OPERATION & MAINTENANCE MANUAL

DFI No. : D00847
Facility Type: Water Quality Biofiltration Swale

December, 2017

INDEX

1. Identification

Drainage Facility ID (DFI):	**D00847**
Facility Type:	Water Quality Biofiltration Swale
Construction Drawings:	47V-127
Location:	District: 08
	Highway No.: 270
	Mile Post: 0.05/.08
	Description: This facility is located along the shoulder of Lake of the Woods Highway.

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 Hydro Unit Manager

Or

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

3. Construction

Engineer of Record:	DeLanie Cutsforth – Region 3 Tech Center, White City, (541) 774-6326
Facility construction:	2016
Contractor:	N/A

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.

This facility is located along the shoulder of Lake of the Woods Highway (No. 270). Access for this facility is available from the shoulder. Stormwater enters the facility via roadway runoff and a series of inlets. As the water flows through the swale it is treated as it slows and spreads out within the swale before outfalling into north jack creek.

A. Maintenance equipment access:
   This facility can be accessed from the shoulder of Lake of the Woods Highway.

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 water quality biofiltration swale can be used to store a volume of liquid by blocking the facility outlet through use of sandbags.

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
There are no auxiliary outlets built into this facility. In the event that flows exceed design flows the water will overtop the swale.

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:

Note: Special maintenance Requirements Require Concurrence from ODOT SR Hydraulics Engineer.

8. Waste Material Handling

Material removed from the facility is defined as waste by the Department of Environmental Quality (DEQ). Refer to the roadwaste section of the

ODOT Maintenance Yard Environmental Management System (EMS) Policy and Procedures Manual for disposal options:

http://www.oregon.gov/ODOT/Maintenance/Documents/ems_manual.pdf

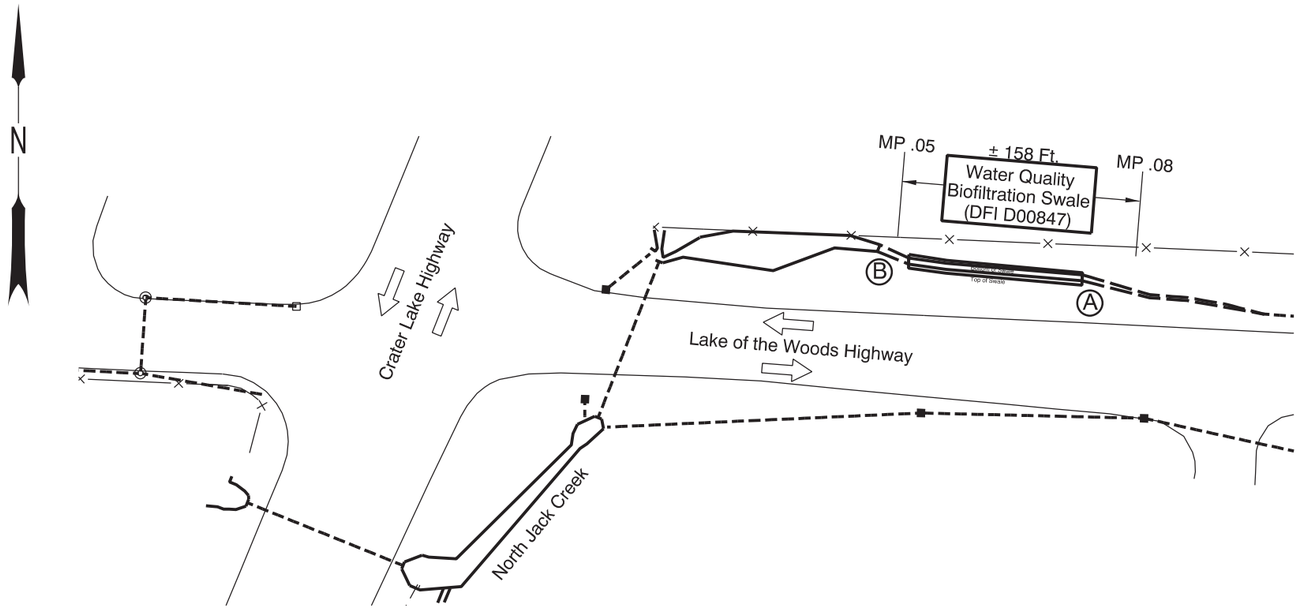
Contact any of the following for more detailed information about management of waste materials found on site:

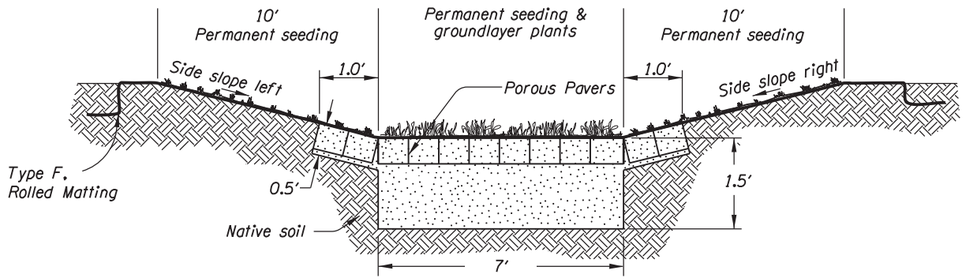
ODOT Clean Water Unit	(503) 986-3008
ODOT Statewide Hazmat Coordinator	(503) 667-7442
ODOT Region 1 Hazmat Coordinator	(503) 731-8290
ODOT Region 2 Hazmat Coordinator	(503) 986-2647
ODOT Region 3 Hazmat Coordinator	(541) 957-3594
ODOT Region 4 Hazmat Coordinator	(541) 388-6186
ODOT Region 5 Hazmat Coordinator	(541) 963-1590
ODEQ Northwest Region Office	(503) 229-5263

Appendix A

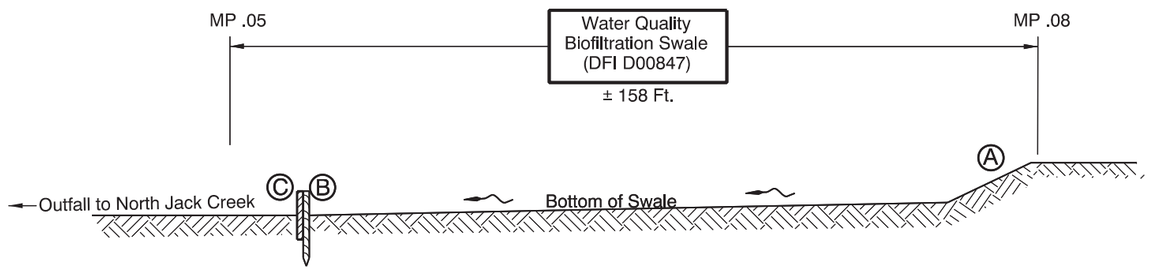
Content:

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

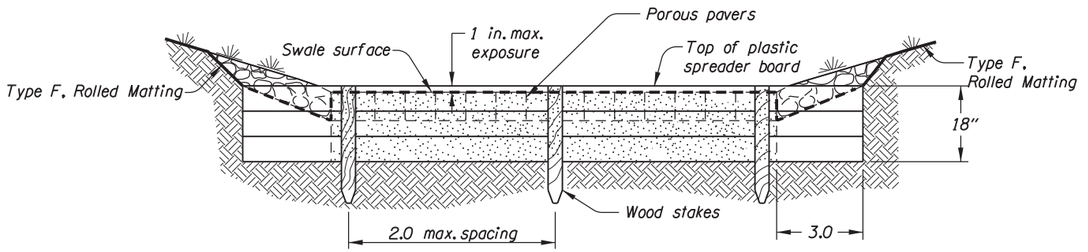




SECTION B-B
N.T.S.



