OPERATION & MAINTENANCE MANUAL

DFI No. : D00769
Facility Type: Water Quality Biofiltration Swale

October, 2017

INDEX

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APPENDIX B: ODOT Project Plan Sheets

1. Identification

Drainage Facility ID (DFI):	**D00769**
Facility Type:	Water Quality Biofiltration Swale
Construction Drawings:	46V-113
Location:	District: 08
	Highway No.: 063
	Mile Post: 11.20; 11.22 (beg./end)
	Description: This facility is located on the right side of North Phoenix Rd and along the Bear Creek Greenway sidewalk. Access to the facility can be obtained along the shoulder of North Phoenix Rd.

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:	Hamilton Construction Co.

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 right of the entrance sidewalk to Bear Creek Greenway from North Phoenix Rd. Access for this facility is available from the right shoulder of North Phoenix Rd. Stormwater enters the facility via roadway runoff and a series of inlets located along North Phoenix Rd. As the water flows through the swale it is treated as it slows and spreads out within the swale before out falling into an existing stormwater culvert.

A. Maintenance equipment access:
This facility can be accessed from the shoulder of North Phoenix Rd.

B. Heavy equipment access into facility:

☒ Allowed (no limitations)
☐ Allowed (with limitations)
☐ Not allowed

C. Special Features:

☒ Amended Soils
☒ Porous Pavers
☐ Liners
☐ Underdrains
☒ Spreader Board
☒ Riprap
☒ Perforated Pipe
☒ Geotextile

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

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 Environment 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

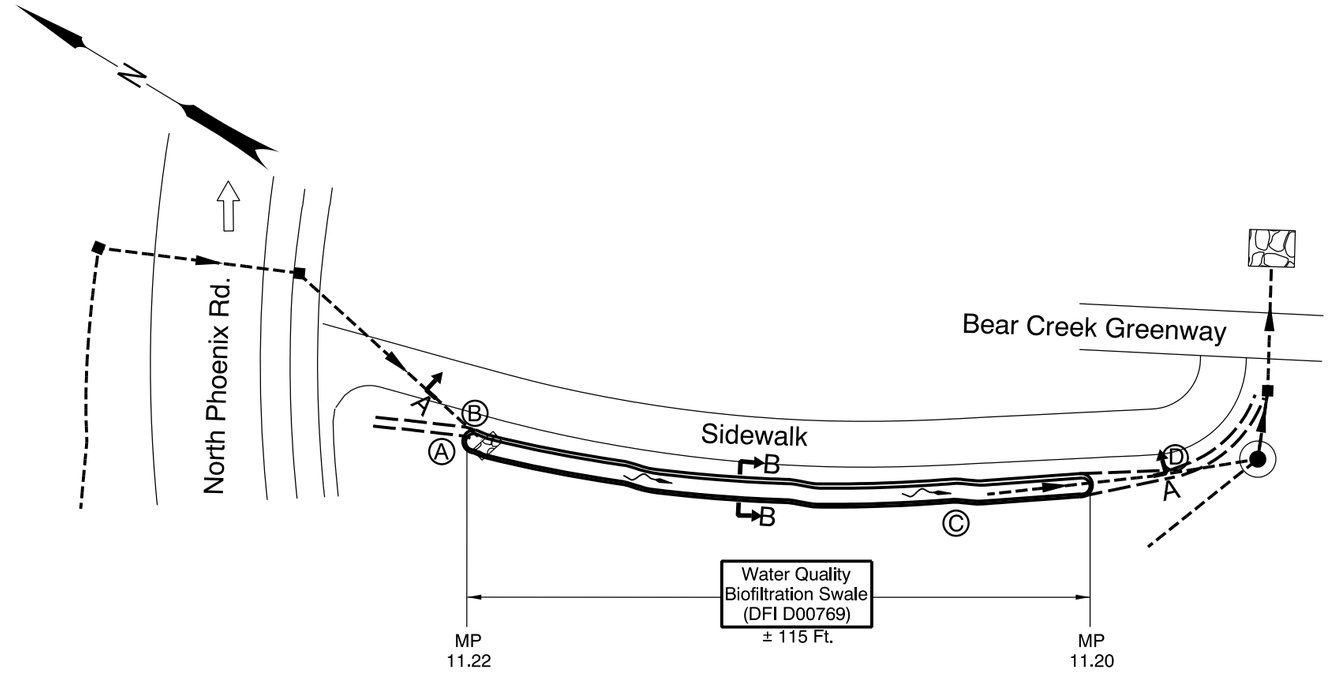
Contact any of the following for more detailed information about management of waste materials found on site:

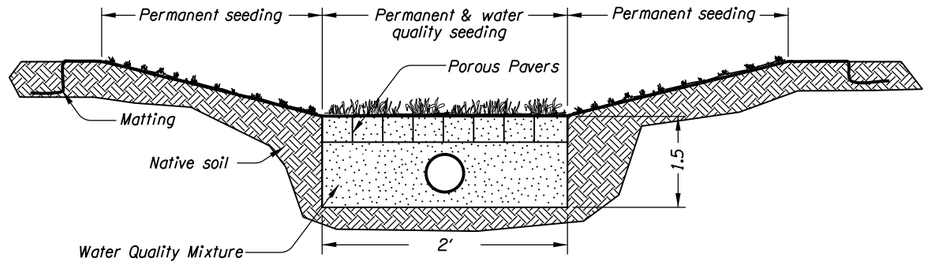
ODOT Clean Water Unit	(503) 986-3008
ODOT Statewide Hazmat Coordinator	(503) 667-7442
ODOT Region 1 Hazmat Coordinator	(503) 731-8290
ODOT Region 2 Hazmat Coordinator	(503) 986-2647
ODOT Region 3 Hazmat Coordinator	(541) 957-3594
ODOT Region 4 Hazmat Coordinator	(541) 388-6186
ODOT Region 5 Hazmat Coordinator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

Appendix A

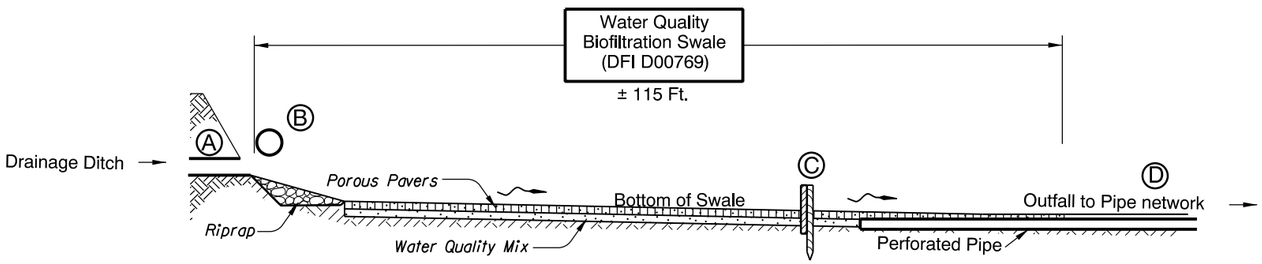
Content:

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

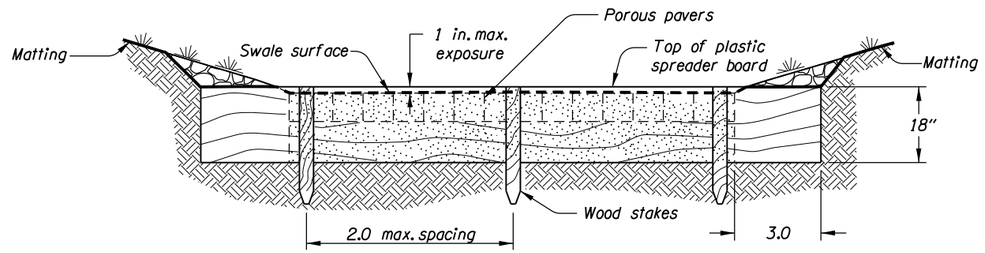




SECTION B-B
N.T.S.



SECTION A-A
N.T.S.



FLOW BOARD SPREADER DETAIL
N.T.S.

LEGEND:

- Ⓐ-Ⓑ Swale Inlet
- Ⓒ Flow Board 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: T. BURRIER

Drafted By: T. BURRIER

DFI D00769
MAINTENANCE DISTRICT 08 HWY 001
WQ BIOFILTRATION SWALE
HIGHWAY MP 11.20 TO 11.22
JACKSON COUNTY

DFI_D00000.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'd.
1A-2, 1A-3	Standard Dwg. Nos.
1A-4	Layout Sheet

STATE OF OREGON

DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED PROJECT

PAVING, GRADING, DRAINAGE, STRUCTURES, SIGNING & ROADSIDE DEVELOPMENT

FFO-I-5: FERN VALLEY INTERCHANGE, UNIT 2

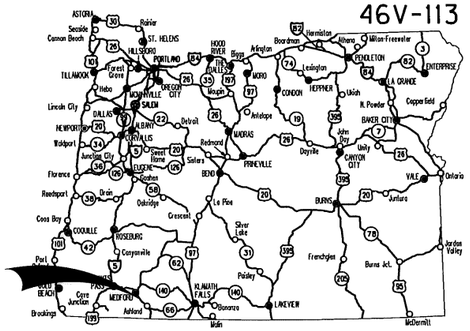
PACIFIC HIGHWAY

JACKSON COUNTY

NOVEMBER 2013

1

46V-113



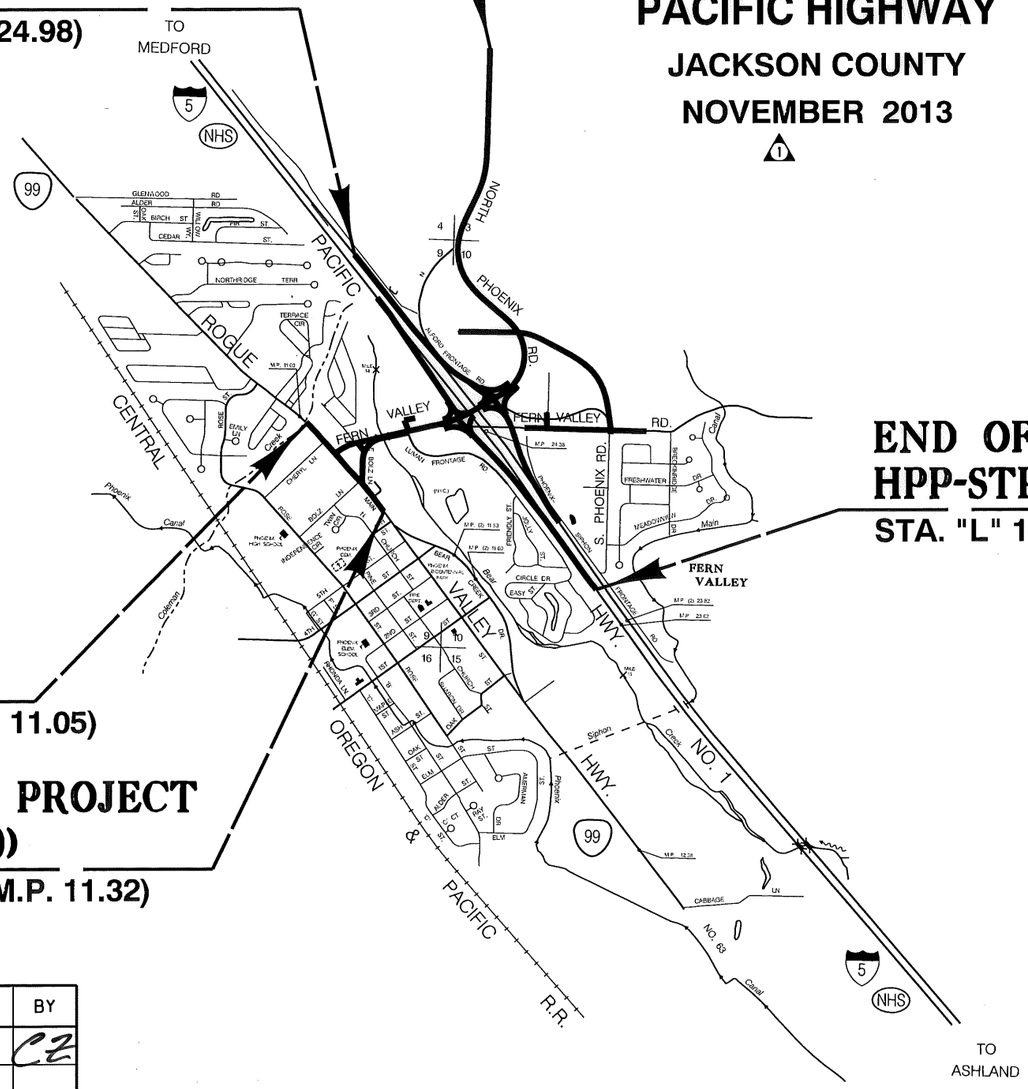
Overall Length Of Project - 1.02 Miles

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
HPP-STP-S001(410)
STA. "NP" 74+00 (M.P. 1.21)

