

OPERATION & MAINTENANCE MANUAL

DFI No.: D00915

Facility Type: Water Quality Biofiltration
Swale



JULY 2016

1. Identification

Drainage Facility ID (DFI): **D00915**
Facility Type: Water Quality Biofiltration Swale
Construction Drawings: (V-File Number) 47V-177
Location: District: 7
Highway No.: 001
Mile Post: 161.81/161.83 (beg./end)
Description: This facility is located on the western side of I-5 (Hwy 001, Pacific Highway). Access can be obtained from the highway shoulder.

2. Facility Contact Information

Contact the Engineer of Record, Region Technical Center, or Geo-Environmental's Senior Hydraulics Engineer for:

- Operational clarification
- Maintenance clarification
- Repair or restoration assistance

Engineering Contacts:

Region Technical Center Hydraulics Engineer (541) 957-3570

Or

Geo-Environmental Senior Hydraulics Engineer (503) 986-3365.

3. Construction

Engineer of Record: Wade R. Holaday
ODOT Designers: Region 3 Tech. Center,
Phone no. 541-957-3570
Facility construction: 2016
Contractor: K&A Construction, Inc.

4. Storm Drain System and Facility Overview

A water quality swale is a flat-bottomed open channel designed to treat stormwater runoff from highway pavement areas. This type of facility is

lined with grass. Treatment by trapping sedimentation occurs when stormwater runoff flows through the grass.

Stormwater for the facility is collected by the roadside ditch (Point A) in addition to sheet flow from the adjacent lanes of I-5. Refer to the Operational Plan in Appendix A for the point locations. Water conveyed into the swale undergoes treatment as it flows through the length of the channel. The treated water flows out of the swale through a Type "D" inlet and 18" cross culvert. (Point B) This storm system directs the flow into Buck Creek.

A. Maintenance equipment access:

Maintenance crew can access the facility from the South Umpqua Weigh Scale that is located on the western side of I-5.

B. Heavy equipment access into facility:

- Allowed (no limitations)
- Allowed (with limitations)
- Not allowed

C. Special Features:

- Amended Soils
- Porous Pavers
- Liners
- Underdrains

5. Facility Haz Mat Spill Feature(s)

The swale can be used to store a volume of liquid by blocking the inlet grate.(Point B)

6. Auxiliary Outlet (High Flow Bypass)

This facility has a rip-rap lined overflow. If the inlet is blocked the excess flow will overtop the outlet and continue to flow within the roadside ditch the next culvert crossing.

The auxiliary outlet feature for this facility is:

- Designed into facility
- Other, as noted below

7. Maintenance Requirements

Routine maintenance table for non-proprietary stormwater treatment and storage/detention facilities have been incorporated into ODOT's Maintenance Guide. These tables summarize the maintenance requirements for ponds, swales, filter strips, bioslopes, and detention tanks and vaults. Special maintenance requirements in addition to the routine requirements are noted below when applicable.

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

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

Maintenance requirements for proprietary structures, such as underground water quality manholes and/or vaults with filter media are noted in Appendix C when applicable.

The following stormwater facility maintenance table (See ODOT Maintenance Guide) should be used to maintain the facility outlined in this Operation and Maintenance Manual or follow the Maintenance requirements outlined in Appendix C when proprietary structure is selected below:

- Table 1 (general maintenance)
- Table 2 (stormwater ponds)
- Table 3 (water quality biofiltration swales)
- Table 4 (water quality filter strips)
- Table 5 (water quality bioslopes)
- Table 6 (detention tank)
- Table 7 (detention vault)
- Appendix C (proprietary structure)

- Special Maintenance requirements:N/A

8. Waste Material Handling

Material removed from the facility is defined as waste by DEQ. Refer to the roadwaste 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>

