1. Identification

Drainage Facility ID (DFI): D00729

Facility Name: **Cascade Ave. Drywells**

Project Name: US20: Cascade Improvements (Sisters) Sec.

Facility Type: UIC (Drywells)

Drawings: Plan view, see attached

Location: District 10; Highway 15; M.P. 92.24, LT

2. Designer

Wade Coatney, PE, ODOT Region 4 Associate Engineer (541) 388-6234

3. Construction

Construction is to be completed in the year 2013.
The contractor is yet to be decided.

4. Storm Drain System and Facility Overview

The facility system consists of 12 drywells, each of which contains inlets (with a downturned elbow), sedimentation manholes and gate valves. The drywells are two standard sizes (8 feet deep and 12 feet deep) that are sized dependent on the drainage area. Runoff is directed to each of the drywells via a curb, inlet and piping system. The drainage area for each drywell varies from 7,000 sqft (0.16 acres) to 13,775 sqft (0.32 acres), with a total impervious surface area close to 2.6 acres. There is no natural outfall for this area, so all runoff is infiltrated on site.

The system collects runoff from 200 feet west of Pine Street to the west side of Larch Street.

A. Maintenance equipment access:

Maintenance access to the facility is obtained from Cascade Avenue, US20 the McKenzie Highway.

B. Special features:

Sedimentation manholes and inlets with a downturned elbow are required by DEQ as pretreatment for each drywell. Gate valves are required to be installed for the possibility that there is a hazardous material spill. This will allow the hazardous material to be kept from entering the drywell.

5. Haz Mat Spill Operation

The drywells are not intended to collect hazardous material. The 12 inch gate valves will be installed to allow incident responders to cut the flow to the drywells. Once the flow has been stopped to the drywell and all material has been removed from the roadway, remove all remaining hazardous material from all inlets, manholes, and drywells. Refer to section 8 of this document for handling of hazardous materials. If hazardous material has reached a drywell, testing of surrounding soils may be required. Contact the ODOT Region 4 Hazmat Coordinator for testing requirements.

6. Overflow System

There is no easily accessible outfall location for this project, which makes this an isolated system with no designed overflow system. The slope of the road does allow the potential for some drywells to bypass flow downstream to the next drywell. However, there are multiple mainline sags that do not allow for flow to be bypassed outside of the project limits.

7. Maintenance Requirements

Routine maintenance and inspections will be required for all inlets, sedimentation manholes, and drywells. The ODOT Maintenance Guide incorporates routine maintenance activities and should be referenced for equipment use and general stormwater maintenance requirements. The ODOT Maintenance Guide can be viewed at the following website:

http://www.oregon.gov/ODOT/HWY/OOM/MGuide.shtml

Special maintenance requirements are noted below.

Schedule

First 2 years
- Inspect all inlets, manholes, and drywells after each 24hr. rainfall > 0.50 inches.
- Inspect at a minimum 2 times per year.
- Remove sediment if required.

General Requirements

- Inspect all inlets, manholes, and drywells on a semi-annual basis.
- At a minimum remove sediment from all inlets, manholes, and drywells by-annually.
- Remove sediment from all inlets, manholes, and drywells when the sediment depth reaches 12 inches.

8. Waste Material Handling

Material cleaned from the facility is defined as waste by DEQ. This means the material must be disposed at a permitted waste management facility (landfill, incinerator, etc.) or managed, reused, or recycled according to DEQ waste rules.

Management of road waste and the rules that surround it are extremely complicated. Refer to the road waste section of the ODOT Maintenance Yard Environmental Management System (EMS) Policy and Procedures Manual for disposal options:

http://egov.oregon.gov/ODOT/HWY/OOM/EMS.shtml

Contact any of the following for more detailed information about management of waste materials found on site:

ODOT Clean Water Unit	(503) 986-3008
ODOT Statewide Hazmat Coordinator	(503) 229-5129
ODOT Region 4 Hazmat Coordinator	(541) 388-6088
ODEQ Region Office	(541) 388-6146

APPENDIX A

(Plan View)

46V-037

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	Title Sheet
1A	Index Of Sheets Cont'd.
1A-2	Std. Drg. Nos.

STATE OF OREGON

DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED PROJECT

GRADING, DRAINAGE, PAVING, SIGNING & ROADSIDE DEVELOPMENT

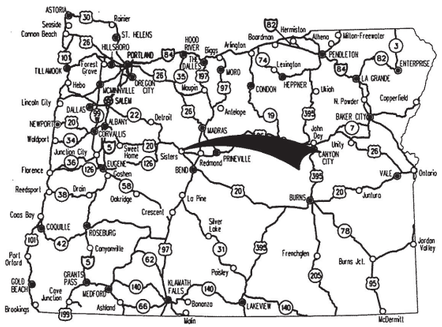
FFO-US20: CASCADE IMPROVEMENTS (SISTERS) SEC.

McKENZIE HWY. & SANTIAM HWY.

