OPERATIONS AND MAINTENANCE MANUAL

DFI No. 00857
Facility Type: Biofiltration Swale

Facility D00857 Looking West from Highway

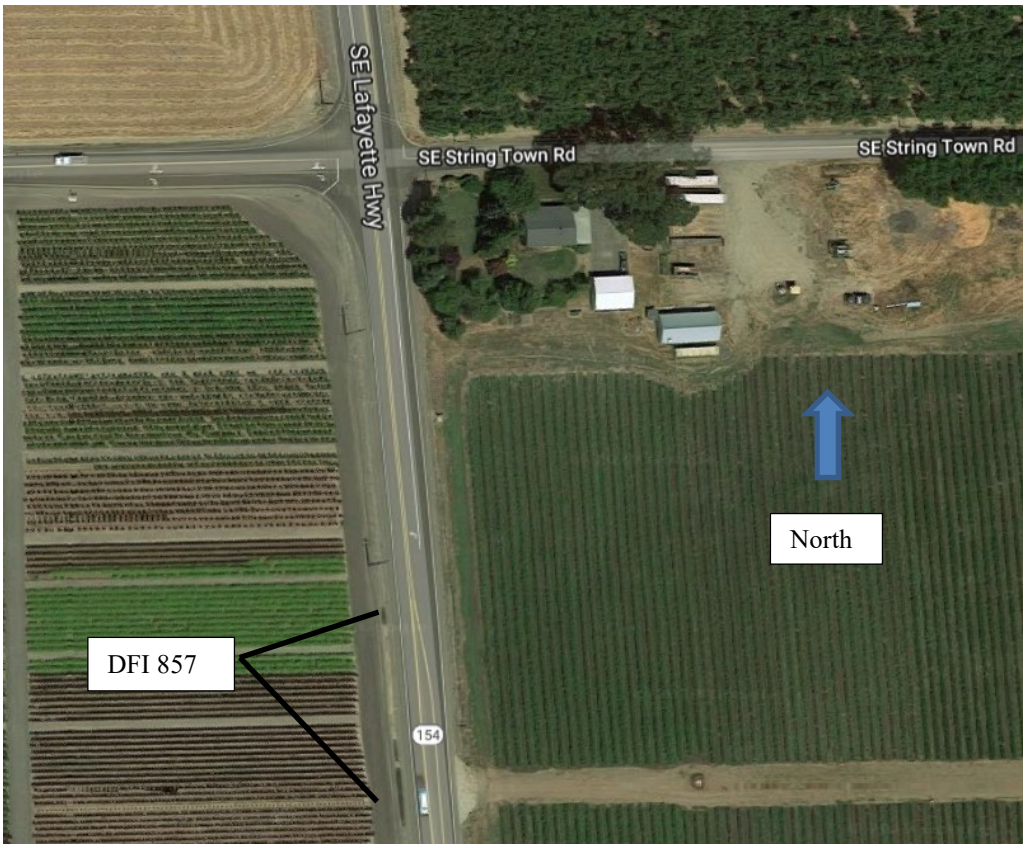
July, 2019

INDEX

1. Identification

Facility Types: Water Quality Biofiltration Swale D00857

Location: Lafayette Highway 154
Milepost 1.24 to 1.28, Right



Facility D00857 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 0.08 miles south 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 byparking on the shoulder of southbound OR-154 between mile posts 1.24 and 1.28.

