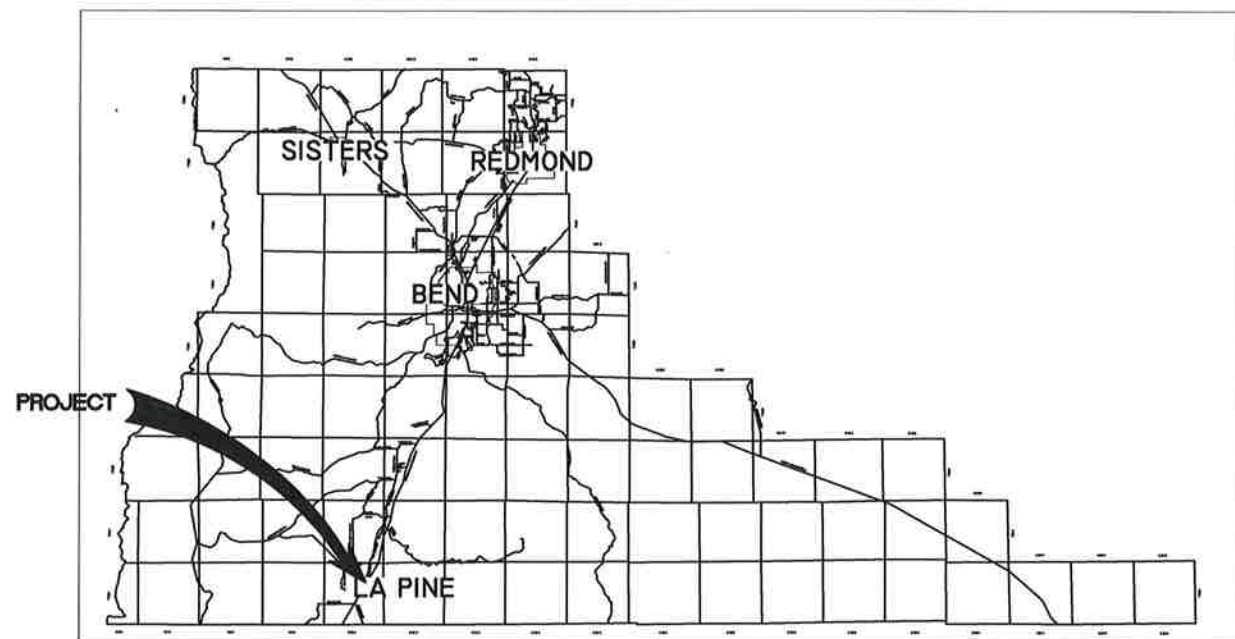


DESCHUTES COUNTY ROAD DEPARTMENT

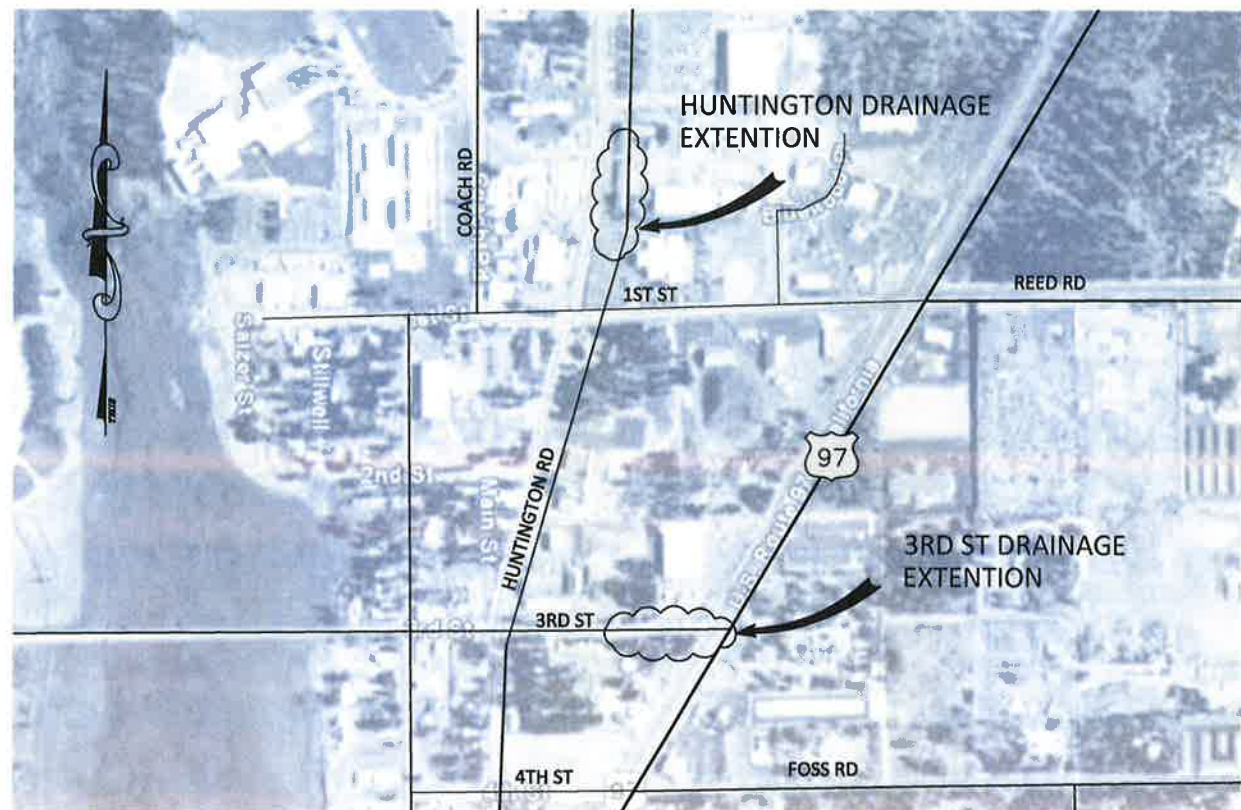
PLANS FOR 3rd ST AND HUNTINGTON RD DRAINAGE EXTENSION

APRIL 2018



VICINITY MAP

NOT TO SCALE



SITE MAP

NOT TO SCALE

LEGEND

| | |
|--|--|
| | EXIST. MAILBOXES |
| | EXISTING SIGN |
| | TREE |
| | WATER MANHOLE |
| | SEWER MANHOLE |
| | WATER GATE VALVE |
| | WATER METER |
| | FIRE HYDRANT |
| | WATER MAINLINE |
| | EXIST. UTILITY POLE |
| | EXIST. OVERHEAD POWER LINE |
| | TELEPHONE UTILITY |
| | UNDERGROUND GAS LINE |
| | APPROXIMATE SEWER PRESSURE LINE LOCATION |
| | EXISTING CENTERLINE OF ROAD |
| | EXISTING EDGE OF ROAD |
| | PROPERTY BOUNDARY APPROX. |

INDEX OF SHEETS

| SHEET NO. | DESCRIPTION |
|-----------|--------------------------------|
| 1 | COVER SHEET |
| 2 | 3RD ST PLAN AND PROFILE |
| 3 | HUNTINGTON RD PLAN AND PROFILE |

ODOT STANDARD DRAWING NO.

| | |
|-------|--|
| RD300 | TRENCH BACKFILL, BEDDING, PIPE ZONE AND MULTIPLE INSTALLATIONS |
| RD302 | STREET CUT |
| RD335 | STANDARD STORM SEWER MANHOLE |
| RD336 | STANDARD MANHOLE DETAILS |
| RD339 | PIPE TO STRUCTURE CONNECTIONS |
| RD342 | SHALLOW MANHOLES |
| RD344 | STANDARD MANHOLE BASE SECTION |
| RD345 | PIPE TO MANHOLE CONNECTIONS |
| RD356 | MANHOLE COVER AND FRAMES |
| RD364 | CONCRETE INLETS TYPE G-1, G-2, G-2M & G-2MA |
| RD365 | FRAMES & GRATES FOR CONCRETE INLETS |
| RD371 | CONCRETE INLETS BASE TYPE CG-3 |
| RD720 | SIDEWALKS |
| TM800 | TABLES, ABRUPT EDGE AND PCMS DETAILS |
| TM844 | TEMPORARY PEDESTRIAN ACCESS ROUTING |
| TM850 | 2-LANE, 2-WAY ROADWAYS |

GENERAL NOTES:

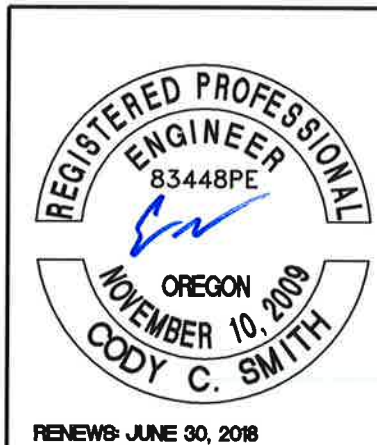
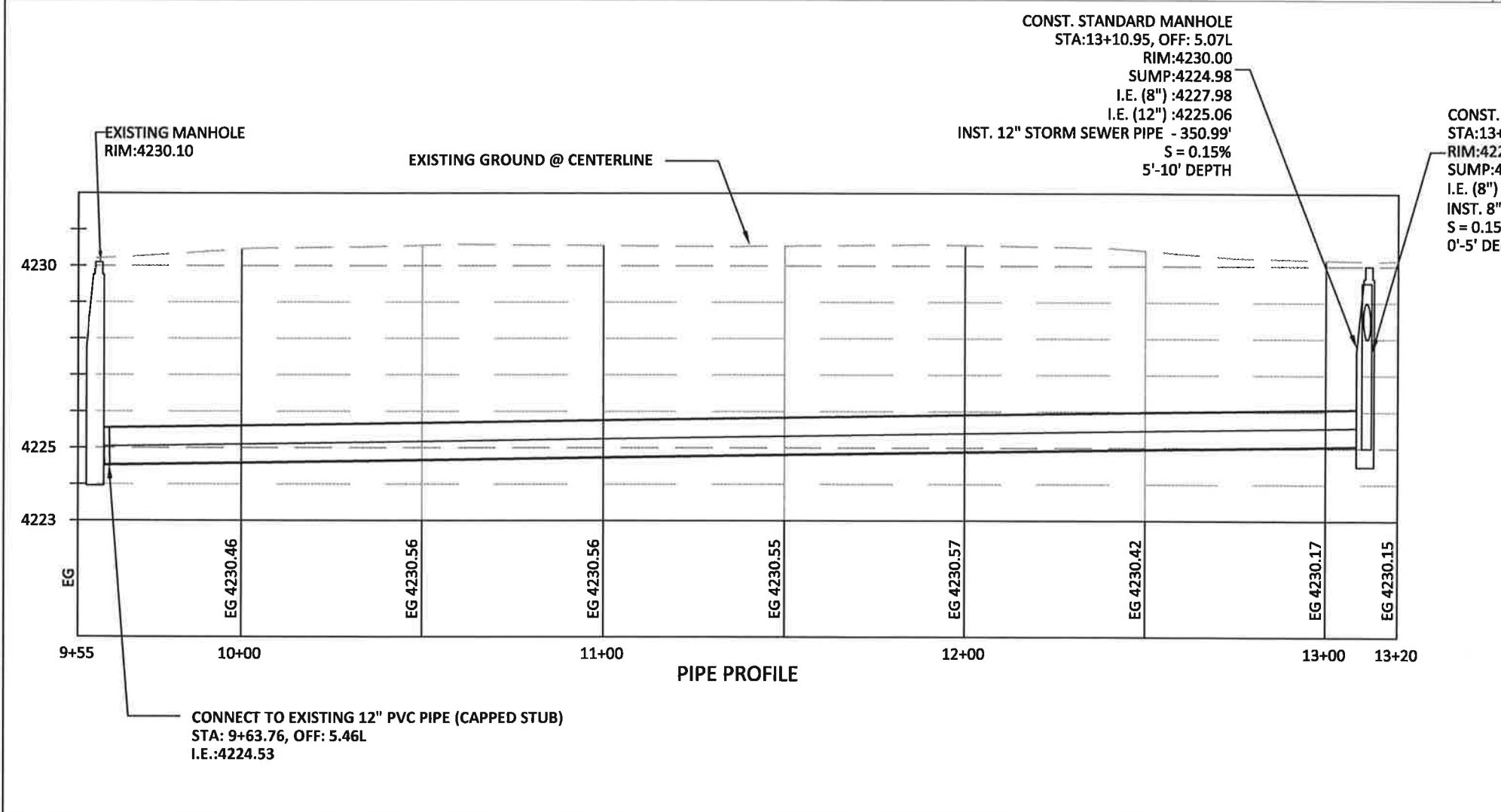
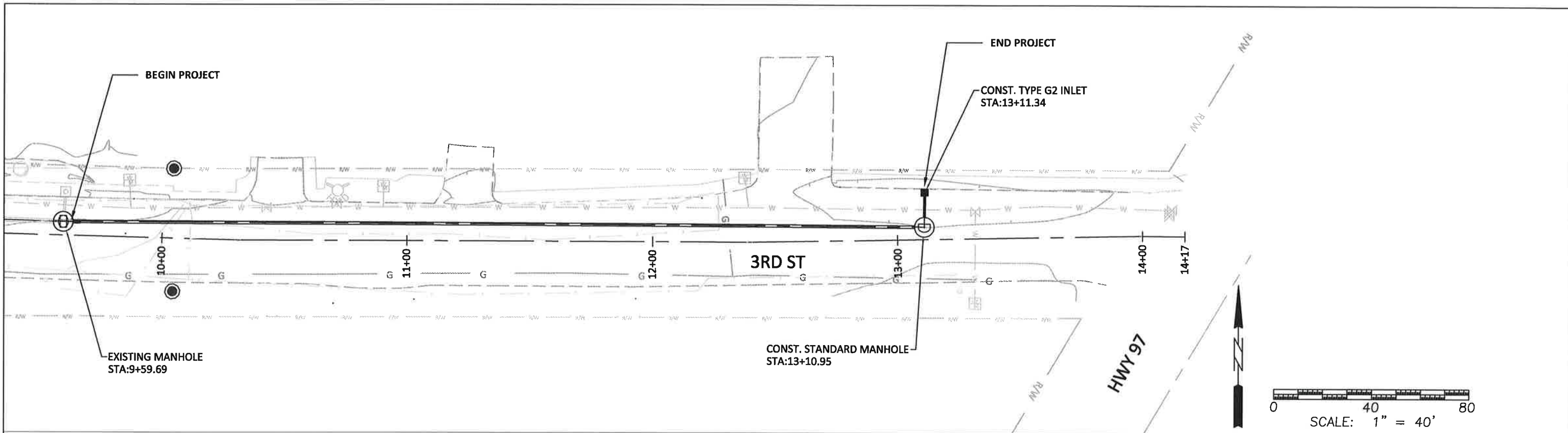
ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED UNDER CONTRACT SHALL, EXCEPT AS OTHERWISE STATED IN THIS CONTRACT'S SPECIAL PROVISIONS, BE CONSTRUCTED IN ACCORDANCE WITH THE "OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION", REVISED 2018 EDITION.

IT IS THE CONTRACTORS RESPONSIBILITY TO RE-ESTABLISH, PER OREGON REVISED STATUTES, ALL SURVEY MONUMENTS DISTURBED OR DESTROYED BY THIS WORK. THIS INCLUDES MONUMENTS NOT SHOWN IN THESE PLANS, WHICH ARE DISCOVERED DURING THE COURSE OF CONSTRUCTION. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ELEVATIONS OF SIDE SHOT MONUMENTS FOR USE AS TEMPORARY BENCH MARKS AND SET TEMPORARY BENCH MARKS OR ADDITIONAL HORIZONTAL CONTROL AS NEEDED.

**NO UTILITIES HAVE BEEN LOCATED
FOR THIS DESIGN**

ATTENTION:
Oregon Law Requires You To Follow Rules Adopted By The Oregon Utility Notification Center. Those Rules Are Set Forth In OAR 952-001-0010 Through OAR 952-001-0090 You May Obtain Copies Of The Rules By Calling The Center At 811

| | |
|--|-------------------------|
| DESCHUTES COUNTY ROAD DEPARTMENT 61150 S.E. 27TH STREET BEND, OR. 97702 PHONE: 541-388-6581 FAX: 541-388-2719 | |
| 3RD ST AND HUNTINGTON RD DRAINAGE EXTENSION | |
| COUNTY ENGINEER | 4-5-18 DATE |
| ROAD DEPT DIRECTOR | 04/04/18 DATE |
| COVER SHEET | SHEET 1 OF 3 |



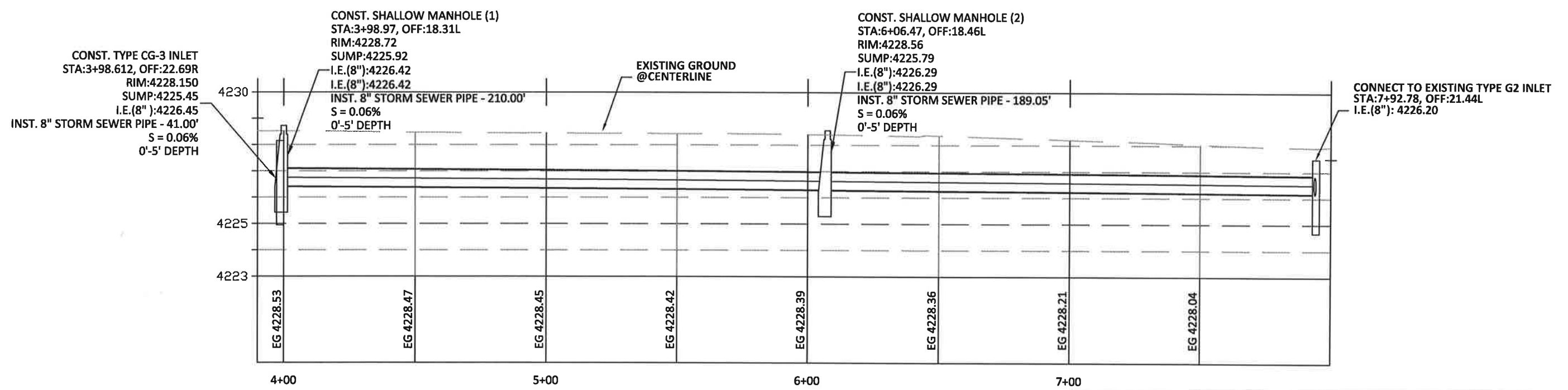
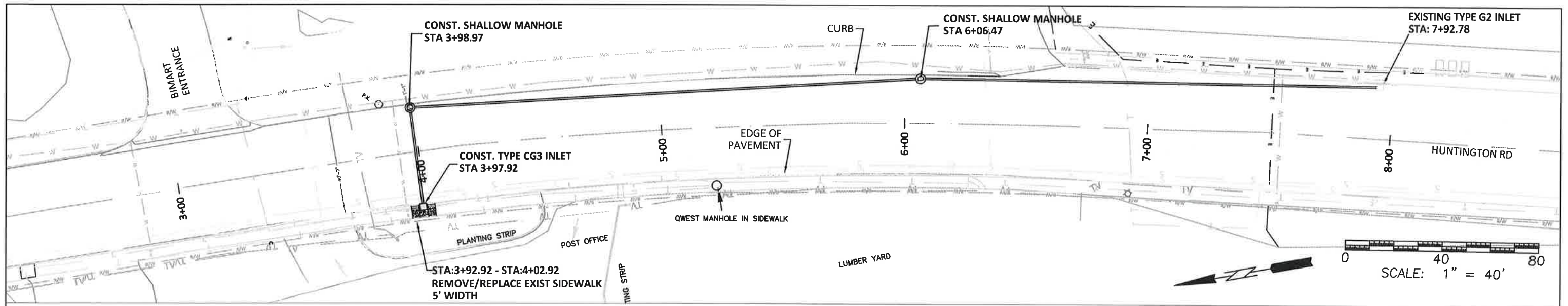
DESCHUTES COUNTY ROAD DEPARTMENT
61150 S.E. 27TH STREET
BEND, OR. 97702
PHONE: 541-388-6581 FAX: 541-388-2719

