



ADDENDUM NO. 1

S CENTURY DR/HUNTINGTON RD INTERSECTION IMPROVEMENTS

The Bidding Documents for the S CENTURY DR/HUNTINGTON RD INTERSECTION IMPROVEMENTS project are amended as follows:

PROJECT PLANS

- ***Append the attached plan sheets to the Bidding Plans.***

The Bidding Documents for the S CENTURY DR/HUNTINGTON RD INTERSECTION IMPROVEMENTS project are amended as described above.

Cody Smith, PE
County Engineer/Assistant Director

9/12/2025
Date

THIS ADDENDUM, EXCLUDING ATTACHMENTS, SHALL BE SIGNED AND SUBMITTED WITH THE BID PROPOSAL BY THE BIDDER.

I acknowledge receipt of Addendum No. 1.

BIDDER NAME

SIGNATURE OF BIDDER

Date

SIGN & POST DATA TABLE

SIGN NO.	SIGN LOCATION 4/ (TM200-TM201, TM635)	SIGN DIMENSIONS		SUB-STRATE		COLOR 1 /				LEGEND	SIGN NO. 2 /	TYPE OF SUPPORT																	POST		FOOTING		REMARKS
						BACKGROUND	LEGEND					WOOD POST (TM670-TM671,TM676) SQ. TUBE SIGN SUPPORT (TM671, TM676, TM681, TM687-TM688) TRIANGULAR BASE BREAKAWAY (TM602) H - FRAME (TM602) MULTI-POST BREAKAWAY (TM220, TM600-TM601) STAINLESS STEEL CLAMP (SSC) (TM677) SIGNAL POLE MOUNT (TM680) MAST ARM SIGN MOUNT (TM679) BRIDGE STRUCTURE MOUNT (Refer to Bridge Drawing) CANTILEVER 1 BUTTERFLY (Refer to Bridge Drawing) SIGN BRIDGE (Refer to Bridge Drawing) EXIT NUMBER SIGN SUPPORT (TM220, TM225) ROUTE MARKER FRAME (TM678) MILE POST MARKER POST (TM221-TM222) CROSSWALK CLOSURE SUPPORT (TM240) VERTICAL SIGN MOUNTS ON EXISTING STRUCTURES CUSTOM VARIABLE SUPPORT C 4X5.4 C 4X7.25 LENGTH	SIZE	LENGTH	LOCATION 3/ (DISTANCE FROM TRAVEL LANE UNLESS OTHERWISE NOTED)	MIN. DEPTH 5 /																	
		ASTM TYPE III or TYPE IV	ASTM TYPE IX OR TYPE XI	ASTM TYPE III or TYPE IV	ASTM TYPE IX OR TYPE XI		NON-REFLECTIVE	PERMANENT	DEMOUNTABLE (TM230-TM233)																								
3	"C" 12+02.34	(24")	(36")								3		✓																2 1/2" x 12GA	14'	13'	3'-0"	Slip Base, Re-Install Existing Sign on New Post
3	"C" 18+19.91	(24")	(36")								3		✓																2 1/2" x 12GA	14'	13'	3'-0"	Slip Base, Re-Install Existing Sign on New Post
5	"H" 49+89.59	(30")	(30")								5		✓																2 1/2" x 12GA	14'	14'	3'-0"	Slip Base, Re-Install Existing Sign on New Post
7	"C" 9+99.51	(24")	(30")								7		✓																2 1/2" x 12GA	14'	13'	3'-0"	Slip Base, Re-Install Existing Sign on New Post
7a	-	(24")	(18")								7a																						Mount Below Sign #7
101	"C" 14+70.23	60"	24"	✓		W			BK	✓	101		✓																2 1/2" x 12GA	14'	18'	3'-0"	Slip Base
101	"C" 15+25.99	60"	24"	✓		W			BK	✓	101		✓																2 1/2" x 12GA	14'	18'	3'-0"	Slip Base
101	"H" 53+70.41	60"	24"	✓		W			BK	✓	101		✓																2 1/2" x 12GA	14'	18'	3'-0"	Slip Base
102	"C" 14+16.20	36"	31.2"	✓		R		W		✓	102		✓																2 1/2" x 12GA	13'	16'	3'-0"	Slip Base
102	"C" 15+83.12	36"	31.2"	✓		R		W		✓	102		✓																2 1/2" x 12GA	13'	16'	3'-0"	Slip Base
102	"H" 53+17.43	36"	31.2"	✓		R		W		✓	102																		2 1/2" x 12GA	13'	16'	3'-0"	Slip Base
103	"C" 12+91.66	24"	30"	✓		W			BK	✓	103		✓																2 1/2" x 12GA	12'	3'	3'-0"	Slip Base; Location measured from the face of curb
103	"C" 17+47.17	24"	30"	✓		W			BK	✓	103		✓																2 1/2" x 12GA	12'	3'	3'-0"	Slip Base; Location measured from the face of curb
103	"H" 51+04.51	24"	30"	✓		W			BK	✓	103		✓																2 1/2" x 12GA	12'	3'	3'-0"	Slip Base; Location measured from the face of curb
201	"C" 9+54.88	30"	30"	✓		Y			BK	✓	201		✓																2 1/2" x 12GA	16'	14'	3'-0"	Slip Base
201	"C" 20+77.15	30"	30"	✓		Y			BK	✓	201		✓																2 1/2" x 12GA	16'	14'	3'-0"	Slip Base
201	"H" 49+07.28	30"	30"	✓		Y			BK	✓	201		✓																2 1/2" x 12GA	16'	14'	3'-0"	Slip Base
202	"C" 11+37.86	48"	24"	✓		Y			BK	✓	202		✓																2 1/2" x 12GA	14'	14'	3'-0"	Slip Base
202	"H" 51+77.14	48"	24"	✓		Y			BK	✓	202		✓																2 1/2" x 12GA	14'	14'	3'-0"	Slip Base
301	"C" 14+23.51	5'-6"	1'-6"	✓		G		W		✓	301		✓																2 1/2" x 12GA	15'	5'	3'-0"	Slip Base; Location measured from the face of curb

1/
 BK=BLACK
 BL=BLUE
 BR=BROWN
 FY=FLUORESCENT YELLOW
 G=GREEN
 O=ORANGE
 P=PURPLE
 R=RED
 RB=RED-BLUE
 W=WHITE
 Y=YELLOW
 YG=FLUORESCENT YELLOW-GREEN

2/

**NOTE: L,C,R ARE LOCATIONS
OF POSTS FACING THE SIGN.**

L = LEFT POST

C = CENTER POST

R = RIGHT POST

3/

**DISTANCE FROM EDGE OF TRAVEL LANE,
FACE OF CURB, GUARDRAIL, OR BARRIER
TO THE CENTERLINE OF FOOTING. FOR
ADDITIONAL INFORMATION SEE STANDARD
DRAWINGS TM600, TM602, AND TM635**

4/
NOTE: THE LOCATIONS SHOWN ARE APPROXIMATE
EXCEPT FOR SPEED ZONES, SCHOOL ZONES, OBJECT
MARKERS AND MILEPOST MARKERS. EXACT LOCATIONS
ARE TO BE DETERMINED BY THE ENGINEER

2/
MINIMUM DEPTH OF FOOTING FOR TRIANGULAR
BASE BREAKAWAY AND MULTI-POST BREAKAWAY
INSTALLATIONS IS FOR A 2' DIAMETER FOOTING.
FOR ADDITIONAL INFORMATION SEE STANDARD
DRAWINGS TM601 AND TM602.

▷	REVISIONS	DATE	BY	DESIGNED AXG
				DRAWN AXG
				CHECKED SGB
				APPROVED

ONE INCH AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

FILE NAME

JOB No.
KAI PN 29922

DATE
07/23/2025



PROJECT NAME


S CENTURY DR/HUNTINGTON RD INTERSECTION IMPROVEMENTS

DESCHUTES COUNTY, OREGON

SIGN AND POST DATA TABLE

DRAWING NO.
41 OF 46

C11.5

DRAWING NO. 42 OF 46	
C11.6	

LEGEND

- JB

1

Install junction box provided by Midstate Electric Cooperative.
- N

Midstate Electric Cooperative to install metal light pole and luminaire.
- PL

Install poly pull line (500# minimum strength).
- S

Install (S) inch electrical grade sch 40 PVC conduit.
- FDN

MEC

Install Midstate Electric Cooperative approved street light foundation. See detail on sheet C12.1.

GENERAL NOTES

1. Junction boxes, and conduit shall be installed at locations shown on plans. If conflicts arise, junction box, and conduit locations may be modified in the field per engineer's approval. All lighting equipment must be placed within the right-of-way. Place conduit in same trench as other conduits whenever possible.
2. Final light pole location(s) shall be approved in the field by the engineer prior to foundation installation.
3. Location of all existing utilities shall be verified prior to beginning any work. Coordinate all work with utility companies to eliminate conflicts.
4. All proposed street lighting conduits, pull ropes and street light foundations shall be furnished and installed by contractor per Midstate Electric Cooperative requirements.
5. All street light poles, luminaire arms, luminaires, lamps, and wiring shall be furnished and installed by Midstate Electric Cooperative. All junction boxes shall be provided by Midstate Electric Cooperative and installed by the contractor.
6. All conduit elbows shall be factory made and be long radius 36". For conduit runs longer than 150' or containing more than 270 degrees of bends, elbows shall be fiberglass.
7. Contractor to coordinate with Midstate Electric Cooperative ten (10) business days in advance of commencing illumination work. Contact James Guilford (541) 536-7298.
8. All conduit runs shall be approved by Midstate Electric Cooperative before backfill.
9. Light levels are based on ANSI/IES RP-8-18, Design and Maintenance of Roadway and Parking Facility Lighting criteria and the most recent applicable Deschutes County and ODOT Standards.
10. Conduit runs and junction box locations shown are schematic. Place junction boxes in a flat area (<2%), accessible to maintenance personnel.

SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		SIGN AND POST
		UTILITY POLE
		LIGHT POLE
		CABLE TV RISER
		RIGHT-OF-WAY LIMIT

STREET LIGHT POLE SCHEDULE

POLE NO.	STREET	STATION	OFFSET FROM ROADWAY CENTERLINE	OFFSET FROM EDGE OF PAVEMENT	LUMINAIRE ARM LENGTH (FT)	LAMP	LUMINAIRE MOUNTING HEIGHT* (FT)	TYPE	NOTES
1	S Century Drive	11+59.20	23.11' Rt.	5.0'	8'	LED	25'	IV	49 Watts
2	S Century Drive	12+38.13	24.98' Lt.	5.0'	8'	LED	25'	IV	49 Watts
3	S Century Drive	13+09.59	31.19' Rt.	5.0'	8'	LED	25'	IV	49 Watts
4	S Century Drive	13+87.94	39.49' Rt.	15.5'	8'	LED	25'	IV	49 Watts
5	S Century Drive	14+22.34	48.18' Lt.	15.5'	8'	LED	25'	IV	49 Watts
6	S Century Drive	14+27.87	50.09' Rt.	15.5'	8'	LED	25'	IV	49 Watts
7	S Century Drive	15+23.40	82.24' Lt.	15.5'	8'	LED	25'	IV	49 Watts
8	S Century Drive	15+65.92	58.30' Rt.	15.5'	8'	LED	25'	IV	49 Watts
9	S Century Drive	16+13.25	38.29' Lt.	15.5'	8'	LED	25'	IV	49 Watts
10	S Century Drive	16+90.38	31.83' Rt.	5.5'	8'	LED	25'	IV	49 Watts
11	S Century Drive	17+60.43	26.74' Lt.	8.0'	8'	LED	25'	IV	49 Watts
12	S Century Drive	18+44.11	20.01' Lt.	5.5'	8'	LED	25'	IV	49 Watts
13	Huntington Road	53+18.31	46.00' Lt.	15.5'	8'	LED	25'	IV	49 Watts
14	Huntington Road	53+02.10	39.60' Rt.	15.5'	8'	LED	25'	IV	49 Watts
15	Huntington Road	52+31.25	35.84' Lt.	15.5'	8'	LED	25'	IV	49 Watts
16	Huntington Road	51+43.86	25.57' Lt.	5.5'	8'	LED	25'	IV	49 Watts

*Luminaire mounting height is measured relative to the edge of pavement.

INTERSECTION LIGHT LEVEL SUMMARY

INTERSECTION	CLASSIFICATION		LIGHT LEVEL (fc)	UNIFORMITY (avg/min)	LIGHT LOSS FACTOR	BUG RATING
S Century Drive / Huntington Road	Major/Major	Target	≥ 1.0 fc	≤ 3.0 : 1	0.85	B2 U0 G2
		Design	1.0 fc	2.5 : 1		

ROADWAY LIGHT LEVEL SUMMARY

ROADWAY	CLASSIFICATION, PEDESTRIAN CONFLICT		LIGHT LEVEL	AVERAGE UNIFORMITY	LIGHT LOSS FACTOR	BUG RATING
S Century Drive - West Leg	Major, Low	Target	≥ 0.8 fc	≤ 5.5 : 1	0.85	B2 U0 G2
		Design	0.9 fc	1.9 : 1	0.85	B2 U0 G2
S Century Drive - North Leg	Major, Low	Target	≥ 0.8 fc	≤ 5.5 : 1	0.85	B2 U0 G2
		Design	0.9 fc	1.8 : 1	0.85	B2 U0 G2
Huntington Road - South Leg	Collector, Low	Target	≥ 0.8 fc	≤ 5.5 : 1	0.85	B2 U0 G2
		Design	0.8 fc	1.7 : 1	0.85	B2 U0 G2

REVISIONS	DATE	BY	DESIGNED
			AXG
			DRAWN
			AXG
			CHECKED
			SGB
			APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY
FILE NAME
JOB No. KAI PN 29922
DATE 07/23/2025



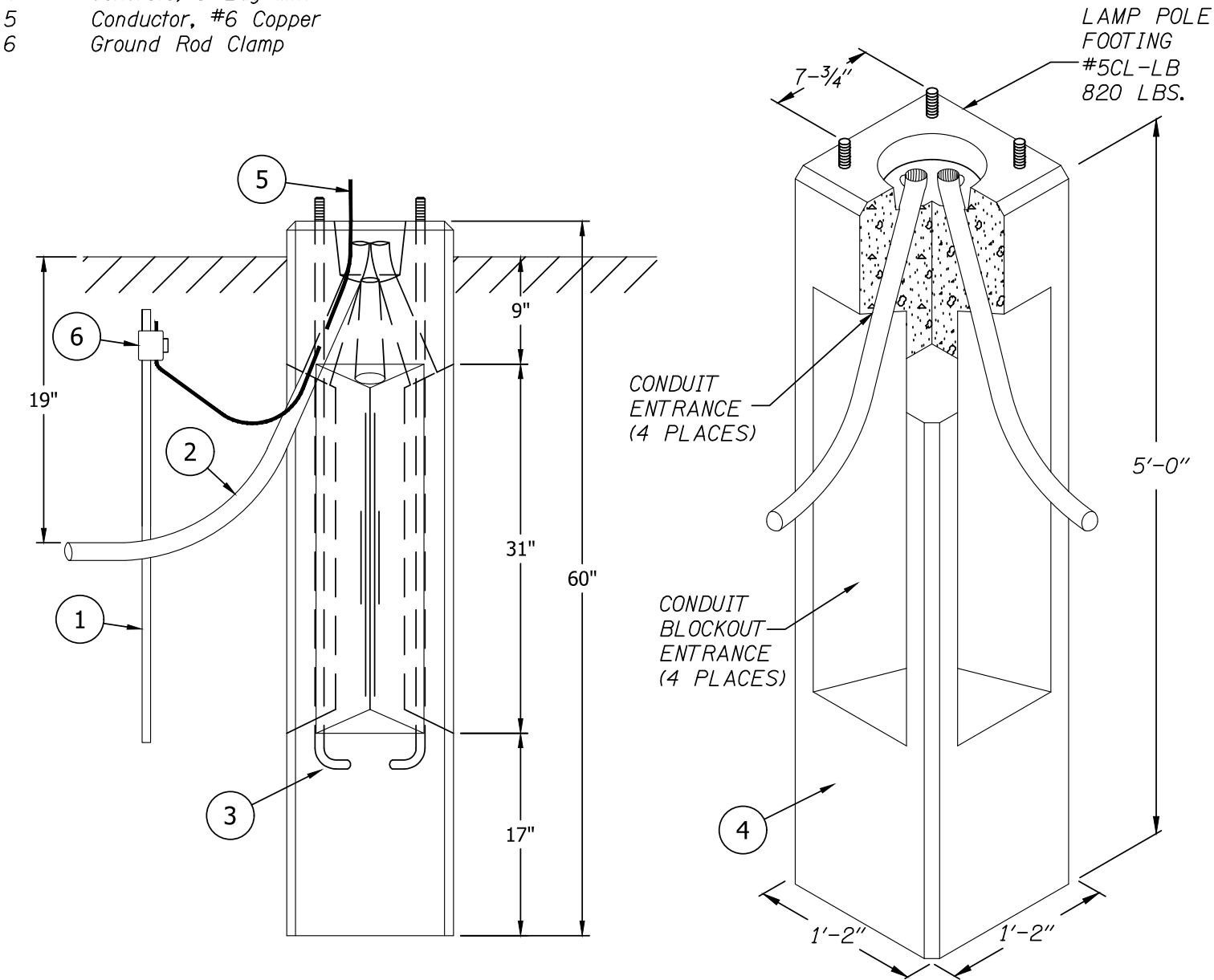
PROJECT NAME
S CENTURY DR/HUNTINGTON RD INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY, OREGON

ILLUMINATION LEGEND

DRAWING NO. 43 OF 46
C12.0

TABLE 1

No.	Description
1	Rod, ground, 5/8" x 8'
2	Conduit, Sch 40 PVC, 1.5"
3	Bolt, anchor, 1" x 36" with 4" hook, galvanized
4	Concrete, 5 Bag Mix
5	Conductor, #6 Copper
6	Ground Rod Clamp



MIDSTATE ELECTRIC COOPERATIVE STREET
LIGHT POLE FOUNDATION DETAIL

REVISIONS	DATE	BY	DESIGNED
			AXG
			DRAWN
			AXG
			CHECKED
			SGB
			APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY
FILE NAME
JOB No.
KAI PN 29922
DATE
07/23/2025



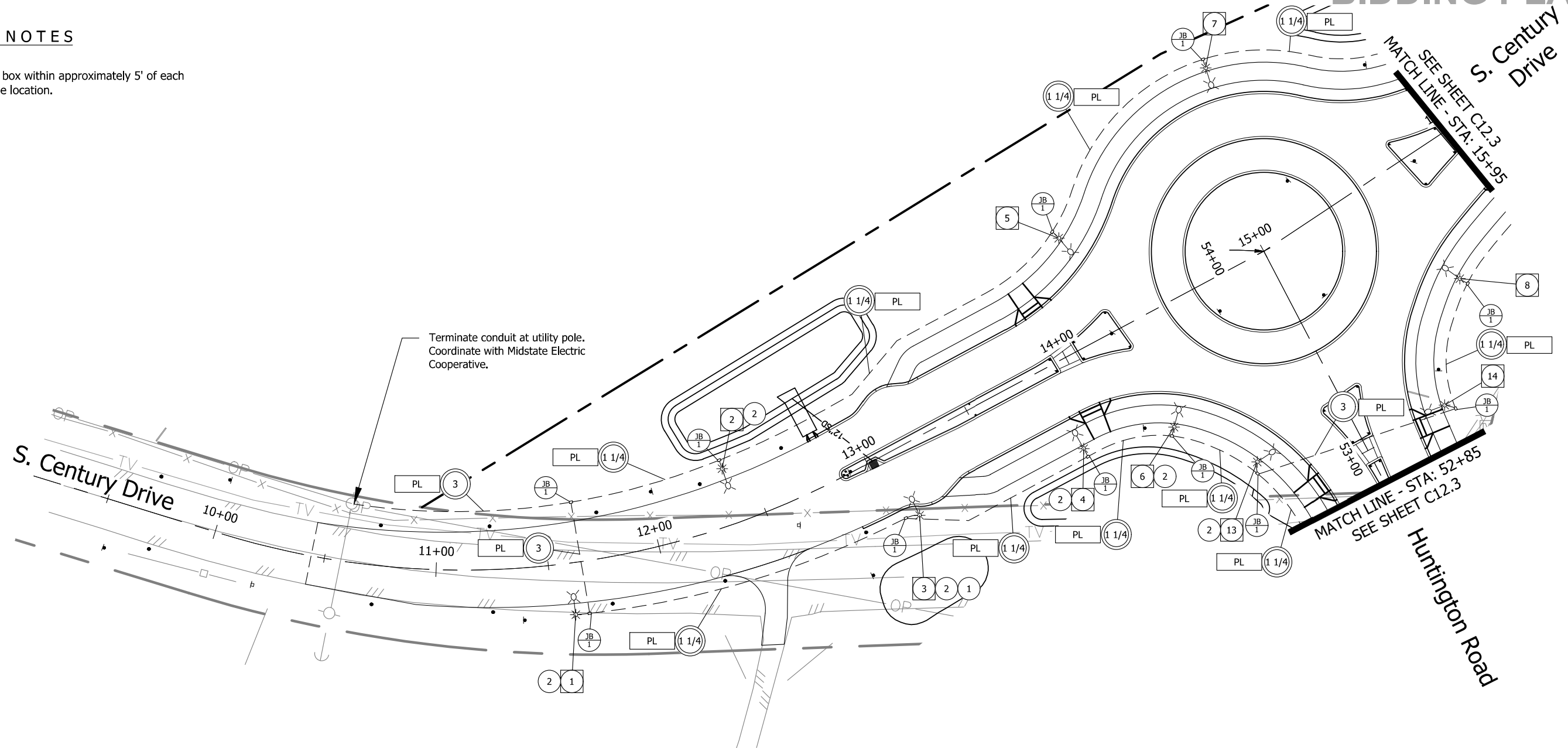
PROJECT NAME
S CENTURY DR/HUNTINGTON RD INTERSECTION IMPROVEMENTS DESCHUTES COUNTY, OREGON

ILLUMINATION DETAILS

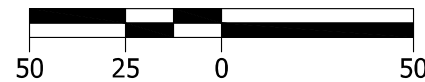
DRAWING NO. 44 OF 46
C12.1

GENERAL NOTES

1. Install junction box within approximately 5' of each illumination pole location.



Scale: 1" = 50'



CONSTRUCTION NOTES

- 1 Prior to installation of street light pole foundation, pothole location to confirm location of existing underground fiber line. If light pole location shown is found to be in conflict, coordinate with project engineer.
- 2 Midstate Electric Cooperative to install house side shield.

REVISIONS	DATE	BY	DESIGNED
			AXG
			DRAWN
			AXG
			CHECKED
			SGB
			APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY
FILE NAME
JOB No.
KAI PN 29922
DATE
07/23/2025



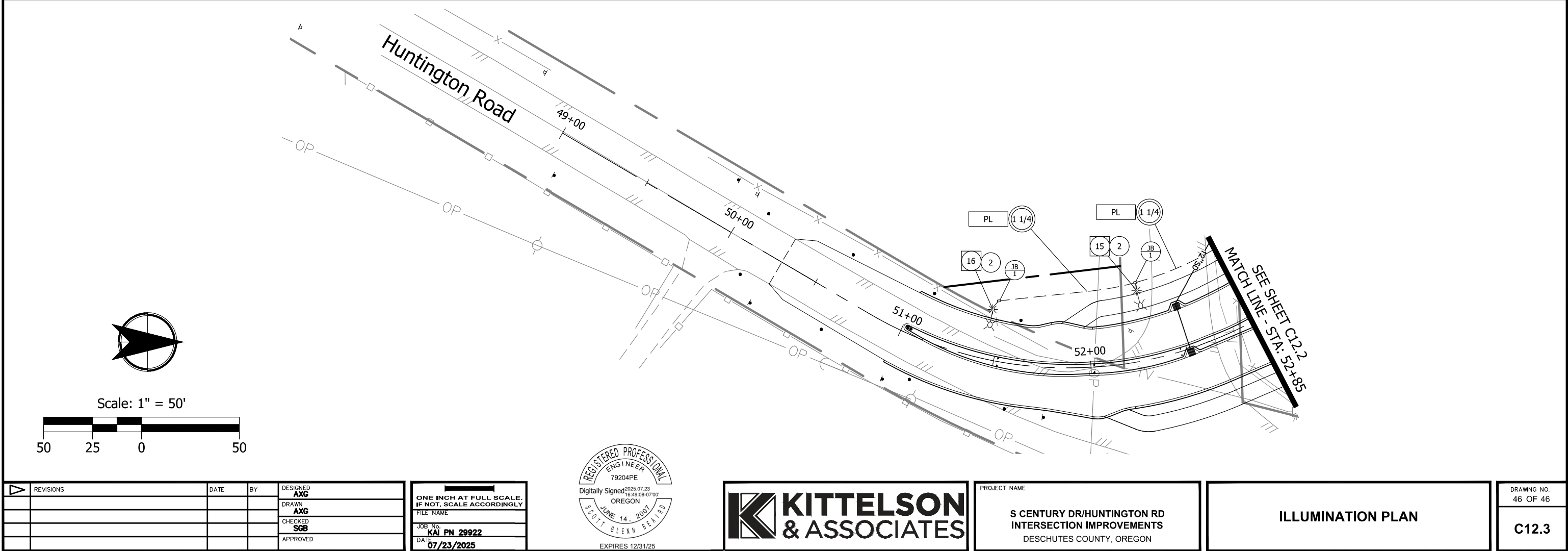
PROJECT NAME
S CENTURY DR/HUNTINGTON RD INTERSECTION IMPROVEMENTS DESCHUTES COUNTY, OREGON

ILLUMINATION PLAN

DRAWING NO. 45 OF 46
C12.2

CONSTRUCTION NOTES

- 1
- Prior to installation of street light pole foundation, pothole location to confirm location of existing underground fiber line. If light pole location shown is found to be in conflict, coordinate with project engineer.
- 2
- Midstate Electric Cooperative to install house side shield.



REVISIONS	DATE	BY	DESIGNED
			AXG
			DRAWN
			AXG
			CHECKED
			SGB
			APPROVED

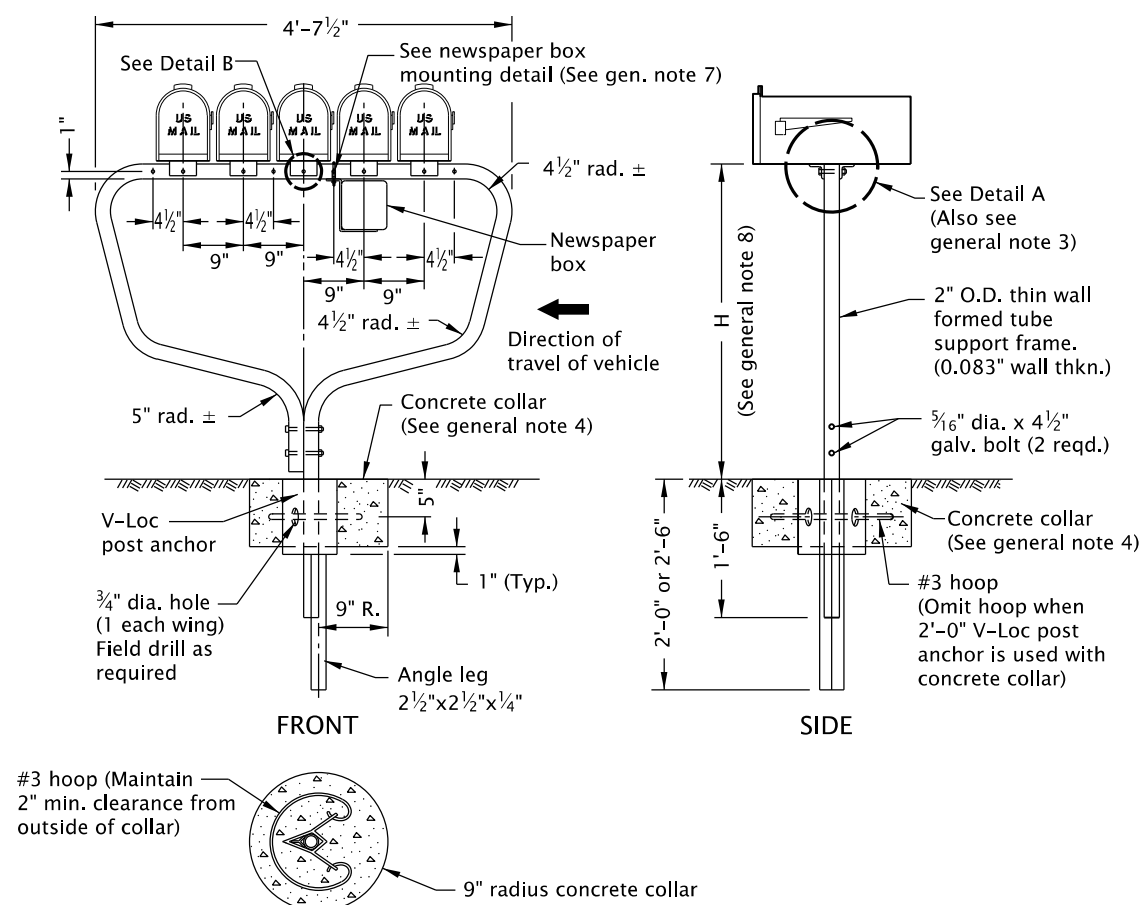
ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY
FILE NAME
JOB No.
KAI PN 29922
DATE
07/23/2025



PROJECT NAME
S CENTURY DR/HUNTINGTON RD INTERSECTION IMPROVEMENTS DESCHUTES COUNTY, OREGON

ILLUMINATION PLAN

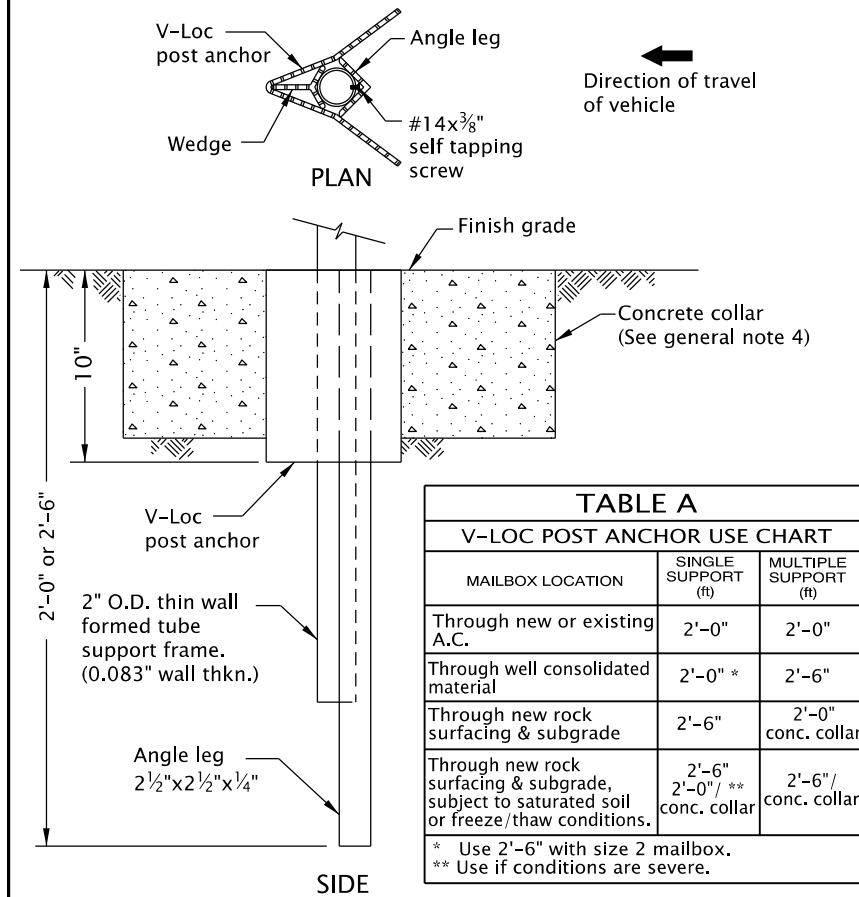
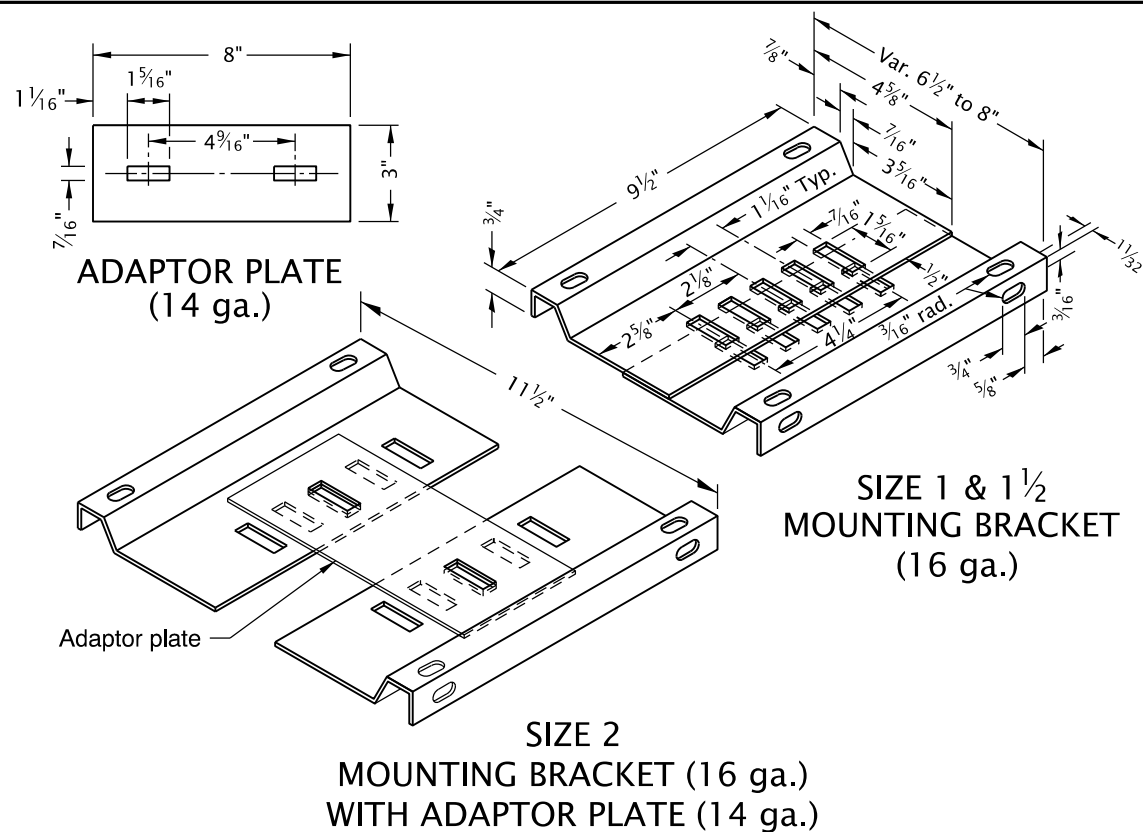
DRAWING NO. 46 OF 46
C12.3



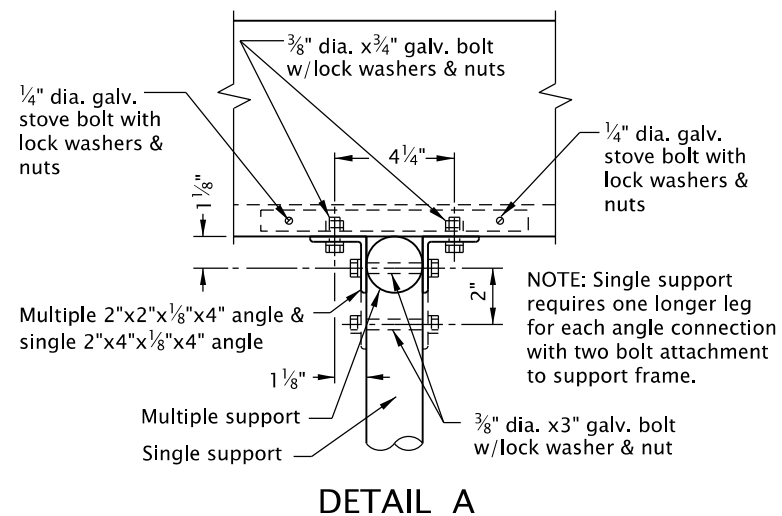
CONCRETE COLLAR
(See general note 4)

MULTIPLE SUPPORT

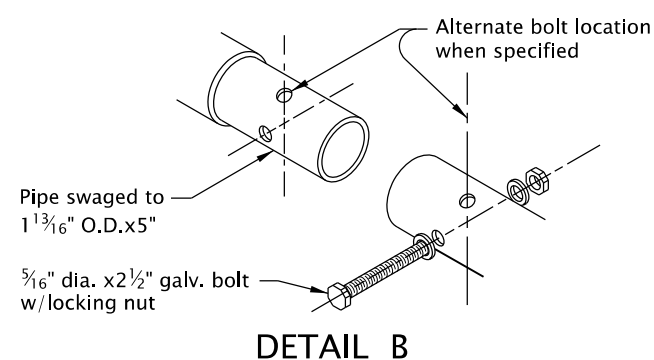
(Supports 5 standard (Sizes 1 & 1½) mailboxes or 4 large (Size 2) mailboxes)



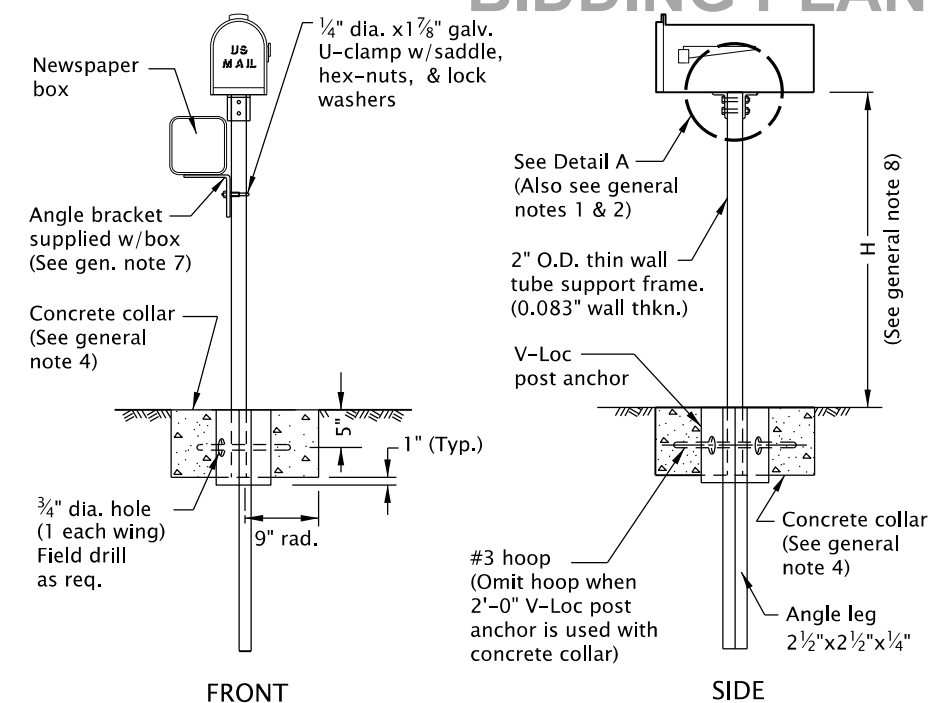
POST MOUNTING SOCKET



DETAIL A



DETAIL B



SINGLE SUPPORT

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Angle connections to be parallel to traffic flow for Size 2 mailbox mounted on single post.
 2. All holes in the tube support frame are to be predrilled by the manufacturer.
 3. Size 2 mailbox mounted on a multiple support requires 2 each $\frac{3}{8}$ " dia. x $\frac{5}{8}$ " galv. bolts with lock washers and nuts to attach the adaptor plate to the mounting bracket. The unit will then require 4 angle connections to attach to the formed tube support frame. See Detail A.
 4. Provide concrete collar when any of the following conditions exist:
 - a) when required in Table A
 - b) when required by project plans
 - c) as directed by the Engineer
- Concrete collar, when required, to be poured in place after V-Loc post anchor has been installed, level and plumb. Do not excavate below bottom of V-Loc post anchor. Care shall be taken that no concrete is placed within anchor.
5. Other proprietary products available as listed in ODOT's QPL.
 6. For mailbox installation locations, see Std. Dwg. RD101 and project plans.
 7. For Newspaper Box Mounting Detail, see Std. Dwg. RD101.
 8. Mounting height (H) shall be from 41" Min. to 45" Max. (42" nominal), measured from vehicle driving surface.
 9. See project plans for detail not shown.

Concrete collar, when required, to be poured in place after V-Loc post anchor has been installed, level and plumb. Do not excavate below bottom of V-Loc post anchor. Care shall be taken that no concrete is placed within anchor.

5. Other proprietary products available as listed in ODOT's QPL.

5. For mailbox installation locations, see Std. Dwg. RD101 and project plans.

7. For Newspaper Box Mounting Detail, see Std. Dwg. RD101.

8. Mounting height (H) shall be from 41" Min. to 45" Max. (42" nominal), measured from vehicle driving surface.

9. See project plans for detail 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

MAILBOX SUPPORT

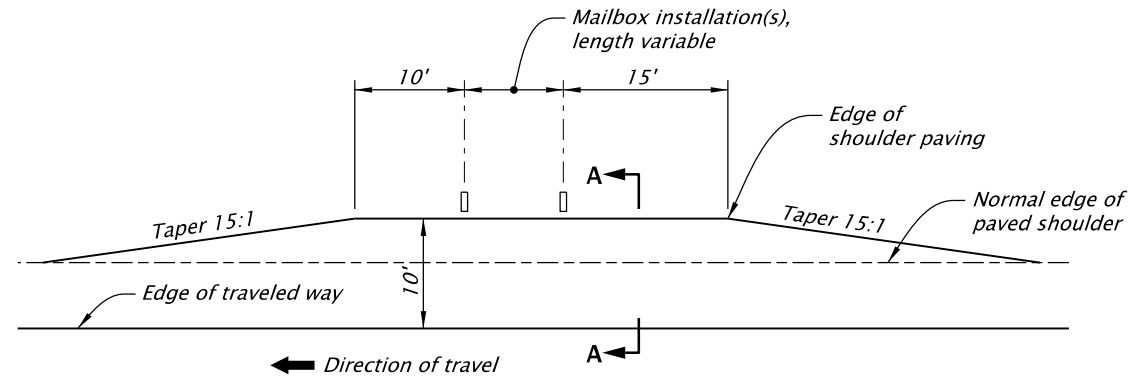
2024

DATE		REVISION DESCRIPTION	
12-2023		REVISED NOTES AND DETAILS	

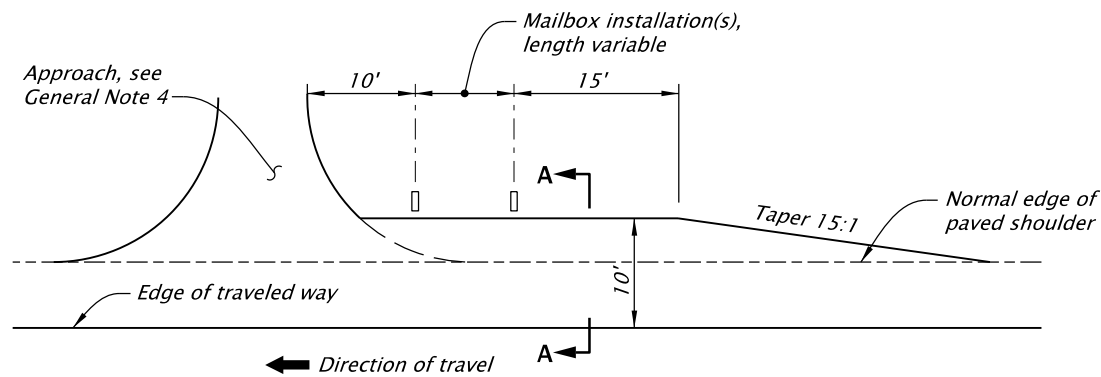
CALC. BOOK NO. _____	N/A _____	SDR DATE: 19-JAN-2024	RD100
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GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

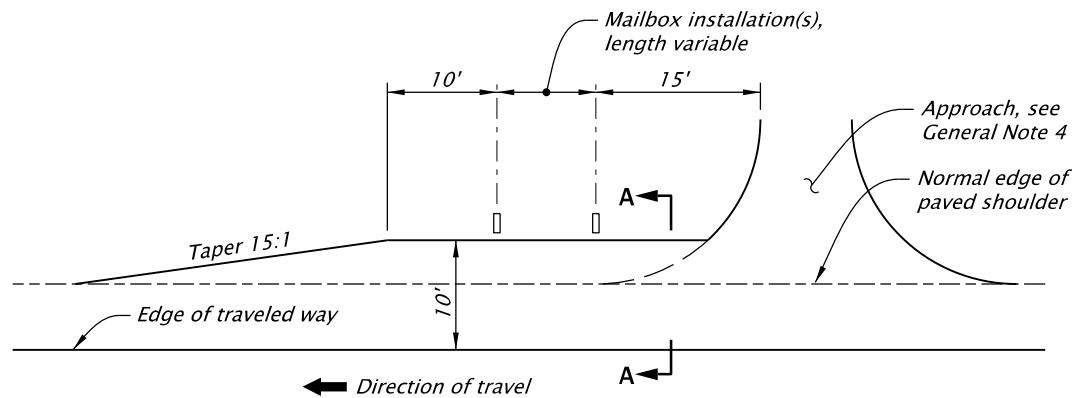
1. All holes in the tube support frame are to be predrilled by the manufacturer.
2. Other proprietary products available as listed in ODOT's QPL.
3. For mailbox support details, see Std. Dwg. RD100.
4. For approach details, see Std. Dwg. RD715.
5. Mounting height ("H") shall be from 41 inches minimum to 45 inches maximum (42 inches nominal), measured from vehicle driving surface.
6. See project plans for details not shown.



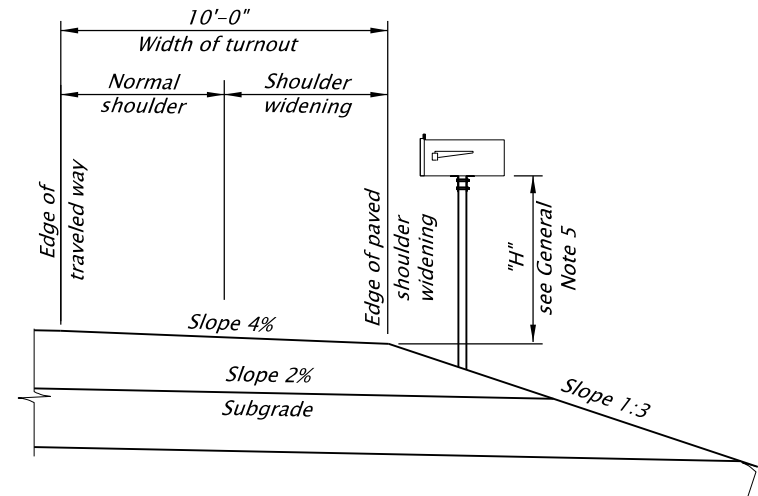
MAILBOX SERVICE TURNOUT



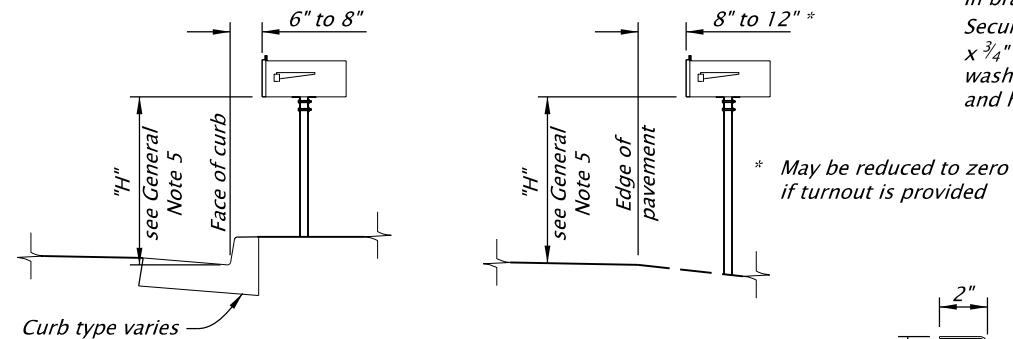
MAILBOX SERVICE TURNOUT BEFORE APPROACH



MAILBOX SERVICE TURNOUT AFTER APPROACH



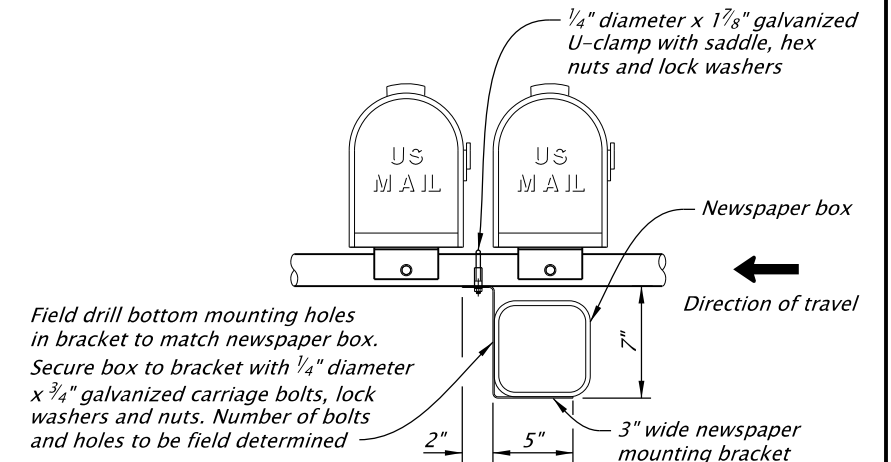
INSTALLATION AT MAILBOX TURNOUT
SECTION A-A



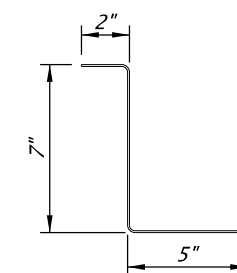
CURBED SECTION

NON-CURBED SECTION

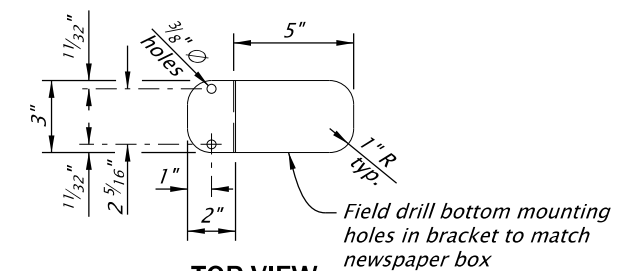
TYPICAL MAILBOX INSTALLATIONS



NEWSPAPER BOX
MOUNTING DETAIL



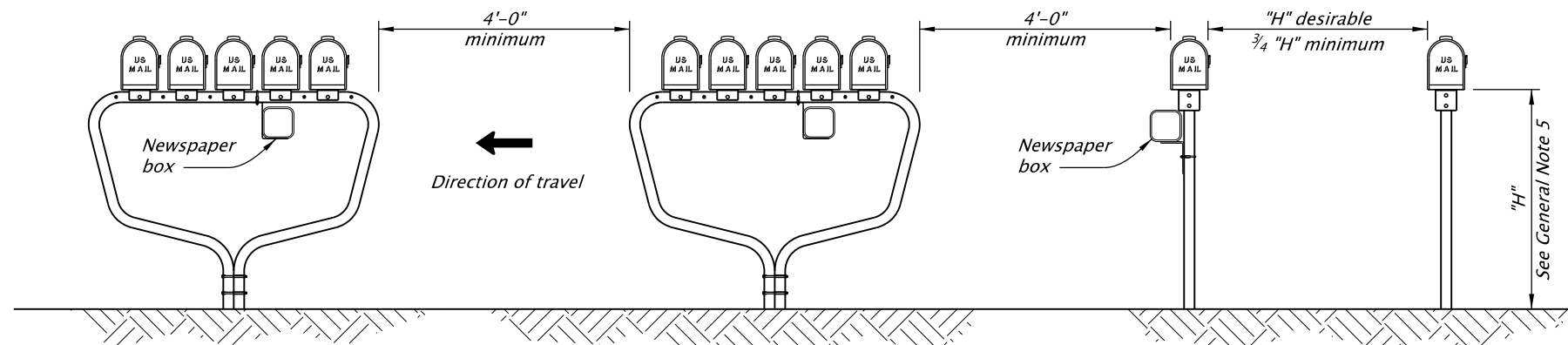
FRONT VIEW



TOP VIEW

NEWSPAPER BOX MOUNTING BRACKET

(14 ga.)



