INDEX OF SHEETS	
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A01	Title Sheet
A02	Index Of Sheets
A03	Std. Dwg. Nos.
A04	Plan Sheet Layout

STATE OF OREGON
DEPARTMENT OF TRANSPORTATION

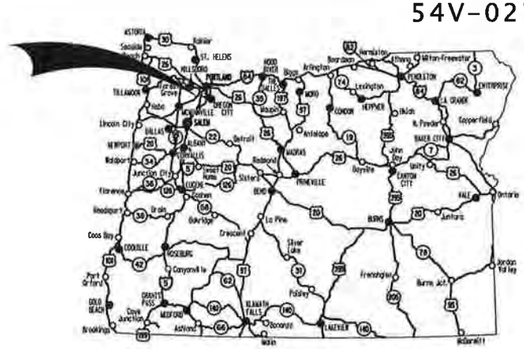
PLANS FOR PROPOSED PROJECT
GRADING, DRAINAGE, STRUCTURES, PAVING,
SIGNING, STRIPING, AND ROADSIDE DEVELOPMENT

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST

WASHINGTON COUNTY
MARCH 2021

54V-027



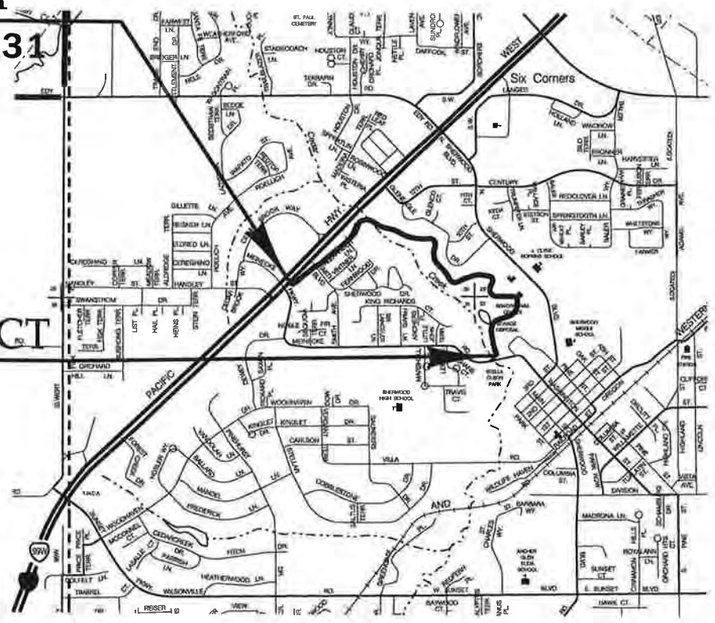
Overall Length Of Project - 1.00 Miles

ATTENTION:
Oregon Law Requires You To Follow Rules Adopted By The Oregon Utility Notification Center. Those Rules Are Set Forth In OAR 952-001-0010 Through OAR 952-001-0090. You May Obtain Copies Of The Rules By Calling The Center. (Note: The Telephone Number For The Oregon Utility Center Is (503) 232-1987.)

LET'S ALL WORK TOGETHER TO MAKE THIS JOB SAFE

END OF PROJECT
STA. 'SEG.3' 51+14.31

BEGINNING OF PROJECT
STA. 'SEG.3' 0+32.71



T. 2 S., R. 1 W., W.M.

City of Sherwood Oregon
Home of the Tualatin River National Wildlife Refuge

1 Revised 02-24-2021 Updated date

PLANS PREPARED FOR
OREGON DEPARTMENT OF TRANSPORTATION

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON TRANSPORTATION COMMISSION

Robert Van Brocklin	CHAIR
Alando Simpson	COMMISSIONER
Martin Callery	COMMISSIONER
Julie Brown	COMMISSIONER
Sharon Smith	COMMISSIONER
Kris Strickler	DIRECTOR OF TRANSPORTATION

These plans were developed using ODOT design standards. Exceptions to these standards, if any, have been submitted and approved by the ODOT Chief Engineer or their delegated authority.

Approving Authority: Matthew R. Little 2021.02.24 14:02:34-08'00'
Signature & date

Matthew R Little, PE, Jacobs Civil Engineer
Print name and title

COOLEY Steven B Digitally signed by COOLEY Steven B Date: 2021.02.24 14:23:48 -08'00'
Concurrence by ODOT Chief Engineer

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	6710(005)	A01

24-FEB-2021 14:49

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C01B & C01C	Profile
C02	General Construction
C02A	Drainage and Utilities
C02B	Profile
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C03A	Drainage and Utilities
C03B	Profile
C04	General Construction
C04A	Drainage and Utilities
C04B	Profile
C05	General Construction
C05A	Drainage and Utilities
C05B	Profile
C06	General Construction
C06A	Drainage and Utilities
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	ROADSIDE DEVELOPMENT/EROSION CONTROL/WETLAND MITIAGATION
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GB02 & GB02A	Retaining Wall - Wall MS01
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GB04 & GB04A	Retaining Wall - Wall RS03
GB05 & GB05A	Retaining Wall - Wall RS04

INDEX OF SHEETS, CONT.

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GB08 & GB08A	Retaining Wall - Wall RS07
GB09 & GB09A	Retaining Wall - Wall RS08
GB10 & GB10A	Retaining Wall - Wall RS09
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	BRIDGE
J01 Thru J12 Incl.	Bridge
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Standard Drawings located on the web at:
http://www.oregon.gov/ODOT/Engineering/Pages/Standards.aspx

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	SEE SHEET A01	A02

17-DEC-2020 18:23

54V-027

Std. Drg. Nos.	
RD300	Trench Backfill, Bedding, Pipe Zone And Mult. Installations
RD302	Street Cut
RD312	Subsurface drain
RD317	Culvert Embankment Protection and Riprap Pads
RD318	Sloped Ends for Concrete Pipe
RD319	Miscellaneous Culvert Details
RD332	Pipe Slope Anchors-Concrete
RD336	Standard Manhole Details
RD356	Manhole Covers and Frames
RD360	Manhole Frame Adjustment
RD615	Asphalt Concrete Pavement ACP Details
RD700	Curbs
RD705	Islands
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RD710	Accessible Route Islands
RD720	Curb Line Sidewalks
RD770	Metal Handrail
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RD815	Chain Link Fence
RD820	Fence Gates
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RD904	Detectable Warning Surface Placement for Curb Ramps
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RD920	Parallel Curb Ramp
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RD1000	Construction Entrance - Type 1
RD1006	Check Dam - Type 6
RD1010	Inlet Protection - Type 3
RD1030	Sediment Barrier Type 2, 3, and 4
RD1032	Sediment Barrier - Type 8, Compost Filter Sock
RD1040	Sediment Fence
RD1055	Slope and Channel Matting
RD1060	Tire Wash Facility - Type 1
RD1070	Concrete Truck Wash Out
BR709	Standard Retaining Wall Cast-In-Place Semi-Gravity Joints And Details
TM200	Sign Installation Details
TM201	Miscellaneous Sign Placement Details
TM206	Sign Bracing Details
TM240	Crosswalk Closure Detail
TM450	Mast Arm Pole Detail
TM457	Vehicle, Ped. Signal & Push Button Mounting Details
TM460	Vehicle Signal Details
TM462	Vehicle Signal Bracket Mount Details
TM467	Pedestrian Signal Mount and Pedestrian Pushbutton Details
TM470	Wire and Cable Installation and Color Code Charts
TM471	Trench and Conduit Installation
TM472	Traffic Signal Junction Boxes
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TM485	Service Wiring Details
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TM629	Slip Base and Fixed Luminaire Supports General Details and Design Criteria
TM630	Slip Base and Fixed Luminaire Supports Base Plate and Footing Details
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City of Sherwood Std. Drg. Nos.	
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RD-21	Vertical Curb
RD-22	Monolithic Curb and Gutter
RD-24	Mountable Curb and Gutter
RD-26	Sidewalk Detail
RD-35	Street Sign Installation
RD-45	Pipe Trench Restoration
RD-63	Pedestrian Path & Bike Sections (Not Adjacent To Roadway)
SS-40	Gutter and Curb Inlet Catch Basin (CG-2)
SS-42	Catch Basin Frame and Grate (CG-2)
SS-48	Area Drain Type II
SS-87	Riprap Details

(See BB04 & BB05)

No R/W Map.

Standard Drawings located on the web at:
http://www.oregon.gov/ODOT/Engineering/Pages/Standards.aspx

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

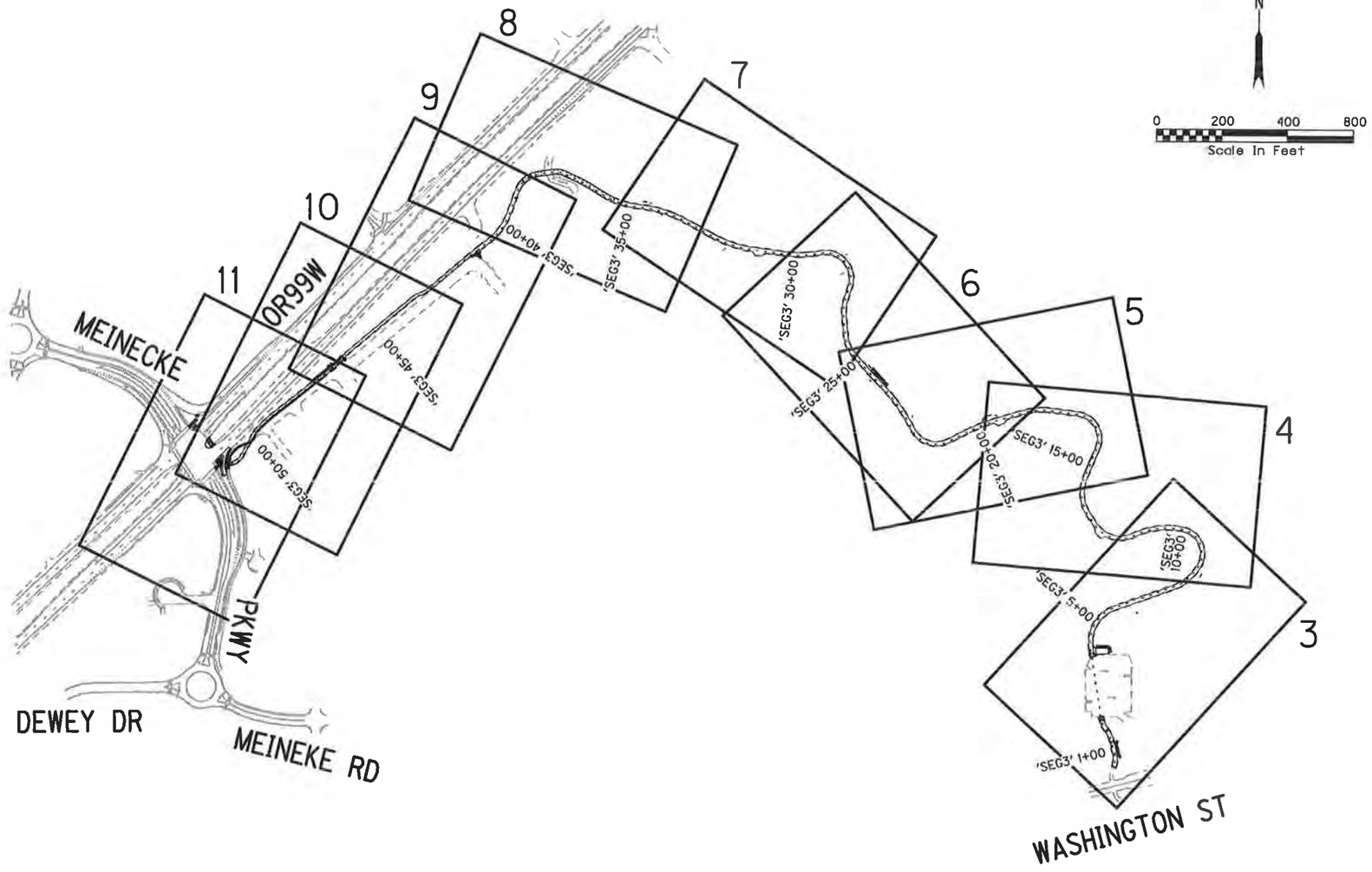
FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	SEE SHEET A01	A03

29-DEC-2020 13:05

54V-027

LEGEND:

3 *Sheet Number and Limits*



REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020.12.17 21:43:51-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

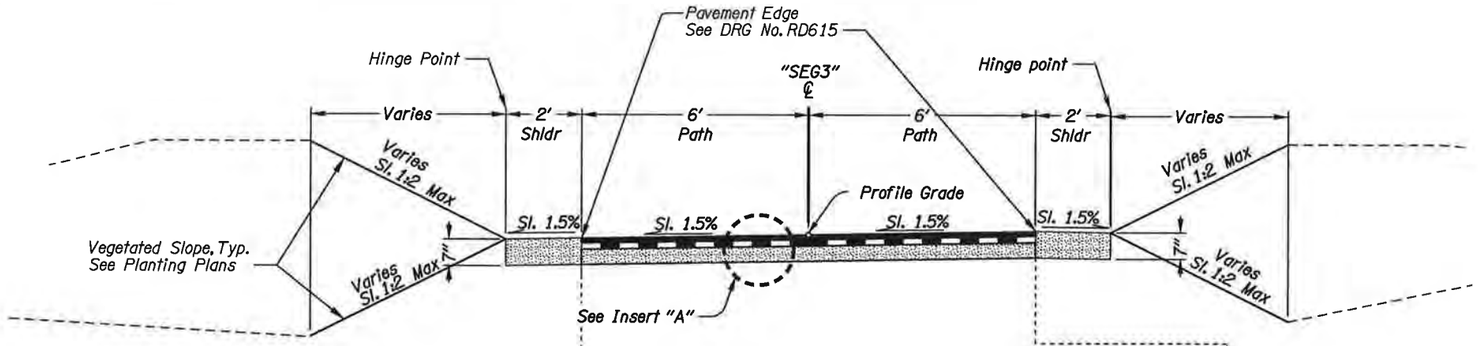
Designer: M Little	Reviewer: M Bittancourt
Drafter: M Wainscott	Checker: M Bittancourt

PLAN SHEET LAYOUT

SHEET NO. A04

16-DEC-2020 12:30

54V-027

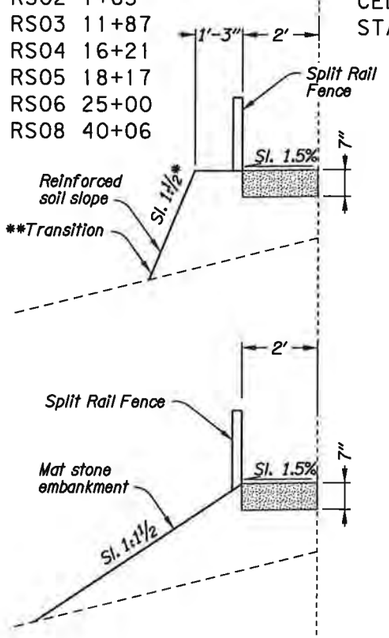


STA. "SEG3" RS01 3+83 To STA. "SEG3" RS01 5+09
RS02 6+95 To RS02 7+63
RS03 10+30 To RS03 11+87
RS04 15+19 To RS04 16+21
RS05 17+59 To RS05 18+17
RS06 23+77 To RS06 25+00
RS08 38+42 To RS08 40+06

CEDAR CREEK TRAIL SEGMENT 3
STA. "SEG3" 1+40 To STA. "SEG3" 1+91.50
6+50 To 7+05
7+52 To 7+85
8+76 To 9+90
12+00 To 13+40
13+70 To 14+42
18+10 To 23+84
24+94 To 25+35
25+90 To 27+32
28+35 To 33+60
34+95 To 35+26
40+23 TO 40+87

* Steepen to 1:2/5 Where Shown

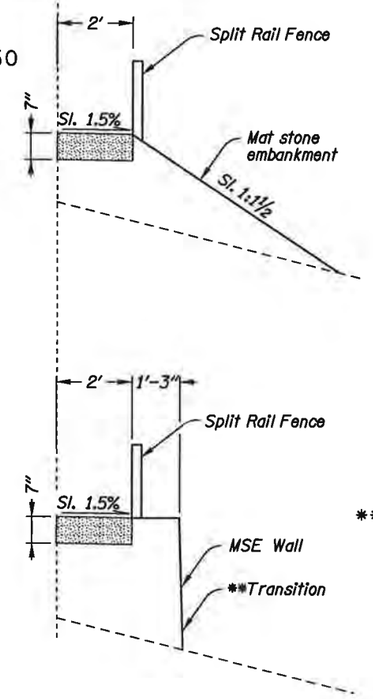
** Transition from Wall to Mat Stone or Site Grading at End of Wall. For Transition Location and Length, see GB Plan and Profile Sheets



STA. "SEG3" 0+33 To STA. "SEG3" 0+52
5+00 To 5+50
6+15 To 6+50
9+90 To 10+40
11+85 To 12+00
13+40 To 13+70
17+10 To 17+69
18+05 To 18+15
23+80 To 23+84
24+90 To 24+95
25+35 To 25+90
27+32 To 27+79
33+85 To 34+12
35+26 To 35+45

STA. "SEG3" MS01 5+40 To STA. "SEG3" MS01 6+20

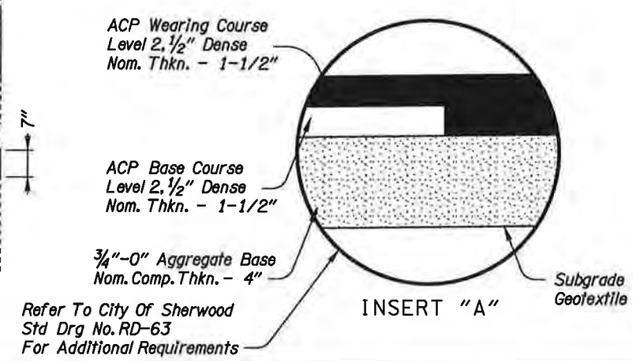
** Transition from Wall to Mat Stone or Site Grading at End of Wall. For Transition Location and Length, see GB Plan and Profile Sheets



STA. "SEG3" 23+75 To
STA. "SEG3" 23+84

STA. "SEG3" MS02 39+72.50 To
STA. "SEG3" MS02 40+23

** Transition from Wall to Mat Stone or Site Grading at End of Wall. For Transition Location and Length, see GB Plan and Profile Sheets



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NOTE:
1. Side-Slopes Are Shown As Vert. To Horiz.

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020.12.17 21:44:55-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

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2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

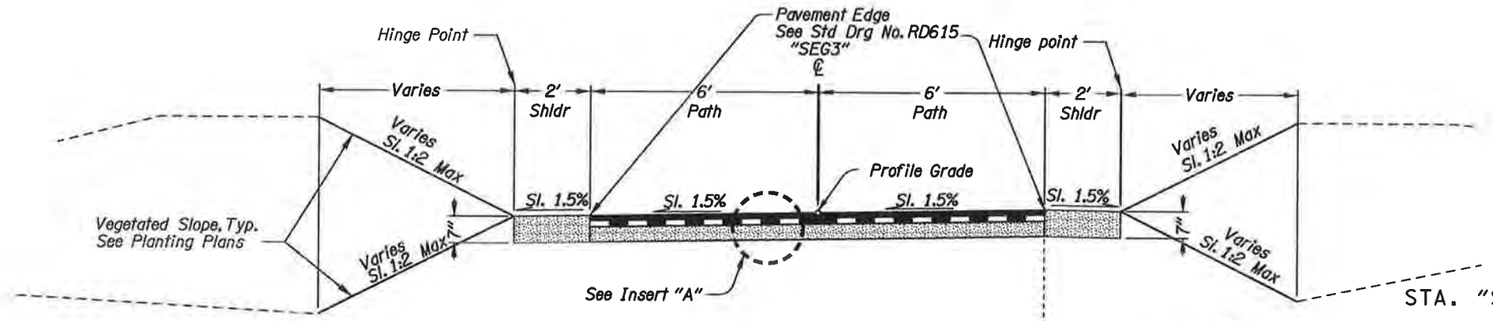
Designer: M Little Reviewer: M Bittancourt
Drafter: M Wainscott Checker: M Bittancourt

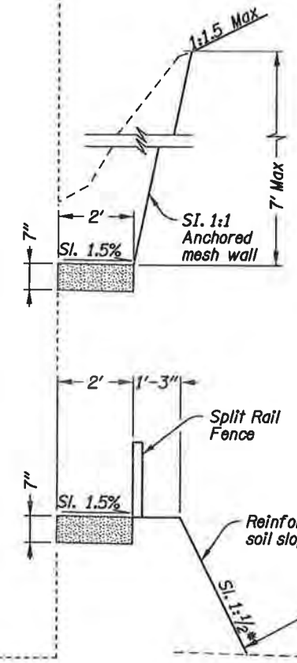
TYPICAL SECTIONS

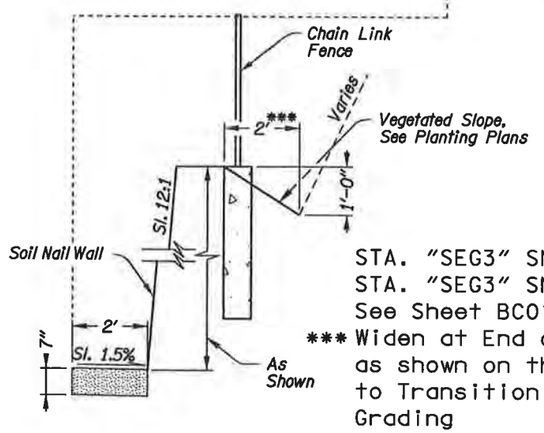
SHEET NO.
BA01

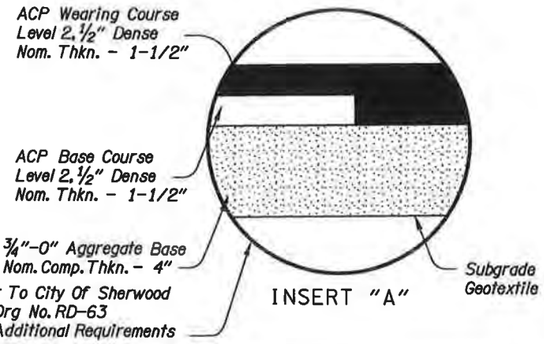
17-DEC-2020 14:30

54V-027









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STA. "SEG3"	PM08	0+33 To	STA. "SEG3"	PM08	0+63
	PM08	1+13 To		PM08	1+40
	PM01	4+70 To		PM01	5+85
	PM02	5+94 To		PM02	6+50
	PM03	7+85 To		PM03	8+76
	PM04	14+42 To		PM04	15+34
	PM04	15+44 To		PM04	15+75
	PM05	15+92 To		PM05	17+80
	PM06	27+70 To		PM06	28+35
	PM07	33+60 To		PM07	34+95

STA. "SEG3" RS07 23+77 To STA. "SEG3" RS07 25+00
RS09 38+42 To RS09 39+72.50

* Steepen to 1:2/5 Where Shown
** Transition from Wall to Mat Stone or Site Grading at End of Wall. For Transition Location and Length, see GB Plan and Profile Sheets

STA. "SEG3" SN01 0+63 To
STA. "SEG3" SN01 1+13
See Sheet BC01 for SN02
*** Widen at End of Wall as shown on the Plan to Transition to Site Grading

NOTE:
1. Side-Slopes Are Shown As Vert. To Horiz.

REGISTERED PROFESSIONAL ENGINEER
72869PE
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OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

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CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

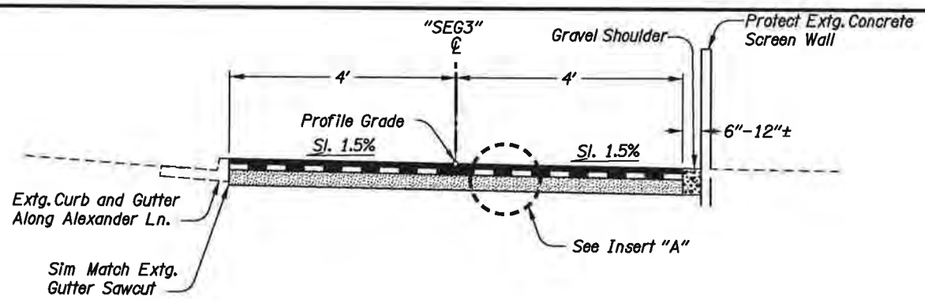
Designer: M Little | Reviewer: M Bittancourt
Drafter: M Wainscott | Checker: M Bittancourt

TYPICAL SECTIONS

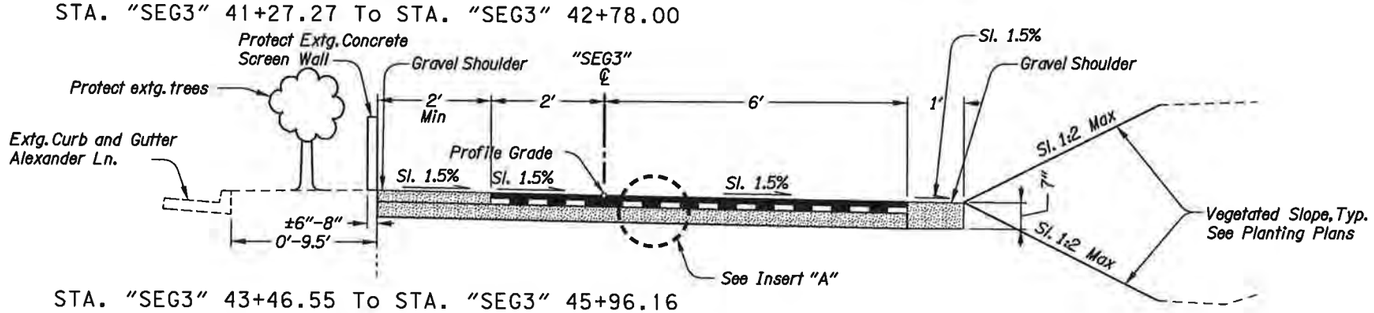
SHEET NO.
BA02

17-DEC-2020 14:30

54V-027



CEDAR CREEK TRAIL SEGMENT 3
STA. "SEG3" 41+27.27 To STA. "SEG3" 42+78.00



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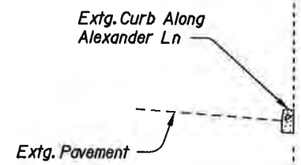

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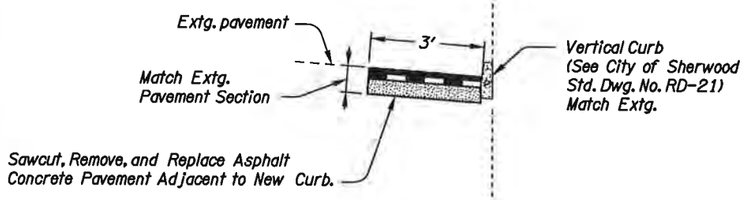

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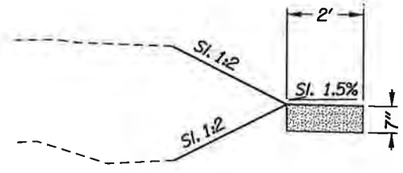

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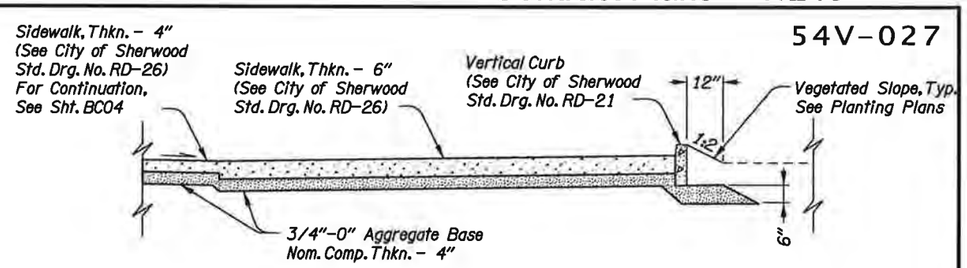
STA. "SEG3" 51+06.20



CEDAR CREEK TRAIL SEGMENT 3
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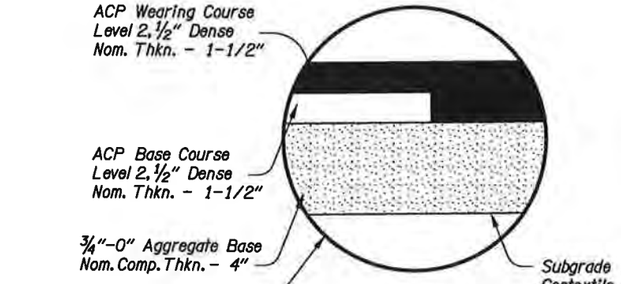
NOTE:
1. Side-Slopes Are Shown As Vert. To Horiz.



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REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020.12.17 21:46:14-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

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CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: M Bittancourt
Drafter: M Wainscott | Checker: M Bittancourt

TYPICAL SECTIONS

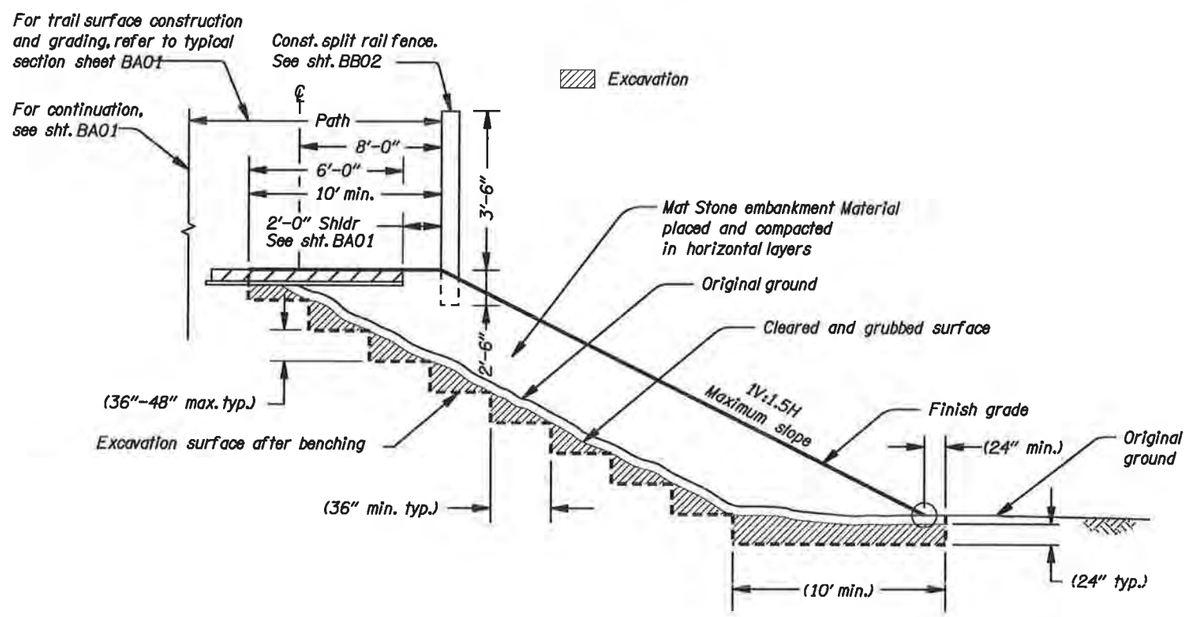
SHEET NO. BA03

17-DEC-2020 14:30

54V-027

MAT STONE EMBANKMENT CONSTRUCTION

(Not to scale: Diagrammatic only)



Standard embankment general notes:

1. *Construct benches on slopes steeper than 1:5 (v:h) to provide positive bond with existing ground.*
2. *Benching work is incidental to embankment construction.*

Geotechnical Design	Civil Design and Site Layout
REGISTERED PROFESSIONAL ENGINEER 58591 Digitally Signed 2020.12.18 07:59:35-08'00' OREGON JULY 14, 1998 RAJIV ALI	REGISTERED PROFESSIONAL ENGINEER 72869PE Digitally Signed OREGON Oct. 23, 2009 MATTHEW RYAN LITTLE
EXPIRES: 12/31/21	EXPIRES: 12/31/2022
FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST	FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

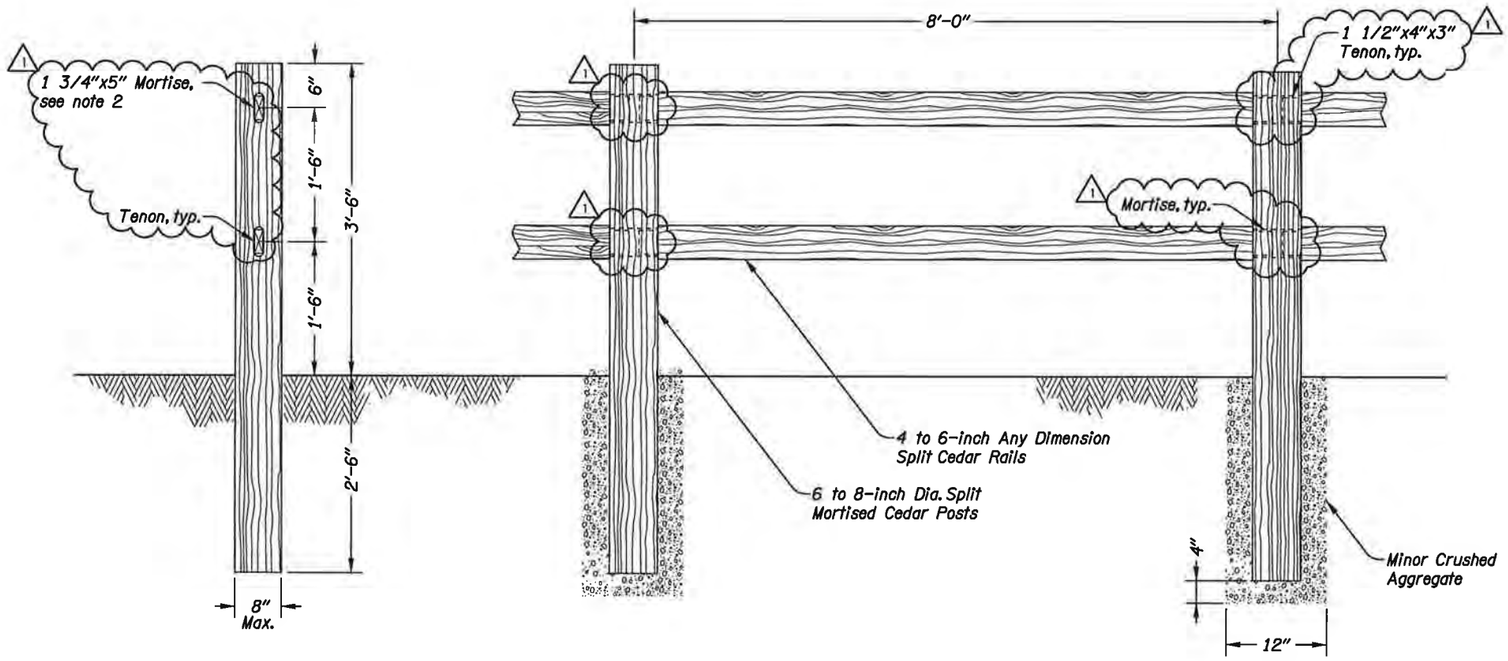
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: M Bittancourt
Drafter: M Wainscott | Checker: M Bittancourt

MAT STONE EMBANKMENT

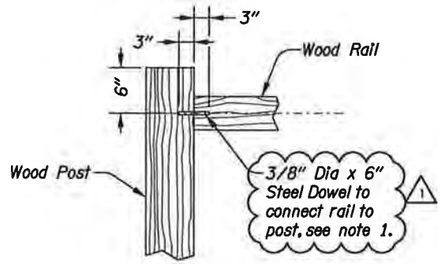
SHEET NO. BB01

17-DEC-2020 15:11



SPLIT RAIL FENCE - POST SECTION

SPLIT RAIL FENCE- ELEVATION



DOWEL DETAIL

Notes:
1. Provide dowel connection where horizontal or vertical changes in split rail fence geometry cannot be accommodated with tenons and mortises.
2. Provide full depth mortises for interior posts not requiring dowel connections on one or more sides. Provide 2 1/2" depth mortises at end posts or posts requiring dowel connections on one or more sides.

1 Revised 01-19-2021 Rail to post connection

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

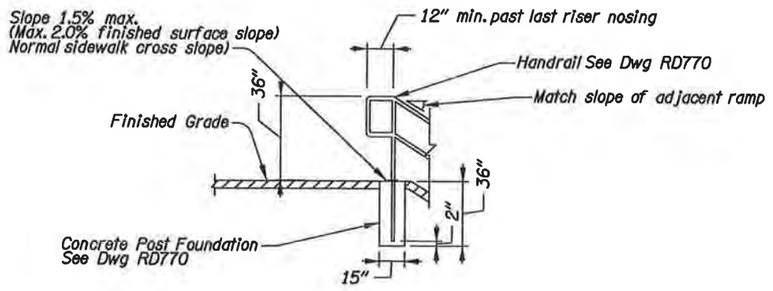
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little
Drafter: M Walnscott
Reviewer: M Bittancourt
Checker: M Bittancourt

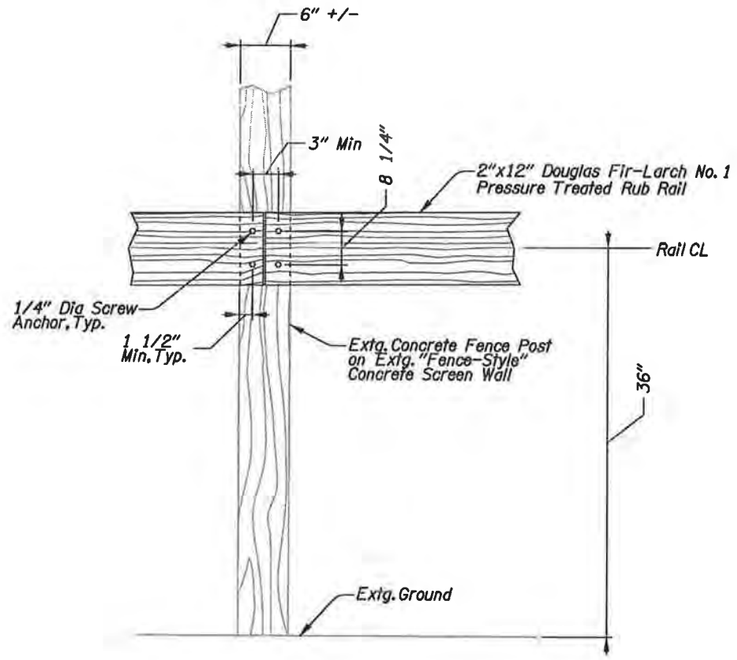
SPLIT RAIL DETAIL

SHEET NO. BB02

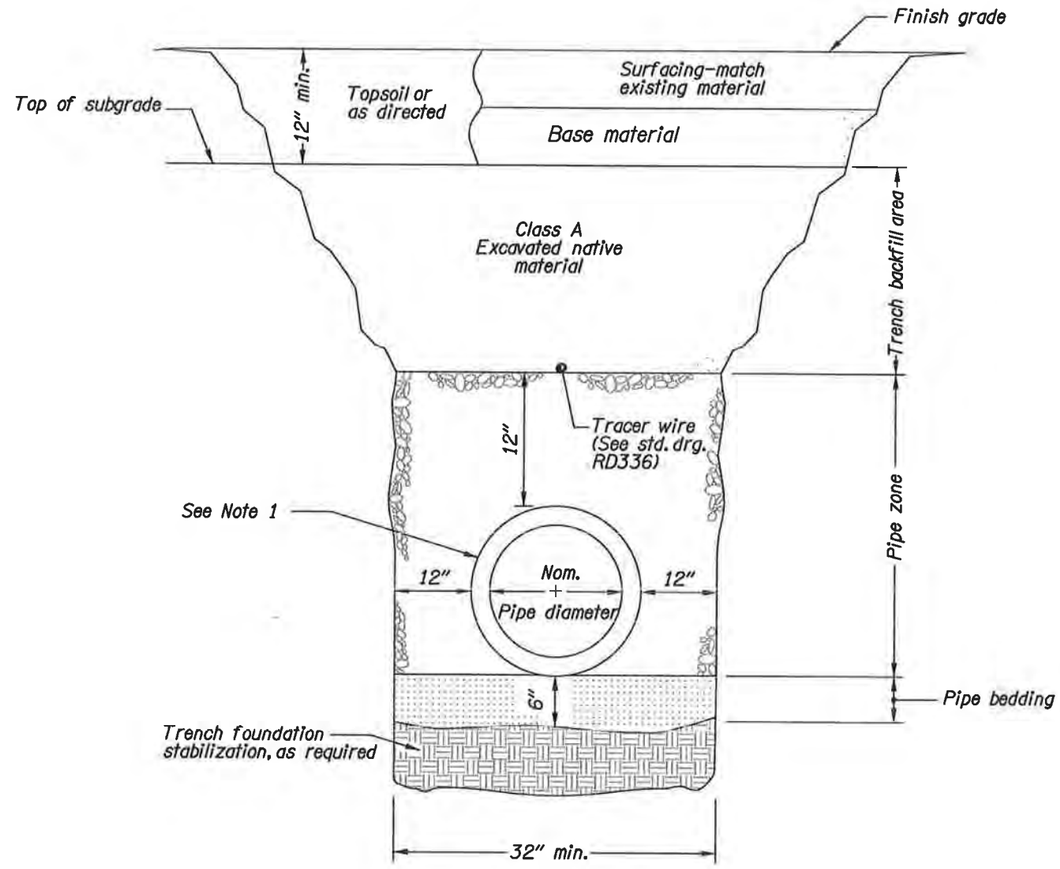
20-JAN-2021 14:15



Handrail Extension



Rub Rail



TYPICAL CIRCULAR CULVERT
TRENCH BACKFILL AND BEDDING

NOTES:

1. *Allow pipe joints to be inspected by the Engineer prior to backfilling the culvert.*

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

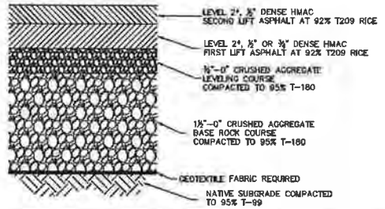
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little
Drafter: M Wainscott
Reviewer: J Schnaderbeck
Checker: J Schnaderbeck

DETAILS

SHEET NO.
BB03

12-JAN-2021 15:11



PAVEMENT SECTION CHART
COMPONENT THICKNESS (INCHES)

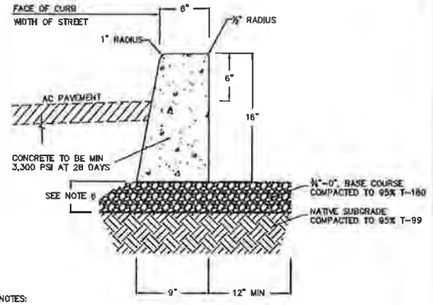
FUNCTIONAL CLASSIFICATION	SECOND LIFT HMAC THICKNESS	FIRST LIFT HMAC THICKNESS	LEVELING COURSE THICKNESS	BASE ROCK COURSE THICKNESS
LOCAL	2"	2"	2"	8"
NEIGHBORHOOD	2"	2"	2"	9"
COMMERCIAL	2"	3"	3"	9"
COLLECTOR	2"	3"	3"	9"
ARTERIAL	2"	3"	4"	10"

NOTES:

1. MATERIALS AND PLACEMENT OF THE HOT MIXED ASPHALT CONCRETE PAVEMENT (ACP) SHALL CONFORM TO THE REQUIREMENTS DELINEATED IN SECTION 00744 – ASPHALT CONCRETE PAVEMENT (ACP), OF THE ODOT/APWA, OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION (LATEST EDITION), EXCEPT AS MODIFIED BY CITY AND NOTED IN THE CITY'S ENGINEERING DESIGN AND STANDARD DETAILS MANUAL (LATEST EDITION).
2. THE TOP LIFT OF HMAC SHALL BE PLACED PRIOR TO CITY FINAL ACCEPTANCE OF PUBLIC INFRASTRUCTURE IMPROVEMENTS.
3. CRUSHED AGGREGATE USED FOR BASE ROCK AND LEVELING COURSE SHALL CONFORM TO THE REQUIREMENTS DELINEATED IN SECTION 02630 – BASE AGGREGATE, OF THE ODOT/APWA, OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION (LATEST EDITION).

* FOR ARTERIAL CLASSIFICATION USE LEVEL 3.

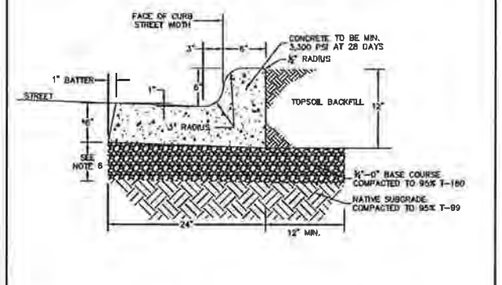
STANDARD DRAWING TITLE	DRAWING NUMBER
PAVEMENT SECTION	RD-20
SCALE: N.T.S.	DATE: MAR '16



NOTES:

1. VERTICAL CURB TO BE USED AT MEDIANS AND MEDIAN PLANTING STRIPS, OR IN REPLACEMENT OF DAMAGED EXISTING VERTICAL CURBS.
2. CONCRETE SHALL BE COMMERCIAL MIX. MIN COMPRESSIVE STRENGTH OF 3,300 PSI AT 28 DAYS.
3. EXPANSION JOINTS TO BE PROVIDED; AT POINT OF TANGENCY OF THE CURB, AT EACH COLD JOINT, AT THE SIDE OF INLET STRUCTURES, AT THE ENDS OF DRIVEWAYS AND AT LOCATIONS NECESSARY TO LIMIT SPACING TO 45 FEET.
4. MATERIAL TO BE PRE-MOLDED, ASPHALT IMPREGNATED, NON-EXTRUDING, WITH A THICKNESS OF ½ INCH.
5. CONTRACTION JOINTS SHALL NOT BE SPACED MORE THAN 15 FEET AND SHALL BE 1½" IN DEPTH
6. BASE ROCK: ¾"-0", COMPACTED TO 95% MAX DENSITY. BASE ROCK SHALL BE TO SUBGRADE OF STREET STRUCTURE OR 6" IN DEPTH, WHICHEVER IS GREATER.

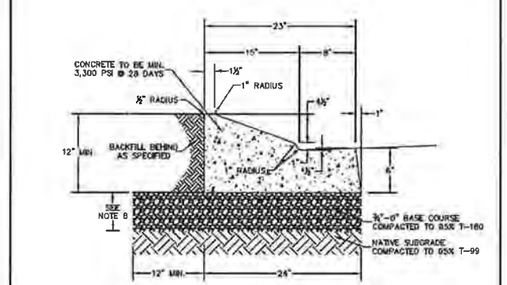
STANDARD DRAWING TITLE	DRAWING NUMBER
VERTICAL CURB	RD-21
SCALE: N.T.S.	DATE: MAR '16



NOTES:

1. MONOLITHIC CURB AND GUTTER SHALL BE USED ON ALL NEW ROADWAY SECTIONS, EXCEPT AT ROADWAY MEDIANS AND AT MOUNTABLE CURB SECTIONS (SEE STD DET RD-21 & RD-24 FOR THESE CONDITIONS).
2. CONCRETE SHALL BE COMMERCIAL MIX, WITH A 28-DAY COMPRESSIVE STRENGTH OF 3,300 PSI, WITH A 4" MAX SLUMP.
3. EXPANSION JOINTS TO BE PROVIDED AT EACH:
   A. POINT OF TANGENCY.
   B. COLD JOINT.
   C. SIDE OF INLET STRUCTURES
   D. SIDE OF DRIVEWAYS.
4. EXPANSION JOINT MATERIAL SHALL BE PRE-MOLDED, ASPHALT IMPREGNATED, NON-EXTRUDING, WITH A THICKNESS OF ½".
5. CONTRACTION JOINTS SHALL HAVE:
   A SPACING OF NOT MORE THAN 15 FEET.
   B. DEPTH OF JOINT OF AT LEAST 1½".
6. BASE ROCK SHALL BE ¾"-0", COMPACTED TO 95% OF MAXIMUM DENSITY PER AASHTO T-180. BASE ROCK SHALL BE TO SUBGRADE OF STREET STRUCTURES OR 6", WHICHEVER IS GREATER, AND SHALL EXTEND 12" BEHIND CURB.
7. FOR CURB AND GUTTER REQUIREMENTS ON SHED AND SUPERELEVATED ROAD SECTIONS, SEE STD DET RD-23
* COMMERCIAL DRIVEWAY DROPS SHALL BE 8" THICK, RE-BAR REINFORCED, AND 4,000 PSI AT 28 DAYS.

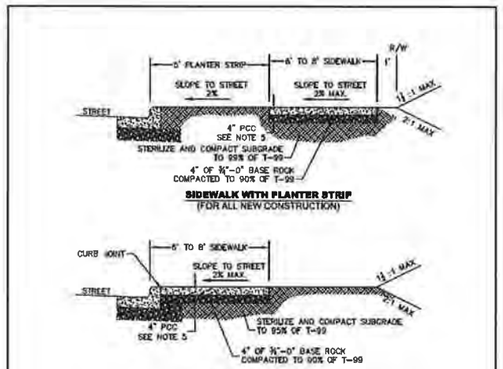
STANDARD DRAWING TITLE	DRAWING NUMBER
MONOLITHIC CURB AND GUTTER	RD-22
SCALE: N.T.S.	DATE: MAR '16



NOTES:

1. FOR USE IN CUL-DE-SACS AND OTHER SPECIAL CIRCUMSTANCES
2. CONCRETE SHALL BE COMMERCIAL MIX, WITH A 28-DAY COMPRESSIVE STRENGTH OF 3300 PSI, WITH A 4" MAX SLUMP.
3. EXPANSION JOINTS TO BE PROVIDED AT EACH:
   A. POINT OF TANGENCY.
   B. COLD JOINT.
   C. SIDE OF INLET STRUCTURES
   D. SIDE OF DRIVEWAYS.
4. EXPANSION JOINT MATERIAL SHALL BE PRE-MOLDED, ASPHALT IMPREGNATED, NON-EXTRUDING, WITH A THICKNESS OF ½"
5. CONTRACTION JOINTS SHALL HAVE:
   A. SPACING OF NOT MORE THAN 15 FEET.
   B. DEPTH OF JOINT OF AT LEAST 1½"
6. BASE ROCK SHALL BE ¾"-0", COMPACTED TO 95% OF MAXIMUM DENSITY PER AASHTO T-180. BASE ROCK SHALL BE TO SUBGRADE OF STREET STRUCTURES OR 6", WHICHEVER IS GREATER, AND SHALL EXTEND 12" BEHIND CURB.

STANDARD DRAWING TITLE	DRAWING NUMBER
MOUNTABLE CURB AND GUTTER	RD-24
SCALE: N.T.S.	DATE: MAR '16



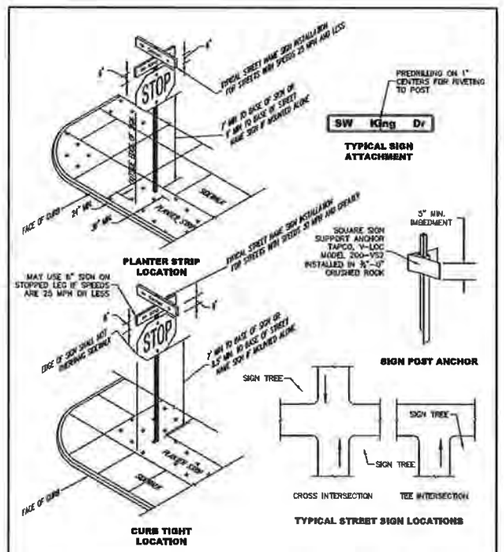
SIDEWALK WITH PLANTER STRIP
(FOR ALL NEW CONSTRUCTION)

CURB-TIGHT SIDEWALK
(TO BE USED WITH VARIANCE ONLY)

NOTES:

1. CONCRETE SHALL BE COMMERCIAL MIX, MIN. COMPRESSIVE STRENGTH OF 3,300 PSI @ 28 DAYS, WITH A 4" MAX SLUMP.
2. SIDEWALK PANELS TO BE SQUARE (6' LONG x 6' WIDE TYP.)
3. EXPANSION JOINTS TO BE PLACED AT SIDES OF DRIVEWAY APPROACHES, UTILITY VAULTS, CURB RAMPS, AND/OR POINTS OF TANGENCY IN CURB AS SHOWN ON THE STANDARD DRAWINGS FOR SIDEWALK RAMPS, AND AT SPACING NOT TO EXCEED 45'.
4. FOR SIDEWALKS ADJACENT TO THE CURB AND POURED AT THE SAME TIME AS THE CURB, THE JOINT BETWEEN THEM SHALL BE A TROWELED JOINT WITH A MINIMUM ½" RADIUS.
5. SIDEWALKS SHALL HAVE A MINIMUM THICKNESS OF 4". IF MOUNTABLE CURB IS USED, OR IF SIDEWALK IS INTENDED AS PORTION OF A RESIDENTIAL DRIVEWAY IT SHALL HAVE A 6" MINIMUM THICKNESS, COMMERCIAL 8".
6. CONCRETE SHALL HAVE A BROOM FINISH, ALL JOINTS SHALL BE EDGED WITH 3" SHINE.
7. WIDTH OF PLANTER STRIP AND SIDEWALK IS MEASURED FROM FACE OF CURB.
8. IF DRAIN BLOCKOUTS IN CURBS ARE APPROVED, THEY SHALL BE EXTENDED PERPENDICULAR TO CURB TO 1' PAST BACK OF SIDEWALK WITH A 3" DIAMETER ADS PIPE. CONTRACTION JOINT SHALL BE PLACE OVER PIPE.

STANDARD DRAWING TITLE	DRAWING NUMBER
SIDEWALK DETAIL	RD-26
SCALE: N.T.S.	DATE: MAR '16



NOTE: SEE STANDARD DWG S-1 & S-2 FOR STREET NAME SIGN DETAILS

STANDARD DRAWING TITLE	DRAWING NUMBER
STREET SIGN INSTALLATION	RD-35
SCALE: N.T.S.	DATE: MAR '16

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020.12.17 21:48:24-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

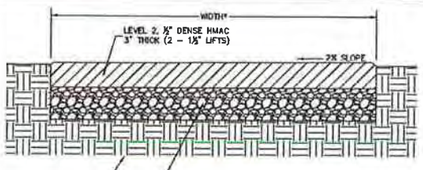
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: M Bittancourt
Drafter: M Wainscott | Checker: M Bittancourt

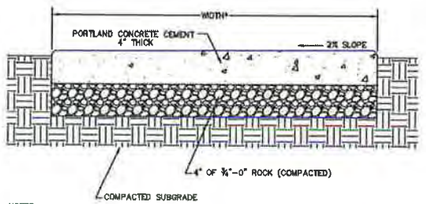
CITY OF SHERWOOD
STANDARD DETAILS

SHEET NO. BB04

16-DEC-2020 12:39



– OR –



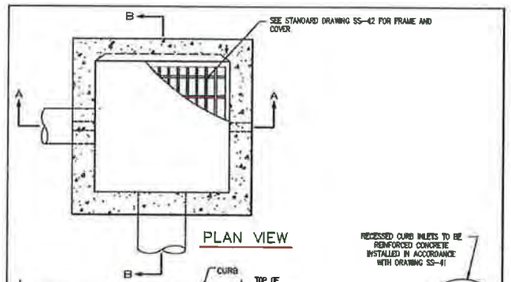
NOTES:

1. CONCRETE SHALL BE 3300 PSI AT 28 DAYS. HMAC LVL 2, ½" DENSE MIX SHALL MEET ODOT SPEC.
2. CONCRETE PATH PANELS SHALL BE SQUARE, HAVE ¾" DEEP SCRIBES AT JOINTS, 3" EDGE SHINE ON 4 SIDES AND HAVE A LIGHT BROOM BRUSH FINISH.
3. PEDESTRIAN PATH OR BIKEWAY SHALL HAVE A MINIMUM WIDTH OF 7 FEET. *

*SEE FIGURE 8–8 OF THE TSP FOR TRAIL WIDTH STANDARDS

STANDARD DRAWING TITLE	DRAWING NUMBER
PEDESTRIAN PATH & BIKEWAY SECTIONS (NOT ADJACENT TO ROADWAY)	RD-63
SCALE: N.T.S.	DATE: MAR '16

Any alteration of this drawing may not be submitted to any way with the City of Sherwood Standard Drawings.

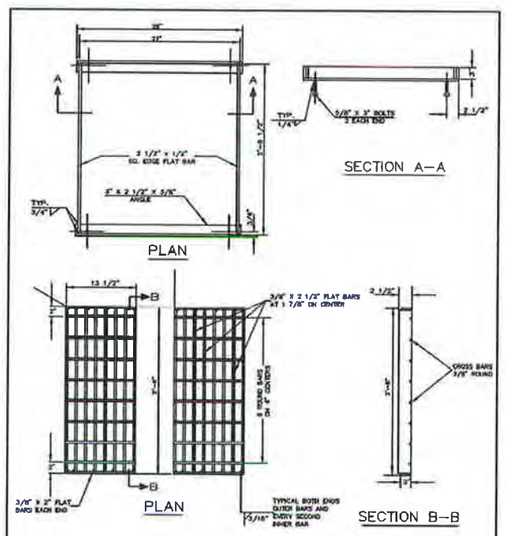


NOTES:

1. CATCH BASIN SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C-478.
2. INSTALL STEPS WHEN DISTANCE FROM TOP OF GRATE TO FLOW LINE OF PIPE IS GREATER THAN 48". SEE STANDARD DRAWING SS-10. SET FIRST STEP 12" FROM TOP OF GRATE.
3. INSTALL STRUCTURE ON MINIMUM OF 8" OF ¾"–0" COMPACTED BASE MATERIAL.
4. REINFORCEMENT FOR PRE CAST CATCH BASIN SHALL BE REBAR MEETING ASTM A-615 GRADE 60 OR WELDED WIRE MEETING ASTM A-497.
5. ALL POURED INPLACE CONCRETE SHALL HAVE A 28 DAY STRENGTH OF 3000 P.S.I. AND A 4" MAX SLUMP.
6. CHANNEL REQUIRED IN FLOW THROUGH APPLICATIONS, AS APPROVED. ALL OTHER APPLICATIONS REQUIRE AN 18" SUMP BELOW LOWEST PIPE INVERT.
7. FULL CURB EXPOSURE REQUIRED. CANNOT BE LOCATED IN SIDEWALK RAMPS OR RAMP AREAS.

STANDARD DRAWING TITLE	DRAWING NUMBER
GUTTER & CURB INLET CATCH BASIN (CG-2)	SS-40
SCALE: N.T.S.	DATE: MAR '16

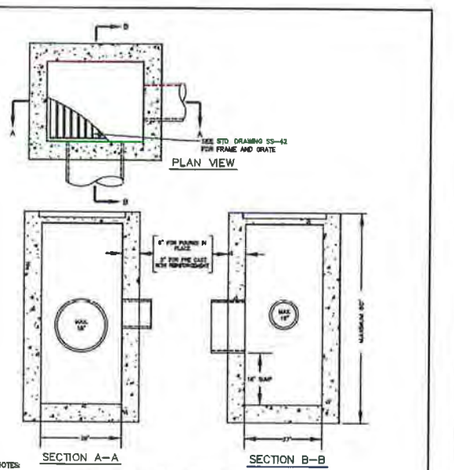
Any alteration of this drawing may not be submitted to any way with the City of Sherwood Standard Drawings.



NOTE:
FRAME AND GRATE TO BE NEW STRUCTURAL ASTM A–36 FLAT BAR STEEL OR APPROVED EQUAL.
ADDITIONAL THICKNESS AND REINFORCEMENT SHALL BE REQUIRED FOR STATIC HIGHWAY APPLICATIONS.

STANDARD DRAWING TITLE	DRAWING NUMBER
CATCH BASIN FRAME AND GRATE (CG-2)	SS-42
SCALE: N.T.S.	DATE: MAR '16

Any alteration of this drawing may not be submitted to any way with the City of Sherwood Standard Drawings.



NOTES:

1. ALL PRE CAST SECTIONS SHALL CONFORM TO REQUIREMENTS OF ASTM C-478.
2. INSTALL STRUCTURE ON MIN. OF 8" OF ¾"–0" COMPACTED BASE MATERIAL.
3. PRE CAST REINFORCEMENT SHALL BE REBAR MEETING ASTM A615 GRADE OR WELDED WIRE MEETING ASTM A497.
4. ALL POURED INPLACE CONCRETE SHALL HAVE A 28 DAY STRENGTH OF 3000 P.S.I. AND A SLUMP OF 3" TO 4".
5. CHANNEL REQUIRED IN FLOW THROUGH APPLICATIONS, AS APPROVED. ALL OTHER APPLICATIONS REQUIRE AN 18" SUMP BELOW LOWEST PIPE INVERT.
6. INSTALL STEPS WHEN DISTANCE FROM TOP OF GRATE TO FLOW LINE OF PIPE IS GREATER THAN 48". SEE STANDARD DRAWING SS-10. SET FIRST STEP 12" FROM TOP OF GRATE.
7. PRE-CAST STRUCTURE'S CONFORMING TO O.D.O.T. TYPE G-2 CATCH BASIN INLET ARE AN ACCEPTABLE ALTERNATE. (ALL GRATE MATERIALS SHALL MEET C.W.S. STANDARDS AS SHOWN ON DETAIL SS-42)

STANDARD DRAWING TITLE	DRAWING NUMBER
AREA DRAIN TYPE II	SS-48
SCALE: N.T.S.	DATE: MAR '16

Any alteration of this drawing may not be submitted to any way with the City of Sherwood Standard Drawings.

RIPRAP:

- ROCK FOR RIPRAP SHALL BE ANGULAR IN SHAPE.
- THICKNESS OF A SINGLE ROCK SHALL NOT BE LESS THAN ONE-THIRD ITS LENGTH.
- ROUNDED ROCK WILL NOT BE ACCEPTED UNLESS APPROVED BY THE CITY OR DISTRICT.

RIPRAP INSTALLATION:

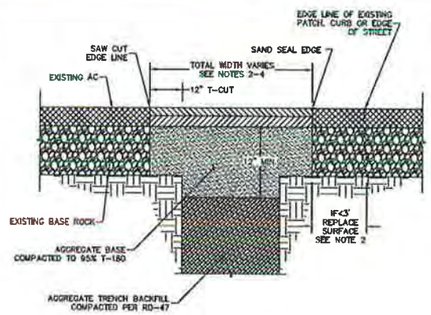
- EXCAVATE BELOW FINISH GRADE TO DEPTH & DIMENSIONS SHOWN ON APPROVED PLANS.
- INSTALL WOVEN GEOTEXTILE FABRIC.
- PLACE RIP RAP TO FINISH GRADE.

- GRADE RIPRAP SHALL BE THE CLASS AND SIZE OF ROCK ACCORDING TO THE FOLLOWING:

CLASS 50	CLASS 100	CLASS 200	CLASS 700	CLASS 2000	PERCENT (BY WEIGHT)
		WEIGHT OF ROCK (LBS)			
50-30	100-60	200-140	700-500	2000-1400	20
30-15	60-25	140-60	500-200	1400-700	30
15-2	25-2	60-8	200-20	700-40	40
2-0	2-0	8-0	20-0	40-0	10

STANDARD DRAWING TITLE	DRAWING NUMBER
RIP RAP DETAILS	SS-67
SCALE: N.T.S.	DATE: MAR '16

Any alteration of this drawing may not be submitted to any way with the City of Sherwood Standard Drawings.



CROSS-SECTION

NOTES:

1. T-CUT IS 12" MINIMUM FOR TRENCHES WIDER THAN 12".
2. IF NEW EDGE OF PAVEMENT IS LESS THAN 3' FROM ANOTHER PATCH, CURB, EDGE OF STREET OR LONGITUDINAL CRACK, REPLACE THE PAVEMENT IN BETWEEN.
3. IF MORE THAN ONE EXISTING PATCH EDGE IS WITHIN THE 3' ZONE, REMOVE PAVEMENT TO THE FAR EDGE OF THE PRE-EXISTING PATCH.
4. NEW EDGE OF PAVEMENT (EDGE LINE) SHALL NOT LIE IN A WHEEL PATH. WIDTH OF T-CUT SHALL BE WIDENED WHERE NECESSARY TO MOVE THE EDGE LINE OUT OF THE WHEEL PATH.
5. SEE STD DET RD-20 FOR TYPICAL STREET PAVEMENT SECTION.
6. SEE STD DET RD-47 FOR TYPICAL TRENCH BACKFILL REQUIREMENTS.

STANDARD DRAWING TITLE	DRAWING NUMBER
PIPE TRENCH RESTORATION	RD-45
SCALE: N.T.S.	DATE: MAR '16

Any alteration of this drawing may not be submitted to any way with the City of Sherwood Standard Drawings.

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020.12.17 21:40:57-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE

EXPIRES: 12/31/2022

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PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little
Reviewer: M Bittancourt
Drafter: M Wainscott
Checker: M Bittancourt

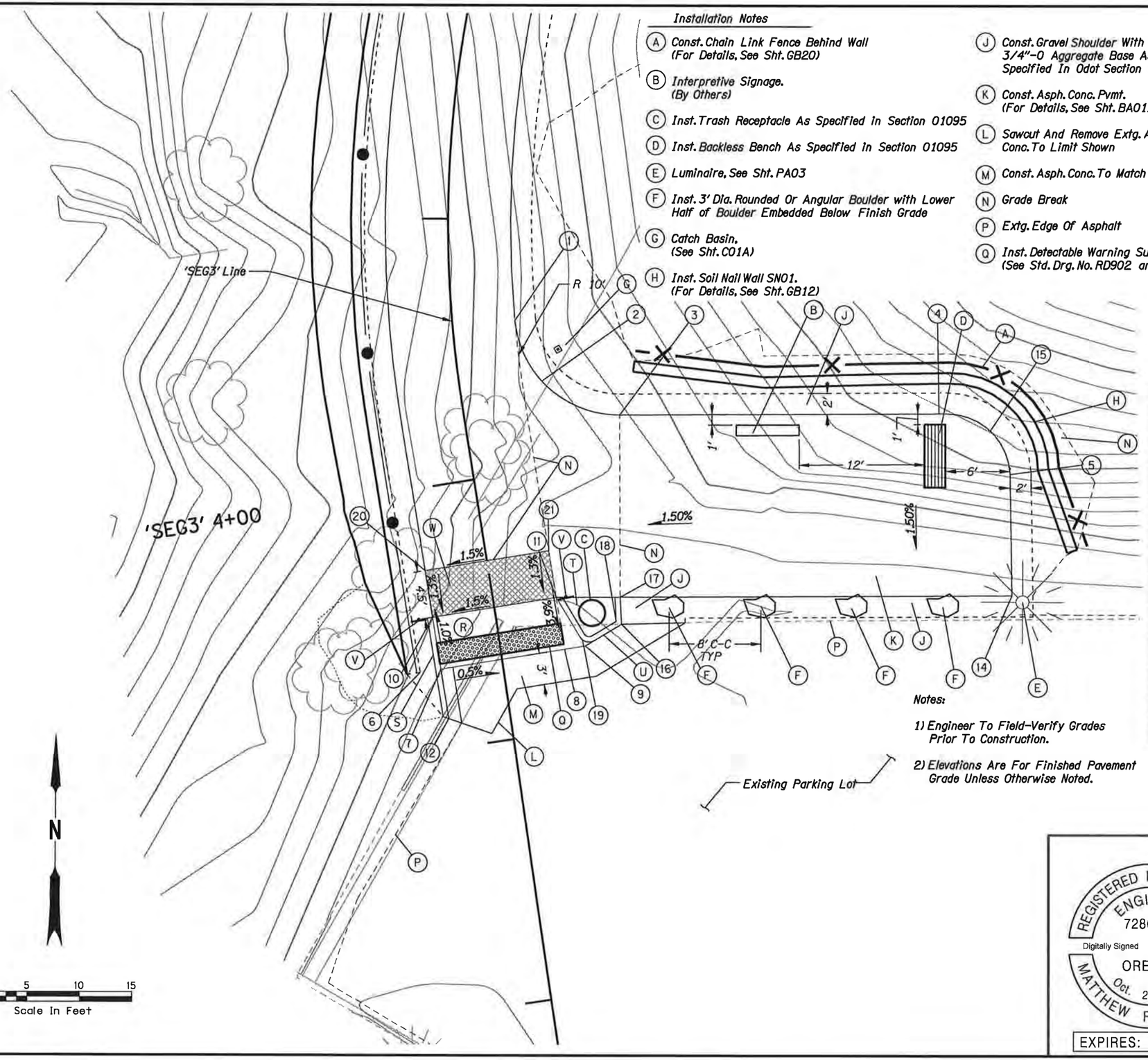
CITY OF SHERWOOD STANDARD DETAILS

SHEET NO. BB05

16-DEC-2020 12:39

54V-027

ROADWAY



Installation Notes

(A) Const. Chain Link Fence Behind Wall (For Details, See Sht. GB20)

(B) Interpretive Signage. (By Others)

(C) Inst. Trash Receptacle As Specified In Section 01095

(D) Inst. Backless Bench As Specified In Section 01095

(E) Luminaire, See Sht. PA03

(F) Inst. 3' Dia. Rounded Or Angular Boulder with Lower Half of Boulder Embedded Below Finish Grade

(G) Catch Basin. (See Sht. C01A)

(H) Inst. Soil Nail Wall SN01. (For Details, See Sht. GB12)

(J) Const. Gravel Shoulder With 7" Thk. 3/4"-0 Aggregate Base As Specified In Odot Section 02630

(K) Const. Asph. Conc. Pvmt. (For Details, See Sht. BA01)

(L) Sawcut And Remove Extg. Asph. Conc. To Limit Shown

(M) Const. Asph. Conc. To Match Extg.

(N) Grade Break

(P) Extg. Edge Of Asphalt

(Q) Inst. Detectable Warning Surface (See Std. Drg. No. RD902 and RD904)

(R) Const. Perpendicular Curb Sidewalk Ramp (With Single Flare) (See Std. Drg. No. RD910, Except Provide Concrete Thickness Of 6")

(S) Const. Curb And Gutter (See City Of Sherwood Std. Drg. No. RD-22)

(T) Const. P.C. Conc. Sidewalk (See City Of Sherwood Std. Drg. No. RD-26)

(U) Const. Vertical Curb (See City Of Sherwood Std. Drg. No. RD-21)

(V) No Motor Vehicles sign (See Sht. LA01)

(W) ADA Turning Space:

Notes:

1) Engineer To Field-Verify Grades Prior To Construction.

2) Elevations Are For Finished Pavement Grade Unless Otherwise Noted.

POINT CONTROL				
Pt.	Northing	Easting	Elev.	Pt. Description
1	112775.52	303433.39	167.81	PC
2	112769.12	303436.69	167.67	Midpoint on Curve
3	112766.59	303443.44	167.51	PT
4	112766.91	303474.30	167.98	PC
5	112761.18	303480.76	167.98	PT
6	112741.93	303424.57	166.76	Ramp Flare PI
7	112742.26	303426.54	167.03	Bottom of Ramp
8	112744.25	303438.37	166.97	Bottom of Ramp
9	112744.58	303440.34	166.85	Ramp Flare PI R=0.5', Bottom of Curb
10	112747.19	303425.71	166.98	Top of Ramp
11	112749.18	303437.55	167.16	Top of Ramp
12	112737.56	303427.33	166.93	Tie to Existing
13	-	-	-	Not Used
14	112749.63	303480.99	167.81	Edge of Asphalt PI
15	112765.29	303478.82	168.02	Midpoint on Curve
16	112746.66	303443.76	167.07	Curb PI, bottom of Curb
17	112749.24	303443.62	167.25	End Grade Break, Top of Curb
18	112746.93	303443.25	167.20	Top of Curb
19	112745.47	303440.56	167.35	Top of Curb
20	112751.63	303424.97	167.04	End of Grade Break
21	112753.61	303436.80	167.22	End of Grade Break

N

0 5 10 15
Scale In Feet

662691dt03.dgn

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

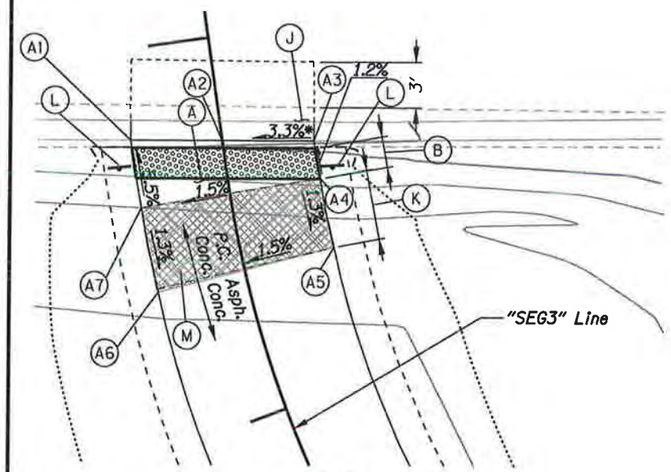
Designer: M Little | Reviewer: M Bittancourt
Drafter: M Wainscott | Checker: M Bittancourt

TRAILHEAD GRADING DETAILS

SHEET NO. BC01

17-DEC-2020 14:30

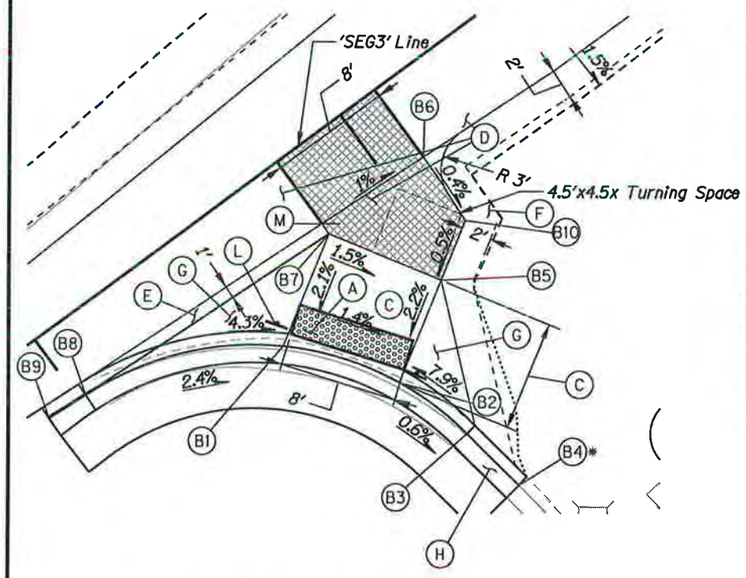
54V-027



Section "A"
Curb Ramp at STA "SEG3" 1+93
See sht. C01

POINT CONTROL				
Pt.	Station	Offset	Elevation	Pt. Description
A1	Sta. 'SEG3' 1+94.02	6.00' Lt.	164.37	Gutter FL, Connect to Extg. Curb and Gutter
A2	Sta. 'SEG3' 1+93.15	0.00'	164.56	PI, Path Alignment and Face of Curb
A3	Sta. 'SEG3' 1+92.29	6.00' Rt.	164.76	Gutter FL, Connect to Extg. Curb and Gutter
A4	Sta. 'SEG3' 1+89.65	6.06' Rt.	164.79	End of Grade Break
A5	Sta. 'SEG3' 1+84.83	6.08' Rt.	164.73	End of Grade Break
A6	Sta. 'SEG3' 1+84.42	5.91' Lt.	164.55	End of Grade Break
A7	Sta. 'SEG3' 1+89.65	5.93' Lt.	164.61	End of Grade Break

*Match Extg. Line



Section "B"
Curb Ramp at STA "SEG3" 41+00
See Sht. C07

POINT CONTROL				
Pt.	Station	Offset	Elev.	Pt. Description
B1	Sta. 'SEG3' 41+12.04	10.00' Lt.	172.82	Bottom of Ramp
B2	Sta. 'SEG3' 41+07.28	16.47' Lt	172.71	Bottom of Ramp
B3	Sta. 'SEG3' 41+05.66	21.81' Lt.	172.69	Gutter FL, End of Flare
B4	Sta. 'SEG3' 41+04.90	26.58' Lt.	*	Connect to Extg. Curb and Gutter
B5	Sta. 'SEG3' 41+01.07	12.68' Lt.	172.87	Top of Ramp
B6	Sta. 'SEG3' 40+97.21	5.46' Lt	172.91	PI, Edge of Asphalt
B7	Sta. 'SEG3' 41+05.24	5.85' Lt.	172.98	Top of Ramp
B8	Sta. 'SEG3' 41+24.47	4.88' Lt.	173.19	Gutter FL, PC
B9	Sta. 'SEG3' 41+27.30	4.70' Lt.	*	Connect to Extg. Curb and Gutter
B10	Sta. 'SEG3' 40+97.45	10.47' Lt.	172.89	Ramp PI

*Match Extg. Line

Notes:

(A) Inst. detectable warning surface. (See Std. Drg. No. RD902 and RD904)

(B) Const. perpendicular curb ramp (through buffer strip). (See Std. Drg. No. RD910, Except Provide Concrete Thickness of 6")

(C) Const. Perpendicular Curb Rramp. (See Std. Drg. No. RD910, Except Provide Concrete Thickness of 6")

(D) Const. asphalt conc. pavement. (For details, see Sht. BA01)

(E) Const. 7" thick unreinforced conc. strip flush with adjacent asphalt path and adjacent curb ramp. For conc. type, see City of Sherwood Std. Drg. No. RD-21

(F) Const. Gravel Shoulder With 7" Thick 3/4"-0 Aggregate Base Course As Specified in Odot Section 02630

(G) Sidewalk Ramp Flare, (See Std. Drg. RD910)

(H) Const. Monolith Curb and Gutter (For Details, See City of Sherwood Std. Drg. No. RD-22)

(J) Const. Conc. Gutter to Match Extg. (For Details, See City of Sherwood Std. Drg. No. RD-22)

(K) Const. Sidewalk. (See City of Sherwood Std. Drg. No. RD-26. Except Provide Concrete Thickness of 6")

(L) No Motor Vehicles Sign (See Sht. LA01 and LA02)

(M) ADA Turning Space:

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: M Bittancourt
Drafter: M Wainscott | Checker: M Bittancourt

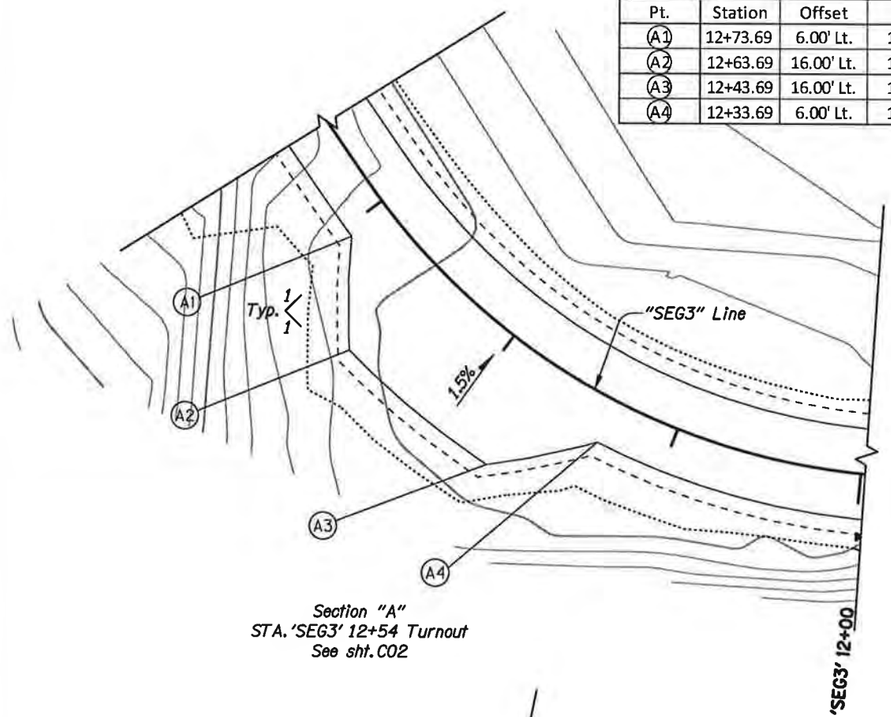
PEDESTRIAN RAMP GRADING DETAILS

SHEET NO. BC02

16-DEC-2020 12:39

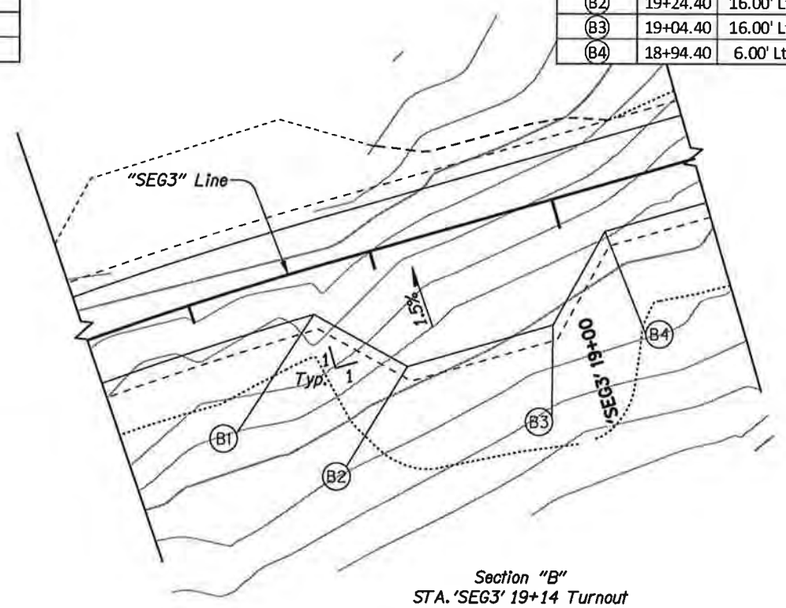
ROADWAY
rd759.dgn 15-JAN-2016
662691dt04.dgn

POINT CONTROL				
Pt.	Station	Offset	Elev.	Pt. Description
A1	12+73.69	6.00' Lt.	196.35	EOP
A2	12+63.69	16.00' Lt.	196.27	EOP
A3	12+43.69	16.00' Lt.	196.34	EOP
A4	12+33.69	6.00' Lt.	196.48	EOP



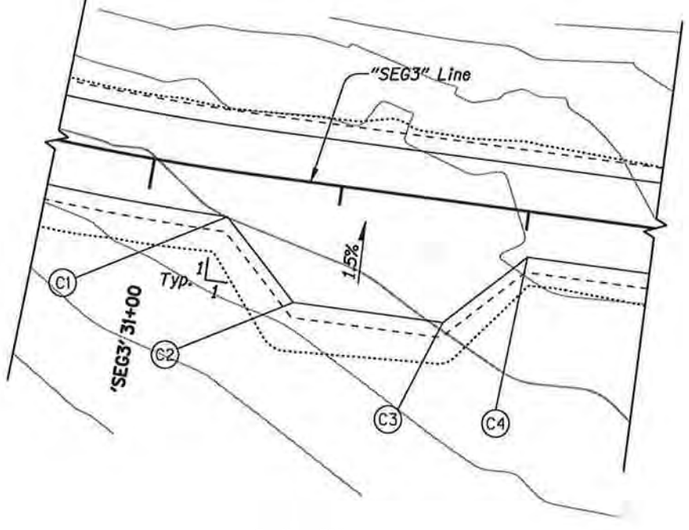
Section "A"
STA. 'SEG3' 12+54 Turnout
See sht. C02

POINT CONTROL				
Pt.	Station	Offset	Elev.	Pt. Description
B1	19+34.40	6.00' Lt.	179.47	EOP
B2	19+24.40	16.00' Lt.	179.15	EOP
B3	19+04.40	16.00' Lt.	178.86	EOP
B4	18+94.40	6.00' Lt.	178.89	EOP

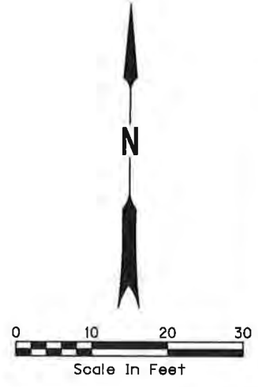


Section "B"
STA. 'SEG3' 19+14 Turnout
See Sht. C03

POINT CONTROL				
Pt.	Station	Offset	Elev.	Pt. Description
C1	30+89.40	6.00' Lt.	160.97	EOP
C2	30+79.40	16.00' Lt.	161.03	EOP
C3	30+59.40	16.00' Lt.	161.45	EOP
C4	30+49.40	6.00' Lt.	161.80	EOP



Section "C"
STA. 'SEG3' 30+70 Turnout
See sht. C05



REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little
Drafter: M Wainscott
Reviewer: M Bittancourt
Checker: M Bittancourt

TURNOUT GRADING DETAILS

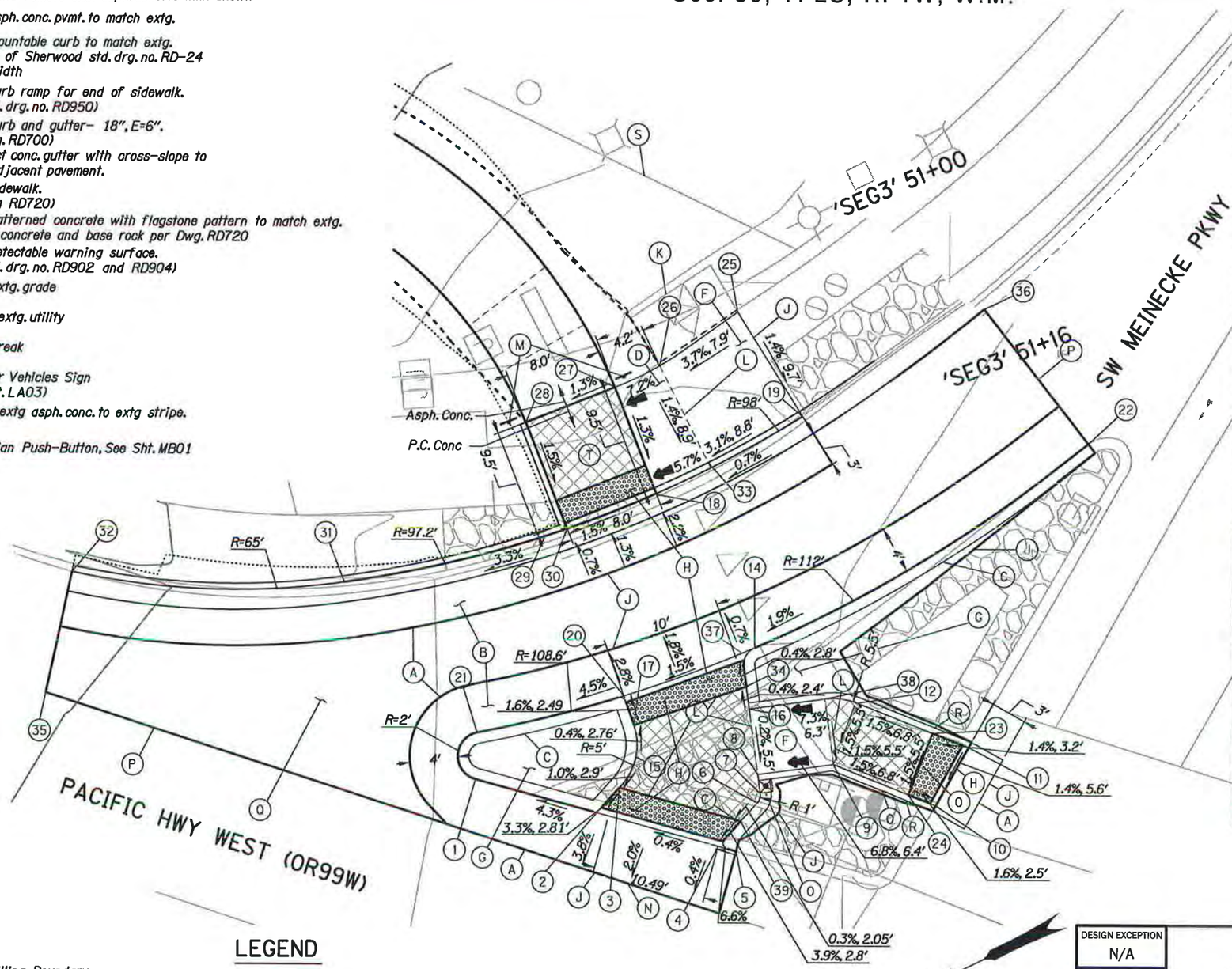
SHEET NO.
BC03

16-DEC-2020 12:39

54V-027

Sec. 30, T. 2S, R. 1W, W.M.

(A) Sawcut and remove exst asph. conc. to limit shown
(B) Const. asph. conc. pvmt. to match extg.
(C) Const. mountable curb to match extg.
See City of Sherwood std. drg. no. RD-24
Match width
(D) Const. curb ramp for end of sidewalk.
(See std. drg. no. RD950)
(E) Const. curb and gutter- 18", E=6".
(See Drg. RD700)
Construct conc. gutter with cross-slope to match adjacent pavement.
(F) Const. sidewalk.
(See Drg RD720)
(G) Const. patterned concrete with flagstone pattern to match extg.
Provide concrete and base rock per Dwg. RD720
(H) Const. detectable warning surface.
(See std. drg. no. RD902 and RD904)
(J) Match extg. grade
(K) Protect extg. utility
(L) Grade break
(M) No Motor Vehicles Sign
(See Sht. LA03)
(N) Remove extg asph. conc. to extg stripe.
(O) Pedestrian Push-Button, See Sht. MB01



POINT CONTROL				
Pt.	Northing	Easting	Elev.	Pt. Description
1	113334.74	300779.72	206.10	Mountable Curb PT, Bottom EL
2	113326.89	300772.78	206.55	Mountable Curb P,I R=0.5', Bottom EL
3	113324.28	300773.81	206.65	Mountable Curb PC, Bottom EL
4	113319.02	300765.84	206.69	Mountable Curb PI, R=0.5', Bottom EL
5	113317.85	300764.80	Match Extg	Mountable Curb POE, Bottom EL
6	113314.50	300767.62	206.79	Mountable Curb PI, R=0.5', Bottom EL
7	113313.92	300768.23	206.79	End Grade Break, Midpoint of Curve
8	113313.41	300769.73	206.80	Mountable Curb PC, R=2', Bottom EL
9	113307.40	300767.70	207.23	Mountable Curb PT, R=2', Bottom EL
10	113301.22	300760.87	207.37	Mountable Curb POE, Match Extg.
11	113296.65	300764.03	207.29	Mountable Curb POB, Match Extg.
12	113303.33	300771.39	207.31	End Grade Break
13				Not Used
14	113309.03	300779.30	206.80	Mountable Curb PT, R=1.5', Bottom EL
15	113321.90	300775.50	206.68	End Grade Break, Midpoint of Curve
16	113311.65	300774.94	206.81	Grade Break PI
17	113320.89	300777.94	206.67	Mountable Curb PT, Bottom EL
18	113310.77	300794.43	206.52	End Vertical Curb, Top Flush with Bottom
19	113297.01	300794.84	207.09	End Grade Break, Begin Curb Taper
20	113320.57	300780.50	206.63	Mountable Curb PI, R=0.5', Bottom EL
21	113333.18	300782.27	206.13	Mountable Curb PC, Bottom EL
22	113276.61	300782.30	Match Extg	Mountable Curb POE, Match Extg.
23	113298.79	300766.39	207.41	End Curb & Gutter, Match Extg.
24	113302.87	300762.70	207.33	Sidewalk PI, Match Extg.
25	113298.06	300805.02	207.23	End Grade Break, Begin Sidewalk Ramp
26	113305.85	300803.85	206.94	Sidewalk PI, R=25'
27	113310.00	300803.89	206.64	Sidewalk PI
28	113317.98	300804.54	206.54	Sidewalk PI, Begin Vertical Curb, Bottom EL
29	113320.76	300795.35	206.28	Vertical Curb PI, R=0.5', Bottom EL
30	113318.75	300795.08	206.40	Vertical Curb PC, Bottom EL
31	113337.36	300799.24	205.61	Vertical Curb PC, Bottom EL
32	113357.37	300809.97	Match Extg	End Curb & Gutter, Match Extg.
33	113305.76	300794.85	206.82	Grade Break PI
34	113311.05	300776.71	206.80	Center of Curve
35	113363.74	300801.90	Match Extg	Edge of Pavement Mill and Inlay
36	113279.49	300796.18	Match Extg	Edge of Pavement Mill and Inlay
37	113310.15	300779.37	206.78	Mountable Curb PI, R=1.5', Bottom EL
38	113305.64	300772.91	207.27	Grade Brake, Curb PT, Bottom EL
39	113316.41	300766.87	206.80	Grade Break, Mountable Curb Bottom EL

LEGEND

(P) Pavement Milling Boundary
(Q) Mill top 2" of existing asphalt concrete. Inlay new Level 3, 1/2-inch dense asphalt concrete pavement.
(R) Const. Standard Curb, E=6" (see Std. Drg. RD700)
(S) Property Line
(T) ADA Turning Space:

ADA Turning space (1.5% max. design slope, 2.0% max. finished surface slope).
Truncated dome detectable warning surface.
Slope 1.5% max. design cross-slope (max 2.0% finished surface slope), 4.99% max. longit. slope.
Slope 7.5% max. design ramp slope (max. 8.3% finished surface slope).
Counter slope
(X) Northing, easting, elevation point

*Match Extg. Line

Notes:
1. For location of work along trail, see sht. C09.
2. Length and slope callouts represent length and slope between control points.

DESIGN EXCEPTION	N/A
CROSSING CLOSURE	N/A
LRM NO.	09100100
HWY: 091 M.P.: 15.95	
CORNER POSITION	C4 AND C4A
RAMP NO.	C4 R1 & C4A R1, R2, R3

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020.12.17 21:52:13-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little
Drafter: M Walnscott
Reviewer: M Bittancourt
Checker: M Bittancourt

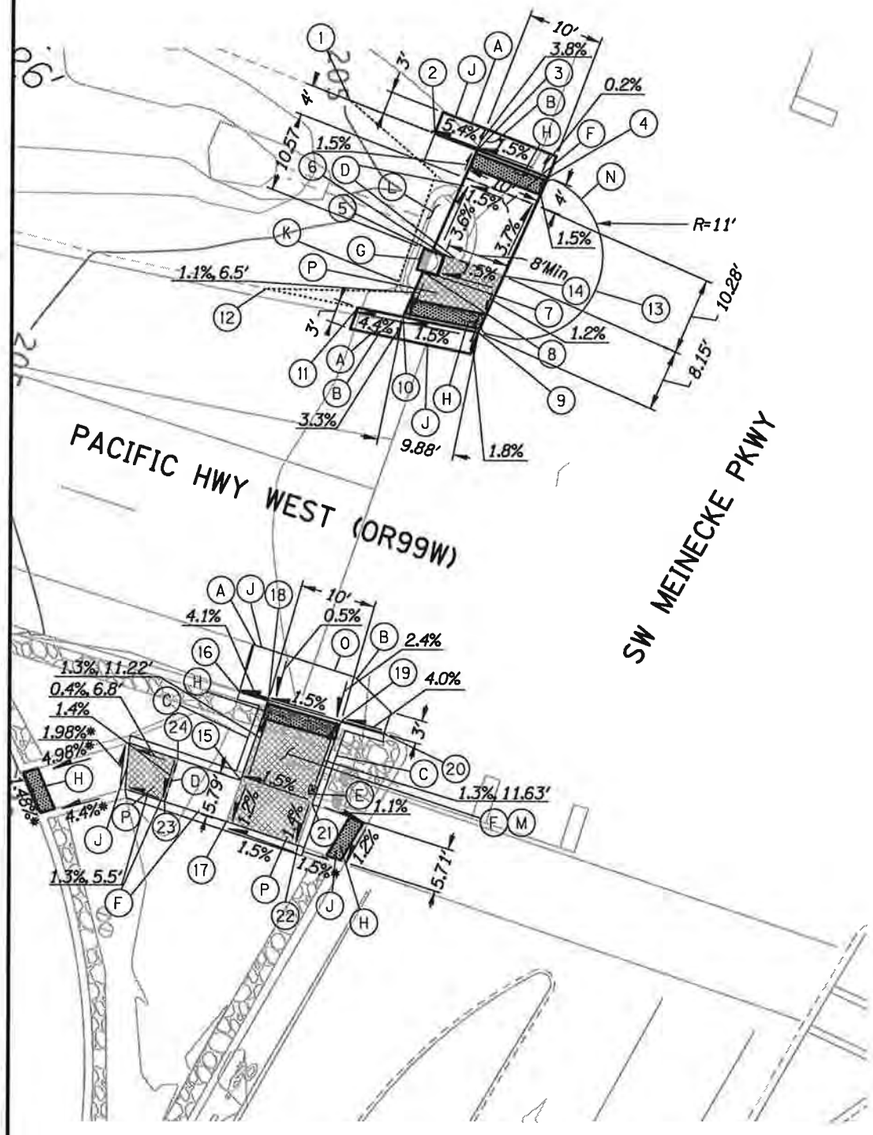
MEINECKE ROAD INTERSECTION - SIDEWALK GRADING DETAILS

SHEET NO. BC04

17-DEC-2020 14:30

Sec. 30, T. 2S, R. 1W, W.M.

54V-027



LEGEND

- ADA Turning space (1.5% max. design slope, 2.0% max. finished surface slope).
- Truncated dome detectable warning surface.
- Slope 1.5% max. design cross-slope (max 2.0% finished surface slope), 4.99% max. longit. slope.
- Slope 7.5% max. design ramp slope (max. 8.3% finished surface slope).
- Counter slope
- (X) Northing, easting, elevation point

(A) Sawcut And Remove Asph. Conc. To Limit Shown

(B) Const. Asph. Conc. Pvmt. To Match Extg.

(C) Const. Mountable Curb to match extg. (See City of Sherwood Std. Drg. No. RD-24. Match Extg. Width)

(D) Grade break

(E) Pedestrian Push-Button, See Sht. MB01

(F) Const. Sidewalk, (See Dwg. RD720)

(G) Protect Extg. Signal Pole

(H) Const. Detectable Warning Surface. (See Std. Drg. No. Rd902 and RD904)

(J) Match Extg. Grade

(K) Earthwork Limit

(L) Earthwork Slope

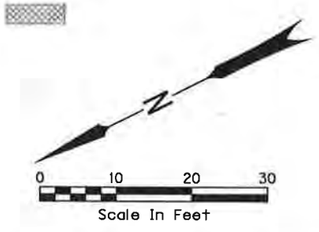
(M) Const. Perpendicular Curb Ramp (Through Buffer Strip) (See Std. Drg. No. Rd910)

(N) Const. Mountable Type C Island (See Std. Drg. No. RD705)

(O) Remove extg asph. conc. to extg stripe.

(P) ADA Turning Space:

POINT CONTROL				
Pt.	Northing	Easting	Elev.	Pt. Description
1	113382.17	300769.00	Match Extg	Earthwork Limit
2	113374.03	300760.16	Match Extg	Begin Pavement Sawcut
3	113369.96	300755.75	205.91	PI, Edge of Sidewalk
4	113363.17	300748.38	206.07	Curb PI, 1-ft Radius, Bottom EL
5	113381.11	300746.38	206.35	PI, Edge of Sidewalk
6	113379.89	300745.13	206.38	Corner of Sidewalk
7	113381.96	300743.13	206.35	Corner of Sidewalk
8	113383.45	300744.42	206.32	PI, Edge of Sidewalk
9	113380.44	300734.07	206.41	Curb PI, 1-ft Radius, Bottom EL
10	113388.43	300740.24	206.25	PI, Edge of Sidewalk
11	113393.23	300743.95	Match Extg	Begin Pavement Sawcut
12	113403.06	300751.56	Match Extg	Earthwork Limit
13	113364.09	300732.24		Curb Midpoint, 11' Radius
14	113374.16	300739.27	206.50	Grade Break PI
15	113434.61	300694.76	206.10	Curb PI, 1-ft Radius, Bottom EL
16	113429.56	300705.33	205.79	Begin Curb, Match Extg.
17	113438.56	300690.62	206.03	Edge of Sidewalk
18	113426.61	300702.63	205.95	Curb PI, 1-ft Radius, Bottom EL
19	113419.20	300695.90	206.10	Curb PI, 1-ft Radius, Bottom EL
20	113414.86	300691.95	206.34	Begin Curb, Match Extg.
21	113427.48	300687.74	206.25	Curb PI, 1-ft Radius, Bottom EL
22	113431.56	300683.73	206.17	Edge of Sidewalk
23	113444.89	300696.66	205.75	Grade Break, Bottom of Curb EL
24	113440.84	300700.89	205.83	Grade Break, Bottom of Curb EL



Notes:

* Match extg. grade.

1. Elevations to be field-verified.
2. Length and slope callouts represent length and slope between control points.

Note:
For location of work along trail, see sht. C09

DESIGN EXCEPTION	N/A
CROSSING CLOSURE	N/A
LRM NO.	09100100
HWY: 091 M.P.: 15.95	
CORNER POSITION	C1A AND C4B
RAMP NO.	C1A R1, R2, R3 & C4B R1, R2

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed
2020.12.17 21:52:54-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little	Reviewer: M Bittancourt
Drafter: M Wainscott	Checker: M Bittancourt

MEINECKE ROAD INTERSECTION - SIDEWALK GRADING DETAILS

SHEET NO. BC05

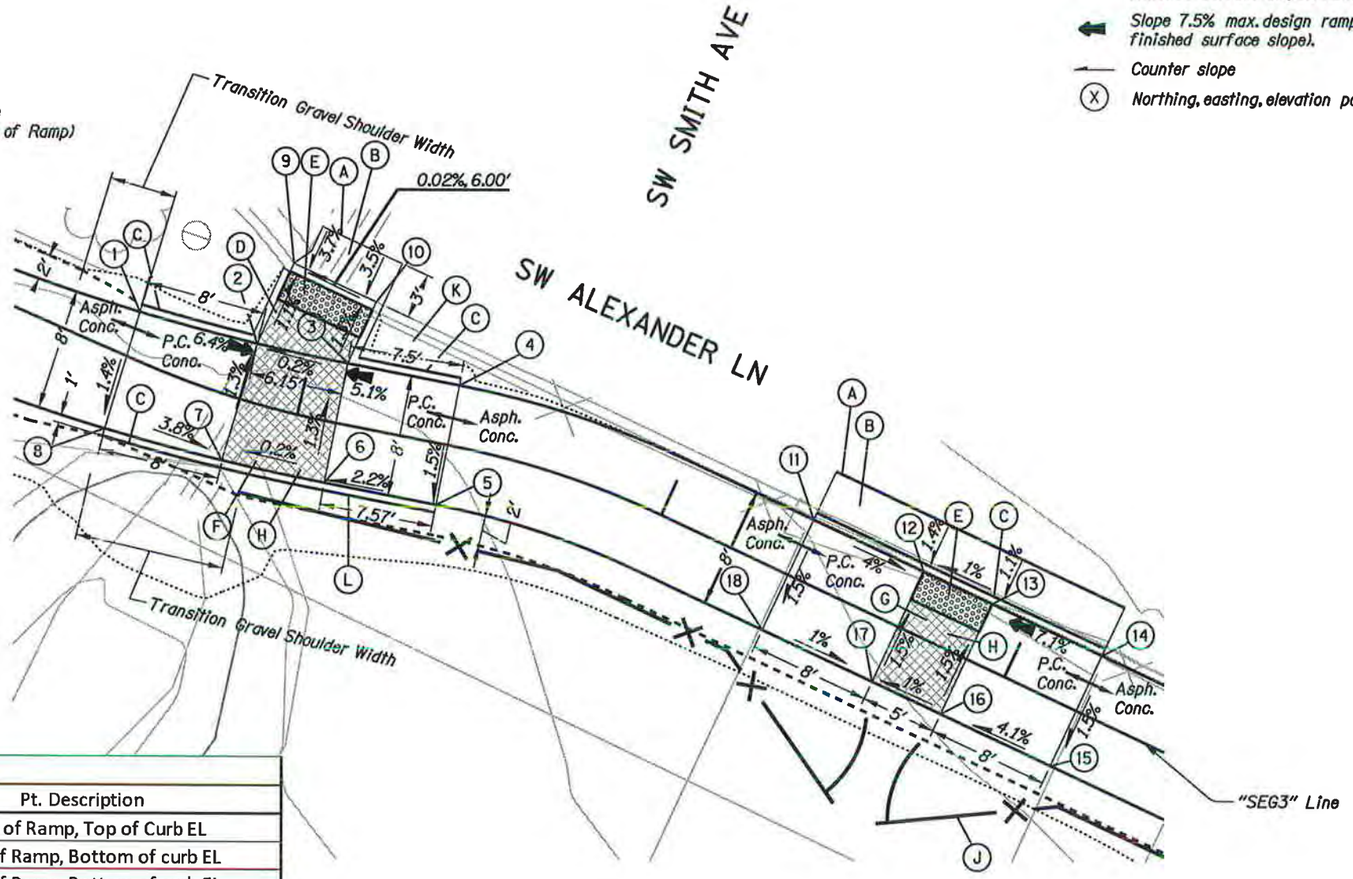
16-DEC-2020 12:39

54V-027

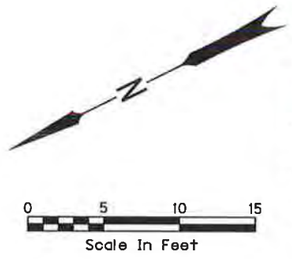
(A) Sawcut and remove exst asph. conc. to limit shown
(B) Const. asph. conc. pvmt. to match extg.
(C) Const. Vertical Curb, (For Details, See City of Sherwood, Std Drg No. RD-21)
(D) Const. sidewalk. (See Drg RD720)
(E) Const. detectable warning surface. (See std. drg. no. RD902 and RD904)
(F) Const. Parallel Curb Ramp (See Std. Drg. No. RD920)
(G) Const. Parallel Curb Ramp (See Std. Drg. No. RD920. Except Provided Concrete Thickness of 6", and do not Provide Curb at Back of Ramp)
(H) ADA Turning Space:
(J) Gate for Emergency Vehicle Access (See Sht C08)
(K) Const. Gravel Shoulder with 7" Thk. 3/4"-0 Aggregate Base as Specified in ODOT Section 02630
(L) Const. standard curb, E=6" (See std. drg. RD700)

LEGEND

- ADA Turning space (1.5% max. design slope, 2.0% max. finished surface slope).
- Truncated dome detectable warning surface.
- Slope 1.5% max. design cross-slope (max 2.0% finished surface slope), 4.99% max. longit. slope.
- Slope 7.5% max. design ramp slope (max. 8.3% finished surface slope).
- Counter slope
- (X) Northing, easting, elevation point



POINT CONTROL				
Pt.	Northing	Easting	Elev.	Pt. Description
1	113641.63	301158.70	192.71	Edge of Ramp, Top of Curb EL
2	113635.61	301153.42	192.20	Edge of Ramp, Bottom of curb EL
3	113630.78	301149.61	192.19	Edge of Ramp, Bottom of curb EL
4	113624.81	301145.07	192.57	Edge of Ramp, Top of Curb EL
5	113629.66	301138.70	192.45	Edge of Ramp, Top of Curb EL
6	113635.63	301143.25	192.29	Edge of Ramp, Bottom of curb EL
7	113641.09	301147.57	192.30	Edge of Ramp, Bottom of curb EL
8	113647.08	301152.84	192.60	Edge of Ramp, Top of Curb EL
9	113631.08	301157.08	Match Extg	Edge of Sidewalk, Top of Conc.
10	113627.32	301152.41	Match Extg	Edge of Sidewalk, Top of Conc.
11	113607.71	301126.82	193.09	Edge of Ramp, Top of Curb EL
12	113602.72	301120.57	192.77	Edge of Ramp, Bottom of curb EL
13	113599.60	301116.66	192.82	Edge of Ramp, Bottom of curb EL
14	113594.61	301110.41	193.38	Edge of Ramp, Top of Curb EL
15	113600.86	301105.42	193.26	Edge of Ramp, Top of Curb EL
16	113605.85	301111.67	192.84	Edge of Ramp, Top of Curb EL
17	113608.97	301115.58	192.89	Edge of Ramp, Top of Curb EL
18	113613.96	301121.83	192.97	Edge of Ramp, Top of Curb EL



DESIGN EXCEPTION	N/A
CROSSING CLOSURE	N/A
LRM NO.	091AXI00
HWY: 091	M.P.: 15.84
CORNER POSITION	C1S AND C2S
RAMP NO.	C1S R1 & C2S R1

REGISTERED PROFESSIONAL ENGINEER
72869PE
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OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little
Drafter: M Wainscott
Reviewer: M Bittancourt
Checker: M Bittancourt

MEINECKE ROAD INTERSECTION - SIDEWALK GRADING DETAILS

SHEET NO. BC06

16-DEC-2020 12:39

Sheet Number	Note No. on Plans	Design Height of Cover (Feet)	Circular or Elliptical 12" Length (Feet)	Circular or Elliptical 24" Length (Feet)	Culvert	Storm Sewer	Others (See Remarks)	Watertight Joints	Terminal Sloped Ends Row	Rigid Reinf. III	Rigid Reinf. V	Ductile Iron - CL 52	PVC	HDPE	Inlets Area Drain (Number Required)	Extg. Pipe Material	Remarks
C01A	1	2.5	38			√	√	√			√	√	√	√			Replace extg 6" DI pipe; 1:2 Sloped End Section
	2														1		Area Drain Type II
	3																Install Rip Rap.
	4														1		Area Drain Type II
	5	2.0	64			√		√			√	√	√	√			End at Wye
	6	0.5	32		√			√				√					Sloped Ends for Pipe
	10																Install Rip Rap.
C02A	8	17.5	42		√			√			√	√	√	√			Projecting End for outfall and 1:2 Sloped End for Inlet
	9																Install Rip Rap.
	56	1.5	38		√			√			√	√					Sloped Ends for Pipe
	57																Install Rip Rap.
C03A	11	1.8	31		√		√	√			√	√					Projecting End for outfall and 1:2 Sloped End for Inlet
	12	10.0			√		√	√									Open Bottom Arch Culvert, see HC02 for pipe mat'l and design requirements.
	13																Remove extg culvert.
	65																Install Rip Rap.
C04A	14	1.5	29		√		√	√			√	√					1:1.5 Sloped End for outfall and 1:2 Sloped End for Inlet
	15																Install Rip Rap.
	16																Major manhole adjustment
	17																
	58	5.8	26		√		√	√			√	√	√	√			Projecting Ends for Pipe
	59																Install Rip Rap.
C05A	18	0.5	33		√		√	√	1:2			√					1:2 Sloped End for outfall and Inlet
	19																Install Rip Rap; do not disturb wetland.
	20	0.5	27		√		√	√	1:2			√					1:2 Sloped End for outfall and Inlet
	21																Install Rip Rap
	22																Minor manhole adjustment
	23																
	24																
C06A	25																Minor manhole adjustment
	26																
	27																Major manhole adjustment
	28																Install Rip Rap
	29								1:2								1:2 Sloped End for outfall
	60														1		Area Drain Type II
	61	2.8	47		√			√			√	√	√	√			1:2 Sloped End for outfall
	62																Install Rip Rap.
C07A	30																
	31																
	32																
	33																
	34																
	35	2.5		4		√	√	√		√						RCP	Connect to extg pipe
	41									√						RCP	Connect to extg pipe
	42	3.5	4			√	√	√		√						RCP	Connect to wye
	43															RCP	Install RCP wye
	44	4.5		81		√	√	√		√						RCP	
C08A	36	1.6	7			√	√	√		√						RCP	Connect to extg pipe; 1:2 sloped end.
	37	2.0	7			√	√	√		√						RCP	Connect to extg pipe; 1:2 sloped end.
	64																Install Rip Rap.
	66														1		Area Drain Type II
	67	2.0	29			√	√	√	1:2	√		√	√	√			1:2 Sloped end for outfall
	68																Install Rip Rap.
C09A	55	1.0	8		√		√	√	1:2		√					RCP	Connect to extg pipe; field verify extg. pipe dia; 1:2 sloped end.
	65																Install Rip Rap.

General Notes:

1. A check (√) indicates column heading applies.
2. A new pipe culvert installation shall be of like material throughout.
3. extension of existing metalk culverts may be of unlike metal or corrugatetions. For connecting details, see Standard Dwg No. RD326
4. Dimensions shown are nominal.
5. All pipes shall conform to the AASHTO specification applicable for the type of material and the diameter of the pipe involved.

Footnotes:

(1) Design height of coner is the critical design height used to select pipe materials. The height of cover for any given run of pipe may vary. Design height of cover shall be measured to finish grade.

(2) Cross-sectional dimensions may vary with different materials. When galvanized iron or steel and aluminum are acceptable alternates use a seperate line for each type of material.

(3) Cross-sectional shape of pipe normal to longitudinal axis, prior to loading.
- A=Pipe-Arch
- R=Round
- E=Eliptical (5% nominal elongation)

(4) Abbreviations for protective coatings for metal pipe
- PM=Polymeric, 1/4" thkn. coated both sides
- PD=Polyethylene inside lining, polymeric outside
- U=Uncoated
- CIM=Chevron industrial membrane
- EP=Epoxy coated

(5) Abbreviations for existing pipe materials
- AB=Asbestos cement
- Al=Corrugated Aluminum
- Co=Concrete
- Pl=Plastic
- St=Corrugated Steel
- x=Other material, see remarks column

- ☒ RD300 Trench Backfill, Bedding, Pipe Zone And Multiple Installations
- ☒ RD302 Street Cut
- ☐ RD304 Arch Pipe Backfill/Compaction
- ☐ RD306 Concrete Encasement, Cradle, and Cap Details
- ☐ RD308 Bore Casing Detail
- ☐ RD310 Shallow/Deep Trench Service Connection, Blocking and Markers
- ☒ RD312 Subsurface Drain
- ☐ RD314 Open Grade HMAC Drainage Details
- ☐ RD316 Sloped Ends For Metal Pipe
- ☒ RD317 Culvert Embankment Protection + Rip Rap Pads
- ☒ RD318 Sloped Ends For Concrete Pipe
- ☒ RD319 Miscellaneous Culvert Details
- ☐ RD322 Safety End Section Metal Pipe
- ☐ RD324 Safety End Section Concrete Pipe
- ☐ RD326 Coupling Bands For Corrugated Metal Pipe
- ☐ RD328 Slotted C.M.P. Drain Details
- ☐ RD330 Metal Pipe Slope Anchors
- ☒ RD332 Concrete Pipe Anchor Detail
- ☐ RD334 Locator Post
- ☐ RD335 Standard Manhole Details
- ☐ RD336 Standard Storm Sewer Manhole
- ☐ RD338 Standard Sanitary Sewer Manhole Storm Sewer Pollution Control Manhole
- ☐ RD340 Shallow Manholes
- ☐ RD342 Standard Manhole Base Section
- ☐ RD344 Large Precast Manhole
- ☐ RD346
- ☐ RD348 Manhole With Inlet
- ☐ RD350 Sanitary Sewer Piped Inside Drop Connection for Manholes
- ☐ RD352 Outside Drop Manholes
- ☐ RD354 Carry Through Manhole - Storm
- ☒ RD356 Manhole Covers And Frames
- ☐ RD358 Manhole Slope Protectors
- ☒ RD360 Manhole Frame Adjustment
- ☐ RD362 Sanitary Cleanout
- ☐ RD364 Concrete Inlets Type G-1, G-2, G-2M, & G-2MA
- ☐ RD366 Concrete Inlets Type CG-1, CG-2 And Curb Inlet Channel
- ☐ RD368 Concrete Inlets Type M-E, M-O, B And B-SL
- ☐ RD370 Ditch Inlet Type D
- ☐ RD371 Concrete Inlet Base Type CG-3
- ☐ RD372 Concrete Inlet Top, Option 1 Type CG-3
- ☐ RD373 Concrete Inlet Top, Option 2 Type CG-3
- ☐ RD374 Area Drainage Basin Or Field Inlet
- ☐ RD376 Miscellaneous Drainage Structures Siphon Box, Inlet Cap & Inlet Adjustment
- ☐ RD378 Type "3" Catch Basin, Frame and Grate
- ☐ RD380 Aluminum & Steel Corrugated Pipe Fill Height Tables
- ☐ RD382 Aluminum & Steel Arch Pipe Fill Height Tables
- ☐ RD384 Aluminum & Steel Spiral Rib Pipe Fill Height Tables
- ☐ RD386 Circular Concrete Pipe Fill Height Table
- ☐ RD388 Fill Height Table For PVC Pipe
- ☐ RD390 Fill Height Table For HDPE Pipe
- ☐ RD391 Fill Height Table For Reinforced HDPE Pipe
- ☐ RD399 Stormwater Treatment And Storage Facility Markers

REGISTERED PROFESSIONAL ENGINEER 72869PE
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OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: R Attanasio
Drafter: M Wainscott | Checker: R Attanasio

PIPE DATA

SHEET NO. BD01

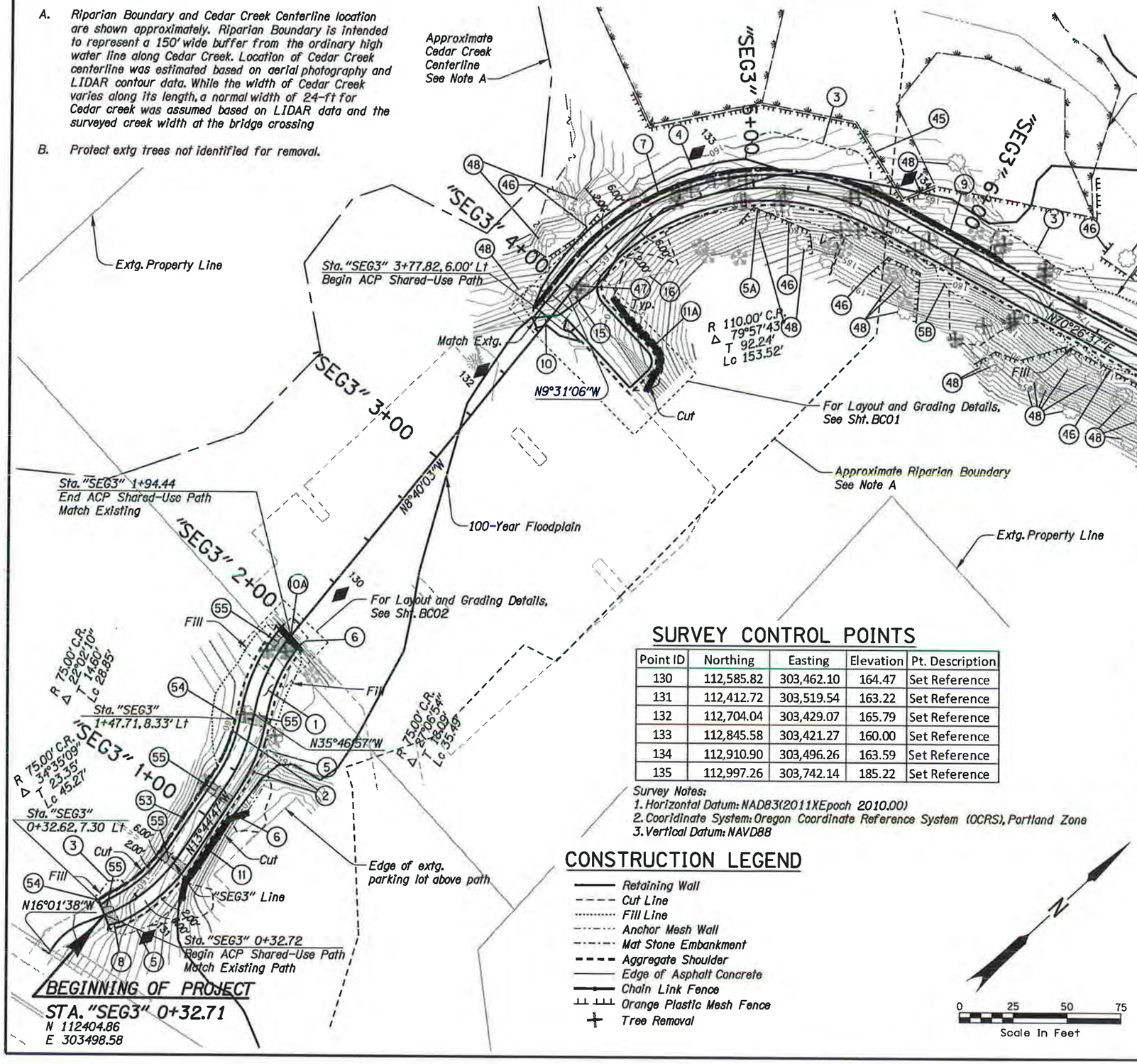
16-DEC-2020 12:40

54V-027

General Notes:

A. Riparian Boundary and Cedar Creek Centerline location are shown approximately. Riparian Boundary is intended to represent a 150' wide buffer from the ordinary high water line along Cedar Creek. Location of Cedar Creek centerline was estimated based on aerial photography and LIDAR contour data. While the width of Cedar Creek varies along its length, a normal width of 24-ft for Cedar creek was assumed based on LIDAR data and the surveyed creek width at the bridge crossing

B. Protect extg trees not identified for removal.



SURVEY CONTROL POINTS

Point ID	Northing	Easting	Elevation	Pt. Description
130	112,585.82	303,462.10	164.47	Set Reference
131	112,412.72	303,519.54	163.22	Set Reference
132	112,704.04	303,429.07	165.79	Set Reference
133	112,845.58	303,421.27	160.00	Set Reference
134	112,910.90	303,496.26	163.59	Set Reference
135	112,997.26	303,742.14	185.22	Set Reference

Survey Notes:
1. Horizontal Datum: NAD83(2011XEpoch 2010.00)
2. Coordinate System: Oregon Coordinate Reference System (OCRS), Portland Zone
3. Vertical Datum: NAVD88

CONSTRUCTION LEGEND

- Retaining Wall
- Cut Line
- Fill Line
- Anchor Mesh Wall
- Mat Stone Embankment
- Aggregate Shoulder
- Edge of Asphalt Concrete
- Chain Link Fence
- Orange Plastic Mesh Fence
- Tree Removal

N

0 25 50 75
Scale In Feet

(1) Const. Asph. Conc. Shared-Use Path
(2) Const. Aggregate Shoulder
(3) Const. 1: 1 1/2 Mat Stone Embankment (For Details, See Sht. BB01)
(4) Const. 1: 1/2 Reinforced Soil Slope, RS01 (For Details, See Sht. GB01)
(4A) Const. 1: 2/5 Reinforced Soil Slope, RS02 (or Details, See Sht. GB03)
(5) Const. Anchored Mesh Wall, PM08 (For Details, See Sht. GB11)
(5A) Const. Anchored Mesh Wall, PM01 (For Details, See Sht. GB13)
(5B) Const. Anchored Mesh Wall, PM02 (For Details, See Sht. GB14)
(5C) Const. Anchored Mesh Wall, PM03 (For Details, See Sht. GB15)
(6) Const. Chain Link Fence Behind Wall (For Details, See Sht. GB20)
(7) Install Split Rail Fence - 376' (For Details, See Sht. BB02
(8) Transition From Extg. Asph. Conc. Width to 12' Wide Asph. Conc. at Sta. 0+37.71
(9) Const. MSE Wall, MS01 (For Details, See Sht. GB02)
(10) Remove Curb and Gutter - 9'
(10A) Remove Curb and Gutter - 12'
(11) Const. Soil Nail Wall, SN01 (For Details, See Sht. GB11)
(11A) Const. Soil Nail Wall, SN02 (For Details, See Sht. GB12)
(15) Remove Extg. 6" DI Culvert - 13'
(16) Remove Extg. 6' Chain Link Fence - 56'
(45) Protect extg wetland. Install Orange Plastic Mesh Fence
(46) Install Orange Plastic Mesh Fence along tree dripline in accordance with Clean Water Services requirements Coordinate with FA sheets and field verify exact fence length.
(47) Remove extg tree. Coordinate removal with FA sheets.
(48) Protect extg tree.
(53) Install Two-Rail Metal Handrail, H=36"-108' Locate center of Handrail 2.33' from Edge of Pavement. (See Std. Drg. No. RD770)
(54) Install Handrail Extension (For Details, see Sht. BB03)
(55) Const. flat landing space, max. 1.5% slope

REGISTERED PROFESSIONAL ENGINEER
72869PE
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OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: M Bittancourt
Drafter: M Wainscott | Checker: M Bittancourt

GENERAL CONSTRUCTION

SHEET NO. C01

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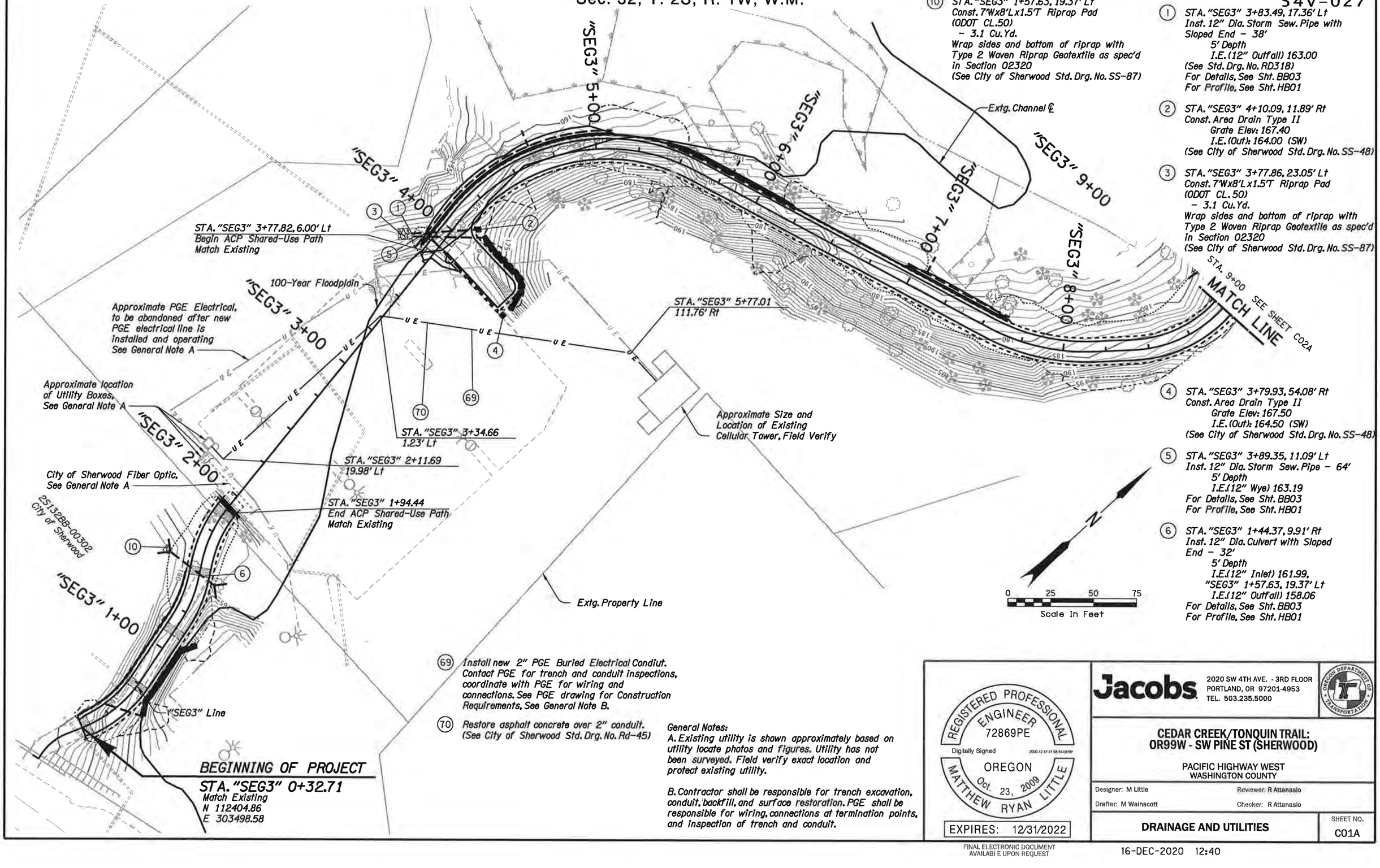
17-DEC-2020 14:30

Sec. 32, T. 2S, R. 1W, W.M.

54V-027



(10) STA. "SEG3" 1+57.63, 19.37' Lt
Const. 7'Wx8'Lx1.5'T Riprap Pad
(ODOT CL.50)
– 3.1 Cu.Yd.
Wrap sides and bottom of riprap with Type 2 Woven Riprap Geotextile as spec'd in Section 02320
(See City of Sherwood Std. Drg. No. SS-87)

(1) STA. "SEG3" 3+83.49, 17.36' Lt
Inst. 12" Dia. Storm Sew. Pipe with Sloped End – 38'
5' Depth
I.E. (12" Outfall) 163.00
(See Std. Drg. No. RD318)
For Details, See Sht. BB03
For Profile, See Sht. HB01

(2) STA. "SEG3" 4+10.09, 11.89' Rt
Const. Area Drain Type II
Grate Elev: 167.40
I.E. (Out): 164.00 (SW)
(See City of Sherwood Std. Drg. No. SS-48)

(3) STA. "SEG3" 3+77.86, 23.05' Lt
Const. 7'Wx8'Lx1.5'T Riprap Pad
(ODOT CL. 50)
– 3.1 Cu.Yd.
Wrap sides and bottom of riprap with Type 2 Woven Riprap Geotextile as spec'd in Section 02320
(See City of Sherwood Std. Drg. No. SS-87)

(4) STA. "SEG3" 3+79.93, 54.08' Rt
Const. Area Drain Type II
Grate Elev: 167.50
I.E. (Out): 164.50 (SW)
(See City of Sherwood Std. Drg. No. SS-48)

(5) STA. "SEG3" 3+89.35, 11.09' Lt
Inst. 12" Dia. Storm Sew. Pipe – 64'
5' Depth
I.E. (12" Wye) 163.19
For Details, See Sht. BB03
For Profile, See Sht. HB01

(6) STA. "SEG3" 1+44.37, 9.91' Rt
Inst. 12" Dia. Culvert with Sloped End – 32'
5' Depth
I.E. (12" Inlet) 161.99,
"SEG3" 1+57.63, 19.37' Lt
I.E. (12" Outfall) 158.06
For Details, See Sht. BB03
For Profile, See Sht. HB01

(69) Install new 2" PGE Buried Electrical Conduit. Contact PGE for trench and conduit inspections, coordinate with PGE for wiring and connections. See PGE drawing for Construction Requirements, See General Note B.

(70) Restore asphalt concrete over 2" conduit. (See City of Sherwood Std. Drg. No. Rd-45)

General Notes:
A. Existing utility is shown approximately based on utility locate photos and figures. Utility has not been surveyed. Field verify exact location and protect existing utility.

B. Contractor shall be responsible for trench excavation, conduit, backfill, and surface restoration. PGE shall be responsible for wiring, connections at termination points, and inspection of trench and conduit.

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CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

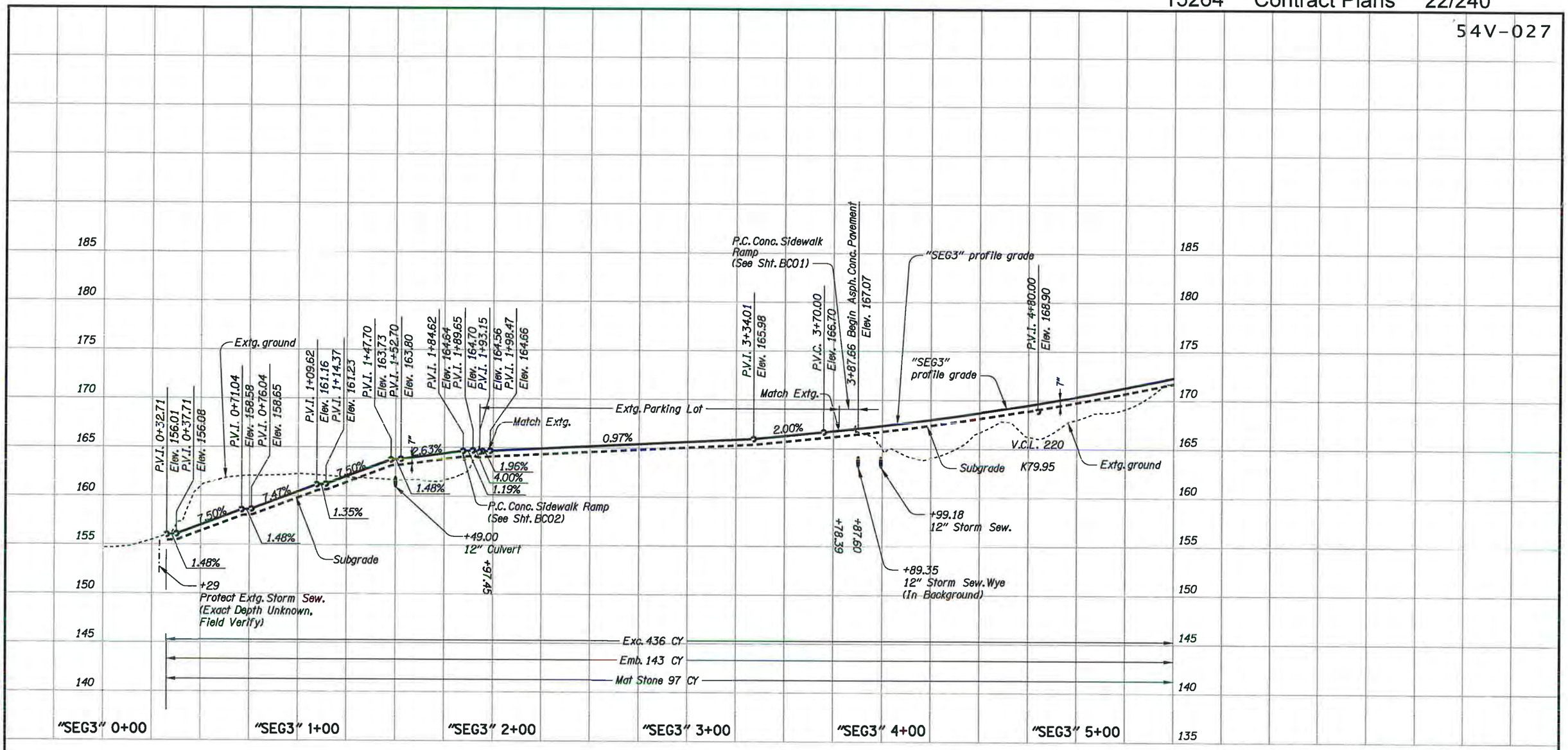
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: R Attanasio
Drafter: M Wainscott | Checker: R Attanasio

DRAINAGE AND UTILITIES

SHEET NO. C01A

16-DEC-2020 12:40



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Vertical Scale In Feet

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

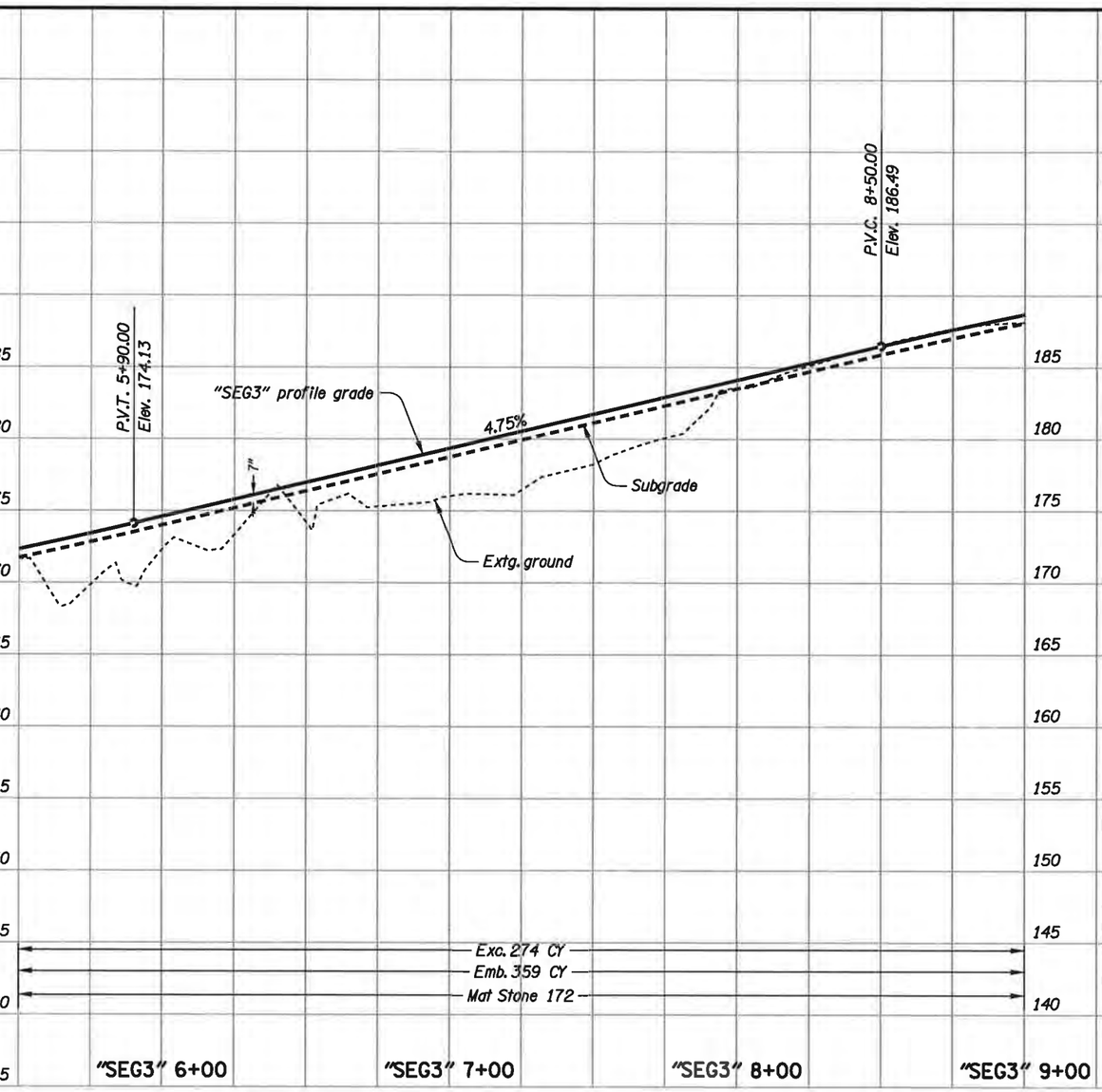
Designer: M Little
Drafter: M Wainscott
Reviewer: M Bittancourt
Checker: M Bittancourt

PROFILE

SHEET NO.
C01B

16-DEC-2020 12:42

54V-027



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Horizontal Scale In Feet

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Vertical Scale In Feet

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72869PE
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Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

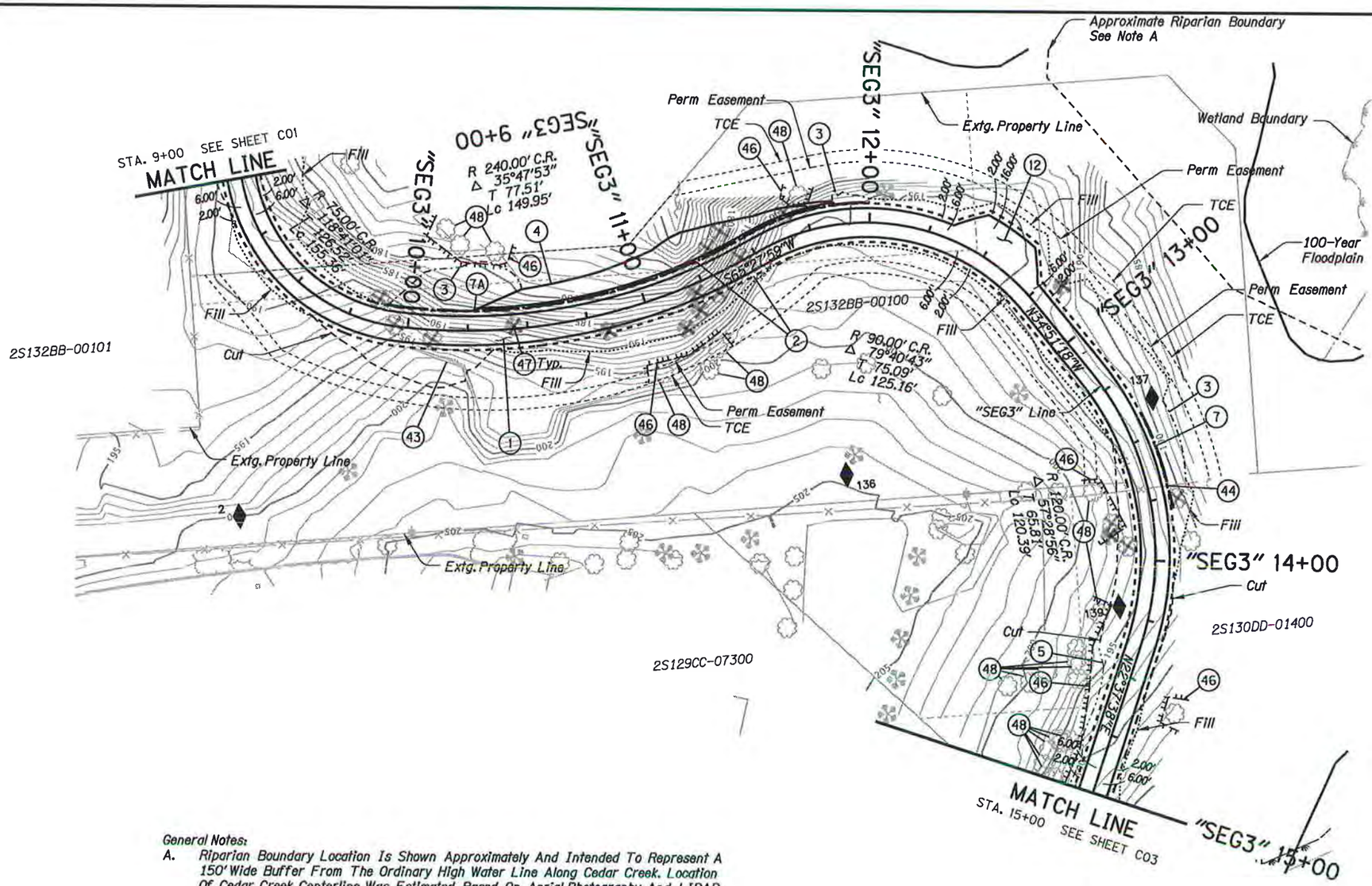
Designer: M Little
Drafter: M Wainscott
Reviewer: M Bittancourt
Checker: M Bittancourt

PROFILE

SHEET NO.
C01C

16-DEC-2020 12:42

54V-027



(1) Const. Asph. Conc. Shared-Use Path

(2) Const. Aggregate Shoulder

(3) Const. 1:1 1/2 Mat Stone Embankment (For Details, See Sht. BB01)

(4) Const. 1:1/2 Reinforced Soil Slope, RS03 (For Details, See Sht. GB04)

(5) Const. Anchored Mesh Wall, PM04 (For Details, See Sht. GB16)

(7) Install Split Rail Fence – 42' (For Details, See Sht. BB02)

(7A) Install Split Rail Fence – 210' (For Details, See Sht. BB02)

(12) Const. Turnout (For Details, See Sht. BC02)

(43) Remove Rock Wall

(44) Remove Extg Fence – 38'

(46) Install Orange Plastic Mesh Fence Along Tree Dripline In Accordance With Clean Water Services Requirements Coordinate With FA Sheets And Field Verify Exact Fence Length.

(47) Remove Extg Tree. Coordinate Removal With FA Sheets.

(48) Protect Extg Tree.

CONSTRUCTION LEGEND

- Retaining Wall
- Cut Line
- Fill Line
- Anchor Mesh Wall
- Mat Stone Embankment
- Aggregate Shoulder
- Edge of Asphalt Concrete
- Chain Link Fence
- Orange Plastic Mesh Fence
- Tree Removal

General Notes:

A. *Riparian Boundary Location Is Shown Approximately And Intended To Represent A 150' Wide Buffer From The Ordinary High Water Line Along Cedar Creek. Location Of Cedar Creek Centerline Was Estimated Based On Aerial Photography And LIDAR Contour Data. While The Width Of Cedar Creek Varies Along Its Length, A Normal Width Of 24-Ft For Cedar Creek Was Assumed Based On LIDAR Data And The Surveyed Creek Width At The Bridge Crossing.*

B. *Protect Extg Trees Not Identified For Removal.*

SURVEY CONTROL POINTS

Point ID	Northing	Easting	Elevation	Pt. Description
2	113,201.94	303,777.39	200.36	Set Reference
136	113204.187	303524.5028	204.8165	Set Reference
137	113182.2851	303395.5585	189.5621	Set Reference
139	113267.3182	303415.9258	196.0567	Set Reference

Survey Notes:
1. *Horizontal Datum: NAD83(2011XEpoch 2010.00)*
2. *Coordinate System: Oregon Coordinate Reference System (OCRS), Portland Zone*
3. *Vertical Datum: NAVD88*

N

0 25 50 75
Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little
Drafter: M Wainscott
Reviewer: M Bittancourt
Checker: M Bittancourt

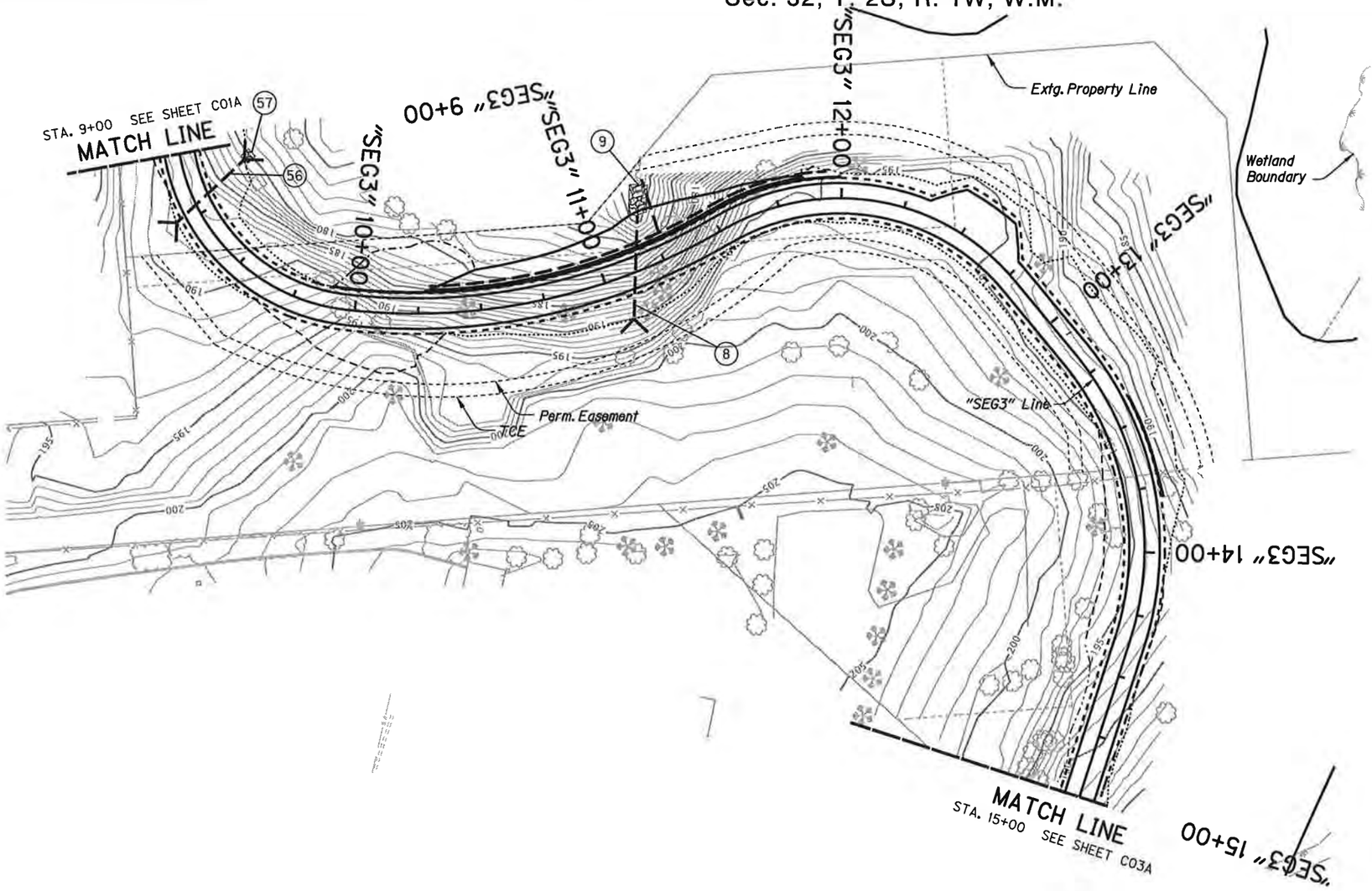
GENERAL CONSTRUCTION

SHEET NO. C02

16-DEC-2020 12:42

Sec. 32, T. 2S, R. 1W, W.M.

54V-027



(8) STA. "SEG3" 11+06.04, 17.07' Rt
Inst. 12" Dia. Culvert with Sloped Inlet and Projected Outfall – 42'
20' Depth
I.E. (12" Inlet) 190.10,
11+23.13, 21.82' Lt
I.E. (12" Outfall) 169.25
(See Std. Drg. No. RD318)
For Details, See Sht. BB03
For Profile, See Sht. HB01

(9) STA. "SEG3" 11+28.34, 31.24' Lt
Inst. 7'Wx12'Lx2.5'T (ODOT CL. 200) Riprap Pad
– 7.8 Cu. Yd.
Wrap sides and bottom of riprap with Type 2 Woven Riprap Geotextile as spec'd in Section 02320
For Details, See City of Sherwood Std. Drg. No. SS-87

(56) STA. "SEG3" 9+23.77, 10.11' Rt
Inst. 12" Dia. Culvert with Sloped Ends – 38'
5' Depth
I.E. (12" Inlet) 187.75
9+10.00, 24.41' Lt
I.E. (12" Outfall) 180.78
For Details, See Sht. BB03
For Profile, See Sht. HB01

(57) STA. "SEG3" 9+07.29, 28.00' Lt
Inst. 7'Wx12'Lx2.5'T (ODOT CL. 200) Rip Rap Pad
– 7.8 Cu.Yd.
Wrap sides and bottom of Riprap with Type 2 Woven Riprap Geotextile as spec'd in Section 02320
For Details, See City of Sherwood Std. Drg. No. SS-87

REGISTERED PROFESSIONAL ENGINEER
72869PE
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OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

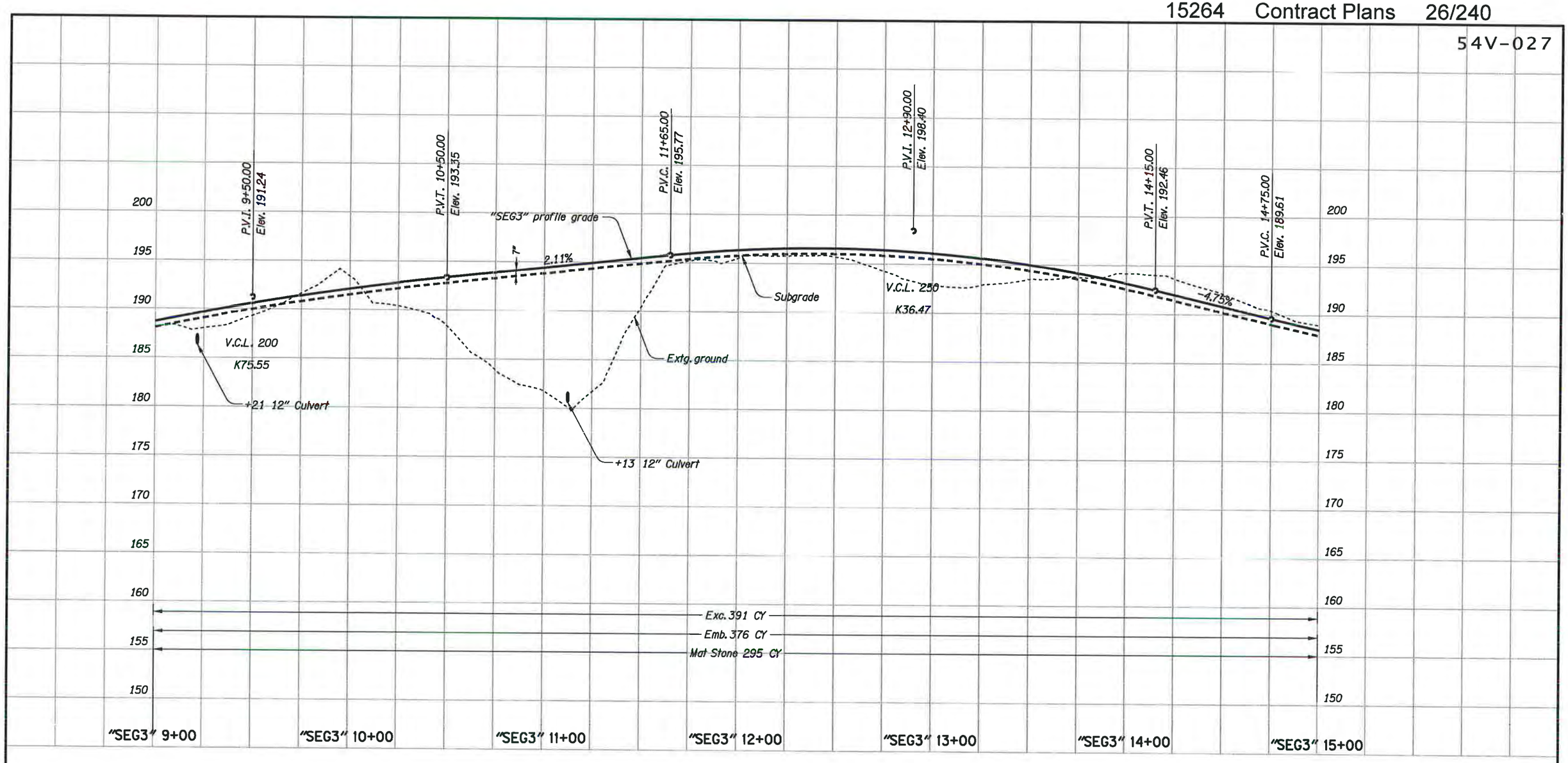
Designer: M Little
Drafter: M Wainscott
Reviewer: R Attanasio
Checker: R Attanasio

DRAINAGE AND UTILITIES

SHEET NO. C02A

16-DEC-2020 12:40

54V-027



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Horizontal Scale In Feet

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Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
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OREGON
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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

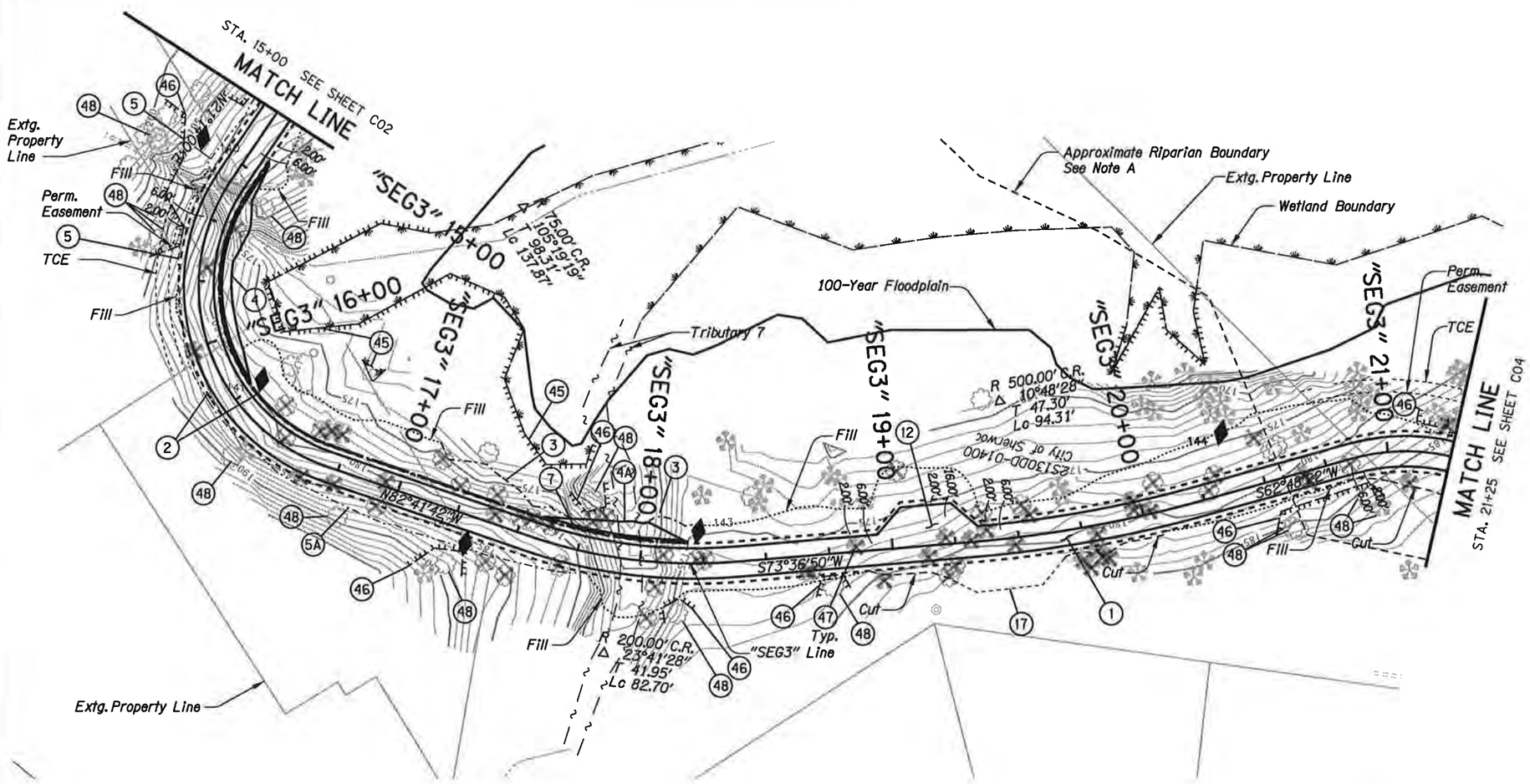
Designer: M Little
Drafter: M Wainscott
Reviewer: M Bittancourt
Checker: M Bittancourt

PROFILE

SHEET NO.
C02B

16-DEC-2020 12:42

54V-027



General Notes:

A. *Riparian Boundary Location Is Shown Approximately And Intended To Represent A 150' Wide Buffer From The Ordinary High Water Line Along Cedar Creek. Location Of Cedar Creek Centerline Was Estimated Based On Aerial Photography And LIDAR Contour Data. While The Width Of Cedar Creek Varies Along Its Length, A Normal Width Of 24-Ft For Cedar Creek Was Assumed Based On LIDAR Data And The Surveyed Creek Width At The Bridge Crossing.*

B. *Protect Extg Trees Not Identified For Removal.*

SURVEY CONTROL POINTS

Point ID	Northing	Easting	Elevation	Pt. Description
140	113,365.53	303,458.34	191.50	Set Reference
141	113,454.23	303,416.28	178.45	Set Reference
142	113,501.30	303,324.49	187.27	Set Reference
143	113,478.03	303,235.14	175.24	Set Reference
144	113,398.53	303,040.61	175.17	Set Reference

Survey Notes:
1. *Horizontal Datum: NAD83(2011XEpoch 2010.00)*
2. *Coordinate System: Oregon Coordinate Reference System (OCRS), Portland Zone*
3. *Vertical Datum: NAVD88*

N

0 25 50 75
Scale In Feet

(1) *Const. Asph. Conc. Shared-Use Path*

(2) *Const. Aggregate Shoulder*

(3) *Const. 1:1 1/2 Mat Stone Embankment (For Details, See Sht. BB01)*

(4) *Const. 1:1/2 Reinforced Soil Slope, RS04 (For Details, See Sht. GB05)*

(4A) *Const. 1:1/2 Reinforced Soil Slope, RS05 (For Details, See Sht. GB06)*

(5) *Const. Anchored Mesh Wall, PM04 (For Details, See Sht. GB16)*

(5A) *Const. Anchored Mesh Wall, PM05 (For Details, See Sht. GB17)*

(7) *Install Split Rail Fence - 280' (For Details, See Sht. BB02)*

(12) *Const. Turnout (For Details, See Sht. BC02)*

(17) *Earthwork Limit Extends Beyond Survey. Field Verify Earthwork Limit with Max 1:2 Slope. Do Not Cross Property Lines, Permanent Easements and other Boundary Lines*

(45) *Protect Extg Wetland. Install Orange Plastic Mesh Fence*

(46) *Install Orange Plastic Mesh Fence Along Tree Dripline In Accordance With Clean Water Services Requirements Coordinate With FA Sheets And Field Verify Exact Fence Length.*

(47) *Protect Extg Wetland. Install Orange Plastic Mesh Fence*

(48) *Protect Extg Tree.*

CONSTRUCTION LEGEND

- *Retaining Wall*
- *Cut Line*
- *Fill Line*
- *Anchor Mesh Wall*
- *Mat Stone Embankment*
- *Aggregate Shoulder*
- *Edge of Asphalt Concrete*
- *Chain Link Fence*
- *Orange Plastic Mesh Fence*
- *Tree Removal*

REGISTERED PROFESSIONAL ENGINEER
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CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little
Drafter: M Wainscott
Reviewer: M Bittancourt
Checker: M Bittancourt

GENERAL CONSTRUCTION

SHEET NO. C03

16-DEC-2020 12:42

Sec. 29, T. 2S, R. 1W, W.M.

54V-027

(11) STA. "SEG3" 15+40.63, 13.19' Rt
Inst. 12" Dia. Culvert with Sloped Inlet and Projected Outfall - 31'
10' Depth
I.E. (12" Inlet) 185.50
"SEG3" 15+49.97, 15.90' Lt
I.E. (12" Outfall) 174.00
(See Std. Drg. RD318)
For Details, See Sht. BB03
For Profile, See Sht. HB01

(12) STA. "SEG3" 17+97.40, 23.05' Rt
Inst. Open Bottom Arch Culvert - 40'
"SEG3" 17+96.75, 15.19' Lt
For Details, See Sht. HC01

(13) Remove Extg. 12" CMP - 28'

(65) STA. "SEG3" 15+56.71, 26.90' Lt.
Inst. 7'Wx12'Lx2.5'T (ODOT CL. 200) Riprap Pad
- 7.8 Cu.Yd.
Wrap sides and bottom of riprap with Type 2 Woven Riprap Geotextile as spec'd in Section 02320
(See City of Sherwood Std. Drg. No. SS-87)

N

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Scale In Feet

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72869PE
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OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

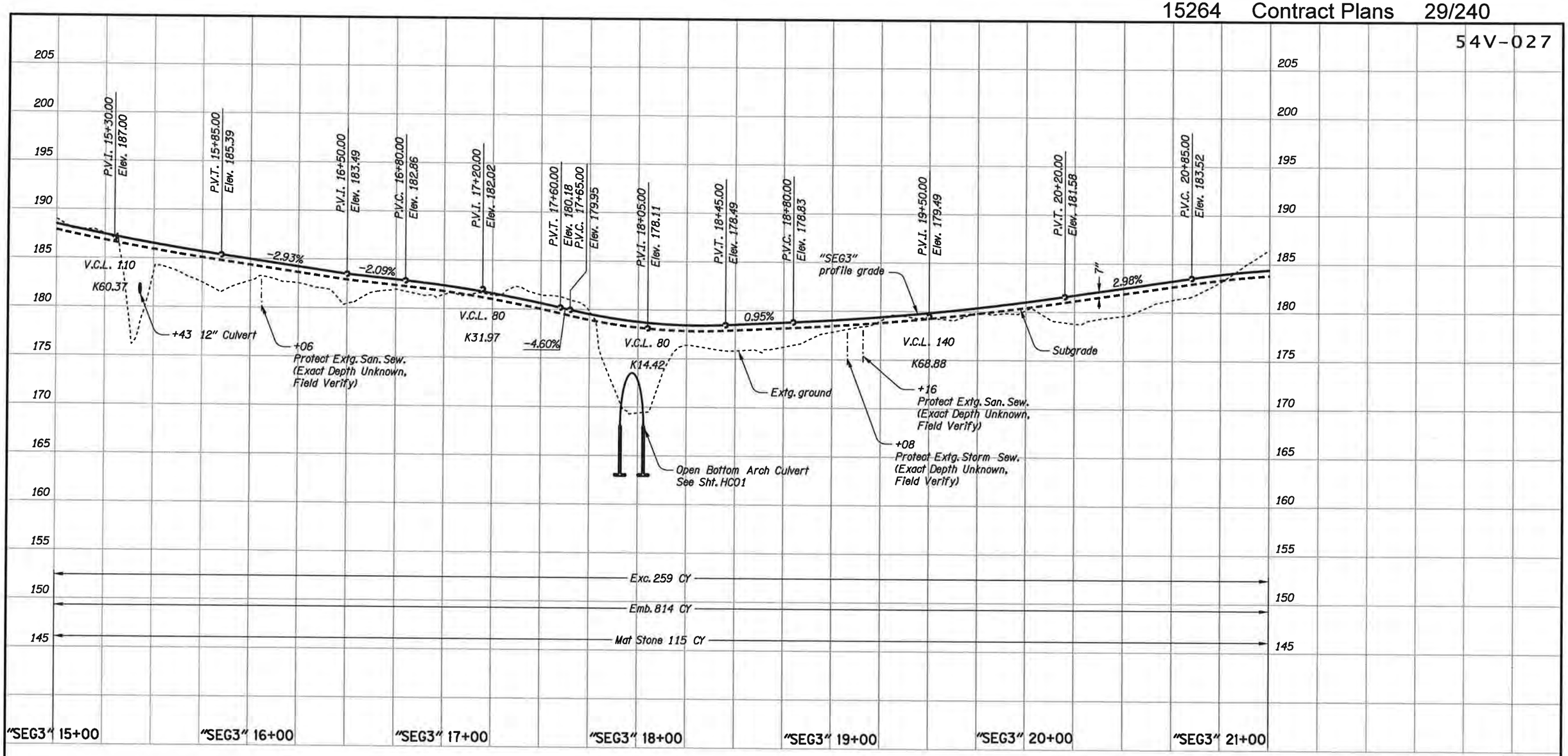
Designer: M Little
Reviewer: R Attanasio
Drafter: M Wainscott
Checker: R Attanasio

DRAINAGE AND UTILITIES

SHEET NO. C03A

16-DEC-2020 12:40

54V-027



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Horizontal Scale In Feet

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Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
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OREGON
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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

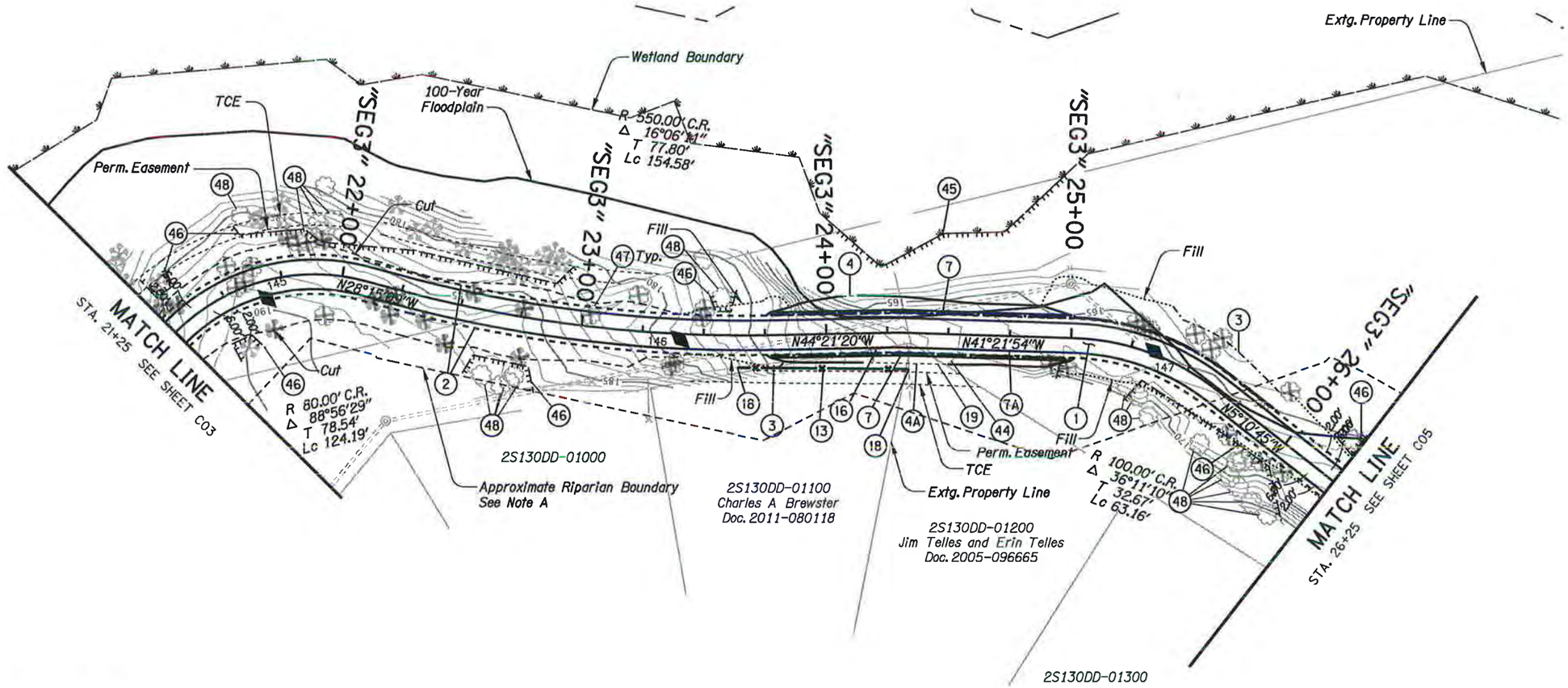
Designer: M Little
Drafter: M Wainscott
Reviewer: M Bittancourt
Checker: M Bittancourt

PROFILE

SHEET NO.
C03B

16-DEC-2020 12:42

54V-027



(1) Const. Asph. Conc. Shared-Use Path

(2) Const. Aggregate Shoulder

(3) Const. 1:1 1/2 Mat Stone Embankment (For Details, See Sht. BC01)

(4) Const. 1:1/2 Reinforced Soil Slope, RS06 (For Details, See Sht. GB07)

(4A) Const. 1:1/2 Reinforced Soil Slope, RS07 (For Details, See Sht. GB08)

(7) Install Split Rail Fence - 220' (For Details, See Sht. BB02)

(7A) Install Split Rail Fence - 115' (For Details, See Sht. BB02)

(13) Const. 3.5' Chain Link Fence. Match to existing Fence. (See City of Sherwood Dwg. No. SS-84) - 70'

(16) Remove Extg. Chain Link Fence - 80'

(18) Join to Extg. Chain Link Fence.

(19) Earthwork Limit Extends Beyond Survey. Field Verify Earthwork Limit. Do Not Exceed 1:1/2 Slope For Reinforced Soil Slope. Do Not Cross Permanent Easement Line

(44) Remove Extg. Chain Link Fence up to Permanent Easement - 11' Confirm Fence Removal does not Create an Opening in an Extg. Fence Perimeter.

(45) Protect Extg Wetland. Install Orange Plastic Mesh Fence

(46) Install Orange Plastic Mesh Fence Along Tree Dripline In Accordance With Clean Water Services Requirements Coordinate With FA Sheets And Field Verify Exact Fence Length.

(47) Remove Extg Tree. Coordinate Removal With FA Sheets.

(48) Protect Extg Tree.

General Notes:

A. Riparian Boundary Location Is Shown Approximately And Intended To Represent A 150' Wide Buffer From The Ordinary High Water Line Along Cedar Creek. Location Of Cedar Creek Centerline Was Estimated Based On Aerial Photography And LIDAR Contour Data. While The Width Of Cedar Creek Varies Along Its Length, A Normal Width Of 24-Ft For Cedar Creek Was Assumed Based On LIDAR Data And The Surveyed Creek Width At The Bridge Crossing.

B. Protect Extg Trees Not Identified For Removal.

SURVEY CONTROL POINTS

Point ID	Northing	Easting	Elevation	Pt. Description
145	113,401.30	302,915.00	188.51	Set Reference
146	113,535.55	302,811.26	178.57	Set Reference
147	113,680.27	302,682.24	165.71	Set Reference

Survey Notes:

1. Horizontal Datum: NAD83(2011XEpoch 2010.00)
2. Coordinate System: Oregon Coordinate Reference System (OCRS), Portland Zone
3. Vertical Datum: NAVD88

CONSTRUCTION LEGEND

- Retaining Wall
- Cut Line
- Fill Line
- Anchor Mesh Wall
- Mat Stone Embankment
- Aggregate Shoulder
- Edge of Asphalt Concrete
- Chain Link Fence
- Orange Plastic Mesh Fence
- Tree Removal

N

0 25 50 75

Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020.12.17 22:07:25-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: M Bittancourt
Drafter: M Wainscott | Checker: M Bittancourt

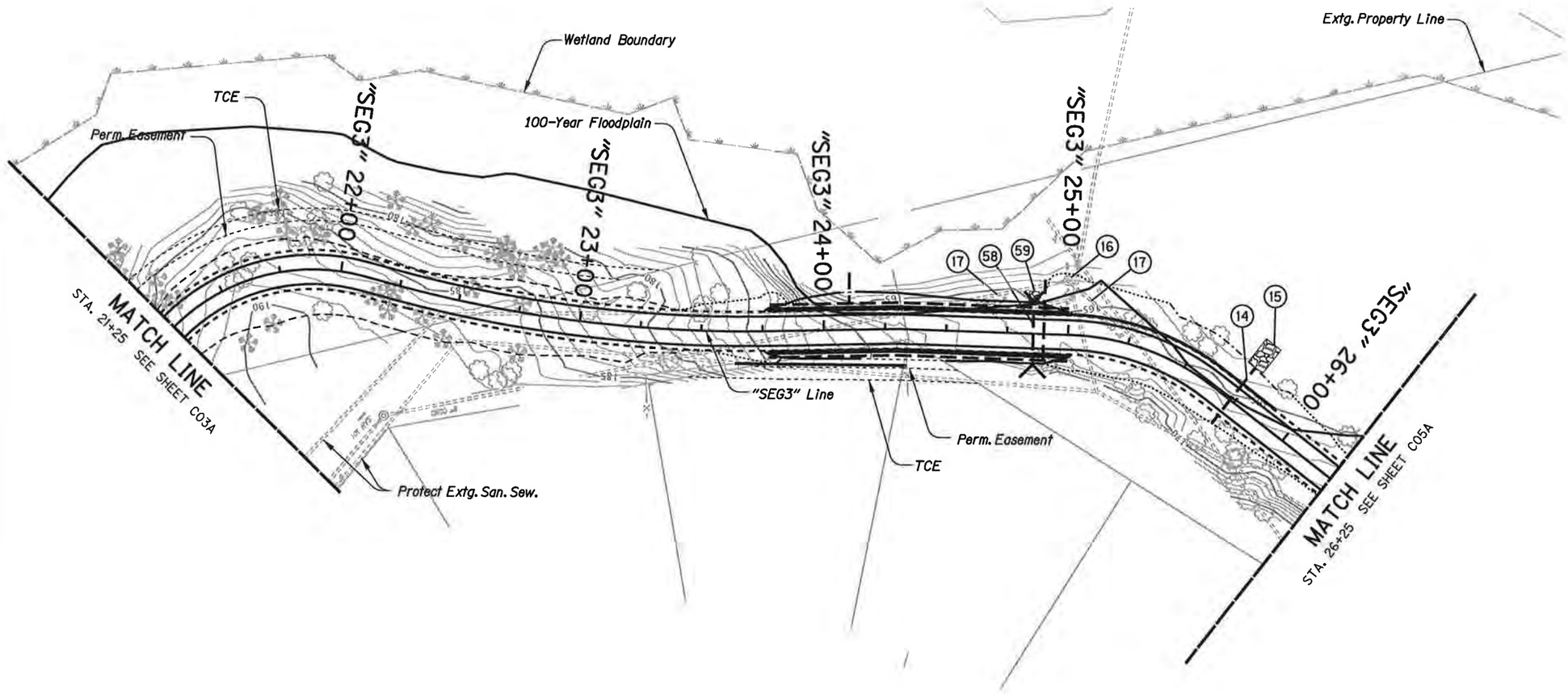
GENERAL CONSTRUCTION

SHEET NO. C04

16-DEC-2020 12:42

Sec. 30, T. 2S, R. 1W, W.M.

