S_1) ..... _____
- Site class ..... _____

(Use the following two bullets when the Mononabe-Okabe method is required.)

- Peak seismic ground acceleration coefficient modified by short period site factor (A_s)..... _____
- Horizontal seismic acceleration coefficient (K_h)..... _____

(Use the following bullet and sub-bullet when the Mononabe-Okabe method is <u>not</u> required. Repeat as necessary for variations in wall height and backslope along the wall.)

- Between Station _____ and Station _____ *(*Lt.*)(*Rt.*)*:
  - Total (static plus seismic) external seismic thrust (P_{AE})..... _____ kip/ft.

(Use the following bullet and sub-bullets to specify minimum base width for external and overall stability. Repeat as necessary for variations in wall height and backslope along the wall.)

- Between Station _____ and Station _____ *(*Lt.*)(*Rt.*)*:
  - Minimum base width for overall stability ..... _____ ft.
  - Minimum base width for external stability ..... _____ ft.

00596B.12(d)(1) Concrete - Replace this subsection, except for the subsection number and title, with the following:

Furnish Class 4000 structural concrete meeting the requirements of Section 02001. Provide aggregate with 3/4 inch or greater maximum nominal aggregate size.

00596B.80 Measurement - Add the following to the end of this subsection:

The estimated quantities of retaining walls are:

(Provide wall area below. Copy as necessary.)

Station Limits	Area
Sta. _____ to Sta. _____ *(*Lt.*)(*Rt.*)*	___ <u>(Wall area here)</u> ___ sq. ft.

(Use the following paragraph to list estimated quantities for <u>nonproprietary retaining wall systems only</u>. Ensure that the Wall (Bridge) Designer addresses quantities for excavation, shoring (if needed), and leveling pad concrete and rebar, and backfill. Copy and paste more lines to address the estimated quantities for nonproprietary retaining wall systems. For Minor Retaining Walls (walls that are not assigned a structure number), revise the Structure Number column heading to a descriptor that will match the plans identification for the wall.)

The estimated quantities, for estimating purposes only, of excavation, shoring, leveling pads, and specified backfill for nonproprietary retaining wall systems are:

Structure Number	Material	Estimated Quantities

_#_	_____	____ cu. yd.
_#_	_____	____ foot
_#_	_____	____ lb.

SP00596C (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25)

SECTION 00596C - CAST-IN-PLACE CONCRETE RETAINING WALLS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00596C of the Standard Specifications modified as follows:

00596C.80 Measurement - Add the following to the end of this subsection:

The estimated quantities of retaining walls are:

(Provide wall area below. Copy as necessary.)

Station Limits	Area
Sta. _____ to Sta. _____ *(*Lt.*)(*Rt.*)*	___ (Wall area here) ___ sq. ft.

(Use the following paragraph to list estimated quantities. Ensure that the Wall (Bridge) Designer addresses quantities for concrete, reinforcement, excavation, shoring (if needed), and backfill. Copy and paste more lines to address the estimated quantities for retaining wall systems.)

The estimated quantities, for estimating purposes only, of concrete, steel reinforcement, excavation, shoring, and specified backfill for retaining wall systems are:

Structure Number	Material	Estimated Quantities
_#_	_____	____ cu. yd.
_#_	_____	____ foot
_#_	_____	____ lb.

SP00596D (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25
This Section requires SP00510 and SP02510.
This Section may require SP00530, SP00540, SP00543, SP00596E.)

SECTION 00596D - SOLDIER PILE RETAINING WALLS

(Follow all instructions and make all edits with "Track Changes" turned on. This template provides a basic special provision layout for use with a soldier pile retaining wall (cut wall construction) in predrilled hole. It may be necessary to delete, add, or revise content for Project specific design. In general, do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Note to spec writer: SP00510 should be included for temporary shoring, structure excavation for soldier pile wall construction, including quantity breakdown as needed. SP00530, SP00540, and SP00543 should be included for cast-in-place permanent facing reinforcement, concrete, and architectural treatment including quantity breakdown as needed.)

Section 00596D, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00596D.00 Scope - This Work consists of furnishing and constructing permanent soldier pile retaining walls composed of steel soldier piles placed and backfilled in predrilled holes, top-down wall excavation, and installation of lagging, wall drainage system and permanent facing.

Select the drilling method and Equipment, and construction procedures to meet the requirements of these Special Provisions, subject to the review and approval of the Engineer.

(Use the following sentence when tie back retaining walls are required.)

See Section 00596E for requirements of permanent ground anchors in tie back retaining walls.

00596D.01 Abbreviations and Definitions:

CGC - Commercial Grade Concrete

CLSM - Controlled Low Strength Material

Soldier Pile - Steel H-pile, wide flange beam, or built-up section, including shear connector studs and connection plates. Soldier piles are placed in predrilled holes spaced at regular intervals and backfilled before top-down excavation begins for retaining wall construction.

00596D.02 Submittals - Submit Working Drawings, Equipment lists and other submittals according to 00150.35 and 00150.37.

(a) Unstamped Submittals -

(1) Soldier Pile Retaining Wall Work Plan including:

- Construction schedule and sequence.
- Descriptive data and operating procedure for Equipment to be used.
- Method of drilling, cleanout, and disposal of drilling spoils, including water or contaminated CLSM or CGC expelled from the top of the hole or casing.
- Method for ensuring predrilled hole stability. If temporary casing is proposed, provide material, size, installation and removal information. If drilling slurry is proposed, provide mix design, and procedure for use, removal and disposal.
- Details of soldier pile installation and bracing, including centralizers.
- Details of CLSM and CGC placement including operational procedures for pumping and tremie methods.
- Wall excavation Lifts and lagging placement.
- Connection of geocomposite drains to lagging or facing and to subsurface drain.
- Reinforced concrete facing construction.

(Use the following bullet when tie back retaining walls are required.)

- Ground anchor construction, installation, and testing procedures according to Section 00596E if used.

(2) Personnel qualifications according to 00596D.30.

(3) Materials certificates of compliance and quality compliance documents size, grade and strength of Materials to be used.

(4) Shop assembly and erection details, including:

- Plan and profile views with soldier pile locations shown and numbered.
- Members and connections for any portion of the system not shown are to be detailed by the Contractor and indicated on the Working Drawings.
- Indicate all welds by standard welding symbols of the AWS A2.4.
- Reinforced concrete shop drawing for cast-in-place facing according to Section 00540
- Precast concrete panel lagging.

(b) Stamped Working Drawings -

- Contractor designed temporary ground support.
- Mix designs for structural concrete in cast-in-place facing and precast concrete panel lagging.
- Design, layout and details of forms and falsework support for cast-in-place facing according to Section 00540.

Clearly indicate by flagging and clouding any changes, additions or alterations to submittals that are deviations from the Contract documents or changes to previously approved or accepted submittals. Provide a written explanation of changes accompanying each submittal.

Materials

00596D.10 Steel Soldier Pile - Provide structural steel soldier piles of the shape, material and grade shown. Furnish Materials meeting the following requirements:

Drilling Slurry 00512.14
Steel Piles 02520.10
Structural Steel Plates, Shapes, Bars
and Miscellaneous Metals 02530
Shear connector studs ..... AASHTO M169, AWS D1.1

00596D.11 Steel Casing - Provide temporary casing meeting the requirements of ASTM A 252 or ASTM A 36. Use casing of sufficient strength to resist handling, transportation and installation stresses and the external stresses of the subsurface Materials. Ensure that the casing is clean and watertight prior to placement.

00596D.12 Drilling Slurry - Provide drilling slurry meeting the requirements of 00512.14.

00596D.13 Backfill in Predrilled Holes for Soldier Piles - Provide CGC as shown, and meeting the requirements of Section 00440 except provide the mixture with a slump of 8 inches ± 1 1/2 inches. Provide CLSM as shown, and meeting the requirements of Section 00442.

00596D.14 Subsurface Drains - Provide subsurface drainage pipe, drain backfill material and drainage geotextile as shown and according to Section 00430.

(In subsection .15, modify the list of products as advised by the wall designer.)

00596D.15 Prefabricated Geocomposite Wall Drains - Provide one of the following products, or other approved equal:

- SiteDrainTM Sheet-184 by American Wick Drain, Inc., Monroe, NC
- Delta® Drain 6000 HI-X by Cosella-Dorken Products, Inc., Beamsville, ON
- TenCate Mirafi® G100N by TenCate Geosynthetics Americas, Pendergrass, GA

Provide geocomposite drains in rolls wrapped with a protective covering and stored in a manner which protects the drains from mud, dirt, dust, sunlight and damage.

(Use one of the three options for subsection .16 shown below, as appropriate to the type of lagging to be used. Delete the other options.)

[Option 1 - Use the following bullet when timber lagging is used]

00596D.16 Timber Lagging - Provide construction-grade, rough-cut douglas fir timber meeting the requirements of Section 02130. When treated timber lagging is shown, provide preservative treatment according to Section 02190.

[Option 2 - Use the following bullet when precast concrete lagging panels are used]

00596D.16 Precast Concrete Lagging Panel Facing - Provide structural concrete of the class shown, according to Sections 00540 and 02001. Provide steel reinforcement meeting the requirements of Sections 00530 and 02510.

[Option 3 - Use the following bullet when steel plate lagging is used]

00596D.16 Steel Plate Lagging - Provide ASTM A 572, Grade 50 structural steel plate meeting the requirements of Section 02530.

00596D.17 Cast-in-Place Reinforced Concrete Facing - Furnish structural concrete of the class shown, according to Sections 00540 and 02001. Furnish reinforcement according to Sections 00530 and 02510.

00596D.18 Architectural Treatment - Furnish architectural treatment according to Section 00543.

Equipment

00596D.20 Approval of Predrilling Equipment for Soldier Pile Holes - 10 Calendar Days before the preconstruction meeting, submit the following (unstamped) according to 00596D.02:

- Drilling Equipment data including suitability, based on the Contractor's understanding of the site and subsurface conditions.
- Project history of the drilling Equipment that demonstrates the successful use of the Equipment in drilling boreholes of equal or greater diameter and depth and through subsurface conditions similar to those expected to be encountered on this Project.

Procedural approvals given by the Engineer will be subject to trial in the field and will not relieve the Contractor of the responsibility to satisfactorily complete the Work.

Labor

00596D.30 Personnel Qualifications - 10 Calendar Days before the preconstruction meeting, submit the following:

- A list identifying the personnel performing and supervising the soldier pile work. Include a list of the locations and dates of previous projects and reference contacts for verification to support the experience requirements listed below.
- Proof of successfully completing at least three temporary or permanent soldier pile retaining wall projects in the last 5 years.
- Proof that drill operator has successfully performed three projects with similar drilled holes in the last 5 years.
- Welder qualifications and welding procedures in accordance with American Welding Society Standard AWS D 1.1, *Structural Welding Code*.

Do not start Work on any soldier pile wall, or order Materials, until the personnel qualifications have been approved by the Engineer.

00596D.31 Quality Control Personnel - Provide technicians with CAgT and CDT certifications.

Construction

00596D.40 Predrilled Holes for Soldier Piles - Predrill holes at the locations and to the depths and diameters shown. Maintain a stable hole meeting the minimum required diameter for the full depth shown. Ensure that the sidewalls of holes do not collapse during drilling. Frequently check the plumbness, alignment, and dimensions of the hole during construction.

Dispose of materials removed from the predrilled hole according to 00290.20. Divert all surface water away from holes and prevent all surface water from entering holes by approved means.

Notify the Engineer of completion of each hole to permit inspection. No more than 2 inches of loose or disturbed Material is allowed at the bottom of the predrilled hole. Hole cleanliness will be determined by the Engineer. Measure and record final bottom of the hole elevation after final cleaning to verify that the bottom elevation meets Contract requirements. Do not proceed with soldier pile installation until the hole bottom cleanliness requirements have been met and the bottom elevation is approved.

Install temporary casing according to the approved installation plan. Ensure that temporary casing is clean and watertight before installation. Remove all temporary casing during or after completion of backfill placement.

00596D.41 Steel Soldier Piles - Furnish and place steel soldier piles as shown and according to the following:

(a) General - Shop fabricate soldier pile with attachments such that no field welding is necessary.

(b) Storage and Handling - Store and handle steel soldier piles in ways that protect them from damage. Bent or kinked piles will be rejected.

(c) End Treatment - Cut pile ends square.

(d) Splices - Do not splice piles unless approved by the Engineer.

(e) Welding - Perform structural steel welding according to 00560.26(a) and steel piling welding according to 00520.43(g). Do not begin welding until all of the following have been approved by the Engineer:

- Welding Procedure Specification (WPS)
- Procedure Qualification Records (PQR)
- Welder Qualification Test Records (WQTR)
- Material Test Report (MTR)

- AWS Certified Welding Inspector (CWI)

Following completion of all welding, submit the following:

- An inspection report stating that the welding under the Contract was performed according to AWS D1.1 that includes a review of the WPS, a review of welder qualifications, and a report on visual inspection of the welds on the job site. Have a certified welding inspector (CWI) holding QC1 certification as defined in AWS D1.1 sign the inspection report.

(f) Cutoff Lengths - Cut off the tops of all permanent piles square and smooth at the elevations shown or as directed. All cut-off pile becomes the property of the Contractor. Dispose of according to 00290.20.

(g) Placement - Do not place steel soldier piles in predrilled holes prior to receipt of the Engineer's approval of the hole. Fit piles with approved centralizers to keep the pile in the center of the hole. Obtain the Engineer's approval of the centralizer Material type, attachment method, and placement before use.

(Edit the tolerance values as needed for Project specific design requirements. The dimensional tolerances given are estimated to be adequate for most cases, however, less stringent location tolerances may be acceptable based on the Project.)

Position each pile meeting the following tolerances:

- Within 2 inches of the plan location shown, perpendicular to wall face, measured from top of wall face elevation.
- Within 2 inches of the plan location shown, parallel to wall face, measured from top of wall face elevation.
- Within 2 inches of the plan elevation.
- Vertical plumbness tolerance of 1 inch per 10 feet for each axis of the soldier pile.
- Provide minimum required bearing contact between lagging and soldier pile flange as shown.
- Provide minimum required edge distance between pile edges and the predrilled hole as shown.

00596D.42 Backfilling Predrilled Holes for Soldier Piles - Place concrete in predrilled holes immediately after completion of soldier pile installation, and with approval of the Engineer. Concrete may be placed without mechanical vibration in those areas of predrilled holes that are not formed or are below the ground line.

Restrain the soldier pile from vertical and horizontal movement during concrete placement. Place concrete with a tremie pipe, beginning near the bottom of the hole. Place concrete continuously until concrete at the top of the predrilled hole is free of water, Soil, and debris, and uncontaminated concrete extends to the elevation shown. If a temporary casing is used, fill the space between the casing and the soldier pile with pile concrete as the casing is withdrawn, maintaining a minimum 5-foot head of backfill above the bottom of the casing. A

slight downward movement of the casing while exerting downward pressure, or hammering or vibrating the casing is permitted to facilitate extraction. Dispose of all contaminated concrete and CLSM pile backfill expelled from the top of the predrilled hole in an approved manner. Remove waste pile backfill from the site. If a delay in pile backfill placement occurs because of a delay in pile backfill delivery or other factors, reduce the placement rate to maintain a flow of fresh pile backfill into the predrilled hole.

Do not wait longer than 60 minutes between pile concrete placements or use concrete older than 90 minutes from batch time, unless allowed by the approved mix design. Use procedures for concrete placement that ensure the concrete in the predrilled hole forms a monolithic, homogeneous unit.

Place pile concrete using hoses or pipes having watertight joints. For concrete placement by gravity tremie, use a hose or pipe having an inside diameter of at least 8 inches. For placement by concrete pump, use a hose with an inside diameter of at least 4 inches. Provide a backup delivery system that can be used in case of failure of the primary delivery system. Place concrete only against the bottom of the predrilled hole or into fresh concrete.

If caving occurs during concrete placement, the prebored pile may be rejected at the discretion of the Engineer.

Following the concrete placement, backfill the remainder of the predrilled hole with CLSM.

00596D.43 Excavation and Lagging Installation - Do not begin general excavation in the area in front of the wall until after the soldier piles are constructed. Maintain a stable excavation site and safe working conditions. Place lagging as shown. Place lagging from the top down as wall excavation proceeds. Minimize excavation required to install the lagging and fill resulting voids behind the lagging with granular wall backfill.

Prior to the start of excavation perform survey to establish baseline location of the tops of soldier piles. Perform survey and frequent visual inspection during excavation and lagging installation to monitor wall movement and maintain tolerance according to 00596D.41(g).

Where lagging is installed above original ground, carefully place granular wall backfill against the lagging as required to minimize the formation of voids. Place backfill at a rate that prevents movement of the wall and loss of ground.

(Use the following sentence when tie back retaining walls are required.)

See Section 00596E for installation, stressing and testing of permanent ground anchors in tie back retaining walls.

00596D.44 Wall Drainage Systems - Place geocomposite drains according to manufacturer's installation guidelines. Construct seams, top, bottom and end caps to prevent concrete or backfill from entering the geocomposite. Install the geocomposite drains between the piles with the geotextile fabric facing toward the lagging and the impervious backing away from the lagging. Secure the drains in position so as to prevent concrete from contaminating the geotextile facing. Install continuous drains from the top of the lagging to the bottom of the concrete facing.

Construct wall subsurface drain according to Section 00430.

00596D.45 Reinforced Concrete Facing - Construct reinforced concrete facing to the limits shown, according to Sections 00530 and 00540 and the approved Working Drawings.

Measurement

00596D.80 Measurement - The quantities of Work performed under this Section will be measured according to the following:

(Delete Work that is not required on the Project.)

(a) Predrilling and Encasing Soldier Piles - Predrilling and backfilling holes for soldier piles will be measured on the length basis by the vertical excavated length from the bottom of the predrilled hole to the top of predrilled hole elevation.

(b) Steel Soldier Piles - Steel soldier piles will be measured on the length basis by the length of each pile from the pile tip to the top of the pile elevation. No measurement will be made for welded attachments to the piles.

(c) Lagging - Lagging will be measured on the area basis by the square foot area of lagging installed. The quantity will be computed based on the vertical dimension from the highest lagging elevation to the lowest lagging elevation between each pair of adjacent soldier piles as the height dimension and the center-to-center spacing of the soldier piles as the length dimension.

(d) Wall Drainage and Filter System - No measurement of quantities will be made for Structure drainage system.

The estimated quantities of Materials for Structure drainage system are:

(List by structure number then item and quantity. Revise item list as appropriate. Obtain information from the Retaining Wall Designer.)

Structure Number	Material	Estimated Quantities
_#_	6 inch Drain Pipe	____foot
_#_	Drainage Geotextile, Type 1	____ sq. ft.
_#_	Geocomposite Drains	____ sq. ft.
_#_	Granular Drain Backfill	____cu. Yd.

Delineators at subsurface drain outlets will be measured according to 00840.80.

Structure excavation will be measured according to 00510.80.

The quantities of reinforcement used in cast in place concrete facing will be measured according to 00530.80.

The quantities of structural concrete in cast in place facing will be measured according to 00540.80.

Payment

00596D.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement

(Delete Pay Items not included in the Schedule of Items. Do not change the alpha characters next to the Pay Items.)

(a) Predrilling and Encasing Soldier Piles ..... Foot
(b) _____ Steel Soldiers Piles ..... Foot
(c) Lagging ..... Square Foot
(d) Wall Drainage and Filter System..... Lump Sum

In Item (b), the type and size of pile will be inserted in the blank.

Item (a) includes furnishing, moving, setting up, and removing the drilling Equipment to the Project at the various locations on the Project. It also includes predrilling holes for soldier piles and disposing of the excavated Material while furnishing, placing, removing temporary casings, and backfilling the predrilled hole with specified concrete after steel soldier pile installation.

Item (b) includes furnishing complete fabricated soldier piles with welded assemblies, installing, supporting, and trimming the piles.

Item (c) includes furnishing and installing lagging and filling voids behind lagging with granular wall backfill.

Item (d) includes furnishing and installing geocomposite drain and subsurface drain pipe, Aggregate and geotextile.

Structure excavation will be paid for according to 00510.90.

Reinforcement in cast in place concrete facing will be paid for according to 00530.90.

Concrete in cast in place concrete facing will be paid for according to 00540.90.

Delineators at subsurface drain outlets will be paid for according to 00840.90.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for welding inspection performed according to 00596D.41(e).

SP00596E (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 02-03-25)**

SECTION 00596E – GROUND ANCHORS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Notes for use: Provide LRFD factored design loads, locations, minimum unbonded length, minimum bond lengths, soil or rock-grout bond strength, Class I corrosion protection requirement, and any limitations on anchor inclination in the plans or special provisions. The Contractor is then responsible for selecting the type of anchor and designing the anchor system to satisfy the design criteria provided. Sufficient foundation information must be given to permit the Contractor to perform the design and installation. This special provision is written for common downward inclined ground anchors like those used as tie-backs for top-down construction retaining walls. Special uses such as vertical seismic tie-down anchors will need additional project specific revision.)

Section 00596E, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00596E.00 Scope - This Work consists of designing, furnishing, installing, testing, stressing and locking-off prestress load in permanent Ground Anchors at locations shown and as specified. The Work also includes installation and testing of sacrificial Ground Anchors for design verification, and furnishing, installing and removing assemblies necessary to perform the Work.

Select the Ground Anchor type, drill hole diameter, Bond Length, drilling method, installation method and grouting method to provide the specified load-carrying capacity and satisfy the acceptance criteria.

00596E.01 Definitions:

Alignment Load (AL) - A nominal load applied to each anchor to maintain correct position of testing equipment.

Anchor Head - The Anchor Head includes wedges and a wedge plate for strand tendons or an anchor nut for bar tendons. The Anchor Head transfers the prestressing force from the prestressing steel to the Bearing Plate.

Anchorage - The combined system of Anchor Head, Bearing Plate, Trumpet, and corrosion protection that transfers prestressing force from the prestressing steel to the surrounding ground or the supported structure.

Bearing Plate - A steel plate under the Anchor Head that distributes the prestressing force to the anchored structure.

Bond Length - The grouted length of the Ground Anchor that is bonded to surrounding Soil or Rock and transfers applied tensile load to the surrounding Soil or Rock.

Class I Corrosion Protection System - A Class I Corrosion Protection System encases the prestressing reinforcement inside a plastic sheath filled with either grout or corrosion-inhibiting compound. A Class I protected tendon is also referred to as an encapsulated tendon or a double-corrosion-protected tendon.

Creep Test - A test to determine the movement of the Ground Anchor at a constant load. Ground Anchor movement is recorded at specified intervals in the Creep Test.

Factored Design Load (FDL) - The value shown or specified for the Ground Anchor design controlling limit state combination of factored loads determined by AASHTO LRFD methodology. Test schedules presented herein present incremental load and the maximum test load in terms of Factored Design Load (FDL).

Free Stressing Length - The designed length of the tendon that is not bonded to the surrounding ground or grout during stressing. Free Stressing Length is also referred to as unbonded length.

Ground Anchor - A structural system consisting of a tendon installed in a drilled and grouted hole in the ground (Soil or Rock) that is stressed after installation and used to transmit the applied tensile load to the ground. Anchorage, Free Stressing Length, and Bond Length are the basic components of a Ground Anchor.

Lock-Off Load - The load transferred to the Anchorage after the load testing is complete and the anchor has been accepted.

Performance Test - Cyclic incremental test loading and unloading of a production anchor and recording the total movement of the Anchor Head at each increment. A Creep Test is performed at the maximum test load in a cycle as indicated in the Performance Test schedule.

Preproduction Verification Test - Cyclic incremental test loading and unloading of a sacrificial anchor and recording the total movement of the Anchor Head at each increment. A Creep Test is performed at the maximum test load in a cycle as indicated in the Preproduction Verification Test schedule. Preproduction Verification Test is used to verify Contractor's Ground Anchor design and installation procedure.

Proof Test - Incremental loading and unloading of a production anchor and recording the total movement of the Anchor Head at each increment. A Creep Test is performed at the maximum test load as indicated in the Proof Test schedule. Proof Test is used to verify grout/ground bond strength.

Tendon Bond Length - The length of tendon bonded to the anchor grout.

Transition Tube - A common sheath that is inserted into the top of the fluid grout and extended into the Trumpet.

Trumpet - Device to provide corrosion protection in the transition length from the Bearing Plate to the Free Stressing Length.

00596E.04 Preconstruction Working Drawings, Design Calculations, and Submittals - Submit preconstruction Working Drawings, design calculations and submittals according to 00150.35 except as modified by this Subsection.

(a) Ground Anchor Design - Design Ground Anchors with Class 1 corrosion protection using LRFD design method according to the current edition of the following:

- *AASHTO LRFD Bridge Design Specifications,*
- *Geotechnical Engineering Circular No. 4 Ground Anchors and Anchor Systems (FHWA-IF-99-015),*
- *Post Tensioning Institute Recommendations for Prestressed Rock and Soil Anchors.*

Select the type of tendon and size the tendon to ensure the Factored Design Load and maximum test load do not exceed 80 percent of the minimum ultimate tensile strength of the prestressing steel.

(The minimum bond lengths in the following paragraph may be reduced/revised if recommended by the geotechnical report.)

Determine the Bond Length necessary to develop the given Factored Design Load. The minimum Bond Length for strand is 15 feet. The minimum Bond Length is 10 feet for bars 1.75 inch diameter and smaller, and 15 feet for bars larger than 1.75 inch diameter.

The minimum Free Stressing Length (unbonded length) is 15 feet for strand and 10 feet for bar, unless a greater minimum length is shown or specified.

(b) Stamped Working Drawings - Before beginning construction of permanent Ground Anchors, submit the following stamped Working Drawings and calculations according to 00150.35. Include all stamped design calculations, details, dimensions, quantities, ground profiles, and cross-sections necessary to construct Ground Anchor tiebacks, and for members and connections for any portion of the anchor not shown. Include the following:

(1) Ground Anchor schedule including:

- Ground Anchor number,
- Type, size and specification of Ground Anchor tendon,
- LRFD Factored Design Load and maximum test load,
- Lock-off Load,
- Minimum Tendon Bond Length,
- Minimum Bond Length,

- Minimum unbonded length,
- Minimum total anchor length.

(2) Shop drawings of the Ground Anchor and the corrosion protection system including the following details:

- The relationship of the Ground Anchors to Right-of-Way and easement lines, utilities, structures and other construction,
- Tendon bar size or number of strands,
- Spacers and their location,
- Centralizers and their location, including the permanent rubber seal between the Trumpet and the tendon unbonded length corrosion protection and the transition between the Tendon Bond Length and the unbonded tendon length,
- Bar tendon coupler locations, if used,
- Unbonded length corrosion protection system,
- Bond breaker in the unbonded length,
- Bond Length corrosion protection system,
- Anchorage and Trumpet,
- Anchorage corrosion protection system,
- Grout tubes,
- Drilling methods including drill hole diameter, Equipment, and access space requirements,
- Grout mix design, test procedure, placement Equipment and procedure, minimum cure time,
- Jacking frame and bracing assembly, method and Equipment for testing and measuring movement during testing.

(3) Design calculations including:

- The Ground Anchor system and Bond Length,
- Testing and stressing frame assembly,
- Verification test reaction pad.

(4) Construction procedure, installation plan, and testing procedure

(c) Unstamped Submittals - Submit the following before beginning construction of permanent Ground Anchors:

- Materials certificates of compliance and quality compliance documents for:

  - Prestressing reinforcement,
  - Portland cement,
  - Prestressing hardware,
  - Bearing Plates,

- Corrosion protection system.
- Personnel qualifications according to 00596E.30.
- Equipment list according to 00596E.20.
- Calibration data for each test jack, load cell, primary pressure gauge and reference pressure gauge to be used.

00596E.05 Ground Anchor Construction and Test Data Report Submittals - Submit a summary report to the Engineer before the end of the work day that each anchor is installed and tested unless otherwise noted. Include the following information:

- Project and date,
- Names of personnel responsible for design, fabrication, installation and testing of the anchor and Agency's Inspector,
- List of testing Equipment used,
- Drawing showing the Ground Anchor's location, orientation, anchor type, anchor capacity, tendon type, total anchor length, Bond Length, unbonded length, and Tendon Bond Length,
- Drill hole diameter, drilling method, elevation groundwater encountered, subsurface conditions encountered,
- Grouting pressure and quantity,
- Results of the load test, including completed testing field data records for load increments and time periods in 00596E.42(b), 00596E.42(d), and 00596E.42(e) and appropriate presentation figures, charts and graphs,
- Summary statement of test results, including whether the load test met or failed to meet the criteria.

Submit test data reports as Stamped Working Drawings according to 00150.35.

Materials

00596E.10 General - Provide Materials meeting the requirements of this Section. Do not deliver Materials to the site until the Engineer has approved the Materials submittals outlined in 00596E.04. Store and handle prestressing steel strands and bars according to the manufacturer's recommendations and in such a manner that no damage to the component parts occurs. Protect all steel components from the elements at all times. Store cement and additives for grout under cover and protect against moisture.

00596E.11 Materials - Furnish Materials meeting the following requirements:

(a) Ground Anchor - Furnish the complete anchor system according to the *Post Tensioning Institute (PTI) Recommendations for Prestressed Rock and Soil Anchors*, including prestressing reinforcement, Anchorage, Class I corrosion protection, sheathings, spacers, centralizers and grout. Corrosion protection is not required for sacrificial verification test anchors.

(In the bullet list, delete the types of prestress reinforcement that will not be considered for use on the project, if any. Check with the designer.)

(b) Prestressing Reinforcement - Fabricate tieback tendons from single or multiple elements of the following:

- Seven-wire low-relaxation strand according to 02515.10,
- Continuously Threaded High Strength Steel Bars according to 02515.30,
- "Compact" seven-wire, low-relaxation strands according to ASTM A779,
- Epoxy coated steel bars according to ASTM A775.

Hollow-core, self-drilling bar tendons are not acceptable.

Use prestressing steel bar couplers capable of developing 100 percent of the minimum ultimate tensile strength of the prestressing steel bar.

Use continuous prestressing strand reinforcement without splices or couplers.

(c) Tendon Bond Length Encapsulations - Fabricate the Tendon Bond Length encapsulation from one of the following:

- High density corrugated polyethylene tubing conforming to the requirements of AASHTO M 252 and having a minimum wall thickness of 0.16 inch except pregrouted tendons which may have a minimum wall thickness of 0.04 inch.
- Deformed steel tubing or pipes conforming to ASTM A53 Grade B or ASTM A500 Grade B (Fy = 46 ksi for square sections, and Fy = 42 ksi for round sections) with a minimum wall thickness of 0.04 inch.
- Corrugated, polyvinyl chloride tubes manufactured from rigid PVC compounds conforming to ASTM D1784, Class 13464-B.
- Fusion-bonded epoxy conforming to the requirements of AASHTO M 284.

Furnish end caps from the same material as the encapsulation tubing.

Provide Tendon Bond Length encapsulation that meets all of the following performance requirements:

- Capable of transferring stresses from the grout surrounding the tendon to the Bond Length grout,
- Able to accommodate movements during testing and after lock-off,
- Resistant to chemical attack from aggressive environments, grout or grease,
- Resistant to aging by ultra-violet light,
- Fabricated from materials nondetrimental to the tendon,
- Capable of withstanding abrasion, impact and bending during handling and installation,
- Capable of resisting internal grouting pressures developed during grouting.

(d) Anchorage Devices - Provide a combination of either a steel Bearing Plate with wedge plate and wedges, or a steel Bearing Plate with a threaded anchor nut. The steel bearing and wedge plate may also be combined into a single element. Ensure Anchorage devices are capable of developing 95 percent of the minimum ultimate tensile strength of

the prestressing steel tendon. Ensure Anchorage devices conform to the static strength requirements of Section 3.1.6(1) and 3.1.8(1) and (2) of the *PTI Post-Tensioning Manual*.

(1) Bearing Plate - Fabricate the Bearing Plate from steel conforming to AASHTO M 270, Grade 36, or a ductile iron casting conforming to ASTM A536.

(2) Wedges and Wedge Plates - Use wedges designed to preclude premature failure of the prestressing steel due to notch or pinching effects under static and dynamic strength requirements of Section 3.1.6(1) and Sections 3.1.8(1) and (2) of the *PTI Post-Tensioning Manual*. Do not reuse wedges.

(3) Anchor Nuts - Size anchor nuts and other threaded hardware for epoxy coated bars to thread over the epoxy-coated bar and still comply with the requirements for carrying capacity.

(4) Trumpet - Furnish Trumpets fabricated from steel pipe or tube conforming to ASTM A53 for pipe or ASTM A500 for tubing. Furnish steel Trumpets having a minimum wall thickness of 1/8 inch for diameters up to 4 inches and 3/16 inch for larger diameters.

(5) Anchorage Cover - Furnish Anchorage covers fabricated from steel or plastic with a minimum thickness of 1/8 inch. Ensure the joint between the cover and the Bearing Plate is watertight.

(e) Bondbreaker - Fabricate the bondbreaker sleeve for the anchor Free Stressing Length from a smooth plastic tube or pipe having the following properties:

- Resistant to chemical attack from aggressive environments, grout, or corrosion inhibiting compound,
- Resistant to aging by ultraviolet light,
- Fabricated from material non-detrimental to the tendon,
- Capable of withstanding abrasion, impact, and bending during handling and installation,
- Enables the tendon to elongate during testing and stressing,
- Allows the tendon to remain unbonded after lock-off.

(f) Corrosion Inhibiting Compound - Furnish corrosion inhibiting compound for placement in the Free Stressing Length or the Trumpet area. Furnish grease, gel or wax corrosion inhibiting compound meeting the requirements of Section 4.6 of *PTI Recommendations for Prestressed Rock and Soil Anchors*.

(g) Sheathings - Use a sheath as part of the corrosion protection system for the unbonded length portion of the tendon.

Furnish sheathing fabricated from one of the following:

- A polyethylene tube pulled or pushed over the prestressing steel. Use Type II, III, or IV polyethylene as defined by ASTM D1248 (or approved equal). Use tubing with a minimum wall thickness of 0.06 inch.

- A hot-melt extruded polypropylene tube. Use polypropylene of cell classification B55542-11 as defined by ASTM D4101 (or approved equal). Use tubing with a minimum wall thickness of 0.06 inch.
- A hot-melt extruded polyethylene tube. Use high density Type III polyethylene as defined by ASTM D1248 (or approved equal). Use tubing with a minimum wall thickness of 0.06 inch.
- Steel tubing conforming to ASTM A500, Grade B (Fy = 46 ksi for square sections, and Fy = 42 ksi for round sections). Use tubing with a minimum wall thickness of 0.25 inch.
- Steel pipe conforming to ASTM A53, Grade B. Use pipe with a minimum wall thickness of 0.25 inch.
- Plastic pipe or tube of PVC conforming to ASTM D1784 Class 13464-B. Use Schedule 40 pipe or tube at a minimum.
- Heat shrink sleeves according to 00596E.11(h) with a minimum wall thickness of 0.04 inch

Provide sheathing that meets all of the following performance requirements:

- Resistant to chemical attack from aggressive environments, grout or corrosion inhibiting compound,
- Resistant to aging by ultraviolet light,
- Fabricated from material nondetrimental to the tendon,
- Capable of withstanding abrasion, impact and bending during handling and installation,
- Enables the tendon to elongate during testing and stressing,
- Allows the tendon to remain unbonded after lock off.

(h) Bar Tendon Coupler Protection - On encapsulated bar tendons, cover the coupler and any adjacent exposed bar section with a corrosion-proof compound or wax-impregnated cloth tape. Cover the coupler area with a smooth plastic tube complying with 00596E.11(g), overlapping the adjacent sheathed tendon by at least 1 inch. Seal the two joints with a coated heat-shrink sleeve of at least 6 inches in length, or approved equal. Completely fill the space inside the cover tube with the corrosion-proof compound.

Provide heat shrinkable sleeves fabricated from a radiation cross-linked polyolefin tube with a nominal thickness of 0.24 inches and internally coated with an adhesive sealant with a nominal thickness of 0.2 inches.

(i) Spacers and Centralizers:

(1) Spacers - Use spacers to separate the elements of a multi element tendon and permit grout to freely flow around the tendon and up the drill hole. Fabricate spacers from plastic, steel, or material which is non-detrimental to the prestressing steel. Do not use wood. A combination centralizer-spacer may be used. Use spacers to separate individual steel strands at intervals of no more than 10 feet.

(2) Centralizers - Fabricate centralizers from plastic, steel or material which is non-detrimental to the prestressing steel. Do not use wood. Use centralizers capable of

supporting the tendon in the drill hole and position the tendon so a minimum of 1/2 inch of grout cover is provided and permits grout to freely flow around the tendon and up the drill hole.

Provide centralizers at intervals of no more than 10 feet with the deepest centralizer located 1 foot from the end of the anchor and the upper centralizer for the bond zone located no more than 5 feet from the top of the Tendon Bond Length.

(j) Grout and Grout Tubes - Use Type I, II, or III Portland cement according to AASHTO M 85 (ASTM C150) for grout. Use grout that is a pumpable neat mixture of cement and water that is stable (bleed less than 2 percent), fluid, and provides a compressive strength of at least 3,000 psi at time of stressing. Provide water for mixing grout according to Section 02020.

Admixtures which control bleed, improve flowability, reduce water content and retard set may be used in the grout subject to the approval of the Engineer. Admixtures, if used, shall be compatible with prestressing reinforcement and mixed according to the manufacturer's recommendations. Expansive admixtures may only be used for filling sealed encapsulations, Trumpet, and Anchorage covers. Do not use accelerators.

Submit a detailed written mix design of the exact brand and batch quantities of pre-packaged grout and water including dosages proposed. Prior to installing the first Ground Anchor, mix a trial batch of grout using the Equipment, Materials, proportions, and grouting crew proposed for use on the Project. Perform the following tests:

- **Bleeding** - Determine bleed resistance according to ASTM C940. The maximum allowable bleeding is 2 percent.
- **Compressive Strength** - Determine compressive strengths according to ASTM C109. Sample 2 sets of 3 cubes at least once for each trial batch. Demonstrate the grout achieves at least 3,000 psi compressive strength at the end of the wait time before stressing.

If the proposed grout mix design does not produce acceptable trial batch results, revise the mix design and perform another trial batch. Results from previous projects will not be considered acceptable documentation. Grouting may proceed after approval of the trial batch.

Provide grout tubes with an adequate inside diameter to enable the grout to be pumped to the bottom of the drill hole and capable of withstanding a minimum grouting pressure of 150 psi or the Contractor's maximum anticipated grout pressure.

Equipment

00596E.20 General - Provide an Equipment list and a review of all Equipment suitability based on the Contractor's understanding of the site subsurface conditions, the associated installation plan, and Ground Anchor testing procedures. Before drilling, obtain approval in writing of drilling, grouting, stressing and testing Equipment.

00596E.21 Drilling Equipment - Furnish drilling Equipment appropriate for the subsurface conditions shown. Drilling Equipment includes all Equipment necessary to make holes of the diameter and depth required, maintain an open hole, and place anchors.

00596E.22 Mixing and Grouting Equipment - Furnish mixers, storage tanks, pumps, and necessary Equipment that satisfy the following:

- Mixer that produces a neat cement grout that is free of lumps and undispersed cement and continuously agitated during grouting operations,
- Pump and pressure gauge capable to monitor grout pressures at least 150 psi or twice the actual grout pressures used, whichever is greater,
- Grouting Equipment sized to enable the grout to be pumped in one continuous operation.

00596E.23 Anchor Stressing and Testing Equipment - Furnish Equipment to demonstrate the anchor acceptance criteria through testing and to stress and lock off the tendon at the load specified. Furnish Equipment with rated capacity adequate for stressing the tendon to the maximum specified test load.

(a) Hydraulic Jack and Pump – Furnish the following:

- Stressing Equipment capable of stressing the whole tendon in one stroke to the specified test load within 75 percent of the rated capacity. Provide a pump capable of applying each load increment in less than 60 seconds.
- Stressing Equipment capable of stressing the anchor in increments so that the anchor load can be raised or lowered according to the test specifications and allow the anchor to be lift-off tested to confirm the Lock-off Load and properly selected for the type and number of stressing elements.

(b) Stressing Anchorage - Furnish stressing Anchorage according to 00596E.11(d) to grip the prestressing reinforcement during loading.

(c) Pressure Gauges and Load Cells – Furnish the following:

- A primary pressure gauge consisting of a dial gauge or vernier scale capable of measuring to 0.001 inch to measure the Ground Anchor movement. Use a movement-measuring device that has a minimum travel equal to the theoretical elastic elongation of the total anchor length at the maximum test load plus two inches and adequate travel so the Ground Anchor movement can be measured without resetting the device at an interim point.
- A reference calibrated pressure gauge for checking the primary pressure gauge.
- An electrical resistance load cell and readout for use in combination with a pressure gauge for extended Creep Test.

Adjustment or repair of jacks, gauges, or load cell after certification requires recalibration at no additional cost to the Agency.

Furnish stressing Equipment calibrated by an independent firm traceable to the National Institute of Standards and Technology (NIST). Perform certified calibration of stressing

system within 55 Calendar Days of the date of calibration submittal to the Engineer. Provide calibration accuracy of plus or minus 2 percent prior to use. Keep the calibration certificate and graph available on site during testing and stressing.

Labor

00596E.30 Personnel Qualifications - Perform the Work using personnel with the required minimum experience in Ground Anchor installation, stressing, and testing. Submit for review a list identifying the Subcontractor (if not performed by the Contractor), Project Site supervisors and drill rig operators assigned and the experience relevant to the Project. Submit the following:

- Project reference list of at least three Ground Anchor projects successfully completed in the last 5 years. Include a brief description of each project and the owner's contact person's name and current phone number for each project listed.
- Experience documentation of the supervising engineer for the On-Site Work with at least 3 years' experience in Ground Anchor design and construction. Provide experience information including the direct supervisory responsibility for the installation, stressing and testing operations.
- Provide experience information for drill operators with at least 1 year experience in the construction of permanent Ground Anchors.

Construction

00596E.40 Ground Anchor Storage and Handling - Store and handle anchors so as to avoid mechanical damage, corrosion and contamination with dirt or deleterious substances. Use padding under banding for prefabricated anchors to avoid damage to the anchor corrosion protection. Store Materials delivered prior to time required in a dry, clean ventilated place, heated, if necessary, to prevent accumulation of moisture on the Materials or in the wrapping. Do not store on the ground or expose to weather. Rusting sufficient to cause excessive surface roughness, pitting visible to the naked eye, or unevenness, will be cause for rejection. Bent anchors that have surface damage or have been subject to excessive rusting will be rejected.

The storage method is subject to review and approval prior to delivery of Materials to the Project Site. Do not weld anchor components. Protect anchors from any nearby welding operations to avoid touching the anchor with the electrode and to avoid electrical circuits that may cause resistance heating from passing through the anchors. Lift pre-grouted anchors so as to avoid excessive bending, which can debond the prestressing steel from the surrounding grout. Do not expose prestressing steel to excessive heat.

00596E.41 Ground Anchor Installation:

(a) Drilling Anchor Holes - Drill anchor holes to the length and diameter shown on the approved shop drawings and within 1 degree of the inclination shown. Utilize a drilling method to establish a stable hole of adequate dimensions within the tolerances specified. Drilling methods may involve, amongst others, rotary, percussion, rotary/percussive or auger drilling; or percussive- or vibratory-driven casing. Jetting is not allowed. Case the drilled anchor holes as necessary to prevent sloughing or caving of material into the hole.

Thoroughly clean the holes of loose debris and re-drill any anchor hole that caves, sloughs, or otherwise does not provide suitable Anchorage as required.

(b) Anchor Insertion - Place anchors according to the Plans, details and recommendations of the anchor manufacturer. Insert the anchor into the drill hole to the desired depth without damaging the sheathing, coating, and grout tubes. Align the center of the anchor with the center of the drill hole. If the anchor cannot be completely inserted, remove the anchor from the drill hole and clean or re-drill the hole to permit insertion. Do not drive or force partially inserted anchors into the hole.

Prior to inserting an anchor in the drilled hole, allow the Engineer to examine the entire anchor for damage. Repair damaged anchors according to the manufacturer's recommendations, as approved by the Engineer, and replace anchors as required, at no additional cost to the Agency.

(c) Anchor Grouting - After the anchor is inserted, grout the drill hole in one continuous grouting operation. Inject grout from the lowest point of the drill hole.

Record the quantity of the grout and grout pressures.

Provide separation between grout and the back of the Structure or the bottom of the Trumpet at the top of the drill hole. The grout tube may remain in the hole on completion of grouting if the tube is filled with grout.

After grouting, do not load the anchor for a minimum of 3 Calendar Days and the time demonstrated in the trial batch testing.

(d) Anchorage Installation - Install the anchor Bearing Plate and the Anchor Head or nut perpendicular to the anchor, within ± 3 degrees and centered on the Bearing Plate, without bending or kinking of the prestressing elements. Ensure that wedge holes and wedges are free of rust, grout, and dirt. Clean and protect the stressing tail and protect from damage until final testing and lock-off. After the anchor has been accepted, cut the stress tail to its final length according to the anchor manufacturer's recommendations.

Extend the corrosion protection surrounding the unbonded length up beyond the bottom seal of the Trumpet or 4 inches into the Trumpet if no Trumpet seal is provided. If the protection does not extend beyond the seal or sufficiently far enough into the Trumpet, extend the corrosion protection or lengthen the Trumpet.

Do not contact the corrosion protection surrounding the unbonded length with the Bearing Plate or the Anchor Head during testing and stressing. If the protection is too long, trim the corrosion protection to prevent contact.

00596E.42 Ground Anchor Testing - Test Ground Anchors according to the following:

(a) General - Test each Ground Anchor. Apply the Alignment Load and set dial gauges. Do not stress anchors beyond the Alignment Load prior to testing. Do not exceed 80 percent of the anchor's minimum ultimate tensile strength during testing.

Measure and record anchor movement to the nearest 0.001 inch with respect to an independent fixed reference point. Monitor load with the primary pressure gauge. Place reference pressure gauge in series with the primary pressure gauge during each test.

For Performance and Proof Tests, at loads other than the maximum test load, hold load just long enough to obtain the movement reading. Hold the maximum test load for a minimum of 10 minutes. Continually adjust jack pressure to maintain a constant load. Start load-hold period as soon as the maximum test load is applied. Record anchor movement at 1 minute, 2, 3, 4, 5, 6 and 10 minutes. If anchor movement between 1 minute and 10 minutes exceeds 0.04 inches, hold the maximum test load for an additional 50 minutes, and record anchor movement at 15 minutes, 20, 30, 40, 50 and 60 minutes.

For all verification, Performance, and Proof tests, submit an anchor test data report, according to 00596E.05. The Engineer will respond within 5 Calendar Days after receipt of the report with either acceptance or rejection of the tested anchor.

(b) Preproduction Verification Tests - Prior to installation of permanent Ground Anchors, construct two sacrificial verification test anchors and verification test reaction pads according to the approved Working Drawings and in the locations shown.

Perform verification tests to verify that the Contractor installed anchors meet the anchor acceptance criteria, verify that the length of the anchor bond zone is adequate, and verify the Contractor's design and installation methods. For each verification test, provide the anchor Test Data Report to the Engineer within 5 Calendar Days of completing the testing. Do not begin installation of permanent ground anchors until verification test reports have been reviewed and accepted by the Engineer.

Verification test anchor locations may be adjusted by the Engineer depending on actual site conditions and other factors. If additional verification test anchors are needed, the location will be determined by the Engineer.

For verification test anchors, use the drilling and grouting methods, casing and reinforcement details, depth of embedment (bond zone), and all other installation Materials and methods specified for the production anchors, unless otherwise approved by the Engineer. At the completion of verification testing, remove test anchors down to 2 feet below Roadway Subgrade or as directed.

Conduct verification tests according to the Performance Test schedule in 00596E.42(c).

Do not proceed with further Ground Anchor testing or construction without verification test approval.

(1) Verification Test Anchor Acceptance Criteria - The acceptance criteria for anchor verification load tests are:

- Total elastic movement at the maximum test load exceeds 90 percent of the theoretical elastic elongation of the unbonded length.
- At the end of the 1.0 FDL Creep Test load increment, test pile creep rate does not exceed 0.04 inch/log cycle time (1 to 10 minutes) or 0.08 inch/log cycle time

(6 to 60 minutes or the last log cycle if held longer) and the creep rate is linear or decreasing throughout the creep load hold period.

- Failure does not occur at the 1.0 FDL maximum test load. Failure is defined as the load where the slope of the load versus head deflection curve (at the end of increment) first exceeds 0.025 inch/kip.

(2) Verification Test Anchor Rejection - If a verification-tested Ground Anchor fails to meet the acceptance criteria, modify the design, the construction procedure, or both. These modifications may include modifying the installation methods, increasing the Bond Length, or changing the Ground Anchor type. Submit to the Engineer any modifications that necessitate changes to the Structure.

(c) Performance Test - Performance Test the first production anchors installed for each row and as directed by the Engineer. If changes are made to the Equipment, means, or methods, conduct an additional Performance Test at no additional cost to the Agency. Conduct Performance Test according to the following schedule:

Performance Test Schedule

Step	Loading	Applied Load
1		AL
2	Cycle 1	0.20FDL*
		AL
3	Cycle 2	0.20FDL
		0.40FDL*
		AL
4	Cycle 3	0.20FDL
		0.40FDL
		0.60FDL*
		AL
5	Cycle 4	0.20FDL
		0.40FDL
		0.60FDL
		0.80FDL*
		AL
6	Cycle 5	0.20FDL
		0.40FDL
		0.60FDL
		0.80FDL
		0.90FDL*
		AL
7	Cycle 6	0.20FDL
		0.40FDL
		0.60FDL
		0.80FDL

		0.90FDL
		1.00FDL*
8	Maximum load 1.00FDL hold period per 00596E.42(e)	
9	Cycle 6 continued	Reduce to Lock-off Load
10	Lift off test	
11	Adjust Lock-off Load	

AL=Alignment Load
FDL=Factored Design Load

Plot the prestressed soil anchor movement versus load for each load increment marked with an asterisk (*) in the Performance Test schedule, and plot the residual movement of the tendon at each Alignment Load versus the highest previously applied load.

(d) Proof Test - Proof Test each production anchor not performance tested. Perform Proof Test by incrementally loading the Ground Anchor according to the following schedule:

Proof Test Schedule

Applied Load (LRFD Design)	
AL	
0.20FDL	
0.40FDL	
0.60FDL	
0.80FDL	
1.00FDL	Hold test load 10 minutes minimum.[1]
Reduce to Lock-off Load	
Lift-off test	

AL = Alignment Load
FDL = Factored Design Load

[1]Perform Creep Test measurements on the maximum load in the test. Start the load-hold period as soon as the maximum test load is applied. Measure and record the Ground Anchor movement at 1 minute, 2, 3, 4, 5, 6, and 10 minutes. If the Ground Anchor movement between 1 minute and 10 minutes exceeds 0.04 in., hold the maximum test load for an additional 50 minutes. If the load hold is extended, record the Ground Anchor movement at 15 minutes, 20, 30, 40, 50, and 60 minutes. If the Creep Test is extended, the creep movement between the 6 and 60 minute readings is required to be less than 0.08 inches for acceptance. Construct a graph

showing a plot of Ground Anchor movement versus load for each load increment in the Proof Test. Obtain Engineer's approval of graph format prior to use.

(e) Ground Anchor Acceptance Criteria - The Engineer will analyze the permanent Ground Anchor test results. Ground Anchor acceptance is based on satisfying each of the following criteria: creep, movement, and Lock-off Load:

- A performance or proof tested anchor with a 10 minute load hold is acceptable if the anchor resists the maximum test load with less than 0.04 inches of movement between 1 minute and 10 minutes and the total elastic movement at the maximum test load exceeds 90 percent of the theoretical elastic elongation of the unbonded length.
- A performance or proof tested anchor with a 60 minute load hold is acceptable if the anchor resists the maximum test load with a creep rate that does not exceed 0.08 inches in the last log cycle of time and the total elastic movement at the maximum test load exceeds 90 percent of the theoretical elastic elongation of the unbonded length.
- A verification, performance, or proof tested anchor subjected to extended Creep Testing is acceptable if the anchor resists the maximum test load with a creep rate that does not exceed 0.08 inches in the last log cycle of time and the total elastic movement at the maximum test load exceeds 90 percent of the theoretical elastic elongation of the unbonded length.
- Initial lift-off reading is within ±5 percent of the designed Lock-off Load. Perform liftoff test according to 00596E.42(h).

(f) Procedures for Anchors Failing Acceptance Criteria - Anchors that fail the acceptance criteria will be handled as follows:

- Anchors that do not satisfy the minimum apparent free length criteria will be rejected and replaced at no additional cost to the Agency.
- Re-groutable anchors satisfying the minimum apparent free-length criteria but failing to satisfy creep criteria may be post-grouted and retested. Anchors which cannot be post-grouted or re-grouted anchors that do not pass the acceptance criterion will be rejected.

In the event that an anchor fails, modify the design or construction procedures. These modifications may include installing additional anchors, modifying the installation methods, increasing the Bond Length, reducing the anchor design load by increasing the number of anchors, increasing the total anchor length, or changing the anchor type. Complete design or construction modification at no additional cost to the Agency. Submit a description of any proposed modifications to the Engineer in writing. Do not implement proposed modifications until receiving written approval from the Engineer.

(g) Anchor Lock-Off - Apply Lock-off Loads to permanent Ground Anchors as follows:

- After testing has been completed and anchors have been accepted by the Engineer, set the Anchorage to achieve the design Lock-off Load considering seating losses.
- Limit the Lock-off Load to a maximum 70 percent of the anchor minimum ultimate tensile strength.

- Seat the wedges at a minimum load of 50 percent of the anchor minimum ultimate tensile strength. If the Lock-off Load is less than 50 percent of the anchor minimum ultimate tensile strength, use shims under the wedge plate and seat the wedges at 50 percent of the anchor minimum ultimate tensile strength Remove shims after seating to reduce the load in the anchor to the design Lock-off Load.
- Adjust Lock-off Load using shims. Do not regrip strand anchors where regripping would result in overlapping wedge bites below the Anchorage wedge plate.

(h) Anchor Liftoff Test - After transferring the Lock-off Load to the Anchorage, and prior to removing the jack, conduct a liftoff test to confirm the magnitude of the load in the anchor. This load is determined by reapplying load to the anchor to lift off the wedge plate (or anchor nut) without unseating the wedges (or turning the anchor nut). This moment represents zero time for any long term monitoring. In the event that the load is removed from the anchor for any reason, repeat the anchor liftoff test procedure.

If the initial liftoff reading for any anchor is not within 5 percent of the designated Lock-off Load, adjust the anchor load accordingly and repeat the liftoff test. Repeat the liftoff until the liftoff reading is within 5 percent of the designated Lock-off Load.

Measurement

00596E.80 Measurement - The quantities of Work performed under this Section will be measured on the unit basis.

Payment

00596E.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement
(a) Permanent Ground Anchor	Each
(b) Performance Test	Each
(c) Verification Test	Each

Item (a) includes Contractor design of bonded length and for designing, furnishing, placing, and proof testing permanent Ground Anchors.

Item (c) includes design and construction of verification test reactions pads, and for designing, furnishing, placing, and testing of sacrificial anchors.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP00597 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-21-25)**

SECTION 00597 - SOUND WALLS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use the following lead-in paragraph when none of the following subsections are included in the project.)

Comply with Section 00597 of the Standard Specifications.

(Use the following lead-in paragraph when any of the following subsections are included in the project.)

Comply with Section 00597 of the Standard Specifications modified as follows:

(Use the following subsection .00 when only one type of sound wall is allowed. Fill in the blank with one of the following: "Concrete Block Walls", "Precast Concrete Panel Walls", or "Concrete Panel Fence Walls." Obtain information from the Bridge Designer.)

00597.00 Scope - Replace this subsection, except for the subsection number and title, with the following:

This Work consists of furnishing and constructing _____ at the location shown or directed.

SP00599 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-21-25
Requires SP02510)

SECTION 00599 - CONCRETE SLOPE PAVING

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00599 of the Standard Specifications.

SP00610 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-22-25)

SECTION 00610 - RECONDITIONING EXISTING ROADWAY

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00610 of the Standard Specifications.

SP00620 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-22-25
This Section requires SP00744 or SP00745 when traffic is not allowed on the cold planed surface.)

SECTION 00620 - COLD PLANE PAVEMENT REMOVAL

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use the following lead-in paragraph when none of the following subsections are included in the project.)

Comply with Section 00620 of the Standard Specifications.

(Use the following lead-in paragraph when any of the following subsections are included in the project.)

Comply with Section 00620 of the Standard Specifications modified as follows:

(Use the following subsection .43 when traffic restrictions are required on cold planed areas. Delete what does not apply.)

00620.43 Maintenance Under Traffic - Replace this subsection, except for the subsection number and title, with the following:

(Use these two paragraphs when traffic is allowed on cold planed areas for a limited duration. Obtain time limit from the pavement designer.)

Traffic will be allowed on the cold planed surface up to ___ Calendar Days after removing the existing surface. Sweep and clean the cold planed surface before opening to traffic.

Before beginning paving operations, make repairs to the existing cold planed surface as directed. Payment for the repairs will be made according to 00195.20.

(Use this paragraph when cold planed areas are required to be paved before opening to traffic. Delete subsection number in parentheses that does not apply. Delete all orange parentheses. Be sure to include 00744.51 or 00745.51 in the special provisions, as appropriate.)

Traffic is not allowed on the cold planed surface. Before opening the area to traffic, pave the surface according to *(*00744.51*)(*00745.51*)*.

(Use the following subsection .44 when requested by the pavement design report and a secondary cold plane Pay Item is included.)

Add the following subsection:

00620.44 Inspection of Cold Plane Surfaces – The Engineer will inspect the primary cold plane surface immediately after it is swept clean to determine if secondary cold plane pavement removal is required. The Engineer will determine the locations for secondary cold plane pavement removal required, mark locations, and notify the Contractor immediately after marking locations.

(Use the following subsection .80 when requested by the pavement design report and a secondary cold plane Pay Item is included.)

00620.80 Measurement - Replace this subsection, except for the subsection number and title, with the following:

The quantities of cold plane pavement removal and secondary cold plane pavement removal will be measured on the area basis, in place.

When the depth of cold plane pavement removal is variable, the depth as shown is an estimate and is approximate only. No guarantee is made that the actual depth will be the same as the estimated depth.

The depth of secondary cold plane pavement removal is an estimate. In areas where directed to perform additional depth of secondary cold plane pavement removal, the areas will be adjusted by converting to an equivalent number of square yards on a proportionate volume basis.

(Use the following subsection .90 when requested by the pavement design report and a secondary cold plane Pay Item is required.)

00620.90 Payment - Replace this subsection, except for the subsection number and title, with the following:

The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement

(a) Cold Plane Pavement Removal, _____ Deep.....Square Yard
(b) Secondary Cold Plane Pavement Removal, _____ Deep .Square Yard

In item (a), the depth of Pavement removal will be inserted in the blank. If the depth is variable, the depth range will be inserted in the blank.

In items (b), the estimated depth of secondary pavement removal will be inserted in the blank.

Payment will be payment in full for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for temporary wedges constructed, maintained, and removed under 00620.40(d), or for replacement of cutting teeth.

SP00621 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-22-25
This Section requires SP00744
or SP00745 when traffic is not
allowed on the cold planed surface.)

SECTION 00621 - AMG COLD PLANE PAVEMENT REMOVAL

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00621, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00621.00 Scope - This Work consists of removing existing Pavement to a grade represented by a 3D Construction Model using Automated Machine Guidance to prepare a foundation for placing new surfacing.

00621.02 Definitions:

Automated Machine Guidance (AMG) - AMG is the computerized guidance of construction Equipment to follow the line and grade of the engineered design. Guidance is either by direct control of the machinery or through visual or audible signals to the operator. Operation is based on digital input from positioning systems.

00621.03 Submittals - Submit a 3D Construction Model that accurately represents the Agency 3D Model according to 00150.35.

Equipment

00621.20 Equipment - Provide self-propelled planing machines or grinders:

- Equipped with Automated Machine Guidance for positioning the cutting edge.
- Capable of loosening Pavement Material.
- With a totally enclosed cutting drum with replaceable cutting teeth.
- With an effective means of removing loosened Material from the surface and preventing dust from escaping into the air.
- Capable of providing a true cross-slope grade that allows placement of overlay Pavement to a uniform thickness.

Construction

00621.40 Pavement Removal:

(a) General - Remove the existing Pavement to the depth, width, grade and cross section represented in the approved 3D Construction Model or as directed. The use of a heating device to soften the Pavement is not allowed.

(b) Depth 1 inch to 2 inches - If the depth of the existing Pavement to be removed is 2 inches or less, but more than 1 inch and the section is under traffic, schedule the Work so the full width and length of travel lanes can be removed during the same shift. Remove the Shoulder area within 24 hours.

(c) Depth over 2 inches - If the depth of the existing Pavement to be removed is over 2 inches and the section will be under traffic, schedule the Work so the full width and length of the travel lanes and Shoulders can be removed, leaving no longitudinal or transverse drop-offs, during the same shift.

(d) Pavement Removal Alternative - If unable to complete the Pavement removal according to 00621.40(b) and 00621.40(c), then, construct a wedge of asphalt concrete within the same Day and with the approval of the Engineer, at a Slope of 1V:10H or flatter along each exposed longitudinal drop-off, and 1V:50H or flatter along each exposed transverse drop-off. Place wedges completely across the milled area at intersections, points of beginning and ending of the milling operation, and around manholes, valve boxes and other structures. Longitudinal drop-offs of 1 inch or less do not require a wedge. Maintain wedges as long as the area remains under traffic or until Pavement is replaced. Remove and dispose of wedges before placing new Pavement.

(e) Warning Signs - Provide warning signs as required where abrupt or sloped drop-offs occur at the edge of the existing or new surface according to Sections 00221 and 00222.

(f) Rough Grading - Pavement removal prior to preparation of the final milled surface can be constructed using Equipment meeting 00620.20.

00621.41 Surface Tolerance - Match the finished milled surface to the established grade and cross section for the finished surface represented by the approved 3D Construction Model within 0.02 foot at the frequency stated in the *Construction Survey Manual for Contractors* Section 8.2.2 Within Subgrade Area.

00621.42 Disposal of Materials - Dispose of all Materials according to 00290.20.

(Use one of the following three options as instructed. Delete the options that do not apply.)

00621.43 Maintenance Under Traffic -

[Option 1 – Use the following paragraph when traffic will be allowed on the cold planed surface.]

Sweep and clean the cold planed Pavement surface prior to allowing traffic to use the Roadway.

[Option 2 – Use the following two paragraphs when traffic is allowed on cold planed areas for a limited duration. Obtain time limit from the pavement designer.]

Traffic is allowed on the cold planed surface up to ___ Calendar Days after removing the existing surface. Sweep and clean the cold planed surface before opening to traffic.

Before beginning paving operations, make repairs to the existing cold planed surface as directed. Payment for the repairs will be made according to 00195.20.

[Option 3 – Use the following paragraph when cold planed areas are required to be paved before opening to traffic. Delete the subsection number that does not apply. Delete all orange parentheses. Include 00744.51 or 00745.51 in the special provisions, as appropriate.]

Traffic is not allowed on the cold planed surface. Before opening the area to traffic, pave the surface according to *(*00744.51*)(*00745.51*)*.

Measurement

00621.80 Measurement - The quantities of AMG cold plane Pavement removal will be measured on the area basis, in place.

Payment

00621.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per square yard, for the item "AMG Cold Plane Pavement Removal".

Payment will be payment in full for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for temporary wedges constructed, maintained, and removed under 00621.40(d), or for replacement of cutting teeth.

SP00622 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-22-25)**

SECTION 00622 - GRINDING CONCRETE PAVEMENT

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use the following lead-in paragraph when none of the following subsections are included in the project.)

Comply with Section 00622 of the Standard Specifications.

(Use the following lead-in paragraph when any of the following subsections are included in the project.)

Comply with Section 00622 of the Standard Specification modified as follows:

(Use the following subsection .40 when full depth repairs are needed. Be sure to include Section 00758 and appropriate bid items.)

Add the following subsection:

00622.40 Preparation - Complete full-depth concrete repairs, spall repairs, and joint repairs according to Section 00758 in the area to be ground before beginning grinding operations.

(Use the following subsection .41 to identify the aggregate hardness tolerance. Fill in the blank with either "Moderately Hard Aggregate" or "Hard Aggregate" as determined by the designer.)

00622.41 Grinding - Add the following paragraph to the end of this subsection.

This Project's Aggregate Hardness Tolerance is _____.

SP00630 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-22-25)**

SECTION 00630 – RUBBLIZING CONCRETE PAVEMENT

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project,

unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00630, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00630.00 Scope - This Work consists of rubblizing and seating existing PCC Pavement and PCC patches prior to the placement of ACP.

00630.01 Lines, Grades, and Typical Sections - Conform all finished rubblizing and seating to the lines, grades, and Typical Sections established, shown, or directed.

Materials

00630.10 General - Furnish Materials meeting the following requirements:

Aggregate Base.....00641
ACP 00745
Subgrade Stabilization 00331

Equipment

00630.20 Rubblizing Equipment - Furnish rubblizing Equipment with multiple independent hammers, capable of uniformly rubblizing a 12-foot concrete panel from the longitudinal joint to the edge of the concrete slab in one Pass.

(In the following paragraph, insert the maximum rubble size (typically between 3 and 12 inches) and the minimum rubble size. Obtain information from the Designer.)

Energy and striking patterns shall be adjustable so as to produce rubble with a majority of pieces having a maximum size of ____ inches, a minimum size of _____ inches, and no piece larger than 18 inches. Prevent Equipment from penetrating the existing adjacent PCC surface.

Provide adequate lighting to illuminate rubblizing Equipment and Work areas in front of and behind the rubblizing Equipment according to 00745.24(d).

00630.24 Compactors - Provide rollers capable of reversing without backlash, as follows:

(a) Grid Roller - Provide grid-type metal twin-drum rollers meeting the following requirements:

- Drums with an outside diameter of at least 5 feet.
- Maximum drum width of 32 inches.

- Capable of a 15 Ton loading. The specific loaded weight will be as directed.

Use self-propelled or tractor pulled rollers capable of operating at 15 miles per hour. Do not use a perforated type unless directed by the Engineer.

(b) Pneumatic Roller - Use a pneumatic-tired roller weighing a minimum of 33 Tons and meeting either of the following requirements:

(1) Pulled Roller - Tractor-pulled rollers shall have four rubber-tired wheels equally spaced across the full width of the machine, mounted in-line on a rigid steel frame such that all wheels carry equal loads, regardless of surface irregularities. Ensure roller tires are capable of satisfactory operation at a minimum inflation pressure of 100 psi. Inflate tires to such pressure as to satisfactorily seat the rubblized Material. At the Contractor's option, tires may contain liquid.

The roller shall have a weight body suitable for ballasting to a minimum gross load of 33 Tons. Ballast and ballasting procedure shall be such that gross roller weight can be readily determined and controlled. Tow the roller with a rubber-tired prime mover.

(2) Self-Propelled Roller - Self-propelled rollers shall have two axles mounting no more than seven tires, and shall meet the requirements in 00630.24(b)(1) concerning tire inflation pressure, surface contact pressure, and gross weight.

(c) Smooth Drum Roller - Furnish a self-propelled vibratory roller with a gross static weight of at least 8 Tons.

Construction

(Use one of the following two options for subsection .40.)

[Option 1. Use this subsection.40 if not using Option 2 below. Fill in the blanks. Obtain information from the Designer.]

00630.40 Test Strips - Before beginning rubblizing operations, construct one test strip for each direction of travel. The Engineer will designate locations in the outside travel lane for test strips. Each test strip shall be between 200 and 820 feet in length. Remove any existing AC Pavement covering the PCC on the test strip. Rubblize the concrete Pavement using varying energy and striking patterns as directed, to create test sections within the strips with Materials varying from a majority of pieces ____ inch in size to a majority of pieces ____ inch in size, with a maximum size of 18 inches for all sections. For each variation in energy and striking pattern, rubblize a section approximately 3 feet long by the full lane width, to full depth of the concrete. Backfill all excavated areas with Aggregate Base according to Section 00641.

The Engineer will conduct falling weight deflectometer (FWD) deflection testing directly on the rubblized Material surface, prior to rolling, after each one-way Pass of the roller and on the first Lift of ACP approximately 24 hours after the first Lift is completed. These test areas will be used to determine whether proper breakage is obtained and to assist in determining the most suitable rubblizing procedure. The FWD deflection data will be used to determine the minimum particle size that will provide a structurally adequate foundation for the ACP overlay.

The test area will be used to verify the appropriate roller pattern to provide satisfactory seating. The number of roller Passes will be determined by the Engineer based on the breakover point in the FWD deflections and visual effects of seating the rubblized Materials. Up to seven one-way Passes may be required. Place the first Lift of ACP over the test strips within 48 hours of rubblizing the PCC.

Do not begin rubblization outside the test strip area until a sequence of operations has been established to the satisfaction of the Engineer. Once a sequence of operations has been approved, use this sequence unless field conditions or testing shows a need for modification. Excavate random test sections as directed each Day to verify that the breaking pattern approved in the test strips is maintained. The Engineer may also conduct random FWD deflection testing. Backfill all excavated areas with Aggregate Base according to Section 00641.

The Engineer may require additional test strips any time the breaking pattern, the particle size produced, or the deflections change from those established in the selected test sections.

[End Option 1.]

[Option 2. Use this subsection .40 if required in the pavement design report (typically on small projects).]

00630.40 Test Strip - Use the first 200 feet of rubblization as a test strip. Remove any existing asphalt concrete covering the PCC on the test strip, if present. Use the test strip to develop a pattern to achieve specified size of pieces. Stop the rubblization process at the end of the test strip, and do not continue until directed by the Engineer. Excavate the rubblized Material in a section 3 feet long by the full lane width at a representative location or where directed. Backfill all excavated areas with Aggregate Base according to Section 00641.

Conduct additional test strips as directed. Random falling weight deflectometer (FWD) testing may be conducted by the Engineer.

[End Option 2.]

00630.41 Rubblization - Remove all existing asphalt material layers, if present, to expose bare PCC Pavement prior to beginning the rubblizing operation. Remove all joint filler material that debonds during the rubblizing operation and is left loose and exposed on the rubblized surface. Place and compact adjacent roadway materials shown up to the top of existing concrete Pavement elevation prior to rubblization.

Sawcut joints to full depth prior to rubblization where the rubblizing abuts any concrete Pavement or approach slabs that are to remain in place. Keep rubblization hammers at least 1 foot away from adjacent concrete Pavement or approach slabs.

Follow the same sequence of operations and breaking pattern, and produce the same particle size, as approved in the test sections.

Conduct rubblization in a manner that will produce the desired particle size without displacing the concrete more than 1/2 inch vertically.

Protect passing traffic from flying debris during rubblizing operations.

Leave undisturbed reinforcement in place. However, cut off below the surface and remove from the site, any reinforcement exposed as a result of rubblizing or compaction operations. Dispose of reinforcement according to 00290.20.

Prior to placing surfacing, compact the entire width of rubblized Pavement with the approved number of Passes. In the order below, use all three rollers with at least the number of Passes given, unless otherwise approved by the Engineer.

Grid Roller .....4 Passes
Pneumatic Roller .....2 Passes
Smooth Drum Roller .....4 vibratory Passes

Fill in depressions 2 inches or more in depth with dense Base Course ACP according to Section 00745 and strike off level with the surrounding area. Compact ACP leveling according to Section 00745.

In areas showing visible signs of subgrade pumping during rubblization or seating, perform subgrade stabilization according to Section 00331 and as directed.

(Fill in the blanks with the appropriate thickness of ACP and number of days. Obtain the information from the Pavement Design Engineer.)

Do not allow traffic, including Contractor's vehicles and Equipment, on the rubblized Pavement before placing ____ inches of ACP Base Course. Place the first Lift of Base Course within 48 hours after rubblizing the PCC. Place the wearing Course within _____ Days before opening to Public Traffic.

Maintenance

00630.60 Care of Work - After rubblizing, seating, and backfilling, maintain the surface in the same condition it was in upon completion of the roller pattern. Prevent or repair segregation, raveling, or rutting as directed, until placement of ACP surfacing.

Measurement

00630.80 Measurement - The quantities of rubblized concrete Pavement will be measured on the area basis. The surface area will be determined by horizontal measurements.

Subgrade stabilization will be measured according to 00331.80.

ACP will be measured according to 00745.80.

Payment

00630.90 Payment - The accepted quantities of rubblized Pavement will be paid for at the Contract unit price, per square yard, for the item "Rubblize PCC Pavement".

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for:

- constructing test strips
- excavating and backfilling test sections
- Aggregate Base
- water
- illumination of rubblizing Equipment
- cutting, removing, and disposing of exposed reinforcement, joint fillers, and other similar material
- compacting and maintaining the compacted condition of the existing Pavement

Subgrade stabilization will be paid for according to 00331.90.

ACP will be paid for according to 00745.90.

SP00635 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-22-25)**

SECTION 00635 - GRID-ROLLED AGGREGATE SUBBASE

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00635, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00635.00 Scope - This Work consists of furnishing, placing, and compacting with a perforated or grid type roller, one or more layers of Aggregate mixed with water, on a prepared surface to the lines, grades, thicknesses and Cross Sections shown or established.

Materials

00635.10 Materials - Furnish grid rolled Aggregate Subbase Rock Material having a maximum size of 6 inches and meeting the following requirements:

- **Abrasion** - The source materials for Aggregate Subbase shall not exceed 45 percent wear when tested according to AASHTO T 96.

- **Sand Equivalent** - Aggregate Subbase material shall have a sand equivalent of not less than 25 when tested according to AASHTO T 176.

Equipment

00635.20 Compacting Equipment - Provide perforated or grid-type metal twin-drum rollers meeting the following requirements:

- Drums with an outside diameter of at least 5 feet.
- Maximum drum width of 32 inches.
- Capable of a 15 Ton loading. The specific loaded weight will be as directed.

Use self-propelled or tractor pulled rollers capable of operating at 15 miles per hour.

Construction

00635.40 Preparation of Foundation - Provide a firm surface on which Aggregate Subbase is to be placed according to Section 00320, 00330, or 00610 as applicable.

00635.42 Thickness and Number of Layers - If the required compacted depth of the Subbase exceeds 8 inches, construct it in two or more layers of nearly equal thickness. The maximum compacted thickness of any one layer shall not exceed 8 inches.