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

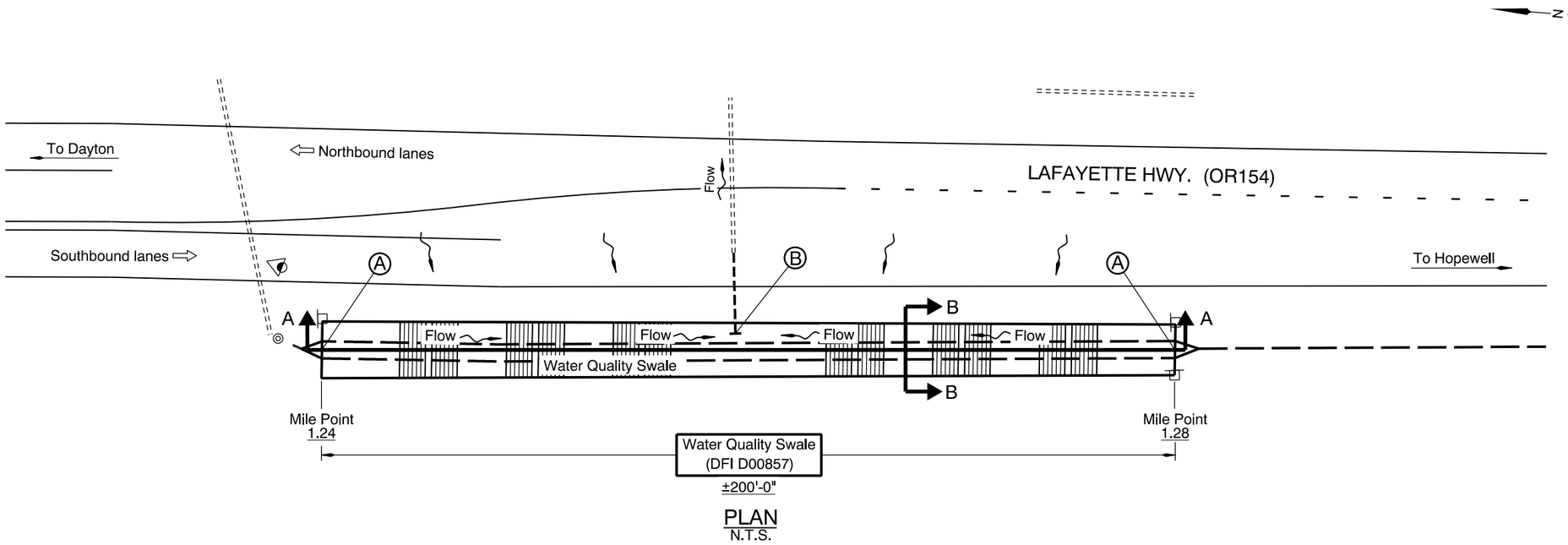
Contact any of the following for more detailed information about management of waste materials found on site:

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

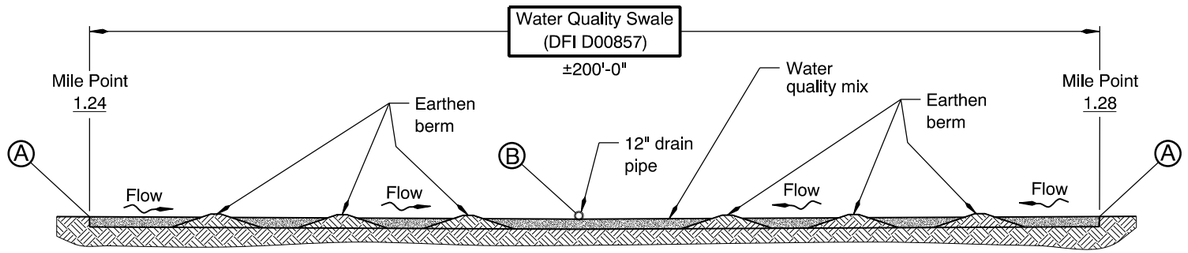
A Appendix A – Site Specific Operational Plan

Contents:

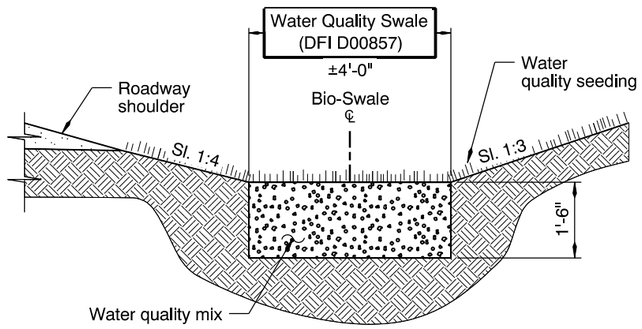
Operational Plan: DFI D00857



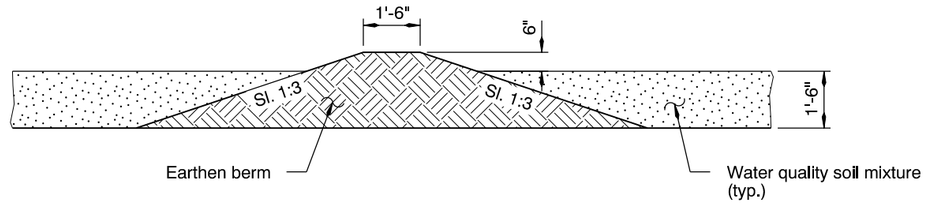
PLAN
N.T.S.



