Unit 2 Lesson 1: Contract Documents

Course Navigation Tips:

- To complete each lesson, you must interact with the audio narration at the top of each section.
- You may drag the toggle on the playback bar to the last 5 seconds and let it play. This will allow the system to note it as complete.
- You are encouraged to complete the entire unit before closing in case your progress is not saved.

You must click on all images before moving on to next Lesson.

01:25

Start Audio Narration

The information in this section applies to the typical ODOT design-bid-build projects that are advertised on the Electronic Bidding Information Distribution System (eBIDS). Other project types may include permit projects through the Maintenance and Operations Branch, Oregon Procurement Information Network (ORPIN), local agency and private developer projects and design-build.

The contract documents (also known as construction documents) include, but are not limited to,

- Contract Change Orders
- Special Provisions
- Contract Plans
- Standard Specifications

These documents are intended to describe all of the items of work collectively necessary to complete the project.

Be sure to follow the project specific requirements for each project. Remember that no matter the project type, inspection for curb ramps “on or along the state highway” needs to use the ODOT Inspection Forms for acceptance. Any curb ramp built under an ODOT contract will follow this inspection process.

02:41

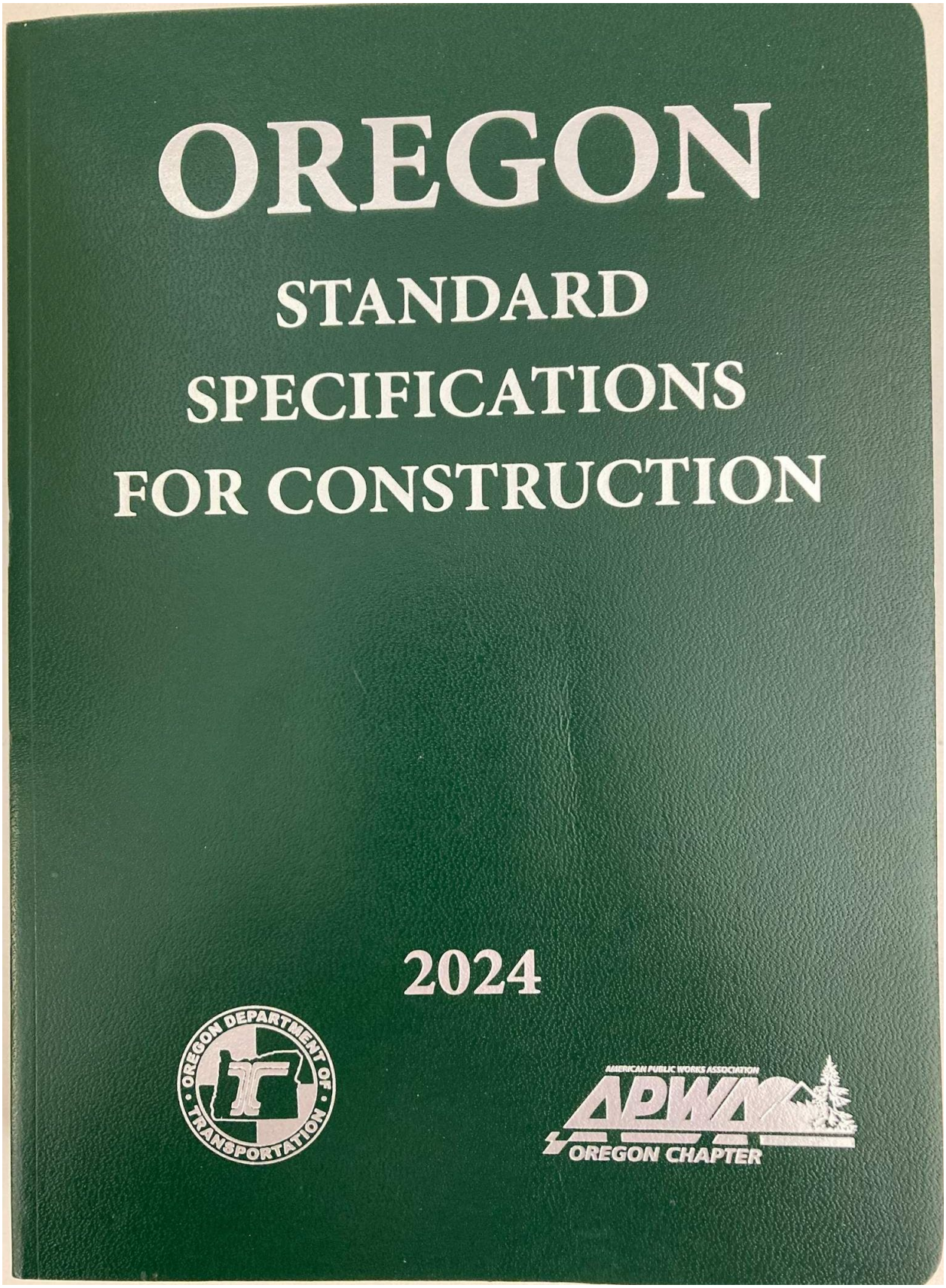
Continue Audio Narration

Oregon Standard Specifications for Construction

Link to Oregon Standard Specifications for Construction

Copies are also available for purchase on this link.

