OPERATION & MAINTENANCE MANUAL

Detention Pond/Water Quality

Biofiltration Swale Combo

Manual prepared: September 2016

DFI No. D00905

Figure 1: DFI No. D00905, looking [southwest]

1. Identification

Drainage Facility ID (DFI):	**D00905**
Facility Type:	Detention Pond/Water Quality Biofiltration Swale Combo
Construction Drawings:	(V-File Number) 48V-103
Location:	District: 2B
	Highway No.: 1
	Mile Post: 302.60/302.76
	Description: This facility is located near the NW corner of N Broadway and N Vancouver Ave along the I-5 SB off-ramp. Access via I-5 SB off-ramp exit 302A.

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:	ODOT Designer – Region 1 Tech. Center Bruce Council 503-731-8319
Facility construction:	2016
Contractor:	Weitman Excavation

4. Storm Drain System and Facility Overview

A detention pond/water quality biofiltration swale combo (referred to from this point forward as a pond/swale combo) combines the forms and functions of a water quality swale and a detention pond. In a pond/swale combo, the biofiltration swale is situated within the bottom confines of the detention facility. The facility provides water quality treatment and infiltration of the smaller storm events and detention/peak flow delay of the larger storm events.

The biofiltration swale is designed as if it was a separate facility and consists of a grassy-lined facility with a flat trapezoidal cross section and gradual slope. Treatment is provided through sedimentation and filtration processes. If amended soils are present, additional treatment is obtained through infiltration through the amended soil media. Water from all but the largest storms will infiltrate into the soil during treatment.

When the flows exceed the water quality flows, the pond/swale combo facility begins to provide detention. Detention is required to reduce or mitigate the increases in discharge, resulting from development. The facility is designed to store and infiltrate stormwater runoff, but a very high flow will fill the detention swale and cause a flow out of the facility into the stormwater sewer. The flow control mechanism for this facility is a raised outlet. When flows exceed the water quality design flow, the water level in the facility will rise until it reaches the level of the drain inlet.

- Detention Pond/Water Quality Biofiltration Swale Combo
- Location: Near the NW corner of N Broadway and N Vancouver Ave along the I-5 SB off-ramp.
- Access: Via I-5 SB off-ramp exit 302A.
- Stormwater runoff from N.Broadway is captured in three inlets and conveyed under the sidewalk to the facility, where it outfalls over riprap pads.
- Stormwater runoff from the I-5 SB ramp for Exit 302A sheet flows into the gravel maintenance pad before flowing into the treatment facility.
- During very large events, water in the facility may become deep enough to flow into an inlet at the north side of the facility through a 12” diameter pipe and eventually into the Willamette river and/or flow over the high point of the broad-crested weir into an inlet on the west edge of the facility into a 12” diameter pipe and into the City of Portland combined sewer system.

A. Maintenance equipment access:
From I-5 Southbound, take exit 302A and pull in to gravel pad on right side just before signal at Broadway.

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 Access

Maintenance access to the facility:

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

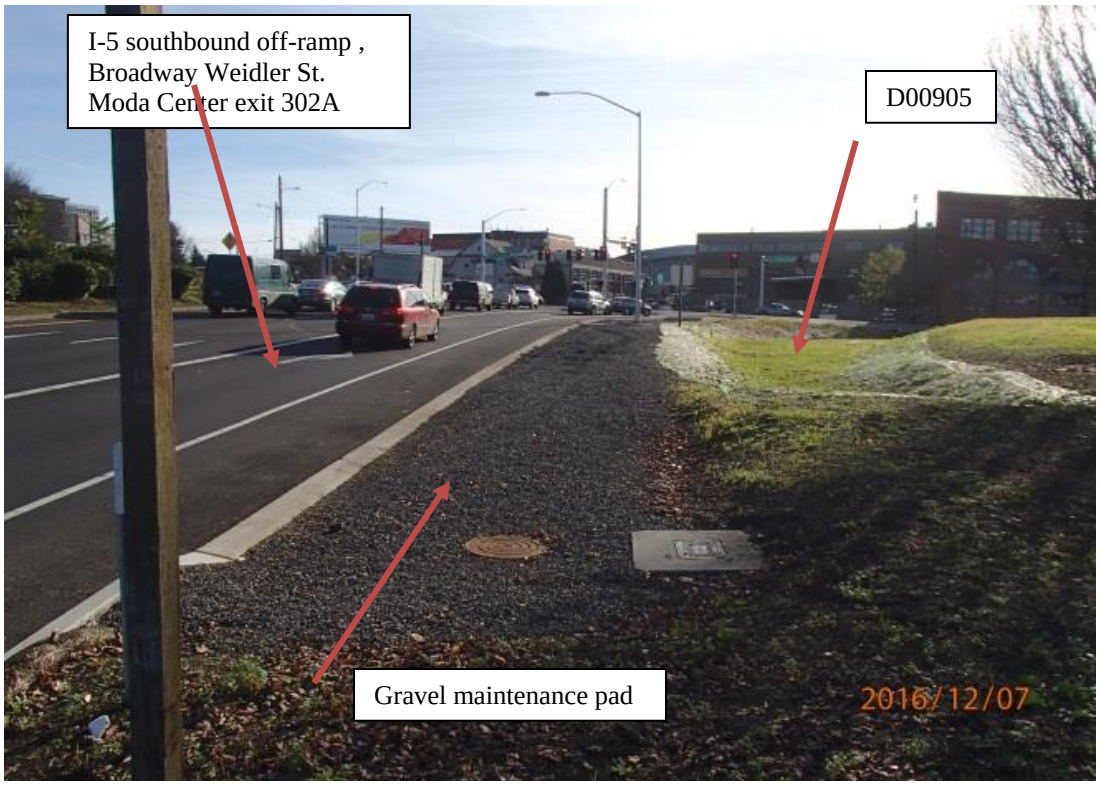


Figure 2: Gravel maintenance pad – Looking south. Facility to the right, I-5 SB exit ramp to the left.

Figure 3: Looking south. Traffic on Broadway westbound is visible, I-5 SB exit ramp and gravel access pad to the left out of frame. Berm to the right.

Figure 4: Looking north. Traffic on I-5 SB and I-5 SB exit ramp visible. Gravel access pad to the right out of frame.

Figure 5: Looking south. Pipe connected to inlet marked as 'A' on operational plan and profile.

Figure 6: Looking south. Example of channel and grate type inlet marked as 'B' on operational plan and profile. (2 in facility)

Figure 7: Looking west. Auxiliary inlet near center, marked 'C' on operational plan and profile.

Figure 8: Looking north. Inlet marked 'D' on operational plan and profile.

6. Auxiliary Outlet (High Flow Bypass)

An Auxiliary Outlet is provided if the primary outlet control structure cannot safely pass the projected high flows. For a majority of storms, it is expected that all stormwater entering the facility will infiltrate into the ground instead of flowing through an outlet. A broad-crested spillway weir is currently included in this bioswale stormwater treatment facility design. Calculations show this should not be necessary, as the 100-year Rational Method event only has a flow of 0.35 cfs. However, should the outfall pipe ever become plugged with debris, the auxiliary outlet would provide a secure path for the water trapped in the bioswale to exit the facility if it cannot infiltrate.