54V-027



(14) STA. "SEG3" 25+73.00, 12.20' Rt
Inst. 12" Dia. Culvert with Sloped Inlet and Sloped Outfall – 29'
5' Depth
I.E. (12" Inlet) = 167.10,
"SEG3" 25+73.00, 16.80' Lt
I.E. (12" Outfall) = 163.25
(See Std. Drg. No. RD318)
For Details, See Sht. BB03

(15) STA. "SEG3" 25+73.00, 28.80' Lt
Inst. 7'Wx12'Lx2.5'T (ODOT CL. 200) Riprap Pad
– 7.8 Cu.Yd.
Wrap sides and bottom of riprap with Type 2 Woven Riprap Geotextile as spec'd in Section 02320
(See City of Sherwood Std. Drg. No. SS-87)

(16) STA. "SEG3" 24+99.30, 22.13' Rt
Major Adjust Manhole to Rim 165.50)
(See Std. Drg. No. RD360)

(17) Protect Extg. 8" Conc. Sew.

(58) STA. "SEG3" 24+85.84, 12.60' Rt
Inst. 12" Dia. Culvert with Projecting Ends – 26'
10' Depth
I.E. (12" Inlet) = 166.50
"SEG3" 24+85.50, 13.28' Lt
I.E. (12" Outfall) = 165.00
For Details, See Sht. BB03
For Profile, See Sht. HB01

(59) STA. "SEG3" 24+85.45, 17.28' Lt
Inst. 7'Wx12'Lx2.5'T (ODOT CL. 200) Riprap Pad
– 7.8 Cu.Yd.
Wrap sides and bottom of riprap with Type 2 Woven Riprap Geotextile as spec'd in Section 02320
(See City of Sherwood Std. Drg. No. SS-87)

N

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Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
72869PE
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OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

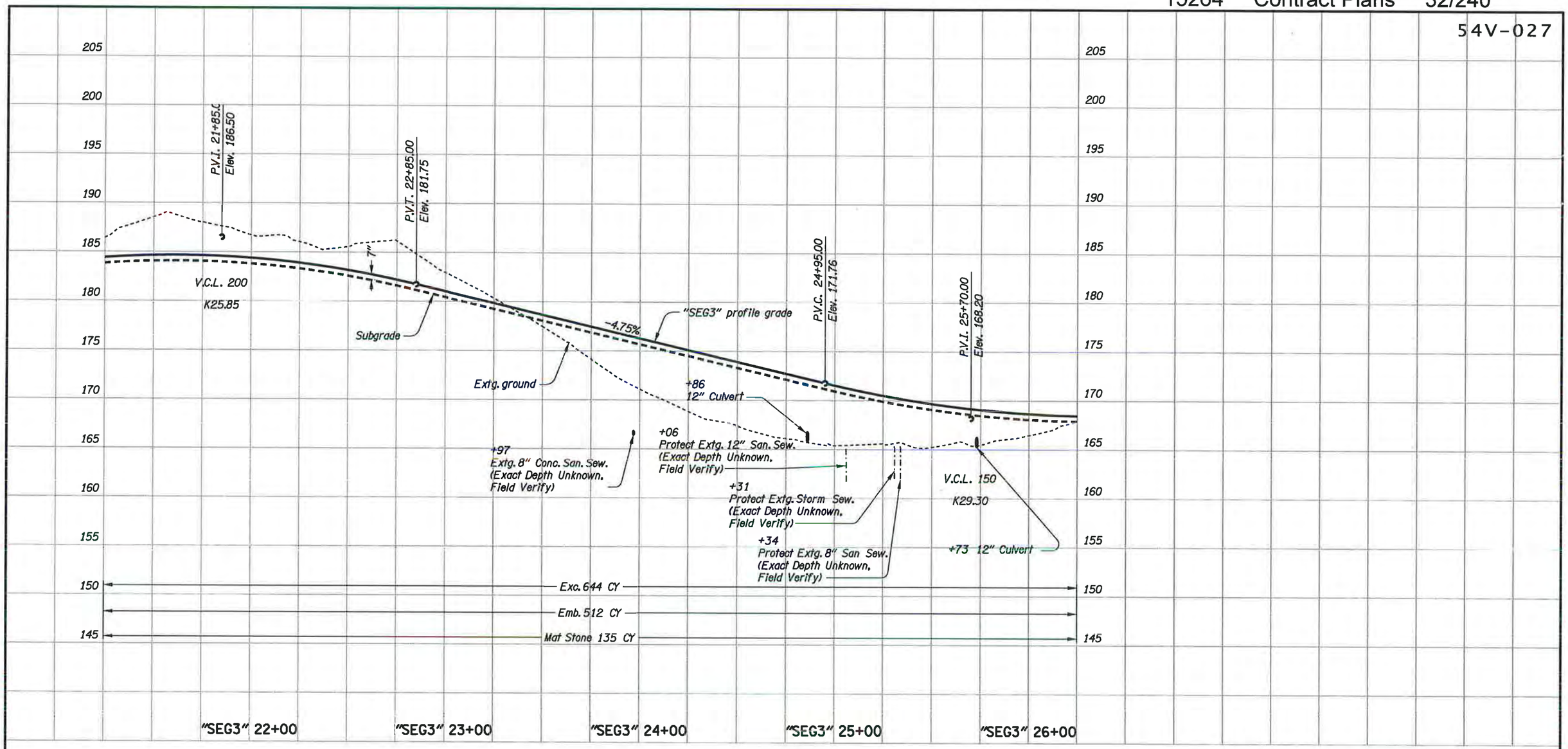
Designer: M Little
Drafter: M Wainscott
Reviewer: R Attanasio
Checker: R Attanasio

DRAINAGE AND UTILITIES

SHEET NO. C04A

16-DEC-2020 12:40

54V-027



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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

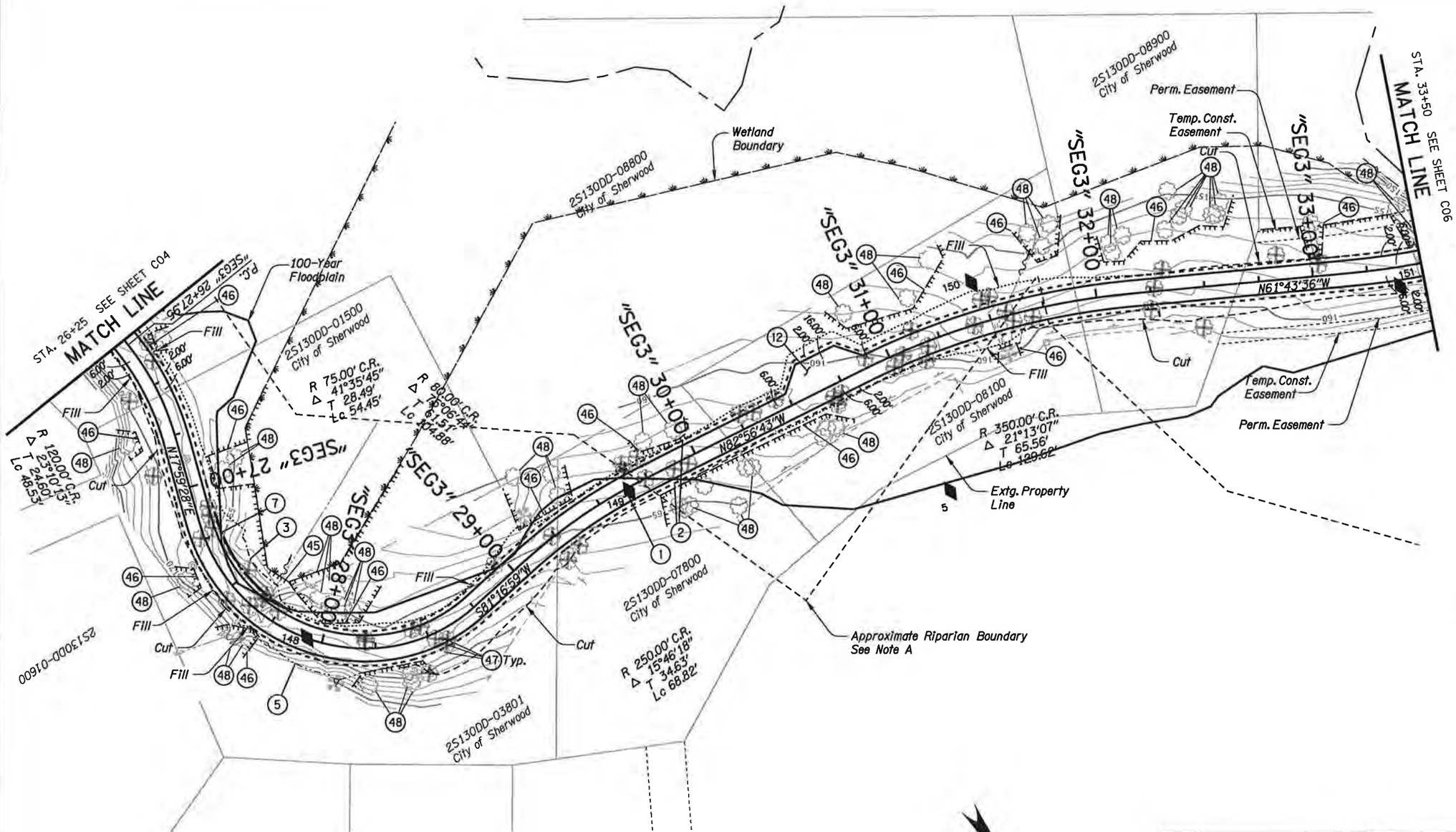
Designer: M Little
Drafter: M Wainscott
Reviewer: M Bittancourt
Checker: M Bittancourt

PROFILE

SHEET NO.
C04B

17-DEC-2020 14:30

54V-027



1. Const. Asph. Conc. Shared-Use Path
2. Const. Aggregate Shoulder
3. Const. 1:1 1/2 Mat Stone Embankment (For Details, See Sht. BB01)
5. Const. Anchored Mesh Wall, PM06 (For Details, See Sht. GB18)
7. Install Split Rail Fence - 57' (For Details, See Sht. BB02)
12. Const. Turnout (For Details, See Sht. BC02)
45. Protect Extg Wetland. Install Orange Plastic Mesh Fence
46. Install Orange Plastic Mesh Fence Along Tree Dripline In Accordance With Clean Water Services Requirements. Coordinate With FA Sheets And Field Verify Exact Fence Length.
47. Remove Extg Tree. Coordinate Removal With FA Sheets.
48. Protect Extg Tree.

CONSTRUCTION LEGEND

- Retaining Wall
- Cut Line
- Fill Line
- Anchor Mesh Wall
- Mat Stone Embankment
- Aggregate Shoulder
- Edge of Asphalt Concrete
- Chain Link Fence
- Orange Plastic Mesh Fence
- Tree Removal

SURVEY CONTROL POINTS

Point ID	Northing	Easting	Elevation	Pt. Description
5	114,038.93	302,391.48	165.76	Set Reference
148	113,931.09	302,676.16	167.10	Set Reference
149	113,956.85	302,515.10	163.83	Set Reference
150	113,964.23	302,330.30	155.56	Set Reference
151	114,075.18	302,166.83	157.80	Set Reference

Survey Notes:
1. Horizontal Datum: NAD83(2011XEpoch 2010.00)
2. Coordinate System: Oregon Coordinate Reference System (OCRS), Portland Zone
3. Vertical Datum: NAVD88

General Notes:
A. Riparian Boundary Location Is Shown Approximately And Intended To Represent A 150' Wide Buffer From The Ordinary High Water Line Along Cedar Creek. Location Of Cedar Creek Centerline Was Estimated Based On Aerial Photography And LIDAR Contour Data. While The Width Of Cedar Creek Varies Along Its Length, A Normal Width Of 24-Ft For Cedar Creek Was Assumed Based On LIDAR Data And The Surveyed Creek Width At The Bridge Crossing.

B. Protect Extg Trees Not Identified For Removal.

0 25 50 75
Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020.12.17 22:09:02-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

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TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: M Bittancourt
Drafter: M Wainscott | Checker: M Bittancourt

GENERAL CONSTRUCTION

SHEET NO. C05

16-DEC-2020 12:42

Sec. 30, T. 2S, R. 1W, W.M.

54V-027

(18) STA. "SEG3" 27+64.04, 10.86' Rt
Inst. 12" Dia. Culvert with Sloped Inlet and Sloped Outfall - 33'
5' Depth
I.E. (Inlet) 166.37,
"SEG3" 27+44.48, 16.32' Lt
I.E. (Outfall) 163.30
(See Std. Drg. No. RD318)
For Details, See Sht. BB03
For Profile, See Sht. HB02

(19) STA. "SEG3" 27+30.66, 22.48' Lt
Inst. 7'Wx8'Lx1.5'T (ODOT CL. 50) Riprap Pad
- 3.1 Cu.Yd.
Wrap sides and bottom of riprap with Type 2 Woven Riprap Geotextile as spec'd in Sectin 02320
(See City of Sherwood Std. Drg. No. SS-87)
Contour to Slope

(20) STA. "SEG3" 31+47.10, 12.04' Rt
Inst. 18" Dia. Culvert with Sloped Inlet and Sloped Outfall - 27'
5' Depth
I.E. (Inlet) 158.00,
"SEG3" 31+46.89, 14.96' Lt
I.E. (Outfall) 156.30
(See Std. Drg. No. RD318)
For Details, See Sht. BB03
For Profile, See Sht. HB02

(21) STA. "SEG3" 31+46.85, 26.96' Lt
Inst. 7.5'Wx12'Lx2.5'T (ODOT CL. 200) Riprap Pad
- 8.3 Cu.Yd.
Wrap sides and bottom of riprap with Type 2 Woven Riprap Geotxtile as spec'd in Section 02320
(See City of Sherwood Std. Drg. No. SS-87)

(22) STA. "SEG3" 26+87.21, 1.96' Rt
Minor Adjust Manhole to Rim 168.46
Replace Lid with Manhole Cover
(See Std. Drg. No. RD360)

(23) Abandon Extg. 8" Concrete Culvert with 2-ft group plug installed in outlet.

(24) Protect Extg. Manhole

REGISTERED PROFESSIONAL ENGINEER
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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

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Drafter: M Wainscott
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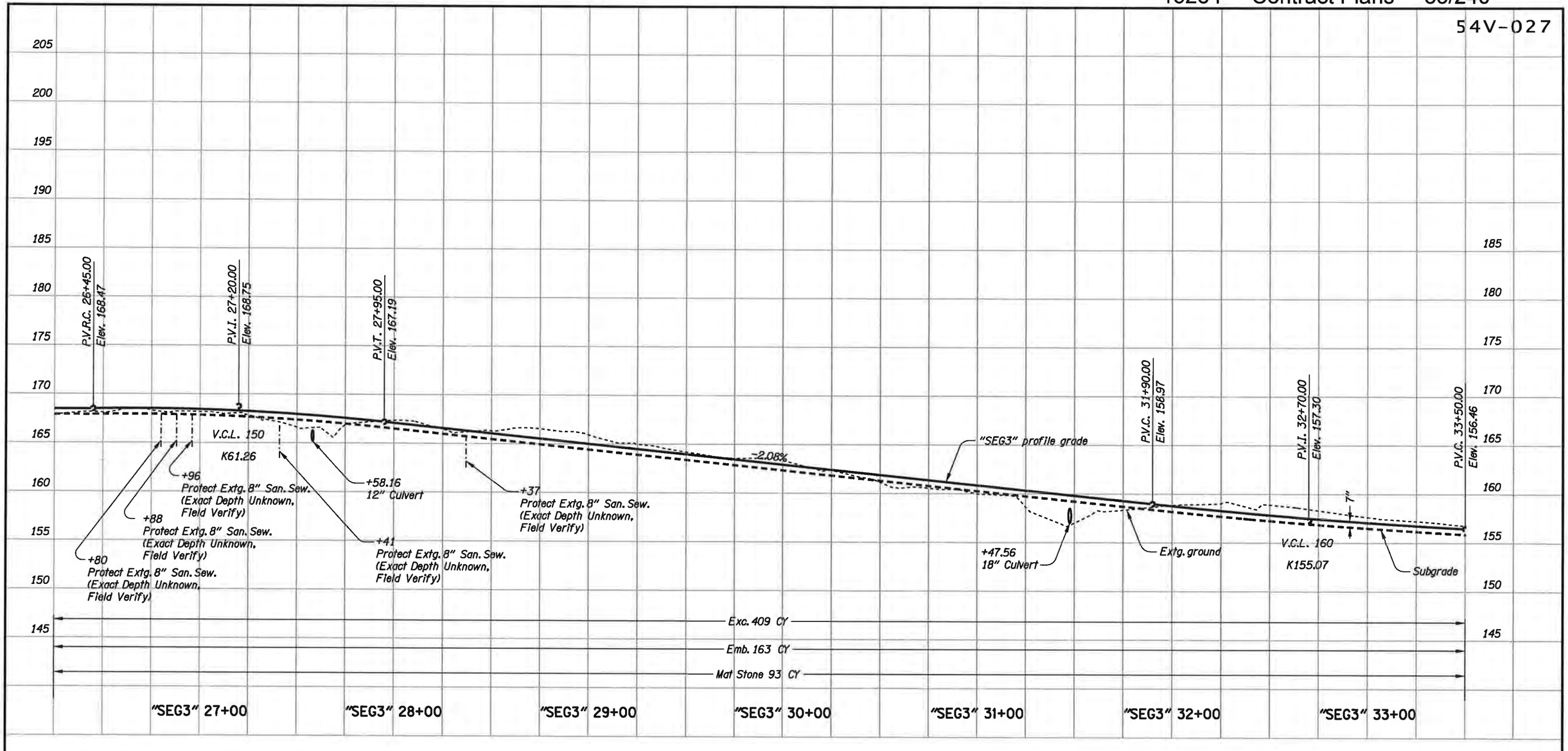
DRAINAGE AND UTILITIES

SHEET NO. C05A

16-DEC-2020 12:40

54V-027



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Horizontal Scale In Feet

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Vertical Scale In Feet

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TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little
Drafter: M Wainscott
Reviewer: M Bittancourt
Checker: M Bittancourt

PROFILE

SHEET NO.
C05B

16-DEC-2020 12:42

54V-027

(1) Const. Asph. Conc. Shared-Use Path

(2) Const. Aggregate Shoulder

(3) Const. 1:1 1/2 Mat Stone Embankment (For Details, See Sht. BB01)

(4) Const. 1:2/5 Reinforced Soil Slope, RS08 (For Details, See Sht. GB09)

(4A) Const. 1:2/5 Reinforced Soil Slope, RS09 (For Details, See Sht. GB10)

(5) Const. Anchored Mesh Wall, PM07 (For Details, See Sht. GB19)

(7A) Install Split Rail Fence – 13' (For Details, See Sht. BB02)

(7B) Install Split Rail Fence – 15' (For Details, See Sht. BB02)

(7C) Install Split Rail Fence – 77' (For Details, See Sht. BB02)

(7D) Install Split Rail Fence – 85' (For Details, See Sht. BB02)

(7E) Install Split Rail Fence – 26' (For Details, See Sht. BB02)

(21) Earthwork Limit Extends Beyond Survey. Field Verify Earthwork Limit. Do Not Exceed 1:1 Slope Within Anchor Mesh. Do Not Cross Permanent Easement Line

(22) Protect Extg. 12' Chain Link Fence

(23) Protect Extg. Electrical Utility Box

(24) Const. Boardwalk – (For Details, See Bridge and Boardwalk Drgs.)

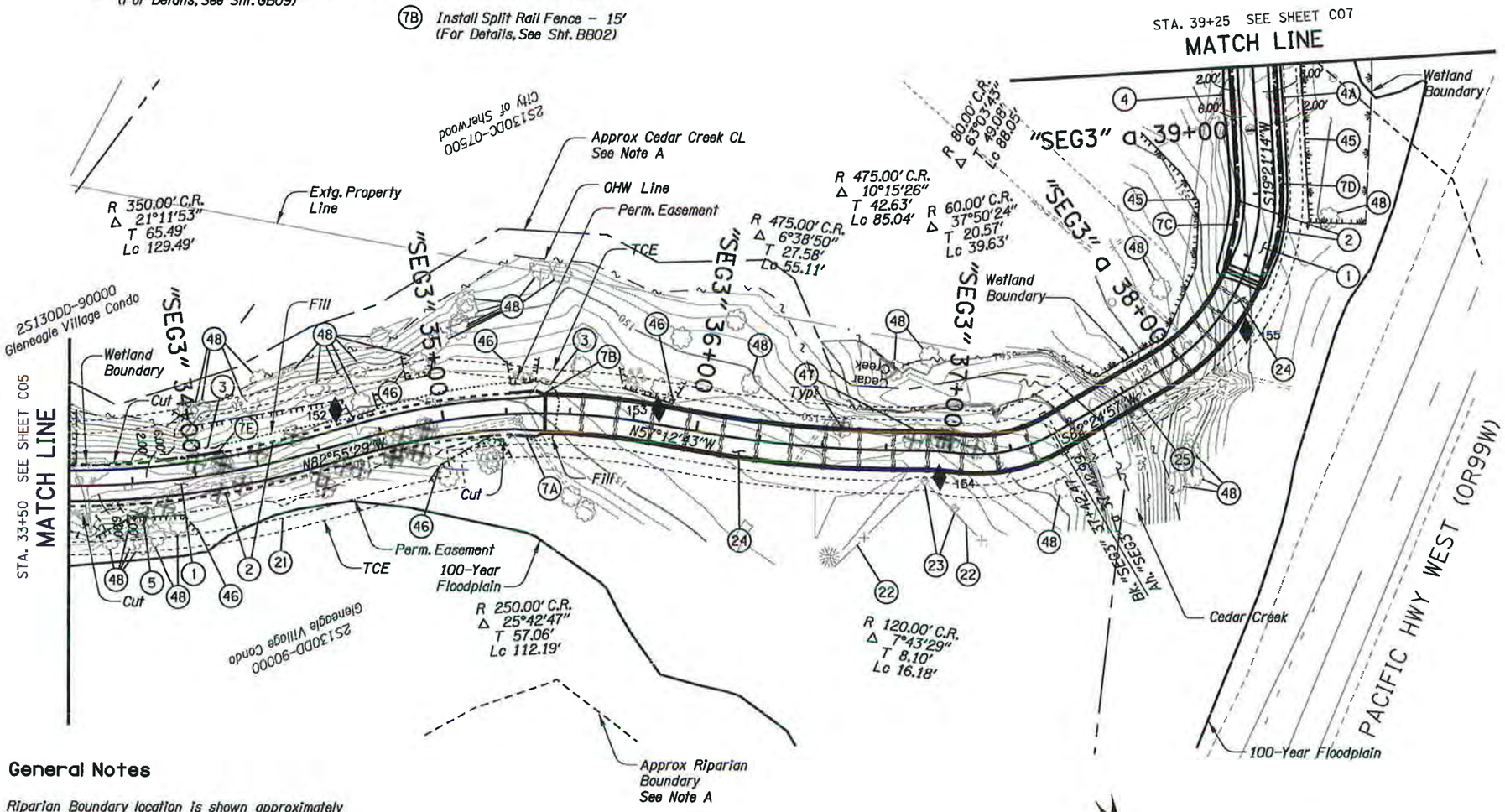
(25) Const. Bridge – (For Details, See Bridge and Boardwalk Drgs.)

(45) Protect Extg Wetland. Install Orange Plastic Mesh Fence

(46) Install Orange Plastic Mesh Fence Along Tree Dripline In Accordance With Clean Water Services Requirements Coordinate With FA Sheets And Field Verify Exact Fence Length.

(47) Remove Extg Tree. Coordinate Removal With FA Sheets.

(48) Protect Extg Tree.



CONSTRUCTION LEGEND

- Retaining Wall
- Cut Line
- Fill Line
- Anchor Mesh Wall
- Mat Stone Embankment
- Aggregate Shoulder
- Edge of Asphalt Concrete
- Chain Link Fence
- Orange Plastic Mesh Fence
- Tree Removal

General Notes

(A) Riparian Boundary location is shown approximately and intended to represent a 150' wide buffer from the ordinary high water line along Cedar Creek. Location of Cedar Creek centerline was estimated based on aerial photography and LIDAR contour data. While the width of Cedar Creek varies along its length, a normal width of 24-ft for Cedar creek was assumed based on LIDAR data and the surveyed creek width at the bridge crossing

(B) Protect extg trees not identified for removal.

(C) Field verify depth and location of Extg. Clean Water Service 24" Sewer Main

SURVEY CONTROL POINTS

Point ID	Northing	Easting	Elevation	Pt. Description
152	114,084.48	302,044.63	154.43	Set Reference
153	114,133.21	301,927.44	152.48	Set Reference
154	114,200.54	301,836.09	152.84	Set Reference
155	114,194.39	301,702.43	160.25	Set Reference

Survey Notes:
1. Horizontal Datum: NAD83(2011XEpoch 2010.00)
2. Cooridinate System: Oregon Coordinate Reference System (OCRS), Portland Zone
3. Vertical Datum: NAVD88

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020.12.17 22:10:34-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: M Bittancourt
Drafter: M Wainscott | Checker: M Bittancourt

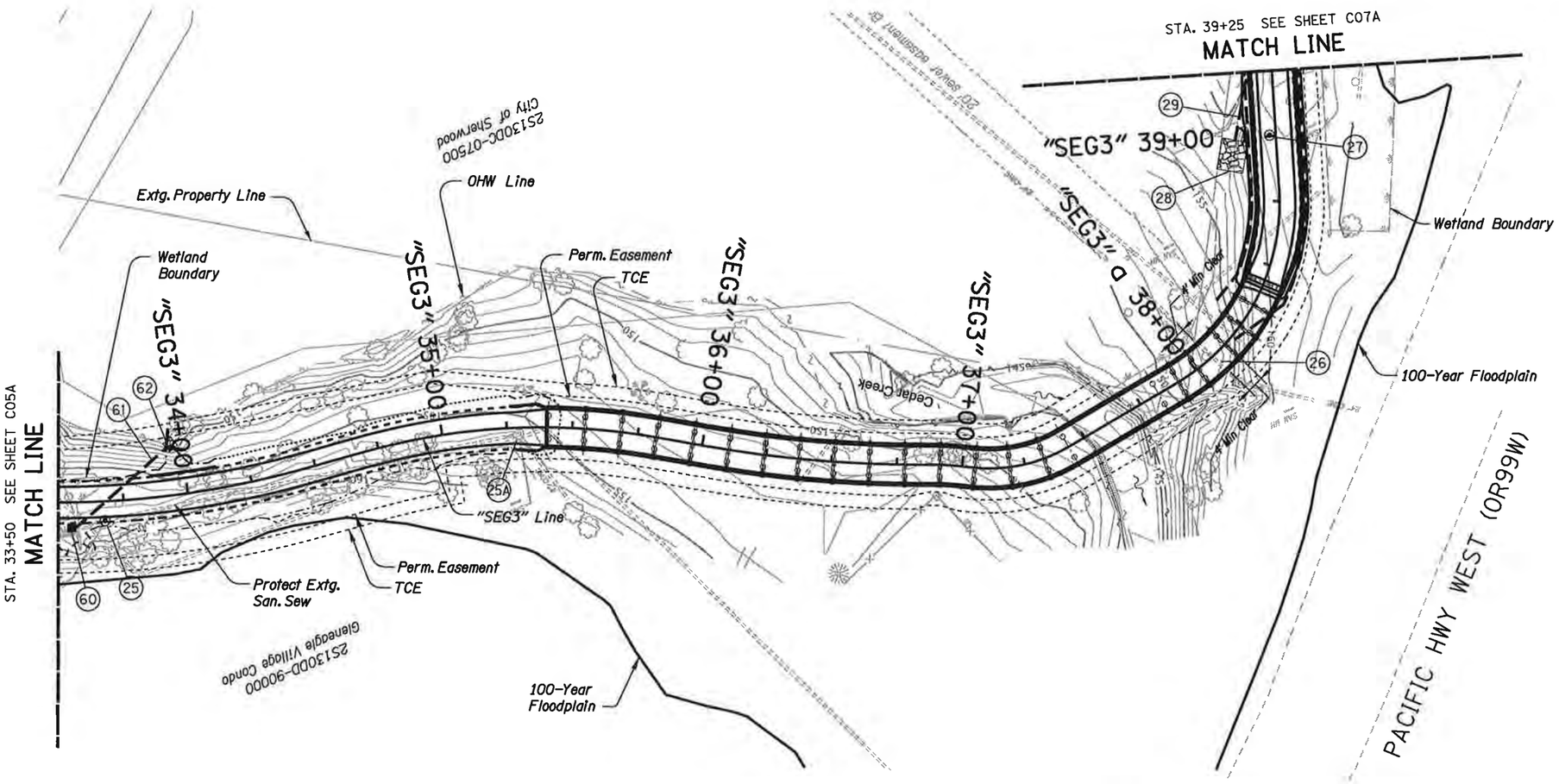
GENERAL CONSTRUCTION

SHEET NO. C06

16-DEC-2020 12:46

Sec. 30, T. 2S, R. 1W, W.M.

54V-027



(25) *Minor Adjust Manhole to Rim 156.39*
Replace Lid with Manhole Cover
(See Std. Drg. Nos. RD360 and RD356)

(25A) *Minor Adjust Manhole to Rim 156.79*
Replace Lid with Manhole Cover
(See Std. Drg. Nos. RD360 and RD356)

(26) *STA. "SEG3" 38+11.11*
Pothole to Field-Verify Location and Depth of Extg. CWS Sanitary Sewer Mainline Prior to Construction. Notify Engineer if current pile locations do not provide min 4' clearance from 24" CWS sewer mainline. Pile locations shall be adjusted as directed by the Engineer to provide sufficient clearance. Protect and Monitor Sewer Mainline During Construction.

(27) *STA. "SEG3" 39+00.39, 2.44' Lt*
Major Adjust Manhole to Rim 166.12
Replace Lid with Manhole Cover
(See Std. Drg. Nos. RD360 and RD356)

(28) *STA. "SEG3" 38+87.61, 18.57' Lt*
Inst. 10'Wx12'Lx2.5'T (ODOT CL. 200) Riprap Pad
- 11.1 Cu.Yd.
Wrap sides and bottom of riprap with Type 2 Woven Riprap Geotextile as spec'd in Section 02320
(See City of Sherwood Std. Drg. No. SS-87.

(29) *STA "SEG3" 38+99.27, 15.71' Lt*
Inst. 24" Storm Sew. Sloped End Section
I.E. (24" Outfall) 158.00
(See Std. Drg. No. RD318)
For Profile, See Sht. HB02

(60) *STA "SEG3" 33+55.01, 9.67' Rt*
Const. Area Drain Type II
Grate Elev 156.40
I.E. (Out) 152.40(W)
(See City of Sherwood Std. Drg. No. SS-48.

(61) *STA "SEG3" 33+93.85, 18.30' Lt*
Inst. 12" Dia. Storm Sew with Sloped End - 47'
5' Depth
I.E. (12" Outfall) 149.00
(See Std. Drg. No. RD318)
For Details, See Sht. BB03
For Profile, See Sht. HB02

(62) *STA "SEG3" 33+93.67, 22.30' Lt*
Inst. 8'Wx7'Lx1.5'T (ODOT CL. 50) Riprap Pad
- 3.1 Cu.Yd.
Wrap sides and bottom of riprap with Type 2 Woven Riprap Geotextile as spec'd in Section 02320
(See City of Sherwood Std. Drg. No. SS-87.

REGISTERED PROFESSIONAL ENGINEER
72869PE
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OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
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CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

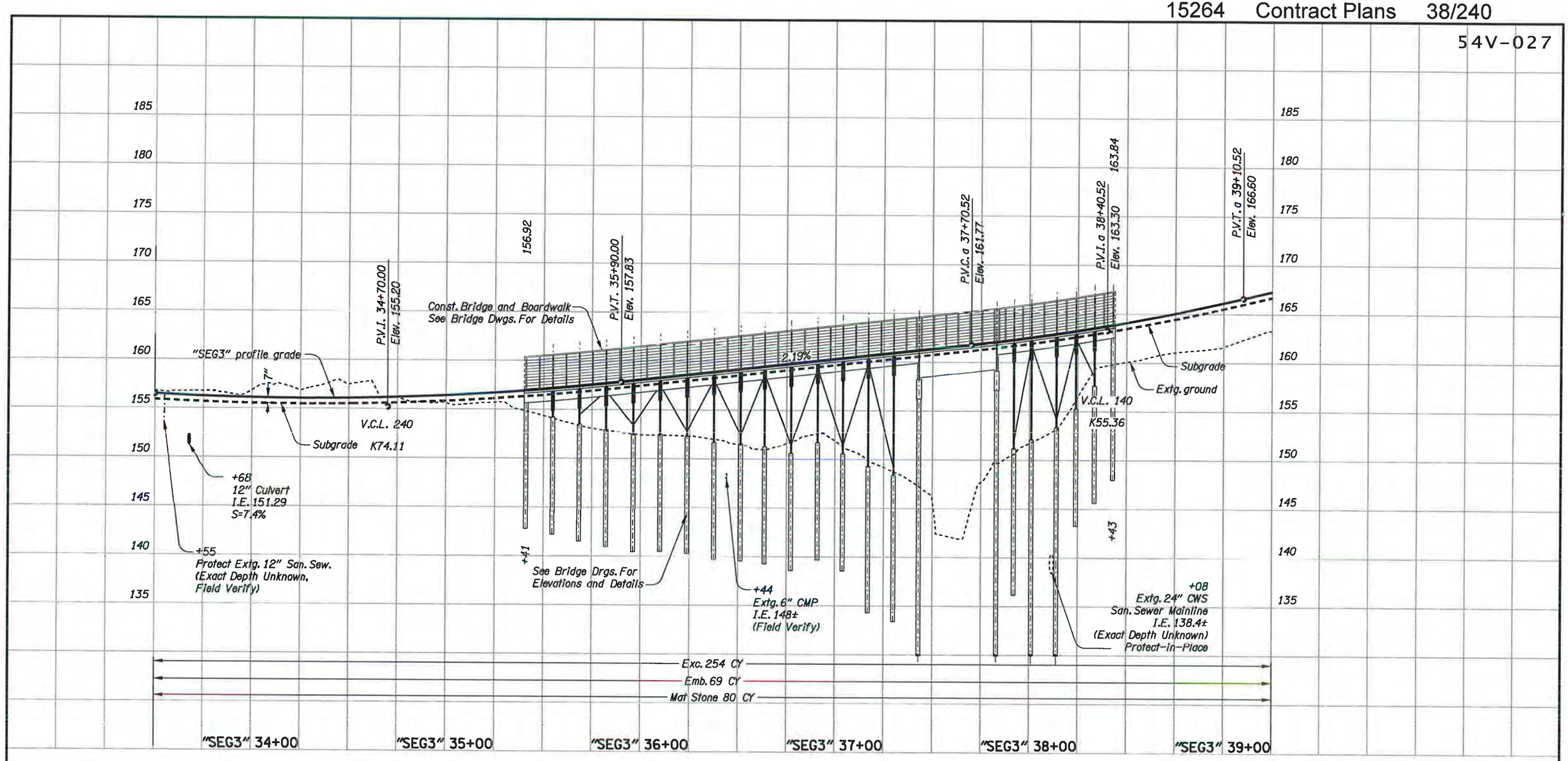
Designer: M Little | Reviewer: R Attanasio
Drafter: M Wainscott | Checker: R Attanasio

DRAINAGE AND UTILITIES

SHEET NO. C06A

16-DEC-2020 12:41

54V-027



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Horizontal Scale In Feet

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Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed
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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

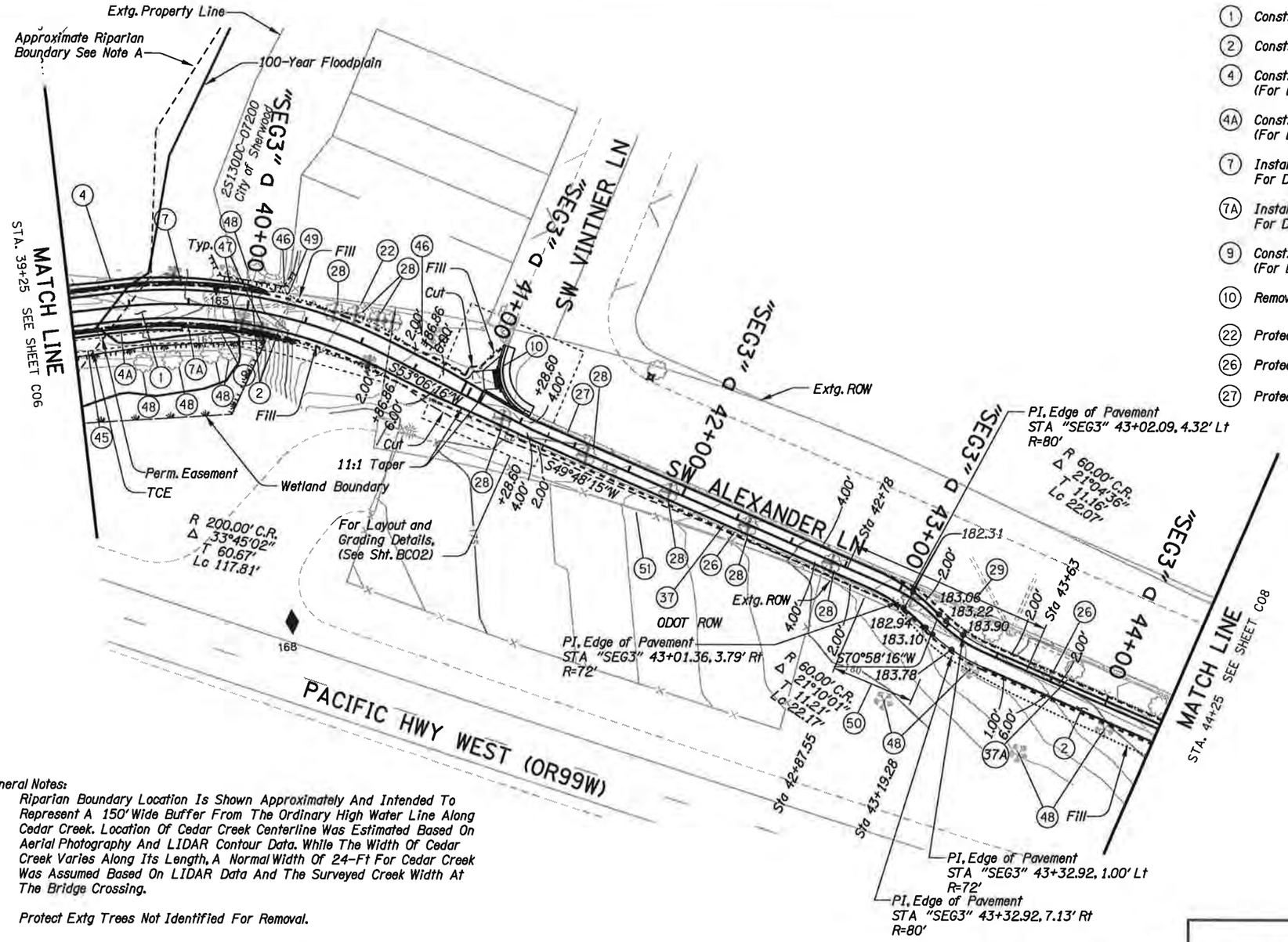
Designer: M Little
Drafter: M Wainscott
Reviewer: M Bittancourt
Checker: M Bittancourt

PROFILE

SHEET NO.
C06B

16-DEC-2020 12:42

54V-027



(1) Const. Asph. Conc. Shared-Use Path

(2) Const. Aggregate Shoulder

(4) Const. 1:2/5 Reinforced Soil Slope, RS08 (For Details, See Sht. GB09)

(4A) Const. 1:2/5 Reinforced Soil Slope, RS09 (For Details, See Sht. GB10)

(7) Install Split Rail Fence - 83' For Details, See Sht. BB02

(7A) Install Split Rail Fence - 94' For Details, See Sht. BB02

(9) Const. MSE Wall. MS02 (For Details, See Sht. GB10)

(10) Remove Curb and Gutter - 33'

(22) Protect Extg. Fence

(26) Protect Extg. Screen Wall

(27) Protect Extg. Curb and Gutter

(28) Remove Extg. Tree

(29) Remove Extg. Screen Wall - 85' Screen wall is concrete and designed to look like a wood fence with wood posts. The length noted is the minimum required. Demolish fence up to nearest concrete fence post beyond the specified length.

(37) Install Rub Rail on Extg Concrete Screen Wall adjacent to trail -190' For Details, See Sht. BB03

(37A) Install Rub Rail on Extg Concrete Screen Wall adjacent to trail -50' For Details, See Sht. BB03

(45) Protect extg wetland. Install Orange Plastic Mesh Fence

(46) Install Orange Plastic Mesh Fence Along Tree Dripline In Accordance With Clean Water Services Requirements Coordinate With FA Sheets And Field Verify Exact Fence Length.

(47) Remove extg tree. Coordinate removal with FA sheets.

(48) Protect Extg Tree.

(49) Steepen Fill Slope To 1:2 From Sta 40+10 To Sta 40+25 Near Property Corner To Avoid Encroaching On Neighboring Property.

(50) Transition path cross-slope from toward Alexander Land to away from Alexander Lane and horizontal alignment from path center to 2-ft Left of path center between Sta 42+87.55 and Sta 43+16.10 (For Typical Sections, See Sht. BA03)

(51) Protect Extg. ODOT Maintenance Yard Fence.

CONSTRUCTION LEGEND

- Retaining Wall
- Cut Line
- Fill Line
- Anchor Mesh Wall
- Mat Stone Embankment
- Aggregate Shoulder
- Edge of Asphalt Concrete
- Chain Link Fence
- Orange Plastic Mesh Fence
- Tree Removal

General Notes:

A. *Riparian Boundary Location Is Shown Approximately And Intended To Represent A 150' Wide Buffer From The Ordinary High Water Line Along Cedar Creek. Location Of Cedar Creek Centerline Was Estimated Based On Aerial Photography And LIDAR Contour Data. While The Width Of Cedar Creek Varies Along Its Length, A Normal Width Of 24-Ft For Cedar Creek Was Assumed Based On LIDAR Data And The Surveyed Creek Width At The Bridge Crossing.*

B. *Protect Extg Trees Not Identified For Removal.*

SURVEY CONTROL POINTS

Point ID	Northing	Easting	Elevation	Pt. Description
120	113,984.44	301,578.29	173.03	Set NTW
165	114,040.10	301,641.86	166.66	Set Reference

Survey Notes:
1. *Horizontal Datum: NAD83(2011XEpoch 2010.00)*
2. *Coordinate System: Oregon Coordinate Reference System (OCRS), Portland Zone*
3. *Vertical Datum: NAVD88*

0 25 50 75
Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: M Bittancourt
Drafter: M Wainscott | Checker: M Bittancourt

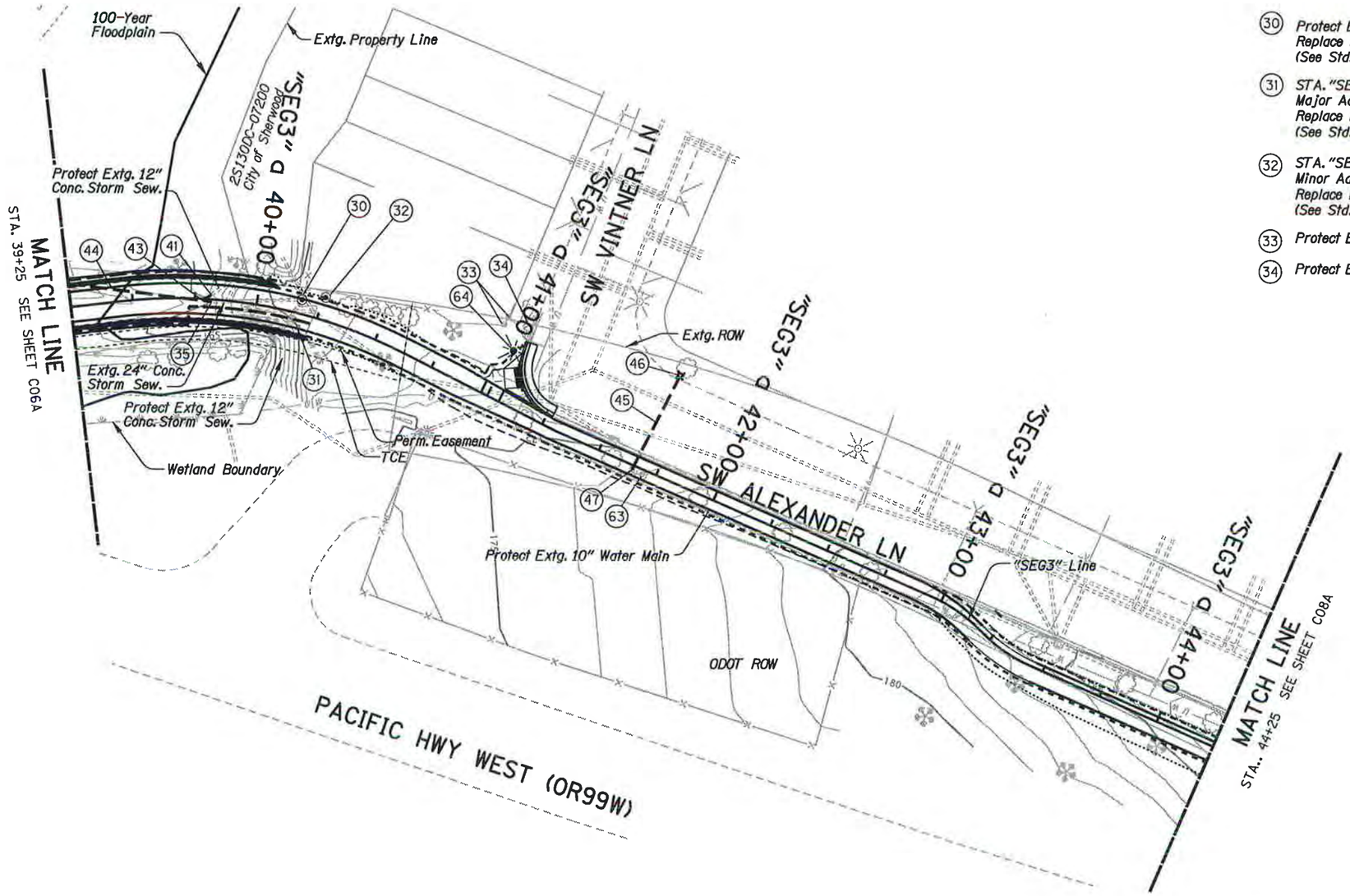
GENERAL CONSTRUCTION

SHEET NO. C07

16-DEC-2020 12:42

Sec. 30, T. 2S, R. 1W, W.M.

54V-027



(30) Protect Extg. Manhole
Replace Lid with Manhole Cover
(See Std. Drg. Nos. RD360 and RD356)

(31) STA. "SEG3" 40+15.13, 3.24'Rt
Major Adjust Manhole to Rim 171.60
Replace Lid with Manhole Cover
(See Std. Drg. Nos. RD360 and RD356)

(32) STA. "SEG3" a40+25.96, 9.01'Lt
Minor Adjust Manhole to Rim 171.83
Replace Lid with Manhole Cover.
(See Std. Drg. Nos. RD360 and RD356)

(33) Protect Extg. Valve Boxes

(34) Protect Extg. Hydrant

(35) STA. "SEG3" a39+81.88, 0.97' Rt
Inst. 24" Storm Sew. to Connect to Extg. 24" Outfall-4'
5' Depth
I.E. (24" Tie-in) 165.29,
Field Verify
For Profile, See Sht. HB02
For Details, See Sht. BB03

(41) STA. "SEG3" a39+81.52, 1.84'Lt
Connect to Extg. 12" Culvert
I.E. (12" Tie-in) 165.08

(42) Inst. 12" Storm Sew. to Connect to New Wye - 4'
5' Depth
For Details, See Sht. BB03

(43) STA. "SEG3" a39+78.25, 0.75'Rt
Inst. New 24"x12" Wye
I.E. 164.97

(44) STA. "SEG3" a39+81.88, 0.97'Rt
Inst. 24" Storm Sew. - 81'
5' Depth
For Profile, See Sht. HB02
For Details, See Sht. BB03

(45) Water Line (by Others)

(46) Fire Hydrant (by Others)

(47) Existing Fire Hydrant to be removed by City of Sherwood

(63) Extg. Utility Pedestal to be Relocated by City of Sherwood

(64) New Streetlight See Sht PA02

N

0 25 50 75
Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020.12.17 22:11:57-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

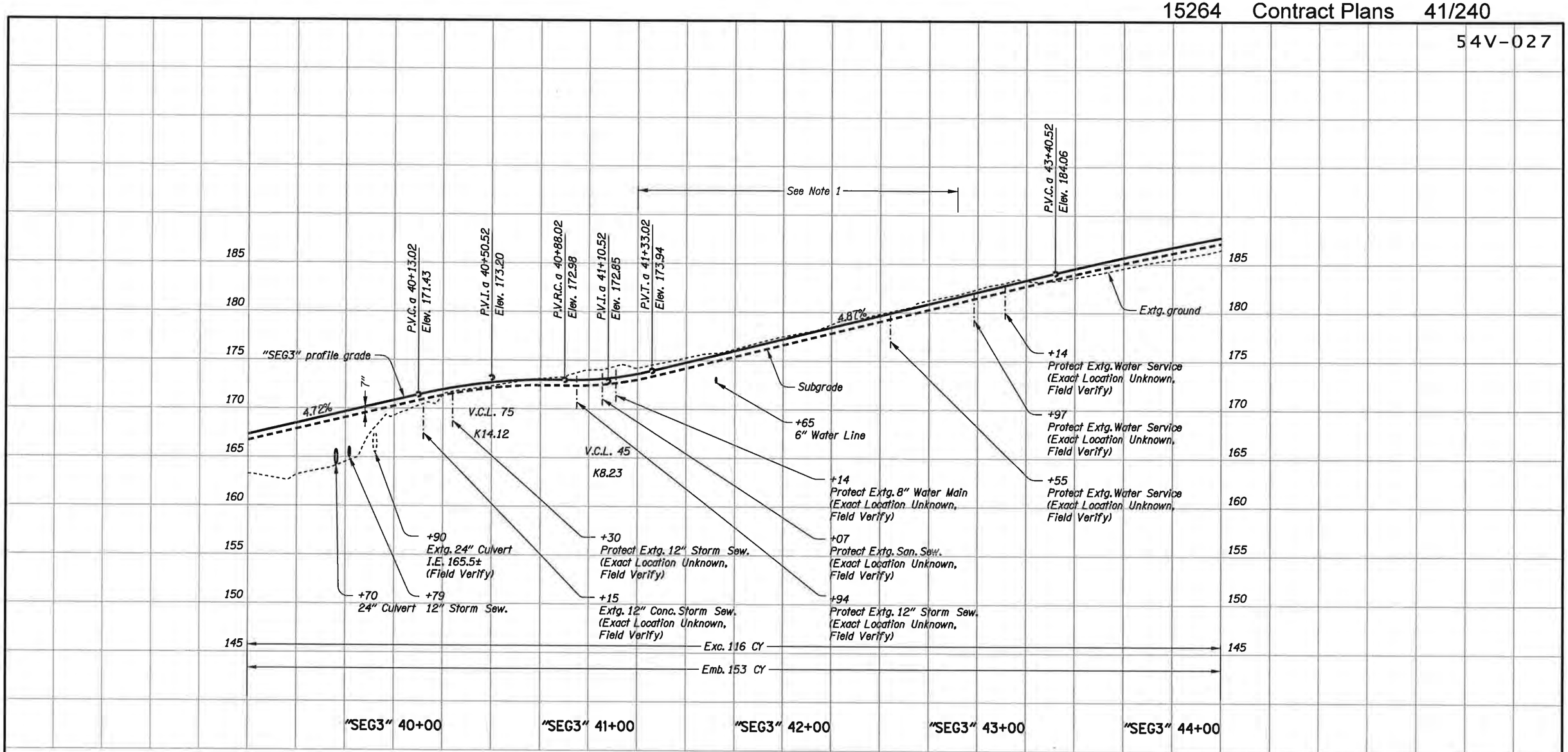
Designer: M Little
Drafter: M Wainscott
Reviewer: R Attanasio
Checker: R Attanasio

DRAINAGE AND UTILITIES

SHEET NO. C07A

16-DEC-2020 12:40

54V-027



Notes:

1. *Trail Pavement is attached to existing curb or new 6" vertical curb along Alexander Lane as shown in the Plans. Field Verify top of adjacent curb, and construct trail pavement to match top of curb with 1.5% cross-slope from the top of curb as shown on Sht. BA03. Where discrepancy between top of adjacent curb and vertical alignment is encountered, top of adjacent curb shall control for trail construction.*

0 25 50 75
Horizontal Scale In Feet

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Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

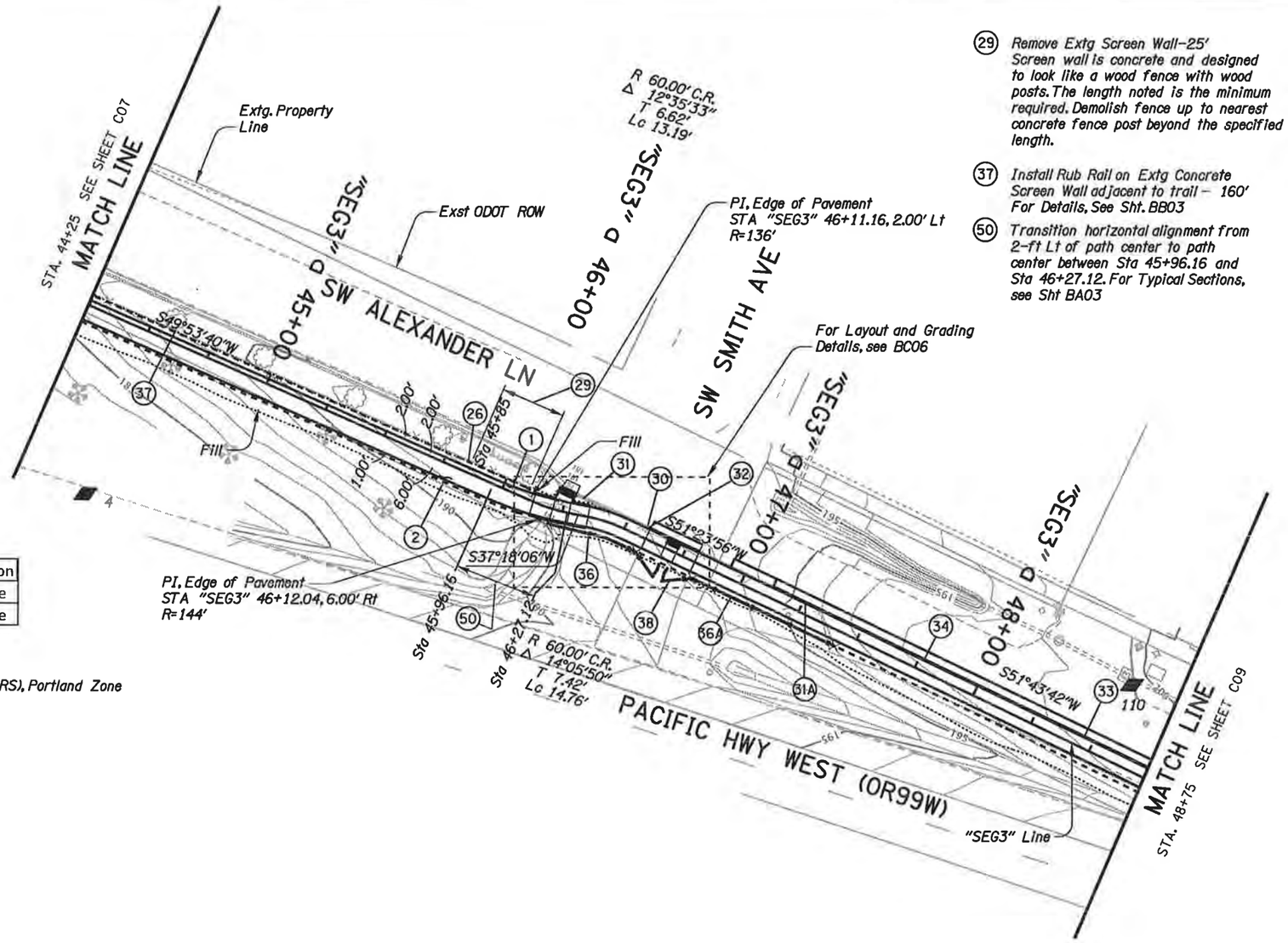
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: M Bittancourt
Drafter: M Wainscott | Checker: M Bittancourt

PROFILE

SHEET NO. C07B

16-DEC-2020 12:42



SURVEY CONTROL POINTS

Point ID	Northing	Easting	Elevation	Pt. Description
4	113,329.28	300,832.06	204.74	Set Reference
110	113,466.00	300,990.37	199.32	Set Reference

Survey Notes:
1. Horizontal Datum: NAD83(2011XEpoch 2010.00)
2. Coordinate System: Oregon Coordinate Reference System (OCRS), Portland Zone
3. Vertical Datum: NAVD88

(29) *Remove Extg Screen Wall–25'*
Screen wall is concrete and designed to look like a wood fence with wood posts. The length noted is the minimum required. Demolish fence up to nearest concrete fence post beyond the specified length.

(37) *Install Rub Rail on Extg Concrete Screen Wall adjacent to trail – 160'*
For Details, See Sht. BB03

(50) *Transition horizontal alignment from 2–ft Lt of path center to path center between Sta 45+96.16 and Sta 46+27.12. For Typical Sections, see Sht BA03*

(1) *Const. Asph. Conc. Shared–Use Path*

(2) *Const. Aggregate Shoulder*

(26) *Protect Extg. Screen Wall*

(30) *Remove Extg. 23' Wide, 4' Chain Link Double Swing Gate*

(31) *Sta. "SEG3" @ 46+21.88 To Sta. "SEG3" @ 46+57.38, Lt. Remove Extg. 4' Chain Link Fence – 36'*

(31A) *Sta. "SEG3" @ 46+80.57 To Sta. "SEG3" @ 47+42.28, Lt. Remove Extg. 4' Chain Link Fence – 67'*

(32) *Protect Extg. Curb*

(33) *Const. Vertical Curb. For Details, see City of Sherwood Std. Drg. No. RD–21*

(34) *Sawcut, Remove and Replace Asphalt Concrete 3' Outside of New Curb to Match Extg.*

(36) *Sta. "SEG3" @ 46+21.5, 5.5'Rt. To Sta. "SEG3" @ 46+57.73, 5.5'Rt. Const. Type CL–4 Chain Link Fence –32' (See Std Drg. No. RD815.)*

(36A) *Sta. "SEG3" @ 46+81.83, 5.5'Rt. To Sta. "SEG3" @ 47+43.44, 5.5'Rt. Const. Type CL–4 Chain Link Fence –61' (See Std Drg. No. RD815.)*

(38) *Inst. 24' Double Swing Locked Gate –1 (See Std Drg. No. RD820.)*

CONSTRUCTION LEGEND

- Retaining Wall
- Cut Line
- Fill Line
- Anchor Mesh Wall
- Mat Stone Embankment
- Aggregate Shoulder
- Edge of Asphalt Concrete
- Chain Link Fence
- Orange Plastic Mesh Fence

N

0 25 50 75
Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
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Digitally Signed 2020.12.17 22:13:07-08'00'
OREGON
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MATTHEW RYAN LITTLE
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CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: M Bittancourt
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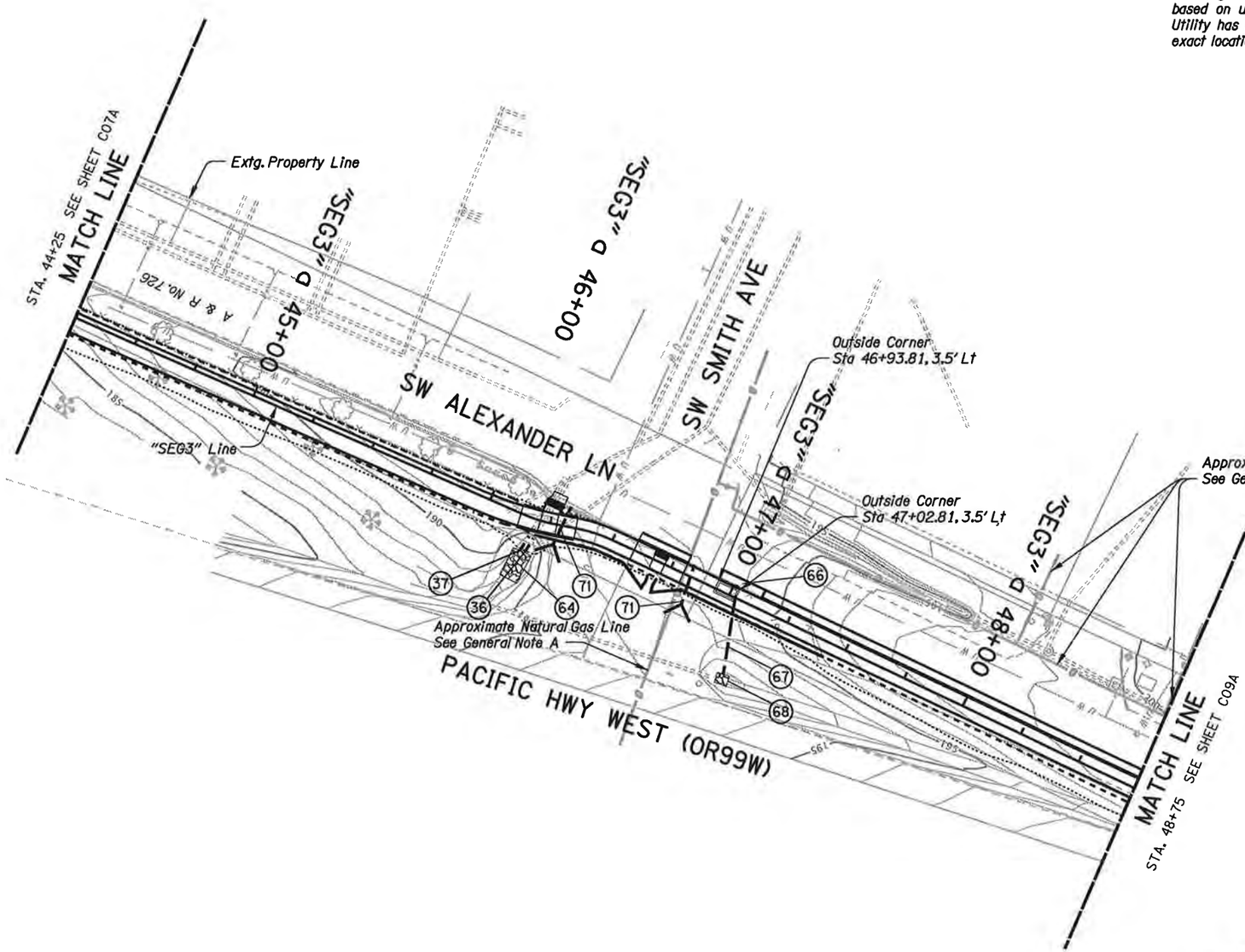
GENERAL CONSTRUCTION

SHEET NO. C08

16-DEC-2020 12:43

Sec. 30, T. 2S, R. 1W, W.M.

54V-027



General Notes:

A. Existing utility line is shown approximately based on utility locate photos and figures. Utility has not been surveyed. Field verify exact location and protect existing utility.

(36) STA. "SEG3" 46+01.78, 4' Lt
Extend Extg. 12" Conc Storm Sew. – 7'
5' Depth
I.E. (Tie-in) 189.25,
I.E. (Outfall) 189.00
Connect with Fernco Coupling or Approved Equal.
Provide Sloped End.
(See Std. Drg. No. RD318)
For Details, See Sht. BB03

(37) STA. "SEG3" 45+98.05, 4.00' Lt
Extend Extg. 12" Conc Storm Sew. – 7'
5' Depth
I.E. (Tie-in) 189.08,
I.E. (Outfall) 189.00
Connect with Fernco Coupling or Approved Equal.
Provide Sloped End
(See Std. Drg. No. RD318)
For Details, See Sht. BB03

(64) STA. "SEG3" 46+17.26, 25.41' Rt
Inst. W=8', L=8', T=4.3' (CL. 200) Riprap Pad
– 10.2 Cu.Yd.
Instead of Riprap backing, wrap sides and bottom riprap with Type 2 Woven Riprap Geotextile as spec'd in Section 02320
See Std. Drg. No. RD317

(66) STA. "SEG3" See Plan
Const. Water Quality Structure DF-1 as specified in Section 01010.
Bottom of Curb Inlet Elev: 193.80
I.E. (Out): 190.90
(For Profile, see sht HB02)

(67) STA. "SEG3" 47+01.19, 4.56' Rt
Inst. 12" Dia. Storm Sew. Pipe with Sloped End– 29'
5' Depth I.E. (Outfall) 190.60
(For Details, See Sht. BB03)
(For Profile, see Sht. HB02)

(68) STA. "SEG3" Sta 47+01.91, 28.72' Rt
Inst. W=5', L=4', T=2.3' (CL. 50) Riprap Pad
– 1.7 Cu.Yd.
Wrap sides and bottom of riprap with Type 2 Woven Riprap Geotextile as spec'd in Section 02320
See Std. Drg. No. RD317

(71) Connect to extg. weephole with 3" PVC schedule 80 pipe. Slope pipe at 2% to drain away from curb and daylight north end of pipe.

N

0 25 50 75
Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020.12.17 22:13:31-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
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CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

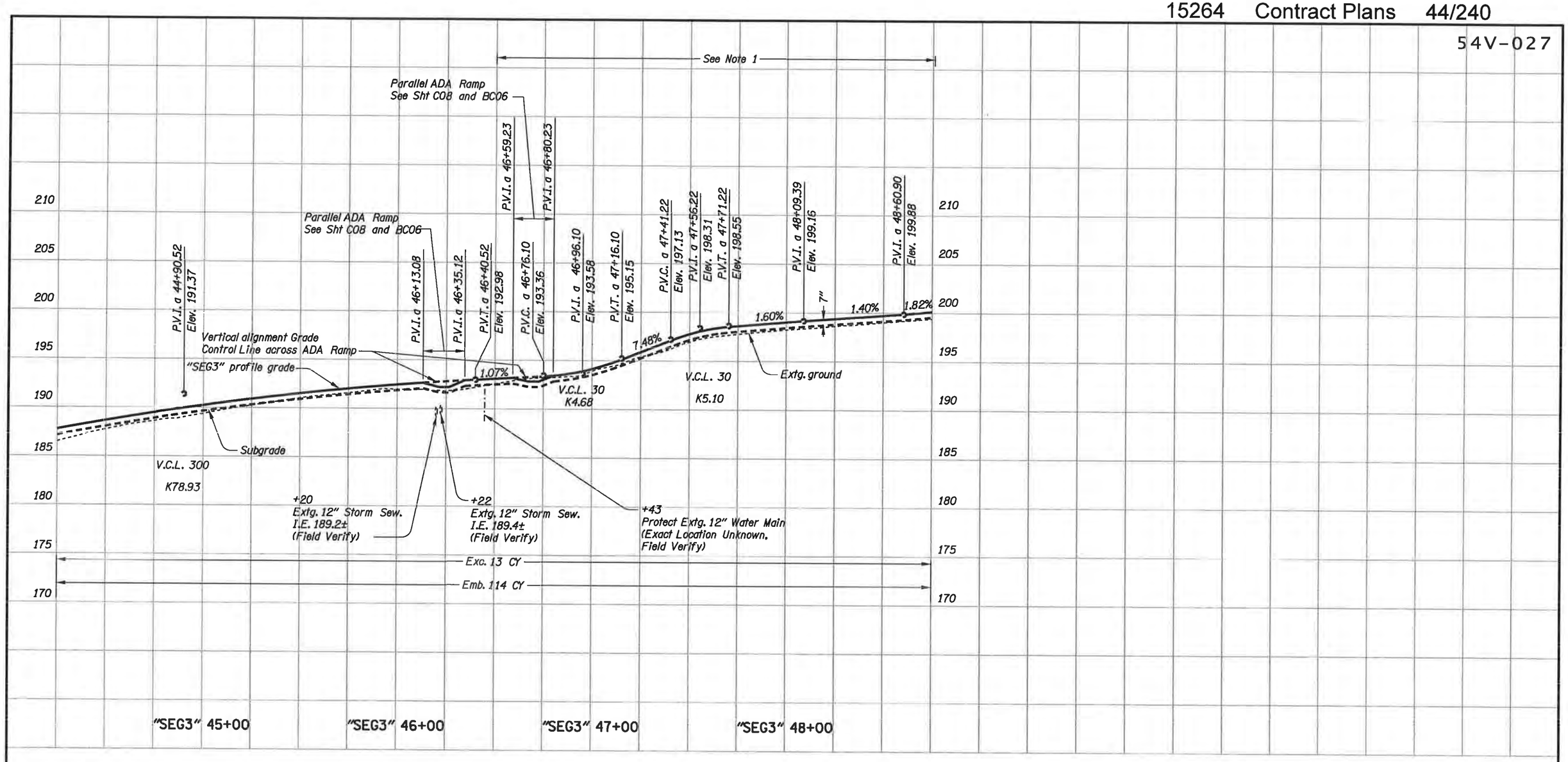
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: R Attanasio
Drafter: M Wainscott | Checker: R Attanasio

DRAINAGE AND UTILITIES

SHEET NO. C08A

16-DEC-2020 12:40



Notes:

1. *Trail Pavement is attached to existing curb or new 6" vertical curb along Alexander Lane as shown in the Plans. Field Verify top of adjacent curb, and construct trail pavement to match top of curb with 1.5% cross-slope from the top of curb as shown on Sht. BA03. Where discrepancy between top of adjacent curb and vertical alignment is encountered, top of adjacent curb shall control for trail construction.*

0 25 50 75
Horizontal Scale In Feet

0 5 10 15
Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

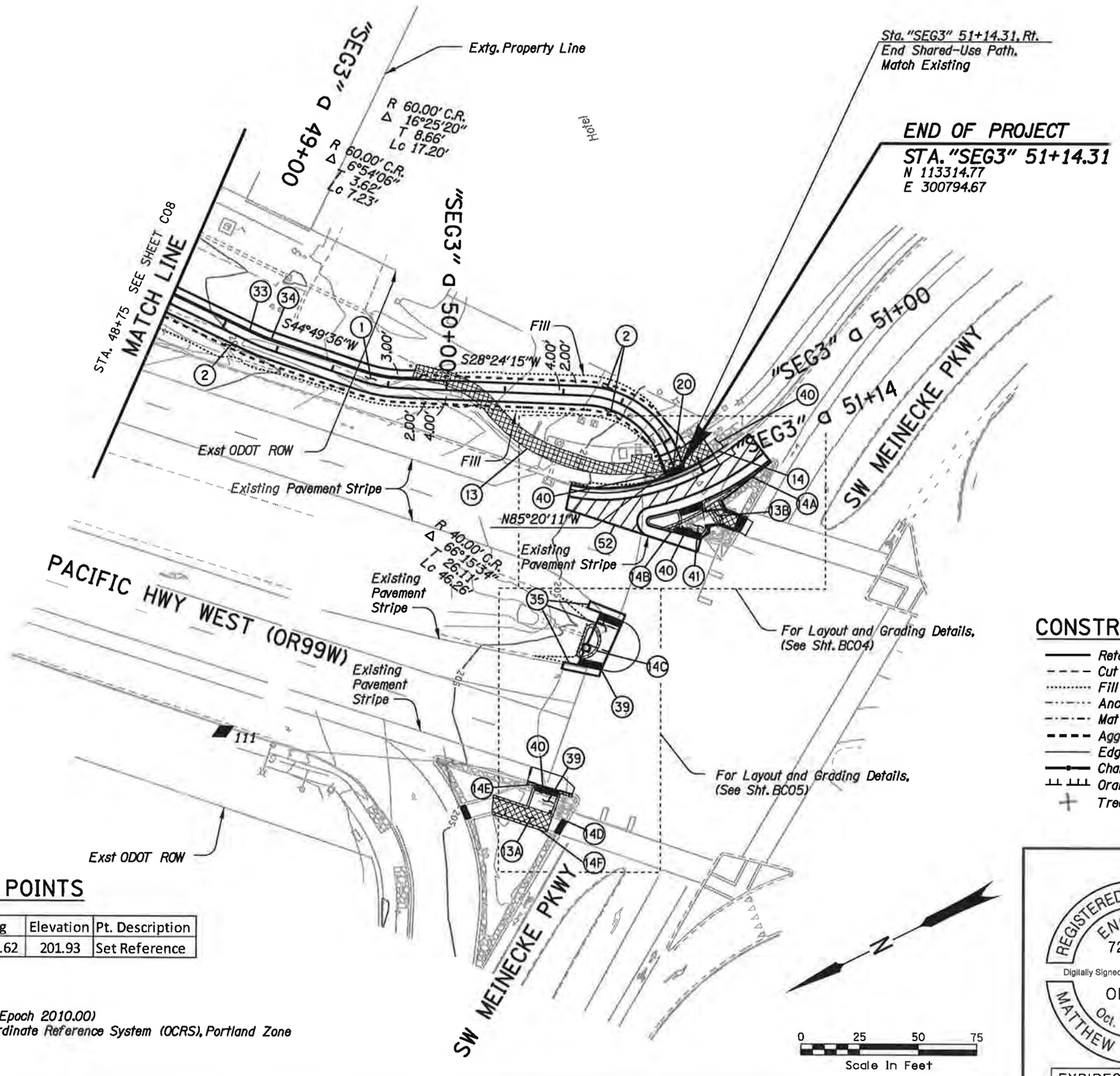
Designer: M Little
Drafter: M Wainscott
Reviewer: M Bittancourt
Checker: M Bittancourt

PROFILE

SHEET NO.
C08B

16-DEC-2020 12:42

54V-027



0 25 50 75
Scale In Feet

SURVEY CONTROL POINTS

Point ID	Northing	Easting	Elevation	Pt. Description
111	113,536.87	300,781.62	201.93	Set Reference

Survey Notes:
1. *Horizontal Datum: NAD83(2011XEpoch 2010.00)*
2. *Coordinate System: Oregon Coordinate Reference System (OCRS), Portland Zone*
3. *Vertical Datum: NAVD88*

(1) *Const. Asph. Conc. Shared-Use Path*
(2) *Const. Aggregate Shoulder*
(13) *Remove Extg. Sidewalk - 877 sf*
(13A) *Remove Extg. Sidewalk - 150 sf*
(13B) *Remove Extg. Sidewalk - 87 sf*
(14) *Sawcut and Remove Extg. Curb and Gutter - 63'*
(14A) *Sawcut and Remove Extg. Mountable Curb - 42'*
(14B) *Sawcut and Remove Extg. Mountable Curb - 55'*
(14C) *Sawcut and Remove Extg. Mountable Curb - 35'*
(14D) *Sawcut and Remove Extg. Mountable Curb - 26'*
(14E) *Sawcut and Remove Extg. Mountable Curb - 20'*
(14F) *Sawcut and Remove Extg. Mountable Curb - 25'*
(20) *Const. Access Ramp and Landing (For Details, See Sht. BC04)*
(33) *Const. Vertical Curb. (For Details, See City of Sherwood Std. Drg. No. RD-21)*
(34) *Sawcut, Remove and Replace Asphalt Conc. 3' Outside of New Curb to Match Extg.*
(35) *Sawcut and Remove Extg. AC Pavement - 360 sf*
(39) *Const. Intersection Island. (For Details, See Sht. BC05)*
(40) *Remove Flagstone Pavement*
(41) *Const. Intersection Island Modification. (For Details, See Sht. BC04)*
(52) *Asphalt Concrete Mill And Inlay Boundary (For Details, See Sht. BC04)*

CONSTRUCTION LEGEND

- *Retaining Wall*
- *Cut Line*
- *Fill Line*
- *Anchor Mesh Wall*
- *Mat Stone Embankment*
- *Aggregate Shoulder*
- *Edge of Asphalt Concrete*
- *Chain Link Fence*
- *Orange Plastic Mesh Fence*
- *Tree Removal*

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Digitally Signed 2020.12.17 22:14:25-08'00'
OREGON
Oct. 23, 2009
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EXPIRES: 12/31/2022

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CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

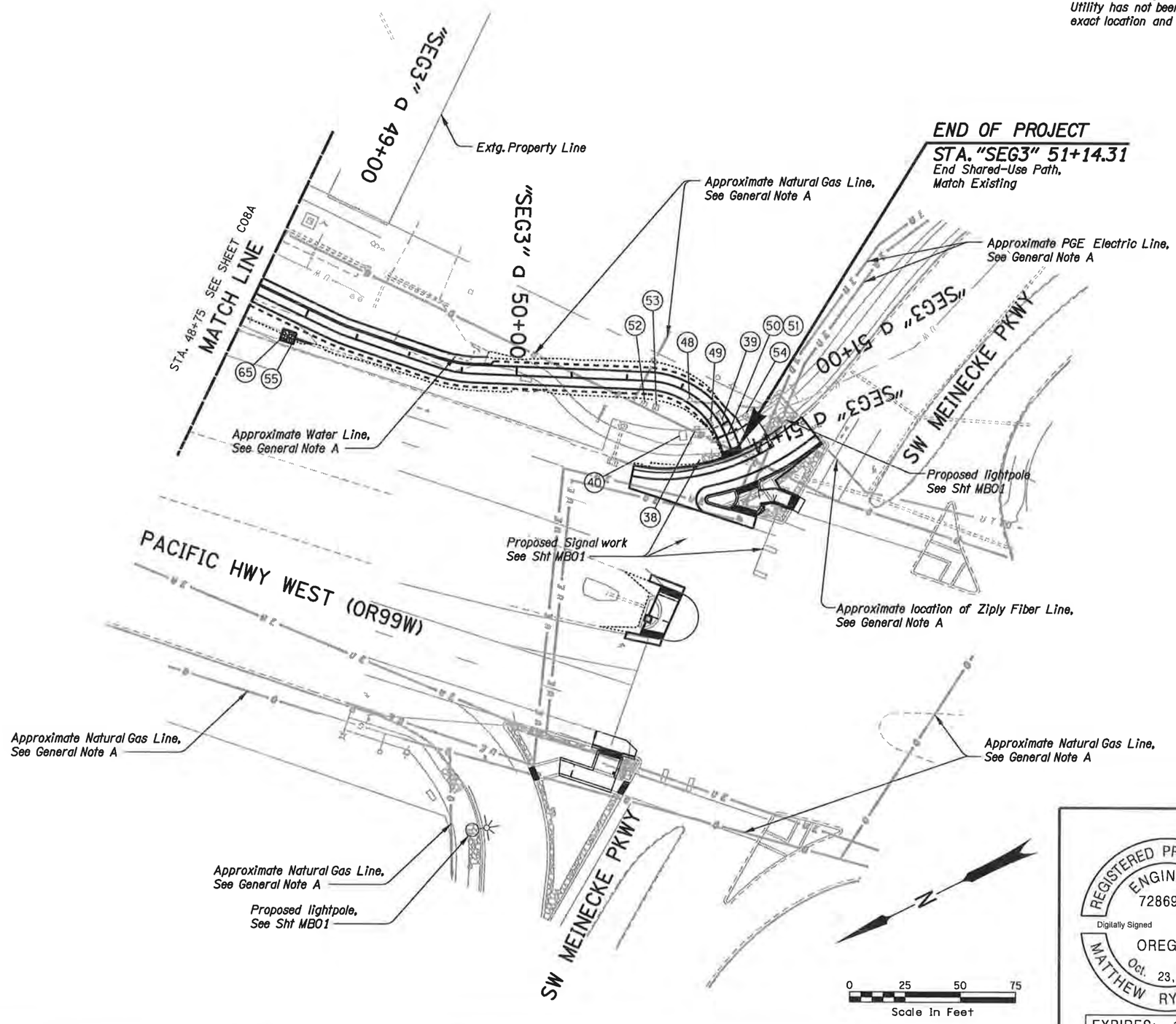
Designer: M Little	Reviewer: M Bittancourt
Drafter: M Wainscott	Checker: M Bittancourt

GENERAL CONSTRUCTION | SHEET NO. C09

16-DEC-2020 12:42

Sec. 30, T. 2S, R. 1W, W.M.

54V-027



General Notes:

A. Existing utility line is shown approximately based on utility locate photos and figures. Utility has not been surveyed. Field verify exact location and protect existing utility.

(38) Protect Extg. Elec. Junction Box and Traffic Signal Box

(39) For Relocation of Extg. ODOT Traffic Signal Meter Base, See Sht. MB01

(40) Protect Extg. Elec. Transformer

(48) Extg. Ziply Fiber Pedestal to be Replaced with Junction Box by Utility Prior to Construction. Coordinate with Ziply. Ziply to perform final adjustment of top of box to match finish grade.

(49) For Relocation of Signal Junction Box, See Sht. MB01

(50) Remove Extg. Junction Box

(51) Inst. New Junction Box to Match Finish Grade TOC 206.56. (See Std. Drg. Nos. TM471 & TM472)

(52) Protect Extg. Electrical Box

(53) Protect Extg. Communication Box

(54) Protect Extg. Traffic Signal Cabinet

(55) STA. "SEG3" @ 49+01.60, 11.60' Rt. Connect to and Extend Extg. 15" Conc Culvert - 7'
5' Depth
I.E. (Tie-in) 198.21
I.E. (Outfall) 198.03
Field Verify Location and Match Extg. Pipe Dia. Connect with Fernco Coupling or Approved Equal
Provide Sloped End
(See Std. Drg. No. RD318)
For Details, See Sht. BB03

(65) STA. "SEG3" Sta 48+96.85, 11.08' Rt
Inst. W=5', L=6.25', T=2.3' (CL. 50) Riprap Pad - 2.7 Cu.Yd.
Wrap sides and bottom of riprap with Type 2 Woven Riprap Geotextile as spec'd In Section 02320
See Std. Drg. No. RD317

Notes:

1. For Signal Plan, See sht. MB01.
2. Field Verify Depth and Location of all Utilities and Associated Structures to be Protected In-Place.

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

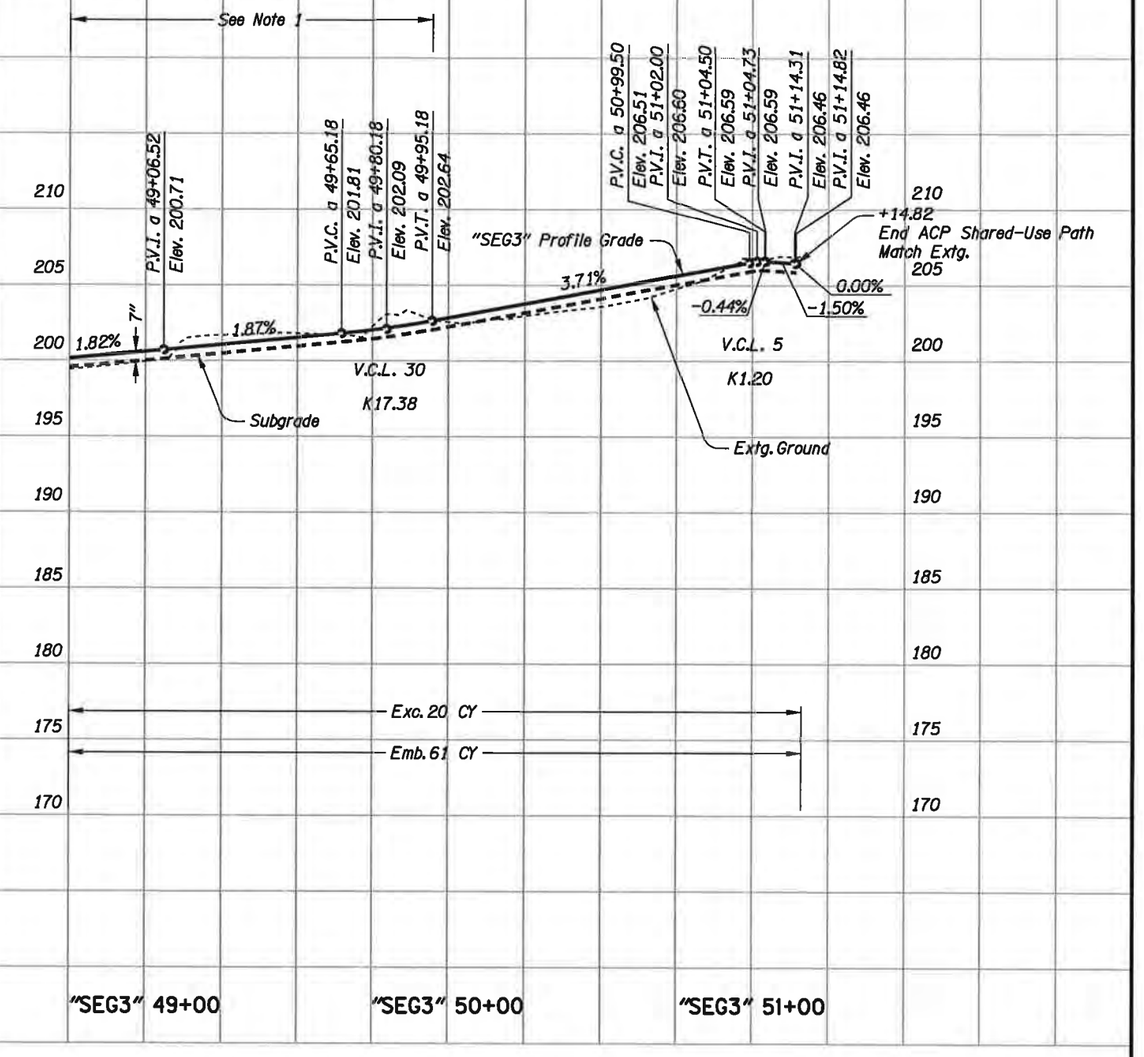
Designer: M Little | Reviewer: R Attanasio
Drafter: M Wainscott | Checker: R Attanasio

DRAINAGE AND UTILITIES

SHEET NO. C09A

17-DEC-2020 18:38

54V-027



Notes:

1. *Trail Pavement is attached to existing curb or new 6" vertical curb along Alexander Lane as shown in the Plans. Field Verify top of adjacent curb, and construct trail pavement to match top of curb with 1.5% cross-slope from the top of curb as shown on Sht. BA03. Where discrepancy between top of adjacent curb and vertical alignment is encountered, top of adjacent curb shall control for trail construction.*

0 25 50 75
Horizontal Scale In Feet

0 5 10 15
Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020.12.17 22:15:29-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

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STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: M Bittancourt
Drafter: M Walnscott | Checker: M Bittancourt

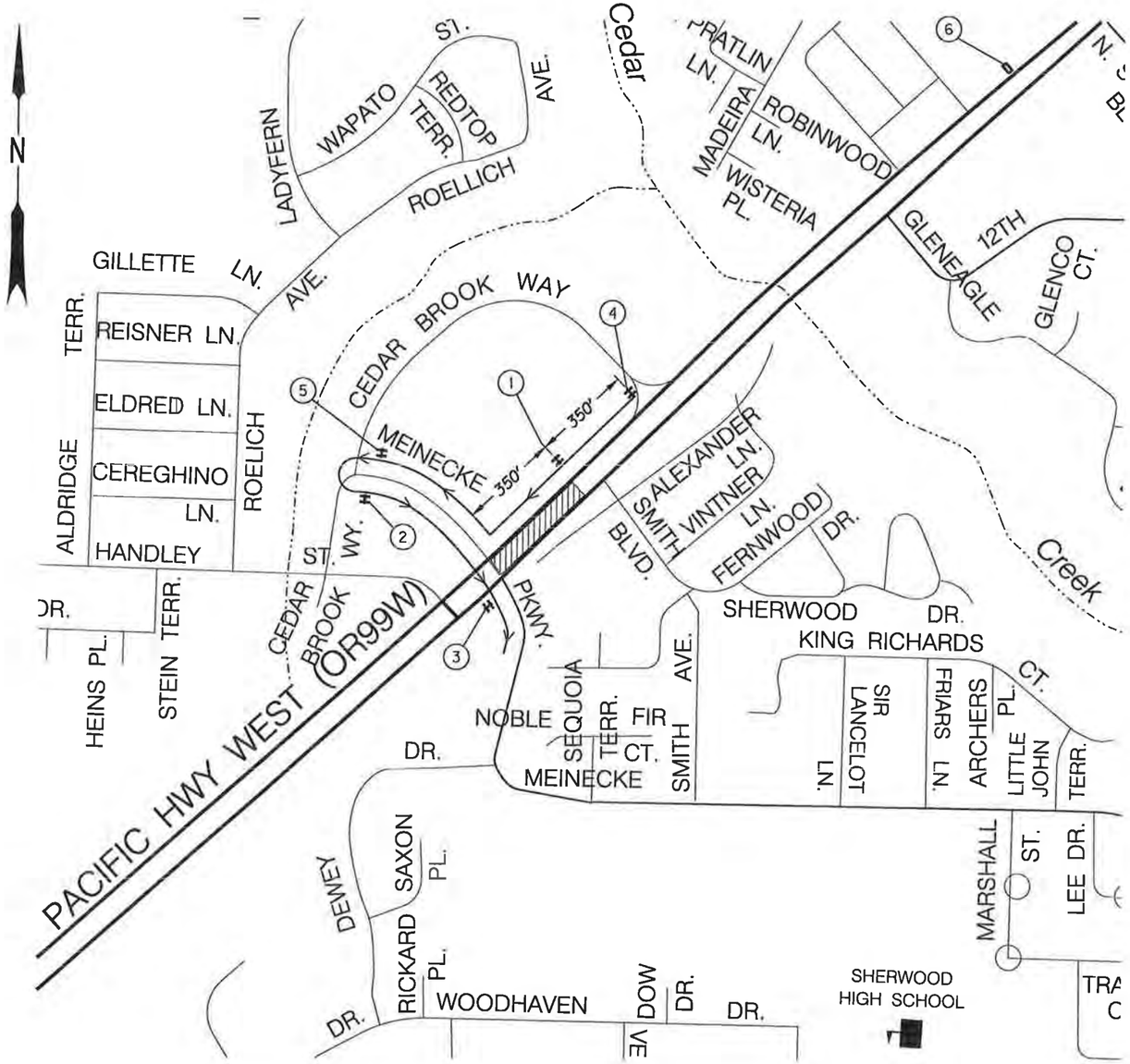
PROFILE

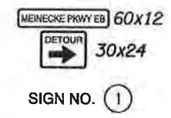
SHEET NO. C09B

16-DEC-2020 12:47

54V-027

DETOUR
STAGE I - OR99W SB LEFT TURN LANE & NB LANE CLOSURE



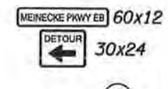


SIGN NO. (1)

SIGN NO. (2)

SIGN NO. (3)

SIGN NO. (4)



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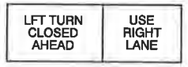

SIGN NO. (6)

LEGEND

- STAGE 1 DETOUR ROUTE - OR99W SB LEFT TURN LANE
- STAGE 1 CONSTRUCTION (OR99W SB LEFT TURN LANE & NB LANE CLOSURE)
- TEMPORARY SIGN ON TSS
- PCMS

ACCOMPANIED BY DWGS.:
TM800, TM820, TM821, TM822, TM840, TM841, TM842, TM843, TM844

REGISTERED PROFESSIONAL ENGINEER
77315PE
DIGITALLY SIGNED 2020.12.29 19:43:27 -08'00'
OREGON
Sept. 13, 2005
BRIAN GENE DEARING
EXPIRES: 12/31/2021

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: A Mansour | Reviewer: B Dearing
Drafter: M Wainscott | Checker: B Dearing

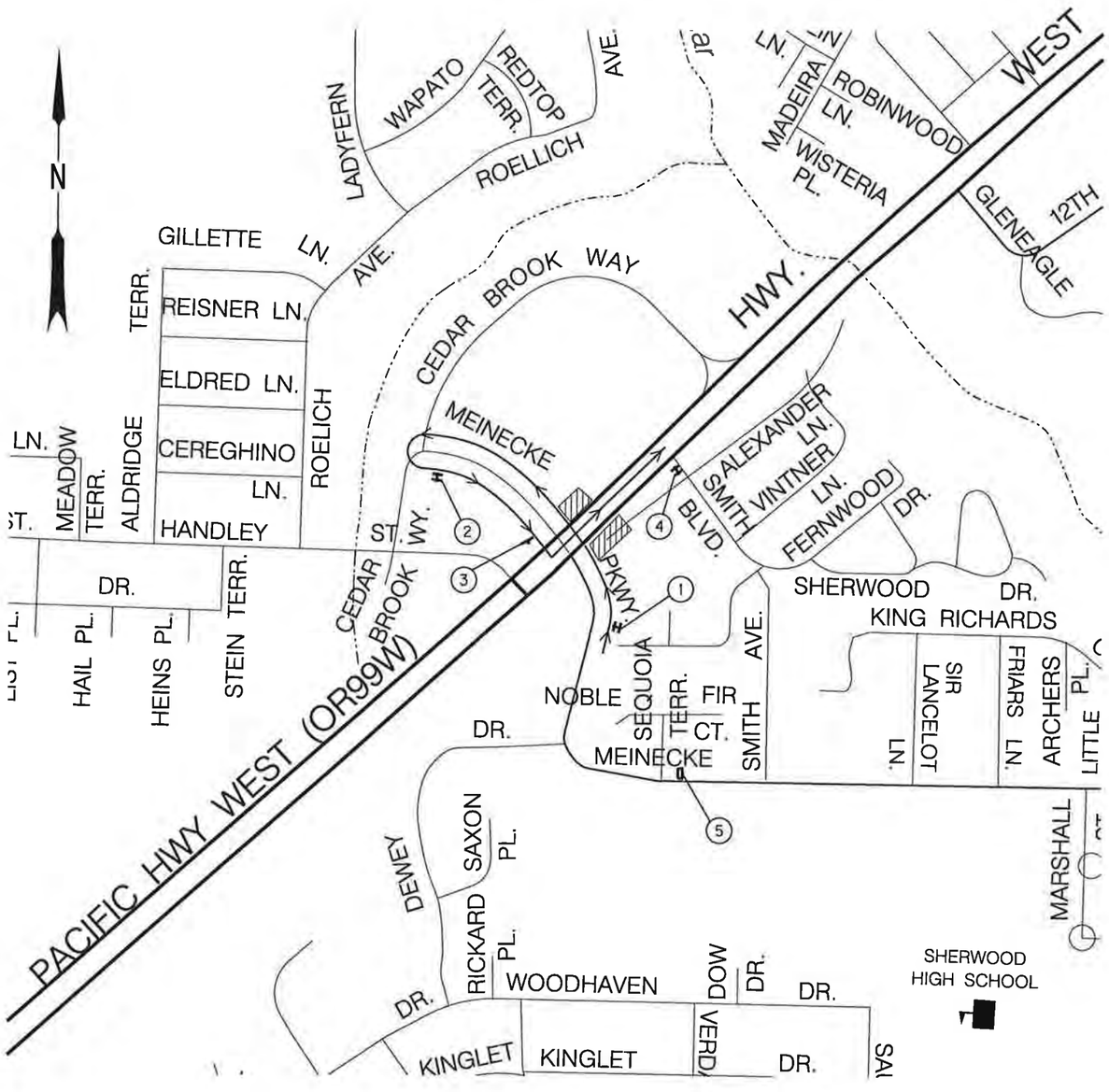
TRAFFIC CONTROL PLAN
MEINECKE INTERSECTION
DETOUR PLAN

SHEET NO. EB01

29-DEC-2020 13:09

54V-027

DETOUR
STAGE II: OR99W SB RIGHT TURN LANE, NB LANE & MEINECKE PKWY WB RIGHT TURN LANE CLOSURE



DETOUR 24x12
NORTH 24x12 Type "W1"
99W 30x24 Type "W1"
21x15 Type "W1"
SIGN NO. (1)

DETOUR 24x12
NORTH 24x12 Type "W1"
99W 30x24 Type "W1"
21x15 Type "W1"
SIGN NO. (2)
Install on Roundabout

DETOUR 24x12
NORTH 24x12 Type "W1"
99W 30x24 Type "W1"
21x15
SIGN NO. (3)

END DETOUR 30x24
SIGN NO. (4)

RT TURN CLOSED AT 99W	FOLLOW DETOUR

PCMS
(Suggested Message)
SIGN NO. (5)

LEGEND

- STAGE 2 DETOUR ROUTE - MEINECKE PKWY WB RIGHT TURN LANE
- STAGE 2 CONSTRUCTION (OR99W SB RIGHT TURN LANE & MEINECKE PKWY WB RIGHT TURN LANE CLOSURE)
- TEMPORARY SIGN ON TSS
- TEMPORARY SIGN ON POLE
- PCMS

REGISTERED PROFESSIONAL ENGINEER
77315PE
DIGITALLY SIGNED 2020.12.29 19:45:26 -08'00'
OREGON
Sept. 13, 2005
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EXPIRES: 12/31/2021

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: A Mansour
Drafter: M Wainscott
Reviewer: B Dearing
Checker: B Dearing

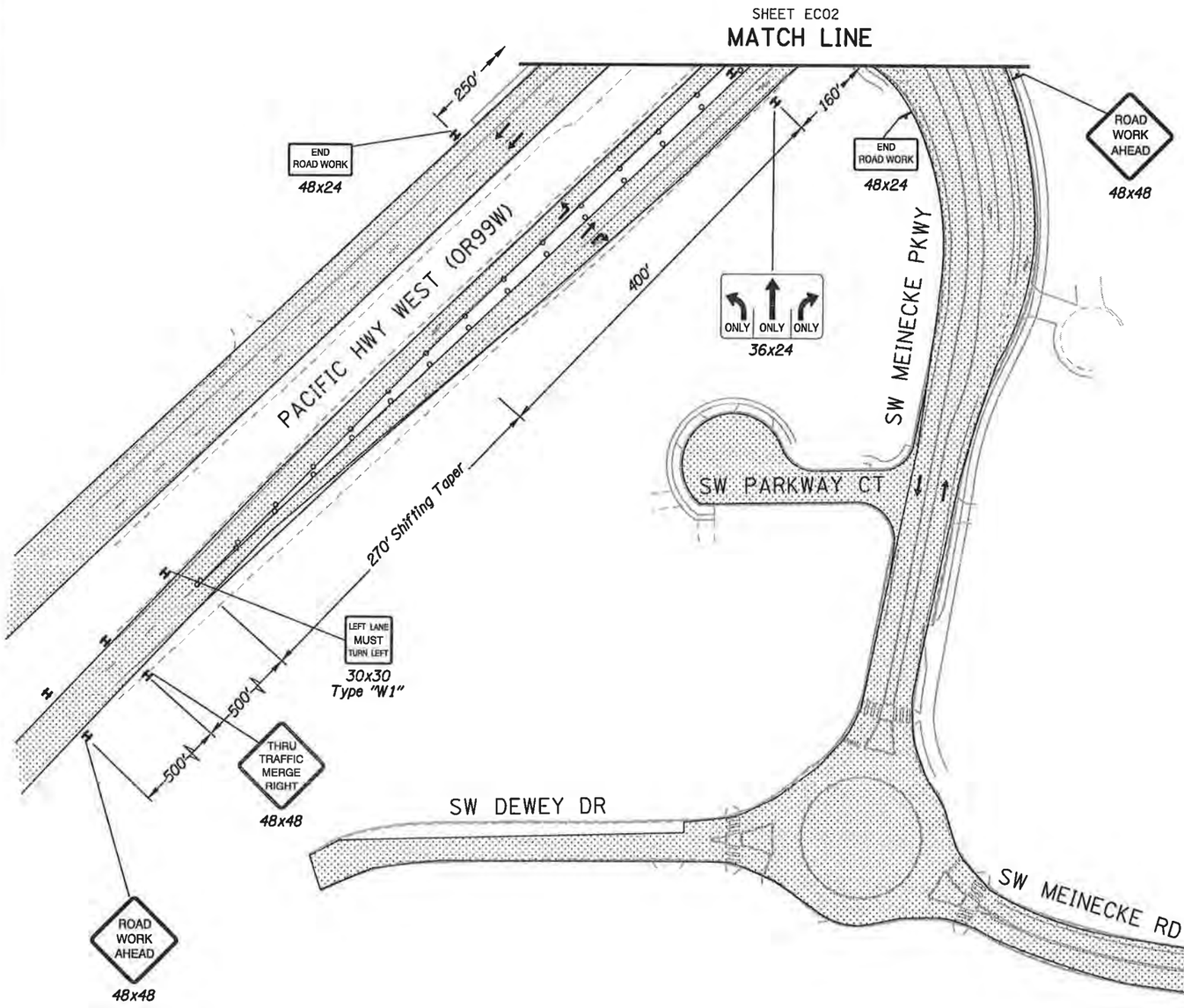
TRAFFIC CONTROL PLAN
MEINECKE INTERSECTION
DETOUR PLAN

SHEET NO. EB02

29-DEC-2020 13:13

STAGE I - OR99W SB LEFT TURN LANE & NB LANE CLOSURE

54V-027



LEGEND

- UNDER TRAFFIC
- UNDER CONSTRUCTION
- TEMP. SIGN
- TYPE III BARRICADE
- TEMP. SIGN SUPPORT (TSS)
- SEQUENTIAL ARROW
- DIRECTION OF TRAFFIC (FOR INFORMATION ONLY - UNLESS OTHERWISE NOTED)
- 28" TUBULAR MARKERS ON 40' MAX SPACING
- 28" TUBULAR MARKERS ON 20' MAX SPACING
- TEMP. PLASTIC DRUMS ON 40' MAX SPACING

Notes:

1. *Cover Existing Signs that Contradict this plan.*
2. *Stage I is applicable only during night work shift from Sunday night to Friday morning 8PM to 6AM. All Lanes must be open at the end of shift.*

REGISTERED PROFESSIONAL ENGINEER
77315PE
DIGITALLY SIGNED 2020.12.29 19:46:34 -08'00'
OREGON
Sept. 13, 2005
BRIAN GENE DEARING
EXPIRES: 12/31/2021

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: A Mansour | Reviewer: B Dearing
Drafter: M Wainscott | Checker: B Dearing

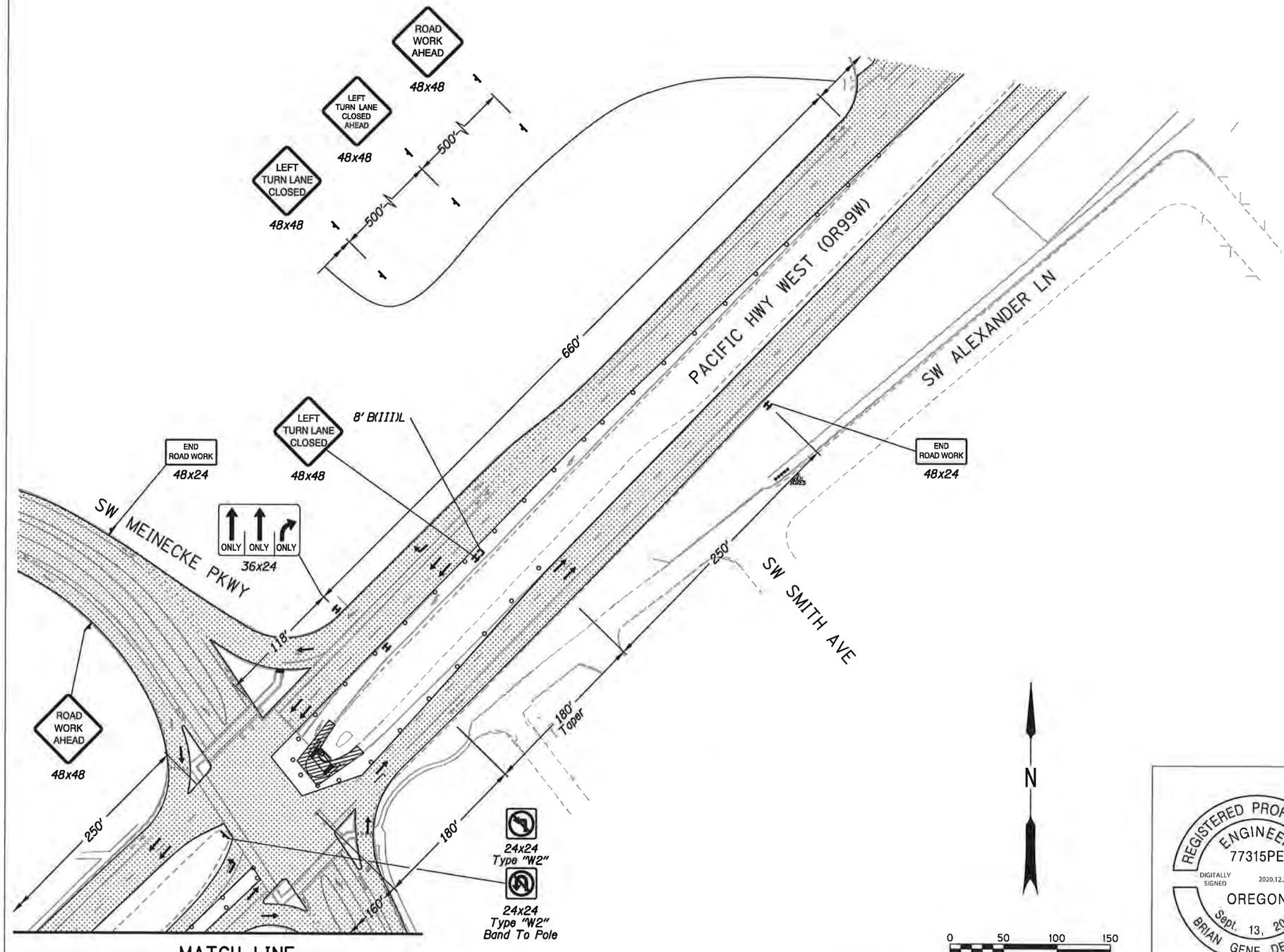
TRAFFIC CONTROL PLAN
MEINECKE INTERSECTON
STAGE I

SHEET NO. EC01

29-DEC-2020 13:18

STAGE I - OR99W SB LEFT TURN LANE & NB LANE CLOSURE

54V-027



LEGEND

- UNDER TRAFFIC
- UNDER CONSTRUCTION
- TEMP. SIGN
- TYPE III BARRICADE
- TEMP. SIGN SUPPORT (TSS)
- SEQUENTIAL ARROW
- DIRECTION OF TRAFFIC (FOR INFORMATION ONLY - UNLESS OTHERWISE NOTED)
- 28" TUBULAR MARKERS ON 40' MAX SPACING
- 28" TUBULAR MARKERS ON 20' MAX SPACING
- TEMP. PLASTIC DRUMS ON 40' MAX SPACING

Notes:

1. *Cover Existing Signs that Contradict this plan.*
2. *Stage I is applicable only during night work shift from Sunday night to Friday morning 8PM to 6AM. All lanes must be open at the end of shift.*

N

0 50 100 150

Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
77315PE
DIGITALLY SIGNED 2020.12.29 19:47:22 -08'00'
OREGON
Sept. 13, 2005
BRIAN GENE DEARING

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CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

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Drafter: M Wainscott | Checker: B Dearing

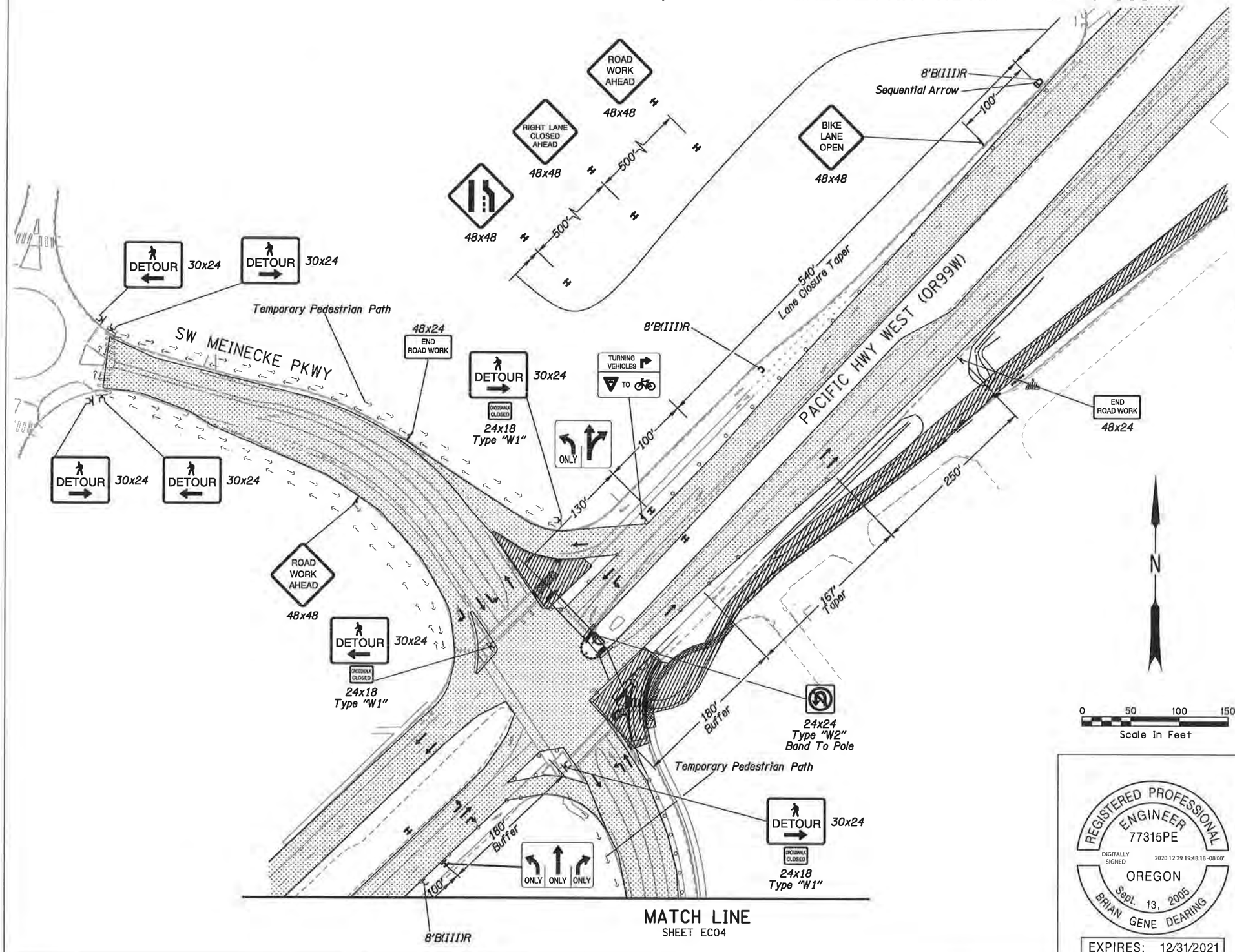
TRAFFIC CONTROL PLAN
MEINECKE INTERSECTION
STAGE I

SHEET NO. EC02

29-DEC-2020 13:25

STAGE II - OR99W SB RIGHT TURN LANE, NB LANE & MEINECKE PKWY WB RIGHT TURN CLOSURE

54V-027



MATCH LINE
SHEET EC04

LEGEND

- UNDER TRAFFIC
- UNDER CONSTRUCTION
- TEMP. SIGN
- TYPE III BARRICADE
- TEMP. SIGN SUPPORT (TSS)
- SIGN MOUNTED TO BARRICADE, TYPE 2
- SEQUENTIAL ARROW
- DIRECTION OF TRAFFIC (FOR INFORMATION ONLY - UNLESS OTHERWISE NOTED)
- 28" TUBULAR MARKERS ON 40' MAX SPACING
- 28" TUBULAR MARKERS ON 20' MAX SPACING
- PLASTIC DRUMS ON 40' MAX SPACING
- PEDESTRIAN DETOUR

N

0 50 100 150
Scale In Feet

Notes:

1. *Construct Crosswalk Thermoplastic Pavement Marking Using Night-time Rolling Closure.*
2. *Cover Existing Signs that Contradict this plan.*
3. *Maintain Access to Bike Lanes during Construction.*
4. *Stage II is applicable only during night work shift from Sunday night to Friday morning 8PM to 6AM. All lanes must be open at end of shift.*

REGISTERED PROFESSIONAL ENGINEER
77315PE
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OREGON
Sept. 13, 2005
BRIAN GENE DEARING
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PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

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Drafter: M Wainscott | Checker: B Dearing

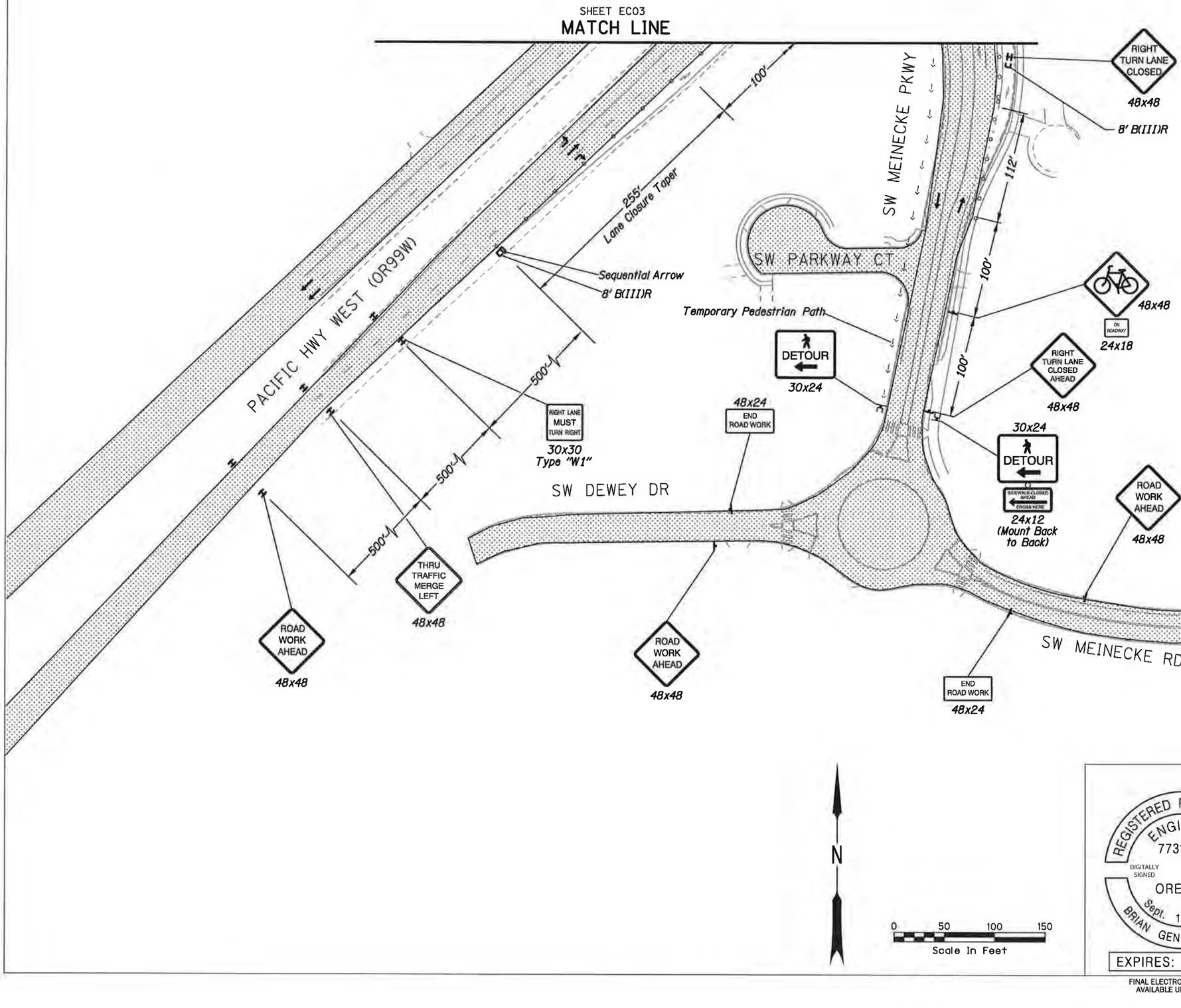
TRAFFIC CONTROL PLAN MEINECKE INTERSECTION STAGE II

SHEET NO. EC03

29-DEC-2020 13:35

STAGE II - OR99W SB RIGHT TURN LANE, NB LANE & MEINECKE PKWY WB RIGHT TURN CLOSURE

54V-027



LEGEND

- UNDER TRAFFIC
- UNDER CONSTRUCTION
- TEMP. SIGN
- TYPE III BARRICADE
- TEMP. SIGN SUPPORT (TSS)
- SIGN MOUNTED TO BARRICADE, TYPE 2
- SEQUENTIAL ARROW
- DIRECTION OF TRAFFIC (FOR INFORMATION ONLY - UNLESS OTHERWISE NOTED)
- 28" TUBULAR MARKERS ON 40' MAX SPACING
- 28" TUBULAR MARKERS ON 20' MAX SPACING
- PLASTIC DRUMS ON 40' MAX SPACING
- PEDESTRIAN DETOUR

Notes:

1. *Cover Existing Signs that Contradict this plan.*
2. *Stage II is applicable only during night work shift from Sunday night to Friday morning 8PM to 6AM. All lanes must be open at end of shift.*

N

0 50 100 150
Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
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PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

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Drafter: M Wainscott
Reviewer: B Dearing
Checker: B Dearing

TRAFFIC CONTROL PLAN
MEINECKE INTERSECTION
STAGE II

SHEET NO. EC04

29-DEC-2020 13:30

PLANTING NOTES

1. PRIOR TO BEGINNING WORK. INVENTORY EXISTING CONDITIONS INCLUDING EXISTING UTILITY LOCATIONS. PROTECT IN PLACE EXISTING UTILITIES. USE CAUTION. CALL BEFORE DIGGING AND BEFORE OVERHEAD WORK.
2. PROTECT IN PLACE ALL TREES AND LANDSCAPE OUTSIDE LIMITS OF PROJECT IMPROVEMENTS. REPLACE ALL PLANTS DAMAGED DUE TO CONSTRUCTION WITH PLANTS OF THE SAME GENIUS. SPECIES. VARIETY. SIZE AND FORM AT THE CONTRACTOR'S EXPENSE.
3. VERIFY ALL PLANT QUANTITIES. PLANT SCHEDULE IS ONLY PROVIDED AS A REFERENCE.
4. PROVIDE MATERIAL SAMPLES WITH 48 HOURS NOTICE PRIOR TO INSTALLATION TO THE OWNER'S REPRESENTATIVE FOR APPROVAL OF ALL MATERIALS SPECIFIED IN THE PLANTING PLAN.
5. PLANT MATERIAL IS TO HAVE IDENTIFICATION TAGS ON 10% OF THE TOTAL QUANTITY OF EACH SPECIES SHOWING GENUS. SPECIES. VARIETY. ETC.
6. SEE PLANTING DETAILS FOR THE INSTALLATION OF TREES AND FOR THE TREATMENT AT PLANTING AREAS.
7. VERIFY THAT ALL NEW PLANT MATERIAL MEETS NURSERY TRADE STANDARDS BY PLANT SPECIES AND CONTAINER SIZE. PLANTS SHALL BE HEALTHY AND IN GOOD CONDITION. TREES WITH DAMAGED TRUNKS OR IMPROPER PRUNING WILL BE REJECTED BY THE ENGINEER.
8. CONFIRM APPROVAL OF FINISHED GRADING FROM OWNER'S REPRESENTATIVE PRIOR TO PLANTING.
9. SEE SPECIFICATIONS FOR TESTING OF TOPSOIL AND AMENDMENTS. TESTING REQUIRES FOUR TO FIVE WEEKS. ALLOW SUFFICIENT TIME FOR TESTING PRIOR TO CONSTRUCTION.
10. ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE HYDROSEEDED.

PLANT MAINTENANCE REQUIREMENTS (LONG TERM)

1. LONG-TERM MAINTENANCE OF PLANTING AREAS IS THE RESPONSIBILITY OF THE PROJECT OWNER.
2. REPLACE GROUND COVER. SHRUBS AND TREES AS NECESSARY WITH SAME SPECIES AS ORIGINALLY SPECIFIED.
3. REPLACE OR RE-SET TREE STAKES AND TIES AS NECESSARY.
4. PRUNE TREES TO ALLOW THE NATURAL BRANCHING STRUCTURE TO DEVELOP.
5. ALLOW GRASSES TO STAND UNTIL FEBRUARY TO PROVIDE ARCHITECTURAL INTEREST IN THE LANDSCAPE DURING THE WINTER MONTHS. CUT BACK FOLIAGE IN FEBRUARY (OR BEFORE NEW SPRING GROWTH EMERGES) TO APPROXIMATELY 6" ABOVE THE GROUND.
6. IMPLEMENT A REGULAR FERTILIZATION PROGRAM FOR PLANTS THAT REQUIRE REGULAR FERTILIZATION TO KEEP THESE PLANTS IN OPTIMUM HEALTH. SUBMIT SOIL SAMPLES FROM ANY PROBLEM AREAS FOR REMEDIAL RECOMMENDATIONS.
7. CHECK. CLEAN AND RE-GRADE SWALES. GRADES AND DRAINS AS NECESSARY TO ENSURE POSITIVE DRAINAGE.
8. REPAIR ANY SOIL EROSION AS SOON AS DISCOVERED.
9. MAINTAIN SPECIFIED FINISH GRADES ADJACENT TO PAVEMENTS TO AVOID TRIPPING HAZARD.

PLANT LIST

STREETSCAPE TREES (Trees shall be planted a minimum of 5' from the trail shoulder edge)

BOTANICAL NAME	COMMON NAME	PLANT TYPE	QTY	SIZE	TYPE
Ginkgo biloba 'Autumn Gold'	Autumn Gold Ginkgo	TREE	11	2" Cal.	BB
Cercis canadensis	Canadian Red Bud	TREE	3	1-1/2" Cal.	BB
Acer platanoides	Norway Maple	TREE	1	2" Cal.	BB

REINFORCED SOIL SLOPE PLANTING

BOTANICAL NAME	COMMON NAME	PLANT TYPE	QTY	SIZE	TYPE
Gaulteria shallon	Salal	SHRUB	3,500	.39 Gal.	CONT

SEED MIX PALETTE 'A' - ALONG ALEXANDER LANE (SEEDING RATE: 120 LBS PER ACRE)

BOTANICAL NAME	COMMON NAME	PLANT TYPE	QTY	TOTAL
Festuca trachyphylla 'Eureka II'	Eureka II Hard Fescue	Seed	19%	Per plans
Festuca ovina 'Quatro'	Quatro Tetraploid Sheep Fescue	Seed	19%	Per plans
Festuca rubra var commutate	Longfellow 3 Chewings Fescue	Seed	19%	Per plans
Festuca rubra 'Chantilly'	Chantilly Creeping Red Fescue	Seed	19%	Per plans
Festuca rubra trichophylla	Lighthouse Slender Red Fescue	Seed	19%	Per plans
Trifolium repens	White Clover	Seed	5%	Per plans

SEED MIX PALETTE 'B' - EROSION CONTROL ALONG PATH (SEEDING RATE: 40LBS PER ACRE)

BOTANICAL NAME	COMMON NAME	PLANT TYPE	QTY	TOTAL
Elymus glaucus	Blue Wildrye	Seed	39%	Per plans
Bromus carinatus	California Brome	Seed	30%	Per plans
Danthonia californica	California Oatgrass	Seed	10%	Per plans
Festuca roemeri	Roemer's Fescue	Seed	10%	Per plans
Koeleria macrantha	Prairie Junegrass	Seed	11%	Per plans

REGISTERED 627 LANDSCAPE ARCHITECT
Digitally Signed 2020.12.17 15:11:17 -08'00'
MICHAEL W. ROSE
05/11/2021
OREGON

alta
711 SE GRAND AVENUE
PORTLAND, OR 97214
TEL. 503.230.9862
ALTAGO.COM

OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

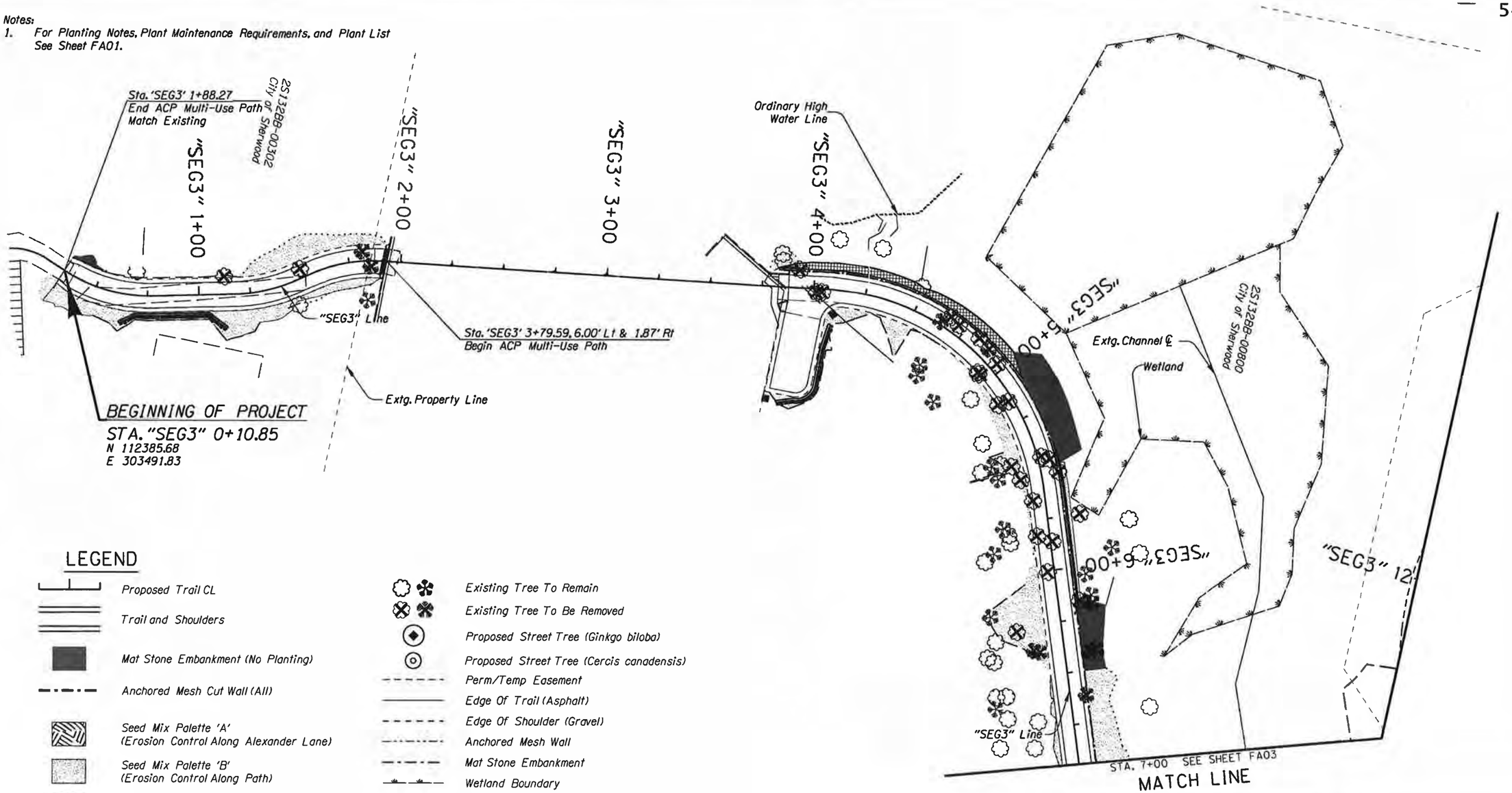
Designer: M STEWART/ J ROSZEL | Reviewer: M ROSE
Drafter: ALTA STAFF | Checker: M ROSE

PLANTING PLAN GENERAL NOTES

SHEET NO. FA01

54V-027

Notes:
1. For Planting Notes, Plant Maintenance Requirements, and Plant List See Sheet FA01.



LEGEND

- Proposed Trail CL
- Trail and Shoulders
- Mat Stone Embankment (No Planting)
- Anchored Mesh Cut Wall (All)
- Seed Mix Palette 'A' (Erosion Control Along Alexander Lane)
- Seed Mix Palette 'B' (Erosion Control Along Path)
- Reinforced Soil Slope
- Existing Tree To Remain
- Existing Tree To Be Removed
- Proposed Street Tree (Ginkgo biloba)
- Proposed Street Tree (Cercis canadensis)
- Perm/Temp Easement
- Edge Of Trail (Asphalt)
- Edge Of Shoulder (Gravel)
- Anchored Mesh Wall
- Mat Stone Embankment
- Wetland Boundary
- Property Line
- Ordinary High Water

N

0 25 50 75
Scale In Feet

REGISTERED LANDSCAPE ARCHITECT
627
2020.12.17 13:38:48 -08'00'
Digitally Signed
MICHAEL W. ROSE
05/11/2021
OREGON

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OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M STEWART/ J ROSZEL | Reviewer: M ROSE
Drafter: ALTA STAFF | Checker: M ROSE

PLANTING PLAN SEGMENT 3

SHEET NO. FA02

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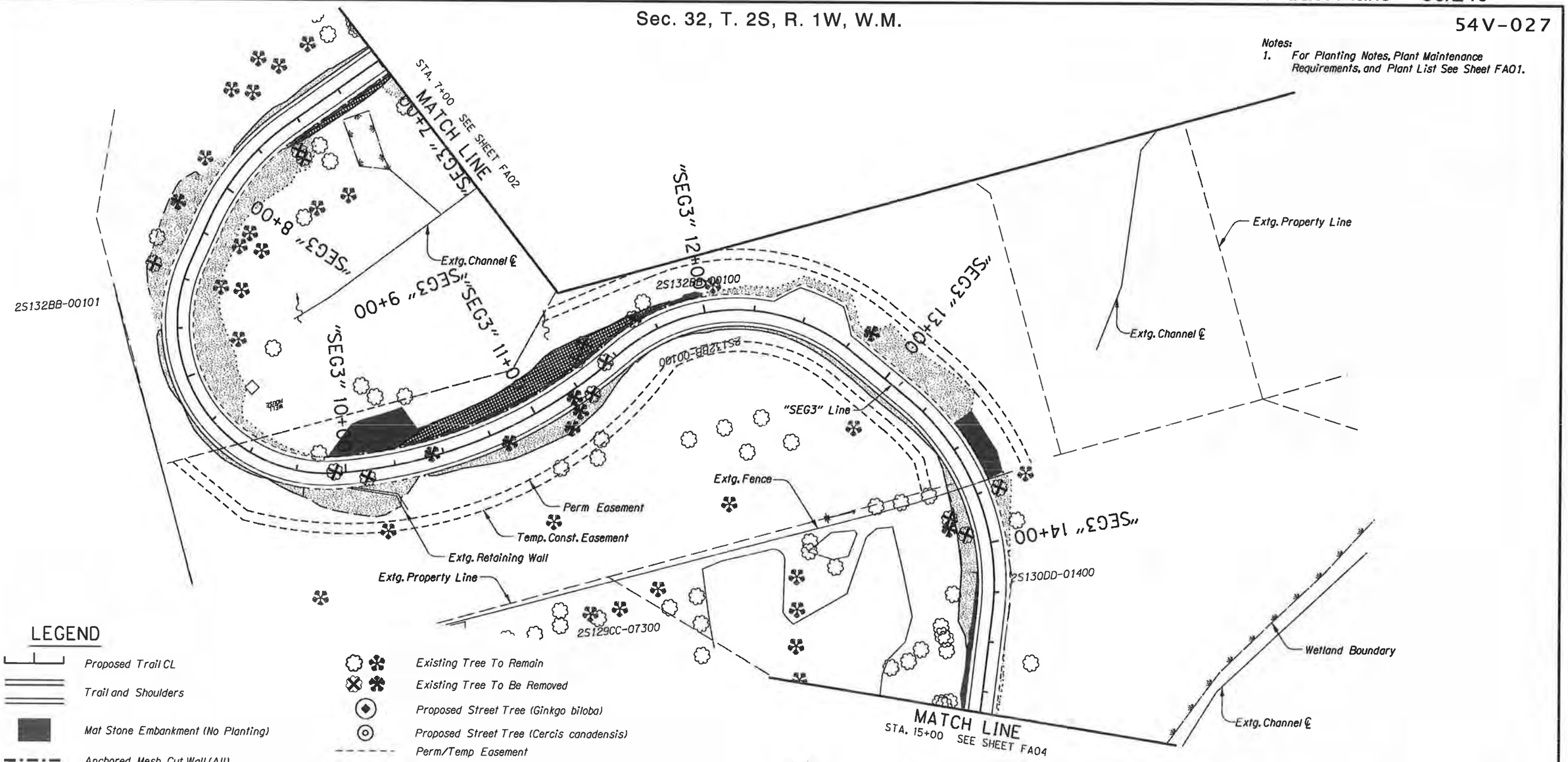
9-DEC-2020 7:32

Sec. 32, T. 2S, R. 1W, W.M.

54V-027

Notes:
1. For Planting Notes, Plant Maintenance Requirements, and Plant List See Sheet FA01.



LEGEND

- Proposed Trail CL
- Trail and Shoulders
- Mat Stone Embankment (No Planting)
- Anchored Mesh Cut Wall (All)
- Seed Mix Palette 'A' (Erosion Control Along Alexander Lane)
- Seed Mix Palette 'B' (Erosion Control Along Path)
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- Edge Of Trail (Asphalt)
- Edge Of Shoulder (Gravel)
- Anchored Mesh Wall
- Mat Stone Embankment
- Wetland Boundary
- Property Line
- Ordinary High Water

N

0 25 50 75
Scale In Feet

REGISTERED 627 LANDSCAPE ARCHITECT
Digitally Signed 2020.12.17 16:15:34 -08'00'
MICHAEL W. ROSE
05/11/2021
OREGON

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711 SE GRAND AVENUE
PORTLAND, OR 97214
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OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M STEWART/ J ROSZEL | Reviewer: M ROSE
Drafter: ALTA STAFF | Checker: M ROSE

PLANTING PLAN SEGMENT 3

SHEET NO. FA03

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9-DEC-2020 8:00

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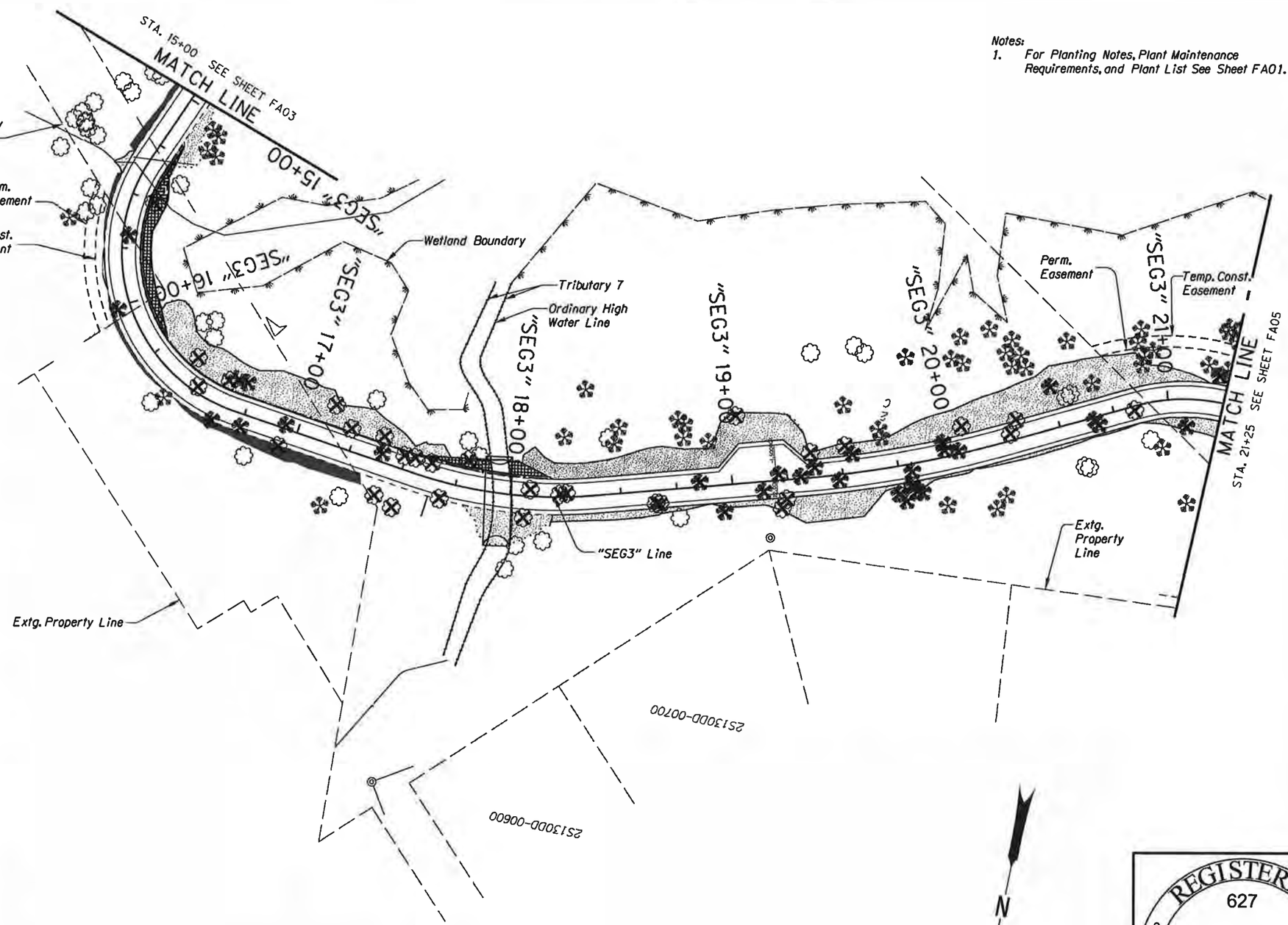
54V-027



Notes:
1. For Planting Notes, Plant Maintenance Requirements, and Plant List See Sheet FA01.

LEGEND

- Proposed Trail CL
- Trail and Shoulders
- Mat Stone Embankment (No Planting)
- Anchored Mesh Cut Wall (All)
- Seed Mix Palette 'A' (Erosion Control Along Alexander Lane)
- Seed Mix Palette 'B' (Erosion Control Along Path)
- Reinforced Soil Slope
- Existing Tree To Remain
- Existing Tree To Be Removed
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- Edge Of Trail (Asphalt)
- Edge Of Shoulder (Gravel)
- Anchored Mesh Wall
- Mat Stone Embankment
- Wetland Boundary
- Property Line
- Ordinary High Water

REGISTERED LANDSCAPE ARCHITECT
627
Digitally Signed 2020.12.17 13:37:25 -08'00'
MICHAEL W. ROSE
05/11/2021
OREGON

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711 SE GRAND AVENUE
PORTLAND, OR 97214
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STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M STEWART/ J ROSZEL Reviewer: M ROSE
Drafter: ALTA STAFF Checker: M ROSE

PLANTING PLAN SEGMENT 3

SHEET NO. FA04

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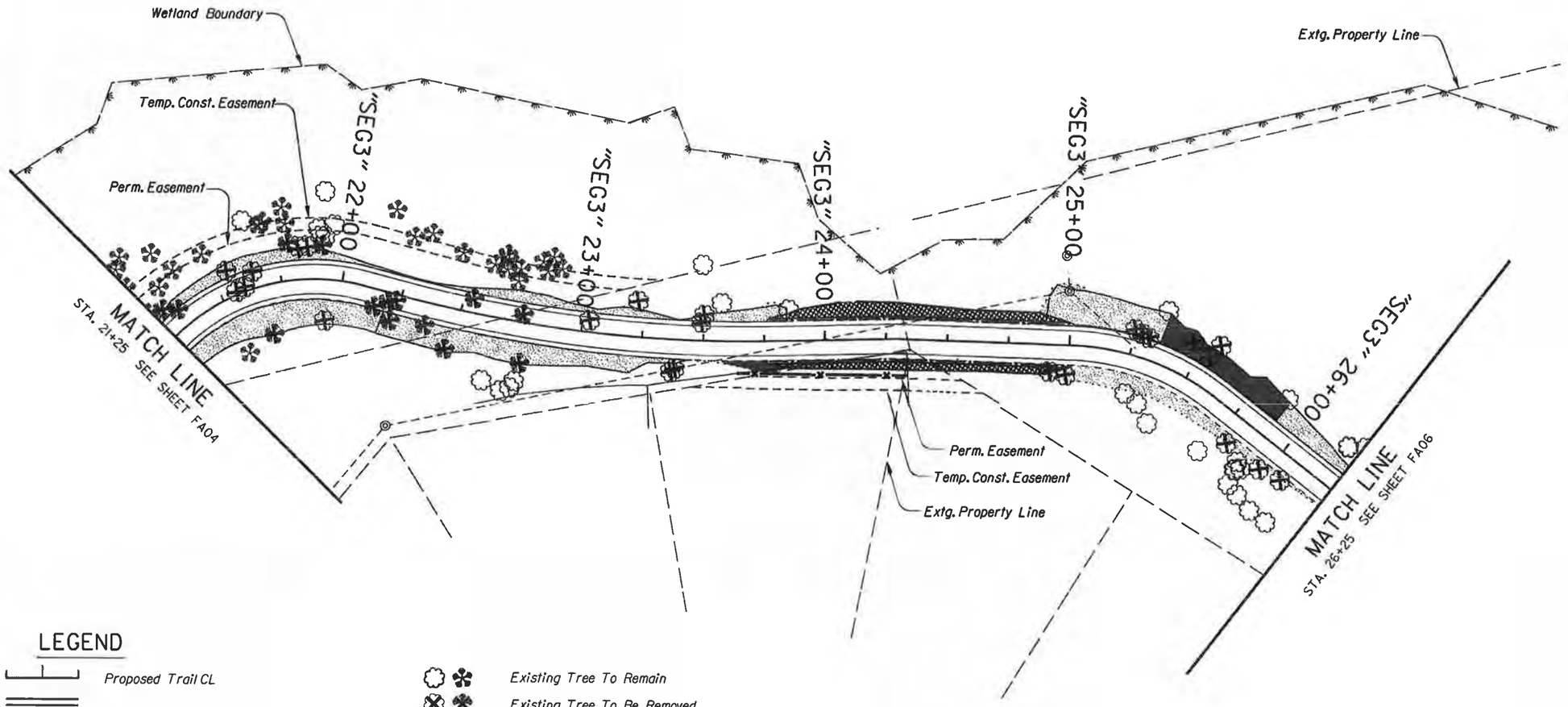
54V-027



Notes:

1. For Planting Notes, Plant Maintenance Requirements, and Plant List See Sheet FA01.

LEGEND

- Proposed Trail CL
- Trail and Shoulders
- Mat Stone Embankment (No Planting)
- Anchored Mesh Cut Wall (All)
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- Seed Mix Palette 'B' (Erosion Control Along Path)
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- Edge Of Trail (Asphalt)
- Edge Of Shoulder (Gravel)
- Anchored Mesh Wall
- Mat Stone Embankment
- Wetland Boundary
- Property Line
- Ordinary High Water

N

0 25 50 75

Scale In Feet

REGISTERED LANDSCAPE ARCHITECT
627
Digitally Signed 2020.12.17 13:35:30 -08'00'
MICHAEL W. ROSE
05/11/2021
OREGON

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711 SE GRAND AVENUE
PORTLAND, OR 97214
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STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M STEWART/ J ROSZEL | Reviewer: M ROSE
Drafter: ALTA STAFF | Checker: M ROSE

PLANTING PLAN
SEGMENT 3

SHEET NO. FA05

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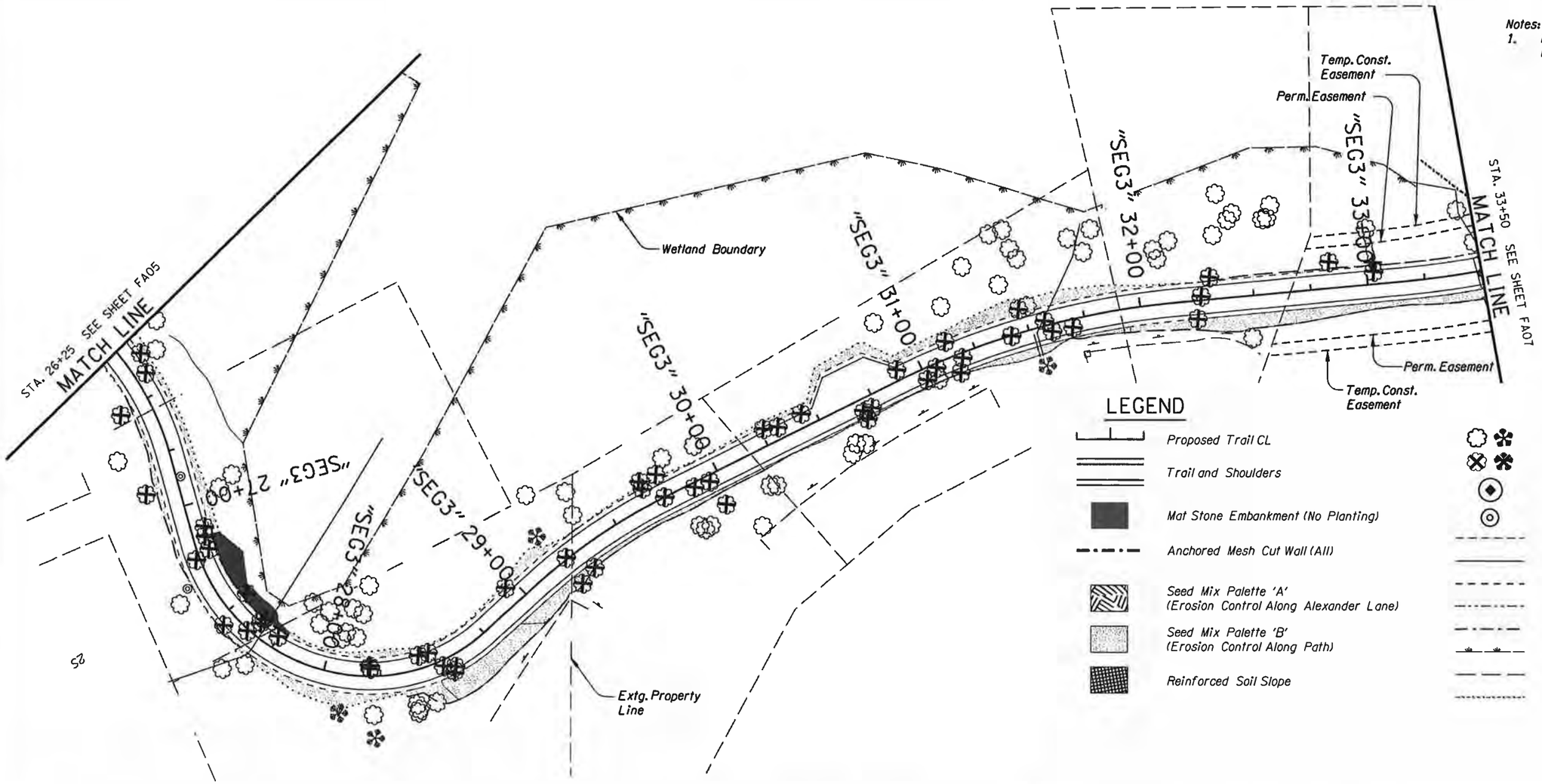
54V-027



Notes:
1. For Planting Notes, Plant Maintenance Requirements, and Plant List See Sheet FA01.

LEGEND

- Proposed Trail CL
- Trail and Shoulders
- Mat Stone Embankment (No Planting)
- Anchored Mesh Cut Wall (All)
- Seed Mix Palette 'A' (Erosion Control Along Alexander Lane)
- Seed Mix Palette 'B' (Erosion Control Along Path)
- Reinforced Soil Slope
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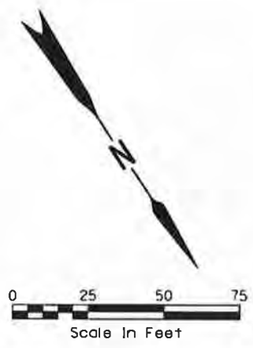
- Edge Of Trail (Asphalt)
- Edge Of Shoulder (Gravel)
- Anchored Mesh Wall
- Mat Stone Embankment
- Wetland Boundary
- Property Line
- Ordinary High Water



REGISTERED LANDSCAPE ARCHITECT
627
Digitally Signed 2020.12.17 13:32:34 -08'00'
MICHAEL W. ROSE
05/11/2021
OREGON

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STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

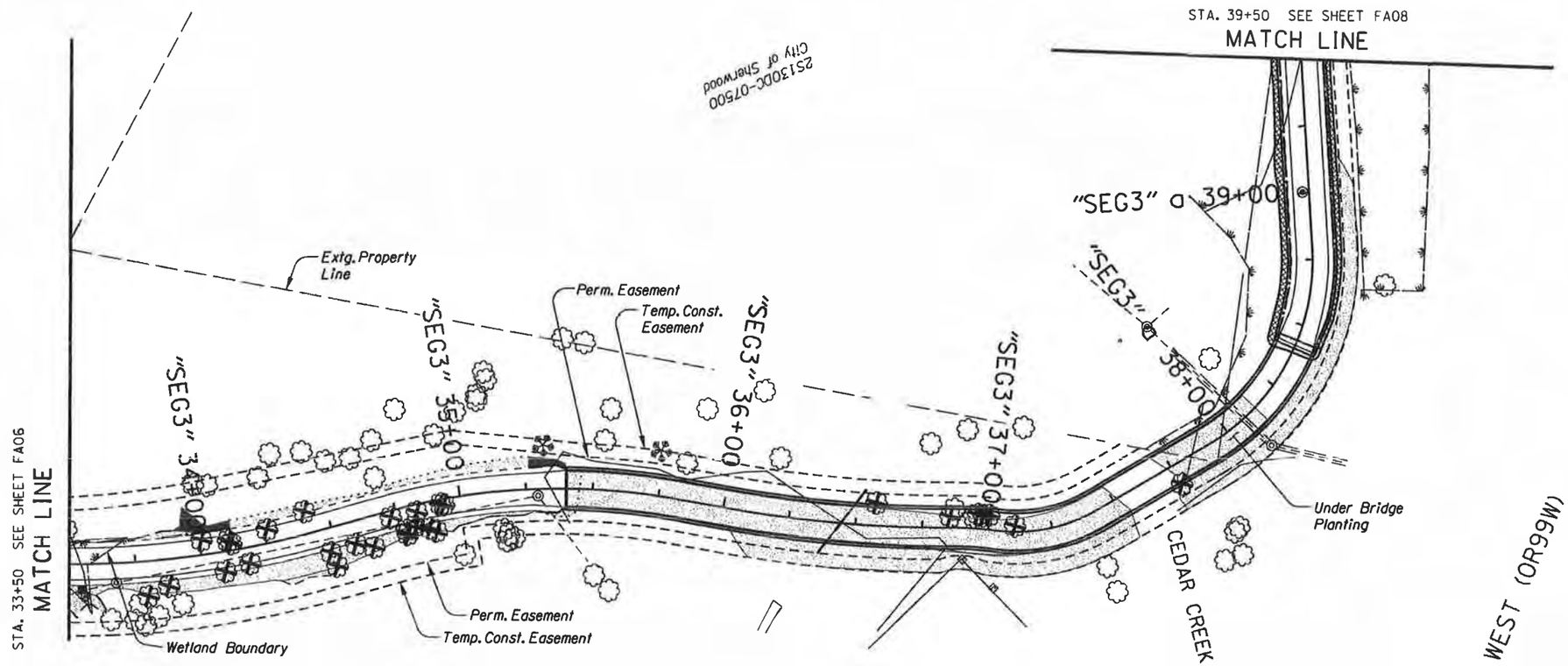
Designer: M STEWART/ J ROSZEL
Reviewer: M ROSE
Drafter: ALTA STAFF
Checker: M ROSE

PLANTING PLAN
SEGMENT 3

SHEET NO.
FA06

Sec. 30, T. 2S, R. 1W, W.M.

Notes:
1. For Planting Notes, Plant Maintenance Requirements, and Plant List See Sheet FA01.



LEGEND

- Proposed Trail CL
- Trail and Shoulders
- Mat Stone Embankment (No Planting)
- Anchored Mesh Cut Wall (All)
- Seed Mix Palette 'A' (Erosion Control Along Alexander Lane)
- Seed Mix Palette 'B' (Erosion Control Along Path)
- Reinforced Soil Slope
- Existing Tree To Remain
- Existing Tree To Be Removed
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- Perm/Temp Easement
- Edge Of Trail (Asphalt)
- Edge Of Shoulder (Gravel)
- Anchored Mesh Wall
- Mat Stone Embankment
- Wetland Boundary
- Property Line
- Ordinary High Water

REGISTERED LANDSCAPE ARCHITECT
627
2020.12.17 13:36:40 -08'00'
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STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL:
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PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M STEWART/ J ROSZEL | Reviewer: M ROSE
Drafter: ALTA STAFF | Checker: M ROSE

PLANTING PLAN
SEGMENT 3

SHEET NO.
FA07

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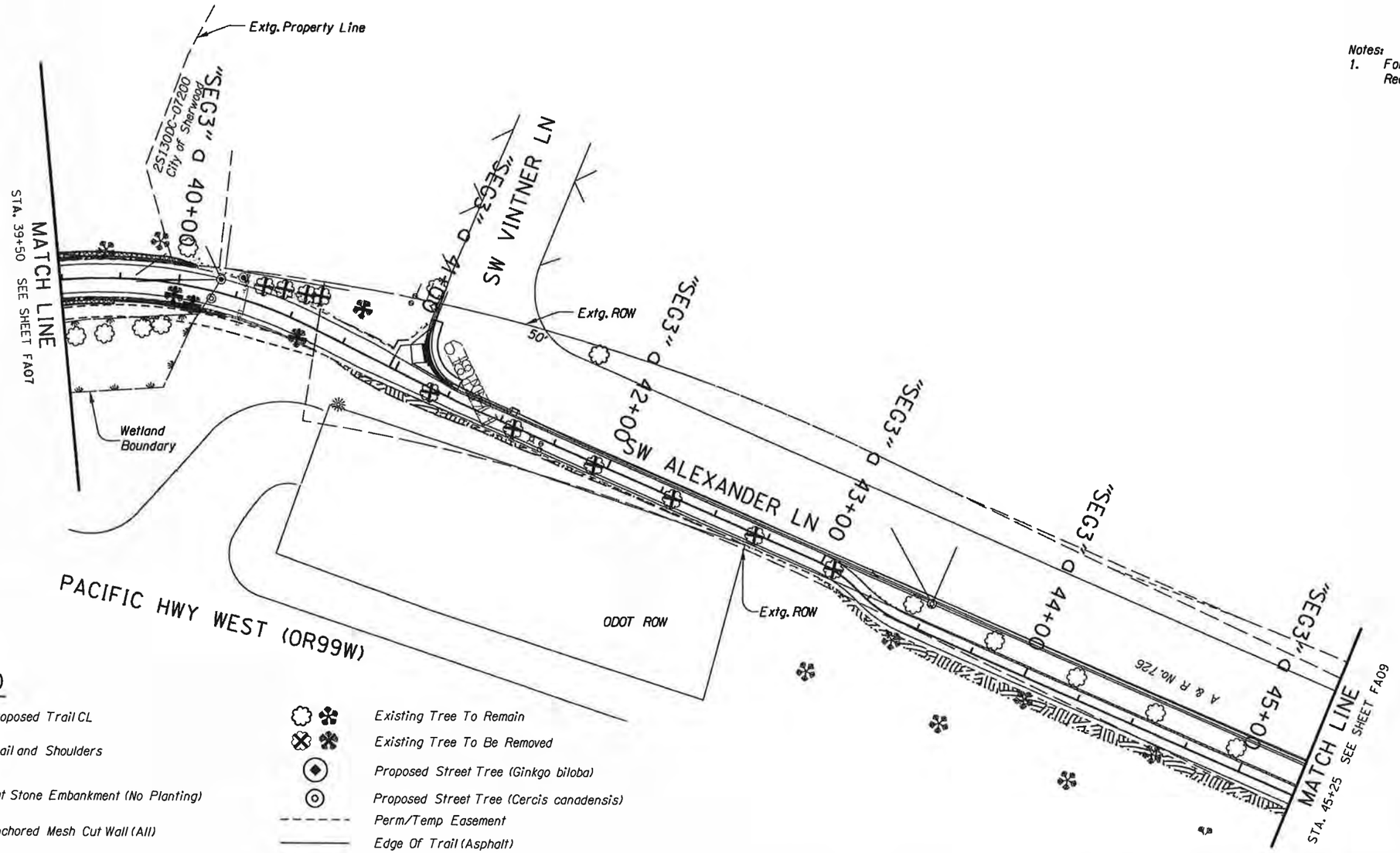
54V-027

Notes:
1. For Planting Notes, Plant Maintenance Requirements, and Plant List See Sheet FA01.



LEGEND

- Proposed Trail CL
- Trail and Shoulders
- Mat Stone Embankment (No Planting)
- Anchored Mesh Cut Wall (All)
- Seed Mix Palette 'A' (Erosion Control Along Alexander Lane)
- Seed Mix Palette 'B' (Erosion Control Along Path)
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- Proposed Street Tree (Cercis canadensis)
- Perm/Temp Easement
- Edge Of Trail (Asphalt)
- Edge Of Shoulder (Gravel)
- Anchored Mesh Wall
- Mat Stone Embankment
- Wetland Boundary
- Property Line
- Ordinary High Water
- Replacement Tree (Acer Platanoides)

N

0 25 50 75
Scale In Feet

REGISTERED 627 LANDSCAPE ARCHITECT
2020.12.17 Digitally Signed 13:38:07 -08'00'
MICHAEL W. ROSE
05/11/2021
OREGON

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PORTLAND, OR 97214
TEL. 503.230.9862
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STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M STEWART/ J ROSZEL Reviewer: M ROSE
Drafter: ALTA STAFF Checker: M ROSE

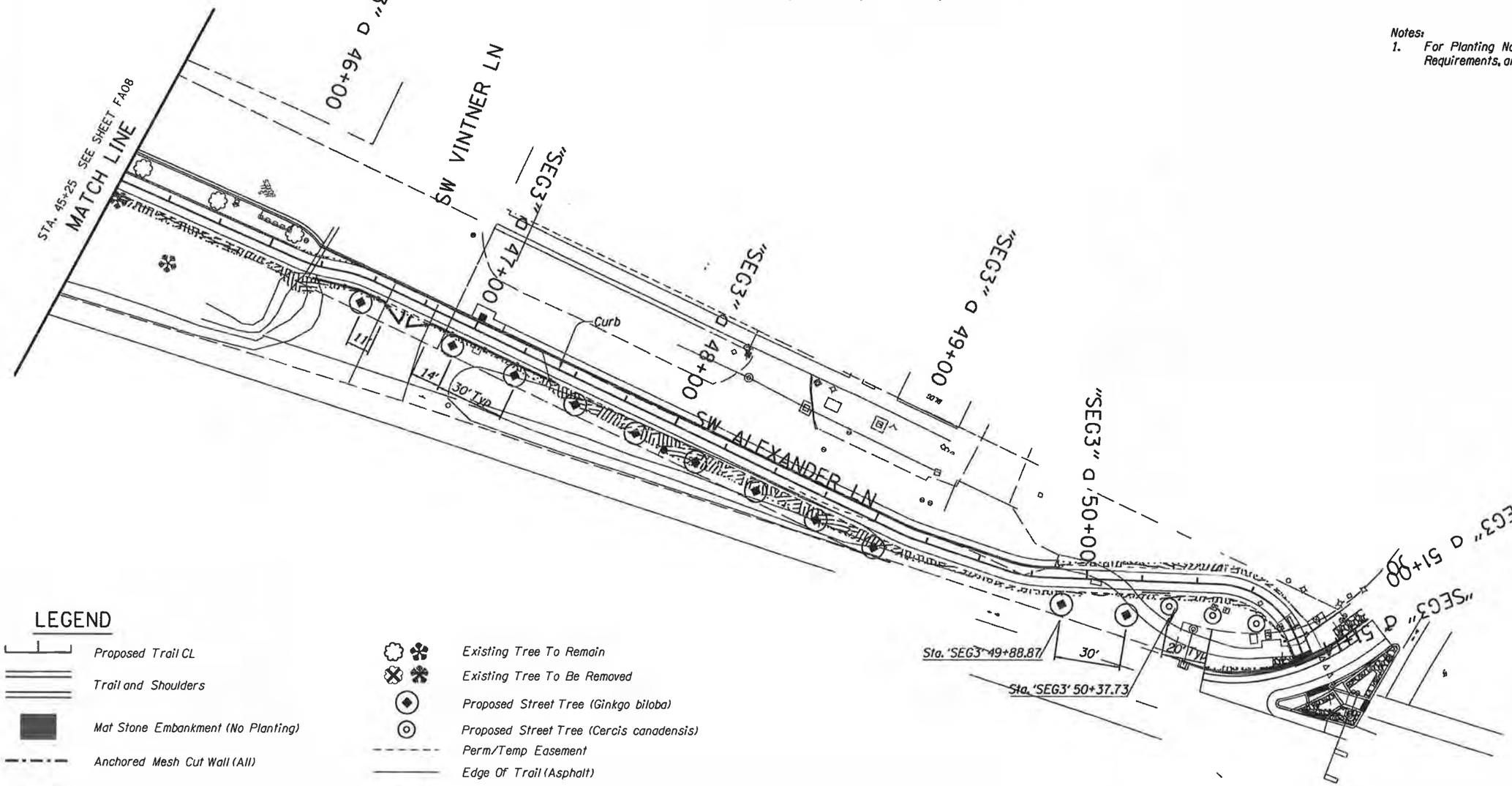
PLANTING PLAN
SEGMENT 3

SHEET NO.
FA08

54V-027

Sec. 30, T. 2S, R. 1W, W.M.

Notes:
1. For Planting Notes, Plant Maintenance Requirements, and Plant List See Sheet FA01.



LEGEND

- Proposed Trail CL
- Trail and Shoulders
- Mat Stone Embankment (No Planting)
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- Anchored Mesh Wall
- Mat Stone Embankment
- Wetland Boundary
- Property Line
- Ordinary High Water

N

0 25 50 75
Scale In Feet

REGISTERED 627 LANDSCAPE ARCHITECT
Digitally Signed 2020.12.17 13:33:20 -08'00'
MICHAEL W. ROSE
05/11/2021
OREGON

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PORTLAND, OR 97214
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OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M STEWART/ J ROSZEL Reviewer: M ROSE
Drafter: ALTA STAFF Checker: M ROSE

PLANTING PLAN
SEGMENT 3

SHEET NO. FA09

THIS IS THE FILENAME LOCATION

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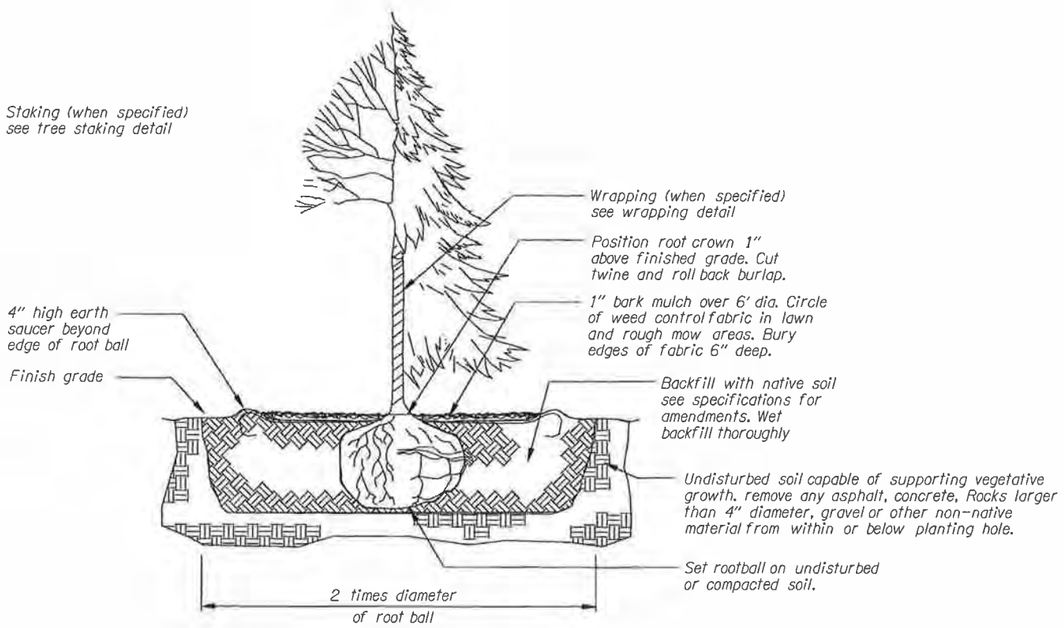
9-DEC-2020 8:53

PLANTING PLAN
DETAILS

General Planting Notes:

* *Ensure that trees are planted beyond the "clear zone". verify with the engineer prior to planting.*
* *Adjust planting locations so that vegetation doesn't conflict with above – or below-ground utilities.*
* *Locate underground utility lines prior to digging tree holes.*
* *Adjust plant locations to avoid conflict with traffic sight lines and signs or other appurtenances.*
* *See 'American Standard For Nursery Stock' for plant quality minimum standards such as size of root ball or caliper of trunk.*
* *All dimensions shown on details are minimum dimensions.*
* *See plant list or special provisions for plant material that may need to be wild-collected or contract-grown.*



TREE PLANTING

(All Forms Except Bareroot)

STREET TREE STAKING NOTES:

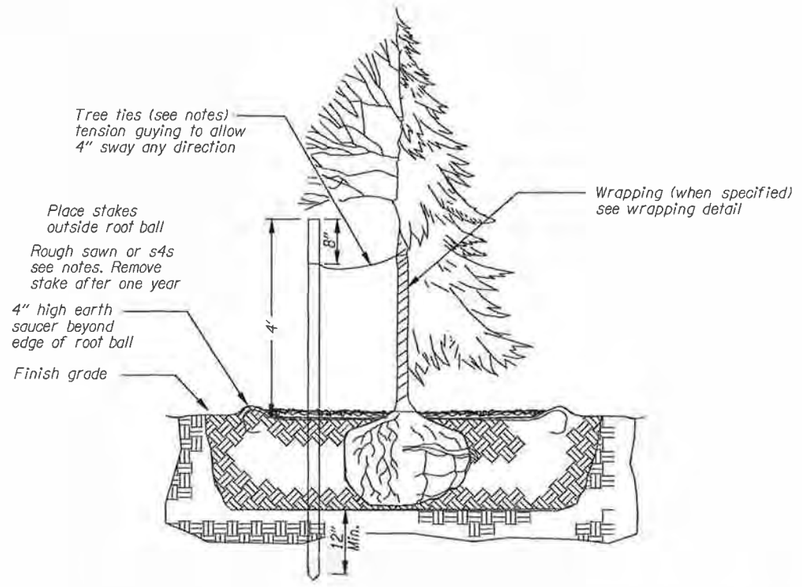
Furnish tree stakes on all street tree plantings. Stakes to be construction grade, rough sawn or finished douglas fir or pine. stain with an approved green penetrating oil. Stake size is to be 1 "x1 " by the following lengths:

- *Trees 36" and shorter - use one - 6' (approx.) stake.*
- *Trees taller than 36" - use two - 8' (approx.) stakes.*

Drive stakes vertically and at least 12" into undisturbed soil. Do not drive stakes thru root ball. Locate stakes to best resist prevailing winds where possible.

Tree ties to be either:

- *Plastic chain type, approximately 1" width by 1/8" depth. Where two stakes are required, cross the ties between stakes and wrap tie once around tree. Fasten securely to stake.*
- *Rigid guy system as manufactured by Alpine Nursery, Boring, Oregon. The galvanized wire is to be approximately 1/8" in thickness and 24" in length. there is to be a plastic sleeve over the portion that goes around the tree. The wire tie is to go thru the wood stake and be securely fastened.*



TREE STAKING DETAIL

(All Forms Except Bareroot)

REGISTERED LANDSCAPE ARCHITECT
627
2020.12.17 13:34:47 -08'00'
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MICHAEL W. ROSE
05/11/2021
OREGON

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ALTAGO.COM

OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M STEWART/ J ROSZEL | Reviewer: M ROSE
Drafter: ALTA STAFF | Checker: M ROSE

PLANTING PLAN
DETAILS

SHEET NO.
FA10

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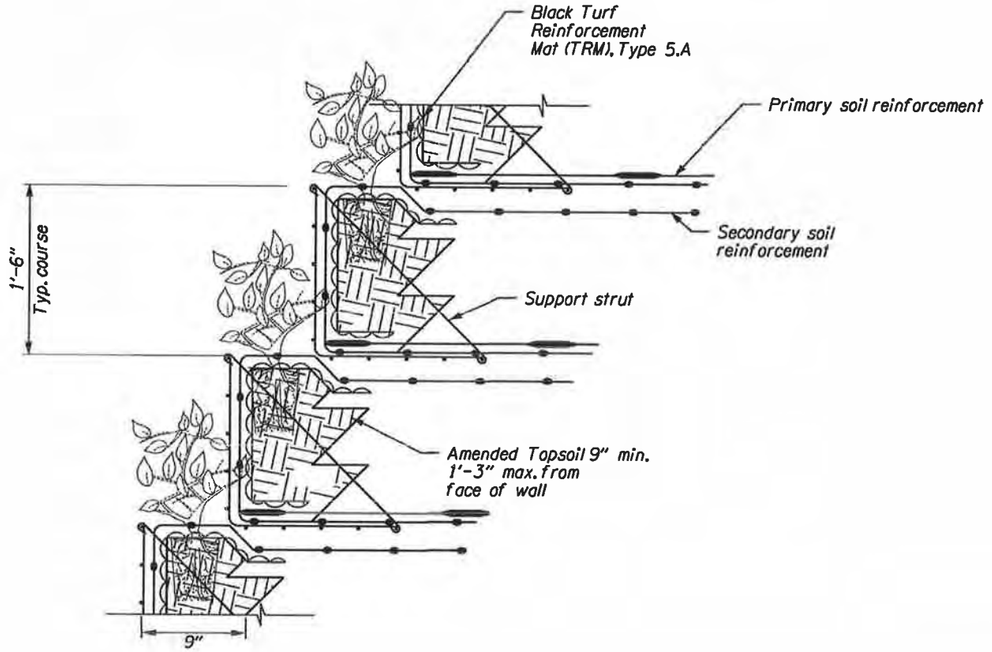

REINFORCED SOIL SLOPE
PLANTING DETAIL

0 25 50 75
Scale In Feet

REGISTERED
627
2020.12.17
Digitally Signed 13:36:08
-08'00'
MICHAEL W. ROSE
05/11/2021
OREGON
LANDSCAPE ARCHITECT

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OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M STEWART/ J ROSZEL Reviewer: M ROSE
Drafter: ALTA STAFF Checker: M ROSE

REINFORCED SOIL
SLOPE WALL

SHEET NO.
FA11

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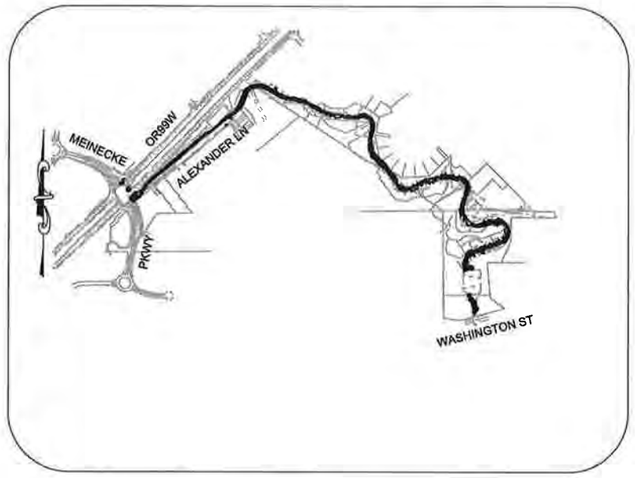
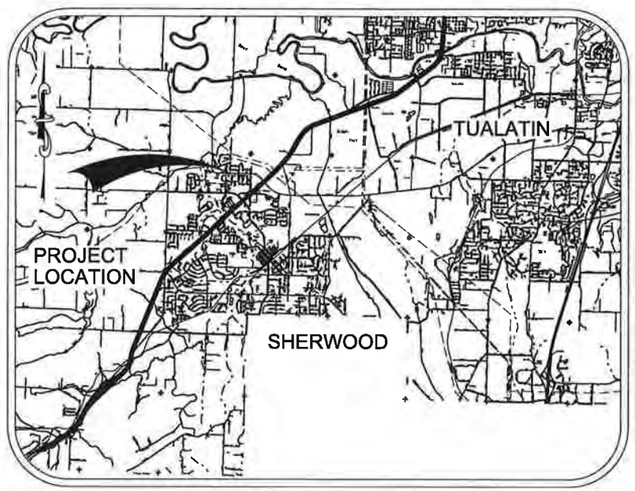
54V-027

ESC PLAN FOR SITES 1 TO 5 ACRES



SITE MAP NOT TO SCALE



VICINITY MAP NOT TO SCALE

PROJECT LOCATION:

NEAR THE STELLA OLSEN MEMORIAL PARK
22256 WASHINGTON ST, WASHINGTON COUNTY, OREGON 97140
LATITUDE = 45° 21'32.03" N, LONGITUDE = 122° 50'44.62" W

PROPERTY DESCRIPTION:

LOCATED IN SECTION 29, 30, 32 TOWNSHIP 2 SOUTH, RANGE 1 WEST, WILLAMETTE MERIDIAN, WASHINGTON COUNTY, OREGON

ATTENTION EXCAVATORS:

OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THESE RULES FROM THE CENTER BY CALLING 503-232-1987. IF YOU HAVE ANY QUESTIONS ABOUT THE RULES, YOU MAY CONTACT THE CENTER. YOU MUST NOTIFY THE CENTER AT LEAST TWO BUSINESS DAYS, BEFORE COMMENCING AN EXCAVATION. CALL 503-246-6699.

DEVELOPER

DEVELOPER/COMPANY: CITY OF SHERWOOD
CONTACT: JASON WATERS
22560 SW PINE ST
SHERWOOD, OR 97140
PHONE: 503-925-2304

PLANNING / ENGINEERING / SURVEYING FIRM

ENGINEERING & SURVEY FIRM: JACOBS
CONTACT: MATTHEW LITTLE
2020 SW 4TH AVENUE, THIRD FLOOR
PORTLAND, OR 97201
EMAIL: MATTHEW.LITTLE@JACOBS.COM
PHONE: 541-768-3339

NARRATIVE DESCRIPTIONS

EXISTING SITE CONDITIONS

PROJECT SITE EXTENDS FROM AN EXISTING PARK ON WASHINGTON ST TO THE INTERSECTION OF HWY 99 AND MEINECKE RD. APPROX 2/3 OF SITE IS WITHIN A HEAVILY VEGETATED NATURAL DRAINAGE WAY AND APPROX 1/3 IS ALONG THE RESIDENTIAL ST, ALEXANDER LN.

DEVELOPED CONDITIONS

CONSTRUCTION OF A NEW PAVED MULTI-USE PATH CONNECTING THE EXISTING PARK ON WASHINGTON ST WITH THE INTERSECTION OF MEINECKE RD AND HWY 99.

NATURE OF CONSTRUCTION ACTIVITY AND ESTIMATED TIME TABLE

* CLEARING (WINTER 2021)
* MASS GRADING (SPRING 2021)
* UTILITY INSTALLATION (SPRING 2021)
* STREET CONSTRUCTION (SUMMER 2021)
* FINAL STABILIZATION (SUMMER 2021)

TOTAL SITE AREA = 414,000 SF = 9.50 ACRES

TOTAL DISTURBED AREA = 195,000 SF = 4.48 ACRES

SITE SOIL CLASSIFICATION:

MOST SOIL IS HILLSBORO LOAM. ALSO PREVALENT ARE MCBEE SILTY CLAY LOAM, ALOHA SILT LOAM, AND XEROCHREPTS AND HAPLOXEROLLS. DRAINAGE VARIES FROM WELL DRAINED TO SOMEWHAT POORLY DRAINED. MOST SOIL IS HYDROLOGIC SOIL GROUP B OR C WITH MODERATE TO SLOW INFILTRATION RATES.

ON-SITE SOILS SHALL BE ASSUMED TO HAVE A HIGH EROSION POTENTIAL.
ALL FILL MATERIAL SHALL BE GENERATED ON-SITE FROM GRADING EXCAVATION AND UTILITY TRENCH SPOILS.

