OPERATION & MAINTENANCE MANUAL

Water Quality Bioslope

Manual prepared: February 2020

DFI No. D01245

Figure 1: DFI No. D01245, looking [note cardinal direction]

1. Identification

Drainage Facility ID (DFI):	D01245
Facility Type:	Water Quality Bioslope
Construction Drawings:	(V-File Numbers) 53V-037
Location:	District: 2B
	Highway No.: 161
	Mile Post: 11.57-11.69, LT.

2. Manual Purpose

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

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: **West**

Figure 2: [ODOT Geo-Environmental to insert facility location map]

4. Facility Summary

Facility D02145 treats and detains stormwater runoff from a portion of OR 211 and the 10-foot wide shared use path. The facility consists of four separate sections of bioslope (B1, B2, B3, and B4). Each bioslope is between the shoulder of the west-bound lane and the 10-foot wide shared use path.

A water quality bioslope is a flat-bottomed, rock and filter media trench constructed along an embankment design to treat stormwater runoff from impervious areas. This type of facility includes a gravel and vegetated filter strip adjacent to the road shoulder, followed by a bioslope consisting of a 2-foot wide trench filled with aggregate, amended soil mixture, and granular backfill. The filter strip acts as pretreatment for the bioslope. The bioslope collects water through the aggregate section and filters it through the ecology mix. Sediment is trapped when stormwater runoff flows across the filter strip and additional pollutants are removed as runoff filters through the bioslope.

Stormwater is conveyed to the facility via sheet flow from the crowned roadway. Stormwater conveyed to the bioslopes receives treatment as it flows across the filter strip and then as it percolates through the media. Drain rock provides storage for the runoff prior to exiting the bioslope. Runoff will exit the bioslope via a perforated 6-inch drain pipe in the drain rock layer. The perforated drain pipe passes flow to an area drain, where a 12-inch storm drain pipe conveys treated stormwater to a stormwater manhole. Each perforated drain pipe has a cleanout.

The bioslope width is measured perpendicular to the edge of pavement and is equivalent to the flow length. The bioslope length is measured parallel to the edge of pavement and is equivalent to the length of the contributing impervious area.

Bioslope	Length (feet)	Gravel Width (feet)	Vegetated Filter Strip (feet)	Bioslope Width (feet)	Gravel Storage Width (feet)	Gravel Storage Height (feet)
B1	102	1.0	2.0 to 3.0	2.0	2.0	1.5
B2	412	1.0	2.0 to 3.0	2.0	6.0	2.0
B3	54	1.0	3.0	2.0	2.0	1.5
B4	124	1.0	3.0	2.0	2.0	1.5

Side Slope	Rise (feet)	Run (feet)
Filter Strip	1	6
Bioslope	0	2

Site Specific Information: Each portion of bioslope for facility D02145 has a vegetated filter strip, filter media, and gravel storage. Bioslope portions B1 and B2 have varying widths of the vegetated filter strip due to limited right of way between the edge of pavement and the 10-foot wide shared use path. Portions B3 and B4 have a 3-foot wide filter strip. Bioslopes B1, B3, and B4 have the same gravel storage dimensions beneath the amended soils. Bioslope B2 has a gravel storage width of 6 feet, which extends 4 feet under the shared use path.

See Appendix B for bioslope locations and typical section. The typical section is in the upper right of sheet HA01, the last sheet of this document. The side slope of the bioslopes are 0% for all four portions of the facility. The vegetated filter strip between the bioslope and edge of road has a varying side slope, with a maximum of 6:1 (H:V).

5. Facility Access

Maintenance access to the facility:

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

Figure 3: [insert post construction facility access photo and caption text]

6. Operational Components / Maintenance Items

Classification and Standard Operational (Op) Plan:

This facility is classified as a:

☐ Filter Strip (Op Plan A)	☒ Bioslope (Op Plan B)
A filter strip consists of a vegetated or media slope located parallel to the edge of pavement. It maintains sheet flow of stormwater runoff over the width of the strip.	A bioslope consists of a filter strip and treatment zone. It is a flow-through stormwater treatment facility located along roadside embankments.
A standard operational plan illustrates the general facility footprint configuration and explains the purpose of each facility component. Operational plans (A, B) are provided in the Standard Operation Manual.	

See Appendix A for the site specific operational plan.

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 Water Quality Catch Basins (implemented April 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 below.

Table 1: Facility Components		ID #
Facility Inlet		
Pavement Sheet Flow	☒	**B1**
Shoulder aggregate	☐	**B2**
Ground Cover		
Vegetated Filter Strip	☒	**B3**
Aggregate Media Slope	☒	**B4**
Underground Components		
Water Quality Mix	☒	**B5**
Ecology Mix	☒	**B6**
Granular Drain Backfill Material	☒	**B7**
Geotextile Fabric	☒	**B8**
HDPE Liner	☒	**B9**
Structures		
Curb/Berm	☐	**B10**
Check Dam	☐	**B11**
Cleanout	☒	**B12**
Facility Outlet		
Perforated Drain Pipe	☒	**B13**
Open Slope Outlet	☐	**B14**
Open Channel Outlet	☐	**B15**
Storm Drain Outlet Pipe	☒	**B16**
Outfall Type		
Waterbody (**C**reek/**L**ake/**O**cean)	☐ **C** ☐ **L** ☐ **O**	**B17**
Outfall Channel	☐	**B18**
Storm Drain System	☒	**B19**
Outfall Type		
Pervious Berm	☐	**B20**
Riprap Pad	☐	**B21**

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 Water Quality Bioslopes:

- Table 1 (General Maintenance): Contains general maintenance and inspection guidelines that are applicable to all ODOT water quality facilities
- Table 4 (Water Quality Filter Strips)
- Table 5 (Water Quality Bioslopes)

The ODOT Maintenance Guide can be viewed at the following website:

http://www.oregon.gov/ODOT/HWY/OOM/pages/mguide.aspx

Proprietary Water Quality Catch Basins have an operation and maintenance manual provided by the manufacturer. See Appendix C of the Standard Operational Manual for Water Quality Catch Basins. These manuals provided guidelines on maintenance procedures for the facilities. A link to the manual is attached to the feature marker in TransGIS. https://gis.odot.state.or.us/TransGIS/

8. Limitations

Filter strips and bioslopes are NOT designed to allow the use of heavy equipment. Vehicles entering the facility can create depressions (tire ruts), damage vegetation, and damage structural components (e.g. area drains). These conditions may result in poor treatment and drainage performance.