SECTION A-A
N.T.S.



SECTION B-B
N.T.S.



EARTHEN BERM DETAIL
N.T.S.

LEGEND:

- Ⓐ Swale Inlet
- Ⓑ Swale Outlet
- ◎ Manhole
- Pavement / Facility Flow Path
- Storm Pipe (Facility)
- Ditch Line
- Swale Boundery
- Traffic Direction
- Photo Location / Direction

OREGON DEPARTMENT OF TRANSPORTATION

Prepared By: M. Skelton

Drafted By: C. Carman, P.E.

DFI D00857
MAINTENANCE DISTRICT 3 HWY 154
WATER QUALITY SWALE
LAFAYETTE HIGHWAY MP 1.24
YAMHILL COUNTY

Rotation: 0° Scale: 1"=30'

B Appendix B – ODOT Project Plans

Contents:

Operational Plan: DFI D00857

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

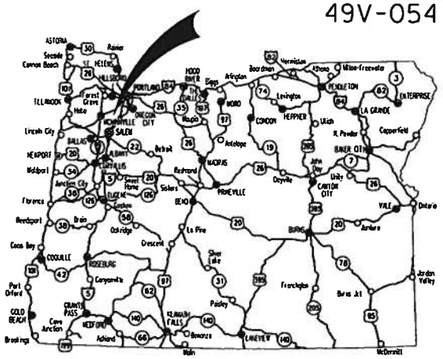
OR154 @ STRINGTOWN ROAD SEC.

