OPERATION & MAINTENANCE MANUAL

Detention Pond

Manual prepared: July 2019

DFI No. D00572

Figure 1: DFI No. D00572, looking South

1. Identification

Drainage Facility ID (DFI):	D00572
Facility Type:	Water Quality Bioretention Pond
Construction Drawings:	(V-File Numbers) 45V-035
Location:	District: 01
	Highway No.: 037
	Mile Post: 1.81 to 1.81, Right

2. Manual Purpose

The purpose of this manual is to outline inspection needs and summarize maintenance actions for stormwater ponds.

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: Roadway shoulder

Flow direction: South to North

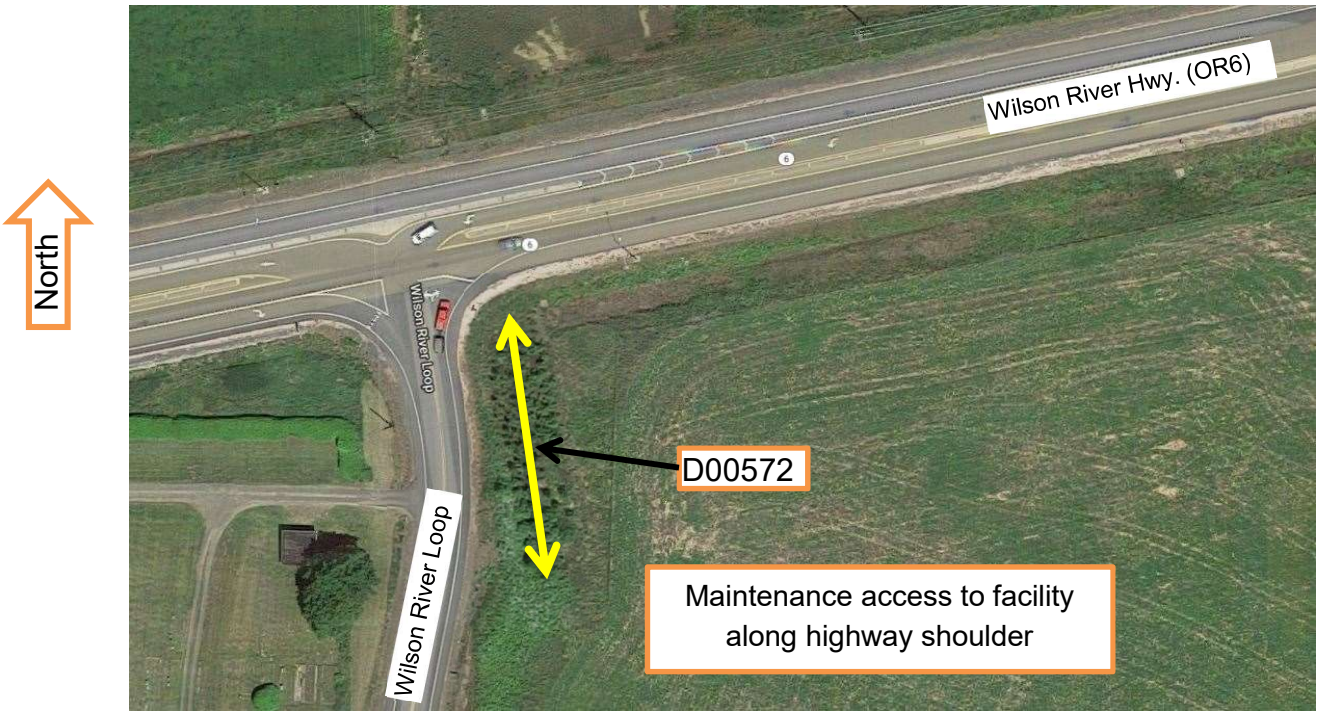


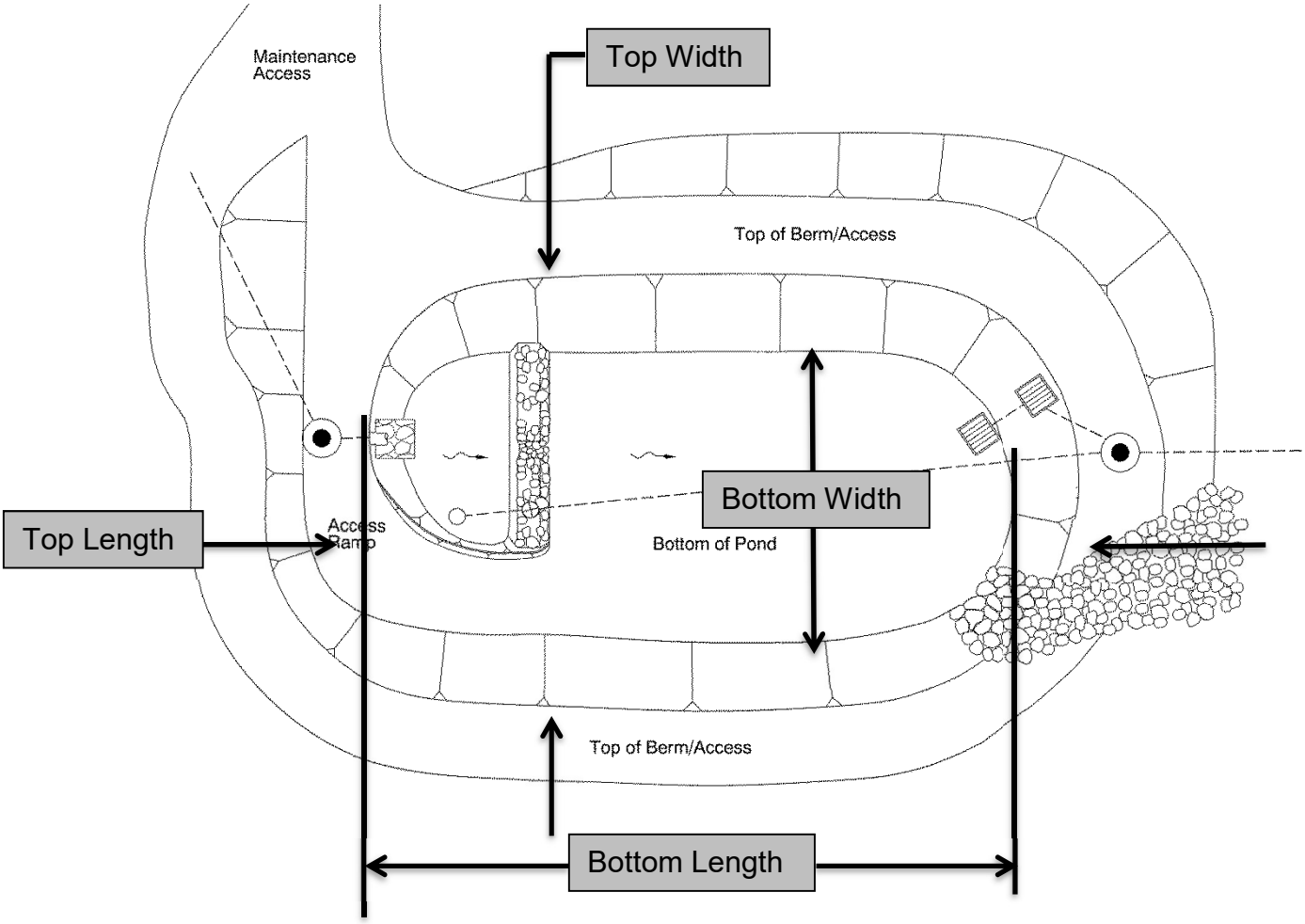
Figure 2: **D00572 facility location map**