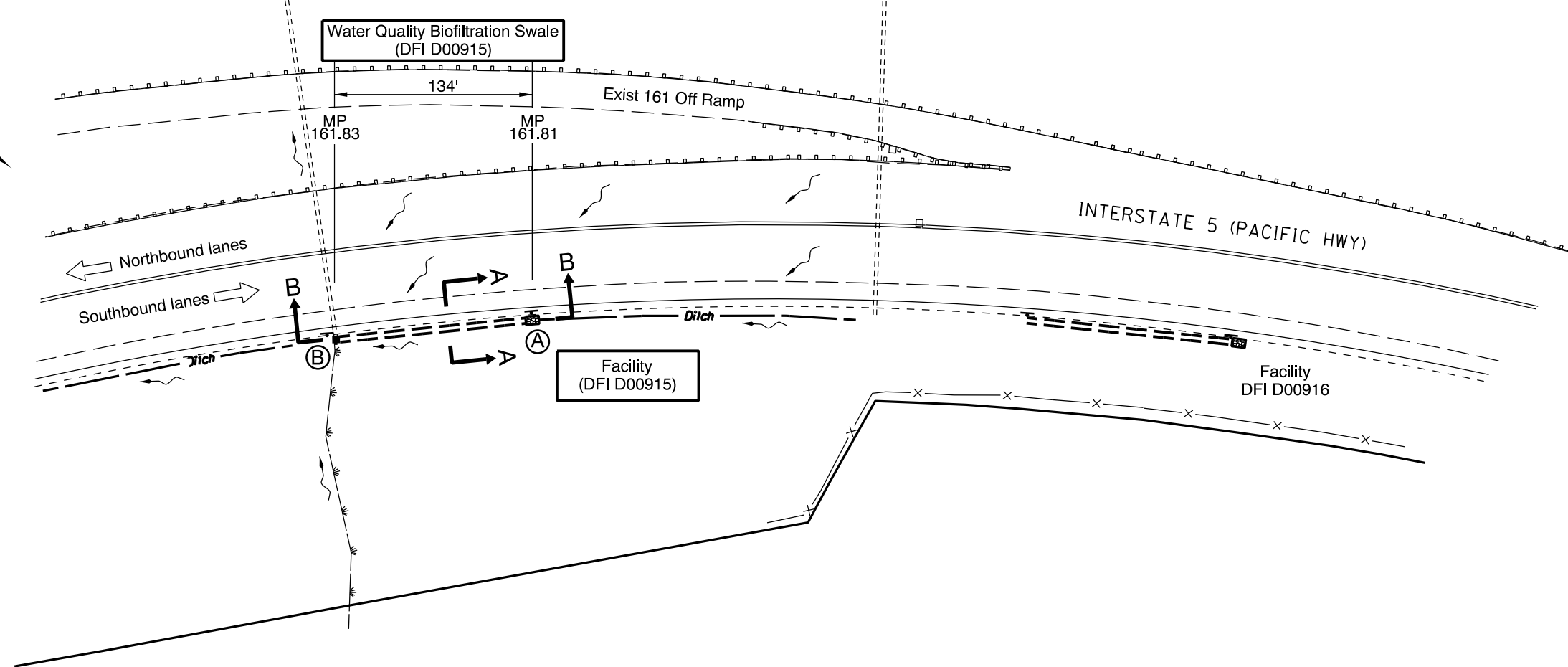
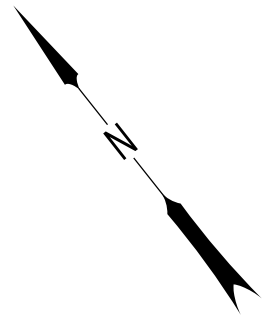
Contact any of the following for more detailed information about management of waste materials found on site:

| | |
|-----------------------------------|----------------|
| ODOT Clean Water Unit | (503) 986-3008 |
| ODOT Statewide Hazmat Coordinator | (503) 229-5129 |
| ODOT Region Hazmat Coordinator | (541) 957-3594 |
| ODEQ Northwest Region Office | (503) 229-5263 |

