

# OPERATION & MAINTENANCE MANUAL

## **Filterra**

Manual prepared: March 2018

DFI No. D00795



Figure 1: DFI No. D00795, looking South

## 1. Identification

Drainage Facility ID (DFI): D00795  
Facility Type: **Filterra**  
Construction Drawings: (V-File Numbers) 47V-025  
Location: District: 04  
Highway No.: 009  
Mile Post: 116.153, Right

## 2. Manual Purpose

The purpose of this manual is to outline inspection needs and summarize maintenance actions for planted water quality catch basins.

## 3. Facility Location

The location map below details the facility location. The highway, mile posts, side streets, access location, and stormwater flow directions are noted on the map.

Facility location type: Curb and Gutter (bike lane)

Flow direction: South



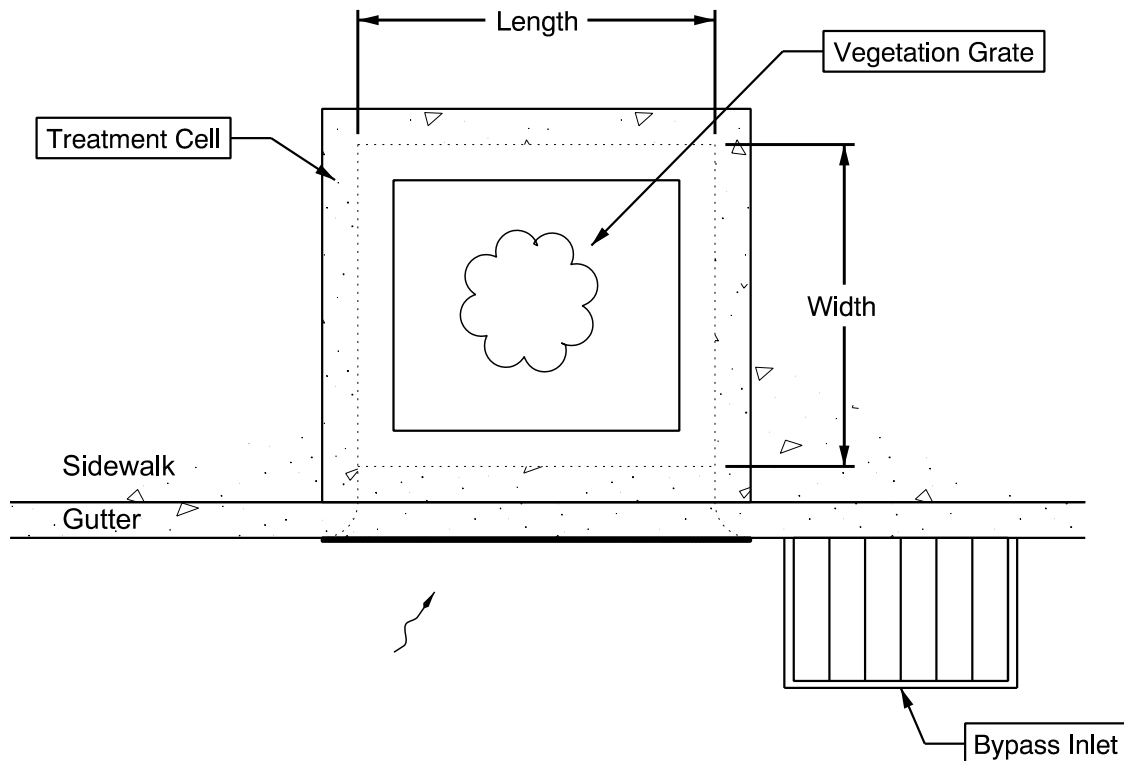
Figure 2: Facility Location Map

## 4. Facility Summary

The length and width of the WQ Catch Basin is based on the dimensions of the inside of the treatment cell.

The length and width of the WQ Catch Basin is:

Length (Feet)	Width (Feet)	Designation Number <sup>1</sup>
6	6	FT0606



**Site Specific Information:** This facility is located along the west side of US 101 between the roadway curb and the sidewalk. See Appendix B for additional information.

<sup>1</sup> The Filterra and MWS designation number is associated with the dimensions of this type of proprietary structure. See appendix C of the Standard Operation Manual for Water Quality Catch Basins to view the Configuration Details for additional information.

## 5. Facility Access

Maintenance access to the facility: Curb and gutter(bike lane)

**Lane Closure Needed**

Water quality catch basins do not typically have access roads/access pads, nor are they gated, as they are located in urban areas alongside sidewalks and curbs. Use caution when accessing these facilities as there may be pedestrians or cyclists in the vicinity.

## 6. Operational Components / Maintenance Items

### Classification and Standard Operational (Op) Plan:

This facility is classified as a:

<input checked="" type="checkbox"/> <b>Filterra (Op Plan A)</b>	<input type="checkbox"/> <b>WQ Planter (Op Plan B)</b>	<input type="checkbox"/> <b>MWS (Op Plan C)</b>
<p>A Filterra is a single chamber treatment cell that utilizes filter media, a plant, and a perforated underdrain.</p>	<p>A WQ Planter is a single chamber treatment cell that utilizes plants, filter media, and a perforated underdrain. The auxiliary outlet is located inside of the treatment cell.</p>	<p>A <u>Modular Wetland System</u> is a three chamber treatment cell that utilizes plants, filter media, filter media cartridges, and a perforated underdrain network.</p>
<p><b>A standard operational plan illustrates the general facility footprint configuration and explains the purpose of each facility component. Operational plans (A and B) are provided in the Standard Operation Manual.</b></p>		

See Appendix A for the site specific operational plan.

### Operational Components

The facility components table (**Table 1**) has been provided to highlight the applicable components for this facility. The component is in use when the box contains an “x” (e.g.  ).

The Standard Operation Manual for Water Quality Catch Basins (implemented April 2018) outlines facility operation, typical footprint configuration, and component definitions and details. A link to the manual is attached to the feature marker in TransGIS. <https://gis.odot.state.or.us/TransGIS/>

## Maintenance Items

Operational components marked in **Table 1** should be inspected and maintained according to Section 7. Each facility component is defined and detailed in the Standard Operation Manual using the associated ID number indicated below.

Table 1: Facility Components		ID #
<b>Facility Inlet</b>		
Inlet Grate	<input type="checkbox"/>	<b>C1</b>
Curb Inlet	<input checked="" type="checkbox"/>	<b>C2</b>
Sidewalk Chute	<input type="checkbox"/>	<b>C3</b>
Bypass Inlet	<input checked="" type="checkbox"/>	<b>C4</b>
<b>Treatment</b>		
Plantings (Tree or Shrub)	<input checked="" type="checkbox"/>	<b>C5</b>
Filter Media	<input checked="" type="checkbox"/>	<b>C6</b>
Filter Media Cartridge	<input type="checkbox"/>	<b>C7</b>
<b>Outfall Type</b>		
Waterbody (Creek/Lake/Ocean)	<input type="checkbox"/> <b>C</b> <input type="checkbox"/> <b>L</b> <input type="checkbox"/> <b>O</b>	<b>C8</b>
Ditch	<input type="checkbox"/>	<b>C9</b>
Storm Drain System	<input checked="" type="checkbox"/>	<b>C10</b>

## 7. Maintenance

### Maintenance Frequency/Maintain Records

- Inspect per manufacturer requirements. Preferably prior to the rainy season.
- Clean and maintain as necessary. Refer to Activity 125 in the Maintenance Guide for conditions when maintenance is needed.
- Keep a record of inspections, maintenance, and repairs.

### Maintenance Guide/Maintenance Actions

Proprietary Water Quality Catch Basins have an operation and maintenance manual provided by the manufacturer. See Appendix C of the Standard Operational Manual for Water Quality Catch Basins. These manuals provided guidelines on maintenance procedures for the facilities. A link to the manual is attached to the feature marker in TransGIS. <https://gis.odot.state.or.us/TransGIS/>

The Maintenance Guide outlines the standard maintenance actions for water quality facilities under Activity 125.