3rd ST DRAINAGE EXT

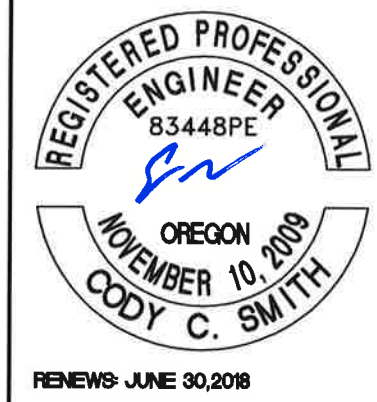
DRAFTER: T.WILSON DATE: 04/03/18
REVIEWED BY: C.SMITH DATE: 04/03/18

PLAN AND PROFILE

SHEET NO.
2 OF 3



PIPE PROFILE




DESCHUTES COUNTY ROAD DEPARTMENT
 61150 S.E. 27TH STREET
 BEND, OR. 97702
 PHONE: 541-388-6581 FAX: 541-388-2719

HUNTINGTON DRAINAGE EXTENTION

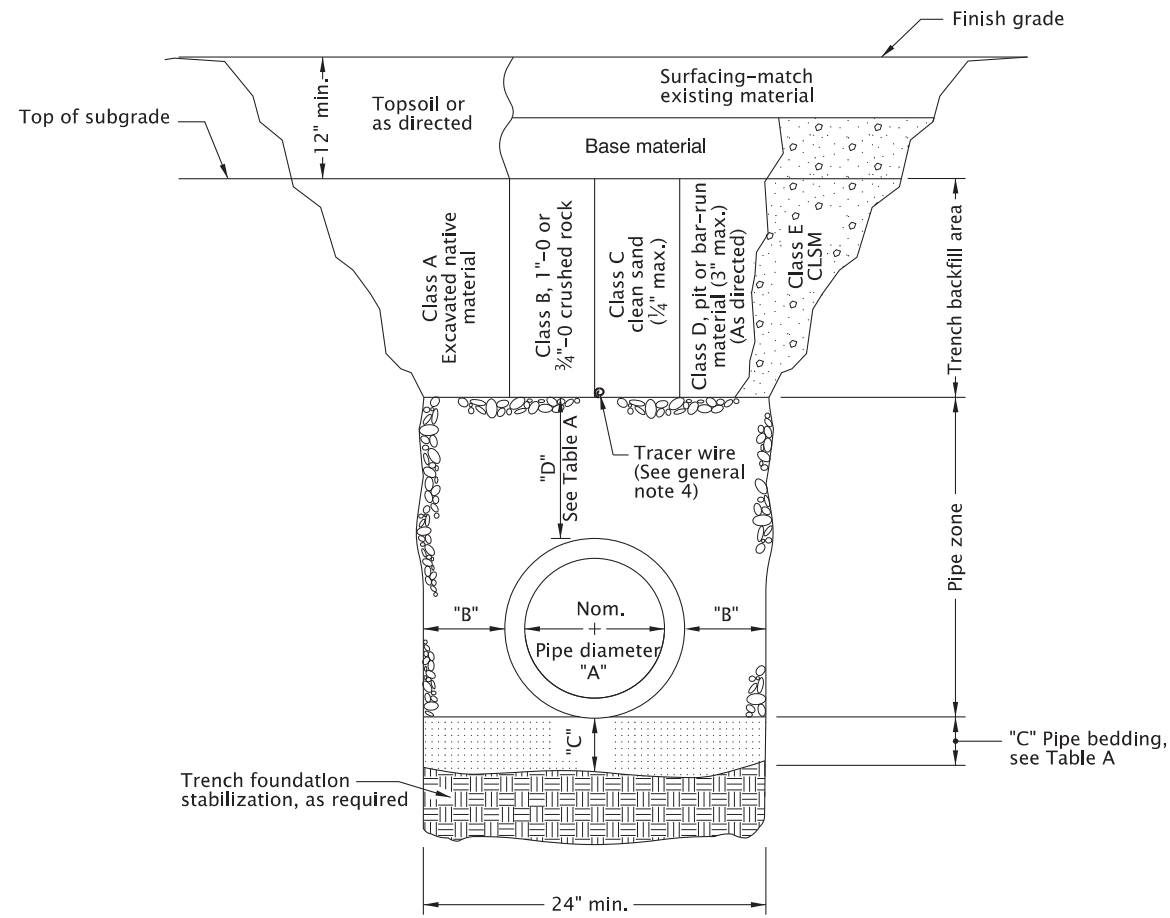
DRAFTER: T.WILSON DATE: 4/3/2018
 REVIEWED BY: C.SMITH DATE: 4/3/2018

HUNTINGTON DRAINAGE EXTENTION
 SHEET NO.
 3 OF 3

TABLE A

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

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



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

GENERAL NOTES FOR ALL DETAILS:

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

CALC. BOOK NO. N/A

BASELINE REPORT DATE 14-JUL-2014

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

OREGON STANDARD DRAWINGS
TRENCH BACKFILL, BEDDING,
PIPE ZONE AND MULTIPLE
INSTALLATIONS

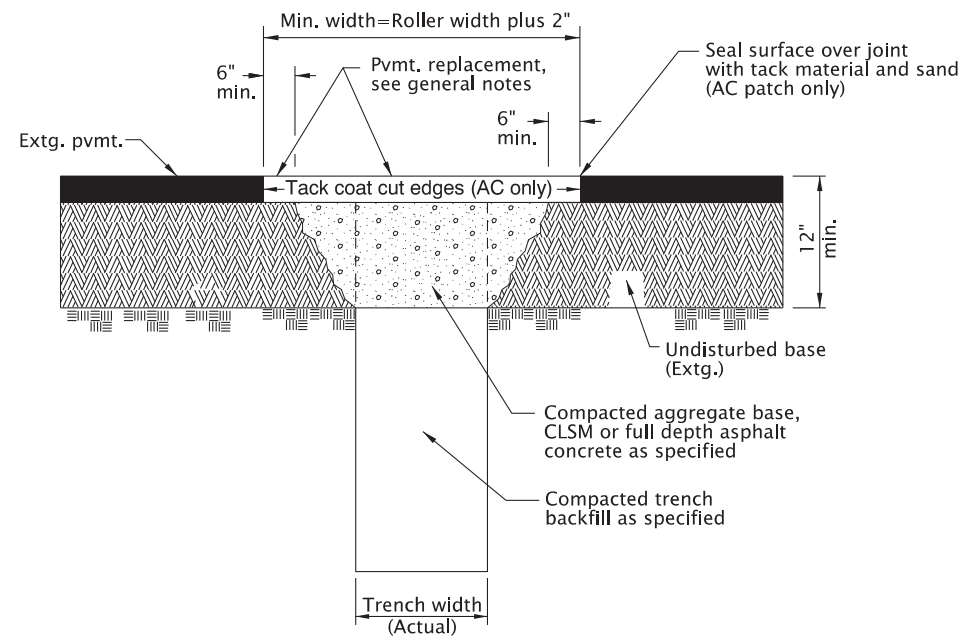
2018

| DATE | REVISION DESCRIPTION |
|------|----------------------|
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| | |

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.

rd302.dgn 25-JUL-2017

RD302



GENERAL NOTES FOR ALL DETAILS:

1. All existing AC or PCC pavement shall be sawcut prior to repaving.
2. Concrete pavement shall be replaced with concrete to a minimum thickness of 6" or to the thickness of removed pavement, whichever is greater.
3. Place AC mix minimum thkn. of 4" or the thkn. of the removed pavement, whichever is greater. Compact as specified.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 12-JUN-2008

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

OREGON STANDARD DRAWINGS

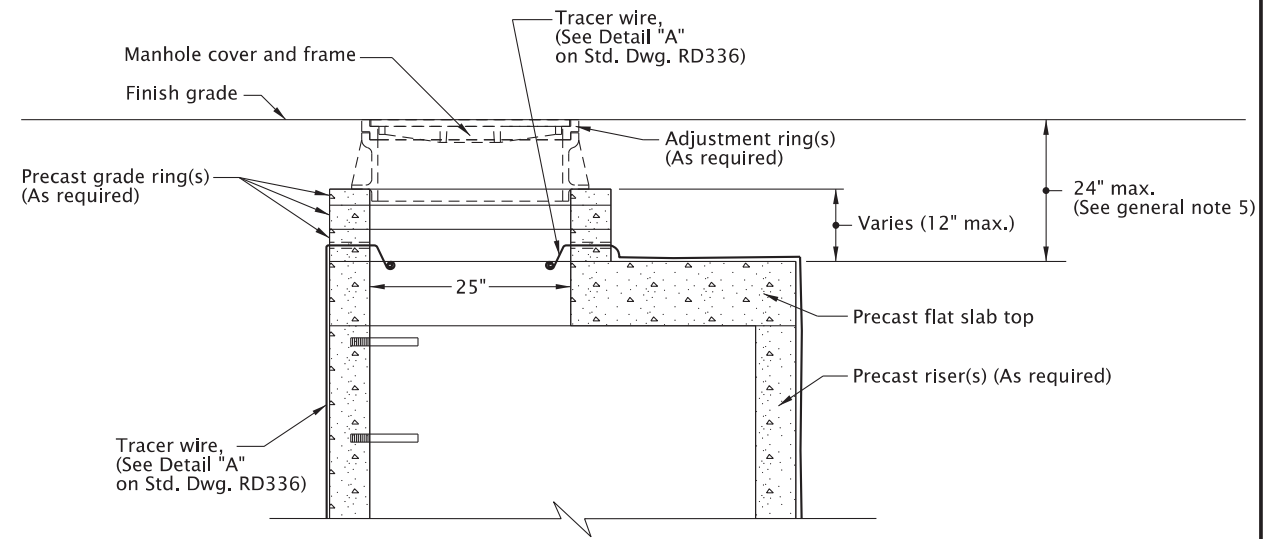
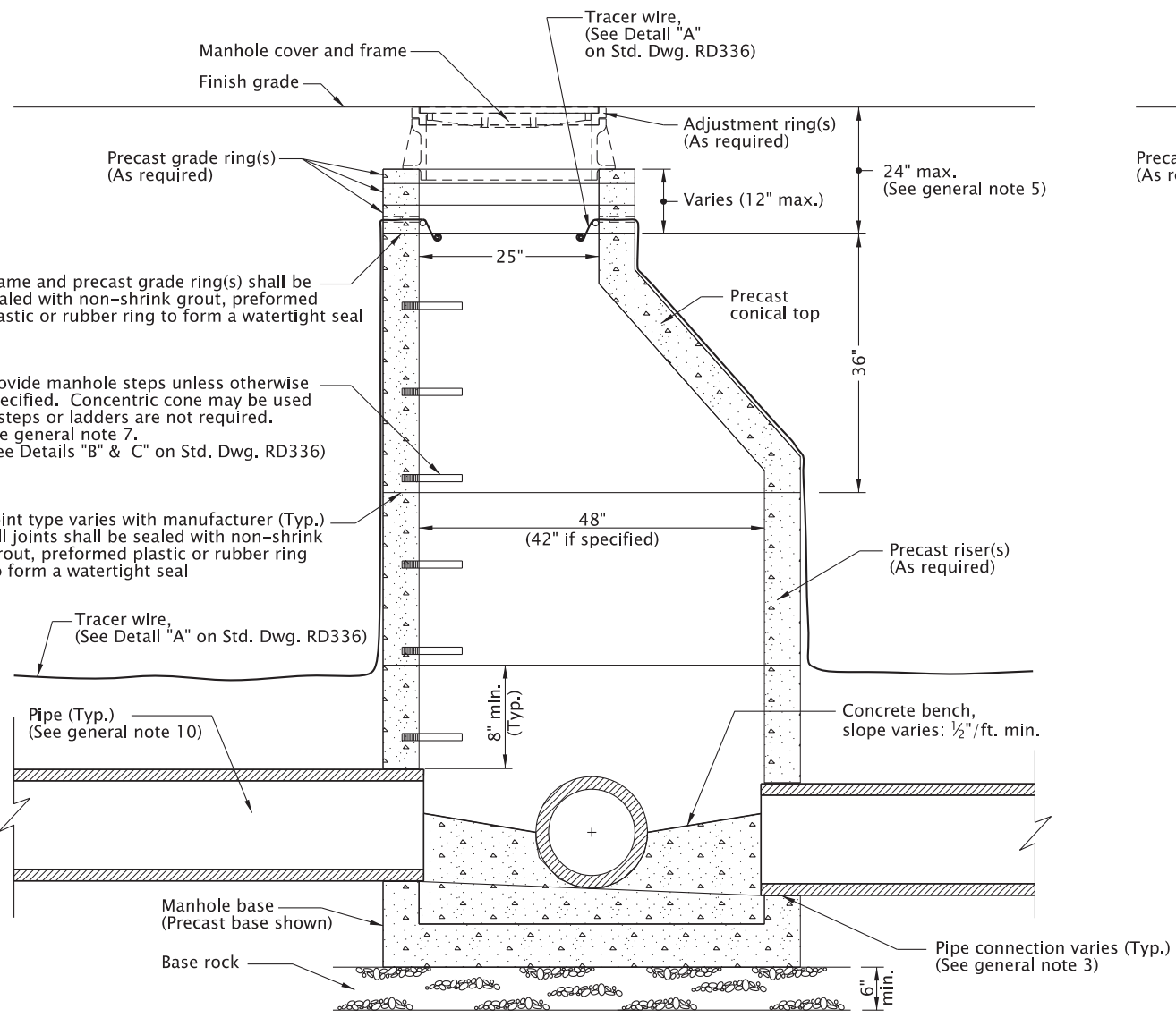
STREET CUT

2018

| DATE | REVISION DESCRIPTION |
|------|----------------------|
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| | |

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.

rd335.dgn 25-JUL-2017



GENERAL NOTES FOR ALL DETAILS:

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. All precast products shall conform to requirements of ASTM C478. 2. Standard precast manhole section diameter shall be 48". Use 42" if specified by the Engineer. 3. See Std. Dwg. RD345 for pipe to manhole connections. 4. See Std. Dwg. RD344 for manhole base section. 5. Adjust 24" maximum. 6. All connecting pipes shall have a tracer wire, or approved alternate. | <ol style="list-style-type: none"> 7. See Std. Dwg. RD336 for manhole steps. 8. See Std. Dwg. RD336 for details not shown. 9. See Std. Dwg. RD356 for manhole covers and frames, manhole adjustment rings, etc. 10. Max. pipe diameter varies with pipe material. 11. See Std. Dwg. RD342 for shallow manholes. 12. Location, elevation, diameter, slope, and number of pipe(s) varies, see project plans. |
|--|--|

| | |
|---|--|
| CALC. BOOK NO. _____ N/A _____ | BASELINE REPORT DATE _____ 25-JUL-2017 _____ |
| NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications | |
| OREGON STANDARD DRAWINGS | |
| STANDARD STORM SEWER MANHOLE | |
| 2018 | |
| DATE | REVISION DESCRIPTION |
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| | |