BEGINNING OF PROJECT
HPP-STP-S001(410)
STA. "L" 1002+00 (M.P. 24.98)



END OF PROJECT
HPP-STP-S001(410)
STA. "L" 1054+35 (M.P. 23.96)

END OF PROJECT
HPP-STP-S001(410)
STA. "RVH" 381+27 (M.P. 11.05)

BEGINNING OF PROJECT
HPP-STP-S001(410)
STA. "RVH" 366+25 (M.P. 11.32)

N

Sec. 03, T.38S, R. 1W, W.M.
Sec. 09, T.38S, R. 1W, W.M.
Sec. 10, T.38S, R. 1W, W.M.
Sec. 15, T.38S, R. 1W, W.M.

OREGON TRANSPORTATION COMMISSION

Pat Egan	CHAIR
David Lohman	COMMISSIONER
Mary F. Olson	COMMISSIONER
Mark Frohnmayer	COMMISSIONER
Tammy Baney	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 11-4-2013

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

Concurrence by ODOT Chief Engineer

No.	DATE	REVISIONS	BY
1	10-31-13	Bid date was October 2013	CZ

FFO-I-5: FERN VALLEY INTERCHANGE, UNIT 2
PACIFIC HIGHWAY
JACKSON COUNTY

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	HPP-STP-S001(410)	1

F:\ODOT_DATA\Projects\12723_Fern_Valley_Interchange\01_Working\Sheets_Title\12723r3.tsl :: Default 10/31/2013 10:08:46 AM hwye33g

INDEX OF SHEETS, CONT'D.

SHEET NO.	DESCRIPTION
(2) 1A-5	Intersection Layout Sheet Index (For Detail Sheets 2B-43 thru 2B-49)
1B	Prospective Staging Area
1B-2, 1B-3	Right of Way Hold-Outs
1C, 1C-2	Survey Control Sheet
2 thru 2A-41	Typical Sections
(2) 2B thru 2B-49	Details
2C thru 2C-13E	Traffic Control Plans
2D thru 2D-8	Pipe Data Sheet
2E thru 2E-5	Concrete Joint Layout
3 thru 15*	Alignment
(1) 3A thru 15A-2*	General Construction
3B thru 15B-2*	Drainage & Utilities
3C thru 15C-2*	Profiles
W1 thru W13	Waterline Plans
D1 thru D10	Waterline Details

*For a detailed list of sheets, see Plan Sheet Index on see sht. 1A-4

SHEET NO.	DESCRIPTION
	GEO/HYDRO
GA	Erosion Control Notes
GA-2 thru GA-7	Erosion Control Details
GA-8 thru GA-63	Erosion Control Plan
GH, GH-2	Bank Protection
GJ thru GJ-10	Stormwater

SHEET NO.	DESCRIPTION
	LANDSCAPE
GN thru GN-15	Planting Plan

SHEET NO.	DESCRIPTION
	AESTHETIC
2F thru 2F-25	Bridge Aesthetic Details

DRAWING NO.	DESCRIPTION
	BRIDGE
92015	General Layout and Index
	GRAVITY WALL #22074
92016	Plan and Elevation
	GRAVITY WALL #21728
92017	Plan and Elevation
	GRAVITY WALL #21919
92018	Plan and Elevation
	BEAR CREEK BRIDGE #21382
92019	Plan and Elevation
92020	General Notes
92021 thru 92023	Foundation Data Sheet
92024	Stage Construction
92025	Footing Plan
92026	Deck Plan
92027	Typical Deck Section
92028	Bulb I Girder Schedules
92029	Deck Elevations: Spans 1&2
92030 thru 92032	Bent 1, Bent 2 and Bent 3
92033	Bent Details
92034	Bearings
92035	Shearlug & Misc.
92036	Wingwalls
92037	Sign Support at Bent 2
92038	Barrier Notes and Misc. Details
92039	Temporary Precast Barriers
92040	Bridge End Pylon
92041	Bridge Monument
92042	Utility Detail
92043	Avista Gas Casing Installation
92044	Retaining Wall Design
92045	MSE Wall Design
92046	MSE Wall Design cont.
	MSE WALL 1 #21729
92047	Plan and Elevation
92048	Foundation Data
92049	MSE Wall Design
92050	Combination Rail Coping Detail
92051	Coping Mount Sign Support
	MSE WALL 2 #21730
92052	Plan and Elevation
92053	Foundation Data
92054	MSE Wal Design
92055	Coping Mount Sign Support

DRAWING NO.	DESCRIPTION
	BRIDGE (cont'd)
	I-5 INTERCHANGE BRIDGE #21383
92056	Plan and Elevation
92057	General Notes
92058 thru 92061	Foundation Data Sheet
92062	Footing Plan
92063	Deck Plan
92064	Typical Deck Section
92065	Deck Elevations: Spans 1 & 2
92066 & 92067	Prestressed Box Girder Details (1&2)
92068	Bent 1
92069	Bent 2
92070	Bent 3
92071	Bent Details
92072	Drilled Shaft Detail
92073	Bearing Pad
92074	Wingwalls
92075	Rail Monument Layout
92076 & 92077	Pedestrian Corridor Monuments
92078 & 92079	Bridge Rail Monuments
92080	Protective Screening Layout
92081	Post Details (Protective Screening)
92082	Retaining Wall Layout
92083 & 92084	MSE Wall Design
	MSE WALL 3 #21731
92085	Plan and Elevation
92086	Foundation Data
92087	MSE Wall Design
92088	Type F Rail Cloping Detail

SHEET NO.	DESCRIPTION
	PERMANENT PAVEMENT MARKINGS
ST & ST-2	Striping Details
ST-3 thru ST-16	Striping Plan

SHEET NO.	DESCRIPTION
	PERMANENT SIGNING
S-14146 thru S-14171	Signing Plans
S-14172 thru S-14184	Signing Details
S-14185 thru S-14196	Sign & Post Data Table

SHEET NO.	DESCRIPTION
	PERMANENT SIGN SUPPORT STRUCTURES
	SIGN STRUCTURE #21718
S-14198	Cantilever Sign Support
	SIGN STRUCTURE #21719
S-14199	Cantilever Sign Support
	SIGN STRUCTURE #21720
S-14200	Cantilever Sign Support
	SIGN STRUCTURE #21721
S-14201	Cantilever Sign Support
	SIGN STRUCTURE #21722
S-14202	Cantilever Sign Support
	SIGN STRUCTURE #21723
S-14203	Truss Type Sign Bridge
	SIGN STRUCTURE #21724
S-14204	Truss Type Sign Bridge
	SIGN STRUCTURE #21725
S-14205	Cantilever Sign Support

SHEET NO.	DESCRIPTION
	ILLUMINATION
I-02138 thru I-02151	Illumination Plans

SHEET NO.	DESCRIPTION
	TRAFFIC SIGNALS
16976 thru 17037, 17326	Signal Plans
17053	Din Rail Section and Details
17054	Din Rail Assembly
ITS-1410, ITS-1411	Fiber Optic Cable Splice Diagram
ITS-1412	Handhole and Traffic Cabinet Details
ITS-1413	Camera Cabinet Details
ITS-1414 thru ITS-1416	Traffic Camera Pole (3 sheets)

For List Standard Dwg. Nos., see shts. 1A-2 & 1A-3

No.	DATE	REVISIONS	BY
(1)	10-21-13	Added sheet 15A-2	CZ
(2)	04-03-15	Added sheets 1A-5, 2B-43 thru 2B-49.	CZ

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

FFO-I-5: FERN VALLEY INTERCHANGE, UNIT 2
PACIFIC HIGHWAY
JACKSON COUNTY

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	HPP-STP-S001(410)	1A

Standard Dwg. Nos.

RD100	- Mailbox Support
RD101	- Mailbox Installation
RD150	- Slope Rounding
RD300	- Trench Backfill, Bedding, Pipe Zone
RD302	- Street Cut
RD306	- Concrete Encasement, Cradle, And Cap Details
RD312	- Subsurface Drain
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
RD322	- Safety End Section For Metal Pipe
RD324	- Safety End Section For Concrete, PVC, HDPE & Polypropylene Pipe
RD326	- Coupling Bands
RD327	- Coupling Bands For Corrugated Metal Pipe Types F, J, & K
RD335	- Standard Storm Sewer Manhole
RD336	- Standard Storm Sewer Manhole
RD342	- Shallow Manholes
RD344	- Standard Manhole Base Section
RD346	- Large Precast Manhole
RD348	- Manhole With Inlet
RD356	- Manhole Covers And Frames
RD358	- Manhole Slope Protectors
RD360	- Manhole Frame Adjustment
RD364	- Concrete Inlets Type G-1, G-2, G-2M, & G-2MA
RD366	- Concrete Inlets Type CG-1, CG-2 and Curb Inlet Channel
RD370	- Ditch Inlet Type D
RD371	- Concrete Inlet Base Type CG-3
RD372	- Concrete Inlet Top, Option 1, Type CG-3
RD373	- Concrete Inlet Top, Option 2, Type CG-3
RD374	- Area Drainage Basin Or Field Inlet
RD376	- Miscellaneous Drainage Structures Siphon Box, Inlet Cap & Inlet Adjustment
RD380, RD382, RD384, RD386	- Pipe Fill Height Tables
RD388	- Fill Height Tables For PVC Pipe
RD390	- Fill Height Tables For Corrugated HDPE Pipe
RD391	- Fill Height Tables For Steel Reinforced HDPE Pipe
RD393	- Fill Height Tables For Polypropylene Pipe
RD398	- Culvert ID Marker
RD399	- Stormwater Treatment and Storage Facility Field Markers
RD400, RD405, RD410, RD415, RD420, RD425, RD430, RD435, RD440, RD445, RD450, RD470	- Guardrail
RD500	- Precast Concrete Barrier Pin and Loop Assembly
RD505	- Concrete Barrier Cast-In-Place
RD516	- Securing Concrete Barrier to Roadway
RD530	- Guardrail Transition to Concrete Barrier
RD545	- Precast Tall (42") Concrete Barrier
RD550	- Cast-In-Place Tall Concrete Barrier Transition to Bridge Rail Type "F"
RD570	- Guardrail Transition to Tall Concrete Barrier
RD610	- Asphalt Pavement Details
RD700, RD701	- Curbs
RD705	- Islands
RD706	- Traffic Separators And Transitions
RD710	- Accessible Route Islands
RD715	- Approaches And Non-Sidewalk Driveways
RD720	- Sidewalks
RD735	- Curb Line Sidewalk Driveways or Alleys
RD740	- Separated Sidewalk Driveways - Local Jurisdictions
RD755	- Sidewalk Ramp Details
RD770	- Pedestrian Handrail
RD771	- Pedestrian Handrail Details
RD810	- Barbed and Woven Wire Fences
RD815	- Chain Link Fence
RD820	- Fence Gates
RD1000	- Construction Entrances
RD1005	- Check Dams
RD1010	- Inlet Protection (Type 1, 2 and 3)
RD1015	- Inlet Protection (Type 4) Biofilter Bags
RD1020	- Inlet Protection (Type 5) Masonary/Aggregate
RD1025	- Sediment Barrier (Type 1)
RD1040	- Sediment Fence
RD1055	- Matting
RD1060	- Tire Wash Facility (Type 1)
BR139	- Expansion Joint with Preformed Compression Seals
BR165	- Bridge End Panel
BR200	- Concrete Bridge Rail Type F
BR203	- Transition Concrete Bridge Rail to Guardrail
BR216	- Sidewalk Mounted Combination Bridge Rail
BR223	- Combination Rail
BR240	- Protective Fencing
BR241	- Protective Fencing Details - 1
BR290	- 3'-6" Type "F" Rail
BR300	- Bulb-I Girders
BR350	- Temporary Diaphragm Beam for Prestressed Concrete Girders
BR425	- 33" Precast Prestressed Box
BR445	- Precast Prestressed Boxes and Slabs Details
BR720	- Standard Gravity Retaining Wall Details
BR760	- Moment Slab on MSE Wall
BR970	- Luminaire Base on Structures with Mounting Details

Cont'd., see next sht.

