INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
A01	*Title Sheet*
A02	*Index Of Sheets Cont. & Std. Dwg. Nos.*

STATE OF OREGON

BENTON COUNTY PUBLIC WORKS

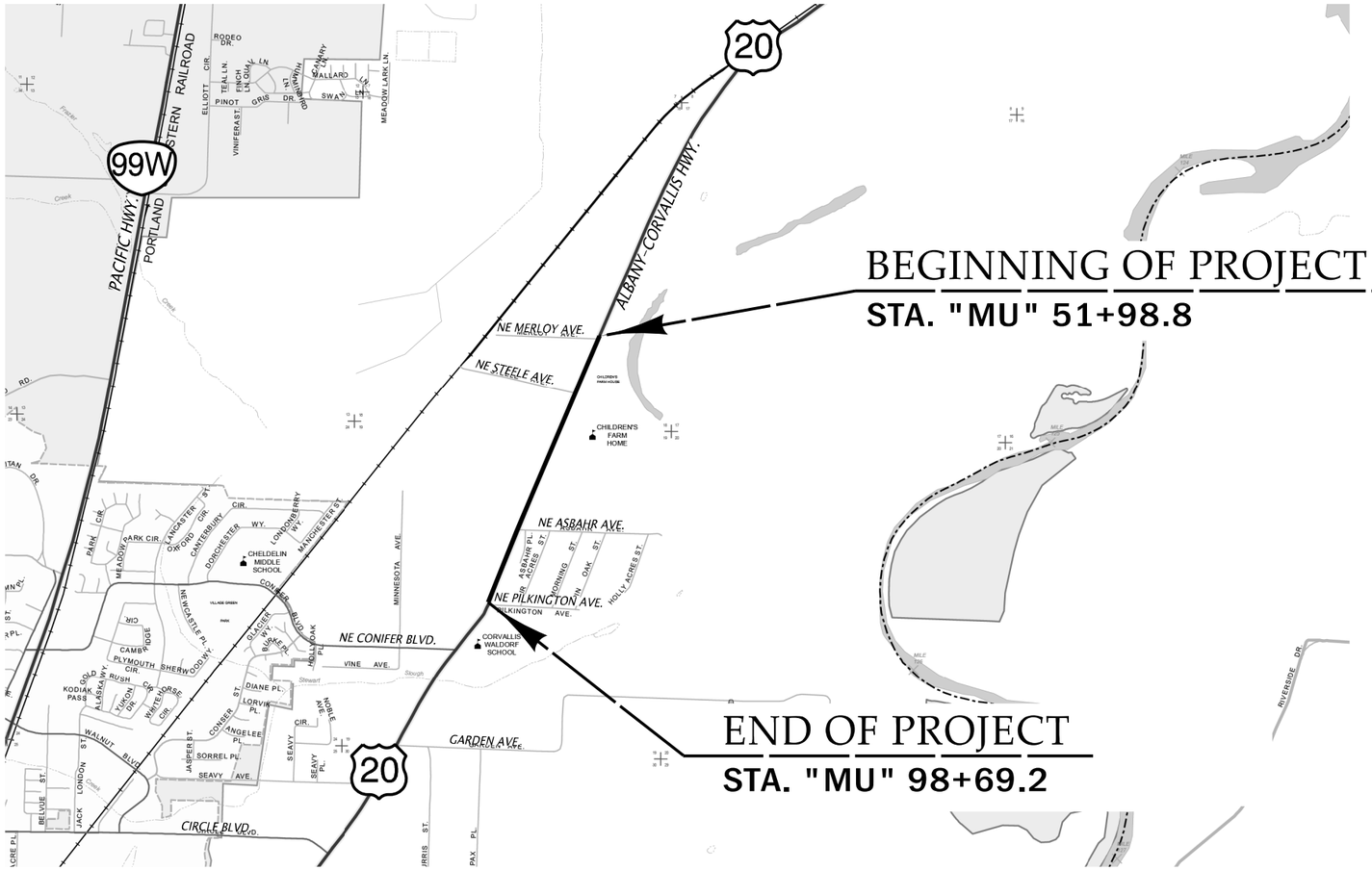
PLANS FOR PROPOSED PROJECT

GRADING, PAVING, SIGNING, PAVEMENT MARKINGS AND ROADSIDE DEVELOPMENT

CORVALLIS-ALBANY PATH: PILKINGTON TO MERLOY

ALBANY-CORVALLIS HIGHWAY

BENTON COUNTY
MAY 2024

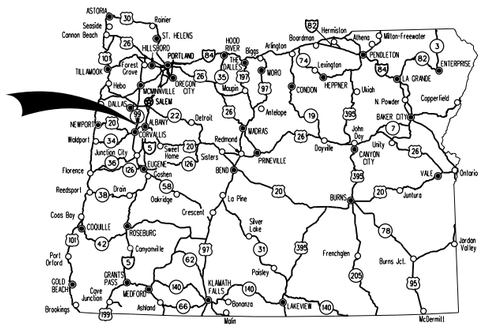


BEGINNING OF PROJECT
STA. "MU" 51+98.8

END OF PROJECT
STA. "MU" 98+69.2

N

T. 11S., R. 4W., W.M.



Overall Length Of Project – 0.88 Miles

ATTENTION:
Oregon Law Requires You To Follow Rules Adopted By The Oregon Utility Notification Center. Those Rules Are Set Forth In OAR 952-001-0001 Through OAR 952-001-0090. You May Obtain Copies Of The Rules By Calling The Center (Note: The Telephone Number For The Oregon Utility Notification Center Is (503) 232-1987).

LET'S ALL WORK TOGETHER TO MAKE THIS JOB SAFE

BENTON COUNTY BOARD OF COMMISSIONERS

Xan Augerot	CHAIR
Pat Malone	COMMISSIONER
Nancy Wyse	VICE-CHAIR
Gary Stockhoff	PUBLIC WORKS DIRECTOR

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

Approving Authority: Paul Tappana
Signature & date

Paul Tappana, P.E. - Project Manager
Print name and title

Concurrence by Benton County Public Works Director

Benton County
PUBLIC WORKS DEPARTMENT

CORVALLIS-ALBANY PATH: PILKINGTON TO MERLOY
ALBANY-CORVALLIS HIGHWAY
BENTON COUNTY

BENTON COUNTY PROJECT NUMBER	FEDERAL AID	SHEET NO.
BP-CorvAlb-01-19		A01

RH-CV-A01-BCOX0020.dgn :: Default 5/8/2024 9:40:44 PM Ppr

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Rotation: 0° Scale: 1"=100'

INDEX OF SHEETS, CONT.	
ROADWAY DETAILS	
SHEET NO.	DESCRIPTION
BA01	*Typical Sections*
BB01	*Details*
BB02	*Details*
BB03	*Details*
ROADWAY CONSTRUCTION	
C01	*General Construction*
C02	*General Construction*
C03	*General Construction*
C04	*General Construction*
C05	*General Construction*
TRAFFIC CONTROL	
EB01	*Temporary Traffic Control Plan*
ENVIRONMENTAL	
FB01	*Erosion and Sediment Control*

Standard Dwg. Nos.

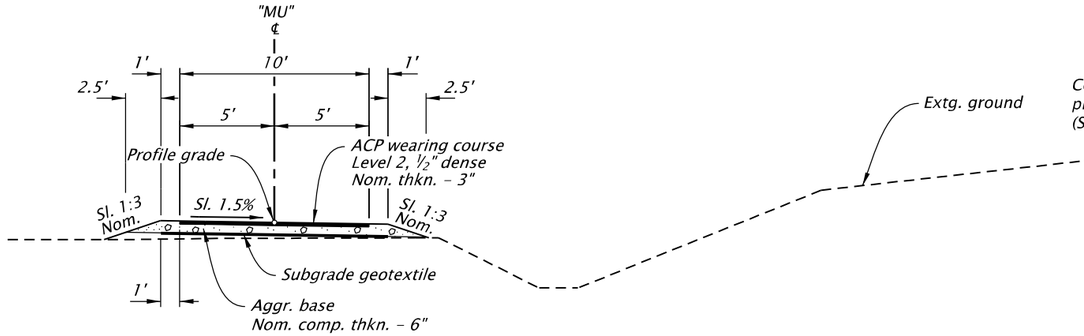
RD300	*- Trench Backfill, Bedding, Pipe Zone And Multiple Installations*
RD317	*- Culvert Embankment Protection And Riprap Basins*
RD318	*- Sloped Ends For Concrete Pipe*
RD319	*- Miscellaneous Culvert Details*
RD320	*- Paved End Slope For Culverts 60" Maximum Pipe Size*
RD339	*- Pipe To Structure Connections*
RD374	*- Area Drainage Basin Or Field Inlet*
RD378	*- Type "3" Catch Basin, Frame and Grate*
RD386	*- Fill Height Table For Circular Concrete Pipe*
RD390	*- Fill Height Table For Corrugated HDPE Pipe*
RD700	*- Curbs*
RD721	*- Separated sidewalks*
RD815	*- Chain link fence*
RD902	*- Detectable Warning Surface Details*
RD904	*- Detectable Warning Surface Placement For Curb Ramps*
RD1000	*- Construction Entrances*
RD1005	*- Check Dams Type 1, 3 And 4*
RD1010	*- Inlet Protection Type 2, 3, 6, 7, 10 and 11*
RD1040	*- Sediment Fence*
TM200	*- Sign Installation Details*
TM500	*- Pavement Marking Standard Detail Blocks*
TM503	*- Pavement Marking Standard Detail Blocks*
TM681	*- Perforated Steel Square Tube (PSST) Sign Support Installation*
TM687	*- Perforated Steel Square Tube (PSST) Anchor Foundation*
TM800	*- Tables, Abrupt Edge and PCMS Details*
TM821	*- Temporary Sign Supports*
TM841	*- Intersection Work Zone Details*

Benton County
PUBLIC WORKS DEPARTMENT

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

CORVALLIS-ALBANY PATH: PILKINGTON TO MERLOY
ALBANY-CORVALLIS HIGHWAY
BENTON COUNTY

BENTON COUNTY PROJECT NUMBER	FEDERAL AID	SHEET NO.
BP-CorvAlb-01-19	SEE SHT. A01	A02



STA. "MU" 51+98.8 To STA. "MU" 52+28.4
"MU" 85+67.2 To "MU" 85+95.8 (Intersection)

TABLE "A"

"MU" STATION	LL	SL
51+98.8 To 52+28.4	5'	1:3
52+28.4 To 52+87.4	5' - 4'	1:2
52+87.4 To 73+96.3	4'	1:2
73+96.3 To 85+67.2	5'	1:2

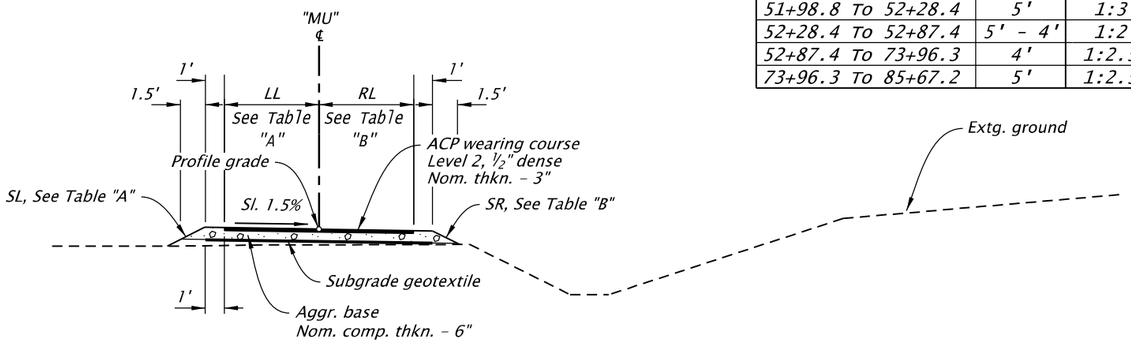
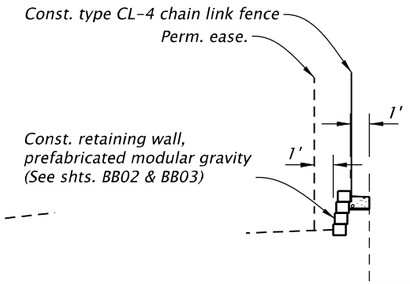


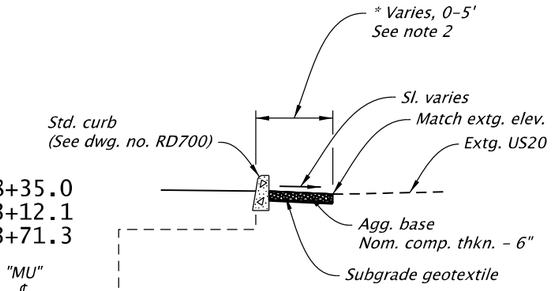
TABLE "B"

"MU" STATION	RL	SR
51+98.8 To 52+28.4	5'	1:3
52+28.4 To 52+87.4	5' - 4'	1:2
52+87.4 To 73+96.3	4'	1:2.5
73+96.3 To 85+67.2	5'	1:2.5

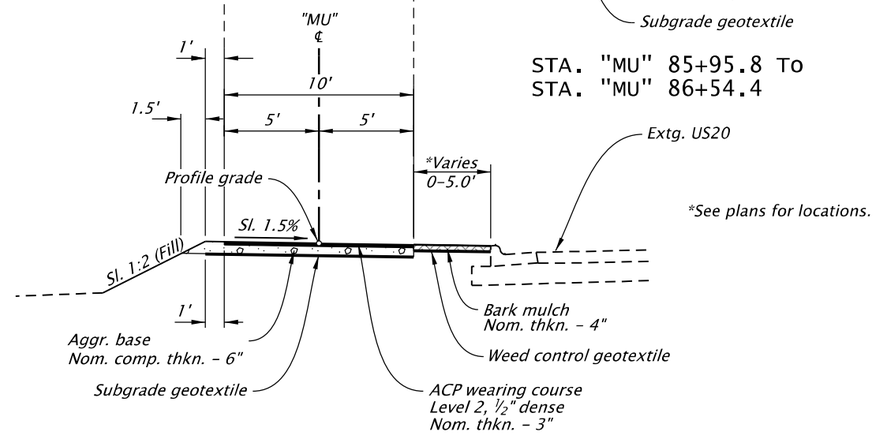
STA. "MU" 52+28.4 To STA. "MU" 85+67.2



STA. "MU" 87+34.7 To STA. "MU" 88+35.0
"MU" 93+06.1 To "MU" 93+12.1
"MU" 93+65.3 To "MU" 93+71.3



STA. "MU" 85+95.8 To
STA. "MU" 86+54.4



*See plans for locations.

STA. "MU" 85+95.8 To STA. "MU" 98+69.2

NOTES:

1. Side-slopes are shown as vert. to horiz.
2. For details, see sht. BB03

Benton County
PUBLIC WORKS DEPARTMENT

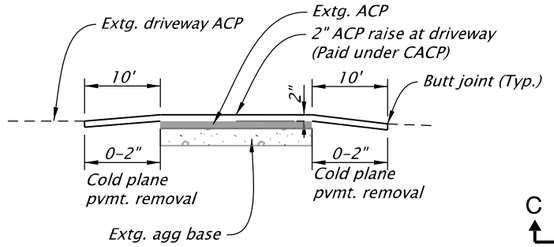
REGISTERED PROFESSIONAL ENGINEER
85994PE
DIGITALLY SIGNED 2024.05.10 05:58:56-07'00'
OREGON
JUL. 10, 2018
PRISCILIANO PERALTA-RAMIREZ
RENEWS: 12-31-2024

DAVID EVANS AND ASSOCIATES INC.
530 Center Street N.E. Suite 605
Salem Oregon 97301
Phone: 503.361.8655

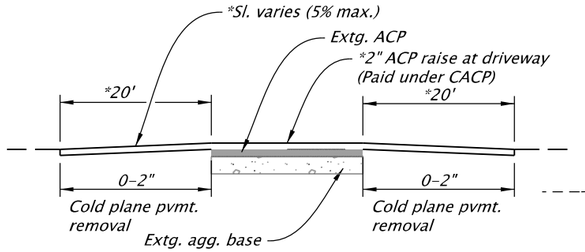
CORVALLIS-ALBANY PATH: PILKINGTON TO MERLOY
ALBANY-CORVALLIS HIGHWAY
BENTON COUNTY

Designer: Prisciliano Peralta | Reviewer: Terry Wheeler
Drafter: Ryan Berger | Checker: Paul Tappana

TYPICAL SECTIONS | SHEET NO. BA01

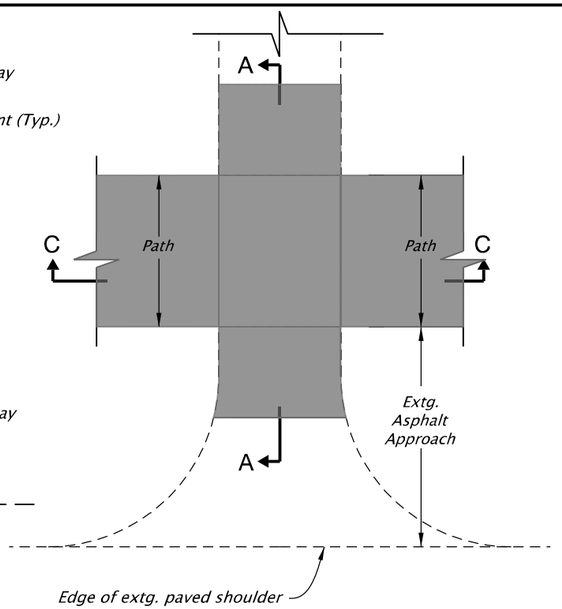


SECTION A-A

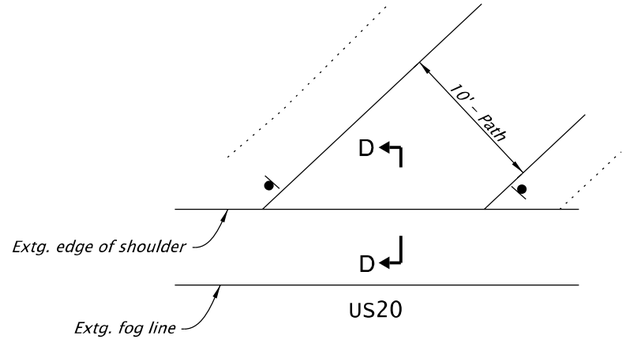


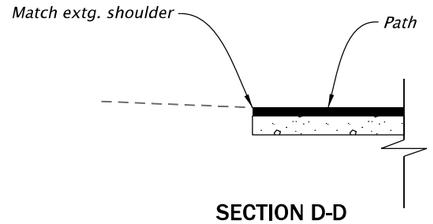
SECTION C-C

* RAISED DRIVEWAYS AT STA. "MU" 60+65.6 & "MU" 65+98.5



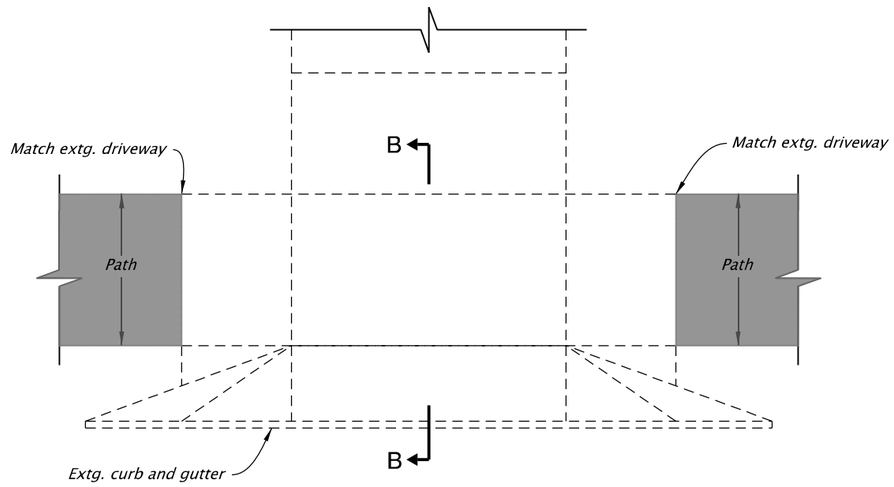
PATH AT EXISTING DRIVEWAYS
BEGIN OF PROJECT TO ASBAHR AVE
(STA'S. "MU" 60+65.6 & "MU" 65+98.5)

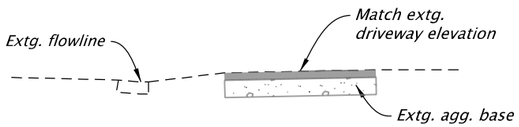




SECTION D-D

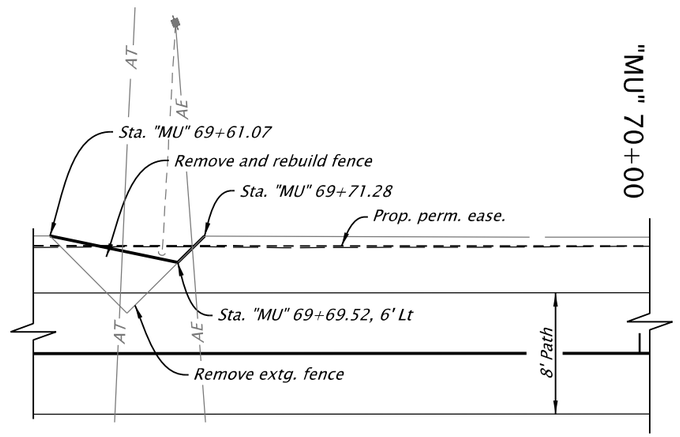
PATH TIE-IN AT EXISTING US20 SHOULDER





SECTION B-B

PATH AT EXISTING DRIVEWAYS
ASBAHR AVE TO PILKINGTON AVE
(STA'S. "MU" 90+84.5, "MU" 93+20.8, "MU" 93+55.4
"MU" 94+58.1, "MU" 95+58.4 & "MU" 96+22.0)



REMOVING AND REBUILDING FENCE
Scale: 1"=10'

Benton County
PUBLIC WORKS DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
85994PE
DIGITALLY SIGNED 2024.05.10 06:01:30-07'00'
OREGON
JUL. 10, 2018
PRISCILIANO PERALTA-RAMIREZ
RENEWS: 12-31-2024

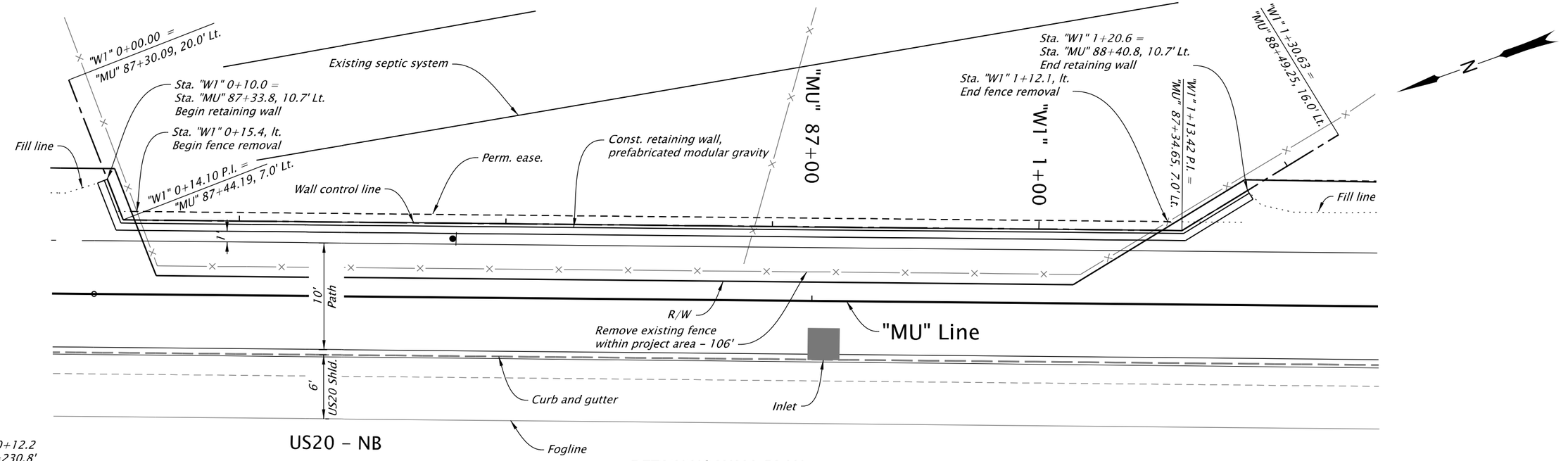
DAVID EVANS AND ASSOCIATES INC.
530 Center Street N.E. Suite 605
Salem Oregon 97301
Phone: 503.361.8655

CORVALLIS-ALBANY PATH:
PILKINGTON TO MERLOY
ALBANY-CORVALLIS HIGHWAY
BENTON COUNTY

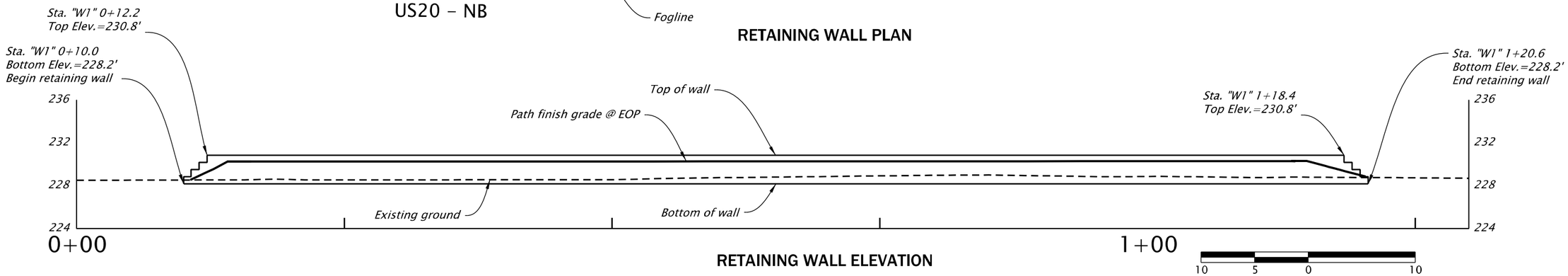
Designer: Prisciliano Peralta | Reviewer: Terry Wheeler
Drafter: Ryan Berger | Checker: Paul Tappana

DETAILS | SHEET NO. BB01

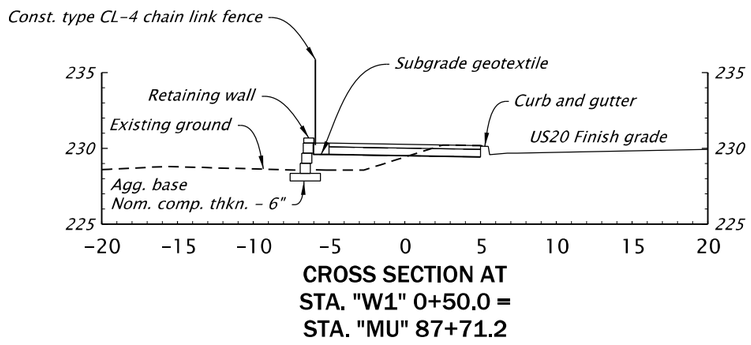
FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST



RETAINING WALL PLAN



RETAINING WALL ELEVATION



CROSS SECTION AT STA. "W1" 0+50.0 = STA. "MU" 87+71.2

Benton County
PUBLIC WORKS DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
85994PE
DIGITALLY SIGNED 2024.05.10 06:01:13-07'00'
OREGON
JUL. 10, 2018
PRISCILIANO PERALTA-RAMIREZ
RENEWS: 12-31-2024

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

DAVID EVANS AND ASSOCIATES INC.
530 Center Street N.E. Suite 605
Salem Oregon 97301
Phone: 503.361.8655

