

OPERATION & MAINTENANCE MANUAL

Detention Pond

Manual prepared: 08/2020

DFI No. D01242

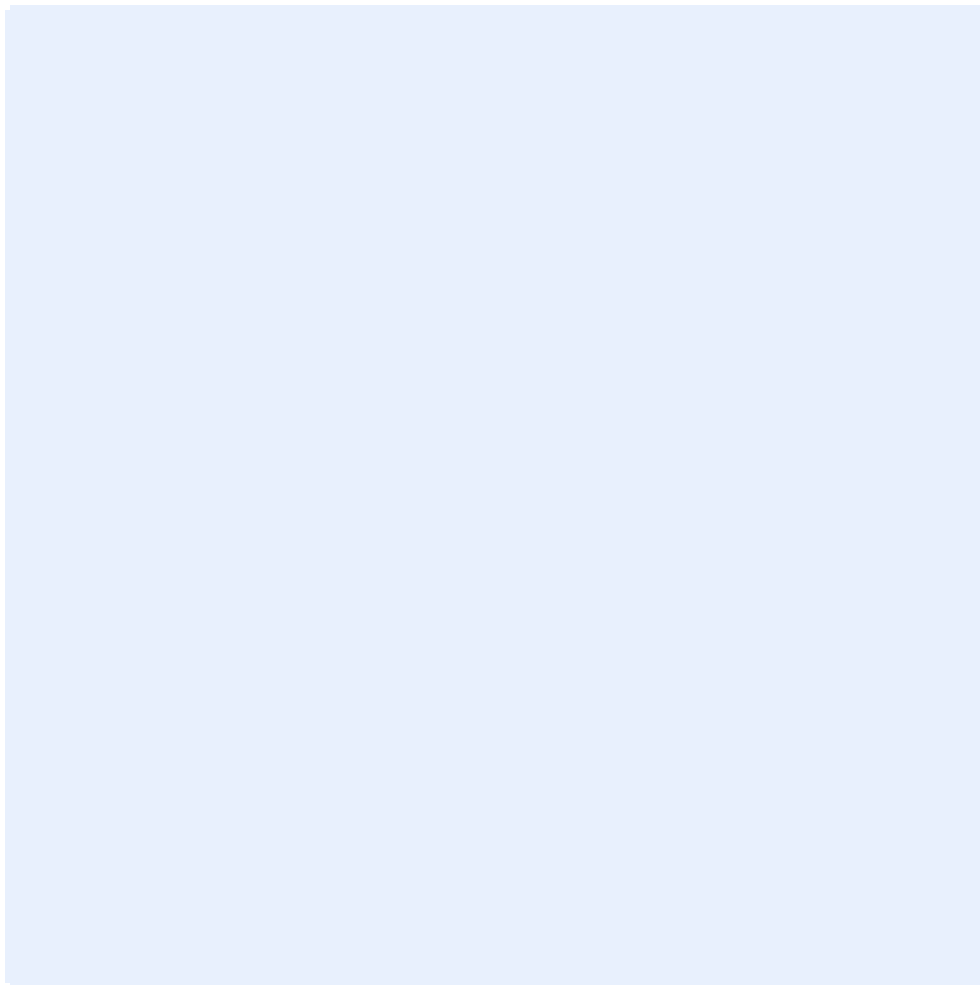


Figure 1: DFI No. D01242, looking [note cardinal direction]

1. Identification

Drainage Facility ID (DFI): D01242
Facility Type: Detention Pond
Construction Drawings: (V-File Numbers) 53V-031
Location: District: 10
Highway No.: 053
Mile Post: 104.07 to 104.16, Right

2. Manual Purpose

The purpose of this manual is to outline inspection needs and summarize maintenance actions for stormwater ponds.

3. Facility Location

The location map below details the facility location. The highway, mile posts, side streets, access location, and stormwater flow directions are noted on the map.

