OPERATION & MAINTENANCE MANUAL

Detention Pond/Water Quality Biofiltration

Swale Combo

Manual prepared: June 2019

DFI No. D00954

Figure 1: DFI No. D00954, looking South

1. Identification

Drainage Facility ID (DFI):	D00954
Facility Type:	Water Qualiy Pond/Swale Combo
Construction Drawings:	(V-File Numbers) 49V-012
Location:	District: 1
	Highway No.: 102
	Mile Post: 88.00 to 88.05, [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: **North to South**

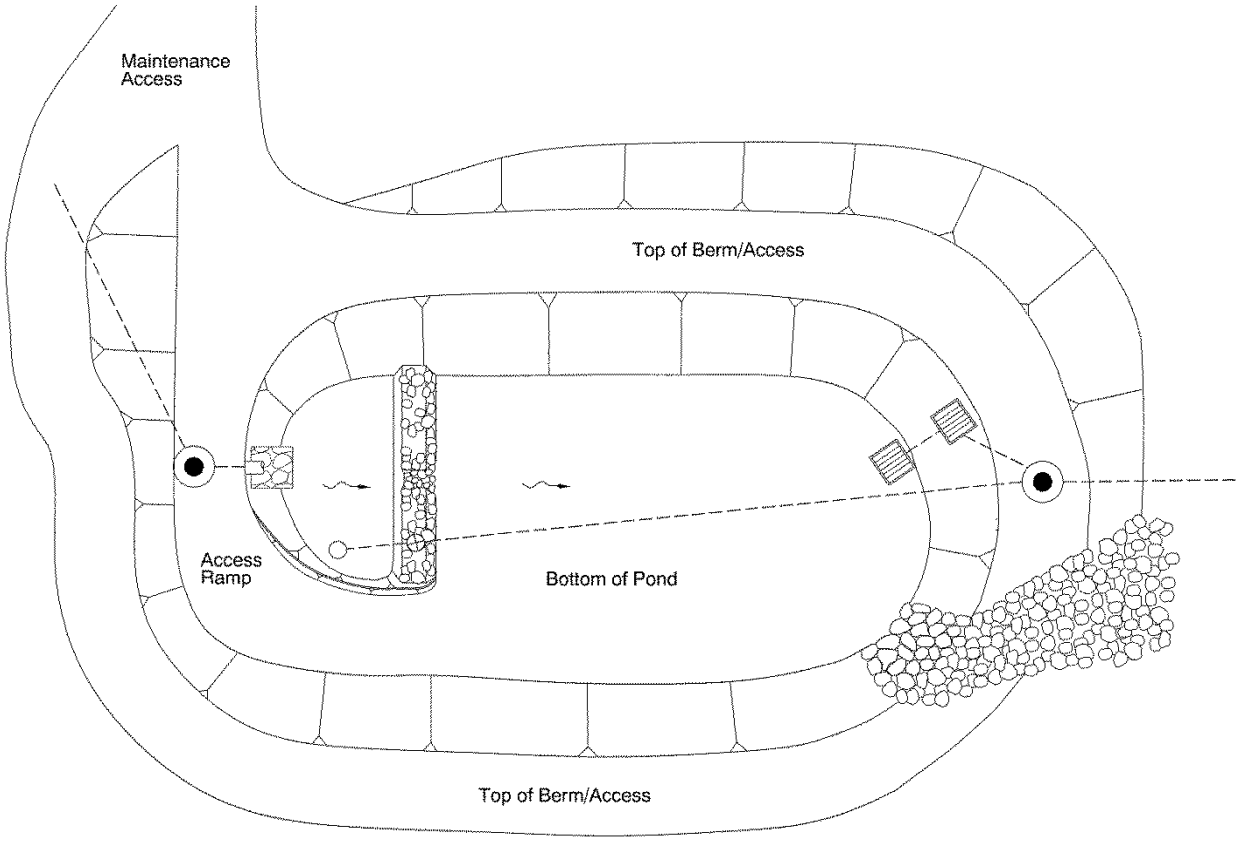
Figure 2**: Facility location map**

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.)
1,360	8,520



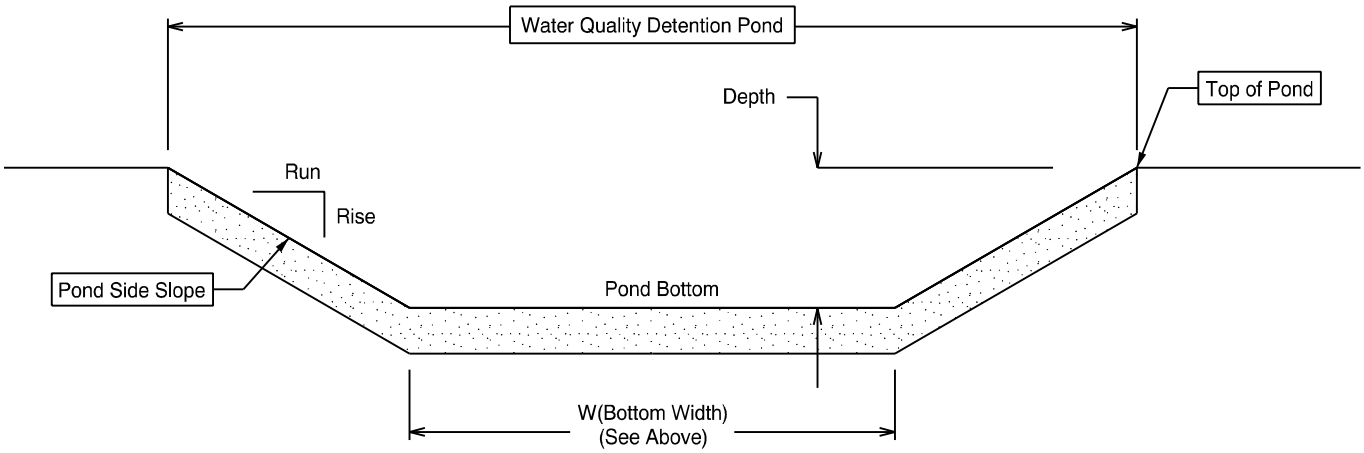
The depth of the pond is the vertical distance measured from the bottom of the pond to the top. The slope of the pond sides is presented by a vertical distance (rise) followed by the horizontal distance (run).

Depth and side slopes:

Depth (feet)
5.3

Side Slope	
Rise (feet)	1
Run (feet)	3 and 4

Site Specific Information:



Access to the pond is through a side gated maintenance road. The orifice has a sliding plate as shown in the as-builts.

5. Facility Access

Maintenance access to the facility:

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

Figure 3: [insert post construction facility access photo and caption text]

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 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:	☐	**P1**
Water Quality Manhole Type:	☐	**P2**
Flow Splitter Manhole	☐	**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:	☐	**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:	☐	**P21**
Facility Outlet		
Catch Basin with Grate	☒	**P22**
Outlet Pipe(s)	☒	**P23**
Outlet/Flow Control Structure	☒	**P24**
Auxiliary Outlet	☐	**P25**
Hazmat Control Valve:	☐	**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 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

