

# OPERATION & MAINTENANCE MANUAL

## **Filterra**

Manual prepared: March 2018

DFI No. D00793



Figure 1: DFI No. D00793, looking South

## 1. Identification

Drainage Facility ID (DFI): D00793  
Facility Type: **Filtterra**  
Construction Drawings: (V-File Numbers) 47V-025  
Location: District: 04  
Highway No.: 009  
Mile Post: 116.096, 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



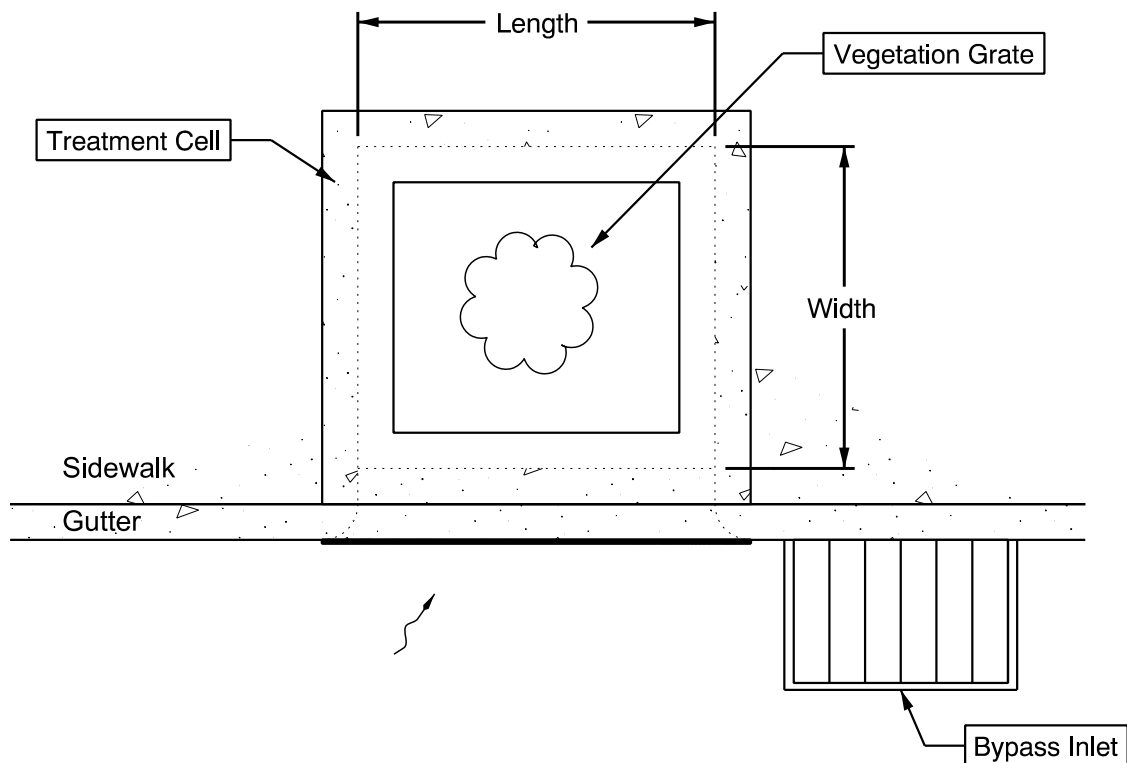
Figure 2: Facility Location Map

## 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</b><br>(Op Plan A)  | <input type="checkbox"/> <b>WQ Planter</b><br>(Op Plan B)  | <input type="checkbox"/> <b>MWS</b><br>(Op Plan C)  |
|---|--|---|
| A Filterra is a single chamber treatment cell that utilizes filter media, a plant, and a perforated underdrain.   | 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. | 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. |
| <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> |  |   |

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>   | <b>C8</b>  |
|                              | <input type="checkbox"/> <b>L</b>   |            |
|                              | <input type="checkbox"/> <b>O</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:

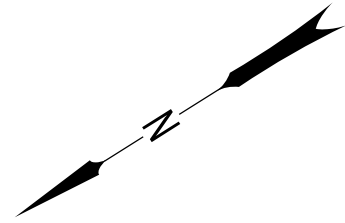
|                                   |                |
|-----------------------------------|----------------|
| ODOT Clean Water Unit             | (503) 986-3008 |
| ODOT Statewide Hazmat Coordinator | (503) 667-7442 |
| ODOT Region 1 Hazmat Coordinator  | (503) 731-8290 |
| ODOT Region 2 Hazmat Coordinator  | (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**