SECTION A-A
N.T.S.



FLOW BOARD SPREADER DETAIL
N.T.S.

LEGEND:

- Ⓐ Swale Inlet w/Flow Spreader Inlet
- Ⓑ Swale Outlet
- Ⓒ Flow Board Spreader
- ◉ and/or ◎ Manhole
- ■ and/or □
- Storm Pipe (Facility)
- Storm Pipe
- Conveyance Direction
- Pavement / Facility Flow Path

OREGON DEPARTMENT OF TRANSPORTATION

Prepared By: T. BURRIER

Drafted By: T. BURRIER

DFI D00847
MAINTENANCE DISTRICT 8 HWY 270
WQ BIOFILTRATION SWALE
HIGHWAY MP .05 TO MP .08
COUNTY

DFI_D00000.dgn

Appendix B

Content:

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

47V-127

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

STATE OF OREGON

DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED PROJECT

PAVING & SIGNAL MODIFICATION

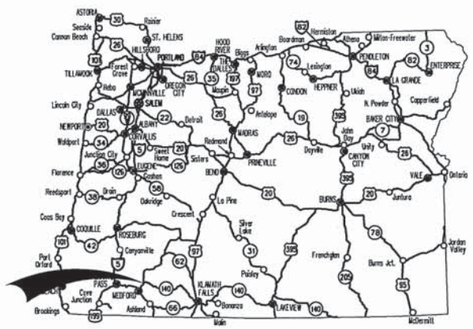
OR62 & OR140

INTERSECTION

CRATER LAKE & LAKE OF THE WOODS HIGHWAY

JACKSON COUNTY

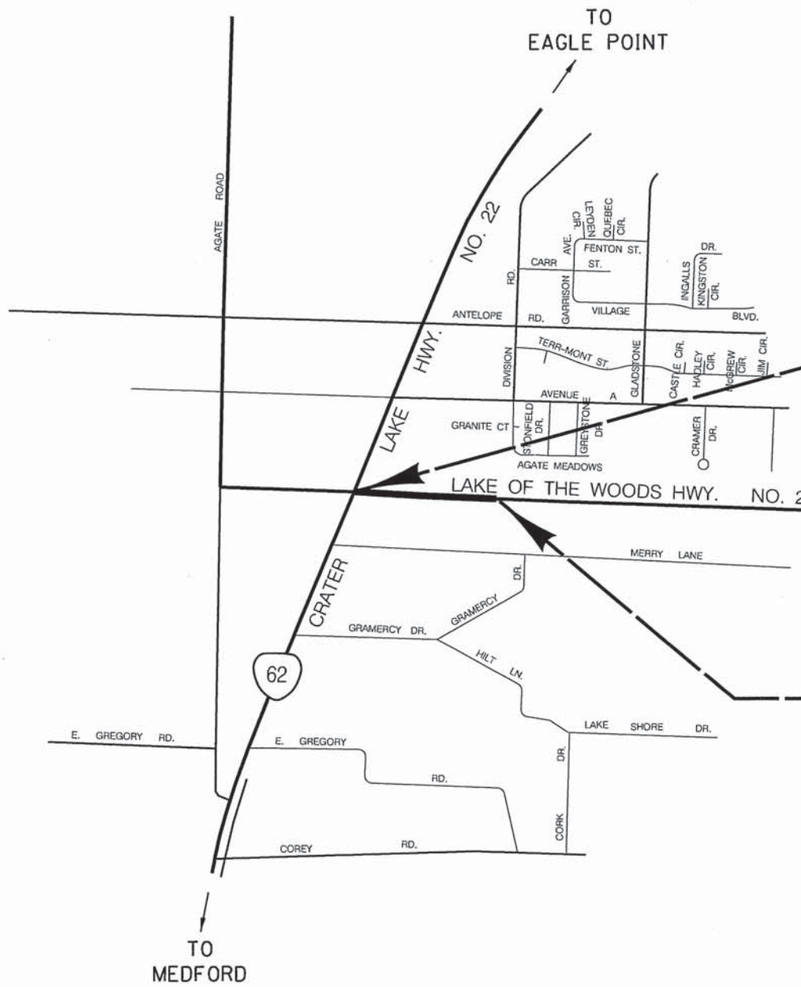
DECEMBER 2014



Overall Length Of Project - 0.27 Mile

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



BEGINNING OF PROJECT
HSIP-S270(038)
STA. "LW" 96+10.13 (M.P. 0.00)
STA. "CL" 2065+45.00 (M.P. 6.03)

END OF PROJECT
HSIP-S270(038)
STA. "LW" 112+17.47 (M.P. 0.27)

N

T. 36S., R. 1W., W.M.

OREGON TRANSPORTATION COMMISSION

Catherine Mater	CHAIR
Tammy Baney	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. J. Thompson
Signature & date 10-13-2014

MARK THOMPSON, TECH. CENTER MGR.
Print name and title

Thomas J. Fuller
Concurrence by ODOT Chief Engineer

OR62 & OR140 INTERSECTION
CRATER LAKE & LAKE OF THE WOODS HIGHWAY
JACKSON COUNTY

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	HSIP-S270(038)	1

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INDEX OF SHEETS, CONT.

SHEET NO.	DESCRIPTION
2, 2A	Typical Sections
2B thru 2B-3	Details
2C thru 2C-3	Traffic Control Plan
2D	Pipe Data Sheet
3, 4	General Construction
3A	General Construction Notes
3B, 3C, 4A	Profiles
GEO/HYDRO	
GA, GA-2	Erosion Control
GJ, GJ-2	Storm Water Details
PERMANENT PAVEMENT MARKINGS	
ST thru ST-3	Striping Plan
PERMANENT SIGNING	
S-14811 thru S-14816	Signing Plan
TRAFFIC SIGNALS	
17706 thru 17716 & 18076	Signal Plans

Standard Drg. Nos.