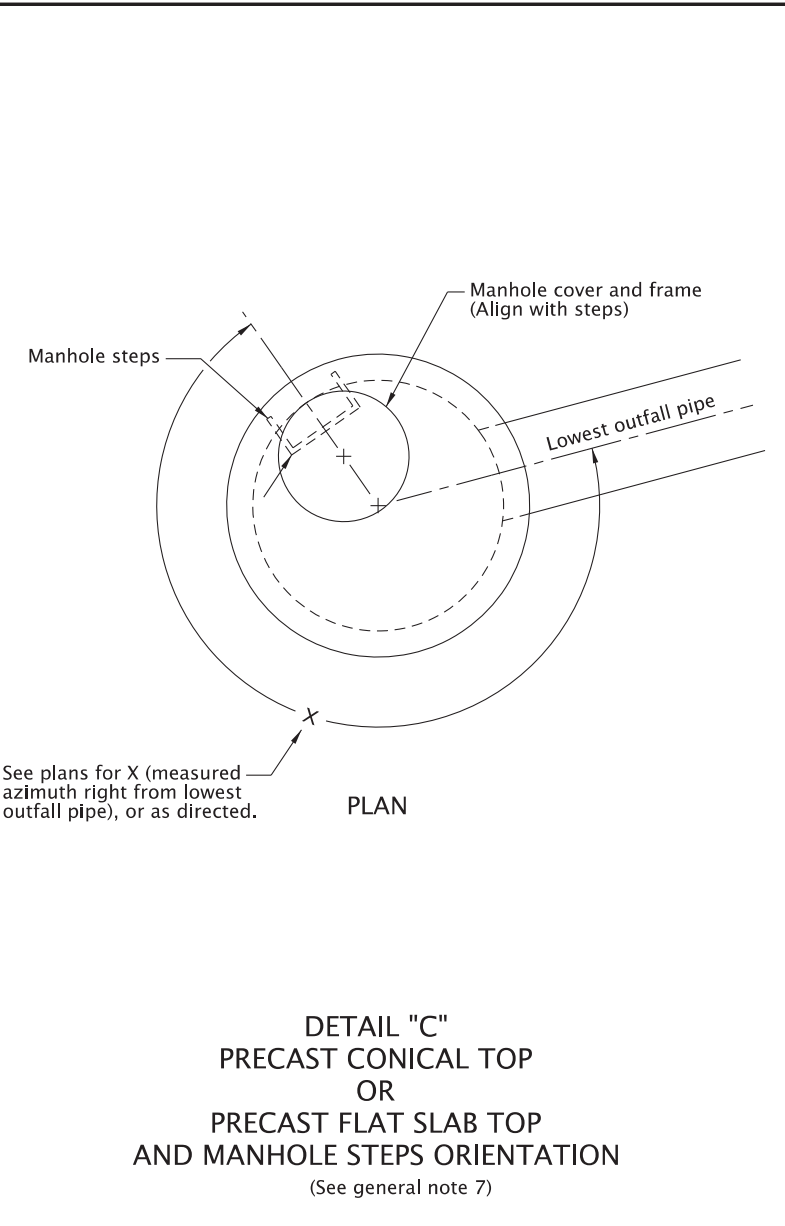
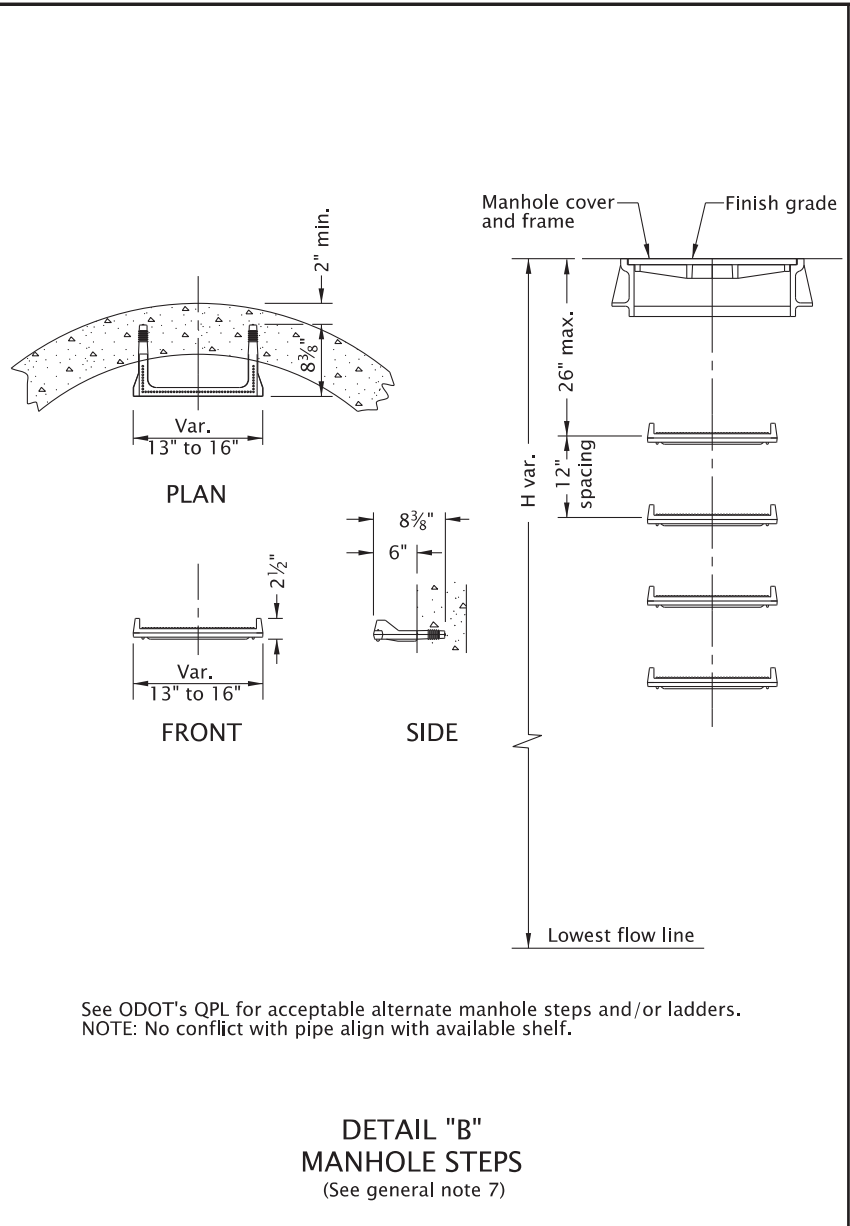
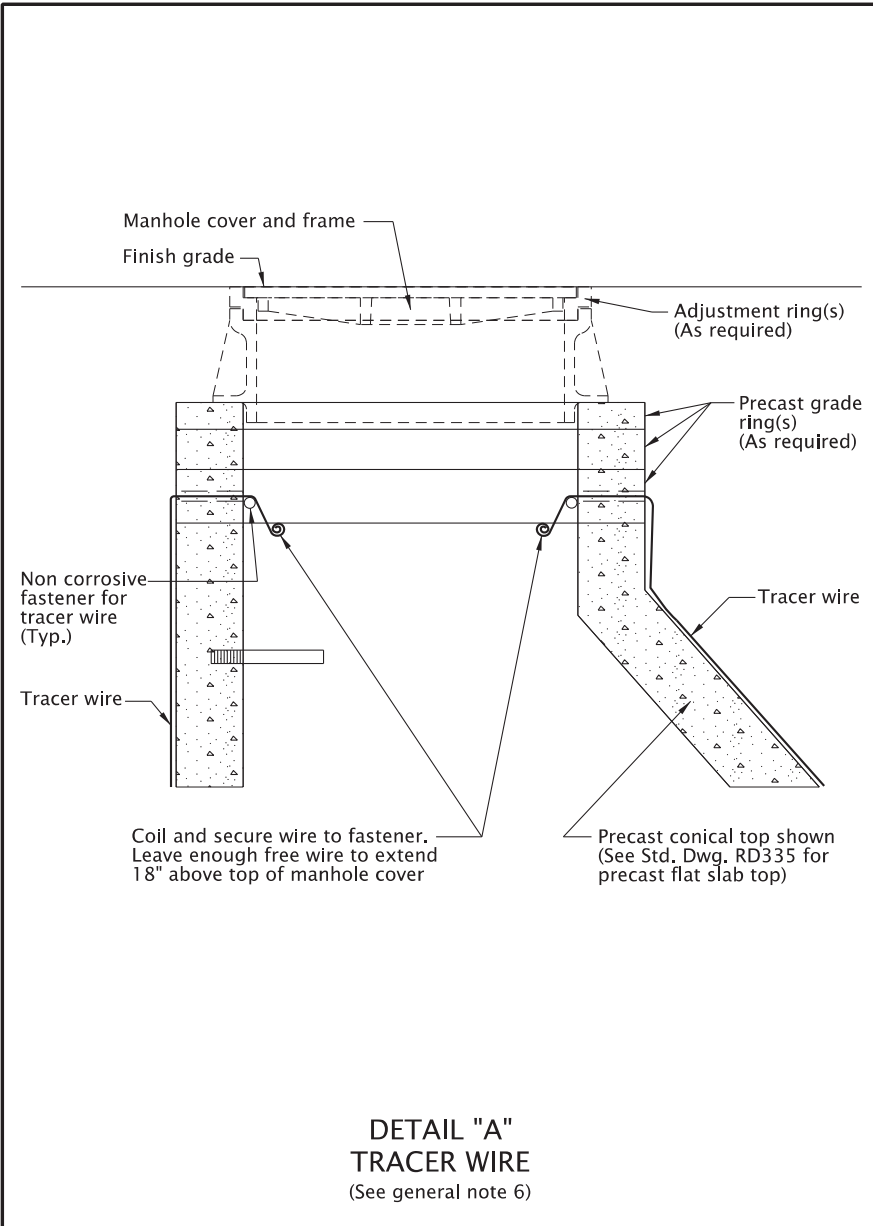
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

Effective Date: December 1, 2017 – May 31, 2018

RD335

RD335

rd336.dgn 25-JUL-2017



GENERAL NOTES FOR ALL DETAILS:

1. All precast products shall conform to requirements of ASTM C478.
2. Standard precast manhole section diameter shall be 48". Use 42" if specified by the Engineer.
3. See Std. Dwg. RD345 for pipe to manhole connections.
4. See Std. Dwg. RD344 for manhole base section.
5. Adjust 24" maximum.
6. All connecting pipes shall have a tracer wire, or approved alternate. Place tracer wire directly over pipe centerline and on top of the pipe zone material.

7. Steps and ladders shall conform to requirements of ASTM C478. When H=42" or less omit steps. See Detail "C" for alignment of steps, and manhole cover and frame.
8. See Std. Dwg. RD335 for details not shown.
9. See Std. Dwg. RD356 for manhole covers and frames, manhole adjustment rings, etc.
10. Max. pipe diameter varies with pipe material.
11. See Std. Dwg. RD342 for shallow manholes.
12. See project plans for details not shown.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 25-JUL-2017

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

OREGON STANDARD DRAWINGS

STANDARD MANHOLE DETAILS

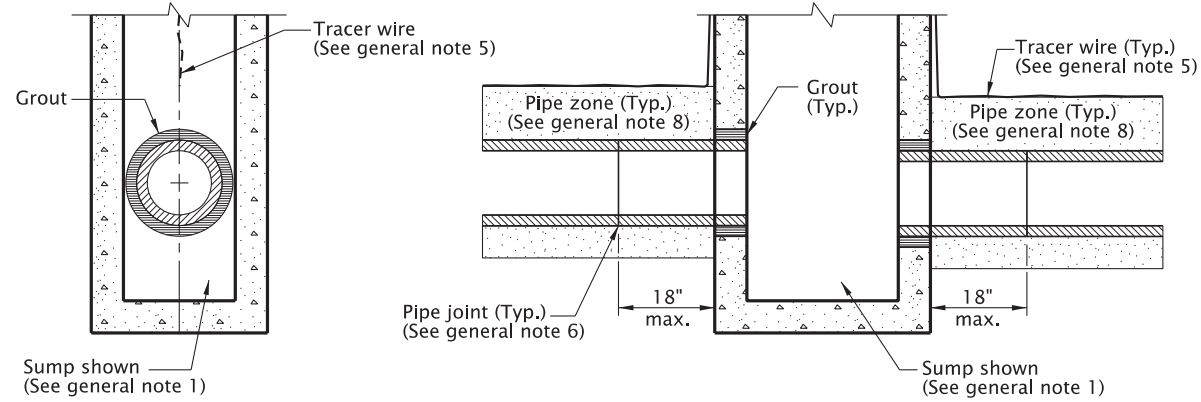
2018

| DATE | REVISION DESCRIPTION |
|------|----------------------|
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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.

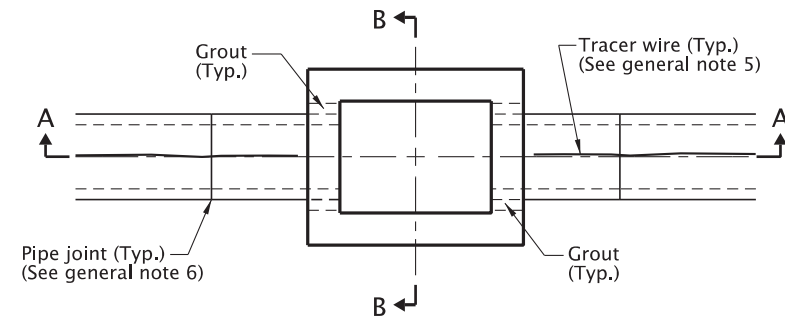
RD336

rd3339.dgn 25-JUL-2017



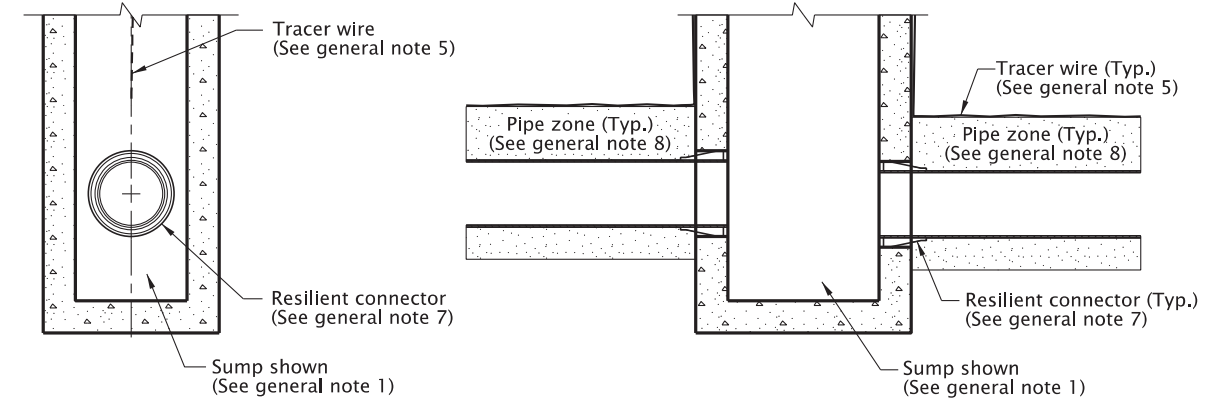
SECTION B-B

SECTION A-A



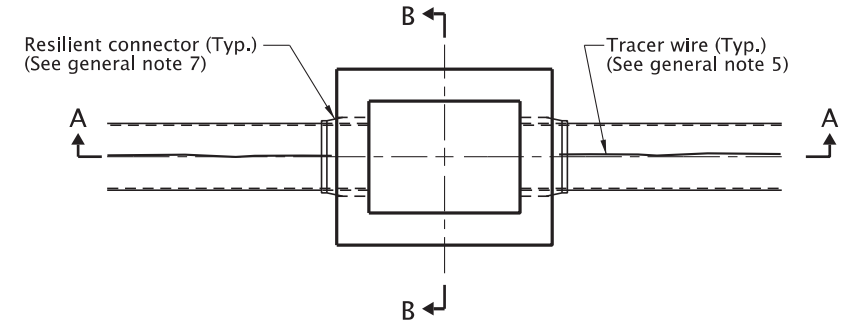
PLAN

CONNECTION OF RIGID PIPE TO STRUCTURE



SECTION B-B

SECTION A-A



PLAN

CONNECTION OF FLEXIBLE PIPE TO STRUCTURE

GENERAL NOTES FOR ALL DETAILS:

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

CALC. BOOK NO. N/A

BASELINE REPORT DATE 14-JUL-2014

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

OREGON STANDARD DRAWINGS

PIPE TO STRUCTURE CONNECTIONS

2018

| DATE | REVISION DESCRIPTION |
|------|----------------------|
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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.

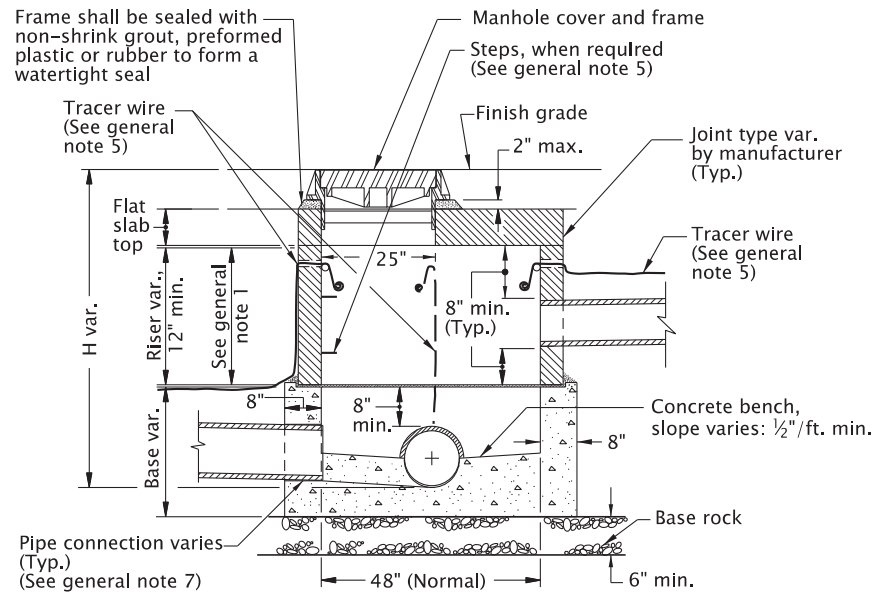
Effective Date: December 1, 2017 – May 31, 2018

RD339

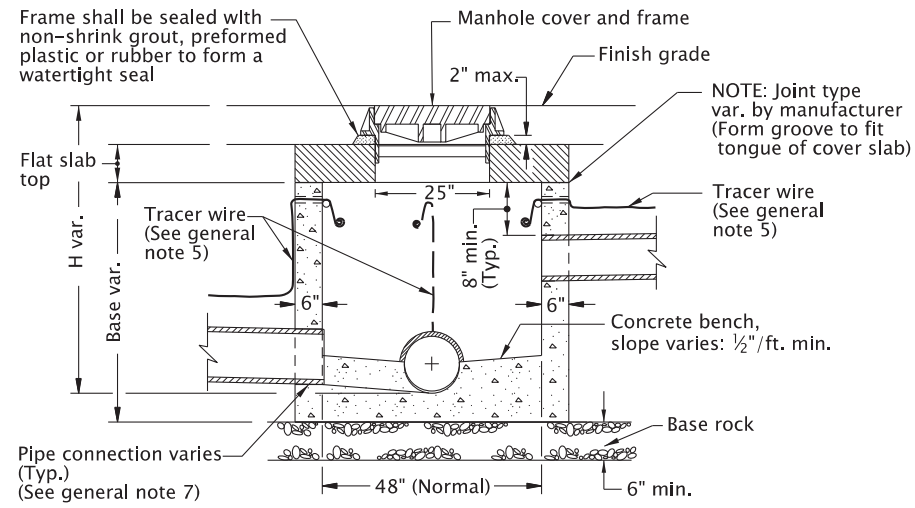
RD339

rd342.dgn 25-JUL-2017

RD342



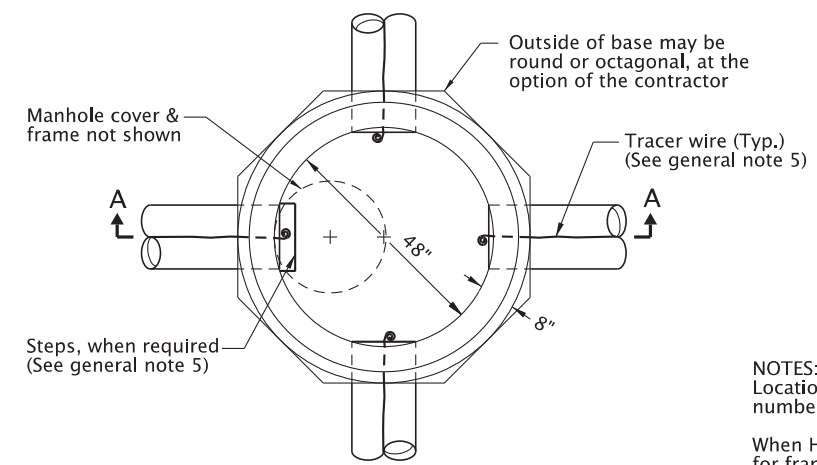
SECTION A-A
(Base, Riser & Flat Slab Top)



SECTION B-B
(Base & Flat Slab Top)

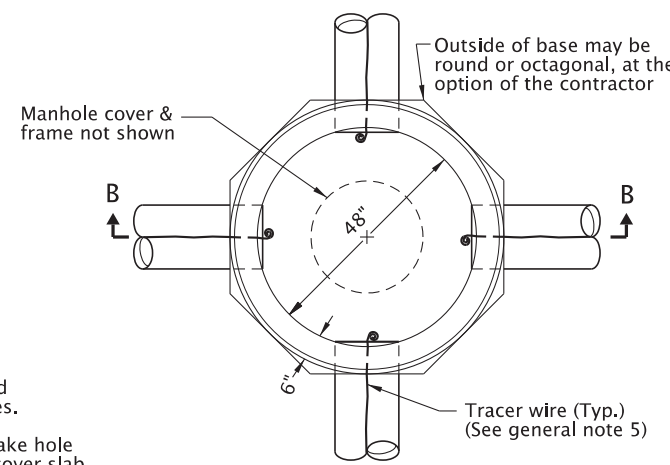
LEGEND
(See general note 3)

| | |
|------------------------|--|
| Cast-in-Place concrete | |
| Precast concrete | |
| 1: 2 cement mortar | |
| Sewer pipe | |



TOP VIEW
(Base, Riser & Flat Slab Top)

NOTES:
Location, elevation, and number of pipe(s) varies.
When H=42" or less make hole for frame in center of cover slab.
When H=42" or less omit steps.