00635.43 Shaping and Compacting - Compact each layer of the Subbase by as many Passes of the roller as necessary to attain the desired fracture and compaction of the material. Operate the roller at the highest speed possible without bounce and without unevenness of compaction.

Perform blading and watering as necessary to provide uniformity of crown, Cross Section, and compaction.

Apply water according to Section 00340 and as directed.

Maintenance

00635.60 Care of the Work - After constructing each layer and completing the Subbase, maintain the layer to specified conditions, and prevent or repair segregation, raveling, or rutting until it is covered with a following layer or until all Contract Work is completed.

Measurement

00635.80 Measurement - The quantities of grid-rolled Aggregate Subbase will be measured on the area basis, constructed to the full thickness. The thickness will be identified on the Plans. The surface area will be determined by horizontal measurements. In areas where directed to grid-roll to thicknesses other than identified on the Plans, the areas will be adjusted by converting to an equivalent number of square yards on a proportionate volume basis.

Payment

00635.90 Payment - The accepted quantities of grid-rolled Aggregate Subbase will paid for at the Contract unit price, per square yard, for the item "Grid-Rolled Aggregate Subbase, ____ Inches Thick".

The thickness of the Subbase will be inserted in the blank.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for water used to bring the mixture to optimum moisture content or for water used in the care of the Work.

SP00640 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-22-25)**

SECTION 00640 - AGGREGATE BASE AND SHOULDERS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00640 of the Standard Specifications.

SP00641 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-22-25)**

SECTION 00641 - AGGREGATE SUBBASE, BASE, AND SHOULDERS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00641 of the Standard Specifications modified as follows:

> ***(Use the following subsection .10 only when the Contractor has the option of using more than one size of Base Aggregate. Specify sizes in the blanks. Do not use this subsection when the Base Aggregate size is included in the Pay Item name.)***

00641.10(a) Base and Shoulder Aggregate - In the paragraph that begins "Aggregate for bases…", add the following sentence after the first sentence:

Base Aggregate shall be either _____ or _____ size.

(Use the following subsection .20 when plant mix only is required.)

00641.20 Mixing Plant - Replace the sentence that begins "Mix Aggregate and water…" with the following two sentences:

Mix Aggregate and water according to subsection 00641.20(a). Road mix is not allowed on this Project.

(Use the following subsection .41 when plant mix only is required.)

00641.41 Mixing, Hauling, and Placing - Replace the sentence that begins "Add water to the Aggregate…" with the following two sentences:

Add water to the Aggregate while mixing to provide a moisture content according to 00641.12 and subsection 00641.41(a). Road mix is not allowed on this Project.

Add the following subsection:

00641.46 Small, Irregular Areas – Haul, place, shape and compact small irregular areas according to 00640.41 through 00640.43. A small or irregular area is outside of the Traveled Way and requires no more than 5 Tons of Aggregate Base or as otherwise approved by the Engineer.

In areas not accessible to the Equipment specified in 00641.24, use a weighted roller, vibratory plate compactor, tamping rammer compactor, or other approved Equipment suitable for the area as approved by the Engineer.

SP00645 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-22-25)**

SECTION 00645 - RECYCLED ASPHALT PRODUCTS IN BASE

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00645, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00645.00 Scope - This Work consists of hauling recycled asphalt products from Agency-provided stockpiles specified in Section 00160 and placing one or more layers of recycled asphalt products, mixed with water, on a prepared surface to the lines, grades, thicknesses, and Cross Sections shown or established.

Materials

00645.10 Materials - Furnish recycled asphalt products of the designated sizes from the stockpiles except discard hardened lumps exceeding 2 inches on any measured face at the stockpile site in a separate new stockpile or reprocess to achieve the desired maximum size limit.

Acceptance of the recycled asphalt products will be by visual inspection.

00645.12 Limits of Mixture - Provide a mixture of recycled asphalt products and water having a uniform moisture content sufficient to obtain the required compaction. Water may be introduced in a mixing plant, or on the grade.

00645.15 Quality Control - Provide quality control according to Section 00165.

Equipment

00645.21 Hauling Equipment - Provide recycled asphalt products hauling vehicles capable of hauling and depositing the recycled asphalt products material with a minimum of material segregation.

00645.22 Watering and Spreading Equipment - Provide Equipment to add water to the recycled asphalt products and spread to the lines and grades shown or directed.

00645.23 Compacting Equipment - Provide self-propelled rollers and compactors capable of reversing without backlash and meeting the following requirements:

- A gross static weight of at least 10 Tons.
- Adequate to compact to specified density while the recycled asphalt products is still moist.

Labor

00645.30 Quality Control Personnel - Provide a technician having a CDT technical certification.

Construction

00645.40 Preparation of Foundation - Provide a firm surface or material on which recycled asphalt products is to be placed, according to Sections 00330 or 00610 as applicable.

00645.41 Mixing, Hauling, and Placing - Load the recycled asphalt products into the hauling vehicle without compacting material remaining in the stockpile.

Add water to recycled asphalt products while mixing to provide moisture content according to 00645.12.

Thoroughly mix the combined recycled asphalt products and water for as long as necessary to produce a homogeneous mixture. Mix, haul, and place the Material by one of the following methods:

(a) Stationary Mixing Plant - Combine Materials in a pug mill or rotary mixer.

Deliver and deposit the mixture without delay. Deliver the mixture to the spreading Equipment by direct deposit into its receiving device, or by placing in uniform windrows in front of the Equipment.

(b) Road Mix - Place Materials for each layer, add water, and mix with a motor grader until a homogeneous mixture is achieve.

00645.43 Thickness and Number of Layers - If the required compacted depth of the Course exceeds 6 inches, construct it in two or more layers of nearly equal thickness. The maximum compacted thickness of any one layer shall not exceed 6 inches unless approved by the Engineer.

Place each layer in spreads as wide as practical and to the full width of the Course before a succeeding layer is placed.

00645.44 Shaping and Compacting - Begin compaction of each layer immediately after the Material is spread. Determine optimum roller pattern according to ODOT TM 306 C *Control Strip Method of Compaction*. Maintain optimum roller pattern throughout.

Shape and maintain the surface of each layer, during the compaction operations, to produce a uniform texture, and to meet the requirements of 00645.45.

Apply additional water over the Materials for proper compaction.

00645.45 Surface Tolerance - The finished surface of the recycled asphalt products and the surface of each underlying layer shall parallel the established grade and Cross Section for the finished surface within 5/8 inch.

The finished surface of the compacted recycled asphalt products, when tested with a 12 foot straightedge, shall not vary from the testing edge by more than 5/8 inch at any point. Furnish and operate the straightedge as directed.

Maintenance

00645.60 Care of the Work - After construction of each layer and completion of recycled asphalt products Course, maintain the layer to specified conditions, and prevent or repair segregation, raveling, or rutting until it is covered with a following layer or until all Work is completed.

Measurement

00645.80 Measurement - The quantities of recycled asphalt products will be measured on the area basis, of recycled asphalt products constructed to the full nominal thickness. In areas and where the thickness is other than the full nominal thickness, the areas will be adjusted by converting it to an equivalent number of square yards at the full nominal thickness on a proportionate volume basis.

Payment

00645.90 Payment - The accepted quantities of recycled asphalt products will be paid for at the Contract unit price, per square yard, for the item "Recycled Asphalt Products in Base, _____ Inches Thick".

The thickness of the recycled asphalt products will be inserted in the blank.

Payment will be payment in full for hauling and placing the Agency provided Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for water used to obtain compaction or in care of the Work.

SP00660 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 00660 - LEAN CONCRETE BASE

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use this lean concrete base specification for non-critical applications such as under sidewalks and curbs. Do not use for critical areas such as under travel lanes.)

Section 00660, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00660.00 Scope - This Work consists of constructing a lean concrete base (LCB) to the lines, grades, and dimensions shown or established.

LCB is a mixture of aggregates, portland cement, water and at the option of the Contractor, an admixture for entraining air.

Materials

00660.10 General - Proportioning, mixture, and acceptance of materials for LCB shall comply with 00660.11, 00660.12, and 00660.14.

00660.11 Proportioning of LCB Mixture - Before using any LCB on the Project, furnish in writing to the Engineer, the proportions by weight of the following materials, when used:

- Air entraining admixtures
- Cement
- Each size of aggregate
- Fly ash
- Other admixtures
- Water

00660.12 Tolerance and Limits of LCB Mixture - Provide a workable mixture of LCB that is uniform in composition and consistency, and has the following characteristics:

- **Minimum Cement Content** - Furnish a LCB mixture with minimum cement or (cement + fly ash) content of 270 pounds per cubic yard.

- **Entrained Air** - Provide air entrainment at the Contractor's option.

- **Slump** - Provide LCB mixture with a slump not exceeding 4 inches. If a water reducing admixture is used in the mix, the slump limit may be increased to 5 inches.

- **Compressive Strength** - LCB shall attain a 28-Day compressive strength of at least 1,000 psi.

- **Temperature** - Provide LCB at a temperature between 50 °F and 90 °F.

00660.14 Acceptance Sampling and Testing:

(a) General - Acceptance sampling and testing will be based on samples obtained at the site of placement before placement, unless provided otherwise. The QCT shall perform all required sampling and testing.

(b) Batch Masses - Send a batch ticket with each load recording and attesting to the source, day, time of batch(es), size of load and quantity of individual constituents in the load.

(c) Plastic LCB - Acceptance of plastic LCB will be based on tests performed by the QCT according to Section 4 of the MFTP and the tolerances and limits of 00660.12.

(d) Hardened LCB - Acceptance of the hardened LCB will be according to 00540.17(c). Cast one set of cylinders per 20 cubic yards, with a maximum of one set per Day.

00660.15 Quality Control - Provide quality control according to Section 00165.

Labor

00660.30 Quality Control Personnel - Provide certified technicians in the following fields:

- CSTT - Concrete Strength Testing Technician
- QCT

Construction

00660.40 General:

(a) Mixing - Mix LCB to the extent that ensures a uniform distribution of materials throughout the mass.

(b) Placing - Place LCB according to the following:

- Use placement methods that will avoid segregation.
- Vibrate and spade to achieve a dense homogeneous concrete, free of voids and rock pockets.
- Place within 90 minutes after batching and mixing.

(c) Forms - Provide and place forms for LCB to the lines and grades as shown or as directed.

(d) Weather - Do not place LCB when the air temperature is below 35 °F without approval.

Protect from freezing if the air temperature is expected to drop below 35 °F during the first 5 Calendar Days after LCB placement.

(e) Curing - Cover the LCB immediately after finishing with polyethylene film, waterproof paper or other waterproof material. Weight down as needed to keep the covering in place. Maintain curing cover for at least 3 Days. Membrane forming curing compounds may be used only if the LCB will not be covered with an asphalt mix.

00660.41 Surface Finish - Perform the strike-off, consolidation, final floating, and surface finishing with Equipment, tools, and methods that provides a uniformity compacted mass and is free of laitance, soupy mortar, marks and irregularities.

00660.42 Replacement or Price Reduction - Remove LCB represented by cylinders that fail to meet the minimum strength requirement and replace at no additional cost to the Agency. If the Engineer determines that the LCB is suitable for the purpose intended, the Contractor may accept a price reduction established by the Engineer instead of removal and replacement.

Measurement

00660.80 Measurement - The quantities of LCB will be measured on the area basis. The area will be determined by measuring the width and length of each separately constructed

Panel. The width is the design width or measured edge-to-edge width on the surface of the LCB, whichever is less. The length is the horizontal measurement from end to end of the LCB along the center line of the strip.

The measurement of extra thickness of LCB, as shown or as ordered, will be determined by conversion on a proportionate volume basis to an equivalent number of square yards of specified thickness Pavement. Extra thickness of LCB caused by the Contractor's methods, operations, or neglect will not be measured.

Payment

00660.90 Payment - The accepted quantities of LCB will be paid for at the Contract unit price, per square yard, for the item "Lean Concrete Base _____ inches Thick". The thickness of the LCB will be inserted in the blank.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for Aggregate, cement, water, or additives.

SP00670 (Special Provisions for the 2024 Book) **(Bidding on or after: 01-01-25 Last updated: 01-22-25)**

SECTION 00670 - CONCRETE PAVEMENT UNDERSEALING

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00670, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00670.00 Scope - This Work consists of undersealing and filling cavities, of portions of existing portland cement concrete (PCC) Pavement by pumping portland cement grout under the Pavement slabs.

Materials

00670.10 Materials - Furnish Materials meeting the following requirements:

Portland Cement Grout 02080.40

Water Reducer (Type A and Type G).....02040.10
Fly Ash 02030.10
Wooden Plugs ..... Commercial quality

Equipment

00670.20 Pump - Provide a pump of sufficient size and capacity to inject grout, fill voids, and stabilize existing concrete Pavement but not cause slabs to change in elevation. Provide an acceptable means of measuring the quantity of grout placed for review and approval by the Engineer. Do not exceed an injection pressure of 250 psi.

00670.21 Drill - Provide a drill capable of cutting holes of the appropriate size for the pump.

00670.22 Movement Detector - Provide Equipment capable of measuring slab lift to the nearest 0.001 inch and that is capable of detecting simultaneous movement of slabs at joints.

Construction

00670.40 Weather Limitations - Do not perform grout undersealing in periods of rain or when water is present on the Pavement surface.

00670.41 Cutting and Cleaning Holes - Drill holes of the size required for the Equipment used at the locations, as shown or directed. Do not drill more holes than can be filled or temporarily plugged the same Day, unless otherwise approved.

Immediately prior to pumping grout into the holes, clean out all drilled holes with compressed air at a minimum pressure of 90 psi. Remove all mud and water from the holes before pumping grout.

00670.42 Pumping Grout and Plugging Holes - Pump grout through holes until all voids are filled, or until one of the following occurs:

- A Pavement slab or portion of a slab begins to rise. Do not raise the slab above the existing grade or 0.08 inch.
- Grouting injection pressure exceeds 250 psi.
- Grout extrudes from adjacent holes, transverse or longitudinal joints, or cracks.
- The Engineer stops undersealing procedure.

Use grout material within 90 minutes of mixing. Grout material held longer than 90 minutes will be rejected.

Temporarily plug the hole until all undersealing in the area has been completed.

Fill and tamp core holes with grout at the completion of undersealing operations.

00670.43 Opening to Traffic - Finish grouting operations and plugging all drill holes at least three hours prior to opening to traffic.

Measurement

00670.80 Measurement -

(Use the following paragraph when Pay Item (a) is included in the Pay Item list below.)

The quantities of drilled holes will be measured on the unit basis.

(Use the following paragraph when Pay Item (b) is included in the Pay Item list below.)

The quantities of grout incorporated in the undersealing work will be measured on the volume basis.

Payment

(Delete the "(s)" or parentheses from the word "item(s)" as appropriate.)

00670.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following item*(*s*)*:

(Delete Pay Item (s) from the list that are not included in the Schedule of Items, but do not change the alpha characters next to the Pay Item s.)

Pay Item	Unit of Measurement
(a) Drilled Holes	Each
(b) Concrete Undersealing Grout	Cubic Yard

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP00680 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-22-25
***This Section requires SP00235*)**

SECTION 00680 - STOCKPILED AGGREGATES

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00680 of the Standard Specifications modified as follows:

(Use the following lead-in paragraph and one of the following subsection .11(c) options for sanding rock. Check with the District Maintenance Manager before using. Modify as needed.)

Add the following subsection:

[Option 1 - Use the following subsection .11(c) when crushed quarry material is required.]

[Begin Option 1]

00680.11(c) Sanding Aggregates - Provide sanding Aggregates meeting the following requirements:

(1) Grading - Furnish clean, hard, and durable Aggregate in stockpiles meeting the following grading requirements:

(Use the following gradation when a coarse crushed quarry material is required.)

Sieve Size	Percent Passing (by Weight)
1/2"	100
3/8"	80 - 95
1/4"	10 - 40
No. 8	0 - 6
No. 40	0 - 2

(Use the following gradation when a fine crushed quarry material is required.)

Sieve Size	Percent Passing (by Weight)
1/2"	100
3/8"	85 - 100
No. 8	0 - 10
No. 40	0 - 2

Perform sieve analysis according to AASHTO T 27.

Scalp the Rock or Gravel material from which the Aggregates are produced on a screen, the entire surface of which has openings not less than 1/2 inch in size. After the material has passed over the scalping screen, it shall contain not more than 5% by weight of material passing the 1/2 inch sieve. If quarry Rock is furnished, apply this requirement to the material after it has passed through the primary crusher. In addition 95% of the quarry Rock shall pass a 8 inch sieve following primary crushing.

(2) Elongated Pieces - Elongated pieces in Aggregate larger than 1/4 inch shall be determined according to ODOT TM 229, with the proportional caliper device set at a ratio of 5:1, and shall not exceed 10 percent by weight of the material retained on the1/4 inch sieve.

(3) Fractured Faces - Provide Aggregates consisting of broken stone, crushed gravel, or a combination of both. Crush Aggregate such that at least 90% by weight of the total

aggregate retained on the No. 8 and larger sieves is fractured on two faces, as determined according to AASHTO T 335.

[End Option 1]

[Option 2 - Use the following subsection .11(c)when cinder material is required.]

[Begin Option 2]

00680.11(c) Sanding Aggregates - Provide cinder sanding Aggregates in stockpiles meeting the following grading requirements:

Sieve Size	Percent Passing (by Weight)
3/4"	100
1/2"	80 - 95
No. 10	25 - 50
No. 100	0 - 16

[End Option 2]

00680.40(a) Source Sites - Replace this subsection, except for the subsection number and title, with the following:

Prepare and develop the source site according to Section 00235.

(Use one of the following subsections .42 when specifying place(s) of delivery. Fill in the quantity, type, stockpile site, and location as appropriate. Delete the language in orange parentheses that does not apply and delete all orange parentheses.)

(Use this .42 when only one stockpile and place of delivery is required.)

00680.42 Places of Delivery - Add the following to the end of this subsection:

Deliver _____ *(*cubic yards*)(*tons*)* of _____ Aggregate, and stockpile at _____, located at _____ as shown.

(Use this .42 when more than one stockpile and place of delivery is required. Modify as needed. Delete the language in orange parentheses that does not apply and delete all orange parentheses.)

00680.42 Places of Delivery - Add the following to the end of this subsection:

Deliver and stockpile Aggregate at the following locations:

Stockpile Site Location	Quantity and Material to be Stockpiled
ODOT Stockpile Site _____ Highway	_____ *(*cubic yards*)(*tons*)* _____(type or size)_____ Rock

MP _____

ODOT Stockpile Site
_____ Highway _____ *(*cubic yards*)(*tons*)* _____(type or size)_____ Rock
MP _____

(Use the following paragraph when filling sanding sheds.)

Fill the sand shed until full. Stockpile remaining material outside the sand shed as directed.

00680.70 Cleaning Up Source Sites - Replace this subsection, except for the subsection number and title, with the following:

Clean up the source sites according to Section 00235.

SP00705 (Special Provisions for the 2024 Book) **(Bidding on or after: 06-01-25 Last updated: 03-03-25)**

SECTION 00705 - EMULSIFIED ASPHALT PRIME COAT AND EMULSIFIED ASPHALT FOG COAT

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00705 of the Standard Specifications modified as follows:

(Use the following subsection .10 when aggregate cover material is required. Delete the language in purple parentheses that does not apply and delete all purple parentheses.)

00705.10 Aggregate Cover Material - Add the following paragraph to the end of this subsection:

Provide *(*Fine Cover*)(*Coarse Cover*)* Aggregate material on this Project.

(Use one of the following options as instructed. Delete the options that do not apply.)

[Option 1 - Use the following subsection .11(c) when polymer modified emulsion is specified in the pavement design report or requested by the Project Manager or District Manager. Fill in the blank with the required grade of emulsified asphalt used on the project]

00705.11(c) Fog Coat - Replace the paragraph that begins "Provide CSS-1…" with the following paragraph:

Provide _____ Emulsified Asphalt for the fog coat.

[Option 2 - Use the following subsection .11(c) when SP00720 is included in the project special provisions.]

00705.11(c) Fog Coat - Replace the paragraph that begins "Provide CSS-1…" with the following paragraph:

Provide CSS-1, CSS-1h, HFRS-P1, CMS-2RA, or HFMS-2RA emulsified asphalt for the fog coat.

[Option 3 - Use the following subsection .11(c) when SP00721 is included in the project special provisions.]

00705.11(c) Fog Coat - Replace the paragraph that begins "Provide CSS-1…" with the following paragraph:

Provide CSS-1, CSS-1h, HFRS-P1, CMS-2RA, or HFMS-2RA Emulsified Asphalt for the fog coat.

00705.40 Season and Weather Limitations - Replace the title of this subsection with "**Weather Limitations".**

(Use the following subsection .43(b) when placing fog coat on existing open graded ACP.)

00705.43(b) Fog Coats - Replace the paragraph beginning "Apply the diluted Emulsified Asphalt…" with the following paragraph:

Apply the diluted Emulsified Asphalt within the range of 0.12 to 0.30 gallons per square yard. The exact rate of application will be determined by the Engineer.

00705.80 Measurement - Add the following to the end of the subsection:

If Emulsified Asphalt is diluted by the asphalt supplier prior to delivery, the quantity measured will be reduced to exclude the weight of the added water.

Measurement for Emulsified Asphalt will not include water added as allowed in 00705.11(c).

00705.90 Payment - Delete the sentence beginning "Item (b) includes water…".

Replace the sentence that begins "Payment will be payment…" with the following sentence:

Payment will be payment in full for furnishing all Materials, mixing Emulsified Asphalt with water, placing all Materials and for furnishing all Equipment labor, and incidentals necessary to complete the Work as specified.

Add the following paragraph to the end of this subsection:

No separate or additional payment will be made for water added prior to delivery by the Supplier or for water added to dilute the Emulsified Asphalt fog coat by the Contractor after delivery from the Supplier.

SP00706 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-22-25)**

SECTION 00706 - EMULSIFIED ASPHALT SLURRY SEAL SURFACING

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use the following lead-in paragraph when none of the following subsections are included in the project.)

Comply with Section 00706 of the Standard Specifications.

(Use the following lead-in paragraph when any of the following subsections are included in the project.)

Comply with Section 00706 of the Standard Specifications modified as follows:

(Use the following subsection .23 when rollers are required.)

00706.23 Rollers - Add the following sentence to the end of this subsection:

This subsection is required on this Project.

(Use the following subsection .48 when rollers are required.)

00706.48 Rolling - Add the following sentence to the end of this subsection:

This subsection is required on this Project.

SP00706 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-22-25)**

SECTION 00706 - EMULSIFIED ASPHALT SLURRY SEAL SURFACING

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All

other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use the following lead-in paragraph when none of the following subsections are included in the project.)

Comply with Section 00706 of the Standard Specifications.

(Use the following lead-in paragraph when any of the following subsections are included in the project.)

Comply with Section 00706 of the Standard Specifications modified as follows:

(Use the following subsection .23 when rollers are required.)

00706.23 Rollers - Add the following sentence to the end of this subsection:

This subsection is required on this Project.

(Use the following subsection .48 when rollers are required.)

00706.48 Rolling - Add the following sentence to the end of this subsection:

This subsection is required on this Project.

SP00710 (Special Provisions for the 2024 Book) **(Bidding on or after: 06-01-25 Last updated: 03-03-25)**

SECTION 00710 - SINGLE APPLICATION EMULSIFIED ASPHALT CHIP SEAL

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00710 of the Standard Specifications modified as follows:

(Use the following subsection .00 when chip seal size is NOT designated on the plans. Delete the parentheses and types that do not apply.)

00710.00 Scope - Add the following paragraph to the end of this subsection:

Provide *(*Fine, Single Size Medium, Graded Medium, Coarse*)* chip seal design type*(*s*)* on this Project.

00710.11 Emulsified Asphalt - Add the following paragraph to this subsection:

(Choose the correct Polymer-Modified or Non-Polymer-Modified emulsified asphalt. It will be specified in the pavement design report. Delete the one that does not apply. Remove the parentheses.)

Provide *(*Polymer-Modified*)(*Non-Polymer-Modified*)* Emulsified Asphalt for this Project.

00710.40 Season and Weather Limitations - Replace the title of this subsection with "**Weather Limitations".**

(Use the following sentence to change hours. Check with the Project Manager for the number of hours that emulsified asphalt and aggregate can be placed before sunset. It may range form 2 - 4 hours, depending on elevation, work in shaded areas, and other conditions.)

In the sentence that begins "Complete the application of…", replace the words "3 hours" with the words " _____ hours".

(Use the following paragraph for Region 3 Projects. Use the previous subsection number and title if above hours are not changed.)

In the sentence that begins "The placing of single…", replace "July 1" with "June 15".

(Use the following paragraph for Region 4 and 5 Projects. Use the previous subsection number and title if above hours are not changed.)

In the sentence that begins "The placing of single…", replace "July 1" with "June 1".

(Use the following subsection .45 to change hours. Check with the Project Manager for the number of hours that courses can be squared up before sunset. It may range form 2 - 4 hours, depending on elevation, work in shaded areas, and other conditions.)

00710.45 Applying Emulsified Asphalt - In the third bullet, replace the words "3 hours" with the words " _____ hours".

Replace the bullet that begins "Place building paper over the treated surface …" with the following bullet:

- At the beginning of each Pass and at each transverse joint, remove excess aggregate from the joint and place building paper over the treated surface to ensure that the nozzles are operating properly before the uncovered surface is reached. Remove and dispose of building paper in a manner satisfactory to the Engineer.

(Use the following subsection .60 if brooming hours are specified.)

00710.60 Power Brooming - In the paragraph that begins "Following the application of…", replace the first sentence with the following sentence:

Between the hours of _____ *(*p.m.*)(*a.m.*)* and _____ a.m. of the Day following the application of the chip seal, carefully broom the entire surface, unless brooming damages the surface, to remove loose aggregate that could damage vehicles.

SP00711 (Special Provisions for the 2024 Book) **(Bidding on or after: 06-01-25 Last updated: 03-03-25)**

SECTION 00711 - PRE-COATED AGGREGATE ASPHALT CHIP SEAL

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00711 of the Standard Specifications modified as follows:

00711.40 Season, Weather and Temperature Limitations - Replace the title of this subsection with "**Weather Limitations"**.

SP00712 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-22-25)**

SECTION 00712 - DRY KEY EMULSIFIED ASPHALT CHIP SEAL

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00712, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00712.00 Scope - This Work consists of applying polymer-modified Emulsified Asphalt and two spreads of graded Aggregates to form a firm, finished surface as shown or directed.

Materials

00712.10 Aggregates - Furnish Aggregates meeting the following requirements:

(a) Size Designation - Furnish the following sizes of Aggregate for the dry key Emulsified Asphalt chip seal:

(Select the chip seal design ("Medium" or "Course") as designated in the Pavement Design Report. Delete the one that does not apply. Always include "Dry Key".)

Chip Seal Design	Size of Screenings
Dry Key	1/4" - 0
Medium	3/8" - 1/4"
Coarse	1/2" - 3/8"

(b) Fractured Faces - Provide Aggregates consisting of broken stone, crushed Gravel, or a combination of both. Crush Aggregate such that at least 90% by weight of the total aggregate retained on the No. 8 and larger sieves is fractured on two faces, as determined according to AASHTO T 335.

(c) Grading - Perform sieve analysis according to AASHTO T 27 and AASHTO T 11. Provide grading for the designated dry key Emulsified Asphalt chip seal design according to the following:

Sieve Size	Coarse 1/2" - 3/8"	Medium 3/8" - 1/4"	Dry Key 1/4" - 0
	Percent Passing (by Weight)		
5/8"	100	–	–
1/2"	85 - 100	100	–
3/8"	0 - 30	80 - 100	100
1/4"	0 - 15	0 - 30	80 - 100
No. 8	0 - 4	0 - 4	5 - 30
No. 200	0 - 2	0 - 2	0 - 2
No. 200 *	0 - 1	0 - 1	–

* in gravels

(d) Unit Mass (Weight) of Aggregate - Provide Aggregate with a minimum unit weight of 90 pounds per cubic foot according to AASHTO T 19.

(e) Soundness - Provide Coarse and Fine Aggregate with a weighted loss not exceeding 12% when subjected to five cycles of the soundness test using sodium sulfate solution according to AASHTO T 104.

(f) Durability - Provide Aggregates meeting the following durability requirements:

Test	Test Method ODOT	Test Method AASHTO	Maximum Values
Abrasion		T 96	30.0%
Degradation (Coarse Aggregate) Passing No. 20 Sieve	TM 208		30.0%

Sediment Height	TM 208	3.0"

(g) Harmful Substances - Provide Aggregates meeting the following harmful substances requirements:

Test	Test Method ODOT	Test Method AASHTO	Limits
Lightweight Pieces		T 113	1.0% maximum
Wood Particles	TM 225		0.1% maximum
Elongated Pieces (Coarse Aggregate at a ratio of 5:1)	TM 229		10.0% maximum
Cleanness Value	TM 227		75 minimum

(h) Taking Aggregates from Agency Stockpiles - When it is specified that Aggregates are to be taken from Agency-controlled stockpiles, take the material in an orderly manner. Do not contaminate the materials. Salvage all material possible from the area which the materials are taken. Shape unused portions of a stockpile to Neat Lines. The Contractor will be charged for materials wasted through negligence or used without written authority.

(i) Stockpiling Contractor-Furnished Aggregates on Agency Property - Aggregates may be temporarily stockpiled at approved sites on Agency property provided the areas used are as small as practicable. Restore the site to its original condition after the materials have been removed. Any contamination during storage or from reloading operations will be cause for rejection.

00712.11 Emulsified Asphalt - Provide HFRS-P1, HFRS-P2, or CRS-2P polymer-modified Emulsified Asphalt as the Contractor elects.

Provide Emulsified Asphalt conforming to the requirement of ODOT's publication *Standard Specifications for Asphalt Materials*. Copies of the publication are available from the ODOT Pavement Services Engineer. The applicable Specifications are those contained in the current publication on the date the Project is advertised. The materials may be conditionally accepted at the source or point of loading for transport to the Project.

Excessive delay in the use of the Emulsified Asphalt or excessive pumping of the Emulsified Asphalt may significantly reduce the viscosity and may make the material unsuitable for chip seal use. For this reason, limit pumping between the bulk storage tank, hauling transportation, field storage tanks and distributor to an absolute minimum to maintain proper viscosity. Final acceptance of Emulsified Asphalt will be at the point of application.

Obtain samples of asphalt according to AASHTO T 40 at the frequency in the MFTP. Samples will be tested at the ODOT Materials Laboratory, or other laboratory as designated by the Agency. Polymer-modified Emulsified Asphalt will be tested within 14 Calendar Days from the day the sample was taken.

00712.15 Aggregate Production Quality Control - Provide quality control during production of Aggregate according to Section 00165. Sampling and Testing shall be performed by a CAgT at the minimum frequency schedule in the MFTP for Section 00710 aggregate.

(a) Quality Control Compliance - Evaluate Aggregates for compliance according to the following:

(1) Gradation - Analyze gradation statistically according to Section 00165. A stockpile contains specification Aggregate when the Pay Factor (PF) for each sieve size calculated according to 00165.40 is equal to or greater than 1.00. Each required sample represents a sublot.

When the results from Table 00165-2 yield a Pay Factor of less than 1.00 for any sieve size, the material is non-specification. The Engineer will reject any stockpile of aggregate containing non-specification material unless the non-specification material is removed from the stockpile. Do not add additional material to such a stockpile until enough non-specification material is removed so that the PF for each sieve size is equal to or greater than 1.00.

(2) Other Tests - Stop production, make appropriate operational adjustments, and remove all failing material from the stockpile whenever a quality control test result, other than sieve analysis, does not meet Specifications. Document operational adjustments made and notify the Engineer prior to resuming production.

(3) Preproduced Aggregate - Compliance of Aggregates produced and stockpiled before the award of this Contract will be determined by either of the following:

- Continuing production records meeting the requirements of 00712.10 and 00712.15.
- Sampling according to AASHTO R 90 and testing the entire stockpile at the minimum frequency schedule in the MFTP. The material shall meet the requirements of 00712.10 and 00712.15.

(b) Materials on Hand - Payment for stockpiled materials on hand may be allowed as described in 00195.60 subject to meeting the requirements of 00712.10 and 00712.15.

00712.16 Acceptance of Aggregate - The Contractors quality control tests will be used for acceptance of Aggregates if verified by the Agency's quality assurance program. The Agency will perform Aggregate production quality assurance according to Section 00165, the MFTP, and the ODOT Quality Assurance Program.

Equipment

00712.20 Equipment - Provide a pressure distributor, hauling vehicles, a minimum of two chip spreaders, compactors, power brooms, and other necessary Equipment to insure efficient operation and construction to meet specified results. Provide Equipment in sufficient number and capacities as will provide coordinated and uniform progress of the work.

Provide two-way radio communication between the asphalt distributor and both chip spreaders.

00712.21 Asphalt Distributor - Provide an asphalt distributor designed, equipped, maintained and operated so the Emulsified Asphalt material may be applied uniformly at even

heat. The distributor shall be capable of applying the asphalt on variable surface widths up to 16 feet at readily determined and controlled rates from 0.05 - 2.00 gallons per square yard, and with uniform pressure. The variation allowed from any specified rate shall not exceed 0.02 gallons per square yard. Provide distributor Equipment that includes a tachometer, pressure gages, accurate volume measuring devices, and a thermometer for measuring temperature of tank contents. Provide distributors equipped with a positive power unit for the asphalt pump and full circulation spray bars adjustable both laterally and vertically. Set the bar height for triple lap coverage.

00712.22 Chip Spreaders - Provide self-propelled chip spreaders equipped with a mechanical device that will spread the Aggregate at a uniform rate across the full width of the chip spreaders. Provide chip spreaders equipped with an aggregate segregator assembly. Chip spreaders without an aggregate segregator assembly may be allowed if approved by the Engineer. Provide chip spreaders of adequate width to provide full coverage of the specified Panel and without placing joints in the travel lanes.

00712.23 Compactors - Provide self-propelled pneumatic-tired or steel-wheeled rollers in good condition and capable of operating at speeds compatible with the chip seal operation. A minimum of two pneumatic-tired rollers and one steel-wheeled roller is required.

(a) Pneumatic-tired Rollers - Provide self-propelled, tandem or multiple axle, multiple wheel type pneumatic-tired rollers with smooth-tread pneumatic tires of equal size. The tires shall be staggered on the axles at such spacings and overlaps that will provide uniform compacting pressure for the full compacting width of the roller. The minimum load per tire shall be 2,800 pounds, with tire inflation pressures of 45 to 90 psi.

(b) Steel-wheeled Rollers - Provide steel-wheeled rollers with a gross static weight of at least 8 Tons.

00712.24 Power Brooms - Provide pickup or non-pickup type power brooms equipped with a positive means to control vertical pressure.

Labor

00712.30 Quality Control Personnel - Provide a technician having CAgT technical certification.

Construction

00712.40 Season and Weather Limitations - Do not apply Emulsified Asphalt when the Pavement temperature is below 70 °F nor if the humidity is higher than 75 percent. Complete the application of the Emulsified Asphalt and the Aggregate three hours before sunset. Remove by milling, or other methods approved by the Engineer, and replace at no additional cost to the Agency, any chip seals damaged by weather during the first 24 hours after application. The placing of dry key Emulsified Asphalt chip seals will not be allowed before June 1 or after August 31.

00712.41 Rate of Progress and Scheduling - Do not apply more chip seal in any one Day than can be broomed the following morning unless approved by the Engineer. Provide a Traffic Control Plan for approval by the Engineer if operations exceed 3 centerline miles or 6 lane miles per Day.

00712.42 Preparation of Underlying Surfaces - Immediately before applying the Emulsified Asphalt, clean and dry the surface to be treated in a manner approved by the Engineer.

00712.43 Sequence of Operations - Construct the dry key Emulsified Asphalt chip seal with a single spread of Emulsified Asphalt followed immediately with a single spread of coarse or medium sized Aggregate as designated in 00712.10(a), followed immediately with a single spread of dry key Aggregate and initial rolling, unless otherwise directed by the Engineer.

00712.44 Application Rates - Apply the Emulsified Asphalt and spread the Aggregates within the following ranges of rates for the specified chip seal design. The exact application and spread rate will be determined by the Engineer.

Chip Seal Design	Emulsified Asphalt Application Rate (Gallon/Sq. Yd.)	Aggregate Spread Rate (Cu. Yd./Sq. Yd.)
Dry Key	–	0.004 - 0.009
Medium	0.40 - 0.70	0.007 - 0.012
Coarse	0.45 - 0.80	0.009 - 0.015

00712.45 Applying Emulsified Asphalt - Apply Emulsified Asphalt at the rates specified in 00712.44 and according to the following:

- Apply the Emulsified Asphalt working toward the Aggregate stockpile at all times unless otherwise approved by the Engineer.
- Leave a minimum of 200 gallons of Emulsified Asphalt in the distributor tank at all times.
- Do not apply Emulsified Asphalt to more than one-half the width of the travel way at one time with the remaining width remaining open to traffic. Do not close the open lane until traffic controlled by pilot car is operating on the new chip seal. Apply the chip seal, weather permitting, to both sides of the travel way so the work is squared up three hours before sunset.
- Do not apply Emulsified Asphalt a greater distance than can be immediately covered by aggregates before the emulsion breaks.
- Place building paper over the treated surface at the beginning of each spread to ensure that the nozzles are operating properly before the uncovered surface is reached. Remove and dispose of building paper in a manner satisfactory to the Engineer.
- If requested by the Engineer, demonstrate that the distribution of the Emulsified Asphalt does not vary between the individual nozzles by more than 15 percent transversely from the average and no more than 10 percent longitudinally from the specified rate of application.
- Apply the Emulsified Asphalt at a temperature between 140 °F and 185 °F as recommended by the manufacturer.

00712.46 Hauling and Spreading Aggregates - Spread Aggregates at the rates specified in 00712.44.

Do not operate hauling and spreading Equipment on uncovered Emulsified Asphalt. During the first hour after application of the Emulsified Asphalt and Aggregate, operate at speeds no more than 10 mph and after the first hour, not more than 15 mph until otherwise permitted by the Engineer. Carefully operate hauling Equipment at all times in a prudent manner and at moderate speeds that will not damage the new chip seal or create a hazard to the traveling public. Route hauling Equipment and pilot lines as uniformly as possible over the full width of the new surface in place.

Calibrate the gate opening, gear selection, and engine RPM for each of the two required chip spreaders for the various sizes of Aggregate to be used. Following calibration, verify the rate of application in a means acceptable to the Engineer.

Immediately following the application of the Emulsified Asphalt, cover the surface with coarse or medium sized Aggregate followed by placement of the dry key Aggregate unless otherwise authorized by the Engineer. Maintain the rate of spread of this Aggregate within 10 percent of specified rate. Remove or repair, by methods approved by the Engineer, Emulsified Asphalt that has set or "broke" before being covered with both spreads of Aggregate, at no additional cost to the Agency.

Aggregates will be surface damp at the time of application. Excess free water (water not adhering to the Aggregate surface) on the Aggregate will not be permitted.

Do not operate the chip spreader at speeds which cause the Aggregates to roll over after striking the emulsion covered surface.

Provide coverage without gaps or overlapping adjacent coverages. Do not construct longitudinal joints within the travel lanes.

Construct neat transverse cut off of Aggregates and remove any excess Aggregates from the surface prior to resuming operations.

00712.47 Shaping and Compacting - After the Aggregates have been placed on the Emulsified Asphalt, spread or remove all piles, ridges, or uneven distribution to ensure against rough spots in the final surface.

Compact the surface with a minimum of two coverages with a pneumatic-tired roller and one coverage with a steel-wheeled roller immediately behind the second chip spreader. Continue compacting until the material is interlocked, firm, and partially bound with the underlying Emulsified Asphalt. The sequence of roller coverages may be adjusted at the discretion of the Engineer.

Operate rollers at speeds such that the rollers do not pick up Aggregates from the surface. Do not exceed rolling speeds of 5 mph.

In the event Aggregates begin to pick up under traffic or from the rolling operation, immediately cover and roll the area with additional quantities of Aggregate.

Maintenance

00712.60 Power Brooming - Following the application of the chip seal, carefully broom the entire surface to remove loose Aggregate. Discontinue the operation if brooming damages the chip seal. Use a minimum of two power brooms.

(Fill in the blanks for the designated brooming hours below as recommended by the Project Manager. Verify that the brooming hours are within the lane restrictions in 00220.40(e)(1).)

Between the hours of _____ p.m. of the Day of and _____ a.m. of the Day following the application of the dry key Emulsified Asphalt chip seal, the entire surface shall be carefully broomed, unless brooming damages the chip seal, to remove loose Aggregate that could damage vehicles. The time period for brooming may be adjusted by the Engineer.

Subsequent brooming the following two Days may be directed by the Engineer to ensure that the surface is free of loose Aggregate that could cause vehicle damage.

In curbed areas, use a pick-up type power broom. On Bridges, sidewalks, and other areas off the Roadway, remove all loose Aggregates to the satisfaction of the Engineer.

Measurement

00712.80 Measurement - The quantities of Aggregate will be measured on the volume basis in the hauling vehicle.

(Fill in the quantities in the blanks below. Always include "Dry Key". Select either "Medium" or "Coarse", and delete the one that does not apply. Include either metric or English quantities as appropriate. Be sure quantities add up to the total Pay Item quantity.)

The estimated quantities of Aggregates are:

Type	Cubic Yard
Dry Key	
Medium	
Coarse	

The quantities of Emulsified Asphalt will be measured on the weight basis.

(Use the following paragraph when approaches are paid for separately.)

The quantities of dry key Emulsified Asphalt chip seal of connections to public roads and streets, on approaches to private properties, guardrail flares, and mailbox turnouts will be measured on the unit basis.

(Use the following paragraph when the number and location of connections, approaches, guardrail flares, and mailbox turnouts are not shown on the plans. Fill in the blank with the number of approaches and list them below the paragraph.)

There are approximately ____ connections, approaches, guardrail flares, and mailbox turnouts located within the limits of the Project as follows:

•
•
•

Payment

(Delete the "(s)" or parentheses from the word "item(s)" as appropriate.)

00712.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following item*(*s*)*:

(Delete Pay Item(s) from the list that are not included in the Schedule of Items, but do not change the alpha characters next to the Pay Items.)

Pay Item	Unit of Measurement
(a) Aggregate in Dry Key Emulsified Asphalt Chip seal.....	Cubic Yard
(b) Asphalt in Dry Key Emulsified Asphalt Chip seal	Ton

(Include Pay Item (c) when approaches are paid for separately.)

(c) Extra for Dry Key Emulsified Asphalt Chip seal Approaches .Each

(Use the following paragraph when approaches are paid for separately.)

Item (c) applies to the extra costs of placing the asphalt and Aggregates in dry key Emulsified Asphalt chip seals on connections, approaches, guardrail flares, and mailbox turnouts. Payment will be in addition to payment made for the Materials used in the Work.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for preparing the road surface, placing the materials in final position, or brooming.

(Use the following paragraph when approaches are incidental.)

No separate or additional payment will be made for dry key Emulsified Asphalt chip seal of connections, approaches, guardrail flares, or mailbox turnouts.

SP00715 (Special Provisions for the 2024 Book) **(Bidding on or after: 06-01-25 Last updated: 03-03-25)**

SECTION 00715 - MULTIPLE APPLICATION EMULSIFIED ASPHALT SURFACE TREATMENT

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with to Section 00715 of the Standard Specifications modified as follows:

(Use the following subsection .00 when surface treatment is NOT designated on the plans. Delete those that do not apply. Remove "(s)" or parentheses as appropriate.)

00715.00 Scope - Add the following to the end of this subsection:

Provide the following surface treatment(s) on this Project:

Fine Double Chip Seal
Medium Double Chip Seal
Type E-9 Oil Mat
Type E-11 Oil Mat

00715.11 Emulsified Asphalt - Add the following paragraph to this subsection:

(Choose the correct Polymer-Modified or Non-Polymer-Modified emulsified asphalt. It will be specified in the pavement design report. Delete the one that does not apply. Remove the parentheses.)

Provide *(*Polymer-Modified*)(*Non-Polymer-Modified*)* Emulsified Asphalt for this Project.

00715.40 Season and Weather Limitations - Replace the title of this subsection with "**Weather Limitations".**

(Use the following sentence to change hours. Check with the Project Manager for the number of hours that emulsified asphalt and aggregate can be placed before sunset. It may range from 2 - 4 hours, depending on elevation, work in shaded areas, and other conditions.)

In the sentence that begins "Complete the application of…", replace the words "3 hours" with the words "_____ hours".

(Use the following sentence for Region 3 Projects. Use the previous subsection number and title if above hours are not changed.)

In the sentence that begins "The placing of multiple…", replace "July 1" with "June 15".

(Use the following sentence for Region 4 and 5 Projects. Use the previous subsection number and title if above hours are not changed.)

In the sentence that begins "The placing of multiple…", replace "July 1" with "June 1".

(Use the following subsections .42(a) and .43 to change hours. Check with the Project Manager for the number of hours that courses can be squared up before sunset. It may range from 2 - 4 hours, depending on elevation, work in shaded areas, and other conditions.)

00715.42(a) Type E-9 and E-11 Oil Mats - Throughout this subsection, replace the words "3 hours" with the words " _____ hours".

00715.43 Applying Emulsified Asphalt - In the third bullet, replace the words "3 hours" with the words " _____ hours".

SP00718 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-22-25)**

SECTION 00718 - HYDRATED LIME SLURRY IN COLD-IN-PLACE RECYCLING

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00718, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00718.00 Scope - This Work consists of producing hydrated lime slurry at the job site and incorporating the hydrated lime slurry into milled RAP.

Materials

00718.10 Lime - Use high calcium hydrated lime slurry in RAP conforming to the hydrated lime specification ASTM C 1097 or AASHTO M 303. If granular quicklime is used to manufacture the hydrated lime slurry, use 3/8" - 0 material conforming to ASTM C 977.

00718.11 Water - Provide water meeting the requirements of 00340.10.

Equipment

00718.20 Lime Slurry Plant - Use mixing Equipment specifically designed for production of hydrated lime slurries. Equip plants with scales and meters to accurately proportion lime and water within 0.5 percent by weight.

00718.21 Lime Metering - Introduce the hydrated lime slurry at the mill head as specified by the Engineer by weight of the RAP material. Calculate the weight of the RAP material by

pounds per cubic foot for volume of cut. Use a metering device to accurately measure the amount of hydrated lime slurry required to within ± 10 percent.

00718.22 Lime Feed Tank - Use agitators or similar Equipment to keep the hydrated lime slurry in suspension when held in the lime slurry feed transport tank.

Keep the hydrated lime slurry in suspension during transport using similar agitator Equipment.

Construction

00718.40 Incorporation of Lime and Water - Produce hydrated lime slurry with the required amount of water to provide a uniform pumpable consistency and that is uniformly incorporated into the RAP at the specified percentage.

Apply hydrated lime at the rate of 1.5 percent by weight of the RAP material.

00718.41 Acceptance - Acceptance of hydrated lime will be as follows:

(a) Chemical Composition - Provide chemical certificates of compliance at the Engineers request.

(b) Solids Content - Provide batch logs and solids content for each mixed load.

Measurement

00718.80 Measurement - The quantity of lime will be measured on the weight basis and will be limited to the dry weight of dry lime used to prepare lime slurry incorporated in the Work at the rate and in the quantity specified or directed.

Payment

00718.90 Payment - The accepted quantities of dry lime used to prepare lime slurry will be paid for at the Contract unit price, per Ton, for the item "Hydrated Lime in CIR".

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for lime that is lost, displaced, used in reworking, used in restoration work, or which is used contrary to the Specifications or for water used in the work.

SP00719 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-22-25)**

SECTION 00719 - PRE-RECYCLE LIME TREATMENT

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple

text] above a subsection, paragraph, sentence, or bullet, then include it in the project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00719, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00719.00 Scope - This Work consists of applying dry quicklime to the existing Pavement surface and slacking with water at the recycling Equipment at locations shown or specified.

Materials

00719.10 Lime - Provide 3/8" - No. 8 granular quicklime in dry form meeting the requirements of 02090.10.

Store the lime in a manner that keeps it dry and free from moisture absorption.

00719.11 Water - Provide water meeting the requirements of 00340.10.

Equipment

00719.20 Equipment - Provide a lime spreading vehicle and a separate lime watering truck in addition to the Equipment required for the recycling process. Do not use blade graders. Ensure the Equipment uniformly distributes the lime. Discontinue use and remove Equipment that results in excessive loss or displacement of the lime.

Construction

00719.40 Weather Limitations of Lime Treatment - Do not perform lime treatment work during freezing weather, during windy conditions, or during other weather conditions that are detrimental to the work.

00719.41 Incorporation of Lime and Water - Apply quicklime in dry form to the existing Pavement immediately ahead of the recycling operation at a uniform rate of 1.5% by weight of material and a distance established by the Engineer. Before being recycled, slack the lime with water at a rate determined by the Engineer.

When applying quicklime in the dry form, take all precautions necessary to prevent injury to persons and livestock. Immediately pick up, bury or slack with water any quicklime that is spilled or deposited at places other than on areas designated to be treated.

Replace quicklime that is lost or displaced by blowing, washing, or other causes at no additional cost to the Agency.

Except for Equipment that is used for watering and for applying the lime, no other Equipment is permitted to pass over the spread lime until it is recycled.

Measurement

00719.80 Measurement - The quantities of quicklime will be measured on the weight basis and will be limited to the dry weight of quicklime lime incorporated in the work at the rate and in the quantity specified or directed.

Payment

00719.90 Payment - The accepted quantities of quicklime will be paid for at the Contract unit price, per Ton, for the item "Lime for Treated Recycle".

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for quicklime that is lost, displaced, used in reworking, used in restoration work, or which is used contrary to the Specifications or for water used in the work.

SP00720 (Special Provisions for the 2024 Book)

(Bidding on or after: 05-01-25
Last updated: 01-22-25
This Section requires SP00705 and SP00730. Requires SP00710 or SP00715 if a chip seal is required over the CIR.)

SECTION 00720 - COLD IN-PLACE RECYCLED ASPHALT CONCRETE PAVEMENT (CIR)

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00720, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00720.00 Scope - This Work consists of constructing Cold In-place Recycled Asphalt Concrete Pavement (CIR) using Class I and Class II Recycling Treatments in reasonably close conformity to the lines, grades, thicknesses, and Cross Sections shown or established.

00720.01 Abbreviations:

CIR - Cold In-Place Recycled Asphalt Concrete Pavement

00720.02 Definitions:

Cold In-place Recycled Asphalt Concrete Pavement - CIR is a mixture of RAP, which has been removed and mixed with a Recycling Agent and water, then relaid and compacted in a continuous operation.

Class I Recycling Treatment - Class I Recycling Treatment is performed on a uniform Pavement, previously designed and built to Specifications. The CIR Mixture produced under Class I is based on a rational mix design method.

Class II Recycling Treatment - Class II Recycling Treatment is performed on either a Pavement with significant maintenance patches over a uniform Pavement or a Pavement with minimal design used in the original construction. The CIR Mixture produced under Class II is less uniform than for Class I and is based on either a rational mix design method or mix design guidelines.

Mixture - Cold in-place recycled asphalt concrete after all Materials are combined and mixed.

Panel - The width of CIR Material being removed and placed by the recycling train or single processing unit in a single Pass.

Recycling Agent - Material added to RAP to soften and rejuvenate existing asphalt Material.

00720.05 Prepaving Conference - Any supervisory personnel of the Contractor and any Subcontractor who are to be involved in the recycle and paving work shall meet with the Engineer, at a time mutually agreed upon, to discuss methods of accomplishing all phases of the recycle and paving work.

Materials

00720.11 Recycling Agent and Water - Furnish Recycling Agent and water meeting the following requirements:

(a) Recycling Agent - Either CMS-2RA or HFMS-2RA that has been manufactured from new Materials and meets the requirements of 00745.11.

(b) Water - Water conforming to 00340.10.

(Use one of the following 00720.12 subsections. Check with Designer on which one to use. Delete the one that does not apply.)

00720.12 Reclaimed Asphalt Pavement (RAP) - Recycling Train - Recycled Material removed from the existing asphalt Pavement using a Recycling Train shall have a maximum size of 1 1/2 inches prior to entering the mixer unless otherwise directed. Separate any recycled Material larger than 1 1/2 inches by screening or by other means, broken down by mechanical means to pass a 1 1/2 inch sieve and uniformly reincorporated with the balance of the recycled Material.

00720.12 Reclaimed Asphalt Pavement (RAP) - Single Processing Unit - Recycled Material removed from the existing asphalt Pavement using a Single Processing Unit shall have a maximum size of 2 inches. Incidental oversize may be allowed if it is not detrimental to the Mixture or wearing surface. If the gradation is determined to be detrimental, take such action necessary to correct the oversize problem. These actions may include reducing the milling speed, adjusting the crusher, changing screen size (when screens are used), or other such measures as may be necessary. Failure to provide an acceptable product will cause a rejection of any unsuitable Equipment.

[End Options]

00720.13 Job Mix Formula (JMF) - Provide a CIR Mixture that consists of RAP from the existing Pavement, Recycling Agent, and water combined in the proportions designated by the Engineer. Variability in the composition of the RAP Material may require changes in the proportions of the constituents, as directed. Normally, the Recycling Agent content will be between 0.1% and 1.8%, by weight, and water between 1.0% and 3.0% by weight.

00720.15 Process Control - Process control sampling and testing will be performed by the Engineer.

00720.16 Acceptance of Mixture - The CIR Mixture will be accepted visually on the road following initial rolling. Correct any Mixture not acceptably mixed or that ravels as follows:

Reprocess or replace any area showing an excess or a deficiency of Recycling Agent. If raveling occurs, provide immediate traffic control. Provide additional fog coat, Aggregate cover Material, and rolling as directed.

Provide traffic control for rerolling, reprocessing, or replacement according to the Engineer. If the Engineer determines the excesses, deficiencies, or raveling are not due to the Contractor's operations, the Work will be paid for under the appropriate Pay items listed in the Schedule of Items. If the Engineer determines the excesses, deficiencies, or raveling are due to the Contractor's operations, the corrective work will be at no additional cost to the Agency.

Equipment

00720.23 Asphalt Concrete Pavers - Pavers shall comply with the following:

(a) Power and Support - Self-contained, self-propelled, supported on tracks or wheels, none of which contact the Mixture being placed.

(b) Augers and Screed - Equipped with augers and a screed or strike-off assembly, heated if necessary, which:

- Provide extensions used on travel lanes, with the same auguring, screeding, and heating Equipment as the rest of the paver.
- Can spread and finish CIR to a uniform texture, in the specified widths, thicknesses, lines, grades, and Cross Sections.
- Will not segregate, tear, shove, or gouge the CIR.

(c) Control System - Equipped with a paver control system which:

- Controls CIR placement to specified Slope and grade.
- Maintains the paver screed in proper position.
- Provide specified results through mechanical sensors and sensor-directed devices actuated from independent line and grade control references.

00720.24 Compactors - Provide specified self-propelled rollers capable of reversing without backlash, as follows:

(a) Steel-Wheeled Rollers - Steel-wheeled rollers shall have:

- A gross static weight of at least 8 Tons.
- A static weight on the drive wheel of at least 250 pounds per inch of width.

If steel-wheeled rollers are used for finish rolling, they shall have:

- A gross static weight of at least 6 Tons.
- No drive wheel static weight requirement.

(b) Vibratory Rollers - Vibratory rollers shall be:

- Equipped with amplitude and frequency controls.
- Specifically designed to compact asphalt concrete.
- Capable of at least 2,000 vibrations per minute.

If vibratory rollers are used for Pavement thickness less than 1 1/2 inches, they shall:

- Have a gross static weight of at least 8 Tons.
- Have a static weight on the drive wheel of at least 250 pounds per inch of width.
- Not be operated in vibratory mode.

If vibratory rollers are used for finish rolling, they shall:

- Have a gross static weight of at least 6 Tons.
- Not be operated in the vibratory mode.

(c) Pneumatic-tired Rollers - Pneumatic-tired rollers shall:

- Be tandem, or multiple axle, multiple wheel type.
- Have smooth-tread, pneumatic tires of equal size.
- Have tires staggered on the axles, spaced and overlapped to provide uniform compacting pressure for the full compacting width.
- Have a minimum total load of 2,800 pounds per tire with tire inflation pressure of 45 psi to 90 psi.

(Use one of the following 00720.26 subsections. Check with Designer for correct one. Delete the one that does not apply.)

[Begin Recycling Train Option Subsection .26]

00720.26 Equipment - Recycling Train - Recycle the existing Pavement using a recycling train consisting of the following major components:

(a) Planing Machine or Grinder - Remove the existing Pavement by a self-propelled planing machine having a minimum 12 foot wide rotary cutter and capable of removing the existing Pavement to a depth of 4 inches in a single Pass.

The unit shall be capable of accurately establishing profile grades within a tolerance of 1/4 inch by reference from either the existing Pavement or from independent grade control, and have a positive means for controlling cross slope elevations. The Equipment shall incorporate a totally enclosed cutting drum with replaceable cutting teeth and have an effective means for removing excess Material from the surface and for preventing dust from escaping into the air. The use of a heating device to soften the Pavement will not be permitted.

Equip the unit to discharge water into the mixing chamber, with fully variable control and meter capable of measuring the rate of feed within 5 gallons per minute.

(b) Crusher - Provide a portable type crusher capable of reducing the oversized RAP Materials to the specified size.

(c) Pug Mill Mixer - Mix the CIR Mixture in a pug mill type plant capable of providing a mix of RAP, Recycling Agent, and water to uniform proportions.

Equip the pug mill with a liner to prevent build-up of Materials during the mixing operation.

Equip mixing plants with a positive control linking the RAP, Recycling Agent, and water feed in a manner that will maintain a constant ratio of each constituent. Equip the plant with facilities so that the Contractor can verify and calibrate the RAP, Recycling Agent, and water quantities by a method acceptable to the Engineer.

Measure the RAP by weight. The Recycling Agent and water may be proportioned by either weight or volume. The Equipment shall be capable of feeding and maintaining a constant rate of RAP feed within a tolerance of plus or minus 5% by weight or the designated amount and a constant rate of Recycling Agent and water feeds within $\pm$ 0.2% by weight of the designated amounts.

Equip the mixing plant with positive displacement pumps and a computerized metering system which can accurately meter the amount of Recycling Agent and water. The pumps shall be an interlocked belt weighing system that measures the quantity of RAP Material entering the mixing plant. Design the interlock so that Recycling Agent and water cannot be added until RAP Material enters the mixer. Equip overrides of the interlock system with short duration timers to prevent their continuous use. Use overrides only during start-up periods.

Provide readouts for the belt weighing device and computerized metering system that indicate the quantity, in Tons, of RAP, water, and Recycling Agent being fed into the mixer at any given time. Provide totalizer readouts to allow determination of accumulative quantities of each constituent.

[End Recycling Train Option Subsection .26]

[Begin Single Processing Unit Option Subsection .26]

00720.26 Equipment - Single Processing Unit - Process the existing Pavement according to the following:

(a) Planing Machine - Remove the existing Pavement by a self-propelled planing machine having a minimum 12 foot wide rotary cutter and capable of removing the existing Pavement to a depth of 4 inches in a single Pass.

The unit shall be capable of accurately establishing profile grades within a tolerance of 1/4 inch by reference from either the existing Pavement or from independent grade control, and have a positive means for controlling cross slope elevations. The Equipment shall incorporate a totally enclosed cutting drum with replaceable cutting teeth and have an effective means for removing excess material from the surface and for preventing dust from escaping into the air. The use of a heating device to soften the Pavement will not be permitted.

In addition, the planing machine shall be capable of adding Recycling Agent and water to the RAP in amounts that produce a uniform Mixture.

Use positive displacement pumps that can accurately meter the planned amount of Recycling Agent and water into the pulverized asphalt concrete. The pumps shall be interlocked to the movement of the machinery used to apply the Recycling Agent and water to provide that no Recycling Agent or water can be added when the machinery is not moving.

Provide positive readout capabilities to the Recycling Agent and water feeds so that the amount of Recycling Agent and water in Tons incorporated into at any given time can be read directly. Provide totalizer readouts to allow determination of accumulative quantities of water and Recycling Agent used in the Mixture.

(b) Recycling Agent Storage and Heating Tanks - Equip storage tanks with accurate volume measuring devices or manufacturer's calibration charts for each storage tank and a thermometer for measuring the temperature of tank's contents.

Use a parallel piping filter system with at least one filter per line between the storage tanks and the liquid asphalt mixing device or recycling Equipment. Filters shall be capable of eliminating solid or semi-solid particles from the Recycling Agent liquid.

Equip each filtering line with on/off valves and changeable filter elements.

Alternately route the Recycling Agent through each filter line for a period of 2 to 4 hours, and alternate filters changed on the same frequency unless otherwise directed.

Loads of Recycling Agent which break prematurely in the storage tanks or haul vehicles or which cause frequent plugging of the filters will be rejected.

[End Single Processing Unit Option Subsection .26]

Construction

00720.40 Season and Weather Limitations - Do not begin in-place recycling of existing asphalt concrete Pavement until the Pavement surface temperature is 70 °F and rising. The construction of CIR will not be allowed before May 15 or after August 1, except the Engineer may approve a start-up prior to the Pavement surface temperature reaching 70 °F under the following conditions:

- The Engineer receives a written request for an early start.
- The Contractor assumes all financial responsibility for correction of raveling problems with the CIR Mixture during the early start period. This includes, but is not limited to the cost of complete recycling, additional fog and cover Aggregate Material, rollers, pilot cars, and flaggers.

Stop CIR work at the end of each Day when the temperature of the Mixture behind the paver drops below 90 °F or 3 hours before sunset, whichever occurs first.

Reprocess or repair by other methods all Pavement that is damaged by rain after placement, at the no additional cost to the Agency.

If recycling and placement operations are not completed by August 1, operations will not be allowed to resume until May 15 of the following year.

00720.41 Rate of Progress and Scheduling - Plan and schedule the recycle operation in such a manner that the Materials are removed, mixed, replaced, and the area open to traffic immediately after initial compaction is completed.

Completely backfill all recycled areas with reprocessed and compacted asphalt concrete Materials so the area is open to two-way traffic during all hours of darkness.

00720.42 Preparation of Underlying Surfaces - Perform the following to underlying surfaces:

(a) Panel Recycling (less than 12 feet wide) with Aggregate Shoulders - Blade existing Aggregates in Shoulder areas away from milling operation so that Shoulder Aggregates are not mixed with Pavement millings.

(b) All Projects:

(1) Removing Fines - Minimize the amount of fines on the milled surface that can be detrimental to a proper bond of the tack coat. If excess fines are on the milled surface, remove by brooming or other method acceptable to the Engineer.

(2) Tack - Just prior to windrowing the recycled Pavement Mixture, apply tack coat according to Section 00730 to the entire profiled area including the vertical edges. Apply the tack at the rates established by the Engineer.

00720.43 Heating Recycling Agent and Water - The temperature of the Recycling Agent prior to entry into the Mixture shall be not less than 125 °F nor more than 185 °F.

The temperature of the water just prior to entry into the Mixture shall be not less than 100 °F.

00720.44 Mixing - Utilize and operate all the various required components of the asphalt concrete mixer in a manner to assure compliance with this Section.

Measure and introduce RAP, Recycling Agent, and water into the mixer in the amounts specified in the JMF and as designated. Continue mixing until the Recycling Agent and water have been distributed throughout the RAP to form a uniformly coated Mixture.

00720.46 Control of Line, Grade, and Milling Depth - Use a floating beam device of adequate length and sensitivity to provide adequate line and grade reference control on either or both sides of the paver.

Perform milling at the depth shown unless otherwise directed. Replace all areas of Pavement with deficient asphalt coating caused by excessive milling depth at no additional cost to the Agency.

00720.48 Spreading and Placing - Except for unavoidable delay or breakdown, recycle and place recycled Pavement by the paving machine at a rate sufficient to provide continuous operation of the paving machine. If paving operations result in excessive stopping of the paving machine suspend the recycling and paving operations until the synchronization of the rate of recycle with the capacity of the paving machines can be achieved.

Lay the Mixture on an approved surface, spread, and strike off to established grade and elevation. Use the specified asphalt pavers to distribute the Mixture.

Deposit the CIR Mixture in a windrow, then pick the Mixture up and place it in the asphalt paver.

Use self supporting loading Equipment that does not exert any vertical load on the paving machine or cause vibrations or other motions which could have a detrimental effect on the riding quality of the completed Pavement. The loading Equipment shall pick up substantially all of the Material deposited on the road and place it directly into the receiving hopper of the paving machine.

In areas where Patching, irregularities, or unavoidable obstacles make the use of specified Equipment impracticable, the Mixture may be spread with special hopper Equipment with adjustable strike-off or by other approved Equipment or means, provided the surface finish is within a tolerance of 1/4 inch.

00720.49 Compaction - Compact the CIR as follows:

(a) General - Immediately after the CIR has been spread, struck off, and surface irregularities and other defects remedied, roll it uniformly until compacted as specified.

(b) Rolling - Compact CIR with rollers conforming to 00720.24. Provide sufficient rollers of types appropriate to compact the Mixture while it is in a workable condition. Operate rollers at a uniform speed not more than 3 mph with the drive roll or wheels nearest the paver.

Begin rolling at the sides and proceed longitudinally, parallel to the road centerline, gradually progressing to the center, unless otherwise directed. On superelevated curves, begin rolling at the low side and progress to the high side. When paving in echelon, or when abutting a previously paved lane, roll the longitudinal joint first, followed by the regular rolling pattern.

Do not make sharp turns or park rollers on the CIR. Stop each pass at least 5 feet longitudinally from preceding stops. Do not displace the line and grade of edges. Prevent CIR from sticking to the wheels and spotting or defacing the CIR by wetting them with a minimum of water or other approved Material.

(1) Breakdown Rolling - Use vibratory, steel-wheeled rollers. Make at least three complete roller Coverages.

(2) Intermediate Rolling - Use a self-propelled, pneumatic-tired roller following the placement of fog coat and Aggregate cover Material. Make at least two complete roller Coverages with the pneumatic-tired roller immediately following application of Aggregate cover Material.

(3) Finish Rolling - Use nonvibratory, tandem-wheeled steel rollers, and continue until roller marks are eliminated.

00720.50 Fog Coat and Aggregate Cover Material - After the breakdown rolling but before the intermediate rolling begins, apply a fog coat and Aggregate cover Material according to Section 00705 and the following:

- Place Aggregate cover Material at a rate of approximately 0.001 to 0.003 cubic yards per square yard immediately before the intermediate roller Coverage.
- Remove all piles, ridges, or uneven distribution of Aggregate cover Material by spreading or removing with hand tools or mechanical means before the final roller Coverage.

(Use the following subsection .51 if a chip seal is required over the CIR. Delete "(00710)" or "(00715)"and delete all parentheses.)

00720.51 Chip Seal - After the CIR has been placed and has cured at least 14 Calendar Days, chip seal the surface according to Section *(*00710*)(*00715*)*.

Maintenance

00720.60 Surface Repair - Correct any displacement of the mat regardless of thickness occurring as a result of the roller reversing or changing direction, or from other causes. Moisten steel roller wheels with water or other approved Material to the least extent necessary to prevent pickup of Mixture.

When the rolling causes undue tearing, displacement, cracking, or shoving, make changes in compaction Equipment or rolling procedures in order to alleviate the problem.

00720.62 Joints:

(a) Drop-offs - Prior to any suspension of operations at the end of each shift, complete the full width of the area to be paved, including outside Shoulders, to the same elevation with no longitudinal drop-offs.

If unable to complete the Pavement without longitudinal drop-offs do the following:

- Construct and maintain a wedge of asphalt concrete within the specified time constraints at a Slope of 1V:10H or flatter along the exposed longitudinal joint. Longitudinal joints 1 inch or less will not require a wedge.
- Remove and dispose of the wedge before continuing paving operations.
- Construct, maintain, remove, and dispose of the temporary wedge at no additional cost to the Agency.

Where allowable abrupt or sloped drop-offs occur within or at the edge of the paved surface, provide suitable warning signs as required under Section 00222.

(b) Finishing and Details - Take special care at longitudinal joints to provide positive bond and to provide density and finish to new Mixture equal in all respects to the Mixture against which it is placed.

00720.66 Cure - Allow the CIR to cure at least 14 Days (3 Days when lime slurry is used) after laydown before placing EAC or ACP Lift.

Finishing and Cleaning Up

00720.70 Pavement Smoothness:

(a) Single Course CIR Construction - Test the top surface of CIR with a 12 foot straightedge parallel to and perpendicular to the centerline, as directed. The Pavement surface shall not vary by more than 1/4 inch.

(b) Multiple Course CIR and EAC or HMAC Construction - Test the top surface of the CIR Course on which the EAC or ACP wearing Course is placed according to 00720.70(a) above.

Test the EAC or ACP wearing surface with the rolling straightedge in the designated wheel path of a 0.1 mile strip of each travel lane per mile, where directed, and on each transverse joint throughout the Project. Operate the rolling straightedge parallel to the centerline. The surface shall not vary more than 0.015 foot.

Also test the EAC or ACP wearing surface with a 12 foot straightedge placed perpendicular to the centerline at least once within the above-mentioned 0.1 mile strip. It shall not vary by more than 1/4 inch.

If the 0.1 mile testing strip meets the Specifications, no further testing of the mile represented by the testing strip will be required, except at the transverse joints. If any part of the testing strip does not meet the Specifications, test both wheel paths of the entire mile.

Perform Pavement smoothness testing within 24 hours of paving and after corrections of Pavement roughness.

00720.75 Correction of Pavement Roughness - Correct the surface roughness to the required tolerances without damaging the Pavement. Use one of the following methods as approved:

- Patch low lying areas with hot mix asphalt.
- Blade high areas to remove excess Material.
- Reroll high areas to compact excess Material.
- Remove and replace the wearing surface Lift.
- Diamond grind high areas to remove excess Material.
- Other method acceptable to the Engineer.

Complete correction of all surface roughness within 14 Calendar Days following notification unless otherwise directed.

00720.78 Shoulder Restoration - Restore the Aggregate Shoulder areas to their original condition in all areas where the Aggregate was dislodged, moved, or rutted due to milling and recycle work. The restoration work includes blading and Leveling existing Aggregate Materials as directed.

Measurement

00720.80 Measurement - The quantities of CIR will be measured on the area basis, based on the paved widths and milled depths shown and the horizontal length along the centerline of the recycled Pavement.

No allowance will be made for recycled Pavement that is in excess of the shown paved width and milled depth unless otherwise directed.

No measurement will be made for depths deviating from the Plan depths, unless directed to mill a depth of ± 1/4 inch from the thickness shown on the Plans. In areas where directed to construct CIR to a thickness other than ± 1/4 inch from the specified thickness, the areas will be adjusted by converting, ± 1/4 inch increments, to the equivalent number of square yards of nominal thickness on a proportionate volume basis above or below the specified tolerance limits.

The quantity of Recycling Agent in the CIR Mixture will be measured on the weight basis.

Water used in the Mixture will be measured according to 00340.80.

Fog coat and Aggregate cover Material will be measured according to 00705.80.

Payment

00720.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement
(a) Cold In-Place Recycled Asphalt Concrete Pavement	Square Yard
(b) Recycling Agent in CIR	Ton

Item (a) includes removing, pulverizing the Existing Surfacing, mixing the Materials, and placing, compacting, and finishing the Work as specified.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

Water used in the CIR Mixture will be paid for according to 00340.90.

Fog coat and Aggregate cover Material will be paid for according to 00705.90.

No separate or additional payment will be made for blading, brooming, or Shoulder restoration work.

SP00721 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-22-25
***This Section requires SP00705, SP00710 and SP00730.*)**

SECTION 00721 - COLD RECYCLED EMULSIFIED ASPHALT CONCRETE PAVEMENT (CRP)

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00721, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00721.00 Scope - This Work consists of constructing Cold Recycled Emulsified Asphalt Concrete Pavement (CRP) to the lines, grades, thicknesses, and Cross Sections shown or established.

00721.01 Abbreviations:

CRP - Cold Recycled Emulsified Asphalt Concrete Pavement

00721.02 Definitions:

Cold Recycled Emulsified Asphalt Concrete Pavement - CRP is a mixture of pulverized RAP, recycling agent, and hydrated lime slurry.

00721.05 Prepaving Conference - Any supervisory personnel of the Contractor and any Subcontractor who are to be involved in CRP Work shall meet with the Engineer, at a time mutually agreed upon, to discuss methods of accomplishing all phases of CRP work.

Materials

00721.10 Lime - Furnish granular quicklime meeting the requirements of 02090.10.

00721.11 Recycling Agent and Water - Furnish recycling agent and water meeting the following requirements:

(a) Recycling Agent - Either CMS-2RA or HFMS-2RA recycling agent.

Provide recycling agent conforming to the requirement of ODOT's publication *Standard Specifications for Asphalt Materials*. Copies of the publication are available from the ODOT's Pavement Services Engineer. The applicable Specifications are those contained in the current publication on the date the Project is advertised. The Materials may be conditionally accepted at the source or point of loading for transport to the Project.

Excessive delay in the use of the recycling agent or excessive pumping of the recycling agent may significantly reduce the viscosity and may make the Material unsuitable for CRP use. For this reason, pumping which occurs between the bulk storage tank, hauling transportation, field storage tanks, and mixing plant shall be kept to an absolute minimum. Final acceptance of Emulsified Asphalt will be at the point of application.

Obtain samples according to AASHTO T 40 at the frequency in the MFTP. Samples will be tested at the ODOT Materials Laboratory, or other laboratory as designated by the Agency. Recycling agent will be tested within 30 Calendar Days from the Day the sample was taken.

(b) Water - Water conforming to 00340.10.

00721.12 Reclaimed Asphalt Pavement (RAP) - Reclaimed Material removed from asphalt pavement shall have a maximum size of 1 1/2 inches prior to entering the mixer unless otherwise directed. Remove all recycled Material larger than 1 1/2 inches by screening or by other means. RAP broken down by mechanical means to pass a 1 1/2 inch sieve shall be uniformly reincorporated with the balance of the Material.

00721.13 Job Mix Formula (JMF) - The Engineer will provide the JMF for the CRP. Produce CRP that consists of RAP, recycling agent, dry quicklime, and water combined in the proportions designated by the Engineer. Variability in the composition of the RAP Material may require changes in the proportions of the constituents as directed. Normally, the

recycling agent content will be between 0.1% and 2.0%, by weight and water between 1.0% and 3.0% by weight. Dry quicklime content shall be 1.5% by weight of dry RAP Material.

