

# **OPERATION & MAINTENANCE MANUAL**

**DFI No. : D01170**

**Facility Type: Drywell**

**September 2018**

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## 1. Identification

Drainage Facility ID (DFI): **D01170**

Facility Type: Drywell

Construction Drawings: (V-File Number) 52V-005

Location: District: 2B

Highway No.: 026

Mile Post: 7.45 (beg./end)

Description: This facility is located along the south side of SE Powell Boulevard approximately 100 feet east of the intersection with 127<sup>th</sup> Place.

## 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 Hydraulics, Bruce Council, PE, (503) 731-8319

Consultant Designer – HDR, Christine Higgins, PE, (503) 423-3700

Facility construction: 2019

Contractor: To be Determined

#### 4. Storm Drain System and Facility Overview

Drywells are structural subsurface facilities with perforated sides or bottom used to dispose/infiltrate stormwater into the ground. Drywells are usually configured with an upstream sedimentation manhole as a form of pretreatment. Drywells have been designed to fully store and infiltrate the volume of runoff from the 25-year, 24-hour rainfall event.

This facility is located along the south side of SE Powell Boulevard approximately 100 feet east of the intersection with 127<sup>th</sup> Place in the center of the eastbound traffic lane. This facility's access manhole lid is flush with the adjacent ground, with 3 feet of drain rock surrounding the precast perforated drywell sections.

The drywell is the end point for the stormwater conveyance system. Runoff is collected with a curb inlet conveyed to a sedimentation manhole, and then discharged into the drywell where the water is infiltrated into the groundwater.

A. Maintenance equipment access:

The facility can be accessed from SE Powell Boulevard.

B. Heavy equipment access into facility:

- Allowed (no limitations)
- Allowed (with limitations)
- Not allowed

C. Special Features:

- Amended Soils
- Porous Pavers
- Liners
- Underdrains

#### 5. 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:

<https://www.oregon.gov/ODOT/GeoEnvironmental/Pages/Stormwater.aspx>

The stormwater facility maintenance table (See ODOT Maintenance Guide) should be used to maintain the facility outlined in this Operation and Maintenance Manual:

Mark as Required and always include Table 1:

- 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)

## 6. 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:

[https://www.oregon.gov/ODOT/Maintenance/Documents/ems\\_manual.pdf](https://www.oregon.gov/ODOT/Maintenance/Documents/ems_manual.pdf)

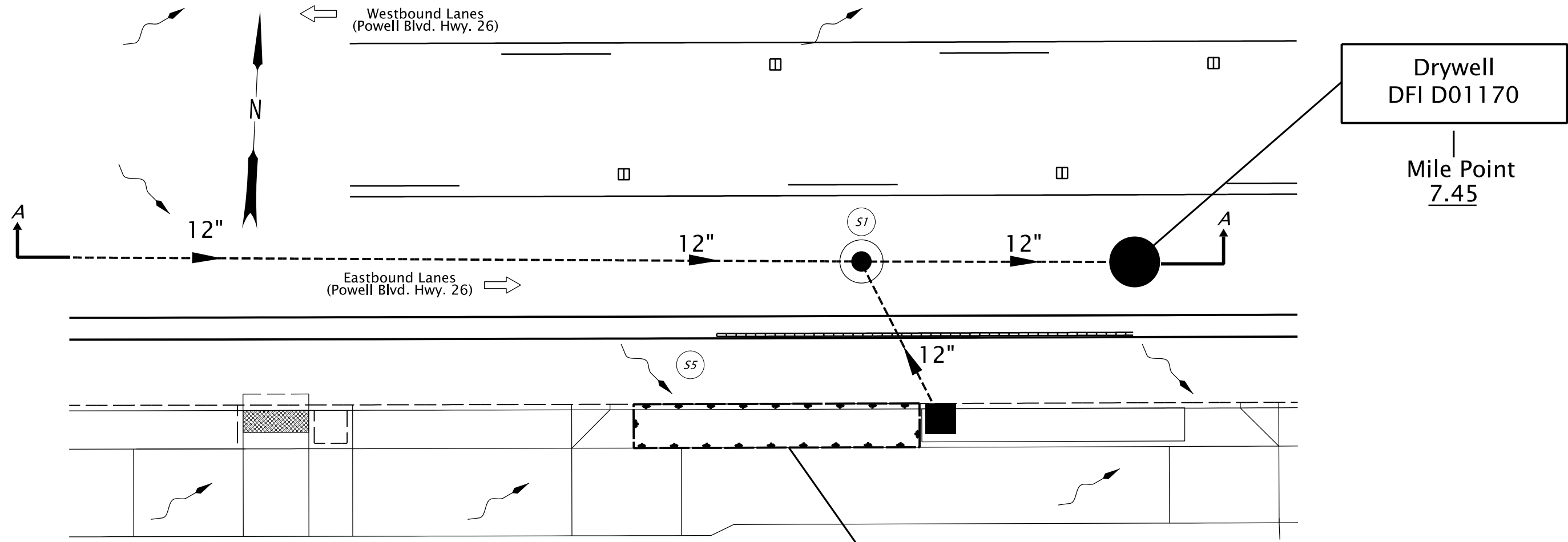
Contact any of the following for more detailed information about management of waste materials found on site:

ODOT Clean Water Unit	(503) 986-3008
ODOT Statewide Hazmat Coordinator	(503) 229-5129
ODOT Region 1 Hazmat Coordinator	(503) 731-8290
ODEQ Northwest Region Office	(503) 229-5263