The auxiliary outlet feature for this facility is:

☒ Designed into facility

☐ Other, as noted below

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

The following stormwater facility maintenance table (See ODOT Maintenance Guide) should be used to maintain the facility outlined in this Operation and Maintenance Manual or follow the Maintenance requirements outlined in Appendix C when proprietary structure is selected below:

☒ Table 1 (general maintenance)
☒ Table 2 (stormwater ponds)
☒ Table 3 (water quality biofiltration swales)
☐ Table 4 (water quality filter strips)
☐ Table 5 (water quality bioslopes)
☐ Table 6 (detention tank)
☐ Table 7 (detention vault)
☐ Appendix C (proprietary structure)
☐ Special Maintenance requirements:

8. Waste Material Handling

Material removed from the facility is defined as waste by DEQ. Refer to the roadwaste section 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

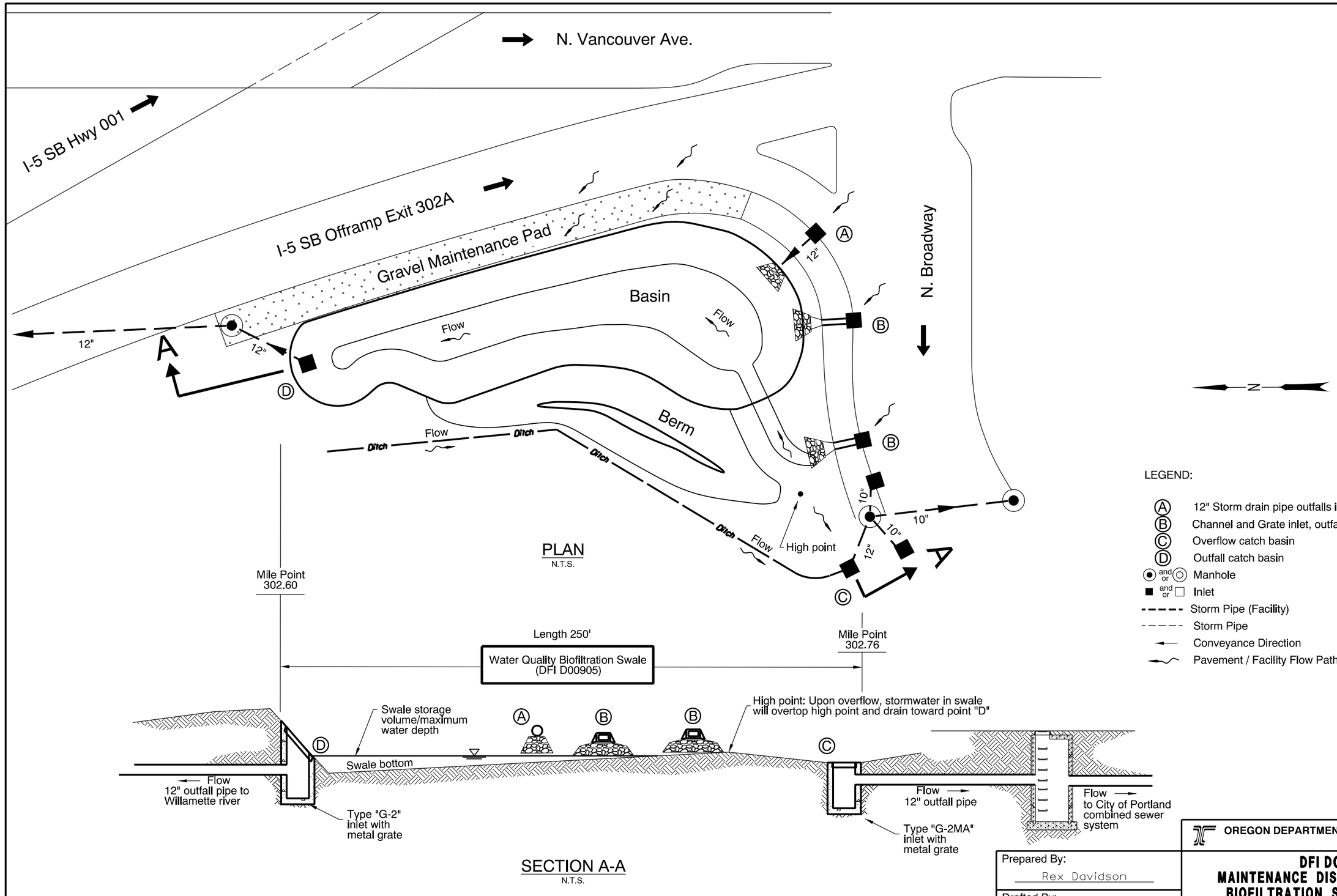
Contact any of the following for more detailed information about management of waste materials found on site:

ODOT Clean Water Unit	(503) 986-3008
ODOT Statewide Hazmat Coordinator	(503) 229-5129
ODOT Region Hazmat Coordinator	(503) 731-8290
ODEQ Northwest Region Office	(503) 229-5263

Appendix A

Content:

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



OREGON DEPARTMENT OF TRANSPORTATION

Prepared By: Rex Davidson

Drafted By: Rex Davidson

DFI D00905
MAINTENANCE DISTRICT 2B HWY 1
BIOFILTRATION SWALE FACILITY
PACIFIC HIGHWAY, MP 302.60/302.76
MULTNOMAH COUNTY

Appendix B

Content:

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

48V-103

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

STATE OF OREGON

DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED PROJECT

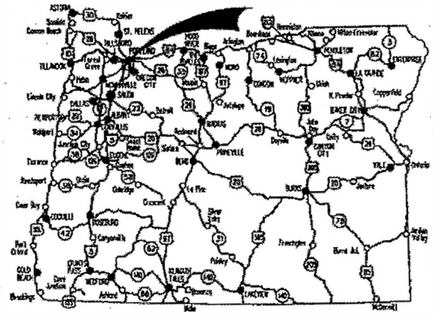
GRADING, DRAINAGE, PAVING, SIGNING, ILLUMINATION, SIGNALS & ROADSIDE DEVELOPMENT

I-5 SB: BROADWAY-WEIDLER EXIT RAMP (PORTLAND) PROJ.

