Appendix C

Forms

Oregon Department of Transportation

DAILY FORCE ACCOUNT RECORD

Forms must be ordered. Select here to open up order form

CONTRACTOR	PROJECT NAME (SECTION)		CONTRACT NO.	
SUB-CONTRACTOR	HIGHWAY	COUNTY	EWO NO.	DATE OF WORK
DESCRIPTION OF WORK				
REMARKS				

LABOR

NAME	CRAFT GROUP NO.	HOURS ST	HOURS OT

Ordered by Engineer

MATERIALS

DESCRIPTION	QUANTITY	UNIT
DO NOT LIST: "ALL" "LUMP SUM" OR "PER ATTACHED INVOICE"		

EQUIPMENT

CONTR.	TYPE OF EQUIPMENT	MANUFACTURER	MODEL NO.	YEAR AND/OR SERIAL #	GAS	DIESEL	SIZE, CAPACITY, HP CFM, AXLE CONFIG.	PAY ATTACHMENT	OPER	STDBY

Ordered by Engineer

SEE THE INSTRUCTIONS ON THE COVER. The Daily Force Account Record is prepared each day by the Inspector and signed by the Contractor's Representative. Original to the Contractor Representative, copy one to Construction Contract Services with Contractor's billing, copy two to Project Manager, copy three to Originator.

CONTRACTOR'S REPRESENTATIVE SIGNATURE	PREPARED BY SIGNATURE	CERT NO.

Oregon Department of Transportation

FIELD INSPECTION REPORT

REPORT NO.	FOR BID ITEM NO.

PROJECT NAME (SECTION)	CONTRACT NO.
HIGHWAY	**F.A. PROJECT NO.**
PROJECT MANAGER	

REASON FOR THIS REPORT

☐ INSPECTION OF MATERIAL ☐ MATERIALS ON HAND

☐ OTHER (EXPLAIN)

MATERIALS DELIVERED FOR PROJECT

TYPE OF MATERIAL			DATE DELIVERED
SOURCE OF MATERIAL (MANUFACTURER OR FABRICATOR)		**DELIVERED TO (NAME OF CONTRACTOR/SUBCONTRACTOR)**	
QUANTITY DELIVERED	**UNIT**	**QUANTITY APPROVED**	**QUANTITY REJECTED (EXPLAIN)**
TOTAL APPROVED TO DATE	**ESTIMATED TOTAL REQUIRED**	**SAMPLE DATA SHEET NO. FOR SAMPLE SENT TO MATERIALS LAB FOR TESTS**	

SUPPORTING DATA

☐ MATERIALS INSPECTION LABORATORY REPORT NO. I- _____ TEST _____ LABORATORY REPORT NO. _____

☐ MATERIALS LABORATORY INSPECTION LABEL OR MARK.

☐ TEST RESULTS CERTIFICATE

☐ QUALITY COMPLIANCE CERTIFICATE

☐ QPL ITEM

☐ CONFORMANCE TO EQUIPMENT LIST AND DRAWINGS (EXPLAIN)

☐ CERTIFICATE OF MATERIAL ORIGIN FOR PERMANENTLY INCORPORATED IRON OR STEEL MATERIALS AND THEIR COATINGS ON FEDERAL AID PROJECTS

☐ FIELD TESTS OR OBSERVATIONS (EXPLAIN)

REMARKS AND EXPLANATIONS, MATERIALS DESCRIPTIONS, DATES OF MANUFACTURE, HEAT AND LOT NOS. DAMAGED OR SUBSTANDARD MATERIALS, REASONS FOR REJECTION AND DISPOSITION OF REJECTED MATERIALS.

WHERE INSPECTED	DATE	INSPECTOR SIGNATURE	CERT NO.

Construction Forms Website: http://www.oregon.gov/ODOT/Hwy/Construction/ConstForms1.shtml

Oregon Department of Transportation

General Daily Progress Report

Project Information

Project Name (Section) | Contract No.

Highway | Federal Aid No.

Contractor / Subcontractor | On-Site Supervisor | Supervisor Present? ☐ Yes ☐ No

Weather

Clear ☐	Fair ☐	Cloudy ☐	Shower ☐	Rain ☐	Snow ☐
TEMP	10-32 ☐	32-50 ☐	50-70 ☐	70-83 ☐	Over 83 ☐
WIND		Still ☐	Low ☐	Med ☐	High ☐
HUMIDITY		Dry ☐	Low ☐	Med ☐	High ☐

Contractor/Subcontractor	Hours
Add Contractor	

Number of Personnel and Major Equipment

Reset

The first four columns are fixed and cannot be changed. In each of the remaining columns, please enter a heading specific to your job (e.g., Trainees, Backhoe, Flaggers) and record the numbers used by each contractor or sub.

Supervisors	Operators	Truck Drivers	Laborers																						

Location	and/or Description of Work	Estimated Quantities		
Add Item		Item No.	This Date	Total

Temporary Traffic Control

Photo(s) ☐ Yes ☐ No

All traffic control items have been inspected and found to be satisfactory ☐ Yes ☐ No (if no, explain below)

Equipment

Photo(s) ☐ Yes ☐ No

Prepared by | Cert No. | Signature

Shift | ☐ Sunday ☐ Monday ☐ Tuesday ☐ Wednesday ☐ Thursday ☐ Friday ☐ Saturday | Work Date

General Daily Progress Report

Project Name (Section) | Work Date

Effects on Work (weather, accidents, breakdowns, delays, personnel, etc.)

Photo(s) ☐ Yes ☐ No

Materials Rejected

Photo(s) ☐ Yes ☐ No

Project Visitors

Photo(s) ☐ Yes ☐ No

Remarks

Photo(s) ☐ Yes ☐ No

Include condition of traffic control and roadway; important discussions with contractors regarding rejected work or materials and reasons; delays, difficulties, accidents, utility damage and other unusual conditions and events; arrivals and departures of major equipment, visitors.

Prepared by | Cert No. | Signature

Shift

☐ Sunday ☐ Monday ☐ Tuesday ☐ Wednesday ☐ Thursday ☐ Friday ☐ Saturday

Work Date

General Daily Progress Report
PHOTOGRAPHS

Project Name (Section)

Work Date

Insert photo in this box. (Click in box and upload photo from computer or source.) X

Photo #

Brief Description

Insert photo in this box. (Click in box and upload photo from computer or source.) X

Photo #

Brief Description

Insert photo in this box. (Click in box and upload photo from computer or source.) X

Photo #

Brief Description

Insert photo in this box. (Click in box and upload photo from computer or source.) X

Photo #

Brief Description

Insert photo in this box. (Click in box and upload photo from computer or source.) X