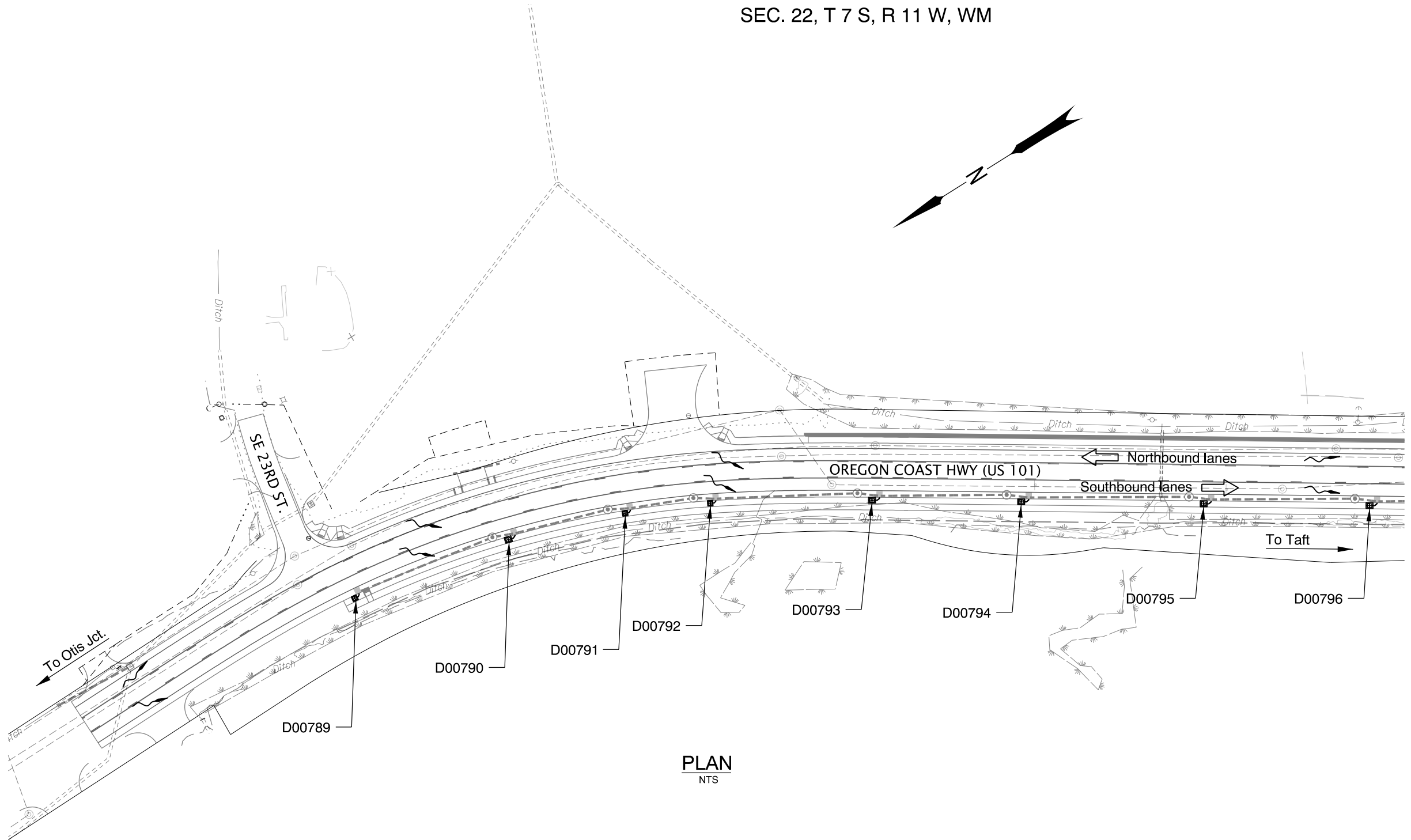
### **Contents:**

**Operational Plan: DFI D00793**

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



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



PLAN  
NTS



OREGON DEPARTMENT OF TRANSPORTATION

Sht. 1 of 4

Prepared By:  
Christopher Carman

Drafted By:  
Jeff Coon

**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

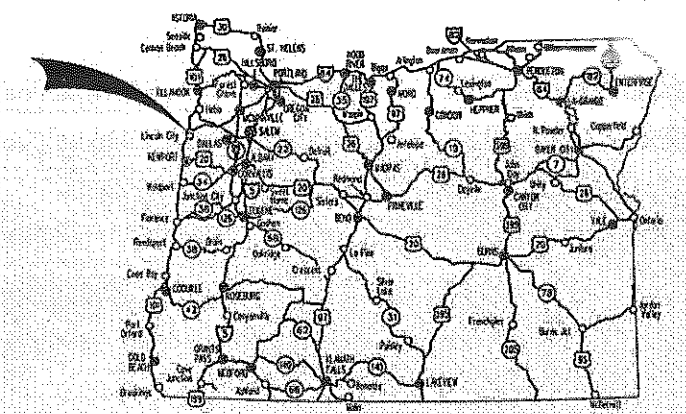
PLANS FOR PROPOSED PROJECT  
GRADING, DRAINAGE, STRUCTURE, PAVING, SIGNING,  
SIGNALS & ROADSIDE DEVELOPMENT

