OPERATION & MAINTENANCE MANUAL

DFI No. : D00850
Facility Type: Water Quality Biofiltration Swale

JUNE 2019

INDEX

1. Identification

Drainage Facility ID (DFI):	**D00850**
Facility Type:	Water Quality Biofiltration Swale
Construction Drawings:	49V-030
Location:	District: 08
	Highway No.: US199; OR25
	Mile Post: 10.04 to 10.07 (beg./end); LEFT
	Description: This facility is located on the south side of eastbound US 199. Access to the facility can be obtained along the shoulder of eastbound US 199.

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:	2017
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 eastbound lane of US 199 (No. 025). Access for this facility is available from the south shoulder of eastbound US 199. Stormwater enters the facility via roadway runoff and a drainage ditch located along the south side of eastbound US 199. As the water flows west it is treated as it slows and spreads out within the swale before outfalling into an existing ditch.

A. Maintenance equipment access:
   This facility can be accessed from the eastbound US 199 (Hwy 025) shoulder. Driving heavy equipment through swale may cause damage to the facility. Use of mower with extension arm recommended.

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 driveway at the NE end of the swale and flow directly into Round Prairie Creek.

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 DEQ. Refer to the roadwaste section of the ODOT Maintenance Yard Environmental Management System (EMS) Policy and Procedures Manual for disposal options: http://egov.oregon.gov/ODOT/HWY/OOM/EMS.shtml

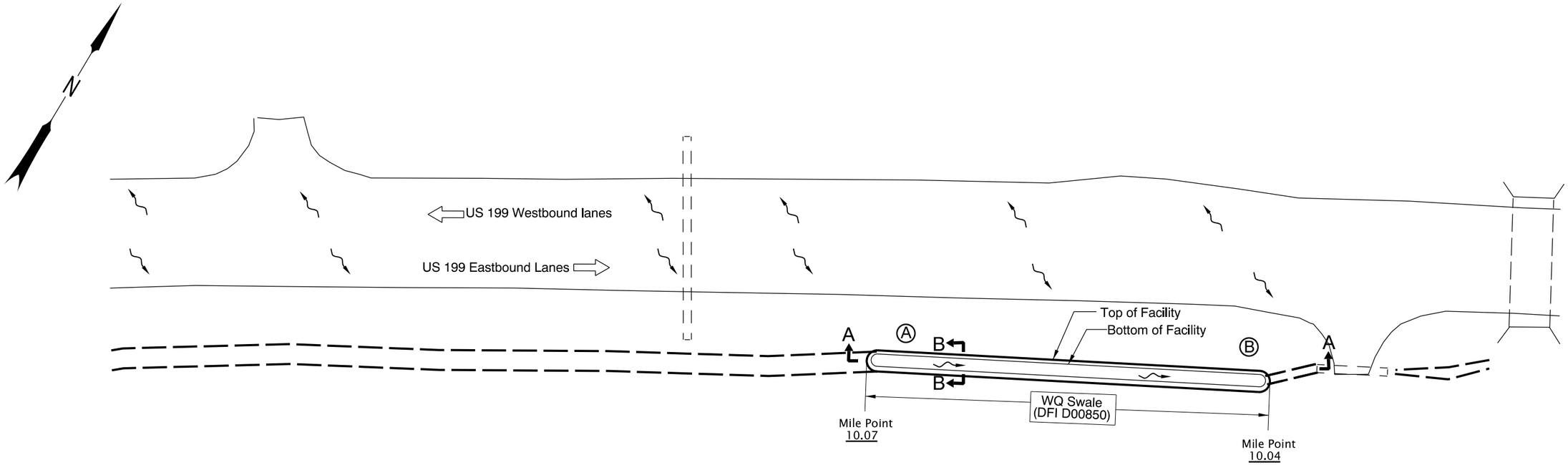
Contact any of the following for more detailed information about management of waste materials found on site:

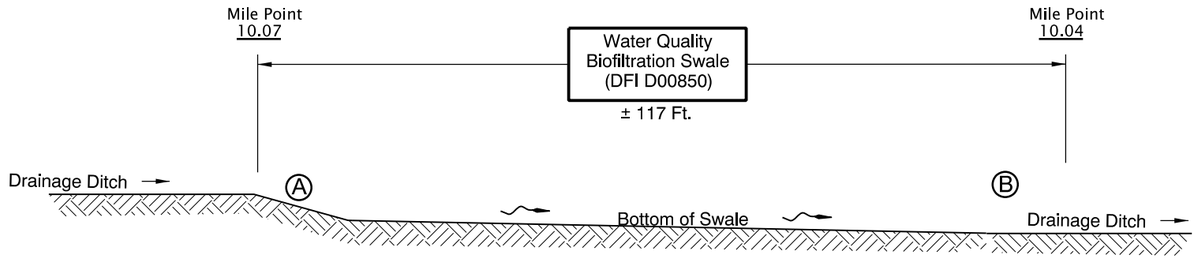
ODOT Clean Water Unit	(503) 986-3008
ODOT Statewide Hazmat Coordinator	(503) 229-5129
ODOT Region Hazmat Coordinator	(503) 731-8304
ODEQ Northwest Region Office	(503) 229-5263

Appendix A

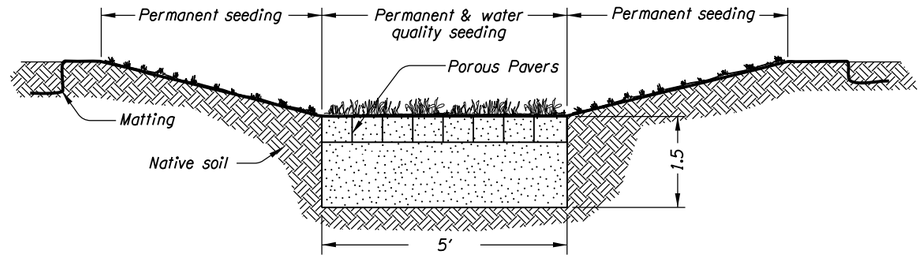
Content:

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





SECTION A-A
N.T.S.