Photo #

Brief Description

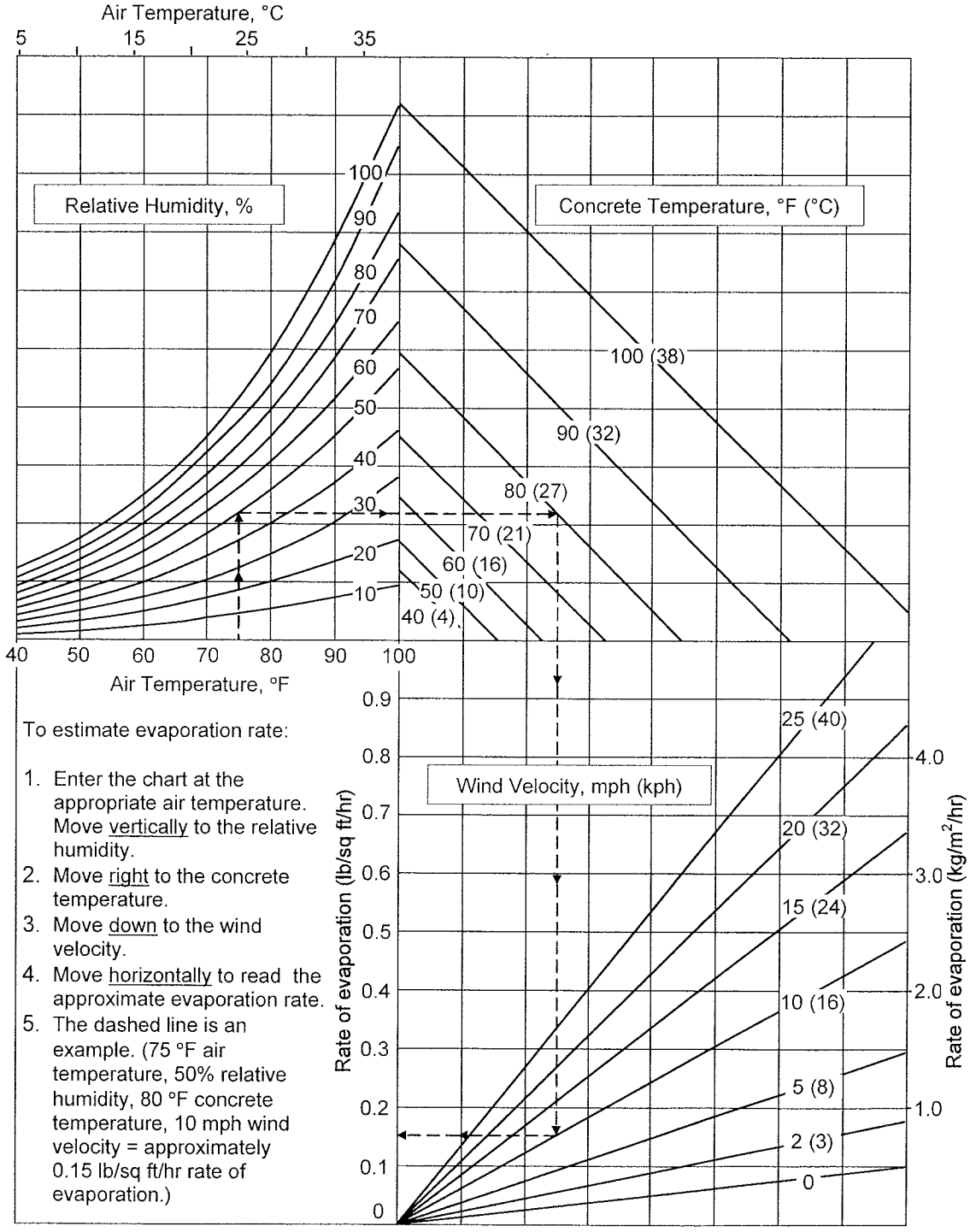
Insert photo in this box. (Click in box and upload photo from computer or source.) X

Photo #

Brief Description

00540.49(b)

FIGURE 00540-1 SURFACE EVAPORATION FROM CONCRETE [1]



[1] Based on ACI 305 R, "Hot Weathering Concreting"

PILE AND DRIVING EQUIPMENT DATA

HIGHWAY	MILEPOST

CONTRACT NO	STRUCTURE NAME AND NO.

PROJECT NAME (SECTION)

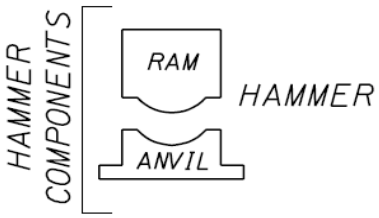
PROJECT MANAGER	CONTRACTOR

COUNTY	PILE DRIVING SUBCONTRACTOR (Piles Driven By):

TYPE OF LEADS: ☐ Fixed ☐ Semi-Fixed ☐ Swinging

OTHER (Provide Description): _____

LEAD DIMENSIONS Depth _____ Width _____



MANUFACTURER	MODEL	TYPE

SERIAL NO.	OWNER:

RATED ENERGY (KN-m)	@ LENGTH OF STROKE (m)	RAM WT. (KN)

MODIFICATIONS

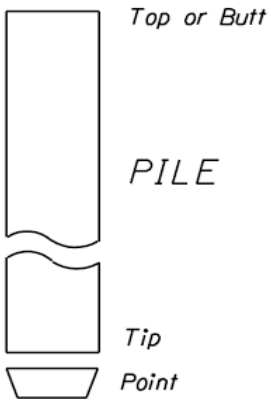
MATERIAL	THICKNESS (mm.)	AREA (mm^2)

MATERIALS	
TOTAL THICKNESS (mm.)	AREA (mm^2)
MODULUS OF ELASTICITY (E): (MPa)	
COEFFICIENT OF RESTITUTION (e)	

ALL COMPONENTS

WEIGHT (KN)	MODIFICATIONS
	`

CUSHION MATERIALS		AREA (mm^2)
NO OF LAYERS	THICKNESS (EACH) (mm.)	TOTAL THICKNESS (mm.)
MODULUS OF ELASTICITY (E): (MPa)		COEFFICIENT OF RESTITUTION (e)



PILE TYPE & SIZE	Weight (KN/m)
LENGTH IN LEADS (m)	
WALL THICKNESS (mm)	TAPER

NOMINAL PILE RESISTANCE (KN)	ACCEPTANCE BY WAVE EQUATION ☐ Yes ☐ No
DESCRIPTION OF SPLICE	
TIP TREATMENT DESCRIPTION (TYPE, MANUFACTURER, MODEL NO., ETC.)	
NOTE: If mandrel is used to drive the pile, attach separate manufacturer's detail sheet(s) including weight and dimensions.	

SUBMITTED BY:	DATE

OREGON DEPARTMENT OF TRANSPORTATION

MICROPILE INSTALLATION LOG

Project Name				Contract No.
Bridge No.	Bent No.	Pile No.	Design Load (kips)	Installation Date:

Micropile Type (A, B, C, or D)		Start of Drilling (date & time)	
Drill Rig/Drill Method		End Drilling	
Flushing Media (air/water)		Start of Grouting	
Drill Rig #, Operator		Pile Completion	
Grout Plant #, Operator		Total Duration	

Drill Bit Type and Size		Cement Type*	
Casing Dia./Wall Thickness		w/c ratio	
Casing (temporary/permanent)		Grout Strength (psi)	
Pile Inclination		Reinforcement Size/Grade/Length	

* describe any grout admixtures below in grout comments

Pile Length Above B.O.F.		Tremie Grout Quantity (bags)	
Upper Cased Length		Pressure Grout Quantity (bags)	
Casing Plunge Length		Grouting After Plunge (bags)	
Bond Length Below Casing		Total Grout Quantity (bags)	
Total Pile Length		Grout Ratio (bags/ft. bond)	

COMMENTS - PILE DRIVING

Depth from B.O.F. (ft)	Soil / Rock Description	Flush Description	Comments

COMMENTS - PILE GROUTING

Depth from B.O.F. (ft)	Pressure Range Max/Average (psi)	Comments

B.O.F. = Bottom of Footing

Was a load test performed? ☐ Yes ☐ No

If load test was performed attach load test results.

