

OPERATIONS AND MAINTENANCE MANUAL

DFI No. 00856

Facility Type: Biofiltration Swale



Facility D00856 Looking West from Highway

July, 2019

INDEX

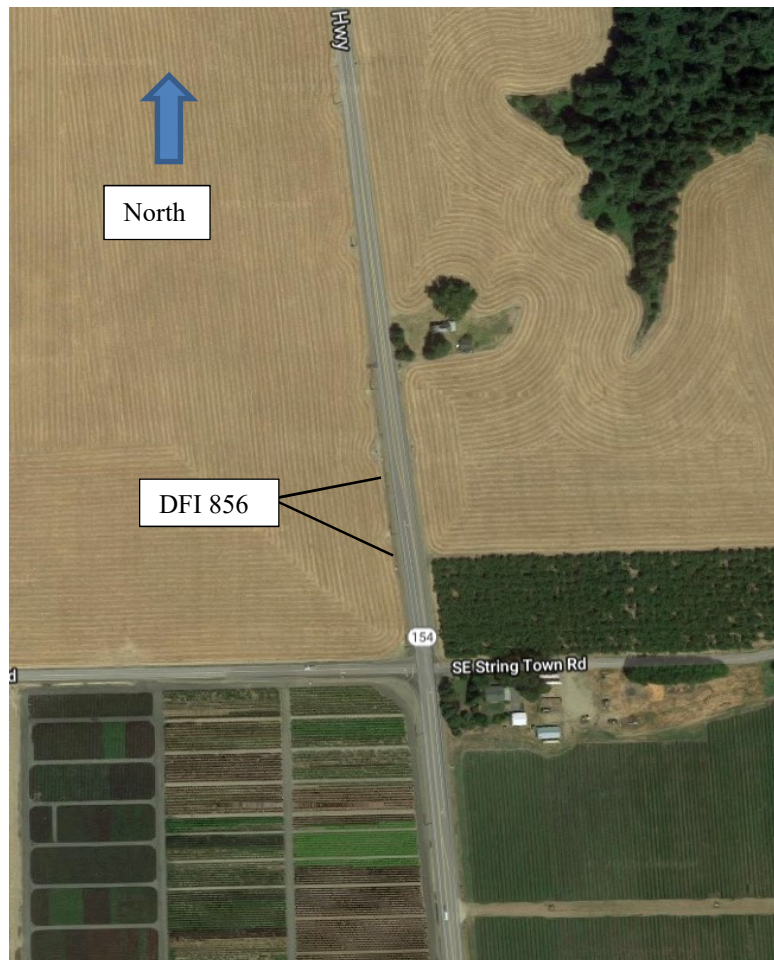
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APPENDIX A:	Operations Plan and Profile Drawing(s)
APPENDIX B:	ODOT Project Plans Sheets

1. Identification

Facility Types: Water Quality Biofiltration Swale, D00856

Location: Lafayette Highway 154
Milepost 1.04 to 1.06, Right



Facility D00856 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 0.10 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 1.04 and 1.06.

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>
[X](#)

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

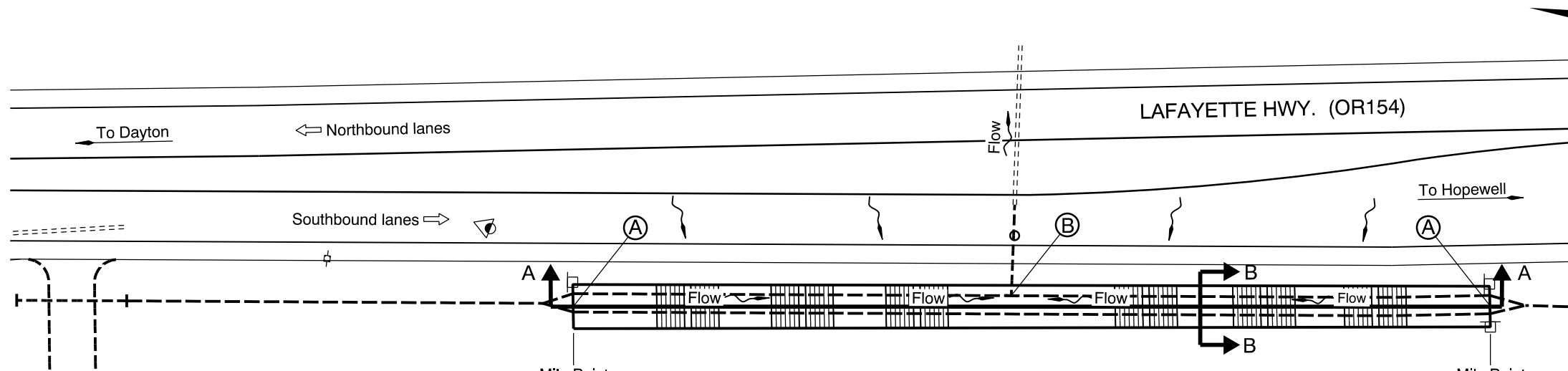
Contact any of the following for more detailed information about management of waste materials found on site:

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

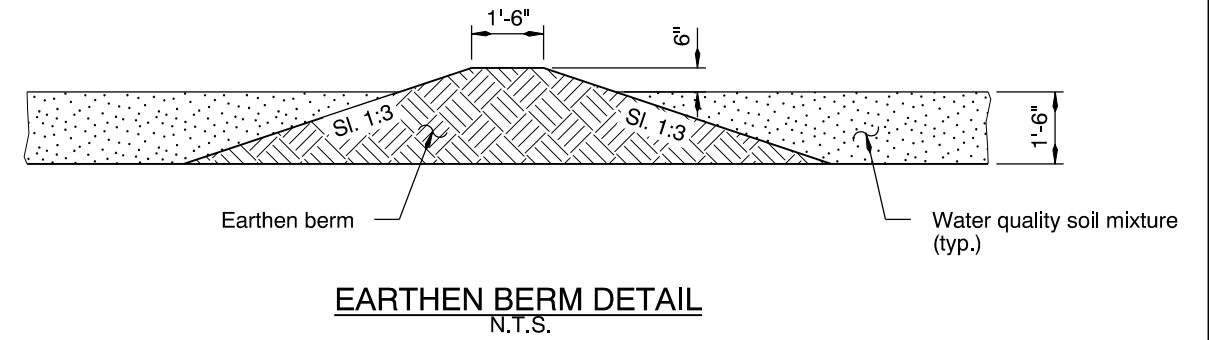
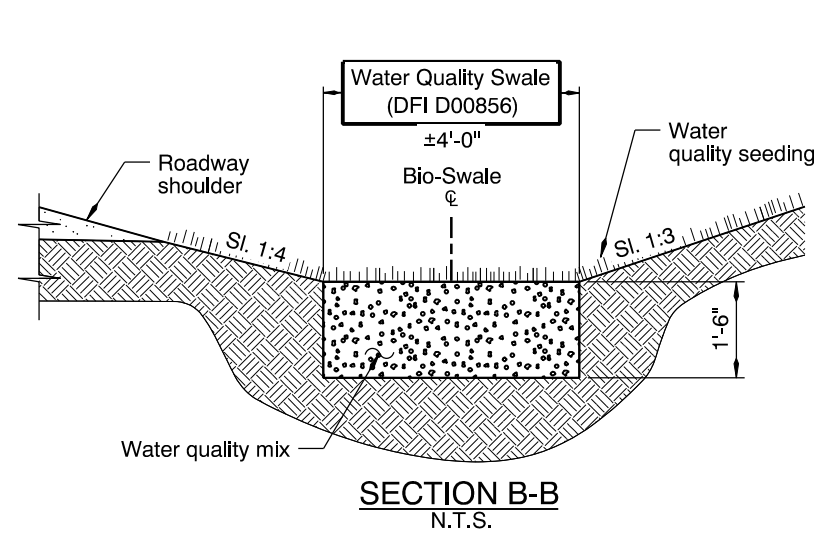
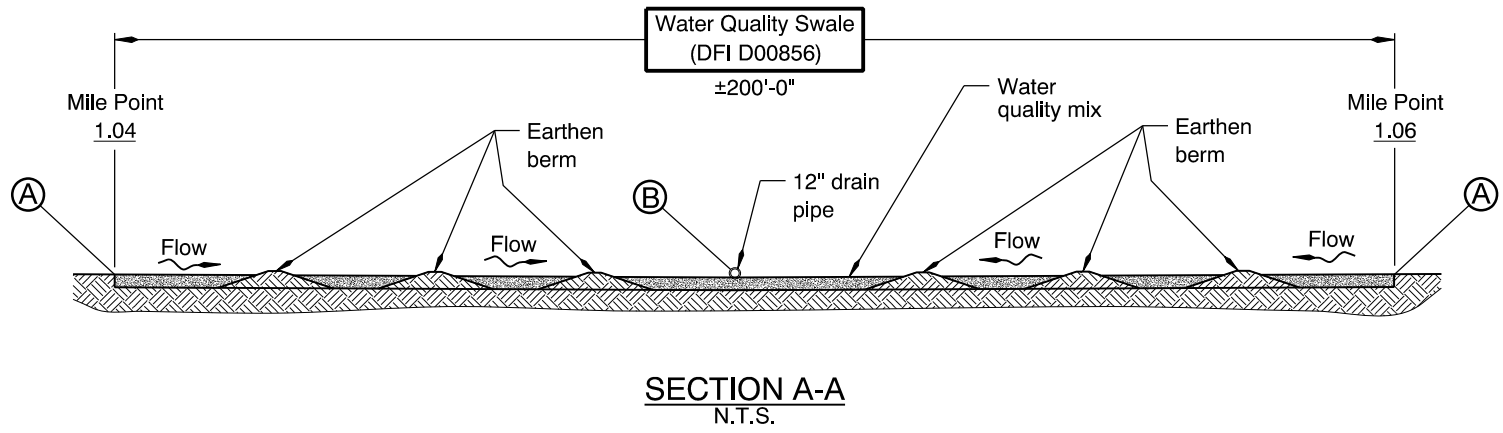
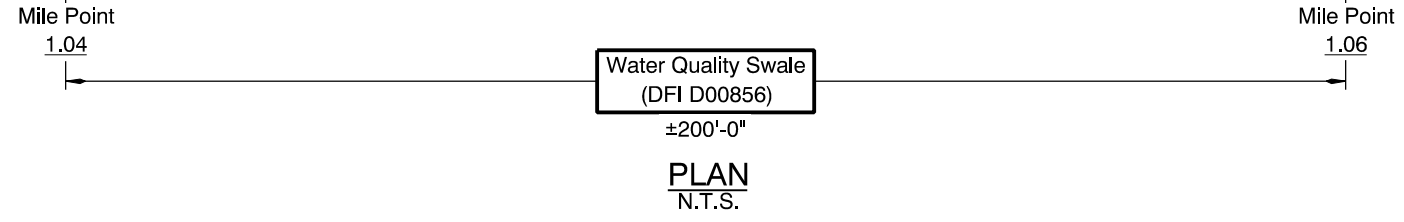
A Appendix A – Site Specific Operational Plan