LAFAYETTE HIGHWAY

YAMHILL COUNTY

AUGUST 2016

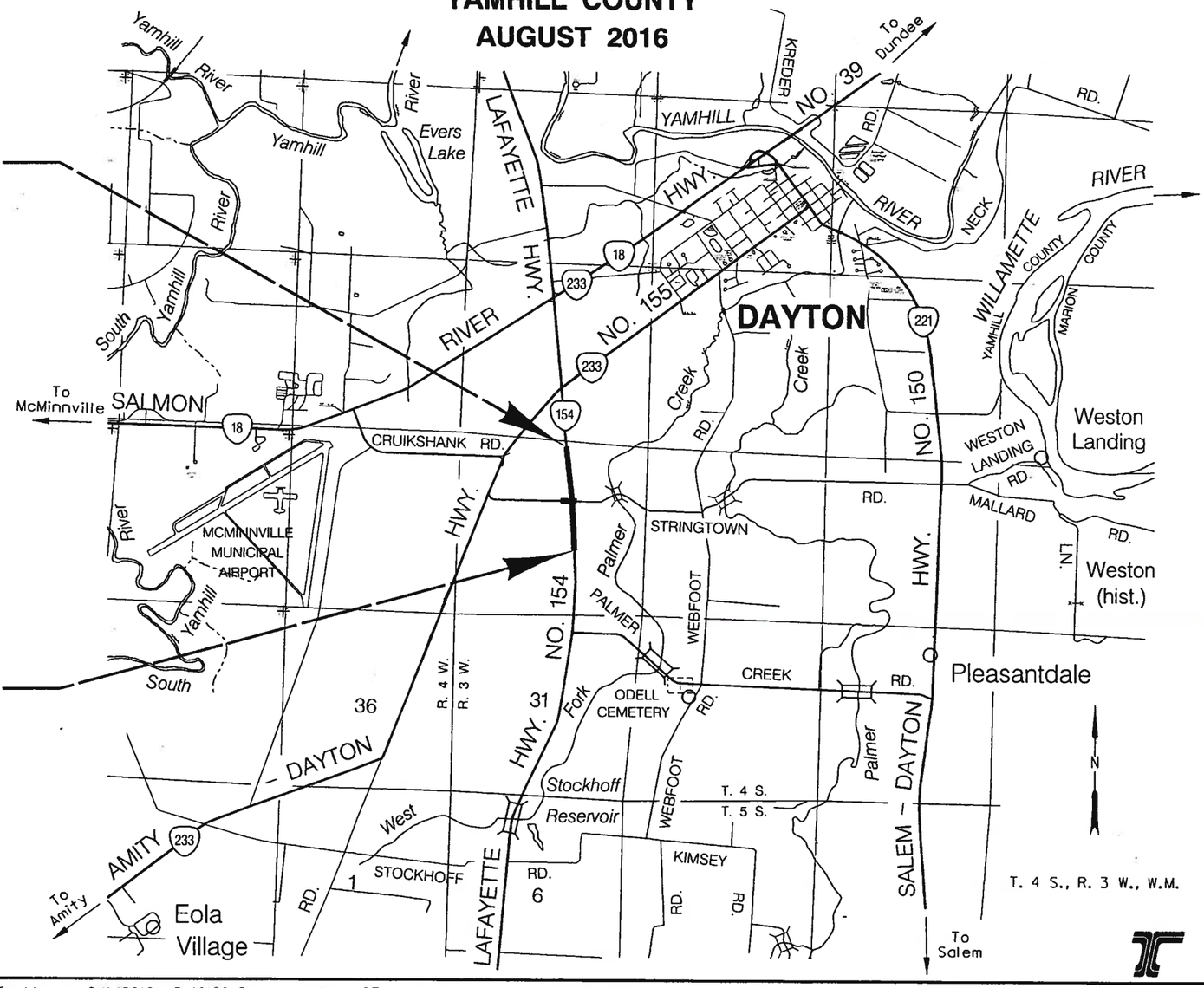
49V-054



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.)

LET'S ALL WORK TOGETHER TO MAKE THIS JOB SAFE

OREGON TRANSPORTATION COMMISSION

Tammy Baney	CHAIR
David Lohman	COMMISSIONER
Susan Morgan	COMMISSIONER
Alando Simpson	COMMISSIONER
Sean O'Hollaren	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: _____ 7.6.16
Signature & date

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

_____
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

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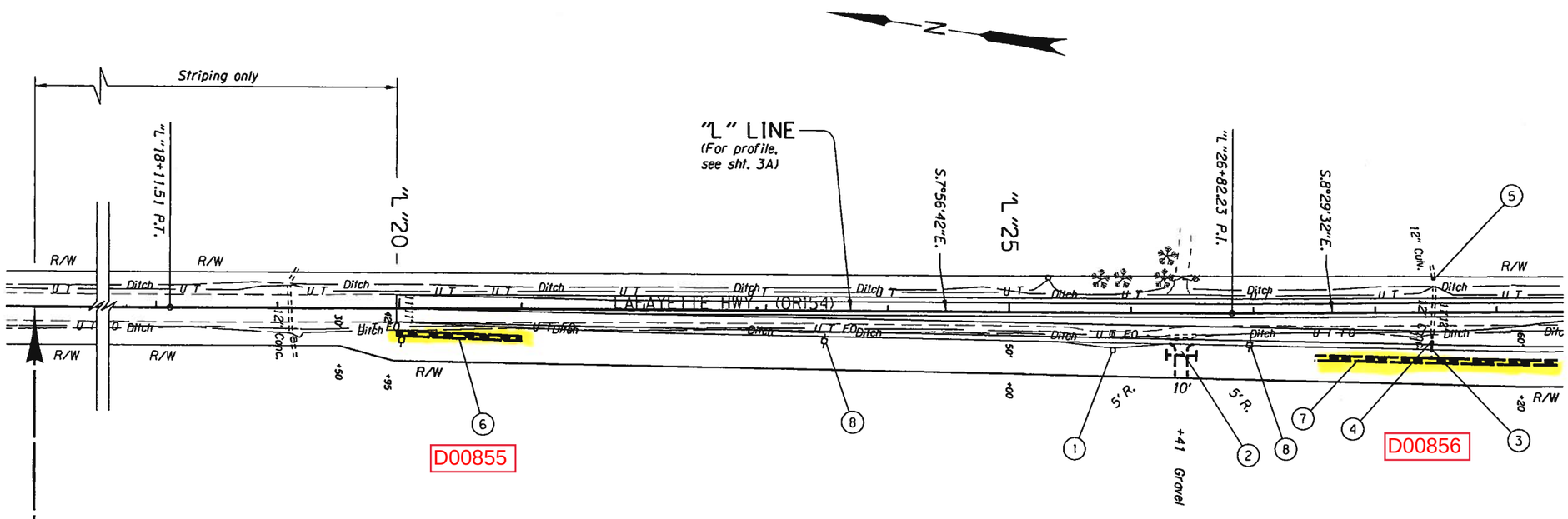
Rotation: 0° Scale: 1"=100'

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

49V-054



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

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)