**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



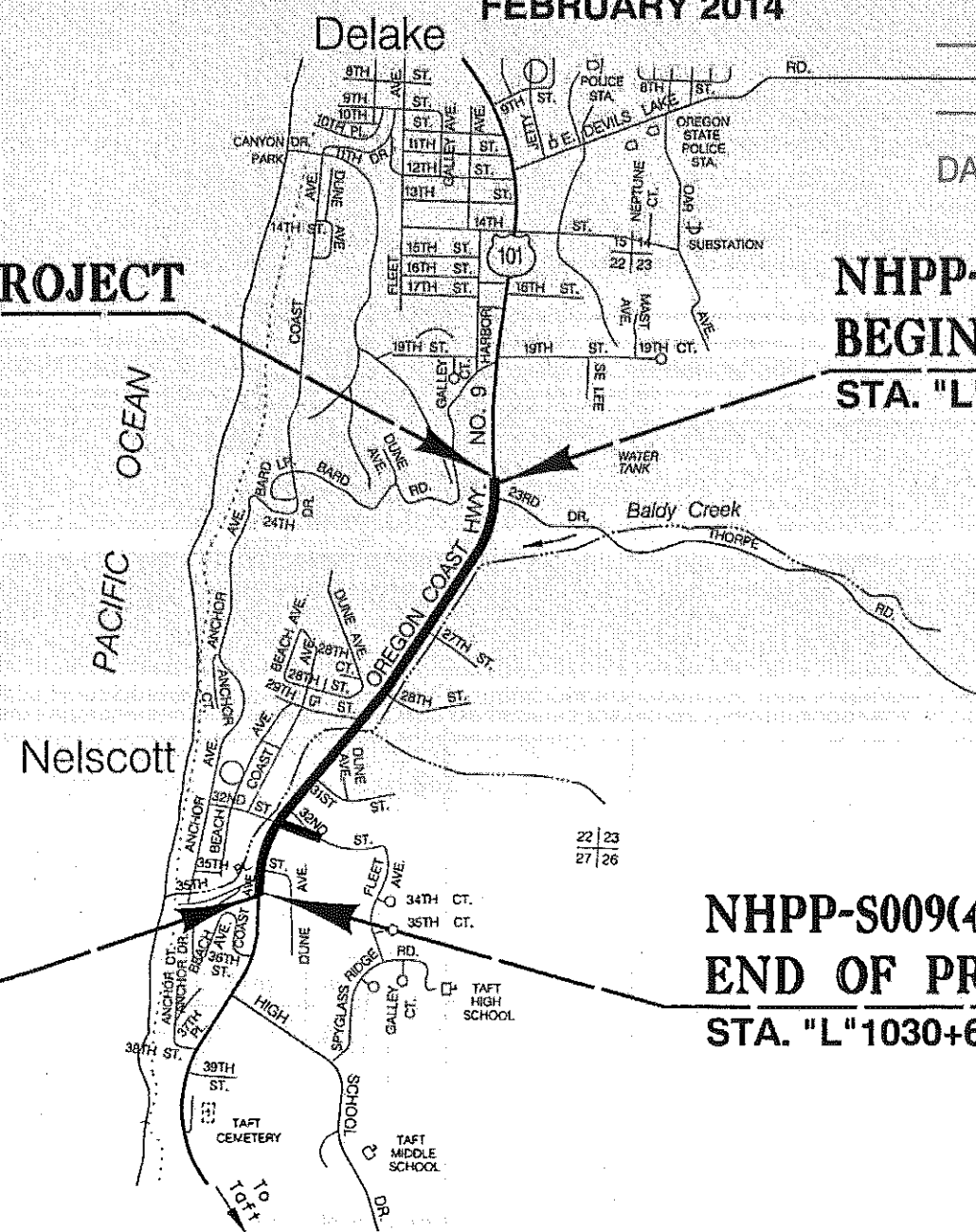
Overall Length Of Project - 0.83 Miles

**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)**

T. 7 S., R. 11 W., W.M.

- 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 12/9/13  
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<br>2A-14 Incl. | Typical Sections                               |
| 2B Thru<br>2B-12 Incl.    | Details  |
| 2C Thru<br>2C-4 Incl.     | Traffic Control Details                        |
| 2C-5 Thru<br>2C-39 Incl.  | Traffic Control Plans                          |
| 2D Thru<br>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,<br>5F & 5G        | "L", "Dwy5", "29TH"<br>"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,<br>6K & 6L    | "L", "32ND", "32e", "P" & "35TH" Profile       |

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| 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<br>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 |
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| GA                         | Erosion And Sediment Control Details      |
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| GB Thru<br>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     |

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|--------------------------|----------------------------------|
| 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<br>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                   |

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| <b>PERMANENT PAVEMENT MARKINGS</b> |                         |
| ST Thru<br>ST-5 Incl.              | Striping Plans          |
| <b>PERMANENT SIGNING</b>           |                         |
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| S-14364 &<br>S-14365               | Sign Details            |
| S-14366 Thru<br>S-14368 Incl.      | Sign & Post Data Table  |
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| 17525                              | Signal Plan             |
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| 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.<br>(LINCOLN CITY) SEC.<br>OREGON COAST HIGHWAY<br>LINCOLN COUNTY |                |              |
| FEDERAL HIGHWAY<br>ADMINISTRATION   | PROJECT NUMBER | SHEET<br>NO. |
| OREGON<br>DIVISION  |                | 1A           |

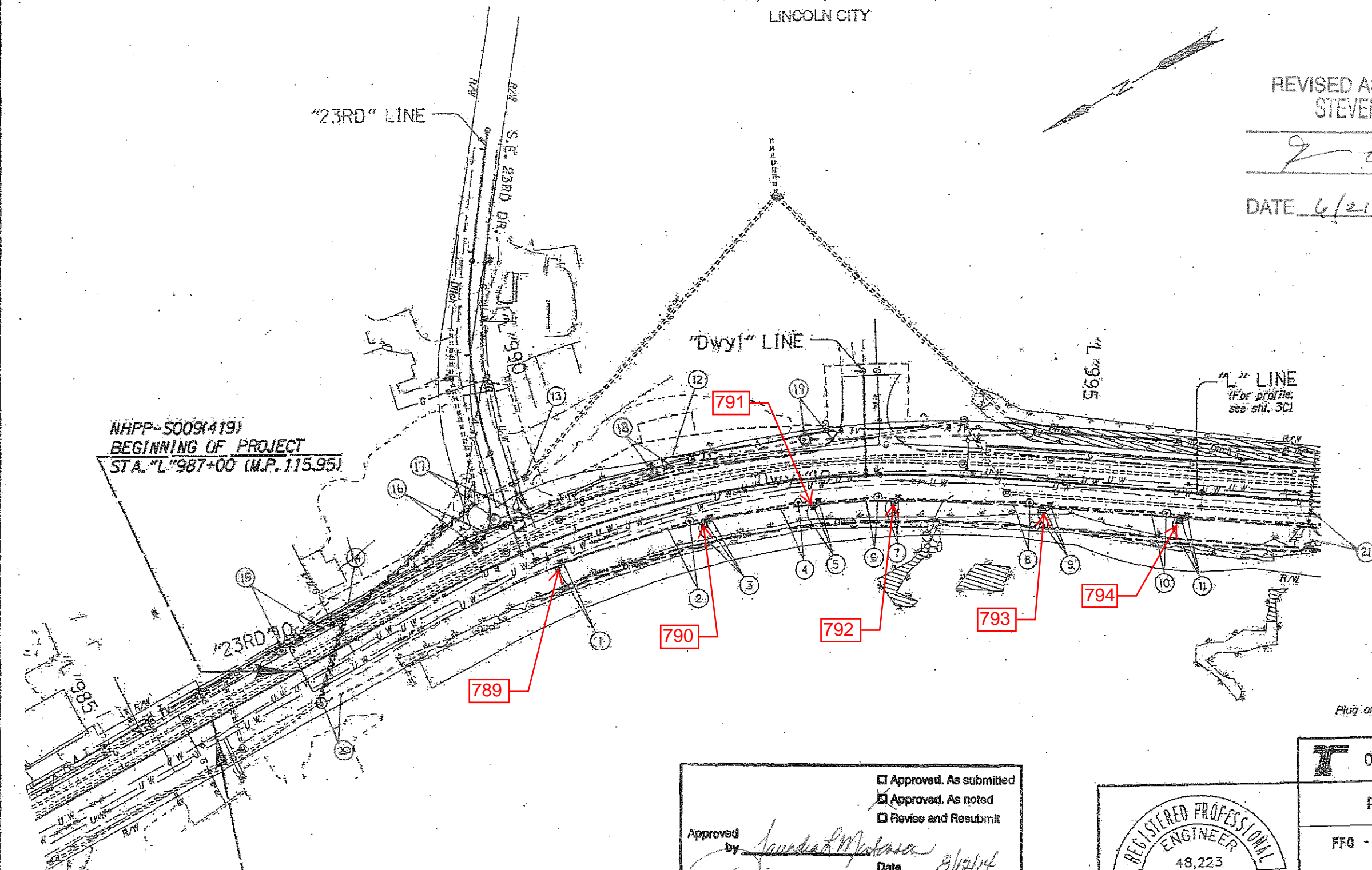
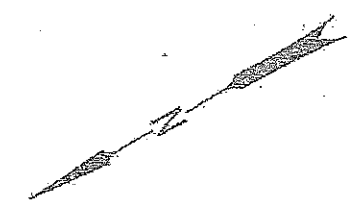
Standard Drawings located on the web at:  
[http://www.oregon.gov/ODOT/HWY/ENGSERVICES/standard\\_drawings\\_home.shtml](http://www.oregon.gov/ODOT/HWY/ENGSERVICES/standard_drawings_home.shtml)