STANDARD SPECS



Oregon Standard Specifications for Construction

The Oregon Standard Specifications are usually updated and released every 3 years. Note that the 2024 Standard Specifications have been released and will be used on contracts beginning on or after December 1, 2023. **The 2024 Oregon Standard Specifications will be used for this course.**

The Oregon Standard Specifications for Construction describe the contractual relationship and responsibilities between the contractor and the Agency. It provides directions, provisions, and requirements necessary for performing highway construction public improvement projects.

Specification Sections

The standard specifications are separated in sections by the following order. These are roughly organized around construction staging (e.g., earthwork, base, paving, striping, signs, etc.). To help you find what you need, there is a table of contents at the beginning and an index with key words in back.

The following are the section numbers and definitions:

Number	Definition
00100	General Conditions
00200	Temporary Features and Appurtenances
00300	Roadwork

Number	Definition
00400	Drainage & Sewers
00500	Bridges
00600	Bases
00700	Wearing Surfaces
00800	Permanent Traffic Safety & Guidance Devices
00900	Permanent Traffic Control & Illumination Systems
01000	Right of Way Development & Control
01100	Water Supply Systems
02000	Materials
03000	Materials

Section Subsections

To support consistency in the process, most subsections are structured this way.

Group	Numbering
Description	X.00 to X.09
Material	X.10 to X.19
Equipment	X.20 to X.29

Group	Numbering
Labor	X.30 to X.39
Construction	X.40 to X.59
Maintenance	X.60 to X.69
Finishing, Clean-up, Warranties	X.70 to X.79
Measurement	X.80 to X.89
Payment	X.90 to X.99

03:31

Continue Audio Narration

00759
Miscellaneous Portland Cement Concrete Structures

Section 00759 of the Oregon Standard Specifications for Construction is one of the main Sections that applies to curb ramps constructed in Oregon. **The exam will cover items found in the Oregon Standard Specifications related to construction of curb ramps and the contract requirements.**

The specifications require that an ODOT ADA Certified Contractor is directly supervising the curb ramp construction. Verification of certified contractors is required to be submitted prior to construction. The contractor shall repair or replace deficient curb ramps at no additional cost to the Agency in accordance with the specification 00759.

It is recommended that the contractor verifies the forms prior to pouring. This is a best practice for successful (passing) ramp construction. In addition, for a successful (passing) ramp construction it is recommended that grades are checked on the wet concrete.

Be advised that completion of the ODOT Curb Ramp Inspection Forms requires final paving to be in place so that gutter flow, counter slope, and lips can be measured and recorded.

Contractor to Verify Concrete Forms

The 00759 Standard Specifications include, in particular for curb ramp work, the following:

00759.02 Definitions

00759.03 Required Submittals

- Working Drawings
- Curb Ramp Work Plan
- ADA Certification for Contractors
- Corrective Action Plan

00759.04 Preplacement Conference

00759.12 Curb Ramp Treatment

00759.20 Equipment

00759.30 Personnel Qualifications

00759.50 Surface Finishing

00759.55 Correction of Deficient Structures

00759.90 Payment

Plans & Specials

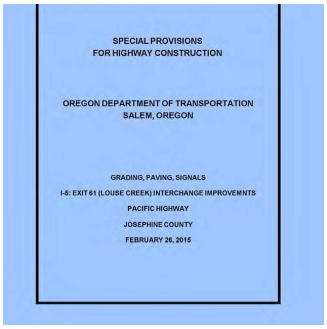
What are Special Provisions?

Special Provisions are project-specific revisions or additions to the standard specifications. Each Project will have special provisions that supersede the standard specifications. **Contractors are responsible for reviewing the special provisions.**

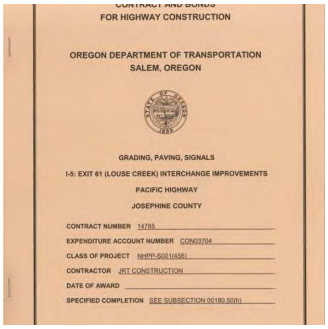
The Special Provisions include revisions for a specific project including the Oregon Standard Specifications by reference and any approved modifications or additions to the Special Provisions.

The Special Provisions are part of the contract after the contract is awarded.

There are two versions of the special provisions. "Special Provisions for Highway Construction" is the bidding version and has a blue cover. The "Contract and Bonds for Highway Construction" is the final contract version and has a tan cover. **Only use tan covered special provisions and plans labeled contract plans.** Contract documents are used to build the project. These plans will have any addendums from the bidding documents added. Tan special provisions include bid prices and the awarded contractor's name. Click on either image to see a full view of the covers.