RECEIVING WATER BODIES:

CEDAR CREEK

INSPECTION FREQUENCY:

SITE CONDITION	MINIMUM FREQUENCY
1. ACTIVE PERIOD	WEEKLY WHEN STORMWATER RUNOFF, INCLUDING RUNOFF FROM SNOW MELT, IS OCCURRING. AT LEAST ONCE EVERY MONTH, REGARDLESS OF WHETHER STORMWATER RUNOFF IS OCCURRING.
2. PRIOR TO THE SITE BECOMING INACTIVE OR IN ANTICIPATION OF SITE INACCESSIBILITY.	ONCE TO ENSURE THAT EROSION AND SEDIMENT CONTROL MEASURES ARE IN WORKING ORDER. ANY NECESSARY MAINTENANCE AND REPAIR MUST BE MADE PRIOR TO LEAVING THE SITE.
3. INACTIVE PERIODS GREATER THAN FOURTEEN (14) CONSECUTIVE CALENDAR DAYS.	ONCE EVERY MONTH.
4. PERIODS DURING WHICH THE SITE IS INACCESSIBLE DUE TO INCLEMENT WEATHER.	IF PRACTICAL, INSPECTIONS MUST OCCUR DAILY AT A RELEVANT AND ACCESSIBLE DISCHARGE POINT OR DOWNSTREAM LOCATION.
5. PERIODS DURING WHICH DISCHARGE IS UNLIKELY DUE TO FROZEN CONDITIONS.	MONTHLY. RESUME MONITORING IMMEDIATELY UPON MELT, OR WHEN WEATHER CONDITIONS MAKE DISCHARGES LIKELY.

* HOLD A PRE-CONSTRUCTION MEETING OF PROJECT CONSTRUCTION PERSONNEL THAT INCLUDES THE INSPECTOR TO DISCUSS EROSION AND SEDIMENT CONTROL MEASURES AND CONSTRUCTION LIMITS.
* ALL INSPECTIONS MUST BE MADE IN ACCORDANCE WITH DEQ 1200-CN PERMIT REQUIREMENTS
* INSPECTION LOGS MUST BE KEPT IN ACCORDANCE WITH DEQ'S 1200-CN PERMIT REQUIREMENTS.
* RETAIN A COPY OF THE ESCP AND ALL REVISIONS ON SITE AND MAKE IT AVAILABLE ON REQUEST TO DEQ, AGENT, OR THE LOCAL MUNICIPALITY DURING INACTIVE PERIODS OF GREATER THAN SEVEN (7) CONSECUTIVE CALENDAR DAYS. RETAIN THE ESCP AT THE CONSTRUCTION SITE OR AT ANOTHER LOCATION

STANDARD EROSION AND SEDIMENT CONTROL PLAN DRAWING NOTES:

1. All permit registrants must implement the ESCP. Failure to implement any of the control measures or practices described in the ESCP is a violation of the permit.
2. The ESCP measures shown on this plan are minimum requirements for anticipated site conditions. During the construction period, upgrade these measures as needed to comply with all applicable local, state, and federal erosion and sediment control regulations.
3. Submission of all ESCP revisions is not required. Submittal of the ESCP revisions is only under specific conditions. Submit all necessary revision to DEQ or Agent.
4. Phase clearing and grading to the maximum extent practical to prevent exposed inactive areas from becoming a source of erosion.
5. Identify, mark, and protect (by fencing off or other means) critical riparian areas and vegetation including important trees and associated rooting zones, and vegetation areas to be preserved. Identify vegetative buffer zones between the site and sensitive areas (e.g., wetlands), and other areas to be preserved, especially in perimeter areas.
6. Preserve existing vegetation when practical and re-vegetate open areas. Re-vegetate open areas when practicable before and after grading or construction. Identify the type of vegetative seed mix used.
7. Erosion and sediment control measures including perimeter sediment control must be in place before vegetation is disturbed and must remain in place and be maintained, repaired, and promptly implemented following procedures established for the duration of construction, including protection for active storm drain inlets and catch basins and appropriate non-stormwater pollution controls.
8. Establish concrete truck and other concrete equipment washout areas before beginning concrete work. Direct all wash water into a pit or leak-proof container. Handle wash water as waste. concrete discharge to waters of the state is prohibited
9. Apply temporary and/or permanent soil stabilization measures immediately on all disturbed areas as grading progresses and for all roadways including gravel roadways.
10. Establish material and waste storage areas, and other non-stormwater controls
11. Prevent tracking of sediment onto public or private roads using BMPs such as: graveled (or paved) exits and parking areas, gravel all unpaved roads located onsite, or use an exit tire wash. These BMPs must be in place prior to land-disturbing activities.
12. When trucking saturated soils from the site, either use water-tight trucks or drain loads on site.
13. Use BMPs to prevent or minimize stormwater exposure to pollutants from spills; vehicle and equipment fueling, maintenance, and storage; other cleaning and maintenance activities; and waste handling activities. These pollutants include fuel, hydraulic fluid, and other oils from vehicles and machinery, as well as debris, leftover paints, solvents, and glues from construction operations.
14. Implement the following BMPs when applicable: written spill prevention and response procedures, employee training on spill prevention and proper disposal procedures, spill kits in all vehicles, regular maintenance schedule for vehicles and machinery, material delivery and storage controls, training and signage, and covered storage areas for waste and supplies
15. Use water, soil-binding agent or other dust control technique as needed to avoid wind-blown soil
16. The application rate of fertilizers used to reestablish vegetation must follow manufacturer's recommendations to minimize nutrient releases to surface waters. Exercise caution when using time-release fertilizers within any waterway riparian zone.
17. If a stormwater treatment system (for example, electro-coagulation, flocculation, filtration, etc.) for sediment or other pollutant removal is employed, submit an operation and maintenance plan (including system schematic, location of system, location of inlet, location of discharge, discharge dispersion device design, and a sampling plan and frequency) before operating the treatment system. Obtain plan approval before operating the treatment system. Operate and maintain the treatment system according to manufacturer's specifications
18. At the end of each workday soil stockpiles must be stabilized or covered, or other BMPs must be implemented to prevent discharges to surface waters or conveyance systems leading to surface waters.
19. Construction activities must avoid or minimize excavation and creation of bare ground during wet weather October 01 – May 31
20. Sediment fence: remove trapped sediment before it reaches one third of the above ground fence height and before fence removal
21. Other sediment barriers (such as biobags): remove sediment before it reaches two inches depth above ground height, and before BMP removal.
22. Catch basins: clean before retention capacity has been reduced by fifty percent. Sediment basins and sediment traps: remove trapped sediments before design capacity has been reduced by fifty percent and at completion of project.
23. Within 24 hours, significant sediment that has left the construction site, must be remediated. Investigate the cause of the sediment release and implement steps to prevent a recurrence of the discharge within the same 24 hours. Any in-stream clean up of sediment shall be performed according to the Oregon Division of State Lands required timeframe
24. The intentional washing of sediment into storm sewers or drainage ways must not occur. Vacuuming or dry sweeping and material pickup must be used to cleanup released sediments
25. Provide permanent erosion control measures on all exposed areas. Do not remove temporary sediment control practices until permanent vegetation or other cover of exposed areas is established. However, do remove all temporary erosion control measures as exposed areas become stabilized, unless doing so conflicts with local requirements. Properly dispose of construction materials and waste, including sediment retained by temporary BMPs
26. If vegetative seed mixes are specified, seeding must take place no later that September 1; the type and percentages of seed in the mix must be identified on the plans
27. All pumping of sediment laden water shall be discharged over an undisturbed, preferably vegetated area, and through a sediment control BMP i.e. (filter bag)
28. All exposed soils must be covered during the wet weather period, October 01 – May 31.
29. If water of the state is within the project site or within 50 feet of the project boundary, maintain the existing natural buffer within the 50-foot zone for the duration of the permit coverage, or maintain less than the entire existing natural buffer and provide additional erosion and sediment control BMPs
30. Do not apply herbicide within 100-FT of the ordinary high water of Cedar Creek and its tributaries.
31. ODOT Standard Drawing borders and Erosion Control Details are used since the project is an ODOT Local Agency project

SHEET INDEX

EROSION AND SEDIMENT CONTROL PLANS

THE PERMITTEE IS REQUIRED TO MEET ALL THE CONDITIONS OF THE 1200-CN PERMIT. THIS ESCP AND GENERAL CONDITIONS HAVE BEEN DEVELOPED TO FACILITATE COMPLIANCE WITH THE 1200-CN PERMIT REQUIREMENTS. IN CASES OF DISCREPANCIES OR OMISSIONS, THE 1200-CN PERMIT REQUIREMENTS SUPERCEDE REQUIREMENTS OF THIS PLAN.

BMP MATRIX FOR CONSTRUCTION PHASES

REFER TO DEQ GUIDANCE MANUAL FOR A COMPREHENSIVE LIST OF AVAILABLE BMP'S.

BMP MATRIX FOR CONSTRUCTION PHASES
REFER TO DEQ GUIDANCE MANUAL FOR A COMPREHENSIVE LIST OF AVAILABLE BMP'S

	CLEARING	MASS GRADING	UTILITY INSTALLATION	STREET CONSTRUCTION	FINAL STABILIZATION	WET WEATHER (OCT. 1 - MAY 31ST)
EROSION PREVENTION						
PRESERVE NATURAL VEGETATION*	X					X
GROUND COVER						X
MULCH/BLOWN APPLICATIONS		X			X	
PLASTIC SHEETING		X				
MATTING		X			X	
DUST CONTROL		X	X	X		
TEMPORARY/PERMANENT SEEDING		X			X	X
BUFFER ZONE**	X	X				
OTHER:						
SEDIMENT CONTROL						
SEDIMENT FENCE (PERIMETER)*	X	X	X		X	X
SEDIMENT FENCE (INTERIOR)	X	X	X			
COMPOST SOCK**		X	X			X
SILT FENCE/CHAIN	X	X	X	X		
OTHER:						
RUN OFF CONTROL						
CONSTRUCTION ENTRANCE**	X	X	X	X		X
OUTLET PROTECTION	X	X	X	X		X
SURFACE ROUGHENING		X		X		
CHECK DAMS	X	X				X
OTHER:						
POLLUTION PREVENTION						
PROPER SIGNAGE	X	X	X	X		X
HAZ WASTE MANAGEMENT						
SPILL KIT ON-SITE	X	X	X	X		
CONCRETE WASHOUT AREA		X	X	X		
OTHER:						

** SIGNIFIES BMP THAT WILL BE INSTALLED PRIOR TO ANY GROUND DISTURBING ACTI

* SIGNIFIES ADDITIONAL BMP'S REQUIRED FOR WORK WITHIN 50' OF WATER OF THE STATE
** SIGNIFIES BMP THAT WILL BE INSTALLED PRIOR TO ANY GROUND DISTURBING ACTIVITY.

RATIONALE STATEMENT

A COMPREHENSIVE LIST OF AVAILABLE BEST MANAGEMENT PRACTICES (BMP) OPTIONS BASED ON DEQ's GUIDANCE MANUAL HAS BEEN REVIEWED TO COMPLETE THIS EROSION AND SEDIMENT CONTROL PLAN. SOME OF THE ABOVE LISTED BMP's WERE NOT CHOSEN BECAUSE THEY WERE DETERMINED TO NOT EFFECTIVELY MANAGE EROSION PREVENTION AND SEDIMENT CONTROL FOR THIS PROJECT BASED ON SPECIFIC SITE CONDITIONS, INCLUDING SOIL CONDITIONS TOPOGRAPHIC CONSTRAINTS, ACCESSIBILITY TO THE SITE, AND OTHER RELATED CONDITIONS, AS THE PROJECT PROGRESSES AND THERE IS A NEED TO REVISE THE ESC PLAN, AN ACTION PLAN WILL BE SUBMITTED.

INITIAL

PERMITTEE'S SITE INSPECTOR: Jason Waters, PE
COMPANY/AGENCY: City of Sherwood, Engineering Department
PHONE: 503-925-2304
FAX: 503-625-0629
E-MAIL: waters@sherwoodoregon.gov
DESCRIPTION OF EXPERIENCE: 17 years of General Site Development and Oversight of ESC Plans, Site Inspections, and Use of Approved BMPs. CESCL Certification ID# ECO-3-6071947

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020.12.17 22:18:35-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: S Mader
Drafter: M Wainscott | Checker: S Mader

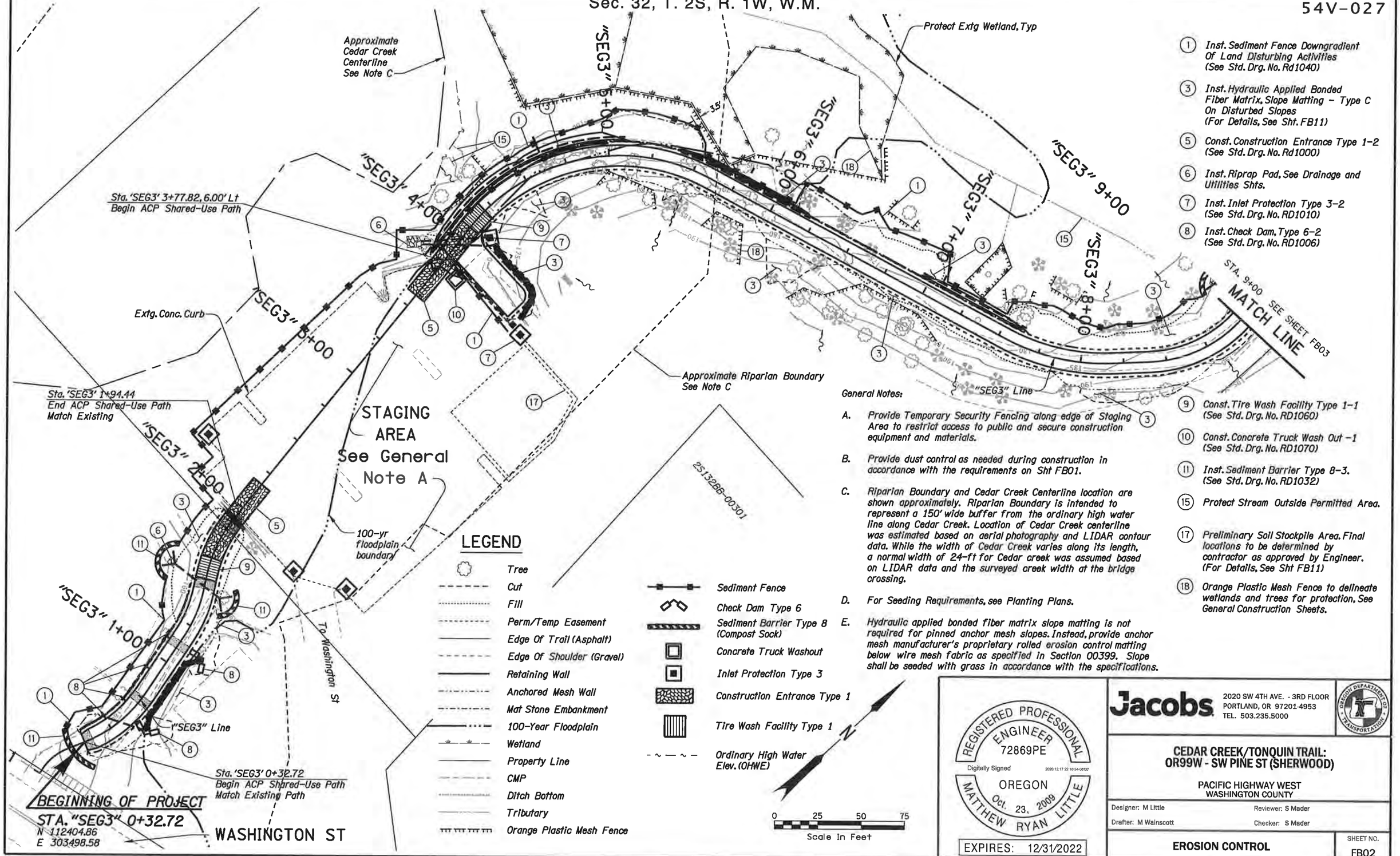
EROSION CONTROL COVER SHEET

SHEET NO. FB01

17-DEC-2020 15:30

Sec. 32, T. 2S, R. 1W, W.M.

54V-027



LEGEND

- Tree
- Cut
- Fill
- Perm/Temp Easement
- Edge Of Trail (Asphalt)
- Edge Of Shoulder (Gravel)
- Retaining Wall
- Anchored Mesh Wall
- Mat Stone Embankment
- 100-Year Floodplain
- Wetland
- Property Line
- CMP
- Ditch Bottom
- Tributary
- Orange Plastic Mesh Fence
- Sediment Fence
- Check Dam Type 6
- Sediment Barrier Type 8 (Compost Sock)
- Concrete Truck Washout
- Inlet Protection Type 3
- Construction Entrance Type 1
- Tire Wash Facility Type 1
- Ordinary High Water Elev. (OHWE)

N

0 25 50 75
Scale In Feet

(1) Inst. Sediment Fence Downgradient Of Land Disturbing Activities (See Std. Drg. No. Rd1040)

(3) Inst. Hydraulic Applied Bonded Fiber Matrix, Slope Matting - Type C On Disturbed Slopes (For Details, See Sht. FB11)

(5) Const. Construction Entrance Type 1-2 (See Std. Drg. No. Rd1000)

(6) Inst. Riprap Pad, See Drainage and Utilities Shts.

(7) Inst. Inlet Protection Type 3-2 (See Std. Drg. No. RD1010)

(8) Inst. Check Dam, Type 6-2 (See Std. Drg. No. RD1006)

(9) Const. Tire Wash Facility Type 1-1 (See Std. Drg. No. RD1060)

(10) Const. Concrete Truck Wash Out -1 (See Std. Drg. No. RD1070)

(11) Inst. Sediment Barrier Type 8-3. (See Std. Drg. No. RD1032)

(15) Protect Stream Outside Permitted Area.

(17) Preliminary Soil Stockpile Area. Final locations to be determined by contractor as approved by Engineer. (For Details, See Sht FB11)

(18) Orange Plastic Mesh Fence to delineate wetlands and trees for protection, See General Construction Sheets.

General Notes:

A. Provide Temporary Security Fencing along edge of Staging Area to restrict access to public and secure construction equipment and materials.

B. Provide dust control as needed during construction in accordance with the requirements on Sht FB01.

C. Riparian Boundary and Cedar Creek Centerline location are shown approximately. Riparian Boundary is intended to represent a 150' wide buffer from the ordinary high water line along Cedar Creek. Location of Cedar Creek centerline was estimated based on aerial photography and LIDAR contour data. While the width of Cedar Creek varies along its length, a normal width of 24-ft for Cedar creek was assumed based on LIDAR data and the surveyed creek width at the bridge crossing.

D. For Seeding Requirements, see Planting Plans.

E. Hydraulic applied bonded fiber matrix slope matting is not required for pinned anchor mesh slopes. Instead, provide anchor mesh manufacturer's proprietary rolled erosion control matting below wire mesh fabric as specified in Section 00399. Slope shall be seeded with grass in accordance with the specifications.

REGISTERED PROFESSIONAL ENGINEER
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OREGON
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CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little
Drafter: M Wainscott
Reviewer: S Mader
Checker: S Mader

EROSION CONTROL

SHEET NO. FB02

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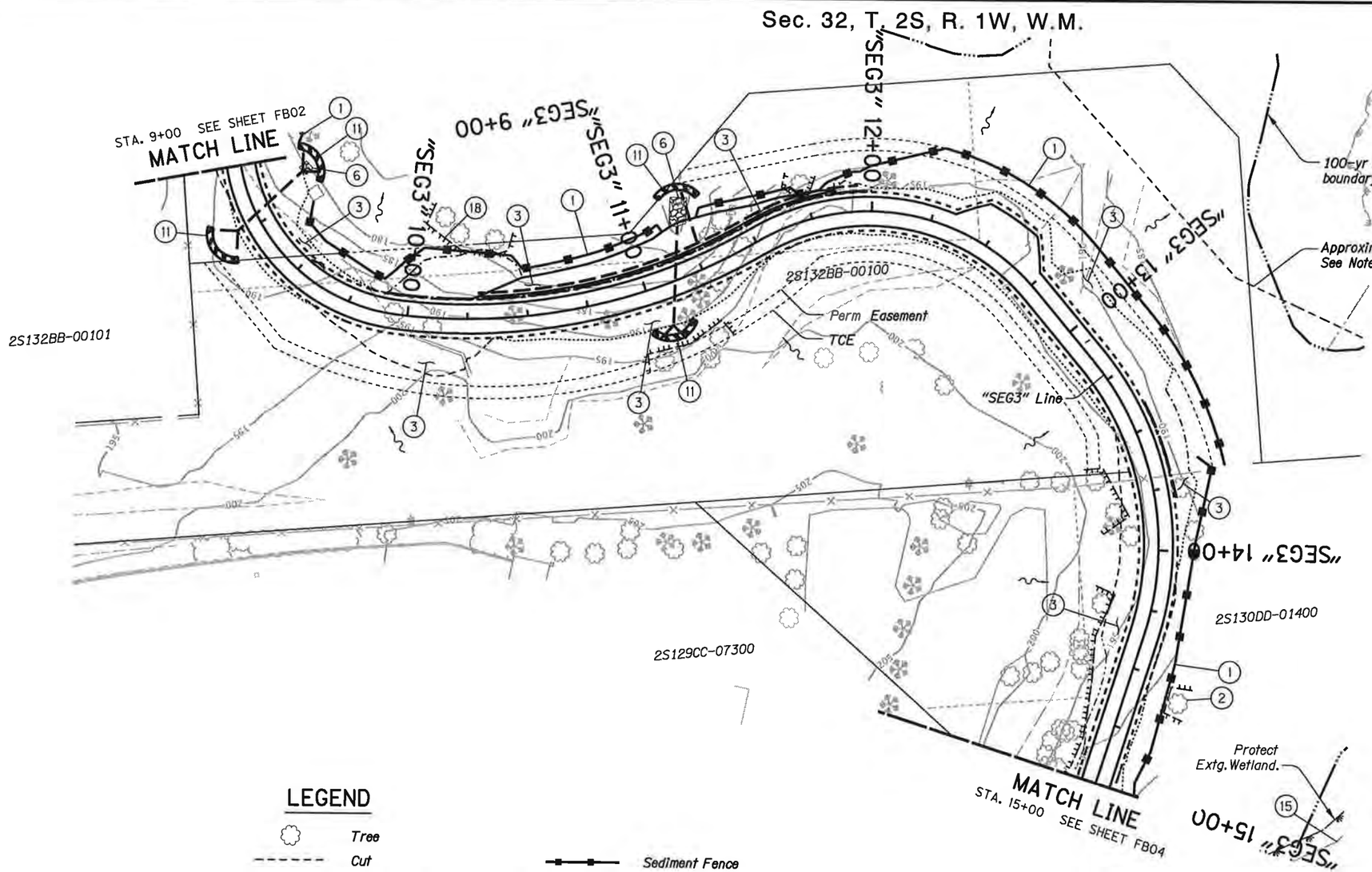

(1) *Inst. Sediment Fence Downgradient Of Land Disturbing Activities (See Std. Drg. No. Rd1040)*

(3) *Inst. Hydraulic Applied Bonded Fiber Matrix, Slope Matting - Type C On Disturbed Slopes (For Details, See Sht. FB11)*

(6) *Inst. Riprap Pad, See Drainage and Utilities Shts.*

(11) *Inst. Sediment Barrier Type 8. (See Std. Drg. No. RD1032)*

(15) *Protect Stream Outside Permitted Area.*

(18) *Orange Plastic Mesh Fence to deliniate wetlands and trees for protection, See General Construction Sheets.*

General Notes:

A. *Riparian Boundary and Cedar Creek Centerline location are shown approximately. Riparian Boundary is intended to represent a 150' wide buffer from the ordinary high water line along Cedar Creek. Location of Cedar Creek centerline was estimated based on aerial photography and LIDAR contour data. While the width of Cedar Creek varies along its length, a normal width of 24-ft for Cedar creek was assumed based on LIDAR data and the surveyed creek width at the bridge crossing*

B. *Provide dust control as needed during construciton in accordnace with the requirements on Sht FB01.*

C. *For Seeding Requirements, see Planting Plans.*

D. *Hydraulic applied bonded fiber matrix slope matting is not required for pinned achor mesh slopes. Instead, provide anchor mesh manufacturer's proprietary rolled erosion control matting below wire mesh fabric as specified in Section 00399. Slope shall be seeded with grass in accordance with the specifications.*

LEGEND

- Tree
- Cut
- Fill
- Perm/Temp Easement
- Edge Of Trail (Asphalt)
- Edge Of Shoulder (Gravel)
- Retaining Wall
- Anchored Mesh Wall
- Mat Stone Embankment
- 100-Year Floodplain
- Wetland
- Property Line
- CMP
- Ditch Bottom
- Tributary
- Sediment Fence
- Check Dam Type 6
- Sediment Barrier Type 8-4 (Compost Sock)
- Concrete Truck Washout
- Inlet Protection Type 3
- Construction Entrance Type 1
- Tire Wash Facility Type 1
- Ordinary High Water Elev. (OHWE)
- Orange Plastic Mesh Fence

N

0 25 50 75
Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
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OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

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TEL. 503.235.5000

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: S Mader
Drafter: M Wainscott | Checker: S Mader

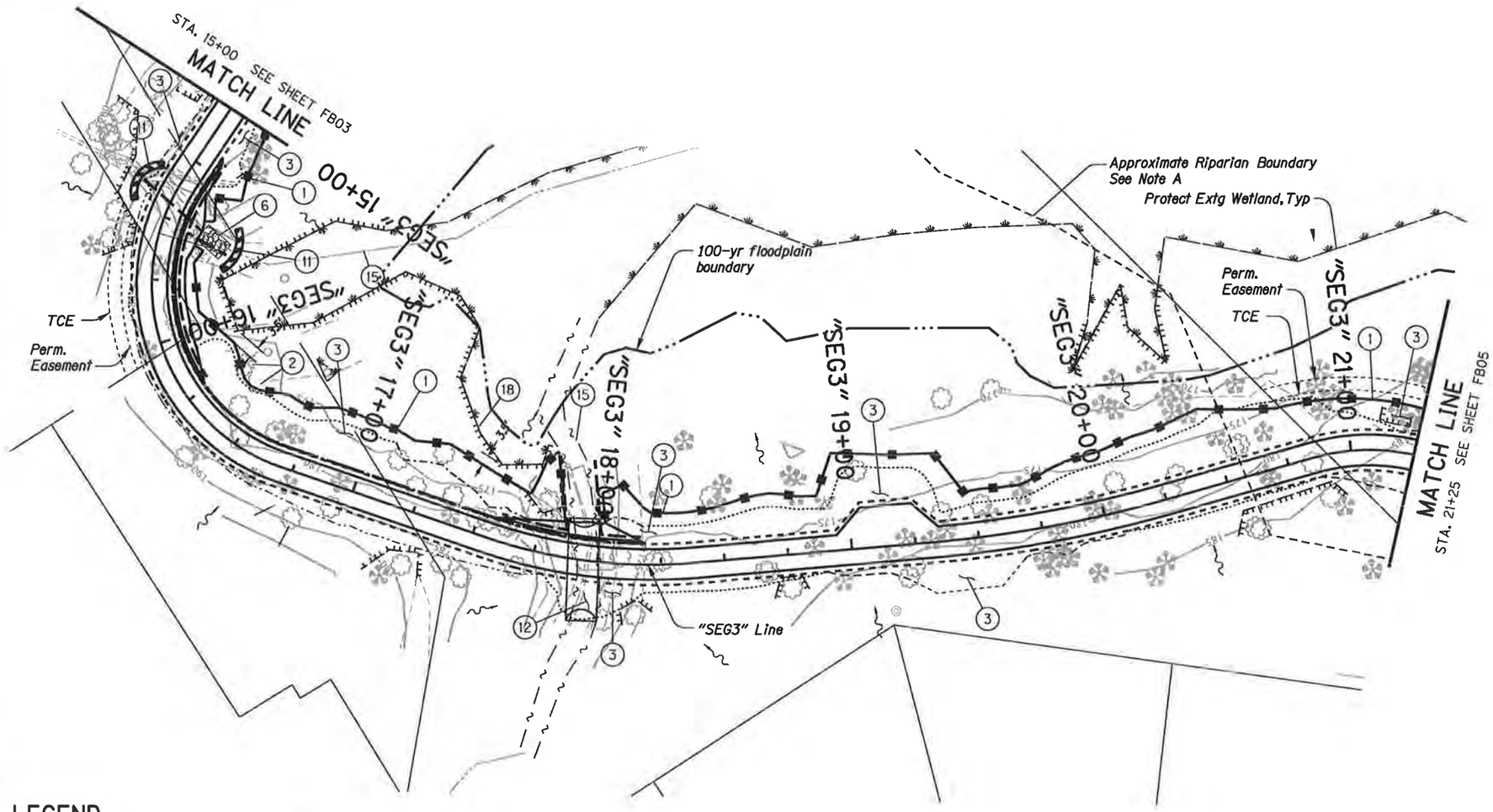
EROSION CONTROL

SHEET NO. FB03

17-DEC-2020 15:12

Sec. 29, T. 2S, R. 1W, W.M.

54V-027



(1) Inst. Sediment Fence Downgradient Of Land Disturbing Activities (See Std. Drg. No. Rd1040)

(3) Inst. Hydraulic Applied Bonded Fiber Matrix, Slope Matting – Type C On Disturbed Slopes (For Details, See Sht. FB11)

(6) Inst. Riprap Pad, See Drainage and Utilities Shts.

(11) Inst. Sediment Barrier Type 8-2. (See Std. Drg. No. RD1032)

(12) Provide Temporary Water Management Facility as specified in Section 00245 to allow Construction of new Open Bottom Arch Culvert while Providing Erosion Control. Water Management Facilities shall be Designed by Contractor and may Include Cofferdam, bypass pipe, and Temporary Riprap

(15) Protect Stream Outside Permitted Area.

(18) Orange Plastic Mesh Fence to delineate wetlands and trees for protection, See General Construction Sheets.

General Notes:

A. Riparian Boundary and Cedar Creek Centerline location are shown approximately. Riparian Boundary is intended to represent a 150' wide buffer from the ordinary high water line along Cedar Creek. Location of Cedar Creek centerline was estimated based on aerial photography and LIDAR contour data. While the width of Cedar Creek varies along its length, a normal width of 24-ft for Cedar creek was assumed based on LIDAR data and the surveyed creek width at the bridge crossing

B. Provide dust control as needed during construction in accordance with the requirements on Sht FB01.

C. For Seeding Requirements, see Planting Plans.

D. Hydraulic applied bonded firber matrix slope matting is not required for pinned anchor mesh slopes. Instead, provide anchor mesh manufacturer's proprietary rolled erosion control matting below wire mesh fabric as specified in Section 00399. Slope shall be seeded with grass in accordance with the specifications.

LEGEND

- Tree
- Cut
- Fill
- Perm/Temp Easement
- Edge Of Trail (Asphalt)
- Edge Of Shoulder (Gravel)
- Retaining Wall
- Anchored Mesh Wall
- Mat Stone Embankment
- 100-Year Floodplain
- Wetland
- Property Line
- CMP
- Ditch Bottom
- Tributary
- Sediment Fence
- Check Dam Type 6
- Sediment Barrier Type 8 (Compost Sock)
- Concrete Truck Washout
- Inlet Protection Type 3
- Construction Entrance Type 1
- Tire Wash Facility Type 1
- Ordinary High Water Elev. (OHWE)
- Orange Plastic Mesh Fence

N

0 25 50 75

Scale In Feet

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EXPIRES: 12/31/2022

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: S Mader
Drafter: M Wainscott | Checker: S Mader

EROSION CONTROL

SHEET NO. FB04

17-DEC-2020 15:13

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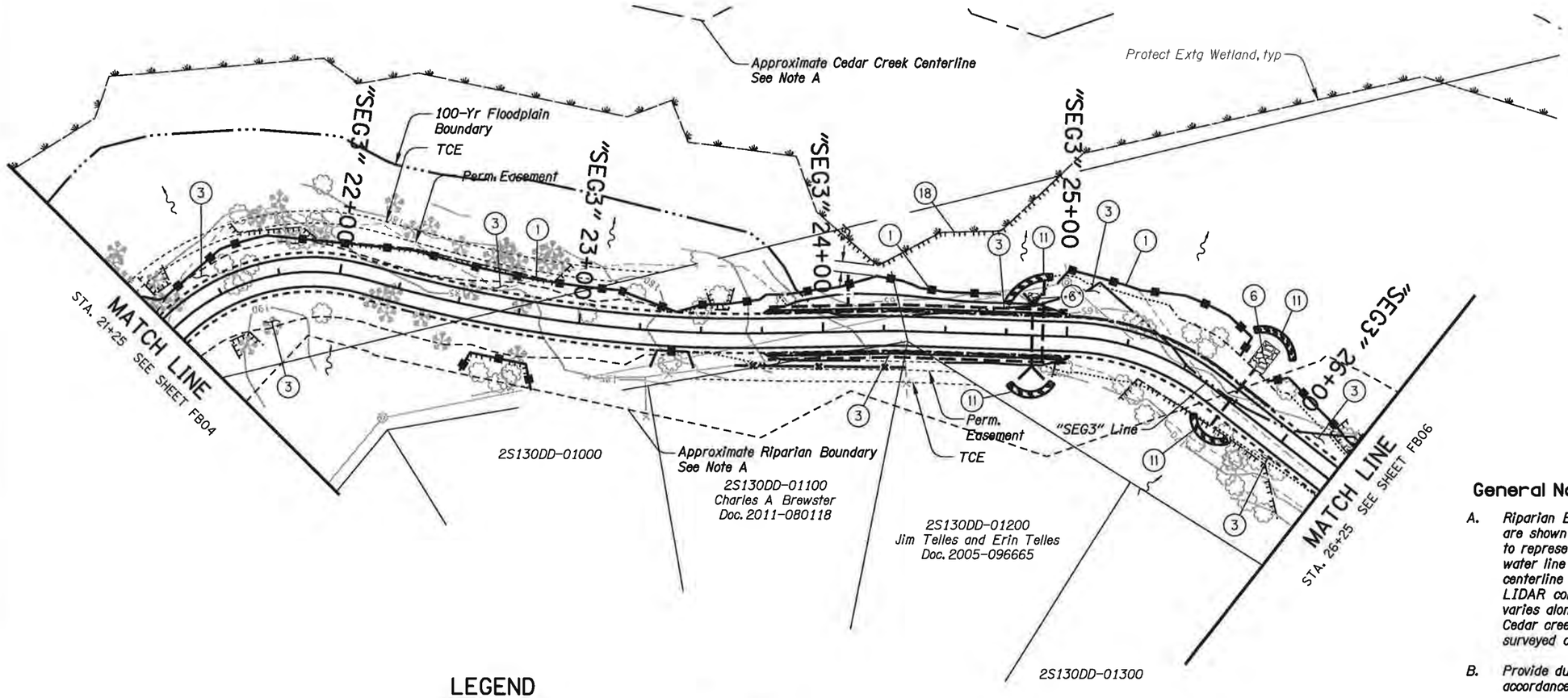

(1) *Inst. Sediment Fence Downgradient Of Land Disturbing Activities (See Std. Drg. No. Rd1040)*

(3) *Inst. Hydraulic Applied Bonded Fiber Matrix, Slope Matting - Type C On Disturbed Slopes (For Details, See Sht. FB11)*

(6) *Inst. Riprap Pad. See Drainage and Utilities Shts.*

(11) *Inst. Sediment Barrier Type 8-4. (See Std. Drg. No. RD1032)*

(18) *Orange Plastic Mesh Fence to delineate wetlands and trees for protection. See General Construction Sheets.*

General Notes:

A. *Riparian Boundary and Cedar Creek Centerline location are shown approximately. Riparian Boundary is intended to represent a 150' wide buffer from the ordinary high water line along Cedar Creek. Location of Cedar Creek centerline was estimated based on aerial photography and LIDAR contour data. While the width of Cedar Creek varies along its length, a normal width of 24-ft for Cedar creek was assumed based on LIDAR data and the surveyed creek width at the bridge crossing*

B. *Provide dust control as needed during construction in accordance with the requirements on Sht FB01.*

C. *For Seeding Requirements, see Planting Plans.*

D. *Hydraulic applied bonded firber matrix slope matting is not required for pinned anchor mesh slopes. Instead, provide anchor mesh manufacturer's proprietary rolled erosion control matting below wire mesh fabric as specified in Section 00399. Slope shall be seeded with grass in accordance with the specifications.*

LEGEND

- Tree
- Cut
- Fill
- Perm/Temp Easement
- Edge Of Trail (Asphalt)
- Edge Of Shoulder (Gravel)
- Reinforced Soil Slope
- Anchored Mesh Wall
- Mat Stone Embankment
- 100-Year Floodplain
- Wetland
- Property Line
- CMP
- Ditch Bottom
- Tributary
- Sediment Fence
- Check Dam Type 6
- Sediment Barrier Type 8 (Compost Sock)
- Concrete Truck Washout
- Inlet Protection Type 3
- Construction Entrance Type 1
- Tire Wash Facility Type 1
- Ordinary High Water Elev. (OHWE)
- Orange Plastic Mesh Fence

N

0 25 50 75

Scale In Feet

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MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: S Mader
Drafter: M Wainscott | Checker: S Mader

EROSION CONTROL

SHEET NO. FB05

17-DEC-2020 15:13

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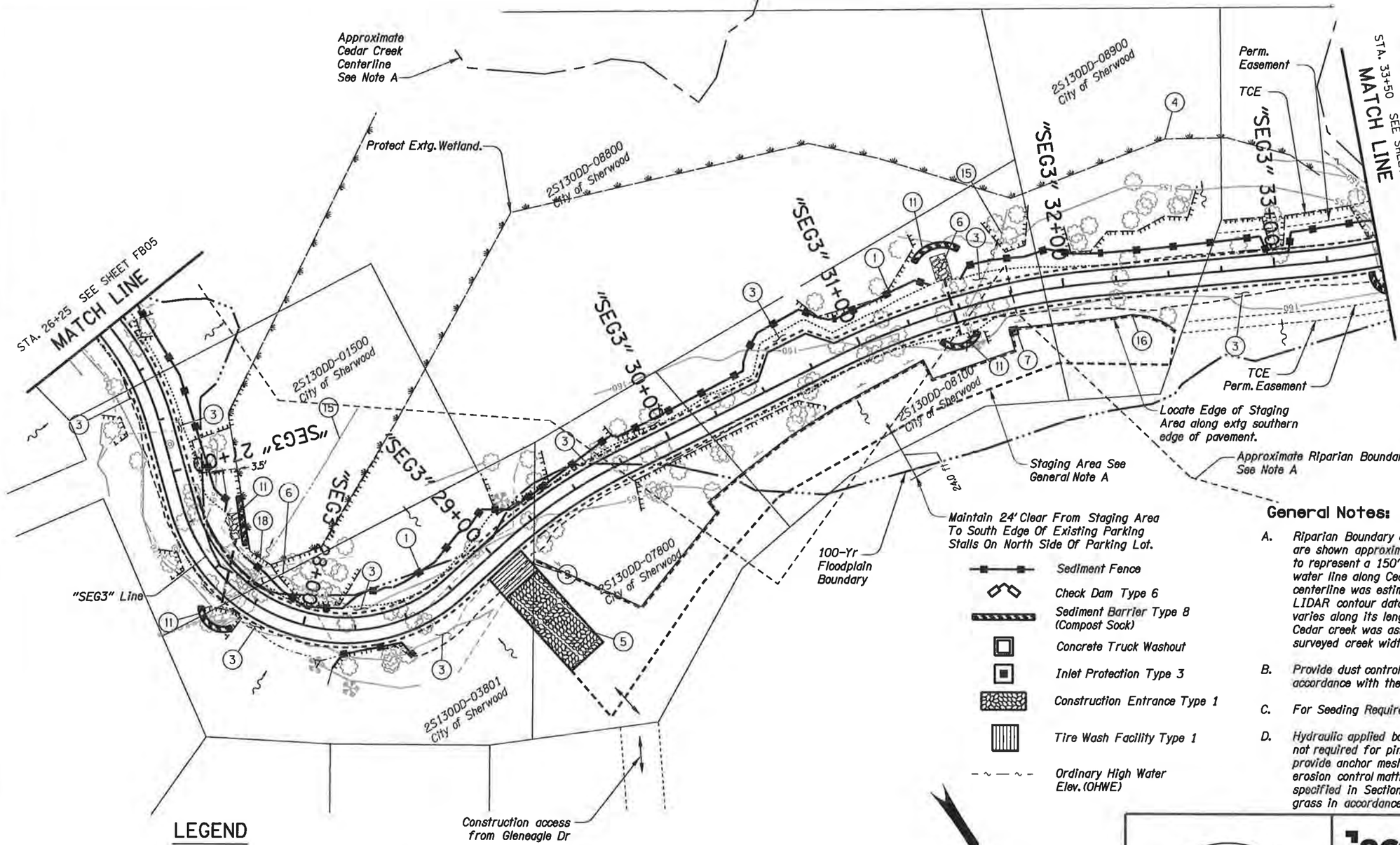

(1) *Inst. Sediment Fence Downgradient Of Land Disturbing Activities (See Std. Drg. No. Rd1040)*

(3) *Inst. Hydraulic Applied Bonded Fiber Matrix, Slope Matting - Type C On Disturbed Slopes (For Details, See Sht. FB11)*

(5) *Const. Construction Entrance Type 1-1 (See Std. Drg. No. RD1000)*

(6) *Inst. Riprap Pad, See Drainage and Utilities Shts.*

(7) *Inst. Inlet Protection Type 3-1 (See Std. Drg. No. RD1010)*

(9) *Const. Tire Wash Facility Type 1-1 (See Std. Drg. No. RD1060)*

(11) *Inst. Sediment Barrier Type 8-4. (See Std. Drg. No. RD1032)*

(15) *Protect Stream Outside Permitted Area.*

(16) *Inst. orange plastic mesh fence along south edge of staging area.*

(18) *Orange Plastic Mesh Fence to delineate wetlands and trees for protection, See General Construction Sheets.*

General Notes:

A. *Riparian Boundary and Cedar Creek Centerline location are shown approximately. Riparian Boundary is intended to represent a 150' wide buffer from the ordinary high water line along Cedar Creek. Location of Cedar Creek centerline was estimated based on aerial photography and LIDAR contour data. While the width of Cedar Creek varies along its length, a normal width of 24-ft for Cedar creek was assumed based on LIDAR data and the surveyed creek width at the bridge crossing*

B. *Provide dust control as needed during construction in accordance with the requirements on Sht FB01.*

C. *For Seeding Requirements, see Planting Plans.*

D. *Hydraulic applied bonded fiber matrix slope matting is not required for pinned anchor mesh slopes. Instead, provide anchor mesh manufacturer's proprietary rolled erosion control matting below wire mesh fabric as specified in Section 00399. Slope shall be seeded with grass in accordance with the specifications.*

Sediment Fence

Check Dam Type 6

Sediment Barrier Type 8 (Compost Sock)

Concrete Truck Washout

Inlet Protection Type 3

Construction Entrance Type 1

Tire Wash Facility Type 1

Ordinary High Water Elev. (OHWE)

LEGEND

Tree	Mat Stone Embankment
Cut	100-Year Floodplain
Fill	Wetland
Perm/Temp Easement	Property Line
Edge of Trail (Asphalt)	CMP
Edge of Shoulder (Gravel)	Ditch Bottom
Retaining Wall	Tributary
Anchored Mesh Wall	Orange Plastic Mesh Fence

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020.12.17 22:19:43-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: S Mader
Drafter: M Wainscott | Checker: S Mader

EROSION CONTROL

SHEET NO. FB06

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

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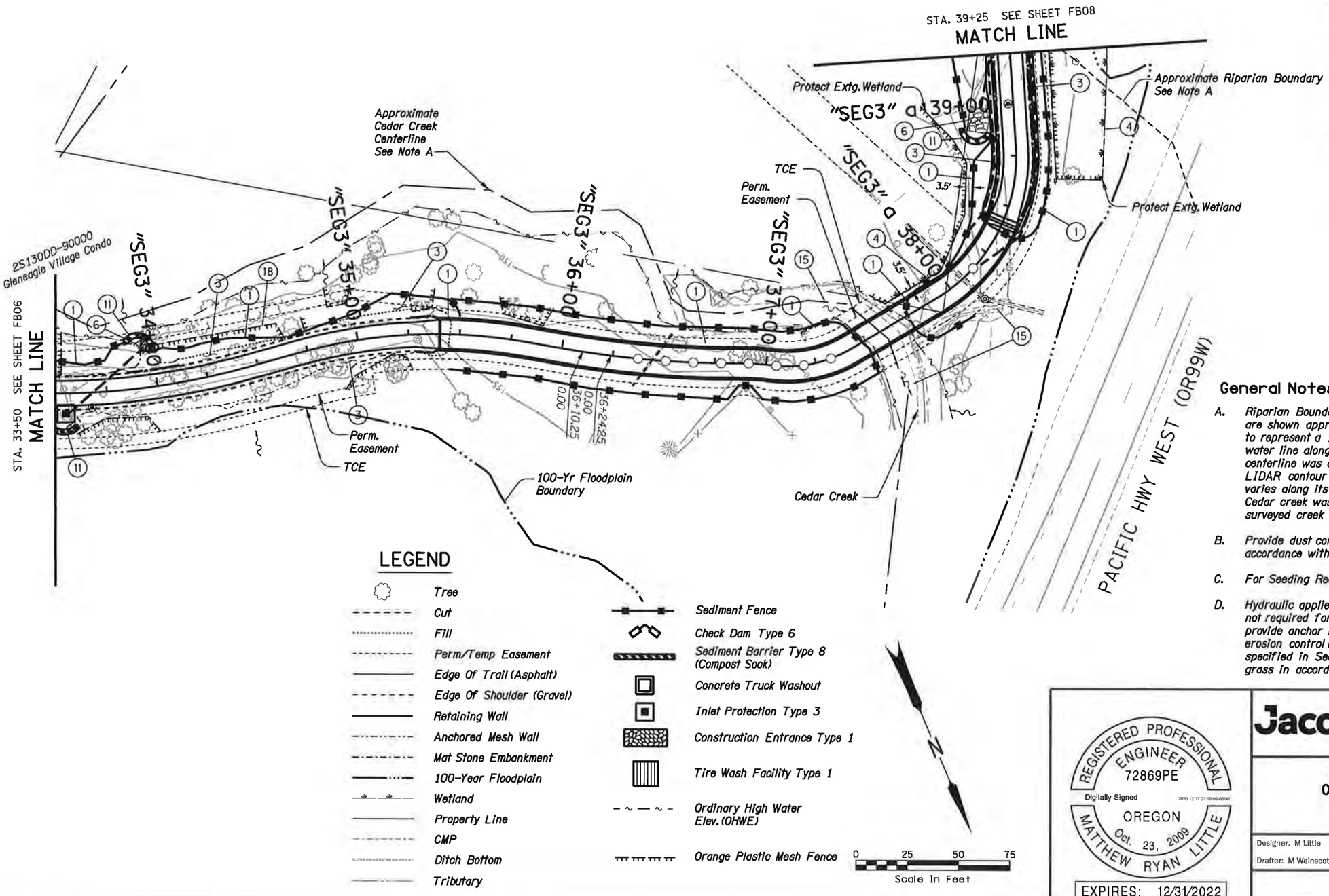
Sec. 30, T. 2S, R. 1W, W.M.

54V-027



(1) *Inst. Sediment Fence Downgradient Of Land Disturbing Activities (See Std. Drg. No. Rd1040)*

(3) *Inst. Hydraulic Applied Bonded Fiber Matrix, Slope Matting - Type C On Disturbed Slopes (For Details, See Sht. FB11)*

(4) *Protect Wetland*

(6) *Inst. Riprap Pad, See Drainage and Utilities Shts.*

(11) *Inst. Sediment Barrier Type 8 - 2 (See Std. Drg. No. RD1032.)*

(15) *Protect Stream Outside Permitted Area.*

(18) *Orange Plastic Mesh Fence to deliniate wetalnds and trees for protection, See General Construction Sheets.*

General Notes:

A. *Riparian Boundary and Cedar Creek Centerline location are shown approximately. Riparian Boundary is intended to represent a 150' wide buffer from the ordinary high water line along Cedar Creek. Location of Cedar Creek centerline was estimated based on aerial photography and LIDAR contour data. While the width of Cedar Creek varies along its length, a normal width of 24-ft for Cedar creek was assumed based on LIDAR data and the surveyed creek width at the bridge crossing*

B. *Provide dust control as needed during construction in accordance with the requirements on Sht FB01.*

C. *For Seeding Requirements, see Planting Plans.*

D. *Hydraulic applied bonded firber matrix slope matting is not required for pinned anchor mesh slopes. Instead, provide anchor mesh manufacturer's proprietary rolled erosion control matting below wire mesh fabric as specified in Section 00399. Slope shall be seeded with grass in accordance with the specifications.*

LEGEND

- Tree
- Cut
- Fill
- Perm/Temp Easement
- Edge Of Trail (Asphalt)
- Edge Of Shoulder (Gravel)
- Retaining Wall
- Anchored Mesh Wall
- Mat Stone Embankment
- 100-Year Floodplain
- Wetland
- Property Line
- CMP
- Ditch Bottom
- Tributary
- Sediment Fence
- Check Dam Type 6
- Sediment Barrier Type 8 (Compost Sock)
- Concrete Truck Washout
- Inlet Protection Type 3
- Construction Entrance Type 1
- Tire Wash Facility Type 1
- Ordinary High Water Elev. (OHWE)
- Orange Plastic Mesh Fence

0 25 50 75
Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

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Jacobs
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PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: S Mader
Drafter: M Wainscott | Checker: S Mader

EROSION CONTROL

SHEET NO. FB07

17-DEC-2020 15:11

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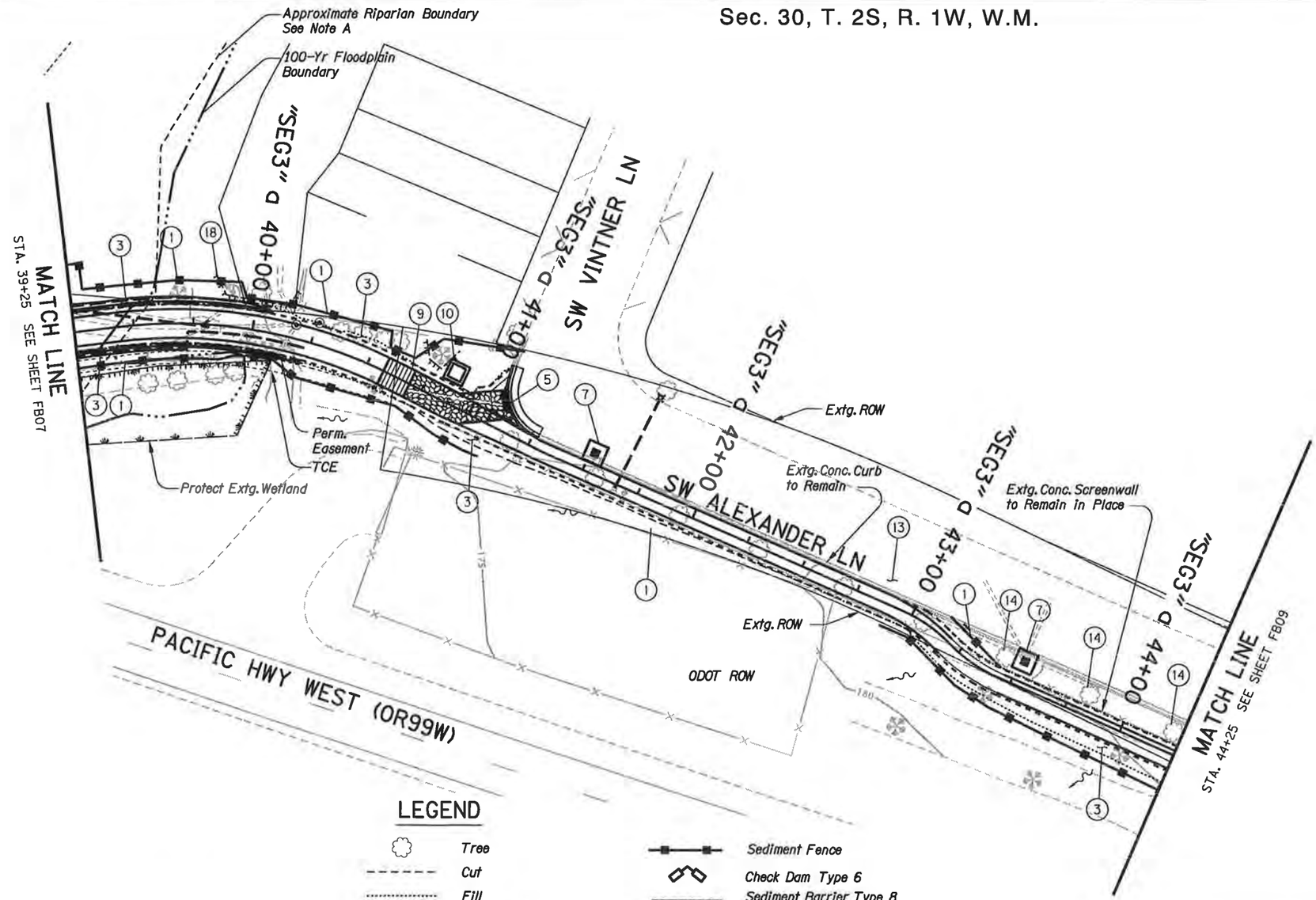
54V-027



(1) *Inst. Sediment Fence Downgradient Of Land Disturbing Activities (See Std. Drg. No. Rd1040)*

(3) *Inst. Hydraulic Applied Bonded Fiber Matrix, Slope Matting - Type C On Disturbed Slopes (For Details, See Sht. FB11)*

(5) *Const. Construction Entrance Type 1-1 (See Std. Drg. No. Rd1000)*

(7) *Inst. Inlet Protection Type 3-2 (See Std. Drg. No. RD1010)*

(9) *Const. Tire Wash Facility Type 1-1 (See Std. Drg. No. RD1060)*

(10) *Const. Concrete Truck Wash Out -1 (See Std. Drg. No. RD1070)*

(13) *While Earthwork Construction Is Active On Adjacent Path, Sweep Street Minimum Once Per Day And More Often When Needed And As Directed By The Engineer*

(14) *Protect Extg. Tree. Tree Is Located on Opposite Side of Extg. Conc. Screen Wall*

(18) *Orange Plastic Mesh Fence to deliniate wetalnds and trees for protection, See General Construction Sheets.*

General Notes:

A. *Riparian Boundary and Cedar Creek Centerline location are shown approximately. Riparian Boundary is intended to represent a 150' wide buffer from the ordinary high water line along Cedar Creek. Location of Cedar Creek centerline was estimated based on aerial photography and LIDAR contour data. While the width of Cedar Creek varies along its length, a normal width of 24-ft for Cedar creek was assumed based on LIDAR data and the surveyed creek width at the bridge crossing*

B. *Provide dust control as needed during construction in accordance with the requirements on Sht FB01.*

C. *For Seeding Requirements, see Planting Plans.*

LEGEND

- Tree
- Cut
- Fill
- Perm/Temp Easement
- Edge Of Trail (Asphalt)
- Edge Of Shoulder (Gravel)
- Retaining Wall
- Anchored Mesh Wall
- Mat Stone Embankment
- 100-Year Floodplain
- Wetland
- Property Line
- CMP
- Ditch Bottom
- Tributary
- Sediment Fence
- Check Dam Type 6
- Sediment Barrier Type 8 (Compost Sock)
- Concrete Truck Washout
- Inlet Protection Type 3
- Construction Entrance Type 1
- Tire Wash Facility Type 1
- Ordinary High Water Elev. (OHWE)
- Orange Plastic Mesh Fence

N

0 25 50 75
Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020.12.17 22:19:36-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

Jacobs
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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: S Mader
Drafter: M Wainscott | Checker: S Mader

EROSION CONTROL

SHEET NO. FB08

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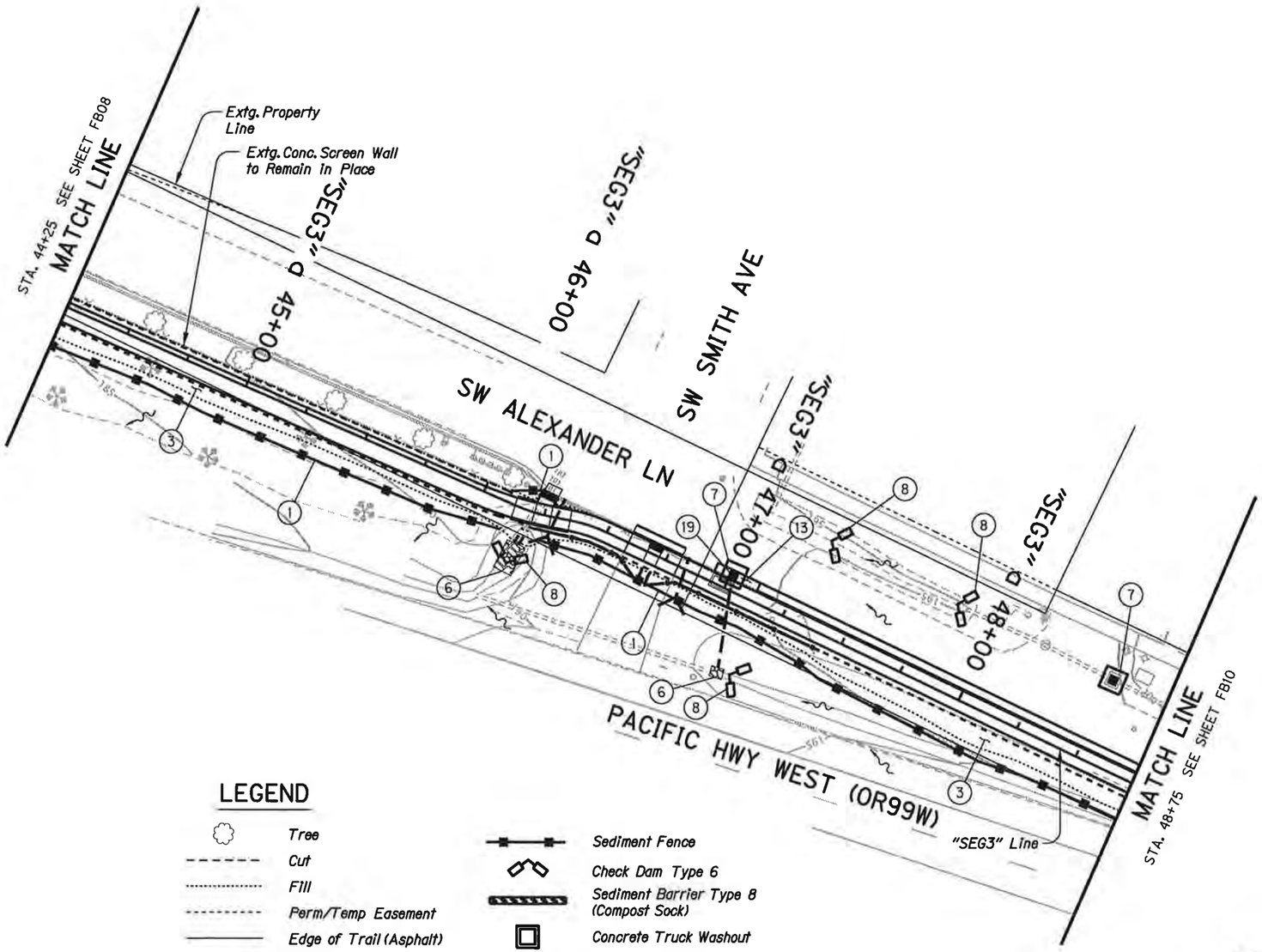
54V-027



(1) *Inst. Sediment Fence Downgradient Of Land Disturbing Activities (See Std. Drg. No. Rd1040)*

(3) *Inst. Hydraulic Applied Bonded Fiber Matrix, Slope Matting – Type C On Disturbed Slopes (For Details, See Sht. FB11)*

(6) *Inst. Riprap Pad. See Drainage and Utilites Shts.*

(7) *Inst. Inlet Protection Type 3-2 (See Std. Drg. No. RD1010)*

(8) *Inst. Check Dam, Type 6-4 (See Std. Drg. No. RD1006)*

(13) *While Earthwork Contruction Is Active On Adjacent Path, Sweep Street Minimum Once Per Day And More Often When Needed And As Directed By The Engineer*

(19) *Permanent Water Quality Structure (For details, See Sht C08A.) Provide additional inlet protection as needed to protect water quality inlet.*

General Notes:

A. *Provide dust control as needed during construction in accordance with teh requirements on Sht FB01.*

B. *For Seeding Requirements, see Planting Plans.*

LEGEND

- Tree
- Cut
- Fill
- Perm/Temp Easement
- Edge of Trail (Asphalt)
- Edge of Shoulder (Gravel)
- Retaining Wall
- Anchored Mesh Wall
- Mat Stone Embankment
- 100-Year Floodplain
- Wetland
- Property Line
- CMP
- Ditch Bottom
- Tributary
- Sediment Fence
- Check Dam Type 6
- Sediment Barrier Type 8 (Compost Sock)
- Concrete Truck Washout
- Inlet Protection Type 3
- Construction Entrance Type 1
- Tire Wash Facility Type 1
- Ordinary High Water Elev. (OHWE)

N

0 25 50 75
Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020.12.17 22:20:06-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: S Mader
Drafter: M Wainscott | Checker: S Mader

EROSION CONTROL

SHEET NO. FB09

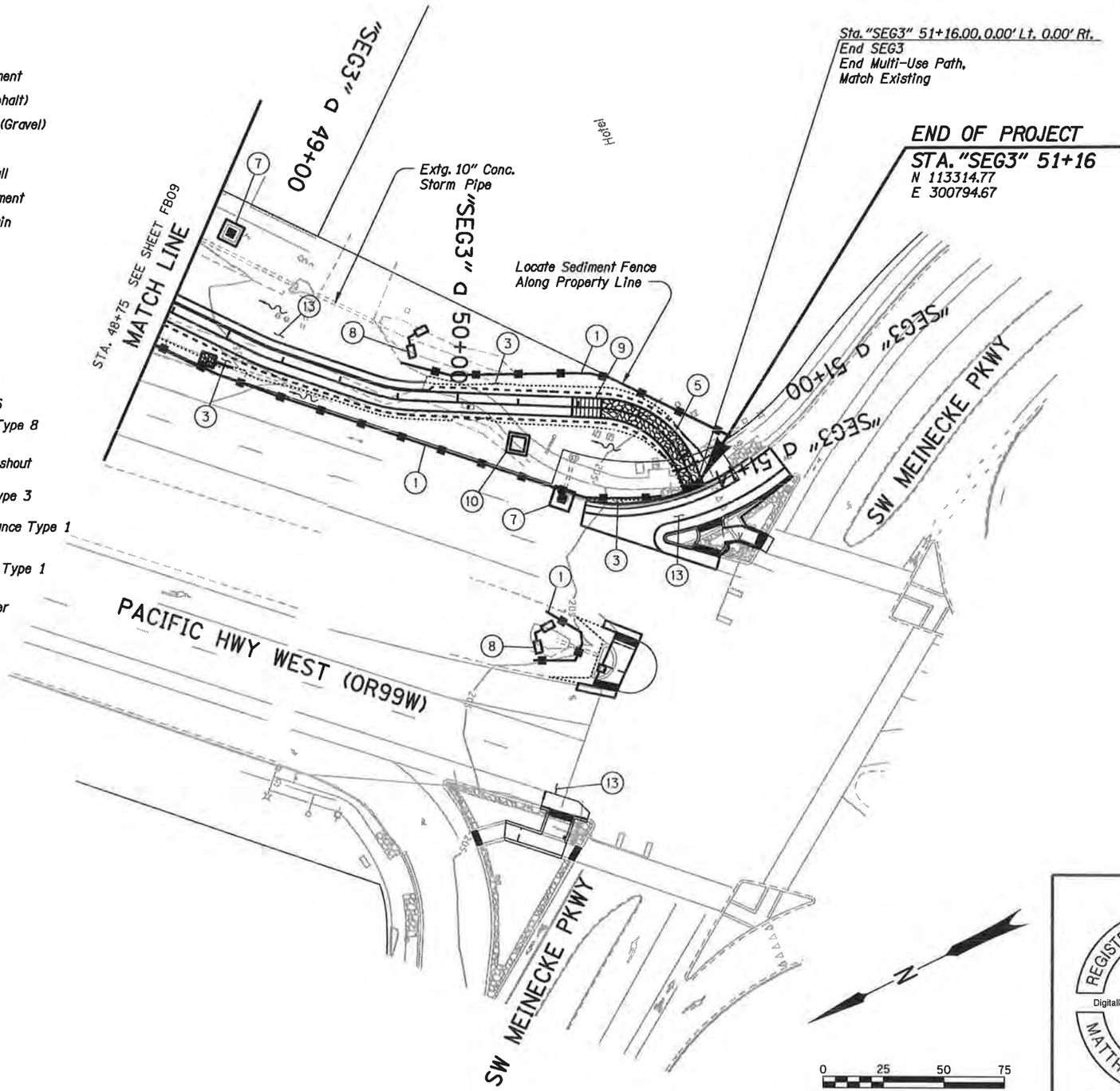
17-DEC-2020 15:12

Sec. 30, T. 2S, R. 1W, W.M.

54V-027

LEGEND

- Tree
- Cut
- Fill
- Perm/Temp Easement
- Edge of Trail (Asphalt)
- Edge of Shoulder (Gravel)
- Retaining Wall
- Anchored Mesh Wall
- Mat Stone Embankment
- 100-Year Floodplain
- Wetland
- Property Line
- CMP
- Ditch Bottom
- Tributary
- Sediment Fence
- Check Dam Type 6
- Sediment Barrier Type 8 (Compost Sock)
- Concrete Truck Washout
- Inlet Protection Type 3
- Construction Entrance Type 1
- Tire Wash Facility Type 1
- Ordinary High Water Elev. (OHWE)



(1) Inst. Sediment Fence Downgradient Of Land Disturbing Activities (See Std. Drg. No. Rd1040)

(3) Inst. Hydraulic Applied Bonded Fiber Matrix, Slope Matting - Type C On Disturbed Slopes (For Details, See Sht. FB11)

(5) Const. Construction Entrance Type 1-1 (See Std. Drg. No. Rd1000)

(7) Inst. Inlet Protection Type 3-2 (See Std. Drg. No. RD1010)

(8) Inst. Check Dam, Type 6-2 (See Std. Drg. No. RD1006)

(9) Const. Tire Wash Facility Type 1-1 (See Std. Drg. No. RD1060)

(10) Const. Concrete Truck Wash Out -1 (See Std. Drg. No. RD1070)

(13) While Earthwork Contruction Is Active On Adjacent Path, Sweep Street Minimum Once Per Day And More Often When Needed And As Directed By The Engineer

General Notes:

A. Provide dust control as needed during construction in Accordance with the requirements on Sht FB01.

B. For Seeding Requirements, see Planting Plans.

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020.12.17 22:20:25-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little
Drafter: M Wainscott
Reviewer: S Mader
Checker: S Mader

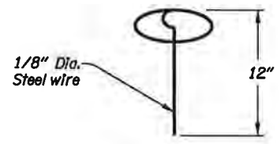
EROSION CONTROL

SHEET NO. FB10

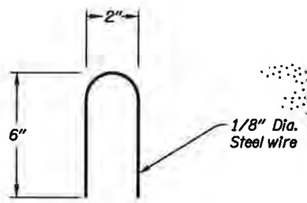
17-DEC-2020 15:31

GENERAL EROSION CONTROL NOTES

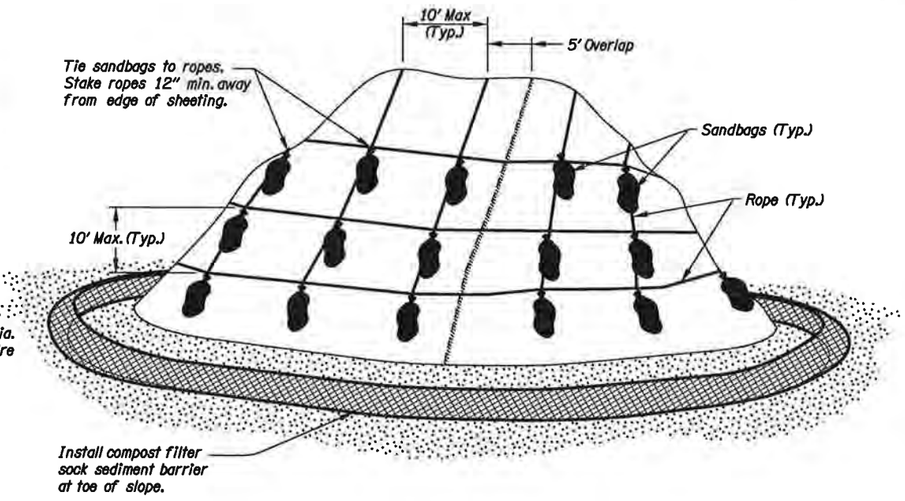
1. Orange plastic mesh fence shall be UV stabilized, orange, high-density polypropylene mesh. Fence shall be minimum 4 feet high and supported with wood or steel post od sufficient strength and durability to last through the life of the project. the fence shall delineate the work boundary for the project near sensitive environmental areas outside of the which no work shall be conducted. Select fence from ODOT QPL list as specified in Section 00221.13.



PIN STAPLE



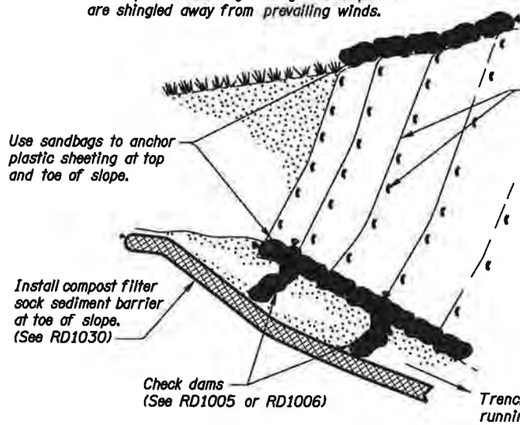
STAPLE DETAIL



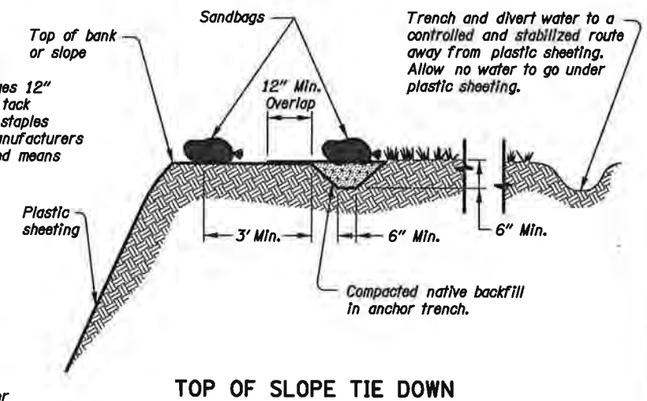
STOCKPILE

NOTES:

1. Install plastic sheeting vertically down slope.
2. Install plastic sheeting so edges overlap and are shingled away from prevailing winds.

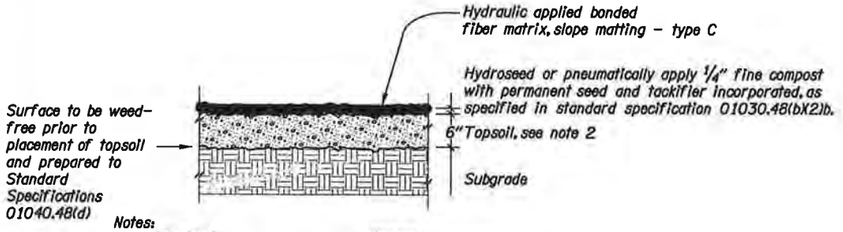


SLOPES



TOP OF SLOPE TIE DOWN

PLASTIC SHEETING

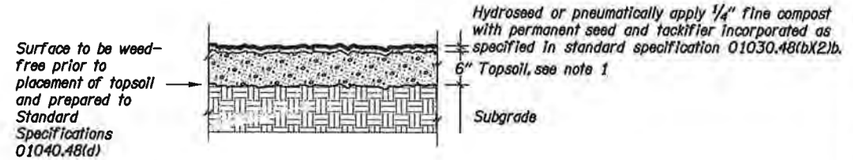


Notes:

1. Required for slopes 1:3 and steeper. See plans and specifications for other areas matting is required.
2. Stockpile and utilize native topsoil. Amend soils as specified or import topsoil if native topsoil quantity is not sufficient.

APPLICATION - STEEP SLOPES, SHALLOW DITCHES & SWALES

N.T.S.



APPLICATION - TEMPORARY/PERMANENT VEGETATIVE COVER

N.T.S.

Notes:

1. Stockpile and utilize native topsoil. Amend soils as specified or import topsoil if native topsoil quantity is not sufficient.

SEEDING AND TOPSOIL DETAIL

REGISTERED PROFESSIONAL ENGINEER
72869PE
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OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE

EXPIRES: 12/31/2022

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: S Mader
Drafter: M Wainscott | Checker: S Mader

EROSION CONTROL DETAILS

SHEET NO. FB11

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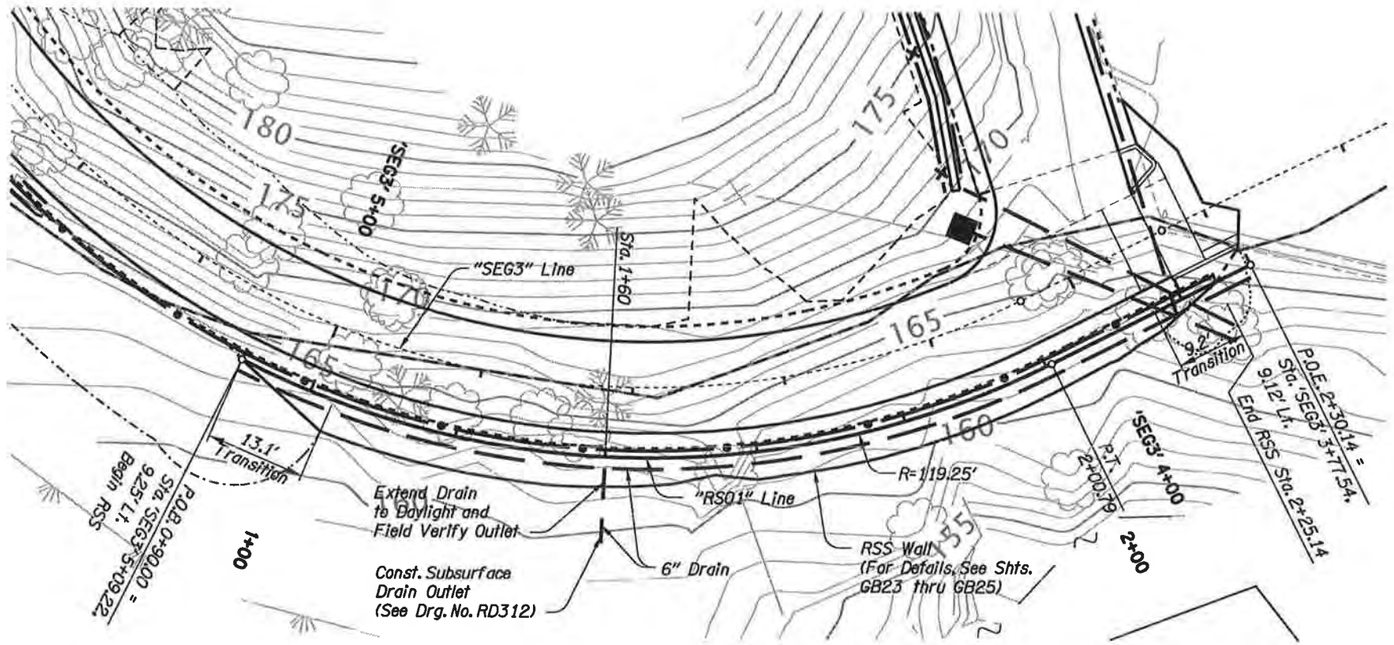
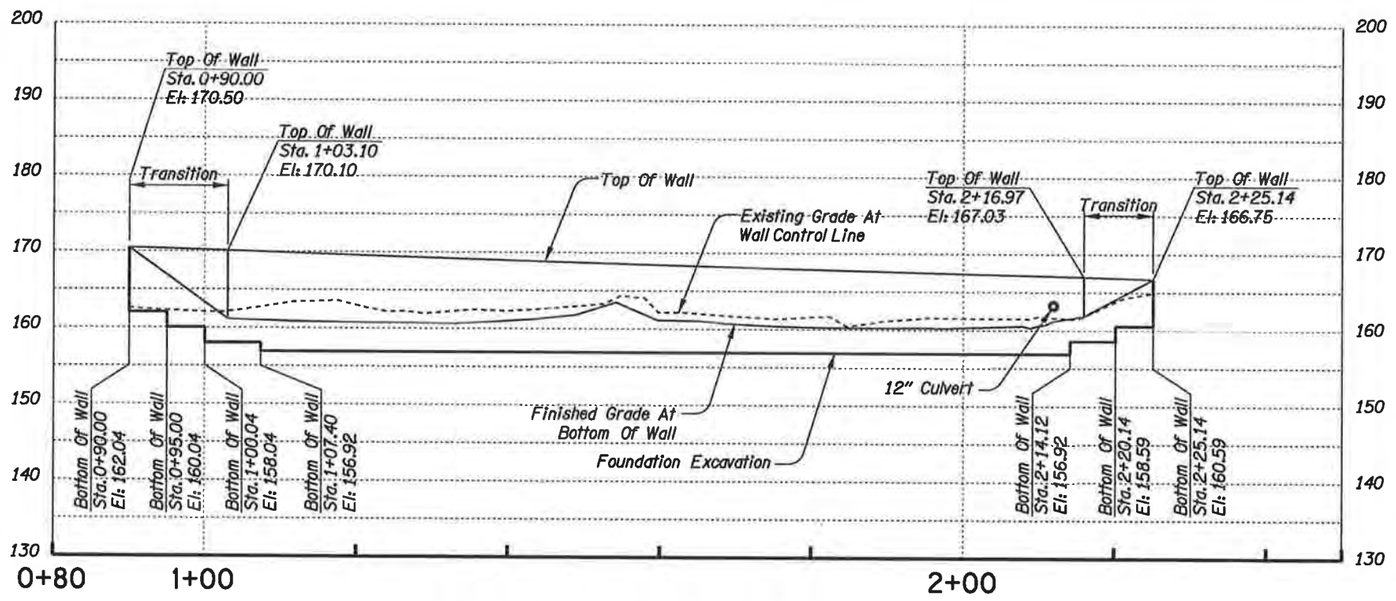
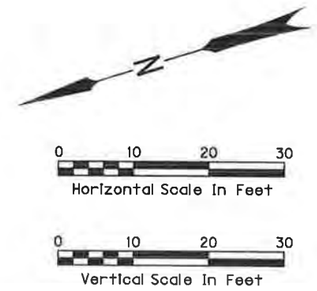


PLAN



DEVELOPED ELEVATION



REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

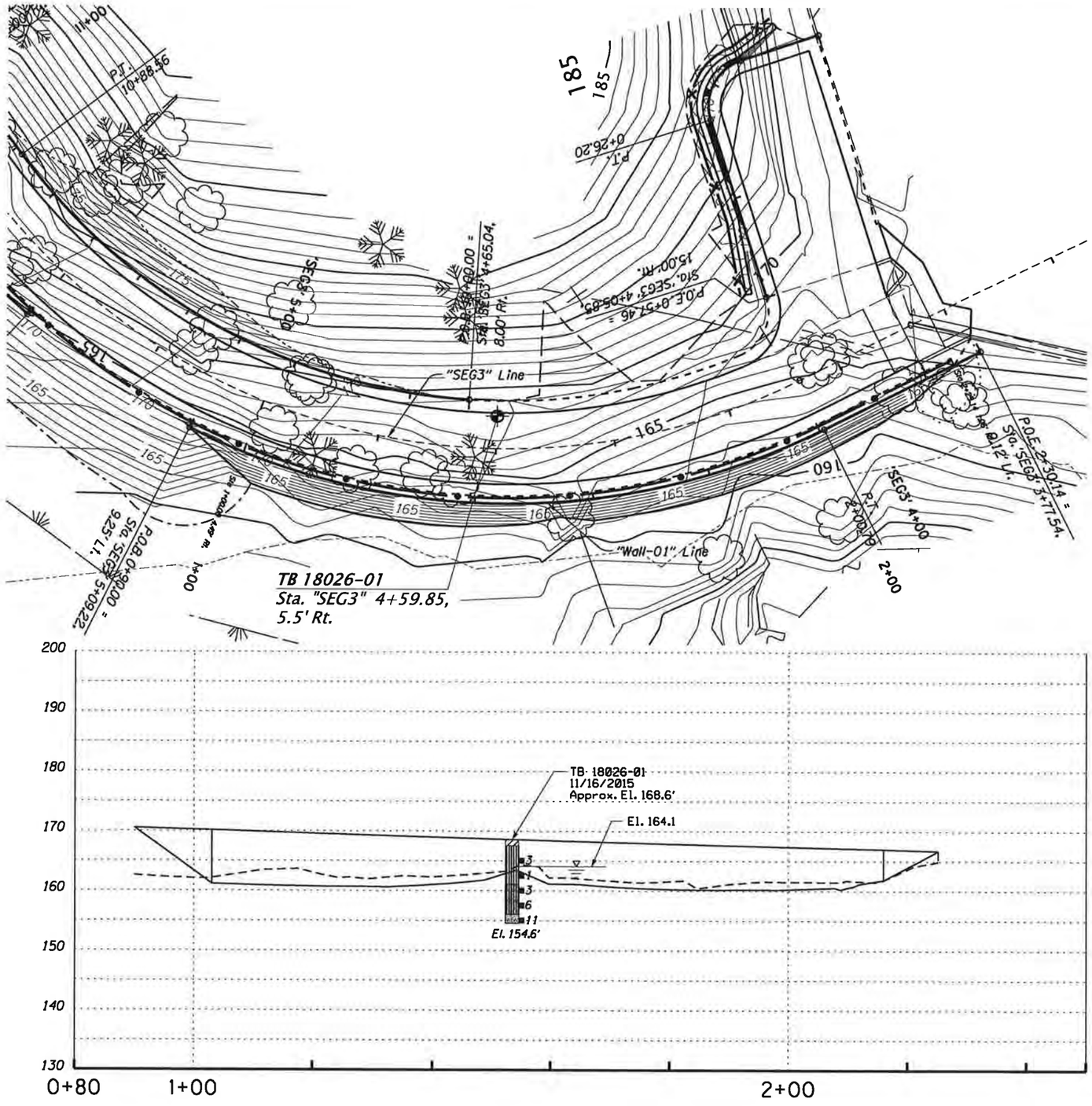
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little
Drafter: J Walker
Reviewer: M Eller
Checker: M Eller

WALL - RS01 PLAN AND PROFILE

SHEET NO. GB01

21-DEC-2020 10:15



UNIT DESCRIPTIONS

54V-027

- SANDY SILT; ML; BROWN; MOIST TO WET; SOFT; (TOPSOIL WITH ROOT ZONE TO 10 INCHES)
- SANDY SILT; ML; BROWN TO GRAY; MOIST TO WET; LOW TO MEDIUM PLASTICITY; SOFT TO MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
- SILTY FINE SAND; SM; BROWN; WET; LOW TO MEDIUM PLASTICITY; LOOSE (MISSOULA FINE-FLOOD DEPOSITS)
- CLAYEY SILT; CL-ML; BROWN; MOIST TO WET; MEDIUM PLASTICITY; MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
- SAND; SP; BROWN; WET; LOOSE TO MEDIUM DENSE (MISSOULA FINE-FLOOD DEPOSITS)

LEGEND

- ■ 24 = Standard penetration test - N value
- RQD = Rock quality designation
- 50/1st #" = SPT Test Refusal Length
- ⊕ = Bore Hole Location
- ▽ = Groundwater measured in the bore hole

GENERAL NOTES

1. 1' Contour Interval.
2. Elevations are based on North American Vertical Datum (1988).
3. Geotechnical data shown on this drawing are a consolidation of information and/or revision in terminology from the drill logs. More detailed subsurface data is available on the drill logs in the geotechnical report, which is available from the Engineer.
4. In accordance with ASTM D1586-84, N values are reported for an interval of 2.5 ft. except as noted.

0 10 20 30
Horizontal Scale In Feet

0 5 10 15
Vertical Scale In Feet

N

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.17 12:25:58-08'00'
OREGON
JULY 14, 1998
RAJIV ALI
EXPIRES: 12/31/21

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Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

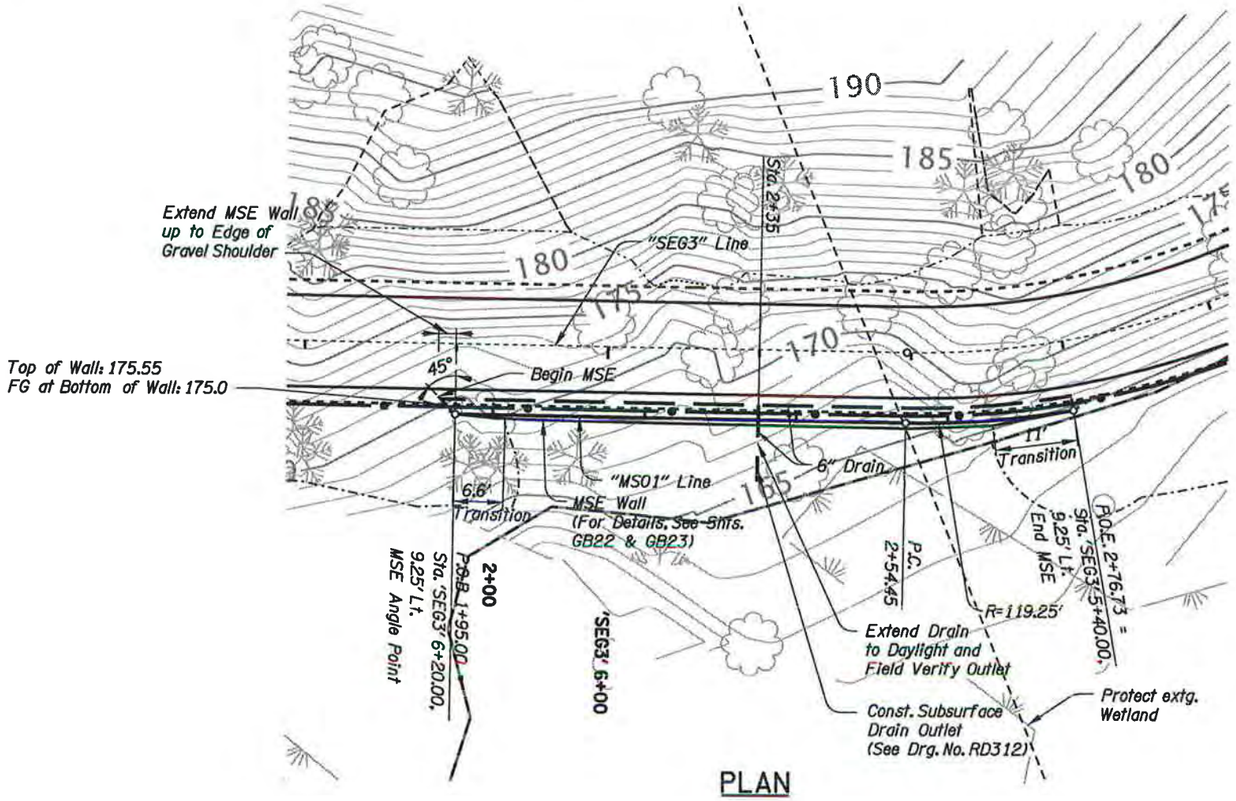
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: R Ali	Reviewer: C Hemberry
Drafter: D Blackshere	Checker: R Ali

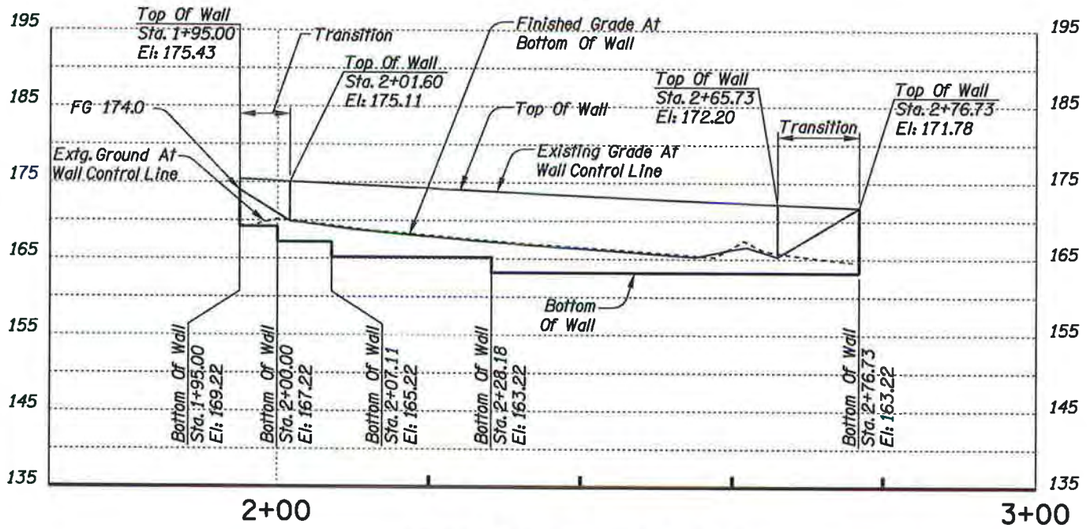
WALL - RS01
GEOTECHNICAL DATA SHEET

SHEET NO. GB01A

662691rw02.dgn



PLAN



DEVELOPED ELEVATION

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020.12.21 10:17:23-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

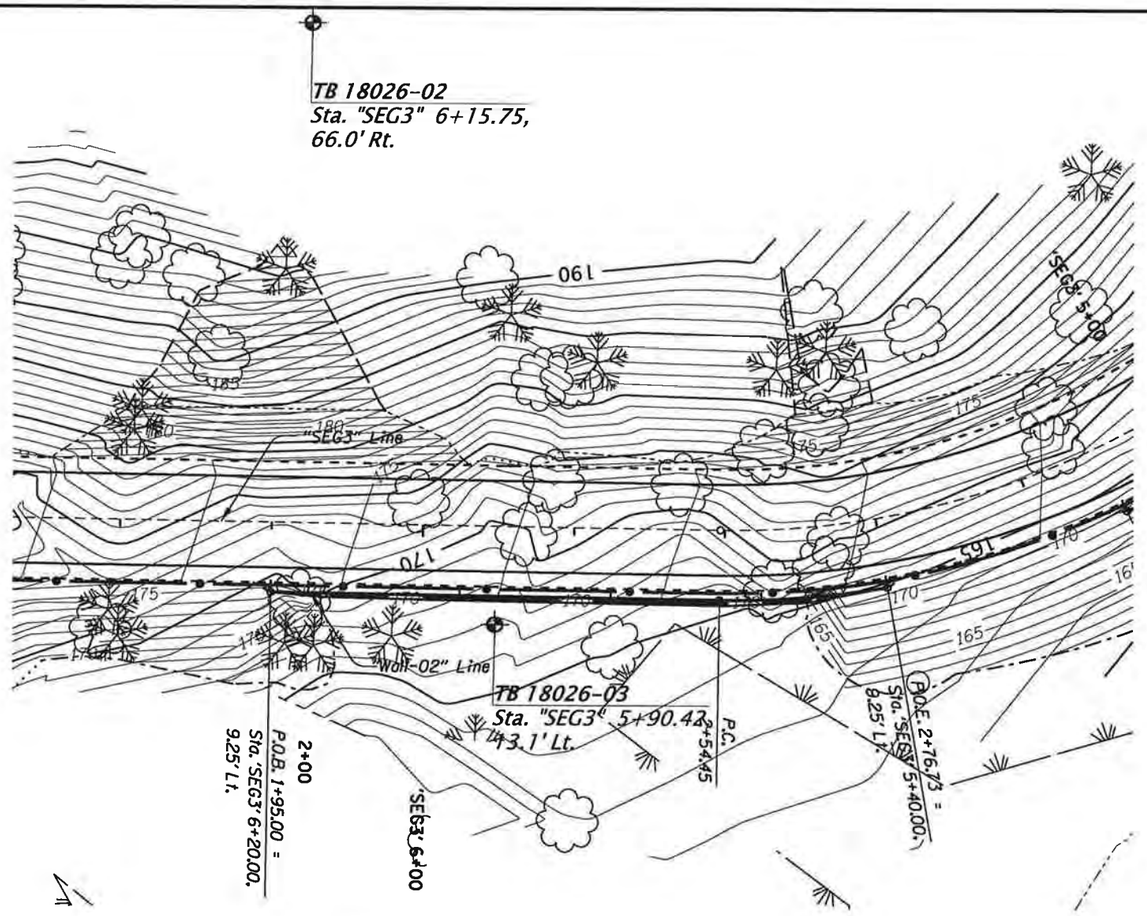
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

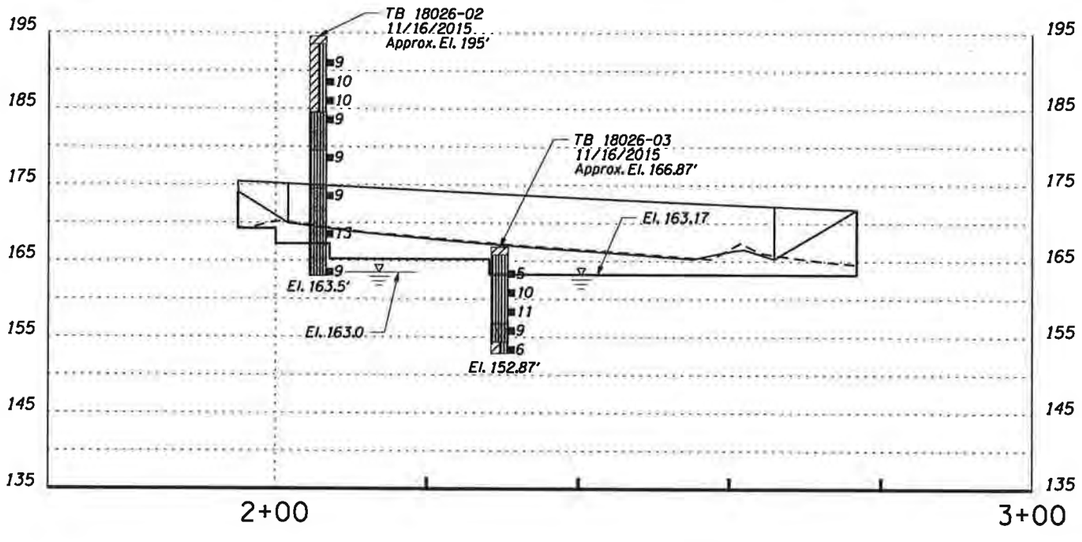
Designer: M Little
Drafter: J Walker
Reviewer: M Eller
Checker: M Eller

WALL - MS01
PLAN AND PROFILE

SHEET NO.
GB02

21-DEC-2020 10:15





UNIT DESCRIPTIONS 54V-027

- SANDY SILT; ML; BROWN; MOIST TO WET; SOFT; (TOPSOIL WITH ROOT ZONE TO 10 INCHES)
- SANDY SILT; ML; BROWN TO GRAY; MOIST TO WET; LOW TO MEDIUM PLASTICITY; SOFT TO MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
- SILTY FINE SAND; SM; BROWN; WET; LOW TO MEDIUM PLASTICITY; LOOSE (MISSOULA FINE-FLOOD DEPOSITS)
- CLAYEY SILT; CL-ML; BROWN; MOIST TO WET; MEDIUM PLASTICITY; MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
- SAND; SP; BROWN; WET; LOOSE TO MEDIUM DENSE (MISSOULA FINE-FLOOD DEPOSITS)

LEGEND

■ 24	=	Standard penetration test - N value
RQD	=	Rock quality designation
50/1st #	=	SPT Test Refusal Length
⊕	=	Bore Hole Location
▽		Groundwater measured in the bore hole

GENERAL NOTES

1. 1' Contour Interval.
2. Elevations are based on North American Vertical Datum (1988).
3. Geotechnical data shown on this drawing are a consolidation of information and/or revision in terminology from the drill logs. More detailed subsurface data is available on the drill logs in the geotechnical report, which is available from the Engineer.
4. In accordance with ASTM D1586-84, N values are reported for an interval of 2.5 ft. except as noted.

N

0 10 20 30
Horizontal Scale In Feet

0 5 10 15
Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.17 12:26:23-08'00'
OREGON
JULY 14, 1998
RAJIV ALI
EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

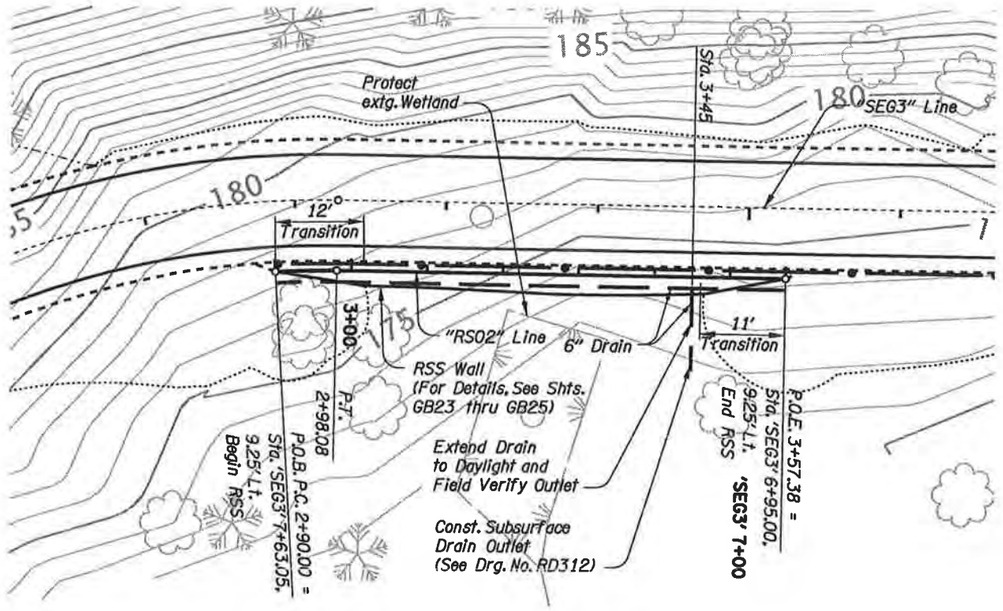
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: R Ali | Reviewer: C Hemberry
Drafter: D Blackshere | Checker: R Ali

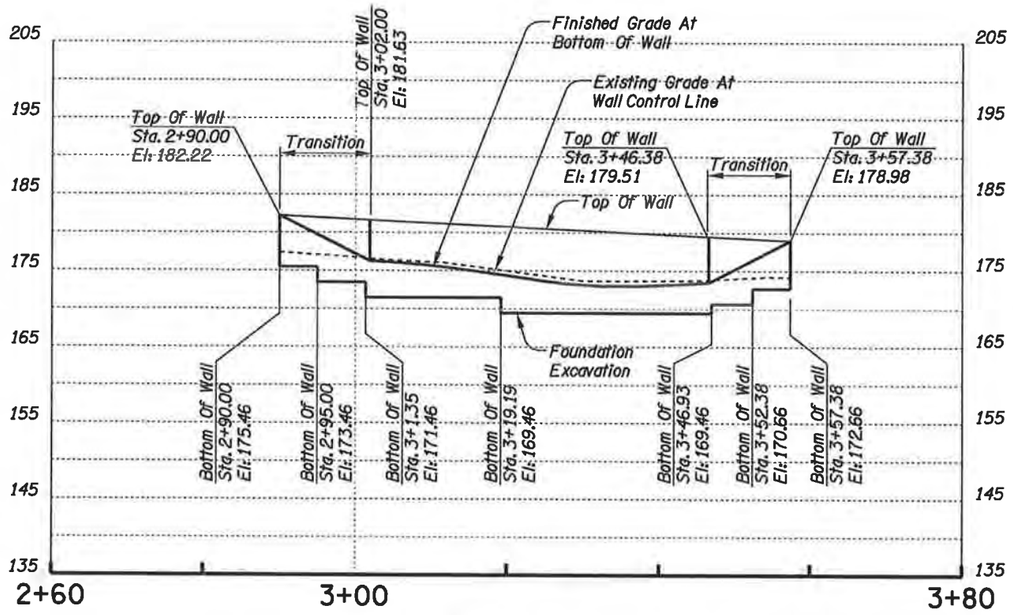
WALL - MS01
GEOTECHNICAL DATA SHEET

SHEET NO. GB02A

662691rw02.dgn



PLAN



DEVELOPED ELEVATION

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

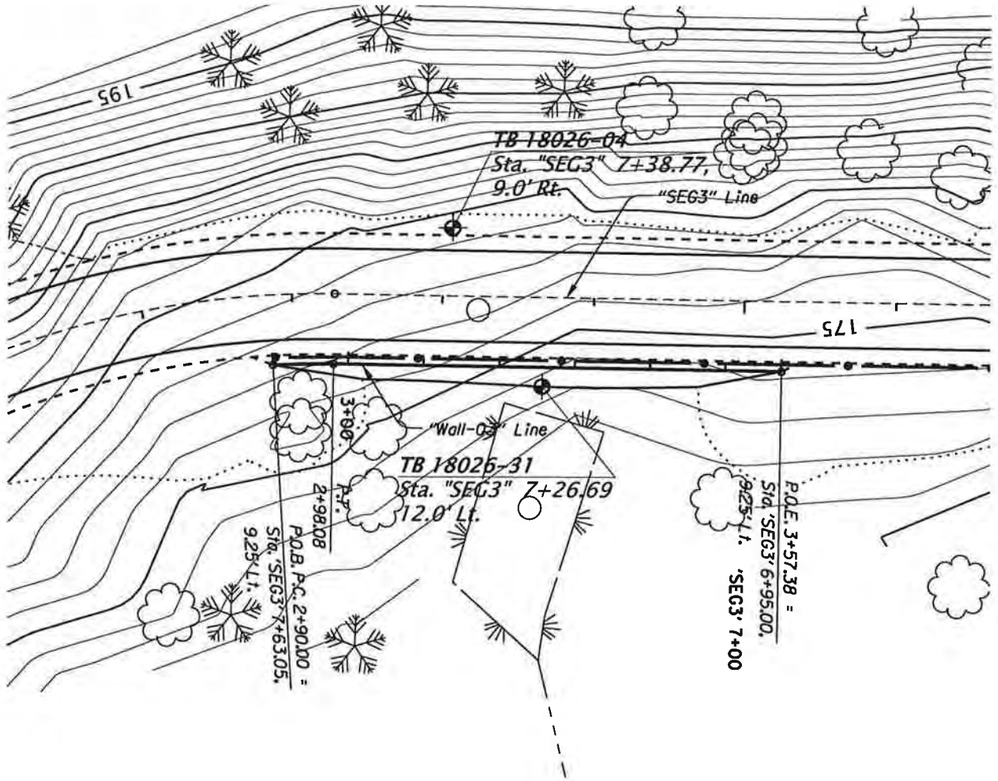
Designer: M Little
Drafter: J Walker
Reviewer: M Eller
Checker: M Eller

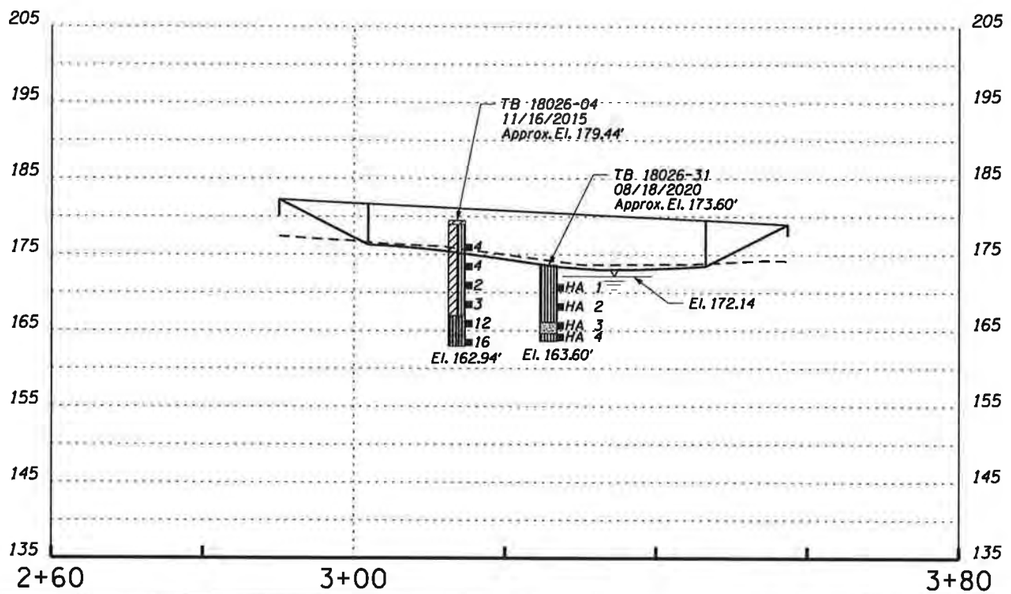
WALL - RS02
PLAN AND PROFILE

SHEET NO.
GB03

21-DEC-2020 10:15

ROADWAY





UNIT DESCRIPTIONS

54V-027

SANDY SILT; ML; BROWN; MOIST TO WET; SOFT; (TOPSOIL WITH ROOT ZONE TO 10 INCHES)

SANDY SILT; ML; BROWN TO GRAY; MOIST TO WET; LOW TO MEDIUM PLASTICITY; SOFT TO MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)

SILTY FINE SAND; SM; BROWN; WET; LOW TO MEDIUM PLASTICITY; LOOSE (MISSOULA FINE-FLOOD DEPOSITS)

CLAYEY SILT; CL-ML; BROWN; MOIST TO WET; MEDIUM PLASTICITY; MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)

SAND; SP; BROWN; WET; LOOSE TO MEDIUM DENSE (MISSOULA FINE-FLOOD DEPOSITS)

LEGEND

■ 24	=	Standard penetration test - N value
RQD	=	Rock quality designation
50/1st #"	=	SPT Test Refusal Length
⌖	=	Bore Hole Location
▽		Groundwater measured in the bore hole

GENERAL NOTES

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N

0 10 20 30
Horizontal Scale In Feet

0 5 10 15
Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.17 12:26:49-08'00'
OREGON
JULY 14, 1998
RAJIV ALI
EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

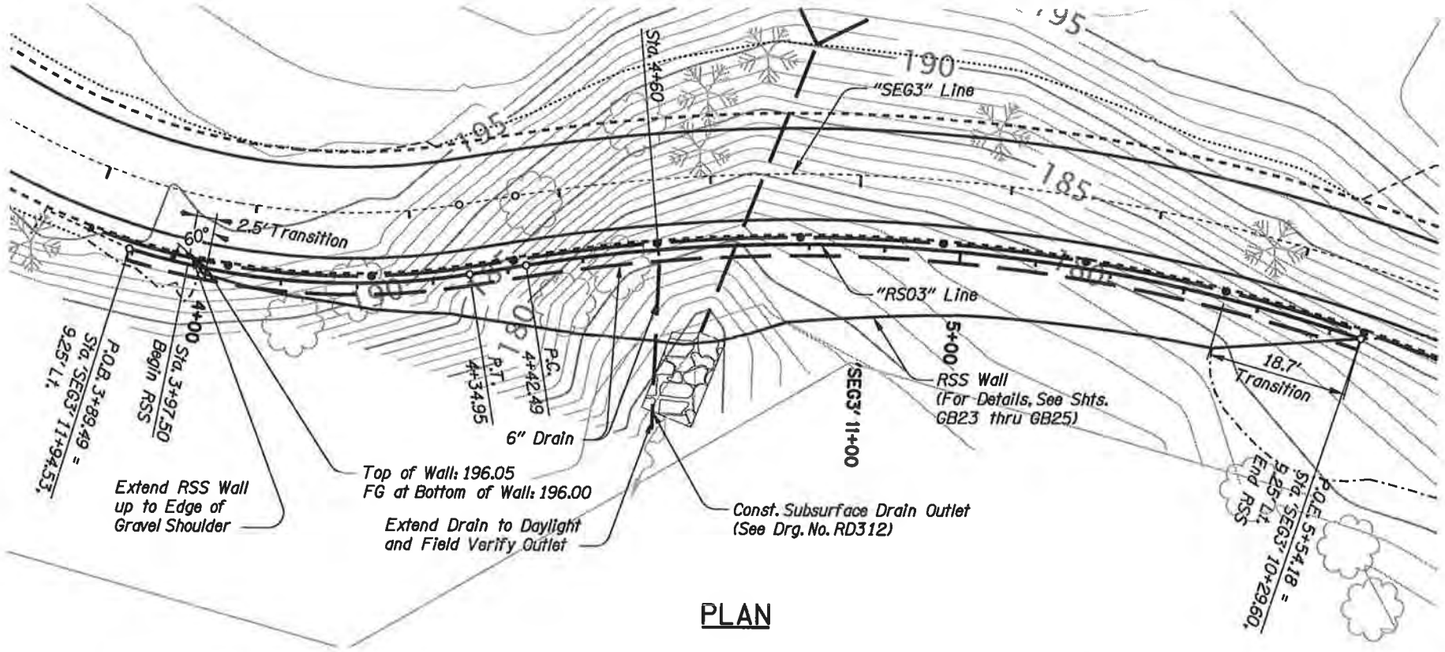
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: R Ali | Reviewer: C Hemberry
Drafter: D Blackshere | Checker: R Ali

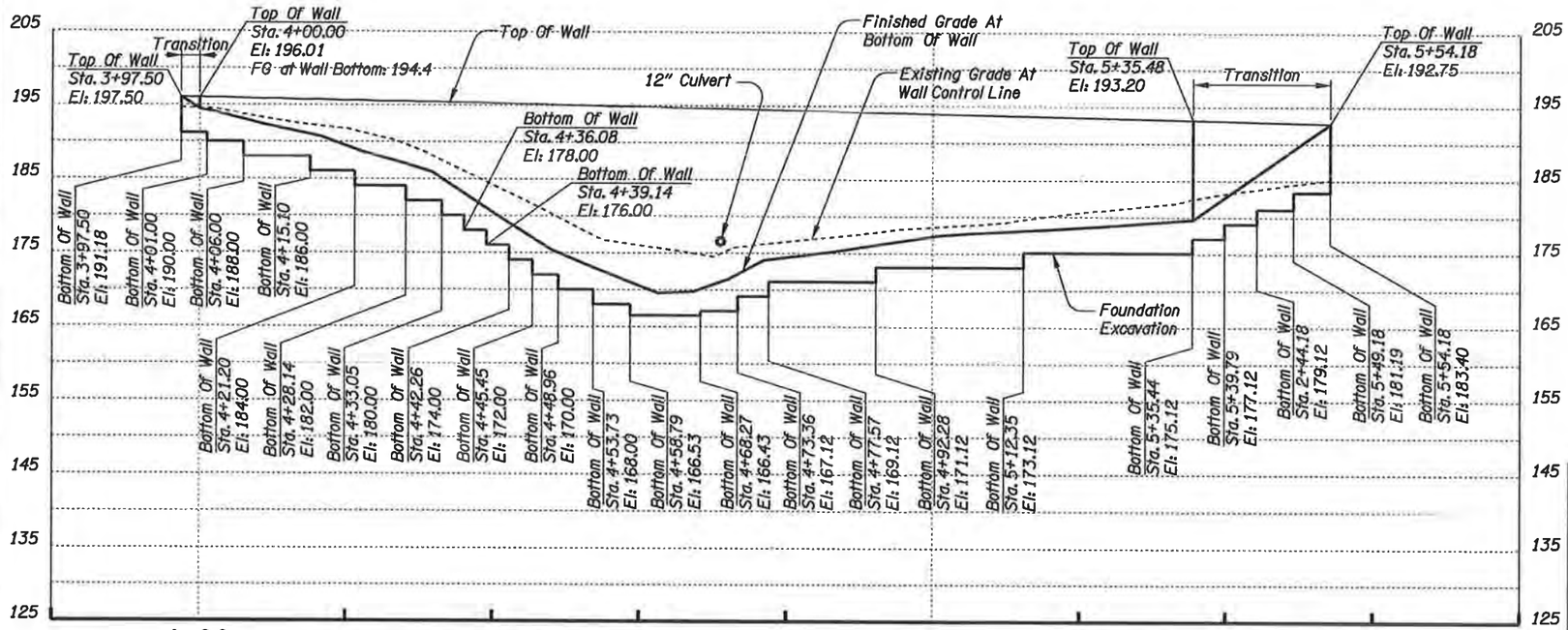
WALL - RS02
GEOTECHNICAL DATA SHEET

SHEET NO. GB03A

662691rw03.dgn



PLAN



DEVELOPED ELEVATION

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

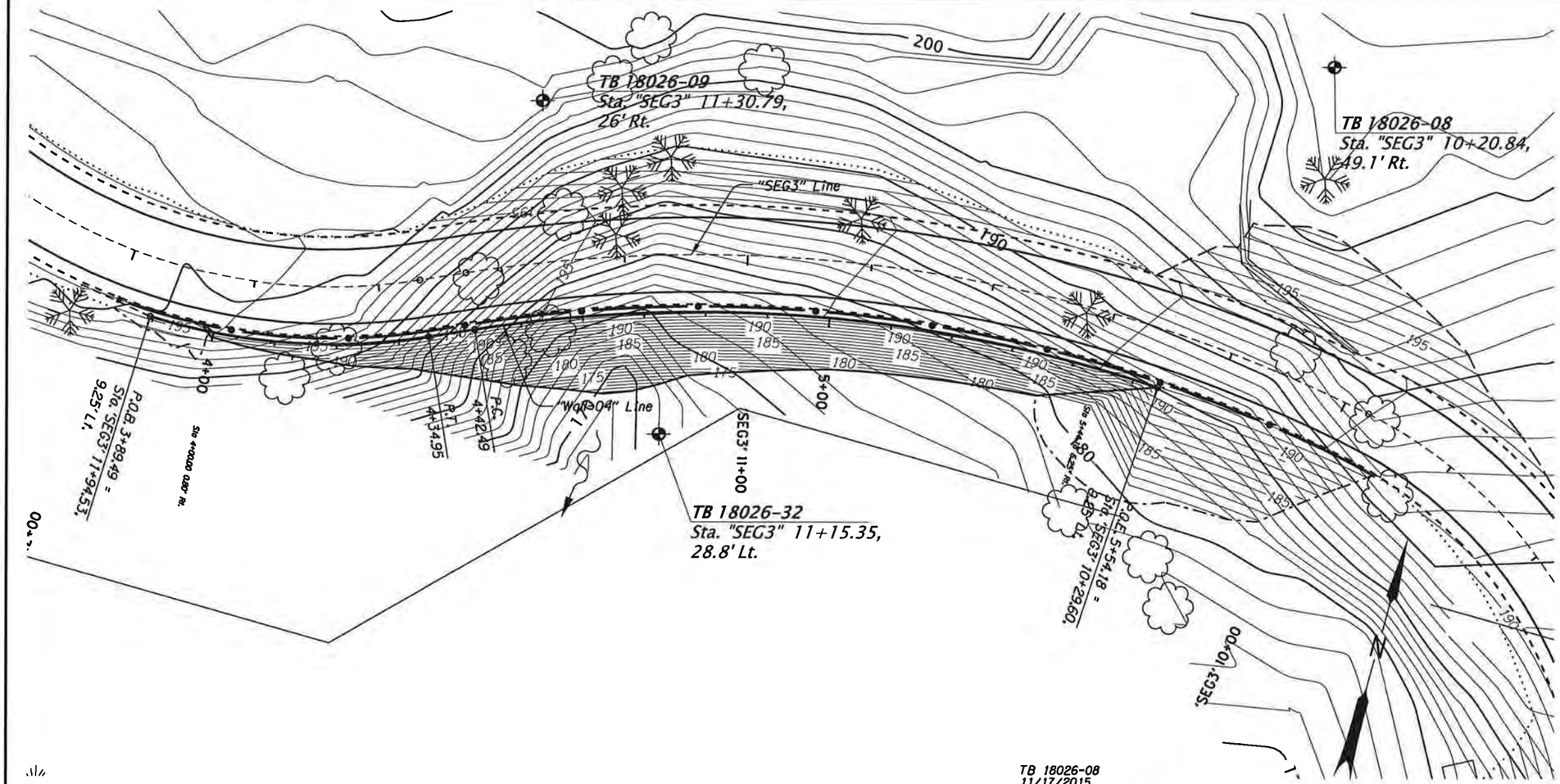
Designer: M Little
Reviewer: M Eller
Drafter: J Walker
Checker: M Eller

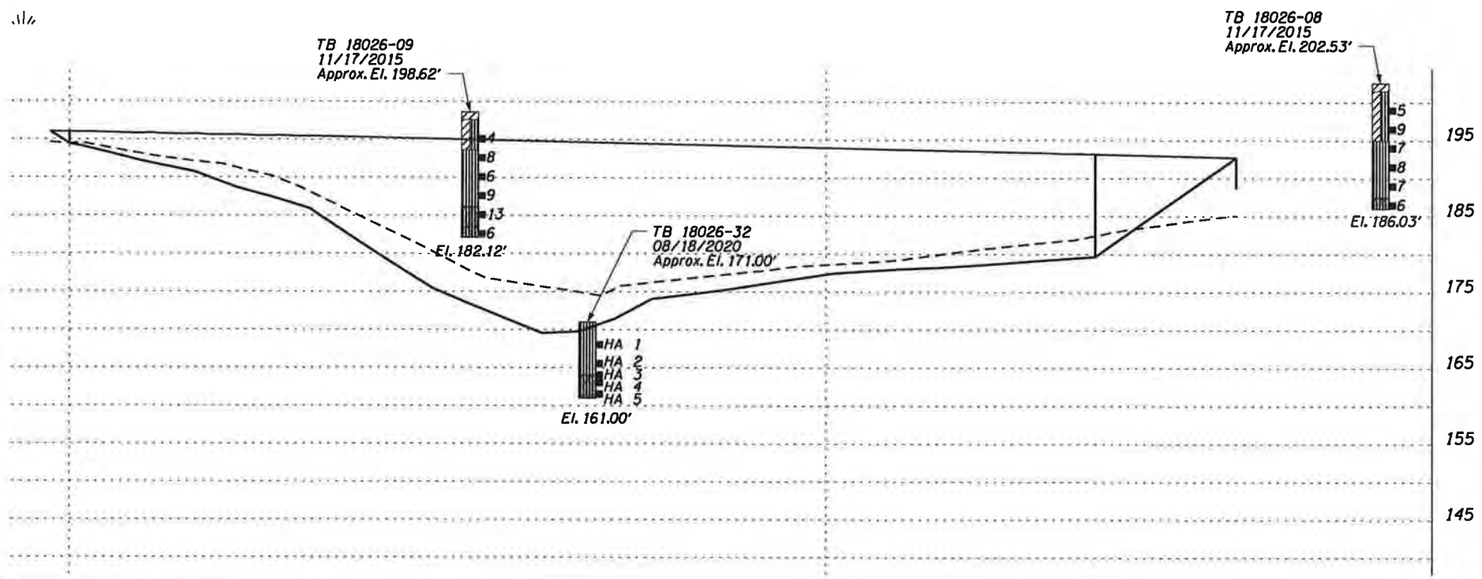
WALL - RS03
PLAN AND PROFILE

SHEET NO.
GB04

21-DEC-2020 10:15

54V-027





UNIT DESCRIPTIONS

SANDY SILT; ML; BROWN; MOIST TO WET; SOFT; (TOPSOIL WITH ROOT ZONE TO 10 INCHES)

SANDY SILT; ML; BROWN TO GRAY; MOIST TO WET; LOW TO MEDIUM PLASTICITY; SOFT TO MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)

SILTY FINE SAND; SM; BROWN; WET; LOW TO MEDIUM PLASTICITY; LOOSE (MISSOULA FINE-FLOOD DEPOSITS)

CLAYEY SILT; CL-ML; BROWN; MOIST TO WET; MEDIUM PLASTICITY; MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)

SAND; SP; BROWN; WET; LOOSE TO MEDIUM DENSE (MISSOULA FINE-FLOOD DEPOSITS)

LEGEND

■ 24	=	Standard penetration test - N value
RQD	=	Rock quality designation
50/1st #"	=	SPT Test Refusal Length
⊕	=	Bore Hole Location
▽		Groundwater measured in the bore hole

GENERAL NOTES

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2. Elevations are based on North American Vertical Datum (1988).
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4. In accordance with ASTM D1586-84, N values are reported for an interval of 2.5 ft. except as noted.

0 10 20 30
Horizontal Scale In Feet

0 5 10 15
Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.17 12:27:16-08'00'
OREGON
JULY 14, 1998
RAJIV ALI
EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

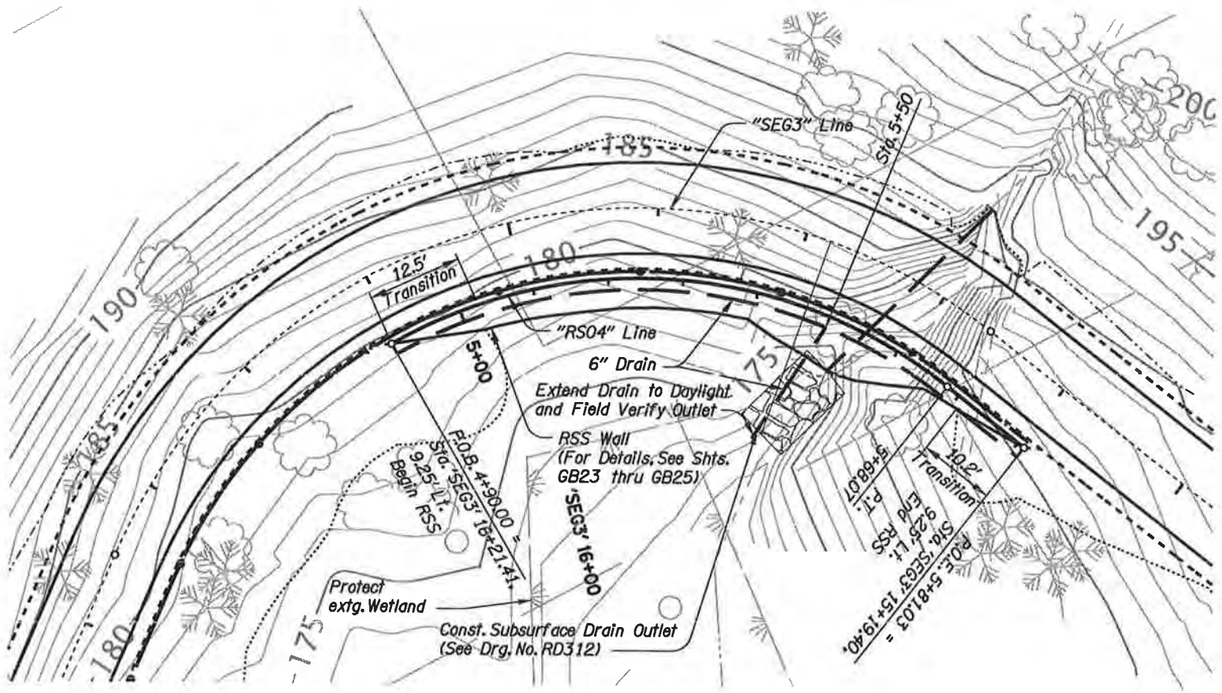
Designer: R Ali | Reviewer: C Hemberry
Drafter: D Blackshere | Checker: R Ali

WALL - RS03
GEOTECHNICAL DATA SHEET

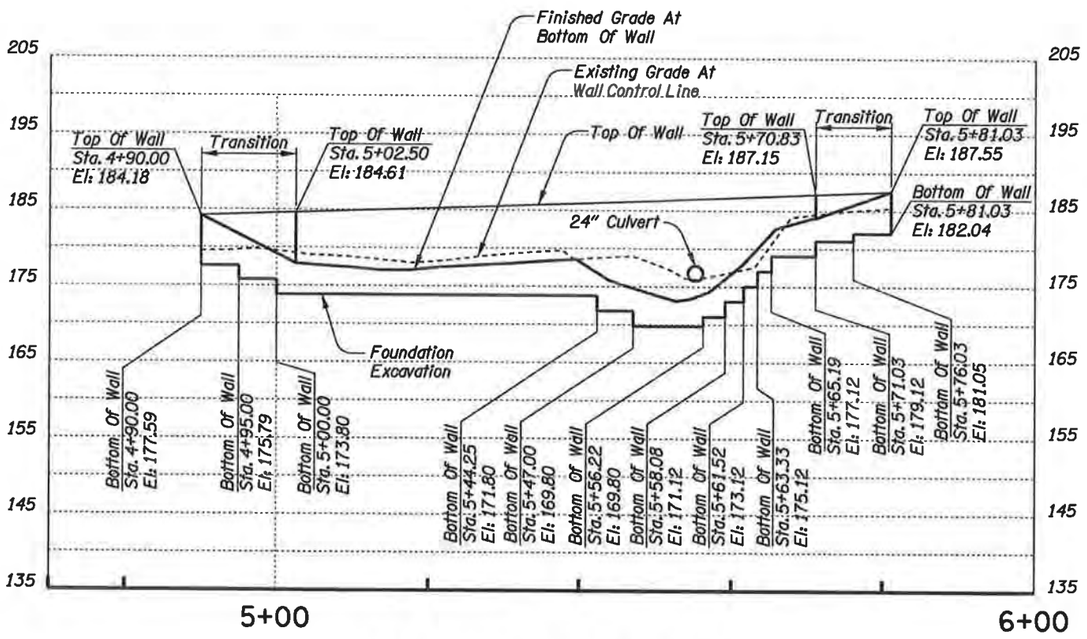
SHEET NO.
GB04A

ROADWAY

662691rw04.dgn



PLAN



DEVELOPED ELEVATION

0 10 20 30
Horizontal Scale In Feet

0 10 20 30
Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020.12.21 10:13:44-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

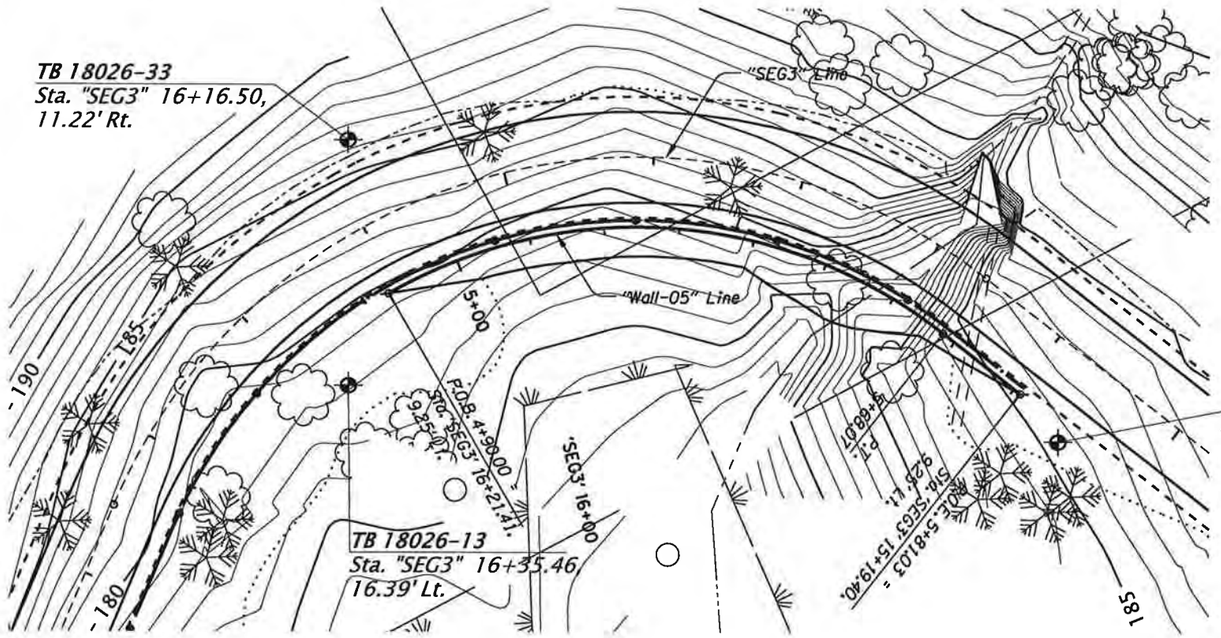
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

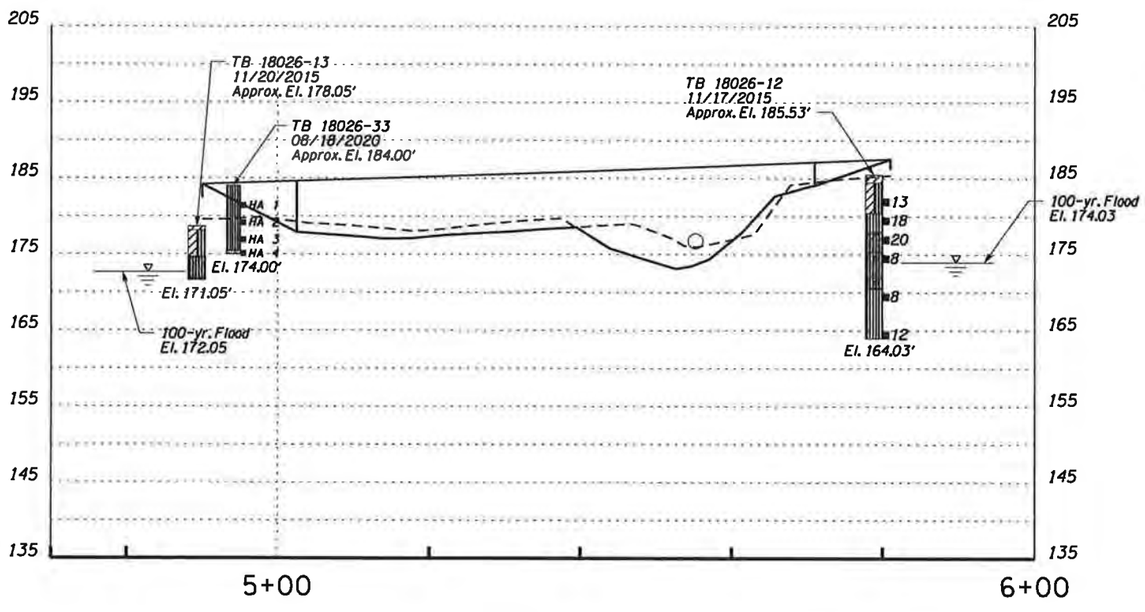
Designer: M Little
Drafter: J Walker
Reviewer: M Eller
Checker: M Eller

WALL - RS04
PLAN AND PROFILE

SHEET NO.
GB05

21-DEC-2020 10:15





UNIT DESCRIPTIONS 54V-027

- SANDY SILT; ML; BROWN; MOIST TO WET; SOFT; (TOPSOIL WITH ROOT ZONE TO 10 INCHES)
- SANDY SILT; ML; BROWN TO GRAY; MOIST TO WET; LOW TO MEDIUM PLASTICITY; SOFT TO MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
- SILTY FINE SAND; SM; BROWN; WET; LOW TO MEDIUM PLASTICITY; LOOSE (MISSOULA FINE-FLOOD DEPOSITS)
- CLAYEY SILT; CL-ML; BROWN; MOIST TO WET; MEDIUM PLASTICITY; MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
- SAND; SP; BROWN; WET; LOOSE TO MEDIUM DENSE (MISSOULA FINE-FLOOD DEPOSITS)

LEGEND

- ■ 24 = Standard penetration test - N value
- RQD = Rock quality designation
- 50/1st #" = SPT Test Refusal Length
- ⌖ = Bore Hole Location
- ▽ = Groundwater measured in the bore hole

GENERAL NOTES

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N

0 10 20 30
Horizontal Scale In Feet

0 5 10 15
Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.17 12:27:44-08'00'
OREGON
JULY 14, 1998
RAJIV ALI
EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

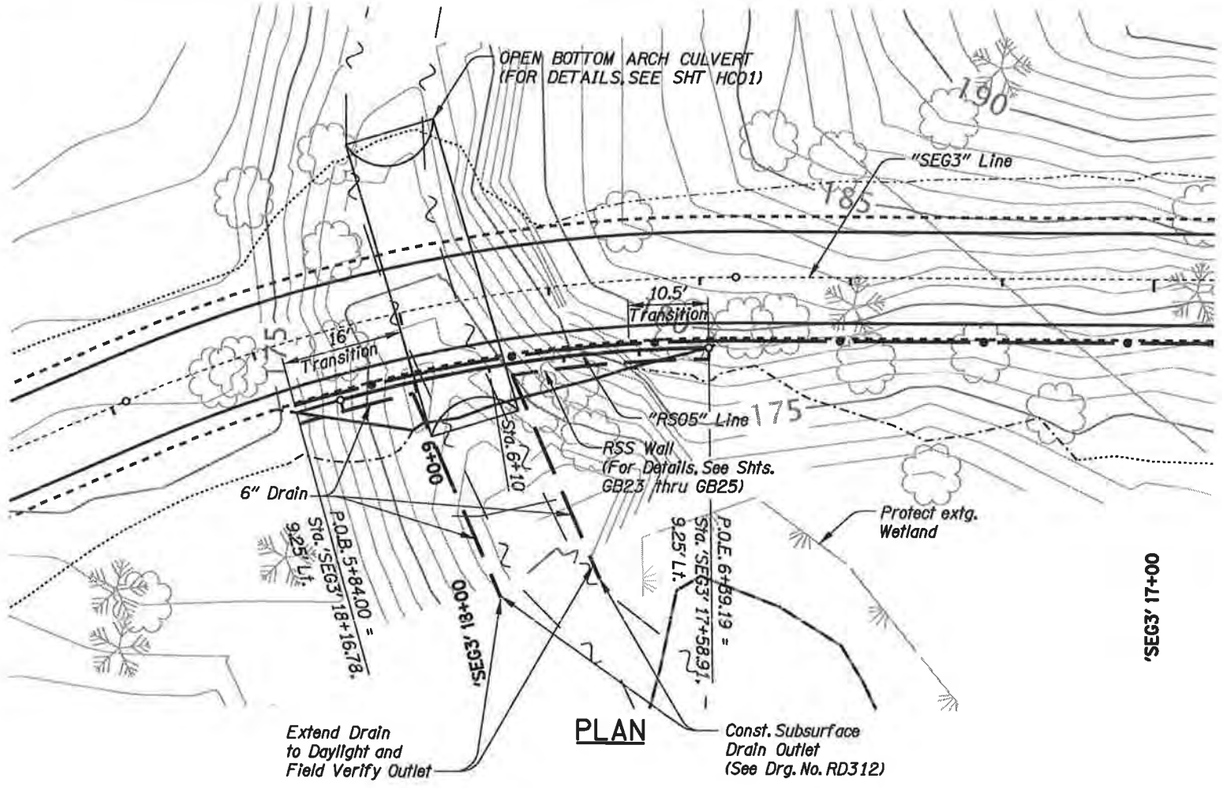
Designer: R Ali | Reviewer: C Hemberry
Drafter: D Blackshere | Checker: R Ali

WALL - RS04
GEOTECHNICAL DATA SHEET

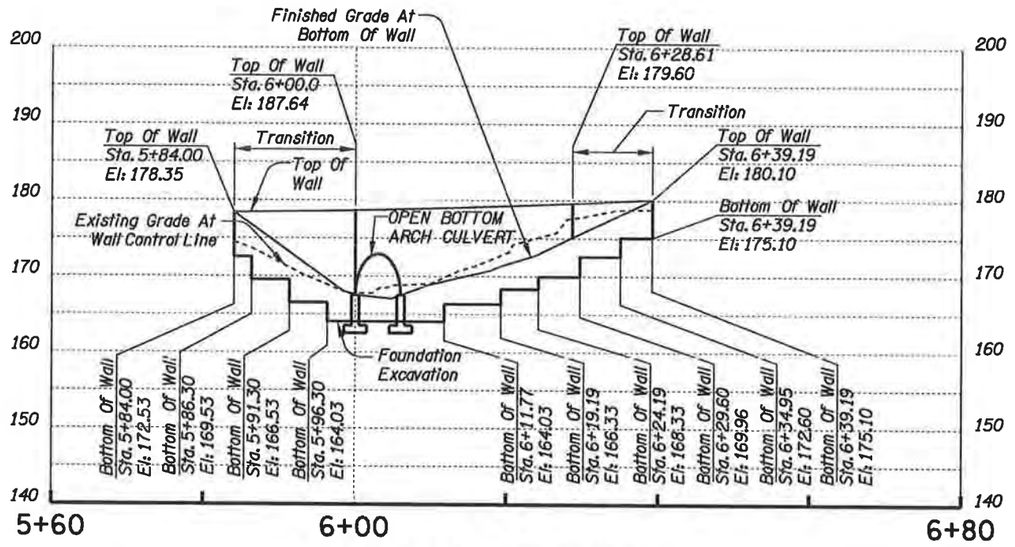
SHEET NO. GB05A

ROADWAY

662691rw05.dgn



PLAN



DEVELOPED ELEVATION

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201 4053
TEL. 503.235.5000

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

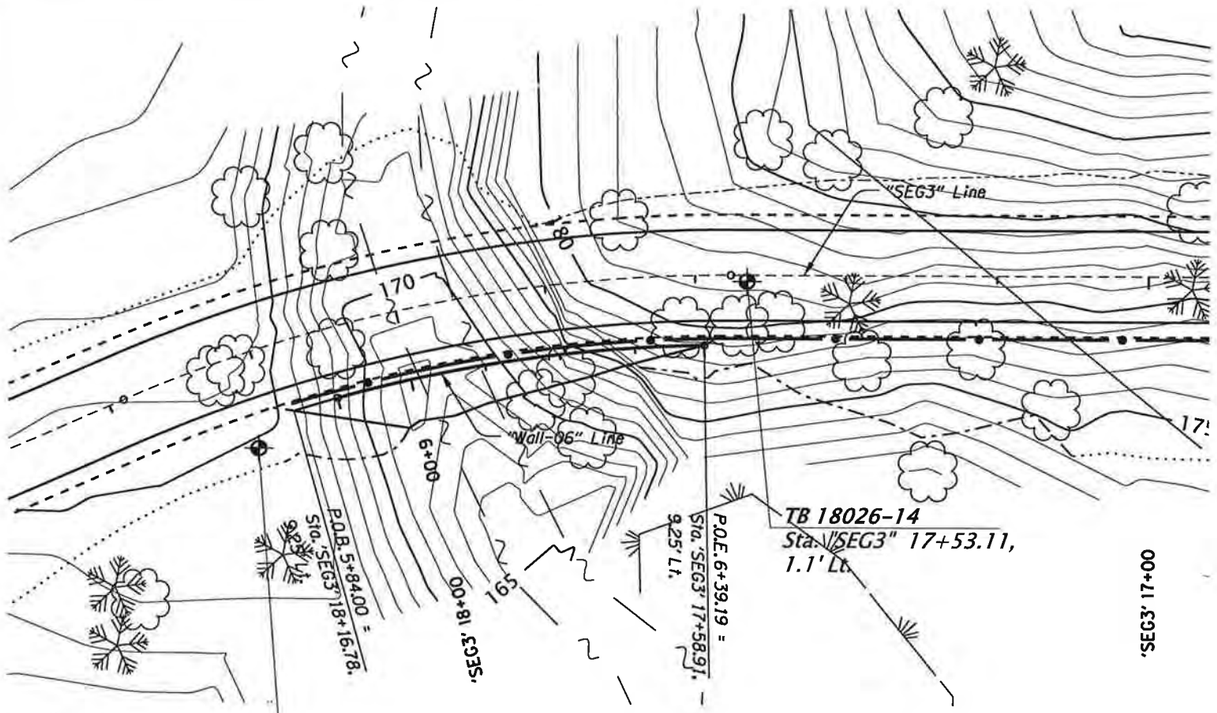
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

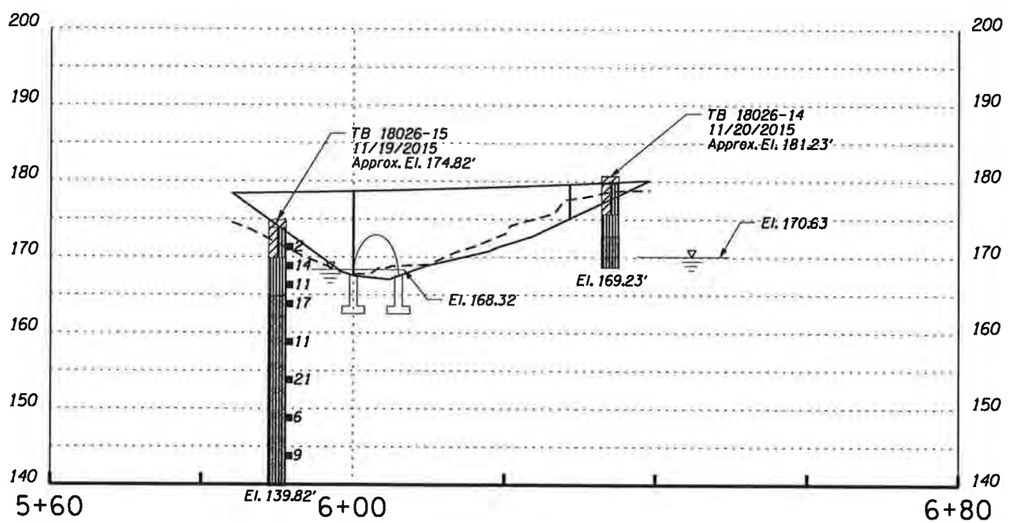
Designer: M Little
Drafter: J Walker
Reviewer: M Eller
Checker: M Eller

WALL - RS05 PLAN AND PROFILE

SHEET NO. GB06

21-DEC-2020 10:15





UNIT DESCRIPTIONS 54V-027

- SANDY SILT; ML; BROWN; MOIST TO WET; SOFT; (TOPSOIL WITH ROOT ZONE TO 10 INCHES)
- SANDY SILT; ML; BROWN TO GRAY; MOIST TO WET; LOW TO MEDIUM PLASTICITY; SOFT TO MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
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LEGEND

■ 24	=	Standard penetration test - N value
RQD	=	Rock quality designation
50/1st #"	=	SPT Test Refusal Length
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▽		Groundwater measured in the bore hole

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N

0 10 20 30
Horizontal Scale In Feet

0 5 10 15
Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.17 12:28:24-08'00'
OREGON
JULY 14, 1998
RAJIV ALI
EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

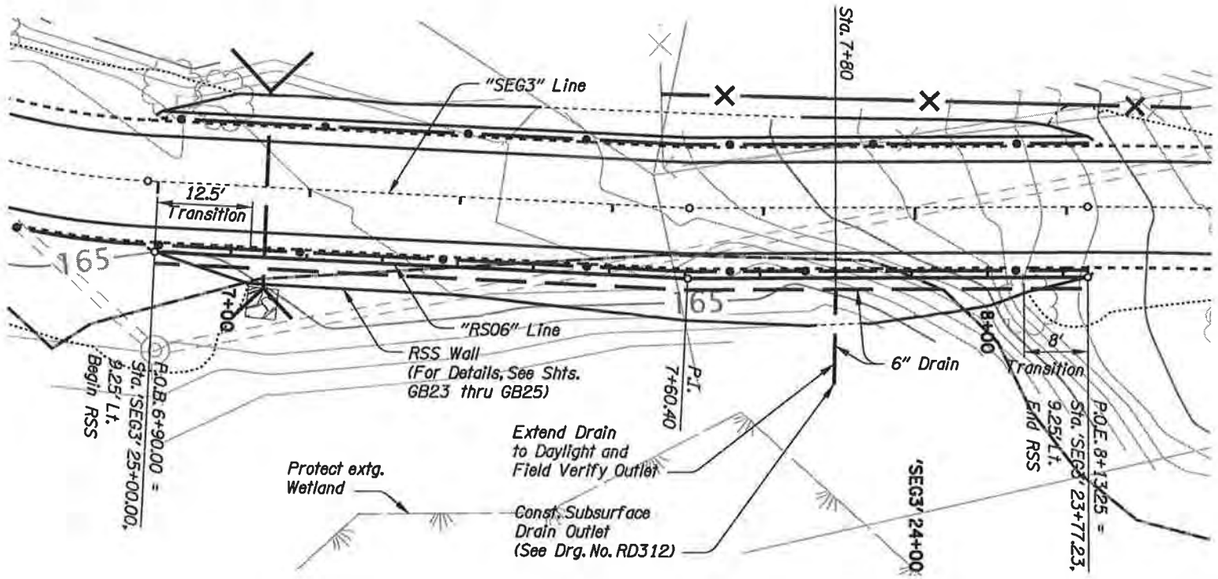
Designer: R Ali | Reviewer: C Hemberry
Drafter: D Blackshere | Checker: R Ali

WALL - RS05
GEOTECHNICAL DATA SHEET

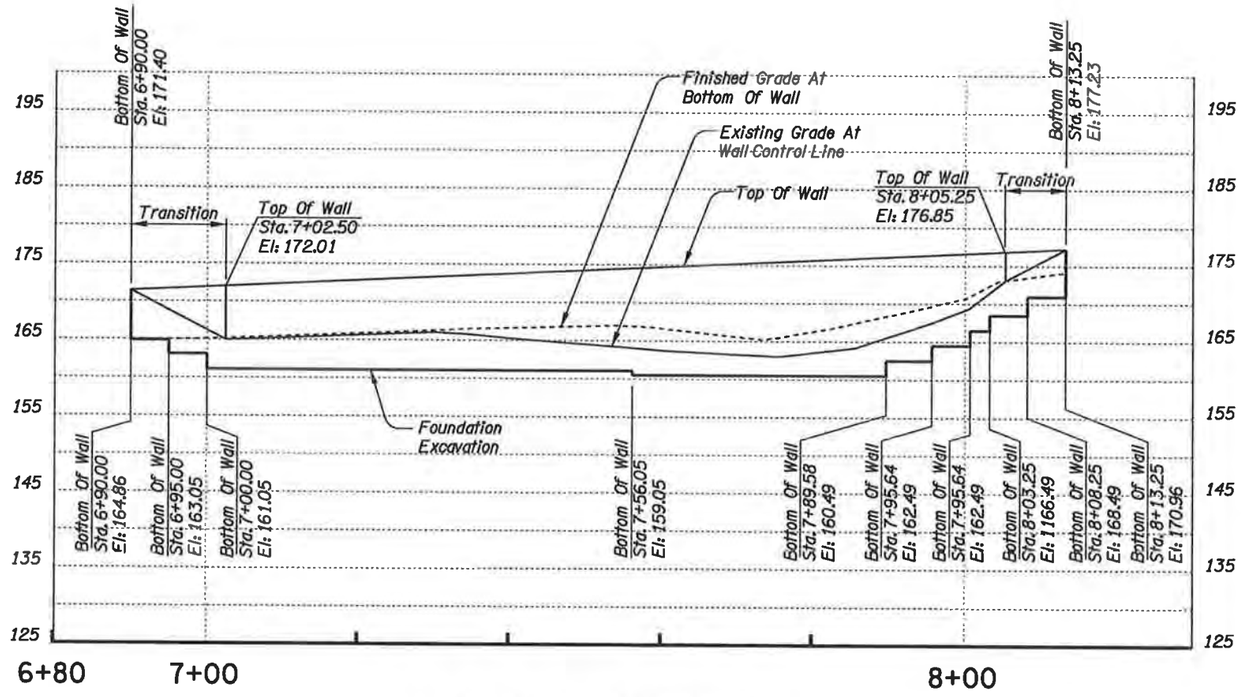
SHEET NO. GB06A

ROADWAY

662691rw06.dgn



PLAN



DEVELOPED ELEVATION

0 10 20 30
Horizontal Scale In Feet

0 10 20 30
Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020.12.21 10:14:31-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

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PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

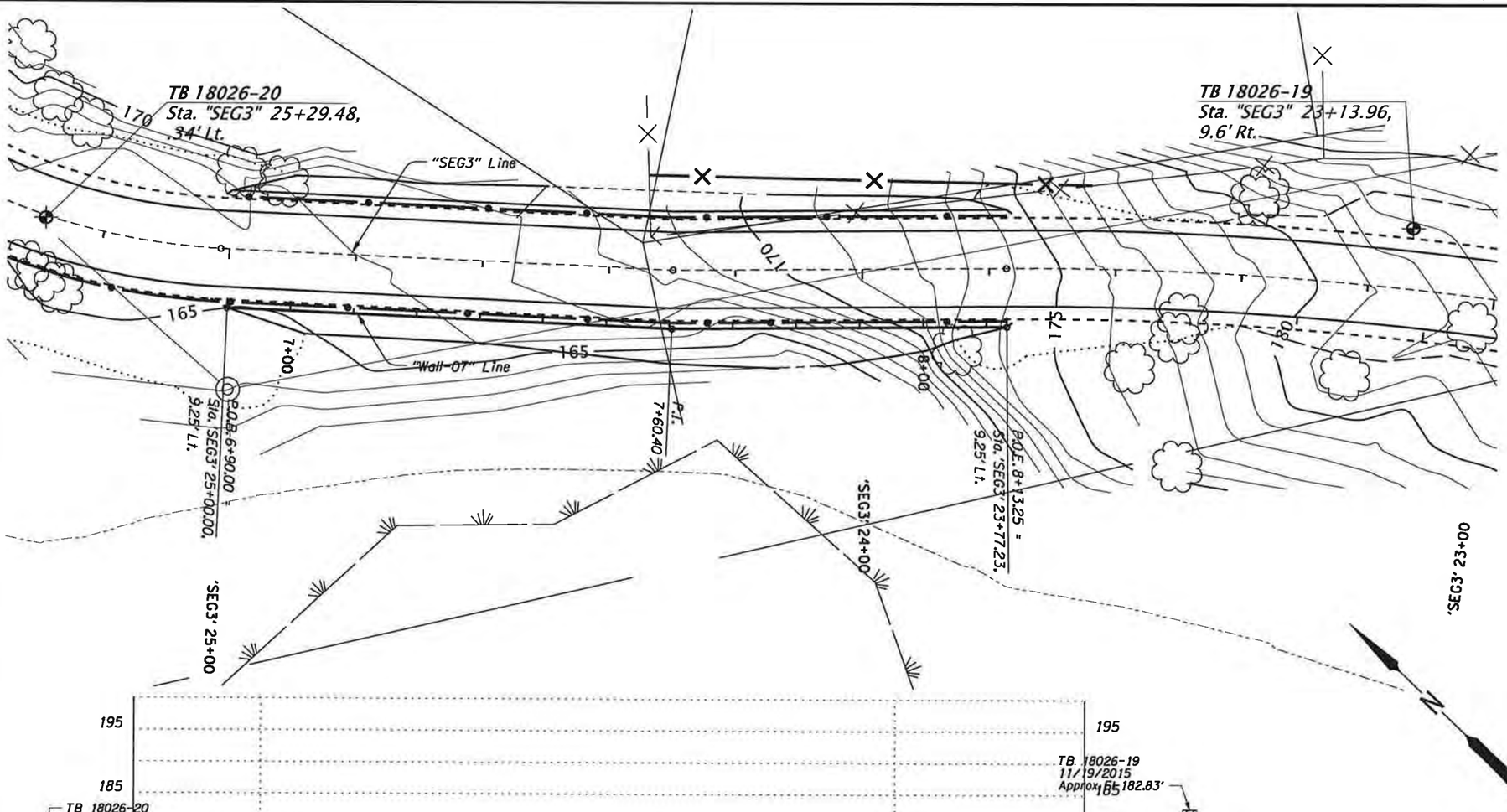
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

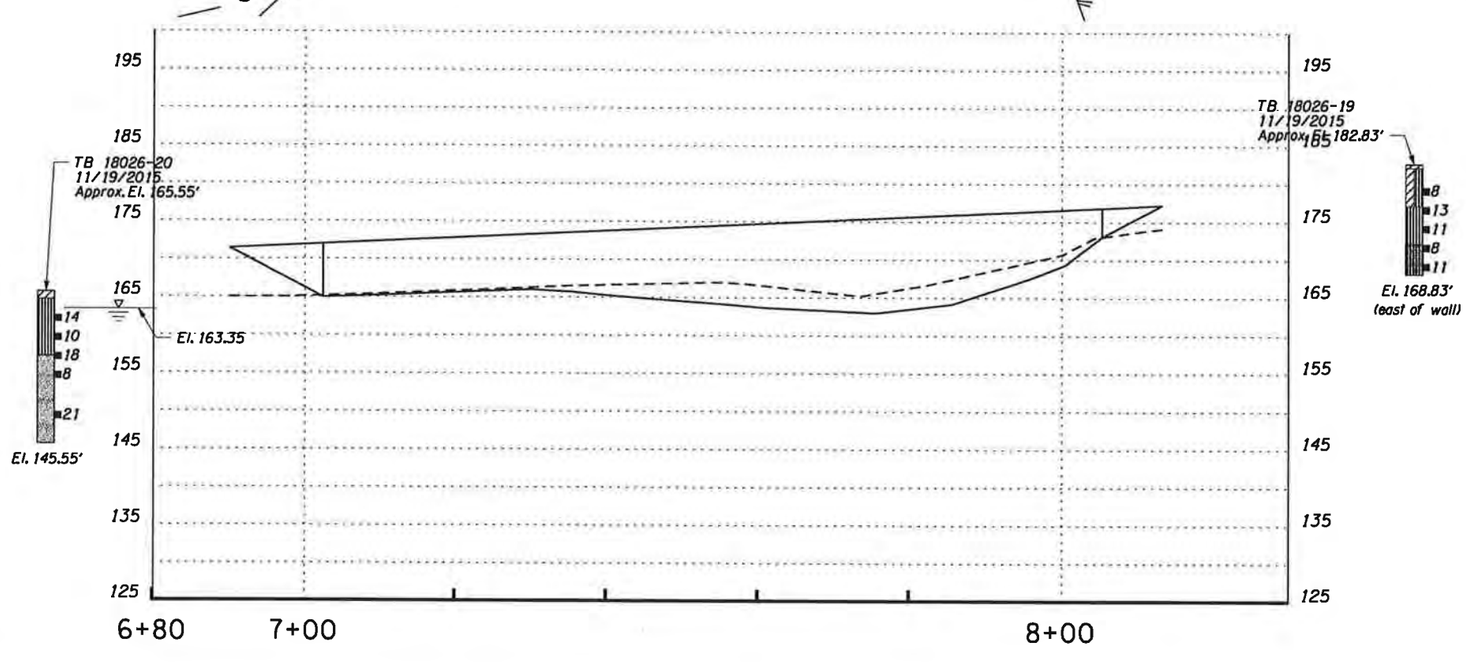
Designer: M Little | Reviewer: M Eller
Drafter: J Walker | Checker: M Eller

WALL - RS06 PLAN AND PROFILE

SHEET NO. GB07

21-DEC-2020 10:17





UNIT DESCRIPTIONS 54V-027

- SANDY SILT; ML; BROWN; MOIST TO WET; SOFT; (TOPSOIL WITH ROOT ZONE TO 10 INCHES)
- SANDY SILT; ML; BROWN TO GRAY; MOIST TO WET; LOW TO MEDIUM PLASTICITY; SOFT TO MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
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LEGEND

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- 50/1st #" = SPT Test Refusal Length
- ⊕ = Bore Hole Location
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GENERAL NOTES

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Horizontal Scale In Feet

0 5 10 15
Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.17 12:26:58-08'00'
OREGON
JULY 14, 1998
RAJIV ALI
EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

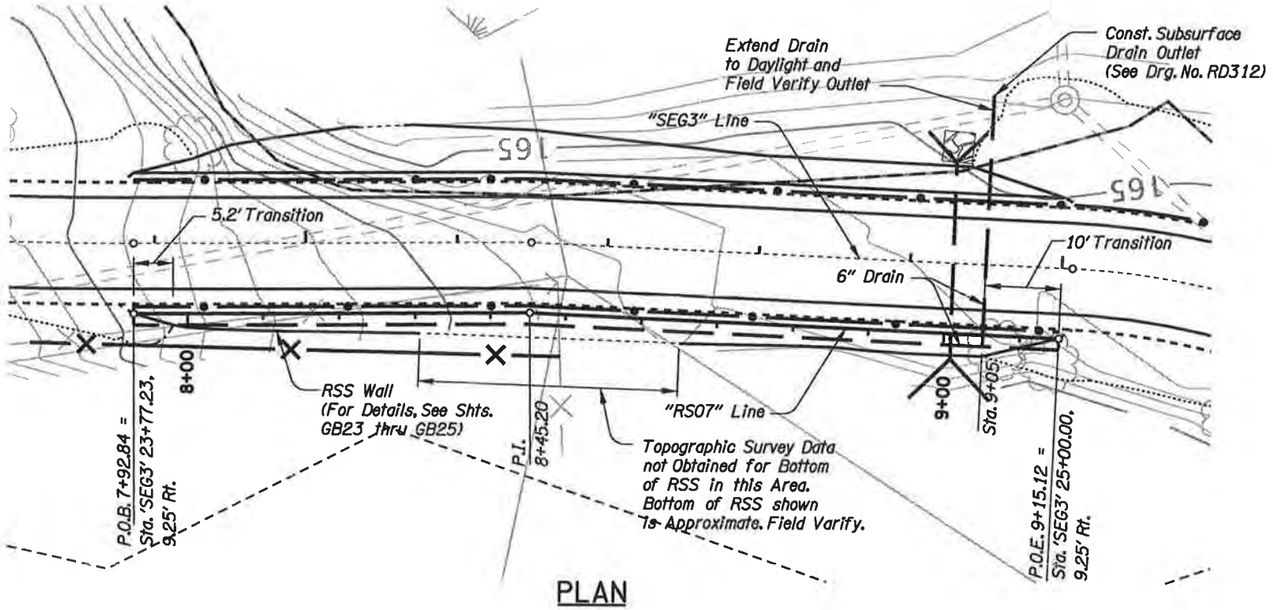
Designer: R Ali
Drafter: D Blackshere
Reviewer: C Hemberry
Checker: R Ali

WALL - RS06
GEOTECHNICAL DATA SHEET

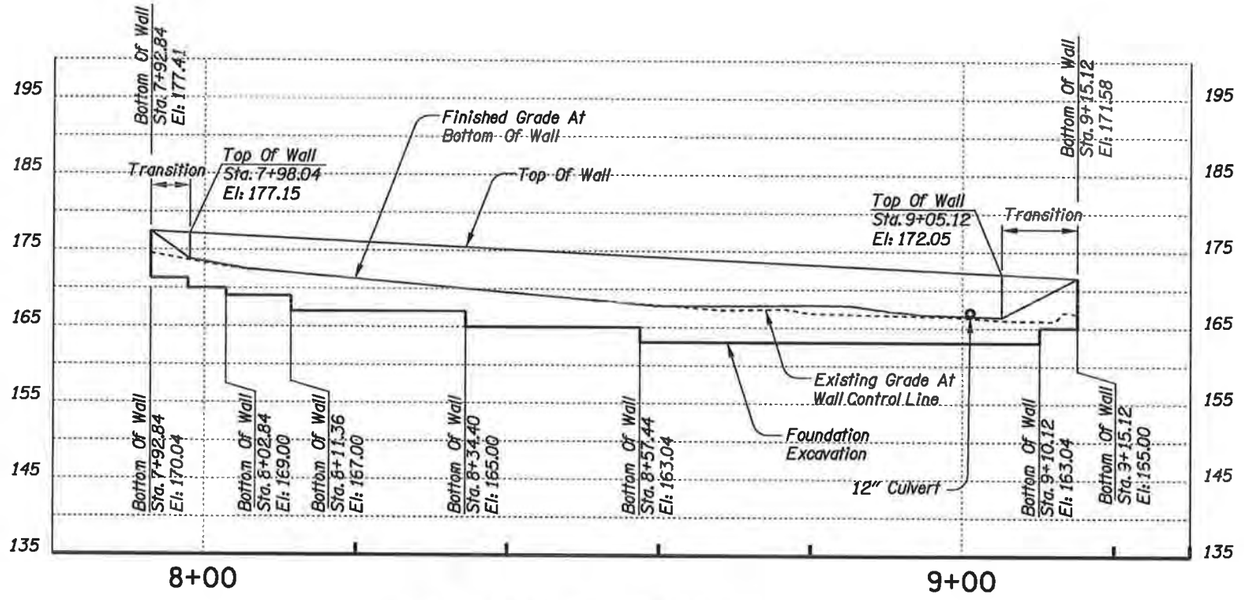
SHEET NO.
GB07A

ROADWAY

662691rw07.dgn



PLAN



DEVELOPED ELEVATION

0 10 20 30
Horizontal Scale In Feet

0 10 20 30
Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020.12.21 10:14:51-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

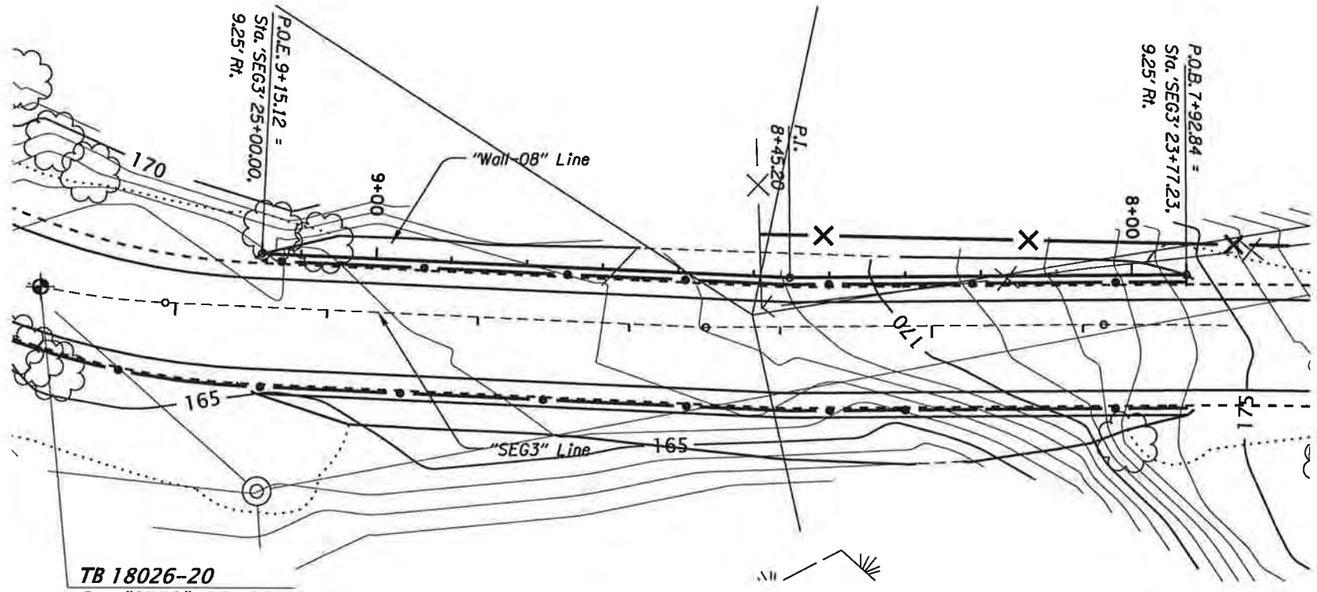
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

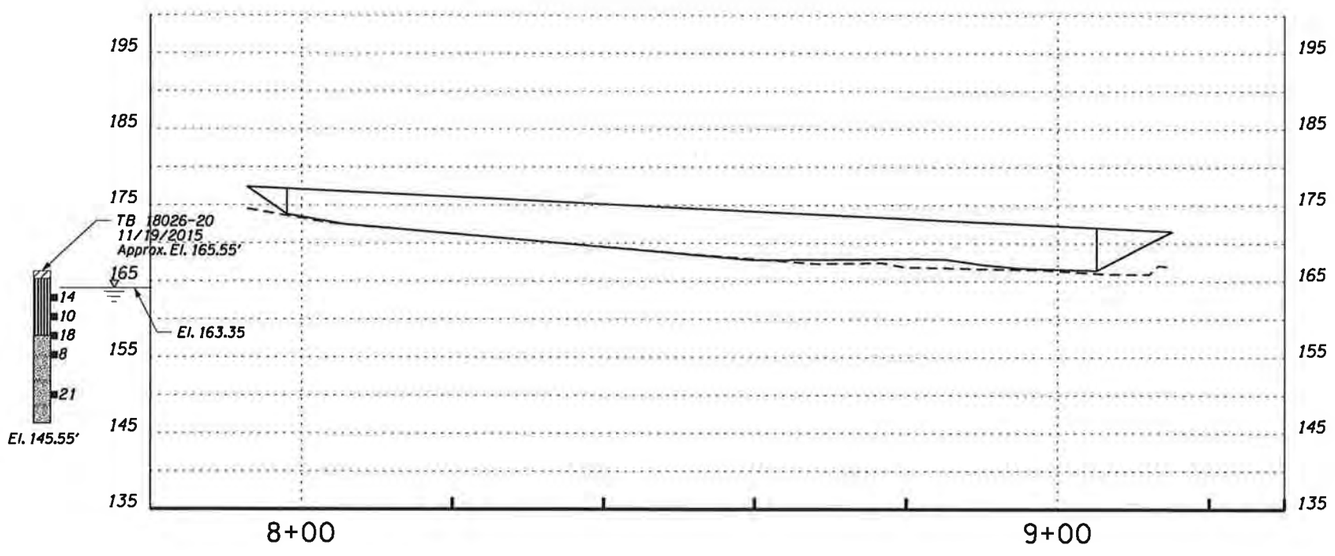
Designer: M Little
Drafter: J Walker
Reviewer: M Eller
Checker: M Eller

WALL - RS07
PLAN AND PROFILE

SHEET NO.
GB08

21-DEC-2020 10:15





UNIT DESCRIPTIONS 54V-027

- SANDY SILT; ML; BROWN; MOIST TO WET; SOFT; (TOPSOIL WITH ROOT ZONE TO 10 INCHES)
- SANDY SILT; ML; BROWN TO GRAY; MOIST TO WET; LOW TO MEDIUM PLASTICITY; SOFT TO MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
- SILTY FINE SAND; SM; BROWN; WET; LOW TO MEDIUM PLASTICITY; LOOSE (MISSOULA FINE-FLOOD DEPOSITS)
- CLAYEY SILT; CL-ML; BROWN; MOIST TO WET; MEDIUM PLASTICITY; MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
- SAND; SP; BROWN; WET; LOOSE TO MEDIUM DENSE (MISSOULA FINE-FLOOD DEPOSITS)

LEGEND

■ 24	=	Standard penetration test - N value
RQD	=	Rock quality designation
50/1st #"	=	SPT Test Refusal Length
⊕	=	Bore Hole Location
▽		Groundwater measured in the bore hole

GENERAL NOTES

1. 1' Contour Interval.
2. Elevations are based on North American Vertical Datum (1988).
3. Geotechnical data shown on this drawing are a consolidation of information and/or revision in terminology from the drill logs. More detailed subsurface data is available on the drill logs in the geotechnical report, which is available from the Engineer.
4. In accordance with ASTM D1586-84, N values are reported for an interval of 2.5 ft. except as noted.

N

0 10 20 30
Horizontal Scale In Feet

0 5 10 15
Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.17 12:29:40-08'00'
OREGON
JULY 14, 1998
RAJIV ALI
EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

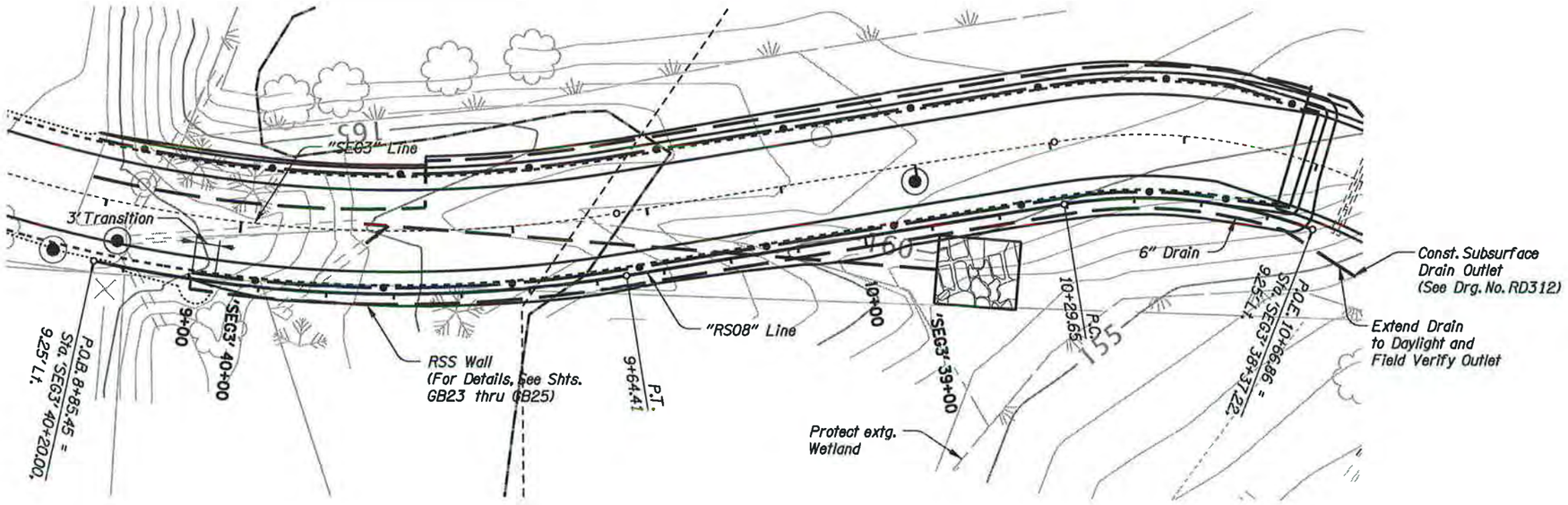
Designer: R Ali	Reviewer: C Hemberry
Drafter: D Blackshere	Checker: R Ali

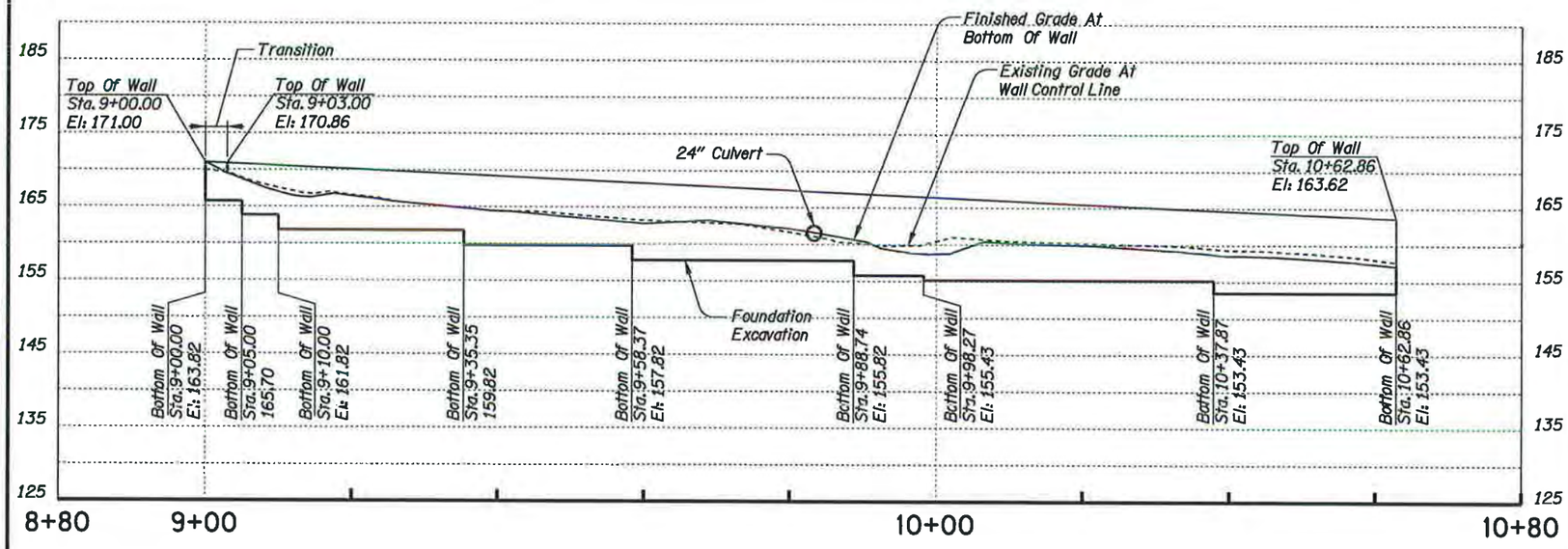
WALL - RS07
GEOTECHNICAL DATA SHEET

SHEET NO. GB08A

ROADWAY

662691rw08.dgn





0 10 20 30
Horizontal Scale In Feet

0 10 20 30
Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

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TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

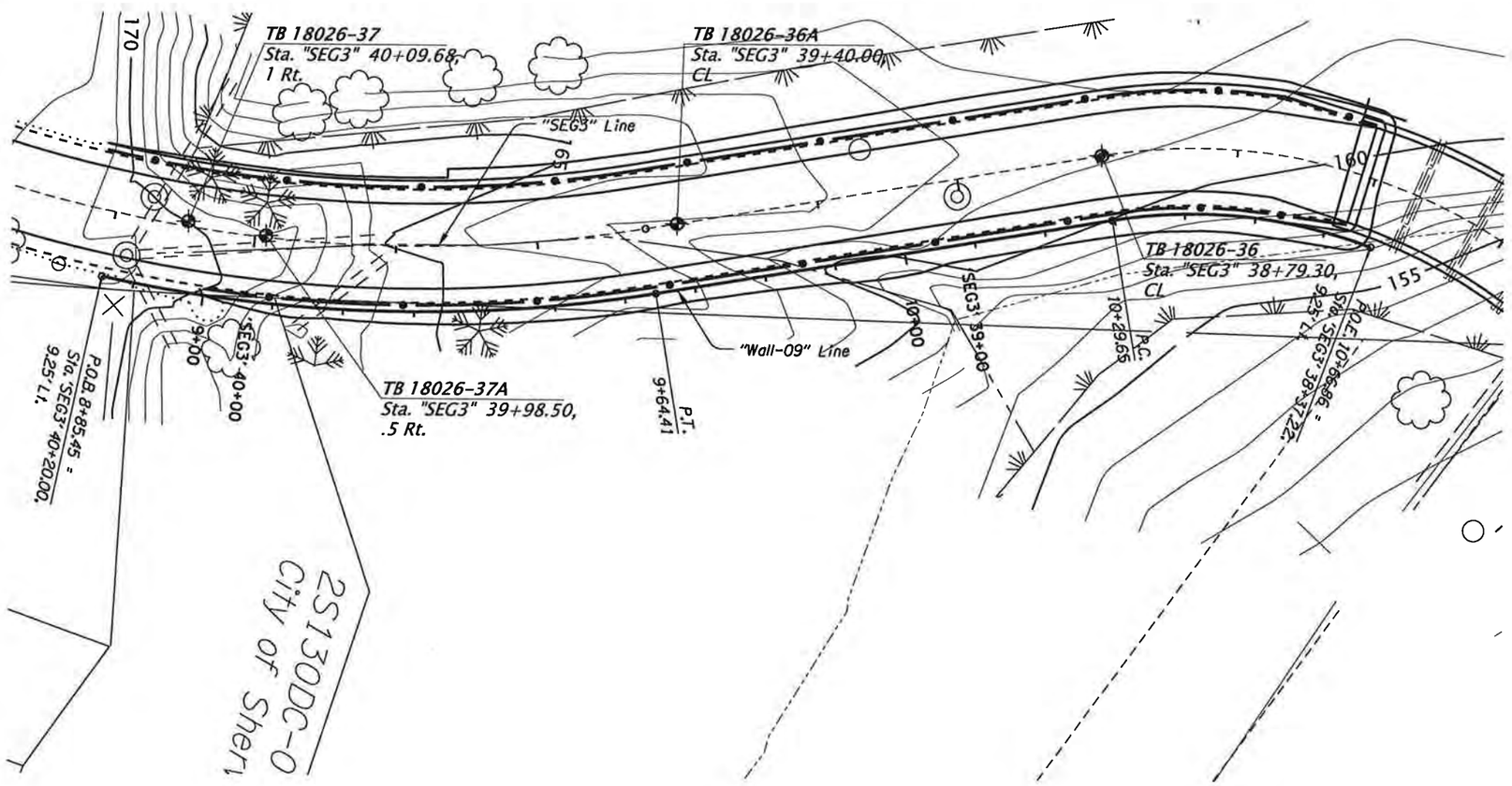
Designer: M Little
Drafter: J Walker
Reviewer: M Eller
Checker: M Eller

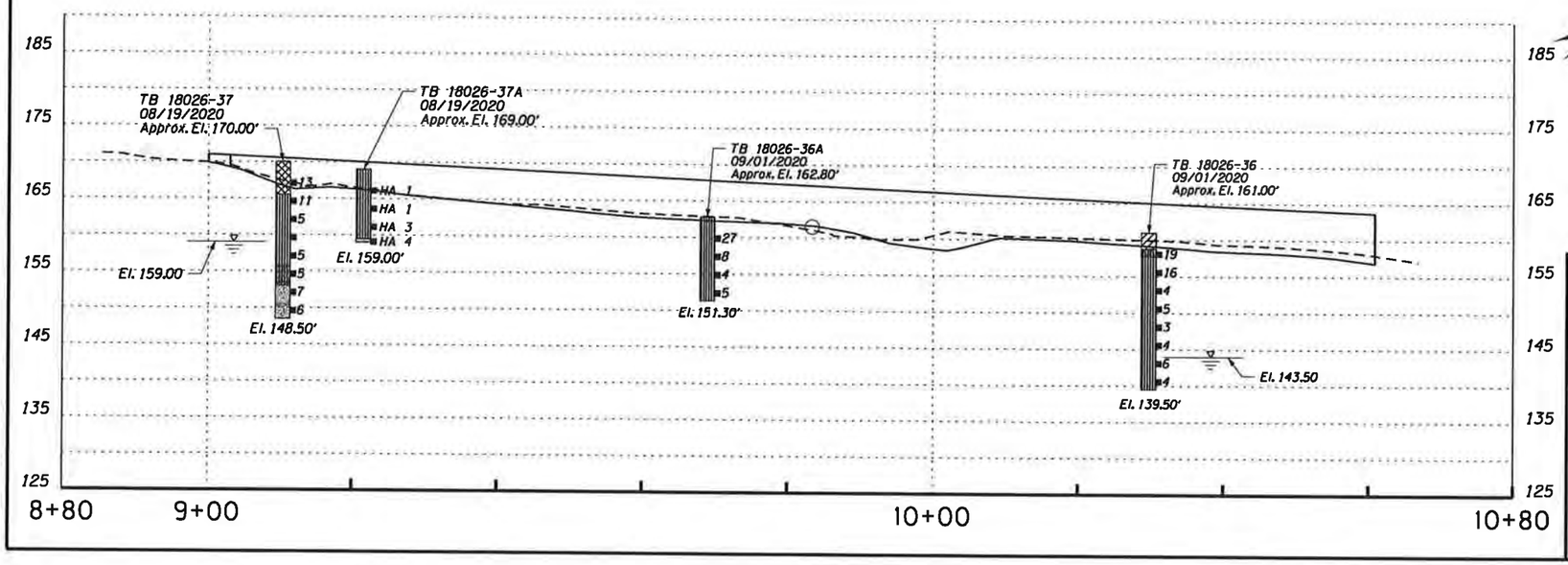
WALL - RS08
PLAN AND PROFILE

SHEET NO.
GB09

21-DEC-2020 10:15

54V-027





UNIT DESCRIPTIONS

- WELL GRADED GRAVEL; GW; GRAY;ANGULAR, MEDIUM GRAINED, MOIST, NONO PLASTIC (FILL)
- SILT; ML; BROWN; MOIST TO WET; MEDIUM STIFF TO STIFF; LOW PLASTICITY; MICACEOUS (MISSOULA FINE-FLOOD DEPOSITS)
- SANDY SILT; ML; BROWN; SUBROUNDED; FINE GRAINED; WET; MEDIUM STIFF; LOW PLASTICITY; MICACEOUS (MISSOULA FINE-FLOOD DEPOSITS)
- POORLY GRADED SAND; SP; BROWN; SUBROUNDED; FINE GRAINED; WET; LOOSE; NON PLASTIC; MICACEOUS (MISSOULA FINE-FLOOD DEPOSITS)

LEGEND

24	=	Standard penetration test - N value
RQD	=	Rock quality designation
50/1st#"	=	SPT Test Refusal Length
	=	Bore Hole Location
		Groundwater measured in the bore hole

GENERAL NOTES

1. 1' Contour Interval.
2. Elevations are based on North American Vertical Datum (1988).
3. Geotechnical data shown on this drawing are a consolidation of information and/or revision in terminology from the drill logs. More detailed subsurface data is available on the drill logs in the geotechnical report, which is available from the Engineer.
4. In accordance with ASTM D1586-84, N values are reported for an interval of 2.5 ft. except as noted.

