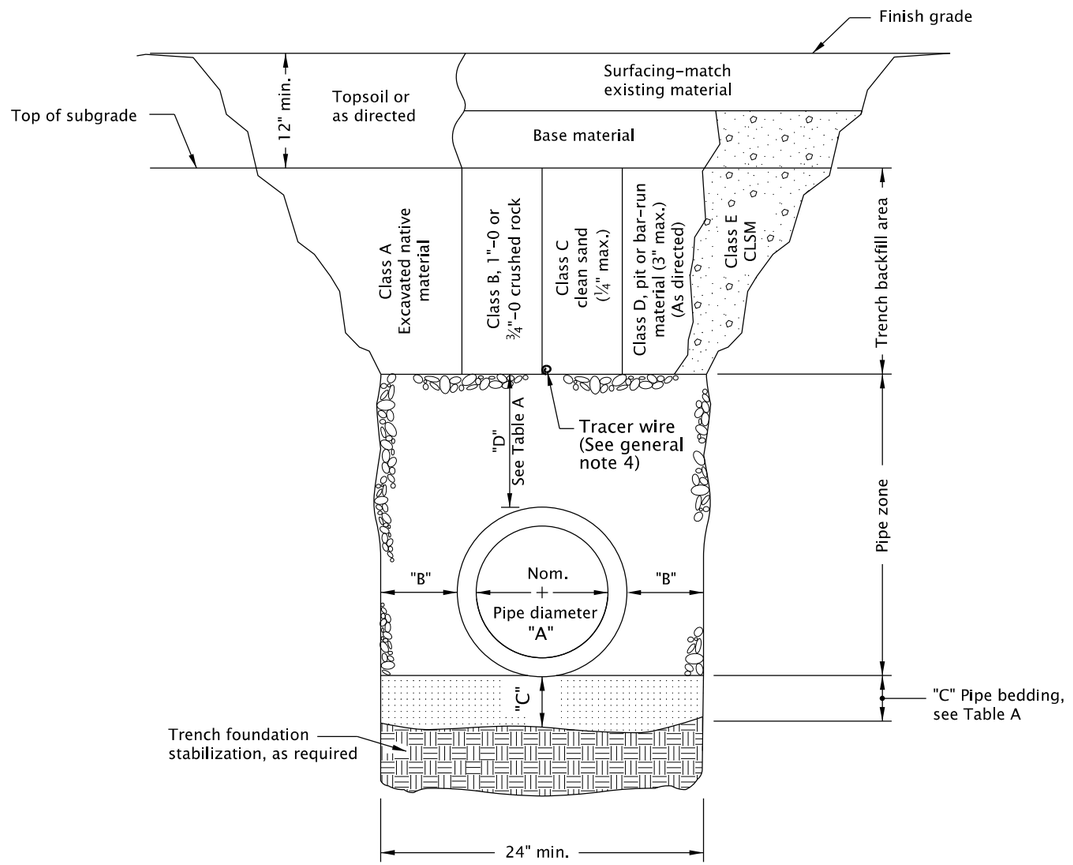
rd300.dgn 20-JUL-2020

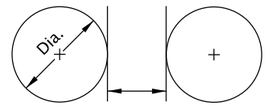
TABLE A

"A" (in)	"B" (in)	"C" (in)	"D" (in)
4	10	4	8
6	10	4	8
8	10	6	10
10	10	6	10
12	12	6	10
15	12	6	10
18	16	6	12
21	16	6	12
24	18	6	12
30	18	6	12
36	24	6	14
42	24	6	14
48	24	6	14
54	24	6	14
60	24	6	14
66	24	6	14
72	24	6	14

For pipes over 72" diameter, see general note 3.



MULTIPLE INSTALLATIONS



DIAMETER	MIN. SPACE BETWEEN PIPES
Up to 48"	24"
48" to 72"	One half (½) dia. of pipe

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Surfacing of paved areas shall comply with street cut Std. Dwg. RD302.
2. For pipe installation in embankment areas where the trench method will not be used and the pipe is ≥ 36" diameter, increase dimension "B" to nominal pipe diameter.
3. Pipes over 72" diameter are structures, and are not applicable to this drawing.
4. See Std. Dwg. RD336 for tracer wire details (When required).

CALC. BOOK NO. N/A

SDR DATE 14–JUL–2014

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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

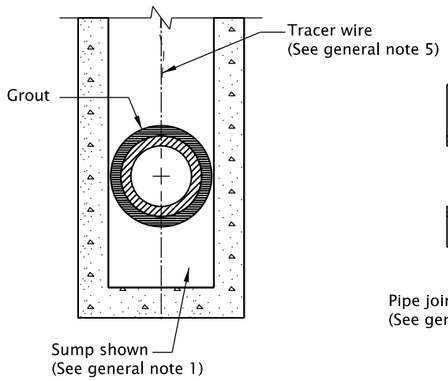
OREGON STANDARD DRAWINGS

TRENCH BACKFILL, BEDDING, PIPE ZONE AND MULTIPLE INSTALLATIONS

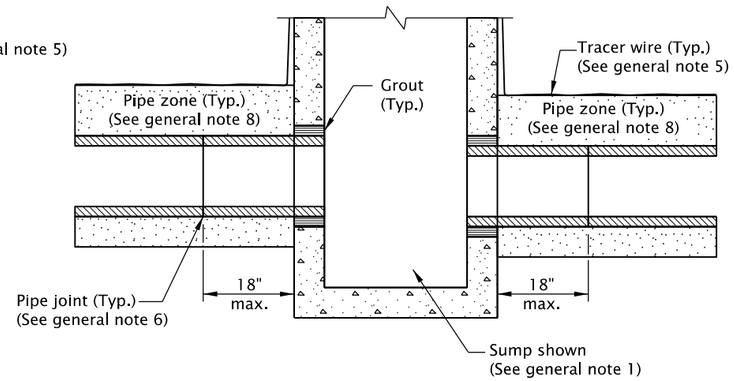
2021

DATE	REVISION DESCRIPTION

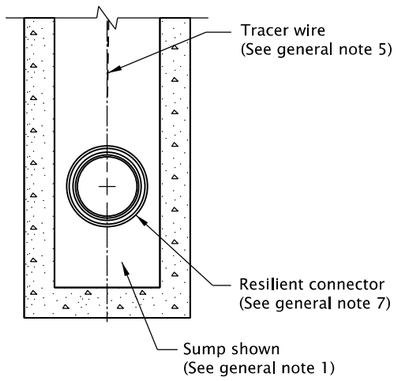
RD300



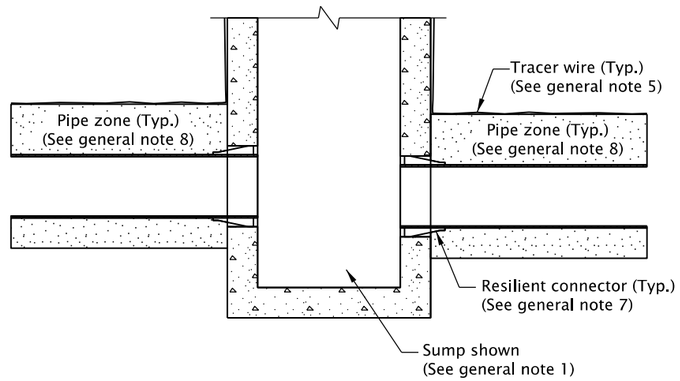
SECTION B-B



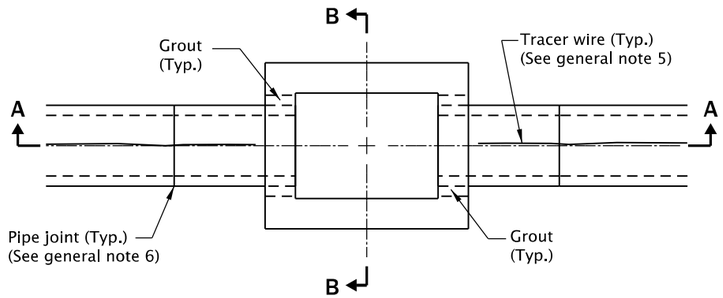
SECTION A-A



SECTION D-D

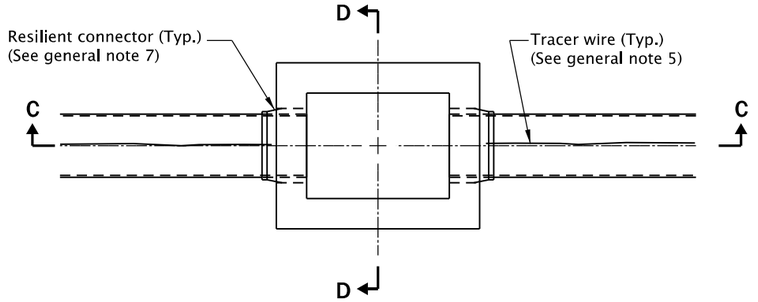


SECTION C-C



PLAN

CONNECTION OF RIGID PIPE TO STRUCTURE



PLAN

CONNECTION OF FLEXIBLE PIPE TO STRUCTURE

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. See Std. Dwgs. RD364, RD365, and RD366 for inlet details not shown.
2. See appropriate standard drawings or special project details for other similar structures.
3. Location, elevation, diameter, slope, and number of pipe(s) varies, see project plans.
4. Maximum pipe diameter varies with pipe material.
5. All connecting pipes shall have a tracer wire, or approved alternate. See Std. Dwg. RD336 for tracer wire details.
6. When rigid pipe is used, the connecting pipe shall have a flexible, gasketted and unrestrained joint within 18" of structure wall. Joint type varies with manufacturer.
7. When flexible pipe is used, install resilient connectors conforming to requirements of ASTM C923.
8. Pipe zone varies, see Std. Dwg. RD300.

CALC. BOOK NO. N/A

SDR DATE 19-JUL-2021

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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

OREGON STANDARD DRAWINGS

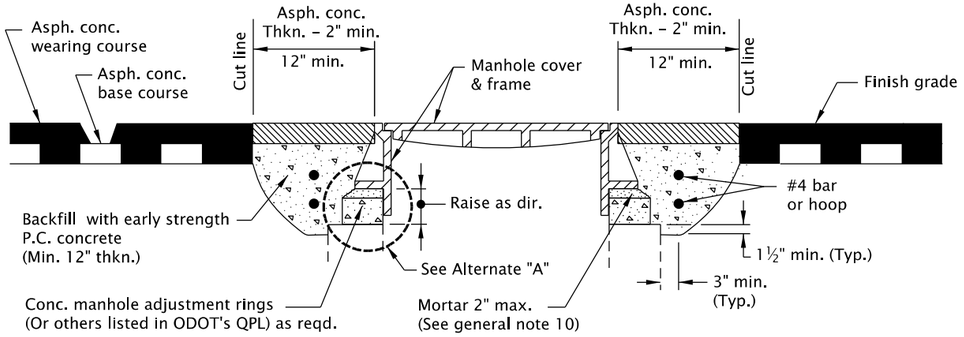
PIPE TO STRUCTURE CONNECTIONS

2021

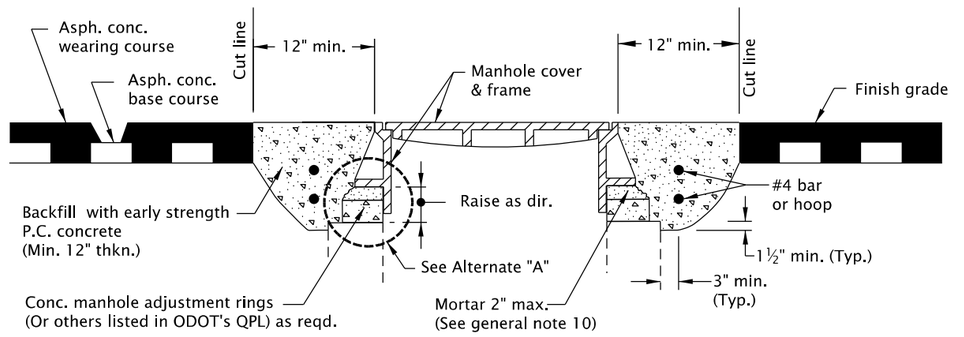
DATE	REVISION DESCRIPTION
07-2021	REVISED NOTES

RD339

rd339.dgn 19-JUL-2021



METHOD "A"



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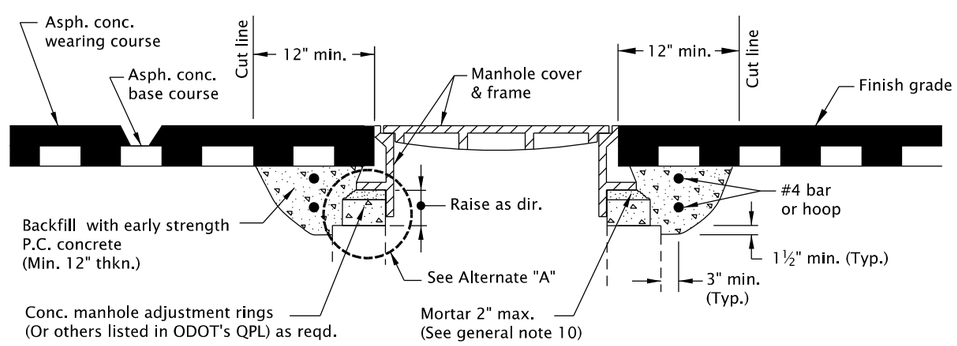
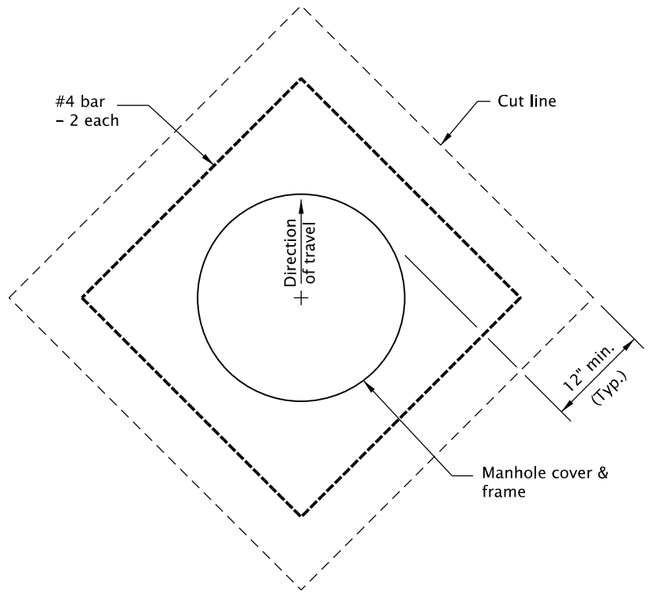
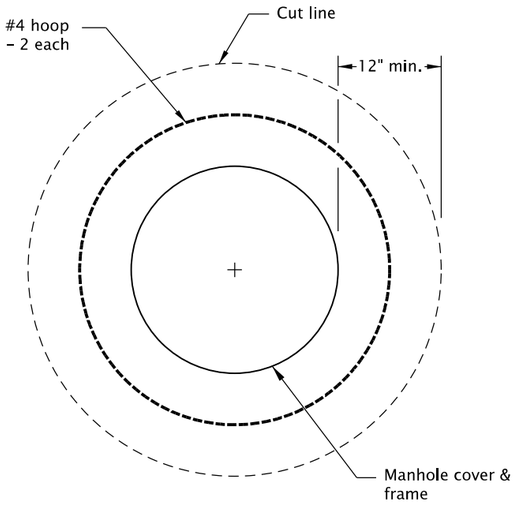


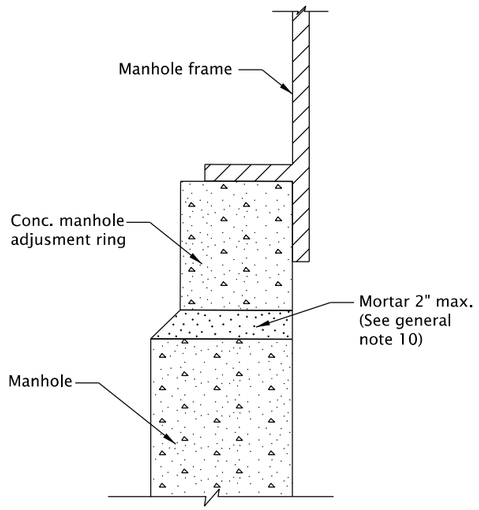
METHOD "C"



PLAN
SQUARE CUT



PLAN
CIRCULAR CUT



ALTERNATE "A"

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Cover manhole with building paper and const. asph. conc. base course and wearing courses.
2. Saw cut square or circular excavation around manhole 12" min. from manhole frame.
3. Raise manhole cover and frame to finish grade by installing conc. manhole adjustment rings and leveling mortar, as shown.
4. Backfill with early strength Portland Cement Concrete. All concrete shall be commercial grade concrete.
5. Protect from traffic loading until conc. has cured to 3000 psi.
6. Apply tack coat to edges of existing pavement before installing patch.
7. Finish joint with asphalt seal and sand.
8. See Std. Dwg. RD336 for manhole steps details.
9. See appropriate manhole standard drawings for details not shown.
10. Use epoxy for synthetic grade rings.
11. See Std. Dwg. RD336 for tracer wire details.
12. See Std. Dwg. RD356 for manhole covers and frames.

CALC. BOOK NO. N/A

SDR DATE 21-JUL-2015

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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

OREGON STANDARD DRAWINGS

MANHOLE FRAME ADJUSTMENT

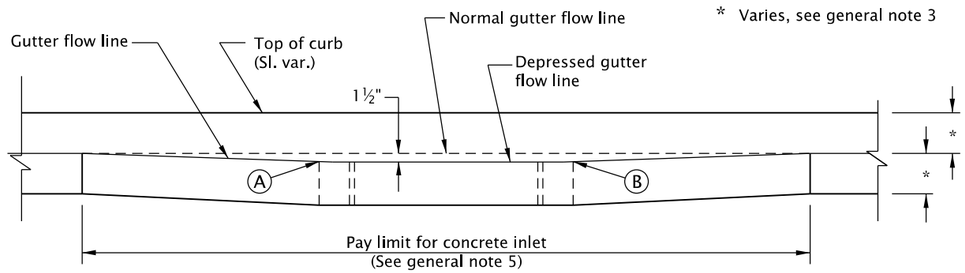
2021

DATE	REVISION DESCRIPTION

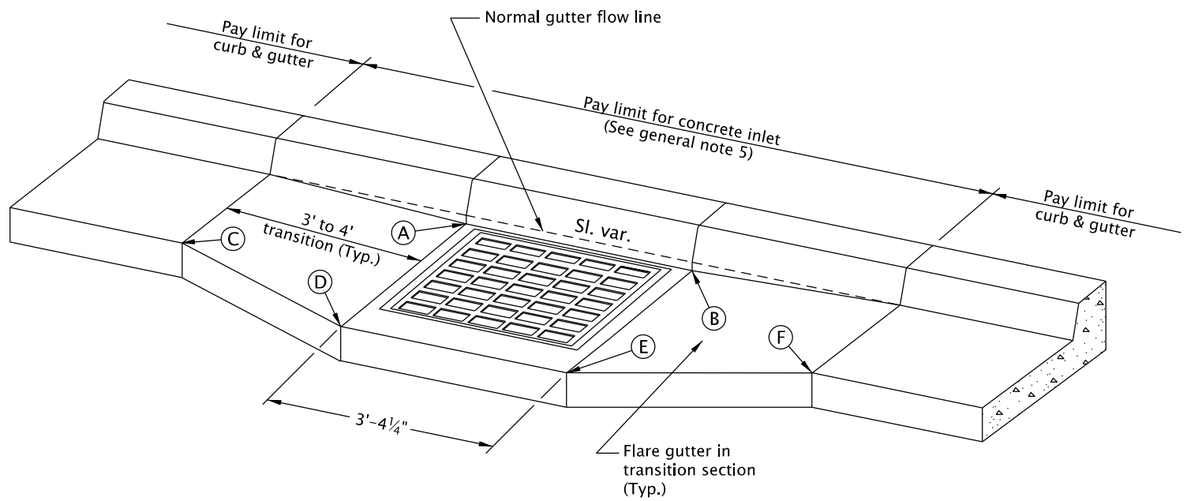
rd360.dgn 20-JUL-2020

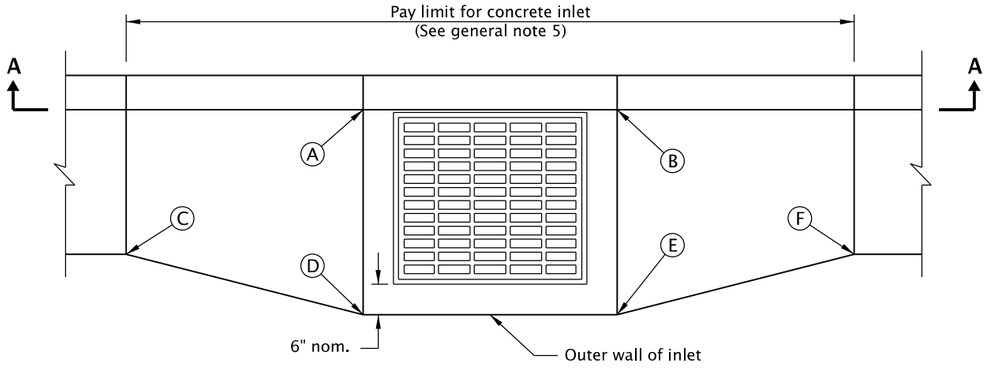
RD360

NOTES:
1. Provide 1½" local depression at points A & B.
2. Match normal pvmt. grade at points C, D, E & F.
3. Vary transition section slopes to match above points.



SECTION A-A





PLAN VIEW

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. For inlet details, see appropriate inlet standard drawing(s).
2. For frame and grate details, see Std. Dwg. RD365.
3. For curb details, see Std. Dwgs. RD700 & RD701.
4. All concrete shall be commercial grade concrete.
5. Pay limit for inlet is expanded when curb and gutter are monolithic.

CALC. BOOK NO. N/A

SDR DATE 21-JUL-2015

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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

OREGON STANDARD DRAWINGS

GUTTER TRANSITION AT INLET

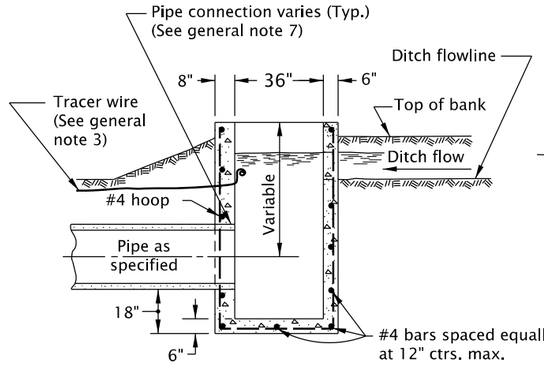
2021

DATE	REVISION DESCRIPTION

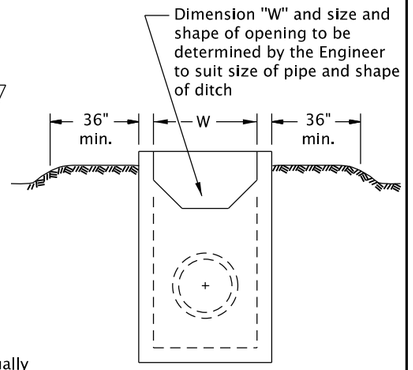
Effective Date: June 1, 2022 - November 30, 2022

RD363

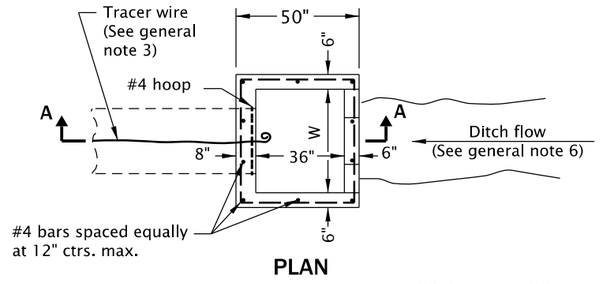
rd363.dgn 20-JUL-2020



SECTION A-A



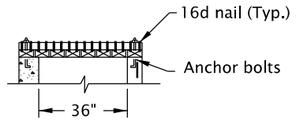
END VIEW



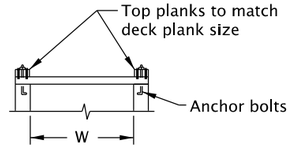
PLAN

SIPHON BOX

NOTE:
All reinforcement to be #4 bars at 12" ctrs. max.

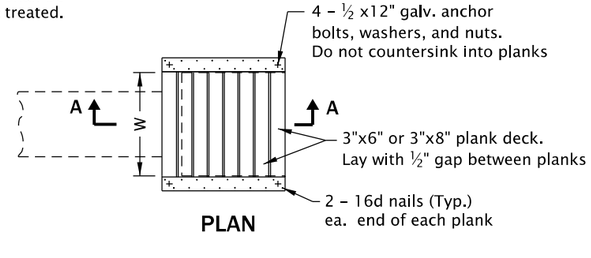


SECTION A-A



END VIEW

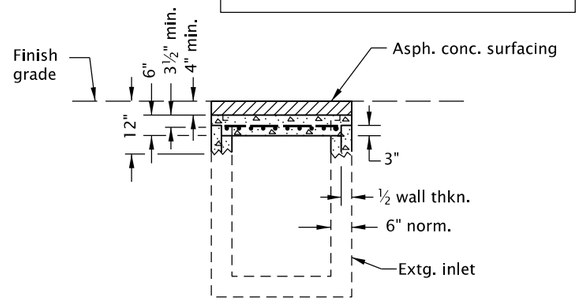
NOTE:
All wood shall be pressure treated.



PLAN

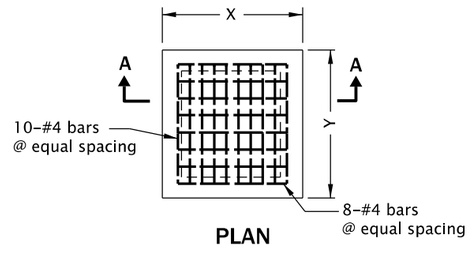
SIPHON BOX COVER
SIPHON BOX AND COVER

NOTE:
X & Y dimensions to be determined by field measurements.



SECTION A-A

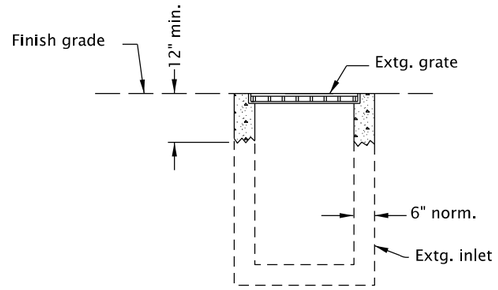
Place bars in concrete inlet cap 1½" min. clear of bottom face of concrete and 3½" min. clear of top face of concrete.



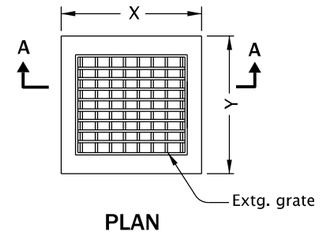
PLAN

CONCRETE INLET CAP

NOTE:
X & Y dimensions to be determined by field measurements.



SECTION A-A



PLAN

ADJUST EXISTING INLET
(For details not shown, see Std. Dwg. RD366)

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. All reinforcement to be placed a minimum of 2" clear of nearest face of concrete unless otherwise shown or noted.
2. If metal frame and grate is reqd. conform to details for Type 1grate. Size frame and grate to match dimensions of siphon box used, see Std. Dwg. RD364.
3. See Std. Dwg. RD336 for tracer wire details.
4. Max. pipe diameter varies with pipe material.
5. All precast products shall conform to requirements of ASTM C913.
6. Alignment of ditch, siphon box, and pipe varies, see project plans.
7. See Std. Dwg. RD339 for pipe to structure connections.

CALC. BOOK NO. N/A

SDR DATE 14-JUL-2014

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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

OREGON STANDARD DRAWINGS
MISCELLANEOUS DRAINAGE STRUCTURES
SIPHON BOX, INLET CAP & INLET ADJUSTMENT
2021

DATE	REVISION DESCRIPTION

rd376.dgn 20-JUL-2020

RD376

rd386.dgn 20-JUL-2020

ALLOWABLE FILL HEIGHTS FOR CIRCULAR CONCRETE PIPE

HS 25 - 44 LIVE LOAD

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

GENERAL NOTES FOR ALL TABLES ON THIS SHEET:

1. Maximum height of cover is greatest vertical distance from top of pipe to finish grade.
2. Minimum height of cover is least vertical distance from top of pipe to subgrade.
3. For ODOT, pipes with diameters greater than 72" must be reviewed by the Geo-Environmental Section.
4. For ODOT, pipes with maximum cover greater than those shown in the Tables shall be approved by the Senior Standards Engineer.
5. For multiple pipe installations, see Std. Dwg. RD300.
6. Open ends of pipes normally require a site specific design, and may require special treatment (Sloped ends, culvert embankment protection, paved end slopes, safety end sections, or other measures).
   See special details or Standard Drawings as called for on plans.

CALC. BOOK NO. RD07-02

SDR DATE 16-JAN-2019

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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

OREGON STANDARD DRAWINGS

FILL HEIGHT TABLE FOR CIRCULAR CONCRETE PIPE

2021

DATE	REVISION DESCRIPTION

RD386

PIPE	SOLID WALL PVC		
DIAMETER (Inches)	MINIMUM COVER (Feet)	MAXIMUM COVER (Feet)	REMARKS
4	2.0	40	ASTM D 3034 SDR35 (46 psi stiffness)
6	2.0	40	
8	2.0	40	
10	2.0	40	
12	2.0	40	
15	2.0	40	
18	2.0	40	ASTM F 679 (46 psi stiffness)
21	2.0	40	
24	2.0	40	
27	2.0	40	
30	2.0	40	
33	2.0	40	
36	2.0	40	
42	2.0	40	
48	2.0	40	

PIPE	PROFILE WALL PVC		
DIAMETER (Inches)	MINIMUM COVER (Feet)	MAXIMUM COVER (Feet)	REMARKS
4	2.0	40	ASTM F 794 Series 46 (46 psi stiffness)
6	2.0	40	
8	2.0	40	
10	2.0	40	
12	2.0	40	
15	2.0	40	
18	2.0	40	
21	2.0	40	
24	2.0	40	
27	2.0	40	
30	2.0	40	
33	2.0	40	
36	2.0	40	
39	2.0	40	
42	2.0	40	
45	2.0	40	
48	2.0	40	

GENERAL NOTES FOR ALL TABLES ON THIS SHEET:

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

PIPE	SOLID WALL PVC		
DIAMETER (Inches)	MINIMUM COVER (Feet)	MAXIMUM COVER (Feet)	REMARKS
14	2.0	41	AWWA C905 DR 32.5 (57 psi stiffness)
16	2.0	41	
18	2.0	41	
20	2.0	41	
24	2.0	41	
30	2.0	41	
36	2.0	41	
42	2.0	41	
48	2.0	41	

PIPE	SOLID WALL PVC		
DIAMETER (Inches)	MINIMUM COVER (Feet)	MAXIMUM COVER (Feet)	REMARKS
14	1.0	46	AWWA C905 DR 26 (115 psi stiffness)
16	1.0	46	
18	1.0	46	
20	1.0	46	
24	1.0	46	
30	1.0	46	
36	1.0	46	

PIPE	SOLID WALL PVC		
DIAMETER (Inches)	MINIMUM COVER (Feet)	MAXIMUM COVER (Feet)	REMARKS
14	1.0	48	AWWA C905 DR 25 (129 psi stiffness)
16	1.0	48	
18	1.0	48	
20	1.0	48	
24	1.0	48	
30	1.0	48	
36	1.0	48	
42	1.0	48	
48	1.0	48	

PIPE	SOLID WALL PVC		
DIAMETER (Inches)	MINIMUM COVER (Feet)	MAXIMUM COVER (Feet)	REMARKS
14	1.0	61	AWWA C905 DR 21 (224 psi stiffness)
16	1.0	61	
18	1.0	61	
20	1.0	61	
24	1.0	61	
30	1.0	61	
36	1.0	61	

PIPE	SOLID WALL PVC		
DIAMETER (Inches)	MINIMUM COVER (Feet)	MAXIMUM COVER (Feet)	REMARKS
4	1.0	48	AWWA C900 DR 25 (129 psi stiffness)
6	1.0	48	
8	1.0	48	
10	1.0	48	
12	1.0	48	

PIPE	SOLID WALL PVC		
DIAMETER (Inches)	MINIMUM COVER (Feet)	MAXIMUM COVER (Feet)	REMARKS
4	1.0	69	AWWA C900 DR 18 (364 psi stiffness)
6	1.0	69	
8	1.0	69	
10	1.0	69	
12	1.0	69	

PIPE	SOLID WALL PVC		
DIAMETER (Inches)	MINIMUM COVER (Feet)	MAXIMUM COVER (Feet)	REMARKS
4	1.0	109	AWWA C900 DR 14 (814 psi stiffness)
6	1.0	109	
8	1.0	109	
10	1.0	109	
12	1.0	109	

CALC. BOOK NO. RD11-02

SDR DATE 13-JUN-2011

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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

OREGON STANDARD DRAWINGS

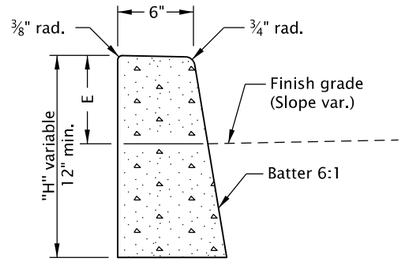
FILL HEIGHT TABLES FOR PVC PIPE

2021

DATE	REVISION DESCRIPTION

rd388.dgn 20-JUL-2020

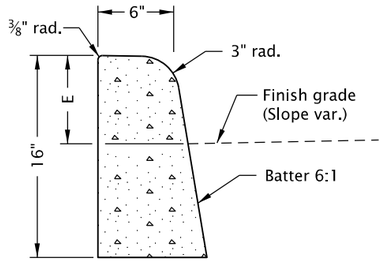
RD388



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

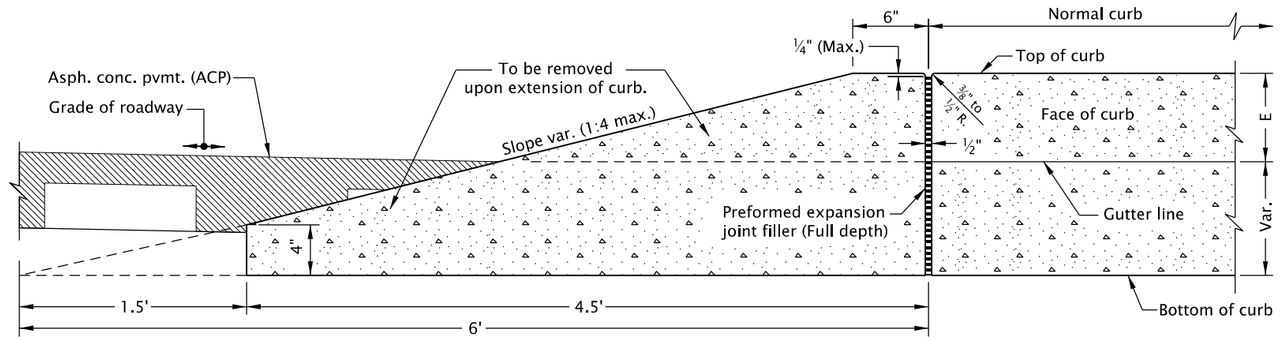
STANDARD CURB

(See general note 11)

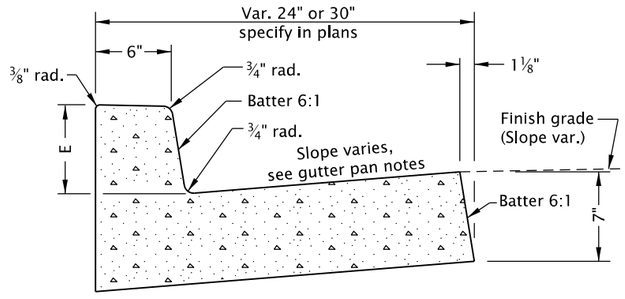


MOUNTABLE CURB

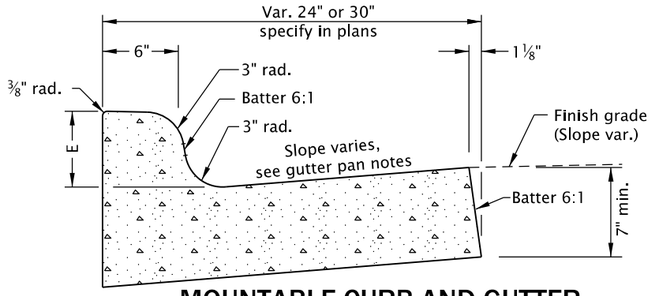
(See general note 11)



CURB ENDING DETAIL



CURB AND GUTTER



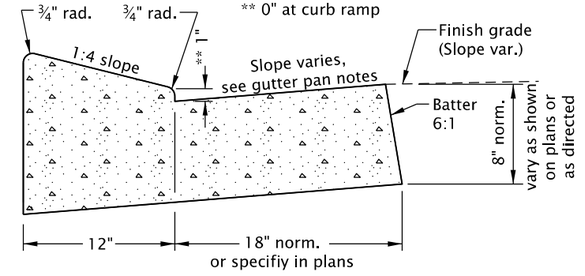
MOUNTABLE CURB AND GUTTER

GUTTER PAN NOTES:

Slope 5.0% normal.