DESCHUTES COUNTY

MAY 2013

T. 15 S., R. 10 E., W.M.

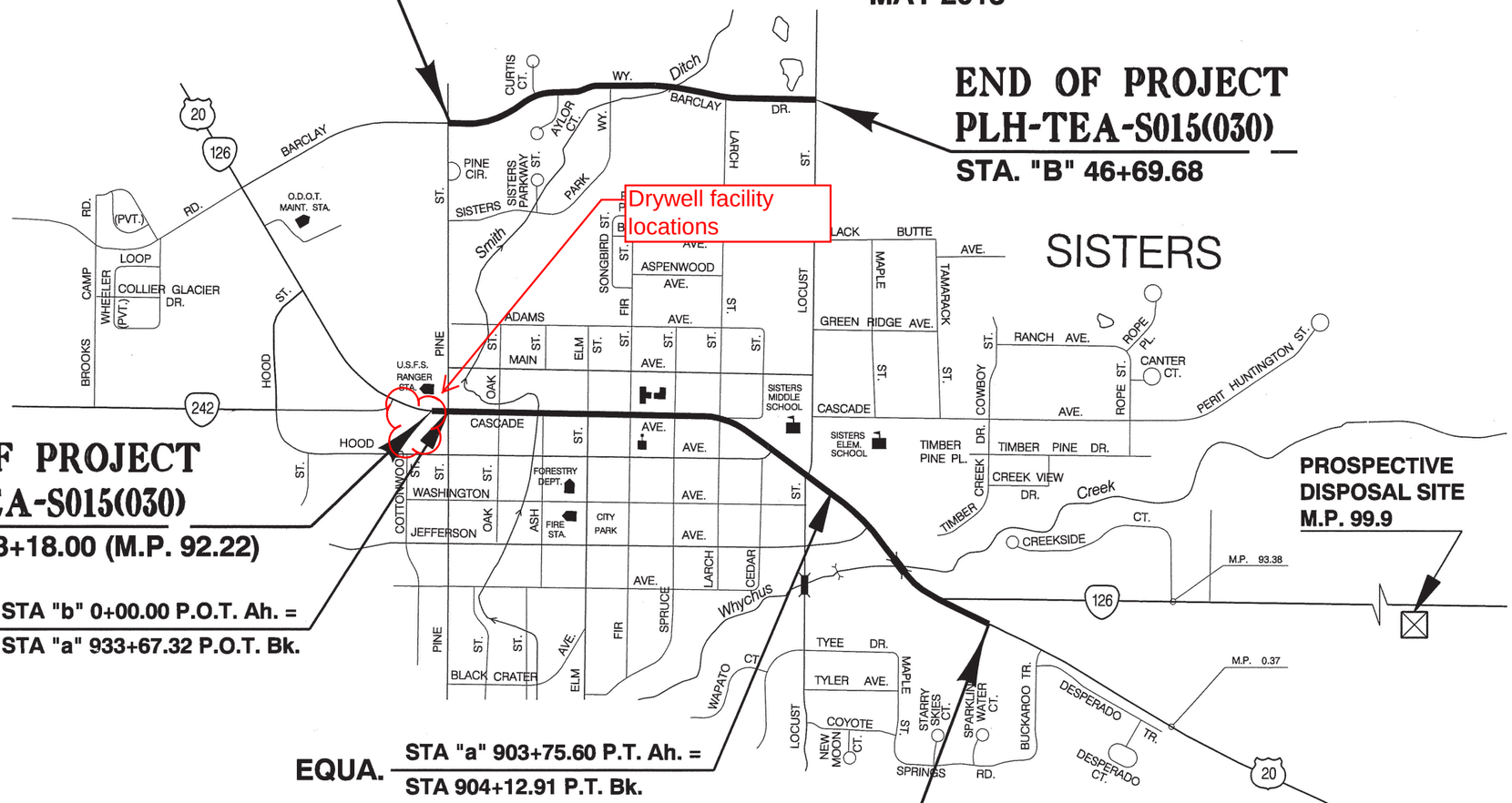


Overall Length Of Project - 1.41 Miles

ATTENTION:
Oregon Law Requires You To Follow Rules Adopted By The Oregon Utility Notification Center. Those Rules Are Set Forth In OAR 952-001-0010 Through OAR 952-001-0090. You May Obtain Copies Of The Rules By Calling The Center. (Note: The Telephone Number For The Oregon Utility Center Is (503) 232-1987.)

BEGINNING OF PROJECT
PLH-TEA-S015(030)
STA. "B" 19+85

END OF PROJECT
PLH-TEA-S015(030)
STA. "B" 46+69.68



END OF PROJECT
PLH-TEA-S015(030)
STA. "b" 3+18.00 (M.P. 92.22)

EQUA. STA "b" 0+00.00 P.O.T. Ah. = STA "a" 933+67.32 P.O.T. Bk.

EQUA. STA "a" 903+75.60 P.T. Ah. = STA 904+12.91 P.T. Bk.

BEGINNING OF PROJECT
PLH-TEA-S015(030)
STA. 889+53.00 (M.P. 0.08)

OREGON TRANSPORTATION COMMISSION

Pat Egan	CHAIR
David Lohman	COMMISSIONER
Mary F. Olson	COMMISSIONER
Mark Frohnmayer	COMMISSIONER
Tammy Baney	COMMISSIONER
Matthew L. Garrett	DIRECTOR OF TRANSPORTATION