TYPICAL MAILBOX SUPPORT SPACING

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

MAILBOX
INSTALLATION

2024

DATE	REVISION	DESCRIPTION
01-2024	REVISED NOTES AND DETAILS, UPDATED DRAWING CAD STANDARDS	
CALC. BOOK NO.	N/A	SDR DATE

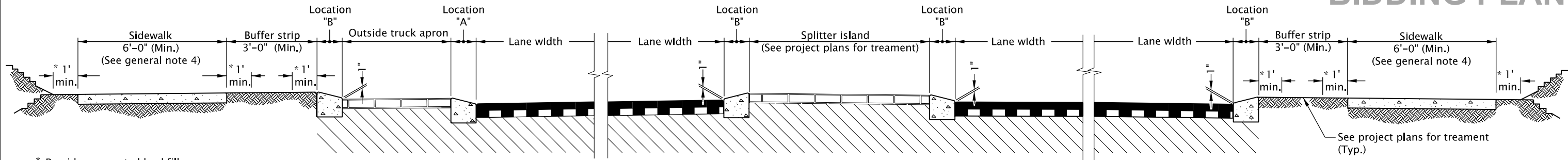
19-JAN-2024

RD101

Effective Date: June 1, 2025 – November 30, 2025

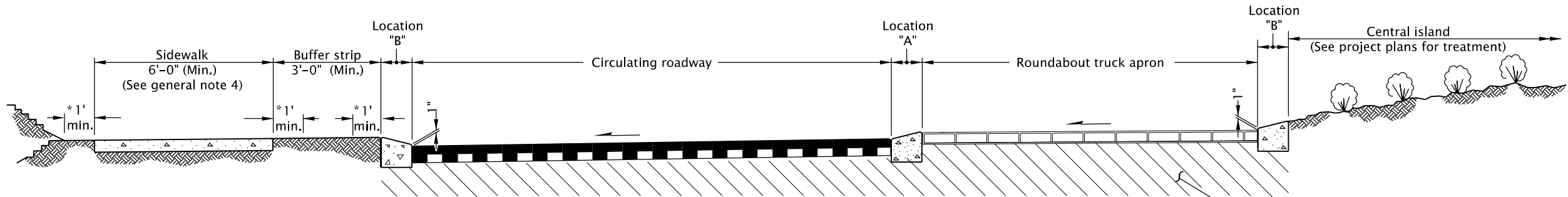
20-JUL-2020

RD170.dgn

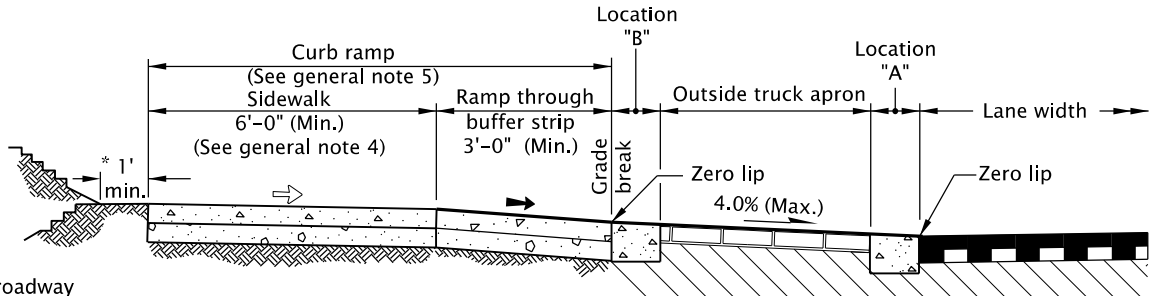


* Provide compacted backfill adjacent to curb and sidewalk

SECTION A - A

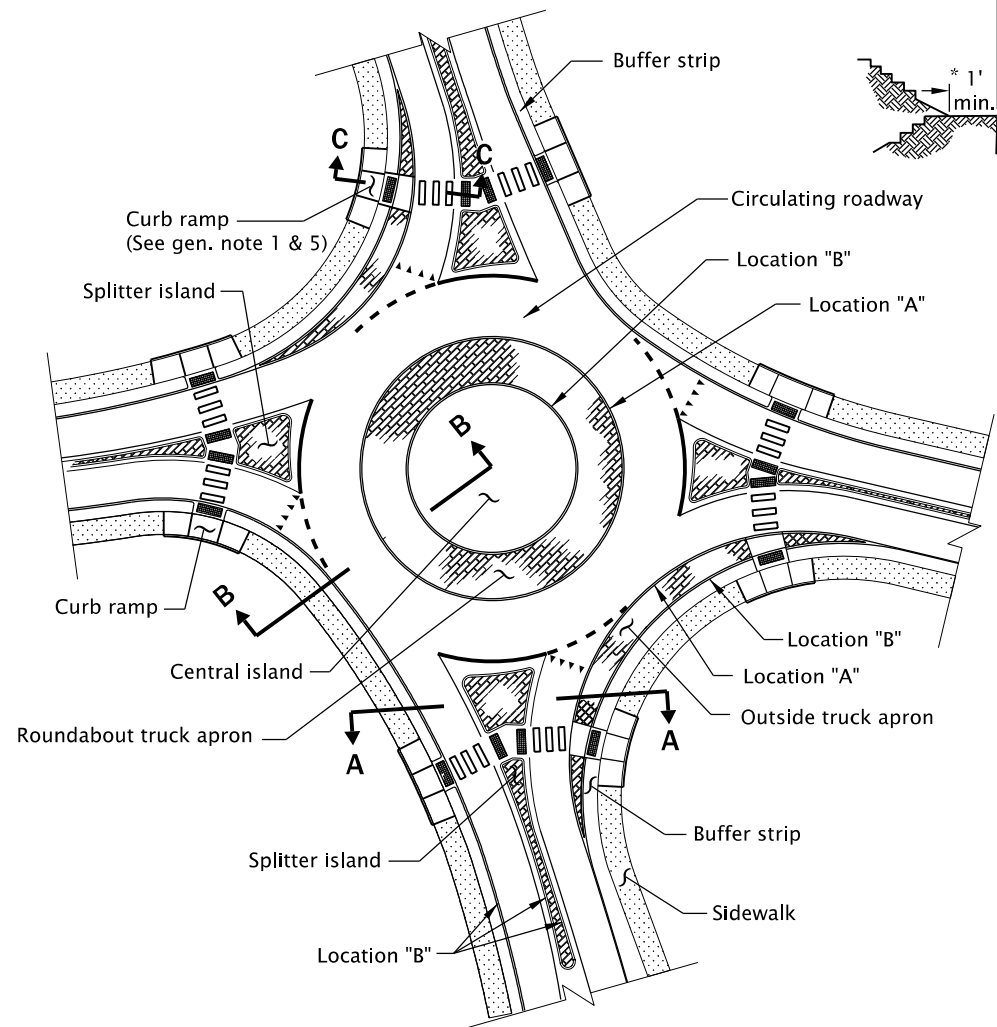


SECTION B - B



Note: Monolithic PCC construction is required at location A, outside truck apron, and location B.

SECTION C - C

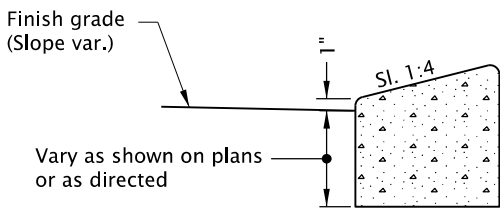


PLAN

ROUNDABOUT CURB PLACEMENT

(Roundabout configuration will vary depending on project plans)

LOCATION "A"
ROUNDABOUT TRUCK APRON P.C. CONC. CURB
(LOW PROFILE MOUNTABLE CURB, See Std. Dwg. RD700)



LOCATION "B"
ROUNDABOUT P.C. CONC. CURB
(OUTSIDE, RIGHT SIDE OR SPLITTER ISLAND)
(LOW PROFILE MOUNTABLE CURB, See Std. Dwg. RD700)

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. See Std. Dwgs. RD700, RD705, RD706, RD710 & RD720 for additional details. See Std. Dwg. RD707 for roundabout splitter island nose treatments. See Std. Dwgs. RD720 & RD721 for concrete sidewalk details. See Std. Dwgs. RD902 through RD908 for detectable warning surface placements. See Std. Dwgs. RD900, RD901, RD910, RD920 & RD930 for additional curb ramp details. See TM Standard Drawings for signal pole, pedestrian pedestal, crosswalk markings, and related details.
2. Construct curb joints at cement concrete pavement transverse joint locations.
3. The slope across the low profile curb may be modified to use a 2" rise where low clearance vehicles or trucks are present.
4. Sidewalk width as shown on plans or as directed. On sidewalks 8' or wider, provide a longitudinal joint at the midpoint.
5. See project plans for the curb ramp placement and design specified.

LEGEND:

- ← 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			
ROUNDABOUT AND TRUCK APRON CURB PLACEMENT			
2024			
DATE	REVISION	DESCRIPTION	
CALC. BOOK NO.		N/A	SDR DATE: 25-JUL-2017
			RD170

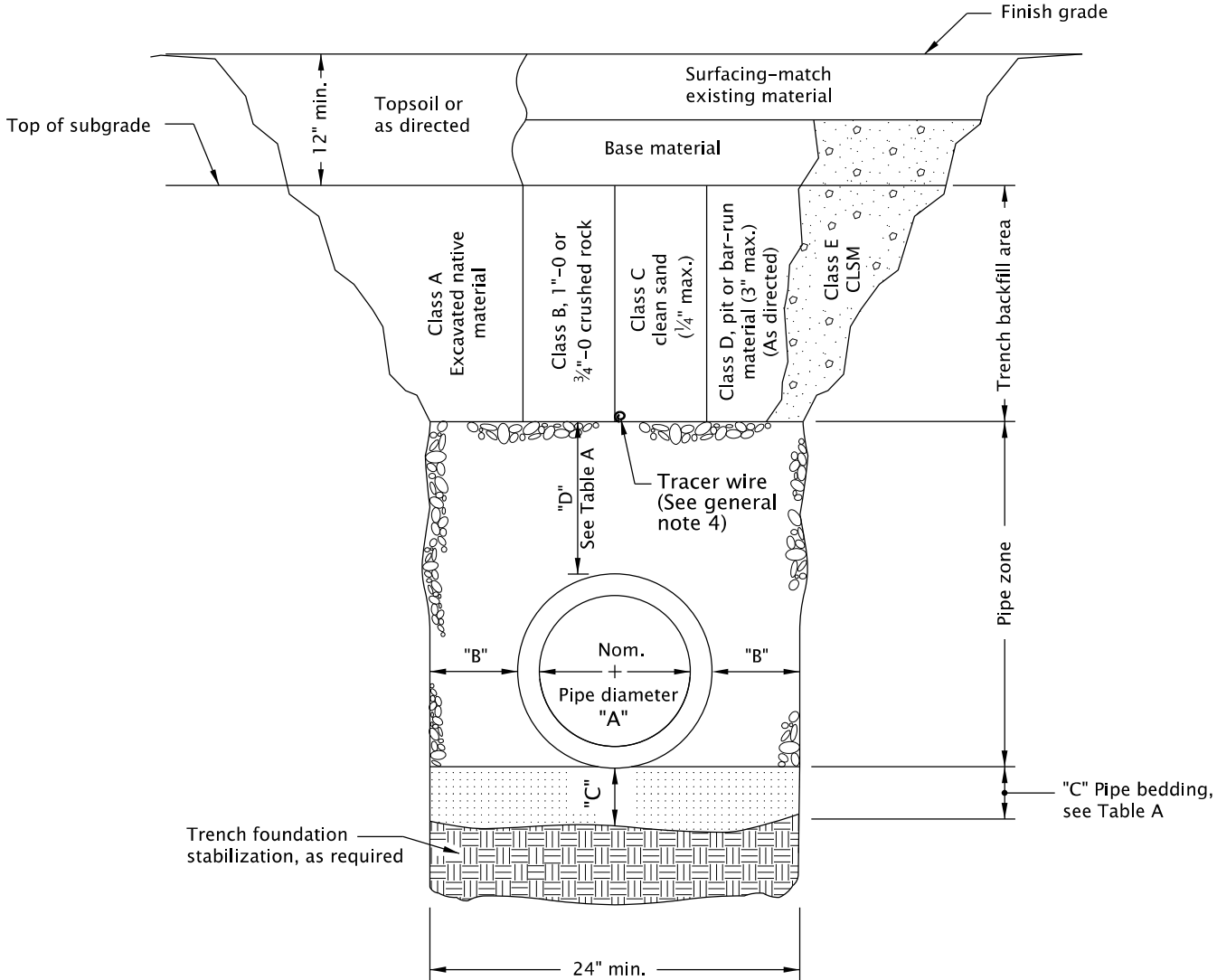
20-JUL-2020

RD300.dgn

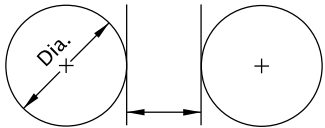
TABLE A

"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



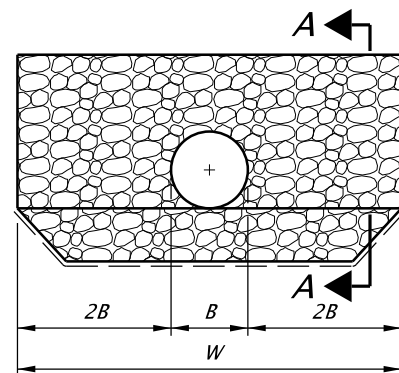
DIAMETER	MIN. SPACE BETWEEN PIPES
Up to 48"	24"
48" to 72"	One half (1/2) dia. of pipe

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

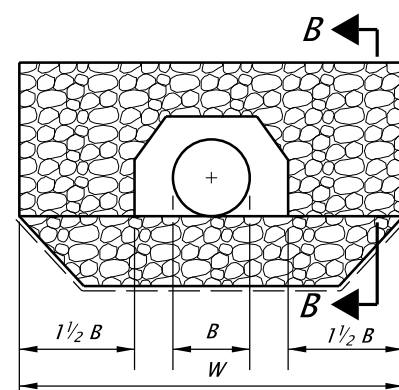
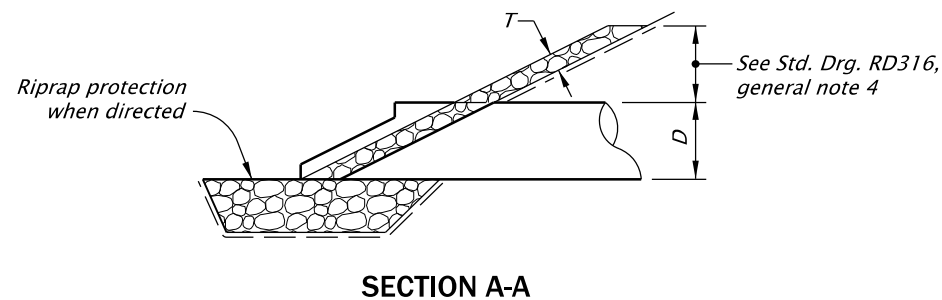
1. Surfacing of paved areas shall comply with street cut Std. Dwg. RD302.
2. For pipe installation in embankment areas where the trench method will not be used and the pipe is ≥ 36 " diameter, increase dimension "B" to nominal pipe diameter.
3. Pipes over 72" diameter are structures, and are not applicable 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.

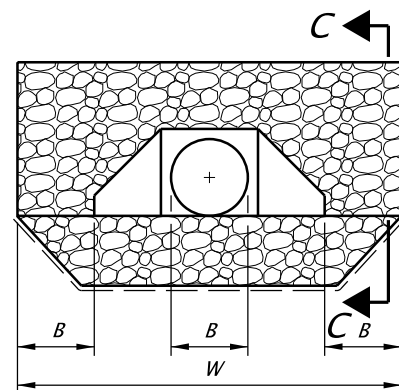
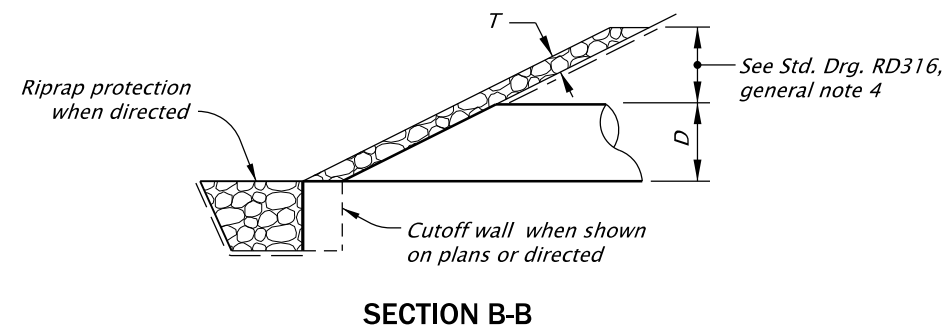
All materials shall be in accordance with the current Oregon Standard Specifications.			
OREGON STANDARD DRAWINGS			
TRENCH BACKFILL, BEDDING, PIPE ZONE AND MULTIPLE INSTALLATIONS			
2024			
DATE	REVISION DESCRIPTION		
CALC. BOOK NO.	N/A	SDR DATE	14-JUL-2014
RD300			



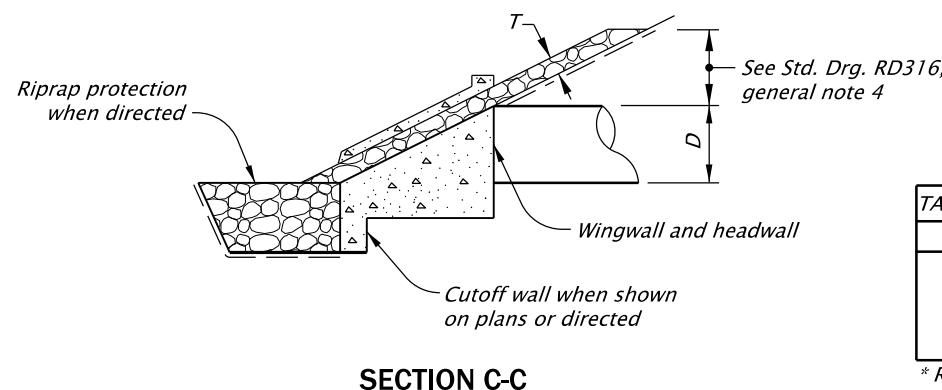
SLOPED OR PROJECTING END



SLOPED END WITH SLOPE PAVING



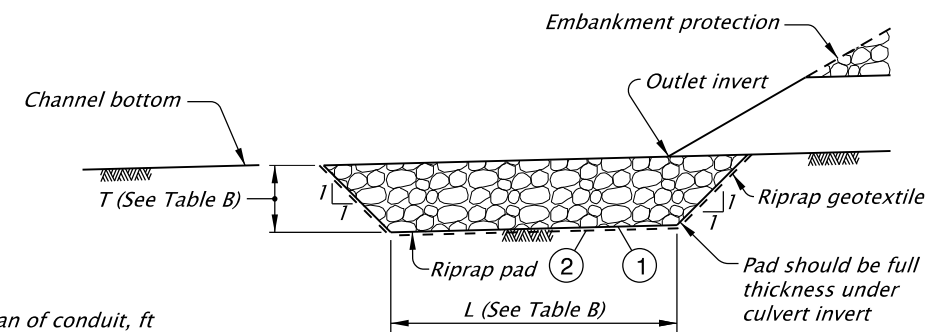
HEADWALL AND WINGWALLS



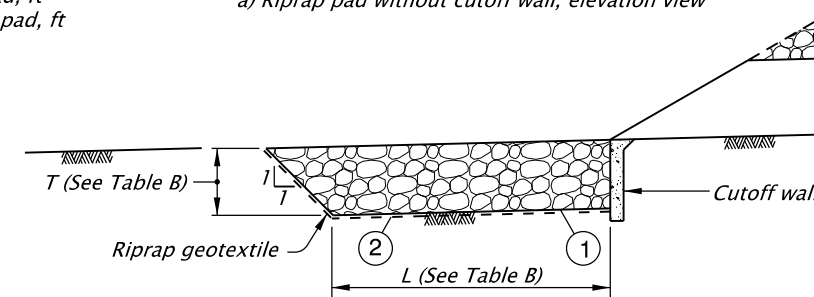
B = Diameter of circular barrel or span of arch pipe, box, or open-bottom arch.
 D = Diameter of circular barrel or rise of arch pipe, box, or open-bottom arch.
 T = Thickness of riprap blanket, see Table A.

EMBANKMENT PROTECTION

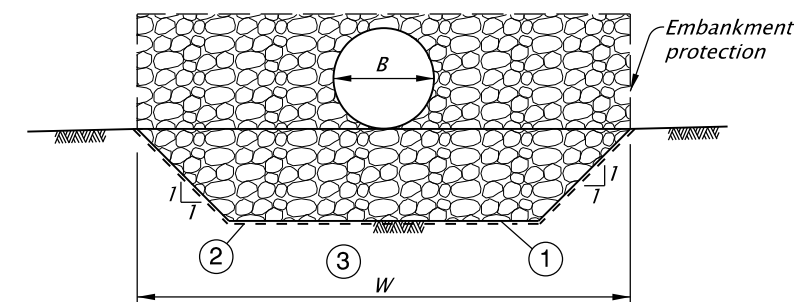
B = Diameter or span of conduit, ft
 L = Length of bottom of riprap pad, ft
 T = Thickness of riprap pad, ft
 W = Width of top of riprap pad, ft



a) Riprap pad without cutoff wall, elevation view



b) Riprap pad with cutoff wall, elevation view



c) Riprap pad, end view

RIPRAP PADS

RIPRAP PAD NOTES:

- Do not excavate non-erodible rock in order to place riprap.
- Use riprap geotextile under Class 200 and Class 700 loose riprap.
- Top width (W) of the riprap pad is the larger of $5B$ or the width of the embankment slope protection.

GENERAL NOTES FOR ALL DETAILS:

- See Std. Drg's. RD300 & RD304 for installation details.
- 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

Riprap Class	T Distance
50	12 Inches
100	18 Inches
200	24 Inches *
700	36 Inches *

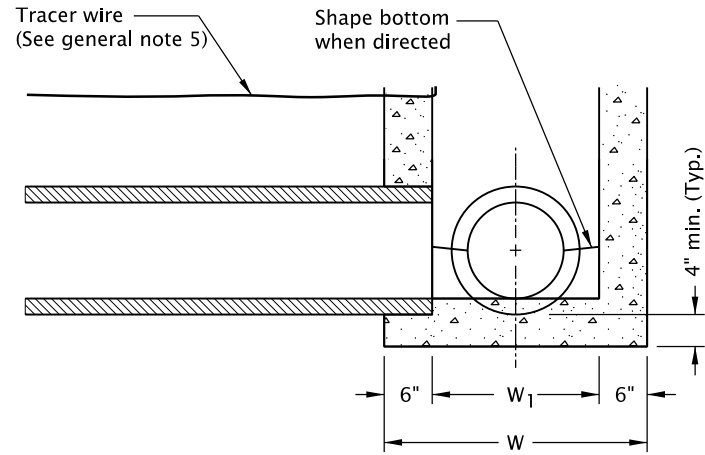
* Riprap geotextile required between riprap and embankment

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

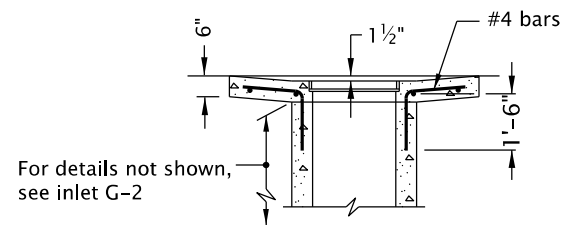
* L is the greater of $4B$ or the listed dimension.

20-JUL-2020

RD364.dgn



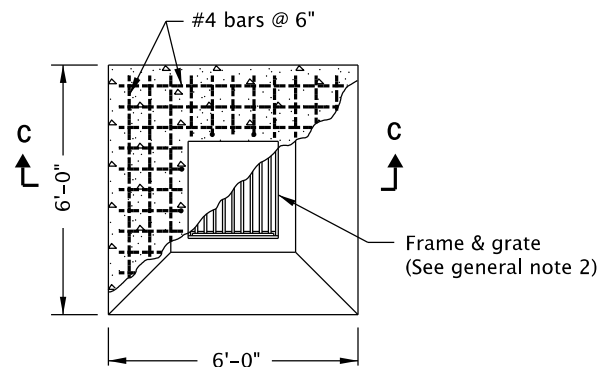
**DETAIL A
WITHOUT SUMP**



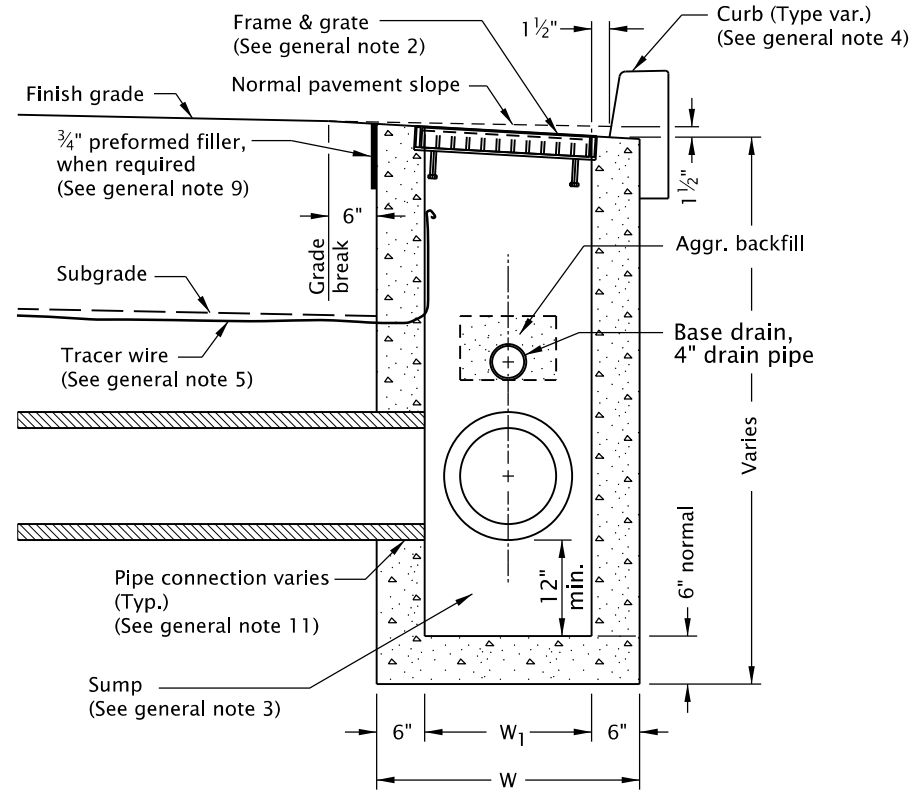
SECTION C-C

NOTE:

All reinforcement to be placed 2" clear of nearest face of concrete unless shown or noted otherwise



**PLAN
TYPE G-2MA**

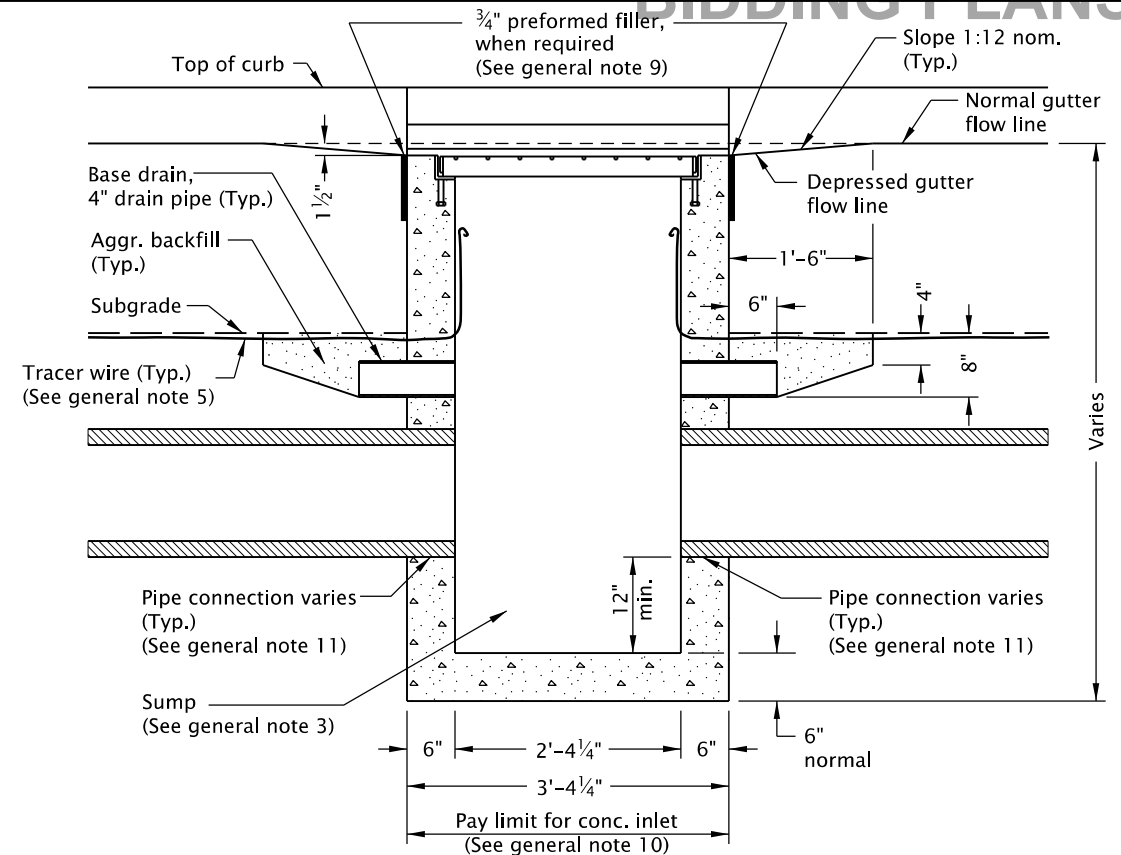


SECTION B - B

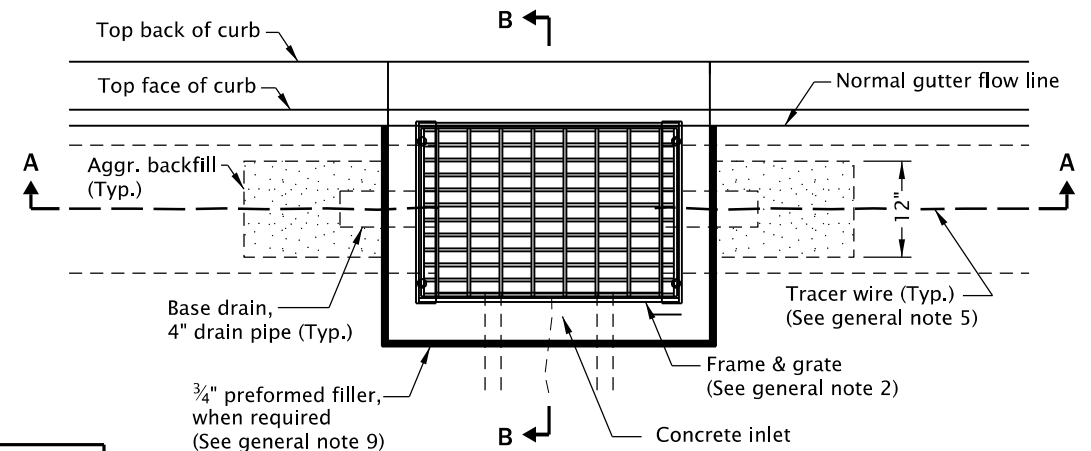
TABLE A		
INLET TYPE	W	W ₁
G-1	2'-8 7/8"	1'-8 7/8"
G-2, G-2M, G-2MA	3'-3 3/8"	2'-3 3/8"

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- Where precast inlets are used as an alternate to cast-in-place inlets, a 4" compacted leveling bed of sand or 1/4"-0 crushed aggregate shall be provided. All precast inlets shall conform to requirements of ASTM C913.
- Graphics show G-1 inlet with Type 2 grate. See Table A for inlet dimensions.
Type 1 grate allowed only in locations not subject to bicycle or pedestrian use.
For frame and grate details, see Std. Dwg. RD365.
- Provide sump only where shown on plans, and allowed by jurisdiction. See Detail A for inlet without sump.
- For curb details, see Std. Dwgs. RD700 & RD701.
- See Std. Dwg. RD336 for tracer wire details, or approved alternate.
- Max. pipe diameter varies with pipe material.
- Location, elevation, diameter, slope, and number of pipe(s) varies, see project plans.
- All concrete shall be commercial grade concrete.
- 3/4" preformed filler (in concrete pavement or gutter only) to extend through thickness of concrete.
- See Std. Dwg. RD363 for gutter transition section, when curb and gutter are required.
- See Std. Dwg. RD339 for pipe to structure connections.



SECTION A - A



**PLAN
TYPE G-1, G-2, G-2M**

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

**CONCRETE INLETS
TYPE G-1, G-2, G-2M, & G-2MA**

2024

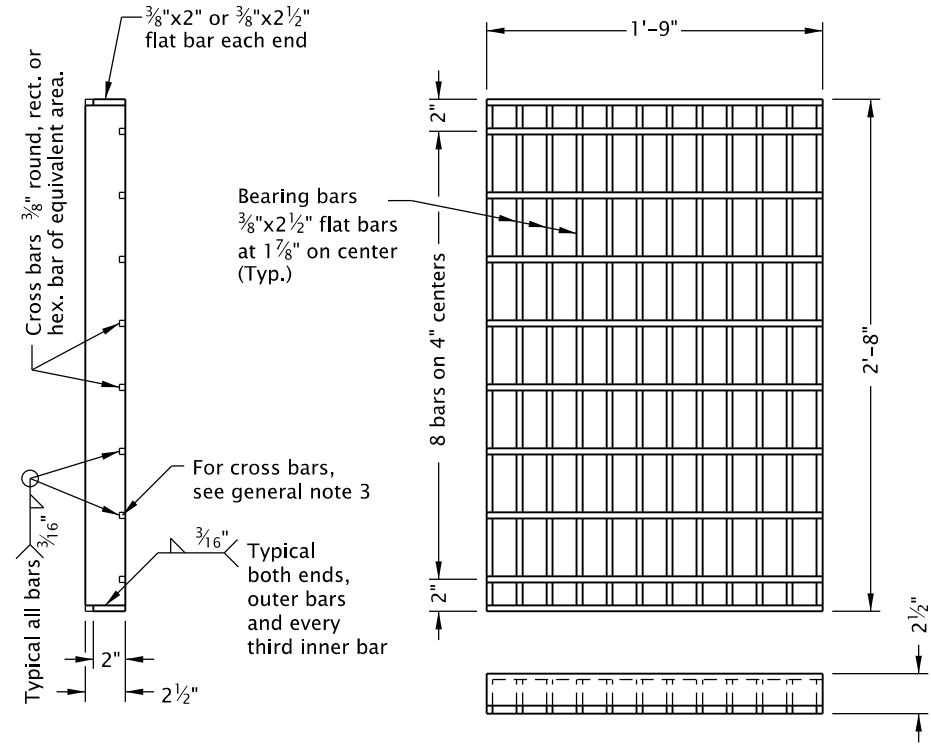
DATE	REVISION	DESCRIPTION
CALC. BOOK NO.	N/A	SDR DATE: 21-JUL-2015

RD364

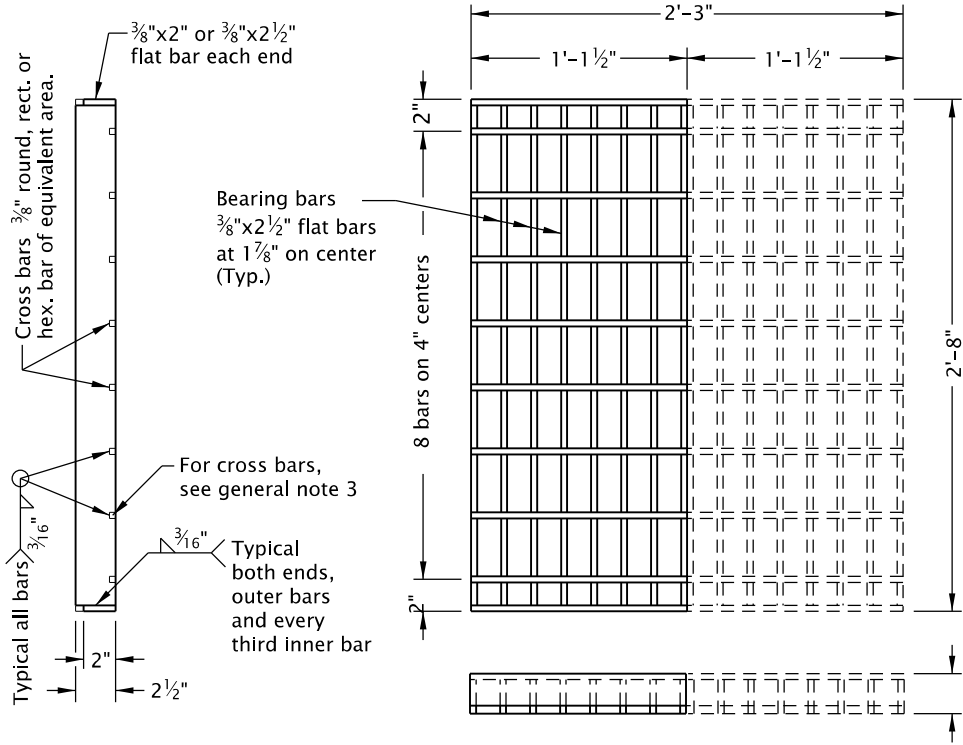
Effective Date: June 1, 2025 – November 30, 2025

20-JUL-2020

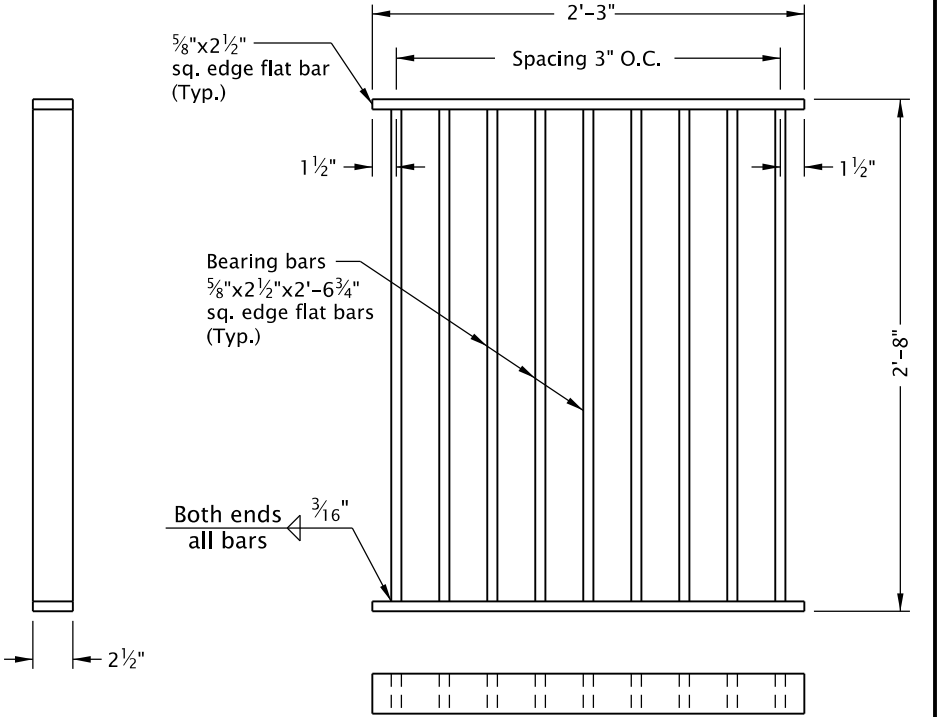
RD365.dgn



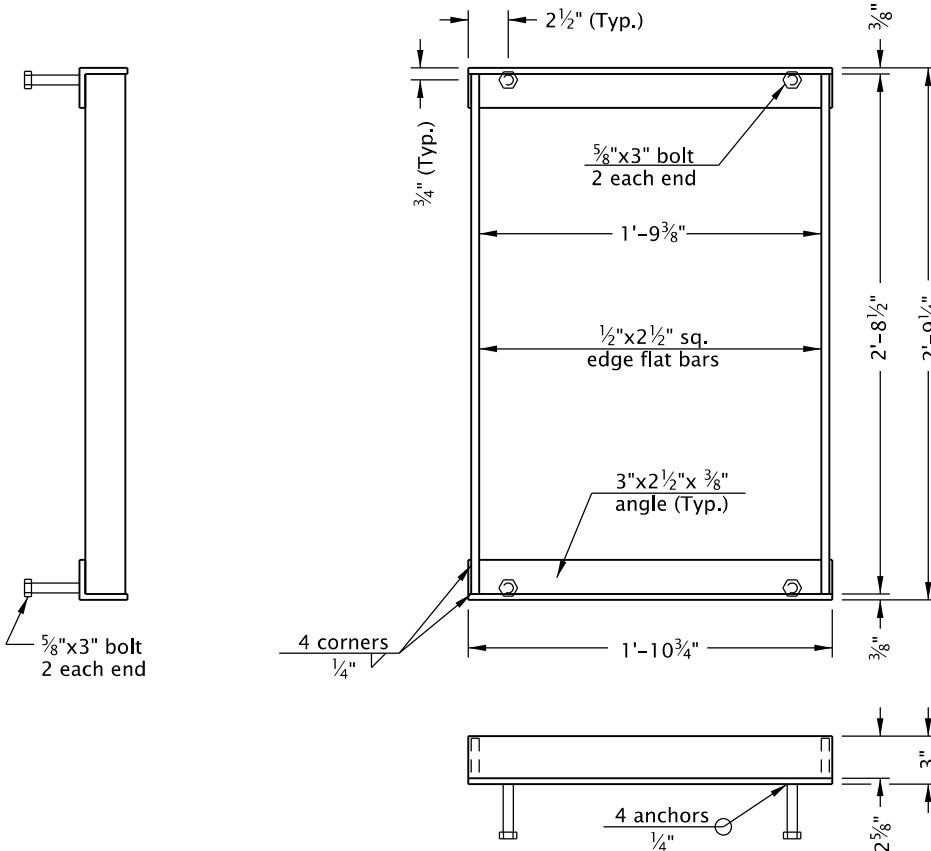
**G-1, CG-1 GRATE
(TYPE 2)**
(Bicycle-safe)



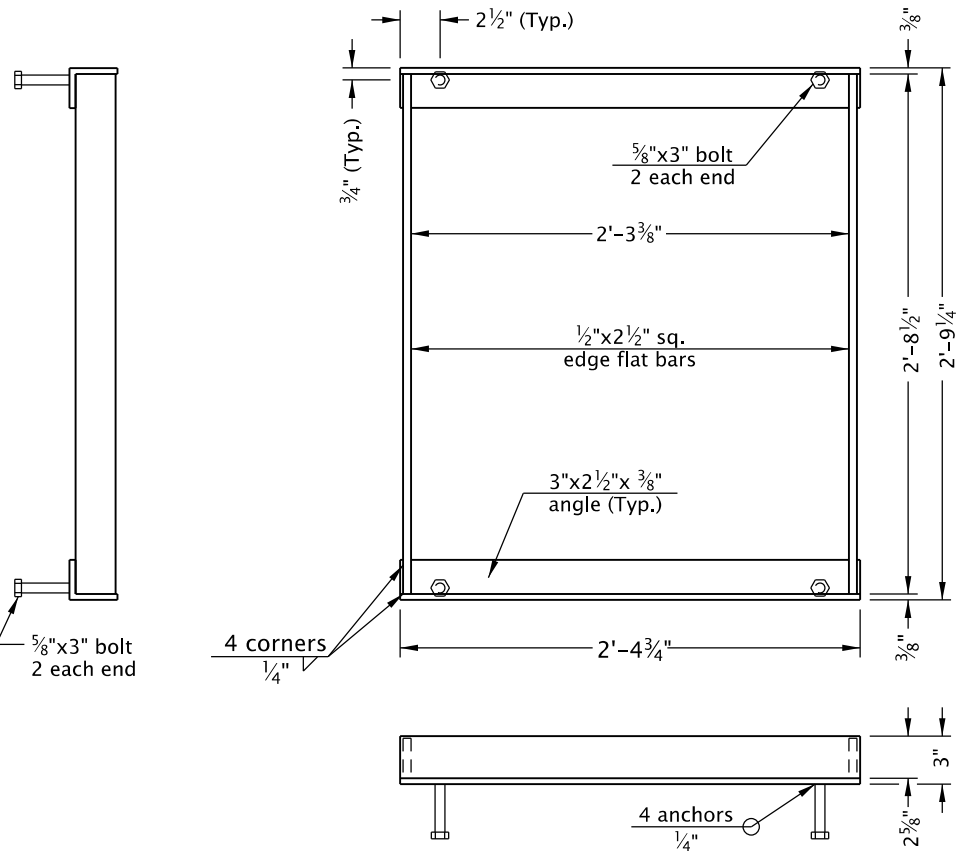
**G-2, G-2M, G-2MA, CG-2 GRATE
(TYPE 2)**
(Bicycle-safe)
(2 grates required per inlet, as shown)



**G-2, G-2M, G-2MA, CG-2 GRATE
(TYPE 1)**
(See general note 2)



G-1, CG-1 FRAME



G-2, G-2M, G-2MA, CG-2 FRAME

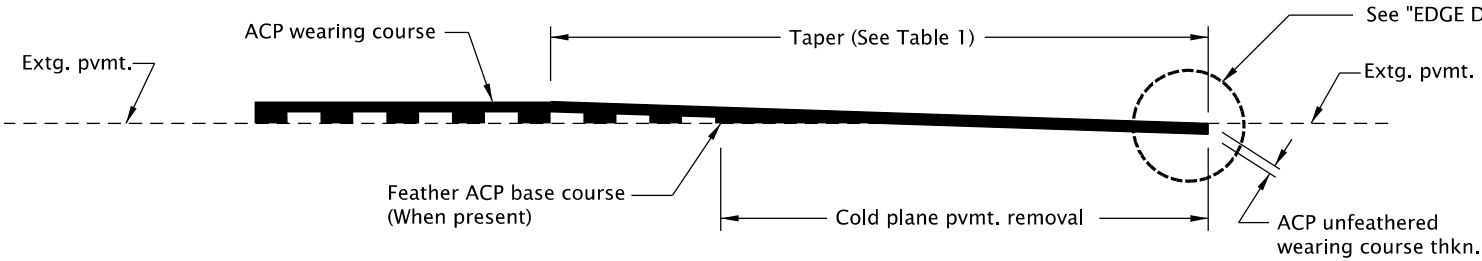
GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. For inlet details, see appropriate inlet standard drawing(s).
2. Type 1 grate allowed only in locations not subject to bicycle or pedestrian use.
3. 3/8" cross bars shall be flush with the top of grate surface and may be fillet welded, resistance welded or electroforged to bearing bars.
4. Hot dip galvanize after fabrication.
5. Cast iron grate and frame are acceptable alternates. See ODOT's QPL.

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			
FRAMES & GRATES FOR CONCRETE INLETS			
2024			
DATE	REVISION DESCRIPTION		
CALC. BOOK NO.	N/A	SDR DATE	14-JUL-2014
RD365			

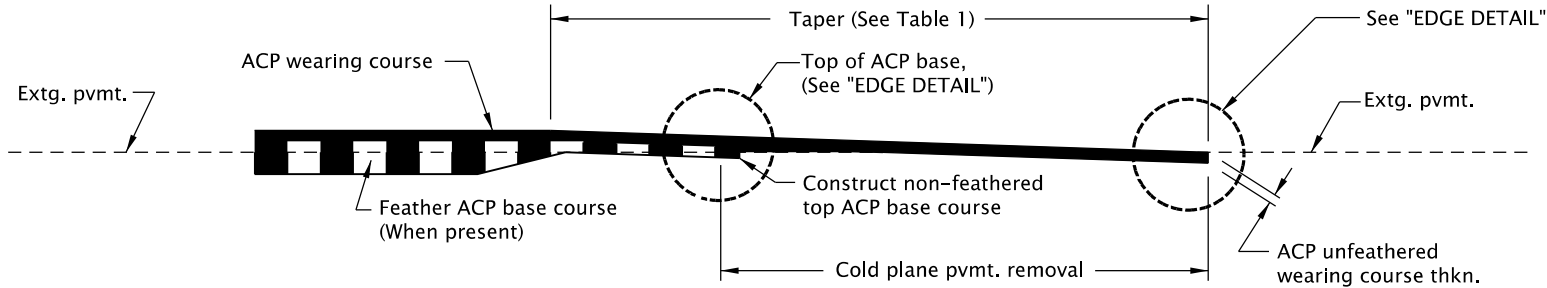
20-JUL-2020
RD610.dgn



METHOD A *

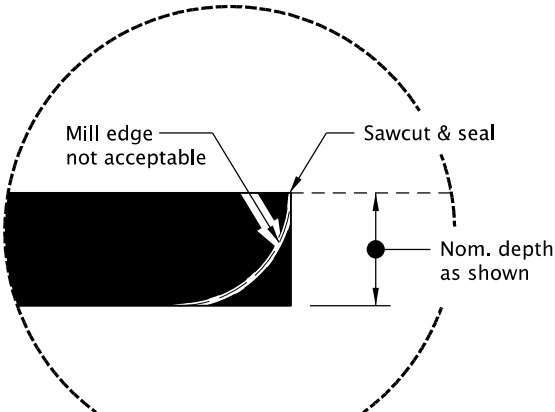
* See project plans for method.

TABLE 1	
TAPER LENGTHS	
Posted Speed	Taper Length
< 45 mph	1" per 50'
≥ 45 mph	1" per 100'

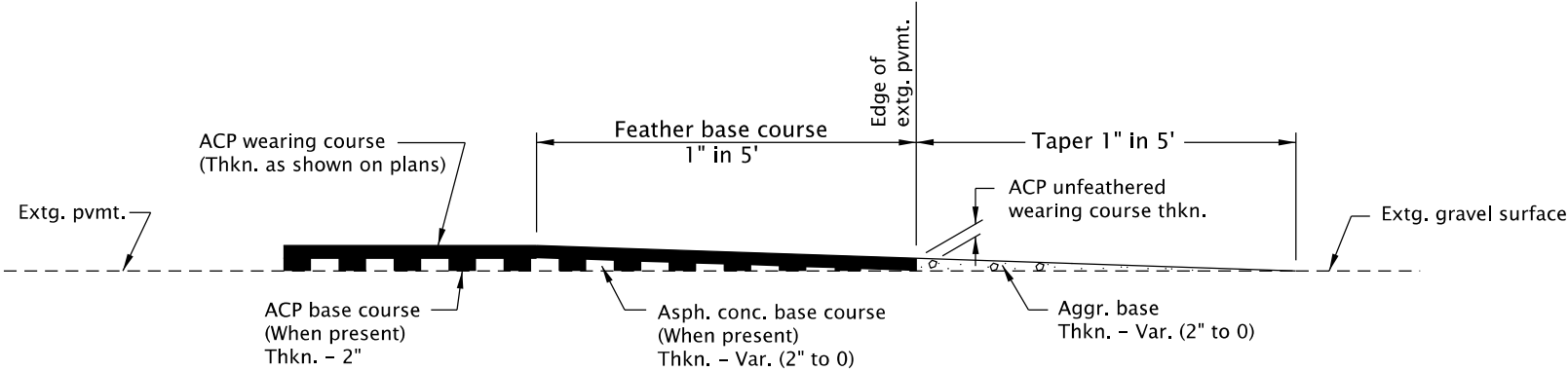


METHOD B *

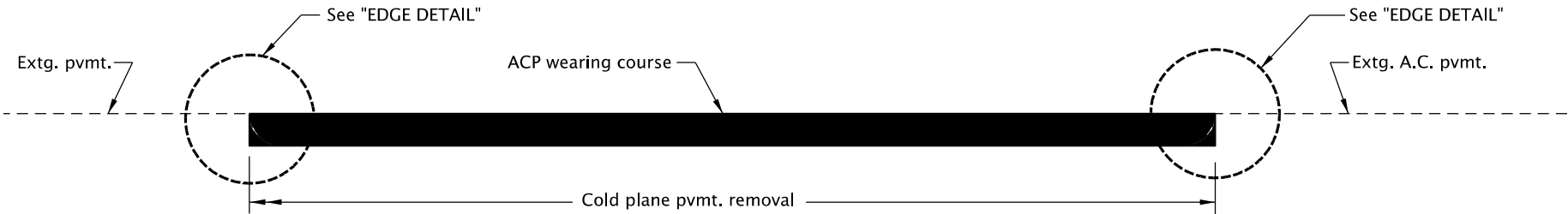
ACP PAVEMENT MATCH AT PROJECT ENDS
OR BRIDGE ENDS WHEN NOT OVERLAYING THE BRIDGE



EDGE DETAIL



METHOD OF FEATHERING ACP PAVEMENT
AT GRAVEL APPROACHES



METHOD OF MATCHING EXTG. ACP INLAY SURFACING
(Inlay to extg. asphalt conc. pvmt.)

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			
ASPHALT CONCRETE PAVEMENT (ACP) DETAILS			
2024			
DATE	REVISION DESCRIPTION		
CALC. BOOK NO.	N/A	SDR DATE	25-JUL-2017
RD610			

SAFETY EDGE PLACED WITH LIFTS

SAFETY EDGE PLACED ONLY WITH FINAL LIFT

SAFETAY EDGE FOR ASPHALT CONCRETE (NEW CONSTRUCTION)

MULTI-LAYER PAVEMENT CONSTRUCTION

SINGLE COURSE OVERLAY

PAVEMENT THICKNESS (T) 5" OR LESS

SAFETY EDGE FOR ASPHALT CONCRETE RECONSTRUCTION (INCLUDING MILL, INLAY AND OVERLAY)

PAVEMENT THICKNESS (T) GREATER THAN 5"

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. *Safety edges are required at the outside edges of the paved roadway (edge of travel lane or edge of paved shoulders), where the wearing surface thickness is 2" or greater, except where indicated in the plans.*
2. *Construct the safety edge at a slope of 1:1½ to 1:2 measured from the pavement surface.*
3. *Do not construct safety edge at intersections, paved drives, or other obstructions.*
4. *For total new asphalt depth of "T" ≤ 5", construct the safety edge to the full thickness of the surface and intermediate courses. For total new asphalt depth of "T" > 5", construct the safety edge to a depth of 5" approximately with a 1:1 sloped face below the safety edge.*

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

SURFACE EDGE DETAILS

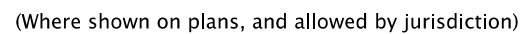
2024

DATE	REVISION	DESCRIPTION
07-2021	TITLE CHANGED,	REVISED DETAILS AND NOTES

CALC. BOOK NO. _ _ _ _ <u>N/A</u> _ _ _ _	SDR DATE <u>19-JUL-2021</u> _	RD615
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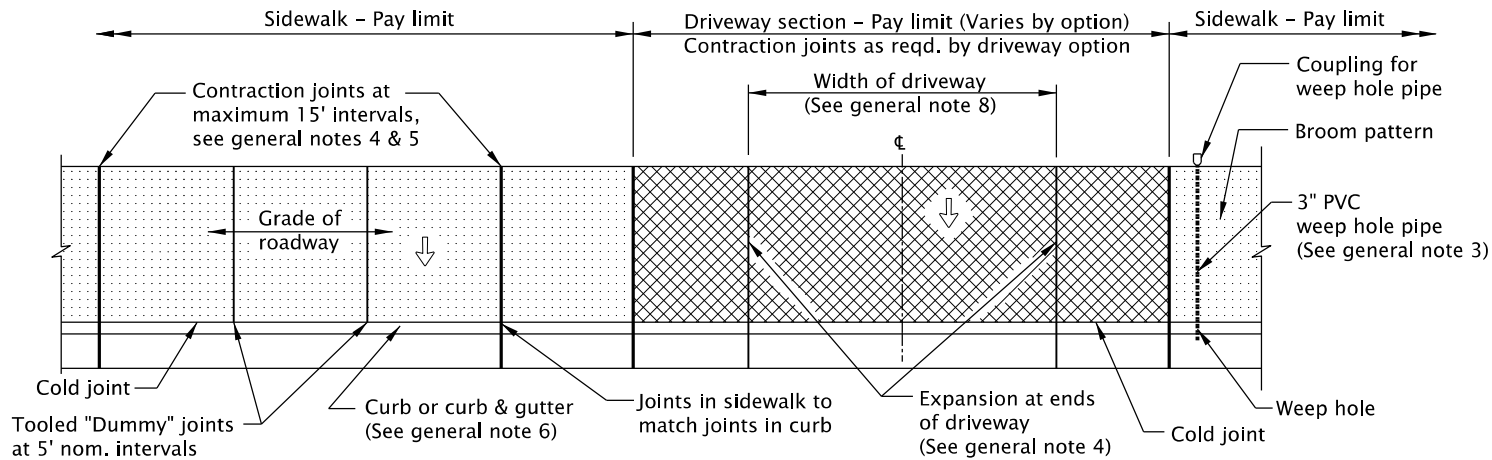
Vary slope as reqd. for drainage.
Vary where shown on plans, and
allowed by jurisdiction.