RD300 - Trench Backfill, Bedding, Pipe Zone And Mult. Installations
RD302 - Street cut
RD316 - Sloped Ends For Metal Pipe
RD317 - Culvert Embankment Protection
RD318 - Sloped Ends For Concrete Pipe
RD319 - Miscelloneous Culvert Details
RD320 - Paved End Slope For Culverts 60" Maximum Pipe Size
RD326 - Coupling Bands For Corrugated Metal Pipe Types A, B, D, & E
RD327 - Coupling Bands For Corrugated Metal Pipe Types F, J, & K
RD336 - Standard Storm Sewer Manhole
RD346 - Large Precast Manhole
RD354 - Corry Through Manhole-Storm
RD356 - Manhole Covers And Frames
RD364 - Concrete Inlets Type G-1, G-2, G-2M, & G-2MA
RD365 - Frames & Grates for Concrete Inlets
RD371 - Concrete Inlet Base Type CG-3
RD372 - Concrete Inlet Top, Option 1, Type CG-3
RD380 - Fill Height Tables For Aluminum & Steel Corrugated Pipe
RD384 - Fill Height Tables For Aluminum & Steel Spiral Rib Pipe
RD386 - Fill Height Tables For Circular Concrete Pipe
RD388 - Fill Height Tables For PVC Pipe
RD390 - Fill Height Tables For Corrugated HDPE Pipe
RD393 - Fill Height Tables For Polypropylene Pipe

RD610 - Asphalt Pavement Details

RD700 - Curbs
RD715 - Approaches And Non-Sidewalk Driveways
RD720 - Sidewalks
RD755 - Sidewalk Ramp Details
RD756 - Sidewalk Ramp Placement Options Curb Radii ≤ 15'
RD757 - Sidewalk Ramp Placement Options Curb Radii >15'
RD759 - Truncated Dome Detectable Warning Surface Details & Locations
RD770 - Pedestrian Handrail
RD771 - Pedestrian Handrail Details

RD1005 - Check Dams
RD1010 - Inlet Protection (Type 1, 2 & 3)
RD1035 - Sediment Barrier (Type 3)
RD1040 - Sediment Fence, Supported; Sediment Fence, Unsupported
RD1055 - Matting

TM200 - Sign Installation Details
TM201 - Miscellaneous Sign Placement Details
TM211 - Sign Details US & Interstate Route Shields
TM212 - Signing Details Oregon Route Signs
TM221 - Signing Details Milepost Markers
TM222 - Installation Details Milepost Markers Posts
TM223 - Conventional Roads Directional Sign Layout Street Name Signs
TM230 - Mounting Details For Removable Legend (4" Through 8" Letters/Numbers)
TM233 - Mounting Details For Removable Legend (Various Arrow Sizes)

(1) TM450 - Mast Arm Pole Details
(1) TM455 - Temporory Signal Details
TM457 - Vehicle, Pedestrian Signal And Push Button Mounting Option Details
TM458 - Pedestrian Ramp Placement Details
TM460 - Vehicle Signal Details
TM462 - Adjustable Signal Head Mounting Details
TM465 - Overhead Sign, Fire Preemption And Photoelectronic Control Details
TM467 - Pedestrian Signal And Pedestrian Push Button Details
TM470 - Color Code Charts
TM472 - Traffic Signal Junction Boxes/Hand Holes
TM482 - Controller Cabinet And Foundation Details
TM485 - Service Cabinets And Service Cabinet Wiring Details
TM488 - Terminal Cabinet Detail

TM500 - Pavement Marking Standard Detail Blocks
TM501 - Pavement Marking Standard Detail Blocks
TM502 - Pavement Marking Standard Detail Blocks
TM503 - Pavement Marking Standard Detail Blocks
TM515 - Pavement Markers
TM517 - Recessed Pavement Markers
TM521 - Durable Pavement Markings Method "A" & Method "B" Surface & Groove Installed Non-Profiled
TM530 - Intersection Pavement Markings (Crosswalk, Stop Bar & Bike Lane Stencil)
TM531 - Turn Arrow Marking Details
TM539 - Median and Left Turn Channelization Details
TM560 - Alignment Layout: General
TM570 - Traffic Delineators
TM571 - Traffic Delineators Steel Post Details
TM576 - Traffic Delineator Installation For Non-Freeways

TM602 - Triangular Base Breakaway Sign Support (Multi-Directional Slip Base Design)
TM629 - Slip Base & Fixed Base Luminaire Supports (Details & Design Criteria)
TM635 - Breakaway Sign and Luminaire Supports (Location Guidelines)
TM650 - Traffic Signal Supports (Details & Design Criteria)
TM651 - Traffic Signal Supports (Notes And Reactions)
TM652 - Traffic Signal Supports (Steel Details)
TM653 - Traffic Signal Supports (Foundation Requirements)
TM670 - Wood Post Sign Supports
TM671 - 3 Second Gust Wind Speed Map
TM675 - Extruded Aluminum Panels
TM676 - Sign Attachments
(1) TM677 - Sign Mounts
TM678 - Secondary Sign Mounting Details
TM680 - Signal Pole Mounts

TM800 - Tables, Abrupt Edge And PCMS Details
TM810 - Temporary Pavement Markings
TM820 - Temporary Barricades
TM821 - Temporary Sign Supports
TM841 - Intersection Work Zone Details
TM842 - Signalized Intersection Details
TM843 - Multi-Lane Signalized Intersection Details

No R/W Map

No.	DATE	REVISIONS	BY
(1)	12-03-14	Added 18076, TM455, TM677	JWS

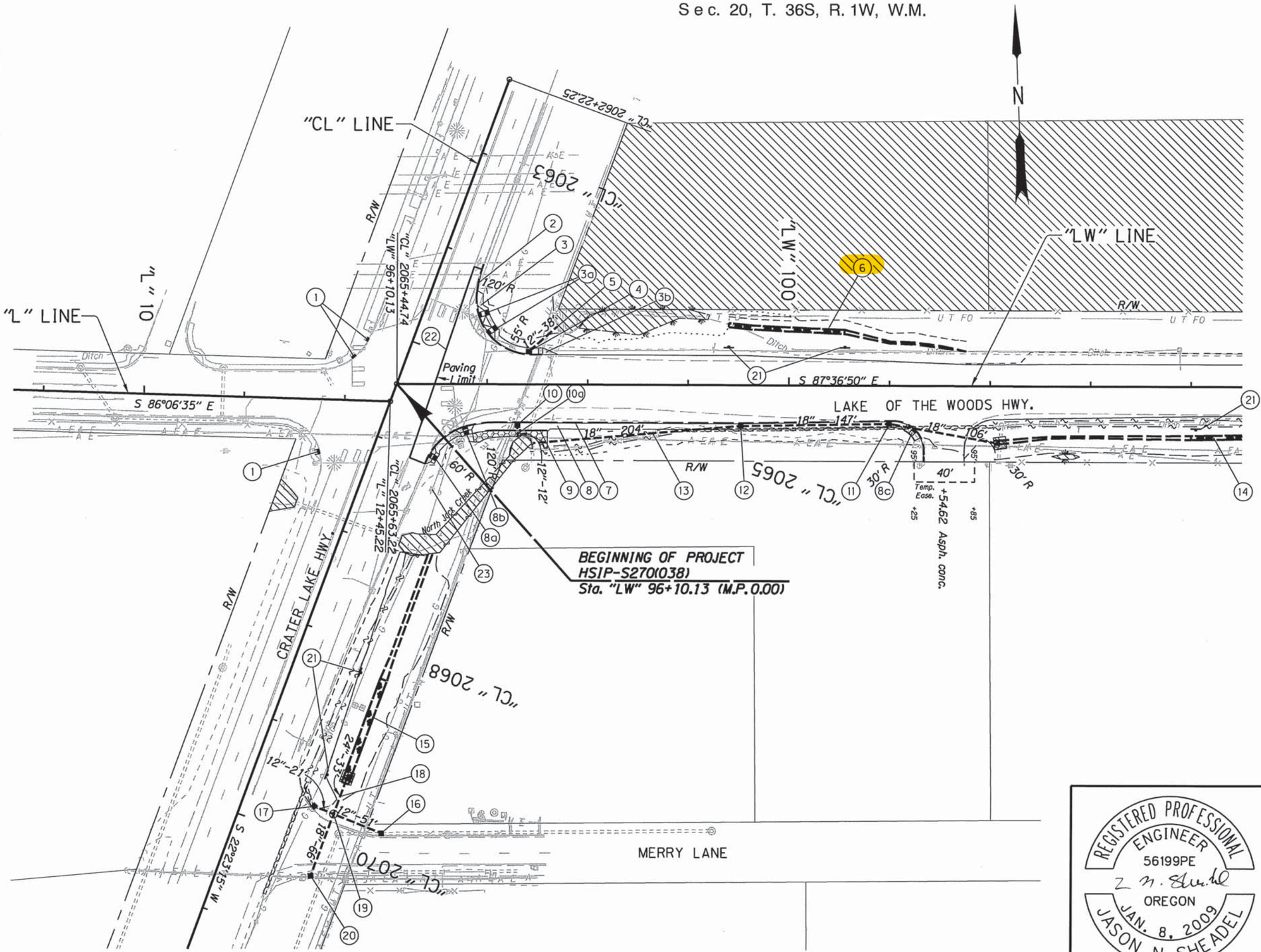
Standard Drawings located on the web at:
http://www.oregon.gov/ODOT/HWY/ENGSERVICES/standard_drawings_home.shtml