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

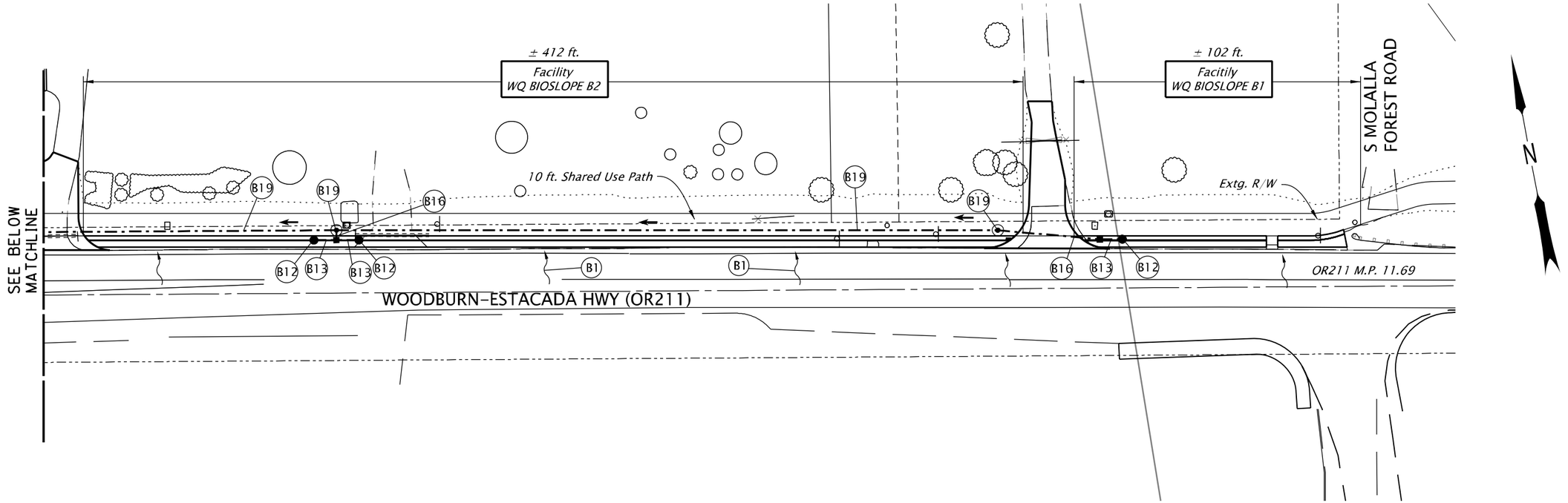
Contact any of the following for more detailed information about management of waste materials found on site:

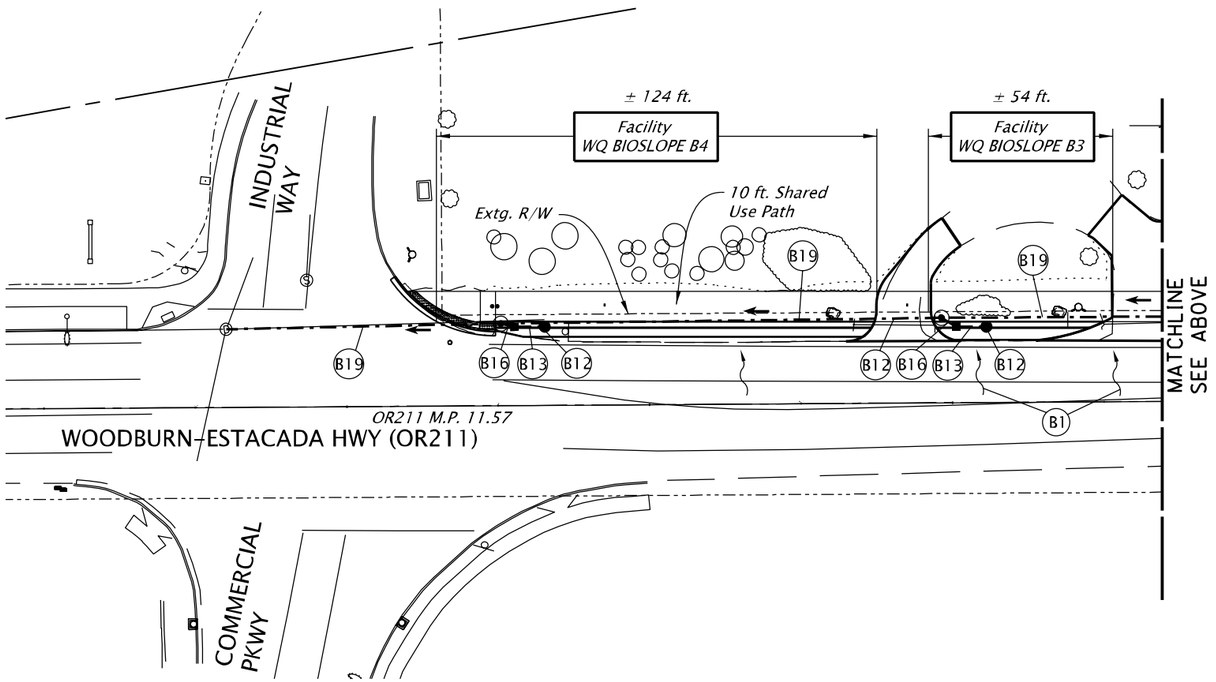
ODOT Clean Water Unit	(503) 986-3008
ODOT Statewide Hazmat Coordinator	(503) 667-7442
ODOT Region 1 Hazmat Coordinator	(503) 731-8290
ODOT Region 2 Hazmat Coordinator	(503) 986-2647
ODOT Region 3 Hazmat Coordinator	(541) 957-3594
ODOT Region 4 Hazmat Coordinator	(541) 388-6186
ODOT Region 5 Hazmat Coordinator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

A Appendix A – Site Specific Operational Plan

Contents:

Operational Plan: DFI D01245





LEGEND

- *Manhole*
- *Inlet*
- *Cleanout*
- *Storm pipe*
- *Conveyance Direction*
- *Pavement/ Facility Flow Path*

50 25 0 50

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OREGON DEPARTMENT OF TRANSPORTATION

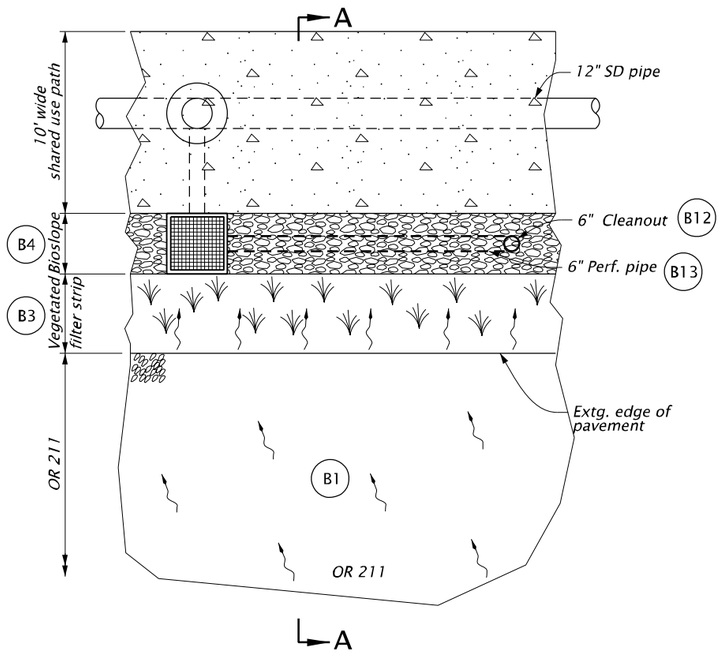
OR211: OR213 - N HEZZIE LANE (MOLALLA)
WOODBURN - ESTACADA HIGHWAY
CLACKAMAS COUNTY