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

FFO-1-5: FERN VALLEY INTERCHANGE, UNIT 2
PACIFIC HIGHWAY
JACKSON COUNTY

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	HPP-STP-S001(410)	1A-2

Standard Dwg. Nos. cont'd.:

TM200	- Sign Installation Details
TM201	- Miscellaneous Sign Placement Details
TM204	- Flag Board Mounting Detail
TM206	- Sign Bracing Details
TM211, TM212	- Signing Details
TM220	- Multi-Post Installations with Auxiliary Signs
TM221	- Signing Details Milepost Markers
TM222	- Installation Details Milepost Marker Posts
TM223	- Conventional Roads Directional Sign Layout Street Name Signs
TM224	- Signing Details Directional Sign Layout
TM225	- Exit Number & Gore Signing Details
TM230, TM231, TM232, TM233	- Mounting Details For Removable Legend
TM450	- Mast Arm Pole Details
TM452	- Strain Pole Details
TM453	- Stabilizer Details
TM455	- Temporary Signal Details
TM457	- Vehicle, Ped. Signal & Push Button Mounting Details
TM458	- Pedestrian Ramp Placement Details
TM460	- Vehicle Signal Details
TM462	- Adjustable Signal Head Mounting Details
TM463	- Spanwire Mounting Details
TM465	- Overhead Sign, Fire Preemption & Photoelectronic Details
TM467	- Ped. Signal And Ped. Push Button Details
TM470	- Color Code Charts
TM472	- Traffic Signal Junction Boxes
TM475, TM478	- Loop Details
TM480	- Loop Entrance Details
TM482	- Controller Cabinet And Foundation Details
TM485	- Service Cabinets And Service Cabinet Wiring Details
TM488	- Terminal Cabinet Detail
TM500, TM501, TM502, TM503	- Pavement Marking Standard Details
TM517	- Recessed Pavement Markers
TM521	- Durable Pavement Markings Method "B" Extruded & Method "F" Spray
TM524	- Durable Pavement Markings Method "E" Non-Profile Wet Weather
TM530	- Intersection Pavement Markings
TM531	- Turn Arrow Marking Details
TM539	- Median And Left Turn Channelization Details
TM547	- Freeway Entrance Ramp Pavement Markings
TM551	- Freeway Exit Ramp Pavement Markings
TM560, TM561	- Alignment Layout
TM570	- Traffic Delineators
TM571	- Traffic Delineators Steel Post Details
TM575	- Traffic Delineator Installation For Freeways
TM576	- Traffic Delineator Installation For Non-Freeways
TM577	- Traffic Delineator Installation For Special Applications
TM600, TM601	- Multi-Post Breakaway Sign Supports
TM602	- Triangular Base Breakaway Multi-Direction Slip Base
TM614, TM615, TM616, TM617, TM618, TM619, TM620	- Truss Type Sign Bridge
TM622, TM623, TM624, TM625, TM626, TM627	- Monotube Cantilever Sign Support
TM629, TM630	- Slip Base & Fixed Base Luminaire Supports
TM650, TM651, TM652, TM653	- Traffic Signal Supports
TM670	- Wood Post Sign Supports
TM671	- 3 Second Gust Wind Speed Isotach
TM675	- Extruded Aluminum Panels
TM676	- Sign Attachments
TM677	- Sign Mounts
TM678	- Secondary Sign Mounting Details
TM679	- Signal Mast Arm Street Name Sign Mounts
TM680	- Signal Pole Mounts
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 Reflective Pavement Markers
TM820	- Temporary Barricades
TM821	- Temporary Sign Supports
TM830	- Temporary Concrete Barrier And Rumble Strips
TM831	- Temporary Impact Attenuators
TM840	- Closure Details
TM841	- Intersection Work Zone Details
TM842	- Signalized Intersection Details
TM843	- Multi-Lane Signalized Intersection Details
TM844	- Temporary Pedestrian Access Routing
TM850	- 2-Lane, 2 Way Roadways
TM851, TM852	- Non-Freeway Multi-Lane Sections
TM860, TM861, TM862	- Freeway Sections
TM870	- Bridge Construction
TM871	- Blasting Zones

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

FFO-I-5: FERN VALLEY INTERCHANGE, UNIT 2
PACIFIC HIGHWAY
JACKSON COUNTY

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	HPP-STP-S001(410)	1A-3

Sec. 09, T.38S, R. 1W, W.M.

46V-113

N

"G" LINE
For alignment stationing
See sht. 10-2

"GR" LINE
For alignment stationing
See sht. 10-2

"OT" LINE

"D4" LINE

"O" LINE

"SRD" LINE

"NP" LINE

"BSPUR" LINE

"LU" LINE

"B" LINE

"SRE" LINE

"D4" 73+16.42

N 35°23'54" W

"D4" 36°00'04" Δ22°08'06" T 31.13' e 2%

"D4" 72+18.35 P.T.

"D4" 71+56.86 P.C.

"D4" 71+49.90 P.T.

"D4" 36°00'04" Δ30°28'07" T 43.34' e 2%

N 57°32'00" W

N 27°03'53" W

"D4" 70+65.27 P.C.

"D4" 70+00.00 P.O.T.=
"NP" 13+29.00 P.O.T.

"GR" 410

"NP" 15

"OT" 252+30.94

"OT" 252+28.88 P.T.

N 90°25'25" W

"O" 151+73.11 P.T.

"O" 152+71.30

"OT" 22°55'06" TΔ 15°00'15" C.R. Ts 32.92' e 2%

N 77°25'26" E

"OT" 251+63.41 P.C.

"OT" 251+04.31 P.O.T.=
"O" 151+04.31 P.C.

"O" 143°14'22" 98°32'33" C.R. TΔ 46.46' Ts 5%

"SRD" 400+00.00 P.C. (42.68' L.T.)= "NP" 24+60.67 P.O.T.

"SRD" 400+00.00 P.O.T.

MATCH LINE D
SEE SHEET 5

"NP" 20

N 21°07'07" W

"OT" 250+00.00 P.O.T.=
"NP" 20+20.51 P.O.T.

N 77°14'17" E

N 78°19'18" E

"NP" 20+20.59 P.O.T.=
"LU" 166+56.70 P.O.T.

N. PHOENIX RD

S 21°04'58" E

N 67°20'21" E

"LU" 167+78.36 P.C.

"NP" 24+70.94 P.O.T.

"NP" 13°00'00" C.R. Δ19°07'26" T 74.24' e 2%

"NP" 12+87.77 P.T.

"BSPUR" 40+00.00 P.O.T.=
"NP" 13+31.01 P.O.T.

"BSPUR" 41+51.59 P.O.T.=
"B" 54+18.45 P.O.C.

"B" 18°59'59" C.R. Δ76°40'38" T 238.49' e 2%

E. BOLZ RD

B 55

G 315

B 57+06.21 P.T.

B 60

"B" 60+84.91=
"NP" 20+23.62 (21.31' RT.)

LIMAN RD

"LU" 17°28'55" TΔ 76°30'35" CL. 238.42' e 3.8%

SEE SHEET 9

MATCH LINE H
SEE SHEET 8

SEE SHEET 5

OREGON DEPARTMENT OF TRANSPORTATION

REGION 3 - TECHNICAL CENTER

REGISTERED PROFESSIONAL ENGINEER
63243
OREGON
JULY 9, 2001
CHRIS R. ZELMER
EXPIRES: JUNE 30, 2014

FFO-I-5: FERN VALLEY INTERCHANGE, UNIT 2
PACIFIC HIGHWAY
JACKSON COUNTY

Designed By - Roy Blower
Reviewed By - Rich Coffel
Drafted By - David Knox

ALIGNMENT

SHEET NO. 10

F:\ODOT_DATA\Projects\12723_Fern_Valley_Interchange\01_Working\Sheets_Alignment\12723.all :: Default 7/16/2013 1:43:32 PM hwye33g

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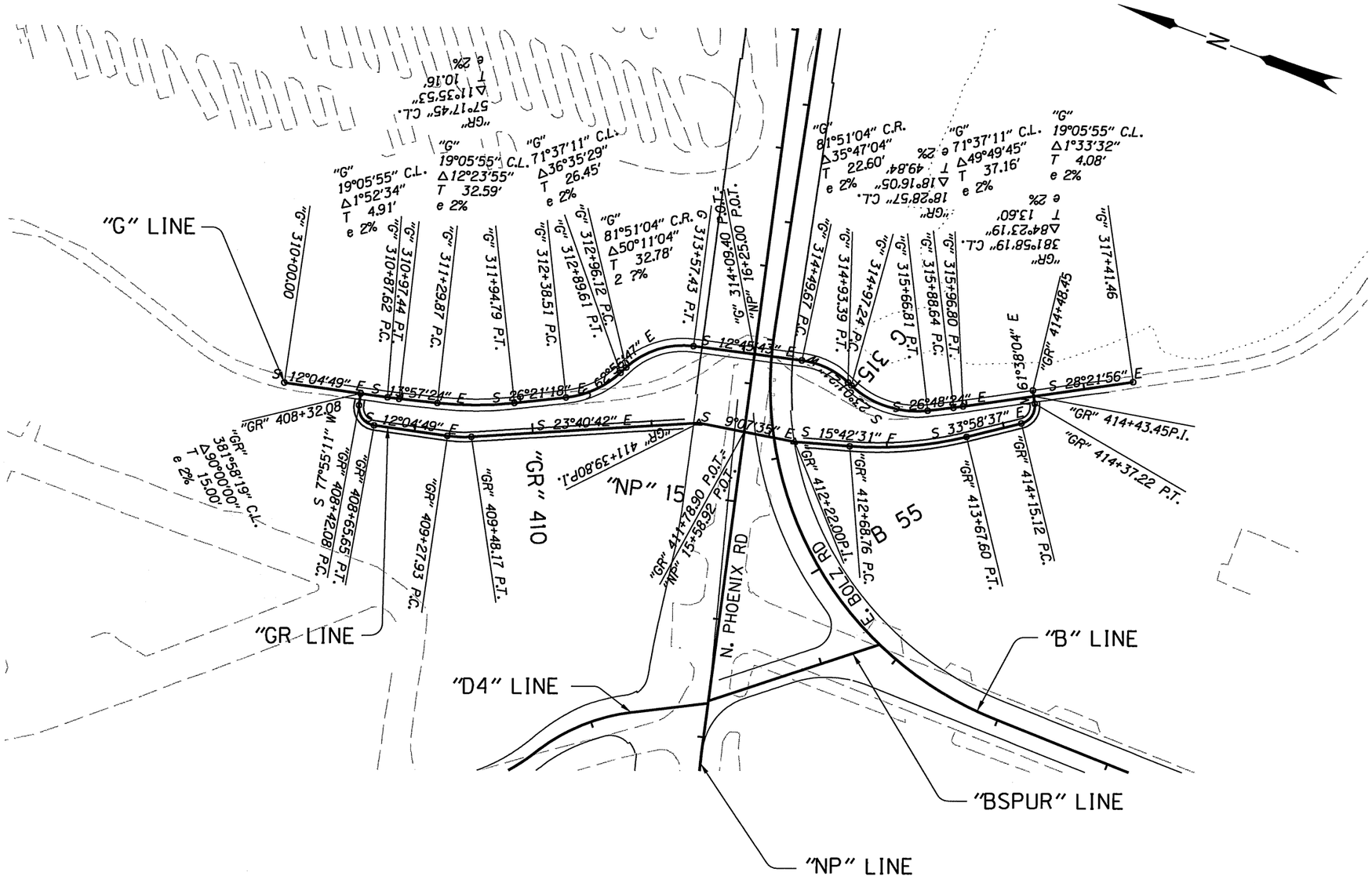
Sec. 09, T.38S, R. 1W, W.M.