OR62 & OR140 INTERSECTION
CRATER LAKE & LAKE OF THE WOODS HIGHWAY
JACKSON COUNTY

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	HSIP-S270(038)	1A

Sec. 20, T. 36S, R. 1W, W.M.

47V-127



See sheet 3A for General Construction Notes.
See sheet 3B for "LW" Profile.
See sheet 3C for "CL" Profile.

Notes:
1. Station/Offset/Elevation callouts for type "CG-3" inlets are to top face of curb.
2. Station/Offset/Elevation callouts for type "G2-MA" inlet and manhole are to center of structure.
3. Station/Offset callouts for sidewalk ramps are to the center of the ramp at the back of curb.

Remove extg. pipe shown thus:

No Work/No Entry Area shown thus:

Riprap Pad shown thus:

Stone Embankment shown thus:

REGISTERED PROFESSIONAL ENGINEER
56199PE
OREGON
JAN. 8, 2009
JASON N. SHEADEL
EXPIRES: JUNE 30, 2016

OREGON DEPARTMENT OF TRANSPORTATION

REGION 3 - TECHNICAL CENTER

OR62 & OR140 INTERSECTION
CRATER LAKE & LAKE OF THE WOODS HIGHWAY
JACKSON COUNTY

Designed By - Jason Sheadel
Reviewed By - Brian Sheadel
Drafted By - Judy Hardin

GENERAL CONSTRUCTION

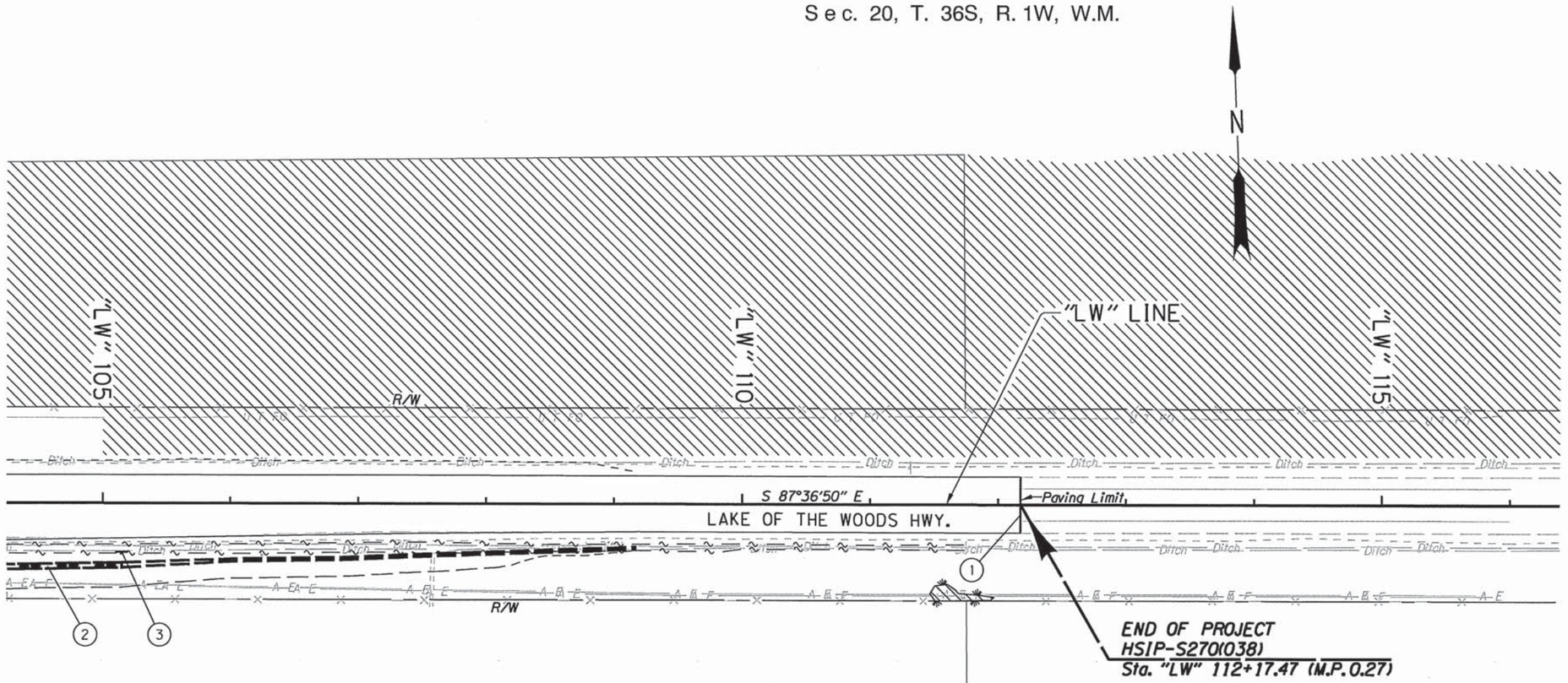
SHEET NO. 3

F:\ODOT_DATA\Projects\17471_62to140\Sheets_Plans_&_Pipe_Data\17471.pl1 :: Default 7/17/2014 11:36:19 AM hwye33g

Rotation: 0° Scale: 1"=100'

Sec. 20, T. 36S, R. 1W, W.M.

47V-127



(1) Const. asphalt conc. pvmt. match

(2) Const. water quality swale "S" (See sht. 3a, note 14)

(3) Inst. field facility marker, Type "S2" (See sht. 3A, note 21)

Note:
No work area shown to the north of Hwy. 140 is located just north of the extg. roadside ditch.