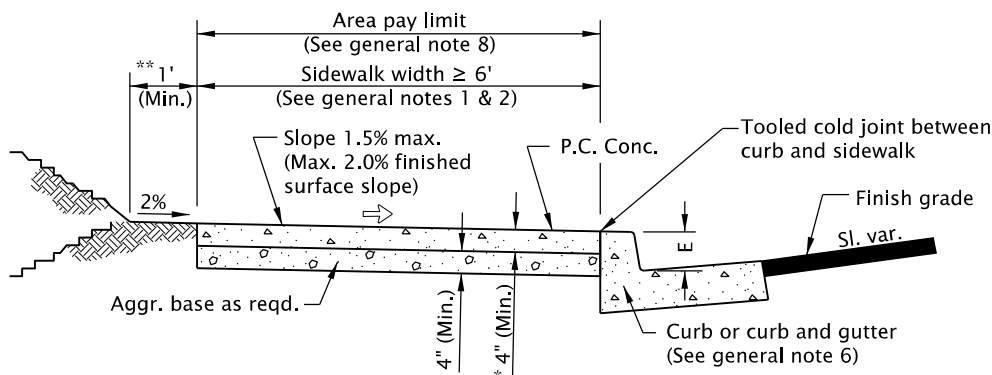
DATE		REVISION DESCRIPTION	
CALC. BOOK NO. - - - - N/A - - - -		SDR DATE - 20-JUL-2020 -	RD700

20-JUL-2020

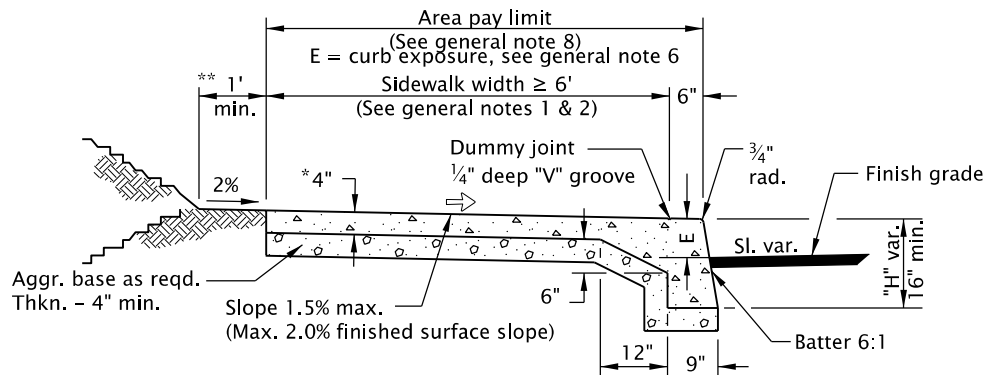
RD720.dgn



TYPICAL PLAN VIEW - CURB LINE SIDEWALK



TYPICAL CURB SIDEWALK CROSS SECTION



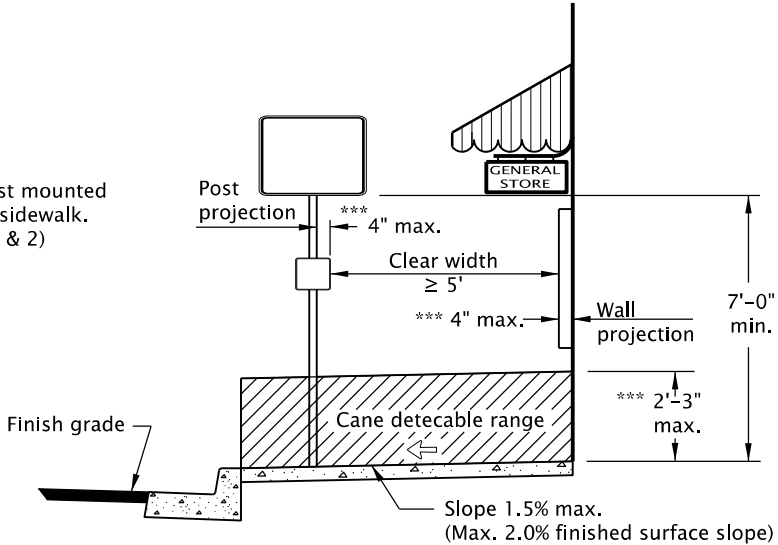
TYPICAL MONOLITHIC CURB & SIDEWALK CROSS SECTION

E = curb exposure, see general note 6

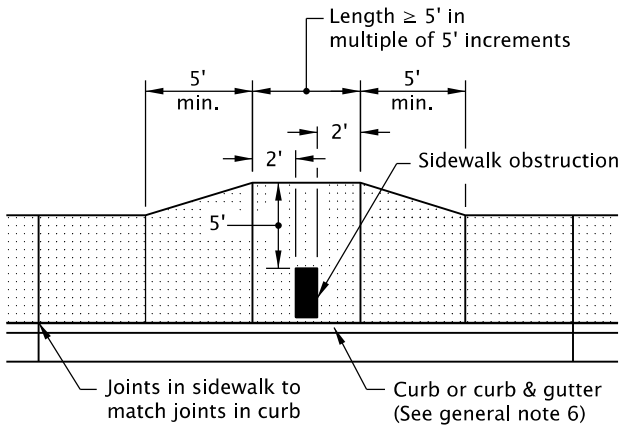
- * Min. 4" or as specified in plans. A thickness ≥ 6" if sidewalk is intended as portion of a driveway or mountable curb is used.
- ** Provide compacted backfill adjacent to curb and sidewalk

*** Objects with base below 2'-3" may protrude any distance as long as the 5' circulation path is maintained. When an object with a base higher than 2'-3" protrudes further than 4" provide a detection below protrusion to delineate edge.

Building, wall, or post mounted obstruction outside sidewalk. (See general notes 1 & 2)



CLEAR CIRCULATION PATH



REQUIRED SIDEWALK WIDENING AROUND OBSTRUCTIONS

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Include additional paved or unpaved 2' shy distance to vertical faces higher than 5' such as retaining walls, sound walls, fences and buildings.
2. Curb type and sidewalk width as shown on plans or as directed. On sidewalks 8' and wider, provide a longitudinal joint at the midpoint.
3. Install 3" pvc weep hole pipes in sidewalks where shown on plans, and allowed by jurisdiction. Place contraction joint over top of pipe. See Std. Dwg. RD700 for weep hole details.
4. Provide expansion joints around poles, posts, boxes, at ends of each driveway, and other fixtures which protrude through or against the structures. For sidewalk, monolithic curb & sidewalk, const. expansion joints at 45' maximum spacing. See Std. Dwg. RD722 for expansion joints details.
5. Const. contraction joints at 15' maximum spacing, and at ends of each curb ramp. See Std. Dwg. RD722 for contraction joints details.
6. For curb details, see Std. Dwgs. RD700 & RD701. ODOT standard E=7".
7. Sidewalk details are based on applicable ODOT standards.
8. Fully lowered sidewalk shown; see project plans for the 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.

LEGEND

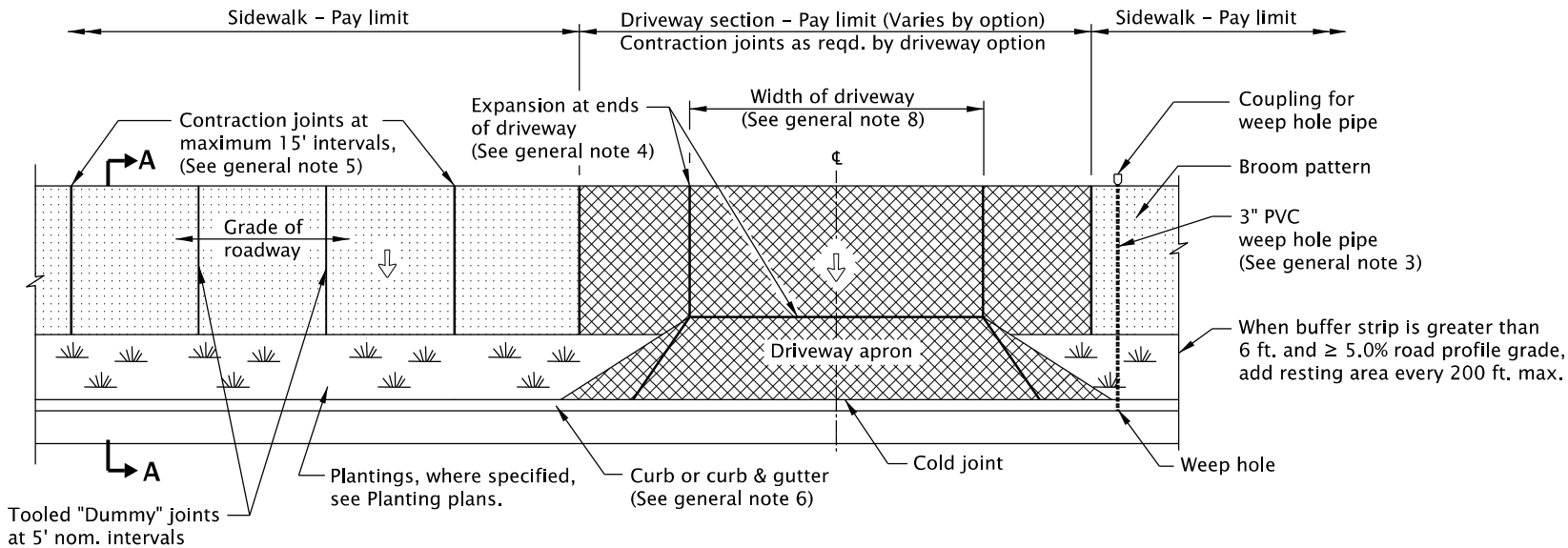
- Sidewalk pay limit.
- Driveway pay limit, varies by option, (See general note 8).
- Cross slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)

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			
CURB LINE SIDEWALKS			
2024			
DATE	REVISION DESCRIPTION		
CALC. BOOK NO.	N/A	SDR DATE	21-JUN-2019
RD720			RD720

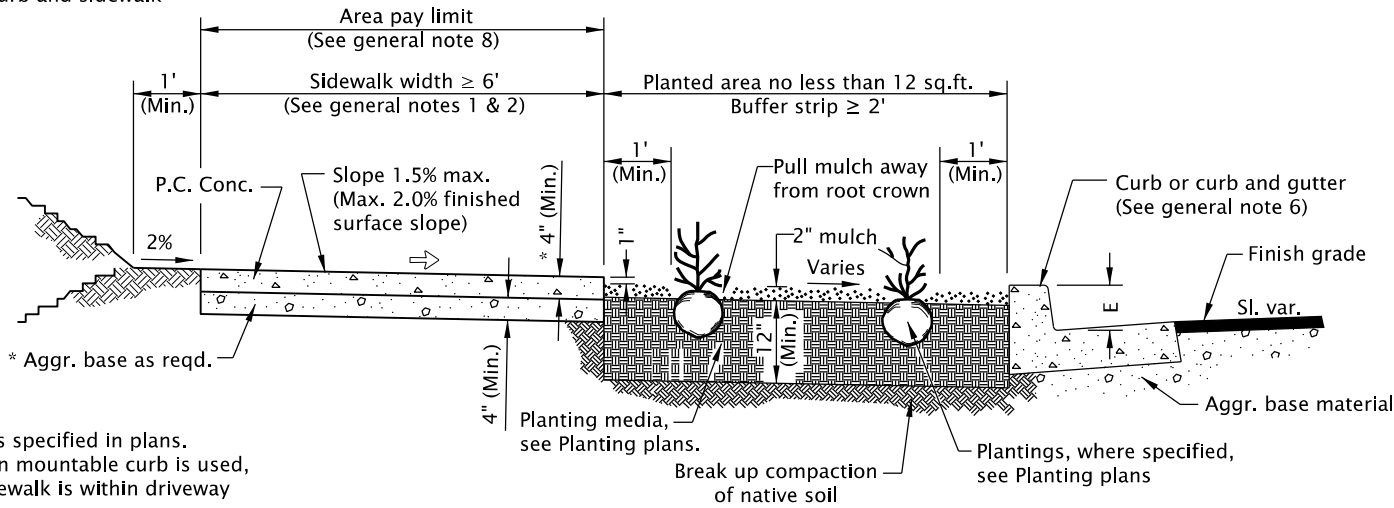
20-JUL-2020

RD721.dgn



TYPICAL PLAN VIEW - SEPARATED SIDEWALK

Provide compacted backfill adjacent to curb and sidewalk

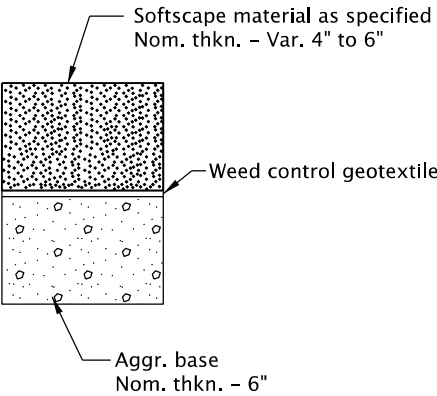


* Min. 4" or as specified in plans.
Min. 6" when mountable curb is used,
or when sidewalk is within driveway
pay limits.

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.

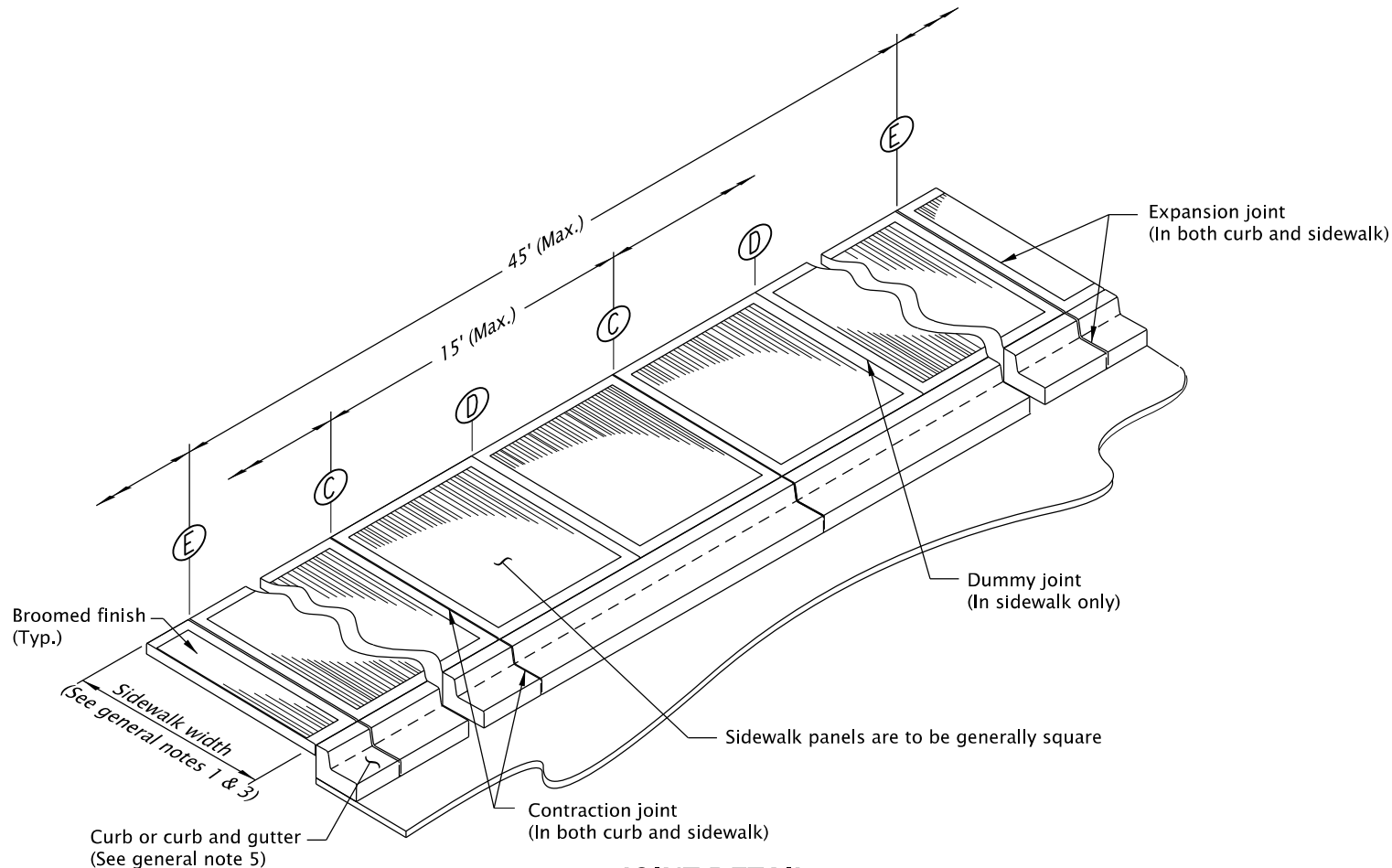
5. Const. contraction joints at 15' maximum spacing, and at ends of each curb ramp. See Std. Dwg. RD722 for contraction joint details.
6. Curb and gutter shown; see project plans for the curb design specified. For curb details, see Std. Dwgs. RD700 & RD701. ODOT standard E=7".
7. Sidewalk details are 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.

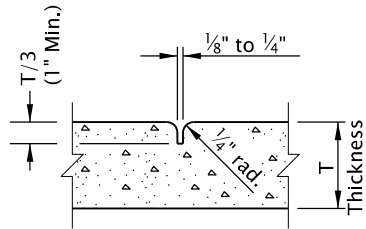
All materials shall be in accordance with the current Oregon Standard Specifications.			
OREGON STANDARD DRAWINGS			
SEPARATED SIDEWALKS			
2024			
DATE	REVISION DESCRIPTION		
CALC. BOOK NO.	N/A	SDR DATE	20-JUL-2020
RD721			

08-JUL-2022

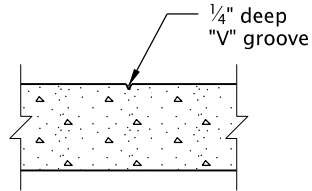
RD722.dgn



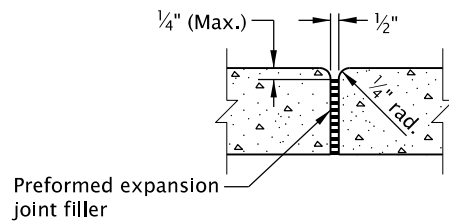
JOINT DETAIL
(Curb line sidewalk with curb and gutter shown)



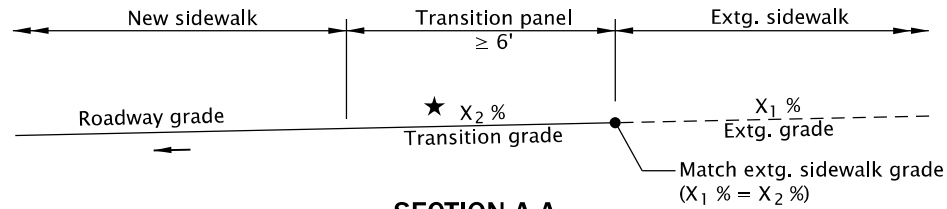
Ⓒ CONTRACTION JOINT
(See general note 6)



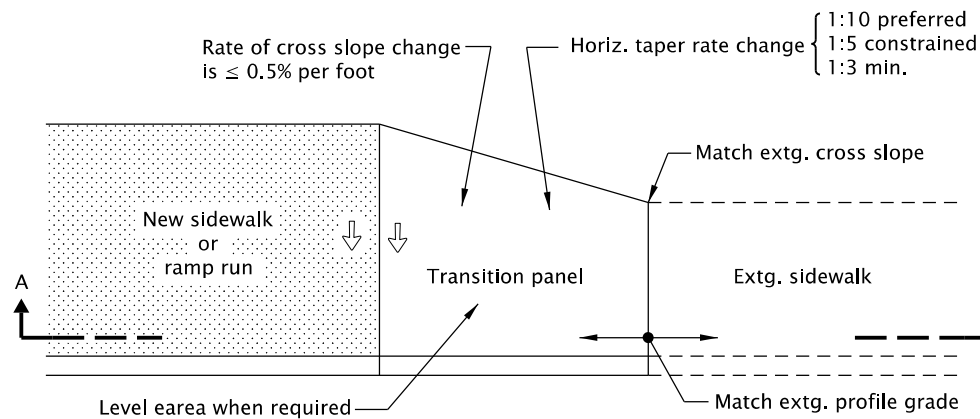
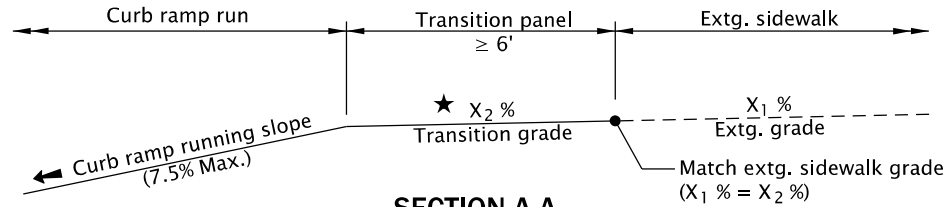
Ⓓ DUMMY JOINT



Ⓔ EXPANSION JOINT
(See general notes 2 & 5)



★ Project the existing sidewalk profile grade through transition panel to new sidewalk or curb ramp run.



SIDEWALK AND CURB RAMP TRANSITION PANELS

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. See Std. Dwgs. RD720 and RD721 for concrete sidewalk details. See project plans for sidewalk width, placement and design specified.
2. Provide expansion joints around poles, boxes, at ends of each driveway and other fixtures which protrude through or against the structures. For sidewalk, monolithic curb and sidewalk, provide construction expansion joints at 45 feet maximum spacing.
3. On sidewalks 8 feet and wider, provide a longitudinal joint at the midpoint of sidewalk panel.
4. See Std. Dwgs. RD700 and RD701 for concrete curb details. See project plans for the curb design specified.
5. Do not place expansion joints between separate concrete pours for curb ramp system components construction. Place expansion joints outside of curb ramp runs when required. Install expansion joints flush with surface for structures protruding through the curb ramp system. See Std. Dwg. RD900.
6. Construct contraction joints at 15 feet maximum spacing, and at each curb ramp, driveway, sidewalk and curb.

LEGEND:

- New sidewalk or ramp run
- Slope 1.5% max.
(Max. 2.0% finished surface slope)
(Normal sidewalk cross slope)
- Slope 7.5% max.
(Max. 8.3% finished surface slope)
- Zero exposure

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

SIDEWALK JOINTS AND TRANSITION PANELS

2024

DATE		REVISION DESCRIPTION	
07-2022		REVISED NOTES	
CALC. BOOK NO.	N/A	SDR DATE	08-JUL-2022

RD722











Effective Date: June 1, 2025 – November 30, 2025

10-JAN-2025

RD900.dgn

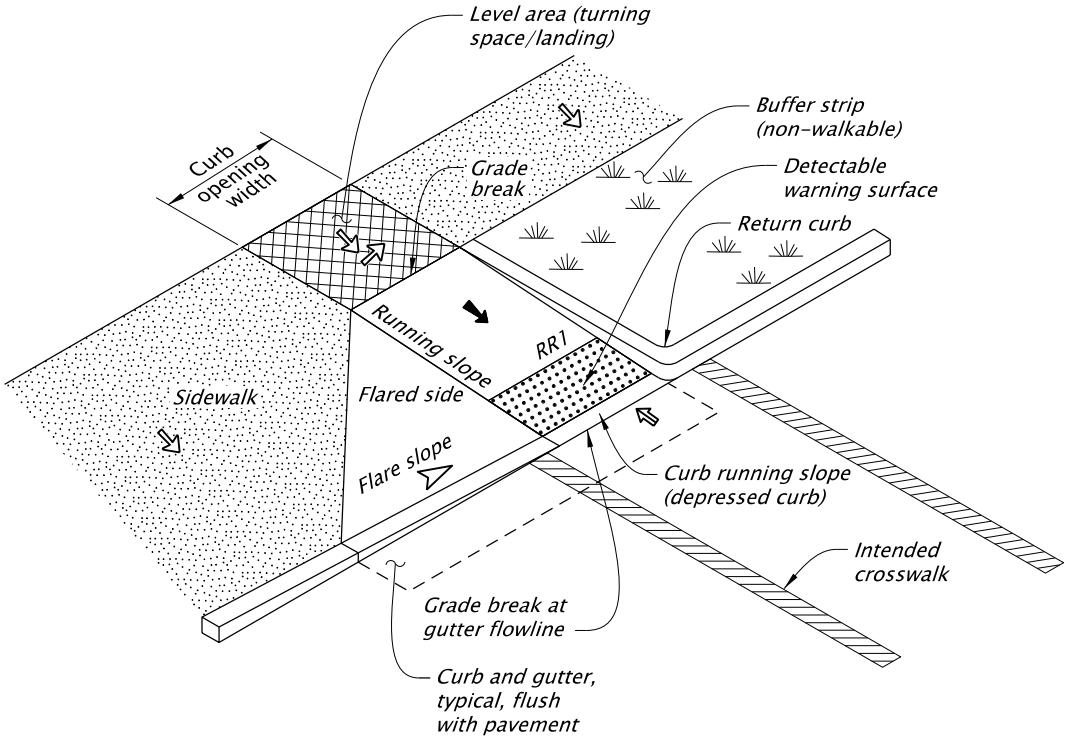
CURB RAMP INDEX	
STANDARD DRAWING NUMBER	STANDARD DRAWING TITLE
RD900	Curb Ramp Components and Legend
RD901	Curb Ramp Legend and Corner Identification
RD902	Detectable Warning Surface Details
RD904	Detectable Warning Surface Placement For Curb Ramps
RD905	Detectable Warning Surface Placement For Directional Curbs
RD906	Detectable Warning Surface Placement For Accesible Route Island
RD908	Detectable Warning Surface Placement For Rail
RD909	Detectable Guide Strip Placement at Bike Ramps
RD910	Perpendicular Curb Ramp
RD912	Perpendicular Curb Ramp
RD913	Perpendicular Curb Ramp With Closure
RD916	Perpendicular Curb Ramp Single Ramp
RD920	Parallel Curb Ramp
RD922	Parallel Curb Ramp Single Ramp
RD930	Combination Curb Ramp
RD932	Combination Curb Ramp
RD936	Combination Curb Ramp
RD938	Combination Curb Ramp Single Ramp
RD940	Blended Transition Curb Ramp Single Ramp
RD950	End of Walk Curb Ramp
RD952	End of Walk Curb Ramp
RD960	Unique Curb Ramp

LEGEND:

-  Marked or intended crossing location
-  Sidewalk or other traversable surface
-  Detectable warning surface (DWS)
-  Level area (Turning space/landing)
-  Cross slope 1.5% maximum
(Maximum 2.0% finished surface slope)
(Normal sidewalk cross slope)
-  Running slope 4.0% maximum
(Maximum 4.9% finished surface slope)
-  Running slope 7.5% maximum
(Maximum 8.3% finished surface slope)
-  Counter slope 4.0% maximum ascending or descending
(Maximum 5.0% finished surface slope)
Slope as required for drainage
-  Flare slope
(Maximum 10.0% finished surface slope)
-  4'x4' clear space
- RR1 Ramp Run position 1

INTERSECTION CONDITION TYPES

- MB = Midblock, less than or equal to roadway grade
finished gutter flow slope
- SU = Signalized or uncontrolled, maximum 5.0%
finished gutter flow slope
- SY = Stop or Yield, maximum 2.0% finished gutter
flow slope

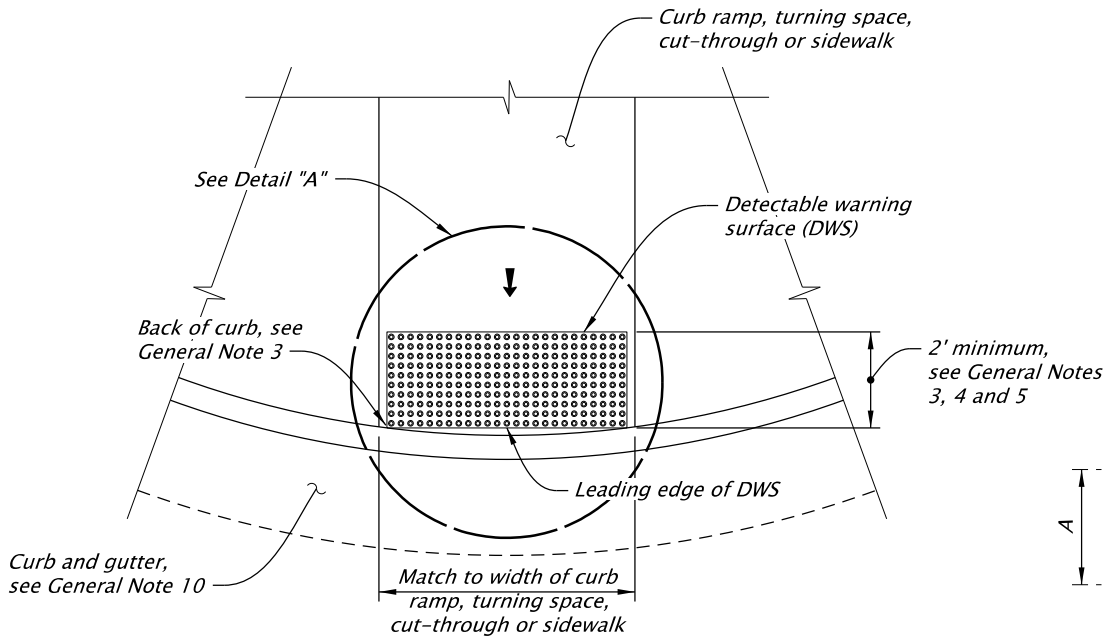


TYPICAL CURB RAMP SYSTEM COMPONENTS
(PERPENDICULAR TYPE SHOWN)

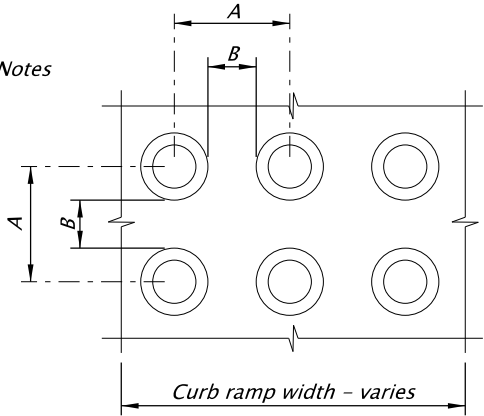
<i>The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.</i>	All materials shall be in accordance with the current Oregon Standard Specifications.		
	OREGON STANDARD DRAWINGS		
	CURB RAMP COMPONENTS AND LEGEND		
	2024		
DATE	REVISION		DESCRIPTION
11-2023	REVISED LEGEND		
01-2025	UPDATED CAD STANDARDS		
CALC. BOOK NO.	N/A	SDR DATE	10-JAN-2025
			RD900

10-JAN-2025

RD902.dgn

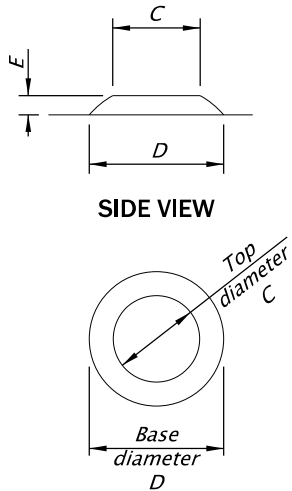


DETECTABLE WARNING SURFACE DETAIL



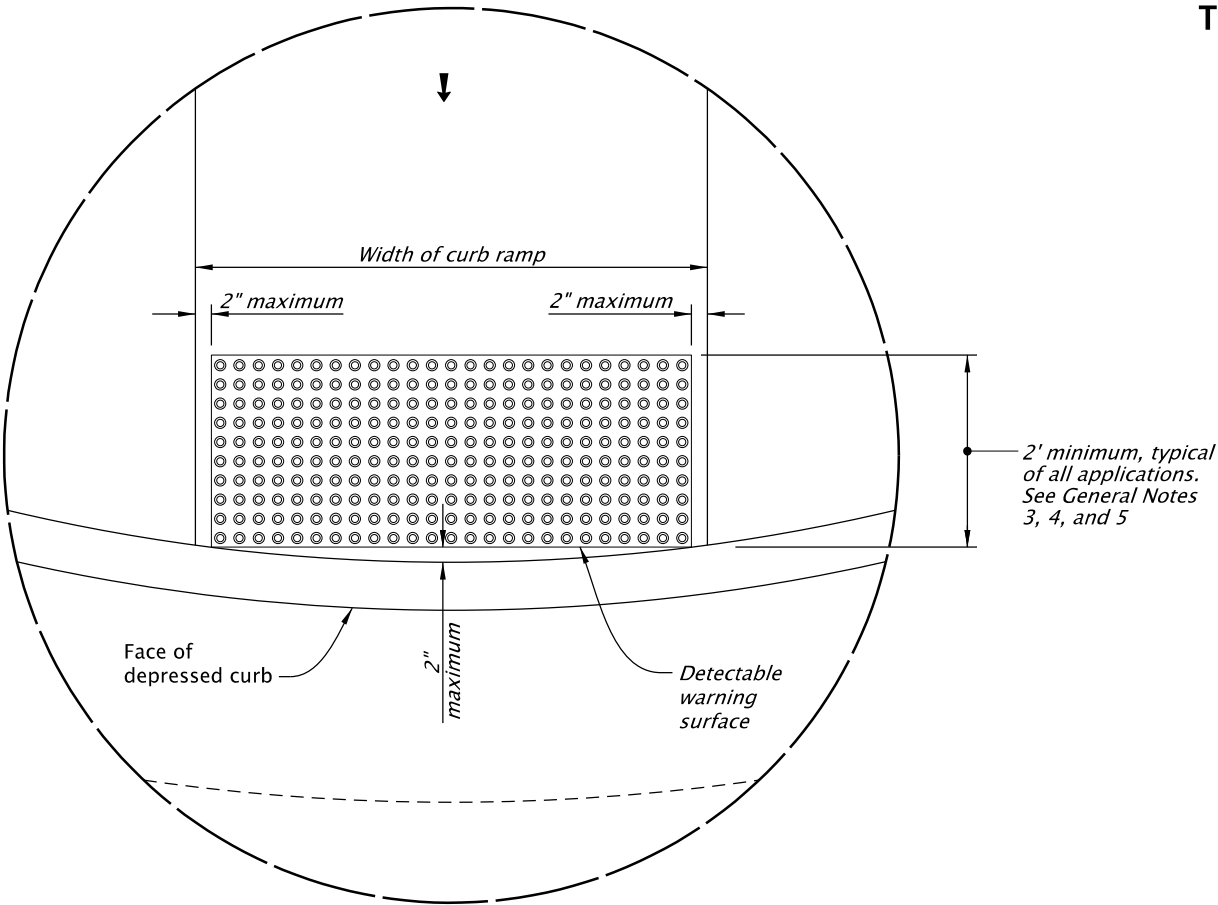
TRUNCATED DOME SPACING

TRUNCATED DOME SIZE/SPACING DIMENSIONS					
	A	B	C	D	E
MINIMUM (IN.)	1.60	0.65	0.45	0.90	0.20
MAXIMUM (IN.)	2.40	--	0.91	1.40	0.20



TRUNCATED DOME

TRUNCATED DOME DETAILS






DETAIL "A"

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Detectable warning surface details and locations are based on applicable ODOT Standards.
2. See project plans for details not shown. See drawings RD700 and 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 feet 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 within 1/4-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 drawing 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 drawings 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% maximum
(Maximum 2.0% finished surface slope)
(Normal sidewalk cross slope)
-  Running slope 7.5% maximum
(Maximum 8.3% finished surface slope)

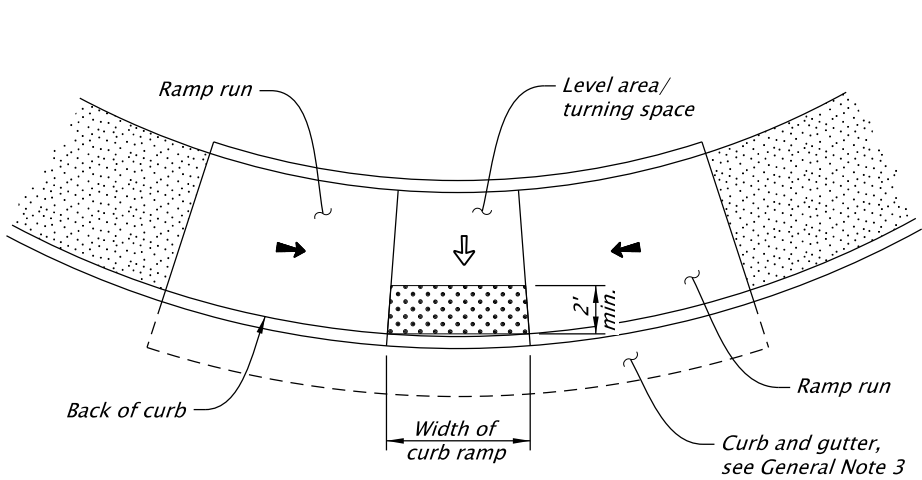
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.			
OREGON STANDARD DRAWINGS			
DETECTABLE WARNING SURFACE DETAILS			
2024			
DATE	REVISION DESCRIPTION		
01-2025	UPDATED CAD STANDARDS		
CALC. BOOK NO.	N/A	SDR DATE	10-JAN-2025
RD902			

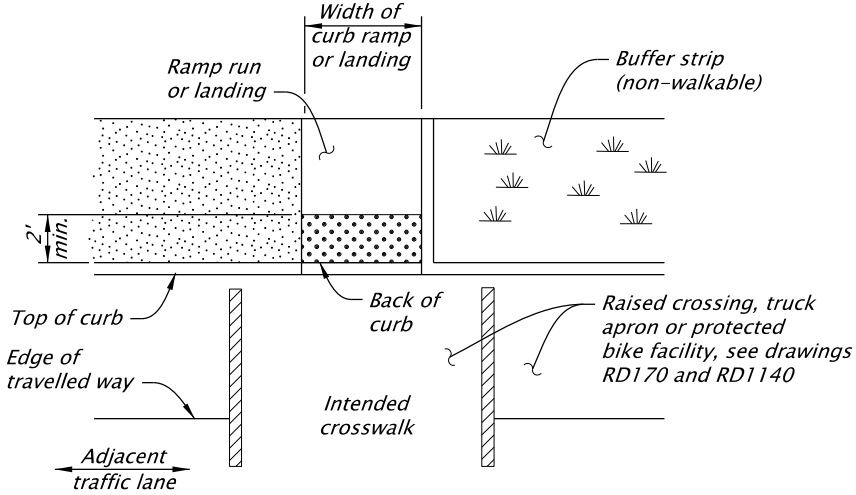
10-JAN-2025

RD904.dgn

- GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:
- 1. Detectable warning surface details and locations are based on applicable ODOT Standards.
 - 2. See project plans for details not shown. See drawings RD700 and RD701 for curbs. See drawing 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.

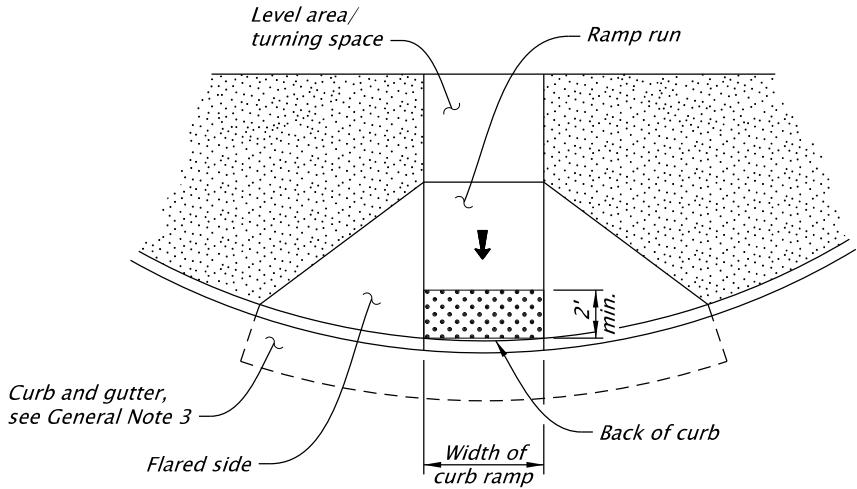


PARALLEL CURB RAMP

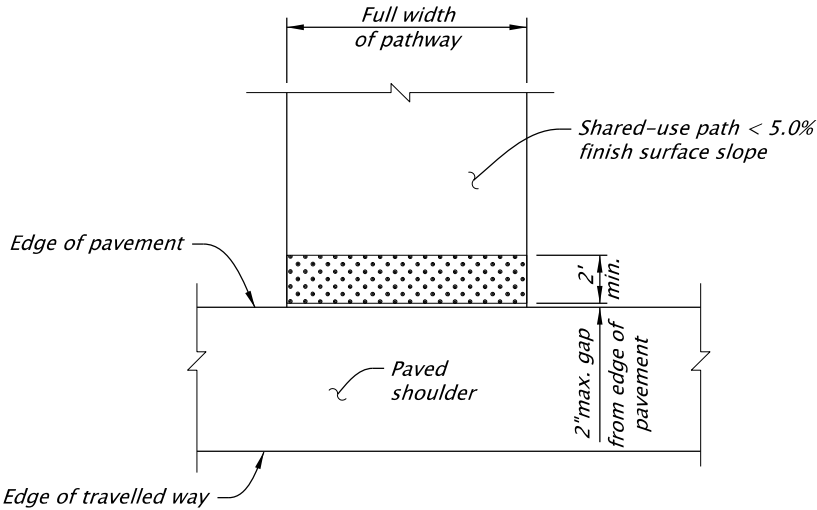


RAISED CROSSING, TRUCK APRON
OR PROTECTED BIKE FACILITY

- LEGEND:
- Marked or intended crossing location
 - Sidewalk
 - Detectable warning surface
 - Cross slope 1.5% maximum
(Maximum 2.0% finished surface slope)
(Normal sidewalk cross slope)
 - Running slope 7.5% maximum
(Maximum 8.3% finished surface slope)



PERPENDICULAR CURB RAMP
GRADE BREAK IN FRONT OF CURB



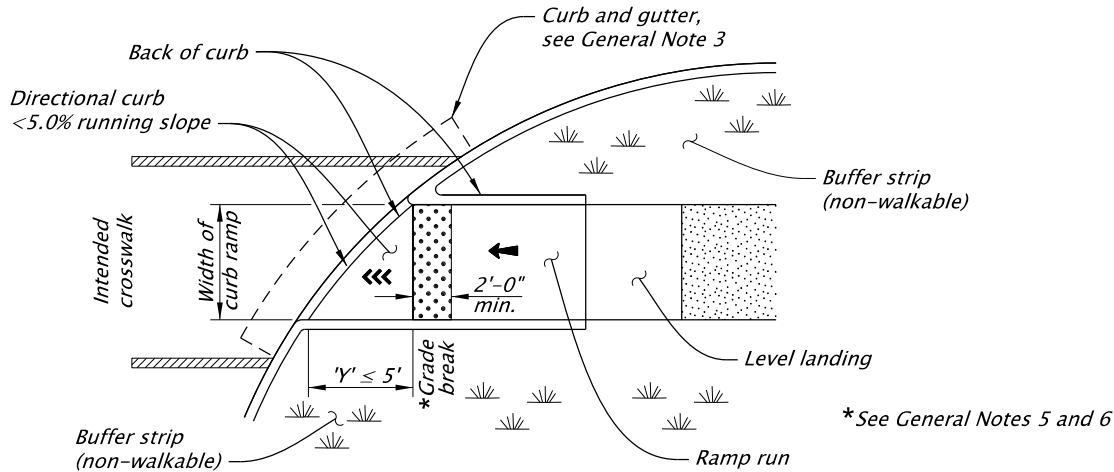
SHARED-USE PATH CONNECTION
OR CURBLESS WALKWAY

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.

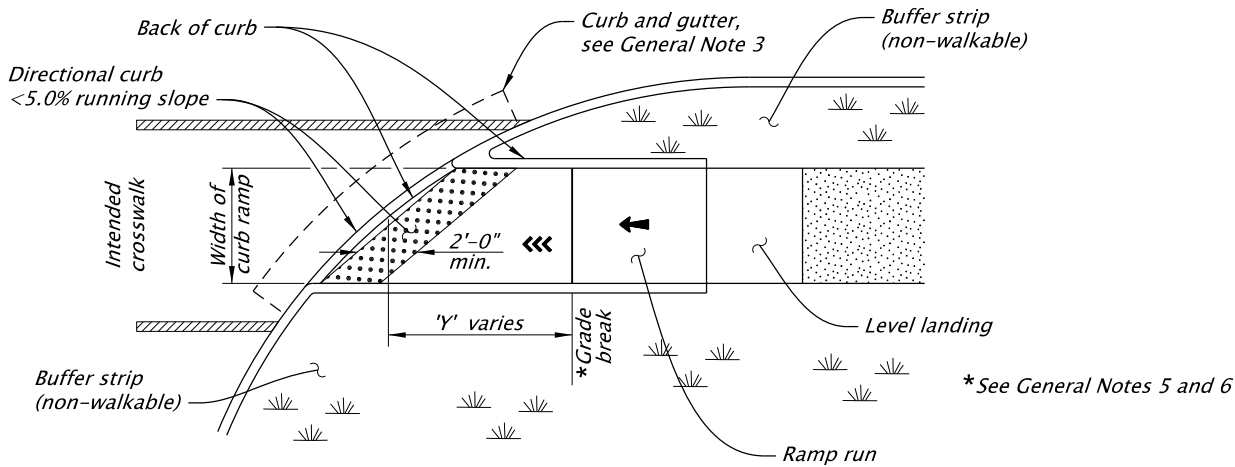
All materials shall be in accordance with the current Oregon Standard Specifications.			
OREGON STANDARD DRAWINGS			
DETECTABLE WARNING SURFACE PLACEMENT FOR CURB RAMPS			
2024			
DATE	REVISION	DESCRIPTION	
01-2025	UPDATED CAD STANDARDS		
CALC. BOOK NO.	N/A	SDR DATE	10-JAN-2025
			RD904

10-JAN-2025

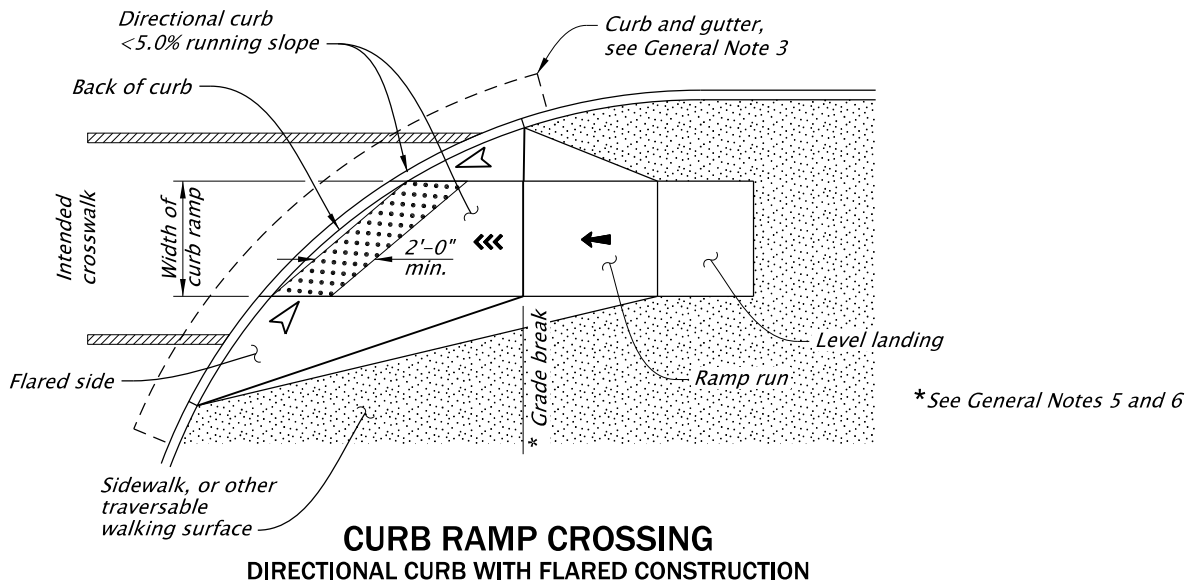
RD905.dgn



CURB RAMP CROSSING
GRADE BREAK ≤ 5 FEET FROM BACK OF CURB



CURB RAMP CROSSING
GRADE BREAK > 5 FEET FROM BACK OF CURB



CURB RAMP CROSSING
DIRECTIONAL CURB WITH FLARED CONSTRUCTION

GENERAL NOTES FOR ALL DETAILS THIS SHEET:

1. Detectable warning surface details and locations are based on applicable ODOT Standards.
2. See project plans for details not shown. See drawings RD700 and RD701 for curbs. See drawing 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.
5. Detectable warning surface placement across the grade break is prohibited.
6. Where the 'Y' distance is greater than 5 feet anywhere in front of ramp run grade break, the detectable warning surface placement shall be placed at the back of curb line.

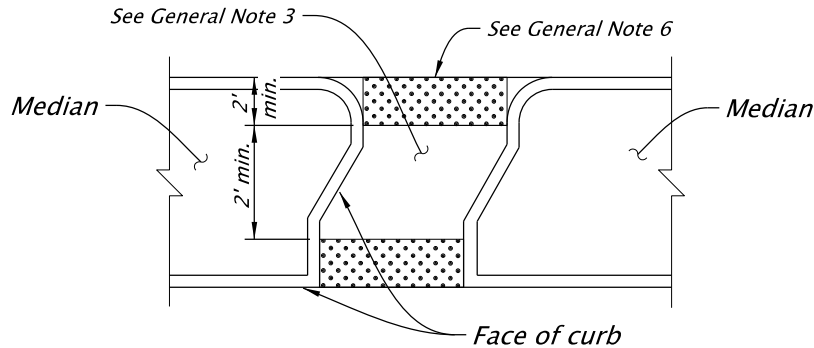
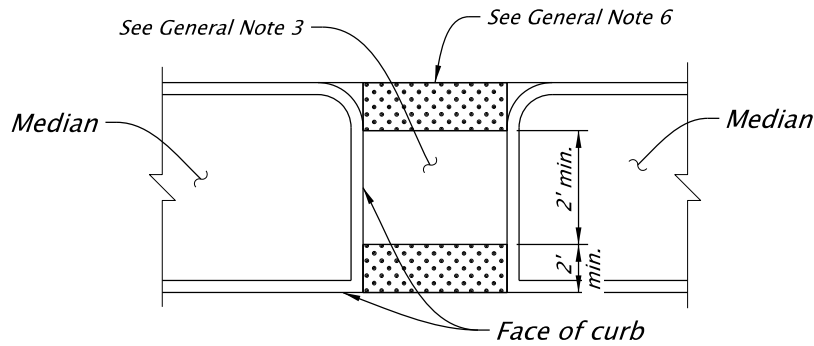
LEGEND:

- Marked or intended crossing location
- Sidewalk
- Detectable warning surface
- Running slope 7.5% maximum
(Maximum 8.3% finished surface slope)
- Flare slope
(Maximum 10.0% finished surface slope)
- Running slope 4.0% maximum
(Maximum 4.9% finished surface slope)

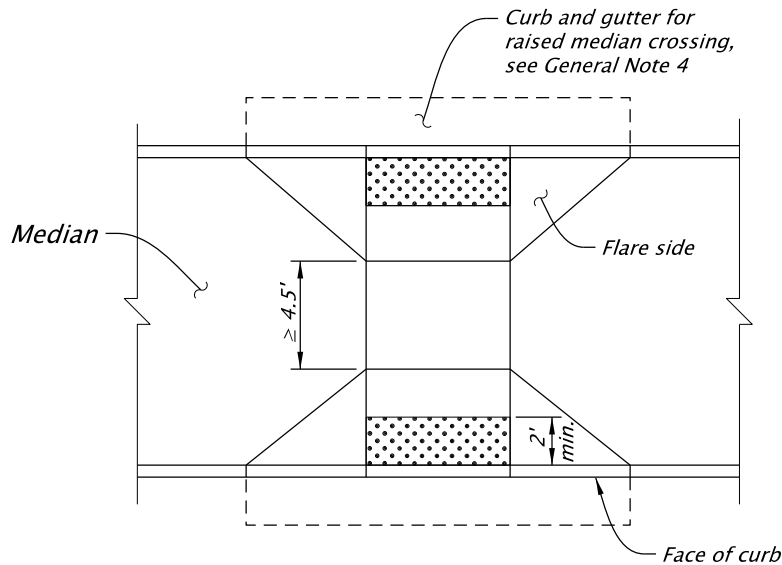
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.			
OREGON STANDARD DRAWINGS			
DETECTABLE WARNING SURFACE PLACEMENT FOR DIRECTIONAL CURBS			
2024			
DATE	REVISION DESCRIPTION		
01-2025	UPDATED CAD STANDARDS		
CALC. BOOK NO.	N/A	SDR DATE	10-JAN-2025
RD905			

10-JAN-2025
RD906.dgn

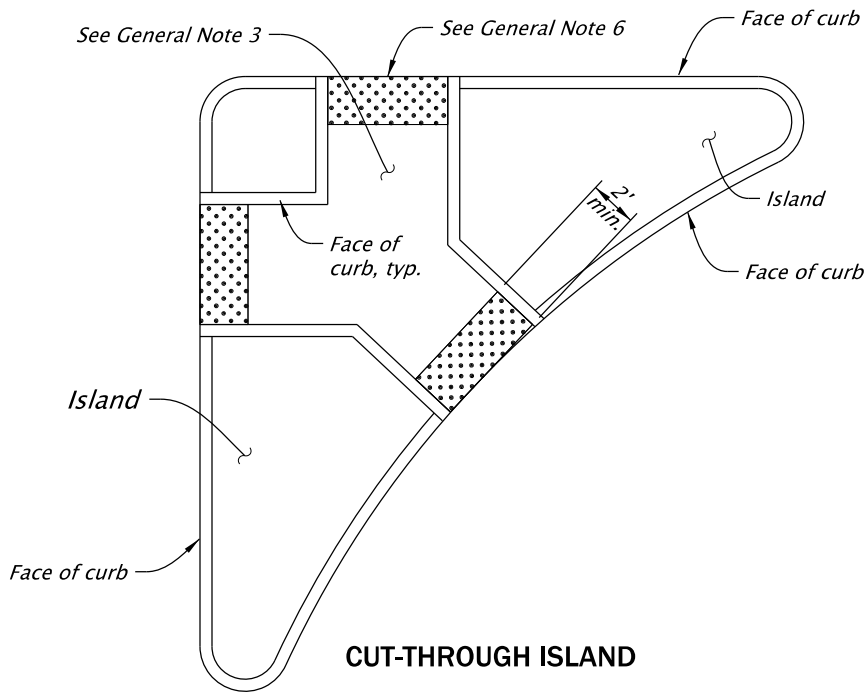


CUT-THROUGH

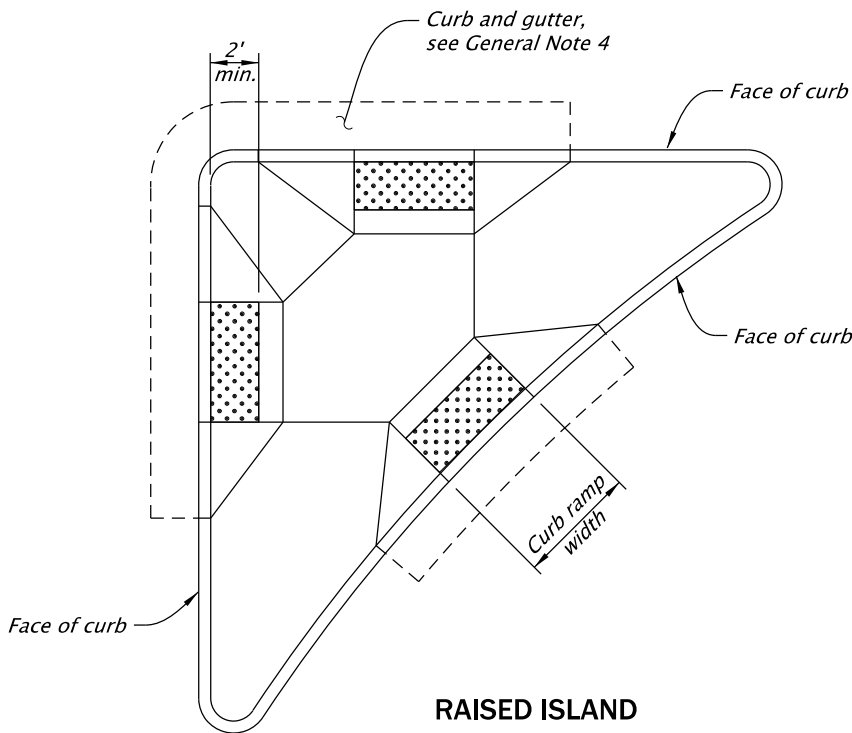


RAISED MEDIAN

MEDIAN CROSSING



CUT-THROUGH ISLAND




RAISED ISLAND

CHANNELIZATION ISLAND

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Detectable warning surface details and locations are based on applicable ODOT Standards.
2. See project plans for details not shown. See drawings RD700 and RD701 for curbs. See drawings RD710 and RD711 for accessible route island. See drawing RD902 for detectable warning surface installation details.
3. Detectable warning surfaces shall be separated by a 2-foot minimum length of walkway without detectable warnings. Site conditions normally require a project specific design. See project plans for details not shown. Omit detectable warning surfaces if less than 2 feet.
4. On or along state highways, curb and gutter is required at curb ramps.
5. Details intended for pedestrian route only. For protected bike lanes on multi-use paths, see project plans for specific details.
6. Where the island has no depressed curb, the detectable warning surface shall be placed at the edge of roadway. Detectable warning surface shall be full width where radial return curbs are installed.