SECTION B-B
N.T.S.

LEGEND:

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

OREGON DEPARTMENT OF TRANSPORTATION

Prepared By: D. Cutsforth

Drafted By: D. Cutsforth

DFI D00850
MAINTENANCE DISTRICT 8 HWY 025
WQ BIOFILTRATION SWALE
MP 10.04 - 10.07
JOSEPHINE COUNTY

DFI_D00850_OperationalPlan.dgn

Appendix B

Content:

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

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

REVISED AS CONSTRUCTED

T Parelli

Project Mananger

2/17/2017 C14880

Date Contract No.

STATE OF OREGON

DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED PROJECT

GRADING, DRAINAGE, PAVING & SIGNING

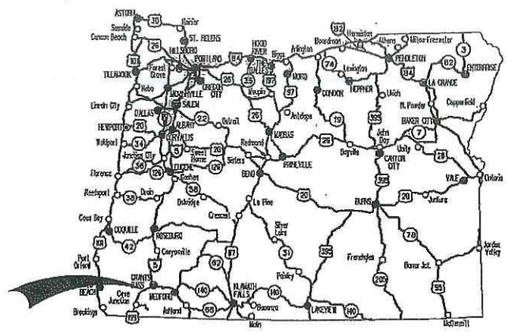
US199: APPLEGATE RIVER - SLATE CREEK

REDWOOD HIGHWAY

JOSEPHINE COUNTY

MARCH 2016

49V-030



Overall Length Of Project - 7.24 Miles

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.)

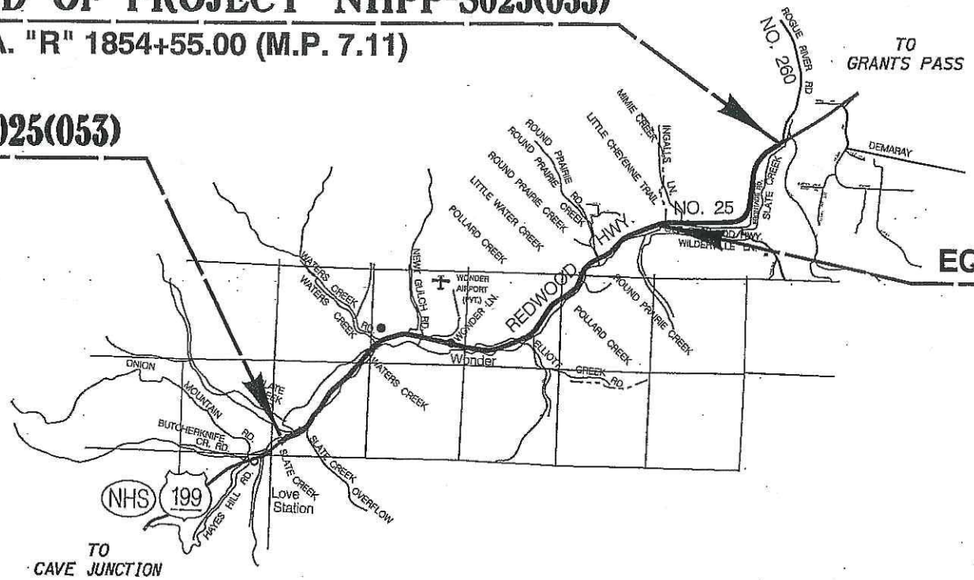
LET'S ALL WORK TOGETHER TO MAKE THIS JOB SAFE

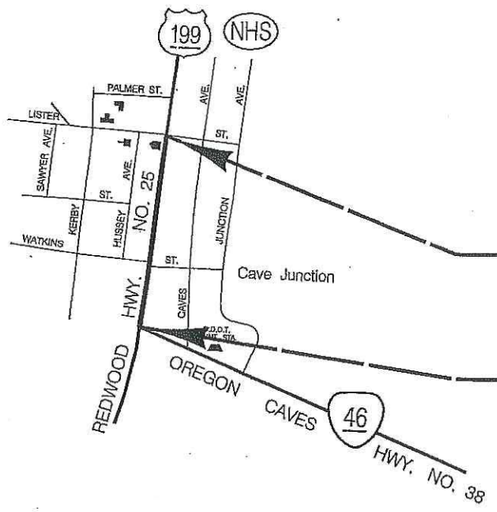
END OF PROJECT NHPP-S025(053)

STA. "R" 1854+55.00 (M.P. 7.11)

BEGINNING OF PROJECT NHPP-S025(053)

STA. "R" 1492+84.50 (M.P. 14.26)





END OF PROJECT NHPP-S025(053)

STA. "R" 692+20.00 (M.P. 28.60)

BEGINNING OF PROJECT NHPP-S025(053)

STA. "R" 673+35.00 (M.P. 28.99)

EQUA. STA. "R" 1753+24.23 = M.P. 9.03 Bk. =
= M.P. 9.33 Ah.

N

T. 036S., R. 006W., W.M.
T. 037S., R. 007W., W.M.

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.