Designer: John Million | Reviewer: Dan Shafar
Drafter: Anthony O'Donnell | Checker: John Million

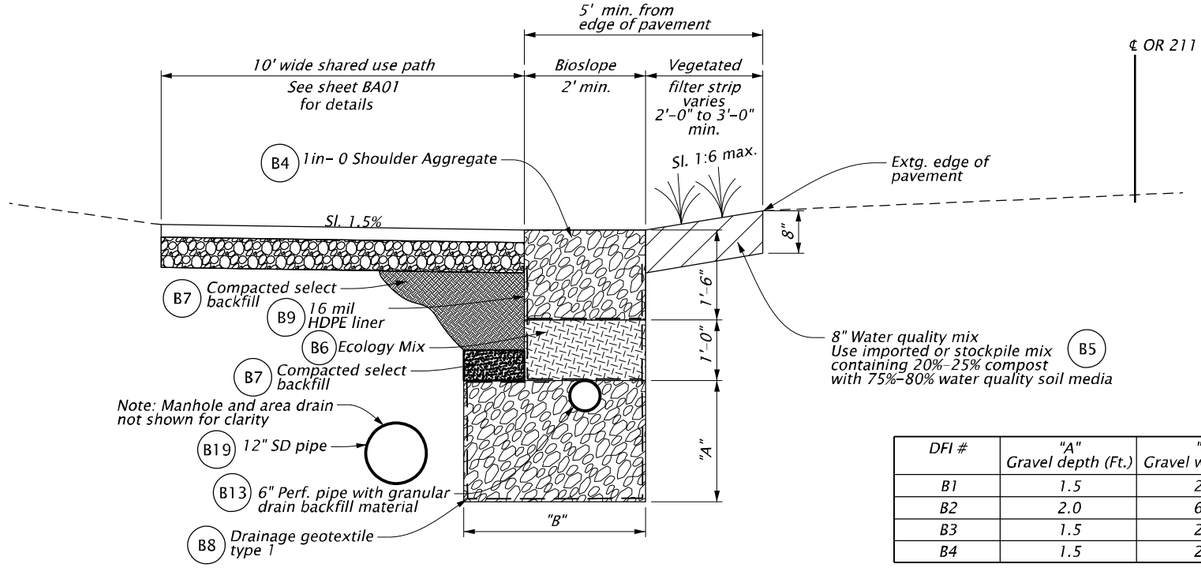
OPERATIONS AND MAINTENANCE MANUAL

SHEET NO. O&M 1

Rotation: 0° Scale: 1"=50'

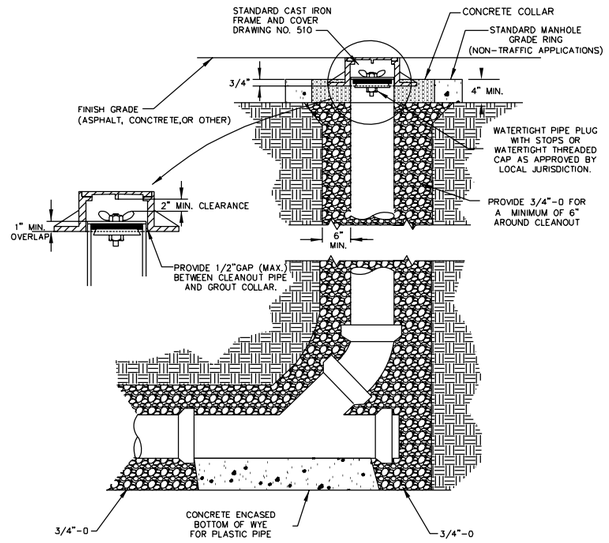


BIOSLOPE DETAIL
NTS



BIOSLOPE
SECTION A-A
NTS

DFI #	"A" Gravel depth (Ft.)	"B" Gravel width (Ft.)
B1	1.5	2.0
B2	2.0	6.0
B3	1.5	2.0
B4	1.5	2.0



NOTE:

1. CONCRETE ENCASE ENTIRE WYE SECTION AND 45° BEND IF CONCRETE PIPE.
2. STAND PIPE TO BE SAME SIZE AS MAINLINE UP TO AND INCLUDING 8" PIPE. MAINLINE GREATER THAN 8" SHALL HAVE A 8" STANDPIPE.

CLEANOUT DETAIL
NTS

STORMWATER FACILITY MARKER TABLE							
FACILITY LOCATION		BIOSLOPE		TYPE S2 MARKER LOCATION		TYPE S1 MARKER LOCATION	
STATION	MP	#	DFI #	BEGIN	END	RED	GREEN
"L" 20+97.18	11.69	B1	D01245	✓			✓
"L" 19+49.99	11.67	B2	D01245	✓			
"L" 14+97.76	11.59	B3	D01245	✓			
"L" 14+23.56	11.57	B4	D01245	✓		✓	

✓ CHECK WHERE APPROPRIATE
RED = RED - BEGINNING OF FACILITY
GREN = GREEN - END OF FACILITY

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SEPTEMBER 13, 2011
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OREGON DEPARTMENT OF TRANSPORTATION

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WOODBURN - ESTACADA HIGHWAY
CLACKAMAS COUNTY

Designer: John Million | Reviewer: Dan Shafar
Drafter: Anthony O'Donnell | Checker: John Million

OPERATIONS AND MAINTENANCE MANUAL

SHEET NO.
O&M 2

Rotation: 0° Scale: Full Size 1=1

B Appendix B – Project Contract Plans

Contents:

Site Specific Subset of Project Contract Plan 53V-037

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

STATE OF OREGON

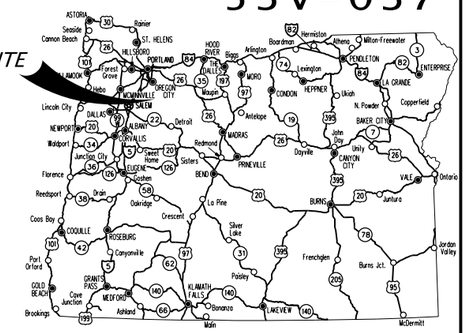
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED PROJECT