No Work/No Entry Area shown thus:

REGISTERED PROFESSIONAL ENGINEER
56199PE
OREGON
JAN. 8, 2009
JASON N. SHEADEL

EXPIRES: JUNE 30, 2016

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REGION 3 - TECHNICAL CENTER

OR62 & OR140 INTERSECTION
CRATER LAKE & LAKE OF THE WOODS HIGHWAY
JACKSON COUNTY

Designed By - Jason Sheadel
Reviewed By - Brian Sheadel
Drafted By - Judy Hardin

GENERAL CONSTRUCTION

SHEET NO. 4

47V-127

(1) Remove extg. conc. sidewalk ramp landing
Const. P.C. conc. sidewalk perpendicular ramp landing
(See drg. nos. RD720, RD755, RD759)

(2) Sta. "CL" 2064+04, Lt. to Sta. "LW" 97+55, Lt.
Const. conc. curb and gutter
(See drg. no. RD700)

(3) Sta. "CL" 2064+30, Lt. to Sta. "LW" 97+44, Lt.
Const. P.C. conc. sidewalk

(3a) Sta. "CL" 2064+52, 53.4' Lt. / Sta. "LW" 97+01, 51.0' Lt.
Const. perpendicular sidewalk ramps (Option G)
(See drg. no. RD757)

(3b) Sta. "LW" 97+44, 30.0' Lt. to Sta. "LW" 97+70, 30.0' Lt.
Const. sidewalk ramp at end of walk (Option F)
(See drg. no. RD756)

(4) Sta. "LW" 97+41, 29.6' Lt.
Const. type "CG-3" inlet, 1309.84
Tamperproof cover Option 1 top
F.L. (12" out)= 1304.00
(See drg. nos. RD356, RD371, RD372, RD700)

(5) Sta. "LW" 97+41, 32.4' Lt. to
Sta. "LW" 97+69.3, 57.3' Lt.
Inst. 12" storm sewer pipe - 38'
5' depth
Sl.=0.0774'/ft.
F.L. (In)= 1304.00
F.L. (Out)= 1301.90
Connect to extg. box culvert wingwall
(For details, see sht. 2B-2)
(See drg. no. RD300)

(6) Sta. "LW" 99+40 to Sta. "LW" 100+55, Lt.
Const. water quality swale "N"
(For details, see sht. GJ)

(7) Sta. "CL" 2066+09, Lt. to Sta. "LW" 101+35, Rt.
Const. conc. curb and gutter
Const. curb ending at driveway
(See drg. no. RD700)

(8) Sta. "CL" 2066+09, Lt. to Sta. "LW" 101+31, Rt.
Const. P.C. conc. sidewalk

(8a) Sta. "CL" 2065+99.5, 55.1' Lt.
Const. perpendicular sidewalk ramp (Option G)

(8b) Sta. "LW" 96+78, 42.5' Rt.
Const. perpendicular sidewalk ramp (Option G)

(8c) Sta. "LW" 101+25, 43.7' Rt.
Const. parallel sidewalk ramp
(See drg. no. RD755)

(9) Sta. "LW" 96+98.5 to Sta. "LW" 97+60.0, Rt.
Const. three rail handrail, on structure (bolt down) - 62'
(See drg. nos. RD770, RD771)

(10) Sta. "LW" 97+30.0, 37.5' Rt.
Const. type "CG-3" inlet, 1309.36
Tamperproof cover Option 1 top
F.L. (12" out)= 1304.50

(10a) Sta. "LW" 97+30.0, 40.4' Rt. to
Sta. "LW" 97+30.7, 52.3' Rt.
Inst. 12" storm sewer pipe - 12'
5' depth
Sl.=0.1667'/ft.
F.L. (In)= 1304.50
F.L. (Out)= 1302.50
Connect to extg. box culvert wingwall
(For details, see sht. 2B-2)

(11) Sta. "LW" 100+99.6, 37.7' Rt. to
Sta. "LW" 102+04.1, 56.0' Rt.
Const. type "CG-3" inlet, 1312.04, 34.9' Rt.
Tamperproof cover Option 1 top
F.L. (W)= 1307.0
F.L. (E)= 1307.0
Inst. 18" storm sewer pipe - 106'
5' depth
Const. paved end slope (1:4) - 35 sq. ft.
Inst. 18" sloped end section
Inst. riprap protection pad (Class 50) - 2 C.Y.
Sl.=0.0142'/ft.
F.L. (In)= 1308.50
F.L. (Out)= 1307.00
(See drg. nos. RD302, RD316, RD317, RD318, RD319, RD320)
(For details, see sht. 2B-3)

(12) Sta. "LW" 99+52.4, 40.3' Rt. to
Sta. "LW" 100+99.6, 37.6' Rt.
Const. type "CG-3" inlet, 1310.66, 37.5' Rt.
Tamperproof cover Option 1 top
F.L. (W)= 1304.90
F.L. (E)= 1304.90
Inst. 18" storm sewer pipe - 147'
5' depth
Sl.=0.0142'/ft.
F.L. (In)= 1307.00
F.L. (Out)= 1304.90

(13) Sta. "LW" 97+45.6, 58.2' Rt. to
Sta. "LW" 99+52.4, 40.3' Rt.
Inst. 18" storm sewer pipe - 204'
5' depth
Sl.=0.0142'/ft.
F.L. (In)= 1304.90
F.L. (Out)= 1302.00
Connect to extg. box culvert wingwall
(For details, see sht. 2B-2)

(14) Sta. "LW" 104+00 to Sta. "LW" 105+15, Rt.
Const. water quality swale "S"
(For details, see sht. GJ)

(15) Sta. "CL" 2068+25 to Sta. "CL" 2069+35, Lt.
Const. water quality swale "CL"
(For details, see sht. GJ)

(16) Sta. "CL" 2069+72.0, 142.0' Lt.
Const. type "CG-3" inlet, 1308.23 - Connect to extg. 12" pipe
Tamperproof cover, - Option 1 top
F.L. (In - E) - Est. 1307 (Field verify)
F.L. (Out - W) - 1306.00
Inst. 12" storm sewer pipe - 51'
5' depth
Sl.=0.0100'/ft. (to manhole note 19)

(17) Sta. "CL" 2069+69.5, 68.2' Lt.
Remove extg. "CG-3" inlet
Const. type "CG-3" inlet, 1306.80 (field verify extg. curb)
Tamperproof cover, Option 1 top
F.L. (Out - E) - 1304.50
Inst. 12" storm sewer pipe - 21'
5' depth
Sl.=0.0100'/ft. (to manhole note 19)

(18) Sta. "CL" 2069+67.7, 90.0' Lt. to
Sta. "CL" 2069+35, 90' Lt.
Inst. 24" storm sewer pipe - 33'
5' depth
Const. paved end slope (1:4) - 35 sq. ft.
Inst. 24" sloped end section
Inst. riprap protection pad (Class 50) - 2 C.Y.
Sl.=0.0050'/ft.
F.L. (In)= 1302.97
F.L. (Out)= 1302.80

(19) Sta. "CL" 2069+67.7, 90.0' Lt. to
Sta. "CL" 2070+33.2, 90.0' Lt.
Const. large precast manhole, 72" - 1307.45
Tamperproof cover
F.L. (In - S)= 1302.97
F.L. (In - W)= 1304.33
F.L. (Out - N)= 1302.97
F.L. (In - E)= 1305.49
Inst. 18" storm sewer pipe - 66'
5' depth
Trench resurfacing - 23 sq.yd.
Sl.=0.0025'/ft.
F.L. (In)= 1303.14
F.L. (Out)= 1302.97
(See drg. nos. RD336, RD346, RD354, RD356.)