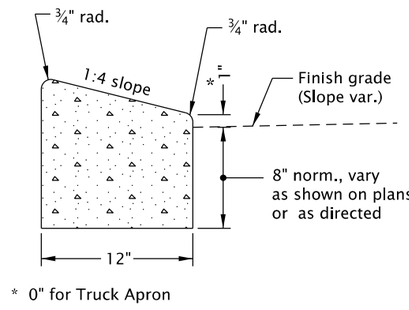
Slope 4.0% max. at curb ramps.

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



LOW PROFILE MOUNTABLE CURB AND GUTTER

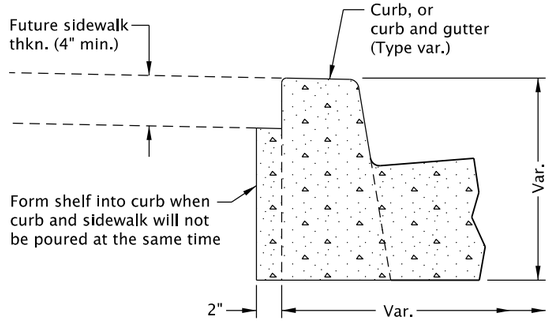
(Where shown on plans)



* 0" for Truck Apron

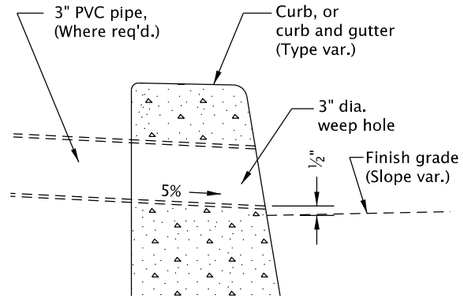
LOW PROFILE MOUNTABLE CURB

(See general note 11)



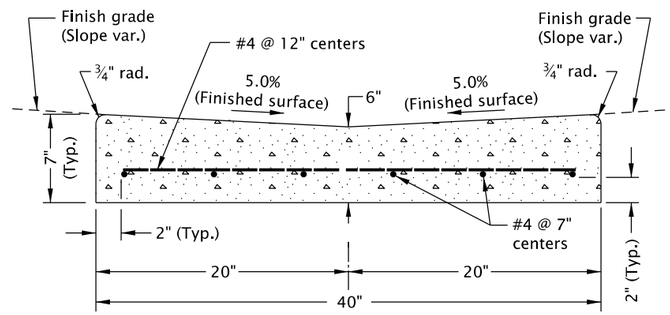
MODIFICATION FOR KEYWAY

(Where shown on plans)



WEEP HOLE DETAIL

(Where shown on plans, and allowed by jurisdiction)



VALLEY GUTTER

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Curb exposure "E" = 6" to 9", as measured vertically from flowline to highest point on curb. Vary as shown on plans or as directed. O.D.O.T standard "E"=7".
2. Const. curb expansion joints at 200' maximum spacing, and at points of tangency, and at ends of each driveways.
3. Const. curb contraction joints at 15' maximum spacing, and at ends of each inlet and curb ramp.
4. Transitions shall be used to connect curbs of different exposures "E". ("E" Is the total vertical dimension of those curb surfaces having a slope of 1:1 or steeper). Minimum desirable transition length shall be 20' for each 1" difference in "E".
5. Tops of all curbs shall slope toward the roadway at 1.5% max. (Max. 2.0% finished surface slope), unless otherwise shown, or as directed.
6. Dimensions are nominal, vary to conform with curb machine approved by the engineer.
7. Dimensions adjacent to radii are measured to the point of intersection of curb surfaces.
8. For sidewalk details, and monolithic curb & sidewalk, see Std. Dwgs. RD720 & RD721.
9. For drainage curbs, see Std. Dwg. RD701.
10. For curb ramp details, see Std. Dwgs. RD900 series.
11. On or along state highways, curb and gutter is required at curb ramp.

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

CALC. BOOK NO. N/A

SDR DATE 20-JUL-2020

NOTE: All material and workmanship shall be In accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

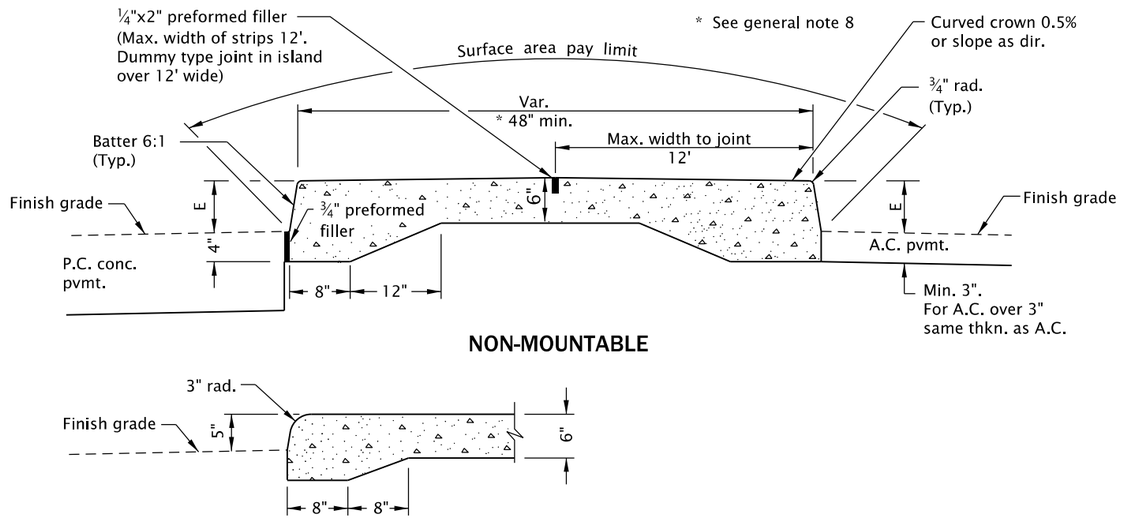
CURBS

2021

DATE	REVISION DESCRIPTION

rd700.dgn 20-JUL-2020

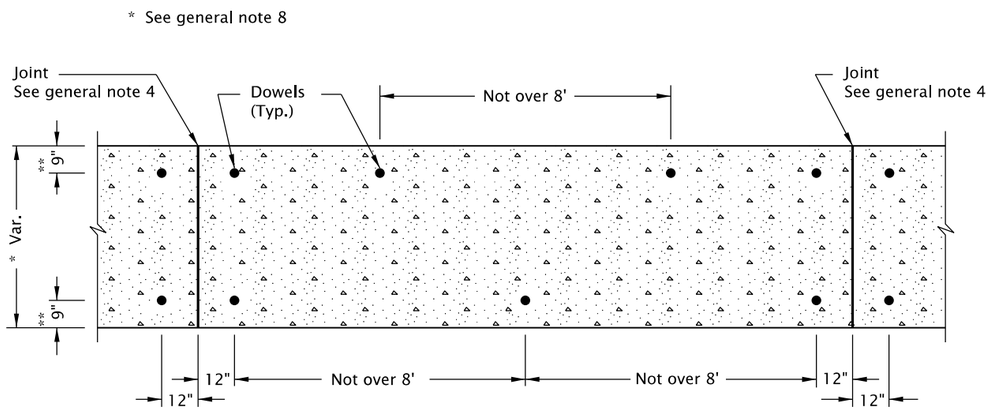
RD700



NON-MOUNTABLE

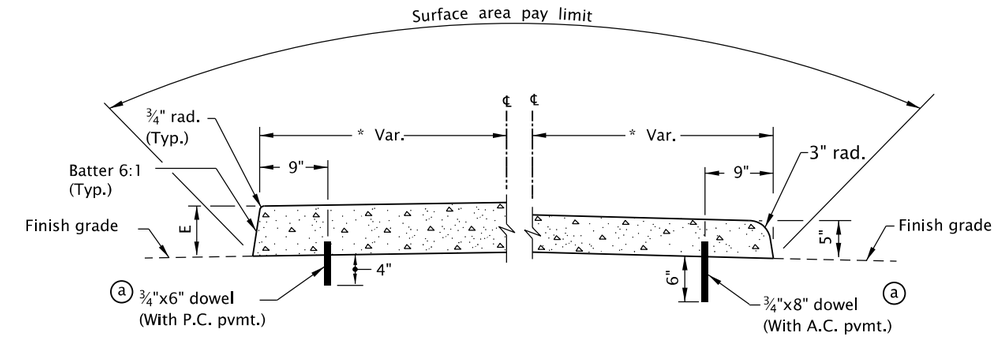
MOUNTABLE
(For surfacing details not shown, see above)

TYPE A



DOWEL PLAN
FOR TYPE C OR TYPE CA ISLANDS & TRANSITIONS
(ON SURFACE OF NEW OR EXISTING PAVEMENT)

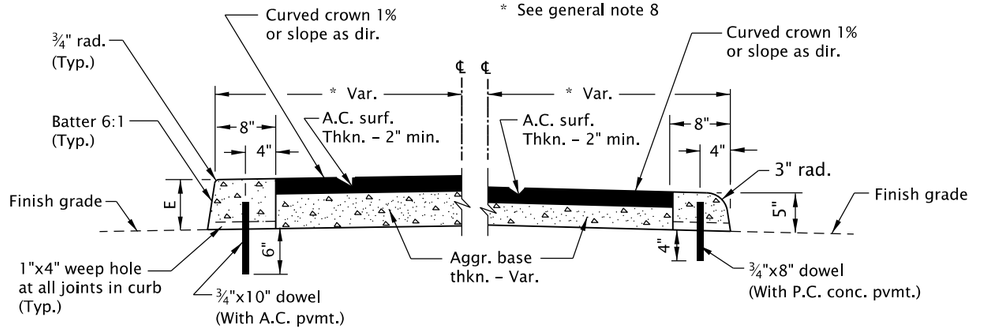
** Also see below for type CA island requirement.



NON-MOUNTABLE **MOUNTABLE**

ⓐ No dowels reqd. for Type C islands 5' wide or wider

TYPE C



NON-MOUNTABLE **MOUNTABLE**

TYPE CA

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Curb exposure "E" = 7" normal. Vary as shown on plans or as directed.
2. Standard batter is shown. Vary as shown on typical section or as directed.
3. Transverse joints in conc. islands to match joints in conc. pvmt. and to be of same type (Omit dowels in expansion joints).
4. Set joint spacing 200' max. for expansion and 15' max. for contraction.
5. Place preformed filler along one side of conc. islands in conc. pvmt. and around all curved ends.
6. Dowels shall be ¾" dia. with length as shown.
   In new conc. pvmt. set dowels before conc. hardens.
   In extg. conc. pvmt. drill holes 1½" dia. and grout dowels in.
   In A.C. pvmt. drive dowels.
7. For transitions to traffic separators, see Std. Dwg. RD706.
8. Minimum island width is 48". For accessible route islands, see Std. Dwg. RD710.

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

CALC. BOOK NO. N/A

SDR DATE 16-JUL-2018

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

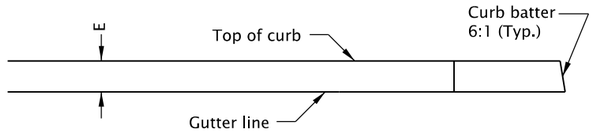
ISLANDS

2021

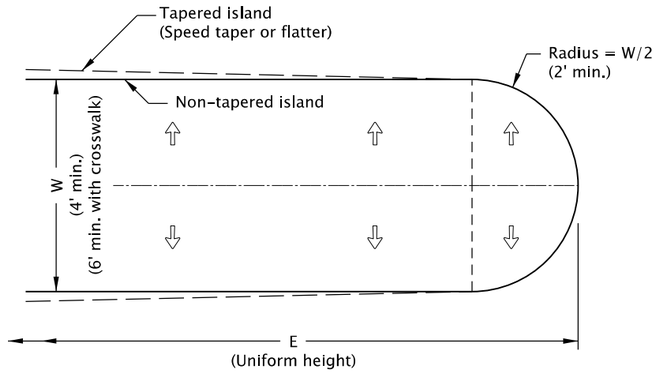
DATE	REVISION DESCRIPTION

RD705

rd705.dgn 20-JUL-2020

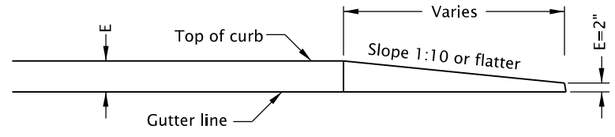


ELEVATION

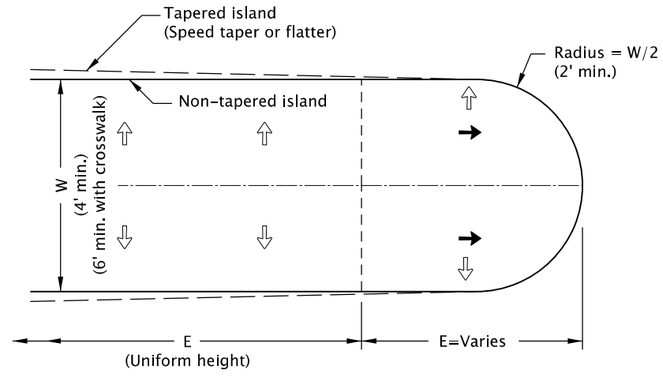


PLAN

OPTION "A"

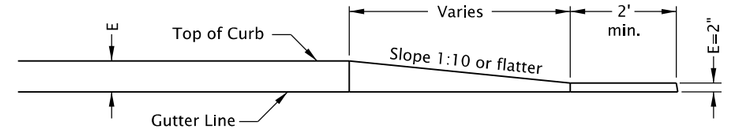


ELEVATION

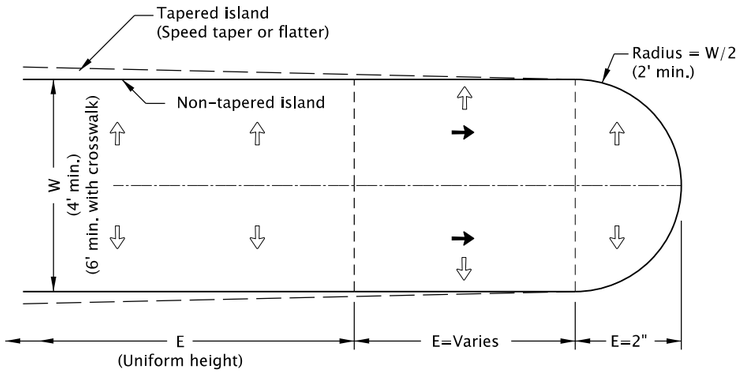


PLAN

OPTION "B"



ELEVATION



PLAN

OPTION "C"

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Curb type and median width as shown on plans or as directed.
2. Curb exposure "E" = 7" normal. Vary as shown on plans or as directed.
3. Standard batter is shown. Vary as shown on typical section or as directed.
4. See Std. Dwgs. RD700, RD701, RD705, RD706 & RD710 for additional details.
5. Site conditions normally require a project specific design, which considers roadway conditions (sheet flow limits, cross slope, superelevation, profile, pavement type, lane and shoulder widths, etc.).
6. See Std. Dwg. RD710 for accessible route islands.

⇨ Slope (2.0% normal)

➔ Slope (varies)

E Curb exposure

CALC. BOOK NO. N/A

SDR DATE 22-JUL-2016

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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

OREGON STANDARD DRAWINGS

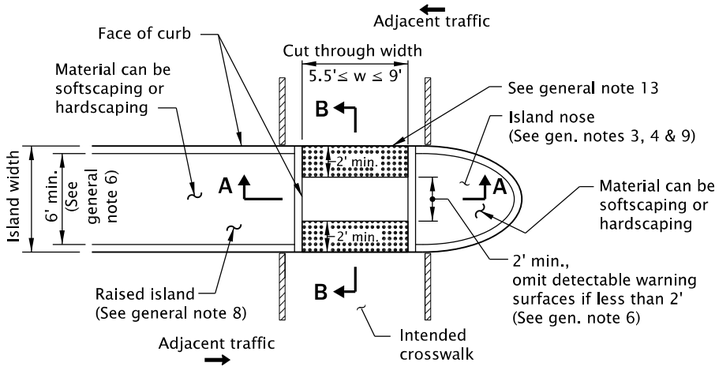
ISLAND NOSE TREATMENTS

2021

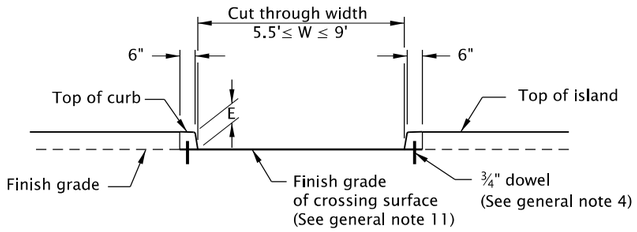
DATE	REVISION DESCRIPTION

rd707.dgn 20-JUL-2020

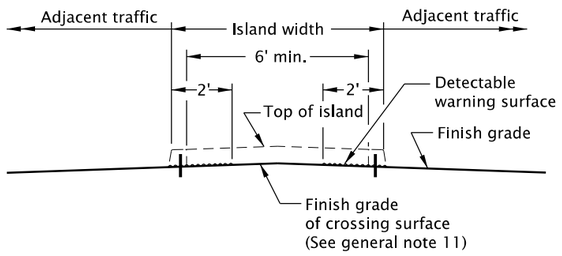
RD707



PLAN



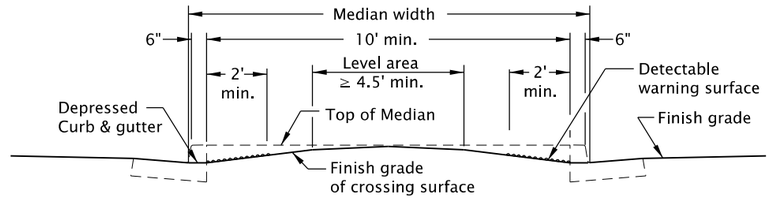
SECTION A-A



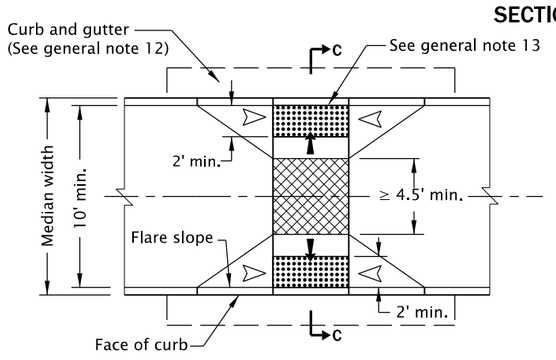
SECTION B-B

MEDIAN ISLAND CROSSING (CUT THROUGH)

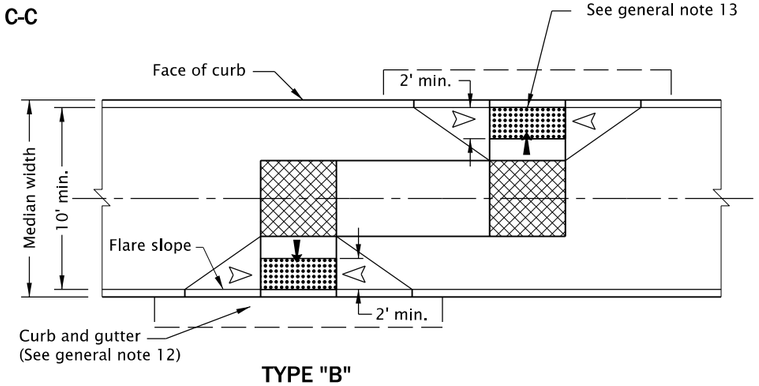
(A.C. pavement shown)



SECTION C-C



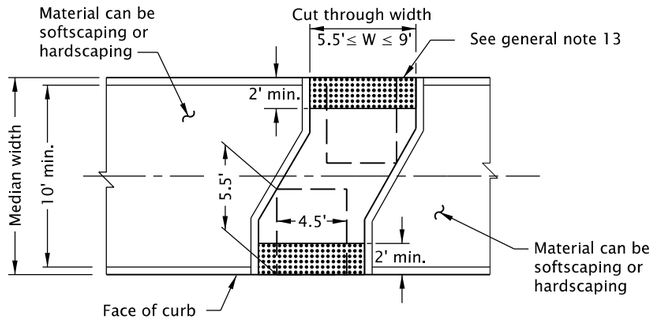
TYPE "A"



TYPE "B"

MEDIAN RAISED CROSSING

(P.C. conc. surface shown)



MEDIAN CUT-THROUGH CROSSING

(Asph. conc. surface shown)

LEGEND:

- Marked or intended crossing location
- Level area (Turning space/landing) Unobstructed 4.5' x 4.5' With obstruction 4.5' x 5.5' (Longer dimension in direction of pedestrian street crossing). For the purposes of this application, a max. 2.0% finished surface slope (for drainage) is considered level.
- Detectable warning surface
- Cross slope 1.5% max. (Max. 2.0% finished surface slope)
- Running slope 7.5% max. (Max. 8.3% finished surface slope)
- Flare slope (Max. 10.0% finished surface slope)
- Zero curb exposure
- Clear space 4.5' x 5.5' (Longer dimension in direction of pedestrian street crossing)

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Accessible route islands are based on applicable ODOT Standards.
2. Place detectable warning surface at the back of curb for a minimum depth of 2 feet at curb ramp that is adjacent to traffic. For details not shown, see Std. Dwgs. RD902 through RD908.
3. The minimum area of islands that contain signal poles, pedestals, etc., shall be 75 square feet. Square feet to be measured to outer perimeter of entire island.
4. For cut through islands, dowel each island segment to the pavement with a minimum of two ¾" diameter dowels. Dowel the nose section of the raised median island with a minimum of two ¾" diameter dowels. Place dowels as directed. See Std. Dwg RD705.
5. Align curb ramps for lowered or partially lowered island and cut through island with the crosswalk.
6. Detectable warning surfaces shall be separated by a 2-foot minimum length of walkway without detectable warnings. Where no curb, the detectable warning surface shall be placed at the edge of roadway.
7. Grade breaks at the top and bottom of curb ramp runs shall be perpendicular to the direction of the ramp run. Grade breaks shall not be permitted on the surface of ramp runs and turning spaces. Surface slopes that meet at grade breaks shall be flush.
8. Curb type and island width as shown on plans or as directed. Type A or Type CA islands are acceptable alternates, see Std. Dwg. RD705.
9. See project plans for details not shown. See Std. Dwg. RD707 for island nose treatment. See Std. Dwg. RD705 for expansion and contraction joint spacing. See Std. Dwgs. RD700, RD701, RD705 & RD706 for additional details. See TM Standard Drawings for signal pole, pedestrian pedestal, crosswalk markings, and related details.
10. Details intended for pedestrian route only. For multi-use path, see project plans for specific details.
11. When crossing surface grade is ≤ 5%, a level area is not required.
12. On or along state highways, curb and gutter is required at curb ramps.
13. Raised islands in crossings shall have accessible curb ramps at all crossings or all crossings shall be cut through with the street.

CALC. BOOK NO. N/A

SDR DATE 14-JAN-2022

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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

OREGON STANDARD DRAWINGS

ACCESSIBLE ROUTE ISLANDS

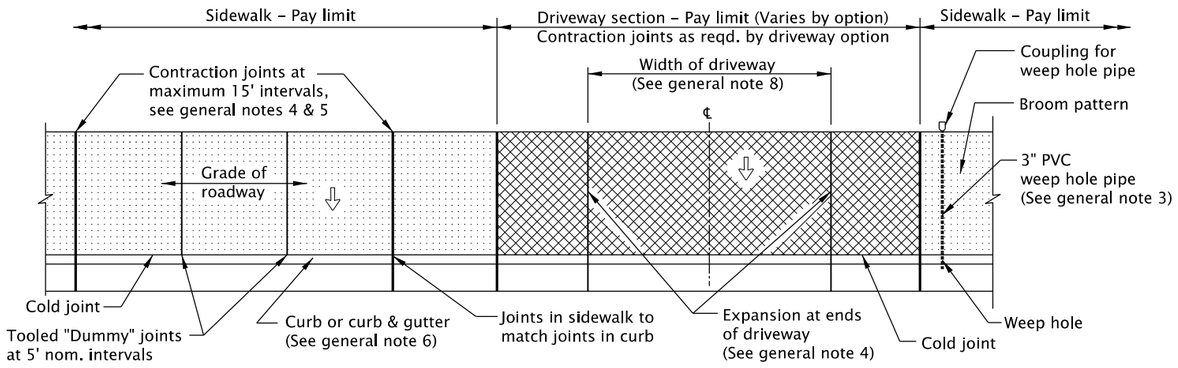
2021

DATE	REVISION DESCRIPTION
07-2021	REVISED DETAILS AND NOTES
11-2021	REVISED NOTES

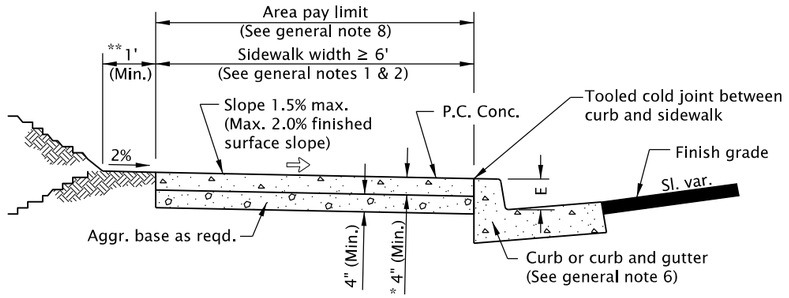
rd710.dgn 14-JAN-2022

RD710

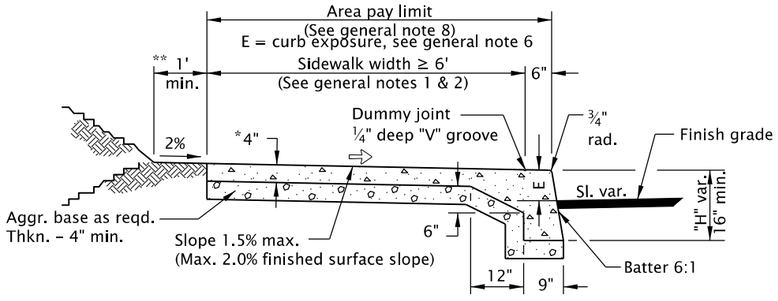
Effective Date: June 1, 2022 - November 30, 2022



TYPICAL PLAN VIEW - CURB LINE SIDEWALK



TYPICAL CURB SIDEWALK CROSS SECTION



TYPICAL MONOLITHIC CURB & SIDEWALK CROSS SECTION

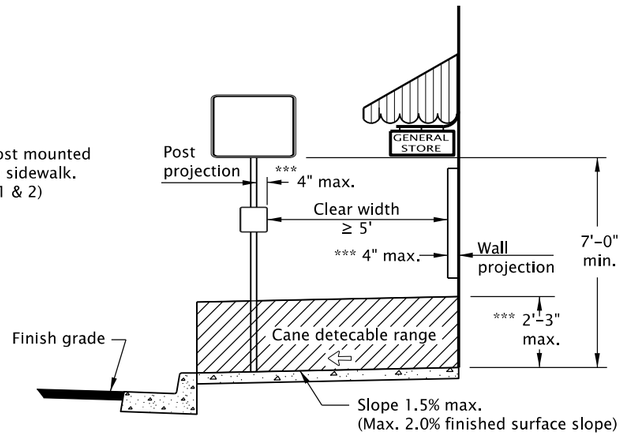
E = curb exposure, see general note 6

* Min. 4" or as specified in plans. A thickness ≥ 6" if sidewalk is intended as portion of a driveway or mountable curb is used.

** Provide compacted backfill adjacent to curb and sidewalk

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

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



CLEAR CIRCULATION PATH

REQUIRED SIDEWALK WIDENING AROUND OBSTRUCTIONS

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Include additional paved or unpaved 2' shy distance to vertical faces higher than 5' such as retaining walls, sound walls, fences and buildings.
2. Curb type and sidewalk width as shown on plans or as directed. On sidewalks 8' and wider, provide a longitudinal joint at the midpoint.
3. Install 3" pvc weep hole pipes in sidewalks where shown on plans, and allowed by jurisdiction. Place contraction joint over top of pipe. See Std. Dwg. RD700 for weep hole details.
4. Provide expansion joints around poles, posts, boxes, at ends of each driveway, and other fixtures which protrude through or against the structures. For sidewalk, monolithic curb & sidewalk, const. expansion joints at 45' maximum spacing. See Std. Dwg. RD722 for expansion joints details.
5. Const. contraction joints at 15' maximum spacing, and at ends of each curb ramp. See Std. Dwg. RD722 for contraction joints details.
6. For curb details, see Std. Dwgs. RD700 & RD701. ODOT standard E=7".
7. Sidewalk details are based on applicable ODOT standards.
8. Fully lowered sidewalk shown; see project plans for the diveway design specified. For driveway details not shown, see Std. Dwgs. RD725, RD730, RD735, RD740, RD745 & RD750.
9. See project plans for details not shown.