00721.16 Acceptance of Mixture - The CRP will be accepted visually following initial rolling. Correct any mixture not acceptably mixed or that ravels as follows:

Replace any area showing excess or deficiency of recycling agent. If raveling occurs, provide immediate traffic control. Provide additional CRP, fog coat, Aggregate cover Material, and rolling as directed.

If the Engineer determines the excesses, deficiencies, or raveling are not due to the Contractor's operations, the Work will be paid for under the appropriate Pay items listed in the Schedule of Items. If the Engineer determines the excesses, deficiencies, or raveling are due to the Contractor's operations, the corrective Work will be at no additional cost to the Agency.

The Engineer may perform testing at any time to verify the specified RAP size, recycling agent content, and lime content are being provided. Immediately take corrective action when the Engineer's testing determines specified requirements are not being met.

Equipment

00721.20 CRP Mixing Plant - Produce the CRP at a plant capable of providing a mix of RAP, lime slurry, water and recycling agent at uniform proportions and consistency as designated.

Provide mixing plants with:

- A scalping screen of the appropriate size to keep oversize RAP from entering the mixture.
- A mechanical system for reducing oversize RAP Material to the proper size.
- A twin shaft pugmill for mixing the CRP.
- Positive controls linking the RAP, lime slurry, and recycling agent feed so that constant ratios of recycling agent to RAP and hydrated lime slurry to RAP are maintained.
- Totalizers for RAP, recycling agent and lime.
- A metering device that can determine the percent recycling agent and percent dry quicklime in the mixture at any time the plant is in operation.
- An adjustable recycling agent spray bar.
- A system for mixing dry quicklime and water in the specified proportions to create a hydrated lime slurry prior to mixing with RAP. The system shall be equipped with scales or meters to proportion quicklime and water within ± 0.5%.
- A storage facility for dry quicklime on calibrated load cells capable of determining the amount of dry quicklime incorporated with any selected time period.

Provide Equipment capable of feeding and maintaining a constant rate of RAP within a tolerance of ± 5% by weight of the designated amount, feeding a constant rate of recycling agent within ± 0.5% by weight of the designated amount, and feeding a constant rate of hydrated lime slurry within ± 5% of the designated amount.

Calibrate meters and weighing devices at the mixing plant according to ODOT TM 322 prior to beginning production of CRP.

00721.22 Hauling Equipment - Provide hauling vehicles in good operating condition with tight, clean, metal beds and a cover. Equip beds of hauling vehicles with a positive system to prevent materials from leaking onto the surfaces over which the hauling vehicle travels. If leakage occurs, remove any spilled material and repair any damage according to 00170.82.

Coat the beds with a minimum amount of approved Material to prevent the mixture from adhering to the beds. Do not use diesel oil. Drain excess coating material before loading by raising the truck bed, opening belly dump gates, or operating the conveyor belt, as appropriate.

Do not use vehicles that cause segregation or delay operations.

00721.23 Asphalt Concrete Pavers - Pavers shall comply with the following:

(a) Power and Support - Self-contained, self-propelled, supported on tracks or wheels, none of which contact the mixture being placed.

(b) Augers and Screed - Equipped with augers and screed or strike-off assembly, heated if necessary, which:

- Can spread and finish CRP to a uniform texture, in the specified widths, thicknesses, lines, grades, and Cross Sections.
- Will not segregate, tear, shove, or gouge the CRP.
- Produce a finished surface to specified evenness and texture.

(c) Control System - Equipped with a paver control system which:

- Controls CRP placement to specified slope and grade.
- Maintains the paver screed in proper position.
- Provides specified results through mechanical sensors and sensor-directed devices actuated from independent line and grade control references.

00721.24 Compactors - Provide specified self-propelled rollers capable of reversing without backlash, as follows:

(a) Steel-Wheeled Rollers - Steel-wheeled rollers shall have:

- A gross static weight of at least 12 Tons for breakdown rolling.
- A gross static weight of at least 6 Tons for finish rolling.

(b) Pneumatic-tired Rollers - Pneumatic-tired rollers shall:

- Be tandem, or multiple axle, multiple wheel type.
- Have smooth-tread, pneumatic tires of equal size.

- Have tires staggered on the axles, spaced and overlapped to provide uniform compacting pressure for the full compacting width.
- Have a gross weight of at least 25 Tons.
- Capable of tire inflation pressures of 45 psi to 90 psi.

Construction

00721.40 Season and Weather Limitations - Do not begin placement of Cold Recycled Emulsified Asphalt Concrete Pavement until the Pavement surface temperature is 60 °F and rising. The construction of CRP will not be allowed before May 15 or after August 31.

Stop placement of CRP 3 hours before sunset.

Reprocess or repair by other methods all CRP that is damaged by rain or adverse weather conditions after placement, at no additional cost to the Agency.

00721.41 Rate of Progress and Scheduling - Plan and schedule the CRP operation in such a manner that the Materials are mixed, placed, and the area open to traffic as early as practical after initial compaction is completed.

00721.42 Preparation of Underlying Surfaces - Clean all existing and new Bases, Surfacings, and Pavements in a manner acceptable to the Engineer.

Bring the existing surface to uniformity by Patching irregular or depressed surfaces and potholes with CRP or HMAC thoroughly compacted to conform with the surrounding surface. Prepare individual potholes for Patching by cutting the edges vertically to the depth of the deepest portion of the hole.

Apply a tack coat to the existing surface according to Section 00730 prior to placing CRP.

00721.43 Mixing:

(a) General - Mix the RAP, recycling agent, and hydrated lime slurry until a uniform consistency is obtained. Use the temperature of the recycling agent recommended by the Supplier.

Be aware that both Equipment and process for mixing dry quicklime with water and for mixing hydrated lime slurry with RAP may be patented. See 00170.04.

(b) Production of Hydrated Lime Slurry - Produce the hydrated lime slurry by mixing the specified amount of dry quicklime with the required amount of water to provide a uniform pumpable consistency that is uniformly incorporated into the RAP.

Apply dry quicklime at the rate of 1.5% by weight of dry RAP Material.

00721.44 Control of Line and Grade - Use a floating beam device of adequate length and sensitivity to provide adequate line and grade reference control on either or both sides of the paver. Where this method is impractical, manual control for grade of the paver will be permitted when approved.

00721.45 Hauling, Depositing, and Placing:

(a) Hauling - Deliver the mixture to the paving machine at a rate that provides continuous operation of the paving machine, except for unavoidable delay or breakdown. If excessive stopping of the paving machine occurs during paving operations, the Engineer may suspend paving operations until the mixture delivery rate matches the paving machine operation.

If rain or cold air temperatures are encountered any time between loading and placement:

- Suspend mixing operations.
- Cover the mixture in transit.
- Do not place mixture in transit until conditions improve, unless placed at the Contractor's risk according to 00721.40.
- Take action to prevent recycling agent run-off from entering drainage channels or facilities.

CRP will be rejected before placing if one or more of the following is found:

- Segregating or separating.
- Solidifying or crusting.

Dispose of rejected loads at no additional cost to the Agency.

(b) Depositing - Deposit CRP in windrows from the hauling vehicles so segregation is prevented. Alternate methods of depositing may be used if allowed by the Engineer.

Provide pick-up Equipment that can:

- Pick up substantially all of the CRP deposited on the Roadway.
- Be self-supporting, not exerting any vertical load on the paving machine, nor causing vibrations or other motions which could have a harmful effect on the riding quality of the completed Pavement.

(c) Placing - Place CRP on dry, prepared surfaces with pavers meeting the requirements of 00721.23. Spread and finish to established widths, thickness, line, grade and cross-section.

When approved, CRP may be spread with other Equipment and means where irregularities or obstacles make the use of specified Equipment impractical.

00721.46 Compaction - Compact the CRP as follows:

(a) General - Immediately after the CRP has been spread, struck off, and surface irregularities and other defects remedied, roll it uniformly until compacted as specified.

(b) Rolling - Compact CRP with rollers conforming to 00721.24. Provide sufficient rollers of types appropriate to compact the mixture while it is in a workable condition. Operate

rollers at a uniform speed not more than 53 mph, with the drive roll or wheels nearest the paver.

Begin rolling at the sides and proceed longitudinally, parallel to the road centerline, gradually progressing to the center, unless otherwise directed. On superelevated curves, begin rolling at the low side and progress to the high side. When paving in echelon, or when abutting a previously paved lane, roll the longitudinal joint first, followed by the regular rolling pattern.

Do not make sharp turns or park rollers on the CRP. Stop each Pass at least 5 feet longitudinally from preceding stops. Do not displace the line and grade of edges. Prevent CRP from sticking to the wheels and spotting or defacing the CRP by wetting them with a minimum of water or other approved Material.

(1) Breakdown Rolling - Use steel-wheeled rollers. Make at least three complete roller Coverages.

(2) Intermediate Rolling - Use a self-propelled, pneumatic-tired roller following the placement of fog coat and Aggregate cover Material. Make at least two complete roller Coverages with the pneumatic-tired roller immediately following application of Aggregate cover Material.

(3) Finish Rolling - Use steel-wheeled rollers and continue until roller marks are eliminated.

00721.47 Fog Coat and Aggregate Cover Material - After the breakdown rolling but before the intermediate rolling begins, apply a fog coat and fine size Aggregate cover Material according to Section 00705 and the following:

- Apply fog coat emulsion at a rate of approximately 0.08 to 0.12 gallons per square yard. The exact rate will be determined by the Engineer.
- Place Aggregate cover Material at a rate of approximately 0.001 to 0.003 cubic yards per square yard immediately before the intermediate roller Coverage. The exact rate will be determined by the Engineer.
- Remove all piles, ridges, or uneven distribution of Aggregate cover Material by spreading or removing with hand tools or mechanical means before the final roller Coverage.

00721.48 Longitudinal Joints - Bond, compact, and finish the new CRP at longitudinal joints equal to the CRP against which it is placed.

(a) Location - Place CRP in Panel widths which hold the number of longitudinal joints to a minimum. Do not construct longitudinal joints within the area or width of a travel lane. On Median lanes and Shoulder areas, construct joints only at lane lines or at points of change in the transverse slopes as shown or directed.

(b) Drop-offs - Complete the full width of the area to be paved, including outside Shoulders, to the same elevation with no longitudinal drop-offs by the end of each shift.

If unable to complete the Pavement without longitudinal drop-offs do the following:

- Construct and maintain a wedge of asphalt concrete within the specified time constraints at a Slope of 1V:10H or flatter along the exposed longitudinal joint. Longitudinal joints 1 inch or less will not require a wedge.
- Remove and dispose of the wedge before continuing paving operations.
- Construct, maintain, remove, and dispose of the temporary wedge at no additional cost to the Agency.

Where allowable abrupt or sloped drop-offs occur within or at the edge of the paved surface, provide suitable warning signs as required under Section 00222.

00721.49 Transverse Joints:

(a) Travel Lanes - Construct transverse joints on the travel lane portion of all specified Pavement Courses, except Leveling Courses, as follows:

(1) Temporary End Panel - Maintain Pavement depth, line and grade at least 5 feet beyond the selected transverse joint location, and from that point, wedge down on the appropriate slope until the top of the Course being laid meets the underlying surface assuming a Pavement Course thickness of 2 inches as follows:

- For wedges that will be under traffic for less than 24 hours, construct an 8 feet long wedge (1V:50H taper rate).
- For wedges that will be under traffic for 24 hours or longer, construct a 25 feet long wedge (1V:160H taper rate).
- Construct, maintain, remove and dispose of the temporary wedge at no additional cost to the Agency. CRP for the temporary wedge will be paid for at the bid item price.

When the Pavement Course thickness is different than the above 2 inch example, use the appropriate taper rate to compute the length of the wedge. The wedge length plus the 5 feet or longer Panel form the "temporary end Panel".

(2) Vertical Face - After the mixture has reached the required density:

- Provide a smooth, vertical face the full depth of the Course being laid at the location selected for the joint by sawing, cutting or other approved method.
- Remove the CRP Material from the joint to the end of the Panel. If removed before resuming paving beyond the joint, reconstruct the temporary end Panel immediately by placing a bond-breaker of paper, dust, or other suitable Material against the vertical face and on the surface to be occupied by the temporary end Panel. Construct a full-depth Panel at least 5 feet long, beginning at the sawed or cut joint, and taper it on a 1V:50H Slope to zero thickness.

(3) Excess CRP - After completing a temporary end Panel as specified, dispose of unused, remaining CRP as directed. Payment will be made for the entire load of CRP, but will be limited to only one load per joint per Panel.

(4) Resume Paving - When permanent paving resumes, remove the temporary end Panel and any bond-breakers. Clean the surface of all debris and apply a tack coat to the vertical edge and the surface to be paved.

(5) Joint Requirements - Compact both sides of the joint to the specified density. When tested with a straightedge placed across the joint, the joint surface shall conform to the specified surface tolerances.

(b) Abutting Bridge Ends - Compact the CRP abutting Bridge ends, and other rigid type Structures, in the transverse or diagonal direction, as well as longitudinally, as directed.

Maintenance

00721.60 Correction of Defects - Correct all defects in Material and work, as directed, at no additional cost to the Agency. Defects include segregation of materials and fouled surfaces preventing full bond with the seal coat. No adjustment to Contract time will be made for corrective work.

(a) Roller Damage Surface Repair - Correct all displacements of any Course at once, with rakes and addition of fresh mixture when required, regardless of thickness.

(b) Other Defects - Remove, replace with fresh CRP, and compact to conform to the surrounding area all CRP that:

- Is loose, broken, or mixed with dirt.
- Shows visually too much or too little asphalt.
- Is defective in any way.

Remove and replace the CRP that contains defects, excesses, or deficiencies prior to placing the seal coat at no additional cost to the Agency.

00721.61 Brooming - Remove loose fog coat cover Aggregate by carefully brooming the entire surface as directed by the Engineer, unless brooming damages the new CRP Pavement.

Subsequent brooming the following two Days may be directed by the Engineer to ensure that the surface is free of loose Aggregate that could cause vehicle damage.

On Bridges, sidewalks and other areas off the Roadway, remove all loose Aggregates to the satisfaction of the Engineer.

00721.62 Curing - After each lift of CRP has been placed, allow the CRP to cure a minimum of 72 hours, or as directed, before placing the next lift of CRP.

Finishing and Cleaning Up

00721.70 Pavement Smoothness - Test the top surface of CRP with a 12 foot straightedge parallel to and perpendicular to the centerline, as directed. The Pavement surface shall not vary by more than 1/4 inch. Perform Pavement smoothness testing within 24 hours of paving and after corrections of Pavement roughness.

00721.71 Correction of Pavement Roughness - Correct the surface roughness to the required tolerances without damaging the Pavement. Use one of the following methods as approved:

- Patch low lying areas with HMAC.
- Blade high areas to remove excess Material.
- Reroll high areas to compact excess Material.
- Remove and replace the wearing surface lift.
- Diamond grind high areas to remove excess Material.
- Other method acceptable to the Engineer.

Complete correction of all surface roughness within 14 Calendar Days following notification unless otherwise directed.

00721.72 Emulsified Asphalt Chip Seal - After the CRP has been placed and has cured for at least 14 Calendar Days, apply a single application Emulsified Asphalt chip seal according to Section 00710.

Measurement

00721.80 Measurement - The quantities of CRP, recycling agent, and dry quicklime will be measured on the weight basis.

Measurement of quicklime will be limited to the weight of dry quicklime used to produce hydrated lime slurry at the rate specified or directed.

Fog coat and Aggregate cover Material will be measured according to 00705.80.

Emulsified asphalt chip seal will be measured according to 00710.80.

Payment

(Delete the "(s)" or parentheses from the word "item(s)" as appropriate.)

00721.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following item*(*s*)*:

(Delete Pay Item(s) from the list that are not included in the Schedule of Items, but do not change the alpha characters next to the Pay Items.)

Pay Item	Unit of Measurement
(a) Cold Recycled Emulsified Asphalt Pavement	Ton
(b) Recycling Agent in CRP	Ton
(c) Lime in CRP	Ton

(Use the following paragraph when Pay Item (a) is included in the Pay Item list above.)

Item (a) includes hauling, screening, and crushing RAP Material, water, and processing necessary for producing hydrated lime slurry, mixing the Material, and placing, compacting, and finishing the Work as specified.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

Fog coat and Aggregate cover Material will be paid for according to 00705.90.

Emulsified asphalt chip seal will be paid for according to 00710.90.

No separate or additional payment will be made for brooming or for Pavement tapers at approaches and connections.

SP00725 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-22-25
This Section requires SP00730.)

SECTION 00725 - HOT IN-PLACE RECYCLED ASPHALT CONCRETE PAVEMENT (HIR)

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00725, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00725.00 Scope - This Work consists of constructing Hot In-place Recycled Asphalt Concrete Pavement (HIR) in reasonably close conformity to the lines, grades, thicknesses, and Cross Sections shown or established.

00725.01 Abbreviations:

HIR - Hot In-place Recycled Asphalt Concrete Pavement.

00725.02 Definitions:

Hot In-place Recycled Asphalt Concrete Pavement - HIR is a Mixture of RAP, which has been heated, mixed in place with new asphalt concrete Mixture (when specified) and Recycling Agent, then relaid and compacted in a continuous operation.

Mixture - Hot in-place recycled asphalt concrete after all Materials are combined and mixed.

Panel - The width of HIR Material being removed and placed by the recycling train.

Recycling Agent - Material added to RAP to soften and rejuvenate existing asphalt Material.

00725.05 Prepaving Conference - Any supervisory personnel of the Contractor and any Subcontractor who are to be involved in the recycle and paving Work shall meet with the Engineer, at a time mutually agreed upon, to discuss methods of accomplishing all phases of the recycle and paving work.

Materials

00725.11 Recycling Agent - Furnish RA 1, RA 5, RA 25, RA 75, RA 250, or RA 500 Recycling Agent that has been manufactured from new Material and meets the requirements of 00745.11.

00725.12 Asphalt Concrete Mixture - Furnish new asphalt concrete Mixture meeting the requirements of Section 00745.

00725.13 Job Mix Formula (JMF) - Furnish an HIR Mixture that consists of RAP from the existing Pavement, new asphalt concrete Mixture (when specified) and Recycling Agent combined in the proportions designated by the Engineer. Variability in the composition of the RAP Material may require changes in the proportions of the constituents, as directed. Normally, the Recycling Agent content will be between 0.2% and l.0% by weight of mix.

00725.15 Process Control - Process control sampling and testing will be performed by the Engineer.

00725.16 Acceptance of Mixture - The HIR Mixture will be accepted visually on the road following initial rolling. Correct any Mixture that is not acceptable as follows:

- Reprocess or replace any area showing an excess or a deficiency of asphalt with new asphalt concrete Pavement.
- If raveling occurs, provide immediate traffic control and additional rolling.

Provide traffic control for rerolling, reprocessing, or replacement according to the Engineer. If the Engineer determines the excesses, deficiencies, or raveling are not due to the Contractor's operations, the Work will be paid for under the appropriate bid items listed in the Schedule of Items. If the Engineer determines the excesses, deficiencies, or raveling are due to the Contractor's operations, the corrective Work will be at no additional cost to the Agency.

Equipment

00725.23 Asphalt Concrete Pavers - Pavers shall comply with the following:

(a) Power and Support - Self-contained, self-propelled, supported on tracks or wheels, none of which contact the Mixture being placed.

(b) Augers and Screed - Equipped with augers and screed or strike-off assembly, heated if necessary, which:

- Provide extensions used on travel lanes, with the same augering, screeding, and heating Equipment as the rest of the paver.
- Can spread and finish HIR to a uniform texture in the specified widths, thicknesses, lines, grades, and Cross Sections.
- Will not segregate, tear, shove, or gouge the HIR.

(c) Control System - Equipped with a paver control system which:

- Controls HIR placement to specified Slope and grade.
- Maintains the paver screed in proper position.

Provide specified results through mechanical sensors and sensor-directed devices actuated from independent line and grade control references.

(d) Illumination - Provide adequate lighting to illuminate the paver and the road in front of and behind the paver during the period from 30 minutes after sunset to 30 minutes before sunrise. Shield lighting from adjacent traffic as necessary. Provide a minimum light level of 10 foot candles as measured on the road surface at a distance of 16 feet from the edge of the paver.

00725.24 Compactors - Provide specified self-propelled rollers capable of reversing without backlash, as follows:

(a) Steel-Wheeled Rollers - Steel-wheeled rollers shall have:

- A gross static weight of at least 8 Tons.
- A static weight on the drive wheel of at least 250 pounds per inch of width.

If used for finish rolling, they shall have:

- A gross static weight of at least 6 Tons.
- No drive wheel static mass requirement.

(b) Vibratory Rollers - Vibratory rollers shall be:

- Equipped with amplitude and frequency controls.
- Specifically designed to compact asphalt concrete.
- Capable of at least 2000 vibrations per minute.

If vibratory rollers are used for Pavement thickness less than 1 1/2 inches, they shall:

- Have a gross static weight of at least 8 Tons.
- Have a static weight on the drive wheel of at least 250 pounds per inch of width.
- Not be operated in vibratory mode.

If vibratory rollers are used for finish rolling, they shall:

- Have a gross static weight of at least 6 Tons.
- Not be operated in the vibratory mode.

(c) Pneumatic-tired Rollers - Pneumatic-tired rollers shall:

- Be tandem, or multiple axle, multiple wheel type.
- Have smooth-tread, pneumatic tires of equal size.
- Have tires staggered on the axles, spaced and overlapped to provide uniform compacting pressure for the full compacting width.
- Have a minimum total load of 2,800 pounds per tire with tire inflation pressure of 45 psi and 90 psi.
- Be fully skirted to reduce tire heat loss and Mixture pick up.

00725.26 Heating and Scarifying Equipment:

(a) General - Indicate at the preconstruction conference the type of Equipment intended for use. Provide Equipment that is in good operating condition in sufficient time for evaluation prior to its use. Any Equipment which the Engineer determines to be unsuitable for the purpose intended will be rejected.

Prior to performing hot recycling Work on the Project, provide a written statement to the Engineer that contains the following:

- A current air contaminate discharge permit number for the plant being used.
- The expiration date of the permit.
- A copy of the statement advising DEQ of the location of the Project and when operations are intended to commence.

The name and address of the air pollution authority having jurisdiction over the area may be obtained from the Engineer.

(b) Equipment - Provide HIR Equipment that performs the following:

(1) Heater Scarification - Heat the existing asphalt surface from 4 inches to 8 inches wider than the width to be processed. The temperature of the scarified Material shall be such as not to unduly harden the asphalt cement, and generally not be over 290 °F, but shall be capable of heating the asphalt mix so that the temperature behind the screed will be a minimum of 230 °F before compaction.

No open flame directed on or at the Pavement surface will be allowed.

Establish the number of heating units to be used. Multiple heaters, if used, will be in tandem.

Set the scarifying system to produce a fully recycled Mixture without lumps. Equip the heater scarifier with a milling head or mechanical device to loosen the heated Pavement to be reprocessed.

(2) Addition of Recycling Agent - Provide a means by which Recycling Agent can be homogeneously added to the heated and scarified Mixture as follows:

- Positive feed and shut-off of the agent, linked to the movement of the machine.
- Control of the quantity of agent to ± 0.05 gallons per square yard of surface scarified, within an agent application range of from 0.1% to 2.0%, by weight of total Mixture.
- Measurement of the volume of agent used by means of a metering device capable of recording accumulated liters to an accuracy of ± 2%.
- Proportional interlinking of the agent application rates to the machine's Mixture processing rate.
- Heating of the agent to within ± 25 °F of the application temperature established by the Engineer.

(3) Addition of New Asphalt Concrete Mixture - Provide a means to add new asphalt concrete Mixture into the heated and scarified Mixture as follows:

- A hopper to receive the new Mixture directly from the hauling vehicle.
- Positive feed and shut-off of the Mixture, linked to the movement of the machine.
- Control of the new Mixture feed system to provide adequate proportional interlinking to insure that HIR meets the JMF.

(4) Mixing - Provide a means to uniformly mix the scarified mix (RAP), the new asphalt concrete Mixture (when specified), and the Recycling Agent in a chamber or mixing unit so that a homogeneous Mixture is produced.

Provide a means to convey the recycled mix directly to the hopper of the asphalt concrete paver.

Construction

00725.41 Test Strip - At the beginning of the hot recycling operations, construct a test strip on the Project of at least 500 feet but not more than 1,000 feet in length using the Equipment and methods to be used for the hot recycling Work on the Project. Do not perform any other hot recycling Work until the test strip is evaluated and approved.

00725.42 Cleaning Existing Surface - Clean the existing paved surface to be recycled of all dirt, oils, and other objectionables by brooming, flushing with water, or other approved methods prior to beginning heater-scarification operations.

00725.43 Heating and Scarifying - Evenly heat, scarify, and rework the Pavement surface to the widths and depths shown. Control heating to assure uniform heat penetration without causing differential softening of the surfaces. Charring of the asphalt will not be permitted. Uniformly apply the Recycling Agent to the scarified Material prior to remixing and Leveling unless otherwise approved. The rate of application will be as determined by the Engineer based on laboratory tests on Pavement samples.

The heated and scarified Material shall have a temperature in a range between 230 °F and 290 °F as measured immediately behind the scarifier. The Engineer will select the temperature within these limitations. Stay within the above range and do not vary the Mixture from the selected temperature by more than 23 °F.

Do not burn or scorch trees, shrubs, or other items located adjacent to the Pavement. Be responsible for protecting the adjacent landscape from heat damage. The protection may consist of individual shielding, water spray, or other approved methods.

When a Pass is made adjacent to a previously placed mat, extend the longitudinal joint at least 52 inches horizontally into the previously placed mat, unless otherwise directed. Other approved methods may be used that insure a tight joint between the mats.

00725.44 Mixing and Relaying - Automatically feed the scarified and reclaimed Material into a mixing unit. Add new asphalt concrete Mixture and the Recycling Agent to the reclaimed Material at the mixer unit at the specified rate. Thoroughly mix the combined Material then automatically feed it into the asphalt concrete paver. Spread and strike off the Material to the required thickness, grade, and cross-section at a minimum temperature of 230 °F.

00725.49 Compaction - Compact the HIR as follows:

(a) General - Immediately after the HIR has been spread, struck off, and surface irregularities and other defects remedied, roll it uniformly until compacted as specified. Complete all rolling before the Mixture temperature drops below 135 °F unless the Engineer determines that a higher minimum temperature is required for proper compaction.

(b) Rolling - Compact HIR with rollers conforming to 00725.24. Provide sufficient rollers of types appropriate to compact the Mixture while it is in a workable condition. Operate rollers at a uniform speed not more than 3 mph, with the drive roll or wheels nearest the paver.

Begin rolling at the sides and proceed longitudinally, parallel to the road centerline, gradually progressing to the center, unless otherwise directed. On superelevated curves, begin rolling at the low side and progress to the high side. When paving in echelon, or when abutting a previously paved lane, roll the longitudinal joint first, followed by the regular rolling pattern.

Do not make sharp turns or park rollers on the HIR. Stop each Pass at least 5 feet longitudinally from preceding stops. Do not displace the line and grade of edges. Prevent HIR from sticking to the wheels and spotting or defacing the HIR by wetting them with a minimum of water or other approved Material.

(1) Breakdown Rolling - Use vibratory, steel-wheeled rollers. Make at least three complete roller Coverages.

(2) Intermediate Rolling - Use self-propelled, pneumatic-tired rollers. Make at least two complete roller Coverages with the pneumatic-tired roller immediately.

(3) Finish Rolling - Use nonvibratory, tandem-wheeled steel rollers, and continue until roller marks are eliminated.

Maintenance

00725.60 Surface Repair - At locations where heater scarification operations begin or end, ensure that the transition between the scarified and unscarified surface is smooth and has no irregularities .

Repair all irregularities that result from the heater scarification operations with a Leveling Course of hot mix asphalt concrete or as directed. Repair defects at no additional cost to the Agency.

Finishing and Cleaning Up

00725.70 Pavement Smoothness:

(a) Single Course CRP Construction - Test the top surface of HIR with a 12 foot straightedge parallel to and perpendicular to the centerline, as directed. The Pavement surface shall not vary by more than 1/4 inch.

(b) Multiple Course CRP and EAC or ACP Construction - Test the top surface of the HIR Course on which the EAC or ACP wearing Course is placed according to 00725.70(a) above.

Test the EAC or ACP wearing surface with the rolling straightedge in the designated wheel path of a 0.1 mile strip of each travel lane per mile where directed, and on each transverse joint throughout the Project. Operate the rolling straightedge parallel to the centerline. The surface shall not vary more than 0.015 foot.

Also test the EAC or ACP wearing surface with a 12 foot straightedge placed perpendicular to the centerline at least once within the above mentioned 0.1 mile strip. It shall not vary by more than 1/4 inch.

If the 0.01 mile testing strip meets the Specifications, no further testing of the mile represented by the testing strip will be required, except at the transverse joints. If any part of the testing strip does not meet the Specifications, test both wheel paths of the entire mile.

Perform Pavement smoothness testing within 24 hours of paving and after corrections of Pavement roughness.

Measurement

00725.80 Measurement - The quantities of HIR will be measured on the area basis based of the finished surface of the completed Pavement within the Neat Lines shown or established.

The quantities of Recycling Agent in the HIR Mixture will be measured on the weight basis.

New asphalt concrete Mixture will be measured according to 00745.80.

Payment

00725.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement
(a) Hot In-place Recycled Asphalt Concrete Pavement	Square Yard
(b) _____ Recycling Agent in HIR	Ton

In item (b), the type of recycling agent will be inserted in the blank.

Payment will be payment in full furnishing and placing for all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

New asphalt concrete Mixture will be paid for according to 00745.90.

No separate or additional payment will be made for preparing the existing road surface that receives the HIR.

SP00730 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-22-25)**

SECTION 00730 - EMULSIFIED ASPHALT TACK COAT

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00730 of the Standard Specifications modified as follows:

(Use one of the following two options. Delete the one that does not apply.)

[Option 1]

00730.11 Emulsified Asphalt – Replace the sentence that begins "Furnish CSS-1, CSS-1h…" with the following sentence:

Furnish CSS-1, CSS-1h, CMS-2, CMS-2S, CMS-2h, CRS-1, CRS-2, HFRS-2, HFMS-2 or HPTC as selected by the Contractor.

[End Option 1]

[Option 2 – Use this option when only HPTC is required.]

00730.11 Emulsified Asphalt – Replace the sentence that begins "Furnish CSS-1, CSS-1h…" with the following sentence:

Furnish HPTC.

Replace the paragraph that begins "Dilution of the tack coat material may be allowed…" with the following sentence:

Dilution of the tack coat material is allowed only by the asphalt Supplier at a ratio meeting the requirements of ODOT's publication *Standard Specifications for Asphalt Materials*.

[End Option 2]

(Use the following subsection .80 on projects that have more than 10 tons of tack coat.)

00730.80 Measurement - Replace this subsection, except for the subsection number and title, with the following:

The quantities of Emulsified Asphalt used as tack will be measured on the weight basis.

(Use the following subsection .90 on projects that have less than 10 tons of tack coat. Obtain quantity from the Designer.)

00730.90 Payment - Replace this subsection, except for the subsection number and title, with the following:

No separate or additional payment will be made for Emulsified Asphalt tack coat. Approximately _____ Tons of Emulsified Asphalt in tack coat will be required on this Project.

SP00735 (Special Provisions for the 2024 Book) **(Bidding on or after: 06-01-25**
Last updated: 03-03-25
This Section require SP00705 when emulsified asphalt fog coat is required. Requires SP00710 or SP00715 when chip seal is required.)

SECTION 00735 - EMULSIFIED ASPHALT CONCRETE PAVEMENT

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00735 of the Standard Specifications modified as follows:

00735.40 Season and Weather Limitations - Replace the title of this subsection with "**Weather Limitations".**

Replace the paragraph that begins "Place EAC from May 1 to August 31…" with the following paragraph:

Place EAC from May 1 to August 31, inclusive, when the Pavement temperature is 60 °F or above. Limitations for EAC will not supersede limitations for Emulsified Asphalt chip seals on the Project.

00735.42 Preparation of Underlying Surfaces – Add the following paragraph to the end of this subsection:

Remove existing pavement markers, recessed markers, and pavement legends before paving. Remove pavement lines, bars, and pavement legends as shown or directed and according to 00225.45.

(Use the following subsection .45(b) on projects that allow alternate methods of depositing EAC on the road. Obtain the methods from the Designer.)

00735.45(b) Depositing - Add the following to the end of this subsection:

The following alternate methods of depositing EAC may be used:

-

SP00738 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-22-25)

SECTION 00738 - SAFETY EDGE

(Follow all instructions. If there are no instructions above a subsection, paragraph, sentence, or bullet, then include it in the project. The specifications may be modified to include project specific specifications, but all additions, deletions, or modifications must be sent to the ODOT Technical Resource and State Specifications Engineer for review and approval.)

Comply with Section 00738 of the Standard Specifications.

SP00740 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-22-25
This Section requires SP00730*)*

SECTION 00740 - COMMERCIAL ASPHALT CONCRETE PAVEMENT (CACP)

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00740 of the Standard Specifications.

SP00743 (Special Provisions for the 2024 Book) **(Bidding on or after: 06-01-25**
Last updated: 03-03-25*)*

SECTION 00743 - POROUS ASPHALT CONCRETE (PAC)

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00743 of the Standard Specifications modified as follows:

00743.40 Season and Temperature Limitations - Replace the title of this subsection with "**Temperature Limitations".**

SP00744 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-22-25
This Section requires SP00730
This Section requires SP00738 when Safety Edge is shown in the typical sections of the plans.)

SECTION 00744 - ASPHALT CONCRETE PAVEMENT

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00744 of the Standard Specifications modified as follows:

(Fill in the blank with the required grade of asphalt used on the project.)

00744.11(a) Asphalt Cement - Add the following to the end of this subsection:

Provide _____ grade asphalt cement for this Project.

(Use the following subsection .16 on projects that are bid and awarded by ODOT. The following subsection is not intended for use on projects that are not bid and awarded by ODOT.)

00744.16 Sampling and Testing - Replace this subsection, except for the subsection number and title, with the following:

For each 1,000 Tons of placement, have a CAT I perform a minimum of one of each of the following test methods as modified in the MFTP:

- Asphalt Content - AASHTO T 308 with ODOT TM 323 determined Calibration Factor
- Gradation - AASHTO T 30
- Mix Moisture - AASHTO T 329
- Maximum Specific Gravity - AASHTO T 209
- Field Compacted Gyratory Specimens - ODOT TM 326

When less than 1,000 Tons of mix is placed in a Day, perform a minimum of one series of tests per Day. Provide test results to the Engineer by the middle of the following work shift. The Engineer may waive the requirement for any of AASHTO T 308, AASHTO T 30, AASHTO T 329, and ODOT TM 326 on a daily basis. The Engineer may waive the requirement for AASHTO T 209 when less than 500 Tons of ACP is placed in a single work shift.

Provide samples or split samples to the Engineer when requested.

(Use the following subsection .17 on projects that are bid and awarded by ODOT. The following subsection is not intended for use on projects that are not bid and awarded by ODOT.)

00744.17 Acceptance - Replace this subsection, except for the subsection number and title, with the following:

If the test result for each mix gradation constituent, asphalt content, and density measurement is within the specification limits, the material will be accepted. If the asphalt content, one or more gradation constituents, or the density measurement are not within the specification limits, the material that is not within the specification limits will be accepted according to 00150.25.

(Use the following subsection .41 on projects that are bid and awarded by ODOT. The following subsection is not intended for use on projects that are not bid and awarded by ODOT.)

00744.41 Mixing Temperature - Replace the table with the following:

	Temperature, °F	
Type	**Maximum at Mixer**	**Minimum Behind Paver**

HMAC	350	240
WMAC	350	215

(Use the following subsection .49 on projects that are bid and awarded by ODOT. The following subsection is not intended for use on projects that are not bid and awarded by ODOT.)

00744.49 Compaction - Replace the paragraph that begins "Determine compliance with…" with the following paragraph:

Determine compliance with density Specifications by random testing of the compacted surface with calibrated nuclear gauges. Determine the density by averaging QC tests performed by a CDT with the nuclear gauge operated in the backscatter mode according to AASHTO T 335 at one random location for each 100 Tons of asphalt concrete placed, but take no less than three tests each shift. Do not locate the center of a density test less than 1 foot from the Panel edge. Calculate MAMD according to ODOT TM 305. The Engineer may waive compaction testing requirements when less than 500 Tons of ACP is placed in a single work shift.

(Use the following lead-in paragraph and one of the following two options when traffic restrictions are required. Obtain information from the pavement designer. Delete the option that does not apply.)

Add the following subsection:

[Option 1 - Use this .51 when paving through the top base course is required.]

00744.51 Opening Sections to Traffic - Schedule work so that, during the same shift, the surfaces being paved are paved full width and length through the top Base Course before opening to traffic. Traffic will be allowed on the top Base Course up to ____ Calendar Days.

Before beginning wearing Course paving operations, make repairs to the existing surface as directed. Payment for the repairs will be made according to 00195.20.

[Option 2 - Use this .51 when paving through the wearing course is required.]

00744.51 Opening Sections to Traffic - Schedule work so that, during the same shift, the surfaces being paved are paved full width and length through the wearing Course before opening to traffic.

SP00745 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 02-03-25
This Section requires SP00730.
This Section requires SP00738 when Safety Edge is shown in the typical sections of the plans.)

SECTION 00745 - ASPHALT CONCRETE PAVEMENT - STATISTICAL ACCEPTANCE

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00745 of the Standard Specifications modified as follows:

(Use the following subsection .02 when one of the following definitions is required.)

00745.02 Definitions -

(Use the following three paragraphs when separate sublot definitions are required by the Pavement design report.)

Replace the sentence that begins "**Sublot Size** - A sublot is…" with the following paragraphs:

Sublot Size - Except for compaction, a sublot is 1000 Tons. The final sublot for a JMF may be increased up to a maximum of 1,500 Tons, if the production total does not reach the random number for the sublot.

A compaction sublot is 200 Tons. The final compaction sublot for a JMF may be increased up to a maximum of 400 Tons, if the production total does not reach the random number for the sublot.

(Add the following definition when IRI Pavement smoothness specifications are required by the Pavement design report.)

Add the following definition:

Localized Roughness - An area that exceeds 160.0 inches per mile in a continuous International Roughness Index (IRI) evaluation over a 25.0-foot base length.

(Add the following definition when a 10,000 Ton Lot Size is required by the Pavement design report.)

Replace the definition "**Lot Size**" with the following definition:

Lot Size - A lot consists of up to 10,000 Tons of ACP, with a maximum of 20,000 Tons for the final lot per JMF. The following circumstances will require a different lot:

- A new JMF is used. A JMF adjusted according to 00745.16 is not considered a new JMF
- The method for measuring compaction is changed
- A new compaction specification limit is required according to 00745.49(b)(3)
- A change from one test procedure for measuring asphalt content to another test procedure for measuring asphalt content occurs.

The Engineer may allow Material for irregular areas not completed during the main paving operations, such as driveways or guardrail flares, to be evaluated as a separate lot.

00745.11(b) Asphalt Cement Additives – Delete the bullet that begins "Anti-stripping asphalt cement…"

(Use the following lead-in paragraph and subsection .11(d) when latex polymer treatment of Aggregate is listed as an option in the Pavement design report.)

Add the following subsection:

00745.11(d) Aggregate Treatment - Latex Polymer - A latex polymer Aggregate treatment Material may be used to treat new crushed Aggregates instead of lime if Tensile Strength Ratio test results on the mixture with the latex polymer treatment at the JMF meet the minimum criteria in 00745.13(a).

(1) General:

a. Provide a system to automatically meter the latex emulsion at the proper rate and apply the emulsion uniformly to the Aggregate prior to the addition of the asphalt cement. Follow manufacturer's recommendations to set up, adjust, and calibrate the Equipment.

b. Demonstrate to the Engineer's satisfaction that the required application rate of latex solids is being met. If it is not, take corrective action. Document and notify the Engineer of the corrective action.

(2) Material - Use latex polymer emulsion concentrate meeting the following:

	Minimum	Maximum	Test Method
Solids Percent	65.0	–	ASTM D 1417
pH	9.0	11.0	ASTM D 1417
Brookfield Viscosity Spindle 3, 20 RPM, cPs	500	3000	ASTM D 1417

Provide a quality compliance certificate for the polymer latex emulsion concentrate to the Engineer according to 00165.35.

(3) Application Rate - Apply the latex emulsion to achieve a minimum of 0.75 pounds of latex solids per Ton of new Aggregate (0.0375%) for dense graded mixtures and a minimum of 0.50 pounds of latex solids per Ton of Aggregate (0.025%) for open-graded mixtures. Higher application rates may be required to meet minimum TSR limits. Determine application rate during mix design testing.

(4) Treatment During ACP Production:

a. Adjust Aggregate moisture content to meet the manufacturer's recommendation for emulsion application. Apply the latex emulsion at the minimum rate specified above or at a higher rate if TSR testing indicates a higher rate is required.

b. Apply the latex emulsion to the Aggregate just prior to entry into dryer drum. Mix Aggregate with the emulsion in a pugmill or in the dryer drum prior to application of asphalt cement. Heat Aggregates to at least 250 °F after treatment and prior to addition of asphalt cement.

(Use the following lead-in paragraph and subsection .11(e) when a liquid anti-stripping additive is listed as an option in the pavement design report.)

Add the following subsection:

00745.11(e) Liquid Anti-Stripping Additive – An asphalt cement liquid anti-stripping additive (LASA) may be used instead of lime treatment of Aggregate.

(1) General – For LASA to be considered for use, meet the following criteria:

- Be designated as an asphalt anti-strip additive, with test results posted on the Warm Mix Asphalt Technologies category on the *AASHTO Product Evaluation and Audit Solutions (APEAS)* website.
- APEAS test results indicate an increase of 10 percent or greater in TSR (AASHTO T 283) performed on durable Aggregate, not limestone.
- Be approved for use by another State DOT as an anti-stripping additive.

If a product meets these criteria, it may be used in the JMF development according to the *ODOT Contractor Mix Design Guidelines for Asphalt Concrete*. The standard addition rate of LASA for the JMF is the rate used in the APEAS testing. If no rate is published, the minimum rate will be 0.5% of the virgin binder. If the APEAS published rates are 0.5% of total binder or higher, the minimum rate may be reduced to 0.5% of the virgin binder.

Approval of the JMF is also dependent on Hamburg wheel-track testing results conducted at the ODOT Central Materials Laboratory. When tested according to AASHTO T 324 for 20,000 passes at a test temperature of 50 °C the minimum requirements are:

Rut depth (Level 4 wearing Course).....5mm max.
Rut depth (All others).....7mm max.
Stripping inflection point (All levels).....none

(2) Addition to Asphalt Cement – Blend the LASA at the asphalt terminal prior to delivery to the mixing plant. Use LASA compatible with the asphalt cement. Comply with all asphalt cement requirements for the blended product. Do not change the LASA addition rate without prior approval from the Engineer.

(3) Field Testing During Production – At the Agency's discretion, production mixture may be tested at the Central Materials Laboratory. Failure to meet the criteria listed above may require a change in addition rate, a change of approved LASA, or lime-treatment of Aggregate to continue production.

(Use the following subsection .14 when required by the Pavement design report.)

00745.14 Tolerances and Limits - Replace the line "**Asphalt Cement - AASHTO**… with the following line:

Asphalt Cement - AASHTO T 308 (Ignition) and ODOT TM 323	JMF ± 0.35%

(Use the following subsection .46(b) when required by the Pavement design report.)

00745.46(b) Depositing - Replace the paragraph that begins "Deposit ACP from..." with the following paragraph:

Deposit ACP from the hauling vehicles so segregation is prevented. Do not deliver the ACP directly into the paving machine for wearing Courses where the continuous length of the Panel is greater than 500 feet. Deliver the ACP to the paving machine by either a windrow pick-up machine or an end-dump transfer machine.

00745.47(a)(2) Wearing Course - Replace this subsection, except for the subsection number and title, with the following:

Construct longitudinal joints six inches from permanent lane markings, or as shown or directed.

00745.48(c) Bridge Deck Overlays - Replace the paragraph that begins "Saw cut the wearing Course of Pavement …" with the following paragraph:

Sawcut the wearing or base Course of Pavement directly over the joints in bridge decks, bridge end joints and end Panel end joints as soon as practical but within 48 hours of paving each stage of the wearing or base Course, unless otherwise directed. Saw the cut 3/8 inch wide, ± 1/8 inch, by 1/2 inch less than the thickness of the Panel of Pavement depth or 1 1/2 inches deep, whichever is less.

(Use the following subsection .49(b)(1) when required by the Pavement design report.)

00745.49(b)(1) General - Replace the paragraph that begins "Have the CDT notify the Engineer…" with the following paragraph:

Have the CDT notify the Engineer and CAT-II when a density test is less than 90.0 percent or exceeds 95.9 percent of MAMD. Initiate an investigation to determine if the results indicate that a problem with the mix is developing. Electronically submit the results and recommendations of the CAT-II's investigation to the Engineer within two shifts of the density test. An adjustment to the JMF will not be allowed unless MDV testing supports a required change.

(Use the following subsection .49(b)(2) when blind random density testing and separate sublot definitions are required by the Pavement design report.)

00745.49(b)(2) Random Testing - Replace the paragraph that begins "Determine the density of each sublot by averaging…" with the following paragraphs:

Correspond lots and compaction sublots with those defined in 00745.02. Provide one density test location for each compaction sublot. Notify the Engineer when rolling operations are completed in a compaction sublot and it is ready for test location identification. The Engineer will use stratified random numbers to locate the QC tests according to ODOT TM 400 Annex. ODOT TM 400 Annex is available from the Engineer. The Engineer will mark where the QC tests are to be performed.

Allow 30 minutes for the Engineer to locate the final test locations after completion of finish rolling and any additional time required for testing, prior to opening the travel lane to traffic. Have the CDT locate and document the test locations not identified within this time frame.

(Use the following subsection .49(b)(2)(b) when core correlation specifications are required by the Pavement design report.)

00745.49(b)(2)(b) Core Correlation of Nuclear Gauge Readings - Replace this subsection, except for the subsection number and title, with the following:

For each Lift on the Project that contains more than 2,500 Tons of ACP, correlate each nuclear gauge that will be used on that Lift. Perform core correlations and determine core correlation factors according to AASHTO T 355 and ODOT TM 327. Provide bulk specific gravity values to the Engineer within 24 hours of coring. If an Aggregate source or the asphalt cement source changes, new core correlations are required.

Apply correlation factors to all nuclear gauge readings for the Lift on which the core correlation was performed.

Both the Engineer and the Contractor may request additional core correlation of nuclear gauge readings. Core correlations requested by the Contractor or that are required due to a change in Aggregate or asphalt cement source will be at no additional cost to the Agency.

(Use the following subsection .49(b)(4) when separate sublot definitions are required by the Pavement design report.)

00745.49(b)(4) Test Results - In the paragraph that begins "Provide density results…" replace the word "sublots" with the words "compaction sublots".

(Use the following subsection .49(c) when required by the Pavement design report.)

00745.49(c) Thin Pavement - Replace the paragraph that begins "Perform breakdown and intermediate rolling…" with the following paragraph:

Use ODOT TM 301 "Establishing Roller Patterns for Thin Lifts of ACP" to establish the rolling pattern for compaction. Use the roller pattern from ODOT TM 301 or four Coverages, whichever is greater. Complete additional Coverages as directed.

(Use the following lead-in paragraph and one of the following two options when traffic restrictions are required. Obtain information from the Pavement designer. Delete the option that does not apply.)

Add the following subsection:

[Option 1 - Use this .51 when paving through the top base course is required.]

00745.51 Opening Sections to Traffic - Schedule Work so that, during the same shift, the surfaces being paved are paved full width and length through the top Base Course before opening to traffic. Traffic will be allowed on the top Base Course up to ____ Calendar Days.

Before beginning wearing Course paving operations, make repairs to the existing surface as directed. Payment for the repairs will be made according to 00195.20.

[Option 2 Use this .51 when paving through the wearing course is required.]

00745.51 Opening Sections to Traffic - Schedule Work so that, during the same shift, the surfaces being paved are paved full width and length through the wearing Course before opening to traffic.

(Use the following subsection .70 when IRI pavement smoothness specifications are required by the Pavement design report.)

00745.70 Pavement Smoothness - Replace this subsection, except for the subsection number and title, with the following:

Construct the Pavement wearing surface of Traffic Lanes to a profile that does not deviate from longitudinal and transverse smoothness more than the specified limits of 00745.73.

Perform profiling and straightedge testing under the supervision of the Engineer with Equipment furnished and operated by the Contractor at no additional cost to the Agency, according to ODOT TM 772. Complete all required smoothness testing no later than 14 Calendar Days following final completion of all Traffic Lane paving on the Project, or by October 15 of each calendar year for multiple year projects, whichever is earlier. The Contractor accepts the risk that the smoothness may be affected by exposure to traffic between the date the Traffic Lanes are paved and the date the smoothness testing is completed. If the Contractor elects to perform smoothness measurements on a Day other than the Day the Pavement is placed, additional traffic control required for smoothness measurement, and not required for other Work, will be at no additional cost to the Agency.

(Use the following lead-in paragraph and subsection .72 when IRI Pavement smoothness specifications are required by the Pavement design report.)

Add the following subsection:

00745.72 Smoothness Testing Equipment - Furnish all Equipment and supplies for determining smoothness.

(a) Straightedge - Provide one 12 foot straightedge.

(b) Profiler - Provide a profiling device meeting the requirements of ODOT TM 772 and certified according to ODOT TM 769.

Provide competent and experienced operator(s) for the Equipment, certified with the profiler according to ODOT TM 769. The profiler operator shall meet with the Engineer at a mutually agreed upon time prior to beginning smoothness measurements to discuss all aspects of smoothness measurement on the Project.

(Use the following lead-in paragraph and subsection .73 when IRI Pavement smoothness specifications are required by the Pavement design report.)

Add the following subsection:

00745.73 Smoothness Testing and Surface Tolerances - Test according to the following:

(a) General - Test the Base Course with a 12 foot straightedge as directed. Test the wearing Course with the profiler meeting the requirements of 00745.72(b). Compute the IRI from the profile data according to the procedures described in ODOT TM 772. Price adjustment for smoothness will be made according to 00745.96.

Before performing any smoothness measurements on the Project, verify calibration of the profiler according to the manufacturer's recommendations and ODOT TM 772.

(b) Surface Test:

(1) Transverse - Test the Base Course with the 12-foot straightedge perpendicular to the centerline, as directed. The Pavement surface shall not vary by more than 1/4 inch.

(2) Longitudinal - Test all Base or wearing Course sections of Pavement that are not required to be profiled according to 00745.73(c) with the 12-foot straightedge parallel to the centerline and lane dividers, as directed. The Pavement surface shall not vary by more than 1/4 inch.

(c) Wearing Course Surface Test:

(1) Transverse - Test with the 12-foot straightedge perpendicular to the centerline, as directed. The Pavement surface shall not vary by more than 1/4 inch.

(2) Longitudinal - Perform testing as follows:

a. Quality Control - Run the profiling device over each Traffic Lane for the full length of the Project.

In the presence of the Engineer and according to ODOT TM 772, obtain profiles on the Pavement surface in the right and left wheel path of the Traffic Lane along a line parallel to permanent longitudinal Pavement markings, at 3-foot and 9-foot offsets from the left edge of the Traffic Lane. Take the profile on transition areas of entrance and exit ramps, as close to the right and left wheel path of the through Traffic Lane as practical. Submit data files to the Engineer at the completion of each shift in which profiling has taken place. For the Pavement sections tested, provide the raw data files and provide electronic copies of the profile data in PPF and manufacturer proprietary formats, as required by the Engineer.

Analyze profiles according to 00745.73(d), and give the results to the Engineer no later than 24 hours following completion of required smoothness. The results shall consist of a table showing areas of Localized Roughness in each wheel path, and the left wheel path IRI, right wheel path IRI, and mean IRI (average of left and right wheel path IRI) at 0.10 mile intervals.

b. Quality Assurance - At the discretion of the Engineer, the Agency may perform Quality Assurance of Profiles on projects according to ODOT TM 772.

(3) Transverse Joints - Test with the 12-foot straightedge parallel to the centerline, as directed. The Pavement surface shall not vary by more than 1/4 inch.

(d) Determination of the International Roughness Index:

(1) General - Determine the IRI in 0.10 mile segments and partial segments of the wearing Course. Begin segments 50 feet into the Project and run consecutively in the direction of travel. A segment ends as a partial segment and a new segment begins when the segment sequence is interrupted by stage construction or by profiled areas excluded from the smoothness requirements. Minimize the number of partial segments.

The following areas of Pavement are excluded from IRI smoothness requirements and are not profiled:

- Profiles extending beyond the Project ends.
- Bridge decks, Bridge end panels, and Pavement within 50 feet of Bridge end panels.
- First and last 50 feet of the ACP paving limits of the Project.
- The 50 feet before and after No Work Areas within the Project limits.
- Ramps and auxiliary lanes that are less than 2500 feet in length.
- First 800 feet of entry ramps and the last 800 feet of exit ramps.
- The 25 feet before and after Utility appurtenances in the Traffic Lane.
- Continuous portions of Traffic Lanes with less than 0.05 mile between excluded areas.
- Portions of the Project with posted speed limits less than 45 mph.

Locate ACP IRI profiling excluded areas prior to smoothness measurement. Areas excluded from longitudinal profile measurement shall meet the straightedge requirements of 00745.73(b)(2).

(2) Method of Analysis - Determine the IRI for each wheel path and areas of Localized Roughness for each wheel path according to ODOT TM 772. Submit the results to the Engineer for review.

(e) Shoulders and Paved Medians - Test the Base and wearing Course with the 12-foot straightedge parallel to and perpendicular to the centerline for Shoulders and paved Medians, as directed by the Engineer. The Pavement surface shall not vary by more than 1/4 inch.

(Use the following subsection .75 when IRI Pavement smoothness specifications are required by the Pavement design report.)

00745.75 Correction of Pavement Roughness - Replace this subsection, except for the subsection number and title, with the following:

If testing described in 00745.73 shows that the Pavement does not conform to the prescribed limits, the following applies:

(a) General - The Contractor is responsible for locating areas that require corrective work.

(b) Base Course - If the requirements of 00745.73(b) are not met, correct according to one of the following and retest:

(1) Cold Plane Removal - Profile grind with Equipment meeting the requirements of 00620.20 to a maximum depth of 0.4 inch.

(2) Grinder - Profile grind with abrasive grinder(s), equipped with a cutting head comprised of multiple diamond blades to a maximum depth of 0.4 inch.

(c) Wearing Course - After locating each area of Localized Roughness and the 0.10 mile segments that have an average IRI value greater than 95.0 inches per mile, meet with the Engineer at a mutually agreed upon time and drive the Project together. During the drive-through, evaluate each area of Localized Roughness between 160.0 and 189.9 inches per mile and partial segments with an average IRI value greater than 95.0 inches per mile to determine if corrective Work is required. All 0.10 mile segments with an IRI value more than 95.0 inches per mile and all areas of Localized Roughness equal to or greater than 190.0 inches per mile require corrective action. Disagreements will be resolved by the Engineer.

Correct all areas of Localized Roughness, segments and partial segments identified for corrective work, and any transverse joint and excluded areas that exceed the requirements of 00745.73, by one of the methods listed below and to the specified limits:

(1) Remove and Replace - Remove and replace the wearing surface lift.

(2) Grind - Profile grind with abrasive grinder(s) equipped with a cutting head comprised of multiple diamond blades to a maximum depth of 0.3 inch and apply an emulsion fog seal according to Section 00705, or as directed. Half or full lane width corrective grinding is required for areas requiring correction in one or both wheel paths as shown by the Localized Roughness, respectively. Perform corrective grinding in such a manner that the shedding of water is not interrupted across the travel lanes due to the grinding.

Following corrective work, the Engineer will re-evaluate all corrected areas for acceptance. The Engineer may require retesting per ODOT TM 772 and 00745.73. Further corrective Work may be required. Perform all corrective Work and retesting, including traffic control, at no additional cost to the Agency.

(d) Time Limit - Complete correction of all surface roughness prior to application of permanent Pavement markings within 14 Calendar Days following notification, unless otherwise directed.

(Obtain the specific gravity for the Project from the Designer and fill in the blank.)

00745.80 Measurement - Add the following paragraph to the beginning of this subsection:

The quantities of ACP shown in the Contract Schedule of Items were computed on the basis of Aggregates having a specific gravity of _____.

(Use the following two paragraphs when no separate measurement will be made for the liquid asphalt. Do NOT use on NHS projects or on Projects that have more than 150 Tons of liquid asphalt. When used, be sure to also include the boilerplate language under subsection .90.)

Replace the paragraph that begins "The quantities of ACP..." with the following paragraph:

The quantities of ACP will be measured on the weight basis. No separate measurement will be made for asphalt cement used in the mixture. No deduction will be made for lime or any other additive used in the mixture.

(Use the following two paragraphs when core correlation specifications are required by the Pavement design report.)

Add the following paragraph to the end of this subsection:

The quantities of core correlation of nuclear gauge readings will be measured on the unit basis for each core correlation test that is completed and accepted according to ODOT TM 327. Core correlations that are requested by the Contractor or that are required due to a change in Aggregate or asphalt cement source will not be measured.

(Use the following subsection .90 when any of the following apply:

- ***Latex polymer treatment of Aggregate is listed as an option in the Pavement design report.***
- ***No separate payment will be made for the liquid asphalt.***
- ***No separate payment will be made for the liquid anti-stripping asphalt cement additives.***
- ***Core correlation specifications are required by the Pavement design report.)***

00745.90 Payment -

(Use the following paragraph and Pay Item when core correlation specifications are required by the Pavement design report. The Pavement designer will estimate the quantity of core correlations on the basis of one core correlation for each paving lift over 2,500 Tons. If the Project is a multi-year Project, add correlations for each lift to be paved each subsequent year.)

Add the following Pay Item to the Pay Item list:

(c) Core Correlation of Nuclear Gauge Readings……..Each

(Use the following two paragraphs when core correlation specifications are required by the Pavement design report.)

Add the following paragraph after the paragraph that begins "In item (b)…":

Item (c) includes developing core correlation factors for all gauges to be correlated for the lift on which the core correlation was performed, according to the procedure in ODOT TM 327.

(Use the following paragraph and bullet when latex polymer treatment of Aggregate is listed as an option in the Pavement design report.)

In the paragraph that begins "No separate or additional payment…", add the following bullet to the end of the bullet list:

- Aggregate treatment - latex polymer

(Use the following two paragraphs when no separate payment will be made for the liquid asphalt. Do NOT use on NHS projects or on Projects that have more than 150 Tons of liquid asphalt. When used, be sure to also include the boilerplate language under subsection .80.)

Add the following paragraph to the end of this subsection:

No separate or additional payment will be made for asphalt cement used in the mixture.

(Use the following two paragraphs when no separate payment will be made for the liquid anti-stripping asphalt cement additives.)

In the paragraph that begins "No separate or additional payment…", add the following bullet to the end of the bullet list:

- liquid anti-stripping asphalt cement additives

(Use the following subsection .95 when separate sublot definitions is required by the Pavement design report.)

00745.95 Price Adjustments - Add the following two paragraphs after the bullet that begins "The adjusted target…"

If the Pay Factor (PF) for compaction is 1.00 or greater as calculated in 00165.40, use that compaction PF for the lot. If the PF for compaction is below 1.00, re-calculate the PF for compaction using a lower specification limit (LSL) of 91.5. The compaction PF re-calculated using a LSL of 91.5 will not exceed 1.00. The minimum PF of 1.00 described in 00165.40(d)(8) does not apply when re-calculating the compaction PF.

A completed lot with a CPF of between 0.95 and 1.00 will be accepted, subject to a price adjustment according to 00150.25. The basis of adjustment will be the CPF as calculated in 00165.40.

[End sublot definitions language]

(Use the following lead-in paragraph and subsection .96 when IRI Pavement smoothness specifications are required by the Pavement design report.)

Add the following subsection:

00745.96 Smoothness Price Adjustment - No separate or additional payment will be made for smoothness testing.

(a) General - A price adjustment based on the results of the IRI will be made for each 0.10 mile segment or partial segment of Traffic Lane ACP requiring IRI measurement according to 00745.73. The price adjustment will be based on the IRI values determined according to ODOT TM 772 for each 0.10 mile segment and partial segment. Partial segments less than 0.10 mile in length shall be evaluated with the IRI price adjustment value multiplied by the ratio of the partial segment length to 0.10 mile.

A smoothness price adjustment will be made for all segments, or partial segments based on the average IRI value and the following equations:

(Use one of the following options as required by the Pavement design report. Only use one option and delete the one that does not apply.)

[Option 1 - Schedule 1 IRI smoothness price adjustment.]

Schedule 1

Averaged IRI (inches/mile)	Equation
≤ 35.00	Y = $500.00
35.01 - 60.00	Y = (– $20.00 × X) + $1,200.00
60.01 - 65.00	Y = $0.00
65.01 - 95.00	Y = (– $20.00 × X) + $1,300.00
> 95.00	Corrective Action

Y = The price adjustment for the segment or partial segment
X = The averaged IRI value for the segment or partial segment

[End Option 1]

[Option 2 - Schedule 2 IRI smoothness price adjustment.]

Schedule 2

Averaged IRI (inches/mile)	Equation
≤ 50.00	Y = $300.00
50.01 – 65.0	Y = (– $20.00 × X) + $1,300.00
65.01 – 80.00	Y = $0.00
80.01 – 95.00	Y = (– $20.00 × X) + $1,600.00
> 95.00	Corrective Action

Y = The price adjustment for the segment or partial segment
X = The averaged IRI value for the segment or partial segment

[End Option 2]

Any positive smoothness price adjustment due to the Contractor will be made on the next monthly progress estimate following the satisfactory completion of all corrective Work and the submission of all test data for all Traffic Lane paving on the Project.

00745.96(b) applies when corrective action is taken by the Contractor, or the Engineer elects to not correct identified Areas of Localized Roughness according to 00745.75(c).

(b) Adjustments for Sections Requiring Corrective Work or with Areas of Localized Roughness - Segments or partial segments in which corrective Work is performed according to 00745.75(c) are subject to the price adjustments described in 00745.96(a) except that no positive price adjustment (bonus) will be due to the Contractor If a segment or partial segment containing corrective Work is retested according to ODOT TM 772 and 00745.73, the retested average IRI value will be used for payment, except that no positive price adjustment will be made for a segment or partial segment containing corrective work.

No segment or partial segment containing an area of Localized Roughness with a value of 160.0 inches per mile or greater will be eligible for positive price adjustment, even if corrective action is not required by the Engineer.

Segments or partial segments containing corrective Work with an IRI value of more than 95.0 inches per mile are subject to additional corrective action and retesting according to 00745.75(c). The Engineer may waive corrective action in partial segments with the application of a smoothness price adjustment based on an IRI value of 95.0 inches per mile.

SP00746 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-22-25)**

SECTION 00746 - CRACK SEALING FLEXIBLE PAVEMENTS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00746 of the Standard Specifications.

SP00748 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-22-25)**

SECTION 00748 - ASPHALT CONCRETE PAVEMENT REPAIR

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00748 of the Standard Specifications.

SP00749 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-22-25)**

SECTION 00749 - MISCELLANEOUS ASPHALT CONCRETE STRUCTURES

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00749 of the Standard Specifications modified as follows:

00749.14 Concrete - Delete this subsection.

(Use the following subsection .47 when asphalt islands or asphalt traffic separators are included on the Project.)

00749.47 Concrete - Replace this subsection with the following subsection:

00749.47 Concrete Curbs - Construct concrete curbs associated with asphalt islands and traffic separators, as shown and according to Section 00759.

(Use the following subsection .91 when "extra for asphalt islands" Pay Item is included in the Schedule of Items.)

00749.91 Method "A" - Weight and Extras Basis - Replace the paragraph beginning "Item (e) includes…" with the following:

Item (e) includes raised traffic islands and raised traffic separators. Concrete curbs necessary for the islands will be paid according to 00759.90.

(Use the following subsection .92 when "asphalt islands" Pay Item is included in the Schedule of Items.)

00749.92 Method "B" - Complete in Place Basis - Replace the paragraph beginning "Item (c) includes…" with the following:

Item (c) includes raised traffic islands and raised traffic separators. Concrete curbs necessary for the islands will be paid according to 00759.90.

SP00754 (Special Provisions for the 2024 Book) **(Bidding on or after: 06-01-25**
Last updated: 03-03-25
Requires SP02050 and SP02510)

SECTION 00754 - PLAIN CONCRETE PAVEMENT REPAIR

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00754, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00754.00 Scope - This Work consists of sawcutting and removing existing concrete Pavement and constructing new plain portland concrete Pavement repairs as shown and specified.

00754.01 Abbreviations:

SSD - Saturated Surface-Dry
SSFC - Stationary Side Form Construction

00754.02 Areas of Work - Locations of the areas for repair are as shown. Additional areas of repair may be required as determined by the Engineer.

00754.04 Prepaving Conference - Supervisory personnel of the Contractor and any Subcontractors who are to be involved in the concrete paving work shall meet with the Engineer, at a mutually agreed time, to discuss methods of accomplishing all phases of the paving work.

Materials

00754.10 Materials - Furnish Materials meeting the following requirements:

Resin Bonded Anchors.....00535
Bar Reinforcement 02510
Concrete Materials 02001
Curing Materials 02050
Epoxy and Nonepoxy Bonding Agents.....02070
Epoxy and Nonepoxy Grouts 02080
Galvanizing.....02530.70
Portland Cement Concrete Repair Materials.....02015
Poured Joint Fillers.....02440.30
Preformed Expansion Joint Filler 02440.10

00754.11 Classes of Concrete - If the time frame designated for opening traffic is less than 72 hours after concrete placement, provide Class HES4000 - 1 1/2 concrete designed to attain a minimum average compressive strength of 3,000 psi prior to allowing traffic on the concrete. Otherwise furnish Class 4000 - 1 1/2 paving concrete.

00754.13 Concrete Mix Designs - Prepare and submit either new mix designs or current mix designs for each class of concrete required according to Section 02001.

00754.15 Quality Control - Provide quality control according to Section 00165, Section 02001, and the following:

(a) Concrete Mixture - If the results of any test are outside of the specification limits, stop the placement of the load. Correct the load or reject it and do not incorporate it into the work. Test subsequent loads before any further concrete placement. Correct the subsequent loads if any of the tests are still outside the specification limits. If the load cannot be corrected, reject it and do not incorporate it into the work. Testing of subsequent loads may return to the specified frequency when the test results from two consecutive loads are shown to meet the specification limits.

(b) Records - Deliver all batch tickets, water-cement ration calculations, and all other records required to the Engineer upon availability but no later than the morning of the next Day.

00754.16 Acceptance of Concrete:

(a) General - Acceptance of concrete will be based on the results of the Contractor's quality control testing according to Section 00165 and the MFTP.

(b) Aggregate - Acceptance will be based on the Contractor's quality control testing, if verified by the Agency according to Section 00165 and the MFTP.

(1) Aggregate Gradation - A stockpile contains specification aggregate gradation when the quality level for each sieve size calculated according to 00165.40 is equal to or greater than the quality level in Table 00165-2 for a PF of 1.00. Each required sample

represents a sublot. When the quality level in Table 00165 2 yields a PF of less than 1.00 for any constituent, the material is non specification.

(2) Non-specification Aggregate Gradation - Stockpiled aggregates that contain non-specification aggregate gradation will be rejected by the Engineer unless non-specification material is removed from the stockpile. Do not add additional material to the stockpile until enough non-specification material is removed so that the quality level for each constituent is equal to or greater than the quality level in Table 00165 2 for a 1.00 PF.

(c) Plastic Concrete - Acceptance of the plastic concrete will be based on the tests performed by the Contractor's QCT, according to the tolerances and limits of Section 02001.

(d) Hardened Concrete - Cast and cure the test cylinders according to AASHTO T 23 in single use plastic molds and test at 28 Days according to AASHTO T 22.

(1) General - For all classes of concrete, acceptance of hardened concrete will be based on an analysis of compressive strength tests of cylinders cast by the QCT. Test cylinders at an ODOT certified laboratory.

(2) Actual Strength Test Value - The ASTV at 28 Days is the average compressive strength of the three cylinders tested.

(3) Sampling and Testing - Sample and test according to Section 00165 and the MFTP.

(4) Acceptance - The ASTV shall exceed the $f'c$ (specified strength) for the mix design. If a set of cylinders has an ASTV less than $f'c$, the Engineer will review the results to determine if the concrete represented by the cylinders shall be removed. In any case, concrete that has an ASTV of less than 85 percent of the specified strength shall be removed unless otherwise authorized, in writing, by the Engineer. The cost of removal, replacement, and all related work shall be the Contractor's responsibility, subject, if the concrete is allowed to remain in place, to a price adjustment according to 00150.25.

If an ASTV falls below the $f'c$, the Contractor may submit a written plan within 3 Days of the test for review by the Engineer. The plan shall outline a proposed alternate method of evaluating compressive strength. The plan shall provide evidence that a reasonable $f'cr$ (over design) was maintained and that there is credible evidence (besides low strength) which warrants consideration of this option. If the Engineer determines that the compressive strength test results are suspect from definable external factors, the Engineer may allow an alternate method of acceptance.

00754.17 Spall Repair Material - For spall repair, furnish a PCC repair material meeting the requirements of Section 02015 except do not use products that contain magnesium phosphate. Use either "Rapid Setting" or "Very Rapid Setting" material.

00754.18 Bond Breaker - Bond breaker must be one of the following:

- Non-woven geotextile meeting the property requirements listed in Table 02320-4.

- Liquid curing compound evenly applied as a bond breaker in two applications, at a rate of 1 gallon per 130 to 165 square feet for each application, over the entire surface area.

Equipment

00754.20 Batch Plant - Provide batch plants according to 02001.40.

00754.21 Mixers - Provide mixers according to 02001.40.

For Projects requiring Class HES concrete, mobile mixers may be used if the mixers conform to the following:

- The mixer is self-propelled and carries sufficient unmixed dry bulk cement, Sand, Coarse Aggregate, admixtures, and water to produce a minimum of 6 cubic yards of concrete on site.
- The mixer provides positive measurement of cement being introduced into the mix by meter or counter.
- The mixer provides positive control of the flow of water into the mixing chamber. Water flow is readily adjustable to provide for minor variations in Aggregate moisture.
- Each mixer is calibrated to automatically proportion and blend all components according to the mix design on a continuous or intermittent basis as required by the placing operation.

Perform a calibration and yield test on each mixer prior to the first placement to accurately proportion the specified mix. Use a written calibration procedure from the mixer manufacturer, a procedure provided by the agency or other written procedure acceptable to the agency. The calibration process may be witnessed by the Engineer. Provide the Engineer with information about the scheduled date, time and place for the calibration. Perform a new calibration when the source of materials changes, when the mixer undergoes a major repair, or when requested by the Engineer.

00754.22 Hauling Equipment - Use truck mixers to transport concrete. Provide hauling Equipment conforming to AASHTO M 157.12 or AASHTO M 157.11.6.

00754.23 Paving Equipment - Provide paving Equipment conforming to the following:

- Able to vibrate, consolidate, and finish the slab to proper grade and Cross Section for the full width and depth of the concrete being placed.
- Capable of meeting the smoothness requirements.
- Approved by the Engineer.

00754.24 Concrete Saws - Provide power driven concrete saws for sawing joints, adequate in number of units and power to complete the sawing at the required rate. Also provide a standby saw on the Project Site.

00754.25 Smoothness Testing Equipment - Provide one 12-foot straightedge.

00754.26 Concrete Drills - Provide a drilling system consisting of drilling Equipment and drilling supports that:

- Is capable of drilling holes of the required diameter and depth.
- Can produce holes parallel to the Pavement surface and parallel to each other within a tolerance of ± 1/8 inch.
- Can provide hole alignments at mid-depth of PCC Pavement.

Labor

00754.30 Quality Control Personnel - In addition to the certified technicians required in 02001.50 provide and designate an individual to be present at the placement site at all times during concrete placements and who is authorized and responsible for acceptance and rejection of materials.

Construction

00754.40 Weather Limitations - Coordinate all operations involved in repairing the Pavement so the Work will result in a finished Pavement conforming to the Specifications regardless of the daily or seasonal variations in weather, temperature and humidity under which the work is permitted to proceed.

Do not place PCC during periods of rain. Do not place PCC on frozen bases. Stop placement when descending air temperature falls below 35 °F. Do not begin placement until the air temperature is 35 °F in the shade and rising and is forecast to remain above 35 °F.

Protect the Pavement from weather damage. Protect unhardened PCC from precipitation with protective material. When PCC is placed during cold weather and the air temperature is forecast to drop below 33 °F, prevent the concrete from freezing for a minimum of 7 Days after placement.

Remove and replace weather-damaged Pavement at no additional cost to the Agency.

00754.41 Preparation:

(a) Removal of Existing Pavement - Remove full panels of existing concrete Pavement full depth as shown or directed. A vertical full depth sawcut is required along all longitudinal joints and at transverse locations. Cut concrete through tie bars and dowels. Remove concrete Pavement with Equipment approved by the Engineer in a manner that does not damage remaining Pavement or connections and allows for specified connections. Repair damage to the existing Pavement due to the Contractor's operations, at no additional cost to the Agency, by extending the full depth repair to the satisfaction of the Engineer.

(b) Concrete Pavement Base Repair - Use material similar to existing base material or use commercial concrete. If concrete is used, place a bond breaker between the new concrete Base and the new concrete Pavement. If the repair is a nominal 2 inches deep or less, the repair may be accomplished by pouring the patch monolithically with the new concrete Pavement, without a bond breaker. PCC repair material may be substituted for Commercial Grade Concrete.

Compact unbound Granular Materials used in the Base repair as directed. Allow concrete or substitutes to cure sufficiently to support necessary construction activities without

yielding prior to continuing those activities. No further testing of Pavement Base material is required.

(c) Spall Repair Area - Sawcut the existing concrete Pavement to a nominal depth of 2 inches. Remove existing concrete within the perimeter of the sawcut to a depth of 2.0 inches, or to sound concrete as determined by the Engineer. If jack hammers are used for removing Pavement, they shall not weigh more than 30 pounds, and chipping hammers shall not weigh more than 15 pounds. Do not operate hammers at an angle greater than 45 degrees measured from the surface of the Pavement. Any existing Pavement that is to remain that has been damaged shall be repaired at no additional cost to the Agency.

