

**CITY OF TROUTDALE
CONSTRUCTION DETAILS
INTERIM CHANGES**

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CITY OF TROUTDALE CONSTRUCTION DETAILS

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Interim Changes



Memo

TO: File
FROM: Jim Galloway, Public Works Director
DATE: July 23, 1999
RE: Construction Standards for Public Works Facilities May 1997:
Interim Change #1

Under the authority provided to me by City Council Resolution No. 1312, I have made the following interim changes to the "Construction Standards for Public Works Facilities" dated May, 1997, effective immediately:

1. Part VII (Sanitary Sewers), Paragraph 4, is changed to read: "Manholes shall be placed at all points of change in alignment or pipe size, breaks in grade, and at all intersections with pipes eight inches in diameter or larger. The maximum permissible spacing between manholes for pipes with a diameter of twelve inches or less shall be three hundred feet. The maximum permissible spacing between manholes for pipes with a diameter of more than twelve inches but less than twenty-four inches shall be four hundred feet. The maximum permissible spacing between manholes for pipes with a diameter of twenty-four inches or more shall be five hundred feet. Manholes shall not be located in areas which would restrict free access by maintenance personnel and vehicles."
2. Part VII (Sanitary Sewers), Paragraph 6, is changed to read: "Manholes less than sixty inches in diameter shall have a minimum of 0.2 foot drop from pipe invert "in" to pipe invert "out". Manholes sixty inches in diameter or larger shall have a minimum of 0.1 foot drop from pipe invert "in" to pipe invert "out". All sanitary sewer lines between manholes shall meet the minimum allowable slope requirements as established by DEQ or by general engineering principles."

Drawing No. VIII-1, General Note 7, and Drawing No. VIII-3, General Note 5, are hereby changed accordingly.

Superseded
see IC#18

These changes will be incorporated in the next update to the "Construction Standards for Public Works Facilities".

Memo

TO: FILE
FROM: JIM GALLOWAY, PUBLIC WORKS DIRECTOR
DATE: SEPTEMBER 13, 1999
**RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES,
MAY 1997: INTERIM CHANGE NO. 2**

Under the authority provided to me by City Council Resolution No. 1312, I have made the following interim change to the "Construction Standards for Public Works Facilities" dated May, 1997, effective immediately: Water Distribution System (General Requirements), Paragraph 15, is changed to read as follows: "Each half of a duplex shall be served with an individual service line and an individual meter. In all other uses, only one meter will normally be allowed per tax lot. Exceptions may be granted by the Director in those situations where rigid adherence to this standard would be technically infeasible or prohibitively expensive. The applicant must request the exception in writing (with adequate justification) prior to the submission of construction drawings."

This change will be incorporated in the next update to the "Construction Standards for Public Works Facilities".

C:\PWSEP99

Memo to File
Change #3
Rescinded



Memo

TO: FILE
FROM: JIM GALLOWAY, PUBLIC WORKS DIRECTOR
DATE: JANUARY 25, 2000
RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES, MAY 1997: INTERIM CHANGE NO. 4

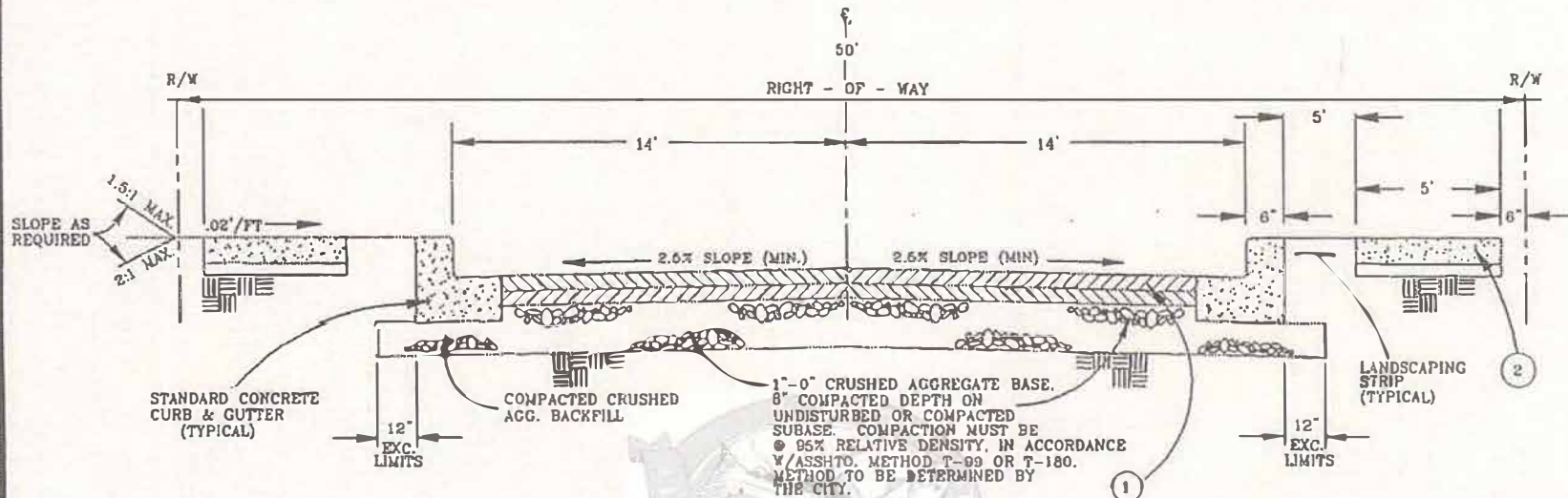
Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May, 1997, to bring the Standards into compliance with Ordinance No. 658.

Add to Part II – Streets (Construction Details) a new Drawing No. II-29 (attached).

This change will be incorporated in the next update to the "Construction Standards for Public Works Facilities".

c: Jerry
Ed
Mike
Christa
Travis

C:\PWJAN00



TOWN CENTER OVERLAY DISTRICT CROSS SECTION

NOTES:

- ① 3 1/2" OF ASPHALTIC CONCRETE CLASS "C" PLACED IN 2 LIFTS. 1ST LIFT SHALL BE 2" COMPACTED DEPTH. FINAL 1 1/2" LIFT WILL BE PLACED AFTER 90% OF THE CERTIFICATES OF OCCUPANCY HAVE BEEN ISSUED OR 2 YEARS AFTER THE FIRST LIFT, WHICHEVER COMES FIRST.
- ② 4" THICK CONCRETE SIDEWALK ON MINIMUM OF 2" COMPACTED DEPTH OF 3/4" - 0 CRUSHED ROCK.

GENERAL:

1. THESE STANDARDS ARE SHOWN AS MINIMUM ALLOWABLE STANDARDS. THE CITY ENGINEER MAY REQUIRE MODIFICATIONS DUE TO ADVERSE SOIL CONDITIONS, TRAFFIC CONDITIONS, OR OTHER UNFORESEEN RELEVANT SITE CONDITIONS.
2. ALL MATERIALS AND WORKMANSHIP SHALL MEET THE REQUIREMENTS OF THE AMERICAN PUBLIC WORKS ASSOCIATION STANDARD SPECIFICATIONS.
3. DEFLECTION/COMPACTION TESTS WILL BE REQUIRED AS DEEMED NECESSARY BY THE CITY. NO DEFLECTION IS ALLOWED.
4. SUBGRADE MUST BE APPROVED BY THE CITY PRIOR TO PAVING.

CITY OF TROUTDALE

TOWN CENTER
OVERLAY DISTRICT STREET
(CROSS SECTION)

DATE:
UPDATED 1999

DRAWING NO.
II - 29

Memo to File
Change #5
Rescinded



Memo

DATE: AUGUST 10, 2001
TO: FILE
FROM: JIM GALLOWAY, PUBLIC WORKS DIRECTOR
RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES,
MAY 1997: INTERIM CHANGE NO. 6

Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May, 1997:

Part II (Streets), Drawing No. II-26 (Gravel Construction Entrance) is amended as follows:

Delete: "Clean Pit Run or 2" minus gravel (or larger if required)"

Add: " 3" minus crushed rock"

c: Jerry Ortega
Ed Kubicki
Mike Sorensen
Rich Faith
Jack Hanna
Kevin Rauch

Memo to File
Change #7
Rescinded

Memo

DATE: MARCH 24, 2003
TO: FILE
FROM: JIM GALLOWAY, PUBLIC WORKS DIRECTOR
RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES,
MAY 1997: INTERIM CHANGE NO. 8

Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May 1997:

Add to Part I (Streets) the following new paragraph:

29. Access management for driveways

- a. A driveway approach constructed in accordance with these standards is required for any driveway or private street accessing a public street. A wheel chair ramp or regular sidewalk section shall not be used as a driveway approach.
- b. Construction of a driveway approach in City right-of-way requires a Public Works permit. Construction of a driveway approach in the right-of-way of another jurisdiction requires a permit from that jurisdiction.
- c. When a property abuts two or more streets, the driveway access shall generally be to the street of lowest classification.
- d. A single-family residential property shall have only one access to an abutting street.
- e. A driveway shall not be closer than twenty (20) feet to a point of curvature or point of tangency of a curb return. (Dimensions "C" and "R", Figure 10, Page 19, "Guidelines for Driveway Location & Design", Institute for Transportation Engineers, 1987.

c: Travis Hultin
Ed Kubicki
Mike Sorensen
Kevin Rauch
Rich Faith

V.

Recommended Guidelines

Basic Driveways

Basic widths, curb spacing, radii, and angles of driveways suggested for various land uses in urban and rural areas are given in Table 2. Methods of measurement and portions of previous text are footnoted below the table and are illustrated in Figure 10.

In some driveway permit regulations, the term "curb cut" is used. The word "driveway" is preferred, since curb cut has little relation to the practical function of a driveway and may be confusing when applied to roadways without curbs. If used, curb cut should be clearly defined as representing the effective driveway width together with the curb radii on both sides. Control dimensions should be adjusted accordingly. Thus, a 30-foot (9 m) driveway with a 15-foot (5 m) radius on each side becomes a 60-foot (18 m) curb cut.

It should be stressed that these design values are *guidelines*. The dimensions should be adjusted by the driveway permit engineer as required to handle expected traffic conditions. Figure 11 illustrates a typical range of designs related to volumes.

Maximum widths have not been shown in Table 2, because these should vary with conditions. If an agency feels that maximums are necessary, the material in Table 2 footnote 1 may be used.

Major Driveway Design Factors

Special care should be taken in designing driveways serving very high generation uses such as community and regional shopping centers, large industrial plants, major office building complexes, and high density apartment developments. Specific elements

have been discussed under sections on volumes, successive entrances, angles, spacing, median cuts, sight distances, and paving. Shaw³⁹ found that left-turn bays could be justified on the basis of reductions in accidents and delays at typical major intersections having medians, and that the cost could be amortized by the savings in as short a period as five years. Presumably, similar findings would apply to major driveways with heavy volumes of left-turning vehicles. In fact, it is common practice at high generation developments to require left-turn bays or by-pass lanes on two-lane roads.

An unsignalized *major* driveway at grade may be considered to be similar to an unsignalized intersection as studied by Harmelink.¹⁵ He found left-turn storage lanes to be justified for extremely low volumes, based on his design criteria. As shown in Figure 12, a left-turn volume of 50 vehicles per hour from a four-lane highway facing an opposing volume of 300 vehicles per hour, for example, would justify a left-turn bay 50 feet (15 m) in length. If the opposing volume was 1,100 vehicles per hour, a bay length of 100 feet (30 m) would be needed.

When left-turn bays are to be provided at major driveways, a

Table 2. Recommended basic driveway dimension guidelines

	Dimension Reference (See Fig. 8)	Residential	Commercial	Industrial
Nominal Width ¹	W			
one-way		10	15	20
two-way		10	30	40
Right turn radius or flare ²	R			
Minimum		5	15	20
Minimum spacing ³				
From property line	P	0	0	-R
From street corner	C	5	10	10
Between driveways	S	3	3	10
Minimum Angle ⁴	A	45°	45°	30°

1.0 ft. = 0.3m

¹Residential driveway widths typically should not exceed about 24 feet (7 m). Commercial driveway widths may vary from about 24 feet for low volume activity (providing that 20 foot radii are used), to a maximum of 36 feet (11 m) for undivided design, higher volume activity. A 36 foot (11 m) driveway is usually marked with two exit lanes of 10 to 11 foot (3 m) width, with the balance used for a single, wide entry lane. Industrial driveway widths should not exceed 50 feet (17 m).

²On the side of a driveway exposed to entry or exit by right turning vehicles. The radii for major generator driveways such as shown in Figures 5 and 6 should be much higher than the values shown.

³Measured along the curb or edge of pavement from the roadway end of the curb radius or flare, except for conditions noted in Figure 7. For individual properties, a suggested limitation on the number of driveways is: 1 for 0-50 foot (0-15 m) frontage, 2 for 51-150 foot (16-50 m) frontage, 3 for 151-500 foot (51-150 m) frontage, and a 4 for over 500 (over 150 m) frontage.

⁴Minimum acute angle measured from edge of pavement, and generally based on one-way operation. For two-way driveways and in high pedestrian activity areas, the minimum angle should be 70 degrees.

minimum spacing is automatically established for successive driveways that are to have left turn entry or exit. The basic factors are the distance required for the median taper (a 10:1 ratio) and the length of the storage bay. If a driveway on a major route is opposite a street, a left-turn bay for the street also should be incorporated. This will further increase the required distance between major driveways.

The distance of a major driveway, with left-turn channelization from a nearby major intersection which also has left-turn bays, will vary depending on whether the driveway is on the approach or departure side of the intersection with respect to the left-turn lane.¹⁰ This may be illustrated by two examples. Assume a north/south route and a requirement for a northbound left-turn bay to a major driveway. Assume that a bay 100 feet (30 m) long is needed. If the major intersection is north of the driveway and requires a left-turn bay 200 feet (60 m) long with a 120-foot (36 m) taper, the closest permissible location for a driveway would be 320 feet (100 m) from the intersection. If the intersection is south of the driveway, the required distance would be equal to the length of the left-turn storage bay for southbound traffic at the intersection, the taper, and the left-turn bay for the major driveway. These dimensions add up to a minimum distance from the intersection of 420 feet (130 m) for a driveway.

These examples show the problems of attempting to specify the distances, consistent with actual traffic needs, that driveways should be from intersections. It is important that driveways be designed for the particular traffic characteristics anticipated and that upstream and downstream factors affecting a driveway location be considered in each instance.

As discussed under successive entrances, the entry movement to

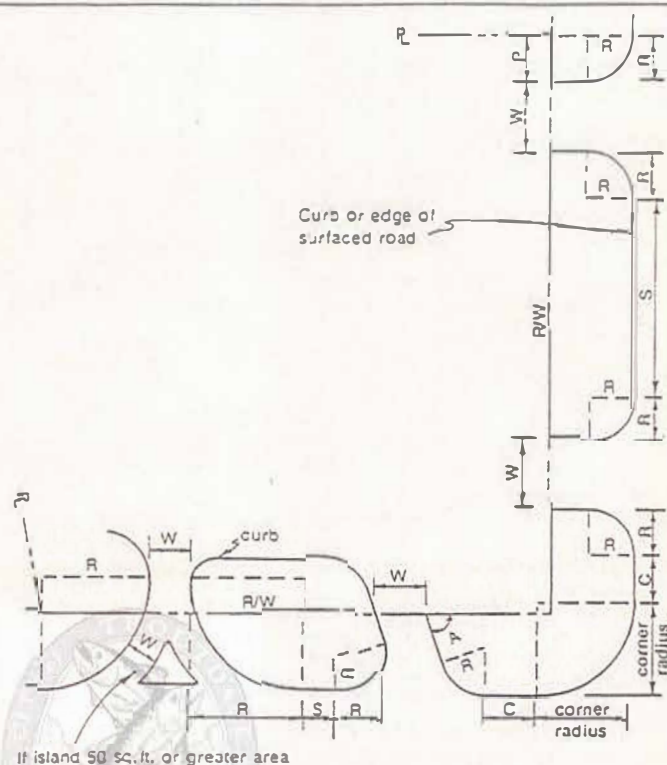


Figure 10. Driveway dimensions measurements (see Table 2).

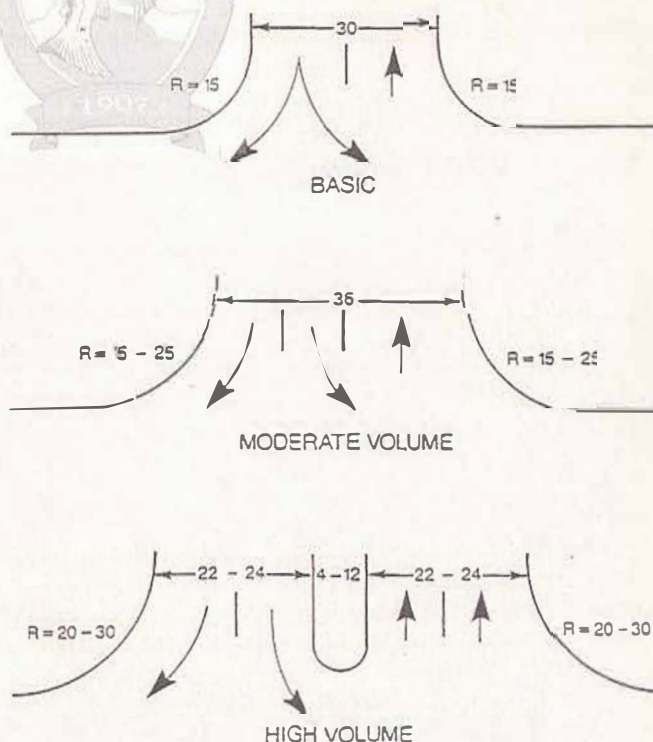


Figure 11. 2-way commercial driveway design. Dimensions are in feet.

Memo to File

IC #9

Superseded by IC#10

IC No. 10 Superseded by IC No. 36

Memo to File

IC #10

Superseded by IC#19

Memo

DATE: JANUARY 27, 2004
TO: FILE
FROM: JIM GALLOWAY, PUBLIC WORKS DIRECTOR
RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES MAY 1997: Interim Change No. 11

Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May, 1997:

1. Replace statement #5 under the heading "Conditions Where Practice Applies" on Page IX – 14 with the following: See Detail Drawing X – 9 for Filter Bag Inlet Detail for catch basin protection.
2. Drawing No. X – 6 titled "Biofilter Bag-Protected Catch Basins Detail should be removed.

Cc: Ed Kubicki
Mike Sorensen
Travis Hultin
Kevin Rauch
Amy Pepper
Rich Faith
Jack Hanna

Memo

DATE: NOVEMBER 2, 2004
TO: FILE
FROM: JIM GALLOWAY, PUBLIC WORKS DIRECTOR
RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES –
MAY 1997: Interim Change No. 12

Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May, 1997:

1. Part III (Water – General Requirements), Paragraph 10 is amended to add "M & H Style 129 Fire Hydrant".
2. Part IV (Water – Construction Details), Drawing No. IV-2, "General Notes" is amended to change Paragraph 7E to read "M & H Style 129" and to add Paragraph 7F to read: "Or approved equal".
3. Part IV (Water – Construction Details), Drawing No. IV-3, "General Notes" is amended to change Paragraph 7E to read "M & H Style 129" and to add Paragraph 7F to read: "Or approved equal".

c: Travis Hultin
Kevin Rauch
Mike Sorensen
Olaf Sweetman
Amy Pepper
Rich Faith

C:\STAN04

Superseded
see IC #20

Memo

DATE: JANUARY 18, 2005
TO: FILE
FROM: JIM GALLOWAY, PUBLIC WORKS DIRECTOR
RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES
MAY 1997: INTERIM CHANGE NO. 13

Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May, 1997:

Part I (Streets – General Requirements), Paragraph 26, which required the certification of buildable lots, is deleted.

c: Travis Hultin
Kevin Rauch
Mike Sorensen
Olaf Sweetman
Amy Pepper
Rich Faith

C:\PW\JAN05

Memo

DATE: FEBRUARY 2, 2005
TO: FILE
FROM: JIM GALLOWAY, PUBLIC WORKS DIRECTOR
RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES MAY
1997: INTERIM CHANGE NO. 14

Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May, 1997:

Part III (Water – General Requirements), Paragraph 24 is amended to delete the following:

- 1 1/2" and 2" Neptune water meters.
- Neptune Trident fire hydrant meter.
- Neptune Trident turbine meter.

c: Travis
Kevin
Mike
Olaf
Amy
Rich

C:\PW\JAN05

Memo

DATE: AUGUST 30, 2005
TO: FILE
FROM: JIM GALLOWAY, PUBLIC WORKS DIRECTOR *JH FOR JG*
RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES MAY 1997: INTERIM CHANGE NO. 15

Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May, 1997:

Part V (Storm Sewer Collection - General Requirements):

1. Change Paragraph 4 to read: "Storm sewer design for subdivisions shall be designed to control the 2-year, 24-hour post-development peak flow rate to the pre-development erosion -initiating rate (one-half of the 2-year, 24-hour flow rate). The facilities shall also control the post-development flows from the 5-, 10-, and 25-year, 24-hour peak flows to the pre-development 5-, 10-, and 25-year, 24-hour flow rates. Use either the rational and/or the Santa Barbara method to determine the rate and volume of discharge."
2. Change Paragraph 7 to read: "Rainfall coefficients shall be based on the ultimate development planned or the land use shown in the City of Troutdale Comprehensive Land Use Plan."
3. Add the following paragraph: "Stormwater quality treatment shall comply with the 2002 *Stormwater Management Manual*, City of Portland Bureau of Environmental Services."

c: Travis Hultin
Kevin Rauch
Mike Sorensen
Olaf Sweetman
Amy Pepper
Rich Faith

Paragraph 3 rescinded. See Interim Change #25 paragraph 1 for wording.