GRADING, DRAINAGE, STRUCTURES, PAVING, CURB, SIDEWALK, SIGNING, STRIPING, AND ILLUMINATION

53V-037

PROJECT SITE



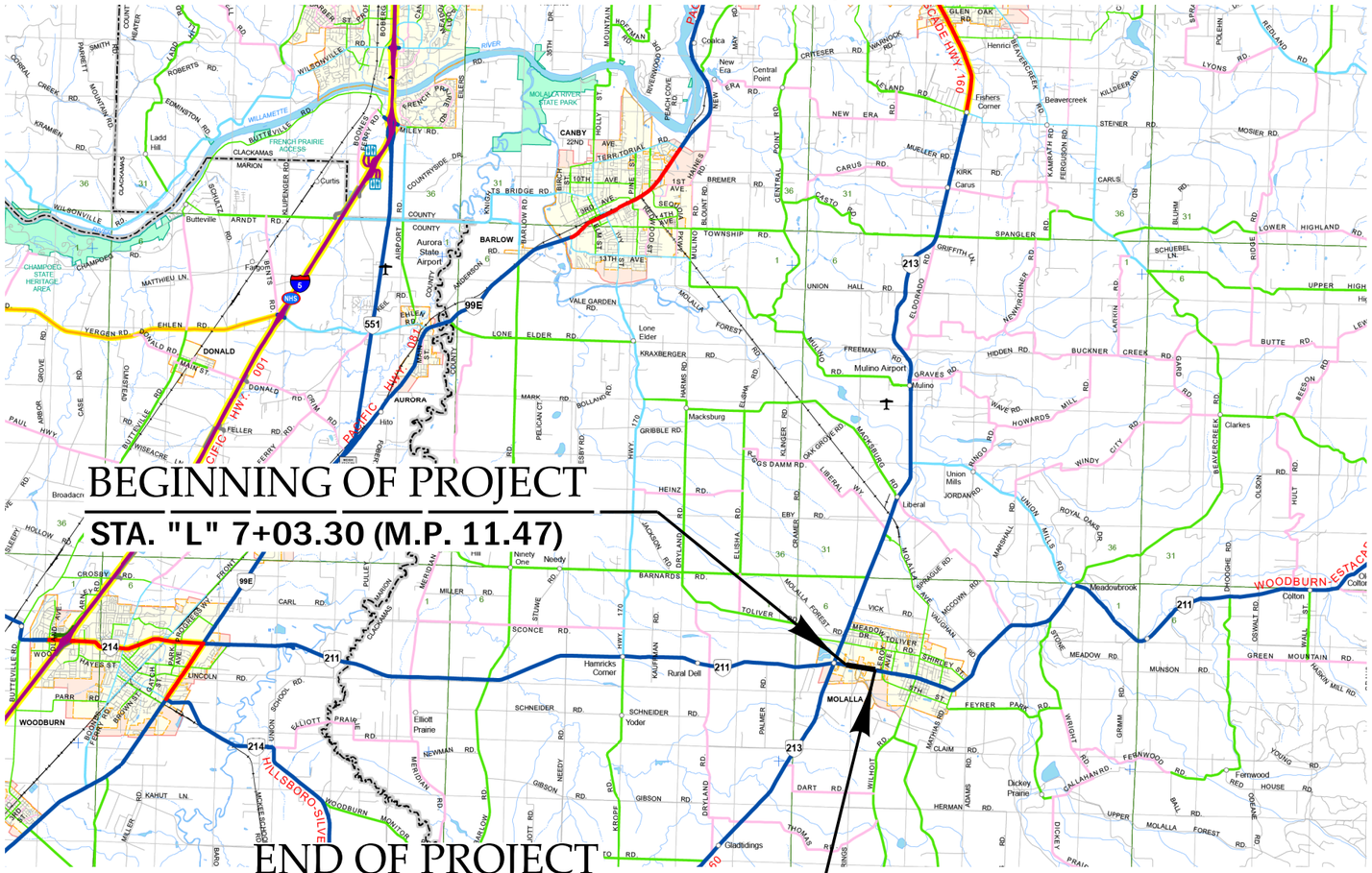
Overall Length Of Project – 0.69 Miles

OR211: OR213 - N HEZZIE LANE (MOLALLA)

WOODBURN - ESTACADA HIGHWAY

CLACKAMAS COUNTY

07/09/2020



T. 5 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.)

SAFETY FIRST

LET'S ALL
WORK TOGETHER
TO MAKE THIS
JOB SAFE

PLANS PREPARED FOR
OREGON DEPARTMENT OF TRANSPORTATION

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851 SW Sixth Ave
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OREGON TRANSPORTATION COMMISSION

Robert Van Brocklin	CHAIR
Alando Simpson	COMMISSIONER
Martin Callery	COMMISSIONER
Julie Brown	COMMISSIONER
Sharon Smith	COMMISSIONER
Kristopher W. Strickler	DIRECTOR OF TRANSPORTATION

These plans were developed using AASHTO 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

OR211: OR213 - N. HEZZIE LANE (MOLALLA)
WOODBURN - ESTACADA HIGHWAY
CLACKAMAS COUNTY

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	4945(002)	A01

INDEX OF SHEETS, CONT.	
SHEET NO.	DESCRIPTION
A03	Plan Sheet Layout
A04 - A05	Survey Control Data Sheet
	ROADWAY DETAILS
BA01	Typical Sections
BB01 - BB04	Details
BC01 - BC08	Curb Ramp Details
BD01 - BD02	Pipe Data Sheet
	ROADWAY CONSTRUCTION
C01 - C05A	Plan and Profile Sheets
	TRAFFIC CONTROL
EA01	Traffic Control Plan
EB01 - EB03	Traffic Control Plan
EC01 - EC07	Traffic Control Plan
	ROADSIDE DEVELOPMENT/EROSION CONTROL/ WETLAND MITIGATION
FB01-FB05	Erosion and Sediment Control Plan
HA01-HA02	Stormwater Details

SHEET NO.	BDS DRAWING NO.	DESCRIPTION
		BRIDGE
J01	104288	Plan and Elevation
J02	104289	General Notes
J03	104290	Foundation Data
J04	104291	Foundation Plan
J05	104292	Foundation Details
J06	104293	Bent Details
J07	104294	Wingwall Details

INDEX OF SHEETS, CONT.	
SHEET NO.	DESCRIPTION
	SIGNS
LA01 - LA05	Permanent Signing
LB01	Sign Details
LC01	Sign & Post Data Table
	ILLUMINATION
PA01	Illumination Plan
PB01	Illumination Details

Standard Drg. Nos.