46V-113



OREGON DEPARTMENT OF TRANSPORTATION

REGION 3 - TECHNICAL CENTER

REGISTERED PROFESSIONAL ENGINEER
63243
OREGON
JULY 9, 2001
CHRIS R. ZELMER
EXPIRES: JUNE 30, 2014

FFO-I-5: FERN VALLEY INTERCHANGE, UNIT 2
PACIFIC HIGHWAY
JACKSON COUNTY

Designed By - Roy Blower
Reviewed By - Rich Coffel
Drafted By - David Knox

ALIGNMENT

SHEET NO. 10-2

F:\ODOT_DATA\Projects\12723_Fern_Valley_Interchange\01_Working\Sheets_Alignment\12723.all :: Default 7/16/2013 1:43:33 PM hwye33g

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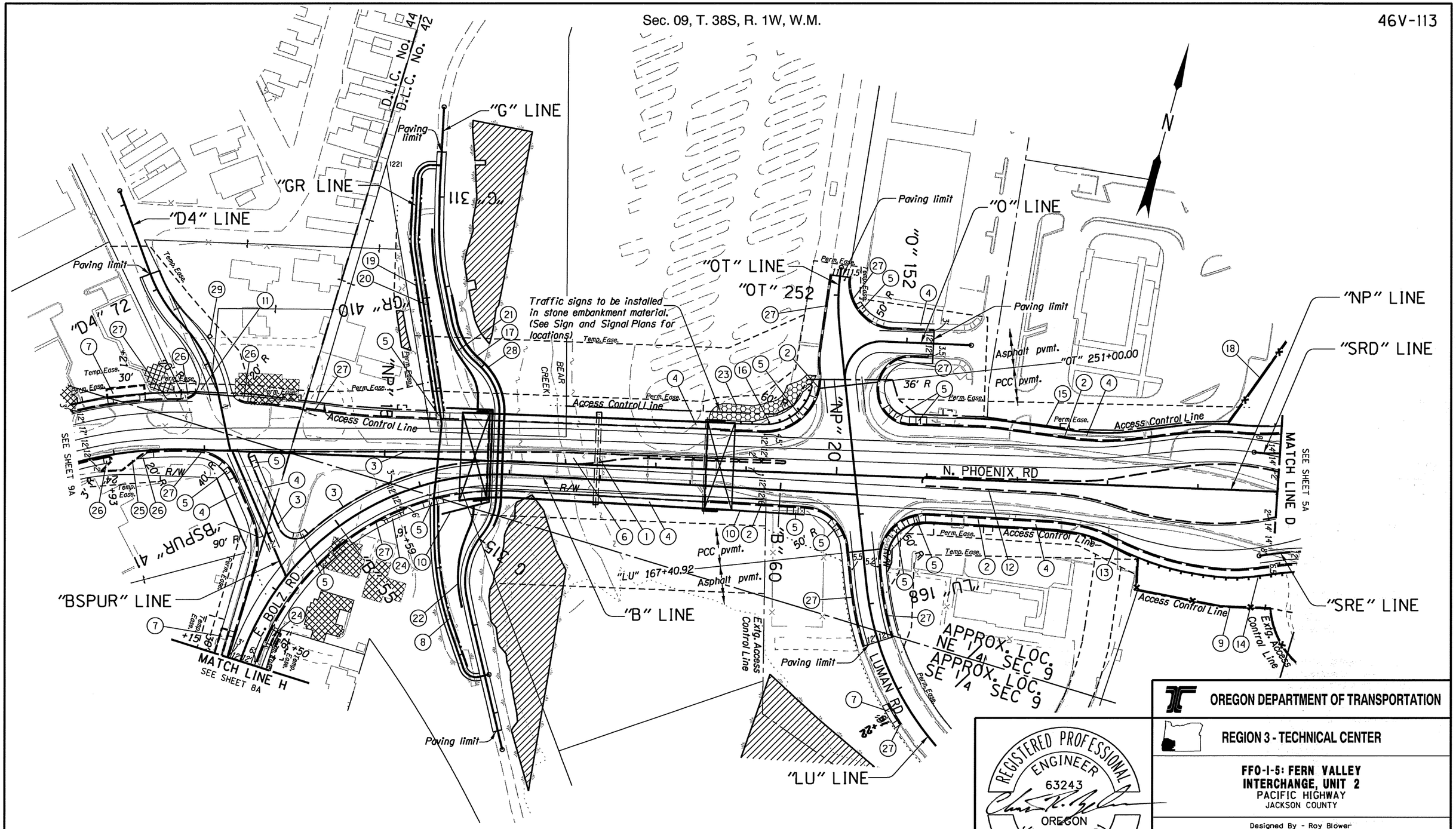
STRUCTURAL DETAILS CHECKED

BRIDGE DETAILS CHECKED

Sec. 09, T. 38S, R. 1W, W.M.

46V-113



Remove building (by others) shown thus:

No Work Area shown thus:

Stone embankment shown thus:

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

EXPIRES: JUNE 30, 2014

OREGON DEPARTMENT OF TRANSPORTATION

REGION 3 - TECHNICAL CENTER

FFO-I-5: FERN VALLEY INTERCHANGE, UNIT 2
PACIFIC HIGHWAY
JACKSON COUNTY

Designed By - Roy Blower
Reviewed by - Rich Coffel
Drafted By - Judy Hardin

GENERAL CONSTRUCTION

SHEET NO. 10A

F:\ODOT_DATA\Projects\12723_Fern_Valley_Interchange\01_Working\Sheets_General Construction\12723.pl1 :: Default 8/29/2013 4:00:28 PM hwye33g

(1) Structure no. 21382
Const. structure
(For dwg. nos., see sht. 1A)

(2) Const. modified curb and gutter
(For details, see sht. 2B-18)

(3) Const. std. curb

(4) Const. P.C. conc. sidewalk

(5) Const. parallel sidewalk ramp - 14

(6) Const. type "C" conc. island (non-mountable)
(For details, see sht. 2B-28)
(See dwg. no. RD705)

(7) Const. appr. Option G - 3

(8) Sta. "GR" 412+31.00 to
Sta. "GR" 414+15.10, 5' Lt.
Const. 3 Tube Ped. Rail - 182.5'

(9) Sta. "NP" 23+37.00, Rt. to
Sta. "L-SB" 1054+29.00, Rt.
Const. Type 2 fence - 2710'

(10) Structure no. 21382
Const. retaining wall
(For dwg. nos., see sht. 1A)

(11) Const. radius style approach
Const. valley gutter - 320 sq. ft.
(For details, see sht. 2B-7)

(12) Const. conc. island
(For details, see sht. 2B-29)

(13) Structure no. 21729
Const. retaining wall
(For dwg. nos., see sht. 1A)

(14) Sta. "NP" 23+46.90, Rt. to
Sta. "SBON" 1034+00.00, Rt.
Const. guardrail - 12.5' (Type 3)
Const. guardrail - 637.5' (Type 2A)
Const. guardrail transition to conc. barrier

(15) Structure no. 21730
Const. retaining wall
(For dwg. nos., see sht. 1A)

(16) Sta. "NP" 18+85.84, Lt. to
Sta. "OT" 251+00.00, Lt.
Const. guardrail - 12.5' (Type 3) Steel posts
Const. guardrail - 75' (Type 2A) (Radius 52.5') Steel posts
Inst. end piece (Type B)
Const. anchor - 2 (Type 1 mod.)
Flare rate=0, W=1', E=0'
Const. guardrail transition

(17) Sta. "G" 311+25.00, Lt. to
Sta. "G" 314+79.00, 5.5' Lt.
Const. 3 Tube Ped. Rail - 357'
(See dwg. nos. RD770, RD771)

(18) See sht. 4A, note 11
Const. Type CL-6 fence

(19) Sta. "GR" 408+65.70 to
Sta. "GR" 411+26.30, 5' Rt.
Const. 3 Tube Ped. Rail - 260'

(20) Sta. "GR" 408+65.70 to
Sta. "GR" 411+24.30, 5' Lt.
Const. 3 Tube Ped. Rail - 260'

(21) Structure no. 21728
Const. retaining wall
(For dwg. nos., see sht. 1A)

(22) Structure no. 21919
Const. retaining wall
(For dwg. nos., see sht. 1A)

(23) Sta "NP" 18+55.00, Lt. to
Sta. "OT" 251+15.00, Lt.
Const. stone embankment - 157 cu. yd.
(For details, see sht. 2B-3)

(24) Const. appr. Option F - 2

(25) Const. radius style approach
Const. valley gutter - 265 sq. ft.
(For details, see sht. 2B-7)

(26) Const. sidewalk ramp - 4
(For details, see sht. 2B-6)

(27) Const. std. curb and gutter

(28) Sta. "G" 311+25.00, Lt. to
Sta. "G" 314+79.00, 5' Lt.
Const. cutoff wall - 357'
(For details, see sht. 2B-19)

(29) Inst. multiple mailbox support
Const. conc. collar

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OREGON DEPARTMENT OF TRANSPORTATION