4. Facility Summary

The pond size is based on storage volume, the bottom and top surface areas and the depth are used for this measurement.

The bottom area and top area of the pond is:

Bottom Area (sq. ft.)	Top Area (sq. ft.)
5,608	15,256

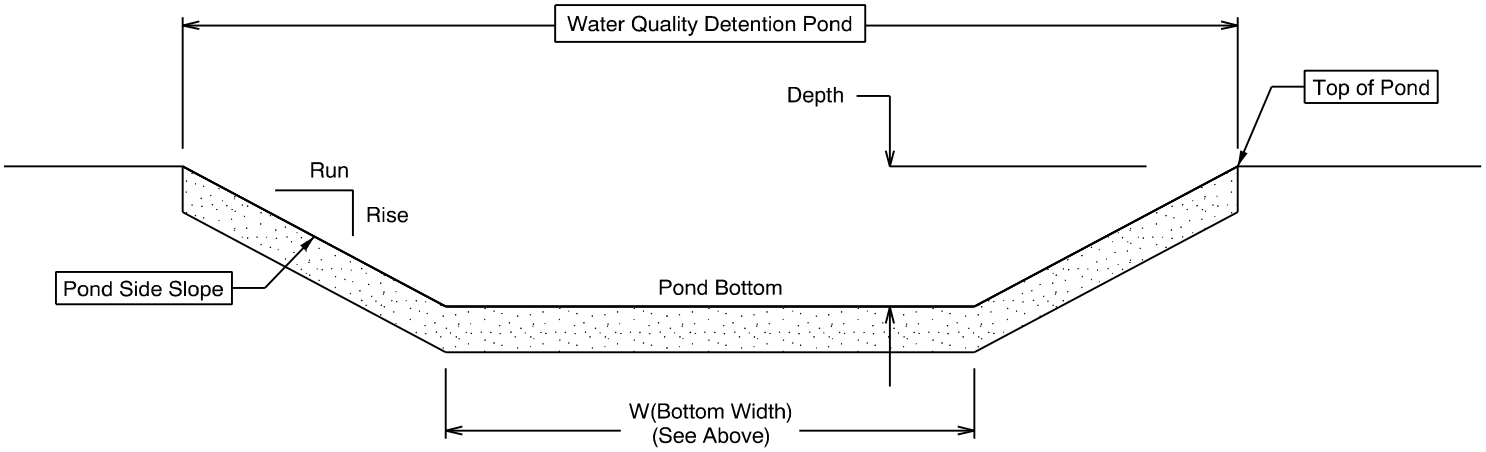


The depth of the pond is the vertical distance measured from the bottom of the pond to the top. The slope of the pond sides is presented by a vertical distance (rise) followed by the horizontal distance (run).

Depth and side slopes:

Depth (feet)
2

Side Slope	
Rise (feet)	1
Run (feet)	4



Site Specific Information: This pond treats the southern portion of Wilson River loop. It is designed to retain/ detain 2 feet of water quality and outlet into a 30" cross culvert. Both D00572 and D00563 outlet in to the same 30" cross culvert.

5. Facility Access

Maintenance access to the facility:

☐Roadside pad	☒Roadside shoulder
☐Access road with Gate	☐Access road without Gate

Figure 3: Roadside shoulder access

6. Operational Components / Maintenance Items

Classification and Standard Operational (Op) Plan:

This facility is classified as a:

☒ Detention Pond (Op Plan A)	☐ WQ Bioretention Pond (Op Plan B)	☐ WQ Extended Detention Dry Pond (Op Plan C)	☐ WQ Detention Pond/Biofiltration Swale Combo (Op Plan D)
A standard operational plan illustrates the general facility footprint configuration and explains the purpose of each facility component. Operational plans (A,B,C,D) are provided in the Standard Operation Manual.			

See Appendix A for the site specific operational plan.

Key Features/Items:

This facility is classified as a:

☐ Dry Pond	☒ Wet Pond
The pond is wet during storm events and dries during periods of no precipitation.	The pond has constant presence of water year round. A portion of the pond dries during periods of no precipitation.

This facility includes a **high flow bypass component**:

☒ No	☒ Yes
There is no bypass component. High flows drains into and through the facility	There is a bypass component. Only low/small flows drain into the pond. High flows are diverted around the pond using a bypass component

This facility includes a **proprietary structure(s)**:

☒ No	☐ Yes (DXXXXX)
There are no proprietary structures associated with this facility.	A proprietary structure is used in the operation of this facility. The proprietary structure is a/an: describe

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 Ponds (implemented May 2019) 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 in the table below.