Bidding Special Provisions



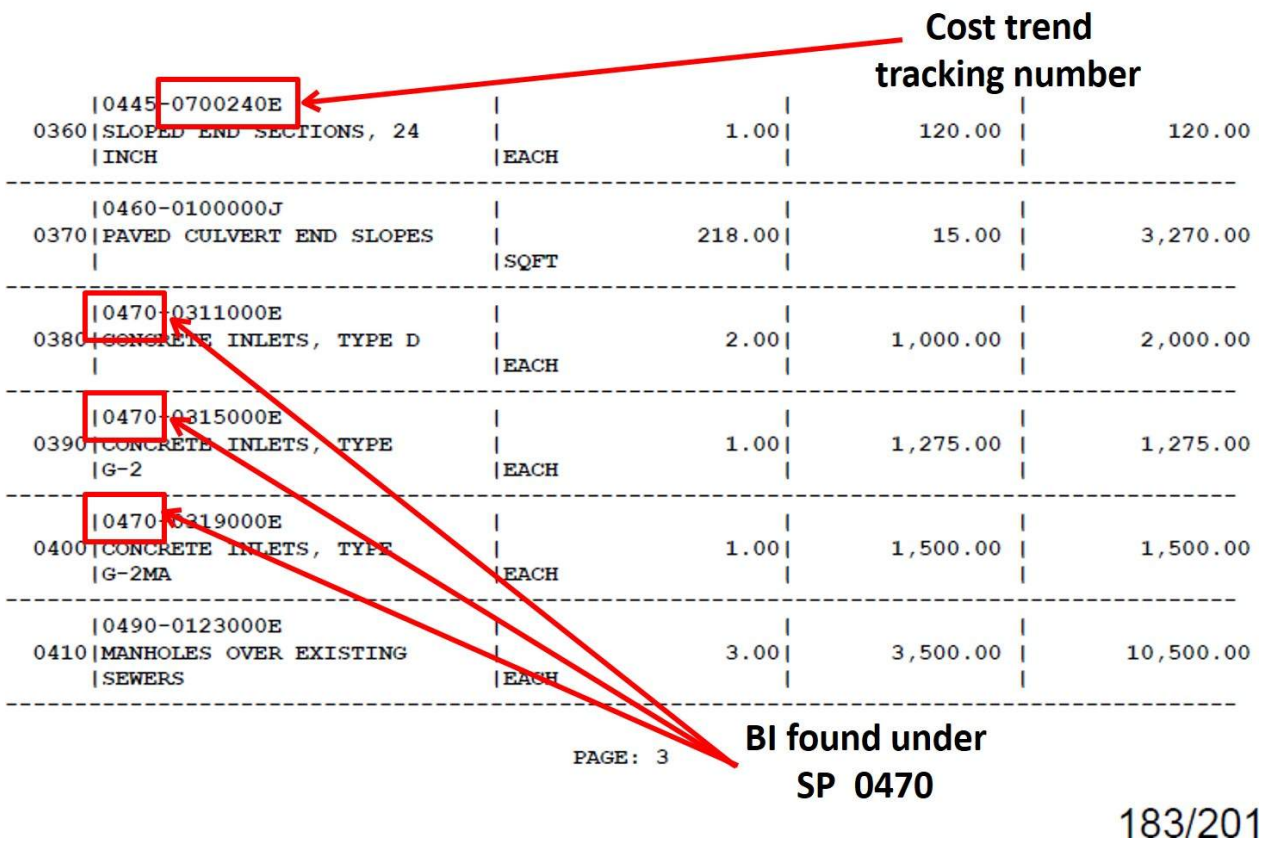
Contract Special Provisions

Schedule of Items

Example Contract Special Provisions

At the end of the special provisions is the list of all of the bid items. The chart to the right shows how to read the schedule of items. (Section guidance sometimes states 1999-9z9. These are not in the standard specifications so you may have to search the section in special provisions.)

Click on the image on the right to view.