Contents:

Operational Plan: DFI D00856



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



OREGON DEPARTMENT OF TRANSPORTATION	
Prepared By: _____ M. Skelton	DFI D00856 MAINTENANCE DISTRICT 3 HWY 154 WATER QUALITY SWALE LAFAYETTE HIGHWAY MP 1.04 YAMHILL COUNTY
Drafted By: _____ C. Carman, P.E.	

B Appendix B – ODOT Project Plan Sheets

Contents:

Operational Plan: DFI D00856

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

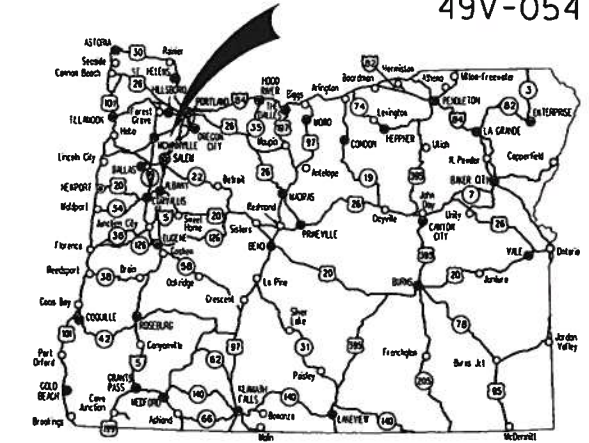
STATE OF OREGON
DEPARTMENT OF TRANSPORTATION

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

OR154 @ STRINGTOWN ROAD SEC.
LAFAYETTE HIGHWAY

YAMHILL COUNTY

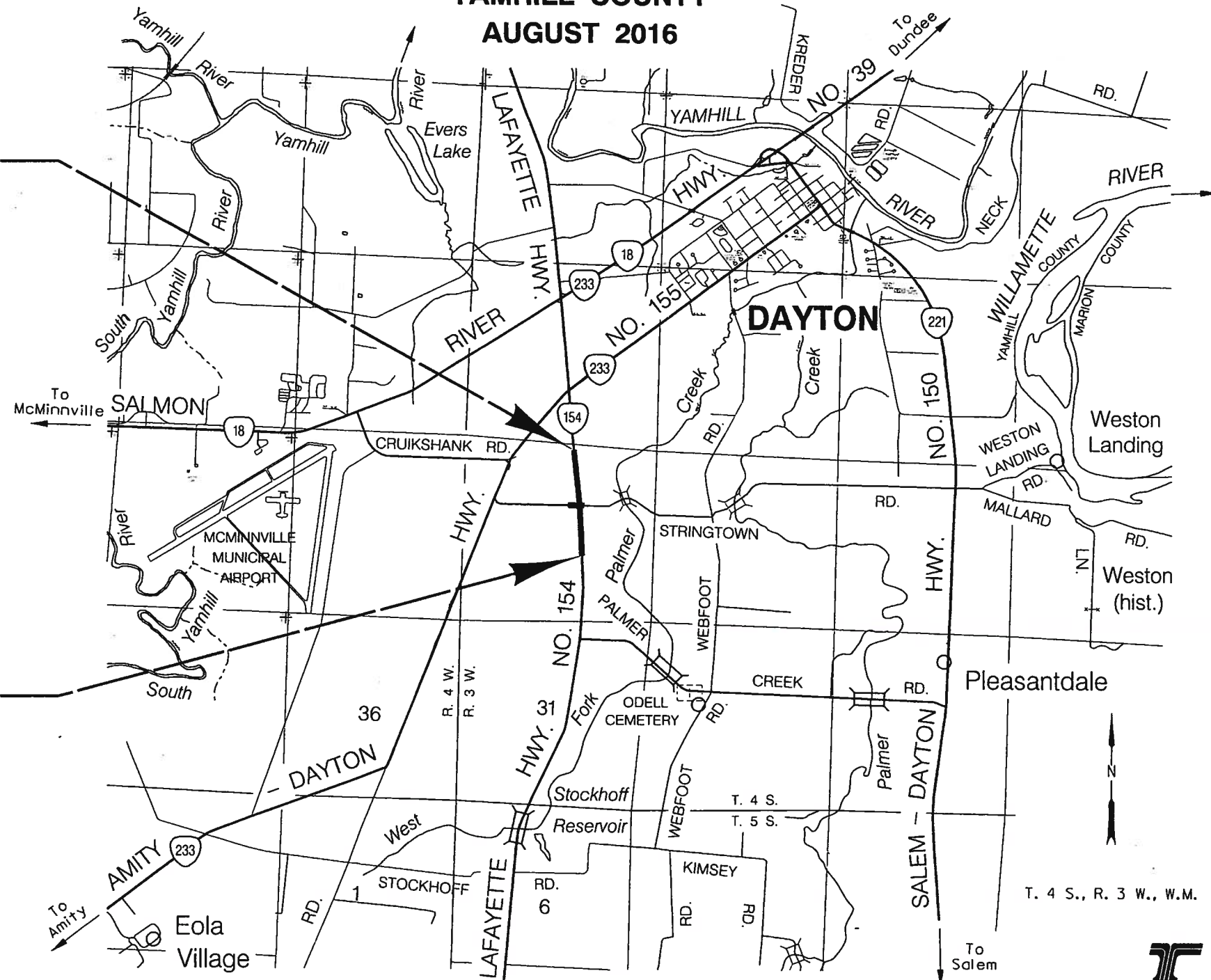
AUGUST 2016



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.