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

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STEVEN SCHULTZ, PE



*[Signature]*

DATE 6/21/16



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


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

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

Approved by *[Signature]*  
Date 8/21/14

Approved. As submitted  
 Approved. As noted  
 Revise and Resubmit

REGISTERED PROFESSIONAL  
ENGINEER  
48,223  
*[Signature]*  
OREGON  
JAN. 15, 2002  
TAUNDRA L. MORTENSEN  
RENEWS: 12-31-2014.

|   |                 |
|---|-----------------|
|  OREGON DEPARTMENT OF TRANSPORTATION |                 |
| REGION 2 TECH CENTER  |                 |
| FFO - US101: S.E. 23RD DR. - S.W. 35TH ST.<br>(LINCOLN CITY) SEC.<br>OREGON COAST HIGHWAY<br>LINCOLN COUNTY               |                 |
| Design Team Leader - Carol Carterright<br>Designed By - Taundra Mortensen<br>Drafted By - Charlotta Gerken                |                 |
| DRAINAGE & UTILITIES  | SHEET NO.<br>3B |

15) Sta "L" 986+91, 25.2 Lt.  
 Const. manhole  
 Inst. 18" storm sew. pipe - 10 ft.  
 5' depth  
 Inst. 24" storm sew. pipe - 217 ft.  
 5' depth  
 Const. paved end slope, Lt.  
 (See drg nos. RD318 & RD319)

16) Sta "L" 989+06, 24.7 Lt.  
 Const. manhole 60" dia.  
 Inst. 30" storm sew. pipe - 31 ft.  
 10' depth

17) Sta "L" 989+30, 42.6 Lt.  
 Const. manhole 60" dia.  
 Inst. 30" storm sew. pipe - 161 ft.  
 10' depth

18) Sta "L" 990+84, 35.7 Lt.  
 Const. manhole 60" dia.  
 Inst. 30" storm sew. pipe - 150 ft.  
 10' depth

19) Sta "L" 992+28, 39.8 Lt.  
 Const. manhole 60" dia.  
 Inst. 30" storm sew. pipe - 219 ft.  
 10' depth

20) Sta "L" 986+99, 36.6 Rt.  
 Const. manhole, shallow  
 Connect extg. 12" storm sew. pipe  
 Inst. 24" storm sew. pipe - 123 ft.  
 5' depth  
 Const. paved end slope, Rt.  
 (See drg. no. RD 342)

21) Sta "L" 997+25  
 18" culv. pipe (In pl.) to remain  
 Connect to extg. culv. pipe  
 Extend - 25' Rt.  
 Const. paved end slope, Rt.  
 (See drg. no. RD354)

REVISED AS CONSTRUCTED  
 STEVEN SCHULTZ, PE

*[Signature]*

DATE 6/21/14

1) Sta. "L" 989+75, Rt.  
 Const. type "G-2" inlet  
 Const. water quality structure #0789  
 (For details, see sht. GJ-5)  
 (See drg. no. RD364)

2) Sta. "L" 991+09.5, Rt.  
 Const. manhole  
 Step orientation - 85°  
 Inst. 12" storm sew. pipe - 131'  
 5' depth  
 (See drg. nos. RD335, RD336,  
 RD344, RD356, RD386)

3) Sta. "L" 991+30, Rt.  
 Const. type "G-2" inlet  
 Const. water quality structure #0790  
 Inst. 12" storm sew. pipe - 20'  
 5' depth  
 (For details, see sht. GJ-5)

4) Sta. "L" 992+19.5, Rt.  
 Const. manhole  
 Step orientation - 85°  
 Inst. 12" storm sew. pipe - 87'  
 5' depth

5) Sta. "L" 992+40, Rt.  
 Const. type "G-2" inlet  
 Const. water quality structure #0791  
 Inst. 12" storm sew. pipe - 20'  
 5' depth  
 (For details, see sht. GJ-5)

6) Sta. "L" 992+99.5, Rt.  
 Const. manhole  
 Step orientation - 85°  
 Inst. 12" storm sew. pipe - 58'  
 5' depth