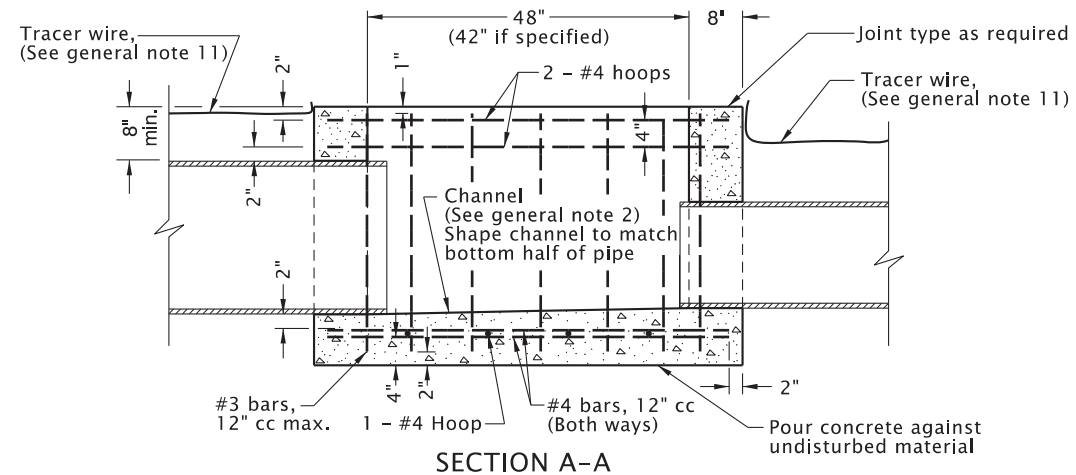
TOP VIEW
(Base & Flat Slab Top)

- GENERAL NOTES FOR ALL DETAILS:**
1. Minimum length if laterals or connections are inserted: outside diameter of pipe + 17".
 2. Use Section B-B when length of riser becomes less than minimum shown.
 3. Base may be precast or cast-in-place.
 4. All precast products shall conform to the requirements of ASTM C478.
 5. See Std. Dwg. RD336 for details not shown.
 6. See Std. Dwg. RD344 for manhole base section.
 7. See Std. Dwg. RD345 for pipe to manhole connections.
 8. See Std. Dwg. RD356 for manhole covers and frames.
 9. All concrete shall be commercial grade concrete.
 10. Max. pipe diameter varies with pipe material.
 11. Location, elevation, diameter, slope, and number of pipe(s) varies, see project plans.

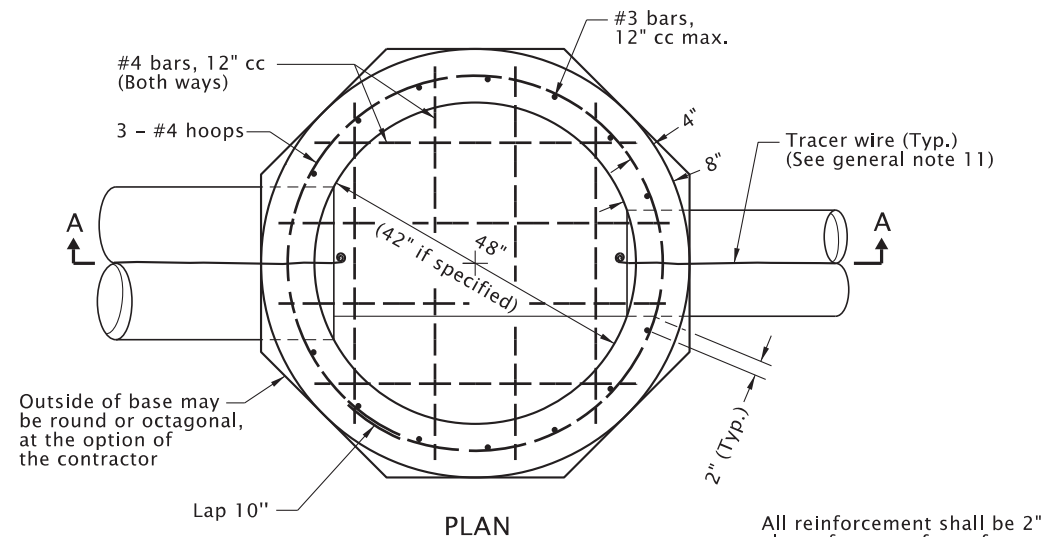
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|---|---|
| CALC. BOOK NO. <u> N/A </u> | BASELINE REPORT DATE <u> 21-JUL-2015 </u> |
| NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications | |
| OREGON STANDARD DRAWINGS | |
| SHALLOW MANHOLES | |
| 2018 | |
| DATE | REVISION DESCRIPTION |
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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.

rd344.dgn 25-JUL-2017



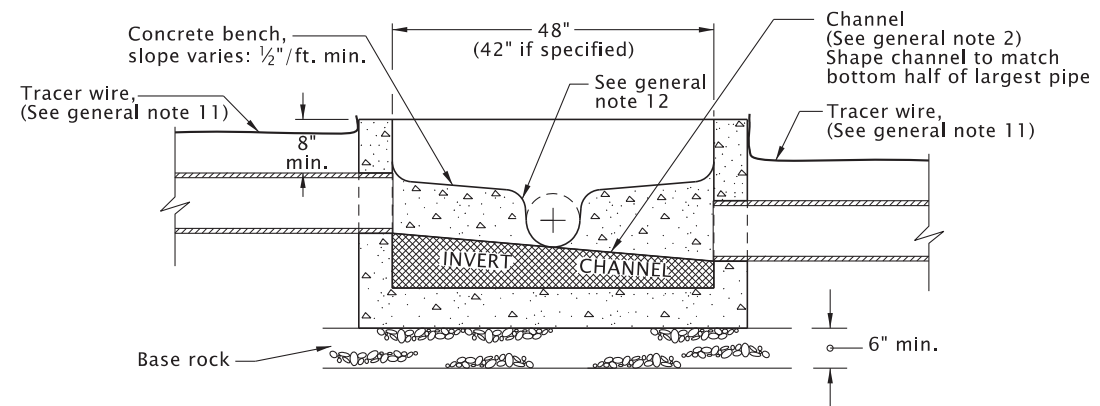
SECTION A-A



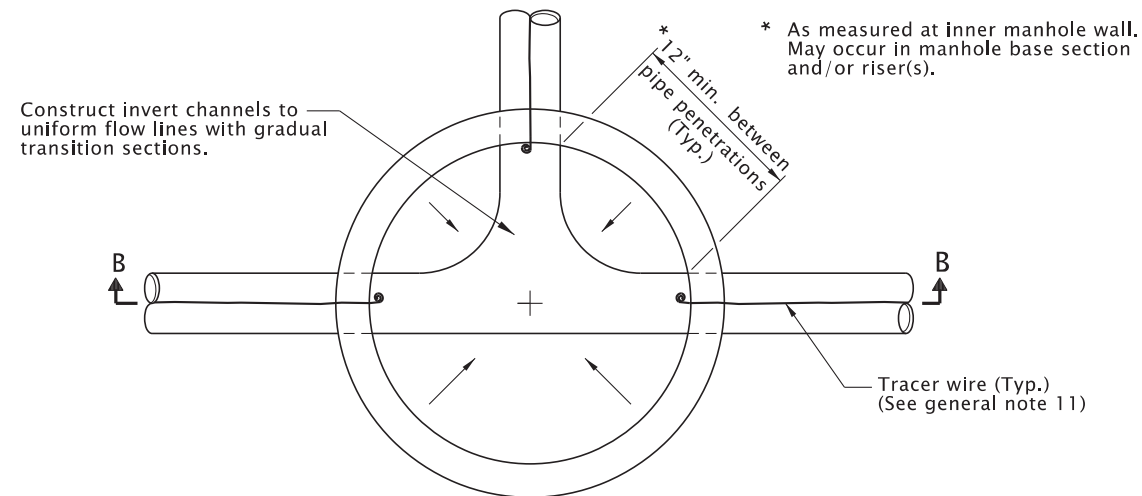
PLAN

CAST IN PLACE MANHOLE BASE
(For invert channel details, see precast option at right)

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



SECTION B-B



PLAN

PRECAST MANHOLE BASE

* As measured at inner manhole wall. May occur in manhole base section and/or riser(s).

GENERAL NOTES FOR ALL DETAILS:

1. All concrete shall be commercial grade concrete.
2. Channels shall be constructed to provide smooth slopes and radii to outlet pipe.
3. Bases may be precast or cast in place.
4. Max. pipe diameter varies with pipe material.
5. Use on 42" and 48" diameter manhole.
6. Extend pipe into manhole and grout smooth. Pipe(s) may extend 2" max. beyond the interior manhole wall.
7. Location, elevation, diameter, slope, and number of pipe(s) varies, see project plans.
8. All precast products shall conform to the requirements of ASTM C478.
9. See Std. Dwg. RD345 for pipe to manhole connections.
10. See Std. Dwg. RD336 for manhole steps details.
11. See Std. Dwg. RD336 for tracer wire details.
12. At spring line of pipe, extend channel up to crown line on 12:1 batter.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 14-JUL-2014

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

OREGON STANDARD DRAWINGS

STANDARD MANHOLE BASE SECTION

2018

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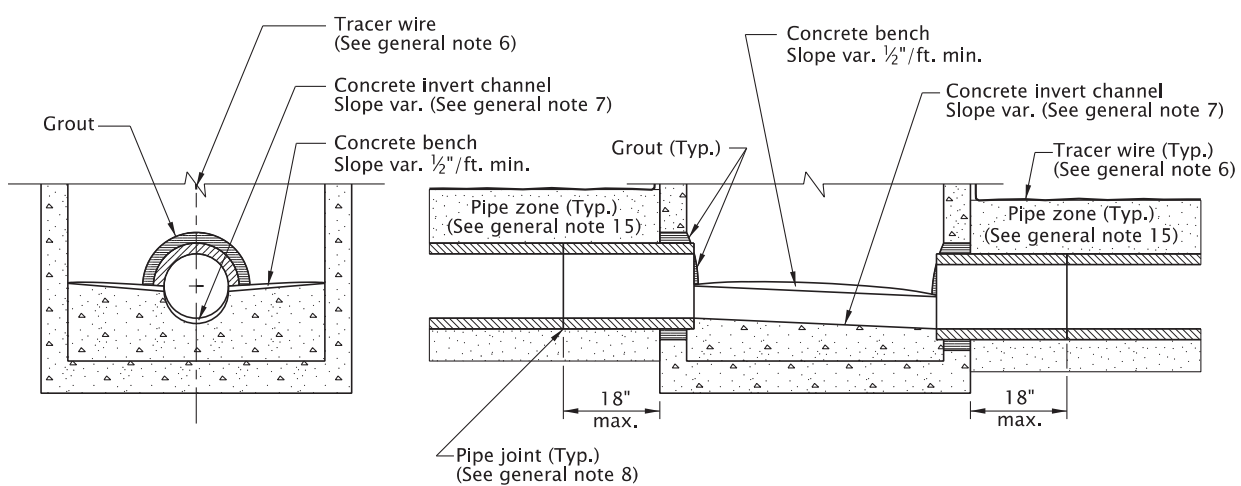
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

Effective Date: December 1, 2017 – May 31, 2018

RD344

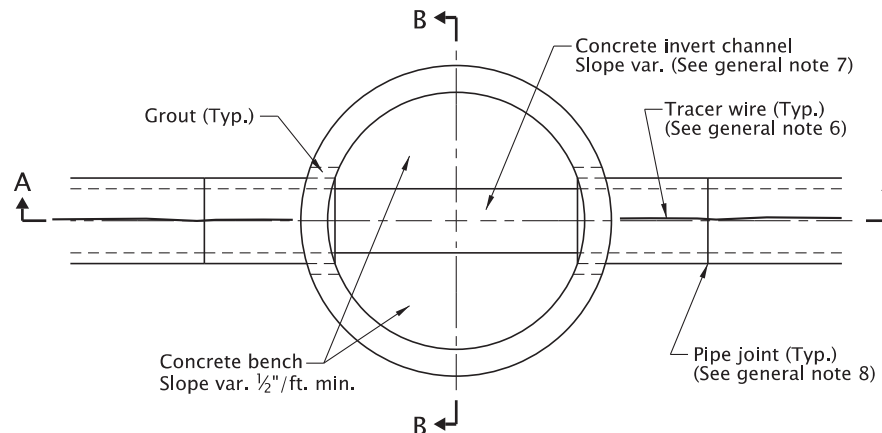
RD344

rd345.dgn 25-JUL-2017



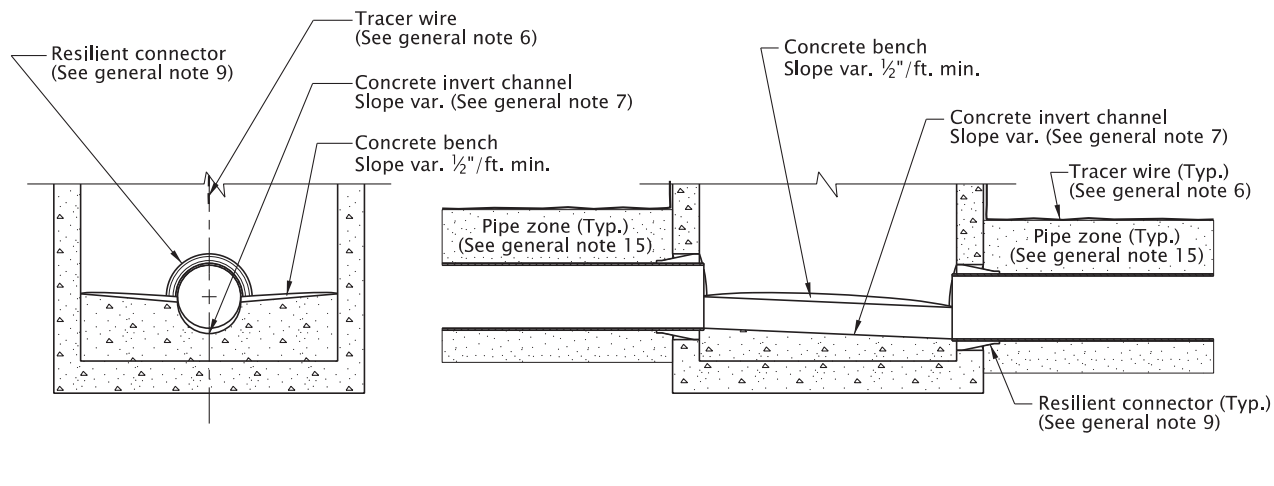
SECTION B-B

SECTION A-A



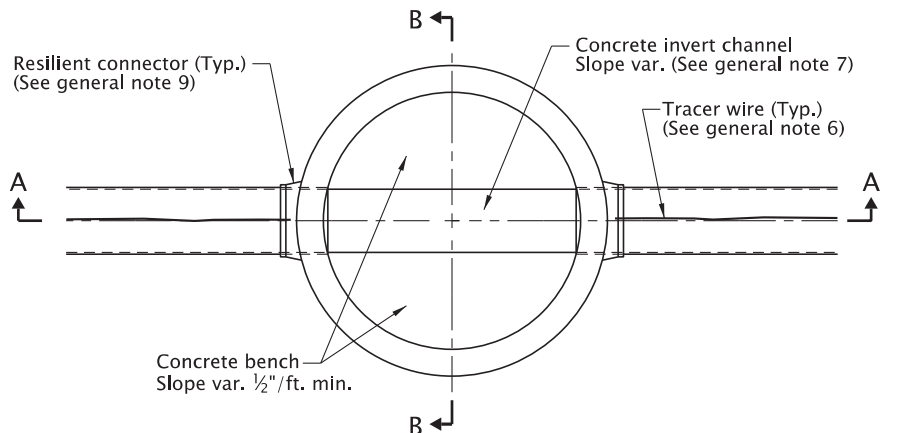
PLAN

CONNECTION OF RIGID PIPE TO MANHOLE



SECTION B-B

SECTION A-A



PLAN

CONNECTION OF FLEXIBLE PIPE TO MANHOLE

GENERAL NOTES FOR ALL DETAILS:

1. All precast sections shall conform to requirements of ASTM C478.
2. Manhole base sections may be precast or cast-in-place.
3. All concrete shall be commercial grade concrete.
4. Location, elevation, diameter, slope, and number of pipe(s) varies, see project plans.
5. Max. pipe diameter varies with pipe material.
6. All connecting pipes shall have a tracer wire, or approved alternate. See Std. Dwg. RD336 for tracer wire details.
7. Invert channels shall be constructed to provide smooth slopes and radii to outlet pipe.