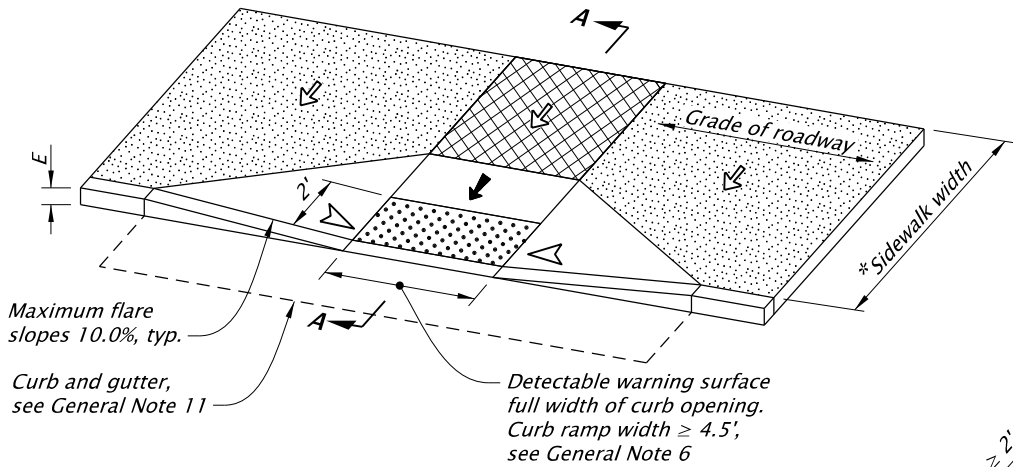
LEGEND:

 Detectable warning surface

<p>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.</p>	All materials shall be in accordance with the current Oregon Standard Specifications.			
	OREGON STANDARD DRAWINGS			
	DETECTABLE WARNING SURFACE PLACEMENT FOR ACCESSIBLE ROUTE ISLAND			
	2024			
DATE	REVISION			DESCRIPTION
01-2025	UPDATED CAD STANDARDS			
CALC. BOOK NO.		N/A	SDR DATE	10-JAN-2025
				RD906

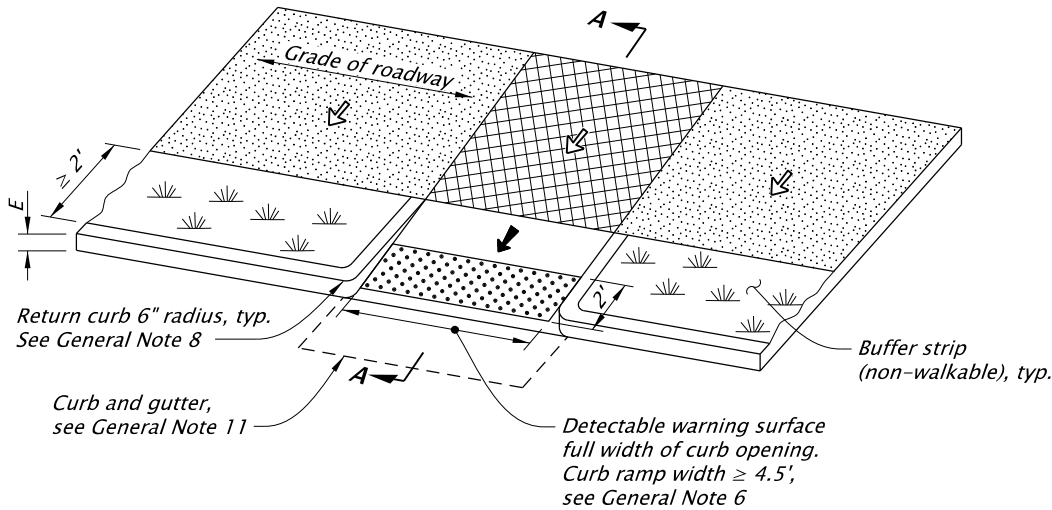
10-JAN-2025

RD910.dgn

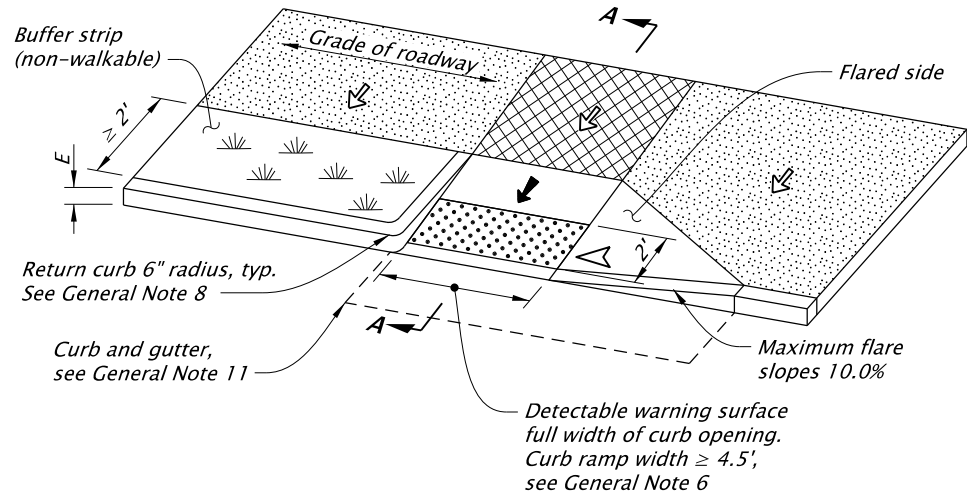


PERPENDICULAR CURB RAMP DETAIL

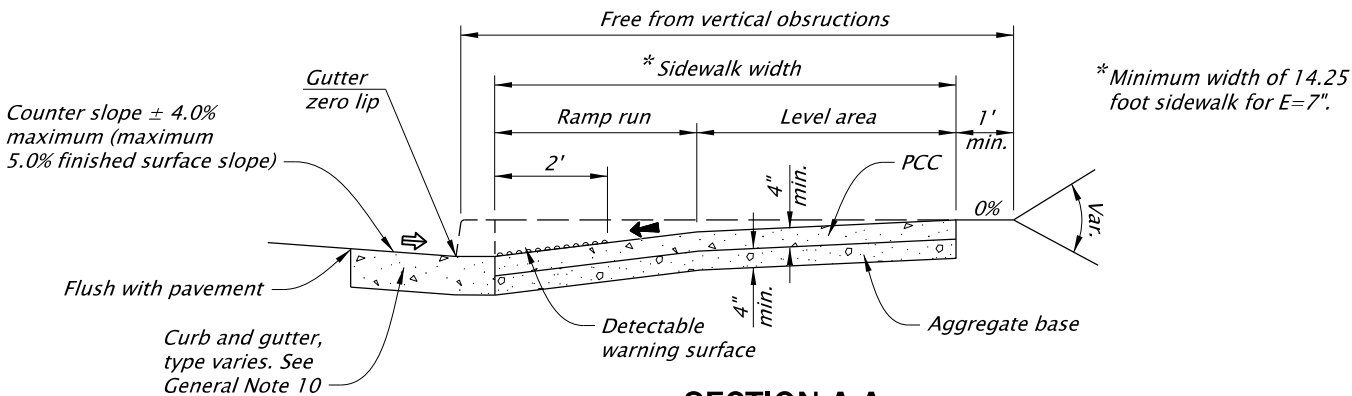
(Use "Parallel Curb Ramp Detail" or "Combination Curb Ramp Detail" when required turning space cannot be obtained)



PERPENDICULAR CURB RAMP THROUGH BUFFER STRIP



PERPENDICULAR CURB RAMP WITH SINGLE FLARE



SECTION A-A

LEGEND:

- Sidewalk
- Detectable warning surface (DWS)
- Level area (Turning space/landing)
Unobstructed 4.5' x 4.5'

With obstruction 4.5' x 5.5' (longer dimension in direction of pedestrian street crossing).

For the purposes of this application, a maximum 2.0% finished surface slope (for drainage) measured perpendicular in two directions is considered level.

- Cross slope 1.5% maximum
(Maximum 2.0% finished surface slope)
(Normal sidewalk cross slope)
- Running slope 7.5% maximum
(Maximum 8.3% finished surface slope)
- Counter slope 4.0% maximum ascending or descending
(Maximum 5.0% finished surface slope)
Slope as required for drainage
- Flare slope
(Maximum 10.0% finished surface slope)

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

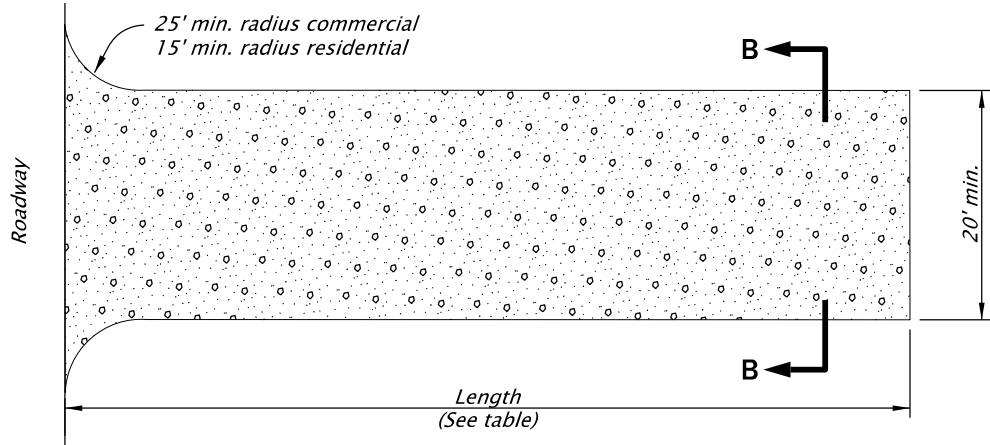
- Curb ramp details are based on applicable ODOT standards.
- See project plans for details not shown. See drawings RD700 and RD701 for curbs. See drawings RD720 and RD721 for sidewalks. See drawings RD902 through RD908 for detectable warning surface installation details. See drawings RD912 through RD916 for curb ramp placement options.
- Site conditions normally require a project specific design. See project plans for details not shown.
- Tooled dummy joints are required at all curb ramp slope break lines. See drawing RD722.
- Curb ramp slopes shown are relative to the true level horizon (zero bubble).
- Place detectable warning surface at the back of curb for a minimum depth of 2 feet in the direction of pedestrian travel full width of curb ramp opening that is adjacent to traffic.
- Grade breaks at the top and bottom of curb ramp runs shall be perpendicular to the direction of the ramp run. Grade breaks shall not be permitted on the surface of ramp runs and turning spaces. Surface slopes that meet at grade breaks shall be flush.
- Return curb may be provided in lieu of flared slope only if protected from traverse travel by softscape, see drawing RD721. Return curb shall not reduce width of approaching sidewalk.
- Curb ramps for shared use paths intersecting a roadway shall be full width of path, excluding flares. When a curb ramp is used to provide bicycle access from a roadway to a sidewalk, the curb ramp opening will be greater than or equal to 8 feet wide. See drawings RD904 and RD909 for additional details.
- Place an inlet at upstream side of curb ramp or perform other approved design mitigation. Check the gutter flow depth at curb ramp locations to assure that the design flood does not overtop the back of sidewalk.
- On or along state highways, curb and gutter is required at curb ramps. Curb and gutter shall be flush with the adjacent pavement.

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.

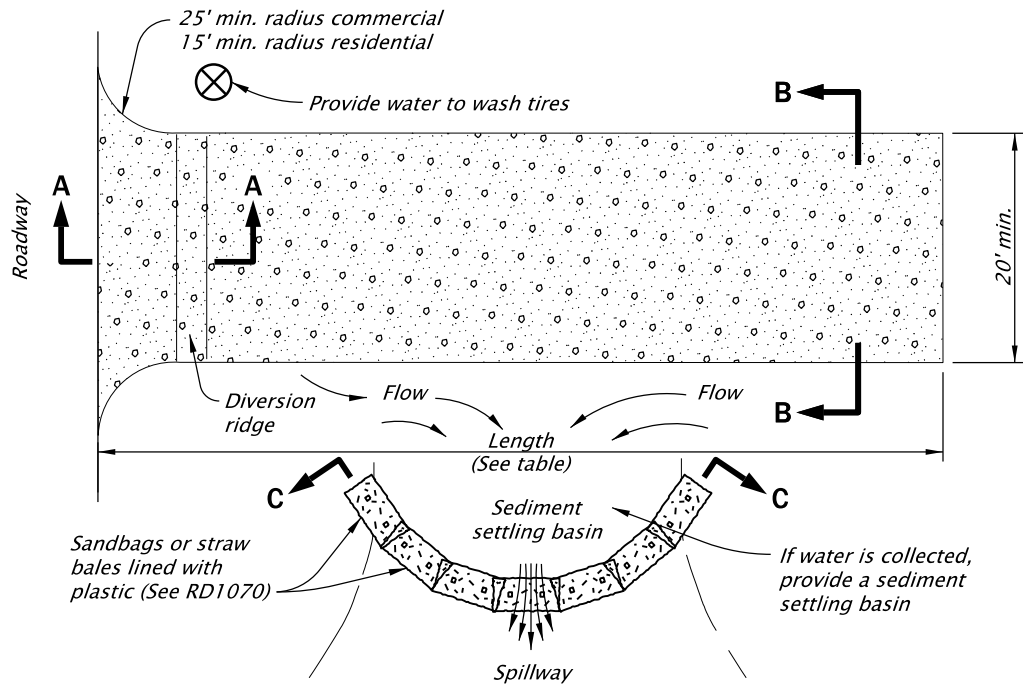
All materials shall be in accordance with the current Oregon Standard Specifications.			
OREGON STANDARD DRAWINGS			
PERPENDICULAR CURB RAMP			
2024			
DATE	REVISION DESCRIPTION		
01-2025	UPDATED CAD STANDARDS		
CALC. BOOK NO.	N/A	SDR DATE	10-JAN-2025
RD910			RD910

20-JAN-2021

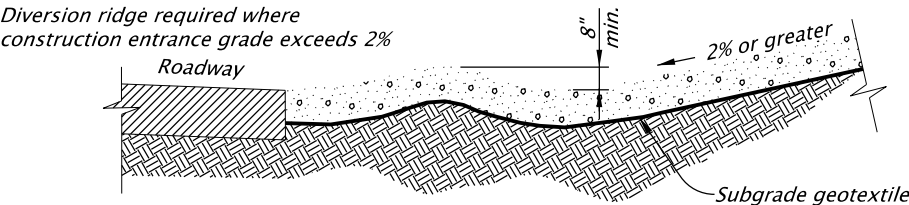
RD1000.dgn



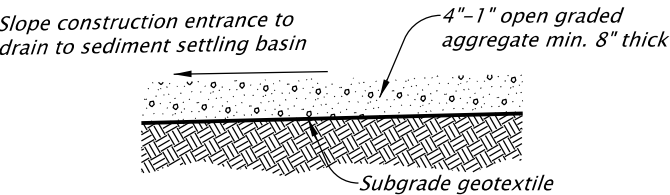
CONSTRUCTION ENTRANCE - TYPE 1
NOT TO SCALE



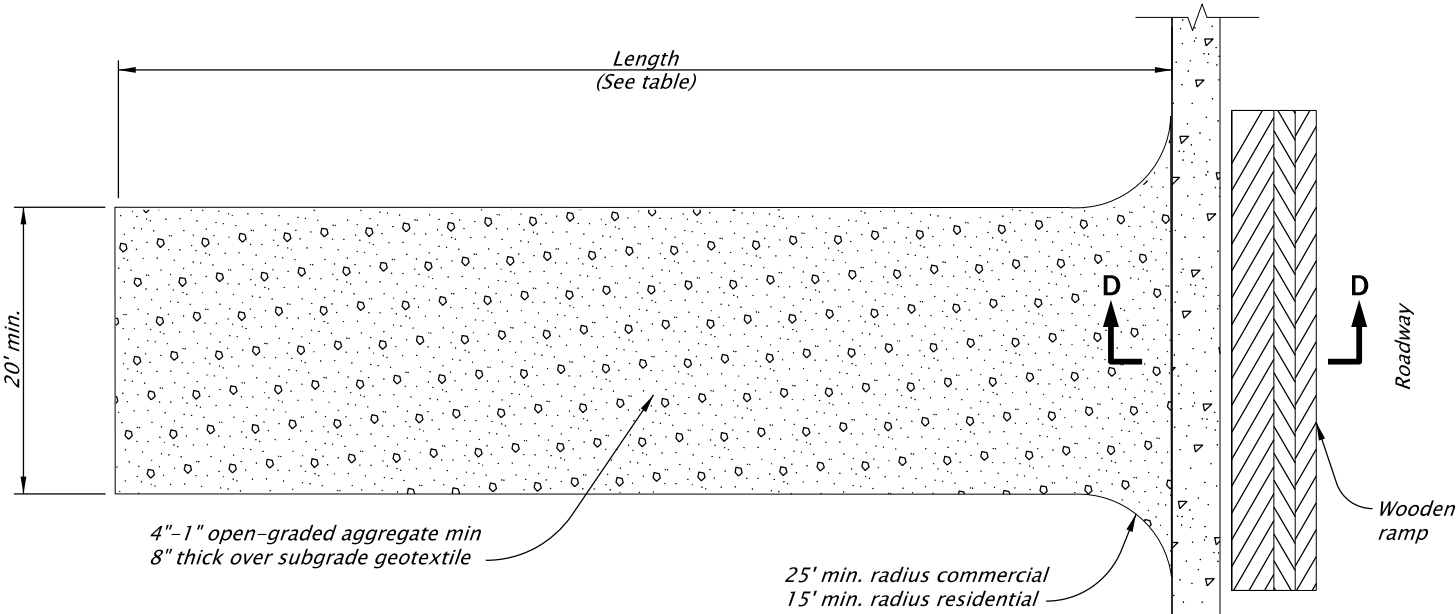
CONSTRUCTION ENTRANCE - TYPE 2
NOT TO SCALE



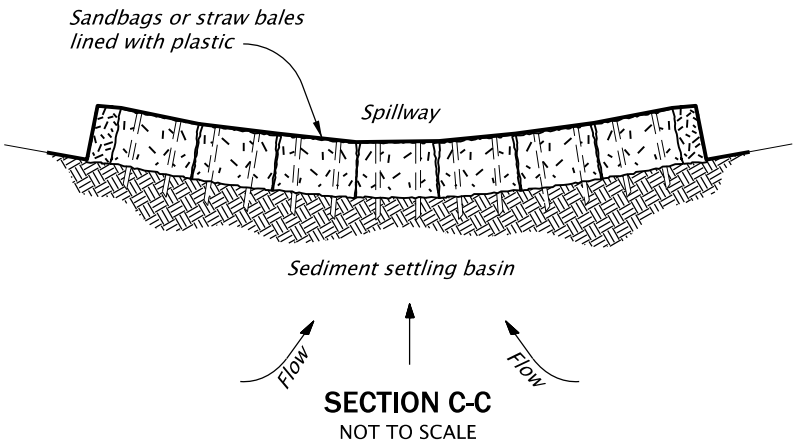
SECTION A-A
NOT TO SCALE



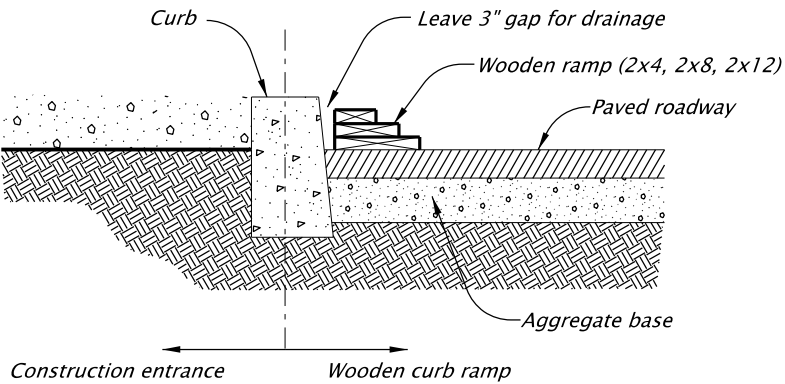
SECTION B-B
NOT TO SCALE



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.

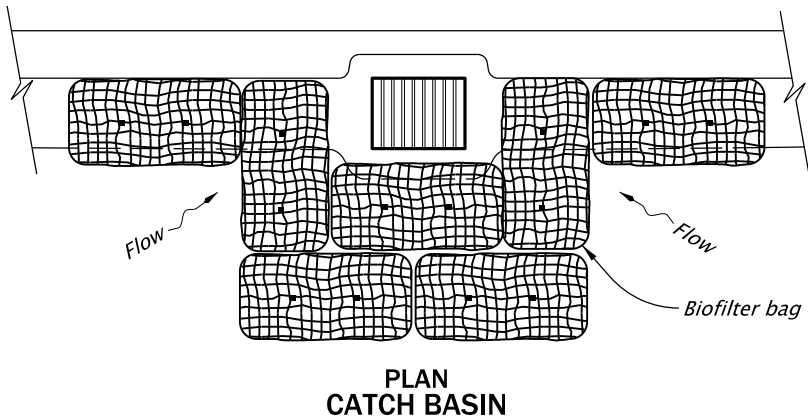
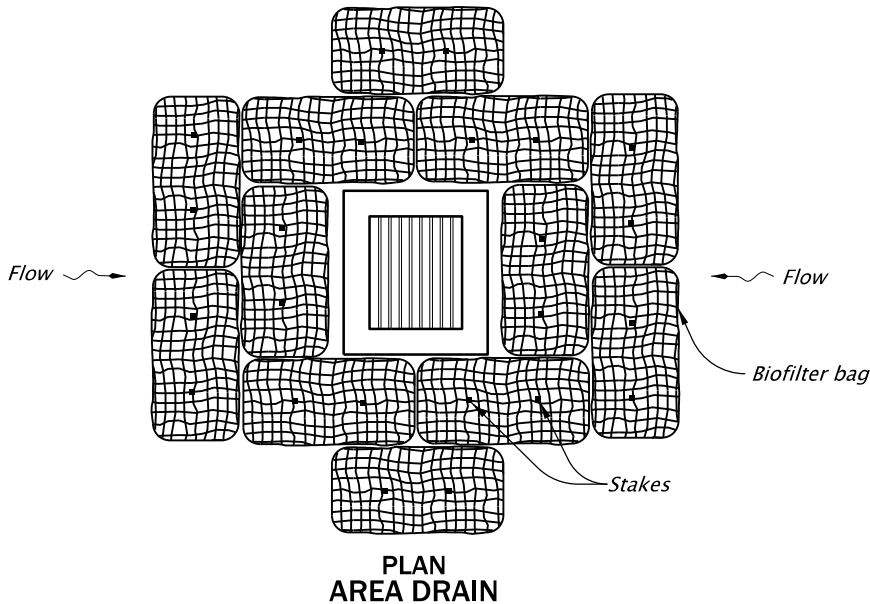
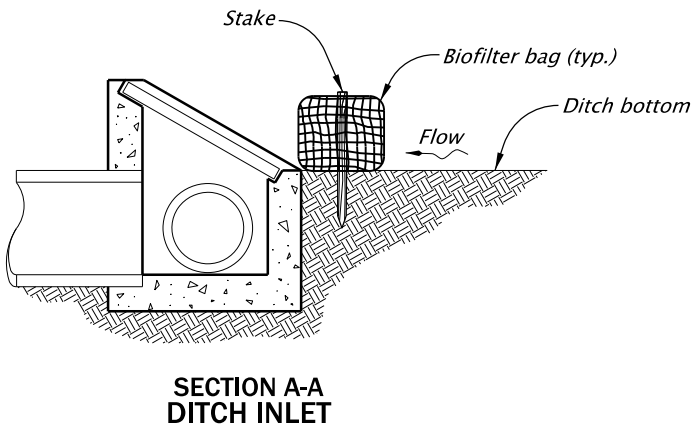
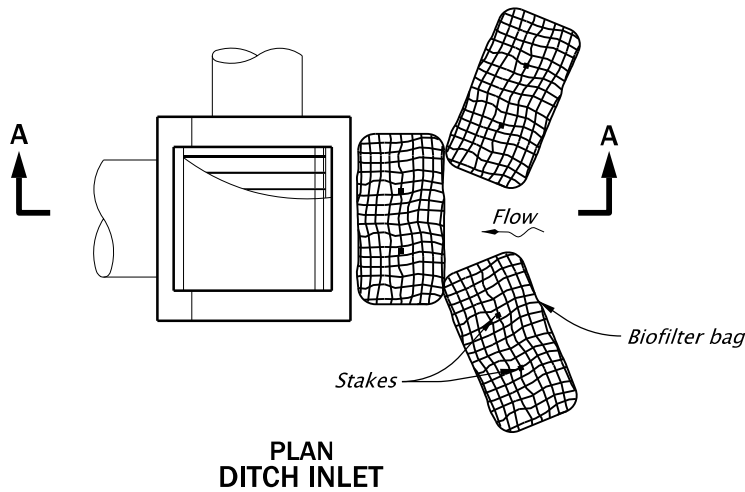
CONSTRUCTION ENTRANCE TABLE MINIMUM LENGTH	
Length (FT)	Area Of Exposed Soil (Acre)
20	0.25
50	0.25 < A < 1.0
100	A > 1.0

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			
2024			
DATE	REVISION DESCRIPTION		
01-2021	REMOVED CALC BOOK NUMBERS		
CALC. BOOK NO.	N/A	SDR DATE	20-JAN-2021
			RD1000

20-JAN-2021

RD1015.dgn



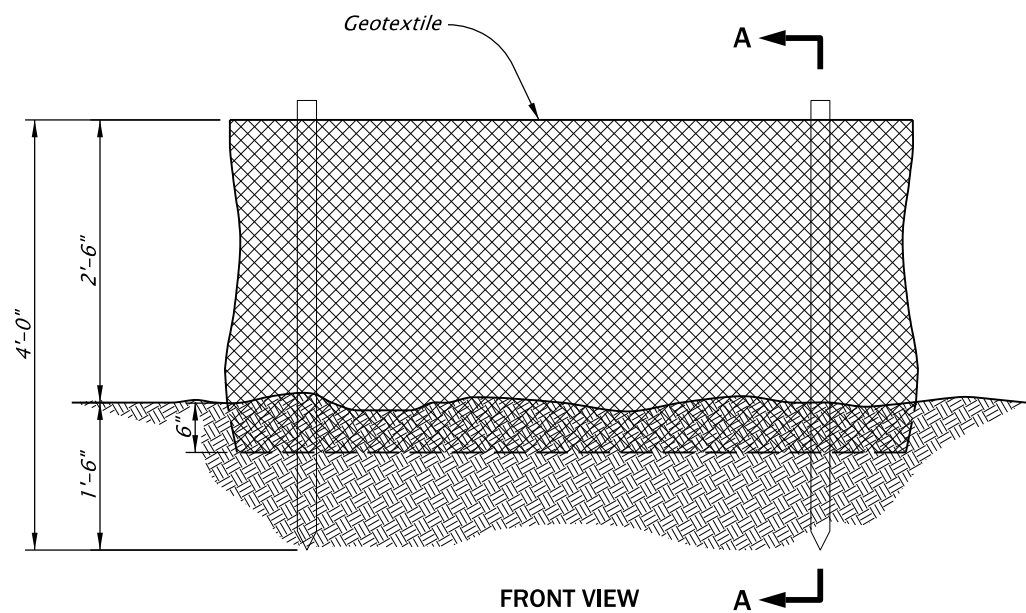
BIOFILTER BAGS - TYPE 4
NOT TO SCALE

- NOTES:
- 1. Stake biofilter bags with 2"x2"x36" wood stakes, and use a minimum 2 stakes per bag. Drive stakes a minimum of 6" into the ground and flush with the top of the bags.
 - 2. Omit stakes when bags are placed on pavement surface.
 - 3. Overlap all bag joints 6".

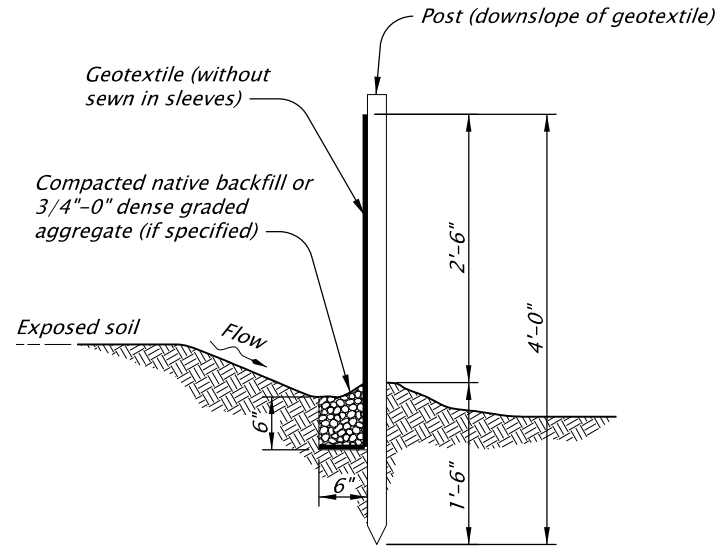
- 4. Biofilter bags used on active roadways are easily displaced and made ineffective if struck by vehicles. If struck by a cyclist, falls with injury could result. On active roadways alternative inlet protection should be considered.

<div>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.</div>	All materials shall be in accordance with the current Oregon Standard Specifications.			
	OREGON STANDARD DRAWINGS			
	INLET PROTECTION TYPE 4			
	2024			
DATE	REVISION			DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS			
CALC. BOOK NO.		N/A	SDR DATE	20-JAN-2021
				RD1015

20-JAN-2021
RD1040.dgn

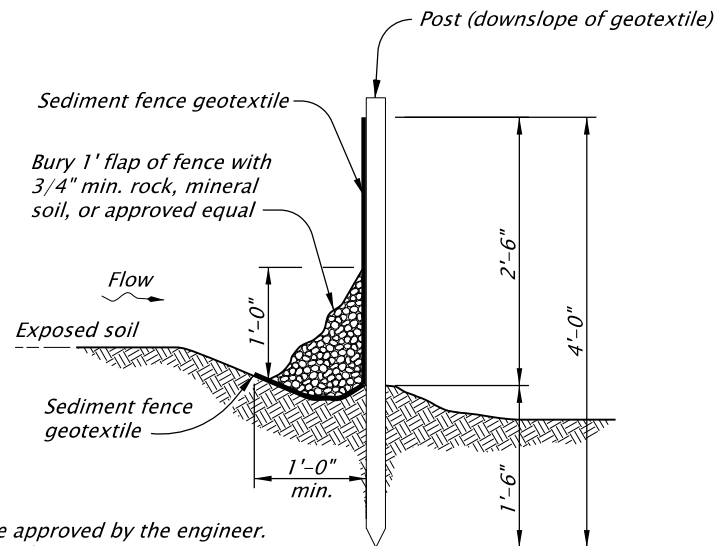


FRONT VIEW



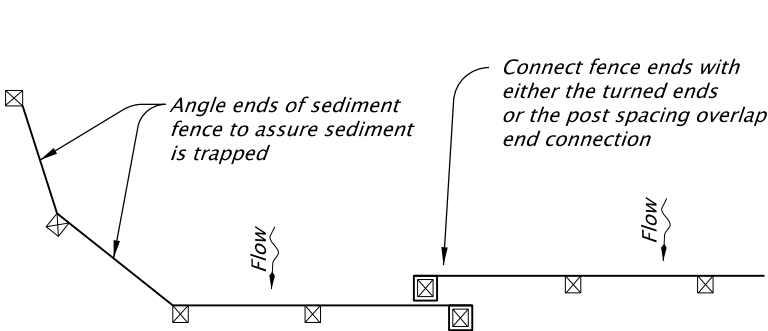
SECTION A-A

SEDIMENT FENCE AND GEOTEXTILE BURY DETAIL - TYPE 1
NOT TO SCALE

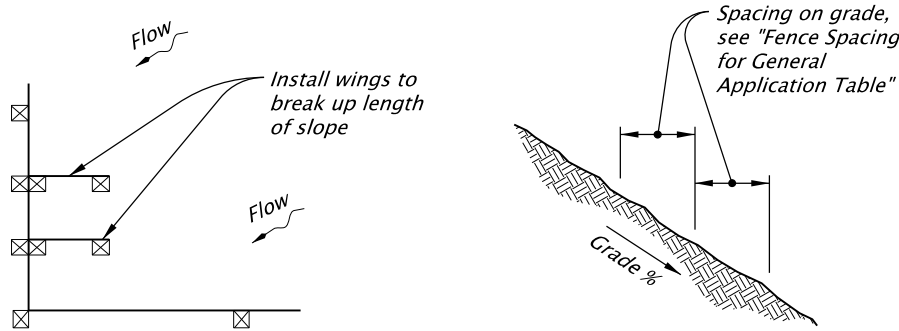


NOTES:
1. Use must be approved by the engineer.
2. Not approved for use with sediment fencing with sewn-in post sleeves.

ALTERNATE SEDIMENT FENCE
WITHOUT TRENCHING - TYPE 2
NOT TO SCALE



PLAN VIEW

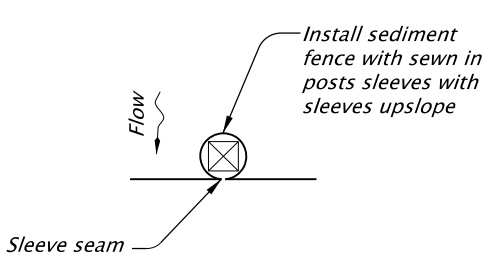


TERMINATION AT CORNER OR PROPERTY LINE

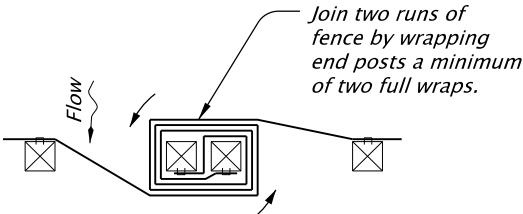
- GENERAL NOTES:
1. Use 2"x2" wood fence posts.
 2. Posts to be installed on downhill side of sediment fence geotextile. Position posts to prevent separation from geotextile.
 3. Compact filter fabric trench backfill and soil on uphill side of fence.
 4. Locate fence no closer than three feet to the 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'

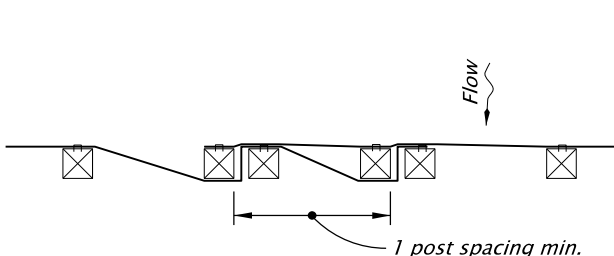
POST SPACING TABLE	
6'	Sediment Fence with Geotextile elongation less than 50%
4'	Sediment Fence with Geotextile elongation 50% or more



GEOTEXTILE WITH POST SLEEVES



TURNED ENDS CONNECTION



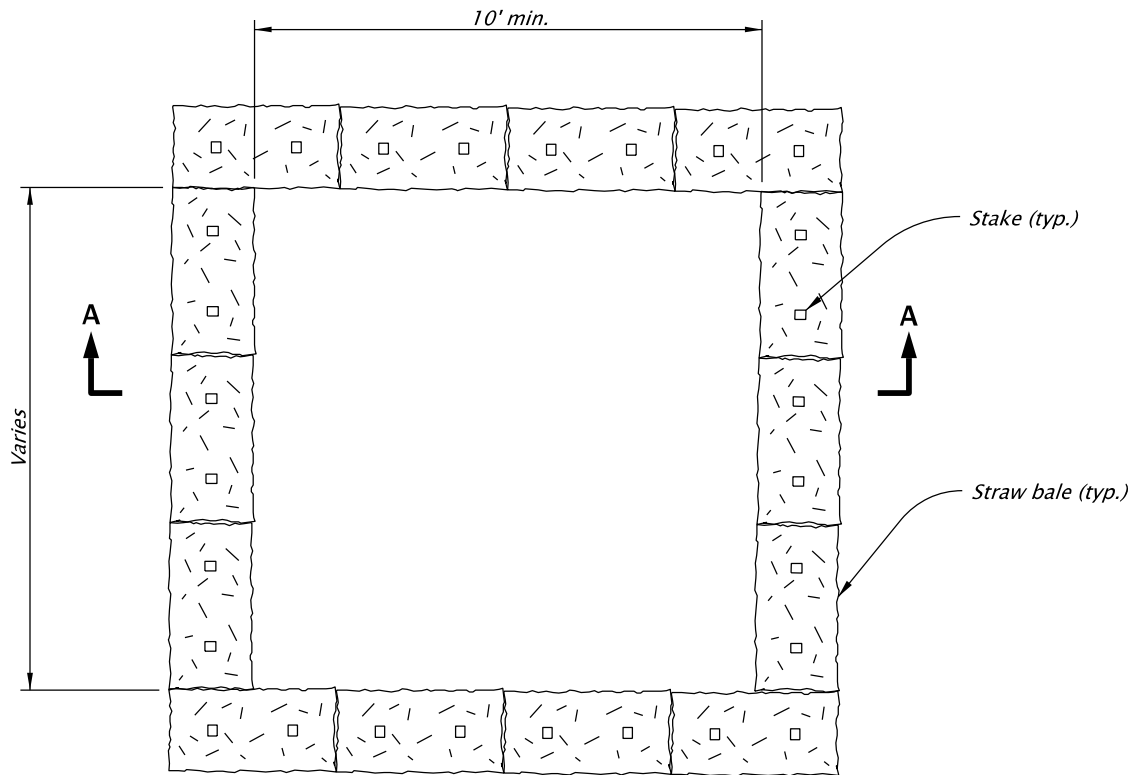
POST SPACING OVERLAP CONNECTION

GEOTEXTILE END CONNECTIONS
NOT TO SCALE

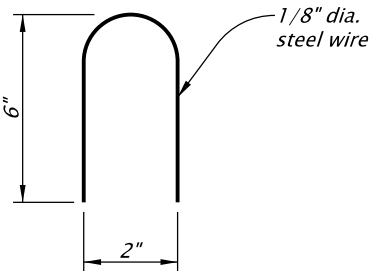
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

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			RD1040

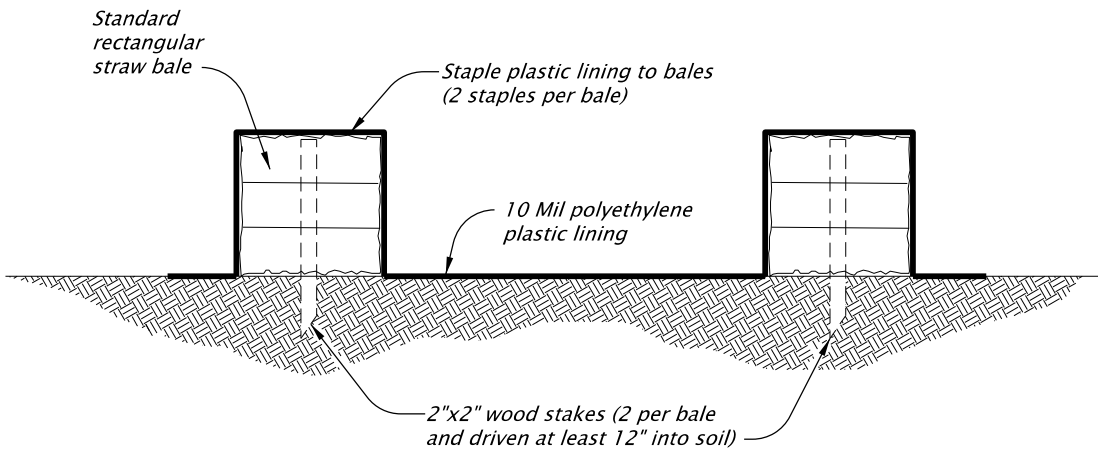
RD1070.dgn 20-JAN-2021



PLAN



STAPLE DETAIL
NOT TO SCALE



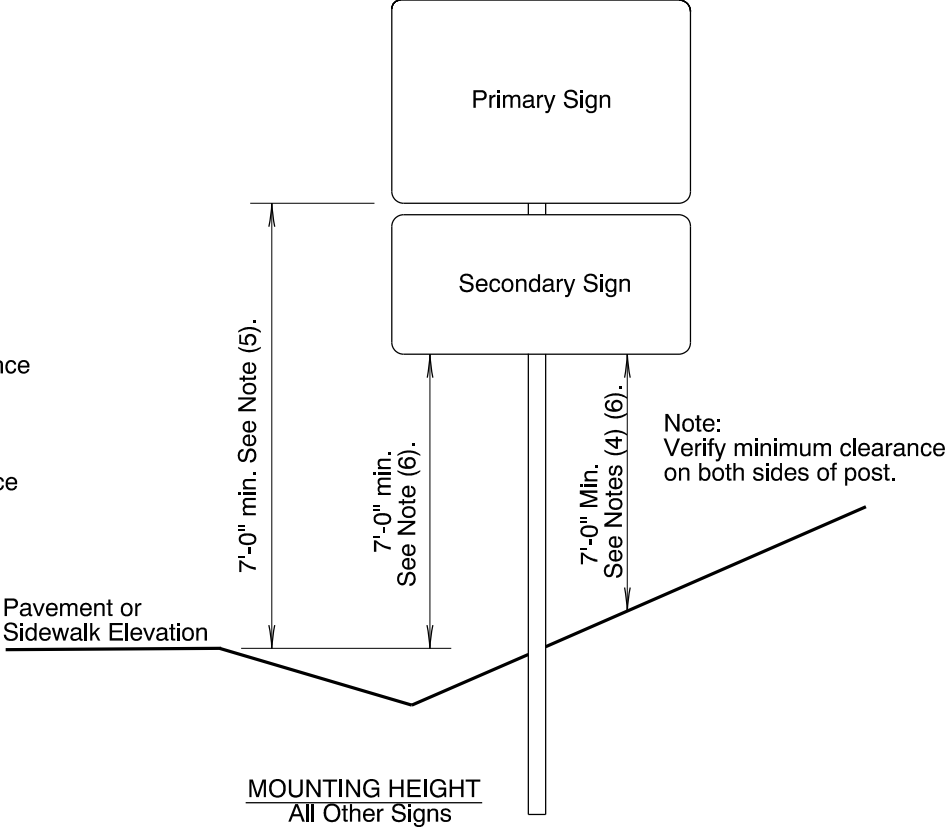
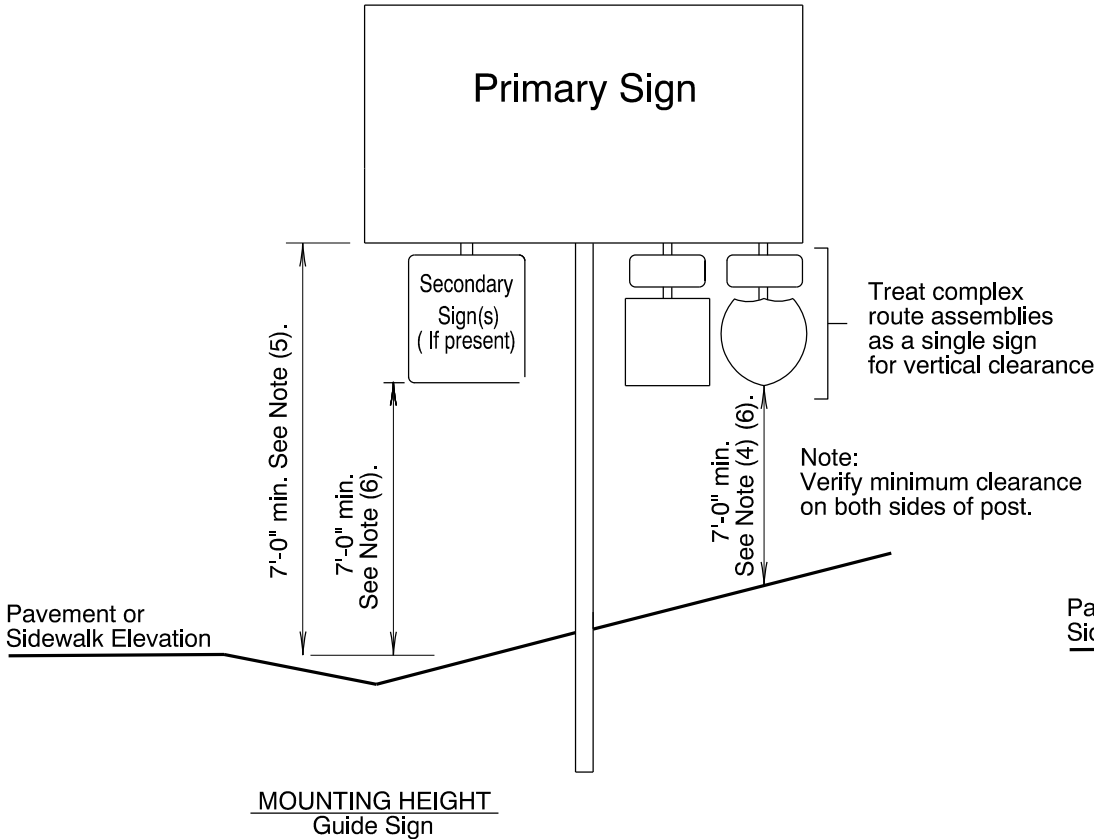
SECTION A-A

CONCRETE TRUCK WASH OUT FACILITY
NOT TO SCALE

<p>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.</p>				All materials shall be in accordance with the current Oregon Standard Specifications.			
				OREGON STANDARD DRAWINGS			
				CONCRETE TRUCK WASH OUT			
				2024			
				DATE	REVISION DESCRIPTION		
CALC. BOOK NO.		N/A		SDR DATE	20-JAN-2021	RD1070	

07-JAN-2022

TM200.dgn

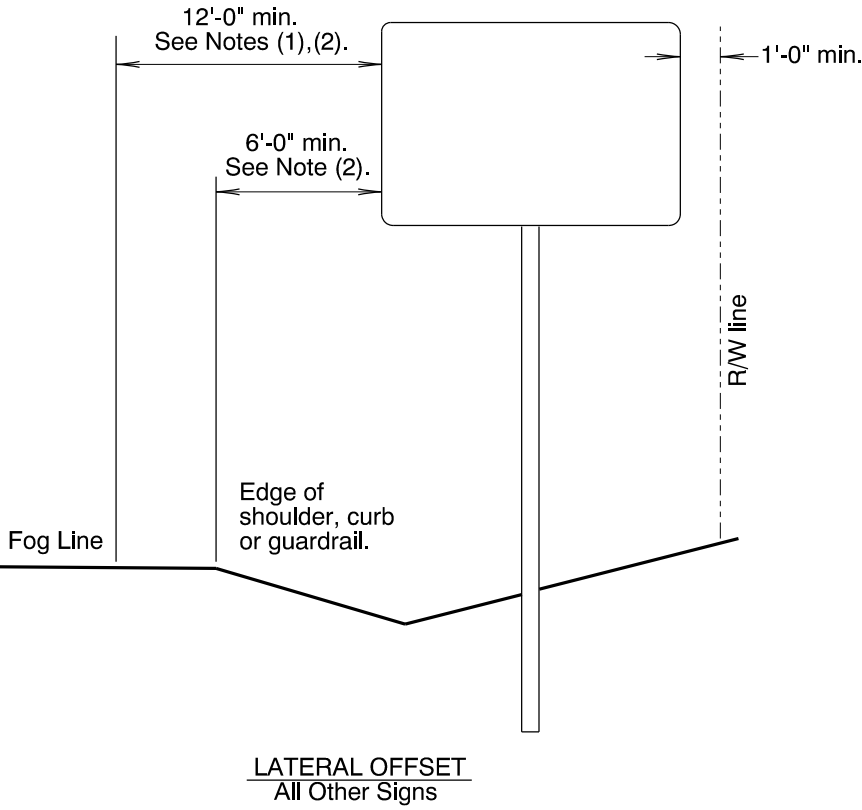
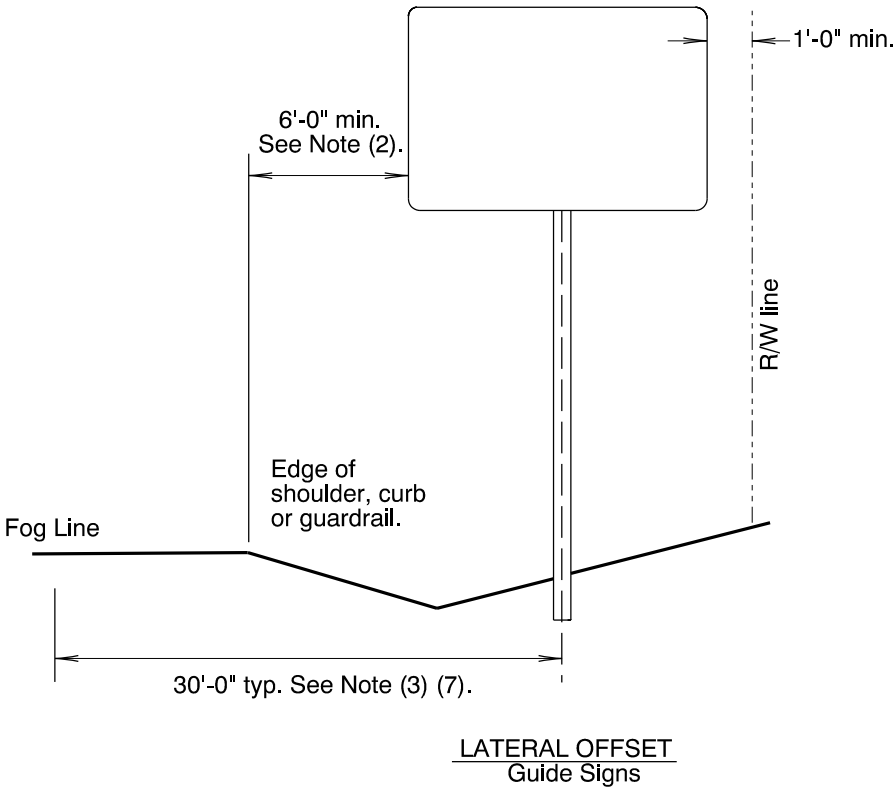


General Installation Notes:

- 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.

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.