7) Sta. "L" 993+20, Rt.  
 Const. type "G-2" inlet  
 Const. water quality structure #0792  
 Inst. 12" storm sew. pipe - 20'  
 5' depth  
 (For details, see sht. GJ-5)

8) Sta. "L" 994+50, Rt.  
 Const. manhole  
 Step orientation - 85°  
 Inst. 12" storm sew. pipe - 128'  
 5' depth

9) Sta. "L" 994+70, Rt.  
 Const. type "G-2" inlet  
 Const. water quality structure #0793  
 Inst. 12" storm sew. pipe - 20'  
 5' depth  
 (For details, see sht. GJ-5)

10) Sta. "L" 995+85, Rt.  
 Const. manhole  
 Step orientation - 85°  
 Inst. 12" storm sew. pipe - 115'  
 5' depth

11) Sta. "L" 996+05, Rt.  
 Const. type "G-2" inlet  
 Const. water quality structure #0794  
 Inst. 12" storm sew. pipe - 20'  
 5' depth  
 (For details, see sht. GJ-5)

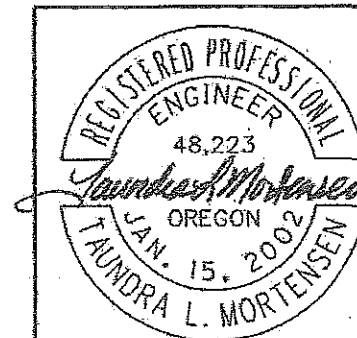
12) Inst. 12" culvert pipe - 35'  
 5' depth  
 (See drg. no. RD300)

13) Sta. "23RD" 10+68.5, Rt.  
 Adjust inlet  
 (See drg. no. RD376)

14) Sta. "L" 987+62, Lt.  
 Adjust inlet  
 Inst. 12" culv. pipe - 75'  
 5' depth  
 Connect to extg. inlet  
 F.L. in 75.07'  
 F.L. out 72.21'

Approved by *[Signature]*  
 Date 8/12/14

Approved. As submitted  
 Approved. As noted  
 Revise and Resubmit



RENEWS: 12-31-2014

|  |                          |
|--|--------------------------|
| <b>OREGON DEPARTMENT OF TRANSPORTATION</b>   |                          |
| <b>REGION 2 TECH CENTER</b>  |                          |
| FFO - US101 S.E. 23RD DR. - S.W. 35TH ST.<br>(LINCOLN CITY) SEC.<br>OREGON COAST HIGHWAY<br>LINCOLN COUNTY |                          |
| Design Team Leader - Carol Corfwright<br>Designed By - Tandra Mortensen<br>Drafted By - Charlotte Garken   |                          |
| <b>DRAINAGE NOTES</b>  | SHEET NO.<br><b>38-2</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**

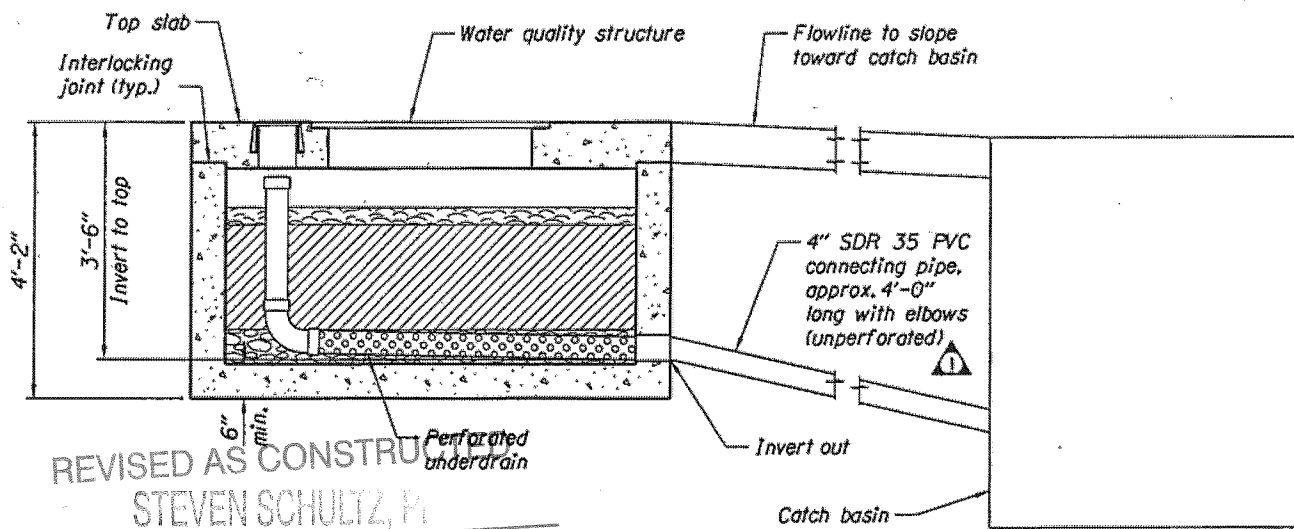
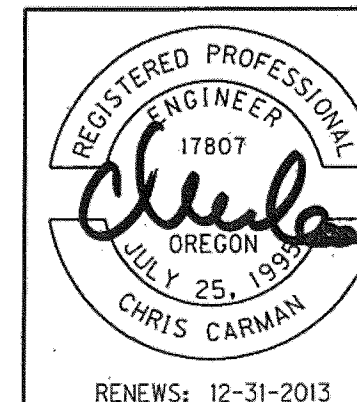
**REGION 2 TECH CENTER**