# Appendix A

## Content:

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

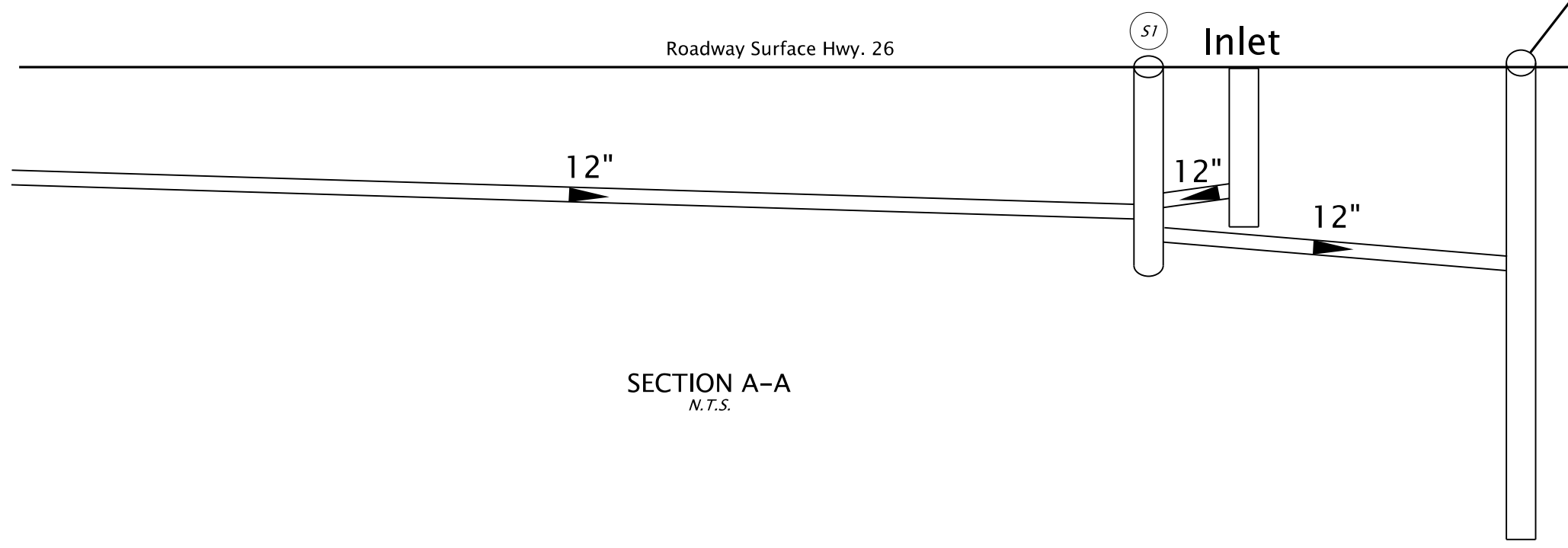


PLAN  
N.T.S.

Stormwater Planter  
DFI D01169

Drywell  
DFI D01170

Drywell  
DFI D01170  
Mile Point  
7.45



SECTION A-A  
N.T.S.

- LEGEND:
- (S1) Pretreatment Manhole
  - (S5) Pavement Sheet Flow
  - and □ Inlet
  - and ○ Manhole
  - and ○ Drywell
  - - - Storm Pipe
  - Conveyance Direction
  - ~ Pavement / Facility Flow Path
  - ← Traffic Flow Direction



Prepared By:  
CMG

Drafted By:  
CMG

**DFI D01170**  
**MAINTENANCE DISTRICT 2B HWY 026**  
**DRYWELL**  
HIGHWAY MP 7.45  
MULTNOMAH COUNTY

# Appendix B

## Content:

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

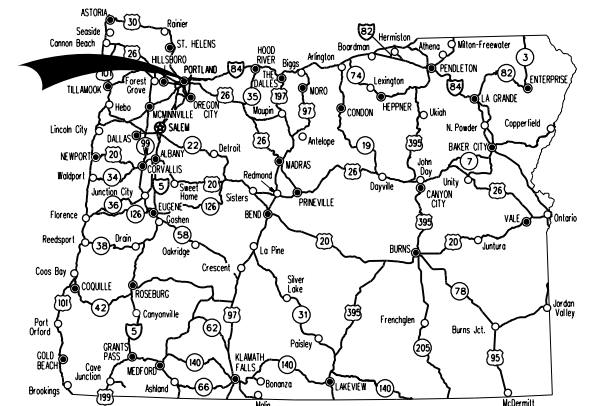


STATE OF OREGON  
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED PROJECT  
GRADING, PAVING, DRAINAGE, SIGNING,  
ILLUMINATION, SIGNALS, AND ROADSIDE DEVELOPMENT