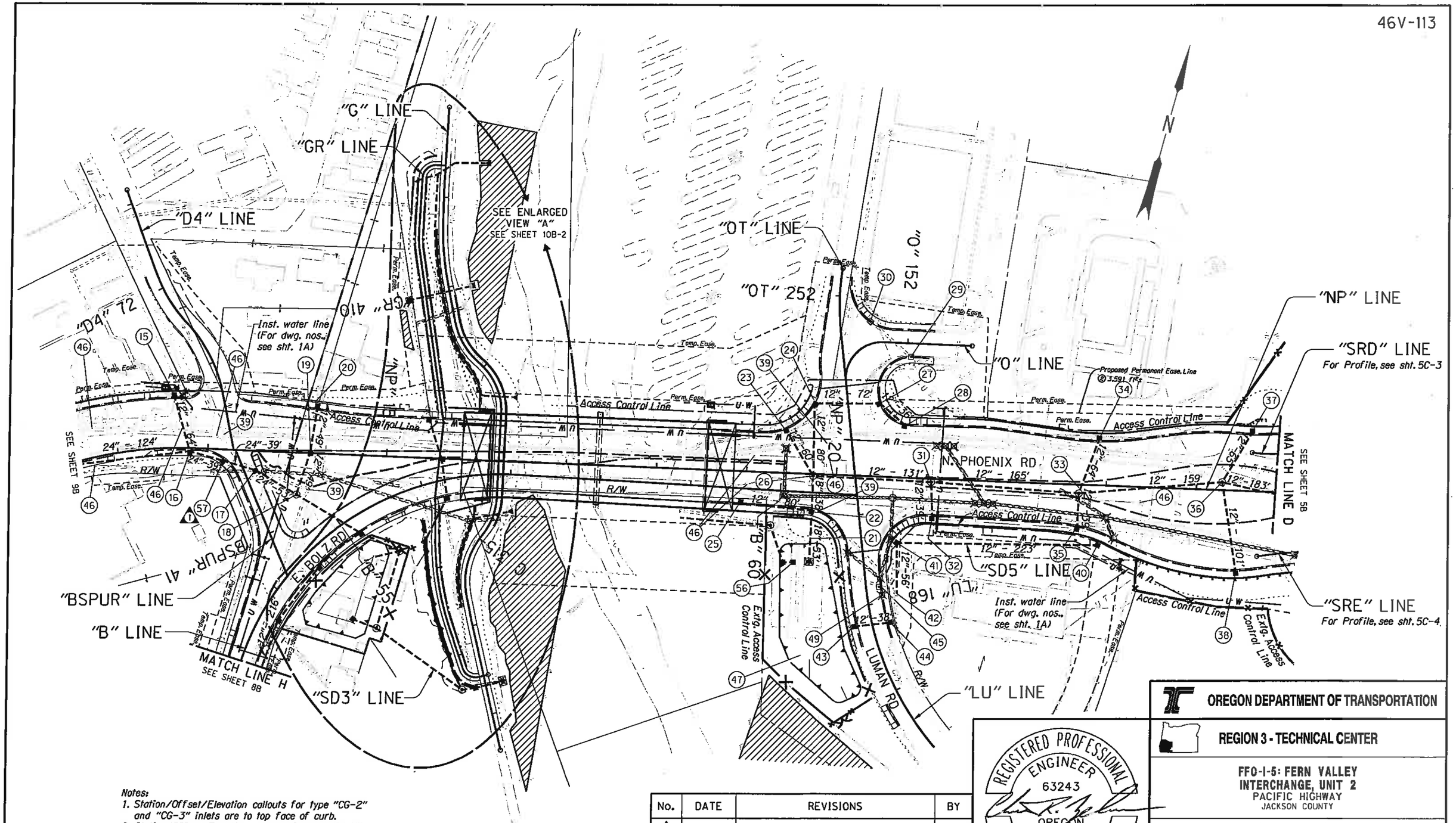
REGION 3 - TECHNICAL CENTER

FFO-1-5: FERN VALLEY INTERCHANGE, UNIT 2
PACIFIC HIGHWAY
JACKSON COUNTY

Designed By - Roy Blower
Reviewed by - Rich Coffel
Drafted By - Judy Hardin

GENERAL CONSTRUCTION

SHEET NO. 10A-2



Notes:

1. *Station/Offset/Elevation callouts for type "CG-2" and "CG-3" inlets are to top face of curb.*
2. *Station/Offset/Elevation callouts for type "G-2" inlets are to back of grate.*
3. *Station/Offset/Elevation callouts for type "G-2MA" inlets and manholes are to center of structure.*
4. *Top of curb (T.C.) and Top of Grate (Gr.) elevations are approximate. (T.C.) and (Gr.) elevations shall match finish grade surface at inlet.*

Remove extg. pipe shown thus:
Remove extg. inlet shown thus:
Remove extg. manhole shown thus:
No Work Area shown thus:

No.	DATE	REVISIONS	BY
1	10-21-15	Added manhole with inlet	CZ

REGISTERED PROFESSIONAL ENGINEER
63243
OREGON
JULY 9, 2001
CHRIS R. ZELMER
EXPIRES: JUNE 30, 2014

OREGON DEPARTMENT OF TRANSPORTATION

REGION 3 - TECHNICAL CENTER

FFO-I-5: FERN VALLEY INTERCHANGE, UNIT 2
PACIFIC HIGHWAY
JACKSON COUNTY

Designed By - Roy Blower
Reviewed by - Rich Coffel
Drafted By - Judy Hardin

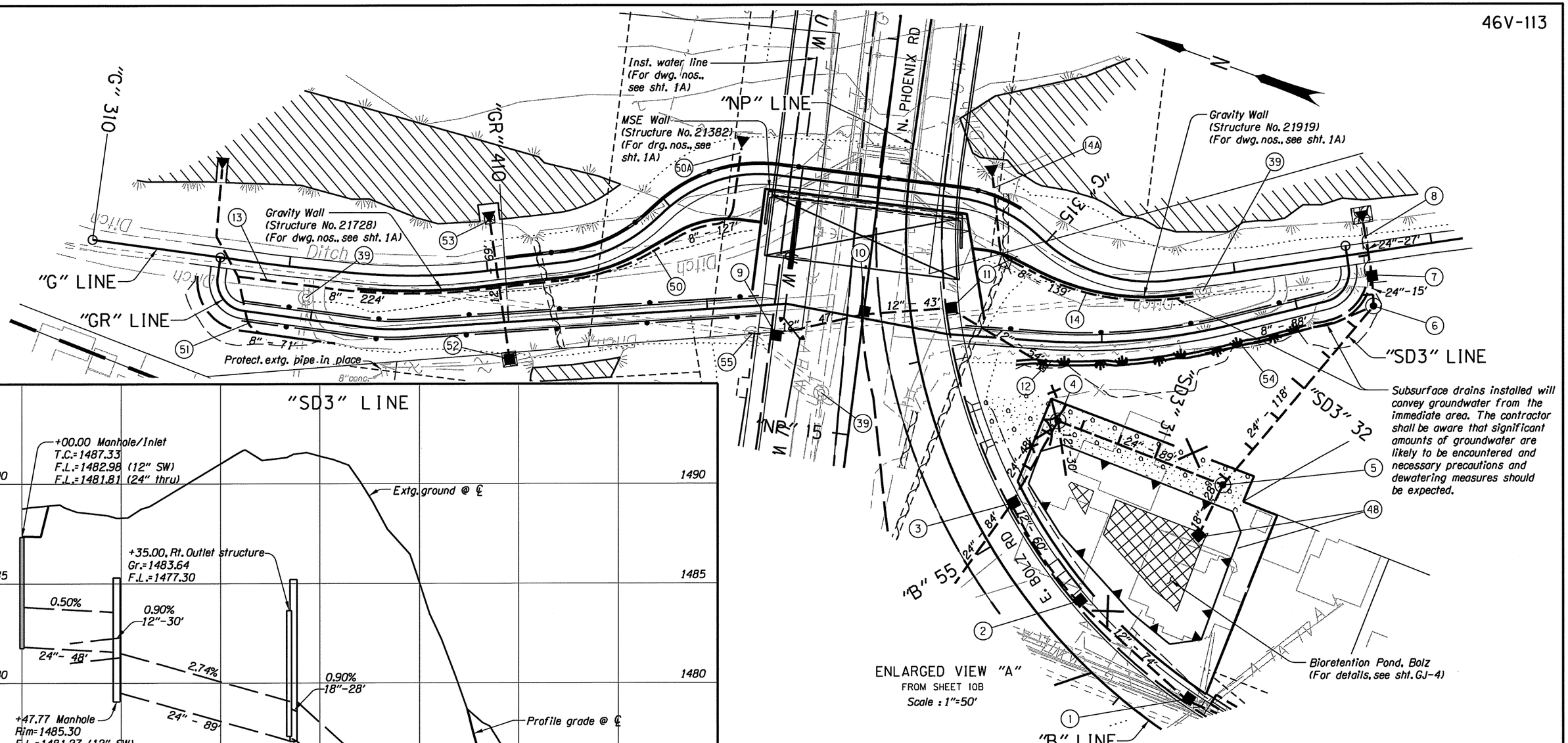
DRAINAGE & UTILITIES

SHEET NO. 10B

STRUCTURAL DETAILS CHECKED

BRIDGE DETAILS CHECKED

46V-113



ENLARGED VIEW "A"
FROM SHEET 10B
Scale : 1"=50'

Notes:
1. Station/Offset/Elevation callouts for type "CG-2" and "CG-3" inlets are to top face of curb.
2. Station/Offset/Elevation callouts for type "G-2" inlets are to back of grate.
3. Station/Offset/Elevation callouts for type "G-2MA" inlets and manholes are to center of structure.
4. Top of curb (T.C.) and Top of Grate (Gr.) elevations are approximate. (T.C.) and (Gr.) elevations shall match finish grade surface at inlet.

Remove extg. pipe shown thus:
Remove extg. inlet shown thus:
Remove extg. manhole shown thus:
No Work Area shown thus:

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

EXPIRES: JUNE 30, 2014

OREGON DEPARTMENT OF TRANSPORTATION

REGION 3 - TECHNICAL CENTER

FFO-I-5: FERN VALLEY INTERCHANGE, UNIT 2
PACIFIC HIGHWAY
JACKSON COUNTY

Designed By - Roy Blower
Reviewed by - Rich Coffel
Drafted By - Judy Hardin

DRAINAGE & UTILITIES

SHEET NO. 10B-2

F:\ODOT_DATA\Projects\12723_Fern_Valley_Interchange\01_Working\Sheets_Drainage\12723.dr3 :: Default 8/29/2013 4:00:35 PM hwye33g

(1) Sta. "B" 53+70.50, 18.00' Rt.
Const. type "CG-3" inlet
Inst. 12" storm sew. pipe - 216'
5' depth
S=1.97%
T.C.=1491.78
F.L.=1487.88 (12" thru)

(2) Sta. "B" 54+50.00, 18.00' Rt.
Const. type "CG-3" inlet
Inst. 12" storm sew. pipe - 74'
5' depth
S=5.81%
T.C.=1489.33
F.L.=1483.58 (12" thru)

(3) Sta. "B" 55+14.00, 18.00' Rt. = Sta. "SD3" 30+00.00
Const. manhole with type "CG-3" inlet
Inst. 12" storm sew. pipe - 60' (radius = 200')
5' depth
S=1.00%
Inst. 24" storm sew. pipe - 84'
5' depth
S=0.95%
T.C.=1487.33
F.L.=1482.98 (12" SW)
F.L.=1481.81 (24" thru)
(For profile, see sht. 10B-2)

(4) Sta. "SD3" 30+47.77
Const. flow splitter manhole
Inst. 12" storm sew. pipe - 30'
10' depth
S=0.90%
Inst. 24" storm sew. pipe - 48'
10' depth
S=0.50%
Rim=1485.30
F.L.=1481.27 (12" SW)
F.L.=1481.57 (24" W)
F.L.=1479.50 (24" S)
(For details, see sht. GJ-4)
(For profile, see sht. 10B-2)
Construct Paved End Slope (07/19/16)

(5) Sta. "SD3" 31+36.74
Const. manhole
Inst. 18" storm sew. pipe - 28'
10' depth
S=0.90%
Inst. 24" storm sew. pipe - 89'
10' depth
S=2.74%
Rim=1485.21
F.L.=1477.05 (18" W)
F.L.=1477.05 (24" thru)
(For profile, see sht. 10B-2)