Facility location type: Roadway shoulder
Flow direction: East

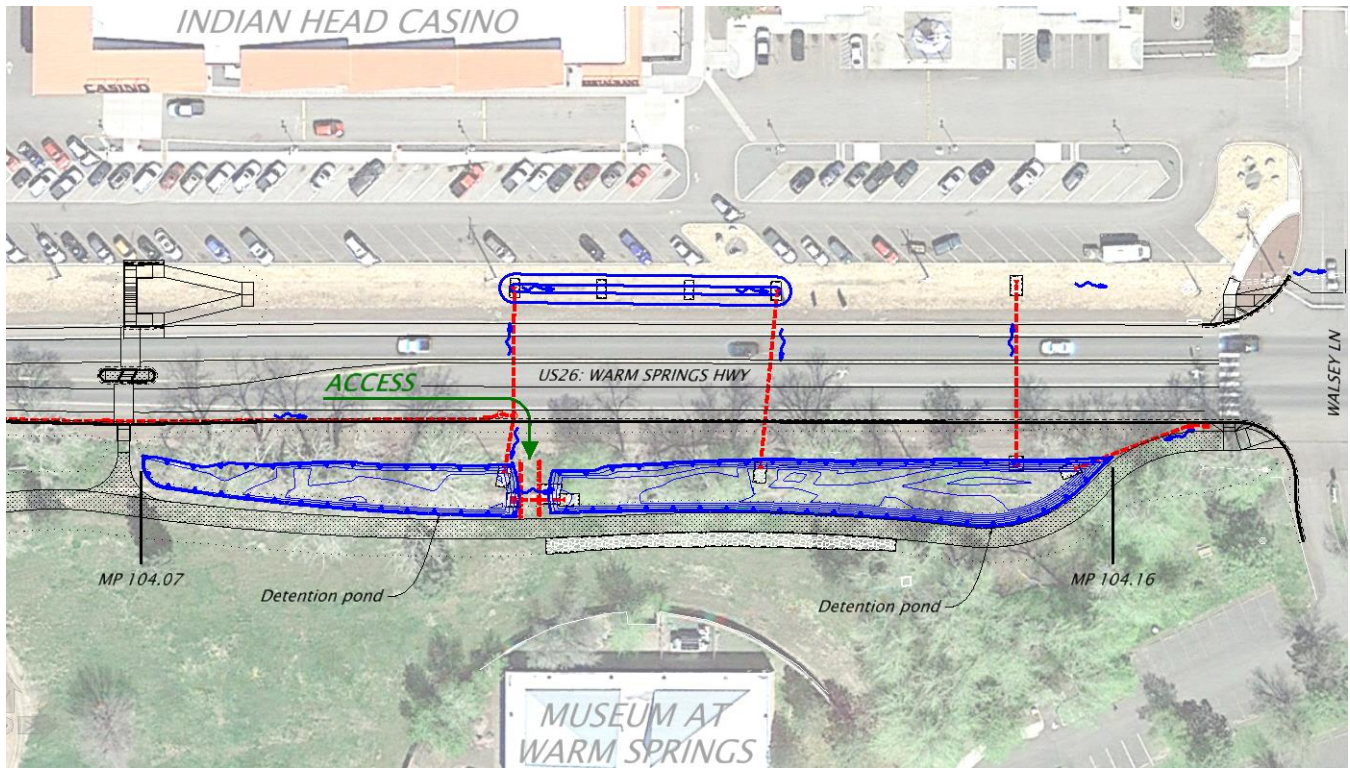


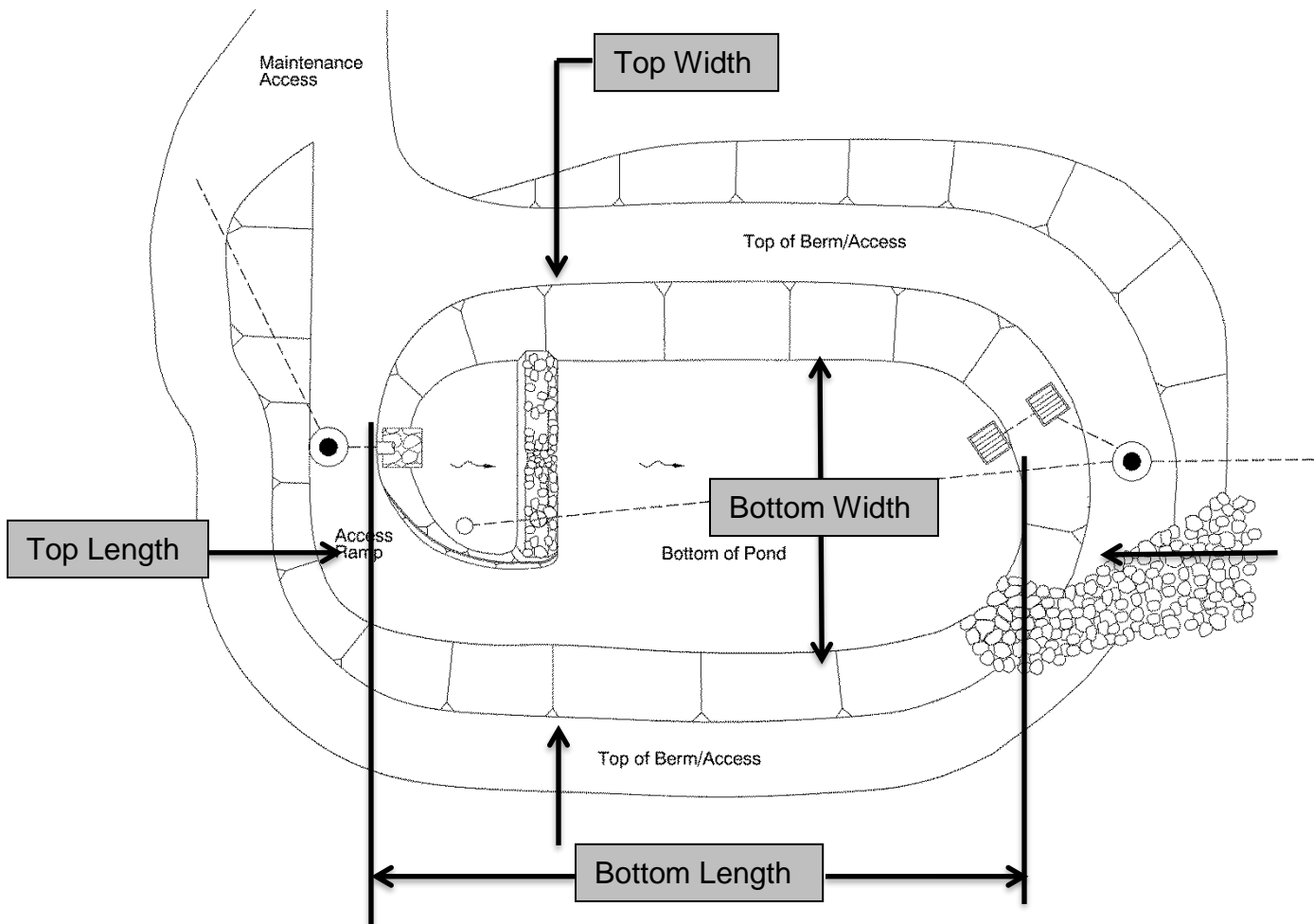
Figure 2: Facility location map

4. Facility Summary

The pond size is based on storage volume, the bottom and top surface areas and the depth are used for this measurement.

The bottom area and top area of the ponds are:

| | Bottom Area (sq. ft.) | Top Area (sq. ft.) |
|-----------|--|--------------------|
| West Pond | Approx. 2,590 (extg. topography; no defined bottom) | 4,570 |
| East Pond | Approx. 4,100 (extg. topography; no defined bottom) | 7,560 |

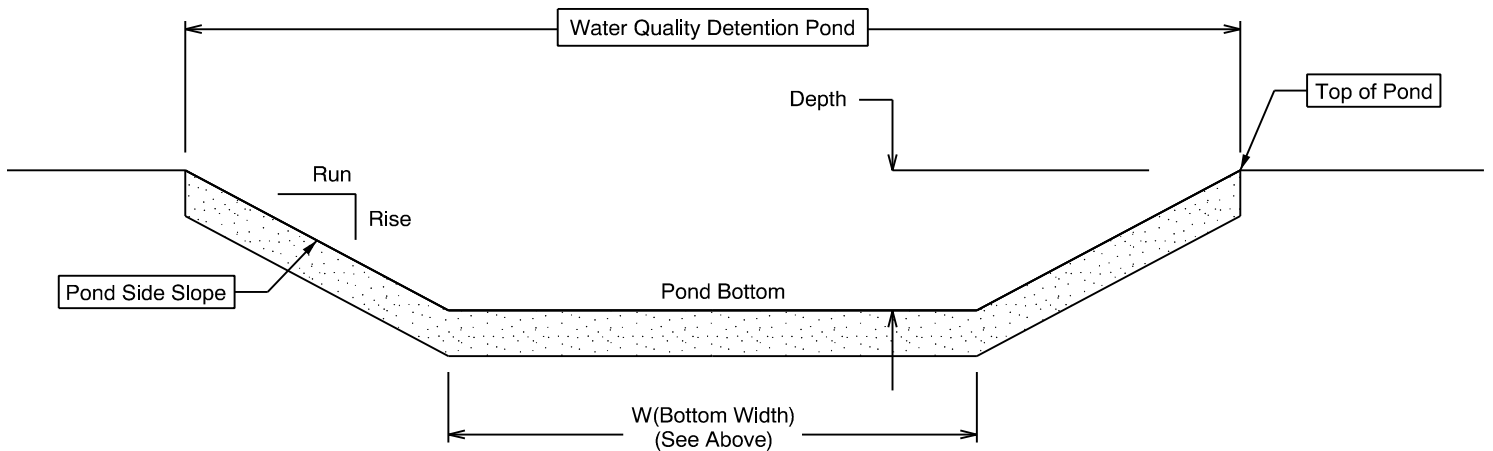


The depth of the pond is the vertical distance measured from the bottom of the pond to the top. The slope of the pond sides is presented by a vertical distance (rise) followed by the horizontal distance (run).

Depth and side slopes:

| |
|-----------------------|
| Depth (feet) |
| Var. (3' max.) |

| | |
|--------------------|------------------------|
| Side Slope | |
| Rise (feet) | 1 |
| Run (feet) | 2 (typ. – var.) |



Site Specific Information: The two detention ponds were formed between the existing roadway embankment (north) and the new sidewalk (south); thus, they do not have standard widths, depths, or side slopes. The ponds were created in an area with existing trees and dense vegetation, which will not be removed. The flow splitter manhole upstream diverts the water quality storm flow to the biofiltration swale (D01255) across the highway for treatment. Upon exiting the swale, treated stormwater is piped to these ponds. Any additional flow is piped directly to the ponds. See D01255 Operation & Maintenance Manual for specific details related to the swale.

5. Facility Access

Maintenance access to the facility:

| | |
|--|--|
| <input type="checkbox"/> Roadside pad | <input type="checkbox"/> Roadside shoulder |
| <input type="checkbox"/> Access road with Gate | <input checked="" type="checkbox"/> Access road without Gate |

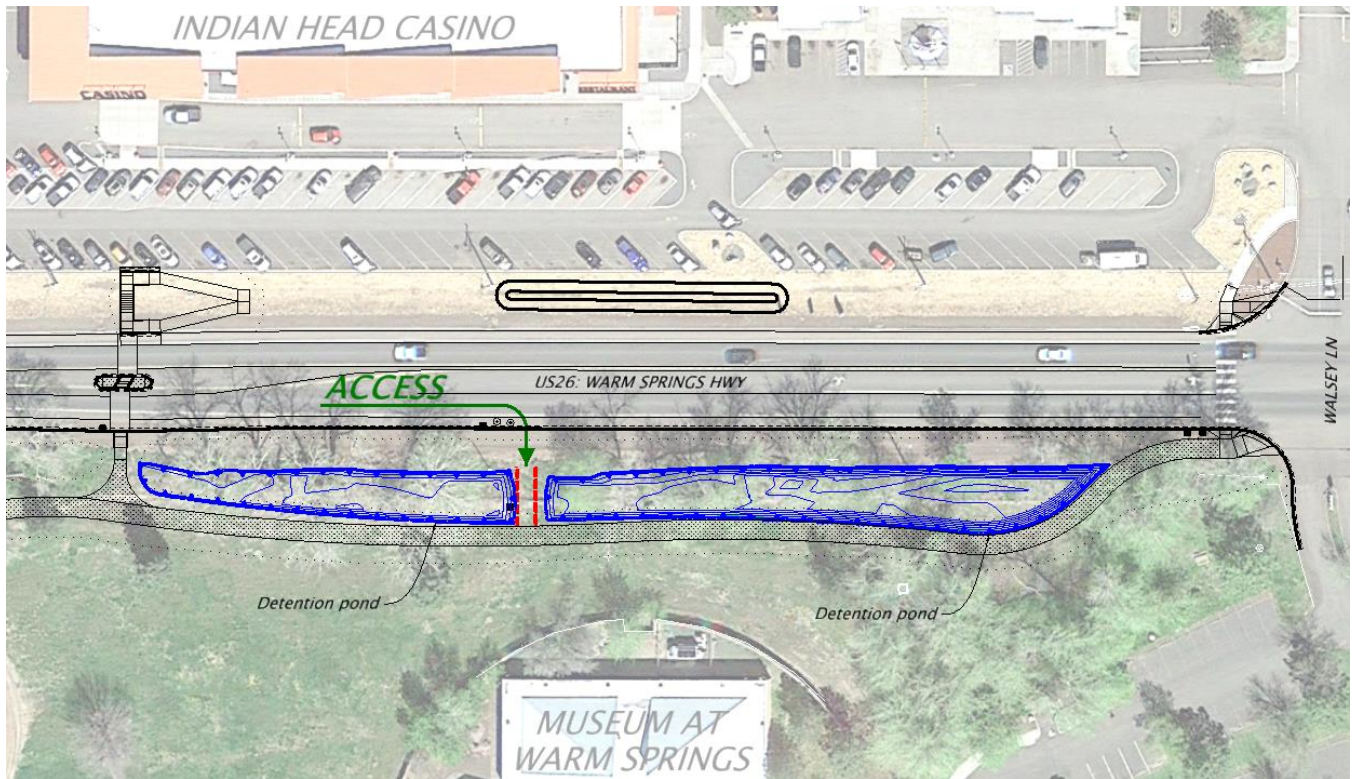


Figure 3: Facility access map

6. Operational Components / Maintenance Items

Classification and Standard Operational (Op) Plan:

This facility is classified as a:

| | | | |
|---|--|--|---|
| <input checked="" type="checkbox"/> Detention Pond (Op Plan A) | <input type="checkbox"/> WQ Bioretention Pond (Op Plan B) | <input type="checkbox"/> WQ Extended Detention Dry Pond (Op Plan C) | <input type="checkbox"/> WQ Detention Pond/Biofiltration Swale Combo (Op Plan D) |
| <p>A standard operational plan illustrates the general facility footprint configuration and explains the purpose of each facility component. Operational plans (A,B,C,D) are provided in the Standard Operation Manual.</p> | | | |

See Appendix A for the site specific operational plan.