LEGEND

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

CALC. BOOK NO. N/A

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

SDR DATE 21-JUN-2019

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

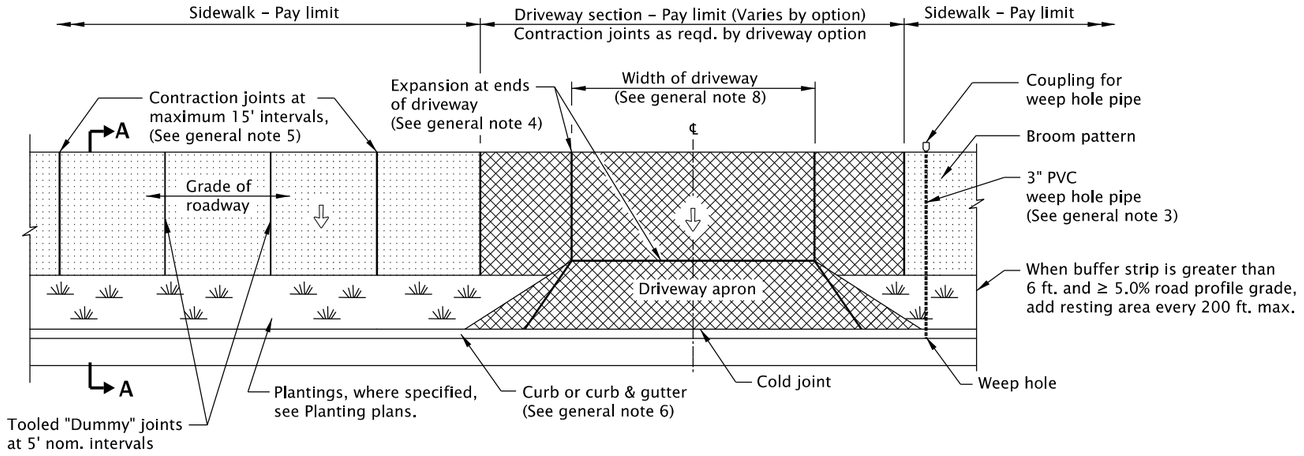
CURB LINE SIDEWALKS

2021

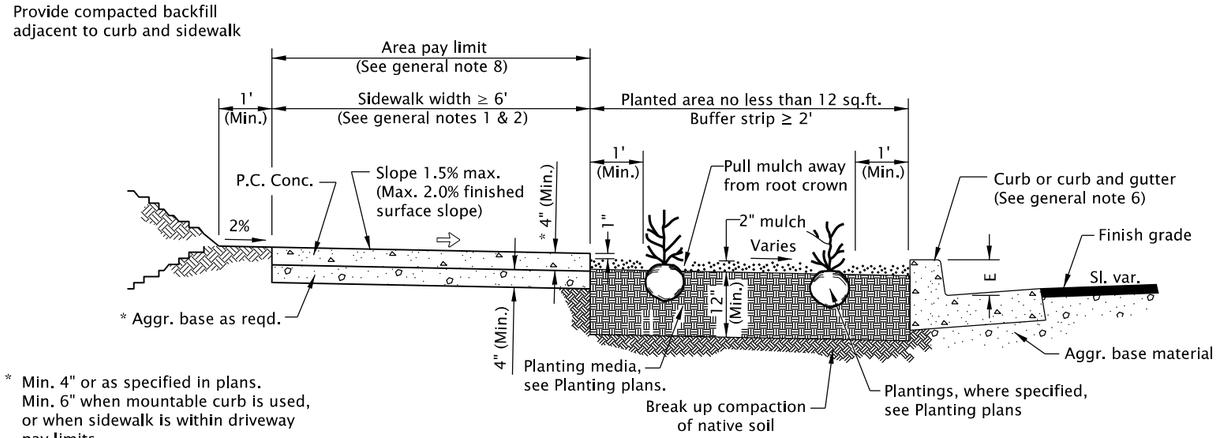
DATE	REVISION DESCRIPTION

rd720.dgn 20-JUL-2020

RD720



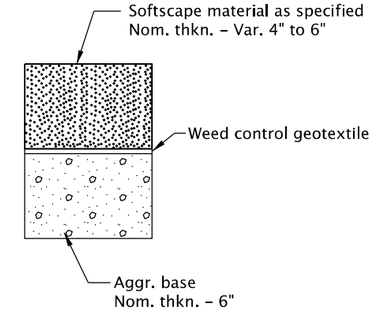
TYPICAL PLAN VIEW - SEPARATED SIDEWALK



SECTION A-A

TYPICAL SETBACK SIDEWALK CROSS SECTION

E = curb exposure, see general note 6



NON-PLANTED SOFTSCAPE CROSS SECTION

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

LEGEND

Sidewalk pay limit.

Driveway pay limit, varies by option, (See general note 8).

⇦ Cross slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Include additional paved or unpaved 2' shy distance to vertical faces higher than 5' such as retaining walls, sound walls, fences and buildings.
2. Curb type and sidewalk width as shown on plans or as directed. On sidewalks 8' and wider, provide a longitudinal joint at the midpoint.
3. Install 3" pvc weep hole pipes in sidewalks where shown on plans, and allowed by jurisdiction. Place contraction joint over top of pipe. See Std. Dwg. RD700 for weep hole details.
4. Provide expansion joints around poles, posts, boxes, at ends of each driveway, and other fixtures which protrude through or against the structures. For sidewalk, monolithic curb & sidewalk, const. expansion joints at 45' maximum spacing. See Std. Dwg. RD722 for expansion joint details.
5. Const. contraction joints at 15' maximum spacing, and at ends of each curb ramp. See Std. Dwg. RD722 for contraction joint details.
6. Curb and gutter shown; see project plans for the curb design specified. For curb details, see Std. Dwgs. RD700 & RD701. ODOT standard E=7".
7. Sidewalk details are based on ODOT applicable standards.
8. Driveway encroaches into sidewalk shown; see project plans for the driveway design specified. For driveway details not shown, see Std. Dwgs. RD725, RD730, RD735, RD740, RD745 & RD750.
9. See project plans for details not shown.
10. Provide plantings in areas 12 SF or greater, as shown or directed. Treat areas less than 12 SF with mulch surfacing.

CALC. BOOK NO. N/A

SDR DATE 20-JUL-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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

OREGON STANDARD DRAWINGS

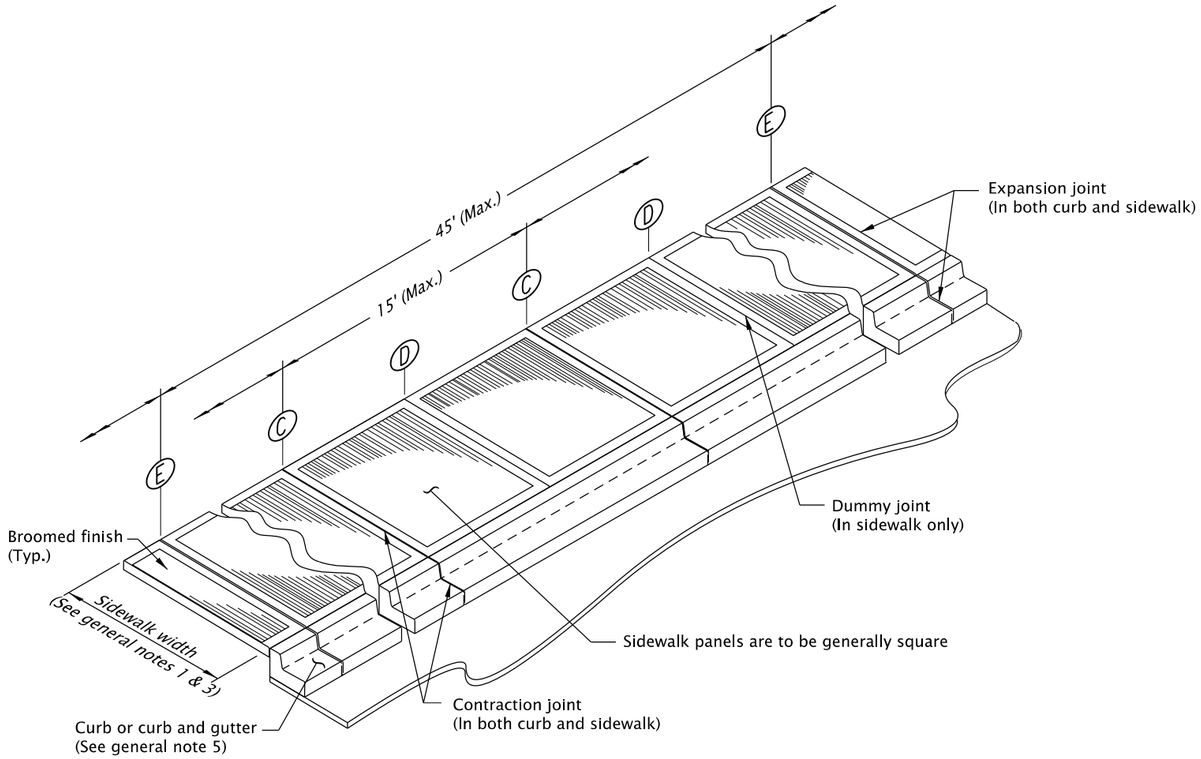
SEPARATED SIDEWALKS

2021

DATE	REVISION DESCRIPTION

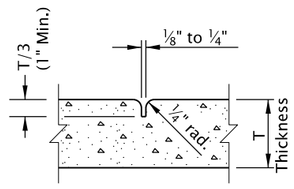
rd721.dgn 20-JUL-2020

RD721

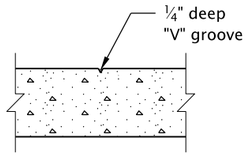


JOINT DETAIL

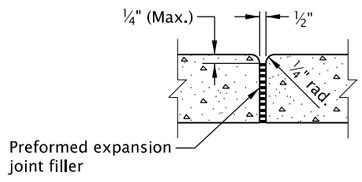
(Curb line sidewalk with curb and gutter shown)



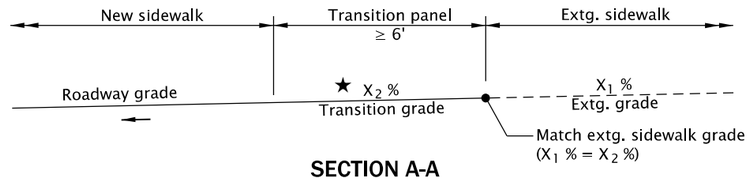
Ⓒ **CONTRACTION JOINT**
(See general note 6)



Ⓓ **DUMMY JOINT**

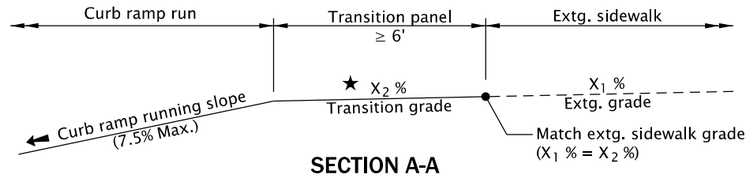


Ⓔ **EXPANSION JOINT**
(See general notes 2 & 5)

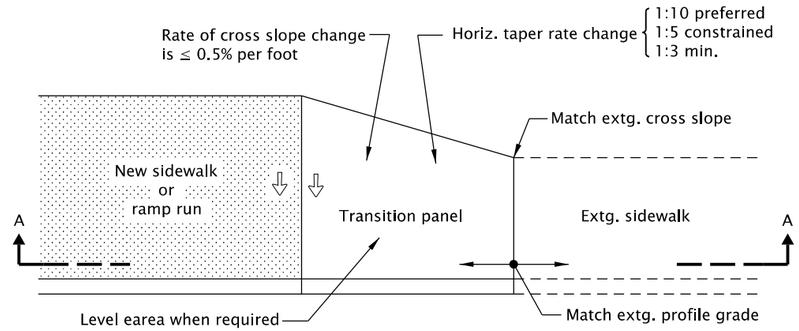


SECTION A-A
(SIDEWALK TRANSITION PANEL SHOWN)

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



SECTION A-A
(CURB RAMP TRANSITION PANEL SHOWN)



PLAN

SIDEWALK AND CURB RAMP TRANSITION PANELS

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. See Std. Dwgs. RD720 & 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, construction expansion joints at 45' max. spacing.
3. On sidewalks 8' and wider, provide a longitudinal joint at the midpoint of sidewalk panel.
4. See Std. Dwgs. RD700 & RD701 for concrete curb details. See project plans for the curb design specified.
5. For curb ramps, do not place expansion joints within the limits of curb ramps and between separate concrete pours.
6. Const. contraction joints at 15' max. 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 consulting a Registered Professional Engineer.

CALC. BOOK NO. N/A

SDR DATE 20-JUL-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

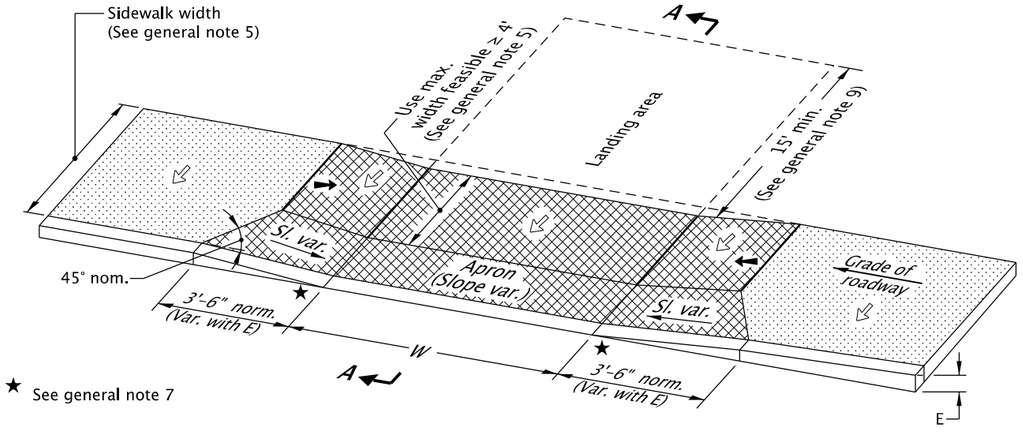
SIDEWALK JOINTS AND TRANSITION PANELS

2021

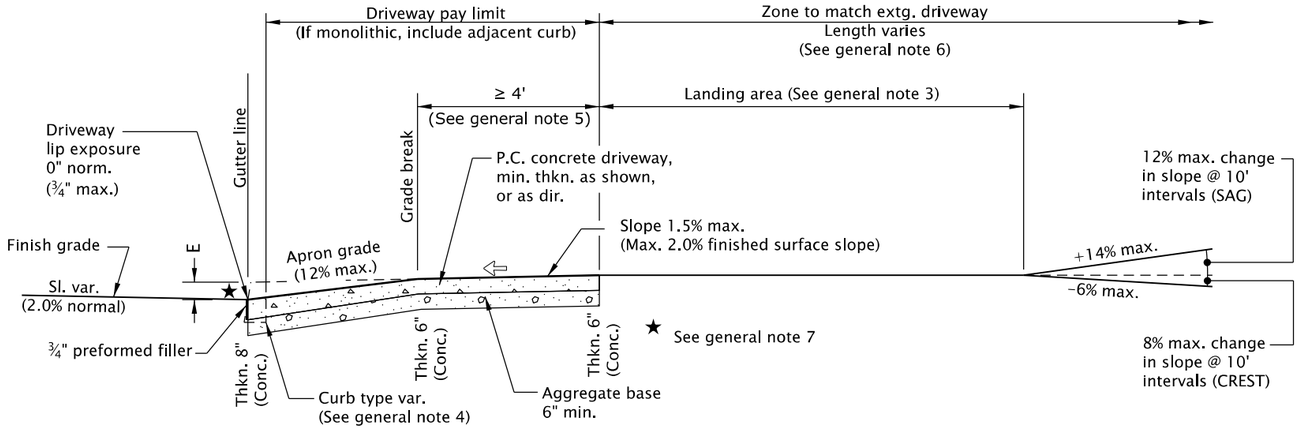
DATE	REVISION DESCRIPTION

rd722.dgn 20-JUL-2020

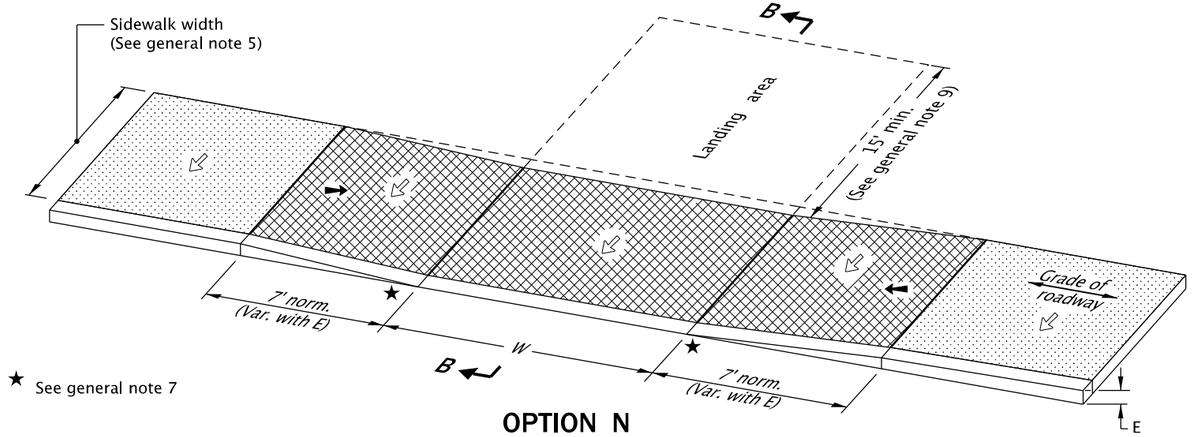
RD722



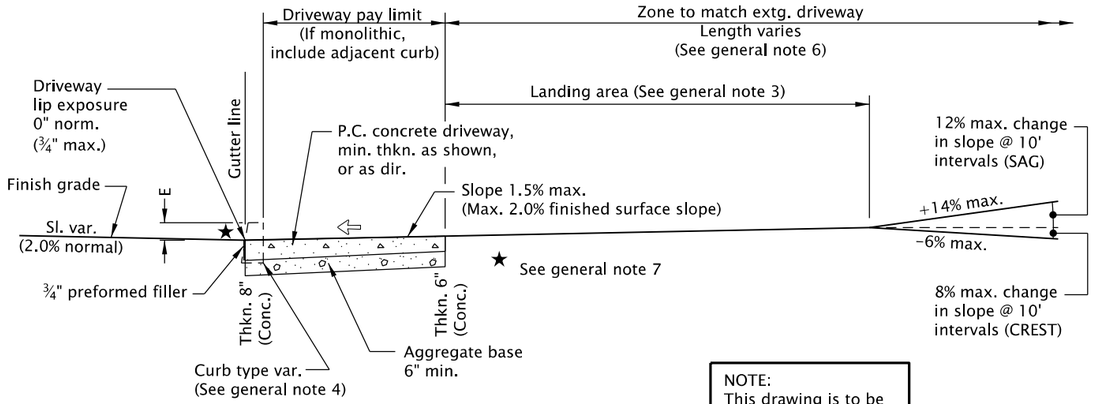
OPTION M
PARTIALLY LOWERED SIDEWALK



SECTION A-A



OPTION N
FULLY LOWERED SIDEWALK



SECTION B-B

NOTE:
This drawing is to be used by local agencies to assist them in the design of driveways on their facilities.

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Details are based on applicable ODOT Standards.
2. Only use details allowed by jurisdiction.
3. The following dimensions are as shown on plans, or as directed: driveway width, driveway slope, sidewalk width, curb exposure, driveway lip exposure, landing area length and width. See project plans for details not shown.
4. Curb, gutter, and sidewalk types varies, see plans.
   See Std. Dwgs. RD700 & RD701 for curb details.
   See Std. Dwg. RD720 for sidewalk details
   See Std. Dwg. RD722 for joint details.
5. A greater than or equal 4' unobstructed clear passage with cross slope 1.5% max. (Max. 2.0% finished surface slope) is required behind driveway apron.
6. Where existing driveway is in good condition, and meets slope requirements, construct only as much landing area as required for satisfactory connection with new work.
7. Check the gutter flow depth at driveway locations to assure that the design flood does not overtop the back of sidewalk at driveway.
   If overtopping occurs place an inlet at upstream side of driveway or perform other approved design mitigation.
8. Construct a full deph expansion joints with 1#2" (In) preformed joint filler at ends of each driveway.
   Tooled joints are required at all driveway slope break lines.
9. 15' min. of the driveway behind the sidewalk should be surfaced to prevent tracking of gravel onto the sidewalk.
10. Monolithic curb & sidewalk shall retain thickened edge through lowered profile, to accommodate driveway use. See Std. Dwg. RD720 for details.
11. Any dimensions except those of general note 5 may be amended by local agencies for their use.

LEGEND:

- Sidewalk
- Driveway pay limit (If monolithic, include adjacent curb) (See project plans for details not shown)
- ⇦ Cross slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)
- ⬅ Running slope 7.5% max. (Max. 8.3% finished surface slope)
- W Width of driveway
- E Curb 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 consulting a Registered Professional Engineer.

CALC. BOOK NO. N/A

SDR DATE 20-JUL-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

CURB LINE SIDEWALK DRIVEWAYS OR ALLEYS (OPTIONS M & N) LOCAL JURISDICTIONS

2021

DATE	REVISION DESCRIPTION

Effective Date: June 1, 2022 - November 30, 2022

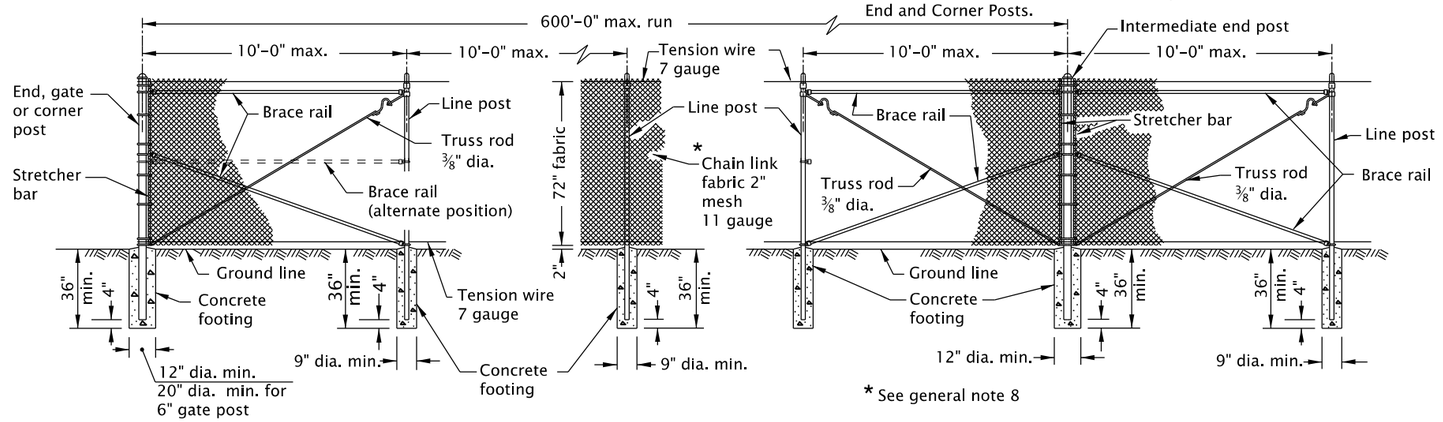
RD750

rd750.dgn 14-JAN-2022

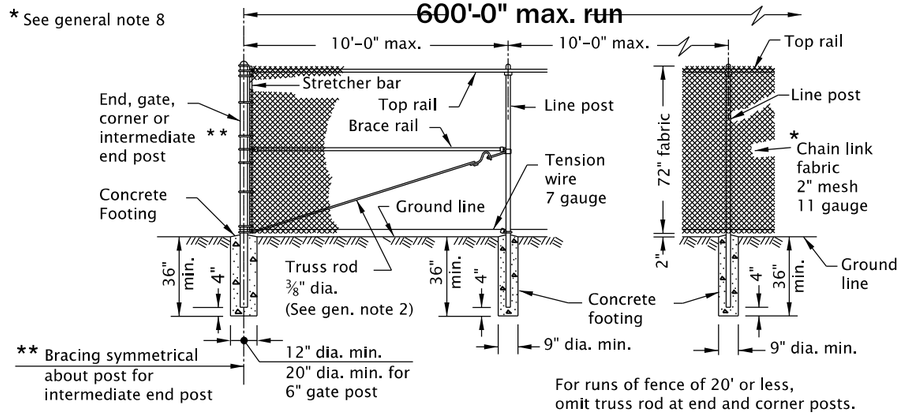
RD750

rd815.dgn 20-JUL-2020

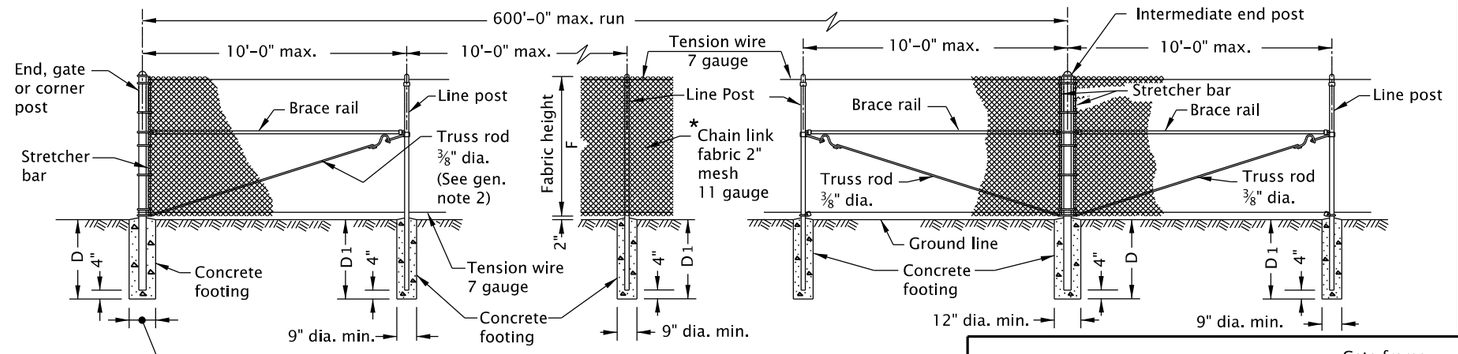
TYPE CL-6



TYPE CL-6R
600'-0" max. run



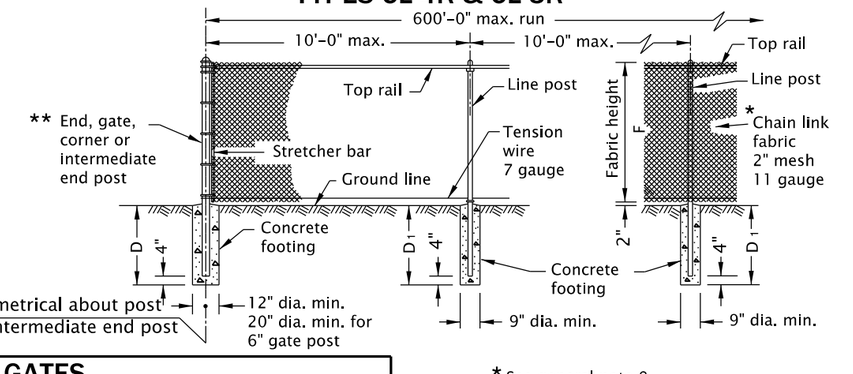
TYPES CL-4 & CL-5



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

* See general note 8

TYPES CL-4R & CL-5R



* See general note 8

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

For runs of fence of 20' or less, omit truss rod at end and corner posts.

GATES

* See general note 8

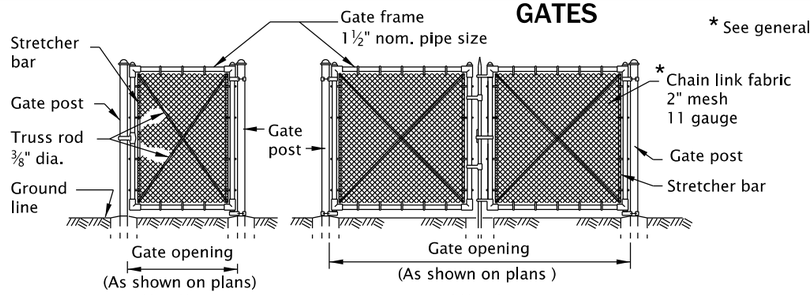


TABLE 1

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

GATE OPENING (ft) SINGLE GATE	GATE OPENING (ft) DOUBLE GATE	GATE POSTS (TUBULAR) Fence Industry (in)	GATE POSTS (TUBULAR) Nom. Dia. (in)
Up thru 6	Up thru 12	2⅞	2½
7 thru 13	13 thru 26	4	3½
14 thru 18	27 thru 36	6⅝	6

NOTE: For CL-6, CL-6R, CL-8, CL-8R, CL-10 & CL-10R, the hardware is minimum and does not include slat wind loading.

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Do not use top rail where fence can be struck by an errant vehicle.
2. Fittings shown are illustrative of use and not specific as to design.
3. Gate posts on each side of a gate opening to be the same size. At a double gate installation with unequal width gates, size of both posts to be as indicated for a single gate installation of the wider gate width.
4. For cross sectional dimensions of members, see Table 1.
5. Posts and rails with sections not shown that meet the requirements of AASHTO M181 are acceptable alternates. See ODOT's QPL for acceptable alternates.
6. All concrete shall be commercial grade concrete.
7. All chain link fabric top and bottom selvage shall be knuckled finish.
8. Chain link fabric for the fence to be installed with pickets shall be 9 gauge wire woven in 3½" by 5½" diamond mesh.
9. See project plans for details not shown.
10. Add fence grounding as required.

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

CALC. BOOK NO. N/A

SDR DATE 13-JAN-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

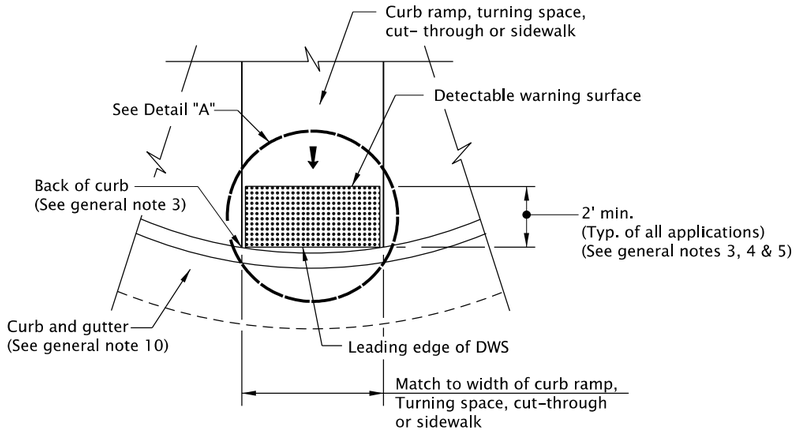
OREGON STANDARD DRAWINGS

CHAIN LINK FENCE

2021

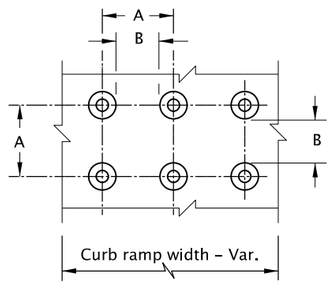
DATE	REVISION DESCRIPTION

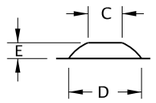
RD815

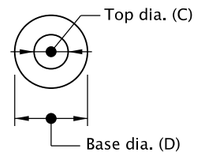


DETECTABLE WARNING SURFACE DETAIL

	A	B	C	D	E
MIN.	1.60"	0.65"	0.45"	0.90"	0.20"
MAX.	2.40"	--	0.91"	1.40"	0.20"

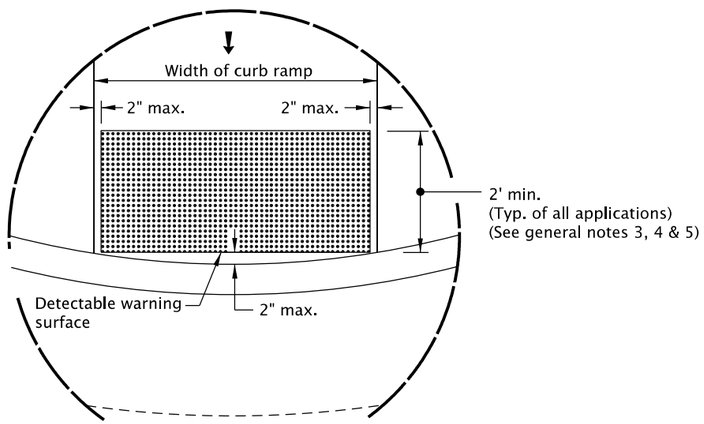






TRUNCATED DOME SPACING TRUNCATED DOME

TRUNCATED DOME DETAILS



DETAIL "A"

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Detectable warning surface details & locations are based on applicable ODOT Standards.
2. See project plans for details not shown.
   See Std. Dwgs. RD700 & RD701 for curbs.
3. The detectable warning surface shall extend the full width of the curb ramp opening, shared use path, blended transition, turning space, or other roadway entrance as applicable. A gap of up to 2 inches on each side of the detectable warning surface is permitted (measured at the leading edge of the detectable warning surface panel as shown in Detail "A").
4. Detectable warning surface shall be placed at the back of curb for a minimum depth of 2 ft. in the direction of pedestrian travel at curb ramps that are adjacent to traffic. Detectable warning surface may be radial or rectangular, but must comply with the truncated dome size and spacing standards. Detectable warning surface may be cut to meet necessary shape as shown in plans. Detectable warning surface across a grade break is prohibited. Place abutting panels within¼ inch of each other and install anchors, as specified by manufacturers, along cut edge.
5. Color to be safety yellow if no color specified in construction note. Alternative colors require a design exception on or along state highways.
6. Detectable warning surface shall be used in the following locations:
   a) Curb ramps at street crossings.
   b) Crossing islands (Accessible Route Islands).
   c) Rail crossings.
7. Where public transportation stations (rail, bus, etc.) use platform boarding, detectable warning surface shall be placed along the full edge length of the station, when not protected by platform screens or guards, (see Std. Dwg. RD908).
8. Detectable warning surface shall not be used on the following locations:
   a) End of sidewalk transitions that are not at a crosswalk, (see Std. Dwgs. RD950, RD952 and RD960).
   b) Driveways, unless constructed with curb return or are signalized.
   c) Parking lots, access aisles and passenger loading zones where curb ramp does not lead to vehicular way.
9. Where no curb is present, the detectable warning surface shall be placed at the edge of the roadway.
10. On or along state highways, curb and gutter is required at curb ramps.