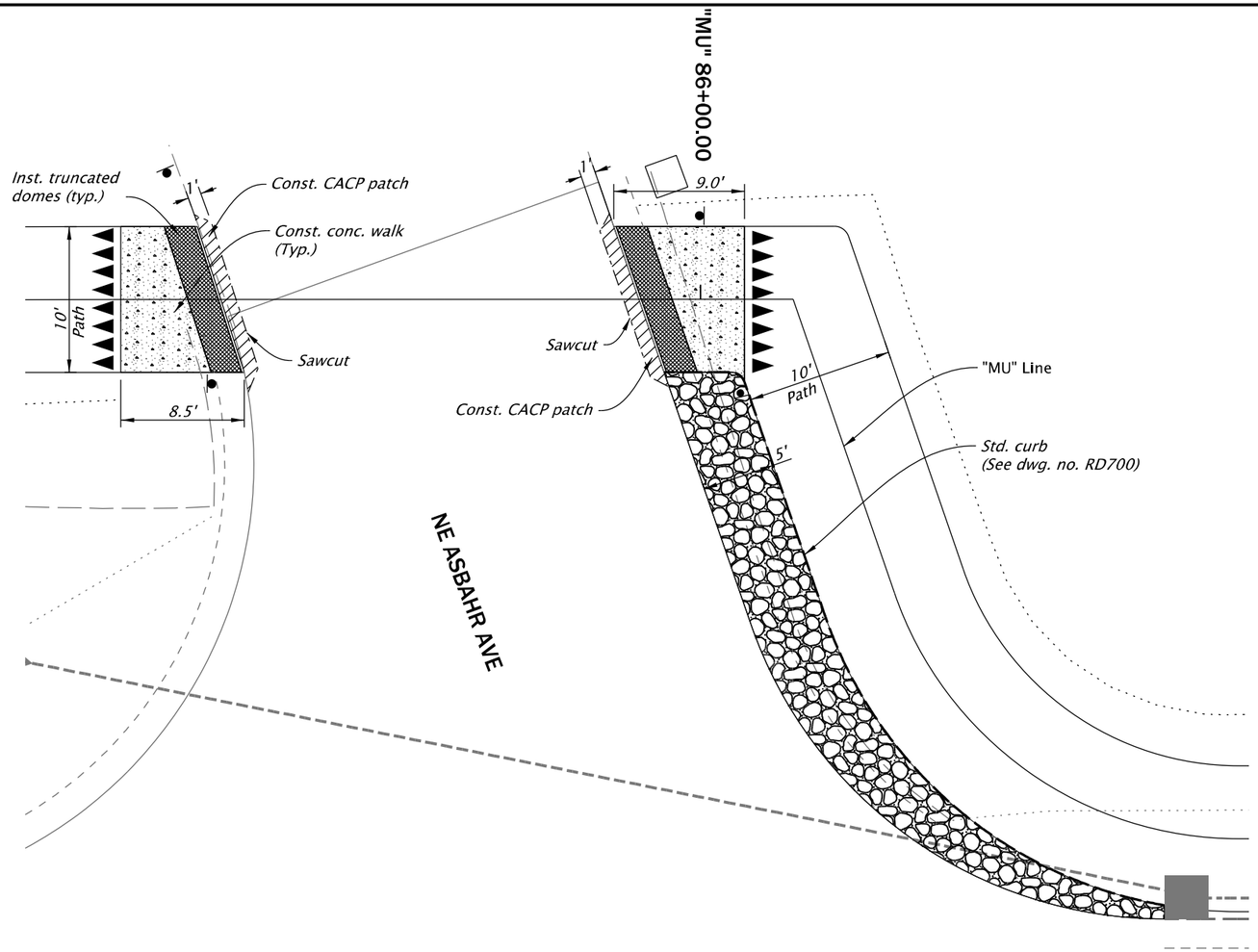
CORVALLIS-ALBANY PATH: PILKINGTON TO MERLOY

ALBANY-CORVALLIS HIGHWAY
BENTON COUNTY

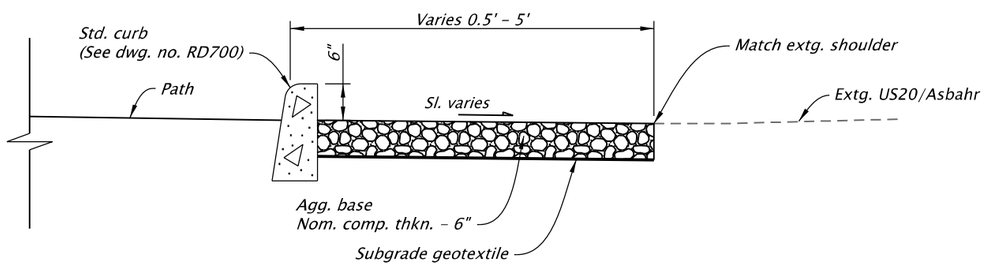
Designer: Prisciliano Peralta | Reviewer: Terry Wheeler
Drafter: Ryan Berger | Checker: Paul Tappana

DETAILS

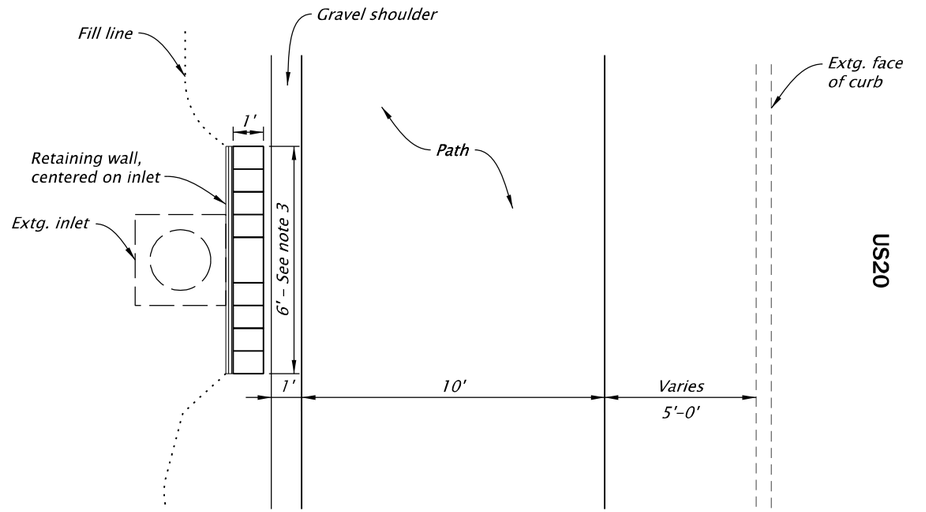
SHEET NO. BB02



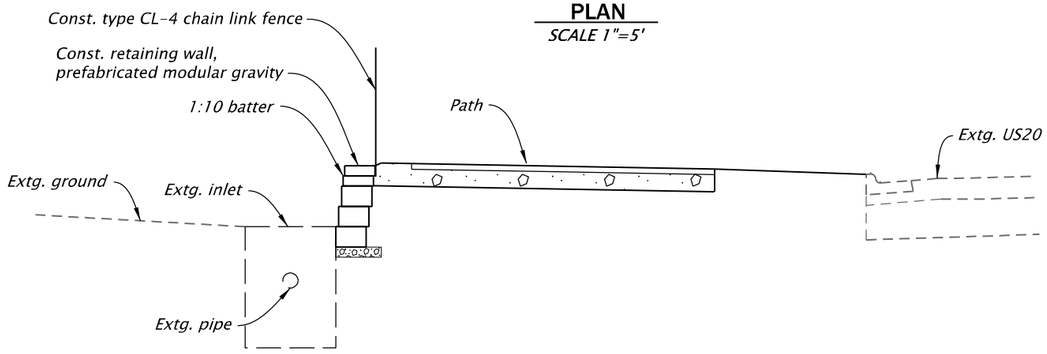
CONCRETE WALK
Scale: 1"=10'



BASE ROCK AT ASBAHR AVE



PLAN
SCALE 1"=5'



ELEVATION
SCALE 1"=5'

Notes:
1. Wall height varies, see sht. C04
2. Contractor to bury one full block
3. Top layer of retaining wall must be 2 full cap blocks

RETAINING WAL AROUND INLET

Benton County
PUBLIC WORKS DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
85994PE
DIGITALLY SIGNED 2024.05.13 14:24:39-07'00'
OREGON
JUL. 10, 2018
PRISCILIANO PERALTA-RAMIREZ
RENEWS: 12-31-2024

DAVID EVANS AND ASSOCIATES INC.
530 Center Street N.E. Suite 605
Salem Oregon 97301
Phone: 503.361.8655

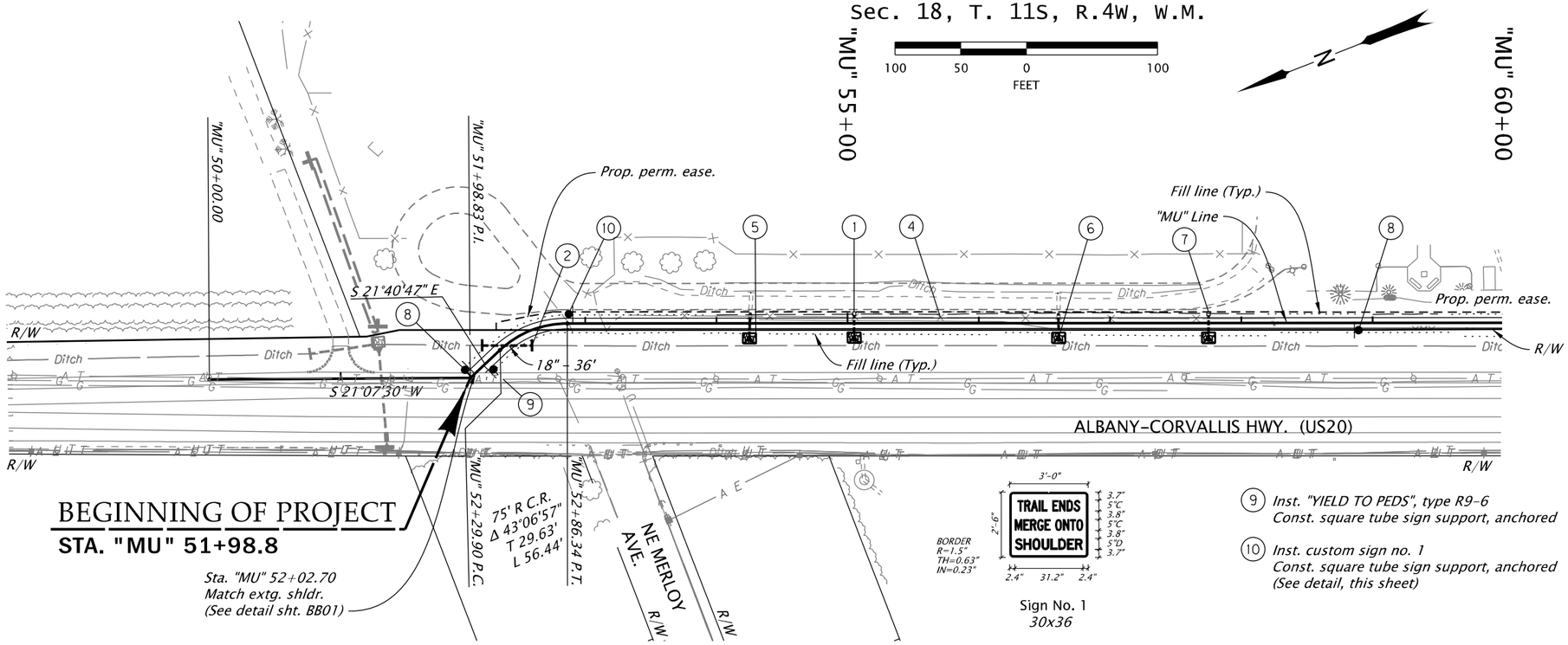
CORVALLIS-ALBANY PATH: PILKINGTON TO MERLOY
ALBANY-CORVALLIS HIGHWAY
BENTON COUNTY

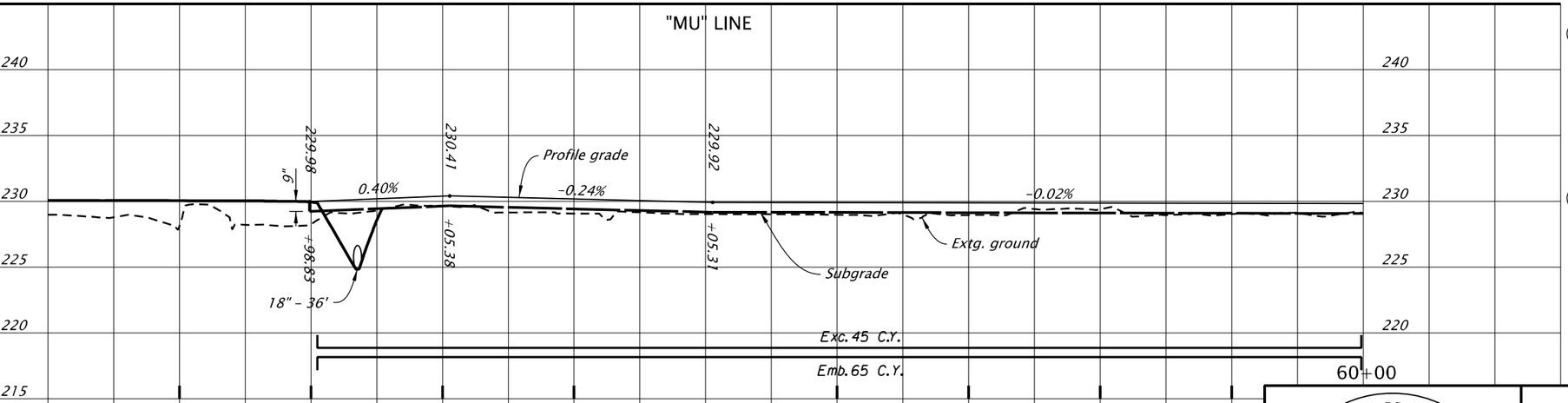
Designer: Prisciliano Peralta | Reviewer: Terry Wheeler
Drafter: Ryan Berger | Checker: Paul Tappana

DETAILS | SHEET NO. BB03

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Sec. 18, T. 11S, R.4W, W.M.





1. Sta. "MU" 55+05, 7.3' Lt.
   Inst. Type 3 inlet
   Rim elev = 229.50'
   Inst. 12" HDPE pipe - 13', Sl.=0.50%
   5' depth,
   F.L Out 226.50' (SW)
   Const. paved end slope
   Const. riprap pad (paid as riprap basin)
   (See dwg. nos. RD300, RD317, RD320, RD378 & RD390)

2. Sta. "MU" 52+54.00, 10.9' Rt.
   Inst. 18" culv. pipe - 36', Sl.=0.02%
   5' depth, Class III, RCP
   Const. sloped ends, Lt & Rt
   F.L. In 224.85 (SW)
   (See dwg. nos. RD318, RD319 & RD386)

3. Note not used

4. Sta. "MU" 53+32.61 to sta. "MU" 58+26.62,
   Remove fence - 494 l.f.
   (Paid under removal of structures and obstructions)
   Inst. work zone fencing

5. Sta. "MU" 54+25.36, 9.2' Rt.
   Const. paved end slope
   Match extg. pipe slope
   Extend 12" HDPE pipe - 16'
   5' depth
   Const. riprap pad (paid as riprap basin)

6. Sta. "MU" 56+60.81, 9.5' Rt.
   Const. paved end slope
   Match extg. pipe slope
   Extend 12" HDPE pipe - 16'
   5' depth
   Const. riprap pad (paid as riprap basin)

7. Sta. "MU" 57+75.00, 7.0' Lt.
   Inst. Type 3 inlet
   Rim elev = 229.64'
   Inst. 12" HDPE pipe - 13', Sl.=0.50%
   5' depth,
   F.L Out 226.64' (SW)
   Const. paved end slope
   Const. riprap pad (paid as riprap basin)

8. Inst. "CYCLISTS YIELD", type OBR1-2 - (2)
   Const. square tube sign support, anchored
   (See dwg. nos. TM200, TM681 & TM687)

9. Inst. "YIELD TO PEDS", type R9-6
   Const. square tube sign support, anchored

10. Inst. custom sign no. 1
    Const. square tube sign support, anchored
    (See detail, this sheet)

Benton County
PUBLIC WORKS DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
85994PE
DIGITALLY SIGNED 2024.05.10 06:00:37-07'00'
OREGON
JUL. 10, 2018
PRISCILIANO PERALTA-RAMIREZ
RENEWS: 12-31-2024

DAVID EVANS AND ASSOCIATES INC.
530 Center Street N.E. Suite 605
Salem Oregon 97301
Phone: 503.361.8655

CORVALLIS-ALBANY PATH: PILKINGTON TO MERLOY
ALBANY-CORVALLIS HIGHWAY
BENTON COUNTY

Designer: Prisciliano Peralta | Reviewer: Terry Wheeler
Drafter: Ryan Berger | Checker: Paul Tappana

GENERAL CONSTRUCTION | SHEET NO. C01

Sec. 18, T. 11S, R.4W, W.M.
Sec. 19, T. 11S, R.4W, W.M.

100 50 0 100
FEET

"MU" 65+00

"MU" 70+00

2500' R C.L.
Δ 1°23'14"
T 30.27'
L 60.53'

"MU" 70+84.20 P.C.

"MU" 71+44.73 P.T.

Prop. perm. ease.

Fill line (Typ.)

Fill line (Typ.)

"MU" Line

R/W

S 21°26'10" W

Ditch

ALBANY-CORVALLIS HWY. (US20)

SEC. 19, T. 11S, R. 4W
SEC. 18, T. 11S, R. 4W

1 Inst. "CYCLIST YIELD", type OBR1-2 - (3)
Const. square tube sign support, anchored

2 Inst. "BICYCLE YIELD LINE", type BYLD - 24
(See dwg. no. TM500)

3 Inst. "GREEN SUPPLEMENTAL BICYCLE LANE DOTTED LINE EXTENSION" (green) type BLE-G - 2
(See dwg. no. TM503)

4 Remove and rebuild fence - 11'
(See detail, sht. BB01)

"MU" LINE

240
235
230
225
220
215

2" ACP raise at driveway
(For details, see sht. BB01)

Profile grade

2" ACP raise at driveway
(For details, see sht. BB01)

230.14
229.83
229.47
229.81
229.75
229.44
228.94
228.94
229.26
228.79

1.57%
1.71%
-0.02%
-0.23%
-2.57%
1.61%
-0.23%
0.17%

+29.12
+49.12
+82.13
+02.13
+25.43
+59.16
+79.16
+17.89
+37.89
+43.66

6"
6"

Subgrade

Extg. ground

Exc. 210 C.Y.

Emb. 40 C.Y.

65+00

70+00

Benton County
PUBLIC WORKS DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
85994PE
DIGITALLY SIGNED 2024.05.10 06:00:16-07'00'
OREGON
JUL. 10, 2018
PRISCILIANO PERALTA-RAMIREZ
RENEWS: 12-31-2024

DAVID EVANS AND ASSOCIATES INC.
530 Center Street N.E. Suite 605
Salem Oregon 97301
Phone: 503.361.8655

CORVALLIS-ALBANY PATH: PILKINGTON TO MERLOY

ALBANY-CORVALLIS HIGHWAY
BENTON COUNTY

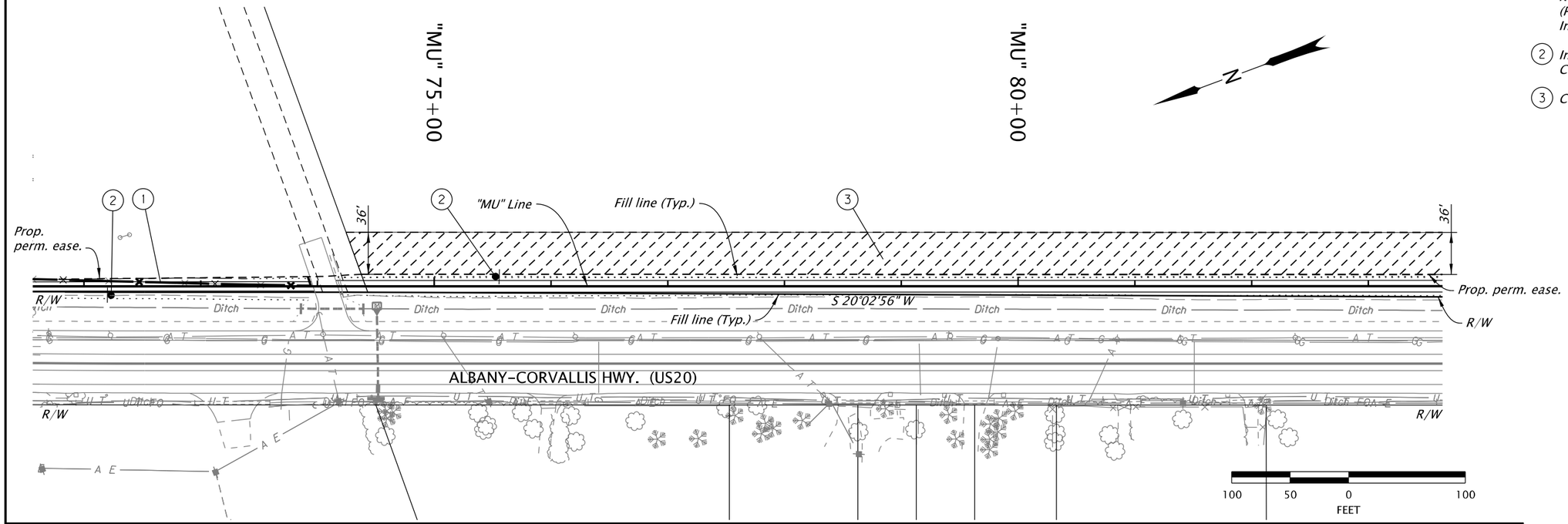
Designer: Prisciliano Peralta
Reviewer: Terry Wheeler
Drafter: Ryan Berger
Checker: Paul Tappana

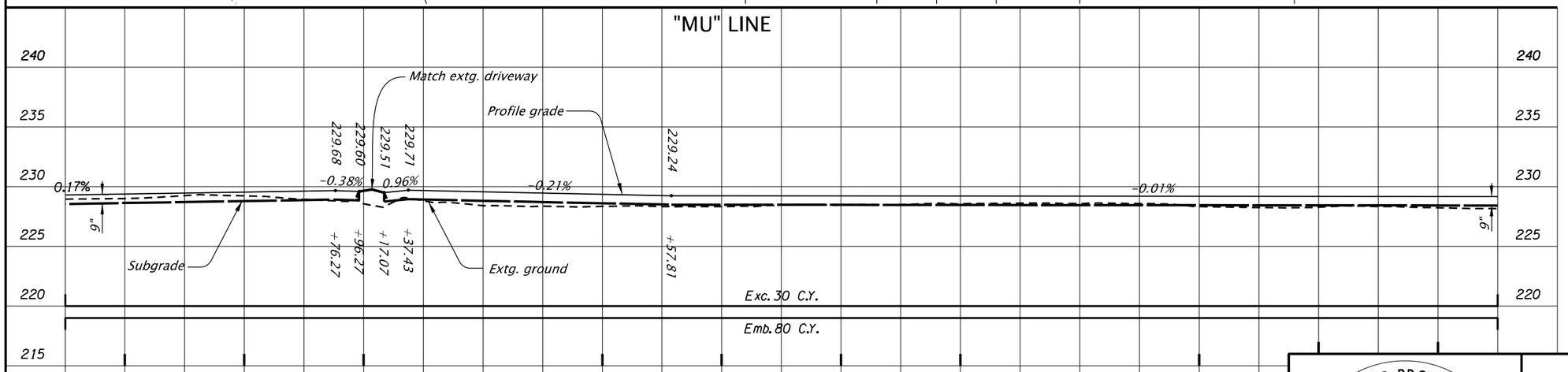
GENERAL CONSTRUCTION

SHEET NO. C02

Sec. 19, T. 11S, R.4W, W.M.

1. Sta. "MU" 71+50.00 to sta. "MU" 73+94.40
   Remove fence 245 l.f.
   (Paid under removal of structures and obstructions)
   Inst. work zone fencing
2. Inst. "CYCLISTS YIELD", type OBR1-2 - (2)
   Const. square tube sign support, anchored
3. Construction staging area





Benton County
PUBLIC WORKS DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
85994PE
DIGITALLY SIGNED 2024.05.10 06:00:00-07'00'
OREGON
JUL. 10, 2018
PRISCILIANO PERALTA-RAMIREZ
RENEWS: 12-31-2024

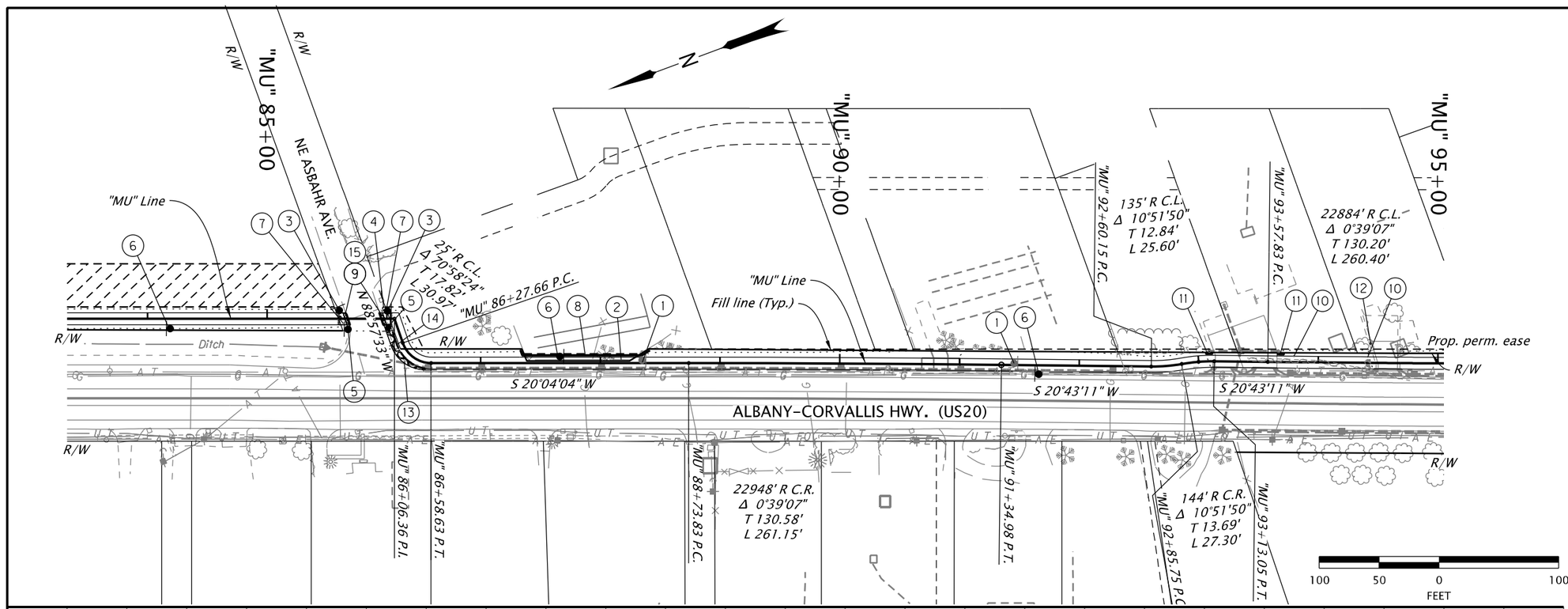
DAVID EVANS AND ASSOCIATES INC.
530 Center Street N.E. Suite 605
Salem Oregon 97301
Phone: 503.361.8655

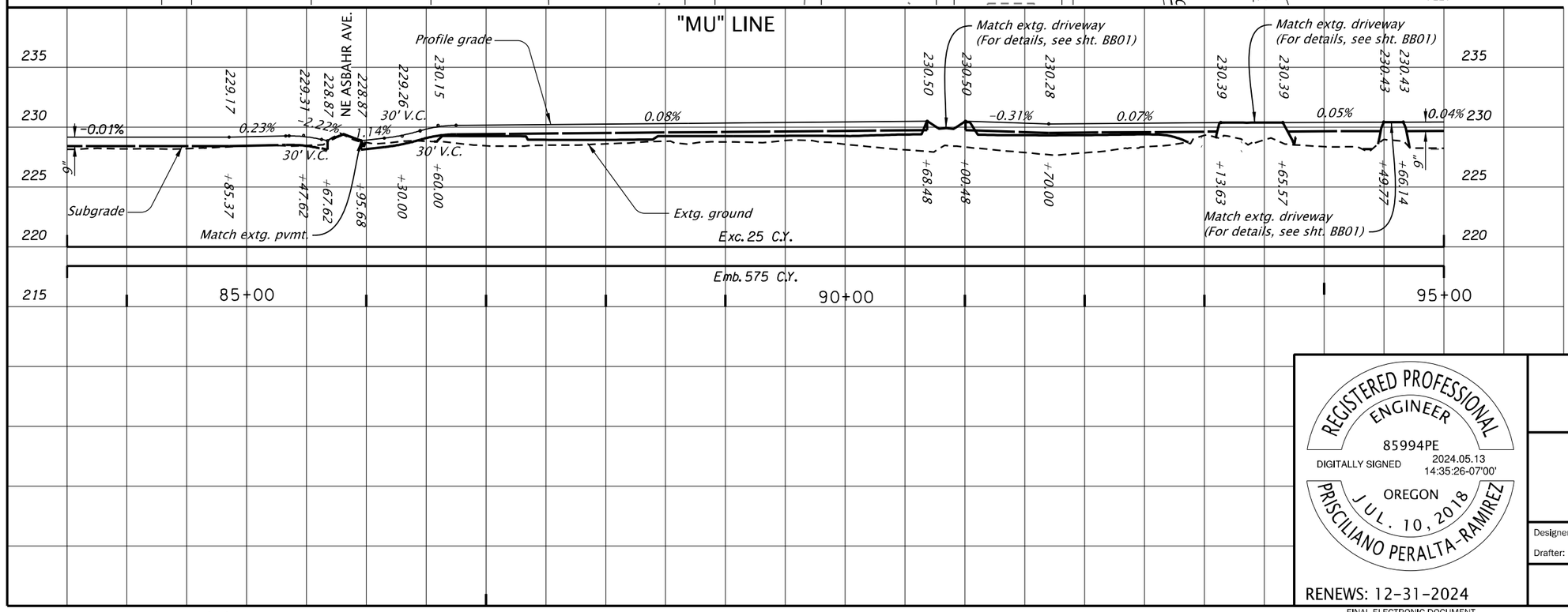
CORVALLIS-ALBANY PATH: PILKINGTON TO MERLOY
ALBANY-CORVALLIS HIGHWAY
BENTON COUNTY

Designer: Prisciliano Peralta | Reviewer: Terry Wheeler
Drafter: Ryan Berger | Checker: Paul Tappana

GENERAL CONSTRUCTION | SHEET NO. C03

Sec. 19, T. 11S, R.4W, W.M.