Key Features/Items:

This facility is classified as a:

| | |
|---|---|
| <input checked="" type="checkbox"/> Dry Pond | <input type="checkbox"/> Wet Pond |
| The pond is wet during storm events and dries during periods of no precipitation. | The pond has constant presence of water year round. A portion of the pond dries during periods of no precipitation. |

This facility includes a **high flow bypass component**:

| | |
|---|---|
| <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes |
| There is no bypass component. High flows drains into and through the facility | There is a bypass component. Only low/small flows drain into the pond. High flows are diverted around the pond using a bypass component |

This facility includes a **proprietary structure(s)**:

| | |
|--|--|
| <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes |
| There are no proprietary structures associated with this facility. | A proprietary structure is used in the operation of this facility. |

Operational Components

The facility components table (**Table 1**) has been provided to highlight the applicable components for this facility. The component is in use when the box contains an “x” (e.g.).

The Standard Operation Manual for Ponds (implemented October 2018) outlines facility operation, typical footprint configuration, and component definitions and details. A link to the manual is attached to the feature marker in TransGIS.

<https://gis.odot.state.or.us/TransGIS/>

Maintenance Items

Operational components marked in **Table 1** should be inspected and maintained according to Section 7. Each facility component is defined and detailed in the Standard Operation Manual using the associated ID number indicated in the table below.

| Table 1: Stormwater Pond Components | | ID # |
|--|-------------------------------------|-------------|
| Upstream Manholes/Structures | | |
| Pre-treatment Manhole Type: Sedimentation | <input checked="" type="checkbox"/> | P1 |
| Water Quality Manhole | <input type="checkbox"/> | P2 |
| Flow Splitter Manhole (Weir) | <input checked="" type="checkbox"/> | P3 |
| Standard Manhole | <input type="checkbox"/> | P4 |
| Sediment Basin/Forebay | <input type="checkbox"/> | P5 |
| Forebay Dewatering Riser Pipe (outlet) | <input type="checkbox"/> | P6 |
| Facility Inlet | | |
| Pavement Sheet Flow | <input type="checkbox"/> | P7 |
| Inlet Pipe(s) | <input checked="" type="checkbox"/> | P8 |
| Open Channel Inlet | <input type="checkbox"/> | P9 |
| Riprap Pad (Energy Dissipater) | <input checked="" type="checkbox"/> | P10 |
| Ground Cover | | |
| Grass Bottom | <input type="checkbox"/> | P11 |
| Grass Side Slopes | <input type="checkbox"/> | P12 |
| Granular Drain Rock | <input type="checkbox"/> | P13 |
| Plantings | <input type="checkbox"/> | P14 |
| Underground Components | | |
| Geotextile Fabric: | <input type="checkbox"/> | P15 |
| Impermeable Liner | <input type="checkbox"/> | P16 |
| Water Quality Mix | <input type="checkbox"/> | P17 |
| Perforated Pipe | <input type="checkbox"/> | P18 |
| Bottom Marker (ex. Porous Pavers) | <input type="checkbox"/> | P19 |

| Flow Spreader | | |
|--|-------------------------------------|------------|
| Anchored Board (midpoint of pond or every 50 feet along pond bottom) | <input type="checkbox"/> | P20 |
| Other | <input type="checkbox"/> | P21 |
| Facility Outlet | | |
| Catch Basin with Grate | <input checked="" type="checkbox"/> | P22 |
| Outlet Pipe(s) | <input checked="" type="checkbox"/> | P23 |
| Outlet/Flow Control Structure | <input type="checkbox"/> | P24 |
| Auxiliary Outlet | <input checked="" type="checkbox"/> | P25 |
| Hazmat Control Valve | <input type="checkbox"/> | P26 |
| Outfall Type | | |
| Waterbody (Creek/Lake/Ocean) | <input type="checkbox"/> C | P27 |
| | <input type="checkbox"/> L | |
| | <input type="checkbox"/> O | |
| Ditch | <input checked="" type="checkbox"/> | P28 |
| Storm Drain System | <input type="checkbox"/> | P29 |
| Outfall Components | | |
| Riprap Pad | <input checked="" type="checkbox"/> | P30 |
| Riprap Bank Protection | <input checked="" type="checkbox"/> | P31 |

7. Maintenance

Maintenance Frequency/Maintain Records

- a. Inspect annually. Preferably prior to the rainy season.
- b. Clean and maintain as necessary. Refer to Activity 125 in the Maintenance Guide for conditions when maintenance is needed.
- c. Keep a record of inspections, maintenance, and repairs.

Maintenance Guide/Maintenance Actions

The Maintenance Guide outlines the standard maintenance actions for water quality facilities under Activity 125.

There are standard maintenance tables for standard ODOT designs. The maintenance tables describe the maintenance component, the defect or problem, the condition when maintenance is needed, and the recommended maintenance to correct the problem. Use the following tables to maintain ODOT Ponds:

- Table 1 (General Maintenance): Contains general maintenance and inspection guidelines that are applicable to all ODOT water quality facilities
- Table 2 (Maintenance of Stormwater Ponds): Contains maintenance information for ponds

The ODOT Maintenance Guide can be viewed at the following website:
<http://www.oregon.gov/ODOT/HWY/OOM/pages/mguide.aspx>

The Blue Book can be viewed at the following website:
http://www.oregon.gov/ODOT/Maintenance/Documents/blue_book.pdf

8. Limitations

There are access limitations for this facility:

| | |
|--|---|
| <input type="checkbox"/> No | <input checked="" type="checkbox"/> Yes |
| There are no porous pavers installed. Equipment is allowed on the pond bottoms; however, dense vegetation will likely preclude vehicle access. | |

Ponds are designed to allow equipment access along the bottom if an access grid is installed. If an access grid is NOT installed, vehicles entering the pond can create depressions (tire ruts), damage vegetation, or damage structural components (e.g. flow spreaders). These conditions may result in poor treatment and drainage performance.

If no access grid then: Equipment wheels should be kept on the tops and side slopes. Mower arms may be run along the pond bottom.

9. Waste Material Handling

Material removed from the facility is defined as waste by the Department of Environmental Quality (DEQ). Refer to the road waste section of the ODOT Maintenance Yard Environmental Management System (EMS) Policy and Procedures Manual for disposal options:

<http://www.oregon.gov/ODOT/HWY/OOM/pages/ems.aspx>

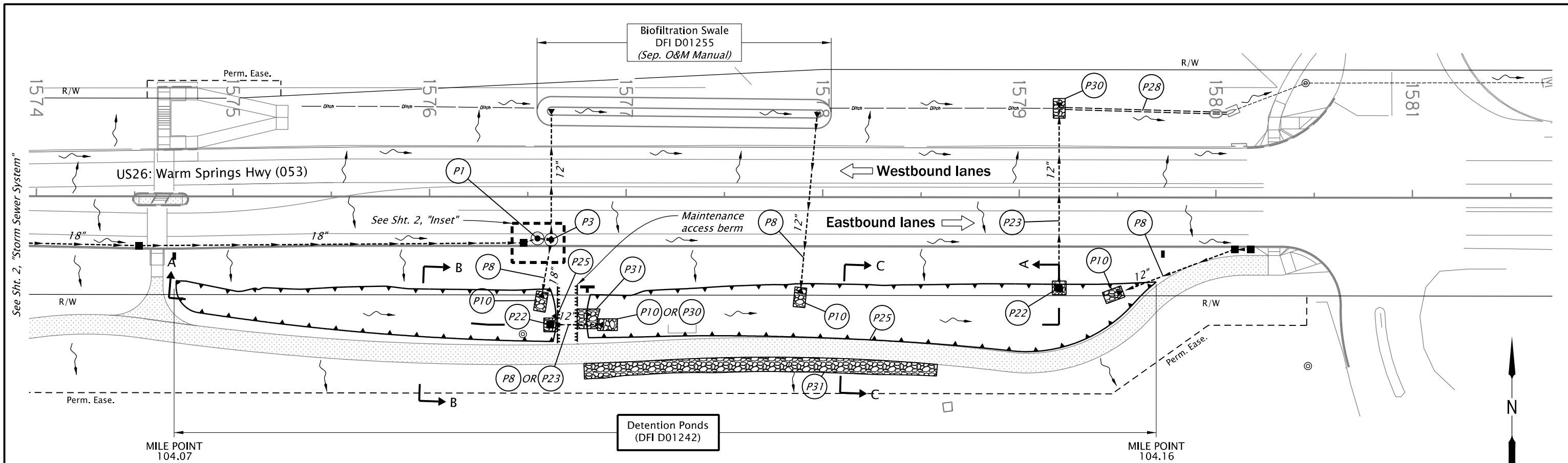
Contact any of the following for more detailed information about management of waste materials found on site:

| | |
|-----------------------------------|----------------|
| 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 |