**US26 (POWELL BLVD):  
SE 122ND AVE - SE 136TH AVE SEC.**

**MT. HOOD HIGHWAY  
MULTNOMAH COUNTY  
DECEMBER 2018**

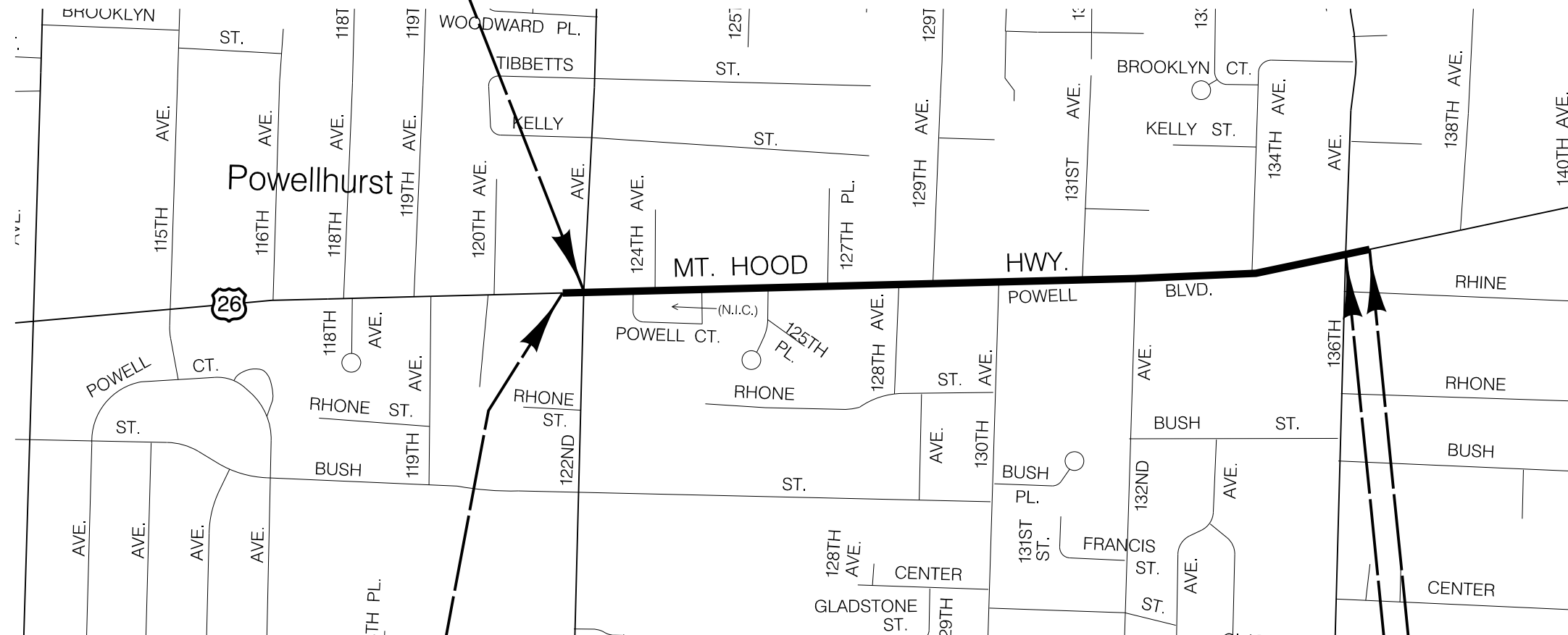


Overall Length Of Project - 0.93 Miles

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
A01	Title Sheet
A02	Index Of Sheets, Cont.
A03	Standard Drawing Numbers
A04	Plan Sheet Layout
A05 thru A07	Control Data

**BEGINNING OF PROJECT**

**STA. "P" 1106+29.96 (M.P. 7.21)**



**BEGINNING OF PAVING**

**STA. "P" 1103+68.00 (M.P. 7.16)**

**END OF PROJECT**

**STA. "P" 1142+67.74 (M.P. 7.90)**

**END OF PAVING**

**STA. "P" 1145+25.00 (M.P. 7.95)**

T. 1 S., R. 2 E., W.M.

**ATTENTION:**  
Oregon Law Requires You To Follow Rules Adopted By The Oregon Utility Notification Center. Those Rules Are Set Forth In OAR 952-001-0010 Through OAR 952-001-0090. You May Obtain Copies Of The Rules By Calling The Center. (Note: The Telephone Number For The Oregon Utility Center Is (503) 232-1987.)



