

# **OPERATION & MAINTENANCE MANUAL**

**DFI No. : D01115**

**Facility Type: Water Quality  
Bioretention Pond**

**November, 2017**

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## 1. Identification

Drainage Facility ID (DFI): **D01115**  
Facility Type: Water Quality Bioretention Pond  
Construction Drawings: (V-File Number) 51V-004  
Location: District: 10  
Highway No.: 041  
Mile Post: (15.81 to 15.82) Hwy 041  
Description: This facility is located in the Southeast quadrant of the OR 126/Tom McCall Roundabout.

## 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: HHPR, Ben Austin, PE, 503-221-1131

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

This Bioretention pond is a flat bottom depressions that treats and provides temporary storage while stormwater is disposed of entirely via infiltration. Treatment is achieved as stormwater travels horizontally through a 24" thick layer of imported water quality soil mix which filters pollutants. Due the arid climate and lack of irrigation infrastructure, the water quality soil will be topped with 4" of rock mulch to reduce erosion and trap larger pollutants. The filtration process removes a variety of pollutants through physical, biological, and chemical treatment mechanisms. The ponds are sized to retain peak runoff volumes through the 100-year storm events while promoting infiltration as the disposal method.

Stormwater from Tom McCall is collected by 2 sets of flanking inlets (6 total) and from 2 inlets located on the east leg of the roundabout and is piped to the pond in 12" storm sewers, see Appendix A.

A. Maintenance equipment access:

Access to the facility can be obtained from the side of Highway 126 or Tom McCall Rd

B. Heavy equipment access into facility:

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

C. Special Features:

Amended Soils  
Porous Pavers  
Liners  
Underdrains

#### **5. Facility Haz Mat Spill Feature(s)**

The Water Quality Bioretention Pond cannot be used to store a volume of liquid. If a spill occurs, cover any effected inlet(s) and plug the storm sewer pipe at the inlet or pipe outfall in the pond.

#### **6. Auxiliary Outlet (High Flow Bypass)**

There is no auxiliary outlet for this facility.

## 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)

Maintenance should include monitoring of the rock mulch for sediment or debris that may clog the infiltration capacity. Noxious weeds should be removed manually. Rock replacement is required if water quality soil becomes exposed. If sediments/debris completely cover the rock mulch surface, remove sediments/debris or remove and replace the rock mulch.