REGISTERED PROFESSIONAL ENGINEER
58,879
OREGON
JULY 13, 2004
DERRYL D. JAMES
RENEWS: 06-30-2017

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

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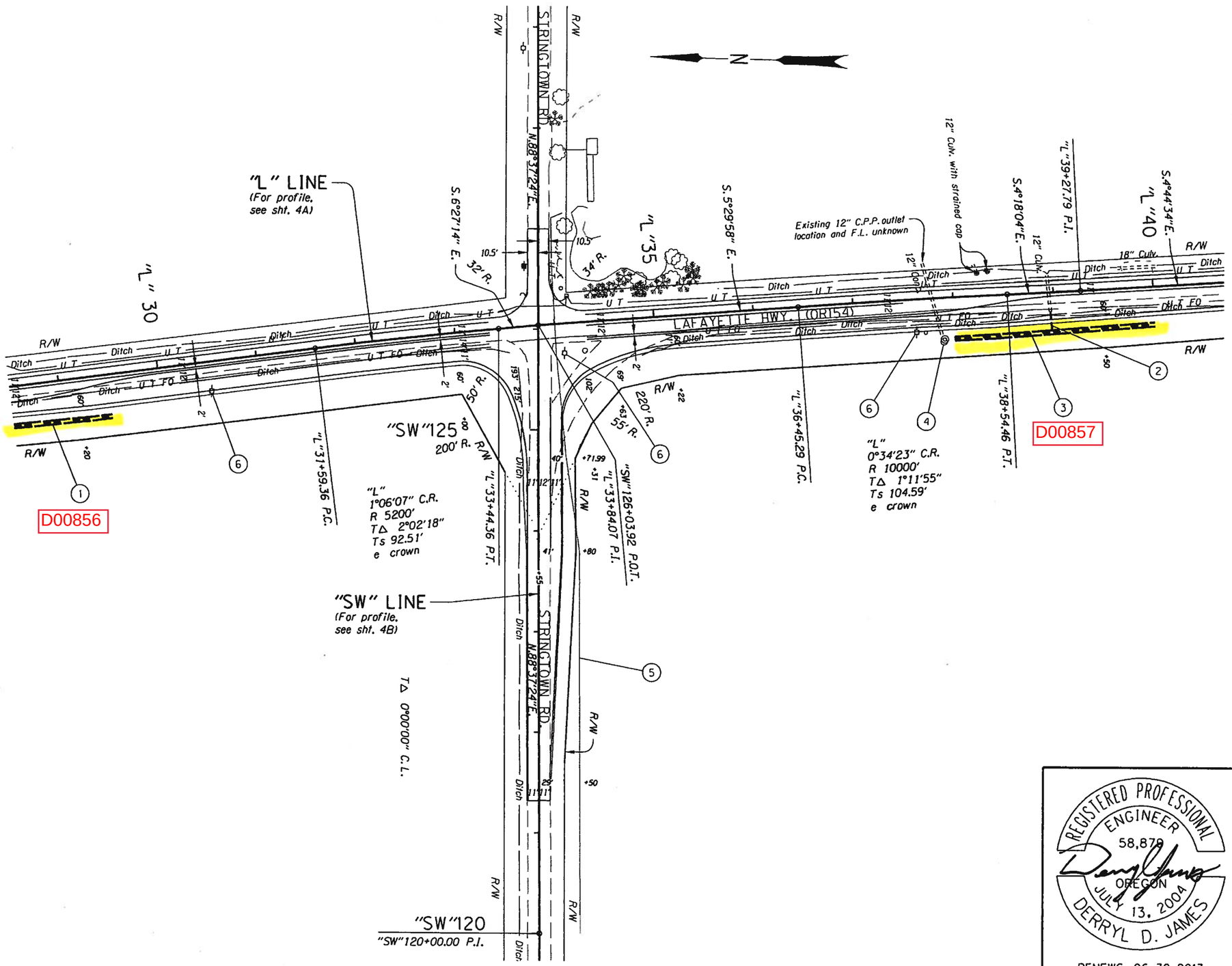
Rotation: 0° Scale: 1"=100'

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

49V-054



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)