**OREGON TRANSPORTATION COMMISSION**

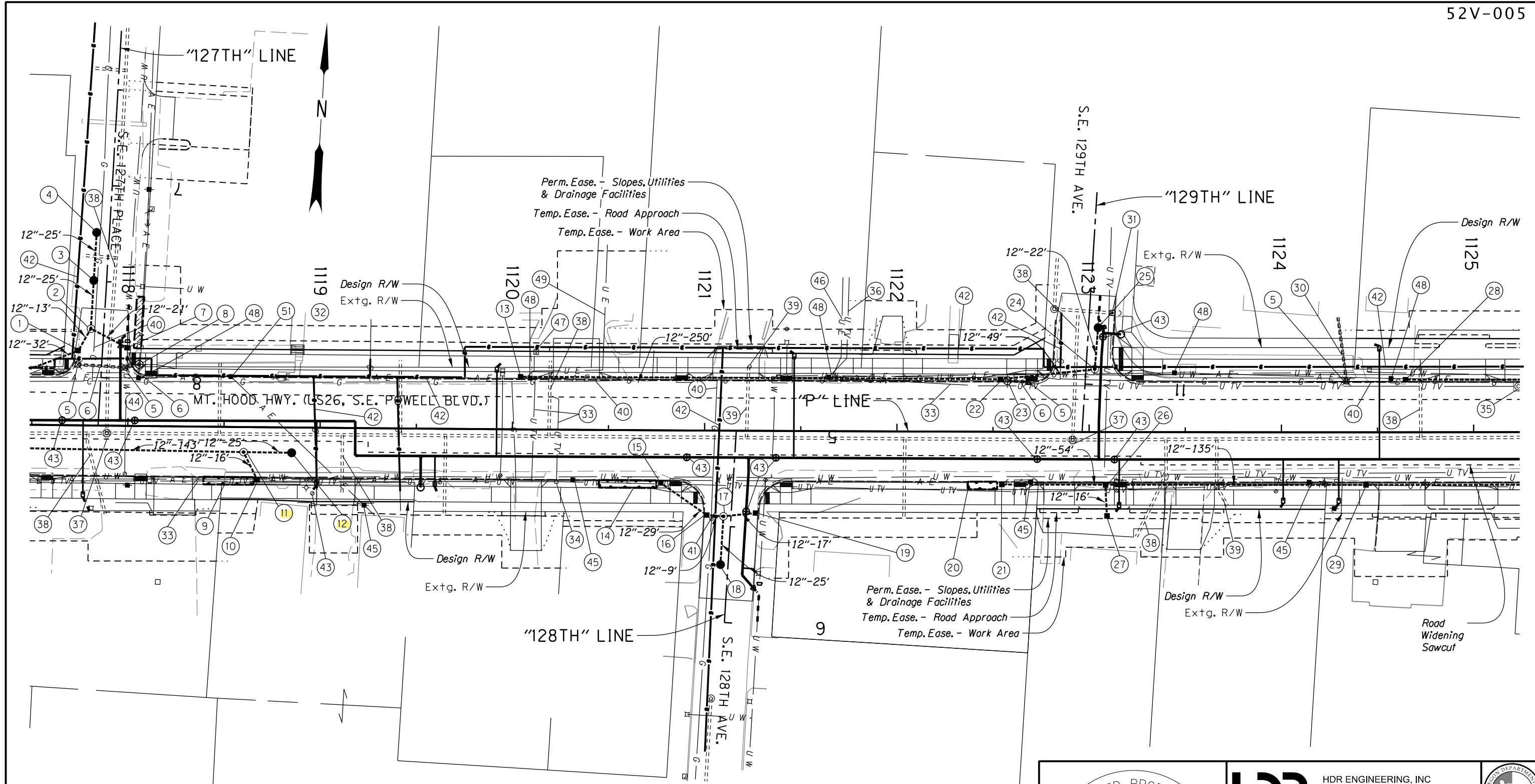
Tammy Baney	CHAIR
David Lohman	COMMISSIONER
Paula Brown	COMMISSIONER
Alando Simpson	COMMISSIONER
Sean O'Hollaren	COMMISSIONER
Matthew L. Garrett	DIRECTOR OF TRANSPORTATION

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: \_\_\_\_\_  
Signature & date  
\_\_\_\_\_  
Print name and title  
\_\_\_\_\_  
Concurrence by ODOT Chief Engineer

**US26 (POWELL BLVD):  
SE 122ND AVE - SE 136TH AVE SEC.  
MT. HOOD HIGHWAY  
MULTNOMAH COUNTY**

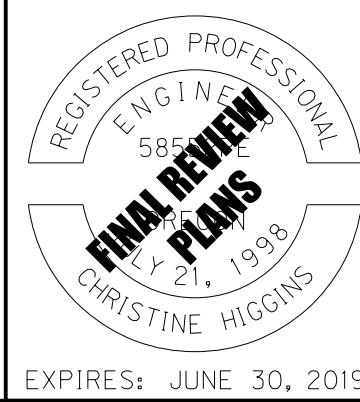
FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	HSIP-S026(126)	A01



**General Notes:**

See sheets RA01 to RA14 for the relocation of the PWB water system.  
 PWB will install the water meter in the water meter box installed by the Contractor.

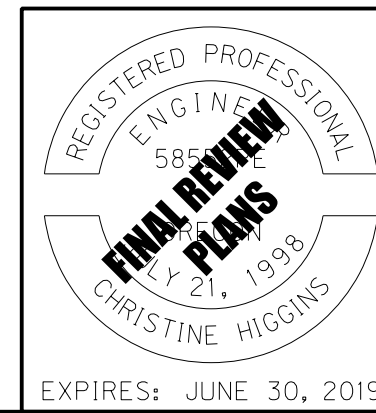
The road widening sawcut line does not reflect the sawcutting for trench resurfacing.