Memo

DATE: 5/2/2007

TO: FILE

FROM: JIM GALLOWAY, PUBLIC WORKS DIRECTOR *Jim*

RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES, MAY
1997: INTERIM CHANGE NO. 16

Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May, 1997:

Part V (Storm Sewer Collection – General Comments):

1. Change Paragraph 6 to read: "Rainfall intensities used for storm sewer analysis and/or design shall be those published by the National Oceanic and Atmospheric Administration for Troutdale, Oregon. NOAA 24-hour rainfall depths for Troutdale are:

2-year, 24-hour	-	2.7"
5-year, 24-hour	-	3.3"
10-year, 24-hour	-	3.8"
25-year, 24-hour	-	4.1"

For rational method calculations, intensity-duration-recurrence curves for Zone 8 in the Oregon Department of Transportation Hydraulics Manual shall be used."

Memo

DATE: July 2, 2007

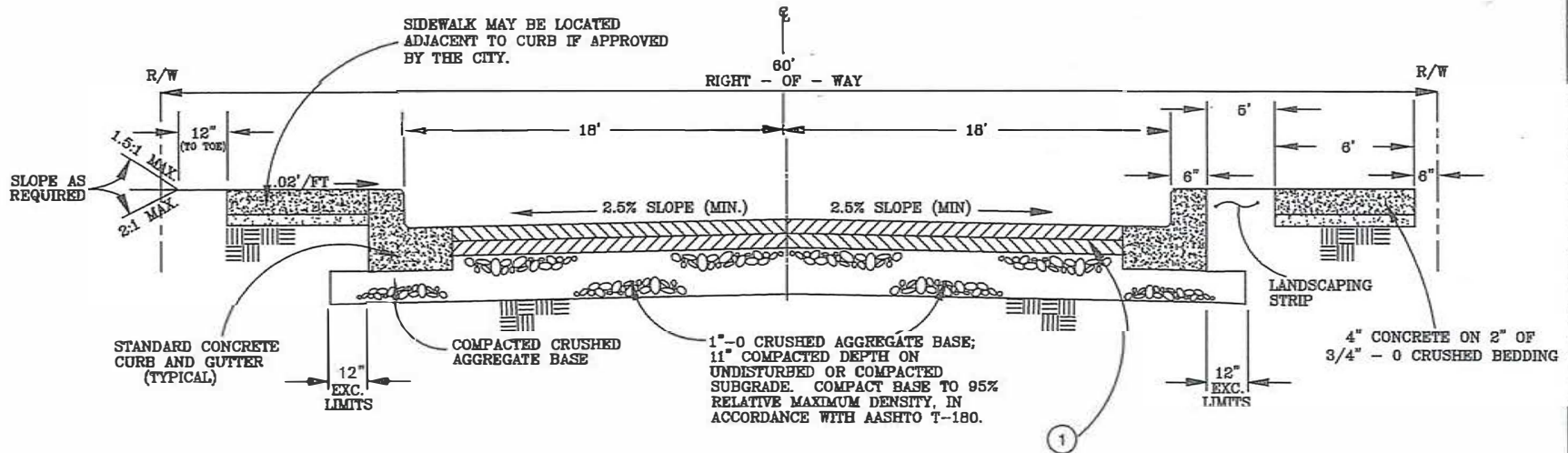
TO: FILE

FROM: JIM GALLOWAY, PUBLIC WORKS DIRECTOR *Jim*

RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES, MAY
1997: INTERIM CHANGE NO. 17

Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May, 1997:

Drawing No. II-1 (Commercial/Industrial Street Cross Section) Updated 1997 is replaced with the attached Drawing No. II-1.1 (Commercial/Industrial Street Cross Section) Updated 2007.



COMMERCIAL/INDUSTRIAL STREET CROSS SECTION (NTS)

NOTES:

- ① 4" OF ASPHALTIC CONCRETE, LEVEL 2, 1/2" (12.5mm) SUPERPAVE MIX (APWA/ODOT SPECS) PLACED IN 2 EQUAL LIFTS OF 2" COMPACTED DEPTH EACH. COMPACT EACH LIFT TO 91% RMD. THE FINAL 2" LIFT WILL BE PLACED AFTER 90% OF THE LOTS ARE OCCUPIED OR 2 YEARS AFTER PLACEMENT OF THE FIRST LIFT, WHICHEVER OCCURS FIRST. THE CITY MAY REQUIRE, AT ITS SOLE DISCRETION, THAT BOTH LIFTS BE PLACED AT THE SAME TIME.

GENERAL:

1. THESE STANDARDS ARE SHOWN AS MINIMUM ALLOWABLE STANDARDS. THE CITY MAY REQUIRE MODIFICATIONS DUE TO ADVERSE SOIL CONDITIONS, SPECIAL TRAFFIC CONDITIONS OR OTHER UNFORESEEN RELEVANT FACTORS.
2. ALL MATERIAL AND WORKMANSHIP SHALL MEET THE REQUIREMENTS OF THE AMERICAN PUBLIC WORKS ASSOCIATION STANDARD SPECIFICATIONS.
3. DEFLECTION/COMPACTION TESTS WILL BE REQUIRED AS DEEMED NECESSARY BY THE CITY. NO DEFLECTION IS ALLOWED.
4. SUBGRADE MUST BE APPROVED BY THE CITY PRIOR TO PLACEMENT OF BASE ROCK. BASE MUST BE APPROVED BY THE CITY PRIOR TO PLACEMENT OF ASPHALT CONCRETE.


COMMERCIAL/INDUSTRIAL
STREET CROSS SECTION

CITY OF TROUTDALE

DATE:
UPDATED 2007

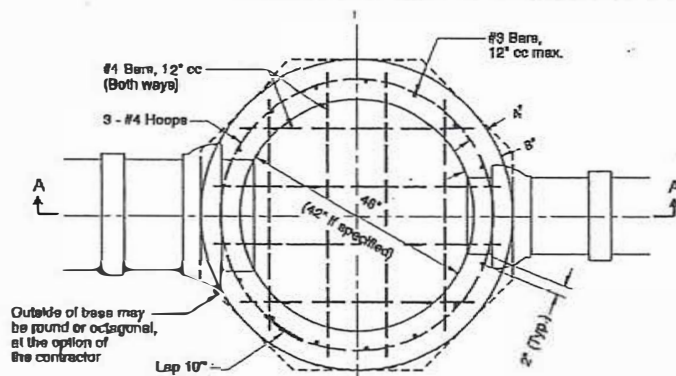
DRAWING NO.
II - 1.1

Memo

TO: FILE
FROM: JIM GALLOWAY, PUBLIC WORKS DIRECTOR 
DATE: FEBRUARY 28, 2008
RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS
FACILITIES, MAY 1997: INTERIM CHANGE NO. 18

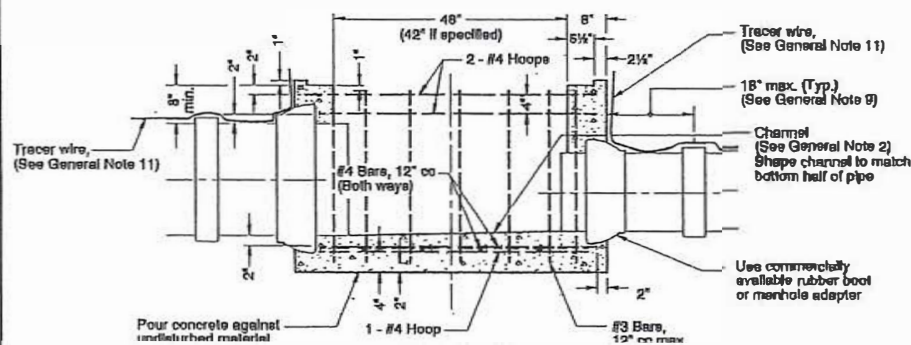
Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May 1997:

Drawing No. VIII-3 (48" Manhole Base (Sanitary or Storm)) Updated 1997 is replaced with ODOT/APWA standard drawing RD-344 (Standard Manhole Base Section), attached.



PLAN

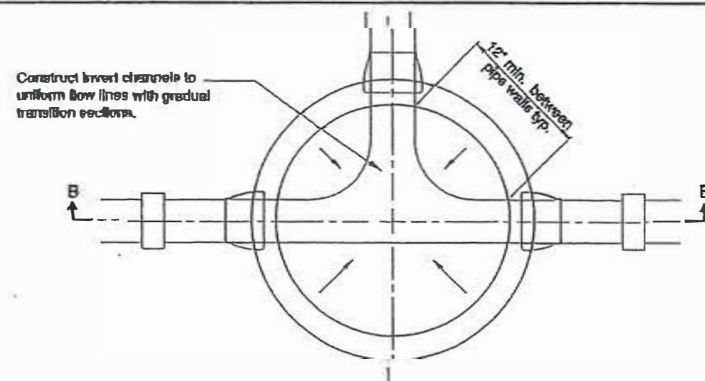
All metal reinforcement shall be 2" clear of nearest face of conc., unless otherwise shown.



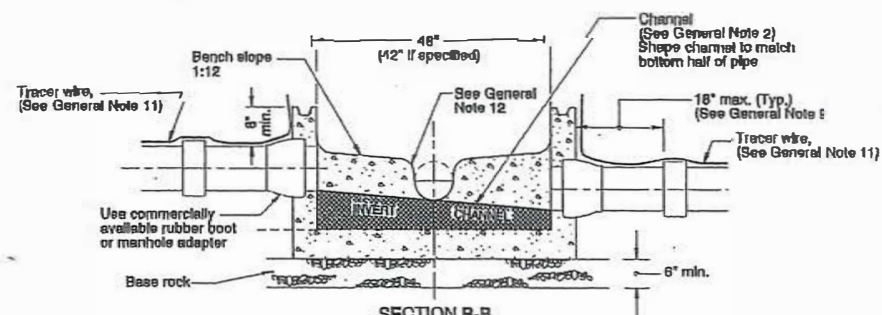
SECTION A-A

CAST IN PLACE MANHOLE BASE

(For Invert channel details, see precast option at right)



PLAN



SECTION R-R

PRECAST MANHOLE BASE

GENERAL NOTES FOR ALL DETAILS:

- Concrete shall be Commercial Grade Concrete.
- Channels shall be constructed to provide smooth slopes and radii to outlet pipe.
- Bases may be precast or cast in place.
- This manhole base section shall be used for pipe sizes up to 24".
- Use on 42" and 48" diameter manhole.
- Extend pipe into manhole and grout smooth. Pipe(s) may extend 2" max. beyond the interior manhole wall.
- Location, elevation, and number of pipe(s) varies.
- All precast sections shall conform to the requirements of ASTM C478.
- All connecting pipes shall have a flexible, gasketed and unrestrained joint within 18" of manhole wall.
- See Std. Dwg. RD338 for manhole steps details.
- See Std. Dwg. RD338 for tracer wire details.
- At spring line of pipe, extend channel up to crown line on 12:1 batter.

C.D.L. BOOK NO.

DATE/REV. REPORT DATE

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

OREGON STANDARD DRAWINGS

STANDARD MANHOLE BASE SECTION

2002

DATE	REVISION DESCRIPTION
04-04	ADDED INVERT CHANNEL TRANSITION
11-03	ADDED BENCH SLOPE DIVING WHILE DETAILS & WORK

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.

Effective Date: November 1, 2007 - May 31, 2008

RD344

Memo to File
Change #19
Rescinded
See IC 30

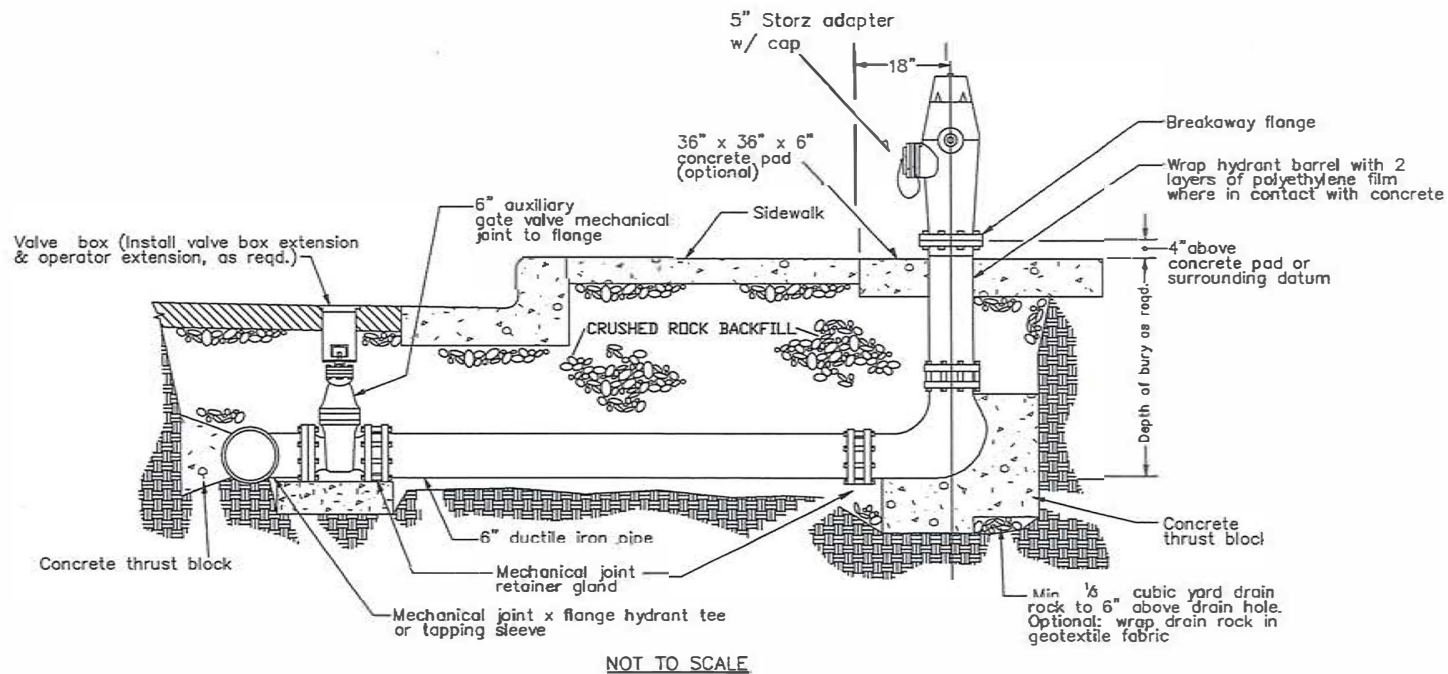
Memo

DATE: 5/17/2012
TO: FILE
FROM: CHARLIE WARREN, PUBLIC WORKS DIRECTOR
RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES, MAY 1997: INTERIM CHANGE NO. 20



Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" date May, 1997:

1. Replace Standard Drawing IV-2, "Fire Hydrant Assembly (Behind Sidewalk), with the attached drawing RD 254-CoTA, "Hydrant Assembly (Behind Sidewalk)" [Attached]
2. Replace Standard Drawing IV-3, "Fire Hydrant Assembly (Behind Curb), with the attached drawing RD 254-CoTA, "Hydrant Assembly (In Landscaping Strip)" [Attached]



GENERAL NOTES:

1. When placed in landscaping strip, see detail RD 254-COT B.
2. When pipe is longer than 18' retainer glands not required.
3. When pipe is shorter than 18', no joints allowed. Use mechanical joint retainer glands.
Two 3/4" galvanized tie rods may be used in lieu of thrust blocks for installations less than 18' long.
Coat tie rods with two coats of coal tar epoxy.
4. Concrete thrust blocks shall be constructed as per thrust blocking Std. Drg. RD250. Do not block drain holes
5. Extensions required for hydrant systems shall be installed to the manufacturer's specifications.
6. Hydrants shall be placed to provide a minimum of 5' clearance from driveways, poles, and other obstructions.
7. Hydrant pumper port shall face direction of access.
8. Set hydrant plumb in all directions.
9. Public hydrants shall be painted safety yellow. Private hydrants safety red.
10. 5" Storz adapter (NST) with pressure cap shall be installed on the 4 1/2" port.
11. Storz adapter and cap shall be high-strength aluminum alloy. Cap shall be attached to the hydrant barrel or adapter with tamper-proof cable.
12. Storz adapter shall have Teflon coated seat and threads with rubber gasket and set screws.