## 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:

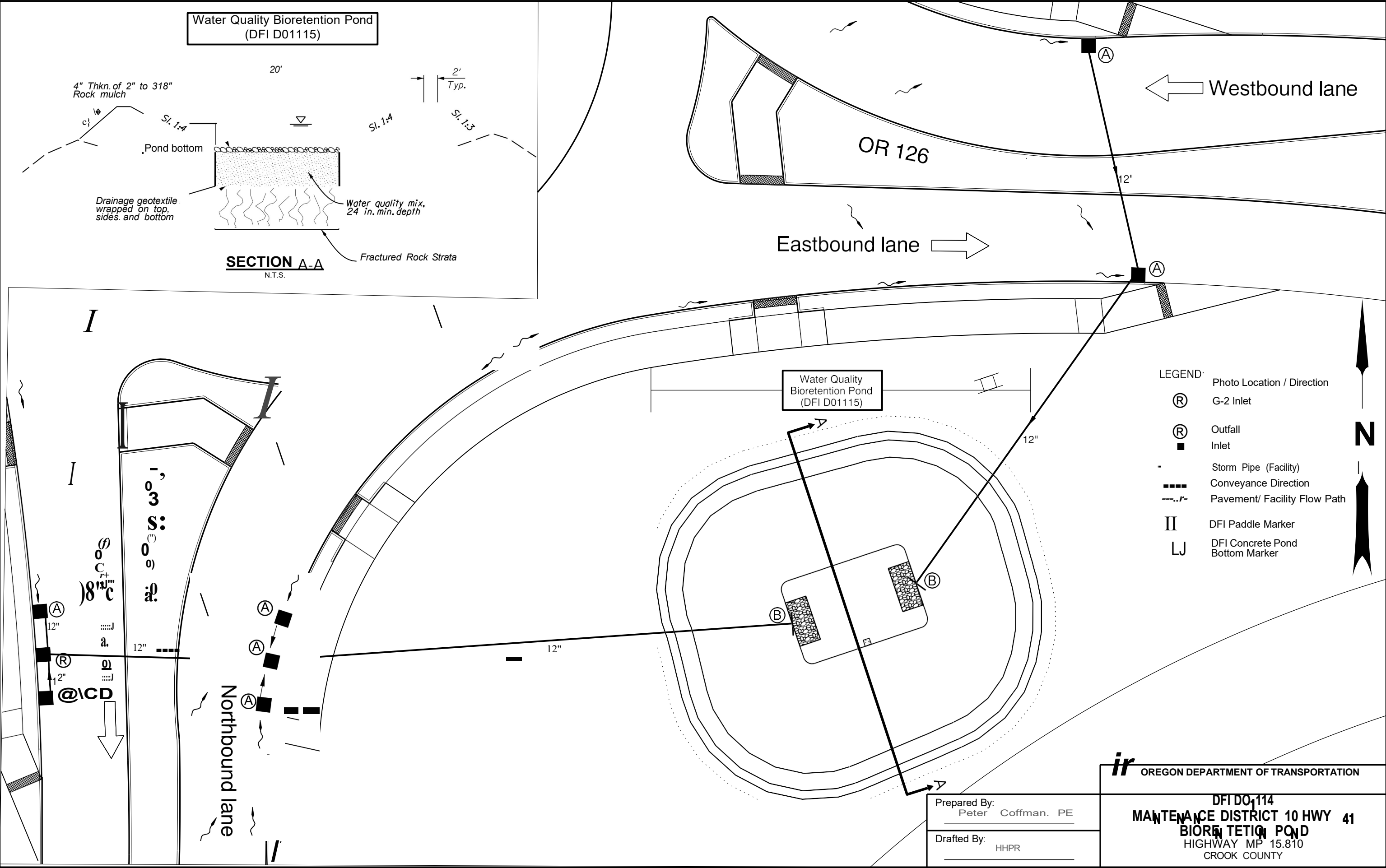
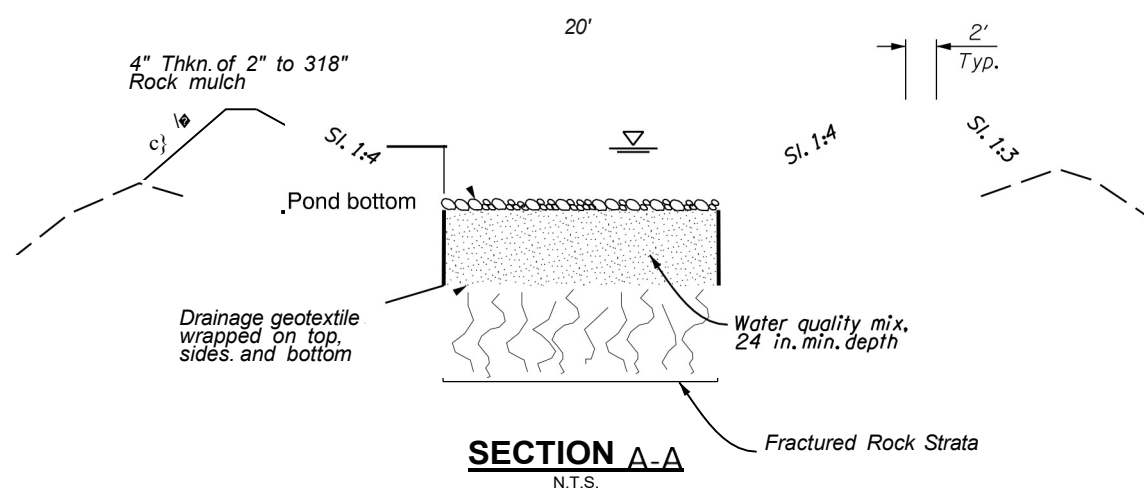
|                                   |                |
|-----------------------------------|----------------|
| ODOT Clean Water Unit             | (503) 986-3008 |
| ODOT Statewide Hazmat Coordinator | (503) 229-5129 |
| ODOT Region Hazmat Coordinator    | (541) 388-6088 |
| ODEQ Northwest Region Office      | (503) 229-5263 |

# Appendix A

## Content:

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

Water Quality Bioretention Pond  
(DFI D01115)



- LEGEND:
- (R) Photo Location / Direction
  - (R) G-2 Inlet
  - (R) Outfall
  - Inlet
  - Storm Pipe (Facility)
  - Conveyance Direction
  - .-.- Pavement/ Facility Flow Path
  - II DFI Paddle Marker
  - LJ DFI Concrete Pond Bottom Marker