REGISTERED PROFESSIONAL ENGINEER
58,879
OREGON
JULY 13, 2004
DERRYL D. JAMES
RENEWS: 06-30-2017

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

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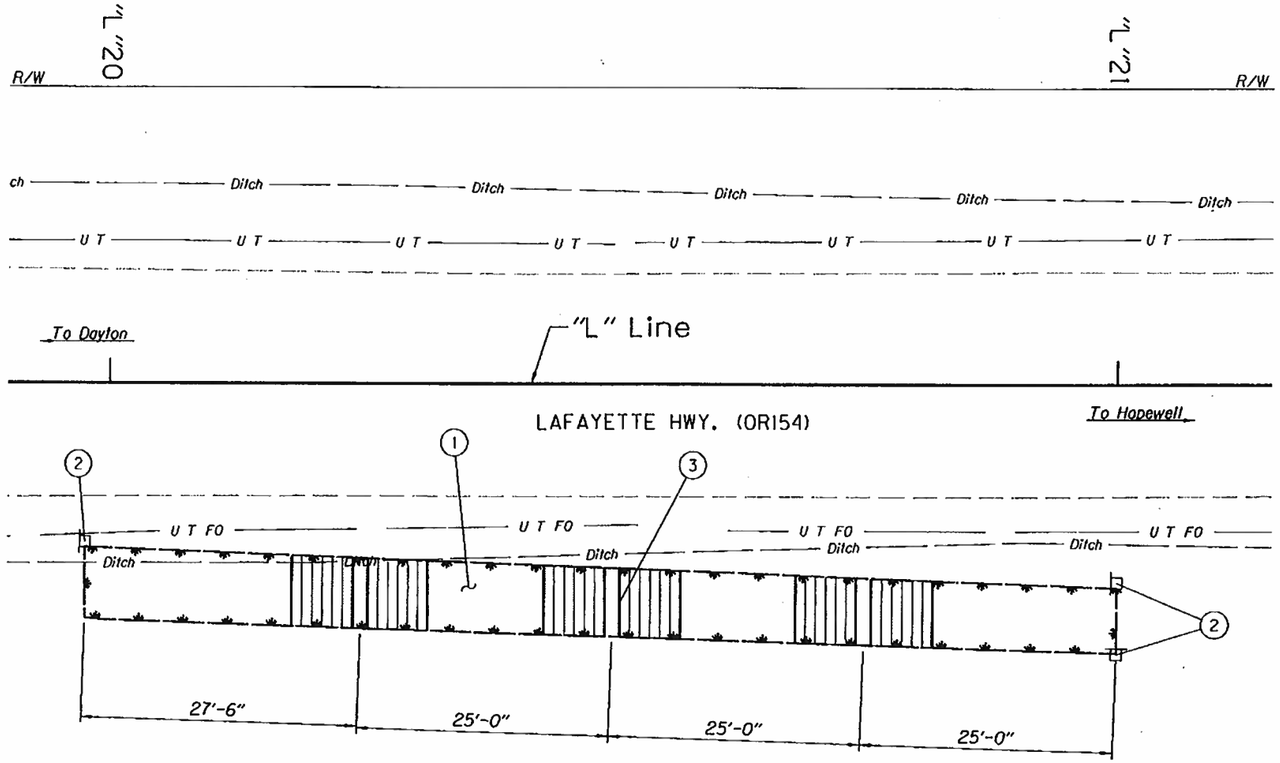
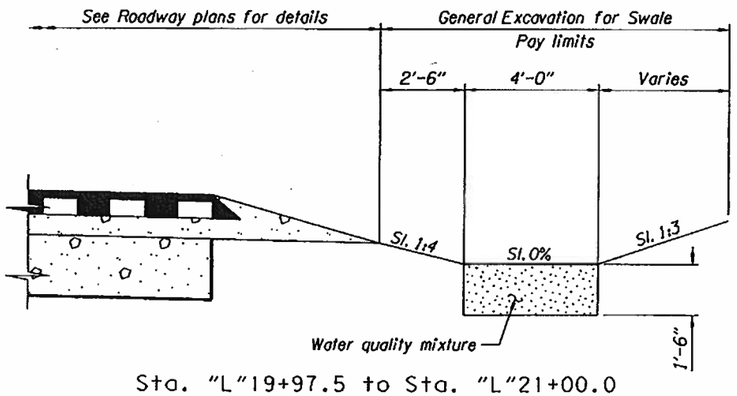


PLAN



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

(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)