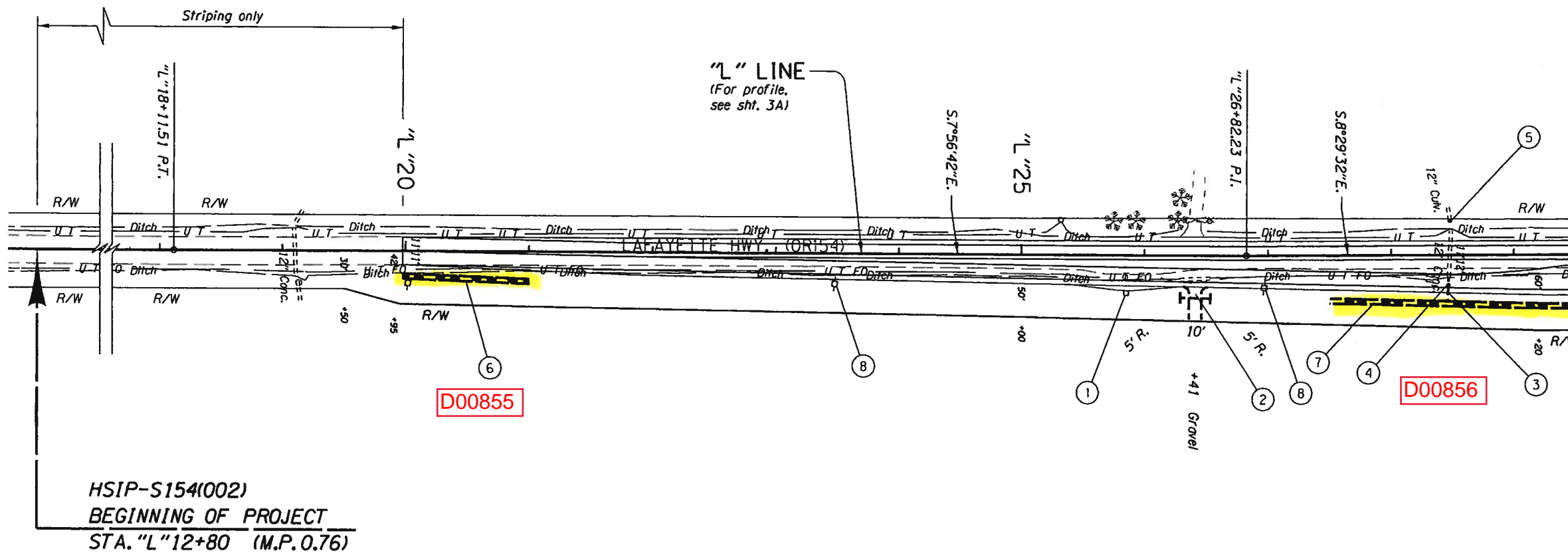
By: *[Signature]* 7.6.16
Signature & date

James E. West - R2 Tech Center Manager
Print name and title

[Signature]
Concurrence by ODOT Chief Engineer

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

PE002194

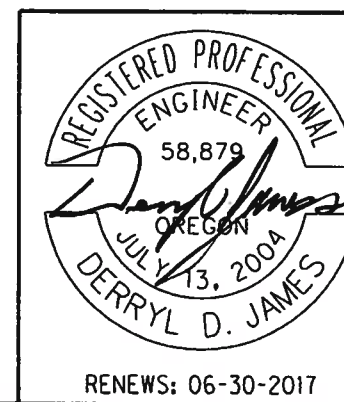


- ① Sta. "L"25+85, Rt.
Const. mailbox service turnout
Inst. single mailbox
(For details, see sht. 2B-2)
(See drg. no. RD100)
- ② Sta. "L"26+41, Rt.
Const. appr.
Inst. 14" culv. pipe (D.I.) - 24'
5' depth
(See drg. no. RD715)
- ③ Sta. "L"28+47, Rt.
12" culv. pipe - 37' (In pl.)
Extend - 20'
5' depth
Inst. 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)