Approving Authority: M. Thompson

Signature & date 1-26-2016

MARK THOMPSON R3 TECH. CENTER MANAGER

Print name and title

Concurrence by ODOT Chief Engineer

US199: APPLEGATE RIVER - SLATE CREEK
REDWOOD HIGHWAY
JOSEPHINE COUNTY

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	NHPP-S025(053)	1

F:\ODOT_DATA\PROJECTS\17469_US199_Applegate\Sheets_Title\17469r3.tsl :: Default 1/13/2016 12:42:08 PM hwye32o

1:1200 - 001

1/255

INDEX OF SHEETS, CONT.	
SHEET NO.	DESCRIPTION
1B & 1B-2	Right of Way Hold Outs
1C-1 thru 1C-4	Survey Control Sheets
2 thru 2A-7	Typical Sections
2B thru 2B-5	Details
2B-6 thru 2B-20	Details (Cave Junction)
2B-21	Details
2C thru 2C-4	Traffic Control Plan
2C-5 & 2C-6	Traffic Control Plan (Cave Junction)
2D	Pipe Data Sheet
3 thru 6	General Construction
7	General Construction And Profiles
8 thru 10	General Construction
11	General Construction And Profiles
11A	General Construction Notes
12 thru 16	General Construction
17	General Construction And Profiles
17A	General Construction Notes
18 thru 21	General Construction (Cave Junction)

GEO/HYDRO	
GA thru GA-6	Erosion Control Plan
GG & GG-2	Temporary Water Management
GJ & GJ-2	Stormwater Details

BRIDGE	
DRAWING NO.	DESCRIPTION
96911	Plan & Details

PERMANENT PAVEMENT MARKINGS	
SHEET NO.	DESCRIPTION
ST thru ST-3	Striping Details
ST-4 thru ST-19	Striping Plan
ST-20 thru ST-22	Striping Plan (Cave Junction)

PERMANENT SIGNING	
SHEET NO.	DESCRIPTION
S15804 thru S15823	Signing Plan
S15824 thru S15826	Signing Details
S15827 thru S15830	Sign and Post Data Table

SIGNAL PLANS	
SHEET NO.	DESCRIPTION
18673	Signal Plan
18674	Detector Plan
18675	Existing Utilities
18676	Signal Plan
18677	Detector Plan
18678	Existing Utilities
18679	Removal Plan
18680	Signal Plan
18681	Detector Plan
18682	Existing Utilities
18683	Details

R/W Map Nos. 11B-7-26
11B-8-4

Standard Drg. Nos.

RD100 – Mailbox Support
RD101 – Mailbox Installation
RD140 – Roadway Cross Slopes Superelevated Sections
RD150 – Slope Rounding

RD300 – Trench Backfill, Bedding, Pipe Zone And Multiple Installations
RD302 – Street Cut
RD316 – Sloped Ends For Metal Pipe
RD317 – Culvert Embankment Protection
RD318 – Sloped Ends For Concrete Pipe
RD319 – Miscellaneous Culvert Details
RD320 – Paved End Slope For Culverts 60" Maximum Pipe Size
1 RD324 – Safety End Section For Concrete, PVC, HDPE & Polypropylene Pipe
RD325 – Coupling Bands For Corrugated Metal Pipe
RD326 – Coupling Bands For Corrugated Metal Pipe
RD327 – Coupling Bands For Corrugated Metal Pipe
RD335 – Standard Storm Sewer Manhole
RD336 – Standard Manhole Details
1 RD339 – Pipe To Structure Connections
RD346 – Large Precast Manhole
RD348 – Manhole With Inlet
RD363 – Gutter Transition
RD364 – Concrete Inlets Type G-1, G-2, G-2M & G-2MA
RD365 – Frames & Grates For Concrete Inlets
RD366 – Concrete Inlets Type CG-1, CG-2
RD367 – Curb Inlet Channel
RD380 – Fill Height Tables For Aluminum & Steel Corrugated Pipe
RD384 – Fill Height Tables For Aluminum & Steel Spiral Rib Pipe
RD386 – Fill Height Table For Circular Concrete Pipe
RD388 – Fill Height Tables For PVC Pipe
RD390 – Fill Height Table For Corrugated HDPE Pipe
RD391 – Fill Height Table For Steel Reinforced HDPE Pipe
RD393 – Fill Height Tables For Polypropylene Pipe
RD398 – Culvert ID Marker
RD399 – Stormwater Treatment And Storage Facility Field Markers

1 RD400 – Guardrail And Metal Median Barrier
RD405 – Guardrail And Metal Median Barrier Parts
RD410 – Guardrail Parts (Thrie Beam)
RD415 – Guardrail And Metal Median Barrier Parts
RD420 – Energy Absorbing Terminal
RD425 – Non Energy-Absorbing Terminal 3' Or 4' Flare
RD435 – Guardrail Installation Terminal (Cut Or False Cut)
1 RD440 – Guardrail Installation At Bridge Ends
RD450 – Guardrail Anchors (Steel)
RD470 – Guardrail Over Low-Fill Culverts
RD480 – 31" Guardrail And Metal Median Barrier
RD481 – 31" Guardrail And Metal Median Barrier Height Conversion
RD610 – Asphalt Concrete Pavement (ACP) Details

RD700 – Curbs
RD705 – Islands
1 RD706 – Traffic Separators And Transitions
RD707 – Island Nose Treatments
RD710 – Accessible Route Islands
RD715 – Approaches And Non-Sidewalk Driveways
RD720 – Sidewalks
RD755 – Sidewalk Ramp Details
RD756 – Sidewalk Ramp Placement Options Small Radii
RD757 – Sidewalk Ramp Placement Options Large Radii
RD759 – Truncated Dome Detectable Warning Surface Details & Locations