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

Approving Authority: Jon W. Heacock 3/6/2013
Signature & date

Jon Heacock, Region 4 TCM
Print name and title

Concurrence by ODOT Chief Engineer

FFO-US20: CASCADE IMPROVEMENTS (SISTERS) SEC.
McKENZIE HWY. & SANTIAM HWY.
DESCHUTES COUNTY

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	PLH-TEA-S015(030)	1

PE001724

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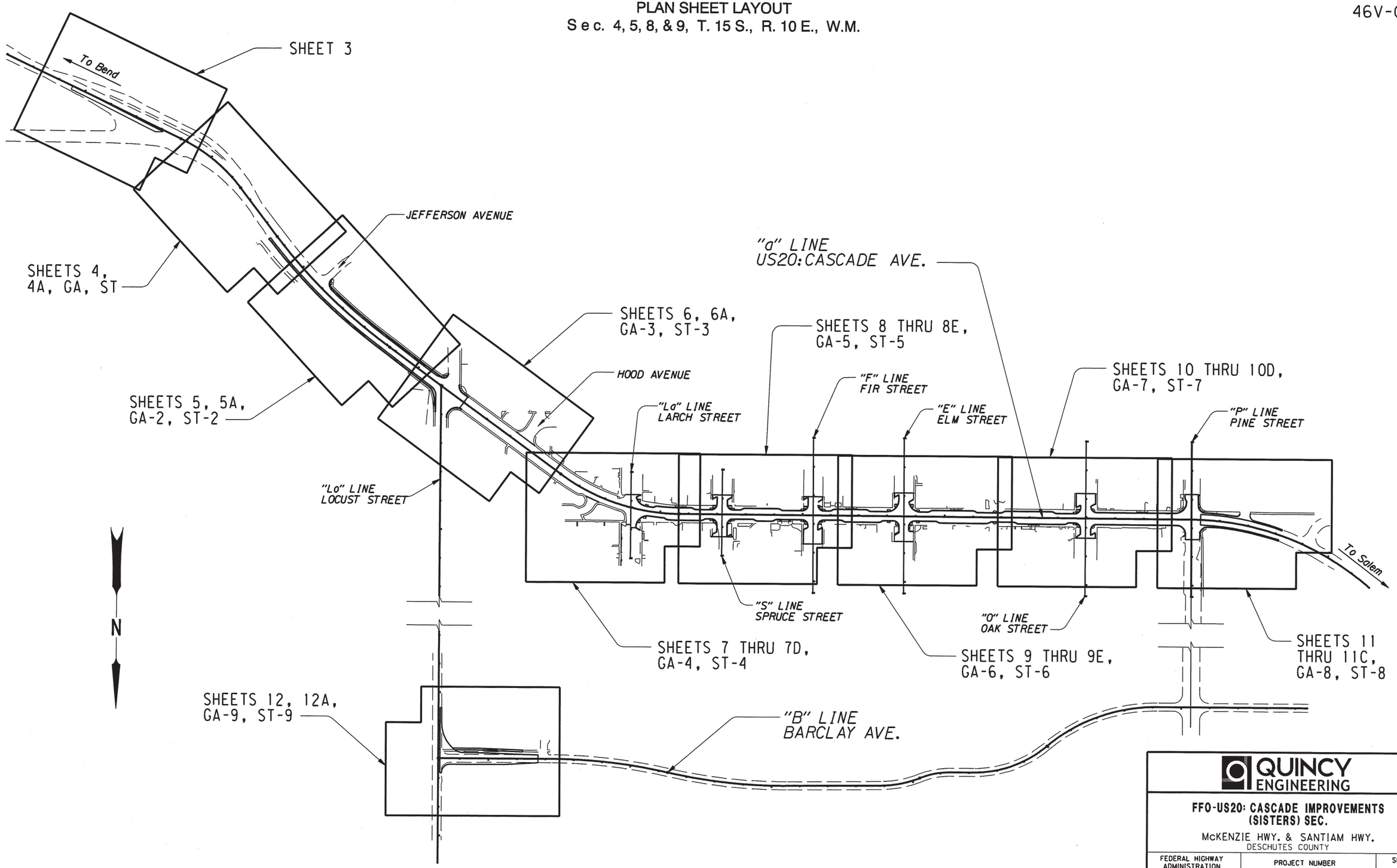
46V-037

PLAN SHEET LAYOUT
Sec. 4, 5, 8, & 9, T. 15 S., R. 10 E., W.M.



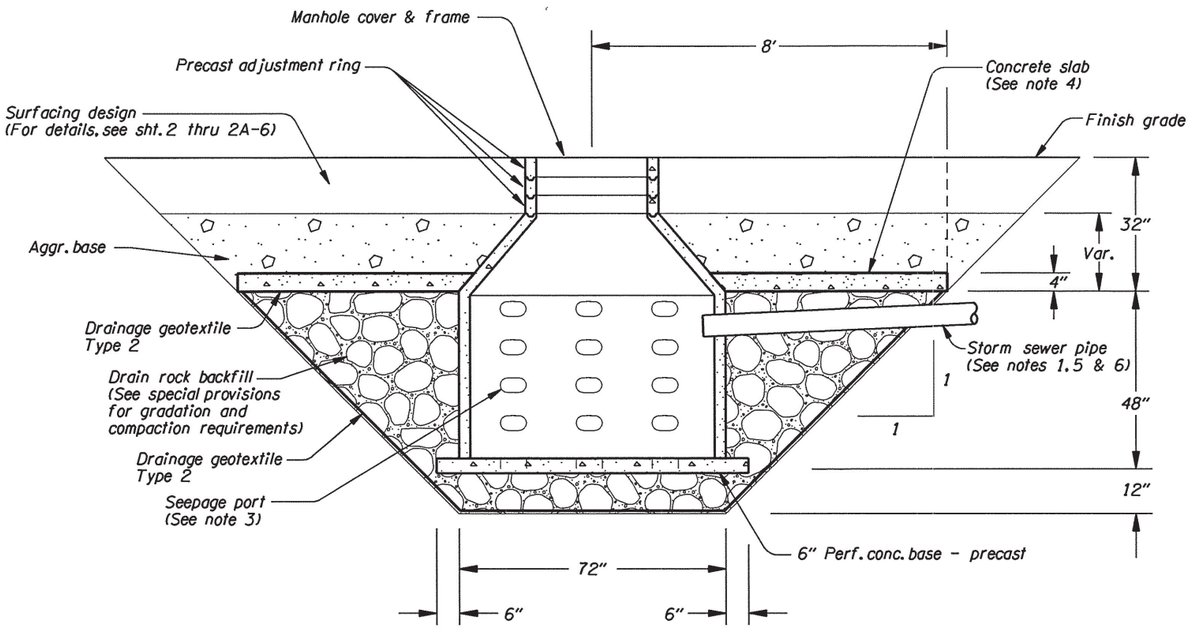
QUINCY ENGINEERING

FFO-US20: CASCADE IMPROVEMENTS (SISTERS) SEC.