1. *Remove and reinstall existing sign*
2. *Remove fence*
   (See detail, sht. BB02)
   (Paid under removal of structures and obstructions)
   Inst. work zone fencing
3. *Inst. "CROSS TRAFFIC DOES NOT STOP", type W4-4P - 2*
4. *Remove existing mailboxes and supports*
   Inst. locking mailbox with pedestal
5. *Inst. "YIELD TO PEDS", type R9-6 - 2*
   Const. square tube sign support, anchored
6. *Inst. "CYCLISTS YIELD", type OBR1-2 - (2)*
   Const. square tube sign support, anchored
7. *Inst. "BICYCLE YIELD LINE", type BYLD - 12*
8. *Const. retaining wall around inlet prefabricated modular gravity (See sht. BB03)*
9. *Inst. safety yellow truncated domes on new surface - 42 sq. ft.*
10. *Relocate pole*
    (By others)
11. *Const. retaining wall around inlet prefabricated modular gravity wall height - 24"*
    (See sht. BB03)
12. *Relocate extg. power outlet*
    (By others)
13. *Agg. base*
    Nom. comp. thkn. - 6"
    (See detail, sht. BB03)
14. *Const. standard curb*
    (See dwg. no. RD700)
15. *Const. conc. walk*
    (See detail, sht. BB03)

Benton County
PUBLIC WORKS DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
85994PE
DIGITALLY SIGNED 2024.05.13 14:35:26-07'00'
OREGON
JUL. 10, 2018
PRISCILIANO PERALTA-RAMIREZ
RENEWS: 12-31-2024

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

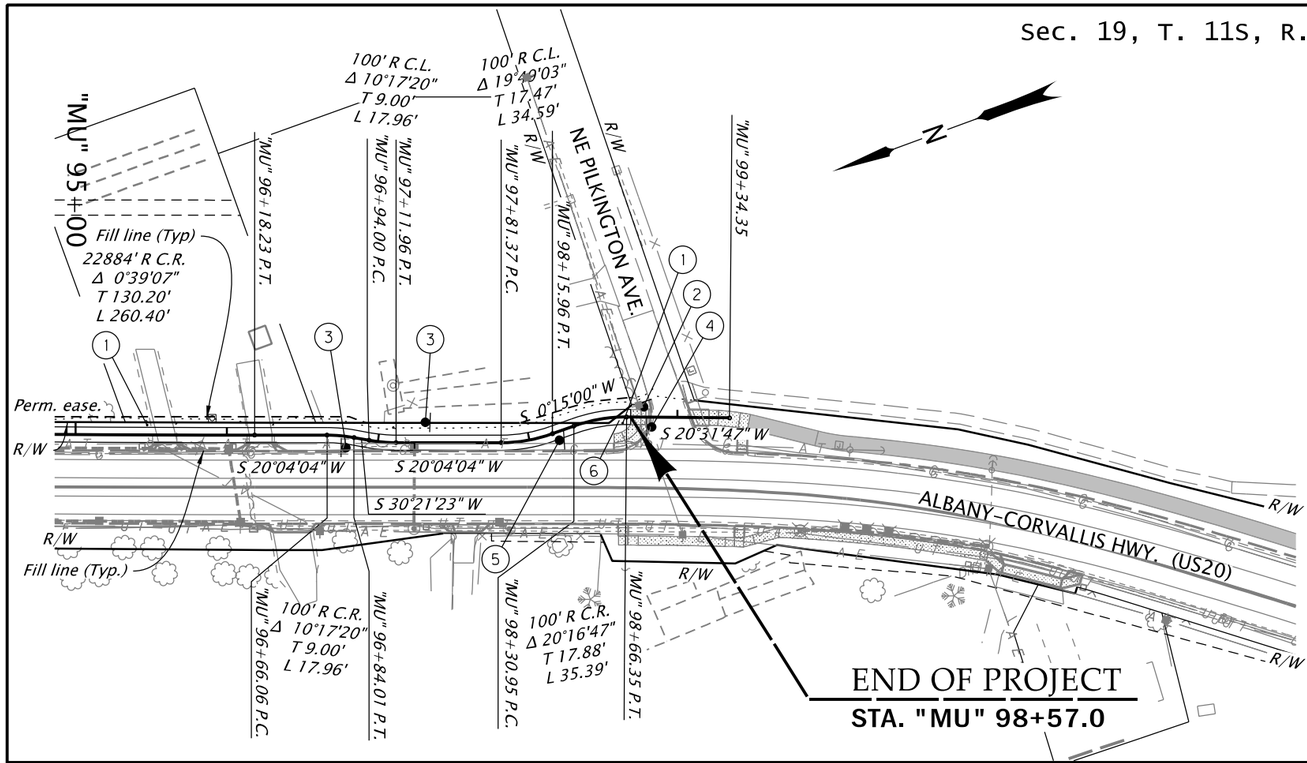
DAVID EVANS AND ASSOCIATES INC.
530 Center Street N.E. Suite 605
Salem Oregon 97301
Phone: 503.361.8655

CORVALLIS-ALBANY PATH: PILKINGTON TO MERLOY
ALBANY-CORVALLIS HIGHWAY
BENTON COUNTY

Designer: Prisciliano Peralta | Reviewer: Terry Wheeler
Drafter: Ryan Berger | Checker: Paul Tappana

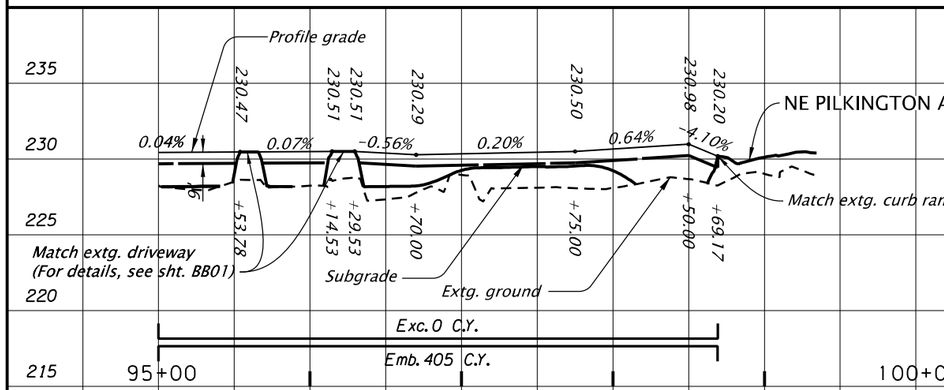
GENERAL CONSTRUCTION | SHEET NO. C04

Sec. 19, T. 11S, R.4W, W.M.



1. Relocate pole
   (By others)
2. Inst. "YIELD TO PEDS", type R9-6
   Const. square tube sign support, anchored
3. Inst. "CYCLISTS YIELD", type OBR1-2 - (2)
   Const. square tube sign support, anchored
4. Inst. "CROSS TRAFFIC DOES NOT STOP",
   type W4-4P
   Const. square tube sign support, anchored
5. Remove and reinstall existing sign
6. Remove existing trees - 12
   (Paid under clearing and grubbing)

100 50 0 100
FEET



Benton County
PUBLIC WORKS DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
85994PE
DIGITALLY SIGNED 2024.05.10 05:59:28-07'00'
OREGON
JUL. 10, 2018
PRISCILIANO PERALTA-RAMIREZ
RENEWS: 12-31-2024

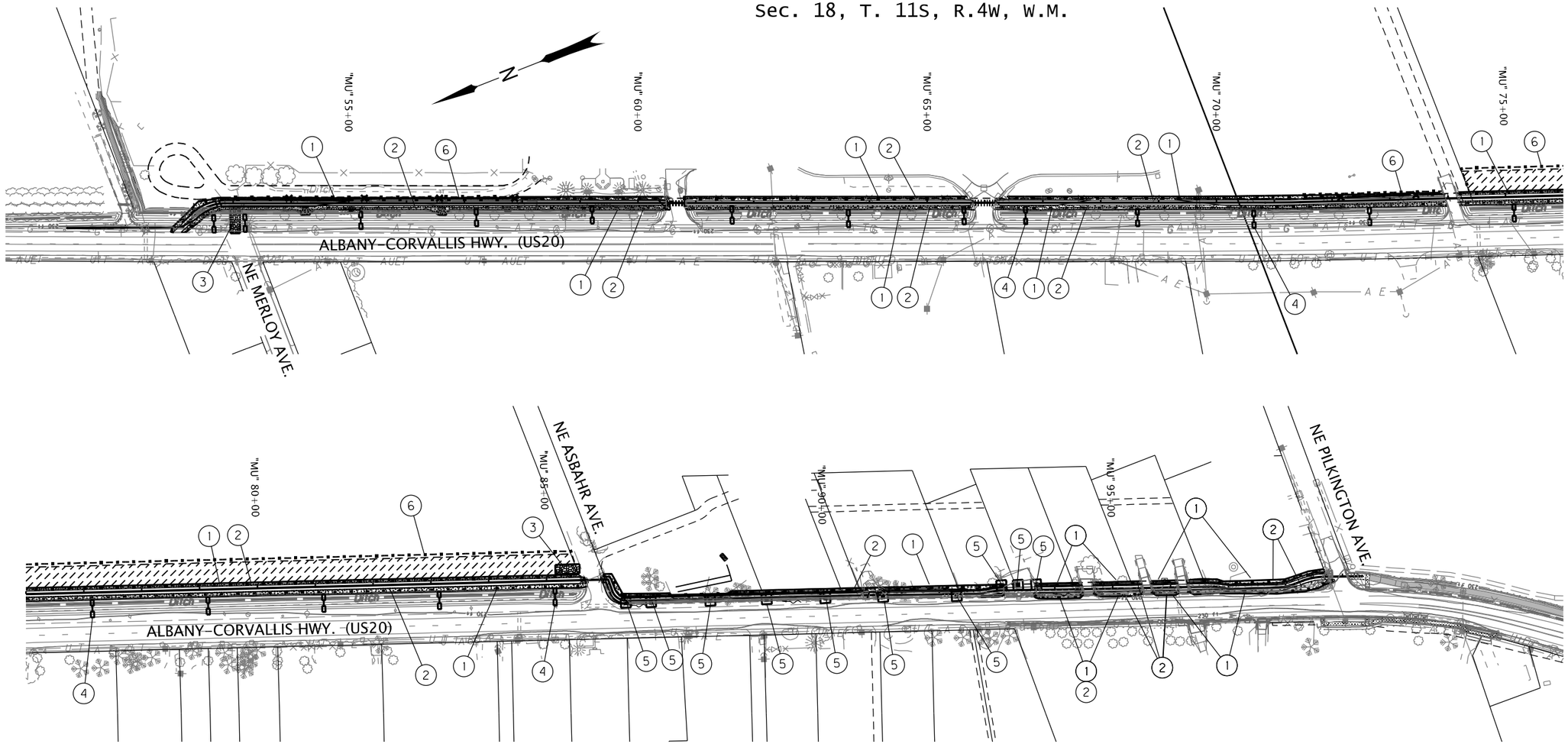
DAVID EVANS AND ASSOCIATES INC.
530 Center Street N.E. Suite 605
Salem Oregon 97301
Phone: 503.361.8655

CORVALLIS-ALBANY PATH: PILKINGTON TO MERLOY
ALBANY-CORVALLIS HIGHWAY
BENTON COUNTY

Designer: Prisciliano Peralta | Reviewer: Terry Wheeler
Drafter: Ryan Berger | Checker: Paul Tappana

GENERAL CONSTRUCTION | SHEET NO. C05

Sec. 18, T. 11S, R.4W, W.M.



1. *Const. sediment fence type 1 - 8,785 l.f.*
   (See dwg. no. RD1040)
2. *Apply permanent seeding mix no. 1 - 1.0 acres*
3. *Const. construction entrance type 1 - 2*
   Location to be field fit by contractor, and approved by Engineer.
   (See dwg. no. RD1000)
4. *Install check dams type 3 - 20*
   (See dwg. no. RD1005)
5. *Install inlet protection type 7 - 10*
   (See dwg. no. RD1010)
6. *Install temp. orange work zone fencing*
   Contractor to provide 14-day notice to County,
   prior to fencing removal

LEGEND

- *Fill slope*
- *Cut slope*
- *Sediment fence*
- *Work zone fencing (Contractor's staging area)*
- *Check dam type 3 (biofilter bags)*
- *Permanent seeding mix no. 1*
- *Construction entrance*
- *Flow direction*

200 100 0 200
FEET

Benton County
PUBLIC WORKS DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
85994PE
DIGITALLY SIGNED 2024.05.10 06:01:48-07'00'
OREGON
JUL. 10, 2018
PRISCILIANO PERALTA-RAMIREZ
RENEWS: 12-31-2024

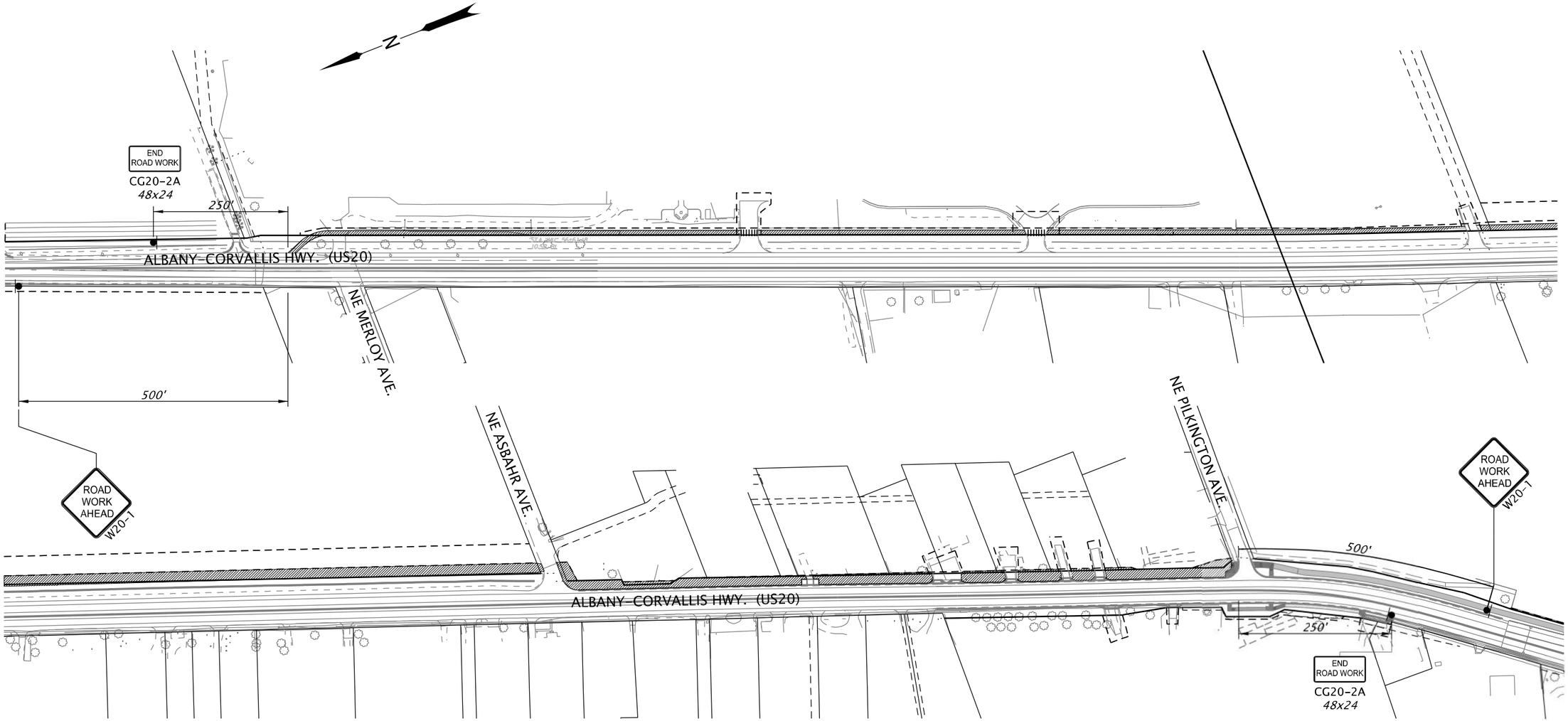
DAVID EVANS AND ASSOCIATES INC.
530 Center Street N.E. Suite 605
Salem Oregon 97301
Phone: 503.361.8655

CORVALLIS-ALBANY PATH: PILKINGTON TO MERLOY
ALBANY-CORVALLIS HIGHWAY
BENTON COUNTY

Designer: Prisciliano Peralta | Reviewer: Terry Wheeler
Drafter: Ryan Berger | Checker: Paul Tappana

EROSION AND SEDIMENT CONTROL | SHEET NO. FB01

Sec. 18, T. 11S, R.4W, W.M.



Under construction

200 100 0 200
FEET

NOTES:
1. *Maintain access for residents*
2. *Sign spacing may be adjusted fo fit field conditions per Std. Drg. No. TM800*
3. *Contractor to provide temporary traffic control plan to County for approval, according to the Special Provisions, Section D*
4. *Contractor shall be responsible for all costs associated with completing the repair of the defects and for associated work including, but not limited to, permitting, mobilization, traffic control, erosion control, surface restoration, site cleanup and remediation caused by, or resulting in whole or in part from, defects in materials, equipment, or workmanship, and other work determined by the Engineer to be necessary to complete repair of defects.*

To Be Accompanied by Standard Drg. Nos. TM800, TM821, & TM841

Benton County
PUBLIC WORKS DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
85994PE
DIGITALLY SIGNED 2024.05.10 06:02:15-07'00'
OREGON
JUL. 10, 2018
PRISCILIANO PERALTA-RAMIREZ
RENEWS: 12-31-2024

DAVID EVANS AND ASSOCIATES INC.
530 Center Street N.E. Suite 605
Salem Oregon 97301
Phone: 503.361.8655

CORVALLIS-ALBANY PATH: PILKINGTON TO MERLOY
ALBANY-CORVALLIS HIGHWAY
BENTON COUNTY

Designer: Prisciliano Peralta | Reviewer: Terry Wheeler
Drafter: Ryan Berger | Checker: Paul Tappana

TEMPORARY TRAFFIC CONTROL

SHEET NO. EB01

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

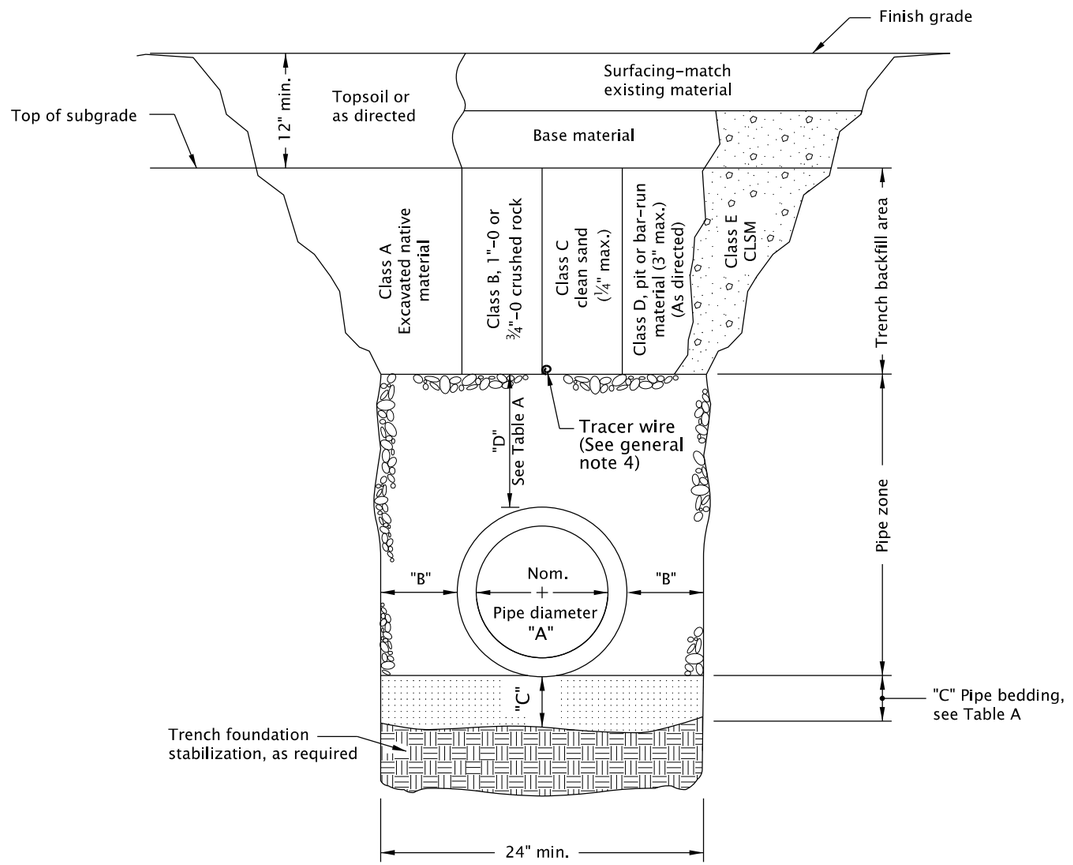
20-JUL-2020

RD300.dgn

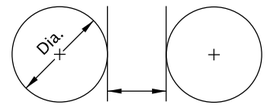
TABLE A

"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).

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

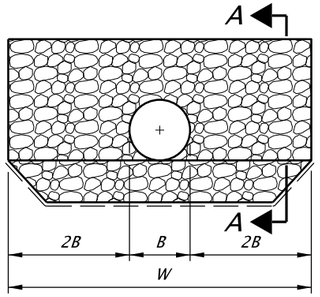
TRENCH BACKFILL, BEDDING, PIPE ZONE AND MULTIPLE INSTALLATIONS

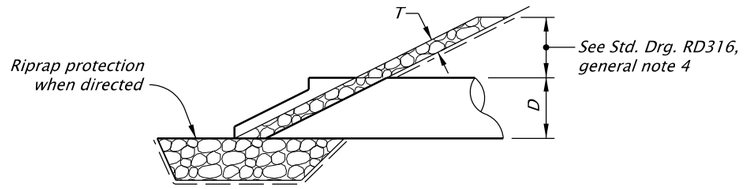
2024

DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2014 | **RD300**

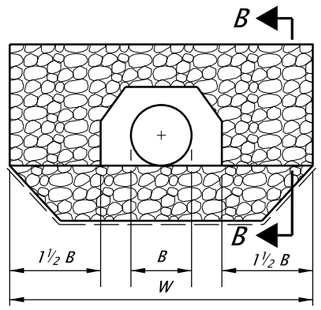
Effective Date: December 1, 2023 – May 31, 2024

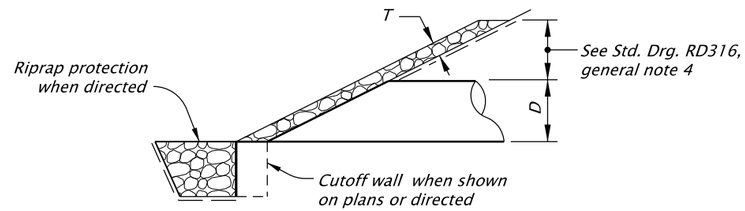




SECTION A-A

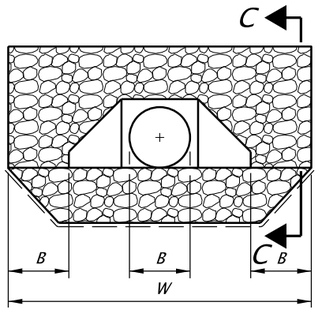
SLOPED OR PROJECTING END

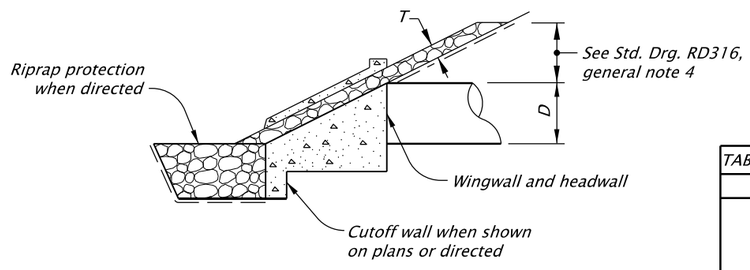




SECTION B-B

SLOPED END WITH SLOPE PAVING



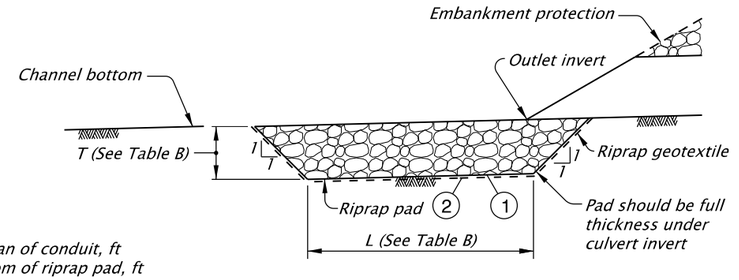


SECTION C-C

HEADWALL AND WINGWALLS

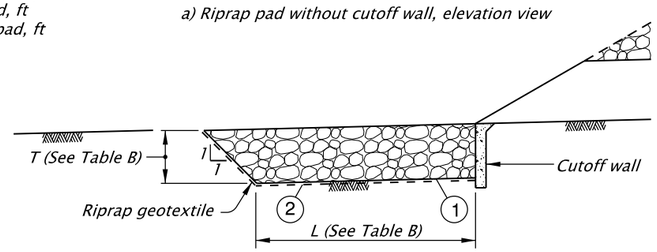
B = Diameter of circular barrel or span of arch pipe, box, or open-bottom arch.
D = Diameter of circular barrel or rise of arch pipe, box, or open-bottom arch.
T = Thickness of riprap blanket, see Table A.