D00855

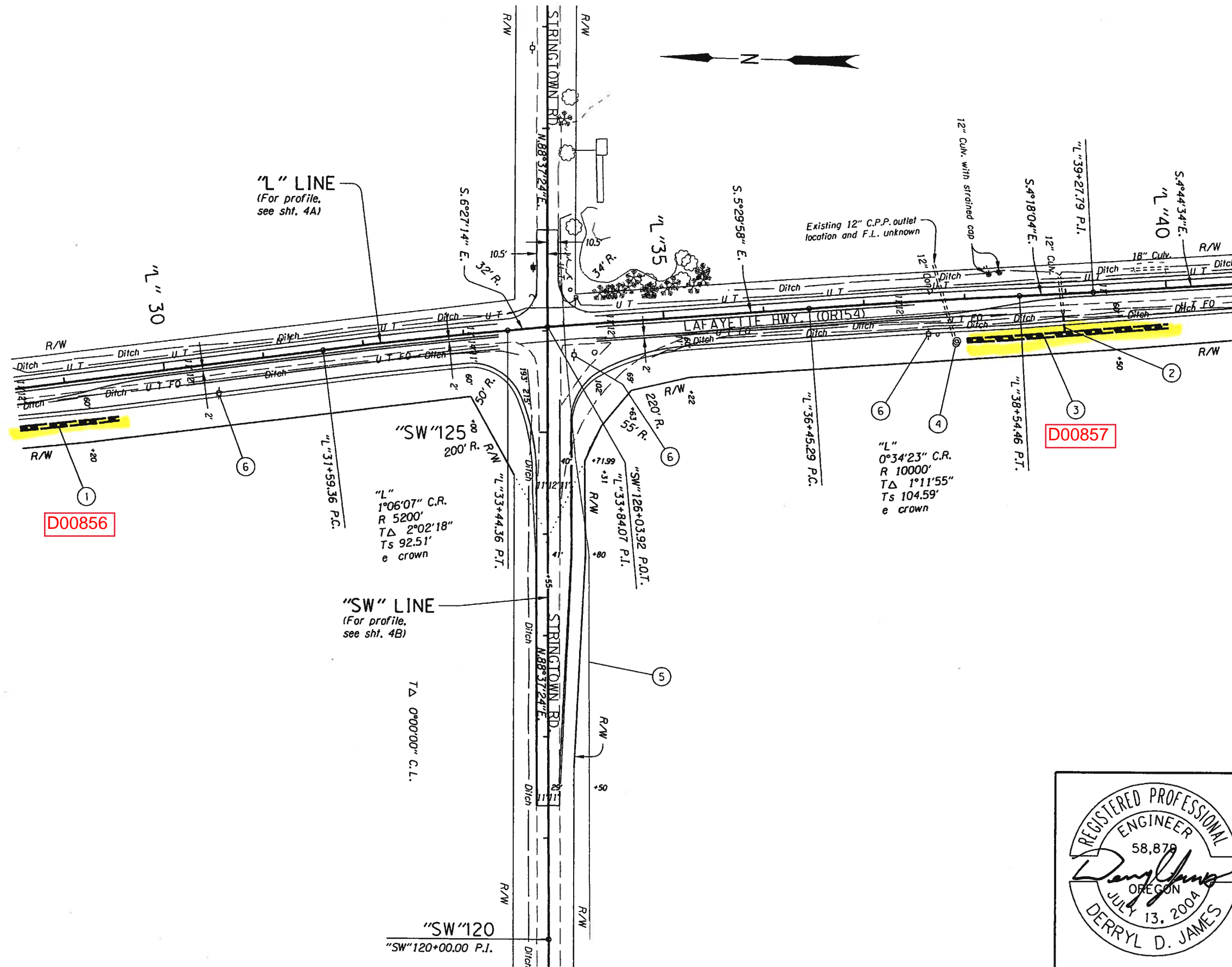
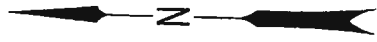
D00856

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. LAFAYETTE HIGHWAY YAMHILL COUNTY	
Design Team Leader - B Scott Nelson Designed By - Kathy Fry Drafted By - Jeff Larson	
GENERAL CONSTRUCTION	SHEET NO. 3