(d) Preparation of Existing Concrete - Before placement of concrete, blow clean the existing concrete surfaces within the pour area with compressed air and dampen the area to be paved with a light application of water. If the area becomes dry before new concrete is placed, blow clean and dampen the area again.

00754.43 Placing Dowel Bars and Tie Bars:

(a) Dowel Bars - Provide smooth, round, epoxy coated dowel bars. Coat with plastic, heavy oil, or other approved material that will neither bond with nor be harmful to the PCC. Use a framework to place dowels that is continuous across the entire lane width, holds the dowels parallel with each other, holds the dowels parallel with the surface of the Pavement, and holds the dowels parallel to the Roadway centerline. For dowels placed across an expansion joint, use a dowel bar basket or other system of support that leaves no permanent incompressible members in place within the joint. Maximum alignment tolerance shall be 5 degrees or 3/16 inch in the length of the dowel. Place dowels within 3/8 inch of the center of the slab vertically.

Place dowel bars for joint contact at existing concrete Pavement surfaces by drilling the existing concrete section and then inserting the dowel bars and grouting them in place. Drill the holes large and deep enough to insert the dowel bars with adequate epoxy or nonepoxy grout. Adjust hole locations to avoid damaging any existing reinforcement when drilling the holes. Blow the dowel bar holes clean with compressed air before grouting. Center the bar in the hole for the full length of embedment before grouting. Pump the grout into the hole around the bar so the back of the hole will be filled first. Do not allow blocking or shimming to impede the flow of the grout into the hole. If dams are needed, place them at the front of the holes to confine the grout. Place the dams to permit the escape of air without leaking grout. Do not remove dams until grout has cured in the hole.

(b) Tie Bars - Provide epoxy coated tie bars and place them for contact-type longitudinal joints by one of the following methods:

- By drilling the hardened concrete section and then inserting the tie bars as resin-bonded anchors in accordance with construction and testing procedures in Section 00535.
- By inserting the tie bars into the plastic slipformed concrete before vibrating and finishing the concrete. The tie bars may be bent before insertion. Replace any loose tie bars by drilling and grouting, as described above, at no additional cost to the Agency.

- By using threaded mechanical splice couplers from the QPL. Submit splices for approval before using. Rebar splices shall be:
- Accompanied by manufacturer's quality compliance certificate according to 00165.35.
- Installed according to manufacturer's recommendations.

00754.44 Handling, Measuring, and Batching Materials - The plant site, layout, Equipment and provisions for transporting material shall be adequate to assure a continuous supply of Material to the Project Site.

(a) Aggregates - Stockpile and remove the aggregate from stockpiles in a manner that holds segregation to a minimum.

Do not use Aggregates that become segregated, mixed with earth or foreign material, or contain lumps of hardened material. Thaw frozen Aggregates or Aggregates containing frozen lumps before use.

(b) Batching - Separately weigh into the hoppers the Fine Aggregate, each separated size of Coarse Aggregate, cement and fly ash in the respective proportions set by the mix design. Provide a device to indicate positively that the full amount of cement and fly ash was discharged into the batch box or container. Measure water and admixtures either by volume or by weight.

Conduct batching so that the individual weights of each Material required are within the following tolerances:

Aggregates .....± 2%
Cement ..... - 1% to + 4%
Fly Ash ..... - 1% to + 4%

00754.45 Mixing Concrete:

(a) General - Mix the concrete in a batch plant mixer, truck mixer, or mobile mixer and the following:

- Charge the batch into the receiving drum so some water enters before the solids and continues to flow uniformly for a portion of the mixing time.
- Keep the skip and the throats of drums free of accumulations.
- Mix the concrete only in the quantity required for immediate use.
- Do not intermix batches.
- Do not retemper concrete by adding water or by other means.

(b) Batch Plant Mixers - The mixing time for batch plant mixers shall be at least 60 seconds unless the Contractor's CCT documents meeting "Concrete Uniformity", according to AASHTO M 157, Annex A1 for concrete produced at the batch plant mixer set up for this Project, to the satisfaction of the Engineer. The mixing time may then be reduced to the extent the test permits but not less than 45 seconds.

(c) Truck Mixers - The mixing time for truck mixers shall be 70 to 100 revolutions at a mixing speed recommended by the manufacturer of the truck mixer.

00754.46 Placing Concrete:

(a) General - Perform the strike-off, consolidation, final floating and surface finishing according to the following:

- Vibrate throughout the concrete until it is uniformly consolidated. Do not segregate.
- Strike off the concrete with templates or screeds designed and manipulated to shape the concrete to the specified Cross Section between the forms, carrying a slight excess of concrete in front of the leading edge of templates or screeds at all times.
- Following the vibrating and strike-off operations, float the concrete. Include transverse floating or other smoothing and finishing actions as necessary. Check and correct the surface according to 00754.49. Keep the surface free from laitance, soupy mortar, marks or irregularities.
- Finish the surface according to 00754.49.

Correct all damage to the Subgrade or Base due to the Contractor's operations, at no additional cost to the Agency, to the satisfaction of the Engineer.

(b) One Lift - Place the concrete in final position in one Lift so a minimum of finishing will be necessary to provide a dense, homogenous Pavement conforming to true grades and Cross Sections.

(c) Provision for Joints and Other Devices - While placing concrete, make provision for constructing joints, placing dowels, tie bars, and other devices, as shown and directed, and as provided in 00754.43 and 00754.48.

(d) Reject Concrete Material - Reject concrete if it:

- Is not in place within 90 minutes after being mixed.
- Has begun to take an initial set before placement.

(e) Hand Operated Equipment - Use shovels to hand spread and distribute the concrete. Do not use rakes. Do not foul the concrete with foreign matter, or disturb joint devices during such operations. Furnish hand operated mechanical vibrators satisfactory to the Engineer. Use the vibrators to consolidate the concrete Pavement at least 6 feet each side of construction and expansion joints and all other areas as directed.

(f) Illumination - During hours of darkness, adequately illuminate work areas at no additional cost to the Agency.

00754.48 Joints:

(a) General - Construct joints of the kinds shown and where shown or directed. Joint types in the concrete Pavement will be contraction, construction or expansion. They shall be transverse or longitudinal, as shown or directed. Extend all joints and joint filler to Pavement edges or to each other.

Joints shall not vary from specified or indicated line by more than 1/4 inch. The tops of joint filler, when required, shall be slightly, but not more than 1/8 inch, below and paralleling finished Pavement grade and Cross Section. Protect top edges of filler from damage by paving operations.

Construct all joints which contain preformed filler before the final floating and surface finishing of the concrete, unless otherwise directed.

(b) Longitudinal Joints - If the Contractor elects to pour the entire width of Pavement at one time, construct the longitudinal joint as shown. Longitudinal joints shall be the contact type or weakened plane type as shown:

(1) Longitudinal Contact Joints - Construct longitudinal contact joints when concrete is placed against hardened concrete regardless of age, between strips of Pavement or between a strip of Pavement and a concrete gutter.

(2) Longitudinal Weakened Plane Joints - Construct weakened plane joints by sawing to the depths and maximum width shown. Saw longitudinal weakened plane joints at the earliest possible time following placement of the concrete to prevent uncontrolled cracking without damaging the Pavement or joint. Saws may be single or tandem, as the Contractor elects, and be controlled by guides to true line. Restore curing agents broken or damaged by the sawing operations.

(c) Construction Joints - Construct construction joints when there is an interruption of 30 minutes in the concrete placing operations.

The new concrete placed against the joint shall conform closely to the proportions and consistency of the previously placed concrete except vibrate and consolidate it to a greater degree and with more care than normal. Unless otherwise shown, do not construct construction joints within 10 feet of a transverse expansion or contraction joint. If sufficient concrete has not been mixed at the time of interruption to form a slab at least 10 feet long, remove the concrete back to the last joint and dispose of as directed.

(d) Transverse Contraction Joints - Form transverse contraction joints by sawing to the required dimensions shown on the Plans. Saw transverse contraction joints at the earliest possible time following placement of the concrete to prevent uncontrolled cracking without damaging the Pavement or joint. Repair any damage to the curing material during the sawing operations immediately after the sawing is completed.

(e) Sealing Sawed Joints - Fill sawed longitudinal weakened plane joints and transverse contraction joints with poured joint filler. Thoroughly clean joints at the time of sealing. Ensure the curing period for joints is complete before allowing construction Equipment and vehicles on the Pavement.

00754.49 Surface Finishing - After the concrete has been given a preliminary finish, check the surface of the fresh concrete in the longitudinal and transverse direction with a 12-foot straightedge. Correct surface deviations more than allowed by 00754.56(a). Lap each successive check with the previous check path by at least half the length of the straightedge.

(a) Textured Finish - Upon completion of the machine floating, straightedge testing, edge tooling and, if necessary, hand floating, and before initial set of the surface concrete, give the surface of the concrete a textured finish.

Accomplish the textured finish with a steel-tine tool with 1/8 inch tines that will mark the finished concrete to a depth of 1/8 inch to 3/16 inch. Randomly space the markings from 1/2 inch to 1 1/4 inches as approved. Avoid overlaps of the texturing. Construct markings either perpendicular or parallel to the Roadway centerline to match the adjacent concrete Pavement textured finish.

With approval of the Engineer, an astroturf or broom finish may be used in place of tining on roads to receive an overlay.

(b) Transverse Profile - Match the surface of the fresh concrete in the transverse direction to the surface of the existing concrete at the ends of the patch. Taper into existing Pavement ruts in the first and last 10 to 20 feet to provide a transverse surface finish for the remainder of the patch meeting the requirements of this section.

00754.52 Edge Tooling and Filling - Tool edges at longitudinal joints and construction joints of new Pavement and clean joints of previously placed concrete to remove laitance and mortar resulting from finishing operations, and to provide clean rounded edges without ridges on the surface. Perform tooling of edges at construction joints so that no more than a 1/8 inch radius is produced.

Fill all areas of minor honeycomb or other minor defect in composition of the concrete along the exposed sides of concrete with a stiff mortar of cement and Fine Aggregate, and apply to the moistened concrete to the satisfaction of the Engineer. Remove and replace areas showing serious defects in composition of the concrete with specified quality concrete for full panel width between longitudinal joints or edges, and for a length not less than a full panel length. Low spots exceeding 1/4 inch in depth, if in hardened concrete, may be filled with an epoxy grout, provided the filling is neat and blends inconspicuously with adjoining concrete. Prepare the area according to the grout manufacturer's recommendations.

00754.53 Curing Concrete - Immediately after the final floating, surface finishing and edging have been completed, and while the concrete surface is still moist, cover and cure the entire exposed surface of the newly placed concrete for at least 72 hours. If the Specifications require opening the lanes to traffic in less than 72 hours, remove curing covers just prior to opening to traffic. Use one of the following provisions:

(a) Liquid Membrane-Forming Compounds - Apply liquid membrane-forming compound uniformly to the concrete by pressure-spray methods at a rate of at least 1 gallon per 150 square feet. Mix the liquid membrane-forming compound thoroughly before and during use. Liquid membrane-forming compounds are not allowed when an asphalt concrete layer will be placed on the new concrete.

(b) Other Coverings - Apply clear or white polyethylene film or insulated curing blankets as a waterproof and moisture-proof covering. Place the film or blankets beyond the edge of the repaired areas and weight to hold in position. Do not mar the concrete with the covering.

00754.54 Longitudinal Pavement Cracks - Remove and replace all patches that show longitudinal cracking or do not bond at no additional cost to the Agency.

00754.55 Spall Repair - In spalled areas, remove the existing Pavement according to 00754.41(c). The repair limits shall extend beyond the spalled area a minimum of 3.0 inches. Use only rectangular or square repair shapes. Prepare the repair area according to 00754.41(d) and the PCC repair material manufacturer's recommendations, then apply a coat of epoxy grout or bonding agent to all vertical surfaces and place PCC repair material before grout dries. When a spall repair is placed directly against an adjacent longitudinal joint, place a bond breaker between the existing concrete and the area to be patched. Mix and place PCC repair material according to the manufacturer's recommendation. Use shovels to hand spread and distribute the concrete. Do not use rakes. Do not contaminate the concrete with foreign matter. Cure PCC repair material according to the manufacturer's recommendation.

00754.56 Surface Tolerance, Testing, and Correction - The surface of finished Pavement shall not deviate from longitudinal and transverse smoothness more than the limits identified below. Perform straightedge testing under the supervision of the Engineer as soon as the hardness of the concrete permits.

(a) Straightedge Testing and Tolerance - Test Pavement surface longitudinal and transverse smoothness with a 12-foot straightedge. The extent of the testing will be determined by the Engineer. The Pavement surface shall not deviate from the straightedge at any point by more than 1/8 inch, except the transverse surface at the patch ends may vary as required in 00754.49(b).

(b) Correcting Deficiencies - Correct all segments that exceed the requirements of 00754.56(a) by one of the following methods:

(1) Remove the non-specification concrete Pavement as determined by the Engineer and replace with Specification concrete Pavement.

(2) Profile with an abrasive grinder equipped with a cutting head comprised of multiple diamond blades.

Retest according to 00754.56(a). Perform all corrective Work at no additional cost to the Agency, including traffic control.

Maintenance

00754.60 Protection of Concrete - Repair or replace any part of the Pavement damaged by traffic or damaged from any other causes before its official acceptance, according to 00170.80. Do not operate construction Equipment or allow Public Traffic on newly placed concrete until all of the following requirements are met:

(a) The Contractor complies with 00150.60.

(b) The concrete attains a compressive strength of at least 3,000 psi as determined by testing at least two cylinders cured according to AASHTO T 23 (field cure) and tested according to AASHTO T 22.

(c) Approval is given by the Engineer before opening to traffic.

(d) The surface of the concrete is protected from scarring or abrasion and kept free of stones, loose mortar and other matter apt to be deleterious to the concrete in the paths of Equipment.

00754.61 Protection of Shoulders - A portion of the shoulder adjacent to the proposed patch, may be removed as necessary to ensure proper forming at the edge or the patch. Prior to opening to traffic, the disturbed shoulder area shall be replaced with material types and thickness similar to the existing shoulder, compacted, and restored to the existing line and grade. Include all cost of the shoulder replacement in the price bid for Concrete Pavement Repair.

Measurement

00754.80 Measurement - The quantities of Work performed under this Section will be measured according to the following:

(a) Concrete Pavement Repair - Concrete Pavement repair will be measured on the area basis and will be determined by measuring the width and length of each separately constructed Panel of Pavement. The width is the measured edge-to-edge width on the surface of the Pavement, perpendicular to centerline. The length is the measurement from end to end of Pavement along the center line of the Roadway, including the length of the bar lap splices.

The measurement of extra thickness of Pavement, as shown or as ordered, will be determined by conversion on a proportionate volume basis to an equivalent number of square yards of specified thickness Pavement.

(b) Spall Repair - Spall repair will be measured on the area basis and will be determined by measuring the width and length of each separate repair. The width is the measured edge-to-edge width on the surface of the Pavement. The length is the measurement from end-to-end of Pavement along the center line of the Roadway.

The measurement of extra thickness beyond the depth shown in the Plans or as ordered by the Engineer, will be determined by conversion on a proportionate volume basis to an equivalent number of square yards of the specified thickness.

(c) Concrete Pavement Base Repair - Concrete Pavement base repair will be measured on the area basis and will be determined by measuring the width and length of each separate repair. The width is the measured edge-to-edge width on the surface of the Pavement, perpendicular to centerline. The length is the measurement from end-to-end of the repair along the center line of the Roadway.

Payment

00754.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement

(a) Plain Concrete Pavement Repair.....Square Yard
(b) Concrete Pavement Spall Repair.....Square Yard
(c) Concrete Pavement Base Repair .....Square Yard

Item (a) includes removing concrete Pavement, preparing the Base, and preparing the cut edges. Item (a) also includes Base repair, Leveling, or backfilling, up to 2 inches deep.

Item (b) includes removing concrete.

Item (c) includes Base repair, Leveling, and related backfilling of Subbases or Subgrade greater than 2 inches.

Sawcutting will be paid for according to Section 00310.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP00755 (Special Provisions for the 2024 Book) **(Bidding on or after: 06-01-25**
Last updated: 02-26-25
Requires SP02050 and SP02510)

SECTION 00755 - CONTINUOUSLY REINFORCED CONCRETE PAVEMENT

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00755 of the Standard Specifications modified as follows:

(Use the following subsection when the class of concrete is different than 4000 –1 ½". Fill in the blank with the class of concrete.)

00755.11 Classes of Concrete - Replace this subsection, except for the subsection number and title, with the following:

Furnish Class _____ paving concrete.

00755.40 Weather Limitations - Replace the paragraph that begins "Coordinate all operations involved…" with the following paragraph:

Coordinate all operations involved in constructing the Pavement so the Work will result in a finished Pavement conforming to the Specifications regardless of the variations in weather, temperature and humidity under which the Work is allowed to proceed.

(Use the following subsection .80 when terminal expansion joints are required.)

00755.80 Measurement - Replace the paragraph that begins " The quantities of terminal anchors…" with the following paragraph:

The quantities of terminal anchors, terminal expansion joints, and terminal expansion joint sleeper slab will be measured on the length basis, along the centerline of each anchor and joint as constructed.

(Use the following subsection .90 when pay items (g), or (h) are required. Delete what does not apply.)

00755.90 Payment – Add the following pay item to the pay item list:

(h) Terminal Expansion Joint Sleeper Slab..... Foot

Add the following paragraphs to the end of this subsection:

Item (g) includes the dowelled expansion joint.

Item (h) includes excavation for the terminal expansion joint sleeper slab.

SP00756 (Special Provisions for the 2024 Book) **(Bidding on or after: 06-01-25**
Last updated: 02-26-25
Requires SP02050 and SP02510)

SECTION 00756 - PLAIN CONCRETE PAVEMENT

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00756 of the Standard Specifications modified as follows:

00756.40 Weather Limitations - Replace the paragraph that begins "Coordinate all operations involved…" with the following paragraph:

Coordinate all operations involved in constructing the Pavement so the Work will result in a finished Pavement conforming to the Specifications regardless of the variations in weather, temperature and humidity under which the Work is allowed to proceed.

(Use the following subsection .58 when flexible to rigid pavement transitions are required)

Add the following subsection:

00756.58 Flexible to Rigid Pavement Transition Systems - Furnish the concrete in Pavement transition systems according to 00756.11. Furnish steel meeting the requirements for standard Pavement reinforcement as shown.

Vibrate the concrete in Pavement transition systems until it is consolidated and the excavations are filled. Construct Pavement transition systems at least 24 hours before paving operations.

(Use the following subsection .80 when flexible to rigid pavement transitions are required)

00756.80 Measurement - Add the following to the end of this subsection:

The quantities of flexible to rigid Pavement transition systems will be measured on the area basis.

(Use the following subsection .90 when flexible to rigid pavement transitions are required)

00756.90 Payment - Add the following Pay Item to the Pay Item list:

(c) Flexible to Rigid Pavement Transitions .....Square Yard

Item (c) includes the transition panel, excavation, and dowelled expansion joint. ACP will be paid for according to 00744.90, or 00745.90, as applicable.

SP00758 (Special Provisions for the 2024 Book) **(Bidding on or after: 06-01-25**
Last updated: 03-03-25
Requires SP02050 and SP02510)

SECTION 00758 - REINFORCED CONCRETE PAVEMENT REPAIR

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00758, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00758.00 Scope - This Work consists of sawcutting and removing existing concrete Pavement and constructing new reinforced and continuously reinforced Portland cement concrete Pavement repairs as shown and specified.

00758.01 Abbreviations:

HES - High Early Strength

00758.04 Pre-placement Conference – Hold a pre-placement conference with all supervisory personnel who are to be involved in the concrete Pavement repair Work at a mutually agreed time. Ensure the Engineer, concrete Supplier and other Subcontractors are represented. Discuss methods of accomplishing all phases of the concrete Pavement repair Work.

Materials

00758.10 Materials - Furnish Materials meeting the following requirements:

Bonding Agents 02070
Concrete 02001
Curing Materials 02050
Grouts.....02080
Hot Poured Joint Filler 02440.30
Portland Cement Concrete Repair Material.....02015
Preformed Joint Fillers for Concrete.....02440.10
Reinforcement 02510
Resin Bonded Anchor Systems.....00535
Synthetic Macro Fiber Reinforcing 02045.20

00758.11 Classes of Concrete -

(Use one of the following two options as instructed. Delete the option that does not apply.)

[Option 1 - Use the following paragraph when HES concrete is NOT required.]

Furnish Class 4000 - 1 1/2 paving concrete.

[Option 2 - Use the following paragraph when the timeframe designated for opening traffic is less than 72 hours after concrete placement and HES concrete is required.]

Furnish Class HES4000 - 1 1/2 concrete designed to attain a minimum average compressive strength of 2,500 psi prior to allowing traffic on the concrete.

00758.13 Concrete Mix Designs - Prepare and submit either new mix designs or current mix designs for each class of concrete required according to Section 02001.

(Use the following HES language when HES concrete is required under subsection .11.)

[Begin HES language]

HES mix designs shall contain fiber reinforcement according to 02045.20. Introduce and mix the fibers in a way that will achieve uniform distribution.

HES mix designs shall have a Strength-Maturity Relationship established per AASHTO T 276 and AASHTO T 325 during the mix design phase. A minimum of seven early age readings will be taken at 1, 2, 3, 4, 5, 6, and 24 hours. Each reading requires averaging the two maturity cylinders and breaking three compressive strength specimens. Submit the required concrete maturity data outlined in the "Reports" sections 11.1.1 through 11.1.10 of AASHTO T 276 and 11.1.1 through 11.1.5 of AASHTO T 325 for approval by the Engineer.

HES mix designs may use Type III Cement from the QPL or Cement that complies with the definition of hydraulic cement or blended hydraulic cement according to ASTM C219.

[End HES language]

00758.15 Quality Control - Provide quality control according to Section 00165, 00758.30, Section 02001, and the following:

(a) Concrete Mixture -

- Sample and test according to the MFTP.
- For all reinforced concrete Pavement repair, provide personnel according to 00758.30 to sample and test the mix for temperature, air content, slump, water-cementitious ratio, density and yield, from the first load of each placement, whenever there is a visible change in the slump of the concrete, and when a set of cylinders is obtained.
- If the results of any test are outside of the specification limits, stop the placement of the load. Correct the load or reject it and do not incorporate it into the work. Test subsequent loads before any further concrete placement. Correct the subsequent loads if any of the tests are still outside the specification limits. If the load cannot be corrected, reject it and do not incorporate it into the work. Testing of subsequent loads may return to the specified frequency when the test results from two consecutive loads are shown to meet the specification limits.

(b) Records - Deliver all batch tickets, water-cement ratio calculations, and all other records according to the MFTP.

00758.16 Acceptance of Concrete:

(a) General - Acceptance of concrete will be based on the results of the Contractor's quality control testing according to Section 00165.

(b) Aggregate - Acceptance will be based on the Contractor's quality control testing, if verified by the Agency according to Section 00165.

(1) Aggregate Gradation - A stockpile contains specification aggregate gradation when the quality level for each sieve size calculated according to 00165.40 is equal to

or greater than the quality level in Table 00165-2 for a PF of 1.00. Each required sample represents a sublot. When the quality level in Table 00165-2 yields a PF of less than 1.00 for any constituent, the material is non-specification.

(2) Non-specification Aggregate Gradation - Stockpiled aggregates that contain non-specification aggregate gradation will be rejected by the Engineer unless non-specification material is removed from the stockpile. Do not add additional Material to the stockpile until enough non-specification Material is removed so that the quality level for each constituent is equal to or greater than the quality level in Table 00165-2 for a 1.00 PF.

(c) Plastic Concrete - Acceptance of the plastic concrete will be based on the tests performed by the Contractor's QCT, according to the tolerances and limits of Section 02001.

(d) Hardened Concrete - Cast and cure the test cylinders according to AASHTO T 23 in single use plastic molds and test at 28 Days according to AASHTO T 22.

(1) General - For all classes of concrete, acceptance of hardened concrete will be based on an analysis of compressive strength tests of cylinders cast by the QCT. Test cylinders at an ODOT certified laboratory.

(2) Actual Strength Test Value (ASTV) - The ASTV at 28 Days is the average compressive strength of the three cylinders tested.

(3) Sampling and Testing - Sample and test according to Section 00165 and the MFTP.

(4) Acceptance - The ASTV shall meet or exceed the $f'c$ (specified strength) for the mix design. If a set of cylinders has an ASTV less than $f'c$, the Engineer will review the results to determine if the concrete represented by the cylinders shall be removed. In any case, concrete that has an ASTV of less than 85 percent of the specified strength shall be removed unless otherwise authorized, in writing, by the Engineer. The cost of removal, replacement, and all related Work shall be the Contractor's responsibility, subject, if the concrete is allowed to remain in place, to a price adjustment according to 00150.25.

If an ASTV falls below the $f'c$, the Contractor may submit a written plan within 3 Days of the test for review by the Engineer. The plan shall outline a proposed alternate method of evaluating compressive strength. The plan shall provide evidence that a reasonable $f'cr$ (over design) was maintained and that there is credible evidence (besides low strength) which warrants consideration of this option. If the Engineer determines that the compressive strength test results are suspect from definable external factors, the Engineer may allow an alternate method of acceptance.

(Use the following subsection .17 when spall repair is required.)

00758.17 Spall Repair Material - For spall repair, furnish a PCC repair Material meeting the requirements of Section 02015 except do not use products that contain magnesium phosphate.

(Use the following subsection .18 when bond breaker is required.)

00758.18 Bond Breaker - Furnish a bond breaker complying with one of the following:

- Non-woven geotextile meeting the property requirements listed in Table 02320-4.
- Liquid curing compound evenly applied as a bond breaker in two applications, at a rate of 1 gallon per 130 to 165 square feet for each application, over the entire surface area.

Equipment

00758.20 Batch Plant - Provide batch plants according to 02001.40.

00758.21 Mixers - Provide mixers according to 02001.40.

When Class HES concrete is required, mobile mixers may be used if the mixers conform to the following:

- The mixer is self-propelled and carries sufficient unmixed dry bulk cement, Sand, Coarse Aggregate, admixtures, and water to produce a minimum of 6 cubic yards of concrete on site.
- The mixer provides positive measurement of cement being introduced into the mix by meter or counter.
- The mixer provides positive control of the flow of water into the mixing chamber. Water flow is readily adjustable to provide for minor variations in aggregate moisture.
- Each mixer is calibrated to automatically proportion and blend all components according to the mix design on a continuous or intermittent basis as required by the placing operation.

Perform a calibration and yield test on each mixer prior to the first placement to accurately proportion the specified mix. Use a written calibration procedure from the mixer manufacturer, a procedure provided by the agency or other written procedure acceptable to the Agency. The calibration process may be witnessed by the Engineer. Provide the Engineer with information about the scheduled date, time and place for the calibration. Perform a new calibration when the source of Materials changes, when the mixer undergoes a major repair, or when requested by the Engineer.

00758.22 Hauling Equipment - Use truck mixers to transport concrete. Hauling equipment shall conform to 02001.40.

00758.23 Paving Equipment - Provide paving Equipment conforming to the following:

- Able to vibrate, consolidate, and finish the slab to proper grade and Cross Section for the full width and depth of the concrete being placed.
- Capable of meeting the smoothness requirements.
- Approved by the Engineer.

00758.24 Concrete Saws - Provide power driven concrete saws for sawing joints, adequate in number of units and power to complete the sawing at the required rate. Also provide a standby saw on the Project Site. For sawing repair areas, provide specialized power driven concrete saws capable of sawing corners of the repair area through the bottom of the existing

concrete Pavement section without cutting into adjacent concrete that is to remain in place. As an alternative to the specialized saw, provide a core drill for drilling corners of area to be removed.

00758.25 Smoothness Testing Equipment - Provide one 12-foot straightedge.

00758.26 Concrete Drills - Provide a drilling system consisting of drilling equipment and drilling supports that:

- Is capable of drilling holes of the required diameter and depth
- For dowels and tie bars, can produce holes parallel to the Pavement surface and parallel to the longitudinal joint within a tolerance of ± 1/8 inch
- For dowels and tie bars, can provide hole alignments at mid-depth of PCC Pavement

Labor

00758.30 Quality Control Personnel - In addition to the certified technicians required in 02001.50, provide and designate an individual to be present at the placement site at all times during concrete placements and who is authorized and responsible for acceptance and rejection of Materials.

Construction

00758.40 Weather Limitations - Coordinate all operations involved in repairing the Pavement so the Work will result in a finished Pavement conforming to the Specifications regardless of the daily or seasonal variations in weather, temperature and humidity under which the Work is permitted to proceed.

Do not place PCC during periods of rain. Do not place PCC on frozen Bases. Stop placement when descending air temperature falls below 35 °F. Do not begin placement until the air temperature is 35 °F in the shade and rising and is forecast to remain above 35 °F.

Protect the Pavement from weather damage. Protect unhardened PCC from precipitation with protective material. When PCC is placed during cold weather and the air temperature is forecast to drop below 33 °F, prevent the concrete from freezing for a minimum of 7 Days after placement.

Remove and replace weather-damaged Pavement at no additional cost to the Agency.

(Use the following subsections (a) through (f) as instructed. Use all subsections that do not have instructions. Do not change the alpha characters before the subsections.)

00758.41 Preparation:

(a) Removal of Existing Pavement - Remove existing reinforced concrete Pavement full depth as shown or directed. Cut the reinforced concrete full depth with a concrete saw prior to removal. Remove concrete Pavement with Equipment approved by the Engineer in a manner that does not damage remaining Pavement and allows for specified connections. Saw corners of the repair area through the bottom of the existing concrete

Pavement section without cutting into adjacent concrete that is to remain in place by using either a specialized saw or by coring only within the concrete to be removed. Rounded corners of the repair area due to the coring operation may remain in place. Repair damage to the existing Pavement due to the Contractor's operations, at no additional cost to the Agency, by extending the full depth repair to the satisfaction of the Engineer.

(Use the following subsection (b) when removal of terminal expansion joint steel w-beam flange and web is required.)

(b) Removal of Terminal Expansion Joint Steel W-Beam Flange and Web - Remove the existing terminal expansion joint steel W-beam top flange and web as shown or as directed. Cut the steel web to facilitate removal. Cut the steel web so that no more than 1/4 inch remains above the existing sleeper slab. Perform the removal in a manner that does not damage remaining Pavement and sleeper slab. Repair any damage to the existing Pavement or sleeper slab due to the Contractor's operations, at no additional cost to the Agency, to the satisfaction of the Engineer.

(c) Preparation of Base - Remove loose or damaged base material completely, leaving no loose base material. Compact and level base material to the satisfaction of the Engineer.

(d) Reinforced Bar Lap Area - After the existing Pavement is removed, install resin bonded anchors according to Section 00535 and as shown.

(Use the following subsection (e) when spall repair is required.)

(e) Spall Repair Areas - Sawcut the existing concrete Pavement to a nominal depth of 2 inches. Remove existing concrete within the perimeter of the sawcut to a depth of 2 inches or to sound concrete as determined by the Engineer. If jack hammers are used for removing Pavement, each jackhammer shall not weigh more than 30 pounds, and if chipping hammers are used for removing Pavement, each chipping hammer shall not weigh more than 15 pounds. Do not operate hammers at an angle greater than 45 degrees measured from the surface of the Pavement. Repair damage to the existing Pavement due to the Contractor's operations, at no additional cost to the Agency by extending the repair to the satisfaction of the Engineer.

(f) Preparation of Existing Concrete - After Pavement in repair areas is removed, sandblast all vertical surfaces of adjoining concrete. Before placement of concrete, blow clean the area with compressed air, dampen the area to be paved with a light application of water, and apply a coat of epoxy grout or bonding agent to all vertical surfaces. If grouted surfaces become dry before new concrete is placed, prepare the existing concrete again as specified.

00758.43 Placing Reinforcement:

(a) General - Place reinforcement as shown and specified. Lap splices according to Section 00530. The Contractor's Equipment hauling reinforcement to the site will not be permitted on the Subgrade or the Base Material.

Use reinforcement that is straight, clean, and free of scale or other matter which would interfere with its bonding to the concrete.

Place the reinforcement on support devices that maintain it in specified position during concrete placement.

(b) Deformed Bar Reinforcement - Tie or clip at every other transverse bar intersection, as a minimum, in a manner that does not allow for displacement. Tie or clip every lap splice as shown.

(c) Support Devices - Support devices used to hold reinforcement in proper position in the concrete shall:

- Hold the reinforcement within 1/2 inch of the vertical position shown.
- Not displace more than 3 cubic inches of concrete when embedded in the slab.

Obtain approval of the proposed support devices before use. If concrete placement operations displace the reinforcement, stop production and place additional support devices.

(d) Tie Bars - Place tie bars required for joint contact at existing concrete Pavement by one of the following methods:

(1) Drill the hardened concrete section and then insert the tie bars as resin-bonded anchors according to Section 00535.

(2) Insert the tie bars into the plastic concrete before vibrating and finishing the concrete. The tie bars may be bent before insertion. Replace any loose tie bars according to 00758.43(d)(1) at no additional cost to the Agency.

(3) Use threaded mechanical splice couplers from the QPL, or approved equal. Submit splices for approval before using. Rebar splices shall be:

- Accompanied by manufacturer's quality compliance certificate according to 00165.35.
- Installed according to manufacturer's recommendations.

Tie bars are not required along the longitudinal joint for repairs less than 15 feet in length.

(e) Dowel Bars - Provide smooth, round, epoxy coated dowel bars. Lubricate dowel bars with bond-breaking compound approved by the Engineer. Place dowels in supporting framework or support devices that hold dowels parallel with each other, parallel with the surface of the Pavement, and parallel with the centerline of the Roadway. Obtain approval of the proposed method of support prior to use. Maximum alignment tolerance shall be 5 degrees or 3/16 inch in the length of the dowel. Place dowels within 3/8 inch of the center of the slab vertically.

Provide dowel bar caps on the lubricated end of each dowel bar used in an expansion joint. Provide dowel caps filled with a soft compressible Material with enough range of movement to allow complete closure of the expansion joint.

At existing concrete Pavement surfaces drill the existing concrete, insert and grout the dowel bars in place. Drill the holes large and deep enough to insert the dowel bars with adequate grout. Adjust hole locations to avoid damaging any existing reinforcement when drilling the holes. Blow the holes clean with compressed air before grouting. Center the bar in the hole for the full length of embedment before grouting. Pump the grout into the hole around the bar so the back of the hole is filled first. Do not allow blocking or shimming to impede the flow of the grout into the hole. If dams are needed, place them at the front of the holes to confine the grout. Place the dams to permit the escape of air without leaking grout. Do not remove dams until grout has cured in the hole.

00758.44 Handling, Measuring, and Batching Materials - The plant site, layout, Equipment and provisions for transporting Material shall be adequate to assure a continuous supply of Material to the Project Site.

(a) Aggregates - Stockpile and remove the Aggregate from stockpiles in a manner that holds segregation to a minimum.

Do not use Aggregates that become segregated, mixed with earth or foreign material, or contain lumps of hardened Material. Thaw frozen Aggregates or Aggregates containing frozen lumps before use.

(b) Batching - Batch Materials according to 02001.40.

00758.45 Mixing Concrete - Mix Materials according to 02001.40. For Projects requiring HES concrete, mobile mixers may be used.

00758.46 Placing Concrete:

(a) General - Perform the strike-off, consolidation, final floating and surface finishing according to the following:

- Vibrate throughout the concrete until it is uniformly consolidated. Do not segregate.
- Strike off the concrete with templates or screeds designed and manipulated to shape the concrete to the specified Cross Section between the forms, carrying a slight excess of concrete in front of the leading edge of templates or screeds at all times.
- Following the vibrating and strike-off operations, float the concrete. Include transverse floating or other smoothing and finishing actions as necessary. Check and correct the surface according to 00758.49. Keep the surface free from laitance, soupy mortar, marks or irregularities.
- Finish the surface according to 00758.49.

Correct all damage to the Subgrade or Base due to the Contractor's operations, at no additional cost to the Agency, to the satisfaction of the Engineer.

(b) One Lift - Place the concrete in final position in one lift so a minimum of finishing will be necessary to provide a dense, homogenous Pavement conforming to true grades and Cross Sections.

(c) Provision for Joints and Other Devices - While placing concrete, make provision for constructing joints, placing dowels, tie bars, and other devices, as shown and directed, and as provided in 00758.43 and 00758.48.

(d) Reject Concrete Material - Reject concrete if it:

- Is not in place within 90 minutes after being mixed.
- Has begun to take an initial set before placement.

(e) Hand Operated Equipment - Use shovels to hand spread and distribute the concrete. Do not use rakes. Do not foul the concrete with foreign matter, or disturb joint devices during such operations. Furnish hand operated mechanical vibrators satisfactory to the Engineer. Use the vibrators to consolidate the concrete Pavement at least 6 feet each side of construction and expansion joints and all other areas as directed.

(f) Illumination - During hours of darkness, adequately illuminate Work areas at no additional cost to the Agency.

00758.48 Joints:

(a) General - Provide and construct contraction, expansion, or construction joints transverse or longitudinal as shown or directed. Extend all joints and joint filler to Pavement edges or to each other as applicable.

Construct all joints at right angles to the surface of the Pavement. Joints shall not vary from the specified or indicated line by more than 1/4 inch. The tops of joint filler, when required, shall be slightly, but not more than 1/8 inch, below and paralleling finished Pavement grade and Cross Section. Protect top edges of filler from damage by paving operations.

Construct all joints which contain preformed filler before the final floating and surface finishing of the concrete, unless otherwise directed.

(b) Longitudinal Joints - Construct contact type or weakened plane type longitudinal joints as shown.

(1) Longitudinal Contact Joints - Construct longitudinal contact joints when concrete is placed against hardened concrete, between strips of Pavement, or between a strip of Pavement and a concrete gutter.

(2) Longitudinal Weakened Plane Joints - Construct weakened plane joints by sawing to the depths and maximum width shown. To prevent uncontrolled cracking, saw longitudinal weakened plane joints at the earliest possible time following placement of the concrete without damaging the Pavement or joint. Saws may be single or tandem, as the Contractor elects, and be controlled by guides to true line. Restore curing agents broken or damaged by the sawing operations.

(c) Construction Joints - Construct construction joints when there is an interruption of 45 minutes in the concrete placing operations, or 10 minutes for Class HES concrete.

Place construction joints no closer than 10 feet from the end of a repair or from an adjacent construction joint.

New concrete placed against construction joints shall conform to the proportions and consistency of the previously placed concrete.

(1) Continuously Reinforced Concrete Pavement - Furnish a self-supported working platform at each construction joint. The working platform shall be at least 4 feet wide and long enough to span the entire width of the Pavement Panel being constructed. Construct and support the platform so it does not rest upon or touch the reinforcing steel. Have the workers use this platform when working in the area around the construction joints. Do not walk on the reinforcing steel. Remove all debris and spilled concrete at and beyond the joint. Support the reinforcement as shown.

(2) Other Pavements - Unless otherwise shown, do not construct construction joints within 10 feet of a transverse joint. If sufficient concrete has not been mixed at the time of interruption to form a slab at least 10 feet long, remove the concrete back to the last joint and dispose of as directed.

00758.49 Surface Finishing - After the concrete has been given a preliminary finish, check the surface of the fresh concrete in the longitudinal and transverse direction with a 12-foot straightedge. Correct surface deviations more than allowed by 00758.56(a). Lap each successive check with the previous check path by at least half the length of the straightedge.

(a) Textured Finish - Upon completion of the machine floating, straightedge testing, edge tooling and, if necessary, hand floating, and before initial set of the surface concrete, give the surface of the concrete a textured finish.

Accomplish the textured finish with a steel-tine tool with 1/8 inch tines that will mark the finished concrete to a depth of 1/8 inch to 3/16 inch. Randomly space the markings from 1/2 inch to 1 1/4 inches as approved. Avoid overlaps of the texturing. Construct markings either perpendicular or parallel to the Roadway centerline to match the adjacent concrete Pavement textured finish.

With approval of the Engineer, an artificial turf or broom finish may be on roads to receive an overlay.

(b) Transverse Profile - Match the surface of the fresh concrete in the transverse direction to the surface of the existing concrete at the ends of the patch. Taper into existing Pavement ruts in the first and last 10 to 20 feet to provide a transverse surface finish for the remainder of the patch meeting the requirements of this section.

00758.52 Edge Tooling and Filling - Tool edges at transverse joints and longitudinal joints of new Pavement and clean joints of previously placed concrete to remove laitance and mortar resulting from finishing operations, and to provide clean rounded edges without ridges on the surface. Perform tooling of edges at construction joints to produce an edge radius that is less than or equal to 1/8 inch.

Fill all areas of minor honeycomb or other minor defect in composition of the concrete along the exposed sides of concrete with a stiff mortar of cement and Fine Aggregate, and apply to the moistened concrete to the satisfaction of the Engineer. Remove and replace areas

showing serious defects in composition of the concrete with specified quality concrete for full panel width between longitudinal joints or edges, and for a length not less than 10 feet. Low spots exceeding 1/4 inch in depth, if in hardened concrete, may be filled with an epoxy grout, provided the filling is neat and blends inconspicuously with adjoining concrete. Prepare the area according to the grout manufacturer's recommendations.

00758.53 Curing Concrete - Immediately after the final floating, surface finishing and edging have been completed, and while the concrete surface is still moist, cover and cure the entire exposed surface of the newly placed concrete for at least 72 hours. If the Specifications require opening the lanes to traffic in less than 72 hours, remove curing covers just prior to opening to traffic. Use one of the following provisions:

(a) Liquid Membrane-Forming Compounds - Apply liquid membrane-forming compound uniformly to the concrete by pressure-spray methods at a rate of at least 1 gallon per 150 square feet. Mix the liquid membrane-forming compound thoroughly before and during use.

Liquid membrane-forming compounds are not allowed when asphalt concrete Pavement is to be placed on the new concrete.

(b) Other Coverings - Apply clear or white polyethylene film or insulated curing blankets as a waterproof and moisture-proof covering. Place the film or blankets beyond the edge of the repaired areas and weight to hold in position. Do not mar the concrete with the covering.

(Use the following paragraph when HES concrete is required under subsection .11.)

For class HES concrete using a cement other than portland cement, cure the concrete as recommended by the cement manufacturer. The method of curing must be authorized before starting construction.

00758.54 Longitudinal Pavement Cracks - Remove and replace all patches that show longitudinal cracking or do not bond at no additional cost to the Agency.

(Use the following subsection .55 when spall repair is required.)

00758.55 Spall Repair - In spalled areas, remove the existing Pavement according to 00758.41(e). Prepare the repair area according to 00758.41(f) and the PCC repair Material manufacturer's recommendations. Mix and place PCC patching Material according to the manufacturer's recommendation. Use shovels to hand spread and distribute the concrete. Do not use rakes. Do not contaminate the concrete with foreign matter.

00758.56 Surface Tolerance, Testing, and Correction - The surface of finished Pavement shall not deviate from longitudinal and transverse smoothness more than the limits identified below. Perform straightedge testing under the supervision of the Engineer as soon as the hardness of the concrete permits.

(a) Straightedge Testing and Tolerance - Test Pavement surface longitudinal and transverse smoothness with a 12-foot straightedge. The extent of the testing will be determined by the Engineer. The Pavement surface shall not deviate from the

straightedge at any point by more than 1/8 inch, except the transverse surface at the patch ends may vary as required in 00758.49(b).

(b) Correcting Deficiencies - Correct all segments that exceed the requirements of 00758.56(a) by one of the following methods:

(1) Remove the non-specification concrete Pavement as determined by the Engineer and replace with Specification concrete Pavement.

(2) Profile with an abrasive grinder equipped with a cutting head comprised of multiple diamond blades. Take care not to unnecessarily sacrifice concrete cover over the reinforcing steel.

Retest according to 00758.56(a). Perform all corrective Work at no additional cost to the Agency, including traffic control.

Maintenance

00758.60 Protection of Concrete - Repair or replace any part of the Pavement damaged by traffic or damaged from any other causes before its official acceptance, according to 00170.80. Do not operate construction Equipment or allow Public Traffic on newly placed concrete until all of the following requirements are met:

(a) The Contractor complies with 00150.60.

(b) The concrete attains a compressive strength of at least 2,500 psi as determined by testing at least two cylinders cured according to AASHTO T 23 (field cure) and tested according to AASHTO T 22.

(Use the following paragraph when HES concrete is required under subsection .11.)

For HES concrete, the concrete attains a compressive strength of at least 2,500 psi according to the Strength-Maturity Relationship established during the mix design. Place a minimum of two probes in the last portion of each repair section according to section 10 of AASHTO T 325.

(c) Approval is given by the Engineer before opening to traffic.

(d) The surface of the concrete is protected from scarring or abrasion and kept free of stones, loose mortar and other matter apt to be deleterious to the concrete in the paths of Equipment.

If a repair at a single location cannot be completed in one shift, the unfinished Work may be temporarily backfilled with rapid setting Controlled Low Strength Materials (CLSM). Limit the length of the temporary backfill to 10 feet and construct the backfill to prevent the corners from breaking under traffic. Do not open to traffic until the compressive strength of the CLSM is 100 psi, and do not allow traffic on temporarily backfilled Material for a total duration of more than 16 hours. Monitor the location while open to traffic and immediately backfill any potholes with cold patch.

00758.61 Protection of Shoulders - A portion of the Shoulder adjacent to the proposed patch may be removed as necessary to ensure proper forming at the edge or the patch. Prior to opening to traffic, replace the disturbed Shoulder area with Material types and thickness similar to the existing Shoulder. Compact and restore Shoulders to match the existing line and grade.

Measurement

00758.80 Measurement - The quantities of Work performed under this Section will be measured according to the following:

(a) Pavement Repair - Reinforced concrete and continuously reinforced concrete Pavement repair will be measured on the area basis and will be determined by measuring the width and length of each separate repair. The width is the measured edge-to-edge width of the repair on the surface of the Pavement perpendicular to the centerline of the Roadway. The length is the measured length from end-to-end of the repair parallel to the centerline of the Roadway, including the length of the bar lap splices.

The measurement of extra thickness of Pavement, as shown or as ordered, will be determined by conversion on a proportionate volume basis to an equivalent number of square yards of specified thickness Pavement.

(Use the following subsection (b) when spall repair is required.)

(b) Spall Repair - Spall repair will be measured on the area basis and will be determined by measuring the width and length of each separate repair. The width is the measured edge-to-edge width of the repair on the surface of the Pavement perpendicular to the centerline of the Roadway. The length is the measured length from end-to-end of the repair parallel to the centerline of the Roadway.

The measurement of extra thickness of Pavement, as shown or as ordered, will be determined by conversion on a proportionate volume basis to an equivalent number of square yards of specified thickness Pavement.

(c) Pavement Repair at Joints - Pavement repairs at joints will be measured on the length basis.

Payment

00758.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

(Delete Pay Item(s) from the list that are not included in the Schedule of Items, but do not change the alpha characters next to the Pay Items.)

Pay Item	Unit of Measurement
(a) Continuously Reinforced Concrete Pavement Repair	Square Yard
(b) Reinforced Concrete Pavement Repair	Square Yard
(c) Spall Repair	Square Yard
(d) Extra for Expansion Joint Repair	Foot

(e) Extra for Terminal Expansion Joint Repair .....Foot
(f) Extra for Terminal Expansion Joint Repair (Steel Beam).....Foot

Items (a) and (b) include:

- Removing concrete Pavement;
- Preparing the cut edges;
- Resin bonded anchors; and
- Replacement of disturbed Shoulder according to 00758.61.

Item (c) includes removing concrete.

Items (d), (e), and (f) include all additional costs for removing existing joints, removing all or portions of existing steel beams, and placing dowel bars and associated expansion joint Material.

Sawcutting will be paid for according to Section 00310.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for intermediate bar lap splices or CLSM necessary to accommodate staging or to reopen the Roadway to traffic.

SP00759 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-22-25
Requires SP02510)

SECTION 00759 - MISCELLANEOUS PORTLAND CEMENT CONCRETE STRUCTURES

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00759 of the Standard Specifications modified as follows:

00759.11 Aggregate Base - Replace this subsection, except for the subsection number and title, with the following:

Furnish Aggregate Base Materials for Base, foundation courses, Leveling courses, or bedding meeting the requirements of 00640.10 or dense graded Base Aggregate in 00641.10 as appropriate and included in the Special Provisions.

(Use the following lead-in paragraph and subsection .13 when detectable guide strips are required.)

Add the following subsection:

00759.13 Detectable Guide Strips - Furnish surface applied or liquid applied detectable guide strips. Use only adhesives recommended or supplied by the manufacturer. Furnish slip-resistant detectable guide strips from one of the following list of pre-approved products:

Manufacturer	Material
Vanguard ADA Systems 18122 SR9 Suite F Snohomish, WA 98296 Phone: (360) 668-5700	Liquid Applied GuideStrip / TWSI Color: Blue

00759.22(a) Qualified Smart Levels – Replace this subsection, except for the subsection number and title, with the following:

Slopes will be measured with the use of a 24 inch SmartTool level model 92379 or model 92500, and a 6 inch SmartTool level model 92346 or 92510.

00759.42 Foundations - Replace this subsection with the following subsection:

00759.42 Aggregate Base - Before placing concrete, prepare underlying Aggregate Base surfaces according to Section 00641.

(Use the following subsection .50(a) when detectable guide strips are required.)

00759.50(a) General - Add the following paragraph to the end of this subsection:

Install detectable guide strips as shown. Place according to the manufacturer's recommendation. Place abutting panels within 1/4-inch of each other and install anchors, as specified by manufacturers, along cut edge. Miter adjacent panels at locations where detectable guide strips change direction. Install detectable guide strips on clean and dry concrete surfaces.

00759.51 Curing - Add the following paragraph to the end of this subsection:

Concrete Structures may be opened to Public Traffic before 7 Calendar Days if the concrete has reached a minimum compressive strength of 2,000 psi as verified by the rebound number determined according to ASTM C805. Test at locations as directed.

(Use the following two paragraphs when detectable guide strips are required.)

Add the following paragraph to the end of this subsection:

Do not apply curing compounds to areas designated for detectable guide strip installation.

(Use the following subsection .90 when any of the paragraphs below are required.)

00759.90 Payment -

(Use the following two paragraphs when earthwork is included as separate Pay Items but the earthwork Pay Items and estimated quantities do not include all or a portion of the Work in this Section. The use of this language requires notation (contact the Senior Standards Engineer) in the Plans to describe the earthwork pay limits relative to SP00330 and requires the State Specification Engineer and RE approval. Consider issuing a LOC.)

Replace the paragraph that begins "When earthwork is included as separate Pay …" with the following paragraph:

When earthwork is included as separate Pay Items under Section 00330, payment will be made according to 00330.90 through 00330.94 as appropriate and only for locations where earthwork quantities are shown. No separate or additional payment will be made for earthwork under Section 00330 where earthwork quantities are not shown.

(Use the following three paragraphs when detectable guide strips are required.)

Add the following Pay Item to the Pay Item list:

(o) Detectable Guide Strips, Blue.....Square Foot

Item (o) includes installation of blue detectable guide strips on a concrete or asphalt surface.

SP00760 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-22-25)**

SECTION 00760 - UNIT PAVERS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00760, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00760.00 Scope - This Work consists of furnishing and installing masonry unit pavers at locations shown or directed.

Materials

00760.10 Unit Paving Material - Furnish pavers and related Material meeting the following requirements:

(Obtain the Type, Color, Size, and Aggregate Base information from the Designer. Delete items that are not included in the Project.)

- **Paving Unit Type** - _____
- **Unit Color** - _____ Provide sample color for approval
- **Unit Size** - _____
- **Unit Strength** - 8,000 psi with a maximum of 5 percent absorption (ASTM C 936)
- **Joint Sand** - Fine PCC Aggregate conforming to 02690.30(g)
- **Leveling Bed** - Fine PCC Aggregate conforming to 02690.30(g)
- **Aggregate Base** - _____
- **Weed Control** - Pre-emergent herbicide conforming to 01040.21

Submit proposed equivalent products to the Engineer for consideration. See 00120.16 and 00180.31.

Construction

00760.40 General - Install pavers according to the manufacturer's instructions.

00760.41 Aggregate Base - Place and compact Aggregate to 95 percent density.

00760.42 Sand Base - Place a minimum depth 1 inch leveling bed. Screed to grade and saturate with water to ensure a firm and smooth grade.

00760.43 Weed Control - Apply granular pre-emergent herbicide over the prepared leveling bed according to the manufacturer's instructions.

00760.44 Unit Pavers - Lay out rows so they are straight and parallel to the surrounding lines. Cut pavers with a masonry saw where necessary to fit pattern to edges.

00760.45 Joint Sand and Compaction - After placing pavers, sweep joint sand into the joints. Use a vibrating mechanical tamper to compact.

00760.46 Surface Tolerance - Do not deviate the longitudinal and transverse surface grades by more than 1/4 inch in 12 feet.

00760.47 Clean Up - Remove excess Sand and broken paving material from the site when complete.

Measurement

00760.80 Measurement - The quantities of unit pavers will be measured on the area basis.

Payment

00760.90 Payment - The accepted quantities of unit pavers will be paid for at the Contract unit price, per square foot for the item "Unit Pavers".

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for Base preparation.

SP00810 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-23-25
***This Section requires SP00594 when weatherized guardrail and painting of transitions and terminals are required.*)**

SECTION 00810 - METAL GUARDRAIL

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

[NOTE: Except for extra length guardrail posts, do not separately pay for new guardrail posts under this Section. New posts are included in the appropriate guardrail Pay Item. Replacing existing guardrail posts is covered in Section 00812.]

> ***(Use the following lead-in paragraph when none of the following subsections are included in the Project.)***

Comply with Section 00810 of the Standard Specifications.

> ***(Use the following lead-in paragraph when any of the following subsections are included in the Project.)***

Comply with Section 00810 of the Standard Specifications modified as follows:

> ***(Use the following subsection .00 when there is no earthwork on the Project and grading at guardrail terminals are required to be constructed.)***

00810.00 Scope - Add the following paragraph to the end of this subsection:

This Work includes constructing grading at guardrail terminals at locations shown.

(Use the following subsection .10 when weatherized guardrail is required or when only recycled plastic guardrail blocks will be allowed. Delete "(s)" or parentheses as applicable.)

00810.10 Materials - Add the following paragraph(s) to the end of this subsection:

(Use the following paragraph when weatherized guardrail is required.)

Furnish "weatherized" Class IV metal rail meeting the requirements of AASHTO M 180.

(Use the following paragraph when only recycled plastic guardrail blocks may be used.)

Furnish recycled plastic guardrail blocks. Wood guardrail blocks are not allowed.

(Use the following subsection .11 when weatherized guardrail is required.)

00810.11 Posts - Replace this subsection with the following subsection:

00810.11 Wood Posts - Furnish wood guardrail posts meeting the requirements of 00810.10.

(Use the following subsection .15 when it has been determined that wood posts and blocks may be salvaged without meeting the preservative treatment requirement. Obtain information from the Designer and concurrence from the Technical Resource.)

00810.15 Salvaged Material - Replace the paragraph that begins "Material salvaged as part…" with the following paragraph:

Materials salvaged as part of removal work on the Project may be reused in new construction if the Engineer determines that the Materials meet the requirements of 0810.10, except for preservative treatment requirements, and conform to the following:

(Use the following subsection .15(a) when only a certain portion of the existing guardrail posts can be salvaged and reused on the Project. Check with the roadway designer and fill in the blank with the estimated percentage of existing posts that may be reused.)

00810.15(a) Wood Posts - Replace this subsection, except for the subsection number and title, with the following:

Use only structurally sound and treated wood posts, free from damage that would affect their strength and durability. Do not incorporate into the Work any post damaged to the extent that untreated wood is exposed.

It is estimated that ____ % of the existing wood guardrail posts may be reused and incorporated into new guardrail work.

(Use the following lead-in paragraph and subsection .16 when there is no earthwork on the Project and grading at guardrail terminals are required to be constructed.)

Add the following subsection:

00810.16 Grading at Guardrail Terminal Materials:

(a) Embankment - Furnish embankment Materials meeting the applicable parts of Section 00330.

(b) Aggregate - Furnish either 1" - 0 or 3/4" - 0 size crushed Aggregate that is clean, hard, durable, and reasonably well-graded from the maximum size to dust.

(c) Asphalt Concrete Mixture - Furnish asphalt concrete mixture meeting the requirements of 00744.10 through 00744.14.

Acceptance of grading at guardrail terminal Materials will be visual by the Engineer.

(Use the following lead-in paragraph and subsection .17 when weatherized guardrail and painting of guardrail transitions and terminals are required. Include 00594.10 and 00594.90(a) in SP00594.)

Add the following subsection:

00810.17 Painted Guardrail - Paint all galvanized metal guardrail transition and guardrail terminal Materials according to Section 00594.

(Use the following subsection .41 when there is any possibility that hand dug guardrail posts are required. Obtain information from the Utility Coordinator or the Designer. If in doubt add this language and a quantity of 4 in the Schedule of Items.)

00810.41 Excavation and Backfill - Add the following paragraph to the end of this subsection:

Hand dig guardrail post holes or use other non-invasive methods when posts are located within 24 inches surrounding the outside dimension of all sides of underground utilities as shown or directed.

(Use the following lead-in paragraph and subsection .44 when grading at guardrail terminals are required and there is no earthwork on the Project.)

Add the following subsection:

00810.44 Grading at Guardrail Terminals:

(a) Earthwork - Perform earthwork according to the applicable parts of Section 00330.

(b) Aggregate - Place Aggregate in two or more layers of nearly equal thickness. The maximum compacted thickness of any one layer shall not exceed 6 inches. Compact each layer of Material by rollers conforming in general to 00641.24.

Shape and maintain the surface of each layer during the compaction operation to produce a uniform texture and firmly keyed Aggregates.

Continue the compactive effort until there is no reaction or yielding observed under the compactor.

(c) Asphalt Concrete Mixture - Place asphalt concrete mixture according to 00744.40 through 00744.49.

(Use the following subsection .80 when grading at guardrail terminals are required and there is no earthwork on the Project.)

00810.80 Measurement - Add the following to the end of this subsection:

The estimated quantities of Materials for all the grading at guardrail terminals are:

(Provide estimated quantities. Delete what does not apply.)

Material	Amount
Embankment	___ cu. yd.
Excavation	___ cu. yd.
Aggregate Base	___ cu. yd.
Asphalt Concrete Mixture	___ Ton

(Use the following subsection .90 when any of the following apply:

- ***Grading at guardrail terminals are required and there is no earthwork on the Project.***
- ***Weatherized guardrail and painting of guardrail transitions and terminals are required.)***

00810.90 Payment -

(Use the following paragraph and Pay Item when grading at guardrail terminals are required and there is no earthwork on the Project.)

Add the following Pay Item to the Pay Item list:

Pay Item	Unit of Measurement
(m) Construct Grading at Guardrail Terminals	Each

(Use the following two paragraphs when grading at guardrail terminals are required and there is no earthwork on the Project.)

Add the following paragraph after the paragraph that begins "In Item (l), the type…":

Item (m) includes excavation and embankment work, Aggregate, and asphalt concrete mix.

(Use the following two paragraphs when weatherized guardrail and painting of guardrail transitions and terminals are required.)

Add the following paragraph to the end of this subsection:

No separate or additional payment will be made for painting galvanized metal guardrail Material.

SP00811 (Special Provisions for the 2024 Book) (Bidding on or after: 05-01-25 Last updated: 01-23-25)

SECTION 00811 - CABLE BARRIER

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00811 of the Standard Specifications.

SP00812 (Special Provisions for the 2024 Book) (Bidding on or after: 05-01-25 Last updated: 01-23-25)

SECTION 00812 - ADJUSTING AND REPAIRING GUARDRAIL

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00812 of the Standard Specifications.

SP00813 (Special Provisions for the 2024 Book) (Bidding on or after: 05-01-25 Last updated: 01-23-25)

SECTION 00813 - STEEL BACKED TIMBER GUARDRAIL

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-

number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00813, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00813.00 Scope - This Work consists of constructing steel backed timber guardrail to the lines and grades shown and established.

00813.02 Submittals - For areas where horizontal and vertical alignments vary from the Supplemental Drawings, provide unstamped Working Drawings that show detailed connections at post installations according to 00150.35.

Materials

00813.10 Materials:

(a) Timber - Furnish rough sawn lumber for timber rail, posts, and blocks of Douglas fir, Hem-fir, or Southern Yellow Pine having a stress grade of at least 1,500 psi and meeting the requirements of AASHTO M 168 and the following:

(1) Grading:

- **Douglas Fir** - Conform to the requirements of either paragraph 80.11 of the current WWPA Grading Rules, or paragraph 131-b of the current WCLIB Grading Rules.

- **Hem-fir** - Conform to the requirements of either paragraph 80.10 of the current WWPA Grading Rules, or paragraph 131-a of the current WCLIB Grading Rules.

- **Southern Yellow Pine** - Conform to the requirements of section 402 of the current Southern Pine Inspection Bureau (SPIB) Grading Rules.

(2) Preservative Treatment - Treat timber rail, posts, and blocks, after boring all through holes, according to Section 02190.

(b) Steel Rail and Plates - Furnish steel rail, steel splice plates, steel bearing plates, and steel plate washers meeting the requirements of AASHTO M 270, Grade 50W (ASTM A709, Grade 50W). Galvanize them according to AASHTO M 111 (ASTM A123).

(c) Fasteners and Hardware - Furnish bolts, nuts, washers, lag screws, and nails meeting the requirements of ASTM A307. Galvanize them according to AASHTO M 232.

(d) Coatings - Furnish white primer and white top coat paints from one of the following manufacturers:

Primer	Sherwin-Williams	A-100 Exterior Oil Stain Blocking Primer
Top Coat	Sherwin-Williams	A-100 Exterior Latex Satin

Primer	Glidden	Stain Stomper Exterior Primer Sealer 2110-1200N
Top Coat	Glidden	FORTIS 350 Exterior Satin Paint 2402
Primer	Miller Paint	Pure Paint Primer
Top Coat	Miller Paint	Acri-Lite Satin 7400 Series

Use the same manufacturer's paint for the primer and the top coat.

Acceptance of Material will be according to 00165.35.

Construction

00813.40 General - Coordinate construction of steel backed timber guardrail to hold disturbance of Bases, Surfacings, and Pavements to a minimum.

In areas of new installations, do not leave posts exposed to traffic for more than 24 hours before installing the steel and timber rail elements and anchors.

In areas where existing guardrail will be removed and replaced with new steel backed timber guardrail, either install the new steel backed guardrail the same working shift the existing guardrail is removed or protect the area with temporary precast concrete barrier with appropriate end treatment until the new steel backed timber guardrail is installed.

00813.41 Excavation and Backfill - Excavate to the lines, grades, and depths shown or established. Make cuts through Pavement with knife-edge cutters or rotary drills. Make cuts below the Pavement with augers or other methods that will not disturb abutting areas. Do not damage existing Bases and Pavements. Remove water and Unsuitable Material that would impair stability of the backfill, from areas to be backfilled.

In areas of Aggregate and paved surface areas, backfill with like Materials to the same thickness and density as the adjacent materials. In other areas, backfill with granular backfill Materials meeting the requirements of 00330.14. Place all backfill in layers not exceeding 6 inches and compact each layer to a firm, dense condition.

Remove, replace, repair, or restore adjoining areas that become misshapen or disturbed during excavating and backfilling operations. Dispose of excess materials according to 00330.41(a)(4).

00813.42 Installation of Posts and Anchors - Place posts and anchors as shown. Set posts in excavated holes or drive them in place. If posts are driven through the Bases, Surfacings, or Pavement, repair all damage. Remove and replace posts or anchors damaged during installation with new components. Set all posts to the line, grade, and spacing shown and within a tolerance of ± 1/2 inch.

00813.43 Installation of Steel and Timber Rails - Install steel and timber rails as shown. Field cut timber elements as shown. Coat all field cuts with 3 brush coats of a wood field preservative from the QPL. Do not field cut steel elements.

00813.44 Coating - After installation, apply coatings to the entire exposed steel backed timber guardrail assembly according the manufacturer's recommendations.

- For timber treated, except ACZA, apply coating as follows:
  - Prime with one coat of oil based primer.
  - Finish with two coats of acrylic latex paint.
- For ACZA treated timber, do the following:
  - Prepare a test section to determine the number of coats required.
  - At a minimum:
    - Prime with two coats of oil based primer.
    - Finish with two coats of acrylic latex paint.

Measurement

00813.80 Measurement -

(Use the following paragraph when Pay Item (a) is included in the Pay Item list below.)

The quantities of steel backed timber guardrail will be measured on the length basis from end of rail at terminal anchor to end of rail at terminal anchor.

(Use the following paragraph when Pay Item (b) is included in the Pay Item list below.)

The quantities of steel backed terminal concrete anchors will be measured on the unit basis.

Payment

(Delete the "(s)" or parentheses from the word "item(s)", as appropriate.)

00813.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following item*(*s*)*:

(Delete Pay Item(s) from the list that are not included in the Schedule of Items, but do not change the alpha characters next to the Pay Items.)

Pay Item	Unit of Measurement
(a) Steel Backed Timber Guardrail	Foot
(b) Steel Backed Terminal Anchors	Each

Payment will be payment in full for furnishing and placing all Materials, and furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP00815 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 00815 - BOLLARDS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00815 of the Standard Specifications.

SP00820 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-23-25
Requires SP02510)

SECTION 00820 - CONCRETE BARRIER

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00820 of the Standard Specifications.

SP00822 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-23-25)

SECTION 00822 - GLARE SHIELDS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00822, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00822.00 Scope - This Work consists of furnishing and installing glare shields on concrete median barrier.

Materials

00822.10 Materials - The Contractor has the option of providing modular glare shields or individual glare shields as specified.

- Furnish glare shields from the QPL.
- Furnish steel base plate brackets fabricated from ASTM A304 stainless steel or merchant quality mild carbon steel. Mild carbon steel brackets shall be hot-dip galvanized after fabrication according to AASHTO M 111 (ASTM A123).
- Furnish bolts, nuts, inserts, washers and other necessary assembly hardware made from ASTM A304 stainless steel or mild carbon steel. Equip exposed hardware with vandal resistant lock nuts or similar. Furnish mechanical inserts, if used, suitable for dynamic application. Galvanize carbon steel assembly hardware according to AASHTO M 111 (ASTM A123).

All base plate brackets and necessary assembly hardware installed in a continuous run shall be of the same material.

Construction

00822.40 Construction - Install the glare shields according to the following:

- Recess inserts at least 1/4 inch below the concrete barrier surface.
- Install all glare shield blades vertical and true to line.
- Place glare shields according to the manufacturer's recommendation.
- Install so that the angle of light coming through from the other side does not exceed 22°.
- Firmly attach the base plate anchor bolts to the concrete barrier to withstand a 1,000 pounds vertical pull and to prevent horizontal and rotational displacement. Space modular unit anchor bolts as recommended by the manufacturer.
- Modular or single element glare shields that are installed in a continuous run shall be of the same manufacture and of like appearance throughout the entire installation.

Measurement

00822.80 Measurement - The quantities of glare shields will be measured on the length basis, along the line and grade of each run.

Payment

00822.90 Payment - The accepted quantities of glare shields will be paid for at the Contract unit price, per foot, for the item "____ Inch Glare Shields".

The length of the blades will be inserted in the blank.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP00830 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 00830 - IMPACT ATTENUATORS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00830 of the Standard Specifications.

SP00840 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 02-23-25)**

SECTION 00840 - DELINEATORS AND MILEPOST MARKER POSTS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use the following lead-in paragraph when none of the following subsections are included in the Project.)

Comply with Section 00840 of the Standard Specifications.

(Use the following lead-in paragraph when any of the following subsections are included in the Project.)

Comply with Section 00840 of the Standard Specifications modified as follows:

(Use the following subsection .42 when backside delineators are required. Obtain information from Designer. List locations by station or by mile points.)

00840.42 Target Members for Delineator Posts - Add the following paragraph to the end of this subsection:

Install delineators with backside target member and reflective sheeting as shown on the _____ highway from _____ to _____.

SP00842 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**

Last updated: 02-04-25)

SECTION 00842 - FACILITY IDENTIFICATION MARKERS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use the following lead-in paragraph when none of the following subsections are included in the Project.)

Comply with Section 00842 of the Standard Specifications.

(Use the following lead-in paragraph when any of the following subsections are included in the Project.)

Comply with Section 00842 of the Standard Specifications modified as follows:

(Use the following subsection .40(a) when stormwater control field facility markers are required. Fill in the table with appropriate information. Obtain information from the designer. Add or delete rows in the table as necessary to list all applicable field markers, Delete example purple text.)

00842.40(a) Stormwater Control Field Facility Markers - Add the following to the end of this subsection:

Install field markers as indicated in Table 00842-1.

Table 00842-1

Facility Station	HWY/MP	DFI Number	Type S1 Marker Red (Beginning of Facility)	Type S1 Marker Green (End of Facility)	Type S2 Marker Begin	Type S2 Marker End	Type S3 Marker
Sta. "L" ##+### RT/LT	I-5/00.00	D#####	X		X		
Sta. "L" ##+### RT/LT	I-5/00.00	D#####		X		X	

SP00850 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-23-25)

(When this Section is used on a Project and when it has a completion date of September 15 or later, contact the Scheduler to determine if a separate completion

date for striping is required. If a separate completion date is required, include an interim completion date in 00180.50(h).)

SECTION 00850 - COMMON PROVISIONS FOR PAVEMENT MARKINGS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00850 of the Standard Specifications modified as follows:

(Use the following subsection .30 only with approval from the ODOT Pavement Marking Manager and when the Project meets ALL of the following requirements:
- ***Only surface applied markings (no groove installed markings or tape), AND***
- ***Less than 2000' of 4" longitudinal markings, AND***
- ***Fewer than 7 legends, AND***
- ***Less than 400 square feet of bars.)***

00850.30 Manufacturer's Representative - Replace this subsection, except for the subsection number and title, with the following:

For Sections referencing 00850.30, the services of a manufacturer's representative are not required. Place Pavement markings only when the Pavement is ready for the Pavement marking material according to the manufacturer's installation instructions.

(Use the following subsection .47(c) only when Section 00868 – "Colored Lane Markings" is included in the Special Provisions)

00850.47(c) Retroreflectivity - Replace the sentence that begins "Except for paint applications…" with the following sentence:

Except for paint and colored lane marking applications, evaluate longitudinal and transverse marking retroreflectivity according to ODOT TM 777.

SP00855 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 00855 - PAVEMENT MARKERS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00855 of the Standard Specifications.

SP00856 (Special Provisions for the 2024 Book) (Bidding on or after: 05-01-25 Last updated: 01-23-25)

SECTION 00856 - SURFACE MOUNTED TUBULAR MARKERS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00856 of the Standard Specifications.

SP00857 (Special Provisions for the 2024 Book) (Bidding on or after: 05-01-25 Last updated: 01-23-25)

SECTION 00857 - RUMBLE STRIPS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00857 of the Standard Specifications.

SP00860 (Special Provisions for the 2024 Book) (Bidding on or after: 05-01-25 Last updated: 01-23-25)

SECTION 00860 - LONGITUDINAL PAVEMENT MARKINGS - PAINT

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use the following lead-in paragraph when none of the following subsections are included in the Project.)

Comply with Section 00860 of the Standard Specifications.

(Use the following lead-in paragraph when any of the following subsections are included in the Project.)

Comply with Section 00860 of the Standard Specifications modified as follows:

(Use the following subsection .45 when only one application of paint is required. Check with Region Pavement Marking Manager. DO NOT convert the initial retroreflective values to English units.)

00860.45 Installation - Replace this subsection, except for the subsection number and title, with the following:

Apply painted longitudinal Pavement markings as follows:

- Apply one application at thickness of 15 mils wet, equivalent to 17 gallons per mile for a 4 inch wide solid stripe.
- Apply reflective elements at a minimum rate of 5 pounds per gallon of paint. Embed by means of wicking, a minimum of 80 percent of the reflective elements in the paint to a minimum depth of 50 percent of their diameter.

Minimum initial retroreflectivity shall be:

- White - 250 mcd/m^2/lx
- Yellow - 200 mcd/m^2/lx

SP00865 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 00865 - LONGITUDINAL PAVEMENT MARKINGS - DURABLE

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00865 of the Standard Specifications.

SP00866 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 00866 - LONGITUDINAL PAVEMENT MARKINGS - HIGH PERFORMANCE

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00866 of the Standard Specifications modified as follows:

00866.90 Payment - Replace this subsection, except for the subsection number and title, with the following:

The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement
Method 1 (Extruded)	
(a) Hi-Build Paint, Extruded, ____	Foot
(b) Hi-Build Paint, Extruded, Wet Weather, ____	Foot
Method 2 (Sprayed)	
(c) Plural Component, Sprayed, ____	Foot
(d) Plural Component, Sprayed, Wet Weather, ____	Foot
(e) Hi-Build Paint, Sprayed, ____	Foot
(f) Hi-Build Paint, Sprayed, Wet Weather, ____	Foot
Method 1-2 (Extruded or Sprayed)	
(g) Hi-Build Paint, Extruded or Sprayed, ____	Foot
(h) Hi-Build Paint, Extruded or Sprayed, Wet Weather, ____	Foot

The word "Surface" or "Grooved" will be inserted in the blank.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

Payment for Work under this Section will be limited to 75 percent of the amount due until the Agency has received the signed Warranty.

SP00867 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 00867 - TRANSVERSE PAVEMENT MARKINGS - LEGENDS AND BARS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then

include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use the following lead-in paragraph when none of the following subsections are included in the Project.)

Comply with Section 00867 of the Standard Specifications.

(Use the following lead-in paragraph when any of the following subsections are included in the Project.)

Comply with Section 00867 of the Standard Specifications modified as follows.

(Use the following subsection .90 when the Bid Schedule contains item (q). Fill in the blank with a description of the Pay Item and all included details. Obtain information from the Traffic Designer and refer to the payment paragraphs in the standard for examples.)

00867.90 Payment - Add the following paragraph after the paragraph that begins "Item (p) includes one…":

Item (q) includes _*(Description of pay item and included details)*_ .

SP00868 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 00868 - COLORED LANE MARKINGS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00868 of the Standard Specifications.

SP00869 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 00869 - CURB AND NON-TRAVERSABLE MEDIAN MARKINGS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project,

unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00869, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00869.00 Scope - In addition to the requirements of Section 00850, 00860, and 00865, install curb markings and non-traversable median markings according to the following Specifications.

Labor

00869.31 Manufacturer-Certified Installers - Provide certified installers according to 00850.31 for thermoplastic applications.