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

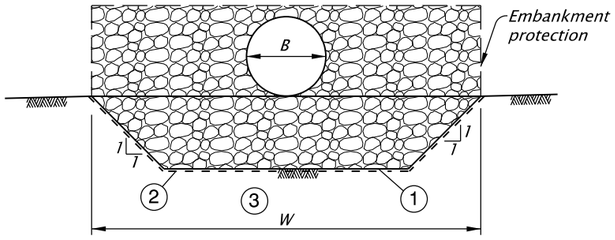
a) Riprap pad without cutoff wall, elevation view



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 geotextile 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 geotextile 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.*

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

CULVERT EMBANKMENT PROTECTION AND RIPRAP PADS

2024

DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | SDR DATE 30-JUN-2022 | **RD317**

30-JUN-2022

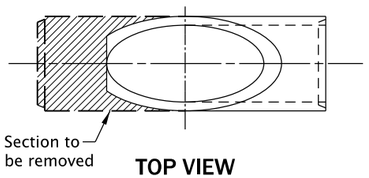
RD317.dgn

Effective Date: December 1, 2023 - May 31, 2024

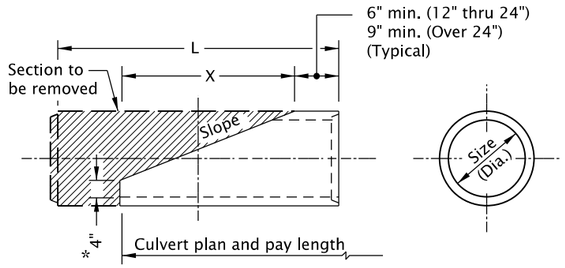
20-JUL-2020

RD318.dgn

CASE 1
SINGLE PIPE LENGTH



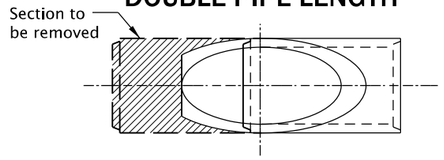
TOP VIEW



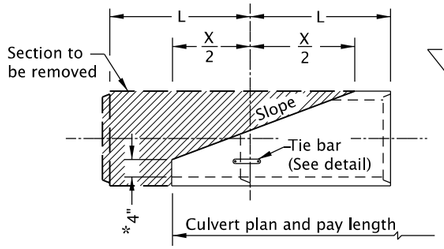
SIDE VIEW

END VIEW
(CASE 1)

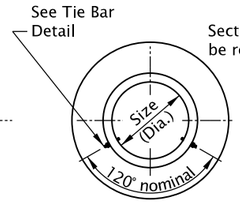
CASE 2
DOUBLE PIPE LENGTH



TOP VIEW

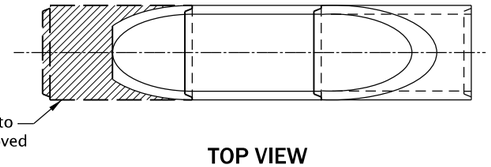


SIDE VIEW

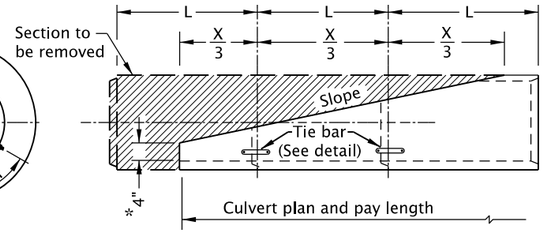


END VIEW
(CASE 2 & 3)

CASE 3
TRIPLE PIPE LENGTH



TOP VIEW



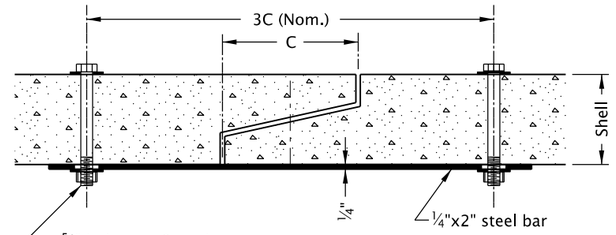
SIDE VIEW

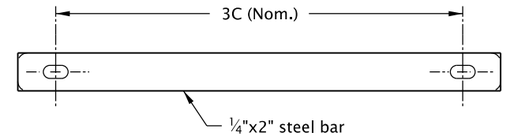
* 0 when used with paved end slope.

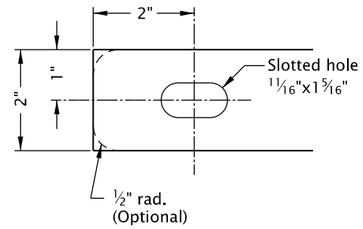
NOTE:
Sloped ends shall be made from minimum Class III concrete pipe.
"X" Values shown are for vertical dimension at bottom of sloped end = 0.

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.).

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

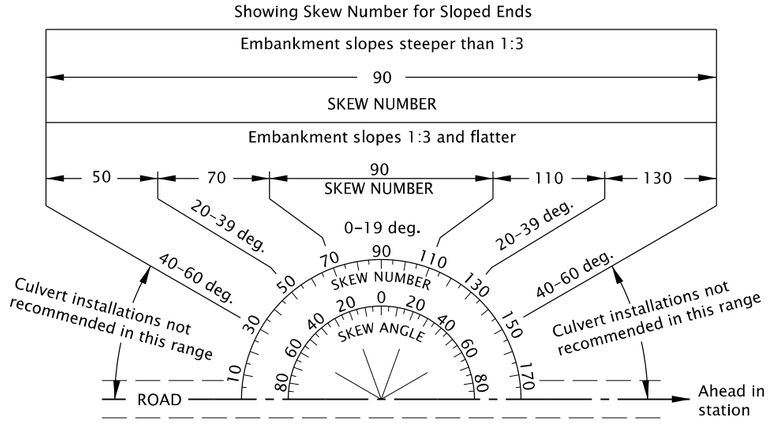
SLOPED ENDS FOR CONCRETE PIPE

2024

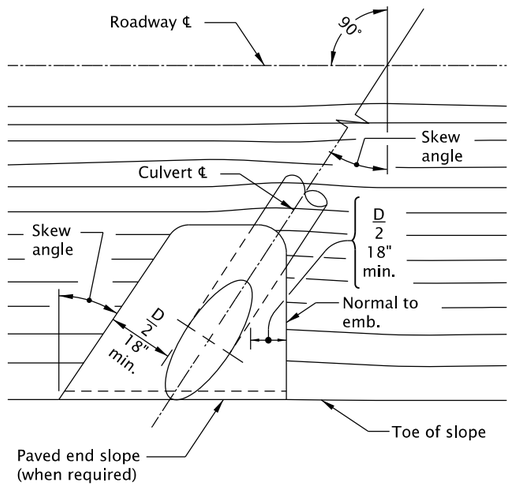
DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | SDR DATE 15-JAN-2016 | **RD318**

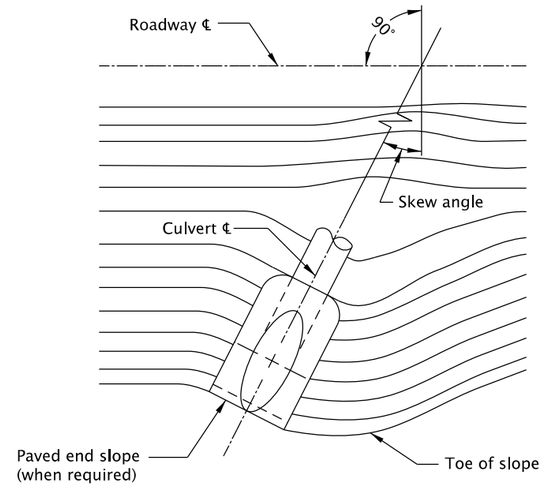
Effective Date: December 1, 2023 - May 31, 2024



SKEW DIAGRAM



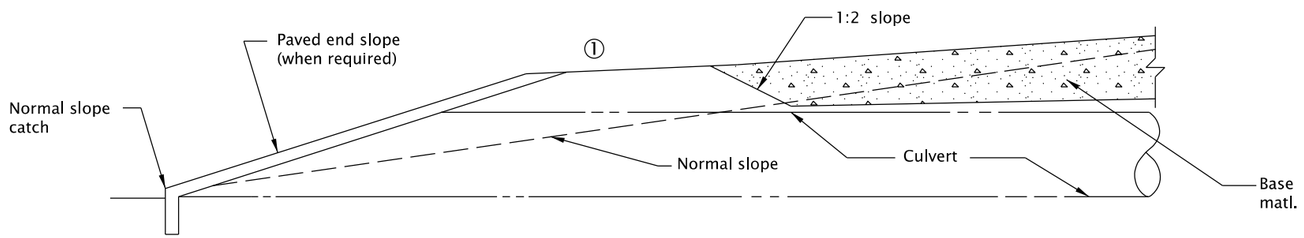
TYPICAL SKEW PLAN



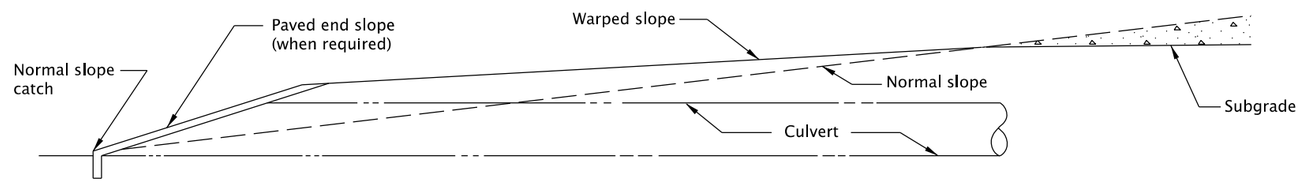
(Where shown on plans)
Contour embankment slope to match paved end slope

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.).

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

MISCELLANEOUS CULVERT DETAILS

2024

DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | SDR DATE 15-JAN-2016 | **RD319**

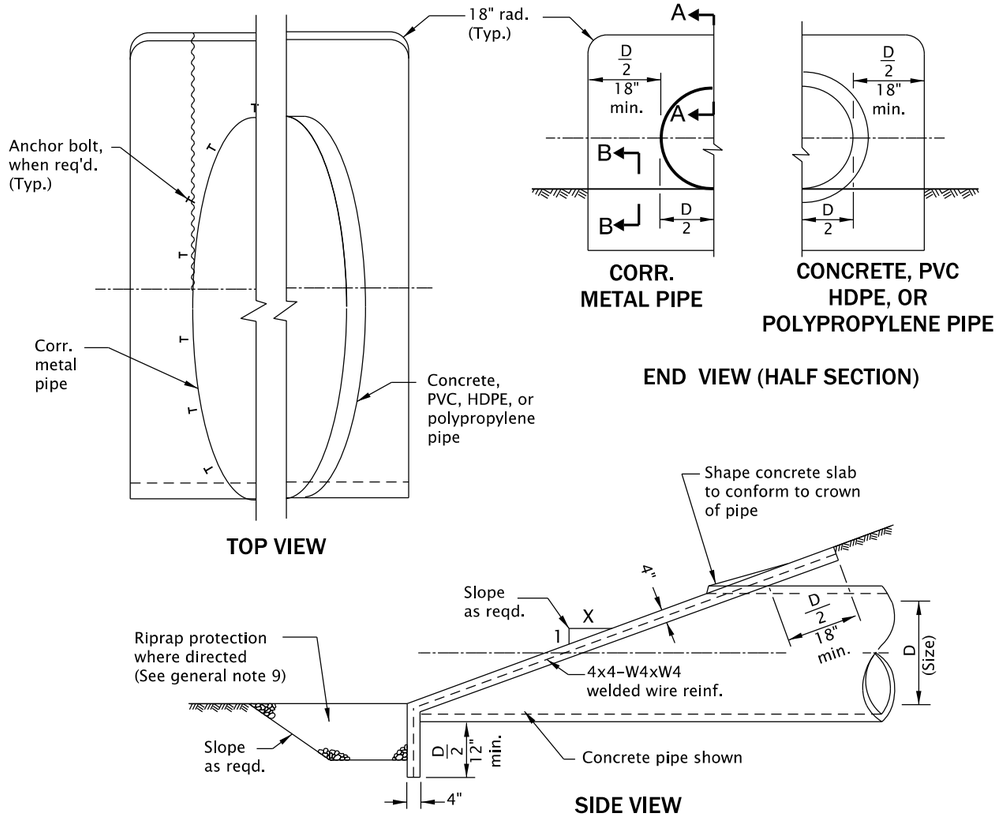
Effective Date: December 1, 2023 – May 31, 2024

20-JUL-2020

RD319.dgn

20-JUL-2020

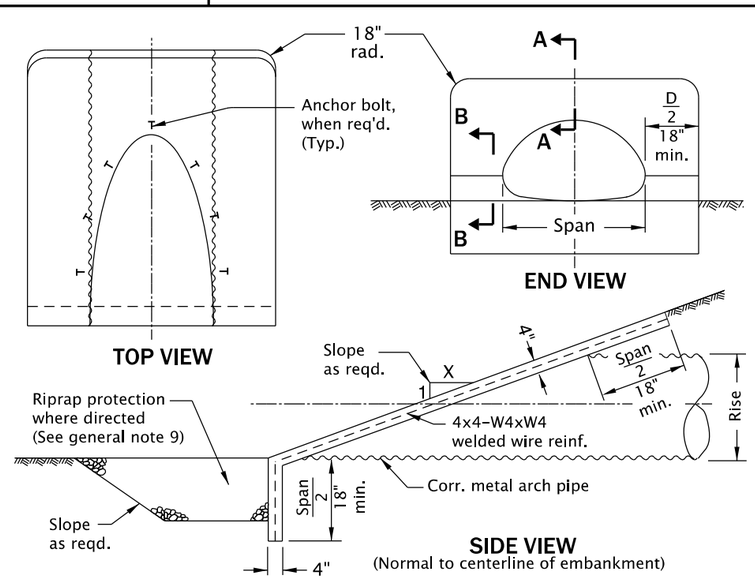
RD320.dgn



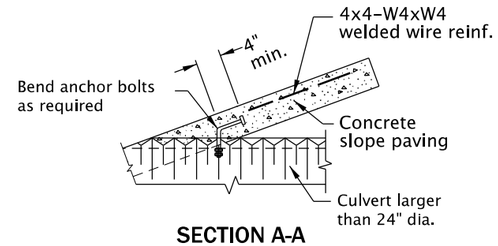
CIRCULAR PIPE CULVERT

PAVED END SLOPE AREA TABLE						
Nominal Pipe Diameter (Inches)	PAVED END SLOPE AREA SQUARE FEET					
	1:3 SLOPE		1:4 SLOPE		1:6 SLOPE	
	Circular Pipe	Arch Pipe	Circular Pipe	Arch Pipe	Circular Pipe	Arch Pipe
12	23	--	26	--	32	--
15	26	23	32	27	41	34
18	30	26	35	30	44	38
21	33	30	39	35	51	45
24	37	33	44	39	57	51
30	47	39	55	46	72	61
36	56	53	67	63	88	83
42	76	67	90	80	119	107
48	98	90	117	108	155	144
54	124	114	148	137	196	184
60	164	137	197	165	264	221

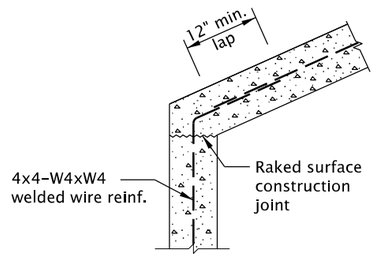
(1) Areas for multiple installations are as shown on the plans.



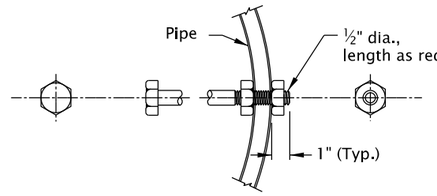
ARCH PIPE CULVERT



SECTION A-A



SECTION B-B



ANCHOR BOLT DETAILS

Anchor bolts to be ASTM A307 galv., equally spaced at a max. of 18" centers around entire perimeter at end of pipes over 24" size. Not required for concrete pipe.

GENERAL NOTES FOR ALL DETAILS ONTHIS SHEET:

1. When rock is encountered, cut off wall depth $\frac{D}{2}$ or $\frac{span}{2}$ may be reduced to rock line but not less than 12".
2. When using pervious bedding and backfill, it is desirable to prevent seepage and piping by placing impervious material at the inlet. Cutoff collars may be used in lieu of impervious material.
3. For multiple pipe installations, see Std. Dwgs. RD300 & RD304.
4. All exposed conc. edges shall be chamfered ¾" unless noted otherwise. Slope paving surface variations shall not exceed ⅜" in 10' .
5. All metal reinforcement shall be placed 1½" clear of nearest face of concrete unless shown or noted otherwise.
6. All concrete shall be commercial grade concrete.
7. 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.
8. See Std. Dwg. RD321 for removable safety bars (When reqd.).
9. See Std. Dwg. RD317 for culvert embarkment protection and riprap pads (When reqd.).

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

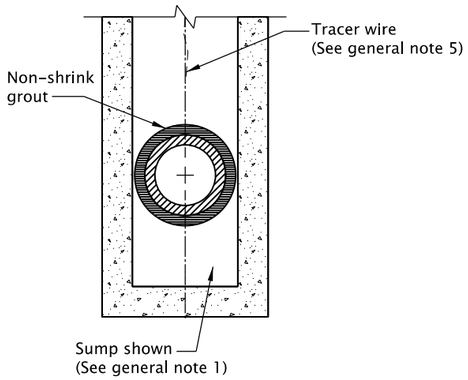
PAVED END SLOPE FOR CULVERTS 60" MAXIMUM PIPE SIZE

2024

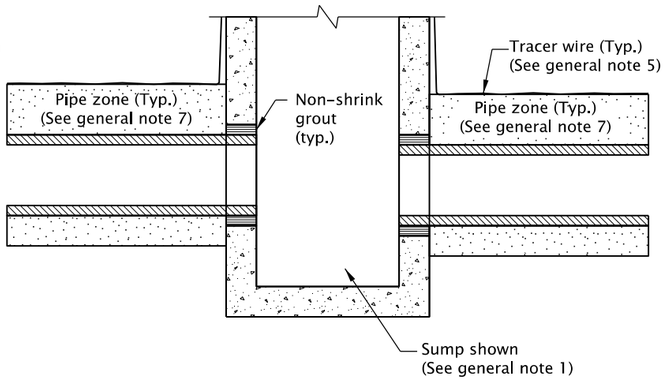
DATE	REVISION DESCRIPTION

CALC. BOOK NO. RD07-02 | SDR DATE 15-JAN-2016 | **RD320**

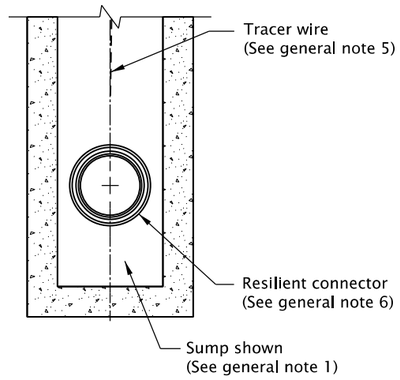
Effective Date: December 1, 2023 - May 31, 2024



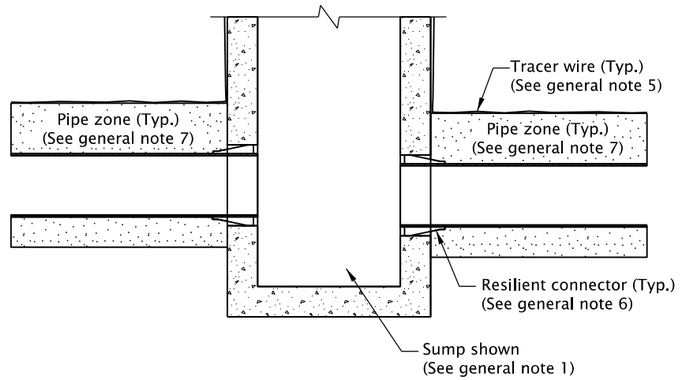
SECTION B-B



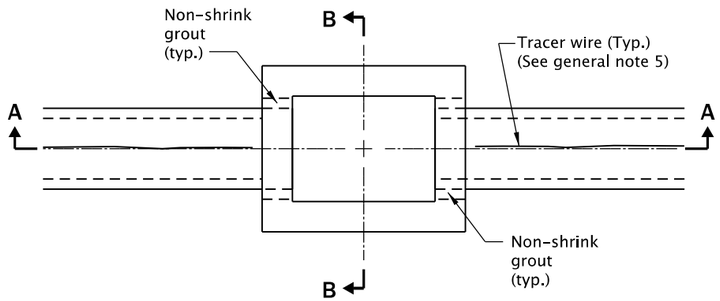
SECTION A-A



SECTION D-D

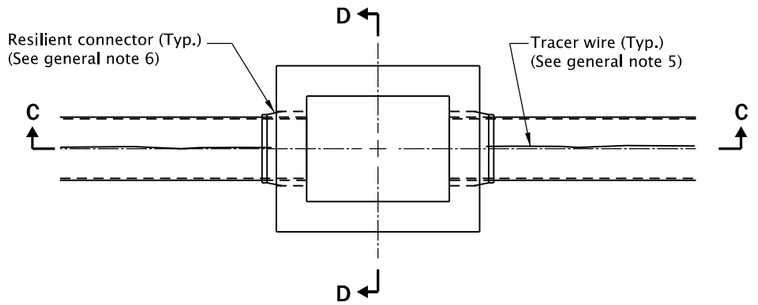


SECTION C-C



PLAN

CONNECTION OF RIGID PIPE TO STRUCTURE



PLAN

CONNECTION OF FLEXIBLE PIPE TO STRUCTURE

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. See Std. Dwgs. RD364, RD365, and RD366 for inlet details not shown.
2. See appropriate standard drawings or special project details for other similar structures.
3. Location, elevation, diameter, slope, and number of pipe(s) varies, see project plans.
4. Maximum pipe diameter varies with pipe material.
5. All connecting pipes shall have a tracer wire, or approved alternate. See Std. Dwg. RD336 for tracer wire details.
6. When flexible pipe is used, install resilient connectors conforming to requirements of ASTM C923.
7. Pipe zone varies, see Std. Dwg. RD300.

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

PIPE TO STRUCTURE CONNECTIONS

2024

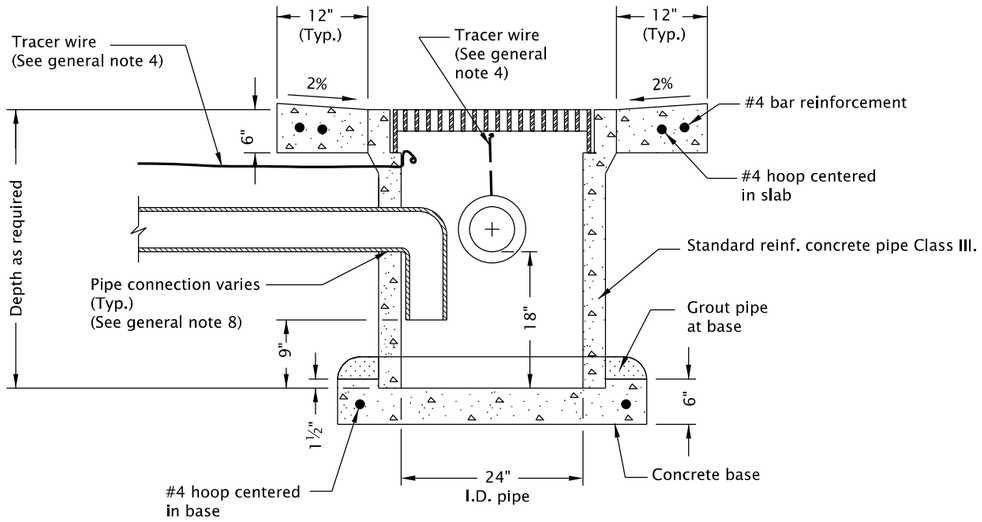
DATE	REVISION DESCRIPTION
07-2021	REVISED NOTES
04-2022	REVISED NOTES
01-2023	REVISED DETAILS AND NOTES

CALC. BOOK NO. N/A | SDR DATE 20-JAN-2023 | **RD339**

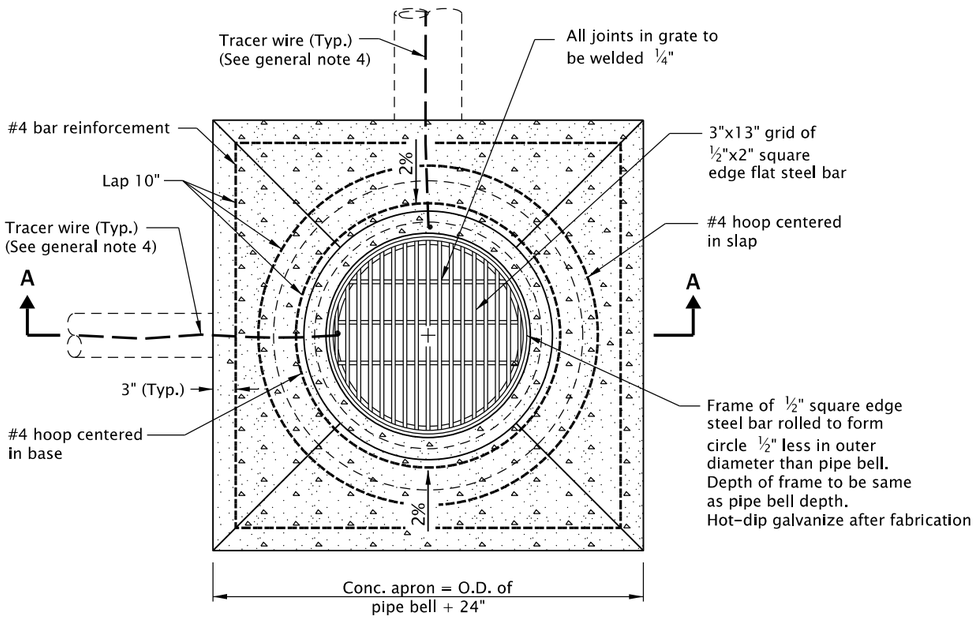
Effective Date: December 1, 2023 – May 31, 2024

20-JAN-2023

RD339.dgn



SECTION A-A



PLAN

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Grates shall be bicycle-safe.
2. Precast concrete inlets may be used when specified or approved. All precast inlets shall conform to requirements of ASTM C913.
3. Anchor vertical leg of inlet pipe if not a glued joint.
4. See Std. Dwg. RD336 for tracer wire details.
5. All reinforcement shall be 2" clear of nearest face of conc., unless otherwise shown.
6. Max. connecting pipe diameter varies with pipe material.
7. All concrete shall be commercial grade concrete.
8. See Std. Dwg. RD339 for pipe to structure connections.
9. Location, elevation, diameter, slope, and number of pipe(s) varies, see project plans.