Table 1: Stormwater Pond Components		ID #
Upstream Manholes/Structures		
Pre-treatment Manhole Type: describe	☐	**P1**
Water Quality Manhole Type: describe	☐	**P2**
Flow Splitter Manhole (Weir/Orifice)	☐	**P3**
Standard Manhole	☐	**P4**
Sediment Basin/Forebay	☐	**P5**
Forebay Dewatering Riser Pipe (outlet)	☐	**P6**
Facility Inlet		
Pavement Sheet Flow	☒	**P7**
Inlet Pipe(s)	☒	**P8**
Open Channel Inlet	☒	**P9**
Riprap Pad (Energy Dissipater)	☒	**P10**
Ground Cover		
Grass Bottom	☒	**P11**
Grass Side Slopes	☒	**P12**
Granular Drain Rock	☐	**P13**
Plantings	☐	**P14**
Underground Components		
Geotextile Fabric: Type 1	☒	**P15**
Impermeable Liner	☐	**P16**
Water Quality Mix	☒	**P17**
Perforated Pipe	☐	**P18**
Bottom Marker (ex. Porous Pavers)	☐	**P19**

Flow Spreader		
Anchored Board (midpoint of pond or every 50 feet along pond bottom)	☐	**P20**
Other: describe	☐	**P21**
Facility Outlet		
Catch Basin with Grate	☐	**P22**
Outlet Pipe(s)	☒	**P23**
Outlet/Flow Control Structure	☐	**P24**
Auxiliary Outlet (Weir)	☒	**P25**
Hazmat Control Valve: Specify make/model	☐	**P26**
Outfall Type		
Waterbody (**C**reek/**L**ake/**O**cean)	☒ **C** ☐ **L** ☐ **O**	**P27**
Ditch	☐	**P28**
Storm Drain System	☐	**P29**
Outfall Components		
Riprap Pad	☐	**P30**
Riprap Bank Protection	☐	**P31**

7. Maintenance

Maintenance Frequency/Maintain Records

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

Maintenance Guide/Maintenance Actions

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 Ponds:

- Table 1 (General Maintenance): Contains general maintenance and inspection guidelines that are applicable to all ODOT water quality facilities
- Table 2 (Maintenance of Stormwater Ponds): Contains maintenance information for ponds

The ODOT Maintenance Guide can be viewed at the following website:
http://www.oregon.gov/ODOT/HWY/OOM/pages/mguide.aspx

The Blue Book can be viewed at the following website:
http://www.oregon.gov/ODOT/Maintenance/Documents/blue_book.pdf

8. Limitations

There are access limitations for this facility:

☐ No	☒ Yes
There are no duty porous pavers installed in this pond.	

Ponds are designed to allow equipment access along the bottom if an access grid is installed. If an access grid is NOT installed, vehicles entering the pond can create depressions (tire ruts), damage vegetation, or damage structural components (e.g. flow spreaders). These conditions may result in poor treatment and drainage performance.

If no access grid then: Equipment wheels should be kept on the tops and side slopes. Mower arms may be run along the pond bottom.

9. 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

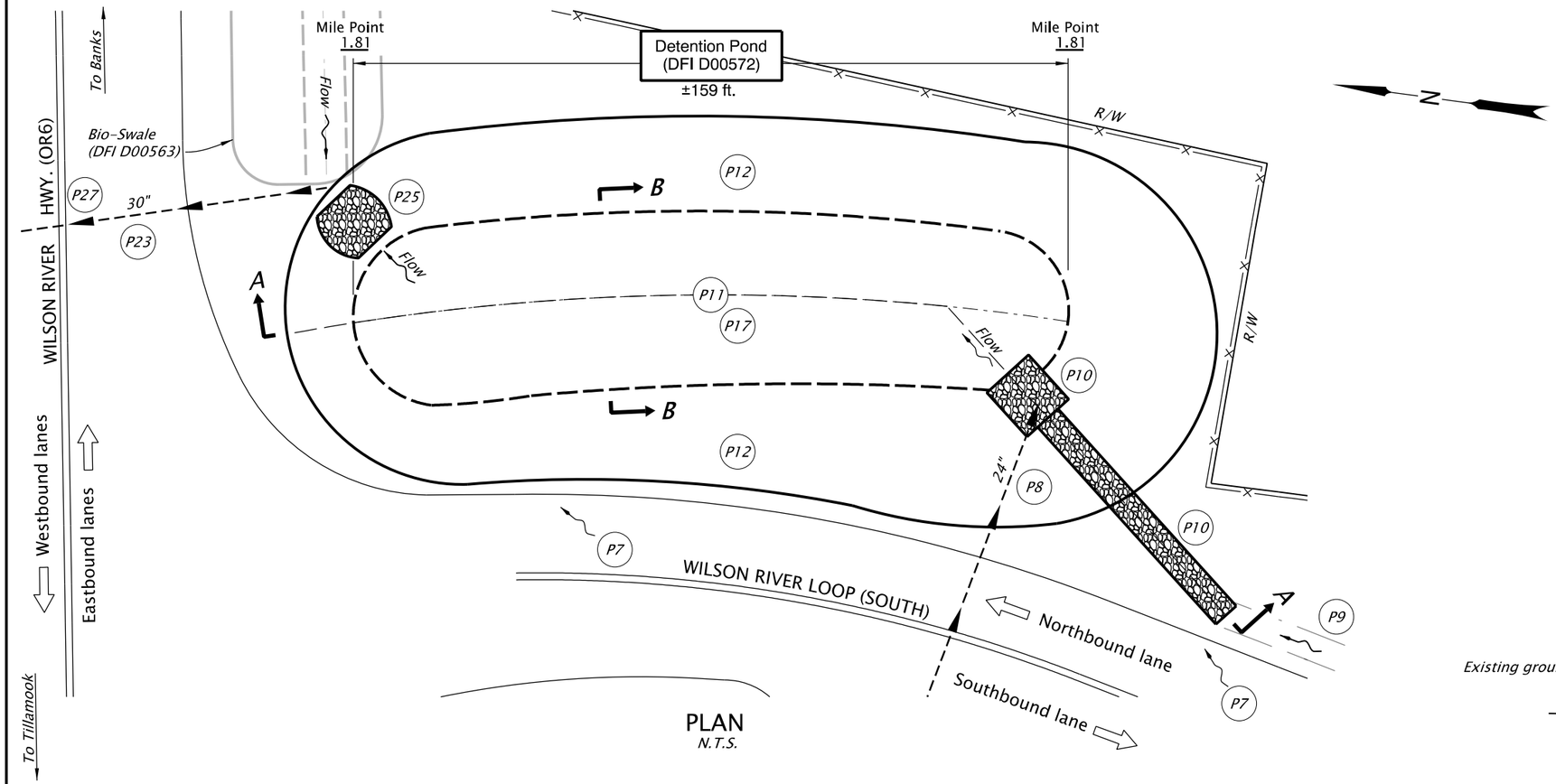
Contact any of the following for more detailed information about management of waste materials found on site:

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:

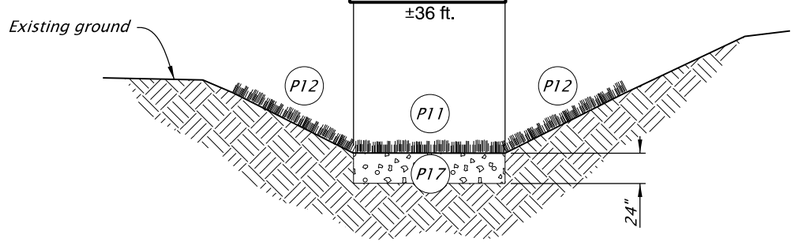
Operational Plan: DFI D00572



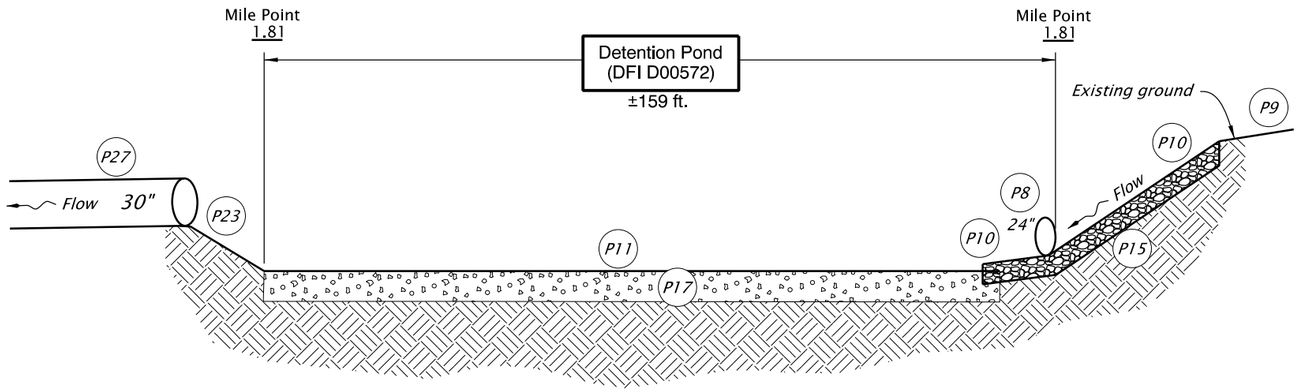
PLAN
N.T.S.

LEGEND:

- *P#* — *Facility Component (see table 1 in O&M Manual)*
- *and or* — *Manhole*
- *and or* — *Inlet*
- *Storm Pipe (Facility)*
- *Storm Pipe*
- *Pond Bottom*
- *Pond Boundary*
- *Conveyance Direction*
- *Pavement / Facility Flow Path*
- *Traffic Flow Direction*



SECTION B-B
N.T.S.



SECTION A-A
N.T.S.

OREGON DEPARTMENT OF TRANSPORTATION

Prepared By: Ramiro Perez

Drafted By: Jeff Coon

DFI D00572
MAINTENANCE DISTRICT 1 HWY 37
DETENTION POND
WILSON RIVER HIGHWAY MP 1.81
TILLAMOOK COUNTY

B Appendix B – Project Contract Plans

Contents:

Site Specific Subset of Project Contract Plan 45V-035

45V-035

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

STATE OF OREGON

DEPARTMENT OF TRANSPORTATION

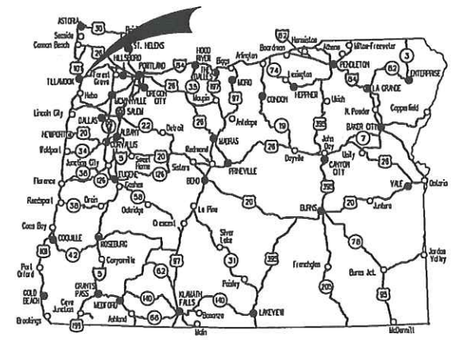
PLANS FOR PROPOSED PROJECT

GRADING, DRAINAGE, STRUCTURES, PAVING, SIGNING, ILLUMINATION, AND ROADSIDE DEVELOPMENT

OR6 @ WILSON RIVER LOOP ROAD SEC.