Construction

00869.45 Installation - Apply curb markings and non-traversable Median markings only when the following conditions are met:

- The ambient temperature is at least 50 °F and rising
- The Pavement has been dry for at least 48 hours
- 30 Calendar Days of cure time for new concrete curb or Median.

Apply the Material to the Pavement according to the manufacturer's installation instructions to the full height and width of curb or Median as shown in the Plans.

Apply one or more of the following marking material types:

- **Paint** - Apply according to 00860.45 along full height of curb face and along full width of top of curb or non-traversable Median.

- **Thermoplastic, Sprayed** - Apply according to 00865.45, using Method B Spray Markings to the full height of curb face and along full width of top of curb or non-traversable Median.
  - Apply each application of painted thermoplastic marking at a thickness of 60 mils.

Measurement

00869.80 Measurement - The quantities of non-traversable Median markings will be measured on the area basis. The quantities of curb markings will be measured on the length basis.

Payment

00869.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

(Delete Pay Item(s) from the list that are not included in the Schedule of Items, but do not change the alpha characters next to the Pay Items.)

Pay Item	Unit of Measurement
(a) Curb Marking, Thermoplastic	Foot
(b) Curb Marking, Paint	Foot
(c) Non-Traversable Median Markings, Thermoplastic	Square Foot
(d) Non-Traversable Median Markings Paint	Square Foot

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP00902 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 00902 - CROSSWALK CLOSURE SUPPORTS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00902, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00902.00 Scope - This Work consists of constructing crosswalk closure supports and associated signs as shown.

Materials

00902.10 Materials - Furnish Materials meeting the following requirements:

Commercial Grade Concrete	00440
Steel	01070.10 and 01070.12
Signs	00940

Construction

00902.40 General - Install crosswalk closure supports and associated signs as shown or directed.

Measurement

00902.80 Measurement - The quantities of crosswalk closure supports will be measured on the unit basis. No separate measurement will be made for signs attached to crosswalk closure supports.

Payment

00902.90 Payment - The accepted quantities of Work done under this Section will be paid for at the Contract unit price, per each, for the item "Crosswalk Closure Supports".

Payment will be payment in full for furnishing and placing all Materials, including signs, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP00905 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 00905 - REMOVAL AND REINSTALLATION OF EXISTING SIGNS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use the following lead-in paragraph when none of the following subsections are included in the Project.)

Comply with Section 00905 of the Standard Specifications.

(Use the following lead-in paragraph when any of the following subsections are included in the Project.)

Comply with Section 00905 of the Standard Specifications modified as follows:

(Use the following "Modify and Repair Language" when modifying or repairing extruded aluminum panel signs and sign legends.

[Begin "Modify and Repair Language"]

00905.00 Scope - In the paragraph that begins "This Work consists of…" replace the word "both" with the word "more".

Add the following bullet to the end of the bullet list:

- Modifying signs, modifying sign legends, and repairing existing signs as shown.

Add the following subsection:

00905.10 Materials - Furnish materials for modifying signs and legends, and for repairing signs, meeting the requirements of Section 02910.

Add the following subsection:

00905.41 Modify Legends - Remove existing removable legends and install new legends as shown and according to 00940.45. Fill all rivet holes not covered by new legends with new blind rivets. Do not damage background sheeting and substrates.

Add the following subsection:

00905.42 Modify Signs - Modify signs as shown and according to Section 00940.

00905.90 Payment - Add the following Pay Item to the end of the Pay Item list:

(c) Modify Existing Signs and Legends ..... Lump Sum

[End "Modify and Repair Language"]

SP00910 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-24-25)**

SECTION 00910 - WOOD SIGN POSTS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00910 of the Standard Specifications.

SP00920 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 02-03-25 Requires SP02510)**

SECTION 00920 - SIGN SUPPORT FOOTINGS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00920 of the Standard Specifications modified as follows:

00920.10 Materials - Replace this subsection, except subsection number and title, with the following:

Furnish Materials for constructing sign support footings meeting the following requirements:

Anchor Bolts 02560.30
Backfill, unless otherwise directed.... 00510.10 or 00510.11
Commercial Grade Concrete.....00440
Reinforcement 02510
Structural Concrete 00540

Furnish Commercial Grade Concrete for minor sign support foundations. Furnish structural concrete for major sign support foundations.

00920.41 Concrete - Replace the paragraph beginning "Construct concrete sign foundations…" with the following:

Construct concrete minor sign support foundations according to Section 00440 and the applicable portions of 00540.48(a). Construct major sign support footings according to Section 00540.

(Use the following subsection .80 when minor or major sign supports are required.)

00920.80 Measurement - Add the following to the end of this subsection:

(Use the following paragraph and table when minor sign supports are required. Obtain support types and quantities from the Designer. Delete the entire row if the support type is not used on the project.)

The estimated quantities of concrete for minor sign supports are:

Support Type	Quantity
Multi-Post Breakaway Sign Supports	cu. yd.
Triangular Base Breakaway Sign Supports	cu. yd.
Pipe Breakaway Sign Supports	cu. yd.
Perforated Steel Square Tube Slip Base Sign Supports	cu. yd.
90 Degree Rotational Sign Supports	cu. yd.
Pipe Sign Supports	cu. yd.
Perforated Steel Square Tube Anchor Sign Supports	cu. yd.

(Use the following paragraphs and table when major sign support spread footings are required. Do not include any quantities for drilled shaft foundations, including the cap. Replace "(Support Type)" and "(Str. No.)" with specific information. Obtain support types, structure numbers, and quantities from the Designer. Replace "(Support Type)" only with one of the following:

- ***Truss Sign Bridge***
- ***Monotube Sign Bridge***
- ***Butterfly Sign Structure***
- ***Monotube Cantilever Sign Structure***

Delete materials and quantities that do not apply. Copy the table as necessary for additional locations.)

The estimated quantities of Materials for major sign supports are:

Location	Material	Quantity
*(*Support Type*)*	Excavation	cu. yd.
Structure Number *(*Str. No*)*	Backfill	cu. yd.
	Concrete	cu. yd.
	Reinforcement	pound
	Miscellaneous Metal	pound

(Use the following subsection .90 when major sign supports are required.)

00920.90 Payment - Add the following paragraph to the end of this subsection:

No separate or additional payment will be made for structural concrete in major sign support footings.

SP00921 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-23-25
Requires SP02510)

SECTION 00921 - MAJOR SIGN SUPPORT DRILLED SHAFTS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00921 of the Standard Specifications modified as follows:

(Use the following subsection .00 when traffic signal 60 foot through 75 foot mast arm supports are included in the Project. Check with the Traffic Signal designer.)

Add the following paragraph to the end of this subsection:

00921.00 Scope - This Work also consists of excavating and constructing drilled, cast-in-place, reinforced concrete shafts and footings for traffic signal 60 foot through 75 foot mast arm supports according to the Specifications and the Plans.

00921.10 Materials - Replace this subsection, except for the subsection number and title, with the following:

Furnish Materials meeting the following requirements:

Concrete.....02001
Reinforcement.....02510

Furnish Class 4000 - 3/8" drilled shaft concrete for the drilled shaft. Water may be added to the concrete mix at the Project Site only if allowed by the approved mix design.

Furnish concrete and anchor bolts according to 00920.10 for the drilled shaft cap.

(Use the following subsection .40(a) when the foundation will be embedded in rock or there is another reason to have additional reinforcing cage length. Check with designer. Delete (s) or parentheses and the words in parentheses as needed.)

00921.40(a) Drilled Shaft Installation Plan - Add the following sentence to the bullet that begins "Unstamped reinforcing steel shop…"

For site(s) (insert site name) (and) (insert site name) only, include details of the method for supporting the reinforcement on the bottom of the shaft excavation

(Use the following subsection .45(a) when the foundation will be embedded in rock or there is another reason to have additional reinforcing cage length. Check with designer. Delete (s) or parentheses and the words in parentheses as needed.)

00921.45(a) Placement - Add the following paragraph and bullets to the end of this subsection:

For site(s) (insert site name) (and) (insert site name) only:

- In each shaft, place reinforcing steel extending from 6 inches above the bottom of the shaft excavation to the elevation shown. The reinforcing cage may be supported on the bottom of the shaft excavation if approved. Support the reinforcing cage to prevent distortion or settlement during concrete placement. Support the reinforcing cage such that the supporting mechanism does not obstruct the center of the shaft and allows concrete placement vertically down the center of the shaft. If concrete placement does not immediately follow cage placement, remove the reinforcing cage from the excavation and rectify the integrity of the excavation prior to reinstallation of the cage.
- To accommodate variations in shaft length, furnish steel reinforcing bar cages, including CSL access tubes if specified, 4 feet longer than the lengths shown. Add the increased length to the bottom of the cage. Following bottom cleanliness approval, trim the bottom of the steel reinforcing bar cage to the proper length prior

to placing it in the excavation. Shift or trim CSL access tubes (if present) to the revised cage length. If CSL tubes are cut, adapt the ends of the tubes to receive the watertight caps as specified.

00921.80 Measurement - Add the following to the end of this subsection:

The estimated quantities of Materials for the sign support drilled shaft foundations are:

(Fill in the blanks with the appropriate quantities. Obtain information from the designer.)

Location	Material	Quantity
Structure Type _____ (Br No. _____)	Concrete Class 3600	_____ cu. yds.
	Concrete Class 4000	_____ cu. yds.
	Uncoated Reinforcement Grade 60	_____ pounds
	Drilled Shaft Excavation	_____ cu. yds.
	CSL Tubes	_____ feet
	CSL Test	_____ each

SP00930 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-23-25
***This Section requires SP02560 when high strength fasteners are required.*)**

SECTION 00930 - METAL SIGN SUPPORTS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purpe text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00930 of the Standard Specifications modified as follows:

(Use the following subsection .10 when topcoat colors are required.)

00930.10 Materials -

(Use the following two paragraphs to list topcoat colors when specifying 00930.48 coating. Fill in the blanks as instructed and obtain information from the Designer. Copy and repeat the paragraph as needed. Use only basic color names and numbers from the SAE AMS-STD-595 color index.

Example:

For Structure No. 12345A, provide a topcoat color of Black that matches to SAE AMS-STD-595 color # 17038.)

Add the following to the end of this subsection:

For __*(Structure number or item description)*__, provide a topcoat color of __*(Color Name)*__ that matches SAE AMS-STD-595 color # __*(Color Number)*__.

(Use the following lead-in paragraph and subsection .48 to specify coating of steel sign supports.)

Add the following subsection:

00930.48 Coating - Prepare and powder coat supports according to the applicable portions of Section 00593 or prepare and coat supports according to the applicable portions of Section 00594. Provide coating materials for field application, repairing damaged coatings, and coating hardware after installation, according to Section 00593 or 00594. Do not coat:

- Slip plate or arm connection surfaces.
- Slip base bolting hardware.
- Anchor rods, anchor rod washers, and anchor rod nuts.

(Use the following subsection .80 to list the estimated quantities of steel. Fill in the blank with the quantity. For major sign supports, replace "(Structure Number)" with the Structure number. Obtain information from the Designer. Delete rows for support types not used on the Project. Delete a heading if all entries under that heading have been deleted.)

00930.80 Measurement - Add the following to the end of this subsection:

The estimated quantities of structural steel are as follows:

Item	Estimated Quantity (Pound)
Major Sign Supports	
Truss Sign Bridge, Str. No. *(*Structure Number*)*	__
Monotube Sign Bridge, Str. No. *(*Structure Number*)*	__
Butterfly Sign Structure, Str. No. *(*Structure Number*)*	__
Monotube Cantilever Sign Structure, Str. No. *(*Structure Number*)*	__
Mounts	

Bridge Structure Mounts ___
Exit Number Mounts ___
Signal Pole Mounts ___
Adjustable Sign Mounts ___
Vertical Sign Mounts on Existing Structures ___
Secondary Sign Mounts ___

Minor Sign Supports

Multi-Post Breakaway Sign Supports ___
Triangular Base Breakaway Sign Supports ___
Pipe Breakaway Sign Supports ___
Perforated Steel Square Tube Slip Base Sign Supports ___
90 Degree Rotational Sign Supports ___
Pipe Sign Supports ___
Perforated Steel Square Tube Anchor Sign Supports ___

(Use the following subsection .90 when subsection 00930.48 is included in the Project Special Provisions to specify painting or powder coating of steel sign supports.)

00930.90 Payment - Add the following paragraph to the end of this subsection:

No separate or additional payment will be made for coating steel sign supports.

SP00940 (Special Provisions for the 2024 Book)

(Bidding on or after: 05-01-25
Last updated: 01-23-25
This Section requires SP02910
When anti-graffiti coatings
are included)

SECTION 00940 - SIGNS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00940 of the Standard Specifications modified as follows:

(Use the following subsection .10 when Oregon Trail or California Trail route markers, Oregon Scenic Byway signs, Oregon State Park shields or Oregon Tour Route signs are required. Delete "(s)" or parentheses as appropriate, and delete sign types that are not applicable.)

00940.10 Materials - Add the following paragraph and bullet(s) to the end of this subsection:

Digital graphic files for the following sign type*(*s*)* may be available on the ODOT Sign Design Information website at

https://www.oregon.gov/ODOT/Engineering/Pages/Signing.aspx:

- Oregon Trail or California Trail route markers
- Oregon Tour Route signs
- Oregon Scenic Byway signs
- Oregon State Parks shields

(Use the following lead-in paragraph and subsection .12 when sign panels require anti-graffiti coating.)

Add the following subsection:

00940.12 Sign Coatings -

(Use only one of the following options as instructed below. Delete the option that does not apply.)

[Option 1 - Use the following paragraph when every sign on the project will receive anti-graffiti coating.]

Furnish all signs on the Project with a shop-applied anti-graffiti coating on both the background and legend sheeting according to 02910.70, regardless of substrate material.

[Option 2 - Use the following paragraph when only select signs will receive anti-graffiti coating and will be shown on the plans.]

Where shown, furnish signs with a shop-applied anti-graffiti coating on both the background and legend sheeting according to 02910.70, regardless of substrate material.

(Use the following subsection .40 when sign panels require anti-graffiti coating.)

00940.40 General - Add the following sentence to the end of the paragraph that begins "Fabricate all components…":

For signs that require anti-graffiti coating, fabricate all components of each individual sign with sheeting and anti-graffiti coating from the same supplier to ensure that all components are compatible and are warrantable by the manufacturer.

00940.47 Sign Erecting - Add the following paragraph to the end of this subsection:

Trim and remove branches, vegetation, or other materials obstructing the visibility of signs by Public Traffic, as directed.

(Use the following lead-in paragraph and subsection .48 when backs of aluminum substrate signs are coated. Obtain color number from Designer.)

Add the following subsection:

00940.48 Coating - Prepare and powder coat the backs of aluminum substrate signs according to the applicable portions of Section 00593 or prepare and coat according to the applicable portions of Section 00594.

Provide SAE AMS-STD-595 Color Number _____.

00940.90 Payment - Add the following paragraph(s) to the end of this subsection:

Trimming and removal of branches, vegetation, or other materials will be paid for according to 00320.90.

(Use the following subsection .90 when sign panels require anti-graffiti coating.)

No separate or additional payment will be made for anti-graffiti coating of signs.

SP00941 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 00941 - SIGN COVERS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00941 of the Standard Specifications modified as follows:

00941.41 Installation - Add the following to the end of this subsection:

(List signs to be covered. Obtain information from the Sign Designer.)

Covers will be required on the following signs:

-
-

SP00942 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 00942 - PERMANENT BARRICADES

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00942, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00942.00 Scope - This Work consists of furnishing, fabricating, and installing permanent Type III barricades as shown.

Materials

00942.10 Materials - Furnish Materials for permanent Type III barricades meeting the following requirements:

Hardware.....02910.40
Plywood.....02910.11
Posts 02110.40
Reflective Sheeting (Type III or Type IV).....02910.20

Construction

00942.40 General - Construct permanent barricades as shown.

Place reflective sheeting on the horizontal member before assembling the required splice.

A sheeting manufacturer approved lubricant may be used on the nylon and metal washers to prevent sign sheeting deformation. Replace damaged horizontal members or horizontal members with sheet deformation at no additional cost to the Agency.

Measurement

00942.80 Measurement - The quantities of permanent barricades will be measured on the unit basis.

Payment

00942.90 Payment - The accepted quantities of permanent barricades will be paid for at the Contract unit price, per each, for the item "Permanent Type III Barricades".

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for excavation and backfill.

SP00950 (Special Provisions for the 2024 Book) **(Bidding on or after: 01-01-25 Last updated: 01-23-25)**

SECTION 00950 - REMOVAL OF ELECTRICAL SYSTEMS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use only one of the following lead-in paragraphs as instructed below.)

[Use the following lead-in paragraph when NONE of the following subsections are included in the Project Special Provisions.]

Comply with Section 00950 of the Standard Specifications.

[Use the following lead-in paragraph when ANY of the following subsections are included in the Project Special Provisions.]

Comply with Section 00950 of the Standard Specifications modified as follows:

(Use the following subsection .41 when removal work is not shown on the contract plan sheets.)

00950.41 Removal and Abandonment - Add the following to the end of this subsection:

[Option 1 - Use the following when NOT all removal Work is shown on contract plan sheets. Only list Work not shown]

This Work consists of removing existing electrical system*(*s*)* as shown. This Work also consists of removing the following existing electrical system*(*s*)*:

Equipment Description	Location

[Option 2 - Use the following when NO removal Work is shown on contract plan sheets.]

This Work consists of removing the following existing electrical system*(*s*)*:

Equipment Description	Location

(Use the following subsection .42 when salvaging and stockpiling removed Materials. Be sure that a "public interest finding letter" is on file before including

this subsection. Contact Region electrician for Region number, phone number, and all information regarding Equipment to be salvaged. List Materials and stockpile locations.)

00950.42 Salvaging and Stockpiling Materials - Add the following to the end of this subsection:

The following Materials will remain the property of the Agency. Salvage the Materials and stockpile them at the locations indicated. Contact Region _____ Electrical Crew at _____ to confirm delivery 48 hours prior to delivery.

Materials	Stockpile Locations

SP00960 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-23-25
Requires SP02510)

SECTION 00960 - COMMON PROVISIONS FOR ELECTRICAL SYSTEMS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00960 of the Standard Specifications modified as follows:

(Use the following lead-in paragraph and subsection .11 when decorative coating of signal equipment is required.)

Add the following subsection:

00960.11 Coating - Prepare and powder coat equipment where shown according to the applicable portions of Section 00593 or prepare and coat equipment according to the applicable portions of Section 00594. Do not coat equipment fabricated of aluminum, stainless steel, or hot-dipped galvanized material, except as shown or specified.

Provide the following colors:

Item	SAE AMS-STD-595 Color Number

00960.30 Licensed Electricians – Replace this subsection, except for the subsection number and title, with the following:

According to the Oregon Administrative Rule 918-282-0120(1), no person or Entity shall allow any individual to perform electrical work for which the individual is not properly registered or licensed. Every person who installs electrical systems on the Project shall submit a copy of their electrical license or apprentice registration to the Engineer prior to performing any Work. They must be licensed as an S or a J under Oregon Administrative Rule 918-282-0140 or 918-282-0170.

(Use the following subsection .42(c) when rigid metallic conduit is required.)

Add the following subsection:

00960.42(c) Metallic Conduit – Paint the following with rust-preventative coating:

- Threads on all metal conduit.
- Areas where the coating has been damaged so underlying metal is exposed.
- Exposed, ungalvanized threads resulting from field cuts.

If corrosive Soil conditions exist, coat metallic conduit with a nonmetallic coating or wrap with corrosion protection tape at least 10 mils thick.

(Use the following subsection .42(d) when connecting new conduit to existing conduit is required.)

Add the following subsection:

00960.42(d) Connecting Non-Metallic Conduit to Metallic Conduit - Use a nonmetallic female threaded connector to connect nonmetallic conduit to metallic conduit.

(Use the following subsection .42(e) when installing conduit under railroad tracks is required.)

Add the following subsection:

00960.42(e) Conduit under Railroad Tracks – Install conduit inside a galvanized, rigid metal conduit at the depth required by the governing Railroad company. Construct so that conduit ends are at least 30 feet beyond the centerline of every track or other distance as required by the Railroad.

(Use the following subsection .42(f) when installing conduit on or in a structure is required.)

Add the following subsection:

00960.42(f) Conduit on Structures - Install conduit according to 00583.40.

(Use the following subsection .42(g) when permanent wood poles are required.)

Add the following subsection:

00960.42(g) Conduit on Wood Poles - Mount conduit on wood poles with two-hole, galvanized, steel conduit straps spaced no more than 3 feet apart. Mount conduit on Utility-owned wood poles according to local Utility regulations. Use stand-off brackets if required.

(Use the following subsection .44 when permanent wood poles are required and the wood pole design is not detailed in the plans.)

Add the following subsection:

00960.44 Wood Poles - Submit stamped Working Drawings, details, and calculations for the wood pole designs to the Engineer for review according to 00150.35. Satisfy the requirements of 02120.10 and include designs for the wood poles, guy anchors, guy wires, span wires, pole setting depths, and pole bearing.

(Use the following subsection .45(f) when poles or cabinets are mounted to a structure.)

Add the following subsection:

00960.45(f) Structure Mounted Poles and Cabinets – Bond all poles and cabinets mounted on Structures or walls to a common ground rod at the end of the Structure. Ground the system at the first convenient acceptable location off the Structure.

(Use the following subsection .45(g) when permanent wood poles are required.)

Add the following subsection:

00960.45(g) Wood Poles - Bond all metallic conduit, messenger cable, terminal cabinet, and other metallic parts within 10 feet of the ground line.

(Use the following subsection .45(h) when metallic junction boxes and lids are required.)

Add the following subsection:

00960.45(h) Metallic Junction Boxes and Lids - Bond metal junction boxes and lids to form a continuous effectively grounded and bonded system with metallic conduit, grounding wire, metal standards and controller cabinets. Leave enough slack in the bond wire connected to the lid to allow complete removal of the lid. Junction boxes only containing circuits that operate at less than 25 V do not need to be bonded.

(Use the following subsection .46 when any of the options are required by the designer.)

00960.46 Service Cabinet and Electrical Energy -

(Use the following two paragraphs if Intelligent Transportation Systems (ITS) is included in the project)

Add the following to the end of the paragraph that begins “Install service cabinet and associated equipment…”

Field testing for Intelligent Transportation Systems (ITS) does not require prior electrical hook-up.

(Use the following lead in sentence and fill in the table and add or delete rows as necessary. Obtain information from the Signal, Illumination, or ITS designer. Delete language in purple parentheses that does not apply and delete all purple parentheses. Use one of the following options below the table.)

Add the following to the end of the subsection:

Table 00960-1 contains Utility contact information to arrange for *(*the Utility*) (*Utilities*)* to make electrical hookups:

Table 00960-1

Location	Utility	Utility Contact Person's Name, Email and Phone Number	Utility Job Number

(Option 1 - Use the following paragraph when the electrical power is metered, Standard Practice.)

Furnish and install a meter base approved by the serving Utility (with cover by the Utility), where shown.

(Option 2 - Use the following paragraph when the electrical power is billed using a flat rate with no meter. Verify with the Utility provider, IGA, and Region electricians.)

Electrical energy is flat-rated. Meter base is not required.

SP00962 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-23-25
This Section requires 02560
when a rotational capacity test is required.)

SECTION 00962 - METAL ILLUMINATION AND TRAFFIC SIGNAL SUPPORTS

(Follow all instructions and make all edits with “Track Changes” turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00962 of the Standard Specifications modified as follows:

(Use the following subsection .05(a) when standard signal mast arm supports are required.)

00962.05(a) Traffic Signal Mast Arm Supports - Add the following to the end of this subsection:

The following standard signal mast arm pole shop drawings are prequalified for use on the Project:

Valmont Industries Inc.	Drg. DB00719 page 1, Rev. P, 6/8/18 Drg. DB00719 page 2, Rev. P, 6/8/18 Drg. DB00719 page 3, Rev. P, 6/8/18 Drg. DB00719 page 4, Rev. P, 6/8/18 Drg. DB00719 page 5, Rev. P, 6/8/18 Drg. DB01290 page 1, Rev. D, 9/22/20 Drg. DB01290 page 2, Rev. D, 9/22/20 Drg. DB01290 page 3, Rev. D, 9/22/20 Drg. DB01290 page 4, Rev. D, 9/22/20
Ameron Pole Products Division	Drg. OR13TR10, Rev. E, 8/27/18 Drg. OR13TR11, Rev. F, 8/27/18 Drg. OR13TR12, Rev. G, 8/27/18 Drg. OR13TR13, Rev. C, 8/27/18

(Use the following subsection .05(c) when standard illumination supports are required.)

00962.05(c) Illumination Supports - Add the following to the end of this subsection:

The following standard luminaire support shop drawings are prequalified for use on the Project:

Valmont Industries Inc.	Drg. DB01371 page 1, Rev. B, 1/24/22 Drg. DB01371 page 2, Rev. B, 1/24/22 Drg. DB01371 page 3, Rev. B, 1/24/22 Drg. DB01371 page 4, Rev. B, 1/24/22 Drg. DB01372 page 1, Rev. B, 4/11/22 Drg. DB01372 page 2, Rev. B, 4/11/22 Drg. DB01372 page 3, Rev. B, 4/11/22 Drg. DB01372 page 4, Rev. B, 4/11/22

(Use the following subsection .10 to list topcoat colors. Fill in the blanks as instructed and obtain information from the Designer. Copy and repeat the paragraph as needed. Use only basic color names and numbers from the SAE AMS-STD-595 color index.

Example:

For Luminaire Poles 1, 2, 3, 4, 5, provide a topcoat color of Black that matches to SAE AMS-STD-595 color # 17038.)

00962.10 Materials - Add the following to the end of this subsection:

For __*(Structure number or item description)*__, provide a topcoat color of __*(Color Name)*__ that matches SAE AMS-STD-595 color # __*(Color Number)*__.

00962.46(j)(3) Bolt Inspection – Delete this subsection.

SP00963 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-23-25
Requires SP02510)

SECTION 00963 - SIGNAL SUPPORT DRILLED SHAFTS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00963 of the Standard Specifications.

SP00965 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-23-25)

SECTION 00965 - METAL CAMERA POLES AND FOUNDATIONS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00965, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00965.00 Scope - This Work consists of furnishing, fabricating, galvanizing, and installing Materials for camera poles and foundations. The location of the camera pole is approximate, with exact locations established in the field.

00965.01 Regulations, Standards, and Codes - All designs and workmanship shall conform to the following standards where applicable:

- AASHTO *Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals*.
- *Standards of the American Society for Testing and Materials* (ASTM).
- *American Welding Society* (AWS) - Steel D1.1.

Wherever reference is made to any of the standards mentioned above, the reference means the code, order, or standard in effect on the date the Project is advertised unless specified otherwise on the Plans or Special Provisions.

Do not begin installations until all permits are obtained and copies are given to the Engineer.

00965.02 Calculations and Drawings - Within 30 Calendar Days after execution of the Contract, submit at least six copies of the calculations and shop drawings.

All engineered details and drawings which are not prepared by the Agency, but are required in the Contract Documents, shall be submitted for review prior to fabrication. Designs, details, plans and calculations shall be stamped and submitted according to 00150.35.

Upon completion of the installation, submit six copies of all changes made from the original Plans. The information furnished shall include all modifications made and shall represent the material installed and in operation. It shall be sufficiently detailed to enable maintenance forces to replace or repair any part of the Project under routine or emergency maintenance by direct reference.

00965.05 Design and Performance - All camera poles shall be designed to the AASHTO *Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals*.

(a) Design - Design camera poles and foundations according to the AASHTO *Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals 5th Edition* with all interim revisions. Design factors include:

- Basic wind speed (3 second gust) 110 mph
- Gust factor (G) 1.14
- Importance factor (Ir) 1.0 (50 year recurrence interval)
- Fatigue category II

Galloping and truck gust fatigue checks are not required.

(b) Performance Calculations - Design the camera pole to support the specified camera and accessories. Include all portions of the effective projected area of the complete lowering system and camera Equipment to be mounted on the pole along with the weight

when designing the pole to meet the specified deflection performance criteria. The pole top deflection shall not exceed 1 inch in a 30 mph (non-gust) wind. The calculations shall include a pole, base plate, handhole, and anchor bolt analysis. The pole calculations shall be analyzed at the pole base, at 5 foot pole intervals/segments, hand hole locations, and at any other critical pole section. At each of these locations, provide the following information:

- The pole's diameter, thickness, section modulus, moment of inertia, and cross sectional area.
- The centroid, weight, projected area, drag coefficient, velocity pressure, and wind force of each pole segment.
- The axial force, shear force, primary moment, total moment, axial stress, bending stress, allowable axial stress, allowable bending stress, and combined stress ratio (CSR).
- The pole's angular and linear deflection.

The weight of a slip base pole and its attachments above the anchor plate shall be kept to a minimum and shall not exceed 1,000 pounds. Determine the total weight of the pole with all appurtenances attached to the pole and submit this with the design calculations.

Hand hole design requirements include:

- Calculations for the moment of inertia, section modulus, and area at the hand hole centerline that show that these values are equal to or greater than the full pipe section properties without a hand hole.
- Calculations that show that the net area of bar forming the hand hole frame is not less than 120 percent of pole cross section removed.
- Calculations that show that the combined stress ratio (CSR) for the steel pole at the centerline elevation of the hand hole is less than or equal to 0.60.

Materials

00965.10 Materials - Furnish Materials meeting the following requirements:

Anchor Rods, Nuts, and Washers 02560.30
Commercial Grade Concrete.....00440
Reinforcement 00530

Furnish steel pole Materials meeting the requirements of Section 02530 modified as follows:

- Provide steel sheet for pole and arms meeting the requirements of ASTM A595, Grade A or B, ASTM A572, or approved equal.
- Provide all other steel sheet and plate meeting the requirements of ASTM A36 or ASTM A572, or approved equal.
- Supplementary Requirement S18 (ASTM A6), maximum tensile strength, is required.
- Galvanized base plates and small and hidden pieces do not require controlled silicon content.

Provide anchor rods conforming to ASTM F1554 Grade 55 for fixed base foundations and ASTM A449 Type 1 for Slip Base foundations. Galvanize anchor bolts, nuts, and washers according to 02560.40(a).

Construction

00965.41 Excavation - Protect all existing pipes that become a part of a foundation as directed by the Engineer and cooperate with Utilities according to 00150.50.

Do all excavation, backfilling and resurfacing work necessary to complete the work. This includes removal and replacement of curbs, sidewalks, paved surfaces and other materials. On completion of the work, replace and finish all surfaces to correspond with the existing surfaces.

Furnish, place, and remove any shoring required to prevent caving of walls.

When excavating in paved areas, cut with an approved Pavement cutting saw to a depth of at least 2 inches along the neat boundaries of the area to be removed. Cut sharp and well-defined Pavement edges with no evidence of cracking, delaminating, or stressing.

Restore all disturbed landscaping and underground systems to original condition at no additional cost to the Agency upon completion of the work. Use hand excavation if directed.

(a) Excavation for Poles Foundations - Make all excavations for pole foundations to the Neat Lines of the foundations. Hand excavation may be required. Place the concrete directly against the sides of the excavation in undisturbed or well-compacted material.

(b) Disposition of Waste Materials - Dispose of all waste materials on completion of the Work according to 00290.20, or as directed.

00965.43 Foundations - Set forms square and true to line and grade. Construct forms of rigid materials that remain in position until the concrete has set. Use a steel template to accurately locate the anchor bolts and hold them plumb and in proper alignment. Out-of-position anchor rods and anchor rods installed more than 40V:1H out of plumb are cause for rejection of the foundation. Field bending of anchor bolts and field modification of the base plate are not allowed. Where breakaway bases are specified, the post stub projection shall not exceed the limits shown.

Construct foundations of concrete according to Section 00440 and applicable portions of 00540.48(a). Place concrete:

- With a continuous pour.
- To the elevation shown or directed.
- With conduit ends and anchor rods held securely in proper vertical position and height with a manufacturer's recommended template until the concrete sets.

Maintain rebar clearances during concrete pour.

Finish tops of foundations to Roadway, sidewalk or curb grade, or as directed.

Finish exposed concrete foundations to present a smooth, neat appearance. Fill all holes.

Make no adjustment of anchor rods after concrete has set. Any adjustment made may be cause for rejection of the foundation.

Remove forms and place subsequent loading according to Table 00540-1.

Where obstructions prevent the construction of planned foundations, construct the foundations in the location directed. Any extra cost due to the site change will be paid according to 00195.20.

If it is determined that foundations must extend deeper than shown, the extra foundation depth will be paid according to 00195.20.

00965.46 Steel Camera Poles - Camera poles include the pole shaft, hand holes, base plate, top tenon assembly, and anchor rod assembly. Poles up to 50 feet in length shall be one piece construction. Poles greater than 50 feet in length shall be of two piece construction. Pole shafts shall be round, 8 sided, 12 sided, or 16 sided with a constant linear taper of 0.14 inch per foot, and contain only one longitudinal seam weld. Unless shown or specified, circumferential welded tube butt splices are not permitted. Laminated tubes are not permitted. Do not erect poles until the Engineer has made a visual inspection of pole welding.

Fabricate entrance openings in steel poles and tenons, including handholes, before galvanizing.

(a) Deviation from Straightness - After the poles are delivered to the Project Site, and before they are erected on the foundations, the Contractor may be required to check any or all poles for deviation from straightness according to the following:

(1) Deviation in One Plane and One Direction Only - A straight line joining the surface of the pole at the base and the same surface of the pole at the top shall not be more than 1/2 inch from the surface of the pole for each 10 feet of length from the closest of these points. The opposite surface shall meet the same requirement.

(2) Deviation in Any Plane - A straight line connecting the midpoint of the pole at the base, with the midpoint at the top, shall not pass through the surface of the pole at any intermediate point.

Any pole not meeting these requirements will be rejected. If more than 25 percent of the poles fail to meet these requirements, sufficient cause exists to reject the entire shipment of poles for the Project.

(b) Welding - Weld steel camera poles according to the American Welding Society (AWS) D1.1. The fabricator shall inspect welds in accordance with details and requirements called out on the Contract Documents. This requirement will override all appropriate weld inspection requirements called out in Section 5.15 WELDING CONNECTIONS in AASHTO *Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals*. Submit all testing procedures for Engineer's review prior to starting inspection. Submit certified copies of inspection reports to the Engineer for review.

Tackers and welders shall be qualified in accordance with the code. Tube longitudinal seam welds shall be free of cracks and excessive undercut, performed with automatic processes, and be visually inspected. Magnetic particle inspect longitudinal welds that are suspected to contain defects. Ultrasonically or radiographically inspect all circumferential butt-welded pole and arm splices. Longitudinal seam welds within 6 inches of complete penetration pole to base plate welds shall be complete penetration welds.

If requested by the Engineer, additional weld inspection may be required upon arrival of the material at the Project Site. If defects are found by this additional inspection, the Contractor shall be responsible for the additional testing and repair costs. If no defects are found, the Engineer will be responsible for the additional inspection costs.

(c) Welding Steel After Galvanizing - No field welding of galvanized steel will be allowed. Perform all welding in a shop. The effected piece shall have the existing galvanizing removed from the heat affected area before welding. Perform the weld, remove the galvanizing totally from the entire piece, and hot-dipped galvanized it. A submittal for review according to 00150.35(b)(1) is required that includes the following:

- Explanation for modification.
- Name of shop performing the work.
- Welding procedure.
- Description of the work that will be performed.
- Name of the shop performing the hot-dipped galvanizing.

(d) Identifying Tags - Attach a stainless steel identifying tag to all poles. The tags shall be at least 1/16 inch thick. Tag lettering shall be at least 1/4 inch in height, and be stamped into the tag. Attach tags with stainless steel pop rivets of at least 3/16 inch nominal body diameter. Do not locate pop rivet holes within 6 inches of welds. Locate the pole tag approximately 5 feet above the bottom of the base plate. Drill holes for pop rivets prior to hot-dip galvanizing. Remove excess hot-dip galvanizing from holes and repair according to ASTM A780.

Tags shall include the following information if applicable:

- Manufacturer
- Month and year of manufacture
- Structure Number
- Top Tenon Yield (ksi)
- Top Tenon Flange Plate Yield (ksi)
- Pole thickness (inch)
- Base Plate Yield (ksi)
- Anchor Rod Yield (ksi)

(e) Hand Holes - The inside dimensions of the hand hole shall be 5 inches wide and 28 inches tall. The hand hole location and all other dimensions shall be as shown. The hand hole shall have a tapped hole for mounting the portable winch.

(f) Pole Top Tenon - The pole shall have a custom plate mounted tenon that allows the field modification of the arm/camera orientation up to 360 degrees. The tenon shall have mounting holes and slot as required for the mounting of the camera-lowering system. The tenon shall be of dimensions necessary to facilitate camera lowering device component installation. Each slot shall be parallel to the pole centerline for mounting the lowering device.

(g) Base Plates - Integrally weld the base plates to the tubes with a telescopic welded joint or a full penetration butt weld with backup bar.

(h) Grounding Connection - For standard four-bolt anchor base poles, provide a 1/2 inch, Type 308, 309 or 310 stainless steel stud on the inside of the shaft. Locate the stud directly opposite and level with the handhole in the pole. Attach grounding electrode conductors and bonding conductors to the stud with a grounding wire clamp, "acorn style".

(i) Erecting Steel Camera Poles - Erect steel camera poles on concrete foundations and according to the recommendations of the pole manufacturer and as shown. Exercise reasonable care to prevent marking the finish and damaging poles.

Bolt protrusion on slip base poles shall not interfere with the breakaway action of pole. File sharp edges smooth and repair according to ASTM A780.

(1) Repair Damaged Finish - Repair damaged galvanizing according to ASTM A780. Minor scratches less than 3 inches long by 3/16 inch wide or an area of 1/2 square inch can be repaired with the sprayed zinc method.

(2) Assembly of Supports and Bolt Tightening - Nuts shall have full thread engagement.

a. Anchor Rods for Fixed Base Camera Pole Supports - After foundation concrete strength and curing requirements are satisfied and after inspection of the foundation, pole installation may begin.

Lubricate anchor rods and nuts according to 02560.70. Estimate the required rake, if any, and set the lubricated leveling nuts accordingly, so that when pole installation is complete and all appurtenances are installed on the pole, the top of the pole is plumb with the base of the pole.

Verify the orientation of the camera arm with the Engineer before installing the pole.

Lift the pole into position on the leveling nuts and washers. Make sure all leveling nuts and washers are in full contact with the base plate.

Install washers and lubricated top nuts, and bring to a snug tight condition. Snug tight is defined as the condition when all plies of the connection are in firm contact, and can be obtained by the full effort of a worker on the end of a 12 inch long wrench. Several passes may be required to obtain uniform snug tightness.

When all anchor rods are snug tight, proceed with installation of arms and other appurtenances, if not previously installed. When installation of arms and appurtenances is complete, and the pole is plumb, final anchor rod tightening may

begin. If the pole is not plumb, adjust as required and repeat snug tightening as described above. As a safety measure, provide crane support of the pole until anchor rods tightening is completed.

Mark the position of each turned element (nut or bolt head) with a felt tip pen or similar marker. Rotate each top nut past snug tight by the amount shown in 00965.46(i)(2)(d). Several passes may be required to obtain uniform final tightness. "Cheater" bars or slugging wrenches are allowed if required for large diameter anchor rods.

b. Anchor rods for Slip Base (Break-away) Camera Supports - After foundation concrete strength and curing requirements are satisfied and after inspection of the foundation, pole installation may begin.

Furnish, at no additional cost to the Agency, a calibrated torque wrench of a capacity appropriate to the size and type of the bolts being tightened. Confirm the accuracy of the calibrated torque wrench through calibration by an approved independent testing agency at least once a year.

Lubricate anchor rods and nuts according to 02560.70. Estimate the required rake, if any, and set the lubricated leveling nuts accordingly, so that when pole installation is complete and all appurtenances are installed on the pole, the top of the pole is plumb with the base of the pole.

Install the anchor plate on the leveling nuts and washers. Make sure all leveling nuts and washers are in full contact with base plate.

Install washers and lubricated top nuts, and bring to a snug tight condition. Snug tight is defined as the condition when all plies of the connection are in firm contact, and can be obtained by the full effort of a worker on the end of a 12 inch long wrench. Several passes may be required to obtain uniform snug tightness.

Verify the orientation of the camera arm with the Engineer before installing the pole.

When all anchor rods are snug tight, proceed with the "Slip Base Bolting Procedure" as shown on the Plans. When the "Slip Base Bolting Procedure" is complete, final anchor rod tightening may begin. As a safety measure, provide crane support of the pole until anchor rod tightening is complete.

Mark the position of each turned element (nut or bolt head) with a felt tip pen or similar marker. Rotate the top nut of each anchor rod past snug tight by the amount shown in .d below. Several passes may be required to obtain uniform final tightness. "Cheater" bars or slugging wrenches are allowed if required for large diameter anchor rods.

c. High-Strength Bolts in Camera Arm-to-Pole Connections - Do not reuse galvanized high strength bolts. Retightening previously tightened bolts that may have been loosened by the tightening of adjacent bolts will not be considered a reuse.

Lubricate high-strength bolts according to 02560.70. Provide all high-strength bolts with hardened flat washers under the element turned during tightening.

If arms or appurtenances are attached after pole erection, support them until bolts are snug tight.

Install high-strength bolt connections to a snug tight condition. Snug tight is defined as the condition when all plies of the connection are in firm contact, and can be obtained by the full effort of a worker on the end of a 12 inch long wrench. Several passes may be required to obtain uniform snug tightness.

Mark the position of each turned element (nut or bolt head) with a felt tip pen or similar marker. Rotate each top nut past snug tight by the amount shown in .d below. Several passes may be required to obtain uniform final tightness.

d. Final Tightening - Required final tightening of anchor rods and high-strength bolts are shown in the following Table:

Connection Type	Rotation Past Snug Tight
ASTM A449 Type 1 Anchor Rods	60° (1/6 turn)
ASTM F1554 Gr. 55 Anchor Rods	60° (1/6 turn)
ASTM F3125, Grade A325 Arm Connection Bolts	60° (1/6 turn)

e. Bolt Inspection - The Engineer will observe the installation and tightening operations to ensure that proper procedures are followed. All inspections will be visual and no testing will be conducted.

Top surface of bolts or rods that are not flush or do not extend beyond the top of the nut requires the rejection of the installation.

(Use the following subsection .48 to specify coating metal camera poles. Obtain item and color number from the Designer.)

00965.48 Coating - Prepare and powder coat poles according to the applicable portions of Section 00593 or prepare and coat poles according to the applicable portions of Section 00594. Provide coating materials for field application, repairing damaged coatings, and coating hardware after installation, according to Section 00593 or 00594. Do not coat:

- Slip plate or arm connection surfaces.
- Slip base bolting hardware.
- Anchor rods, anchor rod washers, and anchor rod nuts.

Provide the following colors:

Item	SAE AMS-STD-595 Color Number

Measurement

00965.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

Payment

00965.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract Lump Sum amount for the item "Camera Poles and Foundations".

Payment will be payment in full for furnishing and installing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP00970 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 00970 - HIGHWAY ILLUMINATION

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00970 of the Standard Specifications modified as follows:

> ***(Use the following lead-in paragraph and subsection .15 when an LED luminaire is required on a traffic signal support. Substitute other approved product as applicable.)***

Add the following subsection:

00970.15 LED Luminaires on Traffic Signal Supports - Furnish one of the following approved models or an approved equal:

- CREE LED - Traveyo Series Large,
  TRVLG-A-HT-3ME-16L-40K7-UL-GY-N

- Signify - LUMEC LED - RoadFocus RFL,
  RFL-135W80LED4K-G2-R3M-UNV-DMG-PH9-GY3

- Current LED - Evolve, ERLH-0-14-C3-40-D-GR

When higher light output is desired, higher wattage luminaires up to 170 watt within the same brand/model listed above, may be furnished.

When furnishing an LED luminaire model that is not specified as approved, the luminaire shall meet the requirements of 02926.54.

(Use the following lead-in paragraph and subsection .16 when an LED luminaire is required on a freeway interchange lighting system. Substitute other approved product as applicable

Replace "(Voltage Information***)" with the voltage information. Check with the Illumination Designer.)***

Add the following subsection:

00970.16 LED Luminaires on Freeway Interchange Lighting Systems - Furnish one of the following models or an approved equal:

- Signify - LUMEC LED - RoadFocus,
  RFL-215W96LED4K-G2-R3M-*(*Voltage Information*)*-DMG-PH9-GY3

- Current LED - Evolve, ERL2-*(*Voltage Information*)*-25-B3-40-D-GR

- CREE LED - Traveyo Series Extra Large,
  TRVXL-A-HT-3ME-25L-40K7-*(*Voltage Information*)*-GY-N

When higher light output is desired, higher wattage luminaires up to 250 watt within the same brand/model listed above, may be furnished.

When furnishing an LED luminaire model that is not specified as approved, the luminaire shall meet the requirements of 02926.54.

00970.47 HDPE Conduit and Connectors – Replace the paragraph that begins "High Density Polyethylene (HDPE) conduit may be used…" with the following paragraph:

High Density Polyethylene (HDPE) conduit may be used for horizontal directional drilling (HDD) applications. Provide HDPE conduit that is gray in color. Join HDPE conduit sections by mechanical fittings that have barbed threads on both ends or by a swedge coupler with two-part conduit adhesive.

(Use the following .90 when refurbishing and reinstalling existing illumination systems.)

00970.90 Payment - Replace the paragraph that begins "Item (e) includes…" with the following paragraph:

Item (e) includes all refurbishing, reinstalling, and other Work as specified or shown.

SP00984 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 00984 - FIBERGLASS POLES FOR ITS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document.

The Work covered under this Section is diverse and this boilerplate may not include Specifications for all the Work or ITS elements on the Project. Modify as necessary by adding, deleting, or revising language for the specific Project requirements. Modifications to this Section, other than deleting language not required, will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00984, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00984.00 Scope - This Work consists of furnishing and installing fiberglass poles.

00984.01 Submittals - Submit stamped Working Drawings according to 00150.35. The stamped Working Drawings show the design standards and criteria, calculated wind loads and pressure, material description, dimensioning, member size and connection details. Material ordered or Work performed before the Engineer finishes and returns the documents shall be at the Contractor's risk.

00984.02 Regulations, Standards, and Codes - Comply with the following standards where applicable:

- American Association of State Highway and Transportation Officials (AASHTO)
  - Standard Specification for Structural Support for Highway Signs, Luminaires and Traffic Signals 5th Edition with all interim revisions.
- American Society for Testing and Materials (ASTM)
  - D635 Standard Test Method for Rate of Burning or Extent and Time of Burning of Plastics in a Horizontal Position

00984.03 Design and Performance - Design the poles according to AASHTO and the following design factors:

Basic wind speed (3 second gust)	110 mph
Extreme I Wind Loading, Basic Wind Speed (3 second gust)	130 mph (1700-yr MRI)
Service I Wind Loading, Basic Wind Speed (3 Second gust)	82 mph (10-yr MRI)
Gust factor (G)	1.14
Importance factor (If)	1.0 (50 year occurrence)

Fatigue category	II
Safety factor	2.0

(a) Performance Calculations - Design the pole to support the specified devices and all associated accessories to be mounted on the pole as shown. Include all portions of the effective projected area (EPA) of the complete system, sensors, and Equipment to be mounted on the pole along with the weight when designing the pole to meet the specified deflection performance criteria. Pole top deflection cannot exceed 1/2 inch in a 30 mph (non-gust) wind. Design calculations include pole and ground anchorage embedment requirements in addition to meeting design demand at any other critical pole sections (e.g. base, handholes). At each of these locations, provide the following information:

- The pole's diameter, thickness, section modulus, moment of inertia, and cross sectional area.
- The axial force, shear force, primary moment, total moment, axial stress, bending stress, allowable axial stress, allowable bending stress, and combined stress ratio (CSR) at the maximum location.
- The pole's angular and linear deflection under service level wind loading.

00984.04 Additional Testing - Perform the following tests on the poles per AASHTO *Standard Specification for Structural Support for Highway Signs, Luminaires and Traffic Signals 5th Edition* with all interim revisions section 8.7.2:

- Weathering resistance according to ASTM G53
- Adhesion of coatings
- Color Change from UV Exposure

Materials

00984.10 Fiberglass Pole - Furnish fiberglass poles with one-piece construction (or breakaway as required) and include the pole shaft, handholes, top tenon assembly (if applicable), ground anchorage, and conduit penetrations. Furnish pole shaft with a round cross section having a constant linear taper of 0.14 inch per foot. Do not erect poles until the Engineer has made a visual inspection of poles.

Height and location of the poles are as shown. Furnish poles constructed of continuous fiberglass filament combined with thermosetting epoxy resin. Furnish direct burial style poles constructed of UV resistant materials. Furnish flame resistant poles according to ASTM D635.

00984.11 Coating - Color the pole SAE AMS-STD-595C color number 10059. Provide coating materials for field application, repairing damaged coatings, and coating hardware after installation.

Construction

00984.41 Excavation - Complete all excavation, backfilling and resurfacing work necessary to complete the Work, including removal and replacement of curbs, sidewalks, paved

surfaces and other materials. On completion of the Work, replace and finish all surfaces to correspond with the existing surfaces.

Furnish, place, and remove any shoring required to prevent caving of walls.

When excavating in paved areas, cut with an approved pavement cutting saw to a depth of at least 2 inches along the Neat Lines of the area to be removed. Cut sharp and well defined pavement edges with no evidence of cracking, delaminating, or stressing.

Restore all disturbed landscaping and underground systems to original condition at no additional cost to the Agency. Use hand excavation as needed and if directed.

(a) Excavation for Pole Foundations - Make all excavations for pole foundations to the Neat Lines of the foundations. Hand excavation may be required. Place the backfill material directly against the sides of the excavation in undisturbed or well-compacted material.

(b) Disposal of Waste Materials - Dispose of all waste materials according to 00290.20, or as directed.

00984.42 Foundations - Backfill excavated pole foundation holes with Selected Granular Backfill according to 00330.14. Excavate pole foundation holes to the lines and grades established and to the depth shown.

Where obstructions prevent the construction of planned foundations, construct the foundations in the location directed. Any extra cost due to the site change will be paid according to 00195.20.

If it is determined that foundations will extend deeper than shown, the extra foundation depth will be paid according to 00195.20.

00984.43 Fiberglass Poles -

(a) Deviation from Straightness - After the poles are delivered to the Project Site, and before they are erected on the foundations, check all poles for deviation from straightness according to the following:

(1) Deviation in One Plane and One Direction Only - A straight line joining the surface of the pole at the base and the same surface of the pole at the top shall not be more than 1/2 inch from the surface of the pole for each 10 feet of length from the closest of these points. Meet the same requirement for the opposite surface.

(2) Deviation in Any Plane - Ensure that a straight line connecting the midpoint of the pole at the base with the midpoint at the top does not pass through the surface of the pole at any intermediate point.

Any pole not meeting these requirements will be rejected.

(b) Identifying Tags - Provide a permanent identification tag and locate the pole tag approximately 2 feet above ground level.

Provide the following information for each pole identification tag:

- Manufacturer and Model
- Month and year of manufacture

(c) Handholes - Provide a handhole reinforced as necessary to meet the design demand with inside dimensions of 2.5 inches wide and 5 inches tall with a handhole for wiring access located near the base of the pole above grade, and a second handhole and a 1.5-inch threaded hub one foot down from the top of the pole or as shown. Provide a handhole cover attached with socket head screws.

(d) Tenons - Permanently bond tenons (as applicable) to the fiberglass shaft and hot-dip galvanize steel according to ASTM A153.

(e) Erecting Fiberglass Poles - Erect fiberglass poles according to the recommendations of the pole manufacturer and as shown. Exercise reasonable care to prevent marking the finish and damaging poles.

Repair damage according to the manufacturer and at no additional cost to the Agency.

Measurement

00984.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

Payment

00984.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract lump sum amount for the item “Fiberglass Poles, Complete”.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP00985 (Special Provisions for the 2024 Book) (Bidding on or after: 05-01-25 Last updated: 01-23-25)

SECTION 00985 - ITS ELECTRICAL SYSTEM INSTALLATION

(Follow all instructions and make all edits with “Track Changes” turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document.

The Work covered under this Section is diverse and this boilerplate may not include Specifications for all the Work or ITS elements on the Project. Modify as necessary by adding, deleting, or revising language for the specific Project requirements.

Modifications to this Section, other than deleting language not required, will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00985, which is not a Standard Specification, is included in this Project by Special Provision.

Description

(In the following subsection .00, delete the language in purple parentheses that does not apply and delete the purple parentheses.)

00985.00 Scope - In addition to requirements of Section 00960, install ITS electrical system as shown or specified. **(**Install Agency-furnished Equipment listed in 00160.30.**)**

00985.01 Regulations, Standards, and Codes - Comply with the following standards where applicable:

- Underwriters Laboratories (UL)
  - 50-2015 - Enclosures for Electrical Equipment, Non-Environmental Considerations
  - 508A-2018 - Standard for Industrial Control Panels
  - 1561-2011 - Standard for Dry-Type General Purpose and Power Transformers
  - 1581-2001 - Reference Standard for Electrical Wires, Cables, and Flexible Cords
  - 1685-2015 - Standard for Vertical-Tray Fire-Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables
  - 83-2017 - Thermoplastic-Insulated Wires and Cables

(In the following subsection .02, delete the language that does not apply. Fill in the appropriate blanks.)

00985.02 Submittals - Submit according to 00150.37, within 30 Calendar Days after execution of the Contract, the following:

- Transformers and cabinets according to 00985.10
- Pole mounted service cabinets according to 00985.11
- Termination enclosures according to 00985.12
- Coaxial video cable according to 00985.13
- Atmospheric sensors and accessories according to 00985.14
- Pavement sensors and accessories according to 00985.14(d)
- Circuit breakers according to 00985.15
- Metal conduit according to 00985.16
- Metallic conduit fittings according to 00985.17
- Conduit seal according to 00985.18
- Electrical splice materials according to 00985.19
- Camera lowering system according to 00985.20
- Wood pole according to KB__.

(Use the following three bullets when RWIS are included in the Project.)

- Power supplies according to KB__
- Serial converter according to KB__
- Analog to Ethernet converter according to KB__

Include the manufacturer's name, model numbers, catalog sheets and other descriptive literature of proposed materials. Provide the catalog sheets and literature including technical data, physical properties and operational description in sufficient detail to demonstrate the equipment meets these specifications.

Materials

(Use the following subsection .10 when a transformer is required.)

00985.10 Transformers and Cabinets - Furnish general purpose dry type transformers with two windings 1000 Volts or less, 60 Hz, self-cooled according to UL 1561, kVA rating as shown. Furnish transformers installed in cabinets that are compliant with UL 50, Type 3R ventilated, 14 gauge Type 304 or 316 stainless steel, and rated for outdoor use. Include a cabinet door with a seamless gasket that is liquid-tight. Remove all sharp edges. Furnish two 2.5 percent taps above and two 2.5 percent taps below normal rated primary voltage minimum, as well as ground and neutral terminal lugs. Furnish an insulation rating of 150 °C winding temperature rise above ambient. The cabinet is to be padlockable.

Furnish a dead front panel within the transformer cabinet, such that when the door is opened only circuit breakers and no live parts are exposed. Dead front material is to be the same as the rest of the cabinet and hinged to allow access to live parts.

(Use the following paragraph only if a safety switch is NOT used with the transformer.)

Furnish a primary protection circuit breaker that is lockable in the "OFF" position, but not on the "ON" position.

(Include following paragraph only if a safety switch is used with the transformer)

Furnish safety switches that comply with NEMA KS 1 and are heavy duty, NEMA 3R, 4, or 4X type. Voltage, current rating, number of poles, and fusing as shown. The cover or door cannot be opened while the switch handle is in the "ON" position. Furnish a safety switch that is made to lock the handle in the "OFF" position but not the "ON" position. Switches are to be of the quick make, quick break type.

(Use the following subsection .11 when a pole mounted service cabinet is required.)

00985.11 Pole Mounted Service Cabinet - Furnish pole mount service cabinets formed from 10 gauge thick sheet metal hot-dipped galvanized after fabrication according to 02530.70, or 12 gauge Type 304 or 306 stainless steel. Furnish cabinets that are UL 508A listed with a top hinged lift cover including provision to hold cover in open position and dead fronts. Include cabinet doors with a seamless gasket that are liquid-tight. Accommodate for

eight single pole circuit breakers or four double pole circuit breakers. Install copper buss bars in cabinets for main and branch circuits. Furnish a minimum of 2 locater studs near top for dead fronts, and handle on dead front near bottom. The cabinet is to be padlockable.

Fabricate dead fronts from code thickness galvanized sheet metal or type 304 or 316 stainless steel. For galvanized sheet metal dead fronts, treat cut edges with zinc-rich paint. Prime with vinyl wash primer and finish with exterior polyurethane enamel.

(Use the following subsection .12 when a termination enclosure is required.)

00985.12 Termination Enclosure - Furnish enclosures constructed from 14 gauge Type 304 or 316 stainless steel, as well as be UL 50 compliant and Type 4X rated with a #4 brushed finish. Remove all sharp edges. Include doors with a continuous hinge and seamless gasket that is liquid-tight. Enclosures are to be padlockable. Dimensions are location specific as shown.

(Use the following subsection .13, when Cables are required.)

00985.13 Coaxial Video Cable - Furnish RG-59/U or RG-6 coaxial cable, 75 ohms with 18 AWG solid bare copper center conductor with 95 percent or greater bare copper braided shield for fixed mounted cameras with UL 1581 or UL 1685 rating. Furnish video cable suitable for wet locations. Video cable may be hybrid type combining the coaxial video cable and multi-conductors for providing power in one single cable assembly. Install nickel plated body, for corrosion resistant, BNC connector on end of cable. Furnish video cable that is one continuous conductor from the camera assembly to the video encoder. Splices are not allowed, unless approved in writing by the Engineer.

(Use the following subsection .14, when atmospheric sensors are required.)

00985.14 Atmospheric Sensors and Accessories - Furnish the following list of Equipment and install as shown:

(a) Temperature/Relative Humidity Sensor

- RM Young Model 41382LC2 (4-20 mA option)
- RM Young Model 41003P-24 radiation shield
- RM Young Model 18446 five conductor cable

(b) Anemometer

- RM Young Model 05106-12M (12 meter cable included)
- RM Young Model 05631C wind line driver
- RM Young Model 18446 five conductor cable

(c) Sensor Mounting Bracket

- Vaisala DRUNIVARM-US with band straps included

(d) Pavement Sensors

- Vaisala DSC111 with the DSCVIS visibility option enabled non-invasive surface state sensor

- Vaisala DST111 non-invasive surface temperature sensor
- Vaisala 216548 communication cable between DSC111 and DST111
- Vaisala non-remote pole installation kit for non-invasive sensors with 28VDC power supply with cables at 50 meter length minimum

(Use the following subsection .15, when circuit breakers are required.)

00985.15 Circuit Breakers - Furnish UL489 listed circuit breakers of the voltage rating shown or specified, unenclosed, molded case bolt-on type with end conductor terminals, and suitable for surface mounting in the cabinet on a false back or bracket. The interrupting rating is to meet or exceed the short circuit rating of the specified electrical system.

(Use the following subsection .16, when metal conduit is required.)

00985.16 Metal Conduit - Furnish metal conduit meeting the following requirements:

- **Rigid Metal Conduit** - Galvanized rigid metal manufactured of mild steel conforming to UL 6, Rigid Metal Electrical Conduit.
- **Liquid-Tight Flexible Metal Conduit** - Furnish UL 360 listed, liquid-tight, nonmetallic, sunlight resistant outer jacket over an inner flexible metal core.

(Use the following subsection .17, when conduit fittings are required.)

00985.17 Metallic Conduit Fittings - Furnish conduit fittings meeting the following requirements:

- **Metallic Expansion Fittings** - Weatherproof, hot dip galvanized malleable iron expansion head and body. Where the Plans do not specify an Equipment grounding wire in the conduit run, furnish fittings with external bonding jumpers. Permit a 4 inch conduit movement minimum.
- **Metallic Bushings** - Galvanized steel or die cast zinc with insulated throat. Include a bonding lug if required.
- **Conduit Hub** - Hot-dip galvanized malleable iron screw-on style with neoprene "O" ring.

00985.18 Conduit Seal - Furnish conduit plug Material used to seal the ends of conduit composed of duct seal that is UL listed clay putty material designed to seal electrical conduit. Seal all conduit impacted by the Project.

00985.19 Electrical Splice Materials - Furnish electrical splice Material meeting the following requirements:

- **Split Bolt** - Made of silicon bronze to securely join the wires both mechanically and electrically.
- **Heat-Shrink Tubing** - Surface-irradiated tube complying with UL 486, rated at 194 °F, with 600 V inner melting wall or liner to provide void-free encapsulated insulation.
- **Insulating Rubber Tape** - Electrical grade, nondrying, rubber based, elastic type conforming to ASTM D4388.

- **Insulating Vinyl Plastic Tape** - Comply with ASTM D3005, Type II and UL 510.

(Use the following subsection .20, when a camera lowering system is required.)

00985.20 Camera Lowering System:

(a) General Description - Design the camera lowering system to support and lower a traffic surveillance IP camera, lens, Pan/Tilt mechanism, associated cabling and connectors, and other supporting field components without damage or causing degradation of camera operations. Provide a lowering system that consists of a suspension contact unit, divided channel support arm, and a pole adapter for attachment to a pole top junction box and camera connection box. Design the divided support arm and receiver brackets to self-align the contact unit with the pole centerline during installation and ensure the contact unit cannot twist under high wind conditions.

(b) Lowering Tool - Operate the camera lowering system by the use of a portable lowering tool. The lowering tool consists of a metal frame winch assembly with a cable, a quick release connector, and adjustable clutch and a variable speed heavy duty electric motor. Provide a lowering tool that is compatible with accessing the support cable through the hand hole of the pole. Provide a lowering tool with a reduction gear for ease of service and operation. Equip the lowering tool with a positive braking mechanism to secure the cable reel during raising and lowering operations and to prevent freewheeling. The use of a strap to attach the lowering device will not be accepted.

(c) Materials - Furnish pulleys that have sealed, self-lubricating bearings. Provide a lowering cable that is a stainless steel cable with a minimum breaking strength of 1700 lbs.

Protect all electrical and video connections between the fixed assembly and the lowering portion of the connection block from exposure to the weather by a waterproof seal. Design the electrical connections (contacts) to minimize loss. The ground wire or pin shall be the last electrical connection to disengage when servicing.

(d) Suspension Contact Unit - Provide a suspension contact unit that allows the camera, Pan/Tilt Unit and dome assembly to easily separate from the camera pole for lowering purposes. Only the stainless steel lowering cable is permitted to move within the pole or lowering device during lowering or raising. Provide a locking mechanism between the fixed and moveable components. When latched, all weight shall be removed from the lowering cable. Provide a suspension contact unit that has a heavy duty cast tracking guide to allow latching in the same position every time. House the suspension contact unit in a weatherproof enclosure with a gasket to seal the interior.

Construction

(In the following subsection .40, delete the language in purple parentheses that does not apply and delete the purple parentheses.)

00985.40 Installation - Install the Materials as specified, shown, and according to the manufacturer's instructions.

(Install the Agency-furnished Materials listed in 00160.30; and all other Incidental items necessary to complete the Work as shown.)

00985.41 Metallic Conduit - If corrosive Soil conditions exist, coat metallic conduit with a nonmetallic coating or wrap with corrosion protection tape at least 10 mils thick.

(a) Metallic Conduit - Paint the following with rust-preventative coating:

- Threads on all metal conduit
- Areas where the coating has been damaged so underlying metal is exposed.
- Exposed, non-galvanized threads resulting from field cuts.

(b) Bushings - Furnish and install bushing according to the following:

- **Metallic Bushing** - Use metallic bushings with rigid metallic elbows, metallic risers, and junction boxes containing circuits less than 25 V.
- **Metallic Bonding Bushing** - Use metallic bonding bushings with rigid metallic elbows, metallic risers, and junction boxes containing 25 V or greater circuits.

00985.42 Cable and Wire - Install No. 16 AWG TFFN orange base with blue tracetone wire in all conduits as a locate wire. Leave slack as required in 00985.43 and install a wire nut. Do not join multiple locate wires under a common wire nut unless otherwise shown.

Tape the ends of unused conductors with insulated vinyl plastic tape.

Install polyethylene pull line in all new conduits for future use. Leave 6 feet of slack pull line. If an existing pull line is used, replace the existing pull line with a new pull line during the installation.

Arrange wiring neatly within cabinets and junction boxes. Use electrical lubricants when inserting conductors in conduit. Before pulling wires through underground conduit runs, blow the conduit out with 120 cubic feet per minute compressed air.

Do not use tapes, straps, ties or other binding materials to bundle single conductors or cables together inside conduits or poles. Bundling of conductors or cables are allowed at the terminating end points for pulling only.

Pull all wire and cable by hand and on a straight line with the conduit opening to prevent damage to wire and cable insulation. Use a pulley device to achieve a straight pull if pulls are made with poles or controller cabinet in place.

00985.43 Conductor Slack - Leave slack in each wire and cable as follows:

- 2 feet in junction boxes and poles
- 6 feet in the first junction box nearest the controller cabinet
- 6 feet in controller cabinet and service cabinet

00985.44 Identification and Marking - Clearly and permanently label all cables and wiring between subsystems. Mark all conductors within 2 inches of wire terminations by means of imprinted tubular white or yellow plastic wire markers at termination points. Install marker nomenclature that is visible without moving wires or markers. Use thermal transfer label printer with minimum 3/4” tape.

00985.45 Covers and Guarding - Furnish covers or guarding for live parts of terminations on circuits of 50 V or more to ground.

00985.46 Conductor Splicing - Install all conductors as shown without splicing. Field verify lengths prior to ordering cables. If splicing is required to complete Work as shown, then submit the method using all materials listed in 00985.19 and the location of splicing for approval by Engineer before construction.

(Use the following subsection .47, when Variable Message Sign Installation is required.)

00985.47 Variable Message Sign (VMS) Installation - Install the Agency-furnished variable message signs, sign control cable, and controller cabinets as shown. Coil and stow minimum 50 feet slack of sign control cable in the sign housing and controller cabinet after pulling. Sign control cable will be terminated by Agency.

(Use the following paragraph when variable message signs are being removed on a Project.)

Notify the Engineer at least 14 Calendar Days before taking any individual VMS out of service, if applicable. Keep the existing VMS and cabinets in service until the new VMS and cabinets are ready to be installed, and minimize the time that the individual signs are out of service.

(Use the following subsection .48, when Variable Speed Sign Installation is required.)

00985.48 Variable Speed Sign (VAS) Installation - Install the Agency-furnished variable speed signs, sign control cable, and controller cabinets as shown. Coil and stow minimum 50 feet slack of sign control cable in the sign housing and controller cabinet after pulling. Sign control cable will be terminated by Agency.

(Use the following subsection .49, when Radar Traffic Sensor Installation is required.)

00985.49 Radar Traffic Sensor Installation - Install the Agency-furnished radar traffic sensors, mounting brackets, accessories, and associated wiring as shown. Configuration and final aiming of the sensor to be completed by the Agency.

(Use the following subsection .50, when Camera Installation is required.)

00985.50 Camera Installation - Install Agency-furnished camera and accessories, which consists of the camera, housing, mounting bracket, power supply, and associated wiring as shown and specified. Final aiming of the camera to be completed by the Agency.

(Use the following subsection .51, when Radio Installation is required.)

00985.51 Radio Installation - Install Agency-furnished radio and accessories, which consists of the radio, mounting bracket, power supply, and associated radio network cable

as shown and specified. Configuration and final aiming of the radio to be completed by the Agency.

Measurement

00985.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

Payment

(Use one of the following two options for subsection .90)

[Option 1. Use this subsection .90 if site work needs to be broken out by Pay Items]

00985.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

(Add additional Pay Item(s) as required for the Schedule of Items and delete all purple parentheses.)

Pay Item	Unit of Measurement
(a) Electrical Systems Installation, Site _____	Lump Sum
(b) Electrical Systems Installation, Site _____	Lump Sum

(In the following paragraph delete the items that are not included as part of the Pay Item. Copy and paste the paragraph as necessary to accommodate all Work.)

Item (a) includes furnishing and installing the cabinet, riser frame, cabinet concrete foundations, junction boxes, handhole, communications bracket, pole concrete foundation, transformer with cabinet, wood pole, meter service, pole mounted service cabinet, base mounted meter service cabinet (BMC), conduits, trenching, backfill, horizontal directional drilling, conductors, grounding and bonding, and all other Incidental items necessary to complete the Work.

Payment will be payment in full for furnishing and placing all Materials; and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for:

- required submittals and documentation
- assistance for commissioning Equipment and systems
- pick-up and installation of the Agency-furnished Material listed in 00160.30, furnishing and installing the conductors and mounting hardware, and removal and disposal.

[End Option 1]

[Option 2. Use this subsection .90 if site work does NOT need to be broken out per site.)

00985.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract lump sum amount for the item “Electrical Systems Installation".

(Include following paragraphs only if Agency furnished materials are included in this specification.)

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for pick-up and installation of the Agency furnished Materials.

(Include following paragraph only if Agency furnished materials are NOT included in this specification.)

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

[End Option 2]

SP00987 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 02-03-25)**

SECTION 00987 - TELECOMMUNICATIONS

(Follow all instructions and make all edits with “Track Changes” turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document.

The Work covered under this Section is diverse and this boilerplate may not include Specifications for all the Work or ITS elements on the Project. Modify as necessary by adding, deleting, or revising language for the specific Project requirements. Modifications to this Section, other than deleting language not required, will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00987, which is not a Standard Specification, is included in this Project by Special Provision.

Description

(In the following subsection .00, delete the language in purple parentheses that does not apply and delete the purple parentheses.)

00987.00 Scope - This Work consists of furnishing and installing fiber optic cabling for the telecommunications (of signalized intersection devices) (of Intelligent Transportation Systems (ITS) devices).

(In the following subsection .01, delete the standards that are not required.)

00987.01 Regulations, Standards, and Codes - Comply with the following standards where applicable:

- Telecommunications Industry Association (TIA/EIA)
  - EIA-455-3A (FOTP-3) Procedure to Measure Temperature Cycling Effects on Optical Fibers, Optical Cable, and Other Passive Fiber Optic Components
  - TIA-455-8 (FOTP-8) Measurement of Splice or Connector Loss and Reflectance Using an OTDR
  - TIA-526-7 (OFSTP-7) Measurement of Optical Power Loss of Installed Single-Mode Fiber Cable Plant
  - EIA-455-25 (FOTP-25) Impact Testing of Optical Fiber Cables
  - EIA-455-33 (FOTP-33) Fiber Optic Cable Tensile Loading and Bending Test
  - EIA-455-41 (FOTP-41) Compressive Loading Resistance of Fiber Optic Cables
  - EIA-455-81 (FOTP-81) Compound Flow (Drip) Test for Filled Fiber Optic Cable
  - EIA-455-82 (FOTP-82) Fluid Penetration Test for Fluid Blocked Fiber Optic Cable
  - EIA-455-104 (FOTP-104) Fiber Optic Cable Cyclic Flexing Test
  - EIA-455-171 (FOTP-171) Attenuation by Substitution Measurement for Short-Length Multimode Graded-Index and Single Mode Optical Fiber Cable Assemblies
  - EIA/TIA-568-B.3 Optical Fiber Cabling Components
  - EIA/TIA-758 Customer Owned Outside Plant Telecommunications Cabling
  - EIA-598-B Optical Fiber Cable Color Coding
- American National Standards Institute/Insulated Cable Engineers Association (ANSI/ICEA)
  - ANSI/ICEA S-87-640 Standard for Optical Fiber Outside Plant Communications Cable
- International Telecommunication Union - Telecommunication Standardization Sector (ITU-T)
  - G.652 (11/09) Characteristics of a single-mode optical fiber and cable Telecommunications Industry Association (TIA)
  - G.652 (11/16) Characteristics of a single-mode optical fiber and cable

(In the following subsection .02, delete the submittals that are not required.)

00987.02 Submittals - Within 30 Calendar Days after the execution of the Contract, submit the following:

- Disruption Request according to 00987.04
- Outside plant fiber optic cable according to 00987.10

(Use the following 3 bullets when splicing is required. Do not use these 3 bullets for Traffic Signal Interconnect.)

- Fiber optic jumper/patch cables according to 00987.11.
- Splice closures and installation instructions according to 00987.12
- Splice trays according to 00987.13.
- Fiber Optics Installer or Fiber Optics Technician Certification according to 00987.30.
- OSP cable installation procedure according to 00987.40(a)
- Fiber optic cable test plan according to 00987.41(a)
- Factory testing according to 00987.41(b)
- Arrival on-site testing according to 00987.41(c)
- Fiber optic cable testing according to 00987.41(d) and (f)

Include the manufacturer's name, model numbers, catalog sheets and other descriptive literature of proposed materials. Provide the catalog sheets and literature including technical data, physical properties and operational description in sufficient detail to demonstrate the Equipment meets these specifications.

(Use the following subsection .04, when Existing System Disruption and Restoration is required.)

00987.04 Existing System Disruption and Restoration - Work of this Contract requires disruptions to the specified existing systems, circuits, and equipment.

Notify the Engineer 14 Calendar Days before existing Ethernet switches are impacted.

Obtain Engineer's approval before disrupting the system. Disruptions will only be considered for non-holiday weekdays between 8 a.m. and 4 p.m. For each written disruption request include the following:

- System(s) to be affected
- Disruption start date and time
- Estimated duration required

(Insert the locations of the existing systems that require disruption)

Existing systems that require disruption include the following:

-
-

Do not disrupt any other communication systems not listed or approved.

Materials

00987.10 Outside Plant Fiber Optic Cable - Furnish and install outside plant (OSP) single mode fiber optic (SMFO) cable containing single mode dual window (1310 nm and 1550 nm) fibers.

(a) Optical Fiber - Meet optical, mechanical and environmental requirements for all usable fibers in buffer tubes.