Did micropile pass load test? ☐ Yes ☐ No ☐ N/A

Oregon Department of Transportation

DRILLED SHAFT CONCRETE PLACEMENT LOG

PROJECT		BRIDGE NO.	CONTRACT NO	
BENT	STATION	SHAFT NO.	SHAFT DIAMETER	
DRILLED SHAFT CONTRACTOR		INSPECTED BY	CERT. NO.	DATE

REFERENCE ELEVATION	SHAFT TOP ELEVATION	REBAR CAGE TOP ELEVATION:	AT START	AT FINISH
DEPTH TO WATER OR SLURRY	SHAFT BOTTOM ELEVATION	REBAR DESIGN ELEV.	WITHIN SPEC? ☐ YES	☐ NO
TOP OF ROCK ELEVATION	SHAFT LENGTH	REBAR CAGE CENTERED WITHIN SPEC? ☐ YES		☐ NO

SHAFT CONCRETE INFORMATION

Placement Method

____ Free Fall

____ Tremie

De-Airing Method

____ Tremie Plug

____ Tremie Cap

____ Relief Valve

Volume in Lines

	#	ID	Length	Volume
				____ cy
				____ cy
				____ cy
Total Volume in Lines (VL)				____ cy
Estimated Waste Concrete (VW)				____ cy

Begin Pour: Date: _____ Time: _____

End Pour: Date: _____ Time: _____

Shaft Completion Time: _____
(including casing removal)

_____ **Total Concrete Volume Delivered (TVD)**

_____ **Total Concrete Volume In Shaft; cy (=TVD-VL-VW)**

Truck No.	Concrete Volume	Slump	Arrival Time	Start Time	Finish Time	Tremie Depth	Depth To Concrete	NOTES (delays, additives, breaching, casing removal)

_____ **Total Concrete Volume Delivered (TVD)**

_____ _____
INSPECTOR SIGNATURE DATE

NOTES: _____

_____

CASING REMOVAL

	OD	Top Elev.	Bot. Elev.	Start	Finish
Permanent Casing					

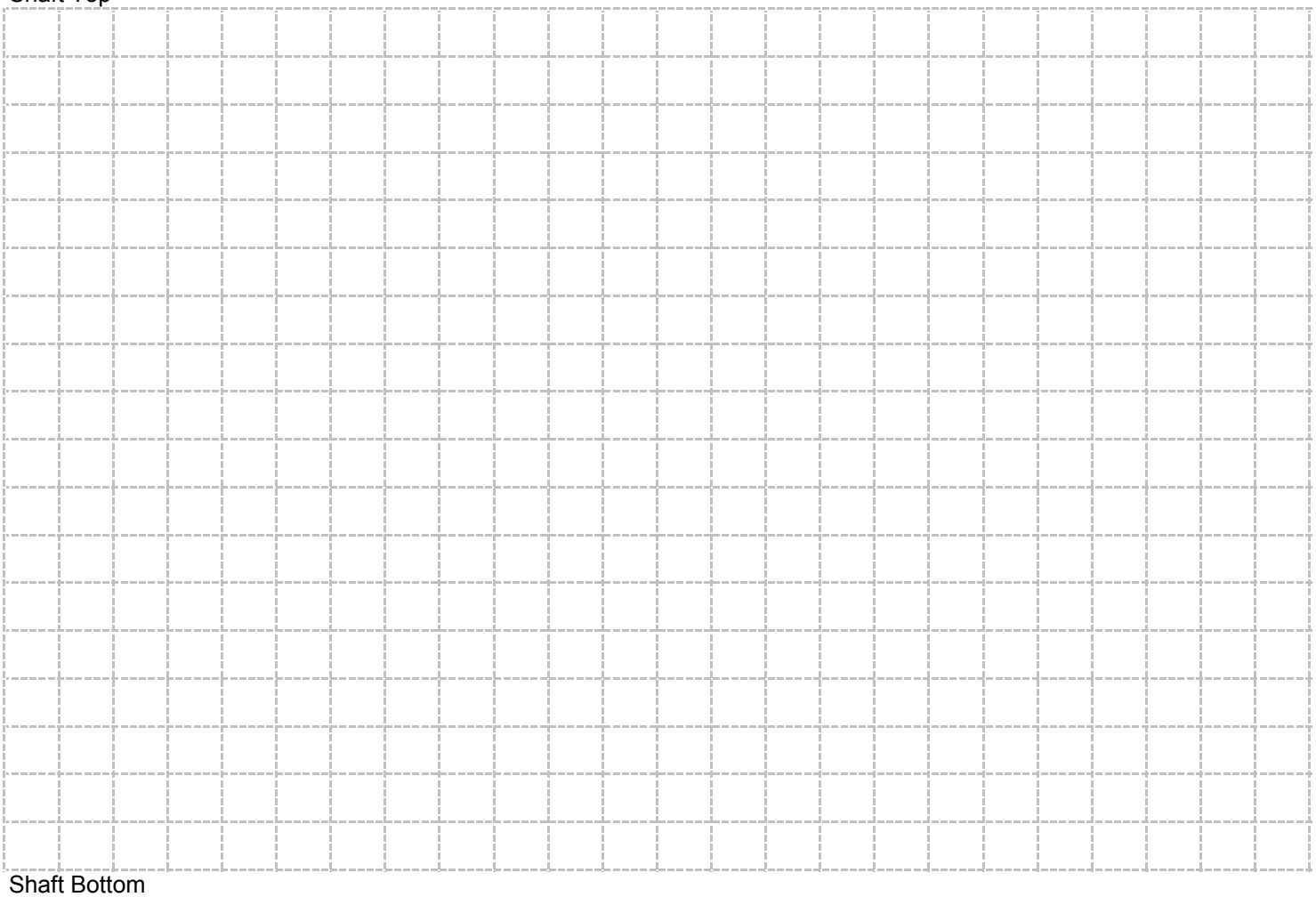
DRILLED SHAFT CONCRETE VOLUMES

PROJECT		BRIDGE NO.	CONTRACT NO	
BENT	STATION	SHAFT NO.	SHAFT DIAMETER	
DRILLED SHAFT CONTRACTOR		INSPECTED BY	CERT. NO.	DATE

CONCRETING CURVE

Prior to pouring concrete, a plot should be made showing the theoretical concrete surface (by depth or elev.) vs. concrete volume placed. During concrete placement the actual concrete surface vs. the actual concrete volume placed is then plotted.