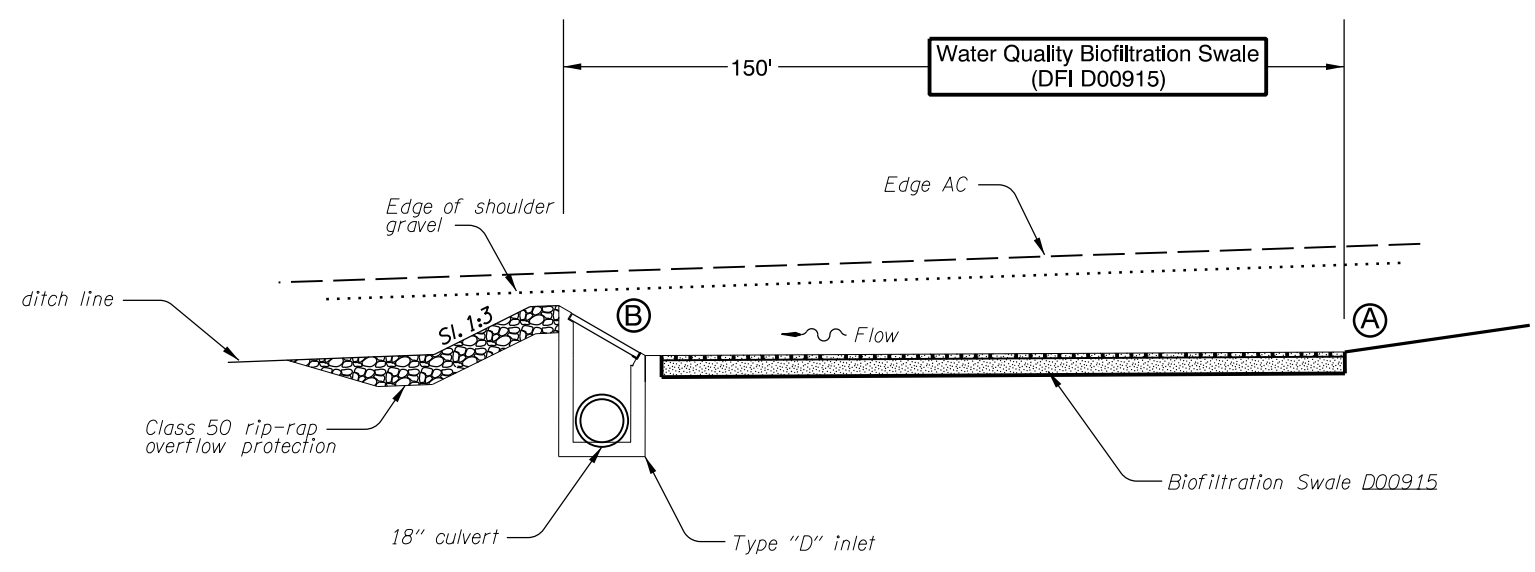
Appendix A

Content:

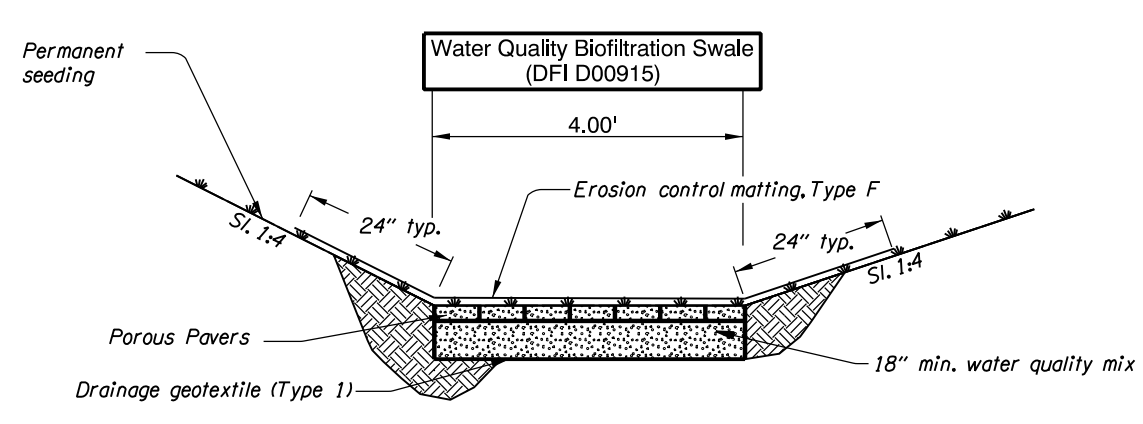
- **Operational Plan and Profile Drawing(s)**



- LEGEND:**
- Photo Location / Direction
 - Inlet
 - Type "D" Outlet
 - Manhole
 - Inlet
 - Storm Pipe (Facility)
 - Storm Pipe
 - Conveyance Direction
 - Pavement / Facility Flow Path



SECTION B-B
SECTION VIEW
Not to scale



SECTION A-A
SECTION VIEW
Not to scale

OREGON DEPARTMENT OF TRANSPORTATION

Prepared By: Wade Holaday
Drafted By: Wade Holaday

DFI D00915
MAINTENANCE DISTRICT 7 HWY 001
BIOFILTRATION SWALE
HIGHWAY MP 161.81
DOUGLAS COUNTY

Appendix B

Content:

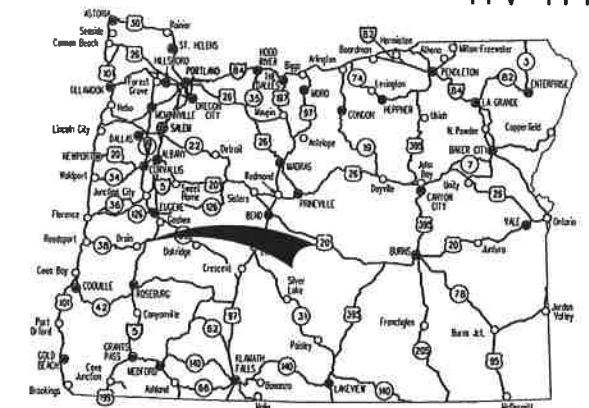
- **ODOT Project Plan Sheets**
 - *Cover/Title Sheet*
 - *Water Quality/Detention Plan Sheets*
 - *Other Details*

STATE OF OREGON
 DEPARTMENT OF TRANSPORTATION
 PLANS FOR PROPOSED PROJECT
PAVING

I-5: ANLAUF - ELKHEAD RD PAVING

**PACIFIC HIGHWAY
 DOUGLAS COUNTY
 FEBRUARY, 2015**

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

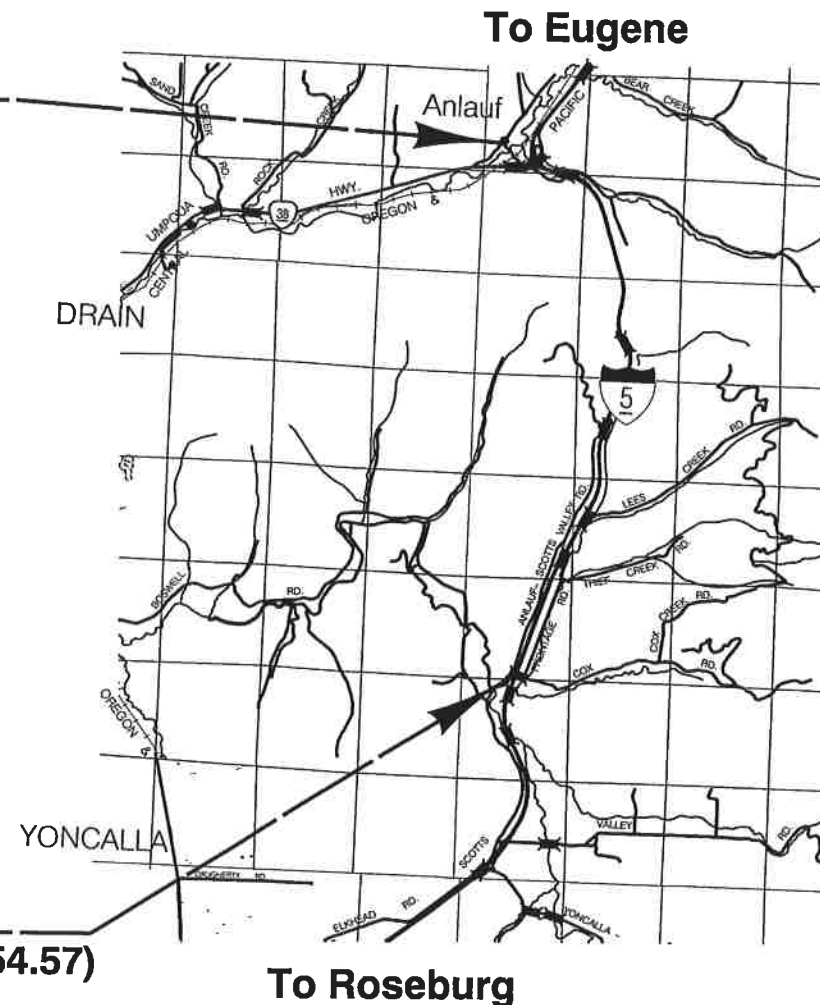


Overall Length Of Project - 7.66 Miles

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
 NHPP-S001(457)
 STA. "LC" 303+37.46 (M.P. 162.23)**