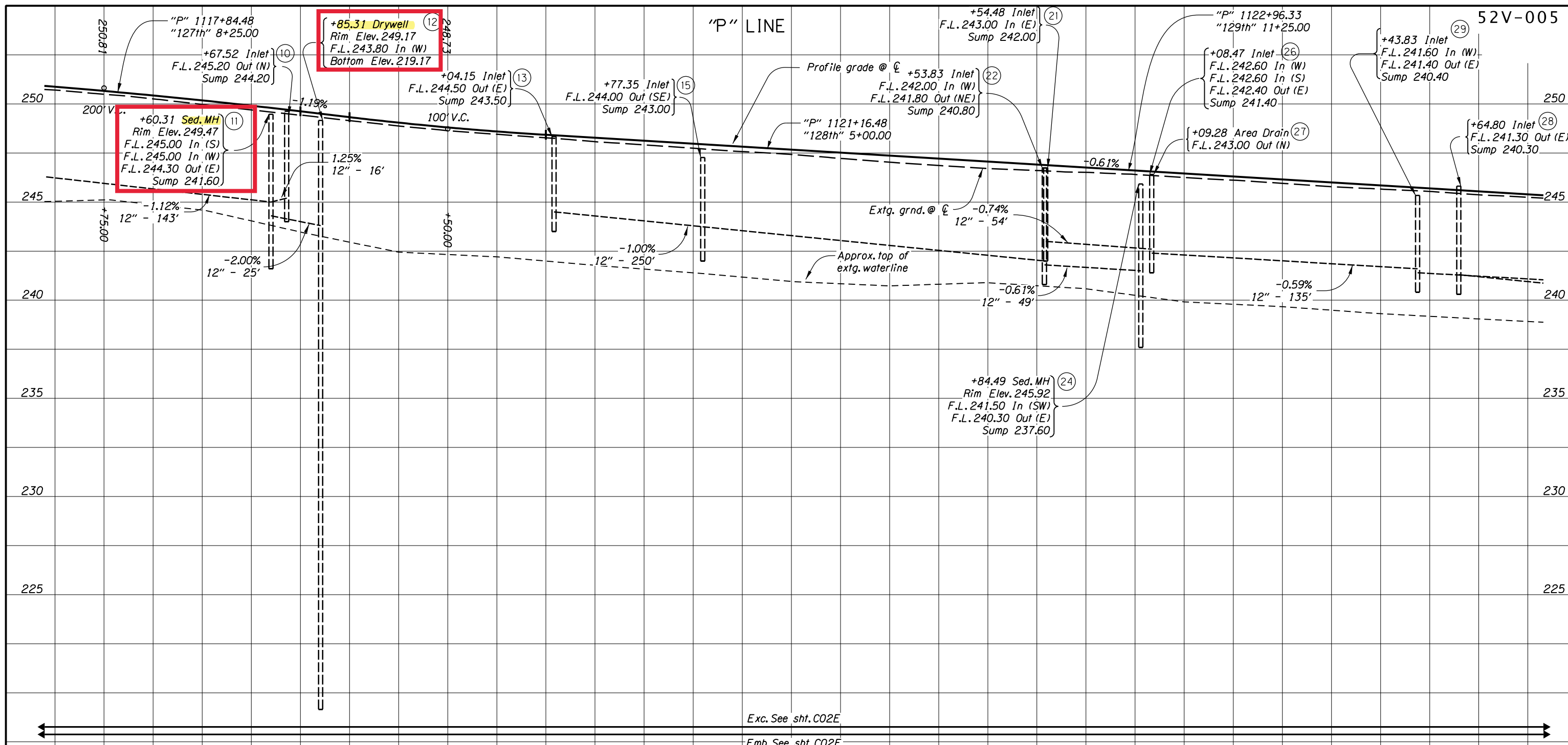
<b>HDR</b>	HDR ENGINEERING, INC 1001 SW 5TH AVENUE, SUITE 1800 PORTLAND, OR 97204-1134 503.423.3700	
	<p align="center"><b>US26 (POWELL BLVD):</b>  <b>SE 122ND AVE - SE 136TH AVE SEC.</b>          MT. HOOD HIGHWAY          MULTNOMAH COUNTY</p>	

Designer: Cory Gieseke	Reviewer: Christine Higgins
Drafter: Cory Gieseke	Checker: Kyle Donovan
<b>DRAINAGE AND UTILITIES - PLANS</b>	
SHEET NO. C04C	