Prepared By:  
Peter Coffman, PE

Drafted By:  
HHPR

**ir** OREGON DEPARTMENT OF TRANSPORTATION

**DFI D01114**  
**MAINTENANCE DISTRICT 10 HWY 41**  
**BIORETENTION POND**  
 HIGHWAY MP 15.810  
 CROOK COUNTY



# Appendix B

## Content:

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

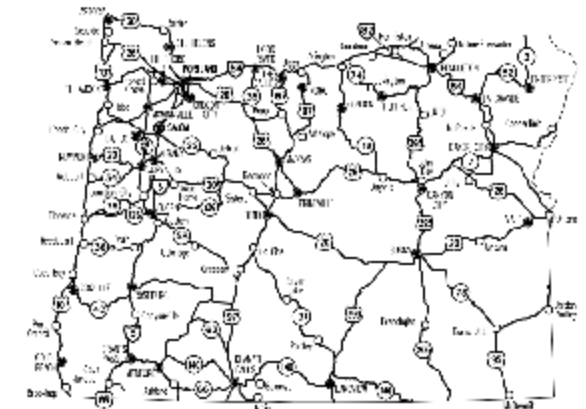
| INDEX OF SHEETS |  |
|-----------------|--|
| SHEET NO.       | DESCRIPTION                            |
| A01             | Title Sheet                            |
| A02             | Index Of Sheets Cont. & Std. Drq. Nos. |

STATE OF OREGON  
 DEPARTMENT OF TRANSPORTATION  
 PLANS FOR PROPOSED PROJECT  
 GRADING, DRAINAGE, PAVING, SIGNING, & ILLUMINATION