HYDRANT MODELS ALLOWED

- A. Mueller 200
- B. Waterous Pacer 6790
- C. Kennedy K-81 Guardian
- D. Clow Medallion
- E. M&H Style 129
- F. Approved equal

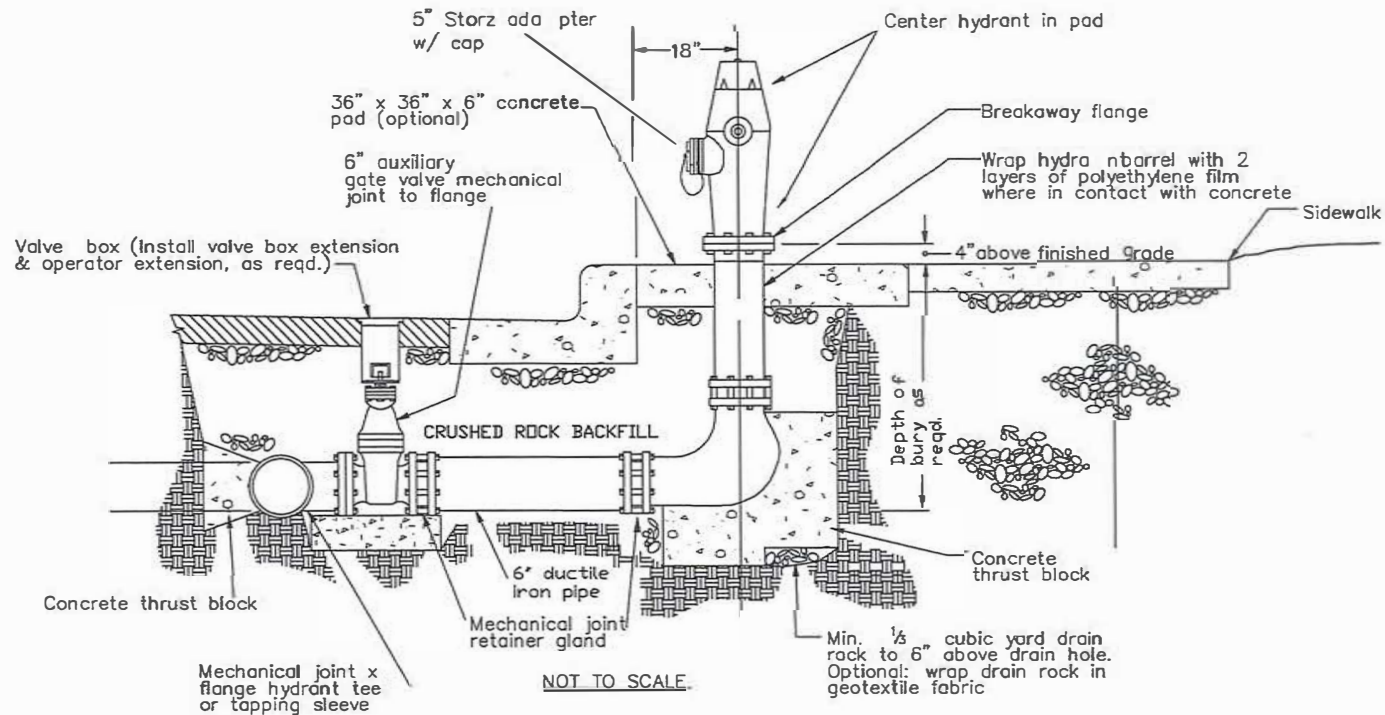
Title: Hydrant Assembly (Behind Sidewalk)

Drawing #:	File Name:
RD254-CoTA	RD254 COT A.dwg
Date:	Drawn by:
5/17/2012	TH

REVISIONS

Date	Description	By
5/17/2012	Interim Change #20 Issued	TH





GENERAL NOTES:

1. When placed in landscaping strip, see detail RD 254-COT B.
2. When pipe is longer than 18' retainer glands not required.
3. When pipe is shorter than 18', no joints allowed. Use mechanical joint retainer glands.
Two 3/4" galvanized tie rods may be used in lieu of thrust blocks for installations less than 18' long.
Coat tie rods with two coats of coal tar epoxy.
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HYDRANT MODELS ALLOWED:

- A. Mueller 200
- B. Waterous Pacer 6790
- C. Kennedy K-81 Guardian
- D. Clow Medallion
- E. M&H Style 129
- F. Approved equal

Title: Hydrant Assembly (In Landscaping Strip)

Drawing #:	File Name:
RD254-CoTB	RD254 COT B.dwg
Date:	Drawn by:
5/17/2012	AH, TH

REVISIONS

Date	Description	By
5/17/2012	Interim Ch g #20 Issued	TH

Public Works Dept. 342 SW 4th St., Troutdale, OR 97060 503-674-3300



Memo

City of Troutdale
Public Works Department

DATE: June 21, 2013

TO: FILE

FROM: TRAVIS HULTIN, CHIEF ENGINEER/ACTING PUBLIC WORKS DIRECTOR *TH*

RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES, MAY 1997:
INTERIM CHANGE #21

Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May 1997:

Part I (Streets – General Comments):

1. Change Paragraph 1 to read: "Elevations for vertical control in construction plans and as-built drawings shall be based on the North American Vertical Datum of 1988 (NAVD88)."
2. Add the following paragraph: At a minimum, the following typical features shall be field-surveyed post-construction to establish as-built positions and elevations to the nearest 0.01 feet (one hundredth foot):
 - a. Manhole and drywell rims, inverts and, if applicable, sump-bottoms.
 - b. Catch basin and inlet rims, inverts and sump-bottoms
 - c. Storm water outfall inverts
 - d. Cleanout rims and inverts
 - e. Fire hydrants (top nut)
 - f. Flow control structure inverts and orifices
 - g. Water valves (operating nut) and Water valve can lid rims
 - h. Public street centerlines/monuments
 - i. Curb return PC's and PT's
 - j. Sanitary sewer lateral stub-ends
 - k. Storm sewer lateral stub-ends
 - l. Water service laterals (at crossing of curb) and meter boxes (horizontal only for both)

The Engineer may designate additional features to be post-surveyed for a project, as needed. As-built drawings provided to the City shall incorporate the post survey results, with all listed items reflected in their true as-built locations and elevations.

Memo

City of Troutdale
Public Works Department

DATE: April 22, 2014

TO: FILE

FROM: Steve Gaschler, Public Works Director

RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES, MAY 1997:
INTERIM CHANGE #22 – Water System State Plan Review Exemption

Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May 1997:

Part III (Water Distribution System – General Comments):

Paragraph 27 is deleted and replaced with the following:

3. The City of Troutdale has received a plan review exemption from the Oregon Health Authority - Drinking Water Program (OHA-DWP) for water main extensions.
 - a. Water main extension plans are not submitted to OHA-DWP for review and the OHA-DWP plan review fee is not applicable. The City will conduct review of water main extension plans and the developer must receive approval by the City prior to commencing construction.
 - b. *OAR 333-061-050, Public Water Systems, Construction Standards* is hereby incorporated into the City of Troutdale *Construction Standards for Public Works Facilities*. Where these OHA-DWP standards differ from other City-adopted construction standards, the more stringent standard shall apply.
 - c. Wells, spring sources, surface water sources, water treatment facilities, facilities for continuous disinfection and disinfectant residual maintenance, finished water sources, and pumping facilities are not exempted and must be submitted to OHA-DWP in accordance with *OAR 333-061-060*. Plans in these categories must be initially reviewed and approved by the City. Developer shall provide copies of the City-approved plans and the OHA-DWP plan review fee to the City and the City shall submit the plans and fee to OHA-DWP. Plans must receive OHA-DWP approval prior to commencing construction.

OAR 333-061-050 – Construction Standards

Oregon Health Authority – Drinking Water Program

(1) General:

(a) These standards shall apply to the construction of new public water systems and to major additions or modifications to existing public water systems and are intended to assure that the system facilities, when constructed, will be free of public health hazards and will be capable of producing water which consistently complies with the maximum contaminant levels;

(b) Facilities at public water systems must comply with the construction standards in place at the time the facility was constructed or installed for use at a public water system. A public water system shall not be required to undertake alterations to existing facilities, unless the standard is listed as a significant deficiency as prescribed in OAR 333-061-0076(4) and that creates a public health hazard, or if maximum contaminant levels are being exceeded.

(c) Non-public water systems that are converted to public water systems shall be modified as necessary to conform to the requirements of this rule.

(d) Facilities at public water systems shall be designed and constructed in a manner such that contamination will be effectively excluded, and the structures and piping will be capable of safely withstanding external and internal forces acting upon them;

(e) Only materials designed for potable water service and meeting NSF Standard 61, Section 9 -Drinking Water System Components — Health Effects (Revised September, 1994) or equivalent shall be used in those elements of the water system which are in contact with potable water;

(f) New tanks, pumps, equipment, pipe valves and fittings shall be used in the construction of new public water systems, major additions or major modifications to existing water systems. The Authority may permit the use of used items when it can be demonstrated that they have been renovated and are suitable for use in public water systems;

(g) Prior to construction of new facilities, the water supplier shall submit plans to the Authority for approval as specified in OAR 333-061-0060(1)(a).

(h) Construction may deviate from the requirements of this section provided that documentation is submitted, to the satisfaction of the Authority, that the deviation is equal to or superior to the requirements of this section as specified in OAR 333-061-0055 (variances from construction standards).

(i) A public water system or other Responsible Management Authority using groundwater, or groundwater under the direct influence of surface water, derived from springs, confined or unconfined wells that wish to have a state certified wellhead protection program shall comply with the requirements as specified in OAR 333-061-0057, 0060, and 0065, as well as OAR 340-040-0140 through 0200. Additional technical information is available in the Oregon Wellhead Protection Guidance Manual.

(j) All new groundwater sources are subject to consideration for potential direct influence of surface water as prescribed in OAR 333-061-0032(7).

(8) Distribution systems:

(a) Wherever possible, distribution pipelines shall be located on public property. Where pipelines are required to pass through private property, easements shall be obtained from the property owner and shall be recorded with the county clerk;

(b) Pipe, pipe fittings, valves and other appurtenances utilized at Community water systems shall be manufactured, installed and tested in conformance with the latest standards of the American Water Works Association, NSF International or other equivalent standards acceptable to the Authority;

(c) In Community water systems, distribution mains located in public roadways or easements, and the portion of the service connections from the distribution main to the customer's property line or service meter where provided are subject to the requirements of these rules. The piping from the customer's property line, or the meter where provided, to the point of water use (the building supply line) is subject to the requirements of the State Plumbing Code;

(d) In all Public Water Systems where the system facilities and the premises being served are both on the same parcel of property, requirements relating to pipe materials and pipe installation shall comply with the State Plumbing Code;

(e) Distribution piping shall be designed and installed so that the pressure measured at the property line in the case of Community water systems, or at the furthest point of water use, in the case of a Transient Non-Community water system of the type described in subsection (d) of this section, shall not be reduced below 20 psi;

(f) Distribution piping shall be carefully bedded and fully supported in material free from rocks and shall be provided with a cover of at least 30 inches. Select backfill material shall be tamped in layers around and over the pipe to support and protect it. Large rocks or boulders shall not be used as backfill over the pipe;

(g) Provision shall be made at all bends, tees, plugs, and hydrants to prevent movement of the pipe or fitting;

(h) Wherever possible, dead ends shall be minimized by looping. Where dead ends are installed, or low points exist, blow-offs of adequate size shall be provided for flushing;

(i) Air-relief valves shall be installed at high points where air can accumulate. The breather tube on air-relief valves shall be extended above ground surface and provided with a screened, downward facing elbow;

(j) Yarn, oakum, lead or other material which may impair water quality shall not be used where it will be in contact with potable water;

(k) Nonconductive water pipe (plastic or other material) that is not encased in conductive pipe or casing must have an electrically conductive wire or other approved conductor for locating the pipe when the

pipeline is underground. The wire shall be No. 18 AWG (minimum) solid copper with blue colored insulation. Ends of wire shall be accessible in water meter boxes, valve boxes or casings, or outside the foundation of buildings where the pipeline enters the building. The distance between tracer lead access locations shall not be more than 1,000 feet. Joints or splices in wire shall be waterproof.

(I) Piping that is to be used for disinfection contact time shall be verified by plug flow calculations under maximum flow conditions.

(9) Crossings-Sanitary sewers and water lines:

(a) All reference to sewers in this section shall mean sanitary sewers;

(b) In situations involving a water line parallel to a sewer main or sewer lateral, the separation between the two shall be as indicated in Figure 1; [Figure not included. See ED NOTE.]

(c) In situations where a water line and a sewer main or sewer lateral cross, the separation between the two shall be as follows:

(A) Wherever possible, the bottom of the water line shall be 1.5 feet or more above the top of the sewer line and one full length of the water line shall be centered at the crossing;

(B) Where the water line crosses over the sewer line but with a clearance of less than 1.5 feet, the sewer line shall be exposed to the sewer line joints on both sides of the crossing to permit examination of the sewer pipe. If the sewer pipe is in good condition and there is no evidence of leakage from the sewer line, the 1.5-foot separation may be reduced. However, in this situation, the water supplier must center one length of the water line at the crossing and must prepare a written report of the findings and indicating the reasons for reducing the separation. If the water supplier determines that the conditions are not favorable or finds evidence of leakage from the sewer line, the sewer line shall be replaced with a full length of pipe centered at the crossing point, of PVC pressure pipe (ASTM D-2241, SDR 32.5), high-density PE pipe (Drisco pipe 1000), ductile-iron Class 50 (AWWA C-51), or other acceptable pipe; or the sewer shall be encased in a reinforced concrete jacket for a distance of 10 feet on both sides of the crossing.

(C) Where the water line crosses under the sewer line, the water supplier shall expose the sewer line and examine it as indicated in paragraph (9)(c)(B) of this rule. If conditions are favorable and there is no evidence of leakage from the sewer line, the sewer line may be left in place, but special precautions must be taken to assure that the backfill material over the water line in the vicinity of the crossing is thoroughly tamped in order to prevent settlement which could result in the leakage of sewage. In this situation, the water supplier must center one length of the water line at the crossing and must prepare a written report recording the manner in which the sewer line was supported at the crossing and the material and methods used in backfilling and tamping to prevent settlement of the sewer. If the water supplier determines that conditions are not favorable or finds evidence of leakage from the sewer line, the provisions of paragraph (9)(c)(B) of this rule apply.

(d) When a water main is installed under a stream or other watercourse, a minimum cover of 30 inches shall be provided over the pipe. Where the watercourse is more than 15 feet wide, the pipe shall be of

special construction with flexible watertight joints, valves shall be provided on both sides of the crossing so that the section can be isolated for testing or repair, and test cocks shall be provided at the valves.

(10) Disinfection of facilities:

(a) Following completion of new facilities and repairs to existing facilities, those portions of the facilities which will be in contact with the water delivered to users shall be disinfected with chlorine before they are placed into service. Other disinfectants may be used if it is demonstrated that they can also achieve the same result as chlorine;

(b) Prior to disinfection, the facilities shall be cleaned and flushed with potable water according to AWWA Standards C651 through C654;

(c) For new construction and installation of wells, pumps, and water mains (with any associated service connections and other appurtenances installed at the time of construction), disinfection by chlorination shall be accomplished according to AWWA standards C651 through C654 which includes, but is not limited to the following:

(A) The introduction of a chlorine solution with a free chlorine residual of 25 mg/l into the system in a manner which will result in a thorough wetting of all surfaces and the discharge of all trapped air. The solution shall remain in place for 24 hours.

(B) After the 24-hour period, the free chlorine residual shall be checked, and if it is found to be 10 mg/l or more, the chlorine solution shall be drained and the facility flushed with potable water. If the check measurement taken after the 24-hour contact period indicates a free chlorine residual of less than 10 mg/l, the facilities shall be flushed, rechlorinated and rechecked until a final residual of 10 mg/l or more is achieved after a 24-hour standing time.

(C) After the final residual is confirmed at 10 mg/l or more, and after the facility is flushed and filled with potable water, bacteriological samples shall be taken to provide a record for determining the procedures' effectiveness. A minimum of two consecutive samples must be collected at least 24 hours apart from the new facilities for microbiological analysis. If the results of both analyses indicate that the water is free of coliform organisms, the facility may be put into service. Likewise, if the microbiological analysis indicates the presence of coliform organisms, the flushing and disinfection must be repeated until a sample free of coliform organisms is obtained.

(d) For repaired wells, pumps, and completely depressurized water mains, disinfection by chlorination shall be accomplished according to AWWA standards C651 through C654. Following thorough flushing, a minimum of one sample must be collected from each direction of flow downstream from the repaired facilities for microbiological analysis. If the direction of flow is unknown, then samples shall be taken on each side of the repaired facility. If the microbiological analysis indicates the presence of coliform organisms, a follow-up sample shall be taken. If the follow-up sample indicates a presence of coliform organisms, then the repaired components shall be flushed and resampled until a sample free of coliform organisms is obtained.

(e) For reservoirs and tanks, disinfection by chlorination shall be accomplished according to AWWA Standard C652 which includes, but is not limited to, the following methods:

(A) Filling the reservoir or tank and maintaining a free chlorine residual of not less than 10 mg/l for the appropriate 6 or 24 hour retention period; or

(B) Filling the reservoir or tank with a 50 mg/l chlorine solution and leaving for six hours; or

(C) Directly applying by spraying or brushing a 200 mg/l solution to all surfaces of the storage facility in contact with water if the facility were full to the overflow elevation.

(f) When the procedures described in paragraphs (10)(e)(A) and (B) of this rule are followed, the reservoir or tank shall be drained after the prescribed contact period and refilled with potable water, and a sample taken for microbiological analysis. If the results of the analysis indicate that the water is free of coliform organisms, the facility may be put into service. If not, the procedure shall be repeated until a sample free of coliform organisms is obtained;

(g) When the procedure described in paragraph (10)(e)(C) of this rule is followed, the reservoir or tank shall be filled with potable water and a sample taken for microbiological analysis. It will not be necessary to flush the reservoir or tank after the chlorine solution is applied by spraying or brushing. Microbiological analysis shall indicate that the water is free of coliform organisms before the facility can be put into service;

(h) When a reservoir is chlorinated following routine maintenance, inspection, or repair, it may be put back into service prior to receiving the report on the microbiological analysis provided the water leaving the reservoir has a free chlorine residual of at least 0.4 mg/l or a combined chlorine residual of at least 2.0 mg/l.

(i) Underwater divers used for routine maintenance, inspection, or repair of reservoirs shall use a full body dry suit with hardhat scuba and an external air supply. The diver shall be disinfected by spraying a 200 mg/l solution of chlorine on all surfaces that will come into contact with drinking water.

(j) A water line may be returned to service, following repairs or routine maintenance, prior to receiving a report on the microbiological analysis if the following procedures have been completed.

(A) Customer meters were shut off prior to placing the water line out of service;

(B) The area below the water line to be repaired was excavated and dewatered;

(C) The exposed pipe was treated with a hypochlorite solution;

(D) The water line and any other appurtenance or item affected by the repair and/or maintenance was disinfected by chlorination according to AWWA standards C651 through C654;

(E) The water line was flushed thoroughly, and a concentration of residual chlorine has been re-established that is comparable to the level normally maintained by the water system, if applicable; and

(F) Microbiological analysis has been conducted as a record of repair effectiveness.

Memo

City of Troutdale
Public Works Department

DATE: May 2, 2014

TO: FILE

FROM: Steve Gaschler, Public Works Director *SG*

RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES, MAY 1997:
INTERIM CHANGE #23

Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May 1997:

Part VII (Sanitary Sewer – General Comments):

Paragraph 3 is deleted and replaced with the following:

3. The City of Troutdale has received a plan review exemption from the Oregon Department of Environmental Quality for gravity sanitary sewer collection systems.
 - a. Gravity sanitary sewer collection system plans are not sent to DEQ for review and the DEQ plan review fee is not applicable. The City will conduct review of gravity sanitary sewer collection system plans and the developer must receive approval by the City prior to commencing construction.
 - b. *OAR 340-52 Appendix A, Sewer Pipelines* and the *DEQ Sanitary Sewer Design Notes, September 1994* are hereby incorporated into the *City of Troutdale Construction Standards for Public Works Facilities*. Where these DEQ standards differ from other City-adopted construction standards, the more stringent standard shall apply.
 - c. Alternative sewer systems (including septic tank effluent pump/gravity, vacuum and grinder pump), pumping stations, and water pollution control facilities are not exempted and must be submitted to DEQ. Plans in these categories must be initially reviewed and approved by the City. Developer shall provide copies of the City-approved plans and the DEQ plan review fee to the City and the City shall submit the plans and fee to DEQ. Plans must receive DEQ approval prior to commencing construction.



Oregon

John A. Kitzhaber, MD, Governor

Department of Environmental Quality
Northwest Region Portland Office/Water Quality
2020 SW 4th Avenue, Suite 400
Portland, OR 97201-4987
(503) 229-5263
FAX (503) 229-6957
TTY 711

April 30, 2014

Steve Gaschler
Public Works Director
342 SW 4th St
Troutdale, OR 97060

Re: Request for Exemption of Sanitary Sewer Plan Review by DEQ
Troutdale WPCF, File No. 89941, Permit #101044
Multnomah County

On April 21, 2014, a request was received from the Steve Gaschler of the City of Troutdale to exempt the city from DEQ plan review of gravity sanitary sewer plans per OAR 340-052-0045. The City has three professional engineers on staff of which the chief engineer, Travis Hultin PE will bear primary plan review responsibility.

The exemption is granted ONLY for gravity sanitary sewer projects.

Should you have any questions about this letter, please call me at 503-229-5310.

Sincerely,

Michael L. Pinney PE
Senior Environmental Engineer DEQ NWR
Water Quality Source Control Section

Cc: Tiffany Yelton-Bram WQ-NWR
File

Memo

City of Troutdale
Public Works Department

DATE: July 24, 2014

TO: FILE

FROM: Steve Gaschler, Public Works Director

SG

RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES, MAY 1997:
INTERIM CHANGE #24 Superseded by IC No. 36

Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May 1997:

- 1) Sidewalk ramp standard drawings contained in Interim Change #10 (July, 2003) are replaced as follows:
 - a) Replace ODOT Drawing RD 755, "Sidewalk Ramp Details" (October 2002), with the current ODOT Drawing RD 755, "Sidewalk Ramp Details" (July 2013).
 - b) Replace ODOT Drawing RD 760, "Sidewalk Ramp Placement", with:
 - ODOT Drawing RD 756, "Sidewalk Ramp Placement Options Curb Radii <15' "; and
 - ODOT Drawing RD 757, "Sidewalk Ramp Placement Options Curb Radii >15' "; and
 - ODOT Drawing RD 759, "Truncated Dome Detectable Warning Surface Details & Locations"

Memo

City of Troutdale
Public Works Department

DATE: October 17, 2016

TO: FILE

FROM: Steve Gaschler, Public Works Director *SG*

RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES, MAY 1997:
INTERIM CHANGE #25 (REVISED)

Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May 1997:

Part V (Storm Sewer Collection – General Requirements)

- 1) Add the following paragraph: "Stormwater quality treatment shall comply with the 2014 *Stormwater Management Manual* (PSWMM), City of Portland Bureau of Environmental Services."
- 2) The Presumptive Approach Calculator (PAC) provided by the City of Portland shall not be utilized for stormwater quality facility sizing and design. The PAC is programmed with rainfall data that is specific to the City of Portland and not applicable to Troutdale. Facility sizing and design for stormwater quality treatment systems may utilize the Simplified Approach as allowed in the PSWMM. For designs that are not permitted to utilize the Simplified Approach in the PSWMM, the Performance Approach shall be utilized.
- 3) Paragraph 3 of Interim Change #15 is rescinded.