(b) Fiber Characteristics and Tests - Meet the requirements in Table 00987-1 for single mode fibers:

Table 00987-1

Fiber Characteristic Table	
Parameters:	Single Mode
Type:	Step Index
Core diameter:	8.3 µm (nominal)
Cladding diameter	125 µm ± 1.0 µm
Core to cladding offset:	≤1.0 µm
Coating:	dual layer, UV-cured acrylate strippable mechanically or chemically without damaging fibers
Optical fibers:	doped silica core with concentric silica cladding
Coating diameter:	250 µm ± 15 µm
Cladding non-circularity defined as:	≤2.0% [1-(min. cladding dia÷max. cladding dia.)]x100 FOP cable: all dielectric, gel-filled or water blocking tape, duct-type
Proof/Tensile Test:	345 MPa, min
Attenuation at 1310 nm:	≤0.4 dB/km
Attenuation at 1550 nm:	≤0.4 dB/km
Design Standard:	ANSI/ICEA S-87-640
Test cable according to:	EIA-455-25 (FOTP-25) EIA-455-33 (FOTP-33 Condition II) EIA-455-41 (FOTP-41) EIA-455-81 (FOTP-81) EIA-455-82 (FOTP-82) EIA-455-104 (FOTP-104 Conditions I and II)
Test optical fiber according to:	EIA-455-3A (FOTP-3)
Attenuation at the Water Peak:	≤2.1 dB/km @ 1383 ± 3 nm
Chromatic Dispersion	
Zero Dispersion Wavelength:	1301.5 to 1321.5 nm
Zero Dispersion Slope:	≤0.092 ps/(nm^2 *km)
Maximum Dispersion:	≤3.3 ps/(nm^2 *km) for 1285 – 1330 nm ≤0.092 ps/(nm^2 *km) for 1550 nm
Cut-Off Wavelength:	<1250 nm
Mode Field Diameter	9.3 ± 0.5 µm at 1310 nm

Petermann II	10.5 ± 1.0 µm at 1550 nm

(c) Color Coding - Distinguish each fiber from others in the same tube or cable by means of color coding according to the following:

1. Blue (BL)
2. Orange (OR)
3. Green (GR)
4. Brown (BR)
5. Slate (SL)
6. White (WT)
7. Red (RD)
8. Black (BK)
9. Yellow (YL)
10. Violet (VL)
11. Rose (RS)
12. Aqua (AQ)

Target colors according to the Munsell color shades and comply with EIA/TIA-598.

The color formulation needs to be compatible with the fiber coating and the buffer tube filling compound, be heat stable, not fade, smear, be susceptible to migration, and it must not affect the transmission characteristics of the optical fibers and not cause the fibers to stick together.

(d) Cable Construction - Furnish fiber optic cables with the following components:

(1) Buffer Tubes - Furnish clearance in the loose buffer tubes with fibers and the inside of the tube to allow for expansion without constraining the fiber. The fibers are to be loose or suspended within the tubes. Do not adhere the fibers to the inside of the buffer tube. Do not exceed a maximum of 12 fibers in each buffer tube. Furnish the number of fibers per cable as shown.

Extrude loose buffer tubes from a material having a coefficient of friction sufficiently low to allow free movement of the fibers. Furnish material that is tough and abrasion resistant to furnish mechanical and environmental protection of the fibers, yet designed to permit safe intentional “scoring” and breakout, without damaging or degrading the internal fibers.

Furnish buffer tube filling compound that is a water blocking tape or gel based filling compound with anti-oxidant additives to prevent water intrusion and migration homogenous hydrocarbon. Furnish filling compound that is non-toxic, dermatologically safe to exposed skin, as well as chemically and mechanically compatible with all cable components, non-nutritive to fungus, non-hygroscopic and electrically non-conductive. Furnish filling compound free from dirt and foreign matter and be readily removable with conventional nontoxic solvents.

Strand buffer tubes around a central member by a method, such as reverse oscillation stranding process that will prevent stress on the fibers when the cable jacket is placed under strain.

(2) Central Member - Furnish a central member that functions as an anti-buckling element that is a glass reinforced plastic rod with similar expansion and contraction characteristic as the optical fibers and buffer tubes. To ensure the proper spacing between buffer tubes during stranding, a symmetrical linear overcoat of polyethylene may be applied to the central member to achieve the optimum diameter.

(3) Filler Rods - Fillers may be included in the cable to maintain the symmetry of the cable cross section. Furnish filler rods that are solid medium or high-density polyethylene. Filler rods are to be the same diameter as the outer diameter of the buffer tubes.

(4) Stranding - Strand completed buffer tubes around the over-coated central member using stranding methods, lay lengths and positioning such that the cable meets mechanical, environmental and performance specifications. A polyester binding is to be applied over the stranded buffer tubes to hold them in place. Apply binders with sufficient tension to secure the buffer tubes to the central member without crushing the buffer tubes. Furnish a binder that is non-hygroscopic, non-wicking, and dielectric with low shrinkage.

(5) Core and Cable Flooding - Furnish a cable core that contains a water blocking tape material to prevent water ingress and migration. Furnish water blocking tape material that is either a polyolefin-based compound, which fills the cable core interstices, or an absorbent polymer, which fills voids and swells to block the ingress of water. The flooding compound or material needs to be homogeneous, non-hygroscopic, non-conductive, and non-nutritive to fungus. Furnish compound or material that is nontoxic, dermatologically safe and compatible with other cable components.

(6) Tensile Strength Member - Furnish tensile strength by high tensile strength aramid yarns or fiberglass, which are helically stranded evenly around the cable, core and not adhere to other cable components.

(7) Ripcord - Furnish cable that contains at least one ripcord under the jacket for easy sheath removal.

(8) Outerjacket - Furnish jacket that is free of holes, splits, and blisters and be medium or high density polyethylene, or medium density cross linked polyethylene with minimum nominal jacket thickness of 1 mm ± 0.076 mm. Apply jacketing material directly over the tensile strength members and water blocking materials and not adhere to the aramid strength material. The polyethylene needs to contain carbon black to provide ultraviolet light protection and not promote the growth of fungus.

Mark the jacket or sheath with the manufacturer's name, the words "Optical Cable", the number of fibers, "SM", year of manufacture, and sequential measurement markings every meter. The marking is to be of contrasting color to the cable jacket.

(e) Packaging and Shipping Requirements - Pack completed cable on reels for shipment. Wrap cable in weather and temperature resistant covering. Seal both ends of cable to prevent ingress of moisture. Secure each cable end to the reel to prevent the cable from coming loose during transit. Have at least 6 feet of cable length accessible for testing purposes.

Label each cable reel with a durable, weatherproof label showing manufacturer's name, cable type, actual length of cable on the reel, Contractor's name, contract number, and reel number. Include a shipping record in a weatherproof envelope showing the above information and include the date of manufacturer, cable characteristics (size, attenuation,

bandwidth), factory test results, cable identification number and any other pertinent information.

Minimum hub diameter of reel needs to be at least thirty times the cable diameter. Fiber optic cable is to be continuous length on each reel. Mark reel indicating direction reel should be rolled to prevent loosening of cable.

Furnish installation procedures and technical support information at delivery.

(Use the following subsection .11 when splicing is required. Do not use this subsection for Traffic Signal Interconnect.)

00987.11 Fiber Optic Jumpers/Patch Cable - Furnish a minimum of 2 duplex or 4 simplex jumper cables in each cabinet that has new or modified fiber optic cable installation. Use jumpers of simplex or duplex design. Use duplex jumpers of duplex round cable construction. Use jumpers that are at least 6 feet in length, sufficient to avoid stress and allow orderly routing. Use an outer jacket of duplex jumpers that is yellow in color. Use the two inner simplex jackets that are contrasting colors to provide easy visual identification of polarity. Store jumpers within the cabinets. The Agency will connect at the time of commissioning.

Use connectors that are ceramic ferrule for single mode fiber with ultra-physical contact (UPC) polishing, type as shown. Furnish connector body housing that is glass-reinforced polymer. The associated coupler is to be of the same material as the connector housing. Each connector is not to exceed 0.75 dB loss as specified by EIA/TIA-568-B.3.

(Use the following subsection .12 when splicing is required. Do not use this subsection for Traffic Signal Interconnect. Delete the language in purple parentheses that does not apply and delete all purple parentheses. Fill in the blanks with the appropriate quantity of cables, splice trays and the diameter of cables.)

00987.12 In Handhole Splice Closures - Enclose the fiber optic field splices in splice closures, complete with splice organizer trays, brackets, clips, cable ties, seals and sealant, as needed. Furnish splice closures suitable for (aerial) (or) (direct burial) application. Supply the Manufacturer's installation instructions to the Engineer prior to the installation of any splice closures. Furnish splice closures that meet the following requirements:

- Non-filled thermoplastic case
- Rodent proof, waterproof, re-enterable and moisture proof
- Expandable from ___ cables per end to __ cables per end by using adapter plates if necessary
- Cable entry ports that accommodate ___ inch to ___ inch diameter cables
- Multiple grounding straps
- Accommodate up to ___ splice trays
- Suitable for butt or through cable entry configurations
- Place no stress on finished splices within the splice trays

Attach the splice closure to the inside wall of the handhole.

(Use the following subsection .13 when splicing is required. Do not use this subsection for Traffic Signal Interconnect.)

00987.13 Splice Trays - Furnish splice trays that accommodate a minimum of 12 fusion splices and allow for a minimum bend radius of 1-3/4 inches. Loop individual fibers one full turn within the splice tray to allow for future splicing. Do not apply stress on the fiber when it is located in its final position. Secure buffer tubes near the entrance of the splice tray. Secure buffer tubes with channel straps.

Furnish splice trays of the same manufacturer as the splice closure or fiber distribution panel depending on use.

00987.14 Warning Tags - Furnish warning tags with a long life material, orange in color, and marked in a permanent and consistent manner with black lettering.

Include the text “CAUTION FIBER OPTIC CABLE” on all warning tags and show the cable fiber count.

Attach warning tags to fiber optic cables using UV-resistant zip ties according to the manufacturer’s recommendations. Do not affix in a manner that causes damage to the fiber.

Attach warning tags to the cables in at least two locations in junction boxes and handholes, and at least one location in cabinets.

00987.15 Labels - Use labels to identify cables and jumpers and patch cords at all termination points, junction boxes, handholes, and cabinets. Use labels to identify all communications equipment and devices in junction boxes, handholes, and cabinets. Use yellow or white colored labels with permanent black lettering. Mechanically imprint labels, do not use handwritten labels.

Use tubular plastic labels on cables and jumpers and patch cords. Label duplex jumpers to provide a visual distinction between the two fibers. Provide labels with the following information:

- Owner
- Number of fibers
- Fiber number
- Cable origin
- Cable destination

Labor

00987.30 Personnel Qualifications - Individuals performing fiber optic installation are to possess either a Fiber Optics Installer or Fiber Optics Technician Certification recognized by the Electronics Technicians Association (ETA) or a Fiber Optics for ITS certificate from the International Municipal Signal Association (IMSA). Submit a copy of certification to the Engineer prior to performing any work.

Construction

00987.40 Fiber Optic Cable Installation and Setup:

(a) OSP Cable Installation - Submit a fiber optic cable installation plan including the manufacturer's recommended procedures for pulling fiber optic cable for review 30 Calendar Days of execution of the Contract. Use mechanical aids to install cable. Place tension measuring device or breakaway swivel between ends of cable grip and pull rope to ensure tension does not exceed 80 percent of recommended tension or 500 pounds, whichever is less. Use cable grips with a ball bearing swivel for installing fiber optic cable to prevent cable from twisting during installation.

During installation, maintain a minimum bend radius of 20 times the outside diameter of the cable per EIA/TIA-568-B.3. Do not stress the cable beyond the minimum bend radius. Install fiber optic cable using cable pulling lubricant as recommended by the manufacturer. Use a non-abrasive pull tape. Station personnel at each splice vault and hand hole to lubricate the cable and prevent kinking or other damage. Install fiber optic cable without splices, except as specifically allowed for on the plans, as described herein, or as directed. Divide slack equally on each side of splice closures. Following installation of cable in conduit, seal all entrances in cabinets, junction boxes and vaults with duct sealing compound to keep out moisture, foreign materials, and rodents.

(Use the following subsection .40(b) when splicing is required. Do not use this subsection for Traffic Signal Interconnect.)

(b) Splicing - Use fusion type splices for all optical fibers that do not exceed a maximum optical attenuation of 0.3 dB per splice as required by EIA/TIA-568-B.3. Place completed splices in a splice tray. Place splice tray in a splice closure unless using a splice enclosure. Protect all splices with a thermal shrink sleeve.

(Use the following subsection .40(c) when splicing is required. Do not use this subsection for Traffic Signal Interconnect.)

(c) Cable Terminations - At the splice closure, the cable jacket of the SMFO cable is to be removed exposing the aramid yarn, filler rods, and buffer tubes. The exposed length of the buffer tubes needs to be at least the length recommended by the splice closure manufacturer which allows the tubes to be secured to the splice trays. Secure each buffer tube to the splice tray in which it is to be spliced. Remove the remainder of the tube to expose sufficient length of the fibers in order to properly install in the splice tray.

Splice and secure fiber optic cable with tie wraps and route to its appropriate fiber distribution unit location.

When applicable, the moisture blocking gel is to be removed from the exposed buffer tubes and fibers. The transition from the buffer tube to the bundle of jacketed fibers is to be treated by an accepted procedure for sleeve tubing, shrink tube and silicone blocking of the transition to prevent future gel leak. Follow manufacturer's installation instructions to ensure that throughout the specified temperature range gel will not flow from the end of the buffer tube if using gel filled fiber optic cable. Strip and prepare the cable for splicing.

All fibers of the fiber distribution panel are to be labeled within the cabinet.

Make a transition with flexible tubing, to isolate each fiber to protect the individual coated fibers. The final transition from bundle to individual fiber tube is to be secured with an adhesive heat shrink sleeve.

00987.41 Fiber Optic Testing:

(Use the following subsection .41(a) when splicing is required. Do not use this subsection for Traffic Signal Interconnect.)

(a) Test Plan - Prior to beginning testing, submit for approval copies of installation and test plan detailing methods of installation and testing for all materials, equipment, and systems. At the same time, submit the associated schedule of activities. Notification of approval or rejection will be made within 28 Calendar Days. If the test plan is rejected, submit a revised test plan within 28 Days. Do not begin testing until receiving approval of the test plan by the Engineer. Submit all test results, including results of failed tests or re-tests to the Engineer. Supply all test equipment.

Provide 48 hours notice of intent to proceed prior to commencing each functional or subsystem test. In the notice, provide location(s) of test(s). Conduct environmental tests of field equipment as part of the functional tests. Subsystem testing and inspections are to include visual inspection from damaged or incorrect installation, adjustments, alignments, and measurement of parameters and operating conditions.

(b) Factory Testing - Documentation of compliance with the fiber specifications as listed herein is to be supplied by the original equipment manufacturer. Before shipment, but while on the shipping reel, test 100 percent of all fibers for attenuation. Maintain copies of the results on file by the manufacturer with a file identification number, attached to the cable reel in a waterproof envelope, and submitted to the Contractor and Engineer.

(c) Arrival On-Site Testing - Physically inspect each cable upon delivery. Attenuation test 100 percent of the fibers to confirm that the cable meets the requirements at wavelengths of both 1310 nm and 1550 nm with the Optical Time Domain Reflectometer (OTDR) test equipment. The failure of any single fiber in the cable is cause for rejection of the entire reel. Record test results and compare and file with the copy accompanying the shipping reel in a waterproof envelope. Do not install the cable until completion of this test sequence and the Engineer provides written approval. Submit copies of traces and test results to the Engineer. If the tests are unsatisfactory, the reel of cable is considered unacceptable and all records corresponding to that reel are to be marked accordingly. Replace the unsatisfactory reels of cable with new reels of cable. Test the new reels of cable to demonstrate acceptability. Submit copies of the test results to the Engineer.

(d) Fiber Optic Cable Testing - Testing is to include the tests on elements of the passive fiber optic components: (1) at the factory; (2) after delivery to the project site, but prior to installation; (3) after installation, but prior to connection to any other portion of the system. Provide all personnel, Equipment, instrumentation, and Materials necessary to perform all on-site testing.

Provide documentation of all test results to the Engineer at most 3 Days after the test is completed. At least 21 Calendar Days prior to the arrival of cable on site, provide detailed field testing procedures. In the procedures include the test involved and method by which

tests are to be conducted. Include in the notification the model, manufacturer, configuration, calibration, and alignment procedures for all proposed test equipment

(Use the following subsection .41(e) when splicing is required. Do not use this subsection for Traffic Signal Interconnect.)

(e) Outdoor Splices - Verify insertion loss quality of each splice prior to sealing splice closure.

(f) Cable Verification:

(1) OTDR Testing - Once the cabling system has been installed and is ready for splicing, test all fiber links with the OTDR test equipment for attenuation at wavelengths of both 1310 nm and 1550 nm. Index matching gel is not allowed in connectors during testing. Record, date and compare test results and file with previous copies. Submit hard copy printout of traces and test results to the Engineer. Use OTDR test equipment capable of recording and displaying anomalies of at least 0.02 dB. Calibrate the OTDR with traceability to a national metrology unit such as the National Institute of Standards and Technology (NIST).

(Use the following subsection .41(f)(2) splicing is required. Do not use this subsection for Traffic Signal Interconnect.)

(2) Power Meter and Light Source Testing - At the conclusion of the OTDR testing, 100 percent of the fiber links are to be tested end to end with a power meter and light source, according to FOTP-171 and in the same wavelength specified for the OTDR tests. Conduct tests in one direction. Calculate the insertion. Record test results, compared, and filed with the other recordings of the same links. Submit test results to the Engineer. Use a power meter that was calibrated with traceability to the National Institute of Standards and Technology (NIST).

(3) Test Failures -

(Use the following paragraph when splicing is required. Do not use this subsection for Traffic Signal Interconnect.)

If the link loss measured from the power meter and light source exceeds the calculated link loss, or the actual location of the fiber ends does not agree with the expected location of the fiber ends (as would occur with a broken fiber), the FO link will be rejected. Replace the unsatisfactory segments of cable, or splices with a new segment of cable or splice. Complete the OTDR testing, power meter and light source testing for the repair to determine acceptability. Submit copies of the test results to the Engineer. The removal and replacement of a segment of cable will be interpreted as the removal and replacement of a single continuous length of cable connecting two splices, two connectors. The removal of only the small section containing the failure and therefore introducing new unplanned splices is not allowed.

(Use the following paragraph when splicing is NOT required. Use this paragraph for Traffic Signal Interconnect.)

If the attenuation measured after installation does not match the attenuation measured on-site before installation then the fiber optic link will be rejected. Replace the unsatisfactory segments of cable with a new segment of cable. Complete the OTDR testing for the repair to determine acceptability. Submit copies of the test results to the Engineer. The removal and replacement of a segment of cable will be interpreted as the removal and replacement of a single continuous length of cable. The removal of only the small section containing the failure and therefore introducing new unplanned splices is not allowed.

(4) Allowed Loss - Evaluate fiber optic cable tests based on the following maximum allowable loss per EIA/TIA-568-B.3:

- Fiber on-reel: 0.40 dB/km at 1310nm and 0.30 dB/km at 1550nm
- Installed fiber: 0.40 dB/km at 1310nm and 0.30 dB/km at 1550nm
- Per connector: 0.75 dB bi-directional average

(Use the following bullet when splicing is required. Do not use this bullet for Traffic Signal Interconnect.)

- Per splice: 0.30 dB bi-directional average

Losses exceeding the above limits are only allowed with written approval from the Engineer.

Measurement

00987.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

Payment

00987.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

(Delete pay item(s) from the list that are not included in the Schedule of Items, but do not change the alpha characters next to the pay items. Also delete the paragraph that begins with "Item (x) includes…" for the corresponding pay item(s) that are being deleted. Select the appropriate unit of measurement, delete the one that does not apply, and delete all purple parentheses. Delete pay item (c) when splicing is NOT required.)

Pay Item	Unit of Measurement
(a) Telecommunications, Material	Lump Sum
(b) Telecommunications, Installation	Lump Sum
(c) Telecommunications, Splicing and Testing	Lump Sum

Item (a) includes furnishing outside plant fiber optic cable, fiber optic jumpers, fiber optic patch cable, splice closures, splice trays, and all other Incidental items necessary to complete the Work.

(Use the following paragraph when splicing is NOT required. Use this paragraph for Traffic Signal Interconnect.)

Item (b) includes installation and testing of all materials as shown or specified.

(Use the following paragraph when splicing is required. Do not use this paragraph for Traffic Signal Interconnect.)

Item (b) includes installation of all materials as shown or specified.

(Use the following paragraph when splicing is required.)

Item (c) includes fiber optic cable splicing and fiber optic testing as shown or specified.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for required submittals and documentation.

No separate or additional payment will be made for replacement of disturbed earthwork, base, and surfacing.

SP00989 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 02-04-25)**

SECTION 00989 - PHOTOVOLTAIC EQUIPMENT INSTALLATION

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document.

The Work covered under this Section is diverse and this boilerplate may not include Specifications for all the Work or ITS elements on the Project. Modify as necessary by adding, deleting, or revising language for the specific Project requirements. Modifications to this Section, other than deleting language not required, will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00989, which is not a Standard Specification, is included in this Project by Special Provision.

Description

(In the following subsection .00, delete the language in purple parentheses that does not apply and delete the purple parentheses.)

00989.00 Scope - In addition to requirements of Section (00960,) (and) (00985) install ITS photovoltaic systems as shown or specified.

00989.01 Regulations, Standards, and Codes - Comply with the following standards where applicable:

- Underwriters Laboratories (UL)
  - 50-2015 - Enclosures for Electrical Equipment, Non-Environmental Considerations
  - 83-2017 - Thermoplastic-Insulated Wires and Cables
  - 498-2016 – Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures
  - 508-2018 – Standard for Industrial Control Equipment
  - 508A-2018 - Standard for Industrial Control Panels
  - 1059-2001 – Standard for terminal
  - 1561-2011 - Standard for Dry-Type General Purpose and Power Transformers
  - 1581-2001 - Reference Standard for Electrical Wires, Cables, and Flexible Cords
  - 1685-2015 - Standard for Vertical-Tray Fire-Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables
  - 1703-2002 - Standard for Flat-Plate Photovoltaic Modules and Panels
  - 1741-2010 - Standard for Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources

(In the following subsection .02, delete the language that does not apply.)

00989.02 Submittals - Submit according to 00150.37, at least 30 Calendar Days after execution of the Contract, the following:

- Photovoltaic Modules according to 00989.10
- Module Mounting Bracket according to 00989.11
- Photovoltaic Module Combiner Cabinet according to 00989.12
- DC Disconnect according to 00989.13
- DC Circuit Breakers according to 00989.14
- Photovoltaic Charge Controller according to 00989.15
- DC Load Controller according to 00989.16
- Batteries according to 00989.17
- Battery Enclosure according to 00989.18
- Controller cabinet according to 00989.19

Include the manufacturer's name, model numbers, catalog sheets and other descriptive literature of proposed materials. Provide the catalog sheets and literature including technical

data, physical properties and operational description in sufficient detail to demonstrate the equipment meets these specifications.

Materials

(Use the following subsection .10 when photovoltaic modules are required. Fill in the appropriate blanks.)

00989.10 Photovoltaic Modules - Furnish photovoltaic modules with cables that meet the following requirements:

Module Characteristic Table	
Maximum Power:	__ Watts or greater
Maximum Voltage:	__ Volts or greater
Maximum Power Point Current:	__ Amps or greater
Open Circuit Voltage:	__ Volts or less
Short Circuit Current:	__ Amps or less
Maximum System Voltage:	__ V
Length:	__ inches maximum
Width:	__ inches maximum
Weight:	__ lbs. maximum
Wind Load Rating:	__ mph minimum

Furnish photovoltaic modules with a minimum combined total of ___ watts at rated maximum power that are UL 1703 listed and be constructed using an anodized aluminum or similar frame.

(Use the following subsection .11 when module mounting brackets are required. Fill in the appropriate blanks.)

00989.11 Module Mounting Bracket - Furnish mounting hardware to mount the photovoltaic modules on the side-of-pole. Furnish bracket sized to fit the modules selected and mount to the metal pole selected. Mount the modules as ____ arrays, with ____ panels on the first array, and ____ panels on the second array. Furnish stainless steel nuts, bolts, washers, and band clamps. The mounting assembly is to be rated for wind loads up to 120 mph and be constructed from anodized aluminum, powder coated aluminum, 304 stainless steel, or 316 stainless steel.

(Use the following subsection .12 when Photovoltaic module combiner cabinet is required.)

00989.12 Photovoltaic Module Combiner Cabinet - Furnish NEMA Type 3R rated, UL 1741 listed enclosures with terminals to combine the photovoltaic modules into one circuit. Protect each photovoltaic module input circuit with an overcurrent protection device sized as shown. Furnish cabinet constructed from anodized aluminum, powder coated aluminum, 304 stainless steel, or 316 stainless steel.

(Use the following subsection .13, when DC disconnects are required.)

00989.13 DC Disconnect - Furnish DC Disconnect that is UL 508 listed for overcurrent protection and has a means for disconnecting the photovoltaic and battery system's circuits. Include DC circuit breakers for protecting the photovoltaic, battery, and load distribution circuits, circuit breaker sizing as shown. Provide a DC bonding block for grounding.

(Use the following subsection .14, when DC circuit breakers are required.)

00989.14 DC Circuit Breakers - Furnish DC circuit breakers rated for 150V DC minimum, UL 489 listed, and DIN rail mounted. Size circuit breakers and label as shown.

(Use the following subsection .15, when photovoltaic charge controllers are required. Fill in the appropriate blanks.)

00989.15 Photovoltaic Charge Controller - Furnish a photovoltaic charge controller that meets the following requirements:

Charge Controller Characteristic Table	
Controller Charge Type	Maximum Power Point Tracking
Voltage Step Down Capability	Convert photovoltaic module voltage selected to 12 VDC nominal for battery charging
Maximum Output Current:	__A DC continuous
Charging Regulation	4 stages minimum
Short Circuit Protection:	Electronic with auto-reset
LCD Meter Module:	Photovoltaic Input Voltage
	Photovoltaic Input Current
	Battery Voltage
	Battery Charging Current
	Cumulative amp/watt hours
Operating Temperature Range:	-__ to __ degrees F
Mounting:	Module/Wall
Wire Size:	Capable of accepting _ AWG conductors
Accepted Battery Type:	Sealed AGM
Temperature Compensation:	Provide an external battery temperature sensor to the charge control set points.
Listing	UL 1741

(Use the following subsection .16, when DC load controller is required. Fill in the appropriate blanks.)

00989.16 DC Load Controller - Furnish a DC load controller that meets the following requirements:

Load Controller Characteristic Table	
Controller Charge Type	Pulse Width Modulation
Voltage Configuration:	12V DC
Minimum Charging/Load Current:	__A DC continuous
Charge Regulation:	Solid State
Short Circuit Protection:	Electronic with auto-reset
LCD Meter Module:	Battery Voltage
	Load Current
	Cumulative amp/watt hours
Temperature Range:	-40 to 113 degrees F
Mounting:	Module/Wall
Wire Size:	Capable of accepting __ AWG conductors
Load Control:	Low voltage disconnect and reconnect
Listing	UL 1741

(Use the following subsection .17, when batteries are required. Fill in the appropriate blanks.)

00989.17 Batteries - Furnish a system of batteries that meets the following requirements:

Battery Characteristic Table	
Voltage:	6V DC or 12V DC, 6V DC batteries may be used to form a 12V DC base system.
Type:	Absorbed glass mat (AGM) sealed deep cycle lead acid
24 Hour Rate:	___ amp-hours minimum
Designed Maintenance Life:	_ years
Length:	_ inches maximum
Width:	_ inches maximum
Height:	_ inches maximum
Weight:	_ lbs. maximum

Furnish a minimum of ____ amp-hours at rated capacity. This includes ____ Days autonomy factoring in temperature de-rating and discharge limit. Include all clamps, connectors, wiring, and other Incidental Materials as needed to wire and secure batteries.

(Use the following subsection .18, when battery enclosures are required.)

00989.18 Battery Enclosure - Furnish a battery enclosure that is UL 50 listed, Type 3R (ventilated), and be constructed from anodized aluminum, powder coated aluminum, 304 stainless steel, or 316 stainless steel. Place vents near the top of the enclosure to prevent the buildup of gases. Size enclosure to fit all of the batteries required for the system plus 2 additional batteries of the same size for future expansion. Include a 2 or 3 point locking mechanism with an integrated interchangeable lock core.

Furnish racks or trays that are rigid metal, designed to support the load, treated to be resistant to deteriorating action by the electrolyte, and included with non-conducting members directly supporting the cells.

The battery trays are frames of nonconductive material and constructed or treated so as to be resistant to deteriorating action by the electrolyte.

Furnish battery enclosure that is ground mounted.

(Use the following subsection .19, when controller cabinets are required.)

00989.19 Controller Cabinet - Furnish enclosure constructed from 14 gauge Type 304 or 316 stainless steel, UL 50 listed, Type 3R ventilated, and with a #4 brushed finish. Remove all sharp edges. Include door with continuous hinge, seamless gasket that is liquid-tight, and padlockable. Enclosure dimensions are location specific and shown on plans.

Construction

00989.40 Installation - Install the Equipment as specified, shown, and according to the manufacturer's instructions. Ground the Photovoltaic Power System according to Article 690 of NFPA 70, the National Electrical Code.

00989.41 Photovoltaic Component Identification and Marking - Photovoltaic modules, module combiner, DC disconnect, circuit breakers, charge controller, load controller, batteries, battery enclosure, and wiring are to be marked according to Article 690 of NFPA 70, the National Electrical Code.

Measurement

00989.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

Payment

(Use one of the following two options for subsection .90)

[Option 1. Use this subsection .90 if site work needs to be broken out by Pay Items]

00989.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

(Add additional Pay Item(s) as required for the Schedule of Items.)

Pay Item	Unit of Measurement
(a) Photovoltaic Equipment Installation, Site _____	Lump Sum
(b) Photovoltaic Equipment Installation, Site _____	Lump Sum

Payment will be payment in full for furnishing and placing all Materials, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for:

- required submittals and documentation
- assistance for commissioning Equipment and systems

[End Option 1]

[Option 2. Use this subsection .90 if site work does NOT need to be broken out per site.)

00989.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract lump sum amount for the item “Photovoltaic Equipment Installation".

Payment will be payment in full for furnishing and placing all Materials, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for:

- required submittals and documentation
- assistance for commissioning Equipment and systems

[End Option 2]

SP00990 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 02-03-25
This Section requires SP00960*)*

SECTION 00990 - TRAFFIC SIGNALS

This Section title is replaced with the following:

SECTION 00990 - TRAFFIC SIGNALS, RAMP METERS, FLASHING BEACONS, INTERCONNECT SYSTEMS & AUTOMATIC TRAFFIC RECORDERS

(Follow all instructions and make all edits with “Track Changes” turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00990 of the Standard Specifications modified as follows:

00990.00 Scope - Replace this subsection, except for the subsection number and title, with the following:

In addition to requirements of Section 00960 and Section 00962, install traffic signals, ramp meters, flashing beacons, interconnect systems, and automatic traffic recorders according to the following Specifications.

(Use the following lead-in paragraph and subsection .10 when inductive loops are used.)

Add the following subsection:

00990.10 Materials - Furnish backer rod materials meeting the requirements of 02440.14. Furnish hot-melt loop sealant from the QPL.

00990.30 Video/Radar Detector Manufacturer's Representative - Replace this subsection, except for the subsection number and title, with the following:

When video/radar detection is shown, provide the services of a manufacturer's representative on-site within 1 week in advance of the anticipated electrical installation completion date to set-up devices with Agency electrical crew present.

(Use the following lead-in paragraph and subsection .40 when there is work at an existing controller cabinet.)

Add the following subsection:

00990.40 Work in Existing Controller Cabinets - Install new field wiring as shown into the existing controller cabinet without terminating.

New control equipment installed as shown in an existing controller cabinet will be tested prior to installation according to 00990.70.

At existing controller cabinets the Agency will be responsible for:

- Storage, delivery, installation, and activation of new control equipment
- Any required modifications to existing control equipment or existing field wiring terminations
- Terminating new field wiring

Prior to the anticipated installation of new control equipment, modification of existing control equipment, or modification of existing field wiring terminations, schedule field testing according to 00990.71. Field testing and activation of the new control equipment or modifications will occur within the same work shift. Be present at the Project Site during field testing.

(Use the following lead-in paragraph and subsection .41 when inductive loops are used.)

Add the following subsection:

00990.41 Inductive Loop Detectors:

(a) General - Do not begin sawcutting until the loop layout has been inspected by the Engineer.

Do not place wire in sawcuts until the cuts have been inspected by the Engineer.

(b) Sawcut and Wire Installation - Sawcut in a manner that is the most practicable, direct line between loops and junction boxes.

Immediately after sawcutting and before the cuttings dry, thoroughly flush each cut with a high-pressure water stream. Before the cuts dry, blow cuts free of water, debris, rock, and grit with compressed air. Slots may also be cleaned by means of a high-pressure water injection/vacuum extraction system. Remove rocks or other material that may be wedged in the cut. Remove and dispose of all cuttings according to 00290.20.

Dry cuts before placing wire.

After the sawcut is cleaned of debris, place the loop wire by pushing it into the slot with a blunt nonmetallic object. Use care to avoid damaging the insulation.

(c) Sealant - Install the sealant in slots according to the manufacturer's instructions. Furnish a copy of the manufacturer's specifications including application procedures. The Engineer may order a test run of any application method or material before filling sawcuts.

In order to prevent heat damage to the insulation, do not allow the temperature of the sealant to exceed 410 °F during application. Install hot-melt sealants in layers to prevent damage to wire insulation. Allow each layer to cool before the next layer is installed. Do not use water to accelerate cooling.

Sealants that crack or pull away from the sawcuts after curing will be rejected.

(d) Resistance and Continuity Testing - The resistance to ground of the loop and loop feeder combinations, shall be 500 MΩ or greater when checked at the following conditions:

- Before splicing and sealing - continuity test
- Before splicing after sealing - resistance test
- After splicing and sealing - resistance test

Furnish a report of the resistance and continuity results for each loop at each testing condition.

(Use the following lead-in paragraph and subsection .42(a) when inductive loops are used.)

Add the following subsection:

00990.42(a) Loop Feeder Cables – When terminating loop feeder cable inside the controller cabinet, do not remove the outside jacket and shield more than 6 inches from the end of the cable. Crimp lugs used for loop wire field terminals may be insulated or non-insulated. Terminate loop feeder shield drain wire to the cabinet input panel grounding bus nearest the feeder wire termination point.

Add the following subsection:

00990.45 Repair Open Holes In Metal Poles, Pedestals, and Mast Arms – Repair holes in metal poles, pedestals, and mast arms caused by removal of equipment using pipe plugs. For holes larger than 1 inch in diameter or of irregular shape, submit method and materials to be used.

(Use the following lead-in paragraph and subsection .47 when Railroad interconnect is required.)

Add the following subsection:

00990.47 Railroad Interconnect - Run the circuit conductors in underground electrical conduit of the size shown. Terminate the conduit at the Railroad cabinet at the location and in the manner directed by the Railroad company. Extend the ends of the wire at least 3 feet beyond the end fitting of the supplied conduit. All other Work inside the Railroad cabinet is the responsibility of the Railroad.

Do not Work in the immediate vicinity of the Railroad cabinet without first notifying the Engineer and receiving permission. The Agency will obtain supervisory personnel from the Railroad company.

Do not place any Materials or Equipment in the vicinity of the tracks without observing proper clearance (see 00170.01(e)).

(Use the following lead-in paragraph and subsection .48 when Copper Twisted Pair interconnect is required.)

Add the following subsection:

00990.48 Interconnect System Testing for Copper Twisted Pair:

Test each new interconnect cable circuit installed in the system. Test the complete system only when all terminations for each cable circuit are completed from the interconnect or controller cabinet at the beginning of the new cable run to the controller or interconnect cabinet at the end of the new cable run. If any test is failed, repair the circuit and repeat the entire test series for that cable circuit.

Perform all tests in the presence of the Engineer. Document the test results. When the tests are completed, furnish the test results and the test data to the Engineer. Conduct tests, as described below, for all cable conductors, including spares, the cable shield, and all field terminations.

In addition to testing the complete system, perform the following tests for each cable circuit:

(1) Continuity - Perform a continuity measurement for each conductor and the cable shield in the system. Conductor resistance shall not be more than 10 Ω per 1,000 feet for each cable pair and shield of the communications cable. Measure the resistance with an ohmmeter having a minimum input impedance of 10 MΩ /V. Record the resistance of each pair and furnish to the Engineer as described above.

(2) Isolation - Perform an isolation measurement for each conductor and cable shield in the system. Measure the insulation resistance with all connections to the conductor or shield under test removed and all other conductors in the cable grounded. Make the measurement with a DC potential of not less than 360 V nor more than 550 V, continuously applied for 1 minute. Insulation resistance of each cable conductor and the shield shall exceed 1,000 MΩ per mile. Use an insulation resistance (Megger) tester with a meter scale for measurements, marked with a range from 100 KΩ to 100 GΩ, and with zero and infinity also marked.

00990.50 Signal Covers - Add the following paragraph to the end of this subsection:

Signal covers may be omitted for flashing beacon bid items.

00990.70 Testing and Turn-On - Replace this subsection with the following subsection:

00990.70 Chamber Testing - This Work includes testing Equipment that requires chamber testing.

(a) Delivery of Equipment - Provide all Equipment requiring chamber testing for the Project according to the cabinet print(s), including all associated manuals, diagrams, and other documents. The cabinet print(s) will be made available to the Contractor by the Engineer. Deliver all Equipment, including wiring diagrams and operation manuals, in one shipment. Partial shipments will not be accepted and will be returned to the Contractor at no additional cost to the Agency. Include the following information with the Equipment shipments:

- Contractor
- Location of Equipment on Project (i.e. street names of Intersection or street alignment/name plus station)
- For controller cabinets, TSSU ID number
- Contract number
- Completed Green Sheets

Deliver the Equipment and information for testing to:

Oregon Department of Transportation
Traffic Systems Services Unit
2445 Liberty St. NE
Salem, Oregon 97303-6738

(b) Equipment Requiring Chamber Testing - The following Equipment will be tested by the Agency before being installed:

- Controller unit
- Controller cabinet
- Power supplies
- Input devices

- Output devices
- Conflict monitors
- Flasher units
- Relays
- Preemption devices
- Auxiliary Equipment in the controller cabinet
- Other Equipment required for the operation of the installation
- Video/radar/hybrid detection systems
- Equipment listed as “chamber tested” on the green sheets

Equipment will be tested at no cost to the Contractor.

The Equipment will be tested in three categories: physical, functional, and environmental as specified in the *Standard Specification for Microcomputer Signal Controller*. ODOT will require at least 6 weeks for completion and evaluation of the testing.

(c) Equipment Failure - An Equipment failure is any occurrence that results in non-specified operation of the Equipment.

Notification of any Equipment failures will be provided. Make on-site repairs within 5 Days of receiving the notification.

Following repair of the Equipment, the testing will be resumed at the beginning of the test category in which the failure occurred.

(d) Equipment Rejection - The Equipment will be rejected under either of the following conditions:

(1) Twice Fail - The Equipment fails twice in the same testing category.

(2) Failure to Repair - The Contractor fails to repair the Equipment within 5 Days of receiving notification of the failure.

Pick up rejected Equipment within 10 Days of receiving the rejection notice, or it will be returned, at Contractor's cost, to the Contractor.

Replace rejected Equipment with Equipment having a different serial number.

Rejected Equipment will not be accepted for testing or installation on any subsequent project within the State of Oregon.

(e) Equipment Acceptance - Equipment that successfully passes the chamber testing procedure will be certified by the Agency as acceptable for installation. Acceptability for installation does not guarantee final acceptance of the completed installation.

The successful completion of the testing does not relieve the Contractor of the responsibility to furnish a complete working electrical installation at the time the Equipment is placed in operation.

The Contractor will be notified when the testing has been completed. Pick up the controller cabinet and video/radar/hybrid detection systems at the test facility.

(f) Controller Cabinet Control Equipment Installation - Be responsible for pick-up, delivery and installation of the controller cabinet and video/radar/hybrid detection systems.

The Agency will be responsible for delivery and installation of the other control Equipment, such as controller units, input devices, switch packs, monitor units, miscellaneous plug-in devices and auxiliary devices not physically wired to the controller cabinet.

Equipment that the Agency is to install will be stored at the test facility until the electrical installation is ready to be turned on.

Add the following subsection:

00990.71 Field Testing - Field testing of electrical installations will be performed by Agency electrical crews. Notify the Engineer one week in advance of the anticipated electrical installation completion date.

Field testing will be performed within one week following the date of completion. The Engineer will notify the Contractor of the test results.

Information on Agency field testing procedures is available from the Engineer.

Add the following subsection:

00990.72 Turn-on - This Work includes turning on completed electrical installations.

(a) General - The Engineer will establish the date and time the electrical installation is to be turned on. The Agency will turn on the electrical installation within one week after completion of corrections identified during field testing.

Be present at the Project Site the date of the turn-on, for the duration of the turn-on process.

After electrical installations are turned on and operating as designed, the agency responsible for maintenance will assume operation and maintenance of the electrical installation. Turn-on does not constitute final approval. The Contractor is still obligated to finish any incomplete portion of the electrical installation and correct problems with workmanship or replace material that does not meet Specifications. After turn-on, damage to the electrical installation caused by conditions beyond the Contractor's control will be the responsibility of the maintaining agency.

(b) For Traffic Signals, Ramp Meters, and Automatic Traffic Recorders - The Agency will be responsible for providing operating software and timing parameters for traffic signals, ramp meters and automatic traffic recorders. Do not turn on electrical installations without the Agency provided timing parameters.

(c) For Flashing Beacons and Other Electrical Installations - The Agency will be responsible for providing the timing and setting parameters for the following flashing beacons and other electric installations as listed in the Green Sheets:

- 24/7 flashing beacon assembly, yellow + speed feedback
- Actuated flashing beacon assembly (all subcategories)
- Rectangular rapid flashing beacon (RRFB) assembly
- Unintegrated speed feedback assembly

Do not turn on electrical installations without the Agency provided parameters.

(Use the following subsection .80 when unintegrated speed feedback assemblies are required.)

00990.80 Measurement – Add the following paragraph to the end of this subsection:

Unintegrated speed feedback assemblies will be measured according to 00991.80.

(Use the following subsection .90 when unintegrated speed feedback assemblies, installing conduit on or in a structure, or crosswalk closure supports are required.)

00990.90 Payment -

(Use the following paragraph and bullet when installing conduit on or in a structure)

In the paragraph that begins “No separate or additional payment will be…”, add the following bullet to the bullet list:

- Conduit installed according to 00960.42(f)

(Use the following paragraph when crosswalk closure supports are required.)

Add the following paragraph to the end of this subsection:

Crosswalk closure supports will be paid for according to 00902.90.

(Use the following paragraph when unintegrated speed feedback assemblies are required.)

Add the following paragraph to the end of this subsection:

Unintegrated speed feedback assemblies will be paid for according to 00991.90.

SP00991 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 02-03-25)**

SECTION 00991 – UNINTEGRATED SPEED FEEDBACK ASSEMBLY

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 00991, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00991.00 Scope - This Work consists of installing an Unintegrated speed feedback assembly as shown. Refer to Section 00990 for integrated speed feedback assemblies.

00991.01 Definitions -

Unintegrated - A stand-alone electrical device that is not integrated with any other electrical devices on the same support.

Materials

00991.10 Materials - Furnish Materials meeting the following requirements:

Commercial Grade Concrete..... 00440
Pedestrian pedestal..... 00960.02
Speed feedback sign..... 00960.02
Signs 00940

Construction

00991.40 General - Install pedestrian pedestal foundation according to Section 00960.

Furnish and install Unintegrated speed feedback assembly, including the electronic speed feedback sign, as shown.

Furnish and install the static sign according to the applicable portions of Section 00940.

Finishing and Testing

00991.71 Field Testing - Perform field testing of the device according to 00990.71.

00991.72 Turn-on - Perform turning on the device according to 00990.72.

Measurement

00991.80 Measurement - The quantities of Unintegrated speed feedback assembly will be measured on the unit basis.

Signs installed on the assembly that are shown on the sign and post data table will be measured according to 00930.80 and 00940.80.

Payment

00991.90 Payment - The accepted quantities of Work done under this Section will be paid for at the Contract unit price, per each, for the item "Unintegrated Speed Feedback Assembly".

Payment will be payment in full for furnishing and placing all Materials, including support, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

Signs installed on the assembly that are shown on the sign and post data table will be paid for according to 00930.90 and 00940.90

SP01010 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 02-03-25)**

SECTION 01010 - STORMWATER CONTROL, WATER QUALITY STRUCTURES

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Be sure to include a separate bid item for each water quality Structure identified by the Drainage Facility Identification Number (DFI).)

Section 01010, which is not a Standard Specification, is included for this Project by Special Provision.

Description

01010.00 Scope - This Work consists of furnishing and installing a Water Quality Structure as shown.

01010.02 Definitions:

Water Quality Structure - An underground self-activating Structure with no moving mechanical parts or external power sources which removes pollutants from stormwater runoff and retains the pollutants in the Structure.

01010.03 Submittals - Furnish Water Quality Structures from the QPL or an approved equal according to 00160.05.

Provide the following Water Quality Structures as indicated in Table 01010-1:

(Fill in the table for each water quality structure with one of the following treatment categories: "sediment pretreatment", "oil treatment", "suspended solids treatment", "dissolved metals treatment", or "phosphorous treatment". Obtain the types from the Designer.)

Table 01010-1

Drainage Facility Identification Number	Location (Station)	Stormwater Control Facility Treatment Category	Manufacturer's Model Number

Submit the following according to 00150.35:

- Unstamped Working Drawings that include the following information:
  - All design and construction details.
  - Structure plan view with dimensions.
  - Typical section with dimensions.
  - All appurtenances labeled.
  - Installation and pipe connection details.
  - Peak flow bypass details.
- Manufacturer prepared product brochures.
- Design calculations showing the water quality design flow rate and online peak flow rate requirements for each Water Quality Structure listed in the Table 01010-2.

(Fill in the table for each water quality structure. Obtain information from the Designer.)

Table 01010-2

Drainage Facility Identification Number	Location (Station)	Contributing Impervious/Drainage Area (Acres)	On-line or Off-line	Water Quality Design Flow Rate (cubic feet per second)	On-line Water Quality Structure Peak Flow Rate (cubic feet per second)

Materials

01010.11 Facility Field Markers - Furnish Type S3 field markers according to 00842.10.

Construction

01010.40 General - Construct Water Quality Structures according to the manufacturer's recommendations and as shown or directed.

01010.41 Pipe connections - Place connecting pipe at the required alignment and grade. Set the connecting pipe through the full thickness of the wall and flush with the inner face of the wall. Ensure that pipe connections to the Structure are watertight. Connect all pipes to Water Quality Structure according to the manufacturer's recommendations.

01010.42 Facility Field Markers - Install field markers as shown and according to Section 00842.

Maintenance

01010.70 Cleaning - Remove all accumulated sediment and debris before completing the facility.

Measurement

01010.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

Field facility markers will be measured according to 00842.80.

Payment

01010.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract lump sum amount for the item "Water Quality Structure, _____".

The drainage facility identification number will be inserted in the blank.

Field facility markers will be paid for according to 00842.90.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP01011 (Special Provisions for the 2024 Book) **(Bidding on or after: 12-01-25**
Last updated: 05-23-25
***This Section requires SP00842*)**

SECTION 01011 - STORMWATER CONTROL, PONDS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 01011, which is not a Standard Specification, is included for this Project by Special Provision.

Description

01011.00 Scope - This Work consists of furnishing and installing stormwater ponds as shown.

Materials

(Delete material items that do not apply and include other materials as necessary.)

01011.10 Materials - Furnish Material meeting the following requirements:

Concrete 00440
Drainage Geotextile, Type 1 02320
Facility Field Markers 00842.10
Granular Drain Backfill 00430.11
Manholes, Catch Basins, and Inlets 00470.11
Riprap 00390.11
Riprap Geotextile, Type 1 02320
Storm Sewer Pipe 00445.11
Subsurface Drain Pipe 00430.10

(Use the following subsection .11 when porous pavers are required. Fill in the blank with one of the following types of pavers to use only in storage ponds: heavy duty, medium duty, or light duty. Obtain the type to use from the Designer.)

01011.11 Porous Pavers - Furnish _____ porous pavers from the QPL.

01011.12 Water Quality Mixture - Furnish medium compost meeting the requirements of Section 03020. Furnish soil meeting the following gradation requirements:

Sieve Size	Percent Passing (by Weight)
No. 4	100
No 10	95 - 100
No. 40	40 - 60
No. 100	10 - 25
No. 200	5 - 10

Sample soil according to AASHTO R 90. Determine sieve analysis according to AASHTO T 27 and AASHTO T 11.

Blend the medium compost and soil so that the mixture:

- Is composed of between 20 percent and 25 percent medium compost material and between 75 percent and 80 percent soil material.
- Has a pH between 5.5 and 8.0.
- Does not have clumps greater than 3 inches in any direction.

Construction

01011.40 General - Construct storage facility as shown. Perform excavation and fine grading work only when the facility area is dry and only from the top of the pond area. Do not stockpile material in the facility area.

01011.41 Storage Pond - Scarify the subsoil area a minimum 12 inches deep. After scarification, place the water quality mixture in maximum 12 inch Lifts. Compact each Lift with a water filled landscape roller.

01011.42 Bioretention Pond:

(a) Scarify - Scarify the subsoil area a minimum 12 inches deep.

(b) Laying Pipe - Lay the pipe according to Section 00445. Place pipe with perforations down unless otherwise directed.

(c) Joining Pipe - Fasten pipes together with coupling fittings or bands as specified for the type of pipe used. Cap the upstream end of the pipe.

(d) Inspection and Repair - Place Type 2 water quality mixture only after all the pipe is laid, joined, and inspected. Remove and reinstall or replace all pipe that is out of alignment, has settled, or is damaged at no additional cost to the Agency.

(e) Placement of Water Quality Mixture - Place water quality mixture in maximum 12 inch Lifts. Compact each Lift by using a water filled roller.

(f) Seeding - Seed according to 01030.13.

01011.43 Facility Field Markers - Install field markers as shown and according to Section 00842.

Maintenance

01011.70 Cleaning - If a stormwater control facility is used for erosion and sediment control, remove all accumulated sediment and debris before completing the facility.

Measurement

01011.80 Measurement - No measurement of quantities will be made for Work performed under this Section. The estimated quantities of Materials are:

(Use the following "Storage Pond" heading and item list when Pay Item (a) is included in the Pay Item list below. Identify ponds by the Drainage Facility Identification Number (DFI). List each DFI separately. Obtain the DFI, the items, and the quantities from the Designer. Fill in all the required blanks. Delete items that do not apply. Copy and paste for multiple facilities.)

Storage Pond __(DFI)__ Quantities:

Item	Quantity
Excavation	____ Cu. Yd.
Drainage Geotextile, Type 1	____ Sq. Yd.
Riprap Geotextile, Type 1	____ Sq. Yd.
Loose Riprap, Class ____	____ Cu. Yd.
Water Quality Mixture,	____ Cu. Yd.
Catch Basin, ____	____ Each
Concrete Storm Sewer Manhole (Flow Control)	____ Each
____ Inch Storm Sewer Pipe	____ Foot
Porous Pavers	____ Sq. Ft.

(Use the following "Bioretention Pond" heading and item list when Pay Item (b) is included in the Pay Item list below. Identify ponds by the Drainage Facility Identification Number (DFI). List each DFI separately. Obtain the DFI, the items, and the quantities from the Designer. Fill in all the required blanks. Delete items that do not apply. Copy and paste for multiple facilities.)

Bioretention Pond __(DFI)__ Quantities:

Item	Quantity
Excavation	____ Cu. Yd.
Drainage Geotextile, Type 1	____ Sq. Yd.
Riprap Geotextile, Type 1	____ Sq. Yd.
Loose Riprap, Class ____	____ Cu. Yd.
Granular Drain Backfill	____ Cu. Yd.
Water Quality Mixture	____ Cu. Yd.
Catch Basin, ____	____ Each
Concrete Storm Sewer Manhole (Flow Splitter)	____ Each
____ Inch Storm Sewer Pipe	____ Foot
____ Inch Subsurface Drain Pipe	____ Foot
Porous Pavers	____ Sq. Ft.

Field facility markers will be measured according to 00842.80.

Payment

(Delete the "(s)" or parentheses from the word "item(s)", as appropriate.)

01011.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract lump sum amount for the item*(*s*)*:

(Delete Pay Item(s) from the list that are not included in the Schedule of Items, but do not change the alpha characters next to the Pay Items.)

Pay Item	Unit of Measurement
(a) Storage Pond, _____	Lump Sum
(b) Bioretention Pond, _____	Lump Sum

The drainage facility identification number will be inserted in the blank.

Field facility markers will be paid for according to 00842.90.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP01012 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-23-25
***This Section requires SP00842*)**

SECTION 01012 - STORMWATER CONTROL, WATER QUALITY BIOFILTRATION SWALE

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 01012, which is not a Standard Specification, is included for this Project by Special Provision.

Description

01012.00 Scope - This Work consists of furnishing and installing a water quality biofiltration swale as shown.

Materials

(Delete material items that do not apply and include other materials as necessary.)

01012.10 Materials - Furnish Material meeting the following requirements:

Check Dam, Type 2 ..... 00280.15(a)
Concrete 00440
Drainage Geotextile, Type 1 02320
Facility Field Markers 00842.10
Granular Drain Backfill Material 00430.11
Manholes, Catch Basins, and Inlets 00470.11
Slope and Channel Liner Matting ..... 00280.14(e)
Riprap 00390.11
Riprap Geotextile, Type 1 02320
Storm Sewer Pipe 00445.11
Subsurface Drain Pipe 00430.10

(Fill in the blank with one of the following types of pavers: heavy duty, medium duty, or light duty. Obtain the type to use from the Designer.)

01012.11 Porous Pavers - Furnish _____ porous pavers from the QPL.

01012.12 Water Quality Mixture - Furnish medium compost meeting the requirements of Section 03020. Furnish soil meeting the following gradation requirements:

Sieve Size	Percent Passing (by Weight)
No. 4	100
No 10	95 - 100
No. 40	40 - 60
No. 100	10 - 25
No. 200	5 - 10

Sample soil according to AASHTO R 90. Determine sieve analysis according to AASHTO T 27 and AASHTO T 11.

Blend the medium compost and soil so that the mixture:

- Is composed of between 20 percent and 25 percent medium compost material and between 75 percent and 80 percent soil material.
- Has a pH between 5.5 and 8.0.
- Does not have clumps greater than 3 inches in any direction.

01012.13 Plastic Board - Furnish plastic board meeting the following requirements:

- Is HDPE or LDPE consisting of recycled plastic.
- Does not contain wood.
- Smooth and free of splinters.
- Includes an ultra-violet inhibitor.

01012.14 Stone Embankment Material - Furnish stone embankment material meeting the requirements of 00330.16 except:

- Provide a maximum size between 9 inches and 3 inches.
- No large rock fragments are allowed.

01012.15 Slope and Channel Liner Matting - Furnish channel liner matting meeting the requirements of 00280.14(e) for resistance to shear stresses calculated for a 10-year storm event.

Construction

01012.40 General - Construct water quality biofiltration swale facility as shown. Perform excavation, fine grading, and placement work only when the facility area is dry and only from the top of the swale area. Do not stockpile excavated material in the facility area. Perform work in sequence as follows:

(Use one of the following two options as instructed below. Obtain the information from the Designer. Delete the option that does not apply.)

[Option 1 - Use the following subsection .40 when a swale <u>does not</u> have a subsurface drain system.]

(a) Scarify - Scarify the subsoil area a minimum 12 inches deep.

(b) Placement of Water Quality Mixture - Place the water quality mixture in maximum 12 inch Lifts. Compact each Lift with a water filled landscape roller.

(c) Pervious Pavers - Install pervious pavers for full length of swale and full width of channel bottom. Fasten adjoining paver panels together.

(d) Seeding - Seed according to 01030.13.

(e) Slope and Channel Liner Matting - After seeding install slope and channel liner matting as shown or directed.

(Select permanent or temporary for type of check dam. Delete the language in purple parentheses that does not apply and delete all purple parentheses.)

(f) Check Dams - Install *(*permanent/temporary*)* check dams spaced as shown or directed.

(g) Stone Embankment - Key and embed permanent check dams and rock basin flow Spreaders constructed with stone embankment horizontally into side slopes of swale to a depth not less than 12 inches. Where rock basin flow spreaders embed into side slopes, extend stone embankment 6 inches higher on side slope.

(h) Plastic Boards - Install plastic boards plumb, level and perpendicular to swale flow line. Key and embed plastic boards horizontally into side slopes of swale to a depth not less than 12 inches. Where plastic board embeds into side slope, extend stone embankment 6 inches higher than plastic boards on both sides of boards on side slope.

[End Option 1]

[Option 2 - Use the following subsection .40 when a swale does have a subsurface drain system.]

(a) Scarify - After excavation scarify the subsoil area a minimum 12 inches deep.

(b) Laying Pipe - Lay the pipe according to Section 00445. Place pipe with perforations down.

(c) Joining Pipe - Fasten pipes together with coupling fittings or bands as specified for the type of pipe used. Cap the upstream end of the pipe.

(d) Inspection and Repair - Place the water quality mix only after all the pipe is laid, joined, and inspected. Remove and reinstall or replace all pipe that is out of alignment, has settled, or is damaged at no additional cost to the Agency.

(e) Placement of Water Quality Mixture - Place the water quality mixture in maximum 12 inch Lifts. Compact each Lift with a water filled landscape roller or approved equal.

(f) Pervious Pavers - Install pervious pavers for full length of swale and full width of channel bottom. Fasten adjoining paver panels together. Infill pervious pavers with water quality mixture to depth as shown or directed.

(g) Seeding - Apply seed according to 01030.13.

(h) Slope and Channel Liner Matting and Seeding - After seeding install slope and channel liner matting as shown or directed.

(Select permanent or temporary for type of check dam. Delete the language in purple parentheses that does not apply and delete all purple parentheses.)

(i) Check Dams - Install *(*permanent/temporary*)* check dams spaced at intervals as shown or directed.

(j) Stone Embankment - Key and embed permanent check dams and rock basin flow spreaders constructed with Stone Embankment horizontally into side slopes of swale to a depth not less than 12 inches. Where rock basin flow spreaders embed into side slopes, extend stone embankment 6 inches higher on side slope.

(k) Plastic Boards - Install plastic boards plumb, level and perpendicular to swale flow line. Key and embed plastic boards horizontally into side slopes of swale to a depth not less than 12 inches. Where plastic board embeds into side slope, extend stone embankment 6 inches higher than plastic boards on both sides of boards on side slope. Seal bottom of plastic boards to prevent water from flowing under boards.

[End Option 2]

01012.41 Facility Field Markers - Install field markers as shown and according to Section 00842.

Maintenance

01012.70 Cleaning - If a stormwater control facility is used for erosion and sediment control, remove all accumulated sediment and debris before completing the facility.

01012.71 Removal - Remove temporary erosion and sediment control features according to 00280.70 only after water quality vegetation has met the establishment requirements of 01030.60.

Measurement

01012.80 Measurement - No measurement of quantities will be made for Work performed under this Section. The estimated quantities of Materials are:

(Identify swales by the Drainage Facility Identification Number (DFI). List each DFI separately. Obtain the DFI, the items, and the quantities from the Designer. Fill in all the required blanks. Delete items that do not apply. Copy and paste for multiple facilities. Include excavation quantity only when the swale excavation is not part of the Roadway typical section.)

Water Quality Swale __(DFI)__ Quantities:

Item	Quantity
Excavation	____ Cu. Yd.
Drainage Geotextile, Type 1	____ Sq. Yd.
Riprap Geotextile, Type 1	____ Sq. Yd.
Loose Riprap, Class ____	____ Cu. Yd.
Granular Drain Backfill	____ Cu. Yd.
Water Quality Mixture	____ Cu. Yd.
Ditch Inlet, Type D	____ Each
Concrete Storm Sewer Manhole (Flow Splitter)	____ Each
____ Inch Storm Sewer Pipe	____ Foot
____ Inch Subsurface Drain Pipe	____ Foot
Plastic Board Flow Spreader	____ Foot
Matting, Type ___	___ Sq. Yd.
Check Dam, Type 2	____ Each
Concrete Basin Flow Spreader	____ Each
Rock Basin Flow Spreader with Stone Embankment	____ Cu. Yd.
Rock Basin Flow Spreader with Riprap	____ Cu. Yd.
Riprap Flow Spreader	____ Each
Porous Pavers	____ Sq. Ft.

Field facility markers will be measured according to 00842.80.

Payment

01012.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract lump sum amount for the item "Water Quality Swale, _____".

The drainage facility identification number will be inserted in the blank.

(Use the following paragraph when the swale excavation is included in the Roadway excavation quantity.)

Excavation will be paid according to 00330.90.

Field facility markers will be paid for according to 00842.90.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP01013 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-23-25
This Section requires SP00842)

SECTION 01013 - STORMWATER CONTROL, WATER QUALITY BIOSLOPE

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 01013, which is not a Standard Specification, is included for this Project by Special Provision.

Description

01013.00 Scope - This Work consists of furnishing and installing a water quality bioslope as shown.

Materials

(Delete material items that do not apply and include other materials as necessary.)

01013.10 Materials - Furnish Material meeting the following requirements:

Drainage Geotextile, Type 1 02320
Facility Field Markers 00842.10
Granular Drain Backfill Material..... 00430.11
Shoulder Aggregate 02640.10
Subsurface Drain Pipe 00430.10

01013.11 Ecology Mix - Furnish an ecology mix composed of the following:

- 3/8" - No. 8 mineral Aggregate gradation meeting the requirements of Section 00680.

- Horticultural grade perlite in a pelletized or granular form, meeting the following gradation:

Sieve Size	Percent Passing (by Weight)
No. 4	99 - 100
No. 18	30 max
No. 30	10 max

- Agricultural grade dolomite lime in a pelletized or granular form, meeting the following gradation:

Sieve Size	Percent Passing (by Weight)
No. 8	80 min
No. 60	25 min

- Agricultural grade gypsum consisting of Calcium Sulfate ($CaSO_4 \cdot 2H_2O$) in a pelletized or granular form, meeting the following gradation:

Sieve Size	Percent Passing (by Weight)
1/4”	99 - 100
No. 20	20 max

Blend the mineral Aggregate, perlite, dolomite, and gypsum so that the mixture is composed of:

- 3 cubic yards of mineral Aggregate per 1 cubic yard of perlite
- 40 pounds of dolomite per 1 cubic yard of perlite
- 12 pounds of gypsum per 1 cubic yard of perlite

Mix the Aggregate, perlite, dolomite, and gypsum before delivery to the Project. Mix the materials in the presence of the Engineer. Provide at least 5 Calendar Days' notice to the Engineer before beginning mixing.

Construction

01013.40 General - Construct water quality bioslope facility as shown. Perform excavation and placement work only when the facility area is dry. Do not stockpile excavated material in the facility area.

(a) Laying Pipe - Lay the pipe according to Section 00445. Place pipe with perforations upslope.

(b) Joining Pipe - Fasten pipes together with coupling fittings or bands as specified for the type of pipe used. Cap the upstream end of the pipe.

(c) Inspection and Repair - Place the ecology mix only after the pipe is laid, joined, and inspected. Remove and reinstall or replace all pipe that is out of alignment, has settled, or is damaged at no additional cost to the Agency.

(d) Compaction - After placing the ecology mix and shoulder Aggregate, compact by saturating with water.

01013.41 Facility Field Markers - Install field markers as shown and according to Section 00842.

Maintenance

01013.70 Cleaning - Remove all accumulated sediment and debris before completing the facility.

Measurement

01013.80 Measurement - No measurement of quantities will be made for Work performed under this Section. The estimated quantities of Materials are:

(Identify bioslopes by the Drainage Facility Identification Number (DFI). List each DFI separately. Obtain the DFI, the items, and the quantities from the Designer. Fill in all the required blanks. Delete items that do not apply. Copy and paste for multiple facilities.)

Bioslope __(DFI)__ Quantities:

Item	Quantity
Excavation	____ Cu. Yd.
Mineral Aggregate	____ Cu. Yd.
Perlite	____ Cu. Yd.
Dolomite	____ Lbs.
Gypsum	____ Lbs.
Crushed Shoulder Aggregate	____ Cu. Yd.
Drainage Geotextile, Type 1	____ Sq. Yd.
Granular Drain Backfill	____ Cu. Yd.
____ Inch Subsurface Drain Pipe	____ Foot

Field facility markers will be measured according to 00842.80.

Payment

01013.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract lump sum amount for the item "Bioslope, _____".

The drainage facility identification number will be inserted in the blank.

Field facility markers will be paid for according to 00842.90.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP01014 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-23-25
This Section requires SP00842)

SECTION 01014 - STORMWATER CONTROL, WATER QUALITY FILTER STRIP

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 01014, which is not a Standard Specification, is included for this Project by Special Provision.

Description

01014.00 Scope - This Work consists of furnishing and installing a water quality filter strip as shown.

(Delete material items that do not apply and include other materials as necessary.)

Materials

01014.10 Water Quality Mixture - Furnish medium compost meeting the requirements of Section 03020. Furnish soil meeting the following gradation requirements:

Sieve Size	Percent Passing (by Weight)
No. 4	100
No 10	95 - 100
No. 40	40 - 60
No. 100	10 - 25
No. 200	5 - 10

Sample soil according to AASHTO R 90. Determine sieve analysis according to AASHTO T 27 and AASHTO T 11.

Blend the medium compost and soil so that the mixture:

- Is composed of between 20 percent and 25 percent medium compost material and between 75 percent and 80 percent soil material.
- Has a pH between 5.5 and 8.0.
- Does not have clumps greater than 3 inches in any direction.

01014.11 Facility Field Markers - Furnish field markers meeting the requirements of 00842.10.

Construction

01014.40 General - Construct water quality filter strip facility as shown. Perform excavation, fine grading, and placement work only when the facility area is dry and only from the perimeter of the filter strip area. Do not stockpile excavated material in the facility area. Scarify the subsoil area a minimum 12 inches deep. After scarification, place the water quality mixture in maximum 12 inch Lifts. Compact each Lift with a water filled landscape roller. Seed according to 01030.13.

01014.41 Facility Field Markers - Install field markers as shown and according to Section 00842.

Maintenance

01014.70 Cleaning - If a stormwater control facility is used for erosion and sediment control, remove all accumulated sediment and debris before completing the facility.

Measurement

01014.80 Measurement - No measurement of quantities will be made for Work performed under this Section. The estimated quantities of Materials are:

(Identify filter strips by the Drainage Facility Identification Number (DFI). List each DFI separately. Obtain the DFI, the items, and the quantities from the Designer. Fill in all the required blanks. Delete items that do not apply. Copy and paste for multiple facilities.)

Filter Strip __(DFI)__ Quantities:

Item	Quantity
Excavation	____ Cu. Yd.
Water Quality Mixture	____ Cu. Yd.

Field facility markers will be measured according to 00842.80.

Payment

01014.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract lump sum amount for the item "Water Quality Filter Strip, ____".

The drainage facility identification number will be inserted in the blank.

Field facility markers will be paid for according to 00842.90.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP01030 (Special Provisions for the 2024 Book) **(Bidding on or after: 06-01-25 Last updated: 02-26-25 Requires SP01040 when soil testing or planting area preparation is required.)**

SECTION 01030 - SEEDING

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 01030 of the Standard Specifications modified as follows:

(Use the following subsection .13(a) when alternate labeling for native plant seeds is required. Obtain information from the Erosion Control Designer.)

01030.13(a) Label - Add the following to the end of this subsection:

Provide alternate labeling for native plant seeds as follows:

-

(Use the following subsection .13(f) to include seed mix formulas. Obtain the information from the Erosion Control Designer. Delete what does not apply. Detail seed mixes according to the following instructions:

- ***Use the format in .13(f) which follows. Show seeding categories as needed: Permanent Seeding, Temporary Seeding, Wildflower Seeding, Plant Seeding, Water Quality Seeding, Wetland Seeding, or Native Plant Seeding. To add more categories, blank columns, or lines, copy from the blank seeding category below.***
- ***Fill in the botanical and common names and the PLS seeding rate. For Oregon Certified Seed, show an asterisk (*) at the beginning of the botanical name.***
- ***For several mixes within the same category, use (Category Name) Seed Mix No. 1, No. 2, etc. and each mix will be a bid item. When using these numbered mixes, a brief mix description may also be added that doesn't show in the bid item name. An example is Wetland Seeding, Mix No. 1 (Emergent Areas).)***
- ***When more than one seed mix needs to be specified but quantities seem too small to be more than one bid item, this format can be used: Under a single***

bid item such as Wetland Seeding, detail multiple mixes by showing Seed Mix A, Seed Mix B, etc. Give an approximate quantity for each mix that equals the quantity of the bid item.)

01030.13(f) Types of Seed Mixes - Add the following to the end of this subsection:

Provide the following seed mix formulas:

- **_____ Seeding:**

Botanical Name (Common Name)	PLS Specified Rate (lb/acre)
_____ (_____)	____
_____ (_____)	____
_____ (_____)	____
_____ (_____)	____
_____ (_____)	____

* Oregon Certified Seed

- **Lawn Seeding:**

Name	PLS Specified Rate (lb/acre)
Fine Fescue**	____
Perennial Ryegrass**	____
Kentucky Bluegrass**	____
Colonial Bentgrass**	____

** Furnish strong growing, site appropriate, disease resistant varieties

(Use the following lead-in paragraph and subsection .14(b)(4) when organic fertilizer is required. Obtain information from the Erosion Control Designer.)

Add the following subsection:

01030.14(b)(4) Organic Fertilizer - Furnish organic fertilizer that analyzes __ % nitrogen, __ % phosphoric acid, and __ % soluble potash. Furnish fertilizer that has no toxicity to sites where it will be applied.

(Use the following subsection .15 and bullet(s) to specify other types of mulch not listed in the Standard Specifications, or when hydromulch may be used for temporary erosion control seeding. Delete "(s)" or parentheses as applicable, such as composted yard debris. Use the generic name for the mulch and include

Specifications, or cite the ODOT QPL if applicable. Obtain information from the Erosion Control Designer.)

01030.15 Mulch - Add the following paragraph*(*s*)* and bullets to the end of this subsection:

Use the following paragraph and bullet(s) to specify other types of mulch not listed in the Standard Specifications, such as composted yard debris. Use the generic name for the mulch and include Specifications, or cite the ODOT QPL if applicable. Obtain information from the Erosion Control Designer.)

Furnish mulch for seeding according to the following:

•

(Use the following paragraph and bullets when hydromulch may be used for temporary erosion control seeding. Obtain the Erosion Control Designer's approval before using.)

Furnish straw mulch for all temporary roadside erosion control seeding, except hydromulch may be used under the following conditions:

- Spring planting west of the Cascades between March 1 and May 15.
- Slopes are steeper than 1V to 1.5H and longer than 16 feet.
- Residential or commercial sites with low erosion potential such as sidewalk, Median, or parking lot planter strips.

Projects that have variable slopes may include straw mulch and hydromulch when approved.

(Use the following subsection .17 when the Federal Aid Highway Program Biological Opinion is applicable to the project and herbicide use will be allowed. Coordinate with the Region Environmental Coordinator and include the weed control pay item.)

01030.17 Pesticides - Add the following to the end of this subsection:

Do not apply herbicides that include any herbicide carrier (i.e. solvent) other than water or vegetable oil. Utilize only the following herbicides for Project Work:

- aquatic imazapyr
- aquatic glyphosate
- aquatic triclopyr-TEA
- chlorsulfuron
- clopyralid
- imazapic
- imazapyr
- metsulfuron-methyl
- picloram

- sethoxydim
- sulfometuron-methyl

Apply only the herbicide adjuvants described in Table 01030-1 for Project Work.

Table 01030-1

Adjuvant Type	Trade Name
Surfactant	Agri-Dex
Surfactant	LI 700
Drift Retardant	41-A
Drift Retardant	Vale

(Use the following subsection .42 to list Specified Weeds and plant species to be removed. Obtain list from the Erosion Control Designer.)

01030.42 Weed Control - Add the following paragraph and bullets after the paragraph that begins "If a pesticide has been approved for…" and before subsection (a):

The Specified Weeds and plant species to be removed include the following:

-

01030.42(b) Weed Control Inspections - Replace the paragraph that begins "Inspect the Project for new growth…" with the following paragraph:

Inspect the Project for new growth of specified weeds at least monthly and apply weed control measures as appropriate. This requirement may be waived by the Engineer during the period that weeds are fully dormant. To ensure satisfactory Weed removal, the last WMA inspection will occur at least 30 Days after growing has begun or as directed.

(Use the following lead-in paragraph and subsection .42(e) and table(s) when the Federal Aid Highway Program Biological Opinion is applicable to the project and herbicide use will be allowed.)

Add the following subsection:

01030.42(e) Herbicide Application - Obtain written approval from the Engineer prior to application of herbicides in sensitive areas. Apply herbicides at the lowest effective label rates. Mix herbicides a minimum of 150 feet away from natural water bodies. Wash spray tanks a minimum of 300 feet from any natural water body. Utilize a non-hazardous indicator dye during herbicide applications within 100 feet of natural water bodies. Keep spray nozzles as low as possible and utilize the largest droplet size possible in order to minimize drift. Provide documentation of wind speed and direction, air temperature, ground temperature, and date of application to the Engineer within 5 Days of broadcast herbicide applications.

Do not apply herbicides during the following conditions:

- When soil is saturated, except for soil-activated herbicides.

- Within 48 hours prior to and during a forecasted rain event of 0.5 inches or greater in a 24-hour period.
- When wind speeds exceed 10 miles per hour, or are less than 2 miles per hour.
- During temperature inversions.
- When ground temperatures exceed 80 °F.

Adhere to the adjuvant application limitations in Table 01030-2. Regulated work area (RWA) is defined in 00290.34(a).

Table 01030-2

Adjuvant Type	Trade Name	Limitations
Surfactant	Agri-Dex	Do not apply within RWA
Surfactant	LI 700	Do not apply within RWA
Drift Retardant	41-A	Do not apply within RWA
Drift Retardant	Vale	Do not apply within 150 feet of natural water bodies

During herbicide application, adhere to the buffer distance requirements in Table 01030-3 through Table 01030-10.