RD100	- Mailbox Support
RD101	- Mailbox Installation
RD130	- Bollards
RD140	- Roadway Cross Slopes Superelevated Sections
RD150	- Slope Rounding
RD250	- Thrust Blocking
RD254	- Hydrant Installation
RD300	- Trench Backfill, Bedding, Pipe Zone And Mult. Installations
RD302	- Street Cut
RD317	- Culvert Embankment Protection and Riprap Pads
RD318	- Sloped Ends For Concrete Pipe
RD319	- Miscellaneous Culvert Details
RD320	- Paved End Slope For Culverts 60" Maximum Pipe Size
RD334	- Locator Post
RD335	- Standard Storm Sewer Manhole
RD336	- Standard Manhole Details
RD339	- Pipe To Structure Connections
RD354	- Carry Through Manhole-Storm
RD356	- Manhole Covers And Frames
RD360	- Manhole Frame Adjustment
RD363	- Gutter Transition At Inlet
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
RD367	- Curb Inlet Channel
RD370	- Ditch Inlet Type D
RD372	- Concrete Inlet Top, Option 1, Type CG-3
RD374	- Area Drainage Basin Or Field Inlet
RD380	- Fill Height Tables For Aluminum & Steel Corrugated Pipe
RD382	- Fill Height Tables For Aluminum & Steel Arch 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 Markers
RD602	- Shared Use Path Pavement Details
RD700	- Curbs
RD715	- Approaches And Non-Sidewalk Driveways
RD720	- Curb Line Sidewalks
RD721	- Separated Sidewalks
RD725	- Separated Sidewalk Driveways Or Alleys (Options A, B & C) ODOT Highways
RD735	- Curb Line Sidewalk Driveways Or Alleys (Options F & G) ODOT Highways
RD755	- Curb Ramp Details
RD756	- Curb Ramp Placement Options Small Radii
RD757	- Curb Ramp Placement Options Large Radii
RD759	- Detectable Warning Surface Details & Placement Locations
RD815	- Chain Link Fence
RD1010	- Inlet Protection Type 2, 3, 6, 7, 10 and 11
RD1030	- Sediment Barrier Type 2, 3 and 4
RD1032	- Sediment Barrier Type 8
RD1040	- Sediment Fence
TM200	- Sign Installation Details
TM212	- Signing Details Oregon Route Signs
TM223	- Conventional Roads Directional Sign Layout Street Name Signs
TM240	- Crosswalk Closure Detail
TM472	- Traffic Signal Junction Boxes/Hand Holes
TM482	- Controller Cabinet & Service Cabinet Foundation Details
TM485	- Service Cabinet 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" & Method "D" Surface Installed Profiled
TM521	- Durable & High Performance Pavement Markings Surface & Groove Installed Non-Profiled
TM530	- Intersection Pavement Markings (Crosswalk, Stop Bar & Bike Lane Stencil)
TM570	- Traffic Delineators
TM571	- Traffic Delineators Steel Post Details
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
TM671	- 3 Second Gust Wind Speed Map
TM676	- Sign Attachments
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 Pavement Markings
TM820	- Temporary Barricades
TM821	- Temporary Sign Supports
TM822	- Temporary Sign Supports
TM840	- Closure Details
TM841	- Intersection Work Zone Details
TM844	- Temporary Pedestrian Accessible Routing
TM850	- 2-Lane, 2-Way Roadways
TM851	- Non-Freeway Multi-Lane Sections
TM870	- Bridge Construction

OREGON DEPARTMENT OF TRANSPORTATION

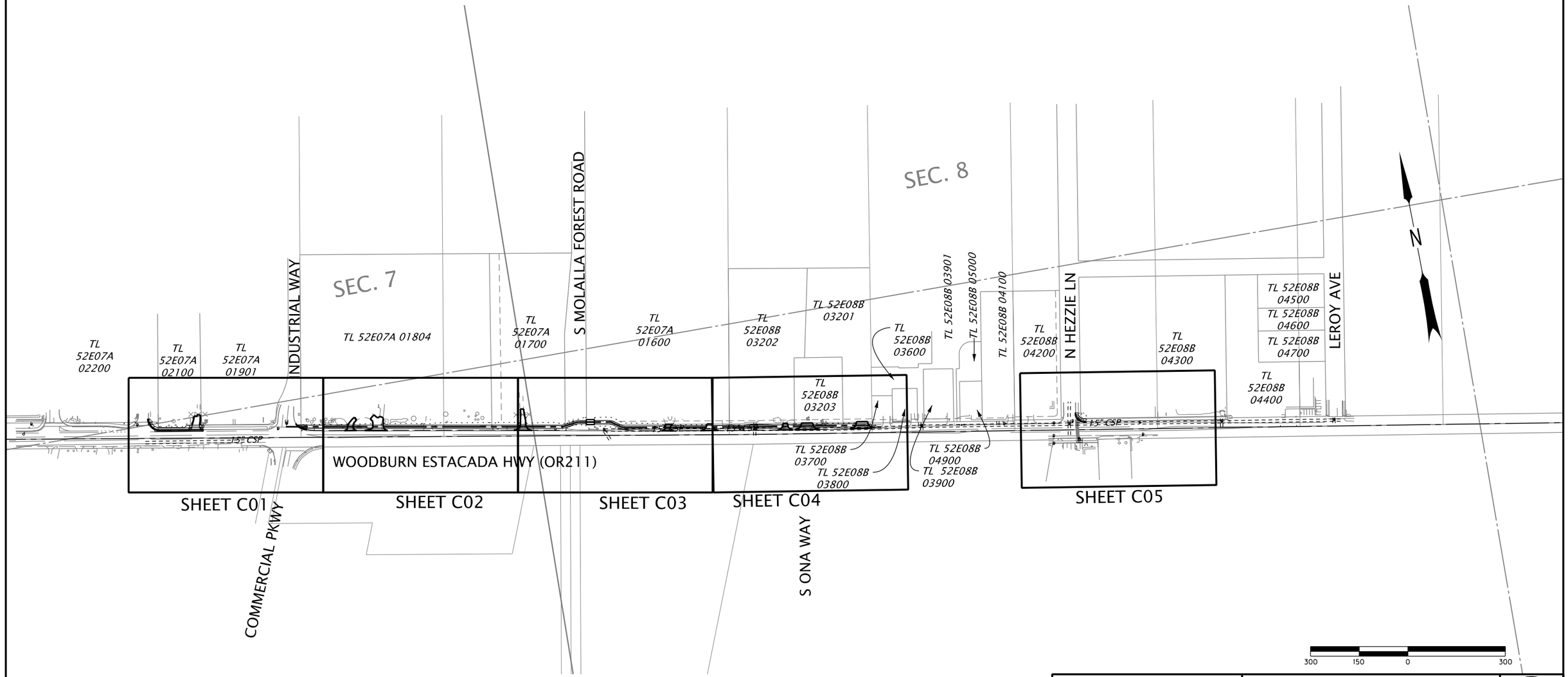
Standard Drawings located on the web at:
http://www.oregon.gov/ODOT/HWY/ENGSERVICES/pages/standard_drawings_home.aspx

OR211: OR213 - N. HEZZIE LANE (MOLALLA)
WOODBURN - ESATACADA HIGHWAY
CLACKAMAS COUNTY

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	SEE SHEET A01	A02

Sec. 7 & 8, T. 5 S, R. 2 E, W.M.

53V-037



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MAY 5, 1998
CHIVANNA T. POT
RENEWS: 12/31/2020

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OREGON DEPARTMENT OF TRANSPORTATION

OR211: OR213 - N HEZZIE LANE (MOLALLA)
WOODBURN - ESTACADA HIGHWAY
CLACKAMAS COUNTY

Designer: Natalie Owen
Reviewer: Brian Roche
Drafter: Anthony O'Donnell
Checker: Chivanna Pot

PLAN SHEET LAYOUT

SHEET NO.
A03

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Rotation: 0° Scale: 1"=300'

NARRATIVE:

THE PURPOSE OF THIS SURVEY IS TO RESOLVE THE LOCATION OF THE EXISTING RIGHT-OF-WAY FOR A PORTION OF THE NORTH HALF OF THE WOODBURN-ESTACADA HIGHWAY (OR211) BETWEEN THE CASCADE HIGHWAY (OR213) AND LEROY AVENUE. THIS SURVEY WILL ALSO ESTABLISH A CONTROL NETWORK AND PERPETUATE THE POSITION OF EXISTING MONUMENTS IN PREPARATION FOR THE OREGON DEPARTMENT OF TRANSPORTATION (ODOT) OR211: OR213-N HEZZIE LANE (MOLALLA) CONSTRUCTION PROJECT.