(20) Sta. "CL" 2070+33.2, 90.0' Lt.
Const. type "G2-MA" modified inlet, 1305.00
w/ 12" sump
F.L. (Out)= 1303.14
(Slope sides of G2-MA to match rock shoulder
and ditch 1:4 side slopes)
(See drg. nos. RD364, RD365)

(21) Inst. field facility marker, Type "S2"
(For location and details, see sht GJ & GJ-2)

(22) Const. asphalt conc. pvmt. match
(See drg. no. RD610)

(23) Sta. "CL" 2066+31, 69' Lt.
Remove extg. wood pole

REGISTERED PROFESSIONAL ENGINEER
56199PE
OREGON
JAN. 8, 2009
JASON N. SHEADEL
EXPIRES: JUNE 30, 2016

OREGON DEPARTMENT OF TRANSPORTATION

REGION 3 - TECHNICAL CENTER

OR62 & OR140
INTERSECTION
CRATER LAKE & LAKE OF THE WOODS HIGHWAY
JACKSON COUNTY

Designed By - Jason Sheadel
Reviewed By - Brian Sheadel
Drafted By - Judy Hardin

NOTES

SHEET NO. 3A

47V-127

"LW" LINE

1335
1330
1325
1320
1315
1310
1305
1300

1310.56
1310.68
1310.20
1309.90
1309.54
1309.34
1309.45
1309.87
1309.74
1310.18
1311.56
1312.06
1312.92
1314.01
1314.42
1314.89
1315.18

-1.47%
-1.78%
-2.03%
-1.32%
-0.31%
26"
50' V.C.
+0.20%
+0.63%
+0.91%
+0.76%
+0.93%
+0.92%
+0.91%
+0.93%
+0.85%
+0.92%
+0.95%
26"

Profile grade @ ℄

Subgrade
(Lt./Rt. side widening)

Subgrade
(Lt./Rt. side widening)

+18.54
+10.13
+38.70
+53.29
+80.88
+43.96
+97.10
+58.12
+42.79
+98.43
+46.09
+00.02
+94.95
+11.44
+59.50
+10.67
+41.45

"LW" 96+38.70 Rt.

"LW" 96+89.45 Lt.

Exc. = 2944 C.Y. Rt. Side

Emb. = 507 C.Y. Rt. Side

Exc. = 943 C.Y. Lt. Side

Emb. = 109 C.Y. Lt. Side

95+00

100+00

REGISTERED PROFESSIONAL ENGINEER
56199PE
OREGON
JAN. 8, 2009
JASON N. SHEADEL

EXPIRES: JUNE 30, 2016

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PROFILE

SHEET NO. 3B

F:\ODOT_DATA\PROJECTS\17471_62to140\Sheets_Profile\17471.pfl :: Default 7/17/2014 9:42:37 AM hwye33g

Rotation: Scale: 1"=100'

47V-127

"CL" LINE

1320
1315
1310
1305
1300
1295

"CL" Line
-0.68% -0.57% -0.55% -0.58% -0.75% -0.45% -0.50% -0.62% -0.50%
Extg. ground @ 90' Lt.
25.0%
0.50%
"CL_Pond" Line
(90.0' Lt. of "CL" Line)

1310.67 +44.92
1310.40 +91.93
1309.91 +81.88
1308.99 +40.27
1308.63 +88.69
1308.45 +28.78
1308.21 +77.35
1307.63 +72.39
1307.69 +60.60

2066+910 90.0' Lt.
Elev. 1301.58

2069+350 90.0' Lt.
Elev. 1302.80

2069+52.8 90.0' Lt.
Elev. 1307.25

Exc. = 1050 C.Y.
Emb. = 546 C.Y.

2066+910
2069+52.8

2065+00
2070

REGISTERED PROFESSIONAL ENGINEER
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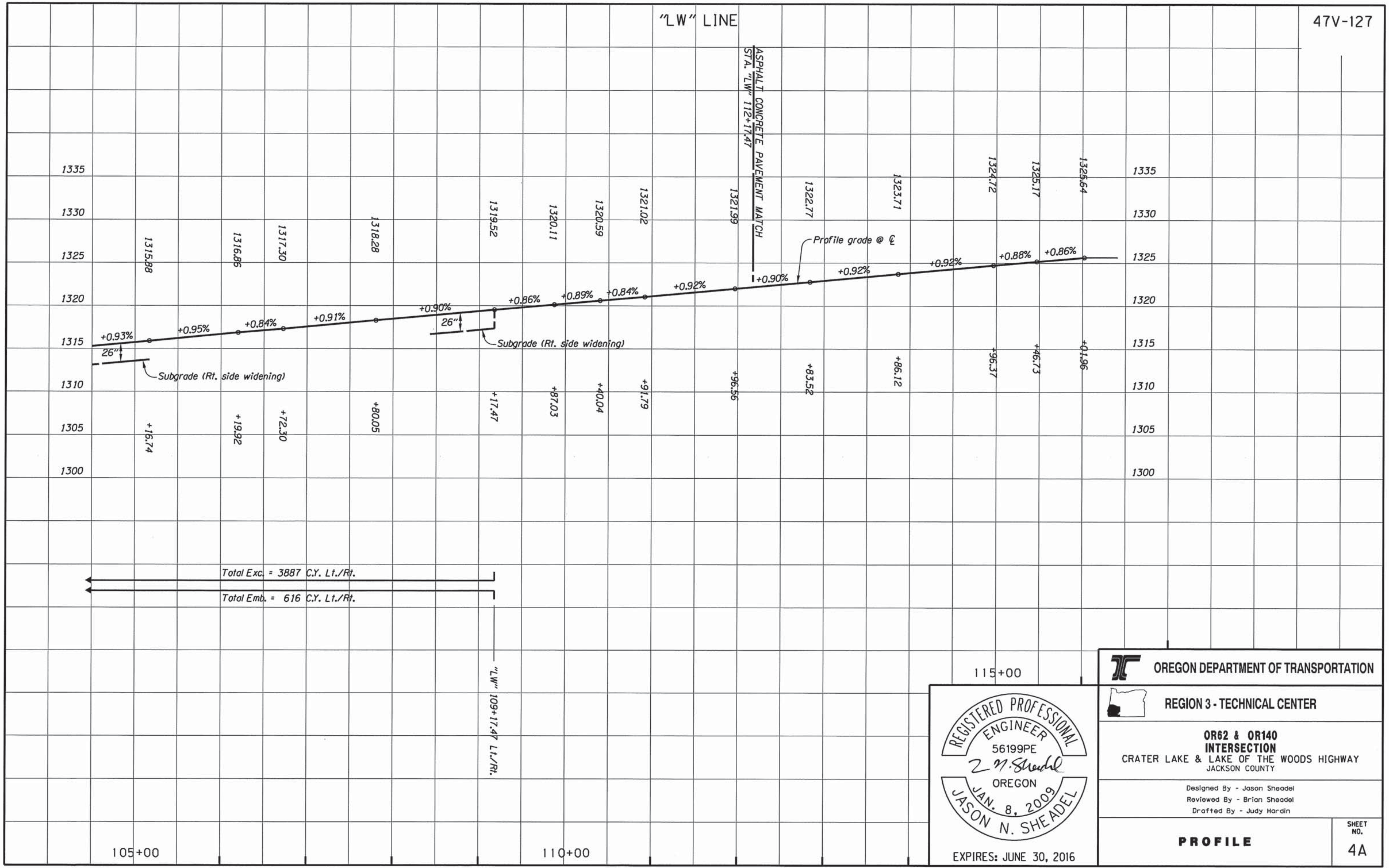
PROFILE