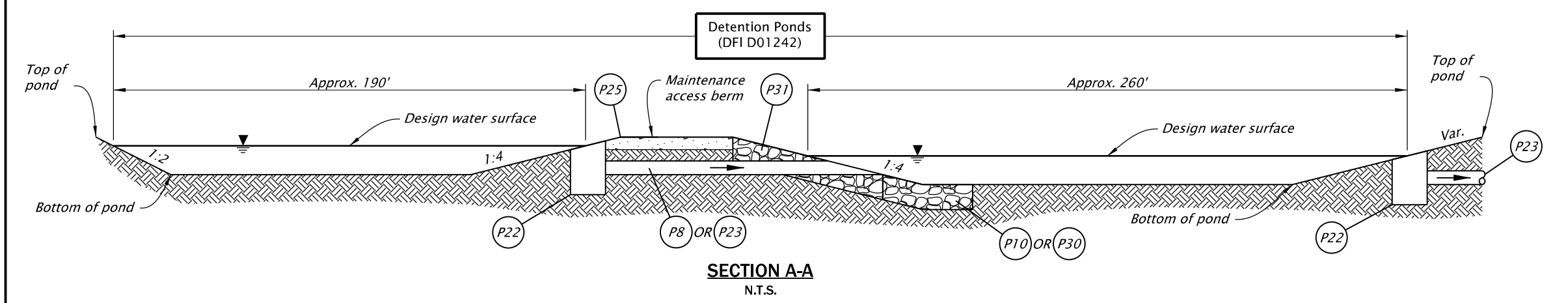
A Appendix A – Site Specific Operational Plan

Contents:

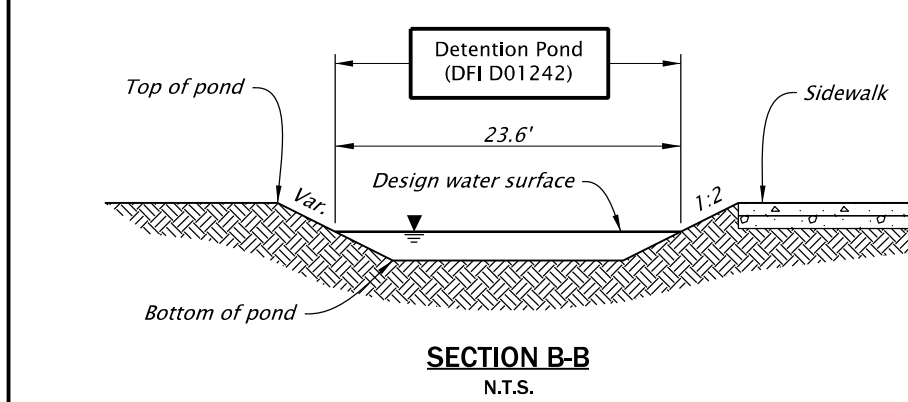
Operational Plan: DFI D01242



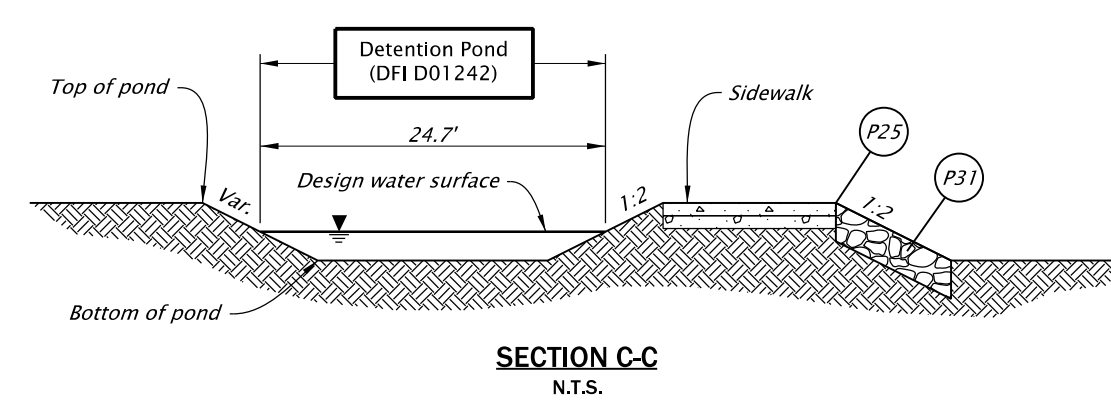
PLAN



SECTION A-A
N.T.S.



SECTION B-B
N.T.S.



SECTION C-C
N.T.S.

- LEGEND:**
- X# Facility component (see table 1 in O&M Manual)
 - and Manhole
 - and Inlet
 - Storm pipe (facility)
 - Storm pipe
 - Conveyance direction
 - Pavement / facility flow path
 - Traffic flow direction
 - Facility marker