Table 01030-3: Application Buffer Width for Perennial Streams and Wetlands, and Intermittent Streams and Roadside Ditches with flowing or standing water present, Labeled for Aquatic Use

Herbicide	Broadcast Spraying	Spot Spraying	Hand Selective
aquatic glyphosate	100 feet	Waterline	Waterline
aquatic imazapyr	100 feet	15 feet	Waterline
aquatic triclopyr-TEA	Not Allowed	15 feet	Waterline

Table 01030-4: Application Buffer Width for Dry Intermittent Streams, Dry Intermittent Wetlands, Dry Roadside Ditches, Labeled for Aquatic Use

Herbicide	Broadcast Spraying	Spot Spraying	Hand Selective
aquatic glyphosate	50 feet	No buffer	No buffer
aquatic imazapyr	50 feet	No buffer	No buffer
aquatic triclopyr-TEA	Not Allowed	No buffer	No buffer

Table 01030-5: Application Buffer Width for Perennial Streams and Wetlands, and Intermittent Streams and Roadside Ditches with flowing or standing water present, Low Risk to Aquatic Organism

Herbicide	Broadcast Spraying	Spot Spraying	Hand Selective
Imazapic	100 feet	15 feet	RWA boundary
Clopyralid	100 feet	15 feet	RWA boundary
metsulfuron-methyl	100 feet	15 feet	RWA boundary

Table 01030-6: Application Buffer Width for Dry Intermittent Streams, Dry Intermittent Wetlands, Dry Roadside Ditches, Low Risk to Aquatic Organism

Herbicide	Broadcast Spraying	Spot Spraying	Hand Selective
Imazapic	50 feet	No buffer	No buffer
Clopyralid	50 feet	No buffer	No buffer
metsulfuron-methyl	50 feet	No buffer	No buffer

Table 01030-7: Application Buffer Width for Perennial Streams and Wetlands, and Intermittent Streams and Roadside Ditches with flowing or standing water present, Moderate Risk to Aquatic Organism

Herbicide	Broadcast Spraying	Spot Spraying	Hand Selective
Imazapic	100 feet	50 feet	RWA boundary
sulfometuron-methyl	100 feet	50 feet	5 feet
Chlorsulfuron	100 feet	50 feet	RWA boundary

Table 01030-8: Application Buffer Width for Dry Intermittent Streams, Dry Intermittent Wetlands, Dry Roadside Ditches, Moderate Risk to Aquatic Organism

Herbicide	Broadcast Spraying	Spot Spraying	Hand Selective
Imazapic	50 feet	15 feet	RWA boundary
sulfometuron-methyl	50 feet	15 feet	RWA boundary
Chlorsulfuron	50 feet	15 feet	RWA boundary

Table 01030-9: Application Buffer Width for Perennial Streams and Wetlands, and Intermittent Streams and Roadside Ditches with flowing or standing water present, High Risk to Aquatic Organism

Herbicide	Broadcast Spraying	Spot Spraying	Hand Selective
Picloram	100 feet	50 feet	50 feet
Sethoxydim	100 feet	50 feet	50 feet

Table 01030-10: Application Buffer Width for Dry Intermittent Streams, Dry Intermittent Wetlands, Dry Roadside Ditches, High Risk to Aquatic Organism

Herbicide	Broadcast Spraying	Spot Spraying	Hand Selective
Picloram	100 feet	50 feet	50 feet
Sethoxydim	100 feet	50 feet	50 feet

(Use the following lead-in paragraph and subsection .44(c) when organic fertilizer is required. Obtain information from the Erosion Control Designer.)

Add the following subsection:

01030.44(c) Organic Fertilizer - Apply organic fertilizer at a rate of ___ pounds per acre at the following locations:

•

(Use the following subsection .45 when soil testing is required.)

01030.45 Soil Testing - Replace this subsection, except for the subsection number and title, with the following:

When the Contract Schedule of Items include items for “soil testing”, test soil according to 01040.13.

(Use the following subsection .60 when the "Plant Seeding, ____" or "Native Plant Seeding, ____" Pay Items are included in the Schedule of Items. Delete "(s)" or the parentheses as applicable.)

01030.60 General - Add the following sentence*(*s*)* after the last bullet:

(Use the following paragraph when the "Plant Seeding, ____" Pay Item is included in the Schedule of Items. Obtain information from the Erosion Control Designer and fill in the blank.)

The minimum living plant coverage for woody or other plant seeding is ____ percent of ground surface.

(Use the following paragraph when the "Native Plant Seeding, ____" Pay Item is included in the Schedule of Items. Obtain information from the Erosion Control Designer and fill in the blank.)

The minimum living plant coverage for native plant seeding is ____ percent of ground surface.

01030.61(b) All Other Seeding - Replace the bullet that begins "The seeding Establishment Period…" with the following bullet:

- The seeding Establishment Period will end 45 Days after the beginning of the Establishment Period, if the area was seeded within the seeding dates according to 01030.43, and all establishment responsibilities have been met.

Replace the bullet that begins "If the original seeding construction…" with the following bullet:

- If the original seeding construction is completed and accepted outside the permanent seeding dates, the Establishment Period will end 45 Calendar Days after all necessary reseeding is completed and accepted during the following seeding dates according to 01030.43.

01030.62(b)(3) Weed Control - Replace this subsection, except for the subsection number and title, with the following:

Kill and remove Specified Weeds as directed, prior to the Weeds going to seed. Keep WMAs and seeded areas, Weed Free throughout the Establishment Period.

01030.90 Payment – Delete Pay Items (l) and (m) from the Pay Item list.

(Use the following two paragraphs when topsoil, wetland soil soil amendments or bio-amendments are required.)

Add the following to the end of this subsection:

Soil testing, topsoil, wetland soil, soil amendments, and bio-amendments will be paid for according to 01040.90.

SP01040 (Special Provisions for the 2024 Book) **(Bidding on or after: 06-01-25 Last updated: 03-03-25)**

SECTION 01040 - PLANTING

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 01040 of the Standard Specifications modified as follows:

01040.02 Definitions: Add the following definitions to the end of this subsection:

Fall - The period beginning on the equinox in September through solstice in December.

Summer - The period beginning on the solstice in June through the equinox in September.

01040.04(a) Planting Work Plan – Replace the bullet that begins "Plant installation and…" with the following bullet:

- Plant installation

Add the following bullet to the end of the bullet list:

- Plant establishment plan according to 01040.70

Add the following subsection:

01040.05 Submittals – Submit the following for review and approval:

- Contract Growing Plan according to 01040.19(g).
- Planting work plan according 01040.04(a).
- Plant establishment plan according to 01040.70.
- Weed Control Work Plan according to 01030.42(a).

- Photo log 10 Days after each plant establishment visit and periodic inspection. Furnish date stamped photographs in photo log of each plant establishment site visit with photos of multiple individual plants, seeded areas and weed control areas that are sufficiently close to display plant condition and that are representative of the health, vigor and growth of the site plantings.

01040.19(b) Quality - Replace the paragraph that begins "Furnish plants that are acclimated…" with the following paragraph:

Furnish plants that are acclimated to the specific Project environmental site conditions prior to planting. Store all container-grown and balled and burlapped plant materials acquired for planting a minimum of 3 months before planting, as specified in 01040.41 or 01040.42, at a location north of the Oregon - California border.

(Use the following subsection .19(g) when a contract growing agreement is required.)

01040.19(g) Contract Growing Plant Materials - Add the following sentence to the end of this subsection:

This Project requires a contract growing agreement.

01040.19(h)(2) Deciduous Trees - Replace the paragraph that begins "Trees with leaves that are…" with the following paragraph:

Trees which shed their leaves annually.

01040.19(h)(7) Seedling Trees - Replace the paragraph that begins "Plants that are grown from seed…" with the following paragraph:

Plants that are grown from seed in a nursery and brought to the site in a bare root condition. Provide seedlings labeled with age and certification (class number) which shows the length of time grown in a nursery seedbed, followed by the length of time grown in a transplant bed. Furnish seedling trees that are a minimum 2 years old.

(Use the following subsection .20(e) when the allowable size of wood chip mulch is to be listed in the Special Provisions. Obtain the allowable size range from the Designer.)

01040.20(e) Wood Chip Mulch - Add the following to the end of this subsection:

Provide wood chip mulch in the following size range:

-

(Use the following subsection .22 when pressure moisture stress sensors or moisture retention chemicals are required. Delete "(s)" or parentheses.)

01040.22 Water - Add the following paragraph*(*s*)* to the end of this subsection:

(Use the following paragraph when pressure moisture stress sensors are required.)

Provide a pressure moisture stress sensor device for this Project.

(Use the following paragraph when moisture retention chemicals are required.)

Provide moisture retention chemicals for this Project.

01040.41 Planting Season (West of the Cascades) - Replace the title of this subsection with "**Planting (West of the Cascades)".**

01040.42 Planting Season (East of the Cascades) - Replace the title of this subsection with "**Planting (East of the Cascades)".**

01040.48(b) Method "B" (Non-Cultivated Planting Areas) - Replace the paragraph that begins "Finish Wetland mitigation planting …" with the following paragraph:

Finish Wetland mitigation planting areas to specified finish elevations, blending to existing ground smoothly, as required and directed. Except for projects that are less than 1 year in duration and unless otherwise approved, review the hydrology of the area to be planted for the period November 15 to February 28 prior to planting any Wetland plants. Adjust plant types and planting locations as required or directed, based on the review of site hydrology.

01040.50(a)(1) Mechanical Digging - Replace this subsection, except for the subsection number and title, with the following:

Use a tree spade unless otherwise directed. Move only while the tree is dormant. Treat deciduous plants with anti-transpirant prior to excavation. Confirm with the Agency that the size of the spade is appropriate to the size and type of tree prior to beginning Work. Dig the receiving hole prior to digging the tree to be transplanted. Take care not to damage the tree bark. Refill the original hole after transplanting. Do not move Oregon White Oak (Quercus garryana) by this method.

01040.50(g) Plant Cuttings - Replace the paragraph that begins "Collect and plant the cuttings …" with the following paragraph:

Collect and plant the cuttings while the plant is dormant, generally between October and March. Notify the Agency if conflicts exist with permit requirements. Store all cut material in ventilated plastic containers that allow free flow of water. Protect root systems from excessive drying at all times. Do not store plants in airtight containers.

01040.53(b)(3) Compost Blanket - Replace this subsection with the following subsection:

01040.53(b)(3) - Compost Mulch - Spread compost on top of the Soil to a nominal depth of 3 inches. Where a compost erosion blanket is in place according to 00280.44(f) apply and spread additional compost to achieve a depth of 3 inches.

01040.54(a) Pressure Moisture Stress Sensor - Replace the bullet that begins "At 1 month intervals…" with the following bullet:

- At 1 month intervals throughout the Summer, up to the first Fall rain or snow.

01040.70 Plant Establishment – Add the following paragraph and bullets after the paragraph that begins “The Contractor is responsible…”

At a minimum of 15 Days prior to landscape Work, submit the plant establishment plan as part of the planting work plan according to 01040.05. Should the plan become unworkable at any time during Plant Establishment Period, submit a revised plan prior to proceeding with further Work. Include the following in the plant establishment plan:

- Activity descriptions necessary to ensure continued health and vigor of planted and seeded areas according to 01030.60 and 01040.71.
- Proposed scheduling of joint inspection meetings, weeding, and watering/irrigation schedule.
- Materials including herbicides and fertilizers, and Equipment to be utilized for the plant establishment.
- Proposed adaptive management activities for successful establishment of seeded, sodded, and planted areas, during changing environmental conditions or unanticipated weather.

(Use the following subsection .71 to include minimum watering frequencies for trees and shrubs. Obtain information from the Designer. Delete what does not apply.)

01040.71 Plant Care and Success Criteria - Add the following to the end of this subsection:

The following watering frequencies are required:

- Deciduous trees that are 1 1/2 inch and larger, water at a frequency of _____.
- Conifer trees that are over 4 feet tall, water at a frequency of _____.
- All shrubs, water at a frequency of _____.

01040.72 Periodic Inspections - Replace the bullet that begins "Spring…" with the following bullet:

- Early May

Replace the bullet that begins "Summer…" with the following bullet:

- Mid-July

Replace the bullet that begins "Fall…" with the following bullet:

- Late September

01040.73 Corrective Work - Replace the paragraph that begins "The Contractor will be allowed…" with the following paragraph:

The Contractor will be allowed to replace plants outside the planting times described in 01040.41 or 01040.42 as applicable to perform corrective work after each periodic inspection.

(Use the following subsection .75 when Weed Control is not included as a Pay Item under 01030.90.)

01040.75 Weed Control - Replace this subsection, except for the subsection number and title, with the following:

Perform weed control throughout the Plant Establishment Period. Kill and remove Specified Weeds as directed, prior to the Weeds going to seed. Keep the plant areas Weed Free throughout the Plant Establishment Period.

01040.77(b) Trimming and Pruning - Replace the paragraph that begins "Prune during the dormant…" with the following paragraph:

Prune during dormancy unless otherwise specified. Remove and dispose of all dead and critically damaged plant material to maintain the overall appearance of the Project.

(Use the following subsection .77(d) when sod lawn is required. Obtain the schedule from the Designer.)

01040.77(d) Sod Lawn - Add the following to the end of this subsection:

Provide sod lawn feeding, mowing, and general treatment as follows:

•

(Use the following subsection .80(c) when soil conditioner is required.)

01040.80(c) Soil Conditioners - Replace this subsection with the following subsection:

01040.80(c) Soil Conditioners and Hydraulically Applied Soil Conditioner - Soil conditioners and hydraulically applied soil conditioners will be measured according to one of the following:

- **Area Basis** - Hydraulically applied soil conditioners and other surface applied soil conditioners will be measured on the area basis, along the ground surface.
- **Volume Basis** - Soil conditioners will be measured on the volume basis in the hauling vehicle or in containers delivered to the Project Site.

(Use the following subsection .90(c) when soil conditioner is required.)

01040.90(c) Soil Conditioners - Replace this subsection with the following subsection:

01040.90(c) Soil Conditioners and Hydraulically Applied Soil Conditioner - Soil conditioners will be paid for at the Contract unit price, per cubic yard, for the item "Soil Conditioner".

Hydraulically applied soil conditioners will be paid for at the Contract unit price, per acre or square yard, for the item “Hydraulically Applied Soil Conditioner”.

SP01050 (Special Provisions for the 2024 Book)

**(Bidding on or after: 05-01-25
Last updated: 01-23-25
Requires SP02510
Requires SP00587 when
protective fence is required.)**

SECTION 01050 - FENCES

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use only one of the following lead-in paragraphs as instructed below.)

[Use the following lead-in paragraph when NONE of the following subsections are included in the Project Special Provisions.]

Comply with Section 01050 of the Standard Specifications.

[Use the following lead-in paragraph when ANY of the following subsections are included in the Project Special Provisions.]

Comply with Section 01050 of the Standard Specifications modified as follows:

(Use the following subsection .00 when SP00587 for protective fence is used.)

01050.00 Scope - Delete the bullet that begins "Protective Fences, on and…".

(Use the following subsection .01(e) when SP00587 for protective fence is used.)

01050.01(e) Run - Delete the bullet that begins "Bridge protective Fence…".

(Use the following subsection .10 when SP00587 for protective fence is used.)

01050.10 Materials - Delete "Protective Fence Materials, On and Off Structures."

(Use the following subsection .43(a) when SP00587 for protective fence is used.)

01050.43(a) General - Delete the paragraph that begins "For bridge protective Fence…".

(Use the following subsection .43(c) on Projects in Regions 4 and 5 as requested by the Designer.)

01050.43(c) Intermediate End Posts - Add the following sentence to the end of this subsection:

Space intermediate end posts a maximum of 300 feet apart.

(Use the following subsection .45(c) when SP00587 for protective fence is used.)

01050.45(c) Chain Link Fence Fabric and Wire - Delete the paragraph that begins "For bridge protective Fence only…"

(Use the following subsection .46 when SP00587 for protective fence is used.)

01050.46 Protective Fences for Bridges – Delete this subsection.

(Use the following subsection .47(a) when SP00587 for protective fence is used.)

01050.47(a) General - Replace the paragraph that begins "Except for bridge protective Fence…" with the following paragraph:

Provide at least one "ground" for each Run of Fence and place at any post within the Run according to 00960.45(b).

(Use the following subsection .80(e) when SP00587 for protective fence is used.)

01050.80(e) Protective Fence for Bridges - Delete this subsection.

(Use the following subsection .90(c) when SP00587 for protective fence is used.)

01050.90(c) Protective Fence for Bridges - Delete this subsection.

SP01060 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-23-25
Requires SP02510)

SECTION 01060 - METAL CATTLE GUARDS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 01060, which is not a Standard Specification, is included in this Project by Special Provision.

Description

01060.00 Scope - This Work consists of constructing metal cattle guards at the locations shown or specified.

Materials

01060.10 Materials - Furnish Materials meeting the following requirements:

Anchor Bolts	02560.30
Bearing Pads	00582
Coating Steel Structures	00594
Commercial Grade Concrete	00440
Fasteners	02560.20
Precast Concrete Units	00550
Reinforcement	02510.10
Structural Steel	02530.20
Tubing	02810.20

01060.11 Other Materials - Furnish black, welded or seamless steel pipe meeting the requirements of ASTM A53, Type F.

Construction

01060.40 General - Construct cattle guards as shown and according to the following:

- After road construction is complete.
- Excavate and backfill according to Section 00510.
- Provide drainage pits or areas beneath the cattle guard surfaces as shown or specified.
- Use precast or construct cast-in-place concrete abutments.
- Install reinforcement and place concrete according to Sections 00530 and 00440.
- Assemble structural steel members and other steel according to Section 00560, except that prequalification of welders will not be required and inspection of welding will be visual.
- Coat steel according to Section 00594 except blast cleaning will not be required. Coat all steel members with at least three applications.
- Connect fences to the cattle guards as shown.

Finishing and Cleaning Up

01060.70 General - Remove excess materials and debris from the cattle guard sites.

Measurement

01060.80 Measurement - The quantities of cattle guards will be measured on the unit basis.

Payment

01060.90 Payment - The accepted quantities of cattle guards will be paid for at the Contract unit price, per each, for the item "_____ Cattle Guard". The width of the cattle guard will be inserted in the blank.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for excavation or backfill Work.

SP01069 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 01069 - METAL HANDRAIL AND PEDESTRIAN FENCE

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 01069 of the Standard Specifications.

SP01070 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25 Requires SP02510)**

SECTION 01070 - MAILBOX SUPPORTS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

(Use the following lead-in paragraph when none of the following subsections are included in the Project.)

Comply with Section 01070 of the Standard Specifications.

(Use the following lead-in paragraph when any of the following subsections are included in the Project.)

Comply with Section 01070 of the Standard Specifications modified as follows:

(Use the following subsections .00, .80, and .90 when existing mailbox supports are reused. Use only when the existing mailbox supports, brackets, hardware, and post sockets are crash worthy and meet current standards. Check with the Designer.)

01070.00 Scope - Add the following paragraph to the end of this subsection:

This Work includes removing, maintaining, and reinstalling existing mailboxes and existing supports.

01070.80 Measurement - Add the following paragraph to the end of this subsection:

The quantities of mailboxes and supports removed, maintained, and reinstalled will be measured on the unit basis, regardless of type, installed in permanent locations.

01070.90 Payment - Add the following Pay Item to the Pay Item list:

(d) Remove and Reinstall Mailbox Supports .....Each

Item (d) includes removing mailboxes and supports, maintaining them at temporary locations, and reinstalling them at their permanent locations.

SP01090 (Special Provisions for the 2024 Book) (Bidding on or after: 05-01-25 Last updated: 01-23-25)

SECTION 01090 - GRAVEL BEDS AND BLANKETS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 01090 of the Standard Specifications.

SP01091 (Special Provisions for the 2024 Book) (Bidding on or after: 05-01-25 Last updated: 02-03-25)

(Use this Section on Projects that require work on and near waterways. Be sure all permits and all conditions are met before using this Section.)

SECTION 01091 - WATERWAY ENHANCEMENTS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple

text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 01091, which is not a Standard Specification, is included in this Project by Special Provision.

Description

01091.00 Scope - This Work consists of constructing waterway enhancements such as fish Rocks, large woody Material (LWM), engineered streambed Material, and other types of waterway items as shown or directed.

01091.05 Pre-Work Meeting - Attend a pre-work meeting at the Project Site with the Engineer, at a mutually agreed upon time, at least 8 Calendar Days prior to implementation of any waterway enhancement work. Required attendees include:

- Engineer
- Contractor
- Waterway Enhancement Subcontractors
- ODOT Region Environmental Coordinator
- ODOT Hydraulics Designer

The pre-work meeting agenda typically includes the methods of accomplishing all phases of the waterway enhancement work, including:

- temporary water management (TWM)
- fish salvage plan and strategy
- environmental risks discussion
- turbidity monitoring
- energy dissipation
- dewatering and re-watering plan and strategy
- existing streambed Material salvage
- site clean-up expectations
- circumstances under which contacting the Engineer is required

Representatives from interested permitting agencies will be invited by the Agency.

Materials

01091.10 Material - Furnish Materials meeting the following requirements:

(When native streambed Material is to be excavated, salvage and stockpile native Material to be used as a streambed sediment within the constructed channel.)

Streambed Gravels are classified as follows:

- Salvaged streambed Material
- Streambed Sand
- Streambed sediment
- Streambed Cobbles 4 in.
- Streambed Cobbles 6 in.
- Streambed Cobbles 8 in.
- Streambed Cobbles 10 in.
- Streambed Cobbles 12 in.

Provide a streambed Material mix of the following streambed Gravels with the associated ratios:

(Use the engineered streambed list below for the Project mix design. Add or remove Materials to match Project design needs. Fill in all appropriate blanks.)

Engineered Streambed Material:

Salvaged streambed Material _% by volume
Streambed sediment: _% by volume
Streambed Cobbles _ in. _% by volume
Streambed Sand: _% by volume

Thoroughly blend streambed Gravels before placement. Acceptance of the Engineered Streambed Material will be based upon visual inspection by the Engineer.

Components of the salvaged streambed Material which meet the criteria for the specific Material may be used to supplement the streambed sediment and streambed Cobbles and will be based upon visual acceptance by the Engineer.

(a) Loose Riprap - Provide loose riprap meeting the requirements of Section 00390.

(b) Engineered Streambed Material - Provide uncrushed, free of deleterious Material, hard, durable Material that is well graded from the maximum size to the minimum size meeting the following test requirements for quality:

Aggregate Property	Test Method	Requirement
Degradation Factor	ODOT TM 208	15 min,
L.A. Wear, 500 Rev.	AASHTO T 96	50% max
Bulk Specific Gravity	ODOT TM 203	2.55 min.

- **Streambed Sand:** Grade Sand to meet the following requirements expressed as a percentage by weight:

	Percent Passing			
Sieve	**Natural Sand**		**Manufactured Sand**	
	Min.	**Max.**	**Min.**	**Max.**
No. 4	99	100	99	100

No. 8	90	100	90	100
No. 16	60	90	60	90
No. 30	35	70	35	70
No. 50	10	30	20	40
No. 100	0	5	10	25
No. 200	0	3	0	10

- **Streambed Sediment -** Grade streambed sediments according to the following requirements expressed as a percentage by weight:

Sieve Size	Percent Passing
2 1/2” square	100
2” square	65 - 100
1” square	50 - 85
U.S. No. 4	26 - 44
U.S. No. 40	16 max.
U.S. No. 200	5.0 - 9.0

- **Streambed Cobbles** - Grade streambed Cobbles according to the following requirements expressed as a percentage by weight:

Percent Passing

Approx. Size[1]	4” Cobbles	6” Cobbles	8” Cobbles	10” Cobbles	12” Cobbles
12”					99-100
10”				99-100	70-90
8”			99-100	70-90	
6”		99-100	70-90		
5”		70-90			30-60
4”	99-100			30-60	
3”	70-90		30-60		
2”		30-60			
1 1/2"	20-50				
3/4"	10 max.	10 max.	10 max.	10 max.	10 max.

[1]Approximate size can be determined by taking the average dimension of the three axes of the Rock, length, width, and thickness, by use of the following calculation:

$$\frac{\text{Length + Width + Thickness}}{3} = \text{Approximate Size}$$

Length is the longest axis, width is the second longest axis, and thickness is the shortest axis.

The grading of the Cobbles will be determined by the Engineer by visual inspection of the load before it is placed.

(c) Fish Rocks:

Type 1 - 700 pounds to 900 pounds size, hard, durable, angular shaped Rock. Furnish a single Rock with a thickness of not less than one-third its length. Round Rock, non-durable Rock, shale, or Rock with shale seams will not be accepted.

Type 2 - Greater than 900 pounds to 1,800 pounds size, hard, durable, angular shaped Rock. Furnish a single Rock with a thickness of not less than one-third its length. Round Rock, non-durable Rock, shale, or Rock with shale seams will not be accepted.

Type 3 - Greater than 1,800 pounds to 2,200 pounds size, hard, durable, subangular Rock. Furnish a single Rock with a thickness of not less than three-fourths its length. Non-durable Rock, shale or Rock with shale seams will not be accepted.

(d) Large Woody Material - Furnish 18 inch minimum diameter by 20 to 32 feet long conifer trees with rootwad. Furnish structurally sound logs that are free of rot and disease.

(e) Boulder Weirs - Furnish fish Rocks used in the construction of boulder weirs as follows:

(Fill in the blank with the Type of fish Rock required. Obtain information from the hydraulic engineer.)

Type _____ and Type _____ fish Rocks as shown and placed as directed.

Construction

01091.40 General - Obtain all permits and perform Work in and around water according to Section 00290, Section 00245 and the following:

(a) Streambed Excavation - Excavate the foundation for streambed Materials to the elevations and grades as shown. As directed by the Engineer, excavate scour holes in the approximate locations as shown.

(b) Salvaged Streambed Materials - During streambed excavation, salvage and stockpile the existing streambed Materials as directed for re-use.

(c) Loose Riprap - Place loose riprap Material within the stream channel as shown or as directed.

(d) Engineered Streambed Material - Place engineered streambed Material in the stream channel as shown or directed. Place the streambed Material in lifts no thicker than 12 inches. Provide streambed Material in its final location with a well graded mix of streambed sediments and streambed Cobbles.

Construct streambed Material to ensure that low stream flows are conveyed above the finished channel. Pressure apply water to each placed layer to facilitate filling the interstitial voids of the streambed Materials with streambed Sand. The voids are satisfactorily filled when water equivalent to the flow rate of the stream does not go subsurface and there is visual acceptance by the Engineer. If water is not present in the stream, apply water to the stream channel for visual acceptance by the Engineer.

(e) Streambed Sand - Place streambed Sand in the streambed lifts as directed. Do not change the finished channel elevation or affect the channel shape as shown.

(f) Fish Rocks - Place Rocks as shown or as directed.

(g) Large Woody Material - Place LWM as shown or as directed. Place LWM with the rootwad end projecting into the water with the trunk placed at a 45 degree horizontal angle to the bank. Bury the trunk end approximately two-thirds the total length into the embankment.

(h) Boulder Weirs - Install boulder weirs as shown or directed. Arch boulder weirs into the stream flow as shown. Seal weirs with streambed sediments as shown or directed. Acceptance will be based on water flowing over the boulder weirs and not through the Boulders.

Measurement

(Use one of the following options as instructed. Delete the option that does not apply.)

(Option 1 - Use this subsection .80 when streambed enhancement will be measured and paid using a single Streambed Enhancement Pay Item.)

[Begin Option 1]

01091.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

The estimated quantities of Materials required for streambed enhancement are:

(Complete the following for lump sum items. Delete items that are not required on the Project. Obtain quantities from the Designer.)

Item	Quantity
Excavation	____ cu. yd.
Loose riprap, Class ____.....	____ cu. yd.
Salvaged Streambed Material	____ cu. yd.
Engineered Streambed Materials	____ cu. yd.
Fish Rocks, Type 1	____ each
Fish Rocks, Type 2	____ each
Fish Rocks, Type 3	____ each
Large Woody Material.....	____ each

[End Option 1]

(Option 2 - Use this subsection .80 when streambed enhancement will be measured and paid using the individual streambed excavation, LWM, and streambed Material Pay Items.)

[Begin Option 2]

01091.80 Measurement - Work performed under this Section will be measured according to the following:

(a) Fish Rocks and Large Woody Material - The quantities of fish Rocks and LWM will be measured on the unit basis.

(b) Streambed Excavation and Streambed Materials - The quantities of streambed excavation, salvaged streambed Materials and engineered streambed Materials will be measured on the volume basis.

[End Option 2]

Payment

(Use one of the following options as instructed. Delete the option that does not apply.)

(Option 1 - Use this subsection .90 when streambed enhancement will be measured and paid using a single Streambed Enhancement Pay Item.)

[Begin Option 1]

01091.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract lump sum amount for the item "Streambed Enhancement".

[End Option 1]

(Option 2 - Use this subsection .90 when streambed enhancement will be measured and paid using the individual streambed excavation, LWM, and streambed Material Pay Items.)

[Begin Option 2]

01091.90 Payment - The accepted quantities of waterway enhancement items will be paid for at the Contract unit price, per unit of measurement, for the following items:

(Delete Pay Item(s) from the list that are not included in the Schedule of Items, but do not change the alpha characters next to the Pay Items.)

Pay Item	Unit of Measurement
(a) Streambed Excavation	Cubic Yard
(b) Salvaged Streambed Material	Cubic Yard
(c) Engineered Streambed Materials	Cubic Yard
(d) Fish Rocks, _____	Each
(e) Large Woody Material	Each

(Use the following paragraph when Pay Item (d) is included in the Pay Item list above.)

In item (d), the type of fish Rocks will be inserted in the blank.

Loose riprap will be paid for according to 00390.90.

[End Option 2]

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP01095 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 01095 - SITE FURNISHINGS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 01095, which is not a Standard Specification, is included in this Project by Special Provision.

Description

01095.00 Scope - This Work consists of constructing site furnishings such as benches, picnic tables, litter receptacles, bicycle racks, and other furnishings as shown or directed.

Materials

01095.10 General:

(a) Benches - Provide benches meeting the following requirements:

•

(b) Picnic Tables - Provide picnic tables meeting the following requirements:

•

(c) Litter Receptacles - Provide trash receptacles meeting the following requirements:

•

(d) Bicycle Racks - Provide bicycle racks meeting the following requirements:

•

(e) Sand Urns - Provide sand urns meeting the following requirements:

•

(f) Aeration System - Provide aeration system meeting the following requirements:

•

(g) Plant Trellis - Provide plant trellises meeting the following requirements:

•

Construction

01095.40 General - Install all site furnishings as shown and according to the manufacturer's recommendations.

Measurement

01095.80 Measurement - The quantities of site furnishings will be measured on the unit basis.

Payment

(Delete the "(s)" or parentheses from the word "item(s)", as appropriate.)

01095.90 Payment - The accepted quantities of site furnishings will be paid for at the Contract unit price, per unit of measurement, for the following item*(*s*)*:

(Delete Pay Item(s) from the list that are not included in the Schedule of Items. Re-alphabetize the list to be consecutive, beginning with (a).)

Pay Item	Unit of Measurement
(a) Benches, Type _____	Each
(b) Picnic Tables	Each
(c) Litter Receptacles	Each
(d) Bicycle Racks	Each
(e) Sand Urns	Each
(f) Aeration System	Each
(g) Plant Trellis	Each

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SP01120 (Special Provisions for the 2024 Book) (Bidding on or after: 06-01-25

Last updated: 02-26-25)

SECTION 01120 - IRRIGATION SYSTEMS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 01120 of the Standard Specifications modified as follows:

01120.40(b) Electrical Service – Replace this subsection, except for the subsection number and title, with the following:

Install electrical service according to the *National Electrical Code* and all State and local laws. Power sources will be as shown or as directed. Be responsible for coordination and installation of electrical service. Furnish and install meter bases at the power source conforming to the requirements of the power supplier. Give the power supplier's representative notice before making any installation. Provide a separate, dedicated circuit for the controller.

01120.60 System Operation - Replace the paragraph that begins "This responsibility includes, but is not…" with the following paragraph:

This responsibility includes, but is not limited to, draining the system before the first freeze and reactivating the system in early May and at other times as directed.

Replace the paragraph that begins "In the spring, when the…" with the following paragraph:

In early May, when the drip irrigation system is in full operation, make a full inspection of all emitters. This involves visual inspection of each emitter under operating conditions. Make all adjustments, flushing or replacements to the system at this time to ensure the proper operation of all emitters.

SP01140 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-23-25)

SECTION 01140 - POTABLE WATER PIPE AND FITTINGS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 01140 of the Standard Specifications.

SP01150 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 01150 - POTABLE WATER VALVES

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 01150 of the Standard Specifications.

SP01160 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 01160 - HYDRANTS AND APPURTENANCES

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 01160 of the Standard Specifications.

SP01170 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 01170 - POTABLE WATER SERVICE CONNECTIONS, 2 INCH AND SMALLER

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 01170 of the Standard Specifications.

SP01201 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-23-25
This Section requires SP00253, SP00535, SP01210 SP01215, SP01220, SP01235, SP01240, SP01245, SP01260, SP01270, SP01280, & SP01285)

(This Section may require SP00120 Contractor Special Prequalification to ensure that the contractor prequalification requirements are included in the Contract if applicable. Contact the State Specifications Engineer if you have any questions.)

SECTION 01201 - COMMON PROVISIONS FOR CATHODIC PROTECTION SYSTEMS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Impressed current cathodic protection systems are not intended for pre-stressing, post-tensioning, or any Structure where reinforcement yield strength exceeds 100ksi. If corrosion protection of this type of Structure is necessary, contact the ODOT Technical Resource.)

Section 01201, which is not a Standard Specification, is included in this Project by Special Provision.

Description

01201.00 Scope - This Work consists of furnishing and installing Materials and Equipment for cathodic protection of existing Bridges.

To the extent feasible, and in conformance with the Plans, perform the Work without degrading the visual and architectural character of the Bridge.

01201.01 Abbreviations and Definitions:

(a) Abbreviations:

CP - Cathodic Protection

PVC - Polyvinyl chloride

(b) Definitions:

CP Zone - An area of the Bridge surface marked by edge boundaries of the anode, as defined in the Plans. CP Zones are established for the purpose of managing the power needed to operate the cathodic protection system effectively.

Damaged Concrete - Concrete that is spalled or delaminated; concrete with near-surface rock pockets; concrete that is unbonded from reinforcing bars; unsound or delaminated concrete in existing patches; and concrete that has been drilled, excavated, or removed during prior maintenance work or during the Work of this Project. Areas of near-surface metal removal in sound concrete less than 1/2 square foot will not be considered Damaged Concrete.

Essential Near-Surface Metal - Metal located less than 1/2 inch below the surface of the concrete, and that has a structural or functional purpose. Essential near surface metal includes objects such as reinforcing bars, reinforcing mesh, bearing devices, drains, conduits, Bridge supports, and anchors.

Hold Point - A time at which the Contractor must cease a particular activity until a phase of Work is inspected by or tested in the presence of the Engineer. If the Engineer finds this phase conforms to the Specifications, the subsequent phase of Work may proceed.

King Bar - Primary connection of the direct current power source of a cathodic protection system to the reinforcement of a concrete structure (cathode).

Non-Essential Near-Surface Metal - Metal located less than 1/2 inch below the surface of the concrete, and that does not have a structural or functional purpose. Non-essential near surface metal includes objects such as form ties, wires, nails, rebar supports, staples, and abandoned conduits.

Primary Deck Bar - Reinforcing bars in the Bridge deck slab, which span between the members that support the deck slab.

Pumped Concrete - Portland cement, Sand and admixtures or a pre-packaged repair mortar thoroughly mixed and hydrated that is suitable for placement by pumping into restricted liquid tight formwork.

QCE Work - Quality Critical Elements (QCE) of Work is any Work that requires trained personnel to complete the Work. QCE Work consists of the following:

- Quality Control according to Section 01210
- Locate and Remove Near Surface Metal according to Section 01215
- Replace Damaged Concrete according to Section 01235
- Install Reference Cells according to Section 01240
- Locate and Eliminate Electrical Discontinuities in Rebar according to Section 01245
- Prepare Surfaces and Apply Zinc Anodes according to Section 01260

Saturated Surface Dry Condition - Surface condition where hardened concrete is thoroughly saturated with water without any free standing water.

Secondary Deck Bar - Reinforcing bars in the Bridge deck slab, oriented perpendicular to the Primary Deck Bars.

Shallow Rebar - Rebar that is less than 1/2 inch below the surface of the concrete.

Materials

01201.10 Hand Patching Materials - Provide hand patching Materials from Section 02015.30 of the QPL designated for vertical and overhead application.

01201.11 Non-Conductive Resin - Provide non-conductive resin from Section 00535.10 of the QPL designated as “high strength”.

01201.12 Non-Conductive Sealant - Provide one of the following non-conductive sealants:

- Dow Corning 790 Silicone Building Sealant.
- GE SCS9000 SILPRUF Sealant.
- Sikaflex 1a Polyurethane Elastomeric Sealant/Adhesive.

01201.13 Heat Shrink Tubing; Electrical Tape - Furnish the following heavy-walled heat-shrink tubing or approved equal:

- Raychem WCSM series.

Furnish the following electrical tapes or approved equal:

- Electro Tape Specialties MW101 Mastic Rubber Wrap and 750 Premium Grade Vinyl.

01201.14 Ring Connectors; Tap Connections; Solder - Provide UL listed, un-insulated copper ring connectors sized for #10 AWG wire.

Furnish the following C-taps or approved equal:

- Thomas & Betts catalog number 54715.

Furnish RoHS compliant solder meeting IPC-J-STD-004, 005 and 006.

01201.15 Conduit and Fittings - Provide UL listed, schedule 40, extruded PVC electrical conduit that conforms to UL Standard Number 651, rated for 194 °F conductors. Provide gray conduit and gray fittings.

Provide gray conduit fittings constructed from PVC or thermoplastic according to UL Standard Number 514. Provide PVC expansion fittings that are UL listed and constructed to provide a weathertight seal. Provide UL listed PVC conduit elbows.

Provide gray UL listed junction boxes constructed from PVC or thermoplastic furnished with mounting feet and a gasketed weathertight cover mounted with brass or stainless steel screws.

Provide gray UL listed, single-hole PVC conduit straps.

Provide cement recommended by the conduit manufacturer to secure conduit joints.

Provide pre-fastening plastic anchors designed for 1 1/2" minimum embedment in concrete. Fasteners shall be indoor/outdoor and damp/dry location rated for -30 °F or less and 140 °F or greater.

01201.16 Fasteners:

(a) Brass Nuts and Bolts - Provide 1/4-inch-diameter brass hex nuts and brass bolts or all-thread according to ASTM F467/468 UNS number C27000, C46200 or C46400.

(b) Stainless Steel Bolting Materials - Provide Type 316 stainless steel bolting Materials according to ASTM A193/194, Grade B8M, B8MA, B8M2, or B8M3, Class 1, 1A, 1D, or 2 or ASTM F593/594 Group 2 Condition CW.

- For conduit hangers, provide bar stock and all-thread from the same alloy group as the nuts and bolts listed in the subsection.

01201.17 Labels - Use printed labels at least 1 1/2 inches in length with a text height of at least 1/8 inch (12 point Arial). Protect labels by completely covering with clear, flexible heat shrink tubing that is CSA/UL approved meeting MIL-I-23053.

01201.18 Electrical Conductors - Provide UL listed, Type XHHW stranded copper wire with 600 volt rated insulation rated for 167 °F operation in wet or dry locations.

01201.19 Marking Tape - Provide marking tape made of red polyethylene six inches wide and a minimum of four mils thick, continuously imprinted with the message “CAUTION BURIED ELECTRIC LINE”.

Equipment

01201.20 Short Circuit Detection Equipment - Use a voltage detection system that monitors the potential between the steel rebar and the zinc coating and activates an alarm if a short circuit occurs during conduit or junction box installation. Use one of the following digital panel meters, installed in a NEMA 4 enclosure:

- Newport digital panel voltmeter number Q2005AVR2-SPC
- Simpson Hawk 3 digital panel voltmeter number H345-2-12-0-1-0
- Laurel Electronics Laureate digital panel voltmeter number L10100DCV2

Labor

01201.30 Electricians - Furnish electricians licensed as a S or J in the State of Oregon, under Oregon Administrative Rule 918-282-0140 or 918-282-0170.

Construction

01201.40 Short Circuit Detection - Monitor the potential between the steel rebar and the zinc to detect short circuits. A short circuit is indicated if the measured potential is less than 100 mV.

Connect the negative input terminal of the detection Equipment to the anode terminal plate connection in the zone in which Work is being performed and connect the positive input terminal to a terminal on the rebar at the nearest reference cell rebar connection or King Bar connection.

Operate the short circuit monitoring system during any Work capable of causing a short circuit between the zinc anode and the rebar including conduit installation over zinc anode surfaces. If this alarm is actuated, stop installation Work until the short circuit has been eliminated. Perform elimination of short circuits using a method approved by the Engineer.

Use a separate short circuit detector for each concurrent Work area where the anode is discontinuous. When a short is detected, Work may continue in other areas not continuous with the affected anode.

01201.41 Installing Conduit and Fittings:

(a) Conduit - Provide conduit of the sizes shown. If the size is not shown, meet the requirements of the conduit fill limits listed in Table 4 of Chapter 9 of the NEC.

Support major conduit runs through Bridge Utility holes under the Bridge using stainless steel all-thread and plate hangers. Provide an insulated threaded hole for plate hangers by drilling into the concrete surface, inserting non-conductive sealant into the hole, and inserting a plastic anchor. Secure all-thread with non-conductive resin. Maintain major conduit runs straight and level between transverse beams through which the conduit is run.

Support surface-mounted conduit with conduit straps. Provide an insulated threaded hole for the strap by drilling into the concrete surface, inserting non-conductive sealant into the hole, and inserting a plastic anchor. Mount the conduit straps with stainless steel bolts and secure with non-conductive resin.

Provide square-cut or square-formed ends on all sections of conduit. Remove any internal and external sharp edges if the conduit is cut. Cap conduit ends, and provide protection for wires that are exposed at the end of a Work shift until the Work can be completed.

If obstructions require conduit runs to deviate from the routing shown, locate the conduit to minimize visual impact after obtaining written approval from the Engineer. Only drill through concrete with written approval from the Engineer. Locate reinforcing bars before drilling through concrete. Perform drilling through concrete without drilling through reinforcing bars unless otherwise approved. Repair any damage to the surrounding concrete.

(b) Conduit Fittings - When fittings require removable access holes for pulling conductors, provide conduit fittings with a gasketed cover mounted with stainless steel or brass screws according to 01201.16, to form a weathertight fit. Install conduit fittings as follows:

(1) Expansion Fittings - Provide expansion fittings with at least a 6-inch throw for all major conduit runs at all Bridge expansion joints.

Secure the expansion fitting to the surface only at the barrel end of the fitting. Adjust the initial setting of the fitting to account for installation temperature and future expansion/contraction movement based on a minimum design temperature of 10 °F and a maximum design temperature of 110 °F.

(2) Conduit Elbows - Wherever possible, provide factory made bends. If a field bend is necessary, provide a bending radius not less than six times the inside diameter of the conduit. Do not use conduit that is damaged or flattened during bending.

(3) Reducer Couplings - Reducer couplings are not allowed.

(4) Junction Boxes - Provide insulated threaded holes for mounting junction boxes by drilling into the concrete surface, inserting non-conductive sealant into the hole, and inserting a plastic anchor. Mount junction boxes with stainless steel screws. If no size is shown, provide junction boxes sized according to the guidelines given in the NEC.

Field removal of the bottom of junction boxes is allowed, if the Plans show the box without a bottom. Accomplish field removal of box bottoms without damaging the box mounting feet and leaving a minimum of 3/4 inch of box bottom along each side of box.

Install junction boxes with the bottom flush on the concrete surface. Drill a 1/8-inch-diameter hole through the lowest point in each junction box to provide drainage. Junction boxes without mounting feet are acceptable if a hole is drilled in each corner of the bottom for fasteners.

(5) Conduit Cement - Apply cement only within the manufacturer's recommended installation temperature range. Follow all other manufacturer's recommendations.

Temporary

01201.70 Electrical Service - Install and remove any temporary electrical service needed to perform the Work at no additional cost to the Agency. Use electricians meeting the requirements of 01201.30.

SP01210 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-23-25
This Section requires SP01201.)

SECTION 01210 - QUALITY CONTROL

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-

number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 01210, which is not a Standard Specification, is included in this Project by Special Provision.

Description

01210.00 Scope - In addition to the requirements of Section 01201, Section 01215, Section 01220, Section 01235, Section 01240, Section 01245, Section 01260, Section 01270, Section 01280, Section 01285 create and execute a Quality Control (QC) Plan to ensure that all Quality Critical Elements (QCE) of Work conform to the Contract Documents, and providing Quality Control Specialist(s) (QCS) to execute the QC plan according to the following Specifications.

For the purposes of all Work related to cathodic protection, QC is understood to refer specifically to the QC for cathodic protection.

01210.01 Submittals - Submit the QC Plan according to 00150.37 at least 21 Calendar Days before QCE Work begins. At a minimum, include:

- The names of the QCS(s).
- A list of all Work items and Hold Points. Identify all QC tests, pass/fail criteria as stated in the Specifications, and the names of personnel who will perform and witness the test. Include a checklist clearly outlining the Work flow for the QCS to follow.
- A copy of each form that will be used to report QC inspection and test data to the Agency.

Following each QC inspection and test, submit all inspection and test data according to 00150.37.

Labor

01210.30 Quality Control Specialist(s) - Provide Quality Control Specialist(s).

Each QCS must be qualified to inspect QCE Work for defects. The Engineer will determine if the QCS is qualified to perform the Work based on their familiarity with all cathodic protection QC test methods and by experience in performing the specified Work. Each QCS must be approved by the Engineer prior to performing quality control Work.

Multiple QCSs may be designated. A QCS need not fill this role for all QCEs as long as each QCE has at least one QCS responsible for it.

The QCS is responsible for:

- Reviewing all Work for defects and ensuring defects are corrected prior to requesting verification testing and inspection
- Witnessing or performing all QC tests and submitting inspection and test data according to the QC Plan

- Establishing Work limits prior to beginning QCE Work or anytime Work limits are broken into smaller areas
- Inspecting Equipment and abrasive daily
- Cooperating with Agency verification testing and inspection
- Stopping Work when test Equipment is not available, and when necessary to ensure that the Work is performed according to the Contract Documents

The QCS shall not perform production duties or supervision for any QCE Work for which the QCS is responsible for quality control.

The QCS will be immediately removed from QCS duties and disqualified from future QCS duties if any quality control failure occurs. Quality control failure includes:

- Three separate occurrences of accepting QCE Work that does not comply with the Contract Documents
- A determination that zinc anode thickness approved by the QCS are later found to be below the minimum or above the maximum thickness values.
- Two separate occurrences of QCS performing production duties when they are designated as the QCS for that QCE Work.
- Two separate occurrences of the QCS failing to perform any duties as specified.

Stop QCE Work if the QCS responsible for it is no longer employed by the Contractor, a Subcontractor, or is otherwise unavailable. If the QCS will no longer be available, propose a new QCS for approval by the Engineer before resuming the QCE Work in question.

Construction

01210.40 Quality Control Testing and Inspection - Provide QC testing and inspection to ensure compliance of the Work with the Contract Documents. Ensure that defects are corrected prior to requesting verification testing and inspection.

01210.41 Agency Verification Testing and Inspection - Coordinate with Agency verification testing and inspection to provide timely access and ensure a QCS is present.

Provide the Inspector timely access to areas where Work is being performed. Allow adequate time for inspection and testing at each Hold Point. The Engineer will inspect each phase of the Work. If the Engineer finds a phase conforms to the Specifications, the subsequent phase of Work may proceed.

The following Hold Points are defined for Agency verification testing and inspection:

- After the Work platforms and containment Structures have been installed and accepted according to Section 00253.
- After marking of near-surface metals, before removal of near-surface metals according to Section 01215
- After removal of near-surface metals, before patching according to Section 01215
- After patching of near-surface metals areas according to Section 01215
- After marking of corroded reinforcing bars according to Section 01220

- After preparation for reinforcing bar repairs, before splicing according to Section 01220
- After completion of splicing, before patching according to Section 01220
- After patching of reinforcing bar repair areas according to Section 01220
- After marking of damaged concrete according to Section 01235
- After removal of damaged concrete, before installing forms according to Section 01235
- After installation of forms, immediately before pumping patch concrete according to Section 01235
- After form removal according to Section 01235
- After surface finishing according to Section 01235
- After conducting potential surveys according to Section 01240
- After preparation, before installation of reference cells according to Section 01240
- After installation of reference cells according to Section 01240
- After continuity checks, before continuity welding according to Section 01245
- After continuity welding, before patching according to Section 01245
- After patching of continuity weld areas according to Section 01245
- After completion of anode terminal installation according to Section 01260
- Before abrasive blast according to Section 01260
- After abrasive blast according to Section 01260
- Before anode application according to Section 01260
- After anode application according to Section 01260
- After installation of conduits and wiring according to Section 01270
- After fabrication of cabinets, before shipment of cabinets according to Section 01285
- After installation of cabinets according to Section 01285

Measurement

01210.80 Measurement - No measurement will be made for Work performed under this Section.

Payment

01210.90 Payment - The accepted quantities of Quality Control Work will be paid for at the Contract Lump Sum amount for the item “Quality Control Plan”.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor and Incidentals necessary to complete the Work as specified.

SP01215 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-23-25
This Section requires SP01201.)

SECTION 01215 - LOCATE AND REMOVE NEAR-SURFACE METAL

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 01215, which is not a Standard Specification, is included in this Project by Special Provision.

Description

01215.00 Scope - In addition to the requirements of Section 01201, Section 01210, Section 01235, and Section 01260, this Work consists of locating, and eliminating low resistance paths for CP current from the thermal spray anode to the rebar.

01215.02 Timing - Perform locating and marking of Essential and Non-Essential Near-Surface Metal after boundaries of damaged concrete have been marked for removal according to Section 01235.

01215.03 Submittals - At least 21 Calendar Days before beginning Work, submit according to 00150.37 detailed procedures for locating and marking Essential and Non-Essential Near-Surface Metal. Identify patching Materials and resins to be used. Include the manufacturers' specifications and operating instructions for all Equipment. The Engineer will respond within 21 Calendar Days after receipt of the submittal.

Do not start Work until written approval of submittals is received from the Engineer.

Materials

01215.10 Hand Patching Materials - Comply with 01201.10.

Construction

01215.40 Location and Removal Requirements - Locate and mark all metal bearing plates, drains, Bridge supports, anchors, and other exposed Essential Near-Surface Metal on all concrete surfaces receiving anode.

Locate all reinforcing bars, reinforcing mesh, and other Essential Near-Surface Metal that have less than 1/2 inch of concrete cover. Locate by visual inspection and by using a metal detector.

Within areas marked for replacing damaged concrete under Section 01235:

- Do not mark Essential Near-Surface Metal.
- Do not mark Non-Essential Near-Surface Metal.

- Do not remove Non-Essential Near-Surface Metal, as it will be removed under 01235.
- Do not perform resin coating or concrete build-up over Essential Near-Surface Metal, as concrete cover will be restored under Section 01235.

Outside areas marked for replacing damaged concrete under Section 01235:

- On surfaces identified as high visual impact in 01235.46, mark for resin buildup on shallow rebar according to 01235.46.
- On surfaces not identified as high visual impact in 01235.46, mark for mortar buildup on shallow rebar according to 01235.46.
- Remove all Non-Essential Near Surface Metal within 1/2 inch from the concrete surfaces. Do not remove or cover objects if it is obvious that none of the metal can survive abrasive blasting.

Wire brush and mask Essential Near-Surface Metal and the adjacent concrete surface within four inches of metal to prevent bonding of the anode to the exposed metal and the immediate area surrounding it.

Explore all spots of rust visually and with a metal detector to determine if a metallic object is present. Mark the location and extent of all known Non-Essential Near Surface Metal.

If a pattern of form ties or other objects is identified, examine all expected locations visually and with a metal detector. If form ties are found, examine the opposite side of the member to locate the other end of the tie.

Remove marked Non-Essential Near-Surface Metal to a minimum of 1/2 inch below the concrete surface, and clean the cavity.

An acceptable removal technique for Non-Essential Near Surface Metal of less than 1/4 inch diameter which are oriented perpendicular to the concrete surface is to drill one or more small diameter holes, a minimum of 3/4 inch deep, with a rotary or rotary-impact drill beside each object. Sever the object at the required depth by grinding, sawing, or shearing.

Leave nails and other small metallic objects with their entire length at the concrete surface for removal during abrasive blasting under Section 01260.

Mark cavities that are greater than 1/2 square foot in area and long cavities such as those from removal of a piece of wire more than 12 inches long as repair damaged concrete under Section 01235.

Repair cavities with hand patching Materials created by non-essential near surface metal removal that are less than 1/2 square foot leaving no feathered edges. Observe QPL remarks and follow manufacturer's guidelines for application.

Measurement

01215.80 Measurement - The quantities of Work performed under this Section will be measured according to the following:

(a) Locate Near Surface Metal - Locating near surface metal will not be measured.

(b) Remove Non-essential Near Surface Metal - Removal of Non-Essential Near-Surface Metal will be measured on the unit basis.

Payment

01215.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement
(a) Locate Near Surface Metal	Lump Sum
(b) Remove Non-Essential Near-Surface Metal	Each

Item (b) includes removing Non-Essential Near-Surface Metal and hand patching cavities less than 0.5 square foot.

No separate or additional payment will be made for Non-Essential Near-Surface Metal that is left in place to be removed by abrasive blasting under Section 01260.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor and Incidentals necessary to complete the Work as specified.

SP01220 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-23-25
This Section requires SP01201 and SP02510.)

SECTION 01220 - REPAIR DAMAGED REINFORCING BARS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 01220, which is not a Standard Specification, is included in this Project by Special Provision.

Description

01220.00 Scope - In addition to the requirements of Section 01201, Section 01210, Section 01235, Section 01240, Section 01245, and Section 01260, locate and repair damaged reinforcing bars according to the Specifications.

01220.02 Timing - Perform reinforcing bar repairs after removing all damaged concrete and blast-cleaning all exposed concrete and reinforcement according to Section 01235, and before:

- Patching concrete excavations (including excavation made in competent concrete under this Section) as specified in Section 01235
- Performing any Work under Section 01240
- Performing any installation Work under Section 01245
- Performing any Work other than initial abrasive blast under Section 01260

01220.03 Pre-Welding Conference - Before beginning the Work of this Section, attend a pre-welding conference with the Engineer, at a mutually agreed-upon date and time. Attendance is mandatory for the Contractor's supervisory personnel and the Contractor's Certified Welding Inspector (CWI). The pre-welding conference shall include discussion of the Contractor's quality control responsibilities, documentation requirements, and welding procedures and Equipment; and demonstration(s) of welder(s) skills.

No later than 21 Calendar Days before the pre-welding conference, submit the following according to 00150.37:

- Descriptions of Materials to be used. Identify all relevant constituents and properties of each Material and the Specifications with which it complies. Data published by the manufacturer is acceptable, except when certifications of Materials characteristics are required.
- Detailed procedures for performing the Work of this Section. Include the manufacturer's specifications and operating instructions for all Equipment, and:
- Welder certifications according to AWS D1.4
- Pre-approved Welding Procedure Specifications (WPS) or Procedure Qualification Record / Welding Procedure Specifications (PQR/WPS)
- Detailed procedures for electrode control measures
- Detailed procedures for achieving, maintaining and monitoring pre-heat and inter-pass temperatures

Do not schedule the Work until at least 21 Calendar Days after submitting procedures, and do not start Work until written approval is received from the Engineer.

Materials

01220.10 Reinforcing Bars - Provide uncoated, ASTM A706, Grade 60 reinforcing bars according to 02510.10.

01220.11 Welding Materials - Use weld Materials conforming to the current version of AWS D1.4, "Structural Welding code - Reinforcing Steel". When using shielded metal arc welding (SMAW), provide low-hydrogen electrodes.

Labor

01220.30 Welders; Welding Inspectors - Provide certified welders and welding inspectors according to AWS D1.4.

Construction

01220.40 Location Requirements - Mark all locations where exposed bars have 50 percent or more section loss. At all such locations, splice bars according to the following:

(a) Sidewalks, Miscellaneous Beams, and Walls - On sidewalks and their supports, and on miscellaneous beams and walls:

- Splice longitudinal and transverse bars at each location having at least 50 percent section loss.
- Splice every stirrup and hoop having a location with at least 50 percent section loss.

(b) Longitudinally Framed Floor Systems:

(1) Girders - In the bottoms of girders, splice every longitudinal bar at each location having at least 50 percent section loss. Use tied splices only.

Splice every stirrup having at least 50 percent section loss.

(2) Bottom of Deck Slabs - Splice every primary deck bar at each location having at least 50 percent section loss except within one half of a splice length of a supporting member.

(c) Transversely Framed Floor Systems:

(1) Transverse Floor Beams - In the bottoms of floor beams, splice every longitudinal bar at each location having at least 50 percent section loss. Use tied splices only.

Splice every stirrup having at least 50 percent section loss.

(2) Bottom of Deck Slabs - Splice every primary deck bar at each location having at least 50 percent section loss except within one half of a splice length of a supporting member. Use tied splices only.

01220.41 Repair Requirements - Remove sound concrete as necessary according to Section 01235, to leave a minimum of 3/4 inch clearance between the bar and concrete around the entire perimeter of all splice bars over their entire length. Remove any additional concrete that cracks or spalls during welding. Remove only as much sound concrete as needed to shape excavations for adequate patch retention. Avoid gouging or loosening rebar and damaging sound concrete outside of splice areas.

Provide splice bars with cross sectional area equal to or greater than the section loss of the bar being repaired. Repair round bars with splice bars the same diameter as the original bars. Repair square bars with round splice bars of a diameter equal to the thickness of the square bars. Extend splice bars both ways beyond the area of 50 percent section loss for at least the minimum splice length shown.

If feasible, place splice bars so as to allow 1/2 inch of concrete cover without raising the original concrete surface. Provide enough wire ties to keep the splice bar in position during the placement of concrete cover and to provide electrical continuity between existing and new bars.

Except where tied splices are specified, tied or welded splices are allowed.

Perform all weld splicing according to ANSI/AWS D1.4, “Structural Welding Code - Reinforcing Steel”. Since the carbon content of existing reinforcement is unknown, assume that preheating is required under ANSI/AWS D1.4. Limit the temperature of reinforcing bar at concrete interface to 500 °F or less, verified using an infrared thermometer.

Perform weld inspection according to ANSI/AWS D1.4. A Certified Welding Inspector shall mark each inspected weld.

01220.42 Documentation - Provide a map in an approved electronic format detailing the locations of all rebar repairs within ± three inches.

Measurement

01220.80 Measurement - The quantities of reinforcing bar repair Work will be measured on the unit basis, by count of splice bars installed.

Payment

01220.90 Payment - The accepted quantities of reinforcing bar repair Work will be paid for at the Contract unit price, per each, for the item “Repair Damaged Reinforcing Bars”.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for documentation of repairs.

SP01235 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-23-25
This Section requires SP01201.)

SECTION 01235 - REPAIR DAMAGED CONCRETE

(Follow all instructions and make all edits with “Track Changes” turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 01235, which is not a Standard Specification, is included in this Project by Special Provision.

Description

01235.00 Scope - In addition to the requirements of Section 01201, Section 01210, Section 01215, and Section 01260, this Work consists of:

- Locating and removing damaged concrete and replacing it with pumped repair mortar.
- Removing Non-Essential Near-Surface Metal in areas larger than 1/2 square foot and long cavities such as those from removal of a piece of wire more than 12 inches long and filling cavities with pumped repair mortar.

01235.02 Timing - Begin the Work only after the entire surface within the Work area has been cleaned to remove dirt, grease, oils, laitance, paint, sealers, coatings, and other deleterious material according to Section 01260.

Provide temporary shoring of Work areas when required by 01235.50 before removing existing concrete.

Mark boundaries for excavating concrete and boundaries for adding concrete cover before locating surface metal according to Section 01215.

Place and cure repair mortar before preparing anode surfaces according to Section 01260

01235.03 Submittals - Submit the following according to 00150.37. Within 21 Calendar Days after receipt of submittals, the Engineer will review the submittals and designate them in writing as "approved", "approved as noted", or "returned for correction". At least 21 Calendar Days before beginning concrete repair Work, submit the following:

(a) Repair Mortar -

- A description of all relevant constituents and properties of the Material. Data published by manufacturer is acceptable unless certifications of the material characteristics are required by these Specifications.
- For prepackaged products, the manufacturer's certification that the furnished Material meets the requirements of 01235.11.
- The Specifications subsection with which each repair mortar complies
- If proposing an alternate repair mortar to those specified in 01235.10, test data demonstrating compliance with 01235.10.

For alternate repair mortar submit three 4 by 8-inch cylinders of patch Material cast in the presence of the Engineer using the proposed mix proportions, admixtures, and mixing and application Equipment, at least 7 Calendar Days before starting concrete repair Work. Cast and cure the cylinders according to AASHTO T 23 or AASHTO R 39.

Submit records of mix proportions and which mix design was used in each repair location. Maintain and provide records that are complete enough to be able to match repaired bridge areas with the mix records.

(b) Concrete Repair Procedure -

- Manufacturer's specifications and operating instructions for all Equipment
- Details of each step to accomplish the Work
- Steps to maintain quality control of all newly applied mortar
- Plan to maintain records of verification of mix proportions for all repair mortar mixed on-site
- Plan to maintain records identifying the mix design for each repaired area

Do not begin Work until written approval is received from the Engineer.

Submit stamped shoring drawings and design calculations according to 00150.35, at least 21 Calendar Days before starting concrete removal.

01235.04 Procedure Qualification - Demonstrate in the presence of the Engineer, proposed procedures and Equipment for patching and curing.

The Engineer will evaluate the results and determine whether procedures are accepted or rejected.

01235.05 Acceptance Criteria – The Work performed under this Section is acceptable if it passes the tests described below.

After the repair mortar has cured, and in the Engineer's presence, conduct a delamination survey of all repaired areas, as follows:

- Sound all repaired areas with a hammer.
- Mark boundaries of all delamination in the repaired areas.
- Identify the following delaminations for repatching:
  - All delaminations greater in area than a 3 inch diameter circle.
  - All delaminations with a dimension greater than five inches.
- Verify that delamination survey results are repeatable by spot checking using a different surveyor.
- When a spot check finds a non-repeatable result, re-survey the area surveyed since the latest repeatable spot check.

After repairing repatched areas repeat the survey. Repeat the survey and repair procedure until all areas of unsound repair mortar have been successfully repaired.

Perform quality control testing according to 01235.47.

Provide material for verification testing according to 01235.48.

If a core tested for pull-off strength according to 01235.47 has Sand pockets or voids, fully remove the defects and repair the affected area.

Materials

01235.10 Repair Mortar - Provide one of the following repair mortars with the required admixture as specified in 01235.14:

- BASF MasterEmaco S 440MC
- Alternative repair mortar conforming to the following:
  - Non-polymer flowable micro-concrete
  - Suitable for pumping
  - At least 3,000 psi 28-Day compressive strength
  - “Low” potential for cracking and no cracking in 28 Calendar Days when tested according to ASTM C1581, including Appendix
  - Electrical resistivity in the range of 2,000 to 20,000 ohm-cm

Submit proposed alternate repair mortar for approval according to 01235.03.

Provide hand patching Materials complying with 01201.10.

01235.11 Prepackaged Product - Premixed and prepackaged concrete provided for on-site mixing is acceptable if approved by the Engineer. Furnish packages containing cement and Aggregate according to these Specifications with no silica fume, fly ash, or any other porosity-reducing admixture.

01235.12 Non-Conductive Resin - Furnish non-conductive resin conforming to 1201.11.

01235.13 Embedded Steel - Furnish un-galvanized steel whenever welded wire fabric or other metal is to be embedded in the mortar.

01235.14 Admixtures - Use only admixtures approved by the Engineer.

When admixtures are used to reduce water-cement ratio or retard or accelerate the development of strength, use only admixtures compatible with the cement used, at the rate specified by the manufacturer.

01235.15 Hollow Wall Anchors - Furnish the following plastic hollow wall anchors or approved equal:

- ITW Red Head EZP100 Nylon E-Z Drywall Anchor

01235.16 Water - Furnish water according to 02020.

Construction

001235.40 Access; Containment; Disposal - Provide Work access and debris containment according to Section 00253.

Dispose of waste according to 00290.20.

01235.41 Locating and Marking - Locate and mark all damaged concrete and surface defects.

Locate surface defects such as rock pockets or delaminated finishing coatings or mortars by visual inspection. Mark boundaries for patching all surface defects which do not sound as damaged concrete and are not located over a rebar or it is obvious that rebar corrosion is not associated with the surface defect.

Locate damaged concrete by visual inspection and by sounding the concrete surface with a 16 ounce masonry hammer. Mark as damaged concrete all areas where damaged concrete is visually obvious or is suspected based on sounding with a hammer. Where sounding indicates possible delamination and the concrete surface appears sound, with no obvious damage, use a bar locator to determine rebar location and cover depth. Remove concrete according to 01235.41 from a four inch wide by eight inch long exploration area centered over the rebar, and extend the exploration area along the rebar until rebar that is free of rust scale or pitting is exposed. Mark the exploration area as damaged concrete.

Mark boundaries for concrete removal around all:

- Damaged concrete
- Shallow rebar, if the reinforcement is a prefabricated mesh
- Patches that were located and marked according to Section 01215

Do not use angles sharper than 45 degrees in defining the repair boundaries. Make all repairs at least four inches wide in each direction. While conforming to these guidelines, draw repair boundaries that minimize the effort needed to saw and excavate.

The Engineer will perform verification surveys of selected sections of the Work and determine the final quantity of repairs. Do not begin concrete removal until the Engineer has completed the verification surveys of the selected sections.

01235.42 Concrete Removal - Sawcut the boundaries of concrete to be removed, to a depth just missing the reinforcing bars or to a depth of 1/2 inch, whichever is less. Sawcuts shall not overrun at the corners of the marked boundaries. Sawcutting is not required if the Contractor can consistently provide, by another technique, a minimum 1/2-inch deep excavation surface that is uniformly perpendicular to the original concrete.

Remove concrete within the marked boundaries with high-pressure waterjet blasting Equipment, pneumatic hammers, chipping guns, manual picks and chisels, or other Equipment approved by the Engineer. Do not use pneumatic hammers heavier than a nominal 15-pound class. Remove concrete in such a way that removal of sound concrete beyond established boundaries is kept to a minimum. When working around reinforcing bars, avoid loosening the reinforcement or fracturing the concrete around it beyond the repair area.

Remove all damaged concrete within the marked boundaries to the depth of sound concrete. In areas where the reinforcing bar lacks bond with the existing concrete, continue to excavate to 1/2 inch beyond the depth of the reinforcing bar. In areas where it is difficult to determine

if the reinforcing bar lacks bond with the existing concrete, do not excavate beyond the depth of the reinforcing bar if a 4-inch wide exploration area shows the reinforcing bar to be free of rust scale or pitting, and the reinforcing bar is not separated from the remaining concrete. Limit removal to no more than one inch above the bottom mat reinforcing bar in deck soffits. If further excavation is required to remove all damaged concrete, inform the Engineer and do not proceed until approved.

Do not remove sound concrete over shallow rebar.

Verify that all damaged concrete has been removed by sounding with a 16-ounce hammer.

01235.43 Surface Preparation - Abrasive-blast or water blast all concrete surfaces that are to receive repair mortar to remove all debris, loose concrete, concrete pulverized during removal, scale, and loose rust. Abrasive-blast exposed reinforcing bars according to SSPC Standard SP6 "Commercial Blast Cleaning" or equivalent procedure. Do not allow prepared surfaces to remain exposed more than 36 hours before placing repair mortar.

Prepare surfaces that are to receive repair mortar with a surface profile according to International Concrete Repair Institute (ICRI) *Guideline 310.2R-2013 surface profile CSP 6*.

Provide hollow wall anchors conforming to 01235.15 for concrete surfaces that are to receive more than one inch of repair mortar and have reinforcing bar spacing greater than nine inches. Install anchors by drilling 1/4-inch diameter holes 1/2 to 3/4 inch deep on a nine-inch maximum grid in the concrete substrate. Apply non-conductive resin and insert anchors. Remove excess resin from the concrete substrate.

01235.44 Repair Mortar Installation - Install repair mortar patches as follows:

(a) Forms - Provide smooth-surfaced form Materials. Provide adequate support and bracing of forms to prevent deflection under the weight and pressure of new concrete, and to prevent vibration damage to mortar during setting and curing. Leave forms in place for a minimum of 72 hours after concrete placement.

Provide watertight form Materials and a watertight form system to prevent loss of water during presoaking repair mortar placement, and curing. Incorporate enough pumping ports to ensure consistent placement, drains for flushing, and enough vent holes or vent tubes to allow air to escape extreme surface irregularities and remote cavities. Limit port spacing to prevent mortar segregation.

Provide forms that can readily be removed and reinstalled for presoaking, flushing, and blowdown, and for verification of saturated surface dry condition.

(b) Pre-soak - Saturate the substrate concrete for at least 24 hours before application of repair mortar, using either a watertight form kept full of water or saturated burlap or foam Material packed inside the forms, in contact with the entire existing concrete surface, and soaked frequently, or any other method demonstrated to produce saturated surface dry condition.

After the substrate has been saturated, temporarily remove the form and, immediately before placing mortar, remove all dust, dirt, and other debris by flushing the surface with water pressurized to at least 60 psi, followed by blasting with clean compressed air to

remove excess water. Provide a damp surface free of standing water (saturated surface dry condition) and free of contaminants when applying repair mortar. Light surface rust that appears during the pre-soak stage does not need to be removed. When the concrete surface is in saturated surface dry condition and free of contaminants, and reinforcement is clean or has only light surface rust, immediately reinstall the forms and place mortar.

(c) Mixing - When a package of prepackaged repair mortar is opened, mix the entire contents of the package. Do not allow packaging to be mixed into the repair mortar.

Mix repair mortar according to the manufacturer's instructions, including, but not limited to, mixing speed, mixing time, and mixing Equipment.

(d) Placing Repair Mortar - Pump repair mortar and achieve thorough and uniform hydration without the use of excess water.

Do not pump mortar before acceptance of saturated surface dry condition by the Engineer.

Follow all of the manufacturer's recommendations regarding temperature and weather conditions during mortar placement, and:

- Do not pump mortar during freezing weather, or if temperatures are likely to drop below freezing during the cure period.
- Ensure that substrate, surface and ambient air temperatures are at least 40 °F and rising when mortar is applied, and remain above 40 °F for at least 24 hours after application.
- Do not apply mortar to frosted surfaces

Provide adequate pumping pressure into each port to ensure mortar completely fills the cavity and mortar is observed at all vents. Vibrate only if approved in advance by the Engineer.

(e) Miscellaneous Metal - Electrically connect all welded wire fabric or other metal installed to facilitate repair mortar placement to existing metal reinforcement, and fasten securely to remain 1/2 inch clear of final finished surface. Do not use galvanized or coated Materials.

(f) Adjacent Surface Protection - Protect surfaces outside the repair area from mortar overshoot and drip, and remove the excess Material from these areas after the application has been completed.

(g) Mix Records - Record mix proportions for all mortar mixed on-site at the start of each mortar placement operation and every time proportions or additives are changed.

Repair surface defects with hand patching Materials. Observe QPL remarks and follow manufacturer's guidelines for application.

01235.45 Curing and Finishing - Take care to avoid cracks in the new mortar due to excessive surface evaporation in the dry, controlled environment of the containment Structure. Continuously cure all newly applied mortar for a minimum of 72 hours.

Finish all exposed surfaces and surface defects to straight and true lines, as shown. Provide a Class 2 surface finish according to 00540.53(c) on all exposed surfaces and a general surface finish according to 00540.53(a) on all other surfaces, with no coating on any surface unless otherwise directed.

01235.46 Essential Near-Surface Metal - For sound concrete in the following areas of high visual impact provide electrical isolation of Essential Near-Surface Metal identified in 01215.40 with resin buildup on shallow rebar. Coat the concrete over the Essential Near-Surface Metal with two-inch wide strips of non-conductive resin before abrasive-blasting:

- Bottom surface of girders, cross beams, and sidewalk stringers.
- Outer surface of exterior girders, box girders, or sidewalk stringers.
- All sidewalk bracket surfaces.
- Sidewalk soffits except areas of prefabricated mesh where both dimensions exceed 12 inches.
- All columns, spandrel, and abutment walls.
- All arch rib and strut surfaces.
- Web walls in bents and cross bracing in arches.

For sound concrete in all other areas provide electrical isolation of Essential Near-Surface Metals identified in 01215.40 with mortar buildup on shallow rebar. Use hand tools to prepare the existing surface according to 01235.43. Form raised patches to provide at least 1/2 inch of clearance between Essential Near-Surface Metal and surface of the patch and install repair mortar according to 01235.43.

For damaged concrete, provide additional mortar build-up on shallow rebar as needed to achieve at least 1/2 inch of cover between the Essential Near-Surface Metal and the surface of the repair.

01235.47 Quality Control Testing - For each 500 square feet of applied mortar placed on the Bridge, but not less than once per production Work shift, cast three 4 by 8-inch cylinders in single-use plastic molds, at the same time and under the same conditions as placement on the Bridge. Cast and cure strength specimens according to AASHTO T 23 or AASHTO R 39. Test the cylinders for compressive strength after 28-Day cure according to AASHTO T 22. The minimum acceptable 28-Day compressive strength (f'c) of cylinders is 3000 psi.

Following a 7-Day cure, core one 3-inch-diameter test specimen at a location designated by the Engineer, from each 500 square feet of newly applied mortar placed on the Bridge surface but not less than one specimen from each Day's production. Locate cores to avoid rebar and to have sufficient length to extend into the original Bridge concrete. Do not break cores free before testing. Perform pull-off strength tests of the cores in the presence of the Engineer once dolly adhesive has fully cured. Individually seal the cores taken from the test panel in plastic bags and tag them for identification.

Measure the core pull-off strength according to ASTM C1583. The minimum acceptable pull-off strength is 175 psi or as directed by the Engineer. Conduct the test until failure.

If any quality control test fails to meet the minimum requirements, any or all mortar represented by that test may be rejected by the Engineer.

01235.48 Verification Testing - For each 1,500 square feet of applied mortar placed on the Bridge, cast three 4 by 8-inch cylinders in single-use plastic molds, at the same time and under the same conditions as placement on the Bridge. Cast and cure strength specimens according to AASHTO T 23 or AASHTO R 39. Deliver these specimens to the Engineer within 48 hours of casting for verification testing by the Agency.