SHEET NO. 3C

F:\ODOT_DATA\Projects\17471_62to140\Sheets_Profile\17471.pfl :: Default 7/17/2014 9:42:37 AM hwye33g

Rotation: 0° Scale: 1"=100'

47V-127



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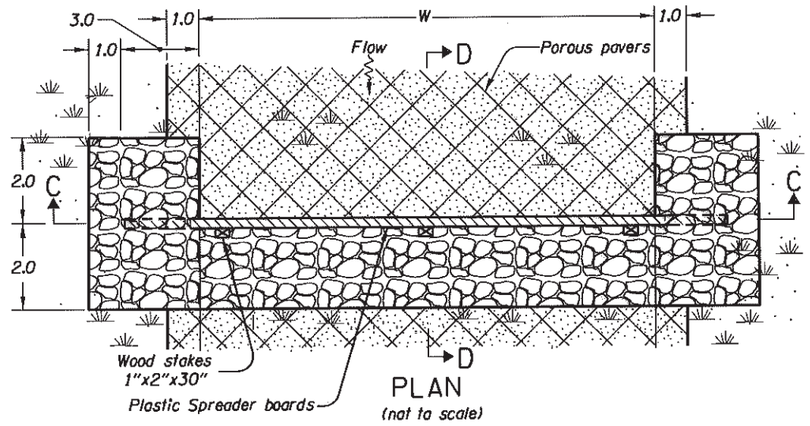
PROFILE

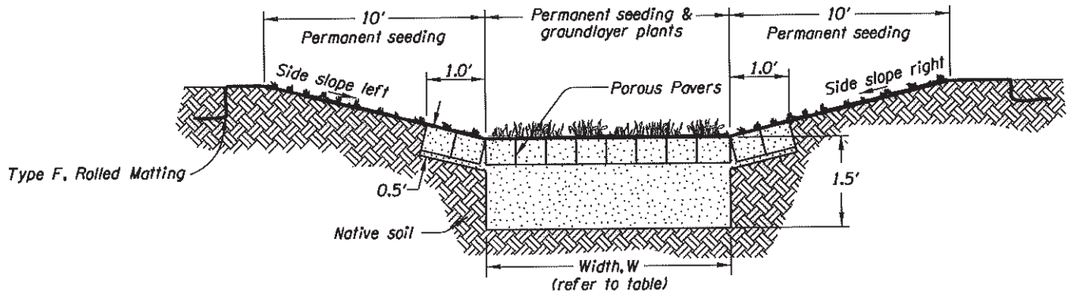
SHEET NO.
4A

WATER QUALITY SWALE DETAILS

47V-127



PLAN
(not to scale)



TYPICAL SECTION
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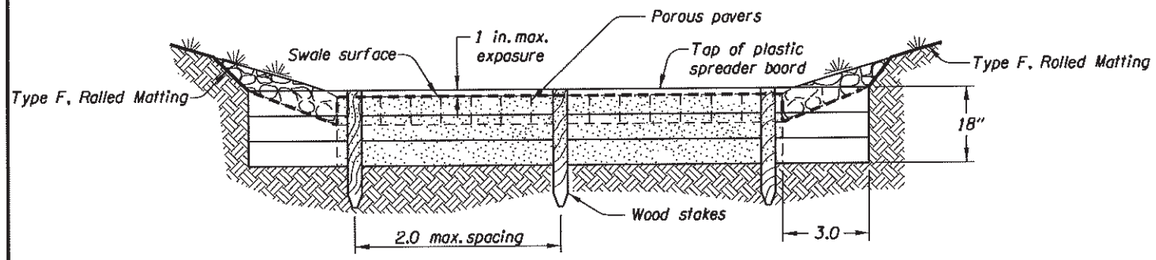

SECTION C-C
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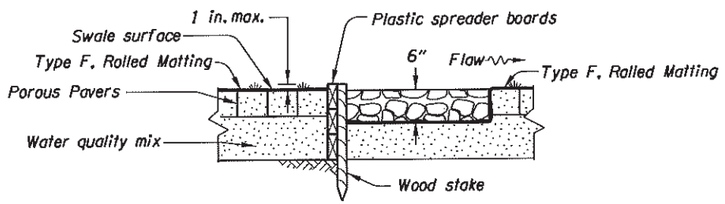

SECTION D-D
(not to scale)

PLASTIC BOARD FLOW SPREADER DETAIL

NOTES:
1. Construct spreader boards level.
2. Extend spreader boards a minimum of 3 feet into side slopes.
3. Reinforce side slopes at flow spreader locally with 1½"–¾" granular drain backfill material..
4. Fasten wood stakes to spreader boards with 2½" galvanized wood screws every 2" (minimum).
5. Place plastic board flow spreader at beginning and end of swale and every 50 feet throughout length of biofiltration swale.
6. Install matting according to RD1055 channel application. Omit check slots.
7. Install Type S2 markers at beginning and end of biofiltration swale. See sheet GJ-2 for details.

BIOFILTRATION SWALE DATA

Facility Name	Plan Sheet & Note #	STA. To STA.	W (ft.)	Longitudinal Slope (ft./ft.)	Side Slope Left (V:H)	Side Slope Right (V:H)	DFI
Water quality Swale "N"	Sheet 3, note 6	"LW" 99+40.00 To "LW" 100+55.00, Lt.	4.0	0.01	1:6	1:4	D00847
Water quality Swale "S"	Sheet 3, note 14	"LW" 104+00.00 To "LW" 105+15.00, Rt.	4.0	0.01	1:4	1:4	D00848
Water quality Swale "CL"	Sheet 3, note 15	"CL" 2068+25.00 To "CL" 2069+35.00, Lt.	7.0	0.005	1:4	1:4	D00846

(1)

GROUNDLAYER PLANTS

Scientific Name	Common Name	Type	Spacing	Quantity (each)		
				Swale "N"	Swale "S"	Swale "CL"
Carex Densa	Dense Sedge	Plugs	1 per 2 sq. ft.	230	230	385
Eleocharis Palustris	Common Spikerush	Plugs	1 per 2 sq. ft.	230	230	385
Juncus Tenuis	Poverty Rush	Plugs	1 per 2 sq. ft.	230	230	385
Mimulus Guttatus	Seep Monkeyflower	Plugs	1 per 2 sq. ft.	230	230	385

1½"–¾" Granular Drain Backfill Materiol

Water quality mix (and swale excavation pay limit)

Note: All dimensions are in feet unless otherwise noted.