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

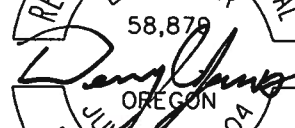


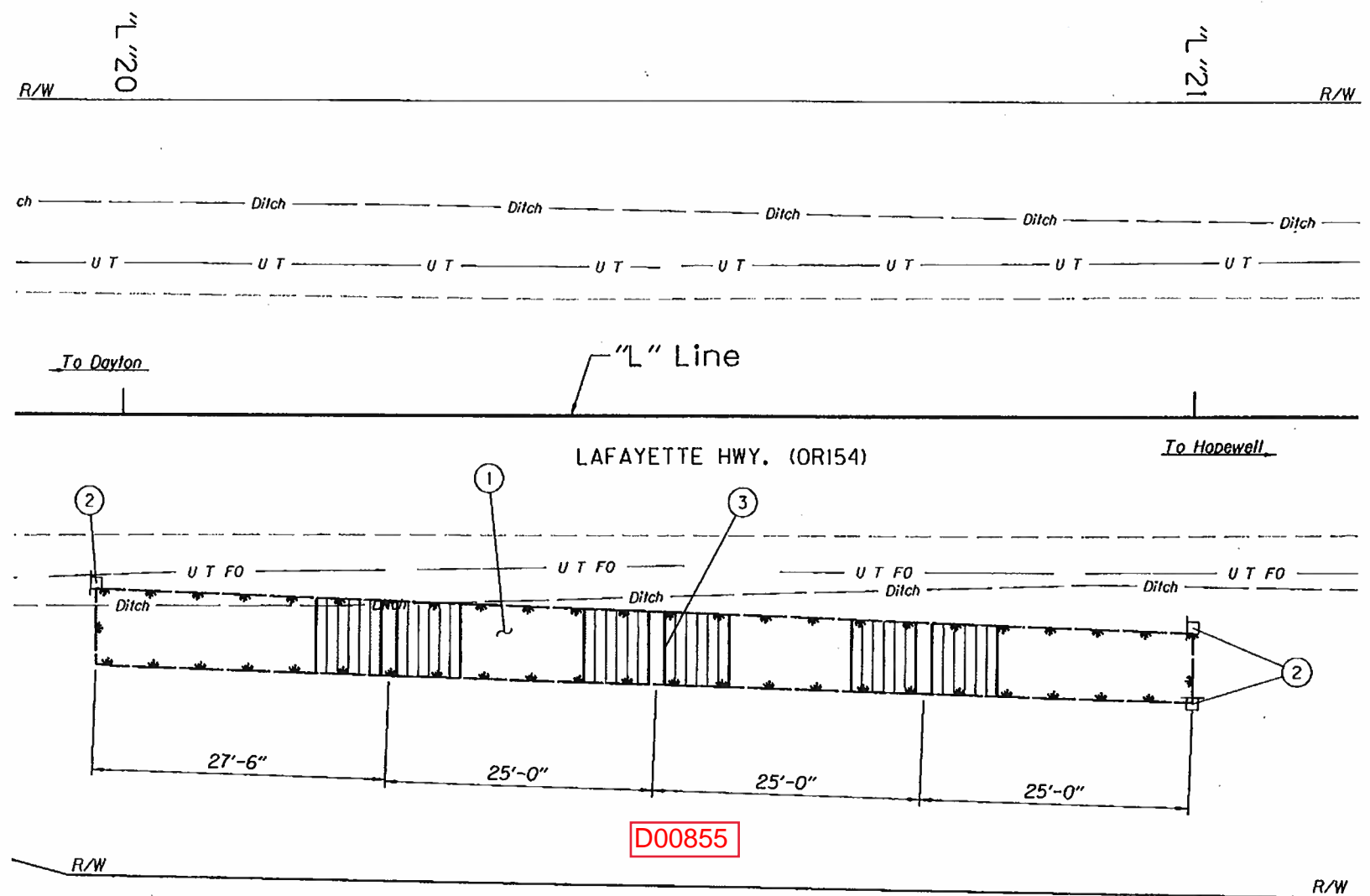
- ① See sht. 3, note 7
Const. water quality biofiltration swale
- ② Sta. "L" 38+96, Rt.
12" culv. pipe - 36' (In pl.)
Extend - 19'
5' depth
Inst. culv. ID marker, Type 1 & 2
DFI no. D042235
MP 1.26
- ③ Sta. "L" 38+00 To Sta. "L" 40+00, Rt.
Const. water quality biofiltration swale #00857
(For details, 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)

D00856

D00857

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

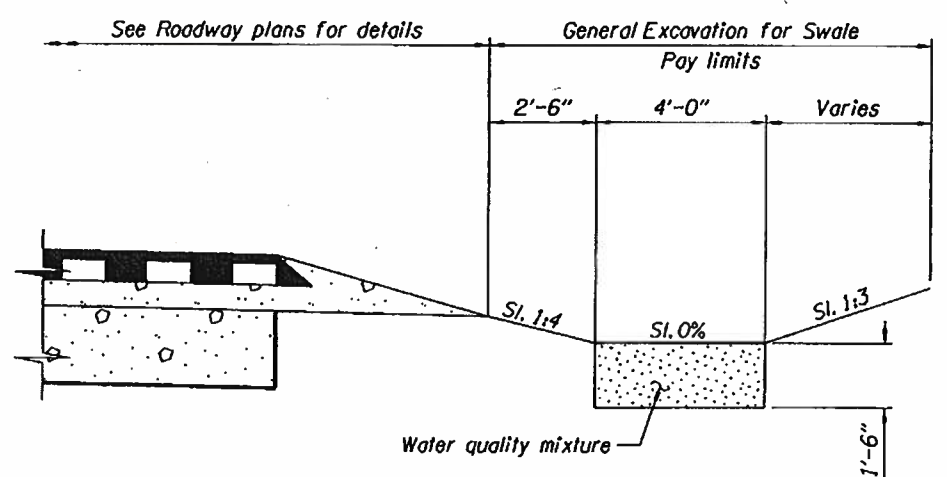
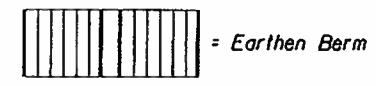
REGISTERED PROFESSIONAL
 ENGINEER
 58,879