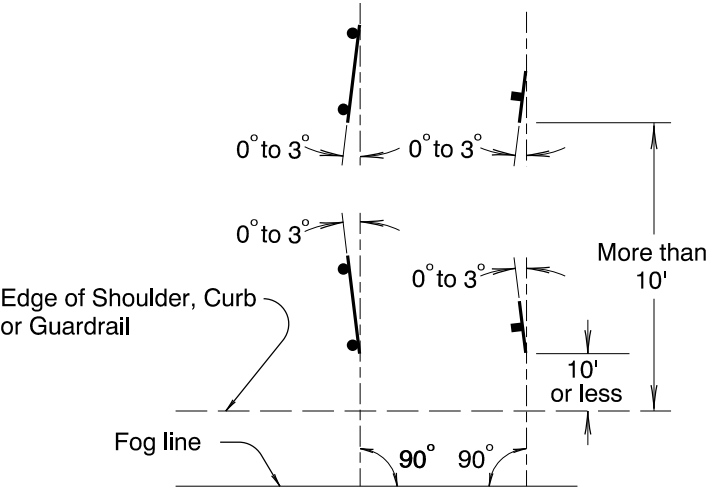


The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

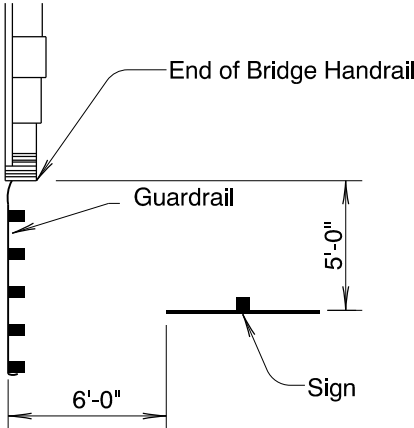
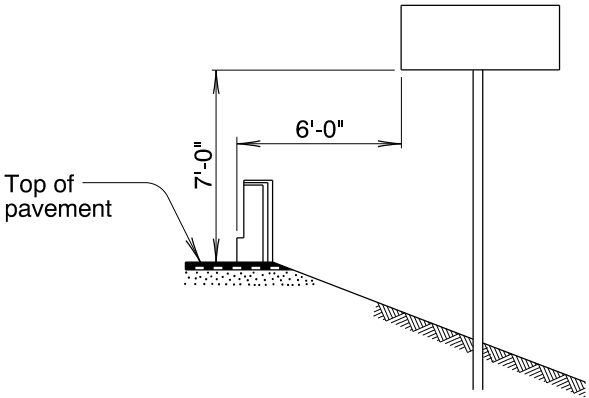
All materials shall be in accordance with the current Oregon Standard Specifications.			
OREGON STANDARD DRAWINGS			
SIGN INSTALLATION DETAILS			
2024			
DATE	REVISION DESCRIPTION		
01/22	Edtred elevatton text In Mounting Helt details		
CALC. BOOK NO.	N/A	SDR DATE	07 JAN 2022
			TM200

07-JAN-2022

TM201.dgn



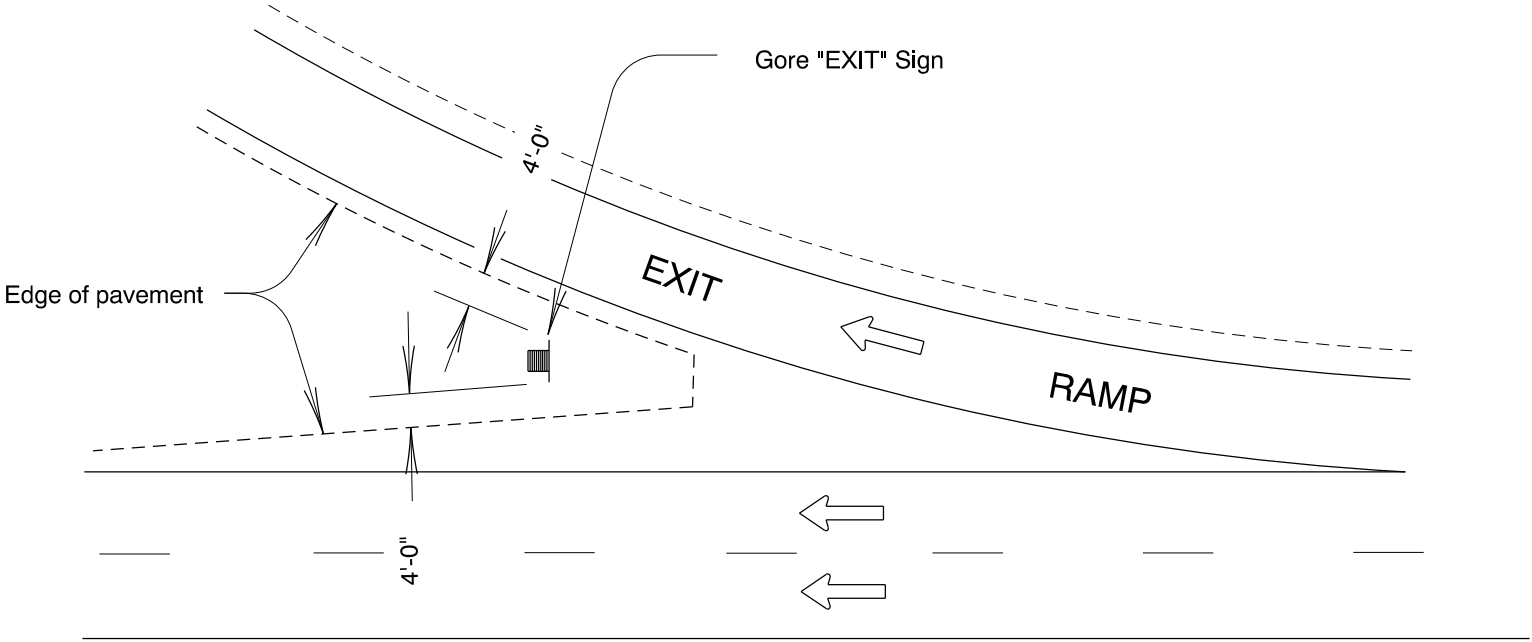
SIGN PLACEMENT



ELEVATION

PLAN

SIGN LOCATION FOR FREEWAY OVERCROSSING
(MINIMUM VALUES)



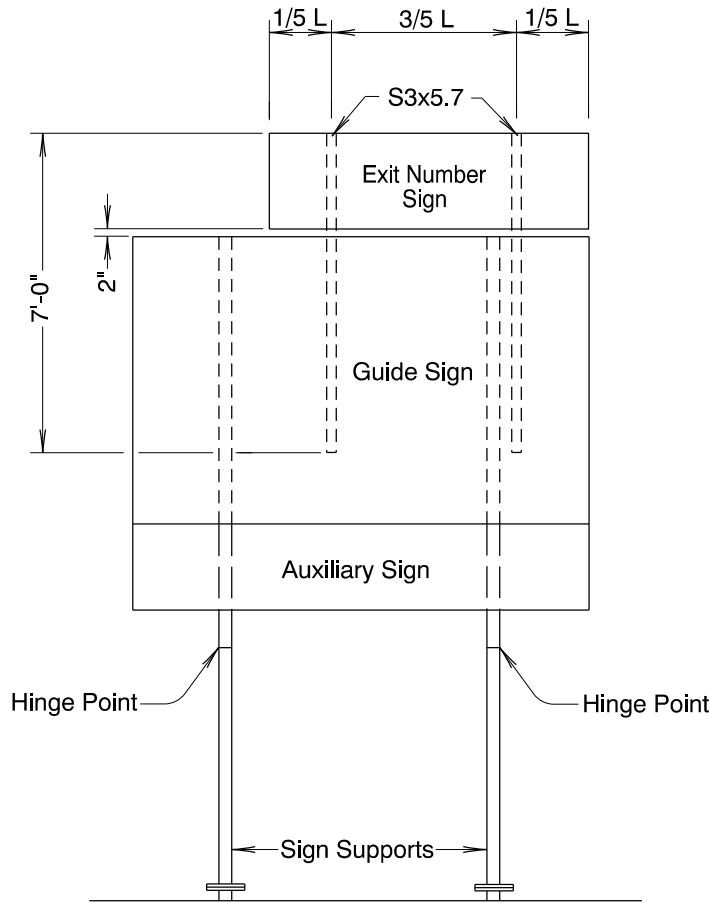
TYPICAL "EXIT" SIGN INSTALLATION

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.

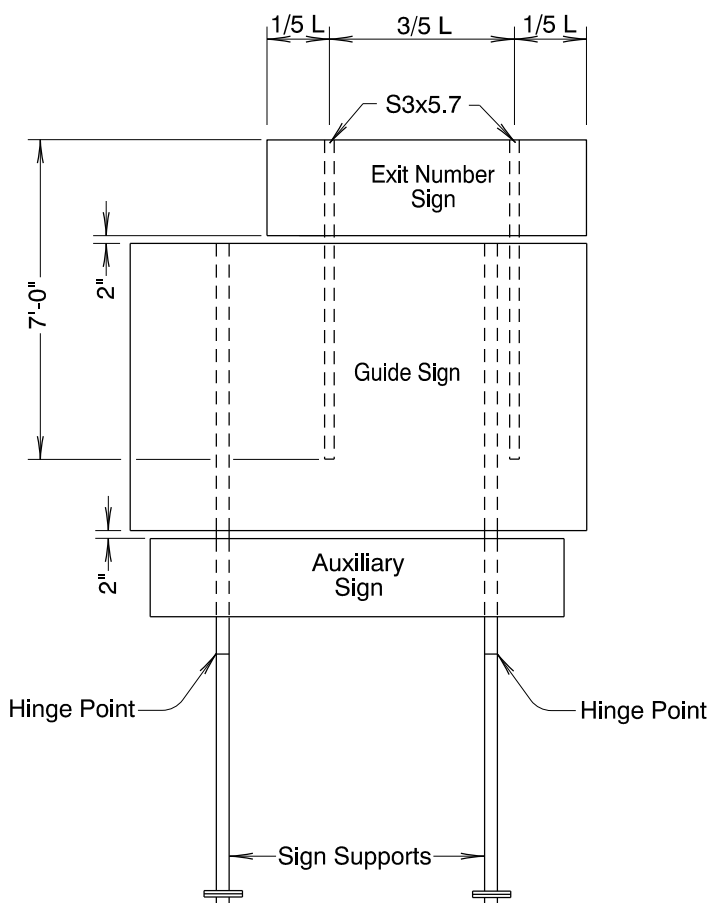
All materials shall be in accordance with the current Oregon Standard Specifications.			
OREGON STANDARD DRAWINGS			
MISCELLANEOUS SIGN PLACEMENT DETAILS			
2024			
DATE	REVISION	DESCRIPTION	
01/2022		Changed angle dimension in Sign Placement detail	
CALC. BOOK NO.	N/A	SDR DATE	07 JAN 2022
			TM201

06-JUL-2012

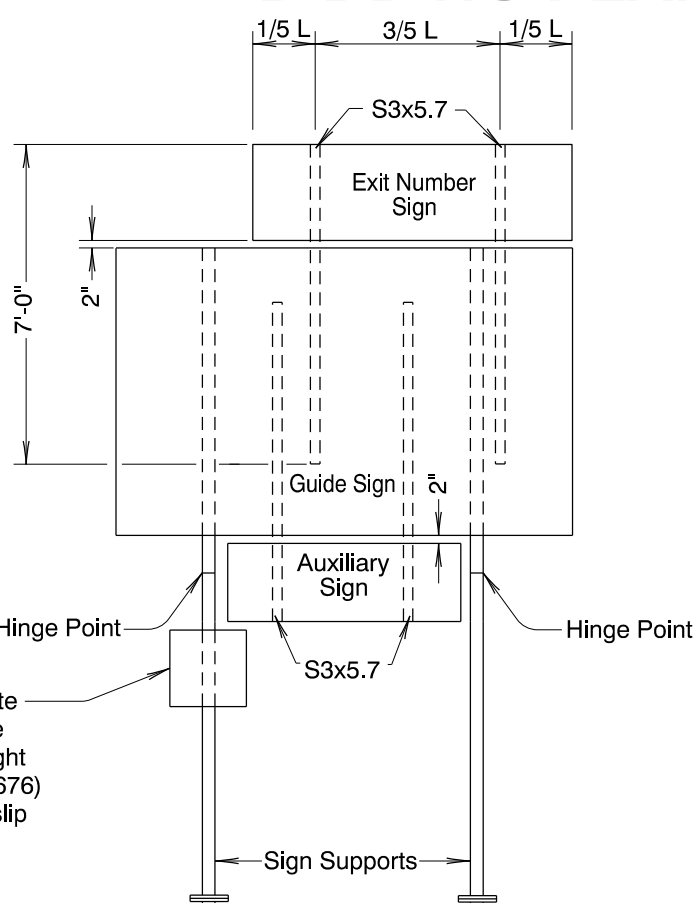
TM220.dgn



Mount auxiliary sign to sign supports with post clips.
Bolt auxiliary sign to guide sign as shown on Dwg. TM675.

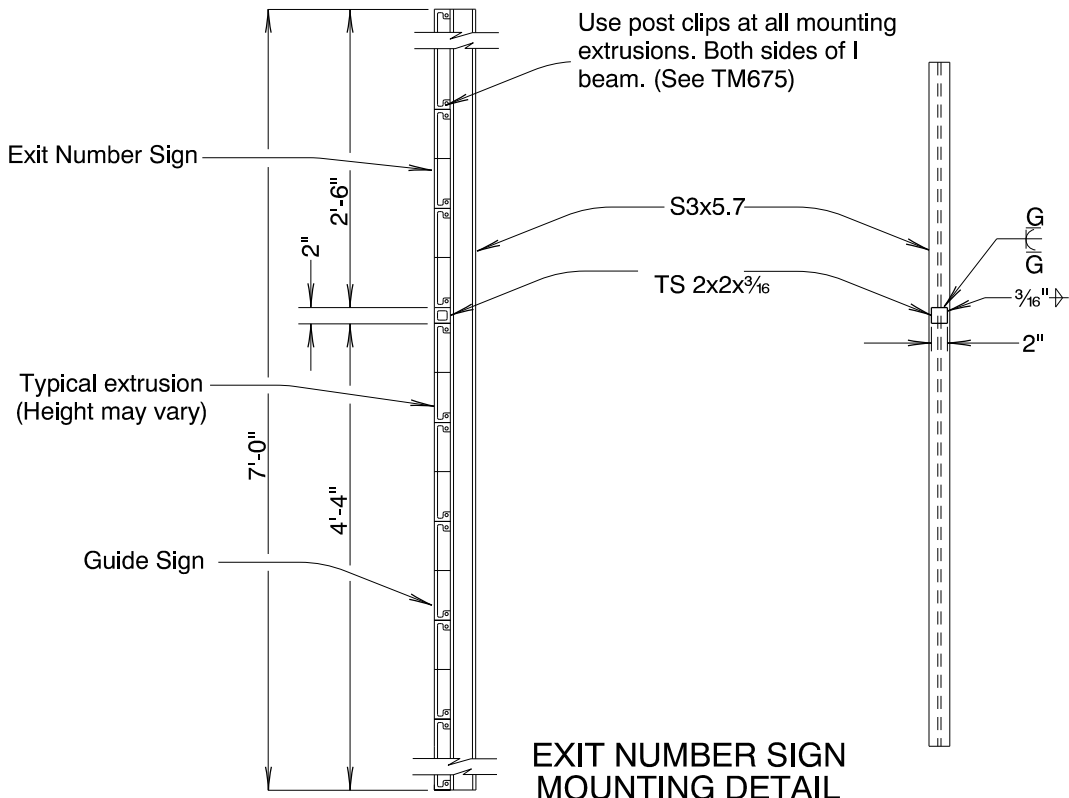


Typical auxiliary sign mounting with exit number sign mounts.
Auxiliary signs that extend outside sign supports shall also be
fastened to sign supports with post clips. Length of sign
mounts used to support auxilliary sign will vary
depending on height of auxiliary sign.



Individual signs or route
marker frames may be
bolted directly to upright
sign support (See TM676)
but not over hinge or slip
plate. (See TM600)

Typical auxiliary sign mounting with exit number sign mounts.
Auxiliary sign does not extend to sign supports. Length of
sign mounts used to support auxiliary sign will vary
depending on height of auxiliary sign.



EXIT NUMBER SIGN
MOUNTING DETAIL

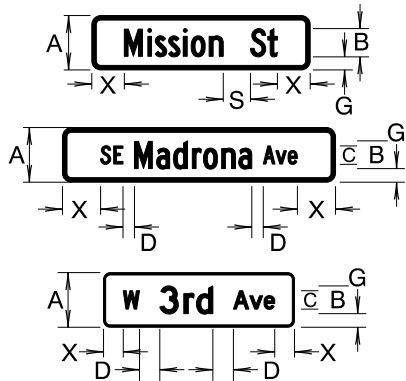
Notes:

- 1) All bolts, nuts and washers shall be stainless steel unless noted otherwise.
- 2) Exit Number sign shall be aligned with right side of guide sign (Exception: Exit Number sign shall be aligned with left side of guide sign for left exit interchanges.)
- 3) Refer to TM600 for other details.

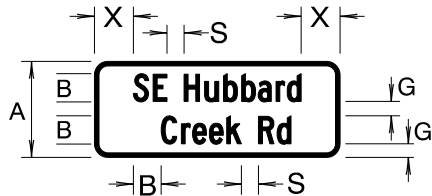
<i>The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.</i>		All materials shall be in accordance with the current Oregon Standard Specifications.		
		OREGON STANDARD DRAWINGS		
		MULTI-POST INSTALLATIONS WITH AUXILIARY SIGNS		
		2024		
DATE		REVISION DESCRIPTION		
CALC. BOOK NO. - - - -		N/A - - - -	SDR DATE - 06-JUL-2012 -	TM220

19-JAN-2024

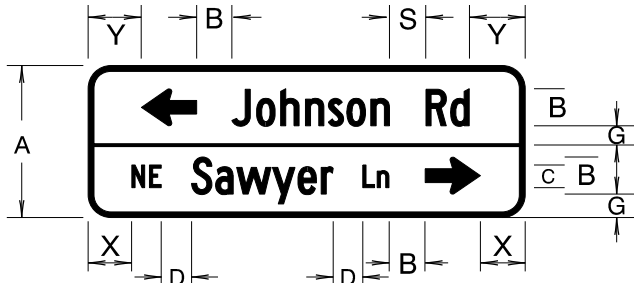
TM223.dgn



LEGEND EXAMPLES FOR STREET NAME SIGNS



STACKED LEGEND FOR STREET NAME SIGN
(GROUND-MOUNTED)



STACKED LEGEND FOR STREET NAME SIGN
(MAST ARM MOUNTED)

Notes: If 12"C font on mast arm mounted sign yields signs larger than 21 square feet, the 10" Alternate may be used.
White border and legend on mast-arm signs are to be ASTM Type IX retroreflective sheeting. Borders shall be flush with edge of sign. Dividers, where used, shall be same width as border.
New Projects: Include mast-arm signs on Signing Plans.
Existing Poles: Perform pole analysis prior to adding or enlarging signs.

STREET NAME SIGN DETAILS

	A	A*	B	C	D**	E	F	G	G*
GROUND-MOUNTED SIGN (2-3 LANE HWYS)	12"	15"	6"	4"	2½"	1"	1½"	3"	5"
GROUND-MOUNTED SIGN (4+ LANES AND 40 MPH OR LESS)	12"	15"	6"	4"	2½"	1"	1½"	3"	5"
GROUND-MOUNTED SIGN (4+ LANES AND > 40 MPH)	15"	18"	8"	5"	3⅝"	1"	1½"	3½"	6"
GROUND-MOUNTED SIGN (LOCAL ROAD, 25 MPH OR LESS)	9"	12"	5"	3"	1⅞"	½"	1½"	2"	4"
MAST ARM MOUNTED SIGN *** (12" STANDARD)	21"	24"	12"	8"	5"	1"	3"	4½"	7½"
MAST ARM MOUNTED SIGN (10" ALTERNATE)	21"	21"	10"	6"	3¾"	1"	3"	5½"	7"
STACKED LEGEND SIGN (GROUND-MOUNTED)	21"	24"	6"	N/A	N/A	1"	3"	3"	4"
STACKED LEGEND SIGN *** (MAST ARM MOUNTED)	30"	33"	8"	5"	3⅞"	1"	3"	3½"	5"

E = BORDER WIDTH
F = BORDER RADIUS
H = LETTER HEIGHT
S = SPACE BETWEEN WORDS
X = 1/2 OF REMAINING SPACE
* = USE FOR TEXT INCLUDING LOWER-CASE g, j, p, q and y
** = MINIMUM SIZE; CAN BE LARGER TO MATCH STANDARD HIGHWAY SIGN'S D3-1
*** = SIGNS EXCEEDING THE MAXIMUM SIGN HEIGHT "Z" COLUMN OF THE MAST ARM STREET NAME SIGN MOUNT DETAIL ON TM679 WILL REQUIRE STRUCTURAL ANALYSIS OF THE MAST ARM AND POLE.

SERIES (FONT)				
	B	C	D	E
S	.531	H	.625	H
			.836	H
				1.00
				H

SPACING BETWEEN WORDS

X-Dimension should be approximately the same dimension as the letter Height (H). At a minimum the X-Dimension shall be no less than one-half the letter height (1/2 H)

Sign examples shown here are not drawn to scale, but to illustrate the layout of the legend items.

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

OREGON STANDARD DRAWINGS

STREET NAME SIGN LAYOUT

2024

DATE	REVISION	DESCRIPTION
01-2024	MOVED	DIRECTIONAL SIGN CONTENT TO NEW STD DWG TM226
01-2024	ADDED	STREET SIGN EXAMPLE AND EDITED DIMENSION TABLE

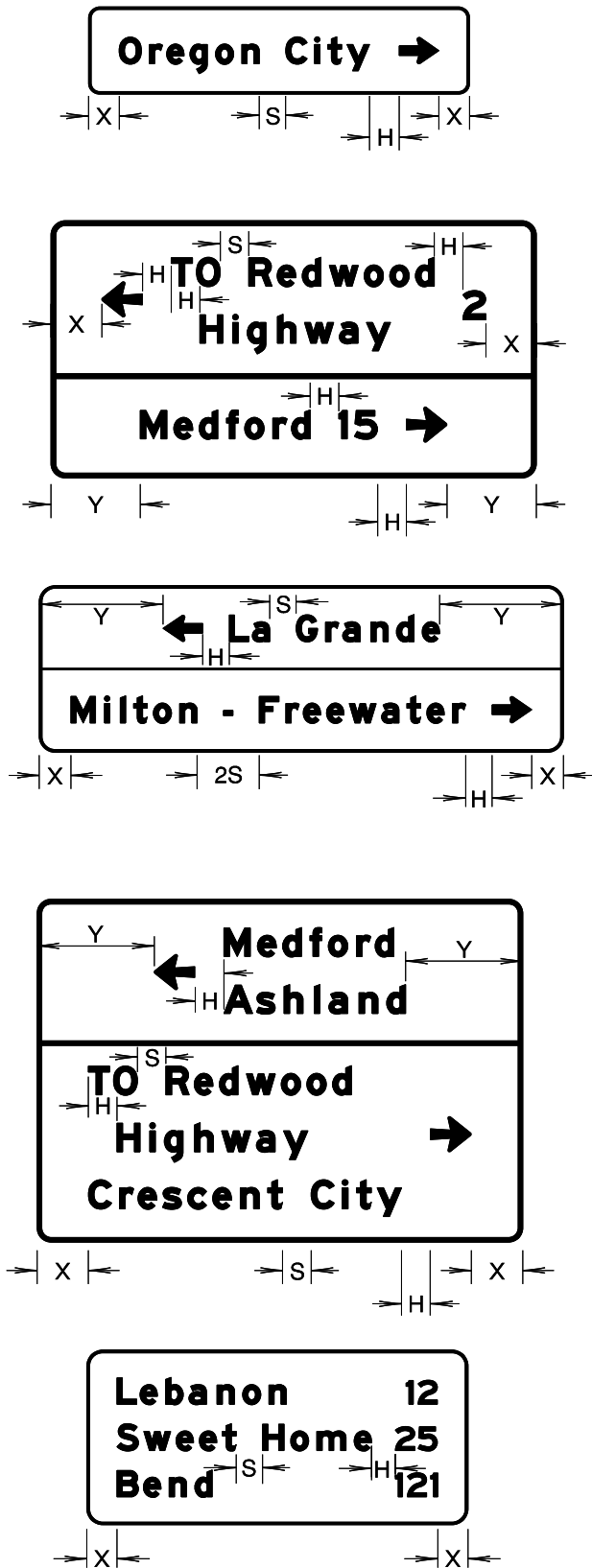
CALC. BOOK NO. --- N/A ---

SDR DATE- 19-JAN-2024 -

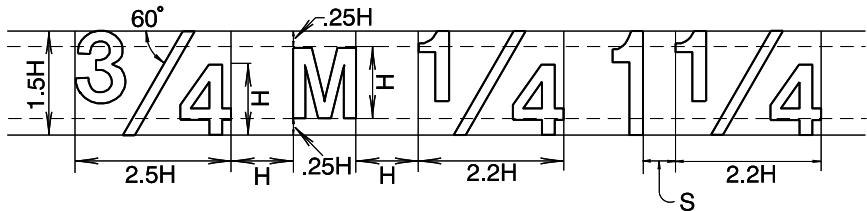
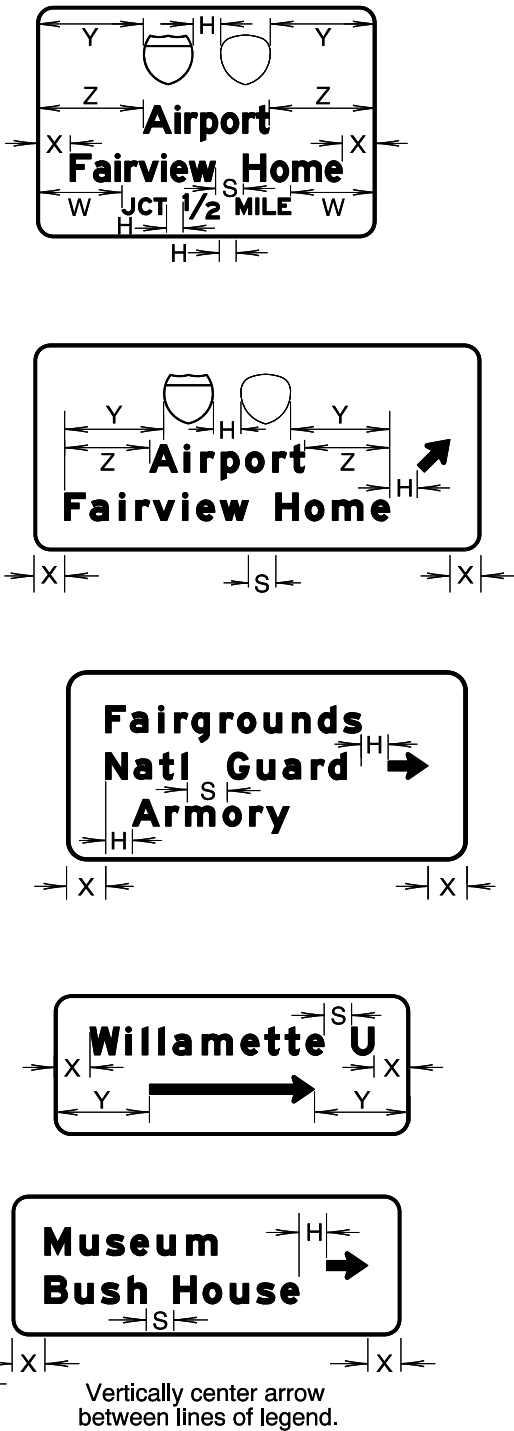
TM223

19-JAN-2024

TM226.dgn



DIRECTIONAL SIGN DETAILS



FRACTIONAL LAYOUT

SERIES (FONT)				
B	C	D	E	
S.531	H.625	H.836	H.1.00	H

SPACING BETWEEN WORDS

H = Letter Height
S = Space between words
W,X,Y & Z = 1/2 of remaining space

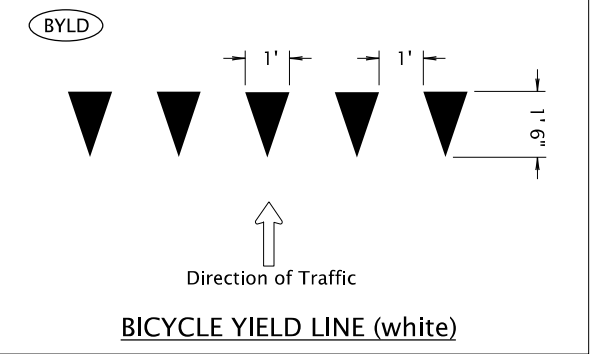
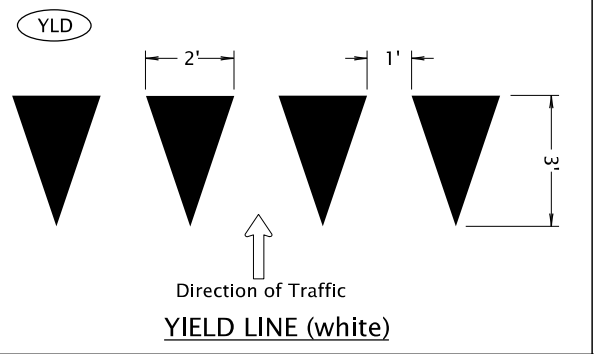
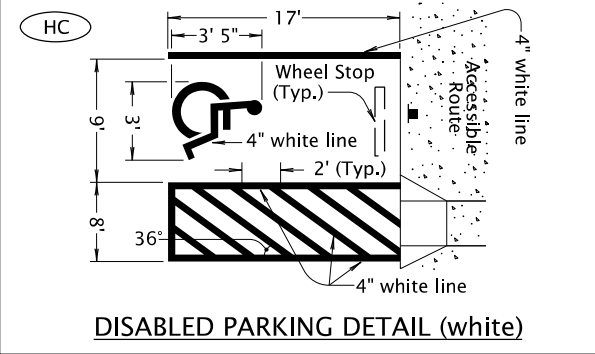
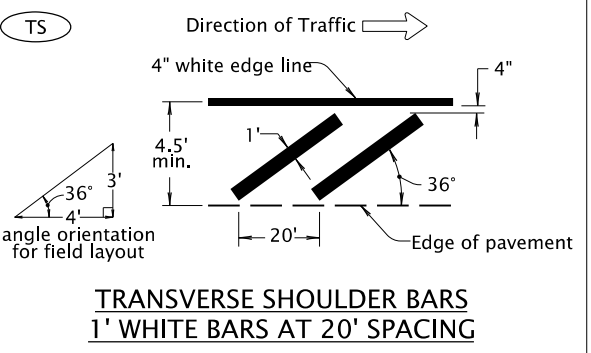
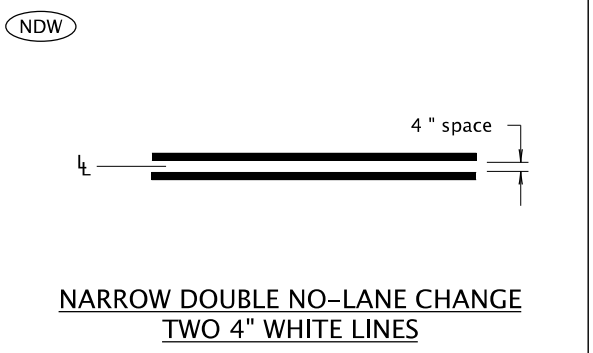
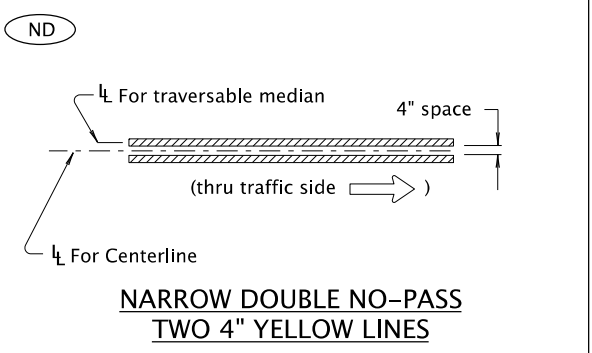
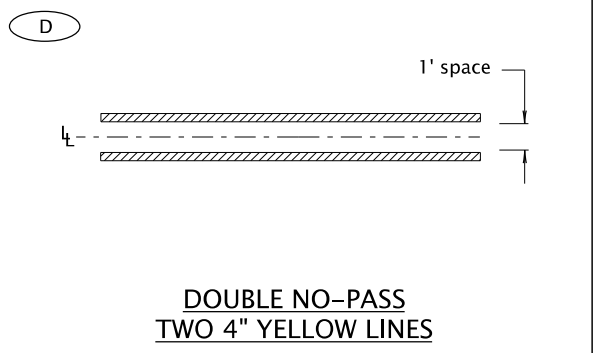
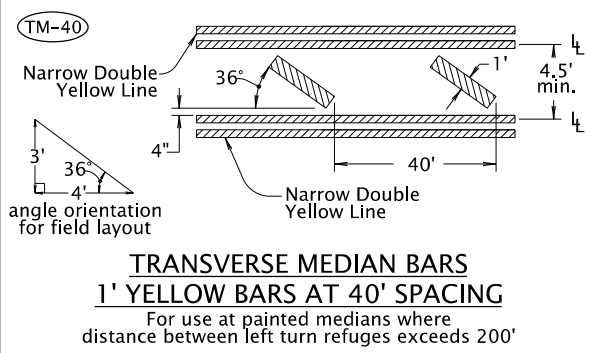
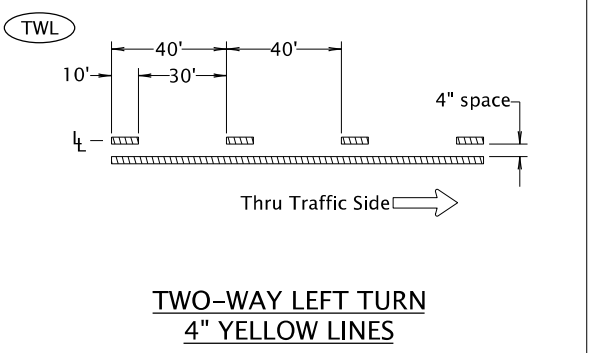
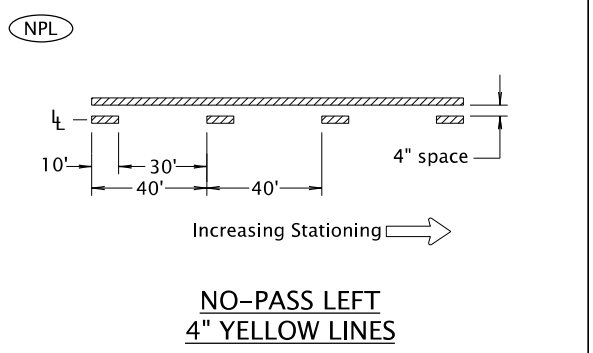
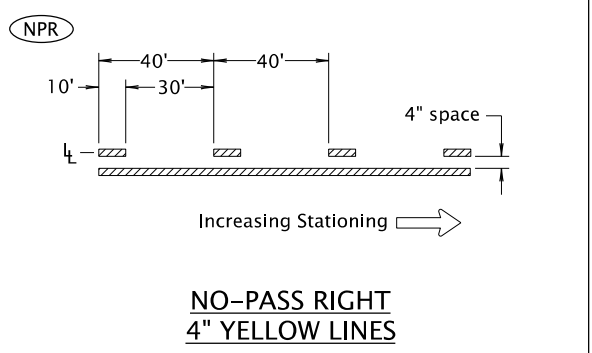
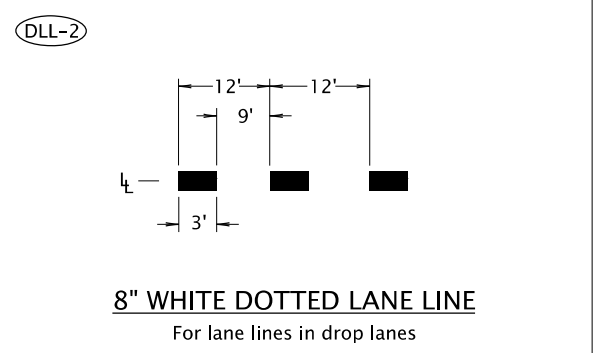
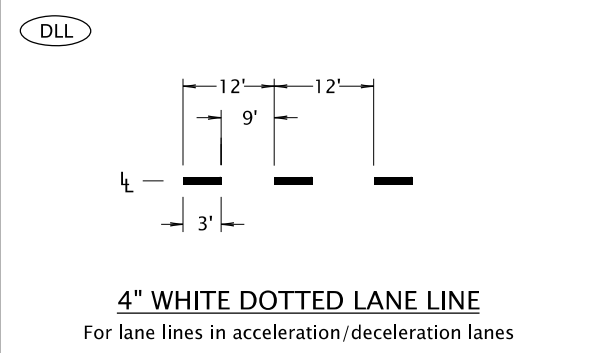
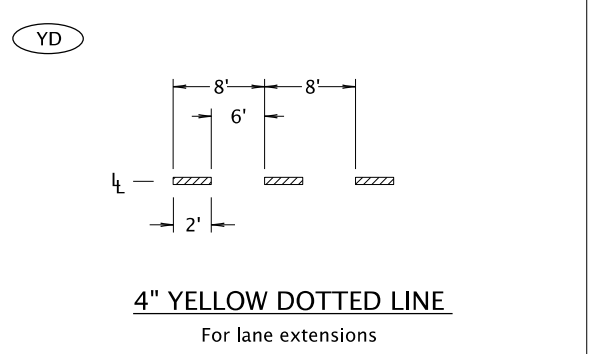
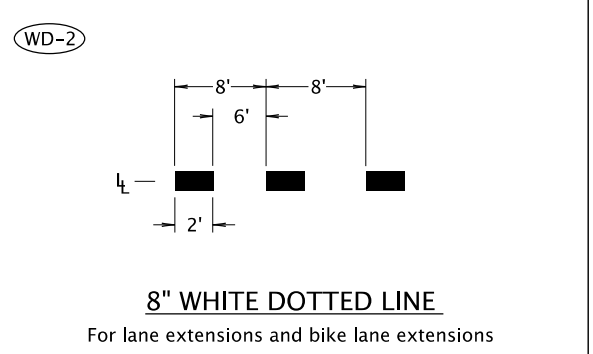
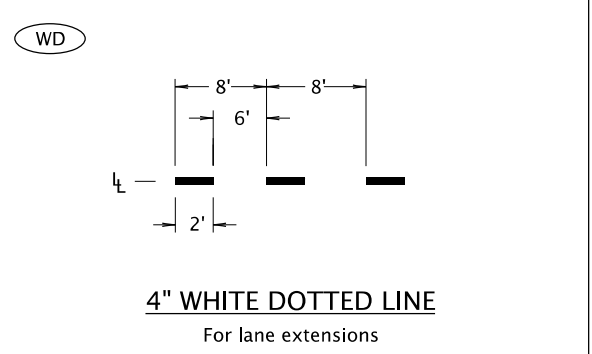
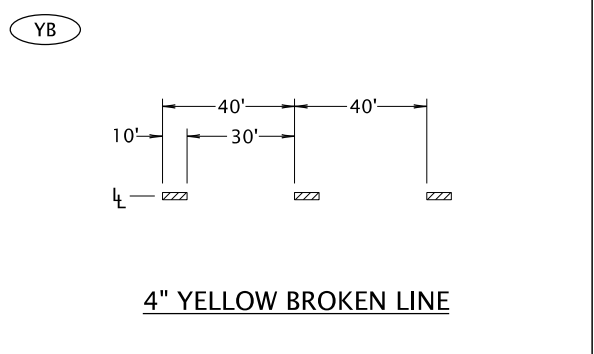
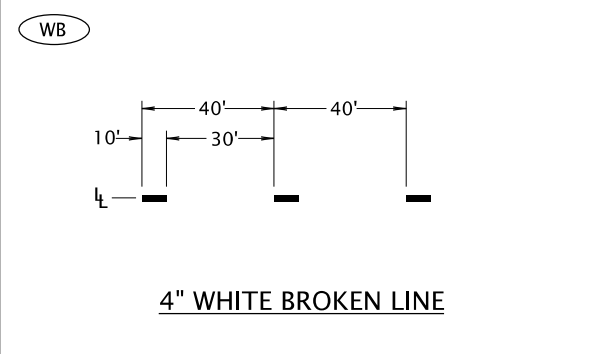
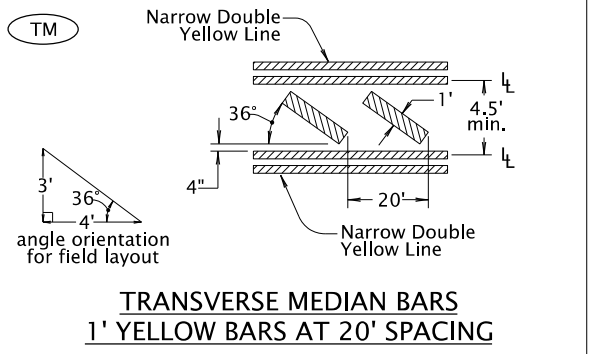
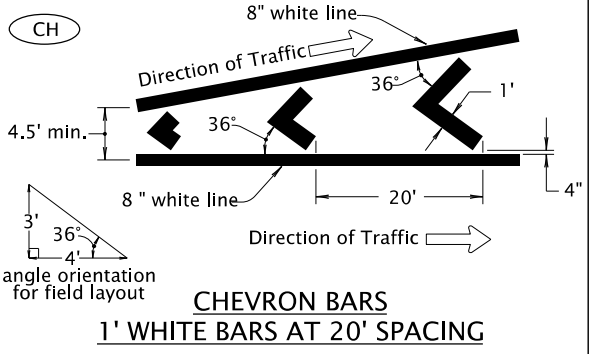
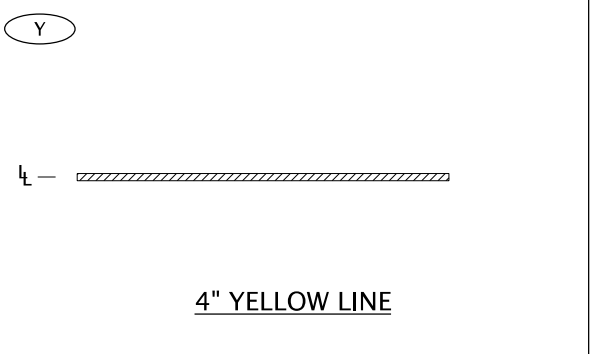
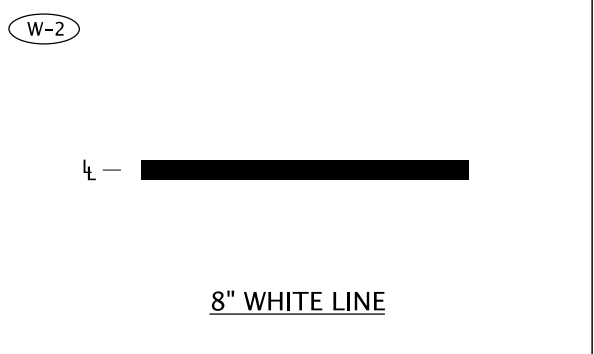
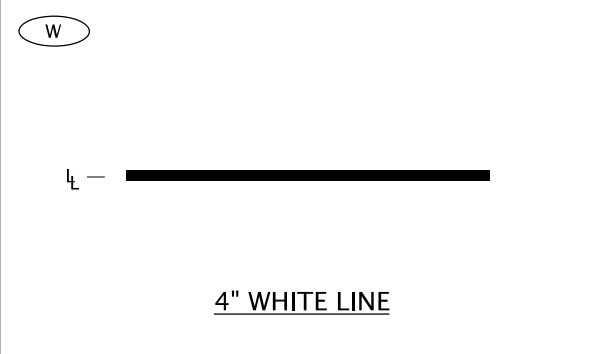
X-Dimension should be approximately the same dimension as the letter Height (H). At a minimum the X-Dimension shall be no less than one-half the letter height (1/2 H)

Sign examples shown here are not drawn to scale, but to illustrate the layout of the legend items.

<i>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.</i>	All materials shall be in accordance with the current Oregon Standard Specifications.		
	OREGON STANDARD DRAWINGS		
	CONVENTIONAL ROADS DIRECTIONAL SIGN LAYOUT		
	2024		
DATE	REVISION DESCRIPTION		
01-2024	SEPARATED MATERIAL FROM TM223		
01-2024	EDITED CONTENT ON TWO SIGNS		
CALC. BOOK NO.	N/A	SDR DATE	19-JAN-2024
			TM226

07-01-2020

TM500.dgn



LEGEND

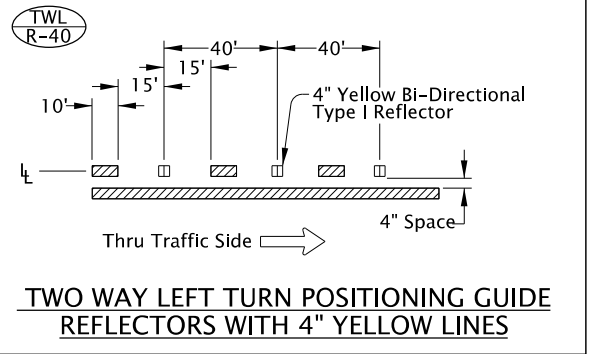
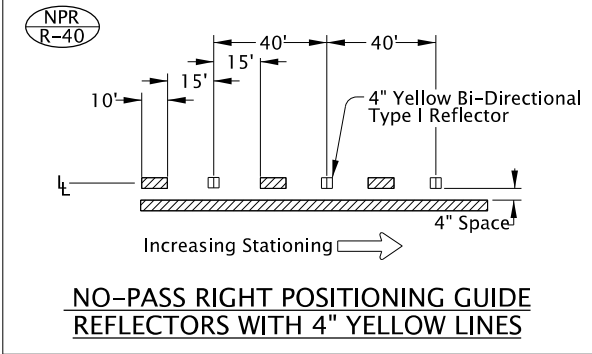
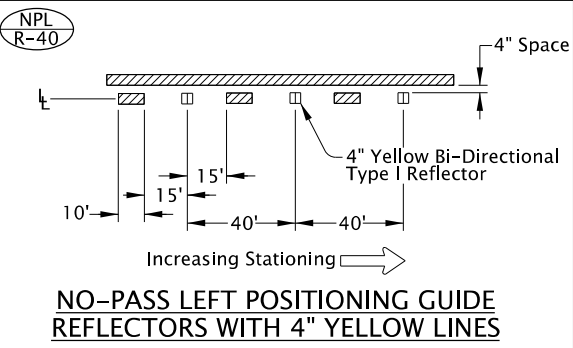
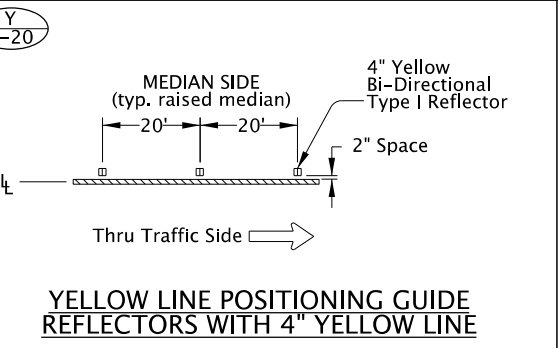
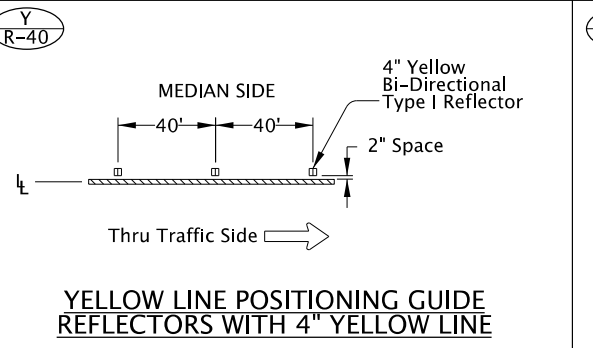
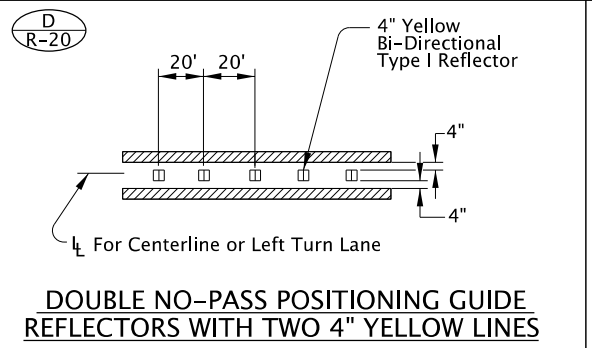
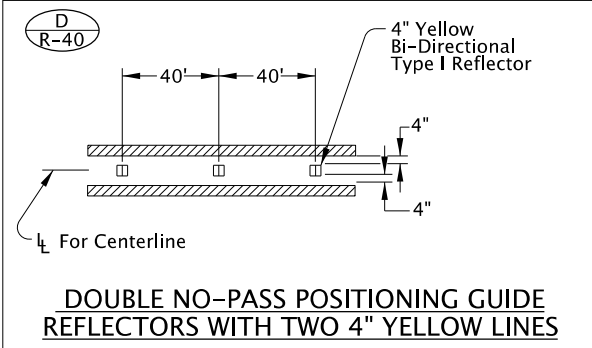
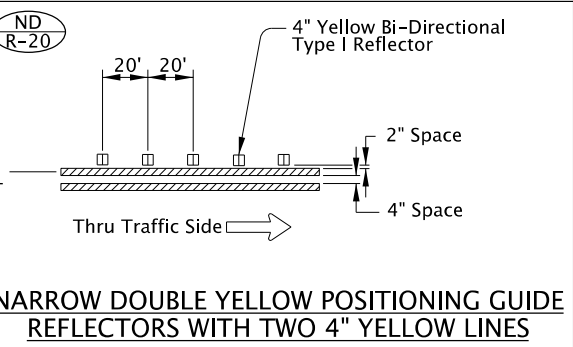
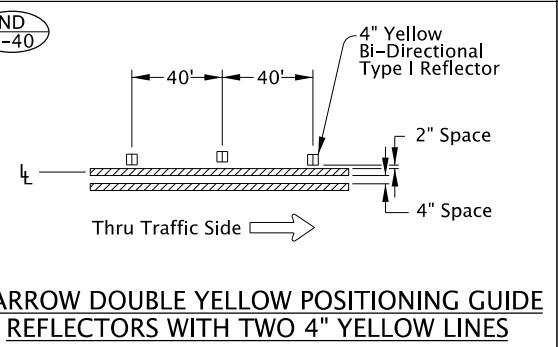
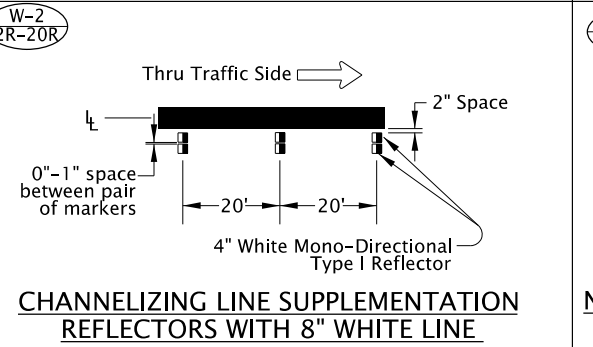
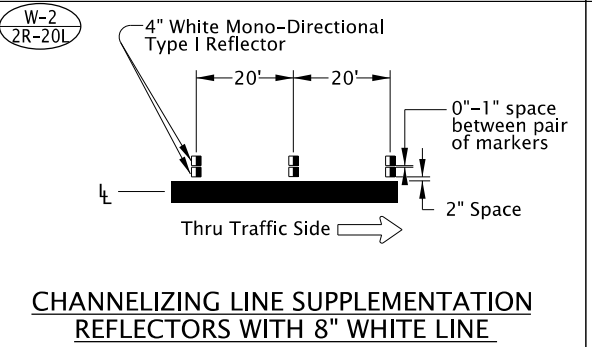
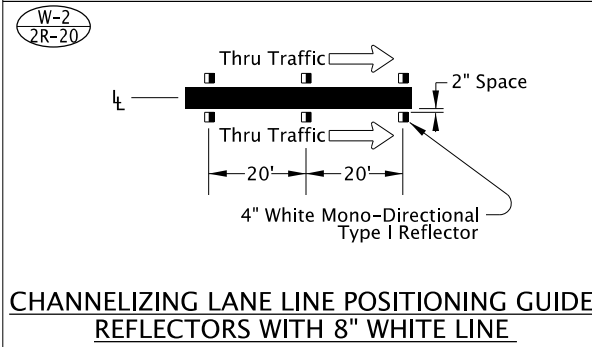
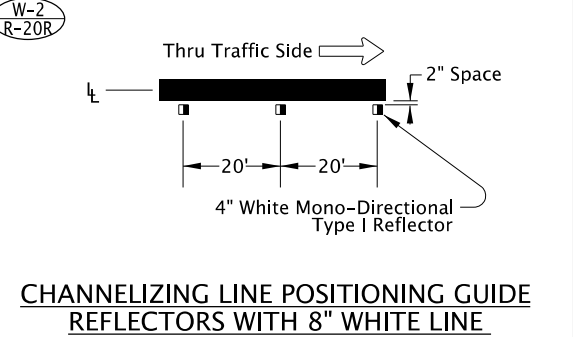
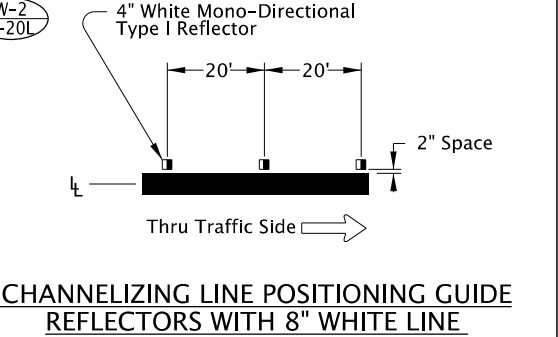
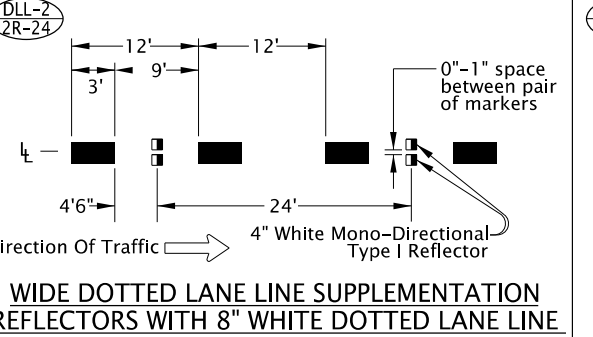
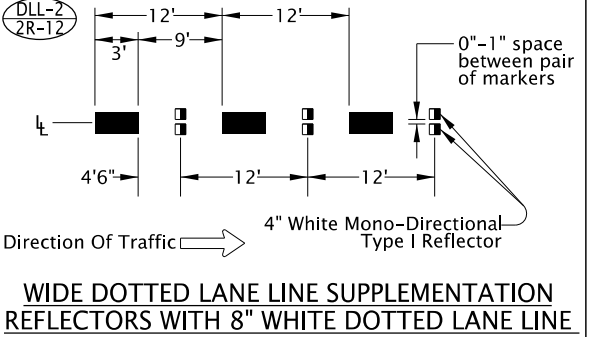
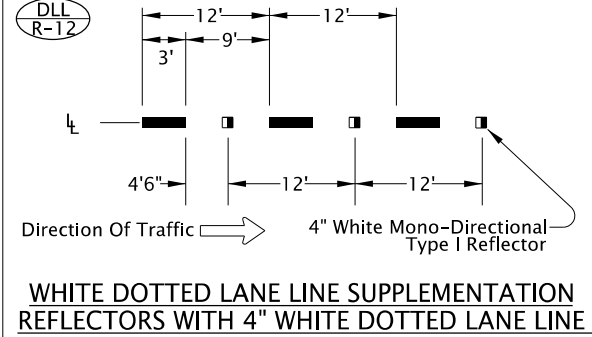
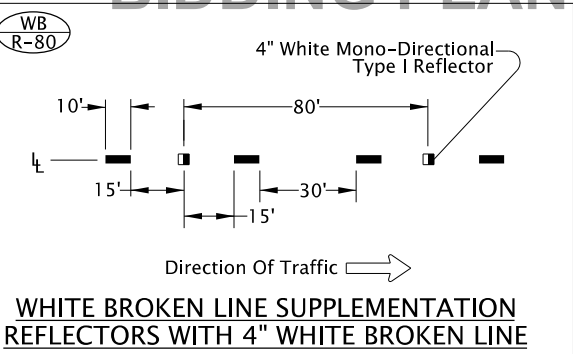
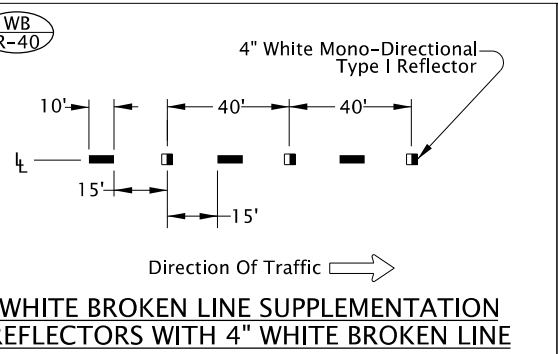
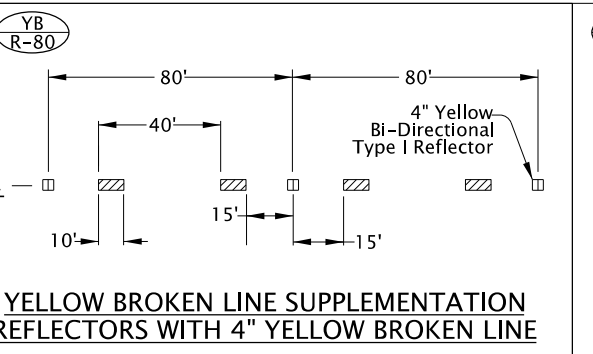
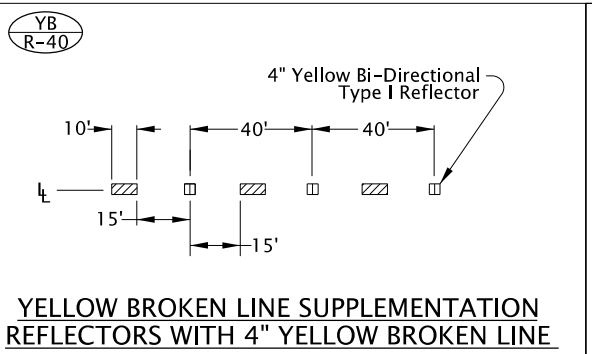
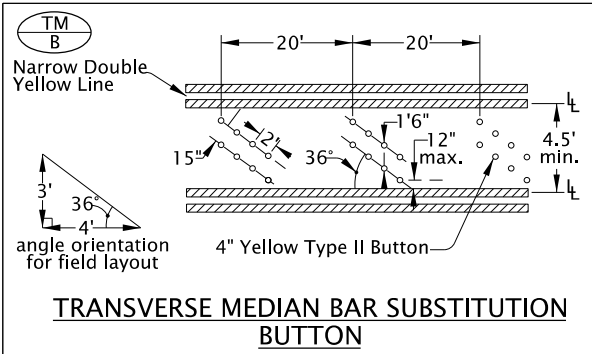
← Direction Of Traffic, Increasing Stationing Or Thru Traffic Side

⊥ — 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

01-03-2022
TM502.dgn

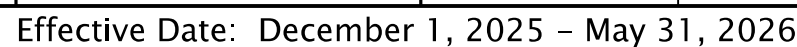


General note:
1) Surface mount Raised Pavement Markers (RPMs) unless otherwise specified.