McKENZIE HWY. & SANTIAM HWY.
DESCHUTES COUNTY

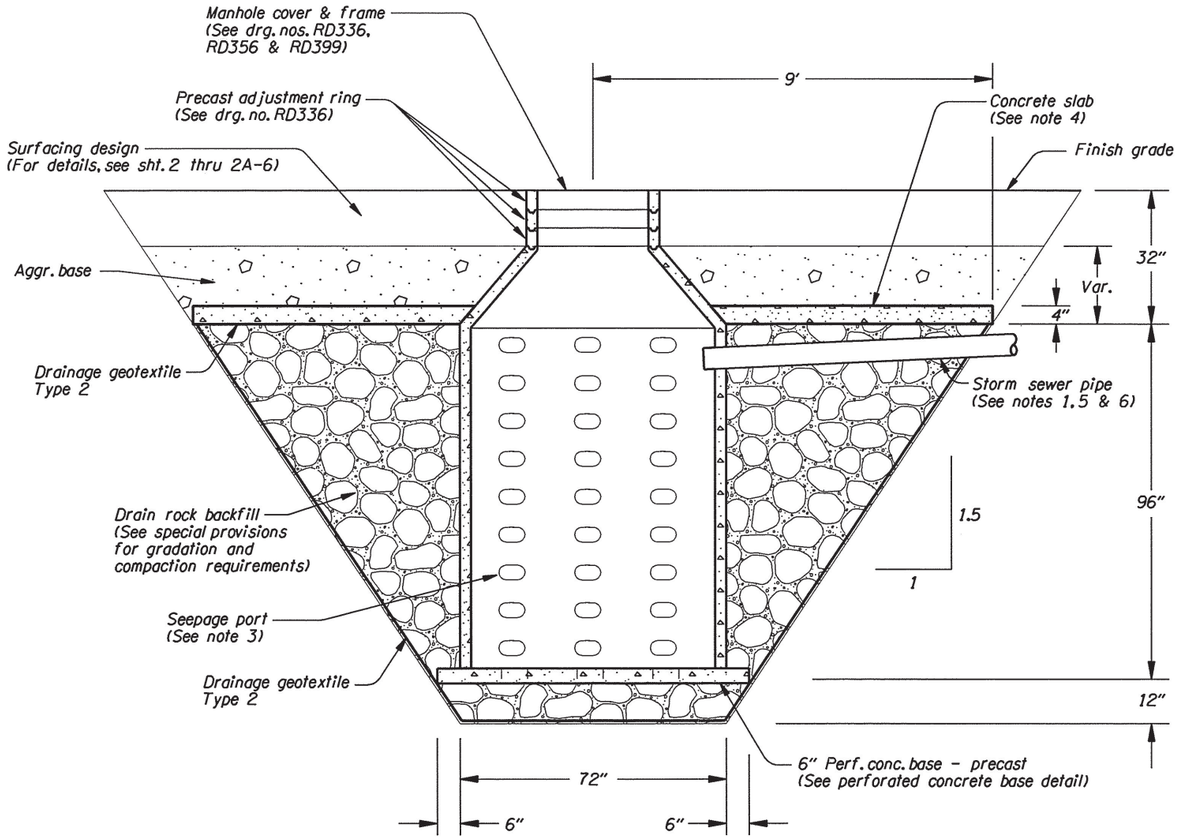
FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	PLH-TEA-S015(030)	1B

46V-037

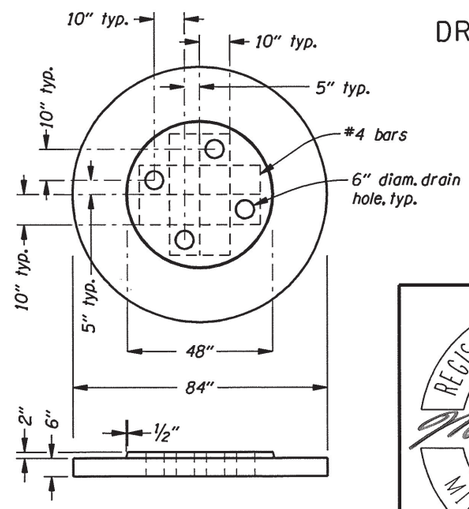


DRYWELL - TYPE I

D00729



DRYWELL - TYPE II



PERFORATED
CONCRETE BASE

GENERAL NOTES FOR ALL DETAILS:

1. For storm sewer pipe materials, sizes, slopes & locations, see plan sheets and pipe data sheets.
2. All precast sections shall conform to requirements of ASTM C478.
3. Seepage port size and location vary by manufacturer.
4. Construct precast or cast-in-place concrete slab.
5. Connect inlet pipe to structure using precast hole or core drilled hole.
6. All connecting pipes shall have a tracer wire, or approved alternate.

REGISTERED PROFESSIONAL ENGINEER
56155
OREGON
SEPTEMBER 9, 2005
MICHAEL W. OGDEN

RENEWS: 12-31-2014

OREGON DEPARTMENT OF TRANSPORTATION

REGION 4 TECHNICAL CENTER

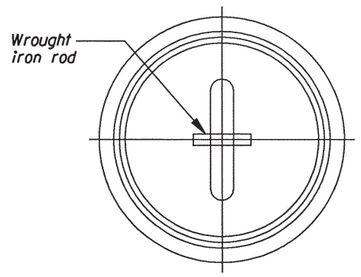
FFO-US20: CASCADE IMPROVEMENTS (SISTERS) SEC.
McKENZIE HWY. & SANTIAM HWY.
DESCHUTES COUNTY

Reviewed By - Michael W. Ogden
Designed By - Wade J. Cootney
Drafted By - Greg Saurbier

