

# OPERATIONS AND MAINTENANCE MANUAL

DFI No. 00855

Facility Type: Biofiltration Swale



Facility D00855 Looking West from Highway

July, 2019

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|             |  |
|-------------|--|
| APPENDIX A: | Operations Plan and Profile Drawing(s) |
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## 1. Identification

Facility Types: Water Quality Biofiltration Swale, D00855

Location: Lafayette Highway 154  
Milepost 0.90 to 0.94, Right  
Region 2, District 3



Facility D00855 Location Map

## 2. Facility Contact Information

Chris Carman, ODOT Hydraulics Engineer (503) 986-2691.

## 3. Construction

Engineer of Record: ODOT Designer - Region 2 Tech. Center,  
Chris Carman, (503) 986-2691

Facility construction: 2017

## 4. Overview

The swale is located 0.25 miles north of Stringtown Road on the west side of the Lafayette highway. Treatment of pollutants from the highway are achieved through sedimentation and infiltration through the water quality mix shown in section B-B in the operational plan.

### A. Maintenance equipment access:

Maintenance crews and equipment can access the bioswale facility by parking on the shoulder of southbound OR-154 between mile posts 0.90 and 0.94.

### B. Heavy equipment access into facility:

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

Access is allowed for light to mid weight equipment such as mowers and small excavators.

### C. Special Features:

- Amended Soils
- Porous Pavers
- Liners
- Underdrains

## 5. Facility Haz Mat Spill Feature

The swale can be used to store a volume of liquid by blocking the outlet of the swale. A barrier such as a temporary berm made of sandbags could be used to prevent liquid from draining from the swale.

## 6. Auxiliary Outlet (High Flow Bypass)

Auxiliary Outlets are provided if the primary outlet control structure can not safely pass the projected high flows. Broad-crested spillway weirs and over flow risers are the two most common auxiliary outlets used in stormwater treatment facility design. The auxiliary outlet feature is either a part of the facility or an additional storm drain feature/structure.

The auxiliary outlet feature for this facility is:

Designed into facility

Other

This facility does not contain an auxiliary outlet feature. The facility was designed to receive runoff from the road and discharge into cross pipes.

## 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, under the **Operations and Maintenance Manuals and Maintenance Tables** section:

<https://www.oregon.gov/ODOT/GeoEnvironmental/Pages/Stormwater.aspx>

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:

## 8. Waste Material Handling

Material removed from the facility is defined as waste by DEQ. Refer to the roadwaste section 5.18 of the ODOT Maintenance Yard Environmental Management System (EMS) Policy and Procedures Manual for disposal options:

[https://www.oregon.gov/ODOT/HWY/OOM/EMSdoc/ems\\_manual.pdf](https://www.oregon.gov/ODOT/HWY/OOM/EMSdoc/ems_manual.pdf)

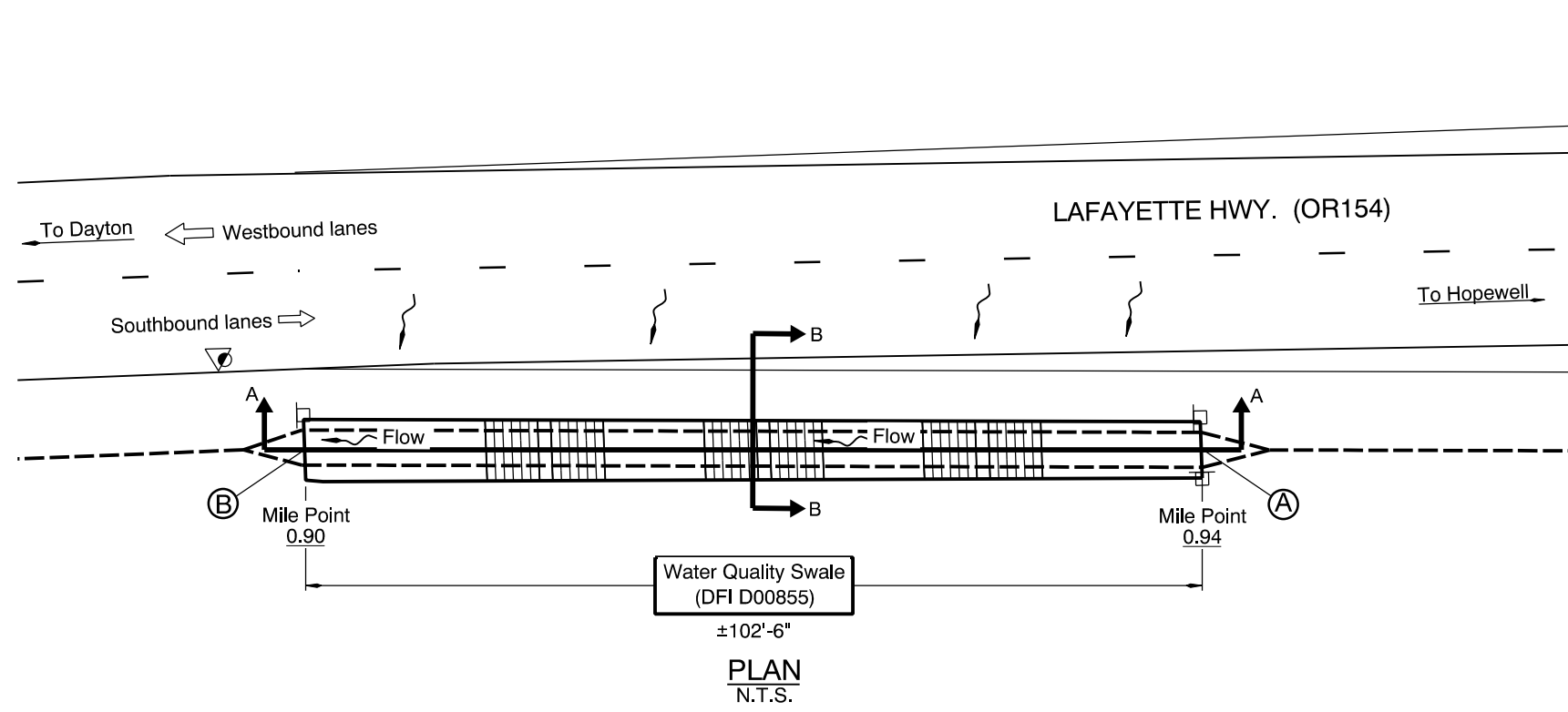
Contact any of the following for more detailed information about management of waste materials found on site:

|                                   |                |
|-----------------------------------|----------------|
| ODOT Clean Water Unit             | (503) 986-3008 |
| ODOT Statewide Hazmat Coordinator | (503) 229-5129 |
| ODOT Region Hazmat Coordinator    | (503) 986-2647 |
| ODEQ Northwest Region Office      | (503) 229-5263 |