01235.49 Deficient Repair Mortar - All repair mortar represented by a failed verification test will be rejected regardless of any passing quality control tests. Replace all repair mortar that is rejected based on quality control testing or verification testing, or that are found deficient in respect to any of the specified criteria, as directed. Further testing will be allowed to identify the extent of deficient repair mortar in the quality control test area represented at no additional cost to the Agency. If additional areas are found to be deficient, repair the represented production test area, as directed. Repairs include, but are not limited to, removal and replacement of repair mortar.

"Deficient repair mortar" includes new repair mortar with alligatored surface or uncontrolled cracks that are visible without magnification after completion of abrasive blasting.

Repair small crevices a maximum of 0.4 inch deep and 0.1 inch wide at the edge of a repair area with non-conductive resin at no additional cost to the Agency. Cut out pockets and other defects and replace with new repair mortar according to the Specifications.

Temporary

(The EOR shall review the Bridge Program Unit load ratings for the Structures included in the Project. Delete options that do not apply to the Structures included in the Project. If multiple Structures exist on a Project, clearly define which options are acceptable for each Structure.)

01235.50 Concrete Removal Limits - Prevent damage to Bridge structural components during concrete removal and repair. For the purposes of this subsection, repaired concrete is defined as past repairs to the Structure or repair mortar that has been wet cured for the minimum requirement of this Section. Limits defined in the subsection only apply to removal of concrete and pumped patch sizes may be larger when not in conflict with this subsection.

When the concrete removal requirements of 01235.50 cannot be met, design shoring to support the entire dead load, live load, and wind load of member(s) being protected, with a safety factor not less than 2.0. Construct shoring according to AASHTO *Construction Handbook for Bridge Temporary Works* except if in conflict with the Specifications.

Do not combine any of the following methods without the Engineer's approval. Prevent damage to structural components by one or more of the following methods:

(a) General - Removal Work is unlimited for concrete removal on all structural components, except arches and columns, to the centerline depth of the reinforcement closest to the surface being worked on and not behind reinforcement.

(b) Bottom Surface of Girders - Limit concrete removal on the bottom surface of girders to four-foot-long sections separated by at least eight feet of intact un-repaired or repaired concrete. Limit concrete removal to 1/2 inch above the highest longitudinal bar in the bottom reinforcement.

(c) Sides of Girders and Crossbeams - Limit concrete removal on the sides of girders and crossbeams higher than 1/2 inch above the highest longitudinal bar in the bottom reinforcement to one side of girder or crossbeam centerline at a time. Limit the length of removal to the spacing between two stirrups separated by at least the spacing between four stirrups of intact un-repaired or repaired concrete.

(d) Girders - Eliminate live loading on the girder by closing the Traffic Lane, according to 00220.40(e), above the girder and limit concrete removal to one side of girder centerline at a time. Do not use this method to protect any girder within two feet of Project centerline unless both lanes can be closed as shown or directed.

(e) Bottom Surface of Crossbeams - Limit concrete removal on the bottom surface of crossbeams to sections of concrete no longer than 22D, where D equals longitudinal bar diameter (bar width for square bars), separated by a distance of at least 44D. Limit concrete removal to one inch above the highest longitudinal bar in the bottom reinforcement.

(f) Top Surface of Girders or Crossbeams - Limit concrete removal on the top surface of girders or crossbeams to sections of concrete no longer than 22D, where D equals longitudinal bar diameter (bar width for square bars), separated by a distance of at least 44D. Limit concrete removal to 1/2 inch below the lowest longitudinal bar in the top reinforcement. If the bottom surface also requires repair beyond the centerline depth of the reinforcement nearest the surface at the same section, complete each repair separately or limit removal to one side of the component centerline at a time.

(g) Columns and Arches - Limit concrete removal on columns and arches to sections of concrete covering two hoop bars and a vertical height of 22D, where D equals vertical or primary bar diameter (bar width for square bars), separated by a distance of at least 44D. Limit concrete removal to 1/2 inch inside the vertical bars on columns and longitudinal bars on arches.

(h) Deck Soffits - Limit concrete removal on deck soffits to half the section of the deck. Limit removal length and width to twice the smallest spacing between two parallel reinforcement bars in the mat closest to the surface.

(i) Abutments and Pier Walls -

(1) Repairs at Least 24 Inches Thick - Limit concrete removal on abutments and pier walls at least 24 inches thick to sections of concrete covering up to 10 square feet, separated by a distance of at least 3 feet. Limit concrete removal to 1/2 inch behind the reinforcement closest to the surface.

(2) Repairs less than 24 Inches Thick - Limit concrete removal on abutments and pier walls less than 24 inches thick to sections of concrete covering two vertical bars and a vertical height of 22D, where D equals vertical bar diameter (bar width for square

bars), separated by a distance of 44D. Limit concrete removal to 1/2 inch inside the longitudinal bars.

Measurement

01235.80 Measurement - No measurement of quantities will be made for locating damaged concrete.

The quantities of repair damaged concrete will be measured on the area basis, and will be the outside measurement of each area marked for concrete removal and verified by the Engineer, not including areas marked for mortar buildup on shallow rebar. Measurement will be made before concrete removal.

The quantities of mortar buildup on shallow rebar will be measured on the area basis, and will be the outside measurement of each area marked for concrete removal and verified by the Engineer containing shallow rebar. Measurement will be made before concrete removal.

The quantities of resin buildup on shallow rebar will be measured on the area basis. Measurement will be the outside measurement of each area marked for resin buildup and verified by the Engineer. Measurement will be made before resin placement.

The quantities of repair surface defects will be measured on the area basis. Measurement will be the outside measurement of the defect prior to patching.

Payment

01235.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement
(a) Locate Damaged Concrete	Lump Sum
(b) Repair Damaged Concrete	Square Yard
(c) Mortar Buildup on Shallow Rebar	Square Yard
(d) Resin Buildup on Shallow Rebar	Square Yard
(e) Repair Surface Defects	Square Yard

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for providing mix proportions or mix design records.

No payment will be made for repair of initially sound concrete that is micro-fractured or otherwise damaged by the Contractor's operations.

SP01240 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-23-25
This Section requires SP01201.)

SECTION 01240 - INSTALL REFERENCE CELLS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 01240, which is not a Standard Specification, is included in this Project by Special Provision.

Description

01240.00 Scope - In addition to the requirements of Section 01201, Section 01210, Section 01215, Section 01235, Section 01245, and Section 01260, conduct corrosion potential surveys to determine reference cell locations and install permanent reference cells.

01240.01 Timing - Begin the Work of this Section only after the entire surface within the Work area has been cleaned to remove dirt, grease, oils, laitance, paint, sealers, coatings and other deleterious material according to Section 01260.

Do not start this Work until written approval of detailed procedures is received from the Engineer. Provide at least 24 hours' notice before the installation of each reference cell.

Make corrosion potential surveys in each zone only after the Work of Sections 01215, 01235, and 01245 is complete, and:

- All patches and new concrete have cured at least three Calendar Days.
- All curing compounds have been removed from patches and the adjacent concrete by abrasive blasting.

01240.02 Submittals - Submit detailed descriptions of all Materials according to 00150.37. Identify all relevant constituents and properties of each Material and the Specifications with which it complies. Data published by the manufacturer is acceptable if testing was performed and reported by an independent test laboratory. This includes but is not limited to reference cell assembly, grout, and test Equipment.

Submit complete and detailed procedures for this Work according to 00150.37 at least 21 Calendar Days before the first scheduled Work under this item. Include the recommended reference cell conditioning procedures, Specifications, calibration certificates, and operating instructions for all Equipment, grout mixing, and wire labeling.

Submit a report according to 00150.37 detailing the following reference cell data:

- Pre-installation calibration potential of each reference cell after conditioning
- Location of each permanent cell and labeling system for its lead wires

- Circuit resistance measurements
- Potential of each reference cell in its permanent location with respect to the rebar and the potential of a portable Copper/Copper sulfate (Cu/CuSO4) or Silver/Silver Chloride (Ag/AgCl) reference cell taken in the test hole adjacent to the reference cell
- Potential, with respect to the rebar, of a portable Cu/CuSO4 or Ag/AgCl reference cell placed on the surface of the reference cell grout backfill.
- Resistance between each reference cell, the rebar adjacent to the reference cell, and the king bar
- Potential of each reference cell in its permanent location with respect to the zinc anode placed directly over the reference cell grout.

Submit the following potential survey information according to 00150.37 at least 10 Calendar Days before installation of reference cells. Furnish all potential survey data in an approved electronic format labeled to indicate the cathodic protection zone:

- One copy of large-scale potential survey data. Clearly identify data taken over patches or within three inches of patches. Provide a labeling method for survey grids and typical grid layout and survey procedures (e.g. origin location, direction in which data was taken) in sufficient detail to allow interpretation of data.
- One copy of a summary of large-scale potential survey data. For each survey grid provide a location description, the number of data points collected, the average potential for the grid, the minimum potential in the grid, and a rank of the grid's minimum potential as compared to other grids in the zone.
- One copy (each) of maps of small-scale potential surveys, designating their location with respect to the original surveys and the location of rebar and potential readings. Provide surveys for each reference cell location plus one backup location for each reference cell. Scale these surveys with units indicated and use compass point directions and reference to the Bridge structural elements. Identify the cathodic protection zone. Show the precise location and orientation marks where the reference cells are to be installed.
- A summary sheet showing the grid number and location, rank of minimum potential and minimum potential from the large-scale grid survey, and the type of reference cell for each selected location. If additional locations with greater negative potentials are omitted, show the grid number, rank, minimum potential, and reason the location was omitted.

Do not start survey Work until these submittals have been approved by the Engineer.

Materials

01240.10 Reference Cells - Furnish two permanent Silver/Silver Chloride (Ag/AgCl) reference cells for each zone. Furnish the following reference cells or approved equal:

- Staperm by GMC Electrical, Inc. Model AG-4-UGPC

Furnish each reference cell with a #14 AWG wire having sufficient length to reach the junction box at the rebar connection location.

01240.11 Reference Cell Grout - Provide non-epoxy grout from the QPL or an approved mix design provided by the reference cell manufacturer.

01240.12 Eyebolts and Anchors - Provide 1/4”-20 threaded eyebolts designated for lifting constructed from Type 316 stainless steel. Minimum eye diameter shall be 3/4" and minimum vertical lifting capacity shall be 450 pounds.

Provide 1/4”-20 female threaded concrete anchors constructed from Type 316 stainless steel. Minimum pull-out and shear capacity shall be 450 pounds tested in 4,000 psi concrete.

Equipment

01240.20 Resistivity Meter – Use one of the following resistivity meters:

- Fluke 1623 or 1625 GEO Earth Ground Tester
- Tinker & Rastor Model SR-2 Soil Resistivity Meter
- Miller 400A Analog Resistance Meter.

Construction

01240.40 Location Requirements - Identify two permanent reference cell locations in each cathodic protection zone. Install a Silver/Silver Chloride (Ag/AgCl) permanent reference cell at a location in each zone with the most negative potential. Install a second Ag/AgCl permanent reference cell at the maximum distance from the anode terminal plate but within 30 mV of most negative potential location. Locate each reference cell adjacent to a reinforcing bar.

Do not install the two permanent reference cells within 10 feet of each other measured along the surface of the Structure or within three feet of any galvanized steel in contact with the concrete. If the location with the most negative potential is also the most distant from the anode terminal plate, install the second Ag/AgCl cell at the location with the second most negative potential.

Identify a location for future linear polarization testing block outs adjacent to each reference cell location. Do not place the block out within 3 feet of a reference cell or negative connection excavation or within 10 feet of each other. Where possible, place the block out over the same reinforcing bar being read by the adjacent reference cell. Place at the most negative potential location possible while maintaining specified spacing from the reference cell excavations.

In each cathodic protection zone, conduct a corrosion potential survey with 36-inch grid spacing (“large-scale” survey) according to ASTM C876, "Standard Test Method for Half Cell Potentials of Reinforcing Steel in Concrete". Use a wetting solution of water and 0.2 percent sodium chloride by weight or 1.6 percent sodium chloride by volume.

Select prospective reference cell locations based on the most negative results of the large-scale corrosion potential survey. Perform a survey with 12-inch grid spacing (“small-scale” survey) of these locations directly over and following the reinforcing bar of the large-scale survey. Mark the precise location for the reference cell following the procedure described above in the first paragraph of this subsection.

Select final reference cell locations based on the most negative results of small-scale corrosion potential survey.

01240.41 Concrete Excavation Requirements - Excavate concrete for reference cell installation by carefully sawcutting or drilling to the rebar depth and then chipping out the concrete as specified in Section 01235 and as shown. Avoid disturbing the concrete around the adjacent reinforcing bar. In the event the concrete is disturbed, select a new location from the alternate sites.

Excavate concrete for rebar connections according to Section 01235 and as shown. Remove only as much material as necessary to weld a rebar terminal stub. Avoid contacting the rebar directly and de-bonding concrete surrounding the excavation. Install rebar terminals according to Section 01245.

Provide a 2-inch-diameter access hole for taking potential measurements with a portable Cu/CuSO4 or Ag/AgCl reference cell, located opposite the rebar from the permanent reference cell and the same distance from the rebar. Make the access hole with a core drill to the depth of adjacent rebar. Insert a 1 1/2- inch diameter PVC plastic pipe inside the access hole and secure with reference cell grout. Extend the pipe two inches outside the concrete. If the access hole is located on a vertical surface, slope downward at approximately five degrees below horizontal. Install the pipe perpendicular to the surface on overhead, horizontal surfaces. Provide a removable threaded PVC or rubber cap to protect the hole from debris.

01240.42 Reference Cell Installation - Condition the reference cells as recommended by the manufacturer. Take potential readings in the conditioning solution compared to a calomel, Ag/AgCl, or Cu/CuSO4 with a salt bridge. Clearly label each cell for identification along with its potential reading for future reference after installation. Provide a written description included in reference cell reports that indicates the location of each installed reference cell. Measure cell potentials.

Install each cell as soon as possible after removal from the conditioning solution to prevent its drying out. Wrap the reference cells in a suitable container to hold the moisture and protect the cell from contamination. Do not place the reference cell in contact with metallic dust.

Follow the manufacturer's instructions regarding any special backfill Materials required around the reference cell.

Place a layer of reference cell grout on all sides of reference cell before installing the cell in the excavation. Do not allow the reference cell to contact the rebar or other cathodic protection system components. Fill the excavation flush with the existing concrete surface by hand packing. Ensure that no air pockets remain. Take care to avoid damage to lead wires. Make bends in the lead wire with a radius no less than six times the lead wire diameter. Where the reference cell is to be placed along a non-horizontal bar, install with the lead wire end down.

Take reference cell-to-rebar resistance measurements after wet curing of the reference cell grout is complete, in the Engineer's presence, using a resistance meter conforming to 01240.20.

Acceptable resistance values between reference cell and reinforcing bar are 5000 ohms or less. Reference cell installations with resistance measurements outside this limit may be rejected.

Take installed reference cell voltage readings using a voltmeter with an input impedance of at least one megohm. Take these readings between the permanent reference cell and the rebar and compare with the voltage between a portable Cu/CuSO4 or Ag/AgCl reference cell in the access hole adjacent to the permanent cell and the rebar. Take these measurements in the Engineer's presence, within one hour of each other, after 7-Day wet curing of the reference cell grout is complete, and before any connection is made between the anode and cathode. Acceptable reference cell-to-rebar potential voltage reading is 75 ± 25 millivolts more positive than a Cu/CuSO4 portable reference cell-to-rebar potential voltage measurement and ± 25 millivolts when using an Ag/AgCl portable reference cell. Reference cell installations with voltage measurements outside these tolerances may be rejected.

Support and protect wiring and rebar terminals from mechanical damage and corrosion during conduit installation and other construction until permanently enclosed in concrete, conduit, or junction boxes.

Mask future testing block out areas as shown. Install female threaded anchors on opposite sides of the block out areas, 180 degrees apart. Locate reinforcing bars and rotate anchors to avoid the bars. Install anchors according to manufacturer's recommendations using a rotary hammer and an approved insertion tool. Screw eyebolts 1/4 turn past hand tight and mask as shown.

Measurement

01240.80 Measurement - The quantities of reference cells will be measured on the unit basis.

Payment

01240.90 Payment - The accepted quantities of reference cells will be paid for at the Contract unit price, per each, for the item "Reference Cells".

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for corrosion potential surveys, submittals, future testing blockouts or eyebolt installation.

SP01245 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-23-25
This Section requires SP01201.)

SECTION 01245 - ELIMINATE ELECTRICAL DISCONTINUITIES IN REINFORCING

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 01245, which is not a Standard Specification, is included in this Project by Special Provision.

Description

01245.00 Scope - In addition to the requirements of Section 01201, Section 01210, Section 01235, Section 01240, and Section 01270, locate areas where sufficient electrical continuity between reinforcement elements is not provided by direct contact, provide electrical continuity between all reinforcing steel in each CP zone except the top deck mat, and install rebar terminals for king bar connections to CP power supplies. The majority of reinforcing bars in the Bridge are expected to be sufficiently interconnected by direct contact.

01245.01 Timing - Check continuity of embedded steel after all excavations and rebar replacements have been made, and before replacing damaged concrete.

Inspect each rebar terminal installation and do not begin encapsulation until the installation is approved.

01245.02 Submittals - Submit descriptions of proposed Materials according to 00150.37. Identify all relevant constituents and properties of each Material and the Specifications with which it complies. Data published by the manufacturer is acceptable except when certifications of Materials' characteristics are required by the Specifications.

Submit detailed procedures for performing this Work according to 00150.37 at least 21 Calendar Days before Work is scheduled to start. Include the manufacturer's specifications, operating instructions, and calibration certifications for all Equipment and:

- Welder certifications according to AWS D1.4
- Pre-approved Welding Procedure Specification (WPS) or Procedure Qualification Record / Welding Procedure Specification (PQR/WPS)
- Detailed procedure for electrode control measures
- Detailed procedure for achieving, maintaining and monitoring pre-heat and inter-pass temperatures.
- A map in an approved electronic format detailing the locations of all continuity repairs and rebar terminals within plus or minus 3 inches according to 00150.37.

Submit a complete rebar terminal specimen according to 00150.37.

01245.03 Installation Acceptance Criteria - The Work performed under this Section is acceptable if the resistance between each individual reinforcing bar and the king bar is less than 6.0 ohms.

Welds are acceptable if they meet the requirements of AWS D1.4 criteria.

Materials

01245.10 Patching Material - Provide hand patching Material conforming to 01201.10.

01245.11 Welding Materials - Use weld Materials conforming to the current version of AWS D1.4, “Structural Welding code - Reinforcing Steel”. When using shielded metal arc welding (SMAW), provide low-hydrogen electrodes.

01245.12 Brazing - Provide brazing filler designed for fabrication applications on steel and copper alloys according to AWS A5.8 RCuZn-C with the manufacturer‘s recommended flux. Remove flux residue by the method recommended by manufacturer.

01245.13 Brass Threaded Rod – Provide 1/4 inch diameter brass threaded rod according to ASTM F468, UNS number C27000, C46200 or C46400, or approved equal.

01245.14 Non-Conductive Resin - Provide non-conductive resin conforming to 01201.11.

Labor

01245.30 Welders - Provide an AWS Certified Welding Inspector (CWI).

Construction

01245.40 Basic Continuity Check - Perform a basic continuity check on exposed reinforcing bars and 50 covered bars in each zone.

Measure the resistance using a resistivity meter conforming to 01240.20.

Start continuity checks with longitudinal bars that contact multiple stirrups, hoops, or transverse bars. Complete the electrical connection of longitudinal bars before any testing on stirrup and hoop bars.

Test continuity of concrete-covered bars at locations selected by the Engineer. Find these bars using the furnished original construction drawings and a rebar locator. Use a rotary impact drill with a maximum 1 inch diameter bit to access the rebar.

Clearly label bars having more than 6.0 ohms resistance relative to the king bar, with their resistance, and mark them for connection to the nearest bar that is continuous with the king bar.

Classify as continuous any group of two or more bars in a zone with resistance values greater than 6.0 ohm with respect to the king bar but less than 6.0 ohm with respect to one bar in the group. Mark only one bar of a continuous group for connection to a bar that is continuous with the king bar.

Verify resistance after welding and provide results to the Engineer according to 01245.02.

01245.41 Additional Continuity Checks - Perform additional continuity checks as directed if the basic continuity check finds non-continuous reinforcing bars in a zone. Follow procedures outlined in 01245.40 for exposing reinforcing bars and testing continuity.

01245.42 Select King Bar - Select the king bar connection locations in each zone to minimize the length of conduit runs. Select a major reinforcing bar as the king bar, not a stirrup or hoop. If practical, select an existing spall or excavation. The connection location can be excavated to accommodate the rebar stub and allow the rebar weld.

01245.43 Electrical Connection - Electrically connect all steel components that have been marked as non-continuous to a component that is electrically continuous with the king bar.

Provide electrical connection of steel components by welding two adjacent or crossing bars together according to the current version of AWS D1.4 “Structural Welding Code - Reinforcing Steel”. Since carbon content of existing reinforcement is unknown, assume that preheating is required under ANSI/AWS D1.4. Limit the temperature of reinforcing bar at concrete interface to 500 °F or less, verified using an infrared thermometer.

Remove slag from all completed welds and clean the weld and adjacent rebar by brushing or other approved means. Visually inspect all weld connections at least 48 hours after welding. Do not patch over weld connections until they have been inspected and accepted by the Engineer.

Repair excavations made for connections using hand patching Material conforming to 01201.10. Follow all manufacturer’s recommendations for placement. Hand patching Material may not be used for connections in areas marked as damaged concrete under 01235.41.

In zones with multiple king bars, install a rebar terminal on each king bar and provide connecting jumpers between king bars according to Section 01270.

Demonstrate to the Engineer continuity checks according to 01245.40 for completed continuity welds when required by the Engineer.

01245.44 Rebar Terminal - Provide a rebar terminal at each king bar connection and adjacent to each reference cell installation.

The rebar terminal consists of a 1/4-inch-diameter brass threaded rod that is brazed to an eight-inch No. 4 rebar stub. After excavating sufficient concrete for access to the king bar at the selected area for the system negative connection, clean the king bar to bright metal and weld the rebar stub to the king bar as shown.

Inspect each rebar terminal installation by visual examination.

Verify resistance after welding and provide results to the Engineer according to 01245.02.

Completely encapsulate the brazed joint and the portion of threaded rod below the concrete surface with non-conductive resin.

Allow non-conductive resin to completely cure according to the manufacturer's recommended schedule. Backfill the excavation with repair mortar conforming to 01235.10 and according to 01235.44.

Measurement

01245.80 Measurement - No measurement of quantities will be made for basic continuity checks.

The quantities of additional continuity checks, excavate for continuity welds, establishing continuity, and rebar terminals will be measured on the unit basis.

Payment

01245.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement
(a) Basic Continuity Check	Lump Sum
(b) Additional Continuity Check	Each
(c) Excavate for Continuity Welds	Each
(d) Establish Continuity	Each
(e) Rebar Terminals	Each

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor and Incidentals necessary to complete the Work as specified.

Item (a) includes basic continuity checks on exposed reinforcing bars and 50 covered bars in each zone.

Item (b) includes payment for additional continuity checks resulting from finding non-continuous reinforcing bars during basic continuity checks. Additional continuity checks in excess of those specified in 01245.40 will only be paid for if directed by the Engineer.

In items (c) and (d) no separate or additional payment will be made for additional excavation required in delaminated areas to establish continuity.

SP01260 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
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This Section requires SP00253
& SP01201.)

SECTION 01260 - PREPARE SURFACES AND APPLY ZINC ANODES

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project,

unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 01260, which is not a Standard Specification, is included in this Project by Special Provision.

Description

01260.00 Scope - In addition to the requirements of Section 01201, Section 01210, Section 01215, Section 01220, Section 01235, and Section 01240, this Work consists of the following:

- Initial abrasive blasting of the entire surface in the Work area.
- Installing anode terminal plates at the locations shown.
- Abrasive blasting and cleaning concrete surfaces receiving zinc anodes.
- Thermally spraying coatings of zinc to the concrete surfaces, and masking to separate the zones.

01260.01 Timing - Install anode terminal plates before preparing concrete surfaces and after replacing damaged concrete according to Section 01235.

Begin abrasive blasting operations in each Work area only after containment has been installed according to Section 00253 in that area.

(When removing an existing anode or coating system use (Wet abrasive). For all other Projects use (Abrasive). Delete the language in orange parentheses that does not apply and delete all orange parentheses.)

*(*Abrasive*)(*Wet abrasive*)* blast entire surface within each Work area before beginning the Work of Sections 01215, 01220, 01235, and 01240.

Prepare zinc anode surfaces by abrasive blasting and cleaning the entire surface within each Work area after completing the Work of Section 01215, 01220, 01235, and 01240.

(When removing an existing anode or coating system use (Dry or wet abrasive). For all other projects use (Abrasive). Delete the language in orange parentheses that does not apply and delete all orange parentheses.)

*(*Abrasive*)(*Dry or wet abrasive*)* blast patched concrete areas and anode terminal plates after repair mortar and the resin used to install the anode terminal plates or buildup on shallow rebar in areas of high visual impact has cured as recommended by the manufacturer.

(When removing an existing anode or coating system use (dry). Delete the language in orange parentheses that does not apply and delete all orange parentheses.)

Do not conduct (dry)abrasive blasting operations on surfaces that are wet or damp or if the surfaces are less than 6 degrees Fahrenheit above the dew point.

Thoroughly clean concrete surfaces with a 50 psi air blowgun within 15 minutes before zinc spraying. Remove any oil, grease, Soil, water, or other foreign matter that is deposited on the surface after the surface preparation has been completed and before the zinc is applied.

Apply the zinc coatings within 24 hours after completing preparation of zinc anode surfaces.

Test electrical continuity between the primary anode terminal plates and the zinc anodes after installing zinc anodes.

Perform touch-up and patching of zinc coating at Work platform and containment Structure attachment points after removing platforms and containment.

01260.02 Submittals - Submit descriptions of Materials to be used according to 00150.37. Identify all relevant components and properties of each Material and the Specifications with which it complies. Data published by the manufacturer is acceptable, unless otherwise specified.

Submit detailed procedures for performing this Work according to 00150.37, at least 21 Calendar Days Work begins. Include the manufacturer's specifications and operating instructions for all Equipment.

Submit a mill certificate according to 00165.35 verifying compliance with the requirements of ASTM B36 for brass plates.

Submit Material certifications according to 00165.35 verifying compliance with the requirements of ASTM B833 for each lot of zinc.

01260.03 Acceptance Criteria - Anode terminal plates are acceptable if they are attached securely enough that the Engineer is unable to dislodge selected plates and all installations have electrical continuity between the threaded section of the anode terminal plate and the zinc anode.

Acceptable coatings shall have uniform appearance, follow the form of the concrete surface, and do not contain any lumps, blisters, coarse texture, loosely adhering particles, cracks, pinholes, or chips that expose the concrete substrate.

Minimum acceptable adhesion strength is 50 psi.

Acceptable coating thickness is between 0.015 and 0.020 inch. In narrow areas of thermal spray overlap or difficult access such as behind piping, a coating thickness between 0.010 and 0.035 inch may be allowed.

Materials

01260.10 Anode Terminal Plates – Provide 2 1/2-inch-diameter, 1/8-inch-thick brass plates conforming to ASTM B36, UNS number C26000, C21000 or C22000.

Provide 1/4-inch diameter by one inch long brass cap screws or threaded rod conforming to ASTM F468 UNS number C27000, C46200 or C46400.

Provide #10 x 1” tapered flat head brass screws.

Provide silver alloy brazing filler Material according to AWS classification Bag.

01260.11 Non-Conductive Resin - Provide non-conductive resin conforming to 01201.11.

01260.12 Zinc - Provide High Grade Zinc (Z15005, 99.9 percent zinc) wire according to ASTM B833.

01260.13 Masking - Provide nonconductive masking Material.

Do not allow the masking to debond the zinc coating on adjacent surfaces when removed.

Demonstrate the performance and acceptability of masking by preparing a 12 by 12 by one inch or larger concrete test sample. After abrasive blasting and before thermal spraying the test sample, install a four by eight inch piece of masking on the concrete surface. Spray zinc on the test sample according to the Specifications and strip the tape from the sample. Examine the condition of adjacent zinc for evidence of debonding.

01260.14 Abrasives - Provide clean, dry, non-metallic grit abrasive Material with no mineral constituents that break down and remain on the surface in visible quantity. Provide hard angular shaped abrasives from 16 – 30 mesh.

01260.15 Compressed Air - Provide compressed air that is clean, oil free, and dry per ASTM D4285 for abrasive blasting and thermal spraying. Provide air line filters and moisture separators upstream from the blasting and spraying Equipment. Inspect air line filters and moisture separators daily for cleanliness and correct operation. Immediately correct any malfunctioning Equipment that is indicated by oil or water in the filter or trap.

Equipment

(Use the following subsection .20 when removing an existing anode or coating system.)

01260.20 Abrasive Blasting Equipment - Provide a wet abrasive blaster capable of maintaining a maximum pressure of 80 psi at the blast nozzle. Wet abrasive methods may include water injected air pressure type, abrasive injected pressurized water type, or pressurized slurry (vapor) type.

Provide a conventional, air pressure-type dry abrasive blaster capable of maintaining a maximum pressure of 80 psi at the blast nozzle.

(Use the following subsection .20 when wet abrasive blasting equipment is <u>not</u> required.)

01260.20 Abrasive Blasting Equipment - Provide a conventional, air pressure-type dry abrasive blaster capable of maintaining a maximum pressure of 80 psi at the blast nozzle.

01260.21 Zinc Application Equipment - Provide one of the following electric-arc type spray systems:

- Precision Arc 4.8 CE, manufactured by Thermion Incorporated
- Arcspray 170-CL, manufactured by Metallisation
- Eco Arc 600, manufactured by Sulzer Metco
- Bridgemaster Arc Spray System, manufactured by TMS Metalizing Systems, Ltd

01260.22 Short Circuit Detection Equipment - Comply with 01201.20.

Construction

01260.40 Anode Terminal Plate Location - Locate the anode terminal plates as shown. Provide at least two anode terminal plates per zone, separated by a minimum of 40 inches and located at least 40 inches from a zone boundary. Locate anode terminal plates for minimum visual impact where they have continuity with conduit runs supplying other zones, a central location in the zone, and ease of future access.

Provide additional anode terminal plates to provide continuity across expansion joints, bearings, or other features that cause discontinuity of the anode. Provide a minimum of two anode terminal plates for each discontinuous area.

01260.41 Anode Terminal Plate Installation – Construct anode terminal plates as shown. Braze according to the AWS *Brazing Manual*. Remove flux residue by the method recommended by the manufacturer.

Install anode terminal plates with the exposed face of the plate flush with the concrete surface and the bottom and edges of the plate coated with resin so that no portion of the brass plate is in direct contact with the concrete. Roughen the brass plate by abrasive blasting and then clean it to enhance adhesion. Mix and install the resin according to the manufacturer's recommendations with viscosity to support the plates in place without the resin running onto adjacent concrete surfaces. Place the resin between all surfaces of plate and the concrete as shown.

Ensure that no resin is allowed to run on to the side of the brass plate to which the zinc anode is to be applied. If the concrete-to-brass plate bond is damaged or an anode terminal plate is incorrectly fabricated or installed, install a satisfactory replacement anode terminal plate at the same location at no additional cost to the Agency.

01260.42 Abrasive Blasting and Cleaning - Protect the insulation of all exposed conductors and the threads of all anode terminal plates with tubing that has sufficient abrasion resistance to prevent damage from abrasive blasting operations.

(When removing an existing anode system, add the anode type to the listed surface contaminants in the following paragraph)

Clean concrete surfaces to remove dust, grit, coatings, chalk marks, paints, curing compounds, laitance, and other substances which would inhibit bonding of the anode to the concrete

Remove soil, cement spatter, and other foreign matter (other than grease and oil) by scraping, chipping, or brushing with stiff fiber or wire brushes. Remove oil and grease by cleaning with detergents or emulsifying agents. Flush the surface with potable water to remove residue.

Abrasive-blast using non-metallic grit and a maximum pressure of 80 psi at blast nozzle, to remove contaminants and provide a surface according to International Concrete Repair Institute (ICRI) *Guideline 03732 surface profile CSP 4*. Do not damage completed portions of Work. Limit operating pressure and stand-off distance on areas of sound concrete to avoid exposing large Aggregate on finished surfaces. Protect exposed conductors and anode terminal plate threads during abrasive blasting. Do not reuse blasting abrasives that have been used to remove oil and grease. Recovered abrasives may be re-used only if they satisfy the purity and mesh requirements of the Specifications.

Abrasive-blast the unprotected exposed surface of anode terminal plates to provide bright metal.

Thoroughly air-blast all abrasive-blasted surfaces using 80 to 100 psi compressed air through a blasting nozzle held approximately two feet from the surface, to remove all traces of residue. Examine the abrasive-blasted surface for traces of oil, grease, and other adhering contaminants. Repeat cleaning procedures until contaminants are completely removed and concrete surface condition conforms to International Concrete Repair Institute (ICRI) *Guideline 03732 surface profile CSP 4*.

Do not allow cleaned surfaces to become re-contaminated, including contamination by the oil left from a hand print.

01260.43 Masking - Install masking four inches wide between zones. Install masking to provide two inches of uncoated surface between the zinc anode and any exposed metal object.

01260.44 Zinc Anode Application Requirements - Perform coating application, including touch-up and patching, only when the enclosure air temperature and the surfaces to be sprayed are at least 6 °F above the dew point and the surface temperature is 65 °F or higher. Apply coating only to clean, dry, surfaces.

Use a heating and ventilating system to bring surfaces to temperature. It is acceptable to use a portable propane powered weed burner to increase surface temperature in minor areas that do not fully respond to heating and ventilating. If using a weed burner, keep the burner moving at an even pace, heating the concrete surfaces to a maximum temperature of 150 °F. Use an infrared thermometer to verify the surface temperature.

Start zinc anode application in each zone at the anode terminal plate to which the short circuit detector is connected. Apply the zinc anode in a continuous coating to facilitate short circuit detection. Adjust machine controls, such as voltage, current, wire feed rate, air pressure, and compressed air flow rate, to provide the most uniform thickness attainable on all accessible surfaces. Carefully monitor spray gun-to-surface distance, rate and path of travel, overlap distance, time between successive overlaps, and number of overlaps to ensure complete coverage and uniform thickness.

Before starting Work on each shift, perform bend tests to verify the proper operation of Equipment, as follows: Spray two separate 2 by 4 inch by 0.05 inch carbon steel coupons with a 0.015 to 0.018 inch thick coating. Apply the zinc to the coupons using the same techniques and Equipment settings as used for spraying the concrete. Bend the coupons 180 degrees around a 5/8-inch diameter rod with the coating on the tensile side of bend test specimen. Bend test results with minor cracking or no cracking and no lifting or spalling of coating are acceptable. Bend test results with zinc that can be picked off the cracked surface with a knife blade are unacceptable. Adjust Equipment and procedures and repeat bend test until acceptable results are achieved. Do not proceed with production zinc application until approved by the Engineer.

Locate short circuits according to 01201.40.

Eliminate short circuits using a method approved by the Engineer at no additional cost to the Agency.

01260.45 Environmental Monitoring Requirements - Install up to four Agency-furnished temporary run-off monitors at locations designated by the Engineer. Allow the Engineer to collect samples at any time during construction. Repair or replace any components damaged during construction at no additional cost to the Agency.

01260.46 Acceptance Tests - Perform the following tests in the presence of the Engineer, with additional tests as needed to establish the boundary of defective coatings:

(a) Visual Examination - Visually inspect anode surfaces using a lens with a magnification of at least 10.

(b) Adhesion Test - Measure adhesion strength according to ASTM D7234. Perform adhesion testing between eight and 24 hours after anode application.

Perform a minimum of 15 adhesion tests per zone in the zinc CP surface. Test locations are to be chosen by the Engineer.

After each adhesion test, recoat adhesion test areas with 0.002 to 0.004 inch of zinc after scraping any loose or delaminated zinc caused by the adhesion test.

(c) Thickness Test - Perform a minimum of ten thickness measurements for each operator in each shift of zinc application. It is acceptable to use a combination of tape tabs left by the operator and the random adhesion dolly tests.

(d) Anode Terminal Plate Continuity Test - Test electrical continuity between threaded section of anode terminal plate and zinc anode with a resistivity meter conforming to 01240.20.

Anode terminal plate installations with resistance values less than 1.0 ohm are acceptable. Repair installations with resistance greater than 1.0 ohm by abrasive blasting to remove arc-sprayed zinc from anode terminal plate and recoating with zinc. Repeat continuity test until an acceptable result is obtained.

01260.47 Touch-up, Patching, and Repair of Unacceptable Coatings - After removal of Work platforms and containment Structures, prepare and coat all tie-up points and attachment points with zinc conforming to 01260.11.

Remove Soil, cement spatter, and other foreign matter, except grease and oil, by scraping, chipping, or brushing with stiff fiber or wire brushes. Remove grease and oil by cleaning with detergents or emulsifying agents. Flush the surface with potable water to remove detrimental residue. Air-blast using 80 to 100 psi compressed air through a blasting nozzle held approximately two feet from the surface, to remove all traces of residue. Examine the abrasive blasted surface for traces of oil, grease, and other adhering contaminants. Repeat cleaning procedures until contaminants are completely removed. If wet cleaning methods are used, allow the surface to dry thoroughly before coating.

Feather the edges of adjacent existing zinc coating by grinding for a distance of one to two inches.

Apply the zinc coating using an approved thermal spray process to a thickness of 0.015 to 0.020 inches. Operate the short circuit detection system during zinc application.

Repair damaged surfaces and surfaces not in compliance with the Specifications at no additional cost to the Agency and according to the following:

(a) Unacceptable Visual Examination - Repair or replace unacceptable areas using an approved procedure as directed by the Engineer.

(b) Unacceptable Adhesion Test - Remove zinc in unacceptable areas and recoat with zinc according to the Specifications. Perform remedial surface cleaning and surface preparation if needed to obtain satisfactory adhesion, regardless of prior surface preparation acceptance.

(c) Insufficient Zinc Thickness - Apply additional zinc by thermal spraying after the surface is completely dry and any visible contamination has been removed. Warm the areas slowly before thermal spray of additional Material to avoid thermal shock.

(d) Excessive Zinc Thickness - Remove and reapply coatings of zinc greater than 0.035 inches according to the Specifications.

Measurement

01260.80 Measurement - No measurement of quantities will be made for preparing anode surfaces or installing zinc anodes.

The quantities of anode terminal plates will be measured on the unit basis.

Payment

01260.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement

(a) Install Anode Terminal Plates .....Each
(b) Prepare Anode Surfaces..... Lump Sum
(c) Install Zinc Anodes..... Lump Sum

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor and Incidentals necessary to complete the Work as specified.

Item (a) includes acceptance testing performed according to 01260.46(d).

Item (b) includes all masking, blasting, cleaning and roughening of surfaces including brass anode terminal plates.

Item (c) includes acceptance testing performed according to 01260.46(a), (b), and (c).

No separate or additional payment will be made for touch up, patching or repair of unacceptable or damaged coatings.

SP01270 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-23-25
This Section requires SP01201.)

SECTION 01270 - INSTALL CATHODIC PROTECTION SYSTEM WIRING

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 01270, which is not a Standard Specification, is included in this Project by Special Provision.

Description

01270.00 Scope - In addition to the requirements of Section 01201 and Section 01210, provide and install cathodic protection system wiring providing direct current distribution to CP zones, reference cell monitoring, and communication interconnects between CP cabinets.

This Work is to be done in a way that does not degrade the Bridge's visual and architectural character.

01270.01 Timing - Perform installation of conduit, junction boxes, and the associated wiring and miscellaneous Equipment in each zone after the Work required under Section 01260 has been completed in that zone.

01270.02 Submittals - Submit detailed descriptions of all Materials to be used according to 00150.37. Identify all relevant constituents and properties of each Material and the Specifications with which it complies. Data published by the manufacturer is acceptable. Provide conduit cement data clearly indicating the manufacturer's recommended installation temperature range.

Submit detailed procedures for the Work of this Section according to 00150.37 at least 21 Calendar Days before the scheduled start of the Work. Include the manufacturer's specifications and operating instructions for all Equipment and a plan for installing and testing electrical conductors. Do not start this Work until written approval is received from the Engineer.

Submit unstamped wiring drawings according to 00150.35 that show the identification and labeling scheme for all wires and conduits.

Submit a conduit and wire installation plan according to 00150.37 at least 21 Calendar Days before the start of installation, showing how the Work is coordinated with scheduled movements of the Work containment system.

Submit unstamped as-built drawings according to 00150.37, showing the location, wiring details, and labeling of all power distribution, permanent reference cells and conduit runs within 30 Calendar Days of completing the Work.

Materials

01270.10 Electrical Conductors - Comply with 01201.18. Provide consistent wiring insulation color for all zones with separate, unique colors for anode wiring, rebar wiring, and reference cell wiring.

Provide No. 16 AWG shielded, twisted pair instrumentation cable meeting the following requirements:

- Cable rated for 300 volts
- Primary insulation XLPE
- Outer jacket moisture and sunlight resistant 190 °F rated polyvinyl chloride
- Shielding providing 100 percent coverage of twisted pair with aluminum foil-polyester tape with 18 AWG drain wire

Provide UL labeled, Type XHHW stranded copper wire for all conductors with 600 volt rated insulation rated for 167 °F operation in wet or dry locations.

01270.11 Materials – Furnish Materials meeting the following requirements:

Brass Nuts and Bolts ..... 01201.16(a)
Conduit and Fittings 01201.15
Heat Shrink Tubing, Electrical Tape 01201.13
Labels 01201.17
Non-Conductive Resin 01201.11
Non-Conductive Sealant 01201.12

Ring Connectors, Solder 01201.14
Stainless Steel-Bolting Materials..... 01201.16(b)

Provide tin-plated brass, barrier-style, 2-pole terminal blocks rated for 600V and able to accept #16 AWG wire.

Equipment

01270.20 Short Circuit Detection Equipment - Comply with 01201.20.

01270.30 Technician Qualifications - Perform all Work of this Section, except for installation and removal of temporary electrical service, using Oregon licensed electricians holding a Class "A" or Class "B" Limited Energy Technician license, General Journeyman license, or General Supervising license.

01270.31 Supervisor Qualifications - Supervise all Work of this Section using an Oregon licensed electrician holding a General Supervising license.

Construction

01270.40 Conduit and Fittings - Install conduit and fittings according to 01201.41.

01270.41 Connections:

(a) Wire-to-Wire - Make wire-to-wire splice and tap connection only in junction boxes with prior Engineer approval. Insulate all splice and tap connections using heat shrink tubing.

(b) Wire-to-Anode - Crimp and solder the ring connector to the anode end of the DC power distribution wire. Attach the ring connector between two brass nuts to the bolt on the anode terminal plate assembly. Tighten the first brass nut on the bolt to a hand tight condition with a non-adjustable wrench. Place the ring connector over the bolt and tighten a second brass nut against the ring connector to a hand tight condition with a non-adjustable wrench. Tighten a third brass nut, with a wrench, to a hand-tight condition against the second nut.

(c) Wire-to-Rebar Terminal - Crimp and solder the ring connector to the rebar terminal end of the DC power distribution wire. Attach the wire lug between two brass nuts to the threaded rod on the rebar terminal. Run the first brass nut onto the threaded rod. Place the wire lug over the threaded rod and tighten a second brass nut to a hand tight condition with a non-adjustable wrench against the first nut. Tighten a third brass nut with a wrench to a hand tight condition against the second nut.

(d) Wire-to-Zone Rectifier - Connect DC power wiring from the anode terminal plates and rebar terminals to the corresponding zone power supply terminal strips in the CP cabinets.

(e) Wire-to-Binding Post (System Negative at King Bar) - Provide a test wire lug connected to a brass binding post in the side of the junction box at each king bar terminal. Construct this connection with XHHW wire, brass nuts, brass bolts or all-thread, and copper ring connectors.

(f) Reference Cell-to-Instrumentation Cable - Mount a 2-pole, barrier style terminal block inside the king bar junction box using stainless steel or brass nuts and bolts. Connect the reference cell lead and the king bar lead to the terminals. Connect the instrumentation cable wire to the other side of the terminal. Torque terminals to manufacturer's recommendations. Do not connect shield wire at this terminal block.

(g) Instrumentation Cable-to-CP Cabinet - Run the cable without splicing from the terminal block to the monitoring terminal strips in the CP cabinet. Torque terminals to manufacturer's recommendations

01270.42 Labeling - Secure labels to both ends of conductors with clear heat-shrink tubing conforming to 01201.13. Label both connections at all splice points. Designate the zone number for all DC power wiring according to the following example:

D 10 P

Where D = DC Power
10 = Zone Number
P = Positive lead to anode (N = Negative lead to rebar)

Designate the zone number for all remote monitoring system wiring according to the following example:

R 02 A

Where R = Reference cell circuit
02 = Zone Number
A = First reference cell installed in zone (B = second)

01270.43 Short Circuit Detection - Locate and eliminate short circuits according to 01201.40.

Eliminate short circuits using a method approved by the Engineer at no additional cost to the Agency.

Measurement

01270.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

Payment

01270.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract Lump Sum amount for the item "Install Cathodic Protection System Wiring".

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor and Incidentals necessary to complete the Work as specified.

SP01280 (Special Provisions for the 2024 Book) (Bidding on or after: 05-01-25

Last updated: 01-23-25
This Section requires SP01201.)

SECTION 01280 - INSTALL POWER AND COMMUNICATIONS

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 01280, which is not a Standard Specification, is included in this Project by Special Provision.

Description

01280.00 Scope - In addition to the requirements of Section 01201 and Section 01210, this Work consists of providing power and communications to the cathodic protection (CP) cabinets:

01280.02 Submittals - Submit descriptions of Materials to be used according to 00150.37. Identify all relevant constituents and properties of each Material and the Specifications with which it complies. Data published by the manufacturer is acceptable.

Submit detailed procedures for the Work of this Section according to 00150.37 at least 21 Calendar Days before the scheduled start of the Work. Include the manufacturer's specifications and operating instructions for all Equipment. Do not start this Work until written approval is received from the Engineer.

Submit stamped drawings detailing the electrical and telephone service according to 00150.35 at least 21 Days before installation.

Submit unstamped wiring as-built drawings according to 00150.37, showing the identification and labeling scheme for all wires and conduits within 30 Calendar Days of completing the Work.

Submit results of resistance-to-ground measurements at all ground rods according to 00150.37 within 7 Calendar Days of driving ground rods.

Materials

01280.10 Materials - Furnish Materials meeting the following requirements:

Conduit and Fittings 01201.15
Electrical Conductors 01201.18
Heat Shrink Tubing.....01201.13

01280.11 AC Power Cabinets - Provide electrical cabinets fabricated from 14 gauge Type 316 stainless steel, with hardware fabricated from Type 316 stainless steel. Provide in each cabinet a dead-front panel installed with slots cut for operating handles. Mount electrical Equipment on a false back. Internal wiring of cabinets shall be performed by a UL listed facility. Supply mounting brackets and a padlock hasp with each cabinet.

Label the outside face of AC power cabinet doors with a permanent metallic sign reading "120/240 VOLT, CATHODIC PROTECTION" in letters 3/8 inch tall.

01280.12 Circuit Breakers - Provide molded case, bolt-on type circuit breakers of ratings shown. Provide main service panel breakers that are UL listed for the minimum interrupting rating shown. Permanently label all circuit breakers to indicate the circuit that the breaker controls.

01280.13 Cabinet Mounting Bolts - Provide bolts conforming to ASTM F593 Group 2 Condition CW and nuts conforming to ASTM F594 Group 2 Condition CW.

01280.14 Meter Bases - Provide NEMA 4X meter bases fabricated from 14 gauge Type 316 stainless steel, or enclose the meter base in a Type 316 stainless steel NEMA 4X cabinet. Provide meter socket according to requirements of the electric Utility.

01280.15 Stainless Steel Screws – Provide Type 316 stainless steel screws conforming to ASTM A193, Grade B8M, B8MA, B8M2, or B8M3, Class 1, 1A, 1D, or 2.

01280.16 Marking Tape - Provide marking tape made of red polyethylene six inches wide and a minimum of four mils thick, continuously imprinted with the message "CAUTION BURIED ELECTRIC LINE".

01280.17 Grounding Electrodes - Provide copper coated ground rods conforming to the NEC.

Provide bare stranded copper wire conforming to ASTM B8, of gauge(s) shown.

Labor

01280.31 Supervisor Qualifications - Supervise all Work included in this Section, except for excavation Work and pole installation, using an Oregon licensed electrician holding a General Supervising license.

Construction

(If using an existing electrical service, replace "electric Utility" with the electrician(s) who maintain the current service.)

01280.40 Electric Service - Provide electric service in the location shown. Coordinate the electric service installation with the electric Utility.

Install the meter according to the requirements of the electric Utility.

Any existing metered service belonging to the Agency is not available for the Contractor's use during construction.

01280.41 Excavation for Conduit - Provide trenches in the locations shown. Comply with Section 00290 and all regulations affecting the Regulated Work Area.

Perform all trench excavation, bedding and back-filling, according to Section 00405. Restore the surface according to Section 00495.

Permanently mark all underground conduit runs by placing a continuous run of underground marking tape six inches below the ground surface directly over the conduit between junction box and AC power cabinet locations.

Dispose of all waste materials according to 00290.20.

01280.42 Conduit and Fittings - Install conduit and fittings according to 01201.41.

01280.43 Grounding and Bonding - Provide two grounding electrodes at each AC power cabinet installation, unless shown otherwise. Connect the grounding electrodes together and to the electrical system using bare copper conductors. Ground all metal cabinets by connecting to the Equipment ground wire (green insulation). Do not connect the system neutral (white insulation) to the cabinet. Do not ground the negative terminal of the rectifier, the negative terminals of the remote monitoring system, or the rebar.

Drive ground rods perpendicular to the ground until the top of rod is six inches below finished grade. Verify that the resistance-to-ground of the ground rod complies with NEC requirements.

01280.44 Conductor Insulation Testing - Perform insulation integrity checks of all conductors, after installation of the conductor and before connecting each end. Use a 500 volt DC megger insulation tester to measure between conductors and to the grounded shield or ground. The installation is acceptable if the insulation resistance of each conductor within a conduit is five megohms or greater. Remove and replace all conductors in any conduit where an insulation resistance of less than five megohms is found.

Maintenance

01280.60 Electric and Communication Contacts -

(Provide the electric Utility name, contact name, telephone number, and location of nearest existing service)

The electric Utility is _____, contact name _____, telephone number _____. The nearest existing electric Utility service is located _____.

(For land line telephone service, list the communications Utility name, contact name, telephone number, and location of nearest existing service.)

The communications Utility is _____, contact name _____, telephone number _____. The nearest existing communications service is located _____.

Contact information for ODOT electricians is available from the Engineer.

(Delete "(and communications)" when cellular communications will be used for the CP System. Delete all orange parentheses.)

The Agency will provide a service address and billing address for the permanent electric *(*and communications *)*service.

Measurement

01280.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

Payment

01280.90 Payment - The accepted quantities of Work performed under this Section will be paid for at the Contract Lump Sum amount for the item "Install Power and Communications".

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for:

- trench excavation, bedding, and backfill
- surface restoration
- waste disposal

SP01285 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25**
Last updated: 01-23-25
This Section requires SP01201 and SP02510)

SECTION 01285 - CP CABINETS, RISERS, AND WEATHER EQUIPMENT

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 01285, which is not a Standard Specification, is included in this Project by Special Provision.

Description

01285.00 Scope - In addition to the requirements of Section 01201 and Section 01210, furnish and install custom-built CP cabinets, risers, and weather Equipment as shown and as directed.

01285.01 Timing - Notify the Engineer 21 Calendar Days prior to scheduling shipping, to allow for quality assurance testing at the manufacturing facility.

Prepare mounting surfaces for CP cabinets prior to their delivery to the Project Site.

Provide Agency access for quality assurance testing and CP system testing during installation.

Do not power up any portion of the CP system.

01285.02 Submittals - Submit descriptions of Materials to be used according to 00150.37. Data published by manufacturers is acceptable. Submit shop drawings and electronic design schematics according to 00150.37 at least 21 Calendar Days before fabrication begins. Redlined Plans are acceptable.

Submit detailed procedures for this Work according to 00150.37 at least 21 Calendar Days before the scheduled start of Work under this Section.

Submit as-built cabinet drawings according to 00150.37 upon delivery of the cabinets.

Materials

01285.10 Materials - Furnish Materials meeting the following requirements:

Conduit and Fittings 01201.12
Non-Conductive Resin and Spray 01201.11
Non-Conductive Sealant 01201.12

Provide an expanding spray foam.

Use Class 3300 structural concrete meeting the requirements of Section 02001 and the requirements of Table 02001-1.

Use reinforcement complying with Section 00530 and Section 02510.

01285.11 General - Furnish all similar products from the same manufacturer and of the same quality. Verify that all Equipment is permanently marked with the manufacturer's name and the appropriate Equipment ratings. Correct faulty workmanship and Materials immediately upon discovery.

Ensure that all items conform to NFPA 70 (NEC) requirements.

Protect all Materials from damage and corrosion during shipping and storage.

01285.12 Stainless Steel Fasteners - Provide stainless steel fasteners and mechanical anchors according to ASTM F593 Group 2 Condition CW and nuts according to ASTM F594 Group 2 Condition CW.

Equipment

01285.20 General - Store all electronic Equipment in a dry, clean location protected from condensation. Protect all Equipment from physical damage and contaminants such as moisture, dust, fingerprints, and dirt.

01285.21 Cabinet and Risers - Provide cabinets with a NEMA 250-4X rating constructed from 12 gauge, Type 316 stainless steel. Do not drill holes in cabinets for any purpose other than mounting the cabinets. The cabinets shall include:

- A heavy-duty 3-point door latch with external locking rings on the handle. Include continuous hinges on the cabinet doors. Use Type 316 stainless steel for all external metal hardware (e.g.; padlock hasp, hinges, latches). Include a continuous lip around the door opening to provide a tight seal against a gasket approved for use in a NEMA 250-4X enclosure. Perform all welding according to AWS D1.6.
- Mechanisms that hold each cabinet door in place when in the open position. This item may be constructed from any industry standard Material.
- One 15 watt (maximum), 700 lumen (minimum) light fixture mounted to the cabinet ceiling. Include two door interlock switches wired in parallel to activate the light when either door is opened. The switches may be of any industry standard construction.

Provide risers constructed from 12 gauge Type 316 stainless steel. Provide riser access covers constructed from 6 gauge Type 316 stainless steel. Weld locking hasps, lock eyes, and stiffeners according to AWS D1.6.

01285.22 Equipment Rack - Provide four-post, 19-inch Equipment racks with 17-inch (± 1 inch) depth conforming to CEA-310-E specifications. Include:

- Five shelves with a minimum 50-pound capacity, placed at the spacing shown
- A 12 gauge aluminum AC power distribution panel attached to the lower rear of the rack
- A 12 gauge aluminum control panel above the AC panel hinged on the rack to open in the same direction as the adjacent door. Include a door stop that does not allow Equipment to contact the adjacent door when the panel is opened. Include three latching points to secure the door closed without the use of tools other than a standard screw driver.
- Mounts for diodes constructed of a thermally conductive Material. Utilize shelves or the control panel as a heat sink for the diodes.
- A documentation drawer designed to work with the 19-inch Equipment rack, no larger than 2 inches in height and 17 inches deep. Include a hinged cover providing a writing surface when the drawer is extended.

01285.23 Zone Power Supplies, Diodes, and Shunts:

(a) Power Supplies - Provide one of the following variable output DC power supplies:

- Instek SPS3610
- Sorensen XPD33-16
- TDK Lambda Zup20-10/u

(b) Diodes – Provide 1N3881 diodes,

(c) Shunts - Provide one of the following measurement shunts:

- Crompton Instruments FN-10-100
- Empro Shunts HA-10-100
- Murata Power Solutions 3020-01107-0

01285.24 Circuit Protection:

(a) Surge Protectors - Provide one of the following surge protectors:

- Allen Bradley 4983-DH300-25 (requires 3 units per cabinet)
- Schneider Electric PMP3XS-B
- Sola Heavy-Duty STV 100K-10S

(b) Circuit Breakers - Provide one of the following circuit breakers:

- Allen Bradley 1489-A2D 200
- Altech 2DU20UL
- Schneider Electric/Square D 60164

01285.25 Terminal Blocks and Conductors - Provide barrier type, standard screw terminals for the incoming 240/120VAC single phase electrical service, meeting the following requirements:

- Four feed-thru terminals
- An insulating protective cover that is clear to allow for visual inspection
- Compatible with #4-#12 AWG wire
- Rated for at least 600 volts

Provide control panels and AC Bus terminal blocks, including fused blocks, meeting the following requirements:

- IEC 60715 dimensions
- Din rail mounting
- Compatible with #8-#16 AWG wire
- Rated for 600 volts
- Compatible with 1 1/4-inch automotive fuses (fused blocks only). Include 5A fuses.

Use #16 AWG stranded copper conductors conforming to UL 1015 standards.

Use slotted PVC wire ducts to organize wiring.

Use printed labels conforming to 01201.17.

01285.26 Campbell Scientific Equipment - Provide the following Equipment from Campbell Scientific with appropriate connectors, as applicable, indicated in the electronic Equipment schedule in the Plans:

- CR 1000 Datalogger
- PS100 Power supply w/battery backup
- AM16/32B Multiplexer
- MD485 Network interface module
- COM220 Telephone modem (analog line)
- 3315 Type T Thermocouple
- VDIV10:1 Voltage Divider

01285.27 Weather Equipment - Provide HMP155-L Relative humidity/temperature sensor with pigtail terminations. Determine proper lead length from the Plans. Include a 14-gill radiation shield.

01285.28 Additional Panel Mounted Equipment - Provide the following:

- A ground fault interrupting (GFI) duplex receptacle rated for 20 A which conforms to UL 514C standards
- One of the following high-efficiency 12VDC switching type power supplies:
    - Allen Bradley 1606-XLP30B
    - Rhino PSP12-024S
    - Sola Heavy-Duty SCP30S12-DN
- One of the following cabinet heaters:
    - Hammond ELHT200A230
    - Hoffman DAH2002a
    - Rittal 3105.180 (requires 3110.000 thermostat)

01285.29 Manual Override Control Box - Provide a custom-built manual override control box that will mount on the control panel. This may be constructed of any standard enclosure Material with a removable face/cover. Do not exceed a 9 by 7 inch device footprint, 4 inches deep. Include a rubber-lined entry/exit hole for wires. Include the following devices, as applicable:

- A standard single-pole, double-throw (SPDT), panel mounted, toggle switch rated for 5 amps or greater
- A standard double-pole, double-throw (DPDT), panel mounted, toggle switch rated for 5 amps or greater

- 1N4004 diode
- 1N4937 diode
- 5 mm to 10 mm diameter light emitting diode (LED) of the color shown. Bias the diodes with properly sized resistors or provide units with proper integral resistors. Identify diodes and resistors in shop drawings.
- One of the following solid state relays:
    - Crydom D1D07
    - NTE Electronics, Inc. RS3-1D12-41M
    - Omron Electronic Components G3NA-D210B-DC5-24

6-pole, double-throw (6PDT) relays (R1 and R2 as shown in the Plans) are only required on zone power supplies that utilize a contact closure to activate the remote output disable function. If this function requires a TTL level input, the output of the solid state relay may be wired in parallel to these inputs. Include this design with submittals to be approved by the Engineer. If applicable, provide one of the following:

- Magnecraft & Struthers-Dunn W67RCSX-12
- NTE Electronics, Inc. R16-23D5-12
- Tyco Electronics/Potter & Brumfield

Labor

01285.30 Panel Shop Qualifications - Perform all Work included in this Section using a panel shop certified by the Underwriters Laboratories (UL), or have the final product certified by means of UL inspection.

01285.31 Electricians - Perform all DC wiring, reference cell wiring, and telecommunications wiring Work using Oregon licensed electricians holding a Class “A” or Class “B” Limited Energy Technician license, a General Journeyman License, or a General Supervising license.

Perform all AC power wiring using electricians complying with 01201.30.

01285.32 Supervisor Qualifications - Supervise all Work of this Section using an Oregon licensed electrician holding a General Supervising license.

Construction

01285.40 Pads For CP Cabinets - Construct pads as shown. Remove debris from pads prior to cabinet installation.

01285.41 Mount Risers and CP Cabinets - Mount risers and CP cabinets in the locations shown, using stainless steel fasteners. Apply non-conductive sealant between washers and cabinet and tighten fasteners while sealant is wet.

01285.42 Conduits - Terminate conduit runs from the Work of Sections 01265, 01270, and 01280 in the sides of the cabinet riser where they do not interfere with the hatch of the

riser. Route conduits so that conduits containing AC conductors enter the riser in separate locations from conduits containing DC, monitoring, and communications conductors.

01285.43 Wiring:

(a) General - Arrange all wiring neatly in the cabinet. Handle conductors carefully to avoid kinking the wire or damaging insulation during installation. Remove and replace all kinked or damaged wire. Terminate all wiring connections at wire terminals. Follow the terminal block manufacturer's specifications for the number of wires per terminal. Tighten the terminal screw to the terminal block manufacturer's recommended torque.

(b) AC Wiring - Provide a hole in the bottom of the CP cabinet(s) large enough to accommodate the branch circuit conductors located as close to the AC barrier terminals as possible. Install a PVC fitting using non-conductive sealant as shown for this entry after removing any sharp edges.

Pull branch conductors from the Work of Section 01280 through this hole and terminate them at the appropriate terminals. Verify proper voltage at the terminal with the cabinet main disconnect in the off position.

Seal the hole as shown with expanding spray foam and non-conductive resin after voltage has been verified.

Energize cabinet heaters and set to 60 °F.

(c) DC, Monitoring, and Communications Wiring - Provide a hole in the bottom of the CP cabinet(s) large enough to accommodate all DC, monitoring, and communications wiring, located as far from the AC wiring as possible. Install a PVC fitting using non-conductive sealant as shown for this entry after removing any sharp edges.

Pull DC, monitoring, and communications wiring installed under Sections 01265 and 01270 through this hole, routing away from AC circuits, and terminate at the appropriate terminals on the control panel.

Seal the hole with expanding spray foam and non-conductive resin after the Engineer has performed quality assurance testing of the system.

01285.44 CP Cabinet Layout - Arrange Equipment within the CP cabinet in a logical and orderly manner following and as shown. Provide as much separation as possible between 120/240 VAC Equipment and sensor and DC wiring. Secure all electrical components to shelves or electrical panels. Secure the Equipment rack to the cabinet using welds or threaded fasteners that do not protrude beneath the cabinet.

01285.45 Weather Equipment Wiring - Wire Equipment in accordance with the Campbell Scientific product manuals and the wiring schedule shown. Use Campbell Scientific cables whenever a multi-pin connector is specified in the product manuals.

Provide grounding for shielded cable drain wires at one end of the cable only.

01285.46 Labeling - Attach permanent labels to all wires. Use a labeling designation scheme that indicates the adjacent termination name at each end of the wire.

Label each power supply to indicate the zone with lettering a minimum of 3/16 inches high.

01285.47 Temperature/Relative Humidity Sensor - Mount the sensor as shown.

01285.48 Testing - Provide access for the Engineer to perform quality assurance testing before shipping the cabinets to the Project Site.

01285.49 Documentation - Provide a copy of as-built drawings in the documentation drawer of each cabinet. Provide a copy of the technical data sheet along with installation instructions for each unique electronic component in the documentation drawer of each cabinet.

Measurement

01285.80 Measurement - No measurement of quantities will be made for Work performed under this Section.

Payment

01285.90 Payment - The accepted quantities of CP cabinets, risers, and weather Equipment will be paid for at the Contract Lump Sum amount for the item "Provide CP Cabinets, Risers, and Weather Equipment".

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor and Incidentals necessary to complete the Work as specified.

No additional payment will be made for as-built drawings, datasheets, or operations manuals.

SP02001 (Special Provisions for the 2024 Book) **(Bidding on or after: 06-01-25**
Last updated: 02-26-25
Requires SP02690 when IC, LWFA
or lightweight coarse aggregate is required.)

SECTION 02001 - CONCRETE

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 02001 of the Standard Specifications modified as follows:

> ***(Use the following lead-in paragraph and subsection .20(f) when IC is specified to mitigate shrinkage in Bridge decks. Contact ODOT Structure Services prior to selecting internal curing)***

Add the following subsection:

02001.20(f) Internal Curing - For HPC(IC) concrete, internally cure the mixture according to the following:

- Substitute 350 lbs (SSD) LWFA for standard Fine Aggregate.

(Use the following lead-in paragraph and subsection .20(g) when lightweight concrete is required. Contact the Statewide Structural Materials Engineer who will provide densities to be used to fill in the blanks.)

Add the following subsection:

02001.20(g) Unit Weight - Provide high performance lightweight concrete with a maximum plastic density of _____ pounds per cubic foot at time of placement and a maximum calculated approximate equilibrium density of _____ pounds per cubic foot.

02001.40(b) Adjusting Concrete Proportions - Replace the bullet that begins "Large admixture dosage changes…" with the following bullet:

- Large admixture dosage changes, excluding adjustments for air entraining agents and Type A or D water reducers (± 25 oz/cubic yard).

SP02030 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated:02-04-25)**

SECTION 02030 – SUPPLEMENTARY CEMENTITIOUS MATERIALS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 02030 of the Standard Specifications modified as follows:

002030.15 Natural Pozzolans - Replace this subsection, except for the subsection number and title, with the following:

Furnish Class N natural pozzolans from the QPL and conforming to AASHTO M 295 or ASTM C1945.

Add the following subsection:

02030.55 Ground Glass Pozzolan - Furnish ground glass pozzolans meeting the requirements of ASTM C1866 Type GS.

SP02050 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 02050 – CURING MATERIALS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 02050 of the Standard Specifications modified as follows:

02050.10 Liquid Compounds – Replace the paragraph that begins "Furnish liquid membrane-forming curing …" with the following:

Furnish liquid membrane-forming curing compounds from the QPL and meeting the requirements of ASTM C309. Before use, submit two, one quart samples from each lot for testing. Samples will be tested according to ODOT TM 721. Samples are not required for curing compounds used on Commercial Grade Concrete.

SP02011 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 02011 – RAPID HARDENING HYDRAULIC CEMENT

(Follow all instructions and make all edits with "Track Changes" turned on. This Section is not published in the Oregon Standard. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project, unless the item(s) that are included in the subsection, paragraph, sentence, or bullet are not required on the Project and then they should be deleted. In general do not re-number or re-letter subsections when item(s) are deleted. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Section 02011, which is not a Standard Specification, is included in this Project by Special Provision.

Description

02011.00 Scope - This Section includes the requirements for rapid hardening hydraulic cement.

Materials

02011.10 Rapid Hardening Hydraulic Cement - Furnish Type VRH rapid hardening hydraulic cement from the QPL and meeting the requirements of ASTM C1600. Do not mix or alternately use differing brands or types of cement.

SP02320 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-24-25)**

SECTION 02320 - GEOSYNTHETICS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 02320 of the Standard Specifications modified as follows:

02320.20 Geotextile Property Values – Replace Table 02320-3 with the following table:

Table 02320-3 Geotextile Property Values for Sediment Fence [1]

Geotextile Property	ASTM Test Method	Unit	Geotextile Property Requirements Woven and Nonwoven
Grab Tensile Strength (minimum) Machine and Cross Machine Directions	D 4632	lb	120 100
Apparent Opening Size (AOS) (maximum) U.S. Standard Sieve	D 4751	—	30
Permittivity (minimum)	D 4491	sec^{-1}	0.05
Ultraviolet Stability Retained Strength (minimum)	D 4355 (at 500 hours)	%	70

[1] All geotextile properties are Minimum Average Roll Values (MARV). The test results for any sampled roll in a lot shall meet or exceed the values shown in the table.

SP02415 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 02415 - PLASTIC PIPE

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 02415 of the Standard Specifications modified as follows:

02415.40 Polypropylene Pipe – Replace this subsection, except for the subsection number and title, with the following:

Furnish polypropylene pipe and fittings as follows:

(a) Non-Pressure Storm Sewers and Culverts - Furnish polypropylene pipe and fittings for non-pressure storm sewers and culverts from the QPL and meeting the following requirements:

Dual Wall Pipe	ASTM F2764, ASTM F2881, or AASHTO M 330 Type S
Triple Wall Pipe	ASTM F2764 or AASHTO M 330 Type D
Watertight Joints	ASTM D3212

(b) Non-Pressure Sanitary Sewers - Furnish polypropylene pipe and fittings for non-pressure sanitary sewers from the QPL and meeting the following requirements:

Dual Wall Pipe	ASTM F2764
Triple Wall Pipe	ASTM F2764
Watertight Joints	ASTM D3212

SP02510 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 02510 – REINFORCEMENT

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 02510 of the Standard Specifications modified as follows:

02510.11(c) Coated Reinforcement Ties and Supports - Delete this subsection.

02510.11(d) Epoxy Coating Repair - Delete this subsection.

02510.30(d) Ties and Support - Delete this subsection.

02510.60 Wire Reinforcement - Replace this subsection with the following subsection:

02510.60 Ties and Supports - Provide tie wire and supports according to *CRSI Manual of Standard Practice*.

(a) Coated Reinforcement Ties and Supports – Provide nonmetallic coated ties and supports for coated reinforcement, including ties for coated-to-uncoated reinforcement connections.

(b) Uncoated Reinforcement Ties and Supports - Tie all mats of galvanized steel bars with galvanized ties. Provide precast concrete blocks with galvanized ties that support galvanized reinforcement.

SP02513 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-24-25)**

SECTION 02513 – STAINLESS STEEL REINFORCEMENT

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 02513 of the Standard Specifications modified as follows:

02513.30 Chairs and Supports – Delete this subsection.

02513.60 Tie Wire - Replace this subsection with the following subsection:

02513.60 Ties and Supports - Provide 16 gauge tie wire and supports from Type 304 or Type 316 stainless steel according to *CRSI Manual of Standard Practice*.

SP02560 (Special Provisions for the 2024 Book) **(Bidding on or after: 01-01-25 Last updated: 05-23-25)**

SECTION 02560 - FASTENERS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 02560 of the Standard Specifications modified as follows:

02560.60(a)(1) Method 1 – Replace the paragraph that begins "Continue to tighten the nut until…" with the following:

Continue to tighten the nut until the nut has turned twice the rotation shown in Table 00560-3 of Section 00560 from its snug-tight position mark for bolt lengths up to 8D (for greater than 8D up to 12D bolt lengths tighten to 1 1/6 turn from snug-tight).

SP02690 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 01-23-25)**

SECTION 02690 – PCC AGGREGATES

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 02690 of the Standard Specifications modified as follows:

(Use the following lead-in paragraph and subsection .40 when lightweight coarse aggregate is specified.)

Add the following subsection:

02690.40 Lightweight Coarse Aggregate - Provide lightweight coarse aggregate from the QPL.

(Use the following lead-in paragraph and subsection .50 when lightweight fine aggregate is specified. Contact ODOT Structure Services prior to selecting internal curing.)

Add the following subsection:

02690.50 Lightweight Fine Aggregate - Provide lightweight fine aggregate (LWFA) from the QPL. Maintain LWFA at or above saturated surface dry (SSD) condition by uniformly saturating and allowing drain down prior to batching and verify moisture condition by sampling and testing according to ODOT TM 249. Maintain the SSD condition during all batching operations.

SP02910 (Special Provisions for the 2024 Book) **(Bidding on or after: 05-01-25 Last updated: 02-03-25 Required when sign panels require anti-graffiti coating.)**

SECTION 02910 - SIGN MATERIALS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 02910 of the Standard Specifications modified as follows:

Add the following subsection:

02910.23 Digital Printing -

(a) Digitally Printed Ink Systems – Provide digitally printed ink systems that:

- Produce traffic signs using components, and processes that comply with the retroreflective sheeting manufacturer's recommendations.
- Meet and comply with daytime and nighttime chromaticity (color standards) as recognized in ASTM D4956 *Standard Specification for Retroreflective Sheeting for Traffic Control*.
- Meet 70% for type XI standards of the initial retroreflectivity specifications of each respective reflective film color as found in ASTM D4956.

(b) Retroreflective Sheeting – Furnish retroreflective sheeting that:

- Consists of white or colored sheeting having a smooth outer surface and that has the property of a retroreflector over its entire surface.
- Conform to all requirements of the current version of ASTM D4956. Designate the retroreflective sheeting as type XI ASTM D4956 classification.
- Has a Class 1 pressure-sensitive adhesive, as defined by ASTM D4956, protected by an easily removable liner. Fabricate finished traffic signs and traffic sign faces using retroreflective sheeting of Type XI ASTM D4956 classification.

(c) Protective Overlay Film – Fabricate permanent traffic signs printed with digital ink systems with a full sign protective overlay film designed to provide a smooth surface needed for retroreflectivity, and to protect the sign from fading and UV degradation. Comply with the retroreflective sheeting manufacturer's recommendations for the overlaminate to ensure proper adhesion and transparency. Meet the reflective film durability as identified in the warranty requirements.

02910.33 Permanent Legends – Replace this subsection, except for the subsection number and title, with the following:

(a) General – Permanent legends consist of white retroreflective screened, red retroreflective screened, black screened or cut-out white retroreflective sheeting. Meet the design of the FHWA Standard Rounded Capital Letter Alphabets for the letters and numerals of all permanent legends.

(b) Retroreflective White Screened Legend – Use transparent paste materials for the reverse screening of retroreflective white legends and for the screening of retroreflective red legends conforming to the recommendations of the manufacturer of the reflective sheeting.

(c) Retroreflective Cut-out Legend – Use Material for retroreflective cut-out legend conforming to the requirements of 02910.20.

(d) Nonreflective Black Screened Legend – Furnish Material for nonreflective black screened legends that is compatible with the sign sheeting, as recommended by the sign sheeting manufacturer.

(e) Nonreflective Black Cut-out Legend – Use Material for nonreflective cut-out legend conforming to 02910.21.

(f) Digitally Printed Sign – Use processes and Materials for digitally printed signs conforming to the requirements of 02910.23.

(Use subsection .70 when sign panels require anti-graffiti coating.)

Add the following subsection:

02910.70 Anti-Graffiti Coating for Signs:

(a) General - Use anti-graffiti coating from the QPL. Apply anti-graffiti coating over both the background and legend sheeting, per the manufacturer's recommendation.

(b) Acceptance - Furnish a quality compliance certificate according to 00165.35, certifying that the anti-graffiti coating used is an acceptable product on the QPL.