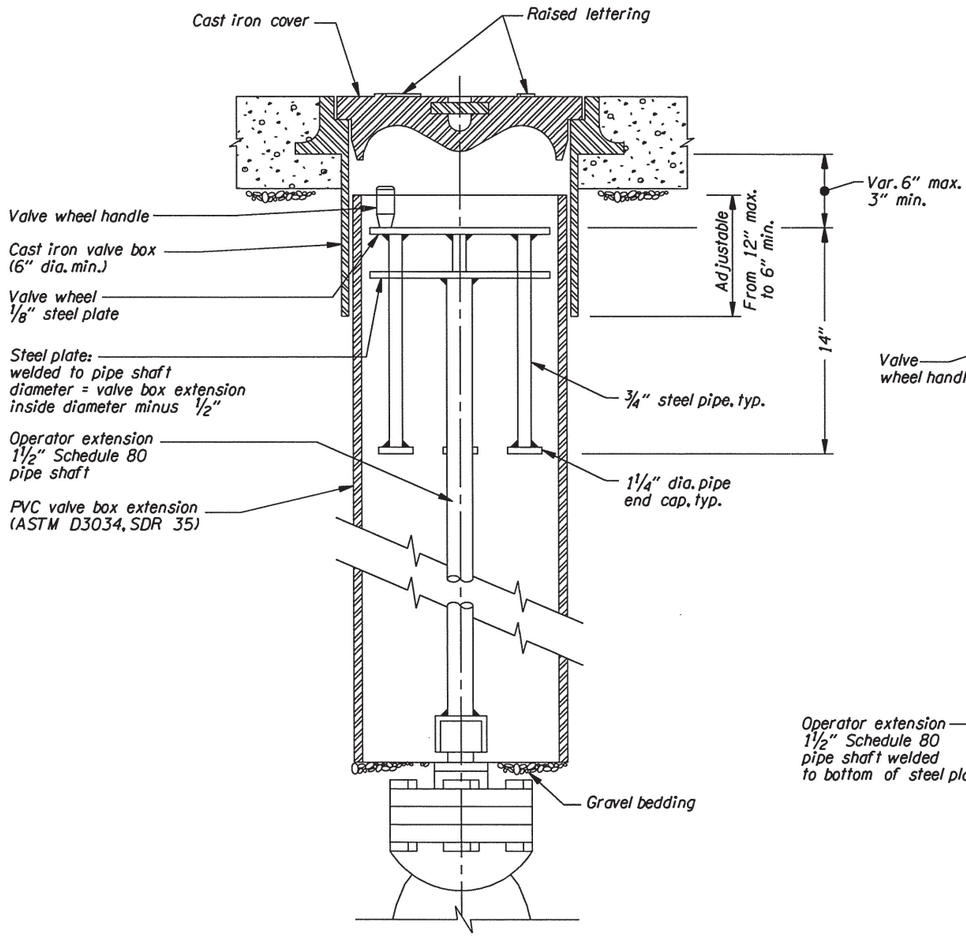
DRAINAGE DETAILS

SHEET NO. 2C

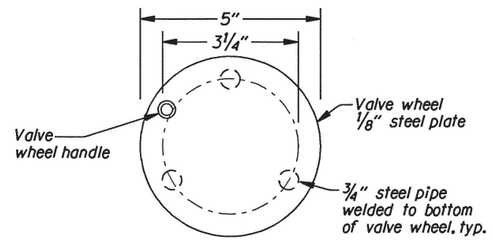
46V-037



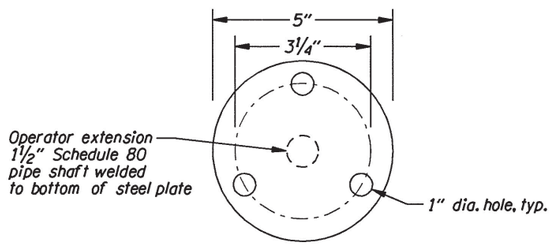
COVER PLAN



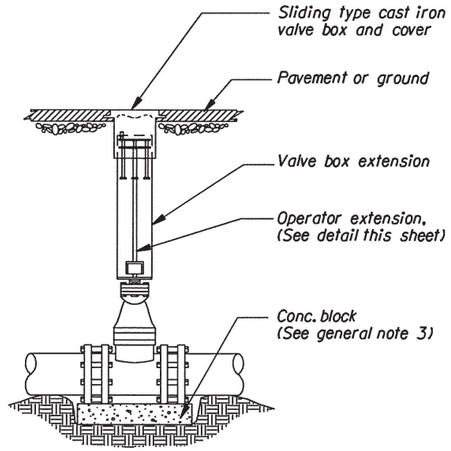
VALVE BOX EXTENSION SECTION



VALVE WHEEL



STEEL PLATE



VALVE BOX ASSEMBLY DETAIL

GENERAL NOTES FOR ALL DETAILS:

1. *Valve box not to rest on operating assembly.*
2. *Center valve box on axis operator extension.*
3. *Valves shall be installed on precast concrete block.*
4. *Welds shall be minimum 1/4" all around.*
5. *Hot-dip galvanize operator extension after fabrication.*