= Earthen Berm

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

REGISTERED PROFESSIONAL ENGINEER
17807
OREGON
JULY 25, 1995
CHRIS CARMAN
RENEWS: 12-31-2017

OREGON DEPARTMENT OF TRANSPORTATION

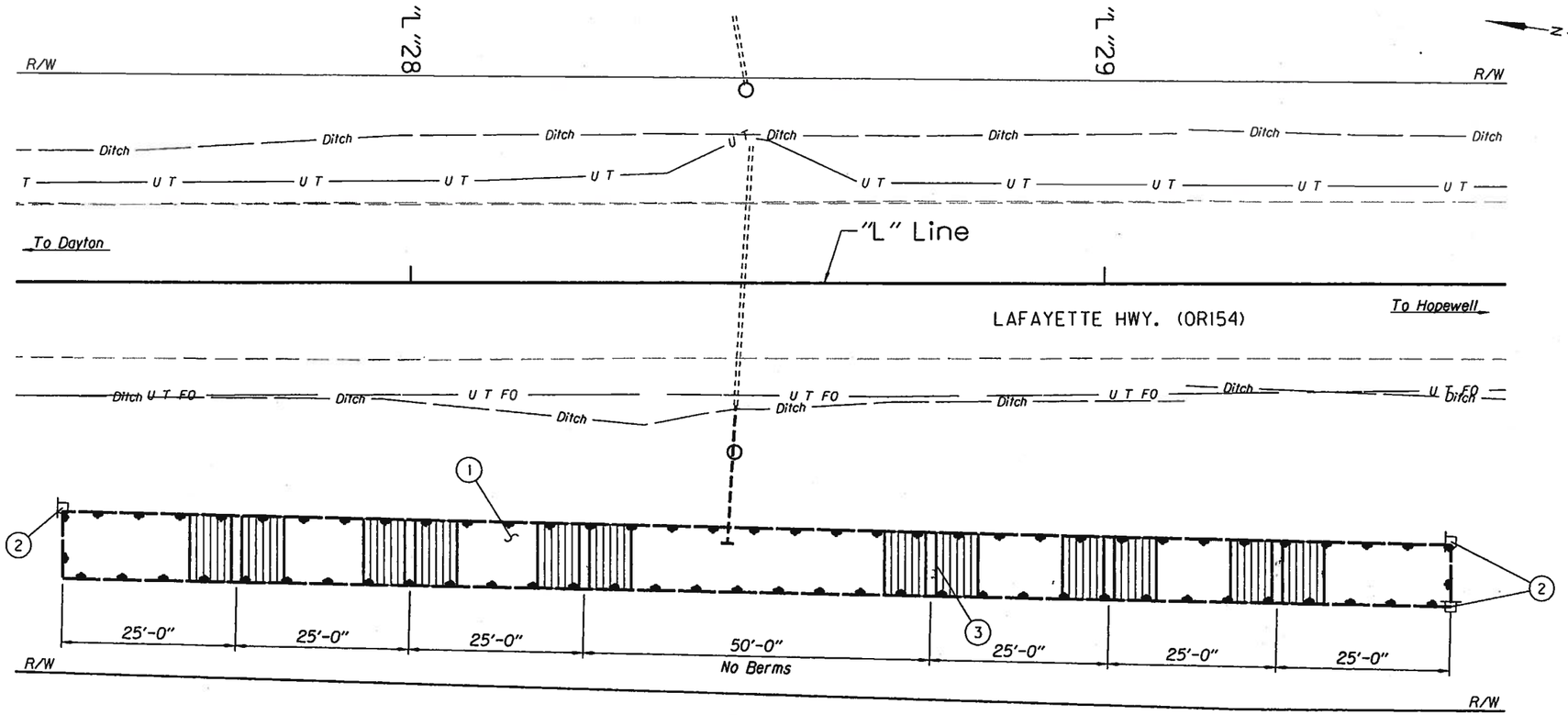
REGION 2 TECH CENTER

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



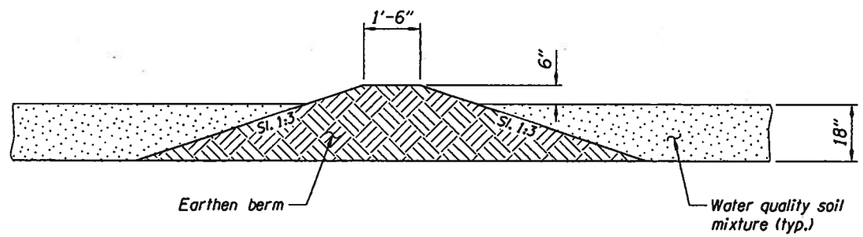
PLAN

D00856

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)



EARTHEN BERM DETAIL

= Earthen Berm

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

See sht. GJ for Typical Water Quality Swale Detail.