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

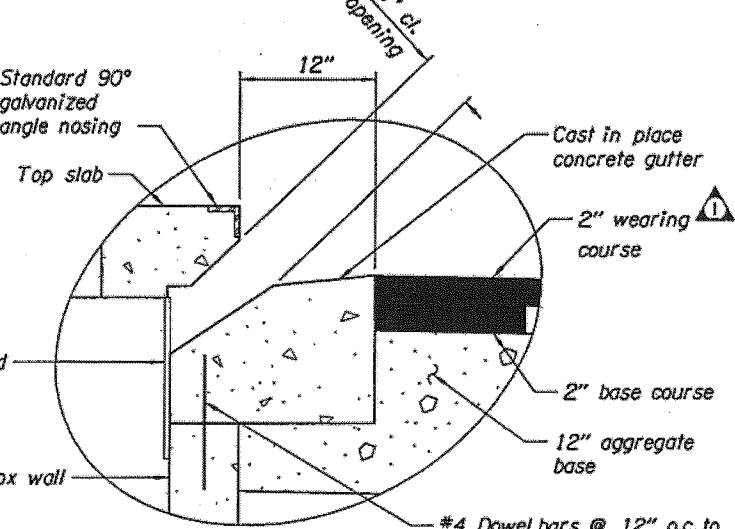
**STORMWATER DETAILS**

SHEET NO.  
**GJ-5**



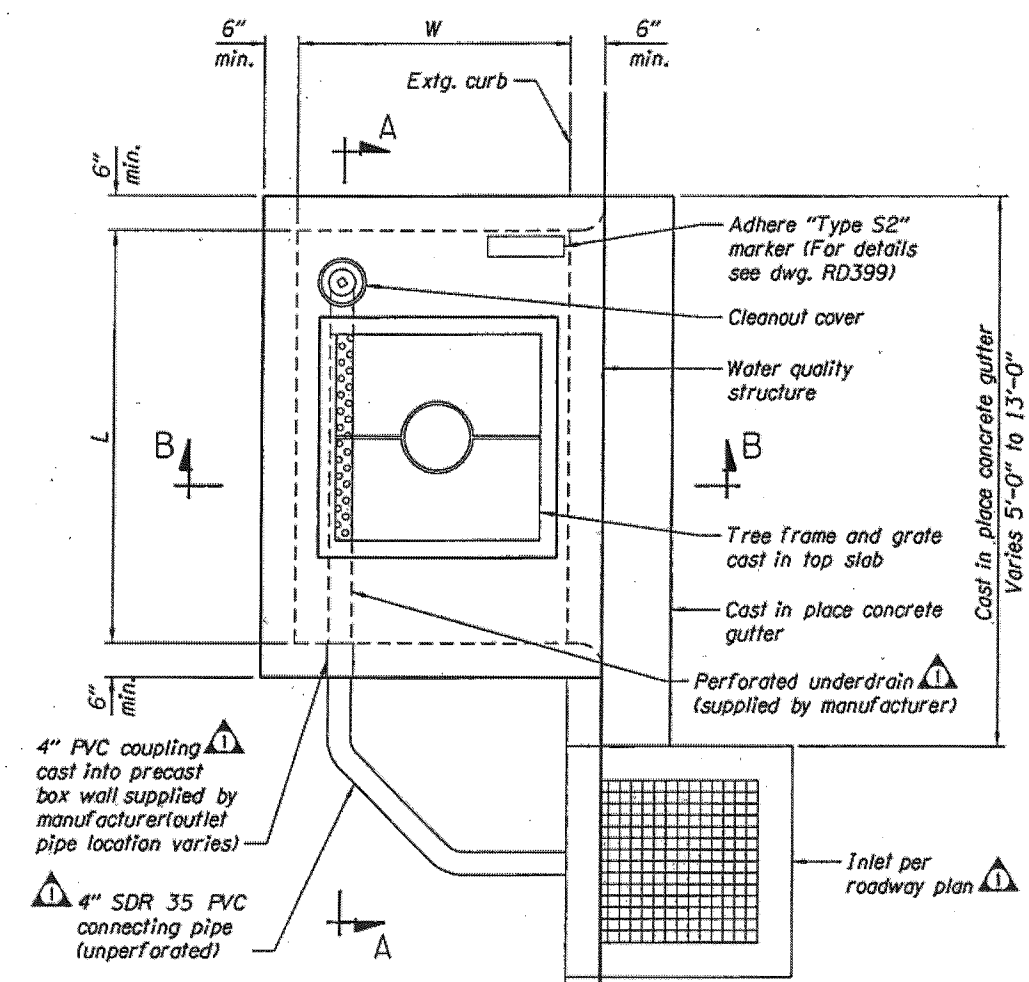
REVISED AS CONSTRUCTED  
STEVEN SCHULTZ, P.E.