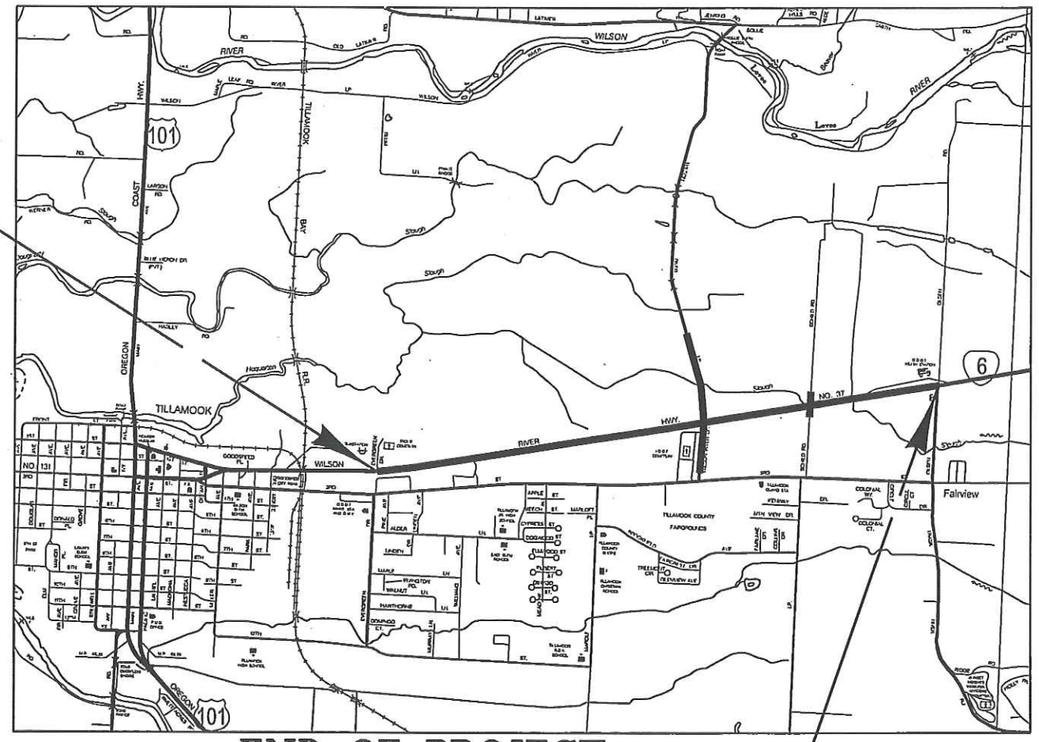
WILSON RIVER HIGHWAY

TILLAMOOK COUNTY
JUNE 2012



Overall Length Of Project - 1.78 Miles

BEGINNING OF PROJECT
NH-S037(026)
STA. "L" 39+50 (M.P. 0.75)



END OF PROJECT
NH-S037(026)
STA. "L" 133+35 (M.P. 2.52)

T. 1 S., R. 9 W., W.M.

REGISTERED PROFESSIONAL ENGINEER
11,149
OREGON
JULY 17, 1981
VIRGIL D. TRUE

Virgil D. True

EXPIRES: 6-30-2014

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.)

PLANS PREPARED FOR
OREGON DEPARTMENT OF TRANSPORTATION
BY:

WHPacific
3470 Pipebend Place
Suite 170
Salem, OR 97301
t: 503.362.4675 f: 503.362.5078

OREGON TRANSPORTATION COMMISSION

Pat Egan	CHAIR
Mary F. Olson	COMMISSIONER
David Lohman	COMMISSIONER
Mark Frohnmayer	COMMISSIONER
Tommy 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: 4/25/12
Signature & date

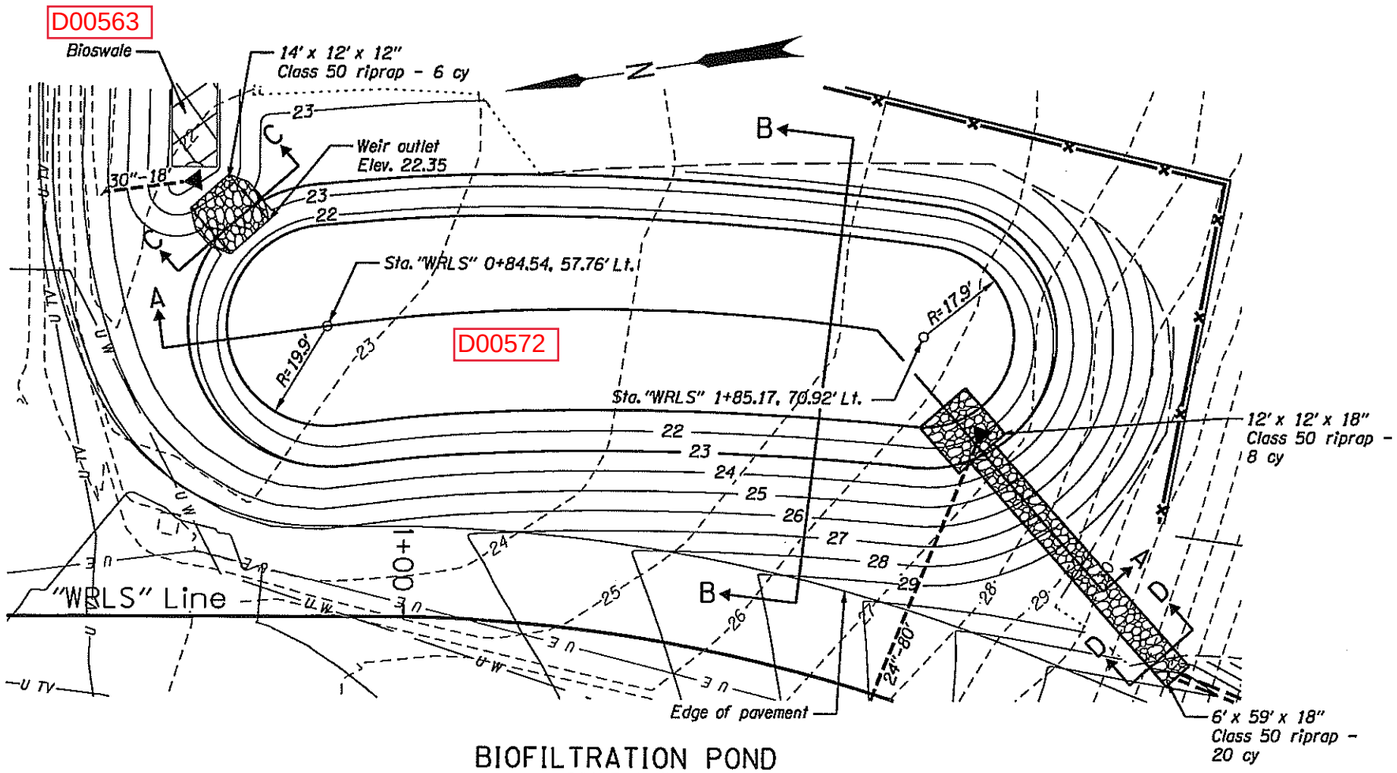
Ed Chamberland, Sr. P.M.
Print name and title