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

AREA DRAINAGE BASIN OR FIELD INLET

2024

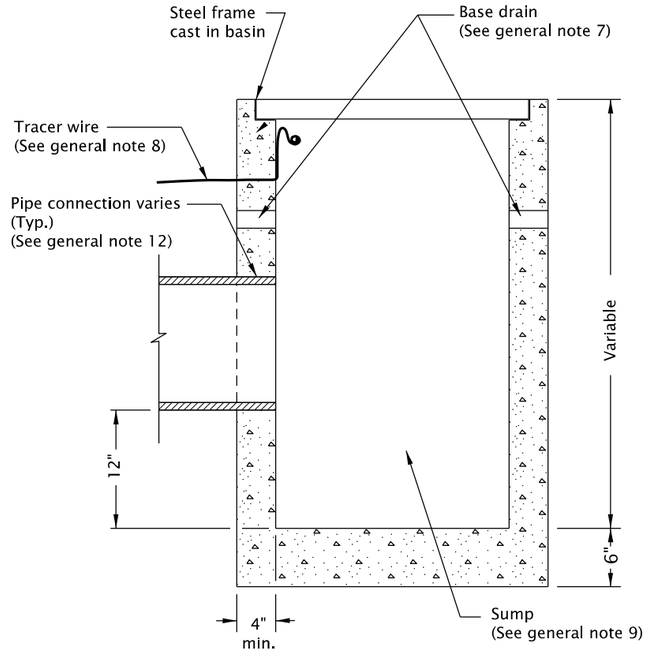
DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2014 | **RD374**

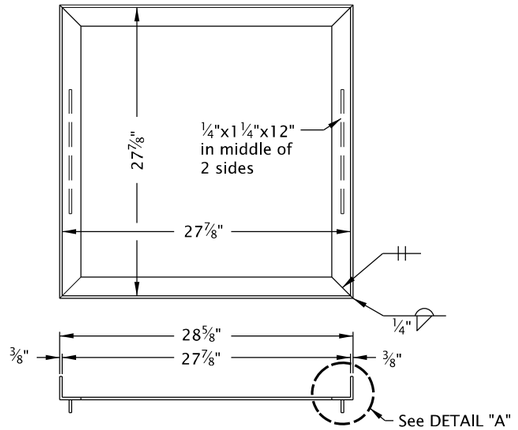
Effective Date: December 1, 2023 - May 31, 2024

20-JUL-2020

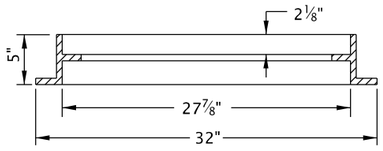
RD374.dgn



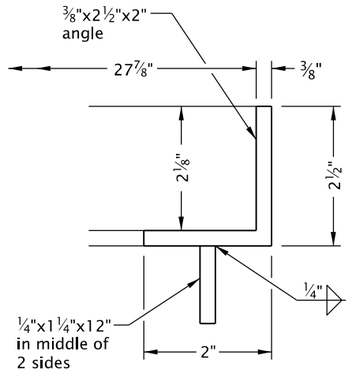
SECTION A–A



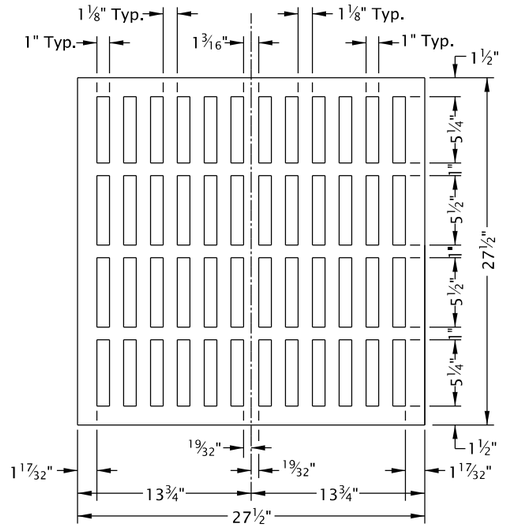
TYPE 3 FRAME - STEEL
(Hot-dip galvanize after fabrication)



OPTIONAL CAST IRON FRAME
FOR A MORTAR-ON TYPE 3 CATCH BASIN

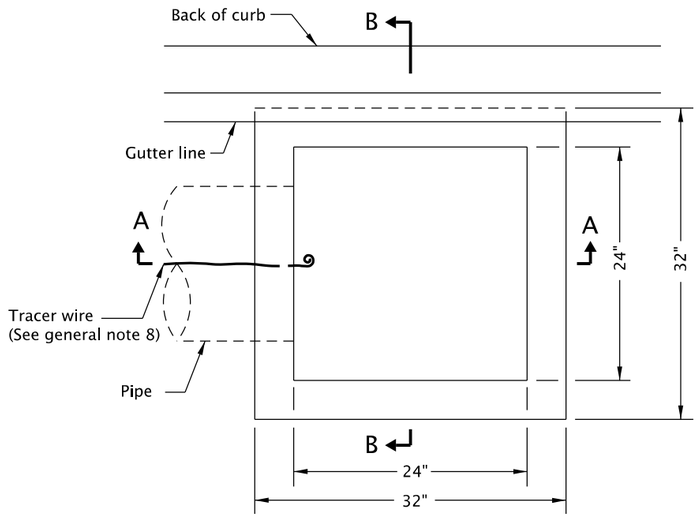


DETAIL "A"

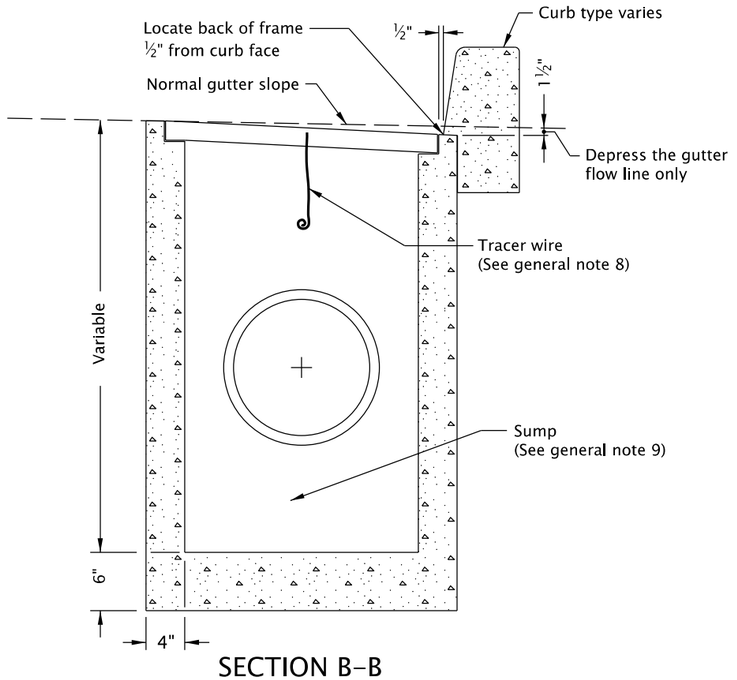


TYPE 3 CATCH BASIN GRATE

PRECAST RISER



PLAN



SECTION B–B

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Catch basin & grate shall meet H20 loading.
2. All concrete shall be commercial grade concrete.
3. Precast walls shall be a minimum of 4" thick.
4. For use by local agencies on low volume residental facilities as directed.
5. Depress gutter flowline and transition gutter as shown in Std. Dwg. RD366 perspective view.
6. Knockouts allowed for precast option.
7. If directed, install 3" dia. base drain with field installed mesh screen for subgrade drainage.
8. See Std. Dwg. RD336 for tracer wire details, or approved alternate.
9. Provide sump only where shown on plans, and allowed by jurisdiction.
   For sump details, see Std. Dwg. RD364.
10. Max. pipe diameter varies with pipe material.
11. All precast inlets shall conform to requirements of ASTM C913.
12. See Std. Dwg. RD339 for pipe to structure connections.
13. See project plans for details not shown.

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with
the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

TYPE "3" CATCH BASIN, FRAME AND GRATE

2024

DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | SDR DATE 21-JUL-2015 | **RD378**

Effective Date: December 1, 2023 – May 31, 2024

20-JUL-2020

RD378.dgn

ALLOWABLE FILL HEIGHTS FOR CIRCULAR CONCRETE PIPE
HS 25 - 44 LIVE LOAD

PIPE DIAMETER (INCHES)	REINFORCED PIPE					
	CLASS III		CLASS IV		CLASS V	
	MINIMUM COVER (Feet)	MAXIMUM COVER (Feet)	MINIMUM COVER (Feet)	MAXIMUM COVER (Feet)	MINIMUM COVER (Feet)	MAXIMUM COVER (Feet)
12	*1.5*	*17*	*1.0*	*27*	*0.5*	*41*
15	*1.5*	*18*	*1.0*	*27*	*0.5*	*42*
18	*1.5*	*18*	*1.0*	*27*	*0.5*	*42*
21	*1.5*	*17*	*1.0*	*27*	*0.5*	*42*
24	*1.5*	*17*	*1.0*	*27*	*0.5*	*42*
27	*1.5*	*17*	*1.0*	*27*	*0.5*	*41*
30	*1.5*	*17*	*1.0*	*27*	*0.5*	*41*
33	*1.5*	*17*	*1.0*	*27*	*0.5*	*41*
36	*1.5*	*17*	*1.0*	*26*	*0.5*	*41*
42	*1.5*	*17*	*1.0*	*26*	*0.5*	*41*
48	*1.5*	*16*	*1.0*	*26*	*0.5*	*41*
54	*1.5*	*16*	*1.0*	*26*		
60	*1.5*	*16*	*1.0*	*26*		
66	*1.5*	*16*	*1.0*	*26*		
72	*1.5*	*16*	*1.0*	*25*		

GENERAL NOTES FOR ALL TABLES ON THIS SHEET:

1. *Maximum height of cover is greatest vertical distance from top of pipe to finish grade.*
2. *Minimum height of cover is least vertical distance from top of pipe to subgrade.*
3. *For ODOT, pipes with diameters greater than 72" must be reviewed by the Geo-Environmental Section.*
4. *For ODOT, pipes with maximum cover greater than those shown in the Tables shall be approved by the Senior Standards Engineer.*
5. *For multiple pipe installations, see Std. Dwg. RD300.*
6. *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.*

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

FILL HEIGHT TABLE FOR CIRCULAR CONCRETE PIPE

2024

DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | SDR DATE 16-JUL-2019 | **RD386**

Effective Date: December 1, 2023 - May 31, 2024

PIPE	CORRUGATED HDPE	
DIAMETER (Inches)	MINIMUM COVER (Feet)	MAXIMUM COVER (Feet)
12	2.0	29
15	2.0	30
18	2.0	27
24	2.0	24
30	2.0	21
36	2.0	23
42	2.0	22
48	2.0	22
60	2.5	21

GENERAL NOTES FOR ALL TABLES ON THIS SHEET:

1. Maximum height of cover is greatest vertical distance from top of pipe to finish grade.
2. Minimum height of cover is least vertical distance from top of pipe to subgrade.
3. For ODOT, pipes with maximum cover greater than those shown in the Tables shall be approved by the Senior Standards Engineer.
4. For multiple pipe installations, see Std. Dwg. RD300.
5. Heavy solid line denotes boundary between minimum cover requirements.
6. 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.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

FILL HEIGHT TABLE FOR CORRUGATED HDPE PIPE

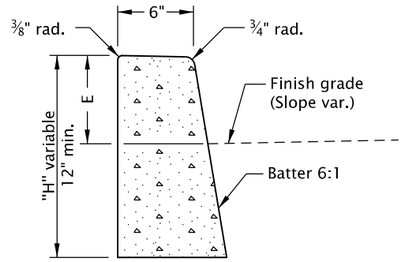
2024

DATE	REVISION DESCRIPTION

CALC. BOOK NO. RD07-02 | SDR DATE 13-JUN-2011 | **RD390**

20-JUL-2020

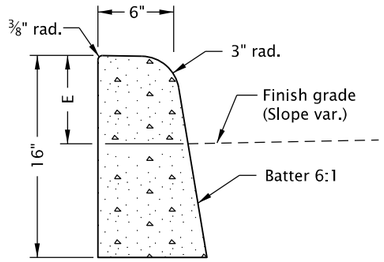
RD700.dgn



O.D.O.T. & City of Portland Standard "H"=16"

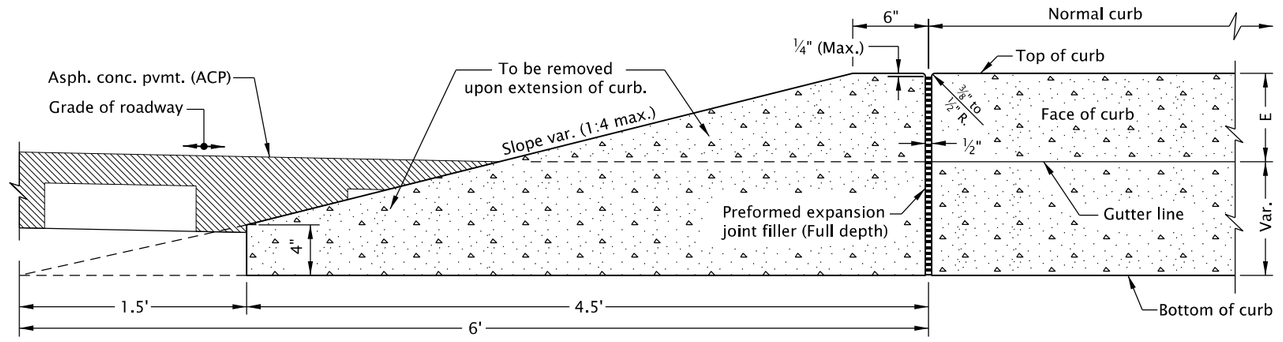
STANDARD CURB

(See general note 11)

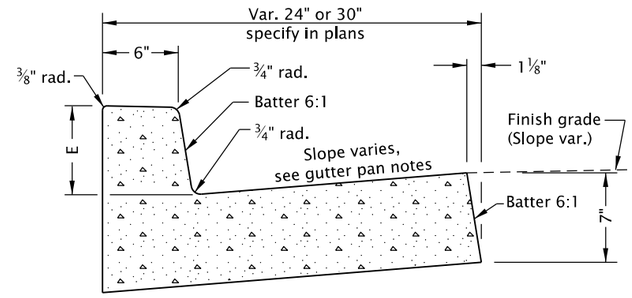


MOUNTABLE CURB

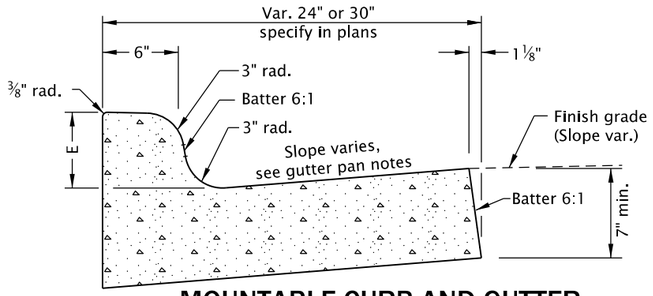
(See general note 11)



CURB ENDING DETAIL



CURB AND GUTTER



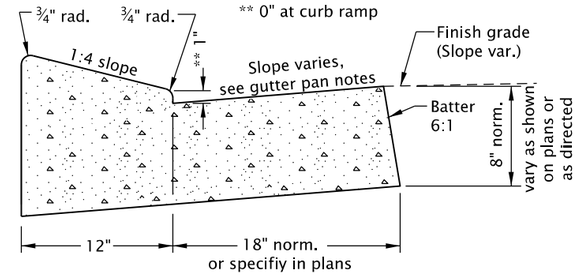
MOUNTABLE CURB AND GUTTER

GUTTER PAN NOTES:

Slope 5.0% normal.

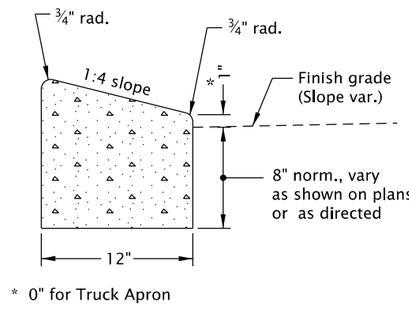
Slope 4.0% max. at curb ramps.

Vary slope as reqd. for drainage. Vary where shown on plans, and allowed by jurisdiction.



LOW PROFILE MOUNTABLE CURB AND GUTTER

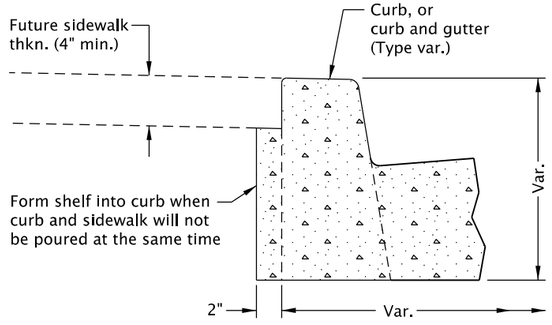
(Where shown on plans)



* 0" for Truck Apron

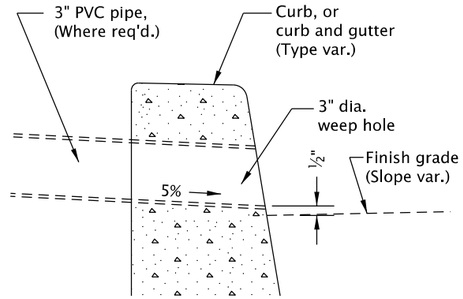
LOW PROFILE MOUNTABLE CURB

(See general note 11)



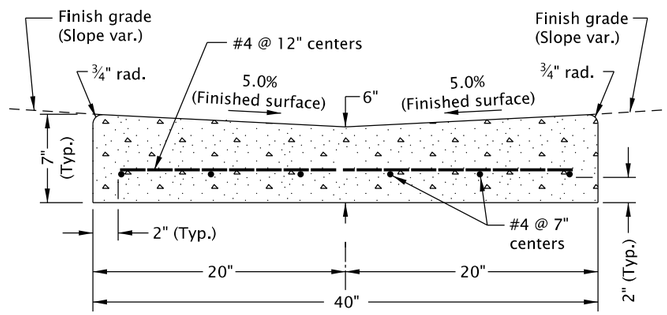
MODIFICATION FOR KEYWAY

(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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

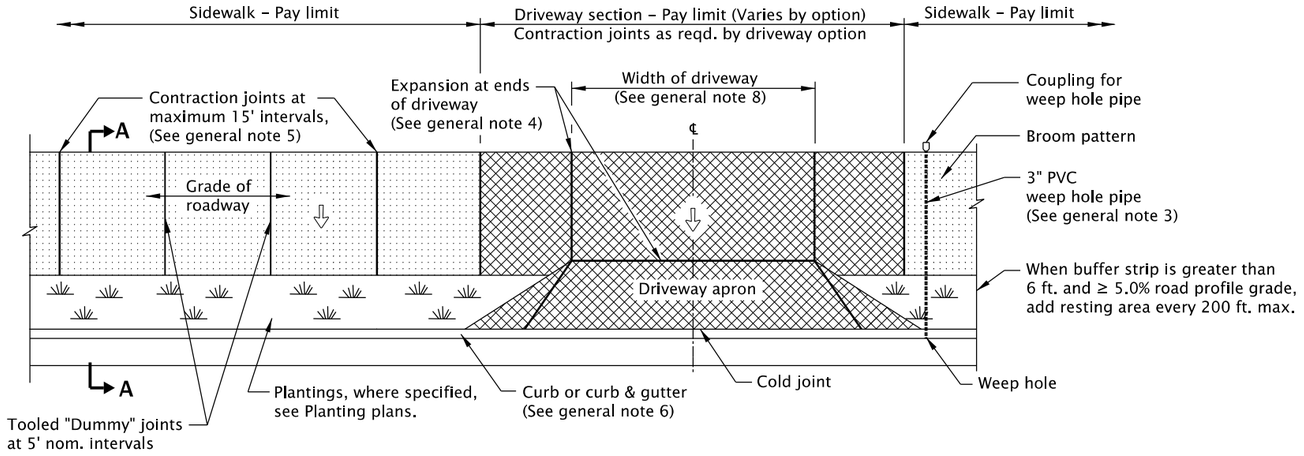
CURBS

2024

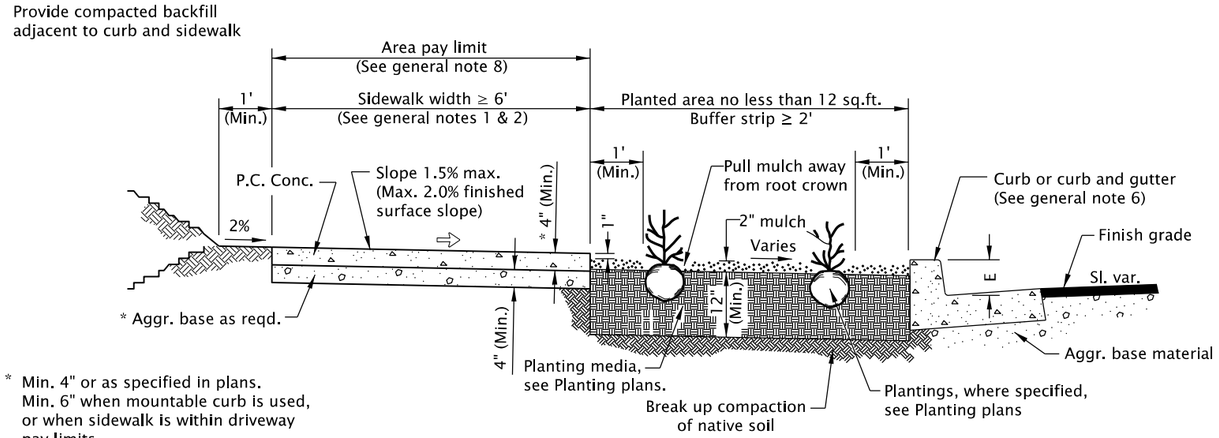
DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | SDR DATE 20-JUL-2020 | **RD700**

Effective Date: December 1, 2023 - May 31, 2024



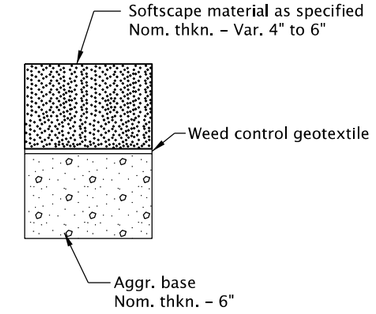
TYPICAL PLAN VIEW - SEPARATED SIDEWALK



SECTION A-A

TYPICAL SETBACK SIDEWALK CROSS SECTION

E = curb exposure, see general note 6



NON-PLANTED SOFTSCAPE CROSS SECTION

NOTES:
1 Use softscape materials allowed by jurisdiction.
2. Approved softscape materials:
   a) Loose, durable round rock 2"–4"in diameter
   b) Lava rock 2"–4"diameter
   c) Wood chips/bark mulch
   d) Sand
3. No crushed aggregate or pea gravel allowed.
4. Install softscape material flush with the top of sidewalk.

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)

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 joint details.
5. Const. contraction joints at 15' maximum spacing, and at ends of each curb ramp. See Std. Dwg. RD722 for contraction joint details.
6. Curb and gutter shown; see project plans for the curb design specified. For curb details, see Std. Dwgs. RD700 & RD701. ODOT standard E=7".
7. Sidewalk details are based on ODOT applicable standards.
8. Driveway encroaches into sidewalk shown; see project plans for the driveway design specified. For driveway details not shown, see Std. Dwgs. RD725, RD730, RD735, RD740, RD745 & RD750.
9. See project plans for details not shown.
10. Provide plantings in areas 12 SF or greater, as shown or directed. Treat areas less than 12 SF with mulch surfacing.

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

SEPARATED SIDEWALKS

2024

DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | SDR DATE 20-JUL-2020 | **RD721**

Effective Date: December 1, 2023 – May 31, 2024

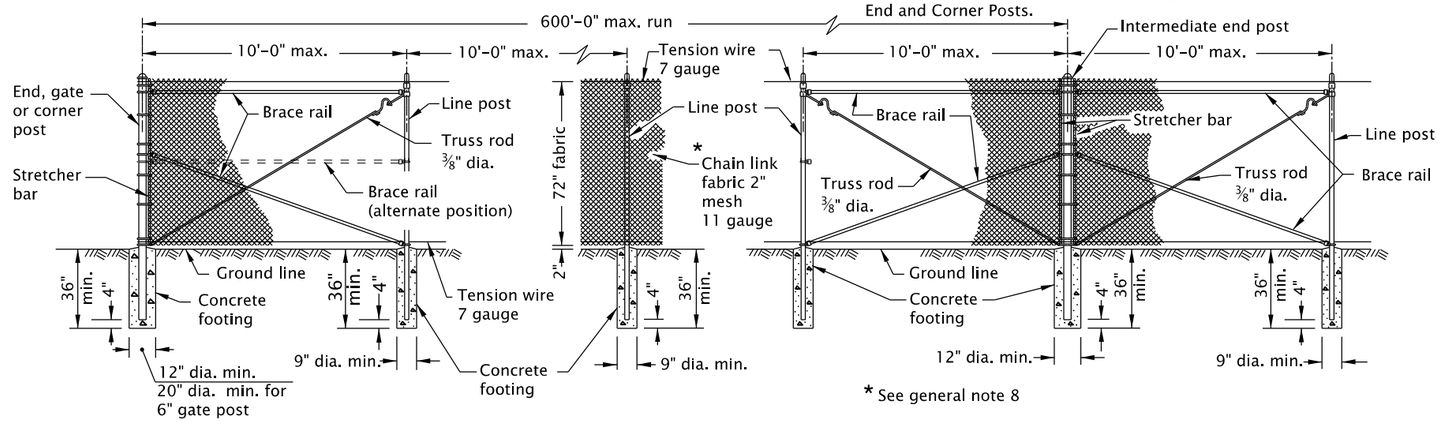
20-JUL-2020

RD721.dgn

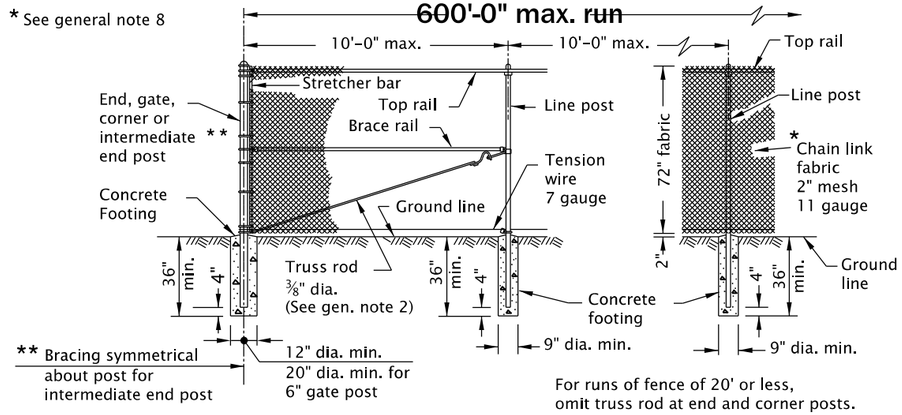
20-JUL-2020

RD815.dgn

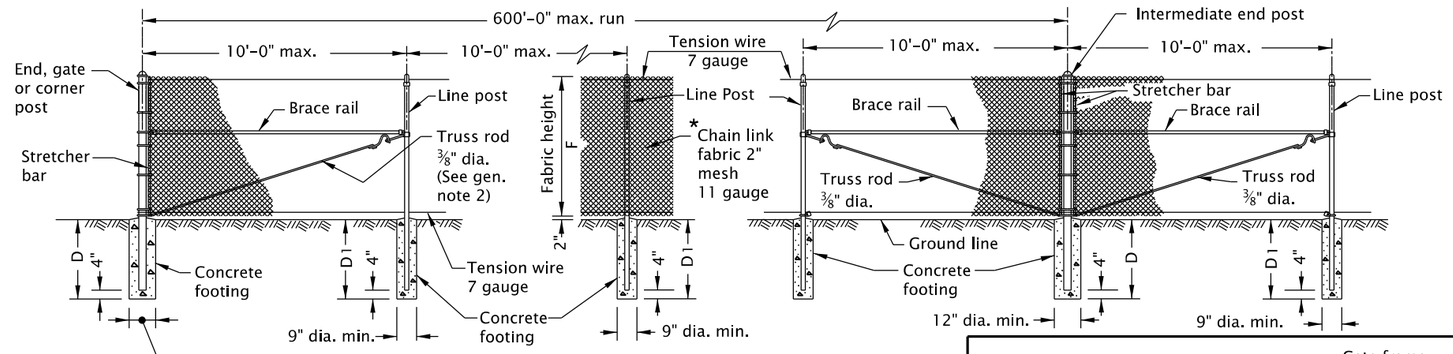
TYPE CL-6



TYPE CL-6R

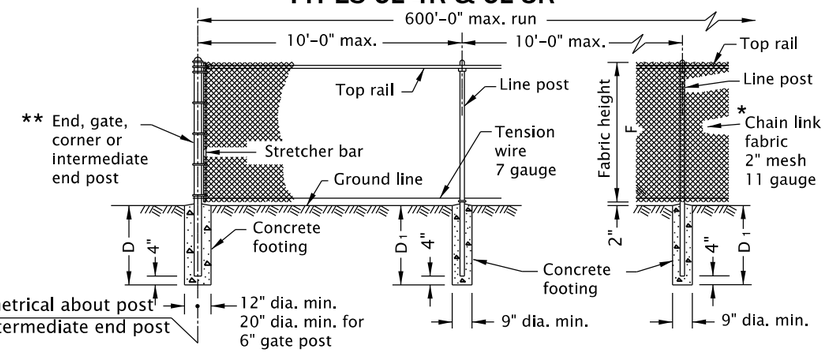


TYPES CL-4 & CL-5



TYPE	D min. (in)	D1 min. (in)	F nom. (in)
CL-4	30	24	48
CL-5	36	36	60

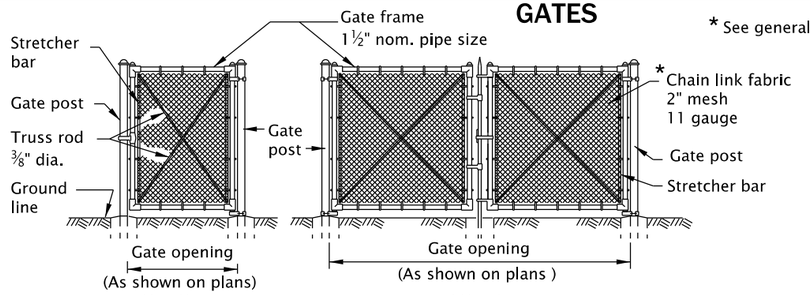
TYPES CL-4R & CL-5R



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: BRACE AND TOP RAILS, TUBULAR: Fence Industry (in)	BRACE AND TOP RAILS, TUBULAR: Nom. Dia. (in)	LINE POSTS, TUBULAR: Fence Industry (in)	LINE POSTS, TUBULAR: Nom. Dia. (in)	LINE POSTS, H-SECTION: Size (in)	LINE POSTS, H-SECTION: Wt. lb/ft	END, CORNER & INTERMEDIATE END POST, TUBULAR: Fence Industry (in)	END, CORNER & INTERMEDIATE END POST, TUBULAR: Nom. Dia. (in)
STEEL CL-4 & CL-4R CL-5 & CL-5R	1⅝	1¼	1⅞	1½	1⅞ x 1⅝	2.72	2⅜	2
STEEL CL-6 & CL-6R	1⅝	1¼	2⅜	2	2¼ x 2	4.10	2⅞	2½