DATE 6/21/14  
SECTION A-A



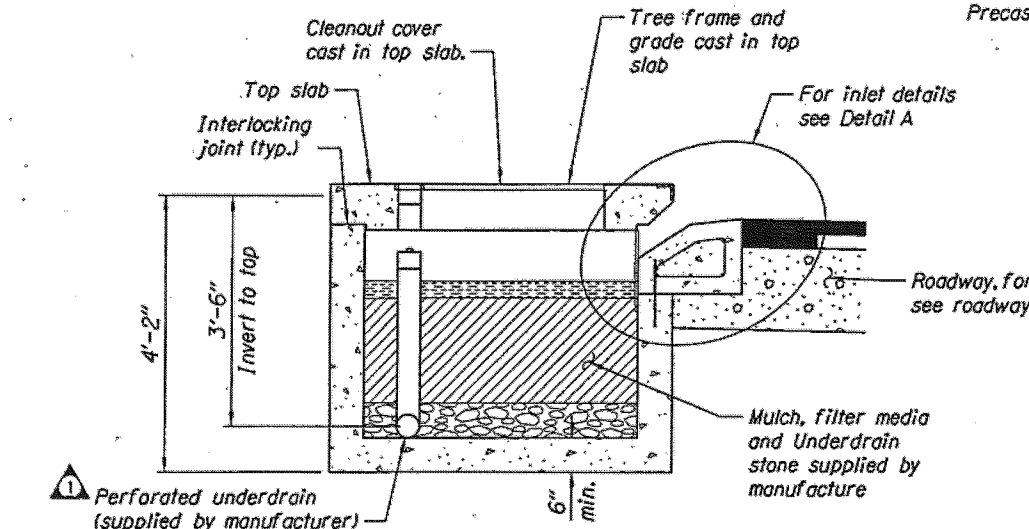
**DETAIL A**

**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.

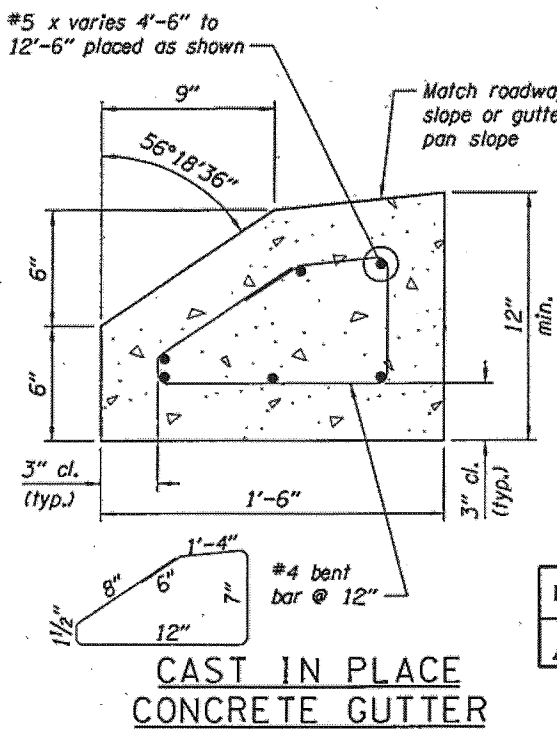


**WATER QUALITY STRUCTURE PLAN**

Throat protection device do not remove - leave in place until site is stabilized and water quality facility is activated.