Schedule of Items example

02:24

Continue Audio Narration

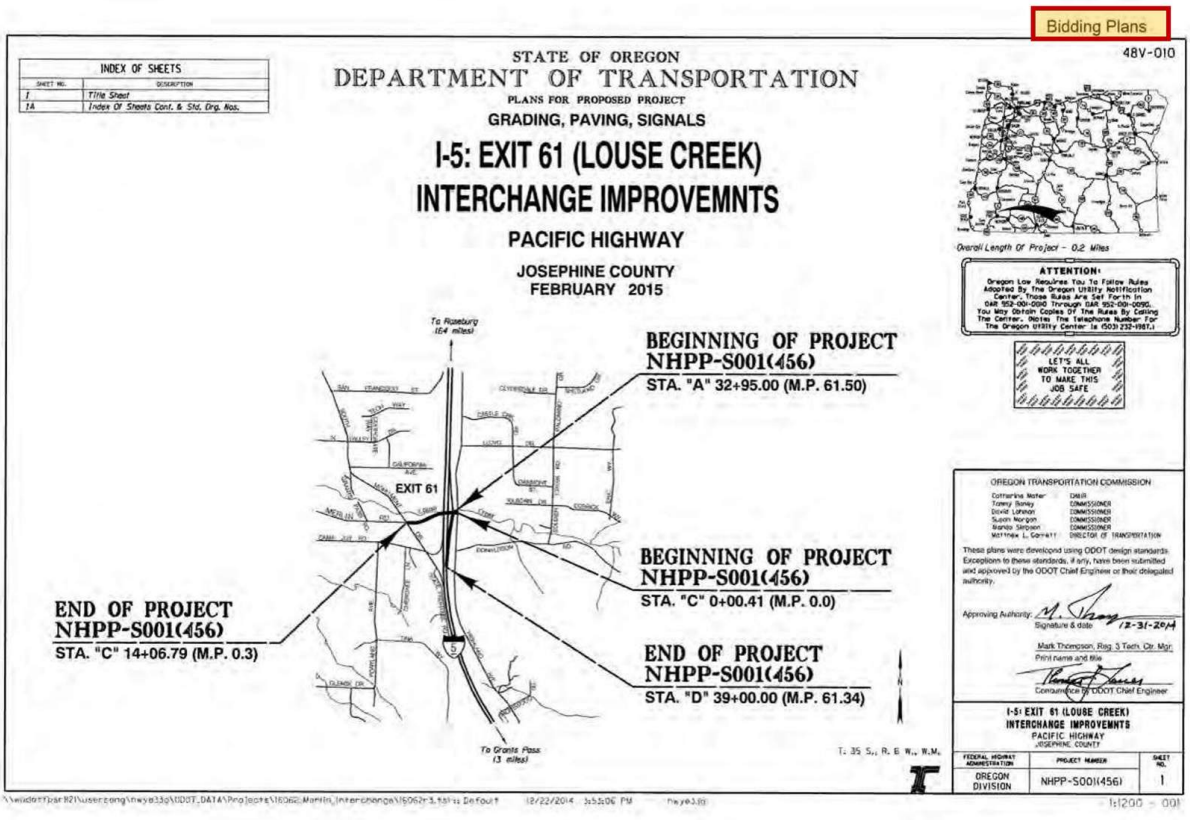
Project Plans

When the Project goes to bid, a set of plans is included with the bidding special provisions. Once the Project is awarded, a set of plans goes with the contract special provisions. Contract plans are sequenced and numbered in specific order. All sheet series are not necessarily included in every set of contract plans. **Only use plans labeled contract plans.**

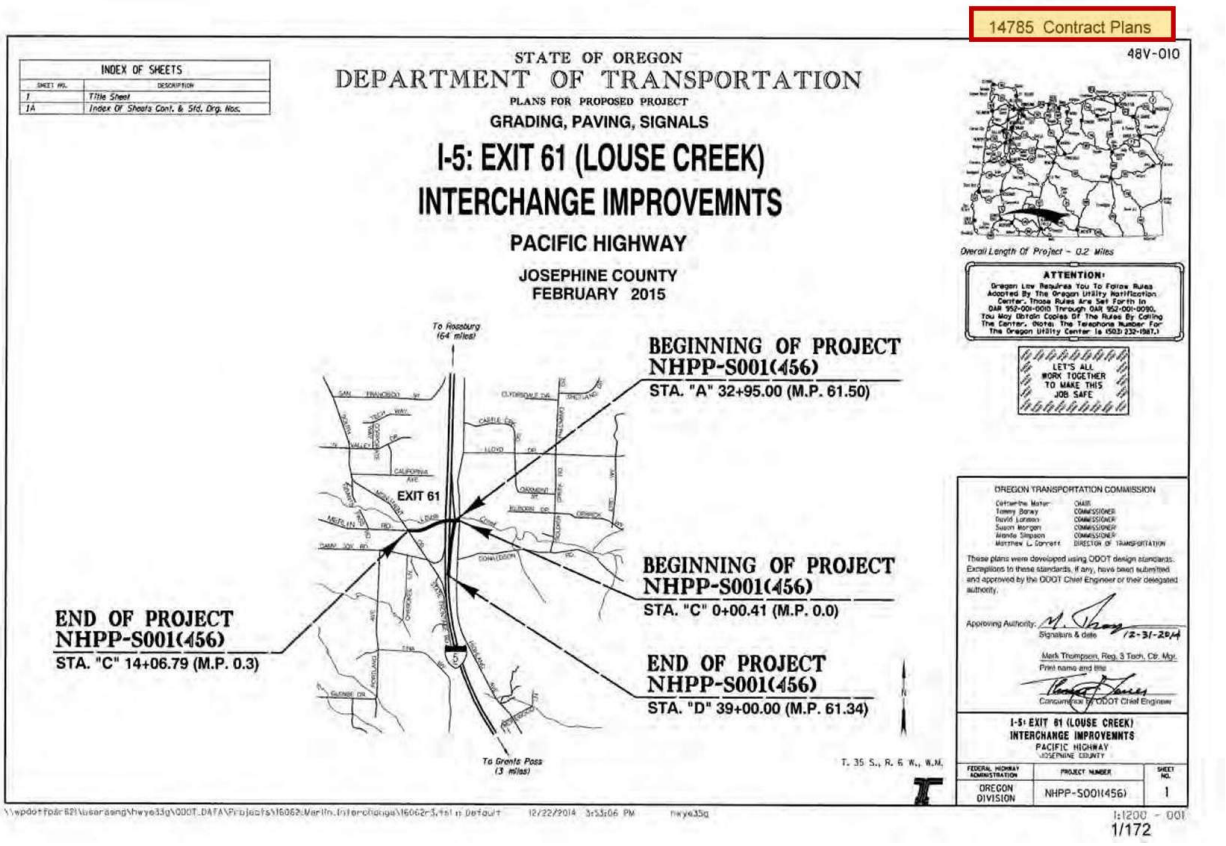
The plans pages usually follow this sheet order:

- A - Title sheet
- B - Roadway details
- C - Roadway construction (main line)
- D - Roadway construction (match line alignments)
- E - Traffic Control
- F - Roadside development/erosion control/wetland mitigation
- G - Geotechnical
- H - Hydraulic
- I - Not used
- J - Bridge
- K - Intelligent Transportation Systems
- L - Signs
- M - Signals
- N - Automatic Traffic Recorder
- O - Not used
- P - Illumination
- Q - Permanent Pavement Markings
- R-Z - Outside Agency plans

Scroll through the images below.