- ① Sta. "127TH" 7+86.82, Rt.  
Const. type "CG-2" inlet with sump  
Inst. 12" storm sew. pipe - 32'  
5' depth
- ② Sta. "127TH" 7+75.00, 6.62' Rt.  
Const. sedimentation manhole  
Inst. 12" storm sew. pipe - 13'  
5' depth  
Inst. 12" storm sew. pipe - 21'  
5' depth  
(For details, see sht. HA01)
- ③ Sta. "127TH" 7+49.75, 6.69' Rt.  
Const. drywell  
Inst. 12" storm sew. pipe - 25'  
10' depth  
(For details, see sht. HA02)
- ④ Sta. "127TH" 7+24.75, 6.65' Rt.  
Const. drywell  
Inst. 12" storm sew. pipe - 25'  
10' depth  
Trench resurfacing - 26 sq. yd.  
(For details, see sht. HA02)
- ⑤ Remove inlet - 4
- ⑥ Remove pipe - 32'
- ⑦ Sta. "127TH" 7+84.30, Lt.  
Const. type "CG-2" inlet with sump
- ⑧ Sta. 1118+05.59, 31.97' Lt.  
Decommission underground injection control system
- ⑨ Sta. 1118+39.60 to 1118+65.60, Rt.  
Const. stormwater planter D01169  
Inst. field facility marker (Type S2) - 1  
DFI no. D01169  
(For details, see sht. HA03)
- ⑩ Sta. 1118+67.52, Rt.  
Const. type "CG-3" inlet with sump
- ⑪ Sta. 1118+60.31, 13.12' Rt.  
Const. sedimentation manhole  
Inst. 12" storm sew. pipe - 16'  
5' depth  
Inst. 12" storm sew. pipe - 143'  
5' depth
- ⑫ Sta. 1118+85.31, 13.18' Rt.  
Const. drywell  
Inst. 12" storm sew. pipe - 25'  
10' depth  
Inst. field facility marker (Type S3) - 1  
DFI no. D01170  
(For details, see sht. HA02)
- ⑬ Sta. 1120+04.15, Lt.  
Const. type "CG-3" inlet with sump
- ⑭ Sta. 1120+45.15 to 1120+75.15, Rt.  
Const. stormwater planter D01171  
Inst. field facility marker (Type S2) - 1  
DFI no. D01171  
(For details, see sht. HA03)
- ⑮ Sta. 1120+77.35, Rt.  
Const. type "CG-3" inlet with sump
- ⑯ Sta. "128TH" 5+44.71, Rt.  
Const. type "CG-2" inlet with sump  
Inst. 12" storm sew. pipe - 29'  
5' depth
- ⑰ Sta. "128TH" 5+44.71, 3.95' Rt.  
Const. sedimentation manhole  
Inst. 12" storm sew. pipe - 9', S=-4.44%  
5' depth  
Inst. 12" storm sew. pipe - 17', S=1.18%  
5' depth
- ⑱ Sta. "128TH" 5+69.93, 3.92' Rt.  
Const. drywell  
Inst. 12" storm sew. pipe - 25'  
10' depth  
(For details, see sht. HA02)
- ⑲ Sta. "128TH" 5+42.04, Lt.  
Const. type "CG-2" inlet with sump
- ⑳ Sta. 1122+37.00 to 1122+52.00, Rt.  
Const. stormwater planter D01172  
Inst. field facility marker (Type S2) - 1  
DFI no. D01172  
(For details, see sht. HA03)
- ㉑ Sta. 1122+54.48, Rt.  
Const. type "CG-3" inlet with sump
- ㉒ Sta. 1122+53.83, Lt.  
Const. type "CG-3" inlet with sump  
Inst. 12" storm sew. pipe - 250'  
5' depth
- ㉓ Sta. 1122+57.38, 26.57' Lt.  
Decommission underground injection control system
- ㉔ Sta. 1123+02.89, 32.68' Lt.  
Const. sedimentation manhole  
Inst. 12" storm sew. pipe - 49'  
5' depth
- ㉕ Sta. "129TH" 10+70.21, 4.91' Lt.  
Const. drywell  
Inst. 12" storm sew. pipe - 22'  
10' depth  
(For details, see sht. HA02)
- ㉖ Sta. 1123+08.47, Rt.  
Const. type "CG-3" inlet with sump  
Inst. 12" storm sew. pipe - 16', S=-2.50%  
5' depth  
Inst. 12" storm sew. pipe - 54'  
5' depth
- ㉗ Sta. 1123+09.28, 43.62' Rt.  
Const. area drain
- ㉘ Relocate CTL pole (by others)
- ㉙ Sta. 1124+64.80, Lt.  
Const. type "CG-3" inlet with sump
- ㉚ Sta. 1124+43.83, Rt.  
Const. type "CG-3" inlet with sump  
Inst. 12" storm sew. pipe - 135'  
5' depth
- ㉛ Abandon pipe
- ㉜ Adjust inlet - 1
- ㉝ Maintain and protect PWB Conduit No. 3  
Water pipes over 12-inch in diameter are  
not shown for confidentiality. Contact  
Portland Water Bureau for locations.
- ㉞ Relocate CTL underground communication  
line (by others)
- ㉟ Relocate CTL communications riser (by others)
- ㊱ Adjust CTL communications manhole to finish grade  
Minor Adjust Manhole - 1  
Furnish non-slip cover. Box-out frame in PCCP.
- ㊲ Relocate Comcast underground communications  
line (by others)
- ㊳ Adjust BES sanitary manhole to finish grade  
Minor Adjust Manhole - 2  
Method "B"
- ㊴ Maintain and protect BES sanitary line
- ㊵ Adjust BES sanitary cleanout - 1 valve box
- ㊶ Relocate NWN gas line (by others)
- ㊷ Adjust NWN gas valve box to finish grade - 1
- ㊸ Maintain and protect NWN gas line
- ㊹ Adjust PWB water valve box to finish grade - 9
- ㊺ Pothole buried PWB manhole - 1
- ㊻ Relocate PGE pole (by others)
- ㊼ Relocate PGE underground electric line (by others)
- ㊽ Relocate PGE junction box (by others)



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<b>US26 (POWELL BLVD): SE 122ND AVE - SE 136TH AVE SEC.</b> MT. HOOD HIGHWAY MULTNOMAH COUNTY		
Designer: Cory Gieseke Drafter: Cory Gieseke	Reviewer: Christine Higgins Checker: Kyle Donovan	SHEET NO. <b>C04D</b>
<b>DRAINAGE AND UTILITIES - NOTES</b>		



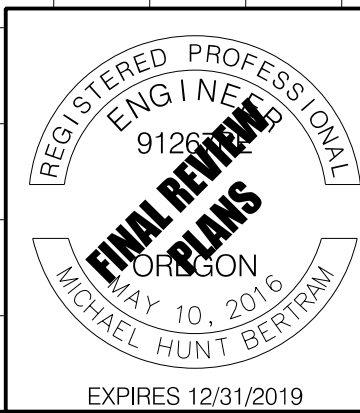
52V-005

**+60.31 Sed. MH (11)**  
 Rim Elev. 249.47  
 F.L. 245.00 In (S)  
 F.L. 245.00 In (W)  
 F.L. 244.30 Out (E)  
 Sump 241.60

**+85.31 Drywell (12)**  
 Rim Elev. 249.17  
 F.L. 243.80 In (W)  
 Bottom Elev. 219.17

**+84.49 Sed. MH (24)**  
 Rim Elev. 245.92  
 F.L. 241.50 In (SW)  
 F.L. 240.30 Out (E)  
 Sump 237.60

Note:  
 Maintain and protect Portland Water Bureau conduit No. 3  
 Location shown is approximate. Actual depth may vary.  
 Field verify actual depth, prior to excavation.  
 PWB inspectors will need to be on-site prior  
 to any potholing of waterlines.