Shaft Top



DEPTH/ELEVATION (Feet

Shaft Bottom

CONCRETE VOLUME PLACED (cubic yards)

VOLUME CALCULATIONS

Volume Delivered	TVD ____ cy	Notes/Comments:	_____
Volume in Lines	VL ____ cy		_____
Wastage	VW ____ cy		_____
Volume Placed (= TVD-VL-VW)	VP ____ cy		_____
Theoretical Volume ($\pi(D^2/4)$(Shaft Length,ft)/27)	VT ____ cy		_____
Overpour (VP-VT)	OP ____ cy		_____

DRILLED SHAFT EXCAVATION LOG

PROJECT		BRIDGE NO.	CONTRACT NO	
BENT	STATION	SHAFT NO.	SHAFT DIAMETER	
DRILLED SHAFT CONTRACTOR		INSPECTED BY	CERTIFICATION NO.	DATE

DATE/TIME EXCAVATED	TYPE OF CONSTRUCTION
START FINISH:	☐ DRY ☐ WET

ELEVATIONS

Reference Elev. _____
Grd. Surface Elev. _____
Water Table Elev. _____
Top Shaft Elev. _____
Msd Top Rock Elev. _____
Msd Avg. Shaft Bot Elev. _____

DIMENSIONS

Soil Auger Dia. _____
Soil Shaft Length _____
Rock Auger Dia. _____
Rock Socket Length _____
Construc. Shaft Length _____

DRILLING SLURRY

Slurry Type & Manufacturer : _____

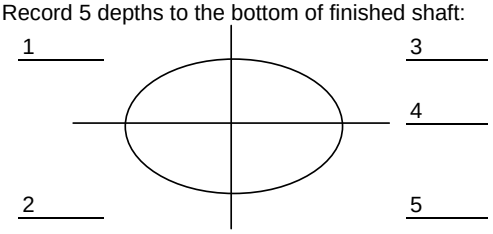
Slurry Meets Specifications? **Y** **N**

CLEANOUT METHOD

Bucket _____ Airlift _____ Pump _____
Other: _____

BOTTOM INSPECTION

Visual _____ Tape/Probe _____
Record 5 depths to the bottom of finished shaft:



Ave. Shaft Bottom Elev.: _____
Meet Cleanout Specification? **Y** **N**
Meet Alignment Specifications? **Y** **N**

CASING INFORMATION (if applicable)

Casing (Temp / Perm)	Casing (Temp / Perm)	Casing (Temp / Perm)
Type	Type	Type
OD (in.)	OD (in.)	OD (in.)
Thickness	Thickness	Thickness
Top Elev.	Top Elev.	Top Elev.
Length:	Length:	Length:

Record and describe all materials encountered during drilled shaft excavation, water table information, depths of seepage and seepage rates, obstructions encountered, equipment used and equip. breakdowns (use additional sheets if necessary).

DEPTH	ELEVATION	START	FINISH	SOIL OR ROCK MATERIAL DESCRIPTION AND NOTES	LOG

INSPECTOR SIGNATURE _____ DATE _____

NOTES: _____

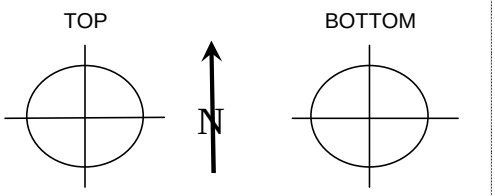
DRILLED SHAFT INSPECTION REPORT

BRIDGE NAME				PROJECT:			CONTRACT NO.:
BRIDGE NO.	BENT	STATION	SHAFT NO.	SHAFT DIAMETER	INSPECTED BY	CERTIFICATION NO.	DATE
DRILLED SHAFT CONTRACTOR				PRIME CONTRACTOR			

Time Excavation Started: _____ STOPPED _____

Date/Time Bottom Inspected: _____

Date Concreting Started: _____ STOPPED _____



Mark Deviation from Plan

As-built location within tolerances? _____

	Plan Measurements	"As-Built" Measurements
Top Elevation		
Bottom Elevation		
Shaft Diameter		
Rock Socket Diameter (if appl.)		
Shaft Length*		

*Was longer shaft approved for payment? ☐ Yes ☐ No

Concrete Volume (cy) _____ _____

Concrete Mix Design _____ _____

Concrete Placement Method ☐ Tremie ☐ Free Fall

Concrete Slump @ time or pour _____

Water Inflow Rate _____ gal/min (est.)

Bottom of Shaft Cleanliness Meets Specification? ☐ Yes ☐ No

Proper reinforcement and CSL tubes installed: _____

Description of bottom of shaft: _____

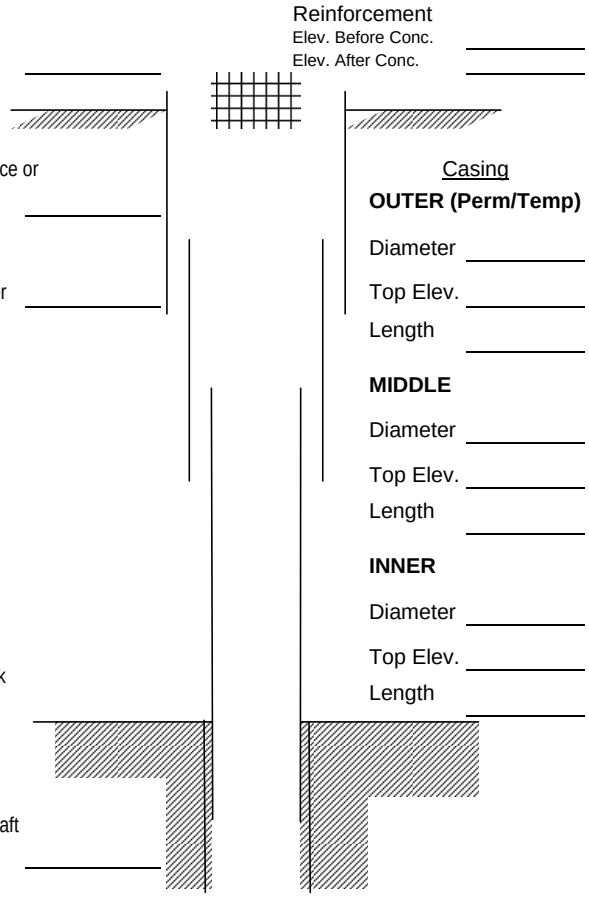
COMMENTS (Obstructions Encountered, etc.):

CSL Test Performed: ☐ Yes ☐ No

CSL Test Results Approved: ☐ Yes ☐ No* *If not approved, describe results and resolution

Shaft Approved by:

INSPECTOR SIGNATURE _____ DATE _____



Note: Forward completed reports to ODOT Bridge Section.

http://www.oregon.gov/ODOT/HWY/CONSTRUCTION/HwyConstForms1.shtml

OREGON DEPARTMENT OF TRANSPORTATION

HIGH STRENGTH BOLTING SUMMARY
TURN-OF-NUT METHOD (LONG BOLTS)

PROCESSES	PURPOSE
1. Rotational Capacity Test	Checks bolts for proper lubrication & for damage during storage or transit
2. Verification Test	Demonstrates that Contractor's personnel, equipment & procedure will tighten bolts to proper tension
3. Inspection Torque	Determines torque value to be used in the random field inspection
4. Random Field Inspection	Checks bolt installation on structure using the Inspection Torque