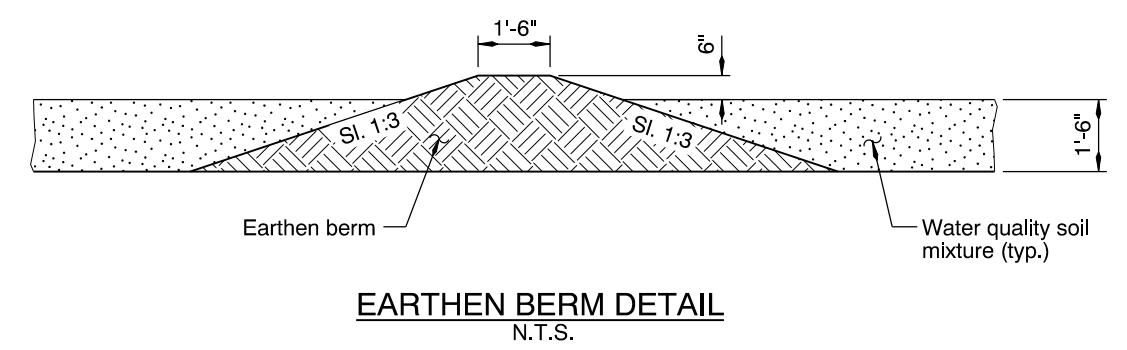
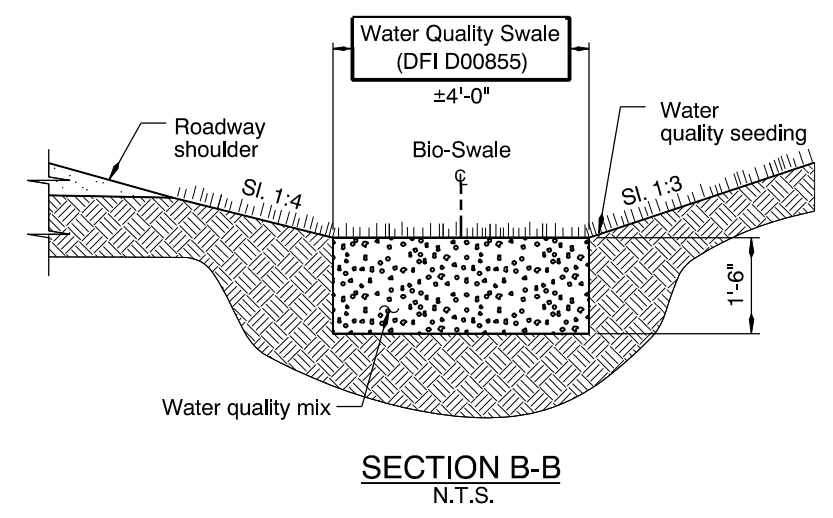
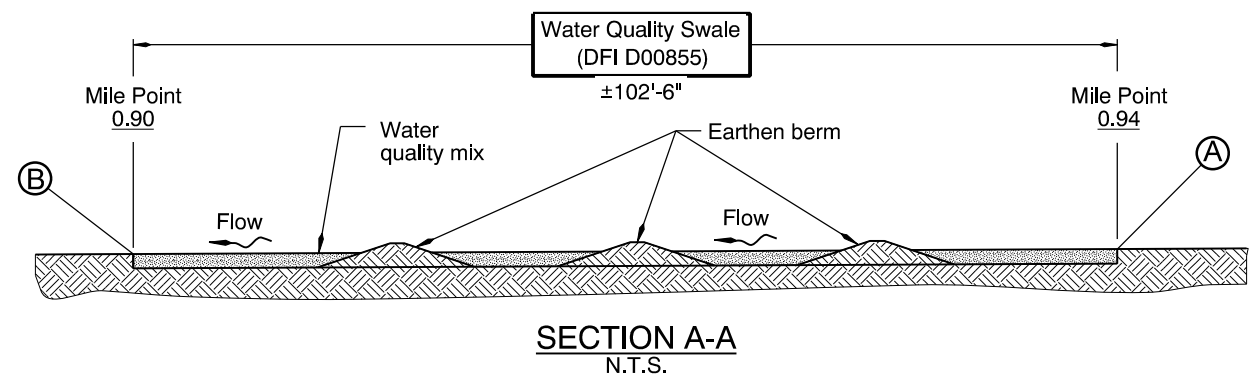
## **A Appendix A – Site Specific Operational Plan**

### **Contents:**

**Operational Plan: DFI D00855**



- LEGEND:**
- Ⓐ Swale Inlet
  - Ⓑ Swale Outlet
  - ~ Pavement / Facility Flow Path
  - - - Ditch Line
  - ▭ Swale Boundary
  - Traffic Direction
  - ◁ Photo Location / Direction



|   |  |
|---|--|
|   | <b>OREGON DEPARTMENT OF TRANSPORTATION</b> |
| <b>DFI D00855</b><br><b>MAINTENANCE DISTRICT 3 HWY 154</b><br><b>WATER QUALITY SWALE</b><br>LAFAYETTE HIGHWAY MP 0.90<br>YAMHILL COUNTY |  |

|              |                 |
|--------------|-----------------|
| Prepared By: | M. Skelton      |
| Drafted By:  | C. Carman, P.E. |