This interim change, originally issued on September 20, 2016, is revised to incorporate paragraph 2 above.

C: Travis Hultin, Chief Engineer
Amy Pepper, Civil Engineer
Greg McIntire, Wastewater Superintendent
Chris Damgen, Planning Director

Memo

City of Troutdale
Public Works Department

DATE: September 20, 2016

TO: FILE

FROM: Steve Gaschler, Public Works Director SG

RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES, MAY
1997: INTERIM CHANGE #26 (Superseded by IC#39)

Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May 1997:

Part III (Water – General Requirements)

1) Paragraph 24: The list of acceptable equipment for water meters is amended to read as follows:

Water Meters:

- ¾" and 1" sizes: Sensus SR II meter
- 1 ½" and larger sizes: Sensus Omni Compound (C²) meter or Sensus Omni Turbo (T²) meter

All meters shall have gallon registers.

C: David Schaffer, Water/Streets Superintendent
Travis Hultin, Chief Engineer
Amy Pepper, Civil Engineer

Memo

City of Troutdale
Public Works Department

DATE: September 20, 2016

TO: FILE

FROM: Steve Gaschler, Public Works Director SG

RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES, MAY 1997:
INTERIM CHANGE #27

Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May 1997:

- A. Part III (Water – General Requirements), Paragraph 24: The list of acceptable equipment for water meter boxes is amended to read as follows:

Meter Boxes: All water meter boxes for $\frac{3}{4}$ ", 1", 1 $\frac{1}{2}$ ", and 2" meters shall be Armorcast Rotocast Polyethylene meter boxes, or approved equal.

Meter box covers shall be matching Armorcast polyethylene or polymer concrete covers with cast iron hinged reader lids, or approved equal. Meter boxes in driveways or other areas subject to vehicle traffic shall have traffic-rated covers.

- B. Part IV (Water Construction Details), Drawing No. IV-7, the meter box reference is amended to read: Armorcast Rotocast Polyethylene Meter Box, or approved equal.
- C. Part IV (Water Construction Details), Drawing No. IV-7, Notes 6 and 7 are amended to read: Armorcast Rotocast Polyethylene Meter Box, or approved equal.
- D. Interim Change #7 is rescinded.
- C: Travis Hultin, Chief Engineer
Amy Pepper, Civil Engineer
David Schaffer, Water/Streets Superintendent

Memo

City of Troutdale
Public Works Department

DATE: September 20, 2016

TO: FILE

FROM: Steve Gaschler, Public Works Director 

RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES, MAY 1997:
INTERIM CHANGE #28

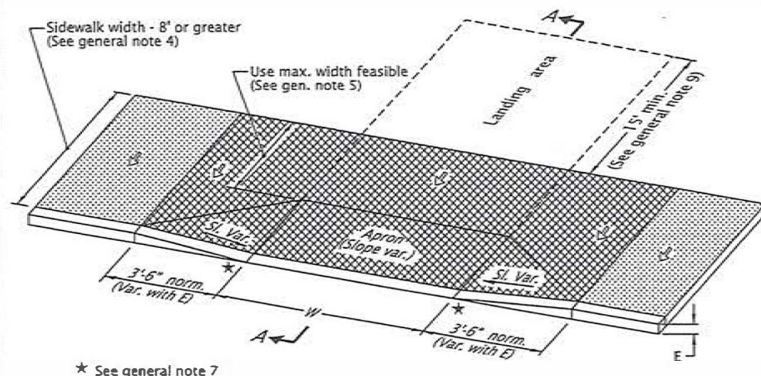
Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May 1997:

A. Part I (Streets – General Requirements), add the following paragraphs:

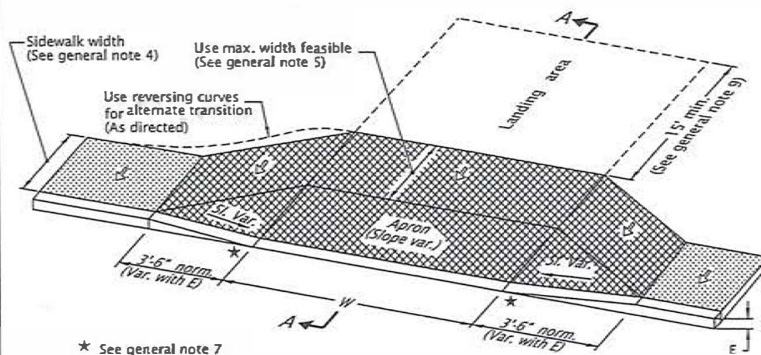
Clustered mailboxes shall be installed in all new subdivisions and partition plats.

Clustered mailboxes within City rights-of-way shall conform to the standards and specifications for such mailboxes contained in the State of Oregon Structural Specialty Code and shall meet the requirements of the Americans with Disabilities Act. Location(s) of clustered mailboxes shall be as directed by the Troutdale Post Master.

C: Travis Hultin, Chief Engineer
Amy Pepper, Civil Engineer
David Schaffer, Water/Streets Superintendent
Chris Damgen, Planning Director
Troutdale Post Master

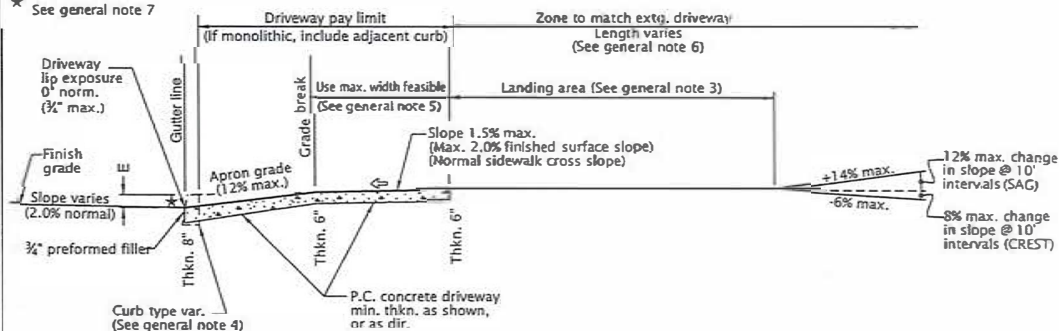


OPTION K
DRIVEWAY IN WIDE (8' OR GREATER) SIDEWALK



OPTION L
SIDEWALK WRAPPED AROUND DRIVEWAY

* See general note 7



SECTION A-A

GENERAL NOTES FOR ALL DETAILS:

- Details are based on United States Access Board Standards.
- Only use details allowed by jurisdiction.
- 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.
- Curb, gutter, and sidewalk types varies, see plans.
See Std. Drgs. RD700 & RD701 for curb details.
See Std. Drg. RD720 for sidewalk details.
- 4' unobstructed clear passage with slope 1.5% max. (Max. 2.0% finished surface slope) is required behind driveway apron.
- Where existing driveway is in good condition, and meets slope requirements, construct only as much as required for satisfactory connection with new work.
- 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.
- Tooled joints are required at all driveway slope break lines.
- 15' min. of the driveway behind the sidewalk should be surfaced to prevent tracking of gravel onto the sidewalk.
- Monolithic curb & sidewalk shall retain thickened edge through lowered profile, to accommodate driveway use. See Std. Drg. RD720 for details.
- Any dimensions except those of general note 5 may be amended by local agencies for their use.

- Sidewalk
- Driveway pay limit
(If monolithic, include adjacent curb)
- Slope 1.5% max.
(Max. 2.0% finished surface slope)
(Normal sidewalk cross slope)
- Width of driveway
- Curb exposure

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

CALC. BOOK NO. N/A

BASELINE REPORT DATE 22-JUL-2016

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 K & L) LOCAL JURISDICTIONS

2015	
DATE	REVISION DESCRIPTION
01-2015	REVISED NOTES
02-2015	REVISED NOTES
01-2016	REVISED NOTES
01-2016	REVISED NOTES & DRAWING

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.

Memo

DATE: September 20, 2016

TO: FILE

FROM: STEVE GASCHLER, PUBLIC WORKS DIRECTOR

SG

RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES, MAY 1997:
INTERIM CHANGE NO. 29

Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" date May, 1997:

A. Part I (Streets – General Requirements), add the following paragraphs:

- 1) Horizontal concrete cutting may performed for the removal of tripping hazards on public sidewalks within City rights-of-way. Horizontal cutting and removal of concrete shall not result in the sidewalk being less than 2" thickness. Sidewalk shall be cut to achieve a 1:12 running slope or flatter, or as otherwise compliant with the "Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way" published by the United States Access Board (<http://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/proposed-rights-of-way-guidelines>).
- 2) Sidewalk grinding is prohibited for sidewalks in City rights-of-way, and is distinct from horizontal cutting.

C: Travis Hultin, Chief Engineer
Amy Pepper, Civil Engineer
David Schaffer, Water/Streets Superintendent

Memo

DATE: September 20, 2016

TO: FILE

FROM: STEVE GASCHLER, PUBLIC WORKS DIRECTOR *SG*

RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES, MAY 1997:
INTERIM CHANGE NO. 30

Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" date May, 1997:

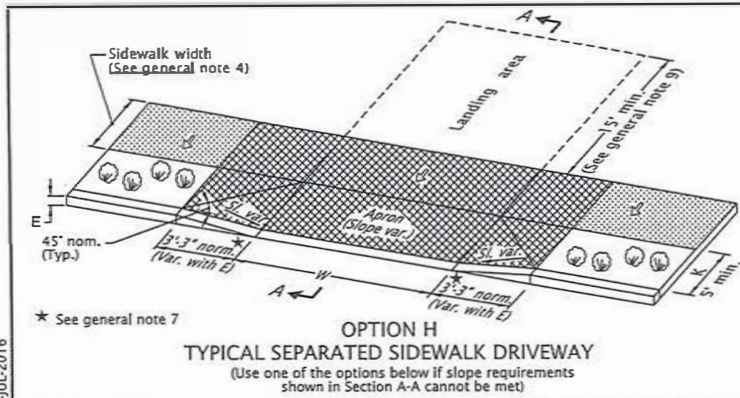
1. Replace ODOT Drawing RD 740, "Separated Sidewalk Driveways or Alleys (Options H, I, & J) Local Jurisdictions with the attached drawing RD 740 (bearing the same title).
2. Replace ODOT Drawing RD 745 and RD 750, "Curb Line Sidewalk Driveways or Alleys (Options K & L) Local Jurisdictions and "Curb Line Sidewalk Driveways or Alleys (Options M & N) Local Jurisdictions with the attached drawings RD 745 and RD 750 (bearing the same title).
3. The following driveway width standards shall apply to all driveway access points onto all City of Troutdale controlled rights-of-way:

Land Use	Width (Dimension "W" on standard details RD 740, 745 & 750)	
	Minimum	Maximum
Single-Family Residential	12'	24' on frontages of less than 50' 24' + 1' per 2' of frontage in excess of 50', up to ultimate max driveway width of 36'
Multi-family Residential	12'	36'
Commercial/Industrial	20'	40'

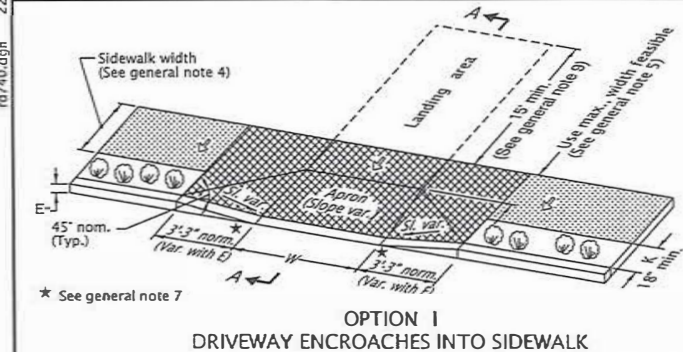
On cul-de-sac bulbs, where irregular lot geometry may not provide necessary frontage to meet the minimum widths indicated above, shared driveway approaches serving two or more lots may be permitted or required.

4. Interim change #19 is rescinded.

C: Travis Hultin, Chief Engineer
Amy Pepper, Civil Engineer
David Schaffer, Water/Streets Superintendent



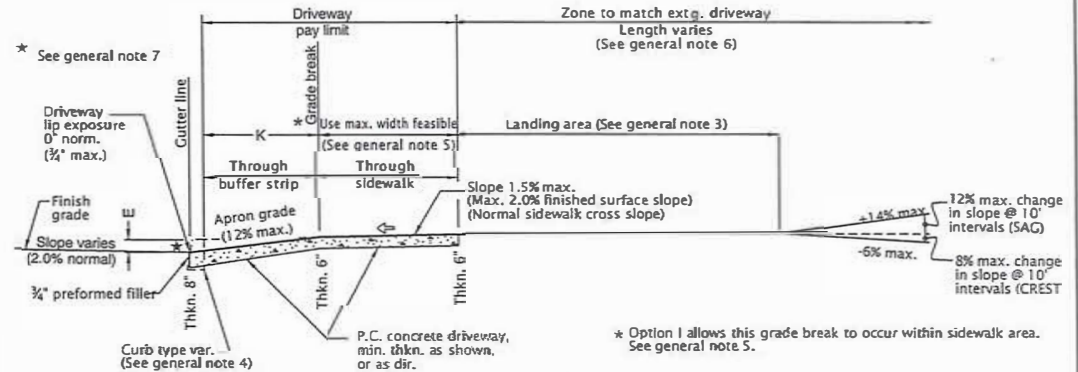
OPTION H
TYPICAL SEPARATED SIDEWALK DRIVEWAY
(Use one of the options below if slope requirements shown in Section A-A cannot be met)



OPTION I
DRIVEWAY ENCROACHES INTO SIDEWALK



OPTION J
LOWERED SIDEWALK



SECTION A-A

GENERAL NOTES FOR ALL DETAILS:

1. Details are based on United States Access Board 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, buffer strip 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. Drgs. RD700 & RD701 for curb details. See Std. Drg. RD720 for sidewalk details.
5. 4' unobstructed clear passage with 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 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. 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. Any dimensions except those of general note 5 may be amended by local agencies for their use.

	W Width of driveway
	K Buffer strip width
	E Curb exposure

- ◀ Slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)
- ◀ Slope 7.5% max. (Max. 8.3% finished surface slope) (Ramp length 15' max., measured along finished surface slope)

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

CALC. BOOK NO. N/A

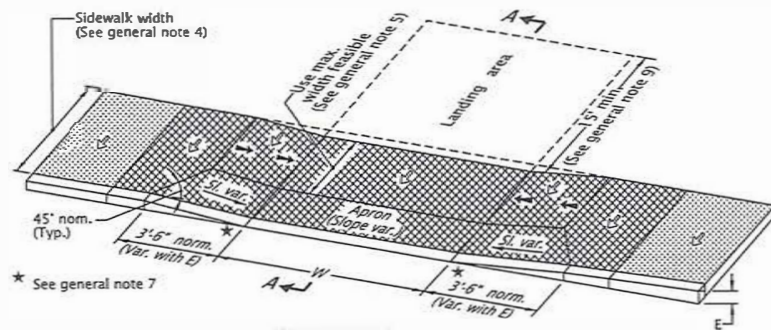
BASELINE REPORT DATE 22-JUL-2016

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

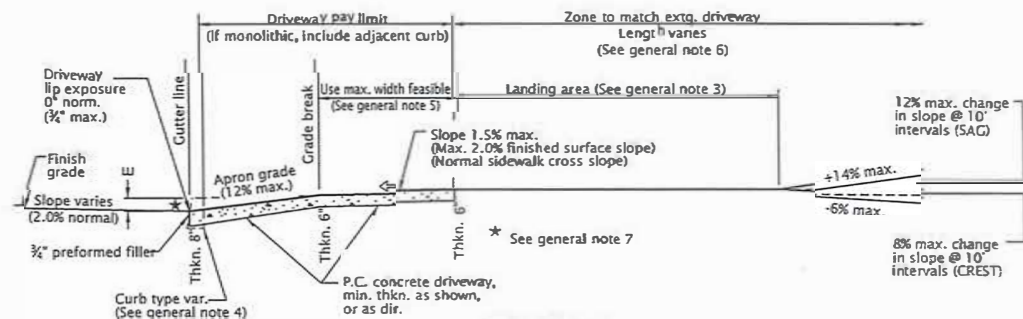
OREGON STANDARD DRAWINGS
SEPARATED SIDEWALK DRIVEWAYS
OR ALLEYS (OPTIONS H, I & J)
LOCAL JURISDICTIONS

DATE	REVISION	DESCRIPTION
01-2015	1	REVIEW NOTES
01-2015	2	REVIEW NOTES
01-2015	3	REVIEW NOTES
01-2015	4	REVIEW NOTES

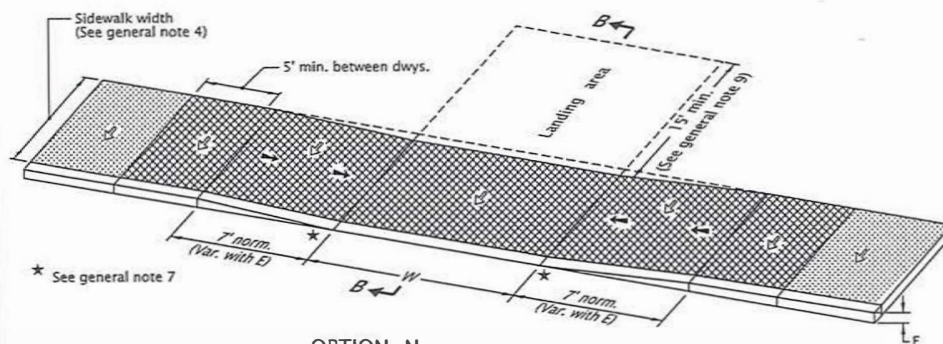
22-JUL-2016
rd750.dgn



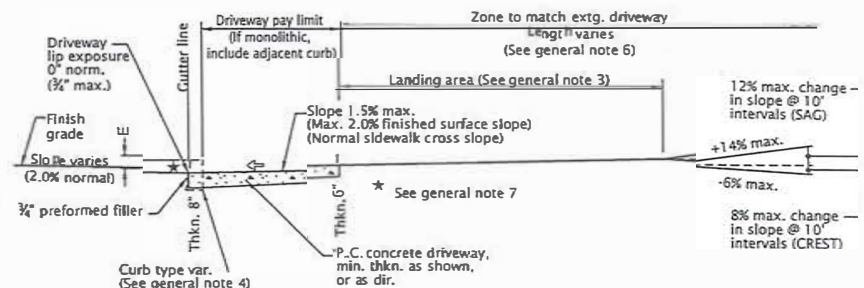
OPTION M
PARTIALLY LOWERED SIDEWALK



SECTION A-A



OPTION N
FULLY LOWERED SIDEWALK



SECTION B-B

GENERAL NOTES FOR ALL DETAILS:

- Details are based on United States Access Board Standards.
- Only use details allowed by jurisdiction.
- 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.
- Curb, gutter, and sidewalk types varies, see plans.
See Std. Drgs. RD700 & RD701 for curb details.
See Std. Drg. RD720 for sidewalk details.
- 4' unobstructed clear passage with slope 1.5% max. (Max. 2.0% finished surface slope) is required behind driveway apron.
- Where existing driveway is in good condition, and meets slope requirements, construct only as much as required for satisfactory connection with new work.
- 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.
- Tooled joints are required at all driveway slope break lines.
- 15' min. of the driveway behind the sidewalk should be surfaced to prevent tracking of gravel onto the sidewalk.
- Monolithic curb & sidewalk shall retain thickened edge through lowered profile, to accommodate driveway use. See Std. Drg. RD720 for details.
- Any dimensions except those of general note 5 may be amended by local agencies for their use.

	Sidewalk
	Driveway pay limit (If monolithic, include adjacent curb)
	Slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)
	Slope 7.5% max. (Max. 8.3% finished surface slope) (Ramp length 15' max., measured along finished surface slope)
	Width of driveway
	Curb exposure
NOTE: This drawing is to be used by local agencies to assist them in the design of driveways on their facilities.	

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.