(6) Sta. "SD3" 32+54.19
Const. manhole
Inst. 8" subsurface drain pipe - 88'
Inst. 24" storm sew. pipe - 118'
10' depth
S=8.91%
Rim=1474.69
F.L.=1466.61 (8" N)
F.L.=1466.59 (24" thru)
(For profile, see sht. 10B-2)

(7) Sta. "SD3" 32+69.26
Const. type "D" inlet
Inst. 24" storm sew. pipe - 15'
10' depth
S=8.87%
F.L.=1465.28 (24" thru)
(For profile, see sht. 10B-2)

(8) Sta. "SD3" 32+96.37
Inst. 24" storm sew. pipe - 27'
5' depth
S=0.96%
F.L.=1465.02
Const. loose riprap (Class 100) - 10 cu.yd.
(Loose riprap pad)
Riprap geotextile - 9 sq.yd.
(For profile, see sht. 10B-2)
(For details, see sht. 2B)

(9) Sta. "NP" 15+45.00, 44.80' Lt.
Const. type "CG-2" inlet
T.C.=1484.49
F.L.=1480.90

(10) Sta. "NP" 15+61.10, 0.1' Rt.
Const. type "G-2MA" inlet
Inst. 12" storm sew. pipe - 47'
5' depth
S=0.45%
Gr.=1484.50
F.L.=1480.69 (12" thru)

(11) Sta. "B" 56+25.00, 18.00' Rt.
Const. type "CG-3" inlet
Inst. 12" storm sew. pipe - 43'
5' depth
S=0.44%
T.C.=1484.41
F.L.=1480.50 (12" thru)

(12) Sta. "B" 55+82.81, 60.00' Rt.
Inst. 12" storm sew. pipe - 54'
5' depth
S=0.50%
F.L.=1480.23 (12" Outfall)
Const. loose riprap (Class 50) - 3 cu.yd.
(Loose riprap pad)
Riprap geotextile - 8 sq.yd.
(For details, see sht. 2B)

(13) Sta. "G" 310+59.70, 44.0' Lt. to
Sta. "G" 312+35.00, 9.0' Rt.
Inst. 8" subsurface drain pipe - 224'
(See dwg. no. RD312)

(14) Sta. "G" 314+62.80, 13.8' Lt. to
Sta. "G" 315+78.00, 9.3' Rt.
Inst. 8" subsurface drain pipe - 139'
Inst. outlet protection block
(See dwg. no. RD312)
(14A) Inst. 12" culv. pipe - 12'
(Sleeve for 8" subsurface drain pipe)

(15) Sta. "NP" 12+63.00, 55.78' Lt.
Const. type "CG-3" inlet
T.C.=1490.27
F.L.=1485.09

(16) Sta. "NP" 12+80.00, 2.00' Rt.
Const. manhole with type "CG-3" inlet
Inst. 12" storm sew. pipe - 64'
5' depth
S=0.40%
Inst. 24" storm sew. pipe - 124'
5' depth
S=0.98%
T.C.=1490.19
F.L.=1484.83 (12" NW)
F.L.=1483.86 (24" thru)

(1) (17) Sta. "BSPUR" 40+30.00, 14.00' Lt.
Const. manhole with type "CG-2" inlet
Inst. 24" storm sew. pipe - 39'
5' depth
S=1.03%
T.C.=1489.41
F.L.=1483.11 (24" thru)

(18) Sta. "BSPUR" 40+72.48, 43.88' Lt.
Const. manhole with type "G-2MA" inlet
Inst. 12" storm sew. pipe - 49'
5' depth
S=0.44%
Inst. 24" storm sew. pipe - 53'
5' depth
S=0.94%
Rim=1487.27
F.L.=1482.90 (12" N)
F.L.=1482.61 (24" thru)

(19) Sta. "NP" 14+15.02, 2.75' Lt.
Const. type "CG-3" inlet
Inst. 12" storm sew. pipe - 49'
5' depth
S=1.04%
T.C.=1487.85
F.L.=1482.83 (12" thru)

(20) Sta. "NP" 14+20.28, 49.40' Lt.
Const. type "CG-3" inlet
T.C.=1486.74
F.L.=1483.04

(21) Sta. "NP" 19+74.16, 92.4' Rt.
Inst. 18" storm sew. pipe - 53'
10' depth
S=7.54%
F.L.=1466.00 (Outfall)
Const. loose riprap (Class 100) - 10 cu.yd.
(Loose riprap pad)
Riprap geotextile - 9 sq.yd.
(For details, see sht. 2B)

(22) Sta. "NP" 19+74.84, 39.18' Rt.
Const. type "CG-3" inlet
Inst. 12" storm sew. pipe - 80'
5' depth
S=0.50%
Inst. 18" storm sew. pipe - 38'
5' depth
S=0.50%
T.C.=1476.64
F.L.=1471.10 (12" W)
F.L.=1469.96 (18" thru)

(23) Sta. "NP" 19+40.55, 49.55' Lt.
Const. type "CG-2" inlet
T.C.=1476.61
F.L.=~~1470.38~~ 1471.28 (06/01/2015)

(24) Sta. "NP" 19+70.91, 78.43' Lt.
Const. type "CG-2" inlet
Inst. 12" storm sew. pipe - 72'
10' depth
S=0.49%
T.C.=1475.88
F.L.=1470.52 (12" thru)

(25) Sta. "NP" 18+95.00, 36.63' Rt.
Const. type "CG-2" inlet
T.C.=1477.75
F.L.=1471.50

No.	DATE	REVISIONS	BY
1	10-21-15	Revised note 17	CZ

OREGON DEPARTMENT OF TRANSPORTATION

REGION 3 - TECHNICAL CENTER

FFO-I-5: FERN VALLEY INTERCHANGE, UNIT 2
PACIFIC HIGHWAY
JACKSON COUNTY

Designed By - Roy Blower
Reviewed by - Rich Coffel
Drafted By - Judy Hardin

DRAINAGE & UTILITIES

SHEET NO. 10B-3

(26) Sta. "NP" 19+74.15, 2.00' Rt.
Const. manhole ~~72" dia.~~ 84" dia (05/13/2014) CZ
Inst. 12" storm sew. pipe - 60'
5' depth
S=0.40%
Inst. 12" storm sew. pipe - 80'
5' depth
S=0.48%
Inst. 12" storm sew. pipe - 131'
5' depth
S=0.96%
Rim=1476.92
F.L.=~~1471.04~~ 1470.14 (06/01/2015) (12" NE)
F.L.=1470.14 (12" N & ~~W~~)
F.L.=1470.14 (18" S)
F.L.=1471.04 (12"W)

(27) Sta. "NP" 20+45.57, 81.32' Lt.
Const. type "CG-2" inlet
Inst. 12" storm sew. pipe - 36'
5' depth
S=0.47%
T.C.=1474.99
F.L.=1470.87 (12" thru)

(28) Sta. "NP" 20+73.16, 59.54' Lt.
Const. type "CG-2" inlet
T.C.=1476.01
F.L.=1471.04

(29) Sta. "O" 152+04.13, 15.15' Rt.
Adjust inlet

(30) Sta. "OT" 251+69.66, 33.96' Rt.
Adjust inlet

(31) Sta. "NP" 21+05.00, 3.70' Rt.
Const. manhole
Inst. 12" storm sew. pipe - 165'
5' depth
S=1.47%
Inst. 12" storm sew. pipe - 39'
5' depth
S=0.74%
Rim=1477.37
F.L.=1472.30 (all)

(32) Sta. "NP" 21+08.00, 40.93' Rt.
Const. type "CG-3" inlet
T.C.=1476.56
F.L.=1472.59

(33) Sta. "NP" 22+69.97, 9.61' Rt.
Const. manhole
Inst. 12" storm sew. pipe - 64'
5' depth
S=0.96%
Inst. 12" storm sew. pipe - 159'
5' depth
S=2.08%
Inst. 12" storm sew. pipe - 39'
5' depth
S=0.91%
Rim=1480.00
F.L.=1474.73 (all)

(34) Sta. "NP" 22+90.00, 49.45' Lt.
Const. type "CG-3" inlet
T.C.=1479.67
F.L.=1475.34

(35) Sta. "NP" 22+70.00, 46.52' Rt.
Const. type "CG-3" inlet
T.C.=1479.18
F.L.=1475.08

(36) Sta. "NP" 24+28.46, 8.67' Lt.
Const. manhole
Inst. 12" storm sew. pipe - 65'
5' depth
S=0.95%
Inst. 12" storm sew. pipe - 183'
5' depth
S=3.93%
Inst. 12" storm sew. pipe - 101'
5' depth
S=0.97%
Rim=1485.44
F.L.=1478.04 (all)

(37) Sta. "NP" 24+60.00, 63.66' Lt.
Const. type "CG-3" inlet
T.C.=1485.43
F.L.=1478.66

(38) Sta. "NP" 24+47.60, 88.63' Rt.
Const. type "CG-3" inlet
T.C.=1484.46
F.L.=1479.02

(39) Minor adjust manhole - 8

(40) Sta. "SP5" 50+00.00
Const. type "G-2MA" inlet
Gr.=1471.45
F.L.=1468.05

(41) Sta. "SP5" 52+23.21
Const. type "G-2MA" inlet
Inst. 12" storm sew. pipe - 223'
5' depth
S=0.60%
Trench resurfacing - 175 sq.yd.
Gr.=1471.20
F.L.=1466.73 (12" thru)

(42) Sta. "SP5" 52+79.02
Inst. 12" storm sew. pipe - 56'
5' depth
S=0.60%
Conn. to extg. structure
Trench resurfacing - 175 sq.yd.
F.L.=1466.40 (12" thru)

(43) Sta. "LU" 168+20.00, 17.50' Rt.
Const. type "CG-3" inlet
T.C.=1473.67
F.L.=1466.77

(1) (44) Sta. "LU" 168+25.00, 17.20' Lt.
Const. type "CG-3" inlet
Inst. 12" storm sew. pipe - 38'
10' depth
S=0.95%
Conn. to extg. pipe
T.C.=1472.42
F.L.=1466.41 (12" W)
F.L.=1466.41± (24" thru)

(45) Sta. "LU" 167+81.74, 17.22' Lt.
Adjust inlet

(46) Adjust box - 15

(47) Water quality pond
(For details, see sht. GJ)

(48) Sta. "SD3" 31+35.00, 27.70' Rt.
Bioretention Pond, Bolz, Outlet structure
F.L.=1477.30
(For details, see sht. GJ-4)

(49) Sta. "LU" 167+91.50, 16.50' Lt.
Cap inlet
Preserve extg. 24" CPP storm sew. pipe in place

(50) Sta. "G" 312+35.85, 9.0' Rt. to
Sta. "G" 313+41.17, 13.4' Lt.
Inst. 8" subsurface drain pipe - 127'
Inst. subsurface drain outlet

(50A) Inst. 12" culv. pipe - 12'
(Sleeve for 8" subsurface drain pipe)

(51) Sta. "GR" 409+13.80, 10.0' Rt. to
Sta. "G" 310+75.00, 8.3' Rt.
Inst. 8" subsurface drain pipe - 71'
Inst. subsurface drain outlet
Inst. Tee fitting

(52) Sta. "GR" 409+99.22, 18.65' Rt.
Const. type "D" inlet
Const. loose riprap (Class 50) - 3.5 cu.yd.
(Loose riprap pad)
Riprap geotextile - 4.5 sq.yd.
F.L.=1463.87
(For details, see sht. 2B)

(53) Sta. "G" 312+03.90, 23.4' Lt.
Inst. 12" storm sew. pipe - 69'
10' depth
S=0.70%
Const. sloped end section
Const. paved end slope, Lt.
Const. loose riprap (Class 50) - 1.7 cu.yd.
(Loose riprap pad)
Riprap geotextile - 2.2 sq.yd.
F.L.=1463.40