Sht. 1 of 2

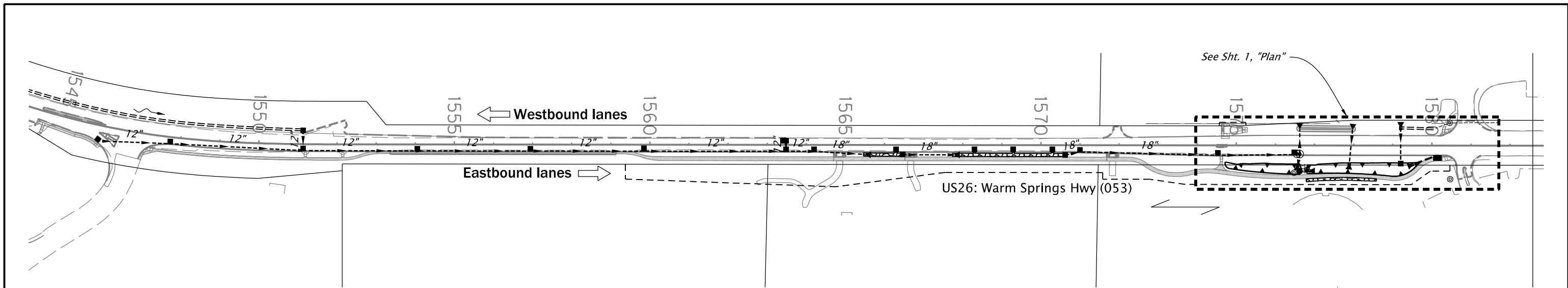
Prepared By:
Austin Kleinberg

Drafted By:
Austin Kleinberg

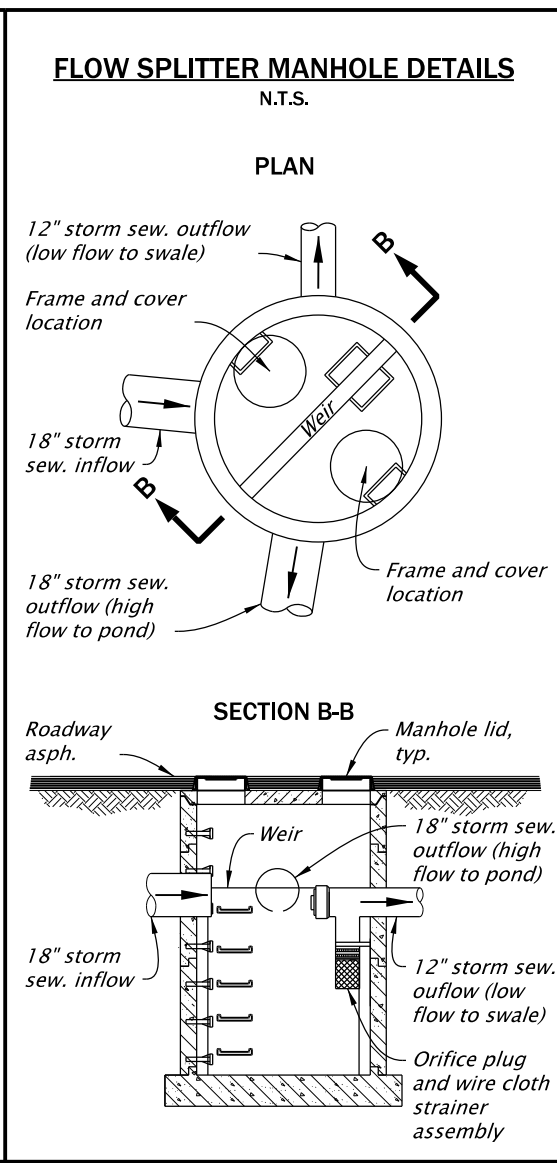
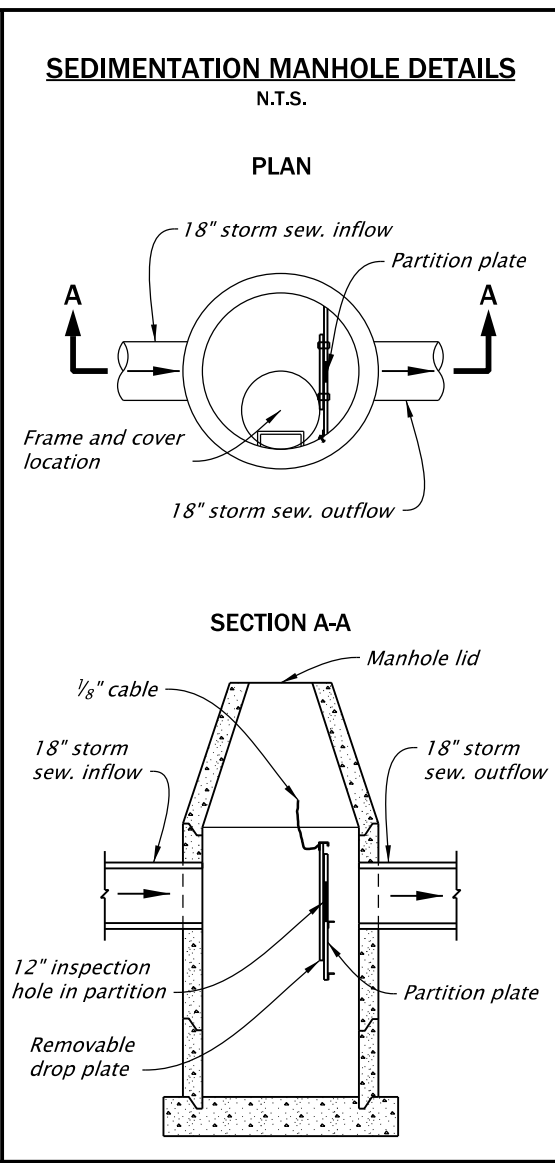
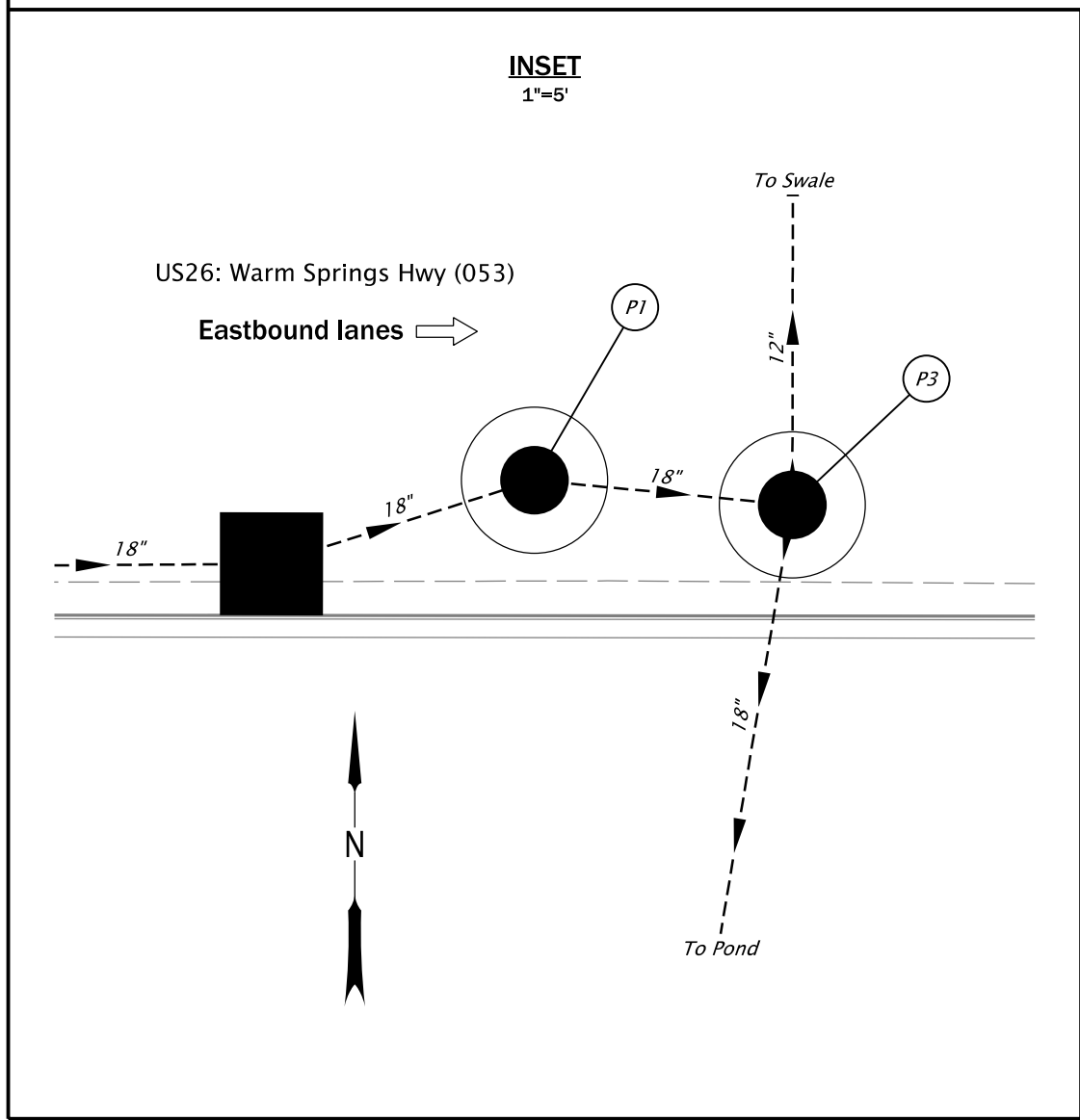
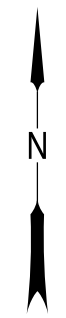


OREGON DEPARTMENT OF TRANSPORTATION

DFI D01242
MAINTENANCE DISTRICT 10 HWY 053
DETENTION PONDS
WARM SPRINGS HWY MP 104.07 - 104.16
CTWS RESERVATION & JEFFERSON COUNTY



STORM SEWER SYSTEM



- LEGEND:**
- Facility component (see table 1 in O&M Manual)
 - Manhole
 - Inlet
 - Storm pipe (facility)
 - Storm pipe
 - Conveyance direction
 - Pavement / facility flow path
 - Traffic flow direction

Sht. 2 of 2

Prepared By:
Austin Kleinberg

Drafted By:
Austin Kleinberg



DFI D01242
MAINTENANCE DISTRICT 10 HWY 053
DETENTION PONDS
WARM SPRINGS HWY MP 104.07 - 104.16
CTWS RESERVATION & JEFFERSON COUNTY

B Appendix B – Project Contract Plans

Contents:

Site Specific Subset of Project Contract Plan 53V-031

| INDEX OF SHEETS | |
|-----------------|--|
| SHEET NO. | DESCRIPTION |
| A01 | Title Sheet |
| A02 & A03 | Index Of Sheets Cont'd. & Std. Dwg. Nos. |
| A04 & A05 | Control Data Sheet |

STATE OF OREGON
 DEPARTMENT OF TRANSPORTATION

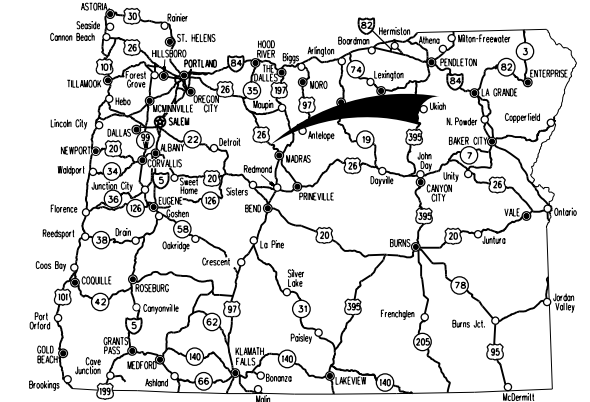
PLANS FOR PROPOSED PROJECT

GRADING, DRAINAGE, STRUCTURES, PAVING, CURB RAMPS,
 SIGNING, ILLUMINATION & SIGNALS

US26: WARM SPRINGS SAFETY CORRIDOR SEC.