**END OF PROJECT
 NHPP-S001(457)
 STA. "LN" 710+00.77 (M.P. 154.57)**

OREGON TRANSPORTATION COMMISSION
 Catherine Mater CHAIR
 Tommy Boney COMMISSIONER
 David Lohman COMMISSIONER
 Susan Morgan COMMISSIONER
 Alando Simpson 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: *M. Thompson*
 Signature & date 12-9-2014

Mark Thompson Reg. 3 Tech Ctr. Mgr.
 Print name and title

Thomas Jones
 Concurrence by ODOT Chief Engineer

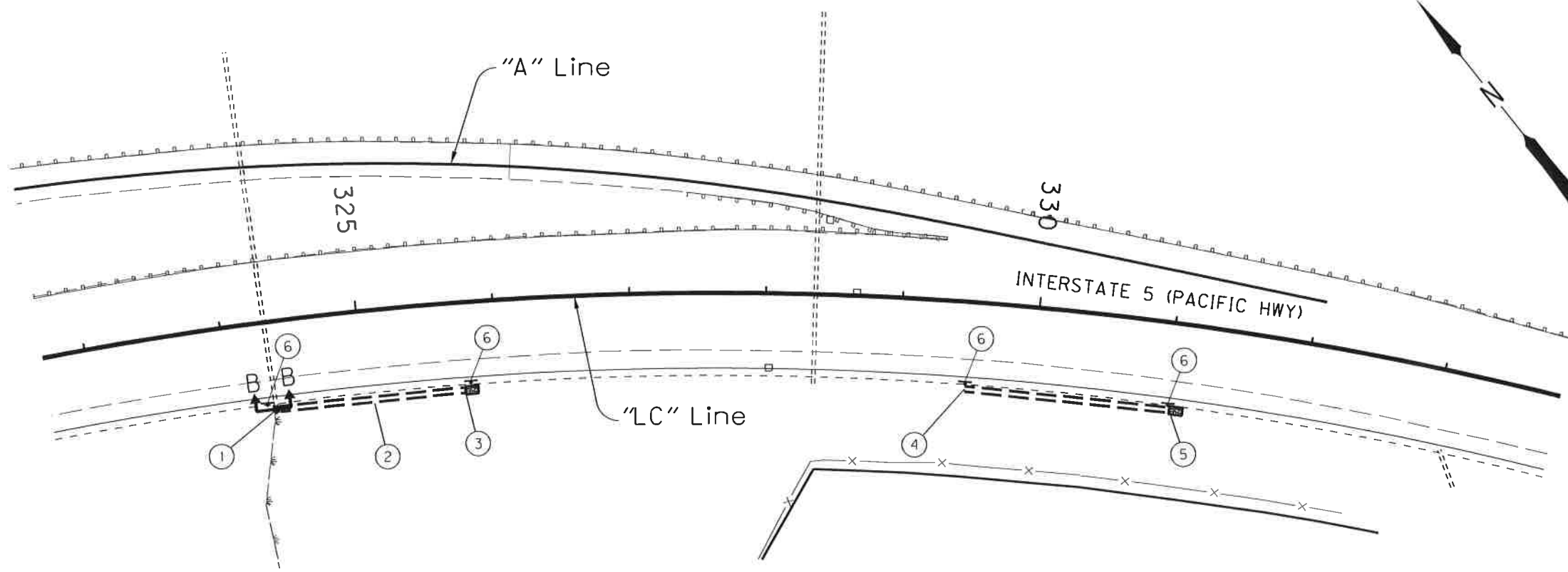
**I-5: ANLAUF - ELKHEAD RD PAVING
 PACIFIC HIGHWAY
 DOUGLAS COUNTY**

| | | |
|--------------------------------|----------------|-----------|
| FEDERAL HIGHWAY ADMINISTRATION | PROJECT NUMBER | SHEET NO. |
| OREGON DIVISION | NHPP-S001(457) | 1 |