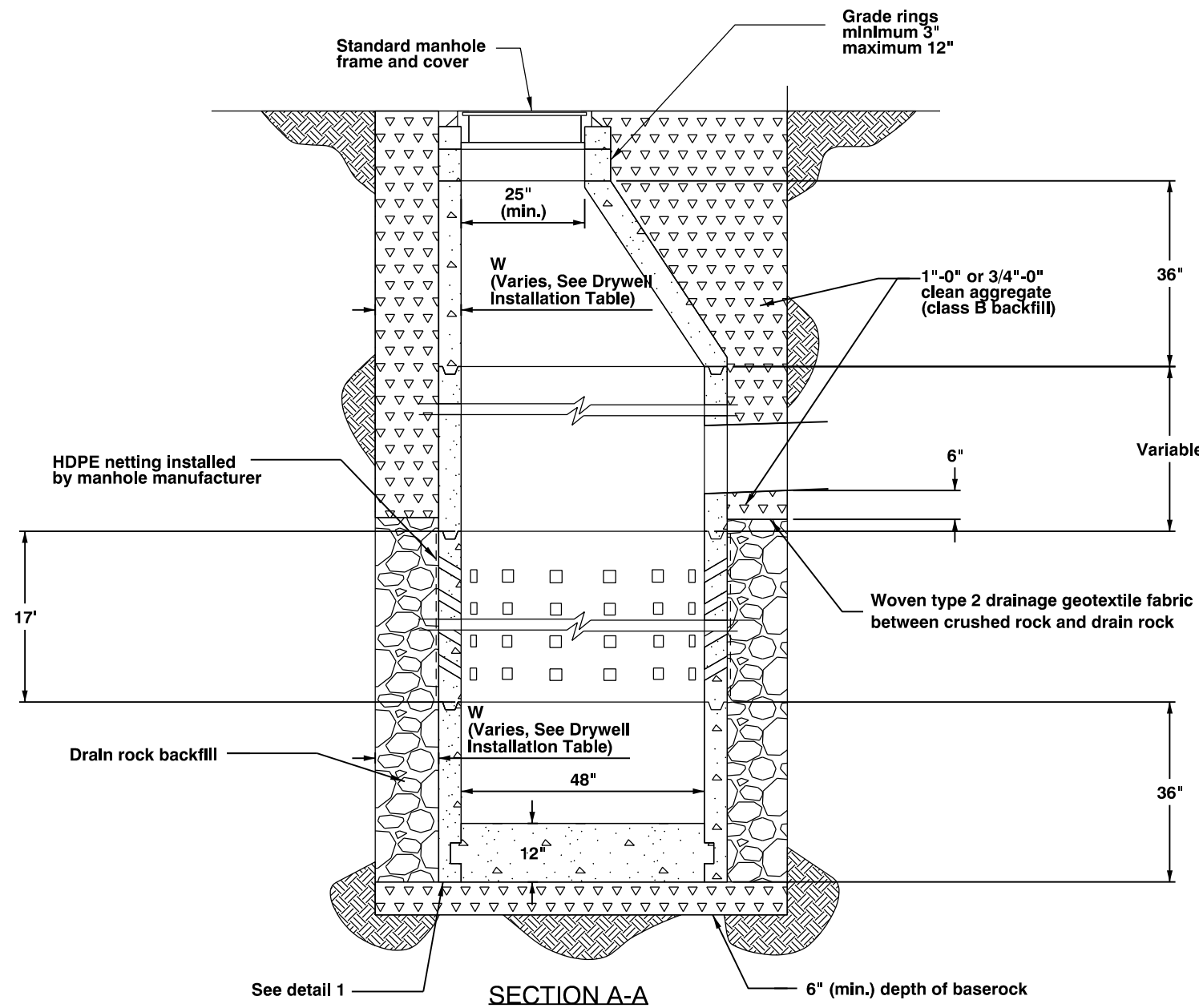
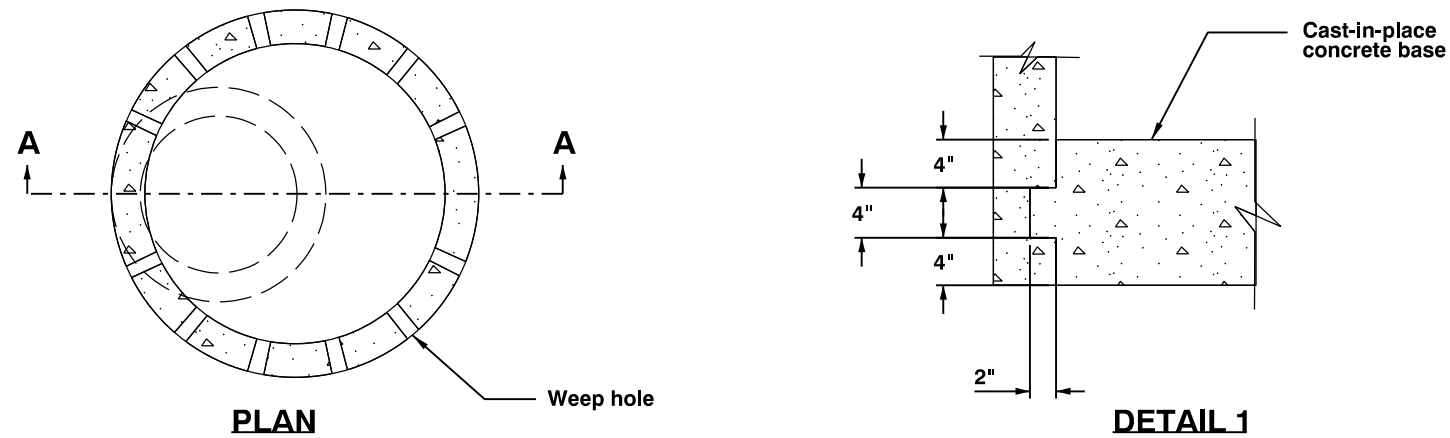