THE POINTS, 1024, A 3-1/4" BRONZE DISK SET PER CLACKAMAS COUNTY UNITED STATES BEARING TREE RECORD (USBT) 2001-052, MARKING THE SOUTHWEST CORNER OF THE HUGH GORDON DONATION LAND CLAIM (DLC) NO. 40 AND MONUMENT NUMBER 1023, A 3-1/4" BRONZE DISK IN MONUMENT WELL, SET PER USBT 2002-145 MARKING THE NORTHEAST CORNER OF DLC NO. 41 AND AN ANGLE POINT ON THE SOUTH LINE OF DLC NO 40.

THIS SURVEY UTILIZES A LOCAL DATUM PLANE (LDP) WHICH IS RELATIVE TO THE OREGON COORDINATE SYSTEM OF 1983 (2011) EPOCH 2010.00 REFERENCE FRAME, NORTH ZONE, WITH RESPECT TO THE LOCAL LATITUDE AND GROUND ELEVATION. THE PRIMARY CONTROL WAS ESTABLISHED USING REAL TIME KINEMATIC (RTK) GPS METHODS OF MEASUREMENT. A LOCAL SET OF TRANSFORMATION PARAMETERS WERE CALCULATED BASED ON THE PRIMARY CONTROL AND APPLIED TO ALL MEASUREMENTS IN AREAS WHERE RTK MEASUREMENTS WERE NOT COLLECTED. NATIONAL GEODETIC SURVEY (NGS) STATION PID AJ8153 WAS OBSERVED AND HELD FOR THE PROJECTS VERTICAL BENCHMARK AND UTILIZED AS A CONFIRMATION OF THE HORIZONTAL CONTROL TRANSFORMATION.

FIELD MEASUREMENTS FOR THIS RECORD OF SURVEY WERE COMPLETED BY PROJECT DELIVERY GROUP, LLC BETWEEN AUGUST AND NOVEMBER OF 2017. GPS MEASUREMENTS WERE COLLECTED WITH TRIMBLE R8S AND R6-3 GNSS RECEIVERS. TERRESTRIAL MEASUREMENTS WERE COLLECTED WITH TRIMBLE S7 AND S6 TOTAL STATIONS. DATA WAS POST PROCESSED USING TRIMBLE BUSINESS CENTER (TBC) SOFTWARE (VERSION 3.82). THE POSITIONAL TOLERANCE WAS ESTABLISHED AT 95% (1.96) CONFIDENCE LEVEL.

TO CONVERT LDP COORDINATES TO THE OREGON COORDINATE SYSTEM STATED ABOVE, MULTIPLY LDP COORDINATES BY 0.99988660.

OREGON STATE HIGHWAY 211 WAS ORIGINALLY ESTABLISHED IN 1865 AS CLACKAMAS COUNTY ROAD NUMBER 4 AND KNOWN AS GORDON & CUTTINGS MILL ROAD. THE ROAD CENTERLINE WAS ESTABLISHED ALONG THE SOUTH LINE OF THE HUGH GORDON DLC NO. 40. FOR THIS RESOLUTION THE RIGHT-OF-WAY CENTERLINE ALIGNMENT OF HIGHWAY 211 WAS RELOCATED COINCIDENT WITH THE SOUTH LINE OF THE HUGH GORDON DLC NO. 40. MONUMENTS MARKING THE SOUTHWEST CORNER AND ANGLE POINT IN THE SOUTH LINE OF SAID DLC WERE RECOVERED AND HELD. POINT NUMBER 1023, A 1/2" IRON PIPE IN MONUMENT WELL MARKING THE NORTHWEST CORNER OF METZLER & HART'S ADDITION, CLACKAMAS COUNTY PLAT NO. 370, WAS SET ON THE SOUTH LINE OF THE HUGH GORDON DLC AND HAS BEEN HISTORICALLY HELD FOR CENTERLINE. THAT MONUMENT WAS HELD FOR THE CENTERLINE ALIGNMENT OF WOODBURN-ESTACADA HIGHWAY. MONUMENTS RECOVERED ALONG THE NORTH RIGHT-OF-WAY WERE HELD TO ESTABLISH RECORD LOCATION AND WIDTH, AS SHOWN HEREIN.

NETWORK POINTS SET DURING THIS SURVEY DO NOT REPRESENT PROPERTY LINES OR RIGHT-OF-WAY LINES.

REFERENCES:

THE SHAVER PLACE, PLAT NO. 360
METZLER & HART'S ADDITION, PLAT 370
PARTITION PLAT 1993-141, 2001-053, 2003-071, 2007-079, 2010-054, 2017-200
PS 10994, 14277, 17247, 21697, 22379, 25041, 26264, 26783, 28519, 28537, 29146
SN 29146, 29696, 2003-059, 2008-324, 2016-039, 2017-200
USBT ENTRY 2001-053, 2002-145, 2017-020
CLACKAMAS COUNTY DEED DOCUMENT 96-052091, 2004-081919, 2007-051574, 2007-051578, 2007-051577, 2014-017552, 2014-044271, 2014-044861, 2015-027397, 2015-071332, 2016-022473, 2016-066016, 2016-067288, 2016-068004, 2017-000415, 2017-017151

REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
MAY 15, 2012
KEITH WHISENHUNT
62679