PACIFIC HIGHWAY

MULTNOMAH COUNTY

OCTOBER 2015



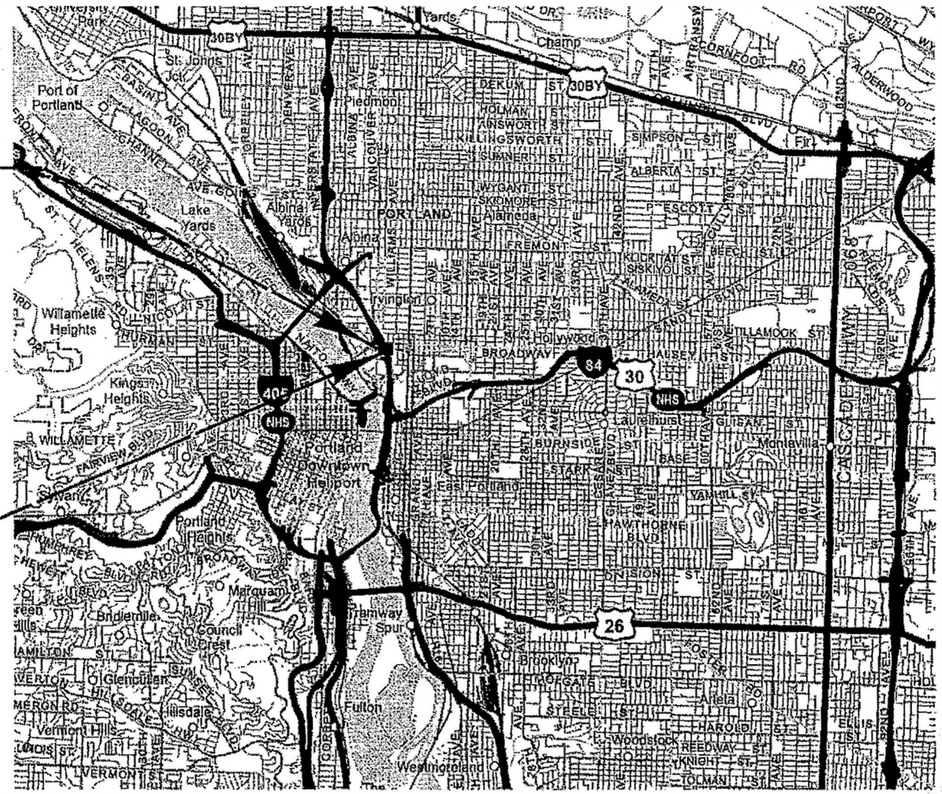
Overall Length Of Project - 0.12 Miles

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

BEGINNING OF PROJECT
NHPP-S001(474)
STA. "E" 350+84.5 (M.P. 302.48)

END OF PROJECT
NHPP-S001(474)
STA. "E" 357+40.4 (M.P. 302.36)



N

T. 1 N., R. 1 E., W.M.

OREGON TRANSPORTATION COMMISSION

Tommy Boney	CHAIR
David Lohman	COMMISSIONER
Susan Morgan	COMMISSIONER
Alando Simpson	COMMISSIONER
Sean O'Halloran	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: Tamira Clark
Tamira J. Clark
Technical Center Manager, Region 1

Concurrence by ODOT Chief Engineer

I-5 SB: BROADWAY-WEIDLER EXIT RAMP (PORTLAND) PROJ.
PACIFIC HIGHWAY
MULTNOMAH COUNTY

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	NHPP-S001(474)	1

PE002257 000

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INDEX OF SHEETS, CONT.

SHEET NO.	DESCRIPTION
2 & 2A	Typical Sections
2B, 2B-2 thru 2B-12	Details
2C & 2C-2	Detour Plan
2C-3	Traffic Control Details
2C-4 thru 2C-7	Traffic Control Plan
2D	Pipe Data Sheet
3	Alignment & General Construction
3A	Drainage and Utilities
3B	Drainage Profile
4	Alignment & General Construction
4A	Drainage and Utilities
5	Alignment & General Construction
5A	Drainage and Utilities
GEO/HYDRO/ENV	
GA, GA-2 thru GA-5	Erosion Control Plan
GA-6	Erosion Control Details
GB	Geotechnical Data
GJ	Water Quality Plan
GJ-2	Water Quality Details
GJ-3	Water Quality Details
GM	Contaminated Soil & Designated Fill Site
PERMANENT PAVEMENT MARKINGS	
ST & ST-2	Striping Plan
PERMANENT SIGNING	
S-15546 thru S-15550	Permanent Signing
ILLUMINATION	
I-02460	Illumination Legend & Pole Table
I-02461	Illumination Plan
I-02462	Illumination Details
TRAFFIC SIGNALS	
18444	Legend
18445	Legend
18446	Removal Plan
18447	Signal Plan
18448	Detector Plan
18449	Utilities
18450	Interconnect Plan
18451	Interconnect Plan
18452	Pole Ent Chart
18453	Details
18454	Details
18455	Signal, Detector And Interconnect Plan Legend
18456	Signal Plan
18457	Detector Plan
18458	Signal Wiring Plan

TRAFFIC SIGNALS - CONT.	
18459	Utilities
18460	Interconnect Plan
18461	Traffic Signal Details
18495	Splice Details

Standard Drg. Nos.

RD300 - Trench Backfill, Bedding, Pipe Zone And Mult. Installations
RD302 - Street Cut
RD320 - Paved End Slope For Culverts 60" Maximum Pipe Size
RD335 - Standard Storm Sewer Manhole
RD336 - Standard Manhole Details
RD339 - Pipe To Structure Connections
RD342 - Shallow Manholes
RD344 - Standard Manhole Base Section
RD345 - Pipe To Manhole Connections
RD356 - Manhole Covers And Frames
RD360 - Manhole Frame Adjustment
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
RD370 - Ditch Inlet Type D
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
RD399 - Stormwater Treatment And Storage Facility Field Markers

RD500 - Precast Concrete Barrier Pin And Loop Assembly
RD515 - Median Barrier Anchoring Details
RD516 - Securing Concrete Barrier To Roadway
RD545 - Precast Tall (42") Concrete Barrier

RD700 - Curbs
RD705 - Islands
RD710 - Accessible Route Islands
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

RD1000 - Construction Entrances
RD1010 - Inlet Protection Type 2, 3, 6 and 7
RD1015 - Inlet Protection Type 4
RD1030 - Sediment Barrier Type 2, 3 and 4
RD1055 - Slope and Channel Matting

TM200 - Sign Installation Details
TM201 - Miscellaneous Sign Placement Details
TM211 - Sign Details US & Interstate Route Shields
TM223 - Conventional Roads Directional Sign Layout Street Name Signs
TM224 - Freeway/Expressway Directional Sign Layout
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
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
TM475 - Loop Details
TM480 - Loop Entrance Details
TM482 - Controller Cabinet And Foundation Details
TM485 - Service Cabinets And Service Cabinet Wiring Details
TM498 - Interconnect Wiring 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
TM520 - Durable Pavement Markings Method "A" Extruded Surface Installed 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
TM561 - Alignment Layout: Left Turn Lane, Centerline & Medians
TM570 - Traffic Delineators
TM571 - Traffic Delineators Steel Post Details
TM575 - Traffic Delineator Installation For Freeways

TM602 - Triangular Base Breakaway Multi-Directional Slip Base Design
TM629 - Slip Base And Fixed Base Luminaire Supports General Details And Design Criteria
TM630 - Slip Base And Fixed Base Luminaire Supports Base Plate & Footing Details
TM635 - Breakaway Sign & Luminaire Supports - Support Location Guidelines
TM650 - Traffic Signal Supports General 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
TM676 - Sign Attachments
TM677 - Sign Mounts
TM679 - Signal Mast Arm Street Name Sign 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

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

I-5 SB: BROADWAY-WEIDLER EXIT RAMP (PORTLAND) PROJ.
PACIFIC HIGHWAY
MULTNOMAH COUNTY

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	NHPP-S001(474)	1A

Standard Drg. Nos. Contd.