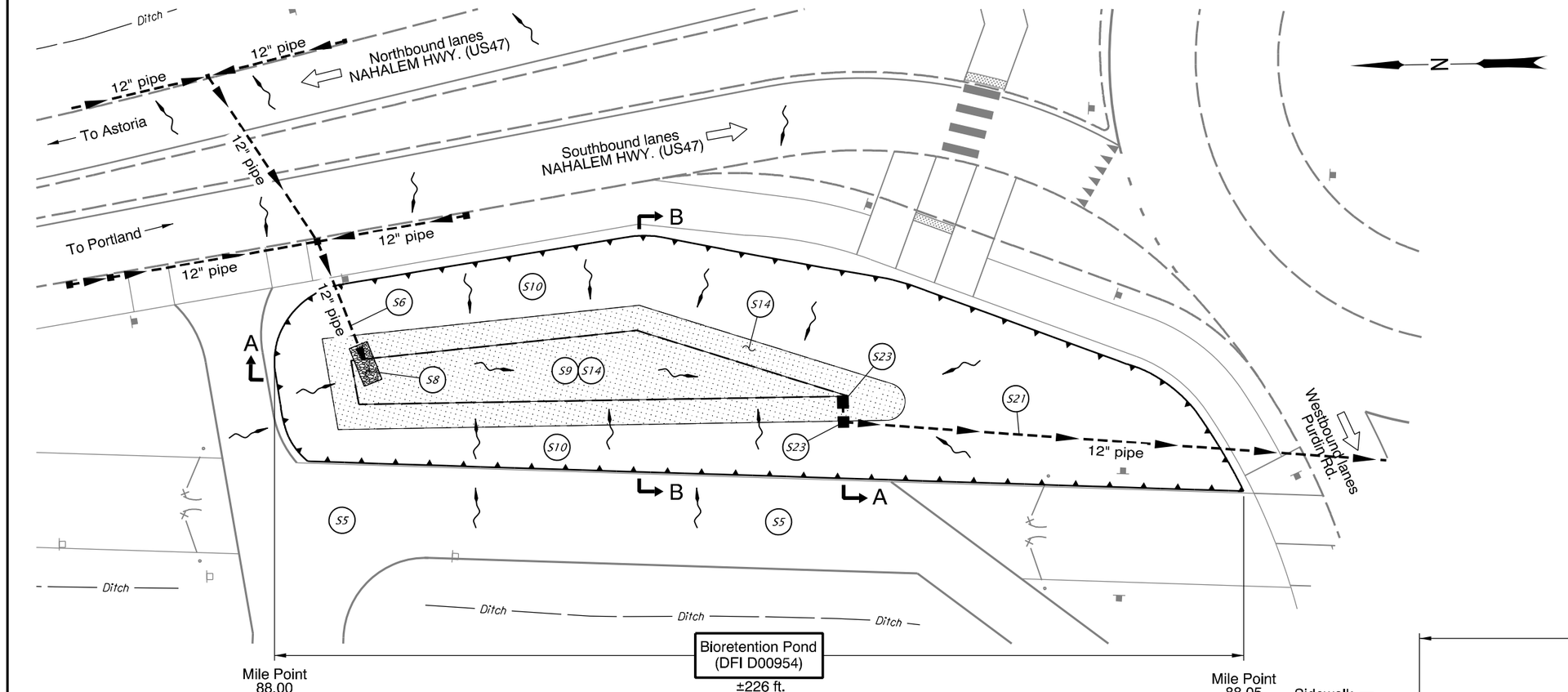
Contact any of the following for more detailed information about management of waste materials found on site:

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

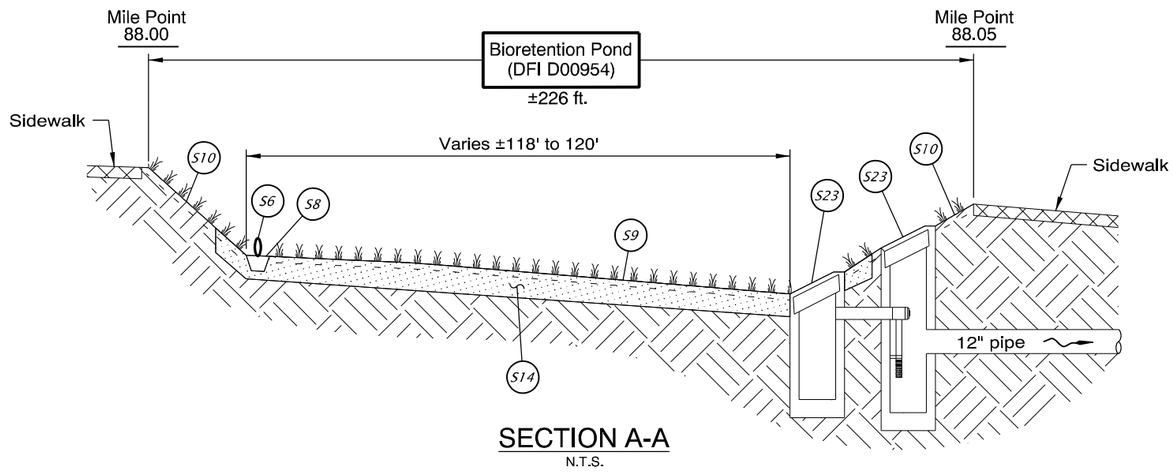
A Appendix A – Site Specific Operational Plan

Contents:

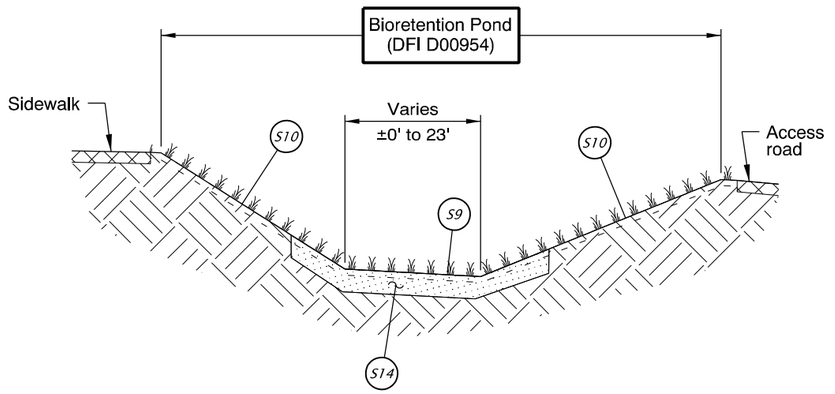
Operational Plan: DFI D00954



PLAN
N.T.S.



SECTION A-A
N.T.S.



SECTION B-B
N.T.S.

OREGON DEPARTMENT OF TRANSPORTATION

Prepared By: Remiro Perez

Drafted By: Michael Skelton

DFI D00954
MAINTENANCE DISTRICT 1 OR47
WATER QUALITY BIORETENTION FACILITY
NEHALEM HIGHWAY SB, MP 88.00 RT.
WASHINGTON COUNTY

B Appendix B – Project Contract Plans

Contents:

Site Specific Subset of Project Contract Plan 49V-012

49V-012

INDEX OF SHEETS		
SHEET NO.	SHEET TITLE	DESCRIPTION
1	1	Title Sheet
2	1A	Index of Sheets & Std. Drg. Reference
3	1B	Key Map

(CONT. ON SHEET 1A)

WASHINGTON COUNTY, OREGON

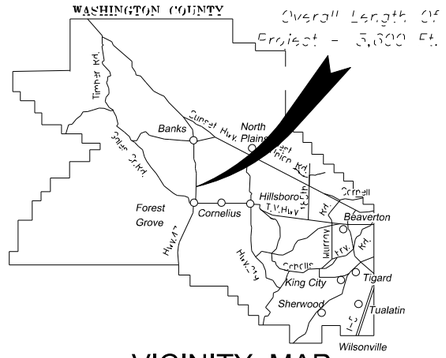
DEPARTMENT OF LAND USE AND TRANSPORTATION