Bidding Plans example



Contract Plans example

ADA Program Logo

As ODOT's ADA Program unit has matured, a permanent logo has been developed to identify those projects that are delivered under the ADA Program with specific expectations, guidance, and processes for preparing the contract for advertisement. Contract plans are retained in ODOT records as archival documents when alterations occur on the state highway system.

The pilot program logo has been retired and should not be on contract documents following January 1, 2023. The new logo shown in Figure B shall be placed on the ODOT contract title sheets for ADA Curb Ramp Only project until ODOT obligation is completed for the settlement inventory of curb ramps. The primary scope and purpose of the projects is to address settlement curb ramp reconstruction. The obligation may be fulfilled prior to the year 2032, and the program usage of the logo may be refined over time based on the department's organization, ADA transition plans and goals.

ADA Program projects are required to have curb ramps meeting ODOT's applicable standards with the final construction.

Figure A: Retired ADA Curb Ramp Pilot Program Logo

Figure B: New logo for ADA Program

06:11

Start Audio Narration

Oregon Standard Drawings

This is a listing of the Oregon Standard Drawings commonly used in ADA curb ramp construction. There are a number of recently revised Oregon Standard Drawings that address requirements for

curb ramps and pedestrian signals. You may see each related standard drawing by clicking the buttons below.

Link to Oregon Standard Drawings-Roadway

STANDARD DRAWINGS

RD900 Series- Curb Ramps and Detectable Warning Surfaces

- **RD900 Curb Ramp Components and Legend**
- **RD901 Curb Ramp Legend and Corner Identification**
- **RD902 Detectable Warning Surface Details**
- **RD904 Detectable Warning Surface Placement for Curb Ramps**
- **RD905 Detectable Warning Surface Placement for Directional Curbs**
- **RD906 Detectable Warning Surface Placement for Accessible Route Island**

- **RD908 Detectable Warning Surface Placement for Rail**
- **RD909 Detectable Guide Strip Placement at Bike Ramps**
- **RD910 Perpendicular Curb Ramp**
- **RD912 Perpendicular Curb Ramp**
- **RD913 Perpendicular Curb Ramp With Closure**
- **RD916 Perpendicular Curb Ramp Single Ramp**
- **RD920 Parallel Curb Ramp**
- **RD922 Parallel Curb Ramp Single Ramp**
- **RD930 Combination Curb Ramp**
- **RD932 Combination Curb Ramp**
- **RD936 Combination Curb Ramp**
- **RD938 Combination Curb Ramp Single Ramp**

- **RD940 Blended Transition Curb Ramp Single Ramp**
- **RD950 End of Walk Curb Ramp**
- **RD952 End of Walk Curb Ramp**
- **RD960 Unique Curb Ramp**

RD1100 Series - Bicycle Facilities

- **RD1140 Separated Bike Lane Crossing**

RD700 Series - Curbs, Islands, Sidewalks and Driveways

- **RD700 Curbs**
- **RD702 Bike Lane Curbs**
- **RD705 Islands**
- **RD710 Accessible Route Islands**
- **RD711 Accessible Route Channelized Islands**
- **RD720 Curb Line Sidewalks**
- **RD721 Separated Sidewalks**
- **RD722 Sidewalk Joints and Transition Panels**
- **RD725 Separated Sidewalk Driveways or Alleys (Options A, B & C) ODOT Highways**
- **RD730 Curb Line Sidewalk Driveways or Alleys (Options D & E) ODOT Highways**
- **RD735 Curb Line Sidewalk Driveways or Alleys (Options F & G) ODOT Highways**
- **RD740 Separated Sidewalk Driveways or Alleys (Options H, I & J) Local Jurisdictions**

- **RD745 Curb Line Sidewalk Driveways or Alleys (Options K & L) Local Jurisdictions**
- **RD750 Curb Line Sidewalk Driveways or Alleys (Options M & N) Local Jurisdictions**
- **RD770 Metal Handrail**
- **RD771 Metal Handrail Details**
- **RD780 Aluminum Pedestrian Fence (MASH, TL-2)**
- **RD781 Aluminum Pedestrian Fence Unit Details**
- **RD782 Aluminum Pedestrian Fence Components Details**

Link to Oregon Standard Drawings-Traffic

STD. DWG. TRAFFIC

TM200 Series- Illumination

- **TM240 Crosswalk Closure Detail**

TM400 Series - Signals

- **TM457 Pedestal Foundation and Traffic Signal Assembly**
- **TM467 Pedestrian Signal Mount and Pedestrian Pushbutton Details**
- **TM472 Junction Box / Hand Holes**