BASELINE REPORT DATE: <u>22-JUL-2016</u>	
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	
DATE	2015
REVISIONS	
BY	
DATE	
REVISIONS	
BY	
DATE	
REVISIONS	

Memo

City of Troutdale
Public Works Department

DATE: September 20, 2016

TO: FILE

FROM: Steve Gaschler, Public Works Director SG

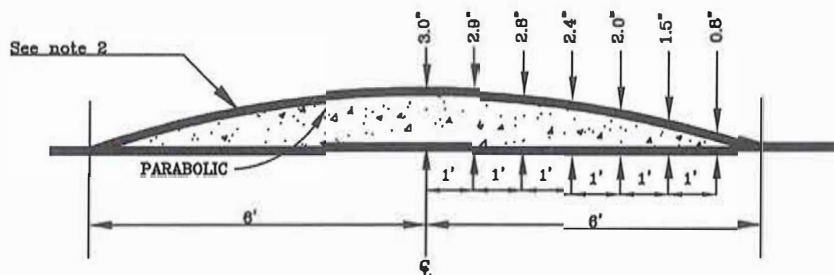
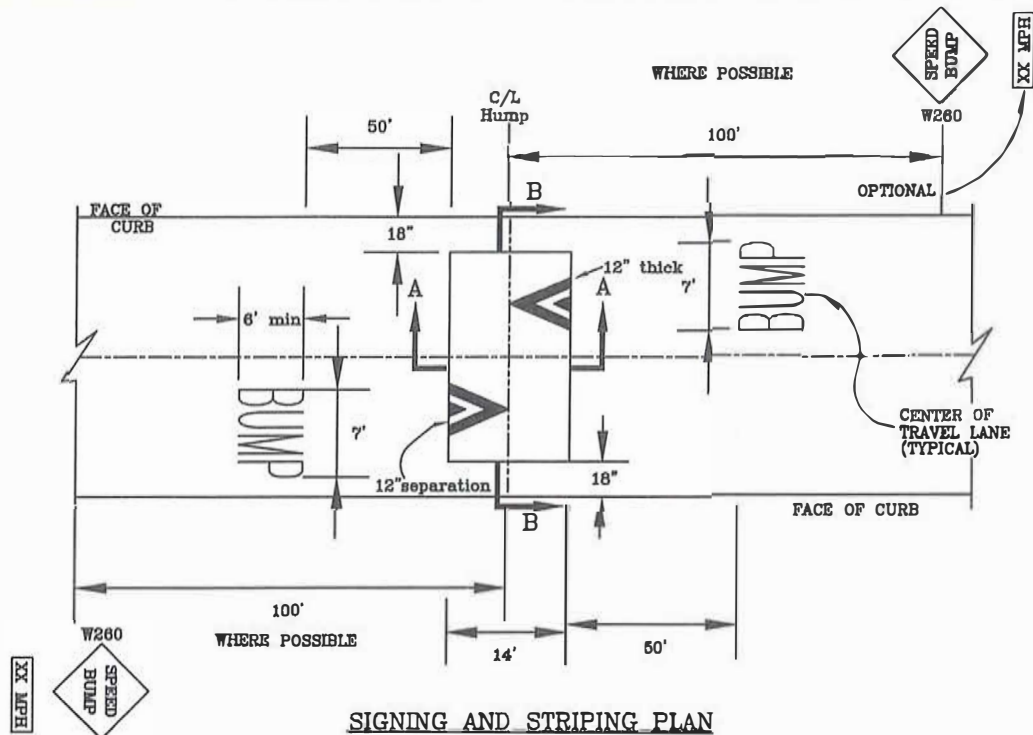
RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES, MAY 1997:
INTERIM CHANGE #31

Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May 1997:

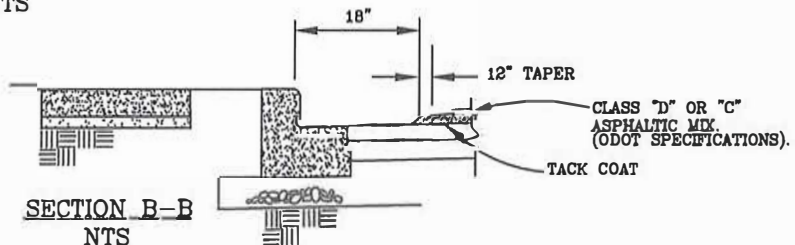
A. Part II (Streets – Construction Details)

Replace Standard Drawing II-25 (14' Wide Speed Hump) with the revised Standard Drawing II-25 bearing the same title, attached.

C: Travis Hultin, Chief Engineer
Amy Pepper, Civil Engineer
David Schaffer, Water/Streets Superintendent



SECTION A-A
NTS



SECTION B-B
NTS

GENERAL NOTES

1. SPEED HUMPS SHOULD BE SPACED ACCORDING TO AN ENGINEERING EVALUATION OF THE PHYSICAL STREET SECTION AS WELL AS TRAFFIC OPERATIONS DATA. TYPICALLY, SPEED HUMPS SHOULD BE SPACED BETWEEN 300 AND 600 FEET.
2. ALL SPEED HUMPS MUST BE FORMED WITH A PRE-MADE TEMPLATE TO ENSURE CONSISTENCY OF CONSTRUCTION FOR DEPTH AND SHAPE. TEMPLATE MUST BE INSPECTED BY CITY FORCES BEFORE PLACEMENT OF HUMPS.
3. AMBIENT TEMPERATURE MUST BE NO LESS THAN 55 DEG. F. DURING PLACEMENT OF HUMPS.
3. WHERE A SERIES OF SPEED HUMPS EXIST IN CLOSE PROXIMITY, THE ADVISORY SPEED PLAQUE MAY BE ELIMINATED ON ALL BUT THE FIRST SPEED HUMP IN THE SERIES, WITH THE APPROVAL OF THE CITY

CITY OF TROUTDALE

14' WIDE SPEED HUMP

DATE:
UPDATED 2016

DRAWING NO.
II-25

Memo

City of Troutdale
Public Works Department

DATE: March 15, 2017

TO: FILE

FROM: Steve Gaschler, Public Works Director *SG. 3-16-17*

RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES, MAY 1997:
INTERIM CHANGE #32

Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May 1997:

A. Part III (Water – General Requirements), Paragraph 24: The following specification is added:

Meter boxes for all $\frac{3}{4}$ " and 1" service laterals shall be sized for 1" meters

Make: Armorcast Rotocast Polyethylene

Part#: P6000485

Nominal Dimensions: 12"X20"X12"

Travis Hultin, Chief Engineer

C: David Schaffer, Water/Streets Superintendent

Erik Henricksen, Engineering Tech

Memo

DATE: August 1, 2017

TO: FILE

FROM: STEVE GASCHLER, PUBLIC WORKS DIRECTOR

SG

RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES, MAY 1997:
INTERIM CHANGE NO. 33

Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" date May, 1997:

1. Residential driveways and sidewalk sections through driveways shall have a nominal thickness of 6" of 3300 PSI concrete @ 28 days on no less than 2 inches thick (compacted depth), $\frac{3}{4}$ "-0 or 1"-0 well-graded crushed rock.
2. Commercial and industrial driveways and sidewalk sections through driveways shall have a nominal thickness of 8" of 3300 PSI concrete @ 28 days on no less than 4 inches thick (compacted depth), $\frac{3}{4}$ "-0 minus or 1"-0 well-graded crushed rock.

C: Travis Hultin, Chief Engineer
Zaldy Macalanda, Civil Engineer
Erik Henriksen, Engineering Associate
Nick Massey, Engineering Technician
David Schaffer, Water/Streets Superintendent

Memo

DATE: August 30, 2017

TO: FILE

FROM: STEVE GASCHLER, PUBLIC WORKS DIRECTOR S.G.

RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES, MAY 1997:
INTERIM CHANGE NO. 34 – EROSION CONTROL STANDARDS

Under the authority provided to me by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" date May, 1997:

1. An erosion and sediment control plan (ESCP) and permit shall be required and approved by the Director, or Director's representative:
 - a. Prior to any grubbing, excavation, mining, dredging, paving, filling, or grading that disturbs an area of 1,000 square feet or greater outside of the vegetation corridor and slope district or flood hazard area; or
 - b. Prior to any grubbing, excavation, mining, dredging, paving, filling, or grading on sites within the vegetation corridor and slope district or flood hazard areas; or
 - c. Upon a finding that visible or measurable erosion has entered, or is likely to enter, the public storm and surface water system.
2. Sites requiring an ESCP and erosion control permit involving disturbance of an area less than 1 acre must obtain a Site Development Permit for erosion control.
3. Sites requiring an ESCP and erosion control permit involving disturbance of an area greater than 1 acre must obtain an NPDES 1200-C Permit for erosion control. See <http://www.oregon.gov/deq/wq/wqpermits/Pages/Stormwater-Construction.aspx>
4. The current edition of the Oregon Department of Environmental Quality *Construction Stormwater Best Management Practices Manual* shall be the primary guide in establishing and reviewing erosion control techniques, methods, and requirements. See <http://www.oregon.gov/deq/FilterPermitsDocs/BMPManual.pdf>.
5. The duration of exposure of soils shall be minimized during construction. Exposed soils and stockpiles shall be covered by mulch, erosion control blankets, sheeting, temporary seeding, or

other suitable material following grading or construction, until soils are permanently stabilized with final vegetation or other approved permanent cover. During the wet season (Nov 1-April 30), disturbed areas and stockpiles that will remain unworked for seven consecutive calendar days shall be temporarily covered as provided above. At all other times of year, disturbed areas and stockpiles that will remain unworked for twenty one consecutive calendar days shall be temporarily covered as provided above.

6. Exemptions:

- a. Farming activities as defined in ORS 30.930 and farm uses defined in ORS 215.203, except construction or reconstruction of buildings on the site associated with farm practices, are exempt from the ESCP and permit requirements of this standard, provided that the specific subject land area has been cultivated within the last three years.

7. When an ESCP and erosion control permit are not required under this standard, any person creating ground disturbance within the City is nonetheless responsible for preventing dirt, mud, sand, clay, stone, gravel, bark mulch or similar material to be moved by the action of water from said property, or to be otherwise placed into or upon the public right-of-way, which shall include public streets, public sidewalks, and public storm or sanitary sewer systems, in accordance with Troutdale Municipal Code 12.09.

C: Travis Hultin, Chief Engineer
Ryan Largura, Environmental Specialist
Zaldy Macalanda, Civil Engineer
Erik Henriksen, Engineering Associate
Nick Massey, Engineering Technician

Memo

DATE: November 16, 2017

TO: FILE

FROM: TRAVIS HULTIN, DEPUTY PW DIRECTOR/CHIEF ENGINEER 

RE: *REVISED* CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES,
MAY 1997: INTERIM CHANGE NO. 35 – STORMWATER QUALITY
TREATMENT REQUIREMENTS

Under the authority provided to the Public Works Director by City Council Resolution No. 1312, and delegated to me by the Public Works Director, the following interim change is made to the "Construction Standards for Public Works Facilities" date May, 1997:

1. Applicability - Water quality treatment for stormwater is required for any/all of the following:
 - a. The site contains vegetation corridor established in Chapter 4.300 Vegetation Corridor and Slope District (VECO) of the Troutdale Development Code (TDC); abuts or drains directly to a protected water feature as defined by the TDC; or the site drains to, or is within, the Flood Management Area established in chapter 4.500 of the TDC.
 - b. The development involves fuel storage or dispensing areas, outdoor vehicle wash areas, or outdoor vehicle maintenance areas.
 - c. The development includes the development or redevelopment of 2,000 square feet or more of uncovered impervious area. Pavement overlays of existing paved surfaces shall not be considered redevelopment for the purpose of this standard. Removal and replacement of paved surfaces shall be considered redevelopment for the purpose of this standard.
 - d. The Public Works Director, or designee, determines that the development has other characteristics that may degrade stormwater quality if water quality treatment is not provided.
2. For development meeting the applicability criteria provided above, the developer shall submit a conceptual Stormwater Management Report with the Land Use Application, providing a qualitative description of the proposed approach to meeting the requirements of these stormwater quality standards; and shall submit a detailed Stormwater Management Report

with the building or plumbing permit application (whichever occurs first) providing a detailed description of the stormwater quality design including supporting calculations, drawings and reference materials. The Stormwater Management Report shall be prepared and sealed by a professional engineer licensed in the State of Oregon, and shall include a statement from the engineer certifying that the design of the water quality facilities meets or exceeds the requirements of these standards.

3. Design Standards - Water quality facilities for stormwater management, when required, shall be designed, constructed, and sited by the developer to ensure that stormwater runoff is treated onsite prior to discharge into public storm drainage systems, public rights-of-way, other private properties, and/or any protected water feature.
 - a. Stormwater quality treatment shall comply with the 2016 *Stormwater Management Manual* (PSWMM) and 2016 *Source Control Manual*, City of Portland Bureau of Environmental Services.
 - i. The Presumptive Approach Calculator (PAC) provided by the City of Portland shall not be utilized for stormwater quality facility sizing and design. The PAC is programmed with rainfall data that is specific to the City of Portland and not applicable to Troutdale. Facility sizing and design for stormwater quality treatment systems may utilize the Simplified Approach as allowed in the PSWMM. For designs that are not permitted to utilize the Simplified Approach in the PSWMM, the Performance Approach shall be utilized.
 - b. Vegetated stormwater quality facilities may be located within the vegetation corridor as defined by the TDC provided that only native vegetation shall be used.
 - c. A vegetated stormwater quality facility may be constructed within the 100-year flood plain provided that:
 - i. The Base Flood Elevation is established for areas of Special Flood Hazard Area Zone A.
 - ii. The stormwater quality facility is outside the area covered by the 25-year flood event.
 - iii. The stormwater quality facility is not within a defined floodway.
 - iv. The stormwater quality facility is planted with native plant species.
 - v. The design of the water quality facility complies with applicable federal standards of the National Flood Insurance Program.
 - d. Where it is determined by the Director of Public Works, or designee, that a more efficient and effective regional stormwater quality facility site exists to serve multiple properties in the sub-basin, the stormwater quality facility may be constructed offsite to accommodate anticipated development at the intensity and density of the underlying zoning districts of the properties to be served.
 - e. Stormwater quality design shall provide for source control of pollution, treatment of stormwater runoff, prevention of stream bank erosion, and prevention of wetland impacts/degradation.

4. When a stormwater quality facility is constructed or modified, an operation and maintenance plan for the facility shall be required. The operation and maintenance plan shall meet the requirements and guidelines specified by the Public Works Department.
5. If a stormwater quality facility is dedicated to the City, all deficiencies in design, workmanship, and materials shall be the responsibility of the developer for two years following acceptance of the dedication by the City. If the facility is not dedicated to the City, and remains in private ownership, operation and maintenance of the facility shall be the continuing responsibility of the owner.
6. All plumbing work associated with stormwater quality facilities on private property is additionally subject to the requirements of the Plumbing Code.
7. Uses that include certain industrial activities require an NPDES 1200-Z permit issued by the Oregon Department of Environmental Quality (DEQ). It is the responsibility of industrial property owners and developers to consult with DEQ to determine if an NPDES 1200-Z permit is required for their site/facility, and to obtain such permit through DEQ when required. Owners/developers are not required to provide verification of such consultations or determinations to the City, save that if a 1200-Z permit is obtained, the owner or developer shall provide a copy of the issued permit to the City.

More information on NPDES 1200-Z permits, including applicability of NPDES 1200-Z permits and contact information for DEQ, is available at <https://www.oregon.gov/deq/wq/wqpermits/Pages/Stormwater-Industrial.aspx>.

If a conflict exists between a requirements of these standards and a requirement of an NPDES 1200-Z permit, the more stringent requirement shall apply.

8. These standards are for the provision of stormwater quality treatment. Requirements for stormwater quantity control (e.g. detention, flow-control) are separate and additional to these standards.

This interim change was originally issued on August 31, 2017. This revision modifies section 7 above to remove the requirement of owners and developers to provide written DEQ verification of NPDES 1200-Z consultations and determinations pursuant to updated guidance provided by Oregon DEQ.

C: Steve Gaschler, Chief Engineer
Greg McIntire, Wastewater Superintendent
Ryan Largura, Environmental Specialist
Zaldy Macalanda, Civil Engineer
Erik Henriksen, Engineering Associate
Nick Massey, Engineering Technician



CITY OF TROUTDALE

MEMO - Engineering Division

Date: April 2, 2019
From: Travis Hultin, Deputy PW Director/Chief Engineer *TH*
To: File

**Subject: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES, MAY 1997: INTERIM
CHANGE NO. 36 – Sidewalk Ramps**

Under the authority provided to the Public Works Director by City Council Resolution No. 1312, and delegated to me by the Public Works Director, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May, 1997:

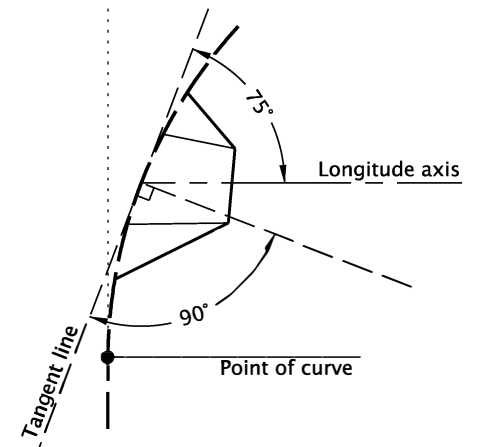
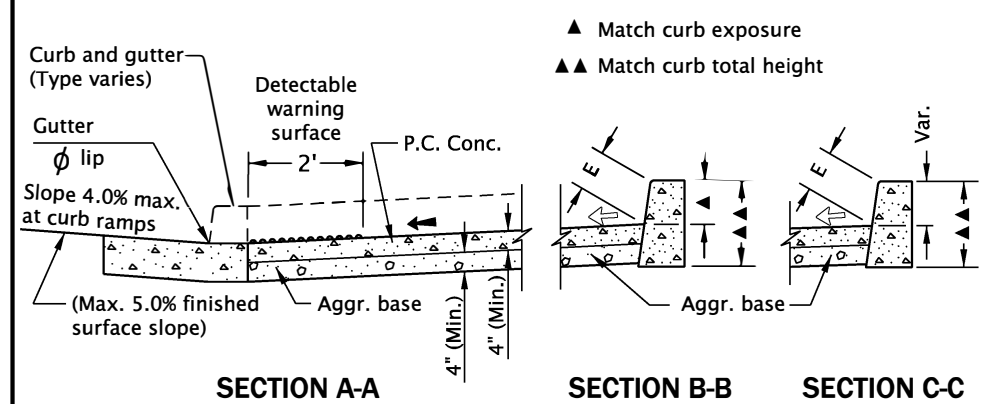
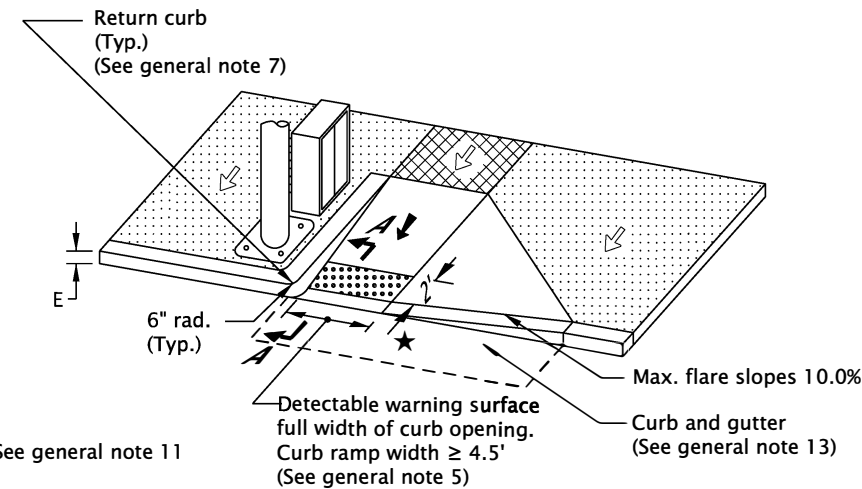
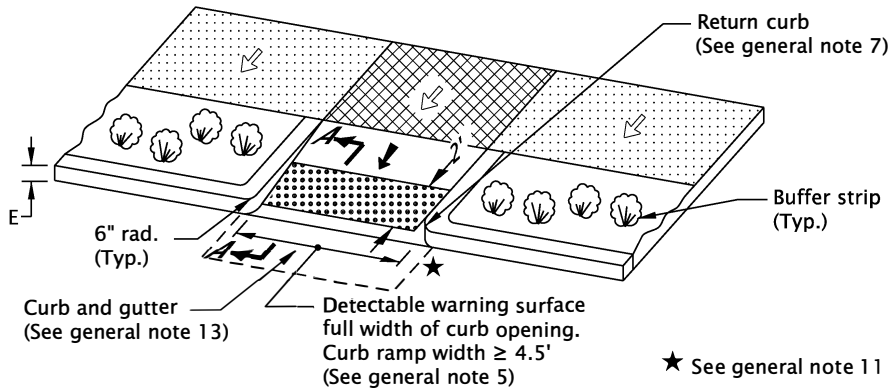
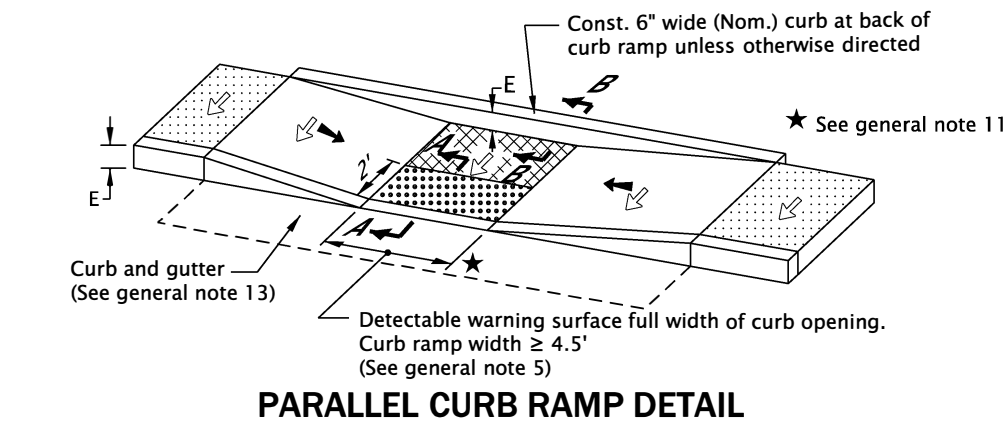
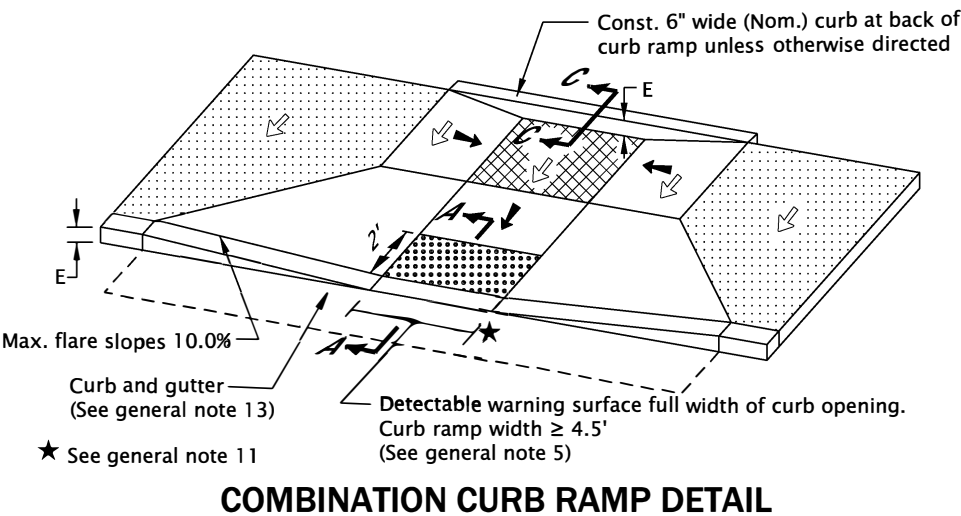
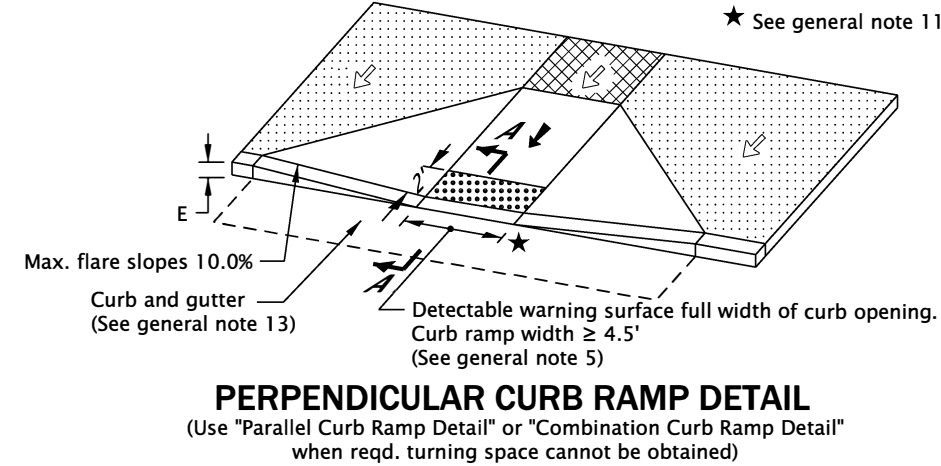
1. Sidewalk ramp drawings specified in Interim Change #24 (July 2014) are replaced as follows:
 - a. Replace ODOT Drawing RD 755, "Sidewalk Ramp Details" (July 2013) with ODOT Drawing RD 755, "Curb Ramp Details", revised January, 2019 (attached).
 - b. Replace ODOT Drawing RD 756, "Sidewalk Ramp Placement Options, Curb Radii $\leq 15'$ " (July 2013) with ODOT Drawing RD 756, "Curb Ramp Layout Options Small Radii", revised January 2019 (attached).
 - c. Replace ODOT Drawing RD 757, "Sidewalk Ramp Placement Options, Curb Radii $\geq 15'$ " (July 2013) with ODOT Drawing RD 757, "Curb Ramp Layout Options Large Radii", revised January 2019 (attached).
 - d. Replace ODOT Drawing RD 759, "Truncated Dome Detectable Warning Surface Details and Locations" (July 2013) with ODOT Drawings 758, "Detectable Warning Surface Details and Placement Locations", revised January 2019 (attached), and 759, "Detectable Warning Surface Details and Placement Locations", revised January 2019 (attached).

2. Interim Changes #10 and #24 are superseded by this interim change and are obsolete.

C: Fred Ostler, Public Works Director
David Schaffer, Streets Superintendent
Zaldy Macalanda, Civil Engineer
Nick Massey, Engineering Associate
Christopher Priano, Engineering Technician

rd755.dgn 16-JAN-2019

RD755



PERPENDICULAR CURB RAMP DIAGRAM
(See general note 8)

	Sidewalk
	Turning space When not constrained 4.5' x 4.5' (4' x 4' min. finished surface). When constrained 4.5' x 5.5' (4' x 5' min. finished surface with 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
	Slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)
	Slope 7.5% max. (Max. 8.3% finished surface slope)

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Curb ramp details are based on ODOT applicable standards.
2. See Std. Dwgs. RD700 & RD701 for curbs. See Std. Dwg. RD720 for sidewalks. See Std. Dwgs. TM503 & TM530 for crosswalk markings, widths, etc.
3. Tooled joints are required at all curb ramp grade break lines.
4. Curb ramp slopes shown are relative to the true level horizon (Zero bubble).
5. Place detectable warning surface at the back of curb for a minimum depth of 2' at curb ramp that is adjacent to traffic. For details not shown, see Std. Dwgs. RD758 & RD759.
6. 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.
7. Return curb may be provided in lieu of flared slope only if protected from traverse by landscaping or fixed barrier. Return curb shall not reduce width of approaching sidewalk.

8. For the purpose of this drawing, a curb ramp is considered "perpendicular" if the angle between the longitudinal axis of the curb ramp and a line tangent to the curb at the curb ramp center is 75° to 90°.
9. Curb ramps for paths intersecting a roadway should 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 should be 8' wide.
10. For curb ramp placement options, see Std. Dwgs. RD756 & RD757.
11. Check the gutter flow depth at curb ramp locations to assure that the design flood does not overtop the back of sidewalk at curb ramp. Place an inlet at upstream side of curb ramp or perform other approved design mitigation.
12. Site conditions normally require a project specific design. See project plans for details not shown.
13. On or along state highways, curb and gutter is required at curb ramps.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 16-JAN-2019

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

OREGON STANDARD DRAWINGS

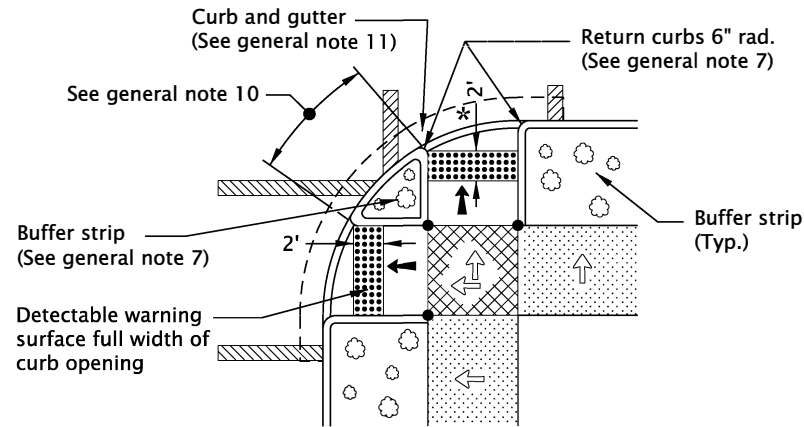
CURB RAMP DETAILS

2018

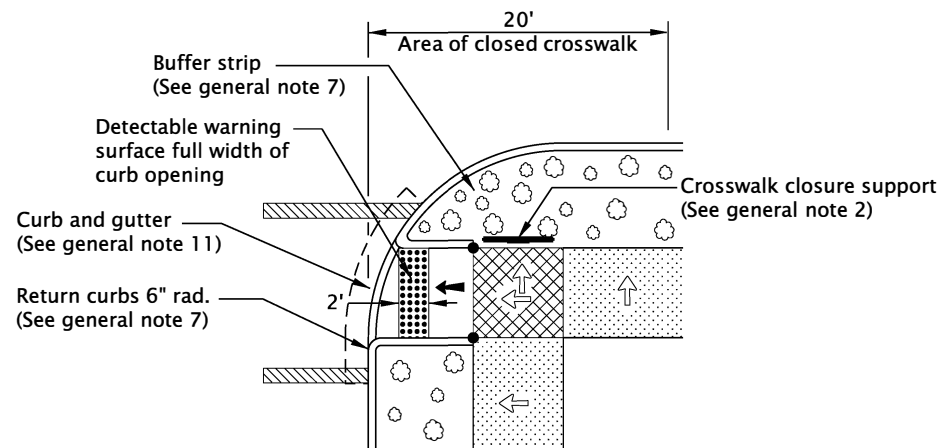
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07-2018	REVISED DETAILS, REVISED & ADDED NOTES	
01-2019	REVISED DETAIL & ADDED DIAGRAM	

rd756.dgn 16-JAN-2019

RD756

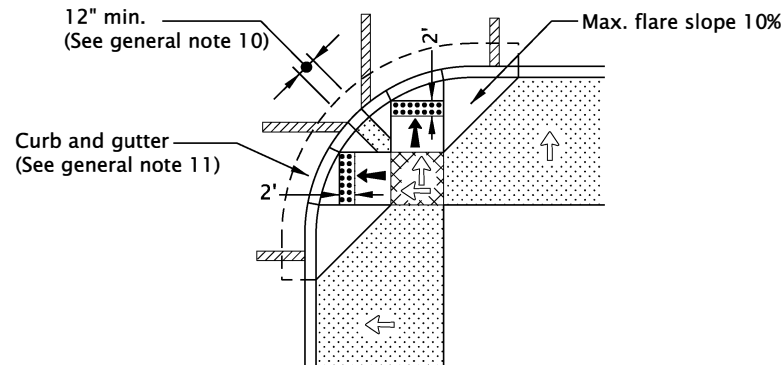


CURB RAMPS WITH LANDSCAPED BUFFER STRIP

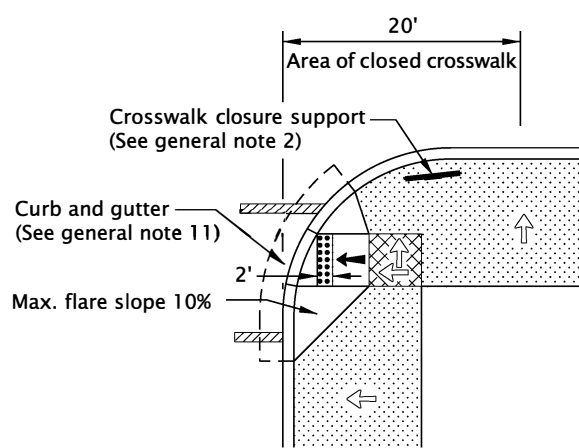


CURB RAMPS WITH CROSSWALK CLOSURE

OPTION "A"

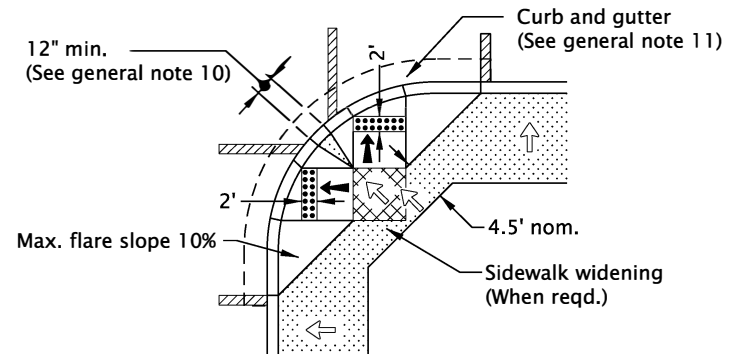


CURB RAMPS FOR WIDE SIDEWALKS

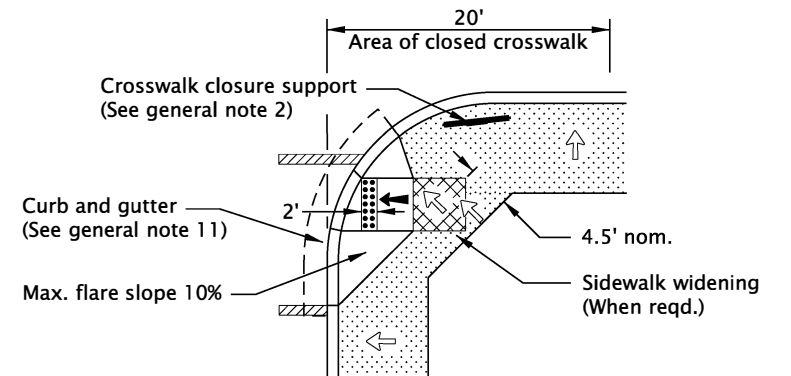


CURB RAMPS WITH CROSSWALK CLOSURE

OPTION "B"

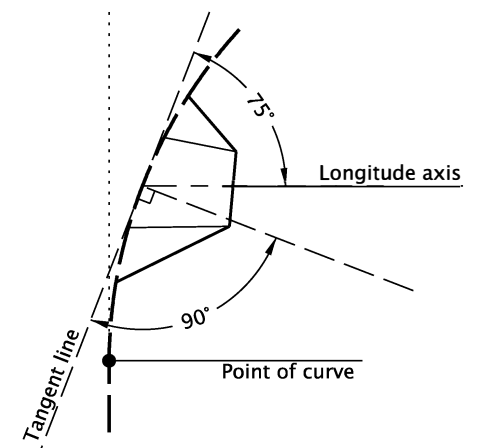


CURB RAMPS FOR NARROW SIDEWALKS



CURB RAMPS WITH CROSSWALK CLOSURE

OPTION "C"



PERPENDICULAR CURB RAMP DIAGRAM

(See general note 8)

Marked or intended crossing location

Sidewalk

Detectable warning surface



Turning space
When not constrained 4.5' x 4.5' (4' x 4' min. finished surface).
When constrained 4.5' x 5.5' (4' x 5' min. finished surface with 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.



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 curb exposure

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Curb ramp details are based on ODOT applicable standards.
2. See project plans for details not shown.
See Std. Dwgs. RD700 & RD701 for curbs.
See Std. Dwg. RD720 for sidewalks.
See Std. Dwgs. TM503 & TM530 for crosswalk marking, widths, etc.
See Std. Dwg. RD755 for curb ramp details.
See Std. Dwg. TM240 for crosswalk closure detail.
See Traffic Standard Drawings for signal pole and pedestrian pedestal details.
3. Tooled joints are required at all curb ramp grade break lines.
4. Curb ramp slopes shown are relative to the true level horizon (Zero bubble).
5. Place detectable warning surface at the back of curb for a minimum depth of 2' at curb ramp that is adjacent to traffic. For details not shown, see Std. Dwgs. RD758 & RD759.
6. Check the gutter flow depth to assure that the design flood does not overtop the back of sidewalk. Place an inlet at upstream side or perform other approved design mitigation.

7. Return curb may be provided in lieu of flared slope only if protected from traverse by landscaping or fixed barrier. Return curb shall not reduce width of approaching sidewalk.
8. For the purpose of this drawing, a curb ramp is considered "perpendicular" if the angle between the longitudinal axis of the curb ramp and a line tangent to the curb at the curb ramp center is 75° to 90°.
9. Curb ramps for paths intersecting a roadway should 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 should be 8' wide.
10. When 2 curb ramps are immediately adjacent as in Options B & C, the curb exposure (E) between the adjacent side flares may range between 3" and full design exposure.
11. On or along state highways, curb and gutter is required at curb ramps.
12. 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.