N

0 10 20 30
Horizontal Scale In Feet

0 5 10 15
Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.17 12:30:06-08'00'
OREGON
JULY 14, 1998
RAJIV ALI
EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
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TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

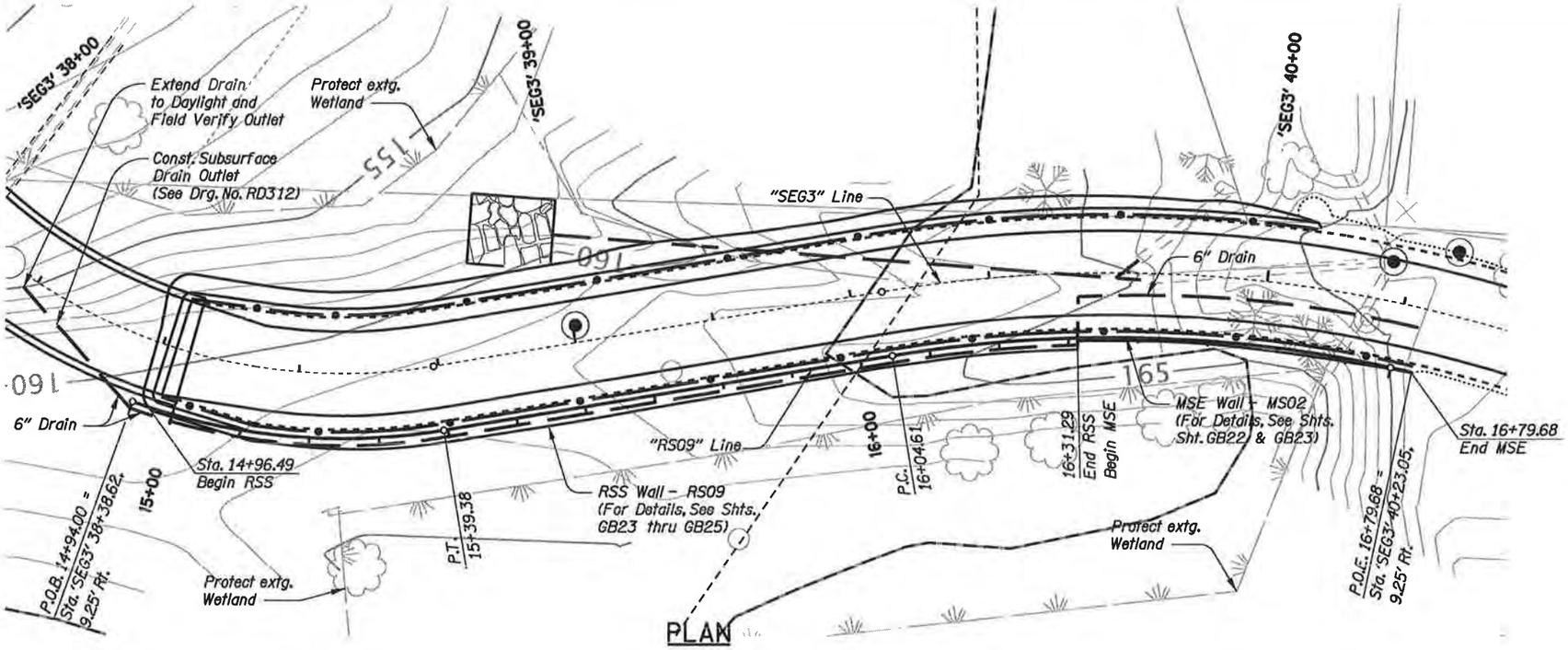
Designer: R Ali
Reviewer: C Hemberry
Drafter: D Blackshere
Checker: R Ali

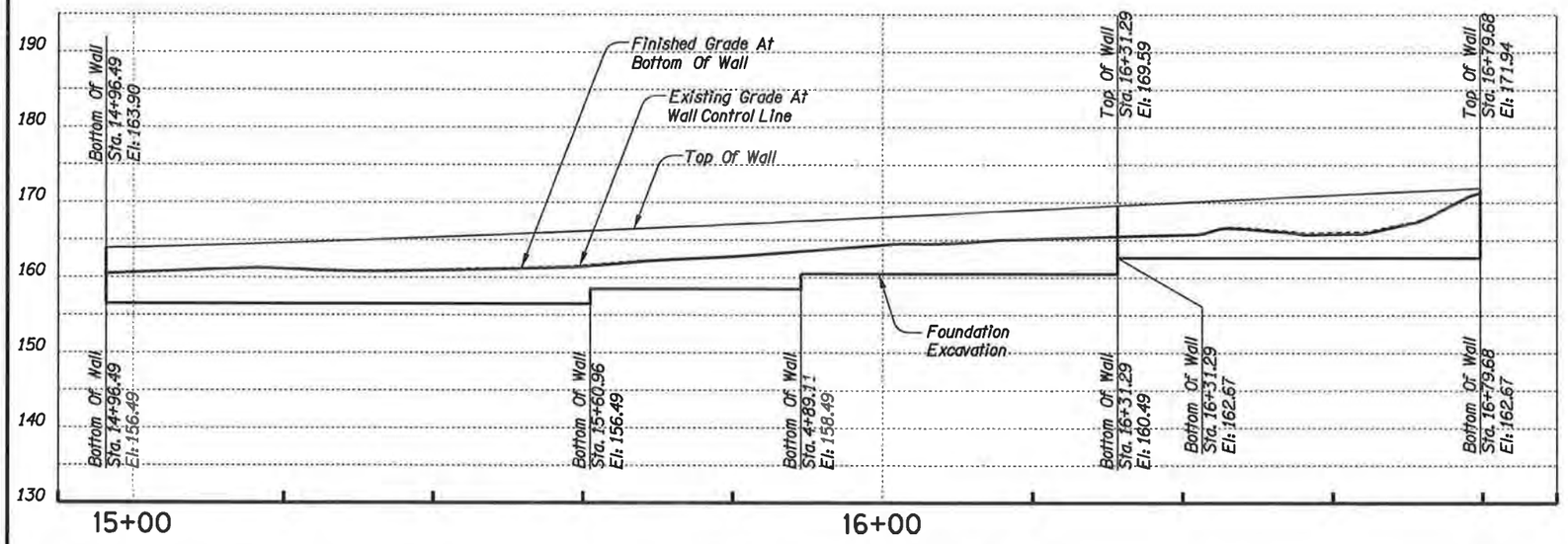
WALL - RS08
GEOTECHNICAL DATA SHEET

SHEET NO.
GB09A

ROADWAY

662691rw09.dgn





DEVELOPED ELEVATION

0 10 20 30
Horizontal Scale In Feet

0 10 20 30
Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020.12.21 19:15:33-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

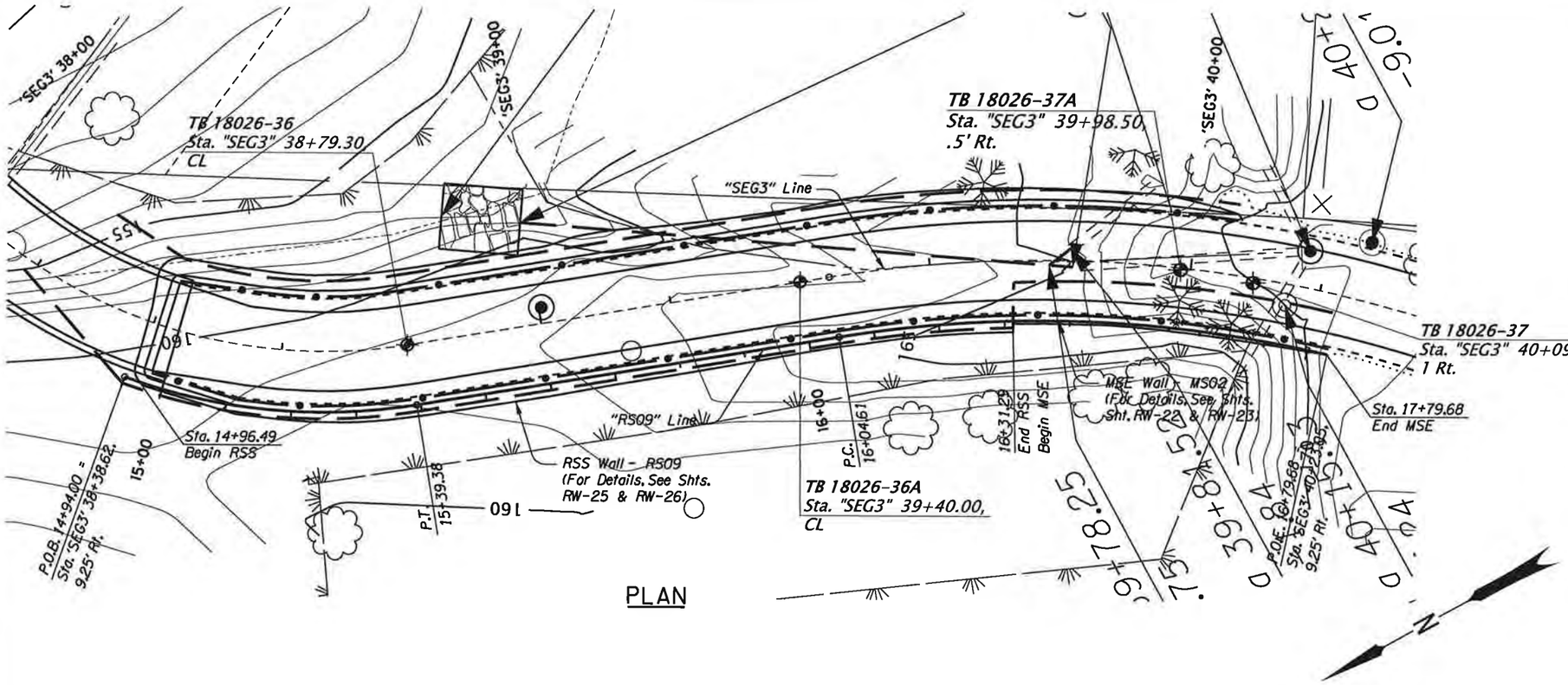
Designer: M Little	Reviewer: M Eller
Drafter: J Walker	Checker: M Eller

WALL - RS09
PLAN AND PROFILE

SHEET NO. GB10

21-DEC-2020 10:17

54V-027



UNIT DESCRIPTIONS

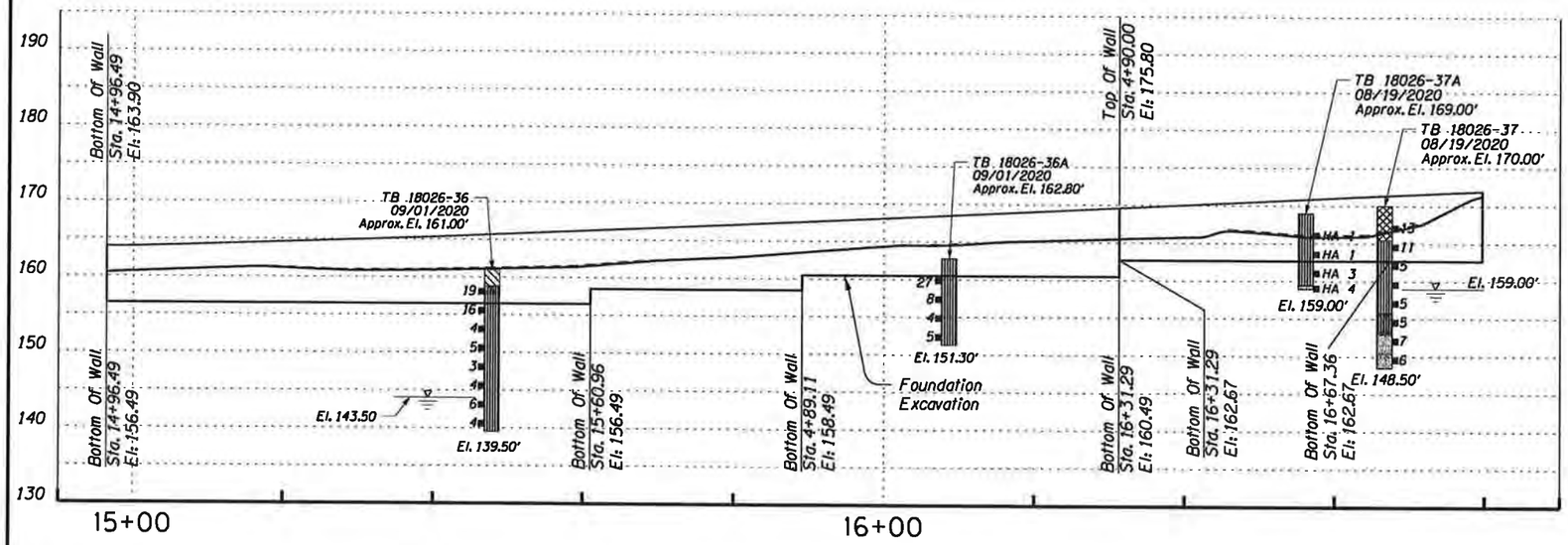
- WELL GRADED GRAVEL; GW; GRAY;ANGULAR, MEDIUM GRAINED, MOIST, NONO PLASTIC (FILL)
- SILT; ML; BROWN; MOIST TO WET; MEDIUM STIFF TO STIFF; LOW PLASTICITY; MICACEOUS (MISSOULA FINE-FLOOD DEPOSITS)
- SANDY SILT; ML; BROWN; SUBROUNDED; FINE GRAINED; WET; MEDIUM STIFF; LOW PLASTICITY; MICACEOUS (MISSOULA FINE-FLOOD DEPOSITS)
- POORLY GRADED SAND; SP; BROWN; SUBROUNDED; FINE GRAINED; WET; LOOSE; NON PLASTIC; MICACEOUS (MISSOULA FINE-FLOOD DEPOSITS)

LEGEND

- 24 = Standard penetration test - N value
- RQD = Rock quality designation
- 50/1st#"= SPT Test Refusal Length
- = Bore Hole Location
- = Groundwater measured in the bore hole

GENERAL NOTES

1. 1' Contour Interval.
2. Elevations are based on North American Vertical Datum (1988).
3. Geotechnical data shown on this drawing are a consolidation of information and/or revision in terminology from the drill logs. More detailed subsurface data is available on the drill logs in the geotechnical report, which is available from the Engineer.
4. In accordance with ASTM D1586-84, N values are reported for an interval of 2.5 ft. except as noted.



0 10 20 30
Horizontal Scale In Feet

0 10 20 30
Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.17 12:30:35-08'00'
OREGON
JULY 14, 1998
RAJIV ALI

EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: R Ali
Reviewer: C Hemberry
Drafter: D Blackshere
Checker: R Ali

WALL - 10
GEOTECHNICAL DATA SHEET

SHEET NO.
GB10A

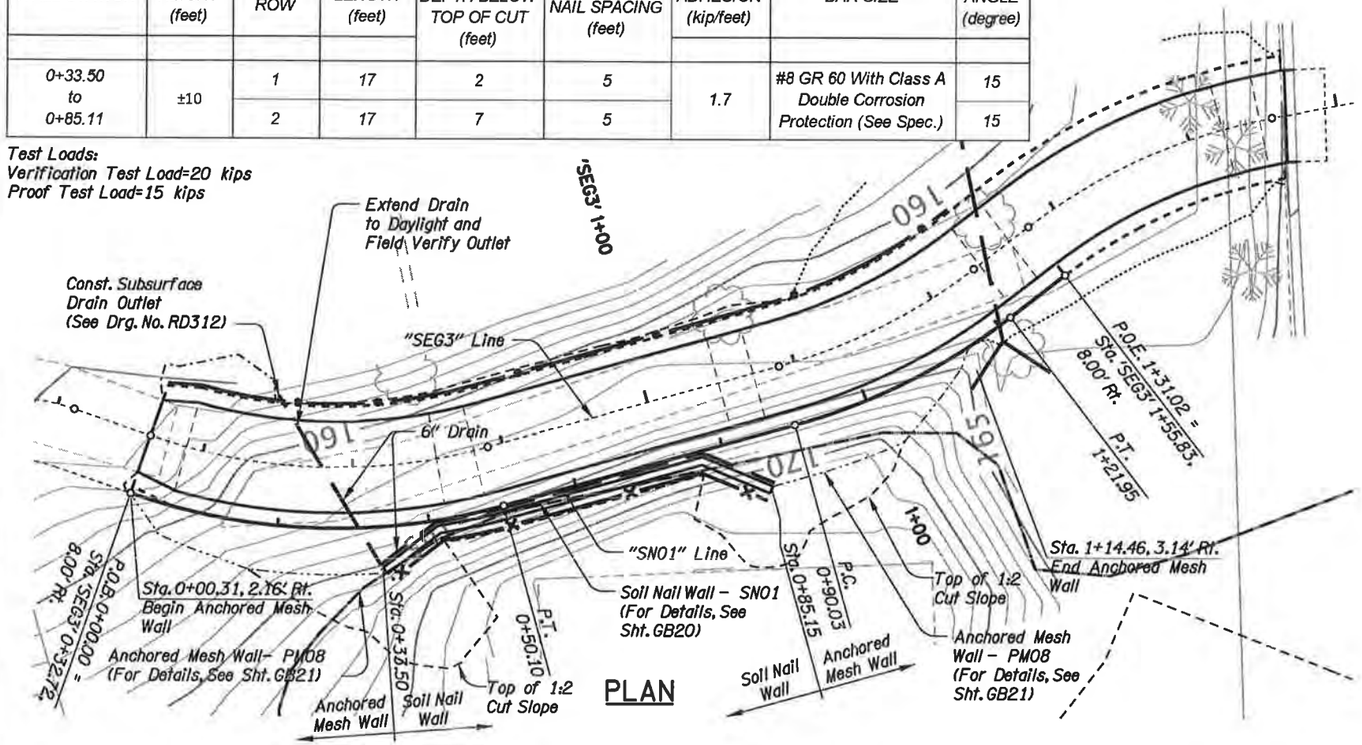
ROADWAY

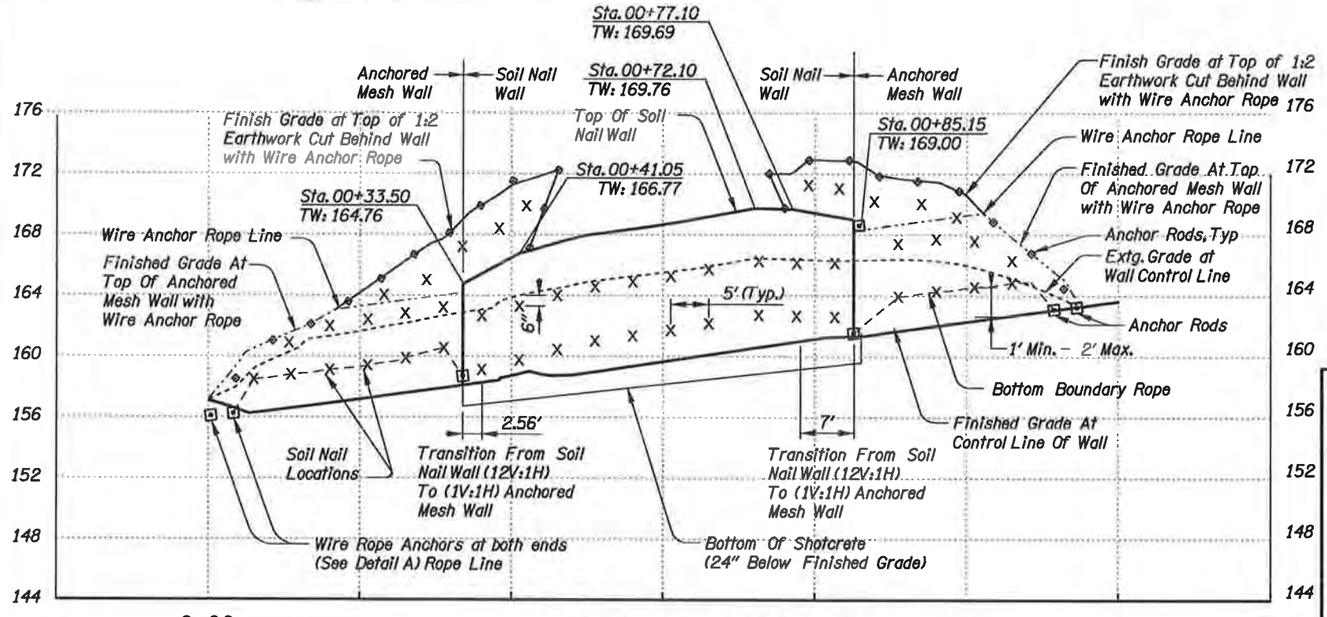
662691rw10.dgn

54V-027

WALL SN01 SOIL NAIL WALL SCHEDULE								
WALL STATION	WALL HEIGHT (feet)	NAIL ROW	NAIL LENGTH (feet)	VERTICAL DEPTH BELOW TOP OF CUT (feet)	HORIZONTAL NAIL SPACING (feet)	ULTIMATE ADHESION (kip/feet)	BAR SIZE	NAIL ANGLE (degree)
0+33.50 to 0+85.11	±10	1	17	2	5	1.7	#8 GR 60 With Class A Double Corrosion Protection (See Spec.)	15
		2	17	7	5			15

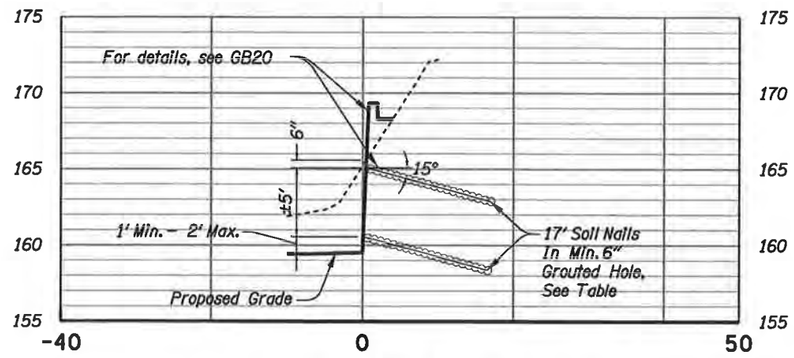
Test Loads:
Verification Test Load=20 kips
Proof Test Load=15 kips





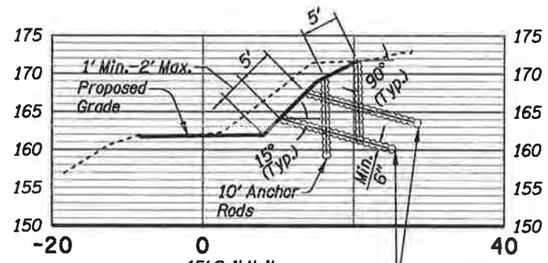
DEVELOPED ELEVATION

Vertical Scale: 1"=5'



SOIL NAIL WALL SECTION

Vertical Scale: 1"=5'

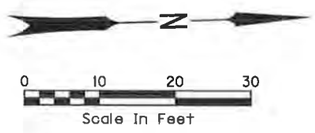


Test Loads:
Verification test Load=20 kips
Proof Test Load=15 kips

15' Soil Nails (#8 GR 75 Galvanized) In Min. 6" Grouted Holes

ANCHORED MESH WALL SECTION

Vertical Scale: 1"=10'



NOTE:
FOR ANCHORED MESH WALLS, INSTALL ANCHOR RODS BETWEEN SOIL NAILS TO AVOID CONFLICTS.

Geotechnical Design

Civil Design and Site Layout

REGISTERED PROFESSIONAL ENGINEER 58591 Digitally Signed 2020.12.21 13:56:30-08'00' OREGON JULY 14, 1998 RAJIV ALI

EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

REGISTERED PROFESSIONAL ENGINEER 72869PE Digitally Signed 2020.12.21 10:19:20-08'00' OREGON Oct. 23, 2009 MATTHEW RYAN LITTLE

EXPIRES: 12/31/2022

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

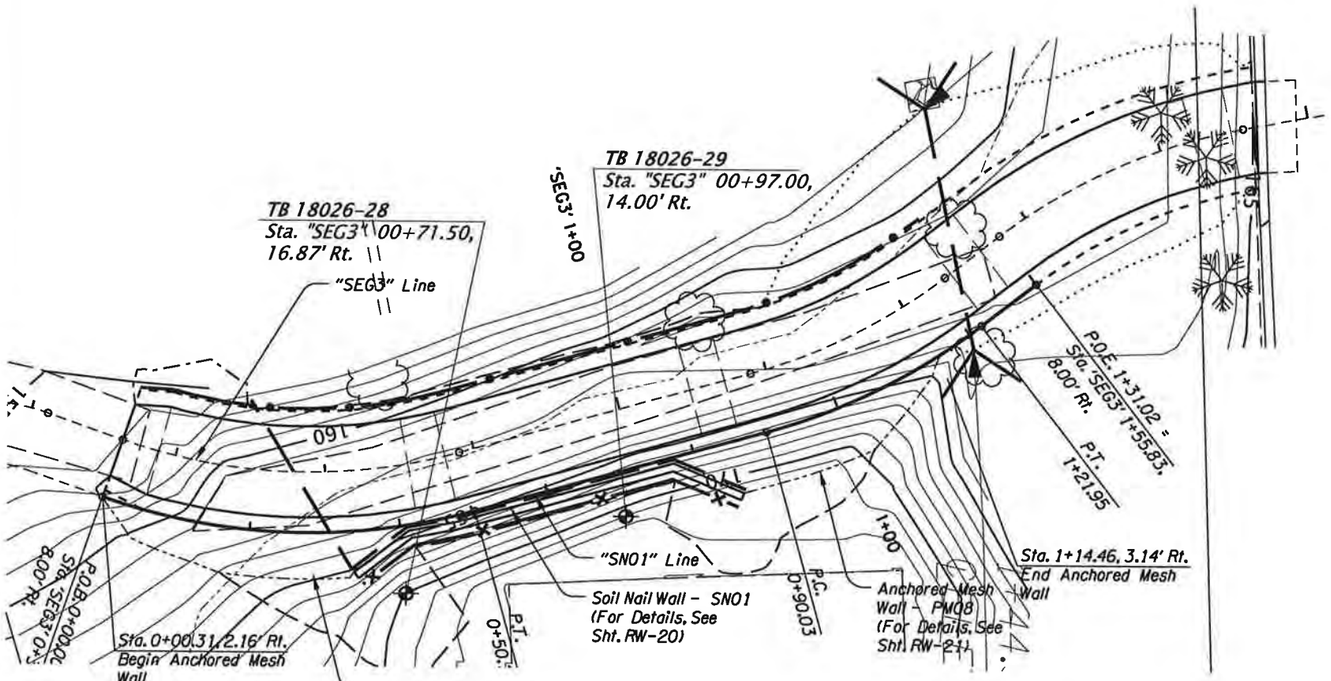
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little
Drafter: J Walker
Reviewer: M Eller
Checker: M Eller

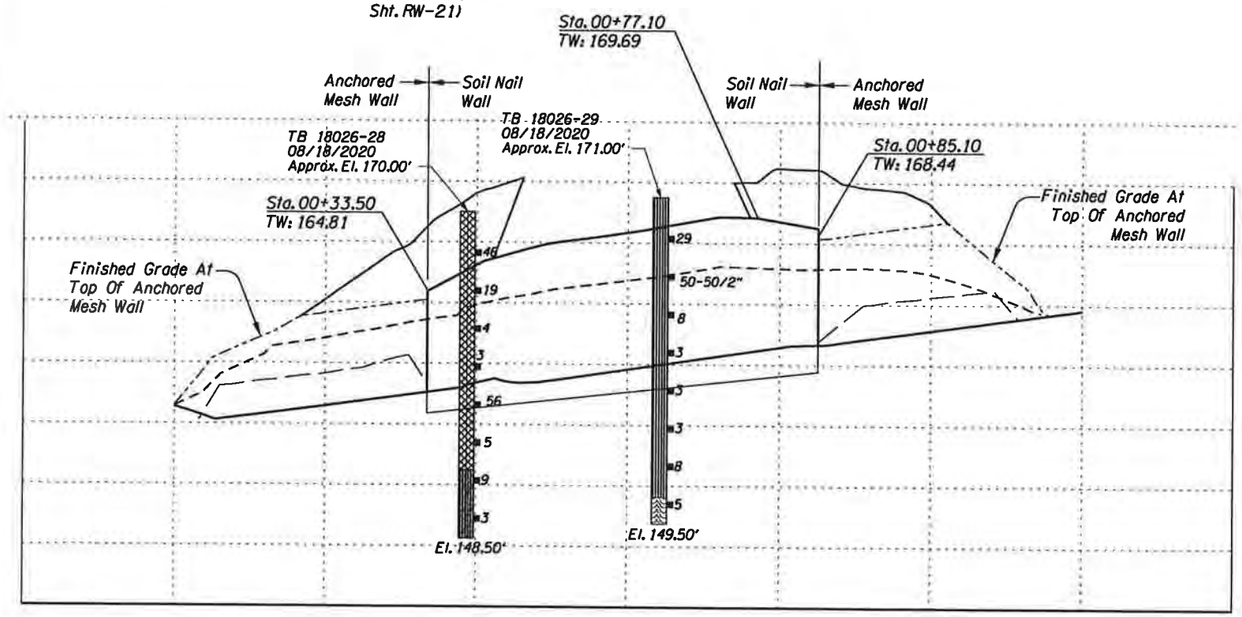
WALL - SN01 PLAN AND PROFILE

SHEET NO. GB11

21-DEC-2020 10:18



PLAN



UNIT DESCRIPTIONS 54V-027

- SANDY SILT WITH GRAVEL; ML; BROWN; SUBANGULAR; FINE TO COARSE GRAINED; MOIST; VERY STIFF TO HARD; LOW PLASTICITY; ASPHALT; GLASS; FIBROUS ORGANICS; AND OTHERFILL DEBRIS (FILL)
- SANDY SILT ; ML; BROWN; SUBROUNDED; FINE TO COARSE GRAINED; MOIST; VERY STIFF TO VERY HARD; LOW PLASTICITY; ASPHALT; GLASS; FIBROUS ORGANICS; AND OTHERFILL DEBRIS (FILL)
- SANDY SILT; ML; GRAY; SUBROUNDED; FINE GRAINED; WET; SOFT TO STIFF; LOW PLASTICITY; MICACEOUS (MISSOULA FLOOD DEPOSITS)
- ORGANIC SOIL; OH; BROWN; WET; MEDIUM STIFF; MEDIUM PLASTICITY; ORGANIC ODOR; FIBROUS ORGANICS (MISSOULA FLOOD DEPOSITS)

LEGEND

- 24 = Standard penetration test - N value
- RQD = Rock quality designation
- 50/1st#" = SPT Test Refusal Length
- = Bore Hole Location
- Groundwater measured in the bore hole

GENERAL NOTES

1. 1' Contour Interval.
2. Elevations are based on North American Vertical Datum (1988).
3. Geotechnical data shown on this drawing are a consolidation of information and/or revision in terminology from the drill logs. More detailed subsurface data is available on the drill logs in the geotechnical report, which is available from the Engineer.
4. In accordance with ASTM D1586-84, N values are reported for an interval of 2.5 ft. except as noted.

N

0 10 20 30
Scale In Feet

0 4 8 12
Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.17 12:31:08-08'00'
OREGON
JULY 14, 1998
RAJIV ALI
EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

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PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: R Ali
Drafter: D Blackshere
Reviewer: C Hemberry
Checker: R Ali

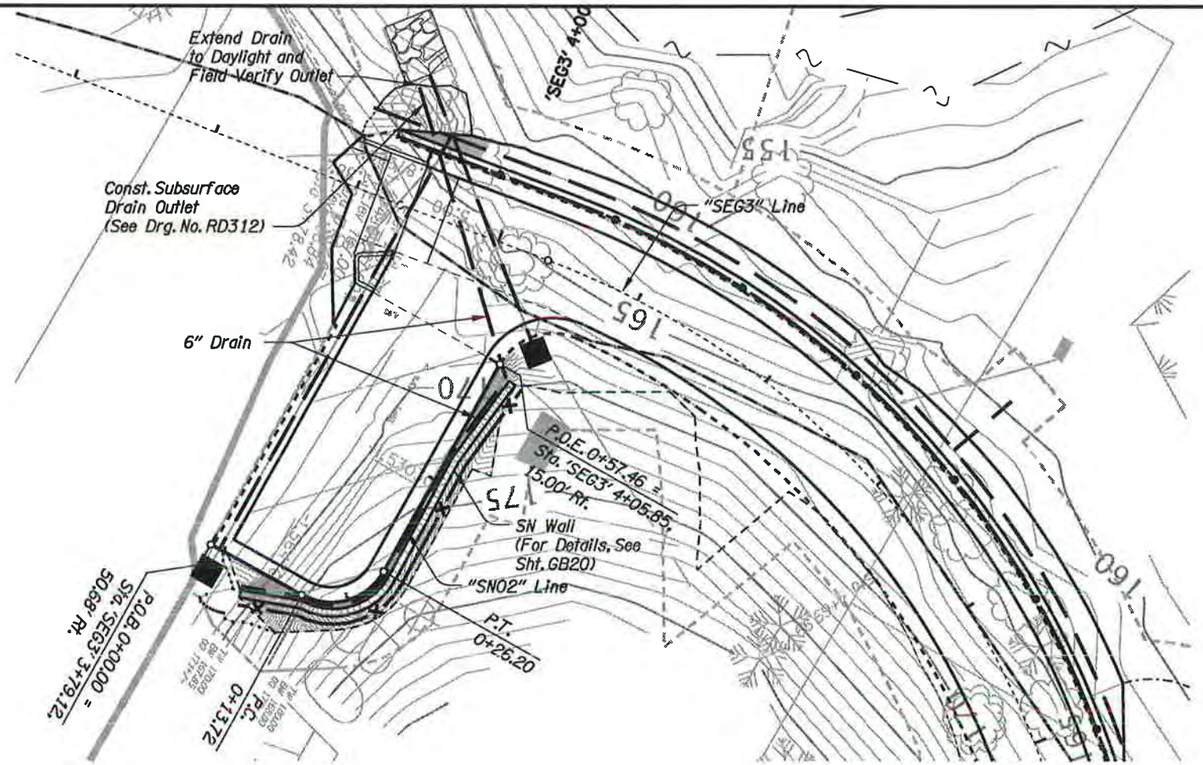
WALL - SN01
GEOTECHNICAL DATA SHEET

SHEET NO. GB11A

ROADWAY

662691rw11.dgn

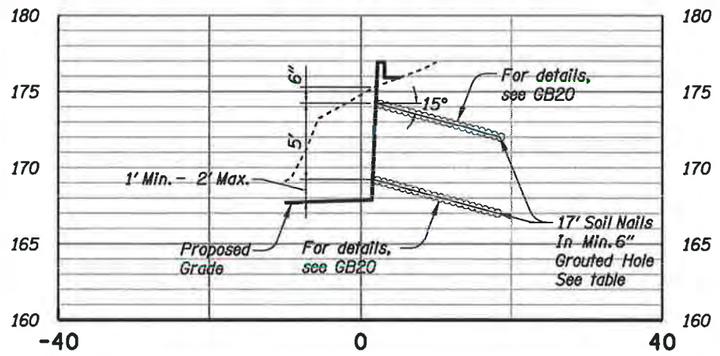
54V-027



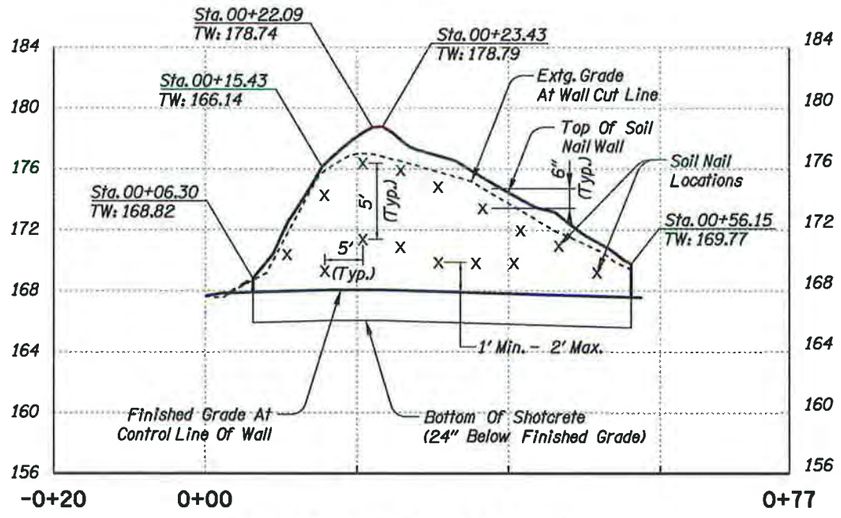
PLAN

WALL SN02 SOIL NAIL WALL SCHEDULE								
WALL STATION	WALL HEIGHT (feet)	NAIL ROW	NAIL LENGTH (feet)	VERTICAL DEPTH BELOW TOP OF CUT (feet)	HORIZONTAL NAIL SPACING (feet)	ULTIMATE ADHESION (kip/feet)	BAR SIZE	NAIL ANGLE (degree)
0+06.38 to 0+56.15	±10	1	17	2	5	1.7	#8 GR 60 With Class A Double Corrosion Protection (See Spec.)	15
		2	17	5	5			15

Test Loads:
Verification Test Load=20 kips
Proof Test Load=15 kips



SOIL NAIL WALL SECTION



DEVELOPED ELEVATION

0 10 20 30
Horizontal Scale In Feet

0 5 10 15
Vertical Scale In Feet

Geotechnical Design

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.21 13:56:51-08'00'
OREGON
JULY 14, 1998
RAJIV ALI

EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Civil Design and Site Layout

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020.12.21 10:18:55-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE

EXPIRES: 12/31/2022

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PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

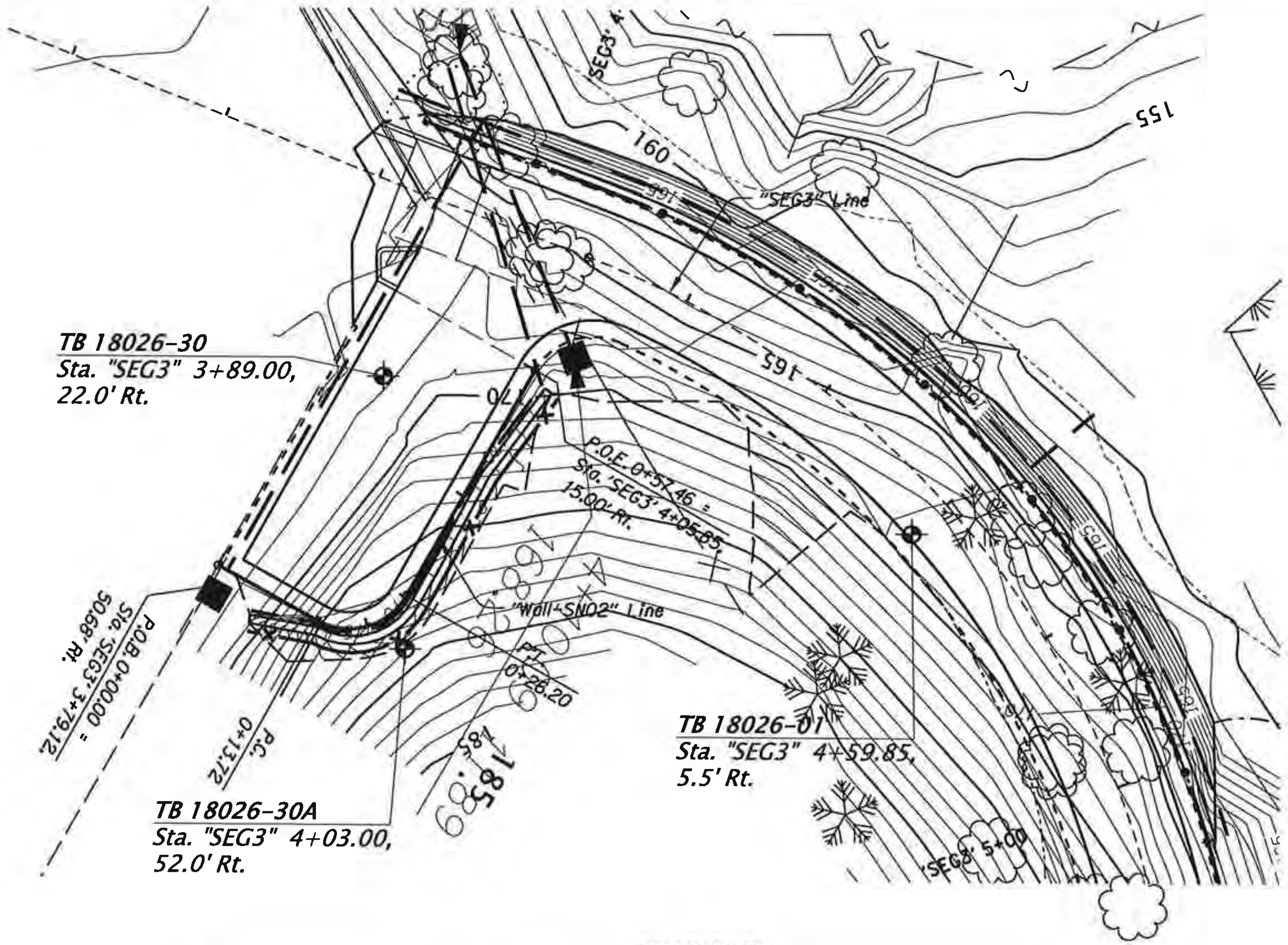
Designer: M Little
Drafter: J Walker
Reviewer: M Eller
Checker: M Eller

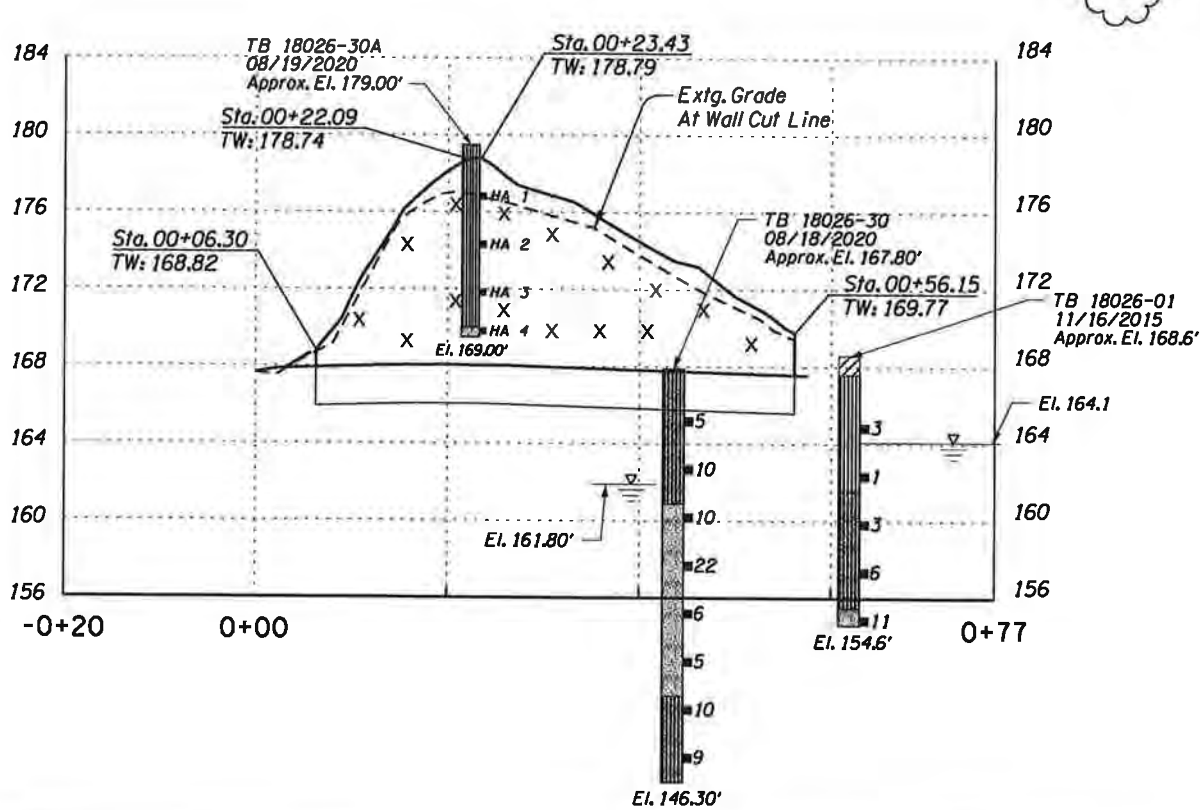
WALL - SN02
PLAN AND PROFILE

SHEET NO.
GB12

21-DEC-2020 10:16

54V-027





UNIT DESCRIPTIONS

- SANDY SILT; ML; BROWN; MOIST TO WET; SOFT; (TOPSOIL WITH ROOT ZONE TO 10 INCHES)
- SANDY SILT; ML; BROWN TO GRAY; MOIST TO WET; LOW TO MEDIUM PLASTICITY; SOFT TO MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
- SILTY FINE SAND; SM; BROWN; WET; LOW TO MEDIUM PLASTICITY; LOOSE (MISSOULA FINE-FLOOD DEPOSITS)
- CLAYEY SILT; CL-ML; BROWN; MOIST TO WET; MEDIUM PLASTICITY; MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
- SAND; SP; BROWN; WET; LOOSE TO MEDIUM DENSE (MISSOULA FINE-FLOOD DEPOSITS)

LEGEND

■ 24	=	Standard penetration test - N value
RQD	=	Rock quality designation
50/1st #"	=	SPT Test Refusal Length
⌖	=	Bore Hole Location
▽		Groundwater measured in the bore hole

GENERAL NOTES

1. 1' Contour Interval.
2. Elevations are based on North American Vertical Datum (1988).
3. Geotechnical data shown on this drawing are a consolidation of information and/or revision in terminology from the drill logs. More detailed subsurface data is available on the drill logs in the geotechnical report, which is available from the Engineer.
4. In accordance with ASTM D1586-84, N values are reported for an interval of 2.5 ft. except as noted.

N

0 10 20 30
Horizontal Scale In Feet

0 4 8 12
Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.17 12:31:35-08'00'
OREGON
JULY 14, 1998
RAJIV ALI
EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

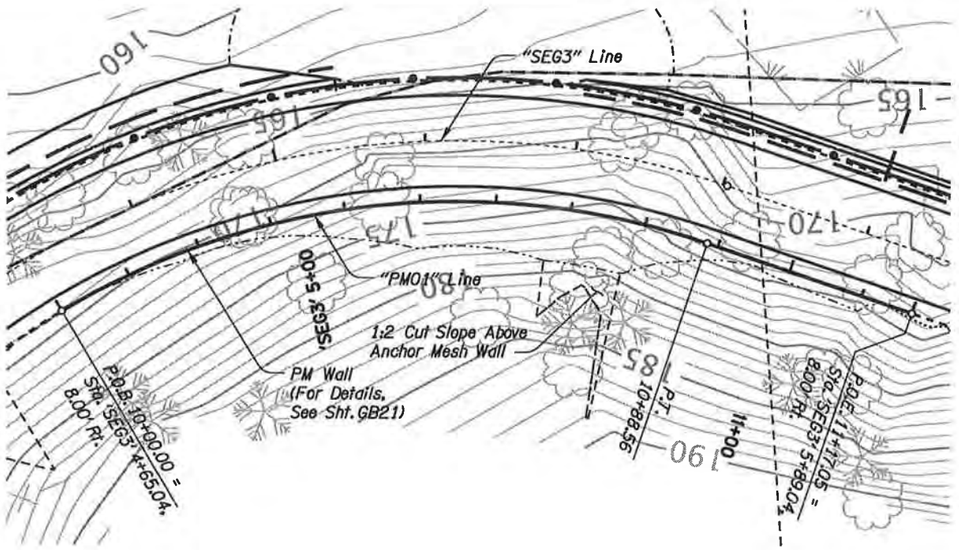
Designer: R Ali
Reviewer: C Hemberry
Drafter: D Blackshere
Checker: R Ali

WALL - SN02
GEOTECHNICAL DATA SHEET

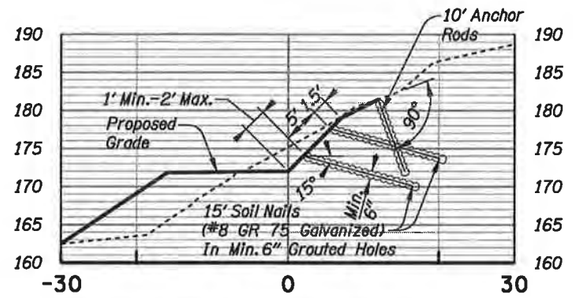
SHEET NO.
GB12A

ROADWAY

662691rw12.dgn



PLAN



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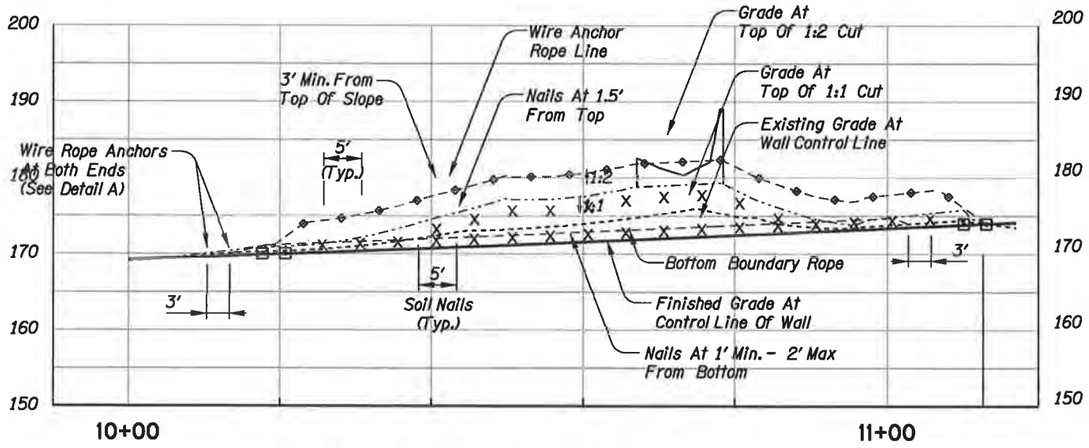
Proof Test Load=15 kips

SECTION A-A



DEVELOPED ELEVATION

0 10 20 30
Horizontal Scale In Feet

0 10 20 30
Vertical Scale In Feet

Note:

Install anchor rods between soil nails to avoid conflicts.

Geotechnical Design

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.21 13:57:15-08'00'
OREGON
JULY 14, 1998
RAJIV ALI

EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Civil Design and Site Layout

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020.12.21 10:27:28-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE

EXPIRES: 12/31/2022

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

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TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

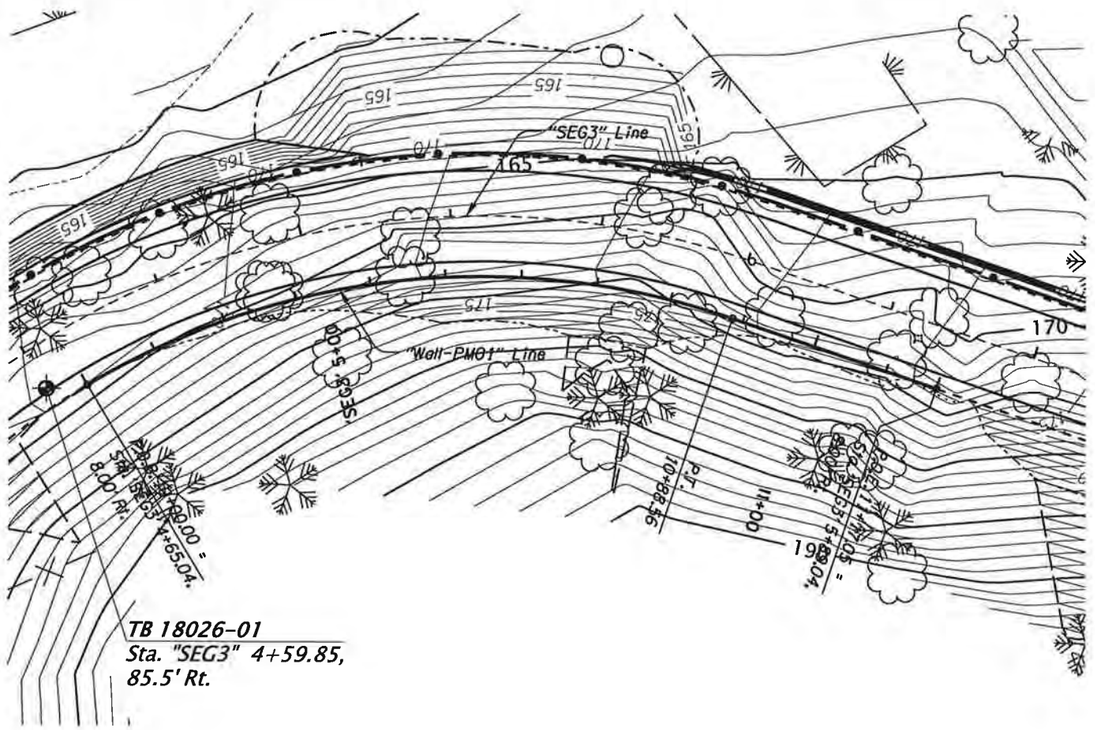
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

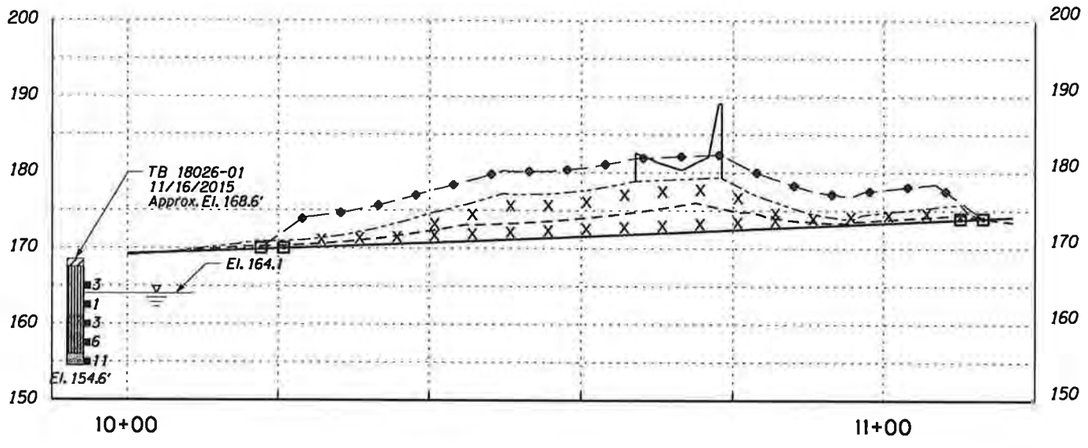
Designer: M Little | Reviewer: M Eller
Drafter: J Walker | Checker: M Eller

WALL - PM01
PLAN AND PROFILE

SHEET NO. GB13

21-DEC-2020 10:17





UNIT DESCRIPTIONS 54V-027

- SANDY SILT; ML; BROWN; MOIST TO WET; SOFT; (TOPSOIL WITH ROOT ZONE TO 10 INCHES)
- SANDY SILT; ML; BROWN TO GRAY; MOIST TO WET; LOW TO MEDIUM PLASTICITY; SOFT TO MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
- SILTY FINE SAND; SM; BROWN; WET; LOW TO MEDIUM PLASTICITY; LOOSE (MISSOULA FINE-FLOOD DEPOSITS)
- CLAYEY SILT; CL-ML; BROWN; MOIST TO WET; MEDIUM PLASTICITY; MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
- SAND; SP; BROWN; WET; LOOSE TO MEDIUM DENSE (MISSOULA FINE-FLOOD DEPOSITS)

LEGEND

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50/1st #"	=	SPT Test Refusal Length
⊕	=	Bore Hole Location
▽		Groundwater measured in the bore hole

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N

0 10 20 30
Horizontal Scale In Feet

0 5 10 15
Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.17 12:32:07-08'00'
OREGON
JULY 14, 1998
RAJIV ALI
EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

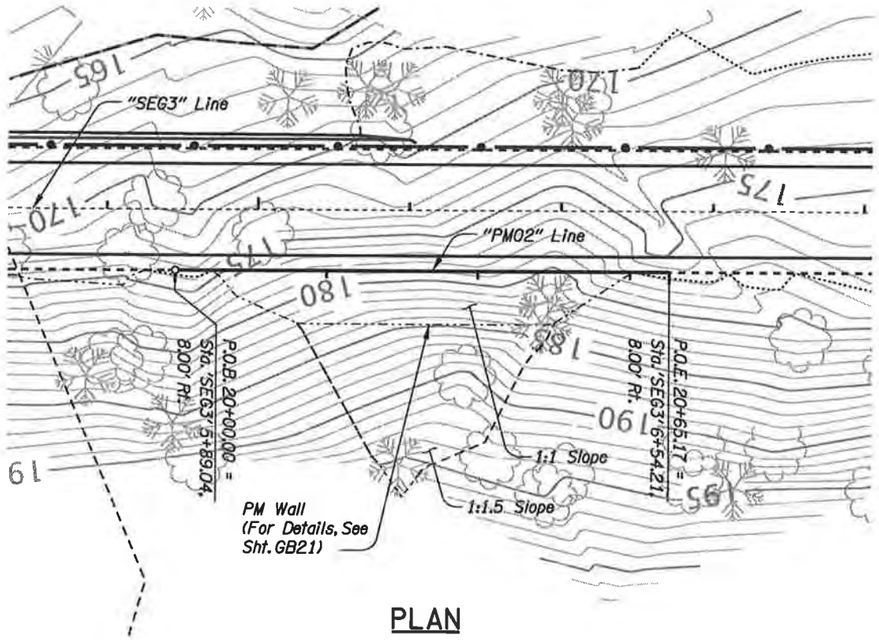
Designer: R Ali | Reviewer: C Hemberry
Drafter: D Blackshere | Checker: R Ali

WALL - PM01
GEOTECHNICAL DATA SHEET

SHEET NO. GB13A

ROADWAY

662691rw13.dgn



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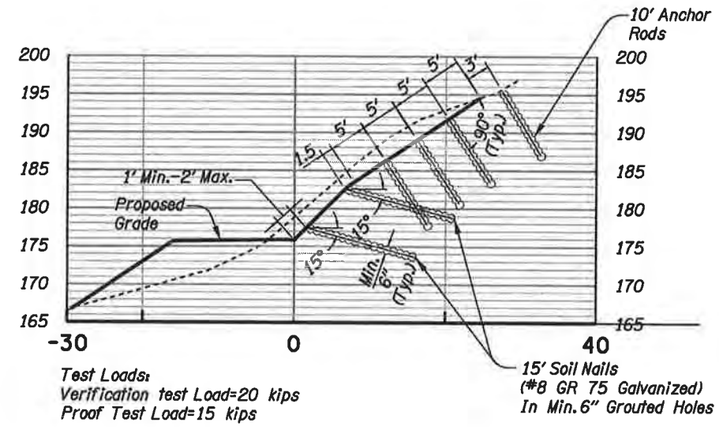

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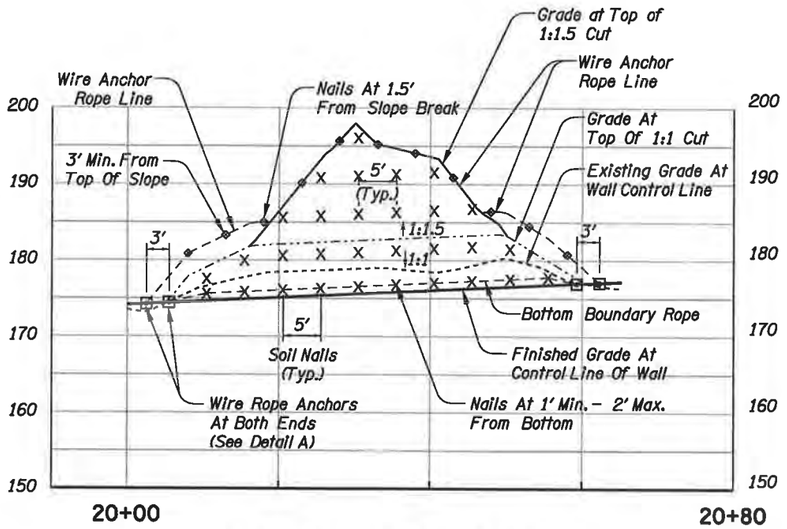

DEVELOPED ELEVATION

0 10 20 30
Horizontal Scale In Feet

0 10 20 30
Vertical Scale In Feet

Note:

Install anchor rods between soil nails to avoid conflicts.

Geotechnical Design

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020 12 21 13:57:33-08'00'
OREGON
JULY 14, 1998
RAJIV ALI

EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Civil Design and Site Layout

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020 12 21 10:26:09-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE

EXPIRES: 12/31/2022

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

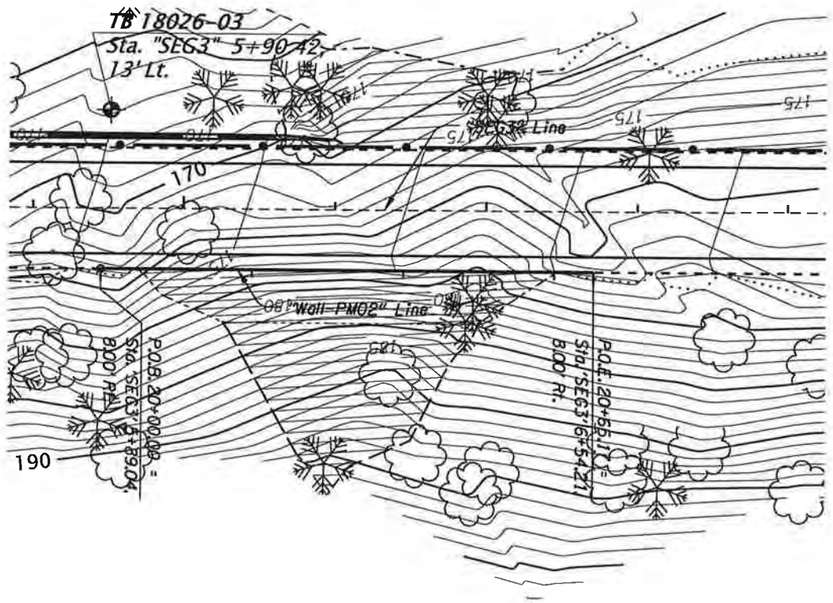
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

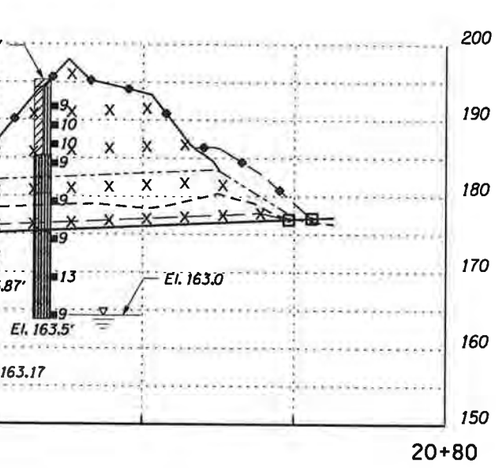
Designer: M Little
Drafter: J Walker
Reviewer: M Eller
Checker: M Eller

WALL - PM02
PLAN AND PROFILE

SHEET NO. GB14

21-DEC-2020 10:16





UNIT DESCRIPTIONS 54V-027

- SANDY SILT; ML; BROWN; MOIST TO WET; SOFT; (TOPSOIL WITH ROOT ZONE TO 10 INCHES)
- SANDY SILT; ML; BROWN TO GRAY; MOIST TO WET; LOW TO MEDIUM PLASTICITY; SOFT TO MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
- SILTY FINE SAND; SM; BROWN; WET; LOW TO MEDIUM PLASTICITY; LOOSE (MISSOULA FINE-FLOOD DEPOSITS)
- CLAYEY SILT; CL-ML; BROWN; MOIST TO WET; MEDIUM PLASTICITY; MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
- SAND; SP; BROWN; WET; LOOSE TO MEDIUM DENSE (MISSOULA FINE-FLOOD DEPOSITS)

LEGEND

■ 24	=	Standard penetration test - N value
RQD	=	Rock quality designation
50/1st #"	=	SPT Test Refusal Length
⊕	=	Bore Hole Location
▽		Groundwater measured in the bore hole

GENERAL NOTES

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2. Elevations are based on North American Vertical Datum (1988).
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REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.17 12:32:33-08'00'
OREGON
JULY 14, 1998
RAJIV ALI
EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: R Ali | Reviewer: C Hemberry
Drafter: D Blackshere | Checker: R Ali

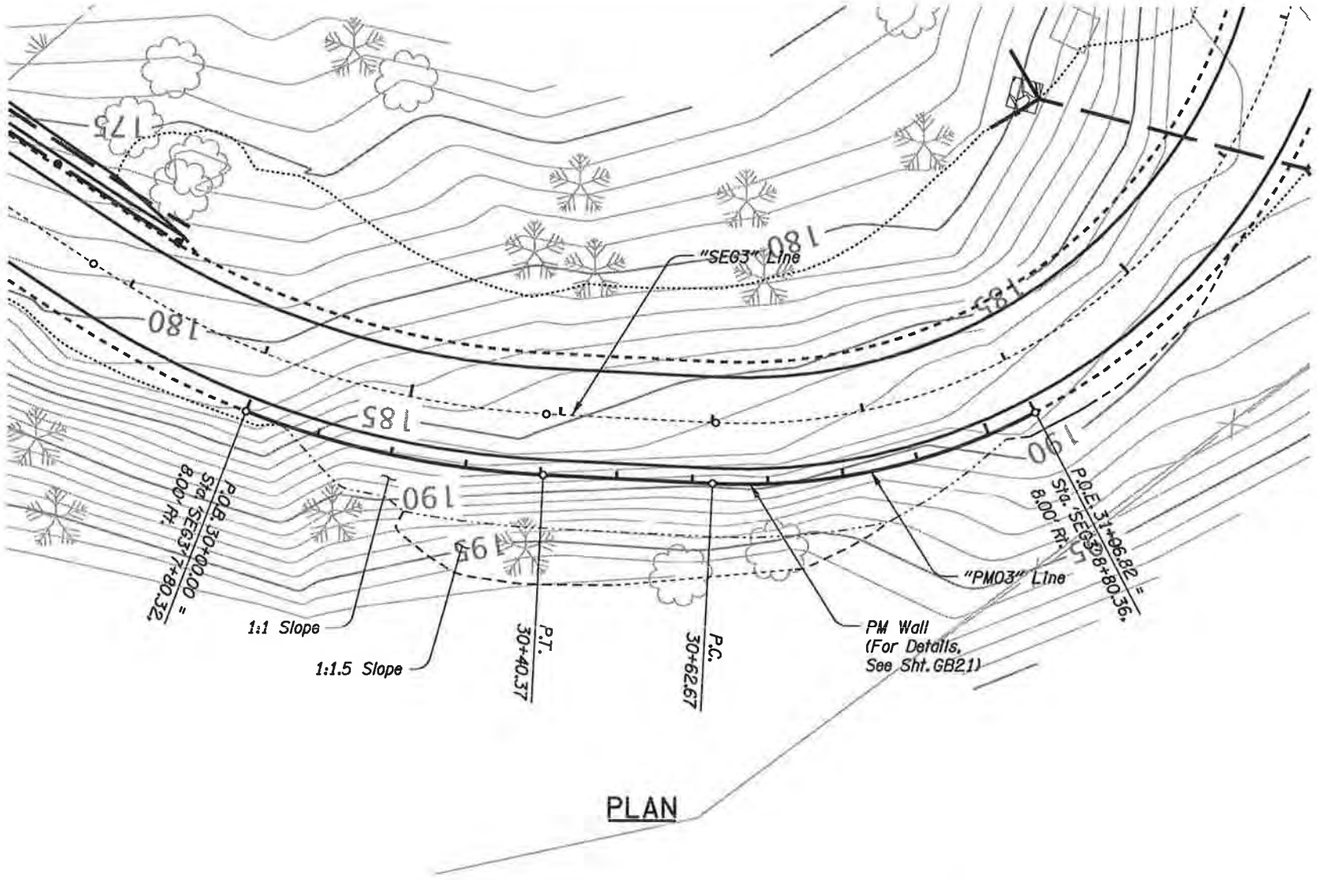
WALL - PM02
GEOTECHNICAL DATA SHEET

SHEET NO. GB14A

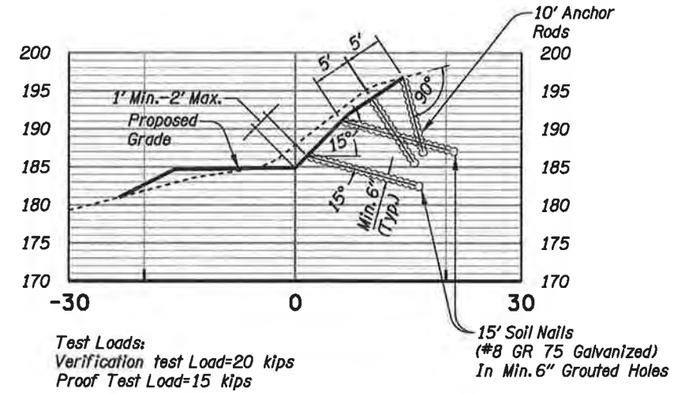
ROADWAY

662691rw14.dgn

54V-027

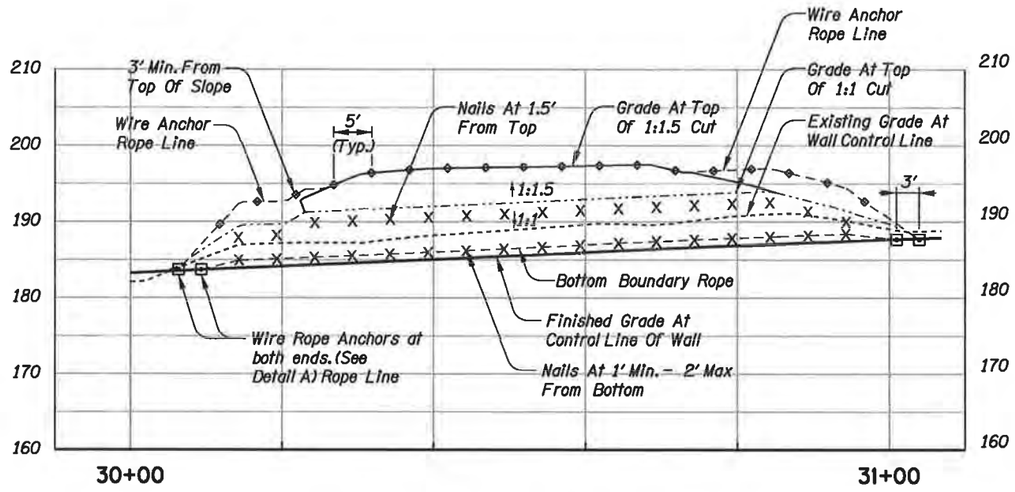


PLAN



Test Loads:
Verification test Load=20 kips
Proof Test Load=15 kips

SECTION



DEVELOPED ELEVATION

0 10 20 30
Horizontal Scale In Feet

0 10 20 30
Vertical Scale In Feet

Note:

Install anchor rods between soil nails to avoid conflicts.

Geotechnical Design

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020 12 21 13:56:08-08'00'
OREGON
JULY 14, 1998
RAJIV ALI

EXPIRES: 12/31/21

Civil Design and Site Layout

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE

EXPIRES: 12/31/2022

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

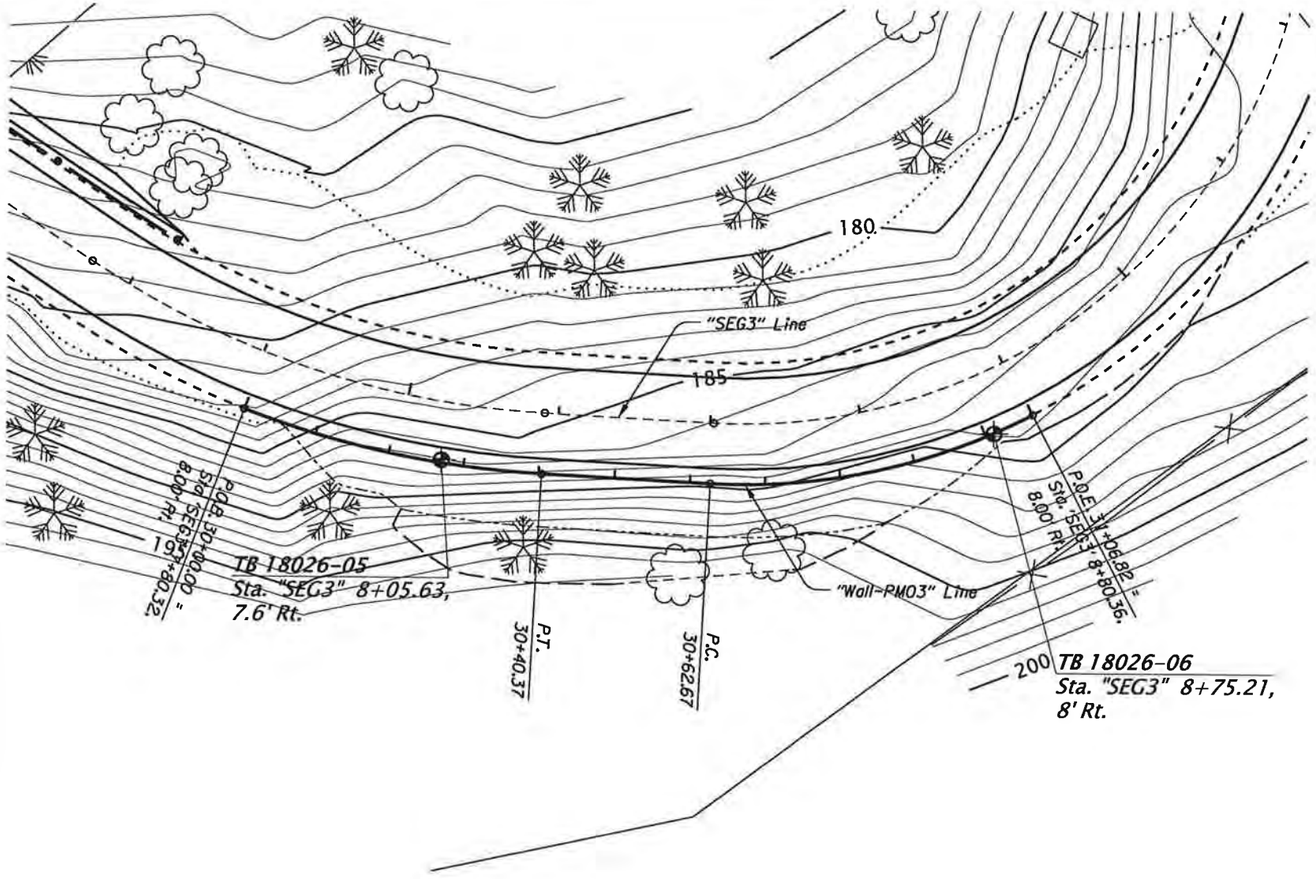
Designer: M Little
Drafter: J Walker
Reviewer: M Eller
Checker: M Eller

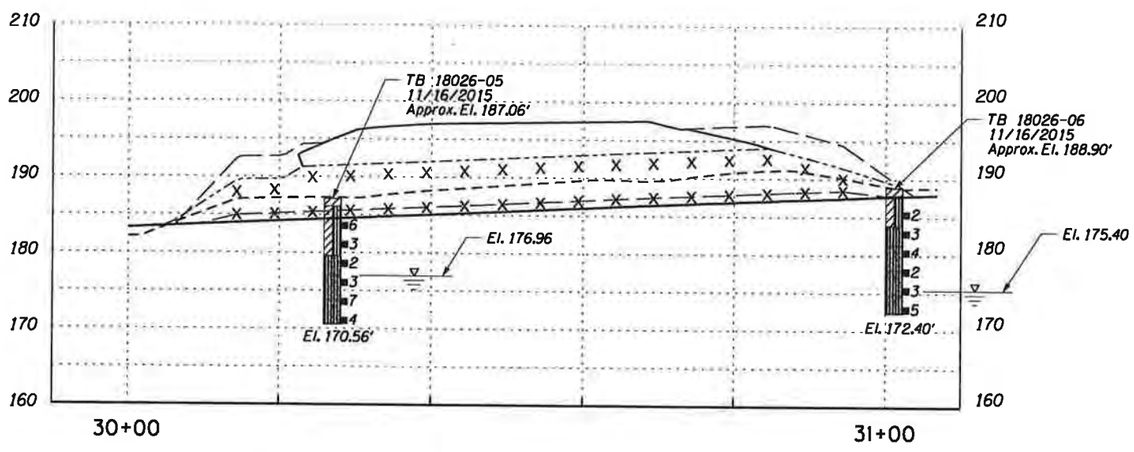
WALL - PM03
PLAN AND PROFILE

SHEET NO. GB15

21-DEC-2020 10:16

54V-027





UNIT DESCRIPTIONS

- SANDY SILT; ML; BROWN; MOIST TO WET; SOFT; (TOPSOIL WITH ROOT ZONE TO 10 INCHES)
- SANDY SILT; ML; BROWN TO GRAY; MOIST TO WET; LOW TO MEDIUM PLASTICITY; SOFT TO MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
- SILTY FINE SAND; SM; BROWN; WET; LOW TO MEDIUM PLASTICITY; LOOSE (MISSOULA FINE-FLOOD DEPOSITS)
- CLAYEY SILT; CL-ML; BROWN; MOIST TO WET; MEDIUM PLASTICITY; MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
- SAND; SP; BROWN; WET; LOOSE TO MEDIUM DENSE (MISSOULA FINE-FLOOD DEPOSITS)

LEGEND

■ 24	=	Standard penetration test - N value
RQD	=	Rock quality designation
50/1st #"	=	SPT Test Refusal Length
⊕	=	Bore Hole Location
▽		Groundwater measured in the bore hole

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N

0 10 20 30
Horizontal Scale In Feet

0 5 10 15
Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.17 12:32:58-08'00'
OREGON
JULY 14, 1998
RAJIV ALI
EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: R Ali | Reviewer: C Hemberry
Drafter: D Blackshere | Checker: R Ali

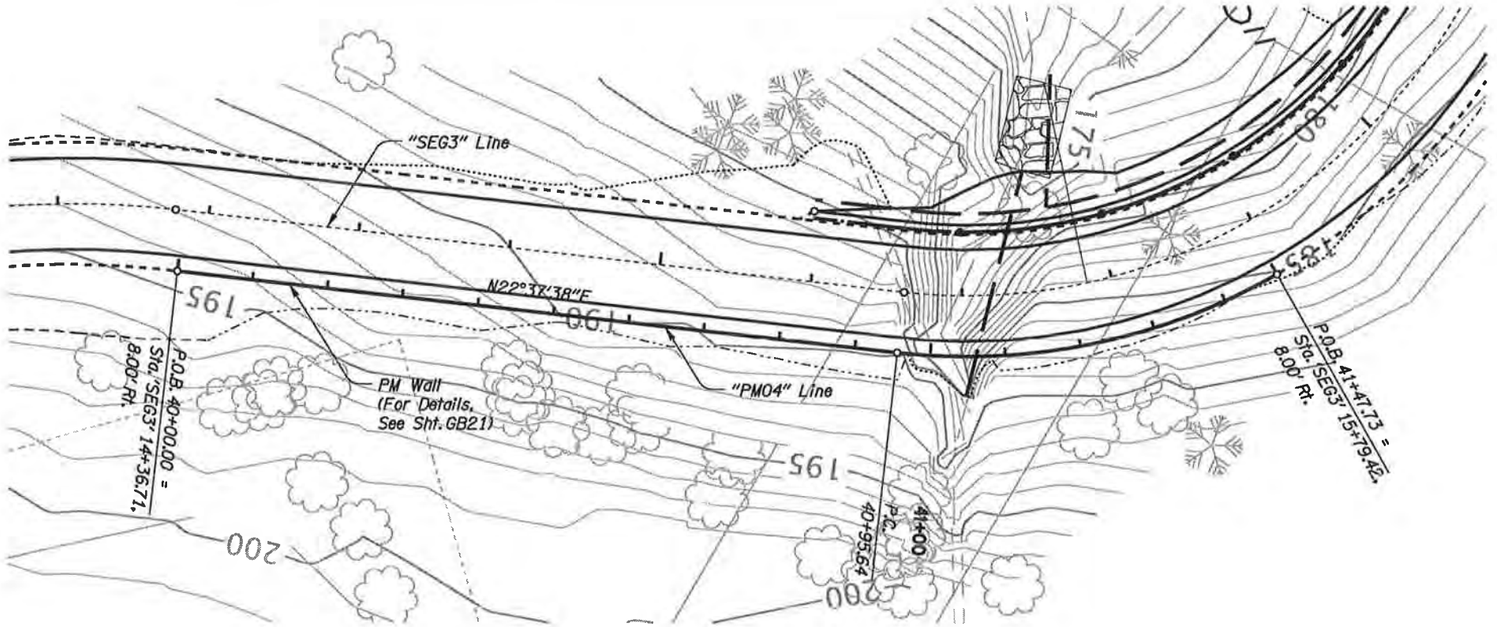
WALL - PMO3
GEOTECHNICAL DATA SHEET

SHEET NO. GB15A

ROADWAY

662691rw15.dgn

54V-027



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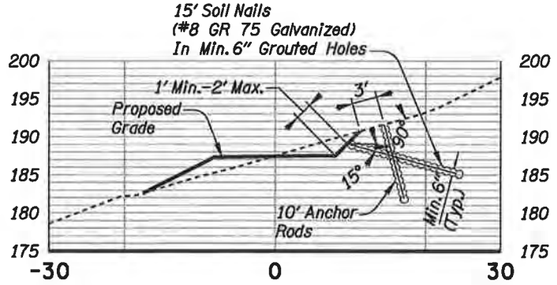
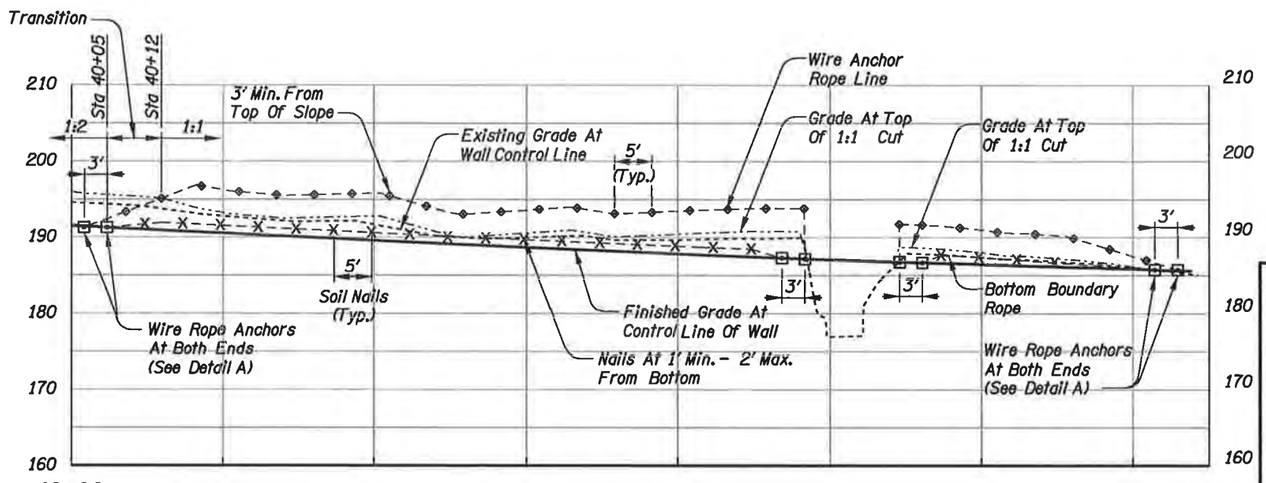


Test Loads:
Verification test Load=20 kips
Proof Test Load=15 kips

SECTION



DEVELOPED ELEVATION

0 10 20 30
Horizontal Scale In Feet

0 10 20 30
Vertical Scale In Feet

Note:

Install anchor rods between soil nails to avoid conflicts.

Geotechnical Design

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020 12 21 13:58:30-08'00'
OREGON
JULY 14, 1998
RAJIV ALI

EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Civil Design and Site Layout

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020 12 21 10:29:18-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE

EXPIRES: 12/31/2022

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

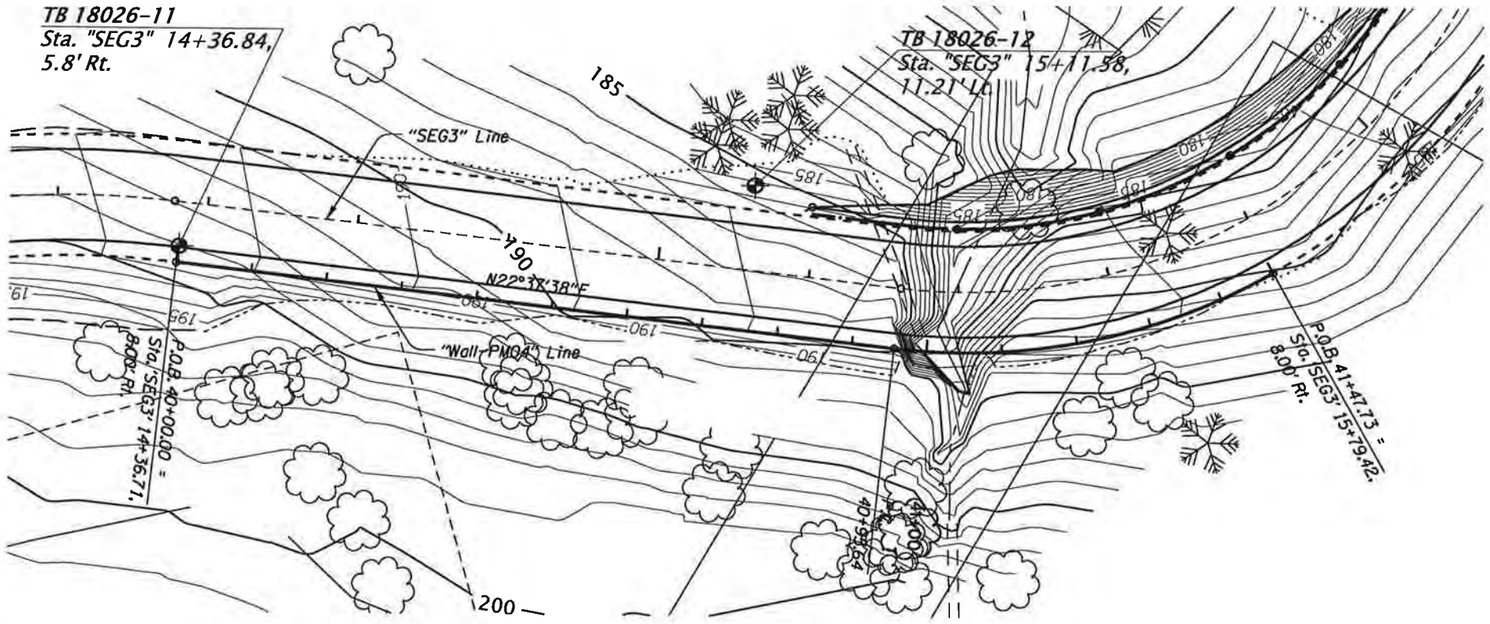
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

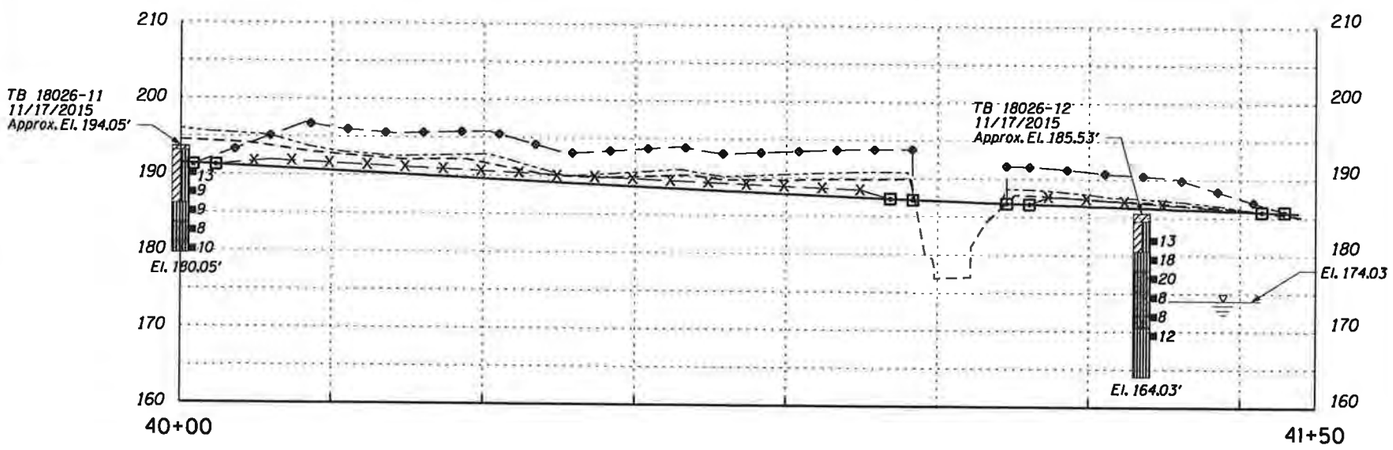
Designer: M Little
Reviewer: M Eller
Drafter: J Walker
Checker: M Eller

WALL - PM04
PLAN AND PROFILE

SHEET NO.
GB16

21-DEC-2020 10:15





UNIT DESCRIPTIONS 54V-027

- SANDY SILT; ML; BROWN; MOIST TO WET; SOFT; (TOPSOIL WITH ROOT ZONE TO 10 INCHES)
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LEGEND

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50/1st #"	=	SPT Test Refusal Length
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▽		Groundwater measured in the bore hole

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0 10 20 30
Horizontal Scale In Feet

0 5 10 15
Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.17 12:33:37-08'00'
OREGON
JULY 14, 1998
RAJIV ALI
EXPIRES: 12/31/21

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Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
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OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: R Ali
Reviewer: C Hemberry
Drafter: D Blackshere
Checker: R Ali

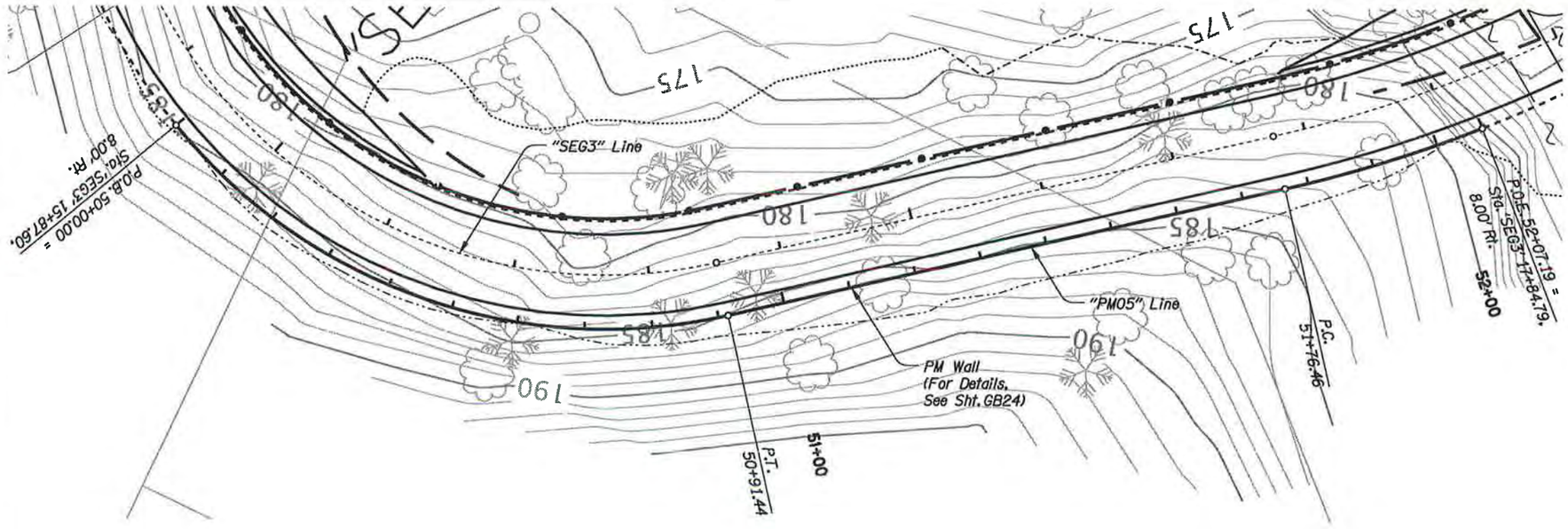
WALL - PM04
GEOTECHNICAL DATA SHEET

SHEET NO.
GB16A

ROADWAY

662691rw16.dgn

54V-027



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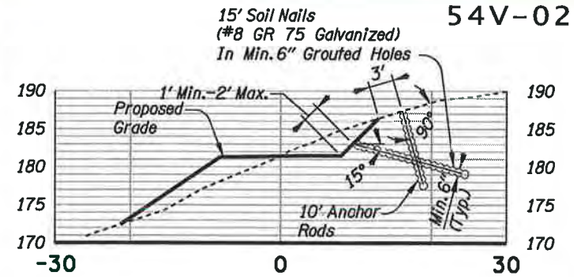
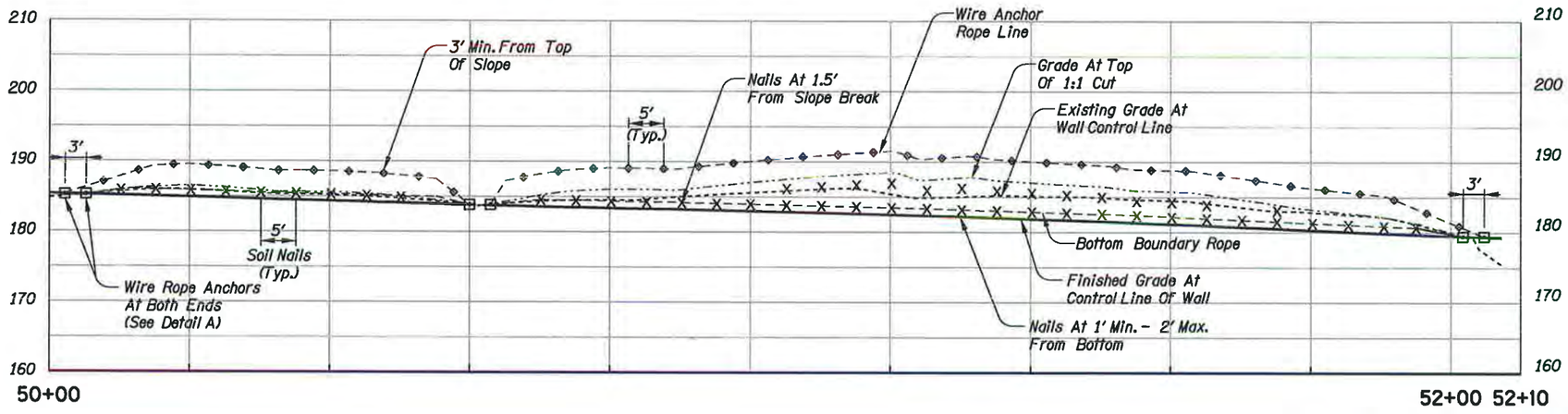


Test Loads:
Verification test Load=20 kips
Proof Test Load=15 kips

SECTION



DEVELOPED ELEVATION

Note:

Install anchor rods between soil nails to avoid conflicts.

Geotechnical Design

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.21 13:59:02-08'00'
OREGON
JULY 14, 1998
RAJIV ALI

EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Civil Design and Site Layout

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020.12.21 10:29:51-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE

EXPIRES: 12/31/2022

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

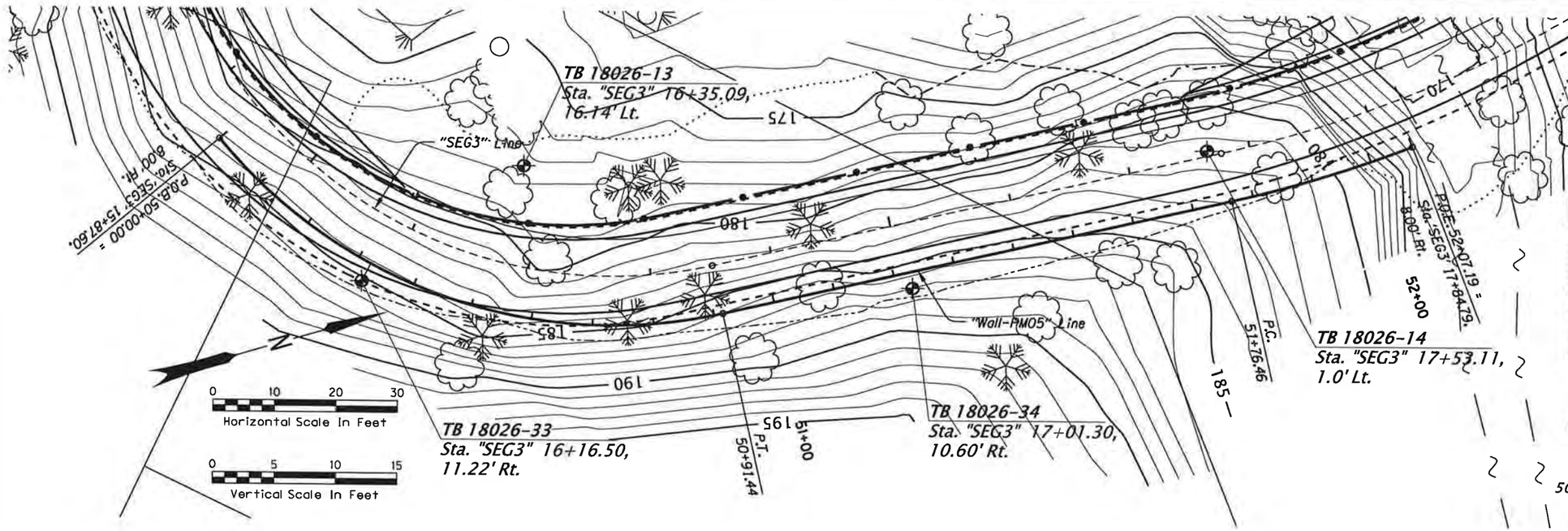
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little
Drafter: J Walker
Reviewer: M Eller
Checker: M Eller

WALL - PM05
PLAN AND PROFILE

SHEET NO.
GB17

21-DEC-2020 10:15

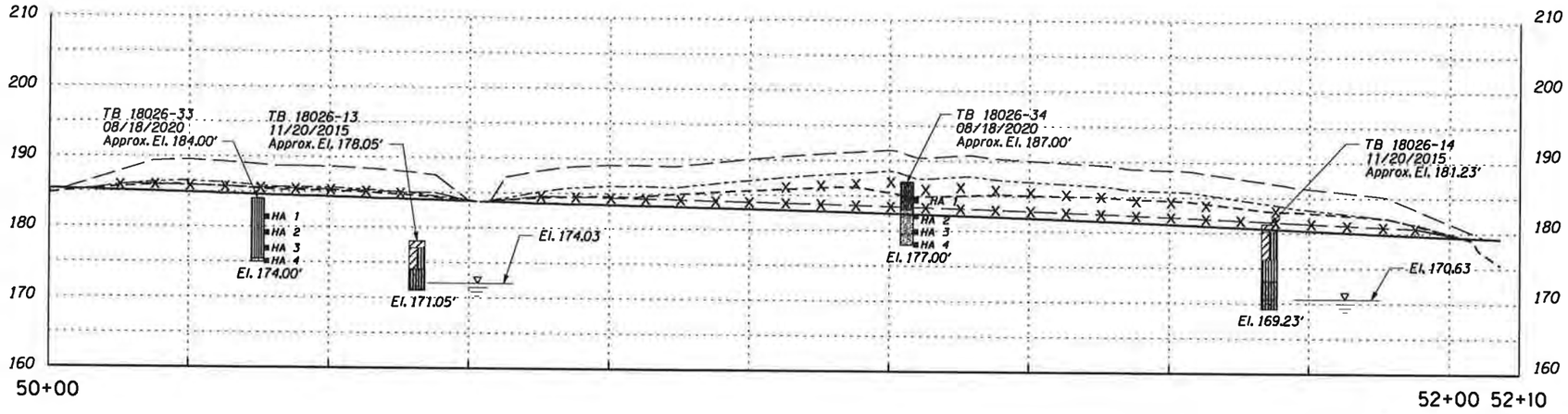


UNIT DESCRIPTIONS

- SANDY SILT; ML; BROWN; MOIST TO WET; SOFT; (TOPSOIL WITH ROOT ZONE TO 10 INCHES)
- SANDY SILT; ML; BROWN TO GRAY; MOIST TO WET; LOW TO MEDIUM PLASTICITY; SOFT TO MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
- SILTY FINE SAND; SM; BROWN; WET; LOW TO MEDIUM PLASTICITY; LOOSE (MISSOULA FINE-FLOOD DEPOSITS)
- CLAYEY SILT; CL-ML; BROWN; MOIST TO WET; MEDIUM PLASTICITY; MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
- SAND; SP; BROWN; WET; LOOSE TO MEDIUM DENSE (MISSOULA FINE-FLOOD DEPOSITS)

LEGEND

■ 24	=	Standard penetration test - N value
RQD	=	Rock quality designation
50/1st #	=	SPT Test Refusal Length
⌖	=	Bore Hole Location
▽		Groundwater measured in the bore hole



GENERAL NOTES

1. 1' Contour Interval.
2. Elevations are based on North American Vertical Datum (1988).
3. Geotechnical data shown on this drawing are a consolidation of information and/or revision in terminology from the drill logs. More detailed subsurface data is available on the drill logs in the geotechnical report, which is available from the Engineer.
4. In accordance with ASTM D1586-84, N values are reported for an interval of 2.5 ft. except as noted.

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.17 12:34:03-08'00'
OREGON
JULY 14, 1998
RAJIV ALI
EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

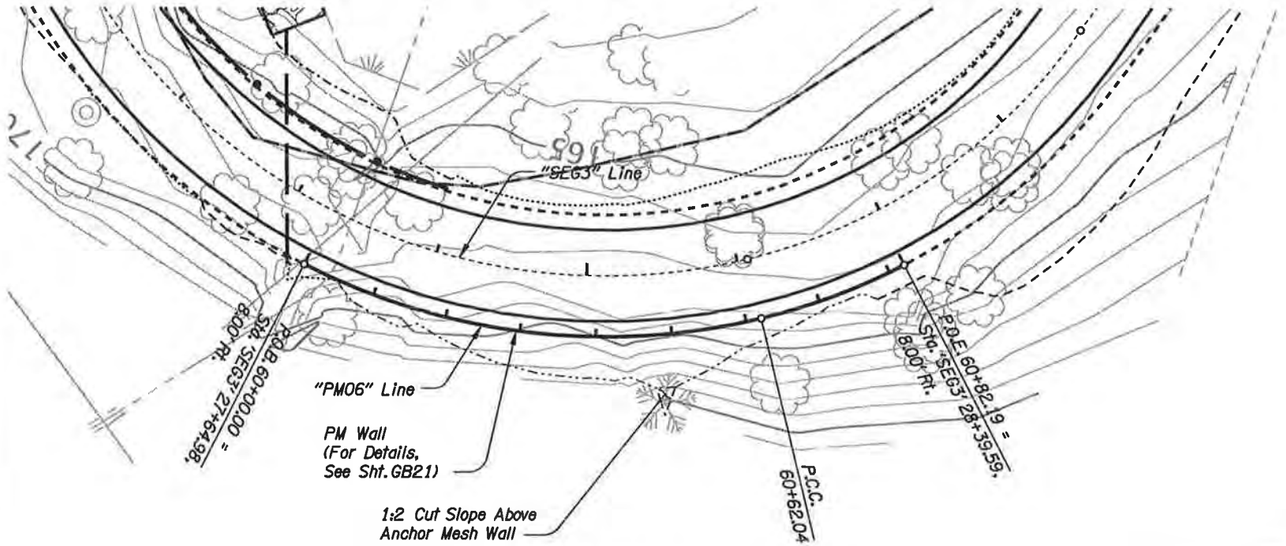
Designer: R Ali
Drafter: D Blackshere
Reviewer: C Hemberry
Checker: R Ali

WALL - PM05
GEOTECHNICAL DATA SHEET

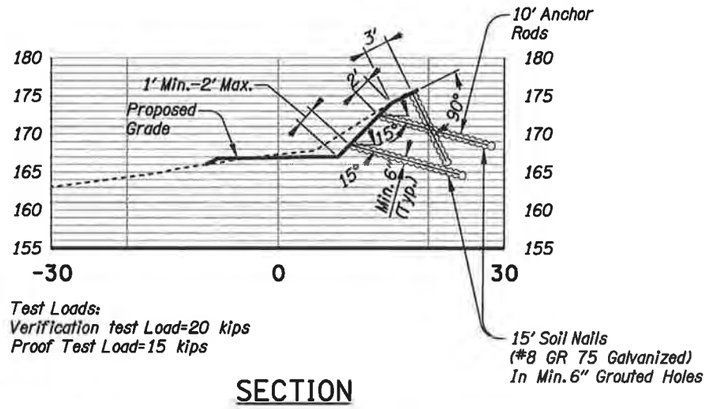
SHEET NO. GB17A

ROADWAY

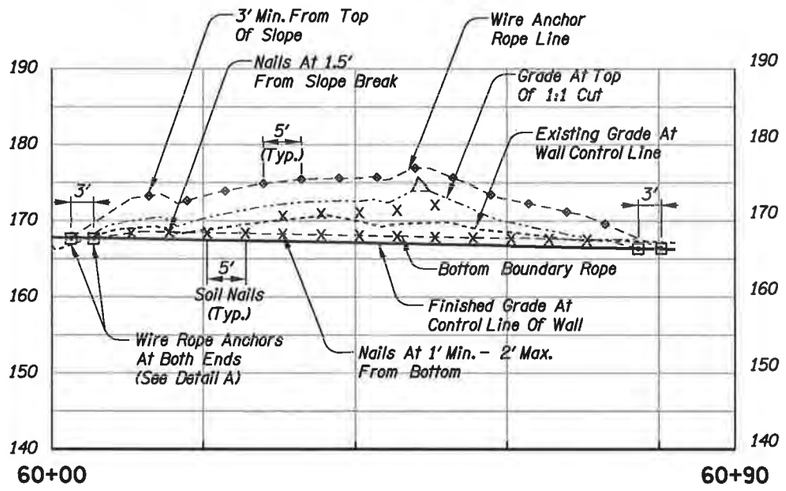
662691rw17.dgn



PLAN



SECTION



DEVELOPED ELEVATION

Note:

Install anchor rods between soil nails to avoid conflicts.

Geotechnical Design

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020 12 21 13:59:28-08'00'
OREGON
JULY 14, 1998
RAJIV ALI

EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Civil Design and Site Layout

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed 2020 12.21 10:30:21-08'00'
OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE

EXPIRES: 12/31/2022

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

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2020 SW 4TH AVE. - 3RD FLOOR
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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

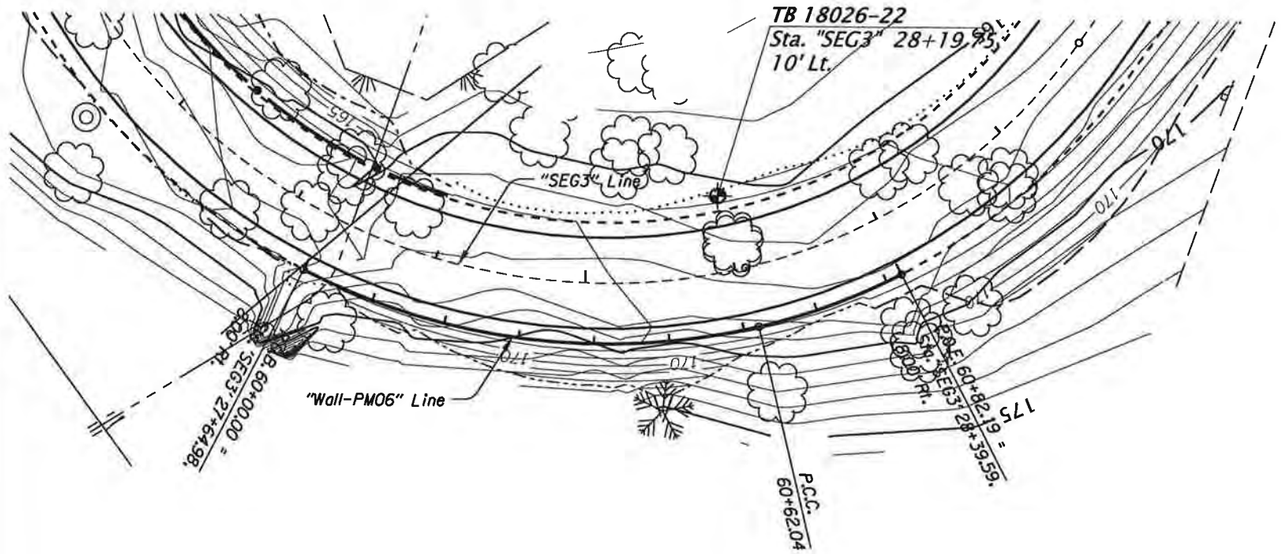
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

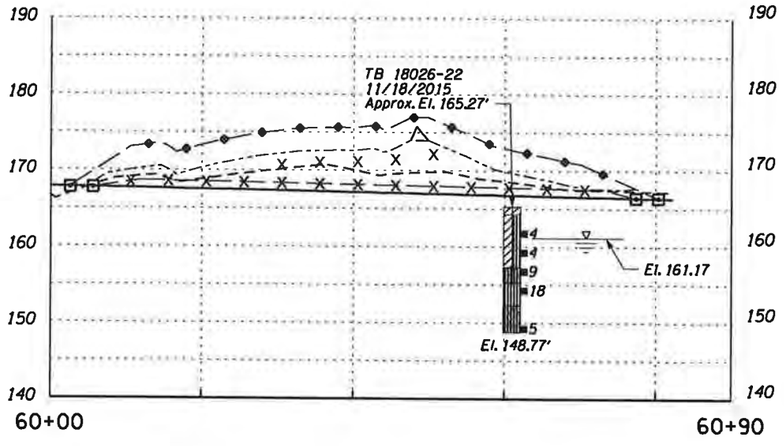
Designer: M Little | Reviewer: M Eller
Drafter: J Walker | Checker: M Eller

WALL - PM06
PLAN AND PROFILE

SHEET NO. GB18

21-DEC-2020 10:17





UNIT DESCRIPTIONS 54V-027

- SANDY SILT; ML; BROWN; MOIST TO WET; SOFT; (TOPSOIL WITH ROOT ZONE TO 10 INCHES)
- SANDY SILT; ML; BROWN TO GRAY; MOIST TO WET; LOW TO MEDIUM PLASTICITY; SOFT TO MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
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- CLAYEY SILT; CL-ML; BROWN; MOIST TO WET; MEDIUM PLASTICITY; MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
- SAND; SP; BROWN; WET; LOOSE TO MEDIUM DENSE (MISSOULA FINE-FLOOD DEPOSITS)

LEGEND

■ 24	=	Standard penetration test - N value
RQD	=	Rock quality designation
50/1st #"	=	SPT Test Refusal Length
⊕	=	Bore Hole Location
▽		Groundwater measured in the bore hole

GENERAL NOTES

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4. In accordance with ASTM D1586-84, N values are reported for an interval of 2.5 ft. except as noted.

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.17 12:34:33-08'00'
OREGON
JULY 14, 1998
RAJIV ALI
EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: R Ali
Reviewer: C Hemberry
Drafter: D Blackshere
Checker: R Ali

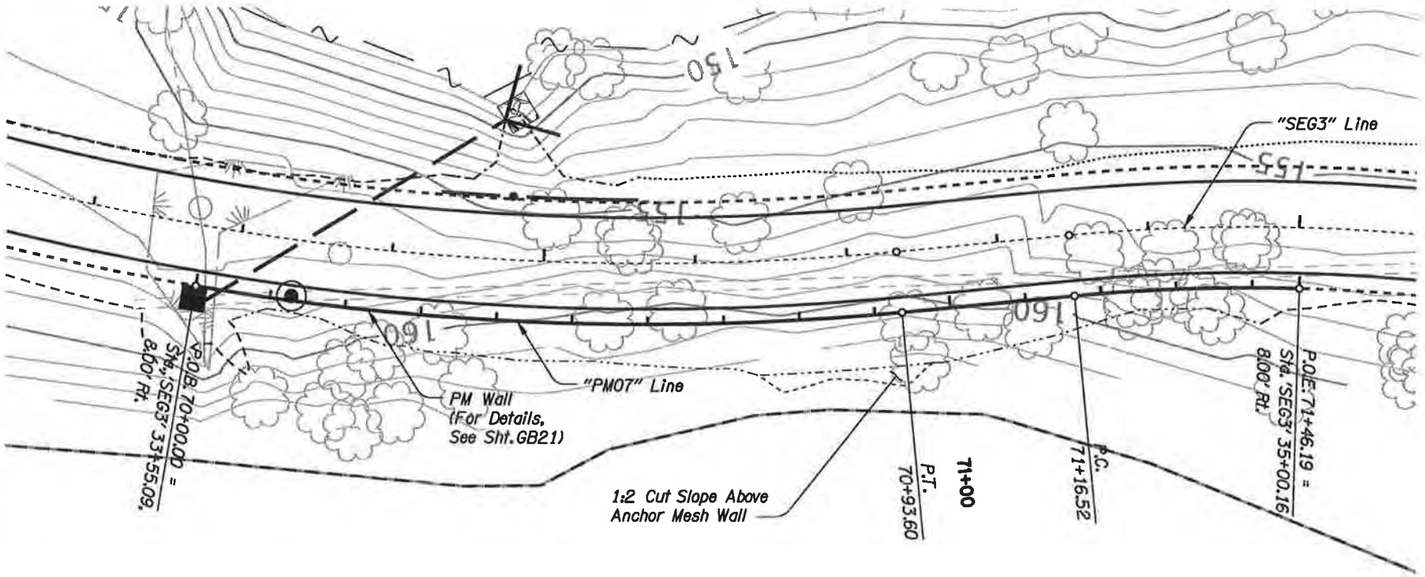
WALL - PM06
GEOTECHNICAL DATA SHEET

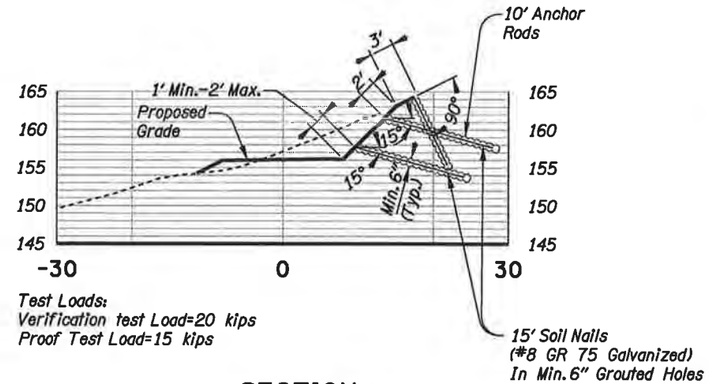
SHEET NO.
GB18A

ROADWAY

662691rw18.dgn

54V-027





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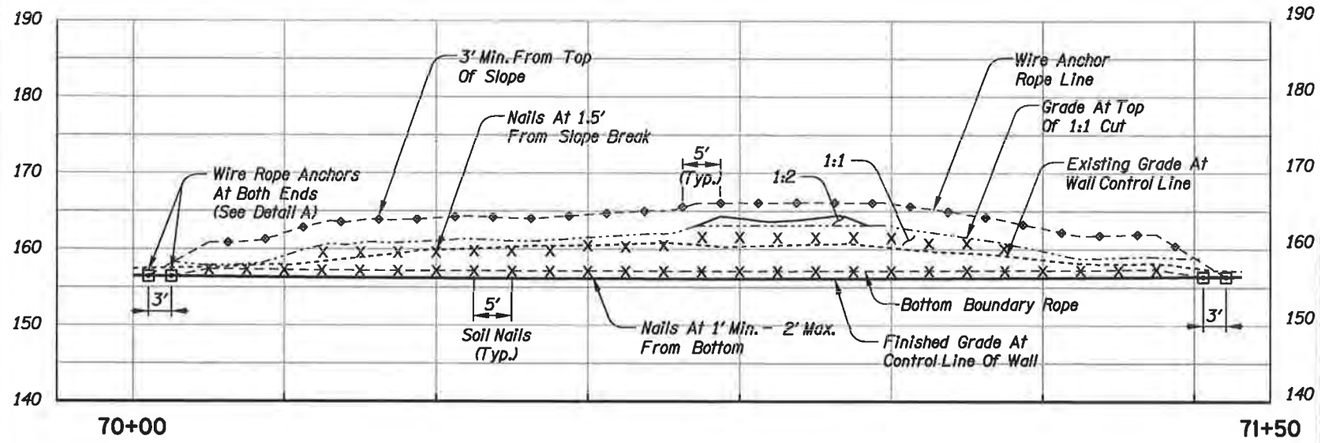

0 10 20 30
Horizontal Scale In Feet

0 10 20 30
Vertical Scale In Feet

Note:

Install anchor rods between soil nails to avoid conflicts.

Geotechnical Design

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020 12 21 13:59:47-08'00'
OREGON
JULY 14, 1998
RAJIV ALI

EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Civil Design and Site Layout

REGISTERED PROFESSIONAL ENGINEER
72869PE
Digitally Signed
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Oct. 23, 2009
MATTHEW RYAN LITTLE

EXPIRES: 12/31/2022

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

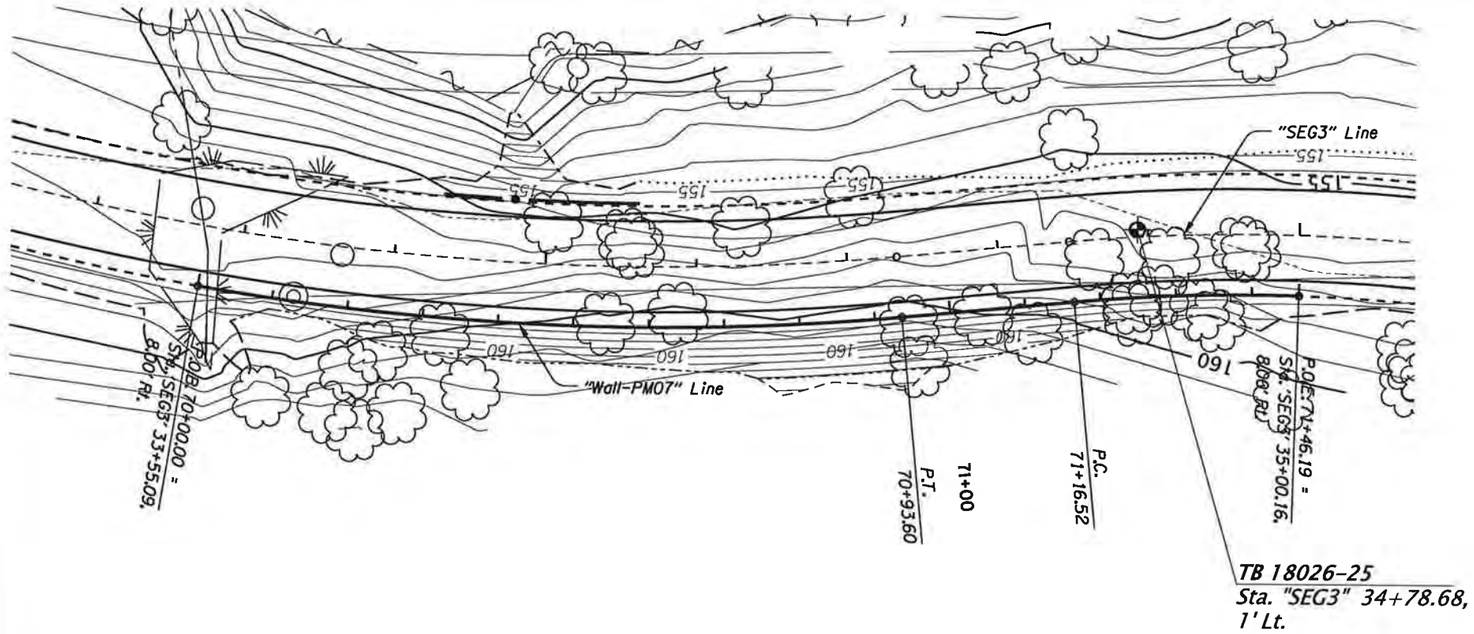
Designer: M Little
Drafter: J Walker
Reviewer: M Eller
Checker: M Eller

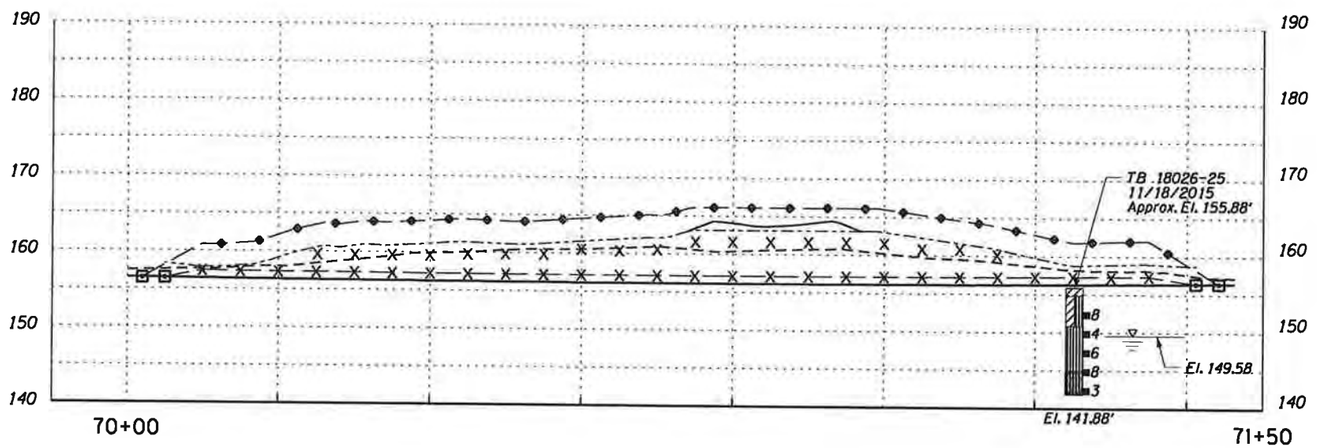
WALL - PM07
PLAN AND PROFILE

SHEET NO.
GB19

21-DEC-2020 10:17

54V-027





UNIT DESCRIPTIONS

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- SAND; SP; BROWN; WET; LOOSE TO MEDIUM DENSE (MISSOULA FINE-FLOOD DEPOSITS)

LEGEND

- 24 = Standard penetration test - N value
- RQD = Rock quality designation
- 50/1st #" = SPT Test Refusal Length
- = Bore Hole Location
- Groundwater measured in the bore hole

GENERAL NOTES

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4. In accordance with ASTM D1586-84, N values are reported for an interval of 2.5 ft. except as noted.

N

0 10 20 30
Horizontal Scale In Feet

0 5 10 15
Vertical Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.17 12:36:11-08'00'
OREGON
JULY 14, 1998
RAJIV ALI
EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
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TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME
CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: R All
Drafter: D Blackshere
Reviewer: C Hemberry
Checker: R All

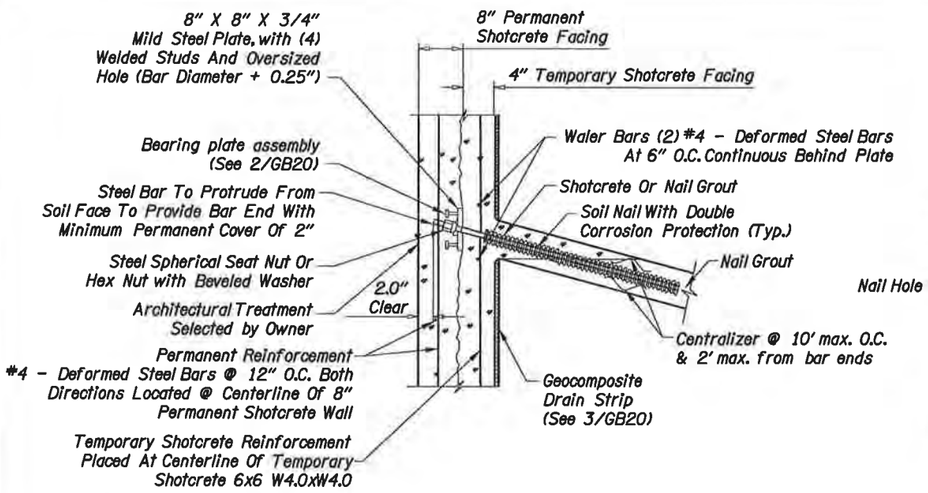
WALL - PM07
GEOTECHNICAL DATA SHEET

SHEET NO.
GB19A

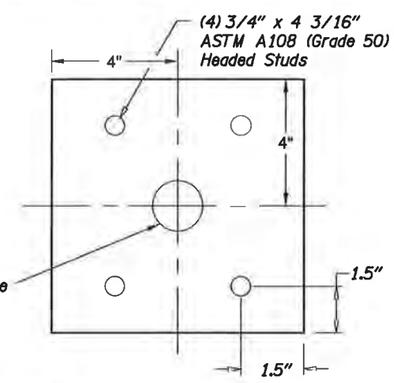
ROADWAY

662691rw19.dgn

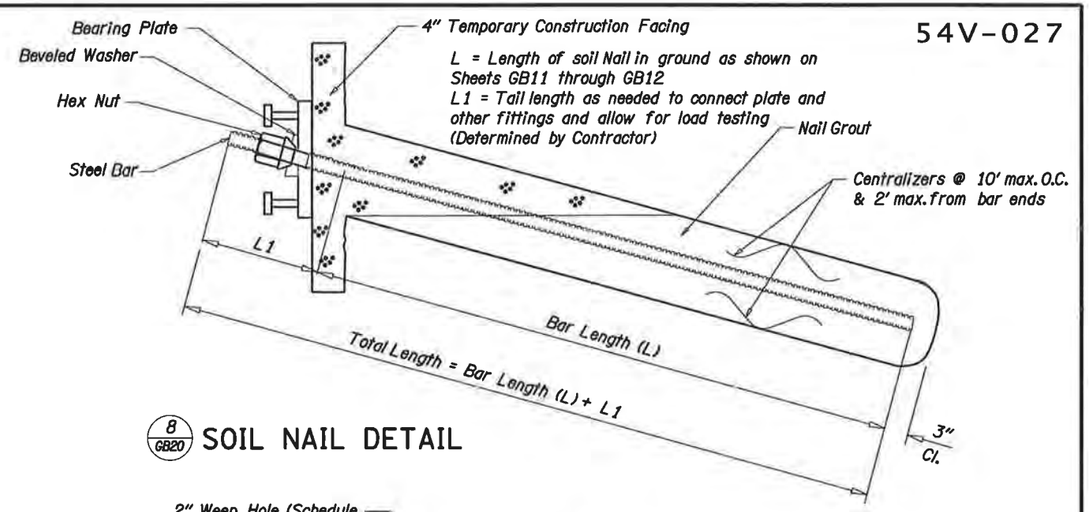
54V-027



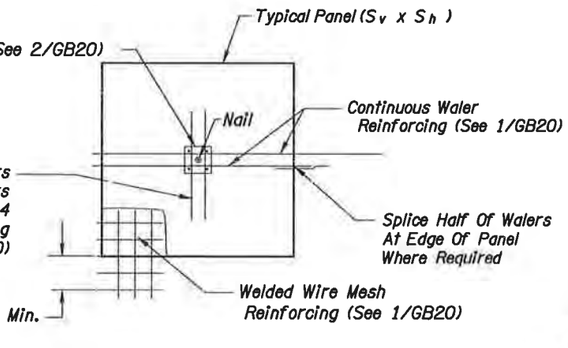
1/GB20 TEST/PRODUCTION NAIL WALL SECTION



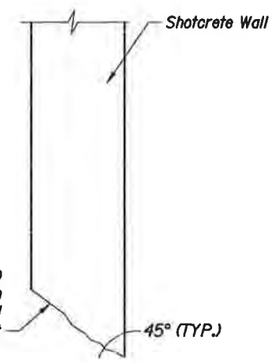
2/GB20 BEARING PLATE



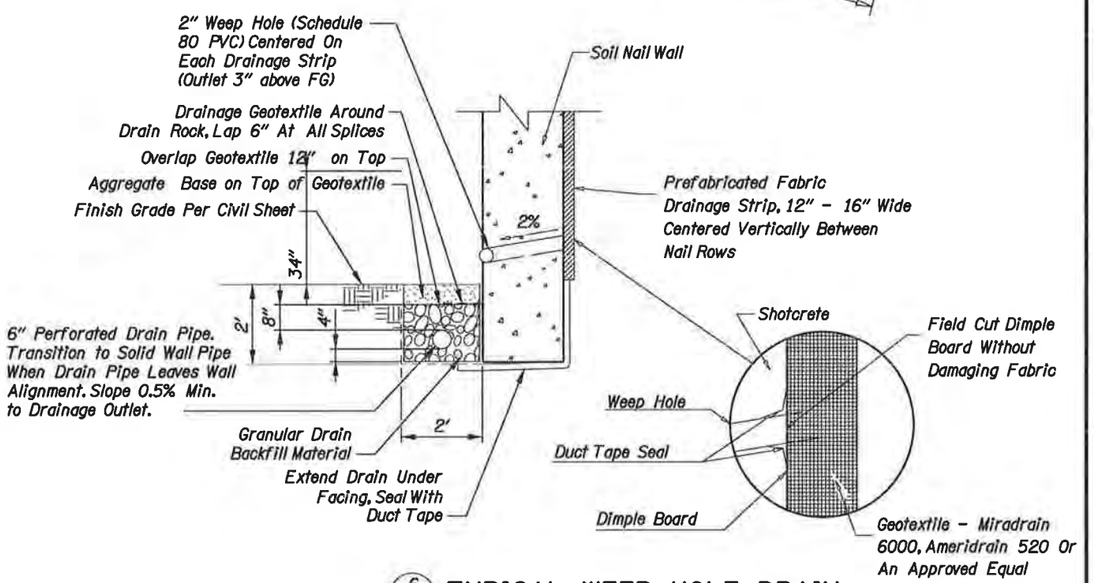
8/GB20 SOIL NAIL DETAIL



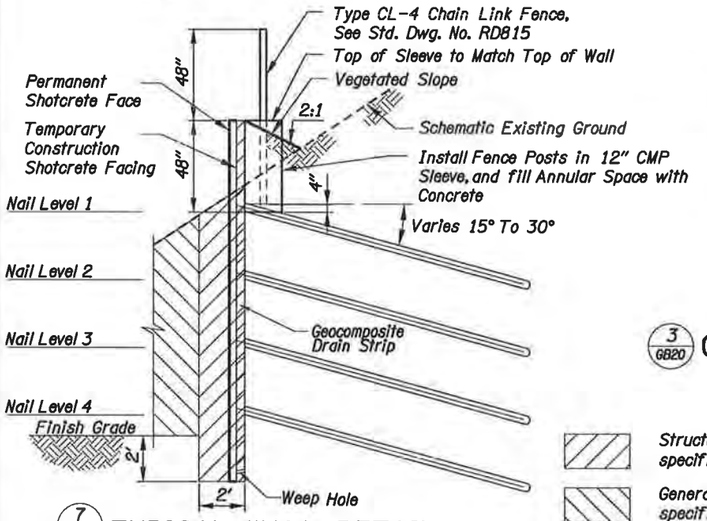
4/GB20 TYPICAL SHOTCRETE PANEL STEEL



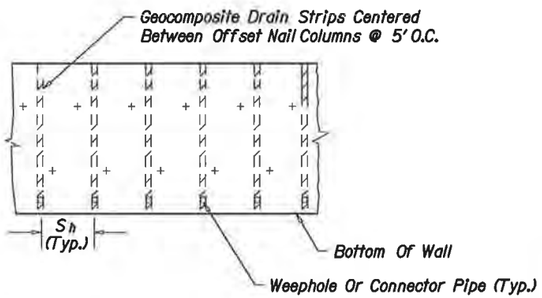
5/GB20 TYPICAL CONSTRUCTION JOINT



6/GB20 TYPICAL WEEP HOLE DRAIN



7/GB20 TYPICAL WALL DETAIL



3/GB20 GEOCOMPOSITE DRAINAGE STRIP DETAIL

Structure Excavation as specified in Section 00510

General Excavation as specified in Section 00330

Geotechnical Design

REGISTERED PROFESSIONAL ENGINEER 58591 Digitally Signed 2020.12.18 08:14:31-08'00' OREGON JULY 14, 1998 RAJIV ALI

EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Structural Design

REGISTERED PROFESSIONAL ENGINEER 94835PE Digitally Signed Dec 17, 2020, 8:10 AM OREGON MAY 14, 2019 JOHN P. LOOMIS

EXPIRES: DEC. 31, 2020

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

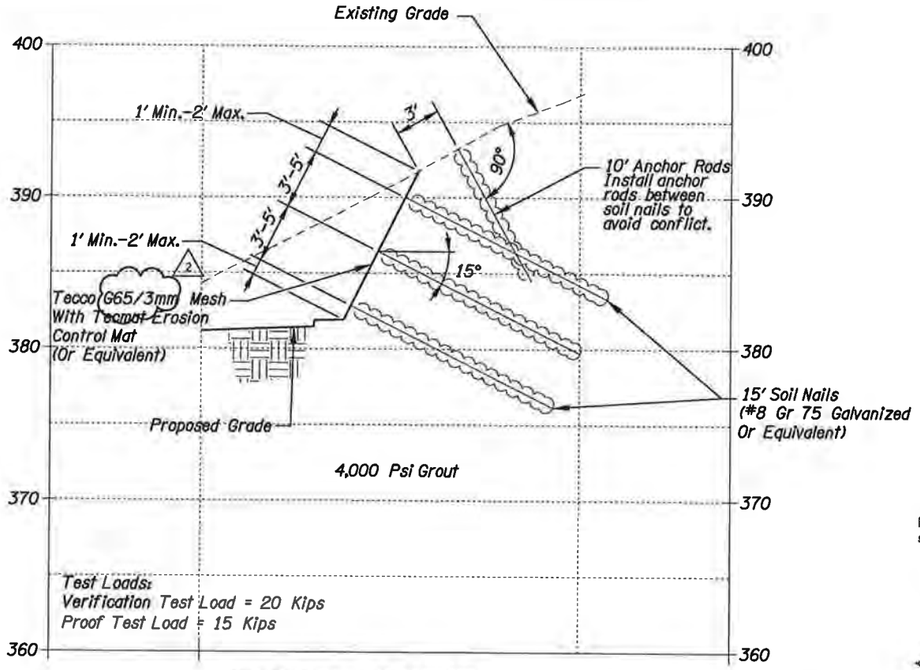
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little	Reviewer: M Eller
Drafter: J Walker	Checker: M Eller

SOIL NAIL WALL DETAILS

SHEET NO. GB20

17-DEC-2020 16:18

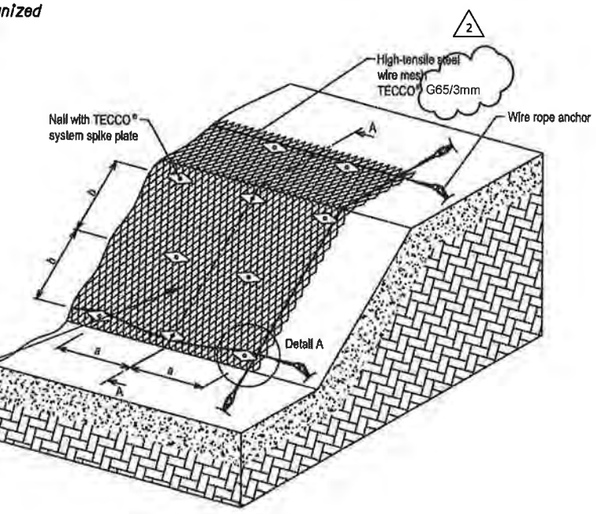


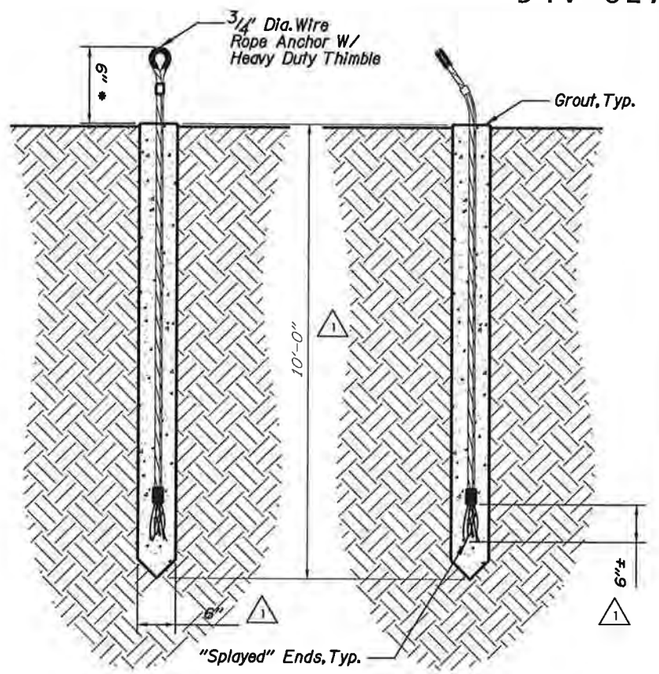
TYPICAL SECTION

Hor. Scale: 1"= 5'

Vert. Scale: 1"= 5'

Seed anchor mesh slope with grass, see FA sheets. Provide anchor mesh manufacturer's proprietary rolled erosion control matting beneath wire mesh as specified in Section 00399.





DETAIL B: ANCHORED WIRE MESH ROPE ANCHOR

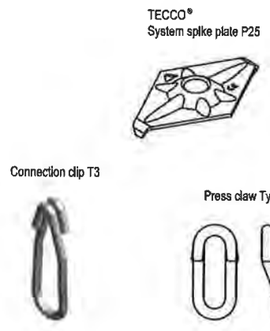
Not To Scale

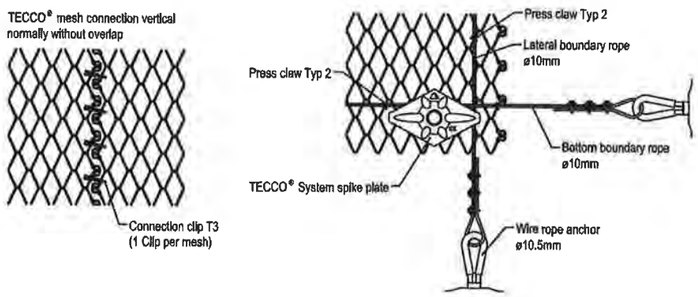
Notes:

1. *Wire Rope Anchors Ends To Be "Splayed" Before Setting In Grout.*
2. *Anchored Wire Mesh Wall Contractor Can Submit Proprietary Design For Approval.*

GENERAL NAIL ARRANGEMENT

Scale: N.T.S.





DETAIL A

Scale: N.T.S.

2	Revised 02-18-2021 Wire Mesh
1	Revised 02-10-2021 Rope anchor size

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2021.02.18 08:39:36-08'00'
OREGON
JULY 14, 1998
RAJIV ALI

EXPIRES: 12/31/21

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

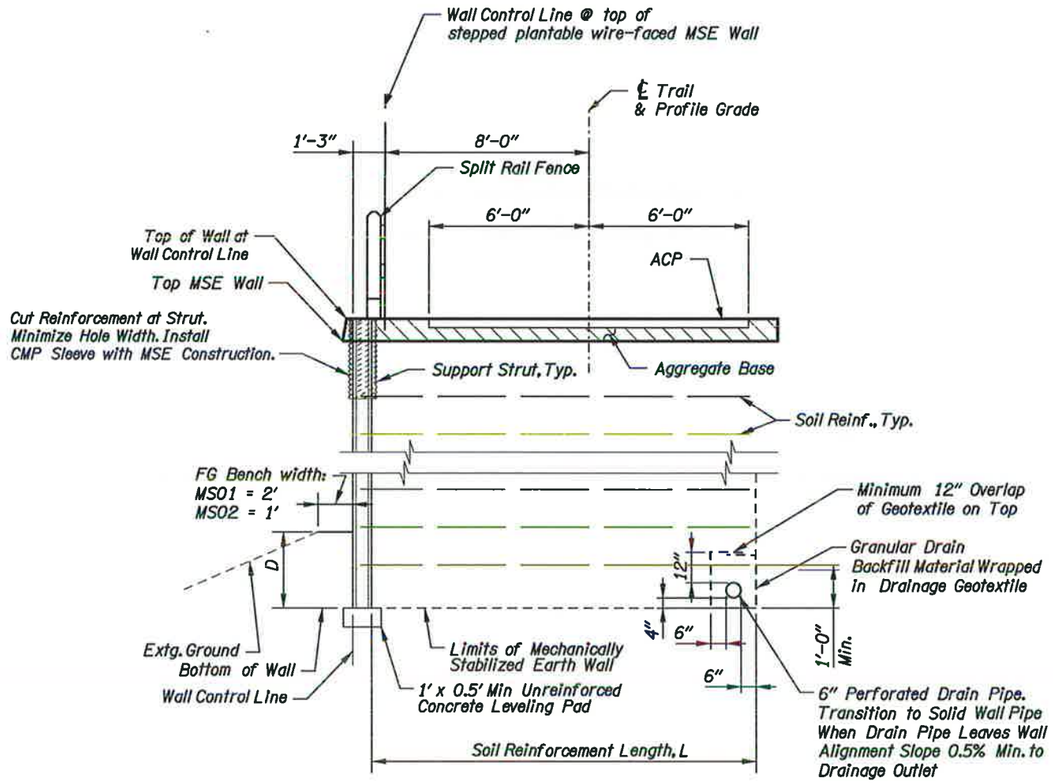
Designer: M Little | Reviewer: M Eller
Drafter: J Walker | Checker: M Eller

ANCHORED MESH WALL DETAILS

SHEET NO. GB21

18-FEB-2021 08:48

Wall	Station	Min. Soil Reinforcement Length 'L' (ft.)	Min. Embedment Depth 'D' (ft.)
MS-01	Sta. 1+95.00 To 2+76.73	Greater of 0.8H or 8'	Greater of 2' or H/10
MS-02	Sta. 16+31.29 To 16+76.59	Greater of 0.8H or 8'	Greater of 2' or H/10



TYPICAL SECTION

Not To Scale

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.18 08:00:59-08'00'
OREGON
JULY 14, 1998
RAJIV ALI

EXPIRES: 12/31/21

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: M Eller
Drafter: J Walker | Checker: M Eller

MSE WALL DETAILS

SHEET NO. GB22

17-DEC-2020 18:32

GENERAL RSS/MSE RETAINING WALL NOTES:

RSS/MSE wall vendor shall perform all internal and external design for RSS/MSE walls. The design drawings and calculations shall be signed and sealed by a professional Geotechnical Engineer licensed by the State of Oregon.

All material and workmanship shall conform to Project Specification Section 00596A. Mechanically Stabilized Earth Retaining Walls.

Peak ground acceleration equal to 0.36g (1,000 yr. return period). Design horizontal ground acceleration equal to 0.18g (~1/2 of the PGA) for seismic lateral earth loads.

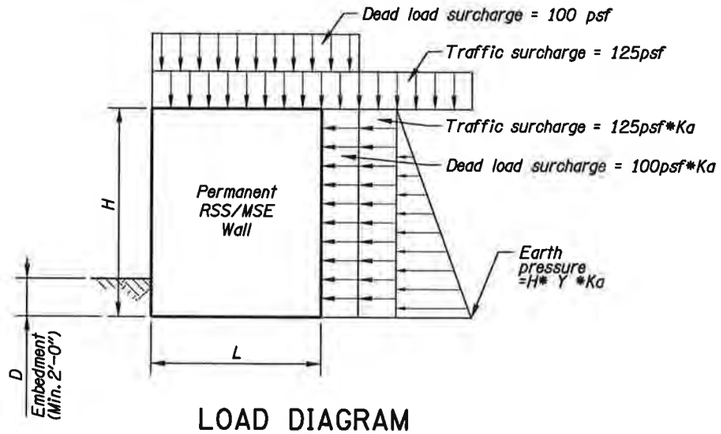
Provide a minimum service life of 75 years for all components.

Reinforced soil slope design shall conform to the requirements for FHWA GEC 011, Design and Contruction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes 2009.

Retaining wall shall be designed for the following soil property values:

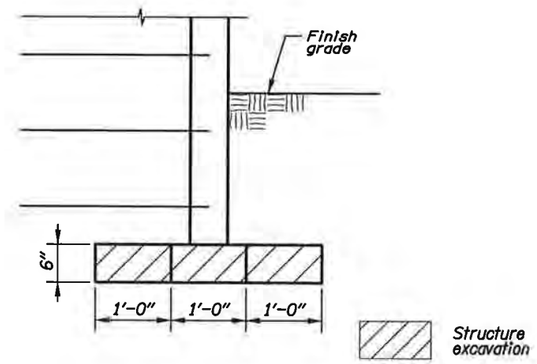
Material Description	Moist Unit Weight (pcf) γ	Angle Of Internal Friction (Degrees) ϕ'	Cohesion Intercept (psf) c'	Active Earth Pressure Coefficient Ka
RSS/MSE granular backfill	125	34	0	0.28
Retained fill	110	28	200	0.35
Foundation Soils	110	28	200	N/A

Segmental wall facing panels shall be used for MSE walls.



LOAD DIAGRAM

Not To Scale



STRUCTURE EXCAVATION PAY LIMITS DIAGRAM

Not To Scale

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.16 08:01:27-08'00'
OREGON
JULY 14, 1998
RAJIV ALI

EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little | Reviewer: M Eller
Drafter: J Walker | Checker: M Eller

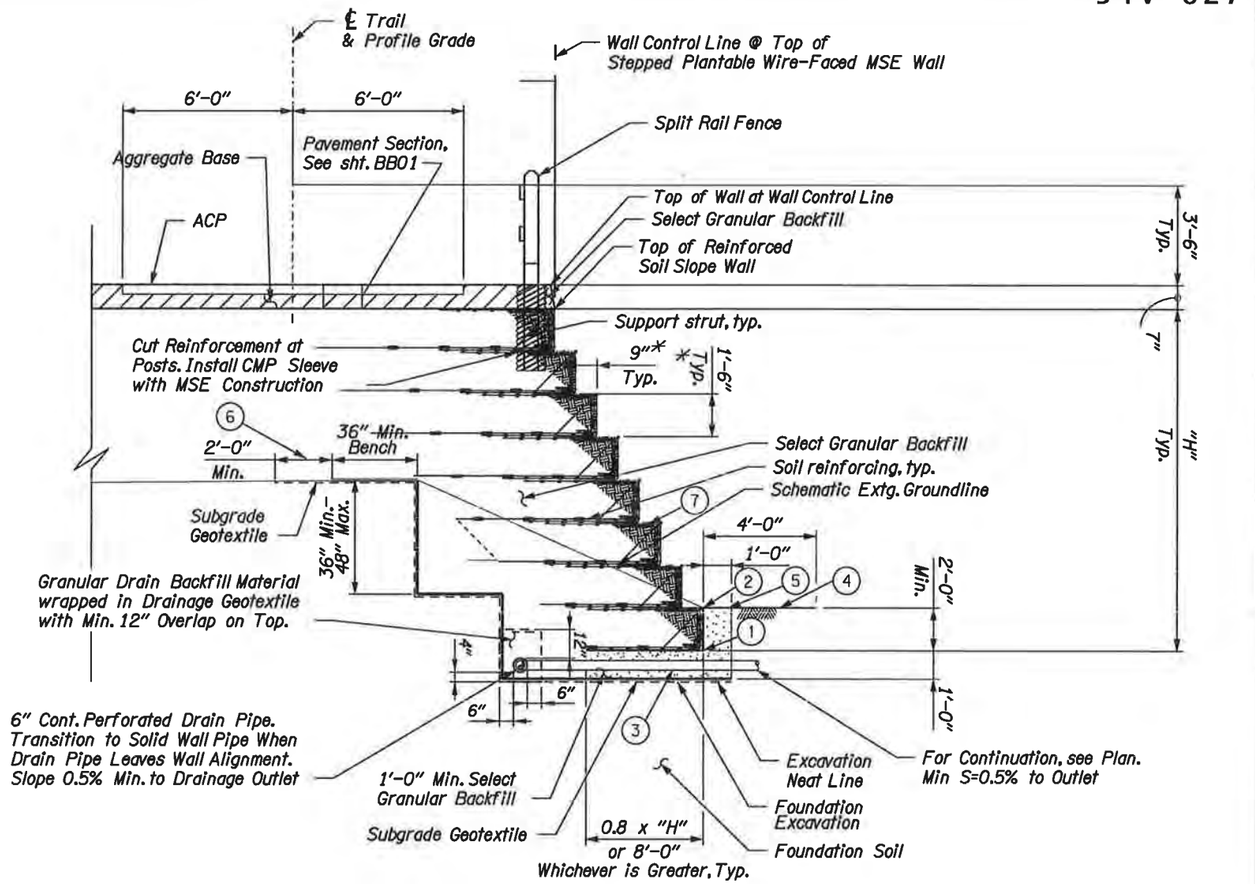
GENERAL NOTES
RSS/MSE WALL

SHEET NO.
GB23

17-DEC-2020 18:15

54V-027

GENERAL REINFORCED SOIL SLOPE NOTES (AND DESIGN CRITERIA):
For General Notes, Load Diagram, and Structure Excavation Pay Limits Diagram, See Sht. GB23



TYPICAL SECTION REINFORCED SOIL SLOPE

Scale: 3/16" = 1'-0"

*Slope Shown for ½:1. Slope Varies ½:1 to ⅔:1

1. Bottom of wall.
2. Finish grade at bottom of wall.
3. 6" Drain line longitudinal along full length of wall. Lateral discharge at 100 ft. max with 0.5% min slope. Discharge to day-light at toe of slope.
4. Minimum 4'-0" horizontal bench in front of wall. Restrict earthwork in front of wall as needed to avoid impacting extg. wetlands.
5. Excavation neat line minimum 1'-0" beyond soil reinforcing.
6. Subgrade geotextile to extend minimum 2'-0" beyond excavation required for wall.
7. Provide corrosion protection for all metal components for a 75 year design life.

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.18 08:02:05-08'00'
OREGON
JULY 14, 1998
RAJIV ALI
EXPIRES: 12/31/21

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

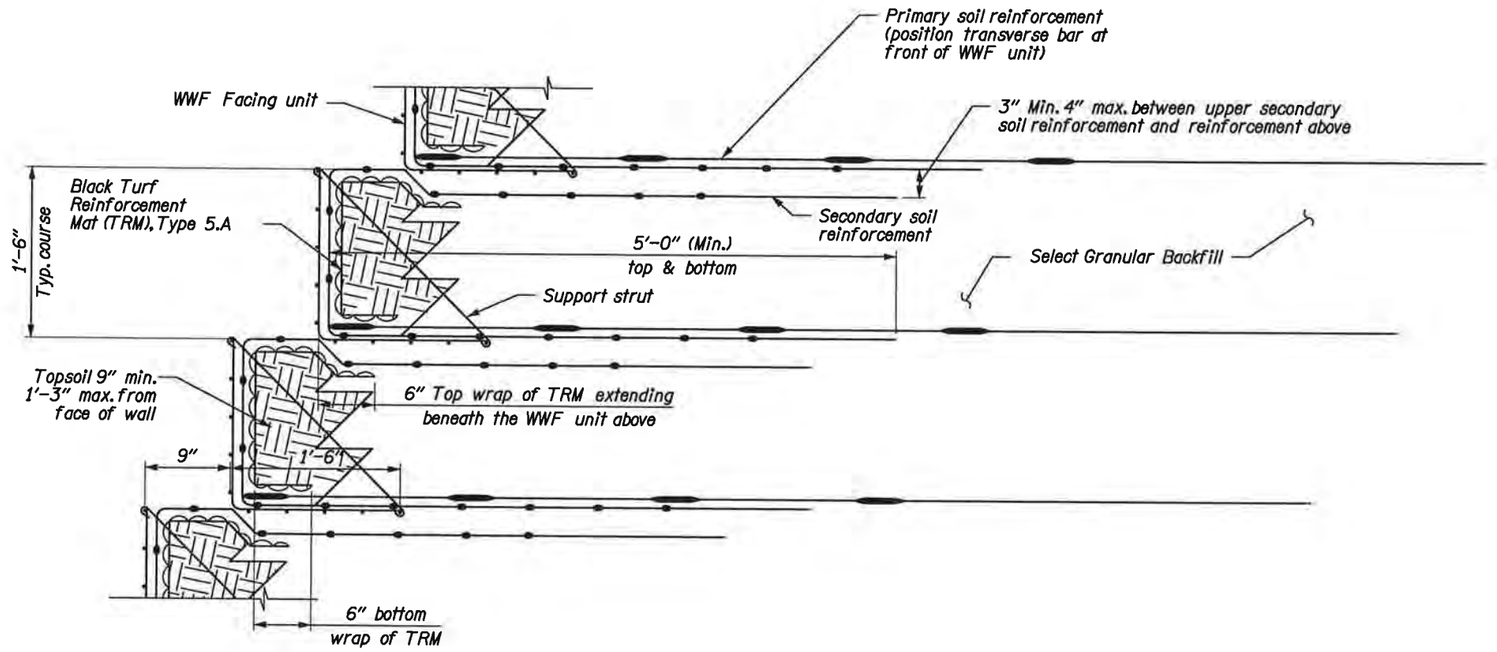
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little	Reviewer: M Eller
Drafter: J Walker	Checker: M Eller

REINFORCED SOIL SLOPE WALL

SHEET NO. GB24

17-DEC-2020 18:29



WELDED WIRE FABRIC FACING DETAIL
REINFORCED SOIL SLOPE

Scale: 3/4" = 1'-0"

0 25 50 75
Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
58591
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OREGON
JULY 14, 1998
RAJIV ALI

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

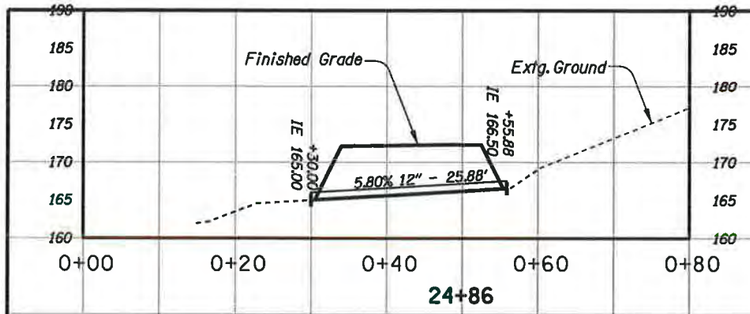
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little	Reviewer: M Eller
Drafter: J Walker	Checker: M Eller

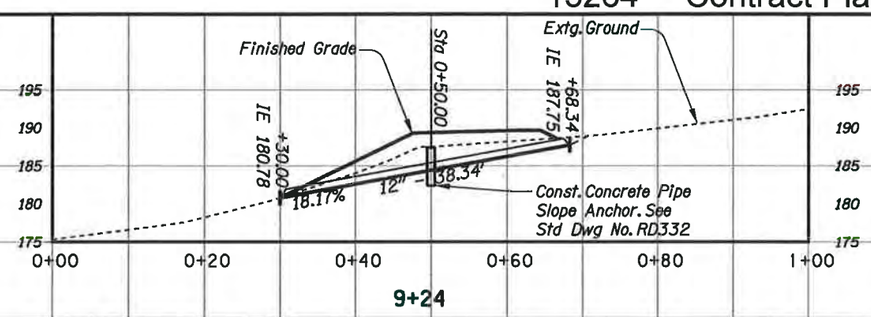
REINFORCED SOIL SLOPE WALL

SHEET NO.
GB25

17-DEC-2020 18:15



24+86



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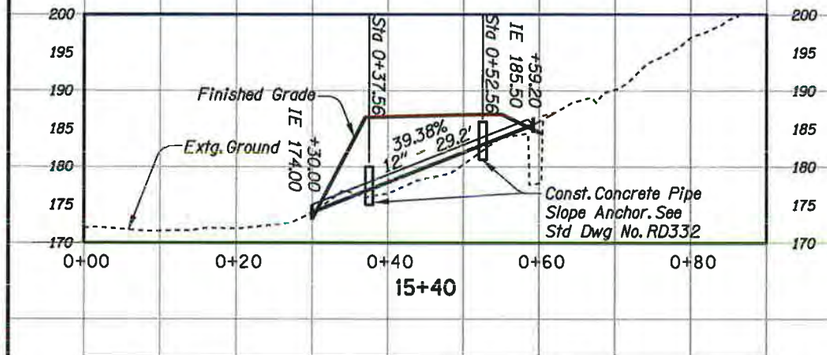

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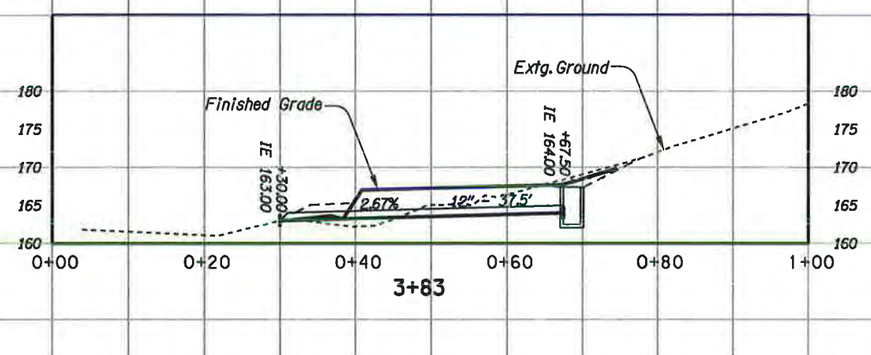
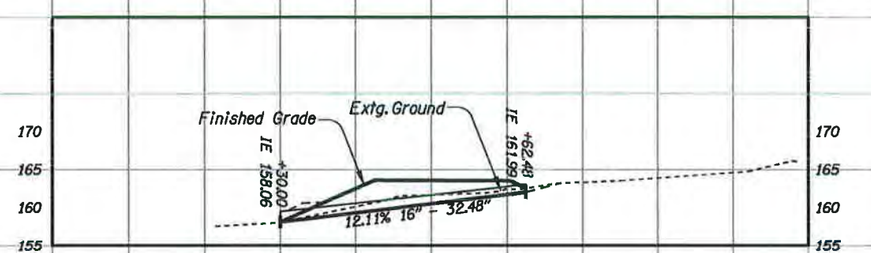


3+83

11+06



1+44

0 10 20 30
Scale In Feet

REGISTERED PROFESSIONAL ENGINEER
72869PE
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OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

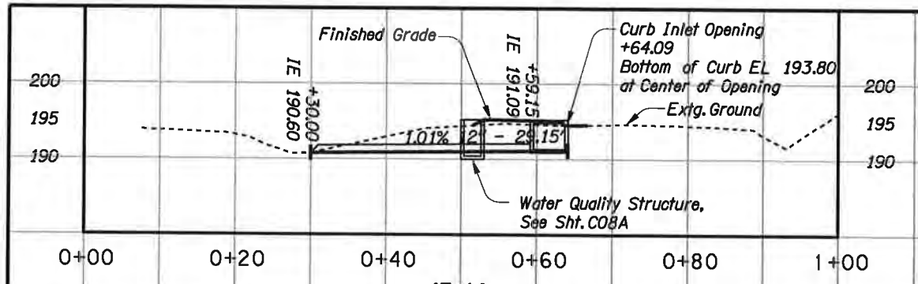
Designer: M Little | Reviewer: R Attanasio
Drafter: M Wainscott | Checker: R Attanasio

CULVERT PROFILES

SHEET NO. HB01

17-DEC-2020 15:17

54V-027



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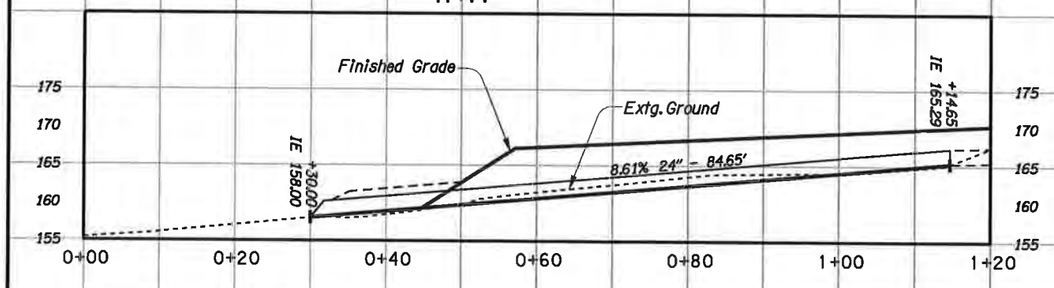
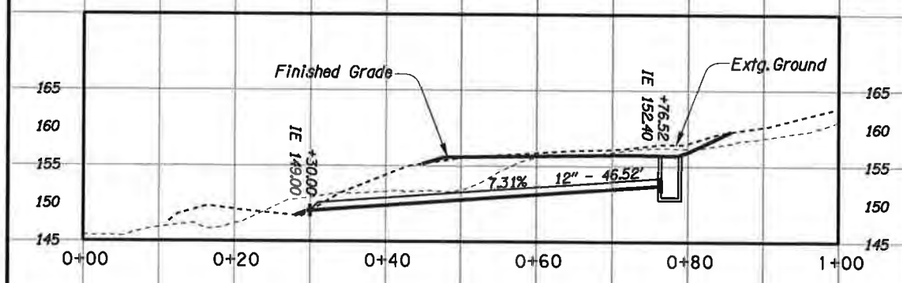


38+99



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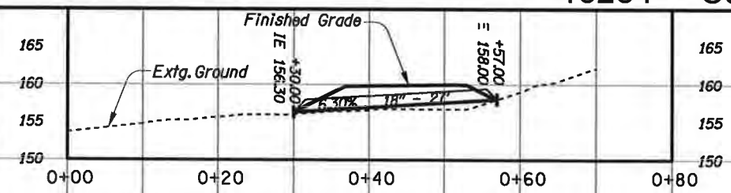

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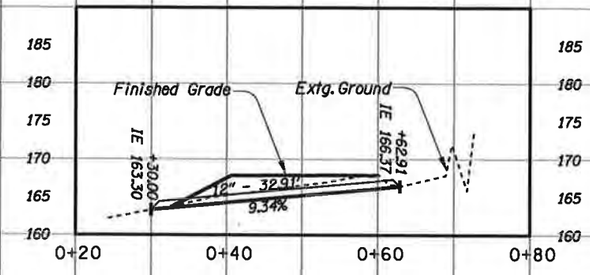

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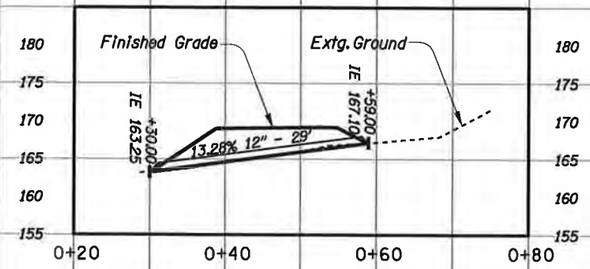

25+73

0 10 20 30
Scale In Feet

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OREGON
Oct. 23, 2009
MATTHEW RYAN LITTLE
EXPIRES: 12/31/2022

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

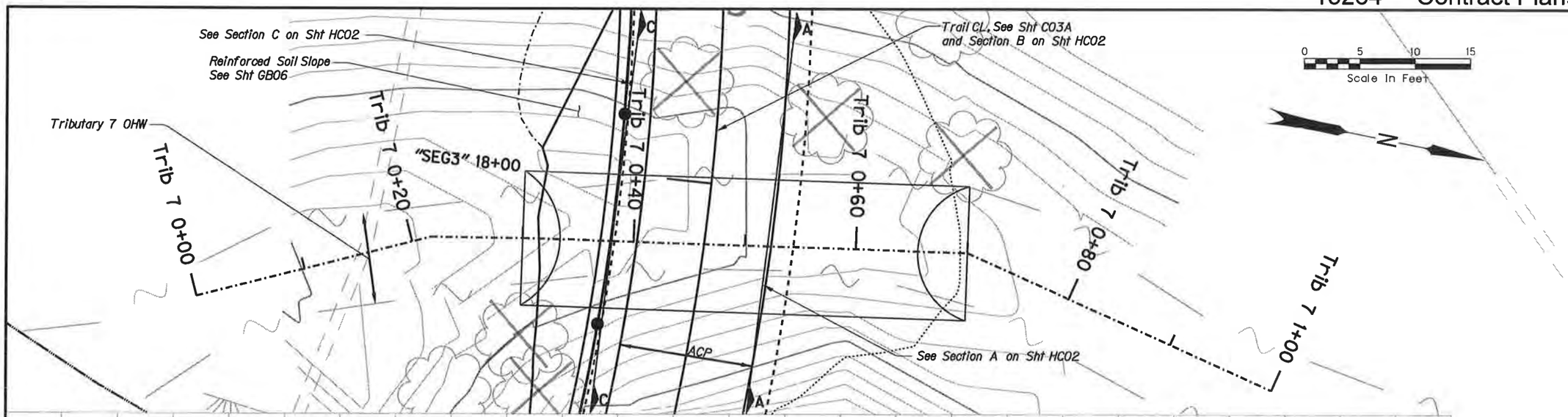
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little
Drafter: M Wainscott
Reviewer: R Attanasio
Checker: R Attanasio

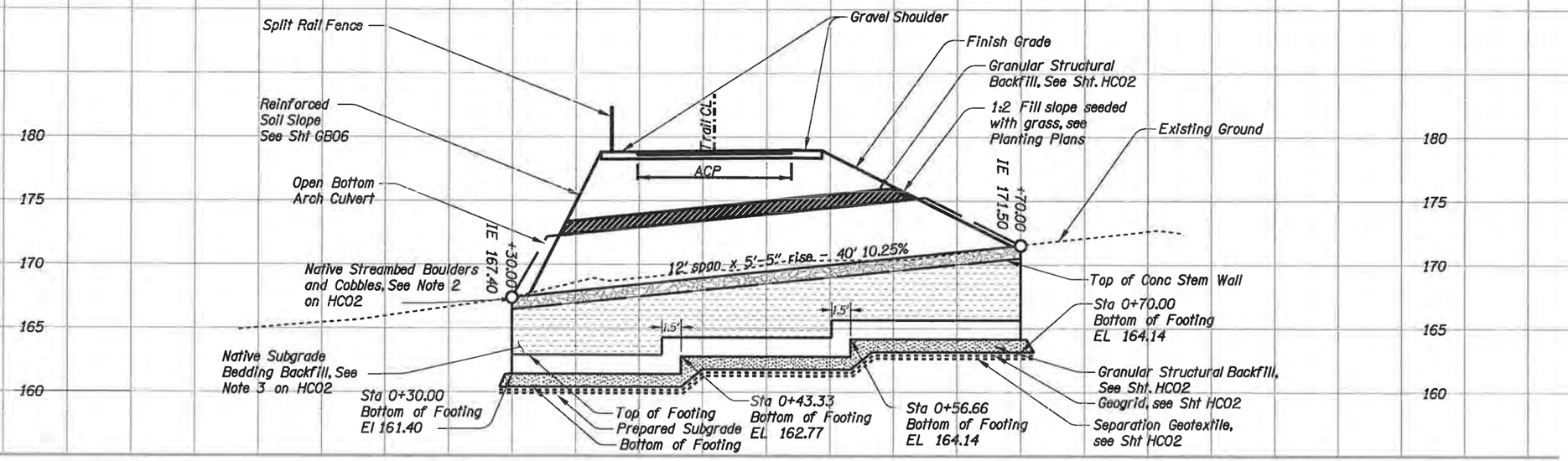
CULVERT PROFILES

SHEET NO.
HB02

17-DEC-2020 15:19



PLAN
1"=5'



PROFILE
1"=5'

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72869PE
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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

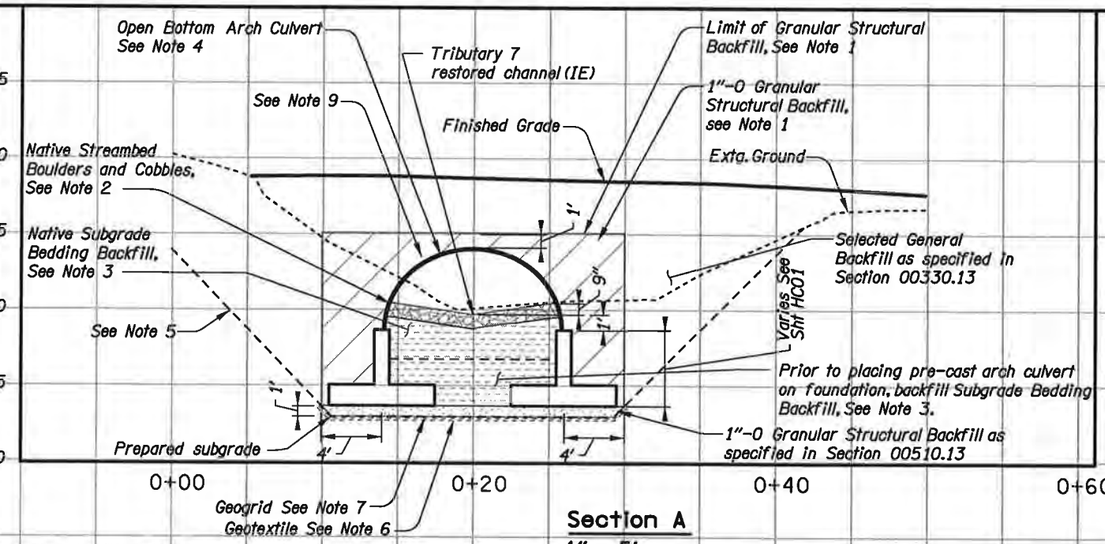
Designer: M Little
Drafter: M Wainscott
Reviewer: R Attanasio
Checker: R Attanasio

FISH PASSAGE CULVERT PLAN AND PROFILE

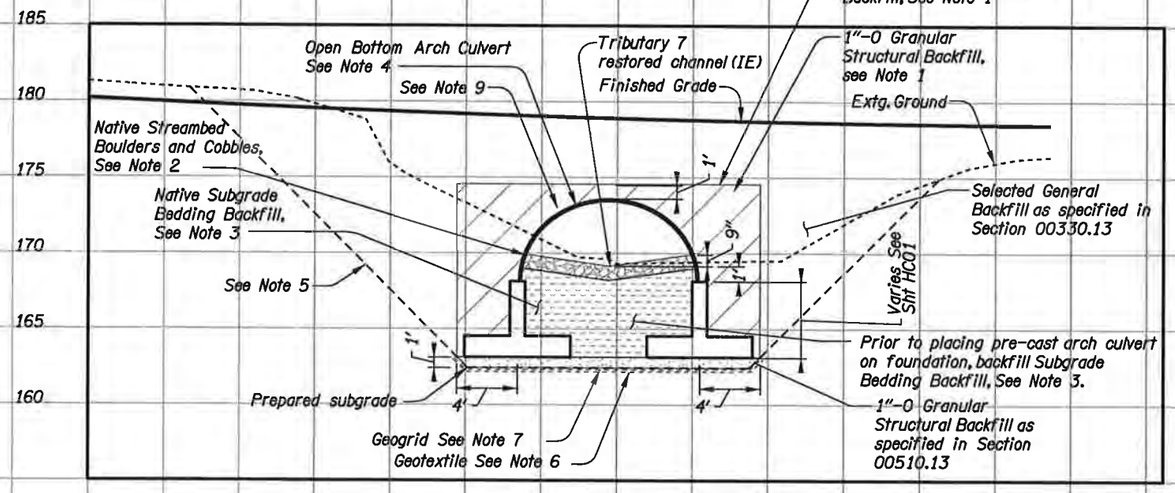
SHEET NO. HC01

20-DEC-2020 16:52

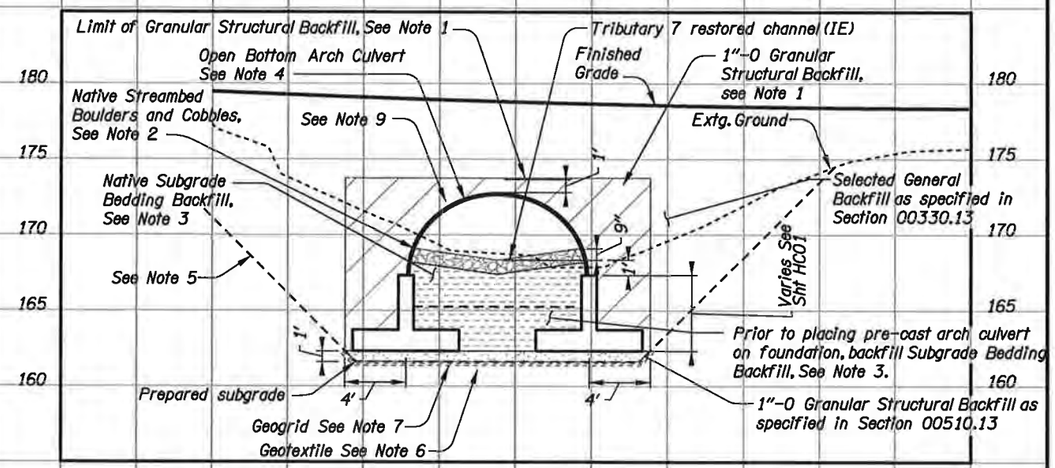
54V-027



Section A
1" = 5'



Section B
1" = 5'



Section C
1" = 5'

Notes:

1. Provide Granular Structure Backfill as specified in Section 00510.13, except that backfill shall be installed in 8" loose lifts placed symmetrically on each side of the culvert and compacted to minimum 90% density per AASHTO T-180. Compaction of the backfill shall be with hand operated equipment or with lightweight (D-4 or lighter) equipment.
2. Excavate and stockpile Native Streambed Boulders and Cobbles >3-inch sieve. Place Boulders and Cobbles to construct top 12 inches of restored channel.
3. Stockpile native material excavated below Streambed Boulders and Cobbles. Confirm this Native Subgrade Bedding Backfill meets gradation specified in 1091.10(b). If material does not meet gradation, import material that does meet the specification. Place material in max. 8" loose lifts.
4. Open bottom arch culvert shall be a Structural Plate Arch as specified in Section 00450. Structural Plate shall be manufactured of 6"x2" Corrugated plate. Contractor shall verify metal gauge with manufacturer, and submit calculations for approval by Engineer demonstrating the structural arch plate has been designed to resist the loading from 10-ft cover and HS-20 Live Load.
5. Schematic Excavation Slope. Contractor to design and excavate to provide safe stable slope complying with OSHA standards and local, state, and federal standards.
6. Provide Woven Subgrade Geotextile as specified in Section 02320.
7. Provide Subgrade Reinforcement Geogrid as specified in Section 02320.
8. Refer to Sht HC01 for locations of Sections in Plan.
9. After culvert is installed and backfilled, protect from excessive loading by other construction equipment.