Oregon Standard Drawing Updates

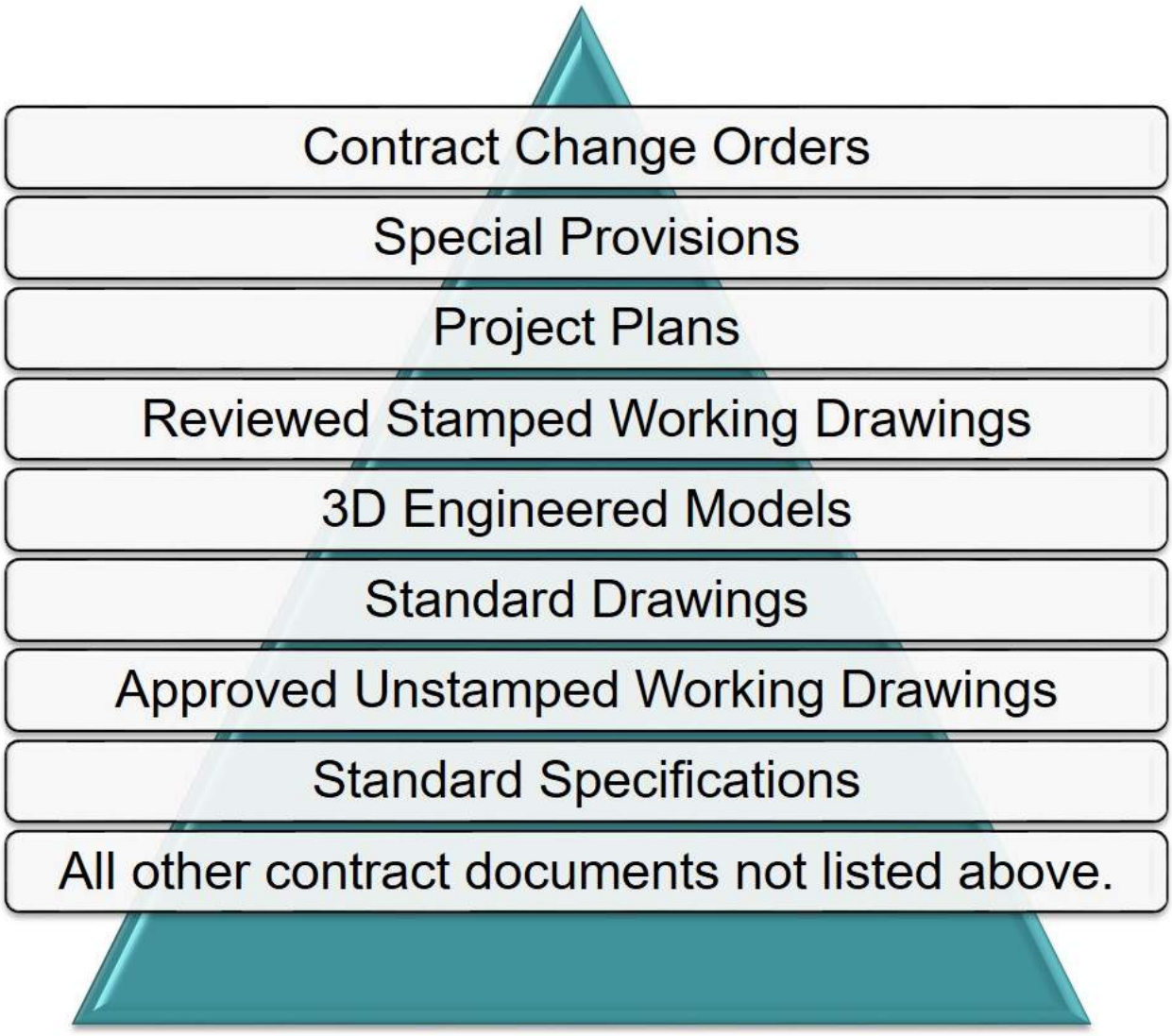
Each standard drawing is marked with an effective date range along the bottom edge to help identify which drawing should be used for a project. It is located at the bottom of the sheet. **The contract will utilize the drawings with an effective date that corresponds to the project bid date.**

1. The drawings are used by multiple government agencies and not all projects include standard drawings in the contract plan set.
2. The standard drawing is valid for the construction life of the project, even if project construction extends beyond the effective date range.

Spend some time reviewing the drawings to get familiar with the construction requirements. Oregon Standard Drawings are published with updates typically every 6 months. **The exam will cover items found on the Oregon Standard Drawings related to curb ramp construction and push buttons for signalized crosswalks.**

Order of Precedence 00150.10(a)

With all of the differing contract documents published throughout the life of the Project, it is important to know which takes precedence when a decision needs to be made. The Order of Precedence listed below can help you determine which contract document to follow. This is defined in 00150.10(a) of the standard specifications. **Remember, notes on a drawing shall take precedence over drawing details.**



Order of Precedence

The Engineer on the project will resolve any discrepancies between these documents using the order of precedence listed.

- Contract change orders
- Special provisions
- Stamped drawings (prepared drawings specifically applicable to the Project and bearing the Project title)
- Reviewed and accepted, stamped working drawings
- 3D engineered models (and supplemental Agency-prepared line, grade and cross section data applicable to the Project)

- Standard drawings
- Approved unstamped working drawings and 3D construction models
- Standard specifications
- All other contract documents not listed above

- Notes on a drawing shall take precedence over drawing details.
- Dimensions shown on the drawings, or that can be computed, shall take precedence over scaled dimensions.

Expand all tabs, review all figures, and advance audio to the end before moving on. A lesson quiz is on the next screen.