# FFO-OR126@ TOM MCCALL ROAD(PRINEVILLE) PROJECT

## OCHOCO HIGHWAY

CROOK COUNTY  
 NOVEMBER 2017



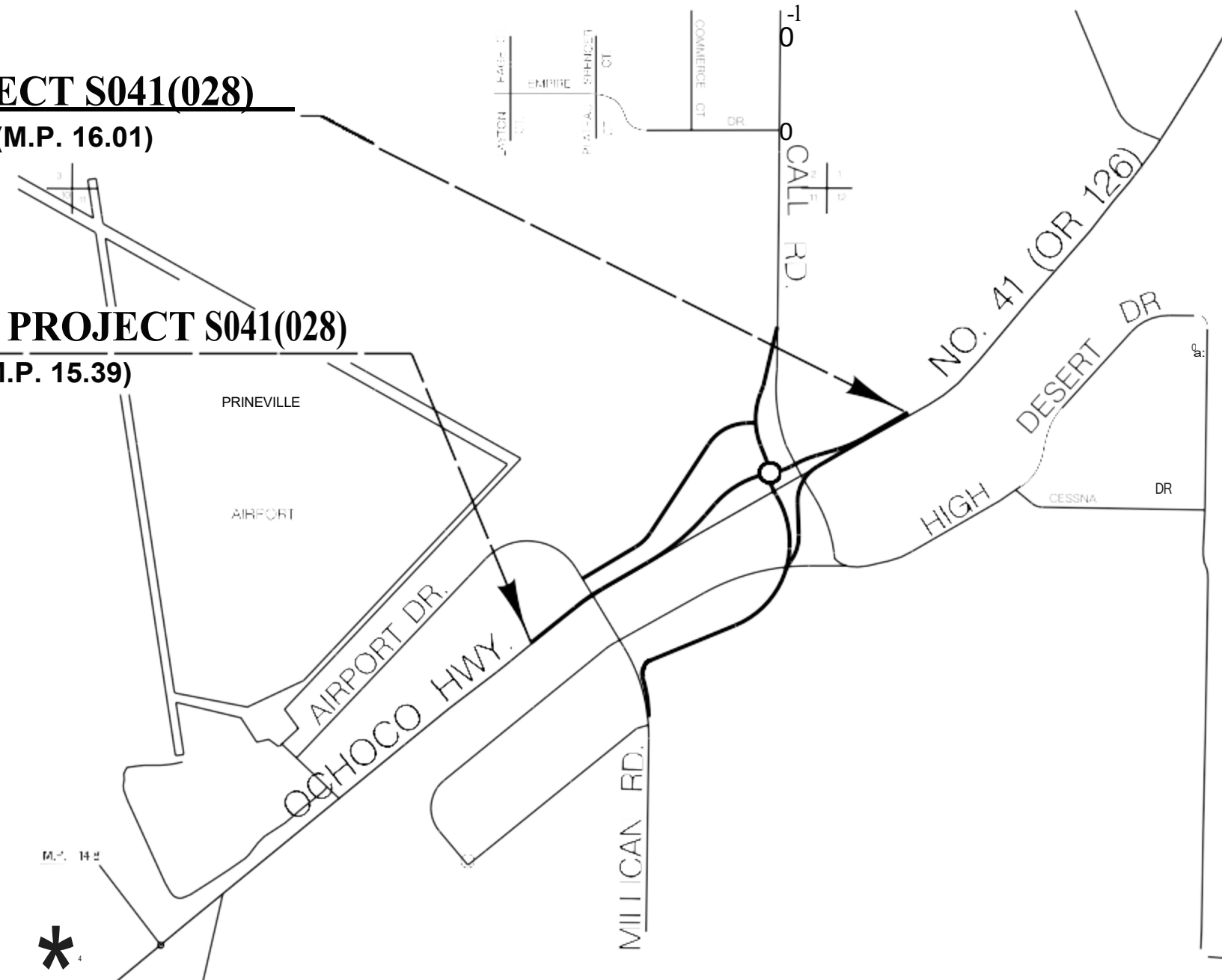
Overall Length Of Project - 0.62 Miles

**ATTENTION**  
 Oreoon Low ReQUIRES You To Follow Rules Adopted By The Oreoon 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 Colling The Center. (Note: The Telephone Number For The Oregon Utility Center Is <503> 232-1987.>



**END OF PROJECT S041(028)**  
 STA. "R" 658+36.81 (M.P. 16.01)

**BEGINNING OF PROJECT S041(028)**  
 STA. "R" 625+97.14 (M.P. 15.39)



T. 15S., R. 15E., W.M.



PLANS PREPARED FOR  
 OREGON DEPARTMENT OF TRANSPORTATION

**Harper Houf Peterson Righellis Inc.**

ENGINEERS • PLANNERS • LANDSCAPE ARCHITECTS • SURVEYORS

OREGON TRANSPORTATION COMMISSION

- Tommy Boney CHAIR
- David Lohman COMMISSIONER
- Paulo Brown COMMISSIONER
- Alonso Simpson COMMISSIONER
- Sean O'Holoren 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