8. When rigid pipe is used, the connecting pipe shall have a flexible, gasketed and unrestrained joint within 18" of manhole wall. Joint type varies with manufacturer.
9. When flexible pipe is used, install resilient connectors conforming to requirements of ASTM C923.
10. See Std. Dwgs. RD335, RD336, and RD338 for details not shown.
11. See Std. Dwg. RD336 for manhole steps details.
12. See Std. Dwg. RD342 for shallow manholes.
13. See Std. Dwg. RD344 for manhole base section.
14. See Std. Dwg. RD356 for manhole covers and frames, manhole adjustment rings, etc.
15. Pipe zone varies, see Std. Dwg. RD300.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 14-JUL-2014

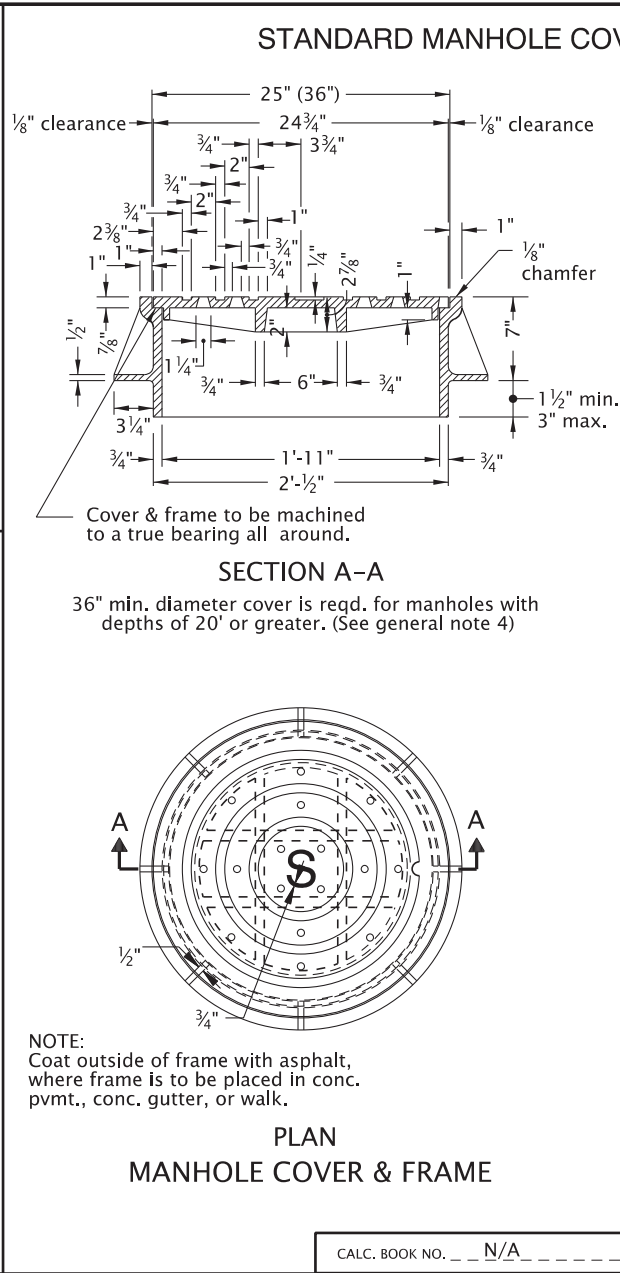
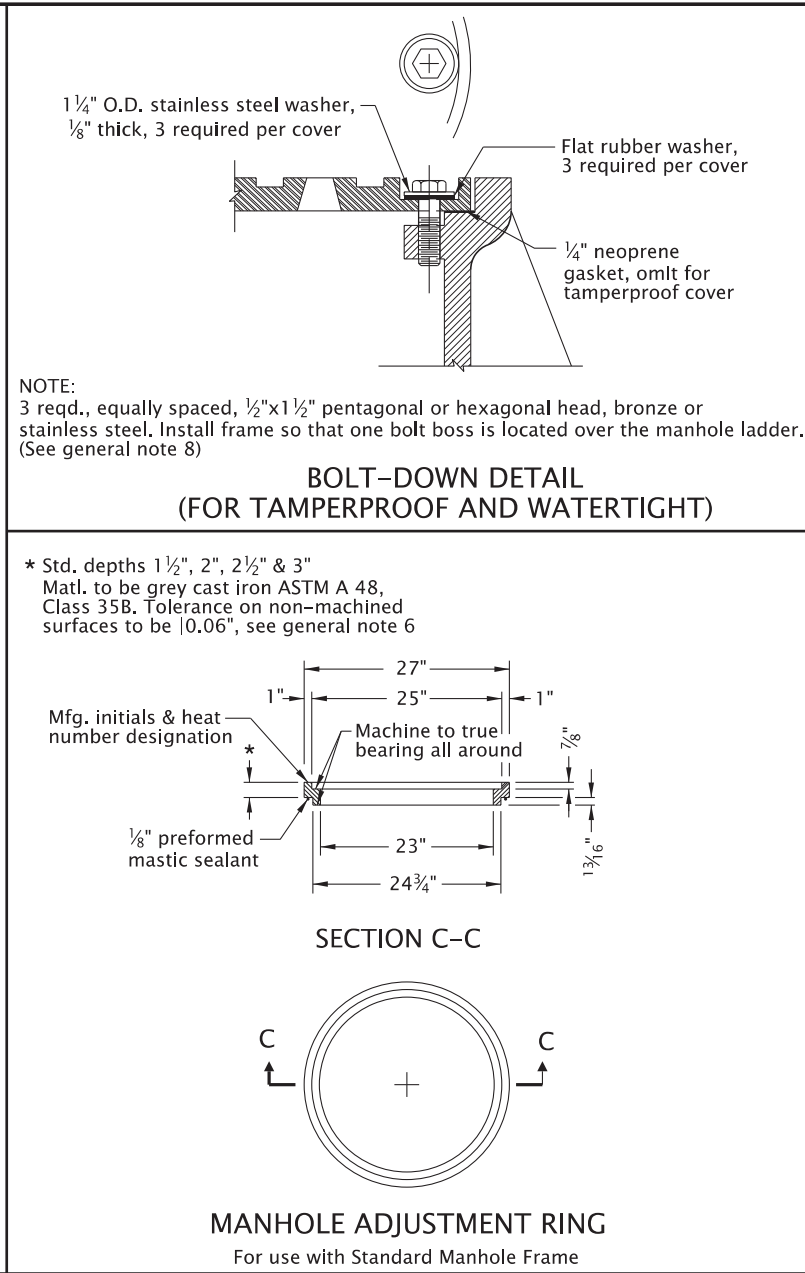
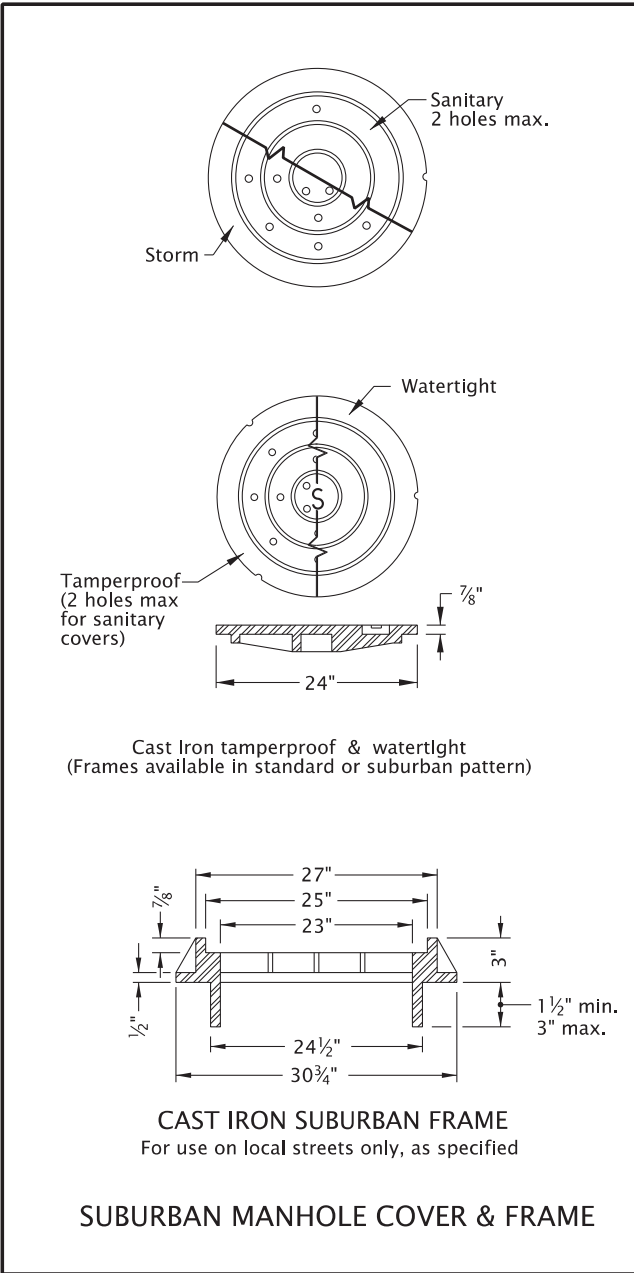
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

| | |
|------------------------------------|----------------------|
| OREGON STANDARD DRAWINGS | |
| PIPE TO MANHOLE CONNECTIONS | |
| 2018 | |
| DATE | REVISION DESCRIPTION |
| | |
| | |
| | |

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.

RD345

rd356.dgn 25-JUL-2017



GENERAL NOTES FOR ALL DETAILS:

1. Tamperproof covers reqd. on sanitary or storm drain manhole where located in pedestrian ways or easement areas. Covers for sanitary manholes shall have 2 holes maximum.
2. Watertight covers required if located where cover may be submerged (no holes).
3. Covers and frames shall be stamped with manufacturer's initials, heat number and point of origin.
4. See Std. Dwg. RD336 for manhole steps.

5. See Std. Dwg. RD360 for manhole frame adjustment.
6. See ODOT's QPL for alternate manhole adjustment rings.
7. Manhole grate allowed only in locations not subject to bicycle or pedestrian use.
8. See ODOT's QPL for alternate bolt-down products.

CALC. BOOK NO. N/A

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 25-JUL-2017

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

OREGON STANDARD DRAWINGS

MANHOLE COVERS AND FRAMES

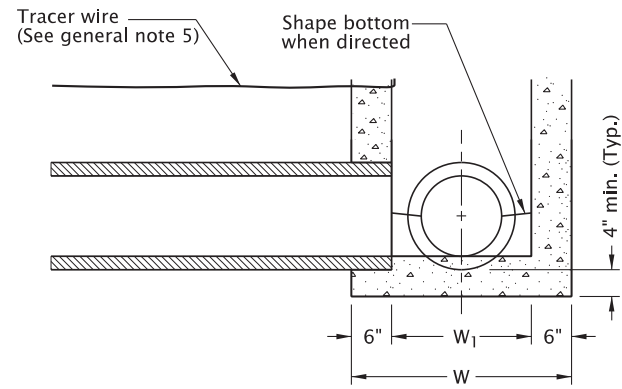
2018

| DATE | REVISION DESCRIPTION |
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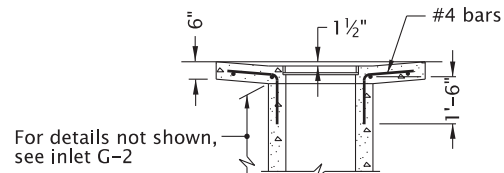
RD356

rd364.dgn 25-JUL-2017

RD364



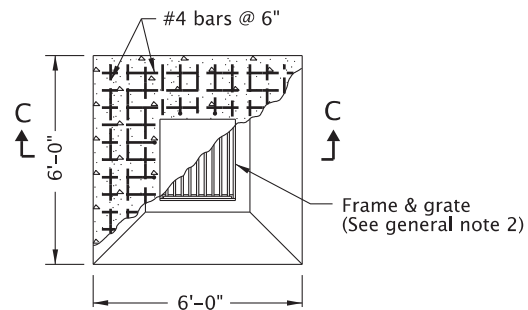
**DETAIL A
WITHOUT SUMP**



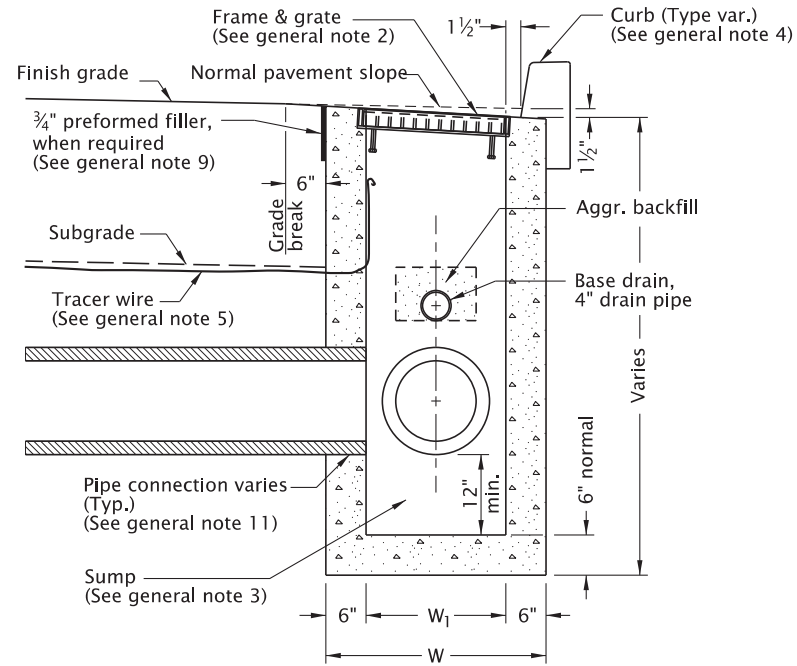
SECTION C-C

NOTE:

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



**PLAN
TYPE G-2MA**

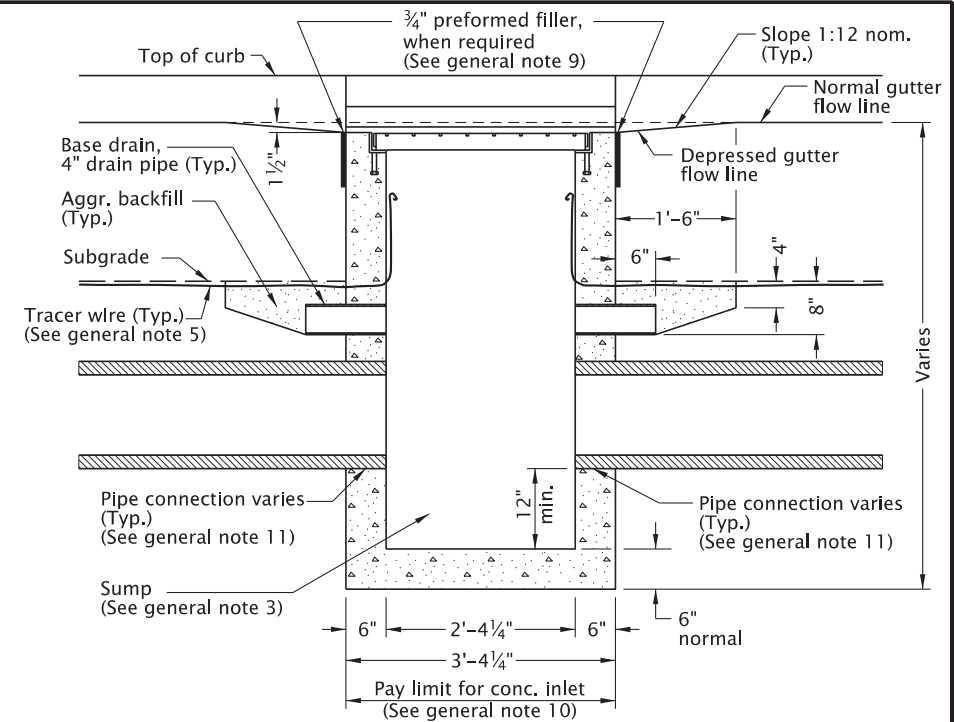


SECTION B - B

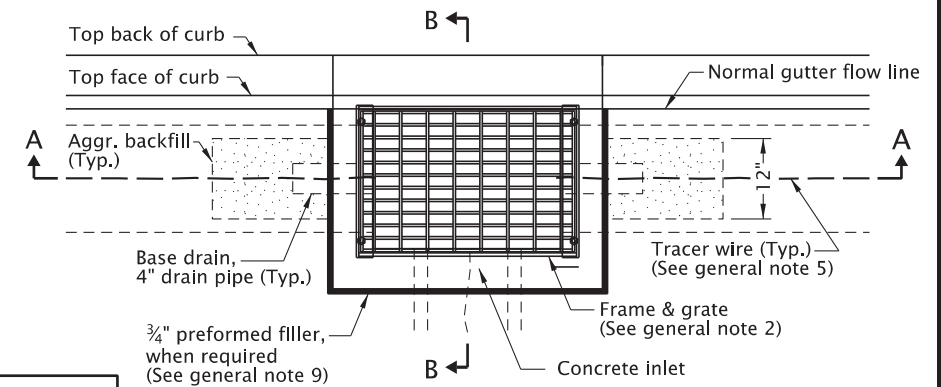
| TABLE A | | |
|------------------|------------------------------------|------------------------------------|
| INLET TYPE | W | W ₁ |
| G-1 | 2'-8 ⁷ / ₈ " | 1'-8 ⁷ / ₈ " |
| G-2, G-2M, G-2MA | 3'-3 ³ / ₈ " | 2'-3 ³ / ₈ " |