CALC. BOOK NO. N/A

BASLINE REPORT DATE 16-JAN-2019

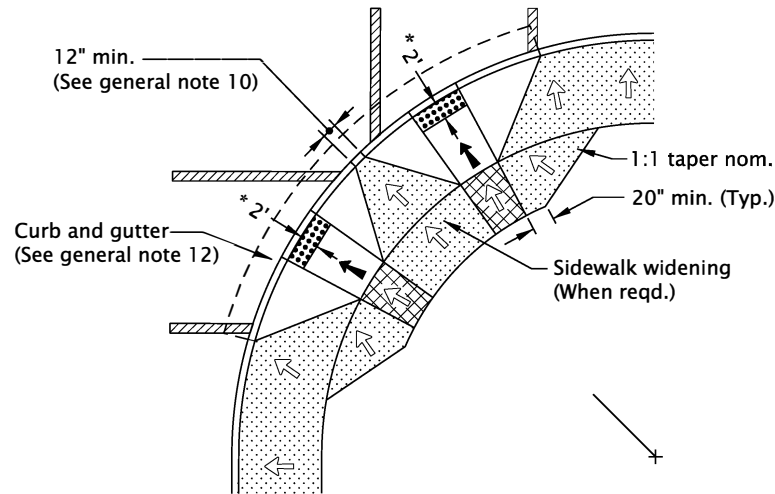
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS
CURB RAMP LAYOUT OPTIONS
SMALL RADII

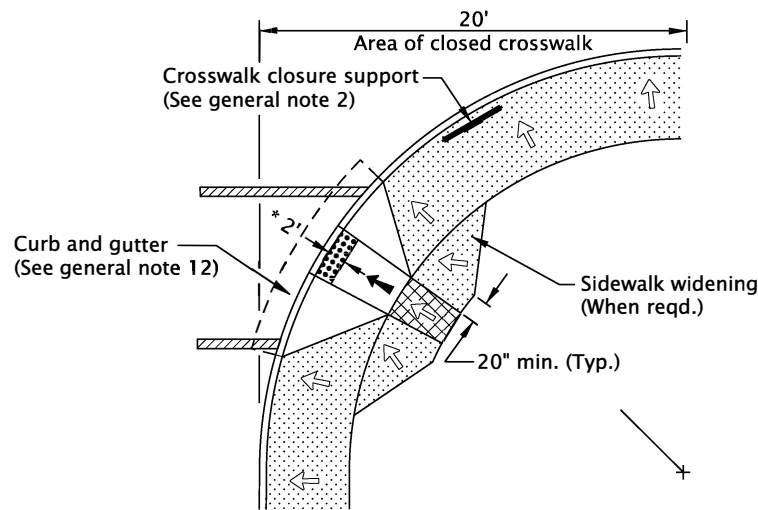
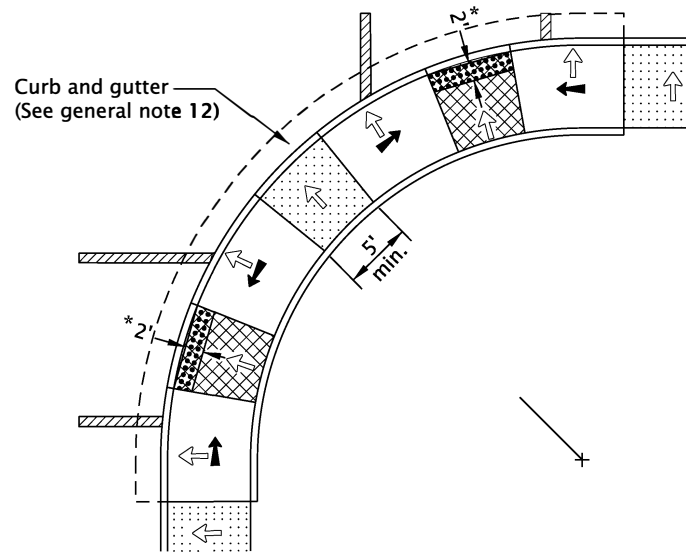
2018

DATE	REVISION	DESCRIPTION
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07-2018	REVISED DETAIL & NOTES	
01-2019	ADDED DIAGRAM DETAIL, REVISED DETAILS & NOTES	

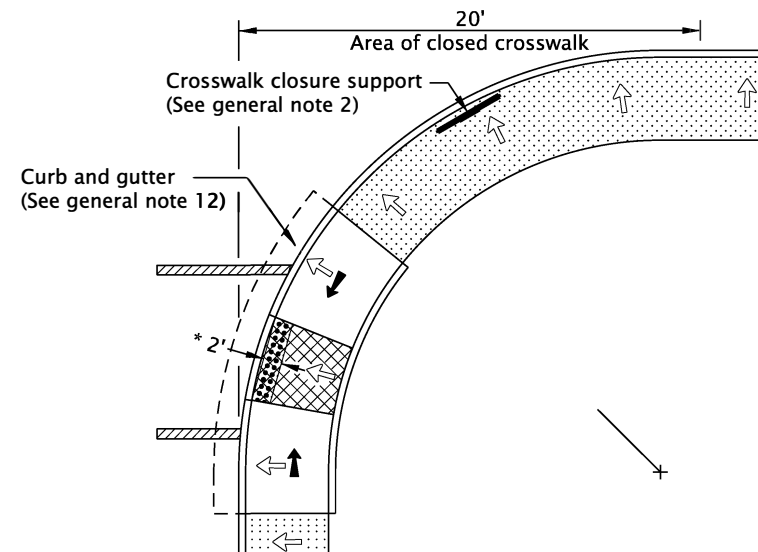
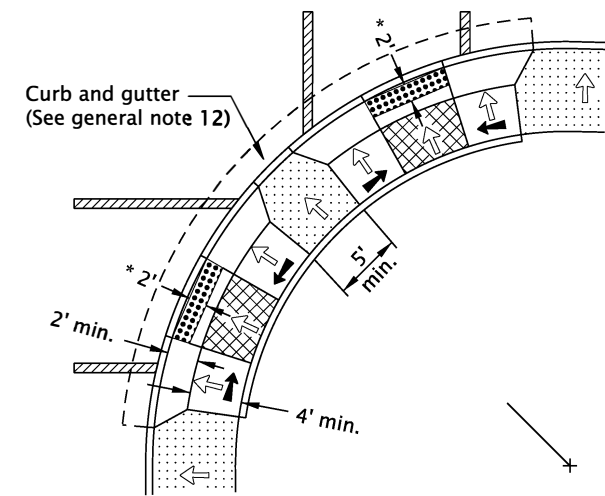
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.



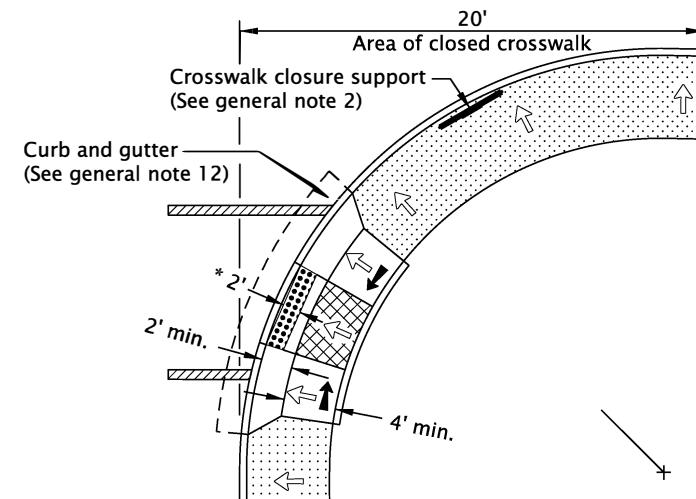
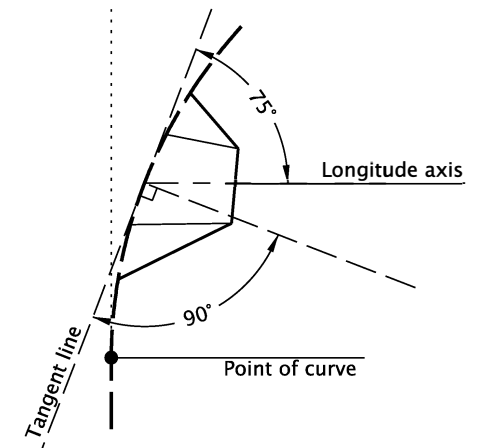
CURB RAMPS FOR NARROW SIDEWALKS




CURB RAMPS FOR NARROW SIDEWALKS
OPTION "G"

CURB RAMPS FOR NARROW SIDEWALKS

CURB RAMPS WITH CROSSWALK CLOSURE
OPTION "H"

CURB RAMPS FOR WIDE SIDEWALKS

CURB RAMPS WITH CROSSWALK CLOSURE
OPTION "I"PERPENDICULAR CURB RAMP
DIAGRAM
(See general note 8)

-  Marked or intended crossing location
-  Sidewalk
-  Detectable warning surface



Turning space
When not constrained 4.5' x 4.5' (4' x 4' min. finished surface).
When constrained 4.5' x 5.5' (4' x 5' min. finished surface with
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.



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



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

* 2' See general note 5

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Curb ramp details are based on ODOT applicable standards.
2. See project plans for details not shown.
See Std. Dwgs. RD700 & RD701 for curbs.
See Std. Dwg. RD720 for sidewalks.
See Std. Dwgs. TM503 & TM530 for crosswalk markings, widths, etc.
See Std. Dwg. RD755 for curb ramp details.
See Std. Dwg. TM240 for crosswalk closure detail.
See Traffic Standard Drawings for signal pole and pedestrian pedestal details.
3. Tooled joints are required at all curb ramp slope break lines.
4. Curb ramp slopes shown are relative to the true level horizon (Zero bubble).
5. Place detectable warning surface in the lower 2' of curb ramp that is adjacent to traffic.
For details not shown, see Std. Dwgs. RD758 & RD759.
6. Check the gutter flow depth to assure that the design flood does not overtop the back of sidewalk.
If overtopping occurs place an inlet at upstream side or perform other approved design mitigation.

7. Return curb may be provided in lieu of flared slope only if protected from traverse by landscaping or fixed barrier. Return curb shall not reduce width of approaching sidewalk.
8. For the purpose of this drawing, a curb ramp is considered "perpendicular" if the angle between the longitudinal axis of the curb ramp and a line tangent to the curb at the curb ramp center is 75° to 90°.
9. Curb ramps for paths intersecting a roadway should 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 should be 8' wide.
10. When 2 curb ramps are immediately adjacent as in Option G, the curb exposure (e) between the adjacent side flares may range between 3" and full design exposure.
11. Only use options allowed by jurisdiction.
12. On or along state highways, curb and gutter is required at curb ramps.
13. 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.

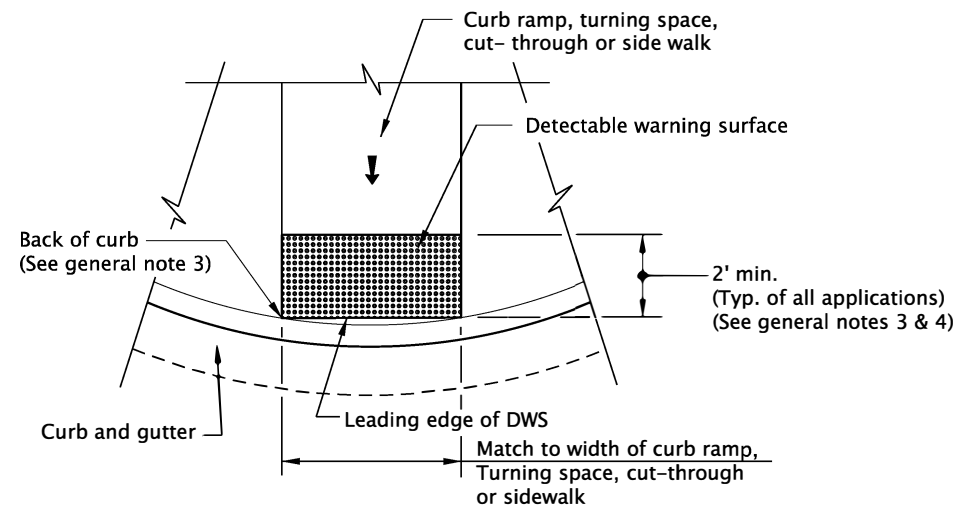
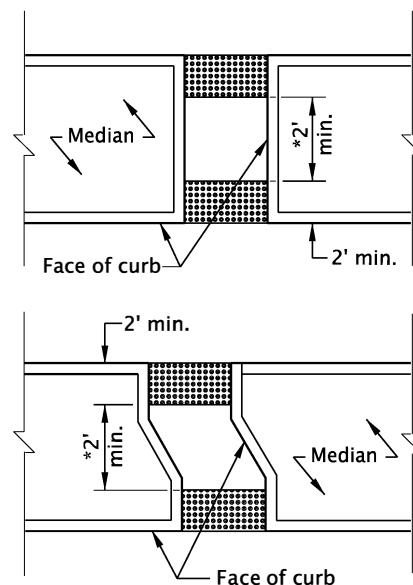
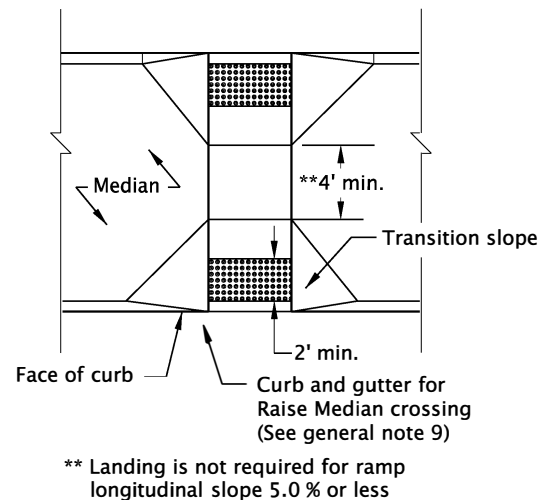
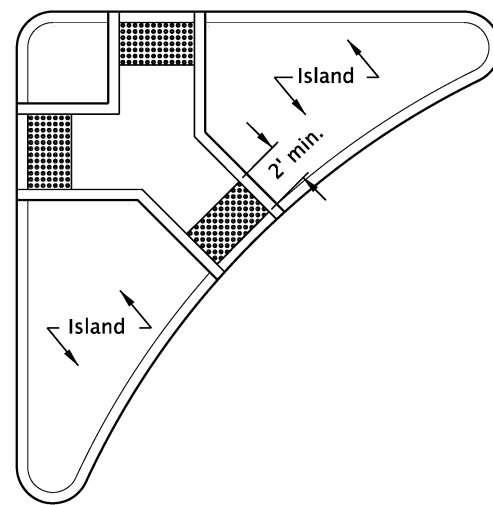
CALC. BOOK NO. N/ABASELINE REPORT DATE 16-JAN-2019

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

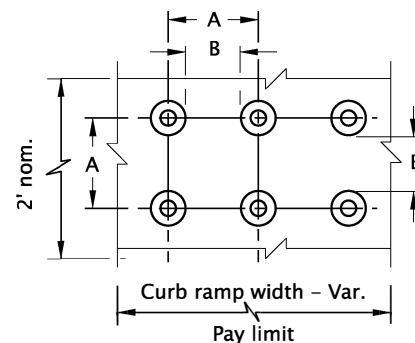
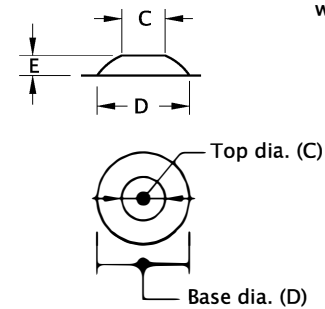
OREGON STANDARD DRAWINGS
CURB RAMP LAYOUT OPTIONS
LARGE RADII

2018

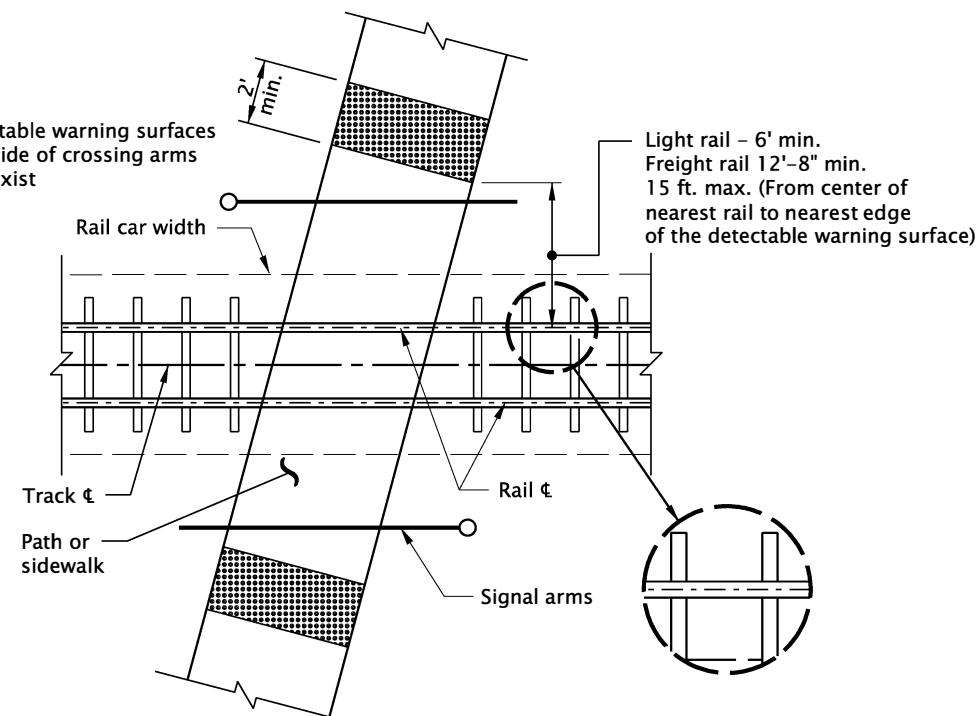
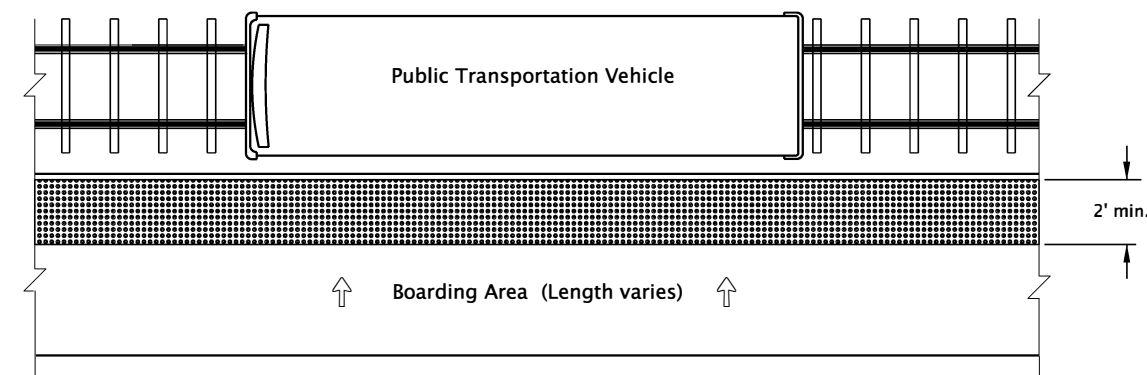
DATE	REVISION	DESCRIPTION
01-2018	REVISED DETAILS, REVISED & ADDED NOTES	
07-2018	REVISED NOTES	
09-2018	ADDED DIAGRAM & REVISED NOTE	
01-2019	REVISED DETAILS & NOTES	

**DETECTABLE WARNING SURFACE DETAIL****CUT-THROUGH**
(Asph. Conc. surface shown)**RAISED MEDIAN ISLAND****RAISED MEDIAN**
(P.C. Conc. surface shown)**RAISED RIGHT TURN CHANNELIZATION ISLAND**

	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**

NOTE: Detectable warning surfaces shall be outside of crossing arms where they exist

**AT-GRADE RAIL CROSSING****PUBLIC TRANSPORTATION PLATFORM**

(See general note 6)

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- Detectable warning surface details & locations are based on ODOT applicable Standards.
- See project plans for details not shown.
See Std. Dwgs. RD700 & RD701 for curbs.
See Std. Dwg. RD720 for sidewalks.
See Std. Dwgs. TM503 & TM530 for crosswalk markings, widths, etc.
See Std. Dwgs. RD705 & RD710 for islands.
- The detectable warning surface shall extend the full width of the curb ramp, 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 corners of the detectable warning surface panel).
- Detectable warning surface shall be placed at the back of curb for a minimum depth of 2 ft. at curb ramps that 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. Color to be safety yellow if no color specified in construction note. For detectable warning surface on or along state highway, alternative colors must be approved.

- Detectable warning surface shall be used in the following locations:
 - Curb ramps (See Std. Dwgs. RD755, RD756, & RD757).
 - Crossing islands (Accessible Route Islands), (See Std. Dwg. RD710).
 - Rail crossings (See detail).
- 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.
- Detectable warning surface shall not be used on the following locations:
 - End of sidewalk transitions that are not at a crosswalk (See Std. Dwg. RD754).
 - Driveways, unless constructed with curb return. (See Std. Dwgs. RD725, RD730, RD735, RD740, RD745, & RD750).
 - Parking lots.
- 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.
- 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.