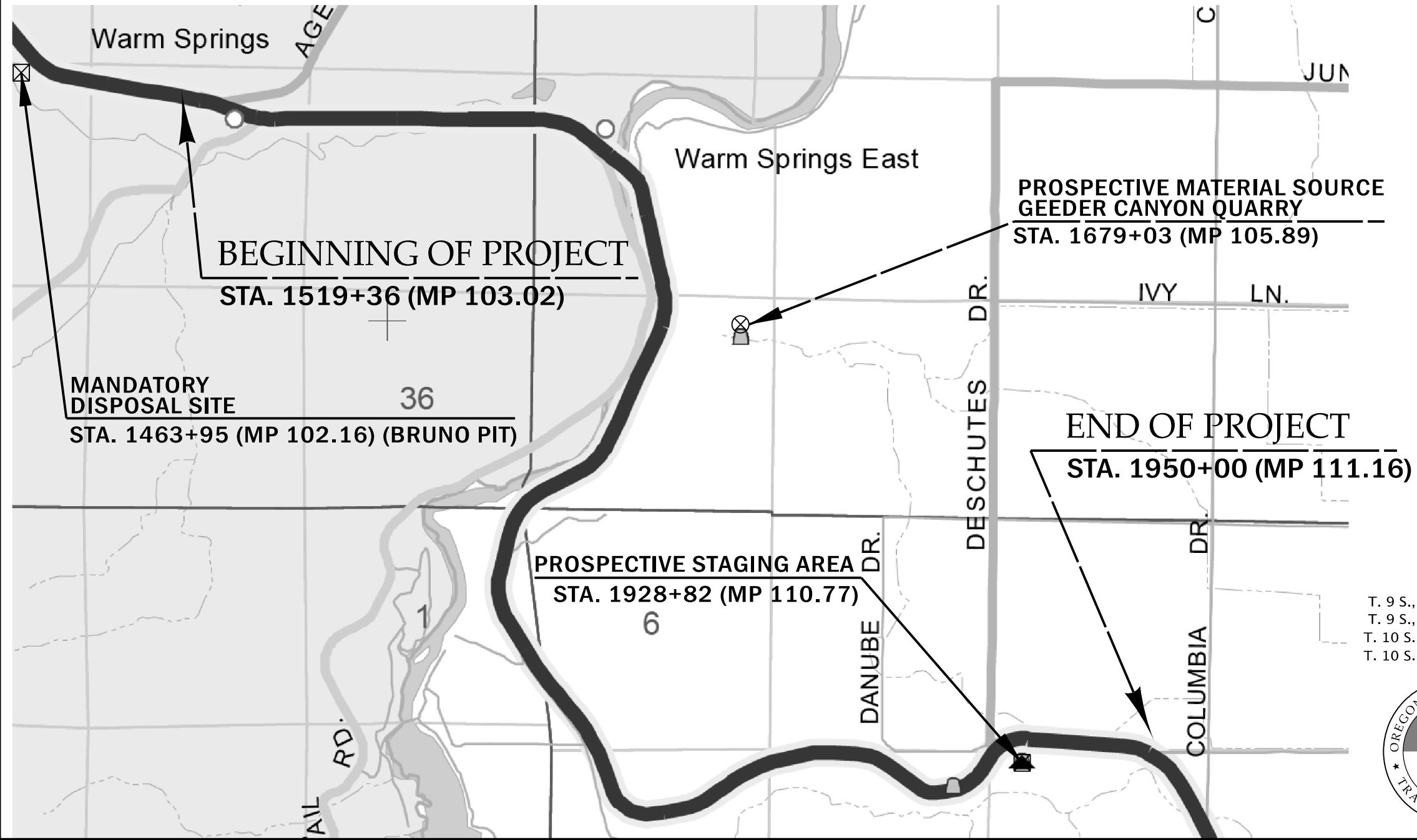
WARM SPRINGS HWY.

**CTWS RESERVATION & JEFFERSON COUNTY
 DECEMBER 2020**



Overall Length Of Project - 8.14 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.)



T. 9 S., R. 12 E., W.M.
 T. 9 S., R. 13 E., W.M.
 T. 10 S., R. 12 E., W.M.
 T. 10 S., R. 13 E., W.M.



OREGON TRANSPORTATION COMMISSION
 Bob Van Brocklin CHAIR
 Alando Simpson VICE CHAIR
 Maurice Henderson COMMISSIONER
 Julie Brown COMMISSIONER
 Sharon Smith COMMISSIONER
 Kris Strickler 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: Omar Ahmed Digitally signed by Omar Ahmed Date: 2020.10.12 12:06:27 -0700
 Signature & date
Omar Ahmed, P.E., Region 4 TCM
 Print name and title
Steven B Cooley Oct 23 2020 12:58 PM
 Concurrence by ODOT Chief Engineer

US26: WARM SPRINGS SAFETY CORRIDOR SEC.
 WARM SPRINGS HWY.
 CTWS RESERVATION & JEFFERSON COUNTY

| | | |
|--------------------------------|----------------|-----------|
| FEDERAL HIGHWAY ADMINISTRATION | PROJECT NUMBER | SHEET NO. |
| OREGON DIVISION | S053(033) | A01 |

PE002561 000

Sec. 25, T. 9 S., R. 12 E., W.M.

53V-031

- 13 Sta. 1576+61.6, 21.9' Rt.
Const. diversion manhole 72" dia. w/ 3' sump
I.E. (W/N) - 1428.49'
I.E. (S) - 1428.63'
Weir elev. - 1429.49'
Inst. 18" storm sew. pipe - 8'
Sl. = 0.005 ft/ft
5' depth
Const. temp. pipe protection
(For details, see shts. HA05 & HA08)

- 14 Inst. 18" storm sew. pipe - 28'
I.E. (out) - 1428.50'
Sl. = 0.005 ft/ft
5' depth
Const. temp. pipe protection
Const. sloped end
Const. riprap outfall channel (Class 50) - 5 cu. yd.
Length - 10'
(For details, see shts. HA04 & HA08)

- 15 Inst. 12" storm sew. pipe - 64'
I.E. (out) - 1428.18'
Sl. = 0.005 ft/ft
5' depth
Trench resurfacing - 22 sq. yd.
Const. sloped end

- 16 Stormwater facility - D01255
(For details, see sht. HA02)

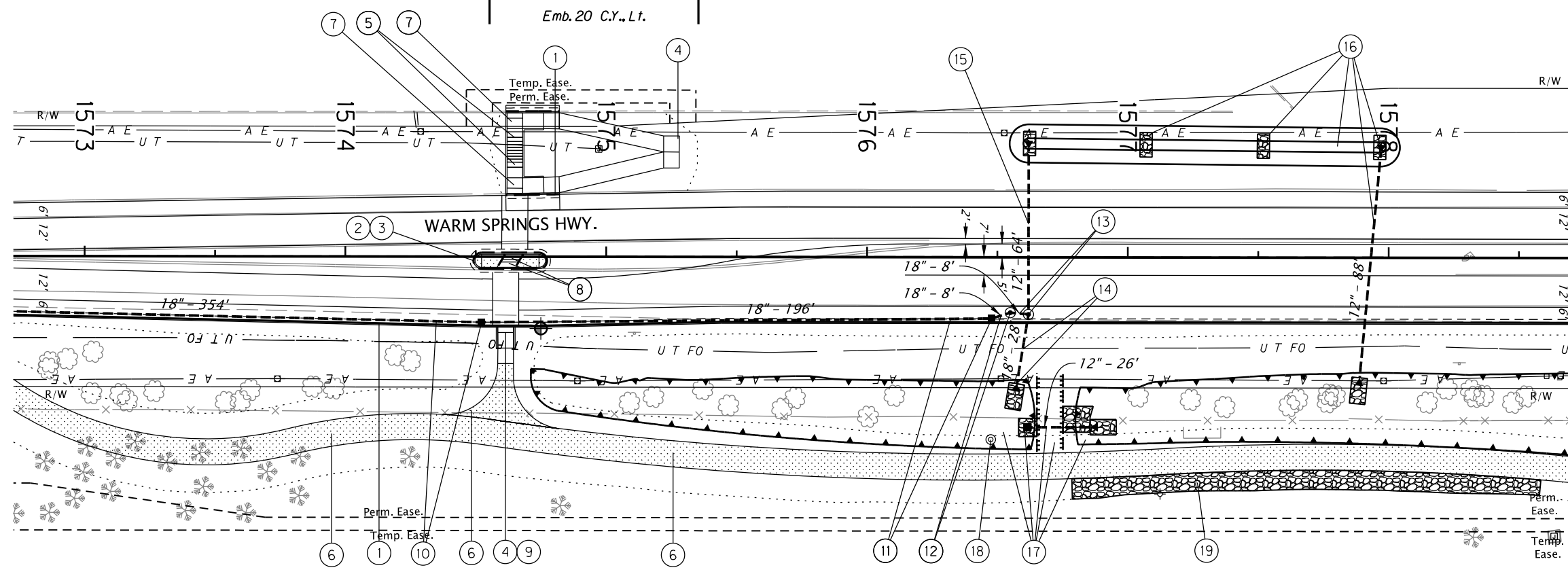
- 17 Stormwater facility - D01242
(For details, see sht. HA01)

- 18 Major adjust manhole - By others
(See dwg. no. RD360)

- 19 Const. loose riprap (Class 50) - 50 cu. yd.
(For details, see sht. HA01 "Section C-C")

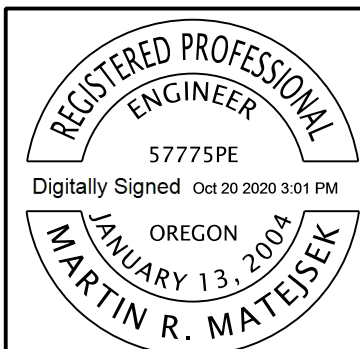
Exc. 30 C.Y., Isl. & Lt.