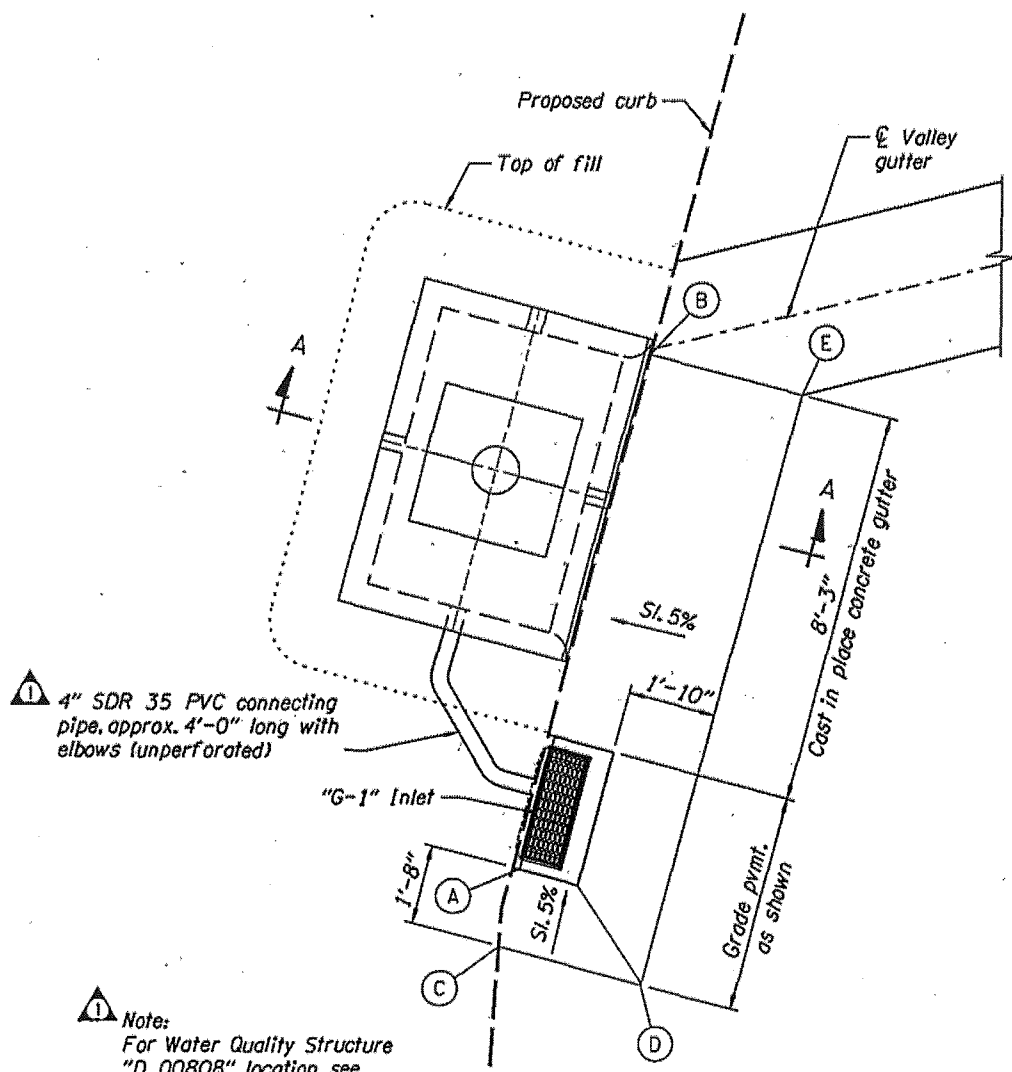
**SECTION B-B**



**CAST IN PLACE CONCRETE GUTTER**

REVISED AS CONSTRUCTED  
STEVEN SCHULTZ, PE

DATE 6/21/14

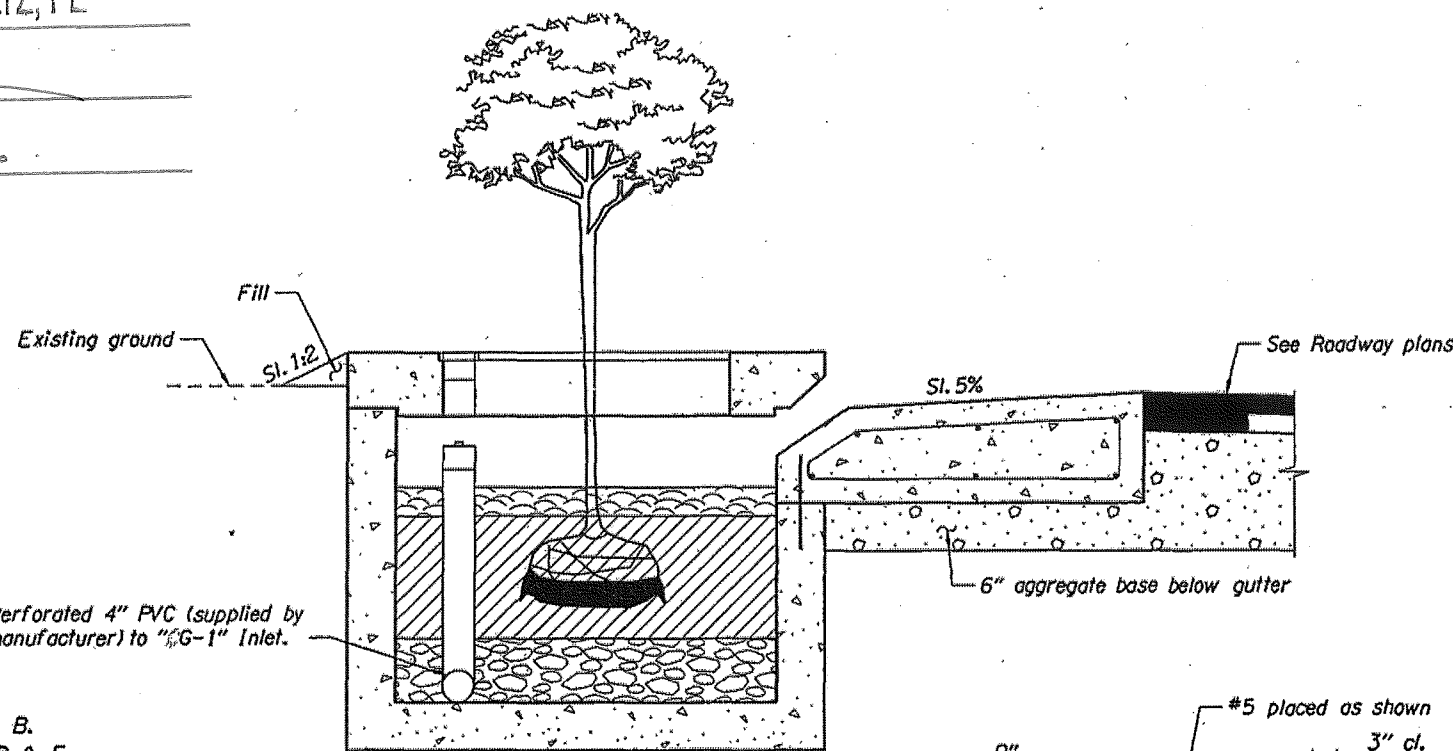


4" SDR 35 PVC connecting pipe, approx. 4'-0" long with elbows (unperforated)

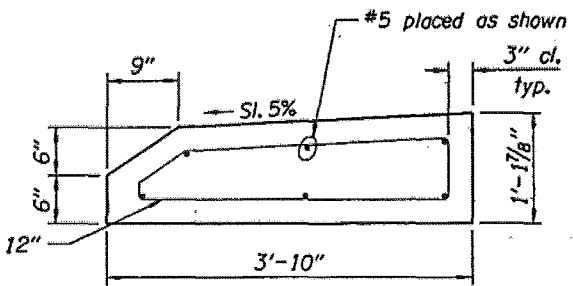
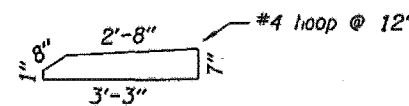
Note:  
For Water Quality Structure "D 00808" location see roadway plans.

- 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.

GUTTER DETAIL



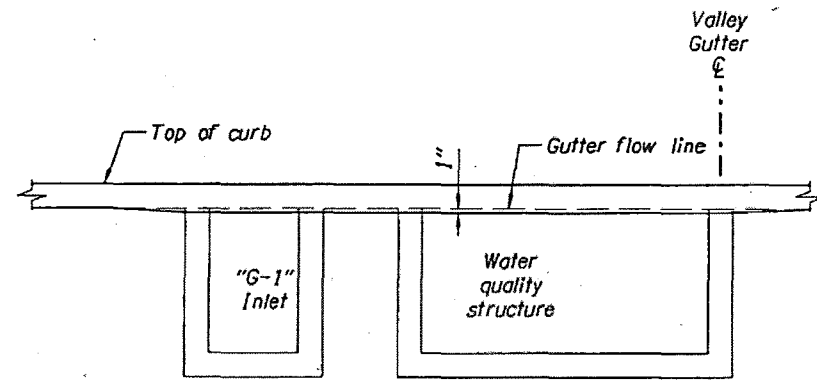
SECTION A-A



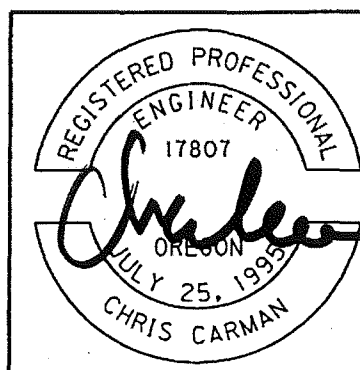
CAST IN PLACE CONCRETE GUTTER DETAIL

| 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

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(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