GATE OPENING (ft): SINGLE GATE	GATE OPENING (ft): DOUBLE GATE	GATE POSTS, TUBULAR: Fence Industry (in)	GATE POSTS, TUBULAR: Nom. Dia. (in)
Up thru 6	Up thru 12	2⅞	2½
7 thru 13	13 thru 26	4	3½
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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

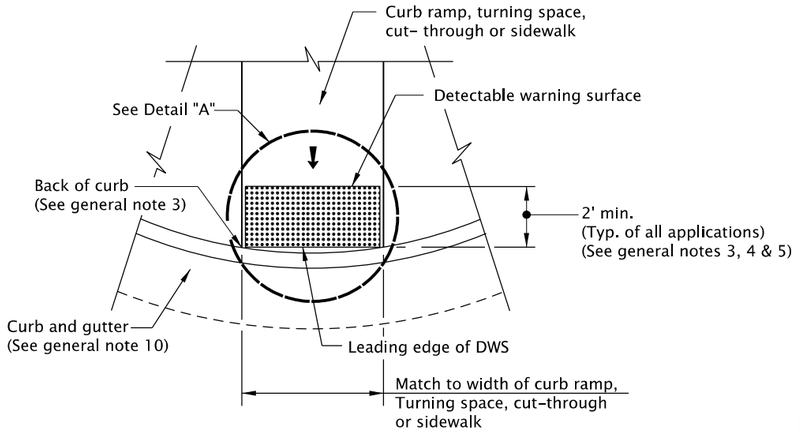
CHAIN LINK FENCE

2024

DATE	REVISION DESCRIPTION

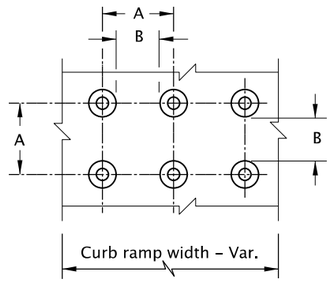
CALC. BOOK NO. N/A | SDR DATE 13-JAN-2020 | **RD815**

Effective Date: December 1, 2023 - May 31, 2024

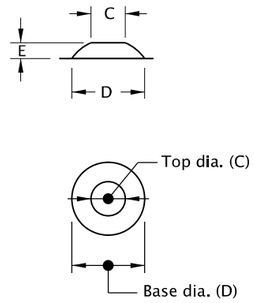


DETECTABLE WARNING SURFACE DETAIL

	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"

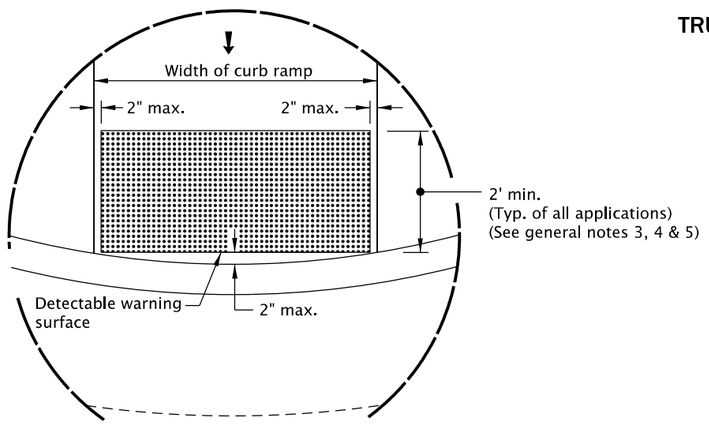


TRUNCATED DOME SPACING



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 as shown in Detail "A").
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. Place abutting panels within¼ inch of each other and install anchors, as specified by manufacturers, along cut edge.
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 and 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)

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

DETECTABLE WARNING SURFACE DETAILS

2024

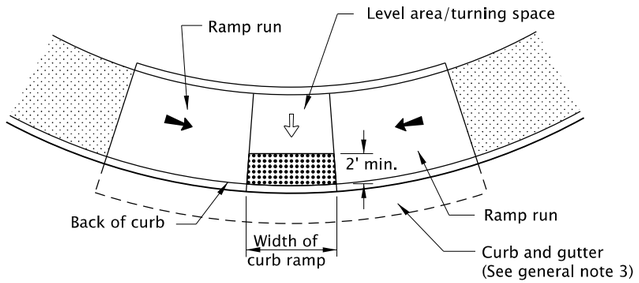
DATE	REVISION DESCRIPTION
07-2020	NEW DRAWING CREATED
07-2021	REVISED DETAILS AND NOTES

CALC. BOOK NO. N/A | SDR DATE 19-JUL-2021 | **RD902**

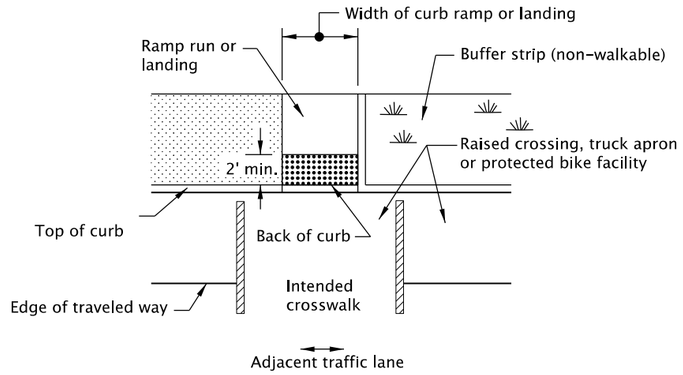
19-JUL-2021

RD902.dgn

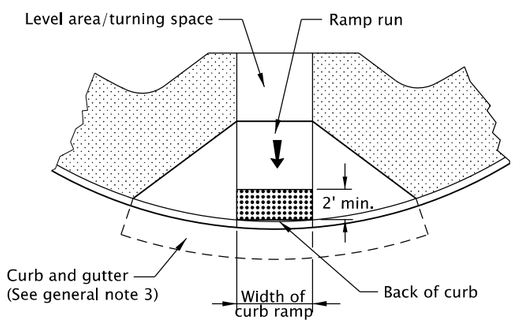
Effective Date: December 1, 2023 - May 31, 2024



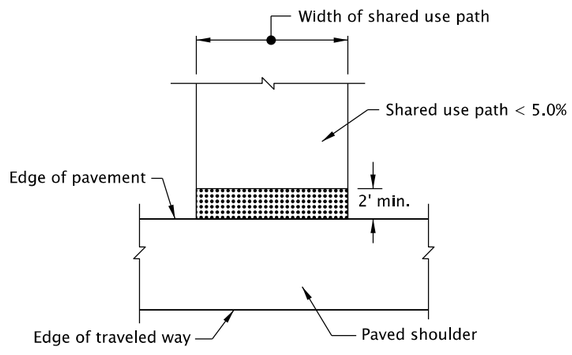
PARALLEL CURB RAMP



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)

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

DETECTABLE WARNING SURFACE PLACEMENT FOR CURB RAMPS

2024

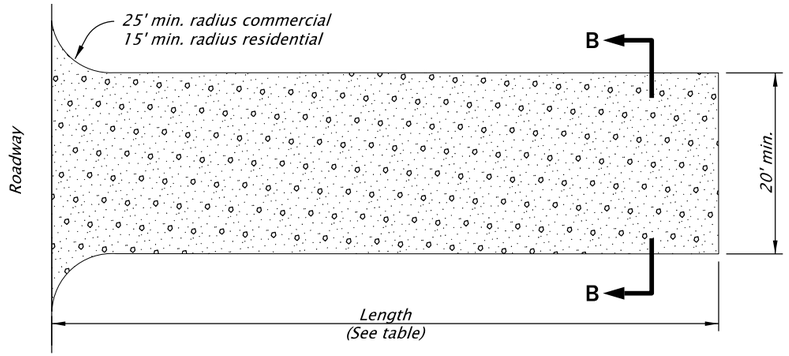
DATE	REVISION DESCRIPTION
07-2020	NEW DRAWING CREATED

CALC. BOOK NO. N/A | SDR DATE 20-JUL-2020 | **RD904**

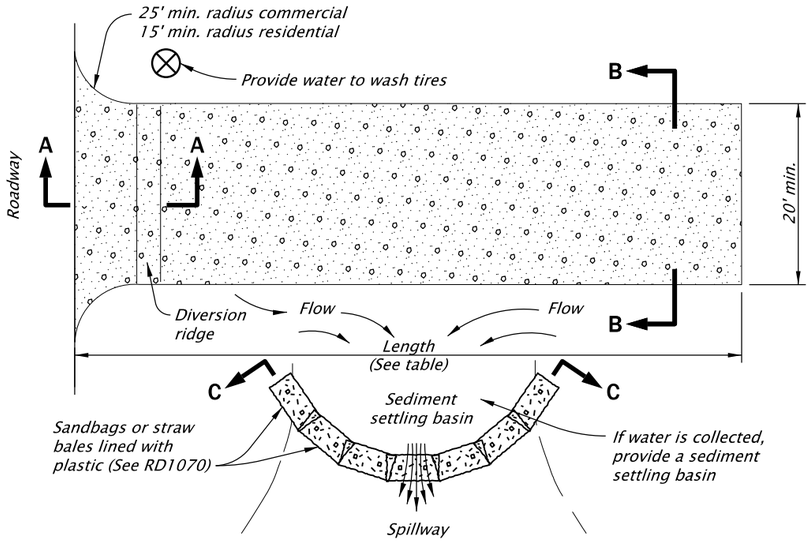
Effective Date: December 1, 2023 - May 31, 2024

20-JUL-2020

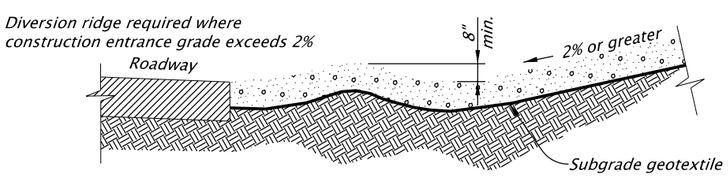
RD904.dgn



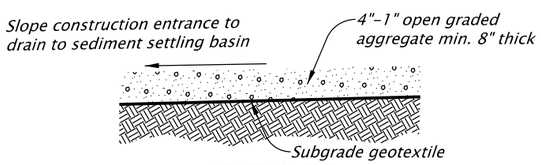
CONSTRUCTION ENTRANCE - TYPE 1
NOT TO SCALE



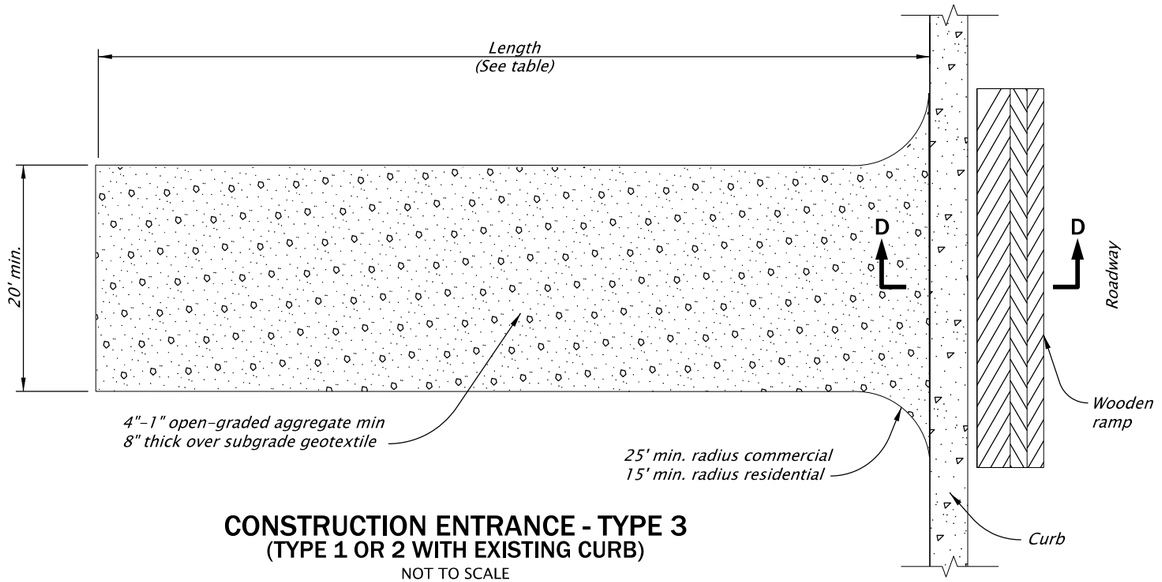
CONSTRUCTION ENTRANCE - TYPE 2
NOT TO SCALE



SECTION A-A
NOT TO SCALE



SECTION B-B
NOT TO SCALE



CONSTRUCTION ENTRANCE - TYPE 3
(TYPE 1 OR 2 WITH EXISTING CURB)
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*

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

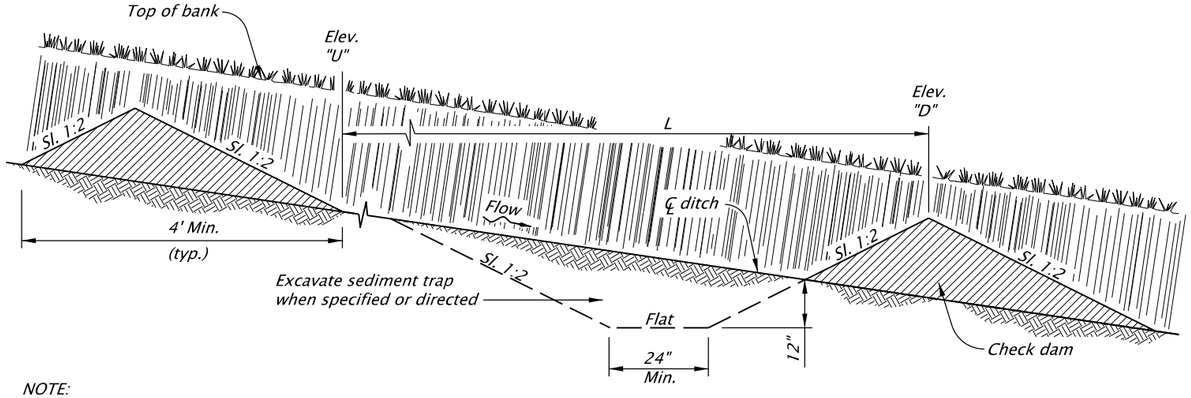
OREGON STANDARD DRAWINGS

CONSTRUCTION ENTRANCES

2024

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

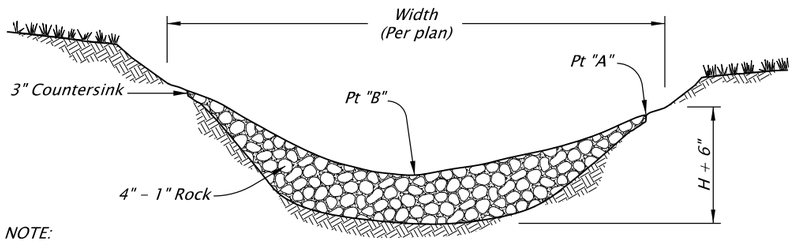
CALC BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1000**



NOTE:
L = Spacing along swale or ditch so that Elevation "U" equals Elevation "D".

TYPICAL PROFILE SECTION CHECK DAMS (SHOWN WITH AGGREGATE)

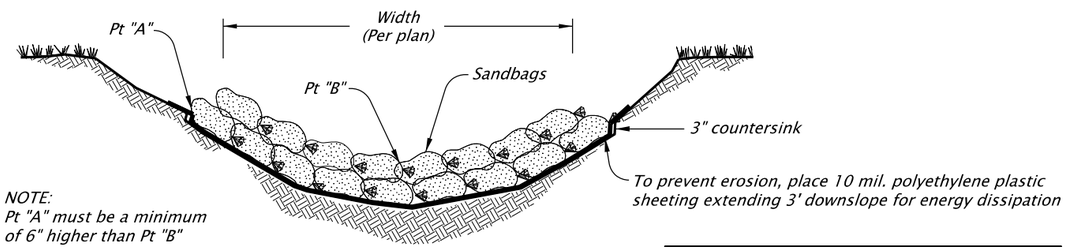
NOT TO SCALE



NOTE:
Pt "A" must be a minimum of 6" higher than Pt "B"

AGGREGATE CHECK DAM - TYPE 1

NOT TO SCALE



NOTE:
Pt "A" must be a minimum of 6" higher than Pt "B"

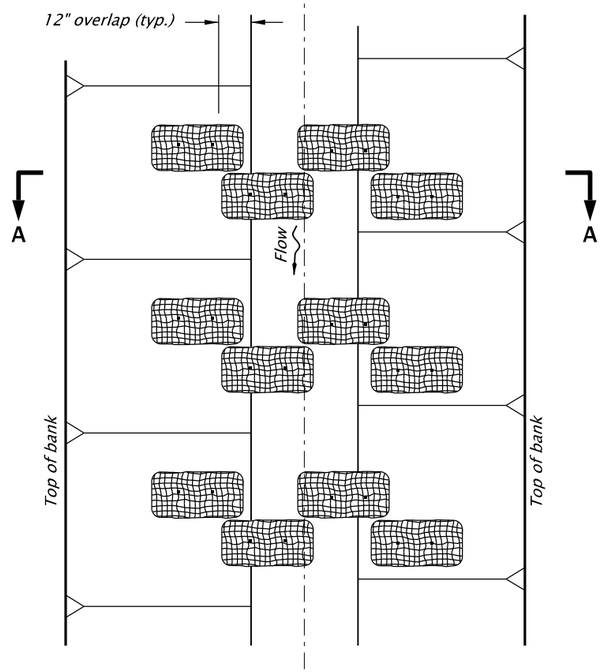
SANDBAG CHECK DAM - TYPE 4

NOT TO SCALE

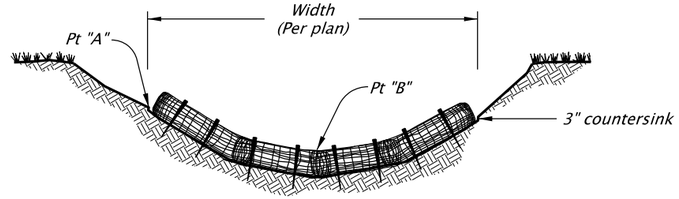
MAXIMUM CHECK DAM SPACING "L"				
Ditch Grade	H=8"	H=12"	H=18"	H=24"
10%	* *	* *	15'	20'
9%	* *	* *	16'	22'
8%	* *	* *	18'	25'
7%	* *	* *	21'	28'
6%	* *	16'	25'	33'
5%	* *	20'	30'	40'
4%	16'	25'	37'	50'
3%	22'	33'	50'	66'
2%	33'	50'	75'	100'

* * Not allowed H = Min. dam height

NOTES:
1. Type 3 - stake biofilter bags with two 2"x2"x18" (minimum) wood stakes per bag. Drive stakes a minimum of 6" into the ground and flush with the top of the bags. Omit stakes if placed over paved surfaces. Overlap bags 12" minimum at each joint.
2. Type 4 - Tightly abut or overlap ends of sandbags at each joint.
3. Spacing between check dams for all check dam types shall comply with the typical profile section shown above.



PLAN



SECTION A-A

BIOFILTER BAG CHECK DAM - TYPE 3

NOT TO SCALE

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

CHECK DAMS TYPE 1, 3 AND 4

2024

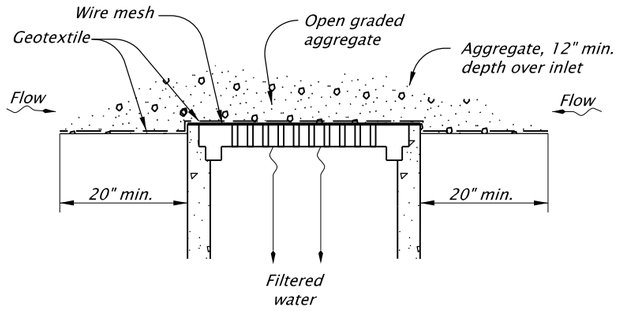
DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

CALC. BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1005**

20-JAN-2021

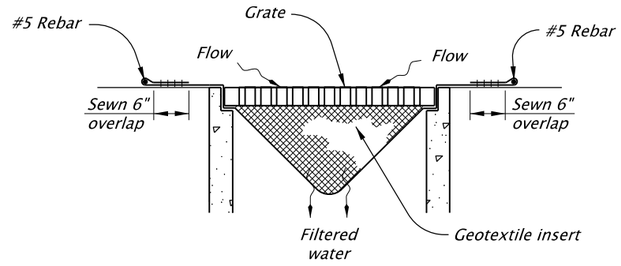
RD1005.dgn

Effective Date: December 1, 2023 - May 31, 2024



GEOTEXTILE/WIRE MESH/AGGREGATE - TYPE 2

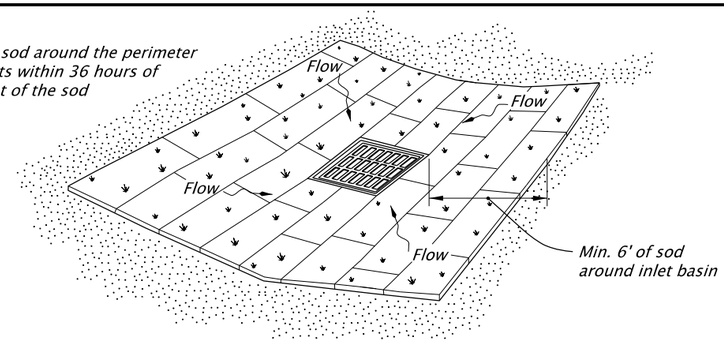
NOT TO SCALE



PREFABRICATED FILTER INSERT - TYPE 3

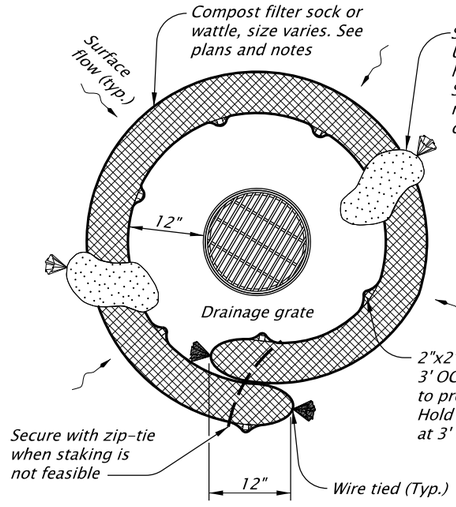
NOT TO SCALE

NOTE:
Install sod around the perimeter of inlets within 36 hours of harvest of the sod

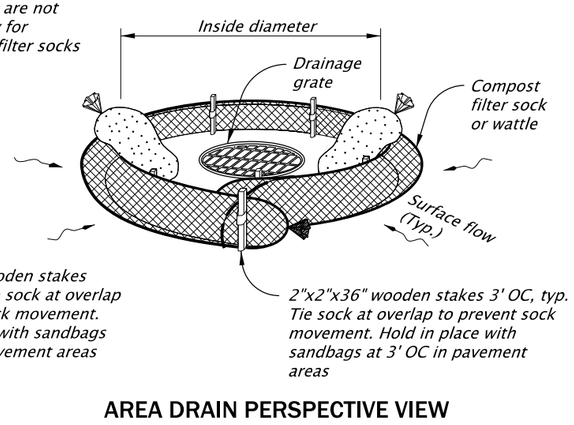


SOD PROTECTION - TYPE 6

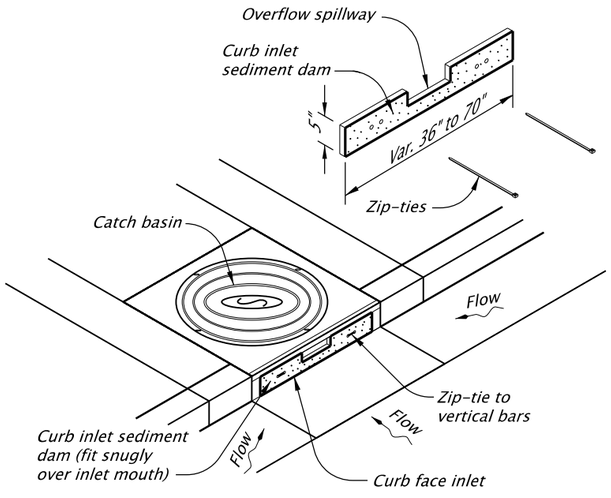
NOT TO SCALE



AREA DRAIN PLAN

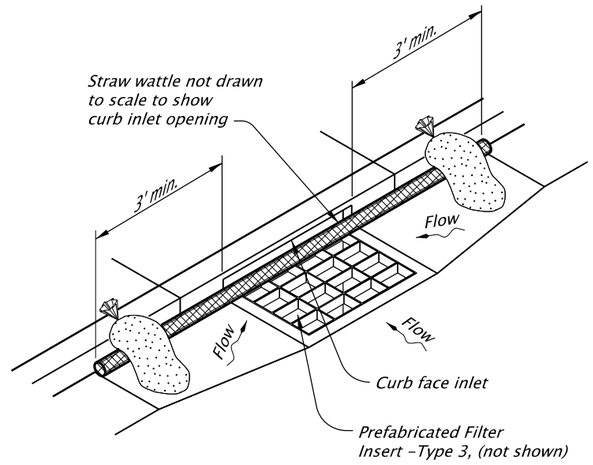


AREA DRAIN PERSPECTIVE VIEW



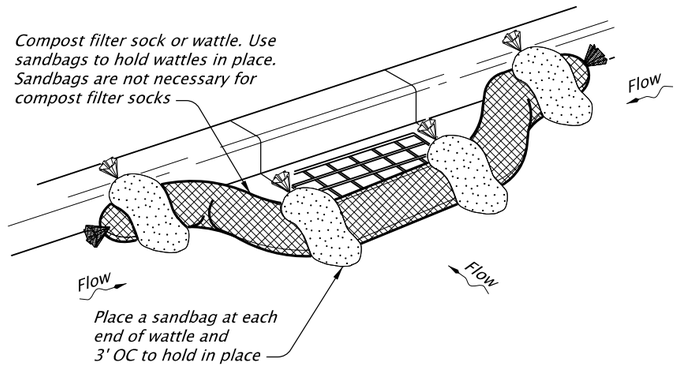
CURB INLET SEDIMENT DAM - TYPE 10

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.