GENERAL NOTES FOR ALL DETAILS:

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



SECTION A - A



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

CALC. BOOK NO. N/A

BASELINE REPORT DATE 21-JUL-2015

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

OREGON STANDARD DRAWINGS

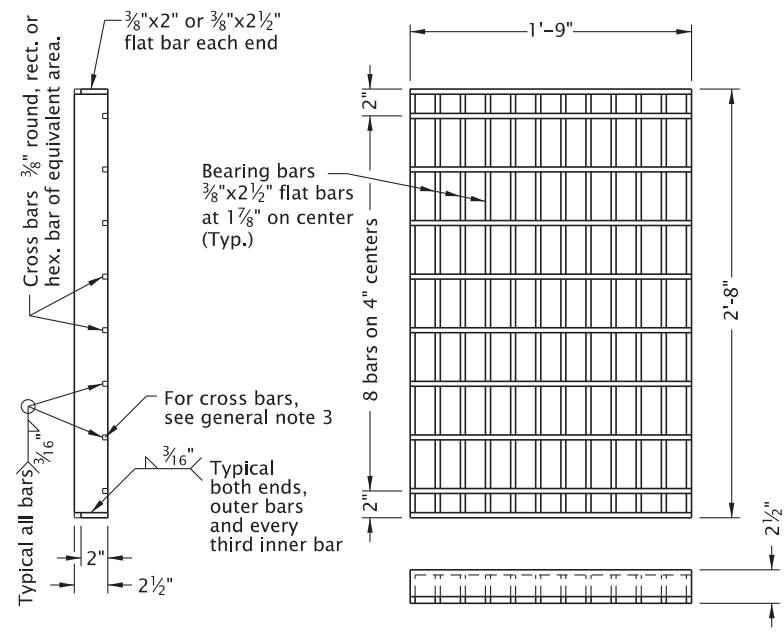
**CONCRETE INLETS
TYPE G-1, G-2, G-2M, & G-2MA**

2018

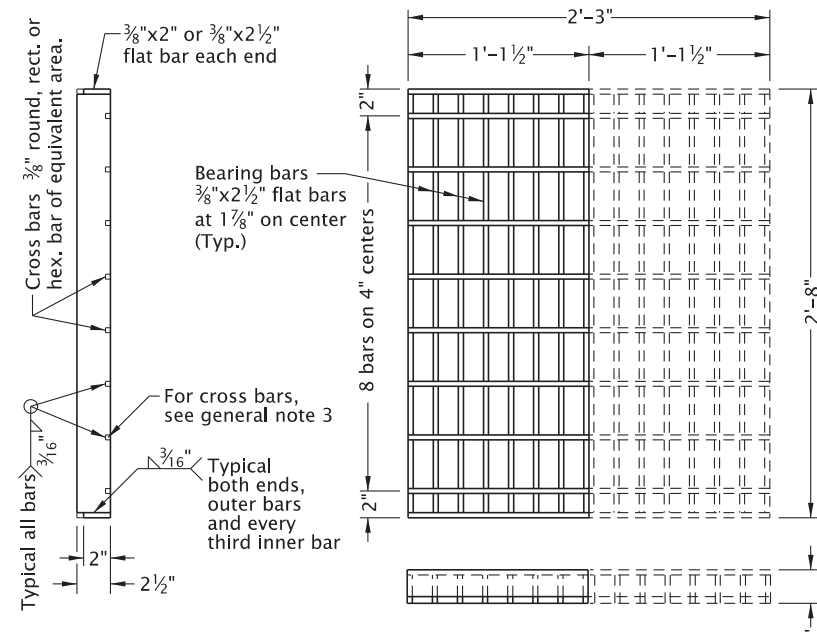
| DATE | REVISION DESCRIPTION |
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The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting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

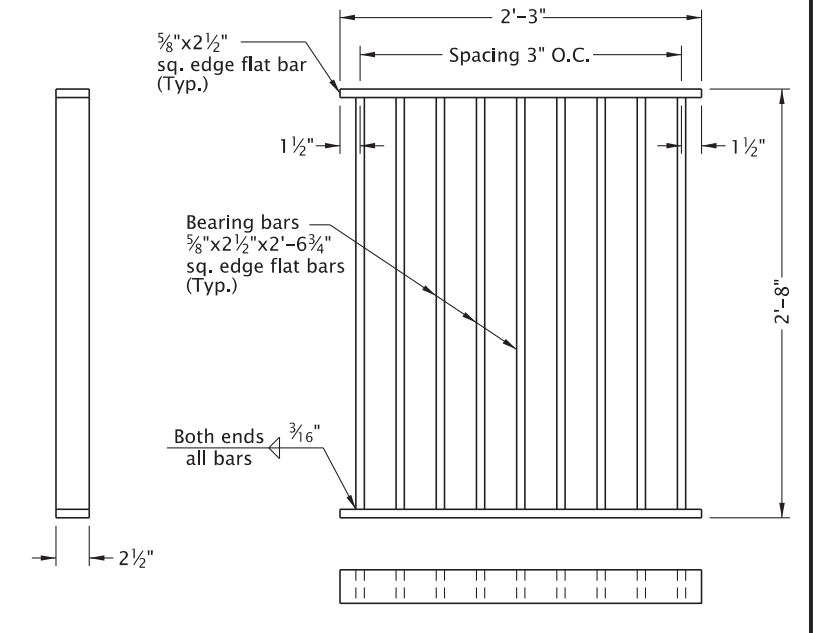
rd365.dgn 25-JUL-2017



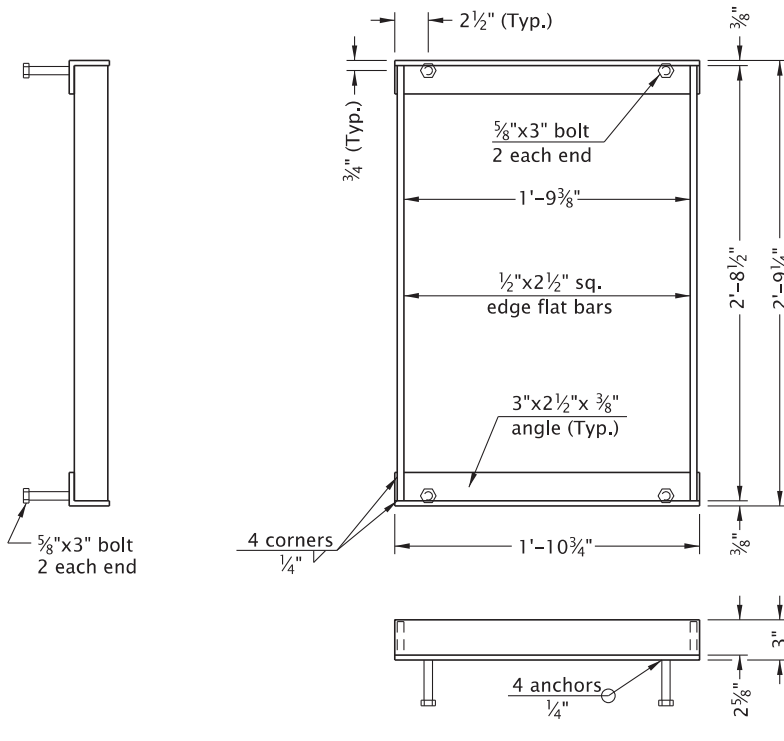
G-1, CG-1 GRATE
(TYPE 2)
(Bicycle-safe)



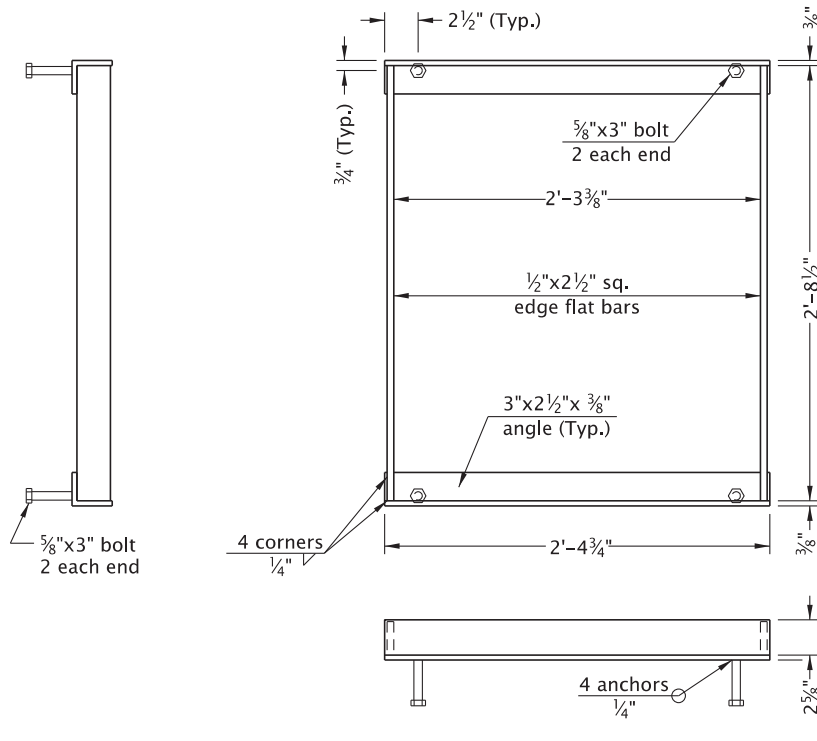
G-2, G-2M, G-2MA, CG-2 GRATE
(TYPE 2)
(Bicycle-safe)
(2 grates required per inlet, as shown)



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



G-1, CG-1 FRAME



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

GENERAL NOTES FOR ALL DETAILS:

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

CALC. BOOK NO. N/A

BASELINE REPORT DATE 14-JUL-2014

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

OREGON STANDARD DRAWINGS

FRAMES & GRATES
FOR CONCRETE INLETS

2018

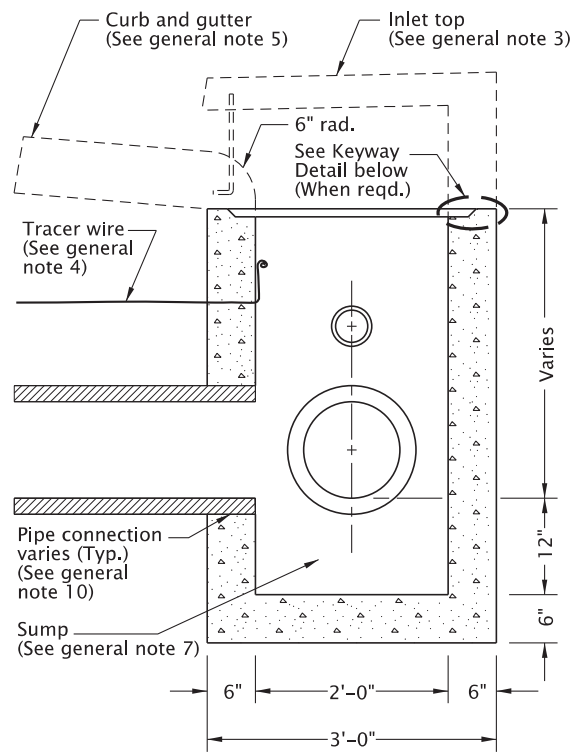
| DATE | REVISION DESCRIPTION |
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The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting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

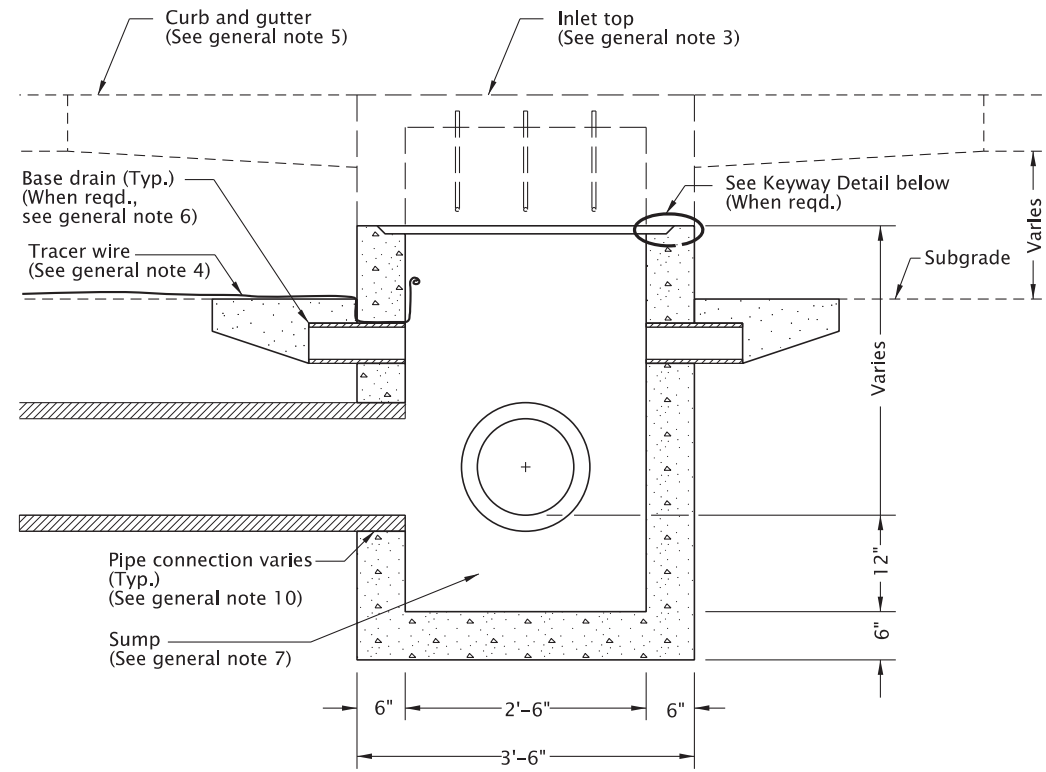
RD365

rd371.dgn 25-JUL-2017

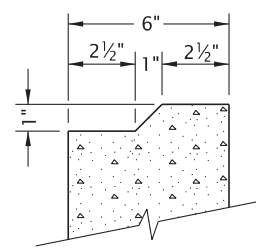
RD371



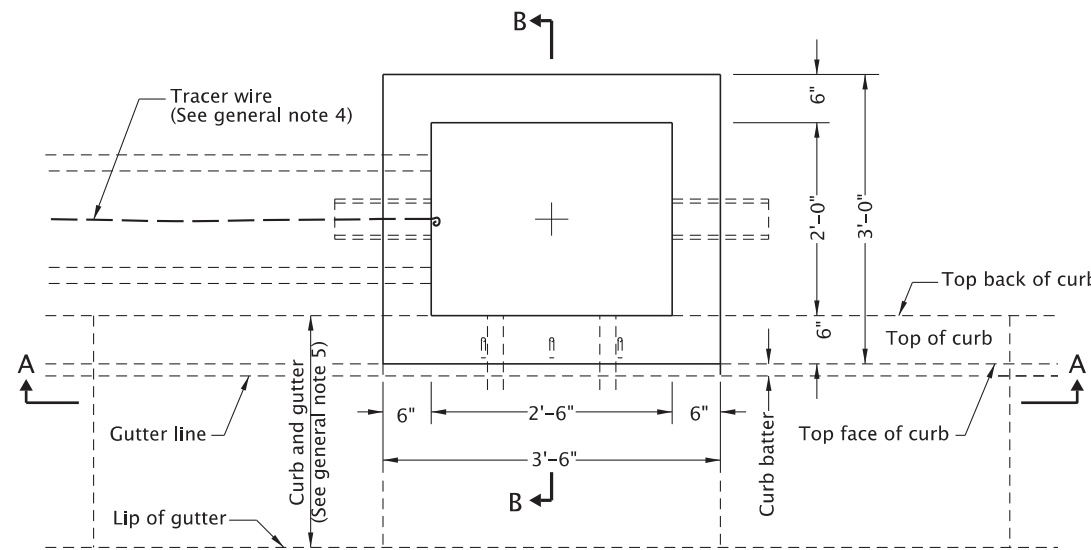
SECTION B - B



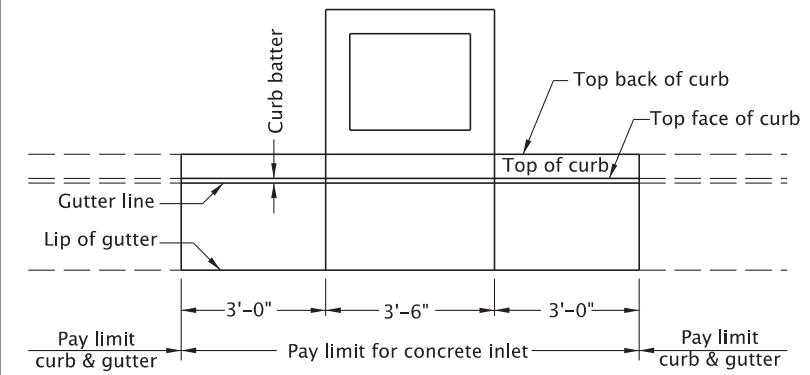
SECTION A - A



KEYWAY DETAIL



PLAN



PLAN
PAY LIMIT

GENERAL NOTES FOR ALL DETAILS:

1. All concrete shall be commercial grade concrete.
2. Inlet base may be cast-in-place or precast. Where precast inlet base is used as an alternate, a 4" compacted leveling bed of sand or 1/4"-0 crushed aggregate shall be provided. All precast inlets shall conform to requirements of ASTM C913.
3. See Std. Dwgs. RD372 & RD373 for inlet top details.
4. See Std. Dwg. RD336 for tracer wire details, or approved alternate.
5. See Std. Dwgs. RD700 & RD701 for curb and gutter details.
6. See Std. Dwg. RD364 for base drain details.
7. Provide sump only where shown on plans, and allowed by jurisdiction. For sump details, see Std. Dwg. RD364.
8. Location, elevation, diameter, slope, and number of pipe(s) varies, see project plans.
9. Max. pipe diameter varies with pipe material.
10. See Std. Dwg. RD339 for pipe to structure connections.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 21-JUL-2015