 OREGON
 JULY 13, 2004
 DERRYL D. JAMES
 RENEWS: 06-30-2017



- 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

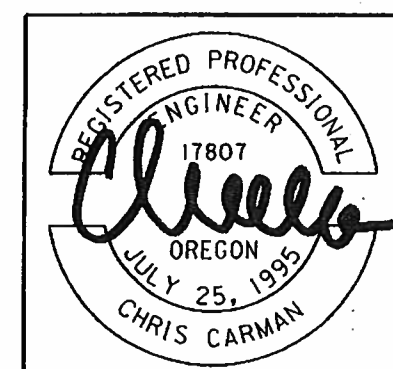
PLAN



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

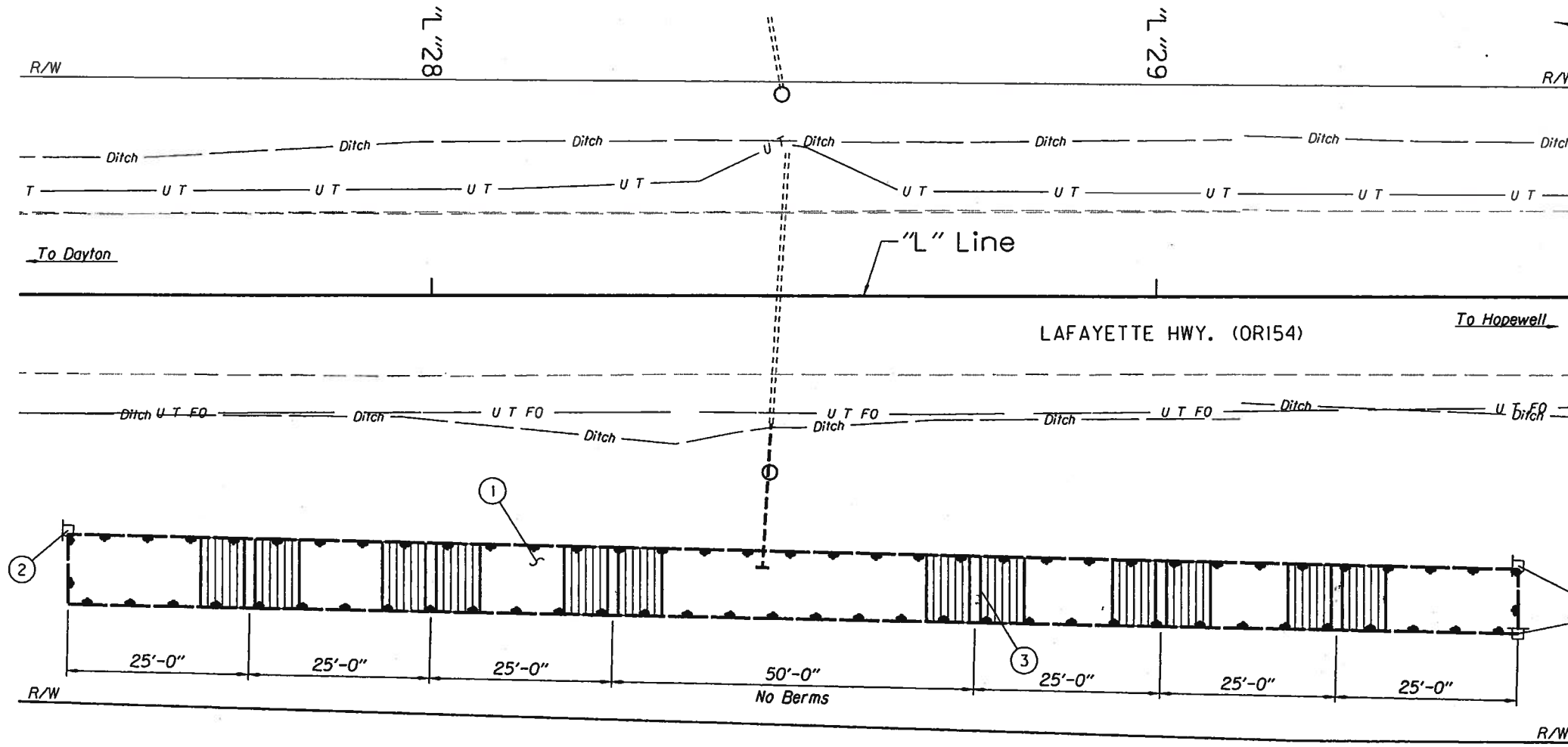
TYPICAL WATER QUALITY SWALE DETAIL

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



RENEWS: 12-31-2017

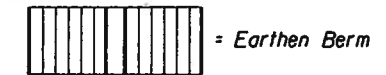
OREGON DEPARTMENT OF TRANSPORTATION	
REGION 2 TECH CENTER	
OR154 @ STRINGTOWN ROAD SEC. LAFAYETTE HIGHWAY YAMHILL COUNTY	
Reviewed By - Bruce Carmichael Designed By - Chris Carman, P.E. Drafted By - Michael Skelton	
STORMWATER PLAN	SHEET NO. GJ



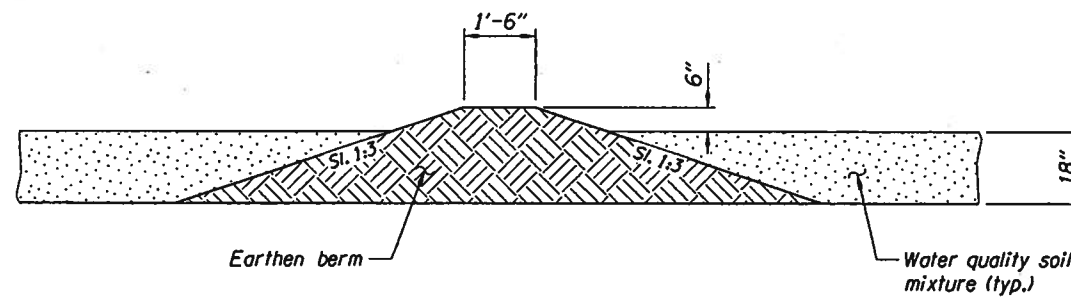
- ① Sta. "L"27+50 to Sta. "L"29+50 Rt.
Const. water quality biofiltration swale 00856
Water Quality Mixture - 46 cu.yd.
General Excavation - 112 cu.yd.
(For details, see sht. GJ)
- ② Stormwater facility marker
Swale #00856
(See dwg. RD399)
- ③ Earthen Berm - 6
(For details see detail)