PLANS FOR PROPOSED PROJECT

GRADING, DRAINAGE, PAVING, SIGNING, & STRIPING,
ILLUMINATION, LANDSCAPING

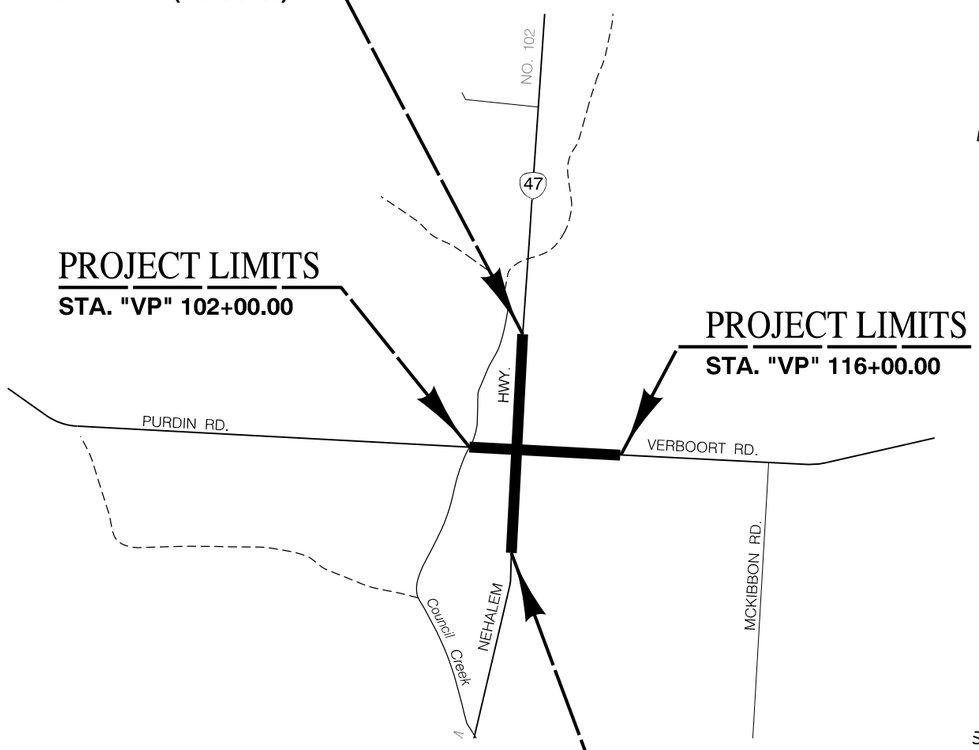
OR47 - VERBOORT/PURDIN ROAD
ROUNDABOUT

WASHINGTON COUNTY
NOVEMBER 2015



VICINITY MAP

BEGINNING OF PROJECT
STA. "OR47" 500+00.00 (M.P. 87.8)



END OF PROJECT
STA. "OR47" 522+00.00 (M.P. 88.3)

BASIS OF BEARINGS: *BASIS OF BEARINGS IS THE LINE BETWEEN FOUND MONUMENTS PV04 AND POINT NO. 1023, WHICH LINE BEARS N81°36'40"E 5176.37 FEET. CONTROL WAS ESTABLISHED IN THE OREGON COORDINATE SYSTEM OF 1983, NORTH ZONE BY RTK GPS, UTILIZING THE ODOT RTK ORGN NETWORK.*

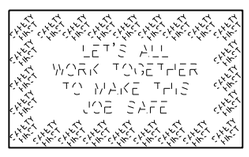
THE HORIZONTAL DATUM IS NAD 83(96)(EPOCH 2002), BEARINGS ARE GRID, DISTANCES ARE GROUND, AND UNITS ARE INTERNATIONAL FEET. STATE PLANE COORDINATES (SPC) WERE REDUCED TO LOCAL DATUM PLANE (LDP) BY DIVIDING SPC BY THE COMBINED SCALE FACTOR OF 0.99991012502.

ELEVATION DATUM: *VERTICAL DATUM ELEVATIONS ARE BASED ON CITY OF FOREST GROVE VERTICAL DATUM, BEING THE U.S.C. & G.S. 1934 ADJUSTMENT OF THE NGVD 29 DATUM. THE FINAL ADJUSTMENT TO THE NGVD 29 DATUM OCURRED IN 1947 WHILE THE CITY OF FOREST GROVE RETAINED THE 1934 ADJUSTMENT. BASIS FOR ELEVATIONS WAS TAKEN FROM WASHINGTON COUNTY BENCHMARK NO. 952, A 1-1#4" BRASS DISK LOCATED IN THE SIDEWALK ON THE EAST SIDE OF THATCHER ROAD, APPROXIMATELY 250 FEET SOUTH OF DAVID HILL ROAD, NEAR THE STEPS INTO A SUBDIVISION, WITH A NGVD 29 ELEVATION OF 236.654 FEET. 0.49 FEET WAS SUBTRACTED FROM THE NGVD 29 DATUM TO GET THE CITY OF FOREST GROVE DATUM.*

T. 1 N.
R. 3 W.
SECTION 30
T. 1 N., R. 3 W., W. M.

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 From The Center.

"This Design Complies with ORS 92.044(7), In That No Utility Infrastructure is Designed to be Within 1 Ft. of a Survey Monument Location Shown on a Subdivision or Partion Plat. No Design Modification Nor Final Field Location Change Shall be Permitted If It Would Cause Any Utility Infrastructure to be Placed Within the Prohibited Area."



AS BUILT DRAWINGS

Revisions Drawn By Sean Atwood Date October, 2017

THESE AS BUILT DRAWINGS HAVE BEEN PREPARED, IN PART, ON THE BASIS OF INFORMATION COMPILED BY OTHERS. THEY ARE NOT INTENDED TO REPRESENT IN DETAIL THE EXACT LOCATION, TYPE OF COMPONENT NOR MANNER OF CONSTRUCTION. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THE AS BUILT DRAWINGS.

FOR STANDARD DRG. NOS. SEE SHT 1A

PROJECT NUMBER 1000207

Department of Land Use & Transportation
Engineering and Construction Services, Engineering

DWG: 432411tc.dgn

NO.	REVISIONS

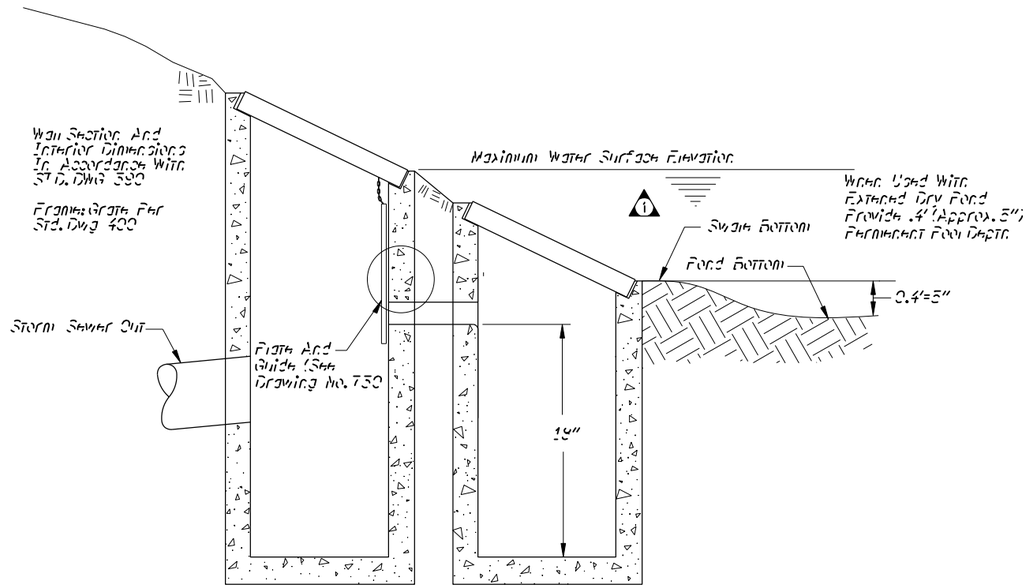
OR47 - VERBOORT/PURDIN ROAD
WASHINGTON COUNTY