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

### **Contents:**

**Operational Plan: DFI D00855**

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

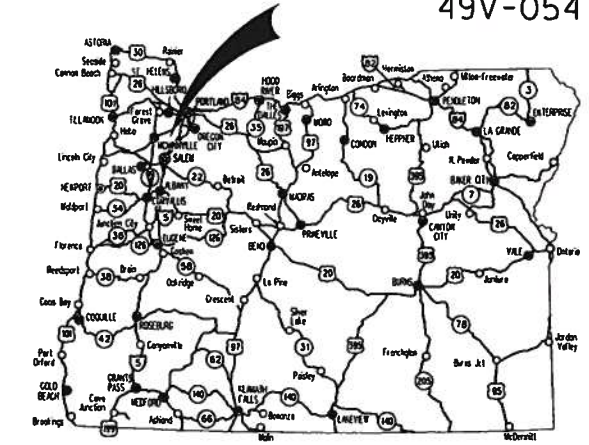
STATE OF OREGON  
DEPARTMENT OF TRANSPORTATION

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

**OR154 @ STRINGTOWN ROAD SEC.**  
**LAFAYETTE HIGHWAY**

YAMHILL COUNTY

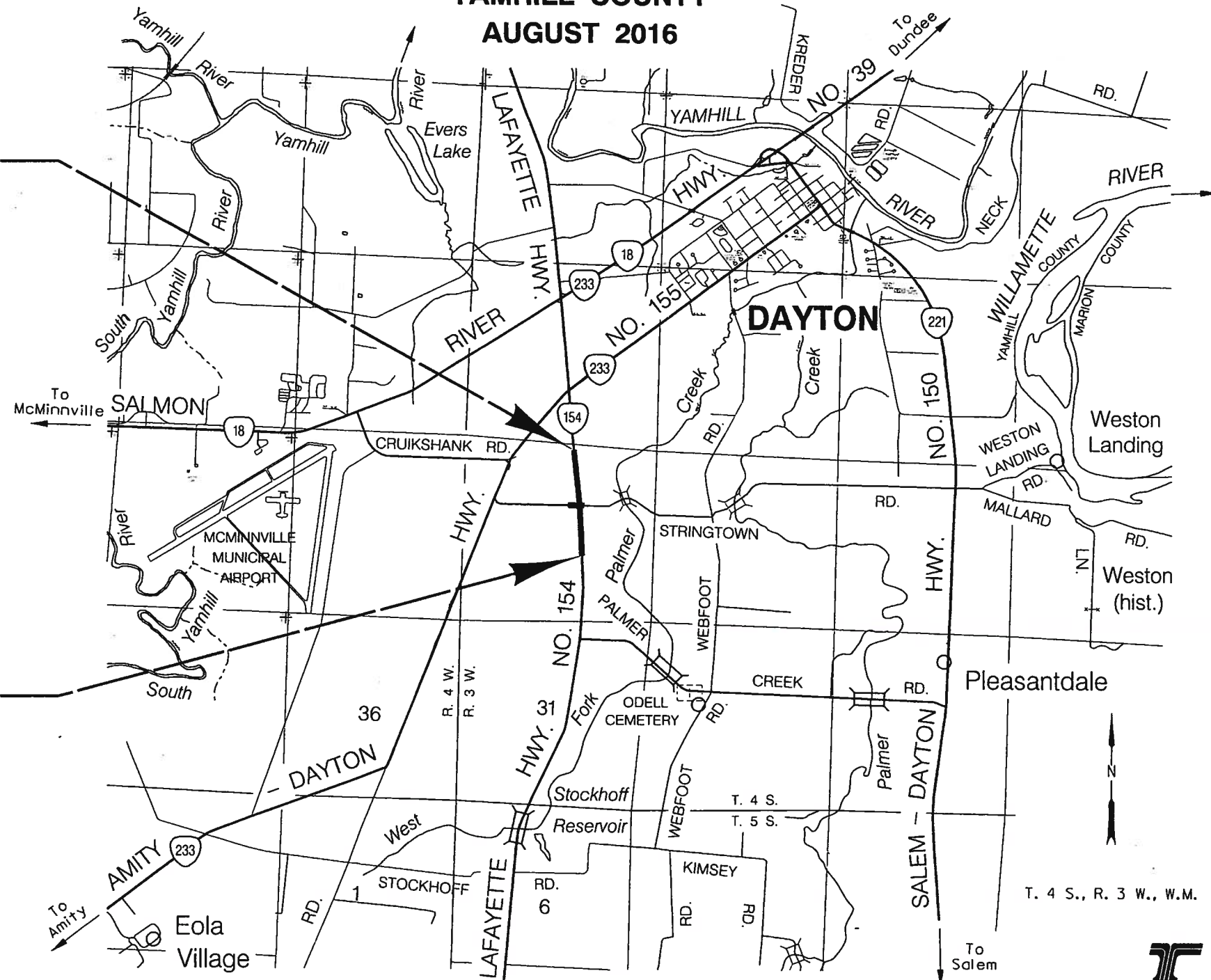
AUGUST 2016



Overall Length Of Project - 0.80 Miles

**HSIP-S154(002)**  
**BEGINNING OF PROJECT**  
STA. "L" 12+80 (M.P. 0.76)

**HSIP-S154(002)**  
**END OF PROJECT**  
STA. "L" 54+90 (M.P. 1.56)



**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.)



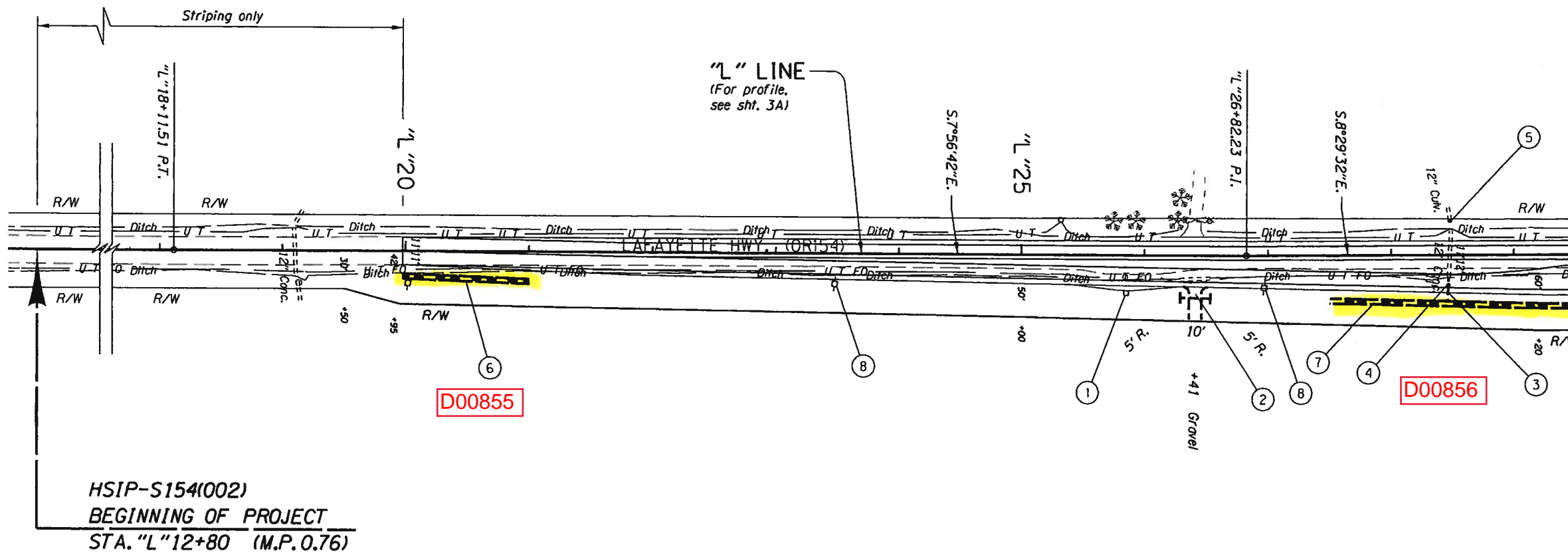
- OREGON TRANSPORTATION COMMISSION**
- Tommy Boney CHAIR
  - David Lohman COMMISSIONER
  - Susan Morgan COMMISSIONER
  - Alando Simpson COMMISSIONER
  - Sean O'Hallaren COMMISSIONER
  - Matthew L. Garrett DIRECTOR OF TRANSPORTATION

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: *[Signature]* 7.6.16  
Signature & date  
James E. West - R2 Tech Center Manager  
Print name and title  
*[Signature]*  
Concurrence by ODOT Chief Engineer

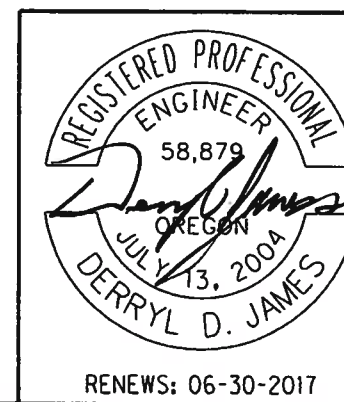
|   |                |           |