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

OREGON STANDARD DRAWINGS

CONCRETE INLET BASE
TYPE CG-3

2018

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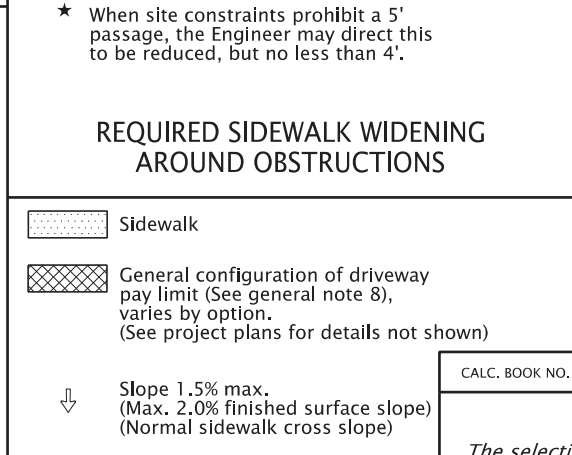
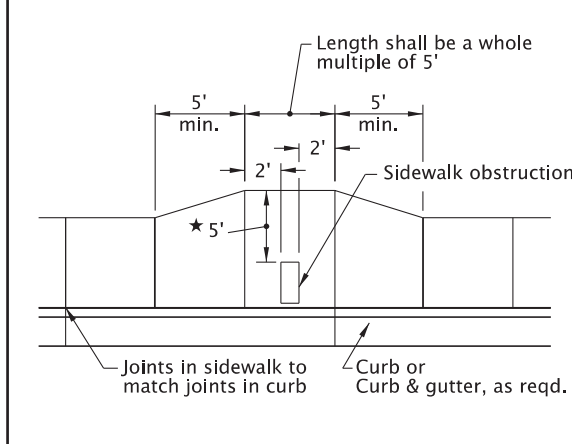
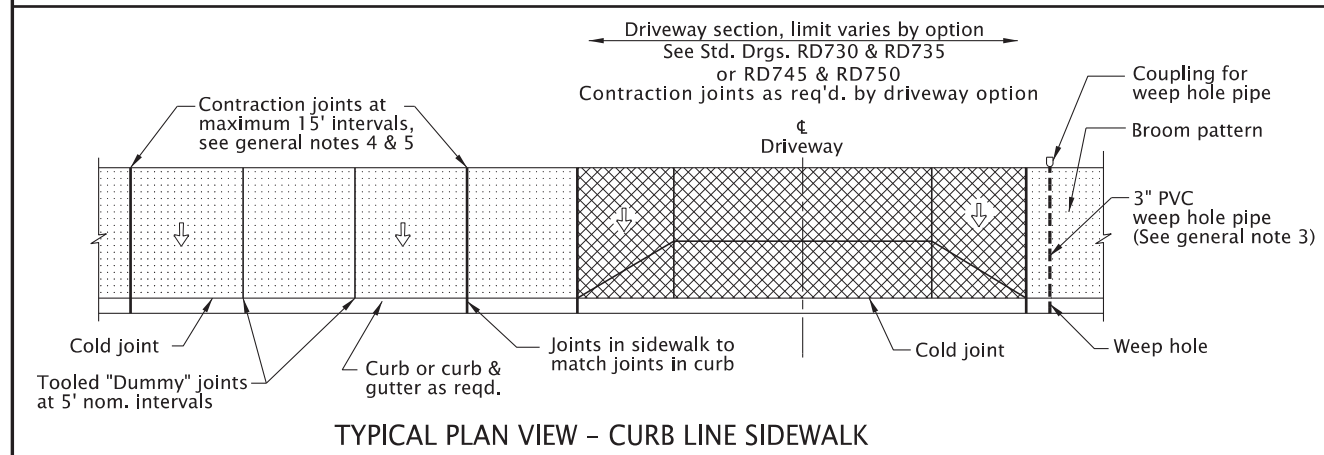
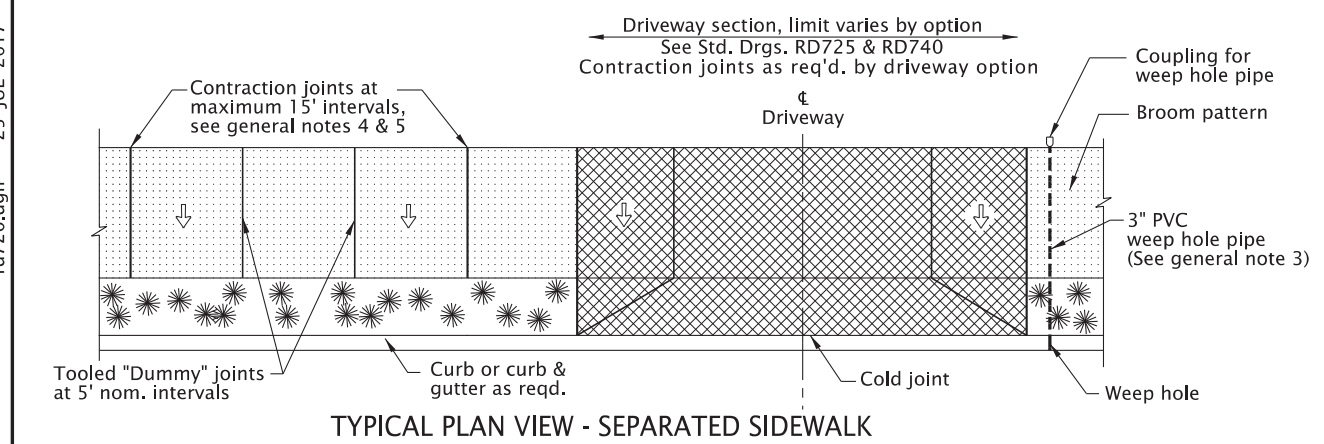
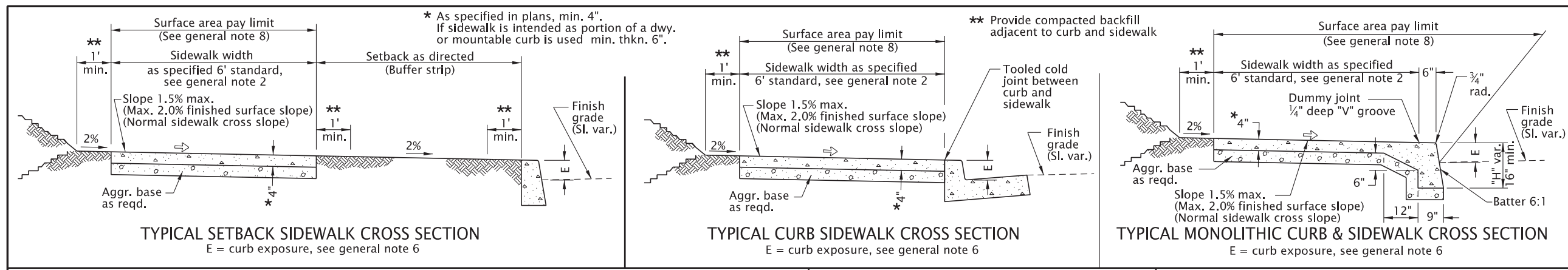
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

Effective Date: December 1, 2017 – May 31, 2018

RD371

rd720.dgn 25-JUL-2017

RD720



- GENERAL NOTES FOR ALL DETAILS:**
1. Include additional paved or unpaved 2' clearance to vertical faces higher than 5' such as retaining walls, sound walls, fences and buildings.
 2. Curb type and sidewalk width as shown on plans or as directed. On sidewalks 8' and wider, provide a longitudinal joint at the midpoint.
 3. Install 3" pvc weep hole pipes in sidewalks where shown on plans, and allowed by jurisdiction. Place contraction joint over top of pipe. See Std. Dwg. RD700 for weep hole detail.
 4. Const. expansion joints at 200' maximum spacing, and at points of tangency, and at ends of each driveway. For monolithic curb & sidewalk, const. expansion joints at 45' maximum spacing.
 5. Const. contraction joints at 15' maximum spacing, and at ends of each driveway and ramp.
 6. For curb details, see Std. Dwgs. RD700 & RD701.
 7. Sidewalk details are based on United States Access Board Standards.
 8. For driveway details not shown, see Std. Dwgs. RD725, RD730, RD735, RD740, RD745 & RD750.
 9. See project plans for details not shown.

| | |
|---|--|
| CALC. BOOK NO. --- N/A --- | BASELINE REPORT DATE --- 23-JAN-2017 --- |
| NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications | |
| OREGON STANDARD DRAWINGS | |
| SIDEWALKS | |
| 2018 | |
| DATE | REVISION DESCRIPTION |
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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.

tm800.dgn 01-JUL-2017

| TAPER TYPES & FORMULAS | |
|---------------------------|-----------------------|
| TAPER | FORMULA |
| Merging (Lane Closure) | "L" |
| Shifting | "L"/2 or 1/2*L" |
| Shoulder Closure | "L"/3 or 1/3*L" |
| Flagging (See Drg. TM850) | 50' - 100' |
| Downstream (Termination) | Varies (See Drawings) |

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

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

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

NOTES:

- For Lane closures where W < 10', use "L" value for W = 10'.
- For Shoulder closures where W < 10', use "L" value for W = 10' or calculate "L" using formula, for Speeds ≥ 45: L = WS, Speeds < 45: L = S²W/60, S = Speed, W=Width

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

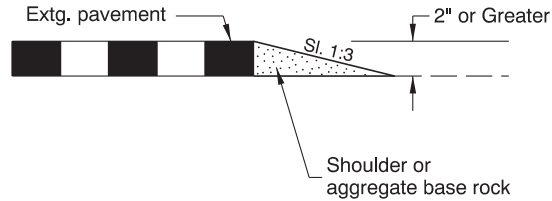
NOTES:

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

TM800

NOTES:

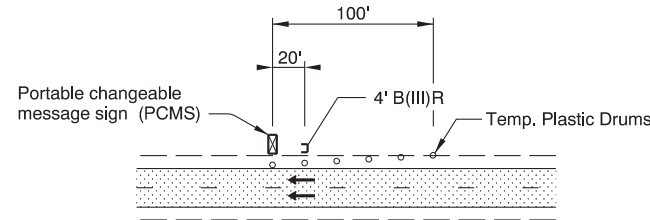
- When paved shoulders adjacent to excavations are less than four feet wide protect longitudinal abrupt edge as shown.
- Use aggregate wedge when abrupt edge is 2 inches or greater.



EXCAVATION ABRUPT EDGE

NOTES:

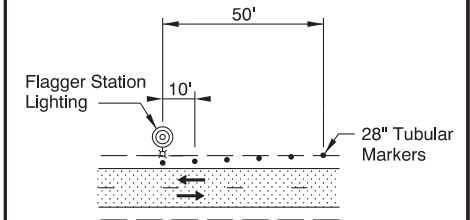
- Install PCMS beyond the outside shoulder, when possible.
- Use the appropriate type of barricade panels for PCMS location. Right shoulder, use Type B(III)R. Left shoulder, use Type B(III)L.
- Use six drums in shoulder taper on 20' spacing. The drums and barricade may be omitted when PCMS is placed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



PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) INSTALLATION

NOTES:

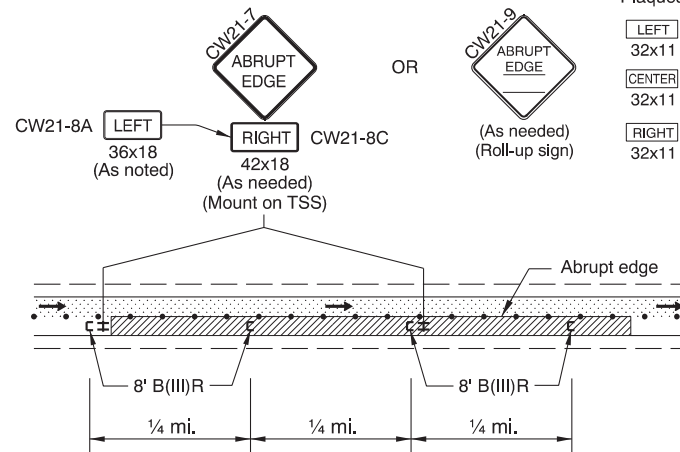
- Install Flagger Station Lighting beyond the outside shoulder, where practical.
- Use six tubular markers in shoulder taper on 10' spacing.
- Place cart / generator / power supply off of the shoulder, as far as practical.



FLAGGER STATION LIGHTING DELINEATION

NOTES:

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



TYPICAL ABRUPT EDGE DELINEATION

GENERAL NOTES FOR ALL TCP DRAWINGS:

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

- Temp. Plastic Drums See TCD Spacing Table for max. spacing.
- 28" Tubular Markers See TCD Spacing Table for max. spacing.

UNDER TRAFFIC
UNDER CONSTRUCTION

To be accompanied by Drg. Nos. TM820 & TM821

CALC. BOOK NO. TM09-01

BASELINE REPORT DATE 01-JUL-2017

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

OREGON STANDARD DRAWINGS

TABLES, ABRUPT EDGE AND PCMS DETAILS

2018

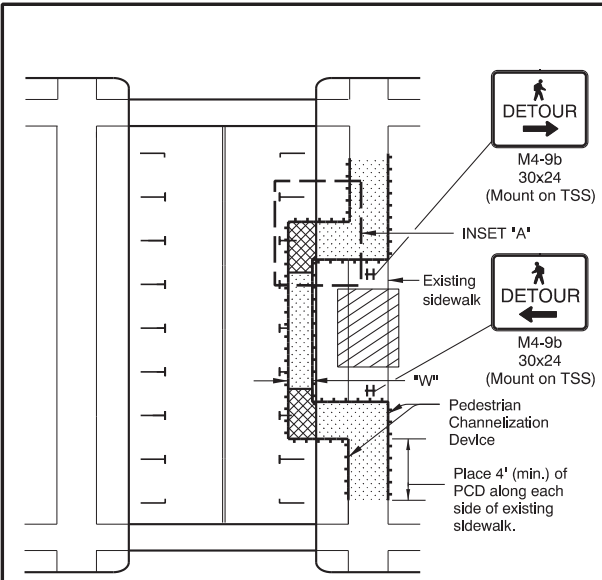
| DATE | REVISION DESCRIPTION |
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The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting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

Effective Date: December 1, 2017 - May 31, 2018

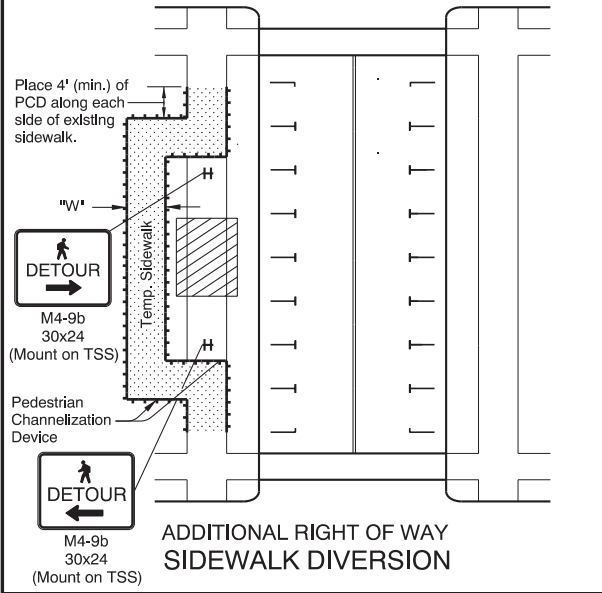
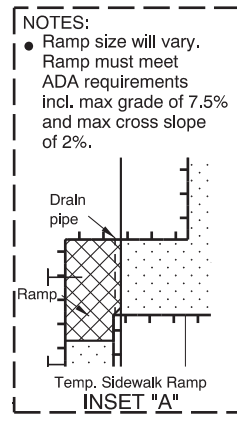
TM800

tm844.dgn 01-JUL-2017

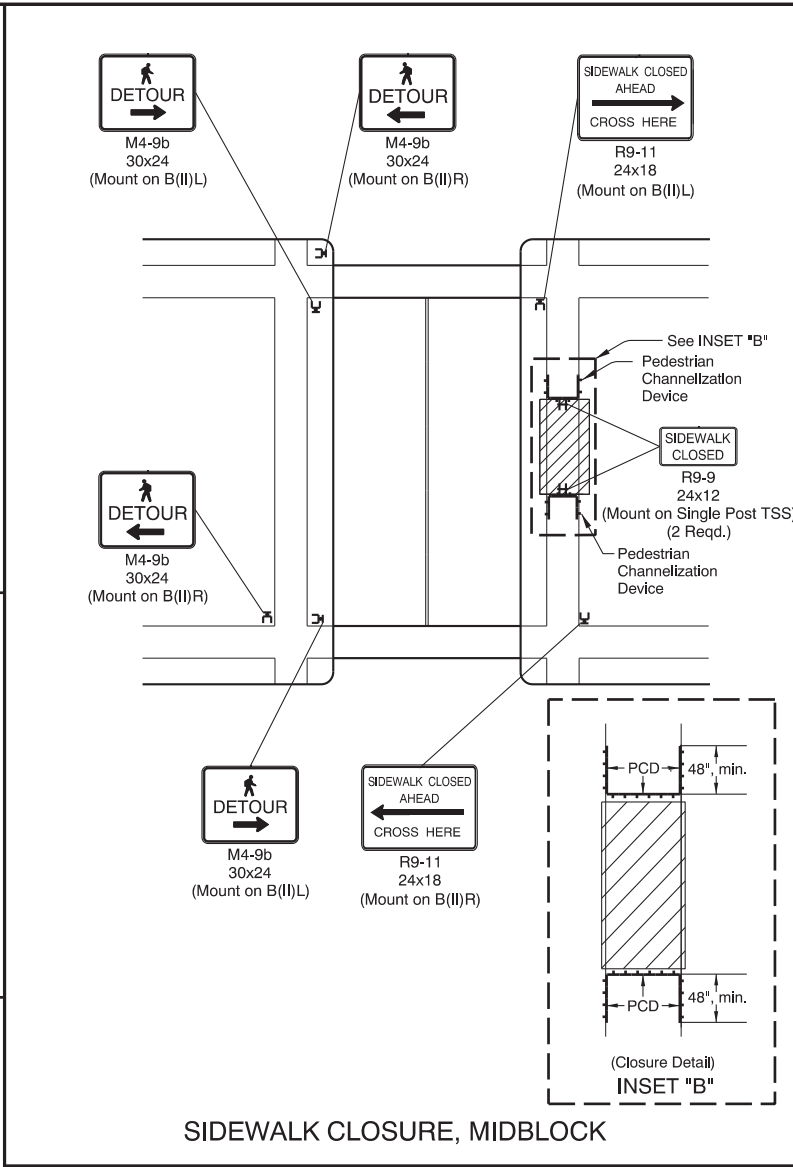


WITHIN ROADWAY SIDEWALK DIVERSION

- NOTES:**
- Place or construct temp. sidewalk ramp, as needed.
 - For roadways with a pre-construction posted speed of 40 mph or less.
 - See inset "A" for Temp. Sidewalk Ramp details.
 - "W" = 60", or, where 60" width cannot be maintained through the entire route, provide 48" min. width with 60" x 60" passing spaces every 200 ft.
 - Use temporary ADA compliant surfaces to cross planter strips or other non-traversable surfaces.