PROCESSES	PROCEDURE
1. Rotational Capacity Test	1. Sample 2 bolt, washer & nut assemblies
(02560.60 (a))	2. Assemble fastener with 3-5 threads within the grip
	3. Snug tight (10% of Required Fastener Tension in Table 560-1); Tolerance= -0 kips, +2 kips
	4. Mark the bolt, nut & plate
	5. Tighten to Required Fastener Tension & record torque (torque must not exceed T=0.25PD) (P in lbs, D in ft)
	6. Turn nut to twice the rotation in Table 560-3 (tension must exceed 115% of Required Fastener Tension)
	7. Remove nut and check threads
2. Verification Test	1. Sample 3 bolt, washer & nut assemblies
(00560.29 (c)(1 & 5))	2. Snug tight (Plies of joint in firm contact, full effort on 12" spud wrench; 10% of RFT< Tension < 50% of RFT)
	3. Mark the bolt, nut & plate
	4. Tighten nut to the rotation in Table 560-3 (max. of 10 seconds with impact wrench)
	5. Verify tension is 5% greater than Required Fastener Tension
3. Inspection Torque	1. Sample 3 bolt, washer & nut assemblies
(00560.29 (d))	2. Place in Skidmore & tighten to Required Fastener Tension in Table 560-1
	3. Measure torque required to turn the nut 5 degrees (1" @ 12" radius)
	4. Average the 3 tests to determine the Inspection Torque
4. Random Field Inspection	1. Select at random 10% of the tensioned bolts in each connection (2 minimum)
(00560.29 (d))	2. Apply Inspection Torque. If none turn, the connection passes.
	3. If one or more fasteners turn, apply inspection torque to all fasteners in the connection.
	4. Re-tension & inspect all fasteners that turned when applying the Inspection Torque.

OREGON DEPARTMENT OF TRANSPORTATION

HIGH STRENGTH BOLTING SUMMARY
TURN-OF-NUT METHOD (SHORT BOLTS)

PROCESSES	PURPOSE
1. Rotational Capacity Test	Checks bolts for proper lubrication & for damage during storage or transit
2. Verification Test	Demonstrates that Contractor's personnel, equipment & procedure will tighten bolts to proper tension
3. Inspection Torque	Determines torque value to be used in the random field inspection
4. Random Field Inspection	Checks bolt installation on structure using the Inspection Torque

PROCESSES	PROCEDURE
1. Rotational Capacity Test	1. Sample 2 bolt, washer & nut assemblies
(02560.60 (a))	2. Assemble fastener with 3-5 threads within the grip
	3. Snug tight (10% of max allowable torque < Torque < 20% of MAT, MAT=1.15(0.25PD)) (P in lbs, D in ft)
	4. Mark socket
	5. Tighten nut to rotation in Table560-3 & record torque (torque must not exceed T=1.15(0.25PD)
	6. Turn nut to twice the rotation in Table 560-3
	7. Remove nut and check threads
2. Verification Test	1. Sample 3 bolt, washer & nut assemblies
(00560.29 (c)(1 & 5))	2. Snug tight (Joint plies in firm contact, full effort on spud wrench; 10% of MAT< Torque < 50% of MAT
	3. Mark the bolt, nut & plate
	4. Tighten nut to the rotation in Table 560-3
	5. Verify torque is 5% greater than average of the recorded torques @ turn requirement in the RoCap Test
3. Inspection Torque	1. Sample 3 bolt, washer & nut assemblies
(00560.29 (d))	2. Snug tight (10% of max allowable torque < Torque < 20% of MAT, MAT=1.15(0.25PD)) (P in lbs, D in ft)
	3. Mark the bolt, nut & plate
	4. Tighten nut to the rotation in Table 560-3
	3. Measure torque required to turn the nut 5 degrees (1" @ 12" radius)
	4. Average the 3 tests to determine the Inspection Torque
4. Random Field Inspection	1. Select at random 10% of the tensioned bolts in each connection (2 minimum)
(00560.29 (d))	2. Apply Inspection Torque. If none turn, the connection passes.
	3. If one or more fasteners turn, apply inspection torque to all fasteners in the connection.
	4. Re-tension & inspect all fasteners that turned when applying the Inspection Torque.

Oregon Department of Transportation

HIGH STRENGTH BOLTS
ROTATIONAL CAPACITY TEST & INSPECTION TORQUE
(LONG BOLT METHOD)

☐ Turn of Nut Method ☐ Direct Tension Indicator ☐ Tension Control Fastener

Project		**Contract No.**
Company		**Test No.** RCT-
Torque Wrench Serial No.		**Calibration Due Date**
Skidmore Serial No.		**Calibration Due Date**
Bolt Diameter	**Bolt Length**	**Quantity**
Bolt Mfg.	**Lot No.**	**Heat No.**
Nut Mfg.	**Lot No.**	**Heat No.**
Washer Mfg.	**Lot No.**	**Heat No.**

Ro-Cap Sample 1:

Required Fastener Tension = _____ Lbs. (Table 00560-1)
Snug Tight Tension = _____ Lbs. (0.10 x Req. Fastener Tension): Tol. = -0 kips + 2 kips
Measured Torque = _____ Ft.-Lbs. @ Required Fastener Tension (Go to Insp. Torque)
Maximum Allowable Torque = _____ Ft.-Lbs. (ASTM F3125 Table A2.2 ≈ T<0.25PD)
Measured Tension = _____ Lbs. @ _____ Turn (2x Rotation In Table 00560-3)
Minimum Tension Required = _____ Lbs. (ASTM F3125 Table A2.4 ≈ 1.15 x RFT)

Sample 1 Results: ☐ Pass ☐ Fail

Ro-Cap Sample 2:

Required Fastener Tension = _____ Lbs. (Table 00560-1)
Snug Tight Tension = _____ Lbs. (0.10 x Req. Fastener Tension): Tol. = -0 kips + 2 kips
Measured Torque = _____ Ft.-Lbs. @ Required Fastener Tension (Go to Insp. Torque)
Maximum Allowable Torque = _____ Ft.-Lbs. (ASTM F3125 Table A2.2 ≈ T<0.25PD)
Measured Tension = _____ Lbs. @ _____ Turn (2x Rotation In Table 00560-3)
Minimum Tension Required = _____ Lbs. (ASTM F3125 Table A2.4 ≈ 1.15 x RFT)

Sample 2 Results: ☐ Pass ☐ Fail

Rotational Capacity Test Results: ☐ Accept ☐ Reject

Inspection Torque Sample 1:

Required Fastener Tension = _____ Lbs. (Table 00560-1)
Measured Torque = _____ Ft.-Lbs. @ Additional 5 Degrees (Apprx. 1" @ 12" Radius)

Inspection Torque Sample 2:

Required Fastener Tension = _____ Lbs. (Table 00560-1)
Measured Torque = _____ Ft.-Lbs. @ Additional 5 Degrees (Apprx. 1" @ 12" Radius)

Inspection Torque Sample 3:

Required Fastener Tension = _____ Lbs. (Table 00560-1)
Measured Torque = _____ Ft.-Lbs. @ Additional 5 Degrees (Apprx. 1" @ 12" Radius)

Inspection Torque = _____ Ft.-Lbs. (Average of the 3 Inspection Torque Samples)

Comments:

Inspector	Cert No.	Title
Contractor's Representative		Date

Oregon Department of Transportation

HIGH STRENGTH BOLTS
ROTATIONAL CAPACITY TEST & INSPECTION TORQUE
(SHORT BOLTS)

☐ Turn of Nut Method ☐ Direct Tension Indicator ☐ Tension Control Fastener

Project		**Contract No.**
Company		**Test No.** RCT-
Torque Wrench Serial No.		**Calibration Due Date**
Skidmore Serial No.		**Calibration Due Date**
Bolt Diameter	**Bolt Length**	**Quantity**
Bolt Mfg.	**Lot No.**	**Heat No.**
Nut Mfg.	**Lot No.**	**Heat No.**
Washer Mfg.	**Lot No.**	**Heat No.**

Ro-Cap Sample 1:

Required Fastener Tension = _____ Lbs. (Table 00560-1)
Snug Tight Torque = _____ Ft.-Lbs.; T = 0.1(1.15)(0.25PD); (P in Lbs., D in Ft.)
Measured Torque = _____ Ft.-Lbs. @ _____ Turn (Table 00560-3) (Go to Insp. Torque)
Maximum Allowable Torque = _____ Ft.-Lbs; T = 1.15(0.25PD): P in Lbs., D in Ft.)
2 x Rotation = _____ Turn (2x Rotation in Table 00560-3)

Sample 1 Results: ☐ Pass ☐ Fail

Ro-Cap Sample 2:

Required Fastener Tension = _____ Lbs. (Table 00560-1)
Snug Tight Torque = _____ Ft.-Lbs.; T = 0.1(1.15)(0.25PD); (P in Lbs., D in Ft.)
Measured Torque = _____ Ft.-Lbs. @ _____ Turn (Table 00560-3) (Go to Insp. Torque)
Maximum Allowable Torque = _____ Ft.-Lbs; T = 1.15(0.25PD): P in Lbs., D in Ft.)
2 x Rotation = _____ Turn (2x Rotation in Table 00560-3)

Sample 2 Results: ☐ Pass ☐ Fail

Rotational Capacity Test Results: ☐ Accept ☐ Reject

Inspection Torque Sample 1:

Measured Torque = _____ Ft.-Lbs. @ _____ Turn (Turn Rotation in Table 00560-3)
Sample Inspection Torque = _____ Ft.-Lbs. @ Additional 5 Degrees (Apprx. 1" @ 12" Radius)

Inspection Torque Sample 2:

Measured Torque = _____ Ft.-Lbs. @ _____ Turn (Turn Rotation in Table 00560-3)
Sample Inspection Torque = _____ Ft.-Lbs. @ Additional 5 Degrees (Apprx. 1" @ 12" Radius)

Inspection Torque Sample 3:

Measured Torque = _____ Ft.-Lbs. @ _____ Turn (Turn Rotation in Table 00560-3)
Sample Inspection Torque = _____ Ft.-Lbs. @ Additional 5 Degrees (Apprx. 1" @ 12" Radius)

Inspection Torque = _____ Ft.-Lbs. (Average of the 3 Inspection Torque Samples)

Comments:

Inspector	Cert No.	Title
Contractor's Representative		Date

Oregon Department of Transportation

HIGH STRENGTH BOLTS
VERIFICATION TEST (LONG BOLT METHOD)

☐ Turn of Nut Method ☐ Direct Tension Indicator ☐ Tension Control Fastener

Project		**Contract No.**
Company		**Test No.** VT-
Torque Wrench Serial No.		**Calibration Due Date**
Skidmore Serial No.		**Calibration Due Date**
Bolt Diameter	**Bolt Length**	**Quantity**
Bolt Mfg.	**Lot No.**	**Heat No.**
Nut Mfg.	**Lot No.**	**Heat No.**
Washer Mfg.	**Lot No.**	**Heat No.**

Verification Sample 1:

Required Fastener Tension = _____ Lbs. (Table 00560-1)
Meas'd Tension @ Snug Tight = _____ Lbs.(Joint Plies in Firm Contact, Full Effort on Spud Wrench)
(10% Req'd Fastener Tension < Snug Tight < 50% RFT)
Measured Time = _____ Seconds (From Snug Tight to Turn Rotation in Table 00560-3)
Maximum Allowable Time = 10 Seconds (From Snug Tight to Turn Rotation in Table 00560-3)
Measured Tension = _____ Lbs. @ _____ Turn (Turn Rotation In Table 00560-3)
Minimum Tension Required = _____ Lbs. (1.05 X Required Fastener Tension)
Sample 1 Results: ☐ Pass ☐ Fail

Verification Sample 2:

Required Fastener Tension = _____ Lbs. (Table 00560-1)
Meas'd Tension @ Snug Tight = _____ Lbs.(Joint Plies in Firm Contact, Full Effort on Spud Wrench)
(10% Req'd Fastener Tension < Snug Tight < 50% RFT)
Measured Time = _____ Seconds (From Snug Tight to Turn Rotation in Table 00560-3)
Maximum Allowable Time = 10 Seconds (From Snug Tight to Turn Rotation in Table 00560-3)
Measured Tension = _____ Lbs. @ _____ Turn (Turn Rotation In Table 00560-3)
Minimum Tension Required = _____ Lbs. (1.05 X Required Fastener Tension)
Sample 2 Results: ☐ Pass ☐ Fail

Verification Sample 3:

Required Fastener Tension = _____ Lbs. (Table 00560-1)
Meas'd Tension @ Snug Tight = _____ Lbs.(Joint Plies in Firm Contact, Full Effort on Spud Wrench)
(10% Req'd Fastener Tension < Snug Tight < 50% RFT)
Measured Time = _____ Seconds (From Snug Tight to Turn Rotation in Table 00560-3)
Maximum Allowable Time = 10 Seconds (From Snug Tight to Turn Rotation in Table 00560-3)
Measured Tension = _____ Lbs. @ _____ Turn (Turn Rotation In Table 00560-3)
Minimum Tension Required = _____ Lbs. (1.05 X Required Fastener Tension)
Sample 3 Results: ☐ Pass ☐ Fail

Verification Test Results: ☐ Accept ☐ Reject

Comments:

Inspector	Cert No.	Title
Contractor's Representative		Date

734-2747 (8-16-2021)

Oregon Department of Transportation

HIGH STRENGTH BOLTS
VERIFICATION TEST (SHORT BOLTS)

☐ Turn of Nut Method ☐ Direct Tension Indicator ☐ Tension Control Fastener

Project		**Contract No.**
Company		**Test No.** VT-
Torque Wrench Serial No.		**Calibration Due Date**
Skidmore Serial No.		**Calibration Due Date**
Bolt Diameter	**Bolt Length**	**Quantity**
Bolt Mfg.	**Lot No.**	**Heat No.**
Nut Mfg.	**Lot No.**	**Heat No.**
Washer Mfg.	**Lot No.**	**Heat No.**