TM800 - Tables, Abrupt Edge And PCMS Details
TM810 - Temporary Pavement Markings
TM820 - Temporary Barricades
TM821 - Temporary Sign Supports
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 - Non-Freeway Multi-Lane Sections
TM860 - Freeway Sections
TM861 - Freeway Sections
TM862 - Freeway Sections

R/W Map Nos. 8B-11-3 & 1R-4-1214

City Of Portland Standard Drawings/Details

P-4

P-349

P-400, P-406, P-410, P-412, P-434

P-601, P-606, P-608, P-610, P-620, P-620(A),
P-622, P-623, P-624, P-625, P-626, P-627,
P-629, P-630, P-632, P-634, P-651, P-654,
P-660, P-671, P-680

http://www.portlandoregon.gov/transportation/50383

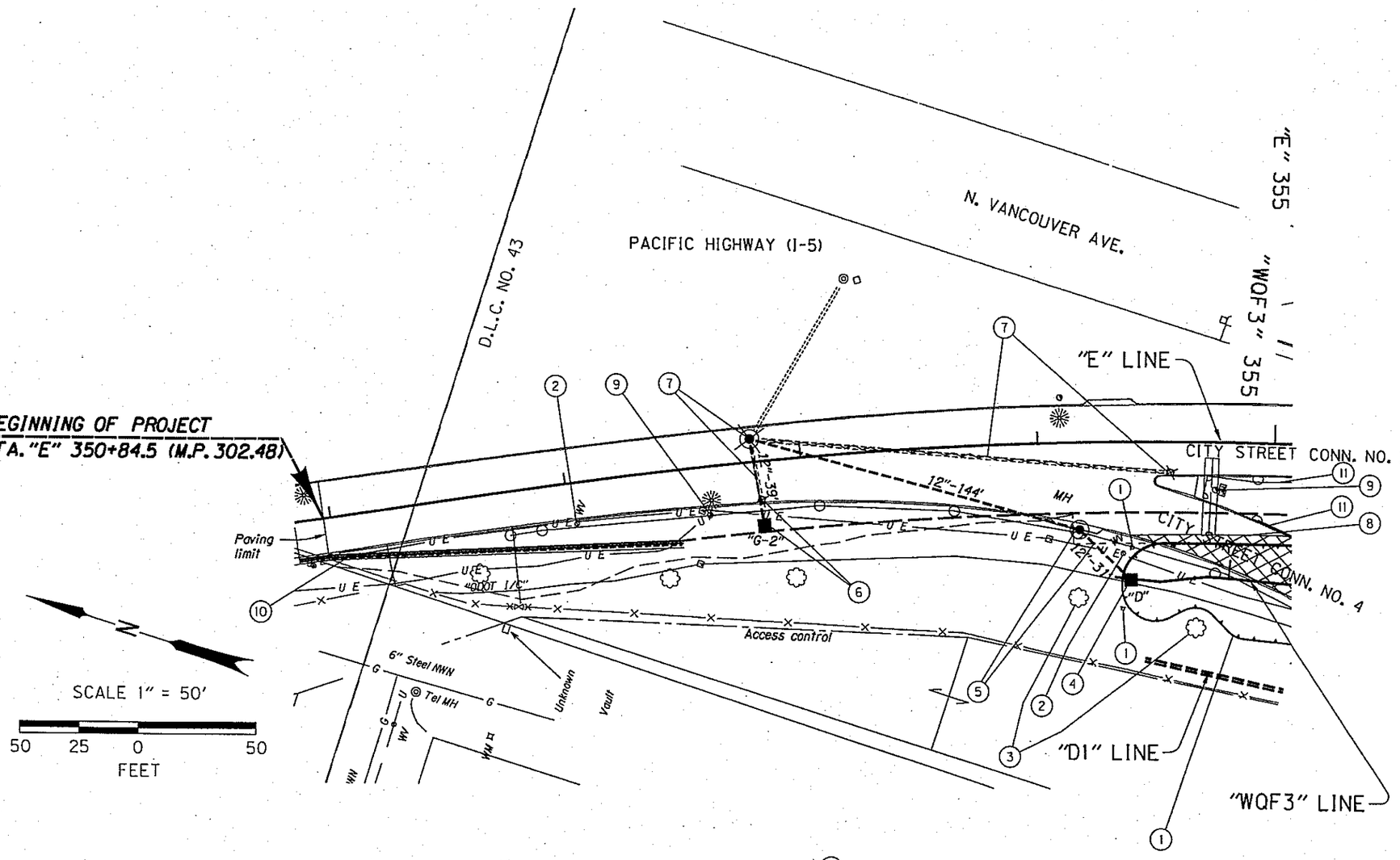
Standard Drawings located on the web at:
http://www.oregon.gov/ODOT/HWY/ENGSERVICES/pages/standard_drawings_home.aspx

I-5 SB: BROADWAY-WEIDLER EXIT RAMP (PORTLAND) PROJ.
PACIFIC HIGHWAY
MULTNOMAH COUNTY

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	NHPP-S001(474)	1B

Sec. 27, T. 1 N., R. 1 E., W.M.

48V-103



(1) Sta. "E" 354+40.22, 50.41' Rt to Sta. "E" 356+25.75, 98.58' Rt.
Construct Water Quality Basin
Inst. drainage facility I.D. marker - 2
(For details, see shts. GJ, GJ-2 & GJ-3)
(See drg. no. RD399)

(2) Remove water valve & box

(3) Preserve & protect tree - 2

(4) Sta. "E" 354+38.92, 58.63' Rt. = Sta. "WQF3" 354+58.79, 0.53' Rt.
Const. type "D" inlet w/ 1.5' sump
(See drg. nos. RD336, RD339, RD364, RD365, & RD370)

(5) Sta. "E" 354+16.90, 36.96' Rt.
Const. shallow manhole
Inst. 12" storm sew. pipe - 31'
5' depth
(See drg. nos. RD300, RD302, RD335, RD342, RD344, RD345, RD356, RD380, RD384, RD386, RD388, RD390, & RD393)

(6) Sta. "E" 352+81.96, Rt.
Remove inlet
Const. type G-2 inlet w/ 1.5' sump

(7) Sta. "E" 352+79.26, 9.95' Lt.
Remove inlet
Abandon 8" storm sew. pipe - 172'
Minor adj. manhole
Inst. 12" storm sew. pipe - 144'
5' depth
Inst. 12" storm sew. pipe - 39'
10' depth
Trench resurf. - 54 sq. yd.
Connect to extg. structure - 2
(See drg. no. RD360)