There are standard maintenance tables for standard ODOT designs. The maintenance tables describe the maintenance component, the defect or problem, the condition when maintenance is needed, and the recommended maintenance to correct the problem. Use the following tables to maintain ODOT Water Quality Catch Basins:

- Table 1 (General Maintenance): Contains general maintenance and inspection guidelines that are applicable to all ODOT water quality facilities

The ODOT Maintenance Guide can be viewed at the following website:

<http://www.oregon.gov/ODOT/HWY/OOM/pages/mguide.aspx>

## 8. Waste Material Handling

Material removed from the facility is defined as waste by the Department of Environmental Quality (DEQ). Refer to the road waste section of the ODOT Maintenance Yard Environmental Management System (EMS) Policy and Procedures Manual for disposal options:

<http://www.oregon.gov/ODOT/HWY/OOM/pages/ems.aspx>

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

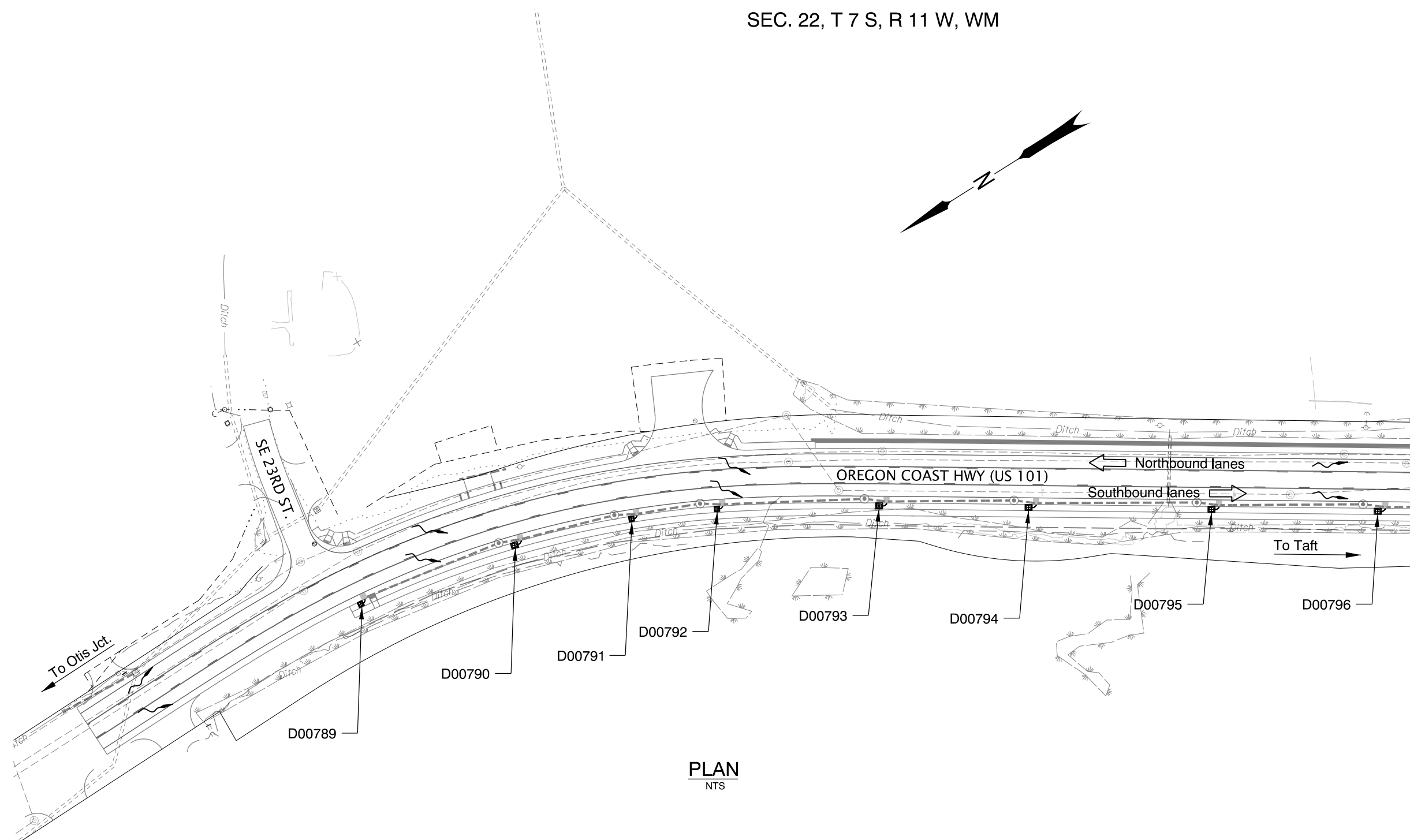
ODOT Clean Water Unit	(503) 986-3008
ODOT Statewide Hazmat Coordinator	(503) 667-7442
ODOT Region 1 Hazmat Coordinator	(503) 731-8290
ODOT Region 2 Hazmat Coordinator	(503) 986-2647
ODOT Region 3 Hazmat Coordinator	(541) 957-3594
ODOT Region 4 Hazmat Coordinator	(541) 388-6186
ODOT Region 5 Hazmat Coordinator	(541) 963-1590
ODEQ Northwest Region Office	(503) 229-5263

## **A Appendix A – Site Specific Operational Plan**

### **Contents:**

**Operational Plan: DFI D00795**

SEC. 22, T 7 S, R 11 W, WM



- LEGEND:
- Pavement / Facility Flow Path
  - Water Quality Catch Basin
  - Traffic Direction
  - Manhole
  - Inlet

PLAN  
NTS

Sht. 1 of 4

Prepared By:  
Christopher Carman

Drafted By:  
Jeff Coon



OREGON DEPARTMENT OF TRANSPORTATION

**FFO US101: S.E. 23RD DR. - S.W. 35TH ST.**  
**MAINTENANCE DISTRICT 4 US101**  
**WATER QUALITY CATCH BASIN**  
 OREGON COAST HIGHWAY  
 LINCOLN COUNTY



## **B Appendix B – Project Contract Plans**

### **Contents:**

**Site Specific Subset of Project Contract Plan 47V-025**

As Constructed Plans

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

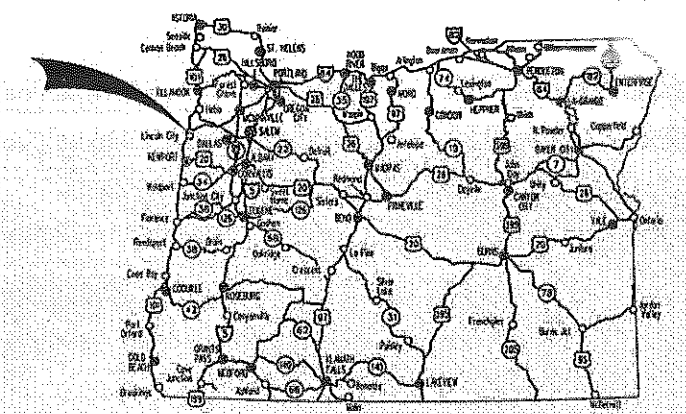
PLANS FOR PROPOSED PROJECT  
GRADING, DRAINAGE, STRUCTURE, PAVING, SIGNING,  
SIGNALS & ROADSIDE DEVELOPMENT