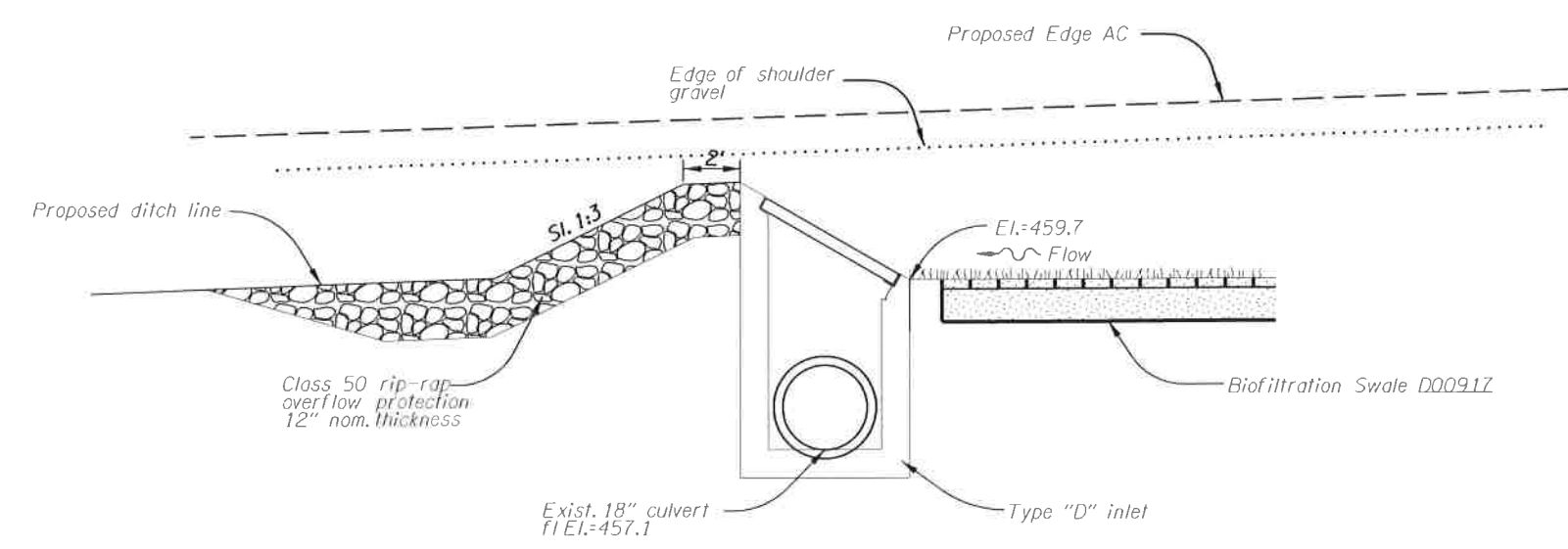
T. 21 S., R. 4 W., W.M.
 T. 22 S., R. 4 W., W.M.



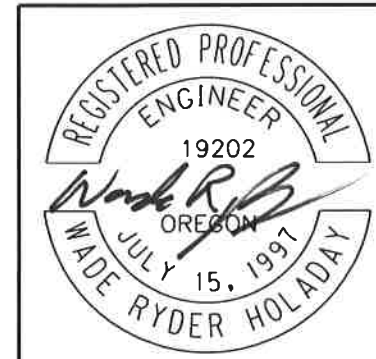
Sec. 32, T. 21 S, R. 4 W, W.M.



- ① Sta. "LC" 324+33.34, 64.3' Rt. connect to extg. culvert
Const Type "D" inlet
Install 18" pipe - 5 lf
5' depth
(refer to detail, this sht.)
(See dwg. no. RD370)
- ② Sta. "LC" 324+33.34, Rt. to "LC" 325+66.95, Rt.
Const. water quality swale D00915
(refer to detail, this sht. & sht. GJ)
- ③ Sta. "LC" 325+66.95
Gen. exc. - 1.5 cy
Const. loose rip-rap, Class 50 - 1.5 cy
- ④ Sta. "LC" 329+49.22 Rt. to "LC" 330+69.27
Const. water quality swale D00916
(refer to detail, sht. GJ)
- ⑤ Sta. "LC" 325+66.95
Gen. exc. - 1.5 cy
Const. loose rip-rap, Class 50 - 1.5 cy
- ⑥ Install field facility marker, Type S2 - 4 ea
(for details, see sht. GJ-6)



SWALE END DETAIL
SECTION B-B
Water Quality Swale "D00915"
NTS



EXPIRES: JUNE 30, 2017

| | |
|--|--------------------------|
| OREGON DEPARTMENT OF TRANSPORTATION | |
| REGION 3 - TECHNICAL CENTER | |
| I-5: ANLAUF - ELKHEAD RD PAVING PACIFIC HIGHWAY DOUGLAS COUNTY | |
| Designed By - Wade Holaday Reviewed By - DeLanie Cutsforth Drafted By - Wade Holaday | |
| STORMWATER PLANS | SHEET NO. GJ-2 |