Concurrence by ODOT Chief Engineer

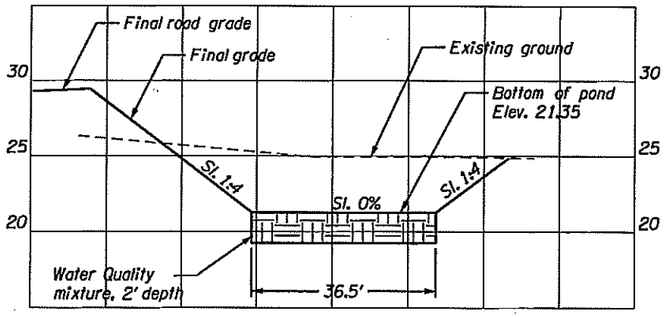
OR6 @ WILSON RIVER LOOP ROAD SEC.
WILSON RIVER HIGHWAY
TILLAMOOK COUNTY

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	NH-S037(026)	1

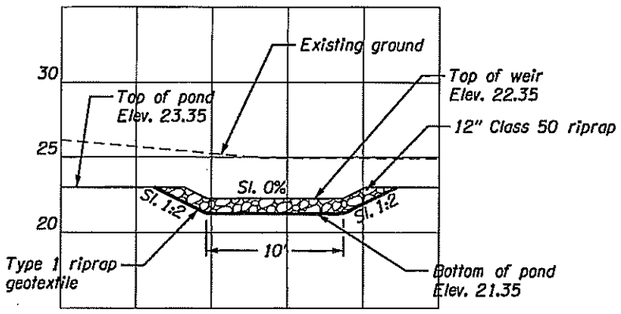
D00563



BIOFILTRATION POND
SCALE: 1"=30'



SECTION B-B
SCALE: 1"=30'



SECTION C-C
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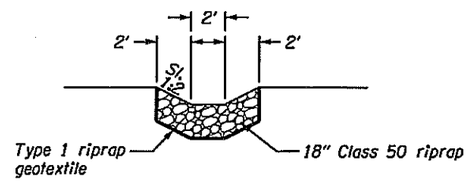

SECTION D-D
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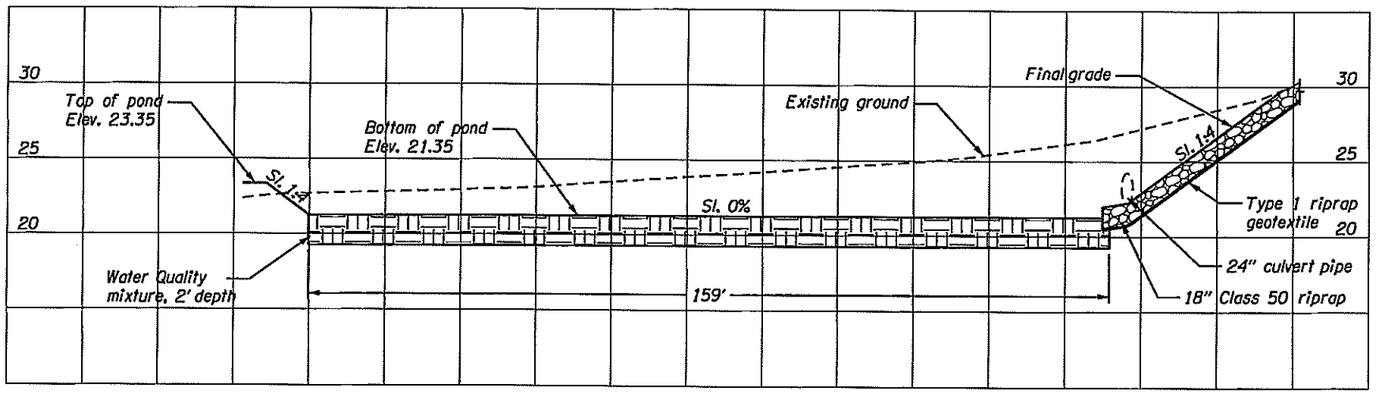

SECTION A-A
SCALE: 1"=30'

Note: See GN series for seed mix in ditches, wetland mitigation areas, bioslopes, bioswales, biofilter strips, and biofiltration pond.