**FFO - US101: S.E. 23RD DR. - S.W. 35TH ST.  
(LINCOLN CITY) SEC.  
OREGON COAST HIGHWAY**

LINCOLN COUNTY  
FEBRUARY 2014

NOT REVISED AS CONSTRUCTED  
STEVEN SCHULTZ, PE

DATE 6/21/16



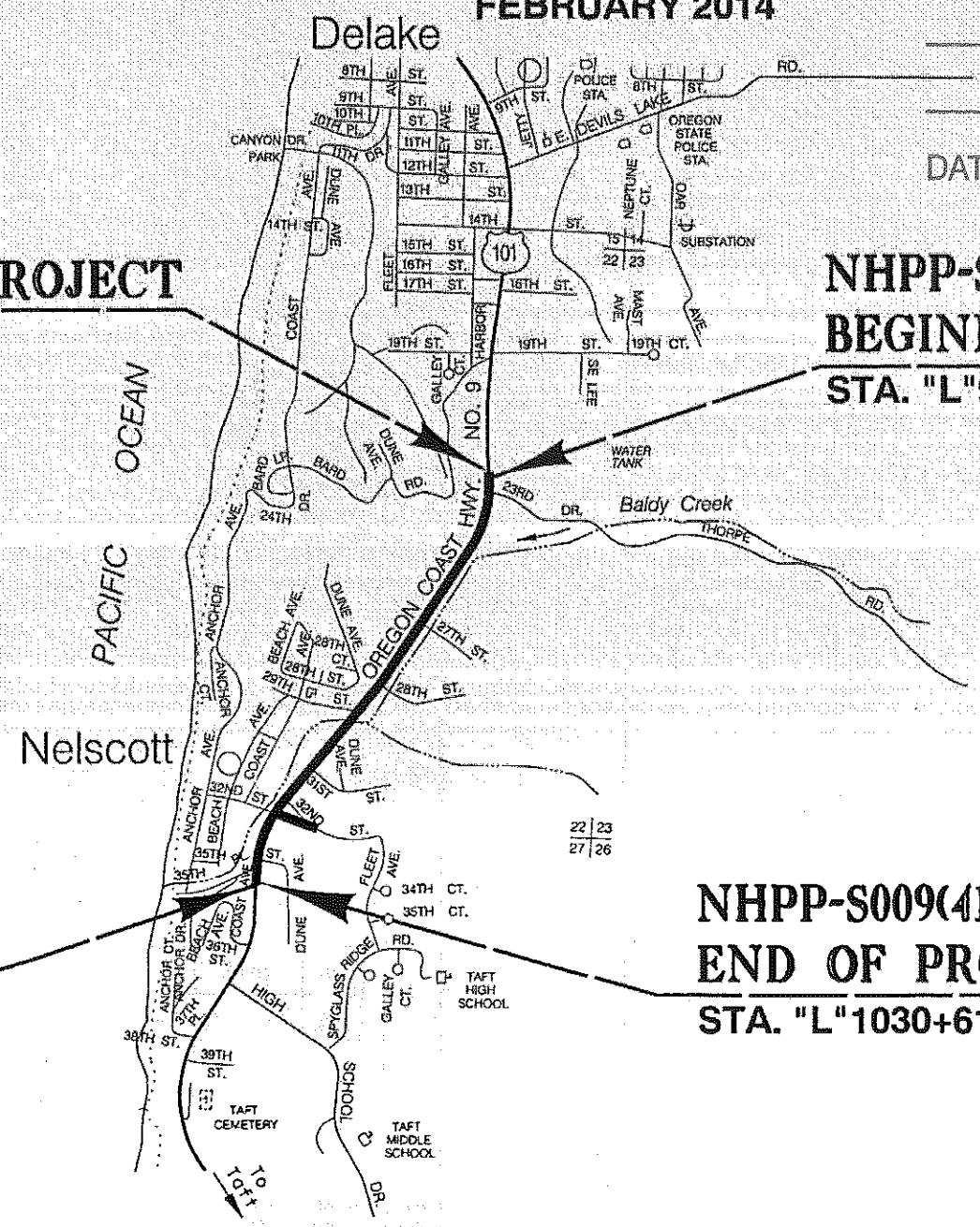
Overall Length Of Project - 0.83 Miles

**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) 232-1587.)



**NHPP-S009(419)  
BEGINNING OF CONTRACT PROJECT  
STA. "L"986+00 (M.P. 115.93)**

**NHPP-S009(419)  
BEGINNING OF PROJECT  
STA. "L"987+00 (M.P. 115.95)**



**NHPP-S009(419)  
END OF CONTRACT PROJECT  
STA. "L"1031+50 (M.P. 116.79)**

**NHPP-S009(419)  
END OF PROJECT  
STA. "L"1030+61 (M.P. 116.77)**

- OREGON TRANSPORTATION COMMISSION
- Pat Egan CHAIR
  - Mary F. Olson COMMISSIONER
  - David Lahman COMMISSIONER
  - Mark Frahmeyer COMMISSIONER
  - Tommy Boney 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.

By: Carol A. Cartwright 12/13  
Signature & Date

Carol A. Cartwright - R2 Roadway Manager

[Signature]  
Print name and title  
Concurrence by ODOT Chief Engineer

FFO - US101: S.E. 23RD DR. - S.W. 35TH ST.  
(LINCOLN CITY) SEC.  
OREGON COAST HIGHWAY  
LINCOLN COUNTY

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER
OREGON DIVISION	NHPP-S009(419)



PE001

INDEX OF SHEETS, CONT'D.	
SHEET NO.	DESCRIPTION
2, 2A Thru 2A-14 Incl.	Typical Sections
2B Thru 2B-12 Incl.	Details
2C Thru 2C-4 Incl.	Traffic Control Details
2C-5 Thru 2C-39 Incl.	Traffic Control Plans
2D Thru 2D-7 Incl.	Pipe Data Sheet
3	Alignment
3A	General Construction
3B	Drainage & Utilities
3B-2	Drainage Notes
3C & 3D	"L", "23RD" & "Dwy1" Profile
4	Alignment
4A	General Construction
4B	Drainage & Utilities
4B-2	Drainage Notes
4C	Diversion Plan
4D & 4E	"L", "Dwy2", "Dwy3" & "Dwy4" Profile
5	Alignment
5A	General Construction
5A-2	Notes
5B	Drainage & Utilities
5B-2	Drainage Notes
5C	Diversion Plan
5D, 5E, 5F & 5G	"L", "Dwy5", "29TH" "31ST" & "Dwy6" Profile
6	Alignment
6A	General Construction
6A-2	Notes
6B	Drainage & Utilities
6B-2	Drainage Notes
6C	Diversion Plan
6D	Alignment
6E	General Construction
6F	Drainage & Utilities
6G, 6H, 6J, 6K & 6L	"L", "32ND", "32e", "P" & "35TH" Profile

INDEX OF SHEETS, CONT'D.	
SHEET NO.	DESCRIPTION
<b>TYLIN INTERNATIONAL</b>	
RL	Waterline Details
RL-2 Thru RL-4 Incl.	Waterline Relocation Plan
RL-5	Waterline Relocation Notes
RL-6	24" Waterline Relocation Profile
RL-7	12" Waterline Relocation Profile
RL-8	Waterline Relocation Plan
RL-9	Waterline Relocation Notes
RL-10	12" Waterline Relocation Profile
RL-11	32nd St. Waterline Relocation Profile
RL-12 Thru RL-14 Incl.	Sanitary Sewer Relocation Plan
RL-15	Sanitary Sewer Relocation Notes
RL-16	Sanitary Sewer Relocation Profile
RL-17	Sanitary Sewer Relocation Plan
RL-18	Sanitary Sewer Relocation Notes
RL-19	Sanitary Sewer Relocation Profile
RL-20	Sanitary Sewer Relocation Plan
RL-21	Sanitary Sewer Relocation Profile
RL-22	Pipe Data Sheet Sanitary Sewer Relocation
<b>GEO/HYDRO</b>	
GA	Erosion And Sediment Control Details
GA-2 Thru GA-10 Incl.	Erosion And Sediment Control Plans
GB Thru GB-8 Incl.	Geotechnical Data
GC	Retaining Wall Index
GC-2	Retaining Wall MSE Wall Details
GC-3	Retaining Wall MSE Wall Sections
GC-4	Retaining Wall "B" Plan And Elevation
GC-5	Retaining Wall "B" Details
GC-6	Retaining Wall Soldier Pile Details
GC-7	Retaining Wall "E" Plan And Elevation
GC-8	Retaining Wall "F" Plan And Elevation
GC-9	Retaining Wall "F" Details
GC-10	Retaining Wall "G" Plan And Elevation
GC-11	Retaining Wall "H" Plan And Elevation
GC-12	Retaining Wall "J" Plan And Elevation
GC-13	Retaining Wall "K" Plan And Elevation
GC-14	Retaining Wall "L" Plan And Elevation
GC-15	Retaining Wall "L" Details
GC-16	Miscellaneous Details
GC-17	Retaining Wall "M" Plan And Elevation

INDEX OF SHEETS, CONT'D.	
SHEET NO.	DESCRIPTION
GE & GE-2	Culvert Plan And Profile
GE-3	Culvert Details
GE-4	Culvert Plan And Section
GG & GG-2	Temporary Water Management Plans
GJ	Stormwater Plan
GJA	Stormwater Notes
GJ-2	Stormwater Plan
GJ-3 Thru GJ-7 Incl.	Stormwater Details
<b>WHPacific</b>	
GN	Planting Notes
GN-2	Planting Details
GN-3	Planting Material Schedule
GN-4	Planting Plan
GN-4A	Planting Notes
GN-5	Planting Plan
GN-5A	Planting Notes
GN-6	Planting Plan
GN-6A	Planting Notes
GN-7	Planting Plan
GN-7A	Planting Notes
GN-8	Planting Plan
GN-8A	Planting Notes
GN-8B & GN-8C	Planting Details
GN-9	Planting Plan
GN-9A	Planting Notes
GN-10	Planting Plan
GN-10A	Planting Notes
GN-10B	Planting Details
GN-11	Planting Plan
GN-11A	Planting Notes
GN-12	Planting Plan
GN-12A	Planting Notes

INDEX OF SHEETS, CONT'D.	
SHEET NO.	DESCRIPTION
<b>PERMANENT PAVEMENT MARKINGS</b>	
ST Thru ST-5 Incl.	Striping Plans
<b>PERMANENT SIGNING</b>	
S-14358 Thru S-14363 Incl.	Sign Plans
S-14364 & S-14365	Sign Details
S-14366 Thru S-14368 Incl.	Sign & Post Data Table
<b>SIGNAL PLANS</b>	
17524	Legend
17525	Signal Plan
17526	Detection Plan
17527	Signal Plan Details
17528	Existing Utilities
17529 & 17530	Signal Plan Details
17531	Flashing Beacon Plan
17532	Flashing Beacon Details

REVISED AS CONSTRUCTED  
STEVEN SCHULTZ, PE

DATE 6/21/16

No.	DATE	REVISIONS	BY
4	02-18-14	Added sheet	T.L.M.