|---|----------------|-----------|
| OR154 @ STRINGTOWN ROAD SEC.<br>LAFAYETTE HIGHWAY<br>YAMHILL COUNTY |                |           |
| FEDERAL HIGHWAY ADMINISTRATION                                      | PROJECT NUMBER | SHEET NO. |
| OREGON DIVISION   | HSIP-S154(002) | 1         |


PE002194



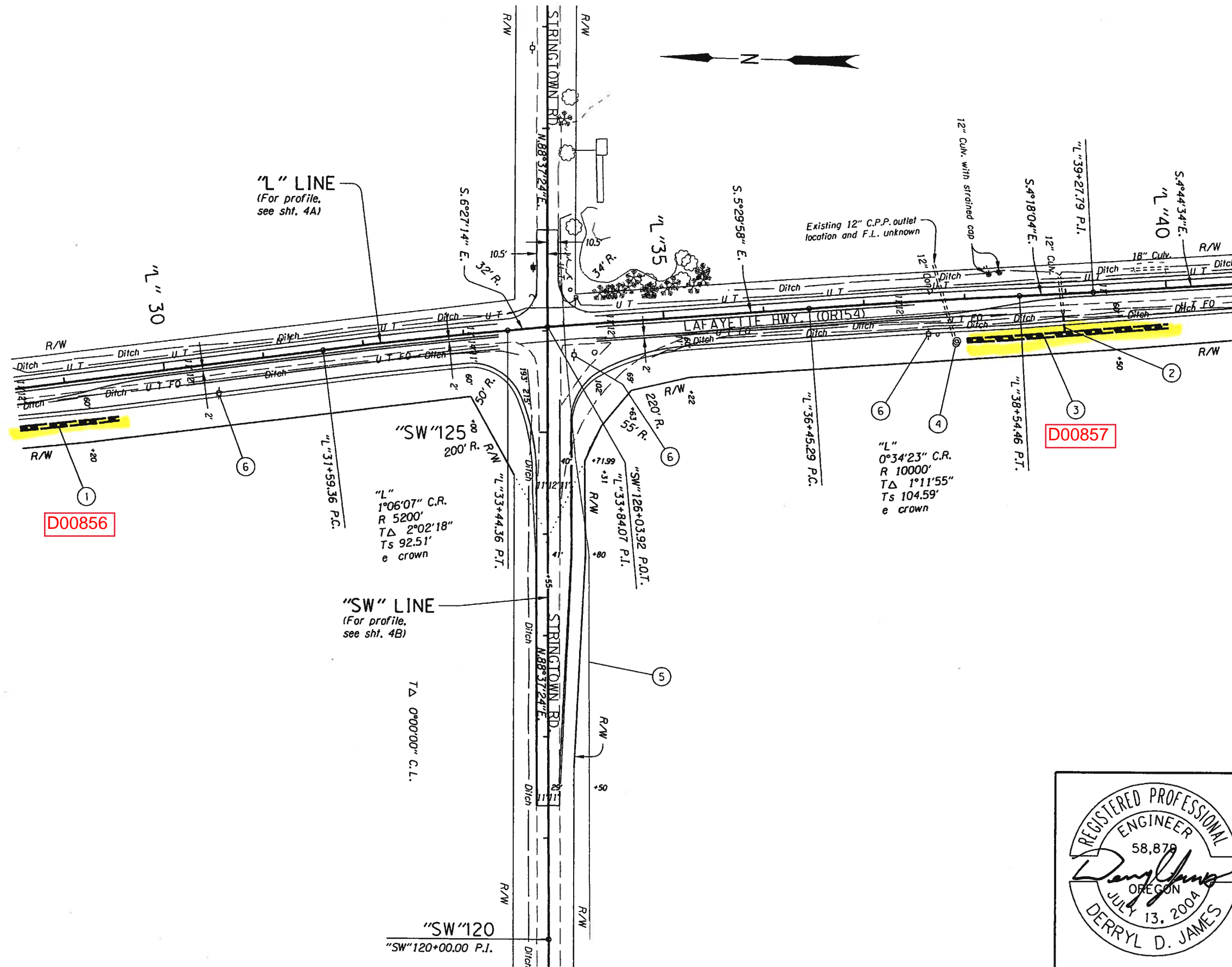
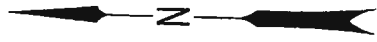
- ① Sta. "L" 25+85, Rt.  
Const. mailbox service turnout  
Inst. single mailbox  
(For details, see sht. 2B-2)  
(See drg. no. RD100)
- ② Sta. "L" 26+41, Rt.  
Const. appr.  
Inst. 14" culv. pipe (D.I.) - 24'  
5' depth  
(See drg. no. RD715)
- ③ Sta. "L" 28+47, Rt.  
12" culv. pipe - 37' (In pl.)  
Extend - 20'  
5' depth  
Inst. culv. ID marker, Type 1 & 2  
DFI no. D042234  
MP 1.06  
(See drg. nos. RD398 & RD399)
- ④ Sta. "L" 28+47, Rt.  
Extg. 24" vertical P.C.C. standpipe  
to be moved. (by others)
- ⑤ Sta. "L" 28+48, Lt.  
Extg. 24" vertical P.C.C. standpipe  
maintain and protect.
- ⑥ Sta. "L" 19+97.5 To Sta. "L" 21+00, Rt.  
Const. water quality biofiltration swale \*00855  
(For details, see sht. GJ)
- ⑦ Sta. "L" 27+50 To Sta. "L" 29+50, Rt.  
Const. water quality biofiltration swale \*00856  
(For details, see sht. GJ-2)
- ⑧ Relocate power pole - 2  
(By others)