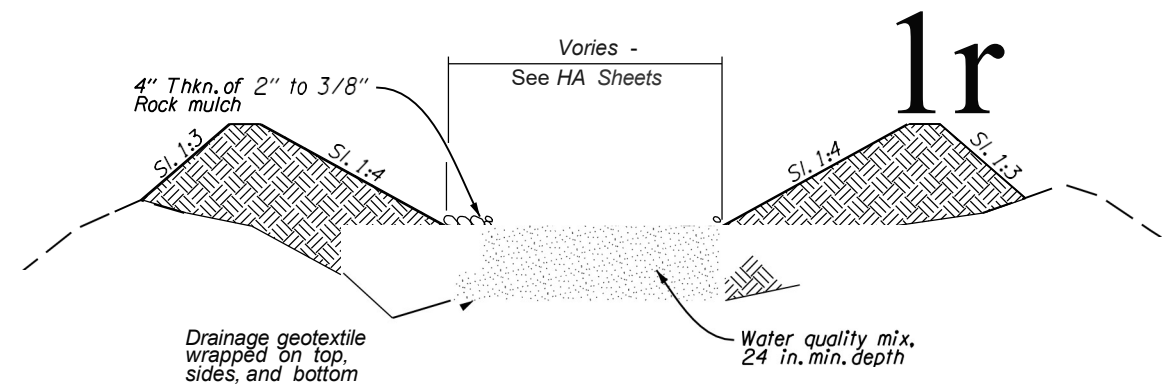
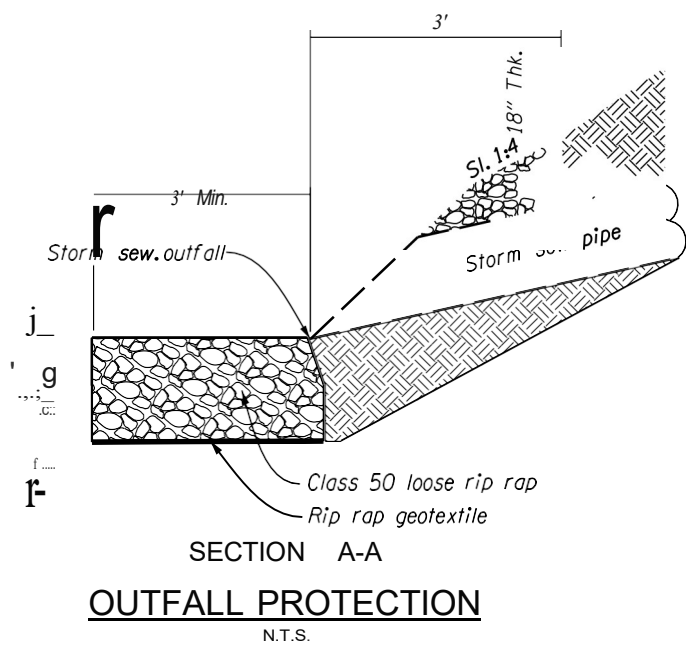