Required Fastener Tension = lbs. (Table 00560-1)

Verification Sample 1:

Maximum Allowable Torque = _____ Ft.-Lbs.; MAT = 1.15(0.25PD), (P in Lbs., D in Ft.)
Meas'd Torque @ Snug Tight = _____ Ft.-Lbs.(Joint Plies in Firm Contact, Full Effort on Spud Wrench)
(10% MAT < Snug Tight < 50% MAT
Measured Time = _____ Seconds (From Snug Tight to Turn Rotation in Table 00560-3)
Maximum Allowable Time = 10 Seconds (From Snug Tight to Turn Rotation in Table 00560-3)
Measured Torque = _____ Ft.-Lbs. @ _____ Turn (Turn Rotation In Table 00560-3)
Minimum Torque Required = _____ Ft.-Lbs. (1.05 X Avg. RoCap Torque @ Rotation in Table 00560-3)
Sample 1 Results: ☐ Pass ☐ Fail

Verification Sample 2:

Maximum Allowable Torque = _____ Ft.-Lbs.; MAT = 1.15(0.25PD), (P in Lbs., D in Ft.)
Meas'd Torque @ Snug Tight = _____ Ft.-Lbs.(Joint Plies in Firm Contact, Full Effort on Spud Wrench)
(10% MAT < Snug Tight < 50% MAT
Measured Time = _____ Seconds (From Snug Tight to Turn Rotation in Table 00560-3)
Maximum Allowable Time = 10 Seconds (From Snug Tight to Turn Rotation in Table 00560-3)
Measured Torque = _____ Ft.-Lbs. @ _____ Turn (Turn Rotation In Table 00560-3)
Minimum Torque Required = _____ Ft.-Lbs. (1.05 X Avg. RoCap Torque @ Rotation in Table 00560-3)
Sample 2 Results: ☐ Pass ☐ Fail

Verification Sample 3:

Maximum Allowable Torque = _____ Ft.-Lbs.; MAT = 1.15(0.25PD), (P in Lbs., D in Ft.)
Meas'd Torque @ Snug Tight = _____ Ft.-Lbs.(Joint Plies in Firm Contact, Full Effort on Spud Wrench)
(10% MAT < Snug Tight < 50% MAT
Measured Time = _____ Seconds (From Snug Tight to Turn Rotation in Table 00560-3)
Maximum Allowable Time = 10 Seconds (From Snug Tight to Turn Rotation in Table 00560-3)
Measured Torque = _____ Ft.-Lbs. @ _____ Turn (Turn Rotation In Table 00560-3)
Minimum Torque Required = _____ Ft.-Lbs. (1.05 X Avg. RoCap Torque @ Rotation in Table 00560-3)
Sample 2 Results: ☐ Pass ☐ Fail

Verification Test Results: ☐ Accept ☐ Reject

Comments:

Inspector	Cert No.	Title
Contractor's Representative		Date

Print Form

Post-Tensioning Grouting Record

Project Name (Section) | County | Contract No.

Highway | Section | Structure No. | Date | Page No.

Contractor | Post-Tensioning Contractor | Post-Tensioning Foreman

Project Manager | Inspector | Cert No.

Trial Batch	Specific Gravity (mud balance)	Flow Cone 0 sec quesence	Flow Cone 30 min retest	Wick Test

Certified Grouting Technician	
Grout Brand (from QPL)	
Water per bag	
Number of bags/batch	
Water per batch	
Mixer (brand/model)	

Production	Specific Gravity Mud Balance +/- 3% from trial batch	Flow Cone 0 seconds quiescent time

Trial Batch Section 00555.13 Perform at least 48 hours before production grouting.	**Flow Cone** (ASTM C 939)	Efflux time between 5 and 30 seconds.
	Flow Cone Retest	Let the mixed grout sit for 30 minutes. Remix the grout for 30 seconds. Retest efflux time, to be within 10 seconds.
	Mud Balance (API RP 13B-1)	
	Bleeding (ASTM C 1741)	Perform the Schupack pressure bleed test, max allowed 0.0% at 5 minutes.
	Compressive Strength (ASTM c109)	Contractor to supply two sets of three grout cubes to the Engineer for informational testing.
Production Testing Section 00555.43	**Flow Cone**	At least once per day. Production Tolerance +/- 5 seconds of Trial Batch, and between 5 and 30 seconds. Efflux time of ejected grout within 5 seconds of efflux time at mixer.
	Mud Balance	Production Tolerance +/- 3.0 % from Trial Batch. Perofrm for each production batch.

POST-TENSIONING STRAND INSTALLATION RECORD

PROJECT NAME					CONTRACT NO.
HIGHWAY		SECTION			COUNTY
CONTRACTOR		POST-TENSIONING CONTRACTOR			POST-TENSIONING FOREMAN
STRUCTURE NO.	DATE	PAGE NO.	PROJECT MANAGER	INSPECTOR	CERT NO.

	R	R	Fv	Fv	Fv
Date	Girder No.	Tendon No.	Reel No.	Heat No.	Number of Strands
12/12/2008					

	R	R	Fv	Fv	Fv
Date	Girder No.	Tendon No.	Reel No.	Heat No.	Number of Strands

734-2696 (06-2008)

R	Recorded information from plans, shop drawings, PT supplier
Fv	Field verified informantion

http://www.oregon.gov/ODOT/HWY/CONSTRUCTION/HwyConstForms.shtml

Oregon Department of Transportation

POST-TENSIONING RECORD (TENSIONING FROM ONE END)

PROJECT NAME			CONTRACT NO.
HIGHWAY	SECTION		COUNTY
CONTRACTOR	POST-TENSIONING CONTRACTOR		POST-TENSIONING FOREMAN
STRUCTURE NO.	DATE	PAGE NO.	PROJECT MANAGER	INSPECTOR	CERT NO.

	R	R	R	R	R	R	R	R	R	R	Fm	Fm	PTc	Fc	PTc	Fc	Fm	PTc	Fc	R
											A	B	C	D	E	F	G	H	I	
Date	Gir. No.	Tendon No.	Reel No.	Jack Serial No.	Gauge Serial No.	Jack Location	Req'd Jacking Force Per Tendon (Kips)	Strands per Tendon	Gauge @ 20% Jacking Force (p.s.i.)	Gauge @ Req'd Jacking Force (p.s.i.)	Measured Tail Length @ 20% Gauge (in.)	Measured Tail Length @ 100% Gauge (in.)	Calc. 100% Elong. (in.)	(B - A) = Measured 80% Elong. (in.)	Calc. 80% Elong. (in.)	% Elong. Per Tendon	Seated Tail Length (in.)	Jack Elong (in.)	(B - G - H) = Measured Anchor Set (in.)	Plan Anchor Set (in.)
																		0.25		
																		0.25		
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R: Recorded info. From Plans, Shop Drawings, PT Supplier, Equipment.

PTc: PT Supplier Calculations from Shop Drawings.

Fm: Field Measured Values

Fc: Field Calculations

Note: % Elong. Per Tendon (F) = Column (D) of the tendon divided by column (E) of the tendon x 100

Note: % Elong. Per Tendon shall be between 95% minimum and 105% maximum.
If Measured Anchor Set is > Plan Anchor Set, contact Engineer of Record.