LEGEND:

Detectable warning surface

Cross slope 1.5% max.
(Max. 2.0% finished surface slope)
(Normal sidewalk cross slope)

Running slope 7.5% max.
(Max. 8.3% finished surface slope)

CALC. BOOK NO. N/A

SDR DATE 19-JULY-2021

NOTE: All material and workmanship shall be In accordance with the current Oregon Standard Specifications

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

OREGON STANDARD DRAWINGS

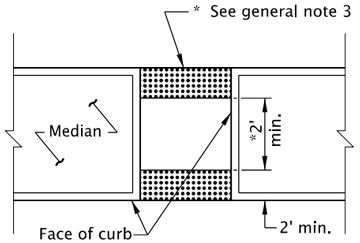
DETECTABLE WARNING SURFACE DETAILS

2021

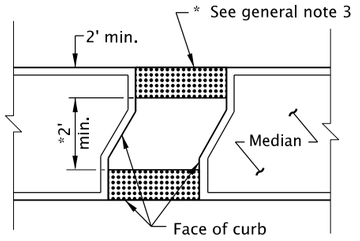
DATE	REVISION DESCRIPTION
07-2020	DRAWING CREATED
07-2021	REVISED DETAIL AND NOTES

rd902.dgn 19-JUL-2021

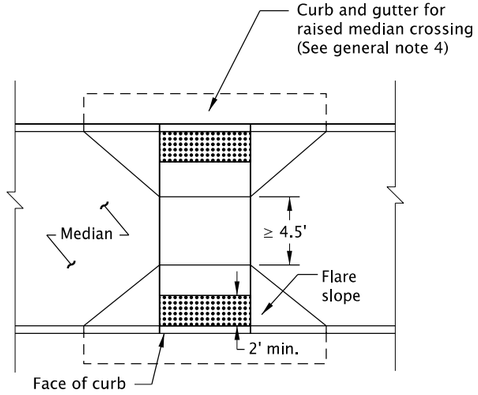
RD902



* Omit detectable warning surfaces if less than 2'



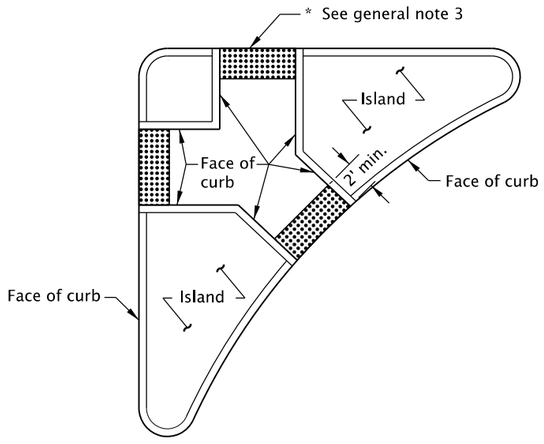
CUT-THROUGH
(Asph. conc. surface shown)



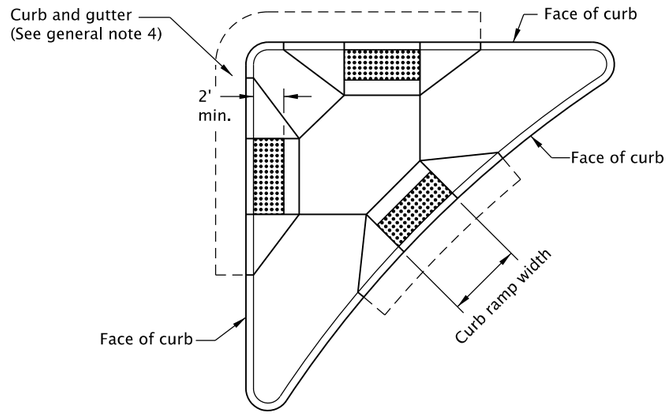
RAISED MEDIAN
(P.C. conc. surface shown)

MEDIAN CROSSING

* Omit detectable warning surfaces if less than 2'



CUT-THROUGH ISLAND
(Asph. conc. surface shown)



RAISED ISLAND
(P.C. conc. surface shown)

RIGHT TURN CHANNELIZATION ISLAND

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Detectable warning surface details & locations are based on applicable ODOT Standards.

2. See project plans for details not shown.
   See Std. Dwgs. RD700 & RD701 for curbs.
   See Std. Dwgs. RD710 & RD711 for accessible route island.
   See Std. Dwg. RD902 for detectable warning surface installation details.

3. Detectable warning surfaces shall be separated by a 2.0 ft minimum length of walkway without detectable warnings. Where the island has no curb, the detectable warning surface shall be placed at the edge of roadway.

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.

LEGEND:

Detectable warning surface

CALC. BOOK NO. N/A

SDR DATE 20-JULY-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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

OREGON STANDARD DRAWINGS

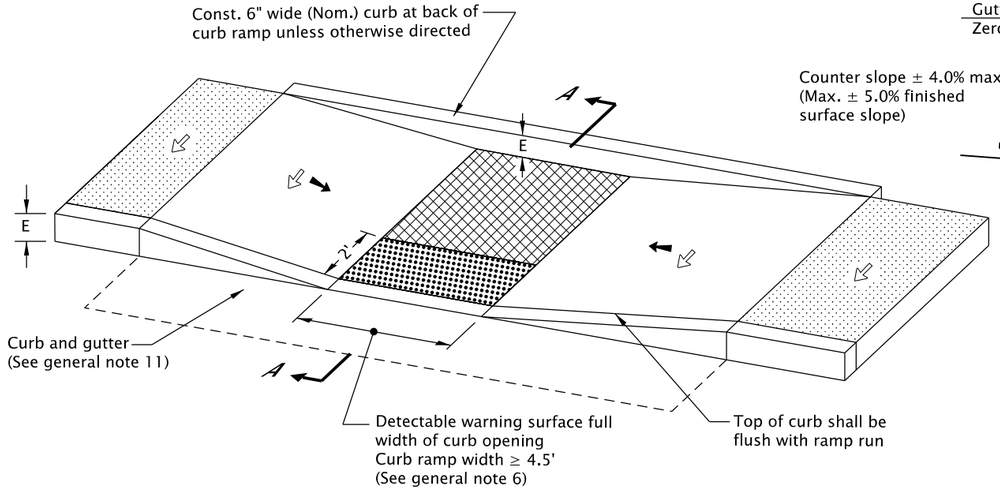
DETECTABLE WARNING SURFACE PLACEMENT FOR ACCESSIBLE ROUTE ISLAND

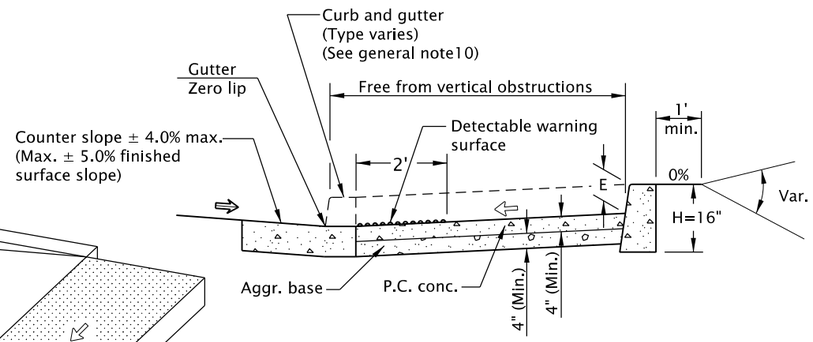
2021

DATE	REVISION DESCRIPTION
07-2020	DRAWING CREATED

rd906.dgn 20-JUL-2020

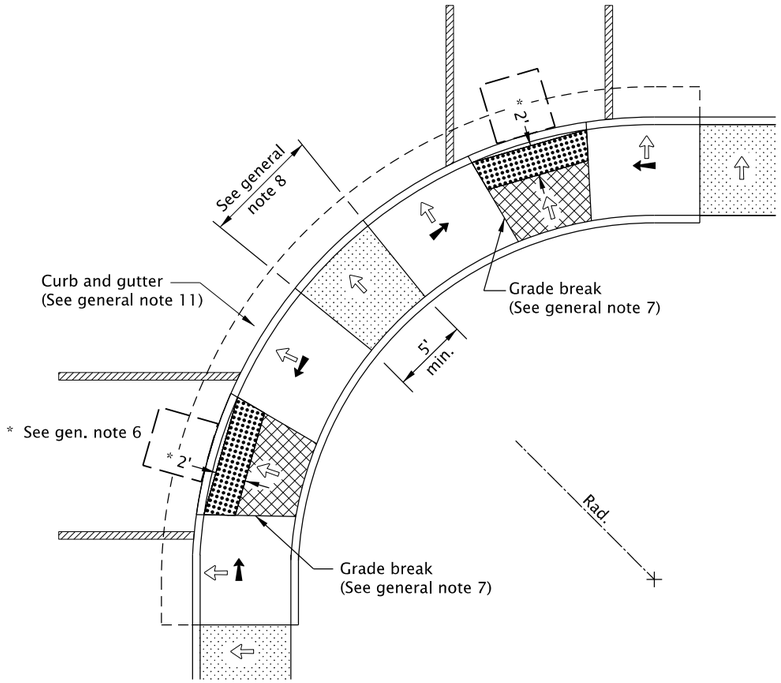
RD906



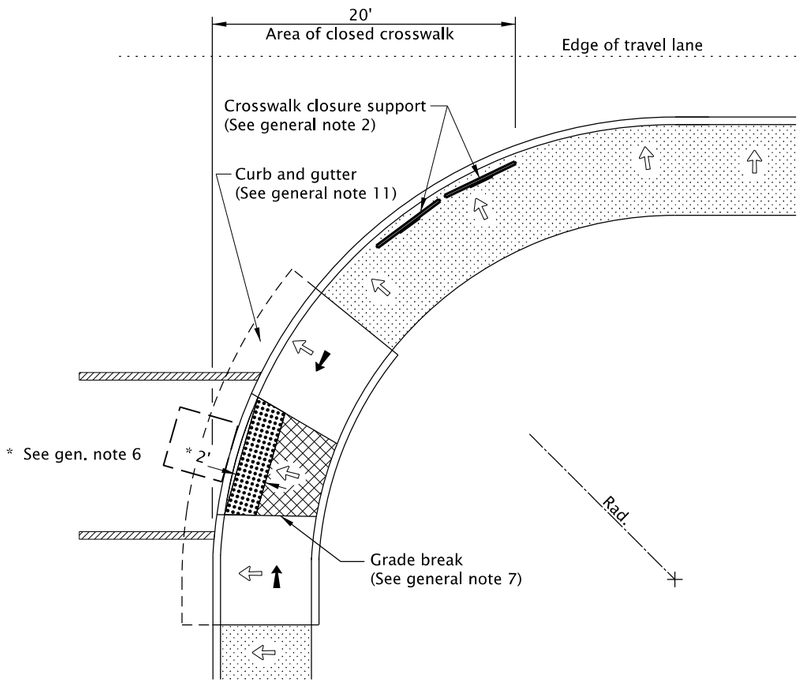


SECTION A-A

PARALLEL CURB RAMP DETAIL



PARALLEL CURB RAMPS
OPTION "PL-1"



PARALLEL CURB RAMP WITH CROSSWALK CLOSURE
OPTION "PL-2"

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Curb ramp details are based on applicable ODOT Standards.
2. See Std. Dwgs. RD700 & RD701 for curbs.
   See Std. Dwgs. RD720 & RD721 for sidewalks.
   See Std. Dwgs. RD902 through RD908 for detectable warning surface installation details.
   See Std. Dwg. TM240 for crosswalk closure detail.
3. Site conditions normally require a project specific design. See project plans for details not shown.
4. Tooled dummy joints are required at all curb ramp grade break lines, (see Std. Dwg. RD722).
5. Curb ramp slopes shown are relative to the true level horizon (zero bubble).
6. Place detectable warning surface at the back of curb for a minimum depth of 2' in the direction of pedestrian travel full width of curb ramp opening that is adjacent to traffic.
7. Grade breaks at the top and bottom of curb ramp runs shall be perpendicular to the direction of the ramp run. Grade breaks shall not be permitted on the surface of ramp runs and turning spaces. Surface slopes that meet at grade breaks shall be flush.
8. When 2 ramp runs are immediately adjacent, the curb exposure (E) between the adjacent side may range between 3" and full design exposure.
9. Curb ramps for shared use paths intersecting a roadway shall be full width of path, excluding flares. When a curb ramp is used to provide bicycle access from a roadway to a sidewalk, the curb ramp opening will be ≥ 8' wide, (see Std. Dwg. RD909 for additional details).
10. Place an inlet at upstream side of curb ramp or perform other approved design mitigation. Check the gutter flow depth at curb ramp locations to assure that the design flood does not overtop the back of sidewalk.
11. On or along state highways, curb and gutter is required at curb ramps.

LEGEND:

- Sidewalk
- Detectable warning surface
- Level area (Turning space/landing)
  Unobstructed 4.5' x 4.5'
  With obstruction 4.5' x 5.5' (Longer dimension in direction of pedestrian street crossing).
  For the purposes of this application, a max. 2.0% finished surface slope (for drainage) measured perpendicular in two directions is considered level.
- Cross slope 1.5% max.
  (Max. 2.0% finished surface slope)
  (Normal sidewalk cross slope)
- Running slope 7.5% max.
  (Max. 8.3% finished surface slope)
- Counter slope 4.0% max. ascending or descending,
  (Max. 5.0% finished surface slope)
  Slope as required for drainage
- 4'x4' clear space

CALC. BOOK NO. N/A

SDR DATE 14-JAN-2022

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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

OREGON STANDARD DRAWINGS

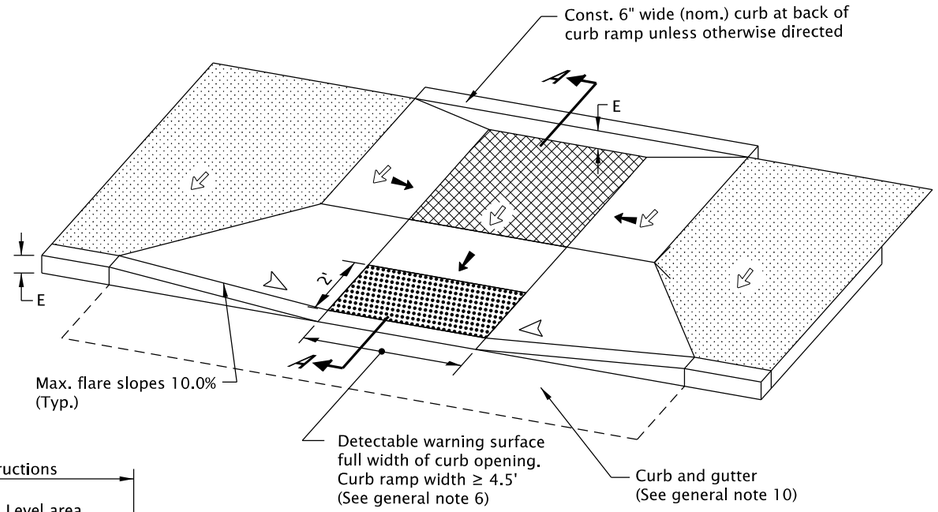
PARALLEL CURB RAMP

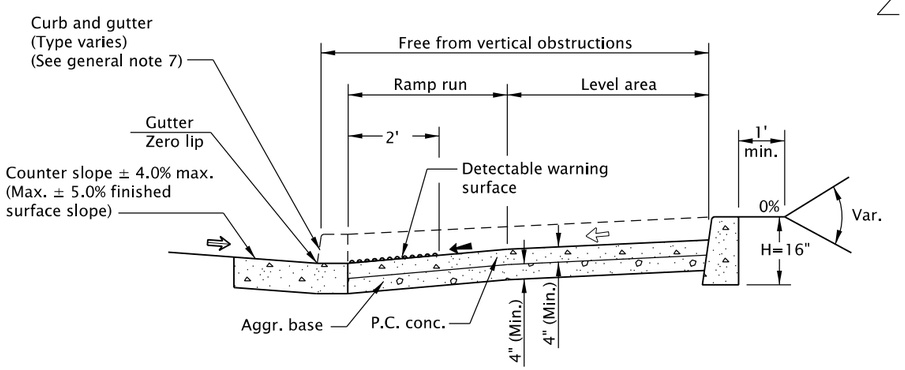
2021

DATE	REVISION DESCRIPTION
07-2020	DRAWING CREATED
07-2021	REVISED DETAIL AND NOTES
01-2022	REVISED NOTES

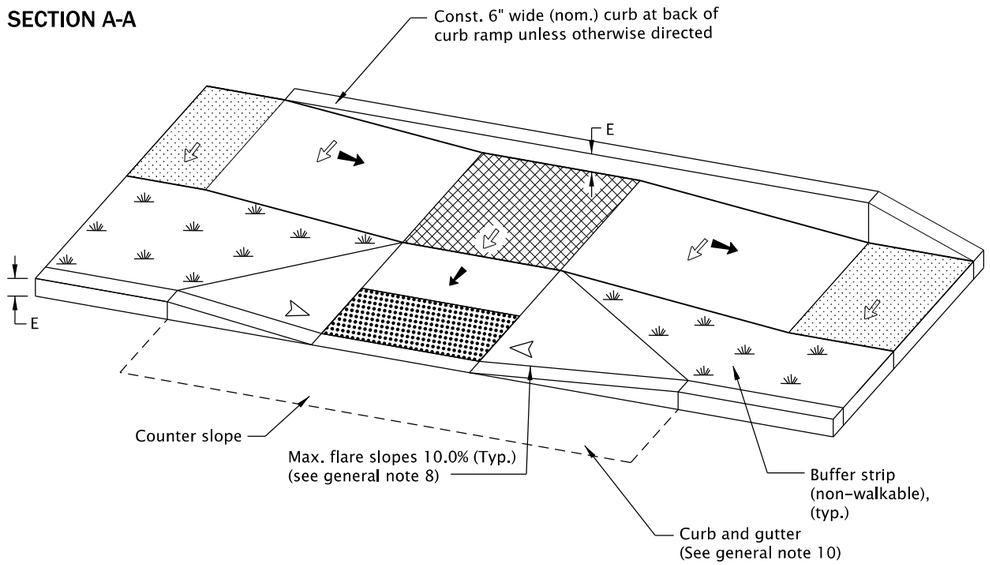
rd920.dgn 14-JAN-2022

RD920





SECTION A-A



COMBINATION CURB RAMP DETAIL

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Curb ramp details are based on applicable ODOT Standards.
2. See project plans for details not shown.
   See Std. Dwgs. RD700 & RD701 for curbs.
   See Std. Dwgs. RD720 & RD721 for sidewalks.
   See Std. Dwgs. RD902 through RD908 for detectable warning surface installation details.
3. Site conditions normally require a project specific design. See project plans for details not shown.
4. Tooled dummy joints are required at all curb ramp slope break lines, (see Std. Dwg. RD722).
5. Curb ramp slopes shown are relative to the true level horizon (zero bubble).
6. Place detectable warning surface at the back of curb for a minimum depth of 2' in the direction of pedestrian travel full width of curb ramp opening that is adjacent to traffic.
7. Place an inlet at upstream side of curb ramp or perform other approved design mitigation. Check the gutter flow depth at curb ramp locations to assure that the design flood does not overtop the back of sidewalk.
8. Return curb may be provided in lieu of flared slope only if protected from traverse travel by landscaping, see Std. Dwg. RD721. Return curb shall not reduce width of approaching sidewalk.
9. Curb ramps for shared use paths intersecting a roadway shall be full width of path, excluding flares. When a curb ramp is used to provide bicycle access from a roadway to a sidewalk, the curb ramp opening will be ≥ 8' wide, (see Std. Dwg. RD909 for additional details).
10. On or along state highways, curb and gutter is required at curb ramps.
11. 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.

LEGEND:

- Marked or intended crossing location
- Sidewalk
- Detectable warning surface
- Level area (Turning space/landing)
  Unobstructed 4.5' x 4.5'
  With obstruction 4.5' x 5.5' (Longer dimension in direction of pedestrian street crossing).
  For the purposes of this application, a max. 2.0% finished surface slope (for drainage) measured perpendicular in two directions is considered level.
- ⇦ Cross slope 1.5% max.
  (Max. 2.0% finished surface slope)
  (Normal sidewalk cross slope)
- ⬅ Running slope 7.5% max.
  (Max. 8.3% finished surface slope)
- ⇦ Counter slope 4.0% max. ascending or descending,
  (Max. 5.0% finished surface slope)
  Slope as required for drainage
- ◁ Flare slope
  (Max. 10% finished surface slope)

CALC. BOOK NO. N/A

SDR DATE 14-JAN-2022

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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

OREGON STANDARD DRAWINGS

COMBINATION CURB RAMP

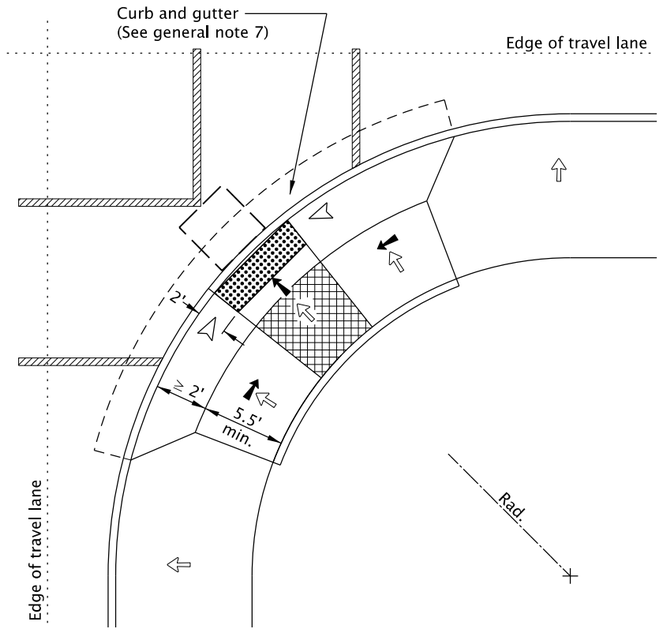
2021

DATE	REVISION DESCRIPTION
07-2020	DRAWING CREATED
07-2021	REVISED DETAILS AND NOTES
01-2022	REVISED NOTES

rd930.dgn 14-JAN-2022

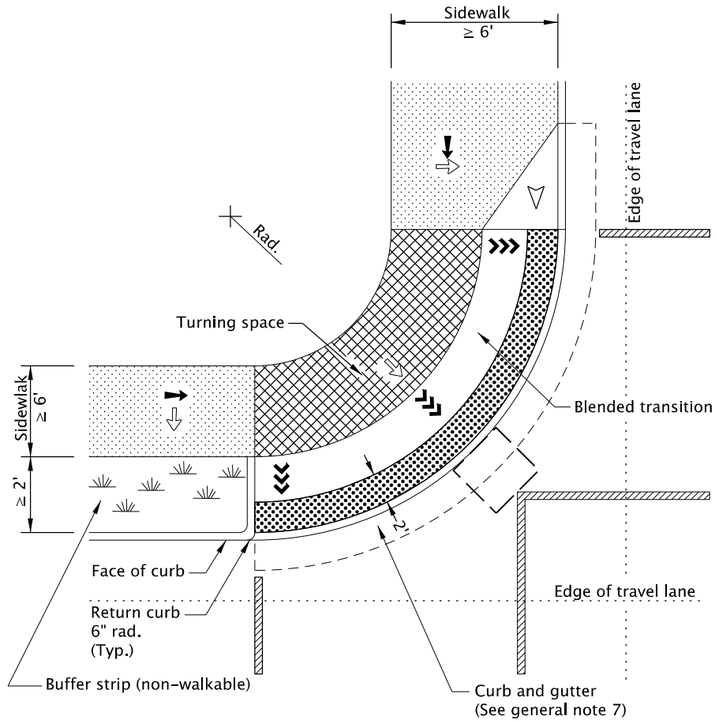
RD930

Effective Date: June 1, 2022 - November 30, 2022



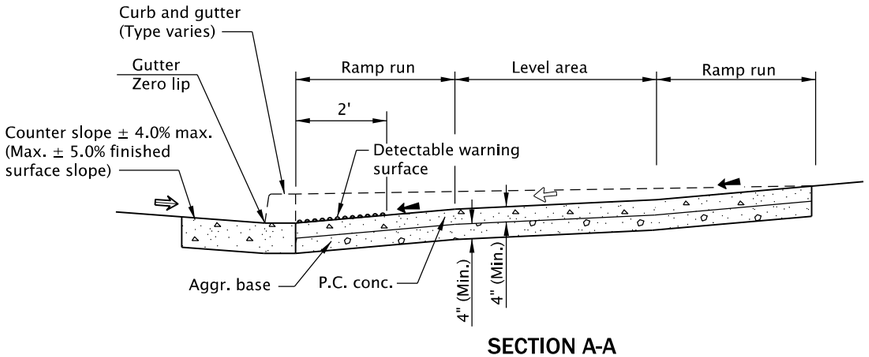
DIAGONAL COMBINATION CURB RAMP OPTION "CC-10"

(Use only when site constraints prohibit installing two curb ramps)

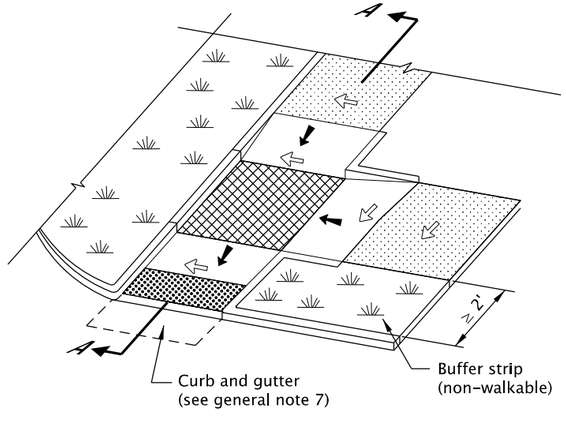


BLENDED TRANSITION COMBINATION CURB RAMP OPTION "CC-11"

(Use only when site constraints prohibit installing two curb ramps)



SECTION A-A



DIRECTIONAL COMBINATION CURB RAMP OPTION "CC-12"

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Curb ramp details are based on applicable ODOT Standards.
2. See project plans for details not shown.
   See Std. Dwgs. RD700 & RD701 for curbs.
   See Std. Dwgs. RD720 & RD721 for sidewalks.
   See Std. Dwgs. RD902 through RD908 for detectable warning surface installation details.
   See Std. Dwg. RD930 for combination curb ramp details.
3. Tooled dummy joints are required at all curb ramp slope break lines, (see Std. Dwg. RD722).
4. Curb ramp slopes shown are relative to the true level horizon (zero bubble).
5. Return curb may be provided in lieu of flared slope only if protected from traverse travel by landscaping, (see Std. Dwg. RD721). Return curb shall not reduce width of approaching sidewalk .
6. Only use curb ramp options allowed by jurisdiction. Single ramps require design exceptions on or along state highways.
7. On or along state highways, curb and gutter is required at curb ramps.
8. 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.

LEGEND:

- Marked or intended crossing location
- Sidewalk
- Detectable warning surface
- Level area (Turning space/landing)
  Unobstructed 4.5' x 4.5'
  With obstruction 4.5' x 5.5' (Longer dimension in direction of pedestrian street crossing).
  For the purposes of this application, a max. 2.0% finished surface slope (for drainage) measured perpendicular in two directions is considered level.
- Cross slope 1.5% max.
  (Max. 2.0% finished surface slope)
  (Normal sidewalk cross slope)
- Running slope 7.5% max.
  (Max. 8.3% finished surface slope)
- Running slope 4.0% max.
  (Max. 4.9% finished surface slope)
- Flare slope
  (Max. 10% finished surface slope)
- 4'x4' clear space

CALC. BOOK NO. N/A

SDR DATE 19-JULY-2021

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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

OREGON STANDARD DRAWINGS

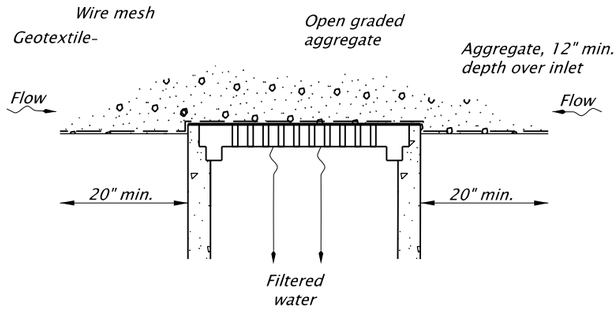
COMBINATION CURB RAMP SINGLE RAMP

2021

DATE	REVISION DESCRIPTION
07-2020	DRAWING CREATED
01-2021	REVISED DETAIL & NOTES
07-2021	REVISED DETAIL & NOTES

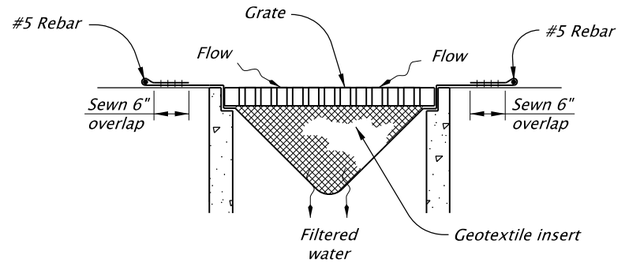
rd938.dgn 19-JUL-2021

RD938



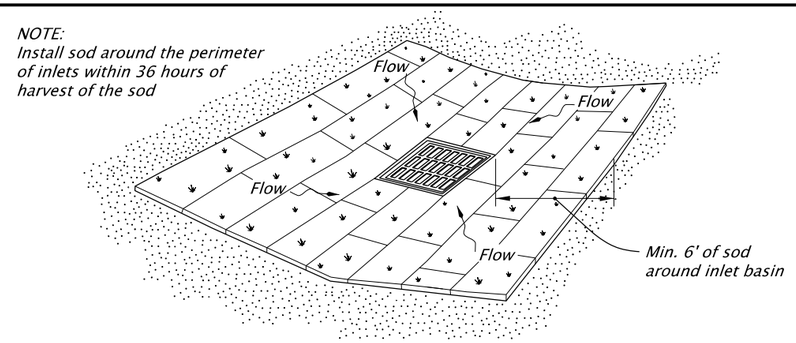
GEOTEXTILE/WIRE MESH/AGGREGATE - TYPE 2

NOT TO SCALE



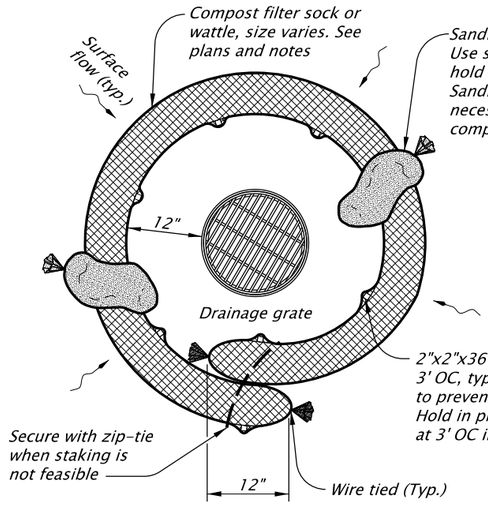
PREFABRICATED FILTER INSERT - TYPE 3

NOT TO SCALE

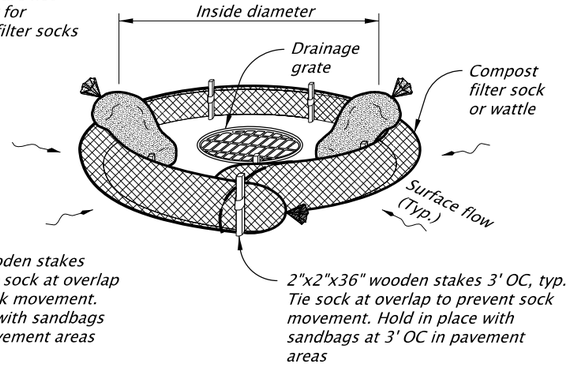


SOD PROTECTION - TYPE 6

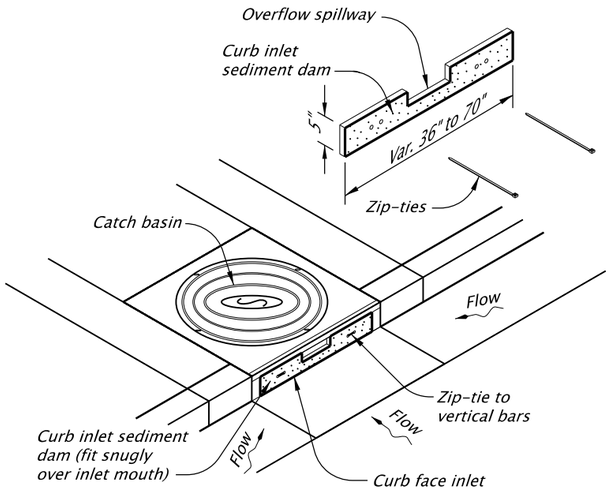
NOT TO SCALE



AREA DRAIN PLAN

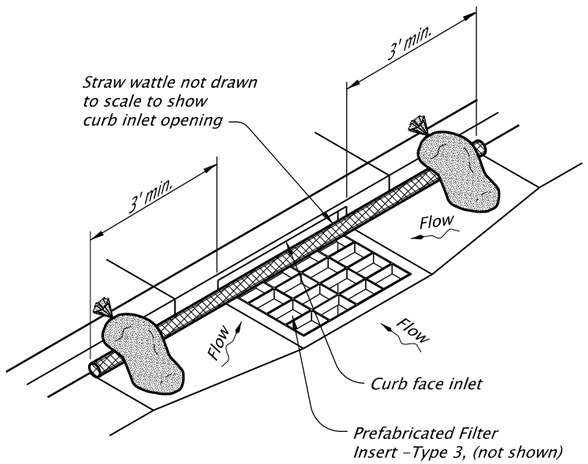


AREA DRAIN PERSPECTIVE VIEW



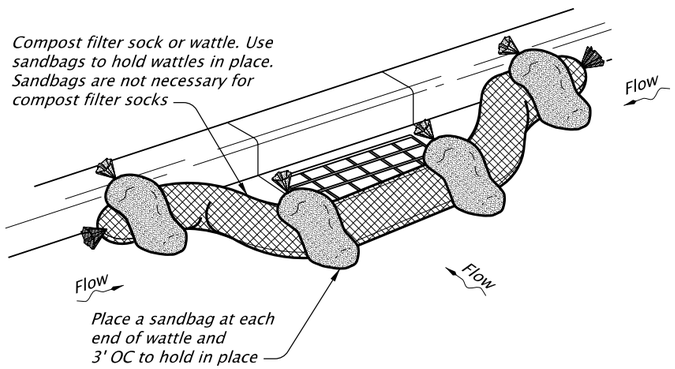
CURB INLET SEDIMENT DAM - TYPE 10

NOT TO SCALE



WATTLE BARRIER WITH FILTER INSERT - TYPE 11

NOT TO SCALE



CURB INLET PERSPECTIVE VIEW

COMPOST FILTER SOCK OR WATTLE - TYPE 7

NOT TO SCALE

NOTES:
Type 2 - Geotextile/wire mesh/aggregate
Place the wire mesh over the grate.
Place sediment fence geotextile over the wire mesh and perimeter area around structure.
Install aggregate over the geotextile fabric.