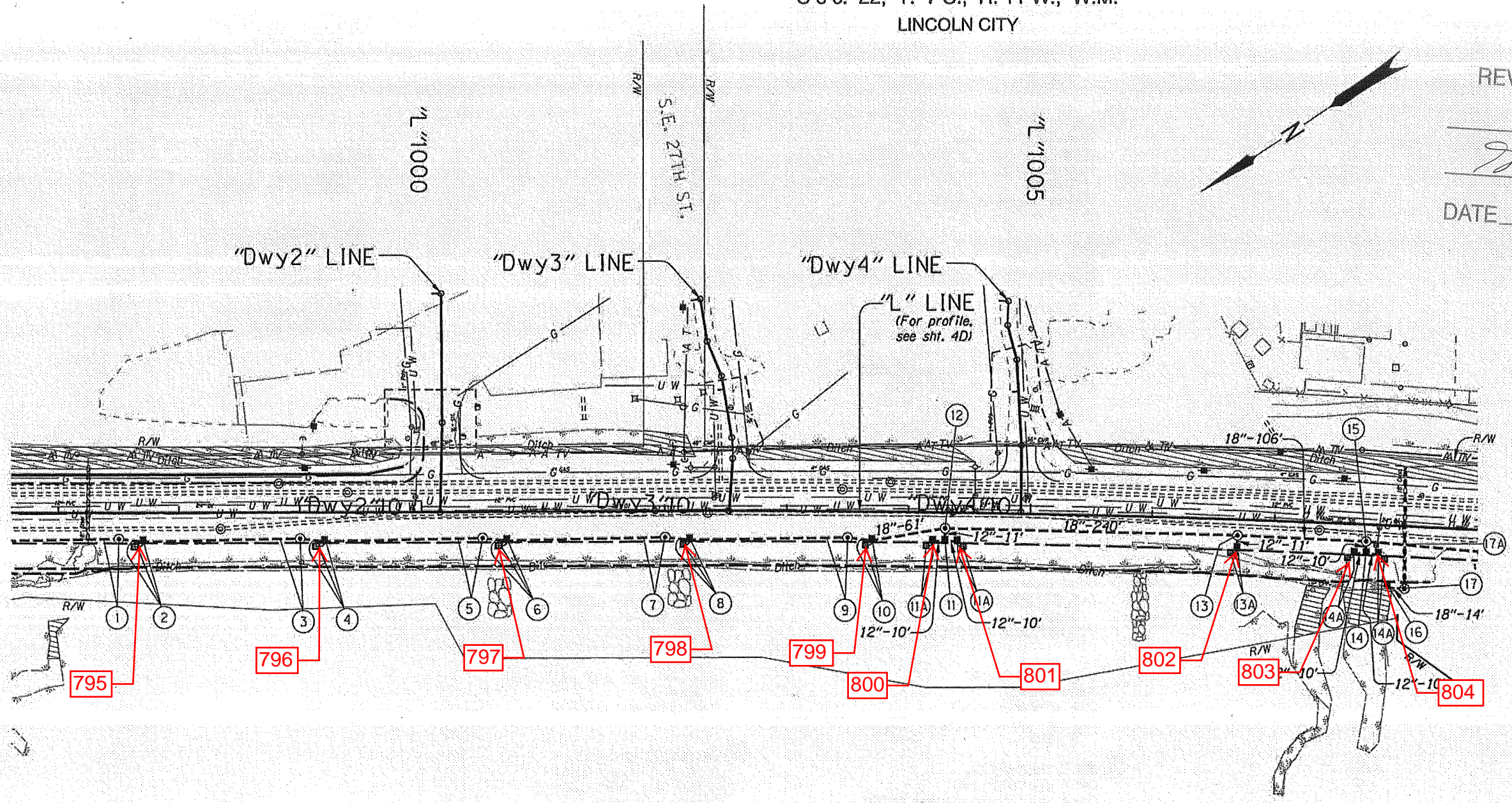
FFO - US101: S.E. 23RD DR. - S.W. 35TH ST. (LINCOLN CITY) SEC. OREGON COAST HIGHWAY LINCOLN COUNTY		
FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION		1A

Standard Drawings located on the web at:  
[http://www.oregon.gov/ODOT/HWY/ENGSERVICES/standard\\_drawings\\_home.shtml](http://www.oregon.gov/ODOT/HWY/ENGSERVICES/standard_drawings_home.shtml)

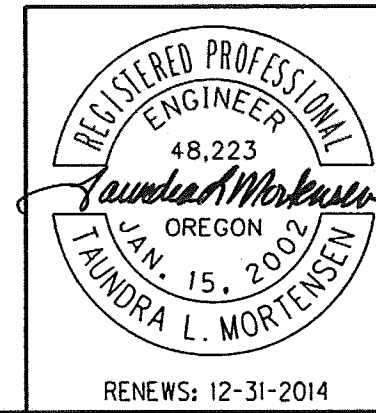
Sec. 22, T. 7S., R. 11 W., W.M.  
LINCOLN CITY

47V-25

REVISED AS CONSTRUCTED  
STEVEN SCHULTZ, PE  
*[Signature]*  
DATE 6/21/16



No work area shown thus:   
Plug and abandon pipe shown thus:



OREGON DEPARTMENT OF TRANSPORTATION	
REGION 2 TECH CENTER	
FFO - US101: S.E. 23RD DR. - S.W. 35TH ST. (LINCOLN CITY) SEC. OREGON COAST HIGHWAY LINCOLN COUNTY	
Design Team Leader - Carol Cartwright Designed By - Tandra Mortensen Drafted By - Charlotte Carken	
<b>DRAINAGE &amp; UTILITIES</b>	SHEET NO. <b>4B</b>

REVISED AS CONSTRUCTED

STEVEN SCHULTZ, PE

DATE 6/21/16

① Sta. "L" 997+50, Rt.  
Const. manhole  
Step orientation - 85°  
Inst. 15" storm sew. pipe - 145'  
5' depth

② Sta. "L" 997+70, Rt.  
Const. type "G-2" inlet  
Const. water quality structure #0795  
Inst. 15" storm sew. pipe - 20'  
5' depth  
(For details, see sht. GJ-5)

③ Sta. "L" 999+00, Rt.  
Const. manhole  
Step orientation - 85°  
Inst. 15" storm sew. pipe - 130'  
5' depth

④ Sta. "L" 999+20, Rt.  
Const. type "G-2" inlet  
Const. water quality structure #0796  
Inst. 15" storm sew. pipe - 20'  
5' depth  
(For details, see sht. GJ-5)

⑤ Sta. "L" 1000+50, Rt.  
Const. manhole  
Step orientation - 85°  
Inst. 18" storm sew. pipe - 130'  
5' depth

⑥ Sta. "L" 1000+70, Rt.  
Const. type "G-2" inlet  
Const. water quality structure #0797  
Inst. 18" sew. pipe - 20'  
5' depth  
(For details, see sht. GJ-5)

⑦ Sta. "L" 1002+00, Rt.  
Const. manhole  
Step orientation - 85°  
Inst. 18" storm sew. pipe - 130'  
5' depth

⑧ Sta. "L" 1002+20, Rt.  
Const. type "G-2" inlet  
Const. water quality structure #0798  
Inst. 18" storm sew. pipe - 20'  
5' depth  
(For details, see sht. GJ-5)

⑨ Sta. "L" 1003+50, Rt.  
Const. manhole  
Step orientation - 85°  
Inst. 18" storm sew. pipe - 130'  
10' depth

⑩ Sta. "L" 1003+70, Rt.  
Const. type "G-2" inlet  
Const. water quality structure #0799  
Inst. 18" storm sew. pipe - 20'  
10' depth  
(For details, see sht. GJ-5)

⑪ Sta. "L" 1004+30, Rt.  
Const. type "CG-2" inlet  
⑪A Const. type "G-2" inlet - 2  
Const. water quality structure #0800 & #0801 - 2  
Inst. 12" storm sew. pipe - 20'  
5' depth  
(For details, see sht. GJ-5)  
(See drg. no. RD366)

⑫ Sta. "L" 1004+30, Rt.  
Const. manhole 60" dia.  
Step orientation - 240°  
Inst. 12" storm sew. pipe - 11'  
5' depth  
Inst. 18" storm sew. pipe - 61'  
10' depth  
(See drg. no. RD346)

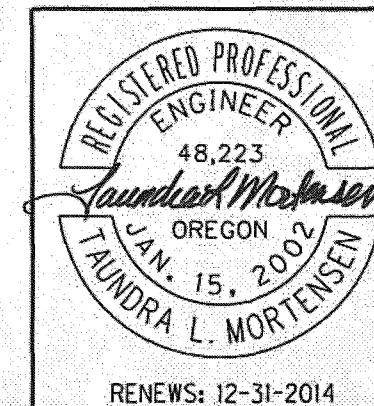
⑬ Sta. "L" 1006+70, Rt.  
Const. manhole  
Step orientation - 270°  
⑬A Const. type "G-2" inlet  
Const. water quality structure #0802  
Inst. 12" storm sew. pipe - 11'  
5' depth  
Inst. 18" storm sew. pipe - 240'  
10' depth  
(For details, see sht. GJ-5)

⑭ Sta. "L" 1007+76.5, Rt.  
Const. type "CG-2" inlet  
⑭A Const. type "G-2" inlet - 2  
Const. water quality structure #0803 & #0804 - 2  
Inst. 12" storm sew. pipe - 20'  
5' depth  
(For details, see sht. GJ-5)

⑮ Sta. "L" 1007+76.2, Rt.  
Const. manhole  
Step orientation - 270°  
Inst. 12" storm sew. pipe - 10'  
5' depth  
Inst. 18" storm sew. pipe - 106'  
10' depth

⑯ Sta. "L" 1007+94.7, Rt.  
Const. type "D" inlet  
(See drg. no. RD370)

⑰ Sta. "L" 1008+09.2, Rt.  
Const. manhole 60" dia.  
Inst. 18" storm sew. pipe - 14'  
5' depth  
Connect to extg. 18" storm sew. pipe  
⑰A Const. conc. saddle  
(See drg. no. RD306)



OREGON DEPARTMENT OF TRANSPORTATION	
REGION 2 TECH CENTER	
FFO - US101: S.E. 23RD DR. - S.W. 35TH ST. (LINCOLN CITY) SEC. OREGON COAST HIGHWAY LINCOLN COUNTY	
Design Team Leader - Carol Cartwright Designed By - Tandra Mortensen Drafted By - Charlotte Gerken	
<b>DRAINAGE NOTES</b>	SHEET NO. <b>4B-2</b>