(8) See sht. 3, note 5
Const. maintenance landing
(For details, see sht. 2)

(9) See Traffic Shts. for pole & UG electrical relocation info

(10) See sht. 3, notes 2, 2a, 3, & 3a
Sta. "E" 350+84.5 to Sta. "E" 354+14.1, Rt.
Inst. Concrete Barrier Drain - 152'
(For details, see sht. 2B-12)

(11) Remove irrigation system, as needed
(For additional information, see shts. 7A & 8A of the 08V-005 N. Russell St. - S.E. Oak St. Unit. of the Eastbank Freeway Sec. project)

LEGEND

(Some items shown in legend may not appear on plans)

Remove manhole:
Adjust manhole:
Const. manhole:
Remove inlet:
Adjust inlet:
Const. inlet:
Const. pipe:
Plug and abandon pipe:

Gen. Notes:

1. For pipe profiles, see sht. 3B
2. See Traffic drg. nos. 1-02461, 18447, 18448 thru 18451 & 18460.
3. For pipe profiles, see sht. 3B

REGISTERED PROFESSIONAL ENGINEER
19,156
OREGON
JULY 15, 1997
BRUCE S. COUNCIL
RENEWS: 12-31-2015

OREGON DEPARTMENT OF TRANSPORTATION

REGION 1 - GEO-ENVIRONMENTAL SECTION

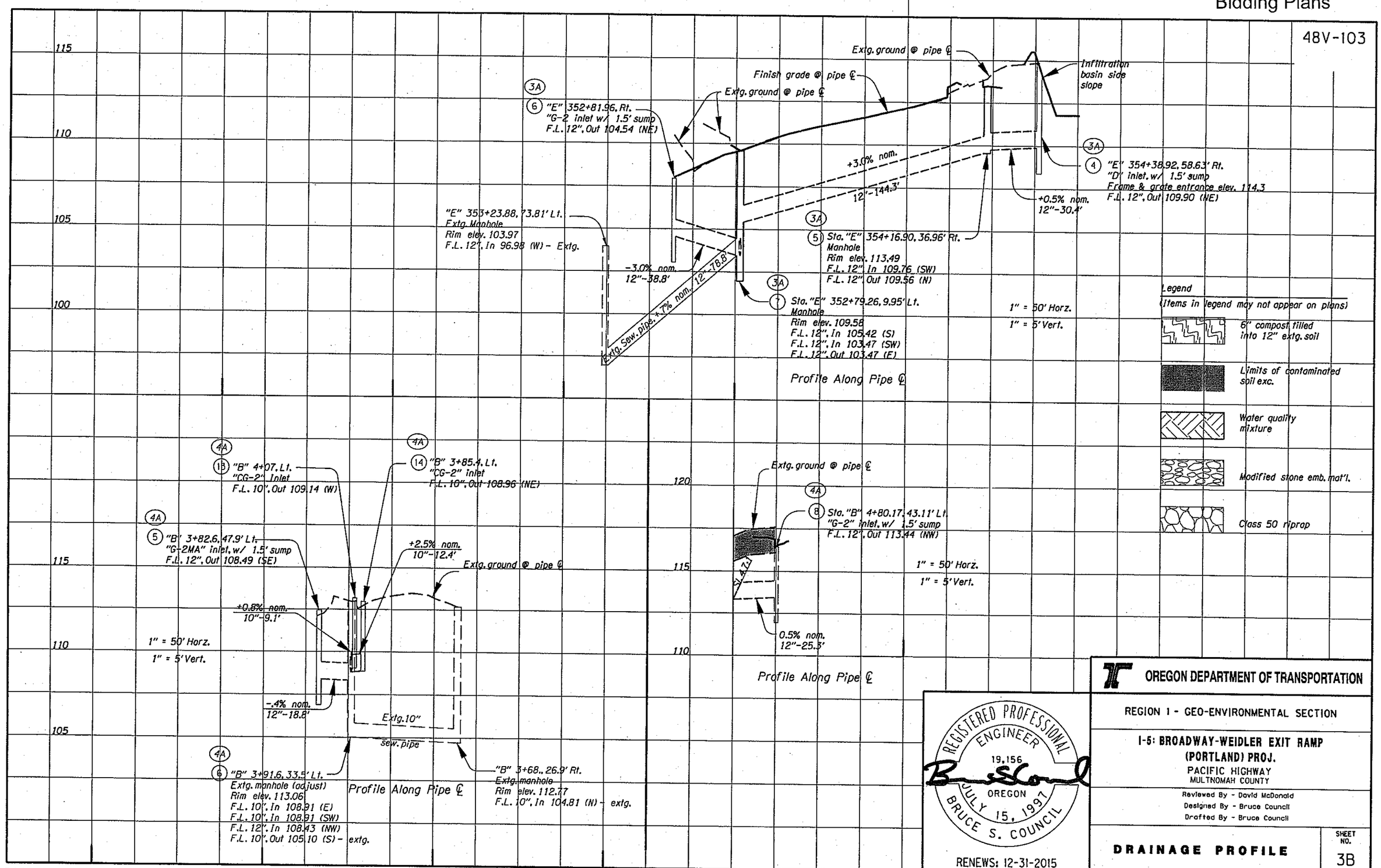
I-5: BROADWAY-WEIDLER EXIT RAMP (PORTLAND) PROJ.
PACIFIC HIGHWAY
MULTNOMAH COUNTY

Reviewed By - David McDonald
Designed By - Bruce Council
Drafted By - Bruce Council

DRAINAGE & UTILITIES

SHEET NO. 3A

48V-103



OREGON DEPARTMENT OF TRANSPORTATION

REGION 1 - GEO-ENVIRONMENTAL SECTION

I-5: BROADWAY-WEIDLER EXIT RAMP (PORTLAND) PROJ.

PACIFIC HIGHWAY
MULTNOMAH COUNTY

Reviewed By - David McDonald
Designed By - Bruce Council
Drafted By - Bruce Council