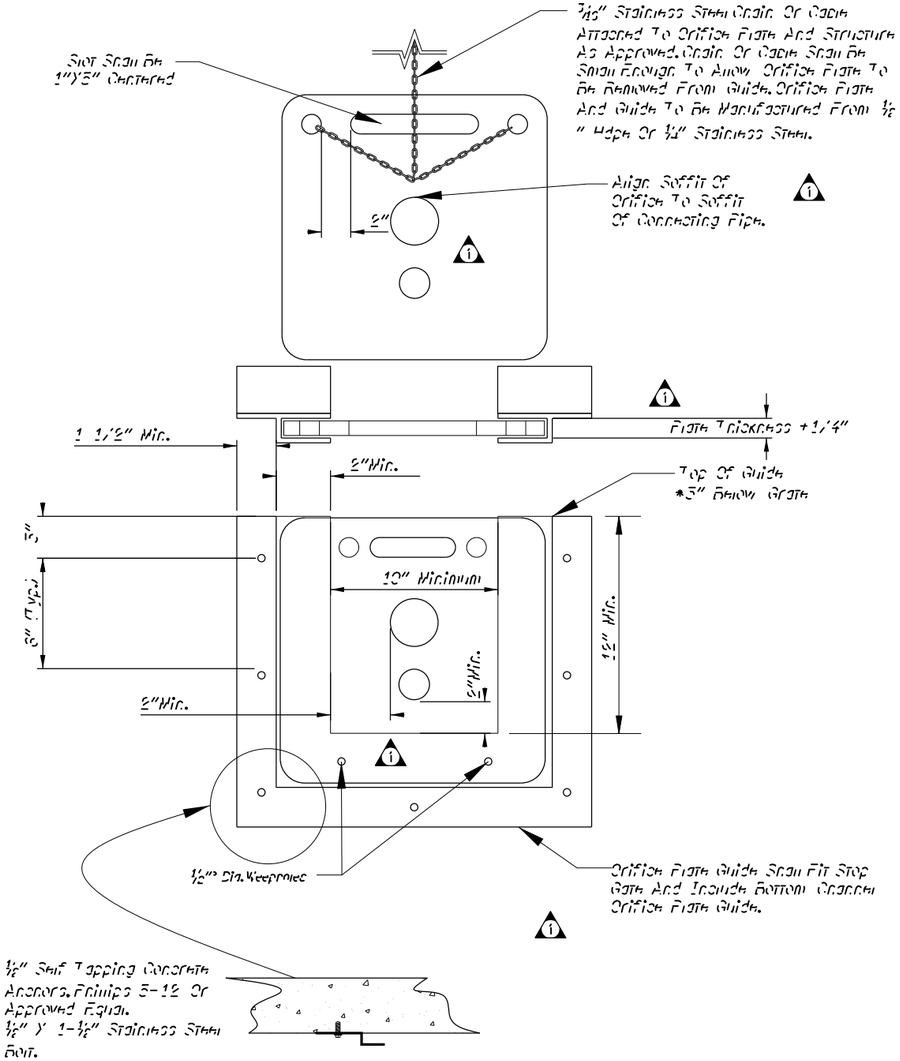
TITLE SHEET AND VICINITY MAP

	BY	DATE
DRWN:	SA	Jun-15
DSGN:	TTR	Jun-15
CHKD:	JJE	Jun-15

CH2MHILL

SHEET NO. 1





Notes:
1. Connecting Pipe Shall Be 12" Awwa C-900 Or Astm 3034 Pvc.
2. Maximum Orifice Opening Shall Be 6" Diameter.
3. Structures Shall Conform To Standard Drawing No. 590 Ditch Inlet.
4. Frame And Grate Shall Conform To Standard Drawing No. 400. Ditch Inlet Frame And Grate.
5. Fish And Guide Shall Be Secured Firmly Against Wall Of Structure As Approved.
6. Maintenance Access Required To Within 10' Of Center Of Both Structures.
7. For Approval Of Alternate Structures See Section 1.17.

OUTFLOW CONTROL STRUCTURE

Verboort North Basin	
Orifice Size	Invert Elevation
1"	167.20
3"	167.70

Verboort South Basin	
Orifice Size	Invert Elevation
2"	167.22
3"	167.65

ORIFICE PLATE AND GUIDE

AS BUILT DRAWINGS

Revisions Drawn By Sean Atwood Date October, 2017

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PROJECT NUMBER 1002207

Department of Land Use & Transportation
Engineering and Construction Services, Engineering