Emb. 20 C.Y., Lt.




- 1 Const. curb and gutter
- 2 Const. mountable curb and gutter
- 3 Sta. 1574+49 to Sta. 1574+77
Remove pvmt.
Const. 6" P.C. conc. surfacing - 136 sq. ft.
- 4 Const. P.C. conc. sidewalk
(For details, see sht. BC14)
- 5 Const. P.C. conc. stairs
Const. pedestrian handrail
(For details, see sht. BC11 & BC14)
(See dwg. nos. RD120, RD770 & RD771)
- 6 Const. asph. conc. sidewalk
- 7 Const. curb ramp - 2 (parallel)
Inst. safety yellow truncated domes on new surface - 24 sq. ft.
(For details, see sht. BC11 & BC14)
- 8 Const. curb ramp (accessible route island) - 2
Median cut-through crossing
(For details, see sht. BC10)
(See dwg. no. RD710)
- 9 Const. curb ramp (perpendicular)
Inst. safety yellow truncated domes on new surface - 12 sq. ft.
(For details, see sht. BC09)
- 10 Sta. 1574+51.9, Rt.
Const. type "CG-2" inlet w/ 1.5' sump
I.E. - 1429.55'
Inst. 18" storm sew. pipe - 354'
Sl. = 0.006 ft/ft
5' depth
Const. temp. pipe protection
(For details, see sht. HA08)
- 11 Sta. 1576+47.6, Rt.
Const. type "CG-2" inlet w/ 1.5' sump
I.E. - 1428.57'
Inst. 18" storm sew. pipe - 196'
Sl. = 0.005 ft/ft
5' depth
Const. temp. pipe protection
(For details, see sht. HA08)
- 12 Sta. 1576+54.7, 21.2' Rt.
Const. sedimentation manhole 48" dia. w/ 3' sump
I.E. - 1428.52'
Inst. 18" storm sew. pipe - 8'
Sl. = 0.006 ft/ft
5' depth
Const. temp. pipe protection
(For details, see sht. HA06 & HA08)

Exc. & Emb. (See sht. C07), Rt.



RENEWS: 12-31-2020

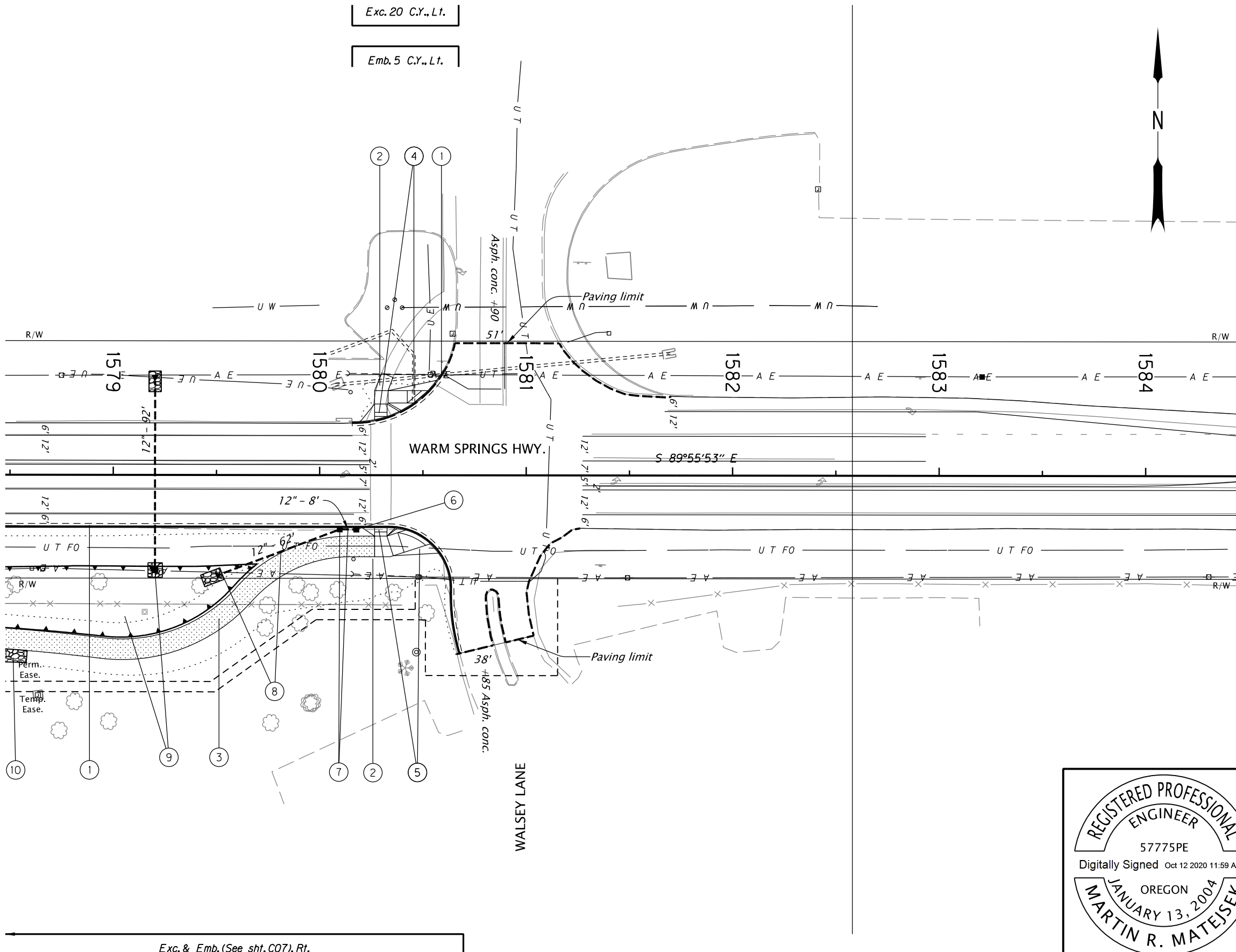
| | |
|--|--|
| <p>OREGON DEPARTMENT OF TRANSPORTATION</p>  | |
| <p>US26: WARM SPRINGS SAFETY CORRIDOR SEC. WARM SPRINGS HWY. CTWS RESERVATION & JEFFERSON COUNTY</p> | |
| <p>Designer: Martin Matejsek Drafter: Adam Temple</p> | <p>Reviewer: Brian Paslay Checker: Chris Penka</p> |
| <p>GENERAL CONSTRUCTION</p> | <p>SHEET NO. C10</p> |

Sec. 25, T. 9 S., R. 12 E., W.M.

53V-031

Exc. 20 C.Y., Lt.

Emb. 5 C.Y., Lt.



- ① Const. curb and gutter
- ② Const. P.C. conc. sidewalk
- ③ Const. asph. conc. sidewalk
- ④ Const. curb ramp (Option perpendicular) - 2
Inst. safety yellow truncated domes on new surface - 31 sq. ft.
(For details, see sht. BC13)
- ⑤ Const. curb ramp (Option perpendicular) - 2
Inst. safety yellow truncated domes on new surface - 71 sq. ft.
(For details, see sht. BC12)
- ⑥ Sta. 1580+17.4, Rt.
Const. type "CG-3" inlet w/ 1.5' sump
I.E. (12" out) - 1426.35'
(See dwg. nos. RD364, RD371, RD372 & RD373)
- ⑦ Sta. 1580+09.4, Rt.
Const. type "CG-3" inlet w/ 1.5' sump
I.E. - 1426.31'
Inst. 12" storm sew. pipe - 8'
Sl. = 0.005 ft/ft
5' depth
- ⑧ Inst. 12" storm sew. pipe - 62'
I.E. (out) - 1426.00'
Sl. = 0.005 ft/ft
5' depth
Const. sloped end
Const. riprap outfall channel (Class 50) - 5 cu. yd.
Length - 10'
(For details, see sht. HA04)
- ⑨ Stormwater facility - D01242
(For details, see sht. HA01)
- ⑩ See sht. C10, note 19
Const. loose riprap (Class 50)

Exc. & Emb. (See sht. C07), Rt.