REGISTERED PROFESSIONAL ENGINEER
56155
OREGON
SEPTEMBER 9, 2003
MICHAEL W. OGDEN

RENEWS: 12-31-2014

OREGON DEPARTMENT OF TRANSPORTATION

REGION 4 TECHNICAL CENTER

FFO-US20: CASCADE IMPROVEMENTS (SISTERS) SEC.
McKENZIE HWY. & SANTIAM HWY.
DESCHUTES COUNTY

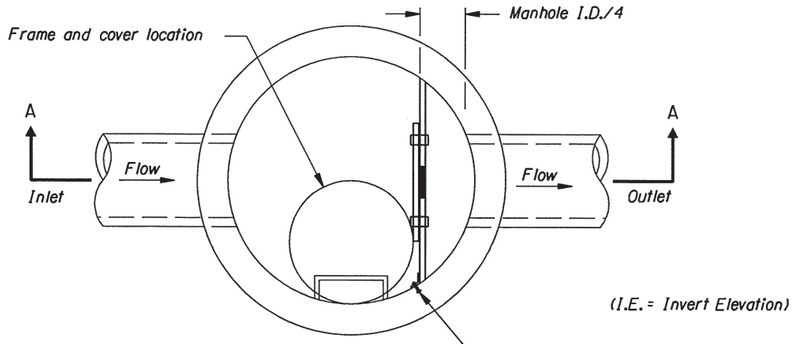
Reviewed By - Michael W. Ogden
Designed By - Wade J. Coatney
Drafted By - Greg Saurbier

DRAINAGE DETAILS

SHEET NO. 2C-3

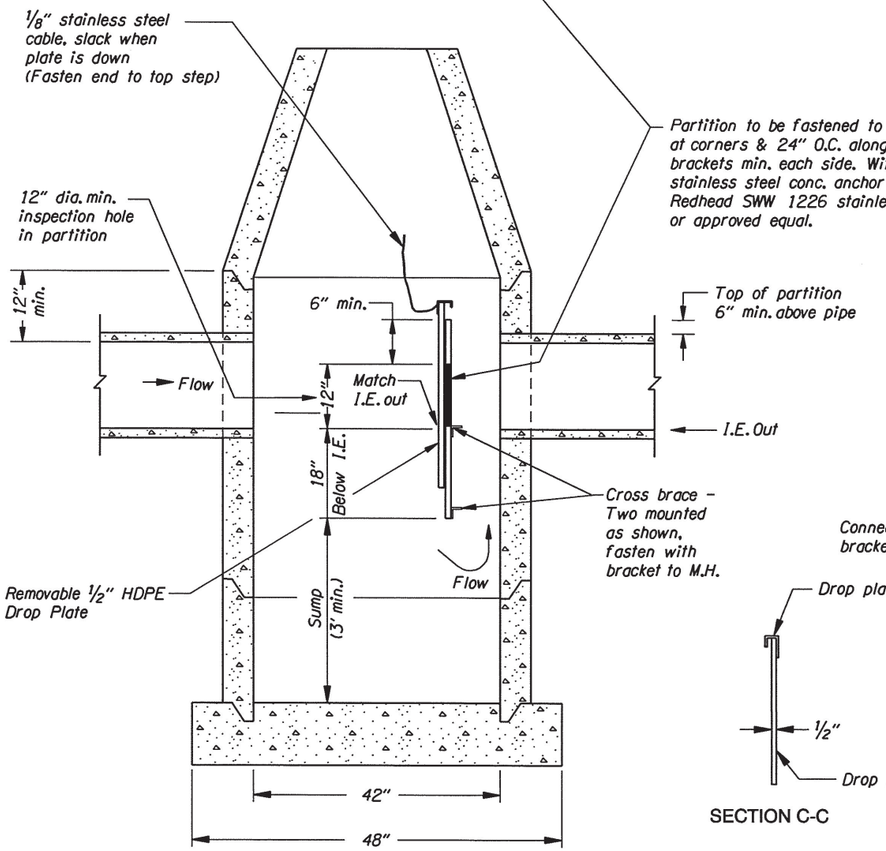
46V-037

(For details not shown, see drg. nos. RD340 & RD346)

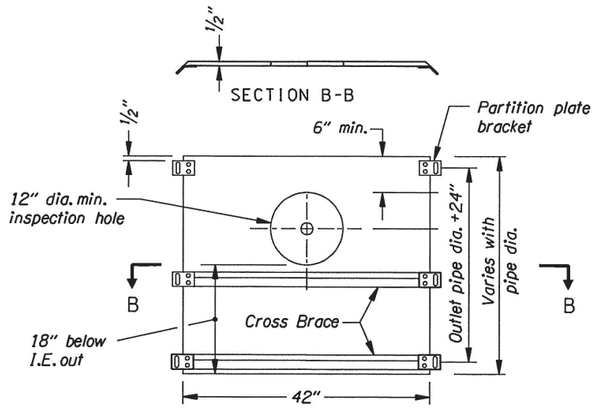


(I.E. = Invert Elevation)

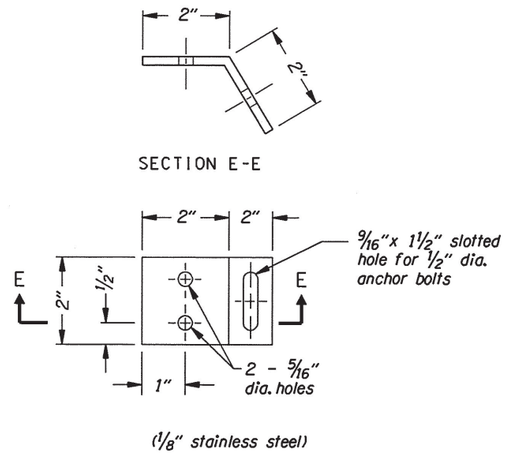
PLAN



SECTION A-A

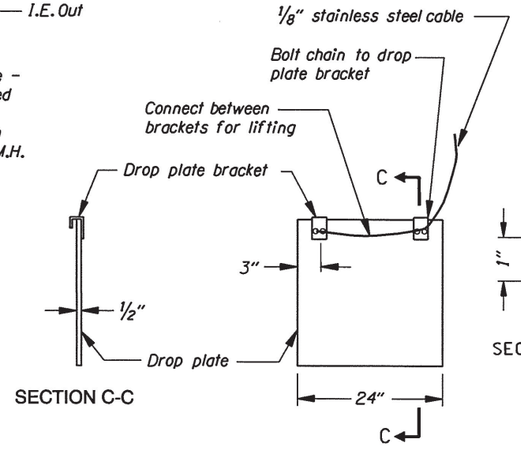


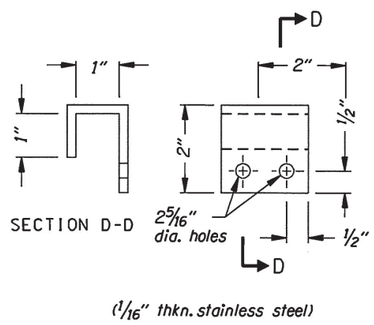
PARTITION PLATE



(1/8" stainless steel)