WASHINGTON COUNTY OREGON

DWG: 436411_49v1.dgn

NO.	REVISIONS	BY	DATE
1	Revised Outfall Design		

OR47 - VERBOORT/PURDIN ROAD
WASHINGTON COUNTY

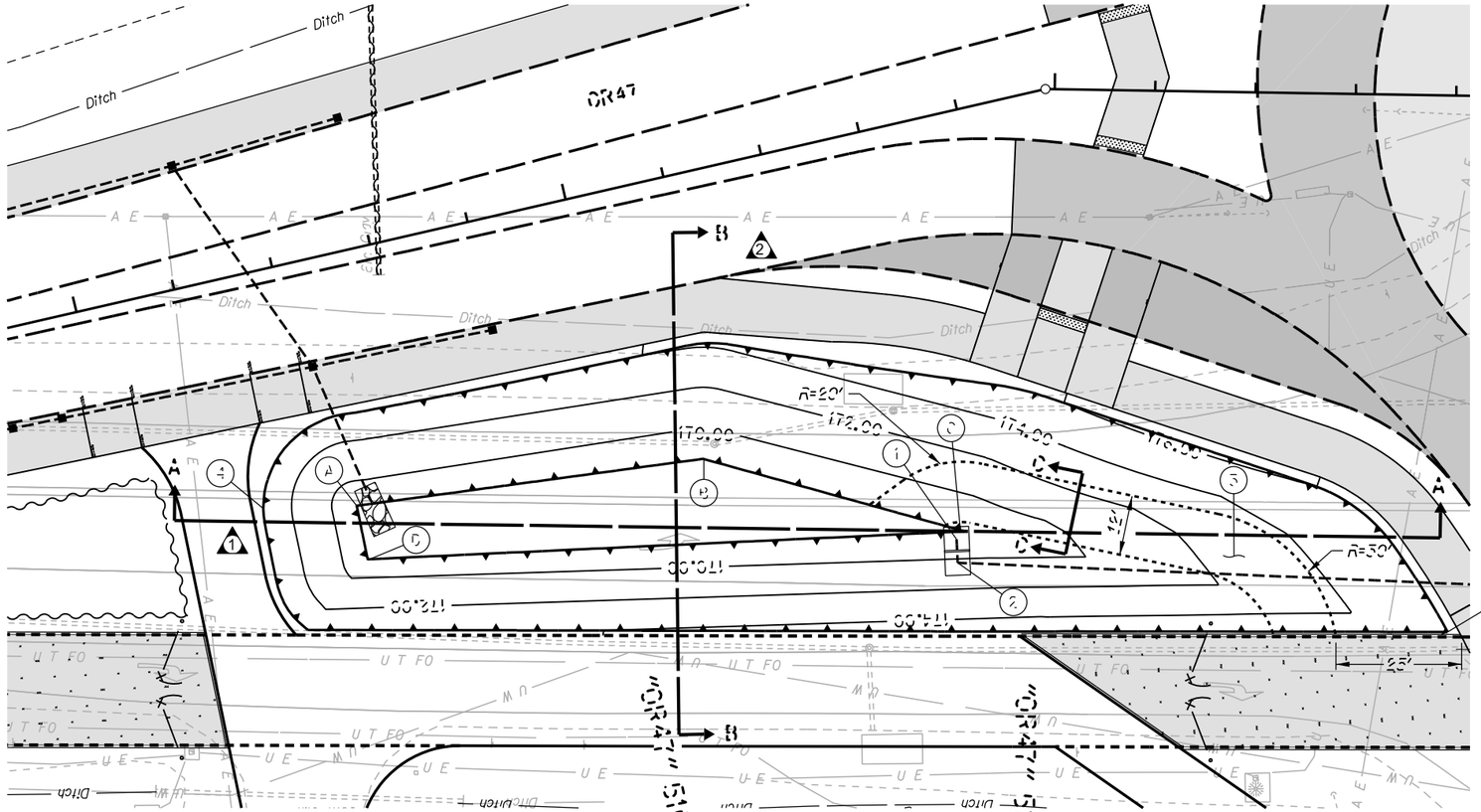
DRAINAGE DETAILS

	BY	DATE
DRWN:	SJA	Mar-16
DSGN:	JFC	Mar-16
CHKD:	JAS	Mar-16

CH2MHILL

SHEET NO. 20-3

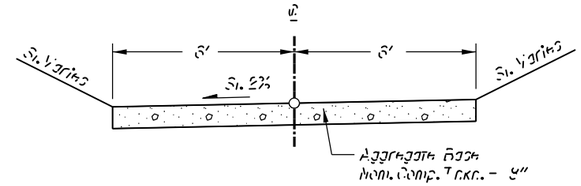
49V-012



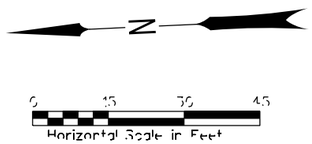
PLAN

POINT CONTROL				
Pt. No.	Station	Offset	Elev.	Pt. Description
(A)	Sta. "OR47" 509+45.75	50.12' Rt.	168.76	Toe of Slope
(B)	Sta. "OR47" 510+15.12	56.48' Rt.	168.44	Toe of Slope
(C)	Sta. "OR47" 510+62.65	82.26' Rt.	168.18	Toe of Slope
(D)	Sta. "OR47" 509+45.49	61.00' Rt.	168.77	Toe of Slope

*Note: Top of Slope Elevation Controlled by Adjacent Roadway Elements.

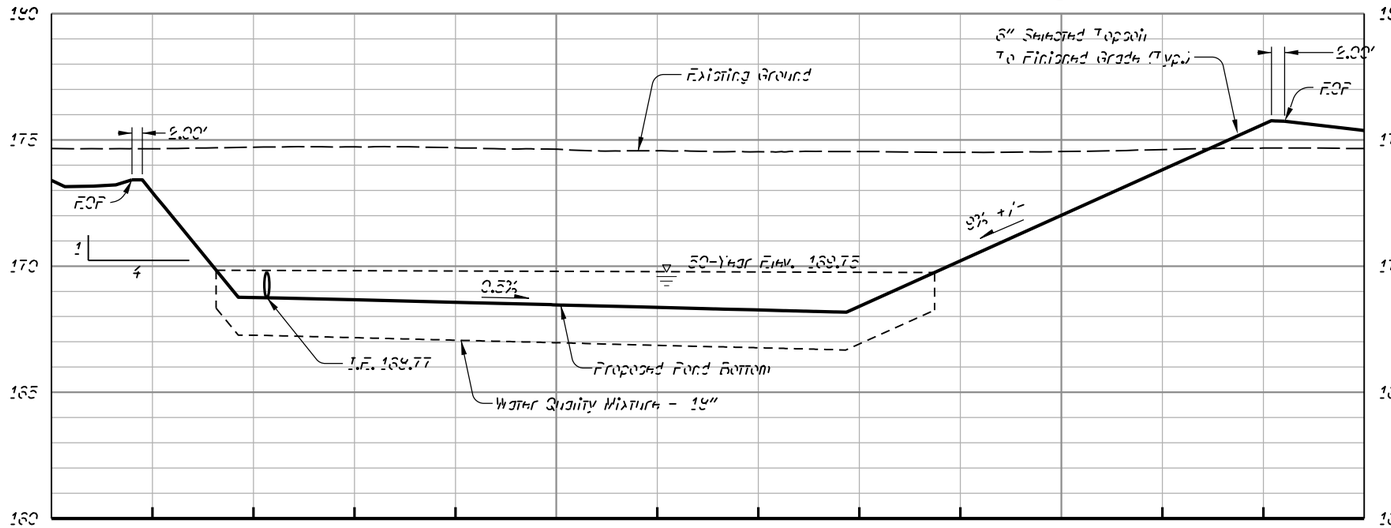


MAINTENANCE ACCESS ROAD
SECTION C-C

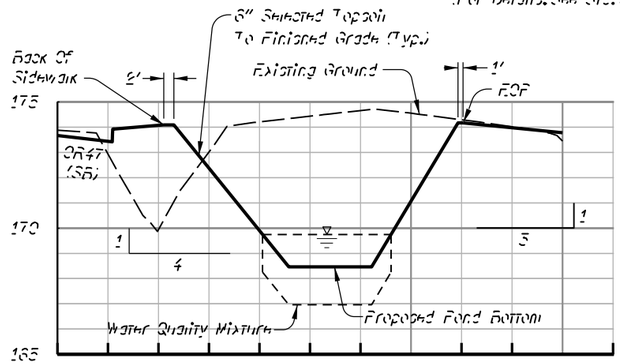


Notes:

1. Sta. "OR47" 510+60.73, 93.45' Rt. (Center) Primary Outlet Structure (For Details, See Sht. 20-5)
2. Sta. "OR47" 510+59.99, 99.04' Rt. (Center) Auxiliary Outlet Structure (For Details, See Shts. 20-5, 5 And 5A)
3. Const. Maint. Access Rd. At Finished Grade (See Detail This Sheet)
4. Inst. Facility Field Marker Type S1 (For Details, See Std. Drg. 599)



SECTION A-A



SECTION B-B

AS BUILT DRAWINGS

Revisions Drawn By Sean Atwood Date October, 2017

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Drainage Facility ID - D 00954

NORTH STORMWATER BIORETENTION POND - D 00954

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CH2MHILL

SHEET NO. 20-4

PROJECT NUMBER 1000207

Department of Land Use & Transportation
Engineering and Construction Services, Engineering

WASHINGTON COUNTY OREGON

DWG: 426411sht4.dgn		
NO.	REVISIONS	
1	Added Field Marker	
2	Record Drawing	

OR47 - VERBOORT/PURDIN ROAD
WASHINGTON COUNTY

STORMWATER DETAILS

	BY	DATE
DRWN:	SJA	Mar-16
DSGN:	JRC	Mar-16
CHKD:	JAS	Mar-16

PROJECT NUMBER
100207

49V-012

WASHINGTON COUNTY OREGON

Department of Land Use & Transportation

Engineering and Construction Services, Engineering

NO.	REVISIONS	DWG: 436411xx04.dgn

OR47 - VERBOORT/PURDIN ROAD

WASHINGTON COUNTY

ROADWAY AND DRAINAGE

STA. "OR47" 506+00.00 TO STA. "OR47" 525+00.00

	BY	DATE
DRWN:	SJA	Mar-16
DSGN:	TTT	Mar-16
CHKD:	JJE	Mar-16

(1) Sta. "OR47" 507+91.07, 20.22' Lt.
Const. Concrete Inlet (CG-3)
Inst. 12" RCP Sew. Pipe - 60'
(For Details, See Std. Drgs. RD571, RD572)

(2) Sta. "OR47" 509+52.37, 20.91' Lt.
Const. Concrete Inlet (CG-3)
Inst. 12" RCP Sew. Pipe - 10'
(For Details, See Std. Drgs. RD571, RD572)

(3) Sta. "OR47" 509+59.37, 24.94' Lt.
Const. Concrete Inlet (CG-3)
Inst. 12" RCP Sew. Pipe - 54'
(For Details, See Std. Drgs. RD571, RD572)

(4) Sta. "OR47" 509+92.45, 19.59' Rt.
Const. Concrete Inlet (CG-3)
Inst. 12" RCP Sew. Pipe - 10'
(For Details, See Std. Drgs. RD571, RD572)

(5) Sta. "OR47" 509+92.45, 19.93' Rt.
Const. Concrete Inlet (CG-3)
Inst. 12" RCP Sew. Pipe - 51'
(For Details, See Std. Drgs. RD571, RD572)

(6) Sta. "OR47" 509+49.79, 50.00' Rt.
F.L. 169.77
Inst. Riprap Basin (Type I)
(For Details, See Sht. 20-2)