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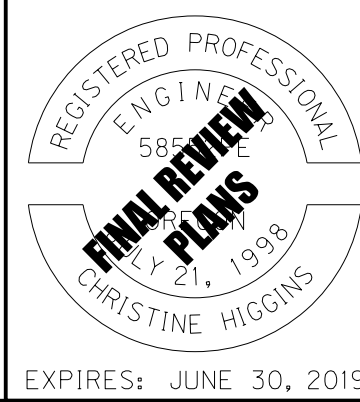
Designer: Mark Taylor      Reviewer: John Wolf  
 Drafter: Mark Taylor      Checker: Dustin Cooley

**PROFILE**      SHEET NO. C04E



DRYWELL INSTALLATION TABLE						
DRAWING REFERENCE	STATIONING	OFFSET	DFI no.	W (FT)	DEPTH (FT)	MIN. INFILTRATION CAPACITY REQUIRED
C02C	Sta. 1105+22.92	51.89' Lt.	D01165	3.00	30.00	90 GPM
C02C	Sta. "122ND" 8+50.45	34.99' Rt.	N/A	4.00	30.00	110 GPM
C02C	Sta. "123RD" 15+66.59	5.51' Lt.	N/A	3.00	30.00	90 GPM
C03C	Sta. "124TH" 5+90.88	8.11' Lt.	N/A	3.00	30.00	90 GPM
C03C	Sta. 1111+36.53	26.96' Rt.	D01168	3.00	30.00	90 GPM
C03C	Sta. "125TH" 26+06.80	9.40' Lt.	N/A	3.00	30.00	90 GPM
C04C	Sta. "127TH" 7+49.75	6.69' Rt.	N/A	4.50	30.00	120 GPM
C04C	Sta. "127TH" 7+24.75	6.65' Rt.	N/A	4.50	30.00	120 GPM
C04C	Sta. 1118+85.31	13.18' Rt.	D01170	3.00	30.00	90 GPM
C04C	Sta. "128TH" 5+69.93	3.92' Rt.	N/A	3.00	30.00	90 GPM
C04C	Sta. "129TH" 10+70.21	4.91' Lt.	N/A	4.00	30.00	110 GPM
C05C	Sta. "130TH" 30+72.83	6.64' Rt.	N/A	4.00	30.00	110 GPM
C05C	Sta. "131ST" 5+43.36	6.32' Lt.	N/A	4.50	30.00	120 GPM
C06C	Sta. "132ND" 10+71.74	6.31' Lt.	N/A	3.00	30.00	90 GPM
C06C	Sta. "132ND" 10+96.94	6.30' Lt.	N/A	3.00	30.00	90 GPM
C06C	Sta. 1133+69.50	39.33' Lt.	D01174	3.00	30.00	90 GPM
C06C	Sta. 1133+94.50	39.65' Lt.	D01175	3.00	30.00	90 GPM
C06C	Sta. 1135+50.50	12.08' Rt.	D01176	3.00	30.00	90 GPM
C06C	Sta. 1136+86.40	34.93' Rt.	D01177	3.00	30.00	90 GPM
C06C	Sta. 1137+97.55	41.77' Lt.	D01178	4.50	30.00	120 GPM
C07C	Sta. 1140+78.84	42.65' Lt.	D01180	3.00	30.00	90 GPM
C07C	Sta. 1141+03.92	42.67' Lt.	D01181	3.00	30.00	90 GPM
C07C	Sta. 1144+04.38	42.38' Rt.	D01183	3.00	30.00	90 GPM

- NOTES:
- All precast products shall conform to requirements of ASTM C478.
  - See Std. Drg. RD336 for manhole steps details.
  - Provide a flexible joint for all connected pipes:
    - Rigid pipe Δ 36 inches - 18 inches (max.) from outside wall.
    - Flexible pipe - 18 inches (max.) from the outside wall unless a flexible joint fitting is installed and accepted.
  - Provide 12 inches (min.) of separation between a section joint and the outer edge of any opening.



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 MT. HOOD HIGHWAY  
 MULTNOMAH COUNTY**

Designer: Cory Gieseke Review: Christine Higgins  
 Drafter: Ryan Sheehan Checker: Kyle Donovan

**DRAINAGE DETAILS** SHEET NO. HAO2