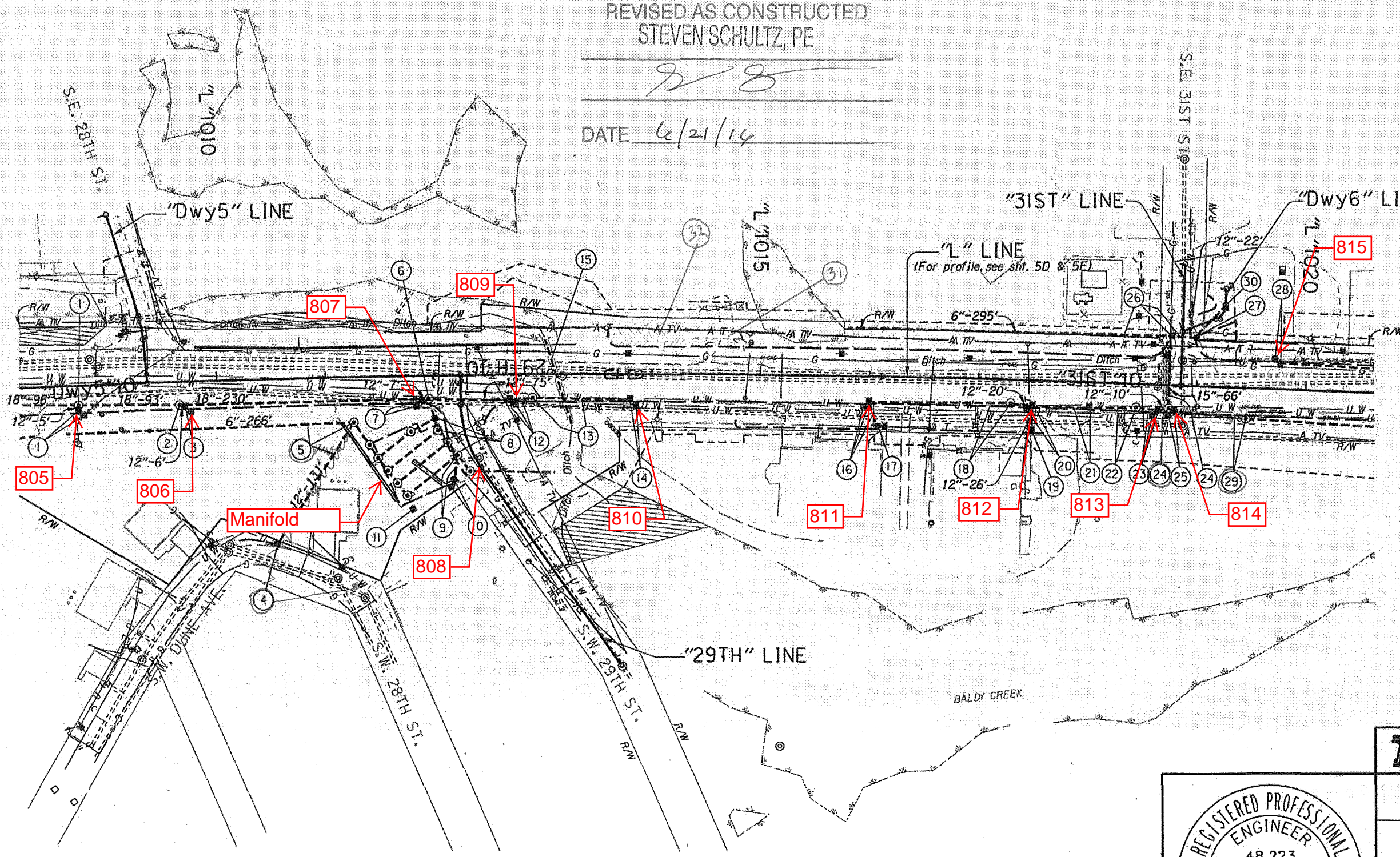
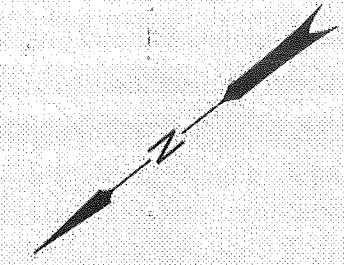
Sec. 22, T. 7 S., R. 11 W., W.M.  
LINCOLN CITY

47V-25

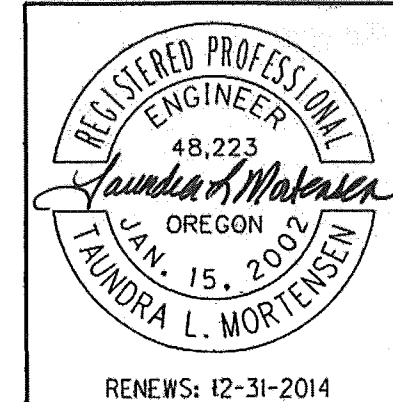
REVISED AS CONSTRUCTED  
STEVEN SCHULTZ, PE

*SS*

DATE 6/21/14



No work area shown thus:



OREGON DEPARTMENT OF TRANSPORTATION

REGION 2 TECH CENTER

FFO - US101: S.E. 23RD DR. - S.W. 35TH ST.  
(LINCOLN CITY) SEC.  
OREGON COAST HIGHWAY  
LINCOLN COUNTY

Design Team Leader - Carol Cartwright  
Designed By - Tandra Mortensen  
Drafted By - Charlotte Gerken

**DRAINAGE & UTILITIES** SHEET NO. **5B**

- ① Sta. "L" 1008+71.9, Rt.  
Const. manhole  
Step orientation - 270°  
Const. type "G-2" inlet  
Const. water quality structure #0805  
Inst. 12" storm sew. pipe - 5'  
5' depth  
Inst. 18" storm sew. pipe - 96'  
10' depth  
(For details, see sht. GJ-5)
- ② Sta. "L" 1009+65, Rt.  
Const. manhole  
Step orientation - 240°  
Inst. 12" storm sew. pipe - 6'  
5' depth  
Inst. 18" storm sew. pipe - 93'  
5' depth
- ③ Sta. "L" 1009+70, Rt.  
Const. type "G-2" inlet  
Const. water quality structure #0806  
(For details, see sht. GJ-5)
- ④ Sta. "L" 1010+51, 150.7' Rt.  
Const. type "G-1" inlet  
F.L. out 97.19'  
(See drg. no. RD364)  
Connect to 2x4
- ⑤ Sta. "L" 1011+25.2, Rt.  
Const. large manhole G-2 inlet  
Inst. 6" subsurface drain pipe - 266'  
5' depth  
Inst. 12" storm sew. pipe - 131'  
5' depth  
Inst. slope anchor - 10'  
(For details, see shts. GJ, GJA & GC-6)  
(See drg. nos. RD330 & RD332)
- ⑥ Sta. "L" 1011+95, Rt.  
Const. manhole 60" dia. (outside drop)  
Step orientation - 145°  
Inst. 12" storm sew. pipe - 82'  
5' depth  
Inst. 18" storm sew. pipe - 230'  
10' depth  
(See drg. no. RD352)
- ⑦ Sta. "L" 1011+89, Rt.  
Const. type "G-2" inlet  
Const. water quality structure #0807  
(For details, see sht. GJ-5)

- ⑧ Sta. "L" 1012+02.8, Rt.  
Const. large manhole  
Const. type "B-SL" inlet  
(For details, see shts. GJ & GJA)
- ⑨ Sta. "L" 1012+20.5, Rt.  
Const. diversion manhole  
Inst. 12" storm sew. pipe - 17'  
5' depth  
F.L. In 46.18(NW)  
F.L. Out 46.07(NW)  
(For details, see sht. GJ-3)
- ⑩ Sta. "29th" 10+84.4, 27' Rt.  
Const. type "G-1" inlet  
Const. water quality structure #0808  
(For details, see shts. GJ & GJ-6)
- ⑪ Const. type "G2-MA" inlet  
(For details, see shts. GJ & GJA)
- ⑫ Sta. "L" 1012+70, Rt.  
Const. type "G-2" inlet  
Const. water quality structure #0809  
Inst. 12" storm sew. pipe - 21'  
5' depth  
(For details, see sht. GJ-5)
- ⑬ Sta. "L" 1012+90.5, Rt.  
Const. manhole  
Step orientation - 270°  
Inst. 12" storm sew. pipe - 89'  
5' depth
- ⑭ Sta. "L" 1013+80, Rt.  
Const. type "G-2" inlet  
Const. water quality structure #0810  
(For details, see sht. GJ-5)
- ⑮ Sta. "L" 1013+07.6  
Remove extg. R.C.B.C.  
Const. 174" x 119" arch pipe  
(For details, see sht. GE)
- ⑯ Sta. "L" 1016+00, Rt.  
Const. type "G-2" inlet  
Const. water quality structure #0811  
Inst. 12" storm sew. pipe - 27'  
5' depth  
(For details, see sht. GJ-5)

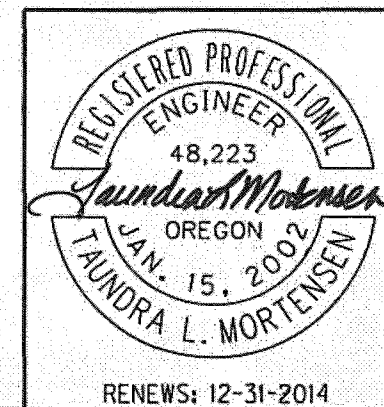
- ⑰ Sta. "L" 1016+08.1, Rt.  
Const. type "CG-3" inlet  
(See drg. nos. RD372, RD371 & RD373)
- ⑱ Sta. "L" 1017+30, Rt.  
Const. manhole  
Step orientation - 85°  
Inst. 12" storm sew. pipe - 130'  
5' depth
- ⑲ Sta. "L" 1017+49.7, Rt.  
Const. type "CG-3" inlet
- ⑳ Sta. "L" 1017+50, Rt.  
Const. type "G-2" inlet  
Const. water quality structure #0812  
Inst. 12" storm sew. pipe - 46'  
5' depth  
(For details, see sht. GJ-5)
- ㉑ Sta. "L" 1018+02.5, Rt.  
Const. type "G-2" inlet  
Inst. 12" storm sew. pipe - 53'  
5' depth
- ㉒ Sta. "L" 1018+45, Rt.  
Const. manhole  
Step orientation - 85°  
Inst. 12" storm sew. pipe - 43'  
5' depth
- ㉓ Sta. "L" 1018+65, Rt.  
Const. type "CG-2" inlet  
Const. water quality structure #0813  
Inst. 12" storm sew. pipe - 20'  
5' depth  
(For details, see sht. GJ-5)
- ㉔ Sta. "L" 1018+75, Rt.  
Const. manhole  
Step orientation - 65°  
Inst. 12" storm sew. pipe - 10'  
10' depth  
Inst. 15" storm sew. pipe - 66'  
10' depth  
Trench resurf. - 22 sq. yd.