(7) Sta. "OR47" 507+19.91, 19.98' Lt.
Const. Concrete Inlet (CG-3)
Inst. 12" RCP Sew. Pipe - 60'
(For Details, See Std. Drgs. RD571, RD572)

(8) Sta. "OR47" 507+29.92, 19.00' Rt.
Const. Concrete Inlet (G-2) (Type 2 Grate)
Inst. 12" D.I. Sew. Pipe - 98'
(For Details, See Std. Drgs. RD565, RD564, RD565)

(9) Sta. "OR47" 505+93.93, 49.98' Lt., F.L. 169.05
Sta. "OR47" 505+92.09, 53.79' Rt., F.L. 169.29
Inst. 18" RCP Culv. Pipe - 104'
Slope = 1.69%
(For Details, See Std. Drgs.
RD517, RD519, RD520)

(11) Sta. "OR47" 509+72.46, 19.35' Rt.
Const. Concrete Inlet (CG-3)
Inst. 12" RCP Sew. Pipe - 10'
(For Details, See Std. Drgs. RD571, RD572)

(12) Sta. "OR47" 509+43.44, 20.05' Rt.
Const. Concrete Inlet (CG-3)
Inst. 12" RCP Sew. Pipe - 24'
(For Details, See Std. Drgs. RD571, RD572)

(13) Sta. "OR47" 509+42.19, 20.71' Lt.
Const. Concrete Inlet (CG-3)
Inst. 12" RCP Sew. Pipe - 10'
(For Details, See Std. Drgs. RD571, RD572)

(14) Const. Stamped P.C. Conc. Splitter Island - Modified Type C.E=6"
(For Details, See Sht. 26-2)

(15) Const. Stamped P.C. Conc. Splitter Island - Modified Type C.E=3"
(For Details, See Sht. 26-2)

(16) Const. Curb And Gutter (AOF Section)
(For Details, See Sht. 26-5)

(17) Const. Asphalt Conc. Driveway Approach
(For Details, See Sht. 26-4 And 26-6)

(18) Const. 22'-0"OW Wide Truck Bypass With
Pervious P.C. Conc. Tied Brick Pavement.
(For Details, See Sht. 26 And Sht. 21-17 Thru 21-20)

(19) Const. P.C. Conc. Modified Low Profile Curb
(For Details, See Sht. 26-3 And Curb Plan & Profile Sht.)

(20) Const. P.C. Conc. Sidewalk
(For Details, See Sht. 26 And Std. Drg. RD720)

(21) Sta. "OR47" 509+82.56, 20.95' Lt.
Const. Concrete Inlet (CG-3)
Inst. 12" RCP Sew. Pipe - 82'
(For Details, See Std. Drgs. RD571, RD572)

(22) Remove Exist. Drain Pipe To New
Relocate Drainage System (By Others)

(23) Remove Exist. Culvert Pipe

(24) Relocate Exist. Utility Pole (By Others)

(25) Relocate Exist. San. Sewer (By Others)

(26) Sta. "OR47" 506+45.34, 20.18' Lt.
Const. Concrete Inlet (CG-3)
Inst. 12" RCP Sew. Pipe - 75'
(For Details, See Std. Drgs. RD571, RD572)

(27) Sta. "OR47" 506+44.91, 17.25' Rt.
Const. Concrete Inlet (G-2) (Type 2 Grate)
Inst. 12" D.I. Sew. Pipe - 98'
(For Details, See Std. Drgs. RD565, RD564, RD565)

(28) Sta. "OR47" 509+25.06, 25.04' Lt.
Const. Concrete Inlet (CG-3)
Inst. 12" RCP Sew. Pipe - 30'
(For Details, See Std. Drgs. RD571, RD572)

(29) Sta. "OR47" 509+90.00, 20.95' Rt.
Const. Concrete Inlet (CG-3)
Inst. 12" RCP Sew. Pipe - 37'
(For Details, See Std. Drgs. RD571, RD572)

(30) Sta. "OR47" 509+14.41, 19.00' Rt.
Const. Concrete Inlet (CG-3)
Inst. 12" RCP Sew. Pipe - 39'
(For Details, See Std. Drgs. RD571, RD572)

(31) Remove And Relocate Mailbox To
Sta. "NF" 105+72, 56' Lt.
(For Details, See Sht. 26-5)

(32) Const. Curb Transition
(For Details, See Sht. 26)

(33) Protect Existing Field Drain
Trim Pipe At Proposed Ditch

(34) For Ditch Profile, See Curb Plan And Profile Sheets

(35) Const. 52'x45" Grate Link Double Gate
(For Details, See Truck Bypass Plan
And Profile Sheets And Std. Drg. RD920)

(36) Remove Exist. Surfacing

(37) Const. P.C. Conc. Edge Restraint Curb
(For Details, See Sht. 26 & 26-3)

(38) See Note 14, Sht. 3

AS BUILT DRAWINGS

Revisions Drawn By Sean Atwood Date October, 2017

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THE CONTRACT DOCUMENT DRAWINGS ARE THE PRINTED DOCUMENTS DATED JULY, 2015 AS SUBSEQUENTLY OFFICIALLY AMENDED, WHICH DEFINE THE SCOPE, EXTENT, AND CHARACTER OF THE WORK. THIS ORIGINALLY ISSUED CONTRACT DOCUMENT DRAWING WAS SEALED AND SIGNED BY JOHN A. BLAND OREGON P.E. NO. 1784PE IN JULY, 2015

ROADWAY

THE CONTRACT DOCUMENT DRAWINGS ARE THE PRINTED DOCUMENTS DATED NOVEMBER, 2015 AS SUBSEQUENTLY OFFICIALLY AMENDED, WHICH DEFINE THE SCOPE, EXTENT, AND CHARACTER OF THE WORK. THIS ORIGINALLY ISSUED CONTRACT DOCUMENT DRAWING WAS SEALED AND SIGNED BY JEFFERY SHAWN STALLARD OREGON P.E. NO. 82970PE IN JULY, 2015

STRUCTURAL

SHEET NO.
4

CH2MHILL®

436411 01-NOV-2017 14:45 jstallard

Sec. 19, T. 1 N., R. 3 W., W.M.

49V-012

PROJECT NUMBER
1002207

Department of Land Use & Transportation
Engineering and Construction Services, Engineering