HSIP-S154(002)  
BEGINNING OF PROJECT  
STA. "L" 12+80 (M.P. 0.76)



|   |                       |
|---|-----------------------|
|  OREGON DEPARTMENT OF TRANSPORTATION |                       |
| REGION 2 TECH CENTER  |                       |
| OR154 @ STRINGTOWN ROAD SEC.<br>LAFAYETTE HIGHWAY<br>YAMHILL COUNTY   |                       |
| Design Team Leader - B Scott Nelson<br>Designed By - Kathy Fry<br>Drafted By - Jeff Larson                                |                       |
| <b>GENERAL CONSTRUCTION</b>   | SHEET NO.<br><b>3</b> |

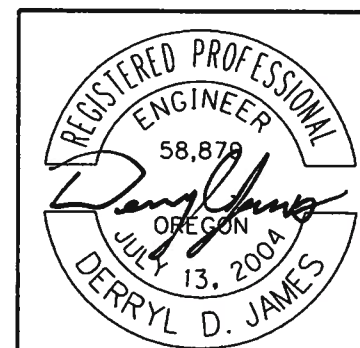
Sec. 30, T. 4 S., R. 3 W., W.M.



- ① See sht. 3, note 7  
Const. water quality biofiltration swale
- ② Sta. "L" 38+96, Rt.  
12" culv. pipe - 36' (In pl.)  
Extend - 19'  
5' depth  
Inst. culv. ID marker, Type 1 & 2  
DFI no. D042235  
MP 1.26
- ③ Sta. "L" 38+00 To Sta. "L" 40+00, Rt.  
Const. water quality biofiltration swale #00857  
(For details, see sht. GJ-3)
- ④ Sta. "L" 37+90, Rt.  
Extg. water vault  
to be moved. (by others)
- ⑤ Underground irrigation line (private)  
(Approx. location, not field tied)
- ⑥ Relocate power pole - 3  
(By others)