- LEGEND**
- Direction Of Travel, Increasing Stationing or Thru Traffic Side
 - Lane line dimensions are shown on the striping plans
 - Mono-directional crystal white marker reflects white to the left in this symbol
 - Bi-directional yellow marker reflects yellow both left and right in this symbol

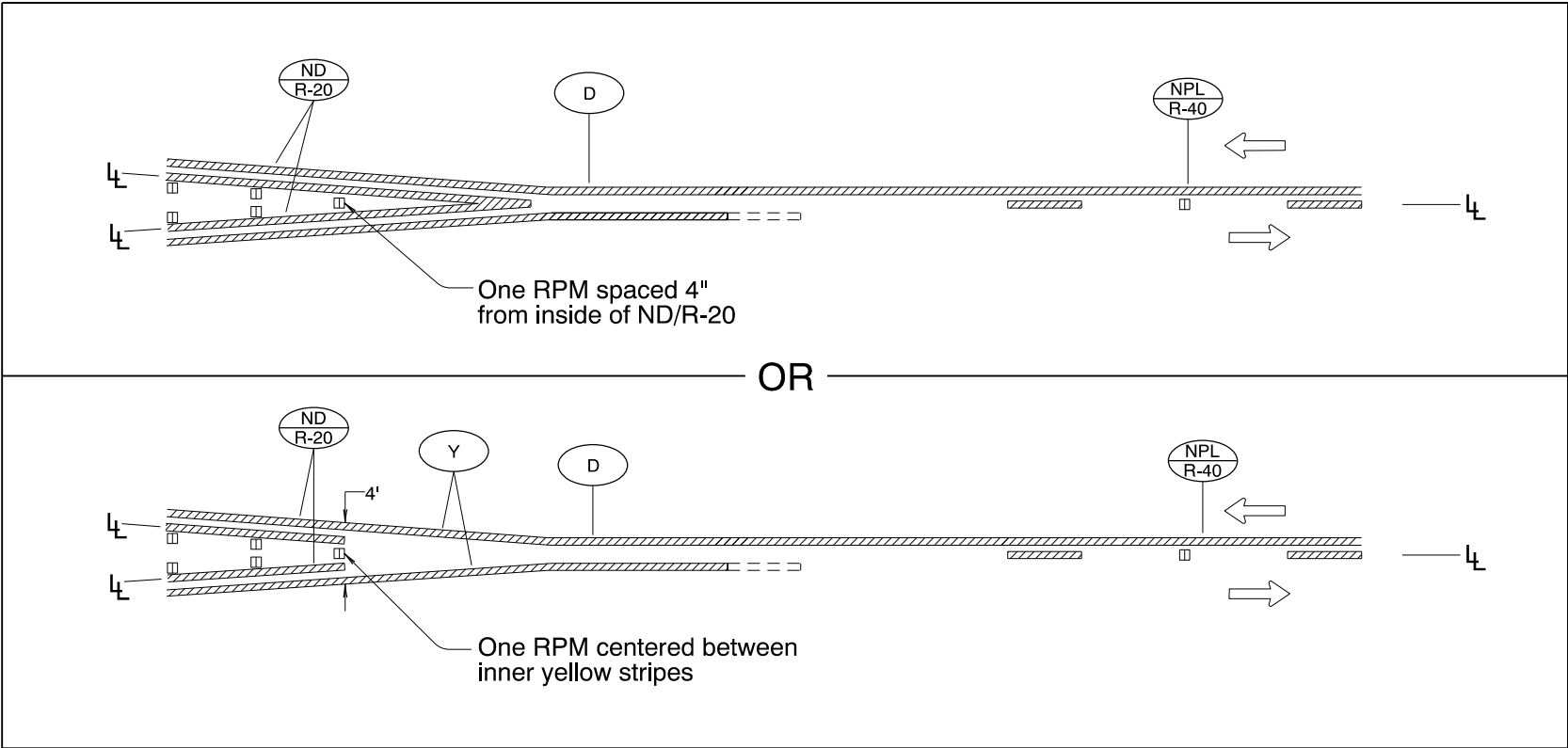
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

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. width of TM/B from 6' to 4.5'		
01-2022	Removed "LANE" from W-2/R-20R title		
CALC. BOOK NO.	N/A	SDR DATE	01-03-2022
			TM502

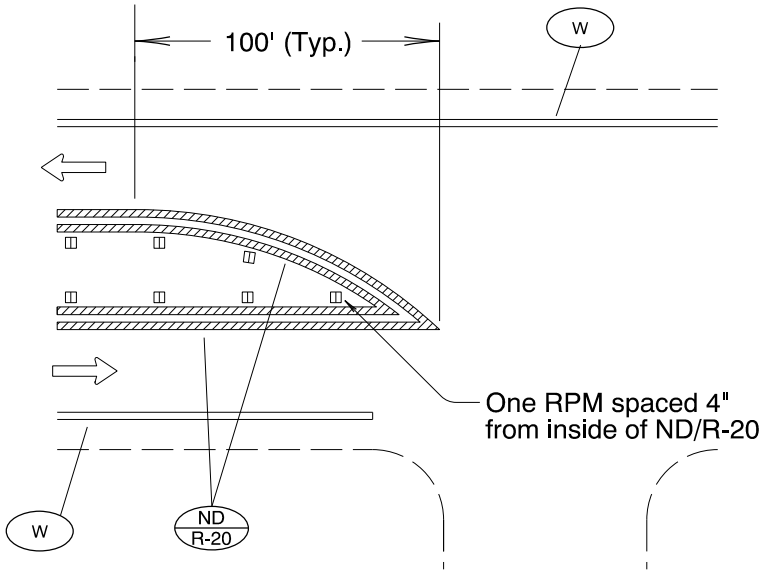


01-JUL-2015

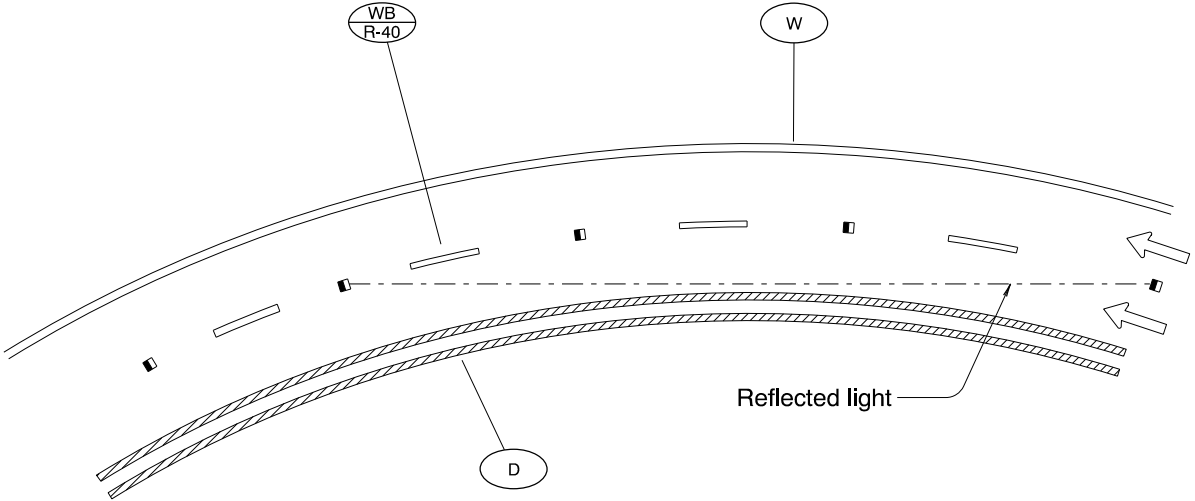
TM515.dgn



MEDIAN WIDTH TRANSITION
(TWO NARROW DOUBLE YELLOW LINES TO ONE-DIRECTION NO-PASSING LINE)
(Refer to TM539 for additional details)

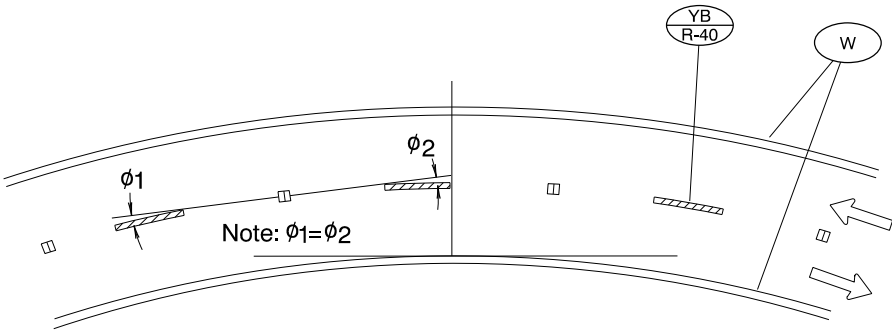


MEDIAN BULLNOSE DETAIL



NOTE:
On one way sections the marker shall be installed with the reflective surface aimed to direct the reflected light back three markers.

(a) PAVEMENT MARKER INSTALLATION FOR MONO-DIRECTIONAL RAISED PAVEMENT MARKERS



(b) PAVEMENT MARKER INSTALLATION FOR BI-DIRECTIONAL RAISED PAVEMENT MARKERS

PAVEMENT MARKER INSTALLATION ON HORIZONTAL CURVES

- LEGEND**
- Mono-Directional White (marker reflects white to left in this symbol)
 - Bi-Directional Yellow (marker reflects yellow to both the left and right in this symbol)
 - Increasing stationing from left to right
 - ← Direction of Travel
 - Lane line dimensions are shown on the striping plans.

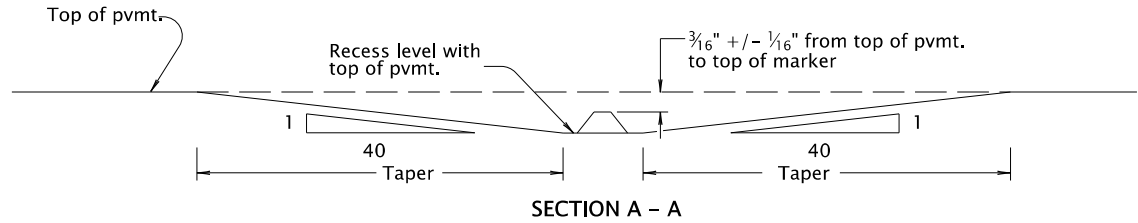
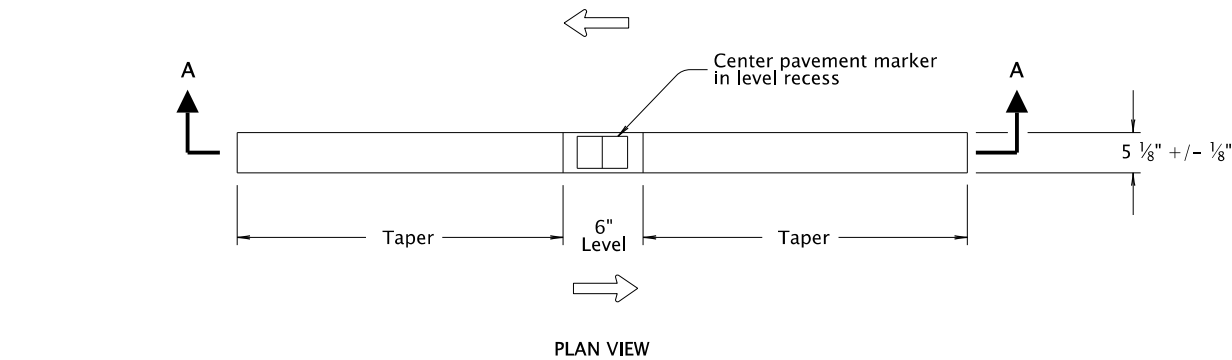
To be accompanied by Standard Dwg. Nos. TM500 thru TM504

All materials shall be in accordance with the current Oregon Standard Specifications.			
OREGON STANDARD DRAWINGS			
PAVEMENT MARKERS			
2024			
DATE	REVISION DESCRIPTION		
CALC. BOOK NO.	N/A	SDR DATE	01-JUL-2015
			TM515

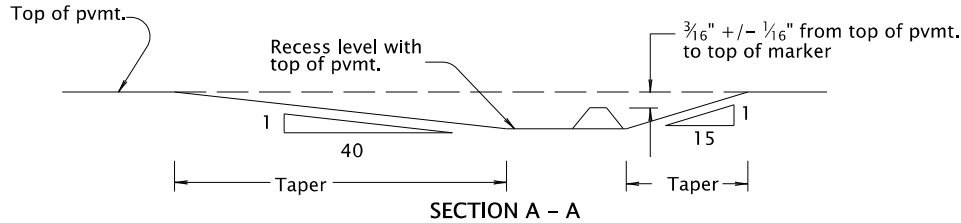
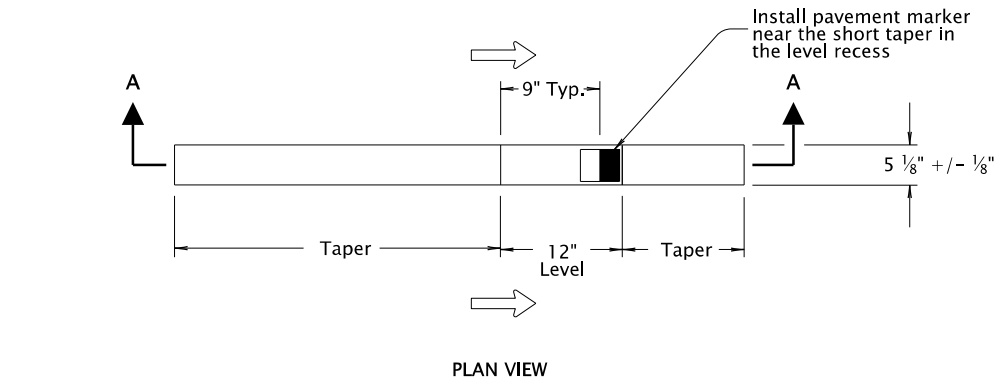
Effective Date: June 1, 2025 – November 30, 2025

07-06-2021

TM517.dgn



BI-DIRECTIONAL RECESSED PAVEMENT MARKER DETAIL



MONO-DIRECTIONAL RECESSED PAVEMENT MARKER DETAIL

LEGEND

- Direction of Travel
- Bi-directional yellow marker reflects yellow both left and right in this symbol
- Mono-directional crystal white marker reflects white to the left in this symbol

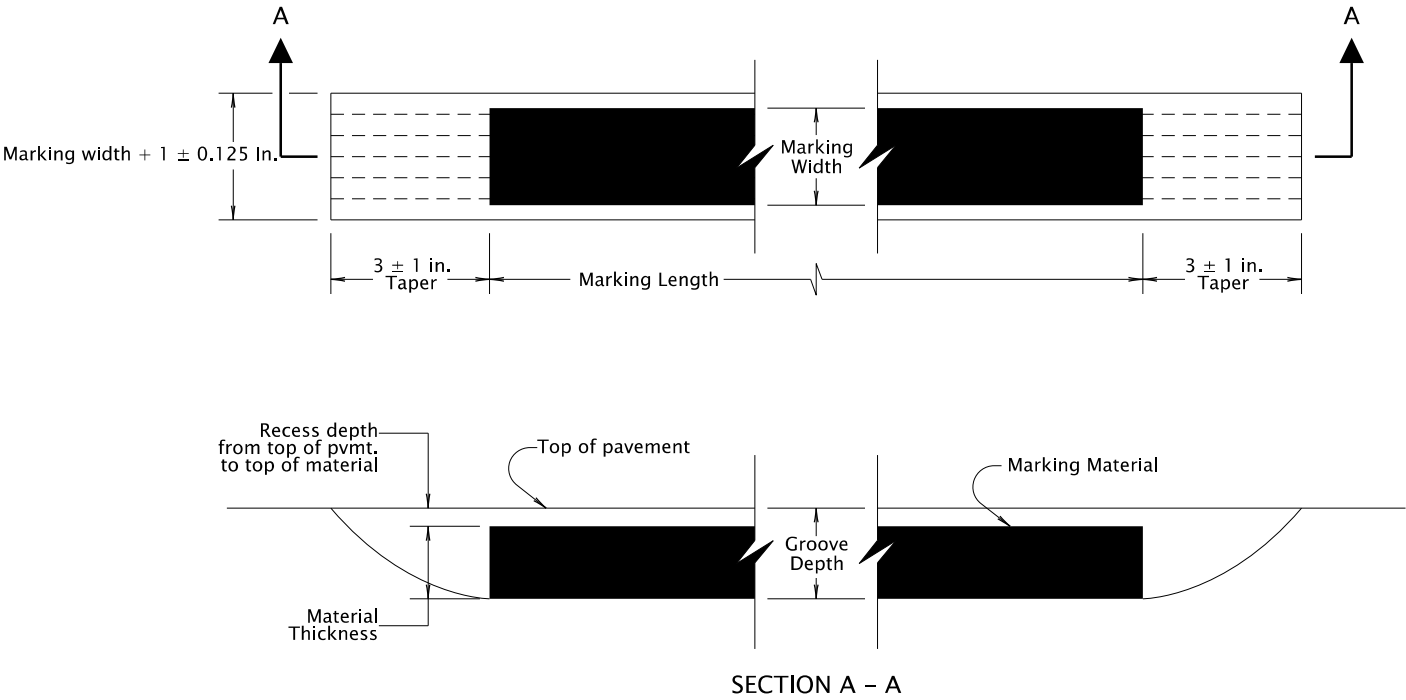
To be accompanied by Standard Dwg. Nos. TM502 and TM515

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			
RECESSED PAVEMENT MARKERS			
2024			
DATE	REVISION DESCRIPTION		
07-2021	Updated to better fit ODOT drafting standards		
CALC. BOOK NO.	N/A	SDR DATE	07-06-2021
			TM517

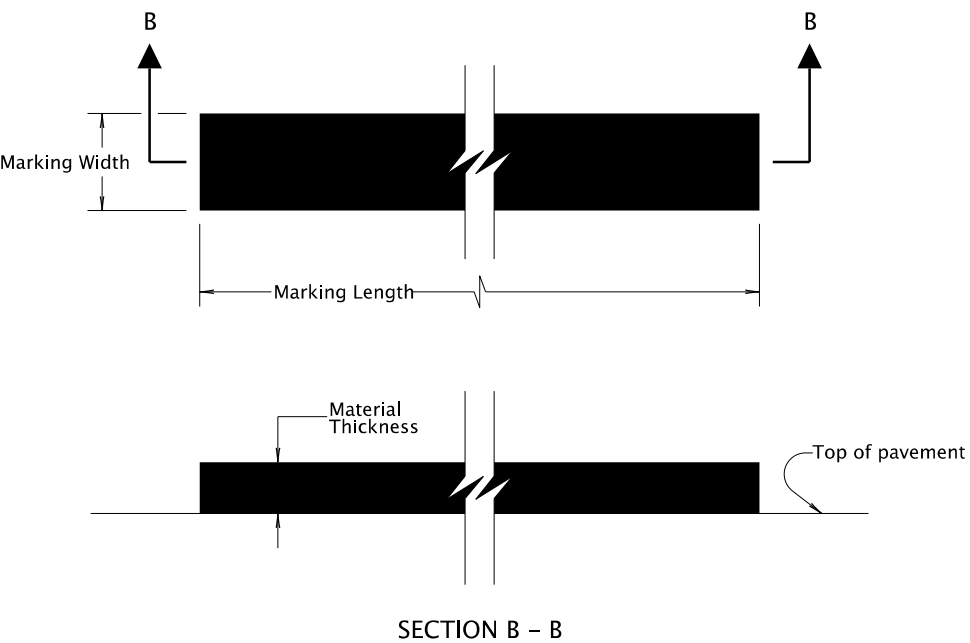
20-JAN-2023

TM521.dgn



GROOVE INSTALLED GROOVE AND MATERIAL DIMENSIONS			
Pavement Marking Material Type	Groove Depth	Recess Depth	Material Thickness
Durable Method 'A' & Method 'D'	220 ± 20 mils	45 ± 5 mils	Var.
High Performance	60 ± 10 mils	Var.	25 mils

GROOVE INSTALLED MARKINGS



SURFACE INSTALLED MATERIAL THICKNESS	
Pavement Marking Material Type	Thickness
Durable Method 'A' & Method 'B' & Method 'D'	120 mils
High Performance	25 mils

SURFACE INSTALLED MARKINGS

- General Notes:
- 1) See Standard Drawing TM500 and/or project plans for marking length and width dimensions.
 - 2) See Standard Specification 00850.46 for marking installation tolerances.

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

DURABLE & HIGH PERFORMANCE

PAVEMENT MARKINGS

SURFACE & GROOVE INSTALLED

NON-PROFILED

2024

DATE	REVISION	DESCRIPTION
07-2021	Changed groove width for 4 in. markings	
01-2023	Changed groove width back to previous width for 4 in. markings	

CALC. BOOK NO.

N/A

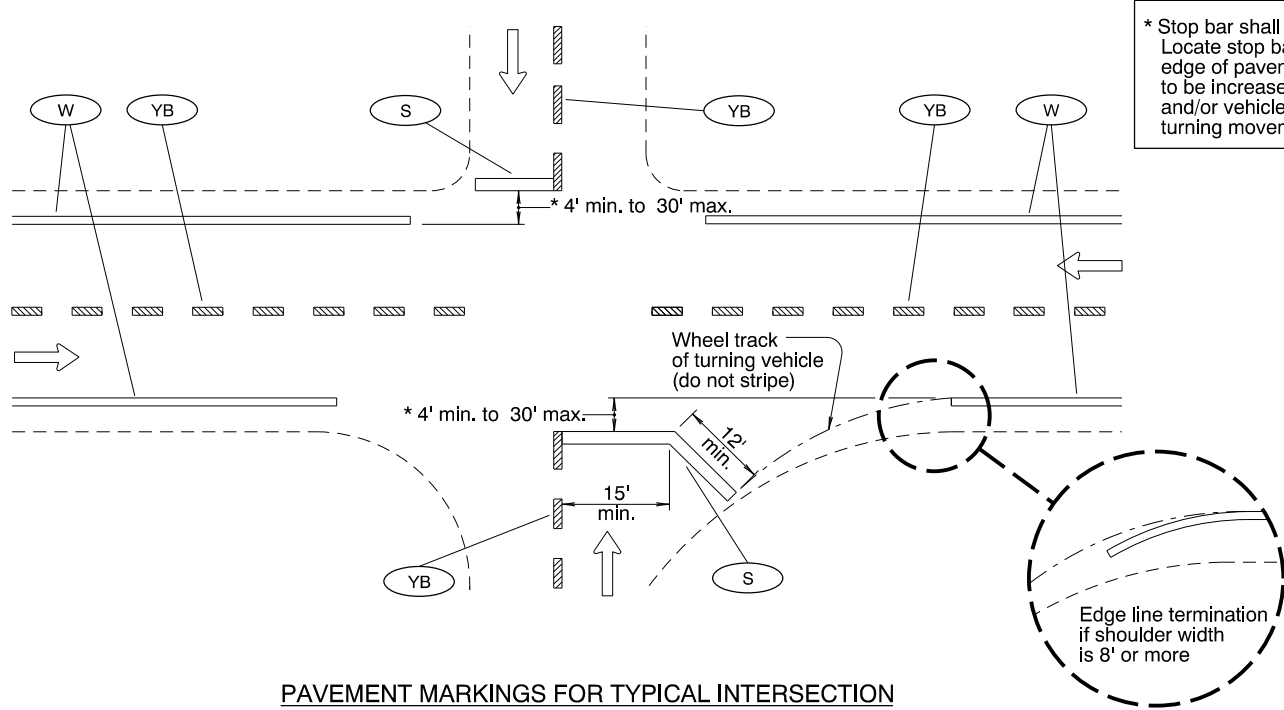
SDR DATE

20-JAN-2023

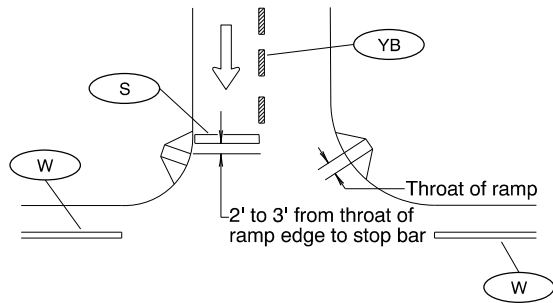
TM521

06-JUL-2022

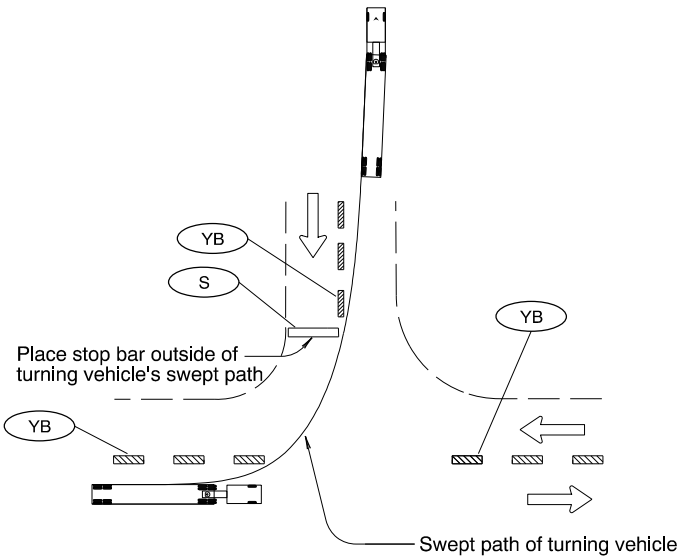
TM530.dgn



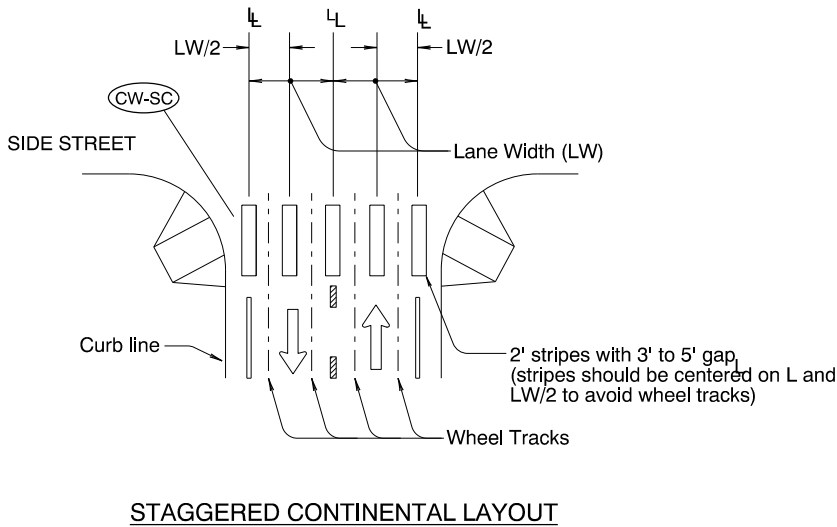
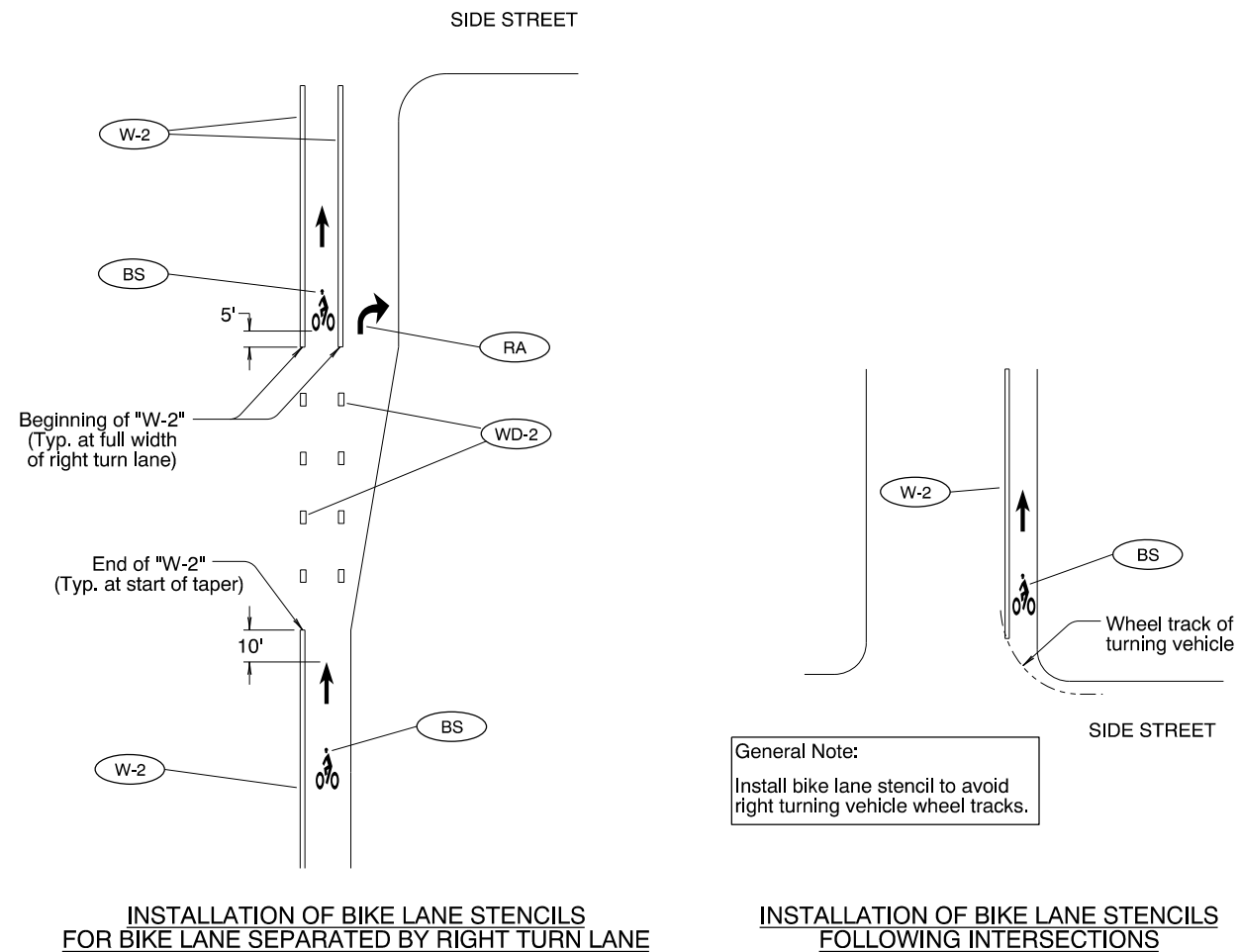
* Stop bar shall be placed as near as possible to the intersecting traveled way. Locate stop bar 4' min. to 30' max. in advance of the extended fog line, edge of pavement, or curb face. Minimum stop bar distance may need to be increased, depending on location of pedestrian ramps (see Detail "A") and/or vehicle turn radii (see Detail "B"). Field verify sight distance and truck turning movements.



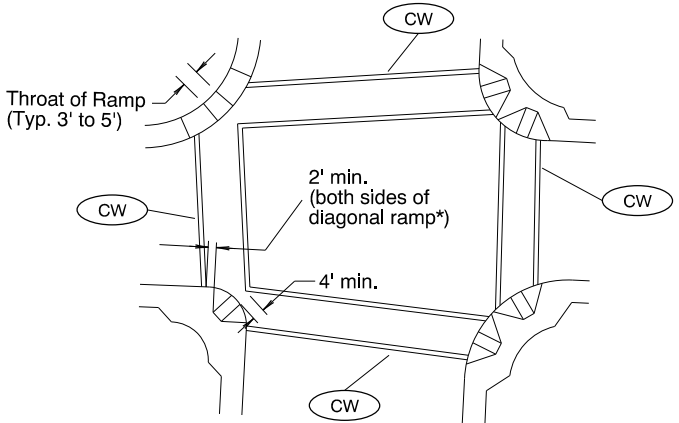
Detail "A"
STOP BAR PLACEMENT WITH
RESPECT TO PEDESTRIAN RAMP



Detail "B"
STOP BAR PLACEMENT WITH
RESPECT TO TURN RADII



General Note:
1. Install crosswalk bars such that the throat of the ADA ramp is entirely within crosswalk markings, or 5' back of extended fog line, edge of pavement, or curb face.



STANDARD CROSSWALK BARS
AT INTERSECTION
* = Refer to Std Dwg RD916

LEGEND
← Direction of Travel
L - Lane line dimensions are shown on the striping plans

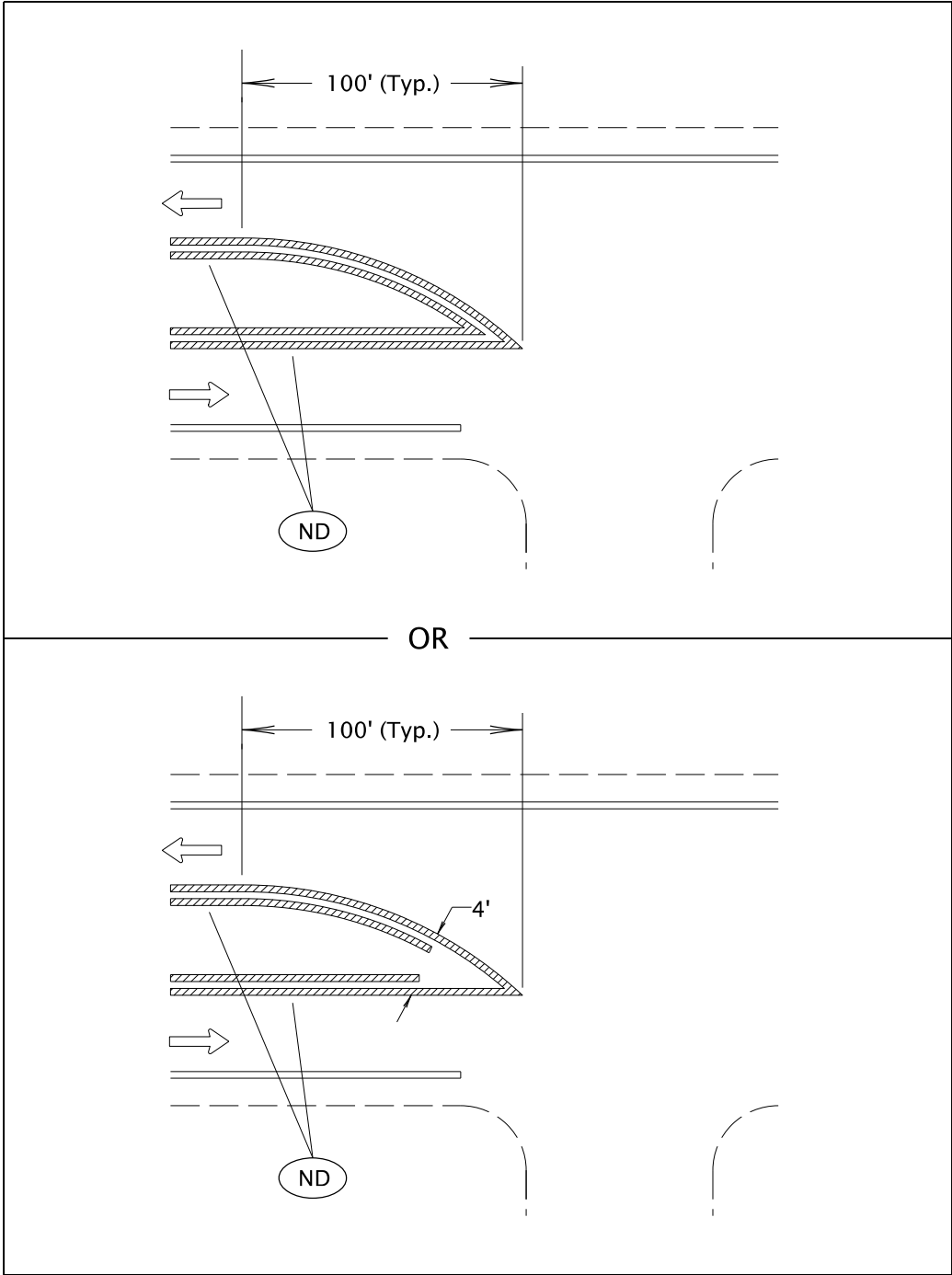
To be accompanied by Standard Dwg. Nos. TM500 thru TM504

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.

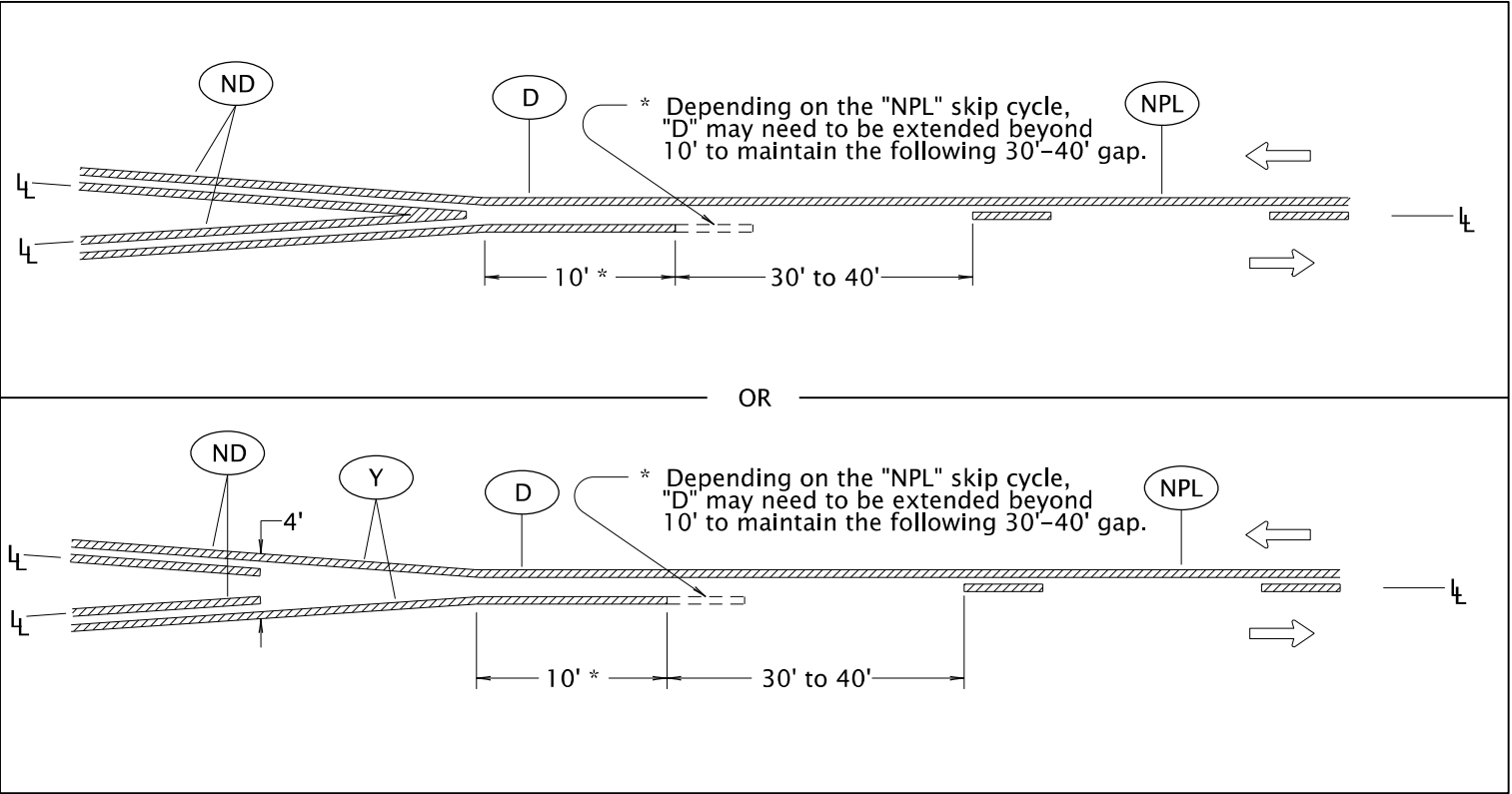
All materials shall be in accordance with the current Oregon Standard Specifications.			
OREGON STANDARD DRAWINGS			
INTERSECTION PAVEMENT MARKINGS (CROSSWALK, STOP BAR & BIKE LANE STENCIL)			
2024			
DATE	REVISION DESCRIPTION		
07-2022	Added Roadway Standard Drawing reference to detail for clarity		
CALC. BOOK NO.	N/A	SDR DATE	06-JUL-2022
			TM530

07-01-2020

TM539.dgn



MEDIAN BULLNOSE DETAIL



MEDIAN WIDTH TRANSITION
(TWO NARROW DOUBLE YELLOW LINES TO ONE-DIRECTION NO-PASSING LINE)

- LEGEND**
- Increasing stationing from left to right
 - Direction of Travel
 - Lane line dimensions are shown on the striping plans

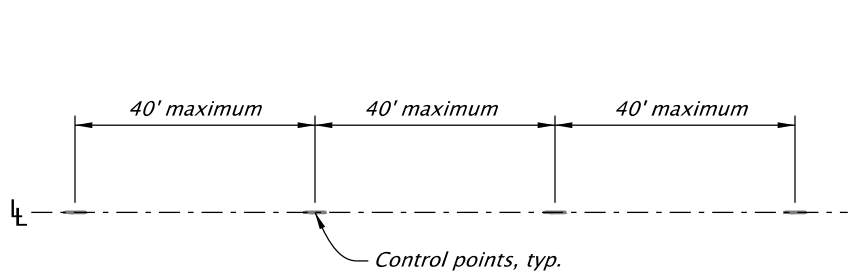
To be accompanied by Standard Dwg. Nos. TM500 thru TM504

All materials shall be in accordance with the current Oregon Standard Specifications.			
OREGON STANDARD DRAWINGS			
MEDIAN AND LEFT TURN CHANNELIZATION DETAILS			
2024			
DATE	REVISION DESCRIPTION		
07-2020	Extended accompanied by drawings to include TM504		
CALC. BOOK NO.	N/A	SDR DATE	07-01-2020
			TM539

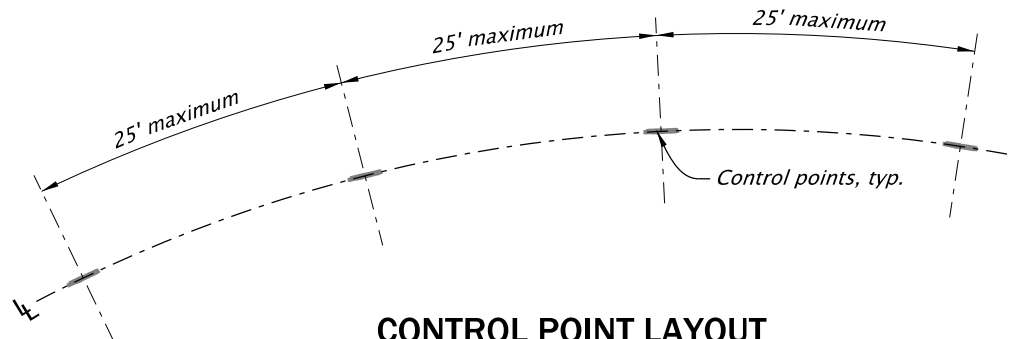
Effective Date: June 1, 2025 – November 30, 2025

11-JUL-2025

TM560.dgn



CONTROL POINT LAYOUT
TANGENT SECTIONS



CONTROL POINT LAYOUT
CURVE SECTIONS

- GENERAL NOTES:**
1. Use control points to make continuous narrow guideline as specified.
 2. Use aerosol paint to mark layout transition details and control point; white paint on asphalt surfaces and black paint on concrete pavement surfaces.
 3. Use pavement marking transition detail marks at the start of pavement markings, where pavement markings transition to a different pavement marking and at the end of pavement markings.
 4. Typical layout transition details are marked by lines denoting location of permanent pavement markings. These lines will be followed by three dots if the line is broken.

LEGEND
L = Lane line dimensions are shown on the Striping plans.



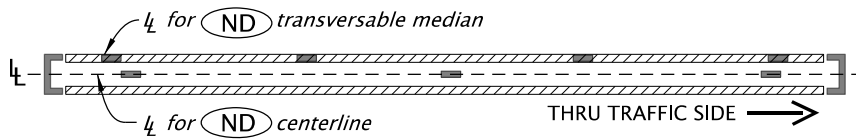
SOLID LINE LAYOUT TRANSITION DETAIL

(W) (Y) (W-2)



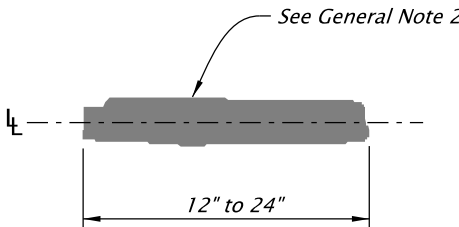
BROKEN LINE LAYOUT TRANSITION DETAIL

(WB) (YB) (WD) (YD) (DLL) (DLL-2) (WD-2)

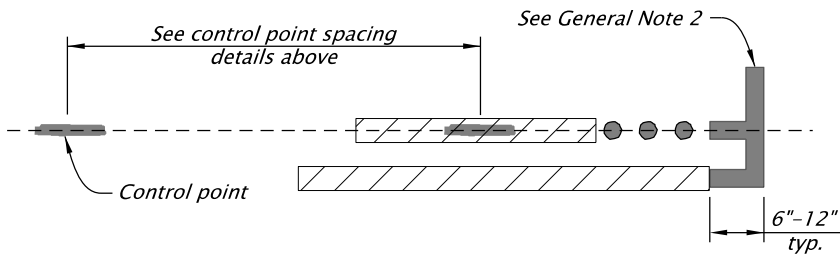


DOUBLE LINES 4" TO 12" WIDTH
LAYOUT TRANSITION DETAIL

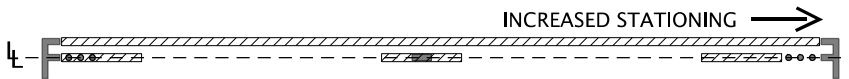
(ND) (D) (NDW)



CONTROL POINT

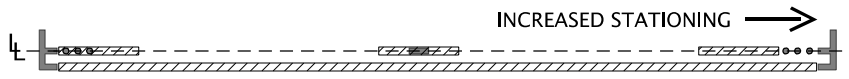


EXAMPLE LAYOUT TRANSITION DETAIL



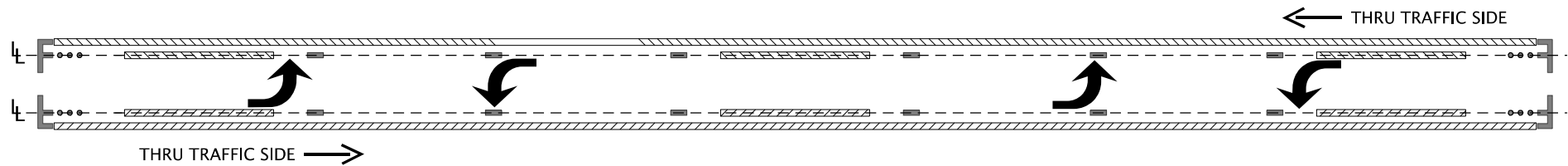
NO PASS LEFT LAYOUT TRANSITION DETAIL

(NPL)



NO PASS RIGHT LAYOUT TRANSITION DETAIL

(NPR)



TWO WAY LEFT LAYOUT TRANSITION DETAIL

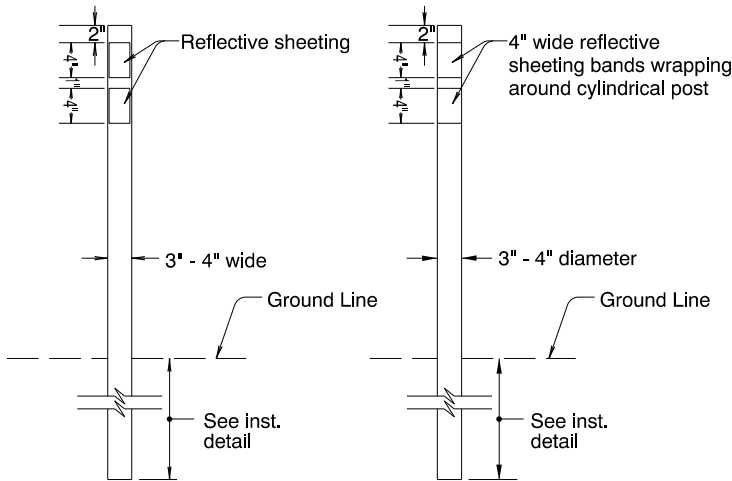
(TWL)

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.