Type 3 - Prefabricated filter inserts
Install prefabricated filter inserts according to the plans, special provisions, and manufacturer recommendations.
Prefabricated inserts with provisions for overflow are allowed only when accompanied by additional BMP's to prevent the potential of sediments entering project storm systems.
Field fabricated inserts are not allowed.

Type 7 - Compost filter sock
Drive 2"x2" wood stakes a minimum of 6" into ground and flush with the top of the sock.
Overlap ends of sock per manufacturers recommendations (12"min., 36" max.).
Use 8" to 12" dia sock on curbside in traffic areas.
(Type 7 cont.)
Use 12" to 18" dia sock in non-traffic areas or areas where the larger socks can be used safely.
use synthetic mesh socks for temporary installations.

Type 10 - Curb inlet sediment dam
Fit curb inlet sediment dam snugly into inlet mouth. Curb inlet sediment dam is required for use with inlet filter insert where at-grade inlet grate and curb inlet are combined at a catch basin.

Type 11 - Wattle barrier with filter insert
Install prefabricated filter insert per Type 3 detail.
Install wattles over opening and 36" to each side of opening tight against curb. Adjust wattle to force storm water to flow through filter insert or wattle prior to leaving the site.
Adjust, replace or modify the inlet protection as needed to prevent sediment laden water from entering the catch basin.

CALC. BOOK NO. N/A

SDR DATE January, 2021

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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

OREGON STANDARD DRAWINGS

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

2021

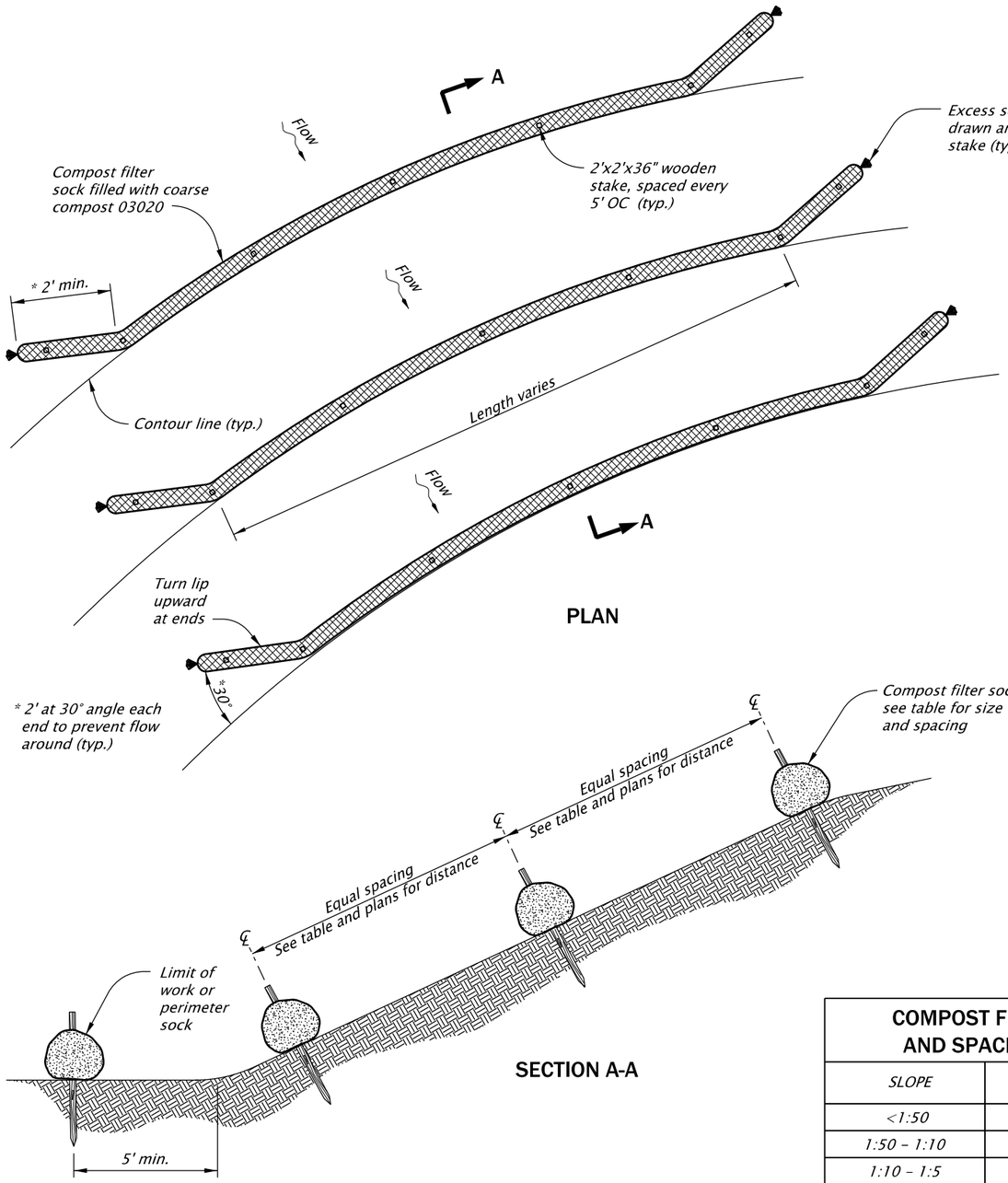
DATE	REVISION DESCRIPTION
Jan 2021	Removed Calc book numbers
Jan 2021	Moved notes up from overlapping the sheet border

rd1010.dgn 01-20-2021

RD1010

Effective Date: June 1, 2022 - November 30, 2022

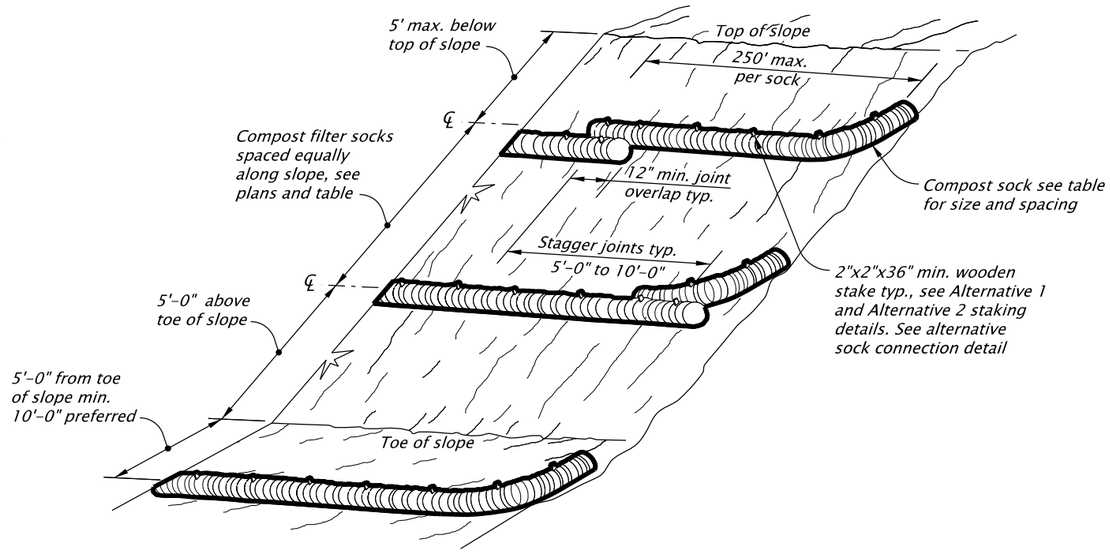
rd1032.dgn 01-20-2021



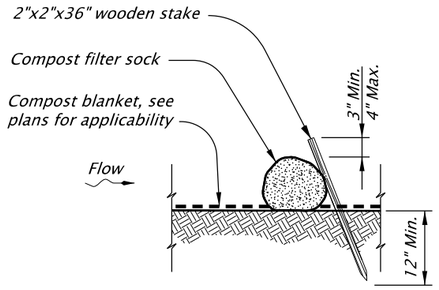
PLAN

SECTION A-A

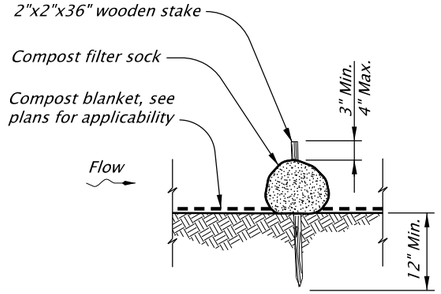
NOTE:
Fully biodegradable compost sock mesh is recommended for permanent installations. Where compost socks must be moved or removed, synthetic sock mesh should be used.



SLOPE APPLICATION - PERSPECTIVE VIEW



ALTERNATIVE 1 (Staking)



ALTERNATIVE 2 (Staking)

COMPOST FILTER SOCK DIAMETER AND SPACING BASED ON SLOPE		
SLOPE	*SPACING (ft)*	*DIAMETER (in)*
<1:50	*250*	*8*
1:50 - 1:10	*125*	*12*
1:10 - 1:5	*100*	*12*
1:5 - 1:2	*50*	*18*
>1:2	*25*	*18*

COMPOST FILTER SOCK

NOT TO SCALE

CALC. BOOK NO. N/A

SDR DATE January, 2021

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OREGON STANDARD DRAWINGS

SEDIMENT BARRIER TYPE 8

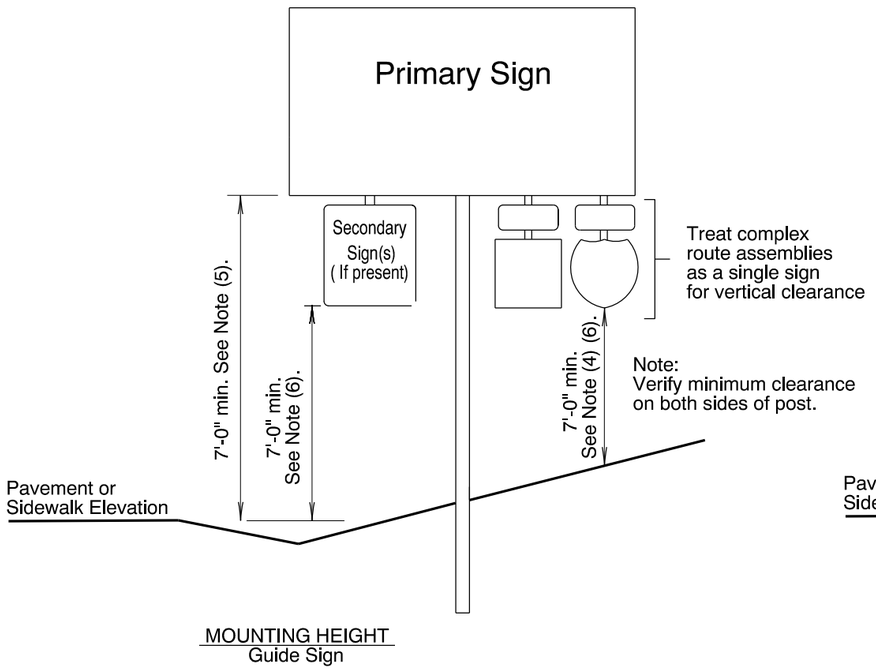
2021

DATE	REVISION DESCRIPTION
Jan 2021	Removed Calc book numbers

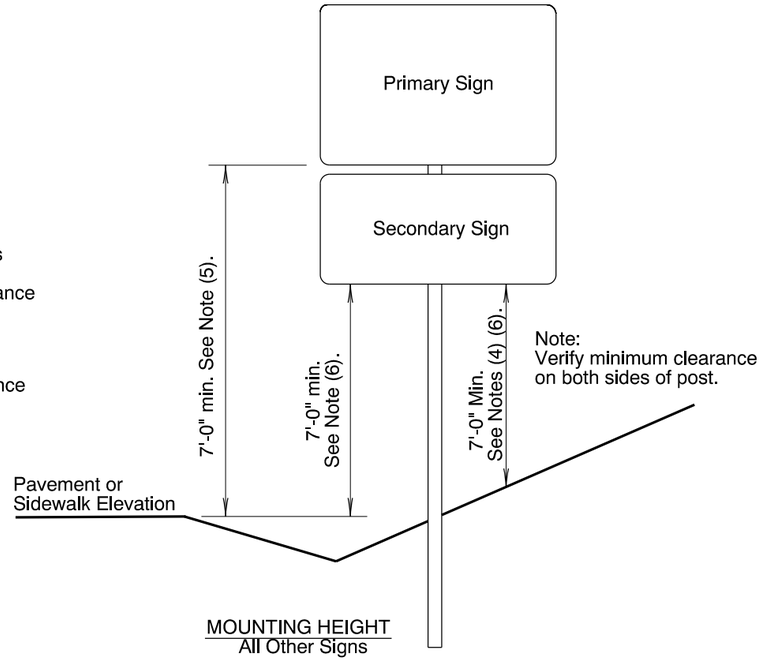
RD1032

Effective Date: June 1, 2022 - November 30, 2022

RD1032



MOUNTING HEIGHT
Guide Sign



MOUNTING HEIGHT
All Other Signs

General Installation Notes:

a. Signing details shown on this sheet are intended to convey "typical" conditions only. Individual locations may require installation different from those shown.
For guidance regarding unique installations or exceptions call the Project Sign Designer or Region Traffic Section.

b. Locate breakaway supports away from ditches to avoid problems with erosion, corrosion, debris, maintenance and breakaway performance. See Dwg. No. TM635 for more information.

c. For wood post support details see Dwg. No. TM670.

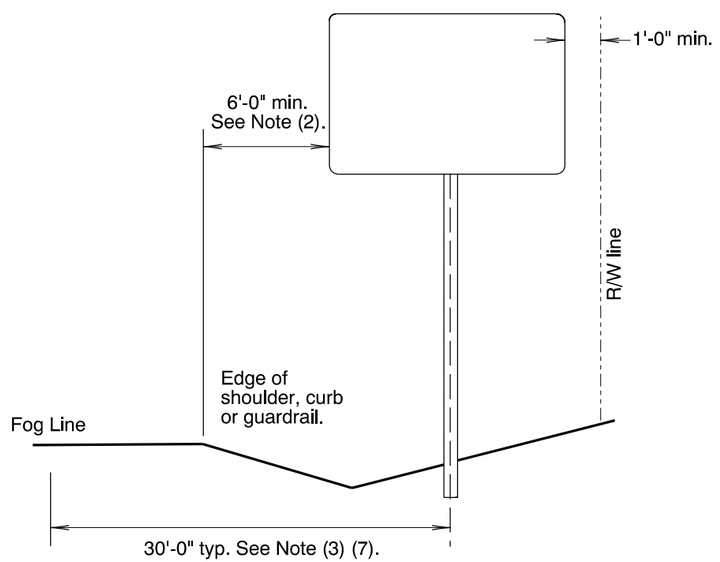
d. For perforated steelsquare tube support details see Dwg. No. TM681.

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

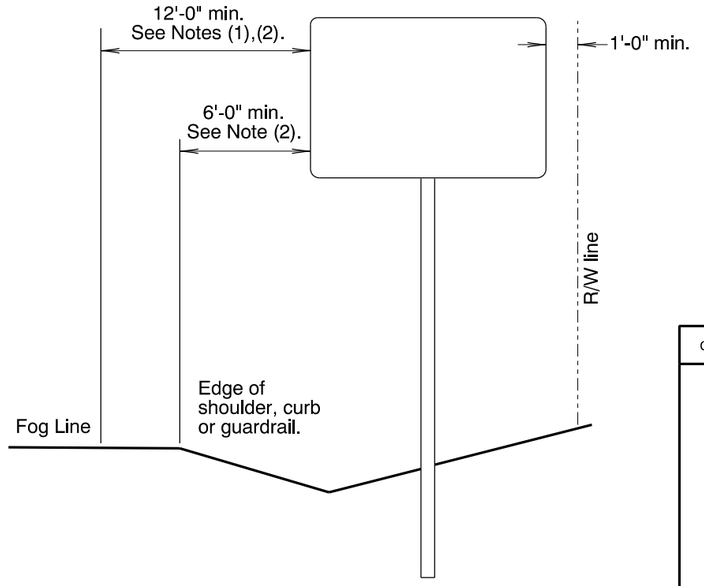
f. For multi-post breakaway support details see Dwg. No. TM600.

g. Mounting heights should not be more than 3 inches more than the minimum heights shown, where practical.

h. 2" vertical spacing between all signs.



LATERAL OFFSET
Guide Signs



LATERAL OFFSET
All Other Signs

Notes:

1). 6' minimum if behind barrier.

2). 2' minimum if restricted R/W.

3). 20' for ramp terminals.

4). 8' minimum if bicycle path underneath.

5). 8' minimum if secondary signs attached.

6). 5' minimum if outside clearzone, in rural areas and no pedestrians underneath.

7). For multi-post installations measure distance from post closest to roadway.

CALC. BOOK NO. N/A

SDR DATE 01/07/2022

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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

OREGON STANDARD DRAWINGS

SIGN INSTALLATION DETAILS

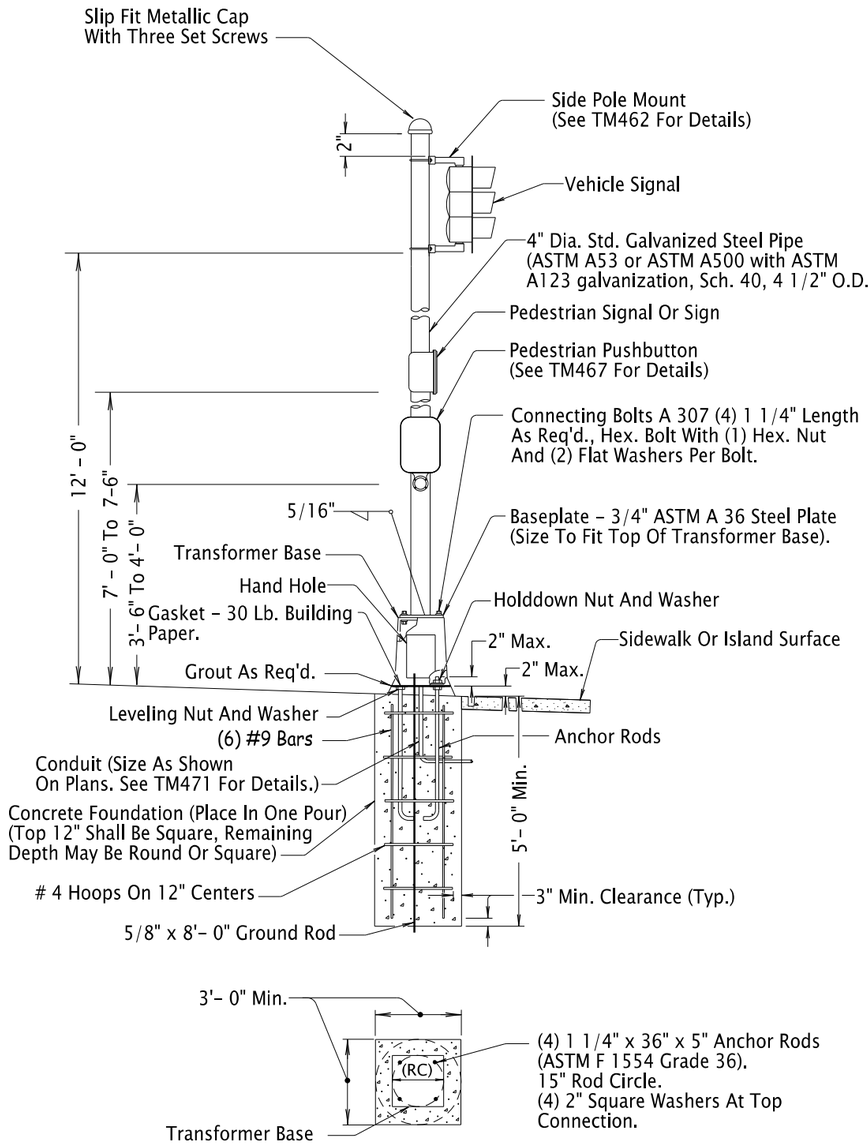
2021

DATE	REVISION DESCRIPTION
1/07/22	Edited elevation text in Mounting Height details

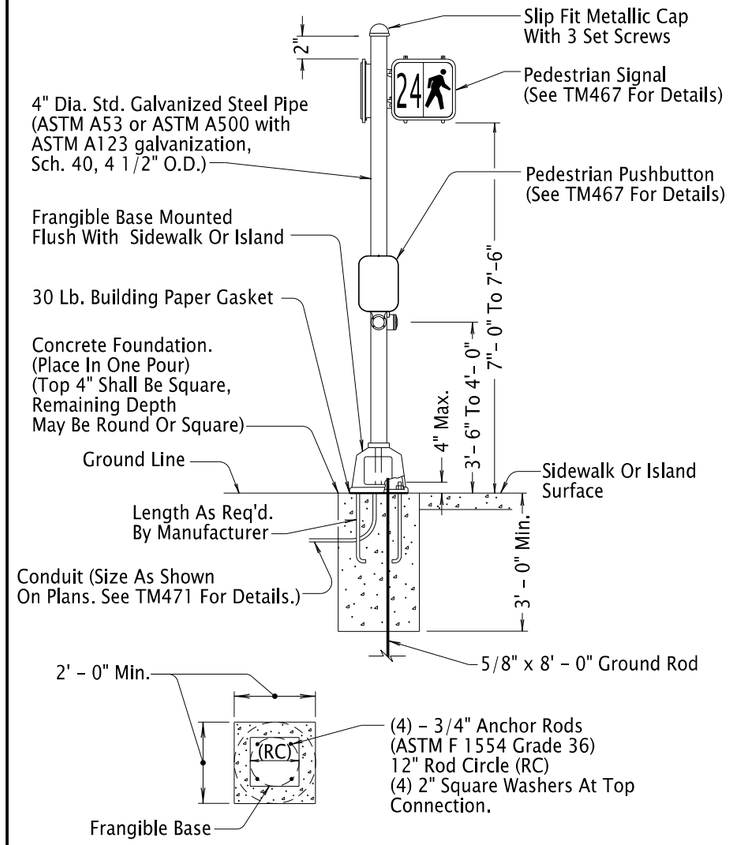
TM200.dgn 1-7-2022

TM200

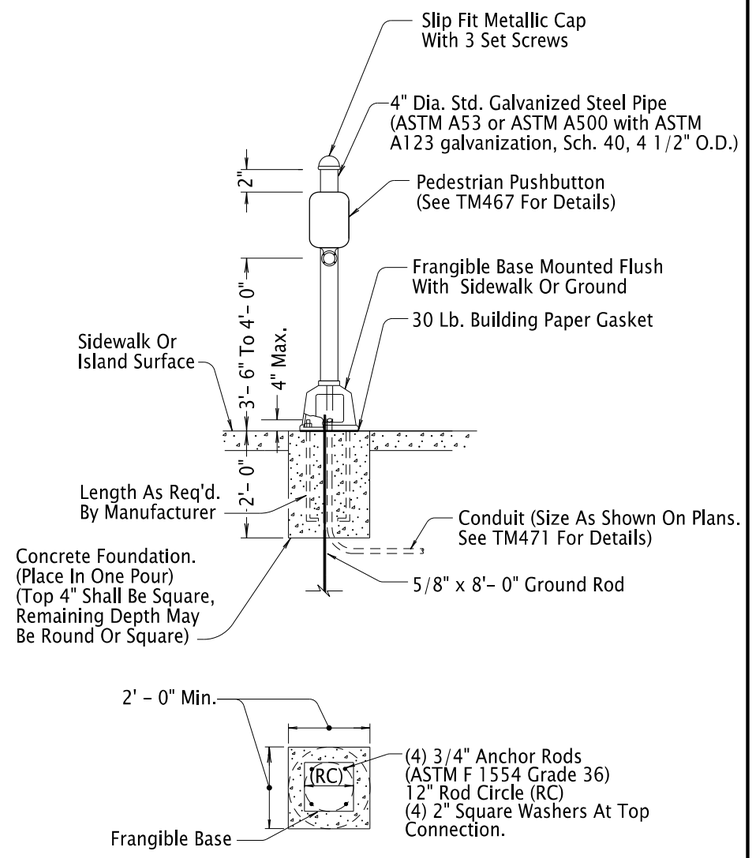
Effective Date: June 1, 2022 - November 30, 2022



VEHICLE SIGNAL PEDESTAL



PEDESTRIAN SIGNAL PEDESTAL



PEDESTRIAN OR BICYCLE PUSHBUTTON POST

General Notes:

1. All Bolts, Nuts And Washers Shall Conform To 02560.20 And Be Galvanized Steel According To 02560.40 Unless Noted Otherwise.
2. All Anchor Rods Shall Be Galvanized Steel Conforming To 02560.30.
3. All Pole Entrances Containing Wiring Shall Be Smooth.
4. Install 1/4" Thick Preformed Expansion Joint Filler Around Footing In Sidewalk Area As Per TM653.
5. Top Of Foundation Shall Not Be Below Finish Grade, Island Surface, Or Sidewalk. Top Of Foundation Shall Have Less Than 1/4 " Vertical Exposure Above Finish Grade, Island Surface, Or Sidewalk.
6. Flat Side Of Foundation Should Line Up With Back Of Sidewalk.

CALC. BOOK NO. N/A

SDR REPORT DATE 4-Jan-2021

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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

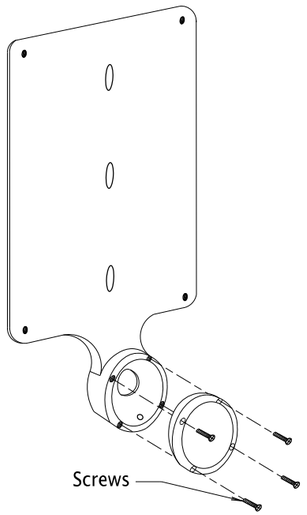
OREGON STANDARD DRAWINGS

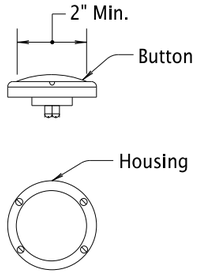
VEHICLE, PEDESTRIAN SIGNAL AND PUSHBUTTON MOUNTING OPTION DETAILS

2021

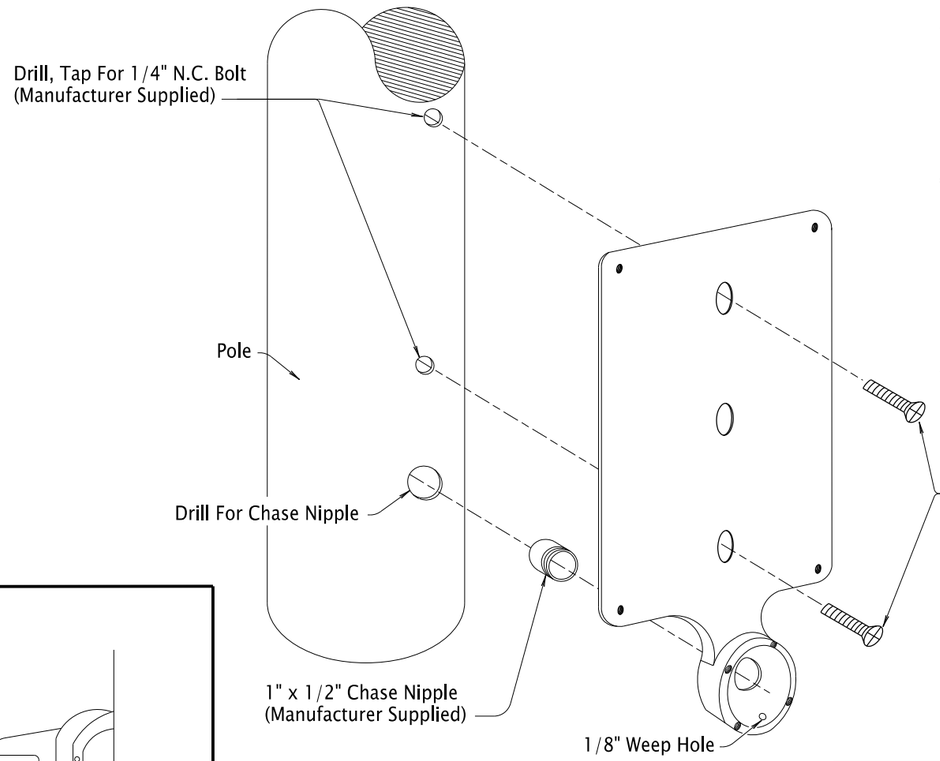
DATE	REVISION DESCRIPTION
01/21	Updated All Anchor Rod Details. Corrected Std. Dwg. Reference

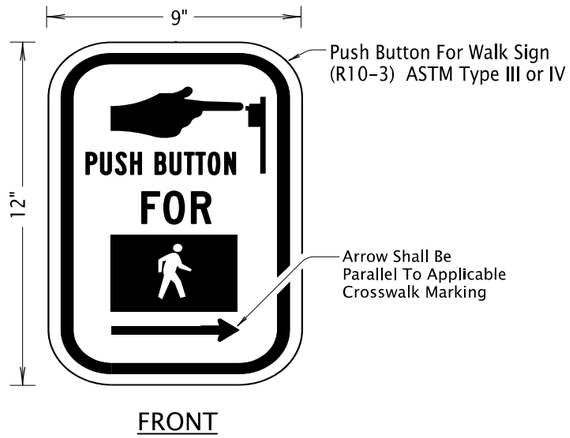
TM457





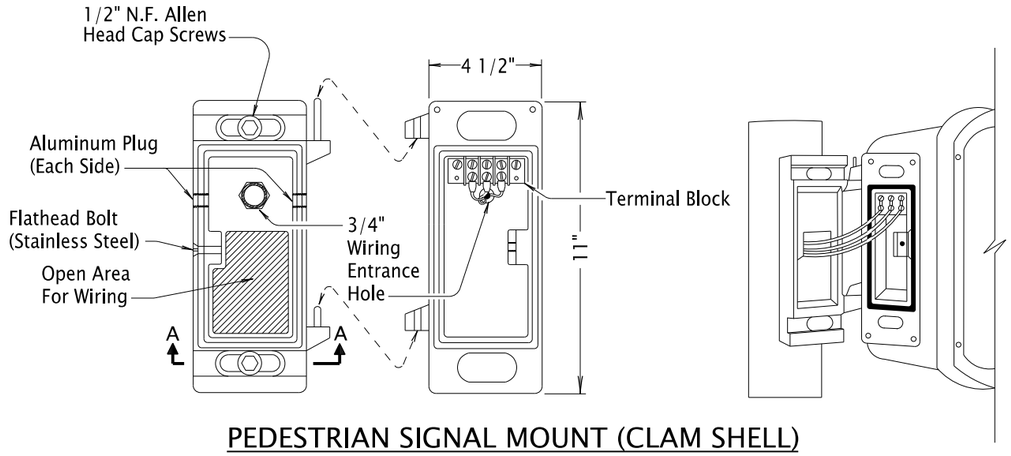
STANDARD PUSHBUTTON





FRONT

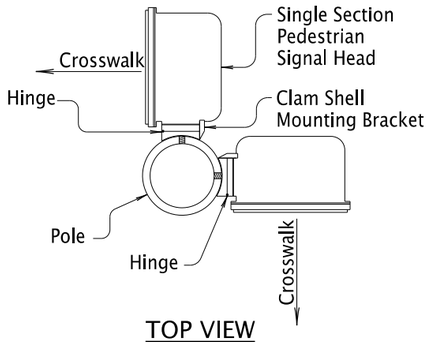
STANDARD PUSHBUTTON STATION AND INSTRUCTION SIGN



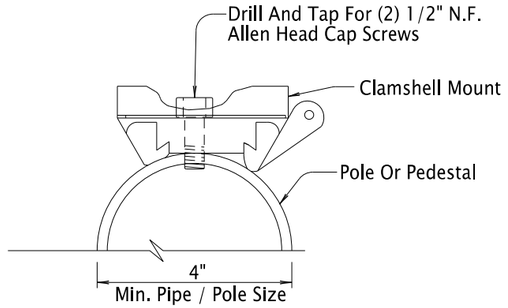
PEDESTRIAN SIGNAL MOUNT (CLAM SHELL)

NOTES:

1. Where Two Heads Are Side Mounted On 4" Conduit, Proper Clearance Shall Be Maintained To Allow Legend To Be Fully Visible.
2. Clam Shells To Be Orientated So That The Heads Can Be Opened For Maintenance. (Verify Hinge Placement Of Clamshell).