PARTITION PLATE BRACKET





(1/16" thkn. stainless steel)

DROP PLATE

DROP PLATE BRACKET

GENERAL NOTES FOR ALL DETAILS:

1. Hardware, fasteners and anchors to be stainless steel; use 1/8" stainless steel cable.
2. See pipe data sheet and plan sheets for pipe size(s).
3. Removable drop plate and partition to be constructed of High Density Polyethelene (HDPE), 1/2" thick ASTM D1248-78 and installed prior to manhole cone or top.
4. Manhole and base per manhole standard drawings.
5. Cross brace L 2 1/2" x 1 1/2" x 3/16" hot-dip galvanize, ASTM A-123. Two per partition plate - Full width. Fasten to partition with stainless bolt, nut & washer at 18" ctrs. Fasten to M.H. at ends using partition plate brackets.
6. Hardware, fasteners, anchors, fittings, appurtenances, labor and equipment is incidental to sedimentation manhole item.

SEDIMENTATION MANHOLE

REGISTERED PROFESSIONAL ENGINEER
56153
OREGON
SEPTEMBER 9, 2005
MICHAEL W. OGDEN
RENEWS: 12-31-2014

OREGON DEPARTMENT OF TRANSPORTATION

REGION 4 TECHNICAL CENTER

FFO-US20: CASCADE IMPROVEMENTS (SISTERS) SEC.
McKENZIE HWY. & SANTIAM HWY.
DESCHUTES COUNTY

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Designed By - Wade J. Coatney
Drafted By - Greg Saurbier

DRAINAGE DETAILS

SHEET NO. 2C-4

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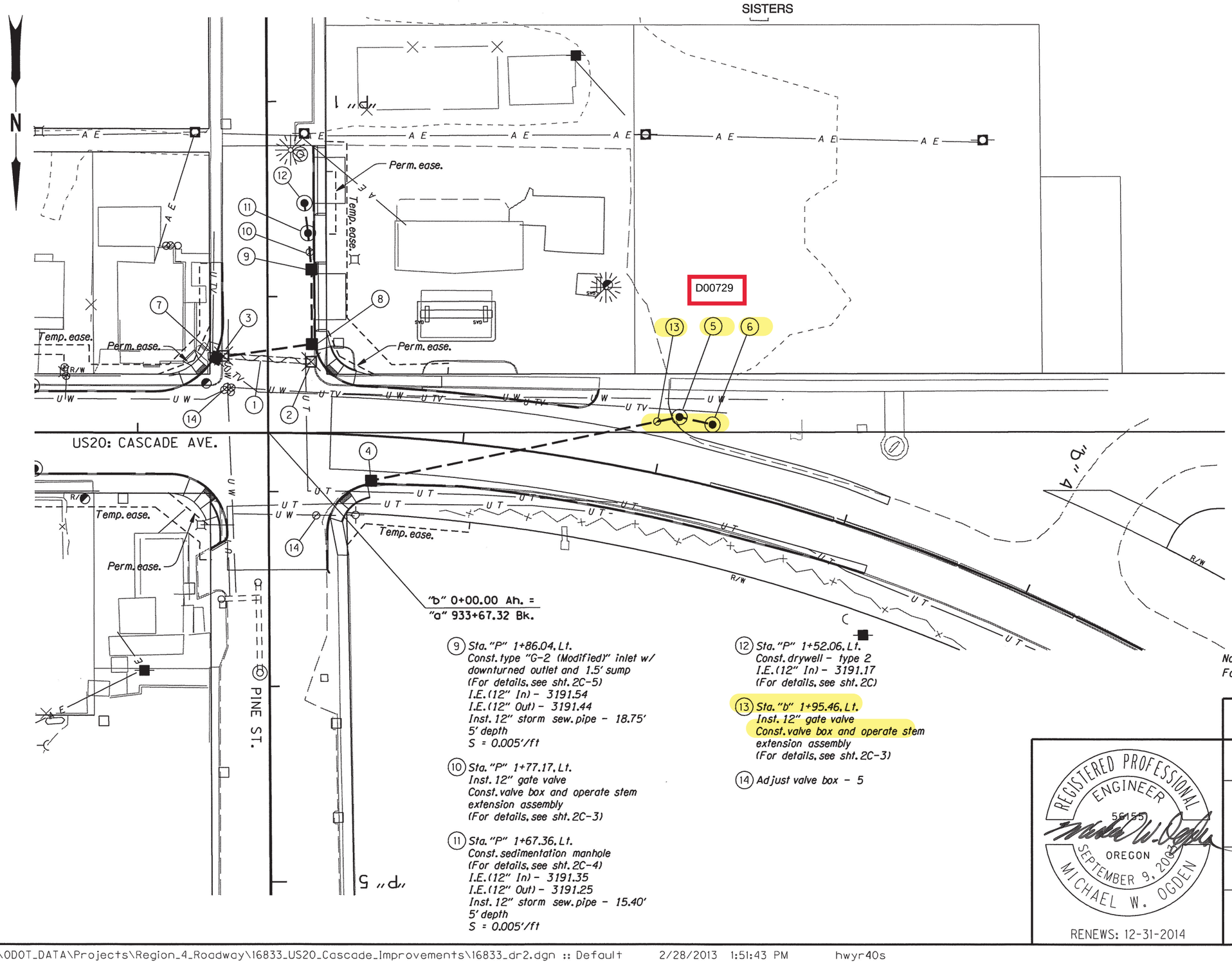