- ㉕ Sta. "L" 1018+80, Rt.  
Const. type "CG-2" inlet  
Const. water quality structure #0814  
Inst. 12" storm sew. pipe - 6'  
5' depth  
(For details, see sht. GJ-5)
- ㉖ Sta. "L" 1018+74.2, Lt.  
Const. type "G-1" inlet  
Inst. 6" subsurface drain pipe - 295'  
5' depth  
Inst. 12" storm sew. pipe - 22'  
5' depth  
Trench resurf. - 7.3 sq. yd.  
(For details, see sht. GC-6)
- ㉗ Sta. "L" 1018+96.4, Lt.  
Const. type "G-1" inlet  
Inst. 12" storm sew. pipe - 41'  
5' depth
- ㉘ Sta. "L" 1019+75.7, Lt.  
Const. type "G-2" inlet  
Const. water quality structure #0815  
(For details, see sht. GJ-5)
- ㉙ Sta. "L" 1019+45, Rt.  
Const. large manhole  
Inst. 15" storm sew. pipe - 66'  
10' depth  
Inst. 12" storm sew. pipe - 37.5'  
(For details, see sht. GJ-2)
- ㉚ Sta. "L" 1019+23.7, Lt.  
Const. type "G-1" inlet
- ㉛ Sta. "L" 1014+62, Lt.  
Install 8" culvert at Dwy.  
Class C900 PVC Pipe
- ㉜ Const. Drainage Ditch

REVISED AS CONSTRUCTED  
STEVEN SCHULTZ, PE

*[Signature]*

DATE 6/21/16



OREGON DEPARTMENT OF TRANSPORTATION	
REGION 2 TECH CENTER	
FFO - US101: S.E. 23RD DR. - S.W. 35TH ST. (LINCOLN CITY) SEC. OREGON COAST HIGHWAY LINCOLN COUNTY	
Design Team Leader - Carol Cartwright Designed By - Tandra Mortensen Drafted By - Choriotte Gerken	
<b>DRAINAGE NOTES</b>	SHEET NO. <b>5B-2</b>

**WATER QUALITY STRUCTURE LOCATION TABLE**

DRAINAGE FACILITY I.D. MARKER	STATION	LT./RT.	W x L (ft.)
D 00789	"L"989+75.0	Rt.	4 x 4
D 00790	"L"991+30.0	Rt.	8 x 4
D 00791	"L"992+40.0	Rt.	6 x 4
D 00792	"L"993+20.0	Rt.	4 x 4
D 00793	"L"994+70.0	Rt.	6 x 6
D 00794	"L"996+05.0	Rt.	6 x 6
D 00795	"L"997+70.0	Rt.	6 x 6
D 00796	"L"999+20.0	Rt.	6 x 6
D 00797	"L"1000+70.0	Rt.	8 x 4
D 00798	"L"1002+20.0	Rt.	8 x 4
D 00799	"L"1003+70.0	Rt.	8 x 4
D 00800	"L"1004+30.0	Rt.	4 x 4
D 00801	"L"1004+30.0	Rt.	6 x 4
D 00802	"L"1006+70.0	Rt.	8 x 4
D 00803	"L"1007+76.5	Rt.	6 x 4
D 00804	"L"1007+76.5	Rt.	6 x 4
D 00805	"L"1008+71.7	Rt.	8 x 4
D 00806	"L"1009+70.0	Rt.	6 x 4
D 00807	"L"1011+89.0	Rt.	4 x 4
D 00808	"L"1012+18.0	Rt.	8 x 4
D 00809	"L"1012+70.0	Rt.	8 x 4
D 00810	"L"1013+80.0	Rt.	4 x 4
D 00811	"L"1016+00.0	Rt.	4 x 4
D 00812	"L"1017+50.0	Rt.	6 x 4
D 00813	"L"1018+65.0	Rt.	4 x 4
D 00814	"L"1018+80.0	Rt.	4 x 4
D 00815	"L"1019+75.7	Lt.	4 x 4
D 00816	"L"1021+20.0	Lt.	8 x 4
D 00817	"L"1022+20.0	Lt.	6 x 6
D 00818	"L"1023+18.0	Lt.	6 x 4
D 00819	"L"1023+18.0	Lt.	4 x 4
D 00820	"L"1024+80.0	Rt.	4 x 4
D 00821	"L"1026+01.0	Rt.	4 x 4
D 00822	"L"1027+16.5	Rt.	4 x 4
A	"32e"10+45.0	Rt.	4 x 4
B	"32e"10+63.0	Lt.	4 x 4
C	"32nd"104+28.5	Rt.	8 x 4
D	"32nd"104+55.0	Rt.	4 x 4
E	"32nd"107+09.0	Lt.	8 x 4
F	"32nd"107+30.0	Lt.	6 x 4
G	"32nd"109+35.0	Lt.	12 x 6

No.	DATE	REVISIONS	BY
1	01-21-14	Added and modified note	C.C.

**OREGON DEPARTMENT OF TRANSPORTATION**

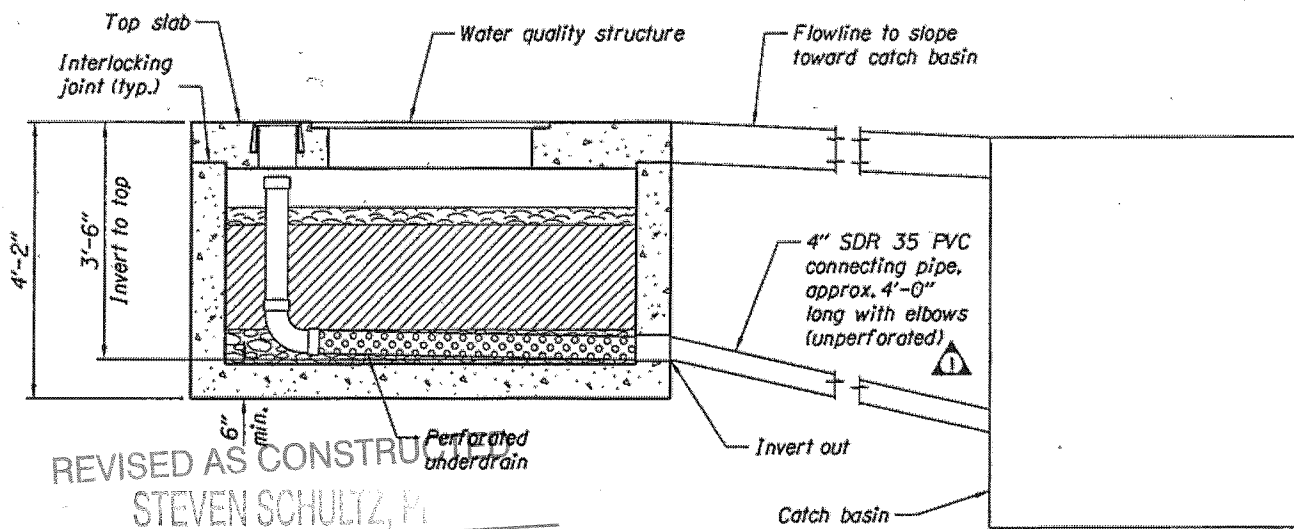
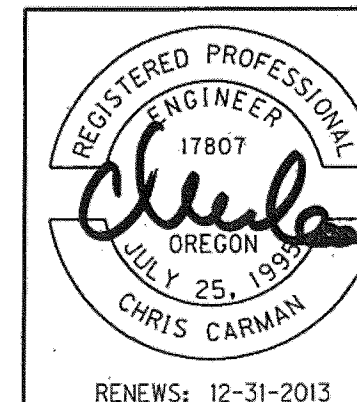
**REGION 2 TECH CENTER**

FFO - US101: S.E. 23RD DR. - S.W. 35TH ST.  
(LINCOLN CITY) SEC.  
OREGON COAST HIGHWAY  
LINCOLN COUNTY

Reviewed By - Bruce Carmichael  
Designed By - Chris Cormon, P.E.  
Drafted By - Michael Skelton