TOP VIEW



SECTION A-A

CLAM SHELL ORIENTATION

General Notes:

1. All Screws, Bolts, Nuts And Washers Shall Be Type 304 Or 316 Stainless Steel Unless Noted Otherwise.
2. Bolts And Screws Shall Have Square Or Hex Heads. Allen Head Fasteners Not Allowed.
3. Drill And Tap Pole As Per Orientation Shown On Plans.
4. Horizontal Reach To The Pushbutton Shall Be 10 Inches Maximum. See Plans Or Consult Engineer To Ensure Compliance.

CALC. BOOK NO. N/A

SDR REPORT DATE 2-Jul-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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

OREGON STANDARD DRAWINGS

PEDESTRIAN SIGNAL MOUNT AND PEDESTRIAN PUSHBUTTON DETAILS

2021

DATE	REVISION DESCRIPTION

TM467

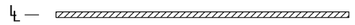
W

4" WHITE LINE

W-2

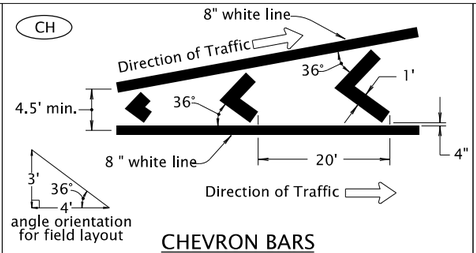
8" WHITE LINE

Y



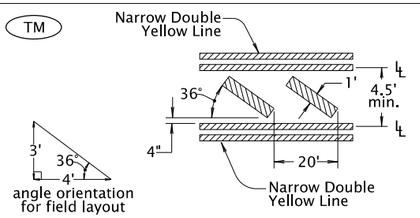
4" YELLOW LINE

CH



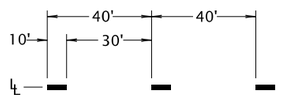
CHEVRON BARS
1' WHITE BARS AT 20' SPACING

TM



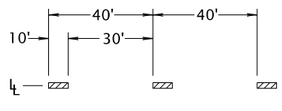
TRANSVERSE MEDIAN BARS
1' YELLOW BARS AT 20' SPACING

WB



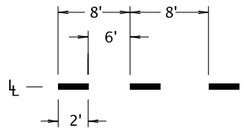
4" WHITE BROKEN LINE

YB



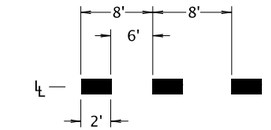
4" YELLOW BROKEN LINE

WD



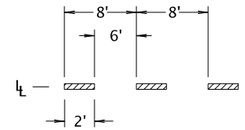
4" WHITE DOTTED LINE
For lane extensions

WD-2



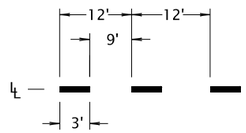
8" WHITE DOTTED LINE
For lane extensions and bike lane extensions

YD



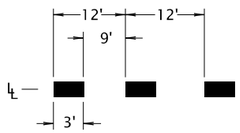
4" YELLOW DOTTED LINE
For lane extensions

DLL



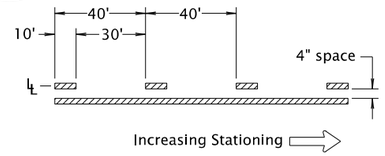
4" WHITE DOTTED LANE LINE
For lane lines in acceleration/deceleration lanes

DLL-2



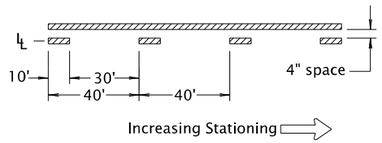
8" WHITE DOTTED LANE LINE
For lane lines in drop lanes

NPR



NO-PASS RIGHT
4" YELLOW LINES

NPL

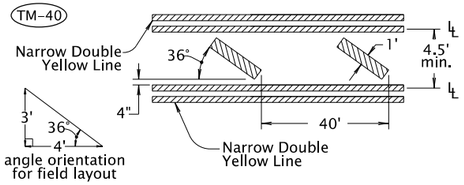


NO-PASS LEFT
4" YELLOW LINES

TWL

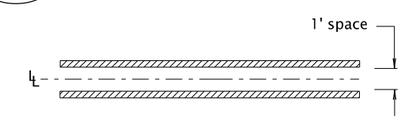
TWO-WAY LEFT TURN
4" YELLOW LINES

TM-40



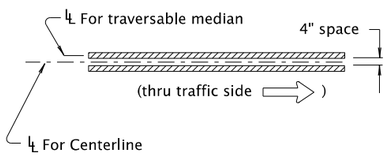
TRANSVERSE MEDIAN BARS
1' YELLOW BARS AT 40' SPACING
For use at painted medians where distance between left turn refuges exceeds 200'

D



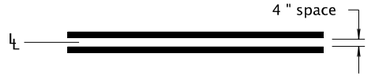
DOUBLE NO-PASS
TWO 4" YELLOW LINES

ND



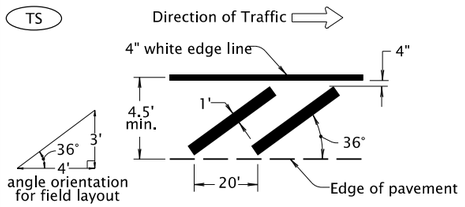
NARROW DOUBLE NO-PASS
TWO 4" YELLOW LINES

NDW



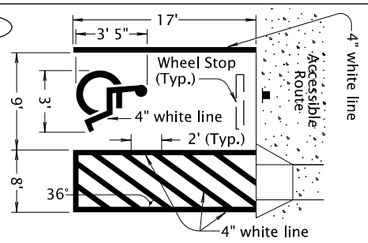
NARROW DOUBLE NO-LANE CHANGE
TWO 4" WHITE LINES

TS



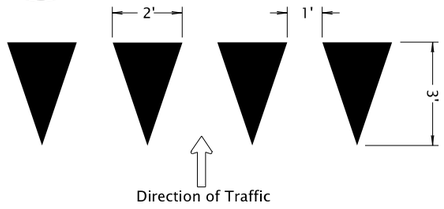
TRANSVERSE SHOULDER BARS
1' WHITE BARS AT 20' SPACING

HC



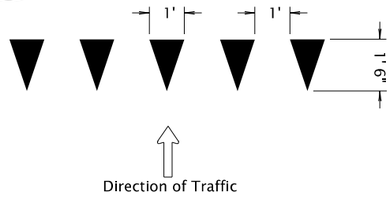
DISABLED PARKING DETAIL (white)

YLD



YIELD LINE (white)

BYLD



BICYCLE YIELD LINE (white)

LEGEND

Direction Of Traffic, Increasing Stationing Or Thru Traffic Side

℄ — Lane line dimensions are shown on the striping plans

CALC. BOOK NO. N/A

SDR DATE 07/01/2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications.

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

OREGON STANDARD DRAWINGS

PAVEMENT MARKING STANDARD DETAIL BLOCKS

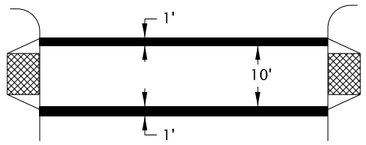
2021

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

TM500

Effective Date: June 01, 2022 - November 30, 2022

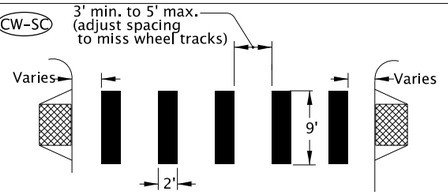
CW



STANDARD CROSSWALK
TWO 1' WHITE BARS

Install per Standard Drawing TM530

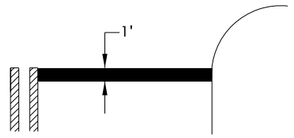
CW-SC



STAGGERED CONTINENTAL CROSSWALK
2' WHITE BARS

Install per Standard Drawing TM530

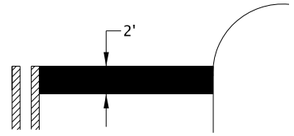
S



STOP BAR
1' WHITE BAR

Install per Standard Drawing TM530

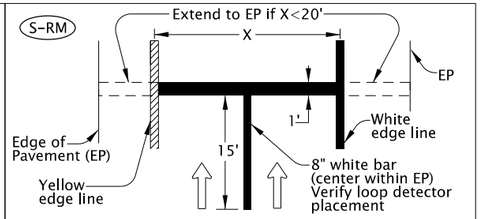
S-2



STOP BAR - LARGE
2' WHITE BAR

Install per Standard Drawing TM530

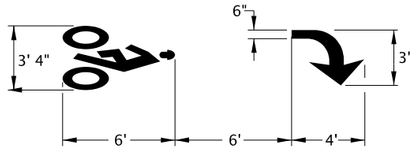
S-RM



RAMP METER STOP BAR
1' & 8" WHITE BARS

For multi-lane ramp meter applications

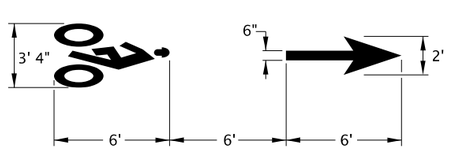
BR



BIKE RIGHT TURN STENCIL (white)

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

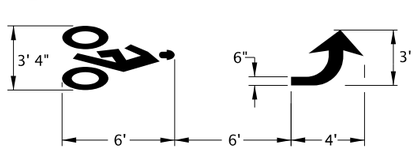
BS



BIKE LANE STANDARD STENCIL (white)

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

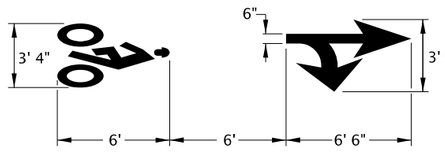
BL



BIKE LEFT TURN STENCIL (white)

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

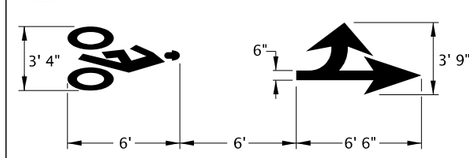
BRS



BIKE RIGHT TURN STRAIGHT STENCIL (white)

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

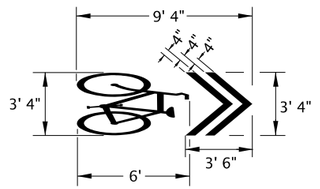
BLS



BIKE LEFT TURN STRAIGHT STENCIL (white)

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

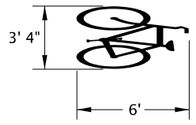
SLM



SHARED LANE MARKING (white)

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

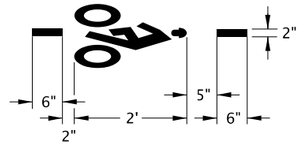
B



BIKE STENCIL (white)

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

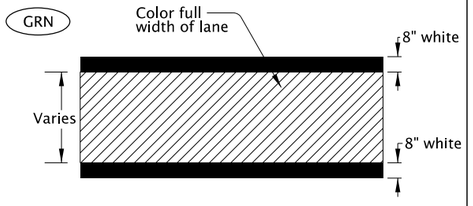
BD



BICYCLE DETECTOR MARKING (white)

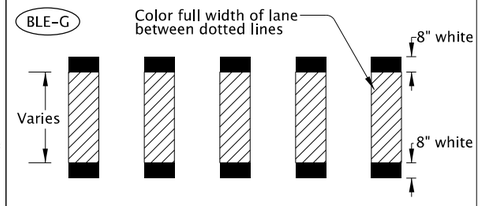
PLace Bicycle Detector Pavement Marking in optimum loction
where bicycle acuates the traffic signal

GRN



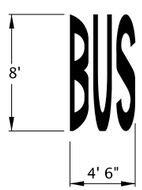
GREEN SUPPLEMENTAL BICYCLE LANE
SOLID LINE (green)

BLE-G



GREEN SUPPLEMENTAL BICYCLE LANE
DOTTED LINE EXTENSION (green)

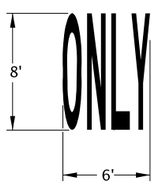
BUS



BUS (white)

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

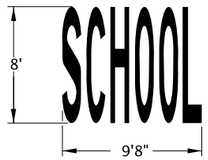
ON



ONLY (white)

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

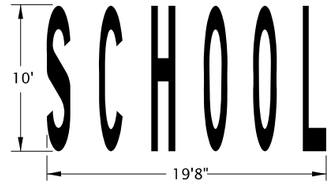
SCH



SCHOOL (white)

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

SCH-LG



SCHOOL - LARGE (white)

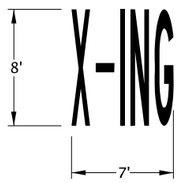
Center marking within width of two lanes
For letter proportion details, see current version of Standard Highway Signs

CRS-LG

CROSSING - LARGE (white)

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

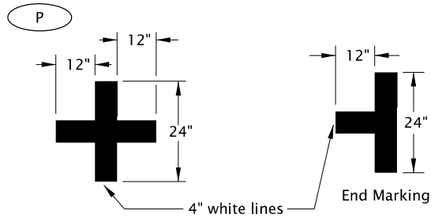
XNG



X-ING (white)

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

P



ON-STREET PARKING DETAIL (white)

General Note:

1. Arrow, letter, and bike symbol dimensions nominal.

LEGEND

Direction of Travel

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

CALC. BOOK NO. N/A

SDR DATE 01/03/2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications.

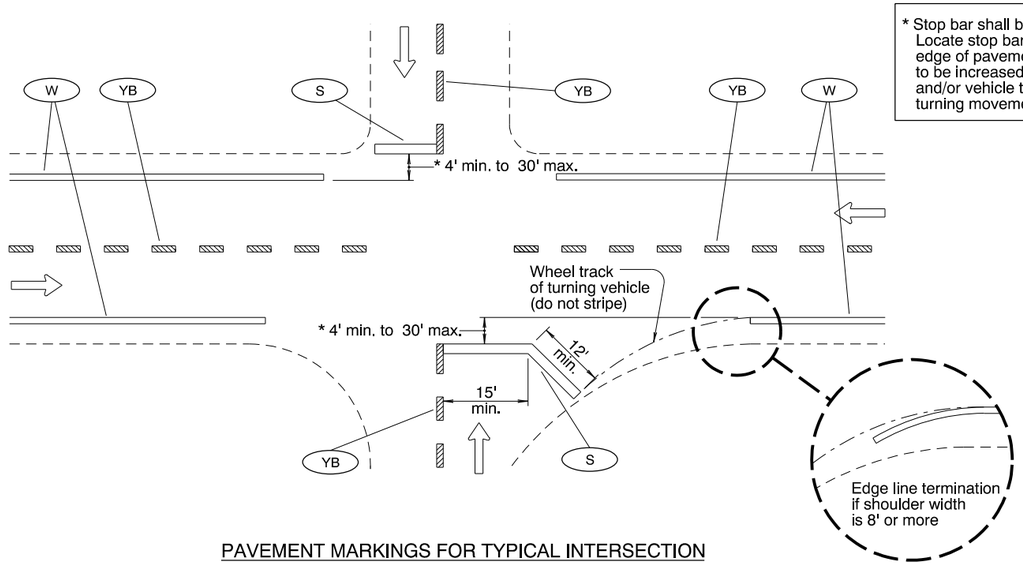
OREGON STANDARD DRAWINGS

PAVEMENT MARKING STANDARD DETAIL BLOCKS

2021

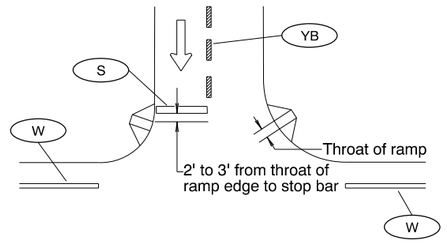
DATE	REVISION DESCRIPTION

TM503

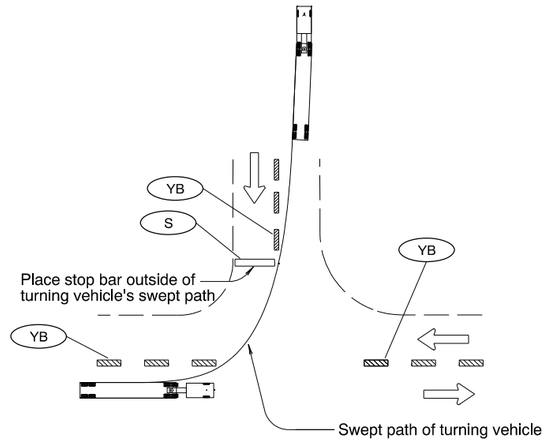


PAVEMENT MARKINGS FOR TYPICAL INTERSECTION

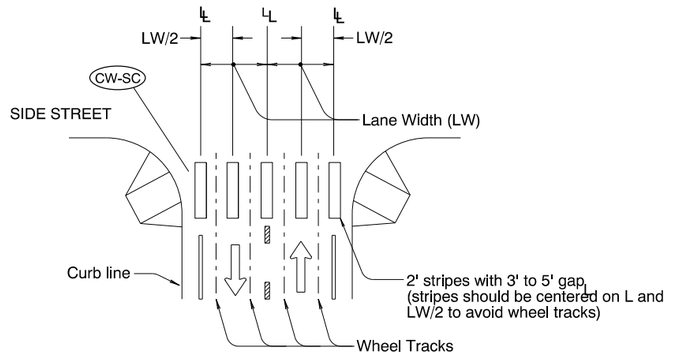
* Stop bar shall be placed as near as possible to the intersecting traveled way. Locate stop bar 4' min. to 30' max. in advance of the extended fog line, edge of pavement, or curb face. Minimum stop bar distance may need to be increased, depending on location of pedestrian ramps (see Detail "A") and/or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



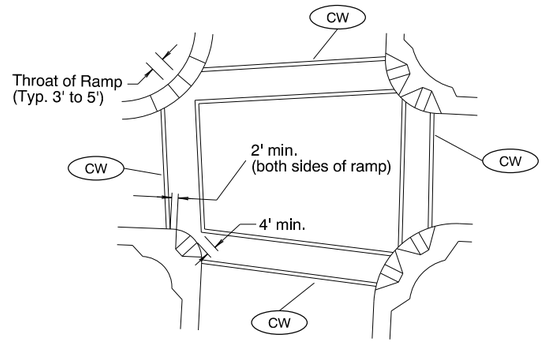
Detail "A"
STOP BAR PLACEMENT WITH
RESPECT TO PEDESTRIAN RAMPS



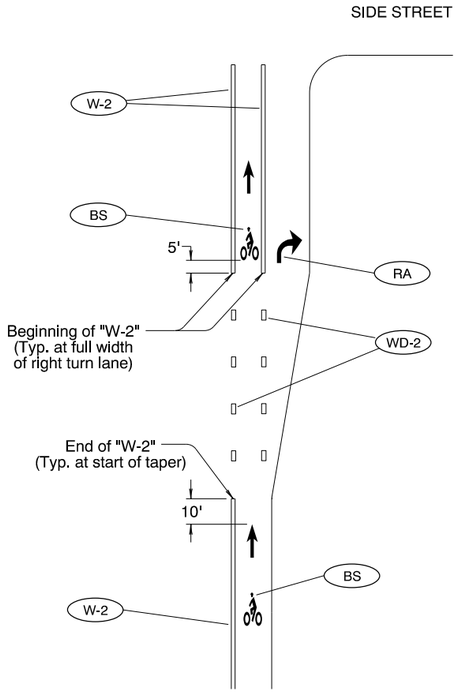
Detail "B"
STOP BAR PLACEMENT WITH
RESPECT TO TURN RADII



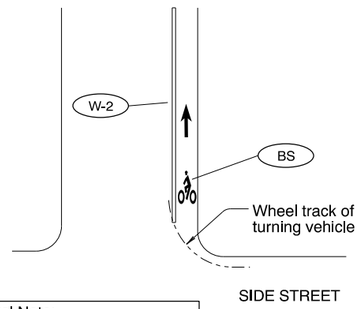
STAGGERED CONTINENTAL LAYOUT



STANDARD CROSSWALK BARS
AT INTERSECTION



INSTALLATION OF BIKE LANE STENCILS
FOR BIKE LANE SEPARATED BY RIGHT TURN LANE



General Note:

Install bike lane stencil to avoid right turning vehicle wheel tracks.

INSTALLATION OF BIKE LANE STENCILS
FOLLOWING INTERSECTIONS

General Note:

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

LEGEND

⇦ Direction of Travel

L - Lane line dimensions are shown on the striping plans

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

CALC. BOOK NO. N/A

SDR DATE July 10, 2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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

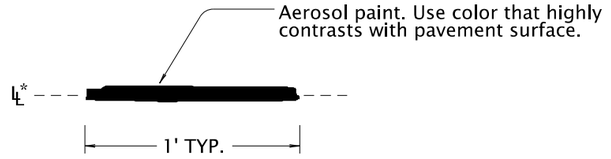
OREGON STANDARD DRAWINGS

INTERSECTION PAVEMENT MARKINGS (CROSSWALK, STOP BAR & BIKE LANE STENCIL)

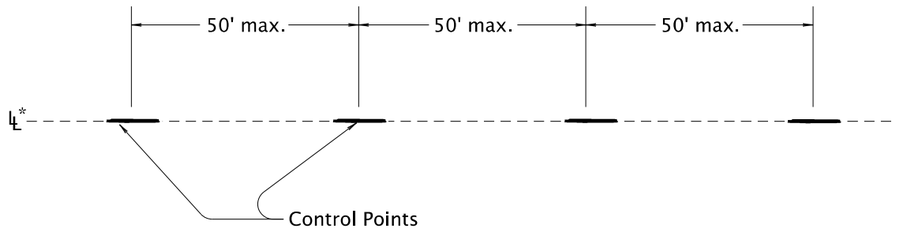
2021

DATE	REVISION DESCRIPTION

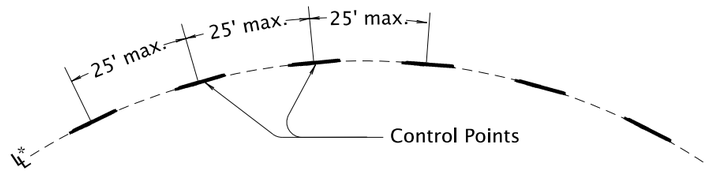
Effective Date: June 1, 2022 - November 30, 2022



CONTROL POINT



CONTROL POINT LAYOUT - TANGENT SECTIONS



CONTROL POINT LAYOUT - CURVE SECTIONS

General note:

1.) Use control points to make continous narrow guideline as specified.

* Control points are placed along the lane line for all longitudinal lines except the following:

ND For center lines only	A control point layout 4" offset from the lane line is required for a ND line when used as a center line.

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

LEGEND

℄ — Lane line dimensions are shown on the striping plans.

CALC. BOOK NO. N/A

SDR DATE 07/01/2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications.

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

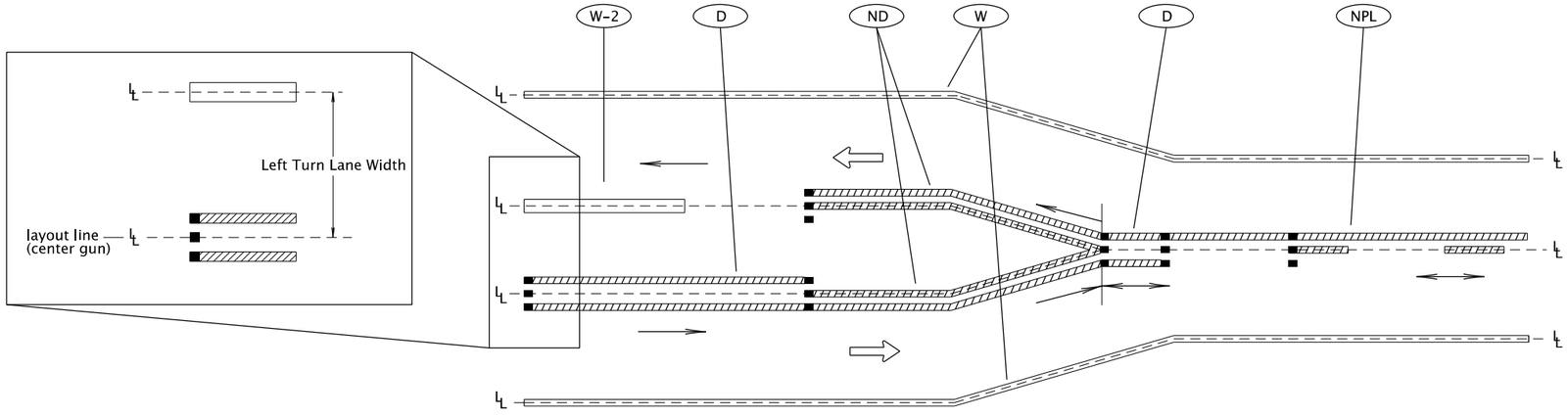
OREGON STANDARD DRAWINGS

ALIGNMENT LAYOUT: GENERAL

2021

DATE	REVISION DESCRIPTION
07/2020	Extended accompanied by drawings to include TM504

TM560



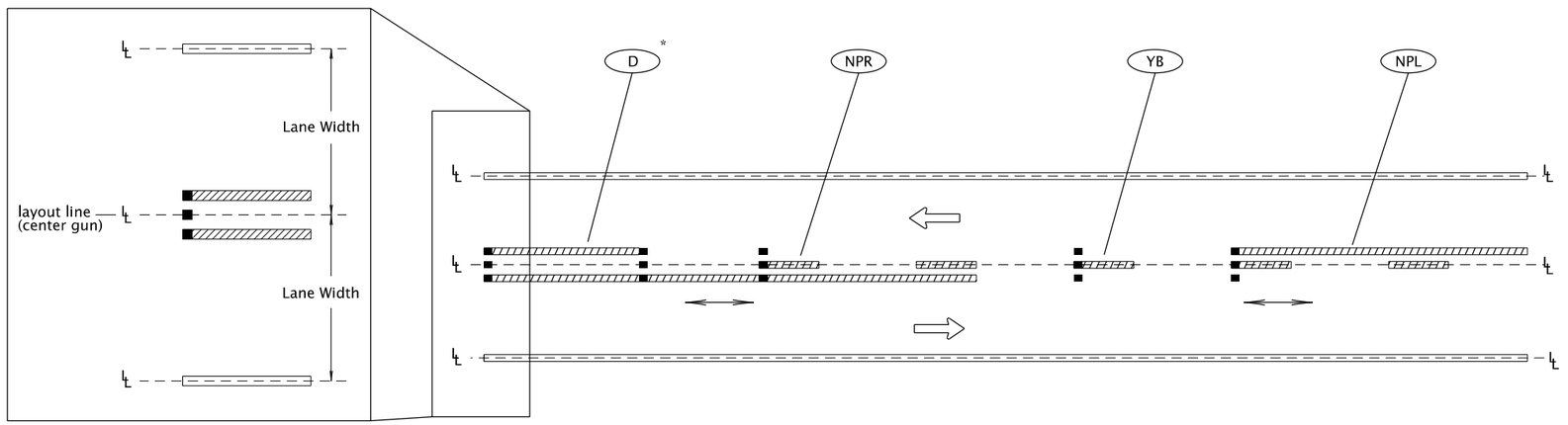
LEFT TURN LANE ALIGNMENT LAYOUT

General note:

1) Install control points for pavement marking alignment layout along the center gun location.
2) Increasing stationing from left to right

LEGEND

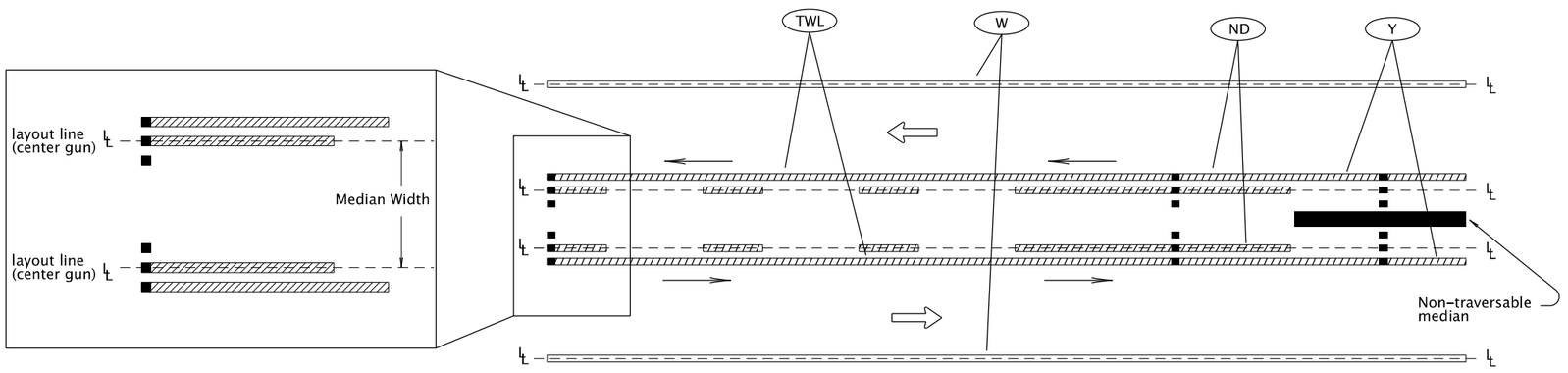
- Direction Of Travel and Thru Traffic Side.
- Lane line dimensions are shown on the striping plans.
- Direction of striping truck (may go either direction)
- Direction of striping truck (may go one direction only)
- Three gun installation system (center dot represents center gun)



CENTERLINE ALIGNMENT LAYOUT

*When ND is used as centerline markings, a control point layout 4" offset from the lane line is required.

4" Offset of Lane Line and Center Gun



MEDIAN ALIGNMENT LAYOUT

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

CALC. BOOK NO. N/A

SDR DATE 07/01/2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications.