REGISTERED PROFESSIONAL ENGINEER
17807
OREGON
JULY 25, 1995
CHRIS CARMAN
RENEWS: 12-31-2017

OREGON DEPARTMENT OF TRANSPORTATION

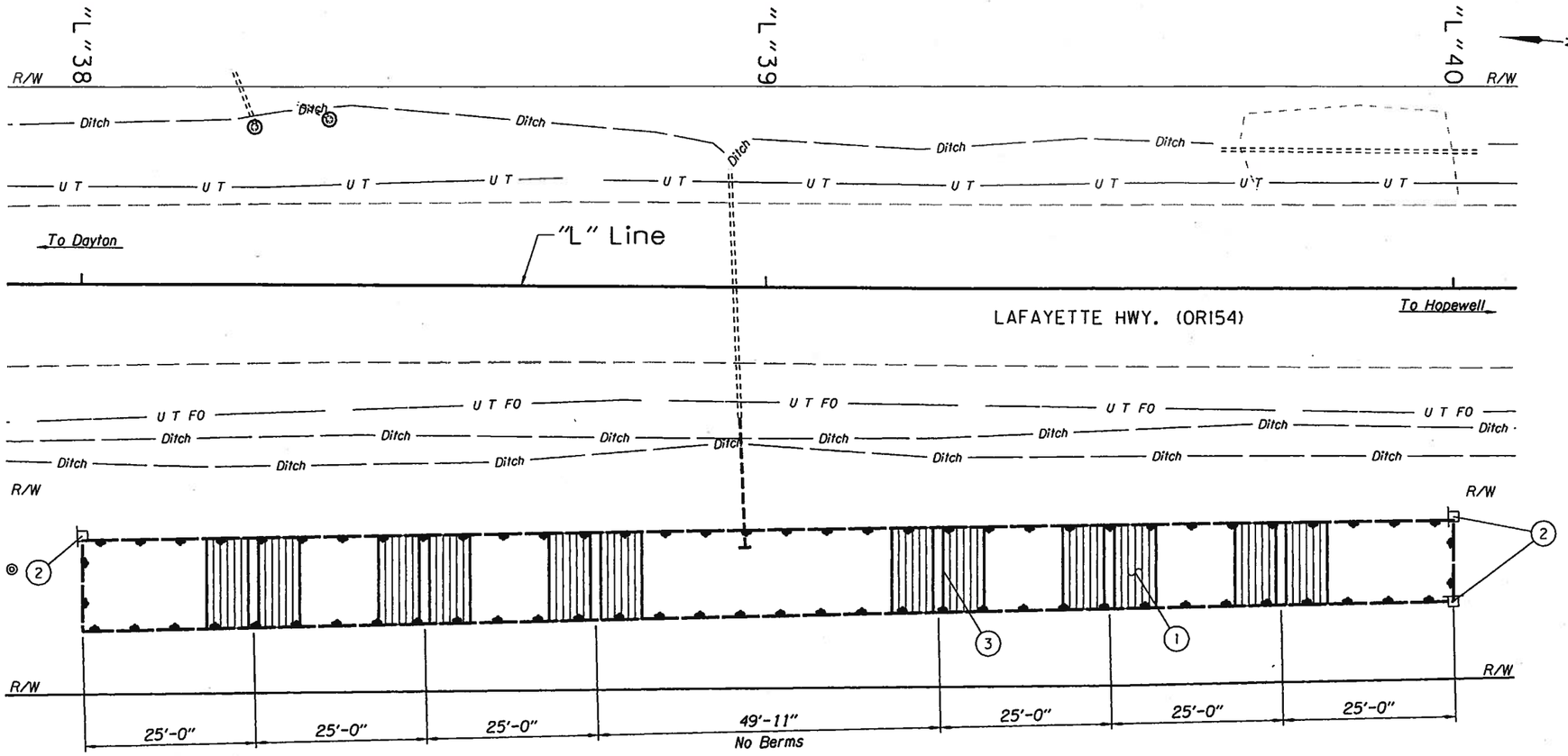
REGION 2 TECH CENTER

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-2



PLAN

D00857

(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)

= Earthen Berm

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

See sht. GJ for Typical Water Quality Swale Detail.

REGISTERED PROFESSIONAL ENGINEER
17807
OREGON
JULY 25, 1995
CHRIS CARMAN
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