(54) Const. water quality swale
(For details, see sht. GJ-9)

(55) Major adjust manhole

(56) Sta. "LU" 167+44.50, 77.78' Rt.
Bioretention Pond, Luman, outlet structure
(For details, see sht. GJ)

(2) (57) Sta. "BSPUR" 40+04.69, 15.52' Rt.
Const. manhole with type "CG-3" inlet
Inst. 24" storm sew. pipe - 39'
5' depth
S=1.05%
T.C.=1489.64
F.L.=1483.48 (24" thru)

No.	DATE	REVISIONS	BY
1	01-14-14	Revised Sta. callout of inlet on note 44	CZ
2	10-21-15	Added note 57 (manhole with inlet)	CZ

REGISTERED PROFESSIONAL ENGINEER
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OREGON
JULY 9, 2001
CHRIS R. ZELMER
EXPIRES: JUNE 30, 2014

OREGON DEPARTMENT OF TRANSPORTATION
REGION 3 - TECHNICAL CENTER

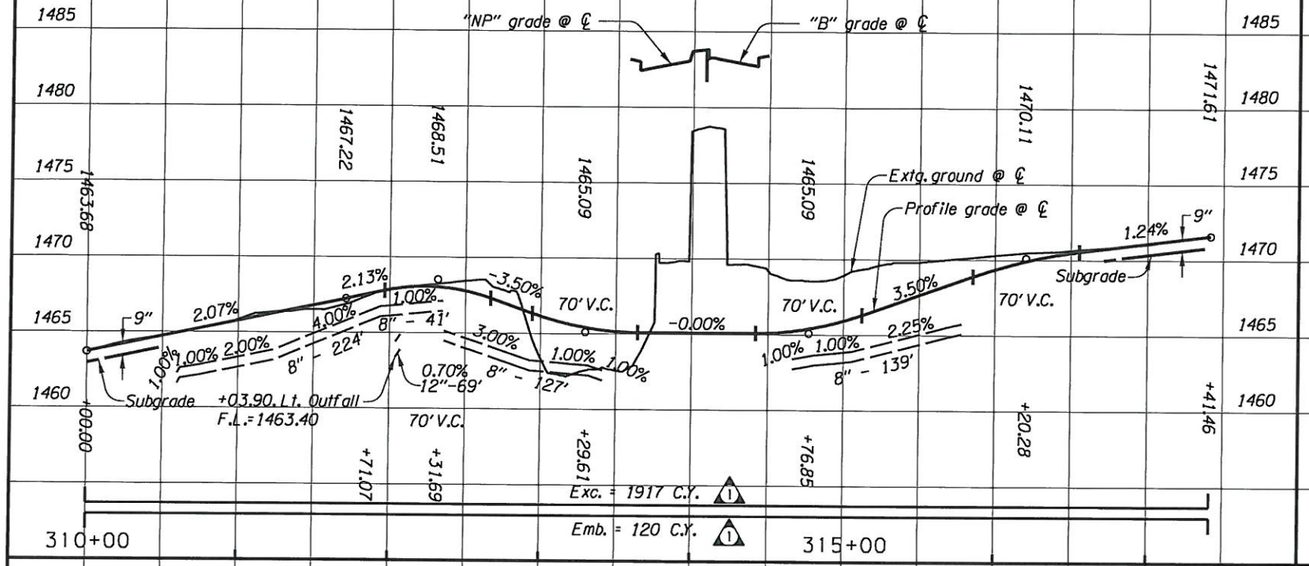
FFO-I-5: FERN VALLEY INTERCHANGE, UNIT 2
PACIFIC HIGHWAY
JACKSON COUNTY

Designed By - Roy Blower
Reviewed by - Rich Coffel
Drafted By - Judy Hardin

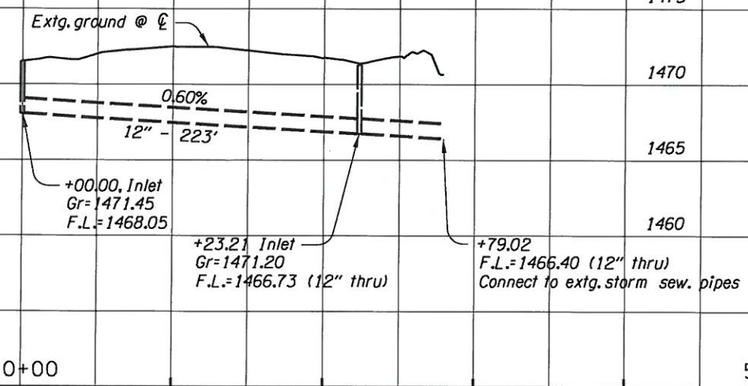
DRAINAGE & UTILITIES

SHEET NO. 10B-4

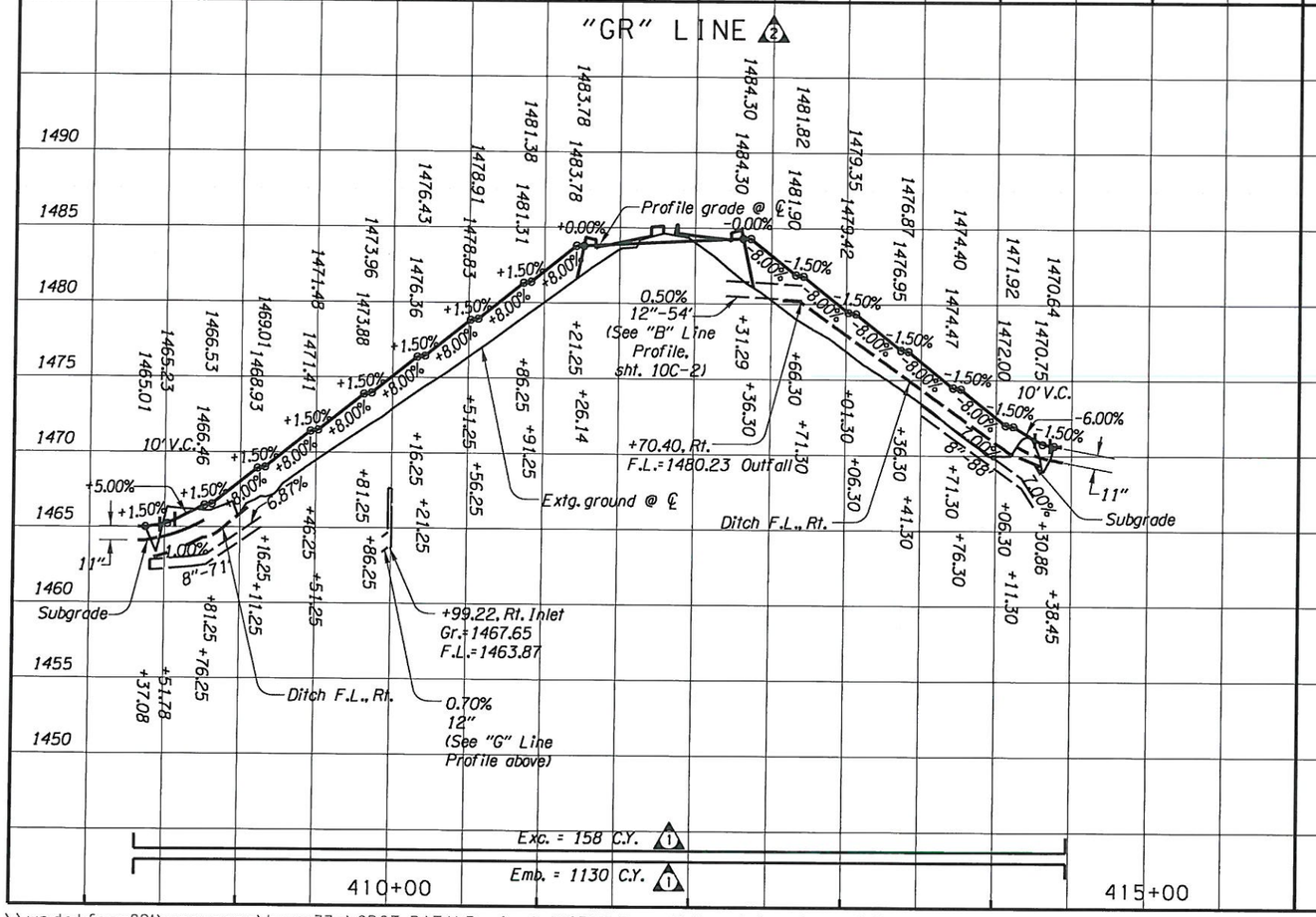
"G" LINE



"SD5" LINE



"GR" LINE



No.	DATE	REVISIONS	BY
1	01-27-14	Revised Exc. and Emb. quantities	CZ
2	07-07-16	Revised vertical alignment	CZ

OREGON DEPARTMENT OF TRANSPORTATION

REGION 3 - TECHNICAL CENTER

REGISTERED PROFESSIONAL ENGINEER
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JULY 9, 2001
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EXPIRES: JUNE 30, 2018

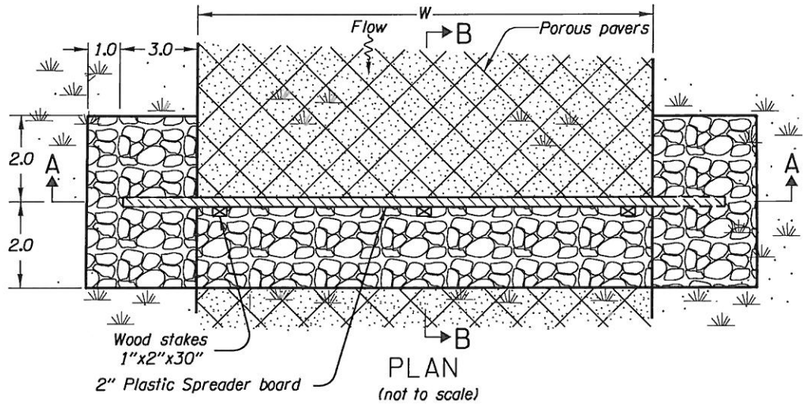
FFO-I-5: FERN VALLEY INTERCHANGE, UNIT 2
PACIFIC HIGHWAY
JACKSON COUNTY

Design Team Leader - Chris Zelmer
Designed By - Roy Blower
Drafted By - Judy Hardin

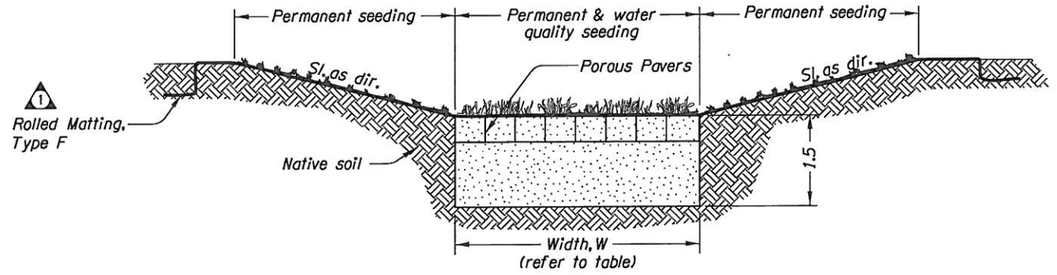
PROFILE

SHEET NO. 10C-3

WATER QUALITY SWALE DETAILS
(BIOFILTRATION SWALE)



PLAN
(not to scale)