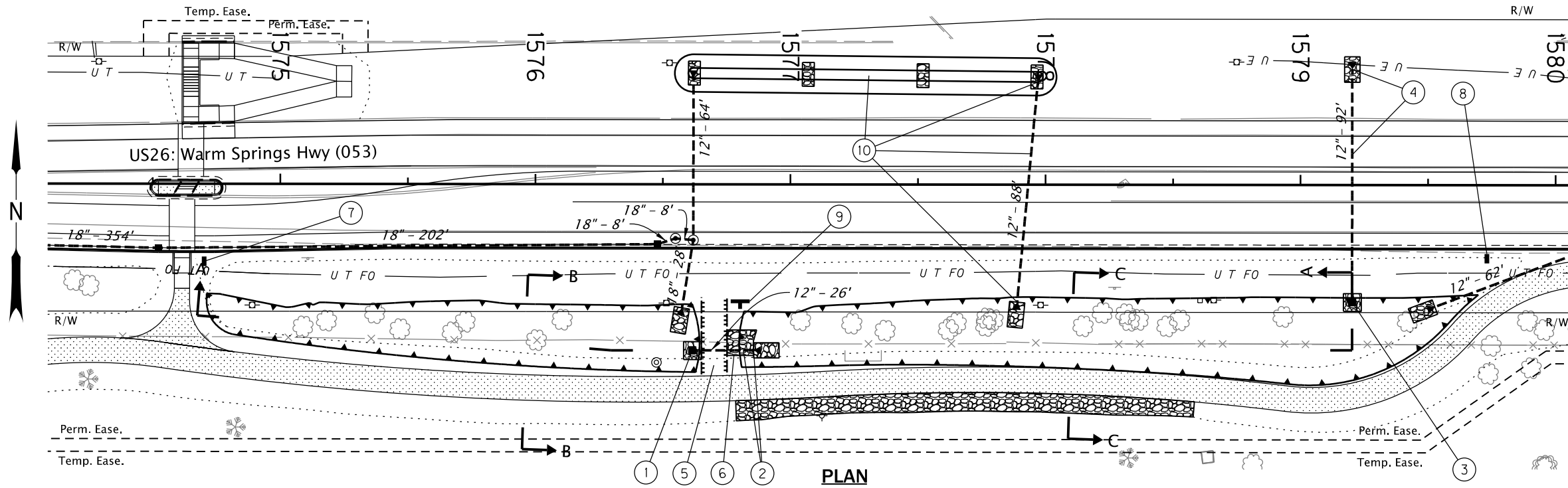
REGISTERED PROFESSIONAL ENGINEER
 57775PE
 Digitally Signed Oct 12 2020 11:59 AM
 OREGON
 JANUARY 13, 2004
 MARTIN R. MATEJSEK

| | |
|--|--|
| OREGON DEPARTMENT OF TRANSPORTATION | |
| US26: WARM SPRINGS SAFETY CORRIDOR SEC. WARM SPRINGS HWY. CTWS RESERVATION & JEFFERSON COUNTY | |
| Designer: Martin Matejsek Drafter: Adam Temple | Reviewer: Brian Paslay Checker: Chris Penka |
| GENERAL CONSTRUCTION | |
| SHEET NO. C11 | |

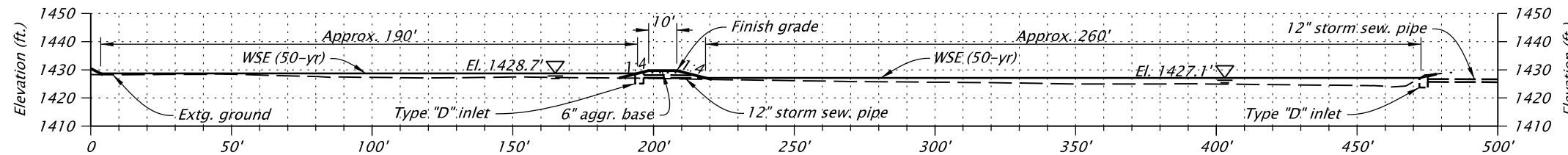
RENEWS: 12-31-2020

FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

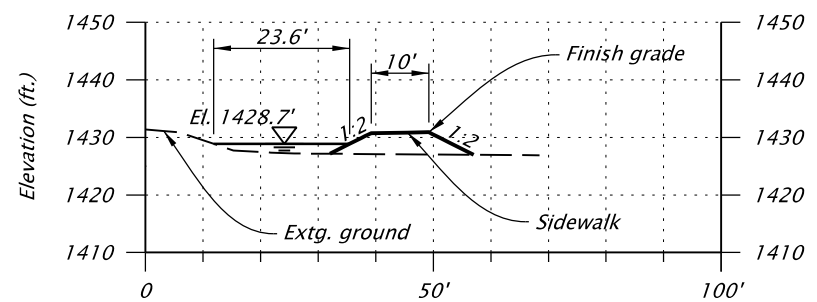
Rotation: 0° Scale: 1"=50'



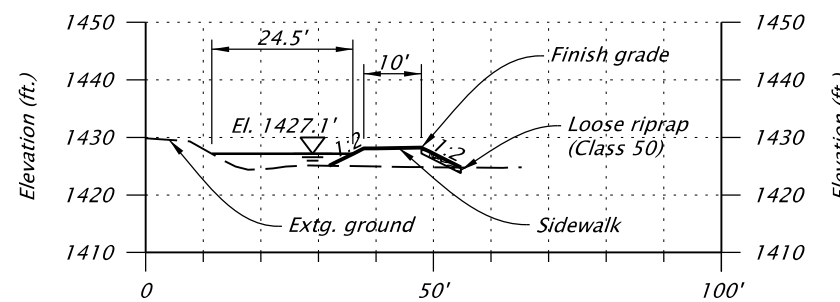
- ① Sta. 1576+61.3, 65.1' Rt.
Const. type "D" inlet w/ 2' sump
Bot. grate elev. - 1428.50'
I.E. (12" out) - 1426.73'
Const. loose riprap (Class 50) - 5 cu. yd.
2' width around inlet edges
1' depth
(See dwg. no. RD370)
- ② Sta. 1576+61.3, 65.1' Rt. To
Sta. 1576+85.3, 65.1' Rt.
Inst. 12" storm sew. pipe - 26'
I.E. (out) - 1426.61'
Sl. = 0.005 ft/ft
5' depth
Const. sloped end
Const. riprap outfall channel (Class 50) - 5 cu. yd.
Length - 10'
(For details, see sht. HA04)
- ③ Sta. 1579+19.9, 46.0' Rt.
Const. type "D" inlet w/ 2' sump
Bot. grate elev. - 1427.00'
I.E. (12" out) - 1425.73'
Const. loose riprap (Class 50) - 5 cu. yd.
2' width around inlet edges
1' depth
- ④ Sta. 1579+19.9, 46.0' Rt. To
Sta. 1579+19.9, 45.3' Lt.
Inst. 12" storm sew. pipe - 92'
I.E. (out) - 1425.27'
Sl. = 0.005 ft/ft
5' depth
Trench resurfacing - 32 sq. yd.
Const. sloped end
Const. riprap outfall channel (Class 50) - 5 cu. yd.
Length - 10'
(For details, see sht. HA04)
- ⑤ Const. berm
10' flat top, 1:4 slopes
- ⑥ Const. loose riprap (Class 50) - 5 cu. yd.
10' width
1' depth
Extend to base of berm
- ⑦ Inst. type "S1" field facility marker - red
(See dwg. no. RD399)
- ⑧ Inst. type "S1" field facility marker - green
- ⑨ Inst. type "S2" field facility marker
DFI no. D01242
- ⑩ Stormwater facility - D01255
(For details, see sht. HA02)



SECTION A-A

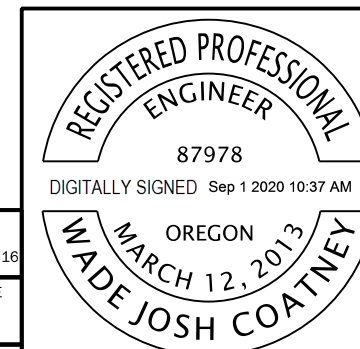


SECTION B-B



SECTION C-C

NOTE:
1. All const. items will be paid for by individual pay items. No payment will be made for stormwater facility D01242.



HWY: 053
M.P.: 104.07-104.16
UNIT FILE CODE
N/A
DFI/TSSU NO.
D01242

RENEWS: 12-31-2021

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|---|--|
| <p>OREGON DEPARTMENT OF TRANSPORTATION</p> | |
| <p>US26: WARM SPRINGS SAFETY CORRIDOR SEC. WARM SPRINGS HWY. CTWS RESERVATION & JEFFERSON COUNTY</p> | |
| Designer: Austin Kleinberg Drafter: Austin Kleinberg | Reviewer: Wade Coatney Checker: Chad Howard |
| <p>STORMWATER FACILITY PLAN</p> | |
| SHEET NO. HA01 | |