(1) *Remove pipe - 45'*

(2) *Remove inlet*

(3) *Decomission UIC*

(4) *Sta. "b" 0+53.88, Rt.*
Const. type "G-2 (Modified)" inlet w/ downturned outlet and 1.5' sump
(For details, see sht. 2C-5)
I.E. (12" Out) - 3190.33
Inst. 12" storm sew. pipe - 161.63'
10' depth
S = 0.005'/ft

(5) *Sta. "b" 2+05.85, Lt.*
Const. sedimentation manhole
(For details, see sht. 2C-4)
I.E. (12" In) - 3189.53
I.E. (12" Out) - 3189.43
Inst. 12" storm sew. pipe - 17.40'
10' depth
S = 0.005'/ft

(6) *Sta. "b" 2+22.71, Lt.*
Const. drywell - type 1
(For details, see sht. 2C)
I.E. (12" In) - 3189.34
Inst. type "S3" facility field marker
DFI no. D00729

(7) *Sta. "P" 2+31.46, Rt.*
Const. type "G-2 (Modified)" inlet w/ downturned outlet and 1.5' sump
(For details, see sht. 2C-5)
I.E. (12" Out) - 3192.08
Inst. 12" ductile iron pipe - 49.68'
5' depth
S = 0.005'/ft

(8) *Sta. "P" 2+24.46, Lt.*
Const. type "G-2 (Modified)" inlet w/ downturned outlet and 1.5' sump
(For details, see sht. 2C-5)
I.E. (12" In) - 3191.84
I.E. (12" Out) - 3191.74
Inst. 12" storm sew. pipe - 38.42'
5' depth
S = 0.005'/ft

(9) *Sta. "P" 1+86.04, Lt.*
Const. type "G-2 (Modified)" inlet w/ downturned outlet and 1.5' sump
(For details, see sht. 2C-5)
I.E. (12" In) - 3191.54
I.E. (12" Out) - 3191.44
Inst. 12" storm sew. pipe - 18.75'
5' depth
S = 0.005'/ft

(10) *Sta. "P" 1+77.17, Lt.*
Inst. 12" gate valve
Const. valve box and operate stem extension assembly
(For details, see sht. 2C-3)

(11) *Sta. "P" 1+67.36, Lt.*
Const. sedimentation manhole
(For details, see sht. 2C-4)
I.E. (12" In) - 3191.35
I.E. (12" Out) - 3191.25
Inst. 12" storm sew. pipe - 15.40'
5' depth
S = 0.005'/ft

(12) *Sta. "P" 1+52.06, Lt.*
Const. drywell - type 2
I.E. (12" In) - 3191.17
(For details, see sht. 2C)

(13) *Sta. "b" 1+95.46, Lt.*
Inst. 12" gate valve
Const. valve box and operate stem extension assembly
(For details, see sht. 2C-3)

(14) *Adjust valve box - 5*

Notes:
For drainage profile, see shts. 11C & 9E

REGISTERED PROFESSIONAL ENGINEER
56155
OREGON
SEPTEMBER 9, 2003
MICHAEL W. OGDEN
RENEWS: 12-31-2014

OREGON DEPARTMENT OF TRANSPORTATION

REGION 4 TECHNICAL CENTER

FFO-US20: CASCADE IMPROVEMENTS (SISTERS) SEC.
McKENZIE HWY. & SANTIAM HWY.
DESCHUTES COUNTY

Reviewed By - Michael W. Ogden
Designed By - Wade J. Cootney
Drafted By - Greg Saurbier

DRAINAGE & UTILITIES

SHEET NO. 11A

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46V-037

"a" LINE, Lt.

"b" LINE, Lt.

Extg. ground line @ ℄

Profile grade @ ℄

Subgrade

3195

3190

3185

EQUA. "a" 933+67.32 Bk. = "b" 0+00 Ah.

Sedimentation MH & Shut-off Valve

D00729

0.50% 12" - 161.63'
+95.46 valve, Lt.
+05.85 manhole, Lt.
f.l. elev. 3189.53 (In)
f.l. elev. 3189.43 (Out)

+22.71 drywell - type 1, Lt.
f.l. elev. 3189.34 (In)

0.50% 12" - 17.40'

"a" 933 "b" 0 "b" 1 "b" 2 "b" 3 "b" 4 "b" 5

"a" LINE, Rt.

"b" LINE, Rt.

Extg. ground line @ ℄

Profile grade @ ℄

Subgrade

3195

3190

3185

EQUA. "a" 933+67.32 Bk. = "b" 0+00 Ah.

0.50% 12"- 161.63'
+53.88 inlet, Rt.
f.l. elev. 3190.33 (Out)

"a" 933 "b" 0 "b" 1 "b" 2 "b" 3 "b" 4 "b" 5

* See roadway profile sheets for vertical curve data.

REGISTERED PROFESSIONAL ENGINEER
56155
OREGON
SEPTEMBER 9, 2005
MICHAEL W. OGDEN

RENEWS: 12-31-2014

OREGON DEPARTMENT OF TRANSPORTATION

REGION 4 TECHNICAL CENTER

FFO-US20: CASCADE IMPROVEMENTS (SISTERS) SEC.
McKENZIE HWY. & SANTIAM HWY.
DESCHUTES COUNTY

Reviewed By - Michael W. Ogden
Designed By - Wade J. Cootney
Drafted By - Greg Saurbier

DRAINAGE PROFILE

SHEET NO. 11C

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