TYPICAL SECTION
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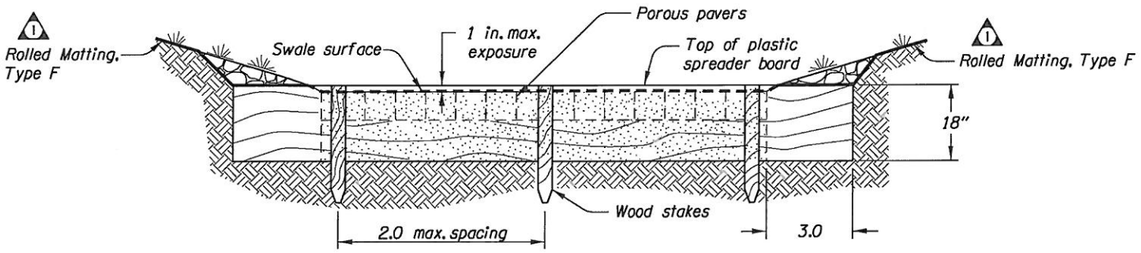
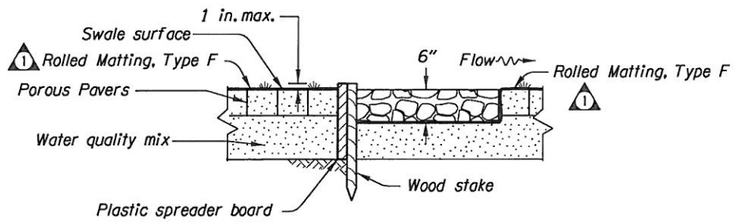


SECTION A-A
(not to scale)



SECTION B-B
(not to scale)

PLASTIC BOARD FLOW SPREADER DETAIL

WATER QUALITY SWALE DATA				
WQ Swale #	Plan sheet & note #	Sta. to Sta.	W (ft.)	Longitudinal Slope (ft./ft.)
1	13B (5)	"NP" 72+82.0 to "NP" 73+82.0, Lt.	4.0	.006
2	13B (5)	"NP" 72+80.0 to "NP" 73+80.0, Rt.	4.0	.002
3	12B (13)	"NP" 58+65.0 to "NP" 59+65.0, Rt.	4.0	.009
4	12B (10)	"NP" 55+00.0 to "NP" 56+50.0, Rt.	4.0	.04
5	3B (3)	"L" 1010+08.0 to "L" 1011+60.0, Rt.	13.0	.005
6	3B (2)	"L" 1008+35.0 to "L" 1009+35.0, Lt.	10.0	.005
7	6B (7)	"NBOFF" 1038+85.0 to "NBOFF" 1039+85.0, Rt.	4.0	.005
8	6B (7)	"SBON" 1036+00.0 to "SBON" 1037+05.0, Rt.	6.5	.005
9	6B (7)	"SBON" 1034+45.0 to "SBON" 1035+45.0, Rt.	4.0	.01
10	6B (7)	"L" 1038+30.0 to "L" 1039+30.0, Lt.	4.0	.01
11	10B-2 (54)	"GR" 412+68.0 to "GR" 413+99.0, Rt.	2.0	0.06

NOTES:
1. Construct spreader board level.
2. Extend spreader board 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 board with 2½" galvanized wood screws every 3" (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. (2)
7. Install Type S2 markers at beginning and end of biofiltration swale. See sheet GJ-10 for details.

1½"–¾" Granular Drain Backfill Material

Water quality mix

Note: All dimensions are in feet unless otherwise noted.

No.	DATE	REVISIONS	BY
1	03-05-14	Stipulated Matting Type	DC
2	03-05-14	Modified sheet reference	DC

REGISTERED PROFESSIONAL ENGINEER
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OREGON
JULY 12, 2005
DELANIE L. CUTSFORTH
EXPIRES: 12-31-2013

OREGON DEPARTMENT OF TRANSPORTATION

REGION 3 - TECHNICAL CENTER

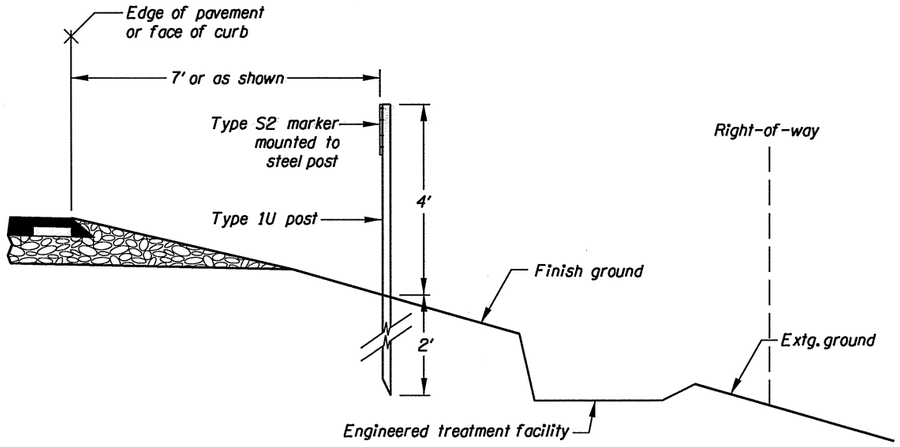
FFO-I-5: FERN VALLEY INTERCHANGE, UNIT 2
PACIFIC HIGHWAY
JACKSON COUNTY

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

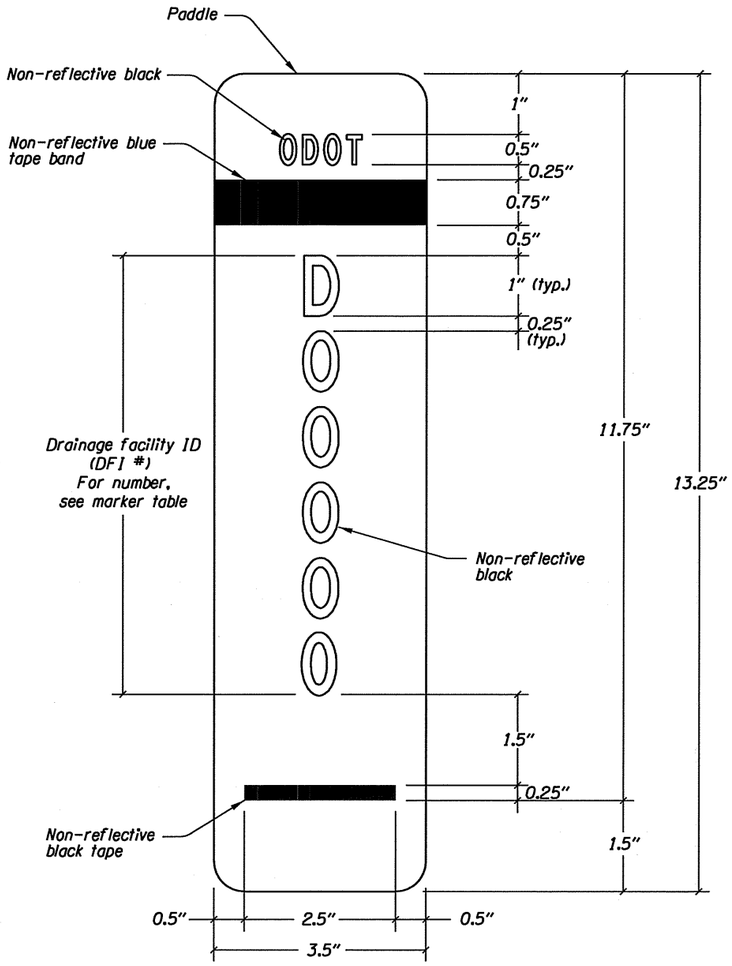
STORMWATER DETAILS

SHEET NO. GJ-9

FIELD FACILITY MARKERS



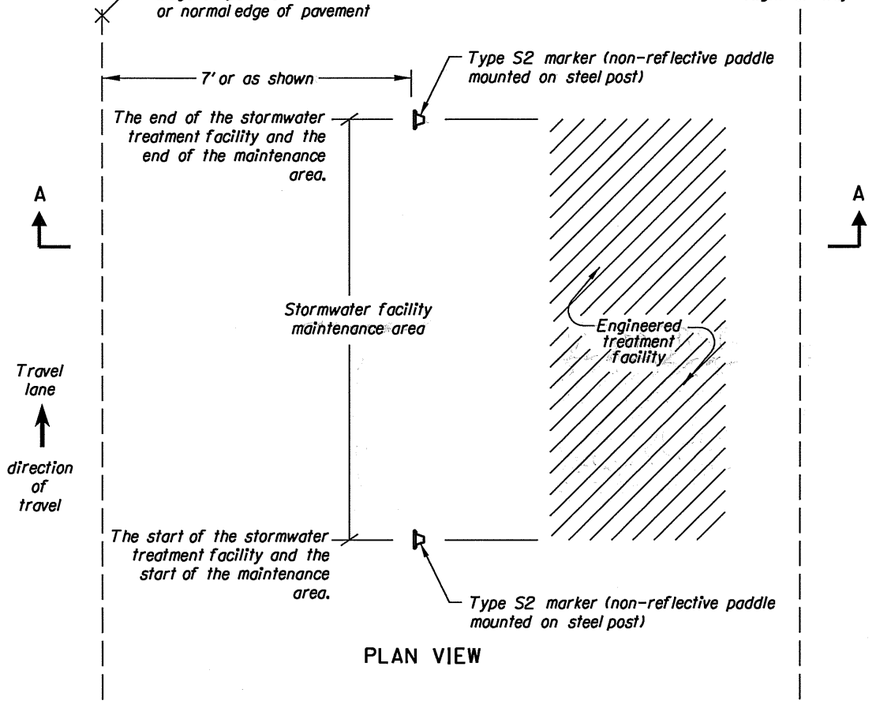
SECTION A-A



TYPE S2 MARKER

MARKER TABLE

FACILITY NAME	FACILITY LOCATION	DFI #	TYPE S2 MARKER	
	STATION		BEGIN	END
WQ SWALE #7	"NBOFF" 1038+85.0, Rt.	D00765		✓
WQ SWALE #7	"NBOFF" 1039+85.0, Rt.	D00765	✓	
WQ SWALE #9	"SBON" 1034+45.0, Rt.	D00767	✓	
WQ SWALE #9	"SBON" 1035+45.0, Rt.	D00767		✓
WQ SWALE #8	"SBON" 1036+00.0, Rt.	D00768	✓	
WQ SWALE #8	"SBON" 1037+05.0, Rt.	D00768		✓
WQ SWALE #5	"L" 1010+08.0, Rt.	D00763	✓	
WQ SWALE #5	"L" 1011+60.0, Rt.	D00763		✓
WQ SWALE #6	"L" 1008+35.0, Lt.	D00762		✓
WQ SWALE #6	"L" 1009+35.0, Lt.	D00762	✓	
NORTH POND	"L" 1026+44.0, Lt.	D00760		✓
NORTH POND	"L" 1029+17.0, Lt.	D00760	✓	
SOUTH POND	"L" 1031+65.0, Lt.	D00761		✓
SOUTH POND	"L" 1034+60.0, Lt.	D00761	✓	
SWALE #10	"L" 1038+30.0, Lt.	D00764		✓
SWALE #10	"L" 1039+30.0, Lt.	D00764	✓	
BOLZ POND	"B" 53+67.0, Rt.	D00770	✓	
BOLZ POND	"B" 55+22.0, Rt.	D00770		✓
LUMAN POND	"LU" 167+24.0, Rt.	D00766	✓	
LUMAN POND	"LU" 168+94.0, Rt.	D00766		✓
WQ SWALE #11	"GR" 412+68.0, Rt.	D00769	✓	
WQ SWALE #11	"GR" 413+99.0, Rt.	D00769		✓



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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REGION 3 - TECHNICAL CENTER

FFO-1-5: FERN VALLEY INTERCHANGE, UNIT 2
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STORMWATER DETAILS

SHEET NO. GJ-10