REGISTERED PROFESSIONAL ENGINEER
19,156
OREGON
JULY 15, 1997
BRUCE S. COUNCIL
RENEWS: 12-31-2015

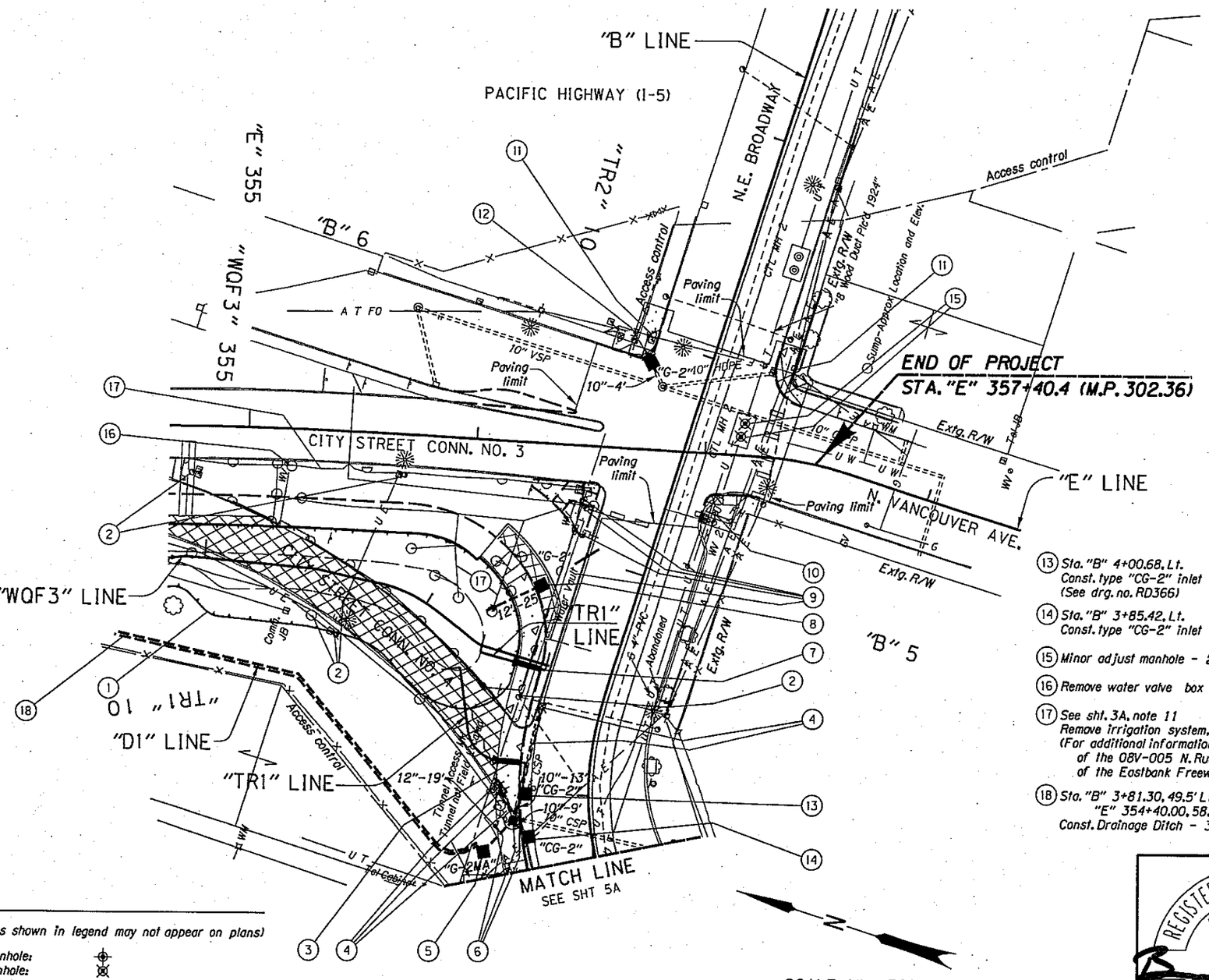
DRAINAGE PROFILE

SHEET NO. 3B

F:\ODOT_DATA\Projects\18262_I-5_SB_Ramp_N_Broadway\06_CADD\03_Fin\18262fdr_dlm.PL :: 50_Scale Plan Shts 9/10/2015 2:03:04 PM hwye0lz

Sec. 27, T. 1 N., R. 1 E., W.M.

48V-103



(1) See sht. 3A, note 1
Sta. "E" 354+40.22, 50.41' Rt to
Sta. "E" 356+25.75, 98.58' Rt.
Construct Water Quality Basin
(For details, see shts. GJ, GJ-2 & GJ-3)

(2) See Traffic Shts. for pole & UG electrical relocation info

(3) Sta. "B" 4+11.60, Lt.
Const. type "channel and grate" inlet
(For details, see sht. 2B-11)

(4) Remove inlet - 3
Remove 8" storm sew. pipe - 55'
Abandon 8" storm sew. pipe - 25'
Salvage G-2 inlets metal grates and frames for City

(5) Sta. "B" 3+82.55, 47.9' Lt.
Const. type "G-2MA" inlet

(6) Sta. "E" 3+91.62, Lt.
Minor Adj. manhole
Inst. 10" storm sew. pipe - 22'
5' depth
Inst. 12" storm sew. pipe - 19'
5' depth
Connect to extg. structure - 3
Trench resurf - 10 sq. yd.

(7) Sta. "B" 4+47.75, Lt.
Const. type "channel and grate" inlet
(For details, see sht. 2B-11)

(8) Sta. "B" 4+80.17, Lt.
Const. type "G-2" inlet
Inst. 12" storm sew. pipe - 25'
5' depth
Const. paved end slope - 32 sq. ft.
(See drg. no. RD320)

(9) Cut & cap water vault and valves (By others)

(10) Adjust water valve box (By others)

(11) Remove pole (By others) - 2

(12) Sta. "B" 5+91.79, Lt.
Remove inlet
Const. type "G-2" inlet
Connect to extg. pipe
Rim elev. = 119.9'
Inst. 10" storm sew. pipe - 4'
5' depth
Trench resurf. - 1 sq. yd.

(13) Sta. "B" 4+00.68, Lt.
Const. type "CG-2" inlet
(See drg. no. RD366)

(14) Sta. "B" 3+85.42, Lt.
Const. type "CG-2" inlet

(15) Minor adjust manhole - 2

(16) Remove water valve box

(17) See sht. 3A, note 11
Remove irrigation system, as needed
(For additional information, see shts. 7A & 8A of the 08V-005 N. Russell St. - S.E. Oak St. Unit, of the Eastbank Freeway Sec. project)

(18) Sta. "B" 3+81.30, 49.5' Lt. to
"E" 354+40.00, 58.2' Rt.
Const. Drainage Ditch - 30 Cu. Yds.

LEGEND

(Some items shown in legend may not appear on plans)

- Remove manhole:
- Adjust manhole:
- Const. manhole:
- Remove inlet:
- Adjust inlet:
- Const. inlet:
- Const. pipe:
- Plug and abandon pipe:

Gen. Notes:

1. For pipe profiles, see sht. 3B
2. See Traffic drg. nos. I-02461, 18447, 18448 thru 18451 & 18460.
3. For pipe profiles, see sht. 3B.