RD1010 – Inlet Protection (Type 2, 6 & 7)
RD1006 – Check Dams Type 2 and 6
RD1015 – Inlet Protection Type 4
RD1040 – Sediment Fence
RD1055 – Matting

TM200 – Sign Installation Details
TM201 – Miscellaneous Sign Placement Details
TM211 – Sign Details US & Interstate Route Shields
TM221 – Signing Details Milepost Markers
TM222 – Installation Details Milepost Marker 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

TM450 – Mast Arm Pole Details
TM452 – Strain Pole Details
TM457 – Vehicle, Pedestrian Signal And Push Button Mounting Option Details
TM467 – Pedestrian Signal And Pedestrian Push Button Details
TM470 – Color Code Charts
TM472 – Traffic Signal Junction Boxes/Hand Holes
TM475 – Loop Details
TM480 – Loop Entrance Details

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
TM525 – High Performance Markings Surface & Groove Installed
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
TM561 – Alignment Layout: Left Turn Lane, Centerline & Medians
TM570 – Traffic Delineators
TM571 – Traffic Delineators Steel Post Details
TM576 – Traffic Delineator Installation For Non-Freeways

TM635 – Breakaway Sign & Luminaire Supports - Support Location Guidelines
TM670 – Wood Post Sign Supports
TM671 – 3 Second Gust Wind Speed Map
TM676 – Sign Attachments
TM678 – Secondary Sign Mounting Details
TM681 – Perforated Steel Square Tube (PSST) Sign Support Installation
TM687 – Perforated Steel Square Tube (PSST) Anchor Foundation
TM688 – Perforated Steel Square Tube (PSST) Slip Base Foundation

TM800 – Tables, Abrupt Edge And PCMS Details
TM810 – Temporary Pavement Markings
TM820 – Temporary Barricades
TM821 – Temporary Sign Supports
TM830 – Temporary Concrete Barrier And Rumble Strip Details
TM831 – Temporary Impact Attenuators
TM833 – Temporary Impact Attenuatpors
TM841 – Intersection Work Zone Details
TM842 – Signalized Intersection Details
TM844 – Temporary Pedestrian Access Routing
TM850 – 2-Lane, 2-Way Roadways
TM851 – Non-Freeway Multi-Lane Sections
TM852 – Non-Freeway Multi-Lane Sections
TM853 – Non-Freeway Multi-Lane Sections

1 BR233 – Thrie-Beam Rail And Transition
BR273 – Thrie Beam Rail Retrofit For Curb And Parapet Rail Connection Details

NOT REVISED AS CONSTRUCTED

2/17/2017 C14880
Date Contract No.

No.	DATE	REVISIONS	BY
1	03-07-16	Added RD324, RD339, RD400, RD440, RD706 & BR233	CZ

US199: APPLEGATE RIVER - SLATE CREEK
REDWOOD HIGHWAY
JOSEPHINE COUNTY

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	NHPP-S025(053)	1A

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

NOT REVISED AS CONSTRUCTED

2/17/2017 C14880

Date Contract No.

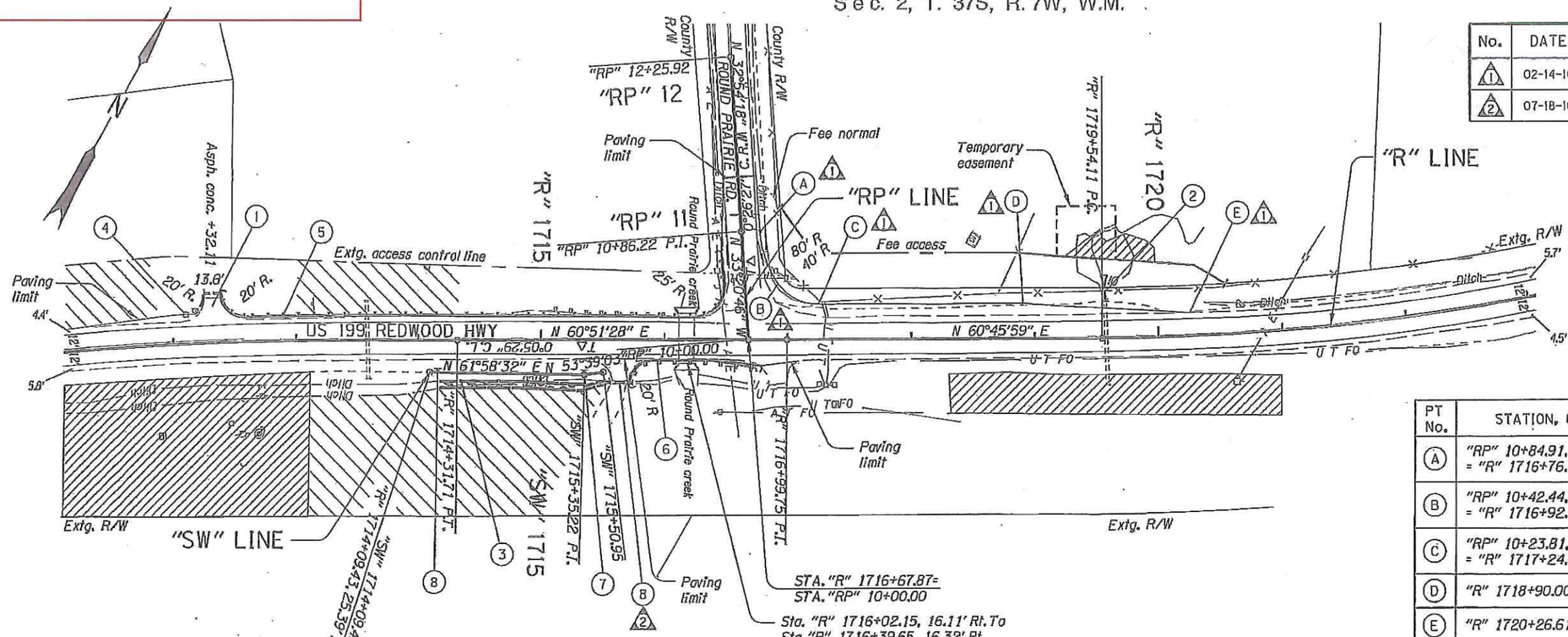
Sec. 2, T. 37S, R. 7W, W.M.