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

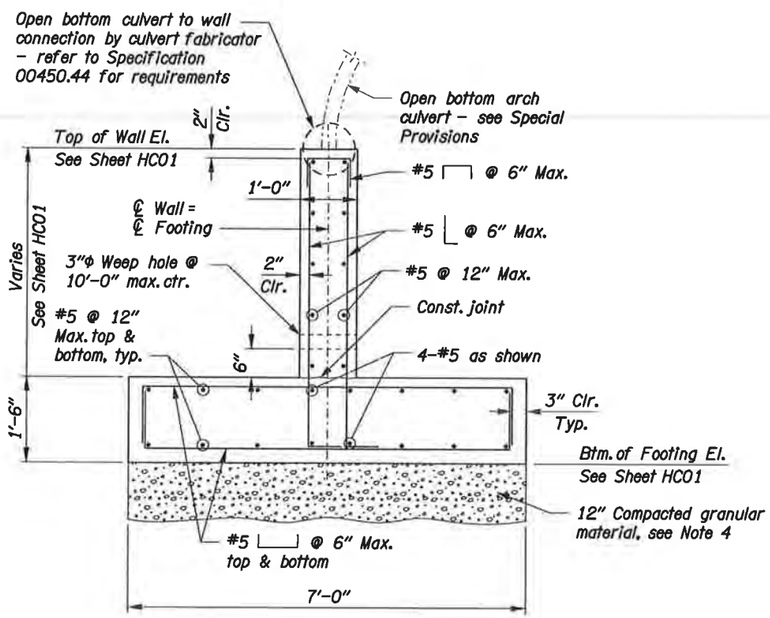
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: M Little	Reviewer: R Attanasio
Drafter: M Wainscott	Checker: R Attanasio

FISH PASSAGE CULVERT SECTIONS

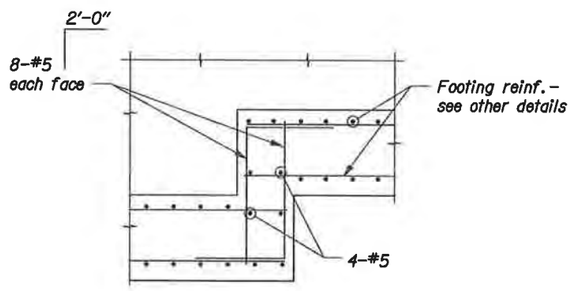
SHEET NO. HC02

17-DEC-2020 15:17



TYPICAL SECTION

Scale : 1" = 1'-0"



FOOTING STEP DETAIL

Scale : 1" = 1'-0"

Notes:

1. Provide Class 3000-3/4 commercial grade concrete.
2. Provide reinforcing steel according to ASTM Specification A706, or AASHTO M31 (ASTM A615) Grade 60. Use the following splice lengths unless shown otherwise.

Reinforcing Splice Lengths (Class B) Grade 60 f'c = 4.0 ksi									
Bar Size	#3	#4	#5	#6	#7	#8	#9	#10	#11
Uncoated	1'-4"	1'-4"	1'-8"	2'-0"	2'-6"	3'-3"	4'-1"	5'-2"	6'-5"

   Increase all splice lengths 40% for nearly horizontal bars so placed that more than 12" of fresh concrete is cast below the bar.

   Splice reinforcing steel at alternate bars, stagger at least one splice length or as far as possible, unless shown otherwise.
3. Provide 3/4" chamfer for all exposed edges.
4. Increase thickness of compacted granular material from 12" to 24" if wet conditions are encountered in the field.
5. Place contraction joints in wall stem only. Contraction joint spacing shall not exceed 30'-0". See ODOT Std. Dwg. BR709 for details.
6. Backfill in-front and behind wall in equal lifts. Difference in height between backfill on heel and backfill on toe shall not exceed 1'-0".

Note:
All dimensions shown are in English units unless otherwise noted.

REGISTERED PROFESSIONAL ENGINEER
94835PE
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OREGON
MAY 14, 2019
JOHN P. LOOMIS
EXPIRES: DEC. 31, 2020

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

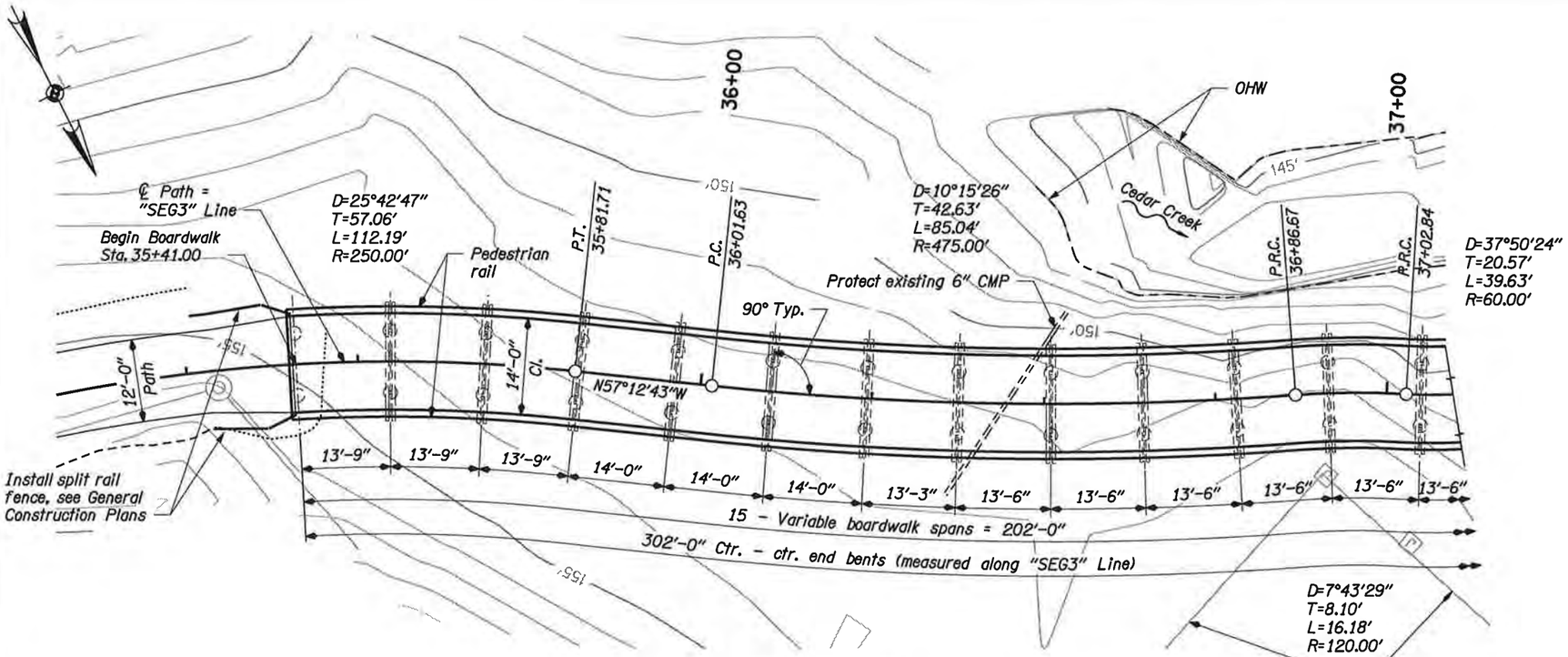
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: J Loomis
Drafter: M Wainscott
Reviewer: R Coomes
Checker: R Coomes

CULVERT DETAILS

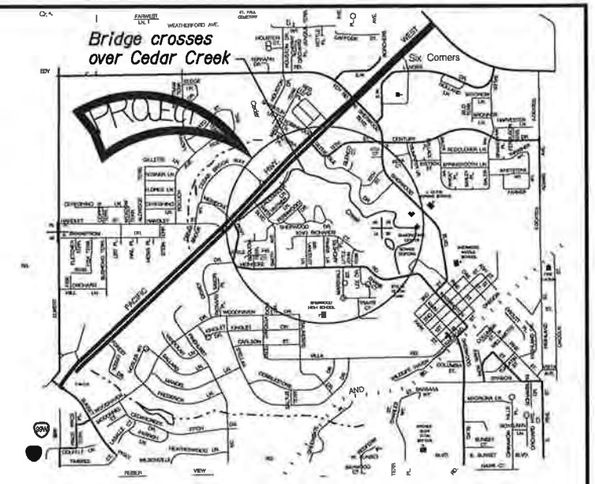
SHEET NO. HC03

16-DEC-2020 11:18



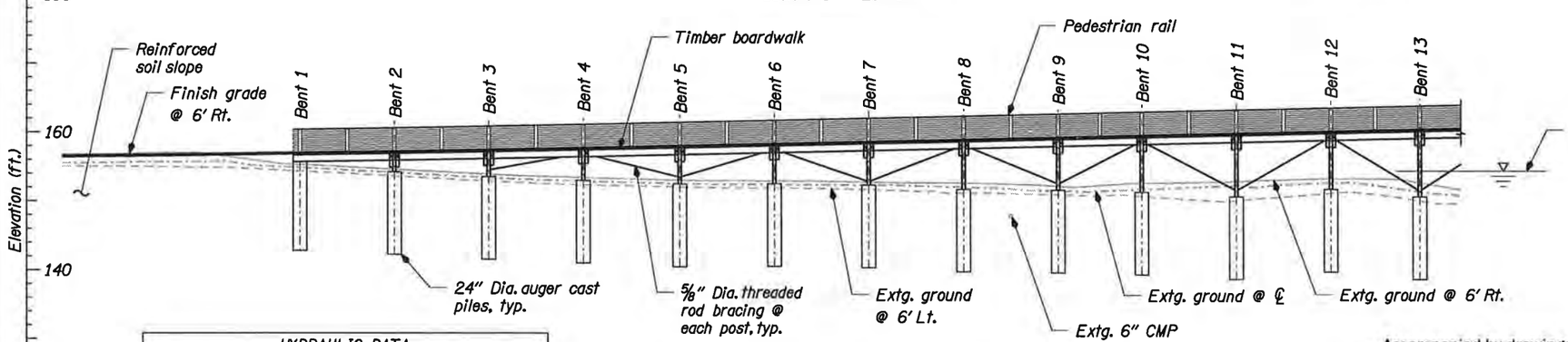
PLAN

Scale : 1" = 20'-0"



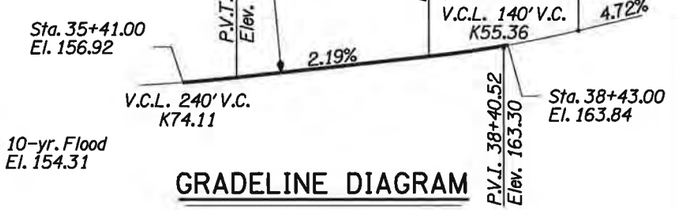
LOCATION MAP

No Scale



DEVELOPED ELEVATION

Scale : 1" = 20'-0"



GRADELINE DIAGRAM

No Scale

HYDRAULIC DATA			
Items	Units	Design Flood	Base Flood
Discharge	ft³/s	844	1,359
Recurrence Interval	Years	10	100
High Water Elevation at Upstream Face of Bridge	Feet	154.31	164.7
Backwater	Feet	+0.05	+0.03
Scour Depth	Feet	-	2.95

Note:
All dimensions shown are in English units unless otherwise noted.

0 10 20 30
Scale In Feet

Notes:

1. Elevations are based on the North American Vertical Datum of 1988 (NAVD88).
2. Protect utilities in place throughout construction.

SCALE WARNING
IF THIS SCALE LINE DOES NOT MEASURE ONE INCH, THEN DRAWING IS NOT TO SCALE

Accompanied by drawings J02 through J12.

STRUCTURE NO.	N/A
BDS DWG NO.	
CALC. BOOK	-
HWY: 091 M.P.: Off System	
COUNTY	WASHINGTON
DATE	11/2020

REGISTERED PROFESSIONAL ENGINEER
94835PE
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OREGON
MAY 14, 2019
JOHN P. LOOMIS
EXPIRES: DEC. 31, 2020

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

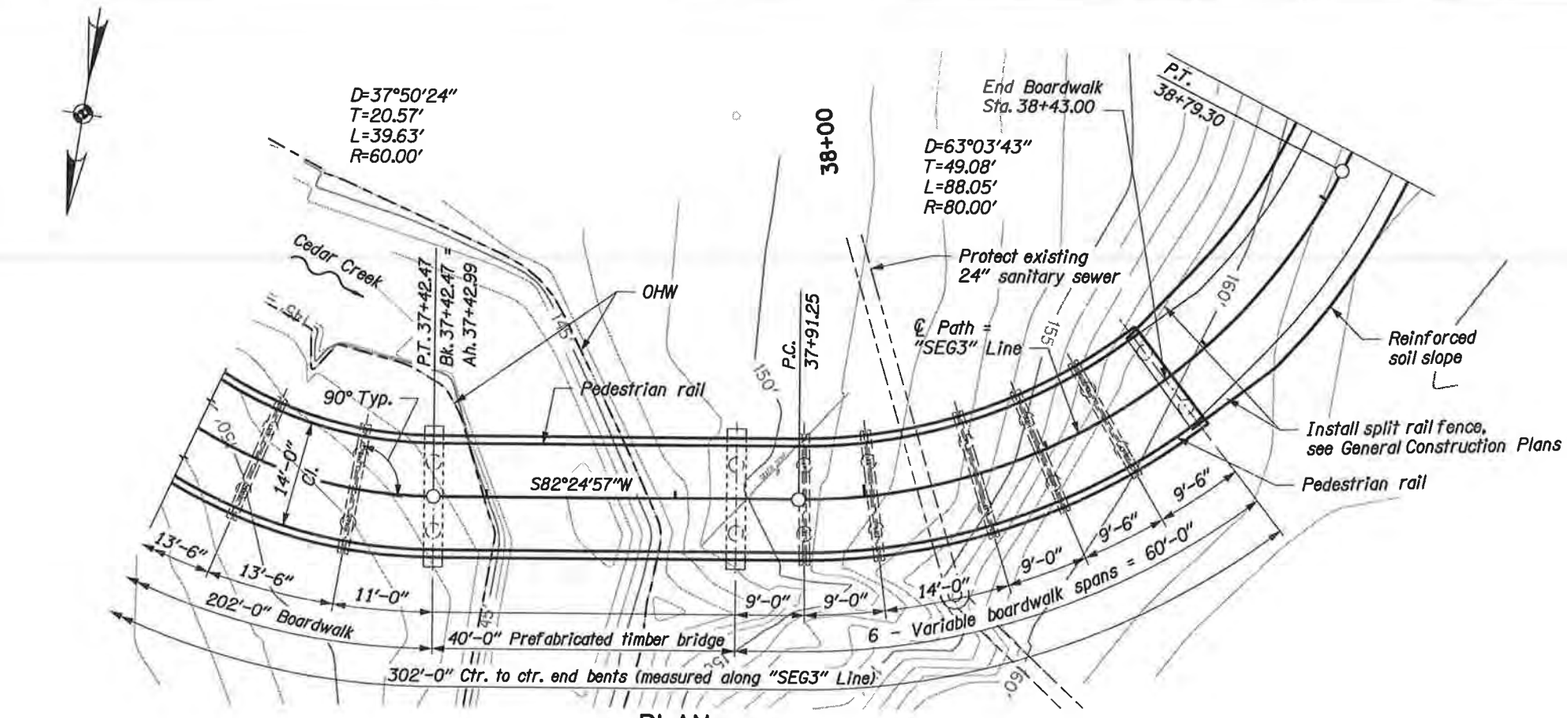
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: J. Loomis Reviewer: G. Conner
Drafter: M Weinert Checker: R Coomes

PLAN AND ELEVATION 1

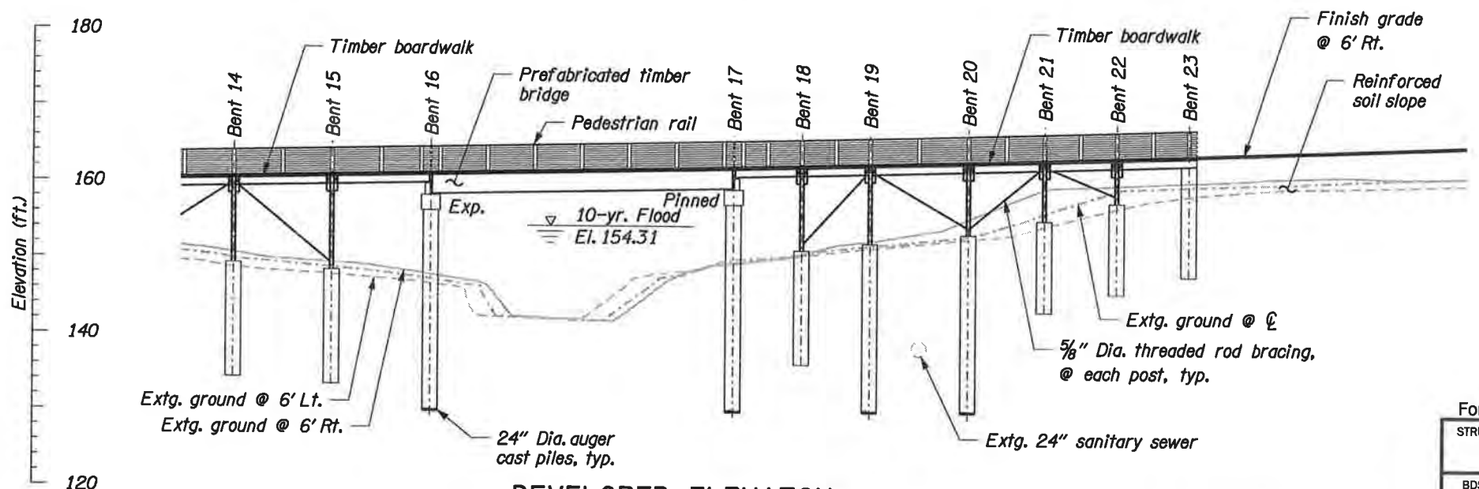
SHEET NO. J01

16-DEC-2020 11:15



PLAN

Scale : 1" = 20'-0"



DEVELOPED ELEVATON

Scale : 1" = 20'-0"

0 10 20 30

Scale In Feet

For accompanied by drawings, see sht. J01

Notes:

1. Elevations are based on the North American Vertical Datum of 1988 (NAVD88).
2. Protect utilities in place throughout construction.
3. For Gradeline Diagram, see J01 sheet.

Note:
All dimensions shown are in English units unless otherwise noted.

SCALE WARNING
IF THIS SCALE LINE DOES NOT MEASURE ONE INCH, THEN DRAWING IS NOT TO SCALE

STRUCTURE NO.	N/A
BDS DWG NO.	
CALC. BOOK	-
HWY: 091	
M.P.: Off System	
COUNTY	WASHINGTON
DATE	11/2020

REGISTERED PROFESSIONAL ENGINEER
94835PE
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OREGON
MAY 14, 2019
JOHN P. LOOMIS
EXPIRES: DEC. 31, 2020

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CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

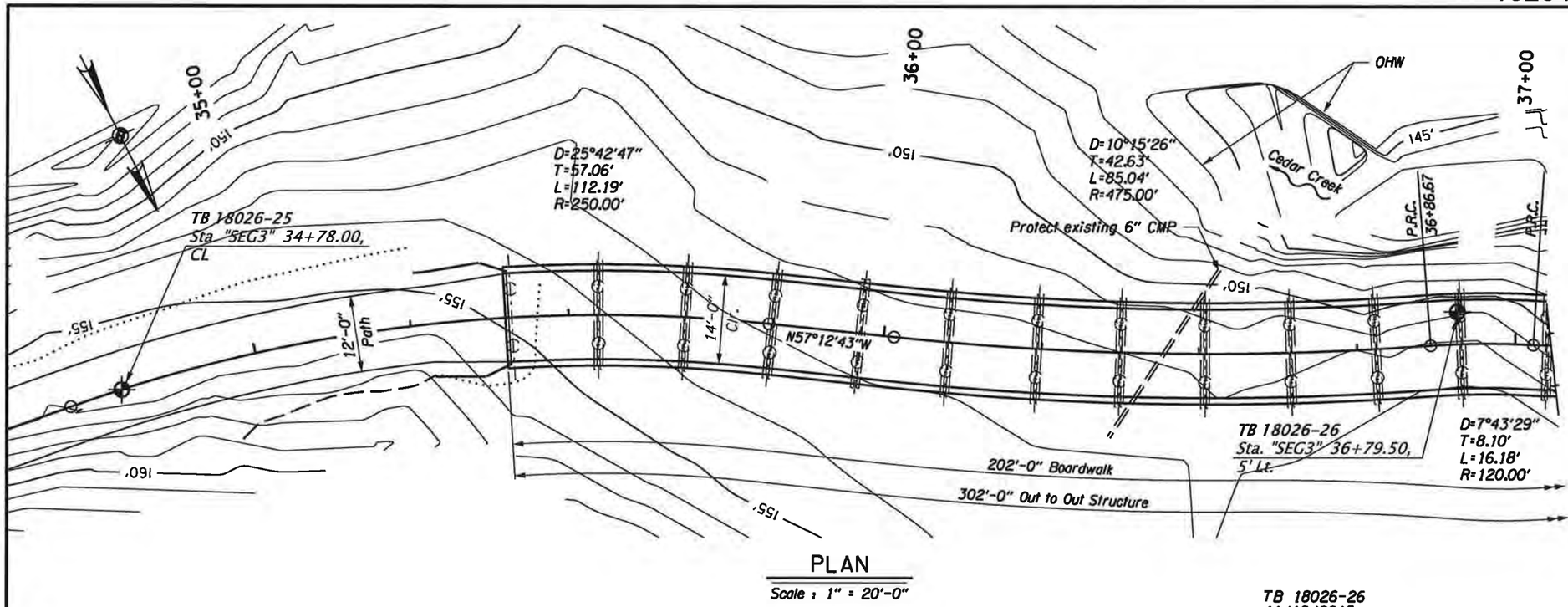
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: J. Loomis | Reviewer: G. Conner
Drafter: M Weinert | Checker: R Coomes

PLAN AND ELEVATION 2

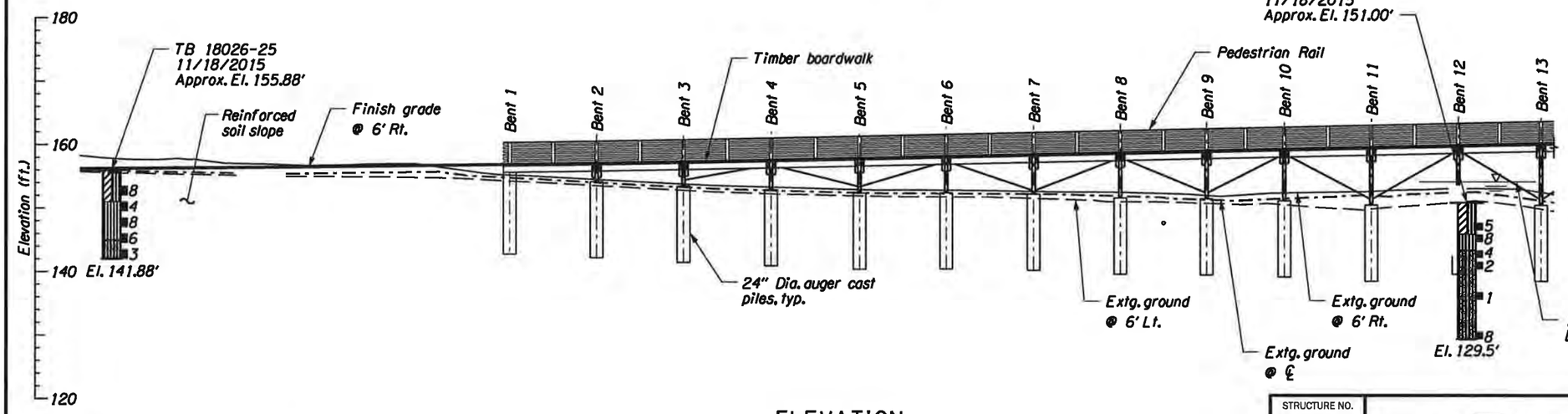
SHEET NO. J02

16-DEC-2020 15:58



PLAN

Scale : 1" = 20'-0"



ELEVATION

Scale : 1" = 20'-0"

Note:
All dimensions shown are in English units unless otherwise noted.

UNIT DESCRIPTIONS 54V-027

- SANDY SILT; ML; BROWN; MOIST TO WET; SOFT; (TOPSOIL WITH ROOT ZONE TO 10 INCHES)
- SANDY SILT; ML; BROWN TO GRAY; MOIST TO WET; LOW TO MEDIUM PLASTICITY; SOFT TO MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
- SILTY FINE SAND; SM; BROWN; WET; LOW TO MEDIUM PLASTICITY; LOOSE (MISSOULA FINE-FLOOD DEPOSITS)
- CLAYEY SILT; CL-ML; BROWN; MOIST TO WET; MEDIUM PLASTICITY; MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
- SAND; SP; BROWN; WET; LOOSE TO MEDIUM DENSE (MISSOULA FINE-FLOOD DEPOSITS)

LEGEND

- ■ 24 = Standard penetration test - N value
- RQD = Rock quality designation
- 50/1st #" = SPT Test Refusal Length
- ⌖ = Bore Hole Location
- ▽ = Groundwater measured in the bore hole

GENERAL NOTES

1. 1' Contour Interval.
2. Elevations are based on North American Vertical Datum (1988).
3. Geotechnical data shown on this drawing are a consolidation of information and/or revision in terminology from the drill logs. More detailed subsurface data is available on the drill logs in the geotechnical report, which is available from the Engineer.
4. In accordance with ASTM D1586-84, N values are reported for an interval of 2.5 ft. except as noted.

0 10 20 30
Scale In Feet

STRUCTURE NO.	N/A
BDS DWG NO.	
CALC. BOOK	-
HWY: 091	
M.P.: Off System	
COUNTY	WASHINGTON
DATE	11/2020

REGISTERED PROFESSIONAL ENGINEER
58591
Digitally Signed 2020.12.17 12:35:06-08'00'
OREGON
JULY 14, 1998
RAJIV ALI
EXPIRES: 12/31/21

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

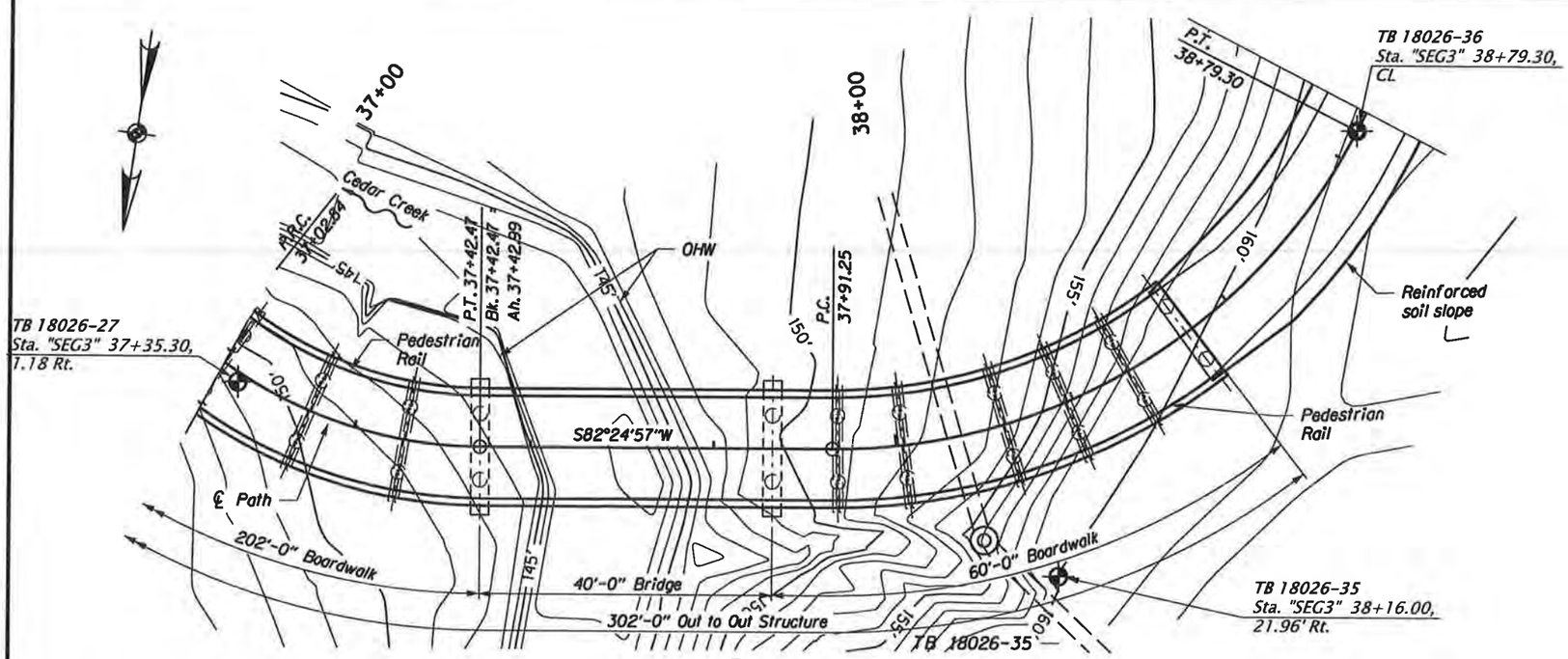
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: R. Ali
Drafter: D. Blackshere
Reviewer: C. Hemberry
Checker: R. Ali

FOUNDATION DATA SHEET 1

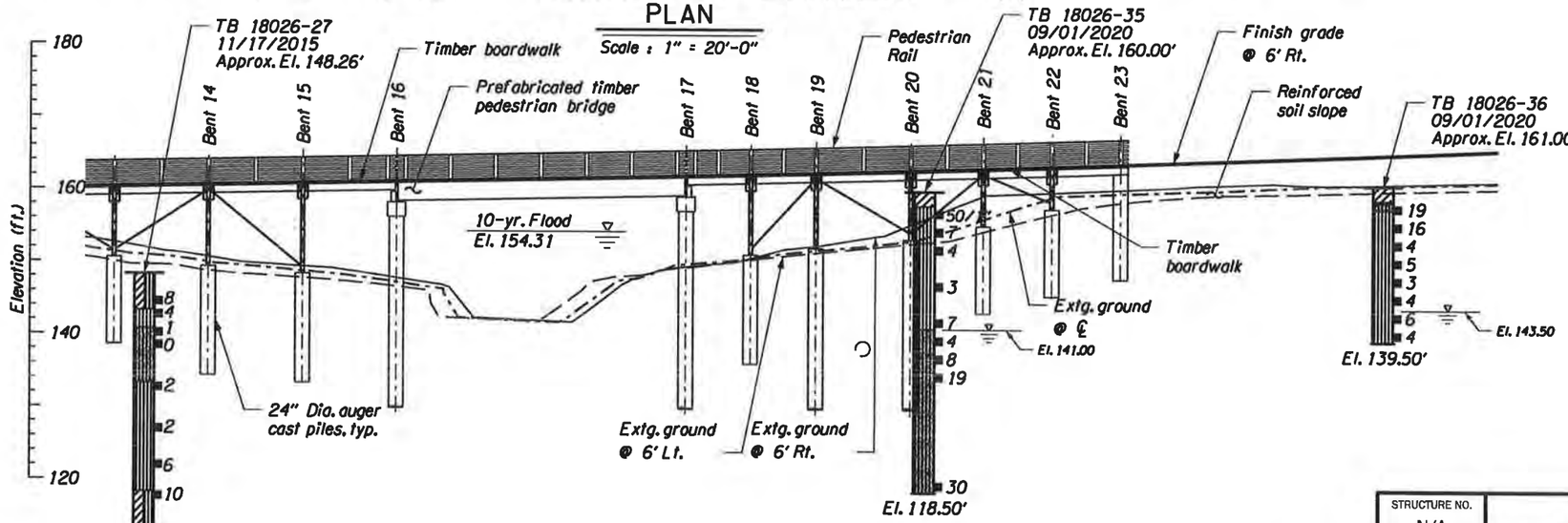
SHEET NO. J03

$PWPATH $PLOTDATE $PLOTTIME



PLAN

Scale : 1" = 20'-0"



ELEVATION

Scale : 1" = 20'-0"

Note:
All dimensions shown are in English units unless otherwise noted.

UNIT DESCRIPTIONS 54V-027

- SANDY SILT; ML; BROWN; MOIST TO WET; SOFT; (TOPSOIL WITH ROOT ZONE TO 10 INCHES)
- SANDY SILT; ML; BROWN TO GRAY; MOIST TO WET; LOW TO MEDIUM PLASTICITY; SOFT TO MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
- SILTY FINE SAND; SM; BROWN; WET; LOW TO MEDIUM PLASTICITY; LOOSE (MISSOULA FINE-FLOOD DEPOSITS)
- CLAYEY SILT; CL-ML; BROWN; MOIST TO WET; MEDIUM PLASTICITY; MEDIUM STIFF (MISSOULA FINE-FLOOD DEPOSITS)
- SAND; SP; BROWN; WET; LOOSE TO MEDIUM DENSE (MISSOULA FINE-FLOOD DEPOSITS)

LEGEND

- ■ 24 = Standard penetration test - N value
- RQD = Rock quality designation
- 50/1st #" = SPT Test Refusal Length
- ⌖ = Bore Hole Location
- ▽ = Groundwater measured in the bore hole

GENERAL NOTES

1. 1' Contour Interval.
2. Elevations are based on North American Vertical Datum (1988).
3. Geotechnical data shown on this drawing are a consolidation of information and/or revision in terminology from the drill logs. More detailed subsurface data is available on the drill logs in the geotechnical report, which is available from the Engineer.
4. In accordance with ASTM D1586-84, N values are reported for an interval of 2.5 ft. except as noted.

0 10 20 30
Scale In Feet

STRUCTURE NO.	N/A
BDS DWG NO.	
CALC. BOOK	-
HWY: 091	
M.P.: Off System	
COUNTY	WASHINGTON
DATE	11/2020

REGISTERED PROFESSIONAL ENGINEER
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JULY 14, 1998
RAJIV ALI

EXPIRES: 12/31/21

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: R. Ali
Drafter: D. Blackshere
Reviewer: C. Hemberry
Checker: R. Ali

FOUNDATION DATA SHEET 2

SHEET NO. J04

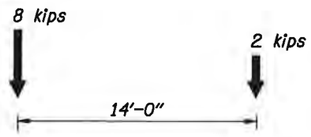
GENERAL NOTES:

Provide all materials and perform all work according to the Oregon Standard Specifications for Construction 2021, supplemented with Special Provisions.

Boardwalk and bridge are designed in accordance with the 2012 AASHTO LRFD Bridge Design Specifications, Sixth Edition, and the 2004 ODOT Bridge Design & Drafting Manual (BDDM), updated May 2013.

Design includes the following Live Loads:

Pedestrian load: 90 psf
Maintenance vehicle: GVW = 10,000 lbs. (Considered separately from pedestrian load)



Note: Transverse wheel spacing = 6'

MAINTENANCE VEHICLE LOAD

Structure bracing is designed to remain elastic during an earthquake with a 1000-year return period. The site is defined as Site Class D with PGA = 0.265g and SDS = 0.772g.

Provide all reinforcing steel according to ASTM Specification A706 or AASHTO M31 (ASTM A615) Grade 60. Spirals and vertical reinforcement in columns and in auger-cast piles shall conform to A706.

All reinforcing shall be uncoated. Stagger all lap splices at least one splice length. Provide the following minimum splice lengths:

#4: 1-9" #5: 2'-2" #6: 2'-7"

Increase all splice lengths 40% for horizontal or nearly horizontal bars so placed that more than 12" of fresh concrete is cast below the bar.

Provide class 3300 - 1½", 1", or ¾" concrete for columns and cap beams.

Provide a ¾" chamfer on all exposed concrete edges unless noted otherwise.

All lumber on boardwalks and bridge, except bridge glulam beam and bridge decking, shall be dimensional framing lumber. Species and commercial grades shall be as follows:

2x blocking, sill plates: Douglas Fir-Larch No. 2
3x decking, 4x stringers, 6x caps and posts, all pedestrian rail framing: Douglas Fir-Larch No. 1

All lumber shall be installed with moisture content not exceeding 19%.

All lumber shall be pressure treated.

Do not notch lumber except as shown without approval by Engineer.

Structural steel components, including connections, shall be hot-dip galvanized per ASTM 153. Nails, lag bolts, and wood screws shall be stainless steel or galvanized.

Cold-formed steel wood connectors shall be hot-dip galvanized per ASTM A653. Where proprietary connectors are used, nails shall be provided such that the capacity of the hardware is achieved. Nails shall be galvanized.

Structural steel plates shall conform to ASTM A36, A572 Grade 50, or A709 Grade 50.

Produce welds according to the latest edition of AWS D1.5 Bridge Welding Code.

Note:
All dimensions shown are in English units unless otherwise noted.

GENERAL NOTES CON'T.:

Anchor bolts shall conform to ASTM A307. Washers shall conform to ASTM F436.

Threaded rods shall conform to ASTM A193 Grade B7. Clevises shall conform to A668. Turnbuckles shall conform to ASTM F1145.

AUGER CAST PILE NOTES:

The General Contractor is responsible for field verifying all existing dimensions and site conditions, determining actual locations of all existing utilities shown on the plans, and for protecting those utilities in place throughout construction.

Contractor shall submit the pile installation plan to the Engineer no fewer than 21 days before construction is to begin. Construction shall not commence until the Engineer has approved the Contractor's installation plan. Drilling shall not commence until sufficient supply of grout is present on the project site to complete the pile.

Muck, organics, soft clay, or other unsuitable materials encountered within 5 feet of the ground surface shall be removed or otherwise treated to prevent problems with pile top construction. Excavation of unsuitable surface material and backfilling shall be completed to the Engineer's satisfaction prior to the construction of auger-cast piles. Should more than 5 feet of unsuitable surface material be encountered, the Contractor shall advise the Engineer immediately and proceed with work as directed by the Engineer.

Adjacent piles within 6 pile diameters, center to center, of each other shall not be installed until it can be demonstrated by the Contractor that the grout in the first pile installed is sufficiently set. The grout shall have set enough such that the integrity of the existing pile will not be compromised if drilling the new pile causes mining of soil away from the existing pile. Minimum set time shall not be less than 24 hours.

The minimum required rebar cages for the auger-cast piles are indicated on the plans. Reinforcing steel shall be lowered into the grout while the grout is in a fluid state. The reinforcing steel shall be centered in the excavation by means of plastic or cementitious spacers placed at sufficient intervals along the pile and at sufficient intervals around the steel to keep the steel centered. The reinforcing steel shall lowered into place by gravity or pushed gently by hand and shall not be vibrated, driven, or otherwise guided into position by mechanical means.

For accompanied by drawings, see sht. J01

SCALE WARNING
IF THIS SCALE LINE DOES NOT MEASURE ONE INCH, THEN DRAWING IS NOT TO SCALE

STRUCTURE NO.	N/A
BDS DWG NO.	
CALC. BOOK	-
HWY: 091 M.P.: Off System	
COUNTY	WASHINGTON
DATE	11/2020

REGISTERED PROFESSIONAL ENGINEER
94835PE
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OREGON
MAY 14, 2019
JOHN P. LOOMIS
EXPIRES: DEC. 31, 2020
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OREGON DEPARTMENT OF TRANSPORTATION

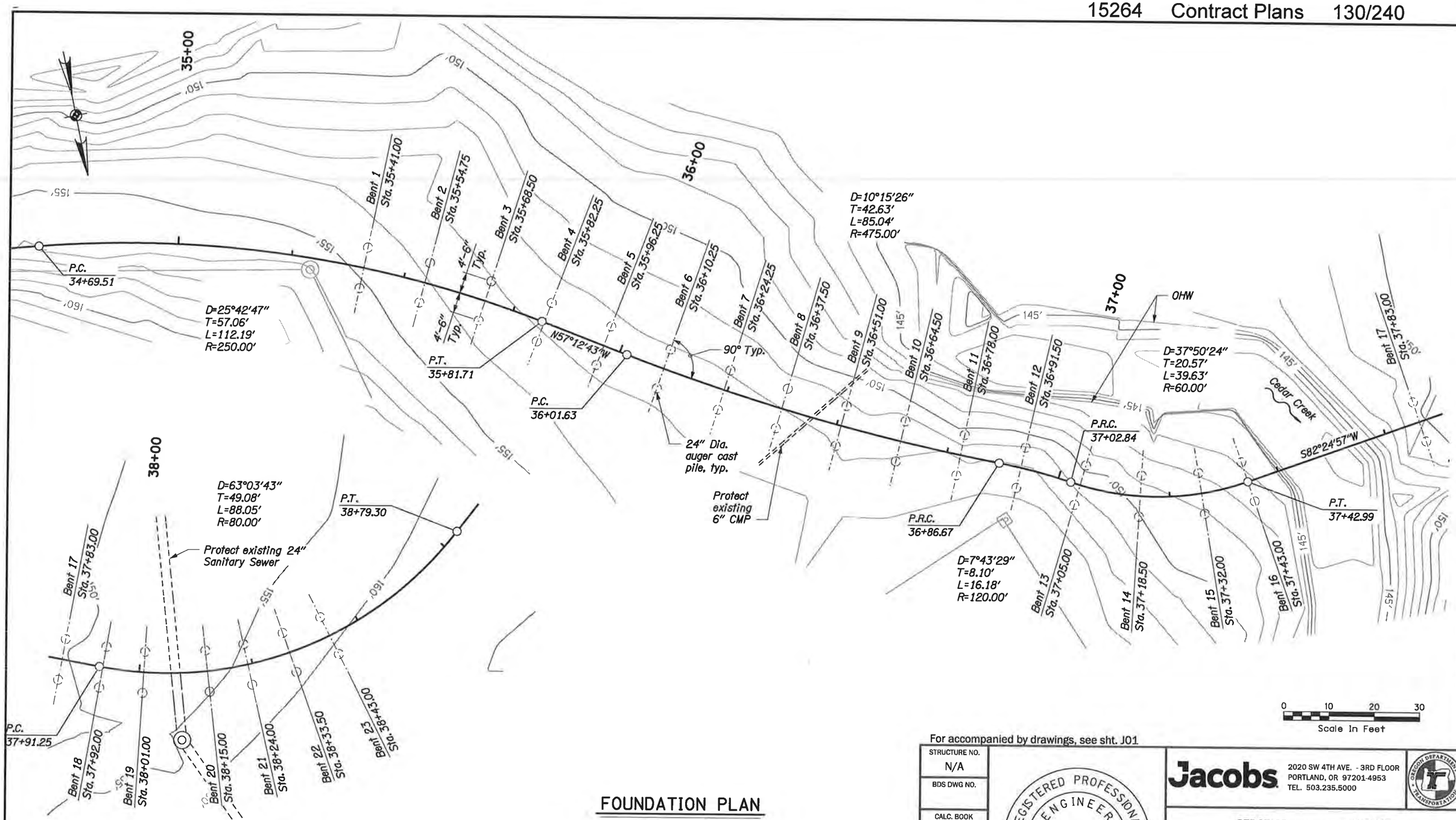
CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: J. Loomis	Reviewer: G. Conner
Drafter: M Weinert	Checker: R Coomes

GENERAL NOTES SHEET NO. J05

16-DEC-2020 16:01



0 10 20 30
Scale In Feet

For accompanied by drawings, see sht. J01

FOUNDATION PLAN

Scale : 1" = 20'-0"

Notes:

1. Provide 24" auger cast piles to the minimum depths shown in the Pile Embedment Table on sheet J07.

SCALE WARNING
IF THIS SCALE LINE DOES NOT MEASURE ONE INCH, THEN DRAWING IS NOT TO SCALE

STRUCTURE NO.	N/A
BDS DWG NO.	
CALC. BOOK	-
HWY: 091 M.P.: Off System	
COUNTY	WASHINGTON
DATE	11/2020

REGISTERED PROFESSIONAL ENGINEER
94835PE
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OREGON
MAY 14, 2019
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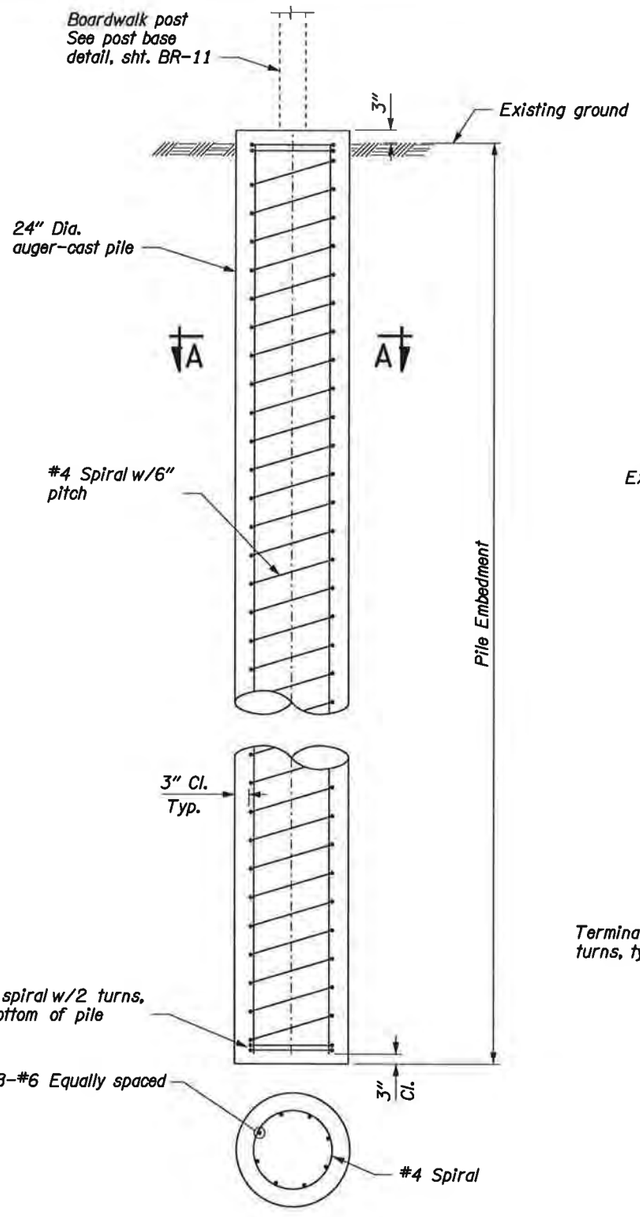
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: J. Loomis Reviewer: G. Conner
Drafter: M Weinert Checker: R Coomes

FOUNDATION PLAN SHEET NO. J06

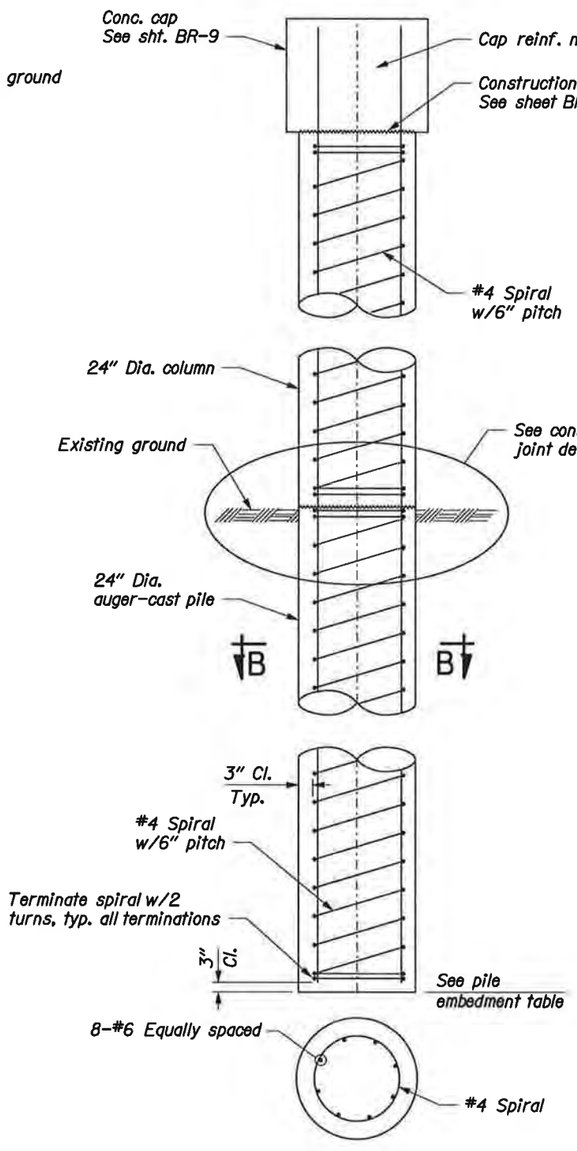
16-DEC-2020 11:15



SECTION A-A

TYPICAL BOARDWALK PILE

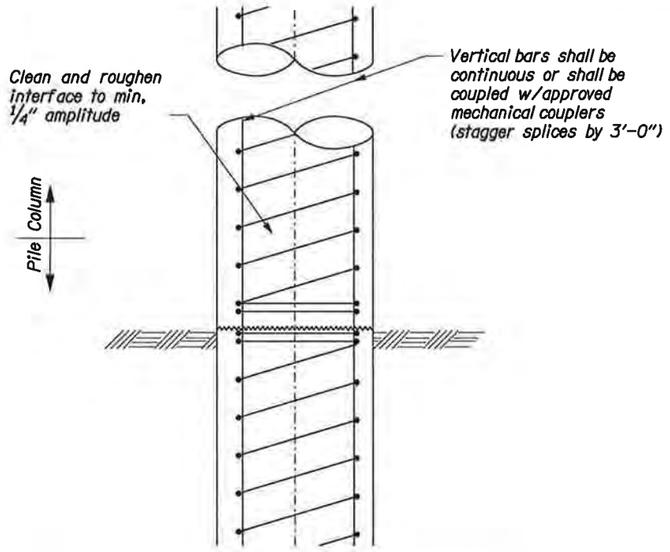
Scale : 3/8" = 1'-0"



SECTION B-B

BENTS 16 & 17 COLUMN/PILE

Scale : 3/8" = 1'-0"



CONSTRUCTION JOINT DETAIL

Scale : 1/2" = 1'-0"

Bent	Minimum required pile embedment *
1-13	12 feet
14	15 feet
15	15 feet
18	15 feet
19	25 feet
20	25 feet
21-23	12 feet

Bent	Required pile tip el.
16	106
17	106

* Measured from existing ground elevation

PILE EMBEDMENT TABLE

Note:
All dimensions shown are in English units unless otherwise noted.

SCALE WARNING

If scale bar doesn't measure one inch then drawing is not to scale

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EXPIRES: DEC. 31, 2020

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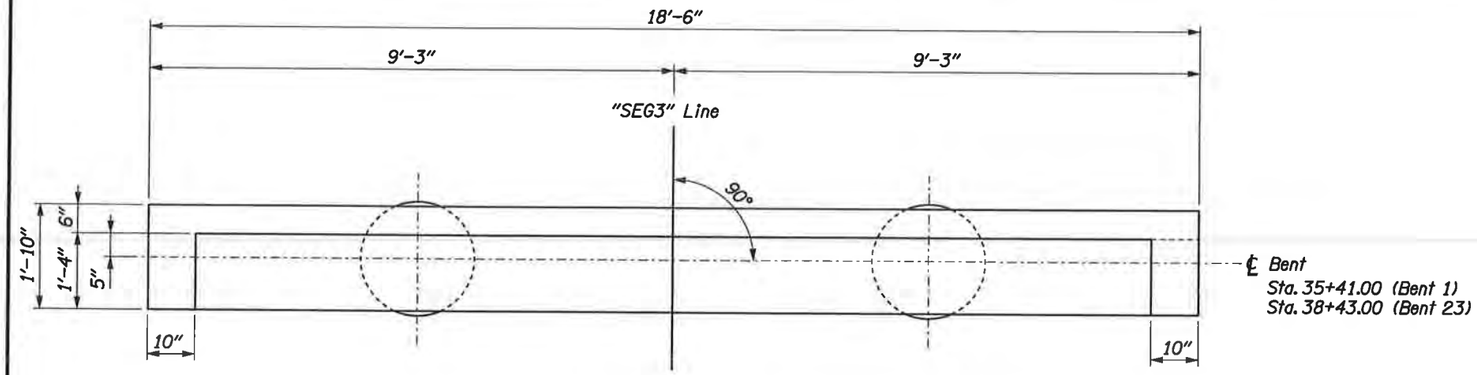
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

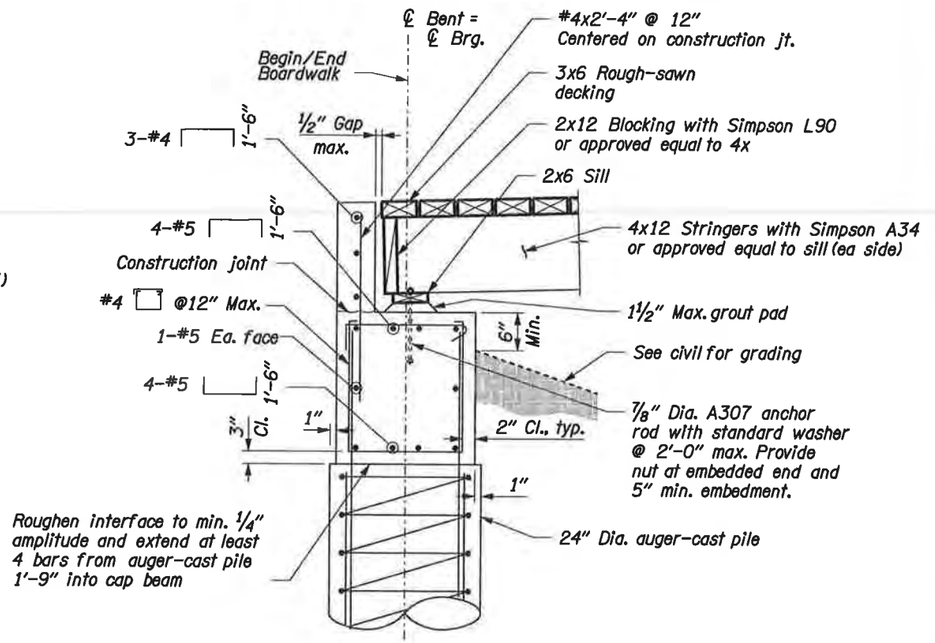
Designer: J. Loomis | Reviewer: G. Conner
Drafter: M Weinert | Checker: R Coomes

SUBSTRUCTURE DETAILS

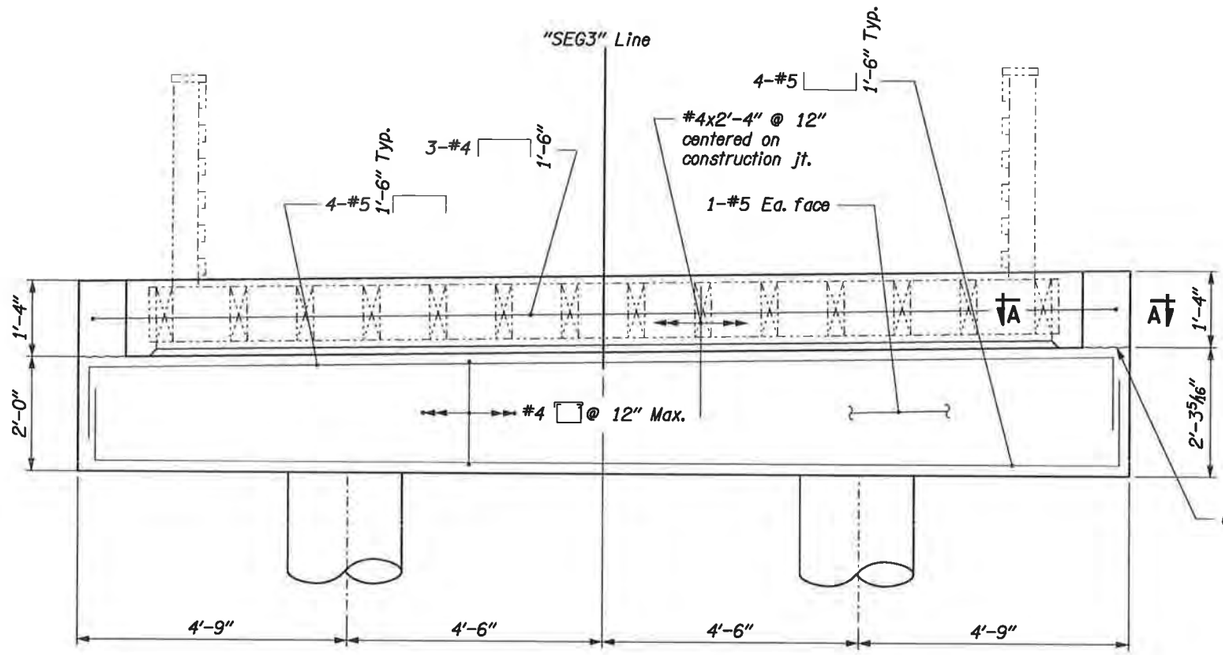
SHEET NO. J07



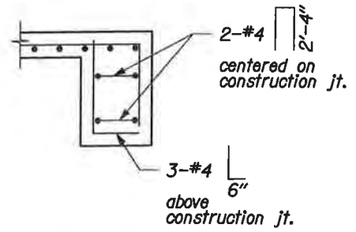
PLAN
Scale : 3/4" = 1'-0"



SECTION
Scale : 1" = 1'-0"



ELEVATION
Scale : 3/4" = 1'-0"



SECTION A-A
Scale : 1 1/2" = 1'-0"

For accompanied by drawings, see sht. J01

Note:
All dimensions shown are in English units unless otherwise noted.

Notes:
1. Bent 1 shown, Bent 23 opp hand.

SCALE WARNING
IF THIS SCALE LINE DOES NOT MEASURE ONE INCH, THEN DRAWING IS NOT TO SCALE

STRUCTURE NO.	N/A
BDS DWG NO.	
CALC. BOOK	-
HWY: 091	
M.P.: Off System	
COUNTY	WASHINGTON
DATE	11/2020

REGISTERED PROFESSIONAL ENGINEER
94835PE
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OREGON
MAY 14, 2019
JOHN P. LOOMIS
EXPIRES: DEC. 31, 2020

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

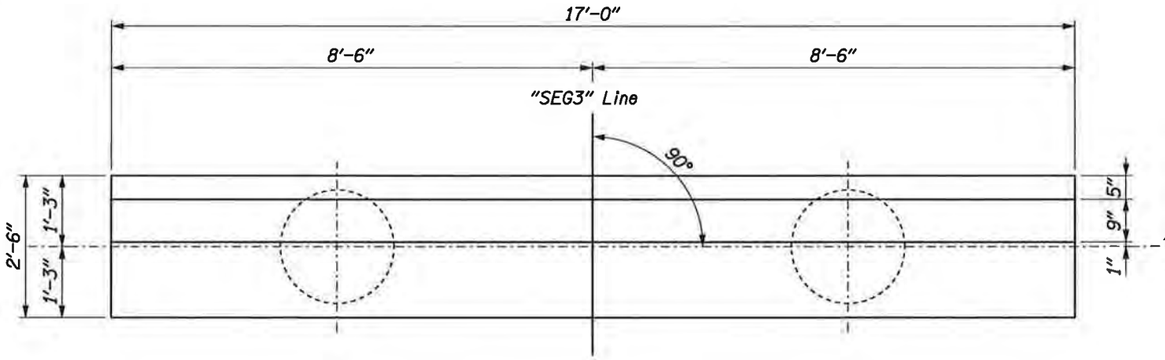
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: J. Loomis	Reviewer: G. Conner
Drafter: M Welnert	Checker: R Coomes

BENTS 1 & 23 DETAILS

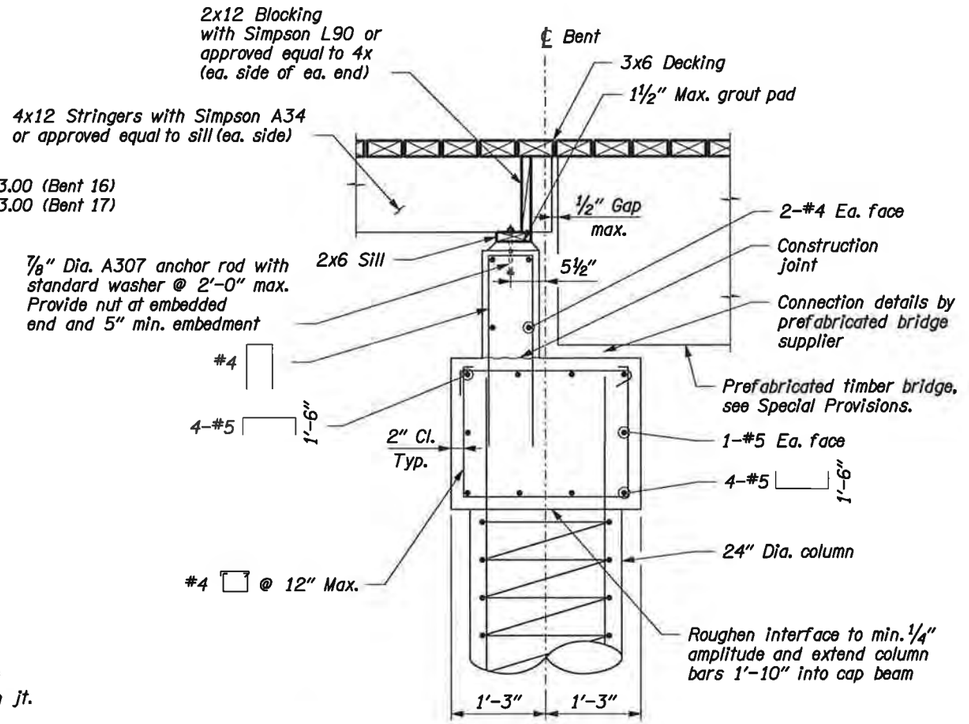
SHEET NO. J08

16-DEC-2020 11:15



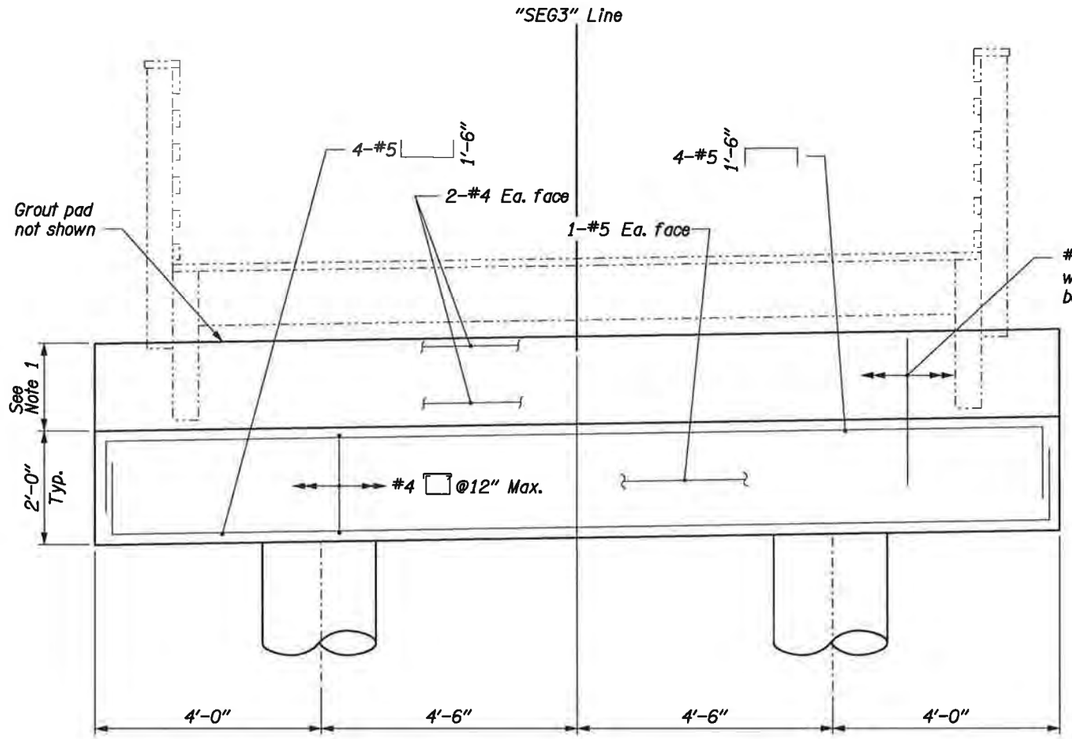
PLAN

Scale : 3/4" = 1'-0"



SECTION

Scale : 1" = 1'-0"



ELEVATION

Scale : 3/4" = 1'-0"

Notes:

1. *Coordinate dimensions with prefabricated timber bridge supplier.*
2. *Bent 16 shown, Bent 17 opposite hand.*

Note:
All dimensions shown are in English units unless otherwise noted.

SCALE WARNING
IF THIS SCALE LINE DOES NOT MEASURE ONE INCH, THEN DRAWING IS NOT TO SCALE

For accompanied by drawings, see sht. J01

STRUCTURE NO.	N/A
BDS DWG NO.	
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HWY: 091	
M.P.: Off System	
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DATE	11/2020

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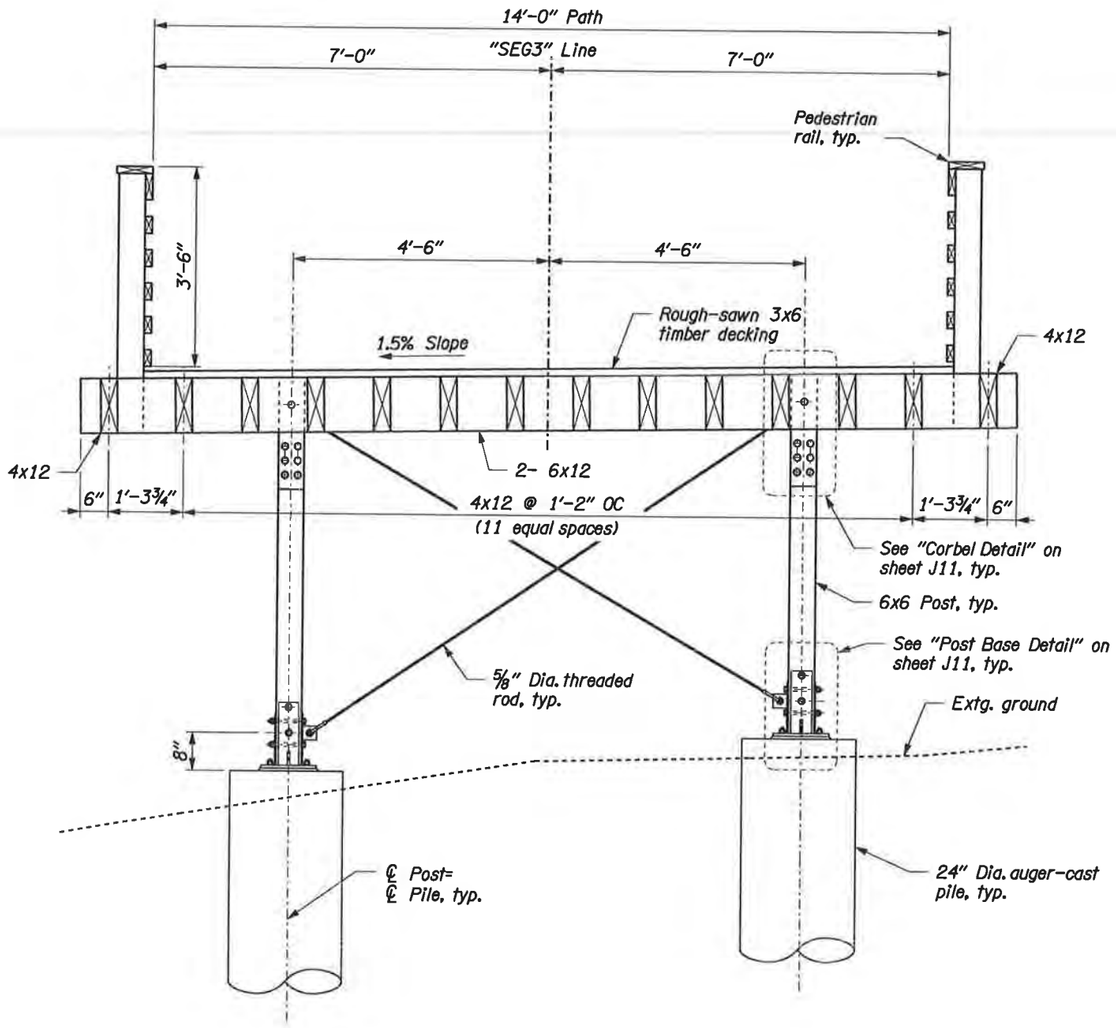
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: J. Loomis | Reviewer: G. Conner
Drafter: M Weinert | Checker: R Coomes

BENTS 16 & 17 DETAILS

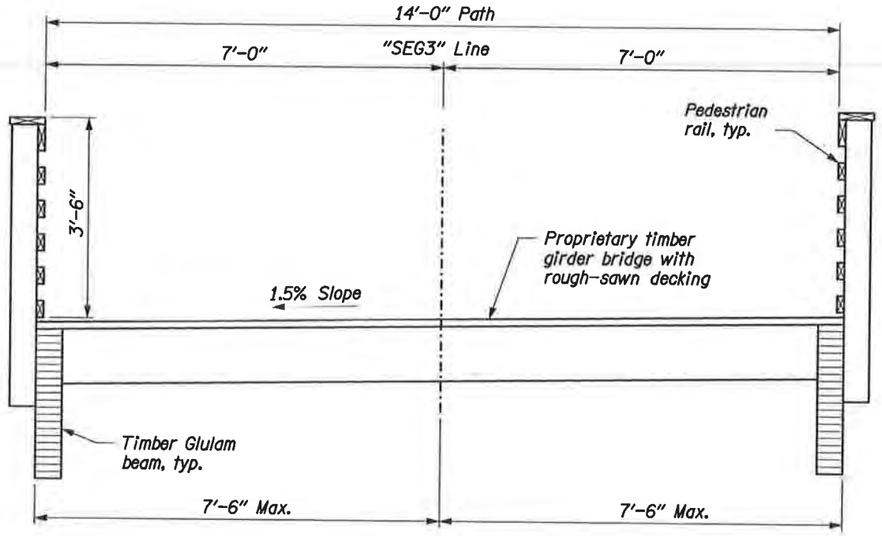
SHEET NO. J09

16-DEC-2020 11:15



TYPICAL SECTION AT BOARDWALK

Scale : ⅜" = 1'-0"



TYPICAL SECTION AT BRIDGE

Scale : ⅜" = 1'-0"

Note:
All dimensions shown are in English units unless otherwise noted.

SCALE WARNING
IF THIS SCALE LINE DOES NOT MEASURE ONE INCH, THEN DRAWING IS NOT TO SCALE

For accompanied by drawings, see sht. J01

STRUCTURE NO.	N/A
BDS DWG NO.	
CALC. BOOK	-
HWY: 091	
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COUNTY	WASHINGTON
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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

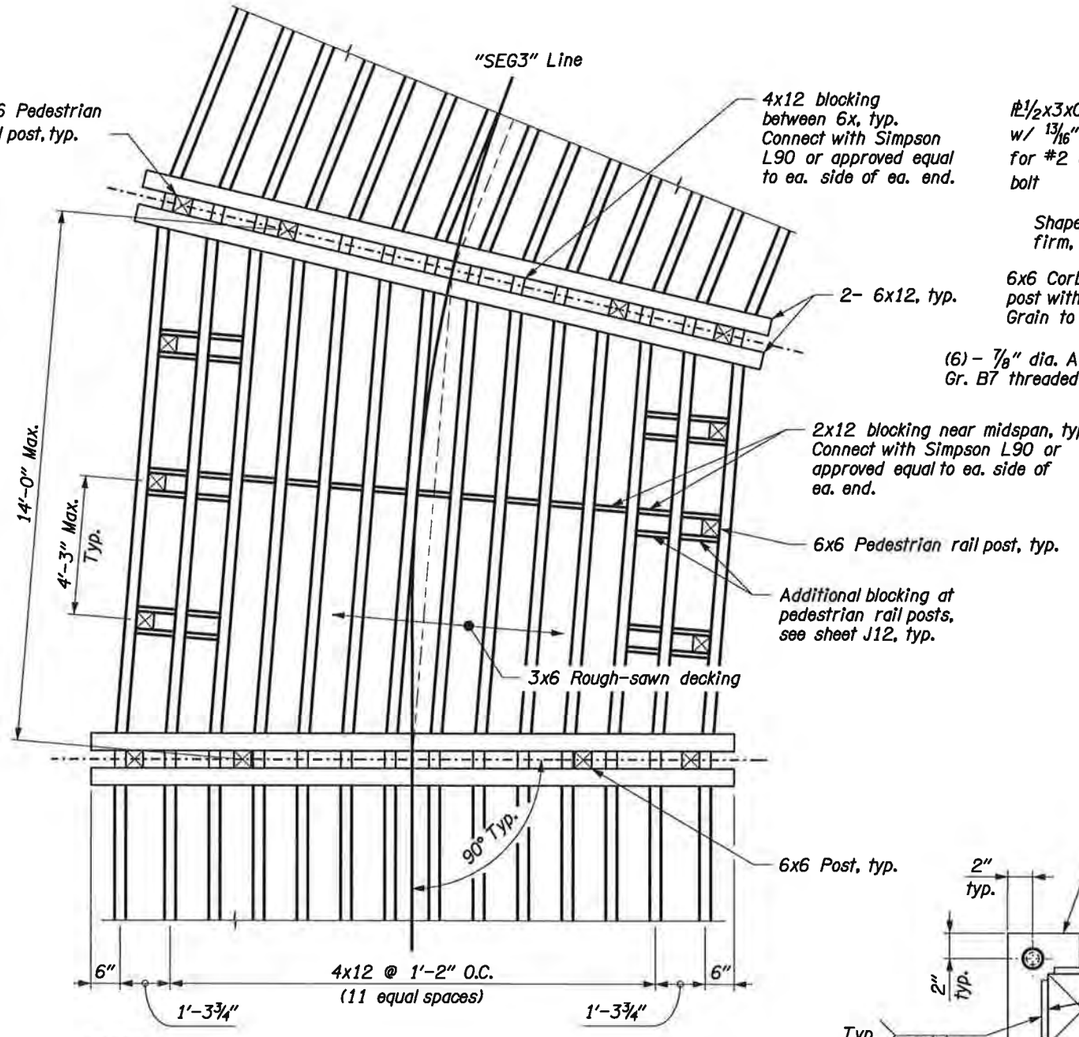
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: J. Loomis
Drafter: M Weinert
Reviewer: G. Conner
Checker: R Coomes

TYPICAL SECTIONS

SHEET NO. J10

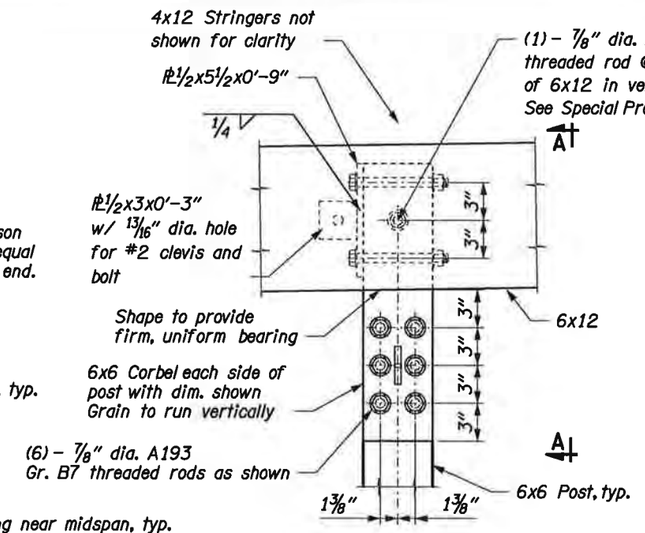
16-DEC-2020 11:15



Note: Provide Simpson U410 or approved equal, ea. end of ea. 4x12 to 6x12 cap beams.

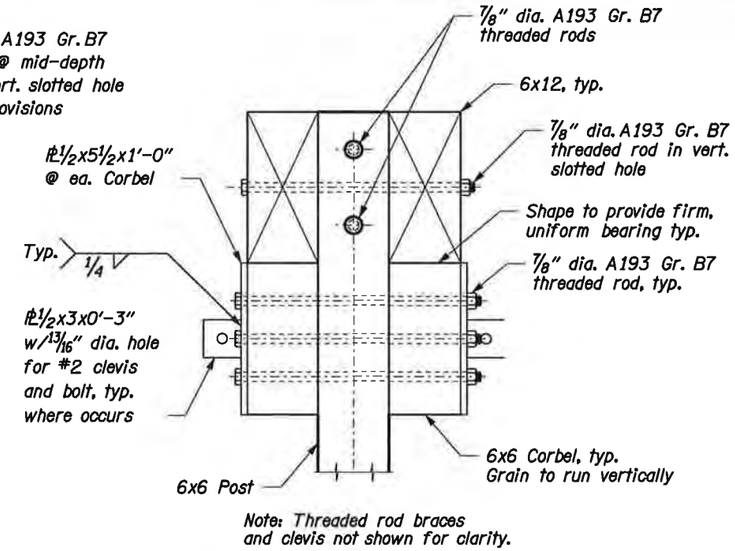
PARTIAL FRAMING PLAN

Scale : 1/4" = 1'-0"



CORBEL DETAIL

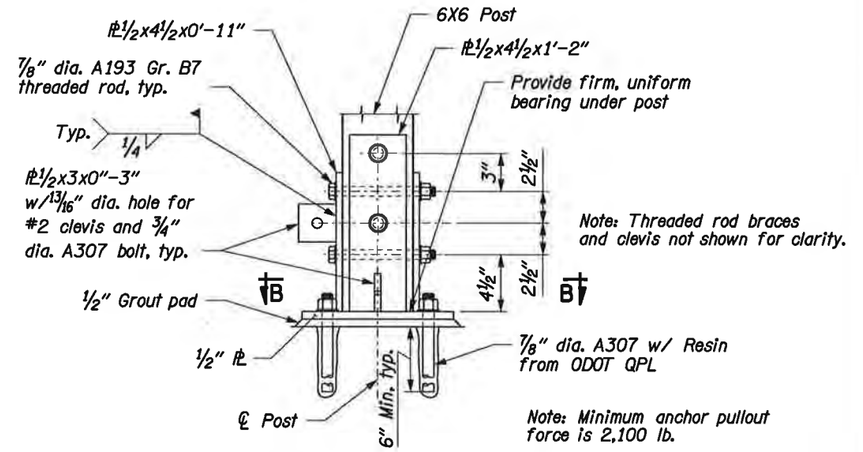
Scale : 1" = 1'-0"



Note: Threaded rod braces and clevis not shown for clarity.

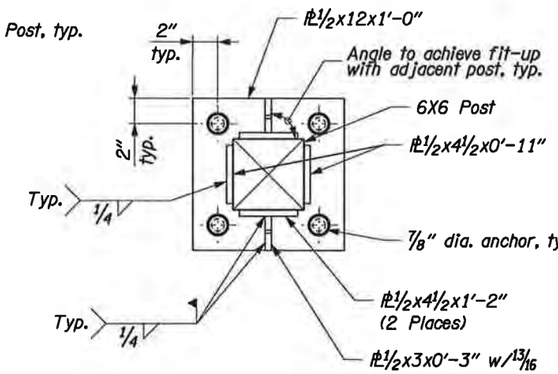
SECTION A-A

Scale : 1" = 1'-0"



POST BASE DETAIL

Scale : 1" = 1'-0"



Note: Threaded rod braces and clevis not shown for clarity.

SECTION B-B

Scale : 1" = 1'-0"

Note:
All dimensions shown are in English units unless otherwise noted.

SCALE WARNING
IF THIS SCALE LINE DOES NOT MEASURE ONE INCH, THEN DRAWING IS NOT TO SCALE

For accompanied by drawings, see sht. J01

STRUCTURE NO.	N/A
BDS DWG NO.	
CALC. BOOK	-
HWY: 091 M.P.: Off System	
COUNTY	WASHINGTON
DATE	11/2020

REGISTERED PROFESSIONAL ENGINEER
94835PE
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OREGON
MAY 14, 2019
JOHN P. LOOMIS
EXPIRES: DEC. 31, 2020

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PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

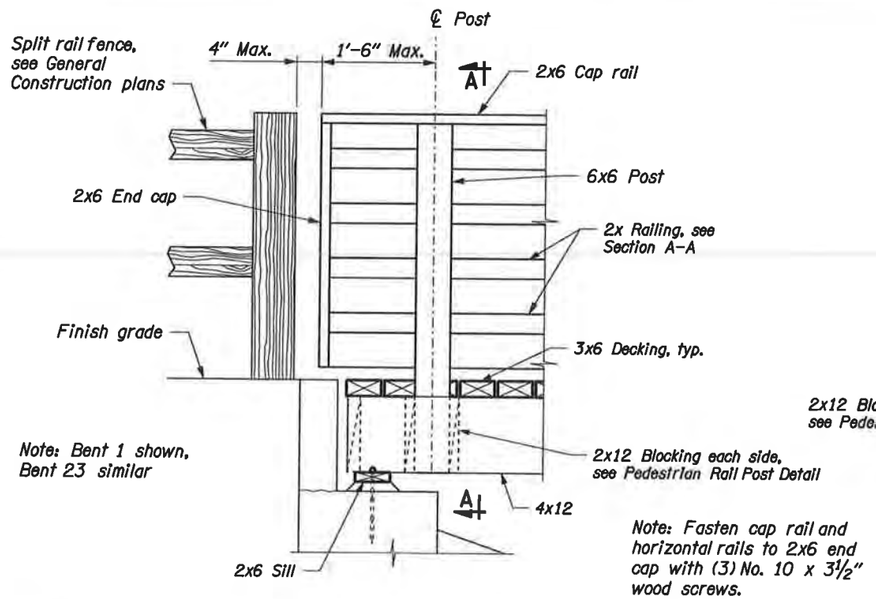
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: J. Loomis | Reviewer: G. Conner
Drafter: M Weinert | Checker: R Coomes

FRAMING PLAN AND CONNECTION DETAILS

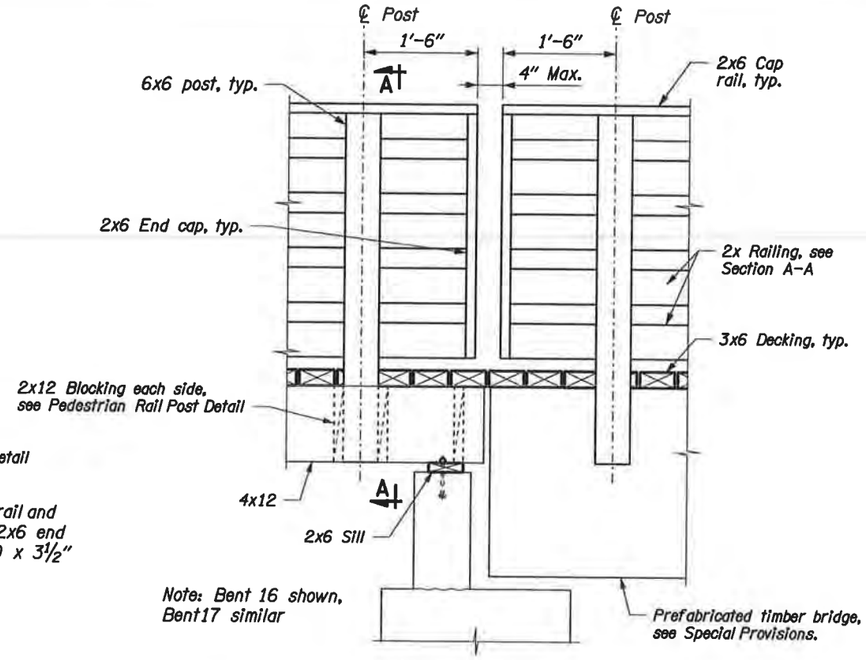
SHEET NO. J11

16-DEC-2020 11:15



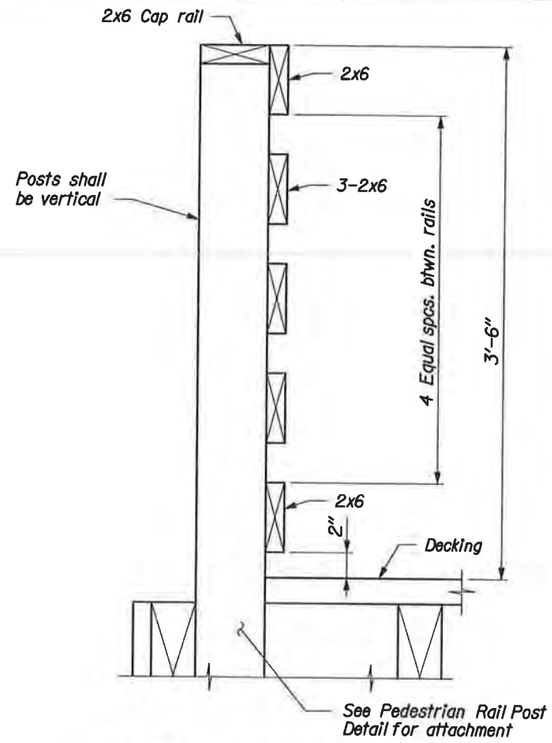
HANDRAIL ELEVATON @ BENTS 1 & 23

Scale : ½" = 1'-0"



PEDESTRIAN RAIL ELEVATON @ BENTS 16 & 17

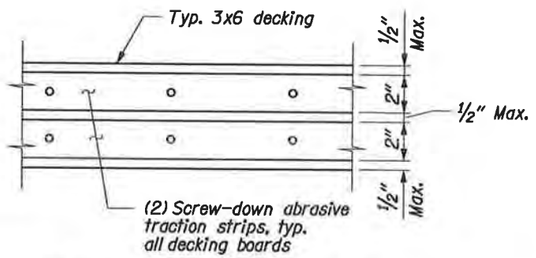
Scale : ½" = 1'-0"



Note: Fasten each horizontal railing member to posts w/ (3) No. 10 x 3½" wood screws

SECTION A-A

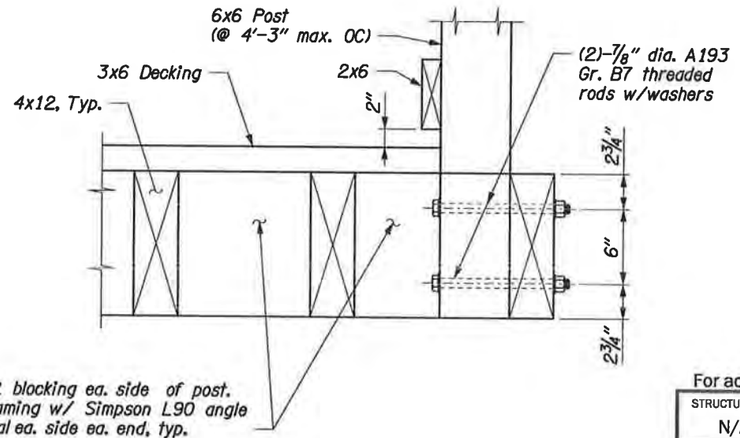
Scale : 1" = 1'-0"



Note: Fasten each 3x to each supporting 4x or 6x w/ (2) ¼" x 4" lag screws

DECKING DETAIL

Scale : 1½" = 1'-0"



PEDESTRIAN RAIL POST DETAIL

Scale : 1" = 1'-0"

Notes:

1. Cantilevered rail elements shall be continuous across at least one rail post.

Note:
All dimensions shown are in English units unless otherwise noted.

SCALE WARNING
IF THIS SCALE LINE DOES NOT MEASURE ONE INCH, THEN DRAWING IS NOT TO SCALE

For accompanied by drawings, see sht. J01

STRUCTURE NO.	N/A
BDS DWG NO.	
CALC. BOOK	-
HWY: 091	M.P.: Off System
COUNTY	WASHINGTON
DATE	11/2020

REGISTERED PROFESSIONAL ENGINEER
94835PE
Digitally Signed Dec. 16, 2020, 4:19 PM
OREGON
MAY 14, 2019
JOHN P. LOOMIS
EXPIRES: DEC. 31, 2020

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

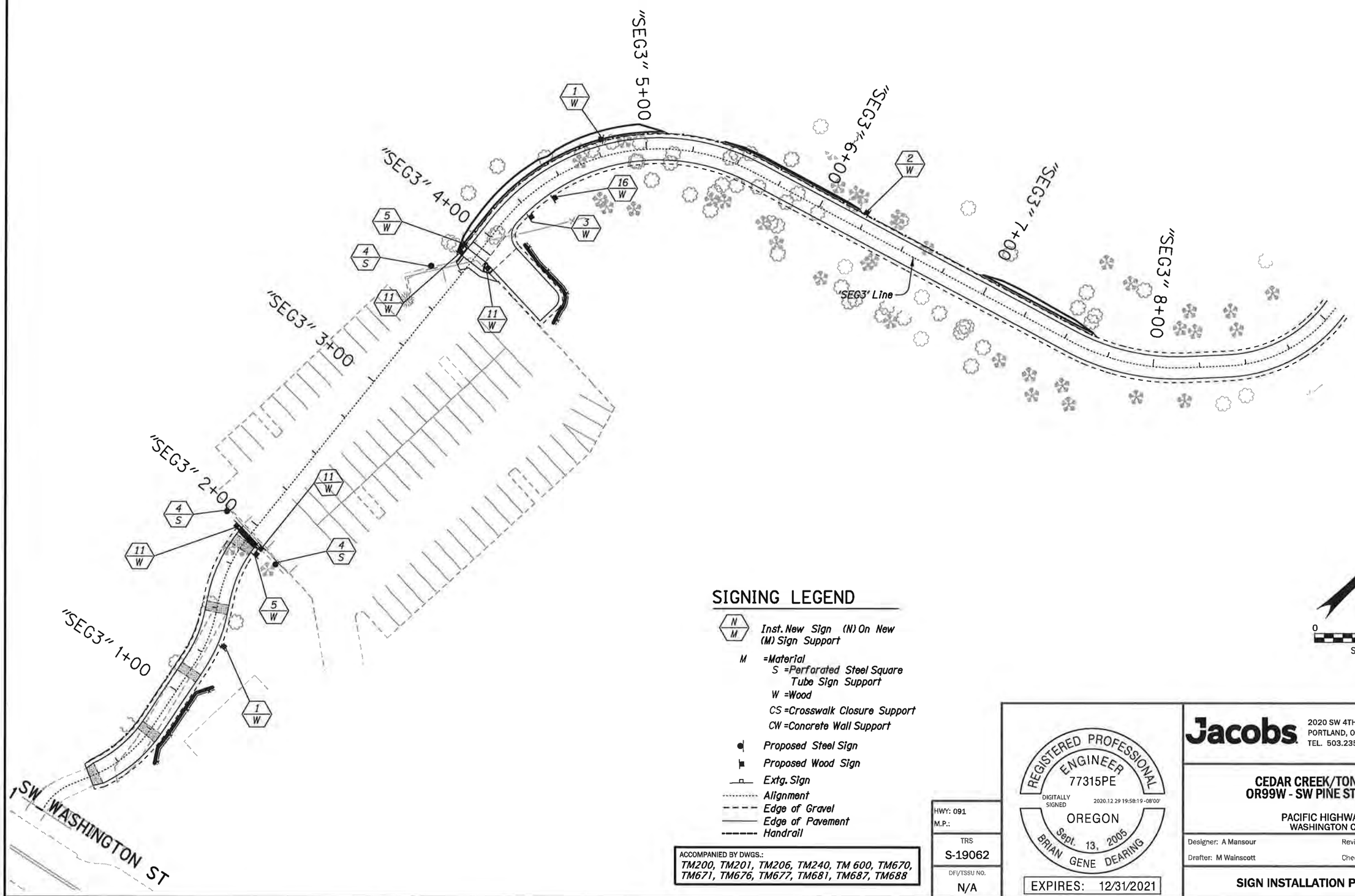
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

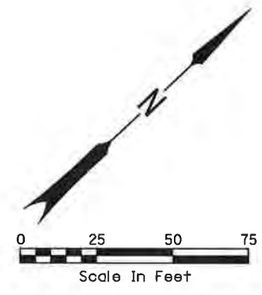
Designer: J. Loomis	Reviewer: G. Conner
Drafter: M Weinert	Checker: R Coomes

TIMBER DETAILS — SHEET NO. J12

16-DEC-2020 11:15

Sec. 32, T. 2S, R. 1W, W.M.





SIGNING LEGEND

N/M — Inst. New Sign (N) On New (M) Sign Support

M =Material
- S =Perforated Steel Square Tube Sign Support
- W =Wood
- CS =Crosswalk Closure Support
- CW =Concrete Wall Support

- Proposed Steel Sign
- Proposed Wood Sign
- Extg. Sign
- Alignment
- Edge of Gravel
- Edge of Pavement
- Handrail

ACCOMPANIED BY DWGS.:
TM200, TM201, TM206, TM240, TM 600, TM670, TM671, TM676, TM677, TM681, TM687, TM688

HWY: 091
M.P.:

TRS
S-19062

DFI/TSSU NO.
N/A

REGISTERED PROFESSIONAL ENGINEER
77315PE
DIGITALLY SIGNED 2020.12 29 19:58:19 -08'00'
OREGON
Sept. 13, 2005
BRIAN GENE DEARING
EXPIRES: 12/31/2021

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

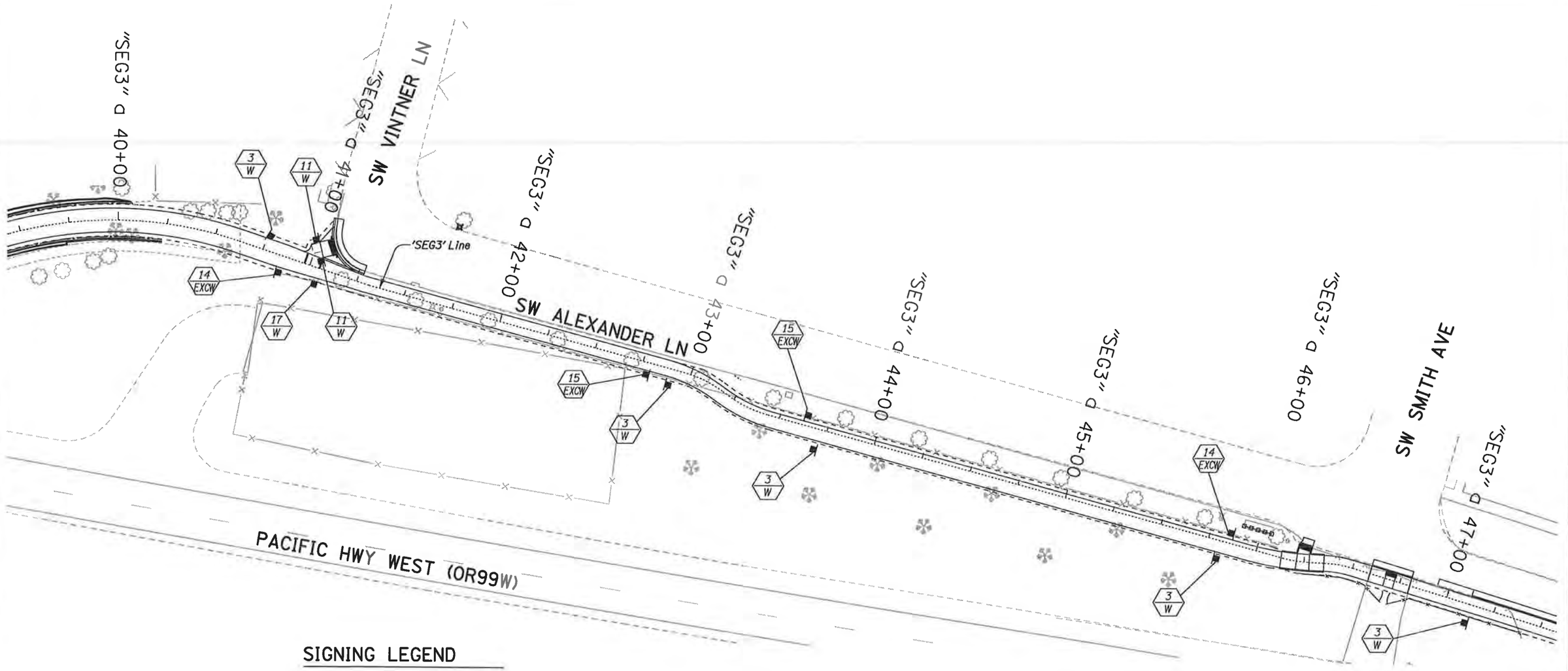
Designer: A Mansour
Drafter: M Wainscott
Reviewer: B Dearing
Checker: B Dearing

SIGN INSTALLATION PLAN

SHEET NO.
LA01

29-DEC-2020 13:51

Sec. 30, T. 2S, R. 1W, W.M.



SIGNING LEGEND

- N / M — Inst. New Sign (N) On New (M) Sign Support
- N / EXM — Inst. New Sign (N) On Existing (M) Sign Support
- M =Material
  - S =Perforated Steel Square Tube Sign Support
  - W =Wood
  - CS =Crosswalk Closure Support
  - CW =Concrete Wall Support
- Proposed Steel Sign
- Proposed Wood Sign
- Extg. Sign
- Alignment
- Edge of Gravel
- Edge of Pavement
- Handrail

N

0 25 50 75
Scale In Feet

HWY: 091
M.P.: 000.00-000.00

TRS
S-19063

DFI/TSSU NO.
N/A

REGISTERED PROFESSIONAL ENGINEER
77315PE
DIGITALLY SIGNED 2020.12.29 19:59:32 -08'00'
OREGON
Sept. 13, 2005
BRIAN GENE DEARING
EXPIRES: 12/31/2021

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

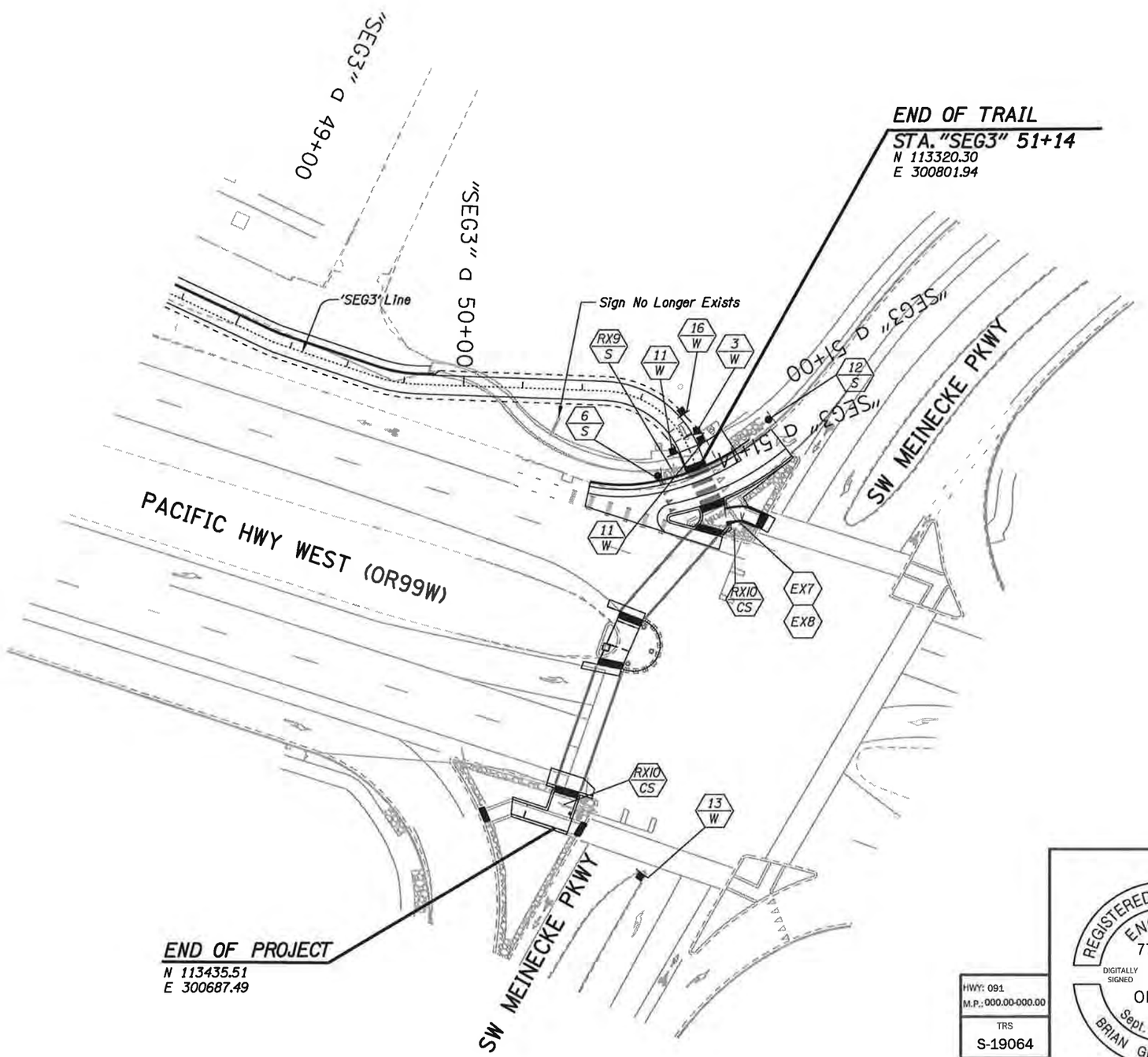
Designer: A Mansour
Drafter: M Wainscott
Reviewer: B Dearing
Checker: B Dearing

SIGN INSTALLATION PLAN

SHEET NO.
LA02

29-DEC-2020 13:53

Sec. 30, T. 2S, R. 1W, W.M.



SIGNING LEGEND

- N/M — Inst. New Sign (N) On New (M) Sign Support
- EXN — Maintain and Protect Existing Sign (N) and Support
- RXN — Remove Existing Sign (N)
- RXN/M — Remove Extg. Sign (N) And Sign Support (M)

M =Material
- S =Perforated Steel Square Tube Sign Support
- W =Wood
- CS =Crosswalk Closure Support
- CW =Concrete Wall Support

- Proposed Steel Sign
- Proposed Wood Sign
- Extg. Sign
- Alignment
- Edge of Gravel
- Edge of Pavement
- Handrail

N

0 25 50 75
Scale In Feet

HWY: 091
M.P.: 000.00-000.00

TRS
S-19064

DFI/TSSU NO.
N/A

REGISTERED PROFESSIONAL ENGINEER
77315PE
DIGITALLY SIGNED 2020.12.29 20:00:22 -08'00'
OREGON
Sept. 13, 2005
BRIAN GENE DEARING
EXPIRES: 12/31/2021

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

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2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: A Mansour
Drafter: M Wainscott
Reviewer: B Dearing
Checker: B Dearing

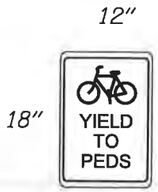
SIGN INSTALLATION PLAN

SHEET NO.
LA03

29-DEC-2020 14:05

Sign No. 1
(W3-2)

Sign No. 2
(W1-2L)



Sign No. 3
(R9-6)

Sign No. 4
(R7-1)

Sign No. 5
(R1-2)

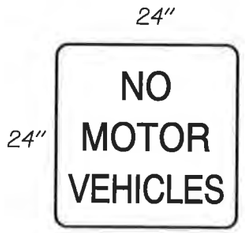
Sign No. 6
(R1-2)

Sign No. 7
(R6-1R)

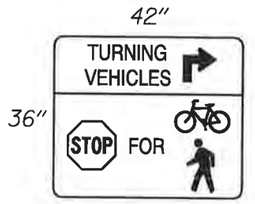
Sign No. 8
(R6-3)

Sign No. 9
(R1-2)

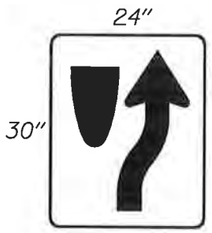
Sign No. 10
(OR22-7)



Sign No. 11
(R5-3)



Sign No. 12
(OR10-15a)



Sign No. 13
(R4-7)

Sign No. 14
(OM-3R)

Sign No. 15
(OM-3L)

Sign No. 16
(OBD1-1c)

Note
Signs Shown With Broken Borders are Extg. Signs.

HWY: 091
M.P.: 000.00-000.00

TRS
S-19065

DFI/TSSU NO.
N/A

REGISTERED PROFESSIONAL ENGINEER
77315PE
DIGITALLY SIGNED 2020.12.29 20:01:32 -08'00'
OREGON
Sept. 13, 2005
BRIAN GENE DEARING
EXPIRES: 12/31/2021

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: A Mansour
Drafter: M Wainscott
Reviewer: B Dearing
Checker: B Dearing

SIGN DETAILS

SHEET NO.
LB01

29-DEC-2020 14:09

Sign No. 17
(OBD1-1c)

HWY: 091
M.P.: 000.00-000.00

TRS
S-19066

DFI/TSSU NO.
N/A

REGISTERED PROFESSIONAL ENGINEER
77315PE
DIGITALLY SIGNED
2020 12 29 20:02:39 -08'00'
OREGON
Sept. 13, 2005
BRIAN GENE DEARING
EXPIRES: 12/31/2021

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Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: A Mansour
Drafter: M Wainscott
Reviewer: B Dearing
Checker: B Dearing

SIGN DETAILS

SHEET NO.
LB02

29-DEC-2020 14:12

SHT. NO.	SIGN NO.	SIGN LOCATION 4/	SIGN DIMENSIONS WIDTH	SIGN DIMENSIONS HEIGHT	BORDER WIDTH	RADIUS	ARROW SIZE 2/	SUB-STRATE PLYWOOD	SUB-STRATE SHEET ALUMINUM	SUB-STRATE EXTRUDED ALUMINUM	DOUBLE SIDED	COLOR 1/ BACKGROUND ASTM TYPE III OR TYPE IV	COLOR 1/ BACKGROUND ASTM TYPE IX	COLOR 1/ BACKGROUND NON-REFLECTIVE	COLOR 1/ LEGEND ASTM TYPE III OR TYPE IV	COLOR 1/ LEGEND ASTM TYPE VII OR TYPE IX	COLOR 1/ LEGEND NON-REFLECTIVE	LEGEND TYPE PERMANENT	LEGEND TYPE REMOVABLE	SIGN NO.	TYPE OF SUPPORT WOOD POST	PERF. STEEL SQUARE TUBE (SLIP BASE)	PERF. STEEL SQUARE TUBE (ANCHOR)	TRIANGULAR BASE BREAKAWAY	STAINLESS STEEL STRAP	SIGN BRIDGE	CROSSWALK CLOSURE SUPPORT	EXIT NUMBER SIGN MOUNT	"H" FRAME	MILE POST MARKER POST	ADJUSTABLE SIGN MOUNT	SECONDARY SIGN MOUNT C 4X5.4	SECONDARY SIGN MOUNT C 4X7.25	SECONDARY SIGN MOUNT S 3X5.7	SECONDARY SIGN MOUNT TS 2X2X3/16	SECONDARY SIGN MOUNT LENGTH	POST (MUST BE FIELD VERIFIED) SIZE (BASED ON ESTIMATED LENGTH) (IN)	POST (MUST BE FIELD VERIFIED) LENGTH (MULTIPLE POST)	PRIMARY SIGN SUPPORT (FT)	SECONDARY SIGN SUPPORT (FT)	FOOTING (MUST FIELD VERIFY) LOCATION (FT) 3/	FOOTING (MUST FIELD VERIFY) MIN. DEPTH (IN) 5/	REFER TO DWG. NO. TM 200, TM 201	TM490	TM 211, TM 212	TM 220	TM 225	TM 600, TM 601	TM 602	TM 635	TM 670, TM 671	TM 675	TM 677	TM 681, TM 687 & TM 688	REMARKS
LA01	1	'SEG3' 1+32 Rt	18"	18"	-	-	-		X			Y					BK	X		1	X															4" x 4"	11		3.1	48	X							X	X			4' Min. mount height from Share-Use Path
LA01	1	'SEG3' 4+77 Lt	18"	18"	-	-	-		X			Y					BK	X		1	X															4" x 4"	11		3.1	48	X							X	X			4' Min. mount height from Share-Use Path
LA01	2	'SEG3' 6+24 Lt	18"	18"	-	-	-		X			Y					BK	X		2	X															4" x 4"	10		2.8	48	X							X	X			4' Min. mount height from Share-Use Path
LA01	3	'SEG3' 4+25 Rt	12"	18"	-	-	-		X			SW					BK	X		3	X															4" x 4"	10		2.5	48	X							X	X			4' Min. mount height from Share-Use Path
LA02	3	'SEG3' 40+75 Lt	12"	18"	-	-	-		X			SW					BK	X		3	X															4" x 4"	10		3	48	X							X	X			4' Min. mount height from Share-Use Path
LA03	3	'SEG3' 51+01 Lt	12"	18"	-	-	-		X			SW					BK	X		3	X															4" x 4"	10		2.5	48	X							X	X			4' Min. mount height from Share-Use Path
LA01	4	SEG3' 1+91 Rt	12"	18"	-	-	-		X			SW					R	X		4			X													2" - 12 ga.	8.5		1.5	36	X							X			X	
LA01	4	SEG3' 1+97 Lt	12"	18"	-	-	-		X			SW					R	X		4			X													2" - 12 ga.	8.5		1.5	36	X							X			X	
LA01	4	SEG3' 3+68 Lt	12"	18"	-	-	-		X			SW					R	X		4			X													2" - 12 ga.	8.5		1.5	36	X							X			X	
LA01	5	SEG3' 1+87 Rt	18"x18"x18"		-	-	-		X			SW					R	X		5	X															4" x 4"	10		2.8	48	X							X	X			4' Min. mount height from Share-Use Path
LA01	5	SEG3' 3+88 Lt	18"x18"x18"		-	-	-		X			SW					R	X		5	X															4" x 4"	10		2.8	48	X							X	X			4' Min. mount height from Share-Use Path
LA03	6	'SEG3' 51+14 Rt	36"x36"x36"		-	-	-		X			SW					R	X		6			X													2" - 12 ga.	9.6		3.5	36	X							X			X	
LA01	11	'SEG3' 1+93 Rt	24"	24"	-	-	-		X			SW					BK	X		11	X															4" x 4"	10		2.8	48	X							X	X			4' Min. mount height from Share-Use Path
LA01	11	'SEG3' 1+94 Lt	24"	24"	-	-	-		X			SW					BK	X		11	X															4" x 4"	10		2.8	48	X							X	X			4' Min. mount height from Share-Use Path
LA01	11	'SEG3' 3+85 Rt	24"	24"	-	-	-		X			SW					BK	X		11	X															4" x 4"	10		2.8	48	X							X	X			4' Min. mount height from Share-Use Path
LA01	11	'SEG3' 3+83 Lt	24"	24"	-	-	-		X			SW					BK	X		11	X															4" x 4"	10		2.8	48	X							X	X			4' Min. mount height from Share-Use Path
LA02	14	'SEG3' 40+83 Rt	12"	36"	-	-	-		X			Y					BK	X		14																					X										Mount to end of existing concrete wall
LA02	11	'SEG3' 41+00 Lt	24"	24"	-	-	-		X			SW					BK	X		11	X															4" x 4"	10		3	48	X							X	X			4' Min. mount height from Share-Use Path
LA02	11	'SEG3' 41+06 Lt	24"	24"	-	-	-		X			SW					BK	X		11	X															4" x 4"	10		3	48	X							X	X			4' Min. mount height from Share-Use Path
LA02	15	'SEG3' 42+78 Rt	12"	36"	-	-	-		X			Y					BK	X		15																					X										Mount to end of existing concrete wall
LA02	3	'SEG3' 42+87 Rt	12"	18"	-	-	-		X			SW					BK	X		3	X															4" x 4"	10		3	48	X							X	X			4' Min. mount height from Share-Use Path
LA02	15	'SEG3' 43+63 Lt	12"	36"	-	-	-		X			Y					BK	X		15																					X										Mount to end of existing concrete wall
LA02	3	'SEG3' 43+73 Rt	12"	18"	-	-	-		X			SW					BK	X		3	X															4" x 4"	10		3	48	X							X	X			4' Min. mount height from Share-Use Path
LA02	3	'SEG3' 45+79 Rt	12"	18"	-	-	-		X			SW					BK	X		3	X															4" x 4"	10		3	48	X							X	X			4' Min. mount height from Share-Use Path
LA02	14	'SEG3' 45+86 Lt	12"	36"	-	-	-		X			Y					BK	X		14																					X										Mount to end of existing concrete wall
LA02	3	'SEG3' 47+13 Rt	12"	18"	-	-	-		X			SW					BK	X		3	X															4" x 4"	10		3	48	X							X	X			4' Min. mount height from Share-Use Path
LA03	11	'SEG3' 51+04 Rt	24"	24"	-	-	-		X			SW					BK	X		11	X															4" x 4"	10		3	48	X							X	X			4' Min. mount height from Share-Use Path
LA03	11	'SEG3' 51+05 Lt	24"	24"	-	-	-		X			SW					BK	X		11	X															4" x 4"	10		3	48	X							X	X			4' Min. mount height from Share-Use Path
LA03	12	'SEG3' 51+09 Lt	42"	36"	-	-	-		X			W					BK	X		12			X													2" - 12 ga.	9.6		3.5	36	X							X			X	
LA03	13	N:113411 , E: 300654	24"	30"	-	-	-		X			SW					BK	X		13	X															4" x 4"	10		3	48	X							X	X			
LA01	16	'SEG3'4+40 Rt	24"	18"	-	-	-		X			G					W	X		16	X															4" x 4"	10		3	48	X							X	X			4' Min. mount height from Share-Use Path
LA02	17	'SEG3'40+28 Rt	24"	18"	-	-	-		X			G					W	X		17	X															4" x 4"	10		3	48	X							X	X			4' Min. mount height from Share-Use Path
LA03	16	'SEG3'50+93 Lt	24"	18"	-	-	-		X			G					W	X		16	X															4" x 4"	10		3	48	X							X	X			4' Min. mount height from Share-Use Path

1/ BK=BLACK
BL=BLUE
BR=BROWN
FY=FLUORESCENT YELLOW
G=GREEN
O=ORANGE
R=RED
RB=RED-BLUE
SW=SILVER-WHITE
W=WHITE
Y=YELLOW
YG=YELLOW-GREEN

2/ NOTE: L,C,R ARE LOCATIONS OF POSTS FACING THE SIGN.
L=LEFT POST
C=CENTER POST
R=RIGHT POST

3/ DISTANCE FROM EDGE OF TRAVEL LANE, FACE OF CURB, GUARDRAIL, OR BARRIER TO THE CENTERLINE OF FOOTING. FOR ADDITIONAL INFORMATION SEE STANDARD DRAWINGS TM601, TM602 AND TM635.

4/ NOTE: THE LOCATIONS SHOWN ARE APPROXIMATE EXCEPT FOR SPEED ZONES, SCHOOL ZONES, OBJECT MARKERS AND MILEPOST MARKERS. EXACT LOCATIONS ARE TO BE DETERMINED BY THE ENGINEER.

5/ MINIMUM DEPTH OF FOOTING FOR TRIANGULAR BASE BREAKAWAY AND MULTI-POST BREAKAWAY INSTALLATIONS IS FOR A 2' DIAMETER FOOTING. FOR ADDITIONAL INFORMATION SEE STANDARD DRAWINGS TM601 AND TM602.

HWY: 091
M.P.: 000.00-000.00
TRS
S-19067
DFI/TSSU NO.
N/A

REGISTERED PROFESSIONAL ENGINEER
77315PE
DIGITALLY SIGNED 2020.12.21 10:43:35 -08'00'
OREGON
Sept. 13, 2005
BRIAN GENE DEARING
EXPIRES: 12/31/2021

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: A Mansour
Drafter: M Wainscott
Reviewer: B Dearing
Checker: B Dearing

SIGN & POST DATA TABLE

SHEET NO. LC01

20-DEC-2020 19:10

SIGNAL AND DETECTOR PLAN LEGEND
PACIFIC HWY WEST (OR99W)/SW MEINECKE PKWY
OR99W AT M.P. 15.95
(SHERWOOD)

L E G E N D

CONTROLLERS

- EX/C — Retain and protect existing Model ATC controller and Model 332 cabinet

POLES

- EX/MPL — Retain and protect existing traffic signal mast arm pole with luminaire arm extension
- EX/VP — Retain and protect existing vehicle signal pedestal
- EX/MA — Retain and protect existing traffic signal mast arm
- EX/PS — Retain and protect existing pushbutton post
- FC/X — Install illumination pole (X=feet) feet from face of curb
- PS — Install pushbutton post
- LP — Install luminaire pole (35 foot mounting height). See Metal Light Pole Table

SIGNALS

- EX/VPh — Retain and protect existing phase (Ph=phase) vehicle signal
- EX/PB — Retain and protect existing pedestrian pushbutton and instruction sign
- EX/P — Retain and protect existing pedestrian signal
- V/Ph — Install phase (Ph=phase) vehicle signal with 2" fluorescent yellow reflective sheeting on backboard per std. dwg. TM460
- C/Ph — Install phase (Ph=phase) countdown pedestrian signal with clamshell mount
- B/Ph — Install phase (Ph=phase) pedestrian pushbutton with mount
- RX/VPh — Remove existing phase (Ph=phase) vehicle signal

CABINETS

- BMCL — Install base mounted service cabinet 120/240 volt metered, for signal and signal pole mounted illumination systems. See sheet MB04 for details
- RX/SC — Remove existing service cabinet
- EX/TC — Retain and protect existing terminal cabinet
- EX/ITS — Retain and protect existing ITS cabinet

SIGNS

- EX/AL — Retain and protect existing aluminum sign and mount
- EX/SNS — Retain and protect existing street name sign
- RX/AL — Remove existing aluminum sign and mount

MISCELLANEOUS

- RX/CW — Remove existing crosswalk closure support with sign(s)

JUNCTION BOXES

- RX/JB — Remove existing junction box
- EX/JB — Retain and protect existing junction box
- EX/SPB — Retain and protect existing loop access point, sand pocket block-out with (_") conduit to junction box
- JB/1 — Install 17"x10"x12" (min. dimension) precast concrete junction box
- JB/1A — Install 17"x10"x12" (min. dimension) precast concrete junction box with concrete apron
- JB/2 — Install 22"x12"x12" (min. dimension) precast concrete junction box
- JB/3 — Install 30"x17"x12" (min. dimension) precast concrete junction box
- JB/3/T — Install tandem 30"x17"x12" (min. dimension) precast concrete junction boxes (See TM472 for details)
- JB/SP — Junction box (See Signal Plan)
- SP/S — Install 6" max. sand pocket block-out with (S=size) inch conduit to junction box

DETECTION

- EX/DPh — Retain and protect existing phase (Ph=phase) vehicle detector loop
- EX/BPh — Retain and protect existing phase (Ph=phase) bicycle detector loop
- LD/Ph — Install phase (Ph=phase) 6' round or 4' diamond vehicle detector loop
- N/LW — Install (N=number) pair of loop wires
- AX/D — Abandon existing vehicle detector loop

WIRES & CABLES

- RX/W — Remove existing wiring
- EX/W — Retain and protect existing wiring
- EX/FO — Retain and protect existing fiber optic cable
- N/G — Install (N=number) No. (G=AWG wire size) THWN wires
- N G — Install (N=number) No. (G=AWG wire size) XHHW wires

CONDUITS

- EX/EC (S) — Retain and protect existing (S=inch when shown) electrical conduit
- EX/DC (S) — Retain and protect existing (S=inch when shown) detector conduit
- S — Install (S=size) inch conduit
- EC — Electrical conduit (See Signal Plan)
- HDD — Install conduit by horizontal directional drilling, open trench not allowed
- AX/C — Abandon existing conduit

FIRE PREEMPTION

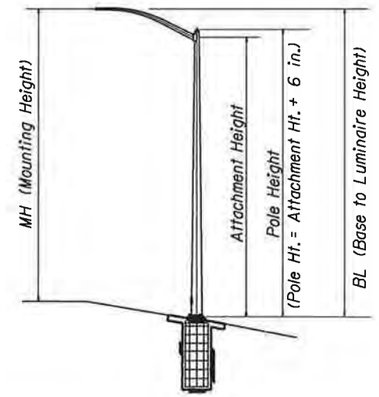
- EX/FD — Retain and protect existing fire preemption detector unit

LUMINAIRES

- EX/PE — Retain and protect existing photoelectric cell
- LED — Install light emitting diode luminaire. (See Metal Light Pole Table, Pole Entrance Chart and special provisions). Bond luminaire to pole grounding terminal
- N — New/existing light pole/utility pole No. (N) for roadway illumination (See Metal Light Pole Table)
- RX/HPS — Remove existing high pressure sodium luminaire

HEADS & BRACKETS

B = Adjustable signal bracket assembly w/rain cap(s) (Install 1" galvanized chase nipple).
2 = 12" R, 12" Y, 12" G
3L = 12" RLTA, 12" YLTA, 12" GLTA



POLE HEIGHT VERIFICATION

Note: Slope may vary per pole location

METAL LIGHT POLE TABLE

POLE NO.	STATION	ATTACHMENT HEIGHT OF ARM (ft)**	UPSWEEP ARM		"BL"(ft)	LUMINAIRE			MOUNTING HEIGHT 'H' (ft)	BASE PLATE CONFIG.	POLE STD.	NOTES
			LENGTH "LA" (ft)	RISE (ft)		LAMP (WATTS)	LINE VOLT	TYPE				
13	N:113503 E:300711	29.5	10	5.5	35	201 LED	240	3	35	F	ODOT	H(90)
14	N:113287 E:300793	29.5	10	5.5	35	201 LED	240	3	35	F	ODOT	H(90)

LEGEND

** = Field verify attachment height of arm before ordering. Values are approximate from grading cross sections
F = Fixed base illumination pole. See dwg. no. TM629 & TM630.
BL = Base plate to Luminaire height.
H(n) = Handhole orientation measured from luminaire arm clockwise direction (n=angle in degrees)

CALCULATION SUMMARY				
	Design Values		Achieved Values	
Location	Average Maintained Illumance (FC)	Uniformity (Average/Minimum)	Average Maintained Illumance (FC)	Uniformity (Average/Minimum)
OR99W/SW Meinecke Parkway	≥2.0	≤3.0	2.0	2.9

ACCOMPANIED BY DWGS.:
TM450, TM457, TM460, TM462, TM467, TM470, TM471, TM472, TM482, TM485, TM629, TM630, TM635

HWY: 091
M.P.: 15.95
UNIT FILE CODE: 21158
DFI/TSSU NO.:

Scott B Cramer CRAMER Scott B Dec 9 2020 8:23 AM
Traffic Section Approval

REGISTERED PROFESSIONAL ENGINEER 74,348
Digitally Signed Date: 2020.12.08 21:44:54-08'00'
OREGON
JUNE 12, 2013
STEVEN J. BOICE
EXPIRES: DEC. 31, 2021

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OREGON DEPARTMENT OF TRANSPORTATION

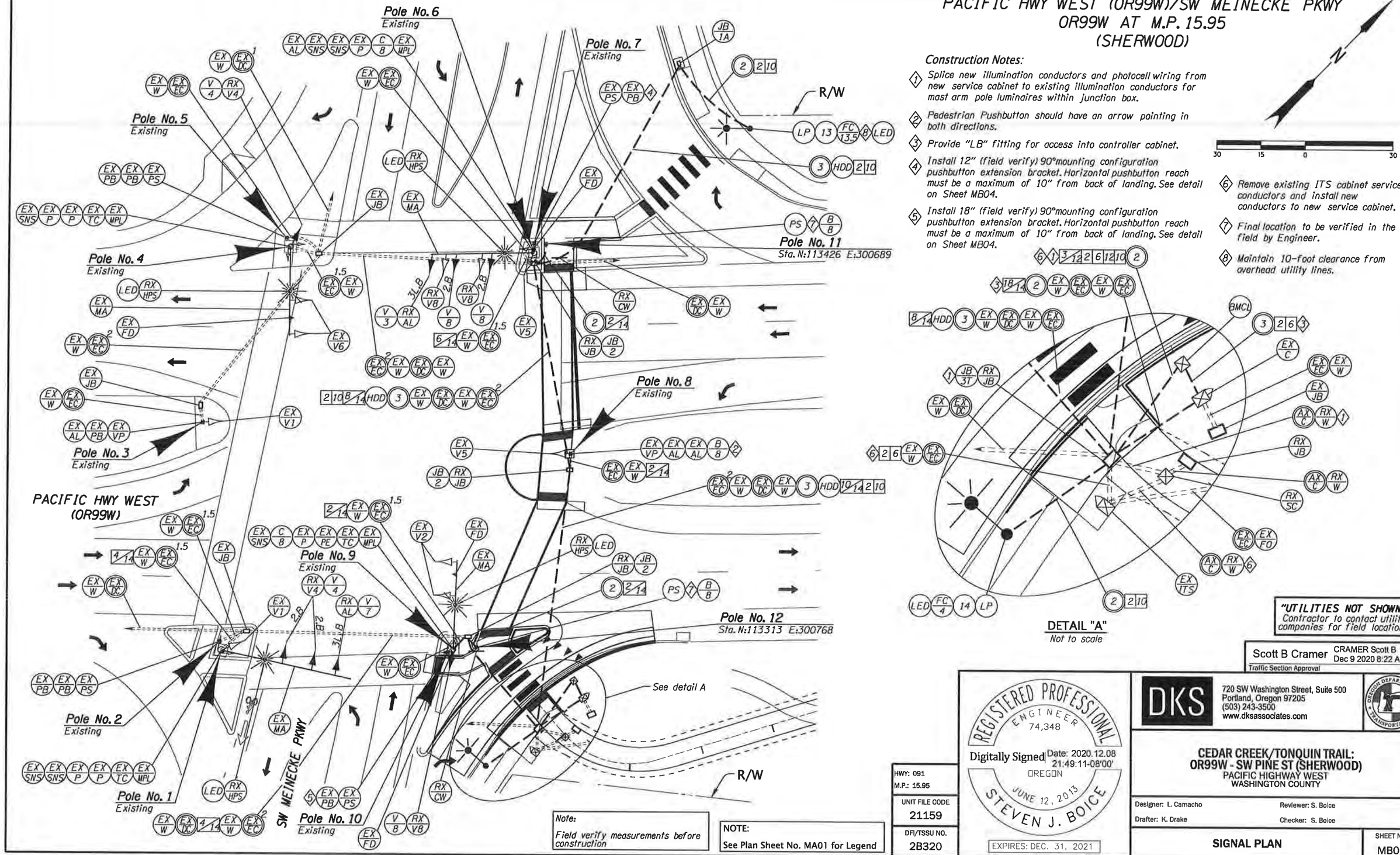
CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: L. Camacho
Drafter: K. Drake
Reviewer: S. Boice
Checker: S. Boice

LEGEND

SHEET NO. MA01

SIGNAL MODIFICATION PLAN
PACIFIC HWY WEST (OR99W)/SW MEINECKE PKWY
OR99W AT M.P. 15.95
(SHERWOOD)



Construction Notes:

1. Splice new illumination conductors and photocell wiring from new service cabinet to existing illumination conductors for mast arm pole luminaires within junction box.
2. Pedestrian Pushbutton should have an arrow pointing in both directions.
3. Provide "LB" fitting for access into controller cabinet.
4. Install 12" (field verify) 90°mounting configuration pushbutton extension bracket. Horizontal pushbutton reach must be a maximum of 10" from back of landing. See detail on Sheet MB04.
5. Install 18" (field verify) 90°mounting configuration pushbutton extension bracket. Horizontal pushbutton reach must be a maximum of 10" from back of landing. See detail on Sheet MB04.
6. Remove existing ITS cabinet service conductors and install new conductors to new service cabinet.
7. Final location to be verified in the field by Engineer.
8. Maintain 10-foot clearance from overhead utility lines.

30 15 0 30

"UTILITIES NOT SHOWN"
Contractor to contact utility companies for field locations

Note:
Field verify measurements before construction

NOTE:
See Plan Sheet No. MA01 for Legend

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: L. Camacho	Reviewer: S. Boice
Drafter: K. Drake	Checker: S. Boice

SIGNAL PLAN — SHEET NO. MB01

HWY: 091	
M.P.: 15.95	
UNIT FILE CODE	21159
DFI/TSSU NO.	2B320

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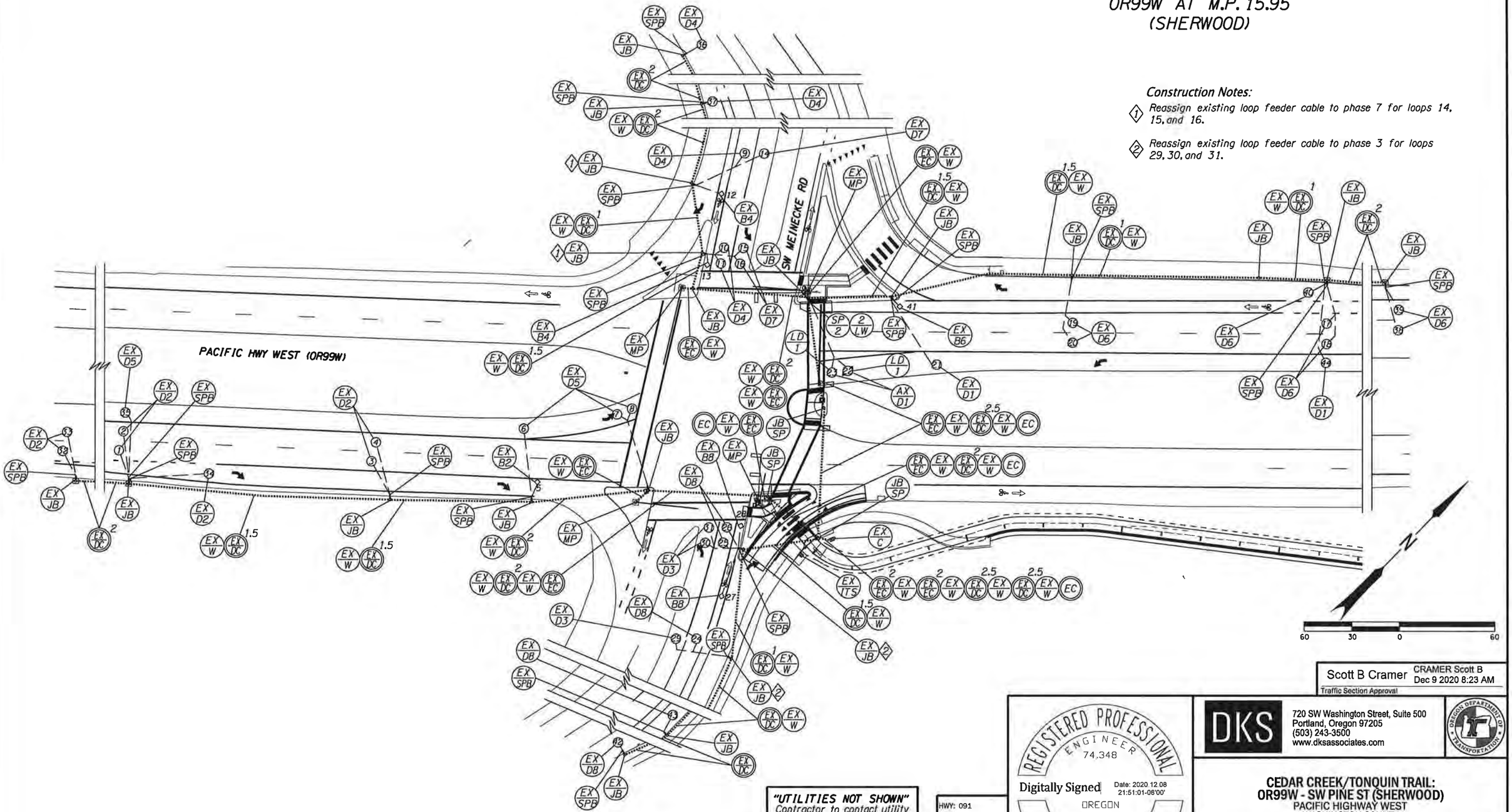
DETECTOR MODIFICATION PLAN
PACIFIC HWY WEST (OR99W)/SW MEINECKE PKWY
OR99W AT M.P. 15.95
(SHERWOOD)



Construction Notes:

1. Reassign existing loop feeder cable to phase 7 for loops 14, 15, and 16.
2. Reassign existing loop feeder cable to phase 3 for loops 29, 30, and 31.

"UTILITIES NOT SHOWN"
Contractor to contact utility companies for field locations

NOTE:
See Plan Sheet No. MA01 for Legend

Note:
Field verify measurements before construction

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Traffic Section Approval

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STEVEN J. BOICE
EXPIRES: DEC. 31, 2021

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

HWY: 091	
M.P.: 15.95	
UNIT FILE CODE	21160
DFI/TSSU NO.	

Designer: L. Camacho — Reviewer: S. Boice
Drafter: K. Drake — Checker: S. Boice

DETECTOR PLAN — SHEET NO. MB02

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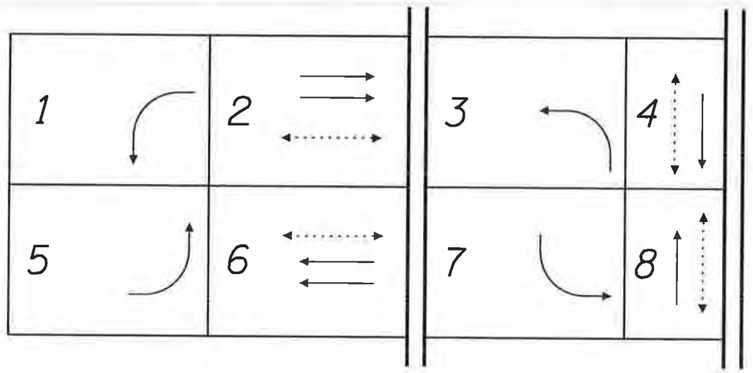
DETECTOR MODIFICATION PLAN
PACIFIC HWY WEST (OR99W)/SW MEINECKE PKWY
OR99W AT M.P. 15.95
(SHERWOOD)

Loop Number	Distance Feet		Phase	Slot	Maxtime
1(EX)	320		2	I3L	5
2(EX)	320		2	I2U	2
3(EX)	160		2	I2L	3
4(EX)	160				
5(EX)	50	BIKE	2	I3U	4
6(EX)	75		5	J1U	15
7(EX)	15		5	J9U	27
8(EX)	5				
9(EX)	75		4	I6U	8
12(EX)	50		4	I7U	10
10(EX)	15				
11(EX)	5		4	I8U	12
13(EX)	5				
14(EX)	75		7	I7L	11
15(EX)	15		7	I6L	9
16(EX)	5				
17(EX)	330		6	J3U	18
18(EX)	330		6	J2U	16
19(EX)	165		6	J2L	17
20(EX)	165				
21(EX)	75		1	I1U	1
22	15		1	I9U	13
23	5				
24(EX)	75		8	J7L	25
27(EX)	50		8	J7U	24
25(EX)	15				
26(EX)	5		8	J8U	26
28(EX)	5				
29(EX)	75		3	J6U	22
30(EX)	15		3	J6L	23
31(EX)	5				
32(EX)	450	P			
33(EX)	450	P			
34(EX)	260		2	I4U	6
35(EX)	320		5	J9L	28
36(EX)	450	P			
37(EX)	260	P			
38(EX)	450	P			
39(EX)	450	P			
40(EX)	320		6	J3L	19
41(EX)	50	BIKE	6	J4U	20
42(EX)	350	P			
43(EX)	210	P			
44(EX)	330		1	I9L	14

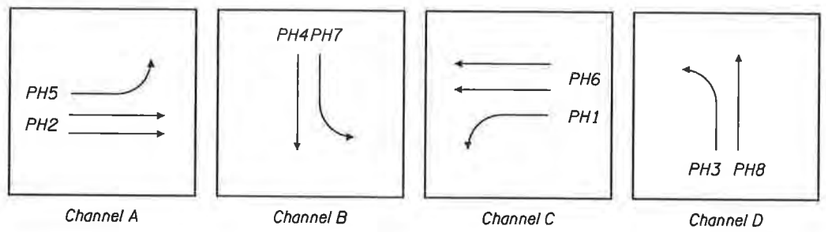
Controller Cabinet

LOOP DETECTOR WIRING DIAGRAM

"Distance" is from Stop Line to center of loop in feet
CI=Check-in, CO=Check-out, EX=Existing, P=Protect



NORMAL PHASE ROTATION



FIRE PREEMPTION

Scott B Cramer Feb 12 2021 10:53 AM
Traffic Section Approval

No.	DATE	REVISIONS	BY
1	02-11-21	Updated loop detector wiring diagram	L.E.C.

HWY: 091
M.P.: 15.95
UNIT FILE CODE 21161
DFI/TSSU NO.

REGISTERED PROFESSIONAL ENGINEER 74,348
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JUNE 12, 2013
STEVEN J. BOICE
EXPIRES: DEC. 31, 2021
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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: L. Camacho
Drafter: K. Drake
Reviewer: S. Boice
Checker: S. Boice

DETAILS

SHEET NO. MB03

SIGNAL DETAILS
PACIFIC HWY WEST (OR99W)/SW MEINECKE PKWY
OR99W AT M.P. 15.95
(SHERWOOD)

POLE ENTRANCE CHART

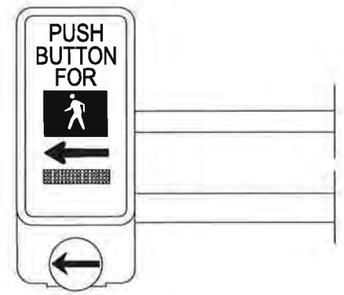
		See TM650 thru TM653	EQUIPMENT ON POLE						EQUIPMENT ON MAST ARM (Length In Feet and Equipment Type)									FOUNDATION INFORMATION (See Std. Drg. TM653)		LUMINAIRES					MISC. EQUIP.
POLE NO.	SHEET NO.	TYPE	PED. SIGNAL DEG.	PED. PUSHBUTTON DEG.	TERM. CABINET DEG.	SIGN DEG.	TRAFFIC SIGNAL DEG.	PHOTO ELECTRIC CELL	ARM LENGTH	D1	D2	D3	D4	D5	D6	D7	D8	FOUNDATION NUMBER	REQUIRED FOUNDATION DEPTH	ARM LENGTH	ARM DEG.	MOUNTING HEIGHT	FIXTURE TYPE	WATTAGE	ON ARM
1	MB01	EX	EX / EX	–	EX		EX		EX	0.5 / V3L	8.5 / V2	20.5 / V2	—	—	—	—	—	EX	EX	EX	EX	EX	LED	200	
2	MB01	EX	—	EX / EX						—	—	—	—	—	—	—	—								
3	MB01	EX	—	EX / EX			EX			—	—	—	—	—	—	—	—	EX	EX						
4	MB01	EX	EX / EX	—	EX		EX		EX	—	—	—	—	—	—	—	—	EX	EX	EX	EX	EX	LED	200	
5	MB01	EX	—	EX / EX						—	—	—	—	—	—	—	—								
6	MB01	EX	EX / 180	—	EX		EX		EX	5.5 / V3L	14.0 / V2	24.0 / V2	—	—	—	—	—	EX	EX	EX	EX	EX	LED	200	
7	MB01	EX	—	EX						—	—	—	—	—	—	—	—								
8	MB01	EX	—	225			EX			—	—	—	—	—	—	—	—	EX	EX						
9	MB01	EX	EX / 90	—	EX		190	EX	EX	—	—	—	—	—	—	—	—	EX	EX	EX	EX	EX	LED	200	
10	MB01	EX	—	EX						—	—	—	—	—	—	—	—								
11	MB01	PS	—	45						—	—	—	—	—	—	—	—								
12	MB01	PS	—	45						—	—	—	—	—	—	—	—								

BRACKET MOUNT

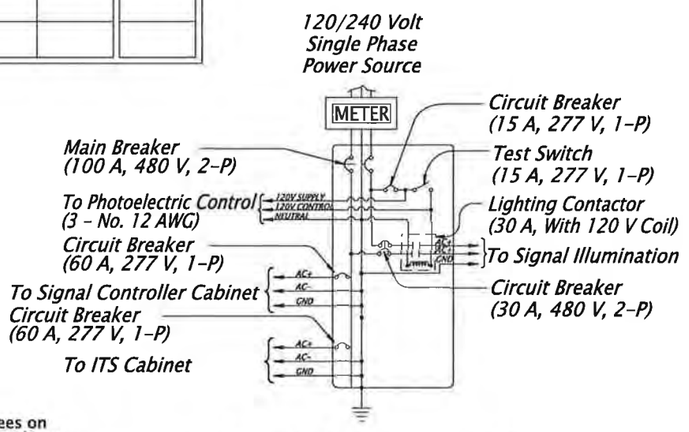
V2 = Traffic Signal Type 2, Adjustable Bracket Mount (See Std. Dwg. TM462)
V3L = Traffic Signal Type 3L, Adjustable Bracket Mount (See Std. Dwg. TM462)

MISC. ITEMS:

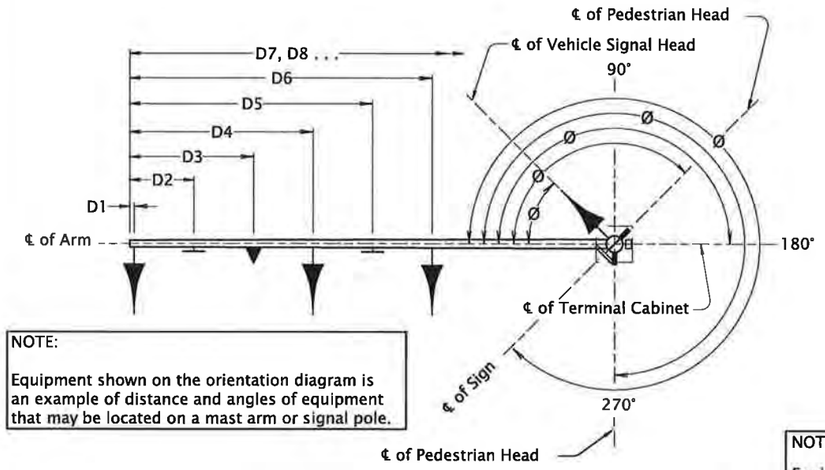
EX = Existing
PS = Pushbutton Post
LED = Light emitting diode



PUSHBUTTON EXTENSION BRACKET – 90 DEGREE MOUNTING CONFIGURATION



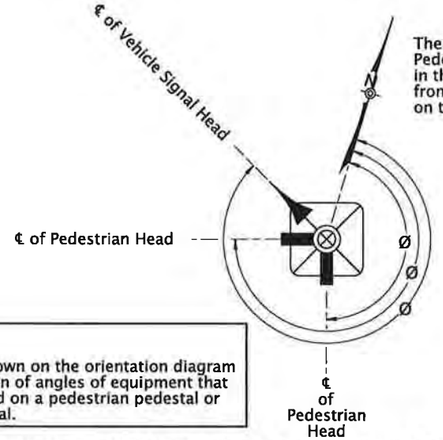
SERVICE CABINET WIRING WITH 240 VOLT ILLUMINATION BMCL



NOTE:

Equipment shown on the orientation diagram is an example of distance and angles of equipment that may be located on a mast arm or signal pole.

MAST ARM POLE ORIENTATION DIAGRAM



The north arrow shown relates to zero degrees on Pedestrian and Vehicle signal poles. Degrees shown in the pole entrance chart show the degrees clockwise from plan sheet north arrow (zero) to equipment located on the pole.

NOTE:

Equipment shown on the orientation diagram is a clarification of angles of equipment that may be located on a pedestrian pedestal or vehicle pedestal.

PEDESTRIAN PEDESTAL / VEHICLE PEDESTAL ORIENTATION DIAGRAM

Scott B Cramer CRAMER Scott B Dec 9 2020 8:23 AM
Traffic Section Approval

REGISTERED PROFESSIONAL ENGINEER 74,348
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JUNE 12, 2013
STEVEN J. BOICE
EXPIRES: DEC. 31, 2021

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OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

HWY: 091
M.P.: 15.95
UNIT FILE CODE: 21162
DFI/TSSU NO.:

Designer: L. Camacho
Drafter: K. Drake
Reviewer: S. Boice
Checker: S. Boice

DETAILS

SHEET NO. MB04

ILLUMINATION LEGEND

L E G E N D

P O L E S

- (EX PT) Retain and protect existing ornamental post top pole and high pressure sodium ornamental luminaire
- (EX BX) Retain and protect existing illumination pole and high pressure sodium shoe box luminaire
- (LED1) Install PGE approved black Holophane Acrylic Washington post lite II ocorn light emitting diode luminaire (see Light Pole Table)
- (LP2) Install PGE approved bronze composite, 2-piece, smooth finish, direct bury pole
- (LP1) Install PGE approved black 14 foot, post-top, decorative, anchor base, cast aluminum fluted pole on new PGE approved Old Castle 20R-LB-4 foundation.
- (LED2) Install PGE approved bronze loetek green cobra light emitting diode luminaire (see Light Pole Table)
- (N) New/existing light pole/utility pole No.(N) for roadway illumination (See Light Pole Table)

C O N D U I T S

- (EX FC) Retain and protect existing electrical conduit
- (S) Install (S=size) inch PGE approved conduit

W I R E S & C A B L E S

- (EX W) Retain and protect existing wiring
- (TC G) Install PGE approved (G=awg size) 3-conductor, class B stranding, type TC THWN cable.

J U N C T I O N B O X E S

- (EX JB) Retain and protect existing junction box
- (JB PGE) Install (17"x30"x18" (min. dimension) PGE approved junction box ①

LIGHT POLE TABLE

POLE NO.	STATION *	LUMINAIRE				MOUNTING HEIGHT (ft)	ARM LENGTH (ft)	NOTES
		WATTAGE	PRODUCT	LINE VOLT	DISTRIBUTION			
1	41+02	60W LED	Washington Post lite II	240	III	16	0	PGE option "B" for City of Sherwood
2	3+80	(45W LED) ①	Leotek, Cobra LED, Bronze	240	II	(25) ①	6	PGE option "B" for City of Sherwood

LED = Light Emitting Diode
II = Type 2 Light Distribution
III = Type 3 Light Distribution
* = Final pole locations to be approved in the field by the Engineer. Poles to maintain minimum 2-foot offset from face of pole to face of curb.

General Notes:

1. Coordinate all PGE Option B lighting work with Portland General Electric. Contact Rico Solis at (503) 672-5417. Refer to PGE work order #M2704492.

2. All street lighting materials shall conform to Portland General Electric (PGE) Option B Specifications. All materials and installation shall be approved by PGE unless otherwise noted.

ACCOMPANIED BY DWGS.:
TM472 and Sheet No. PA02-PA03

No.	DATE	REVISIONS	BY
①	02-11-21	Updated light pole table and legend	L.E.C.

HWY: OFF SYSTEM
M.P.: OFF SYSTEM
UNIT FILE CODE I-03130
DFI/TSSU NO.

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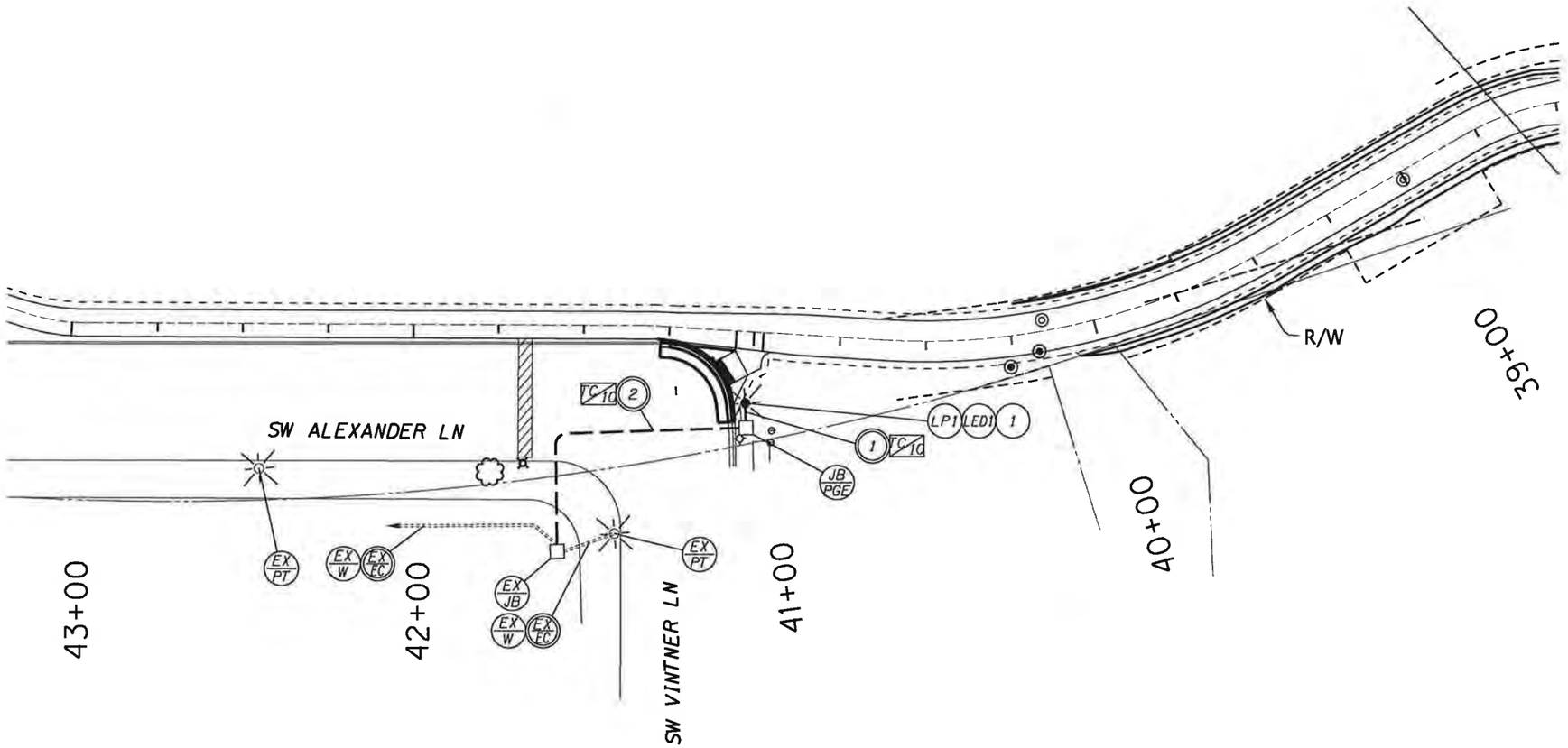
CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: L. Camacho
Drafter: K. Drake
Reviewer: S. Boice
Checker: S. Boice

ILLUMINATION LEGEND AND LIGHT POLE TABLE

SHEET NO. PA01

ILLUMINATION PLAN
SW ALEXANDER LN
(SHERWOOD)



HWY: OFF SYSTEM	
M.P.: OFF SYSTEM	
UNIT FILE CODE	I-03131
DFI/TSSU NO.	

REGISTERED PROFESSIONAL ENGINEER
74,348
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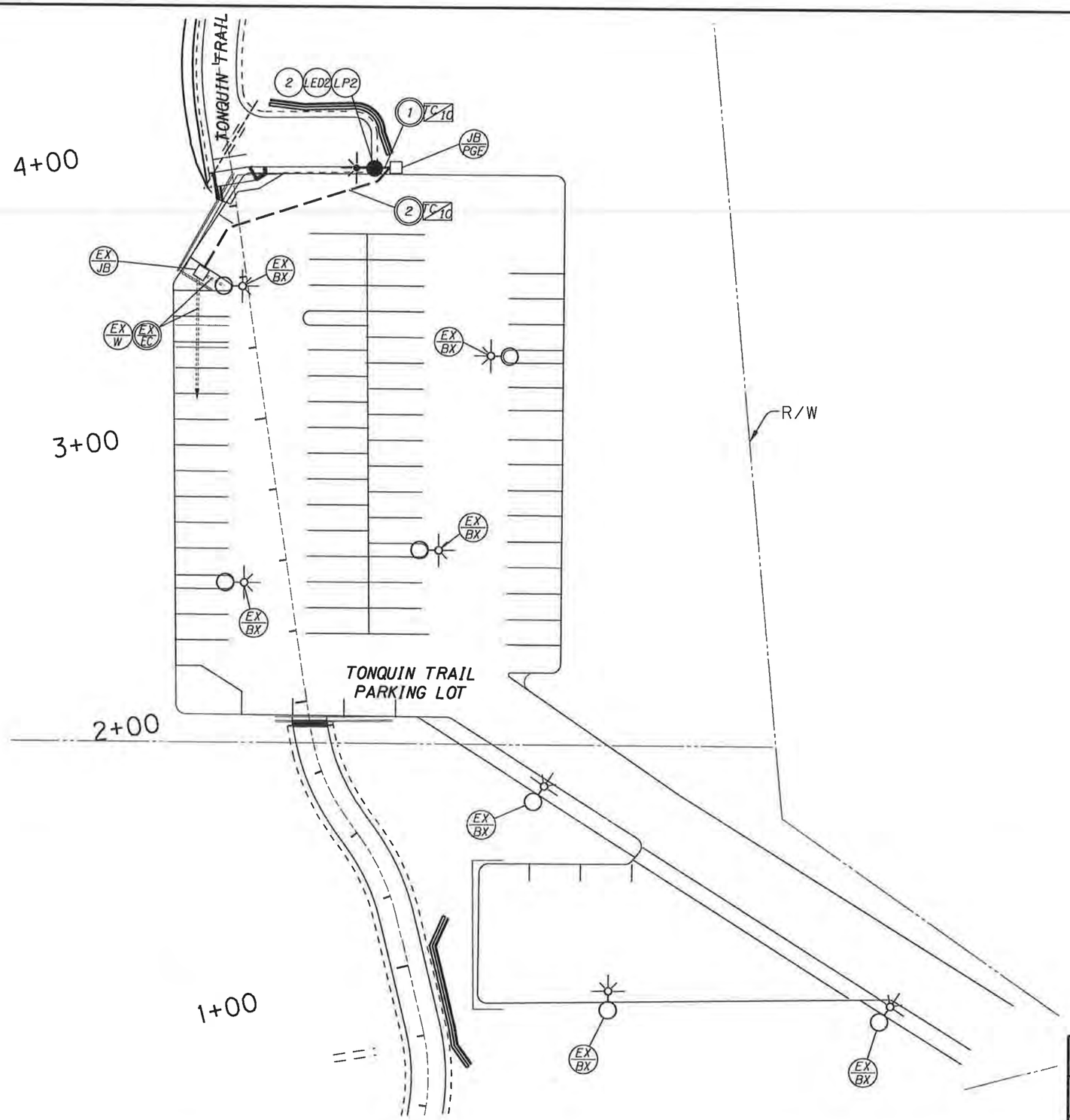
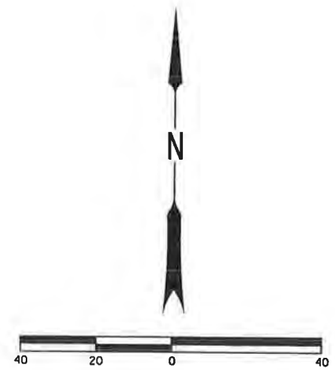
CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: L. Camacho	Reviewer: S. Boice
Drafter: K. Drake	Checker: S. Boice

ILLUMINATION PLAN — SHEET NO. PA02

ILLUMINATION PLAN
TONQUIN TRAIL PARKING LOT
(SHERWOOD)





HWY: OFF SYSTEM	
M.P.: OFF SYSTEM	
UNIT FILE CODE	I-03132
DFI/TSSU NO.	

REGISTERED PROFESSIONAL ENGINEER
74,348
Digitally Signed Date: 2021.01.21 09:32:24-08'00'
OREGON
JUNE 12, 2013
STEVEN J. BOICE
EXPIRES: DEC. 31, 2021

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

DKS
720 SW Washington Street, Suite 500
Portland, Oregon 97205
(503) 243-3500
www.dksassociates.com

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: L. Camacho
Drafter: K. Drake
Reviewer: S. Boice
Checker: S. Boice

ILLUMINATION PLAN

SHEET NO. PA03

LEGEND

- RX S — *Remove Extg. Stop Bar*
- RX W — *Remove Extg. 4" White Line*
- RX Y — *Remove Extg. 4" Yellow Line*
- RX W-2 — *Remove Extg. 8" White Line*
- RX WB — *Remove Extg. 4" Broken White Line*
- RX YLD — *Remove Yield Line*

- CW — *Inst. Standard Crosswalk Two 1' White Bars*
- W-2 — *Inst. 8" White Line*
- WD-2 — *Inst. 8" White Dotted Line*
- YLD — *Yield Line (White)*
- CW-SC — *Inst. Staggered Continental Crosswalk*
- E-RA — *Inst. Elongated Right Turn Arrow*
- BLE-G — *Inst. Green Supplemental Bicycle Lane Dotted Line Extension (green)*

NOTES

1. *Removal of extg. pavement markings shown is approximate and shall be field verified. Exact locations to be determined by the engineer.*
2. *All longitudinal pavement markings shall be method "A" thermoplastic extruded.*
3. *All bike stencils, crosswalk, and yield pavement markings material shall be type "B-HS" thermoplastic.*

ACCOMPANIED BY DWGS.:
TM500, TM501, TM503, TM521, TM530

REGISTERED PROFESSIONAL ENGINEER
77315PE
DIGITALLY SIGNED 2020 12 29 20:03:53 -08'00'
OREGON
Sept. 13, 2005
BRIAN GENE DEARING
EXPIRES: 12/31/2021

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL:
OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: A Mansour — Reviewer: B Dearing
Drafter: M Wainscott — Checker: B Dearing

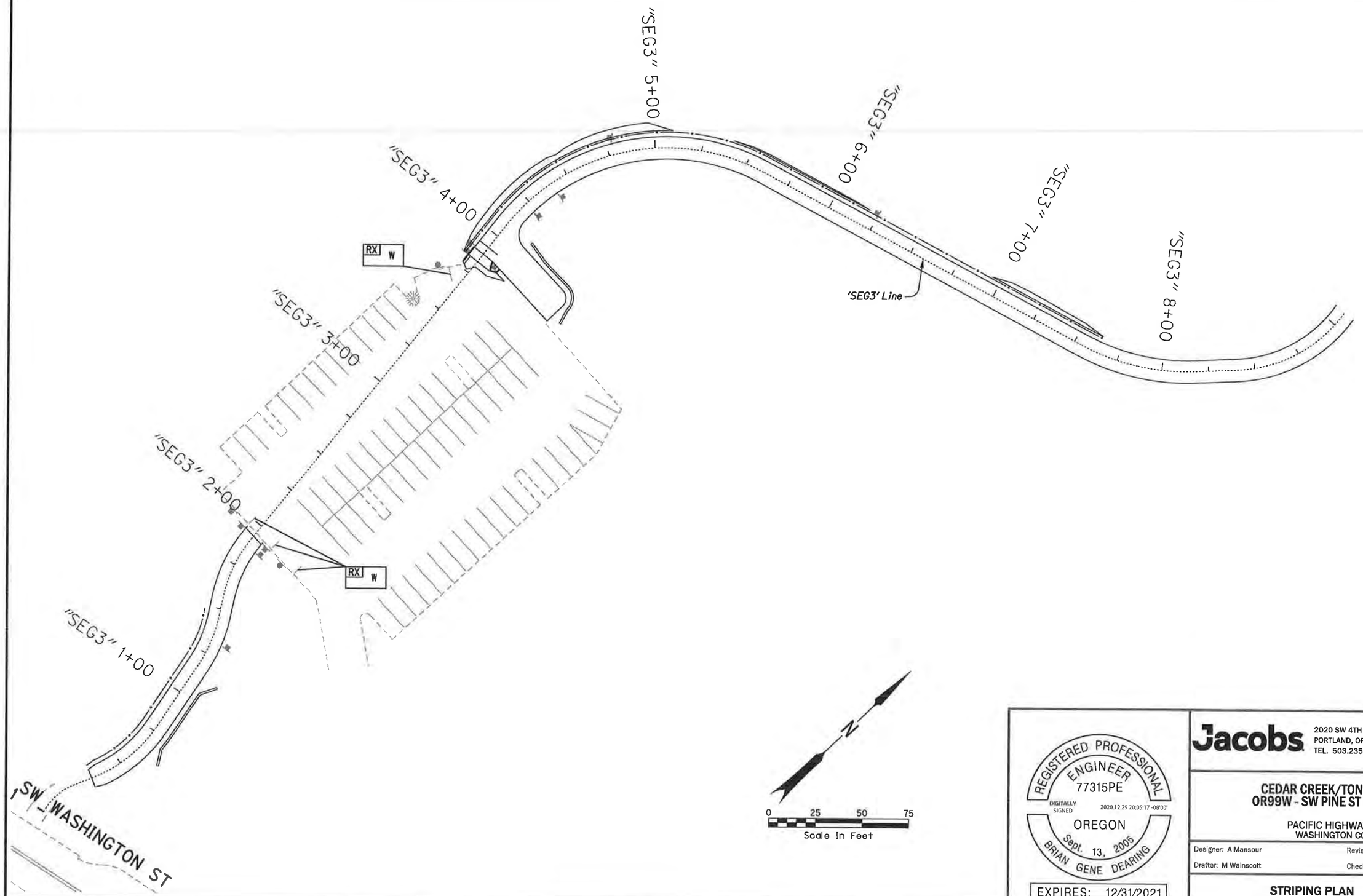
PAVEMENT MARKING LEGEND

SHEET NO.
QB01

29-DEC-2020 13:44

Sec. 32, T. 2S, R. 1W, W.M.

54V-027



REGISTERED PROFESSIONAL ENGINEER
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OREGON
Sept. 13, 2005
BRIAN GENE DEARING

EXPIRES: 12/31/2021

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PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: A Mansour
Drafter: M Wainscott
Reviewer: B Dearing
Checker: B Dearing

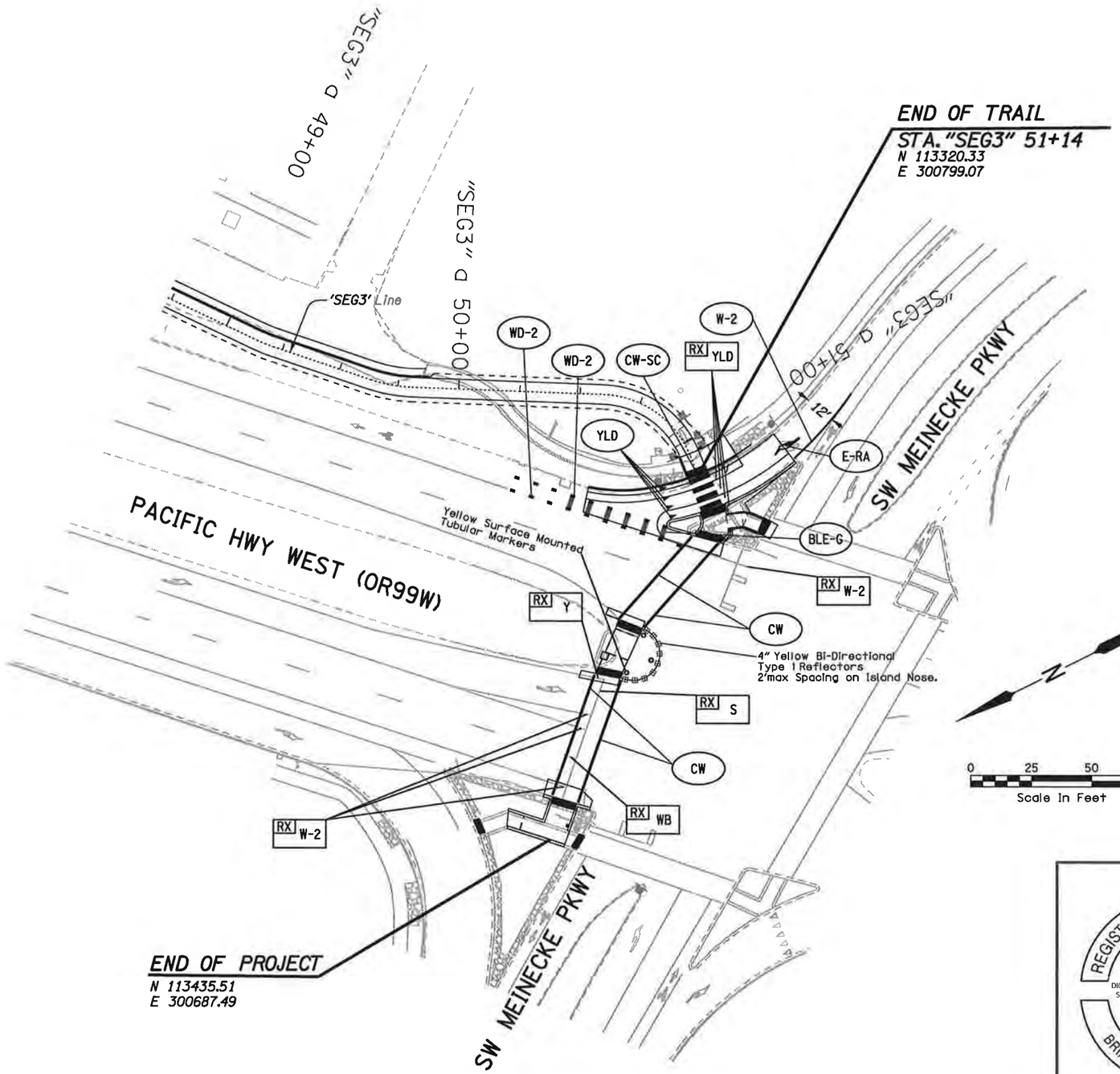
STRIPING PLAN

SHEET NO. QB02

29-DEC-2020 13:46

Sec. 30, T. 2S, R. 1W, W.M.

54V-027



Note
Removal of Extg. Pavement Markings Shown Is Approximate And Shall Be Field Verified. Exact locations To Be determined By The Engineer.

REGISTERED PROFESSIONAL ENGINEER
77315PE
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OREGON
Sept. 13, 2005
BRIAN GENE DEARING
EXPIRES: 12/31/2021

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Jacobs
2020 SW 4TH AVE. - 3RD FLOOR
PORTLAND, OR 97201-4953
TEL. 503.235.5000

OREGON DEPARTMENT OF TRANSPORTATION

CEDAR CREEK/TONQUIN TRAIL: OR99W - SW PINE ST (SHERWOOD)

PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

Designer: A Mansour
Drafter: M Wainscott
Reviewer: B Dearing
Checker: B Dearing

STRIPING PLAN

SHEET NO. QB03

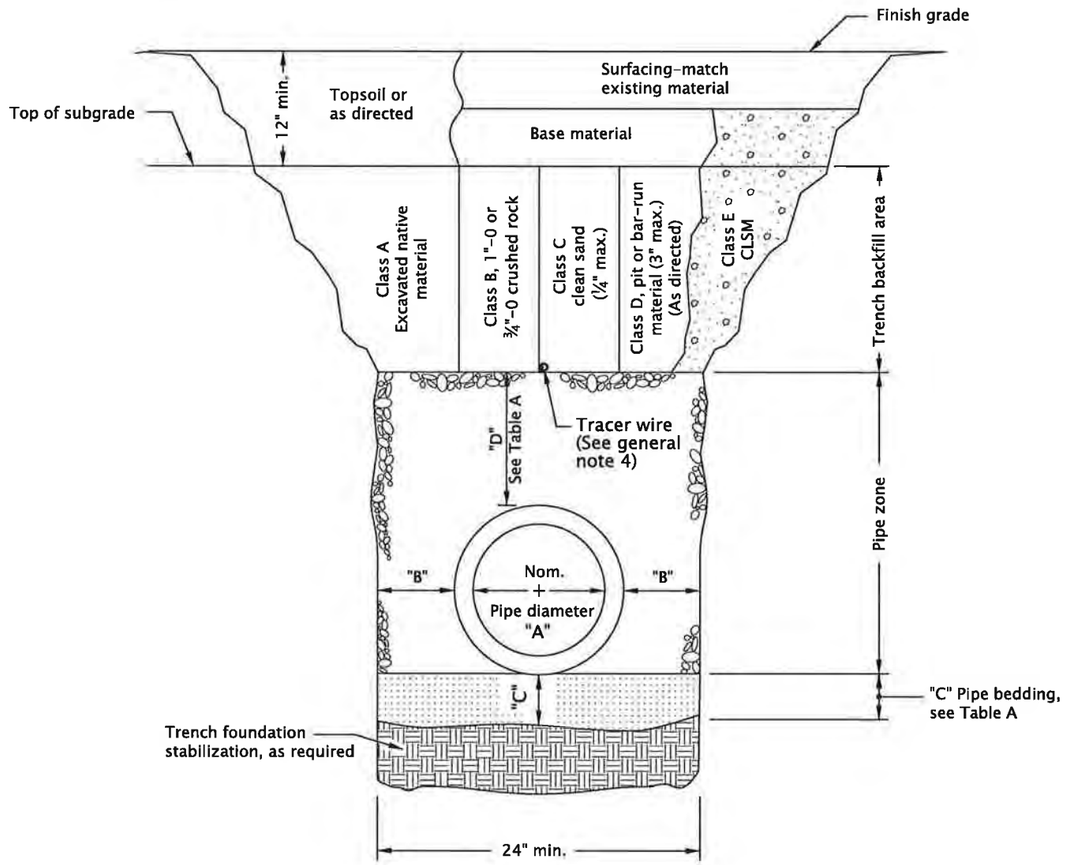
29-DEC-2020 13:48

rd300.dgn 20-JUL-2020

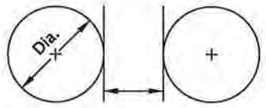
TABLE A

"A" (in)	"B" (in)	"C" (in)	"D" (in)
4	10	4	8
6	10	4	8
8	10	6	10
10	10	6	10
12	12	6	10
15	12	6	10
18	16	6	12
21	16	6	12
24	18	6	12
30	18	6	12
36	24	6	14
42	24	6	14
48	24	6	14
54	24	6	14
60	24	6	14
66	24	6	14
72	24	6	14

For pipes over 72" diameter, see general note 3.



MULTIPLE INSTALLATIONS



DIAMETER	MIN. SPACE BETWEEN PIPES
Up to 48"	24"
48" to 72"	One half (½) dia. of pipe

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Surfacing of paved areas shall comply with street cut Std. Dwg. RD302.
2. For pipe installation in embankment areas where the trench method will not be used and the pipe is ≥ 36" diameter, increase dimension "B" to nominal pipe diameter.
3. Pipes over 72" diameter are structures, and are not applicable to this drawing.
4. See Std. Dwg. RD336 for tracer wire details (When required).

CALC. BOOK NO. N/A

SDR DATE 14-JUL-2014

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

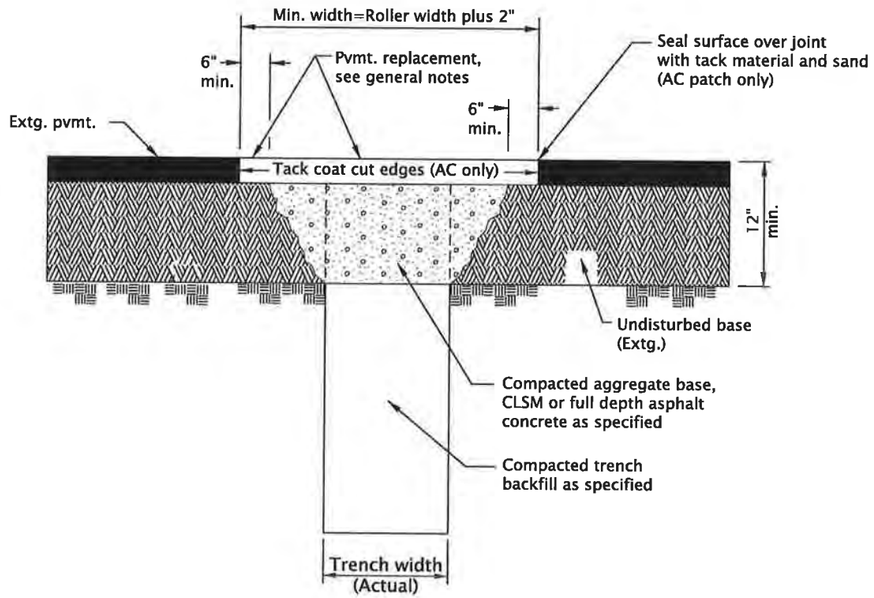
TRENCH BACKFILL, BEDDING, PIPE ZONE AND MULTIPLE INSTALLATIONS

2021

DATE	REVISION DESCRIPTION

RD300

rd302.dgn 20-JUL-2020



GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. All existing AC or PCC pavement shall be sawcut prior to repaving.
2. Concrete pavement shall be replaced with concrete to a minimum thickness of 8" or to the thickness of removed pavement, whichever is greater.
3. For joining new concrete to existing concrete, see contract plans for sepecific details.
4. Place AC mix minimum thkn. of 6" or the thkn. of the removed pavement, whichever is greater. Compact as specified.