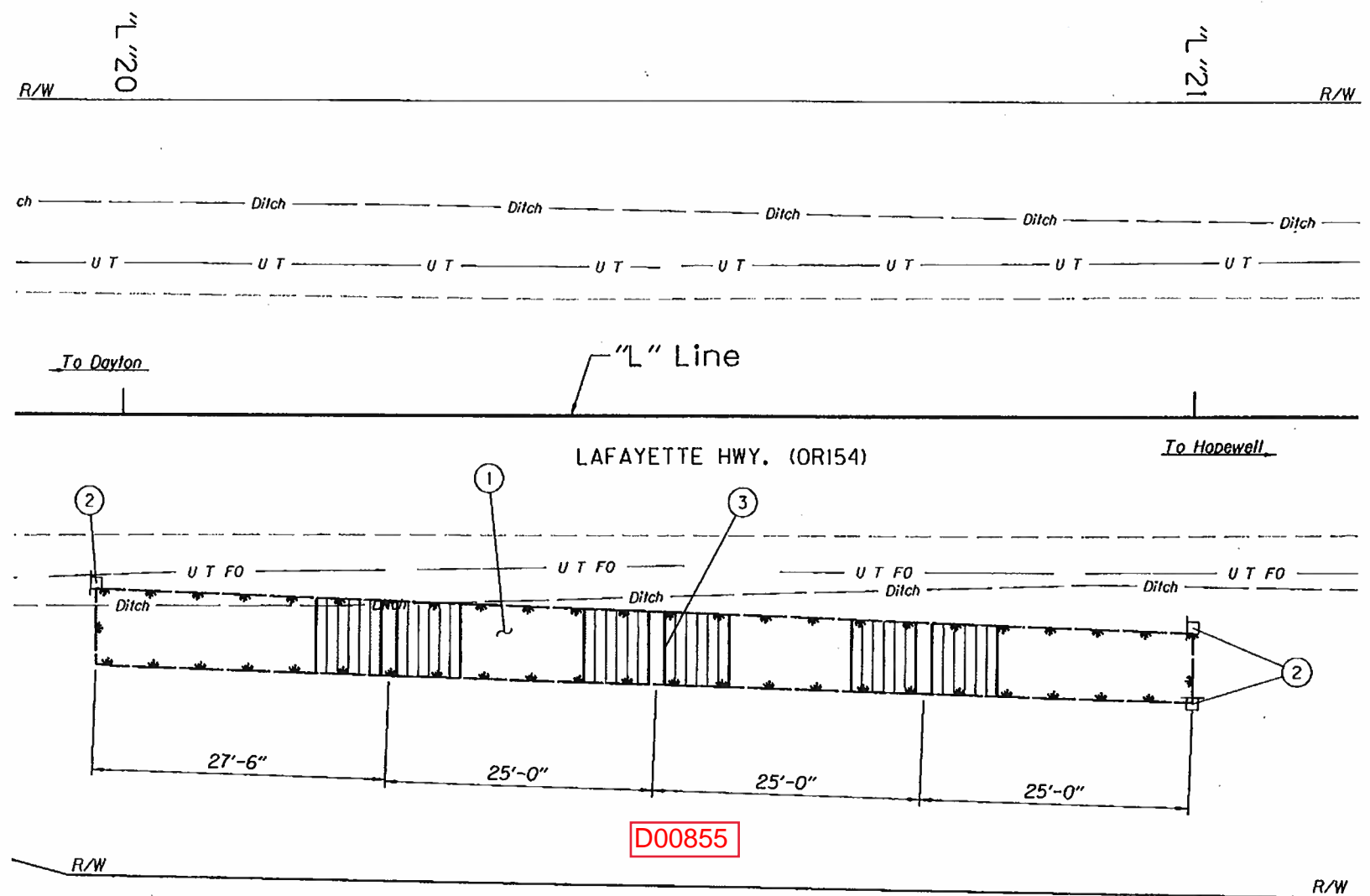
D00857

D00856



RENEWS: 06-30-2017

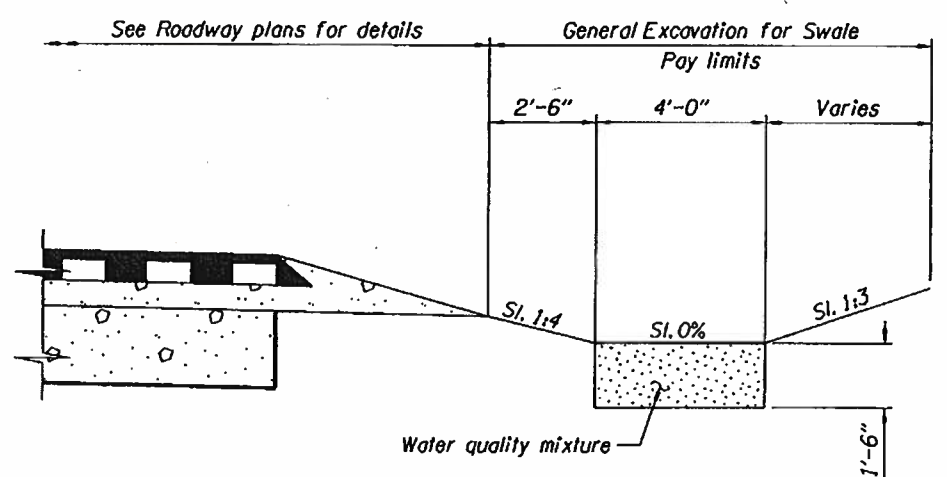
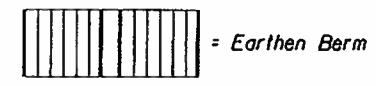
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| OREGON DEPARTMENT OF TRANSPORTATION  |                       |
| REGION 2 TECH CENTER   |                       |
| OR154 @ STRINGTOWN ROAD SEC.<br>LAFAYETTE HIGHWAY<br>YAMHILL COUNTY                        |                       |
| Design Team Leader - B Scott Nelson<br>Designed By - Kathy Fry<br>Drafted By - Jeff Larson |                       |
| <b>GENERAL CONSTRUCTION</b>  | SHEET NO.<br><b>4</b> |



- ① Sta. "L"19+97.5 to Sta. "L"21+00.0 Rt. Const. water quality biofiltration swale 00855  
Water Quality Mixture - 23 cu.yd.  
General Excavation - 27 cu.yd.
- ② Stormwater facility marker Swale #00855 (See dwg. RD399)
- ③ Earthen Berm - 3 (For details see sht. GJ-2)

D00855

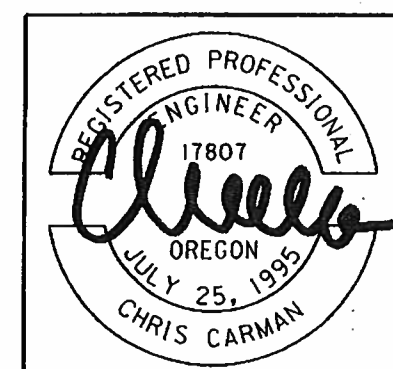
PLAN



Sta. "L"19+97.5 to Sta. "L"21+00.0  
 "L"27+50.0 to "L"28+50.0  
 "L"38+00.0 to "L"40+00.0