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

INLET PROTECTION TYPE 2, 3, 6, 7, 10 AND 11

2024

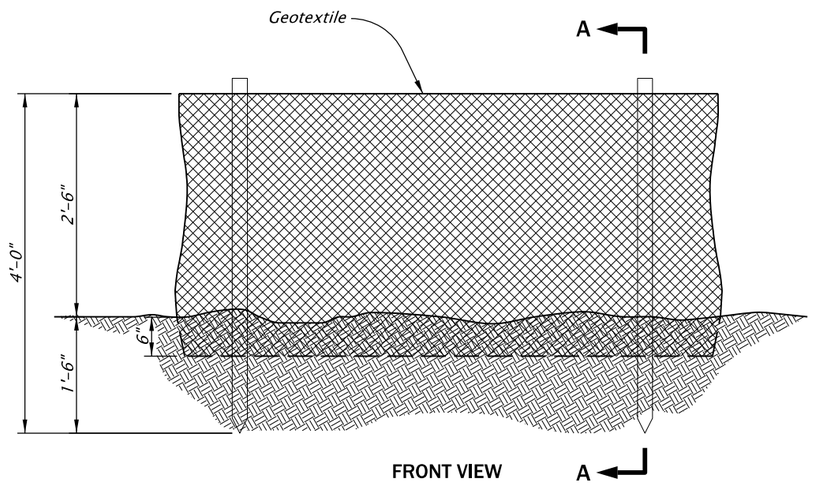
DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS
01-2021	MOVED NOTES UP FROM OVERLAPPING THE SHEET BORDER

CALC. BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1010**

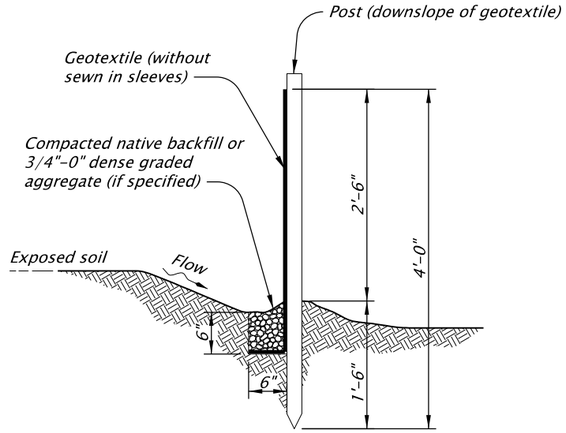
Effective Date: December 1, 2023 - May 31, 2024

20-JAN-2021

RD1010.dgn



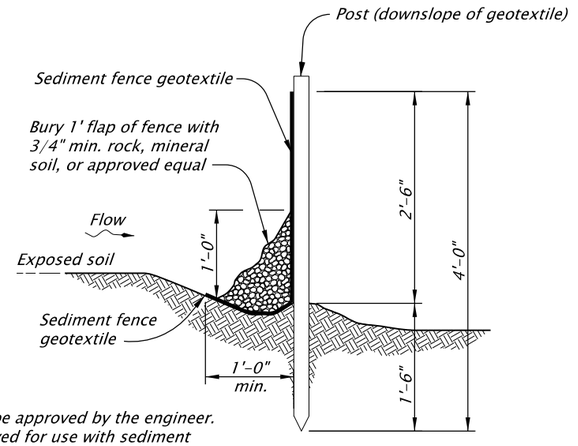
FRONT VIEW



SECTION A-A

SEDIMENT FENCE AND GEOTEXTILE BURY DETAIL - TYPE 1

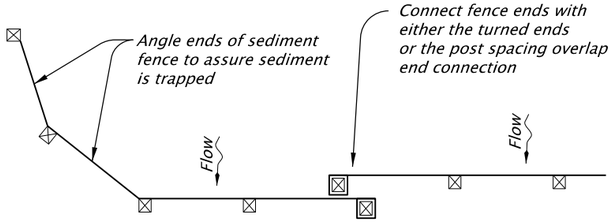
NOT TO SCALE



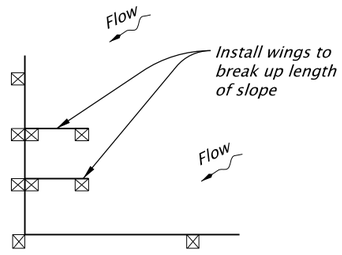
NOTES:
1. Use must be approved by the engineer.
2. Not approved for use with sediment fencing with sewn-in post sleeves.

ALTERNATE SEDIMENT FENCE WITHOUT TRENCHING - TYPE 2

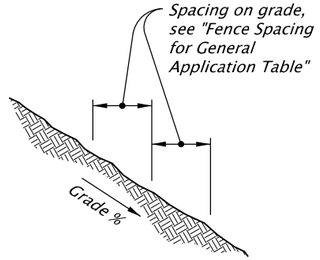
NOT TO SCALE



PLAN VIEW



TERMINATION AT CORNER OR PROPERTY LINE



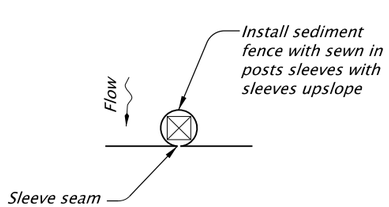
GENERAL NOTES:
1. Use 2"x2" wood fence posts.
2. Posts to be installed on downhill side of sediment fence geotextile. Position posts to prevent separation from geotextile.
3. Compact filter fabric trench backfill and soil on uphill side of fence.
4. Locate fence no closer than three feet to the toe of a slope.
5. Wing spacing shall comply with "Fence Spacing for General Application Table".

FENCE SPACING FOR GENERAL APPLICATION TABLE

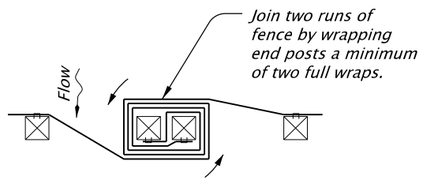
INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS	
GRADE	MAXIMUM SPACING ON GRADE
Grade < 10%	300'
10% ≤ Grade < 15%	150'
15% ≤ Grade < 20%	100'
20% ≤ Grade < 30%	50'
30% ≤ Grade	25'

POST SPACING TABLE

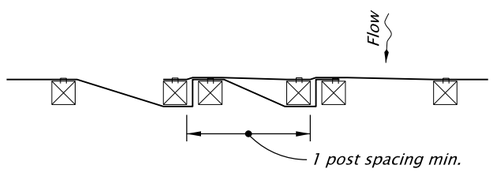
6'	Sediment Fence with Geotextile elongation less than 50%
4'	Sediment Fence with Geotextile elongation 50% or more



GEOTEXTILE WITH POST SLEEVES



TURNED ENDS CONNECTION



POST SPACING OVERLAP CONNECTION

GEOTEXTILE END CONNECTIONS

NOT TO SCALE

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

SEDIMENT FENCE

2024

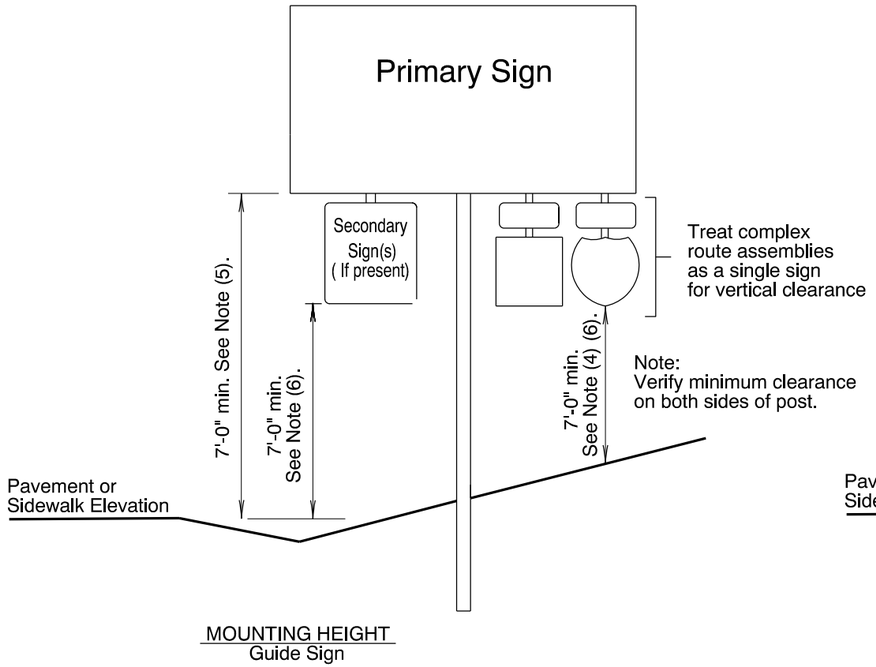
DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

CALC. BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1040**

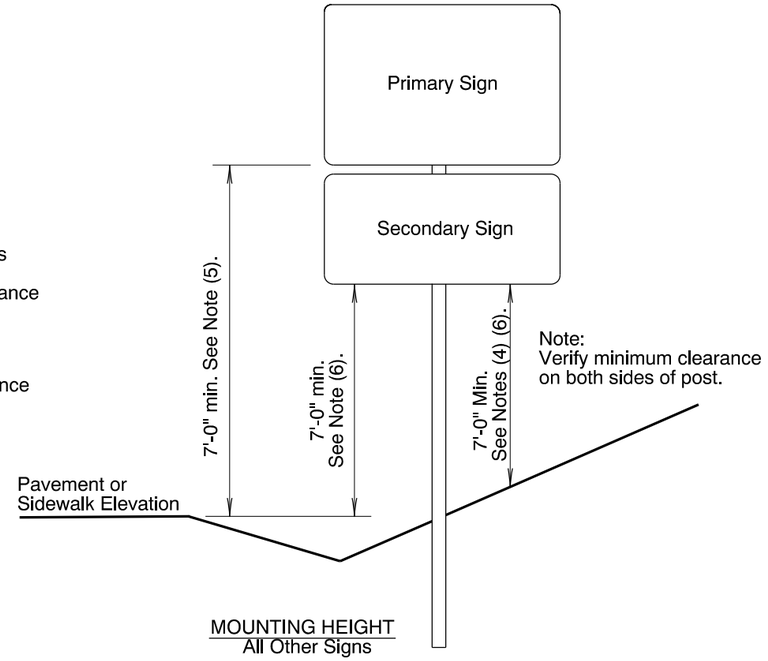
Effective Date: December 1, 2023 - May 31, 2024

07-JAN-2022

TM200.dgn



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.

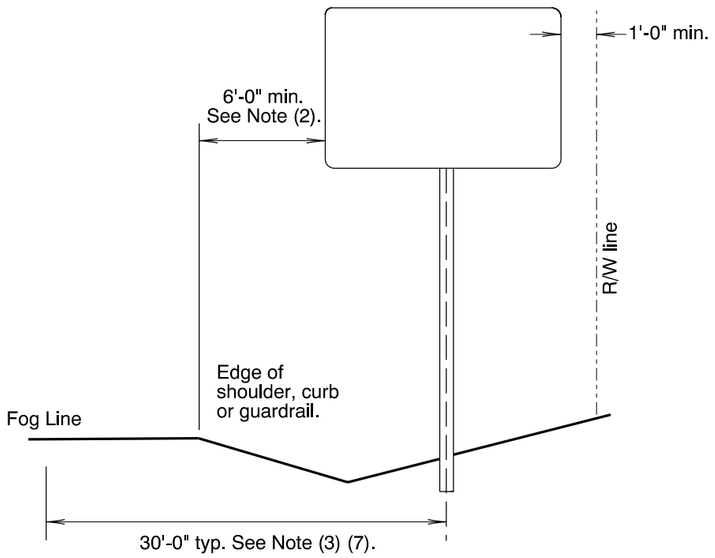
d. For perforated steelsquare tube support details see Dwg. No. TM681.

e. For triangular base breakaway support details see Dwg. No. TM602.

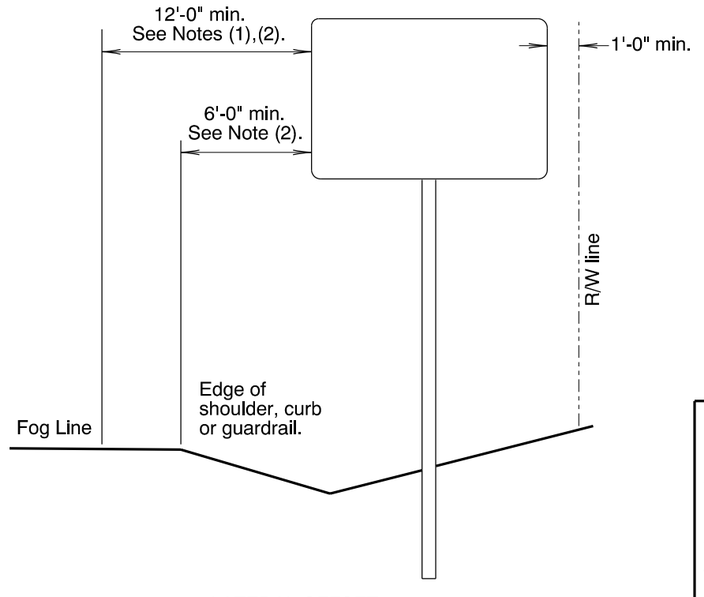
f. For multi-post breakaway support details see Dwg. No. TM600.

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.

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

SIGN INSTALLATION DETAILS

2024

DATE	REVISION DESCRIPTION
01/22	Edited elevation text in Mounting Height details

CALC. BOOK NO. N/A | SDR DATE 07 JAN 2022 | **TM200**

Effective Date: December 1, 2023 - May 31, 2024

07-01-2020

TM500.dgn

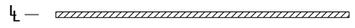
W

4" WHITE LINE

W-2

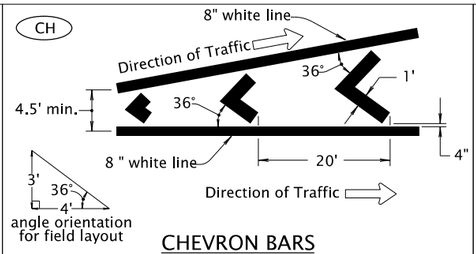
8" WHITE LINE

Y



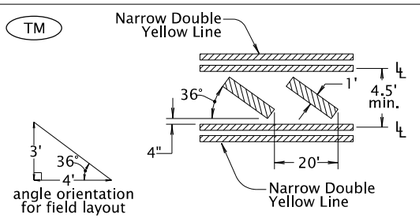
4" YELLOW LINE

CH



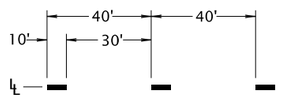
CHEVRON BARS
1' WHITE BARS AT 20' SPACING

TM



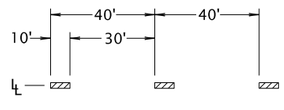
TRANSVERSE MEDIAN BARS
1' YELLOW BARS AT 20' SPACING

WB



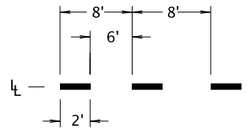
4" WHITE BROKEN LINE

YB



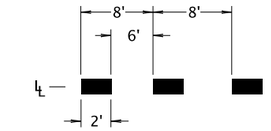
4" YELLOW BROKEN LINE

WD



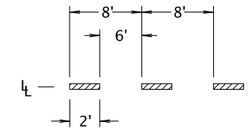
4" WHITE DOTTED LINE
For lane extensions

WD-2



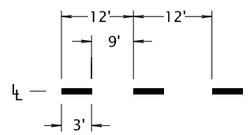
8" WHITE DOTTED LINE
For lane extensions and bike lane extensions

YD



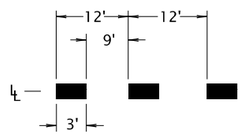
4" YELLOW DOTTED LINE
For lane extensions

DLL



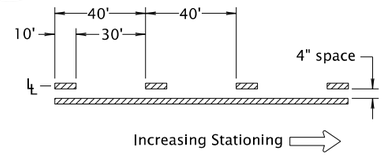
4" WHITE DOTTED LANE LINE
For lane lines in acceleration/deceleration lanes

DLL-2



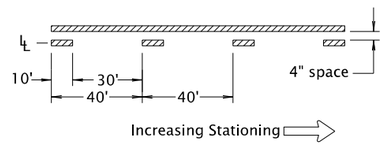
8" WHITE DOTTED LANE LINE
For lane lines in drop lanes

NPR



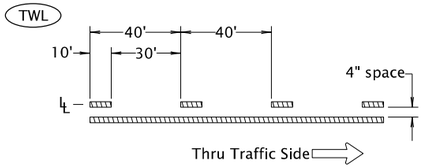
NO-PASS RIGHT
4" YELLOW LINES

NPL



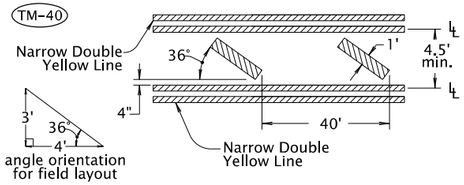
NO-PASS LEFT
4" YELLOW LINES

TWL



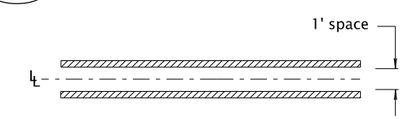
TWO-WAY LEFT TURN
4" YELLOW LINES

TM-40



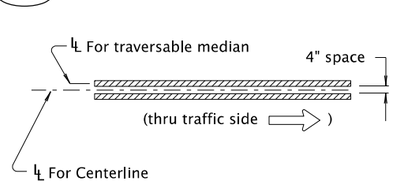
TRANSVERSE MEDIAN BARS
1' YELLOW BARS AT 40' SPACING
For use at painted medians where
distance between left turn refuges exceeds 200'

D



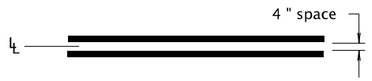
DOUBLE NO-PASS
TWO 4" YELLOW LINES

ND



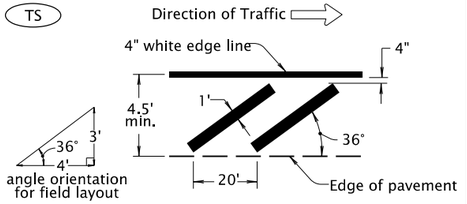
NARROW DOUBLE NO-PASS
TWO 4" YELLOW LINES

NDW



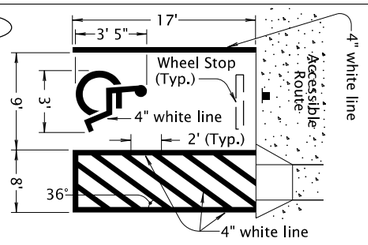
NARROW DOUBLE NO-LANE CHANGE
TWO 4" WHITE LINES

TS



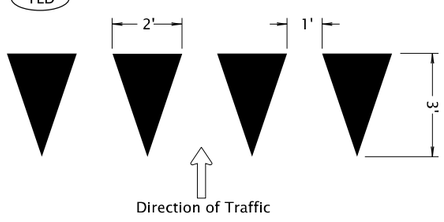
TRANSVERSE SHOULDER BARS
1' WHITE BARS AT 20' SPACING

HC



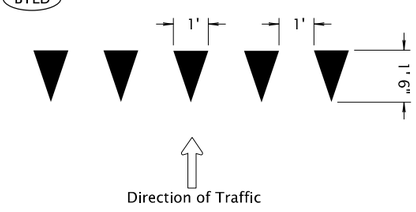
DISABLED PARKING DETAIL (white)

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

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with
the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

PAVEMENT MARKING STANDARD DETAIL BLOCKS

2024

DATE	REVISION DESCRIPTION
07-2020	Changed Min. widths for CH, TM, TM-40, and TS

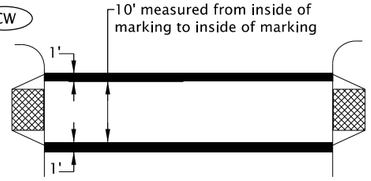
CALC. BOOK NO. N/A | SDR DATE 07-01-2020 | **TM500**

Effective Date: December 1, 2023 - May 31, 2024

07-08-2022

TM503.dgn

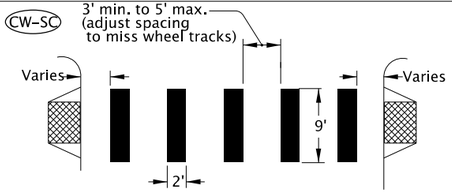
CW



STANDARD CROSSWALK
TWO 1' WHITE BARS

Install per Standard Drawing TM530

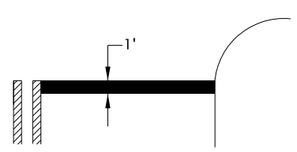
CW-SC



STAGGERED CONTINENTAL CROSSWALK
2' WHITE BARS

Install per Standard Drawing TM530

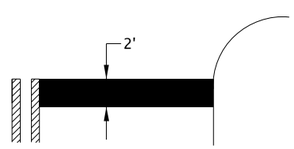
S



STOP BAR
1' WHITE BAR

Install per Standard Drawing TM530

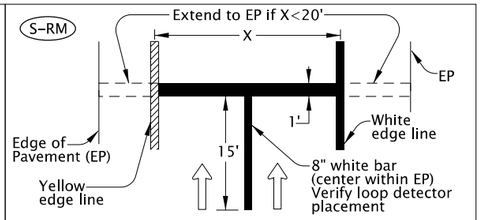
S-2



STOP BAR - LARGE
2' WHITE BAR

Install per Standard Drawing TM530

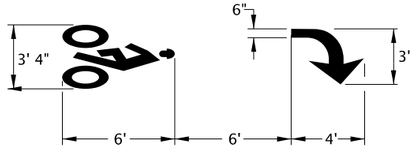
S-RM



RAMP METER STOP BAR
1' & 8" WHITE BARS

For multi-lane ramp meter applications

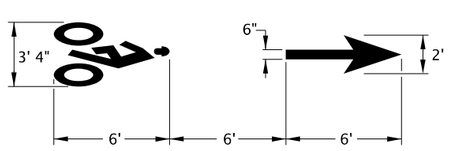
BR



BIKE RIGHT TURN STENCIL (white)

Center marking within lane width
For proportion details, see current version of Standard Highway Signs

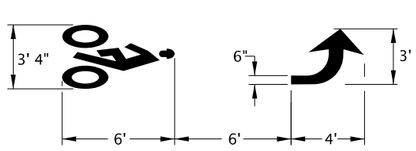
BS



BIKE LANE STANDARD STENCIL (white)

Center marking within lane width
For proportion details, see current version of Standard Highway Signs

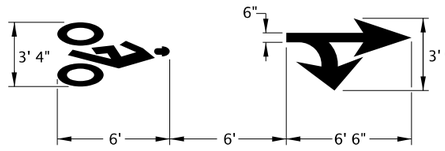
BL



BIKE LEFT TURN STENCIL (white)

Center marking within lane width
For proportion details, see current version of Standard Highway Signs

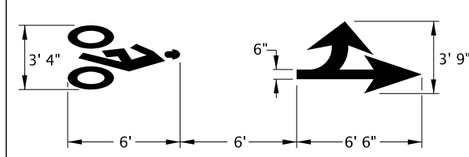
BRS



BIKE RIGHT TURN STRAIGHT STENCIL (white)

Center marking within lane width
For proportion details, see current version of Standard Highway Signs

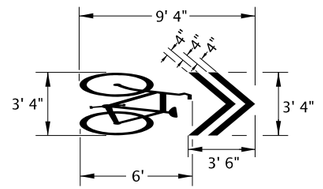
BLS



BIKE LEFT TURN STRAIGHT STENCIL (white)

Center marking within lane width
For proportion details, see current version of Standard Highway Signs

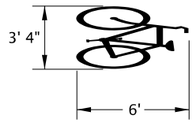
SLM



SHARED LANE MARKING (white)

Center marking within lane width or as shown
For proportion details, see current version of Standard Highway Signs

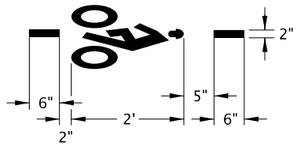
B



BIKE STENCIL (white)

Used for Intersection Bicycle Box applications
Place marking within bicycle box, ceneterd with motor vehicle lane width

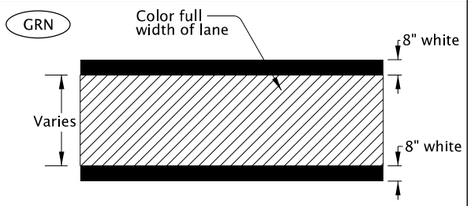
BD



BICYCLE DETECTOR MARKING (white)

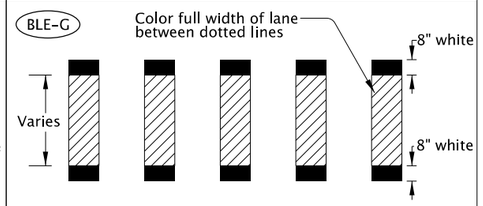
PLace Bicycle Detector Pavement Marking in optimum loction where bicycle acuates the traffic signal

GRN



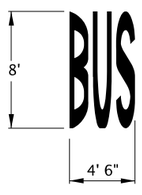
GREEN SUPPLEMENTAL BICYCLE LANE
SOLID LINE (green)

BLE-G



GREEN SUPPLEMENTAL BICYCLE LANE
DOTTED LINE EXTENSION (green)

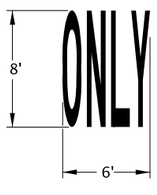
BUS



BUS (white)

Center marking within lane width
For letter proportion details, see current version of Standard Highway Signs

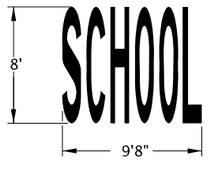
ON



ONLY (white)

Center marking within lane width
For letter proportion details, see current version of Standard Highway Signs