Detectable warning surface

Slope 7.5% max.
(Max. 8.3% finished surface slope)Slope 1.5% max.
(Max. 2.0% finished surface slope)
(Normal sidewalk cross slope)CALC. BOOK NO. N/ABASELINE REPORT DATE 16-JAN-2019

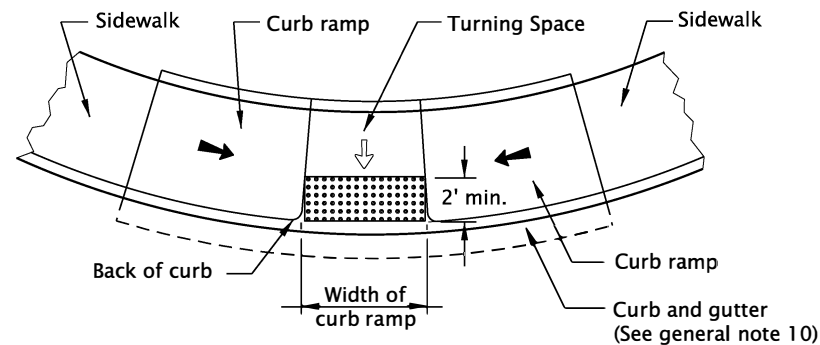
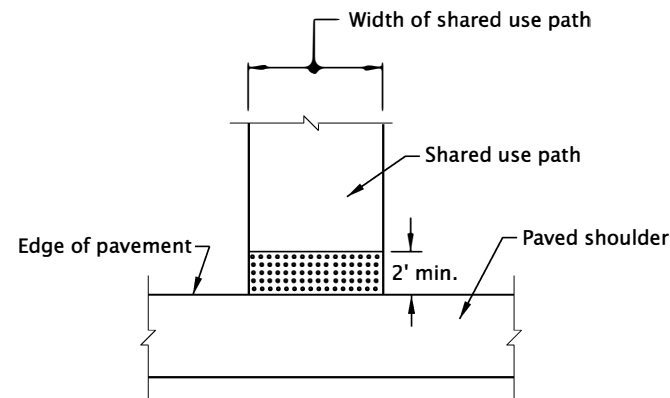
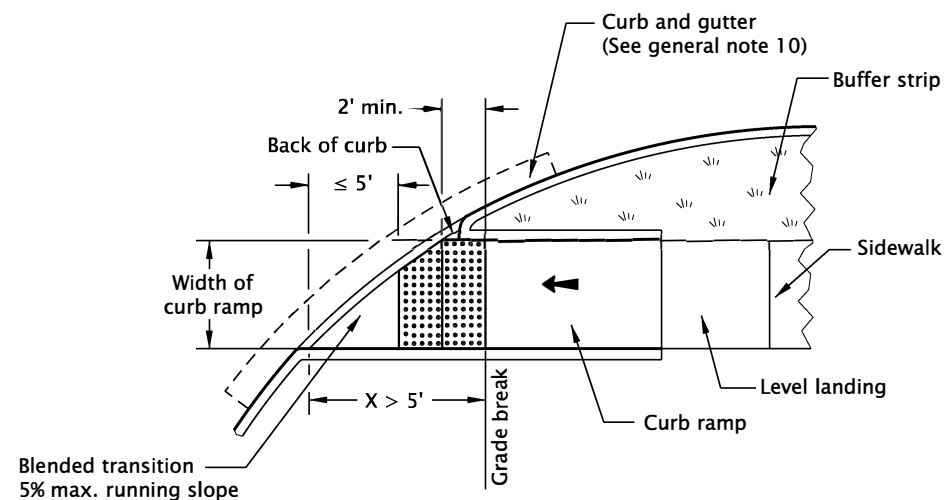
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS
DETECTABLE WARNING SURFACE
DETAILS & PLACEMENT
LOCATIONS

2018

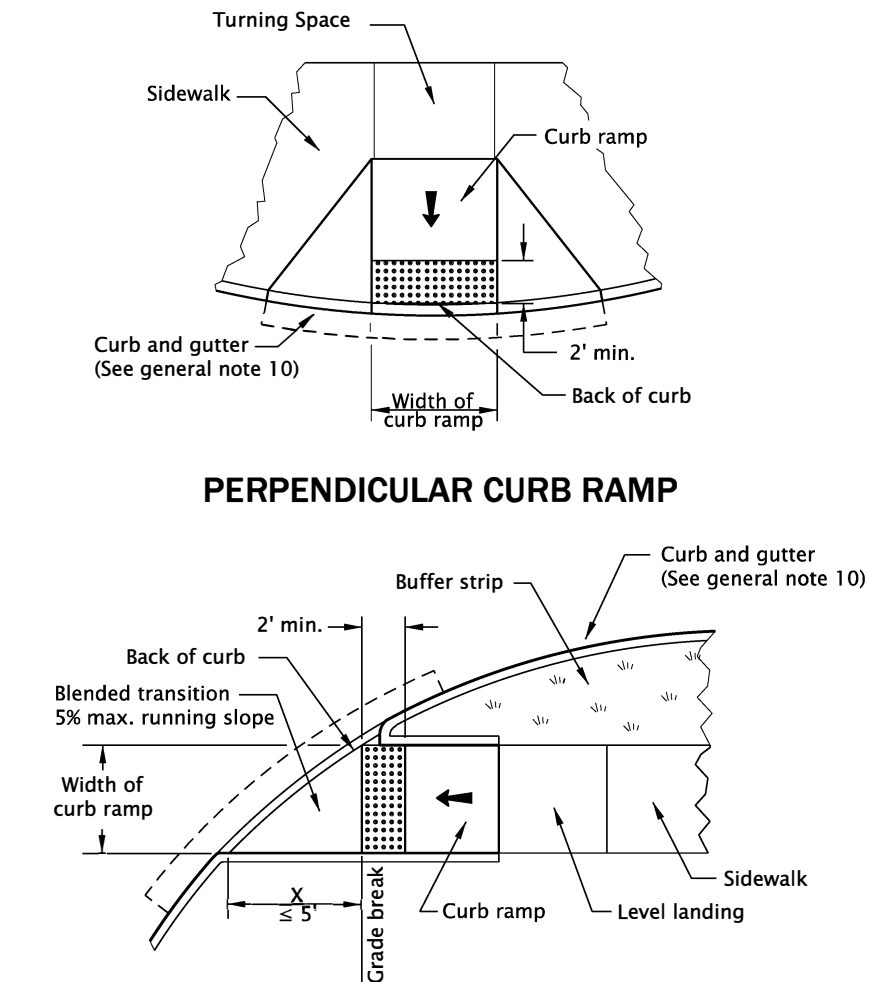
DATE	REVISION	DESCRIPTION
09-2018	REVISED	DETAILS & NOTES
01-2019	REVISED	DETAILS & NOTES

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.

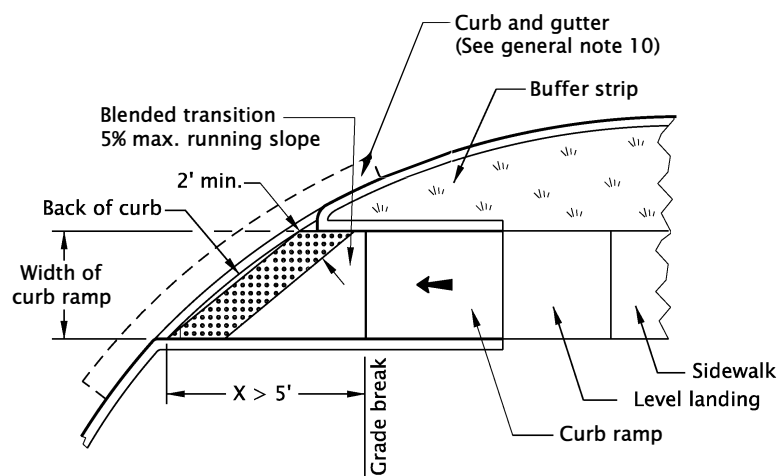
**PARALLEL CURB RAMP****SHARED-USE PATH CONNECTION**

CURB RAMP CROSSING
GRADE BREAK > 5 FT. FROM BACK OF CURB
OPTION 1

(Detectable warning surface shall be placed in area from curb ramp grade break to within 5' of curb)

**PERPENDICULAR CURB RAMP**

CURB RAMP CROSSING
GRADE BREAK ≤ 5 FT. FROM BACK OF CURB
 (Detectable warning surface shall be placed on the bottom of the curb ramp directly above the grade break)



CURB RAMP CROSSING
GRADE BREAK > 5 FT. FROM BACK OF CURB
OPTION 2

(Detectable warning surface shall be placed in the lower 2' of curb ramp that is adjacent to traffic)

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- Detectable warning surface details & locations are based on ODOT applicable Standards.
- See project plans for details not shown.
See Std. Dwgs. RD700 & RD701 for curbs.
See Std. Dwg. RD720 for sidewalks.
See Std. Dwgs. TM503 & TM530 for crosswalk markings, widths, etc.
See Std. Dwgs. RD705 & RD710 for islands.
- The Detectable Warning Surface shall extend the full width of the curb ramp, 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 corners of the detectable warning surface panel).
- Detectable warning surface shall be placed at the back of curb for a minimum depth of 2 ft. at curb ramps that 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. Color to be safety yellow if no color specified in construction note. For detectable warning surface on or along state highway, alternative colors must be approved.
- Detectable warning surface shall be used in the following locations:
 - Curb ramps (See Std. Dwgs. RD755, RD756, & RD757).
 - Crossing islands (Accessible Route Islands), (See Std. Dwg. RD710).
 - Rail crossings (See Std. Dwg. RD758).
- 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. RD758).
- Detectable warning surface shall not be used on the following locations:
 - End of sidewalk transitions that are not at a crosswalk, (See Std. Dwg. RD754).
 - Driveways, unless constructed with curb return, (See Std. Dwgs. RD725, RD730, RD735, RD740, RD745, & RD750).
 - Parking lots.
- 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.
- Where no curb is present, the detectable warning surface shall be placed at the edge of the roadway.
- On or along state highways, curb and gutter is required at curb ramps.
- Detectable warning surface placement for perpendicular ramps vary as shown.

	Detectable warning surface
	Slope 1.5% max. (Max. 2.0% finished surface slope)
	Slope 7.5% max. (Max. 8.3% finished surface slope)

CALC. BOOK NO. N/ABASELINE REPORT DATE 16-JAN-2019

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

OREGON STANDARD DRAWINGS
DETECTABLE WARNING SURFACE
DETAILS & PLACEMENT
LOCATIONS

2018

DATE	REVISION	DESCRIPTION
07-2018	REPLACED DRAWING	TITLE, REVISED DETAILS & NOTES
09-2018	REVISED DETAIL	& NOTES
01-2019	REVISED DETAIL	& NOTES

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.



CITY OF TROUTDALE

MEMO - Engineering Division

Date: April 8, 2019
From: Travis Hultin, Deputy PW Director/Chief Engineer *TH*
To: File

**Subject: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES, MAY 1997: INTERIM
CHANGE NO. 37 – Garbage and Recycling**

Under the authority provided to the Public Works Director by City Council Resolution No. 1312, and delegated to me by the Public Works Director, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May, 1997:

1. Garbage and Recycling, Part XI, General Requirements, is replaced in its entirety with the following:

All commercial, industrial, and multi-family solid waste and recycling container storage areas and enclosures shall meet the requirements of the Troutdale Development Code, the Troutdale Municipal Code, the City of Portland Source Control Manual, and the Plumbing Code.

Site designers are also encouraged to consult with the City's exclusive franchised solid waste collection service provider in the positioning and orientation of solid waste and recycling enclosures to ensure their serviceability by collection vehicles.

2. Garbage and Recycling, Part XII, Construction Details, is deleted in its entirety.

C: Fred Ostler, Public Works Director
Ryan Largura, Environmental Specialist
Zaldy Macalanda, Civil Engineer
Nick Massey, Engineering Associate
Christopher Priano, Engineering Technician
Chris Damgen, Community Development Director



CITY OF TROUTDALE

MEMO - Engineering Division

Date: April 8, 2019
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2. Garbage and Recycling, Part XII, Construction Details, is deleted in its entirety.

C: Fred Ostler, Public Works Director
Ryan Largura, Environmental Specialist
Zaldy Macalanda, Civil Engineer
Nick Massey, Engineering Associate
Christopher Priano, Engineering Technician
Chris Damgen, Community Development Director



CITY OF TROUTDALE

MEMO - Engineering Division

Date: April 8, 2019
From: Travis Hultin, Deputy PW Director/Chief Engineer *TH*
To: File

**Subject: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES, MAY 1997: INTERIM
CHANGE NO. 38 – Hydrants and blow-offs at dead-end water mains**

Under the authority provided to the Public Works Director by City Council Resolution No. 1312, and delegated to me by the Public Works Director, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May, 1997:

1. Water, Part III, General Requirements, paragraph 11, is amended as follows:

Fire hydrant assemblies are required at all dead dead-end water mains of 6" diameter and greater (See Drawing No. RD254CoTA/B for further hydrant details). Blow-off assemblies are required at all dead-end water mains of 4" diameter or less. When used, locate blow-off assemblies four feet from face of curb, within the street (see Drawing No. IV-17 for further blow-off details).

2. Water, Part IV, Construction Details, Drawing No. IV-17 is amended as follows:

The following general note is added: Fire hydrant assemblies are required at all dead dead-end water mains of 6" diameter and greater. Blow-off assemblies are required at all dead-end water mains of 4" diameter or less.

C: Fred Ostler, Public Works Director
David Schaffer, Water/Streets Superintendent
Zaldy Macalanda, Civil Engineer
Nick Massey, Engineering Associate
Christopher Priano, Engineering Technician

Memo

City of Troutdale
Public Works Department

DATE: March 2, 2021

TO: FILE

FROM: Travis Hultin, Deputy PW Director/Chief Engineer

RE: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES, MAY 1997:
INTERIM CHANGE #39

Under the authority provided to the Public Works Director by City Council Resolution No. 1312, and delegated to the Deputy PW Director/Chief Engineer by the Public Works Director, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May, 1997:

Part III (Water – General Requirements)

1) Paragraph 24: The list of acceptable equipment for water meters is amended to read as follows:

Water Meters:

- ¾" size: Kamstrup flowIQ 2100
- 1" size: Kamstrup flowIQ 3101
- 1 ½" – 4" size: Kamstrup FlowIQ 3200
- 6" and larger sizes: Sensus Omni Compound (C²) meter or Sensus Omni Turbo (T²) meter

All meters shall have gallon registers.

2) Interim Change #26 is superseded and hereby rescinded.

C: David Schaffer, Water/Streets Superintendent
Fred Ostler, Public Works Director
Nick Massey, Engineering Associate
Zaldy Macalanda, Civil Engineer
Christopher Priano, Engineering Technician



CITY OF TROUTDALE

MEMO - Engineering Division

Date: December 17, 2021
From: Travis Hultin, Deputy PW Director/Chief Engineer
To: File

**Subject: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES, MAY 1997: INTERIM
CHANGE NO. 40 – Replacement of American Public Works Association Standards**

Under the authority provided to the Public Works Director by City Council Resolution No. 1312, and delegated to me by the Public Works Director, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May, 1997:

1. All Sections:

All references to the American Public Works Association standard specifications are replaced with the *Oregon Standard Specifications for Construction*.

C: Fred Ostler, Public Works Director
Ryan Largura, Environmental Specialist
Scott Waddell, Civil Engineer
Nick Massey, Engineering Associate
Christopher Priano, Engineering Associate



CITY OF TROUTDALE

MEMO - Engineering Division

Date: January 30, 2024
From: Travis Hultin, PW Director/Chief Engineer
To: File

A handwritten signature in blue ink, appearing to be "TH", is written over the "To: File" line.

**Subject: CONSTRUCTION STANDARDS FOR PUBLIC WORKS FACILITIES, MAY 1997: INTERIM
CHANGE NO. 41 – End of Road Markers**

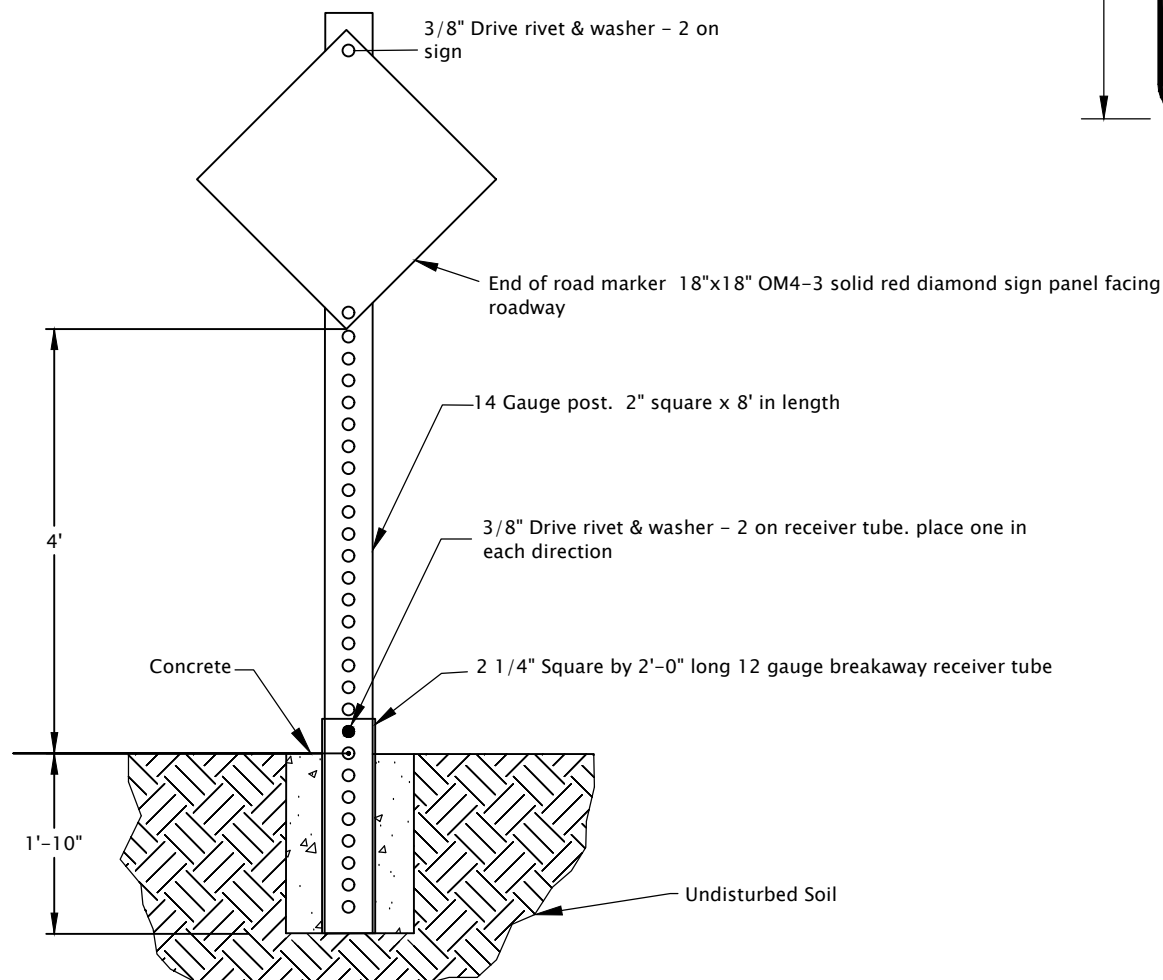
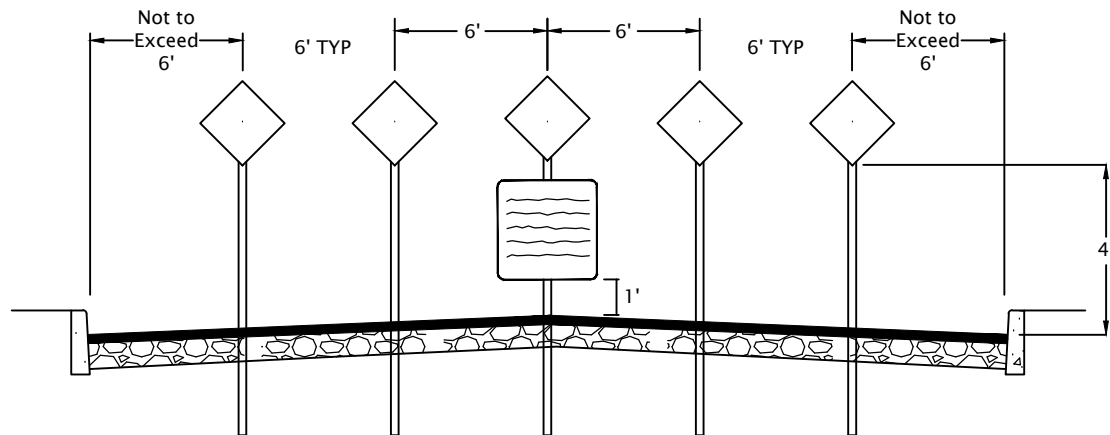
Under the authority provided to the Public Works Director by City Council Resolution No. 1312, the following interim change is made to the "Construction Standards for Public Works Facilities" dated May, 1997:

1. Part I - Streets, General Requirements, add the following paragraph:

End of Road Markers shall be installed in lieu of Type I, II, or III barricades at the end of dead-end stub streets where no drop-off hazard exists. A drop off hazard exists where a slope within 10 feet of the end of pavement is steeper than 3:1 for a vertical drop of 18" or more.

2. Part II – Streets (Construction Details), Drawing NO. ST230-COT (attached herewith) is added.

C: Scott Waddell, Civil Engineer
Nick Massey, Engineering Associate
Christopher Priano, Engineering Associate
Dylan Jay, Engineering Technician
David Schaffer, PW Water/Streets Superintendent
Jim Johnson, Streets Chief Operator



General Notes:

1. Whenever a stub street is created, a notice sign as depicted above must be installed at the end of the stub street.
2. Receiver tube shall be covered by duct tape on all sides.
3. Posts shall be coated with anti-seize on the bottom 2'.
4. End of road markers shall be used in lieu of street barricades where no drop off hazard (slopes greater than 3:1 for 18" or greater vertically) exists.

End of Road Markers

Drawing #:	File Name:
ST230-COT	ST230-COT.dwg
Date:	Drawn By:
Jan. 17, 2024	DJay

Date	Revision Description	By

Public Works Dept. 342 SW 4th St., Troutdale, OR 97060 503-674-3300