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

OREGON STANDARD DRAWINGS

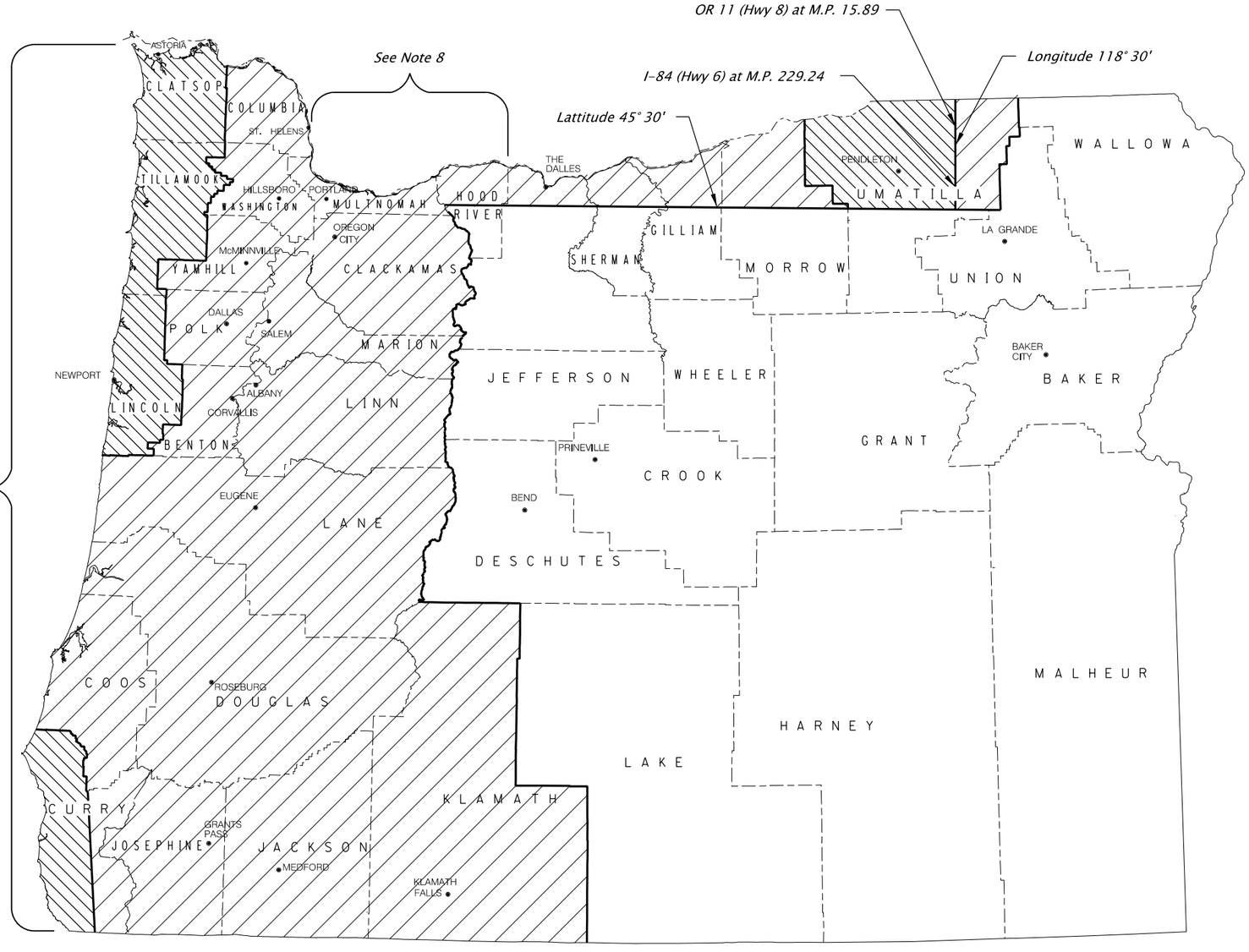
ALIGNMENT LAYOUT: LEFT TURN LANE, CENTERLINE & MEDIANS

2021

DATE	REVISION DESCRIPTION
07/2020	*Extended accompanied by drawings to include TM504*

TM561

Effective Date: June 01, 2022 - November 30, 2022



NOTES:

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

CALC. BOOK NO. _____

SDR DATE 06-JAN-2012

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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

OREGON STANDARD DRAWINGS

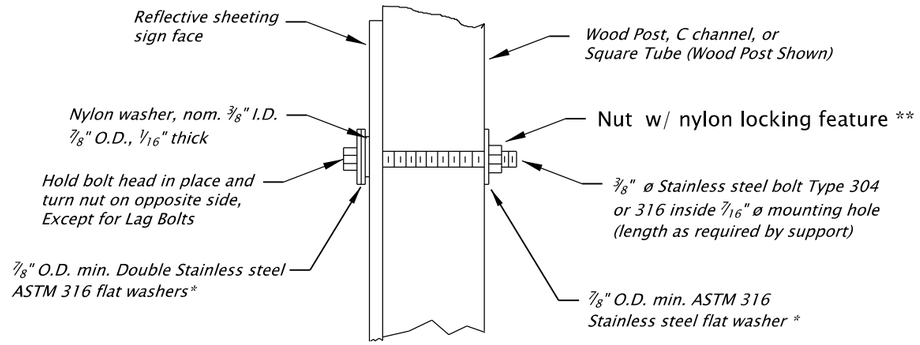
3 SECOND GUST WIND SPEED MAP

2021

DATE	REVISION DESCRIPTION

TM671.dgn 10-JUL-2020

TM671

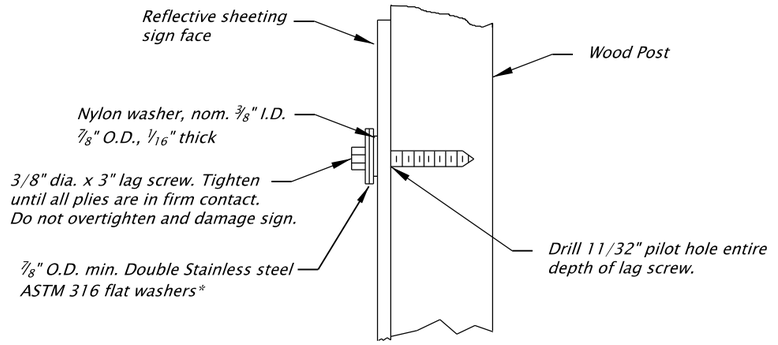


Note:
1)When signs are placed on opposing sides of post, 3/8" x 3" lag screws can be used instead of through bolt.
2) Use nylon and stainless steel washers when signs are placed on both sides of post.
3) Burr threads at junction with nut when locknuts are not used.
4) Post bolts to extend beyond the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

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

*** Acceptable substitute for nylon locking nuts:*
ANCO PIN-LOC
TRI-LOC® Top Lock Locknut

SIGN ATTACHMENT DETAIL



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

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

OPTIONAL WOOD POST LAG SCREW DETAIL

CALC. BOOK NO. _____

SDR DATE 10-JUL-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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

OREGON STANDARD DRAWINGS

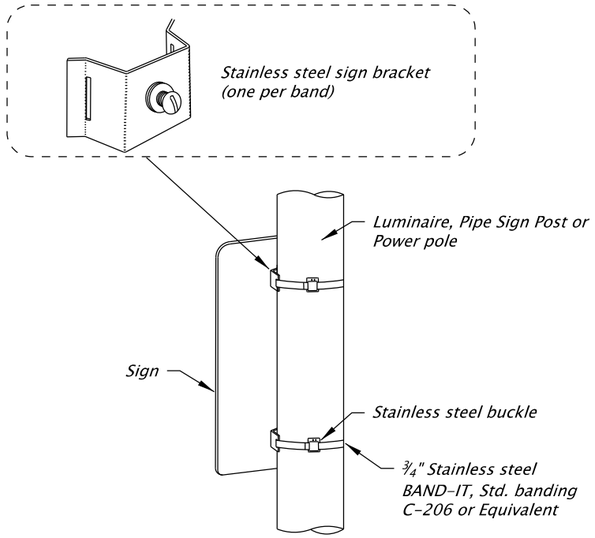
SIGN ATTACHMENTS

2021

DATE	REVISION DESCRIPTION
07/20	Added optional lag screw detail.

tm676.dgn 10-JUL-2020

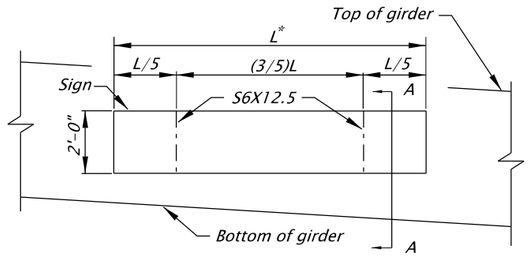
TM676



Signs mounted to vertical posts that use stainless steel clamps shall not be wider than 36". Use 2 clamps for all signs less than 48" in height and 3 clamps for signs 48" to 60" in height.

STAINLESS STEEL CLAMP (SSC) DETAIL

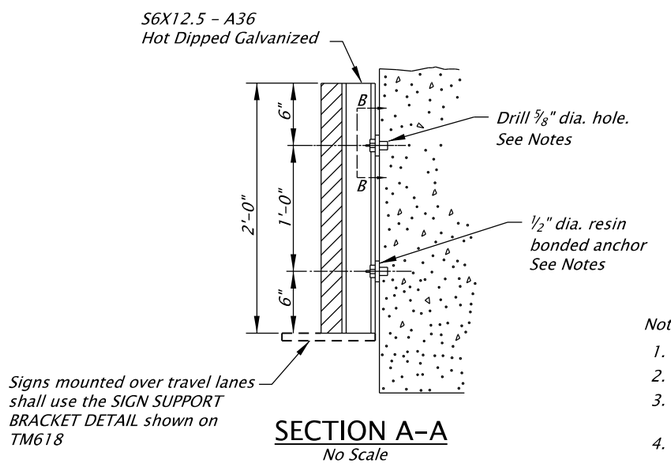
No Scale



** - L maximum is 14'-0".*

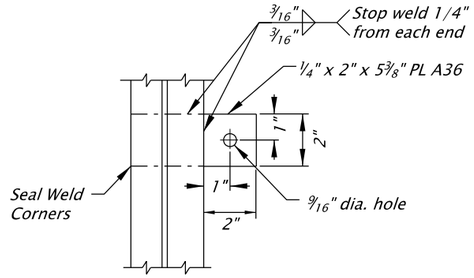
SIGN ELEVATION

No Scale



SECTION A-A

No Scale



SECTION B-B

No Scale

Notes:

1. *Install resin bonded anchors according to Section 00535.*
2. *Resin bonded anchors shall conform to ASTM A307.*
3. *The hole depths shall develop the pullout strength specified in Table 00535-1.*
4. *Tighten 1/2" dia. anchors using 16 ft-lb of torque for waxed galvanized and 40 ft-lb of torque for galvanized only connections.*

ROAD NAME SIGN STRUCTURE MOUNT DETAIL

GENERAL NOTES

1. *For Secondary Sign Mounts See TM678.*

CALC. BOOK NO. _____

SDR DATE 06-JUL-2015

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

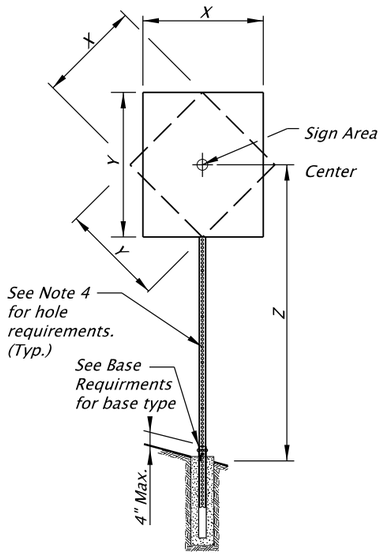
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

SIGN MOUNTS

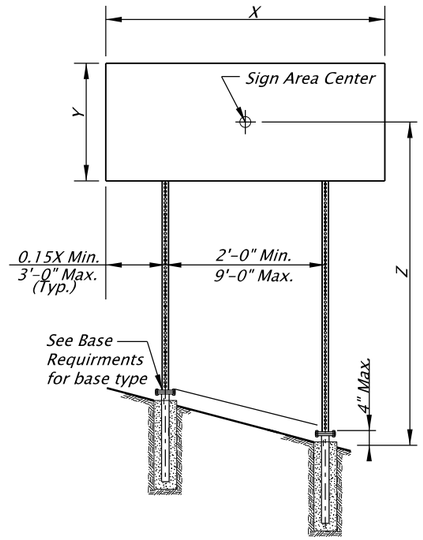
2021

DATE	REVISION DESCRIPTION



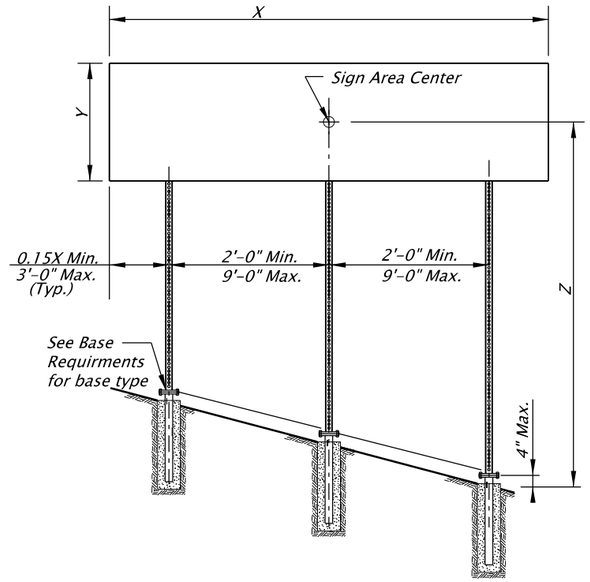
SINGLE POST ELEVATION

No scale



TWO POST ELEVATION

No scale



THREE POST ELEVATION

No scale

GENERAL NOTES:

1. Perforated Steel Square Supports are designed in accordance with the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals 4th Edition, 2001, 2002, 2003, and 2006 interim revisions.
2. The design basic wind speed (3 second gust) shall be according to the wind map shown on TM671.
3. Material grade for base hardware connection shall be according to the manufacturer's recommendation and based on crash testing.
4. Use $^{7}/_{16}$" diameter holes at 1" spacing on each of the 4 sides.
5. Steel post shall have a minimum yield stress of 50 ksi.
6. Steel shall be galvanized according to ASTM A653 with coating designation G90.
7. General design parameters are Kz = 0.87, Cd (sign) = 1.20, and G = 1.14.
8. Permanent signing uses an Ir = 0.71 for a recurrence interval of 10 years.
9. Temporary signing uses an Ir = 0.45 for a recurrence interval of 1.5 years.
10. The sign width to sign height or sign height to sign width ratio shall not exceed 5.0.
11. For horizontal and vertical clearances of permanent signs refer to TM200 and of temporary signs refer to TM822.
12. Posts protected by barrier or guardrail do not require slip bases.

(X * Y * Z) in ft³ - Maximum									
3 Second Gust Wind Speed (TM671)									
	85 MPH			95 MPH			105 or 110 MPH		
	Number of Posts			Number of Posts			Number of Posts		
Square Tube Size	1	2	3	1	2	3	1	2	3
2"-12 ga.	79	158	237	63	126	189	57	114	171
2½"-12 ga.	136	272	408	109	218	327	98	196	294
2½"-10 ga.	165	330	495	132	264	396	119	238	357
2¼" & 2½"-12 *ga.	231	462	693	185	370	555	167	334	501

PERMANENT PERFORATED STEEL SQUARE TUBE TABLE

(X * Y * Z) in ft³ - Maximum									
3 Second Gust Wind Speed (TM671)									
	85 MPH			95 MPH			105 or 110 MPH		
	Number of Posts			Number of Posts			Number of Posts		
Square Tube Size	1	2	3	1	2	3	1	2	3
2"-12 ga.	125	250	375	100	200	300	90	180	270
2½"-12 ga.	215	430	645	172	344	516	155	310	465
2½"-10 ga.	261	522	783	209	418	627	189	378	567
2¼" & 2½"-12 *ga.	364	728	1092	292	584	876	263	526	789

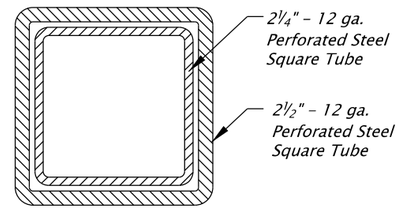
TEMPORARY PERFORATED STEEL SQUARE TUBE TABLE

* - See 2¼" & 2½" - 12 ga. detail.

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

1. Anchor - See Drawing TM687 for PSST anchor foundation details.
2. Slip - See Drawing TM688 for PSST slip base foundation details.
3. N/A - Do not use this option.

BASE REQUIREMENTS



2¼" - 12 ga. PSST to extend entire length inside of the 2½" - 12 ga. PSST.

2¼" & 2½" - 12 GA. DETAIL

No scale

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

CALC. BOOK NO. 5752

SDR DATE 10-JUL-2017

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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

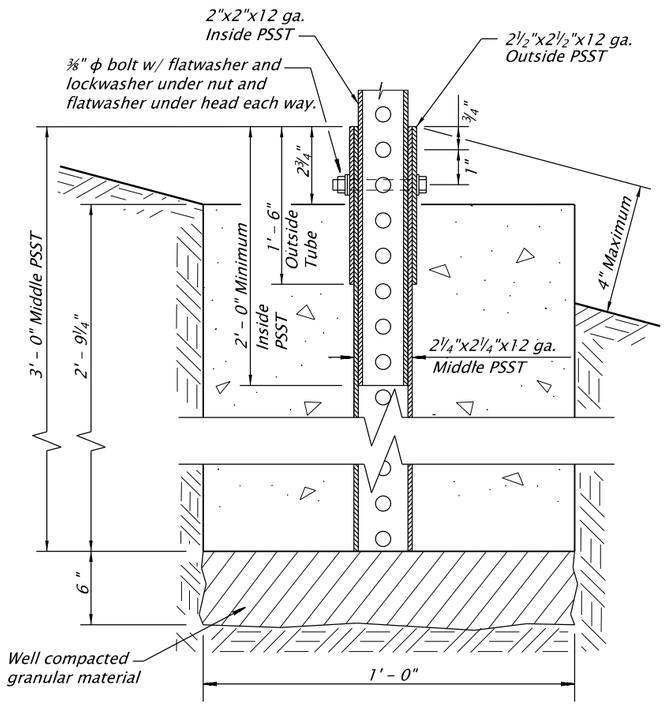
OREGON STANDARD DRAWINGS

PERFORATED STEEL SQUARE TUBE (PSST) SIGN SUPPORT INSTALLATION

2021

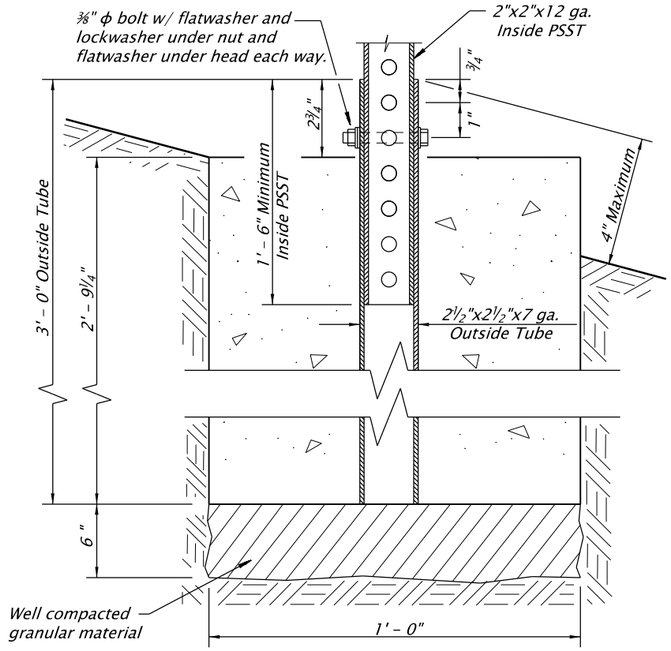
DATE	REVISION DESCRIPTION

TM681



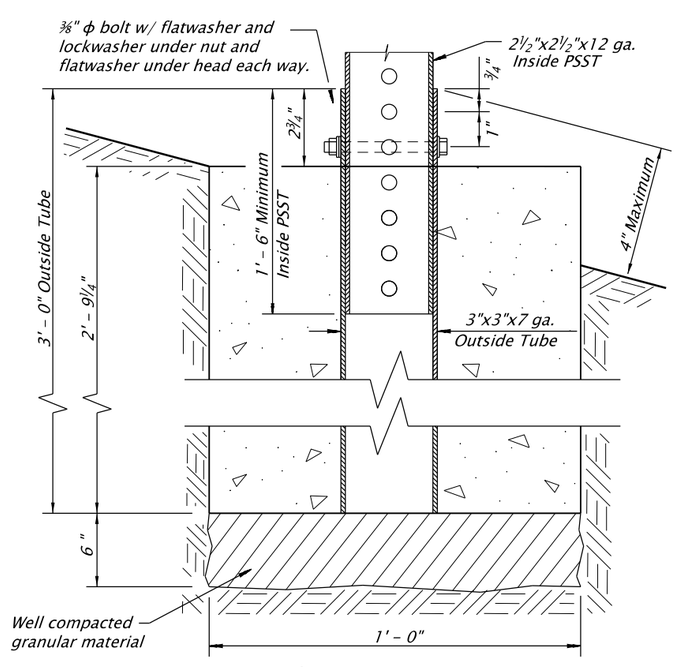
2" ANCHOR DETAIL

No scale



2" OPTIONAL ANCHOR DETAIL

No scale

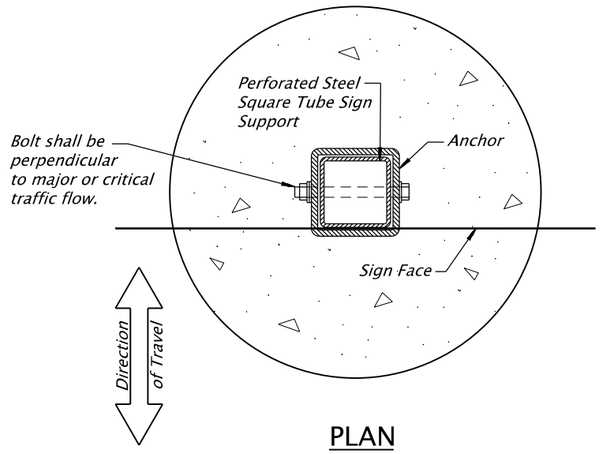


2½" ANCHOR DETAIL

No scale

General Notes:

1. *Material grade for base hardware connection shall be according to the manufacturer's recommendation and based on crash testing.*
2. *Anchor steel shall be hot dipped galvanized or approved equal.*
3. *Footing concrete shall be Commercial Grade Concrete (fc = 3000 psi) per Specification 00440. The CGC mixture may be accepted at the site of placement according to 00440.14.*
4. *The estimated concrete volume is .09 cubic yards.*



PLAN

No scale

Accompanied by dwgs. TM681, TM688

CALC. BOOK NO. 5752

SDR DATE 06-JAN-2012

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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

OREGON STANDARD DRAWINGS

PERFORATED STEEL SQUARE TUBE (PSST) ANCHOR FOUNDATION

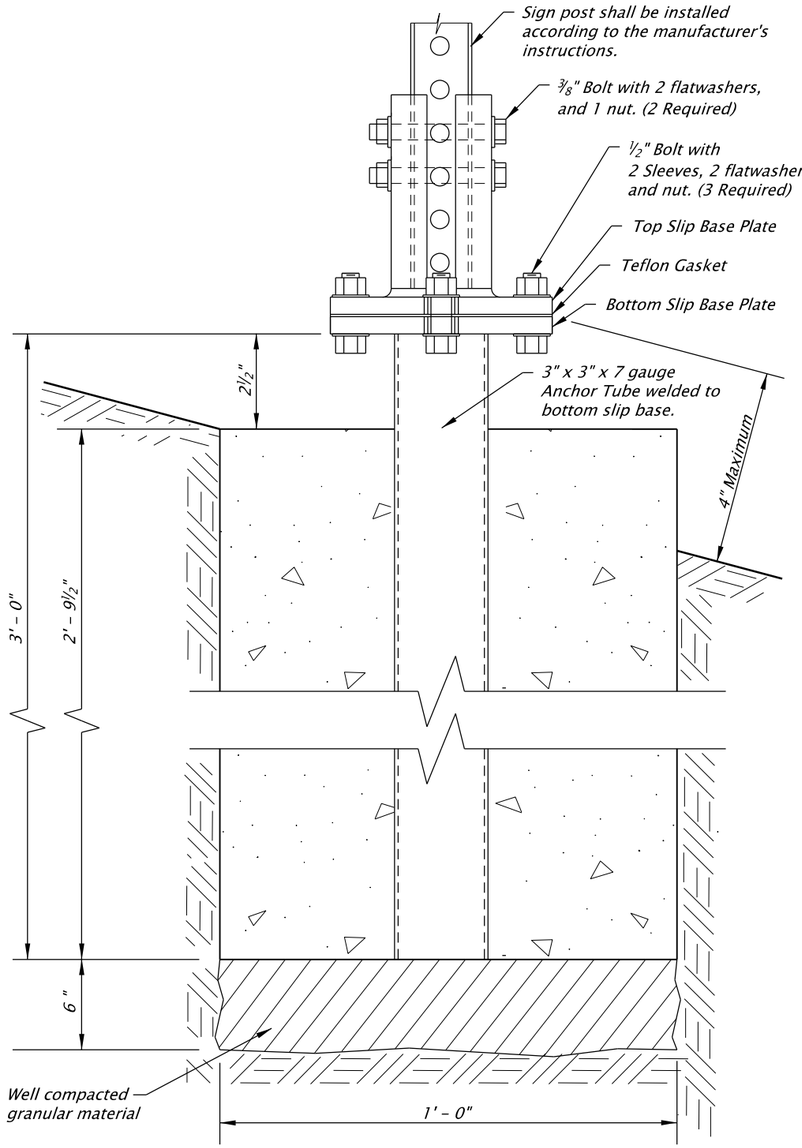
2021

DATE	REVISION DESCRIPTION

Effective Date: June 1, 2022 – November 30, 2022

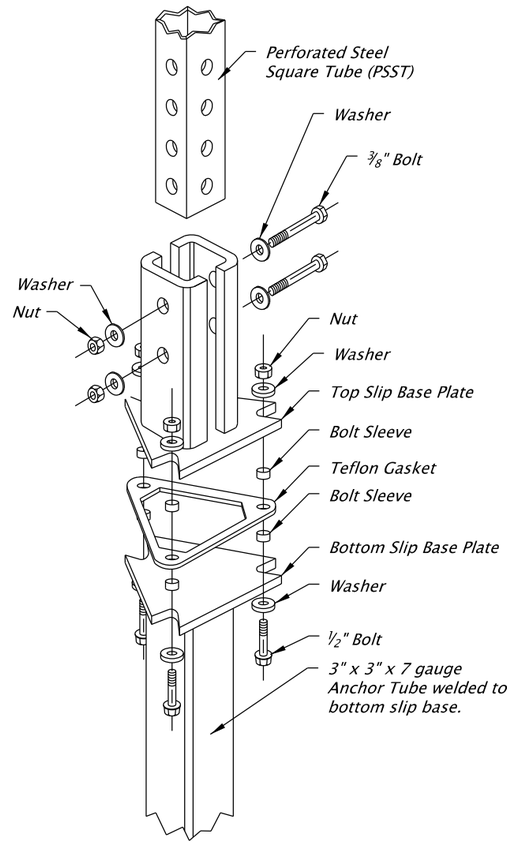
TM687

tm688.dgn 10-JUL-2020



SLIP BASE ELEVATION

No scale

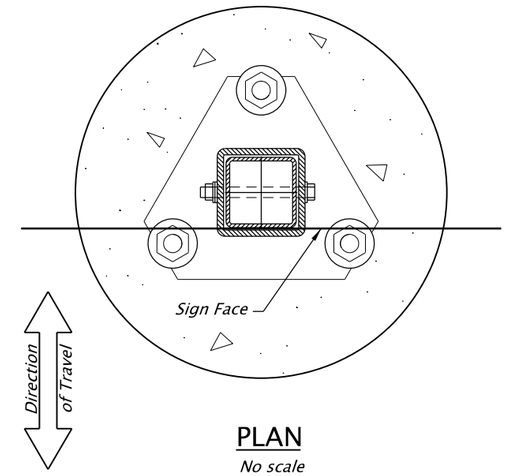


SLIP BASE EXPLODED VIEW

No scale

General Notes:

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



PLAN

No scale

Accompanied by dwgs. TM681, TM687

CALC. BOOK NO. 5752

SDR DATE 06-JAN-2012

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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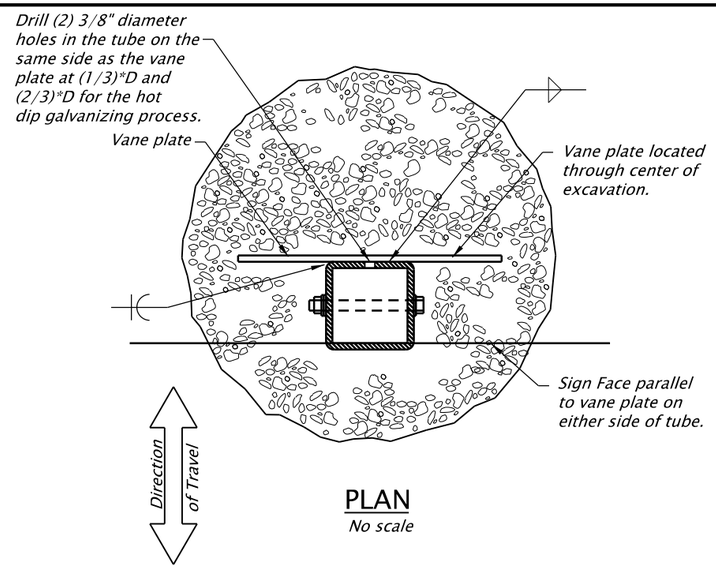
OREGON STANDARD DRAWINGS

PERFORATED STEEL SQUARE TUBE (PSST) SLIP BASE FOUNDATION

2021

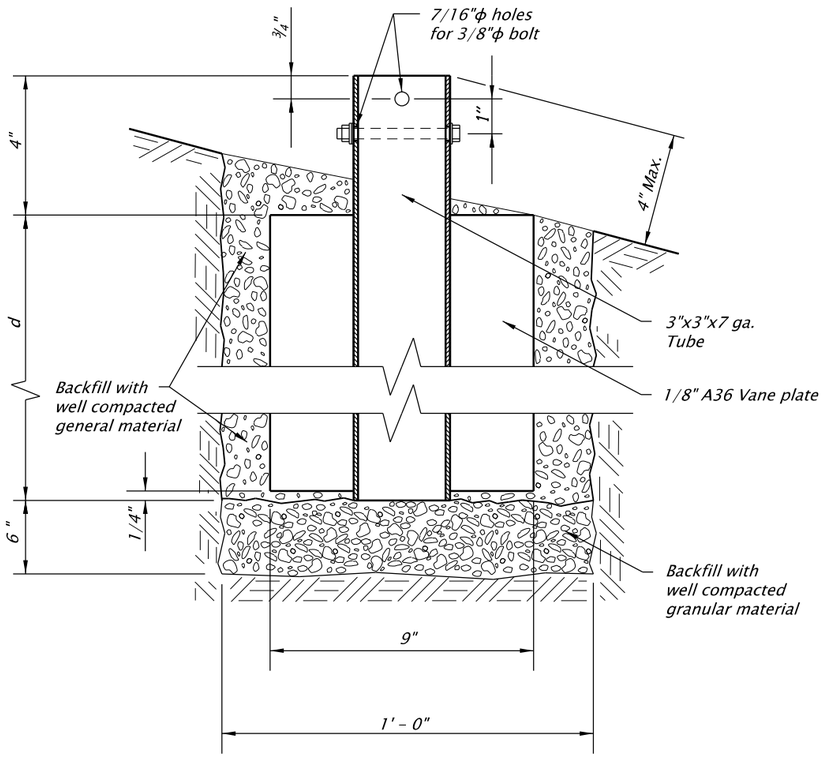
DATE	REVISION DESCRIPTION

TM688



PLAN

No scale



VANE ANCHOR DETAIL

No scale

General Notes:

1. *Reference TM681, TM687, and TM688 for additional PSST details.*
2. *Reference TM822 for temporary sign placement.*
3. *PSST Vane anchor design in accordance with the 5th Edition 2009 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.*
4. *Use the 3 second gust wind speeds shown on TM671 for the site specific sign location. General design parameters are Kz = 0.87, Cd (sign) = 1.20, G = 1.14, and Ir = 0.45 for a recurrence interval of 1.5 years.*
5. *Use this design only for Temporary applications.*
6. *The PSST Vane anchor shall not remain permanently in place.*
7. *The temporary PSST vane anchor shall be hot-dip galvanized after fabrication.*

Post Embedment Installation:

1. *Excavate the hole to 6" deeper than the requried depth and backfill the bottom 6" with well compacted granular material meeting the requirements of 00330.14.*
2. *Align the vane anchor in the hole to a vertical position.*
3. *The space around the vane anchor shall be backfilled to finished ground surface.*
4. *Backfill with selected general backfill meeting the requirements of 00330.13.*
5. *Place backfill in layers not greater than 6 inches.*
6. *Solidly ram and tamp the layers into the excavation area around the post.*
7. *Dampen during placement if too dry to compact properly.*
8. *Replace and finish the surface around the vane anchor to match the surrounding surface.*

Square Tube Size	*d*
2"-12 ga. ⊛	*2'-6"*
2½"-12 ga.	*3'-0"*
2½"-10 ga.	*3'-0"*
2¼" & 2½"-12 ga.	*3'-6"*

⊛ *Requires a 2 1/2" x 2 1/2" x 7 ga. tube installed in the 3" x 3" x 7 ga. anchor.*

DEPTH REQUIREMENTS

Accompanied by dwgs. TM200, TM671, TM681, TM687, TM688, TM822

CALC. BOOK NO. 6634

SDR DATE 06-JAN-2017

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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OREGON STANDARD DRAWINGS

TEMPORARY PSST VANE ANCHOR INSTALLATION

2021

DATE	REVISION DESCRIPTION

tm689.dgn 10-JUL-2020

TM689

tm800.dgn 04-JAN-2022

TAPER TYPES & FORMULAS	
TAPER	FORMULA
Merging (Lane Closure)	"L"
Shifting	"L"/2 or ½"L"
Shoulder Closure	"L"/3 or ⅓"L"
Flagging (See Drg. TM850)	50' – 100'
Downstream (Termination)	Varies (See Drawings)

★ Use Pre-Construction Posted Speed to select the Speed from the Tables below:

TEMPORARY BARRIER FLARE RATE TABLE	
★SPEED (mph)	MINIMUM FLARE RATE
≤ 30	8:1
35	9:1
40	10:1
45	12:1
50	14:1
55	16:1
60	18:1
65	19:1
70	20:1

MINIMUM LENGTHS TABLE					
"L" VALUE FOR TAPERS (ft)					BUFFER "B" (ft)
★ SPEED (mph)	W = Lane or Shoulder Width being closed or shifted				
	W ≤ 10	W = 12	W = 14	W = 16	
25	105	125	145	165	75
30	150	180	210	240	100
35	205	245	285	325	125
40	265	320	375	430	150
45	450	540	630	720	180
50	500	600	700	800	210
55	550	660	770	880	250
60	600	720	840	960	285
65	650	780	910	1000	325
70	700	840	980	1000	365
FREEWAYS					
55	1000	1000	1000	1000	250
60	1000	1000	1000	1000	285
65	1000	1000	1000	1000	325
70	1000	1000	1000	1000	365

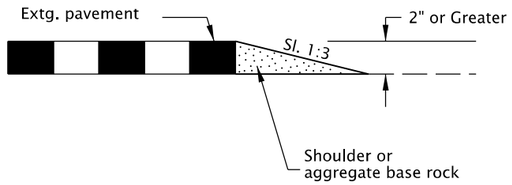
NOTES:
- For Lane closures where W < 10', use "L" value for W = 10'.
- For Shoulder closures where W < 10', use "L" value for W = 10' or calculate "L" using formula, for Speeds ≥ 45: L = WS, Speeds < 45: L = $S^2W/60$, S = Speed, W=Width

TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE				
★ SPEED (mph)	Sign Spacing (ft)			Max. Channelizing Device Spacing (ft)
	A	B	C	
20 – 30	100	100	100	20
35 – 40	350	350	350	20
45 – 55	500	500	500	40
60 – 70	700	700	700	40
Freeway	1000	1500	2640	40

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

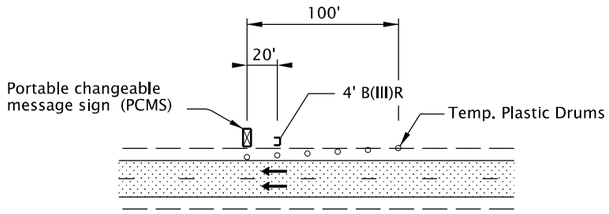
TM800

NOTES:
- When paved shoulders adjacent to excavations are less than four feet wide protect longitudinal abrupt edge as shown.
- Use aggregate wedge when abrupt edge is 2 inches or greater.