CALC. BOOK NO. N/A

SDR DATE 12-JUN-2008

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

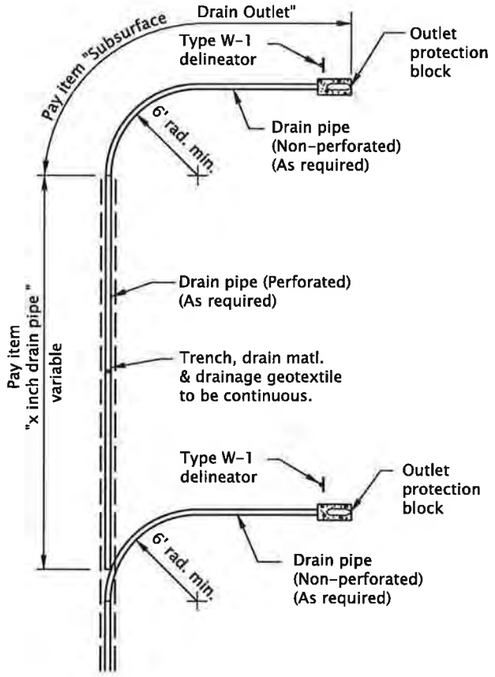
STREET CUT

2021

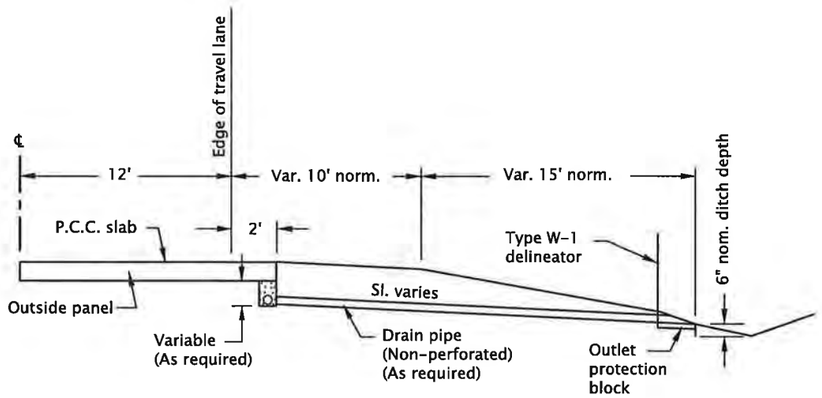
DATE	REVISION DESCRIPTION

RD302

rd312.dgn 20-JUL-2020

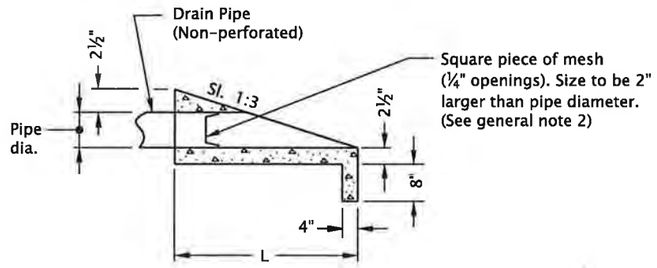


PLAN



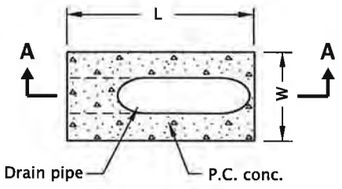
ELEVATION

SUBSURFACE DRAIN OUTLET



SECTION A-A

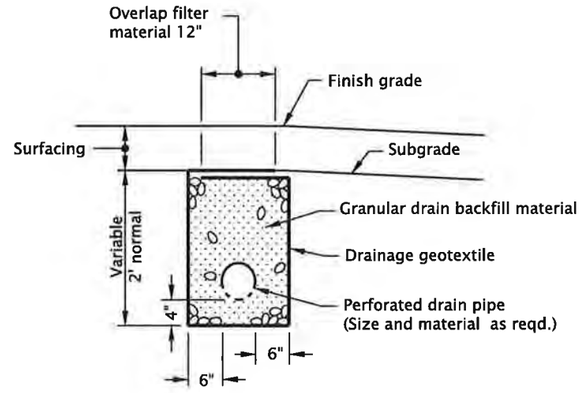
PIPE DIA. (in)	L NOM. (in)	W NOM. (in)
3	24	12
4	24	12
6	33	14
8	42	16



PLAN

OUTLET PROTECTION BLOCK

TYPE 1 SUBSURFACE DRAIN INSTALLATION



SECTION

SUBSURFACE DRAIN DETAIL

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. In guard rail areas extend outlet protection block to back of guard rail post min.
2. Mesh for rodent control to be galvanized wire or approved equal.

CALC. BOOK NO. N/A

SDR DATE 21-JUL-2015

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

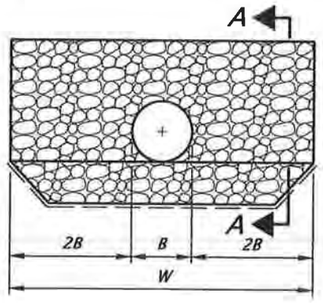
OREGON STANDARD DRAWINGS

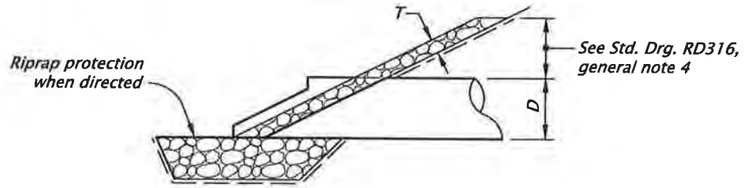
SUBSURFACE DRAIN

2021

DATE	REVISION DESCRIPTION

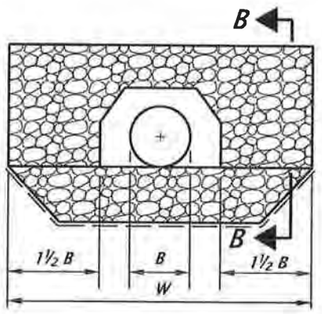
RD312

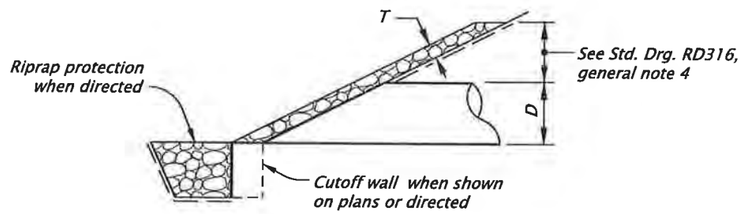




SECTION A-A

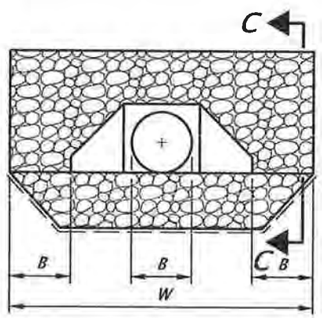
SLOPED OR PROJECTING END

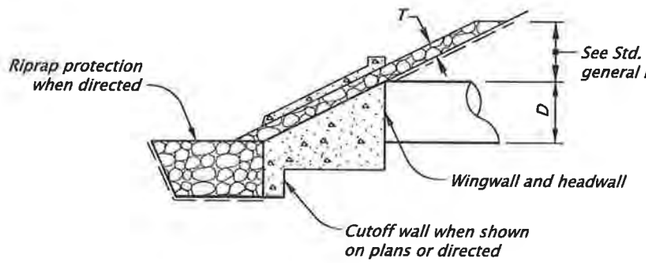




SECTION B-B

SLOPED END WITH SLOPE PAVING



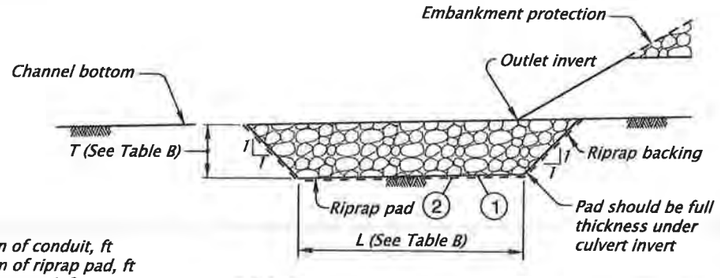


SECTION C-C

HEADWALL AND WINGWALLS

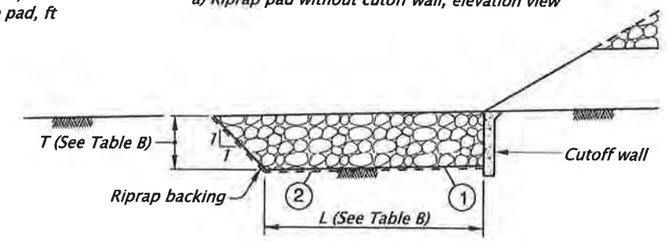
B = Diameter of circular barrel or span of arch pipe, box, or open-bottom arch.
D = Diameter of circular barrel or rise of arch pipe, box, or open-bottom arch.
T = Thickness of riprap blanket, see Table A.

EMBANKMENT PROTECTION



B = Diameter or span of conduit, ft
L = Length of bottom of riprap pad, ft
T = Thickness of riprap pad, ft
W= Width of top of riprap pad, ft

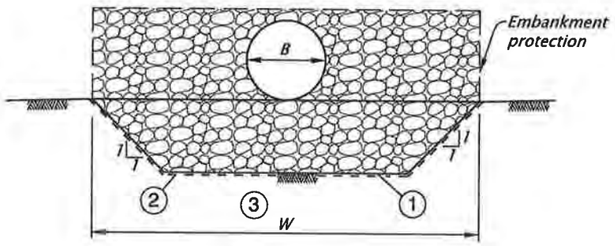
a) Riprap pad without cutoff wall, elevation view



b) Riprap pad with cutoff wall, elevation view

RIPRAP PAD NOTES:

1. *Do not excavate non-erodible rock in order to place riprap.*
2. *Use riprap backing under Class 200 and Class 700 loose riprap.*
3. *Top width (W) of the riprap pad is the larger of 5B or the width of the embankment slope protection.*



c) Riprap pad, end view

RIPRAP PADS

TABLE A – Embankment Slope Protection	
Riprap Class	T Distance
50	12 Inches
100	18 Inches
200	24 Inches *
700	36 Inches *

** Riprap backing required between riprap and embankment*

TABLE B – Riprap Pad Dimensions		
Riprap Class	L * (ft)	T (ft)
50	4B or 1.3	2.3
100	4B or 1.6	3.3
200	4B or 2.0	4.3
700	4B or 3.3	5.6

** L is the greater of 4B or the listed dimension.*

GENERAL NOTES FOR ALL DETAILS:

1. *See Std. Drg's. RD300 & RD304 for installation details.*
2. *Open ends of pipes normally require a site specific design, and may require special treatment (sloped ends, culvert embankment protection, paved end slopes, safety end sections, or other measures). See special details or Standard Drawings as called for on plans.*

CALC. BOOK NO. _____ N/A _____

SDR DATE _____ 01-July-2020 _____

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

CULVERT EMBANKMENT PROTECTION and RIPRAP PADS

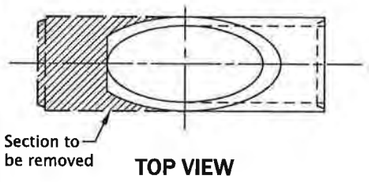
2021

DATE	REVISION DESCRIPTION

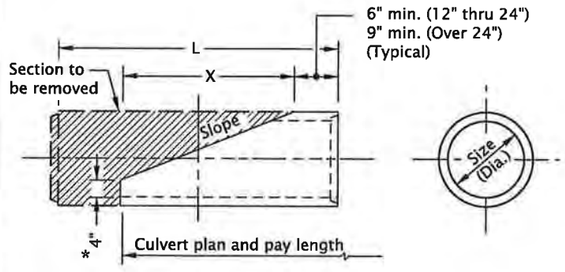
rd317.dgn 07-01-2020

RD317

CASE 1
SINGLE PIPE LENGTH



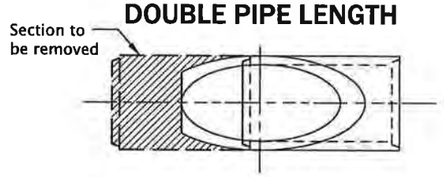
TOP VIEW



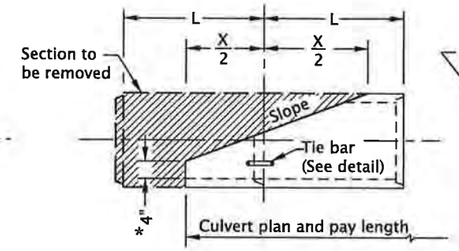
SIDE VIEW

END VIEW (CASE 1)

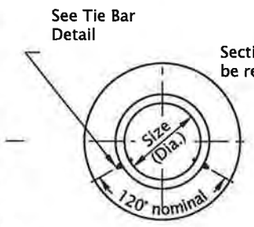
CASE 2
DOUBLE PIPE LENGTH



TOP VIEW

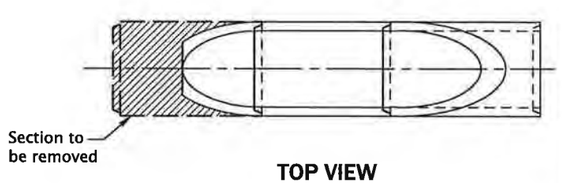


SIDE VIEW

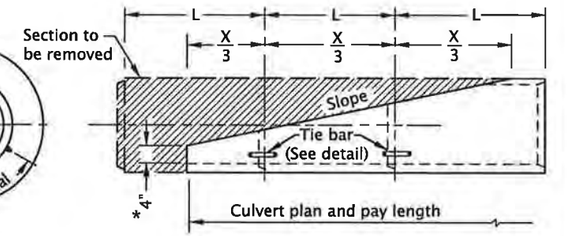


END VIEW (CASE 2 & 3)

CASE 3
TRIPLE PIPE LENGTH



TOP VIEW



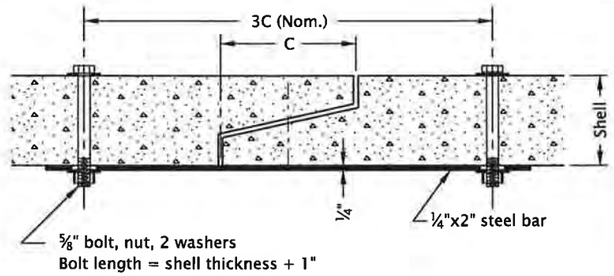
SIDE VIEW

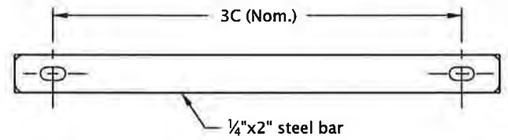
* 0 when used with paved end slope.

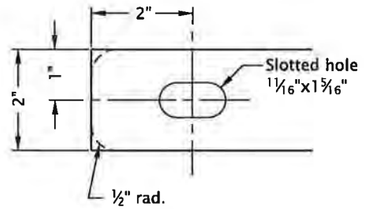
NOTE:
Sloped ends shall be made from minimum Class III concrete pipe.
"X" Values shown are for vertical dimension at bottom of sloped end = 0.

TABLE A

SIZE (Diameter)	SLOPE																				SIZE (Diameter)
	1:1.5			1:2			1:2.5			1:3			1:4				1:6				
	X	CASE 1 L (Min.)	CASE 2 L (Min.)	X	CASE 1 L (Min.)	CASE 2 L (Min.)	X	CASE 1 L (Min.)	CASE 2 L (Min.)	X	CASE 1 L (Min.)	CASE 2 L (Min.)	X	CASE 1 L (Min.)	CASE 2 L (Min.)	CASE 3 L (Min.)	X	CASE 1 L (Min.)	CASE 2 L (Min.)	CASE 3 L (Min.)	
	DIMENSION IN INCHES																				
12	18	36	36	24	36	36	30	48	36	36	72	36	48	72	36		72	90	48		12
15	22.5	36	36	30	48	36	37.5	72	36	45	72	36	60	72	36		90		72		15
18	27	48	36	36	48	36	45	72	36	54	72	36	72	90	48		108		72		18
21	31.5	48	36	42	72	36	52.5	72	36	63	90	48	84		72		126		90		21
24	36	48	36	48	72	36	60	90	48	72	90	48	96		72		144		90		24
27	40.5	72	36	54	72	36	67.5	90	48	81		72	108		72		162			72	27
30	45	72	36	60	90	48	75		48	90		72	120		90		180			72	30
33	49.5	72	36	66	90	48	82.5		72	99		72	132		90		198			90	33
36	54	72	36	72	90	48	90		72	108		72	144		90		216			90	36
42	63	90	48	84		72	105		72	126		90	168			72	252			90	42
48	72	90	48	96		72	120		90	144		90	192			90	288				48
54	81		72	108		72	135		90				216			90	324				54







NOTES:

1. All bolts, nuts and washers to be galvanized.
2. Tie bar to be galvanized after fabrication.
3. "C" is tongue length.
4. Install 2 tie bars at each joint (See end view, Case 2 & 3).

TIE BAR DETAIL

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. For dimensions indicated by letter, see Table A.
2. Open ends of pipes normally require a site specific design, and may require special treament (Slope ends, culvert embankment protection, paved end slopes, safety end sections, or other measures).
   See special details or Standard Drawings as called for on plans.
3. See Std. Dwg. RD317 for culvert embankment protection and riprap pads (When reqd.).

CALC. BOOK NO. N/A

SDR DATE 15-JAN-2016

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

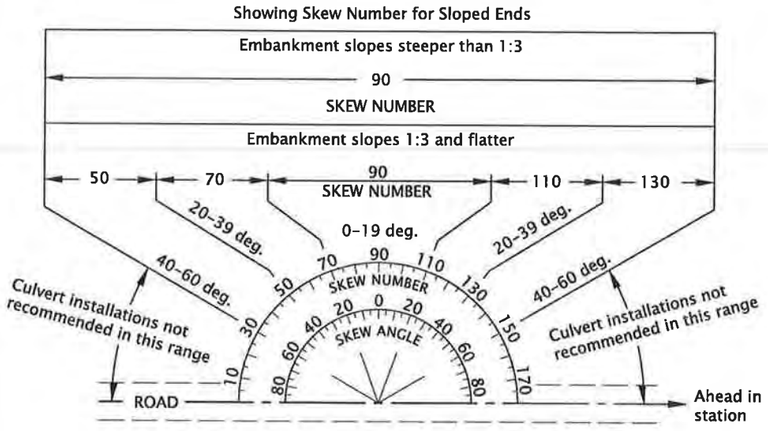
SLOPED ENDS FOR CONCRETE PIPE

2021

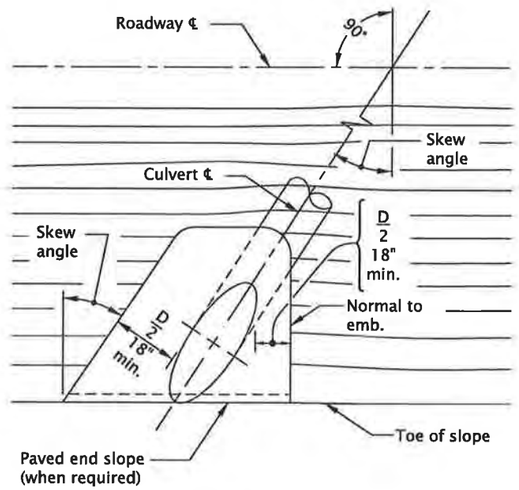
DATE	REVISION DESCRIPTION

RD318

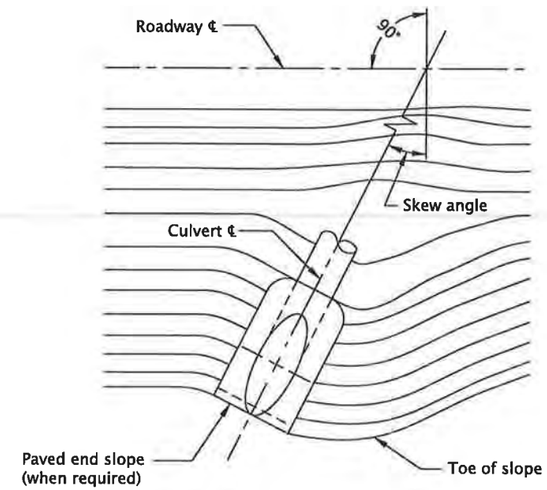
rd318.dgn 20-JUL-2020



SKEW DIAGRAM



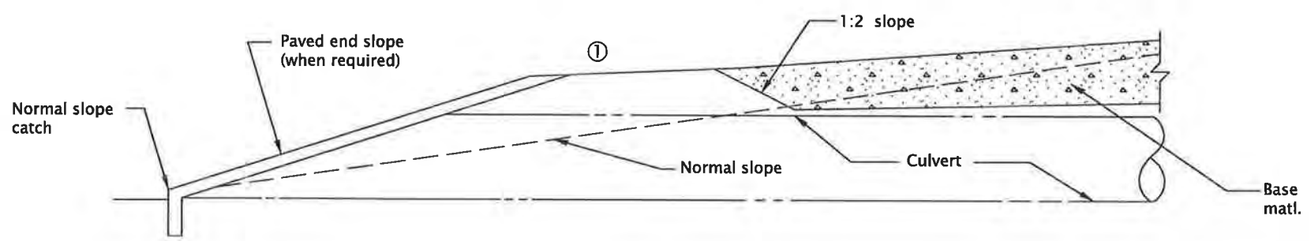
TYPICAL SKEW PLAN



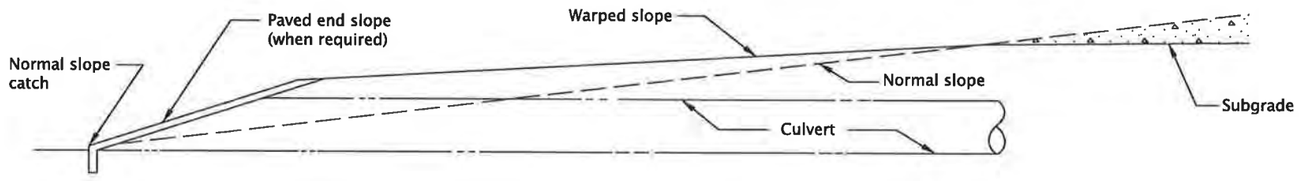
(Where shown on plans)
Contour embankment slope to match paved end slope

ALTERNATE SKEW PLAN

① Modification when nature of installation would result in an adverse slope from subgrade to top of the paved end slope.



INSERT



EMBANKMENT SLOPE WARPING DETAILS

(Warp 100' each side of culvert)

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. All embankment slopes to be warped where required to provide end projections as shown.
2. Open ends of pipes normally require a site specific design, and may require special treatment (Sloped ends, culvert embankment protection, paved end slopes, safety end sections, or other measures).
   See special details or Standard Drawings as called for on plans.
3. See Std. Dwg. RD317 for culvert embankment protection and riprap pads (When reqd.).

CALC. BOOK NO. N/A

SDR DATE 15-JAN-2016

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

MISCELLANEOUS CULVERT DETAILS

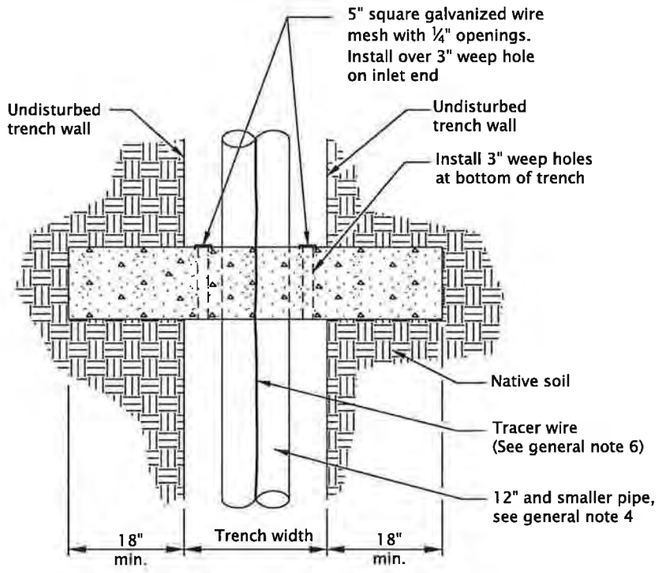
2021

DATE	REVISION DESCRIPTION

rd319.dgn 20-JUL-2020

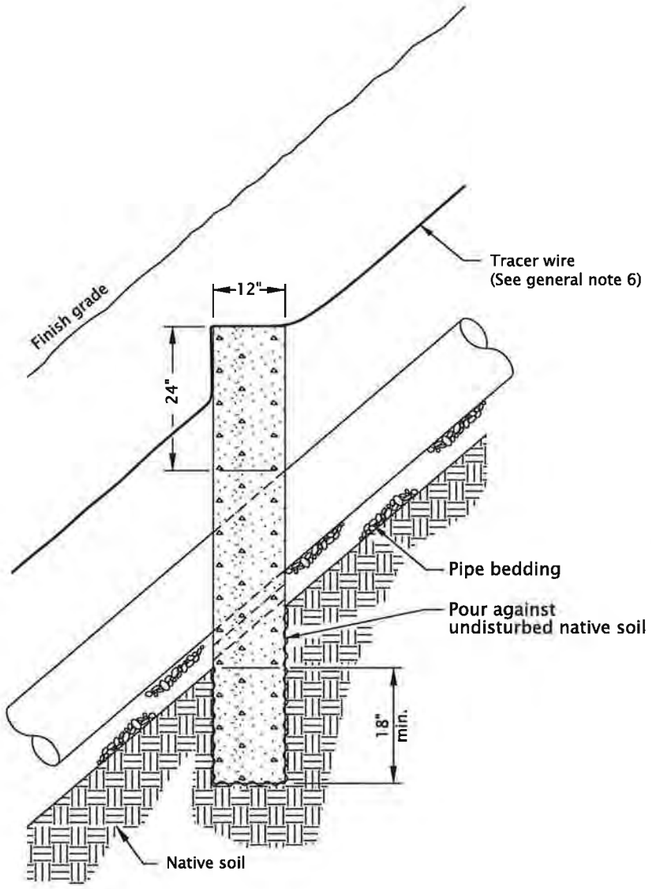
RD319

rd332.dgn 20-JUL-2020



PLAN

Metal pipe requires polymeric coating when using slope anchors made with concrete.



ELEVATION

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Concrete pipe anchors shall be constructed using forms when sewers, storm drains and other pipelines are constructed with slopes 20% or greater. Remove forms prior to backfilling trench.
2. All concrete shall be commercial grade concrete.
3. Center to center max. spacing of concrete pipe anchors shall be:

SLOPE	SPACING (on slope)
20-34%	35'
35-50%	25'
50+ %	15' or concrete encasement

4. Dimensions for embedment for pipes larger than 12" shall be approved by the engineer.
5. See Std. Dwgs. RD300 & RD304 for pipe installation details.
6. See Std. Dwg. RD336 for tracer wire details (When required).

CALC. BOOK NO. N/A

SDR DATE 12-JAN-2015

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

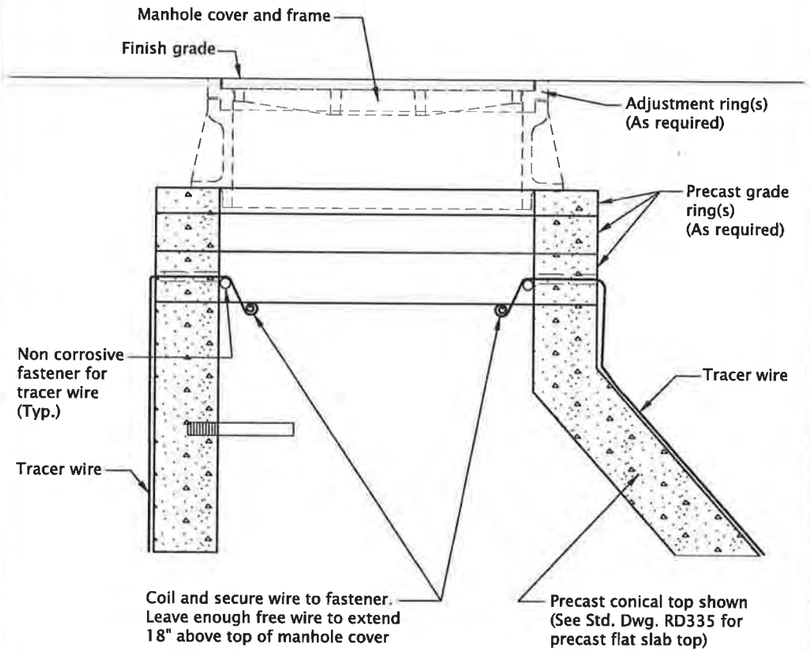
PIPE SLOPE ANCHORS - CONCRETE

2021

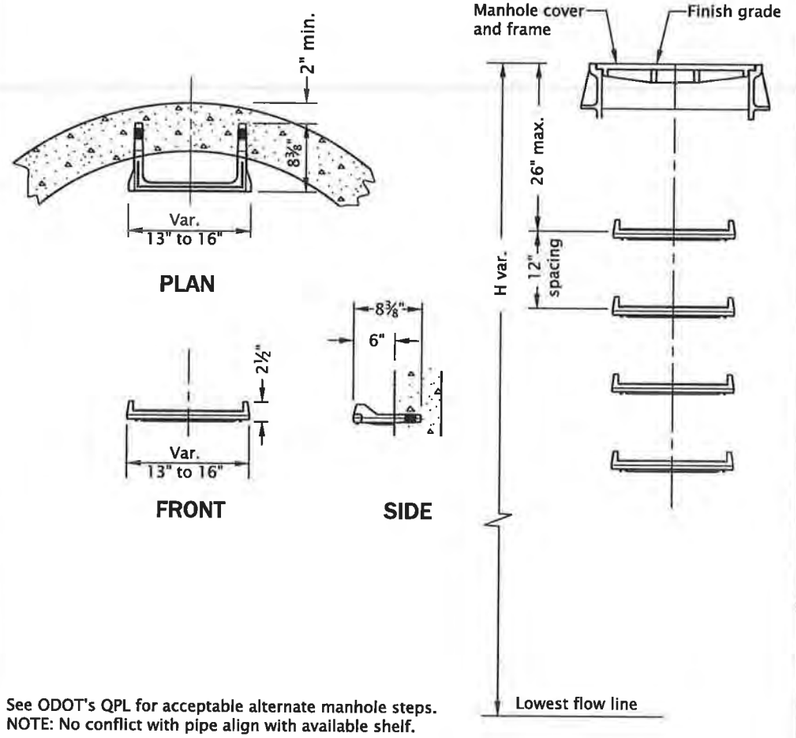
DATE	REVISION DESCRIPTION

RD332

rd336.dgn 20-JUL-2020

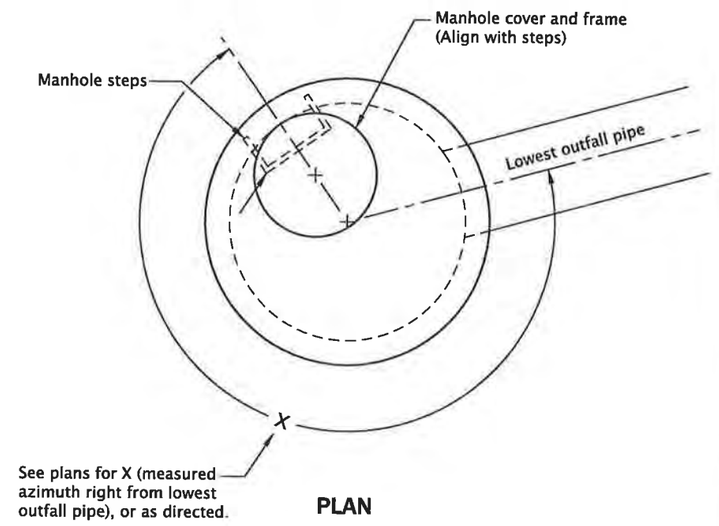


DETAIL "A"
TRACER WIRE
(See general note 6)



See ODOT's QPL for acceptable alternate manhole steps.
NOTE: No conflict with pipe align with available shelf.

DETAIL "B"
MANHOLE STEPS
(See general note 7)



DETAIL "C"
PRECAST CONICAL TOP
OR
PRECAST FLAT SLAB TOP
AND MANHOLE STEPS ORIENTATION
(See general note 7)

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. All precast products shall conform to requirements of ASTM C478.
2. Standard precast manhole section diameter shall be 48". Use 42" if specified by the Engineer.
3. See Std. Dwg. RD345 for pipe to manhole connections.
4. See Std. Dwg. RD344 for manhole base section.
5. Adjust 24" maximum.
6. All connecting pipes shall have a tracer wire, or approved alternate. Place tracer wire directly over pipe centerline and on top of the pipe zone material.
7. Steps shall conform to requirements of ASTM C478. When H=42" or less omit steps. See Detail "C" for alignment of steps, and manhole cover and frame.
8. See Std. Dwg. RD335 for details not shown.
9. See Std. Dwg. RD356 for manhole covers and frames, manhole adjustment rings, etc.
10. Max. pipe diameter varies with pipe material.
11. See Std. Dwg. RD342 for shallow manholes.
12. See project plans for details not shown.

CALC. BOOK NO. N/A

SDR DATE 16-JAN-2019

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

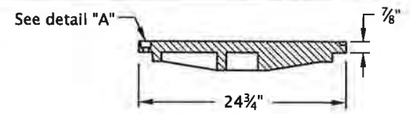
STANDARD MANHOLE DETAILS

2021

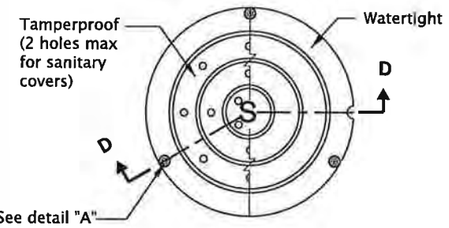
DATE	REVISION DESCRIPTION

RD336

rd356.dgn 20-JUL-2020



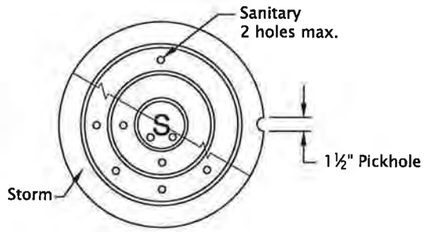
SECTION D-D



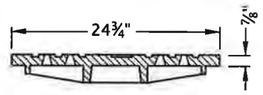
PLAN

CAST IRON TAMPERPROOF & WATERTIGHT COVER

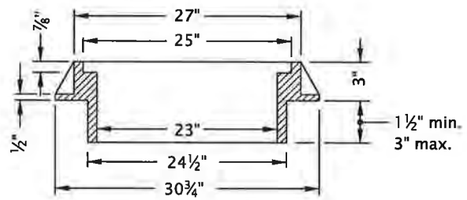
(Frames available in standard or suburban pattern)



COVER PLAN



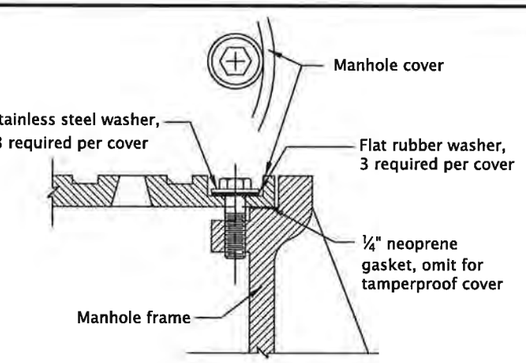
COVER SECTION



FRAME SECTION

CAST IRON SUBURBAN MANHOLE COVER & FRAME

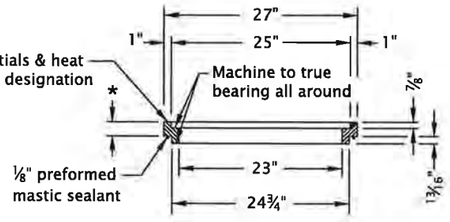
For use on local streets only, as specified



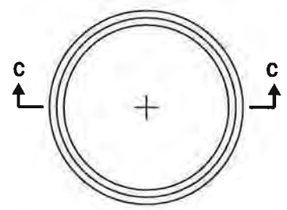
NOTE:
3 required, equally spaced, ½"x1½" pentagonal or hexagonal head, bronze or stainless steel. Install frame so that one bolt boss is located over the manhole steps (See general note 8).

BOLT-DOWN (FOR TAMPERPROOF AND WATERTIGHT)
DETAIL "A"

* Std. depths 1½", 2", 2½" & 3"
Matl. to be grey cast iron ASTM A 48, Class 35B. Tolerance on non-machined surfaces to be ⌊0.06", see general note 6



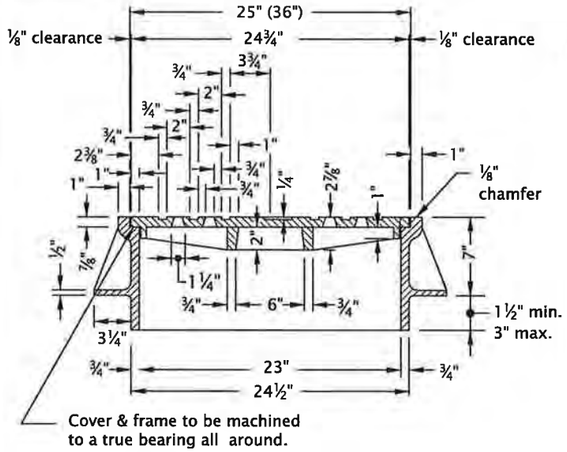
SECTION C-C



PLAN

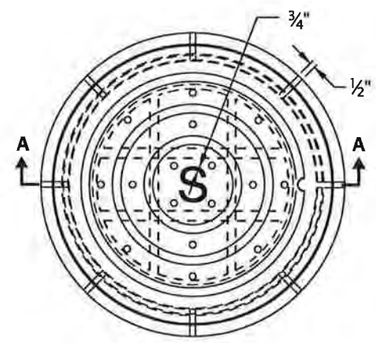
MANHOLE ADJUSTMENT RING

For use with Standard Manhole Frame



SECTION A-A

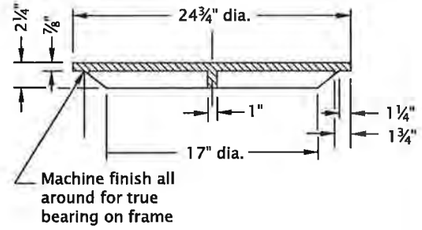
36" min. diameter cover is required for manholes with depths of 20' or greater. (See general note 4)



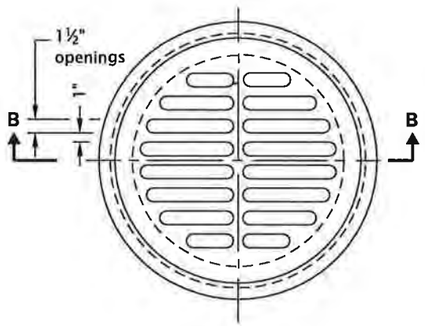
NOTE:
Coat outside of frame with asphalt, where frame is to be placed in conc. pvmt., conc. gutter, or walk.

PLAN

STANDARD MANHOLE COVER & FRAME



SECTION B-B



For use with Standard Manhole Frame (See general note 7)

PLAN

STANDARD MANHOLE GRATE

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Tamperproof covers required on sanitary or storm drain manhole where located in pedestrian ways or easement areas. Covers for sanitary manholes shall have 2 holes maximum.
2. Watertight covers required if located where cover may be submerged (no holes).
3. Covers and frames shall be stamped with manufacturer's initials, heat number and point of origin.
4. See Std. Dwg. RD336 for manhole steps.
5. See Std. Dwg. RD360 for manhole frame adjustment.
6. See ODOT's QPL for alternate manhole adjustment rings.
7. Manhole grate allowed only in locations not subject to bicycle or pedestrian use.
8. See ODOT's QPL for alternate bolt-down products.

CALC. BOOK NO. N/A

SDR DATE 21-JUN-2019

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

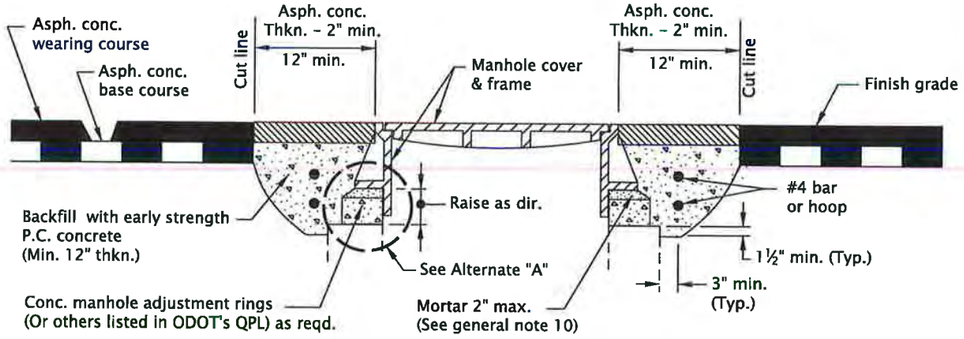
OREGON STANDARD DRAWINGS

MANHOLE COVERS AND FRAMES

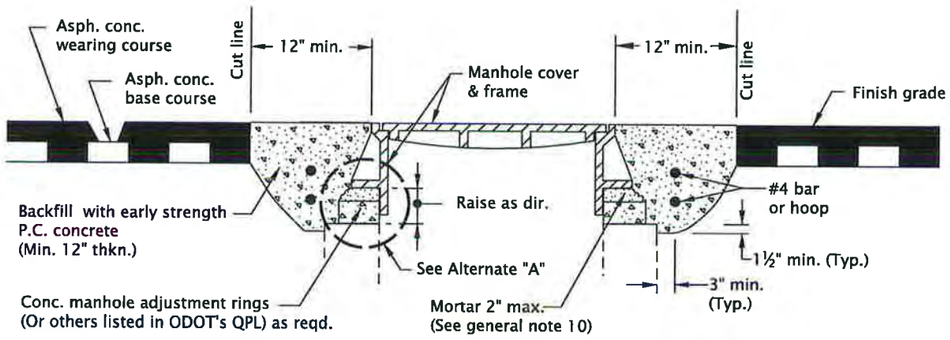
2021

DATE	REVISION DESCRIPTION

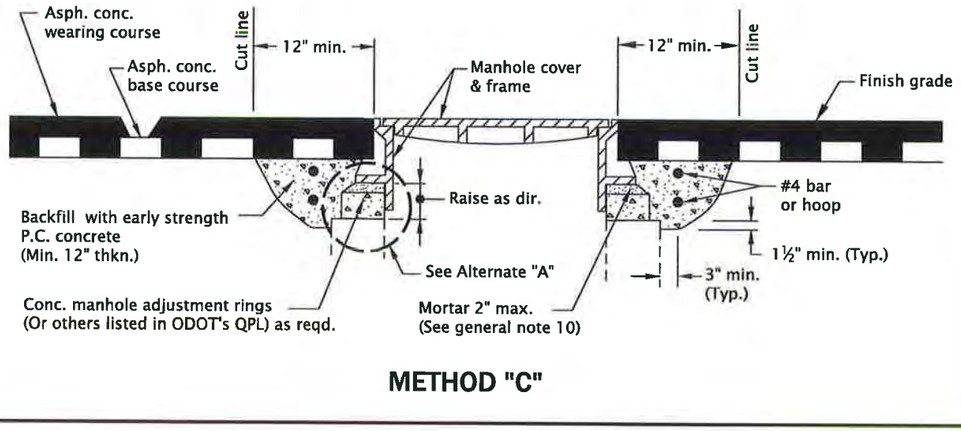
RD356



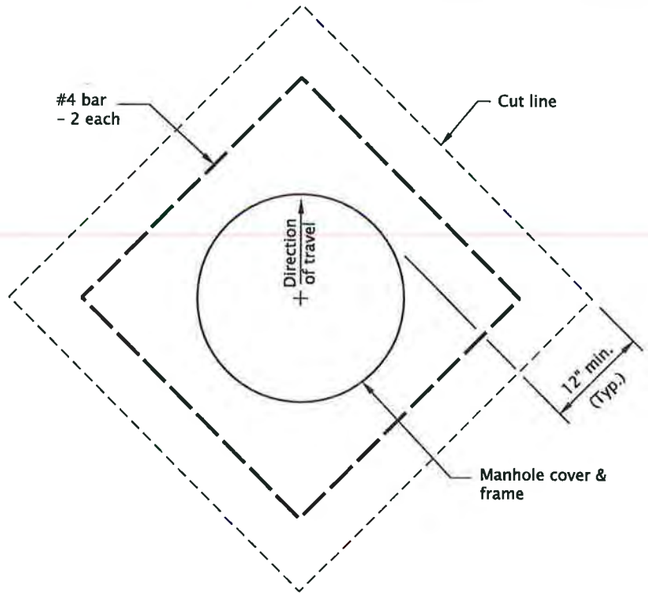
METHOD "A"



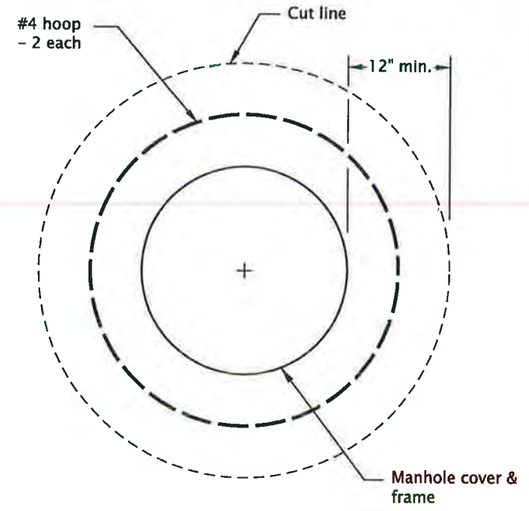
METHOD "B"



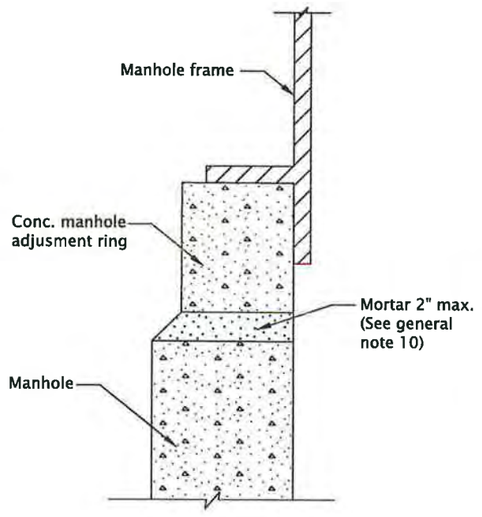
METHOD "C"



**PLAN
SQUARE CUT**



**PLAN
CIRCULAR CUT**



ALTERNATE "A"

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Cover manhole with building paper and const. asph. conc. base course and wearing courses.
2. Saw cut square or circular excavation around manhole 12" min. from manhole frame.
3. Raise manhole cover and frame to finish grade by installing conc. manhole adjustment rings and leveling mortar, as shown.
4. Backfill with early strength Portland Cement Concrete. All concrete shall be commercial grade concrete.
5. Protect from traffic loading until conc. has cured to 3000 psi.
6. Apply tack coat to edges of existing pavement before installing patch.
7. Finish joint with asphalt seal and sand.
8. See Std. Dwg. RD336 for manhole steps details.
9. See appropriate manhole standard drawings for details not shown.
10. Use epoxy for synthetic grade rings.
11. See Std. Dwg. RD336 for tracer wire details.
12. See Std. Dwg. RD356 for manhole covers and frames.

CALC. BOOK NO. N/A

SDR DATE 21-JUL-2015

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

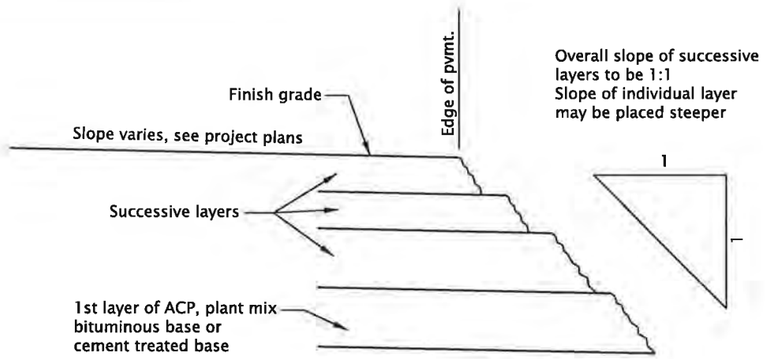
MANHOLE FRAME ADJUSTMENT

2021

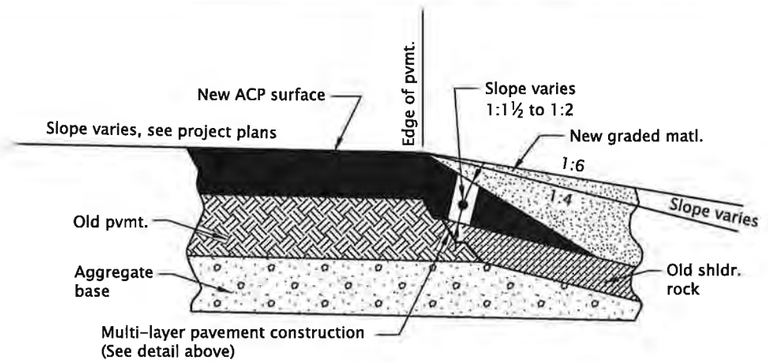
DATE	REVISION DESCRIPTION

RD360

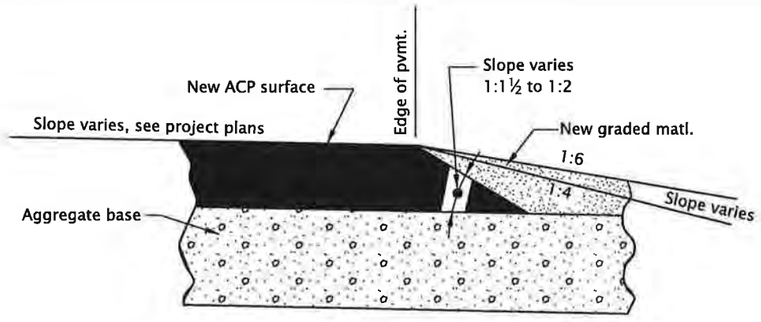
20-JUL-2020 rd360.dgn



MULTI-LAYER PAVEMENT CONSTRUCTION



SAFETY EDGE (RECONSTRUCTION INCLUDING MILL & INLAY)



SAFETY EDGE (NEW CONSTRUCTION)

CALC. BOOK NO. N/A

SDR DATE 25-JUL-2017

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

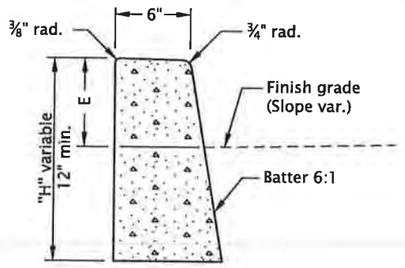
OREGON STANDARD DRAWINGS

ASPHALT CONCRETE PAVEMENT (ACP) DETAILS

2021

DATE	REVISION DESCRIPTION

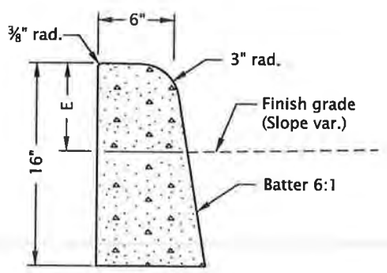
rd615.dgn 20-JUL-2020



O.D.O.T. & City of Portland Standard "H"=16"

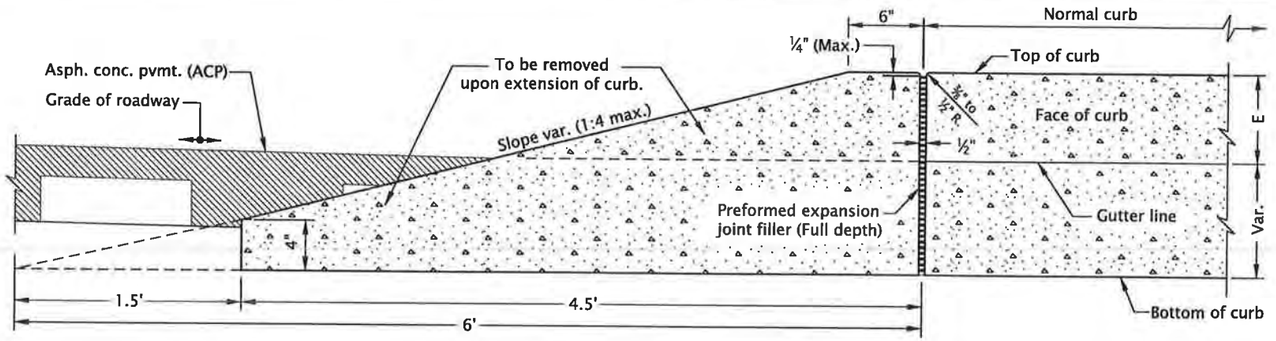
STANDARD CURB

(See general note 11)

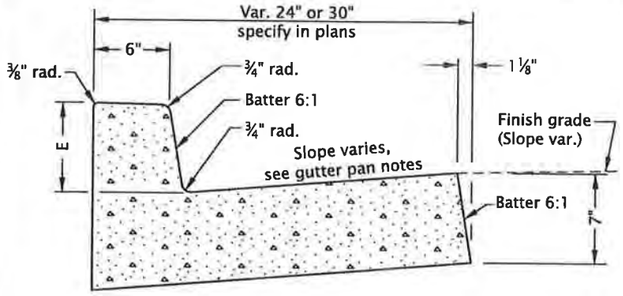


MOUNTABLE CURB

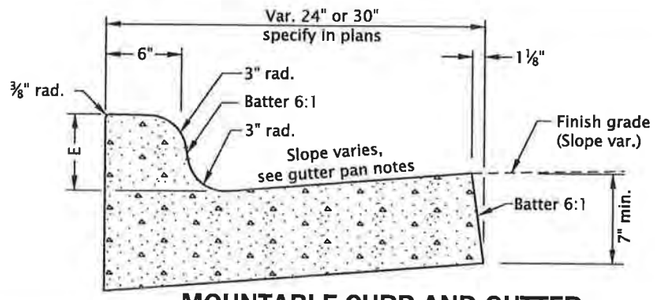
(See general note 11)



CURB ENDING DETAIL



CURB AND GUTTER



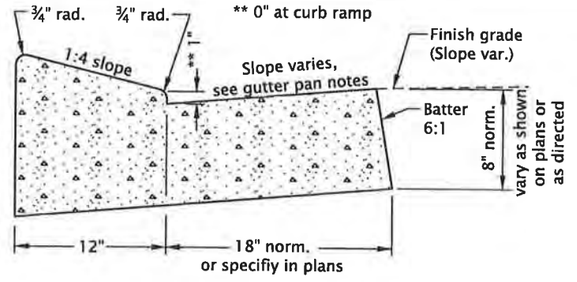
MOUNTABLE CURB AND GUTTER

GUTTER PAN NOTES:

Slope 5.0% normal.

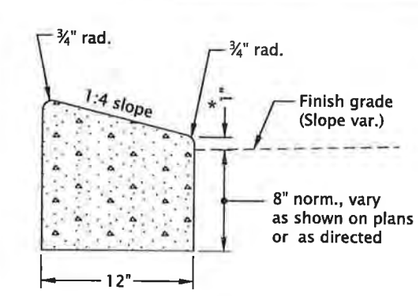
Slope 4.0% max. at curb ramps.

Vary slope as reqd. for drainage. Vary where shown on plans, and allowed by jurisdiction.



LOW PROFILE MOUNTABLE CURB AND GUTTER

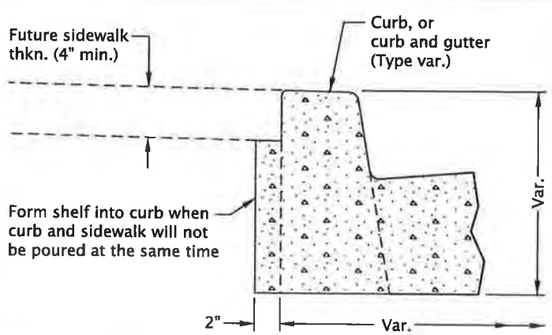
(Where shown on plans)



* 0" for Truck Apron

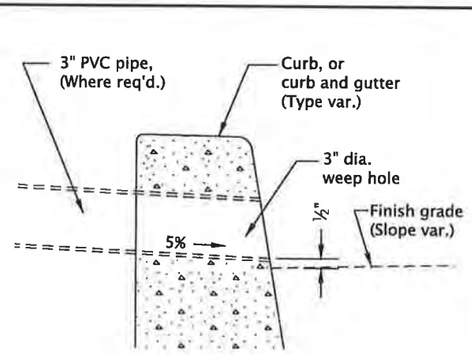
LOW PROFILE MOUNTABLE CURB

(See general note 11)



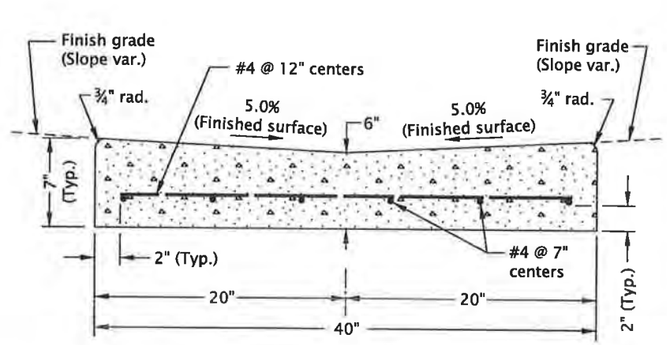
MODIFICATION FOR KEYWAY

(Where shown on plans)



WEEP HOLE DETAIL

(Where shown on plans, and allowed by jurisdiction)



VALLEY GUTTER

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Curb exposure "E" = 6" to 9", as measured vertically from flowline to highest point on curb. Vary as shown on plans or as directed. O.D.O.T standard "E"=7".
2. Const. curb expansion joints at 200' maximum spacing, and at points of tangency, and at ends of each driveways.
3. Const. curb contraction joints at 15' maximum spacing, and at ends of each inlet and curb ramp.
4. Transitions shall be used to connect curbs of different exposures "E". ("E" is the total vertical dimension of those curb surfaces having a slope of 1:1 or steeper). Minimum desirable transition length shall be 20' for each 1" difference in "E".
5. Tops of all curbs shall slope toward the roadway at 1.5% max. (Max. 2.0% finished surface slope), unless otherwise shown, or as directed.
6. Dimensions are nominal, vary to conform with curb machine approved by the engineer.
7. Dimensions adjacent to radii are measured to the point of intersection of curb surfaces.
8. For sidewalk details, and monolithic curb & sidewalk, see Std. Dwgs. RD720 & RD721.
9. For drainage curbs, see Std. Dwg. RD701.
10. For curb ramp details, see Std. Dwgs. RD900 series.
11. On or along state highways, curb and gutter is required at curb ramp.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

CALC. BOOK NO. N/A

SDR DATE 20-JUL-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

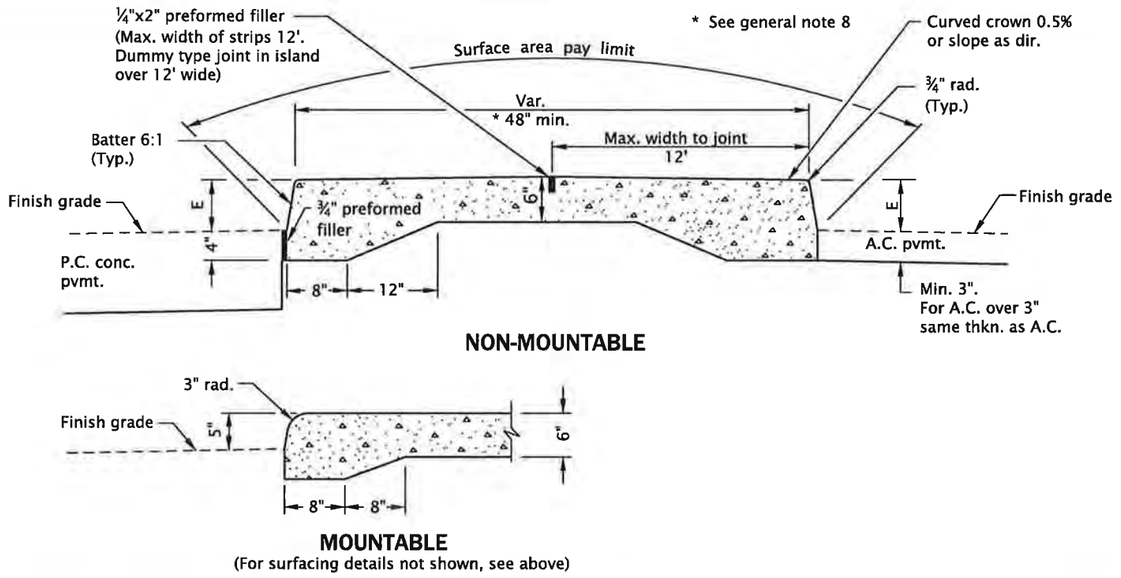
CURBS

2021

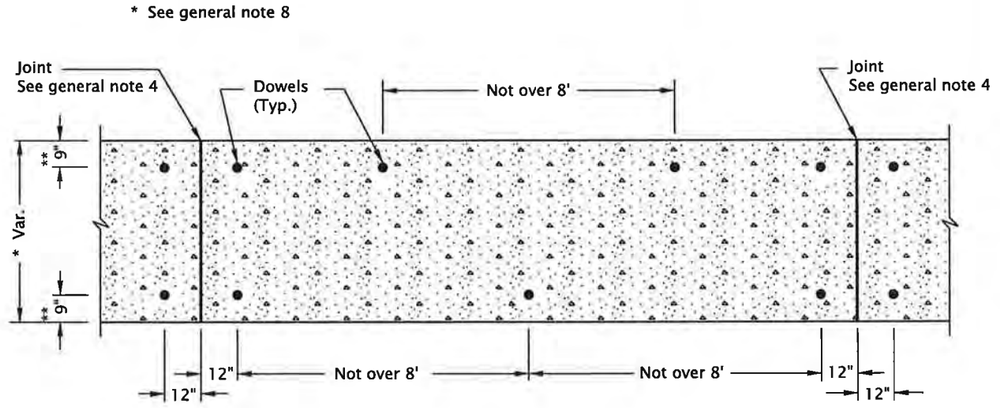
DATE	REVISION DESCRIPTION

rd700.dgn 20-JUL-2020

RD700

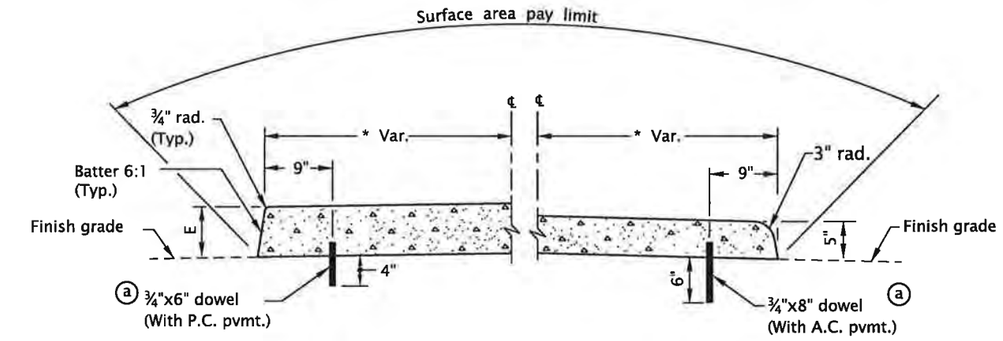


TYPE A



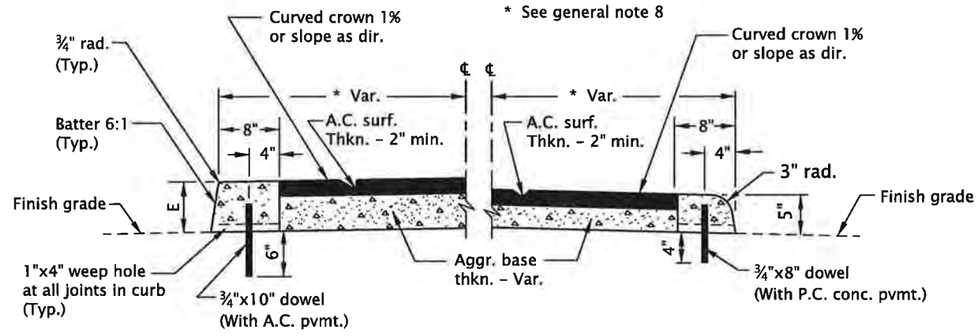
DOWEL PLAN
FOR TYPE C OR TYPE CA ISLANDS & TRANSITIONS
(ON SURFACE OF NEW OR EXISTING PAVEMENT)

** Also see below for type CA island requirement.



ⓐ No dowels reqd. for Type C islands 5' wide or wider

TYPE C



TYPE CA

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Curb exposure "E" = 7" normal. Vary as shown on plans or as directed.
2. Standard batter is shown. Vary as shown on typical section or as directed.
3. Transverse joints in conc. islands to match joints in conc. pvmt. and to be of same type (Omit dowels in expansion joints).
4. Set joint spacing 200' max. for expansion and 15' max. for contraction.
5. Place preformed filler along one side of conc. islands in conc. pvmt. and around all curved ends.
6. Dowels shall be ¾" dia. with length as shown.
   In new conc. pvmt. set dowels before conc. hardens.
   In extg. conc. pvmt. drill holes 1½" dia. and grout dowels in.
   In A.C. pvmt. drive dowels.
7. For transitions to traffic separators, see Std. Dwg. RD706.
8. Minimum island width is 48". For accessible route islands, see Std. Dwg. RD710.

CALC. BOOK NO. N/A

SDR DATE 16-JUL-2018

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

ISLANDS

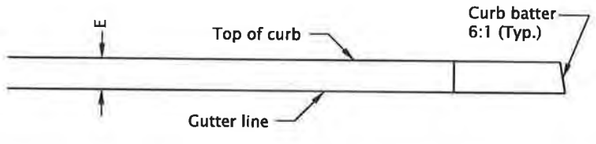
2021

DATE	REVISION DESCRIPTION

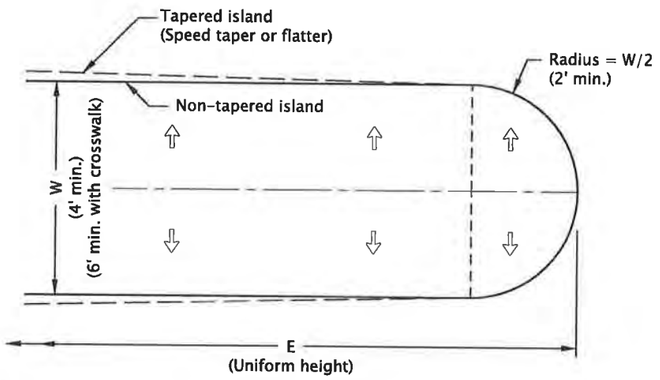
RD705

rd705.dgn 20-JUL-2020

rd707.dgn 20-JUL-2020

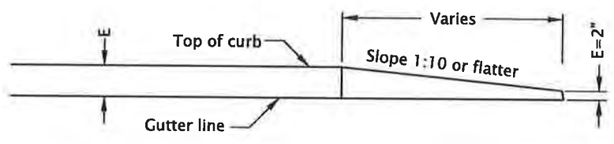


ELEVATION

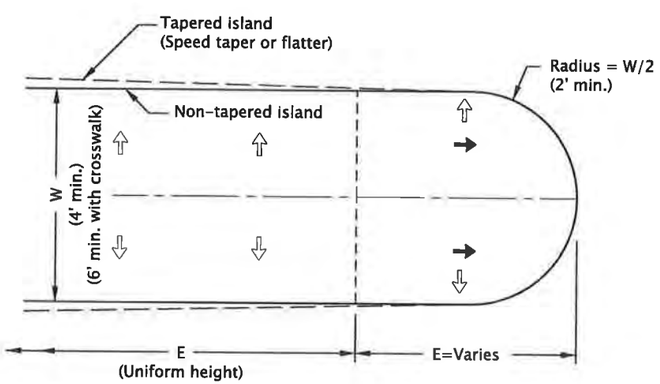


PLAN

OPTION "A"

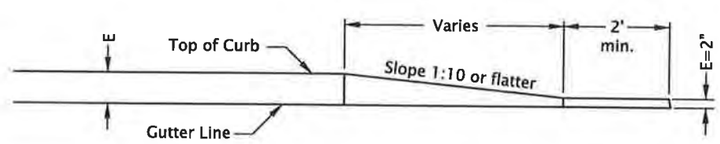


ELEVATION

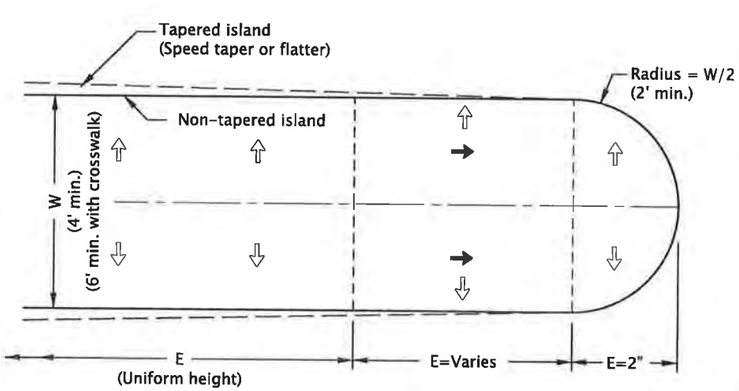


PLAN

OPTION "B"



ELEVATION



PLAN

OPTION "C"

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Curb type and median width as shown on plans or as directed.
2. Curb exposure "E" = 7" normal. Vary as shown on plans or as directed.
3. Standard batter is shown. Vary as shown on typical section or as directed.
4. See Std. Dwgs. RD700, RD701, RD705, RD706 & RD710 for additional details.
5. Site conditions normally require a project specific design, which considers roadway conditions (sheet flow limits, cross slope, superelevation, profile, pavement type, lane and shoulder widths, etc.).
6. See Std. Dwg. RD710 for accessible route islands.

⇨ Slope (2.0% normal)

➔ Slope (varies)

E Curb exposure

CALC. BOOK NO. N/A

SDR DATE 22-JUL-2016

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

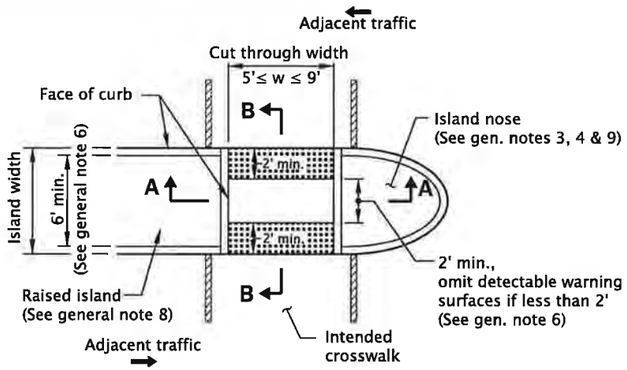
OREGON STANDARD DRAWINGS

ISLAND NOSE TREATMENTS

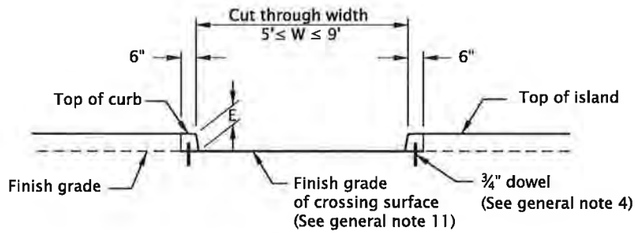
2021

DATE	REVISION DESCRIPTION

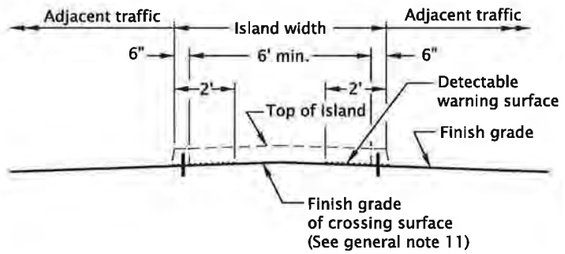
RD707



PLAN



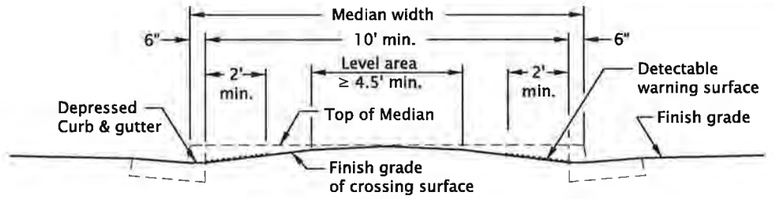
SECTION A-A



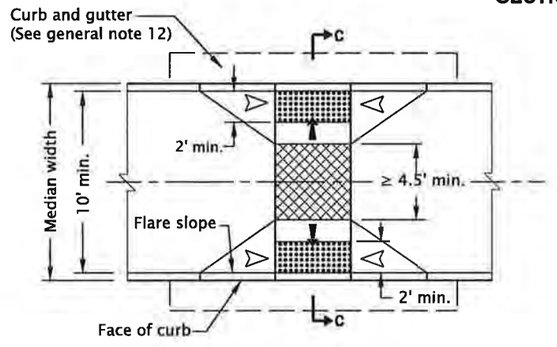
SECTION B-B

MEDIAN ISLAND CROSSING (CUT THROUGH)

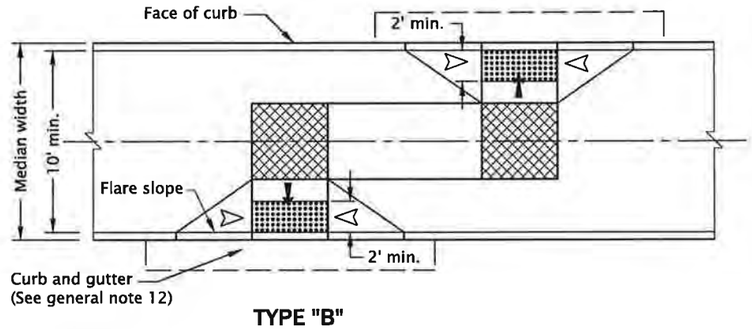
(A.C. pavement shown)



SECTION C-C



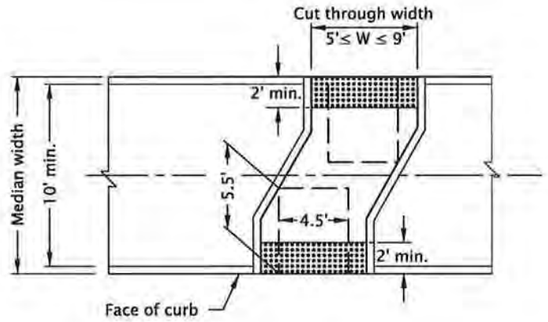
TYPE "A"



TYPE "B"

MEDIAN RAISED CROSSING

(P.C. conc. surface shown)



MEDIAN CUT-THROUGH CROSSING

(Asph. conc. surface shown)

LEGEND:

- Marked or intended crossing location
- Level area (Turning space/landing)
  Unobstructed 4.5' x 4.5'
  With obstruction 4.5' x 5.5' (Longer dimension in direction of pedestrian street crossing). For the purposes of this application, a max. 2.0% finished surface slope (for drainage) is considered level.
- Detectable warning surface
- Cross slope 1.5% max.
  (Max. 2.0% finished surface slope)
- Running slope 7.5% max.
  (Max. 8.3% finished surface slope)
- Flare slope
  (Max. 10.0% finished surface slope)
- Zero curb exposure
- Clear space 4.5' x 5.5'
  (Longer dimension in direction of pedestrian street crossing)

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Accessible route islands are based on applicable ODOT Standards.
2. Place detectable warning surface at the back of curb for a minimum depth of 2' at curb ramp that is adjacent to traffic. For details not shown, see Std. Dwgs. RD902 through RD908.
3. The min. area of islands that contain signal poles, pedestals, etc., shall be 75 sq. ft. Square feet to be measured to outer perimeter of entire island.
4. For cut through islands dowel each island segment to the pvmt. with a min. of 2, ¾" dia. dowels. Dowel the nose section of the raised median island with a minimum of 2, ¾" dia. dowels. Place dowels as directed. See Std. Dwg RD705.
5. Align curb ramps for lowered or partially lowered island and cut through island with the crosswalk.
6. Detectable warning surfaces shall be separated by a 2.0 ft minimum length of walkway without detectable warnings. Where no curb, the detectable warning surface shall be placed at the edge of roadway.
7. Grade breaks at the top and bottom of curb ramp runs shall be perpendicular to the direction of the ramp run. Grade breaks shall not be permitted on the surface of ramp runs and turning spaces. Surface slopes that meet at grade breaks shall be flush.
8. Curb type and island width as shown on plans or as directed. Type A or Type CA islands are acceptable alternates, see Std. Dwg. RD705.
9. See project plans for details not shown.
   See Std. Dwg. RD707 for island nose treatment.
   See Std. Dwg. RD705 for expansion and contraction joint spacing.
   See Std. Dwgs. RD700, RD701, RD705, RD706 & RD755 for additional details.
   See TM Standard Drawings for signal pole, pedestrian pedestal, crosswalk markings, and related details.
10. Details intended for pedestrian route only. For multi-use path, see project plans for specific details.
11. When crossing surface grade is ≤ 5%, a level area is not required.
12. On or along state highways, curb and gutter is required at curb ramps.

CALC. BOOK NO. N/A

SDR DATE 20-JUL-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

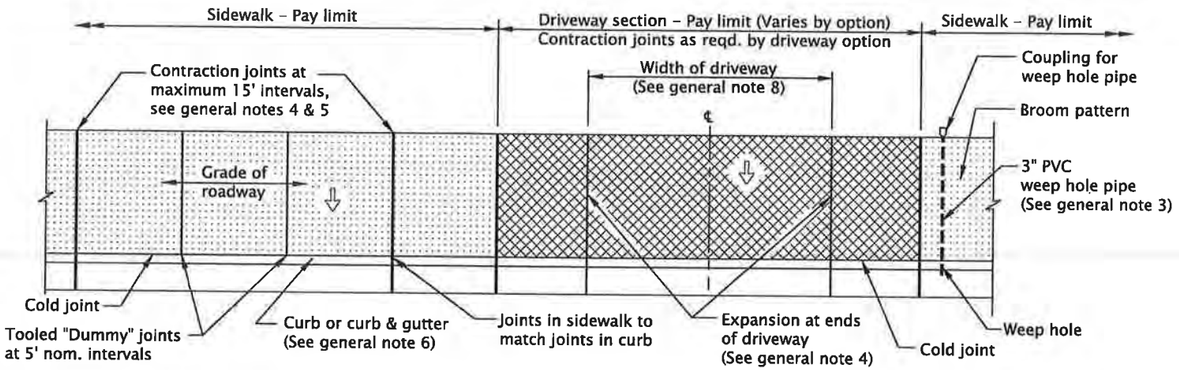
ACCESSIBLE ROUTE ISLANDS

2021

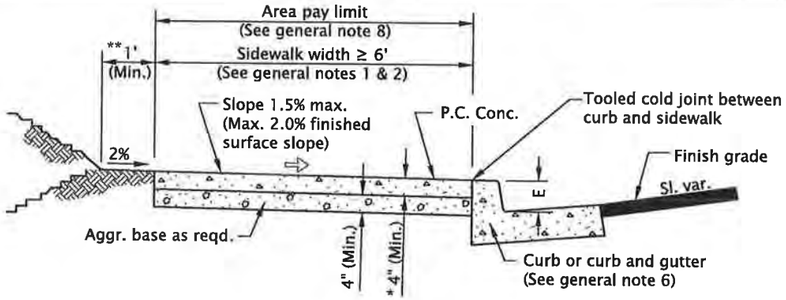
DATE	REVISION DESCRIPTION

rd710.dgn 20-JUL-2020

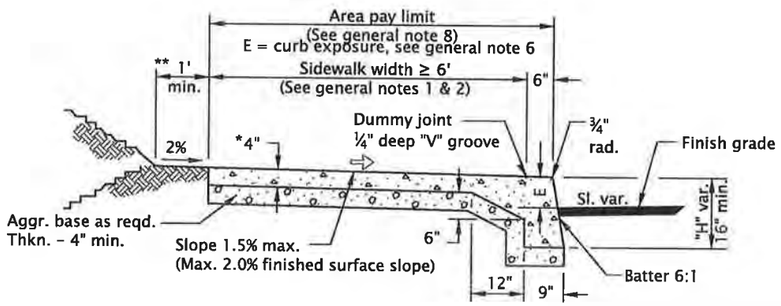
RD710



TYPICAL PLAN VIEW - CURB LINE SIDEWALK



TYPICAL CURB SIDEWALK CROSS SECTION



TYPICAL MONOLITHIC CURB & SIDEWALK CROSS SECTION

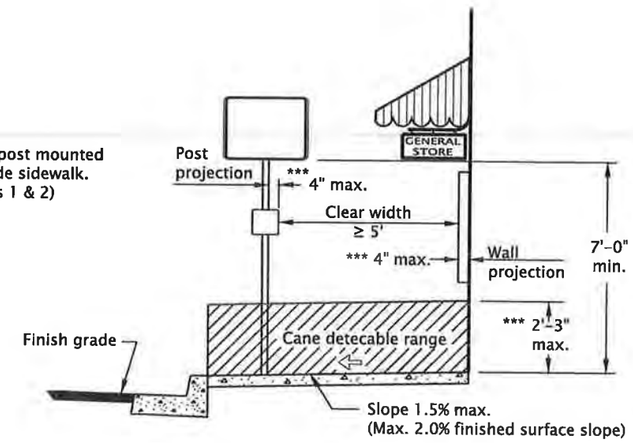
E = curb exposure, see general note 6

* Min. 4" or as specified in plans. A thickness ≥ 6" if sidewalk is intended as portion of a driveway or mountable curb is used.

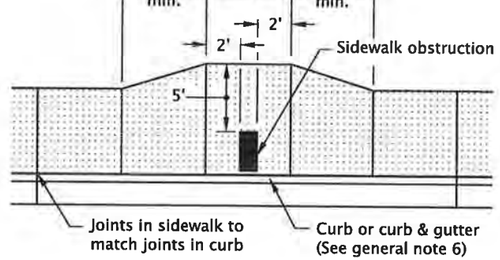
** Provide compacted backfill adjacent to curb and sidewalk

*** Objects with base below 2'-3" may protrude any distance as long as the 5' circulation path is maintained. When an object with a base higher than 2'-3" protrudes further than 4" provide a detection below protrusion to delineate edge.

Building, wall, or post mounted obstruction outside sidewalk. (See general notes 1 & 2)



CLEAR CIRCULATION PATH



REQUIRED SIDEWALK WIDENING AROUND OBSTRUCTIONS

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Include additional paved or unpaved 2' shy distance to vertical faces higher than 5' such as retaining walls, sound walls, fences and buildings.
2. Curb type and sidewalk width as shown on plans or as directed. On sidewalks 8' and wider, provide a longitudinal joint at the midpoint.
3. Install 3" pvc weep hole pipes in sidewalks where shown on plans, and allowed by jurisdiction. Place contraction joint over top of pipe. See Std. Dwg. RD700 for weep hole details.
4. Provide expansion joints around poles, posts, boxes, at ends of each driveway, and other fixtures which protrude through or against the structures. For sidewalk, monolithic curb & sidewalk, const. expansion joints at 45' maximum spacing. See Std. Dwg. RD722 for expansion joints details.
5. Const. contraction joints at 15' maximum spacing, and at ends of each curb ramp. See Std. Dwg. RD722 for contraction joints details.
6. For curb details, see Std. Dwgs. RD700 & RD701. ODOT standard E=7".
7. Sidewalk details are based on applicable ODOT standards.
8. Fully lowered sidewalk shown; see project plans for the diveway design specified. For driveway details not shown, see Std. Dwgs. RD725, RD730, RD735, RD740, RD745 & RD750.
9. See project plans for details not shown.

LEGEND

- Sidewalk pay limit.
- Driveway pay limit, varies by option, (See general note 8).
- ⇦ Cross slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)

CALC. BOOK NO. N/A

SDR DATE 21-JUN-2019

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

CURB LINE SIDEWALKS

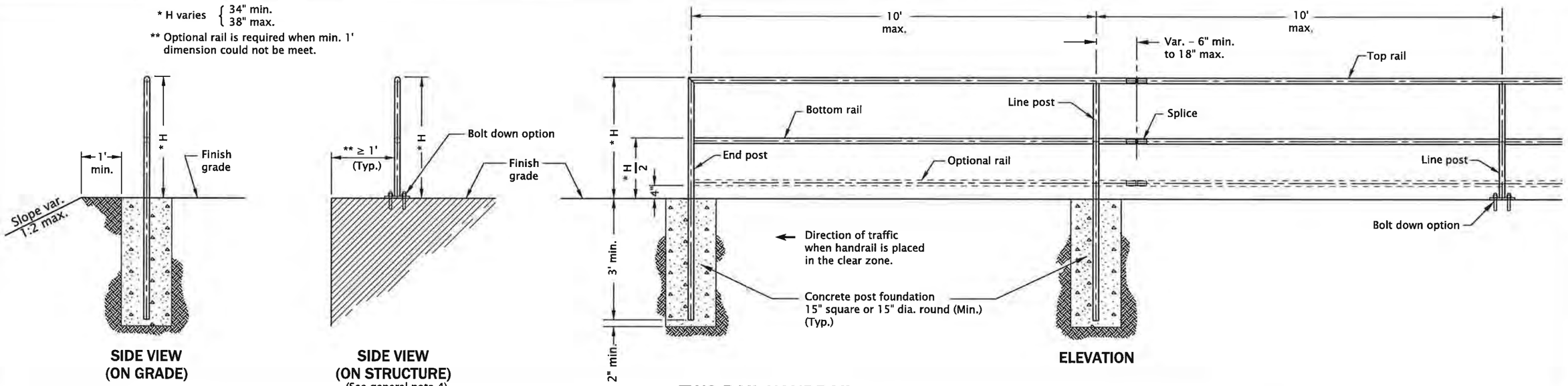
2021

DATE	REVISION DESCRIPTION

rd720.dgn 20-JUL-2020

RD720

rd770.dgn 20-JUL-2020

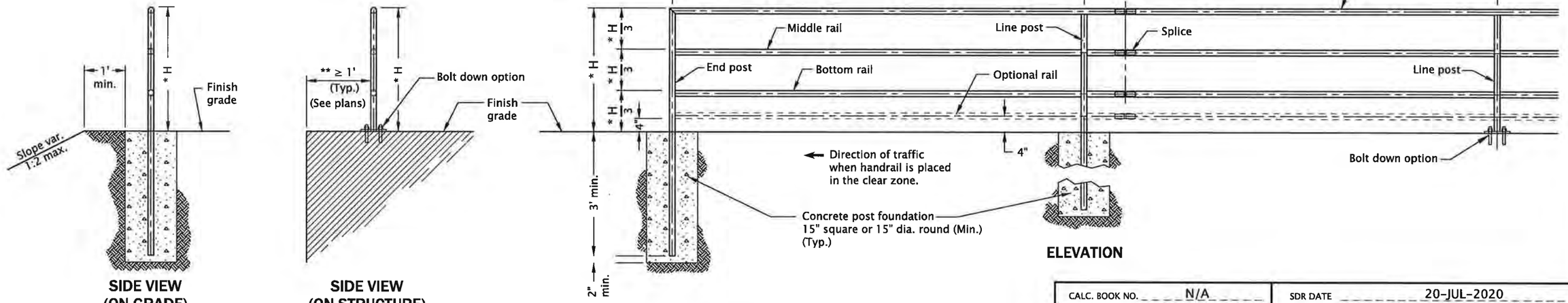


SIDE VIEW (ON GRADE)

SIDE VIEW (ON STRUCTURE) (See general note 4)

ELEVATION

TWO RAIL HANDRAIL



SIDE VIEW (ON GRADE)

SIDE VIEW (ON STRUCTURE) (See general note 4)

ELEVATION

THREE RAIL HANDRAIL

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Handrail details are based on applicable ODOT Standards.
2. See Std. Dwg. RD771 for details not shown.
3. Hot-dip galvanize all metal parts after fabrication.
4. Structure varies, see project plans.
5. Handrail height (H) shall be constant within a ramp run or stairway.
6. All concrete shall be commercial grade concrete.
7. See Std. Dwg. RD120 for concrete stairway.
8. See project plans for details not shown.

CALC. BOOK NO. N/A

SDR DATE 20-JUL-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

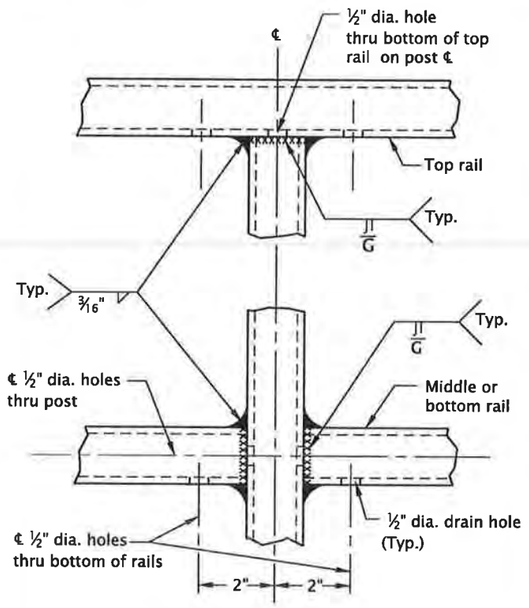
OREGON STANDARD DRAWINGS

METAL HANDRAIL

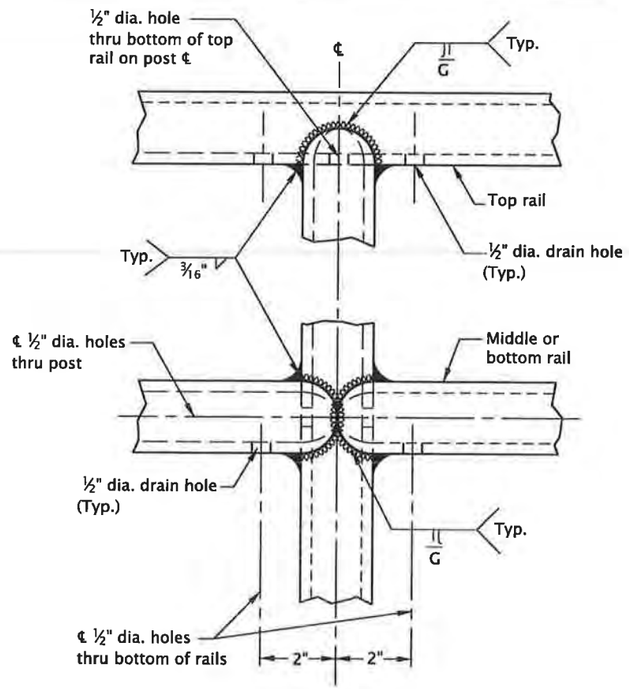
2021

DATE	REVISION DESCRIPTION

RD770



WELD DETAILS FOR STEEL TUBING



WELD DETAILS FOR STEEL PIPE

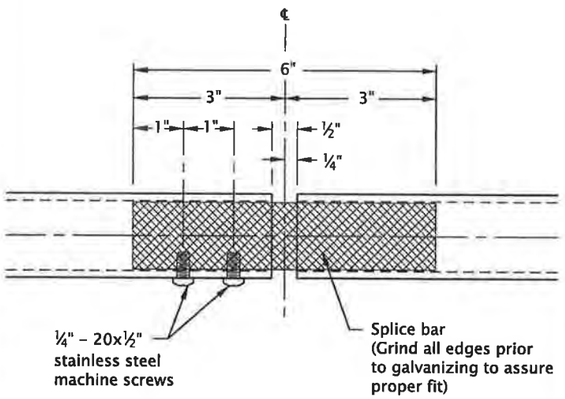
MATERIAL TABLES

STEEL PIPE POST & RAIL MEMBERS				ROUND SPLICE BAR
NOM. DIA.	SCH.	O.D.	I.D.	O.D.
1¼"	40	1.660"	1.380"	1¼"
1½"	10	1.900"	1.682"	1½"
	40	1.900"	1.610"	

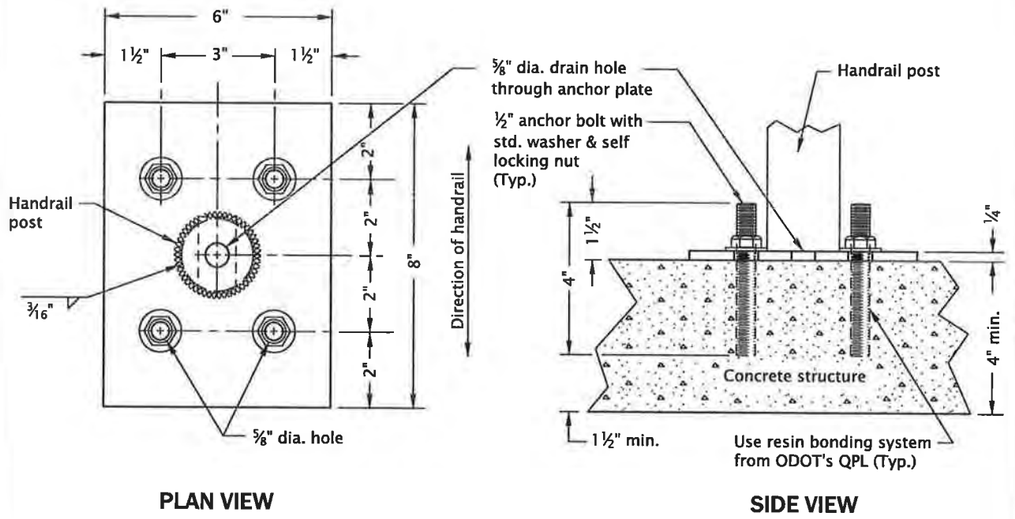
SQUARE STRUCTURAL STEEL TUBING POST & RAIL MEMBERS		SQUARE SPLICE BAR
Outside Dimensions	Wall Thickness	Outside Dimensions
1½"x1½"	⅛"	1"x1 "
	3/16"	¾"x¾"

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Handrail details are based on applicable ODOT Standards.
2. Select materials from tables. Posts and rails shall be identical material. Structural steel tubing shall conform to ASTM specification A500, grade B.
3. Posts shall be vertical. The top rail shall be continuous over a minimum of two posts.
4. On structure, the railing shall conform to the vertical alignment of the structure. Rails shall have a splice in the post space occurring at expansion joints.
5. On grade, rails shall have splices at intervals not to exceed 100'.
6. Hot-dip galvanize all metal parts after fabrication.
7. See Std Dwg. RD770 for details not shown.
8. See Std Dwg. RD120 for concrete stairway.
9. See project plans for details not shown.



SPLICE DETAIL



PLAN VIEW

SIDE VIEW

ANCHOR PLATE FOR BOLT DOWN OPTION

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

CALC. BOOK NO. N/A

SDR DATE 20-JUL-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

METAL HANDRAIL DETAILS

2021

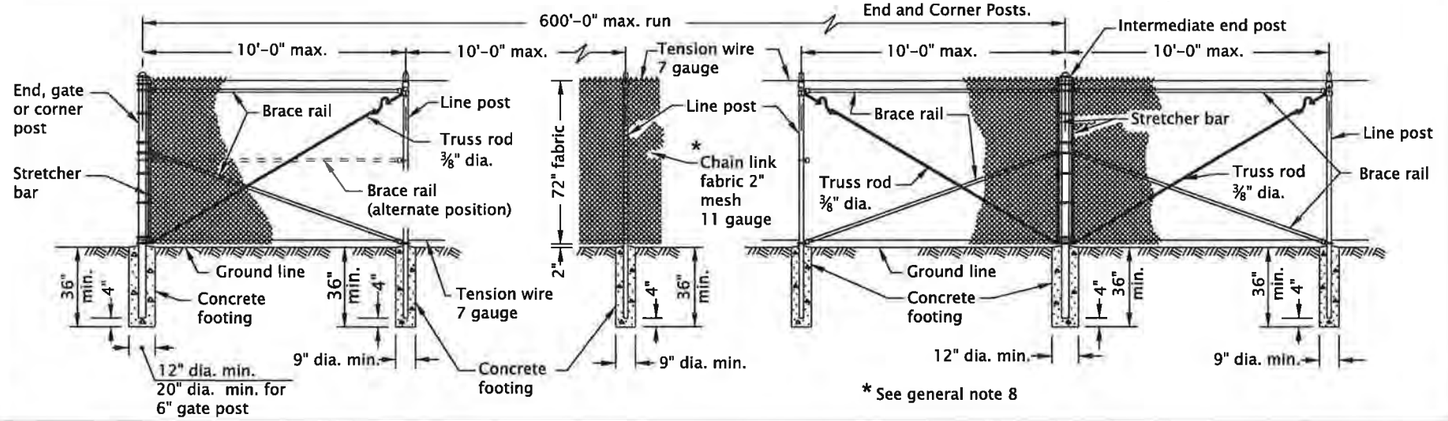
DATE	REVISION DESCRIPTION

rd771.dgn 20-JUL-2020

RD771

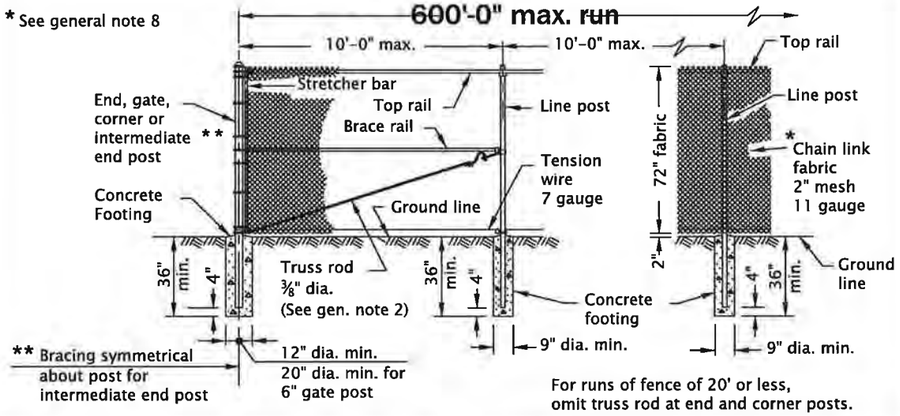
rd815.dgn 20-JUL-2020

TYPE CL-6

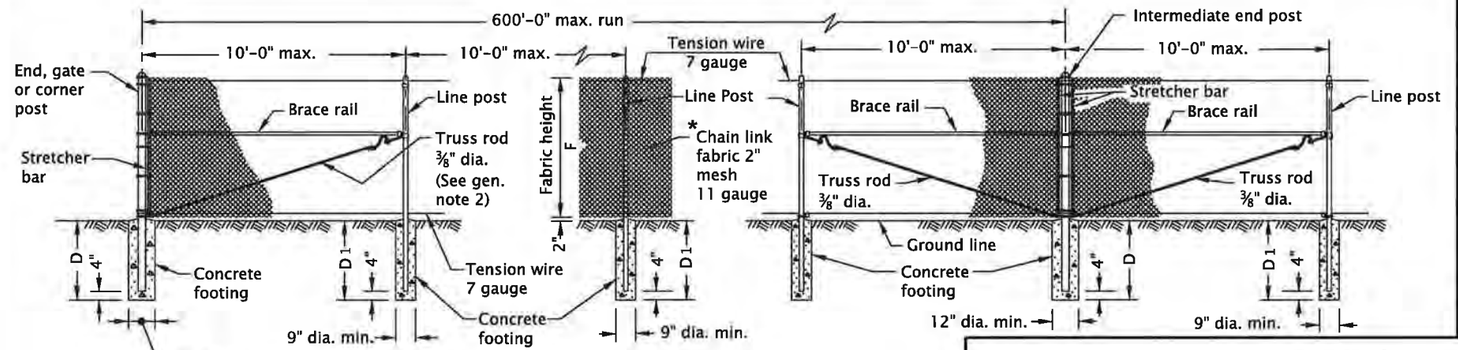


* See general note 8

TYPE CL-6R



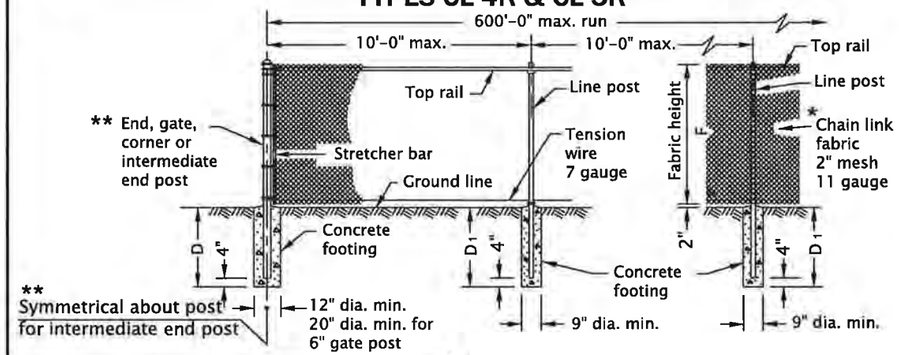
TYPES CL-4 & CL-5



* See general note 8

TYPE	D min. (in)	D1 min. (in)	F nom. (in)
CL-4	30	24	48
CL-5	36	36	60

TYPES CL-4R & CL-5R



* See general note 8

TYPE	D min. (in)	D1 min. (in)	F nom. (in)
CL-4R	30	24	48
CL-5R	36	36	60

For runs of fence of 20' or less, omit truss rod at end and corner posts.

GATES

* See general note 8

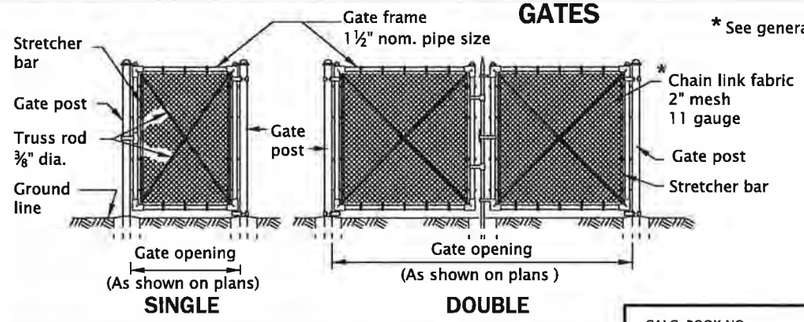


TABLE 1

TYPE	MEMBER								GATE OPENING (ft)		GATE POSTS	
	BRACE AND TOP RAILS		LINE POSTS				END, CORNER & INTERMEDIATE END POST					
	TUBULAR		TUBULAR		H-SECTION		TUBULAR				TUBULAR	
	Fence Industry (in)	Nom. Dia. (in)	Fence Industry (in)	Nom. Dia. (in)	Size (in)	Wt. lb/ft	Fence Industry (in)	Nom. Dia. (in)	SINGLE GATE	DOUBLE GATE	Fence Industry (in)	Nom. Dia. (in)
STEEL CL-4 & CL-4R CL-5 & CL-5R	1⅝	1¼	1⅞	1½	1⅞ x 1⅝	2.72	2⅜	2	Up thru 6	Up thru 12	2⅞	2½
									7 thru 13	13 thru 26	4	3½
STEEL CL-6 & CL-6R	1⅝	1¼	2⅜	2	2¼ x 2	4.10	2⅞	2½	14 thru 18	27 thru 36	6⅝	6

NOTE: For CL-6, CL-6R, CL-8, CL-8R, CL-10 & CL-10R, the hardware is minimum and does not include slat wind loading.

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Do not use top rail where fence can be struck by an errant vehicle.
2. Fittings shown are illustrative of use and not specific as to design.
3. Gate posts on each side of a gate opening to be the same size. At a double gate installation with unequal width gates, size of both posts to be as indicated for a single gate installation of the wider gate width.
4. For cross sectional dimensions of members, see Table 1.
5. Posts and rails with sections not shown that meet the requirements of AASHTO M181 are acceptable alternates. See ODOT's QPL for acceptable alternates.
6. All concrete shall be commercial grade concrete.
7. All chain link fabric top and bottom selvage shall be knuckled finish.
8. Chain link fabric for the fence to be installed with pickets shall be 9 gauge wire woven in 3½" by 5½" diamond mesh.
9. See project plans for details not shown.
10. Add fence grounding as required.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

CALC. BOOK NO. N/A

SDR DATE 13-JAN-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

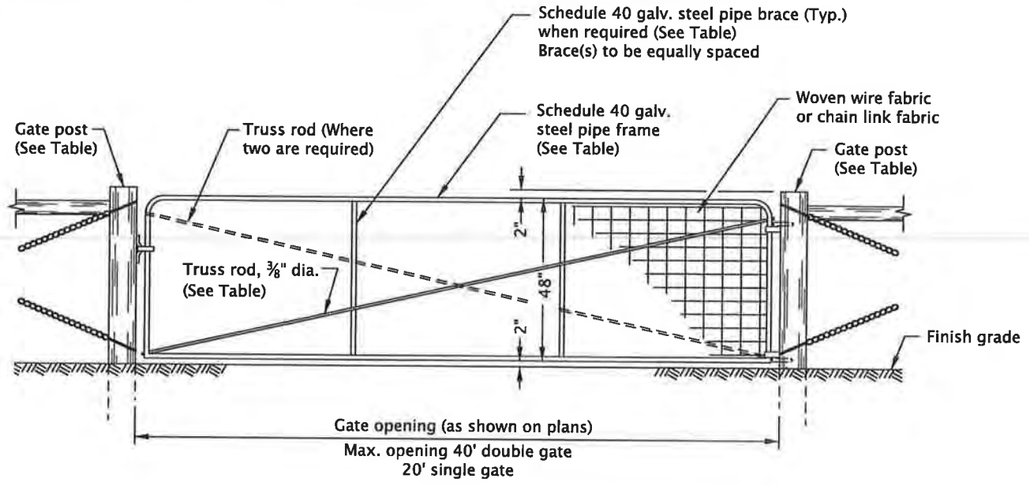
OREGON STANDARD DRAWINGS

CHAIN LINK FENCE

2021

DATE	REVISION DESCRIPTION

rd820.dgn 20-JUL-2020



GATE COMPONENTS								GATE POSTS ①②					
								WOOD				STEEL	
GATE OPENING (ft)		SCHEDULE 40 GALV. STEEL PIPE FRAME		SCHEDULE 40 GALV. STEEL PIPE BRACE			TRUSS RODS	* ROUND			SQUARE	SCHEDULE 40 GALV. STEEL PIPE	
SINGLE GATE	DOUBLE GATE	NOM. DIA. (in)	MIN. WT. (lb/ft)	NUMBER	NOM. DIA. (in)	MIN. WT. (lb/ft)		DIA. OF SMALL END (in)			NOM. SIZE (in)	NOM. DIA. (in)	MIN. WT. (lb/ft)
								Min.	Max.	Min. Avg.			
UP thru 6	UP thru 12	1	1.68	–	–	–	–	5	7	6	6x6	2½	5.79
7 thru 11	13 thru 22	1¼	2.27	1	1	1.68	1	5	7	6	6x6	3½	9.11
12 thru 16	23 thru 32	1½	2.72	2	1¼	2.27	2	7	9	8	8x8	6	18.97
17 thru 20	33 thru 40	2	3.65	2	1¼	2.27	2	9	11	10	10x10	6	18.97

① Gate posts on each side of a gate opening to be the same size.
At a double gate installation with unequal width gates, size of both posts to be as indicated for single gate installation of the wider gate width.

② For length, setting and bracing details see end posts, Std. Dwg. RD810.

* Max. taper 1" in 4'

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Gates shown are for use with Fence Types 1, 1-5W and 2.
2. See Std. Dwg. RD810 for details not shown.
3. See project plans for details not shown.
4. Add fence grounding as required.

CALC. BOOK NO. N/A

SDR DATE 13-JAN-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

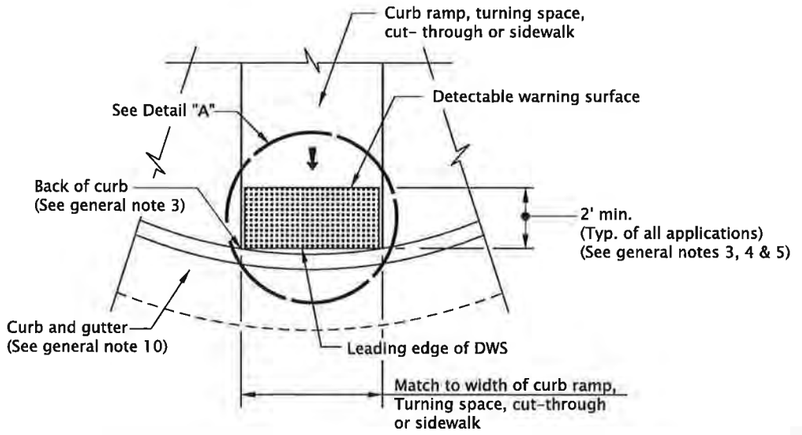
OREGON STANDARD DRAWINGS

FENCE GATES

2021

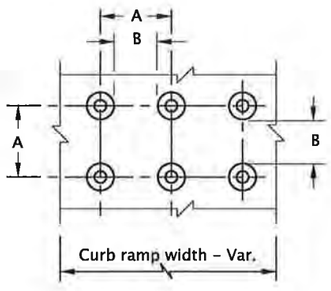
DATE	REVISION DESCRIPTION

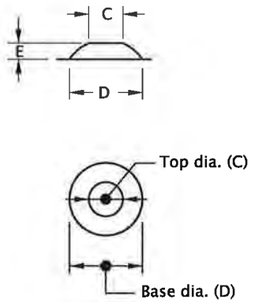
RD820



DETECTABLE WARNING SURFACE DETAIL

	A	B	C	D	E
MIN.	1.60"	0.65"	0.45"	0.90"	0.20"
MAX.	2.40"	--	0.91"	1.40"	0.20"

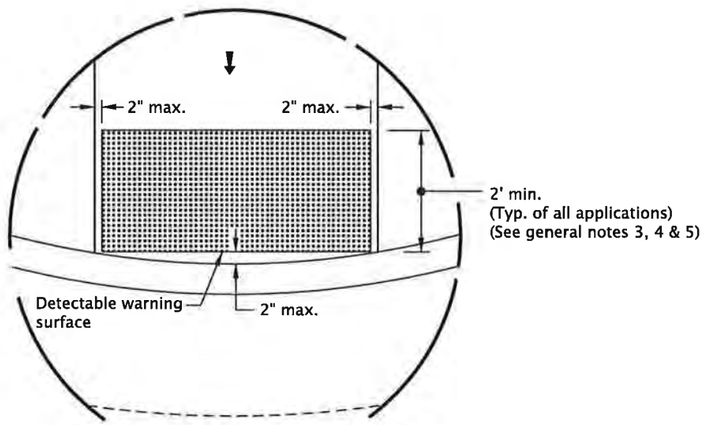




TRUNCATED DOME SPACING

TRUNCATED DOME

TRUNCATED DOME DETAILS



DETAIL "A"

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Detectable warning surface details & locations are based on applicable ODOT Standards.
2. See project plans for details not shown.
   See Std. Dwgs. RD700 & RD701 for curbs.
3. The detectable warning surface shall extend the full width of the curb ramp opening, shared use path, blended transition, turning space, or other roadway entrance as applicable. A gap of up to 2 inches on each side of the detectable warning surface is permitted (measured at the leading edge of the detectable warning surface panel).
4. Detectable warning surface shall be placed at the back of curb for a minimum depth of 2 ft. in the direction of pedestrian travel at curb ramps that are adjacent to traffic. Detectable warning surface may be radial or rectangular, but must comply with the truncated dome size and spacing standards. Detectable warning surface may be cut to meet necessary shape as shown in plans. Detectable warning surface across a grade break is prohibited.
5. Color to be safety yellow if no color specified in construction note. Alternative colors require a design exception on or along state highways.
6. Detectable warning surface shall be used in the following locations:
   a) Curb ramps at street crossings.
   b) Crossing islands (Accessible Route Islands).
   c) Rail crossings.
7. Where public transportation stations (rail, bus, etc.) use platform boarding, detectable warning surface shall be placed along the full edge length of the station, when not protected by platform screens or guards, (see Std. Dwg. RD908).
8. Detectable warning surface shall not be used on the following locations:
   a) End of sidewalk transitions that are not at a crosswalk, (see Std. Dwgs. RD950, RD952 & RD960).
   b) Driveways, unless constructed with curb return or are signalized.
   c) Parking lots, access aisles and passenger loading zones where curb ramp does not lead to vehicular way.
9. Where no curb is present, the detectable warning surface shall be placed at the edge of the roadway.
10. On or along state highways, curb and gutter is required at curb ramps.

LEGEND:

Detectable warning surface

Cross slope 1.5% max.
(Max. 2.0% finished surface slope)
(Normal sidewalk cross slope)

Running slope 7.5% max.
(Max. 8.3% finished surface slope)

CALC. BOOK NO. N/A

SDR DATE 20-JULY-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

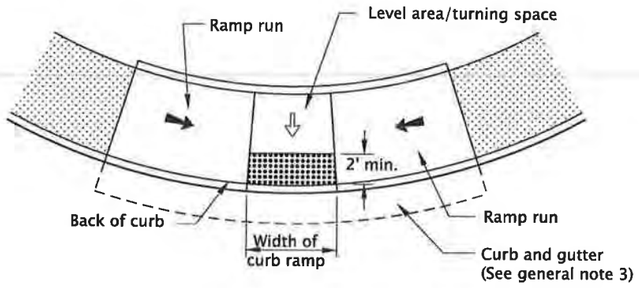
DETECTABLE WARNING SURFACE DETAILS

2021

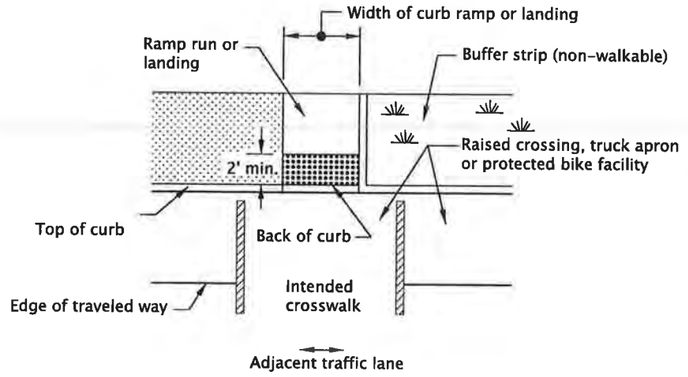
DATE	REVISION DESCRIPTION
07-2020	DRAWING CREATED

rd902.dgn 20-JUL-2020

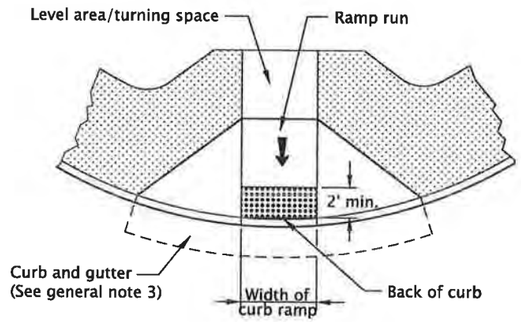
RD902



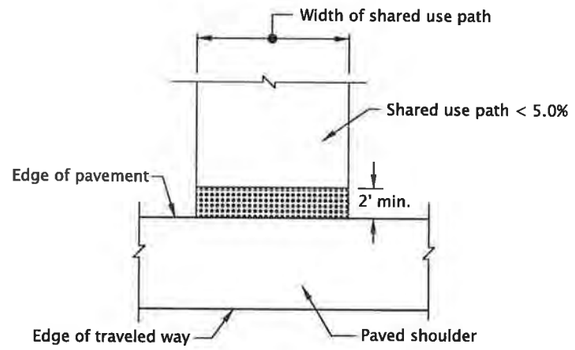
PARALLEL CURB RAMP



RAISED CROSSING, TRUCK APRON OR PROTECTED BIKE FACILITY



PERPENDICULAR CURB RAMP
GRADE BREAK IN FRONT OF CURB



SHARED-USE PATH CONNECTION

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Detectable warning surface details & locations are based on applicable ODOT Standards.
2. See project plans for details not shown.
   See Std. Dwgs. RD700 & RD701 for curbs.
   See Std. Dwg. RD902 for detectable warning surface installation details.
3. On or along state highways, curb and gutter is required at curb ramps.
4. Detectable warning surface placement for perpendicular ramps vary as shown.

LEGEND:

- Marked or intended crossing location
- Sidewalk
- Detectable warning surface
- Cross slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)
- Running slope 7.5% max. (Max. 8.3% finished surface slope)

CALC. BOOK NO. N/A

SDR DATE 20-JULY-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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OREGON STANDARD DRAWINGS

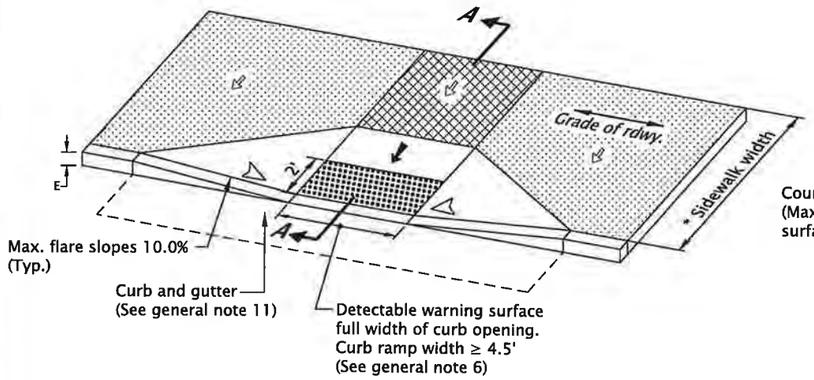
DETECTABLE WARNING SURFACE PLACEMENT FOR CURB RAMPS

2021

DATE	REVISION DESCRIPTION
07-2020	DRAWING CREATED

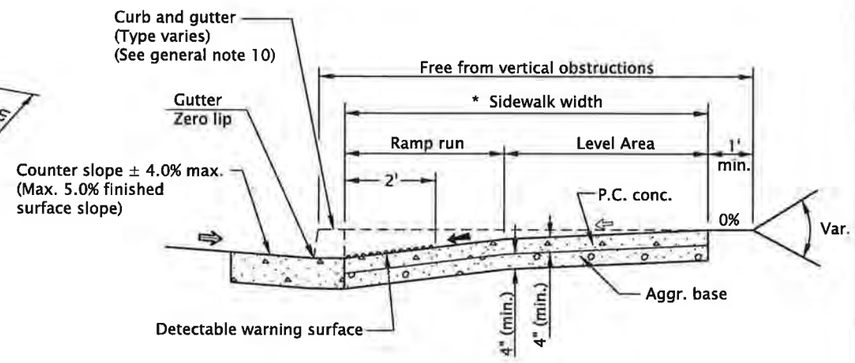
rd904.dgn 20-JUL-2020

RD904



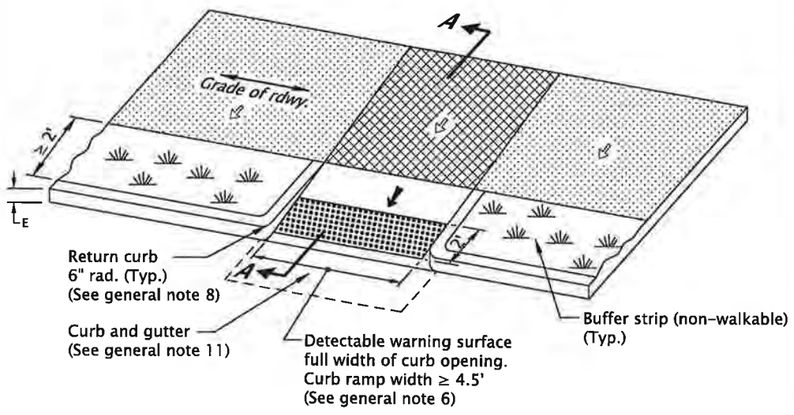
PERPENDICULAR CURB RAMP DETAIL

(Use "Parallel Curb Ramp Detail" or "Combination Curb Ramp Detail" when reqd. turning space cannot be obtained)

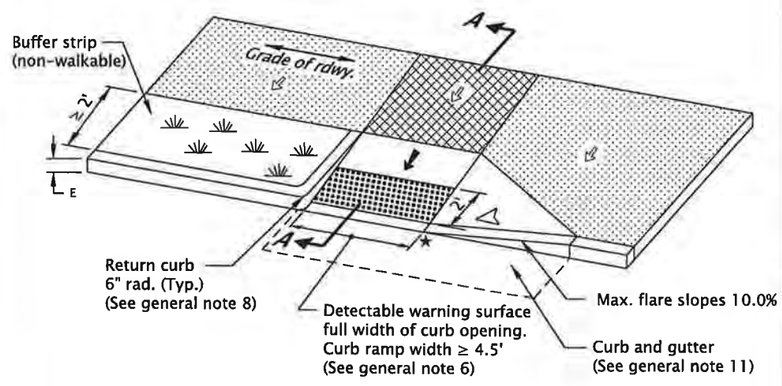


SECTION A-A

* NOTE: Minimum width of 14.25 feet sidewalk for E=7"



THROUGH BUFFER STRIP



WITH SINGLE FLARE

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Curb ramp details are based on applicable ODOT Standards.
2. See Std. Dwgs. RD700 & RD701 for curbs.
   See Std. Dwgs. RD720 & RD721 for sidewalks.
   See Std. Dwgs. RD902 through RD908 for detectable warning surface installation details.
   See Std. Dwgs. RD912 through RD916 for curb ramp placement options.
3. Site conditions normally require a project specific design. See project plans for details not shown.
4. Tooled dummy joints are required at all curb ramp grade break lines, (see Std. Dwg. RD722).
5. Curb ramp slopes shown are relative to the true level horizon (zero bubble).
6. Place detectable warning surface at the back of curb for a minimum depth of 2' in the direction of pedestrian travel full width of curb ramp opening that is adjacent to traffic.
7. Grade breaks at the top and bottom of curb ramp runs shall be perpendicular to the direction of the ramp run. Grade breaks shall not be permitted on the surface of ramp runs and turning spaces. Surface slopes that meet at grade breaks shall be flush.
8. Return curb may be provided in lieu of flared slope only if protected from traverse travel by landscaping, see Std. Dwg. RD721. Return curb shall not reduce width of approaching sidewalk.
9. Curb ramps for shared use paths intersecting a roadway shall be full width of path, excluding flares. When a curb ramp is used to provide bicycle access from a roadway to a sidewalk, the curb ramp opening will be ≥ 8' wide.
10. Place an inlet at upstream side of curb ramp or perform other approved design mitigation. Check the gutter flow depth at curb ramp locations to assure that the design flood does not overtop the back of sidewalk.
11. On or along state highways, curb and gutter is required at curb ramps.

LEGEND:

- Sidewalk
- Detectable warning surface
- Level area (Turning space/landing)
  Unobstructed 4.5' x 4.5'
  With obstruction 4.5' x 5.5' (Longer dimension in direction of pedestrian street crossing).
  For the purposes of this application, a max. 2.0% finished surface slope (for drainage) measured perpendicular in two directions is considered level.
- Cross slope 1.5% max.
  (Max. 2.0% finished surface slope)
  (Normal sidewalk cross slope)
- Running slope 7.5% max.
  (Max. 8.3% finished surface slope)
- Counter slope 4.0% max. ascending or descending,
  (Max. 5.0% finished surface slope)
  Slope as required for drainage
- Flare slope
  (Max. 10% finished surface slope)

CALC. BOOK NO. N/A

SDR DATE 20-JULY-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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OREGON STANDARD DRAWINGS

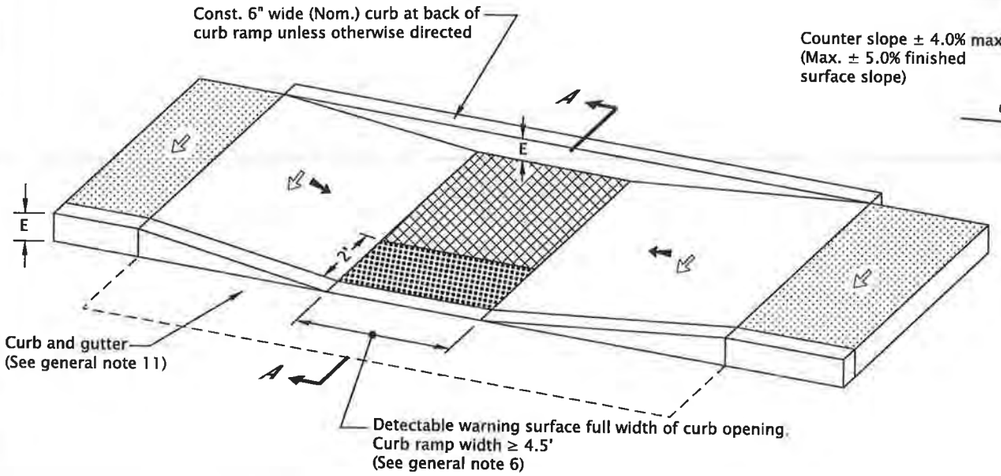
PERPENDICULAR CURB RAMP

2021

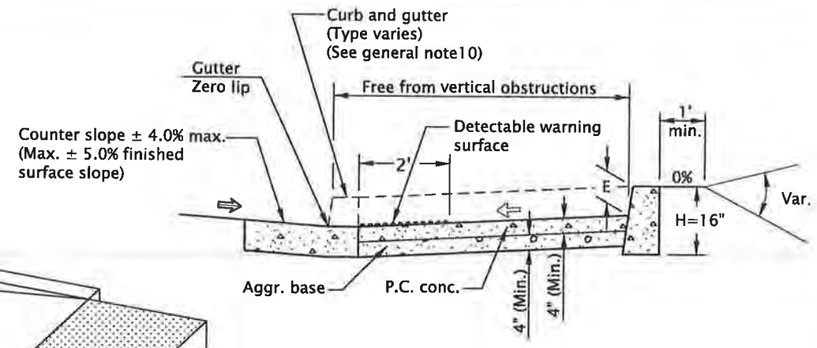
DATE	REVISION DESCRIPTION
07-2020	DRAWING CREATED

rd910.dgn 20-JUL-2020

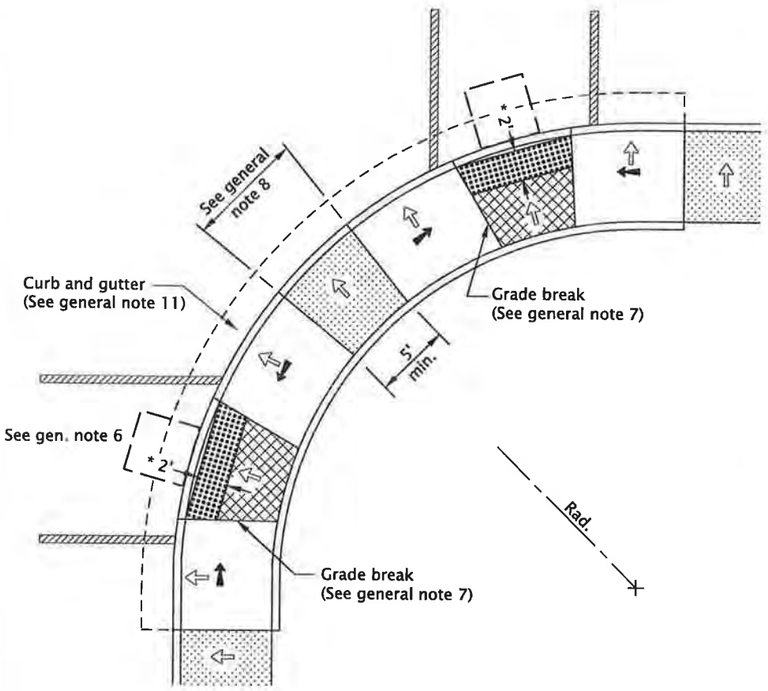
RD910



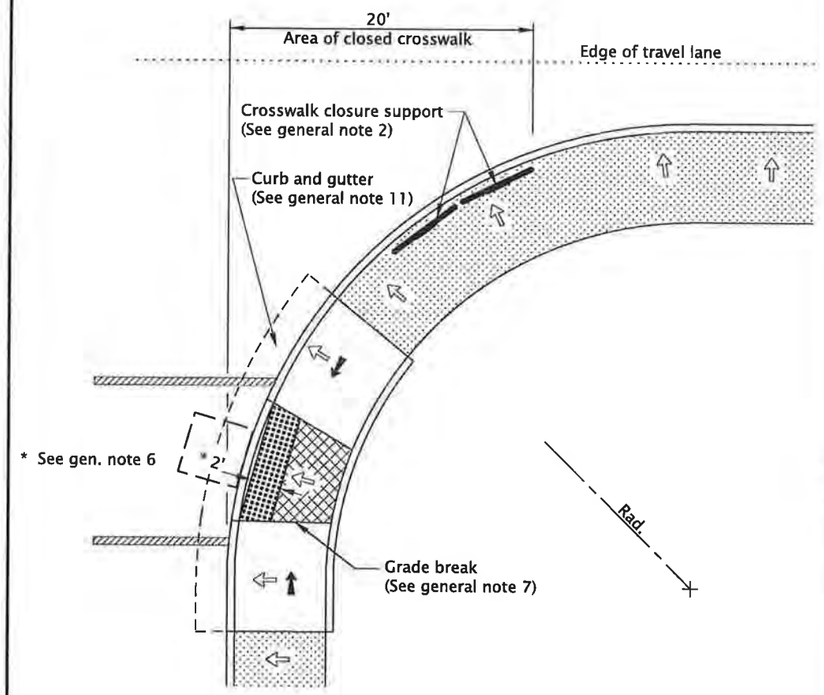
PARALLEL CURB RAMP DETAIL



SECTION A-A



PARALLEL CURB RAMPS
OPTION "PL-1"



PARALLEL CURB RAMP WITH CROSSWALK CLOSURE
OPTION "PL-2"

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Curb ramp details are based on applicable ODOT Standards.
2. See Std. Dwgs. RD700 & RD701 for curbs.
   See Std. Dwgs. RD720 & RD721 for sidewalks.
   See Std. Dwgs. RD902 through RD908 for detectable warning surface installation details.
   See Std. Dwg. TM240 for crosswalk closure detail.
3. Site conditions normally require a project specific design. See project plans for details not shown.
4. Tooled dummy joints are required at all curb ramp grade break lines, (see Std. Dwg. RD722).
5. Curb ramp slopes shown are relative to the true level horizon (zero bubble).
6. Place detectable warning surface at the back of curb for a minimum depth of 2' in the direction of pedestrian travel full width of curb ramp opening that is adjacent to traffic.
7. Grade breaks at the top and bottom of curb ramp runs shall be perpendicular to the direction of the ramp run. Grade breaks shall not be permitted on the surface of ramp runs and turning spaces. Surface slopes that meet at grade breaks shall be flush.
8. When 2 ramp runs are immediately adjacent, the curb exposure (E) between the adjacent side may range between 3" and full design exposure.
9. Curb ramps for shared use paths intersecting a roadway shall be full width of path, excluding flares. When a curb ramp is used to provide bicycle access from a roadway to a sidewalk, the curb ramp opening will be ≥ 8' wide.
10. Place an inlet at upstream side of curb ramp or perform other approved design mitigation. Check the gutter flow depth at curb ramp locations to assure that the design flood does not overtop the back of sidewalk.
11. On or along state highways, curb and gutter is required at curb ramps.

LEGEND:

- Sidewalk
- Detectable warning surface
- Level area (Turning space/landing)
  Unobstructed 4.5' x 4.5'
  With obstruction 4.5' x 5.5' (Longer dimension in direction of pedestrian street crossing).
  For the purposes of this application, a max. 2.0% finished surface slope (for drainage) measured perpendicular in two directions is considered level.
- Cross slope 1.5% max.
  (Max. 2.0% finished surface slope)
  (Normal sidewalk cross slope)
- Running slope 7.5% max.
  (Max. 8.3% finished surface slope)
- Counter slope 4.0% max. ascending or descending,
  (Max. 5.0% finished surface slope)
  Slope as required for drainage
- 4'x4' clear space

CALC. BOOK NO. N/A

SDR DATE 20-JULY-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

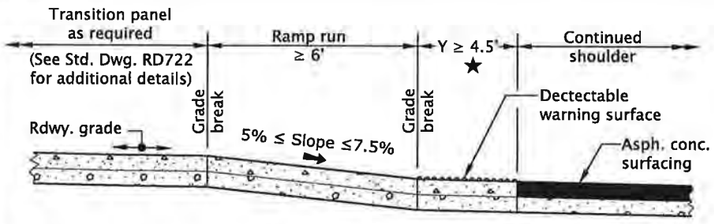
PARALLEL CURB RAMP

2021

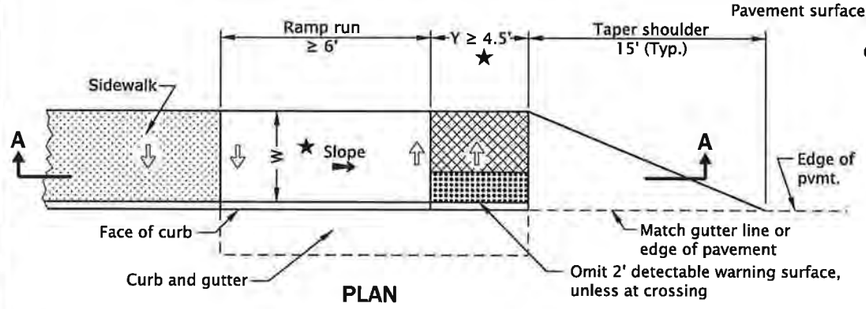
DATE	REVISION DESCRIPTION
07-2020	DRAWING CREATED

rd920.dgn 20-JUL-2020

RD920

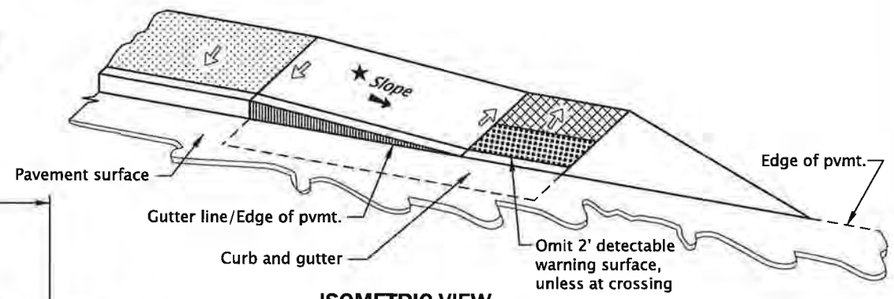


SECTION A-A



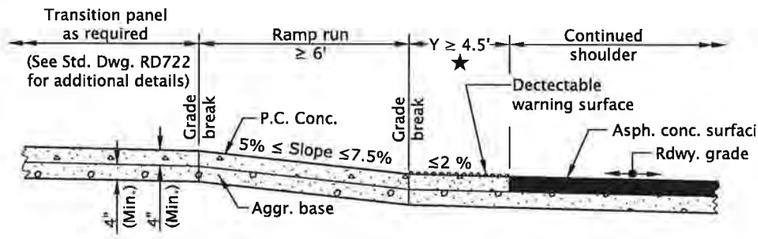
PLAN

★ See general note 12



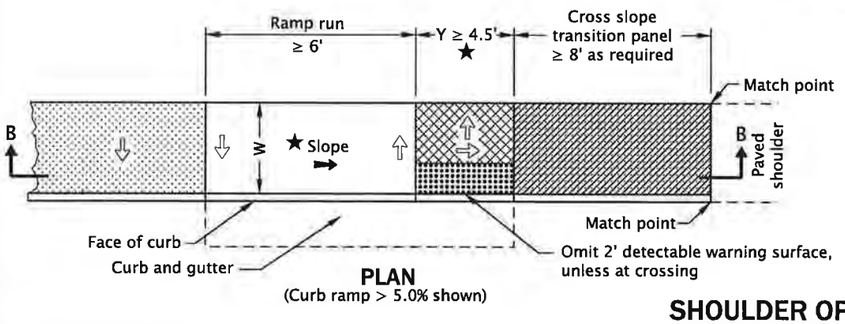
ISOMETRIC VIEW

TAPER OPTION "EW-1"

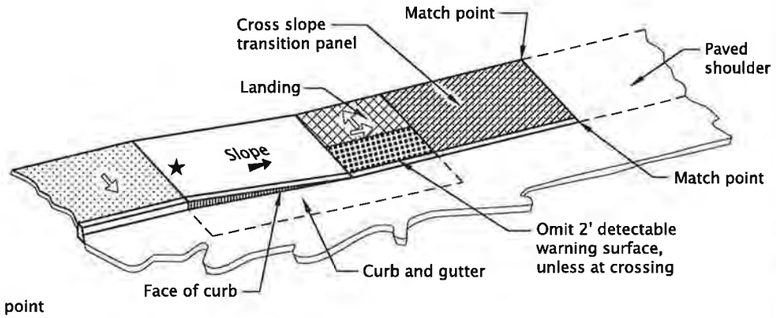


SECTION B-B

★ See general note 12



PLAN
(Curb ramp > 5.0% shown)



ISOMETRIC VIEW

SHOULDER OPTION "EW-2"

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Curb ramp details are based on applicable ODOT Standards.
2. See project plans for details not shown.
   See Std. Dwgs. RD700 & RD701 for curbs.
   See Std. Dwgs. RD720 & RD721 for sidewalks.
   See Std. Dwg. RD722 for transition panel details.
   See Std. Dwgs. RD902 through RD908 for detectable warning surface installation details.
3. Site conditions normally require a project special design. See project plans for details not shown.
4. Tooled dummy joints are required at all curb ramp grade break lines, (see Std. Dwg. RD722).
5. Curb ramp slopes shown are relative to the true level horizon (zero bubble).
6. Place detectable warning surface at the back of curb for a minimum depth of 2' at curb ramp that is adjacent to traffic.
7. Place an inlet at upstream side of curb ramp or perform other approved design mitigation. Check the gutter flow depth at curb ramp locations to assure that the design flood does not overtop the back of sidewalk.
8. When a shared use path terminates, the curb ramp shall be the full width of the path, the turning space Y-dimension should be minimum 8' wide to enable bicycles to ride from ramp to shoulder.
9. Grade breaks at the top and bottom of curb ramp runs shall be perpendicular to the direction of the ramp run. Grade breaks shall not be permitted on the surface of ramp runs and turning spaces. Surface slopes that meet at grade breaks shall be flush.
10. On or along state highways, curb and gutter is required at curb ramps.
11. All end of sidewalk options can be used for curved or tangent roadway sections. Superelated roadways require site specific details.
12. When the slope of the ramp run is greater than 5.0%, a min. landing space of 4.5' x 4.5' with a 1.5% max. slope (2.0% finished surface) is required at the bottom of the curb ramp.
    See section A-A & section B-B.

LEGEND:

- Sidewalk
- Transition panel
- Detectable warning surface
- Level area (Turning space/landing)
  Unobstructed 4.5' x 4.5'
  With obstruction 4.5' x 5.5' (Longer dimension in direction of pedestrian street crossing).
  For the purposes of this application, a max. 2.0% finished surface slope (for drainage) measured perpendicular in two directions is considered level.
- ⇦ Cross slope 1.5% max.
  (Max. 2.0% finished surface slope)
  (Normal sidewalk cross slope)
- ⬅ Running slope 7.5% max.
  (Max. 8.3% finished surface slope)
- W New construction sidewalk width.
  See contract plans for dimension.

CALC. BOOK NO. N/A

SDR DATE 20-JULY-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

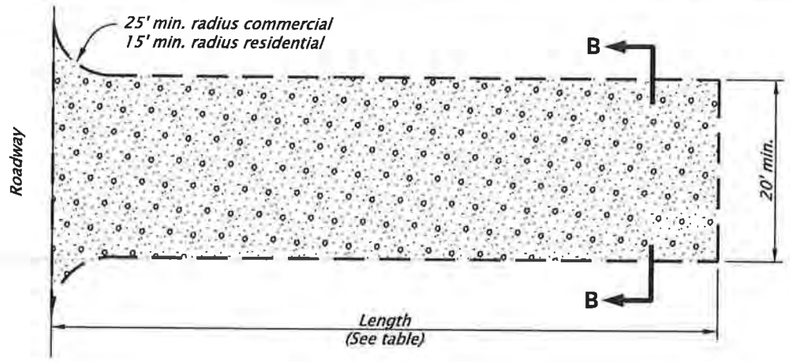
END OF WALK CURB RAMP

2021

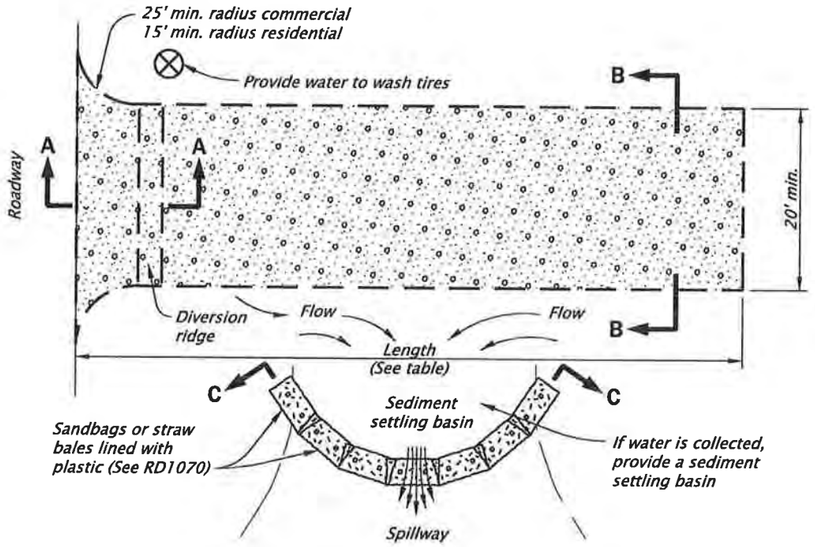
DATE	REVISION DESCRIPTION
07-2020	DRAWING CREATED

rd950.dgn 20-JUL-2020

RD950



CONSTRUCTION ENTRANCE - TYPE 1
NOT TO SCALE



CONSTRUCTION ENTRANCE - TYPE 2
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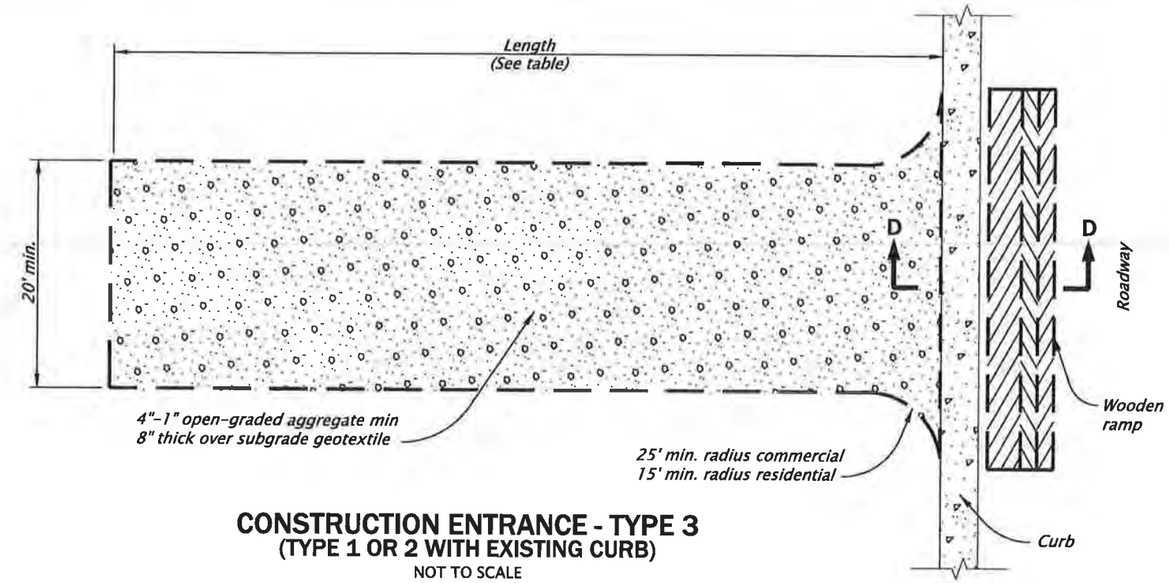
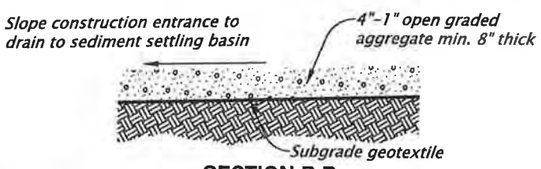
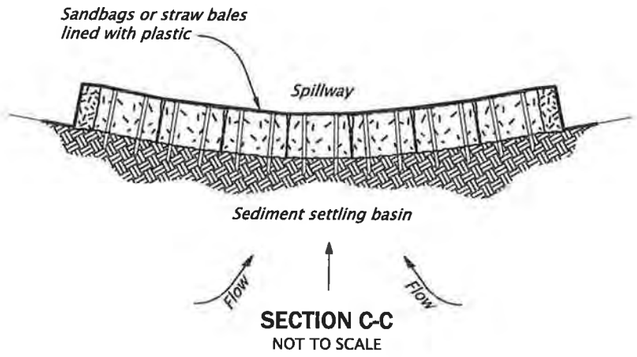


CONSTRUCTION ENTRANCE - TYPE 3
(TYPE 1 OR 2 WITH EXISTING CURB)
NOT TO SCALE

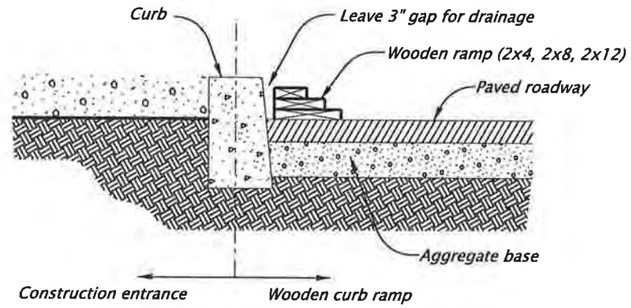
SECTION A-A
NOT TO SCALE



SECTION B-B
NOT TO SCALE



SECTION C-C
NOT TO SCALE



WOODEN CURB RAMP SECTION D-D
NOT TO SCALE

NOTES:
1. *The Type 1 entrance is a simple entrance without a diversion ridge or settling basin.*
2. *The wooden ramp may be used on either Type 1 or Type 2 entrances in situations where there is curb and the curb is not removed for the construction entrance.*

CONSTRUCTION ENTRANCE TABLE MINIMUM LENGTH	
Length (FT)	*Area Of Exposed Soil (Acre)*
20	*0.25*
50	*0.25 < A < 1.0*
100	*A > 1.0*

CALC. BOOK NO. 6408

SDR DATE July, 2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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OREGON STANDARD DRAWINGS

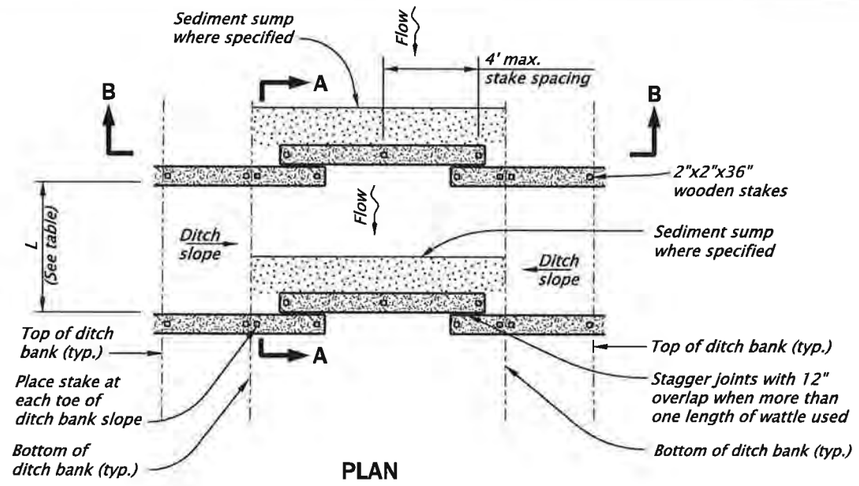
CONSTRUCTION ENTRANCES

2021

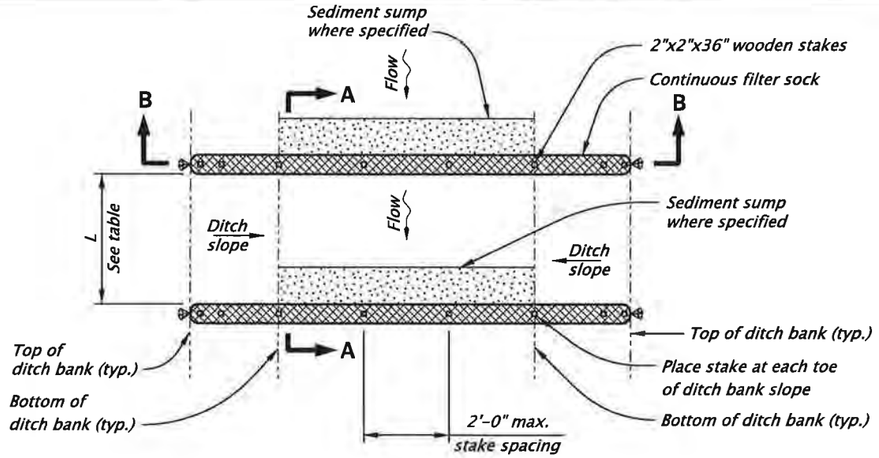
DATE	REVISION DESCRIPTION

rd1000.dgn 07-01-2020

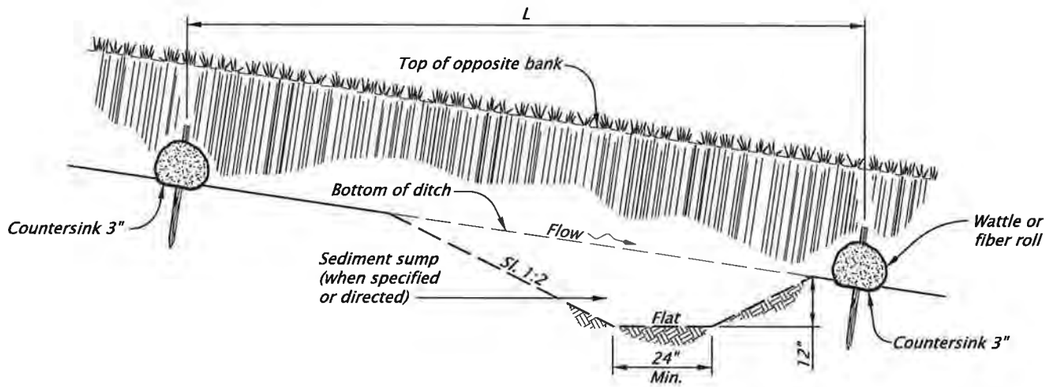
RD1000



PLAN



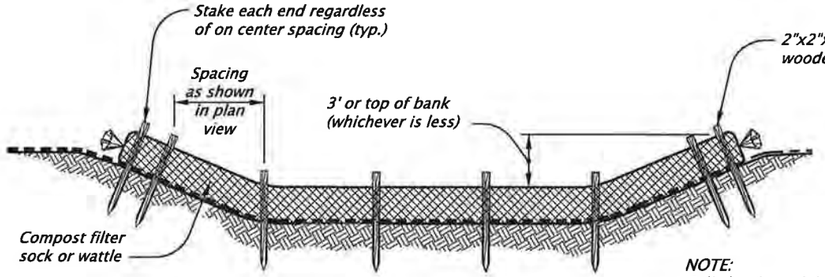
PLAN



SECTION A-A

WATTLE / FIBER ROLL CHECK DAM - TYPE 2

NOT TO SCALE

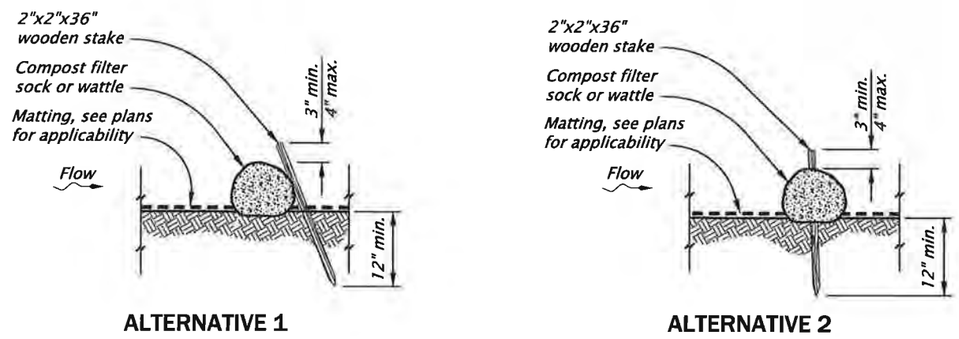


SECTION B-B

NOTE:
Fully biodegradable compost socks are suitable for permanent installation only. Product becomes too fragile to be moved or removed intact.

COMPOST FILTER SOCK CHECK DAM - TYPE 6

NOT TO SCALE



ALTERNATIVE 1

ALTERNATIVE 2

FIBER ROLL AND COMPOST SOCK STAKING ALTERNATIVES

NOT TO SCALE

MAXIMUM CHECK DAM SPACING "L"

Ditch Grade	H=8"	H=12"	H=18"	H=24"
10%	* *	* *	15'	20'
9%	* *	* *	16'	22'
8%	* *	* *	18'	25'
7%	* *	* *	21'	28'
6%	* *	16'	25'	33'
5%	* *	20'	30'	40'
4%	16'	25'	37'	50'
3%	22'	33'	50'	66'
2%	33'	50'	75'	100'

* * Not allowed H = Min. dam height

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CALC. BOOK NO. 6402, 6406, 6407

SDR DATE July, 2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

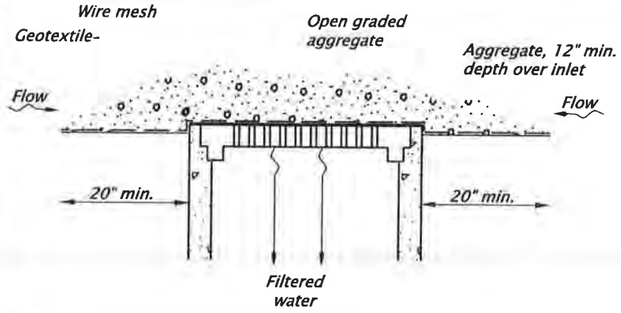
CHECK DAMS TYPE 2 AND 6

2021

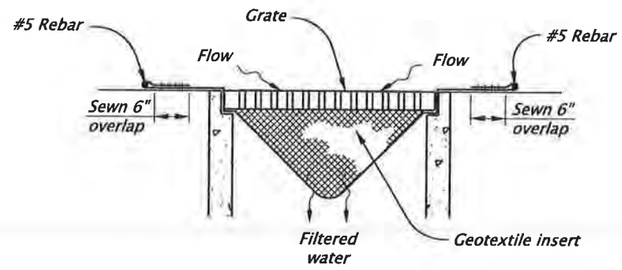
DATE	REVISION DESCRIPTION

rd1006.dgn 07-01-2020

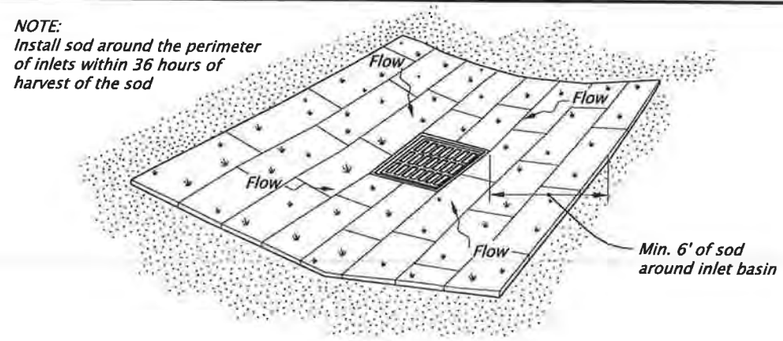
RD1006



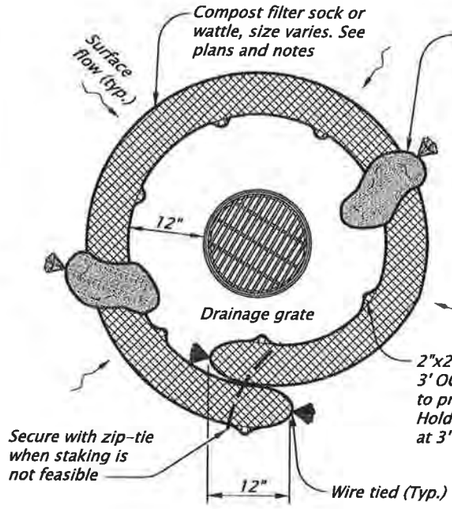
GEOTEXTILE/WIRE MESH/AGGREGATE - TYPE 2
NOT TO SCALE



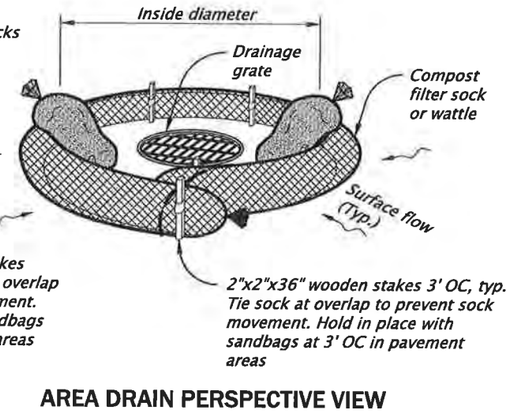
PREFABRICATED FILTER INSERT - TYPE 3
NOT TO SCALE



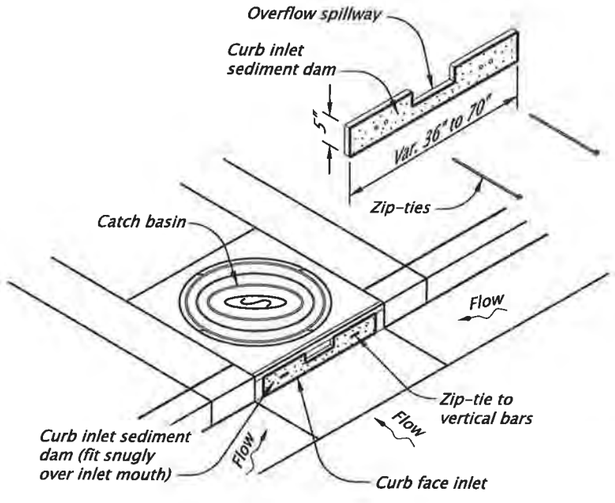
SOD PROTECTION - TYPE 6
NOT TO SCALE



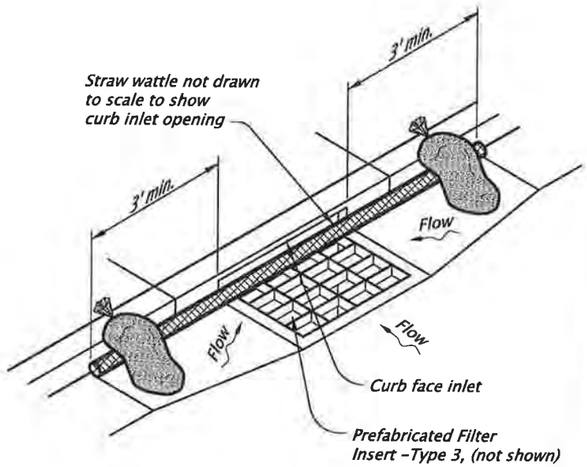
AREA DRAIN PLAN



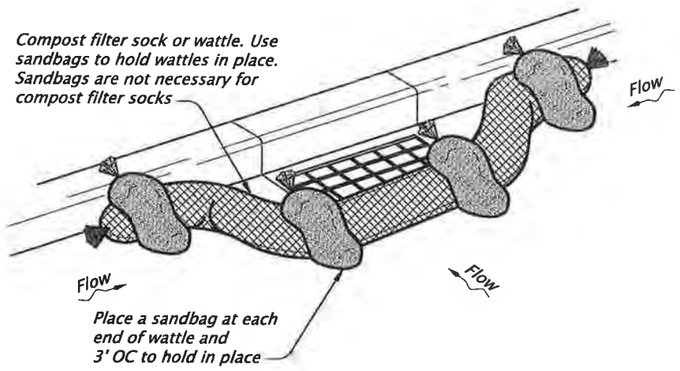
AREA DRAIN PERSPECTIVE VIEW



CURB INLET SEDIMENT DAM - TYPE 10
NOT TO SCALE



WATTLE BARRIER WITH FILTER INSERT - TYPE 11
NOT TO SCALE



CURB INLET PERSPECTIVE VIEW

COMPOST FILTER SOCK OR WATTLE - TYPE 7
NOT TO SCALE

NOTES:
Type 2 – Geotextile/wire mesh/aggregate
Place the wire mesh over the grate.
Place sediment fence geotextile over the wire mesh and perimeter area around structure.
Install aggregate over the geotextile fabric.

Type 3 – Prefabricated filter inserts
Install prefabricated filter inserts according to the plans, special provisions, and manufacturer recommendations.
Prefabricated inserts with provisions for overflow are allowed only when accompanied by additional BMP's to prevent the potential of sediments entering project storm systems.
Field fabricated inserts are not allowed.

Type 7 – Compost filter sock
Drive 2"x2" wood stakes a minimum of 6" into ground and flush with the top of the sock.
Overlap ends of sock per manufacturers recommendations (12"min., 36" max.).
Use 8" to 12" dia sock on curbside in traffic areas

(Type 7 cont.)
Use 12" to 18" dia sock in non-traffic areas or areas where the larger socks can be used safely.
use synthetic mesh socks for temporary installations.

Type 10 – Curb inlet sediment dam
Fit curb inlet sediment dam snugly into inlet mouth. Curb inlet sediment dam is required for use with inlet filter insert where at-grade inlet grate and curb inlet are combined at a catch basin.

Type 11 – Wattle barrier with filter insert
Install prefabricated filter insert per Type 3 detail.
Install wattles over opening and 36" to each side of opening tight against curb. Adjust wattle to force storm water to flow through filter insert or wattle prior to leaving the site.
Adjust, replace or modify the inlet protection as needed to prevent sediment laden water from entering the catch basin.

CALC. BOOK NO. 6402, 6406, 6407

SDR DATE July, 2020

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OREGON STANDARD DRAWINGS

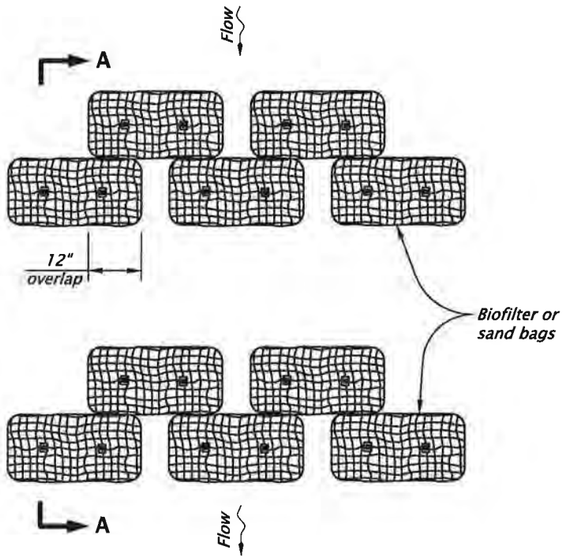
INLET PROTECTION TYPE 2, 3, 6, 7, 10 AND 11

2021

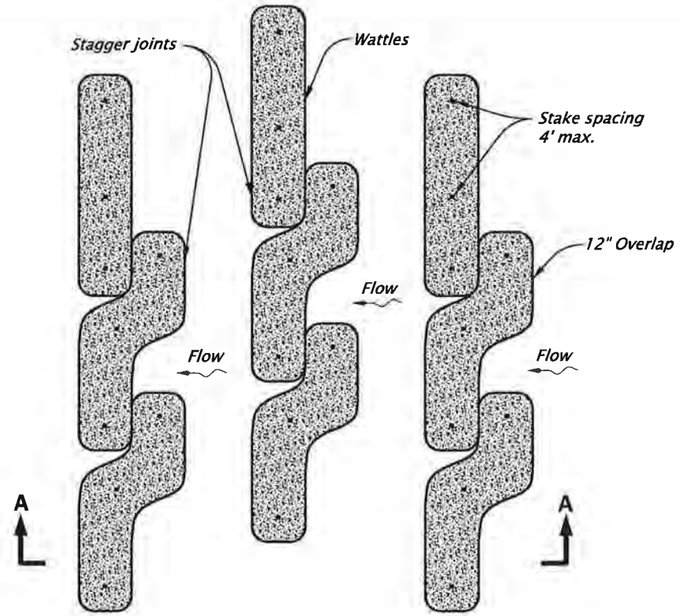
DATE	REVISION DESCRIPTION

rd1010.dgn 07-01-2020

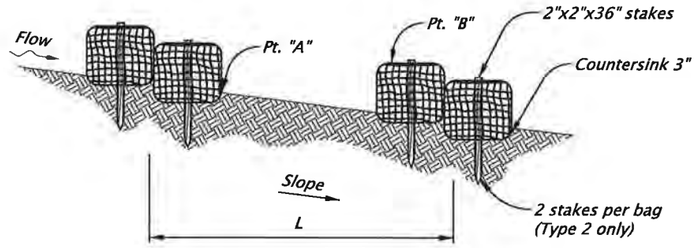
RD1010



PLAN



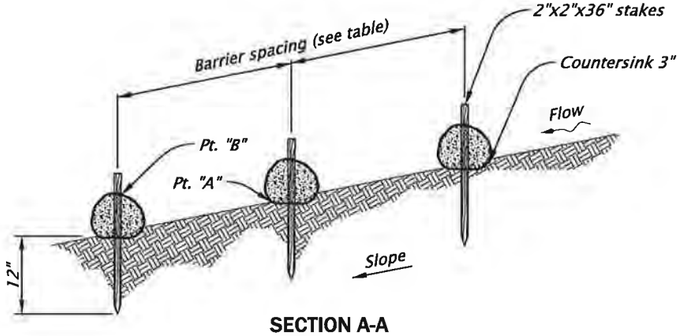
PLAN



SECTION A-A

BIOFILTER BAG / SAND BAG BARRIER - TYPE 2 AND 4

NOT TO SCALE



SECTION A-A

FIBER ROLL BARRIER - TYPE 3

NOT TO SCALE

NOTES:

1. *For Type 2 barrier, drive stakes flush with top of bag and into undisturbed ground a min. of 12". Omit stakes if bags are placed on paved surface.*

2. *For Type 2 and Type 4 barriers, space bags (L) so that the elevation of point "A" is less than or equal to the elevation of point "B".*

Type 2 – Biofilter bags
Type 3 – Wattles
Type 4 – Sand bags

BARRIER SPACING		
INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS		
% SLOPE	% SLOPE	MAXIMUM SPACING ON SLOPE
10% Flatter	1:10 or Flatter	300'
10 > % ≥ 15	10 > X ≥ 7.5	150'
15 > % ≥ 20	7.5 > X ≥ 5	100'
20 > % ≥ 30	5 > X ≥ 3	50'
Steeper than 30%	Steeper than 1:3	25'

CALC. BOOK NO. 6402, 6406, 6407

SDR DATE July, 2020

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OREGON STANDARD DRAWINGS

SEDIMENT BARRIER TYPE 2, 3 AND 4

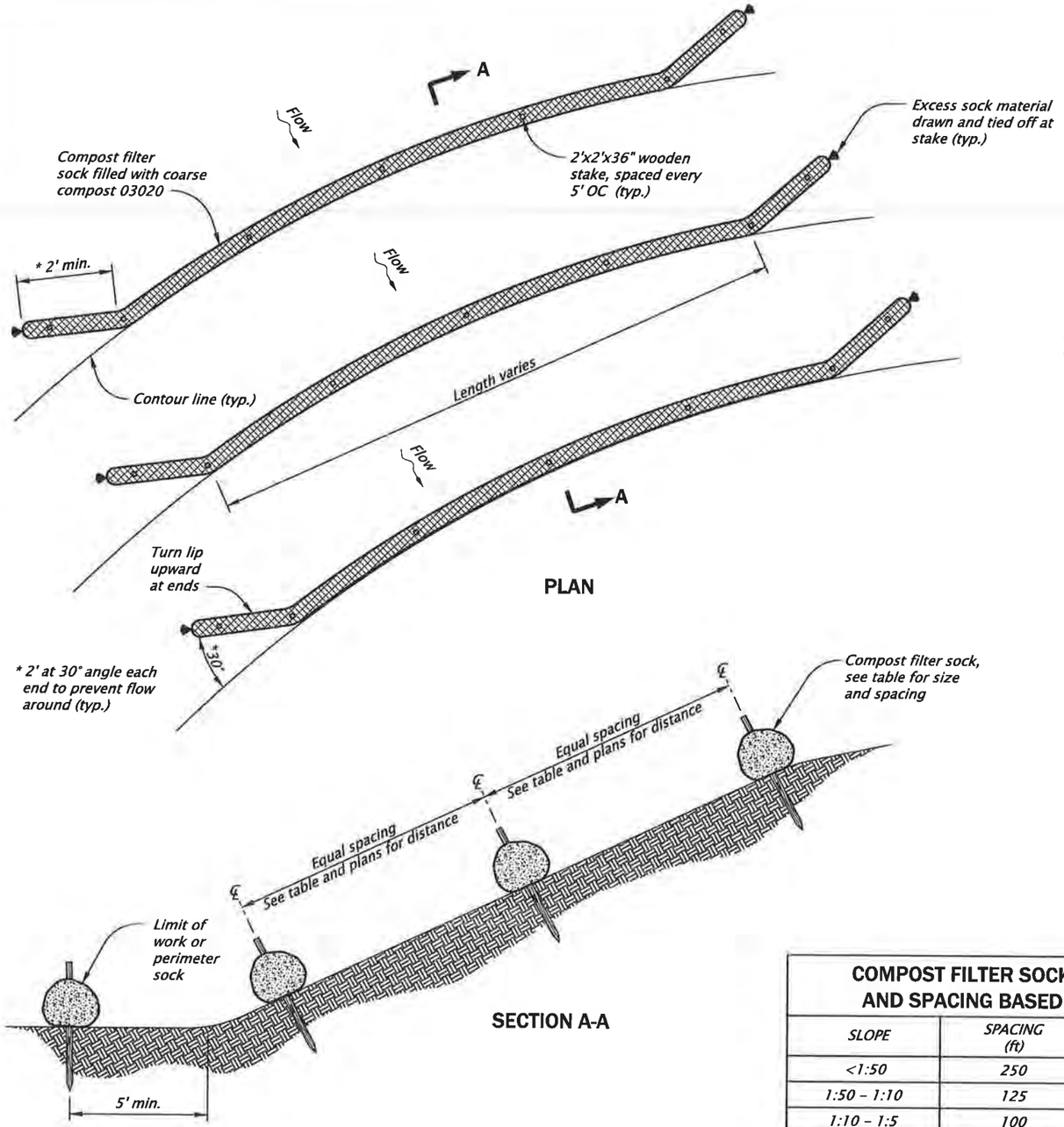
2021

DATE	REVISION DESCRIPTION

rd1030.dgn 07-01-2020

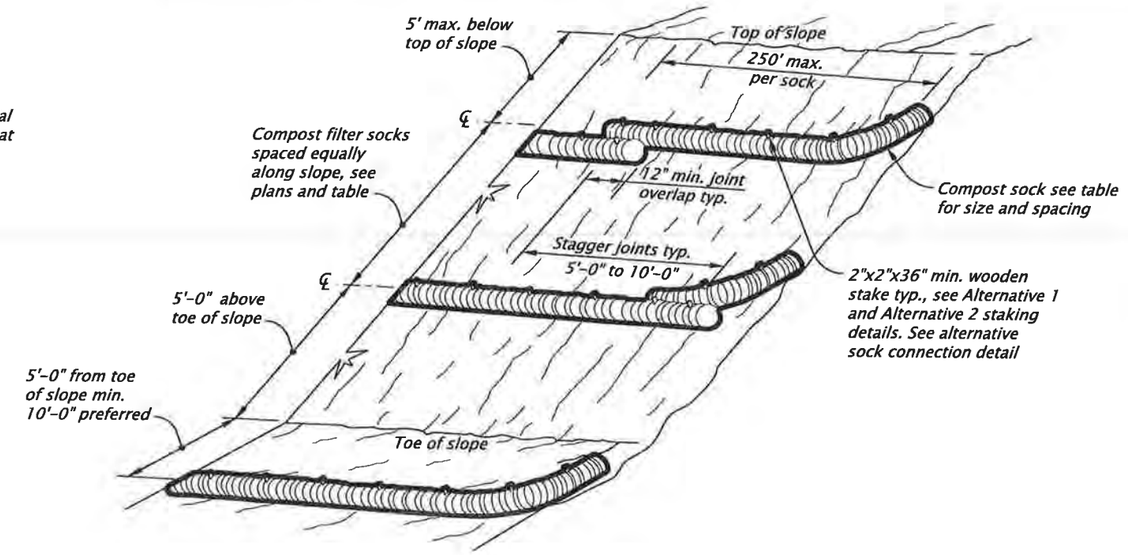
RD1030

rd1032.dgn 07-01-2020

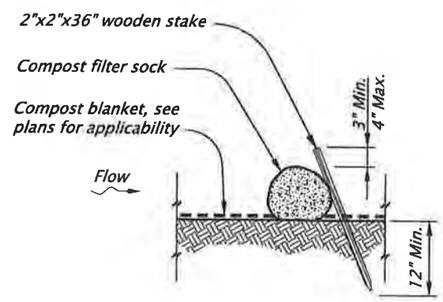


PLAN

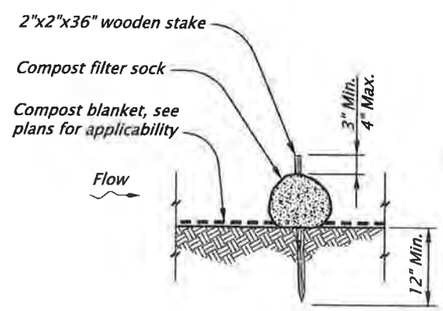
SECTION A-A



SLOPE APPLICATION - PERSPECTIVE VIEW



ALTERNATIVE 1 (Staking)



ALTERNATIVE 2 (Staking)

COMPOST FILTER SOCK DIAMETER AND SPACING BASED ON SLOPE		
SLOPE	*SPACING (ft)*	*DIAMETER (in)*
<1:50	*250*	*8*
1:50 – 1:10	*125*	*12*
1:10 – 1:5	*100*	*12*
1:5 – 1:2	*50*	*18*
>1:2	*25*	*18*

NOTE:
Fully biodegradable compost sock mesh is recommended for permanent installations. Where compost socks must be moved or removed, synthetic sock mesh should be used.

COMPOST FILTER SOCK
NOT TO SCALE

CALC. BOOK NO. 6403, 6404, 6405

SDR DATE July, 2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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OREGON STANDARD DRAWINGS

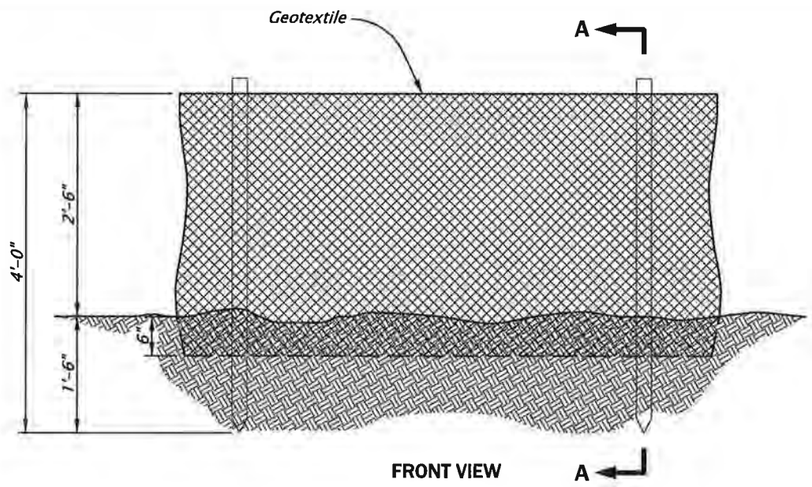
SEDIMENT BARRIER TYPE 8

2021

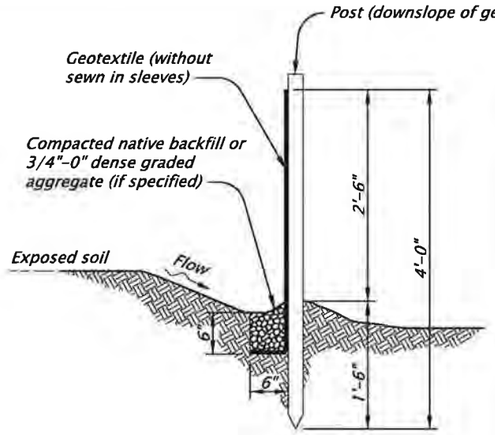
DATE	REVISION DESCRIPTION

RD1032

rd1040.dgn 07-01-2020



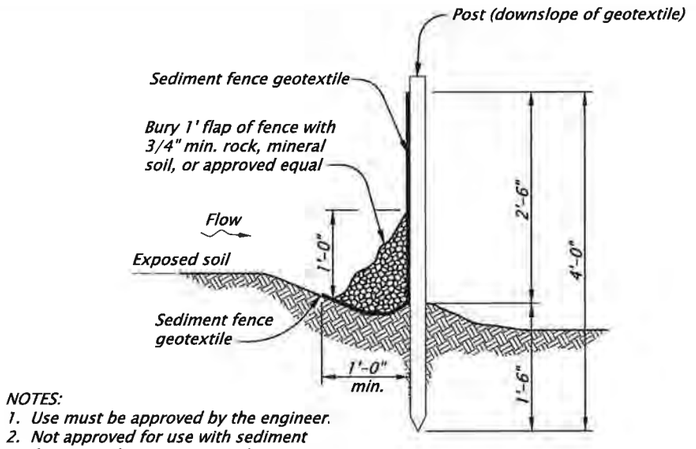
FRONT VIEW



SECTION A-A

SEDIMENT FENCE AND GEOTEXTILE BURY DETAIL - TYPE 1

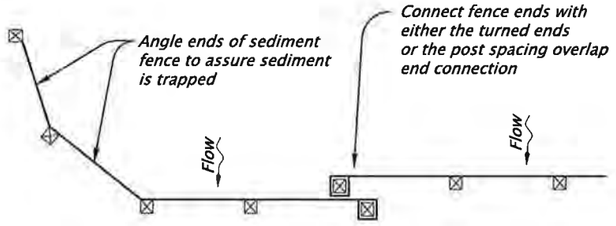
NOT TO SCALE



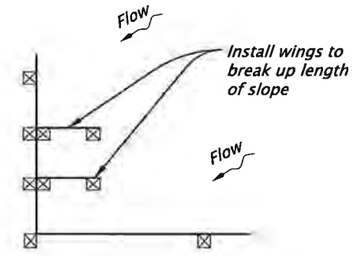
NOTES:
1. Use must be approved by the engineer.
2. Not approved for use with sediment fencing with sewn-in post sleeves.