Renewal Date: 06/30/2020

WSP USA Inc.
851 SW Sixth Ave
Suite 1600
Portland, OR 97204
Tel: 1 503 274 8772

OR211: OR213 - N HEZZIE LANE (MOLALLA)
WOODBURN - ESTACADA HIGHWAY
CLACKAMAS COUNTY

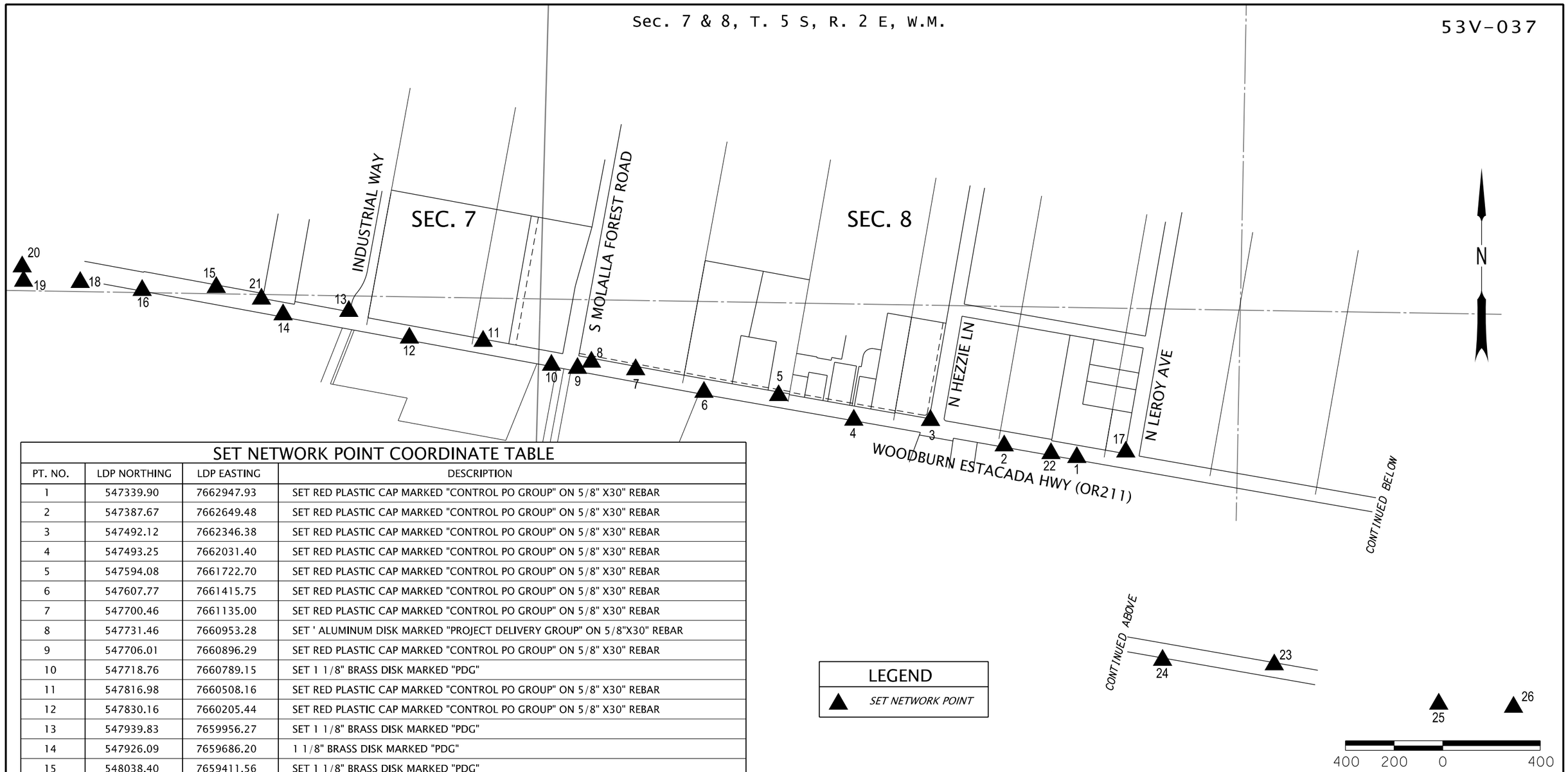
Designer: Natalie Owen | Reviewer: Brian Roche
Drafter: Anthony O'Donnell | Checker: Chivanna Pot

SURVEY CONTROL DATA

SHEET NO. A04

Sec. 7 & 8, T. 5 S, R. 2 E, W.M.

53V-037



SET NETWORK POINT COORDINATE TABLE

PT. NO.	LDP NORTHING	LDP EASTING	DESCRIPTION
1	547339.90	7662947.93	SET RED PLASTIC CAP MARKED "CONTROL PO GROUP" ON 5/8" X30" REBAR
2	547387.67	7662649.48	SET RED PLASTIC CAP MARKED "CONTROL PO GROUP" ON 5/8" X30" REBAR
3	547492.12	7662346.38	SET RED PLASTIC CAP MARKED "CONTROL PO GROUP" ON 5/8" X30" REBAR
4	547493.25	7662031.40	SET RED PLASTIC CAP MARKED "CONTROL PO GROUP" ON 5/8" X30" REBAR
5	547594.08	7661722.70	SET RED PLASTIC CAP MARKED "CONTROL PO GROUP" ON 5/8" X30" REBAR
6	547607.77	7661415.75	SET RED PLASTIC CAP MARKED "CONTROL PO GROUP" ON 5/8" X30" REBAR
7	547700.46	7661135.00	SET RED PLASTIC CAP MARKED "CONTROL PO GROUP" ON 5/8" X30" REBAR
8	547731.46	7660953.28	SET ' ALUMINUM DISK MARKED "PROJECT DELIVERY GROUP" ON 5/8"X30" REBAR
9	547706.01	7660896.29	SET RED PLASTIC CAP MARKED "CONTROL PO GROUP" ON 5/8" X30" REBAR
10	547718.76	7660789.15	SET 1 1/8" BRASS DISK MARKED "PDG"
11	547816.98	7660508.16	SET RED PLASTIC CAP MARKED "CONTROL PO GROUP" ON 5/8" X30" REBAR
12	547830.16	7660205.44	SET RED PLASTIC CAP MARKED "CONTROL PO GROUP" ON 5/8" X30" REBAR
13	547939.83	7659956.27	SET 1 1/8" BRASS DISK MARKED "PDG"
14	547926.09	7659686.20	1 1/8" BRASS DISK MARKED "PDG"
15	548038.40	7659411.56	SET 1 1/8" BRASS DISK MARKED "PDG"
16	548025.93	7659107.10	SET RED PLASTIC CAP MARKED "CONTROL PO GROUP" ON 5/8" X30" REBAR
17	547362.38	7663148.90	SET 1 1/8" BRASS DISK MARKED "PDG"
18	548059.01	7658852.58	SET 1 1/8" BRASS DISK MARKED "PDG"
19	548063.73	7658620.16	SET 1 1/8" BRASS DISK MARKED "PDG"
20	548122.70	7658614.18	SET RED PLASTIC CAP MARKED "CONTROL PO GROUP" ON 5/8" X30" REBAR
22	547355.92	7662841.46	SET 1 1/8" BRASS DISK MARKED "PDG"
23	547045.14	7664864.40	SET 1 1/8" BRASS DISK MARKED "PDG"
24	547063.86	7664405.66	SET 1 1/8" BRASS DISK MARKED "PDG"
25	546883.76	7665540.58	SET 1 1/8" BRASS DISK MARKED "PDG"
26	546870.83	7665847.79	SET 1 1/8" BRASS DISK MARKED "PDG"

LEGEND

▲ *SET NETWORK POINT*

REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
MAY 15, 2012
KEITH WHISENHUNT
62679