OREGON DEPARTMENT OF TRANSPORTATION

REGION 1 - GEO-ENVIRONMENTAL SECTION

I-5: BROADWAY-WEIDLER EXIT RAMP (PORTLAND) PROJ.
PACIFIC HIGHWAY
MULTNOMAH COUNTY

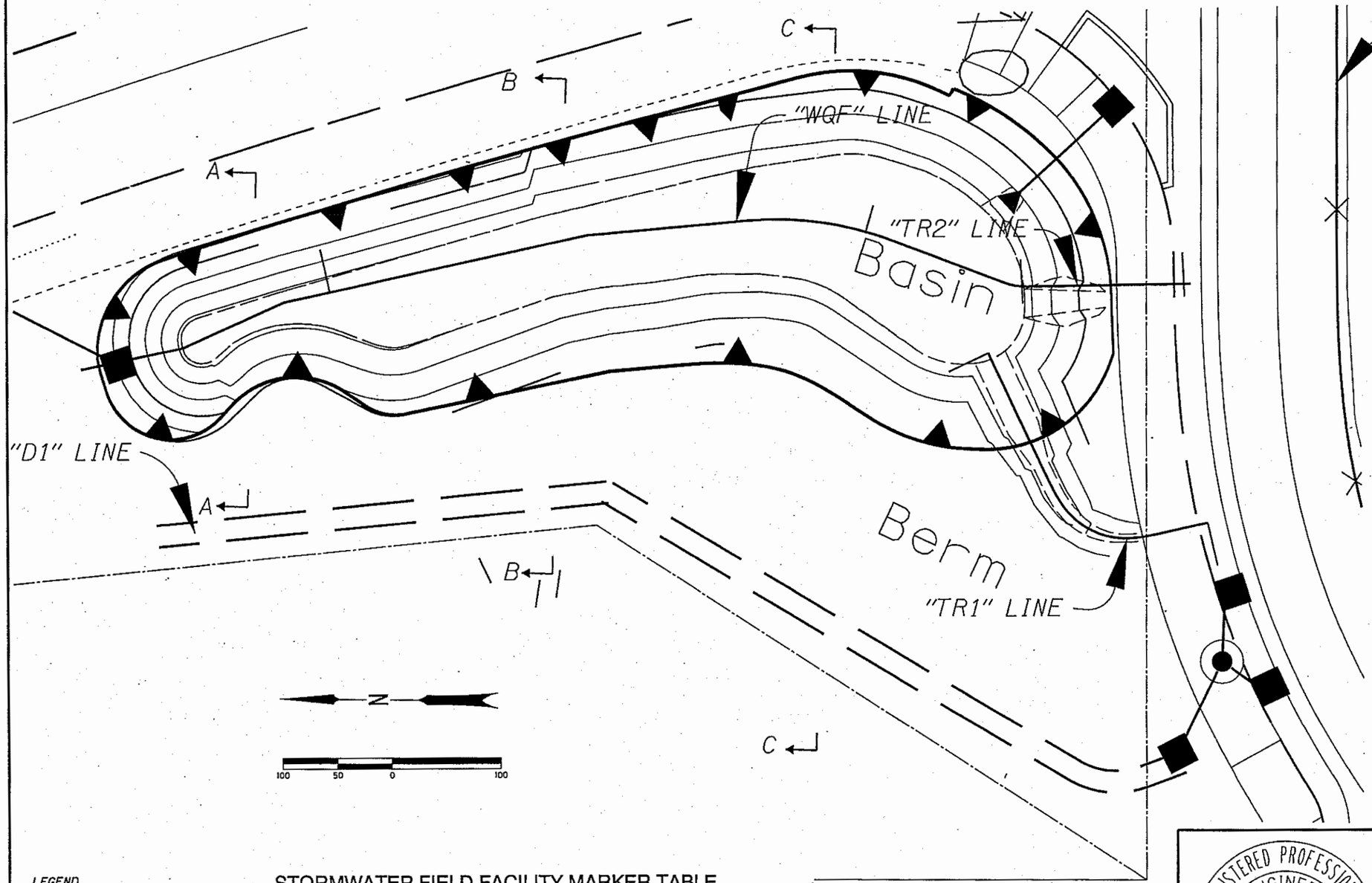
Reviewed By - David McDonald
Designed By - Bruce Council
Drafted By - Bruce Council

REGISTERED PROFESSIONAL ENGINEER
19,156
OREGON
JULY 15, 1997
BRUCE S. COUNCIL
RENEWS: 12-31-2015

DRAINAGE & UTILITIES

SHEET NO. 4A

48V-103



GENERAL NOTES:

1. Preserve & protect trees.
2. See sht. GA for information not shown here.
3. See Illumination shts. for information on subsurface electrical lines.
4. See Erosion Control shts. for planting information.
5. See Roadway sheets for slip ramp removal information.
6. Create a suitable water quality mix by amending existing soils or installing an engineer approved water quality soil mixture. (See ODOT Hydraulics Manual 14-E-1)
7. If chosen, amend existing soil by placing 7" of compost material and mechanically combine into 11" of soil. (total 18" of amended soil).
8. See shts. GA, GA-2 & GA-4 thru GA-6 for seeding and matting information not shown on this sheet.
9. Excavation associated with the water quality infiltration basin/biofiltration swale is included in the water quality lump sum estimate.
10. Berm embankment is included in the lump sum estimate for Contaminated Soil Management.
11. Ditch excavation is included in Ditch Exc. by the cubic yard.
12. For "WQF3" profile & associated sections, see sht. GJ-2.

LEGEND

- Remove manhole:
- Adjust manhole:
- Const. manhole:
- Remove inlet:
- Adjust inlet:
- Const. inlet:
- Const. pipe:
- Plug and abandon pipe:

(Some items shown in legend may not appear on plans)

STORMWATER FIELD FACILITY MARKER TABLE

FACILITY LOCATION		DFI #	TYPE S2 MARKER LOCATION		TYPE S1 MARKER	
STATION "C"	MP		BEGIN	END	RED	GREEN
725+50, Rt.	13.81	D00905	✓			
727+10, Rt.	13.83	D00905		✓		

Check where appropriate
Red = Beginning of facility
Green = End of facility

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OREGON DEPARTMENT OF TRANSPORTATION

REGION 1 - GEO-ENVIRONMENTAL SECTION

I-5 SB: BROADWAY-WEIDLER EXIT RAMP (PORTLAND) PROJ.
PACIFIC HIGHWAY
MULTNOMAH COUNTY

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Drafted By - Bruce Council

WATER QUALITY PLAN

SHEET NO. GJ

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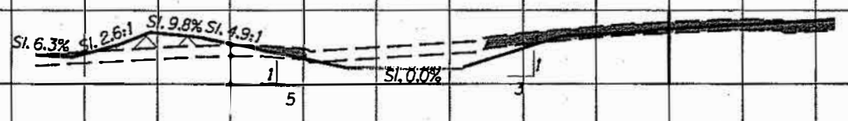
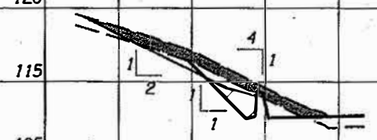
48V-103