ALTERNATE SEDIMENT FENCE WITHOUT TRENCHING - TYPE 2

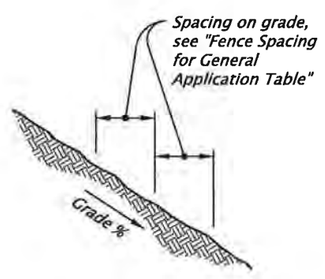
NOT TO SCALE



PLAN VIEW



TERMINATION AT CORNER OR PROPERTY LINE



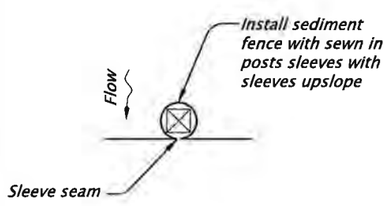
GENERAL NOTES:
1. Use 2"x2" wood fence posts.
2. Posts to be installed on downhill side of sediment fence geotextile. Position posts to prevent separation from geotextile.
3. Compact filter fabric trench backfill and soil on uphill side of fence.
4. Locate fence no closer than three feet to the toe of a slope.
5. Wing spacing shall comply with "Fence Spacing for General Application Table".

FENCE SPACING FOR GENERAL APPLICATION TABLE

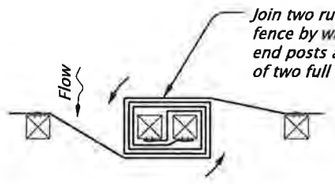
INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS	
GRADE	MAXIMUM SPACING ON GRADE
Grade < 10%	300'
10% ≤ Grade < 15%	150'
15% ≤ Grade < 20%	100'
20% ≤ Grade < 30%	50'
30% ≤ Grade	25'

POST SPACING TABLE

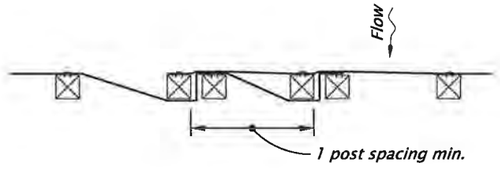
6'	Sediment Fence with Geotextile elongation less than 50%
4'	Sediment Fence with Geotextile elongation 50% or more



GEOTEXTILE WITH POST SLEEVES



TURNED ENDS CONNECTION



POST SPACING OVERLAP CONNECTION

GEOTEXTILE END CONNECTIONS

NOT TO SCALE

CALC. BOOK NO. 6403, 6404, 6405

SDR DATE July, 2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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OREGON STANDARD DRAWINGS

SEDIMENT FENCE

2021

DATE	REVISION DESCRIPTION

Effective Date: December 1, 2020 - May 31, 2021

RD1040

RD1040

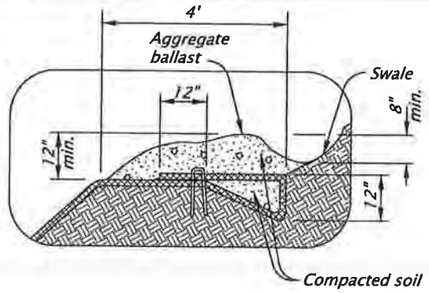


FIGURE A1:
TOP OF BANK ANCHOR TRENCH, H>3' AND TERMINAL SLOPE
NOT TO SCALE

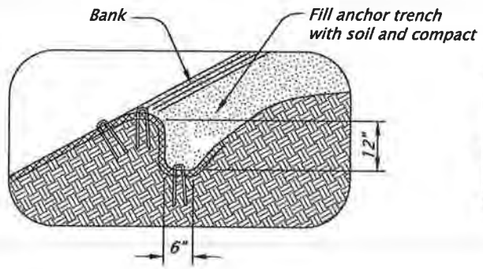


FIGURE A2:
TOP OF BANK ANCHOR TRENCH, H<3'
NOT TO SCALE

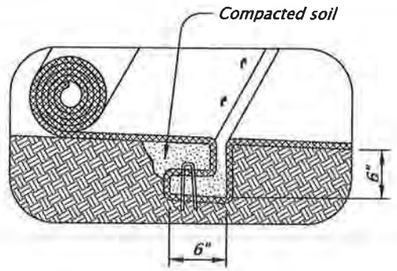


FIGURE A3:
CHANNEL CHECK SLOT
NOT TO SCALE

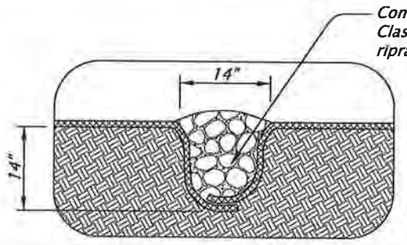


FIGURE A4:
CHANNEL CHECK SLOT WITH ROCK BACKFILL
NOT TO SCALE

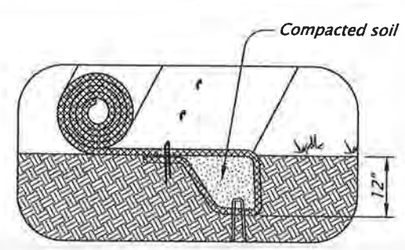
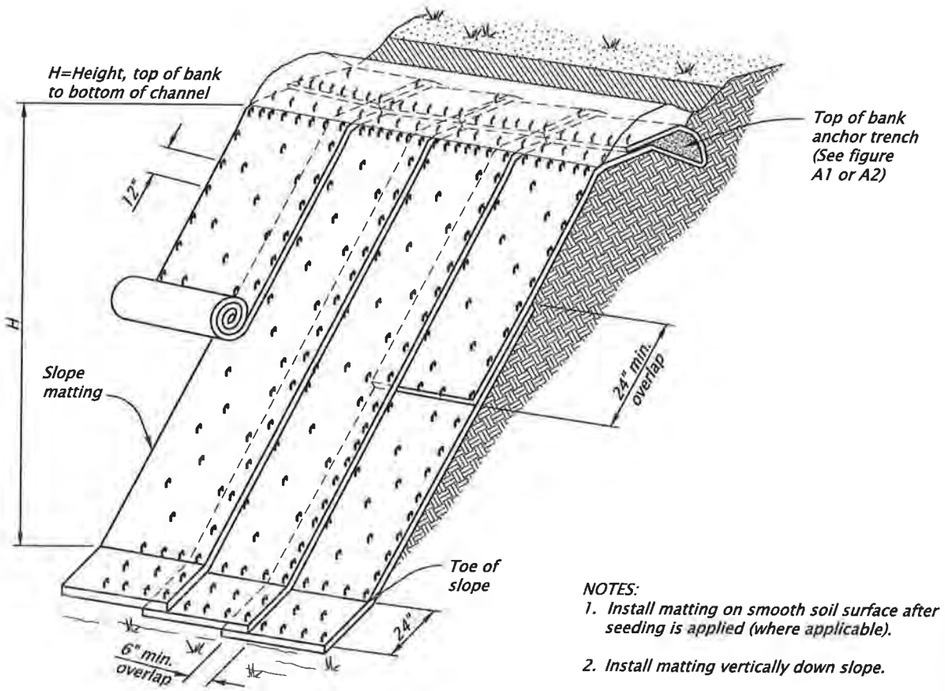
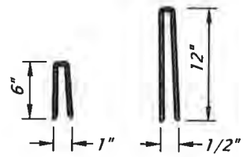


FIGURE A5:
INITIAL CHANNEL ANCHOR TRENCH
NOT TO SCALE



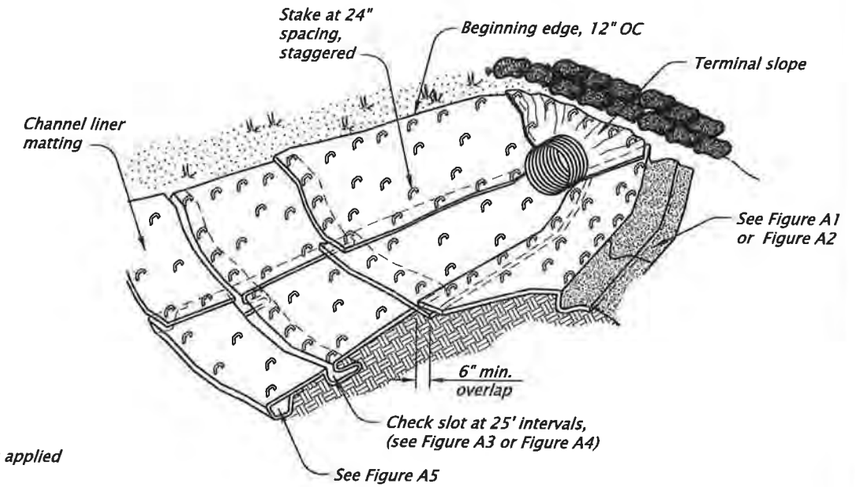
SLOPE MATTING ISOMETRIC VIEW
NOT TO SCALE

NOTES:
1. *Install matting on smooth soil surface after seeding is applied (where applicable).*
2. *Install matting vertically down slope.*
3. *Install matting so edge overlaps are shingled away from prevailing winds.*
4. *Place fastener at 12" OC on matting edges*
5. *Overlap upper mat over lower mat, and fasten.*
6. *Stagger alternate rows of fasteners placed at 24" OC*
7. *Extend mat 24" beyond toe of slope; fold mat back under 4" and fasten.*
8. *Matting Types A through E: Furnish fully biodegradable product. Matting with plastic or photodegradable components will not be accepted.*



STAPLES
NOT TO SCALE

NOTES:
1. *Install matting on smooth soil surface after seeding is applied (where applicable).*
2. *Install channel liner matting, in the direction of water flow. Anchor upstream end of mat with check slot for culvert outfalls, place mat under pipe 12" minimum upstream from pipe outlet.*
3. *Construct check slots across channel bottom at 25' spacing and at the end of each mat (Fig. A3 or A4).*
4. *Overlap side channel liner matting edges 6" over the center channel liner matting and fasten edges 12" OC Continue overlap and stapling pattern for each additional side channel liner mat.*
5. *Lap upstream matting end 12" over beginning edge of downstream matting. Fasten 12" OC*
6. *Anchor top edge of side channel matting in trench and fasten 12" OC (Fig. A2).*
7. *Fasten matting interior at 24" OC with staggered spacing.*
8. *Construct initial anchor trench at downstream end of matting and terminal slope anchor at upstream end.*
9. *Matting Types A through E: Furnish fully biodegradable product. Matting with plastic or photodegradable components will not be accepted.*



CHANNEL MATTING ISOMETRIC VIEW
NOT TO SCALE

CALC. BOOK NO. 6403, 6404, 6405

SDR DATE July, 2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

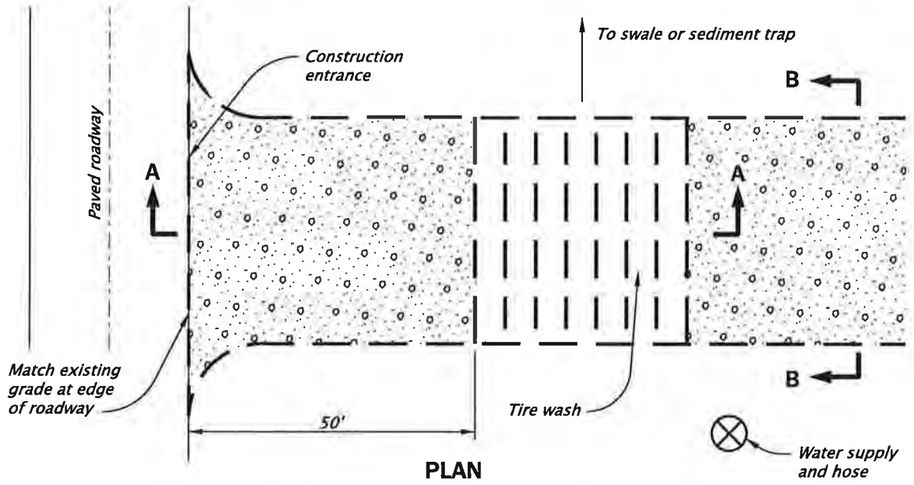
SLOPE AND CHANNEL MATTING

2021

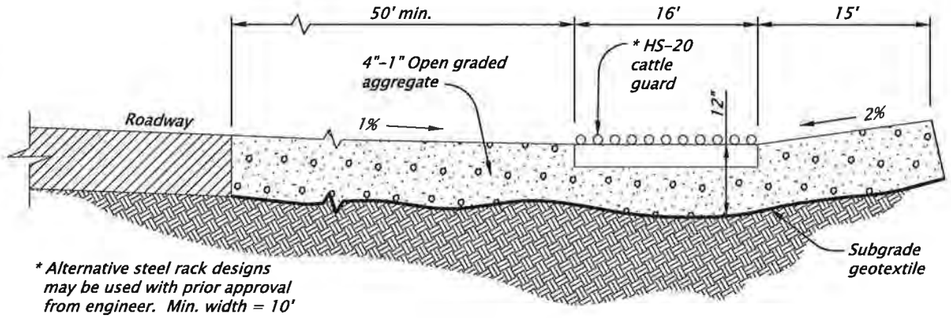
DATE	REVISION DESCRIPTION

RD1055

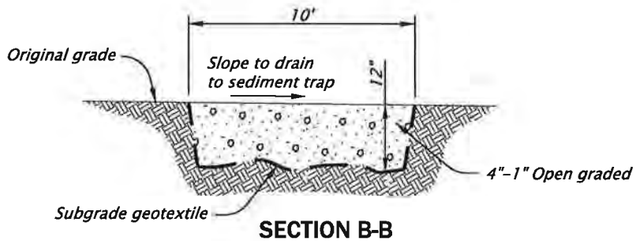
rd1060.dgn 07-01-2020



PLAN



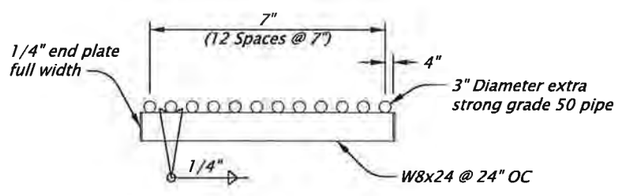
SECTION A-A



SECTION B-B

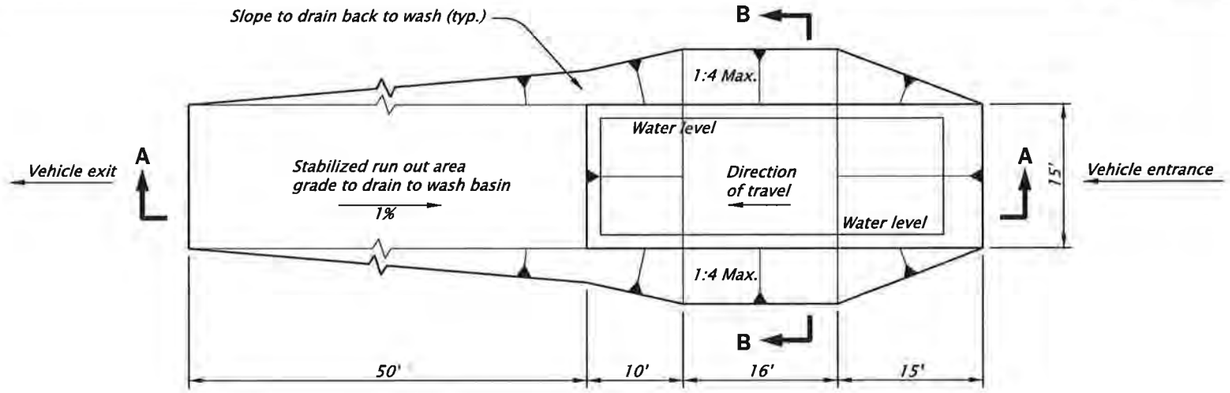
TIRE WASH - TYPE 1 (MANUAL HOSE WASH)

NOT TO SCALE

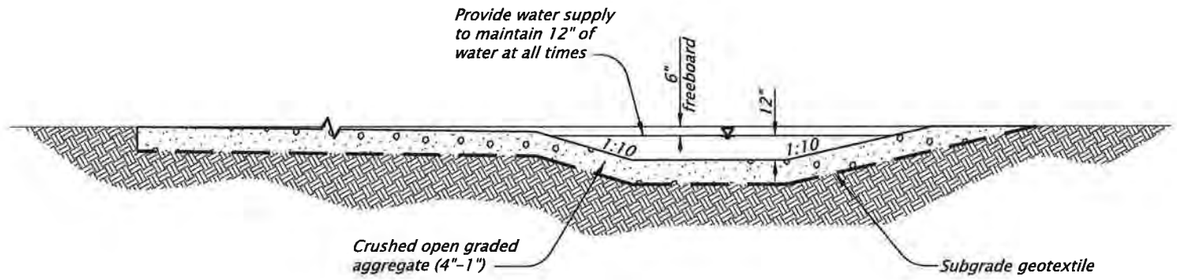


HS-20 CATTLE GUARD

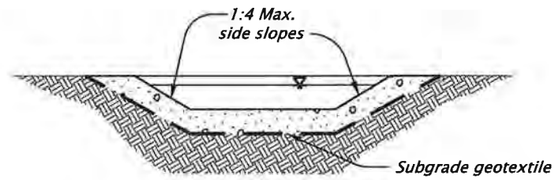
NOT TO SCALE



PLAN



SECTION A-A



SECTION B-B

TIRE WASH - TYPE 2

NOT TO SCALE

CALC. BOOK NO. 6403, 6404, 6405

SDR DATE July, 2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

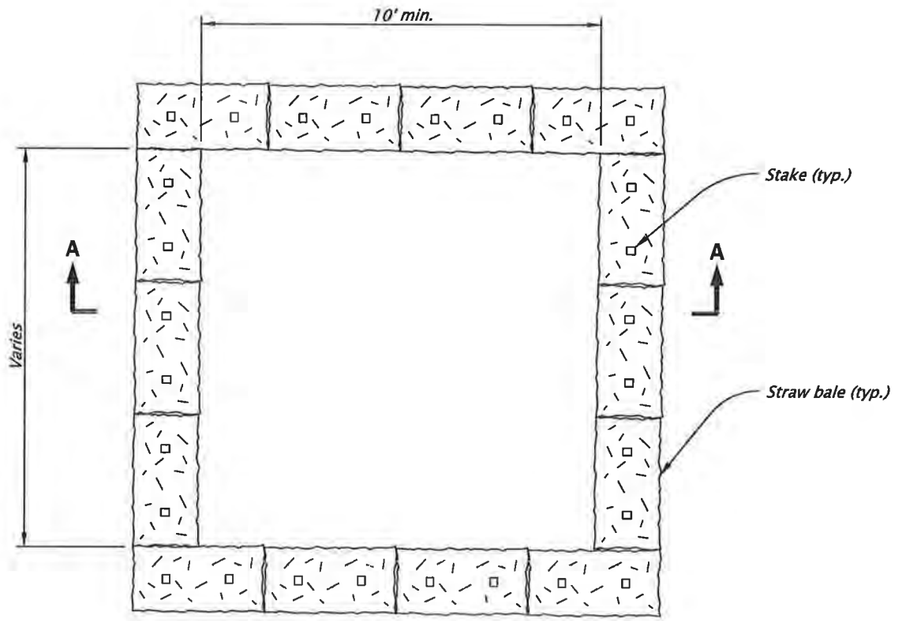
TIRE WASH FACILITY TYPE 1 AND 2

2021

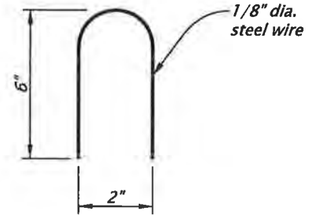
DATE	REVISION DESCRIPTION

RD1060

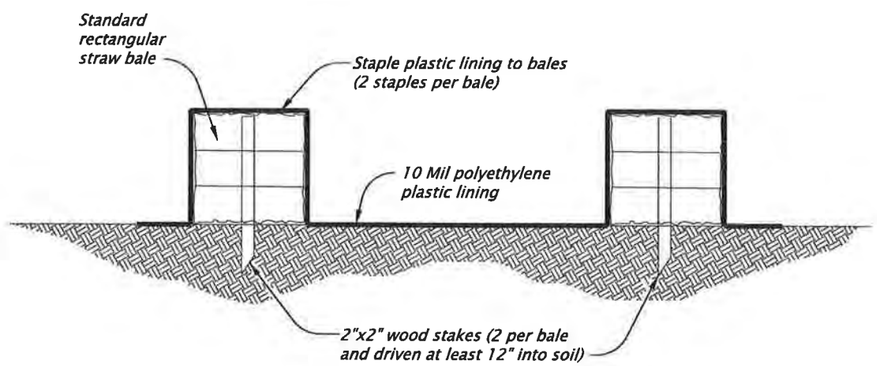
rd1070.dgn 07-01-2020



PLAN



STAPLE DETAIL
NOT TO SCALE



SECTION A-A

CONCRETE TRUCK WASH OUT FACILITY
NOT TO SCALE

CALC. BOOK NO. 6403, 6404, 6405

SDR DATE July, 2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

CONCRETE TRUCK WASH OUT

2021

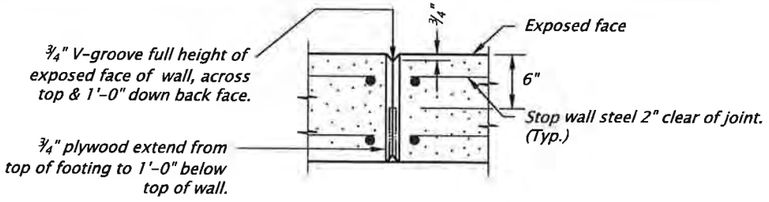
DATE	REVISION DESCRIPTION

Effective Date: December 1, 2020 - May 31, 2021

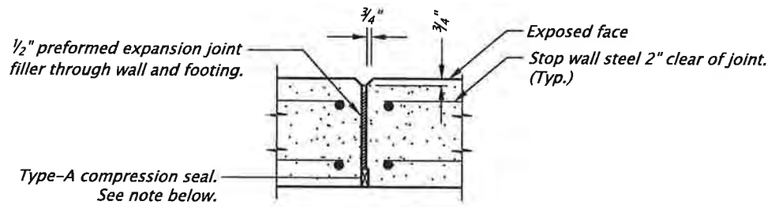
RD1070

RD1070

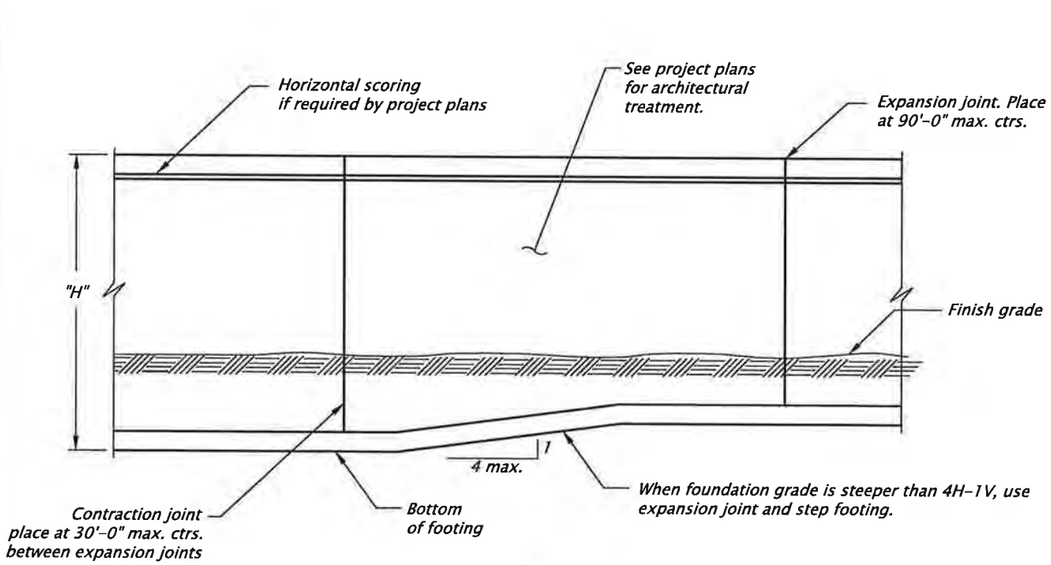
br709.dgn 07-01-2020



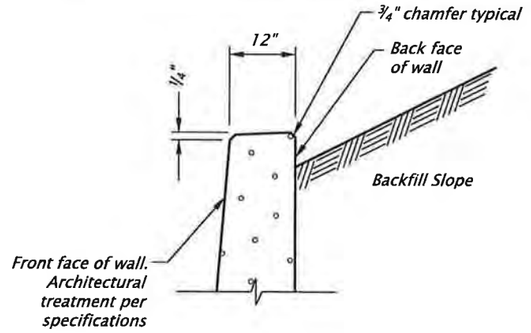
CONTRACTION JOINT
(without scoring)



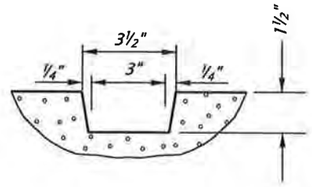
EXPANSION JOINT
(without scoring)



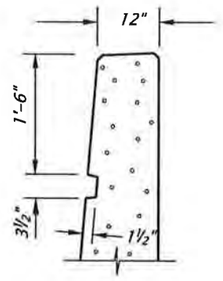
LONGITUDINAL JOINT VIEW
NONE



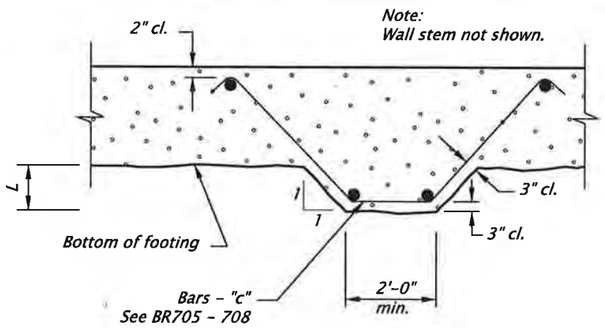
WALL TOP DETAIL



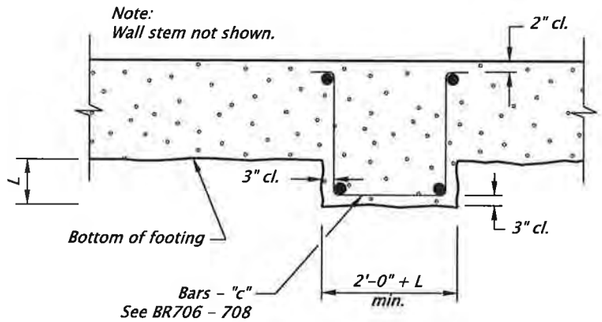
TYPICAL SCORING



HORIZONTAL SCORING
(If shown on project plans)



KEY DETAIL



ALTERNATE KEY DETAIL

NOTES:
Type-A Compression Joint Seal.

1. Install in accordance with manufacturer's recommendations from top of wall to top of footing.

2. See drg. BR139 for nominal size, joint and installation width.

CALC. BOOK NO. 6480

SDR DATE 2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

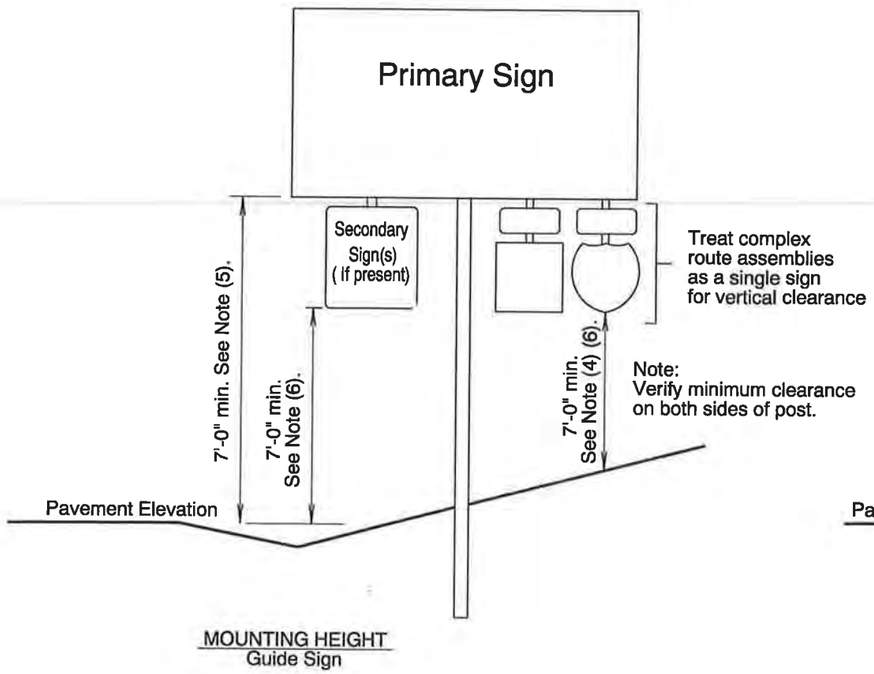
OREGON STANDARD DRAWINGS

STANDARD RETAINING WALL CAST-IN-PLACE SEMI GRAVITY JOINTS AND DETAILS

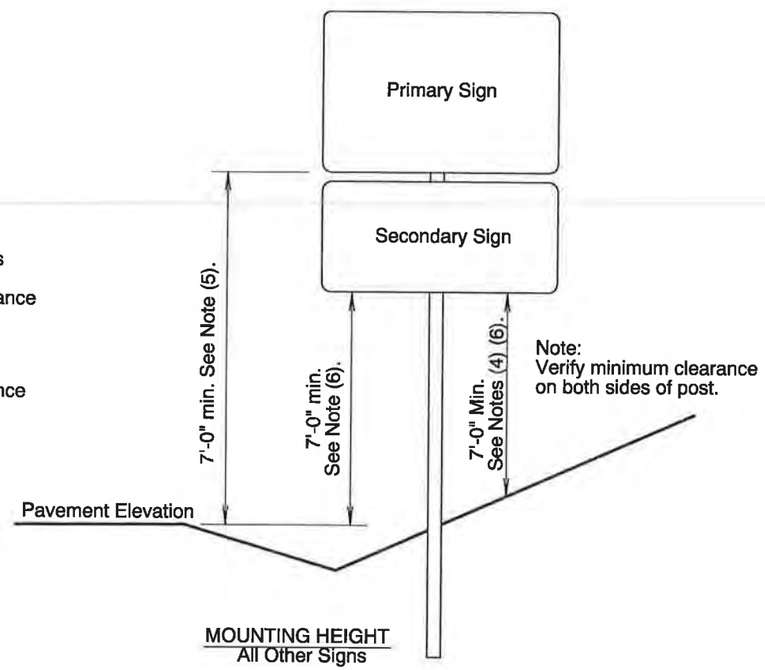
2021

DATE	REVISION DESCRIPTION

TM200.dgn 1-3-2017



MOUNTING HEIGHT
Guide Sign



MOUNTING HEIGHT
All Other Signs

General Installation Notes:

a. Signing details shown on this sheet are intended to convey "typical" conditions only. Individual locations may require installation different from those shown.
For guidance regarding unique installations or exceptions call the Project Sign Designer or Region Traffic Section.

b. Locate breakaway supports away from ditches to avoid problems with erosion, corrosion, debris, maintenance and breakaway performance. See Dwg. No. TM635 for more information.

c. For wood post support details see Dwg. No. TM670.

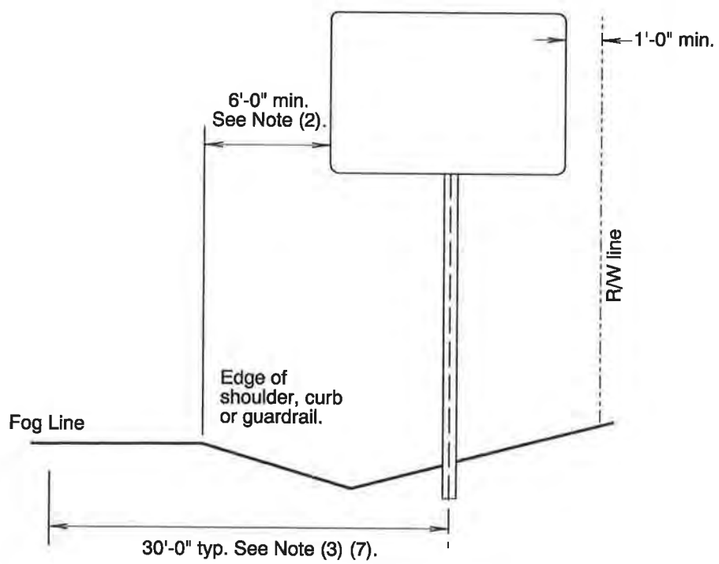
d. For perforated steelsquare tube support details see Dwg. No. TM681.

e. For triangular base breakaway support details see Dwg. No. TM602.

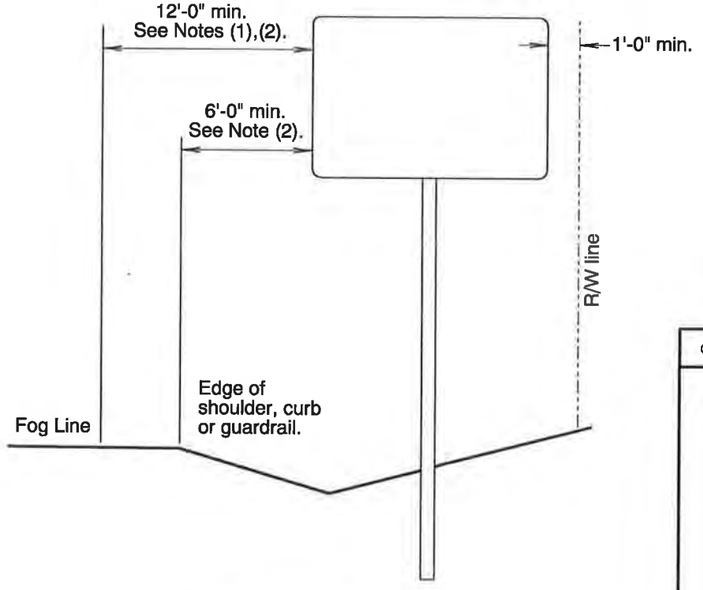
f. For multi-post breakaway support details see Dwg. No. TM600.

g. Mounting heights should not be more than 3 inches more than the minimum heights shown, where practical.

h. 2" vertical spacing between all signs.



LATERAL OFFSET
Guide Signs



LATERAL OFFSET
All Other Signs

Notes:

1). 6' minimum if behind barrier.

2). 2' minimum if restricted R/W.

3). 20' for ramp terminals.

4). 8' minimum if bicycle path underneath.

5). 8' minimum if secondary signs attached.

6). 5' minimum if outside clearzone, in rural areas and no pedestrians underneath.

7). For multi-post installations measure distance from post closest to roadway.

CALC. BOOK NO. N/A

SDR DATE 01/08/2018

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

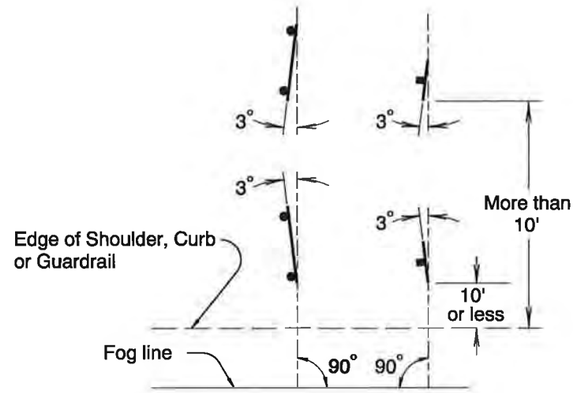
OREGON STANDARD DRAWINGS

SIGN INSTALLATION DETAILS

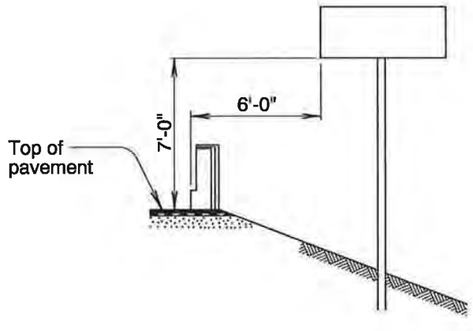
2021

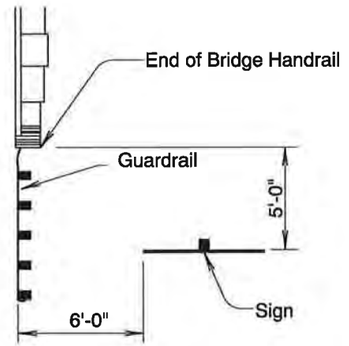
DATE	REVISION DESCRIPTION

TM200



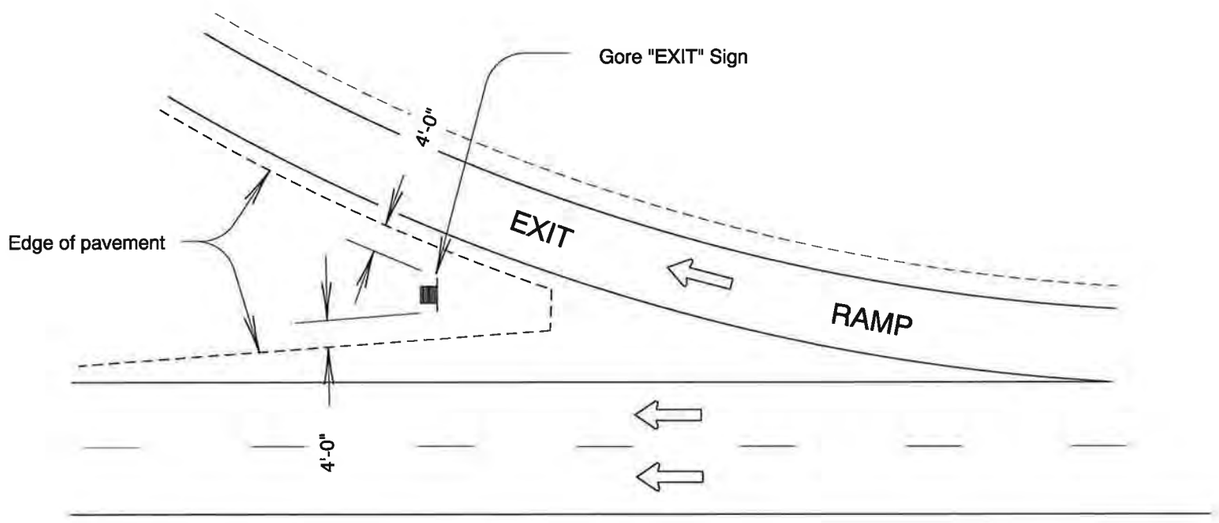
SIGN PLACEMENT





ELEVATION PLAN

SIGN LOCATION FOR FREEWAY OVERCROSSING
(MINIMUM VALUES)



TYPICAL "EXIT" SIGN INSTALLATION

CALC. BOOK NO. N/A

SDR DATE 12-10-09

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

MISCELLANEOUS SIGN PLACEMENT DETAILS

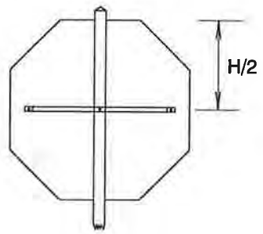
2021

DATE	REVISION DESCRIPTION

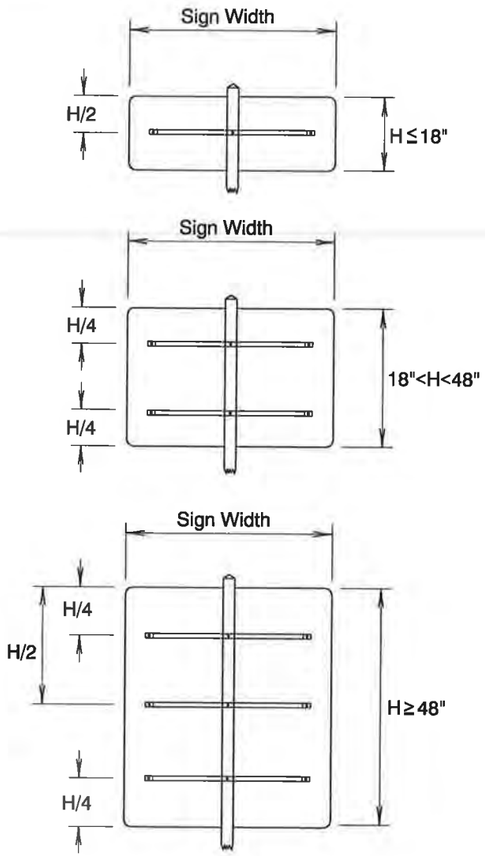
TM201.dgn 1-3-2017

TM201

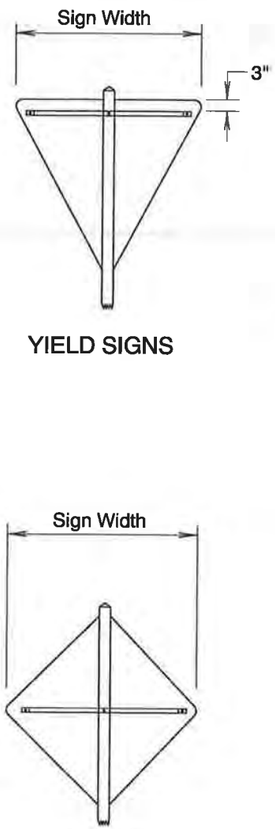
TM206.dgn 1-3-2017



STOP SIGN

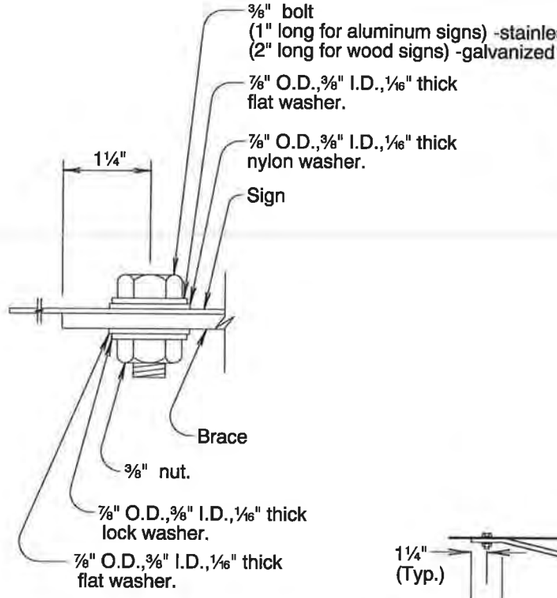


OTHER SIGNS

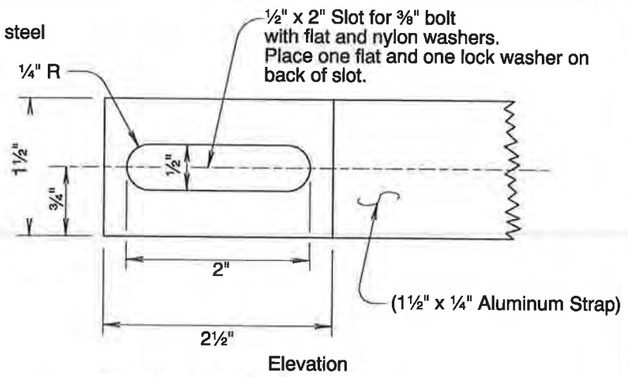


YIELD SIGNS

WARNING SIGNS

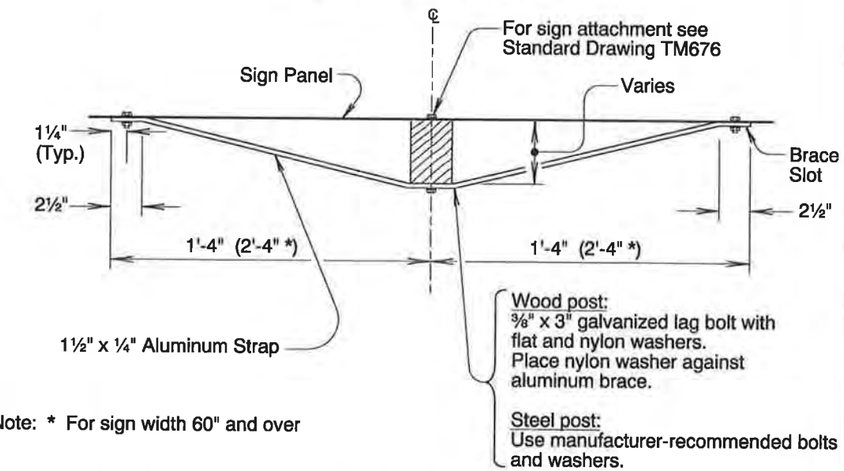


BOLT, NUT AND WASHER
INSTALLATION DETAIL



Elevation

DETAIL OF BRACE SLOT



Note: * For sign width 60" and over

Plan

SIGN BRACING

TYPICAL LOCATION OF BRACING

(Adjust location of bracing so that bolts will miss legend)

BRACE LENGTHS **		
POST SIZE	SIGN WIDTH	
	< 60"	≥60"
2" X 2" (Steel)	32½"	56½"
2½" X 2½" (Steel)	32½"	56½"
4" X 4" (Wood)	33½"	57"
4" X 6" (Wood)	35"	57½"
6" X 6" (Wood)	35½"	58"
6" X 8" (Wood)	37½"	59 "

** Verify lengths before bending and attaching to sign and post.

NOTES:
1. Sign braces are only installed when specified in the contract plans, in the special provisions, or by the engineer.
2. When attaching bolts to brace slot, hold bolt head in place and turn nut on opposite side.
3. Use nylon washer against both sides of aluminum brace when using galvanized hardware.

CALC. BOOK NO. N/A

SDR DATE 12-10-09

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

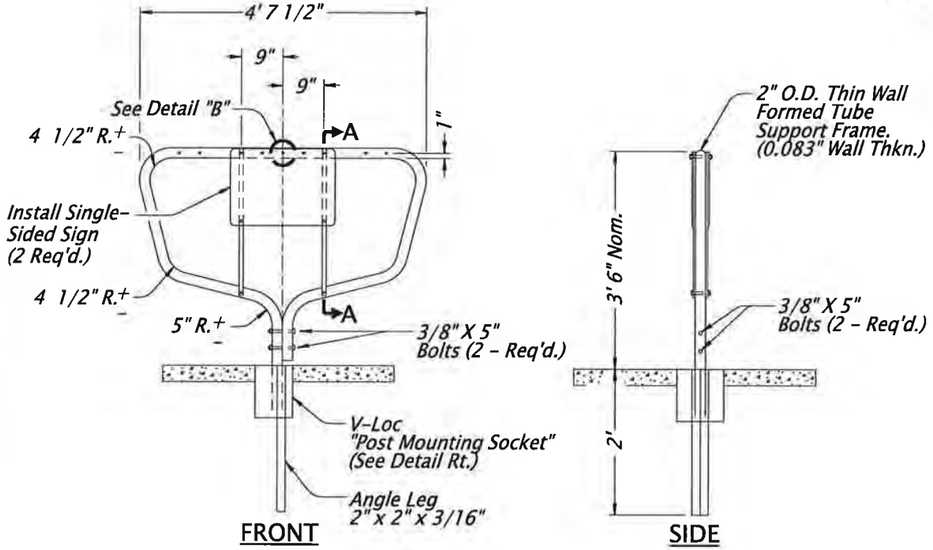
OREGON STANDARD DRAWINGS

SIGN BRACING DETAIL

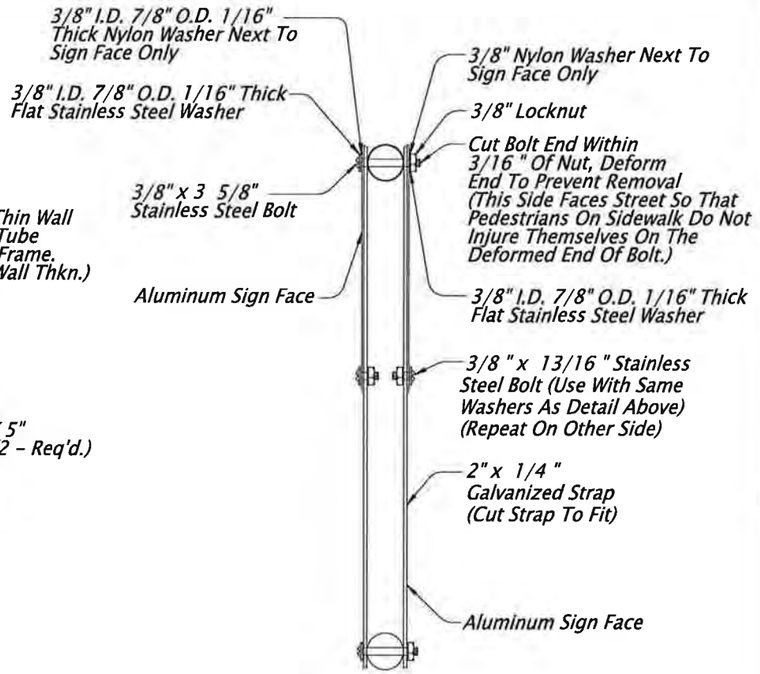
2021

DATE	REVISION DESCRIPTION

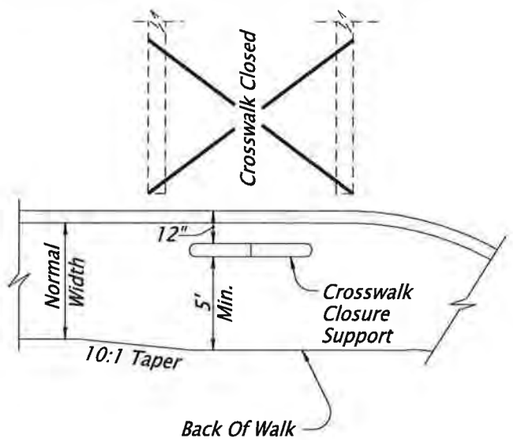
TM206



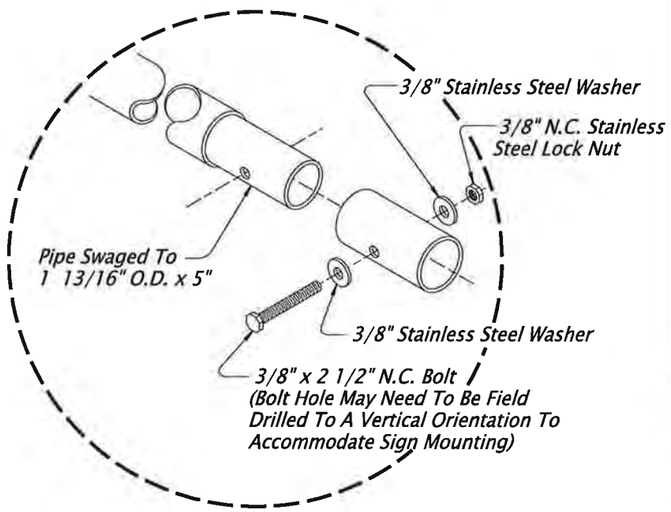
CROSSWALK CLOSURE SUPPORT DETAIL



SECTION A-A



PLAN VIEW



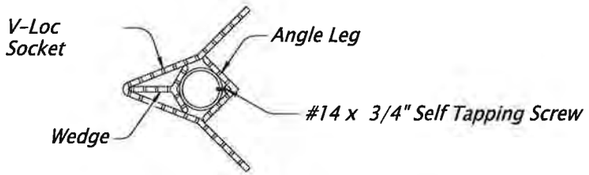
DETAIL "B"

GENERAL NOTES:

1. All Holes In The Tube Support Frame To Be Predrilled By The Manufacturer. (1/32" Larger Than Mounting Bolt)
2. Pipe Swaged By The Manufacturer.

SIGN DETAIL
OR22-7
24" x 18"

Drill 3/8" Dia. Bolt Hole At Each Corner Where Needed.



POST MOUNTING SOCKET
For Additional Details See Standard Drg. No. RD100

NOTE:
Care Shall Be Taken That No Concrete Is Placed Within Mounting Socket.

CALC. BOOK NO. N/A

SDR DATE 7/02/2018

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

CROSSWALK CLOSURE DETAIL

2021

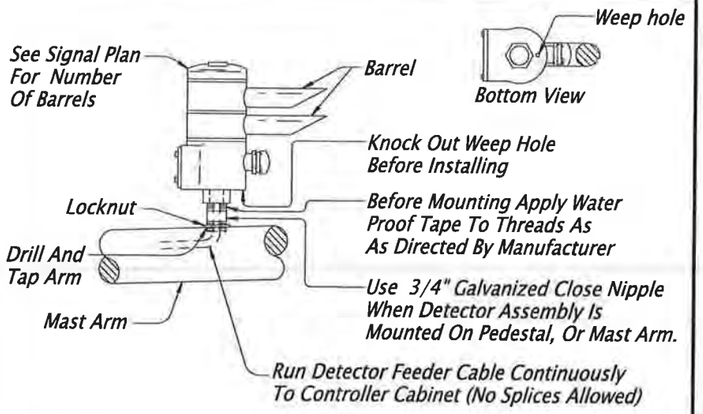
DATE	REVISION DESCRIPTION

TM240.dgn 07-02-2018

TM240

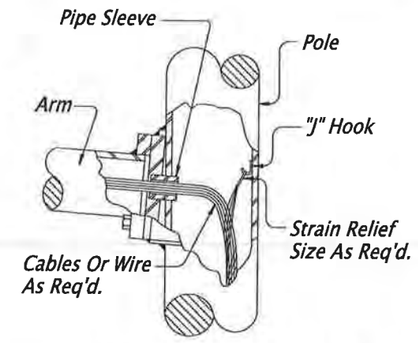
plotfile_TM200s_500s.dgn :: Default 7/10/2020 8:51:31 AM hwyr20m

Effective Date: December 1, 2020 - May 31, 2021



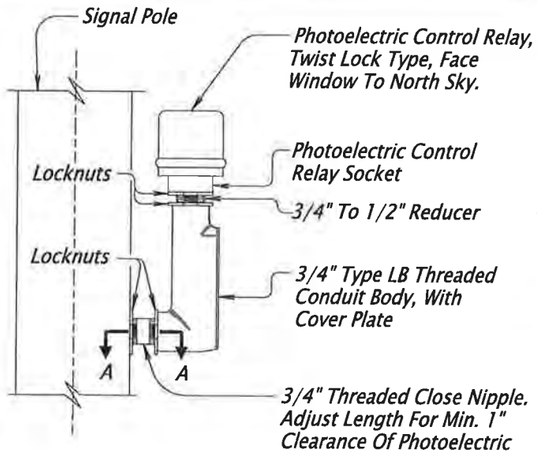
DETAIL "A" FIRE PREEMPTION INSTALLATION

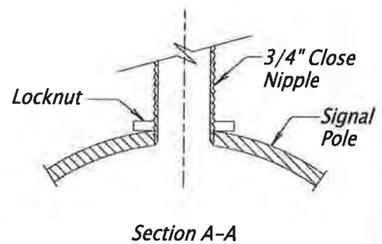
Emitter Units For Vehicles Provided By Others



DETAIL "B" MAST ARM CONNECTION

Preinstalled "J" Hooks In Poles For Wire Compression Strain Relief Devices (Cable Grips) At All Access Entrances For Luminaire & Signal Arms.

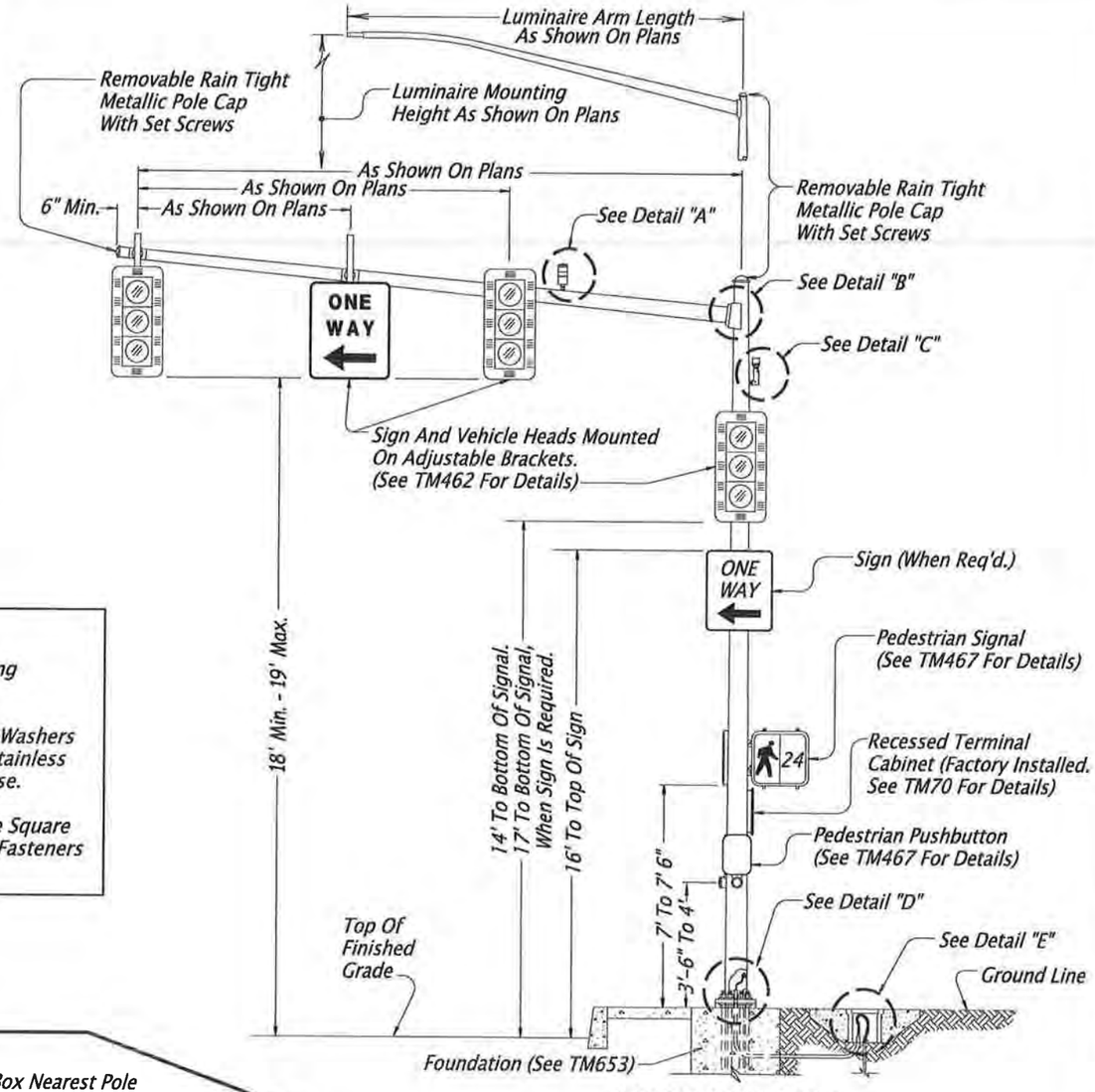




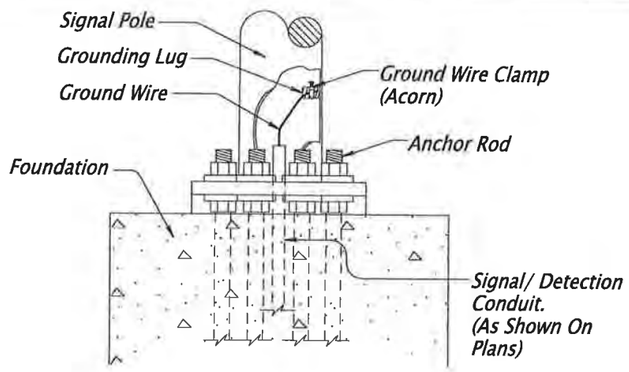
DETAIL "C" PHOTOELECTRIC CONTROL INSTALLATION

General Notes:

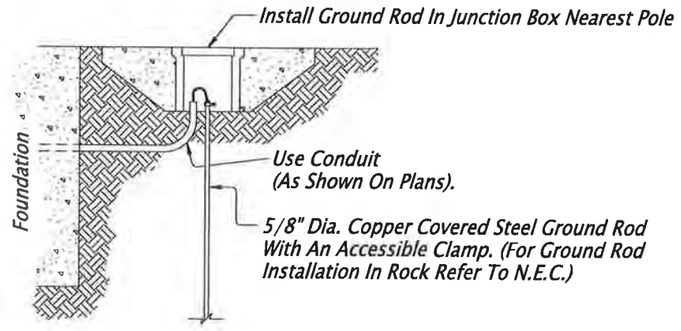
1. *All Pole Entrances Containing Wiring Shall Be Smooth.*
2. *All Screws, Bolts, Nuts And Washers Shall Be Type 304 Or 316 Stainless Steel Unless Noted Otherwise.*
3. *Bolts And Screws Shall Have Square Or Hex Heads. Allen Head Fasteners Not Allowed.*



MAST ARM POLE



DETAIL "D" INTERIOR GROUND INSTALLATION



DETAIL "E" GROUND ROD INSTALLATION

Not Applicable For Structure Mounted Poles. See Specifications.

CALC. BOOK NO. _ N/A _

SDR REPORT DATE 2-Jul-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

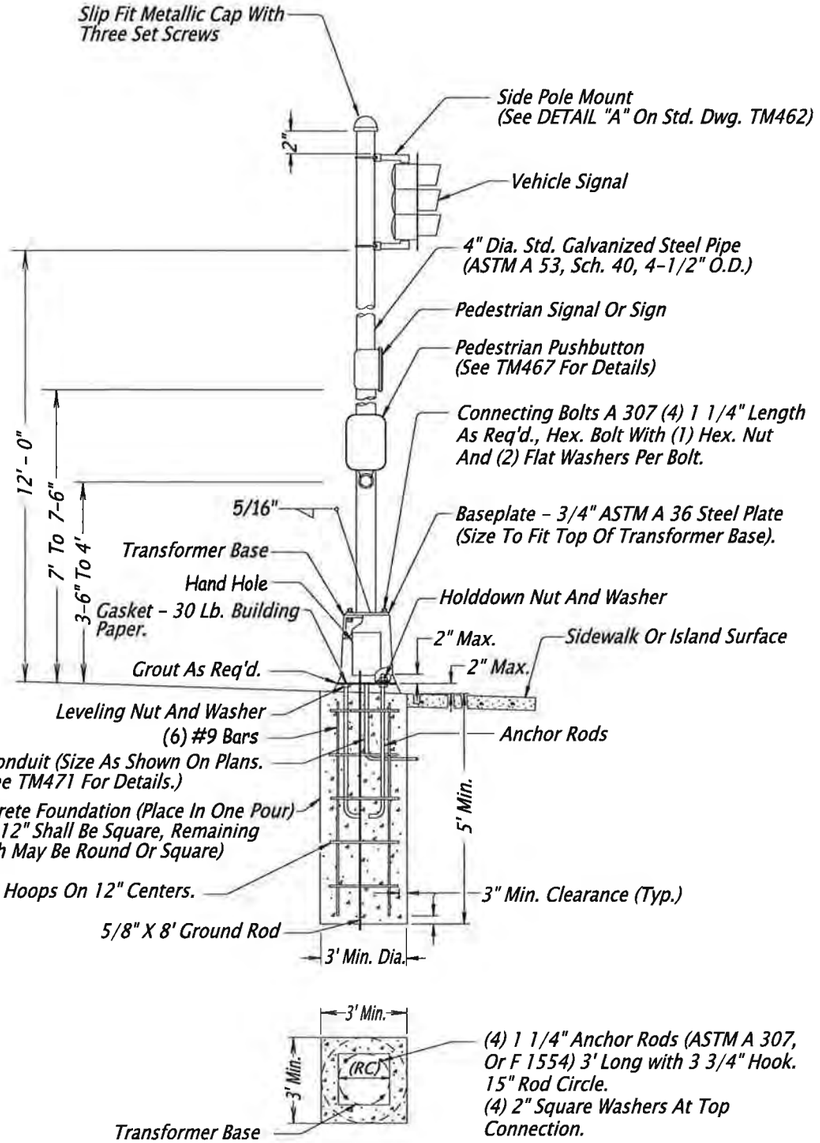
OREGON STANDARD DRAWINGS

MAST ARM POLE DETAILS

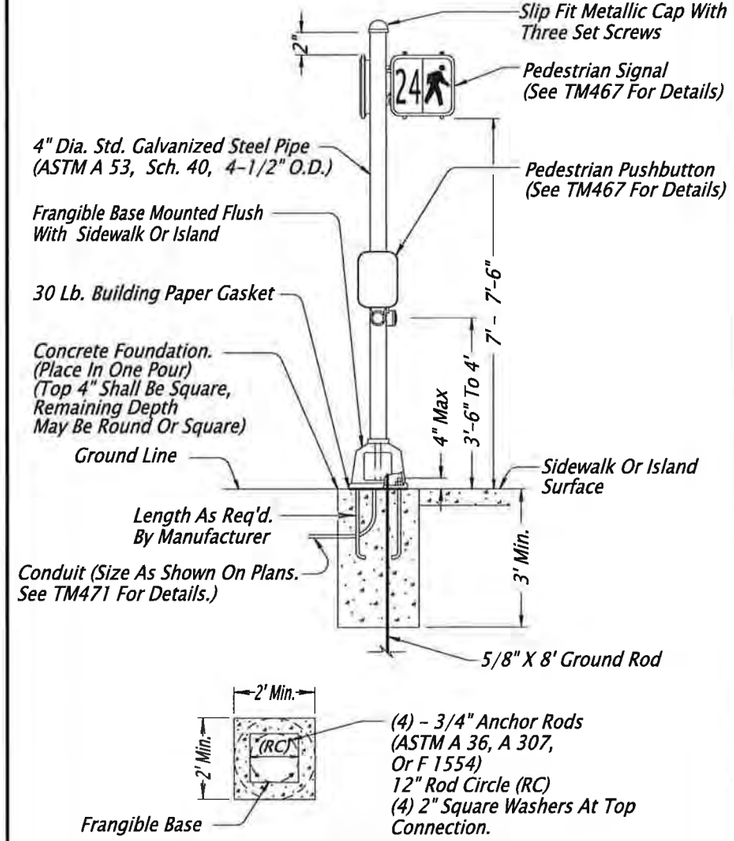
2021

DATE	REVISION DESCRIPTION

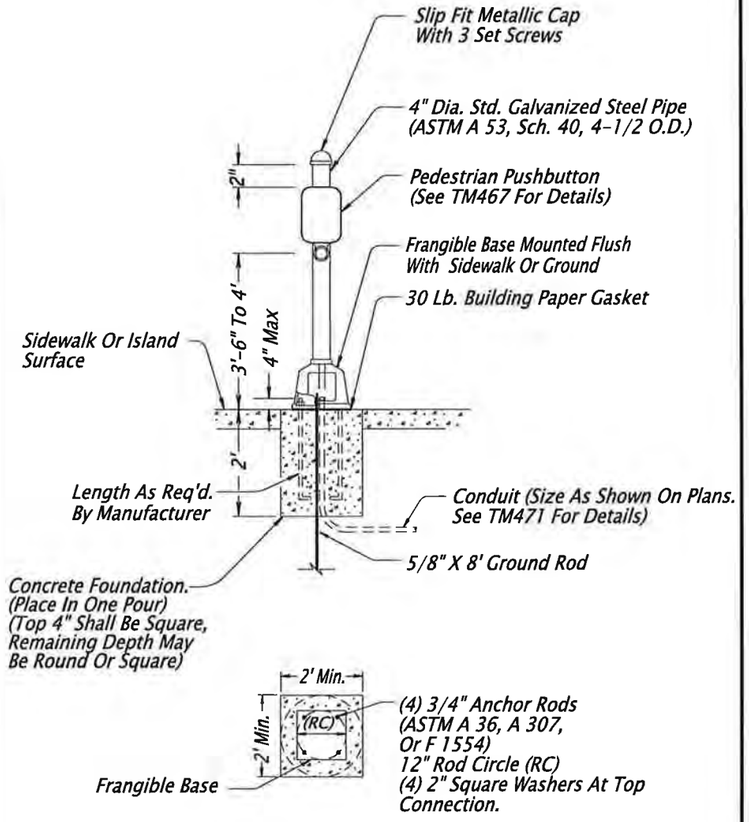
TM450



VEHICLE SIGNAL PEDESTAL



PEDESTRIAN SIGNAL PEDESTAL



PEDESTRIAN OR BICYCLE PUSHBUTTON POST

General Notes:

1. *All Bolts, Nuts And Washers Shall Conform To 02560.20 And Be Galvanized Steel According To 02560.40 Unless Noted Otherwise.*
2. *All Anchor Rods Shall Be Galvanized Steel Conforming To 02560.30.*
3. *All Pole Entrances Containing Wiring Shall Be Smooth.*
4. *Install 1/4" Thick Preformed Expansion Joint Filler Around Footing In Sidewalk Area As Per Tm653.*
5. *Top Of Foundations Shall Have 0" - 1/4 " Exposure Above Finish Grade.*
6. *Flat Side Of Foundation Should Line Up With Back Of Sidewalk.*

CALC. BOOK NO. N/A

SDR REPORT DATE 2-Jan-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

VEHICLE, PEDESTRIAN SIGNAL AND PUSHBUTTON MOUNTING OPTION DETAILS

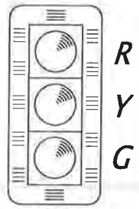
2021

DATE	REVISION DESCRIPTION

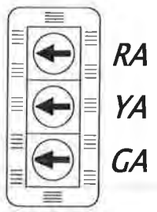
TM457

TYPE 1R
Red Flashing Beacon

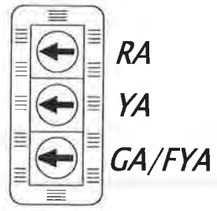
TYPE 1Y
Yellow Flashing Beacon



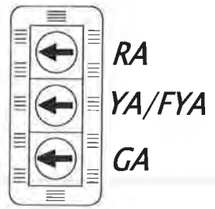
TYPE 2
Standard



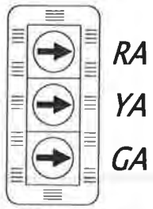
TYPE 3L
Protected Left Turn



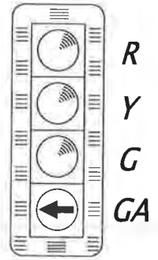
TYPE 3LBF
Protected / Permitted Left Turn



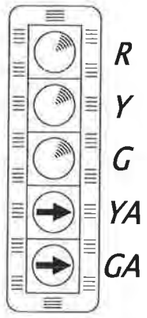
TYPE 3LCF
Protected / Permitted Left Turn



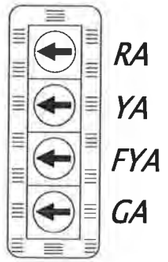
TYPE 3R
Protected Right Turn



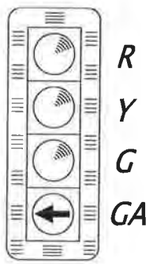
TYPE 4
Spilt Phase Only



TYPE 5
Protected / Permitted Right Turn

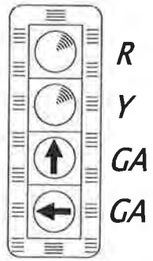


TYPE 6L
Protected / Permitted Left Turn



TYPE 7
Rail Preemption Only

TYPE 8
Ramp Meter Only

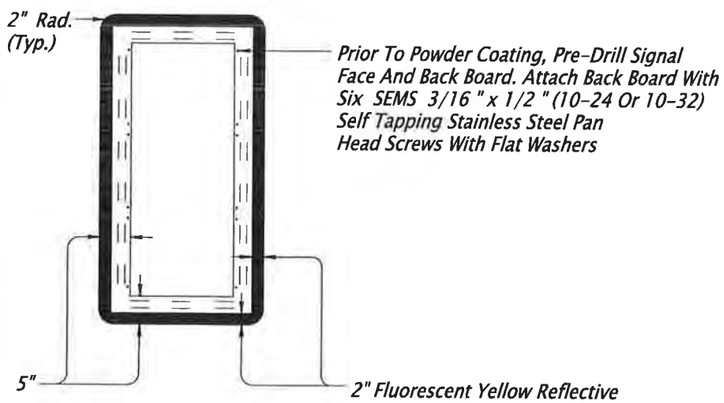


TYPE 9
Split Phase Only

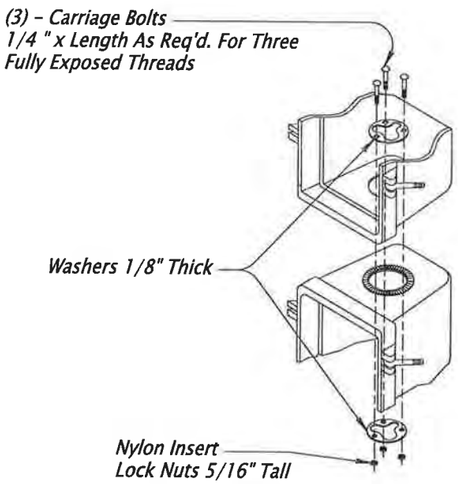
TYPE 10
PHB Only

Color Indications. All Indications Are 12" Diameter.	
R	*Red Circular Ball*
Y	*Yellow Circular Ball*
G	*Green Circular Ball*
RA	*Red Arrow*
YA	*Yellow Arrow*
GA	*Green Arrow*
FYA	*Flashing Yellow Arrow*
FR	*Flashing Red Circular Ball*
FY	*Flashing Yellow Circular Ball*

VEHICLE SIGNAL HEAD DESIGNATIONS AND LENS ARRANGEMENT



BACKBOARD



VEHICLE HEAD ASSEMBLY

General Notes:

1. *All Screws, Bolts, Nuts And Washers Shall Be Type 304 Or 316 Stainless Steel Unless Noted Otherwise.*
2. *Bolts And Screws Shall Have Square Or Hex Heads Unless Otherwise Noted. Allen Head Fasteners Not Allowed.*
3. *Assemble The Heavy Duty Polycarbonate Vehicle Signal, Visor, And Backboard With Bolted Connections, Stainless Steel Reinforcing Strips And Stainless Steel Plates.*

CALC. BOOK NO. N/A

SDR REPORT DATE 2-Jul-2018

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

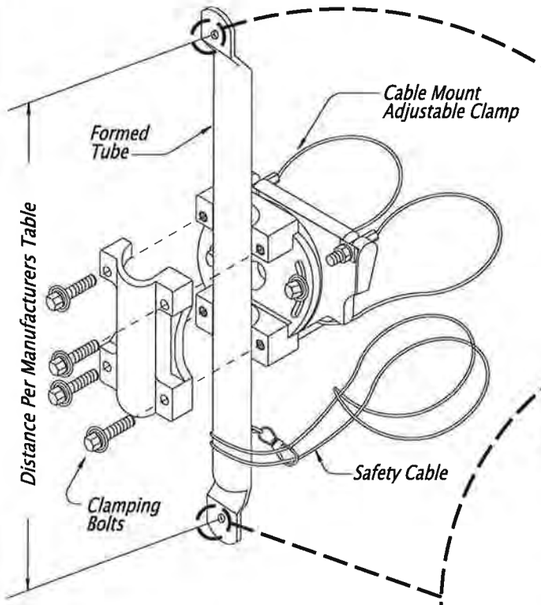
OREGON STANDARD DRAWINGS

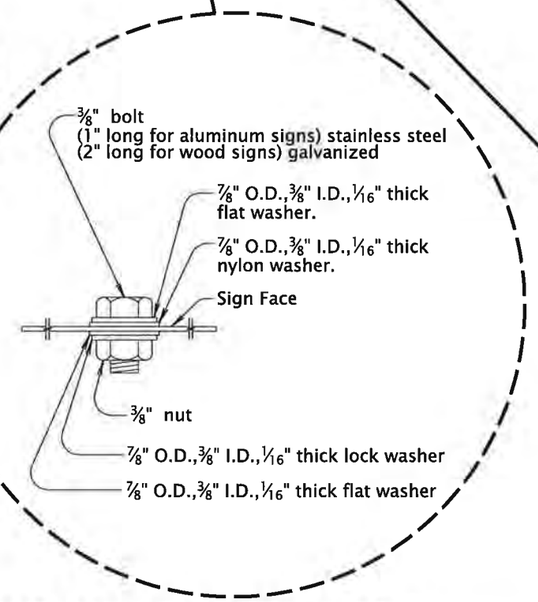
VEHICLE SIGNAL DETAILS

2021

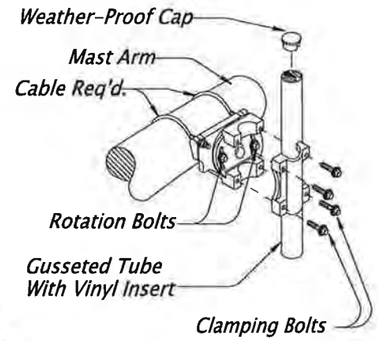
DATE	REVISION DESCRIPTION

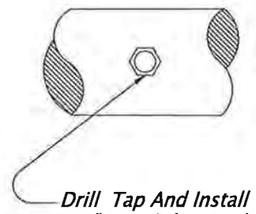
TM460





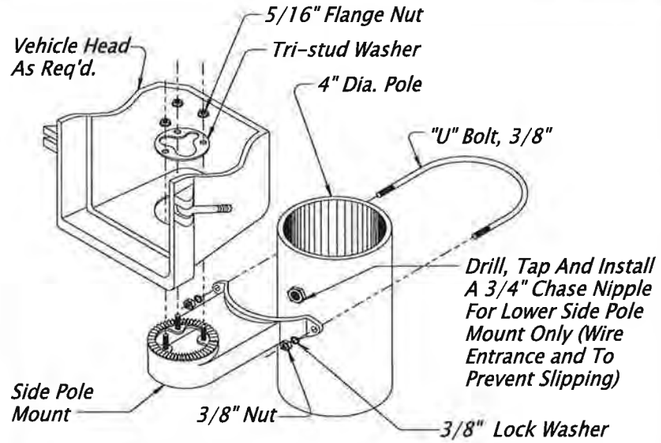
SIGN BRACKET (TYPE "B",MAST ARM/POLE INSTALLATION)





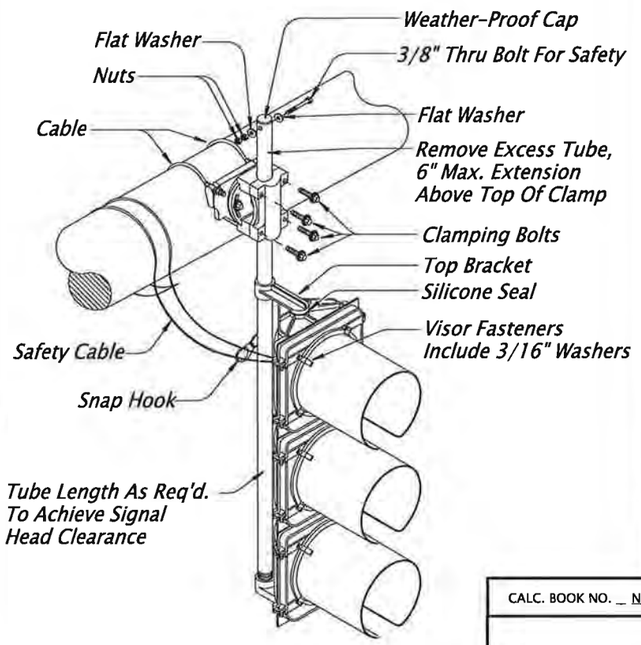
Drill Tap And Install A 1" Dia. Galvanized Metallic Chase Nipple For Wiring Entrance From Adjustable Bracket Into Mast Arm. Repair Galvanizing According To ASTM A 780.

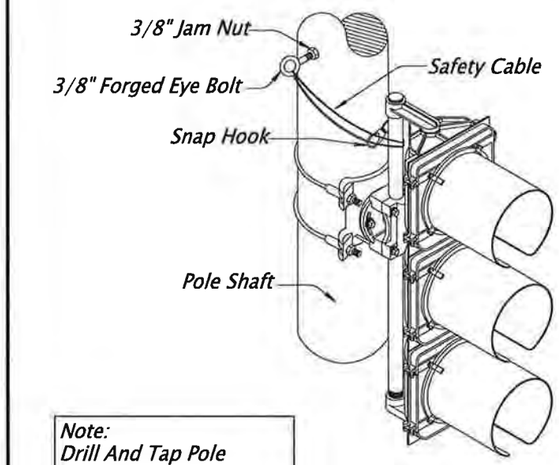
VEHICLE SIGNAL MAST ARM INSTALLATION



4" SIDE POLE MOUNT INSTALLATION

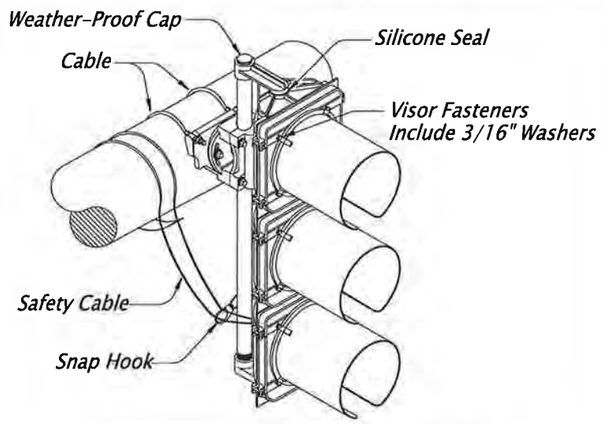
(For Mounting Signal Heads to Vehicle Pedestals)





Note:
Drill And Tap Pole For 3/8" Forged Eye Bolt.

POLE SHAFT INSTALLATION



MOUNTING VEHICLE SIGNAL BETWEEN BRACKET ARMS

NOTE:

This Detail Can Be Applied To Any Signal Head Configuration. If The Extension Between The Center Line Of The Mast Arm And The Top Bracket Exceeds 18" Consult Engineer For Guidance.

MOUNTING VEHICLE SIGNAL ABOVE BRACKET ARMS

General Notes:

1. All Screws, Bolts, Nuts And Washers Shall BeType 304 Or 316 Stainless Steel Unless Noted Otherwise.
2. Bolts And Screws Shall Have Square Or Hex Heads. Allen Head Fasteners Not Allowed.
3. Follow Manufacturers Recommendations For Installation.

CALC. BOOK NO. N/A

SDR REPORT DATE 2-Jul-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

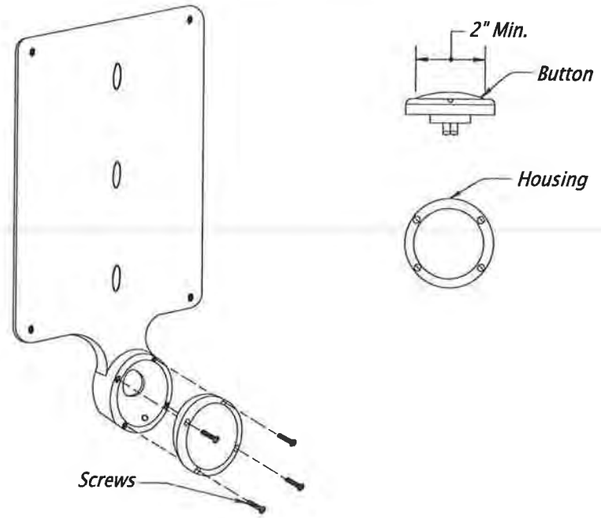
OREGON STANDARD DRAWINGS

VEHICLE SIGNAL BRACKET & SIGN BRACKET (TYPE B) DETAILS

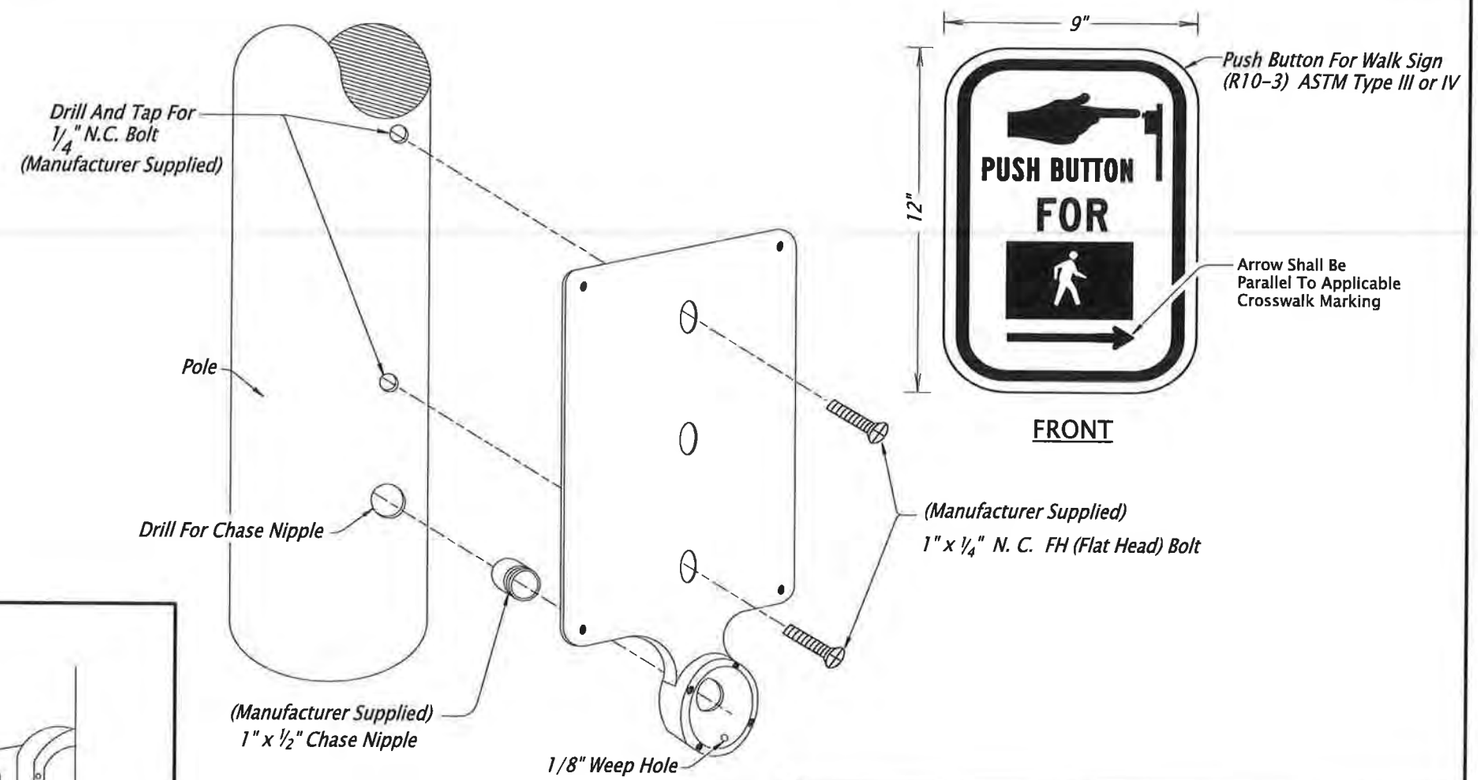
2021

DATE	REVISION DESCRIPTION

TM462

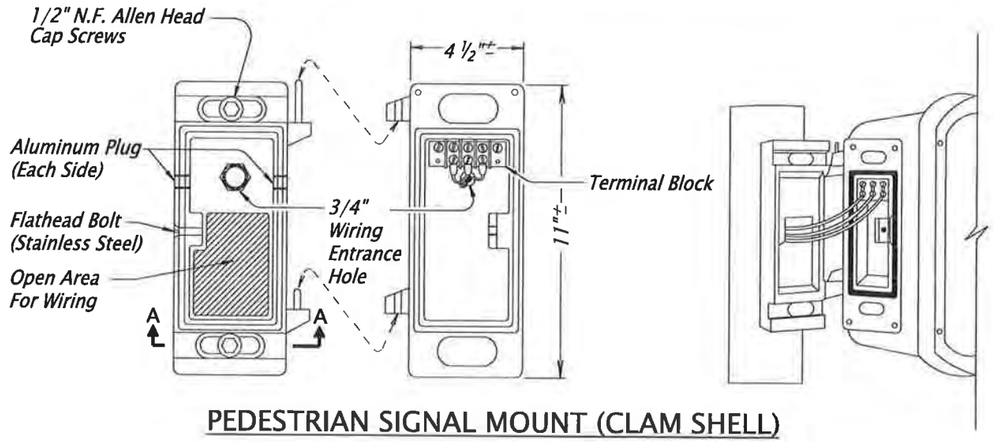


STANDARD PUSHBUTTON



FRONT

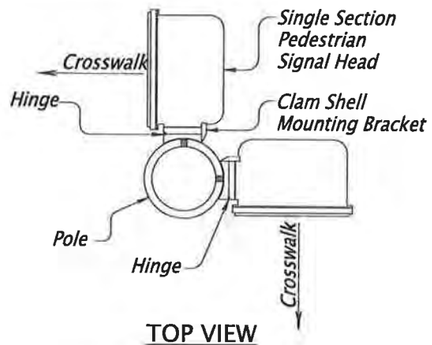
STANDARD PUSHBUTTON STATION AND INSTRUCTION SIGN



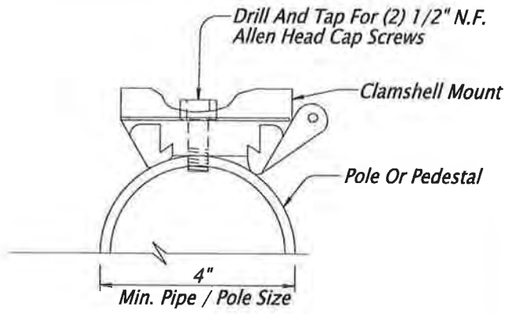
PEDESTRIAN SIGNAL MOUNT (CLAM SHELL)

NOTES:

1. Where Two Heads Are Side Mounted On 4" Conduit, Proper Clearance Shall Be Maintained To Allow Legend To Be Fully Visible.
2. Clam Shells To Be Orientated So That The Heads Can Be Opened For Maintenance. (Verify Hinge Placement Of Clamshell).



TOP VIEW



SECTION A-A

CLAM SHELL ORIENTATION

General Notes:

1. All Screws, Bolts, Nuts And Washers Shall Be Type 304 Or 316 Stainless Steel Unless Noted Otherwise.
2. Bolts And Screws Shall Have Square Or Hex Heads. Allen Head Fasteners Not Allowed.
3. Drill And Tap Pole As Per Orientation Shown On Plans.
4. Horizontal Reach To The Pushbutton Shall Be 10 Inches Maximum. See Plans Or Consult Engineer To Ensure Compliance.

CALC. BOOK NO. N/A

SDR REPORT DATE 2-Jul-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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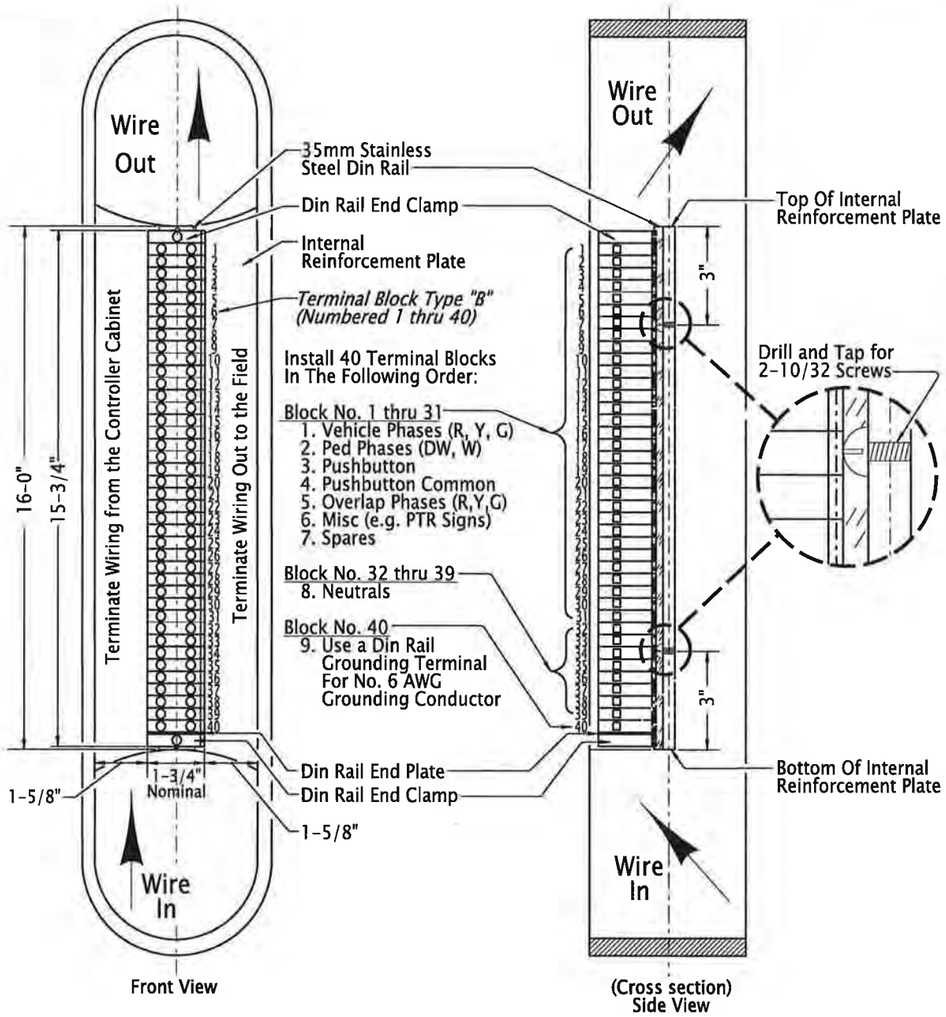
OREGON STANDARD DRAWINGS

PEDESTRIAN SIGNAL MOUNT AND PEDESTRIAN PUSHBUTTON DETAILS

2021

DATE	REVISION DESCRIPTION

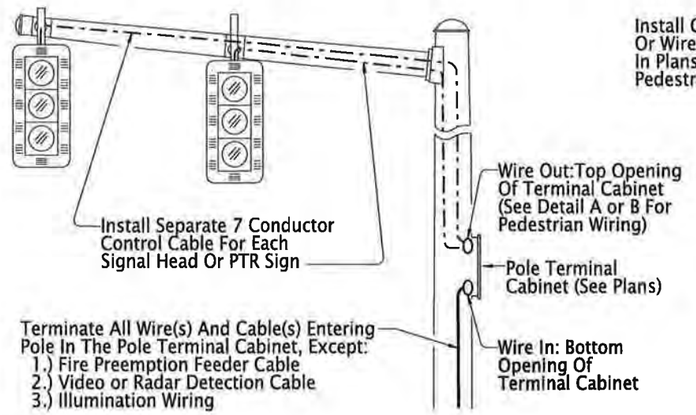
TM467

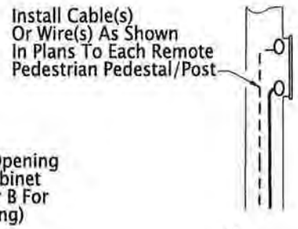


DIN RAIL, TERMINAL BLOCKS, & WIRING IN POLE RECESSED TERMINAL CABINET

7 CONDUCTOR CONTROL CABLE			PEDESTRIAN PHASES	VEHICLE PHASES	SIGNAL HEAD TYPES			
CONDUCTOR NUMBER	BASE COLOR	FIRST TRACER	1 Pedestrian Phase	1 Vehicle Phase	6L, 3LBF	5 or 7	1R, 1Y, 2, 3L, 3LCF, 3R, 4 or 9	10
1	WHITE	—	NEUTRAL	NEUTRAL	NEUTRAL	NEUTRAL	NEUTRAL	NEUTRAL
2	BLACK	—	WALK	YELLOW	YELLOW	YELLOW	YELLOW	YELLOW
3	RED	—	DONT WALK	RED	RED	RED	RED	RED 1
4	ORANGE	—	P.B. COMMON	SPARE	FLASHING YELLOW	TURN YELLOW	SPARE	RED 2
5	GREEN	—	PUSHBUTTON	GREEN	GREEN	GREEN	GREEN	SPARE
6	BLUE	—	SPARE	SPARE	SPARE	TURN GREEN	SPARE	SPARE
7	WHITE	BLACK	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE

COLOR CODE CHART CONTROL CABLE





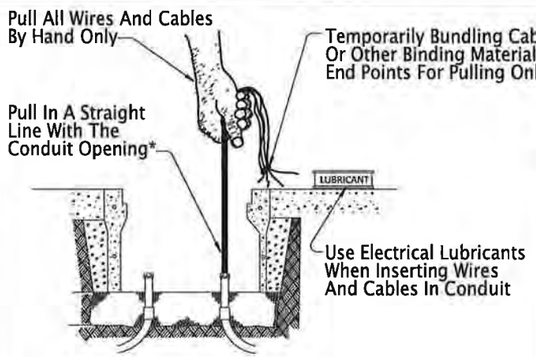
Detail A

Detail B

WIRE & CABLE IN POLES

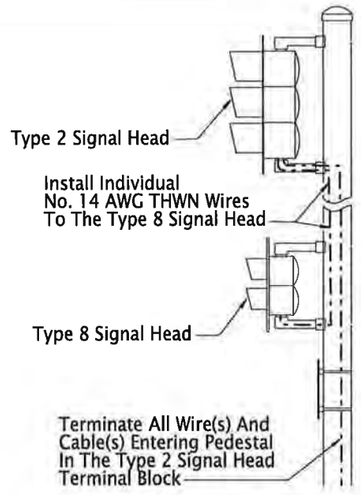
General Notes:

1. Install All Wire And Cable Between Terminal Blocks Without Splicing.
2. Mark Phase Number/Identification On All Cable In Junction Boxes, Terminal Cabinets, Service Cabinets, And Controller Cabinets With Permanent Tags. Use Handheld Labeler (Brady IDXPERT With XC-1500-580-WT-BK Tags Or Approved Equal). Wiring For Overlaps Shall Be Labeled (OLA,OLB,OLC,OLD).
3. Install No. 16 AWG TFFN Orange Base With Blue Tracertone Wire In All Conduits As A Locate Wire. Leave Slack As Required In General Note 5 And Install A Wire Nut. Do Not Join Multiple Locate Wires Under A Common Wire Nut Unless Otherwise Shown.
4. Tape The Ends Of Unsued Conductors With Insulated Vinyl Plastic Tape.
5. Leave Slack In Each Wire And Cable As Follows:
   A.) 2 Feet In Junction Boxes And Poles
   B.) 6 Feet In The First Junction Box Nearest The Controller Cabinet
   C.) 6 Feet In Controller Cabinet And Service Cabinet
6. Install Polyethylene Pull Line In All Conduits Noted On The Plans For Future Use (No Wires/Cables In Conduit). Leave 6 Feet Of Slack Pull Line.
7. At Existing Installations The Contractor Is Responsible For the Re-wiring And Re-numbering Of New And Existing Control Cables, In All Junction Boxes, Terminal Cabinets, Service Cabinets, And Controller Cabinets.



* Use A Pulley Device To Achieve A Straight Line If Pulls Are Made With Poles Or Controller Cabinets In Place

WIRE & CABLE IN CONDUITS



WIRE & CABLE IN RAMP METER PEDESTALS

CALC. BOOK NO. N/A

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SDR REPORT DATE 2-Jul-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

WIRE & CABLE INSTALLATION

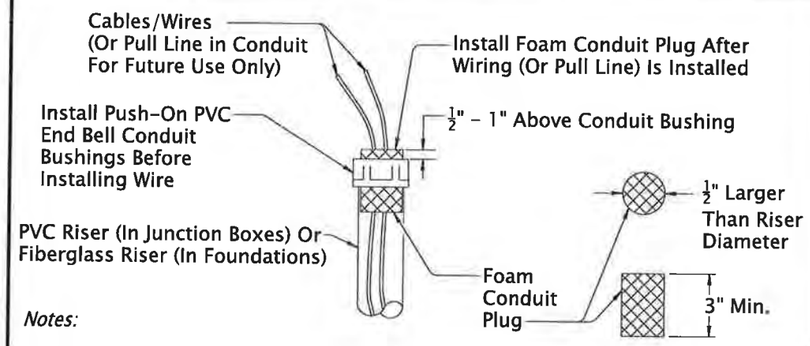
2021

DATE	REVISION DESCRIPTION

TM470

Type Of Conduit	Minimum Cover From Top of Finished Surface (Use Permit Depth If Greater Than These)	
	Roadway & Shoulders	Other Areas
Metallic	24"	18"
Non-Metallic	30"	18"

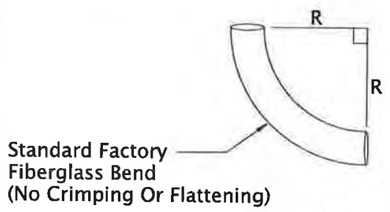
MINIMUM COVER FROM FINISHED SURFACE



Notes:

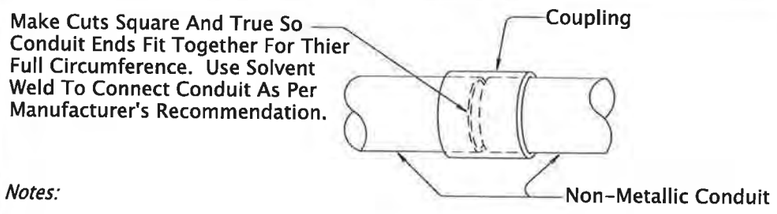
1.) Ream Conduit Ends To Remove Rough Edges And Burrs
2.) Temporarily Plug Or Cap Conduit Ends Until Wiring Is Installed To Keep Debris Out

CONDUIT ENDS AND BUSHINGS



Conduit Diameter	R (min.)
1.5"	10"
2.0"	12"
2.5"	15"
3.0"	18"

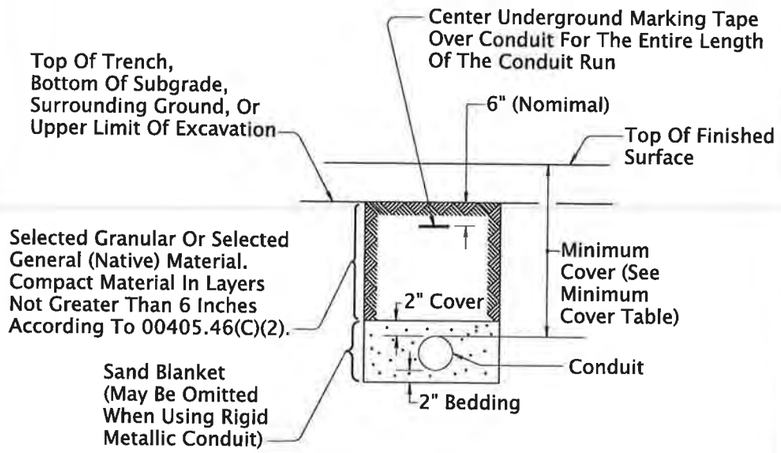
CONDUIT ELBOWS



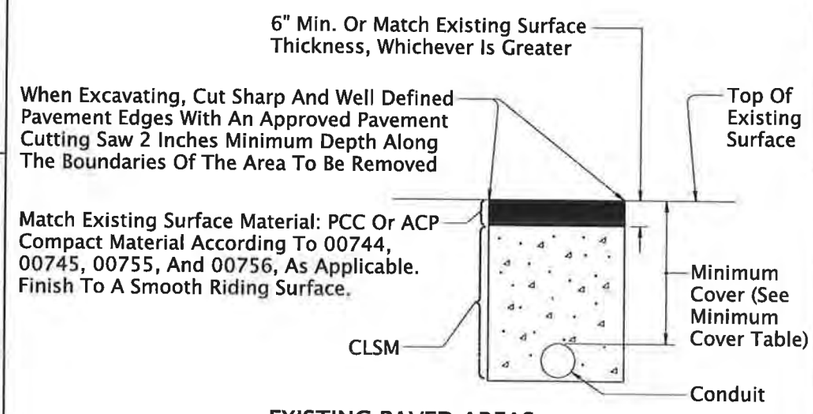
Notes:

1.) Slip Joints, Running Threads Or Reducing Couplings Not Allowed. Use The Same Size Conduit For The Entire Length, Outlet To Outlet.

CONDUIT COUPLINGS



UNSURFACED AREAS
(new roadway prior to paving, shoulders, under sidewalk, landscaped areas, etc.)

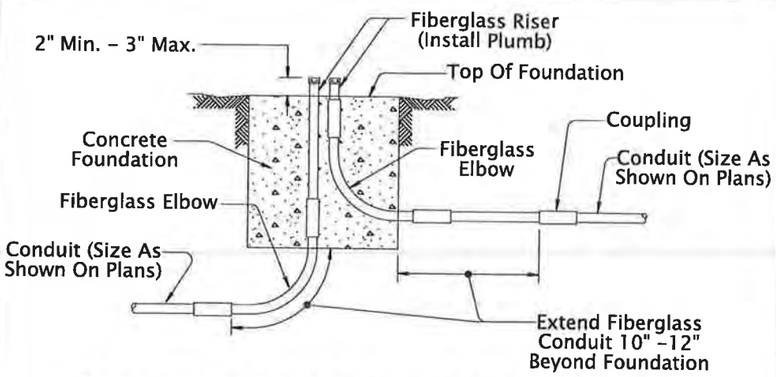


EXISTING PAVED AREAS

Trenching & Backfill Notes:

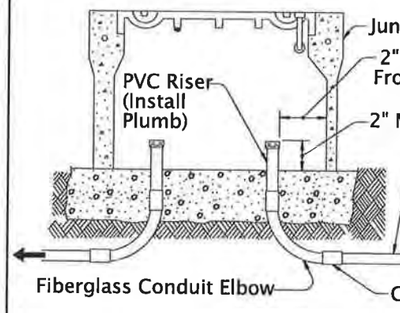
1. *Excavate According To 00960.40. In Areas To Be Paved Or Landscaped, Place All Conduit Before Paving Or Landscaping.*
2. *Hold Trench Width To A Practical Minimum*
3. *Do Not Backfill Trenches Until Inspected By The Engineer*
4. *Furnish Backfill Materials According To 00960.10*

CONDUIT OPEN TRENCH EXCAVATION & BACKFILL



CONDUIT INSTALLATIONS IN FOUNDATIONS

(Applicable for Pole, Pedestal, Post, Service Cabinet and Controller Cabinet Foundations)



Junction Box Type	Max. Sum Of Conduit Diameters
JB1	12"
JB2	18"
JB3	34"

CONDUIT INSTALLATION IN JUNCTION BOXES

General Notes:

1. *Install Non-Metallic Conduit Unless Otherwise Shown. Conduit Runs Shall Be Continous Between Any Pole, Junction Box, Or Cabinet.*
2. *Install Conduit By Open Trench Method, Horizontal Directional Drilling, Or As Shown*
3. *Conduit Runs Shown On Plans Are For Bidding Purposes Only. Locations May Be Changed To Avoid Obstructions.*
4. *Larger Conduit Than Specified May Be Used At The Option And Cost Of The Contractor If Max. Sum Of Conduit Diameters In Junction Box Is Not Exceeded.*

CALC. BOOK NO. N/A

SDR REPORT DATE 2-Jul-2020

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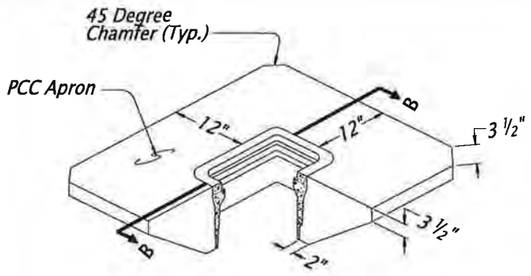
OREGON STANDARD DRAWINGS

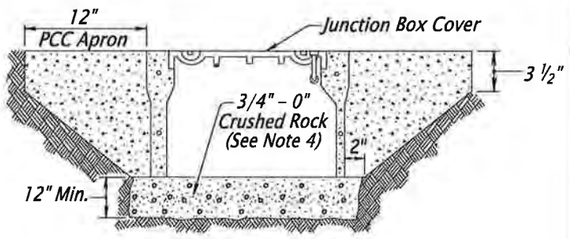
TRENCHING & CONDUIT INSTALLATION

2021

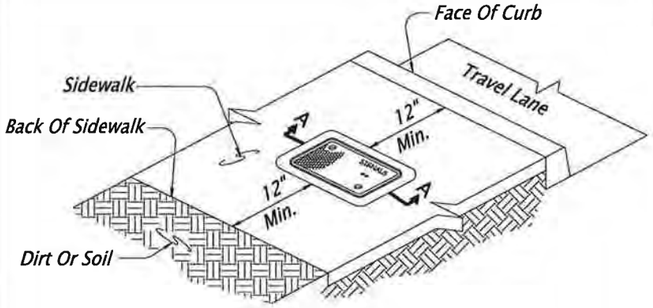
DATE	REVISION DESCRIPTION

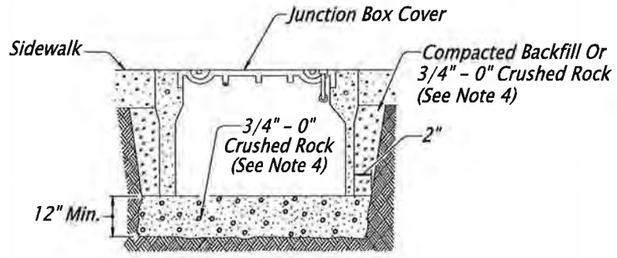
TM471





SECTION B-B

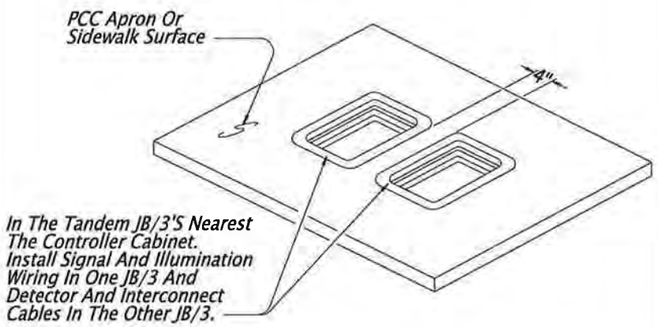




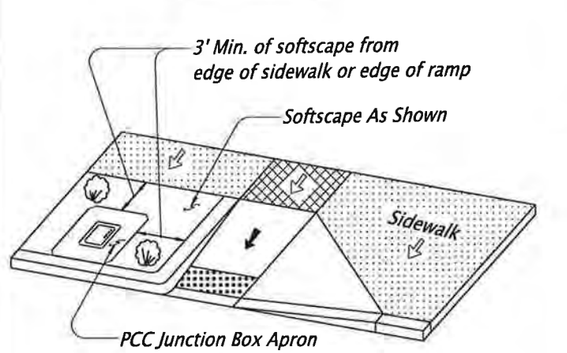
SECTION A-A

JUNCTION BOX INSTALLATION IN PCC SIDEWALK

(This Detail Only Applicable for Junction Boxes Located In Flat Areas Of Sidewalks. Do Not Install In Slopes Of Ramps Or Driveways)

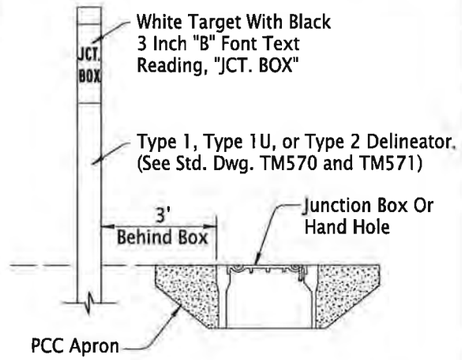


TANDEM JB/3A JUNCTION BOX DETAILS

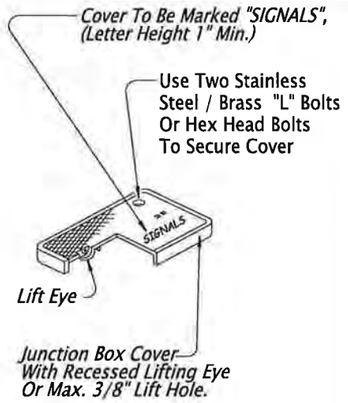


JUNCTION BOX INSTALLATION IN UNSURFACED AREA

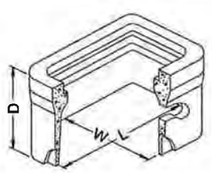
(This Detail Only Applicable for Junction Boxes Located In Incidental Travel Areas; Gravel Shoulders, Behind Guardrail, Etc. Do Not Install In Travel Lanes, Paved Shoulders, Or Other Areas Exposed To Traffic.)



DELINEATION OF JUNCTION BOX & HAND HOLE IN UNSURFACED AREA



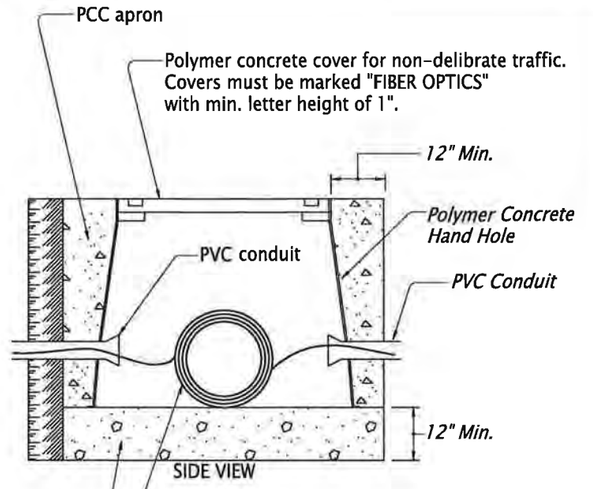
JUNCTION BOX COVER DETAILS

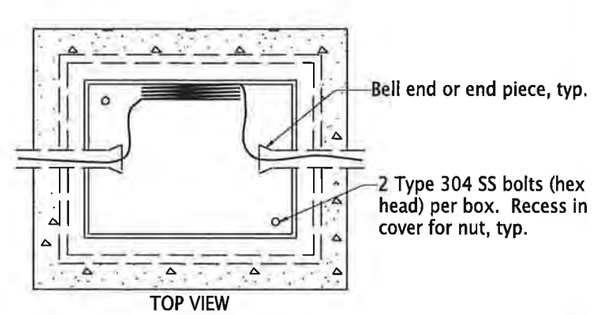


Type*	L	W	D
JB1	17"	10"	12"
JB2	22"	12"	12"
JB3	30"	17"	12"
HH-1	24"	30"	24"
HH-2	30"	48"	24"
HH-3	30"	48"	36"

**Junction Box Or Handhole Type As Shown On Plans*

DIMENSION TABLE





FIBER OPTIC CABLE HAND HOLE INSTALLATION

GENERAL NOTES:

1. Install Top of Junction Box And Hand Hole Flush With The Sidewalk, Surrounding Grade, Or Top Of Curb. For Hand Holes Installed In The Roadway Or Shoulder, Leave The Top Of The Hand Hole 1/2" Below The Pavement Surface.
2. Install Junction Boxes And Hand Holes At The Approximate Locations Shown, Or If Not Shown, No More Than 300 Feet Apart For Junction Boxes And No More Than 1000 Feet Apart For Hand Holes.
3. More Junction Boxes And Hand Holes Than Specified May Be Installed To Facilitate The Work At The Option And Cost Of The Contractor
4. Use Materials According To 00640.10 and 00640.16. Use Compaction Equipment Suitable For Area And Compact Each Six Inch Layer With Sufficient Coverages To Produce A Firm Unyielding Surface. Do Not Install Conductors Until Surface Has Been Constructed.

CALC. BOOK NO. N/A

SDR REPORT DATE 2-Jul-2020

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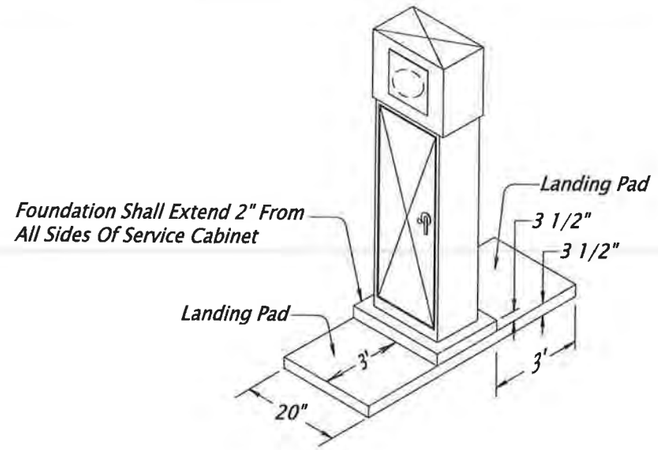
OREGON STANDARD DRAWINGS

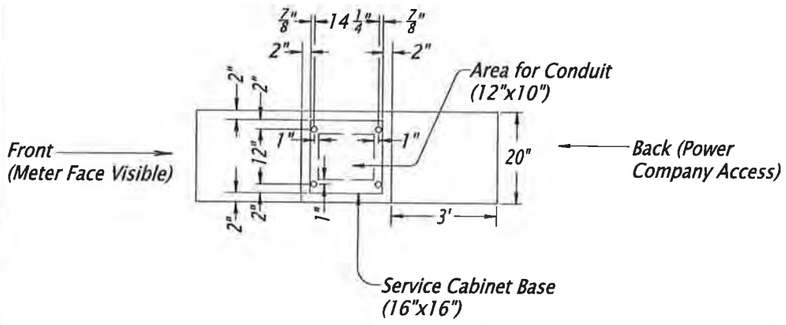
TRAFFIC SIGNAL JUNCTION BOXES/ HAND HOLES

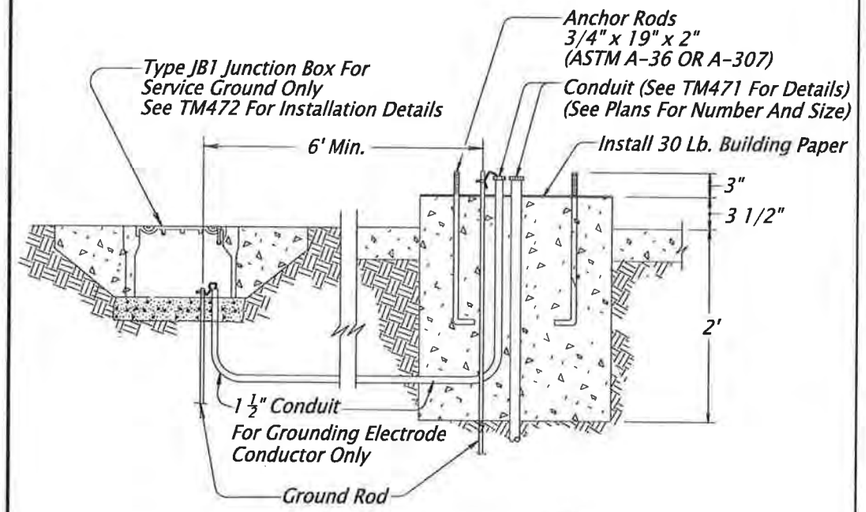
2021

DATE	REVISION DESCRIPTION

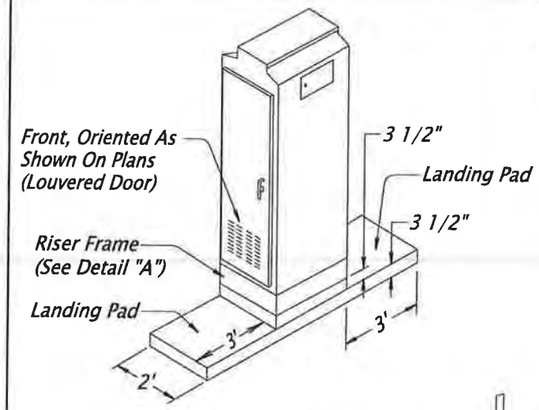
TM472

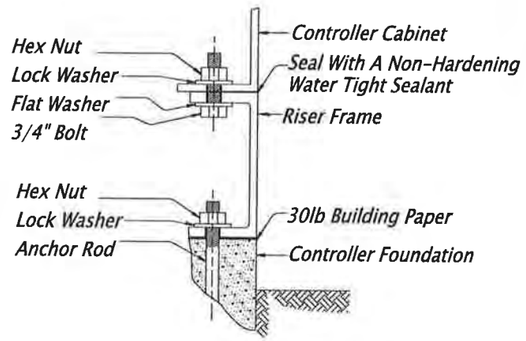




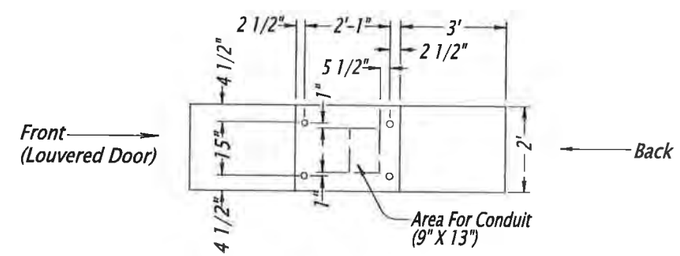


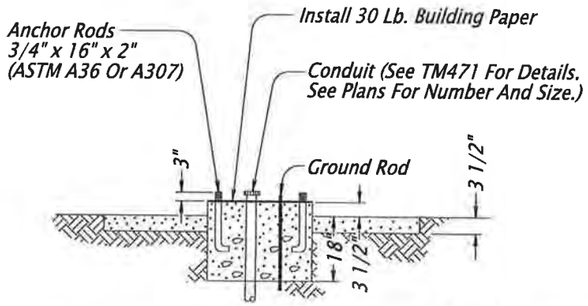
BASE MOUNTED SERVICE CABINET FOUNDATION





DETAIL "A"
RISER FRAME CONNECTION

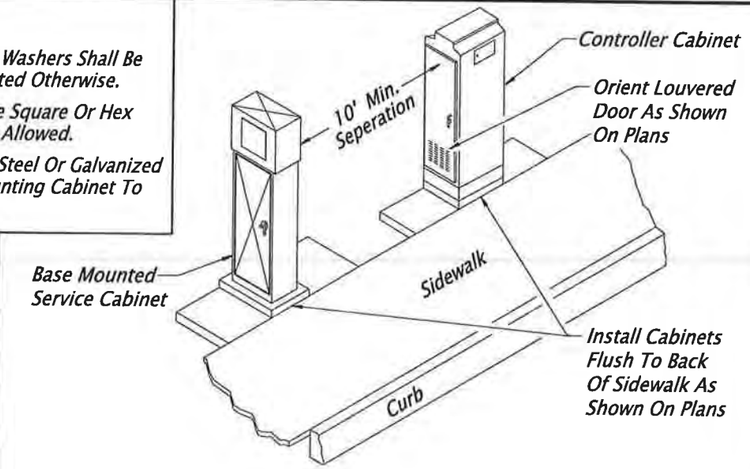




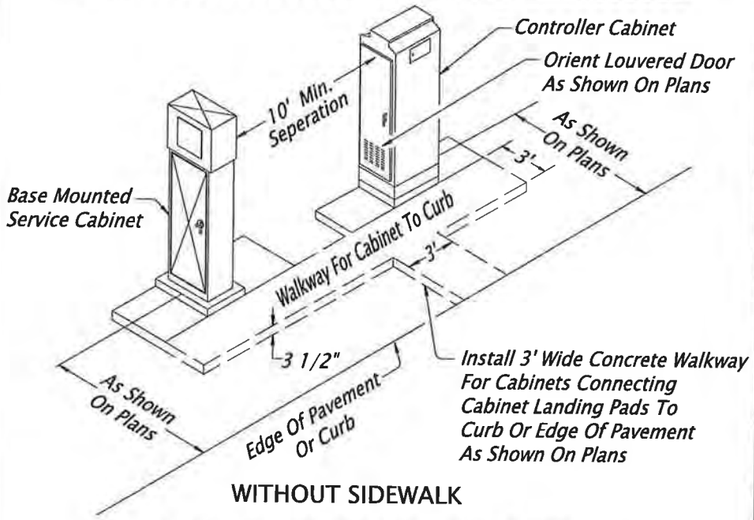
CONTROLLER CABINET FOUNDATION DETAILS
(Model 332S, 332, 334, And 340 Cabinets)

General Notes:

1. *All Screws, Bolts, Nuts And Washers Shall Be Galvanized Steel Unless Noted Otherwise.*
2. *Bolts And Screws Shall Have Square Or Hex Heads. Allen Fasteners Not Allowed.*
3. *Type 304 Or 316 Stainless Steel Or Galvanized Steel May Be Used For Mounting Cabinet To Riser Frame.*



WITH SIDEWALK



WITHOUT SIDEWALK

CABINET FOUNDATION LOCATIONS

Note: Verify Base Mounted Service Cabinet Location And Meter Placement Is Acceptable To Local Power Company

CALC. BOOK NO. N/A

SDR REPORT DATE 2-Jul-2020

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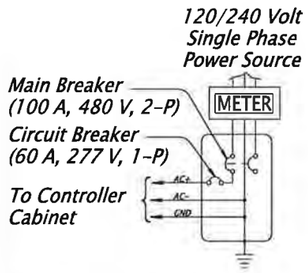
OREGON STANDARD DRAWINGS

CONTROLLER CABINET & SERVICE CABINET FOUNDATION DETAILS

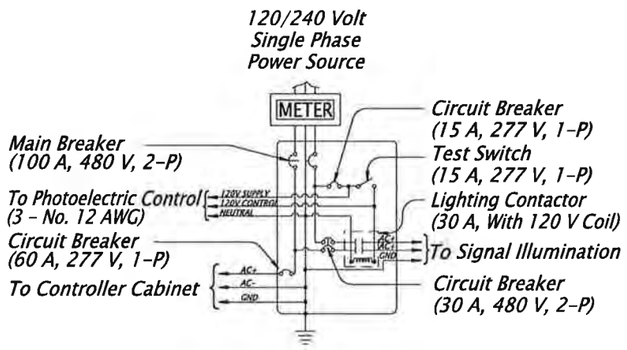
2021

DATE	REVISION DESCRIPTION

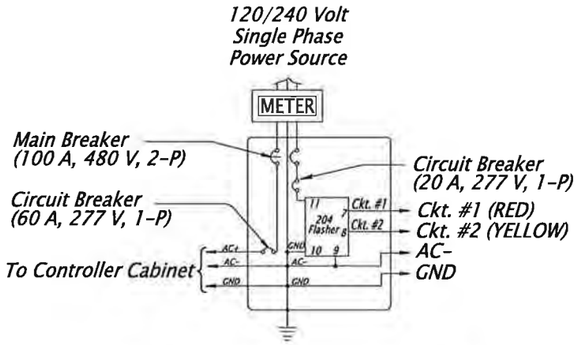
TM482



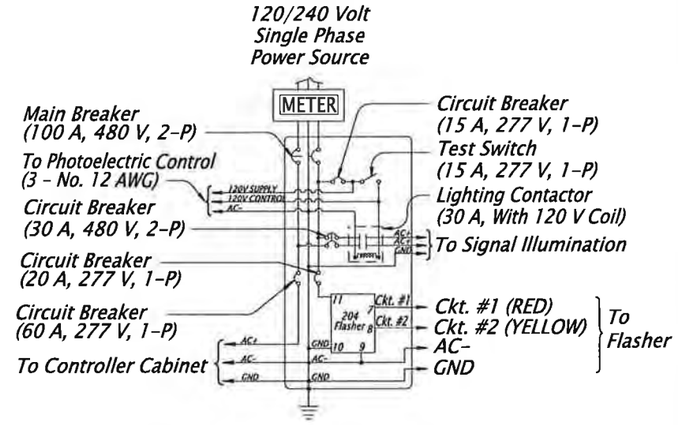
SERVICE CABINET WIRING FOR
120/240 VOLT SIGNAL SERVICE
BMC



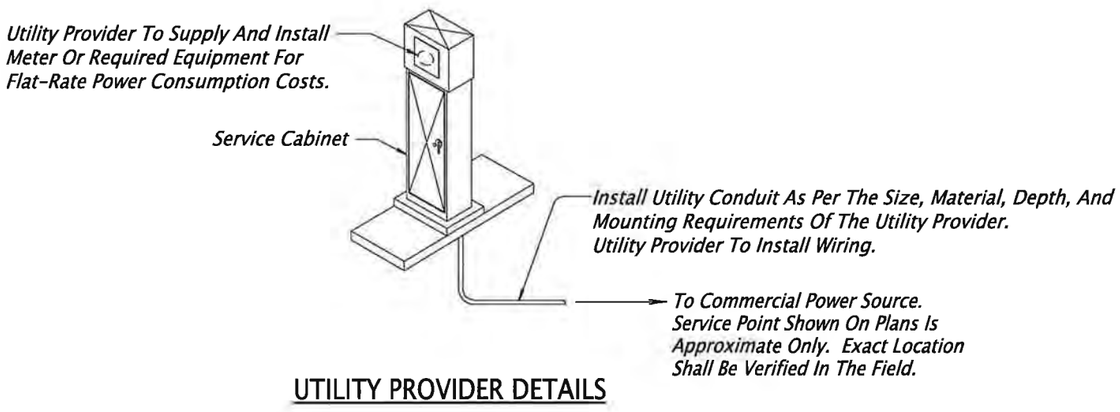
SERVICE CABINET WIRING
WITH 240 VOLT ILLUMINATION
BMCL



SERVICE CABINET WIRING
WITH FLASHER
BMCF



SERVICE CABINET WIRING
FOR SIGNAL, FLASHER &
240 VOLT ILLUMINATION
BMCFL



UTILITY PROVIDER DETAILS

General Notes:

1. *Notify Utility Before Making Any Connections To Utility Poles.*
2. *Service Cabinet Shall Have A Solid Copper Neutral Bus And The Number And Size Of Switches Or Circuit Breakers As Shown.*
3. *Wiring Connections To The Terminal Screws On The Circuit Breakers And Contactors Shall Make Full Contact Under The Screw Head.*
4. *Circuit Breakers Shall Be UL489 Listed, Unenclosed, Molded Case Bolt-On Type With End Conductor Terminals Suitable For Surface Mounting In The Cabinet On A False Back Or Bracket.*
5. *Label Circuit Breakers And Equipment With An Engraved Permanent Label On The Dead Front Panel To Indicate The Circuit Controlled.*

CALC. BOOK NO. N/A

SDR REPORT DATE 2-Jul-2020

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OREGON STANDARD DRAWINGS

SERVICE CABINET WIRING DETAILS

2021

DATE	REVISION DESCRIPTION

TM485

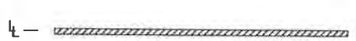
W

4" WHITE LINE

W-2

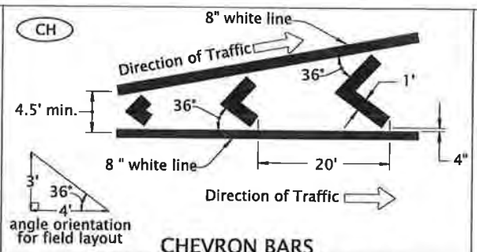
8" WHITE LINE

Y



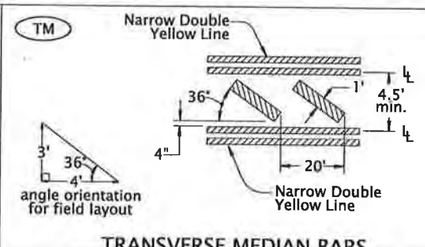
4" YELLOW LINE

CH



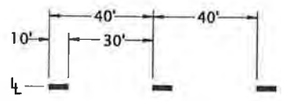
CHEVRON BARS
1' WHITE BARS AT 20' SPACING

TM



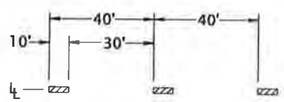
TRANSVERSE MEDIAN BARS
1' YELLOW BARS AT 20' SPACING

WB



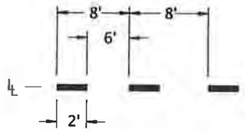
4" WHITE BROKEN LINE

YB



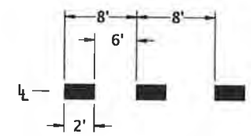
4" YELLOW BROKEN LINE

WD



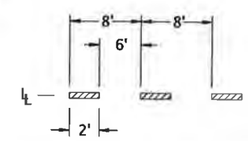
4" WHITE DOTTED LINE
For lane extensions

WD-2



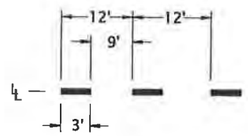
8" WHITE DOTTED LINE
For lane extensions and bike lane extensions

YD



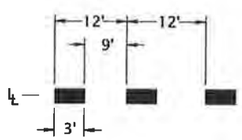
4" YELLOW DOTTED LINE
For lane extensions

DLL



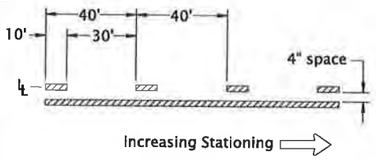
4" WHITE DOTTED LANE LINE
For lane lines in acceleration/deceleration lanes

DLL-2



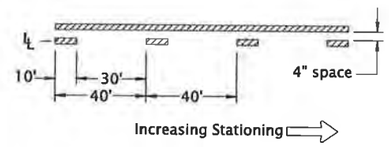
8" WHITE DOTTED LANE LINE
For lane lines in drop lanes

NPR



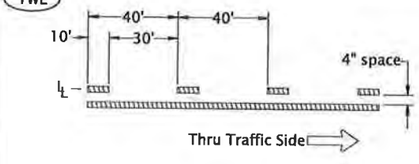
NO-PASS RIGHT
4" YELLOW LINES

NPL



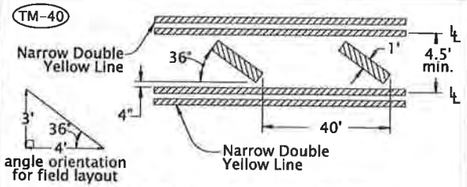
NO-PASS LEFT
4" YELLOW LINES

TWL



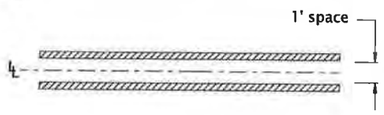
TWO-WAY LEFT TURN
4" YELLOW LINES

TM-40



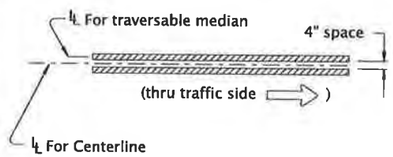
TRANSVERSE MEDIAN BARS
1' YELLOW BARS AT 40' SPACING
For use at painted medians where distance between left turn refuges exceeds 200'

D



DOUBLE NO-PASS
TWO 4" YELLOW LINES

ND

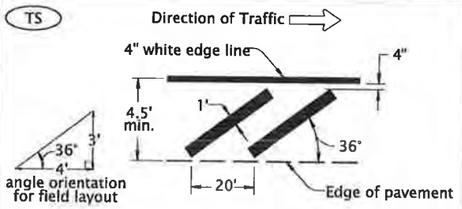


NARROW DOUBLE NO-PASS
TWO 4" YELLOW LINES

NDW

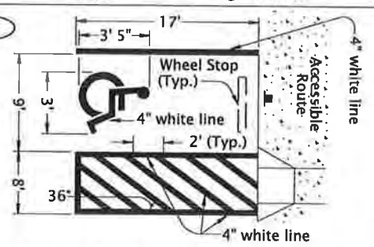
NARROW DOUBLE NO-LANE CHANGE
TWO 4" WHITE LINES

TS



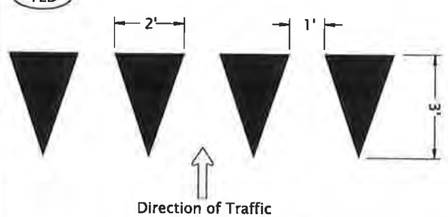
TRANSVERSE SHOULDER BARS
1' WHITE BARS AT 20' SPACING

HC



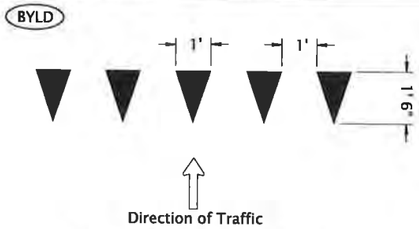
DISABLED PARKING DETAIL (white)

YLD



YIELD LINE (white)

BYLD



BICYCLE YIELD LINE (white)

LEGEND

Direction Of Traffic, Increasing Stationing Or Thru Traffic Side

℄ — Lane line dimensions are shown on the striping plans

CALC. BOOK NO. N/A

SDR DATE 07/01/2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications.

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OREGON STANDARD DRAWINGS

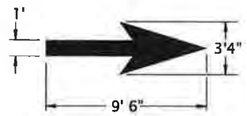
PAVEMENT MARKING STANDARD DETAIL BLOCKS

2021

DATE	REVISION DESCRIPTION
07/2020	Changed Min. widths for CH, TM, TM-40, and TS

TM500

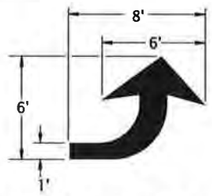
SA



STRAIGHT ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

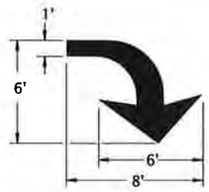
LA



LEFT TURN ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

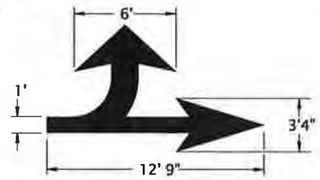
RA



RIGHT TURN ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

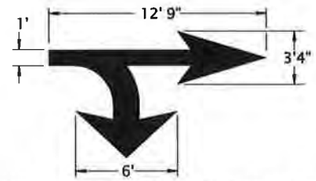
LSA



LEFT TURN STRAIGHT ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

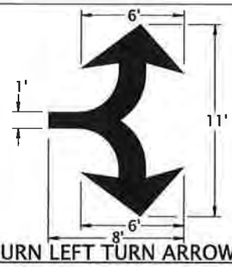
RSA



RIGHT TURN STRAIGHT ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

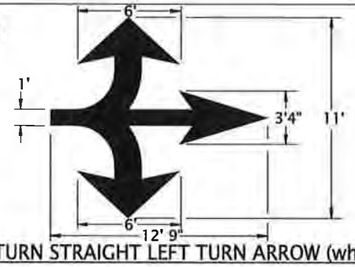
RALA



RIGHT TURN LEFT TURN ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

RSLA



RIGHT TURN STRAIGHT LEFT TURN ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

E-SA

ELONGATED STRAIGHT ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

E-LA

ELONGATED LEFT TURN ARROW (white)

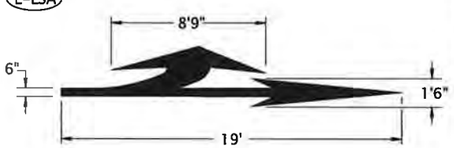
For arrow proportion details, see current version of Standard Highway Signs

E-RA

ELONGATED RIGHT TURN ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

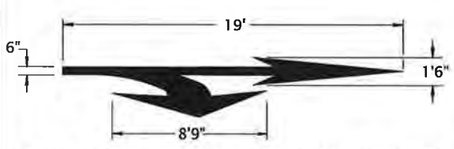
E-LSA



ELONGATED LEFT TURN STRAIGHT ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

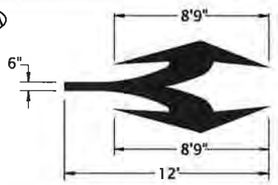
E-RSA



ELONGATED RIGHT TURN STRAIGHT ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

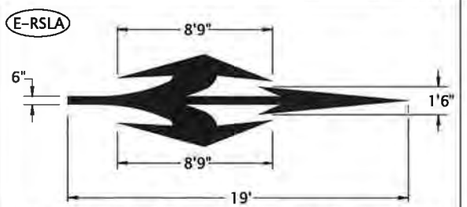
E-RALA



ELONGATED RIGHT TURN LEFT TURN ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

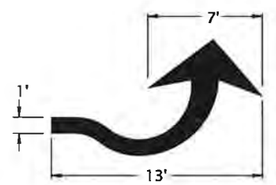
E-RSLA



ELONGATED RIGHT TURN STRAIGHT LEFT TURN ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

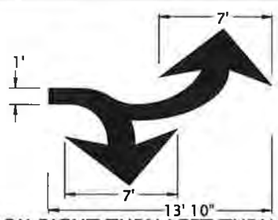
F-LA



FISH-HOOK LEFT TURN ARROW (white)

For arrow proportion details, see the current ODOT Traffic Line Manual

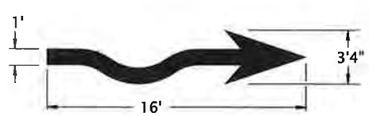
F-RALA



FISH-HOOK RIGHT TURN LEFT TURN ARROW (white)

For arrow proportion details, see the current ODOT Traffic Line Manual

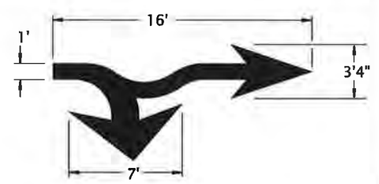
F-SA



FISH-HOOK STRAIGHT ARROW (white)

For arrow proportion details, see the current ODOT Traffic Line Manual

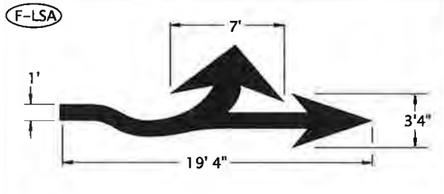
F-RSA



FISH-HOOK RIGHT TURN SRAIGHT ARROW (white)

For arrow proportion details, see the current ODOT Traffic Line Manual

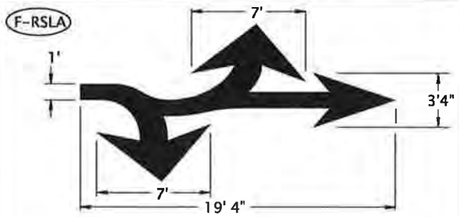
F-LSA



FISH-HOOK LEFT TURN STRAIGHT ARROW (white)

For arrow proportion details, see the current ODOT Traffic Line Manual

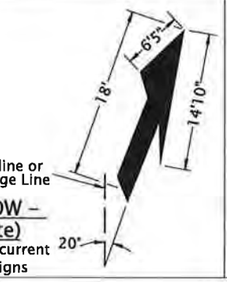
F-RSLA



FISH-HOOK RIGHT TURN STRAIGHT LEFT TURN ARROW (white)

For arrow proportion details, see the current ODOT Traffic Line Manual

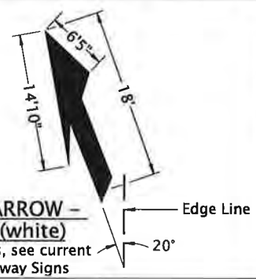
LRA-R



LANE REDUCTION ARROW - LEFT LANE ENDS (white)

For arrow proportion details, see current version of Standard Highway Signs

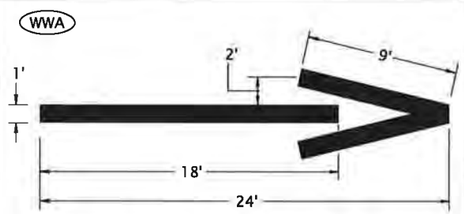
LRA-R



LANE REDUCTION ARROW - RIGHT LANE ENDS(white)

For arrow proportion details, see current version of Standard Highway Signs

WWA



WRONG-WAY ARROW (white)

General Note:

1. Center pavement markings within the lane width.
2. Arrow and letter dimensions nominal, excluding WWA.

CALC. BOOK NO. N/A

SDR DATE 07/01/2020

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OREGON STANDARD DRAWINGS

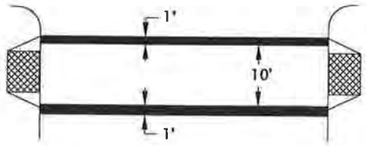
PAVEMENT MARKING STANDARD DETAIL BLOCKS

2021

DATE	REVISION DESCRIPTION
07/2020	Some Detail Blocks moved to new Std. Drawing TM504
	Fish-hook Arrows added, LRA split into LRA-L and LRA-R

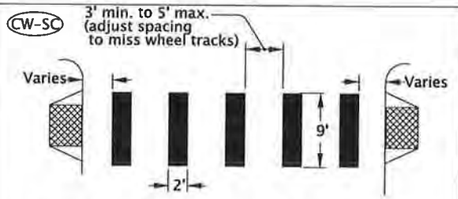
TM501

CW



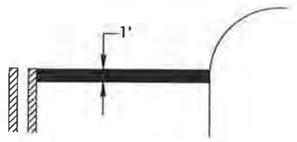
STANDARD CROSSWALK
TWO 1' WHITE BARS
Install per Standard Drawing TM530

CW-SC



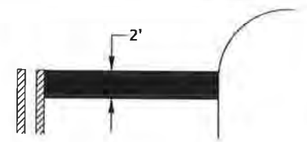
STAGGERED CONTINENTAL CROSSWALK
2' WHITE BARS
Install per Standard Drawing TM530

S



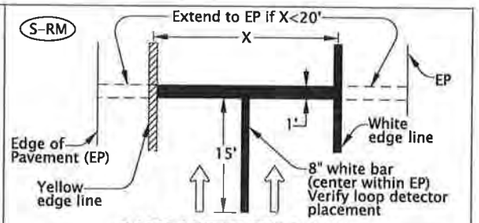
STOP BAR
1' WHITE BAR
Install per Standard Drawing TM530

S-2



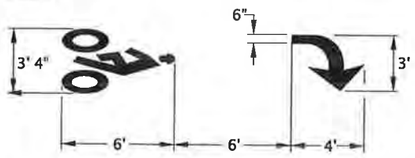
STOP BAR – LARGE
2' WHITE BAR
Install per Standard Drawing TM530

S-RM



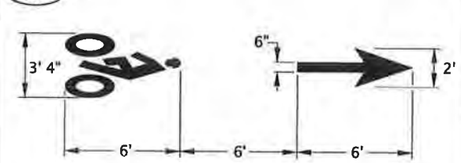
RAMP METER STOP BAR
1' & 8" WHITE BARS
For multi-lane ramp meter applications

BR



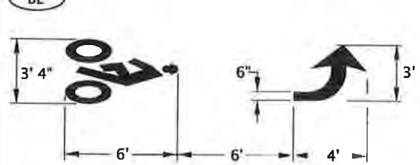
BIKE RIGHT TURN STENCIL (white)
Center marking within lane width
For proportion details, see current version of Standard Highway Signs

BS



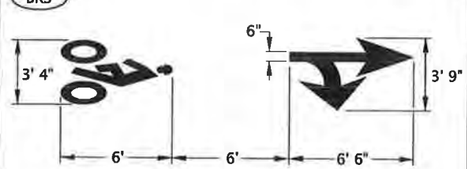
BIKE LANE STANDARD STENCIL (white)
Center marking within lane width
For proportion details, see current version of Standard Highway Signs

BL



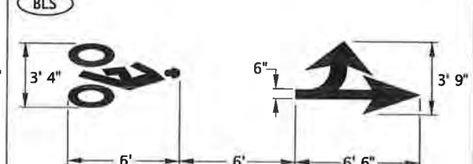
BIKE LEFT TURN STENCIL (white)
Center marking within lane width
For proportion details, see current version of Standard Highway Signs

BRS



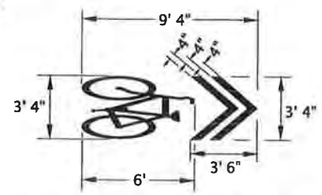
BIKE RIGHT TURN STRAIGHT STENCIL (white)
Center marking within lane width
For proportion details, see current version of Standard Highway Signs

BLS



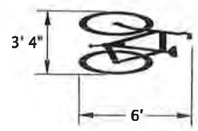
BIKE LEFT TURN STRAIGHT STENCIL (white)
Center marking within lane width
For proportion details, see current version of Standard Highway Signs

SLM



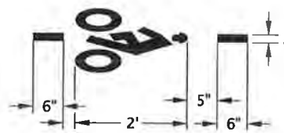
SHARED LANE MARKING (white)
Center marking within lane width or as shown
For proportion details, see current version of Standard Highway Signs

B



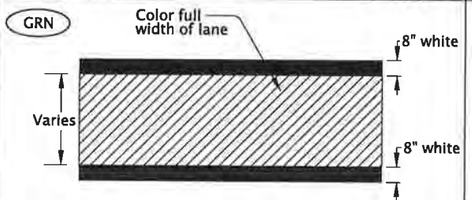
BIKE STENCIL (white)
Used for Intersection Bicycle Box applications
Place marking within bicycle box, ceneterd with motor vehicle lane width

BD



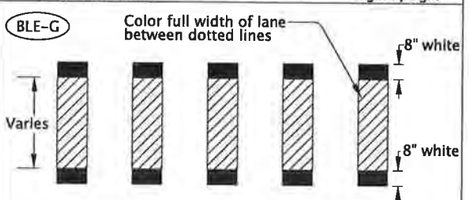
BICYCLE DETECTOR MARKING (white)
PLace Bicycle Detector Pavement Marking in optimum loction
where bicycle acuates the traffic signal

GRN



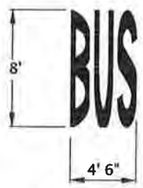
GREEN SUPPLEMENTAL BICYCLE LANE
SOLID LINE (green)

BLE-G



GREEN SUPPLEMENTAL BICYCLE LANE
DOTTED LINE EXTENSION (green)

BUS

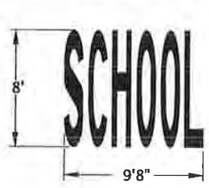


BUS (white)
Center marking within lane width
For letter proportion details, see current version of Standard Highway Signs

ON

ONLY (white)
Center marking within lane width
For letter proportion details, see current version of Standard Highway Signs

SCH

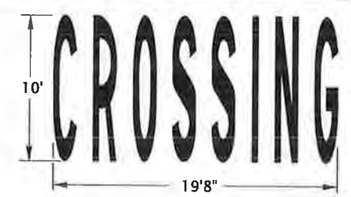


SCHOOL (white)
Center marking within lane width
For letter proportion details, see current version of Standard Highway Signs

SCH-LG

SCHOOL – LARGE (white)
Center marking within width of two lanes
For letter proportion details, see current version of Standard Highway Signs

CRS-LG

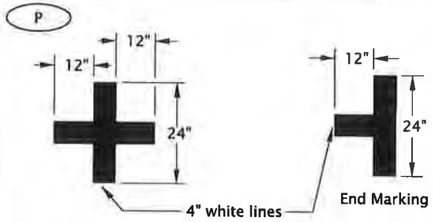


CROSSING – LARGE (white)
Center marking within width of two lanes
For letter proportion details, see current version of Standard Highway Signs

XNG

X-ING (white)
Center marking within lane width
For letter proportion details, see current version of Standard Highway Signs

P



ON-STREET PARKING DETAIL (white)

General Note:
1. Arrow, letter, and bike symbol dimensions nominal.

LEGEND
Direction of Travel

CALC. BOOK NO. N/A

SDR DATE 01/03/2020

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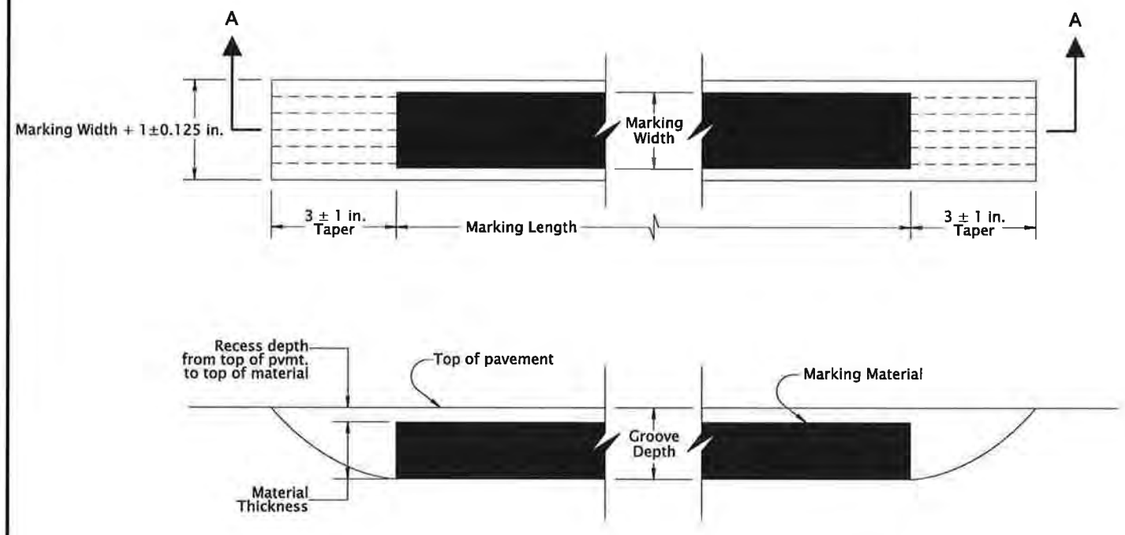
OREGON STANDARD DRAWINGS

PAVEMENT MARKING STANDARD DETAIL BLOCKS

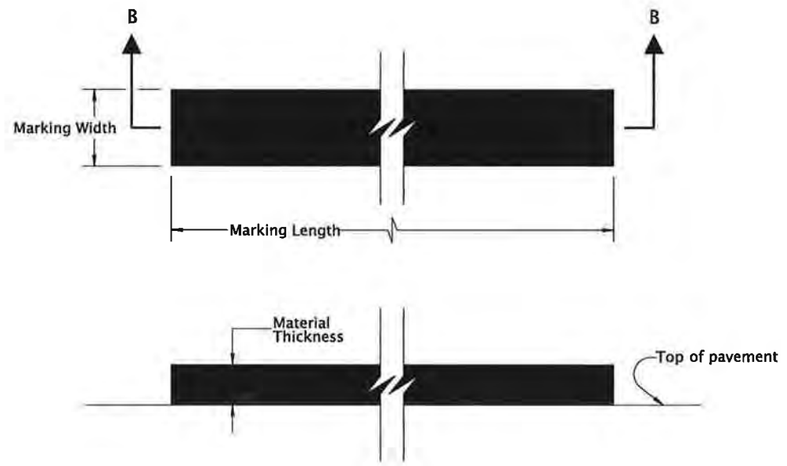
2021

DATE	REVISION DESCRIPTION

TM503



SECTION A - A



SECTION B - B

GROOVE INSTALLED GROOVE AND MATERIAL DIMENSIONS

Pavement Marking Material Type	Groove Depth	Recess Depth	Material Thickness
Durable Method 'A' & Method 'D'	220 ± 20 mils	45 ± 5 mils	Var.
High Performance	60 ± 10 mils	Var.	25 mils

SURFACE INSTALLED MATERIAL THICKNESS

Pavement Marking Material Type	Thickness
Durable Method 'A' & Method 'B' & Method 'D'	120 mils
High Performance	25 mils

GROOVE INSTALLED MARKINGS

SURFACE INSTALLED MARKINGS

General Notes:

1) See Standard Drawing TM500 and/or project plans for marking length and width dimensions.
2) See Standard Specification 00850.46 for marking installation tolerances.

CALC. BOOK NO. N/A

SDR DATE 07/05/2013

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

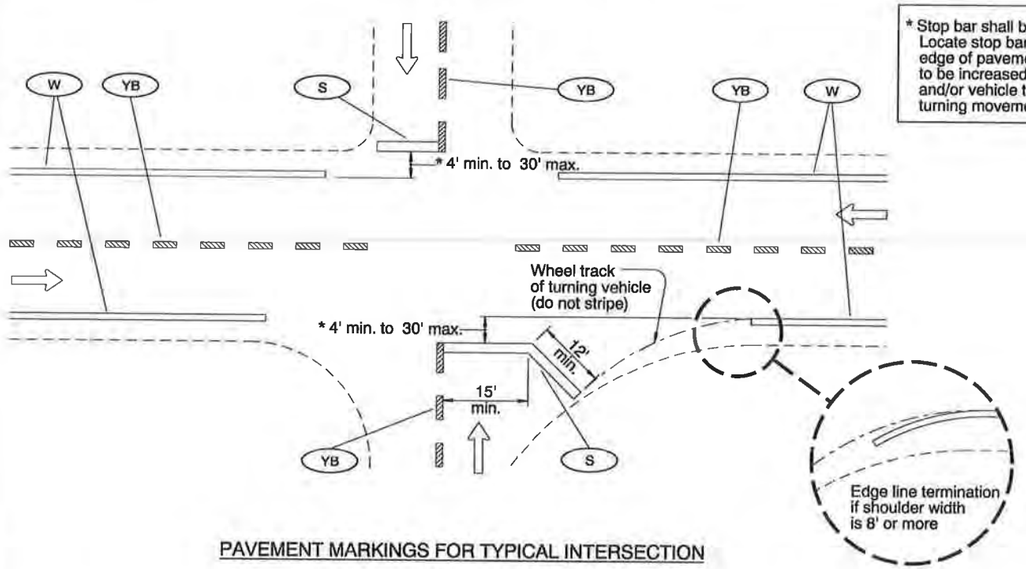
OREGON STANDARD DRAWINGS

DURABLE & HIGH PERFORMANCE PAVEMENT MARKINGS SURFACE & GROOVE INSTALLED NON-PROFILED

2021

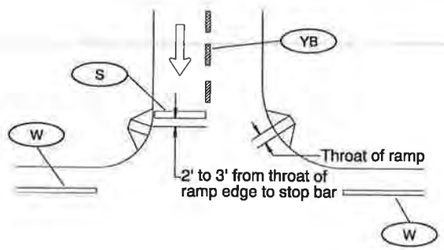
DATE	REVISION DESCRIPTION

TM521

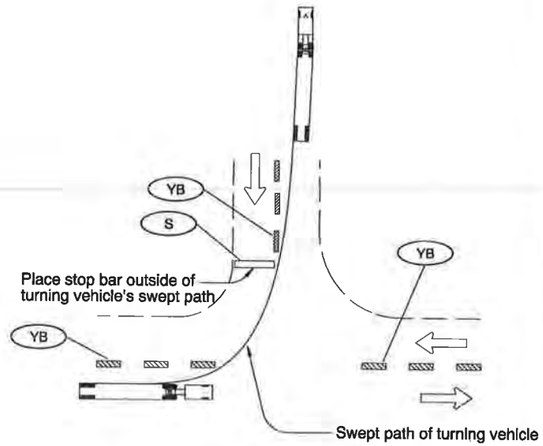


PAVEMENT MARKINGS FOR TYPICAL INTERSECTION

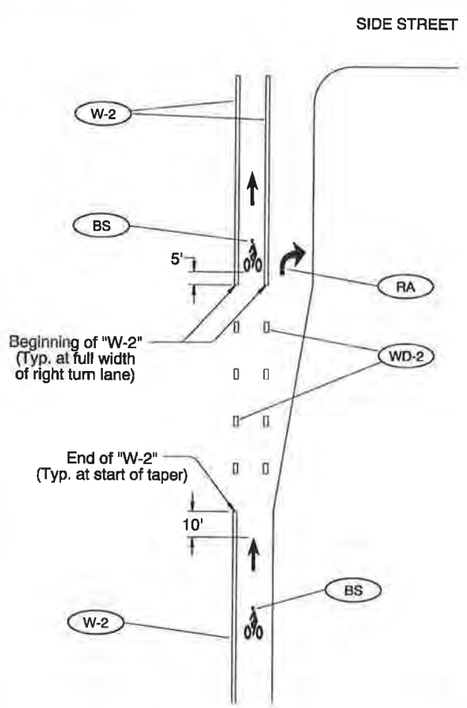
* Stop bar shall be placed as near as possible to the intersecting traveled way. Locate stop bar 4' min. to 30' max. in advance of the extended fog line, edge of pavement, or curb face. Minimum stop bar distance may need to be increased, depending on location of pedestrian ramps (see Detail "A") and/or vehicle turn radii (see Detail "B"). Field verify sight distance and truck turning movements.



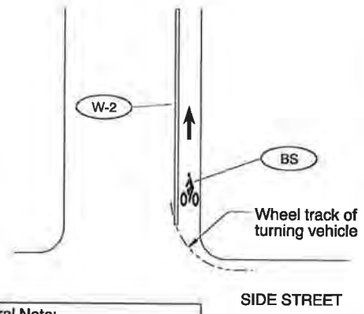
Detail "A"
STOP BAR PLACEMENT WITH RESPECT TO PEDESTRIAN RAMPS



Detail "B"
STOP BAR PLACEMENT WITH RESPECT TO TURN RADII

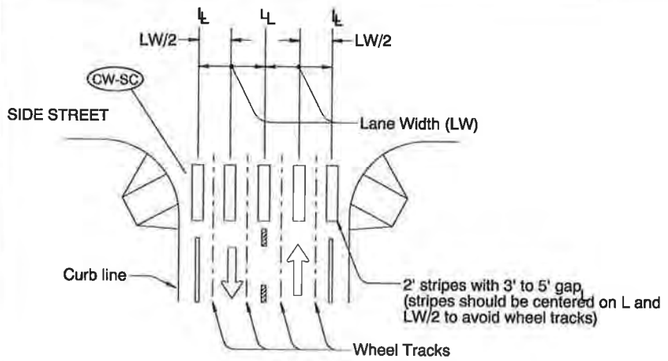


INSTALLATION OF BIKE LANE STENCILS FOR BIKE LANE SEPARATED BY RIGHT TURN LANE

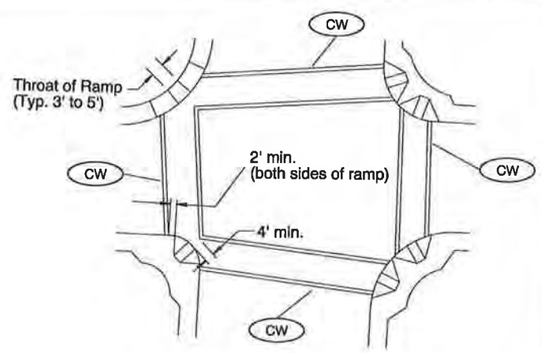


General Note:
Install bike lane stencil to avoid right turning vehicle wheel tracks.

INSTALLATION OF BIKE LANE STENCILS FOLLOWING INTERSECTIONS



STAGGERED CONTINENTAL LAYOUT



STANDARD CROSSWALK BARS AT INTERSECTION

General Note:
1. Install crosswalk bars such that the throat of the ADA ramp is entirely within crosswalk markings, or 5' back of extended fog line, edge of pavement, or curb face.

LEGEND
⇦ Direction of Travel
L - Lane line dimensions are shown on the striping plans

To be accompanied by Standard Dwg. Nos. TM500 thru TM504

CALC. BOOK NO. N/A

SDR DATE July 10, 2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS
INTERSECTION PAVEMENT MARKINGS (CROSSWALK, STOP BAR & BIKE LANE STENCIL)
2021

DATE	REVISION DESCRIPTION
7/10/20	Changed drawing reference

TM530.dgn 1-3-2017

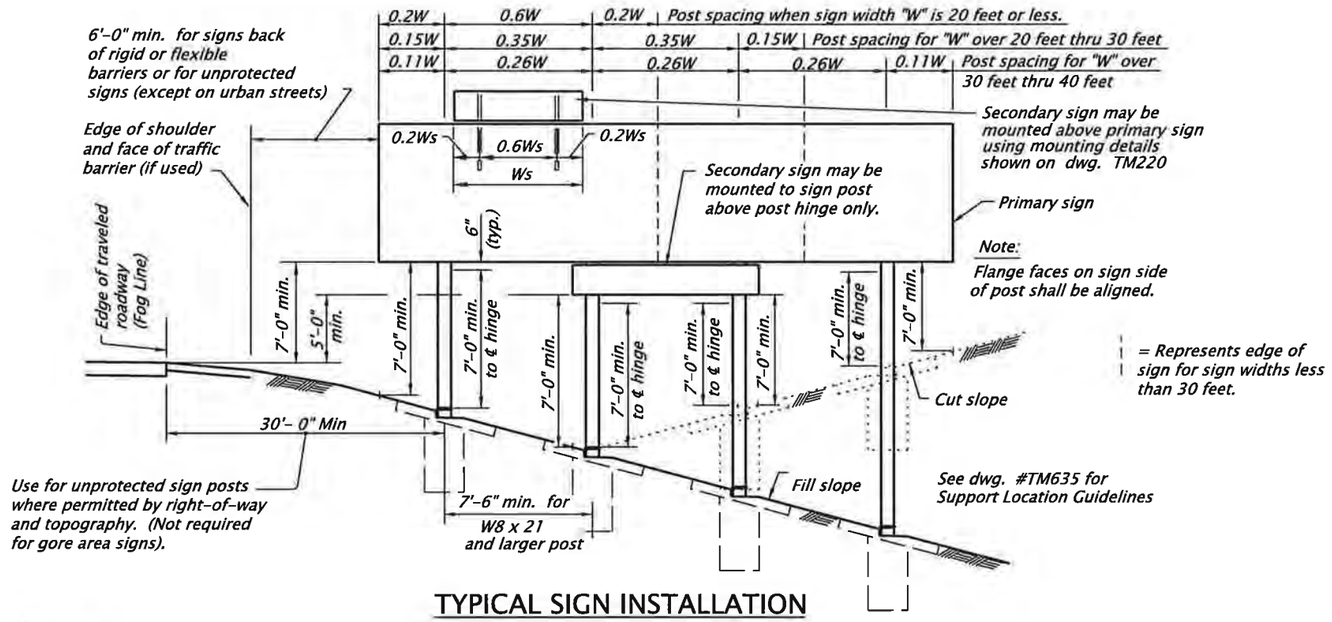
TM530

plotfile_TM200s_500s.dgn :: Default 7/30/2020 4:09:47 PM hwyr20m

Effective Date: December 1, 2020 - May 31, 2021

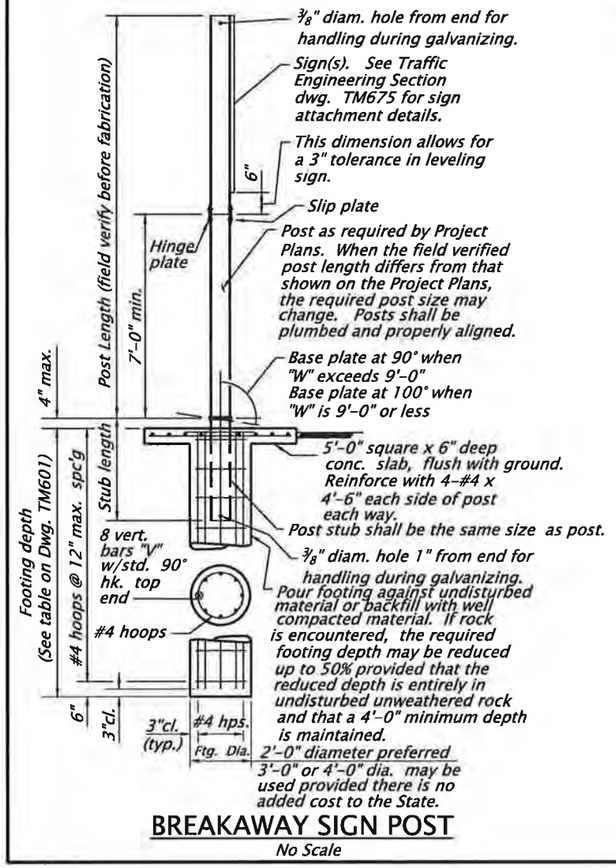
TM530

tm600.dgn 10-JUL-2020



TYPICAL SIGN INSTALLATION

No Scale



BREAKAWAY SIGN POST

No Scale

GENERAL NOTES:

1. Sign supports are designed in accordance with the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals 1994. Use a wind velocity with a 25-year mean reccurrence interval.
2. All concrete shall be Commercial Grade Concrete (f'c = 3000 psi).
3. All reinforcing steel shall conform to AASHTO Specification M31 (ASTM A615), Grade 60 or A706.
4. The following splice lengths shall be used unless otherwise shown:

Bar Size		3	4	5	6	7	8	9	10	11
Splice Length	Uncoated	1'-0"	1'-4"	1'-8"	2'-0"	2'-8"	3'-6"	4'-4"	5'-7"	6'-9"

5. All structural steel shall conform to ASTM Specification A572, Grade 50 unless shown otherwise.
6. Shims shall be fabricated from brass shim stock conforming to ASTM B36.
7. All bolts shall be high strength bolts conforming to ASTM Specification A325 (AASHTO M164). Nuts for high strength bolts shall be well lubricated heavy hexagon nuts conforming to ASTM Specification A563, (AASHTO M291), Grade DH. Compressible direct tension indicator washers shall conform to ASTM Specification F959. Hardened steel washers shall conform to ASTM Specification F436 (AASHTO M293).
8. Steel sheet for keepers shall conform to ASTM Specification A653.
9. Hinge and base plate holes shall be sub-drilled and reamed to size. Hinge and base plate slots shall be saw cut or machine guided flame cut.
10. Direct tension indicator washers shall be mechanically galvanized to ASTM B695.
11. Keeper plate shall be galvanized in accordance with ASTM A653, Coating G165.
12. All other steel including fasteners shall be hot-dip galvanized after fabrication. Remove galvanizing runs and beads on all slip surfaces. Nuts for high strength bolts may be retapped after galvanizing.
13. The use of a post larger than required by design is not permitted.
14. Tightening of base plate bolts shall be done with a state inspector present.
15. See TM601 for additional details.

BASE PLATE BOLTING PROCEDURE:

1. Assemble post to stub as shown in Base Assembly Detail.
2. Shim as required to plumb post. ($\pm \frac{1}{8}$" / vert. 12") (2 shims maximum per bolt)
3. Tighten bolts in a systematic order to the "T1" torque prescribed in the Base Plate Data Table.
4. Loosen and retighten bolts to the "T2" torque prescribed in the Base Plate Data Table. Use the same order as the intitial tightening and DO NOT OVER TIGHTEN!
5. Burr threads at junction with nut using a center punch.

HINGE AND SLIP PLATE BOLTING PROCEDURE:

1. Shop assemble post sections as shown. (D.T.I. bumps toward bolt head)
2. Tighten each nut in a systematic order until the gap between the bolt head and direct tension indicator washer is in the 0.005" to 0.010" range.
3. Further tighten each nut in the same order until a nil gap between the bolt head and indicator washer is attained.

Accompanied by dwgs. TM220, TM601, TM635, TM675

CALC. BOOK NO. 1493 | SDR DATE 09-JAN-2015

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

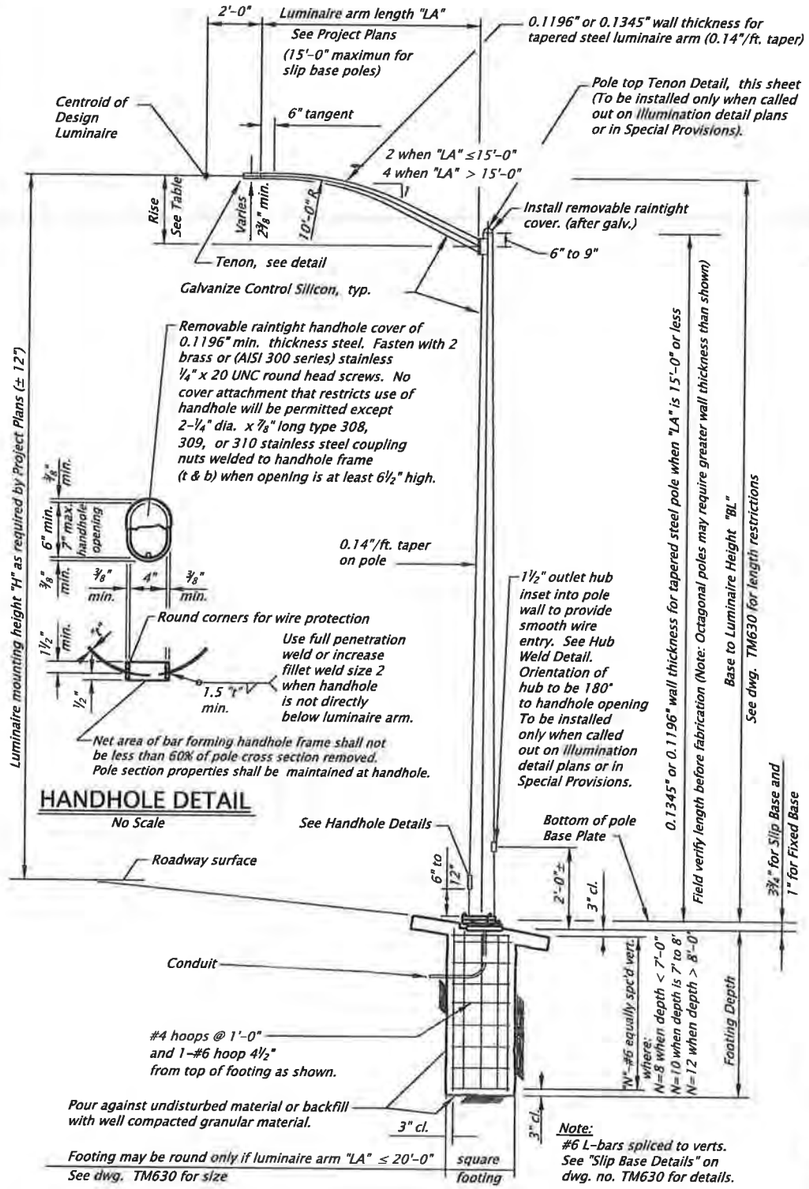
MULTI-POST BREAKAWAY SIGN SUPPORTS NOTES

2021

DATE	REVISION DESCRIPTION

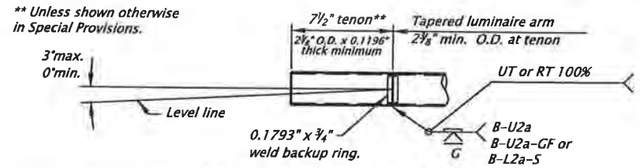
Effective Date: December 1, 2020 – May 31, 2021

tm629.dgn 10-JUL-2020



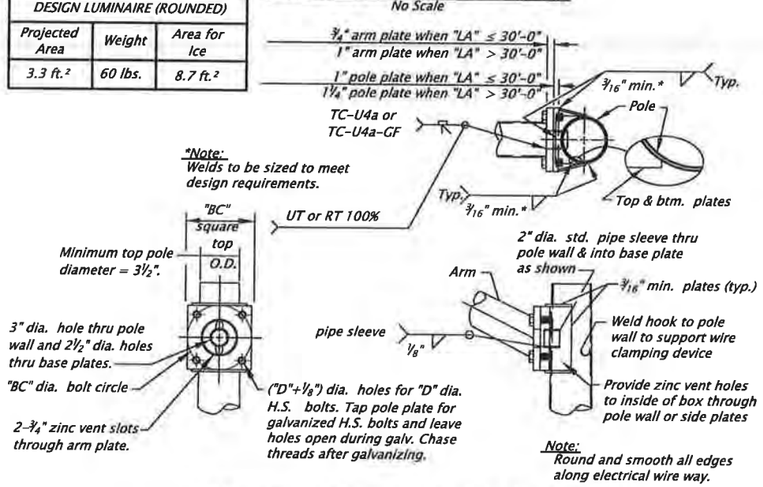
HANDHOLE DETAIL
No Scale

TYPICAL LUMINAIRE SUPPORT
No Scale

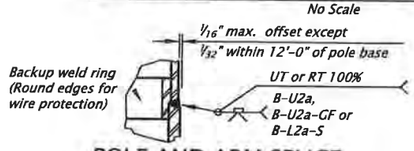


LUMINAIRE TENON DETAILS
No Scale

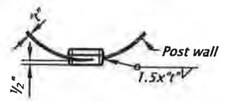
DESIGN LUMINAIRE (ROUNDED)		
Projected Area	Weight	Area for Ice
3.3 ft.²	60 lbs.	8.7 ft.²



LUMINAIRE ARM CONNECTION DETAILS
No Scale

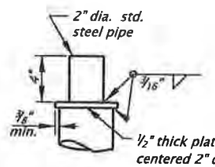


POLE AND ARM SPLICE WELD DETAILS
No Scale



HUB WELD DETAIL

LUMINAIRE ARM DESIGN DATA				
Arm Length "LA"	Allowable Dead Load Deflection	Bolt Circle Dia. "BC"	Bolt Dia. "D"	Approx. Rise (Arm fully loaded)
6'-0"	½"	7"	⅝"	1'-6½"
8'-0"	⅞"	7"	⅝"	2'-6"
10'-0"	1⅜"	7"	⅝"	3'-5½"
12'-0"	2"	7"	⅝"	4'-5"
15'-0"	3⅛"	7"	⅝"	5'-10"
20'-0"	4¼"	8"	¾"	4'-3"
25'-0"	6½"	9"	¾"	5'-3"
30'-0"	9¼"	10"	¾"	6'-3"
35'-0"	12½"	11"	⅞"	7'-3"
40'-0"	16"	1'-0"	⅞"	8'-3"



POLE TOP TENON DETAIL
No Scale

Tenon dimensions are indicative of general config. desired and may be varied depending on manufacturer's requirements for head frame. Variations from that shown shall be allowed as approved by the Engineer.