No.	DATE	REVISIONS	BY
(1)	11-24-14	Changed Stationing Rt. to Lt.	DC

REGISTERED PROFESSIONAL ENGINEER
65698PE
OREGON
JULY 12, 2005
DELANIE L. CUTSFORTH
EXPIRES: 12-31-2015

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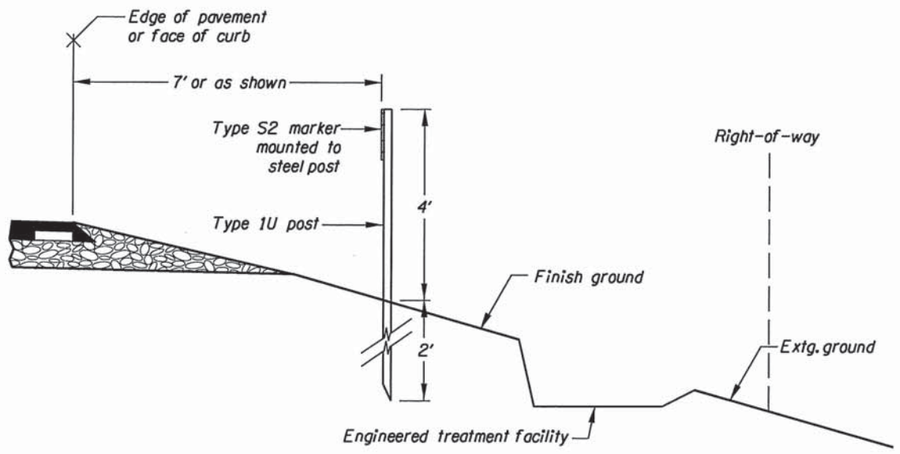
Reviewed By - Wade Holaday
Drafted By - DeLanie Cutsforth

STORMWATER DETAILS

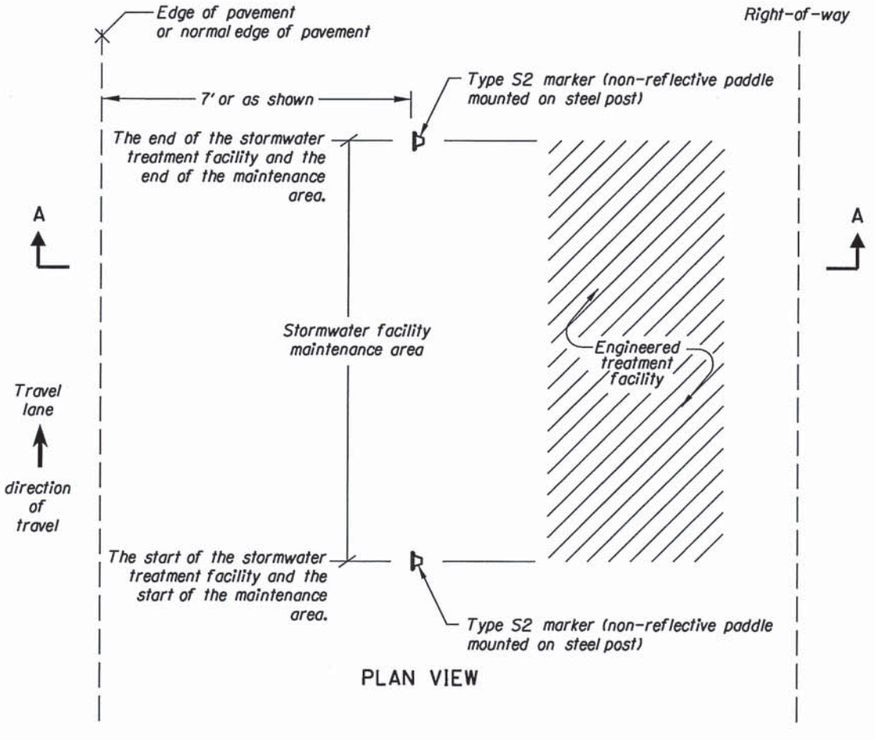
SHEET NO. GJ

STORMWATER DRAINAGE FACILITY IDENTIFICATION

47V-127

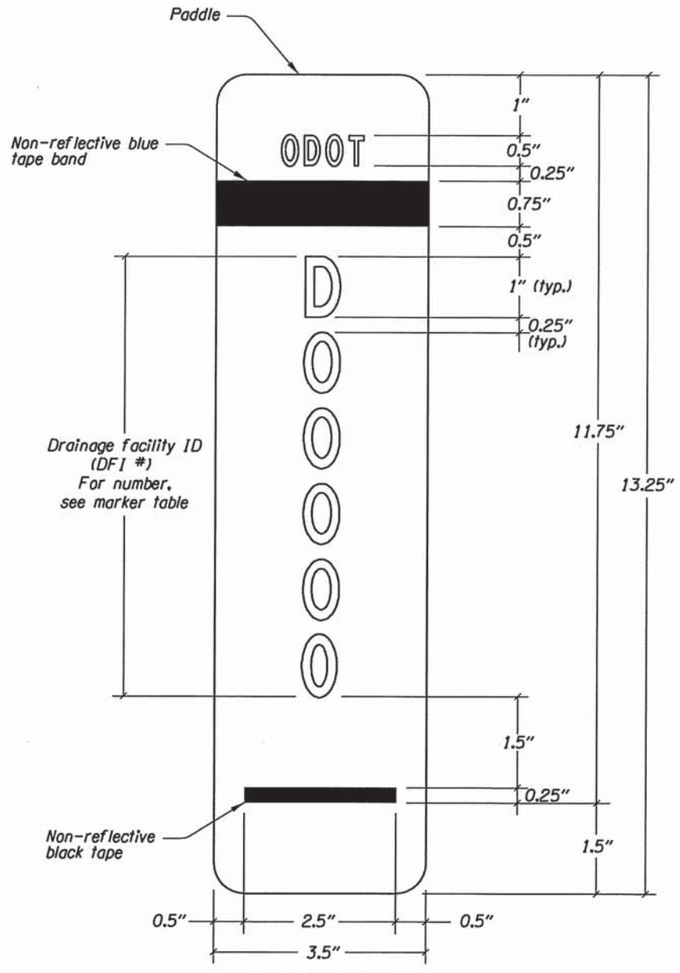


SECTION A-A



PLAN VIEW

INSTALLATION DETAIL



TYPE S2 MARKER

MARKER TABLE

FACILITY NAME	FACILITY LOCATION	DFI #	TYPE S2 MARKER	
	STATION		BEGIN	END
Water Quality Swale "N"	"LW" 99+40.00	D00847	✓	
Water Quality Swale "N"	"LW" 100+55.00	D00847		✓
Water Quality Swale "S"	"LW" 104+00.00	D00848	✓	
Water Quality Swale "S"	"LW" 105+15.00	D00848		✓
Water Quality Swale "CL"	"CL" 2068+25.00	D00846	✓	
Water Quality Swale "CL"	"CL" 2069+35.00	D00846		✓

Notes:

1. Paddle:
   - Aluminum sheet, nominal thickness 0.050"
   - White non-reflective background
   - Mount paddle to one (1) type 1U steel post using 3/16" diameter aluminum blind rivets and washers. See standard drawing TM570 detail labeled "Steel Posts" for mounting a traffic target. Install paddle onto Type 1U steel post using same hole pattern.
   - Text and numbers are type C font in non-reflectorized black
   - Band is non-reflective blue tape
   - Do not mount paddle to other highway signing posts
   - Install paddle parallel to travel lane
   - Prepare paddle for each "DFI" noted in the marker table
2. Steel Posts:
   - See drg. no. TM571 for type 1U steel post dimensions
3. Place 7 feet from edge of pavement or as directed.
4. See marker table for installation locations.

REGISTERED PROFESSIONAL ENGINEER
65698PE
DeLanie Cutsforth
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JULY 12, 2005
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STORMWATER DETAILS

SHEET NO. GJ-2