ADDITIONAL RIGHT OF WAY SIDEWALK DIVERSION

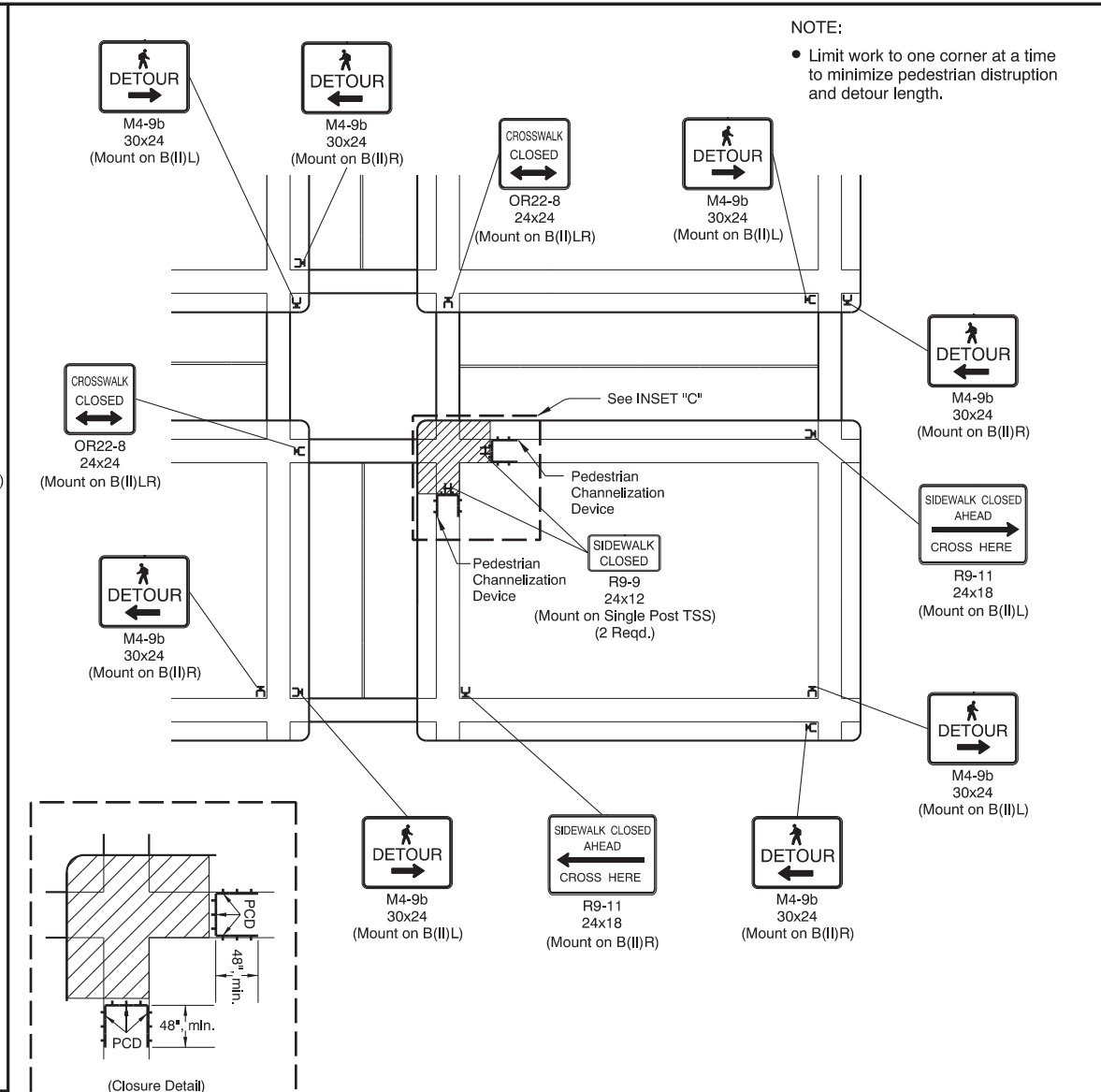


SIDEWALK CLOSURE, MIDBLOCK

GENERAL NOTES FOR ALL DETAILS:

- When closing or relocating crosswalks or other pedestrian facilities provide ADA compliant facilities. Include accessibility features consistent with existing pedestrian facilities by providing adequate slope transitions and surfacing.
- Provide non-slip, 60 inch minimum wide surface through entire pedestrian route. If not possible, provide 48" min. width with 60" x 60" passing spaces every 200 feet along the route.
- Only TCD for pedestrians are shown. Other devices may be necessary to control vehicular traffic.
- Stage work, as necessary, to provide a temporary pedestrian access route at all times. For roadways with no available detours, maintain one open sidewalk at all times.
- Minimize pedestrian out-of-direction travel.

- UNDER PEDESTRIAN TRAFFIC
 - UNDER CONSTRUCTION
 - PEDESTRIAN CHANNELIZATION DEVICE
- To be accompanied by Drg. Nos. TM820 & TM821



SIDEWALK CLOSURE, CORNER

NOTE:

- Limit work to one corner at a time to minimize pedestrian disruption and detour length.

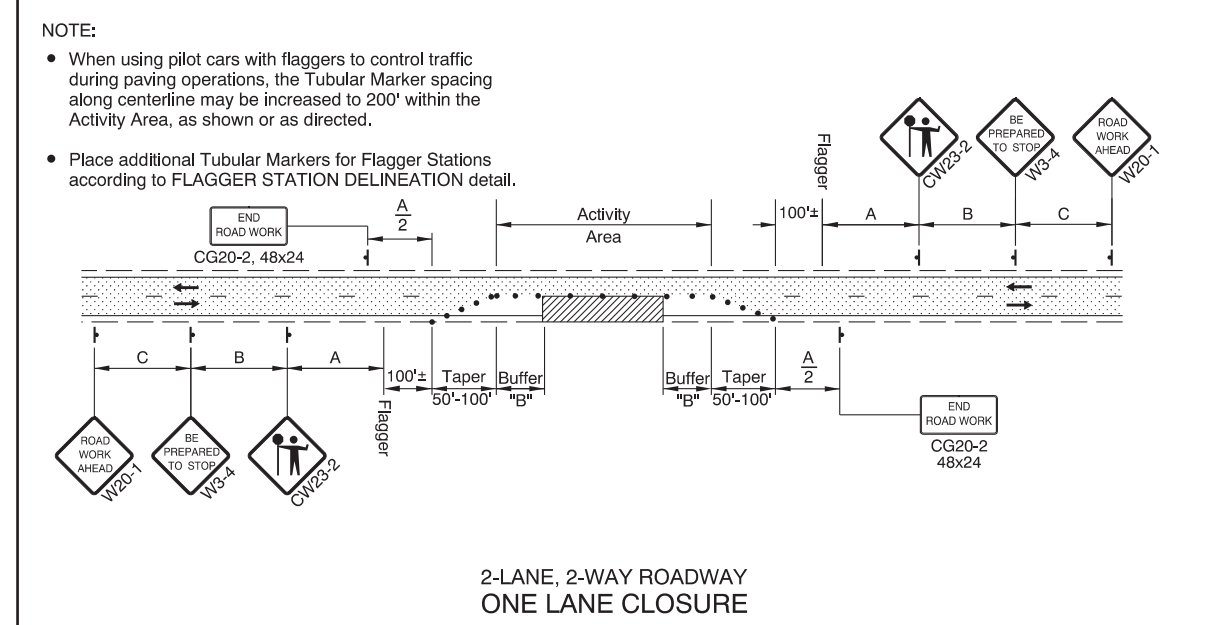
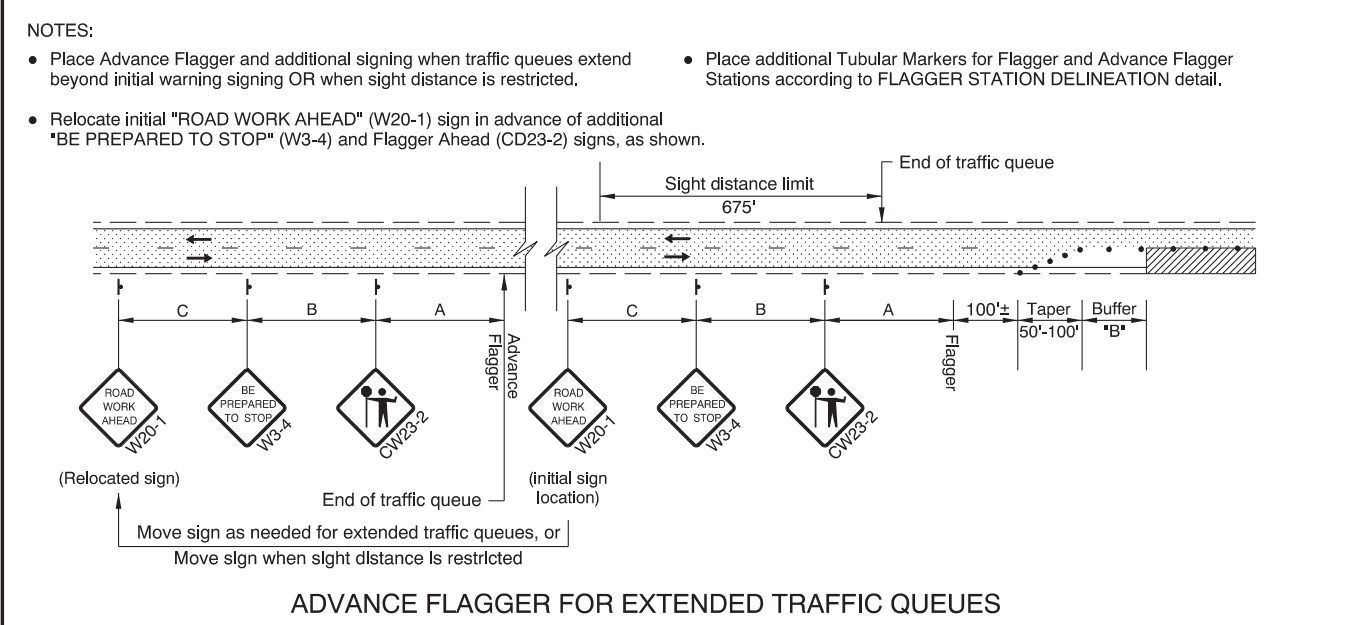
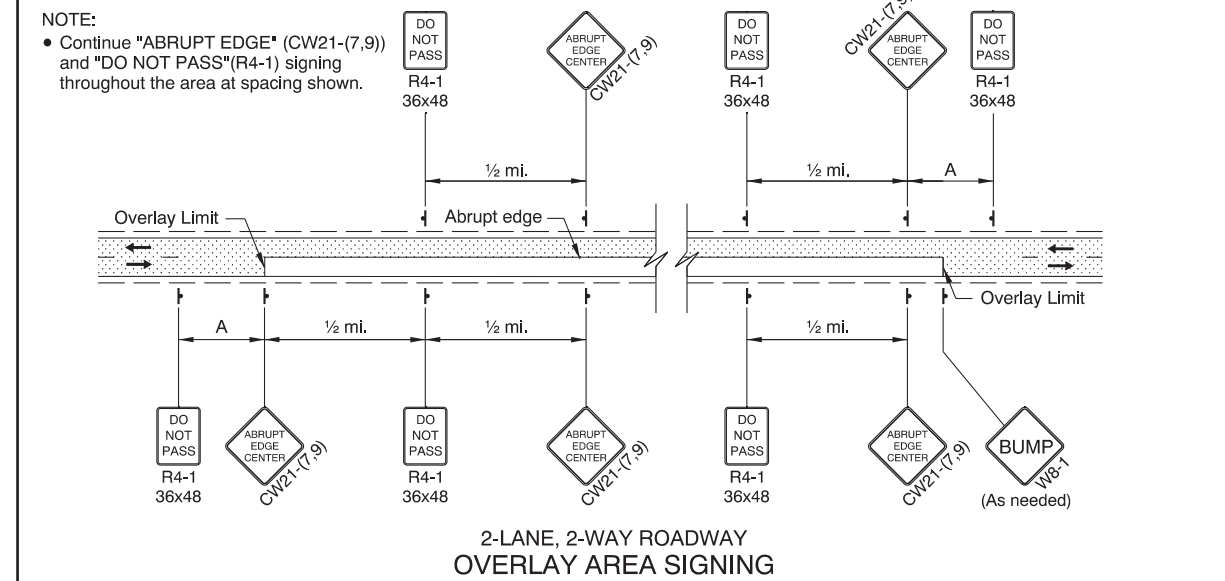
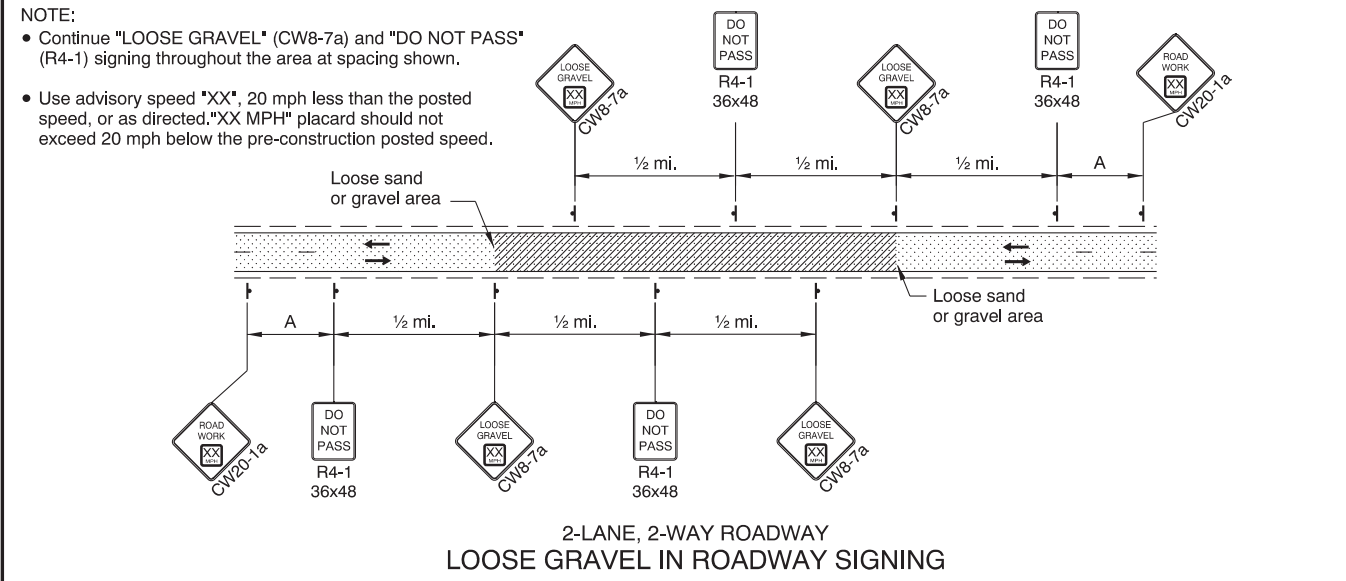
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|---|----------------------------------|
| CALC. BOOK NO. N/A | BASELINE REPORT DATE 01-JUL-2017 |
| NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications | |
| OREGON STANDARD DRAWINGS | |
| TEMPORARY PEDESTRIAN ACCESS ROUTING | |
| 2018 | |
| DATE | REVISION DESCRIPTION |
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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: December 1, 2017 - May 31, 2018

TM844

01-JUL-2017
tm850.dgn



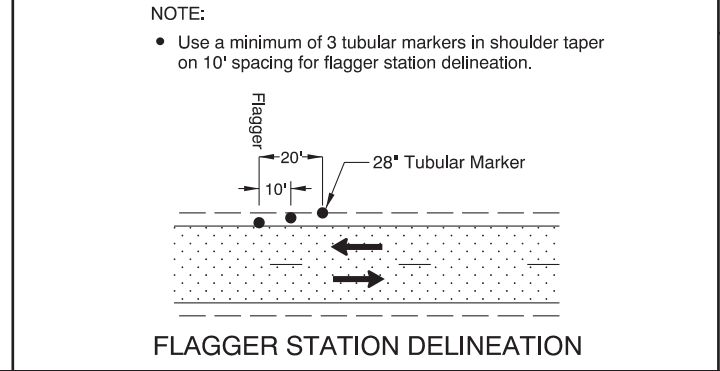
GENERAL NOTES FOR ALL DETAILS:

- The "FLAGGER" (CW23-2) symbol sign shall be used only in conjunction with the "BE PREPARED TO STOP" (W3-4) sign.
- Cover existing passing zone signing, as directed.
- Install temporary striping as required.
- To determine Taper Length ("L") and Buffer Length ("B"), use the "MINIMUM LENGTHS TABLE" shown on Drg. No. TM800.
- To determine sign spacing A, B, and C, use "TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE" on Drg. No. TM800.
- Install a "BICYCLES ON ROADWAY" (CW11-1) sign in advance of the closure when a bike lane is closed, or when the shoulder is closed and bikes are expected.

- • • • • 28" Tubular Markers on 20' max. spacing for flagger tapers and stations
- • • • • 28" Tubular Markers See TCD Spacing Table on TM800 for max. spacing.

UNDER TRAFFIC
 UNDER CONSTRUCTION
 CONSTRUCTION UNDER TRAFFIC

To be accompanied by Drg. Nos. TM821



| | | | |
|---|----------------------|----------------------------|-------------|
| CALC. BOOK NO. _____ | N/A | BASELINE REPORT DATE _____ | 01-JUL-2017 |
| NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications | | | |
| OREGON STANDARD DRAWINGS | | | |
| 2-LANE, 2-WAY ROADWAYS | | | |
| 2018 | | | |
| DATE | REVISION DESCRIPTION | | |
| | | | |
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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: December 1, 2017 - May 31, 2018

TM850

TM850