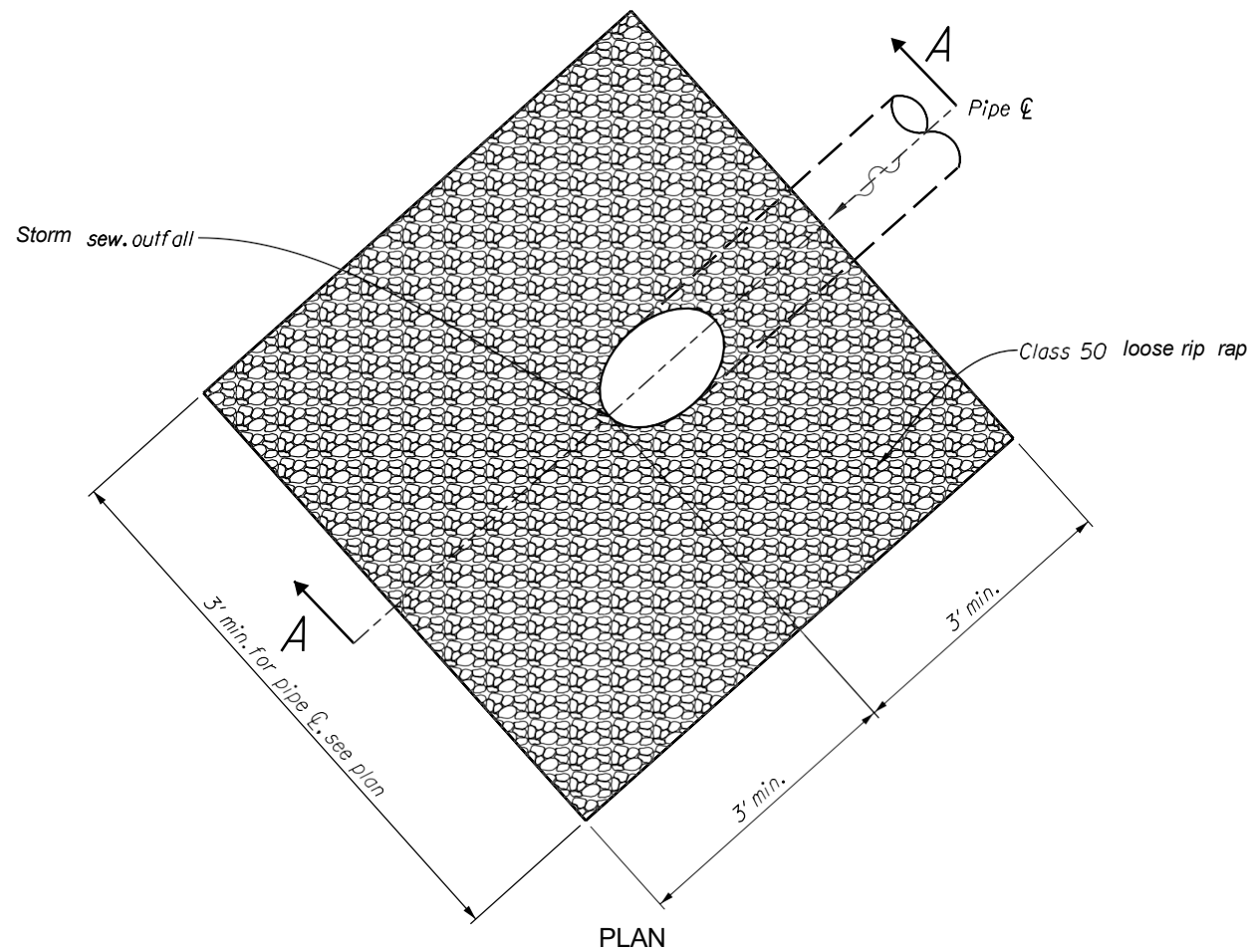
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 Print name and title