PLAN

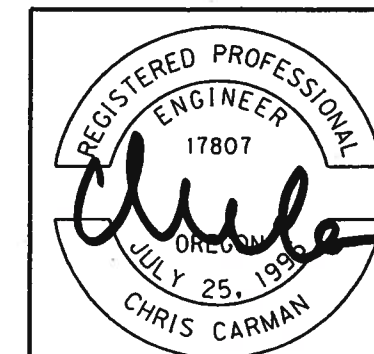
D00856



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

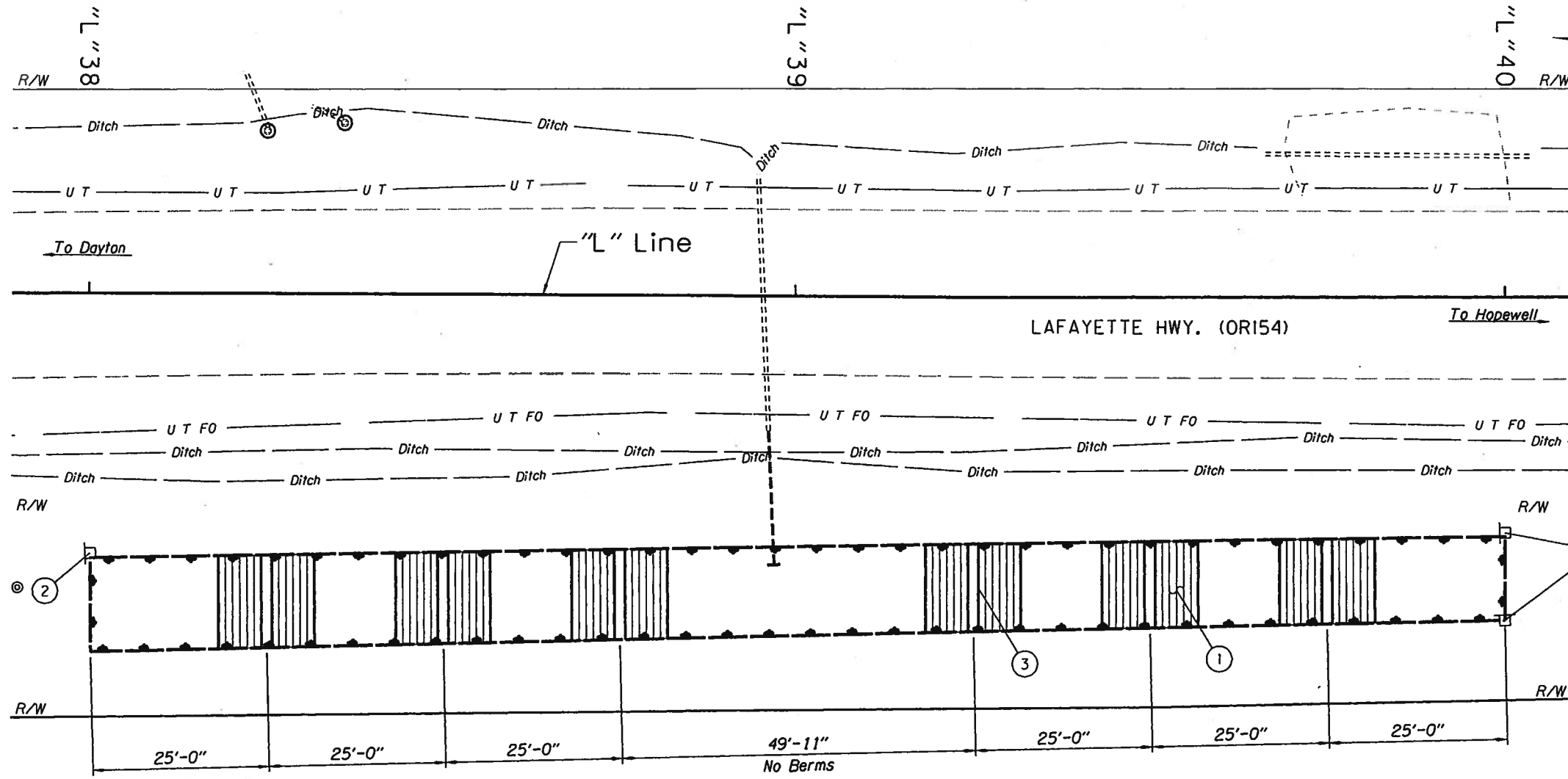


EARTHEN BERM DETAIL



RENEWS: 12-31-2017

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

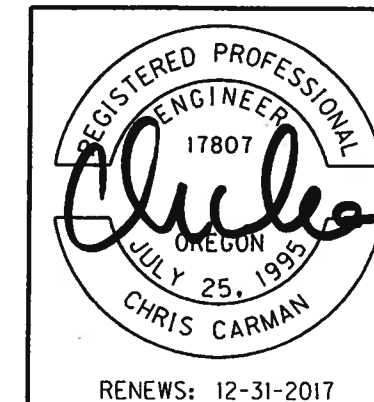
PLAN

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. LAFAYETTE HIGHWAY YAMHILL COUNTY	
Reviewed By - Bruce Carmichael Designed By - Chris Carman, P.E. Drafted By - Michael Skelton	
STORMWATER PLAN	SHEET NO. GJ-3