CONTINUE

Unit 2 Lesson2: Tools for Inspection

You must click on all images before moving on to next Lesson.

02:33

Start Audio Narration

Safety

When performing an inspection, **it is recommended that three people (minimum of two) inspect each curb ramp together.** Having three inspectors ensures a designated spotter as a matter of personal safety. There are many hazards on the road. People, vehicles, and hazardous objects are just a few things to look for. If only two inspectors are available, inspectors should rotate inspecting and recording measurements with spotting duties. Having someone to spot you ensures that everyone gets home safely. **Follow your department, crew, or agency safety policy and guidelines when inspecting.**

Inspection Tools

Smart Level

Smart Level (Required)

Only approved smart levels are used for inspection on ODOT projects and they are specified in the specifications in 00759 under the Equipment Section.

It is required to have at least one 6-inch and one 24-inch smart level to perform inspections. It is strongly recommended that you also bring at least one backup 24-inch smart level. Remember, it is impossible to complete the required forms without a working smart level.

Note that there are different calibration methods for Gen 2 and Gen 3 levels. The Gen 3 models are waterproof, dust proof, semi self-calibrating, and have a back light. The Gen 2 SmartTool model does not have these features.

It is imperative to calibrate levels daily, after substantial shock, and/or after a 20°F temperature change. SmartTool levels may be ordered online or picked up at local retail stores. To learn how the SmartTool works, click on the button to watch a YouTube video on SmartTool calibration. Or download the calibration.pdf for step by step written instructions.

In many of the photographs within this course, you will see more than one SmartTool level. This is to give visual examples of placement for your level. You are not required to have multiple levels to measure curb ramps but it may expedite time spent inspecting if you have multiple calibrated tools available.

SmartTool Calibration Video

Click the button to watch a YouTube video about calibrating a SmartTool level or use the pdf below.

CALIBRATION VIDEO

PDF

calibration.pdf
1.5 MB

Click on each of the following images to learn more about the approved SmartTool Levels. Note the recently approved 6-inch SmartTool level Model 92510.

24” SmartTool Level
Gen 3 Model 92500
(does not include case)

24” SmartTool Level
Gen 2 Model 92379
(includes case)

6” SmartTool Level
Model 92346

New for 2025!
6” SmartTool Level
Model 92510

05:32

Continue Audio Narration

Smart Level References in the Standard Specifications

The smart level use for construction and inspection measurement is referenced in several sections of the Oregon Standard Specifications. The following excerpts are shown below.

00759.22 - Smart Level - Use ODOT approved smart level devices to measure cross slopes and curb ramp slopes. Calibrate smart levels at the time of inspection. Use percentage mode to record all slope measurements to the nearest tenth of a percent relative to a true horizontal plane (zero).

(a) Qualified Smart Levels - 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.

Updated 00759.22 Language for New Approved 6" Smart Level 92510

The language above is from the 2024 Oregon Construction Standards book. The following is the language added for the recently approved Model 92510 6" SmartTool level in the Boilerplate Special Provisions.

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.

Boilerplate Special Provisions

For 00759.22 boilerplate language, click on the most recent link under the "Boilerplate Sets by Effective Date."

BOILERPLATE

00759.50 Surface Finishing

(c) Driveways, Walks, and Surfacings - ...The 24- inch smart level will be used to measure driveway and sidewalk cross slopes on the pedestrian access route.

(d) Curb Ramps - ....The 6-inch smart level will be used to measure curb running slope. The 6-inch smart level will be used to measure slopes on portions of the curb ramp, gutter pan, or adjacent surfaces that cannot accommodate a 24-inch smart level. All other curb ramp locations will use a 24-inch smart level to measure slopes.

Pavement Markers (Recommended)

Using Pavement markers, such as lumber/keel crayons and soapstone are useful tools to document measurements directly on the pavement. This reduces errors and can help streamline the inspection process. It can also assist your inspection by documenting values with a photo of the completed construction and measurements.

ODOT inspection crews use four (4) different colors: red, yellow, green and white.

- Red = Curb ramp slopes
- Yellow = Curb ramp dimensions
- Green = All pushbutton features
- White = Curb ramp comments

All values that are recorded for the inspection form can be written on the corresponding element of the curb ramp system. This is the first quality assurance check when assessing the quality and completeness of the collected data. Photos taken with recorded values at the time of inspection

can be valuable in minimizing data errors while transferring values into the Curb Ramp Inspection Forms. It can be used to perform a second quality assurance check once the form is completed.

Pavement Marking Crayons

Plumb Bob

Plumb Bob (Required)

A plumb bob increases accuracy when measuring the reach range from the push button clear space. You will be required to use it for inspection of push buttons. A plumb bob is a pointed weight attached to the end of the string.