ACCOMPANIED BY DWGS.: TM500, TM501, TM502, TM503, TM504			
All materials shall be in accordance with the current Oregon Standard Specifications.			
OREGON STANDARD DRAWINGS			
ALIGNMENT LAYOUT: GENERAL			
2024			
DATE	REVISION DESCRIPTION		
07-2025	MODIFIED CONTROL POINTS, ADDED NEW LAYOUT REQUIREMENTS AND DETAILS		
CALC. BOOK NO.	N/A	SDR DATE	11-JUL-2025
			TM560

06-JAN-2012

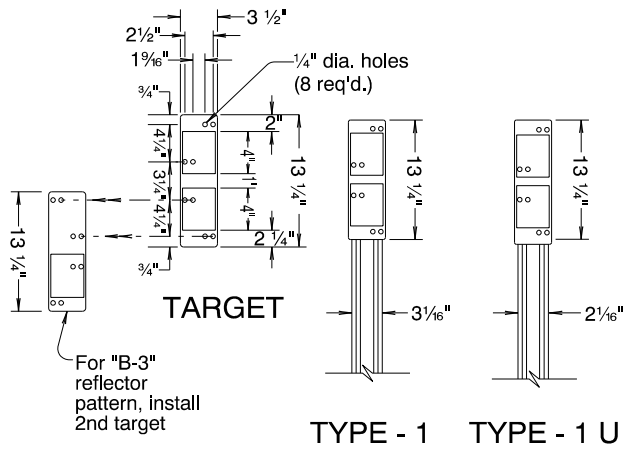
TM570.dgn



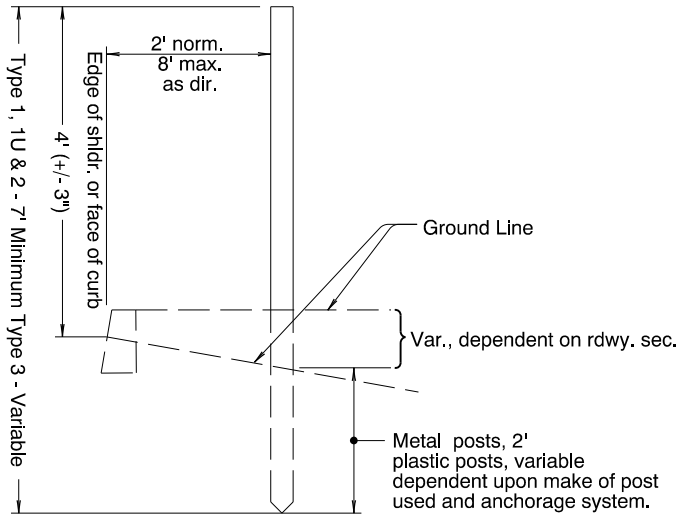
TYPE - 2

TYPE - 3

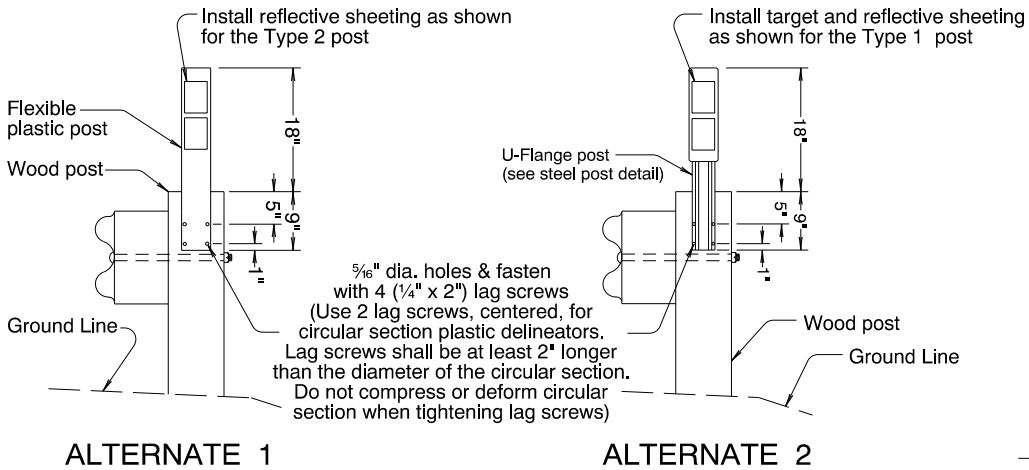
FLEXIBLE PLASTIC POSTS



STEEL POSTS



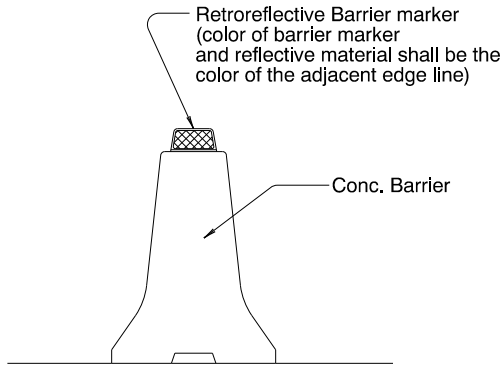
INSTALLATION DETAIL



ALTERNATE 1

ALTERNATE 2

GUARDRAIL AREAS (WITH WOOD POSTS)



TYPE - 5

CONCRETE BARRIER AREAS

(Install barrier markers at 50' spacing unless otherwise noted in plans)

NOTES:

POST:

Galv. steel, nominal weight Type 1, 2 lb/ft, Type 1 U, 1.12 lb/ft.

See Standard Drawing TM571 for steel post dimensions and details.

TARGET:

Aluminum sheet, nominal thickness .050". Fasten to post with 3/16" dia. aluminum blind rivets and washers.

For "B-3" reflector pattern, top target shall overlap bottom target.

REFLECTORS:

3" x 4" reflective sheeting unless otherwise shown. (3 1/2" x 4" reflective sheeting is an acceptable alternate unless otherwise shown.) Acrylic prismatic reflectors acceptable on Type 1, 1 U, 2 and 4 posts and Type 5 barrier mounts. Place required number in sequence from top of target.

GENERAL NOTES:

- Spacing shall be measured along the shoulder.
- On roads with less than 500 vehicle ADT, delineators are not to be used except where situations such as sharp horizontal curves, etc. exist.
- To clear driveways, crossroads etc., or for required adjustments at ramps and at intersections, either:
(a) vary placement of that post up to 25% of spacing shown, or;
(b) eliminate said post if limit of variation must be exceeded.
- Judgement should be exercised in the installation of delineators in cut section, particularly on roads constructed to older standards where ditches are narrow and where delineators tend to hamper maintenance operations.
- On horizontal curves place delineators nearly opposite each other.
- At guard rail locations the delineators are to be installed behind the rail and shall be located adjacent to guard rail posts as shown for Type 4 Delineators.
- Install all delineators with reflectors facing adjacent oncoming traffic.
- Offset delineators an additional 4' in areas of heavy snow removal operations.
- Backside Delineators may be used in frequently snow plowed areas where use of snow poles is not justified. When Backside Delineators are specified, substitute "W-1" and "W-2" with "W-1B" and "W-2B" respectively, on Type 1 steel posts. Do not install Backside Delineators on one-way sections of roadway, freeways and ramps, or on radius sections.
- Refer to TM 222 for bracket assembly details for Backside Reflector Pattern.

REFLECTOR PATTERN TABLE					
	Color Type	Color Of Reflector And Target Or Post	Number Of Reflectors	Color Of Reflector And Target Or Post On Backside	Number Of Reflectors On Backside
Standard Pattern	"W-1"	White	1	Not Applicable	Not Applicable
	"W-2"	White	2		
	"Y-1"	Yellow	1		
	"Y-2"	Yellow	2		
	"B-1"	Blue	1		
	"B-2"	Blue	2		
	"B-3"	Blue	3		
	"R-1"	Red	1		
Backside Pattern	"W-1B"	White	1	White	2
	"W-2B"	White	2	White	2

TANGENT	HORIZONTAL CURVES				
▲ MAX. SPACING EACH SIDE OF ROADWAY IN FEET	▲ MAX. SPACING EACH SIDE OF ROADWAY IN FEET				
	DEGREE OF CURVE	ON CURVE	IN ADVANCE OF & BEYOND CURVE		
400			FIRST SPACE	SECOND SPACE	THIRD SPACE
	Lower Than 1	300	300	300	300
	1	230	300	300	300
	2	160	300	300	300
	3	130	260	300	300
	4	110	220	300	300
	5	100	200	300	300
	6	90	180	270	300
	7 - 8	80	160	240	300
	9 - 11	70	140	210	300
	12 - 16	60	120	180	300
	17 - 22	50	100	150	300
	23 - 34	40	80	120	240
	35 - 53	30	60	90	180
	54 & Higher	20	40	60	120

(Min. spacing 20 feet)

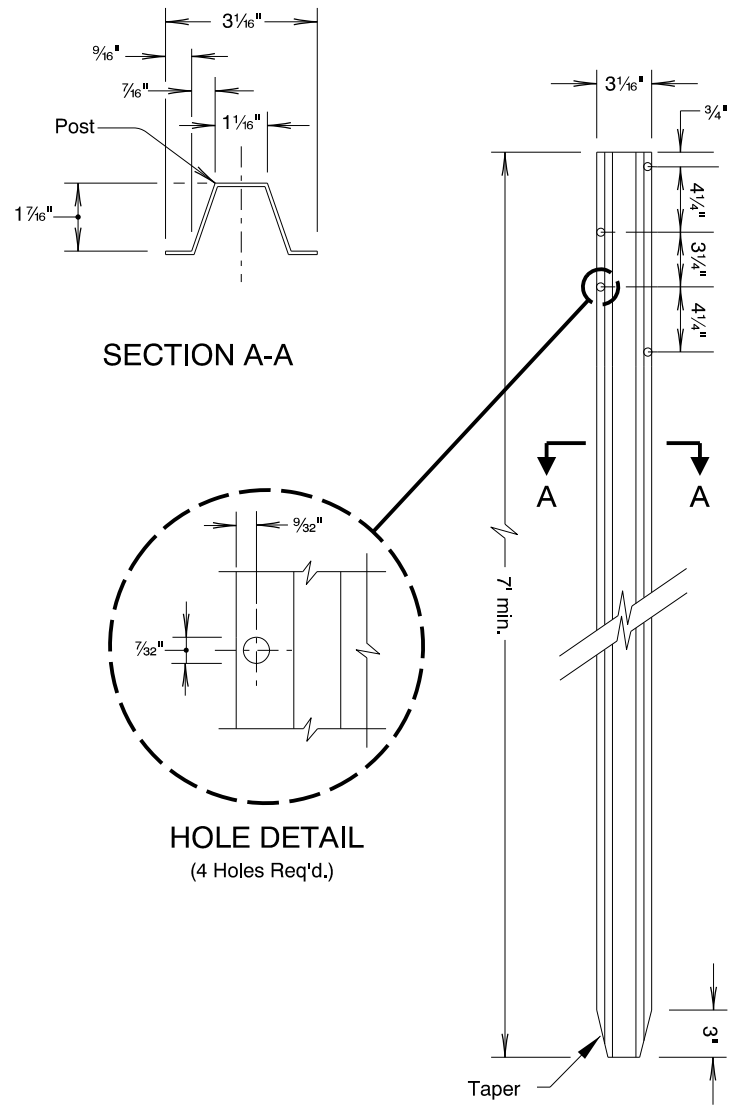
(▲ Install "W-1" reflective pattern unless otherwise noted. See Standard Drawings TM575 thru TM577 for spacing, layout, and reflective pattern of delineators at interchange ramps, channelized intersections, lane reductions, emergency escape ramps and freeway crossovers.)

DELINEATOR SPACING TABLE FOR TYPES 1, 1U, 2, and 4

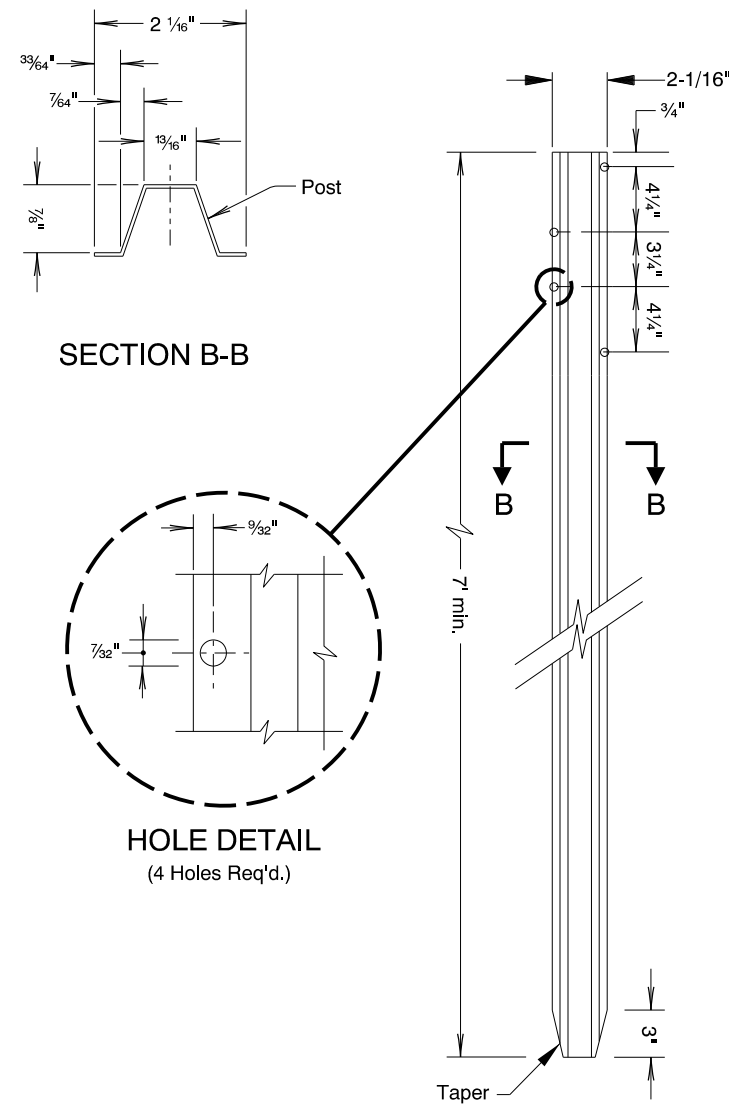
To be accompanied by Drg. No. TM571, TM575, TM576, and/or TM577 as specified.

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			
TRAFFIC DELINEATORS			
2024			
DATE	REVISION DESCRIPTION		
CALC. BOOK NO.	N/A	SDR DATE	06-JAN-2012
			TM570



TYPE - 1 STEEL POST DIMENSIONS



TYPE - 1 U STEEL POST DIMENSIONS

To be accompanied by Drg. No. TM570

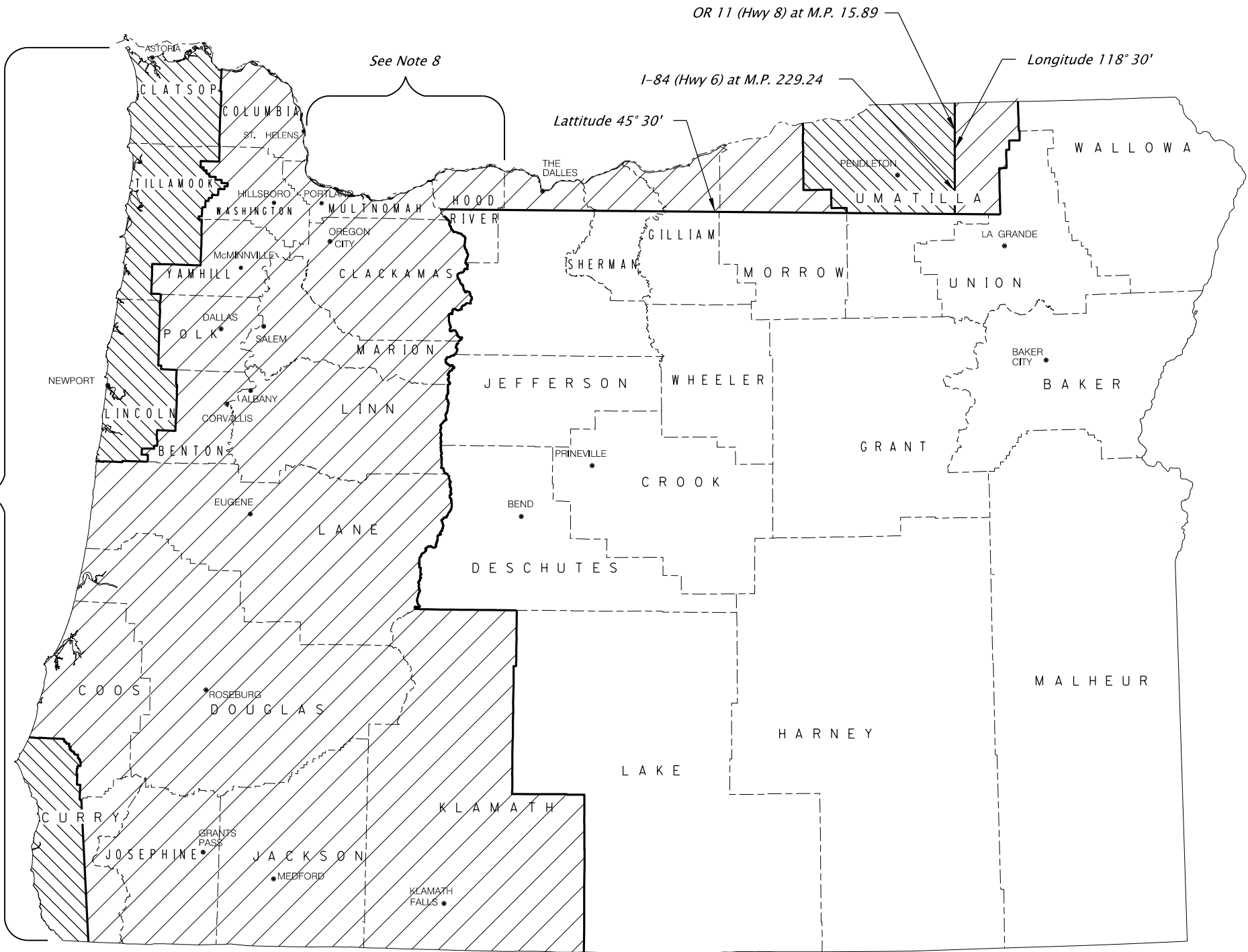
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.			
OREGON STANDARD DRAWINGS			
TRAFFIC DELINEATORS STEEL POST DETAILS			
2024			
DATE	REVISION	DESCRIPTION	
CALC. BOOK NO.	N/A	SDR DATE	10-DEC-2009
			TM571

10-JUL-2020

TM671.dgn

See Note 7



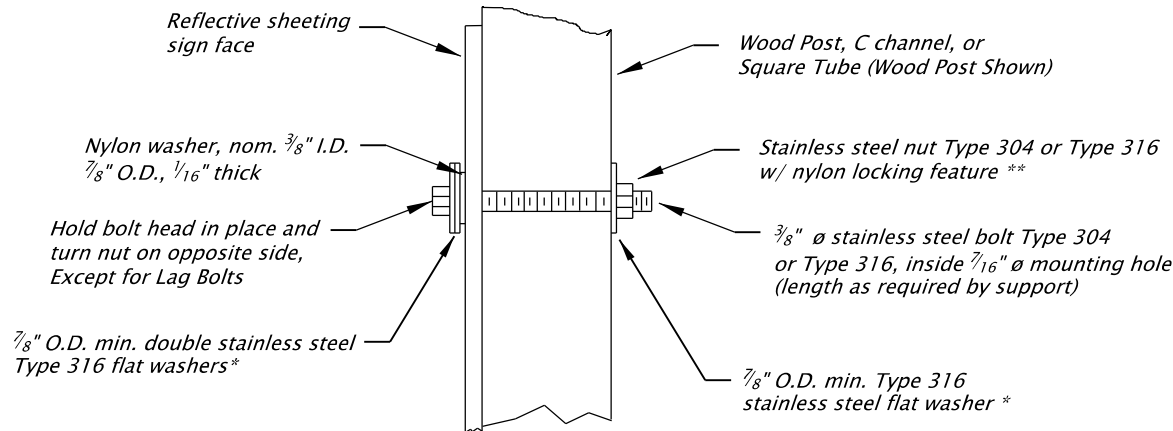
- NOTES:**
- 1. The wind velocity map as shown is adapted from AASHTO 2001 4th Edition - "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals", Appendix C, Figure C-3 and Section 3, Figure 3-2. It uses the wind speed map shown in Figure 1609 of the 2007 Oregon Structural Code to account for locations in the State with special wind regions.
 - 2. The wind velocities shown above are 3-Second Gust wind velocities.
 - 3. The Exposure Category is C.
 - 4. The mean recurrence interval is 50-Years.
 - 5. Mountainous terrain, gorges, and ocean promontories are classified as special wind regions and shall be examined for unusual wind conditions.
 - 6. The Interval Height (Kz) is 30 ft.
 - 7. All areas with full exposure to ocean winds shall be designated 110 mph areas.
 - 8. Areas in Multnomah and Hood River counties with full exposure to Columbia River Gorge winds shall be designated 110 mph areas.
 - 9. Localities may have adopted wind speed higher than shown on this map. Those higher wind speed shall be used.

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			
3 SECOND GUST WIND SPEED MAP			
2024			
DATE	REVISION DESCRIPTION		
CALC. BOOK NO.	N/A	SDR DATE	06-JAN-2012
			TM671

10-JAN-2025

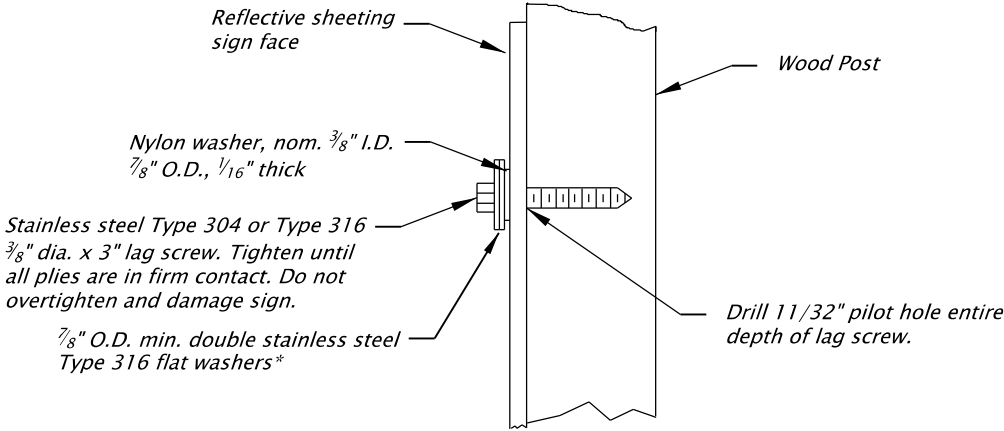
TM676.dgn



Note:
1) When signs are placed on opposing sides of post, $\frac{3}{8}$ " x 3" stainless steel Type 304 or Type 316 lag screws can be used instead of through bolt.
2) Use nylon and stainless steel washers when signs are placed on both sides of post.
3) Burr threads at junction with nut when locknuts are not used.
4) Post bolts to extend beyond the tightened nuts within the limits of $\frac{1}{4}$ " to 1".

* Stainless steel bonded sealing washer with neoprene layer is an acceptable substitute
** Acceptable substitute for nylon locking nuts: Stainless steel TRI-LOC® Top Lock Locknut

SIGN ATTACHMENT DETAIL

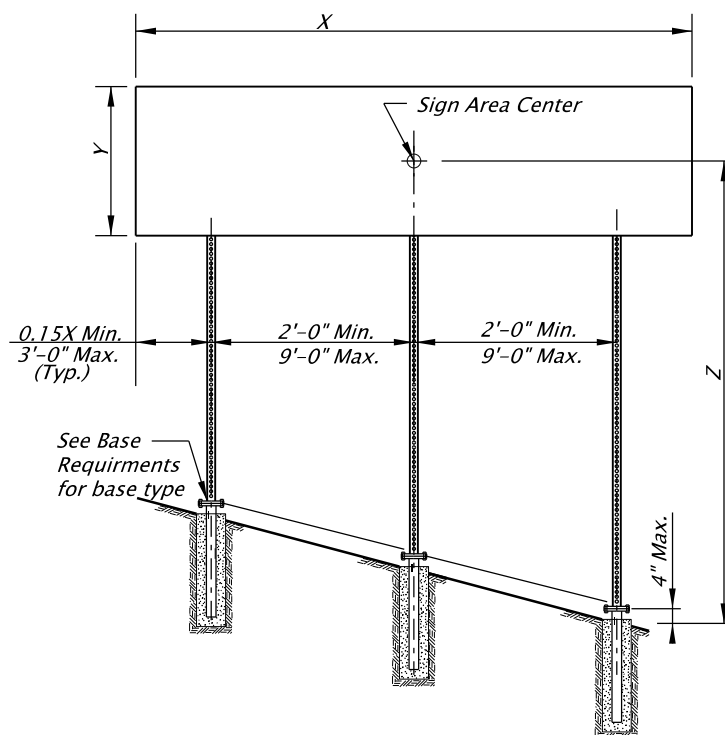


* Stainless steel bonded sealing washer with neoprene layer is an acceptable substitute

Note: This optional detail is to be used only when specified on a project.

OPTIONAL WOOD POST LAG SCREW DETAIL

<div>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.</div>				All materials shall be in accordance with the current Oregon Standard Specifications.			
				OREGON STANDARD DRAWINGS			
				SIGN ATTACHMENTS			
				2024			
				DATE	REVISION DESCRIPTION		
				07-2020	ADDED OPTIONAL LAG SCREW DETAIL		
				01-2025	ADDED STAINLESS STEEL TO ALL HARDWARE AND REMOVED ANCO PIN- LOC		
CALC. BOOK NO. _ _ _ _		N/A _ _ _ _		SDR DATE _	10-JAN-2025 _		TM676

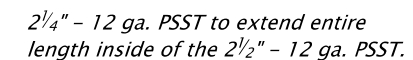


TWO POST ELEVATION

No scale

THREE POST ELEVATION

No scale



No scale

	Number of Posts		
<i>Square Tube Size</i>	<i>1</i>	<i>2</i>	<i>3</i>
<i>2"-12 ga.</i>	<i>Anchor</i>	<i>Anchor</i>	<i>N/A</i>
<i>2½"-12 ga.</i>	<i>Anchor</i>	<i>Slip</i>	<i>Slip</i>
<i>2½"-10 ga.</i>	<i>Slip</i>	<i>Slip</i>	<i>Slip</i>
<i>2¼" & 2½"-12 [*]ga.</i>	<i>Slip</i>	<i>Slip</i>	<i>Slip</i>

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

Accompanied by dwgs. TM200, TM671, TM687, TM688, TM689, TM822

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

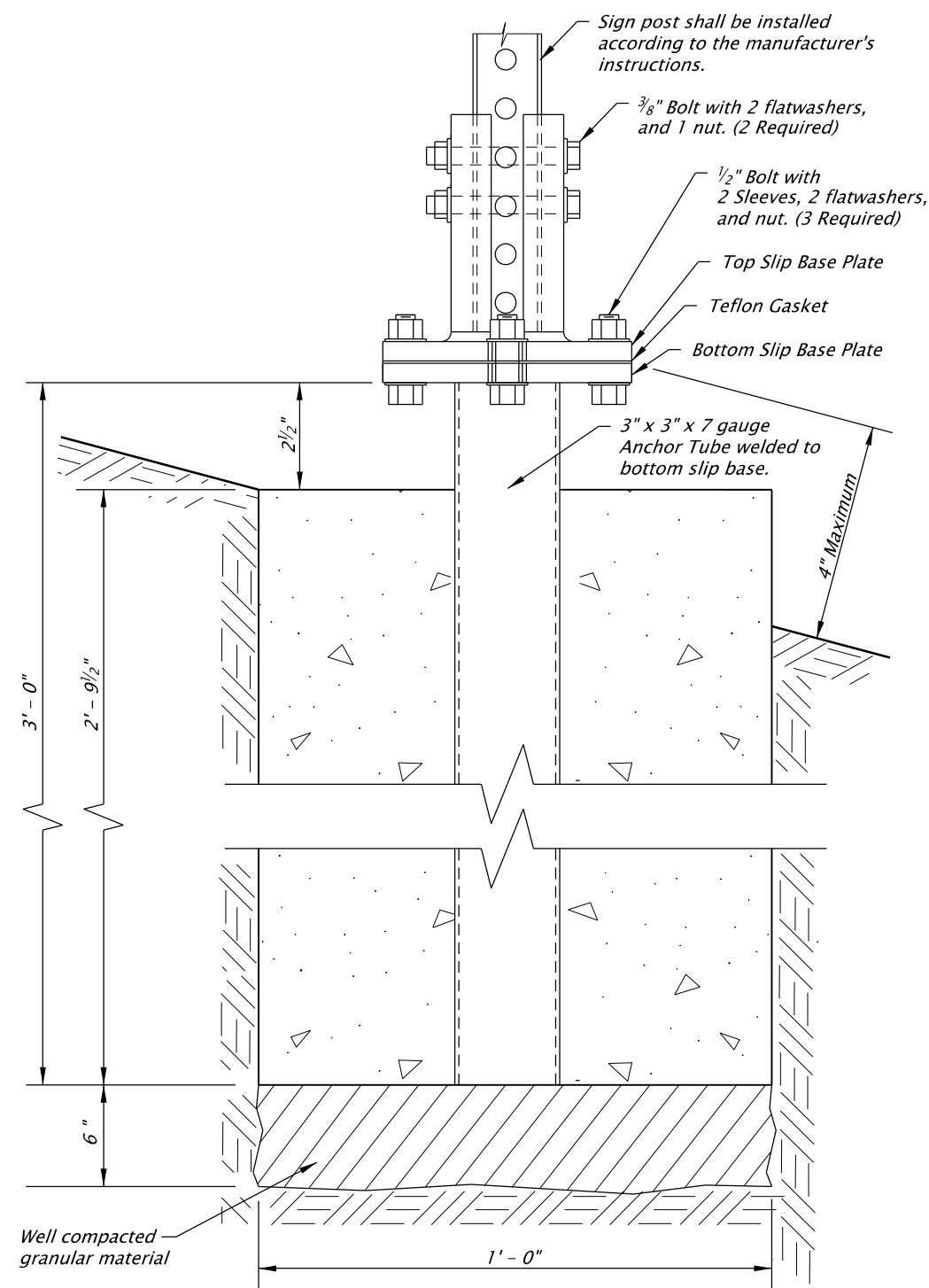
PERFORATED STEEL SQUARE TUBE (PSST) SIGN SUPPORT INSTALLATION

2024

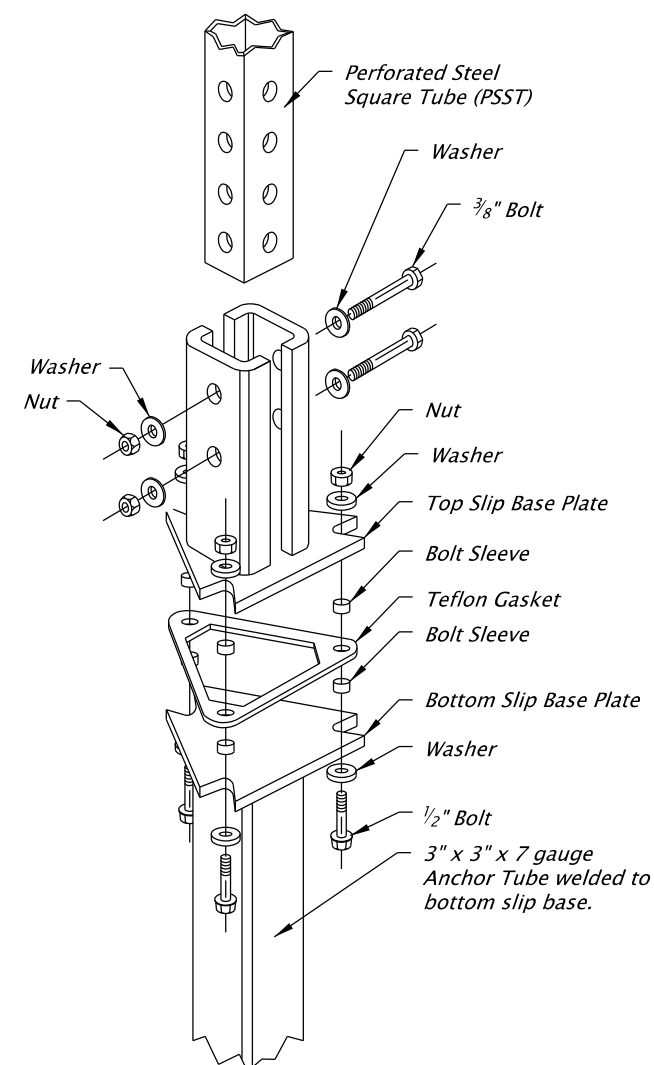
DATE	REVISION	DESCRIPTION

CALC. BOOK NO.	- - - 5752 - - -	SDR DATE	- 10-JUL-2017 -	TM681
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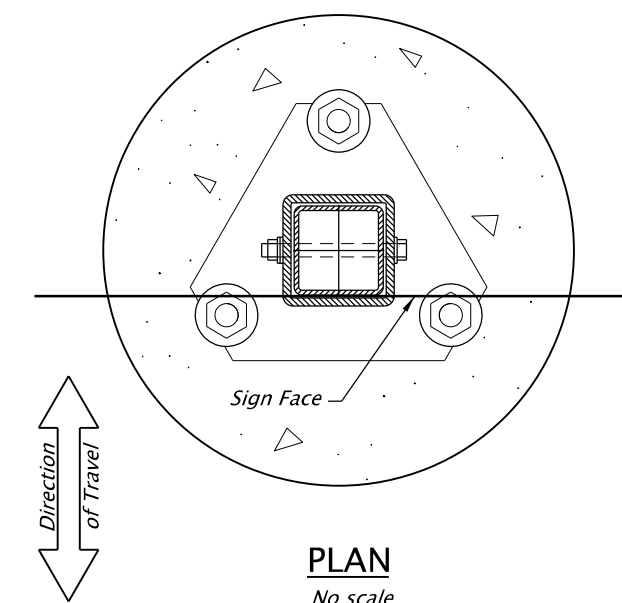
Effective Date: June 1, 2025 – November 30, 2025



SLIP BASE ELEVATION
No scale



SLIP BASE EXPLODED VIEW
No scale



General Notes:

1. *Material grade for base hardware connection shall be according to the manufacturer's recommendation and based on crash testing.*
2. *Slip base steel shall be hot dipped galvanized or approved equal.*
3. *Footing concrete shall be Commercial Grade Concrete ($f_c = 3000$ psi) per Specification 00440. The CGC mixture may be accepted at the site of placement according to 00440.14.*
4. *Material grade for base hardware connection shall be according to the manufacturer's recommendation and based on crash testing.*
5. *All slip bases shall be pre-assembled by the manufacturer and shall be installed according to the manufacturer's instructions.*
6. *Use slip bases listed on the ODOT Qualified products list or submit crash testing data, installation instructions, and unstamped working drawings according to 00150.35.*
7. *Slip base details shown are not for a specific manufacturer and are only shown to convey general pieces of a slip base system. Specific slip base material will be according to the manufacturer's documentation.*

Accompanied by dwgs. TM681, TM687

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)
SLIP BASE FOUNDATION

2024

[illegible]

TM688

Effective Date: June 1, 2025 – November 30, 2025

10-JAN-2025

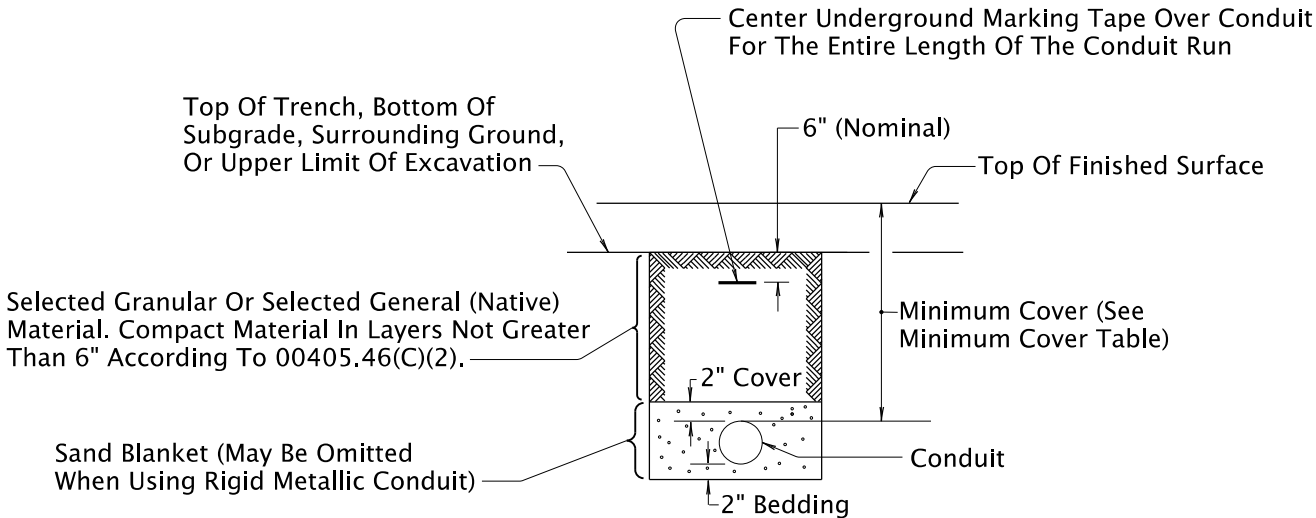
TM700.dgn

Type Of Conduit	Minimum Cover From Top of Finished Surface (Use Permit Depth If Greater Than These)	
	Roadway & Shoulders	Other Areas
Metallic	24"	18"
Non-Metallic	30"(See Note 2)	18"

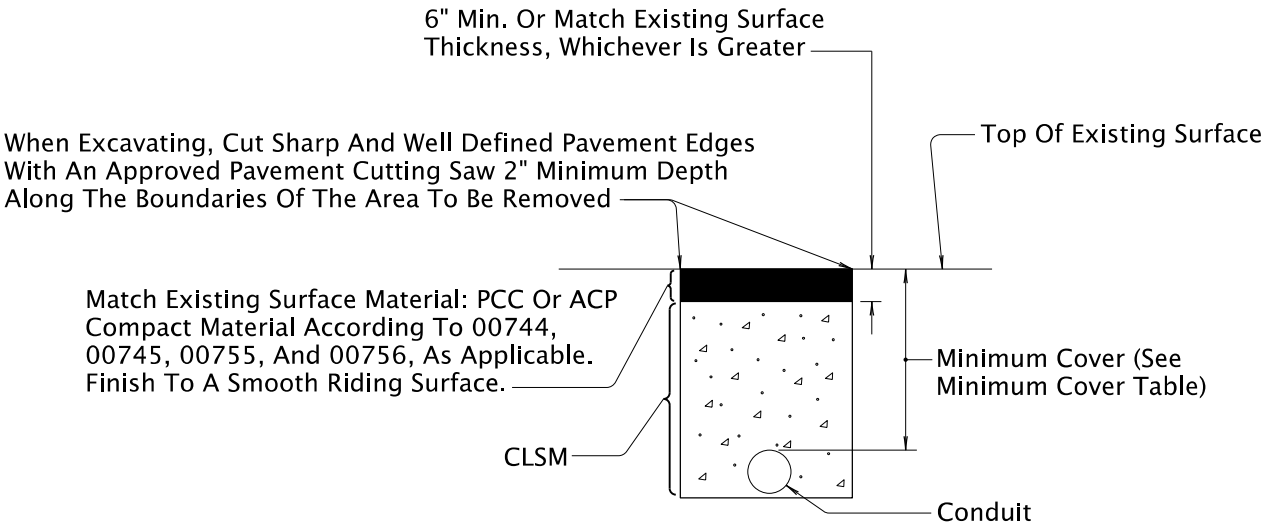
- Notes:
- Additional Cover Depth May Be Necessary Near Foundations And Junction Boxes To Accommodate The Minimum Radius ("R") Of The Conduit Elbow. See TM701 For More Information.
 - For Non-Metallic Conduit Under Roadway & Shoulders Installed Horizontally Into Fiber Optic Hand Hole As Per TM702, The Minimum Cover Depth Is 24 Inches.

MINIMUM COVER FROM FINISHED SURFACE

- General Notes:
- Install Conduit By Open Trench Method, Horizontal Directional Drilling, Or As Shown
 - Conduit Runs Shown On Plans Are For Bidding Purposes Only. Locations May Be Changed To Avoid Obstructions.
 - Excavate According To 00960.40. In Areas To Be Paved Or Landscaped, Place All Conduit Before Paving Or Landscaping.
 - Hold Trench Width To A Practical Minimum
 - Do Not Backfill Trenches Until Inspected By The Engineer
 - Furnish Backfill Materials According To 00960.10



CONDUIT OPEN TRENCH EXCAVATION & BACKFILL
UNSURFACED AREAS (new roadway prior to paving, shoulders,
under sidewalk, landscaped areas, etc.)

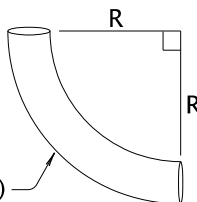


CONDUIT OPEN TRENCH EXCAVATION & BACKFILL
EXISTING PAVED AREAS

<i>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.</i>				All materials shall be in accordance with the current Oregon Standard Specifications.	
				OREGON STANDARD DRAWINGS	
				GENERAL CONDUIT TRENCHING	
				2024	
				DATE	REVISION DESCRIPTION
				01-2025	NEW DRAWING (CONTENT FROM RETIRED TM471)
				CALC. BOOK NO.	SDR DATE
				N/A	10-JAN-2025
				TM700	

10-JAN-2025
TM701.dgn

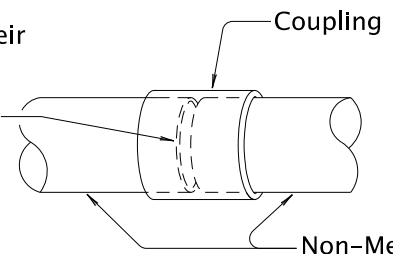
Standard Factory Fiberglass Bend
(No Crimping, Flattening, Field Manipulation, Or Cutting In The Field)



Conduit Diameter	R (min.)
1 1/2"	10"
2"	12"
2 1/2"	15"
3"	18"

CONDUIT ELBOWS

Make Cuts Square And True So Conduit Ends Fit Together For Their Full Circumference. Use Solvent Weld To Connect Conduit As Per Manufacturer's Recommendation.



Notes:
1. Slip Joints, Running Threads Or Reducing Couplings Not Allowed. Use The Same Size Conduit For The Entire Length, Outlet To Outlet.

CONDUIT COUPLINGS

Cables/Wires (Or Pull Line In Conduit For Future Use Only)

Install Push-On PVC End Bell Conduit Bushings Before Installing Wire

Install Foam Conduit Plug After Wiring (Or Pull Line) Is Installed

1/2" To 1" Above Conduit Bushing

PVC Riser (In Junction Boxes) Or Fiberglass Riser (In Foundations)

Foam Conduit Plug

1/2" Larger Than Riser Diameter

3" Min.

Notes:
1. Ream Conduit Ends To Remove Rough Edges And Burrs
2. Temporarily Plug Or Cap Conduit Ends At All Times To Keep Debris Out

CONDUIT ENDS AND BUSHINGS

2" Min. To 3" Max.

Fiberglass Riser (Install Plumb)

Top Of Foundation

Concrete Foundation

Fiberglass Elbow

Coupling

Conduit (Size As Shown On Plans)

Extend Fiberglass Conduit 10" To 12" Beyond Foundation

CONDUIT INSTALLATIONS IN FOUNDATIONS
(Applicable for Pole, Pedestal, Service Cabinet and Controller Cabinet Foundations)

Junction Box Type	Max. Sum Of Conduit Diameters
JB1	12"
JB2	18"
JB3	34"

Junction Box

2" To 3" Typ. From End Wall

2" Min. To 3" Max.

PVC Riser (Install Plumb)

Conduit (Size As Shown On Plans). Enter Through The Bottom Of The Box Near The End Wall From The Direction Of The Conduit Run

(Direction Of Conduit Run)

Fiberglass Conduit Elbow

Coupling

CONDUIT INSTALLATION IN JUNCTION BOXES

Pull All Wires And Cables By Hand Only

Pull In A Straight Line With The Conduit Opening*

Temporarily Bundling Cables Or Wire (Tapes, Straps, Ties, Or Other Binding Material) Allowed Only At The Terminating End Points For Pulling Only

LUBRICANT

Use Electrical Lubricants When Inserting Wires And Cables In Conduit

* Use A Pulley Device To Achieve A Straight Line If Pulls Are Made With Poles Or Controller Cabinets In Place

WIRE & CABLE INSTALLATION IN CONDUITS

Wire & Cable Installation General Notes:

1. See TM470 For Additional Wire/Cable Installation Requirements That Apply To Specification Section 00990 Bid Items.

2. Label Wires And Cables With Permanent Tags As Shown Or Directed. Use Handheld Labeler (Brady M210 Label Maker With Vinyl B-595 Tape) Unless Otherwise Shown.

3. Install No. 16 AWG TFFN Orange Base With Blue Tracertone Wire In All Conduits As A Locate Wire. Leave Slack As Shown Or Directed And Install A Wire Nut. Do Not Join Multiple Locate Wires Under A Common Wire Nut Unless Otherwise Shown.

4. Tape The Ends Of Unused Conductors With Insulated Vinyl Plastic Tape.

5. Leave A Minimum Of 2 Feet Slack In Each Wire And Cable In Junction Boxes, Poles, Cabinets Unless Otherwise Shown.

6. Install Polyethylene Pull Line In All Conduits Noted On The Plans For Future Use (No Wires/Cables In Conduit). Leave 6 Feet Of Slack Pull Line.

Conduit Installation General Notes:

1. Install Non-Metallic Conduit Unless Otherwise Shown. Conduit Runs Shall Be Continuous Between Any Pole, Junction Box, Or Cabinet.

2. Larger Conduit Than Specified May Be Used At The Option And Cost Of The Contractor If Max. Sum Of Conduit Diameters In Junction Box Is Not Exceeded.

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

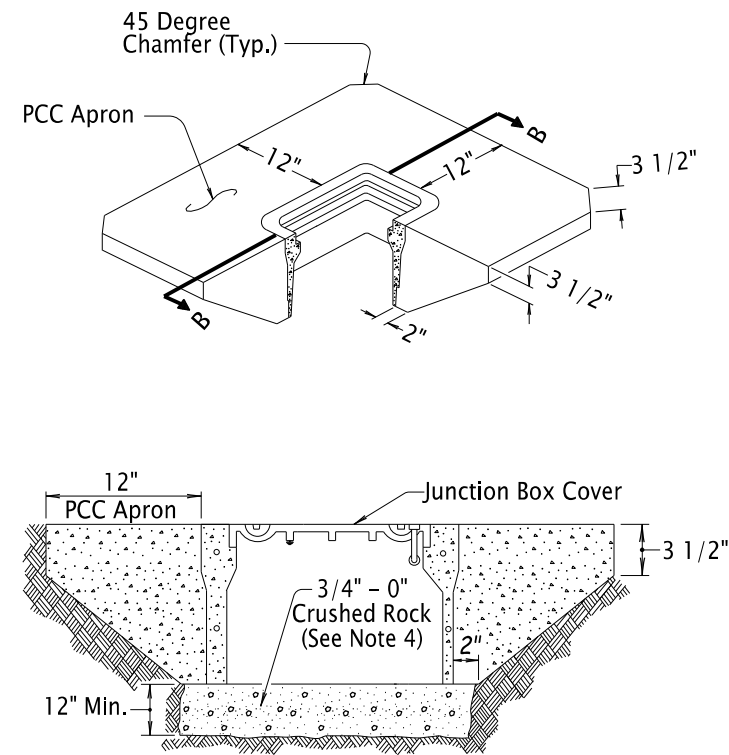
GENERAL CONDUIT & WIRE/CABLE INSTALLATION

2024

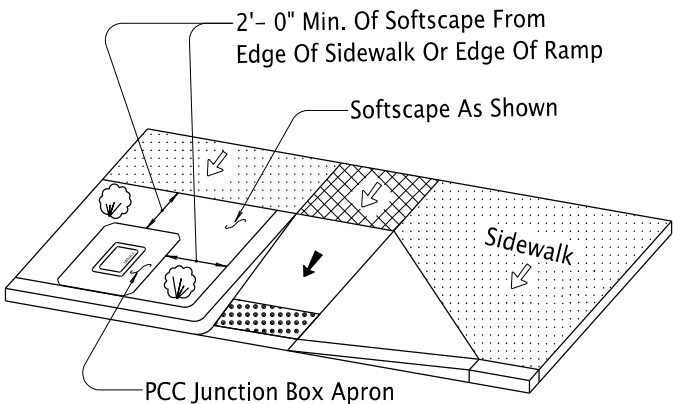
DATE	REVISION	DESCRIPTION
01-2025	NEW DRAWING	(CONTENT FROM RETIRED TM470 & TM471)

CALC. BOOK NO. N/A SDR DATE 10-JAN-2025 TM701

10-JAN-2025
TM702.dgn



SECTION B-B

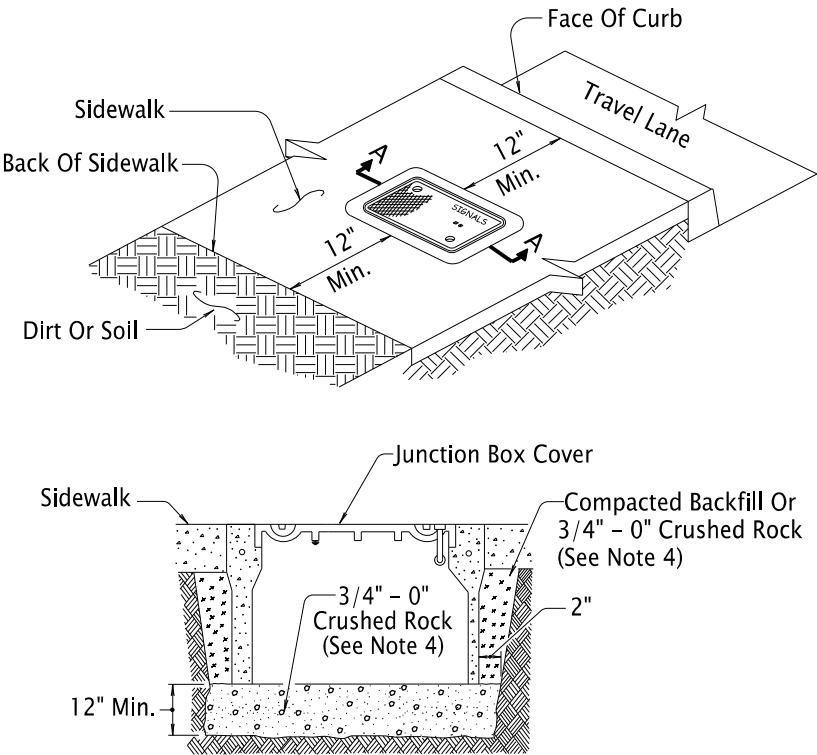


**JUNCTION BOX INSTALLATION
IN UNSURFACED AREA**

(This Detail Only Applicable for Junction Boxes Located In Incidental Travel Areas; Gravel Shoulders, Behind Guardrail, Etc. Do Not Install In Travel Lanes, Paved Shoulders, Or Other Areas Exposed To Traffic.)

GENERAL NOTES:

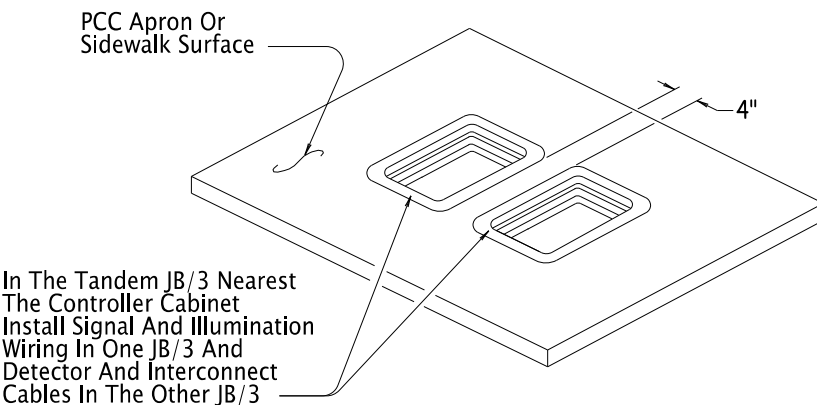
1. Install Top of Junction Box And Hand Hole Flush With The Sidewalk, Surrounding Grade, Or Top Of Curb. For Hand Holes Installed In The Roadway Or Shoulder, Leave The Top Of The Hand Hole 1/2" Below The Pavement Surface.
2. Install Junction Boxes And Hand Holes At The Approximate Locations Shown, Or If Not Shown, No More Than 300 Feet Apart For Junction Boxes And No More Than 1000 Feet Apart For Hand Holes.
3. More Junction Boxes And Hand Holes Than Specified May Be Installed To Facilitate The Work At The Option And Cost Of The Contractor
4. Use Materials According To 00640.10 and 00640.16. Use Compaction Equipment Suitable For Area And Compact Each Six Inch Layer With Sufficient Coverage To Produce A Firm Unyielding Surface. Do Not Install Conductors Until Surface Has Been Constructed.