GENERAL NOTES:

Luminaire supports shall be designed in accordance with AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals (1994).

The design wind velocity shall be 100 mph unless shown otherwise in the Special Provisions for the project.

All pole shafts may be round or hexdecagonal. Octagonal pole shafts may be used for fixed base poles only. Luminaire arm shafts shall be the same shape as the pole shaft except that octagonal arms may be used with hexdecagonal poles if the arm tip diameter does not exceed 3" and the maximum weight limitations are not exceeded.

Steel sheet for poles and arms shall conform to ASTM A 595, Grades A or B, or approved equal. All other steel sheet and plate shall conform to AASHTO specification M223 (ASTM A572), or approved equal. Supplement S18 of ASTM A6 regarding maximum tensile strength shall apply.

Anchor rods for Slip Base Luminaire Supports shall be ASTM 449, Type 1. Anchor rods for Fixed Base Luminaire Supports shall be ASTM A307.

Nuts for anchor rods and slip base bolts shall conform to ASTM Specification A563, Grade DH. High strength bolts shall conform to ASTM Specification A325 (AASHTO M164).

All structural steel including fasteners shall be hot-dip galvanized after fabrication unless noted otherwise.

Galvanize-Control silicon, typical. Silicon content of the base metal shall be in the range of 0 to 0.04% or 0.15 to 0.25%

Footing concrete shall be Commercial Grade Concrete. (f'c = 3000 psi) unless shown otherwise in the Special Provisions. Grout in grout pads shall be non-shrink high early strength grout (non-ferrous) with a minimum strength of 5000 psi.

Reinforcing steel shall conform to AASHTO M31 (ASTM A615), grade 60. A minimum lap splice of 32 bar diameters shall be used unless shown otherwise.

Flat washers shall be hardened steel washers conforming to ASTM Specification F-436.

Longitudinal seam welds shall be complete penetration within 6" of a circumferential weld. 60 percent minimum penetration required for the remainder of the seam weld. Weld inspection shall comply with the special provisions.

The weight of the slip base pole and its attachments above the anchor plate shall be kept to a minimum and shall never exceed 1000 lbs.

Pole lengths shall be field verified before fabrication. Top of footing may be substantially above or below roadway surface. Design shall be adjusted as necessary for increase or decreased pole length.

The computed deflection of the poles at full design loading shall be limited to 5% of pole length for fixed base poles and 7% of pole length for slip base poles. The computed dead load deflection of the poles shall be limited to 1% of the pole length. Poles shall be raked to offset the computed dead load deflection. Computed deflection (ignoring pole bending and/or rotation) of the luminaire arms shall not exceed that listed in the Luminaire Arm Design Data table.

Hubs shall be 3000# threaded forged carbon steel flat weld hubs by Anvil Products Inc., Phoenix Forging Co., Bonney Forge & Tool Works or approved equal. Grounding terminal shall be ½" UNC dia. x 1½" Type 308, 309 or 310 threaded stainless steel weld studs.

See dwg. TM635 for guidelines in locating slip base poles.

Luminaire pole foundation shall meet minimum embankment requirements shown on TM653.

Assemble support and tighten anchor bolts and arm connection bolts according to 00962.46(j)(2).

See dwg. TM630 for charts and details not shown.

Accompanied by dwgs. TM630, TM653

CALC. BOOK NO. 2076/2247

SDR DATE 10-JAN-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

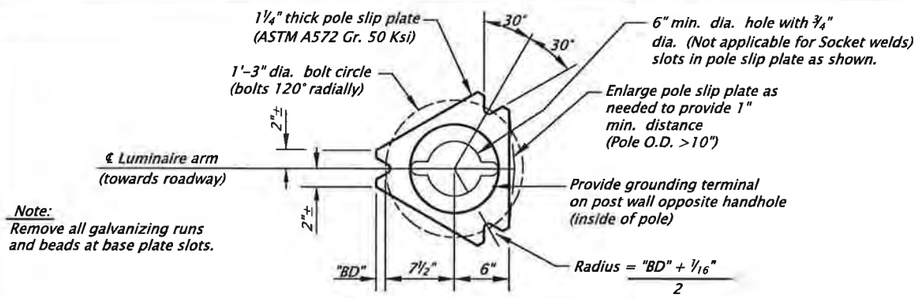
OREGON STANDARD DRAWINGS

SLIP BASE AND FIXED BASE LUMINAIRE SUPPORTS GENERAL DETAILS AND DESIGN CRITERIA

2021

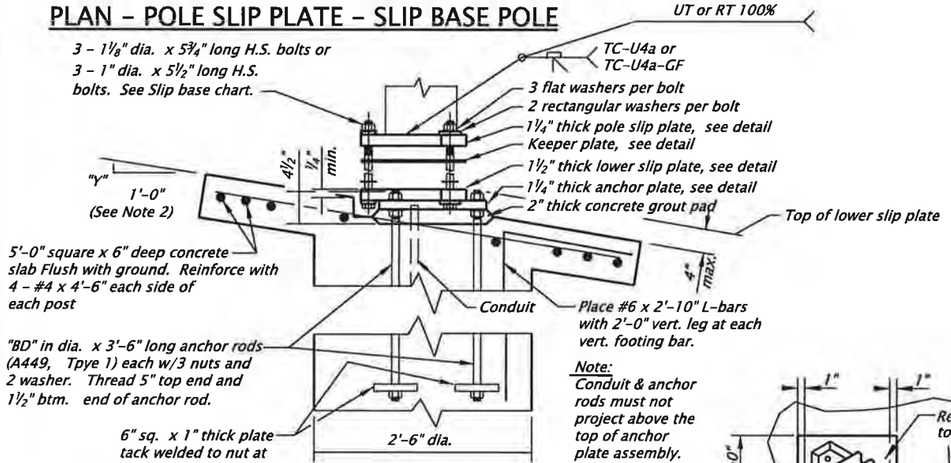
DATE	REVISION DESCRIPTION

tm630.dgn 10-JUL-2020



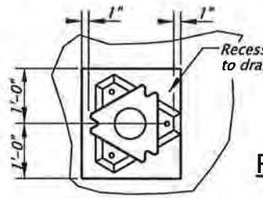
Note:
Remove all galvanizing runs and beads at base plate slots.

PLAN – POLE SLIP PLATE – SLIP BASE POLE

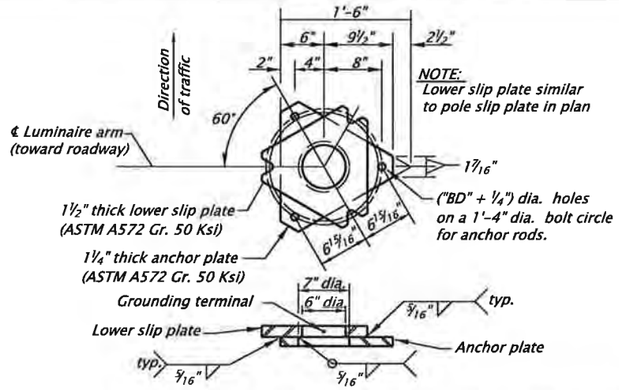


SLIP BASE DETAILS

Note:
Conduit & anchor rods must not project above the top of anchor plate assembly.

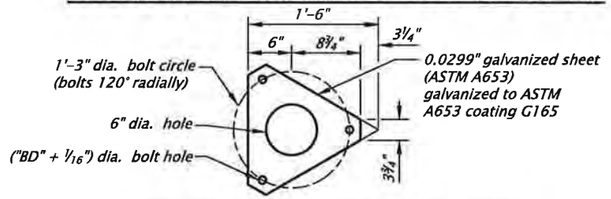


ANCHOR PLATE RECESS – SLIP BASE POLE
No Scale

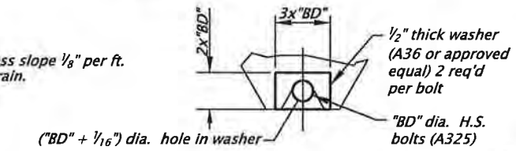


Note:
Lower slip plate similar to pole slip plate in plan

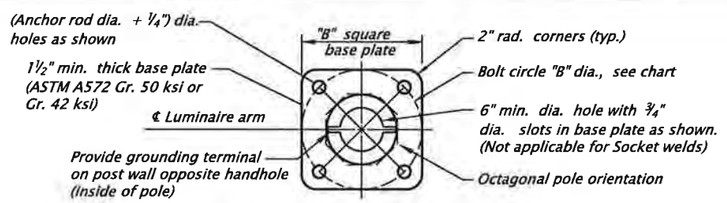
ANCHOR PLATE ASSEMBLY – SLIP BASE POLE



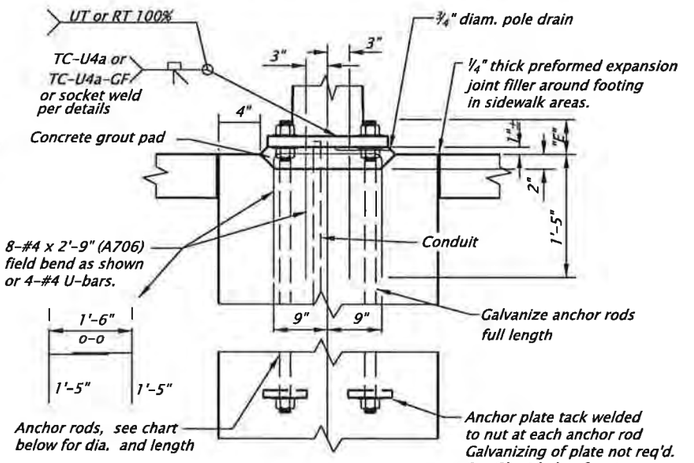
KEEPER PLATE – SLIP BASE POLE



RECTANGULAR WASHER DETAIL
No Scale



PLAN – BASE PLATE – FIXED BASE POLE
No Scale



FIXED BASE DETAILS
(Top 1'-0" of footing shall always be square)

SLIP BASE CHART

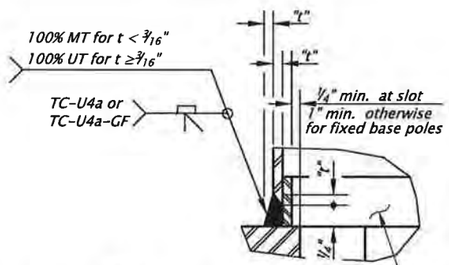
Bolt or Anchor rod "BD"	No. of Luminaire arms		Torque ft. lbs.		Footing Depth
	1	2	"T_1"	"T_2"	
1"	"BL" ≤ 50'	"BL" ≤ 40'	700	90	6'-0"
1⅛"	"BL" > 50'	"BL" > 40'	850	100	6'-6"

Notes: 1. "BL" shall not exceed 55' for single luminaire arm poles. "BL" shall not exceed 45' for double luminaire arm poles. Top of rods must not project above top of lower slip plate.
2. The maximum slope rise "Y" is 2.50 inches per foot and a grade of 1V:4.80H.

SLIP BASE BOLTING PROCEDURE (see 00962.46(j)(2)(b)

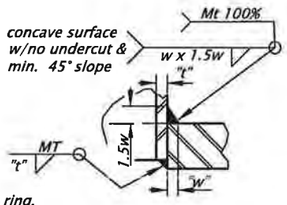
1. Erect pole on an anchor assembly using 3 flat washers and 2 rectangular washers per bolt along with the keeper plate. Place 1 flat washer and the keeper plate between the pole base plate and the anchor plate.
2. Adjust anchor rod leveling nuts as required to rake pole.
3. Tighten high strength bolts to "T_1" ft. – lbs. torque.
4. Loosen each bolt and retighten to "T_2" ft. – lbs. torque. DO NOT OVERTIGHTEN!
5. Burr bolt threads at junction with nut using a center punch.

NOTE:
Tightening of slip base bolts shall not be done without an inspector present.

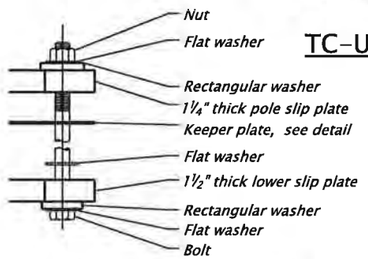


TC–U4a

Size of fillet weld "w" as req'd by calculations, but not less than 1.414 "t" or 1.414 "t" x Fy shaft when Fy base plate base plate Fy < shaft Fy



SOCKET



Bolt Assembly Detail
No Scale

BASE PLATE WELDS
No Scale

FIXED DOUBLE ARM POLES NOTE:
Foundation and anchor rod requirements for fixed double arm poles to be determined by contractor. (S_r = 1500 psf)

FIXED BASE CHART (Single Luminaire Arm)

Pole & Arm Dimensions		4 Anchor rods req'd per pole, each with 3 nuts, 2 washers & 1 anchor plate						Footing width	Footing Depth	
"BL"	"LA"	Anchor rod Diameter	"B"	Length	Thread Top	Proj. "E" max.	Anchor plate size		"LA" ≤ 20' Round Ftg	"LA" > 20' Square Ftg
30' or less	40' or less	1½" A307	16½"	3'-6"	6"	5"	4" sq. x ⅝"	2'-6"	6'-0"	6'-0"
> 30' thru 40'	↓	1¾" A307	18"	↓	6½"	5¼"	4½" sq. x ¾"	2'-6"	6'-0"	7'-0"
> 40' thru 50'		2" A307	19½"		7"	5½"	5⅛" sq. x ⅞"	3'-0"	6'-6"	8'-0"
> 50' thru 60'	20' or less	2" A307	19½"		7"	5½"	5⅛" sq. x ⅞"	↓	8'-0"	—
> 50' thru 60'	>20' thru 40'	2¼" A307	21"		7½"	5¾"	5¾" sq. x 1"		—	9'-6"
> 60' thru 70'	20' or less	2¼" A307	21"		7½"	5¾"	5¾" sq. x 1"		9'-6"	—
> 60' thru 70'	>20' thru 40'	2½" A307	22½"	↓	8"	6"	6⅜" sq. x 1"	↓	—	11'-6"

Accompanied by dwgs. TM629

CALC. BOOK NO. 2076/2247

SDR DATE 07-JAN-2019

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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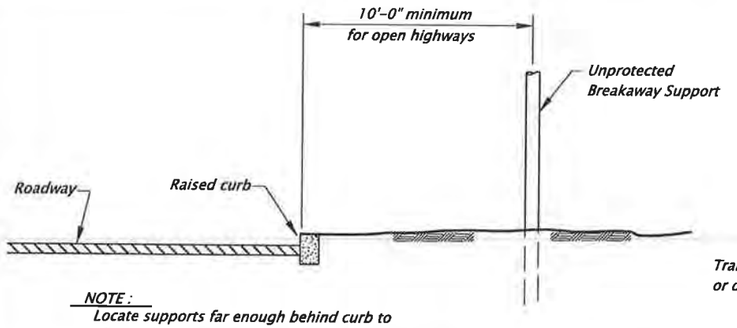
OREGON STANDARD DRAWINGS

SLIP BASE AND FIXED BASE LUMINAIRE SUPPORTS BASE PLATE & FOOTING DETAILS

2021

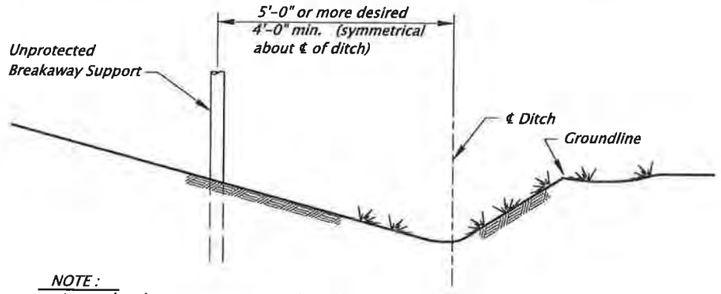
DATE	REVISION DESCRIPTION

tm635.dgn 10-JUL-2020



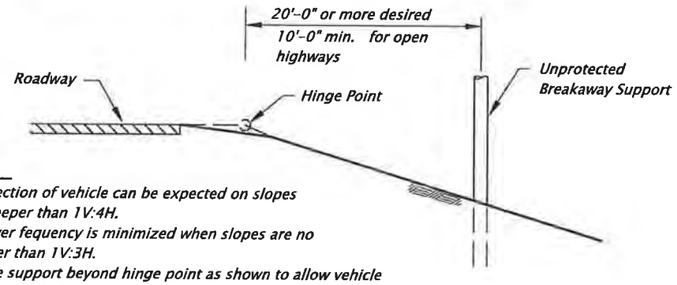
NOTE :
Locate supports far enough behind curb to allow vehicle to stabilize before impacting support.

BREAKAWAY SUPPORTS BEHIND RAISED CURBS



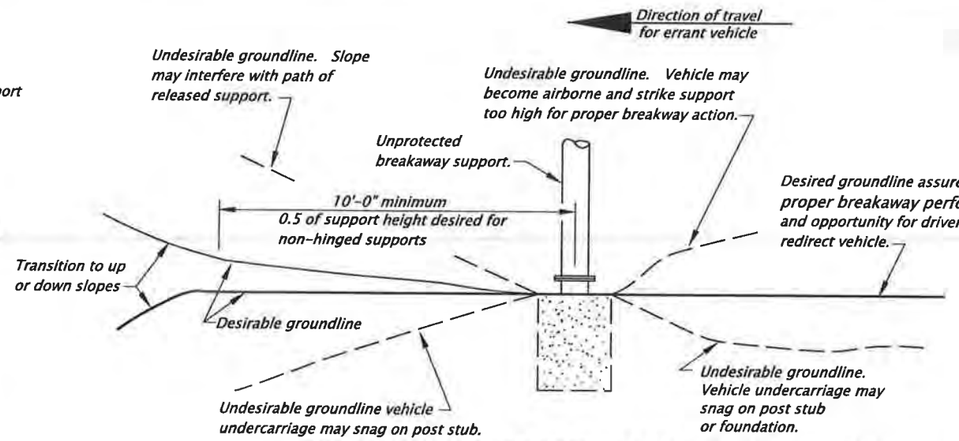
NOTE :
Locate breakaway supports away from ditches to avoid problems with erosion, corrosion, debris, maintenance, and breakaway performance.

BREAKAWAY SUPPORTS NEAR DITCHES



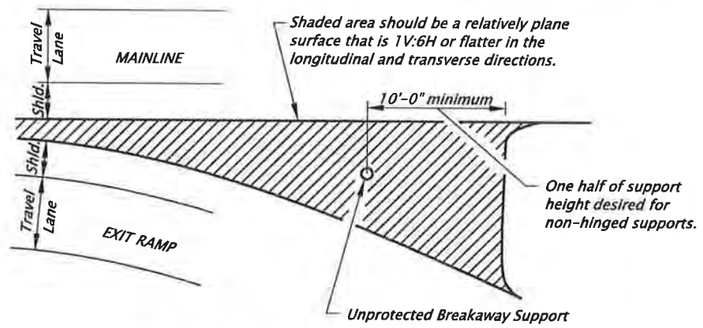
NOTE :
Redirection of vehicle can be expected on slopes no steeper than 1V:4H.
Rollover fequency is minimized when slopes are no steeper than 1V:3H.
Locate support beyond hinge point as shown to allow vehicle to stabilize before impact.

BREAKAWAY SUPPORT ON FILL SLOPE

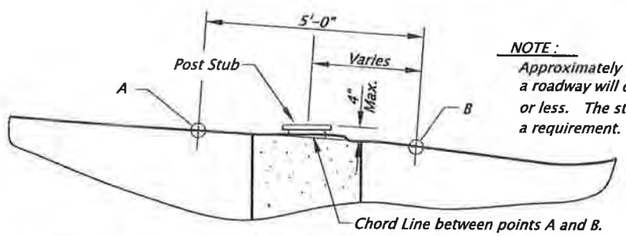


BREAKAWAY SUPPORT – PARTIAL ELEVATION

(Along possible paths of errant vehicles)



GORE AREA BREAKAWAY SUPPORT LOCATION



NOTE :
Approximately 80% of vehicles leaving a roadway will do so at an angle of 15° or less. The stub projection limitation is a requirement.

UNPROTECTED BREAKAWAY SUPPORT CLEARANCE DIAGRAM

Section perpendicular to assumed path of errant vehicle. (Most likely path is a 15° angle from adjacent traffic flow)

PLACEMENT OF UNPROTECTED BREAKAWAY SUPPORTS:

The location of unprotected breakaway supports with respect to the travel lane(s) and the roadside terrain and other geometric conditions over which the vehicle travels before impacting the support will affect the support's breakaway performance.

Breakaway supports located in gore areas are particularly vulnerable to vehicle impacts. Breakaway supports located across tee intersections, at the end of lane drop or on the outside of horizontal curves are also likely to be struck. Locating breakaway supports in these areas should be avoided if possible. If the breakaway support must be located in these areas, locate them to produce an impact situation that is as forgiving as possible while assuring adequate recovery space beyond the support(s).

Breakaway supports placed up on cut slopes generally result in a safer impact situation than for those placed down on fill slopes. The support placed on a cut slope will be lighter than a support placed on fill slope. The momentum of a vehicle traversing a cut slope will generally be less than that for a vehicle traversing a fill slope. A vehicle going up a cut slope is generally more stable and more easily redirected than a vehicle going down a fill slope.

Placement of breakaway supports in or near ditches should be avoided. Breakaway supports should not be located near raised curbs or near the hinge point ot the fill slope.

Where possible, supports should be located behind established barriers.

The guidelines contained herein should be used if possible. However, adjustments to the guidelines may be necessary because of right-of-way and/or other constraints.

See TM200 requirements when signs are mounted on unprotected Breakaway Supports.

CALC. BOOK NO. _____

SDR DATE 06-JUL-2015

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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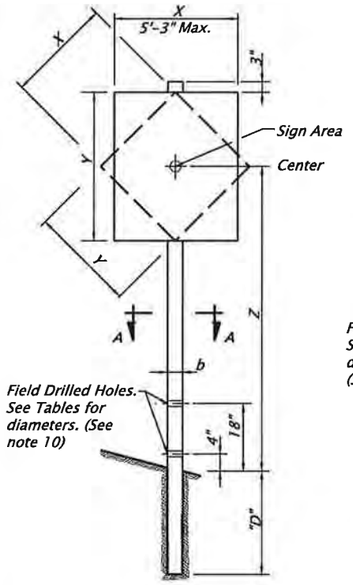
OREGON STANDARD DRAWINGS

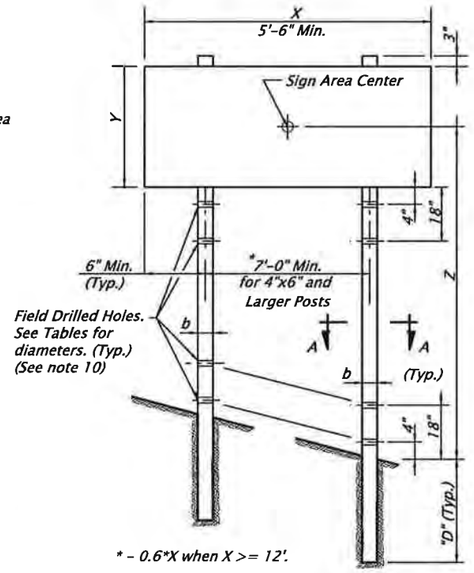
BREAKAWAY SIGN & LUMINAIRE SUPPORTS - SUPPORT LOCATION GUIDELINES

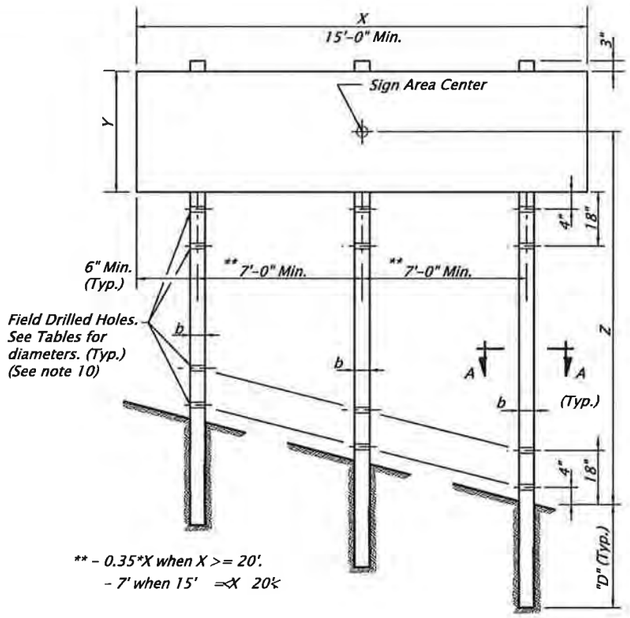
2021

DATE	REVISION DESCRIPTION

tm670.dgn 10-JUL-2020







ELEVATION

No scale

		(X * Y * Z) in ft³ - Maximum												Field Drilled Hole Diameters	Post Embedment Depth "D"
		3 Second Gust Wind Speed (TM671)													
		85 MPH				95 MPH				105 and 110 MPH					
		Number of Posts				Number of Posts				Number of Posts					
		1	2	3 * X=15'	3 * X ≥20'	1	2	3 * X=15'	3 * X ≥20'	1	2	3 * X=15'	3 * X ≥20'		
POST SIZE b x d	4" x 4"	77	154	165	231	62	124	132	186	56	112	120	168	Not Req'd	4' - 0"
	4" x 6"	162	324	347	486	130	260	278	390	117	234	250	351	1½"	5' - 0"
	6" x 6"	270	540	578	810	216	432	462	648	195	390	417	585	2"	5' - 0"
	6" x 8"	494	988	1058	1482	395	790	846	1185	356	712	762	1068	3"	7' - 0"

PERMANENT WOOD POST TABLE**

* - Linear Interpolate X*Y*Z 3 post values for signs greater than 15' and less than 20'.

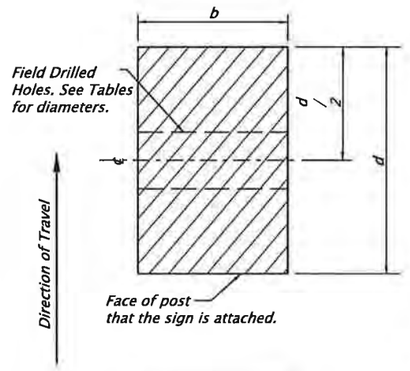
** - See note 8

		(X * Y * Z) in ft³ - Maximum												Field Drilled Hole Diameters	Post Embedment Depth "D"
		3 Second Gust Wind Speed (TM671)													
		85 MPH				95 MPH				105 and 110 MPH					
		Number of Posts				Number of Posts				Number of Posts					
		1	2	3 * X=15'	3 * X ≥20'	1	2	3 * X=15'	3 * X ≥20'	1	2	3 * X=15'	3 * X ≥20'		
POST SIZE b x d	4" x 4"	122	244	261	366	98	196	210	294	88	176	188	264	Not Req'd	4' - 0"
	4" x 6"	257	514	550	771	205	410	439	615	185	370	396	555	1½"	5' - 0"
	6" x 6"	426	852	912	1278	341	682	730	1023	308	616	660	924	2"	5' - 0"
	6" x 8"	779	1558	1669	2337	624	1248	1337	1872	563	1126	1206	1689	3"	7' - 0"

TEMPORARY WOOD POST TABLE**

* - Linear Interpolate X*Y*Z 3 post values for signs greater than 15' and less than 20'.

** - See note 9



SECTION A-A

No scale

General Notes:

1. Wood posts are available in the following commercial lengths: 12', 14', 16', 18', 20', 22', 24', 26'.
2. Material shall be Douglas Fir No. 1 and according to Section 02110.40.
3. For horizontal and vertical clearances of permanent signs refer to TM200 and of temporary signs refer to TM822.
4. Wood post design in accordance with the 5th Edition 2009 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.
5. Use the 3 second gust wind speeds shown on TM671 for the site specific sign location.
6. General design parameters are Kz = 0.87, SIF (duration factor) = 1.6, Cd (sign) = 1.20, and G = 1.14.
7. The sign width to sign height or sign height to sign width ratio shall not exceed 5.0.
8. Permanent signing uses an Ir = 0.71 for a recurrence interval of 10 years.
9. Temporary signing uses an Ir = 0.45 for a recurrence interval of 1.5 years.
10. Posts protected by barrier or guardrail do not require field drilled holes.
11. 4" x 4" posts should not be used in snow plow areas.

Post Embedment Installation:

1. Excavate the hole at least 12" larger in diameter than the diagonal dimension of the post. Maintain at least 6" of space around the edges of the post to accomodate compaction equipment.
2. Align the post in the hole to a vertical position.
3. The space around the wood post shall be backfilled to finished ground surface.
4. Backfill with selected general backfill meeting the requirements of 00330.13.
5. Place in layers not greater than 6 inches.
6. Solidly ram and tamp the layers into the excavation area around the post.
7. Dampen during placement if too dry to compact properly.
8. Replace and finish the surface around the post to match the surrounding surface.

Accompanied by dwgs. TM200, TM671, TM822

CALC. BOOK NO. 5850

SDR DATE 06-JAN-2017

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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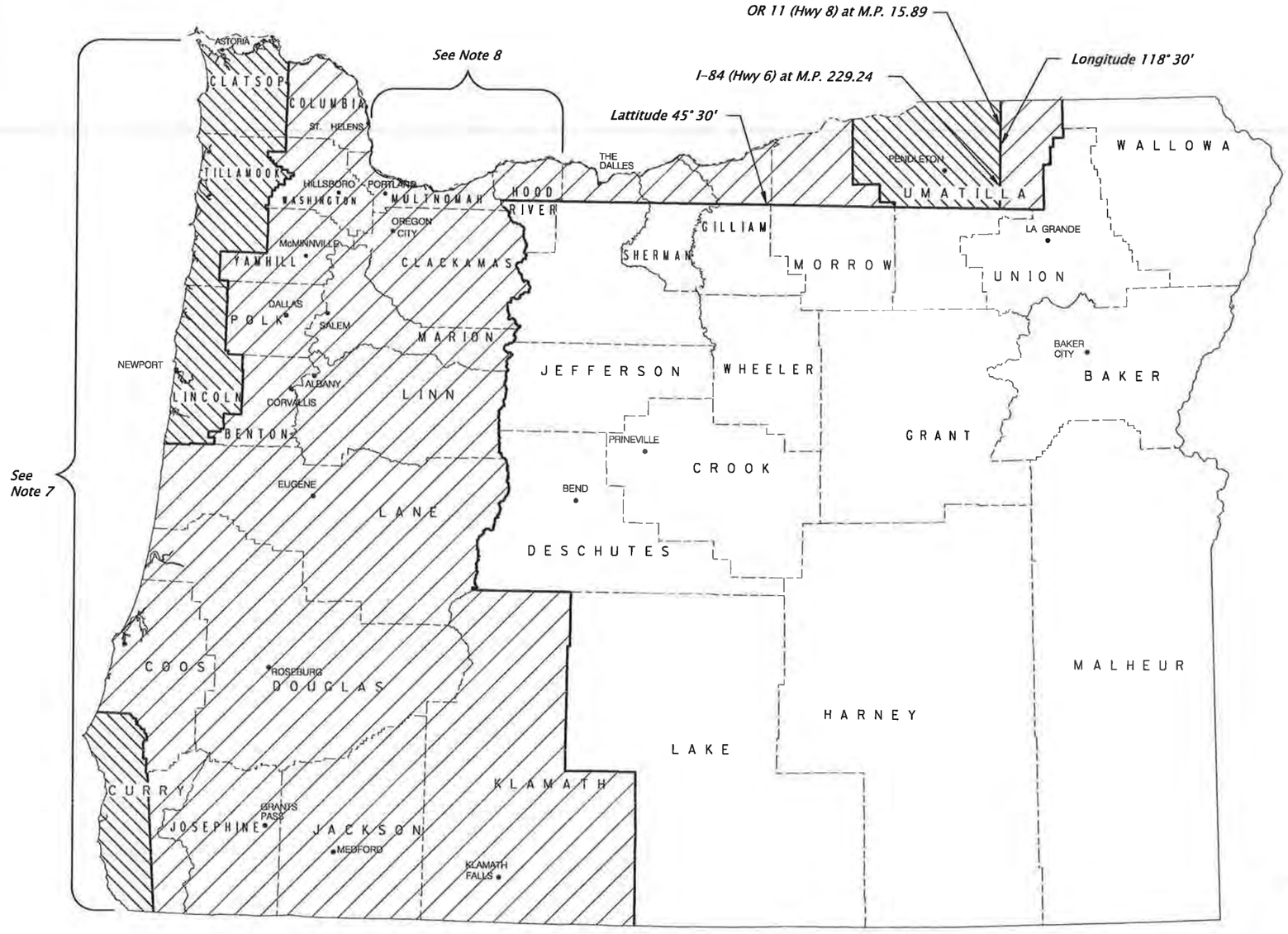
OREGON STANDARD DRAWINGS

WOOD POST SIGN SUPPORTS

2021

DATE	REVISION DESCRIPTION

TM671.dgn 10-JUL-2020



NOTES:

1. *The wind velocity map as shown is adapted from AASHTO 2001 4th Edition – "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals", Appendix C, Figure C-3 and Section 3, Figure 3-2. It uses the wind speed map shown in Figure 1609 of the 2007 Oregon Structural Code to account for locations in the State with special wind regions.*
2. *The wind velocities shown above are 3-Second Gust wind velocities.*
3. *The Exposure Catagory is C.*
4. *The mean recurrence interval is 50-Years.*
5. *Mountainous terrain, gorges, and ocean promontories are classified as special wind regions and shall be examined for unusual wind conditions.*
6. *The Interval Height (Kz) is 30 ft.*
7. *All areas with full exposure to ocean winds shall be designated 110 mph areas.*
8. *Areas in Multnomah and Hood River counties with full exposure to Columbia River Gorge winds shall be designated 110 mph areas.*
9. *Localities may have adopted wind speed higher that shown on this map. Those higher wind speed shall be used.*

CALC. BOOK NO. _____

SDR DATE 06-JAN-2012

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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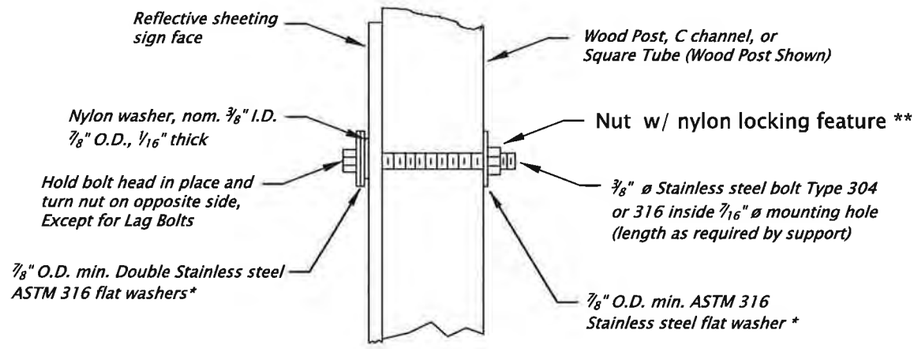
OREGON STANDARD DRAWINGS

3 SECOND GUST WIND SPEED MAP

2021

DATE	REVISION DESCRIPTION

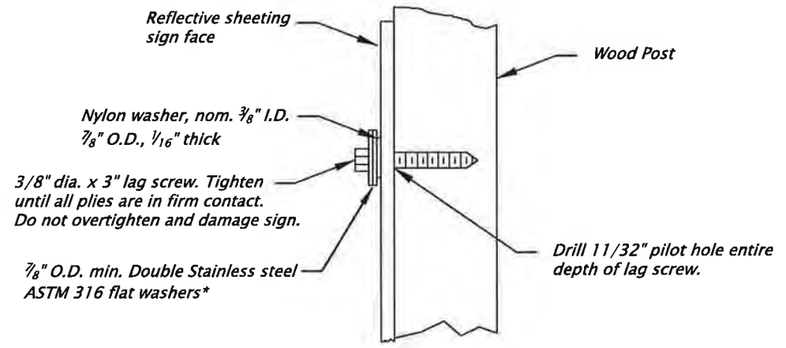


Note:
1)When signs are placed on opposing sides of post, 3/8" x 3" lag screws can be used instead of through bolt.
2) Use nylon and stainless steel washers when signs are placed on both sides of post.
3) Burr threads at junction with nut when locknuts are not used.
4) Post bolts to extend beyond the tightened nuts within the limits of 1/4" to 1".

* Stainless steel bonded sealing washer with neoprene layer is an acceptable substitue

** Acceptable substitute for nylon locking nuts:
ANCO PIN-LOC
TRI-LOC® Top Lock Locknut

SIGN ATTACHMENT DETAIL



* Stainless steel bonded sealing washer with neoprene layer is an acceptable substitue

Note: This optional detail is to be used only when specified on a project.

OPTIONAL WOOD POST LAG SCREW DETAIL

CALC. BOOK NO. _____

SDR DATE 10-JUL-2020

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OREGON STANDARD DRAWINGS

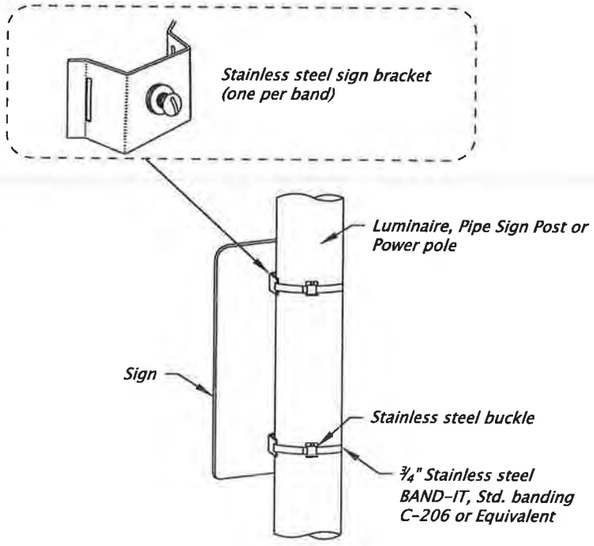
SIGN ATTACHMENTS

2021

DATE	REVISION DESCRIPTION
07/20	Added optional lag screw detail.

tm676.dgn 10-JUL-2020

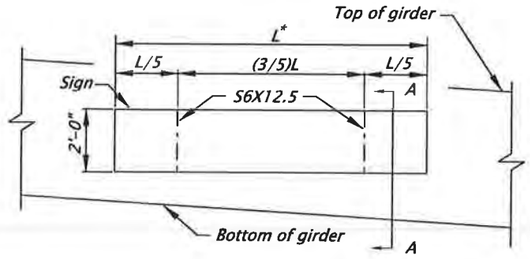
TM676



Signs mounted to vertical posts that use stainless steel clamps shall not be wider than 36". Use 2 clamps for all signs less than 48" in height and 3 clamps for signs 48" to 60" in height.

STAINLESS STEEL CLAMP (SSC) DETAIL

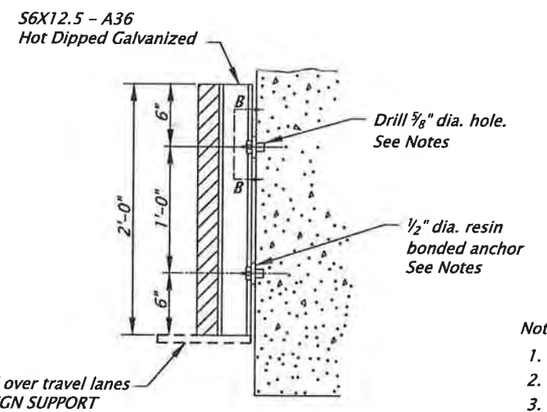
No Scale



** - L maximum is 14'-0".*

SIGN ELEVATION

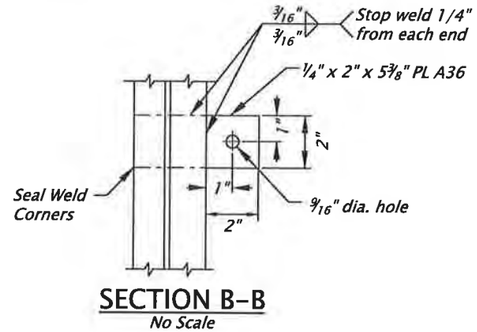
No Scale



Signs mounted over travel lanes shall use the SIGN SUPPORT BRACKET DETAIL shown on TM618

SECTION A-A

No Scale



SECTION B-B

No Scale

Notes:

1. *Install resin bonded anchors according to Section 00535.*
2. *Resin bonded anchors shall conform to ASTM A307.*
3. *The hole depths shall develop the pullout strength specified in Table 00535-1.*
4. *Tighten 1/2" dia. anchors using 16 ft-lb of torque for waxed galvanized and 40 ft-lb of torque for galvanized only connections.*

ROAD NAME SIGN STRUCTURE MOUNT DETAIL

GENERAL NOTES

1. *For Secondary Sign Mounts See TM678.*

CALC. BOOK NO. _____

SDR DATE 06-JUL-2015

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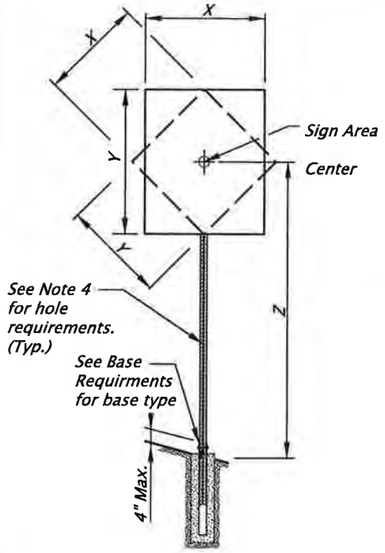
OREGON STANDARD DRAWINGS

SIGN MOUNTS

2021

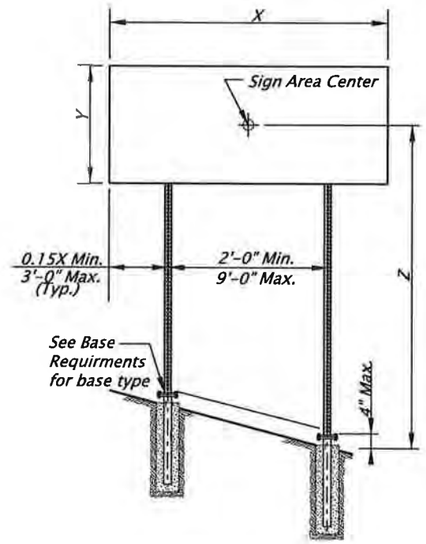
DATE	REVISION DESCRIPTION

TM677



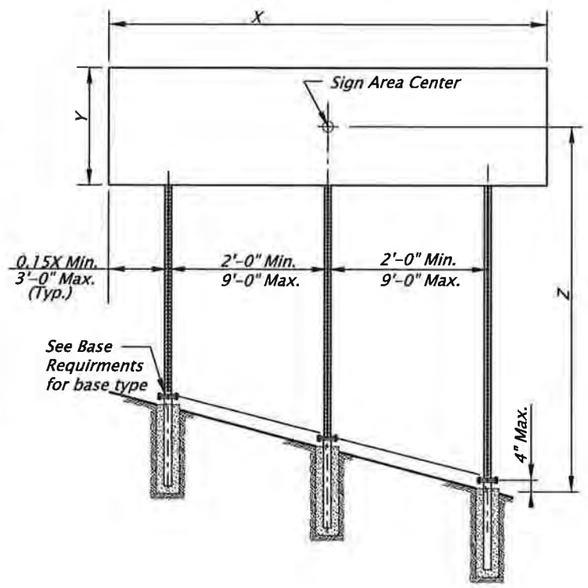
SINGLE POST ELEVATION

No scale



TWO POST ELEVATION

No scale



THREE POST ELEVATION

No scale

GENERAL NOTES:

1. Perforated Steel Square Supports are designed in accordance with the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals 4th Edition, 2001, 2002, 2003, and 2006 interim revisions.
2. The design basic wind speed (3 second gust) shall be according to the wind map shown on TM671.
3. Material grade for base hardware connection shall be according to the manufacturer's recommendation and based on crash testing.
4. Use $\frac{7}{16}$" diameter holes at 1" spacing on each of the 4 sides.
5. Steel post shall have a minimum yield stress of 50 ksi.
6. Steel shall be galvanized according to ASTM A653 with coating designation G90.
7. General design parameters are Kz = 0.87, Cd (sign) = 1.20, and G = 1.14.
8. Permanent signing uses an Ir = 0.71 for a recurrence interval of 10 years.
9. Temporary signing uses an Ir = 0.45 for a recurrence interval of 1.5 years.
10. The sign width to sign height or sign height to sign width ratio shall not exceed 5.0.
11. For horizontal and vertical clearances of permanent signs refer to TM200 and of temporary signs refer to TM822.
12. Posts protected by barrier or guardrail do not require slip bases.

	(X * Y * Z) in ft³ – Maximum								
	3 Second Gust Wind Speed (TM671)								
	85 MPH			95 MPH			105 or 110 MPH		
	Number of Posts			Number of Posts			Number of Posts		
Square Tube Size	1	2	3	1	2	3	1	2	3
2"–12 ga.	79	158	237	63	126	189	57	114	171
2½"–12 ga.	136	272	408	109	218	327	98	196	294
2½"–10 ga.	165	330	495	132	264	396	119	238	357
2¼" & 2½"–12 ga.*	231	462	693	185	370	555	167	334	501

PERMANENT PERFORATED STEEL SQUARE TUBE TABLE

	(X * Y * Z) in ft³ – Maximum								
	3 Second Gust Wind Speed (TM671)								
	85 MPH			95 MPH			105 or 110 MPH		
	Number of Posts			Number of Posts			Number of Posts		
Square Tube Size	1	2	3	1	2	3	1	2	3
2"–12 ga.	125	250	375	100	200	300	90	180	270
2½"–12 ga.	215	430	645	172	344	516	155	310	465
2½"–10 ga.	261	522	783	209	418	627	189	378	567
2¼" & 2½"–12 ga.*	364	728	1092	292	584	876	263	526	789

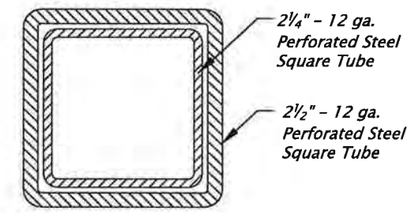
TEMPORARY PERFORATED STEEL SQUARE TUBE TABLE

* – See 2¼" & 2½" – 12 ga. detail.

	Number of Posts		
Square Tube Size	1	2	3
2"–12 ga.	Anchor	Anchor	N/A
2½"–12 ga.	Anchor	Slip	Slip
2½"–10 ga.	Slip	Slip	Slip
2¼" & 2½"–12 ga.*	Slip	Slip	Slip

1. Anchor – See Drawing TM687 for PSST anchor foundation details.
2. Slip – See Drawing TM688 for PSST slip base foundation details.
3. N/A – Do not use this option.

BASE REQUIREMENTS



2¼" – 12 ga. PSST to extend entire length inside of the 2½" – 12 ga. PSST.

2¼" & 2½" – 12 GA. DETAIL

No scale

Accompanied by dwgs. TM200, TM671, TM687, TM688, TM689, TM822

CALC. BOOK NO. 5752

SDR DATE 10-JUL-2017

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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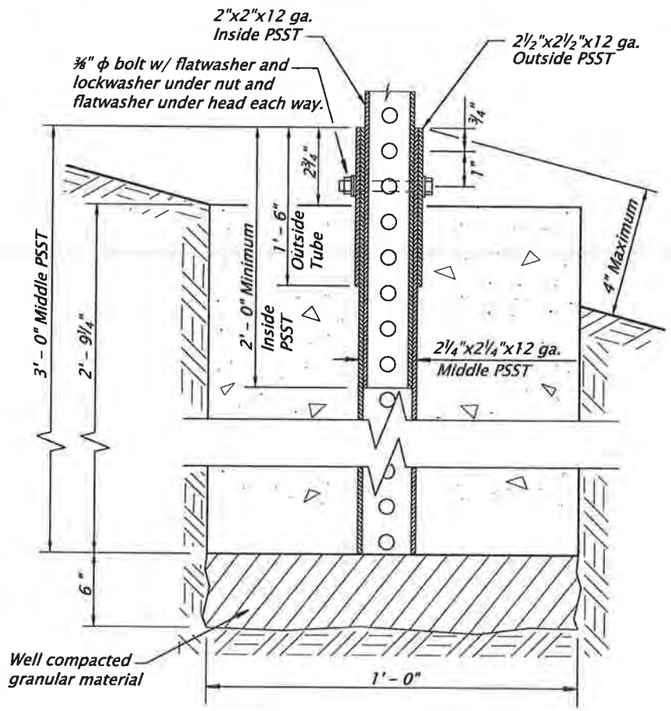
OREGON STANDARD DRAWINGS

PERFORATED STEEL SQUARE TUBE (PSST) SIGN SUPPORT INSTALLATION

2021

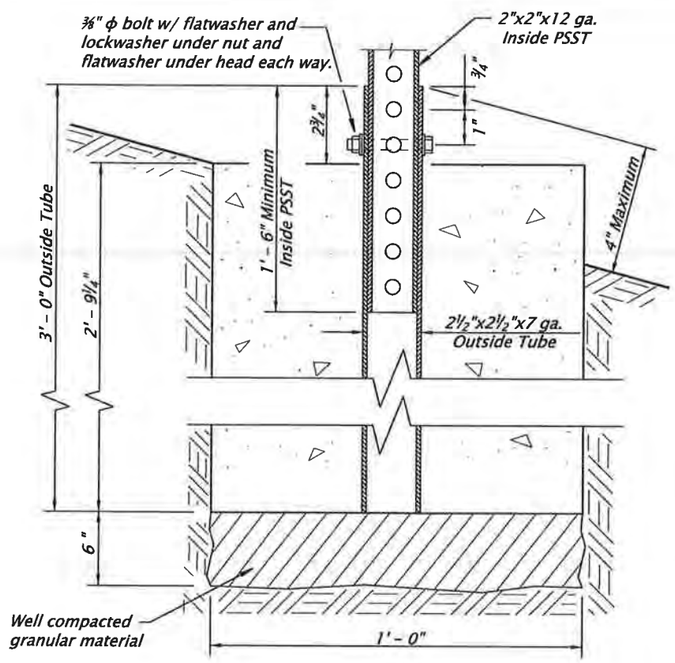
DATE	REVISION DESCRIPTION

tm687.dgn 10-JUL-2020



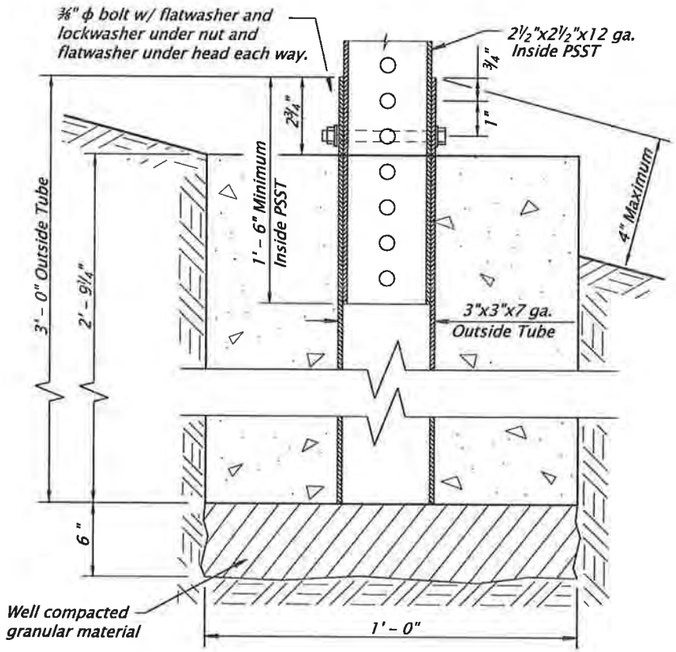
2" ANCHOR DETAIL

No scale



2" OPTIONAL ANCHOR DETAIL

No scale

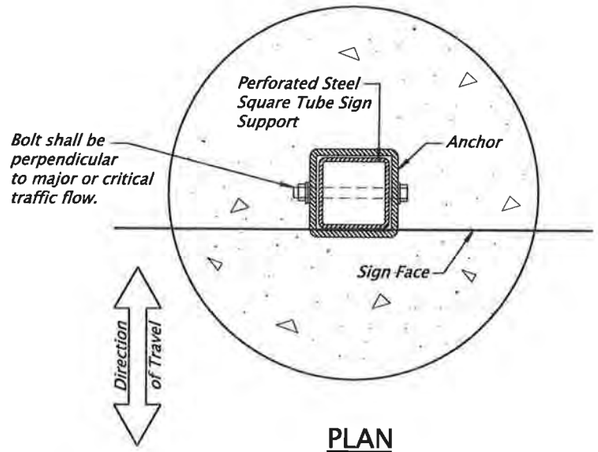


2½" ANCHOR DETAIL

No scale

General Notes:

1. *Material grade for base hardware connection shall be according to the manufacturer's recommendation and based on crash testing.*
2. *Anchor steel shall be hot dipped galvanized or approved equal.*
3. *Footing concrete shall be Commercial Grade Concrete (fc = 3000 psi) per Specification 00440. The CGC mixture may be accepted at the site of placement according to 00440.14.*
4. *The estimated concrete volume is .09 cubic yards.*



PLAN

No scale

Accompanied by dwgs. TM681, TM688

CALC. BOOK NO. 5752

SDR DATE 06-JAN-2012

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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OREGON STANDARD DRAWINGS

PERFORATED STEEL SQUARE TUBE (PSST) ANCHOR FOUNDATION

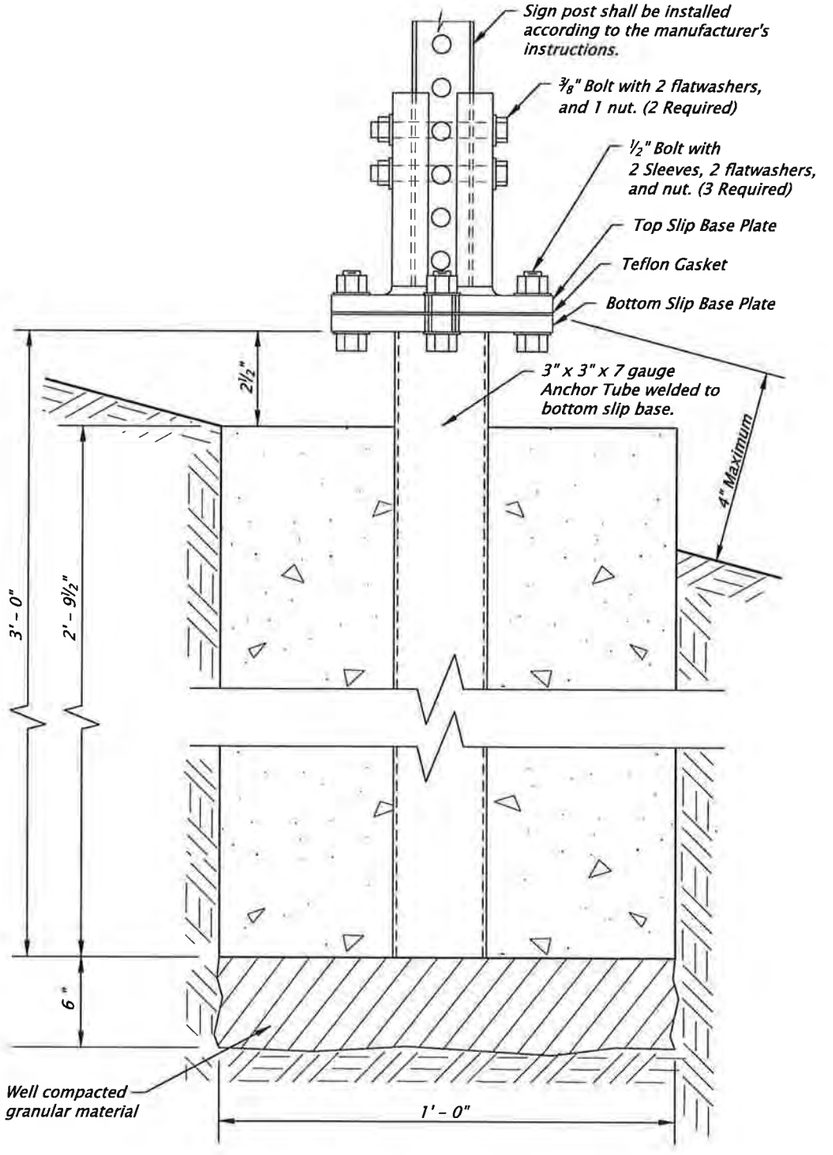
2021

DATE	REVISION DESCRIPTION

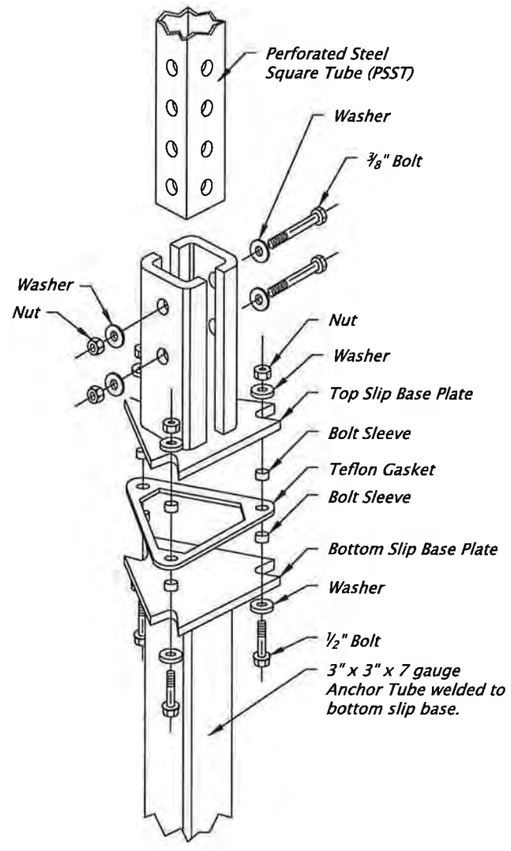
TM687

Effective Date: December 1, 2020 – May 31, 2021

tm688.dgn 10-JUL-2020



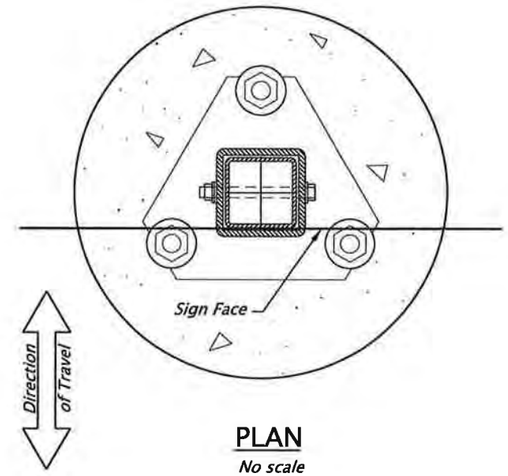
SLIP BASE ELEVATION
No scale



SLIP BASE EXPLODED VIEW
No scale

General Notes:

1. *Material grade for base hardware connection shall be according to the manufacturer's recommendation and based on crash testing.*
2. *Slip base steel shall be hot dipped galvanized or approved equal.*
3. *Footing concrete shall be Commercial Grade Concrete (fc = 3000 psi) per Specification 00440. The CGC mixture may be accepted at the site of placement according to 00440.14.*
4. *Material grade for base hardware connection shall be according to the manufacturer's recommendation and based on crash testing.*
5. *All slip bases shall be pre-assembled by the manufacturer and shall be installed according to the manufacturer's instructions.*
6. *Use slip bases listed on the ODOT Qualified products list or submit crash testing data, installation instructions, and unstamped working drawings according to 00150.35.*
7. *Slip base details shown are not for a specific manufacturer and are only shown to convey general pieces of a slip base system. Specific slip base material will be acccording to the manufacturer's documentation.*



PLAN
No scale

Accompanied by dwgs. TM681, TM687

CALC. BOOK NO. 5752	SDR DATE 06-JAN-2012
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.	NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

PERFORATED STEEL SQUARE TUBE (PSST) SLIP BASE FOUNDATION

2021

DATE	REVISION DESCRIPTION

TM688

TAPER TYPES & FORMULAS	
TAPER	FORMULA
Merging (Lane Closure)	"L"
Shifting	"L"/2 or ½"L"
Shoulder Closure	"L"/3 or ⅓"L"
Flagging (See Drg. TM850)	50' - 100'
Downstream (Termination)	Varies (See Drawings)

★ Use Pre-Construction Posted Speed to select the Speed from the Tables below:

TEMPORARY BARRIER FLARE RATE TABLE	
★SPEED (mph)	MINIMUM FLARE RATE
≤ 30	8:1
35	9:1
40	10:1
45	12:1
50	14:1
55	16:1
60	18:1
65	19:1
70	20:1

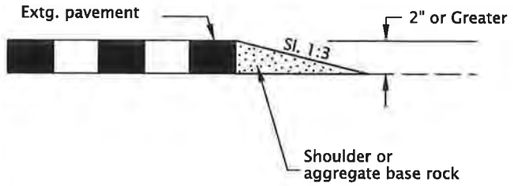
MINIMUM LENGTHS TABLE					
	"L" VALUE FOR TAPERS (ft)				BUFFER "B" (ft)
★ SPEED (mph)	W = Lane or Shoulder Width being closed or shifted				
	W ≤ 10	W = 12	W = 14	W = 16	
25	105	125	145	165	75
30	150	180	210	240	100
35	205	245	285	325	125
40	265	320	375	430	150
45	450	540	630	720	180
50	500	600	700	800	210
55	550	660	770	880	250
60	600	720	840	960	285
65	650	780	910	1000	325
70	700	840	980	1000	365
FREEWAYS					
55	1000	1000	1000	1000	250
60	1000	1000	1000	1000	285
65	1000	1000	1000	1000	325
70	1000	1000	1000	1000	365

NOTES:
- For Lane closures where W < 10', use "L" value for W = 10'.
- For Shoulder closures where W < 10', use "L" value for W = 10' or calculate "L" using formula, for Speeds ≥ 45: L = WS, Speeds < 45: L = $S^2W/60$, S = Speed, W=Width

TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE				
★ SPEED (mph)	Sign Spacing (ft)			Max. Channelizing Device Spacing (ft)
	A	B	C	
20 - 30	100	100	100	20
35 - 40	350	350	350	20
45 - 55	500	500	500	40
60 - 70	700	700	700	40
Freeway	1000	1500	2640	40

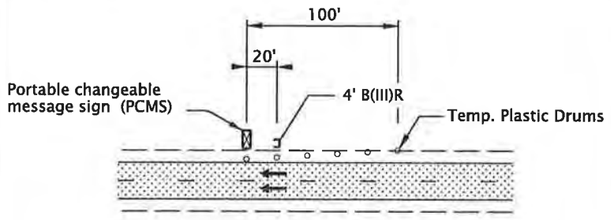
NOTES:
- Place traffic control devices on 10 ft. spacing for intersection and access radii.
- When necessary, sign spacing may be adjusted to fit site conditions. Limit spacing adjustments to 30% of the "A" dimension for all speeds.

NOTES:
- When paved shoulders adjacent to excavations are less than four feet wide protect longitudinal abrupt edge as shown.
- Use aggregate wedge when abrupt edge is 2 inches or greater.



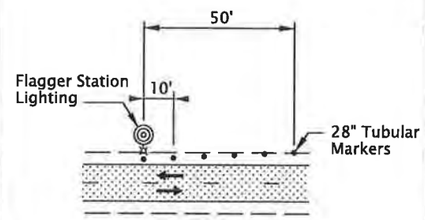
EXCAVATION ABRUPT EDGE

NOTES:
- Install PCMS beyond the outside shoulder, when possible.
- Use the appropriate type of barricade panels for PCMS location. Right shoulder, use Type B(III)R Left shoulder, use Type B(III)L
- Use six drums in shoulder taper on 20' spacing. The drums and barricade may be omitted when PCMS is placed behind a roadside barrier.
- Detail as shown is used for trailered and non-crashworthy components of:
  - Portable Traffic Signals
  - Smart Work Zone Systems



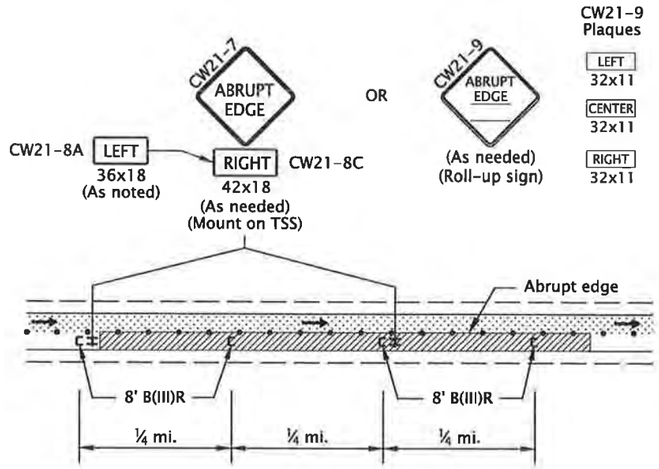
PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) INSTALLATION

NOTES:
- Install Flagger Station Lighting beyond the outside shoulder, where practical.
- Use six tubular markers in shoulder taper on 10' spacing.
- Place cart / generator / power supply off of the shoulder, as far as practical.



FLAGGER STATION LIGHTING DELINEATION

NOTES:
- Abrupt edges may be created by paving, operations, excavations or other roadway work. Use abrupt edge signing for longitudinal abrupt edges of 1 inch or greater.
- If the excavation is located on left side of traffic, replace the 8' B(III)R barricades with 8' B(III)L barricades and replace the "RIGHT" (CW21-8C) riders with "LEFT" (CW21-8A) riders.
- Continue signing and other traffic control devices throughout excavation area at spacings shown.
- If roll-up signs are used, attach the correct (CW21-9) plaques to the sign face using hook and loop fasteners. Place roll-up signs in advance of barricades.



TYPICAL ABRUPT EDGE DELINEATION

GENERAL NOTES FOR ALL TCP DRAWINGS:
- Signs and other Traffic Control Devices (TCD) shown are the minimum required.
- Place a barricade approx. 20' ahead of all sequential arrow boards.
- Arrows shown in roadway are directional arrows to indicate traffic movements.
- All signs are 48" x 48" unless otherwise shown. Use flourescent orange sheeting for the background of all temporary warning signs.
- All diamond shaped warning signs mounted on barrier sign supports shall be 36" by 36". All other signs mounted on barrier sign supports shall not exceed 12 sq. ft. in total sign area.
- Low speed highways have a pre-construction posted speed of 40 mph or less. High speed highways have a pre-construction posted speed of 45 mph or higher.
- Do not locate sign supports in locations designated for bicycle or pedestrian traffic.
- Combine drawing details to complete temporary traffic control for each work activity.
- To be accompanied by Dwg. Nos. TM820 & TM821.

○ ○ ○ Temp. Plastic Drums See TCD Spacing Table for max. spacing.

• • • 28" Tubular Markers See TCD Spacing Table for max. spacing.

UNDER TRAFFIC

UNDER CONSTRUCTION

CALC. BOOK NO. TM09-01

SDR DATE 01-JUL-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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OREGON STANDARD DRAWINGS

TABLES, ABRUBT EDGE AND PCMS DETAILS

2021

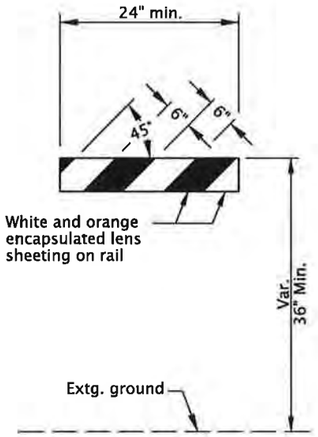
DATE	REVISION DESCRIPTION

tm800.dgn 01-JUL-2020

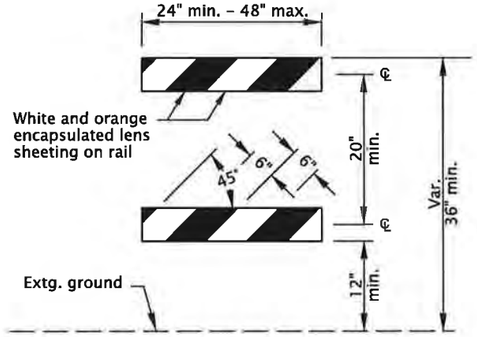
TM800

Effective Date: December 1, 2020 - May 31, 2021

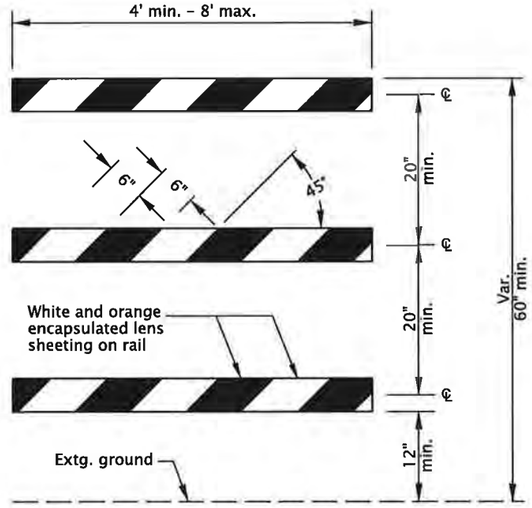
tm820.dgn 01-JUL-2020



TYPE I



TYPE II



TYPE III

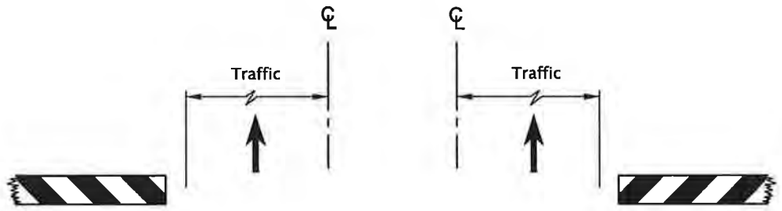
BARRICADE RAIL LAYOUT

GENERAL NOTES FOR ALL DETAILS:

- Sandbags (approximately 25 lb sack filled with sand) may be placed on lower frame to provide additional ballast.
- Ballast shall not extend above bottom rail or be suspended from barricade.
- For rails less than 36" long, 4" wide stripes shall be used.
- Rails must be 8" min. to 12" max. in height.
- Use barricades from ODOT Qualified Products List (QPL).
- Use 4' Type III barricades where horizontal space is limited.
- Do not block bike lanes or shoulders unless the facility is properly closed and signed.
- Do not place barricades in sidewalks unless sidewalk is closed and a temporary pedestrian accessible route (TPAR) is signed according to the TCP. See Dwg. No. TM844.

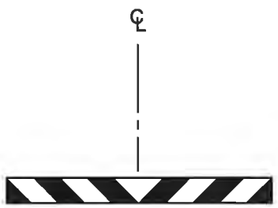
NOTES:

- Markings for barricade rails shall slope downward at an angle of 45° in the direction traffic is to pass.
- Where a barricade extends entirely across a roadway, it is desirable that the stripes slope downward in the direction toward which traffic must turn in detouring.
- Where both right and left turns are provided for, slope the chevron striping downward in both directions from the center of the barricade.
- For full roadway closures, the C or LR barricade may be used. Extend barricades completely across roadway unless access is required for local road users.

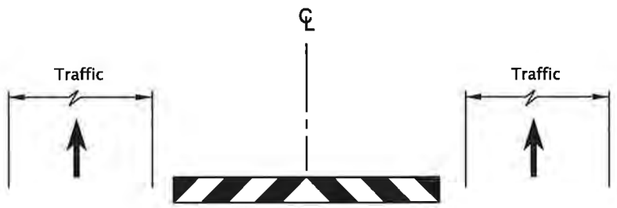


LT. SIDE - L
(For approaching traffic)

RT. SIDE - R
(For approaching traffic)

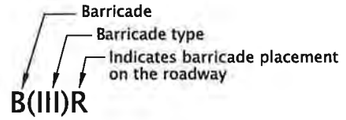


CLOSED - C
(For approaching traffic)



LT. / RT. - LR
(For approaching traffic)

DIAGRAM FOR BARRICADE PLACEMENT AND SLOPE MARKING



BARRICADE NOTATION

CALC. BOOK NO. N/A

SDR DATE 01-JUL-2020

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OREGON STANDARD DRAWINGS

TEMPORARY BARRICADES

2021

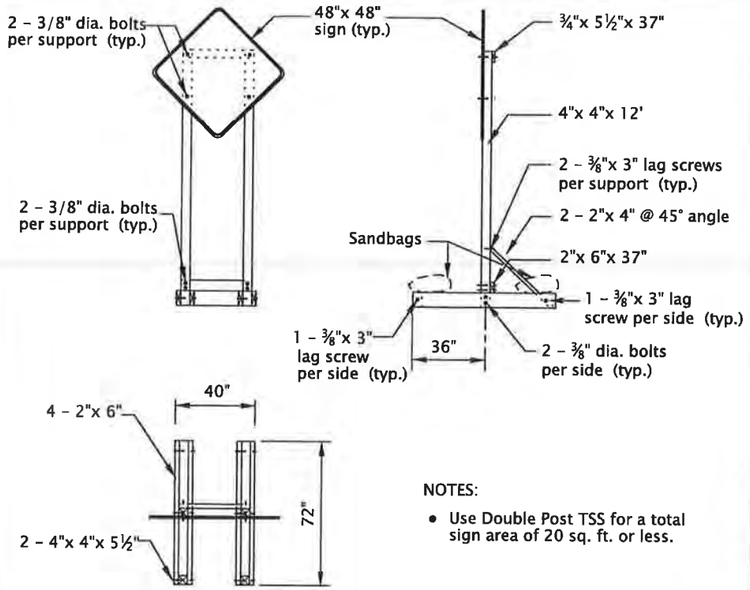
DATE	REVISION DESCRIPTION

Effective Date: December 1, 2020 - May 31, 2021

TM820

TM820

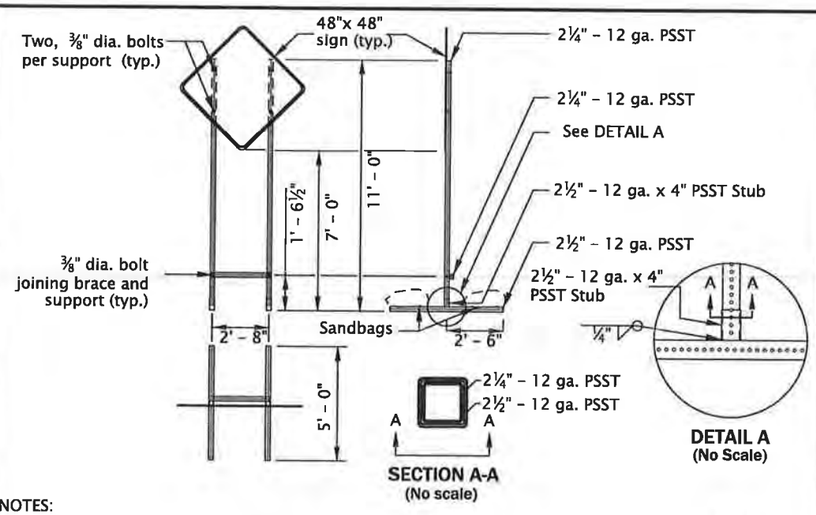
tm821.dgn 01-JUL-2020



NOTES:

- Use Double Post TSS for a total sign area of 20 sq. ft. or less.

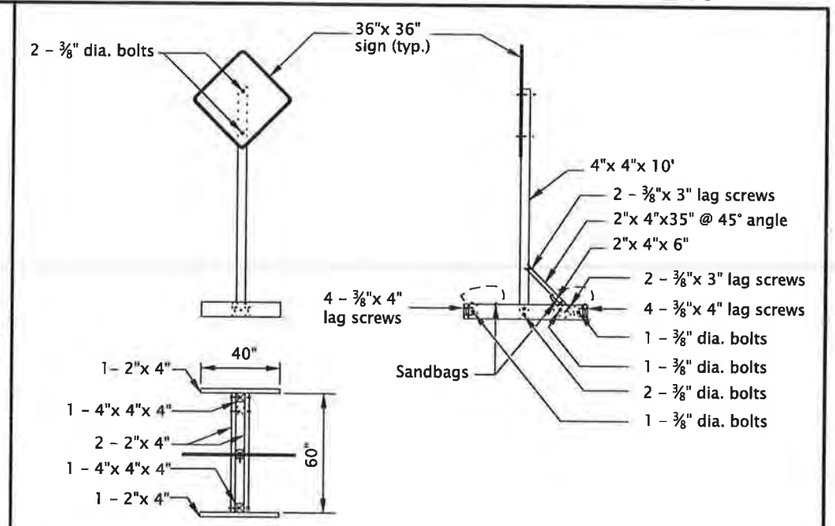
DOUBLE POST DETAIL



NOTES:

- Use PSST TSS's for a total sign area of 16 sq. ft. or less.
- All members shall have a minimum yield stress of 50 ksi.
- Galvanize steel according to ASTM A653 with coating designation G90. Remove Galvanizing from steel before welding. Repair Galvanizing according to ASTM A780.
- Use A325 Bolts or equivalent.
- 2¼" – 12 ga. PSST to extend entire length inside of the 2½" – 12 ga. x 4" PSST Stub.
- Do not use bolt to secure 2¼" PSST inside of the 2½" – 12 ga. x 4" PSST Stub.
- Weld steel according to American Welding Society (AWS) D.1.1.

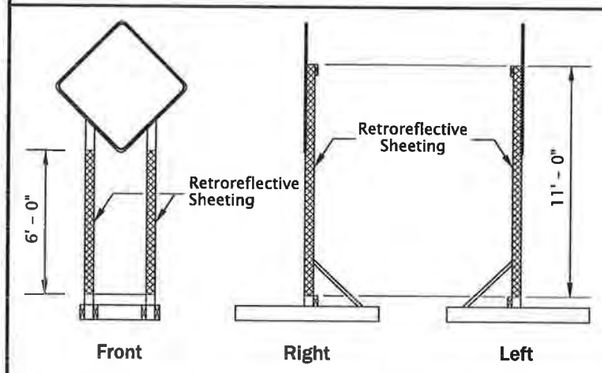
PERFORATED STEEL SQUARE TUBE (PSST) DETAIL



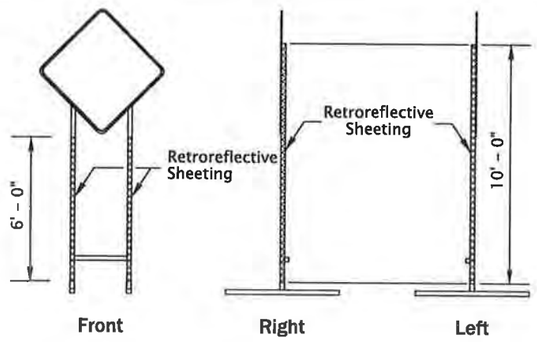
NOTES:

- Use Single Post TSS for a total sign area of 12 sq. ft. or less.
- Use Single Post TSS for mounting "Business Access" (CG20-11) signs. Do not mount signs on Type II or III Barricades.

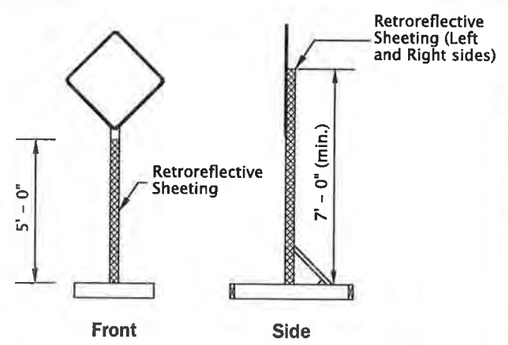
SINGLE POST DETAIL



Double Post



Perforated Steel Square Tube (PSST)



Single Post

TEMPORARY SIGN SUPPORT GENERAL NOTES:

- Do not tip over TSS at any time.
- Do not locate TSS's in locations that block pedestrian or bicycle traffic.
- For wooden TSS's, use either Douglas Fir or Hem Fir, which is surfaced four sides (S4S) and free of heart center (FOHC).
- See "Temporary Sign Placement" detail on TM822 for sign installation heights.
- Do not place or stack ballast more than 24" above the ground.
- When sign is inconsistent with current work zone conditions, cover sign: or turn sign 90 degrees away from approaching traffic. Remove TSS from roadway when signing is not needed for more than 3 days.
- Place a minimum of 50 lbs of sandbags on each of the four TSS supports legs. (25 lb. max per bag) (min. 100 lbs per side of each TSS).
- See Dwg. No. TM204 for flag board mounting detail.

NOTES:

- Apply fluorescent orange, ANSI Type VIII or IX retroreflective sheeting to TSS posts, as shown, for all temporary signs, except "STOP" and "DO NOT ENTER". For "STOP" and "DO NOT ENTER" signs, used red ANSI Type III or IV retroreflective sheeting on the TSS posts.
- Apply sign post retroreflectivity to each TSS post facing front; and to the left and right sides of the TSS, as shown. Use 3" wide sheeting for wood post TSS's. Use 2" wide sheeting for PSST TSS's.
- Sheeting may be applied directly to post material; or applied to a rigid, lightweight substrate, then securely attached to the posts.

SIGN POST REFLECTIVE SHEETING PLACEMENT

CALC. BOOK NO. N/A

SDR DATE 01-JUL-2020

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OREGON STANDARD DRAWINGS

TEMPORARY SIGN SUPPORTS

2021

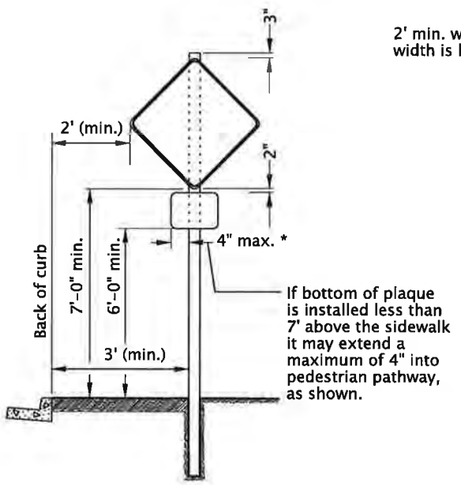
DATE	REVISION DESCRIPTION

Effective Date: December 1, 2020 - May 31, 2021

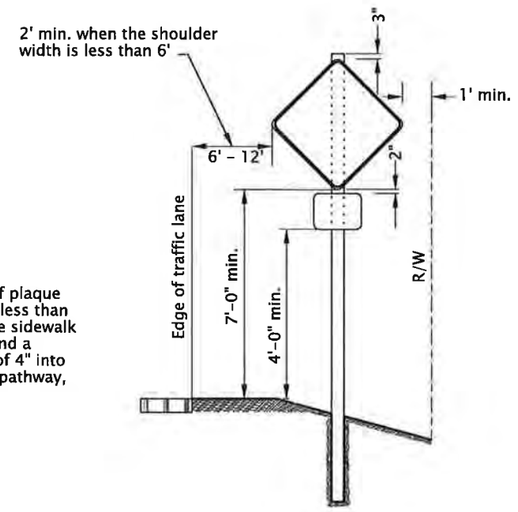
TM821

NOTES:

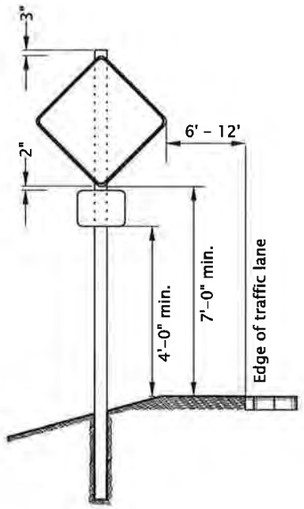
- Do not block bicycle lanes, sidewalks, or TPAR's with sign supports. Maintain minimum widths for these facilities according TCP Design Manual, MUTCD, ADA, or as directed.
- To be accompanied by Dwg. Nos. TM670, TM671, TM687, TM688 & TM689.



Urban Areas With Curb/Sidewalk

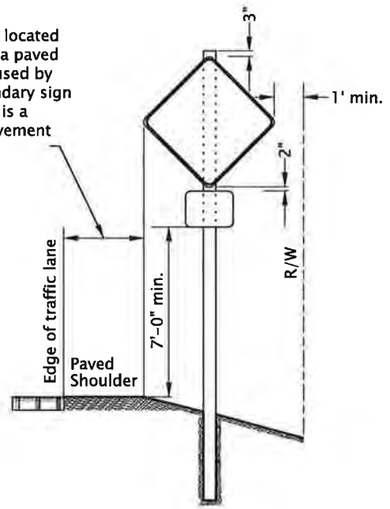


Rural Areas



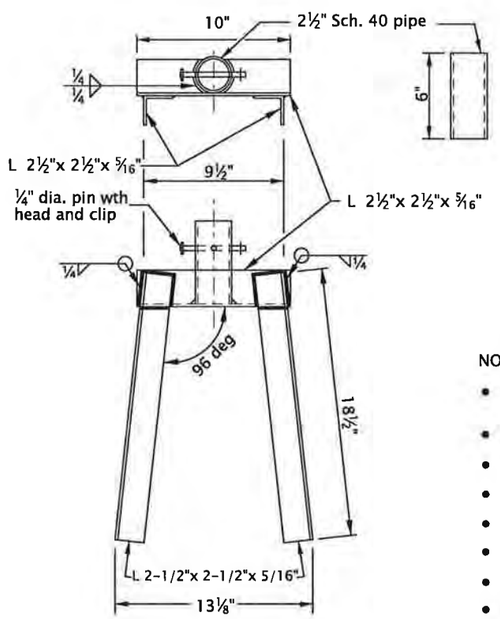
Divided Highway/Freeway Medians
No Curb/Sidewalk

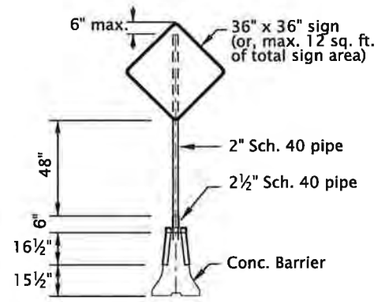
Where temporary signs are located adjacent to or intrude into a paved shoulder or other surface used by bicycle traffic, install secondary sign (plaque) so bottom of sign is a minimum of 7'0" above pavement surface, as shown.



Rural or Urban Areas - Curb or No Curb
Bicycles On Shoulder

TEMPORARY SIGN PLACEMENT





NOTES:

- Drill additional holes so sign can be rotated 90 degrees and pinned when not in use.
- All structural steel shall conform to ASTM A36.
- Support fits both 32" and 42" tall "F" barrier.
- Use for supporting a maximum 12 sq. ft. of total sign area.
- Place support at connection between two concrete barrier sections.
- Weld steel according to American Welding Society (AWS) D.1.1.
- Do not use clipped signs.
- Follow manufacturer recommendation when installing signs on barrier other than concrete.

CONCRETE BARRIER SIGN SUPPORT

CALC. BOOK NO. N/A

SDR DATE 01-JUL-2020

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OREGON STANDARD DRAWINGS

TEMPORARY SIGN SUPPORTS

2021

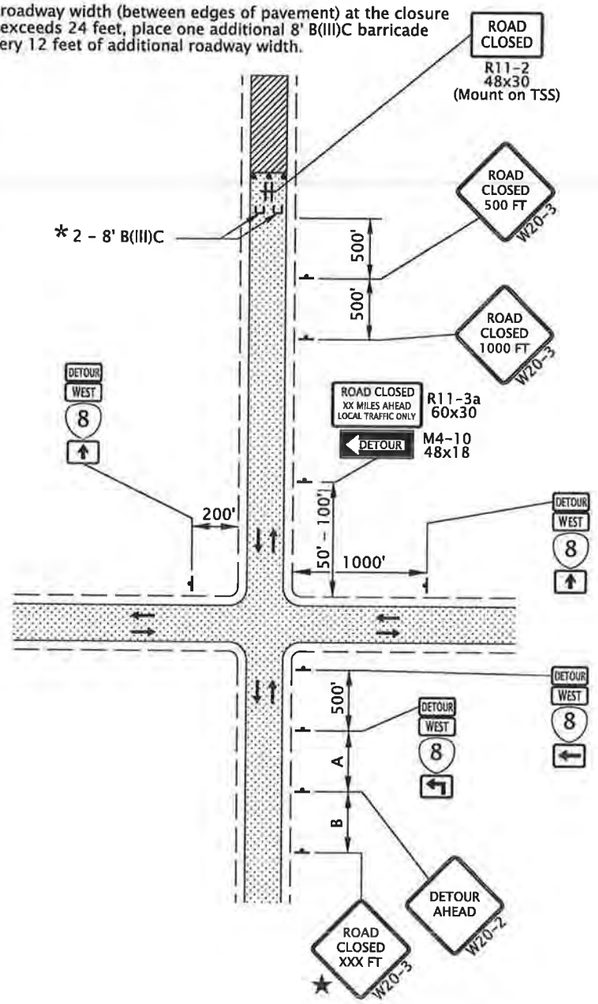
DATE	REVISION DESCRIPTION

tm822.dgn 01-JUL-2020

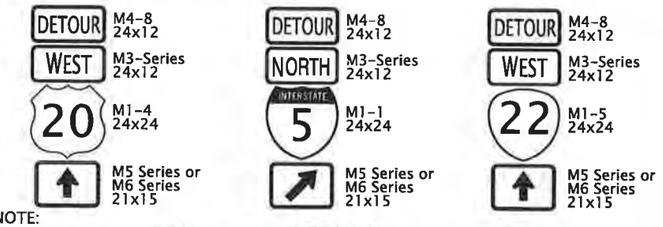
TM822

NOTES:
If closure point is less than 1500 ft. from nearest intersection, use a "ROAD CLOSED TO THRU TRAFFIC" (R11-4)sign in place of the "ROAD CLOSED XX MILES AHEAD" sign.

* If the roadway width (between edges of pavement) at the closure point exceeds 24 feet, place one additional 8' B(III)C barricade for every 12 feet of additional roadway width.

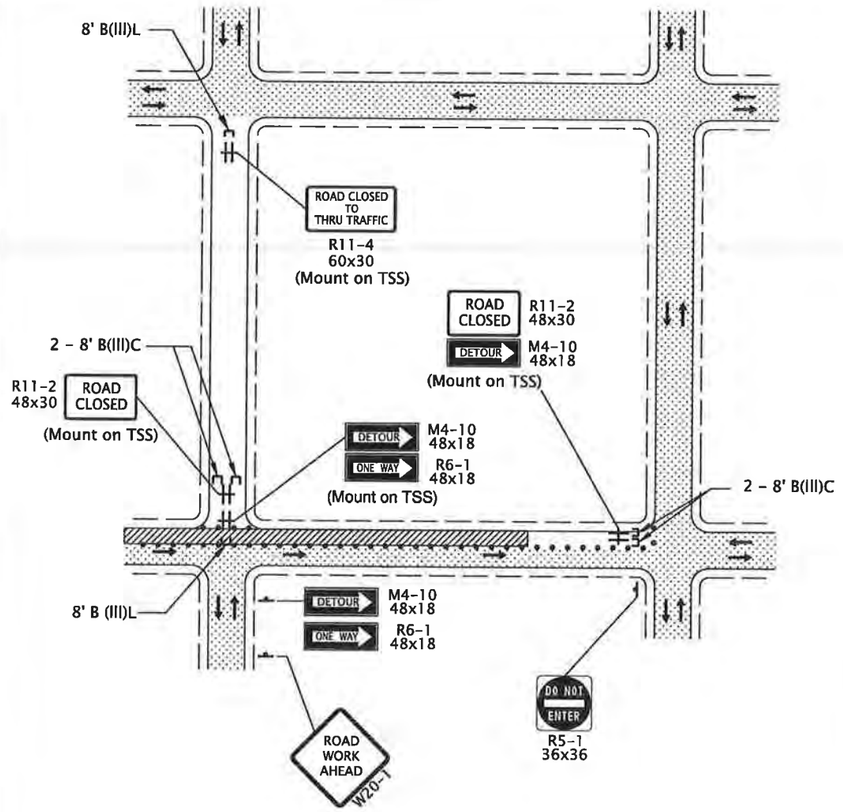


TYPICAL ROAD CLOSURE WITH DETOUR



NOTE:
- When detour routes overlap, each Route Shield will include a seperate cardinal direction, detour, and directional arrow auxiliary sign assembly.

TYPICAL TRAILBLAZER ASSEMBLY



TYPICAL PARTIAL ROAD CLOSURE

GENERAL NOTES FOR ALL DETAILS:

★ A "Street Name" rider may be used to enhance Road Closure signing; or provide a project specific design; or, as shown in the traffic control plan.

##x18 Rider
Rider width to be determined by width of street name.

48 x 60 (nom.)
Project Specific Design

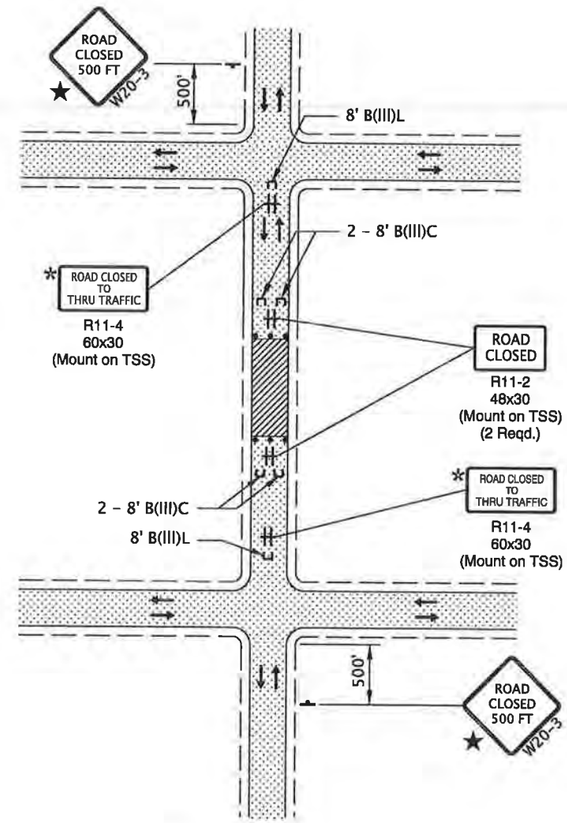
48 x 60 (nom.)
Project Specific Design

- Use a minimum of two Type III barricades for a road closure. For roads ≥ 36' wide between curbs or edge of pavement, use a minimum of three Type III barricades for the closure point.
- For full road closures, the C or LR barricade may be used.
- Place additional signing as directed.
- To determine sign spacing A, B, & C, use the "TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE" on Dwg. TM800.
- To be accompanied by Dwg. Nos.TM820 & TM821.

• • • • • 28" Tubular Markers See TCD Spacing Table on TM800 for max. spacing.

UNDER TRAFFIC

UNDER CONSTRUCTION



NOTE:
* If accesses exist between intersection and point of closure, install "ROAD CLOSED TO THRU TRAFFIC" sign as shown.

TYPICAL ROAD CLOSURE

CALC. BOOK NO. N/A

SDR DATE 01-JUL-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

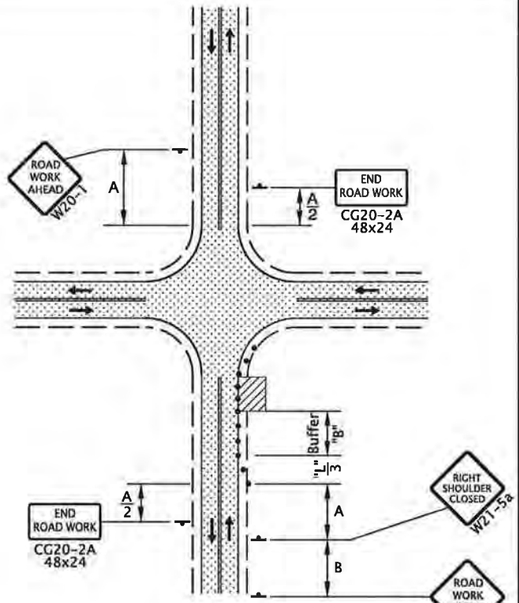
CLOSURE DETAILS

2021

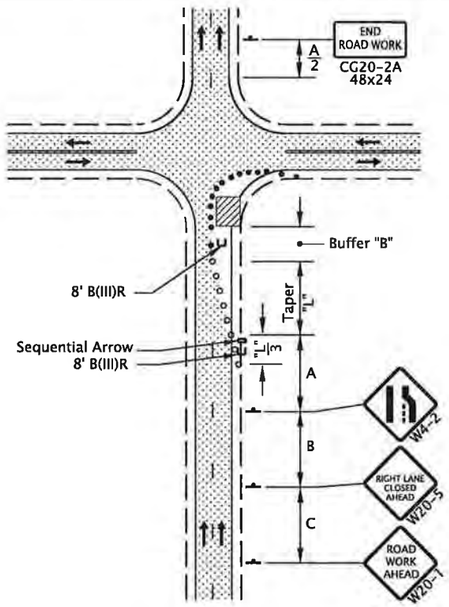
DATE	REVISION DESCRIPTION

tm840.dgn 01-JUL-2020

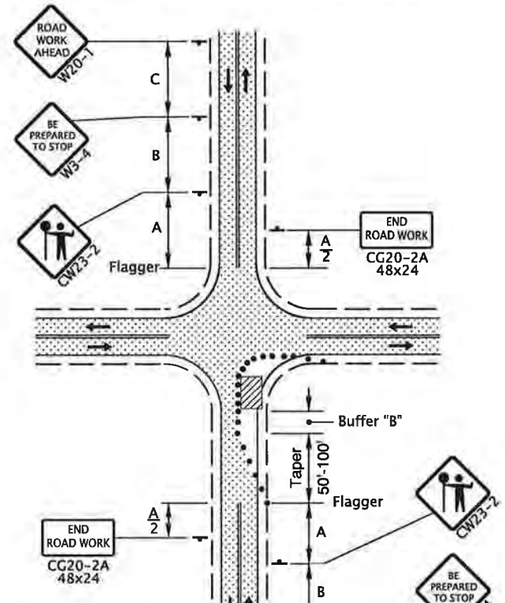
TM840



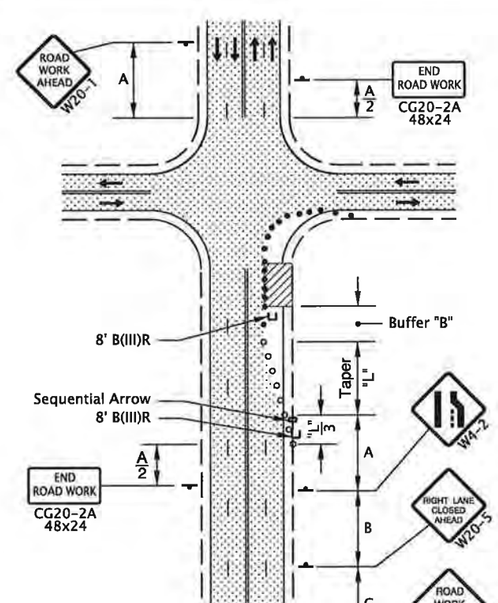
2-Lane, 2-Way
SHOULDER CLOSURE



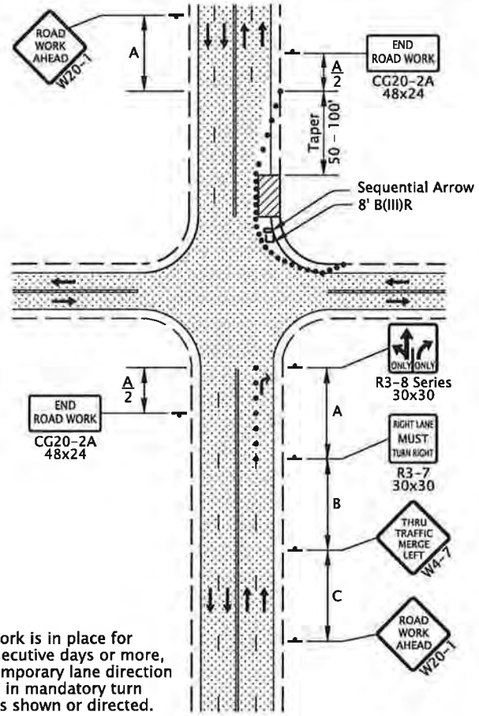
2-LANE, 1-WAY
RIGHT LANE CLOSURE



2-Lane, 2-Way
ONE LANE CLOSURE

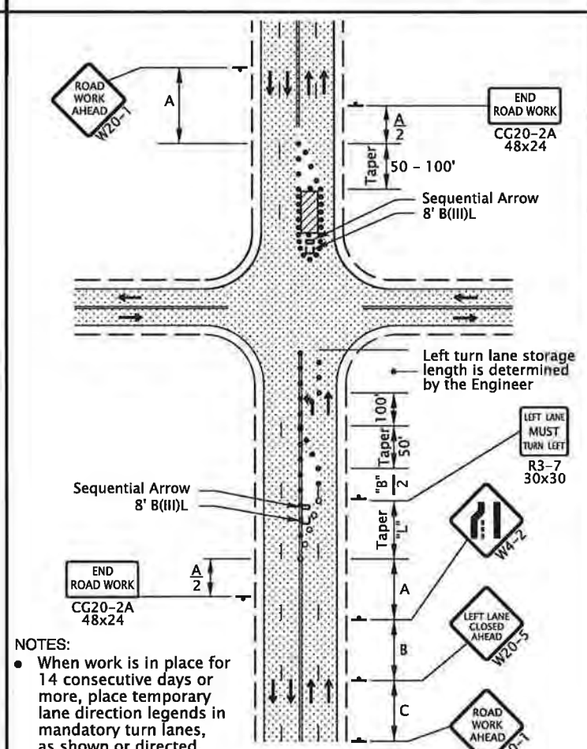


4-Lane, 2-Way
RIGHT LANE CLOSURE, NEAR SIDE



NOTES:
- When work is in place for 14 consecutive days or more, place temporary lane direction legends in mandatory turn lanes, as shown or directed.

4-Lane, 2-Way
RIGHT LANE CLOSURE, FAR SIDE



NOTES:
- When work is in place for 14 consecutive days or more, place temporary lane direction legends in mandatory turn lanes, as shown or directed.

4-Lane, 2-Way
LEFT LANE CLOSURE, FAR SIDE

GENERAL NOTES FOR ALL DETAILS:
- Additional Traffic Control Measures (TCM) may be required for all legs of the intersection.
- The "FLAGGER" (CW23-2) symbol sign shall be used only in conjunction with the "BE PREPARED TO STOP" (W3-4) sign.
- To determine Taper Length ("L") and Buffer Length ("B"), use the "MINIMUM LENGTHS TABLE" on Dwg. TM800.
- For left lane or shoulder work, place TCD to close left lane or shoulder. Use "LEFT LANE CLOSED AHEAD" (W20-5) sign, "LEFT LANE ENDS" (W4-2L) symbol sign, or "LEFT SHOULDER CLOSED" (W21-5a) sign, where applicable.
- To determine sign spacing A, B, and C, use "TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE" on Dwg. TM800.
- When a through road intersects within the work zone, place a "ROAD WORK AHEAD" (W20-1) sign in advance of the intersection at sign spacing A.
- Tubular markers may be used in lane closure tapers where posted speed is 40 mph or less.
- Where shoulder width is limited, Sequential Arrow may be placed within the lane closure taper.
- Place channelizing devices around intersection radii, business accesses and driveways at 10' spacing.
- Install a "BICYCLES ON ROADWAY" (CW11-1) sign in advance of the closure when a bike lane is closed, or when the shoulder is closed and bikes are expected.
- To be accompanied by Dwg. Nos. TM820, TM821 & TM840.

• • • • • 28" Tubular Markers See TCD Spacing Table on TM800 for max. spacing.

○ ○ ○ ○ ○ Temp. Plastic Drums See TCD Spacing Table on TM800 for max. spacing.

UNDER TRAFFIC

UNDER CONSTRUCTION

CALC. BOOK NO. _____N/A_____

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

SDR DATE _____01-JUL-2020_____

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

INTERSECTION WORK ZONE DETAILS

2021

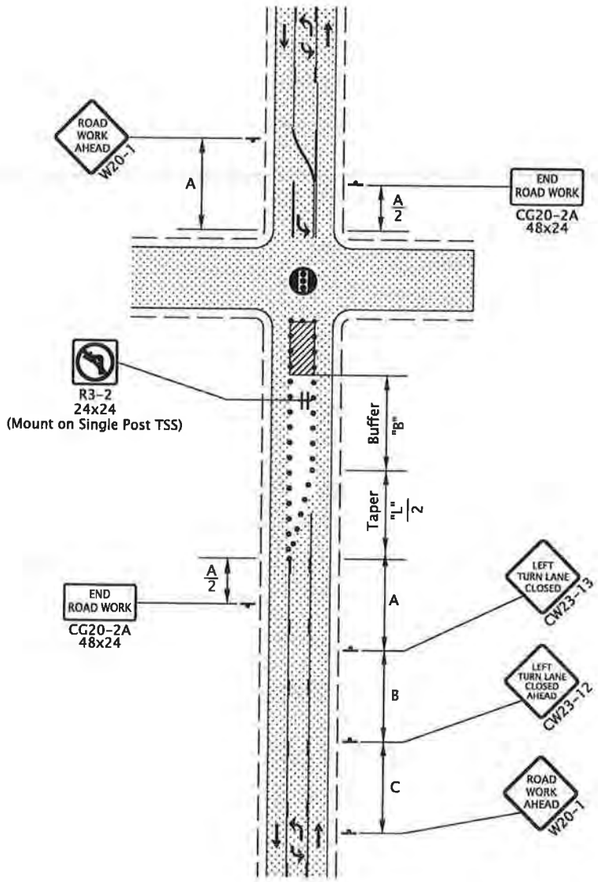
DATE	REVISION DESCRIPTION

tm841.dgn 01-JUL-2020

TM841

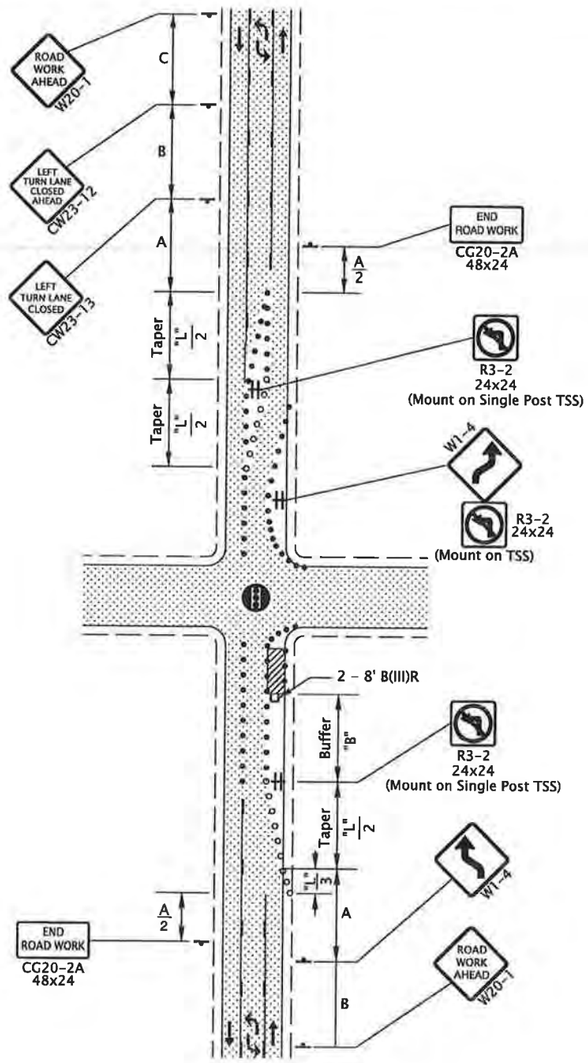
Effective Date: December 1, 2020 - May 31, 2021

tm842.dgn 01-JUL-2020



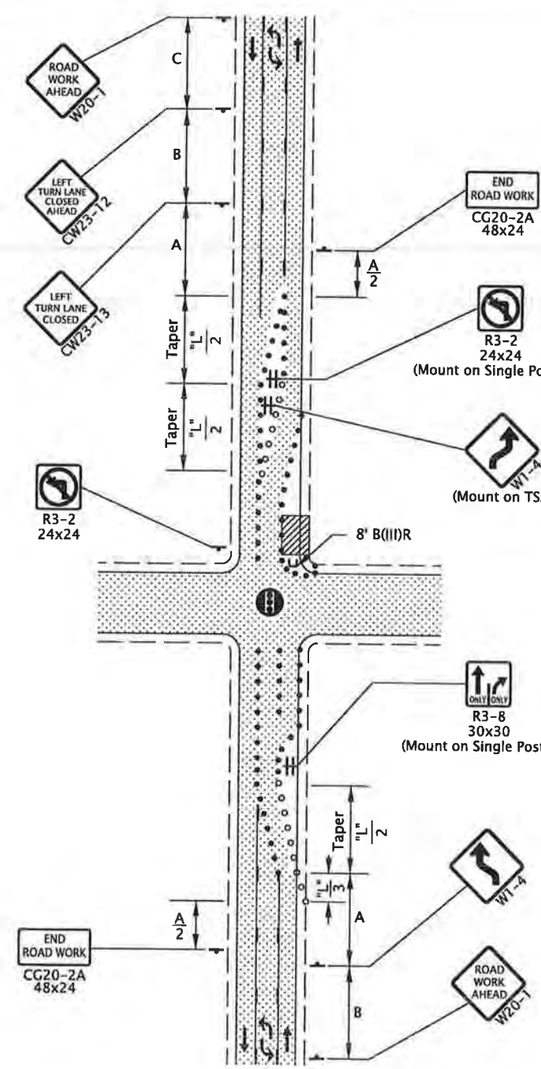
2-Lane, 2-Way Roadway With Left Turn Median

LEFT TURN MEDIAN CLOSURE



2-Lane, 2-Way Roadway With Left Turn Median

RIGHT LANE CLOSURE, NEAR SIDE



2-Lane, 2-Way Roadway With Left Turn Median

RIGHT LANE CLOSURE, FAR SIDE

GENERAL NOTES FOR ALL DETAILS:

- Additional Traffic Control Measures (TCM) may be required for all legs of the intersection.
- To determine Taper Length ("L") and Buffer Length ("B") shown on this sheet, use the "MINIMUM LENGTHS TABLE" on Dwg. TM800.
- Taper length of "L" for through lane shifting tapers may be used for higher speed roads.
- Taper length of "L"/2 for center turn lane closure may be used in areas with a high number of accesses within the work zone.
- When a through road intersects within the work zone, place a "ROAD WORK AHEAD" (W20-1) sign in advance of the intersection at sign spacing A.
- To determine sign spacing A, B, and C, use "TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE" on Dwg. TM800.
- Place channelizing devices around intersection radii, business accesses, and driveways at 10' spacing.
- Tubular markers may be used in lane closure tapers where the posted speed is 40 mph or less.
- Install a "BICYCLES ON ROADWAY" (CW11-1) sign in advance of the closure when a bike lane is closed, or when the shoulder is closed and bikes are expected.
- Signal timing adjustments determined by Engineer.
- To be accompanied by Dwg. Nos. TM820 & TM821.

Signal

• • • • • 28" Tubular Markers See TCD Spacing Table on TM800 for max. spacing

○ ○ ○ ○ ○ Temp. Plastic Drums See TCD Spacing Table on TM800 for max. spacing

UNDER TRAFFIC

UNDER CONSTRUCTION

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

CALC. BOOK NO. N/A

SDR DATE 01-JUL-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

SIGNALIZED INTERSECTION DETAILS

2021

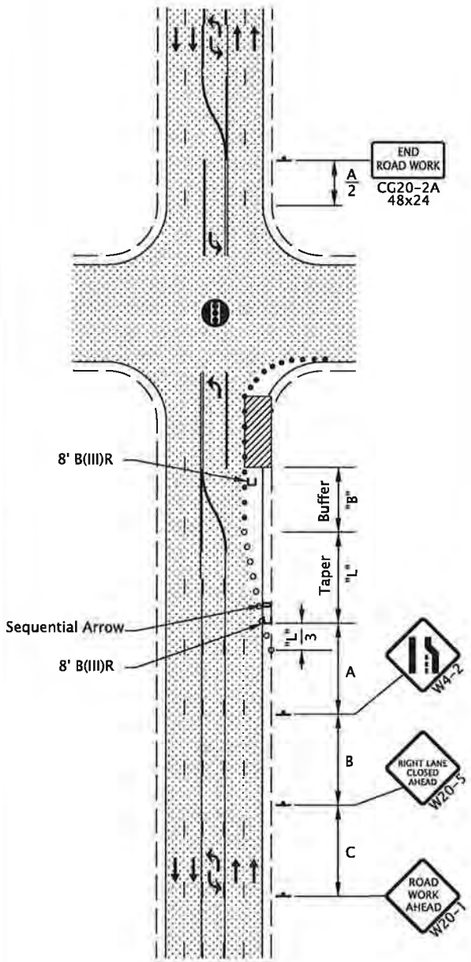
DATE	REVISION DESCRIPTION

TM842

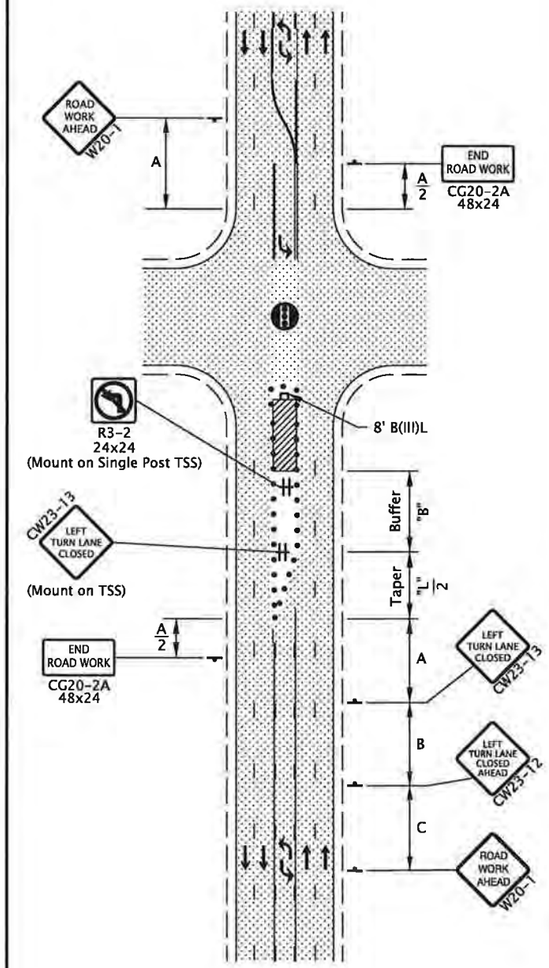
Effective Date: December 1, 2020 - May 31, 2021

TM842

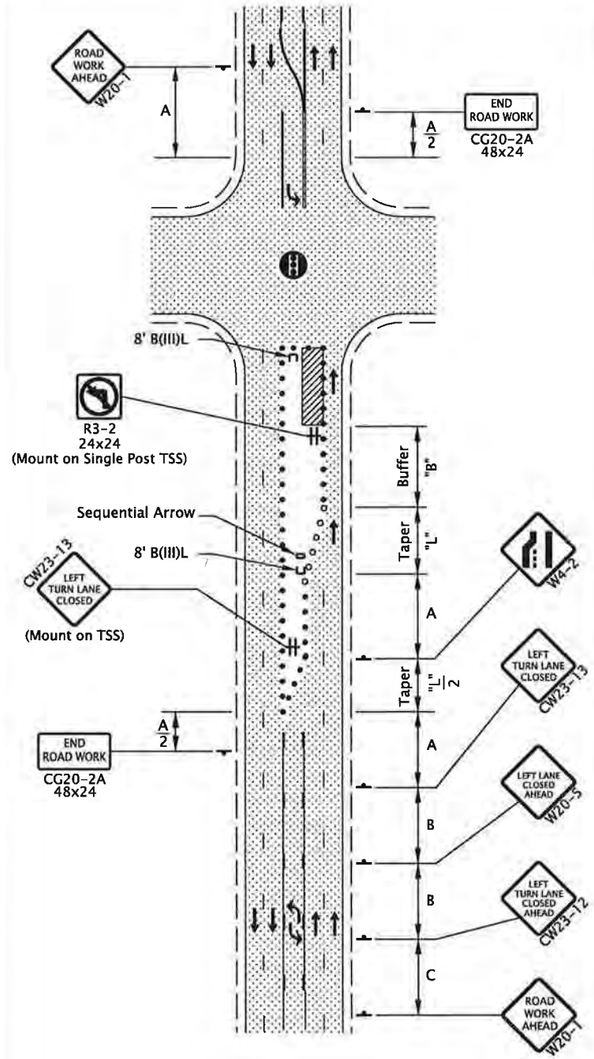
tm843.dgn 01-JUL-2020



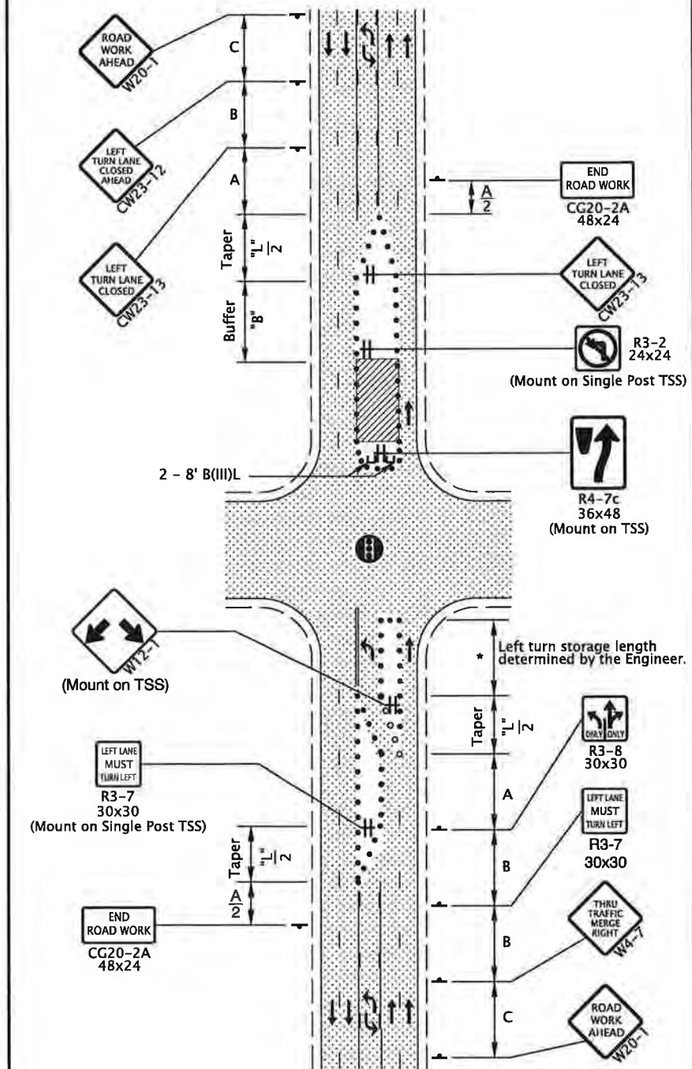
4-Lane, 2-Way Roadway With Left Turn Median
RIGHT LANE CLOSURE



4-Lane, 2-Way Roadway With Left Turn Median
LEFT TURN MEDIAN CLOSURE



4-Lane, 2-Way Roadway With Left Turn Median
LEFT TURN MEDIAN AND LEFT LANE CLOSURE



4-Lane, 2-Way Roadway With Left Turn Median
LEFT TURN MEDIAN & LEFT LANE CLOSURE, FAR SIDE

GENERAL NOTES FOR ALL DETAILS:

- Additional Traffic Control Measures (TCM) may be required for all legs of the intersection.
- To determine Taper Length ("L") and Buffer Length ("B") shown on this sheet, use the "MIMIMUM LENGTHS TABLE" on Dwg. TM800.
- When a through road intersects within the work zone, place a "ROAD WORK AHEAD" (W20-1) sign in advance of the intersection at sign spacing A.
- To determine sign spacing A, B, and C, use "TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE" on Dwg. TM800.
- Tubular markers may be used in lane closure tapers where the posted speed is 40 mph or less.
- Taper Length of "L" for the through-lane shifting tapers may be used for higher speed roads.
- Taper Length of "L"/2 for center turn lane closure may be used in areas with high number of accesses within the work zone.
- Place channelizing devices around intersection radii, business accesses and driveways at 10' spacing.
- Install a "BICYCLES ON ROADWAY" (CW11-1) sign in advance of the closure when a bike lane is closed, or when the shoulder is closed and bikes are expected.
- Signal timing adjustments determined by the Engineer.
- To be accompanied by Dwg. Nos. TM820 & TM821.

Signal

28" Tubular Markers
See TCD Spacing Table on TM800 for max. spacing.

Temp. Plastic Drums
See TCD Spacing Table on TM800 for max. spacing.

UNDER TRAFFIC

UNDER CONSTRUCTION

CALC. BOOK NO. N/A

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SDR DATE 01-JUL-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

MULTI-LANE SIGNALIZED INTERSECTION DETAILS

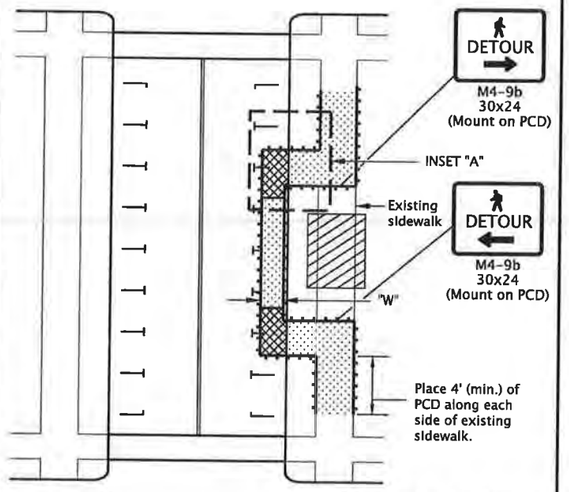
2021

DATE	REVISION DESCRIPTION

TM843

Effective Date: December 1, 2020 - May 31, 2021

tm844.dgn 01-JUL-2020



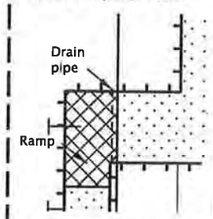
Within Roadway SIDEWALK DIVERSION

NOTES:

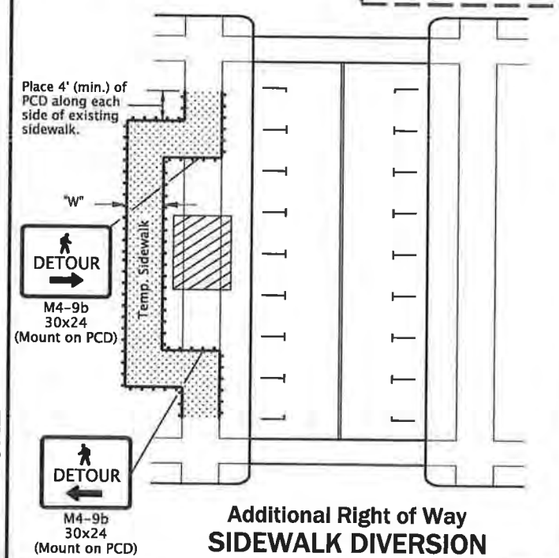
- Place or construct temp. sidewalk ramp, as needed.
- For roadways with a pre-construction posted speed of 40 mph or less.
- See inset "A" for Temp. Sidewalk Ramp details.
- "W" = 60", or, where 60" width cannot be maintained through the entire route, provide 48" min. width with 60" x 60" passing spaces every 200 ft.
- Use temporary ADA compliant surfaces to cross planter strips or other non-traversable surfaces.

NOTES:

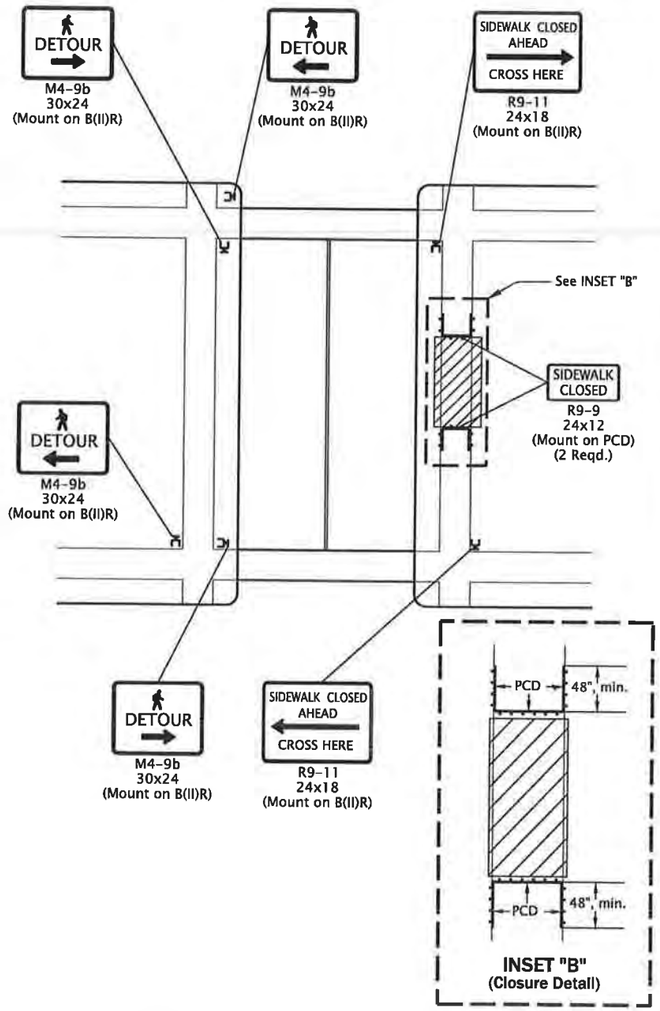
- Ramp size will vary. Ramp must meet ADA requirements incl. max design grade of 7.5% and max design cross slope of 1.5%.



INSET "A"
(Temp. Sidewalk Ramp)



Additional Right of Way SIDEWALK DIVERSION

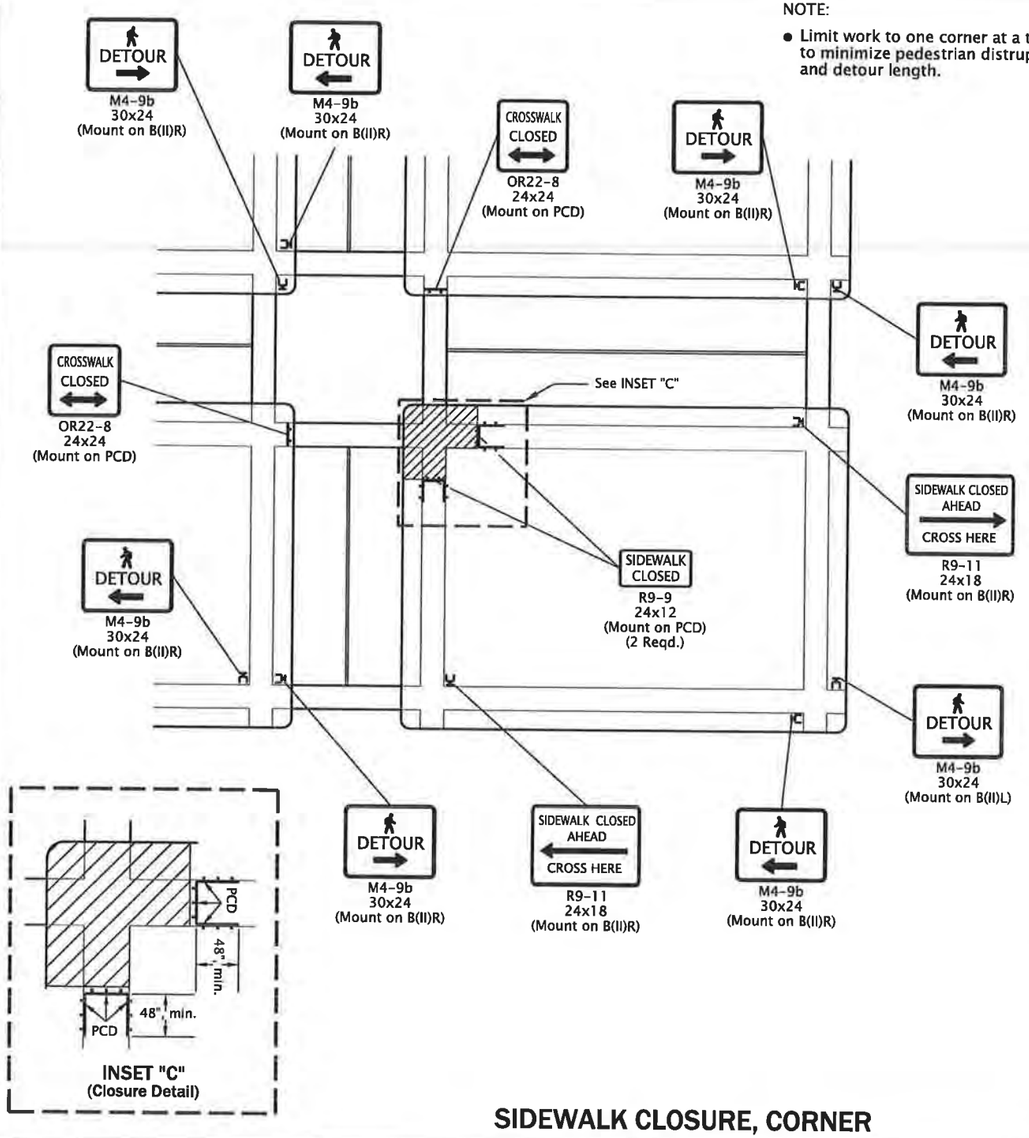


INSET "B"
(Closure Detail)

SIDEWALK CLOSURE, MIDBLOCK

NOTE:

- Limit work to one corner at a time to minimize pedestrian distruption and detour length.



INSET "C"
(Closure Detail)

SIDEWALK CLOSURE, CORNER

GENERAL NOTES FOR ALL DETAILS:

- When closing or relocating crosswalks or other pedestrian facilities provide ADA compliant facilities. Include accessibility features consistent with existing pedestrian facilities by providing adequate slope transitions and surfacing.
- Provide non-slip, 60 inch minimum wide surface through entire pedestrian route. If not possible, provide 48" min. width with 60" x 60" passing spaces every 200 feet along the route.
- Only TCD for pedestrians are shown. Other devices may be necessary to control vehicular traffic.
- Stage work, as necessary, to provide a temporary pedestrian access route at all times. For roadways with no available detours, maintain one open sidewalk at all times.
- Minimize pedestrian out-of-direction travel.
- To be accompanied by Dwg. Nos. TM820 & TM821.

UNDER PEDESTRIAN TRAFFIC

UNDER CONSTRUCTION

PEDESTRIAN CHANNELIZING DEVICE (PCD)

CALC. BOOK NO. N/A

SDR DATE 01-JUL-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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OREGON STANDARD DRAWINGS

TEMPORARY PEDESTRIAN ACCESSIBLE ROUTES

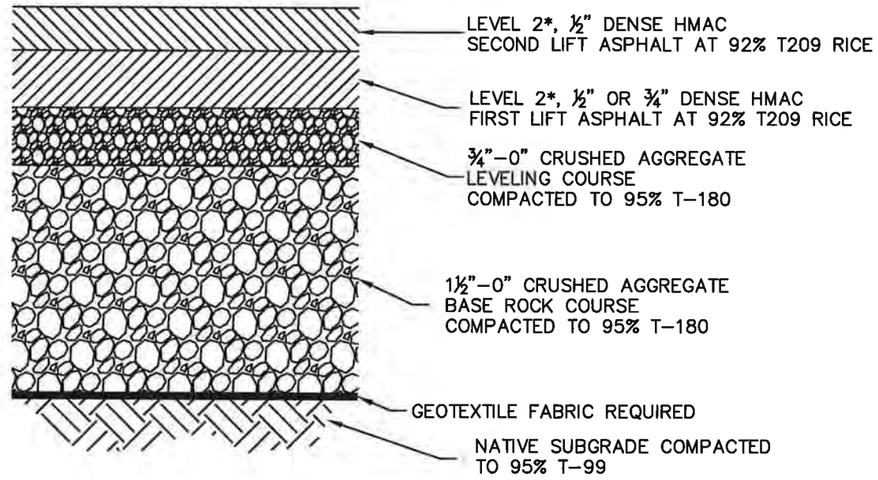
2021

DATE	REVISION DESCRIPTION

Effective Date: December 1, 2020 - May 31, 2021

TM844

TM844



PAVEMENT SECTION CHART
COMPONENT THICKNESS (INCHES)

FUNCTIONAL CLASSIFICATION	SECOND LIFT HMAC THICKNESS	FIRST LIFT HMAC THICKNESS	LEVELING COURSE THICKNESS	BASE ROCK COURSE THICKNESS
LOCAL	2"	2"	2"	8"
NEIGHBORHOOD	2"	2"	2"	9"
COMMERCIAL	2"	3"	3"	9"
COLLECTOR	2"	3"	3"	9"
ARTERIAL	2"	3"	4"	10"

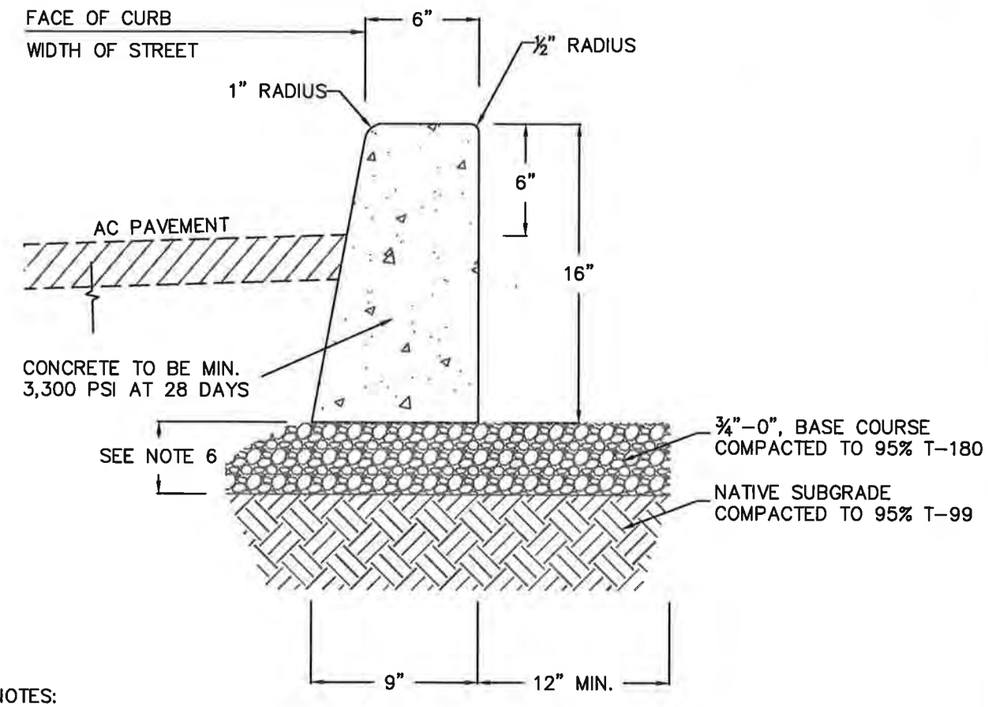
NOTES:

1. MATERIALS AND PLACEMENT OF THE HOT MIXED ASPHALT CONCRETE PAVEMENT (ACP) SHALL CONFORM TO THE REQUIREMENTS DELINEATED IN SECTION 00744 – ASPHALT CONCRETE PAVEMENT (ACP), OF THE ODOT/APWA, OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION (LATEST EDITION), EXCEPT AS MODIFIED BY CITY AND NOTED IN THE CITY'S ENGINEERING DESIGN AND STANDARD DETAILS MANUAL (LATEST EDITION).
2. THE TOP LIFT OF HMAC SHALL BE PLACED PRIOR TO CITY FINAL ACCEPTANCE OF PUBLIC INFRASTRUCTURE IMPROVEMENTS.
3. CRUSHED AGGREGATE USED FOR BASE ROCK AND LEVELING COURSE SHALL CONFORM TO THE REQUIREMENTS DELINEATED IN SECTION 02630 – BASE AGGREGATE, OF THE ODOT/APWA, OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION (LATEST EDITION).

* FOR ARTERIAL CLASSIFICATION USE LEVEL 3.

City of Sherwood Oregon

STANDARD DRAWING TITLE		DRAWING NUMBER
PAVEMENT SECTION		RD-20
Any alteration of this drawing may not be associated in any way with the City of Sherwood Standard Drawings.	SCALE	DATE
	N.T.S.	MAR '16

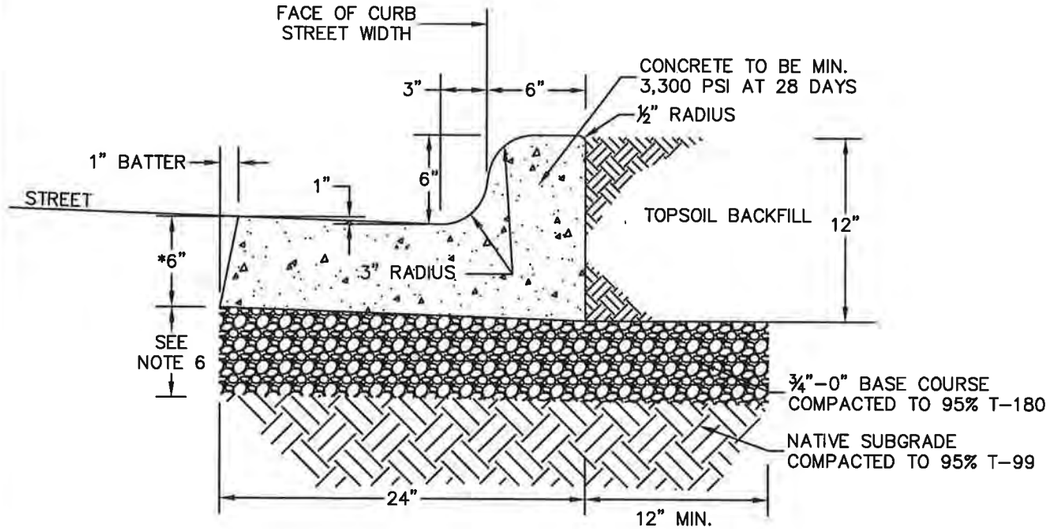


NOTES:

1. VERTICAL CURB TO BE USED AT MEDIANS AND MEDIAN PLANTING STRIPS, OR IN REPLACEMENT OF DAMAGED EXISTING VERTICAL CURBS.
2. CONCRETE SHALL BE COMMERCIAL MIX. MIN. COMPRESSIVE STRENGTH OF 3,300 PSI AT 28 DAYS.
3. EXPANSION JOINTS TO BE PROVIDED: AT POINT OF TANGENCY OF THE CURB, AT EACH COLD JOINT, AT THE SIDE OF INLET STRUCTURES, AT THE ENDS OF DRIVEWAYS AND AT LOCATIONS NECESSARY TO LIMIT SPACING TO 45 FEET.
4. MATERIAL TO BE PRE–MOLDED, ASPHALT IMPREGNATED, NON–EXTRUDING, WITH A THICKNESS OF ½ INCH.
5. CONTRACTION JOINTS SHALL NOT BE SPACED MORE THAN 15 FEET AND SHALL BE 1½" IN DEPTH.
6. BASE ROCK: ¾"–0", COMPACTED TO 95% MAX DENSITY. BASE ROCK SHALL BE TO SUBGRADE OF STREET STRUCTURE OR 6" IN DEPTH, WHICHEVER IS GREATER.

City of Sherwood Oregon

STANDARD DRAWING TITLE		DRAWING NUMBER
VERTICAL CURB		RD-21
Any alteration of this drawing may not be associated in any way with the City of Sherwood Standard Drawings.	SCALE	DATE
	N.T.S.	MAR '16



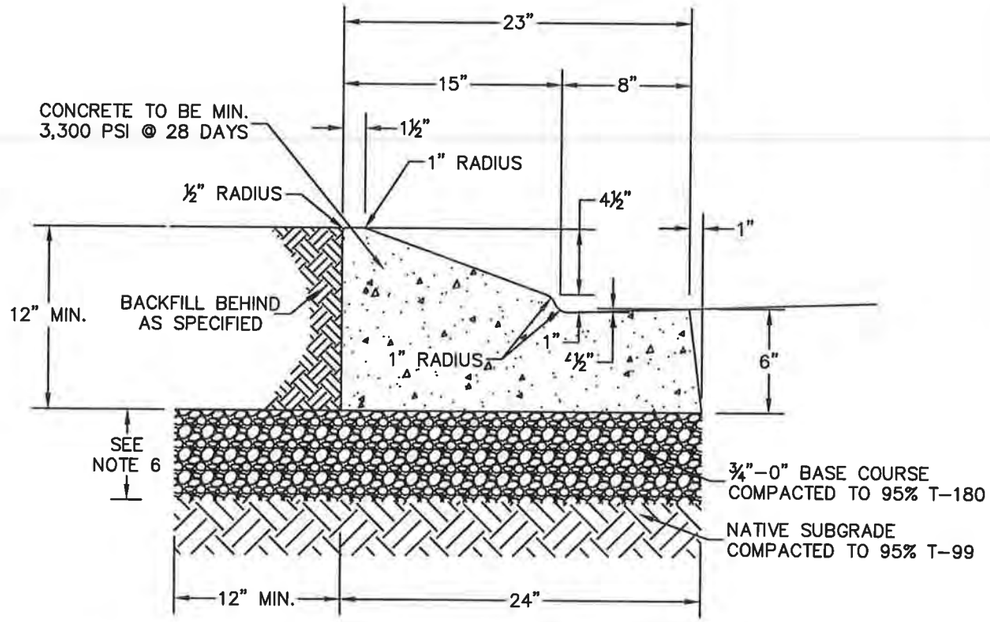
NOTES:

1. MONOLITHIC CURB AND GUTTER SHALL BE USED ON ALL NEW ROADWAY SECTIONS, EXCEPT AT ROADWAY MEDIANS AND AT MOUNTABLE CURB SECTIONS (SEE STD DET RD–21 & RD–24 FOR THESE CONDITIONS).
2. CONCRETE SHALL BE COMMERCIAL MIX, WITH A 28–DAY COMPRESSIVE STRENGTH OF 3,300 PSI, WITH A 4" MAX SLUMP.
3. EXPANSION JOINTS TO BE PROVIDED AT EACH:
   A. POINT OF TANGENCY.
   B. COLD JOINT.
   C. SIDE OF INLET STRUCTURES.
   D. SIDE OF DRIVEWAYS.
4. EXPANSION JOINT MATERIAL SHALL BE PRE–MOLDED, ASPHALT IMPREGNATED, NON–EXTRUDING, WITH A THICKNESS OF ½".
5. CONTRACTION JOINTS SHALL HAVE:
   A. SPACING OF NOT MORE THAN 15 FEET.
   B. DEPTH OF JOINT OF AT LEAST 1½".
6. BASE ROCK SHALL BE ¾"–0", COMPACTED TO 95% OF MAXIMUM DENSITY PER AASHTO T–180. BASE ROCK SHALL BE TO SUBGRADE OF STREET STRUCTURES OR 6", WHICHEVER IS GREATER, AND SHALL EXTEND 12" BEHIND CURB.
7. FOR CURB AND GUTTER REQUIREMENTS ON SHED AND SUPERELEVATED ROAD SECTIONS, SEE STD DET RD–23

* COMMERCIAL DRIVEWAY DROPS SHALL BE 8" THICK, RE–BAR REINFORCED, AND 4,000 PSI AT 28 DAYS.

City of Sherwood Oregon

STANDARD DRAWING TITLE		DRAWING NUMBER
MONOLITHIC CURB AND GUTTER		RD-22
Any alteration of this drawing may not be associated in any way with the City of Sherwood Standard Drawings.	SCALE	DATE
	N.T.S.	MAR '16



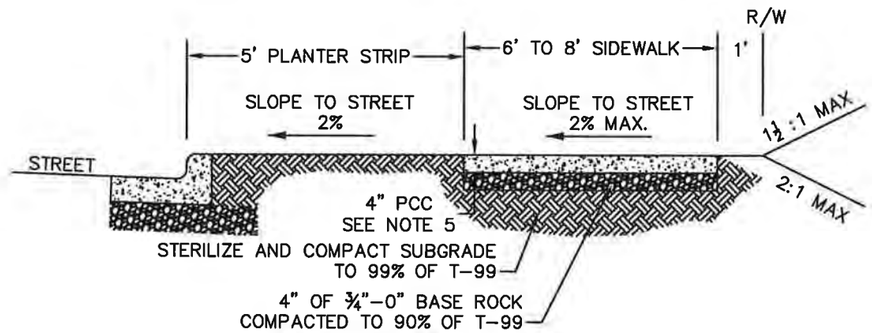
NOTES:

1. FOR USE IN CUL–DE–SACS AND OTHER SPECIAL CIRCUMSTANCES.
2. CONCRETE SHALL BE COMMERCIAL MIX, WITH A 28–DAY COMPRESSIVE STRENGTH OF 3300 PSI, WITH A 4" MAX SLUMP.
3. EXPANSION JOINTS TO BE PROVIDED AT EACH:
   A. POINT OF TANGENCY.
   B. COLD JOINT.
   C. SIDE OF INLET STRUCTURES.
   D. SIDE OF DRIVEWAYS.
4. EXPANSION JOINT MATERIAL SHALL BE PRE–MOLDED, ASPHALT IMPREGNATED, NON–EXTRUDING, WITH A THICKNESS OF ½".
5. CONTRACTION JOINTS SHALL HAVE:
   A. SPACING OF NOT MORE THAN 15 FEET.
   B. DEPTH OF JOINT OF AT LEAST 1½".
6. BASE ROCK SHALL BE ¾"–0", COMPACTED TO 95% OF MAXIMUM DENSITY PER AASHTO T–180. BASE ROCK SHALL BE TO SUBGRADE OF STREET STRUCTURES OR 4", WHICHEVER IS GREATER, AND SHALL EXTEND 12" BEHIND CURB.

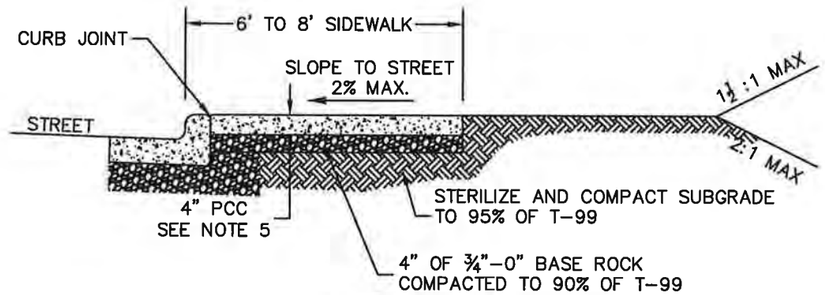
City of Sherwood Oregon

STANDARD DRAWING TITLE	DRAWING NUMBER
MOUNTABLE CURB AND GUTTER	RD-24
SCALE	DATE
N.T.S.	MAR '16

Any alteration of this drawing may not be associated in any way with the City of Sherwood Standard Drawings.



SIDEWALK WITH PLANTER STRIP
(FOR ALL NEW CONSTRUCTION)

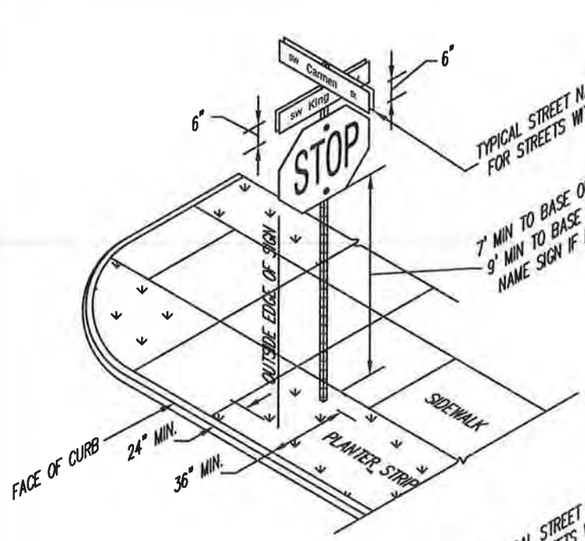


CURB-TIGHT SIDEWALK
(TO BE USED WITH VARIANCE ONLY)

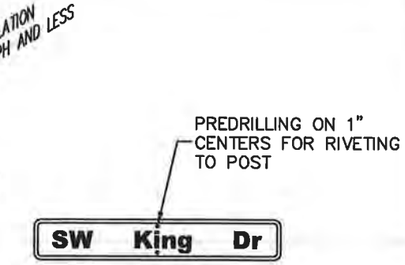
NOTES:

1. CONCRETE SHALL BE COMMERCIAL MIX, MIN. COMPRESSIVE STRENGTH OF 3,300 PSI @ 28 DAYS, WITH A 4" MAX SLUMP.
2. SIDEWALK PANELS TO BE SQUARE (6' LONG x 6' WIDE TYP.).
3. EXPANSION JOINTS TO BE PLACED AT SIDES OF DRIVEWAY APPROACHES, UTILITY VAULTS, CURB RAMPS, AND/OR POINTS OF TANGENCY IN CURB AS SHOWN ON THE STANDARD DRAWINGS FOR SIDEWALK RAMPS, AND AT SPACING NOT TO EXCEED 45'.
4. FOR SIDEWALKS ADJACENT TO THE CURB AND POURED AT THE SAME TIME AS THE CURB, THE JOINT BETWEEN THEM SHALL BE A TROWELED JOINT WITH A MINIMUM ½" RADIUS.
5. SIDEWALKS SHALL HAVE A MINIMUM THICKNESS OF 4". IF MOUNTABLE CURB IS USED, OR IF SIDEWALK IS INTENDED AS PORTION OF A RESIDENTIAL DRIVEWAY IT SHALL HAVE A 6" MINIMUM THICKNESS, COMMERCIAL 8".
6. CONCRETE SHALL HAVE A BROOM FINISH, ALL JOINTS SHALL BE EDGED WITH 3" SHINE.
7. WIDTH OF PLANTER STRIP AND SIDEWALK IS MEASURED FROM FACE OF CURB.
8. IF DRAIN BLOCKOUTS IN CURBS ARE APPROVED, THEY SHALL BE EXTENDED PERPENDICULAR TO CURB TO 1' PAST BACK OF SIDEWALK WITH A 3" DIAMETER ADS PIPE. CONTRACTION JOINT SHALL BE PLACE OVER PIPE.

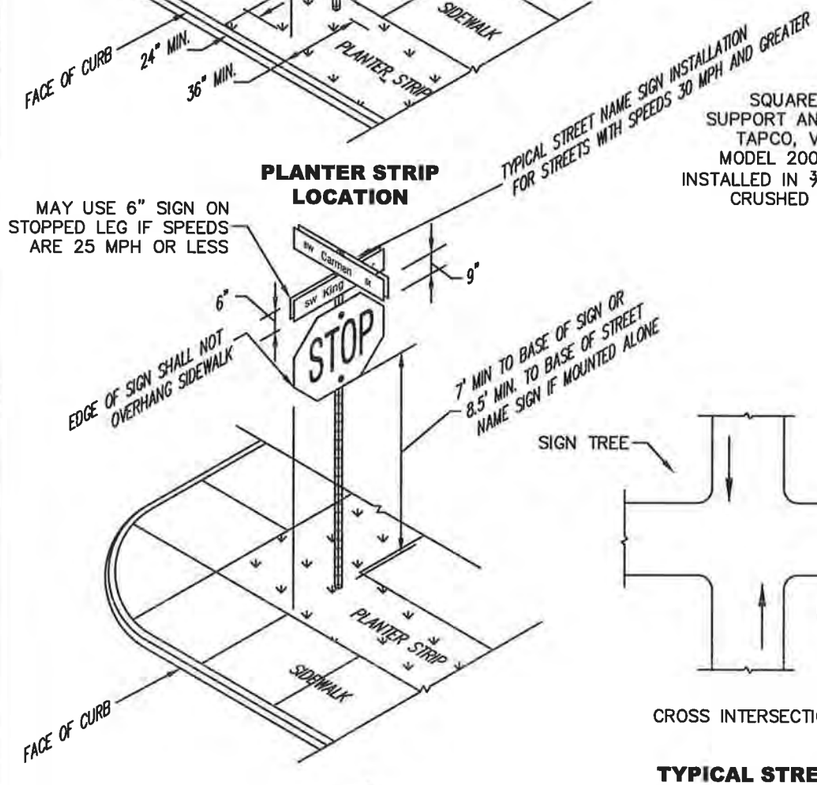
	STANDARD DRAWING TITLE	DRAWING NUMBER
City of Sherwood Oregon	SIDEWALK DETAIL	RD-26
Any alteration of this drawing may not be associated in any way with the City of Sherwood Standard Drawings.	SCALE: N.T.S.	DATE: MAR '16



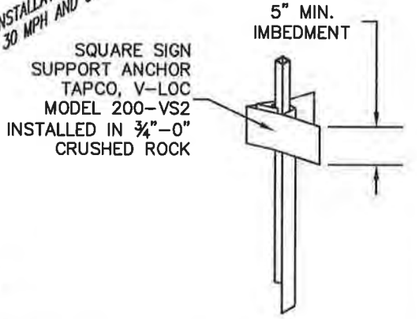
PLANTER STRIP LOCATION



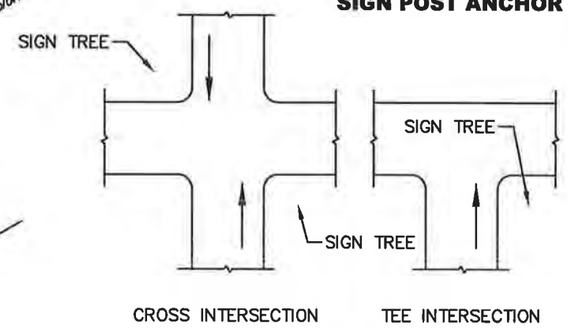
TYPICAL SIGN ATTACHMENT



CURB TIGHT LOCATION



SIGN POST ANCHOR



TYPICAL STREET SIGN LOCATIONS

NOTE: SEE STANDARD DWG S-1 & S-2 FOR STREET NAME SIGN DETAILS

	STANDARD DRAWING TITLE	DRAWING NUMBER
City of Sherwood Oregon	STREET SIGN INSTALLATION	RD-35
Any alteration of this drawing may not be associated in any way with the City of Sherwood Standard Drawings.	SCALE: N.T.S.	DATE: MAR '16

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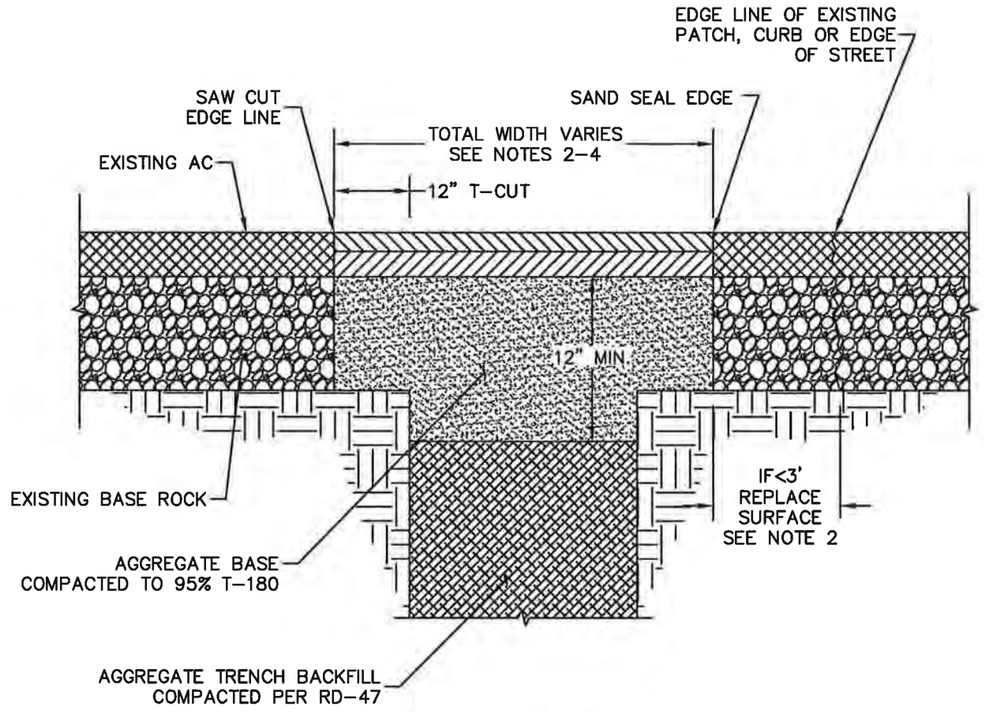
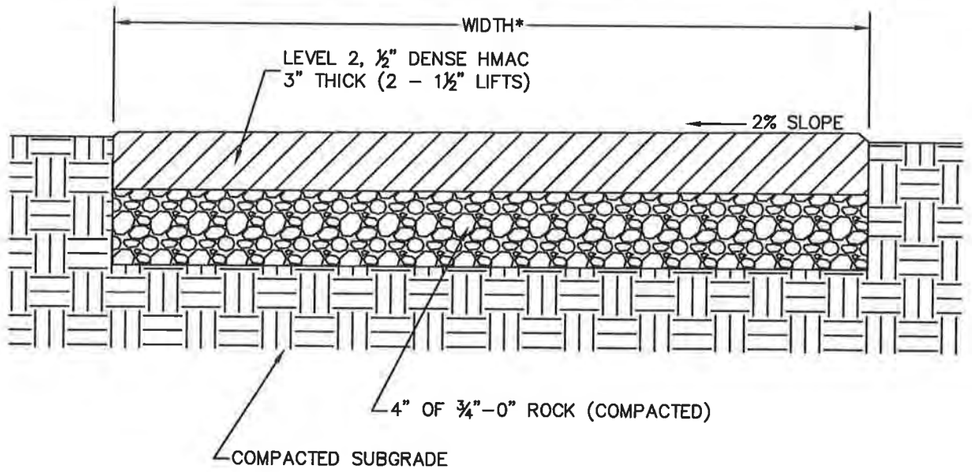


CROSS-SECTION

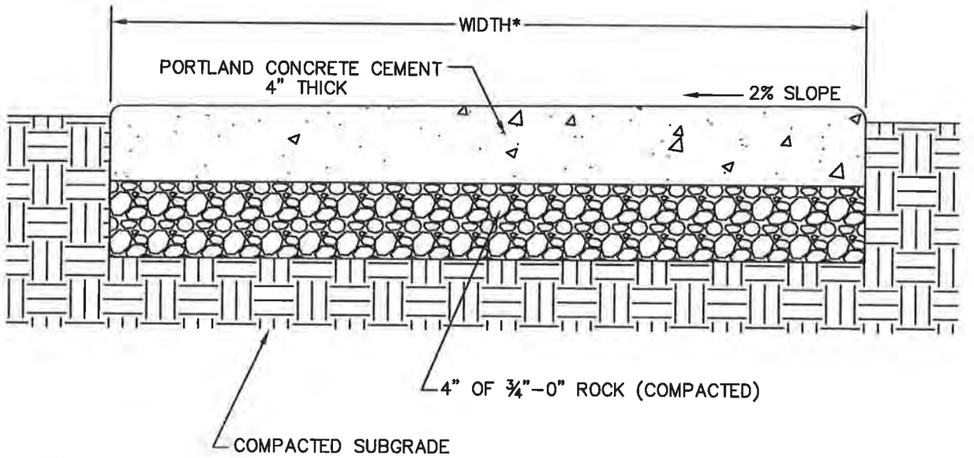
NOTES:

1. T–CUT IS 12" MINIMUM FOR TRENCHES WIDER THAN 12".
2. IF NEW EDGE OF PAVEMENT IS LESS THAN 3' FROM ANOTHER PATCH, CURB, EDGE OF STREET OR LONGITUDINAL CRACK, REPLACE THE PAVEMENT IN BETWEEN.
3. IF MORE THAN ONE EXISTING PATCH EDGE IS WITHIN THE 3' ZONE, REMOVE PAVEMENT TO THE FAR EDGE OF THE PRE–EXISTING PATCH.
4. NEW EDGE OF PAVEMENT (EDGE LINE) SHALL NOT LIE IN A WHEEL PATH. WIDTH OF T–CUT SHALL BE WIDENED WHERE NECESSARY TO MOVE THE EDGE LINE OUT OF THE WHEEL PATH.
5. SEE STD DET RD–20 FOR TYPICAL STREET PAVEMENT SECTION.
6. SEE STD DET RD–47 FOR TYPICAL TRENCH BACKFILL REQUIREMENTS.

	STANDARD DRAWING TITLE	DRAWING NUMBER
City of Sherwood Oregon	PIPE TRENCH RESTORATION	RD-45
Any alteration of this drawing may not be associated in any way with the City of Sherwood Standard Drawings.	SCALE: N.T.S.	DATE: MAR '16



– OR –

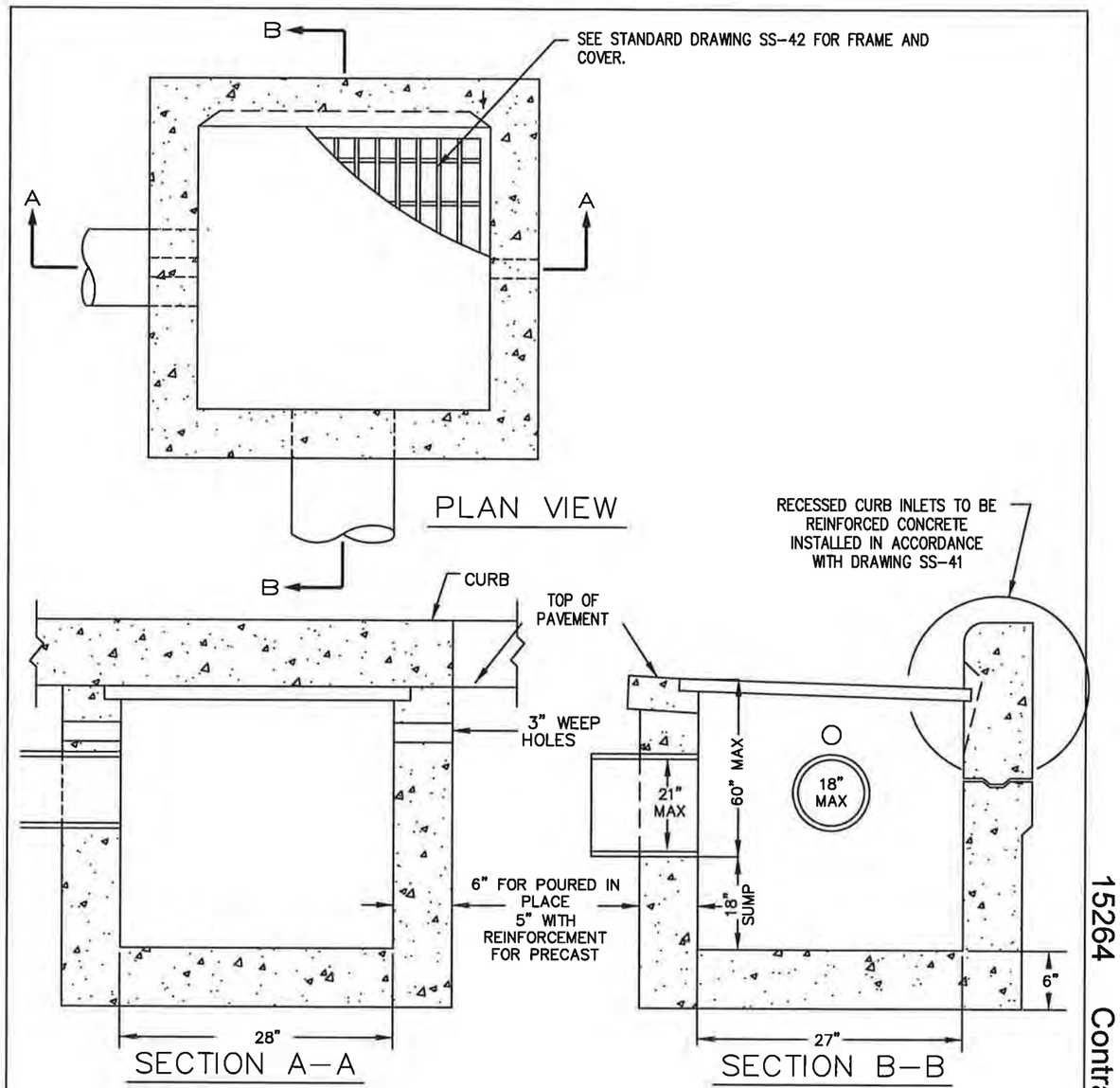


NOTES:

1. CONCRETE SHALL BE 3300 PSI AT 28 DAYS. HMAC LVL 2, ½" DENSE MIX SHALL MEET ODOT SPEC.
2. CONCRETE PATH PANELS SHALL BE SQUARE, HAVE ¾" DEEP SCRIBES AT JOINTS, 3" EDGE SHINE ON 4 SIDES AND HAVE A LIGHT BROOM BRUSH FINISH.
3. PEDESTRIAN PATH OR BIKEWAY SHALL HAVE A MINIMUM WIDTH OF 7 FEET. *

   *SEE FIGURE 8–6 OF THE TSP FOR TRAIL WIDTH STANDARDS

City of Sherwood Oregon	STANDARD DRAWING TITLE	DRAWING NUMBER
	PEDESTRIAN PATH & BIKEWAY SECTIONS (NOT ADJACENT TO ROADWAY)	RD-63
Any alteration of this drawing may not be associated in any way with the City of Sherwood Standard Drawings.	SCALE: N.T.S.	DATE: MAR '16

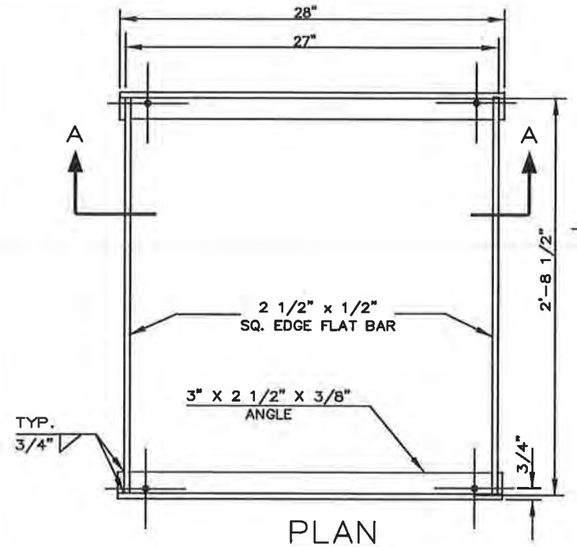


NOTES:

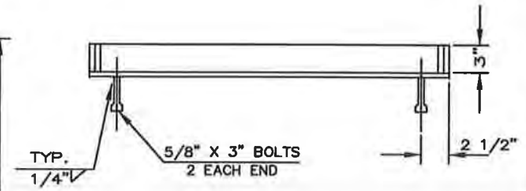
1. CATCH BASIN SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C-478.
2. INSTALL STEPS WHEN DISTANCE FROM TOP OF GRATE TO FLOW LINE OF PIPE IS GREATER THAN 48". SEE STANDARD DRAWING SS-10. SET FIRST STEP 12" FROM TOP OF GRATE.
3. INSTALL STRUCTURE ON MINIMUM OF 8" OF ¾"-0" COMPACTED BASE MATERIAL.
4. REINFORCEMENT FOR PRE CAST CATCH BASIN SHALL BE REBAR MEETING ASTM A-615 GRADE 60 OR WELDED WIRE MEETING ASTM A-497.
5. ALL POURED INPLACE CONCRETE SHALL HAVE A 28 DAY STRENGTH OF 3000 P.S.I. AND A 4" MAX SLUMP.
6. CHANNEL REQUIRED IN FLOW THROUGH APPLICATIONS, AS APPROVED. ALL OTHER APPLICATIONS REQUIRE AN 18" SUMP BELOW LOWEST PIPE INVERT.
7. FULL CURB EXPOSURE REQUIRED. CANNOT BE LOCATED IN SIDEWALK RAMPS OR RAMP WINGS.

City of Sherwood Oregon

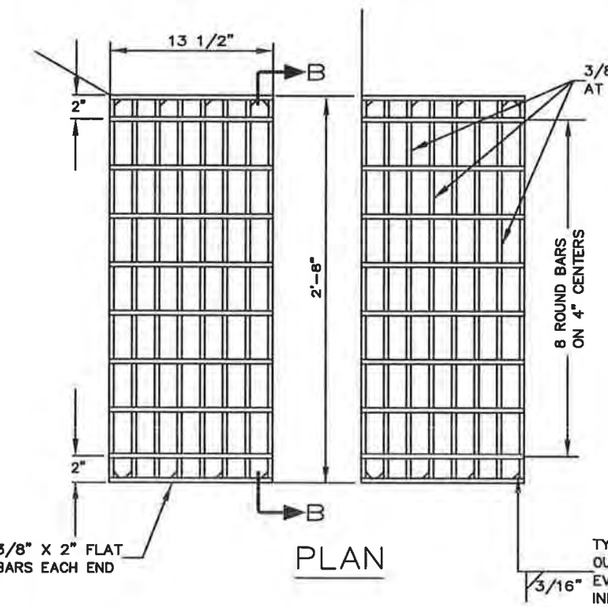
STANDARD DRAWING TITLE	DRAWING NUMBER
GUTTER & CURB INLET CATCH BASIN (CG-2)	SS-40
Any alteration of this drawing may not be associated in any way with the City of Sherwood Standard Drawings.	SCALE: N.T.S. / DATE: MAR '16



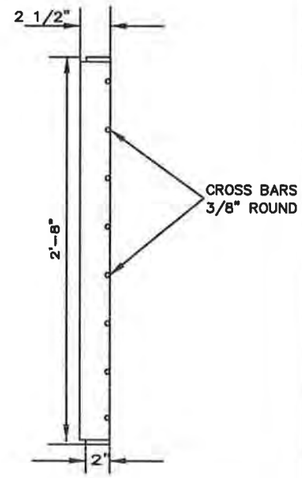
PLAN



SECTION A–A



PLAN



SECTION B–B

NOTE:
FRAME AND GRATE TO BE NEW STRUCTURAL ASTM A–36 FLAT BAR STEEL OR APPROVED EQUAL.
ADDITIONAL THICKNESS AND REINFORCEMENT SHALL BE REQUIRED FOR STATE HIGHWAY APPLICATIONS.

	STANDARD DRAWING TITLE	DRAWING NUMBER
City of Sherwood Oregon	CATCH BASIN FRAME AND GRATE (CG-2)	SS-42
Any alteration of this drawing may not be associated in any way with the City of Sherwood Standard Drawings.	SCALE: N.T.S.	DATE: MAR '16

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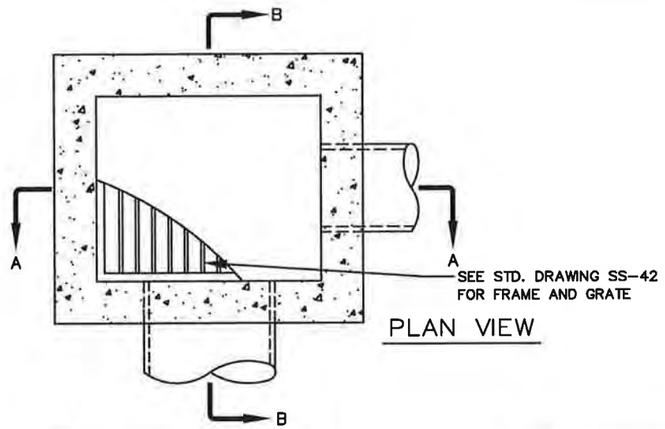
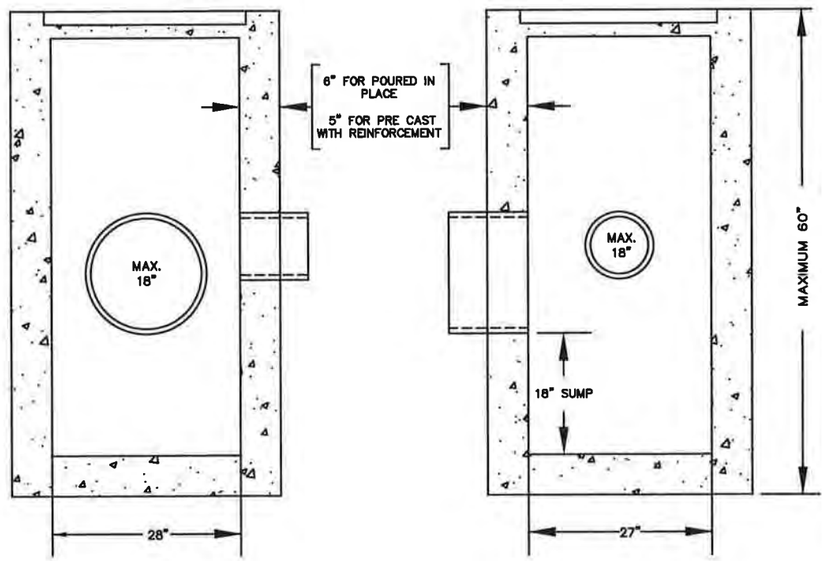


PLAN VIEW



SECTION A–A

SECTION B–B

NOTES:

1. ALL PRE CAST SECTIONS SHALL CONFORM TO REQUIREMENTS OF ASTM C–478.
2. INSTALL STRUCTURE ON MIN. OF 8" OF ¾"–0" COMPACTED BASE MATERIAL.
3. PRE CAST REINFORCEMENT SHALL BE REBAR MEETING ASTM A615 GRADE OR WELDED WIRE MEETING ASTM A497.
4. ALL POURED INPLACE CONCRETE SHALL HAVE A 28 DAY STRENGTH OF 3000 P.S.I. AND A SLUMP OF 2" TO 4".
5. CHANNEL REQUIRED IN FLOW THROUGH APPLICATIONS, AS APPROVED. ALL OTHER APPLICATIONS REQUIRE AN 18" SUMP BELOW LOWEST PIPE INVERT.
6. INSTALL STEPS WHEN DISTANCE FROM TOP OF GRATE TO FLOW LINE OF PIPE IS GREATER THAN 48". SEE STANDARD DRAWING SS–10. SET FIRST STEP 12" FROM TOP OF GRATE.
7. PRE–CAST STRUCTURE'S CONFORMING TO O.D.O.T. TYPE G–2 CATCH BASIN INLET ARE AN ACCEPTABLE ALTERNATE. (ALL GRATE MATERIALS SHALL MEET C.W.S. STANDARDS AS SHOWN ON DETAIL SS–42)

City of Sherwood Oregon

Any alteration of this drawing may not be associated in any way with the City of Sherwood Standard Drawings.

STANDARD DRAWING TITLE	DRAWING NUMBER
AREA DRAIN TYPE II	SS-48
SCALE	DATE
N.T.S.	MAR '16

RIPRAP:

- ROCK FOR RIPRAP SHALL BE ANGULAR IN SHAPE.
- THICKNESS OF A SINGLE ROCK SHALL NOT BE LESS THAN ONE-THIRD ITS LENGTH.
- ROUNDED ROCK WILL NOT BE ACCEPTED UNLESS APPROVED BY THE CITY OR DISTRICT.

RIPRAP INSTALLATION:

- EXCAVATE BELOW FINISH GRADE TO DEPTH & DIMENSIONS SHOWN ON APPROVED PLANS.
- INSTALL WOVEN GEOTEXTILE FABRIC.
- PLACE RIP RAP TO FINISH GRADE.

- GRADE RIPRAP SHALL BE THE CLASS AND SIZE OF ROCK ACCORDING TO THE FOLLOWING:

CLASS 50	CLASS 100	CLASS 200	CLASS 700	CLASS 2000	PERCENT (BY WEIGHT)
		WEIGHT OF ROCK (LBS)			
50-30	100-60	200-140	700-500	2000-1400	20
30-15	60-25	140-80	500-200	1400-700	30
15-2	25-2	80-8	200-20	700-40	40
2-0	2-0	8-0	20-0	40-0	10

City of Sherwood Oregon

STANDARD DRAWING TITLE	DRAWING NUMBER
RIP RAP DETAILS	SS-87
SCALE	DATE
N.T.S.	MAR '16

Any alteration of this drawing may not be associated in any way with the City of Sherwood Standard Drawings.

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