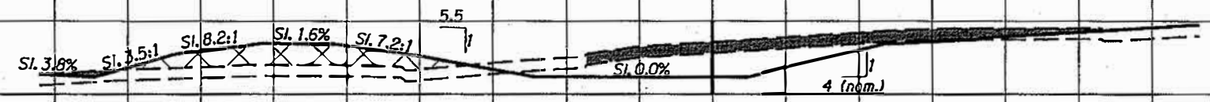
"WQF3" LINE PROFILE & SECTIONS



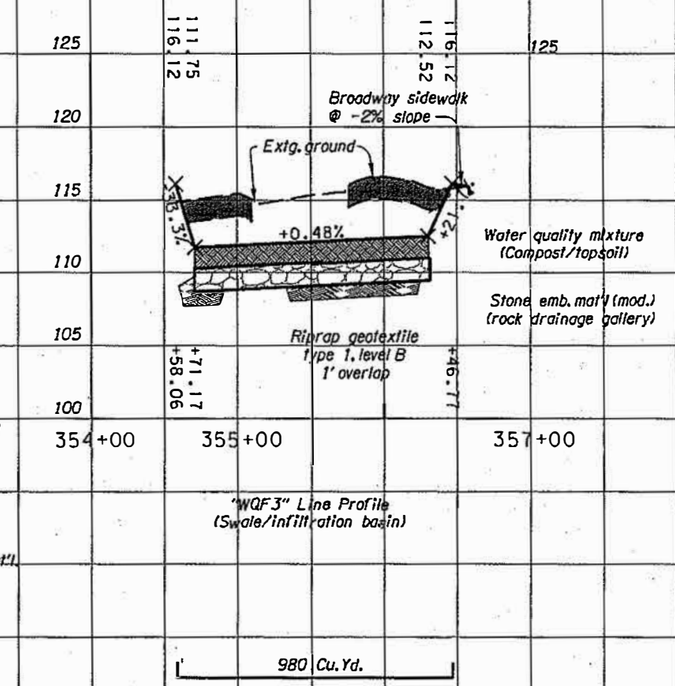
SECTION B-B



SECTION C-C



SECTION A-A



Legend

- 6" compost tilled into 12" extg. soil
- Limits of contaminated soil exc.
- Water quality mixture
- Modified stone emb. mat'l.
- Class 50 riprap

OREGON DEPARTMENT OF TRANSPORTATION

REGION 1 - GEO-ENVIRONMENTAL SECTION

I-5 SB: BROADWAY-WEIDLER EXIT RAMP (PORTLAND) PROJ.

PACIFIC HIGHWAY

MULTNOMAH COUNTY

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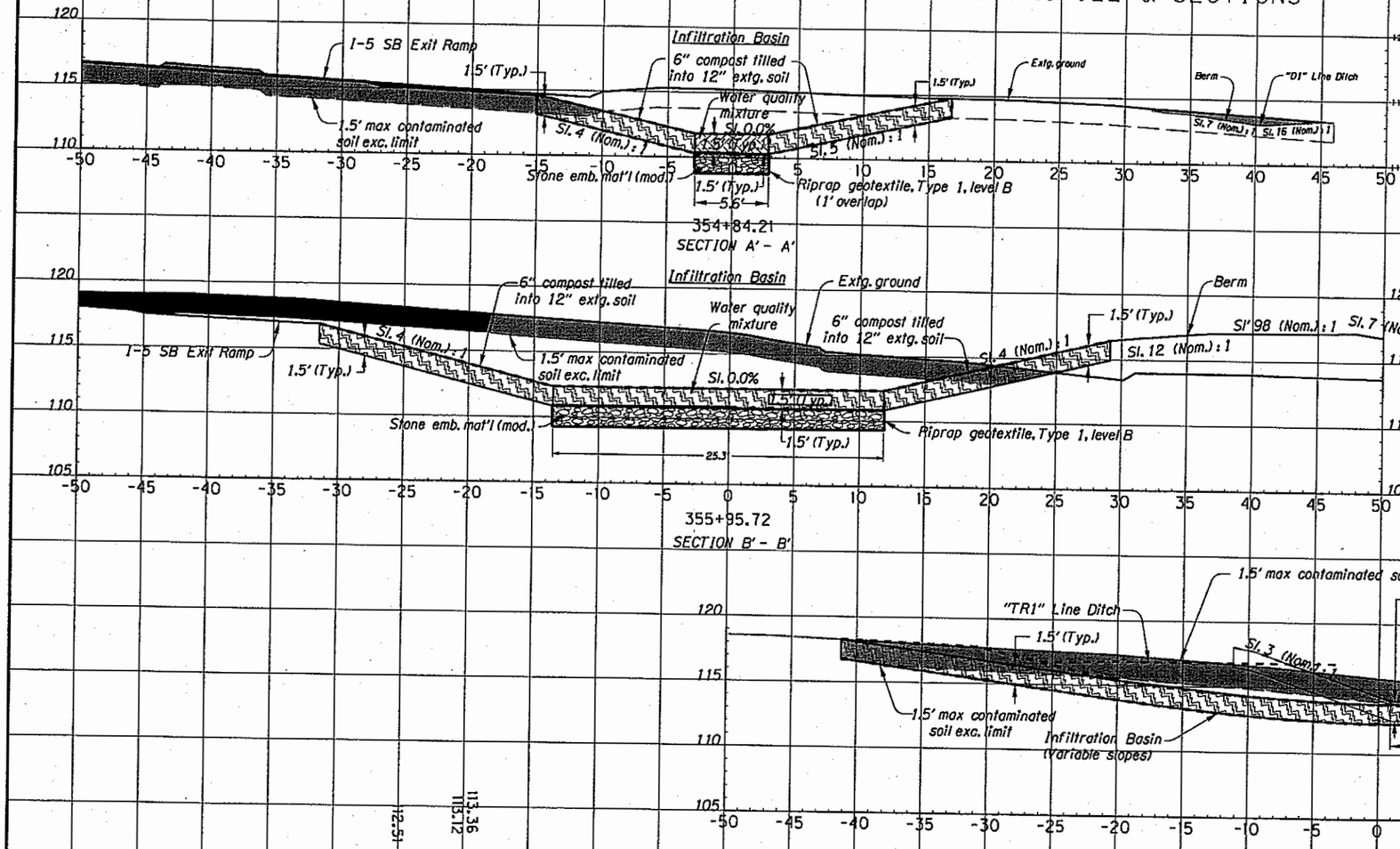
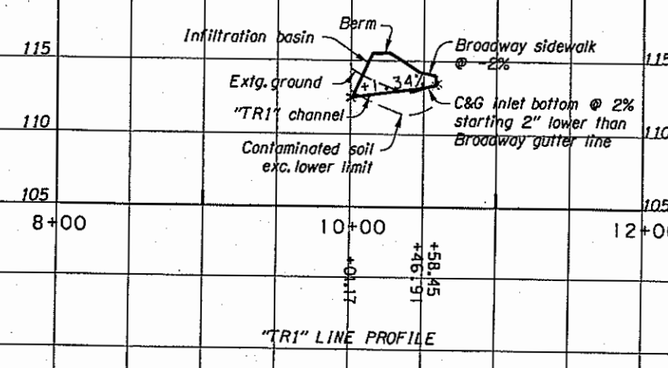
WATER QUALITY DETAILS

SHEET NO. GJ-2

Bidding Plans

"TR1" LINE PROFILE & SECTIONS





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OREGON DEPARTMENT OF TRANSPORTATION

REGION 1 - GEO-ENVIRONMENTAL SECTION

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WATER QUALITY DETAILS

SHEET NO. GJ-3

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