49V-030

No.	DATE	REVISIONS	BY
1	02-14-16	Revised Table, Exc./Emb. C.Y. & Bubble call outs. Add RP profile	CRZ
2	07-18-16	Replace extg. culv.	CRZ

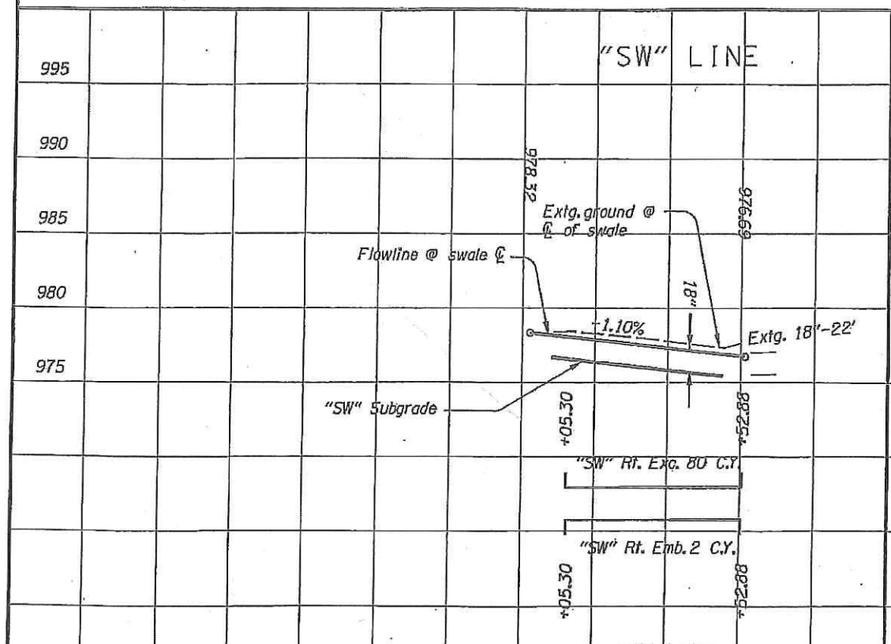
No work zone Shown thus:

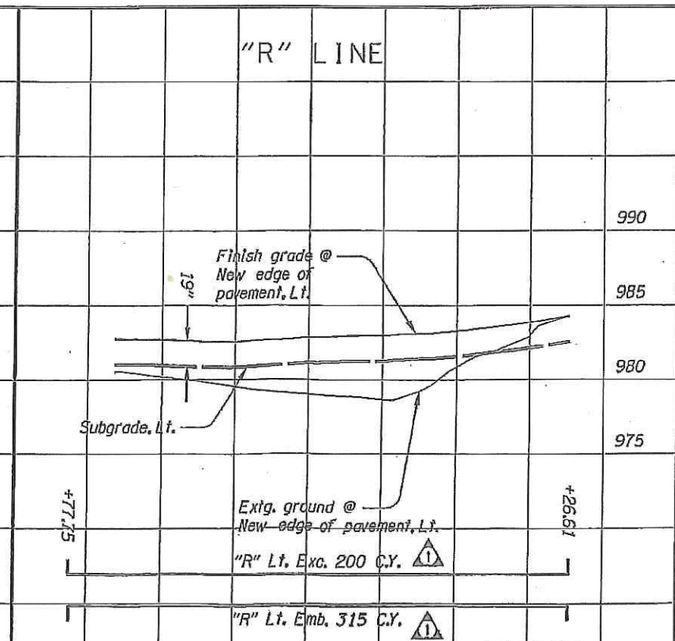
Prospective Staging Area Shown thus:

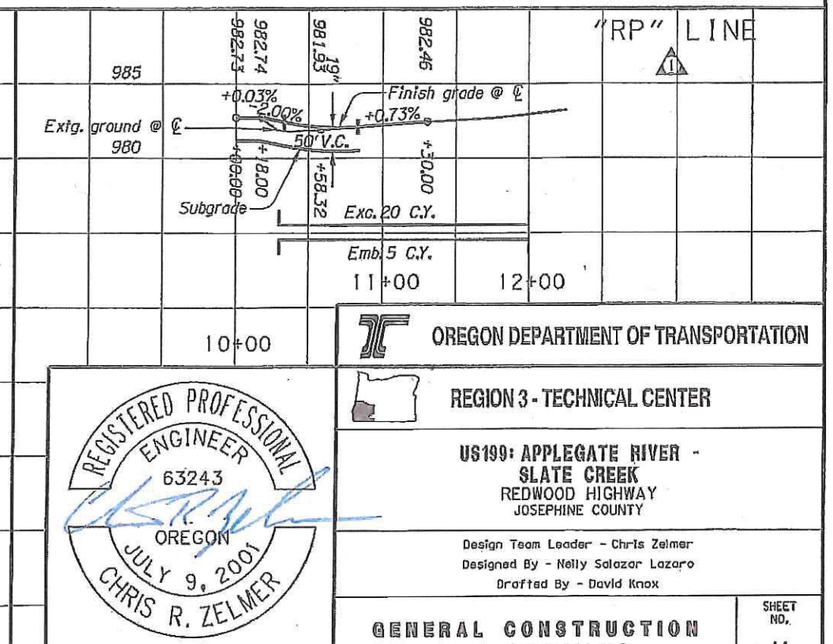


CONTROL POINT TABLE AT NEW EDGE OF PAVEMENT

PT No.	STATION, OFFSET	FINISH GRADE	DESCRIPTION
A	"RP" 10+84.91, 15.39' Rt. = "R" 1716+76.99, 85.81 Lt.	981.83	Match extg. edge of pvmt.
B	"RP" 10+42.44, 27.67' Rt. = "R" 1716+92.35, 44.36' Lt.	981.71	P.C.C.
C	"RP" 10+23.81, 59.05' Rt. = "R" 1717+24.66, 28.03' Lt.	981.67	P.T.
D	"R" 1718+90.00, 28.00' Lt.	982.82	Taper point
E	"R" 1720+26.61, 18.39' Lt.	984.27	Match extg. edge of pvmt.







REGISTERED PROFESSIONAL ENGINEER 63243 OREGON JULY 9, 2001 CHRIS R. ZELMER

EXPIRES: JUNE 30, 2018

OREGON DEPARTMENT OF TRANSPORTATION

REGION 3 - TECHNICAL CENTER

US199: APPLEGATE RIVER - SLATE CREEK
REDWOOD HIGHWAY
JOSEPHINE COUNTY

Design Team Leader - Chris Zelmer
Designed By - Nelly Salazar Lazaro
Drafted By - David Knox

GENERAL CONSTRUCTION AND PROFILES

SHEET NO. 11

(1) Const. appr.

(2) Sta. "R" 1719+55.93, 44.83' Lt. To
Sta. "R" 1719+56.45, 31.13' Lt.
Extend 18" culvert pipe – 14' Lt.
5' depth
I.E. (18" In) = 978.06
I.E. (18" Out) = 977.26
S=0.0587'/ft.
Const. sloped end section
Connect to extg. culvert
Const. paved end slope, Lt.

(3) Const. water quality swale
(For details, see sht. GJ)

(4) Sta. "R" 1711+17.85 To
Sta. "R" 1712+17.39, Lt.
Inst. single mailbox support
Const. conc. collar
Const. mailbox service turnout
(For details, see sht. 2B)

(5) Sta. "R" 1712+40.19, 37.88' Lt. To
Sta. "R" 1716+45.77, 68.71' Lt.
Remove extg. guardrail – 163.2'
Const. 31" guardrail – 400' (Type 2A)
Const. 31" guardrail – 37.5' (Type 2A modified)
Const. anchors – 4 (Type 1 modified)
Inst. end piece (Type C)
Const. 31" guardrail terminal, non-flared – 25'
Test level – 2
W=1', E=0'
(See drg. no. RD470)
(For details, see shts. 2B & 2B-3)

(6) Sta. "R" 1715+71.21, 35.98' Rt. To
Sta. "R" 1716+76.91, 20.53' Rt.
Remove extg. guardrail – 115'
Const. 31" guardrail – 42.4' (Type 2A)
Const. 31" guardrail – 37.5' (Type 2A modified)
Const. 31" guardrail terminal, straight flare – 37.5'
Test level – 3
W=4', E=0.5'
Const. anchors – 2 (Type 1 modified)
Inst. end piece (Type C)
(See drg. no. RD420)
(For details, see sht. 2B)

(7) Inst. Type "S2" marker – 2
(For details, see sht. GJ-2)

(1) (8) Sta. "R" 1715+52.86, 33.87' Rt. To
Sta. "R" 1715+74.59, 34.28' Rt.
Remove culv. pipe – 22'
Inst. 18" culv. pipe – 22'
5' depth
F.L. (18" In) = 976.90 (E) (Match extg.)
F.L. (18" Out) = 976.81 (W) (Match extg.)
S= 0.0041'/ft.
Const. sloped end
Const. paved end slope

NOT REVISED AS CONSTRUCTED

2/17/2017 C14880
Date Contract No.

REGISTERED PROFESSIONAL ENGINEER
63243
OREGON
JULY 9, 2001
CHRIS R. ZELMER
EXPIRES: JUNE 30, 2018

No.	DATE	REVISIONS	BY
1	12-18-16	Replace extg. culv.	CRZ

OREGON DEPARTMENT OF TRANSPORTATION

REGION 3 - TECHNICAL CENTER

US199: APPLEGATE RIVER - SLATE CREEK
REDWOOD HIGHWAY
JOSEPHINE COUNTY

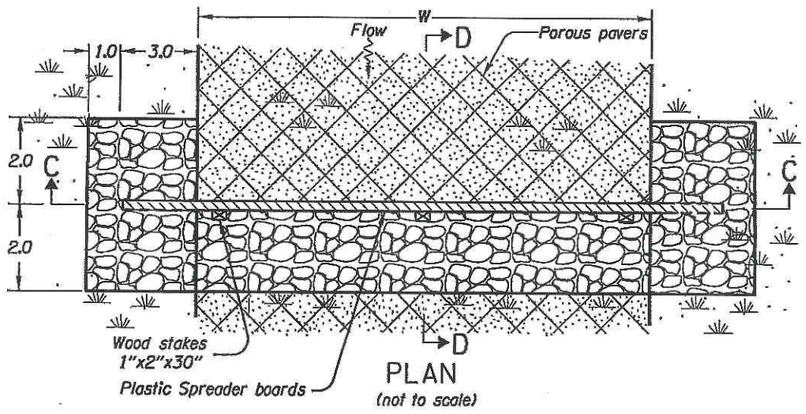
Design Team Leader - Chris Zelmer
Designed By - Kelly Salazar Lazaro
Drafted By - David Knox