WASHINGTON COUNTY OREGON

DWG: 436411pc04gr	
NO.	REVISIONS

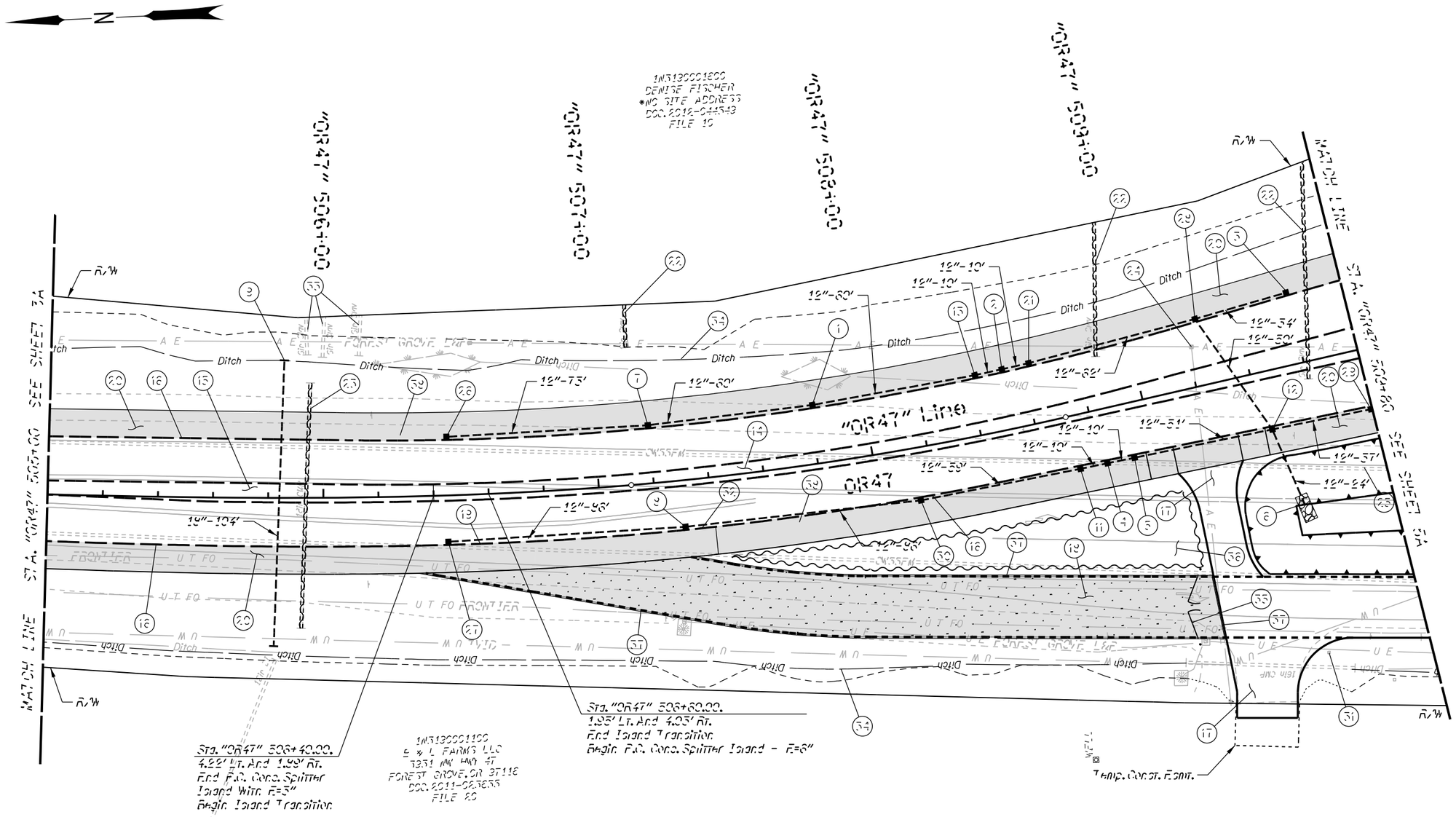
OR47 - VERBOORT/PURDIN ROAD

WASHINGTON COUNTY

ROADWAY AND DRAINAGE PLAN

STA. "OR47" 505+00 TO STA. "OR47" 509+80

	BY	DATE
DRWN:	SJA	Mar-16
DSGN:	PPR	Mar-16
CHKD:	JAE	Mar-16



AS BUILT DRAWINGS

Revisions Drawn By Sean Atwood Date October, 2017

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Ditch — Storm Water Ditch
Cut Line
Fill Line
Remove Existing Pipe
Remove Existing Surfacing Boundary

0 20 40 80
Horizontal Scale in Feet

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DRAINAGE

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ROADWAY

CH2MHILL

SHEET NO.
4A

436411 01-NOV-2017 14:48 sjatwood1

PROJECT NUMBER
100207

49V-012

Department of Land Use & Transportation
Engineering and Construction Services, Engineering

NO.	REVISIONS	DWG. 436411pp05.dgn
1	Revised Travel Elevations	

OR47 - VERBOORT/PURDIN ROAD

ROADWAY AND GRADING PLAN
WASHINGTON COUNTY
OREGON

STA. "OR47" 514+00 TO STA. "OR47" 516+00

	BY	DATE
DRWN:	SJA	Mar-16
DSGN:	TTR	Mar-16
CHKD:	JAS	Mar-16

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SHEET NO.
5

CH2MHILL

1. Sta. "NF" 109+61.44, 37.20' Rt.
Const. Concrete Inlet (G-5)
Inst. 12" RCP Sew. Pipe - 165'
F.L. 171.05 (N)
(For Details, See Std. Drgs. RD371, RD372)

2. Sta. "OR47" 514+20.15, 22.65' Lt.
Const. Concrete Inlet (G-5)
Inst. 12" RCP Sew. Pipe - 49'
(For Details, See Std. Drgs. RD371, RD372)

3. Sta. "OR47" 514+20.00, 23.24' Rt.
Const. Concrete Inlet (G-5)
Inst. 12" RCP Sew. Pipe - 79'
(For Details, See Std. Drgs. RD371, RD372)

4. Sta. "OR47" 515+00.27, 27.04' Rt.
Const. Storm Manhole
Inst. 15" RCP Sew. Pipe - 30'
(For Details, See Std. Drgs. RD342, RD356, RD344, RD345, And RD356)

5. Sta. "OR47" 514+96.90, 37.36' Rt.
Const. Riprap Basin Type II
F.L. 167.90
(For Details, See Sht. 20-2)

6. Sta. "OR47" 510+59.99, 99.04' Rt. (Center)
Const. Outflow Control Structure
Grate F.L. Elev. 169.75
F.L. Out 169.15 (S) (1)
Inst. 12" RCP Sew. Pipe - 235' (1)
Slope = 0.44%
(For Details, See Sht. 20-3 And 20-4)

7. Sta. "OR47" 515+91.79, 99.16' Rt. (Center)
Const. Outflow Control Structure
Grate F.L. Elev. 169.50
F.L. Out 167.40 (N) (1)
Inst. 12" RCP Sew. Pipe - 65'
Slope = 0.44%
(For Details, See Sht. 20-3 And 20-5)

8. Const. Stamped F.C. Conc. Separation Strip
(For Details, See Sht. 26)

9. Const. Sidewalk Ramp
(For Details, See Shts. 26 Thru 26-4)

10. Const. Stamped F.C. Conc. Splitter Island, Modified Type C, E=6"
(For Details, See Sht. 26-2)

11. Const. Stamped F.C. Conc. Splitter Island Head With Curb And Gutter (FCCF Section)
(For Details, See Shts. 26-2 And 26-3)

12. Const. Curb And Gutter (ACF Section)
(For Details, See Sht. 26-3)

13. Const. F.C. Conc. Modified Mountable Standard Curb
(For Details, See Sht. 26-3)

14. Const. Plain F.C. Conc. Pavement, Doweled, 9" Thick Truck Apron With Brick Red Pigment
(For Details, See Shts. 26-2 And 26)

15. Const. Asphalt Conc. Driveway Approach
(For Details, See Sht. 26-4 And 26-6)

16. Const. 22' Wide OSOW Truck Bypass
(For Details, See Sht. 26 And 21-17 Thru 21-20)

17. Const. F.C. Conc. Modified Low Profile Curb
(For Details, See Sht. 26-3)

18. Const. Curb And Gutter, E=8"
(FCCF Section)
(For Details, See Sht 26-3)

19. Const. Curb And Gutter, E=8"
(FCCF Section)
For Details, See Sht 26-3)

20. Const. Landscaped Central Island
(For Details, See Landscape Drawings)

21. Const. F.C. Conc. Sidewalk
(For Details, See Sht. 26 And Std. Drg. RD720)

22. Relocate Exist. Utility Pole (By Others)

23. Relocate Exist. San. Sewer (By Others)

24. Inst. Monument Box At DLC Corner - Notify Washington Co. Surveyor, In Writing, 10 Days Prior To Disturbing. (503) 846-3405
(For Details, See Sht. 2A)

25. Relocate Exist. Vault (By Others)

27. Sta. "NF" 106+56.33, 76.99' Rt.
Const. Standard Storm Manhole
Rim Elev. 175.40
F.L. In 167.15 (N) (1)
F.L. In 167.15 (S)
F.L. Out 167.05 (W)
Inst. 12" RCP Sew. Pipe - 515' (1)
Slope = 0.67%
(For Details, See Std. Drgs. RD335, RD336, RD337, RD344, RD345, And RD356)