REGISTERED PROFESSIONAL ENGINEER
17810PE
OREGON
JUL 25, 1995
EDWARD J. CHAMBERLAND II
RENEWS: 12-31-2013

OREGON DEPARTMENT OF TRANSPORTATION

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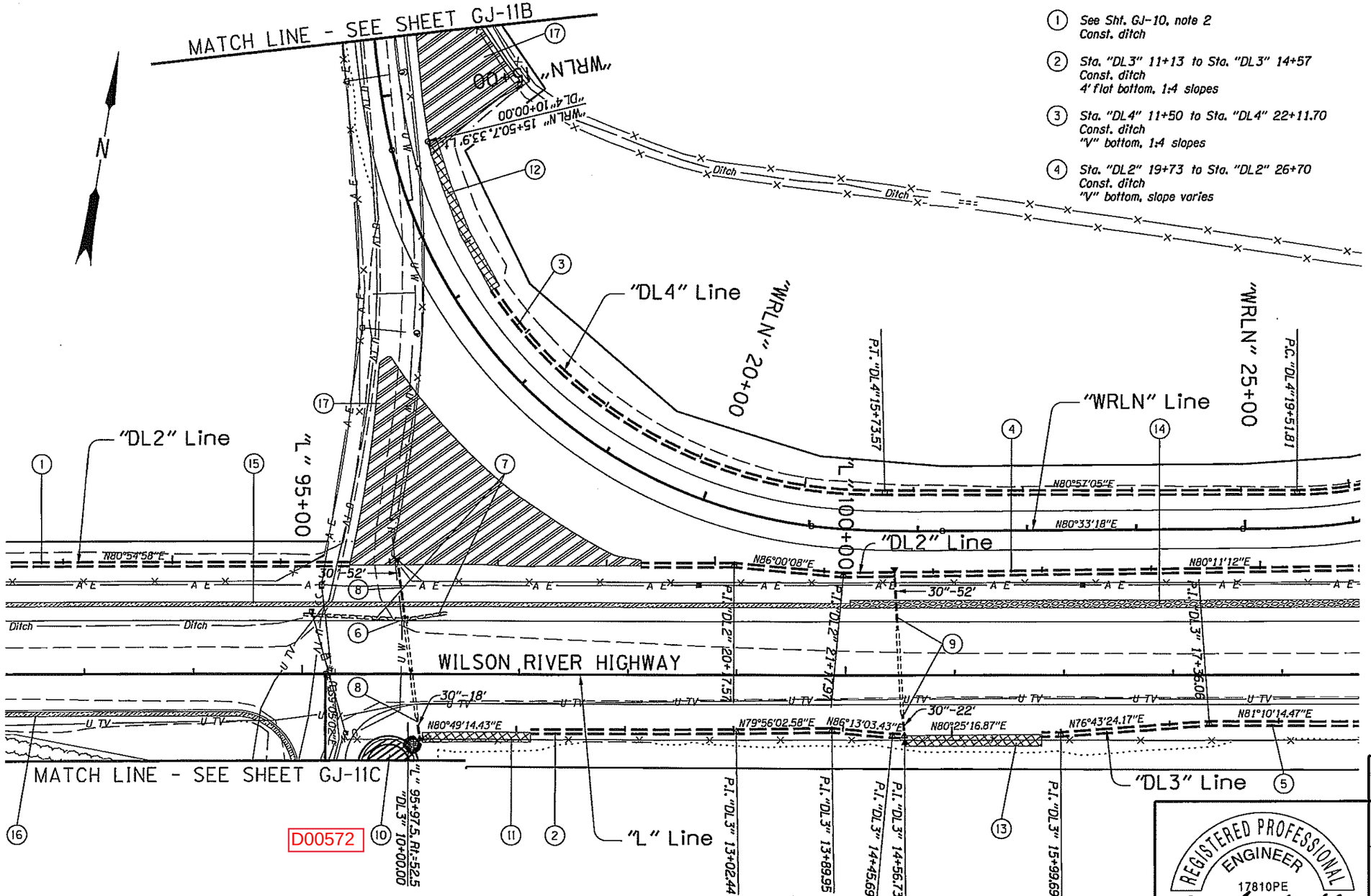
OR6 @ WILSON RIVER
LOOP ROAD SEC.
WILSON RIVER HIGHWAY
TILLAMOOK COUNTY

Design Team Leader - Ed Chamberland
Designed By - Calvin Larwood, Devin Doring, Travis Sater
Drafted By - Linda Foote

STORMWATER DETAILS

SHEET NO. GJ-3



(1) See Sht. GJ-10, note 2
Const. ditch

(2) Sta. "DL3" 11+13 to Sta. "DL3" 14+57
Const. ditch
4' flat bottom, 1:4 slopes

(3) Sta. "DL4" 11+50 to Sta. "DL4" 22+11.70
Const. ditch
"V" bottom, 1:4 slopes

(4) Sta. "DL2" 19+73 to Sta. "DL2" 26+70
Const. ditch
"V" bottom, slope varies

(5) Sta. "DL3" 15+82 to Sta. "DL3" 21+05
Const. ditch
4' flat bottom, 1:4 slopes

(6) Sta. "L" 95+94, 50' Lt.
Remove storm junction box

(7) Sta. "L" 95+01, 54.4' Lt.
Remove 36" pipes - 133'

(8) Sta. "L" 96+00
Extend 30" culv. pipe - 52' Lt., 5' depth
- 18' Rt., 5' depth
Match extg. slope
Const. paved end slope, Lt.& Rt.- 70 sq.ft.

(9) Sta. "L" 100+50
Extend 30" culv. pipe - 52' Lt., 5' depth
- 22' Rt., 5' depth
Match extg. slope
Const. paved end slope, Lt.& Rt.- 110 sq.ft.

(10) Const. biofiltration pond, DF1# D00572
(For details, see sht. GJ-3)

(11) Sta. "DL3" 10+00 to Sta. "DL3" 11+13
Const. bioswale, DF1# D00563
(For details, see sht. GJ-2)

(12) Sta. "DL4" 10+00 to Sta. "DL4" 11+50
Const. bioswale, DF1# D00570
(For details, see sht. GJ-2)

(13) Sta. "DL3" 14+57 to Sta. "DL3" 15+82
Const. bioswale, DF1# D00564
(For details, see sht. GJ-2)

(14) Sta. "L" 100+00 to Sta. "L" 109+00. Lt.
Const. bioslope, DF1# D00565
(For details, see sht. GJ)

(15) See Sht. GJ-10, note 6
Const. biofilter strip

(16) See Sht. GJ-7, note 7
Const. biofilter strip

(17) Const. wetlands shown thus
(For drg. nos., see sht. 1A)