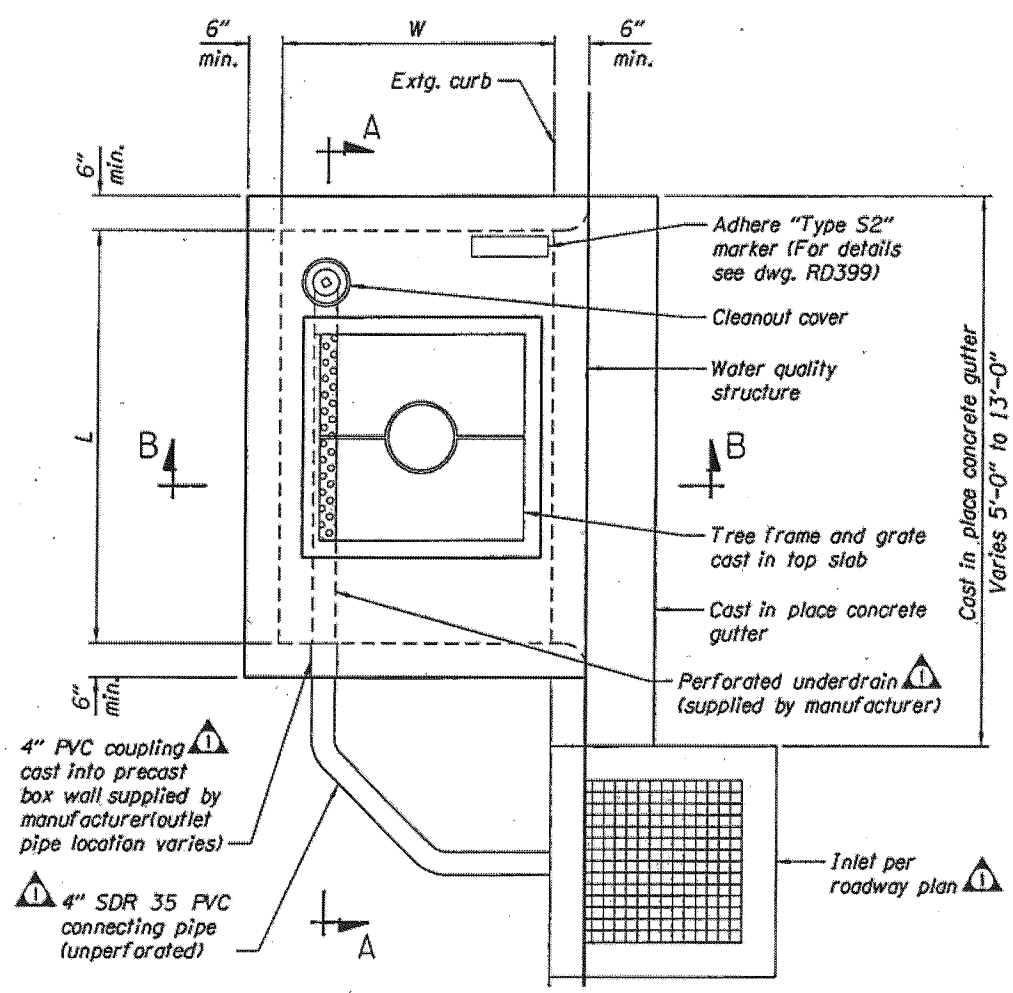
**STORMWATER DETAILS**

SHEET NO.  
GJ-5

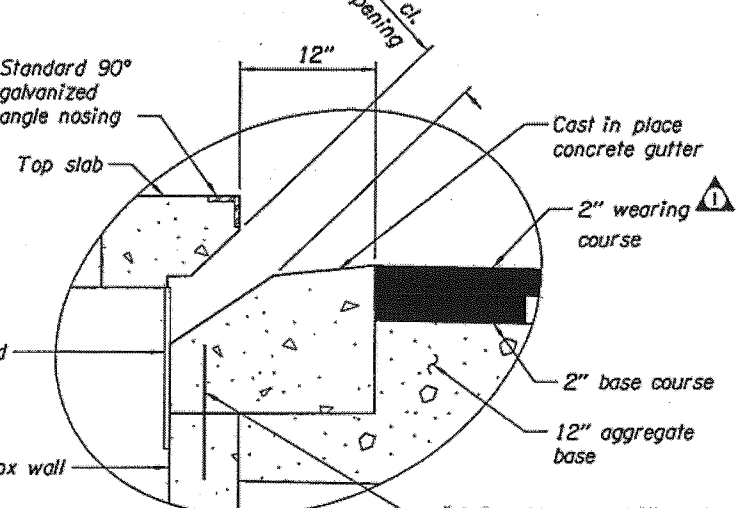


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STEVEN SCHULTZ, P.E.

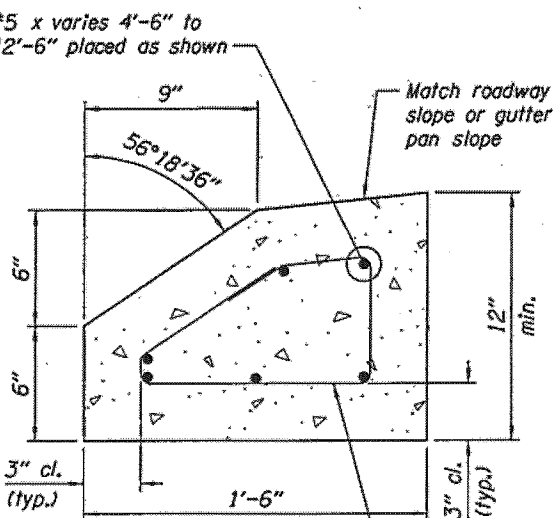
DATE 6/21/14



**WATER QUALITY STRUCTURE PLAN**

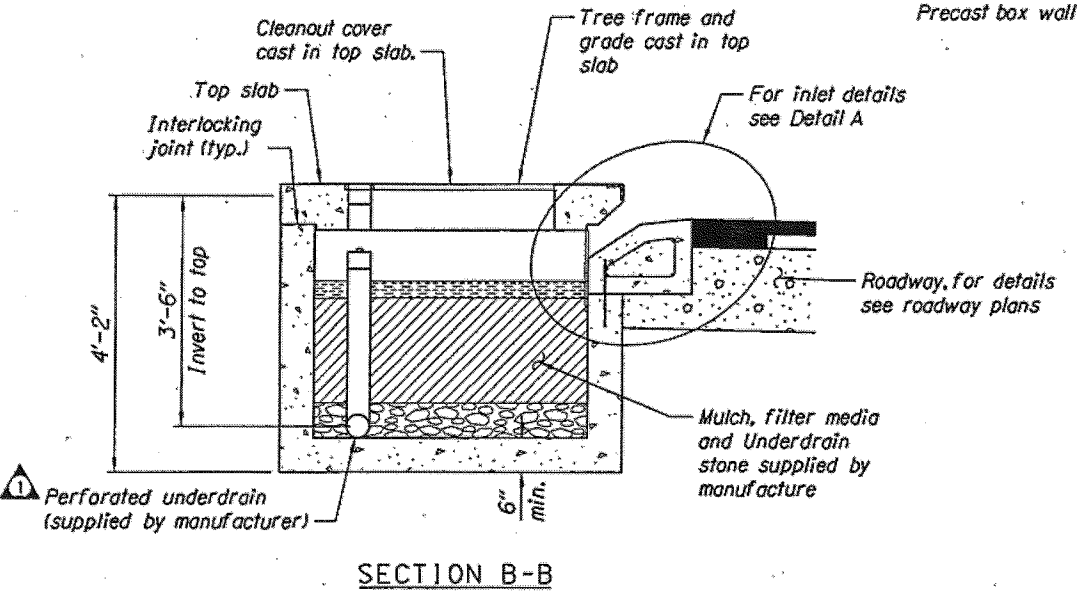


**DETAIL A**



**CAST IN PLACE CONCRETE GUTTER**

**Notes:**  
Tree not shown for clarity.  
Water quality structure shall be activated by manufacturer after project site is fully stabilized and cleaned. Activation includes installation of trees and mulch layers as necessary.  
Box and top must be lifted separately.