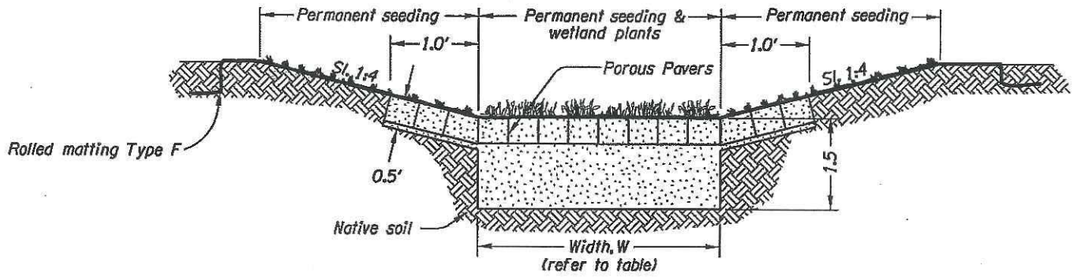
GENERAL CONSTRUCTION NOTES

SHEET NO. 11A

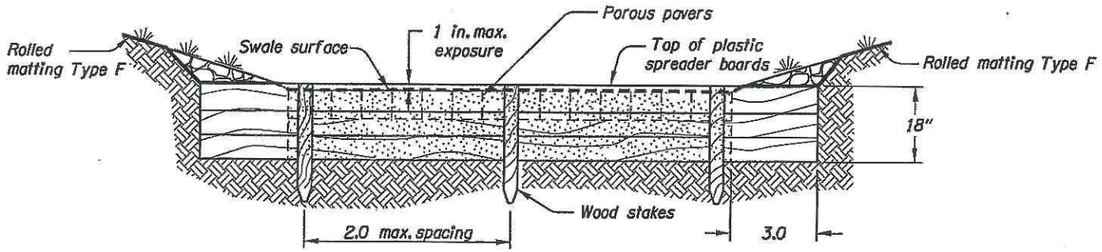
WATER QUALITY SWALE DETAILS

49V-030

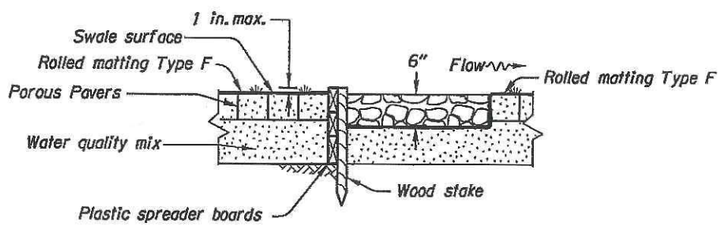




TYPICAL SECTION
(Not to scale)



SECTION C-C
(not to scale)



SECTION D-D
(not to scale)

PLASTIC BOARD FLOW SPREADER DETAIL

BIOFILTRATION SWALE DATA				
Plan sheet & note#	Sta. to Sta.	W (ft.)	Longitudinal Slope (ft./ft.)	DFI #
Sheet 11, note 3	Sta. "SW" 1714+17.5, 9.5' Rt. To Sta. "SW" 1715+34.5, 10.6' Rt.	5.0	0.011	D00850

WETLAND PLANTS			
SCIENTIFIC NAME	COMMON NAME	SPACING	QUANTITY (Each)
Carex Densa	Dense Sedge	1 per 2 sq.ft.	293
Eleocharis Palustris	Common Spikerush	1 per 2 sq.ft.	293
Juncus Tenuis	Poverty Rush	1 per 2 sq.ft.	293
Minulus Guttatus	Seep Monkey Flower	1 per 2 sq.ft.	293

NOT REVISED AS CONSTRUCTED

2/17/2017 — Date

C14880 — Contract No.

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. Omit check slots.
7. Install Type S2 markers at beginning and end of biofiltration swale. See sheet GJ-2 for details.

1½"–¾" Granular Drain Backfill Material

Water quality mix

Note: All dimensions are in feet unless otherwise noted.

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JULY 12, 2005
DELANIE L. CUTSFORTH

EXPIRES: 12-31-2017

OREGON DEPARTMENT OF TRANSPORTATION

REGION 3 - TECHNICAL CENTER

US199: APPLEGATE RIVER - SLATE CREEK
REDWOOD HIGHWAY
JOSEPHINE COUNTY

Designed By - DeLanie Cutsforth
Reviewed By - Wade Holaday
Drafted By - David Knox