REGISTERED PROFESSIONAL ENGINEER
17810PE
OREGON
JUL 25, 1995
EDWARD J. CHAMBERLAND II
RENEWS: 12-31-2013

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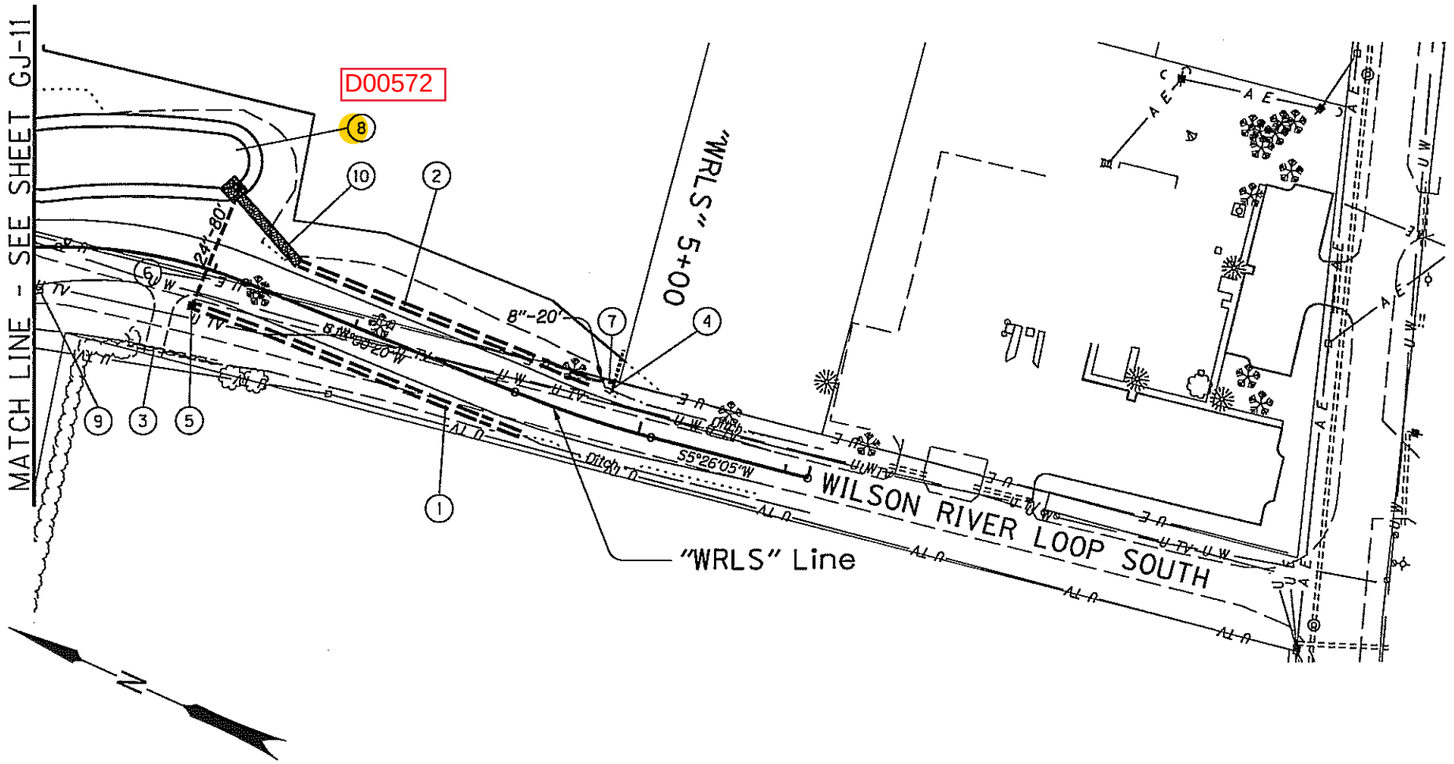
LOOP ROAD SEC.
WILSON RIVER HIGHWAY
TILLAMOOK COUNTY

Design Team Leader - Ed Chamberland
Designed By - Calvin Larwood, Devin Doring
Drafted By - Linda Foote

STORMWATER PLAN

SHEET NO. GJ-11



(1) *Sta. "WRLS" 2+02 to Sta. "WRLS" 4+30, Rt.*
Const. ditch with 6" of 2 inch-4 inch granular drain backfill material
Width varies, 1:4 slope Lt., slope varies Rt.
Inst. Type 1 riprap geotextile
(For details, see sht. GJ-2)

(2) *Sta. "WRLS" 2+50.50 to Sta. "WRLS" 4+67, Lt.*
Const. ditch with 6" of 2 inch-4 inch granular drain backfill material
"V" bottom, 1:4 slopes
Inst. Type 1 riprap geotextile
(For details, see sht. GJ-2)

(3) *Sta. "WRLS" 1+52, 60' Rt.*
Remove 12" pipe - 60'

(4) *Sta. "WRLS" 4+75, 21.5' Lt.*
Remove 8" pipe - 6'
(Field verify)

(5) *Sta. "WRLS" 1+92.60, 26.4' Rt.*
Const. modified Type D ditch inlet
Rim=28'
Connect to storm sewer pipe
(For details, see sht. GJ)

(6) *Sta. "WRLS" 1+92.60, 26.4' Rt. to Sta. "WRLS" 1+98.80, 53.3' Lt.*
Inst. 24" culv. pipe - 80', 5' depth
Const. paved end slope, Lt. - 44 sq.ft.
Sl.=1.25%
I.E.=23.00' (E)
I.E.=24.00' (W)

(7) *Sta. "WRLS" 4+55.90, 24.7' Lt. to Sta. "WRLS" 4+75.20, 27.7' Lt.*
Inst. 8" storm sewer pipe - 20', 5' depth
Inst. 90° elbow
Inst. 8" Tee fitting with cleanout
Connect to exist. storm sewer pipe
I.E.(out)=44.00'
(Field verify)
(See sht. 2B-8 for details)

(8) *Const. biofiltration pond*
(For details, see sht. GJ-3)

(9) *See Sht. GJ-7, note 7*
Const. biofilter strip

(10) *Const. loose riprap blanket (Class 50) - 28 cu.yd.*
Inst. Type 1 riprap geotextile - 460 sq. ft.
(For details, see sht. GJ-3)

REGISTERED PROFESSIONAL ENGINEER
17810PE
OREGON
JUL 25, 1995
EDWARD J. CHAMBERLAND II
RENEWS: 12-31-2013

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WILSON RIVER HIGHWAY
TILLAMOOK COUNTY

Design Team Leader - Ed Chamberland
Designed By - Calvin Larwood, Devin Daring
Drafted By - Linda Foote

STORMWATER PLAN

SHEET NO. GJ-11C