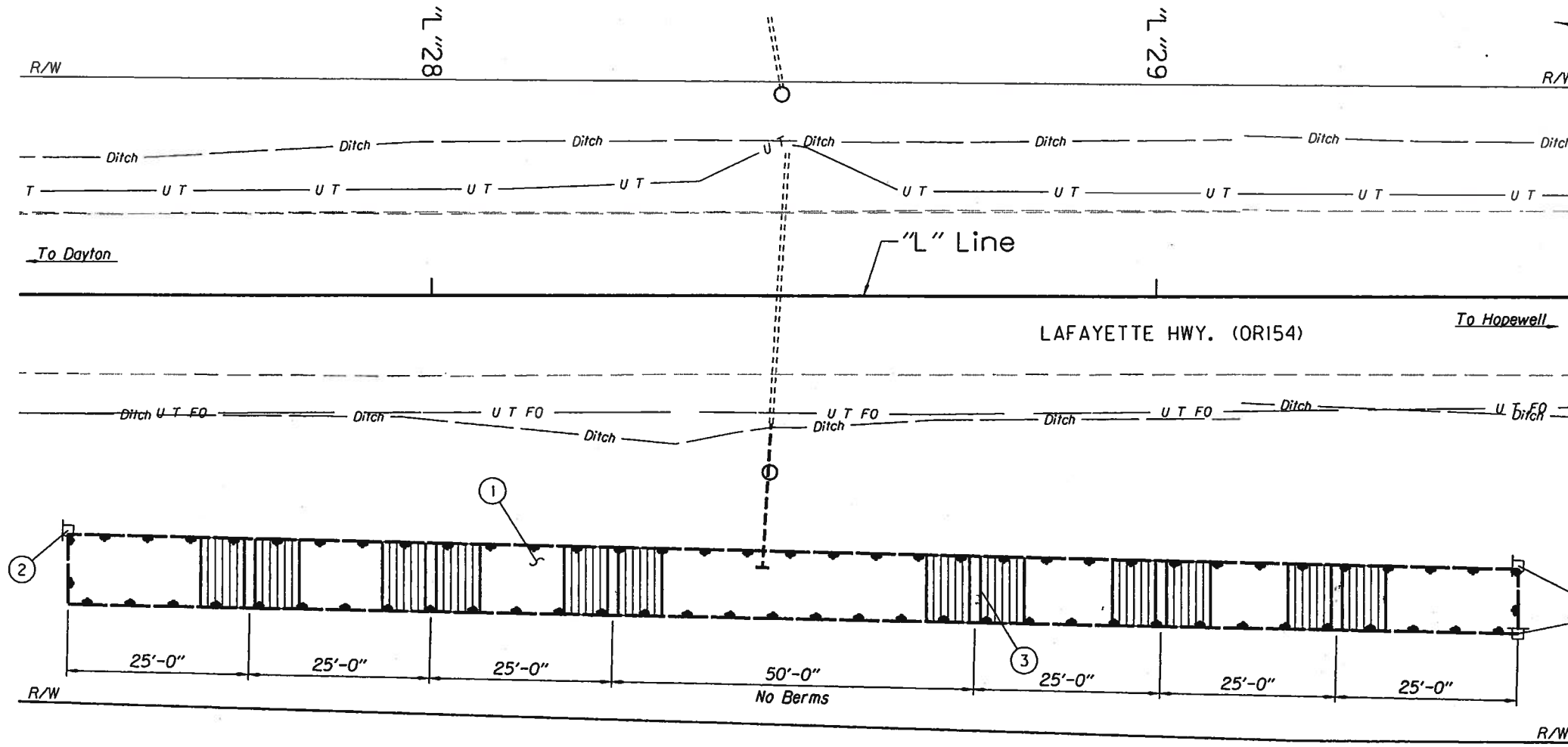
TYPICAL WATER QUALITY SWALE DETAIL

Note:  
Side-slopes are shown as vert. to horiz.



RENEWS: 12-31-2017

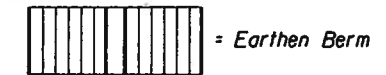
|  |                 |
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| OREGON DEPARTMENT OF TRANSPORTATION  |                 |
| REGION 2 TECH CENTER   |                 |
| OR154 @ STRINGTOWN ROAD SEC.<br>LAFAYETTE HIGHWAY<br>YAMHILL COUNTY                                |                 |
| Reviewed By - Bruce Carmichael<br>Designed By - Chris Carman, P.E.<br>Drafted By - Michael Skelton |                 |
| STORMWATER PLAN  | SHEET NO.<br>GJ |



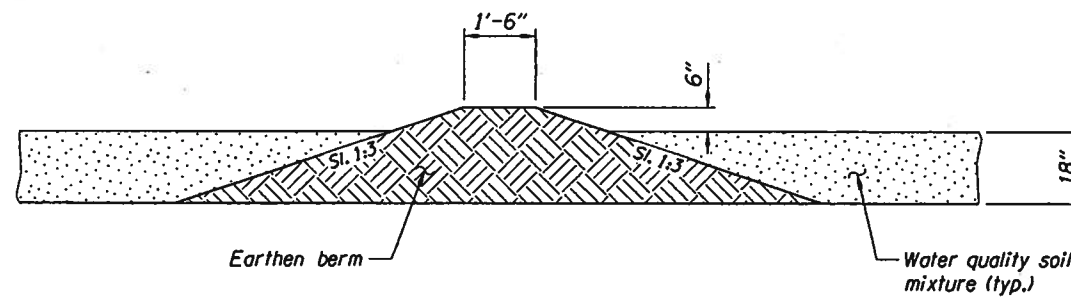
- ① Sta. "L"27+50 to Sta. "L"29+50 Rt.  
Const. water quality biofiltration swale 00856  
Water Quality Mixture - 46 cu.yd.  
General Excavation - 112 cu.yd.  
(For details, see sht. GJ)
- ② Stormwater facility marker  
Swale #00856  
(See dwg. RD399)
- ③ Earthen Berm - 6  
(For details see detail)

PLAN

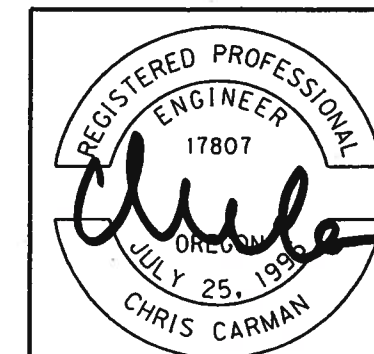
D00856



Note:  
Side-slopes are shown as vert. to horiz.  
See sht. GJ for Typical Water Quality Swale Detail.