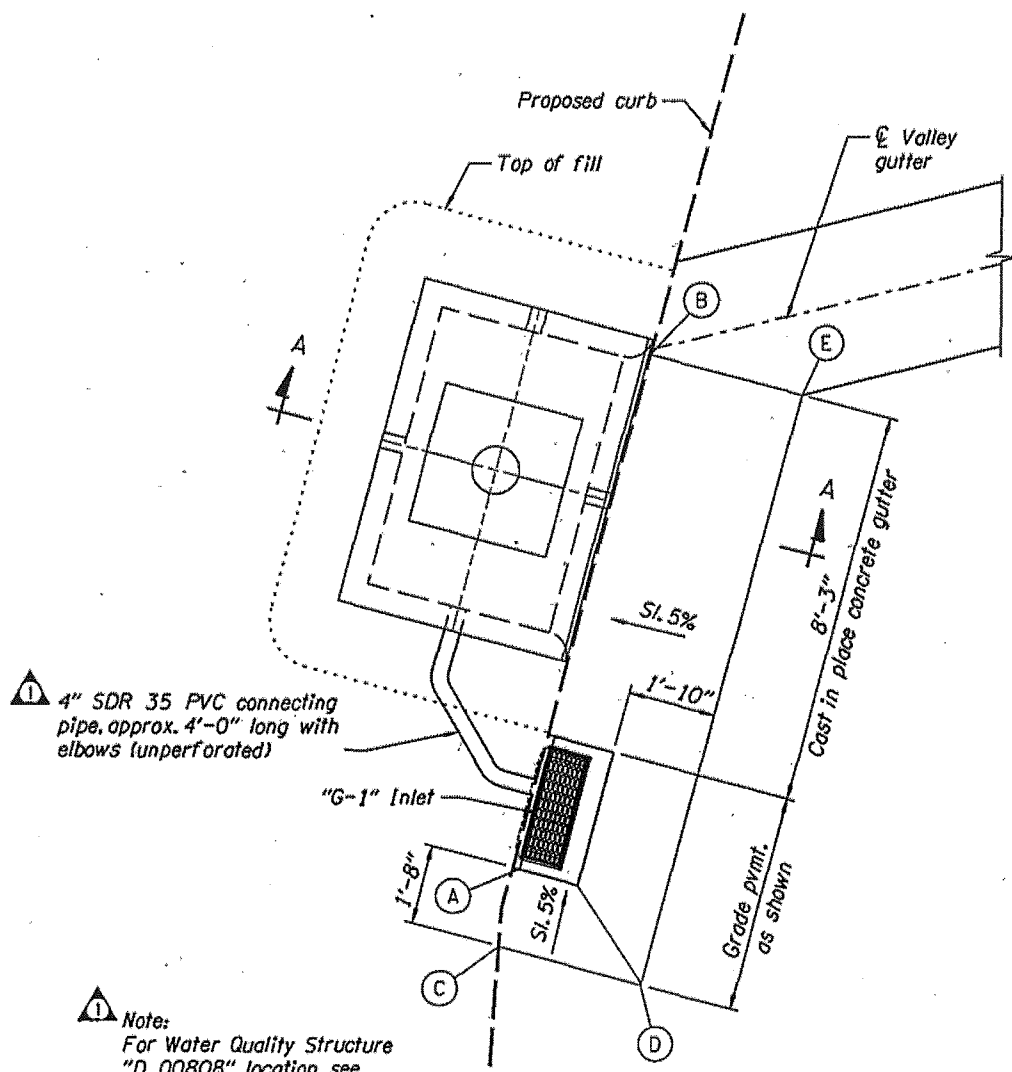


**SECTION B-B**



REVISED AS CONSTRUCTED  
STEVEN SCHULTZ, PE

DATE 6/21/14

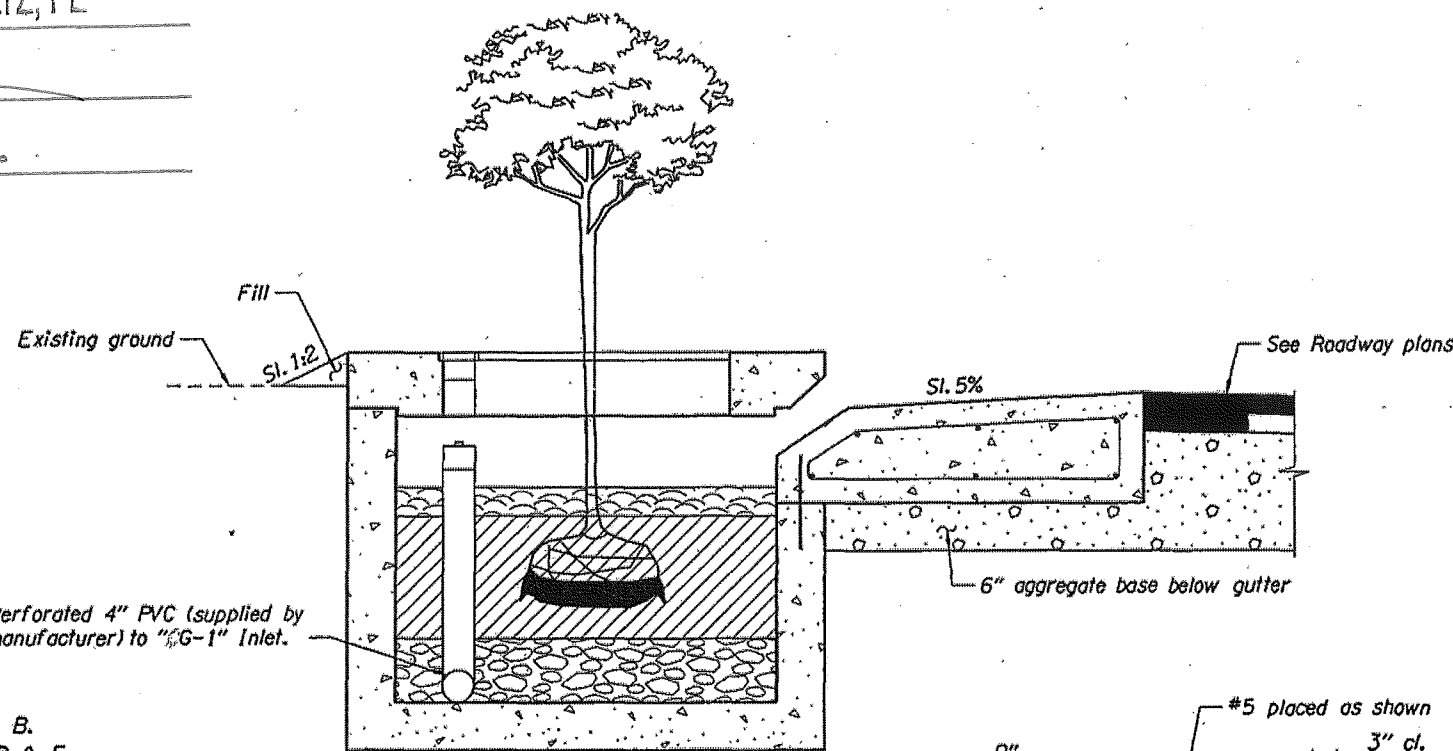


4" SDR 35 PVC connecting pipe, approx. 4'-0" long with elbows (unperforated)

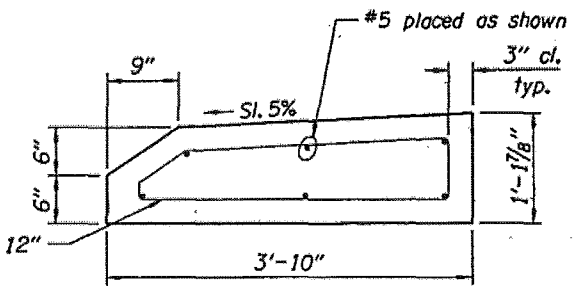
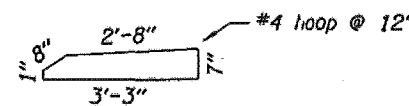
Note:  
For Water Quality Structure "D 00808" location see roadway plans.

GUTTER DETAIL

- Notes:
1. Provide 1" local depression at points A & B.
  2. Match normal pavement grade at points C, D & E.
  3. Side slopes shown vertical to horizontal.



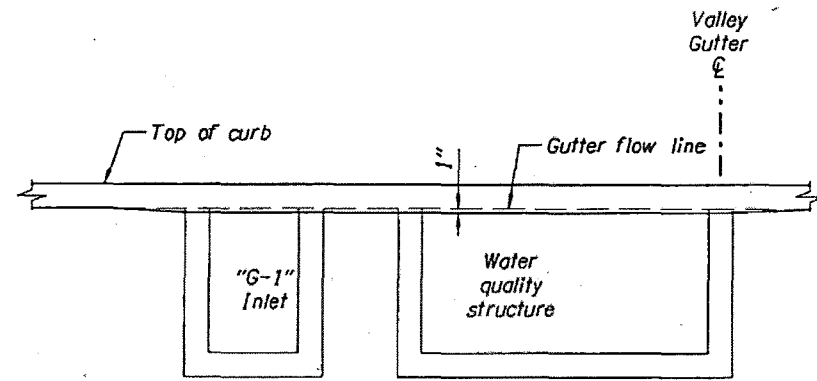
SECTION A-A



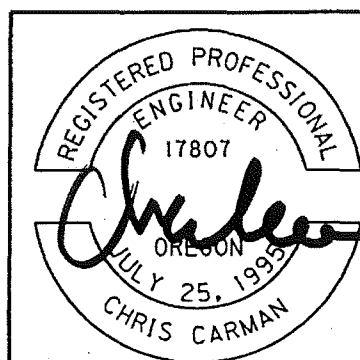
CAST IN PLACE CONCRETE GUTTER DETAIL

No.	DATE	REVISIONS	BY
1	01-21-14	Added and modified note	C.C.

NOTE:  
Slopes are shown as vertical to horizontal.



ELEVATION



RENEWS: 12-31-2013

OREGON DEPARTMENT OF TRANSPORTATION

REGION 2 TECH CENTER

FFO - US101: S.E. 23RD DR. - S.W. 35TH ST.  
(LINCOLN CITY) SEC.  
OREGON COAST HIGHWAY  
LINCOLN COUNTY

Reviewed By - Bruce Carlschauer, P.E.  
Designed By - Chris Carman, P.E.  
Drafted By - Julie Rentz

STORMWATER DETAILS

5-6