Engineer's Tape (Required)

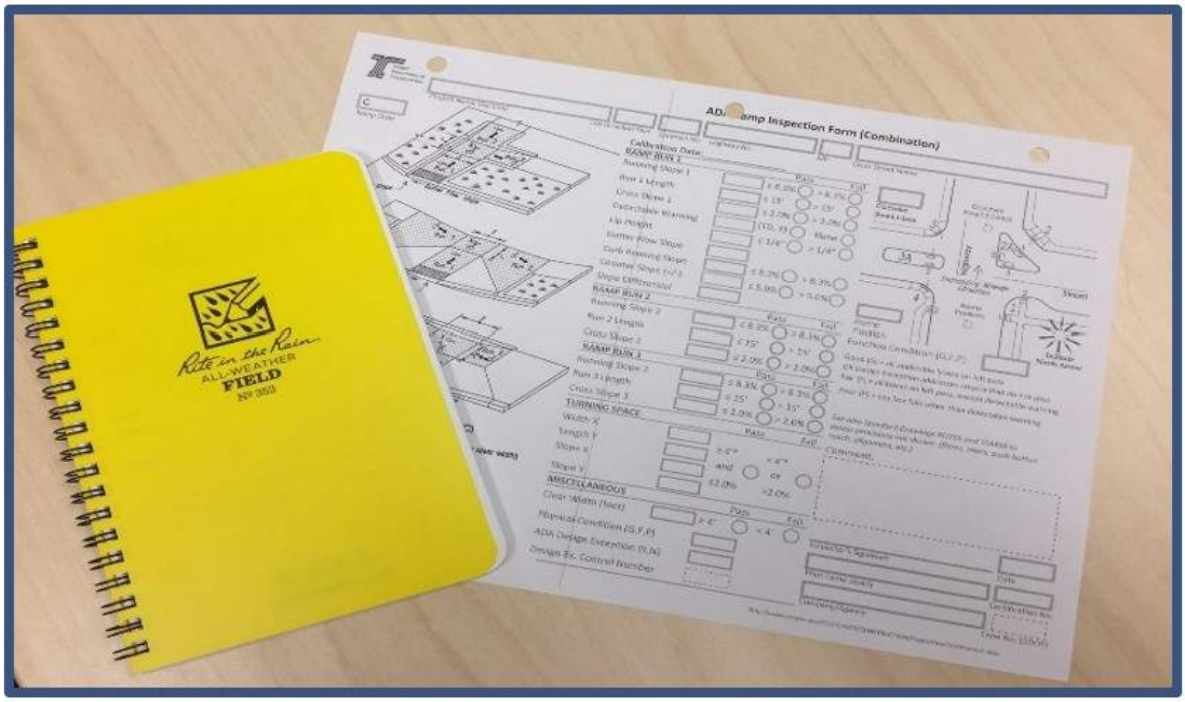
ADA curb ramp and push button inspections are performed using a metal engineer’s tape. Typically, a tape 25 feet in length is sufficient to complete most inspections.

Engineer's Tape

The picture above shows how the reach range distance is measured with plumb bob and tape measure for the push button inspection form.

Rite-in-the-Rain Paper (Recommended, if not using an electronic device)

Working in wet weather can be tricky when utilizing regular paper. Printing inspection forms on waterproof paper helps to ensure the integrity of the data collected during inspection. Use a pencil instead of a pen when using waterproof paper to avoid smudging.



Rite-in-the-Rain Paper and Notebook

Using Traffic Cones During Inspection

Traffic Cones (Required)

Traffic cones should be carried with inspectors as a safety measure while performing curb ramp inspections to alert drivers, cyclists, pedestrians and others that there are workers out in the roadway.

Cleaning Tools (Required)

Cleaning tools are required to clean curb ramps to ensure that ramp surfaces are ready for accurate and repeatable measuring. There are no specific tools that are required but the cleaning tools need to be able to clean off dirt and debris from curb ramp and surrounding roadway surfaces. Recommended cleaning tools include

- Brooms

- Leaf Blowers
- Flat Shovels
- Dustpans


56V
EGO

Activity

Drag and drop each item into the appropriate category.

Required Tools

Plumb Bob

25-foot Engineer's Measuring Tape

24" Smart Level

6" Smart Level

Traffic Cone (minimum 18")

Recommended Tools

- Temporary Pavement Markers (Crayon)
- Rite-in-Rain Paper
- Pencil

Cleaning Tools

- Leaf Blower
- Brooms

Shovels

01:40

Continue Audio Narration

Camera (Required)

Make sure you have a camara when inspecting curb ramps. There are many types of cameras; digital cameras, work phones, and tablets. Any camera that can provide good quality digital color photos that you can download to files and upload to the Curb Ramp Inspection Forms is acceptable.

Document with Photos (Required)

Take at least one good photograph of the ramp from the street and one of the curb ramp extents. For safety, a spotter is recommended when an inspector is in the roadway. Provide additional photos of unique features. Photos are required on all curb ramp inspection forms including when a crosswalk is closed permanently or when a curb ramp is removed from the inventory. Photos are also necessary for pushbutton inspection forms. It is preferable to have 2 to 4 photos with various angles including background to verify the location of the construction feature (curb ramp, closure, pushbutton etc.) Pictures are helpful to the ADA Inventory Team who are updating, adding the asset to the inventory. This will be discussed in further detail in other Units.

Procedure for Taking Photos:

1. Clean the ramp with appropriate tools, removing any debris and equipment.
2. Perform inspection measurements and mark as applicable.
3. Ensure no people are in the photo.
4. Take photo from the street showing the whole curb ramp at the corner or other location.

Expand all tabs, review all figures, and advance audio to the end before moving on. A lesson quiz is on the next screen.

After you have completed the quiz, close your window and the next Unit will become available in Workday Learning.

CONTINUE