POST-TENSIONING RECORD
(TENSIONING FROM BOTH ENDS)

Oregon Department of Transportation

PROJECT NAME		CONTRACT NO.
HIGHWAY	SECTION	COUNTY
CONTRACTOR	POST-TENSIONING CONTRACTOR	POST-TENSIONING FOREMAN

STRUCTURE NO.	DATE	PAGE NO.	PROJECT MANAGER	INSPECTOR	CERT NO.

	R	R	R	R	R	R	R	R	R	R	Fm	Fm	PTc	Fc	PTc	Fc	Fm	PTc	Fc	R
											A	B	C	D	E	F	G	H	I	
Date	Gir. No.	Tendon No.	Reel No.	Jack Serial No.	Gauge Serial No.	Jack Location	Req'd Jacking Force Per Tendon (Kips)	Strands per Tendon	Gauge @ 20% Jacking Force (p.s.i.)	Gauge @ Req'd Jacking Force (p.s.i.)	Measured Tail Length @ 20% Gauge (in.)	Measured Tail Length @ 100% Gauge (in.)	Calc. 100% Elong. (in.)	(B - A) = Measured 80% Elong. (in.)	Calc. 80% Elong. (in.)	% Elong. Per Tendon	Seated Tail Length (in.)	Jack Elong (in.)	(B - G - H) = Measured Anchor Set (in.)	Plan Anchor Set (in.)
																		0.25		
																		0.25		
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																		0.25		

R: Recorded info. From Plans, Shop Drawings, PT Supplier, Equipment.
PTc: PT Supplier Calculations from Shop Drawings.
Fm: Field Measured Values
Fc: Field Calculations

Note: % Elong. Per Tendon (F) = The sum of columns (D) for both ends of the tendon divided by the sum of columns (E) for both ends of the tendon x 100

Note: % Elong. Per Tendon shall be between 95% minimum and 105% maximum.
If Measured Anchor Set is > Plan Anchor Set, contact Engineer of Record.

Contract No.

Deck Placement Conference Outline

(00540.02(a)(b))

Print Form

Project Name (Section) | Contract No.

Highway | County | Date

Contractor | Estimated Date | Estimated Quantity/Day | Project Manager

Mix Design

Approved? ☐ Yes ☐ No

Mix Design No.

List types of admixtures to be used (Superset extender required to extend initial set by 90 min. 02001.30(e). Extra for travel, time or struct. type.)

Slump Range _____ W/C _____ Air Content _____

Concrete Mix

Supplier Name

☐ Supplier notified well in advance.

☐ Supplier aware of specification on truck mixer equipment. 02001.40, ASTM C94

☐ Communication between batch plant and project. How? Who? _____

☐ Continuous delivery assured for cubic yards needed per hour, at what intervals? _____

☐ Supplier has sufficient material on-hand for quantity required.

☐ Mix temperature of 50°F minimum and 80°F maximum when air temperature is 40°F or higher. Mix temperature of 60°F minimum and 80°F maximum when air temperature is or forecast to be below 40°F during cure period.

Contractor Quality Control

CCT Name | Certification No.

QCT Name | Certification No.

Individual authorized for acceptance and rejection of materials

Weather Conditions

☐ Precipitation forecast less than 30% during placement window (2 hours before to 2 hours after). 00540.49(b)

☐ Surface evaporation rate of less than 0.10 psf per hour. Fig. 00540-1

☐ Cold weather plan approved if temperature is or forecast to be below 40°F. 00540.49(1-2-a) ☐ Yes ☐ No ☐ N/A

☐ No frost or ice on forms or rebar.

Contract No. _____

Deck Finishing Machine

☐ Type 00540.24 _____
Brand Name

☐ Approved working drawings showing location of deck machine rails 00540.24(a).

☐ Deck machine to set up and run over full length of area of placement 00540.24(g).

☐ Experienced operator with good knowledge of machine operation. _____
Operator Name

☐ Changes in crown or super? _____

How will changes be handled?

☐ Dry run rebar clearance is +/- ¼" from clearance shown. 00540.48(g)

Method of checking rebar clearance:

Forms

☐ Top mat, tie bar at every intersection if spacing is more than 6", otherwise every other intersection. 00530.41(b)

☐ Bottom mat, tie every other intersection.

☐ At least 3 ties per lap splice.

☐ Monitor falsework, tattletales installed (when needed).

☐ All forming and bulkhead in place prior to start of placement.

☐ Stay-in-place forms are not allowed for bulkheads.

☐ Apply form release to forms.

☐ Cleanliness of bottom and rebar. _____ How? _____ When?

☐ Edge of forms set to line and grade. _____ How? _____ When?

☐ Supports for outside edge.

Deck Placement

☐ Saturate the tops of precast beam and formwork 2 hours immediately prior to beginning deck placement.

☐ Minimum rate of placement 20 ft/hr 00540.48(g) third bullet.

☐ Calculated cubic yards to be placed _____

_____ Method of Placement

_____ Backup Method

_____ Estimated time to place mix

Contract No.

Deck Placement (continued)

☐ Vibrators 00540.48(c)

Experienced vibrator person _____
Operator Name

Size of vibrators to be used _____ ☐ Meet requirements of 00540.23

Number of vibrators to be used (minimum 2) _____

Discuss methods of consolidation 00540.48(c)

Power Source: ☐ Generators ☐ Direct Power ☐ Backup _____
Type

☐ Placement direction 00540.48(g)

☐ Transverse work bridge (2 minimum)

☐ Emergency bulkheads, how will this be addressed if needed?

☐ 12-foot straightedge is on-site prior to start of pour. Check gutters, lane lines, ends of pours and "as directed". 00540.55

Environmental

☐ Where will concrete trucks clean out? _____ _____
Containment?

☐ Where will deck machine clean out? _____ _____
Containment?

☐ Steps to assure containment of in forms? _____

Curing Concrete

☐ Provide pressure washers with fog nozzles.

☐ Provide wind breaks for spray or other approved methods to prevent premature drying during placement operations.

☐ Presoaked wet burlap or dry non-woven polypropene fabric with 4-mil polyethylene film. Color as weather dictates.

☐ Additional soaking to keep the deck moist at all times during the cure period.

☐ Water availability during and after placement

_____
Where?

_____
How?

_____
If above information is not available, who will advise the PM prior to start of placement?

During non-working days, who will be able to add water for cure?

_____ _____
Name Phone No.

☐ Bridge deck cure time is 14 calendar days.

Contract No.

General Information

Check special provisions for additional information.

☐ **Construction joint surfaces:** Use surface retarder to aid in laitance removal. 00540.43 (a)

☐ **Closure pour prep:** Sawcut top 1" of deck, may be waived if joint is straight without spalls.
Hand rub or brush fresh concrete paste onto the existing surface of vertical joints down to the top mat.

☐ **Deck roadway texturing:** Cut grooves no sooner than 14 days after deck is cast. 00540.50

☐ **Striping forms:** 80% of specified strength and 7 days. Table 00540-1
Early removal of forms does not eliminate the curing requirement of 00540.51