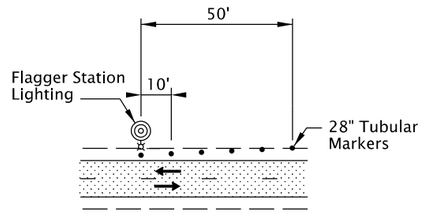
EXCAVATION ABRUPT EDGE

NOTES:
- Install PCMS beyond the outside shoulder, when possible.
- Use the appropriate type of barricade panels for PCMS location. Right shoulder, use Type B(III)R Left shoulder, use Type B(III)L
- Use six drums in shoulder taper on 20' spacing. The drums and barricade may be omitted when PCMS is placed behind a roadside barrier.
- Detail as shown is used for trailered and non-crashworthy components of:
  - Portable Traffic Signals
  - Smart Work Zone Systems



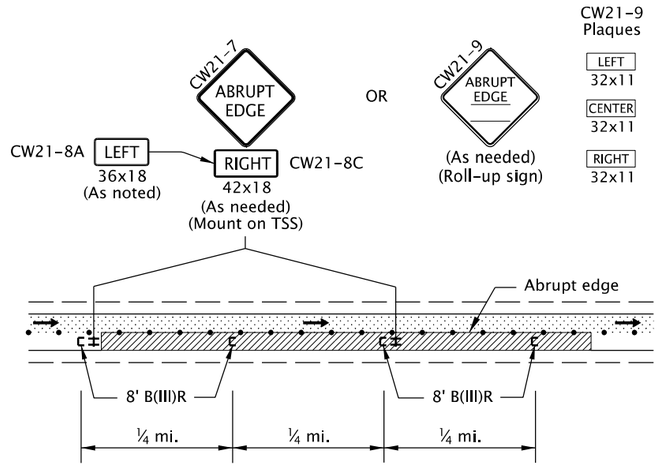
PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) INSTALLATION

NOTES:
- Install Flagger Station Lighting beyond the outside shoulder, where practical.
- Use six tubular markers in shoulder taper on 10' spacing.
- Place cart / generator / power supply off of the shoulder, as far as practical.



FLAGGER STATION LIGHTING DELINEATION

NOTES:
- Abrupt edges may be created by paving, operations, excavations or other roadway work. Use abrupt edge signing for longitudinal abrupt edges of 1 inch or greater.
- If the excavation is located on left side of traffic, replace the 8' B(III)R barricades with 8' B(III)L barricades and replace the "RIGHT" (CW21-8C) riders with "LEFT" (CW21-8A) riders.
- Continue signing and other traffic control devices throughout excavation area at spacings shown.
- If roll-up signs are used, attach the correct (CW21-9) plaques to the sign face using hook and loop fasteners. Place roll-up signs in advance of barricades.



TYPICAL ABRUPT EDGE DELINEATION

GENERAL NOTES FOR ALL TCP DRAWINGS:
- Signs and other Traffic Control Devices (TCD) shown are the minimum required.
- Place a barricade approx. 20' ahead of all sequential arrow boards.
- Arrows shown in roadway are directional arrows to indicate traffic movements.
- All signs are 48" x 48" unless otherwise shown. Use fluorescent orange sheeting for the background of all temporary warning signs.
- All diamond shaped warning signs mounted on barrier sign supports shall be 36" by 36". All other signs mounted on barrier sign supports shall not exceed 12 sq. ft. in total sign area.
- Low speed highways have a pre-construction posted speed of 40 mph or less. High speed highways have a pre-construction posted speed of 45 mph or higher.
- Do not locate sign supports in locations designated for bicycle or pedestrian traffic.
- Combine drawing details to complete temporary traffic control for each work activity.
- To be accompanied by Dwg. Nos. TM820 & TM821.

○ ○ ○ Temp. Plastic Drums See TCD Spacing Table for max. spacing.

• • • 28" Tubular Markers See TCD Spacing Table for max. spacing.

UNDER TRAFFIC

UNDER CONSTRUCTION

CALC. BOOK NO. TM09-01

SDR DATE 04-JAN-2022

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OREGON STANDARD DRAWINGS

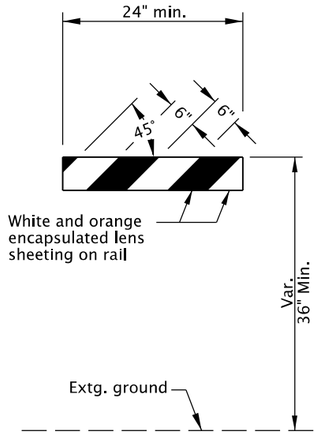
TABLES, ABRUPT EDGE AND PCMS DETAILS

2021

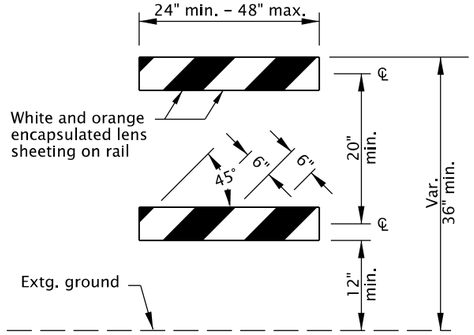
DATE	REVISION DESCRIPTION

Effective Date: June 1, 2022 – November 30, 2022

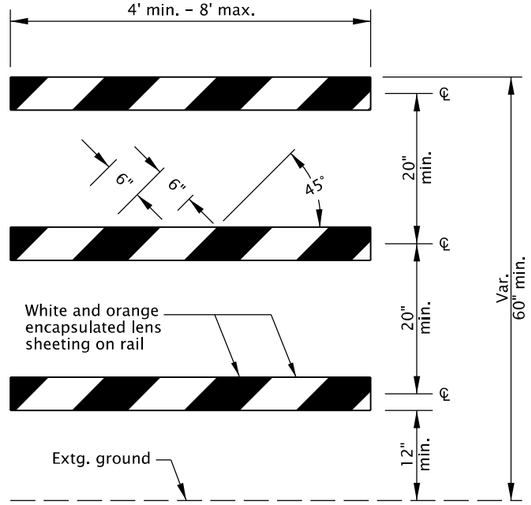
TM800



TYPE I



TYPE II



TYPE III

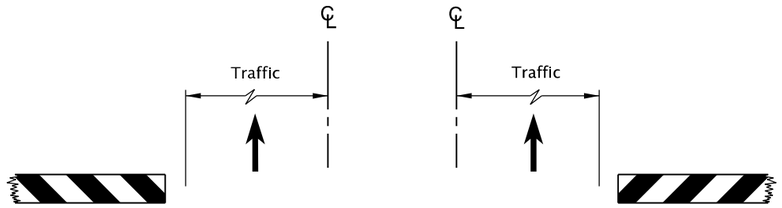
BARRICADE RAIL LAYOUT

GENERAL NOTES FOR ALL DETAILS:

- Sandbags (approximately 25 lb sack filled with sand) may be placed on lower frame to provide additional ballast.
- Ballast shall not extend above bottom rail or be suspended from barricade.
- For rails less than 36" long, 4" wide stripes shall be used.
- Rails must be 8" min. to 12" max. in height.
- Use barricades from ODOT Qualified Products List (QPL).
- Use 4' Type III barricades where horizontal space is limited.
- Do not block bike lanes or shoulders unless the facility is properly closed and signed.
- Do not place barricades in sidewalks unless sidewalk is closed and a temporary pedestrian accessible route (TPAR) is signed according to the TCP. See Dwg. No. TM844.

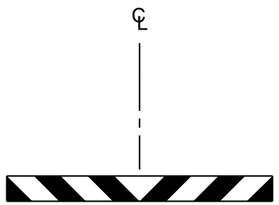
NOTES:

- Markings for barricade rails shall slope downward at an angle of 45° in the direction traffic is to pass.
- Where a barricade extends entirely across a roadway, it is desirable that the stripes slope downward in the direction toward which traffic must turn in detouring.
- Where both right and left turns are provided for, slope the chevron striping downward in both directions from the center of the barricade.
- For full roadway closures, the C or LR barricade may be used. Extend barricades completely across roadway unless access is required for local road users.

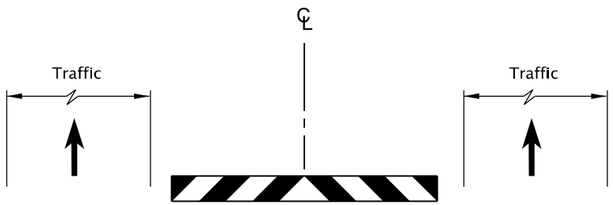


LT. SIDE - L
(For approaching traffic)

RT. SIDE - R
(For approaching traffic)

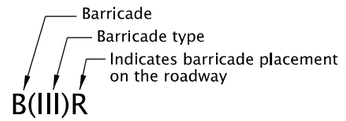


CLOSED - C
(For approaching traffic)



LT. / RT. - LR
(For approaching traffic)

DIAGRAM FOR BARRICADE PLACEMENT AND SLOPE MARKING



BARRICADE NOTATION

CALC. BOOK NO. N/A

SDR DATE 01-JUL-2020

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OREGON STANDARD DRAWINGS

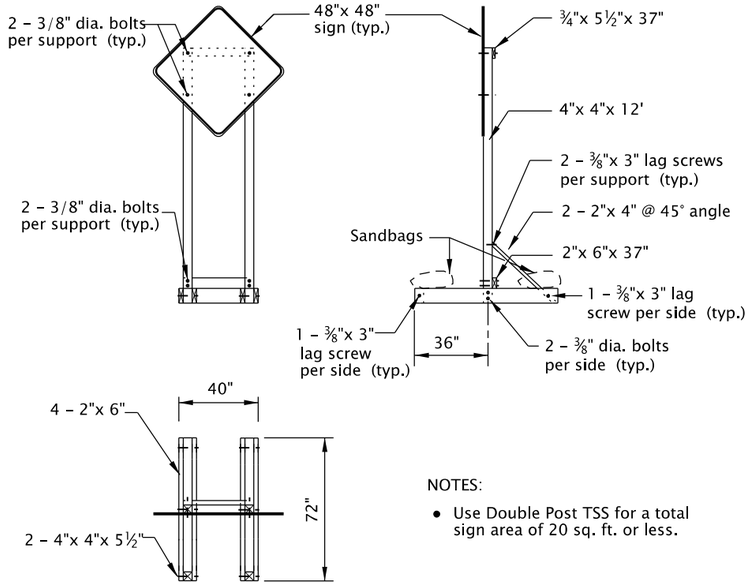
TEMPORARY BARRICADES

2021

DATE	REVISION DESCRIPTION

TM820

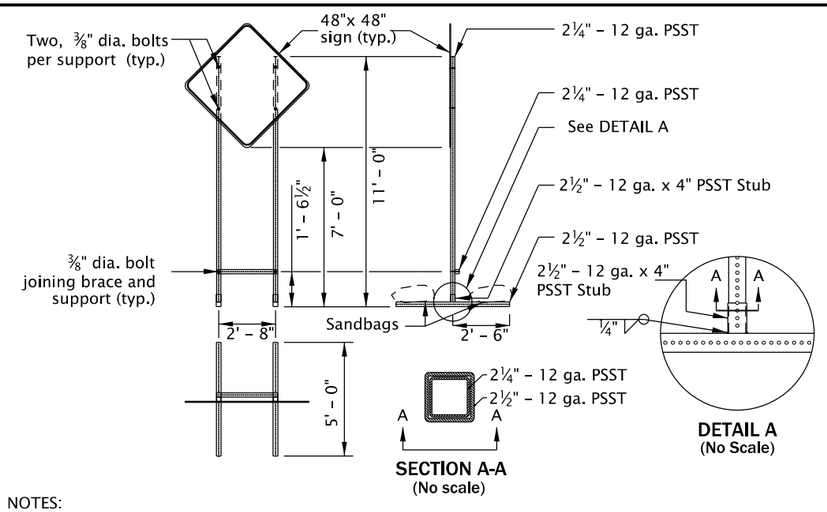
Effective Date: June 1, 2022 – November 30, 2022



NOTES:

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

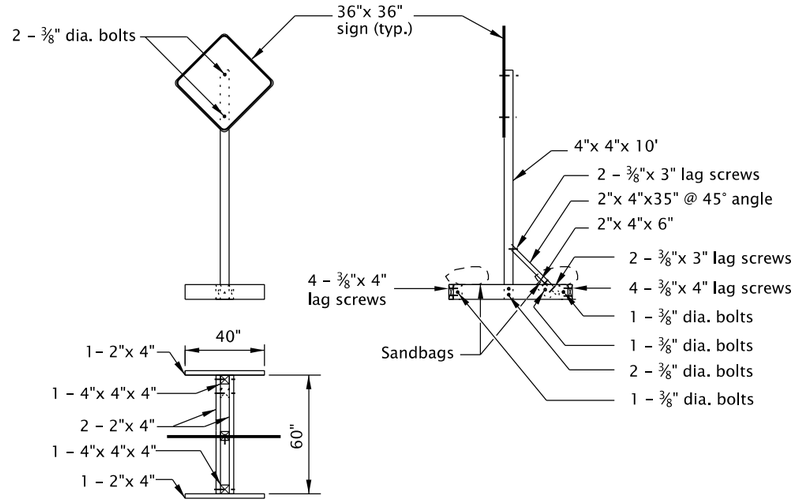
DOUBLE POST DETAIL



NOTES:

- Use PSST TSS's for a total sign area of 16 sq. ft. or less.
- All members shall have a minimum yield stress of 50 ksi.
- Galvanize steel according to ASTM A653 with coating designation G90. Remove Galvanizing from steel before welding. Repair Galvanizing according to ASTM A780.
- Use A325 Bolts or equivalent.
- 2¼" – 12 ga. PSST to extend entire length inside of the 2½" – 12 ga. x 4" PSST Stub.
- Do not use bolt to secure 2¼" PSST inside of the 2½" – 12 ga. x 4" PSST Stub.
- Weld steel according to American Welding Society (AWS) D.1.1.

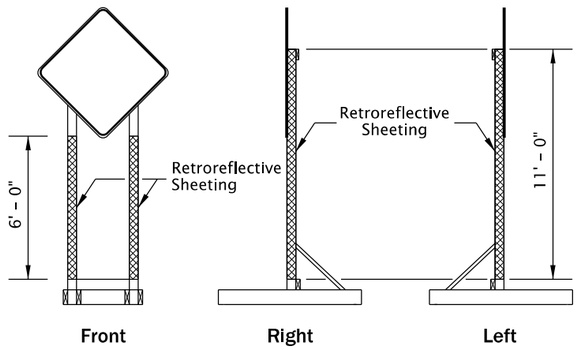
PERFORATED STEEL SQUARE TUBE (PSST) DETAIL



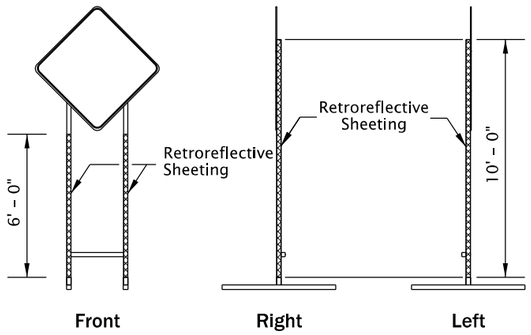
NOTES:

- Use Single Post TSS for a total sign area of 12 sq. ft. or less.
- Use Single Post TSS for mounting "Business Access" (CG20-11) signs. Do not mount signs on Type II or III Barricades.

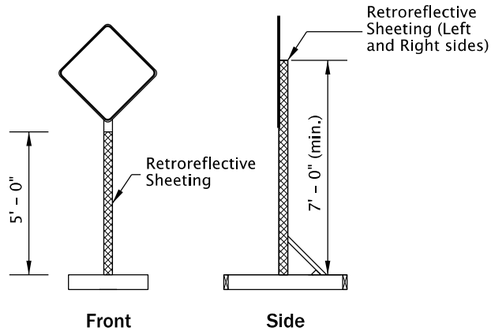
SINGLE POST DETAIL



Double Post



Perforated Steel Square Tube (PSST)



Single Post

TEMPORARY SIGN SUPPORT GENERAL NOTES:

- Do not tip over TSS at any time.
- Do not locate TSS's in locations that block pedestrian or bicycle traffic.
- For wooden TSS's, use either Douglas Fir or Hem Fir, which is surfaced four sides (S4S) and free of heart center (FOHC).
- See "Temporary Sign Placement" detail on TM822 for sign installation heights.
- Do not place or stack ballast more than 24" above the ground.
- When sign is inconsistent with current work zone conditions, cover sign: or turn sign 90 degrees away from approaching traffic. Remove TSS from roadway when signing is not needed for more than 3 days.
- Place a minimum of 50 lbs of sandbags on each of the four TSS supports legs. (25 lb. max per bag) (min. 100 lbs per side of each TSS).
- See Dwg. No. TM204 for flag board mounting detail.

NOTES:

- Apply fluorescent orange, ANSI Type VIII or IX retroreflective sheeting to TSS posts, as shown, for all temporary signs, except "STOP" and "DO NOT ENTER". For "STOP" and "DO NOT ENTER" signs, used red ANSI Type III or IV retroreflective sheeting on the TSS posts.
- Apply sign post retroreflectivity to each TSS post facing front; and to the left and right sides of the TSS, as shown. Use 3" wide sheeting for wood post TSS's. Use 2" wide sheeting for PSST TSS's.
- Sheeting may be applied directly to post material; or applied to a rigid, lightweight substrate, then securely attached to the posts.

SIGN POST REFLECTIVE SHEETING PLACEMENT

CALC. BOOK NO. N/A

SDR DATE 01-JUL-2020

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OREGON STANDARD DRAWINGS

TEMPORARY SIGN SUPPORTS

2021

DATE	REVISION DESCRIPTION

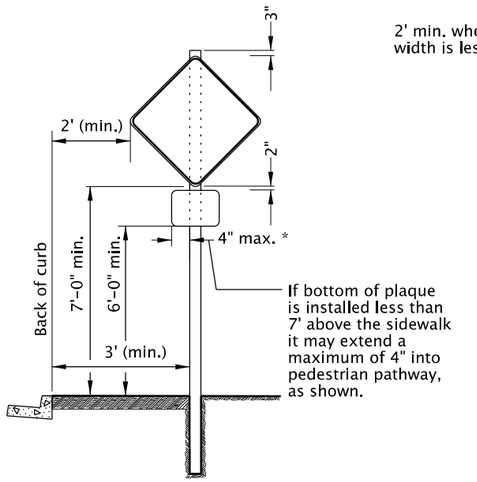
tm821.dgn 01-JUL-2020

TM821

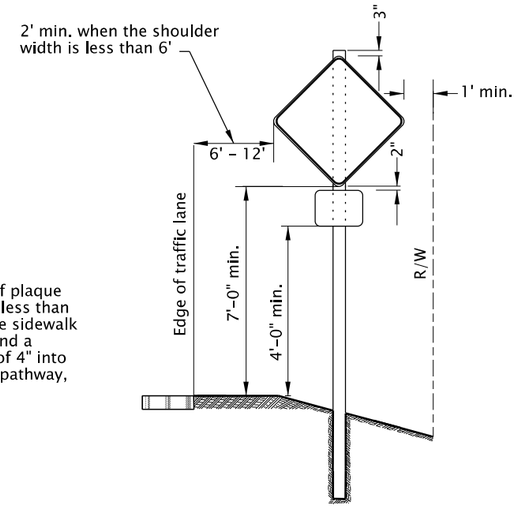
Effective Date: June 1, 2022 – November 30, 2022

NOTES:

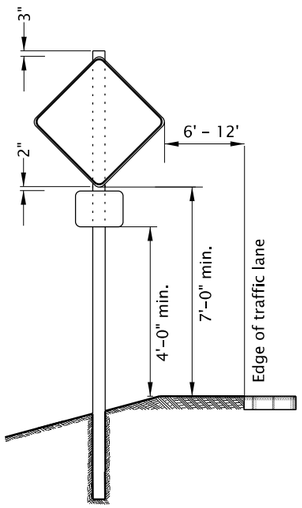
- Do not block bicycle lanes, sidewalks, or TPAR's with sign supports. Maintain minimum widths for these facilities according TCP Design Manual, MUTCD, ADA, or as directed.
- To be accompanied by Dwg. Nos. TM670, TM671, TM687, TM688 & TM689.



Urban Areas With Curb/Sidewalk

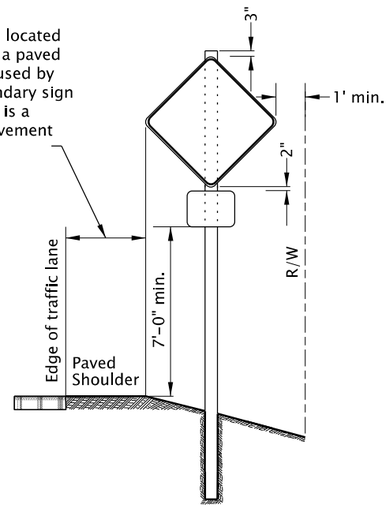


Rural Areas



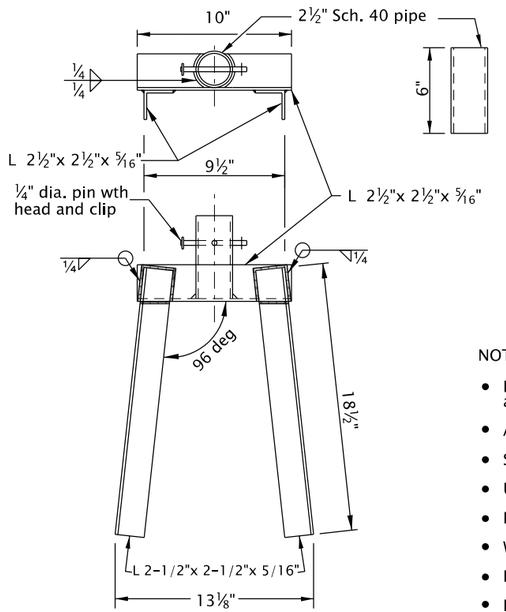
Divided Highway/Freeway Medians
No Curb/Sidewalk

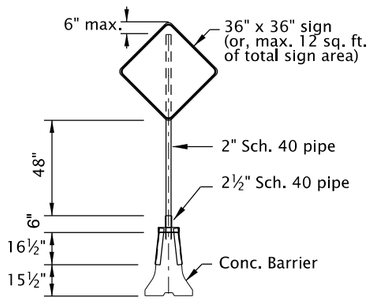
Where temporary signs are located adjacent to or intrude into a paved shoulder or other surface used by bicycle traffic, install secondary sign (plaque) so bottom of sign is a minimum of 7'0" above pavement surface, as shown.



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

TEMPORARY SIGN PLACEMENT





NOTES:

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

CONCRETE BARRIER SIGN SUPPORT

CALC. BOOK NO. N/A

SDR DATE 01-JUL-2020

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OREGON STANDARD DRAWINGS

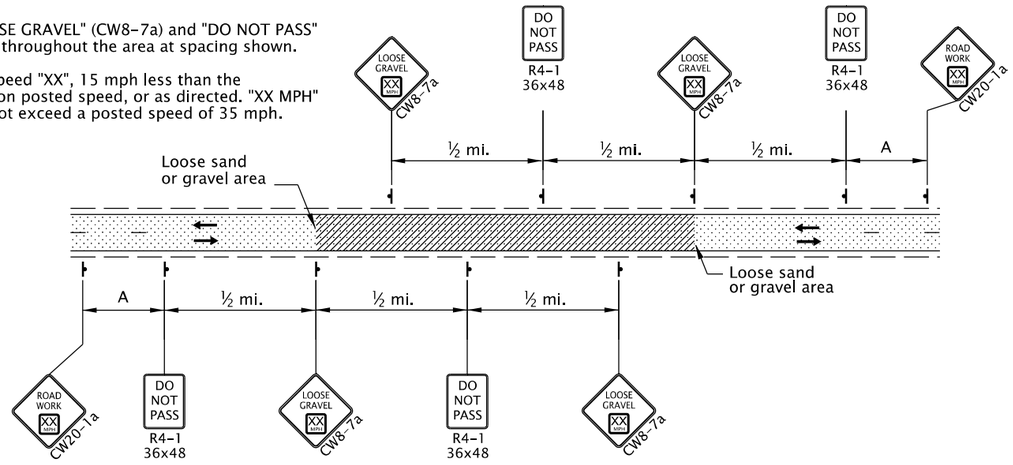
TEMPORARY SIGN SUPPORTS

2021

DATE	REVISION DESCRIPTION

NOTE:

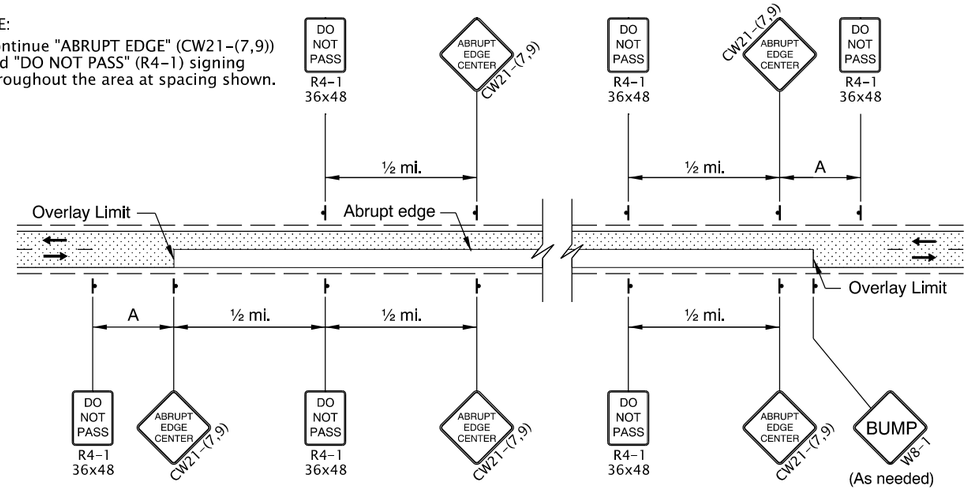
- Continue "LOOSE GRAVEL" (CW8-7a) and "DO NOT PASS" (R4-1) signing throughout the area at spacing shown.
- Use advisory speed "XX", 15 mph less than the pre-construction posted speed, or as directed. "XX MPH" placard shall not exceed a posted speed of 35 mph.



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

NOTE:

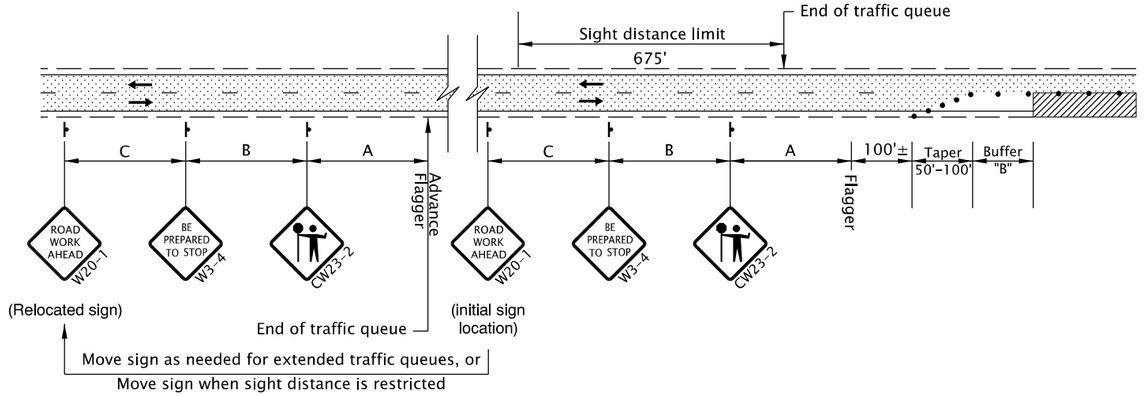
- Continue "ABRUPT EDGE" (CW21-(7,9)) and "DO NOT PASS" (R4-1) signing throughout the area at spacing shown.



2-Lane, 2-Way Roadway
OVERLAY AREA SIGNING

NOTES:

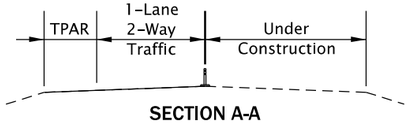
- Place Advance Flagger and additional signing when traffic queues extend beyond initial warning signing OR when sight distance is restricted.
- Relocate initial "ROAD WORK AHEAD" (W20-1) sign in advance of additional "BE PREPARED TO STOP" (W3-4) and Flagger Ahead (CW23-2) signs, as shown.
- Place additional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



ADVANCE FLAGGER FOR EXTENDED TRAFFIC QUEUES

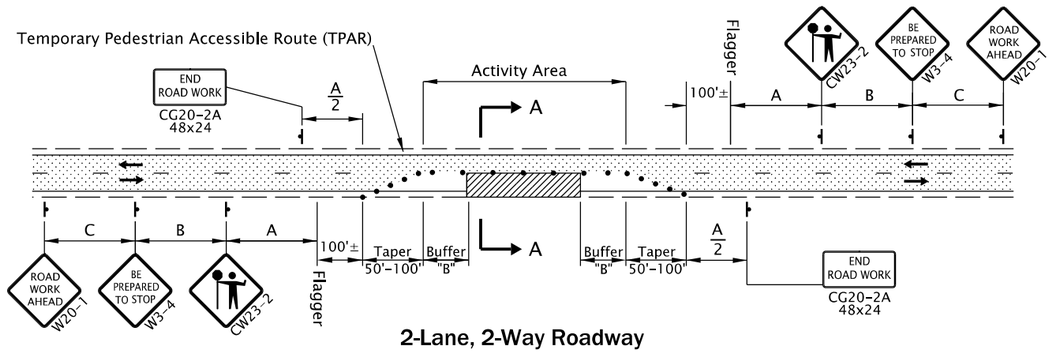
NOTE:

- 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.



SECTION A-A

- 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 "FLAGGER" (CW23-2) symbol sign shall be used only in conjunction with the "BE PREPARED TO STOP" (W3-4) 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.

• • • • • 28" Tubular Markers on 20' max. spacing for flagger tapers and stations

• • • 28" Tubular Markers See TCD Spacing Table on TM800 for max. spacing.

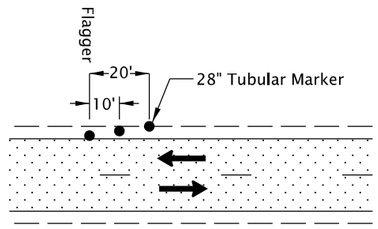
UNDER TRAFFIC

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

CALC. BOOK NO. N/A

SDR DATE 01-JUL-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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

OREGON STANDARD DRAWINGS

2-LANE, 2-WAY ROADWAYS

2021

DATE	REVISION DESCRIPTION

01-JUL-2020

tm850.dgn

TM850

Effective Date: June 1, 2022 – November 30, 2022