\_\_\_\_\_  
 Concurrence by ODOT Chief Engineer

**FFO-OR126 @ TOM MCCALL ROAD(PRINEVILLE) PROJECT**

OCHOCO HIGHWAY  
 CROOK COUNTY

|                                |                |           |
|--------------------------------|----------------|-----------|
| FEDERAL HIGHWAY ADMINISTRATION | PROJECT NUMBER | SHEET NO. |
| OREGON DIVISION                | 00410001       | A01       |



**BIORETENTION POND SECTION**

N.T.S.  
(Typical cross-section in Oregon climate zones 5, 6, 7, 8, and 9)

REGISTERED PROFESSIONAL  
ENGINEER  
70,863  
OREGON  
JUL. 11, 2006  
BENJAMIN R. STIN

EXPIRES: 12/31/17

**HP** Harper Houf Peterson Righellis Inc.

250N.W.111th Ave., Suite 404 Bend, OR 97703 PHONE: 541.318.1161 www.hhr.com FAX: 541.318.1141

**FFO-OR126@TOM MCCALL ROAD (PRINEVILLE) PROJECT**

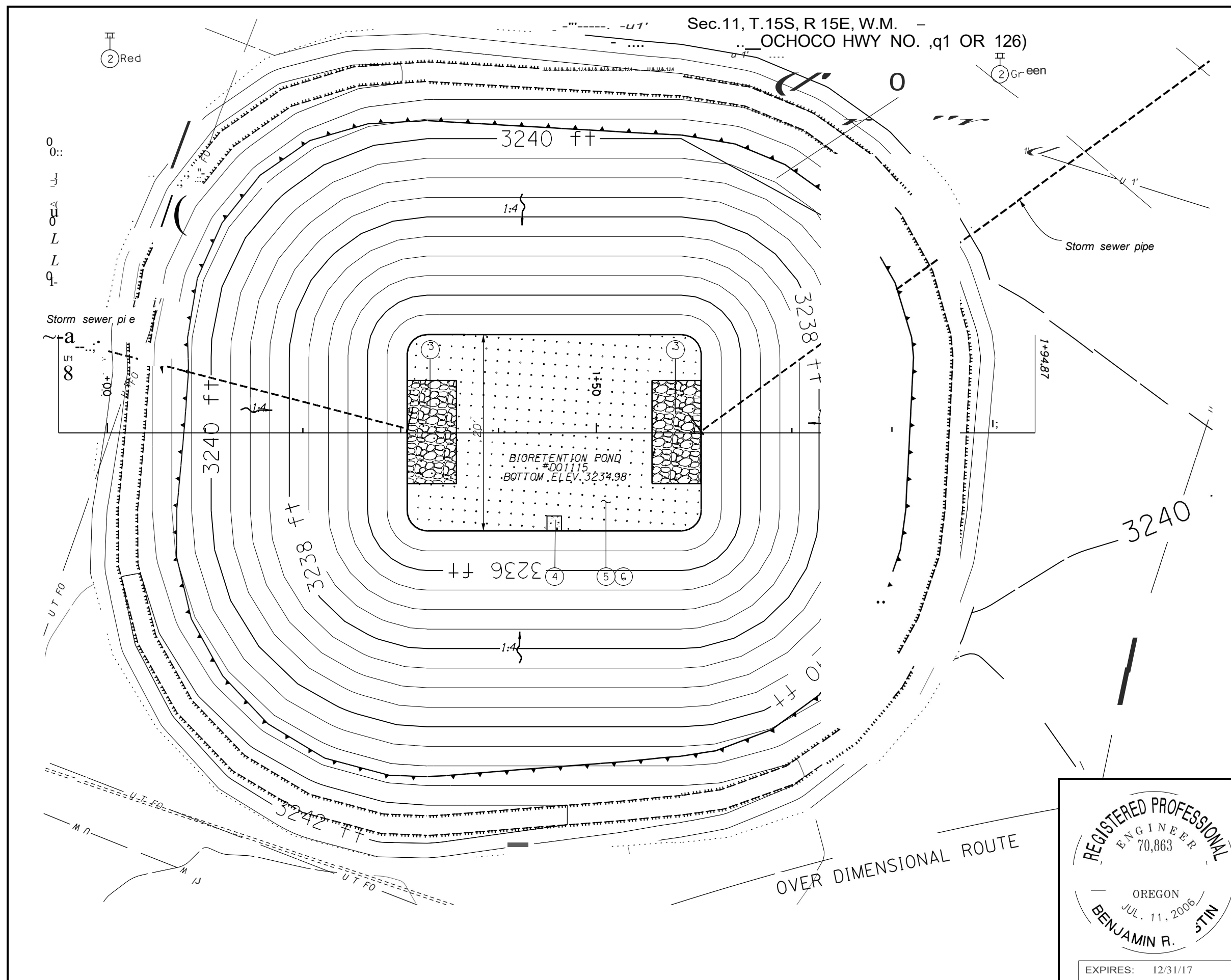
OCHOCO HIGHWAY  
CROOK COUNTY

Designer: Benjamin R. Austin Review: Neil A. Waibel  
Drafter: Todd D. Fleming Checker: Peter G. Coffman

**STORMWATER DETAILS**

SHEET NO.

Sec.11, T.15S, R.15E, W.M. -  
OCHOCO HWY NO. ,q1 OR 126)



- (D) Const. Bioretention pond #DO1115  
(For profile, see sht. HA04AJ  
(For details, see sht. HA04AJ)
- 0 Inst. stormwater field marker, Type S1  
Place 4' to 6' behind edge of pavement or  
curb/bock of walk
- OE/ #DOJJ 15  
(See std. drg. no. RD399J)
- (Ci) Const. outfall protection  
(For details, see sht. HA01J)
- 0 Sta. "R" 648+48.66, 113.97' Rt  
Const. 1.5' X 1.5' Cone. pod  
Stomp, "Pond Bottom 3234.98"
- (R) Inst. rock mulch  
nom. thkn - 4"  
On bottom of pond
- (R) Fracture rock 5' below bottom of excavation

**LEGEND**

- Bioretention Pond Top
- ====•==== Bioretention Pond Berm
- [Rip Rap Symbol] Rip Rap
- [Dotted Line Symbol] Limits of Rock Fracture