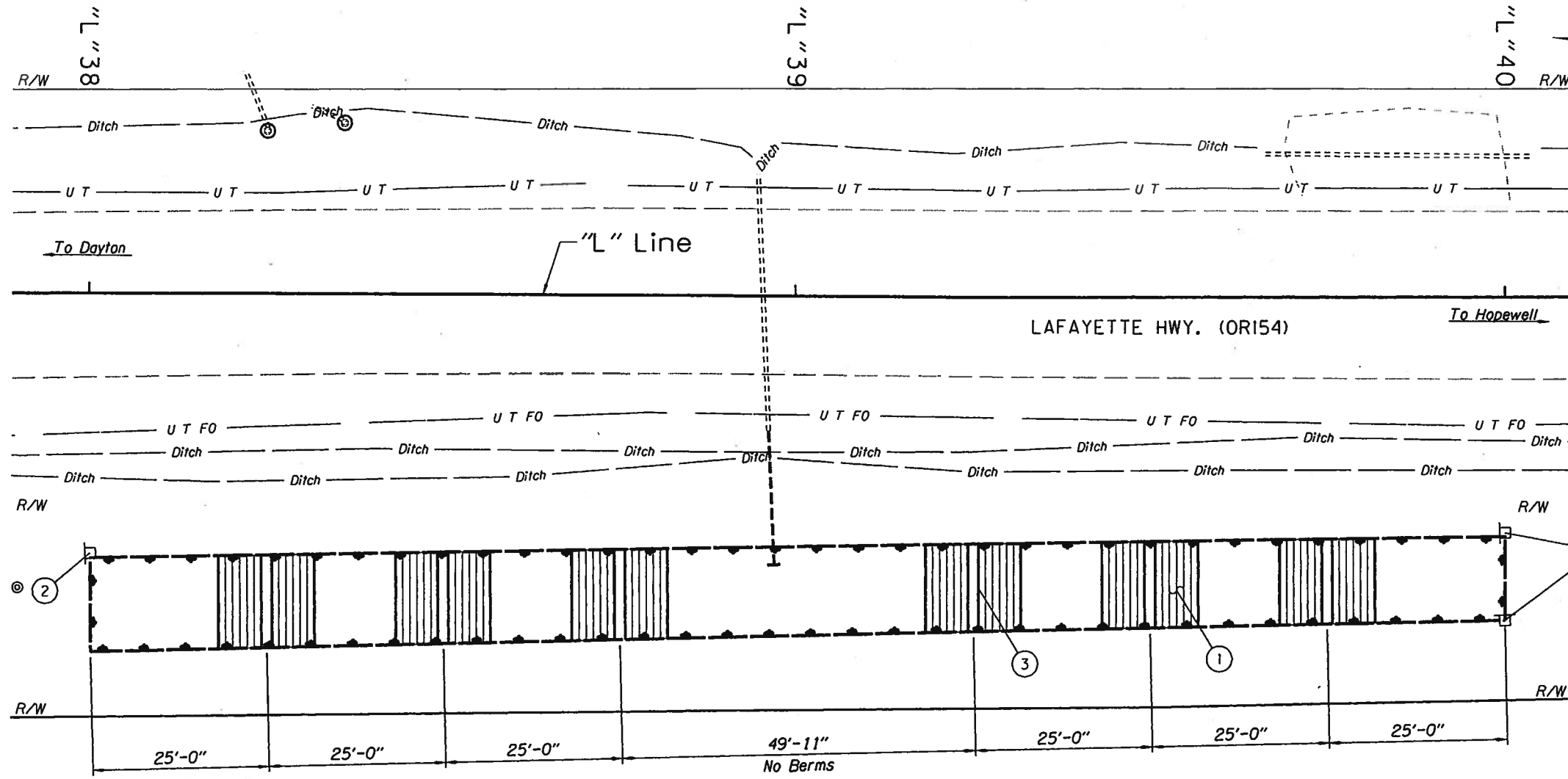


EARTHEN BERM DETAIL



RENEWS: 12-31-2017

|   |                           |
|---|---------------------------|
| <p>OREGON DEPARTMENT OF TRANSPORTATION</p>  |                           |
| <p>REGION 2 TECH CENTER</p>   |                           |
| <p>OR154 @ STRINGTOWN ROAD SEC.<br/>LAFAYETTE HIGHWAY<br/>YAMHILL COUNTY</p>                                |                           |
| <p>Reviewed By - Bruce Carmichael<br/>Designed By - Chris Carman, P.E.<br/>Drafted By - Michael Skelton</p> |                           |
| <p><b>STORMWATER PLAN</b></p>   | <p>SHEET NO.<br/>GJ-2</p> |



- ① Sta. "L" 38+00 Rt. to Sta. "L" 40+00 Rt.  
Const. water quality biofiltration swale 00857  
Water Quality Mixture - 46 cu.yd.  
General Excavation - 226 cu.yd.  
(For details, see sht. GJ)
- ② Stormwater facility marker  
Swale 00857  
(See dwg. RD399)
- ③ Earthen Berm - 6  
(For details see sht. GJ-2)

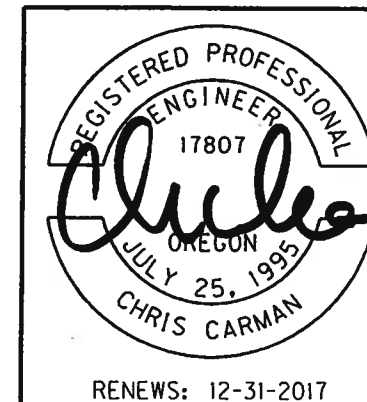
PLAN

D00857


 = Earthen Berm

Note:  
Side-slopes are shown as vert. to horiz.

See sht. GJ for Typical Water Quality Swale Detail.



RENEWS: 12-31-2017

|   |                   |
|---|-------------------|
|  OREGON DEPARTMENT OF TRANSPORTATION |                   |
| REGION 2 TECH CENTER  |                   |
| OR154 @ STRINGTOWN ROAD SEC.<br>LAFAYETTE HIGHWAY<br>YAMHILL COUNTY   |                   |
| Reviewed By - Bruce Carmichael<br>Designed By - Chris Carman, P.E.<br>Drafted By - Michael Skelton                        |                   |
| STORMWATER PLAN   | SHEET NO.<br>GJ-3 |