28. Const. Stormwater Bioretention Pond - D 00954
(For Detail, See Sht. 20-4)

29. Const. Stormwater Bioretention Pond - D 00955
(For Details, See Sht. 20-5)

30. Const. Stamped F.C. Conc. Splitter Island Curbed, E=6"
(For Details, See Sht. 26-2)

31. Sta. "NF" 106+10.52, 27.32' Lt.
Const. Concrete Inlet (G-2) (Type 2 Grate)
Inst. 12" RCP Sew. Pipe - 106'
(For Details, See Std. Drgs. RD363, RD364, And RD365)

32. Sta. "NF" 106+10.49, 25.97' Rt.
Const. Concrete Inlet (G-2) (Type 2 Grate)
Inst. 12" RCP Sew. Pipe - 50'
(For Details, See Std. Drgs. RD363, RD364, And RD365)

33. Const. Plain F.C. Conc. Pavement, Doweled, 9" Thick Truck Apron With Brick Red Pigment
(For Details, See Special Provisions And Shts 2A-10 And 26)

34. Const. Plain F.C. Conc. Pavement, Doweled, 9" Thick Truck Apron With Brick Red Pigment
(For Details, See Shts 26-7 And 26)

35. Const. Asphalt - F.C. Conc. Pavement Transition
(For Details, See Sht 26)

36. Const. 32'x45" Chain Link Double Gate
(For Details, See Truck By-pass Plan And Profile Sheets And Std. Drg. RD920)

37. For Ditch Profile, See Curb Plan And Profile Sheets

38. Const. Plain F.C. Conc. Pavement, Doweled, 9" Thick With Brick Pigment
(For Details, See Special Provisions And Shts 2A-7 And 26)

39. Remove Exist. Surfacing

40. Const. Stamped F.C. Conc. Splitter Island Head For OSOW Truck Crossing - 9" Thick With E=3" Curb And Gutter (FCCF Section)
(For Details, See Shts. 26-2 And 26-3)

41. OSOW Truck Bypass Edge Of Pavement
(For Details, See Shts. 21-17 Thru 21-20)

42. Const. F.C. Conc. Sidewalk And Ramp For OSOW Truck Crossing - 9" Thick

43. Const. Pervious F.C. Conc. Tied Curb Pavement
(For Details, See Shts. 26 And 21-17 Thru 21-20)

44. Maintain Extg. Pavement
(For Limits, See Shts. 21-17 And 21-19)

45. Const. ACF For OSOW Truck Bypass
(For Details, See Sht. 26 And Typical Sections)

46. Const. F.C. Conc. Edge Restraint Curb
(For Details, See Shts. 26 And 26-3)

47. See Note 14, Sht. 3

AS BUILT DRAWINGS

Revisions Drawn By Sean Atwood Date October, 2017

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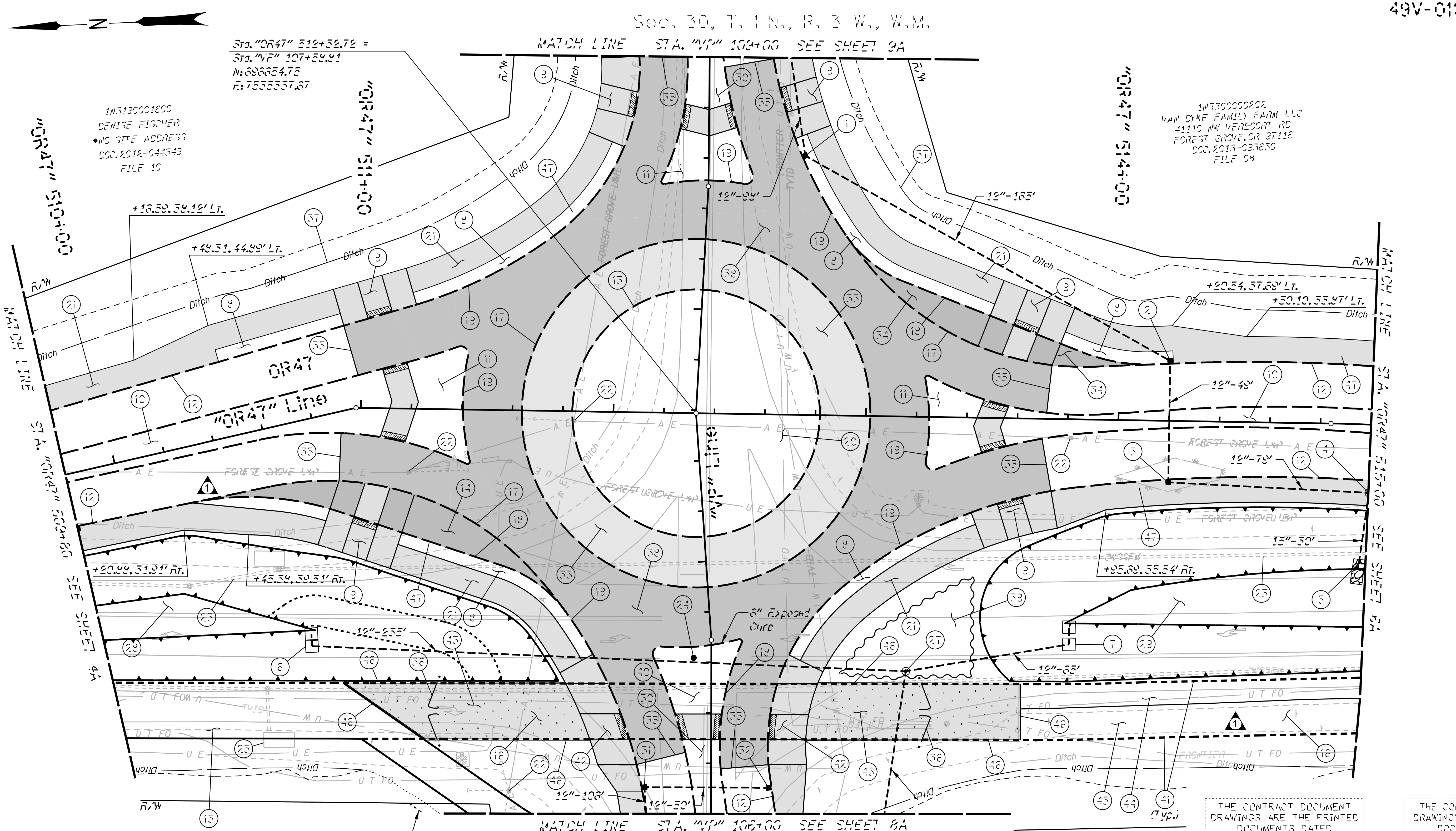
49V-012

PROJECT NUMBER 100207

Department of Land Use & Transportation
Engineering and Construction Services, Engineering
WASHINGTON COUNTY OREGON



1N3130001100
S & L FARMS LLC
3351 NW HWY 47
FOREST GROVE,OR 97116
DOC.2011-056855
FILE 20

Temp. Const. Esmt.

1N3300000301
VDS FARMS,INC.
3385 NW HWY 47
FOREST GROVE,OR 97116
DOC.98-109841
FILE 18

AS BUILT DRAWINGS

Revisions Drawn By Sean Atwood Date October, 2017

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Ditch	Stormwater Ditch
	Cut Line
	Fill Line
	Remove Existing Pipe
	Remove Existing Surfacing Boundary

0 20 40 60
Horizontal Scale in Feet

DRAINAGE

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ROADWAY

DWG:	436411rp07a.dgn
NO.	REVISIONS
1	Record Drawing

OR47 - VERBOORT/PURDIN ROAD
WASHINGTON COUNTY
ROADWAY AND DRAINAGE PLAN
STA. "OR47" 509+80 TO STA. "OR47" 515+00

	BY	DATE
DRWN:	SJA	Mar-16
DSGN:	PPR	Mar-16
CHKD:	JAS	Mar-16

CH2MHILL

SHEET NO. 5A