STORMWATER DETAILS

SHEET NO. GJ

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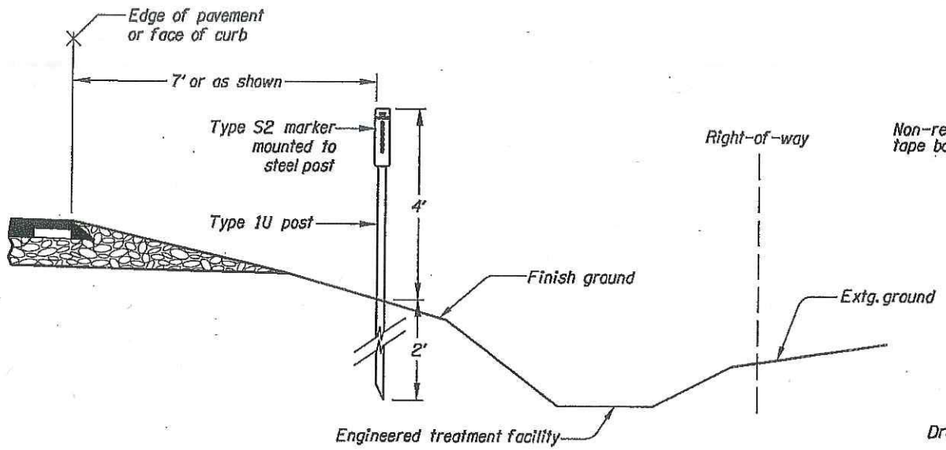
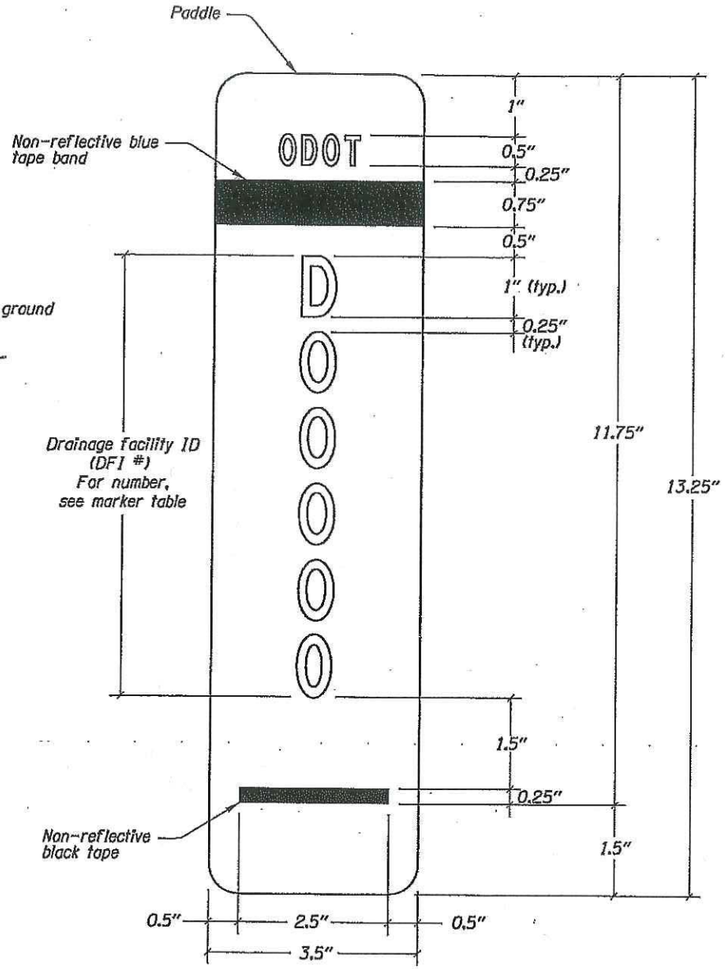
1:1200 - 02B-06

STORMWATER DRAINAGE FACILITY IDENTIFICATION

49V-030



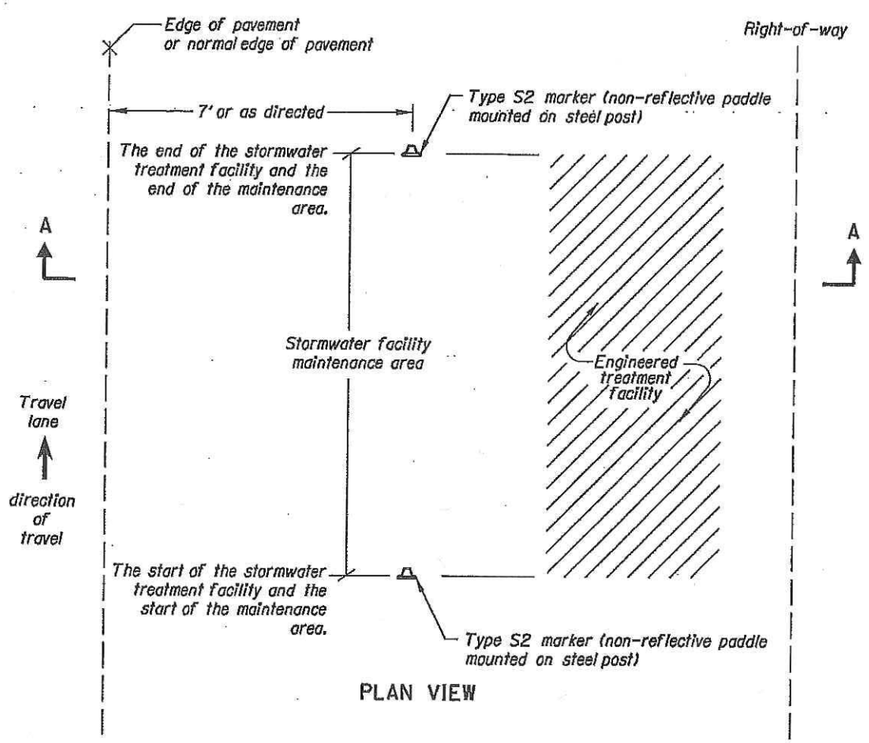
SECTION A-A



TYPE S2 MARKER

MARKER TABLE

FACILITY LOCATION / STATION	DFI #	TYPE S2 MARKER BEGIN	TYPE S2 MARKER END
Sta. "R" 1714+16	D00850	✓	
Sta. "R" 1715+35	D00850		✓



PLAN VIEW

INSTALLATION DETAIL

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.

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STORMWATER DETAILS

SHEET NO. GJ-2