SECTION A-A

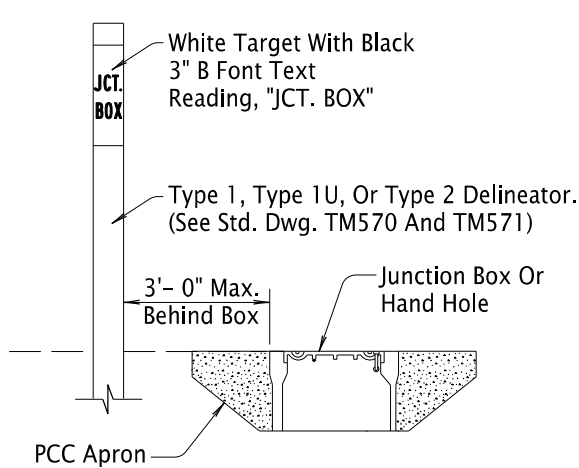
JUNCTION BOX INSTALLATION IN PCC SIDEWALK

(This Detail Only Applicable for Junction Boxes Located In Flat Areas Of Sidewalks. Do Not Install In Slopes Of Ramps Or Driveways)

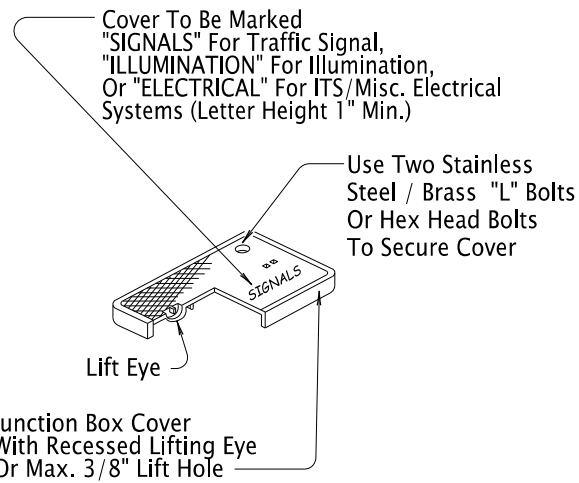


In The Tandem JB/3 Nearest The Controller Cabinet Install Signal And Illumination Wiring In One JB/3 And Detector And Interconnect Cables In The Other JB/3

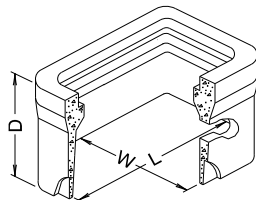
TANDEM JB/3A JUNCTION BOX DETAILS



**DELINEATION OF JUNCTION BOX &
HAND HOLE IN UNSURFACED AREA**



**JUNCTION BOX
COVER DETAILS**

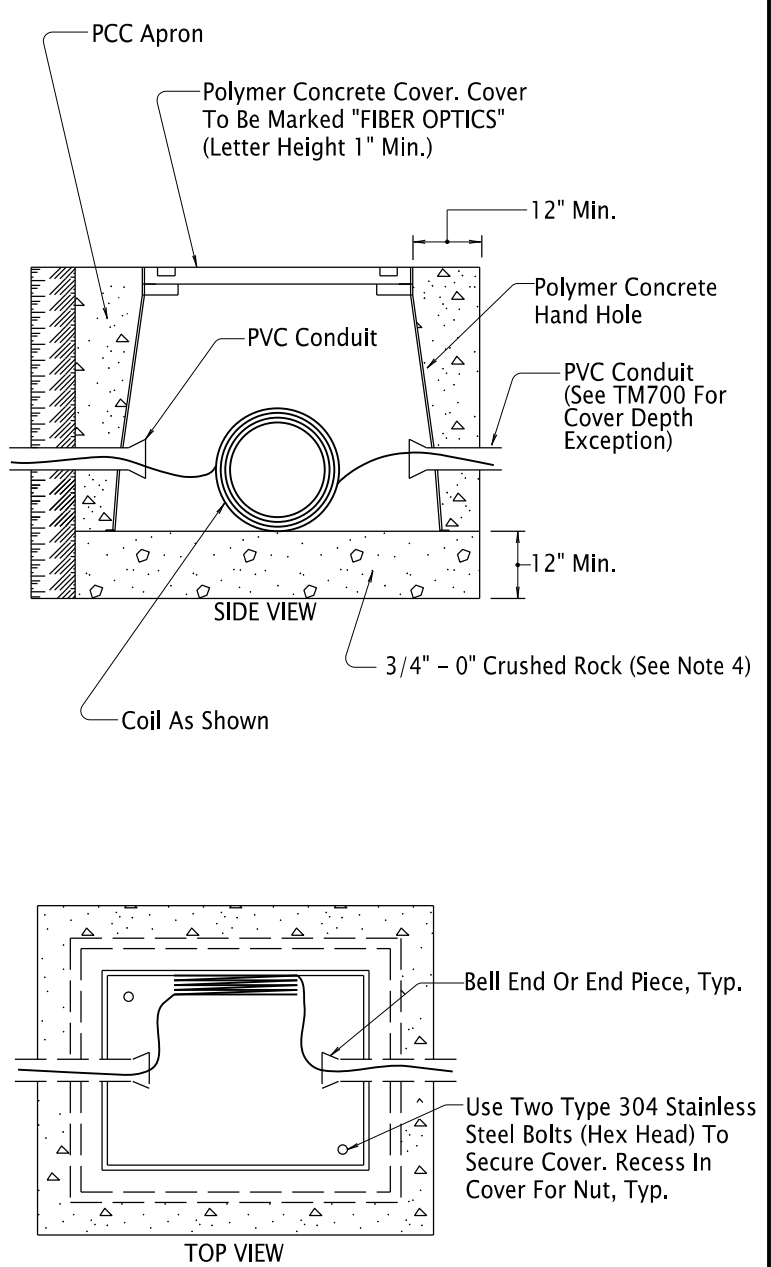


Type*	L	W	D
JB1	17"	10"	12"
JB2	22"	12"	12"
JB3	30"	17"	12"
HH-1	24"	30"	24"
HH-2	30"	48"	24"
HH-3	30"	48"	36"

*Junction Box Or Handhole Type As Shown On Plans

DIMENSION TABLE

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.



FIBER OPTIC CABLE HAND HOLE INSTALLATION

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

OREGON STANDARD DRAWINGS

**GENERAL
JUNCTION BOX/HAND HOLE
INSTALLATION**

2024

DATE	REVISION	DESCRIPTION
01-2025	NEW DRAWING (CONTENT FROM RETIRED TM472)	
CALC. BOOK NO.	N/A	SDR DATE: 10-JAN-2025

TM702

Effective Date: June 1, 2025 – November 30, 2025

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

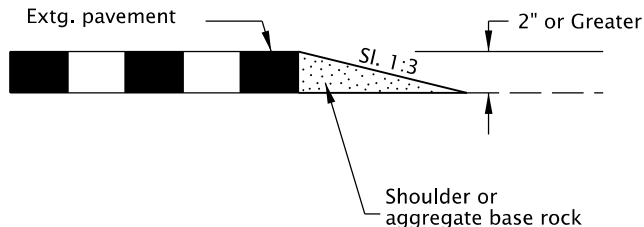
MINIMUM LENGTHS TABLE					
"L" VALUE FOR TAPERS (ft)					BUFFER "B" (ft)
★ SPEED (mph)	W = Lane or Shoulder Width being closed or shifted				
	W ≤ 10	W = 12	W = 14	W = 16	
25	105	125	145	165	75
30	150	180	210	240	100
35	205	245	285	325	125
40	265	320	375	430	150
45	450	540	630	720	180
50	500	600	700	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 = S²W/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

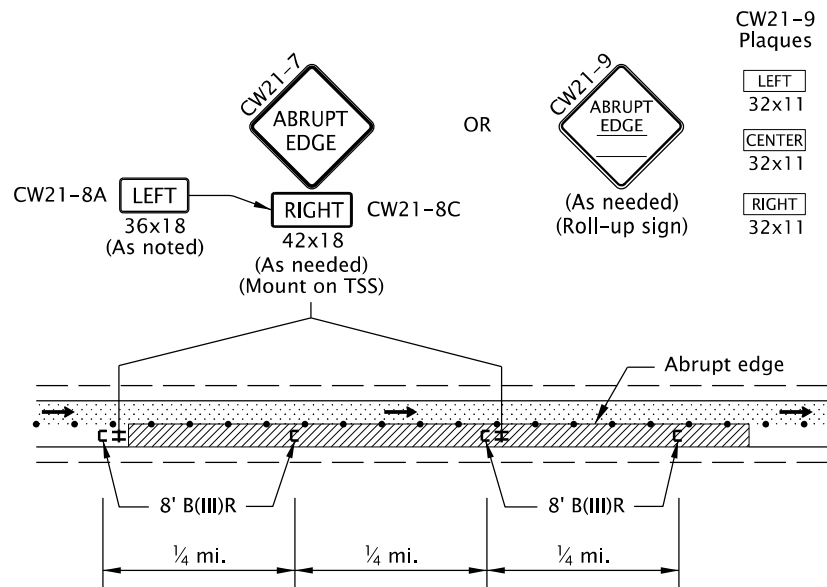
- NOTES:
- Place traffic control devices on 10 ft. spacing for intersection and access radii.
 - When necessary, sign spacing may be adjusted to fit site conditions. Limit spacing adjustments to 30% of the "A" dimension for all speeds.

- 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.



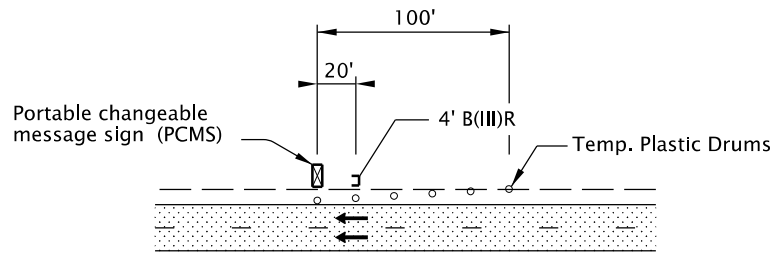
EXCAVATION ABRUPT EDGE

- NOTES:
- 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.



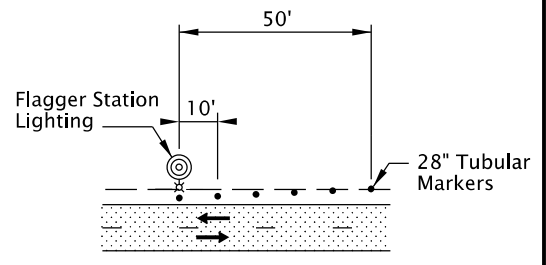
TYPICAL ABRUPT EDGE DELINEATION

- 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

- 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.
 - Provide a truck mounted attenuator (TMA) to protect the active work area on high speed divided highways or freeways when positive protection is not available, or as directed.
 - To be accompanied by Dwg. Nos. TM820 & TM821.

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

OREGON STANDARD DRAWINGS

TABLES, ABRUPT EDGE AND PCMS DETAILS

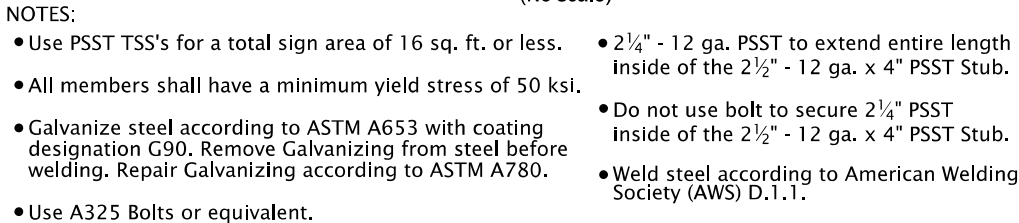
2024

DATE	REVISION	DESCRIPTION
07-2022	Added a note for TPAs	
07-2024	Added a note for TMAs	
CALC. BOOK NO.	N/A	SDR DATE: 12-JUL-2024

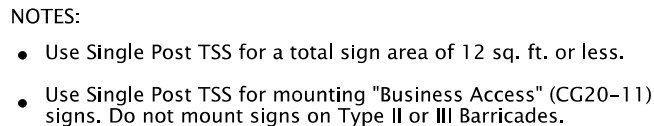
TM800



DOUBLE POST DETAIL



PERFORATED STEEL SQUARE TUBE (PSST) DETAIL



SINGLE POST DETAIL



— Retroreflective Sheeting (Left and Right sides)

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

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OREGON STANDARD DRAWINGS

TEMPORARY SIGN SUPPORTS

2024

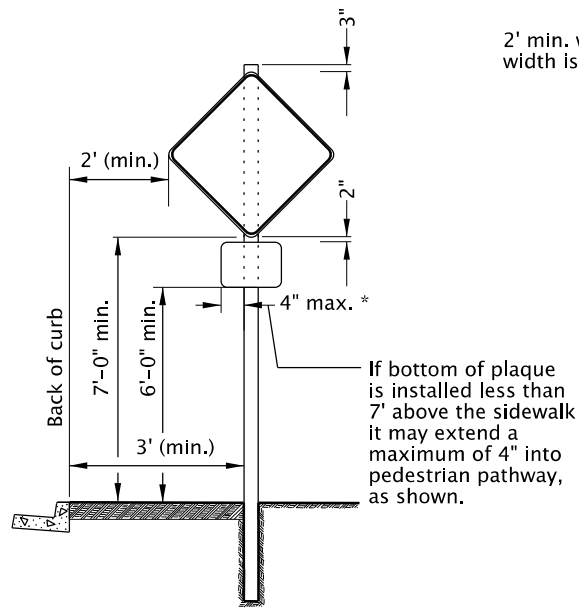
DATE	REVISION DESCRIPTION

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

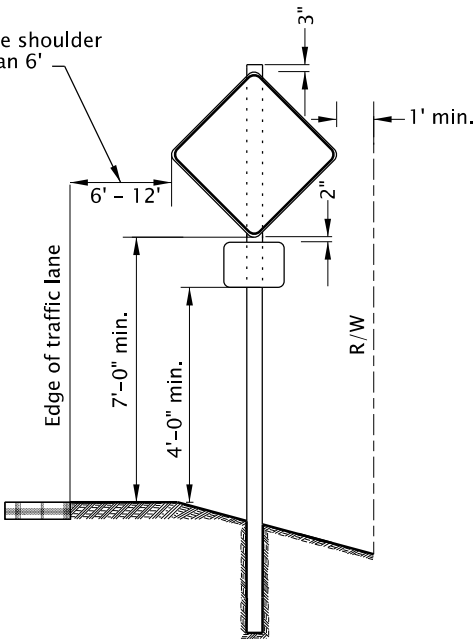
Effective Date: June 1, 2025 – November 30, 2025

NOTES:

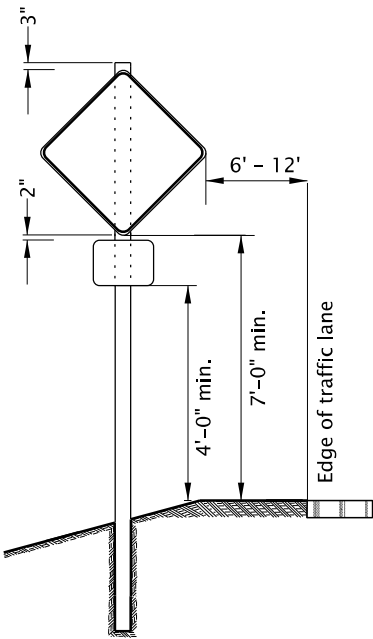
- Do not block bicycle lanes, sidewalks, or TPAR's with sign supports. Maintain minimum widths for these facilities according TCP Design Manual, MUTCD, ADA, or as directed.
- To be accompanied by Dwg. Nos. TM670, TM671, TM687, TM688 & TM689.



Urban Areas With Curb/Sidewalk

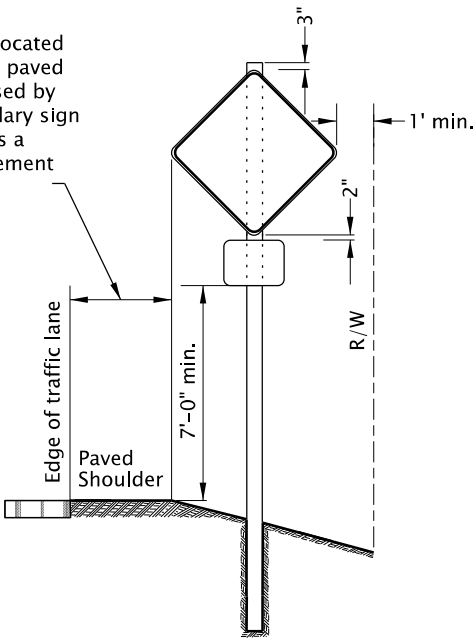


Rural Areas



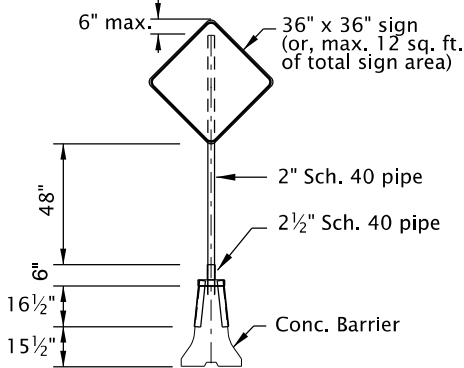
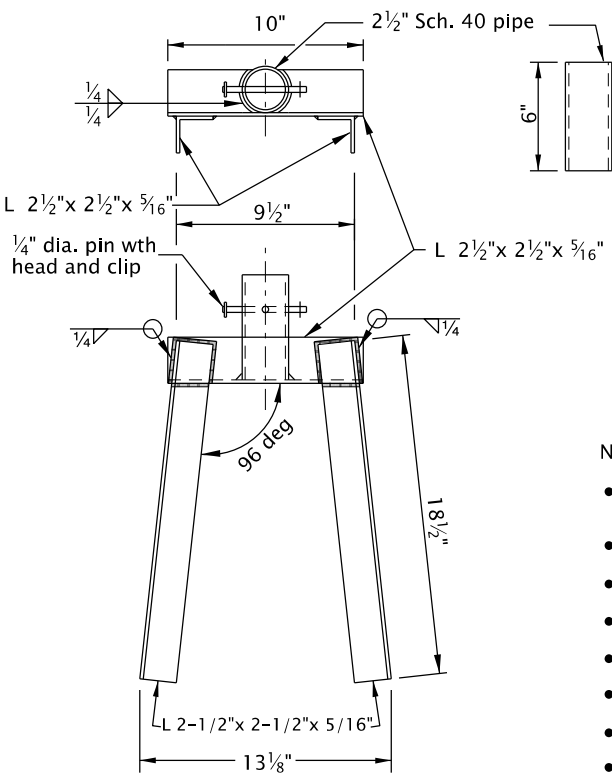
Divided Highway/Freeway Medians
No Curb/Sidewalk

Where temporary signs are located adjacent to or intrude into a paved shoulder or other surface used by bicycle traffic, install secondary sign (plaque) so bottom of sign is a minimum of 7'-0" above pavement surface, as shown.



Rural or Urban Areas - Curb or No Curb
Bicycles On Shoulder

TEMPORARY SIGN PLACEMENT



NOTES:

- Drill additional holes so sign can be rotated 90 degrees and pinned when not in use.
- All structural steel shall conform to ASTM A36.
- Support fits both 32" and 42" tall "F" barrier.
- Use for supporting a maximum 12 sq. ft. of total sign area.
- Place support at connection between two concrete barrier sections.
- Weld steel according to American Welding Society (AWS) D.1.1.
- Do not use clipped signs.
- Follow manufacturer recommendation when installing signs on barrier other than concrete.

CONCRETE BARRIER SIGN SUPPORT

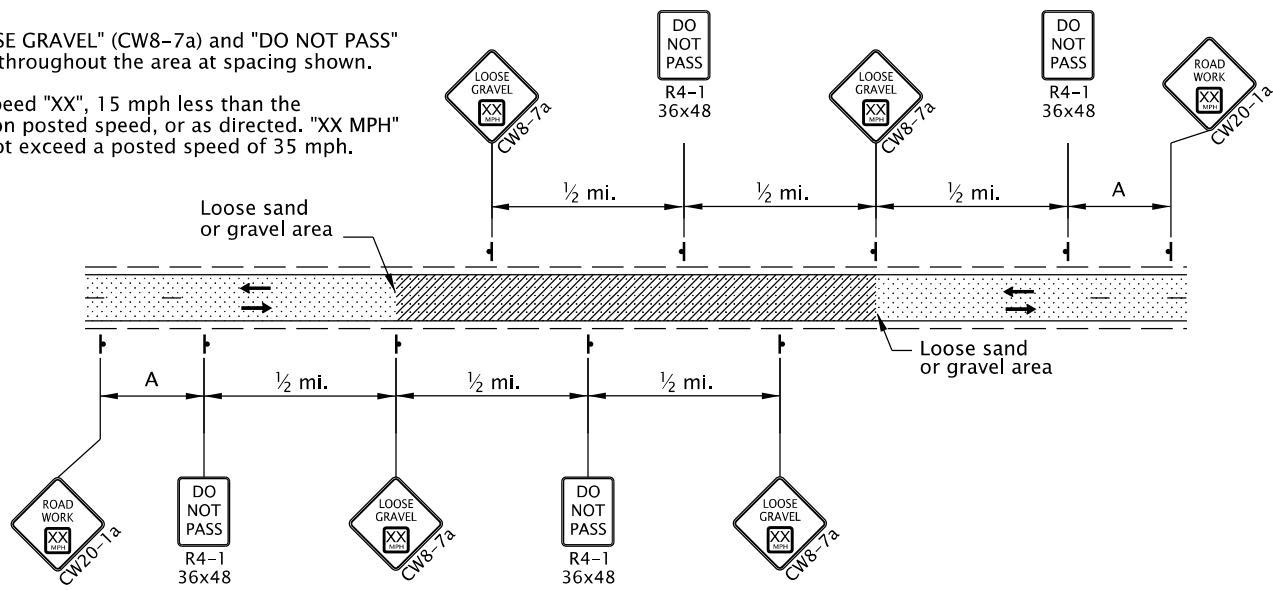
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.			
OREGON STANDARD DRAWINGS			
2024			
DATE	REVISION DESCRIPTION		
CALC. BOOK NO.	N/A	SDR DATE	01-JUL-2020
			TM822

01-JUL-2022

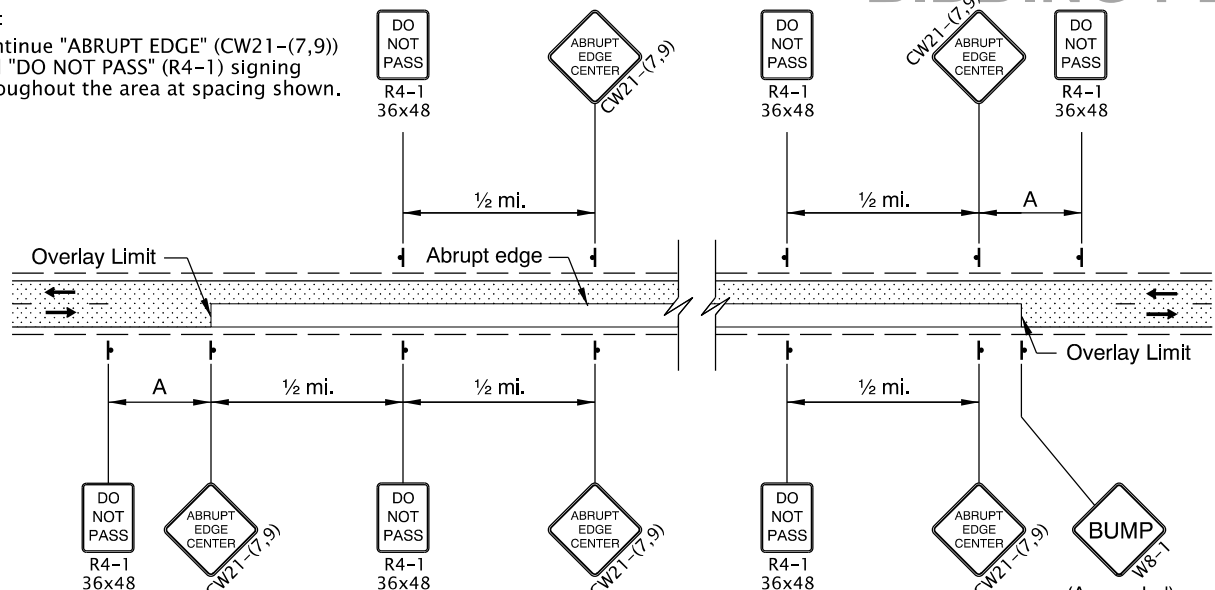
TM850.dgn

- NOTE:
- Continue "LOOSE GRAVEL" (CW8-7a) and "DO NOT PASS" (R4-1) signing throughout the area at spacing shown.
 - Use advisory speed "XX", 15 mph less than the pre-construction posted speed, or as directed. "XX MPH" placard shall not exceed a posted speed of 35 mph.



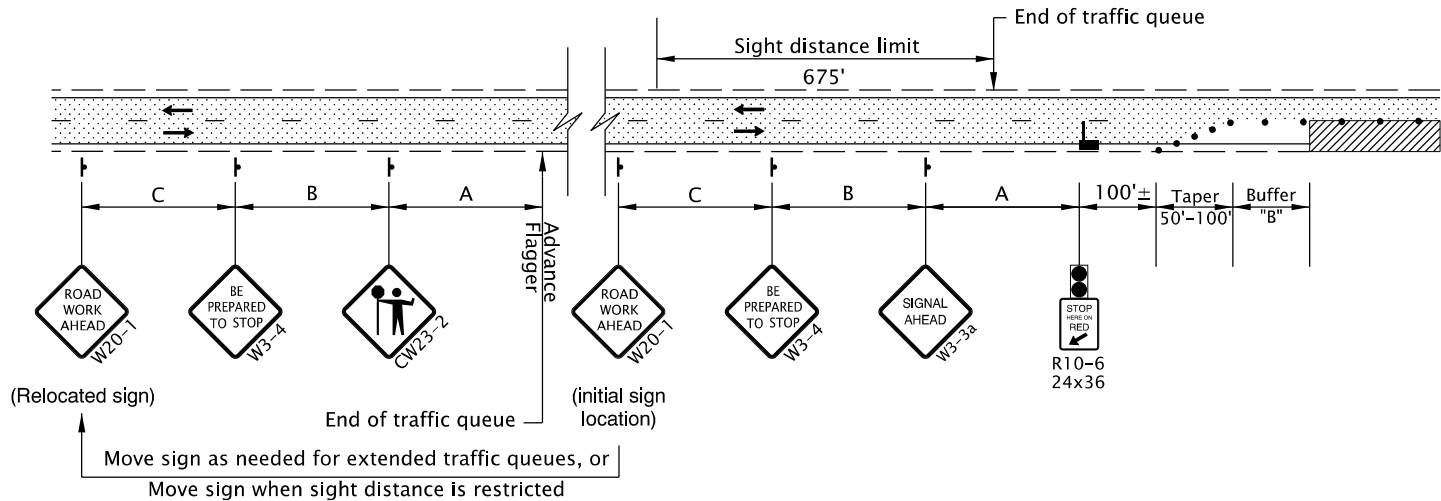
2-Lane, 2-Way Roadway
LOOSE GRAVEL IN ROADWAY SIGNING

- NOTE:
- Continue "ABRUPT EDGE" (CW21-(7,9)) and "DO NOT PASS" (R4-1) signing throughout the area at spacing shown.



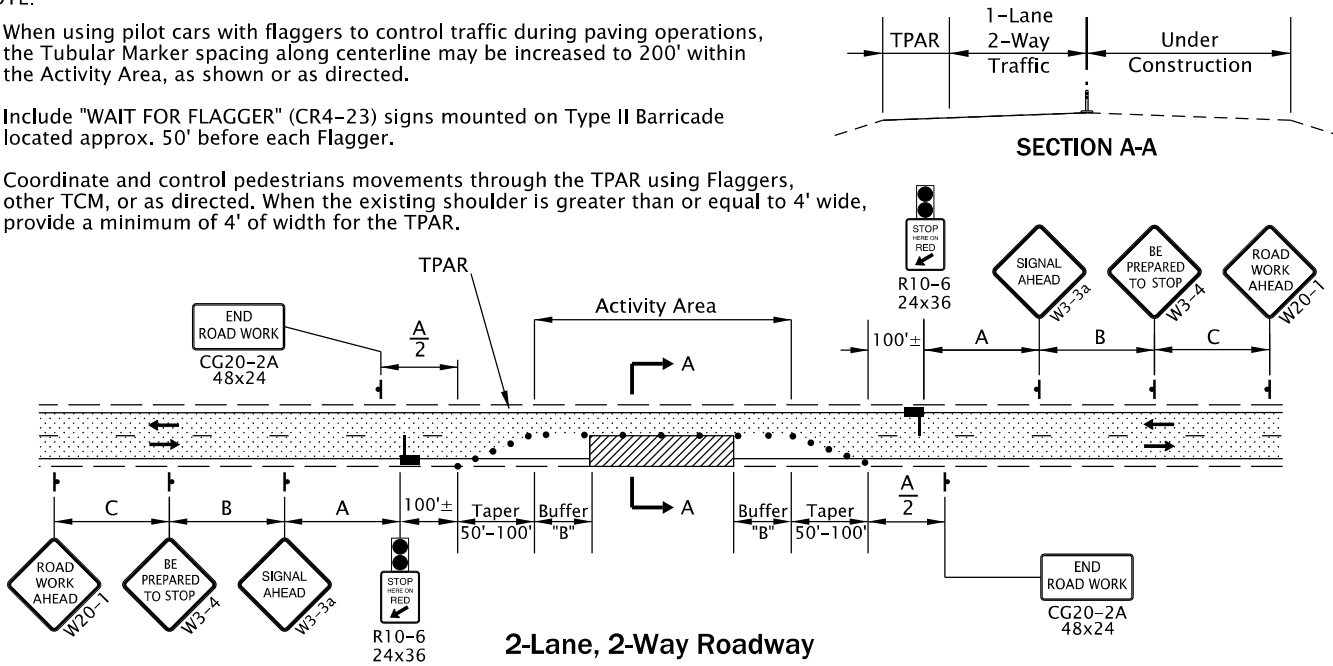
2-Lane, 2-Way Roadway
OVERLAY AREA SIGNING

- NOTES:
- Place Advance Flagger and additional signing when traffic queues extend beyond initial warning signing OR when sight distance is restricted.
 - Relocate initial "ROAD WORK AHEAD" (W20-1) sign in advance of additional "BE PREPARED TO STOP" (W3-4) and Flagger Ahead (CW23-2) signs, as shown.
 - Place additional Tubular Markers for Flagger and Advance Flagger Stations according to FLAGGER STATION DELINEATION detail.



ADVANCE FLAGGER FOR EXTENDED TRAFFIC QUEUES

- NOTE:
- When using pilot cars with flaggers to control traffic during paving operations, the Tubular Marker spacing along centerline may be increased to 200' within the Activity Area, as shown or as directed.
 - Include "WAIT FOR FLAGGER" (CR4-23) signs mounted on Type II Barricade located approx. 50' before each Flagger.
 - Coordinate and control pedestrians movements through the TPAR using Flaggers, other TCM, or as directed. When the existing shoulder is greater than or equal to 4' wide, provide a minimum of 4' of width for the TPAR.



2-Lane, 2-Way Roadway
ONE LANE CLOSURE

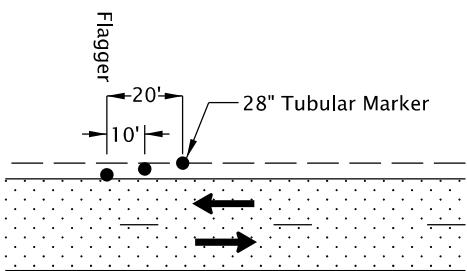
GENERAL NOTES FOR ALL DETAILS:

- The "SIGNAL AHEAD" (W3-3a) sign may be substituted with the Signal Ahead (W3-3) symbol sign.
- Cover existing passing zone signing, as directed.
- Install temporary striping as required.
- To determine Taper Length ("L") and Buffer Length ("B"), use the "MINIMUM LENGTHS TABLE" shown on Dwg. No. TM800.
- To determine sign spacing A, B, and C, use "TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE" on Dwg. No. TM800.
- 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.
- At night, flagger stations shall be illuminated according to the FLAGGER STATION LIGHTING DELINEATION detail on Dwg No. TM800.

- To be accompanied by Dwg. Nos. TM820, TM821 & TM854.
 - Automated Flagging Assistance Device (AFAD)
 - 28" Tubular Markers on 20' max. spacing for flagger tapers and stations
 - 28" Tubular Markers See TCD Spacing Table on TM800 for max. spacing.
- UNDER TRAFFIC
- UNDER CONSTRUCTION
- CONSTRUCTION UNDER TRAFFIC

NOTE:

- Use a minimum of 3 tubular markers in shoulder taper on 10' spacing for flagger station delineation.



FLAGGER STATION DELINEATION

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

OREGON STANDARD DRAWINGS

2-LANE, 2-WAY ROADWAYS

2024

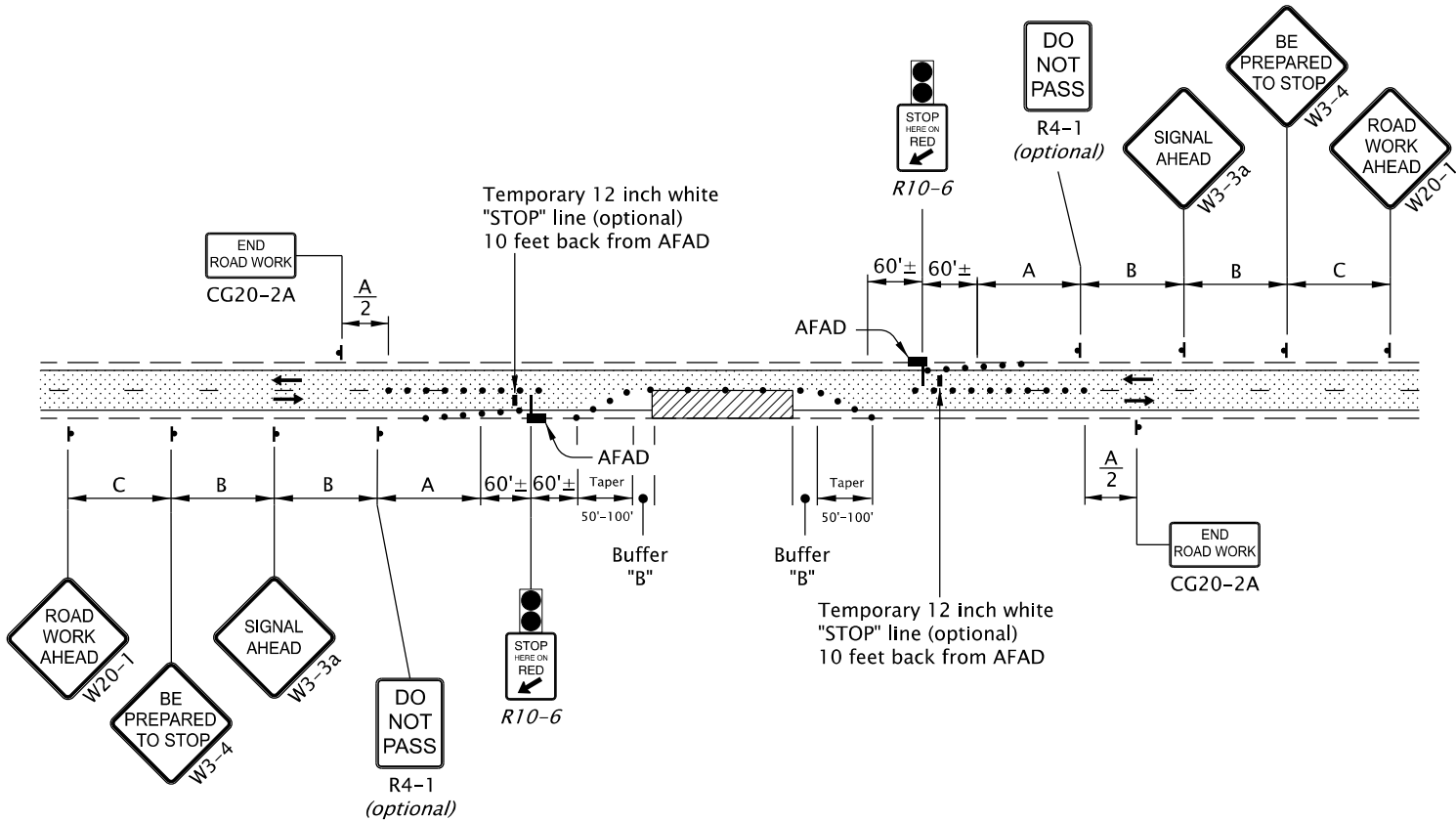
DATE	REVISION	DESCRIPTION
01-2022	Added AFADs to drawing.	
CALC. BOOK NO.	N/A	SDR DATE- 01-JUL-2022

TM850

Effective Date: June 1, 2025 – November 30, 2025

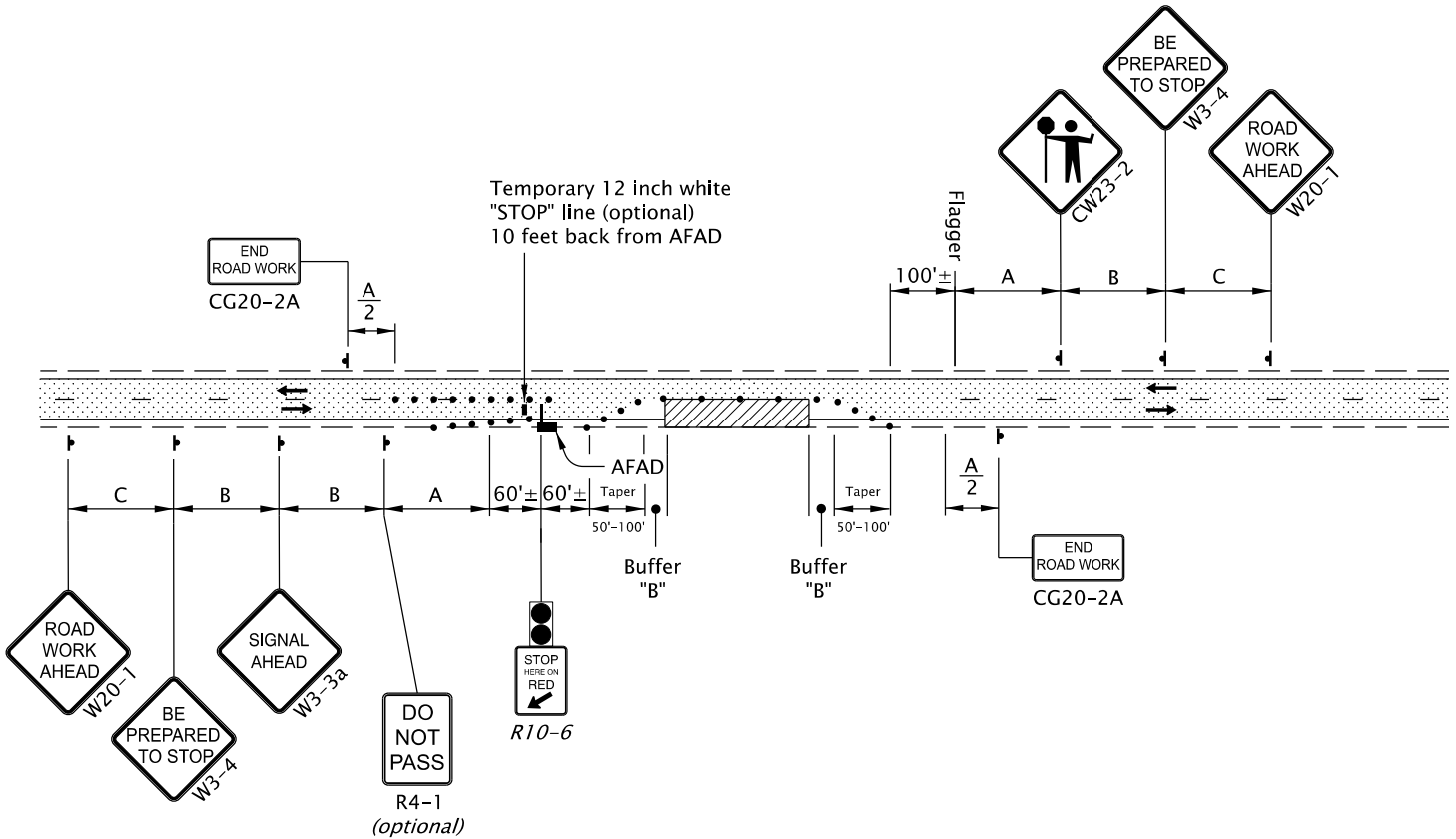
11-JUL-2025
TM854.dgn

- NOTES:
- An AFAD operator shall be provided for each AFAD. A single operator may not simultaneously operate two AFADs.



2-Lane, 2-Way Roadway
ONE LANE CLOSURE, TWO AFADs

- NOTES:
- The AFAD operator shall not flag traffic and operate an AFAD at the same time.

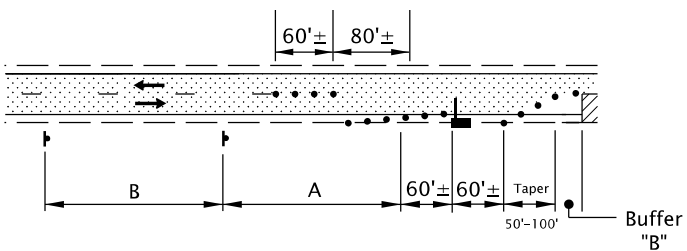


2-Lane, 2-Way Roadway
ONE LANE CLOSURE, ONE AFAD & ONE FLAGGER

GENERAL NOTES FOR ALL DETAILS:

- Flagger station shall be delineated according to "FLAGGER STATION" detail shown on Standard Drawing TM800
- Bottom of lens housing shall be a minimum of 7 ft. above surface when mounted on shoulder and at least 17 ft. above any portion of the travel lane.
- The gate arm shall cover at least one half of the approaching vehicle travel lane.
- Signing and other TCD installed in conjunction with the work area, shall move with the work area.
- Use 1/3 "L" taper for shoulder closure, where necessary.
- For Taper Length ("L") and Buffer Length ("B") shown on this sheet, use the "MINIMUM LENGTHS TABLE" shown on Drg. No. TM800.
- The AFAD operator shall be a certified flagger who has been trained in the operation of the AFAD in use.
- Operator shall operate AFAD from a designated area. Designated area should maintain visual presence of the AFAD and should be at least 50' away from the AFAD and have an escape route available for the operator.
- See "TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE" on Drg. TM800 for sign spacing A, B, and C.
- Remove existing striping and install temporary striping as required.
- Cover existing passing lane signing (as directed)
- When extended traffic queues develop during AFAD operations, protect traffic by providing advance flaggers(s) and signing according to the "Extended Traffic Queues Detail" shown on Standard Drawing TM850.
- When AFAD is not in use for less than one work shift, turn off AFAD, or switch YELLOW lens to flashing mode, and cover or remove all accompanying signing.
- When AFAD is not in use for longer than one work shift, remove AFAD and all accompanying signing from the roadway.
- Do not use the AFAD to control more than one lane of approaching traffic.
- Use temporary pavement markings or a white portable rumble strip for temporary stop line. Remove temporary stop line when AFAD is no longer in use.
- Tubular markers along centerline placed in advance of AFAD to first sign are optional, unless the DO NOT PASS sign is used.
- Include "WAIT FOR FLAGGER" (CR4-23) signs mounted on Type II Barricade located approx. 50' before each Flagger Station.
- Coordinate and control pedestrians movements through the TPAR using flaggers, other TCM, or as directed. When the existing shoulder is greater than or equal to 4' wide, provide a minimum of 4' of width for the TPAR.

- Automated Flagger Assistance Device (AFAD)
- 28" Tubular Markers
See TCD spacing table on TM800 for max. spacing.
- UNDER TRAFFIC
- UNDER CONSTRUCTION



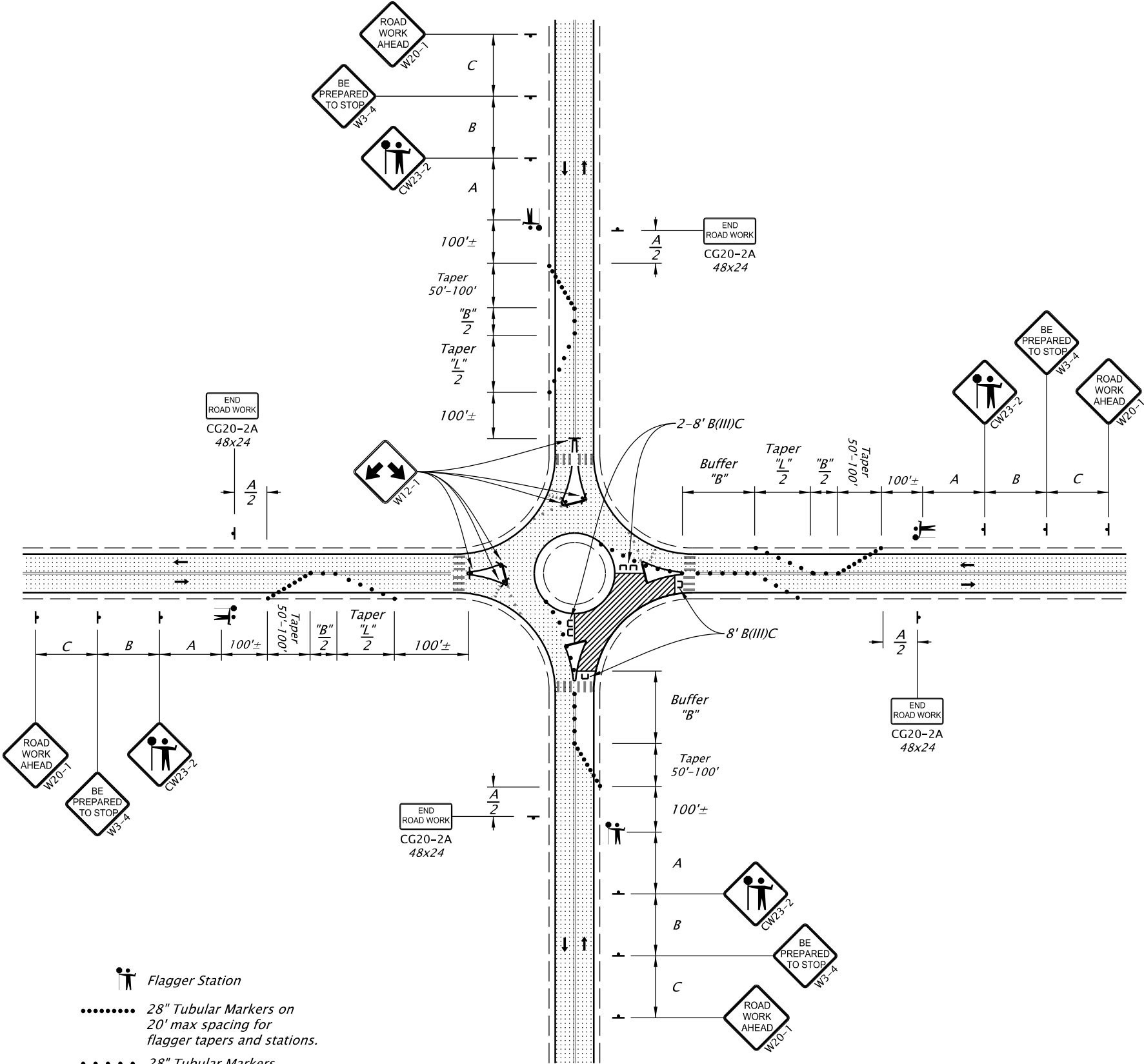
OVER-DIMENSIONAL VEHICLE ACCOMMODATION DETAIL

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OREGON STANDARD DRAWINGS			
2-LANE, 2-WAY ROADWAYS			
2024			
DATE	REVISION DESCRIPTION		
MM-YYYY	REVISION		
07-2023	Minor drafting revision.		
07-2025	Added notes for TPAR.		
CALC. BOOK NO. _ _ _ _ N/A _ _ _ _		SDR DATE _ 11-JUL-2025 _	TM854

DET4730.dgn 01-JUN-2019


DET4730

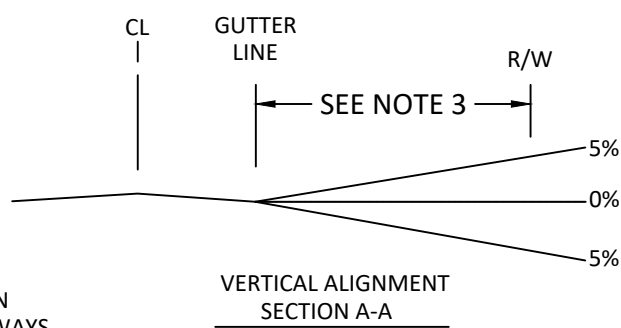
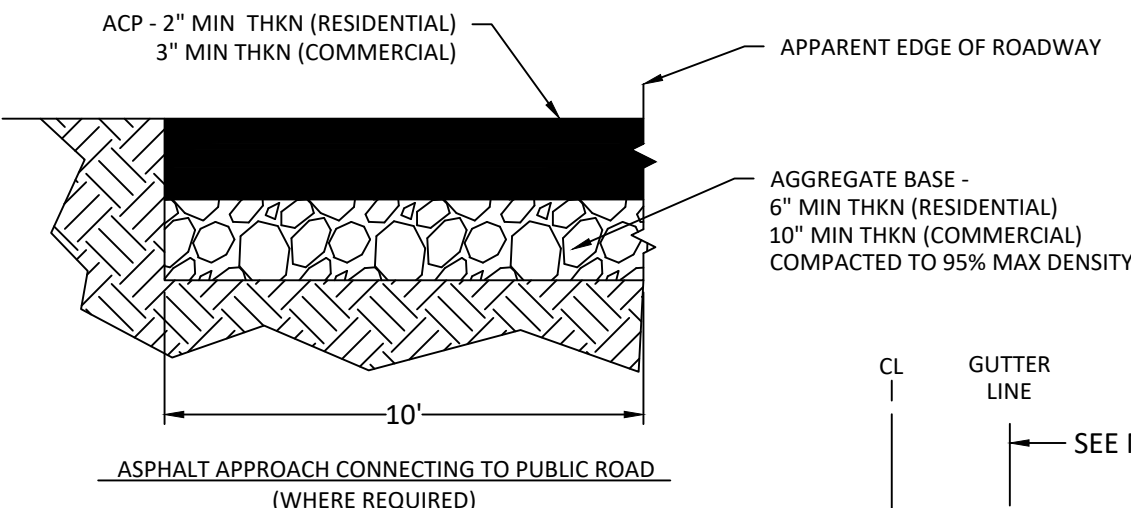
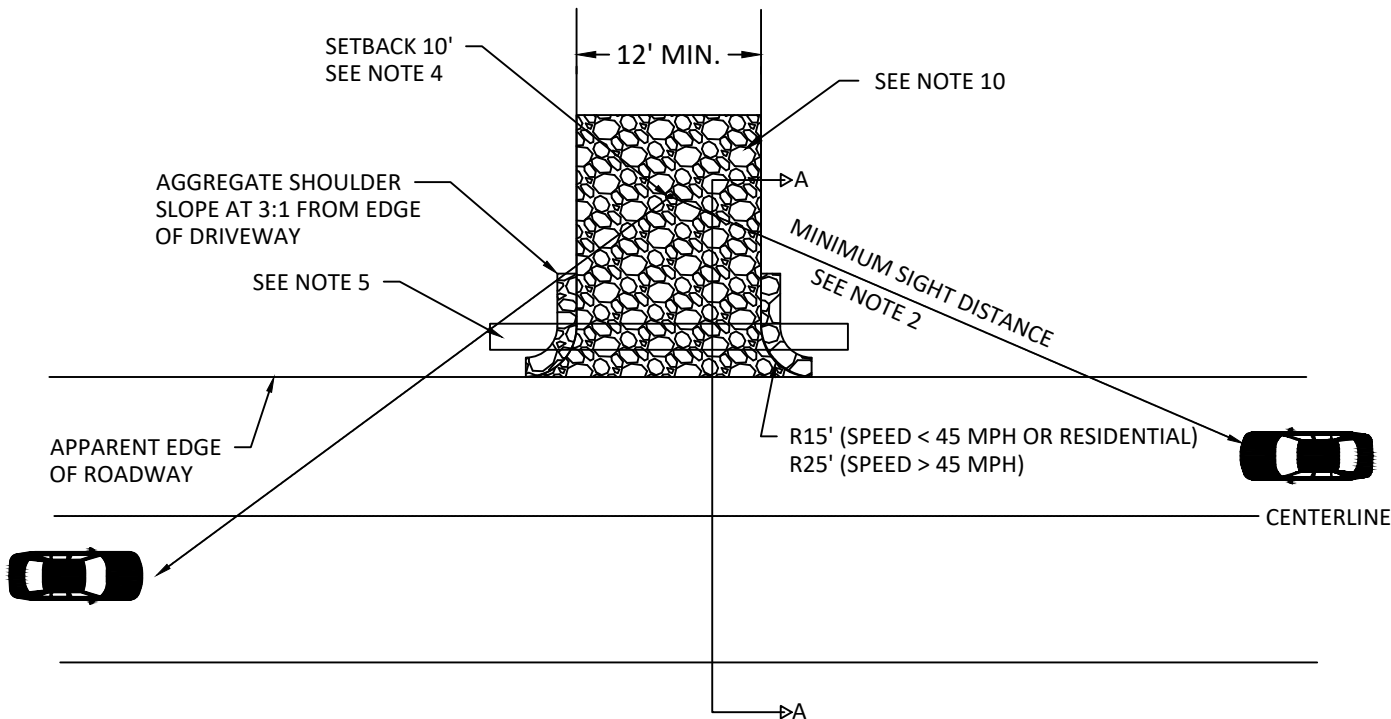


NOTES:

- *Flaggers shall control traffic flow on all approaches of the single lane roundabout.*
- *Only one traffic approach leg shall be released at a time.*
- *A supplemental flagger may be used in the roundabout island to assist in directing traffic.*
- *Place advance flagger and additional signing when traffic queues extend beyond initial warning signs, or when sight distance is restricted.*
- *Night work requires flagger station lighting.*
- *Use a minimum of 3 tubular markers in shoulder taper on 10' spacing for flagger station delineation.*
- *The "FLAGGER" (CW23-2) symbol sign shall be used only in conjunction with the "BE PREPARED TO STOP" (W3-4) sign.*
- *Install a "BICYCLE ON ROADWAY" (CW11-1) sign in advance of a closure when a bicycle lane is closed, or when shoulder is closed and bicycles are expected.*
- *Coordinate and control pedestrian movements through a Temporary Accessible Route using Flaggers, Traffic Control Measures, or as directed.*
- *Occasional adjustments to channelizing devices may be necessary to accommodate oversized vehicles.*
- *Tubular markers may be omitted along splitter islands if the islands are raised.*
- *Flagging operations may be omitted when performing work within the island or shoulder as long as travel lane widths of at least 10 feet is maintained. Close the work area with a shoulder taper and channelizing devices.*
- *Consider diverting oversized vehicle when the center island apron is impacted by the work or equipment.*
- *To determine Taper Length ("L") and Buffer Length ("B"), use the "MINIMUM LENGTHS TABLE" on Drg. No. TM800.*
- *To determine sign spacing A, B, and C, use "TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE" on Drg. No. TM800.*
- *To be accompanied by Drg. Nos. TM820 & TM821.*


The selection and use of this detail, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

 OREGON DEPARTMENT OF TRANSPORTATION TECHNICAL SERVICES DETAILS	
SINGLE LANE ROUNDABOUT FLAGGING OPERATIONS	DETAIL NO. DET4730



NOTES:

1. ACP SHALL BE COMMERCIAL GRADE MIX PER OSSC.
2. MINIMUM SIGHT DISTANCE MUST MEET OR EXCEED DISTANCES LISTED IN CURRENT EDITION OF AASHTO POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS. FOR SIGHT DISTANCE MEASUREMENT, USE DRIVERS EYE HEIGHT OF 3.5' MEASURED TO AN OBJECT HEIGHT OF 2'.
3. MAX DRIVEWAY GRADE AT EDGE OF ROADWAY CAN NOT EXCEED 5% AND MUST MEET REQUIREMENTS OF NOTE 2 TO THE RIGHT-OF-WAY OR MINIMUM OF 10'.
4. SEE STANDARD DWG 1-10 FOR SINGLE POST MAILBOX STANDS
5. WHEN REQUIRED, CULVERT TO BE MIN. 12" DIAMETER OR AS DETERMINED FROM A HYDRAULIC ANALYSIS BY AN ENGINEER.
6. MINIMUM CULVERT END PROJECTION TO BE 12" ON BOTH ENDS.
7. MAXIMUM EMBANKMENT SLOPE TO BE 2:1
8. REFER TO STANDARD DRAWING 1-1 FOR CULVERT INSTALLATION DETAILS.
9. PLACE AND COMPACT MIN. OF 6 INCHES OF 3/4"-0 OR 1"-0 AGGREGATE BASE ROCK TO THE RIGHT-OF-WAY OR MINIMUM OF 10'. (SEE DETAIL ABOVE FOR PAVED DRIVE.)



ROAD
DEPARTMENT

TITLE: RURAL DRIVEWAY AND ACCESS REQUIREMENTS		DWG NO: 1-4
DATE: 10/4/22	SCALE: N.T.S.	APPROVED BY: C. SMITH