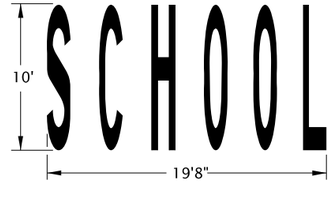
SCH



SCHOOL (white)

Center marking within lane width
For letter proportion details, see current version of Standard Highway Signs

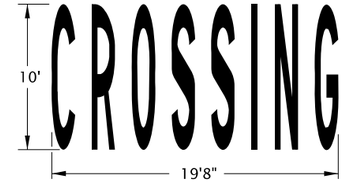
SCH-LG



SCHOOL - LARGE (white)

Center marking within width of two lanes
For letter proportion details, see current version of Standard Highway Signs

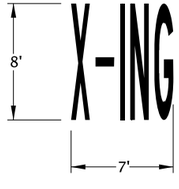
CRS-LG



CROSSING - LARGE (white)

Center marking within width of two lanes
For letter proportion details, see current version of Standard Highway Signs

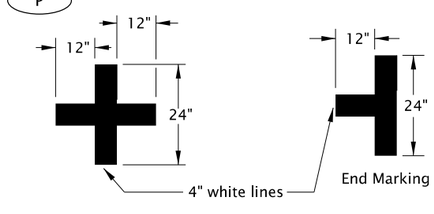
XNG



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 Trave

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

PAVEMENT MARKING STANDARD DETAIL BLOCKS

2024

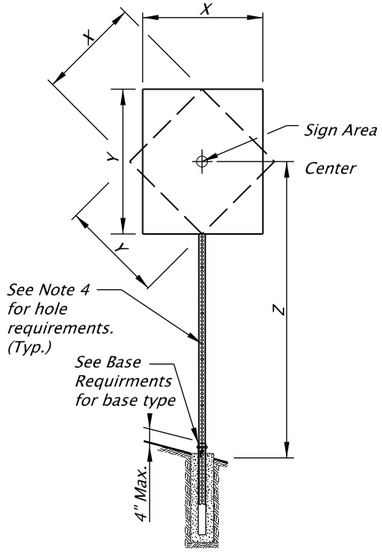
DATE	REVISION DESCRIPTION
07-2022	Added note for measurement of Standard Crosswalk

CALC. BOOK NO. N/A

SDR DATE 07-08-2022

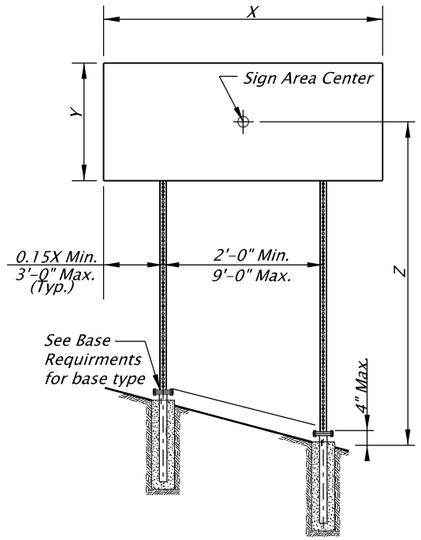
TM503

Effective Date: December 1, 2023 - May 31, 2024



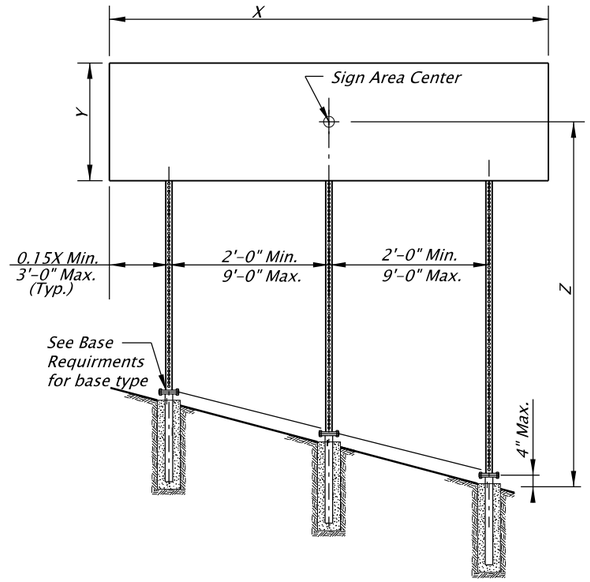
SINGLE POST ELEVATION

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 $^{7}/_{16}$" 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

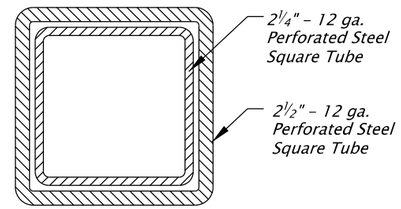
TEMPORARY PERFORATED STEEL SQUARE TUBE TABLE

* - 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

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

PERFORATED STEEL SQUARE TUBE (PSST) SIGN SUPPORT INSTALLATION

2024

DATE	REVISION DESCRIPTION

CALC. BOOK NO. 5752 | SDR DATE 10-JUL-2017 | TM681

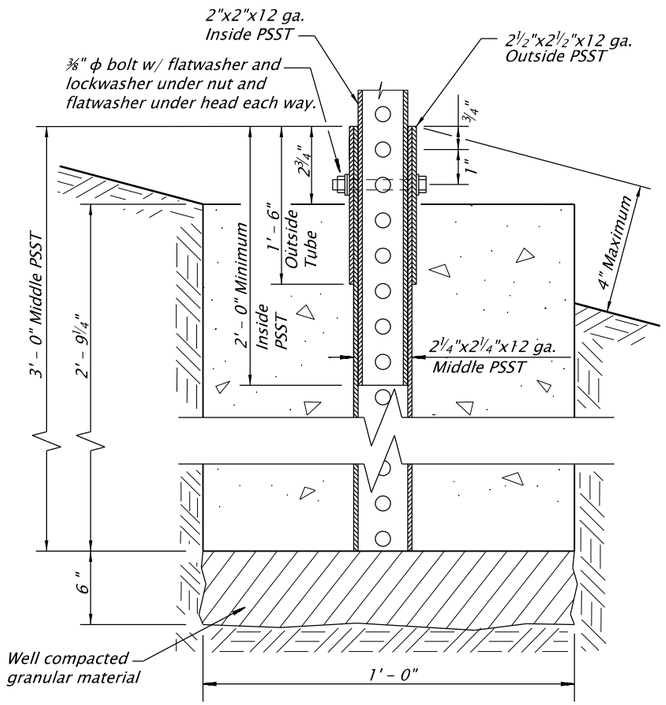
Effective Date: December 1, 2023 - May 31, 2024

10-JUL-2020

TM681.dgn

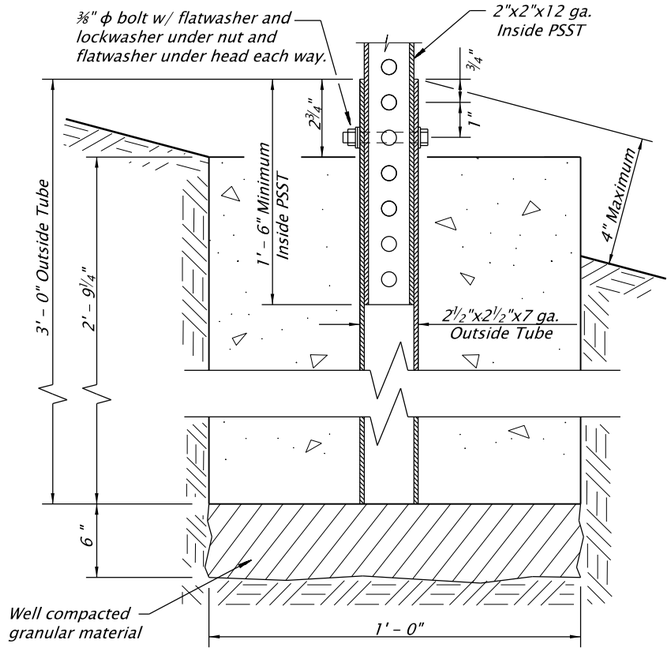
10-JUL-2020

TM687.dgn



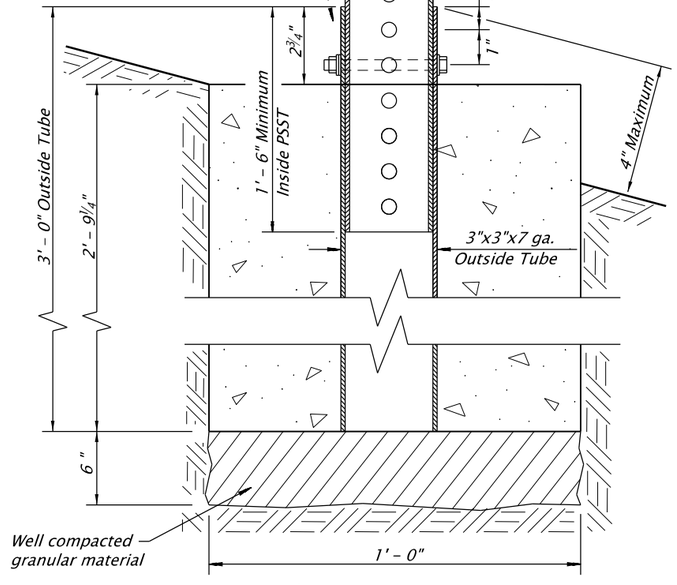
2" ANCHOR DETAIL

No scale



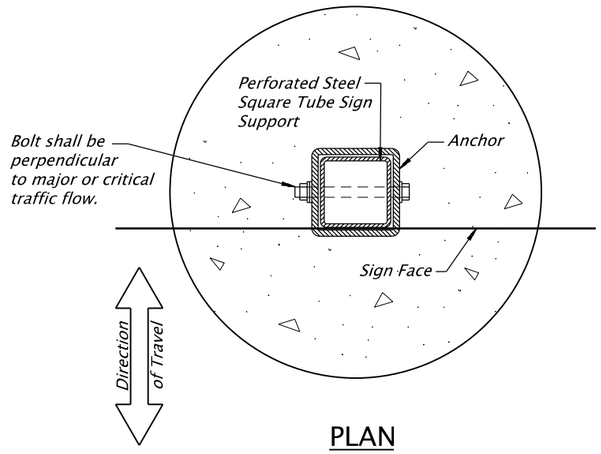
2" OPTIONAL ANCHOR DETAIL

No scale



2½" ANCHOR DETAIL

No scale



PLAN

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.*

Accompanied by dwgs. TM681, TM688

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

PERFORATED STEEL SQUARE TUBE (PSST) ANCHOR FOUNDATION

2024

DATE	REVISION DESCRIPTION

CALC. BOOK NO. 5752 | SDR DATE 06-JAN-2012 | **TM687**

Effective Date: December 1, 2023 - May 31, 2024

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

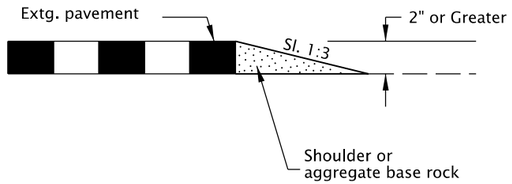
MINIMUM LENGTHS TABLE					
"L" VALUE FOR TAPERS (ft)					BUFFER "B" (ft)
★ SPEED (mph)	W = Lane or Shoulder Width being closed or shifted				
	W ≤ 10	W = 12	W = 14	W = 16	
25	105	125	145	165	75
30	150	180	210	240	100
35	205	245	285	325	125
40	265	320	375	430	150
45	450	540	630	720	180
50	500	600	700	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

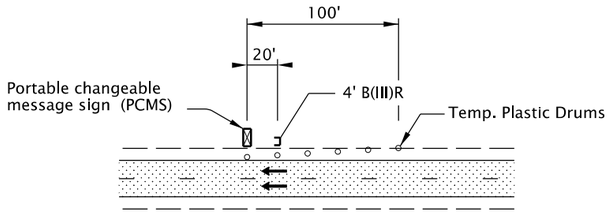
NOTES:
- Place traffic control devices on 10 ft. spacing for intersection and access radii.
- When necessary, sign spacing may be adjusted to fit site conditions. Limit spacing adjustments to 30% of the "A" dimension for all speeds.

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.



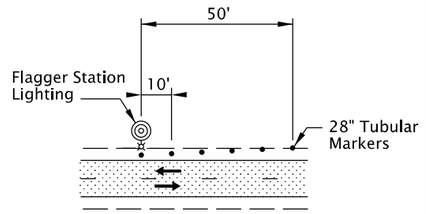
EXCAVATION ABRUPT EDGE

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



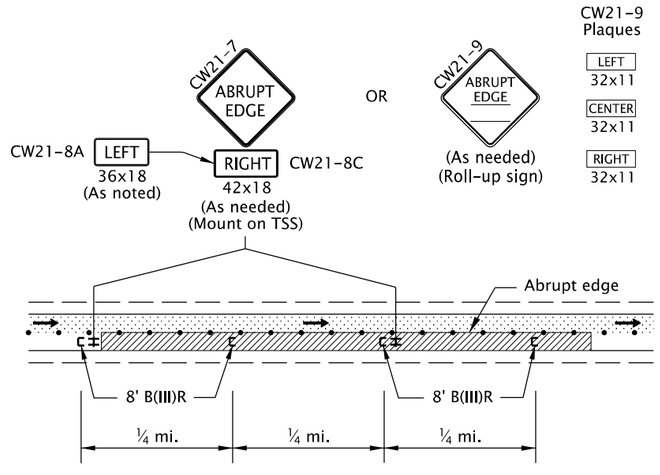
PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) INSTALLATION

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 fluorescent 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.
- Coordinate and control pedestrian movements through a Temporary Accessible Route using Flaggers, Traffic Control Measures, or as directed.
- 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

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

TABLES, ABRUPT EDGE AND PCMS DETAILS

2024

DATE	REVISION DESCRIPTION
07-2022	Added a note for TPARs

CALC. BOOK NO. N/A | SDR DATE 01-JUL-2022 | **TM800**

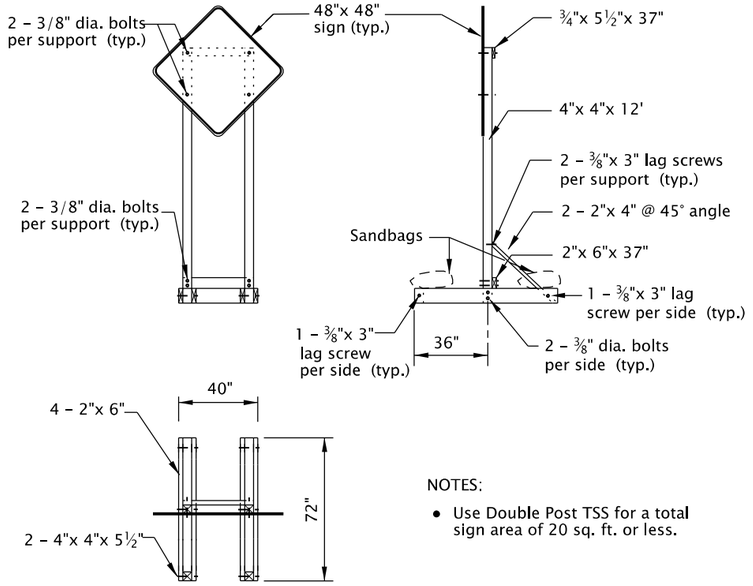
01-JUL-2022

TM800.dgn

Effective Date: December 1, 2023 – May 31, 2024

14-JUL-2023

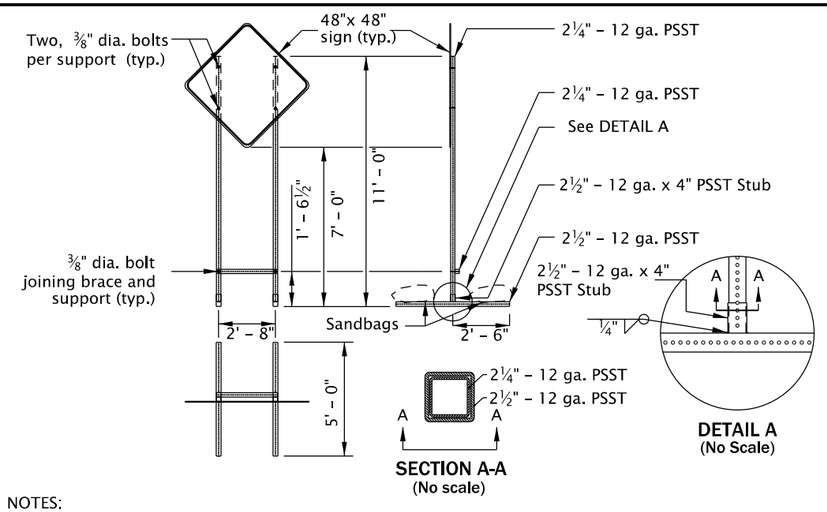
TM821.dgn



NOTES:

- Use Double Post TSS for a total sign area of 20 sq. ft. or less.

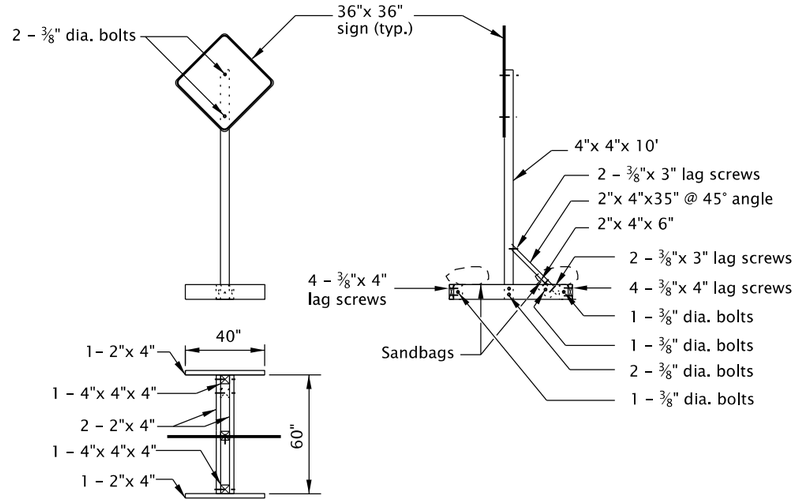
DOUBLE POST DETAIL



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.

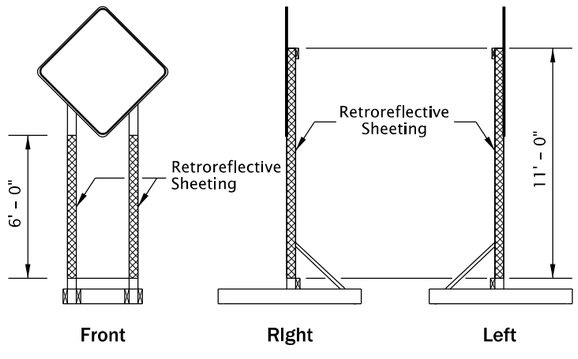
PERFORATED STEEL SQUARE TUBE (PSST) DETAIL



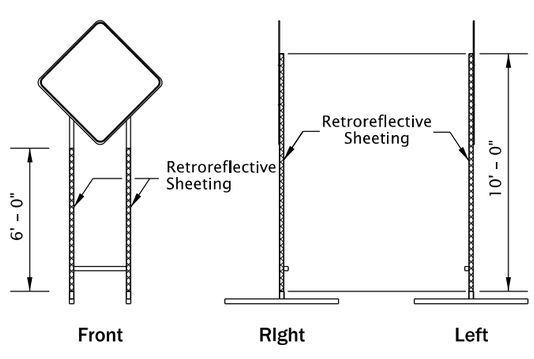
NOTES:

- 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.

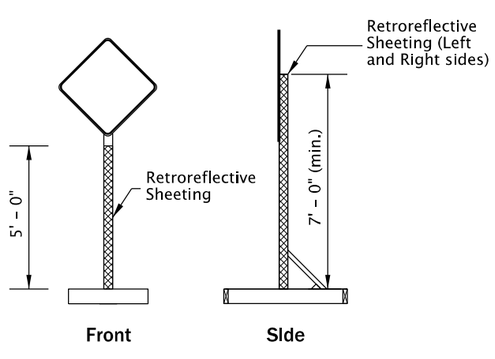
SINGLE POST DETAIL



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 not in use, locate TSS as far from Public Traffic as practicable and turn away from traffic, or cover the sign. Do not cover reflective sheeting on the TSS posts.
- 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

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

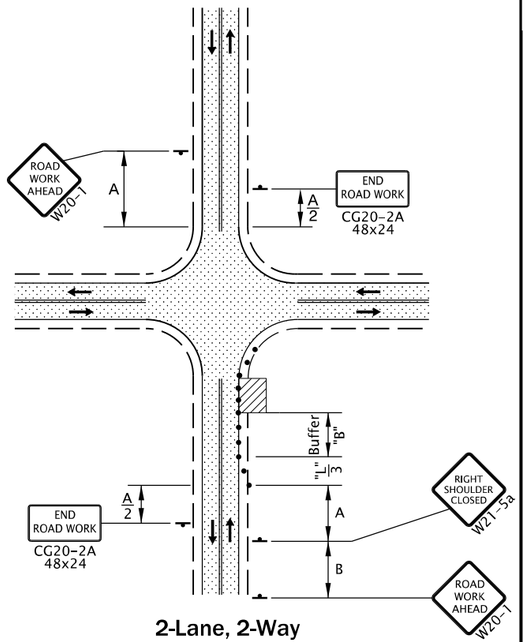
TEMPORARY SIGN SUPPORTS

2024

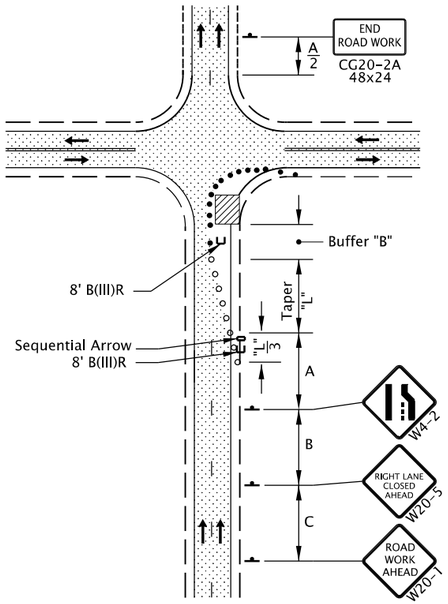
DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | TM821

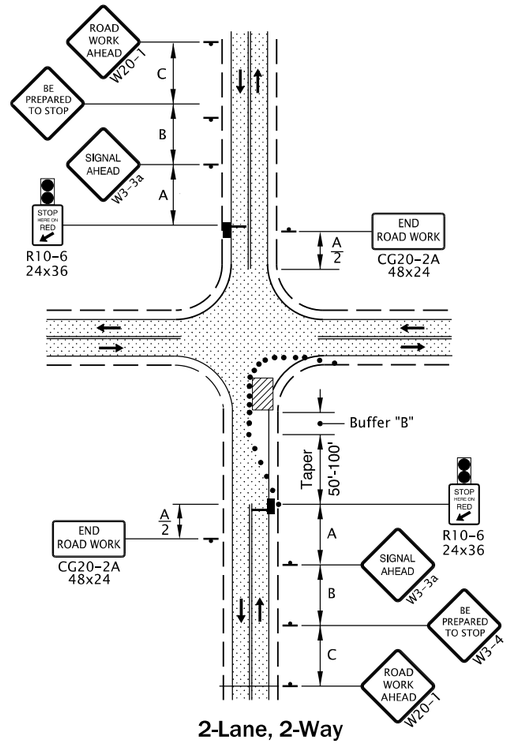
Effective Date: December 1, 2023 – May 31, 2024



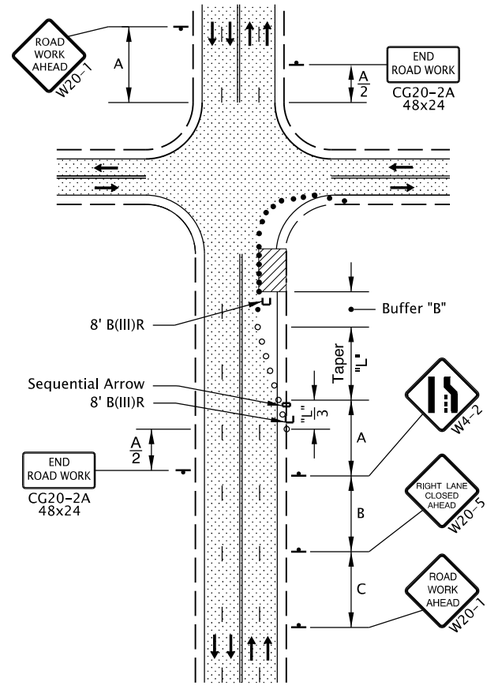
2-Lane, 2-Way
SHOULDER CLOSURE



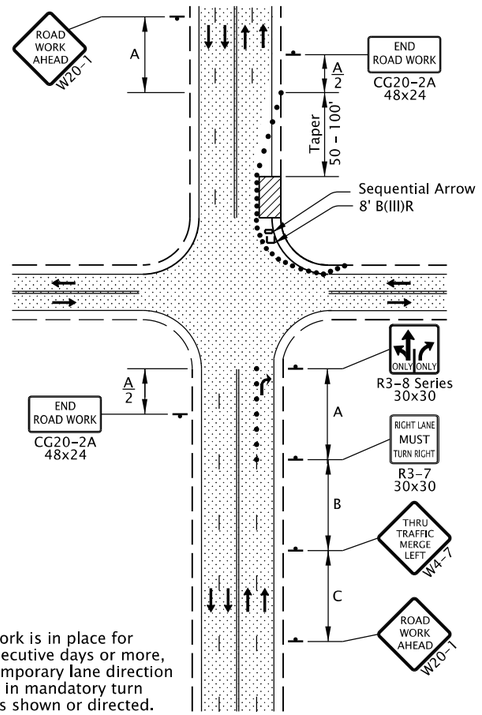
2-LANE, 1-WAY
RIGHT LANE CLOSURE



2-Lane, 2-Way
ONE LANE CLOSURE

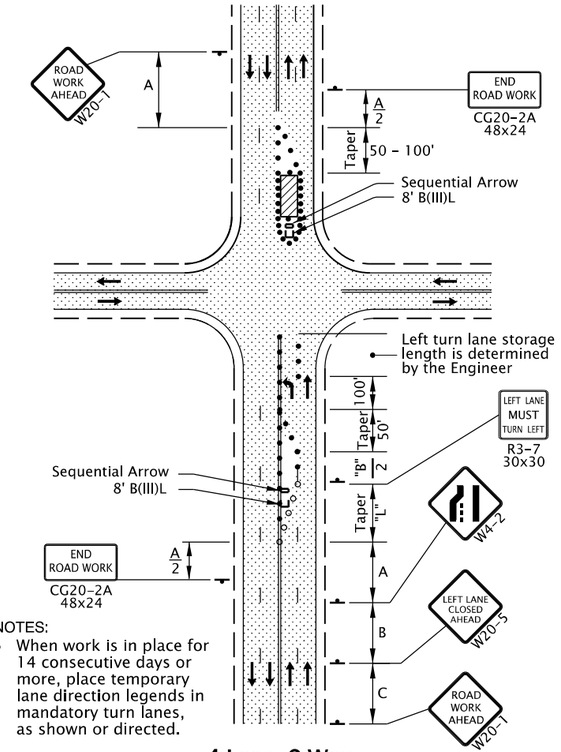


4-Lane, 2-Way
RIGHT LANE CLOSURE, NEAR SIDE



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 "SIGNAL AHEAD" (W3-3a) sign may be substituted with the signal ahead symbol (W3-3) 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, TM82, TM840 & TM854.

Automated Flagging Assistance Device (AFAD)

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

INTERSECTION WORK ZONE DETAILS

2024

DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | SDR DATE 01-JUL-2022 | **TM841**

Effective Date: December 1, 2023 - May 31, 2024