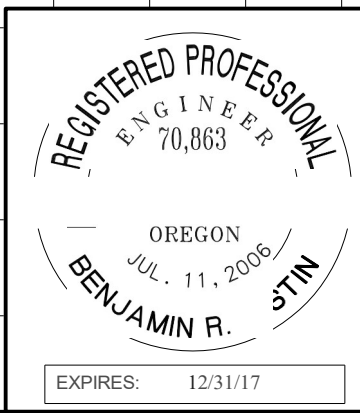
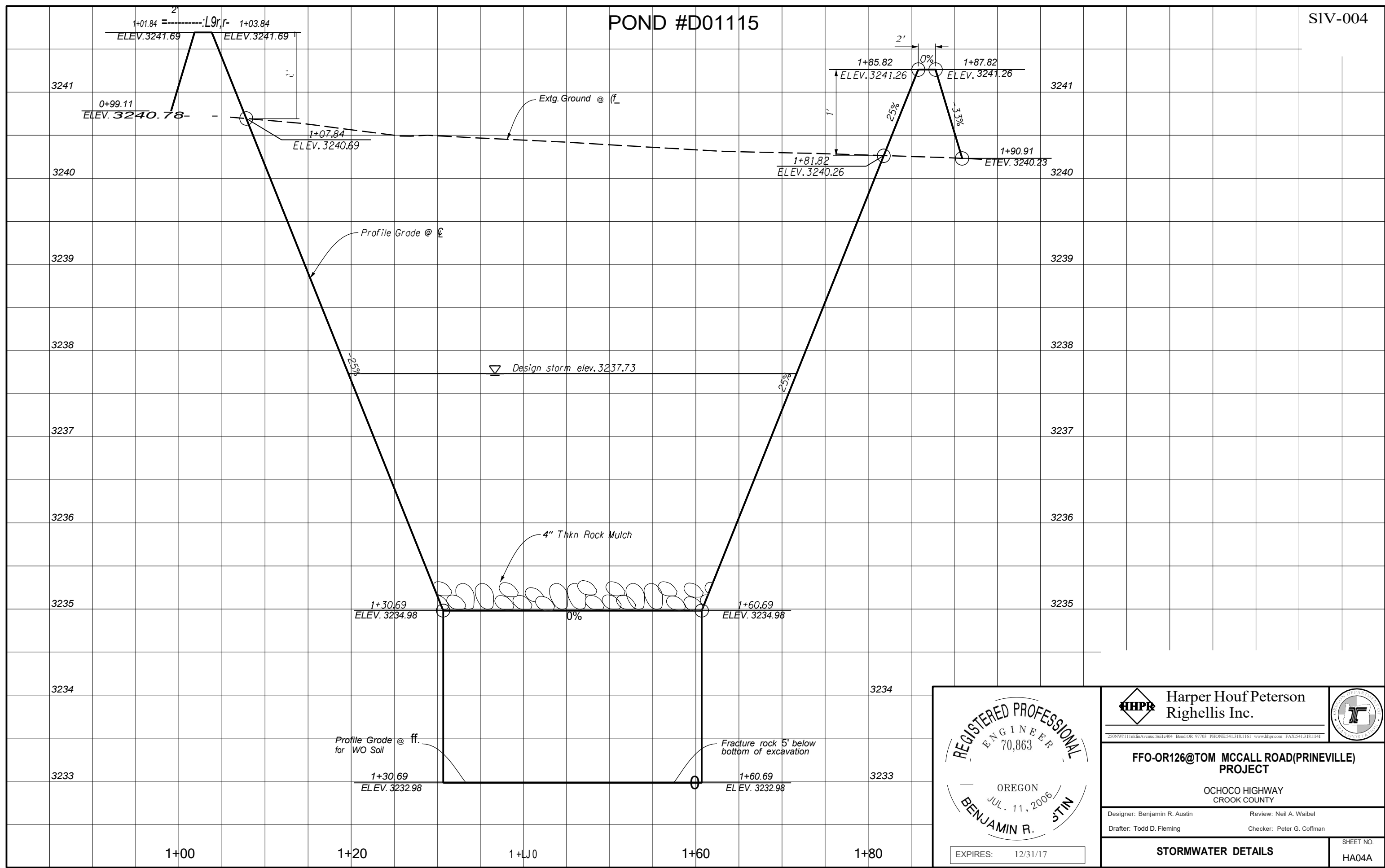
**REGISTERED PROFESSIONAL**  
ENGINEER  
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OREGON  
JUL. 11, 2006  
**BENJAMIN R. STIN**



EXPIRES: 12/31/17

|  |                           |                   |
|--|---------------------------|-------------------|
| <b>Harper Houf Peterson<br/>Righellis Inc.</b>   |                           |                   |
| 250N.W.111thAve., Suite 404 Bend, OR 97703 PHONE: 541.318.1161 www.hhp.com FAX: 541.318.1141 |                           |                   |
| <b>FFO-OR126@TOM MCCALL ROAD (PRINEVILLE)<br/>PROJECT</b>                                    |                           |                   |
| OCHOCO HIGHWAY<br>CROOK COUNTY   |                           |                   |
| Designer: Benjamin R. Austin   | Review: Neil A. Waibel    |                   |
| Drafter: Todd D. Fleming   | Checker: Peter G. Coffman |                   |
| <b>STORMWATER DETAILS</b>  |                           | SHEET NO.<br>HA04 |

# POND #D01115

SIV-004



|  |  |   |
|--|--|---|
|  <b>Harper Houf Peterson Righellis Inc.</b> |  |  |
| <small>250NW111thAve, Suite 404 Bend, OR 97703 PHONE: 541.318.1161 www.hhp.com FAX: 541.318.1141</small>                         |  |   |
| <b>FFO-OR126@TOM MCCALL ROAD (PRINEVILLE) PROJECT</b>  |  |   |
| <b>OCHOCO HIGHWAY CROOK COUNTY</b>   |  |   |
| <small>Designer: Benjamin R. Austin</small>  | <small>Review: Neil A. Waibel</small>    |   |
| <small>Drafter: Todd D. Fleming</small>  | <small>Checker: Peter G. Coffman</small> |   |
| <b>STORMWATER DETAILS</b>  |  | <small>SHEET NO. HA04A</small>  |