Renewal Date: 06/30/2020

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Tel: 1 503 274 8772

OR211: OR213 - N HEZZIE LANE (MOLALLA)
WOODBURN - ESTACADA HIGHWAY
CLACKAMAS COUNTY

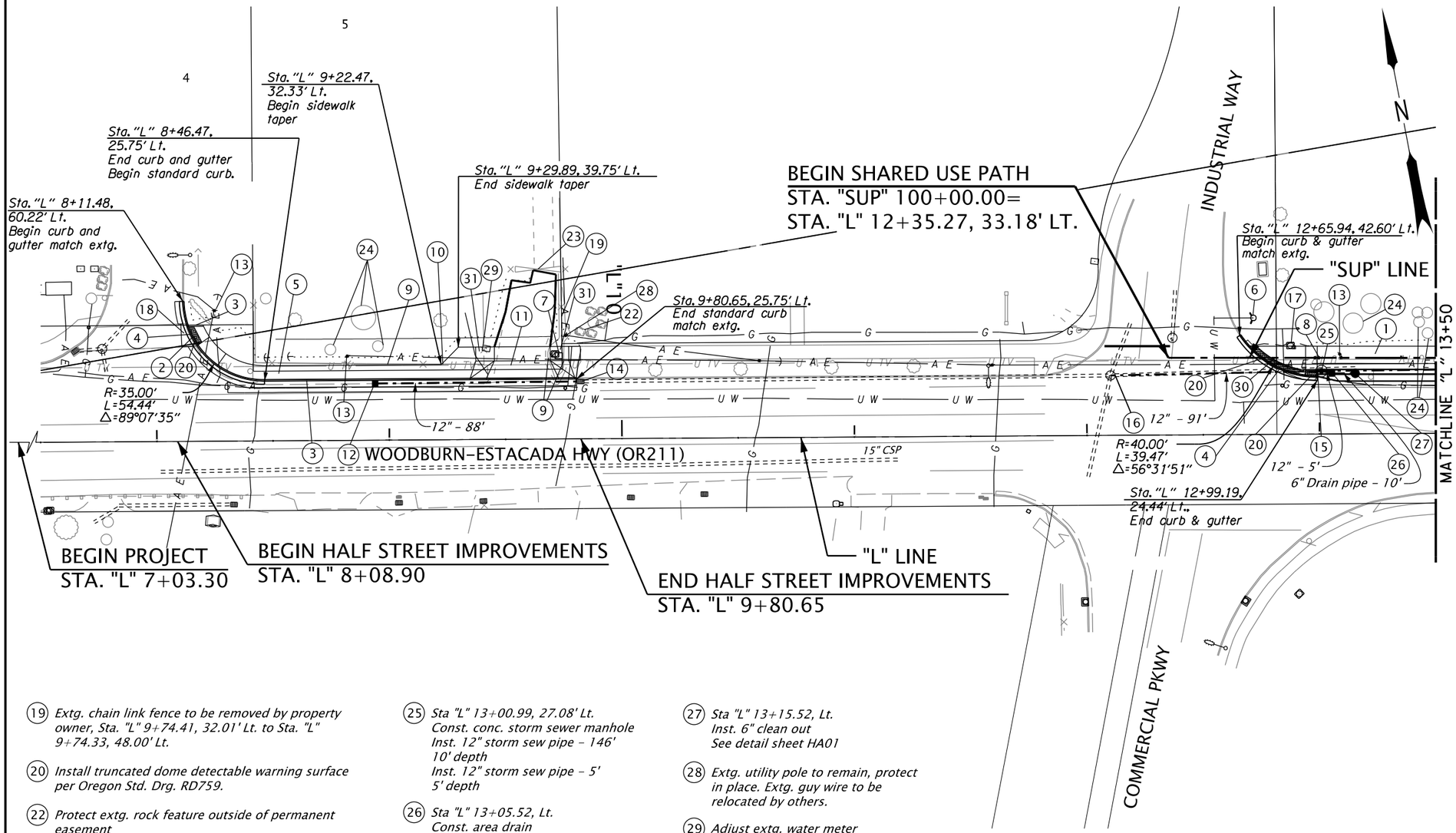
Designer: Natalie Owen
Reviewer: Brian Roche
Drafter: Anthony O'Donnell
Checker: Chivanna Pot

SURVEY CONTROL DATA

SHEET NO. A05

Sec. 7, T. 5 S, R. 2 E, W.M.

53V-037



1. Const. 10' Asphalt conc. shared use path
2. Const. curb ramp. See sheet BC01 for details.
3. Const. Standard conc. curb per Oregon Std. Drg. RD700
4. Const. Standard conc. curb and gutter (24") per Oregon Std. Drg. RD700
5. Const. 6' conc. sidewalk per Oregon Std. Drg. RD720
6. Protect extg. fire hydrant
7. Extg. utility riser box to be relocated by others
8. Const. bollard per Oregon Std. Drg. RD130
   STA. "L" 13+09.34, 32.69' Lt.
9. Extg. retaining wall to be removed by property owner, Sta. "L" 8+42, 36' Lt. to Sta. "L" 9+40.70, 32.36' LT.
10. Extg. chain link fence to be removed by property owner, Sta. "L" 8+41.94, 40.95' Lt. to Sta. "L" 9+40.84, 40.93' Lt.
11. Const. 24' driveway, Sta. "L" 9+57.37, Lt. per Oregon Std. Drg. RD725, Option C
12. Sta. "L" 8+94.01, Lt.
    Const. type "G-2" inlet
13. Extg. utility pole and guy wire to remain, protect in place
14. Sta. "L" 9+82.91, Lt.
    Inst. 12" ductile iron pipe - 88'
    5' depth
    Adjust inlet
15. Sta. "L" 12+99.74, 27.25, Lt.
    End Bioslope B4
    See detail sheet HA01
    Inst. field facility Type "S2" - 1
    DFI no. DO1245
    Inst. field facility mover Type "S1" Green - 1
    See RD 339
16. Sta. "L" 12+10.31, 25.77 Lt.
    Remove extg. pipe-105'
    Adjust manhole
    Inst. 12" storm sew. pipe - 91'
    10' depth
    Trench resurfacing -25 SY
17. Extg. riser box and vault to be relocated by others
18. Const. conc. panel. Match extg. section.
19. Extg. chain link fence to be removed by property owner, Sta. "L" 9+74.41, 32.01' Lt. to Sta. "L" 9+74.33, 48.00' Lt.
20. Install truncated dome detectable warning surface per Oregon Std. Drg. RD759.
22. Protect extg. rock feature outside of permanent easement
23. Protect extg. gate
24. Protect extg. tree
25. Sta "L" 13+00.99, 27.08' Lt.
    Const. conc. storm sewer manhole
    Inst. 12" storm sew pipe - 146'
    10' depth
    Inst. 12" storm sew pipe - 5'
    5' depth
26. Sta "L" 13+05.52, Lt.
    Const. area drain
    Inst. 6" drain pipe - 10'
    5' depth
27. Sta "L" 13+15.52, Lt.
    Inst. 6" clean out
    See detail sheet HA01
28. Extg. utility pole to remain, protect in place. Extg. guy wire to be relocated by others.
29. Adjust extg. water meter
30. Const. curb ramp. See sheet BC03 for details.
31. Const. ADA ramp. See sheet BC02 for details.

50 25 0 50

REGISTERED PROFESSIONAL ENGINEER
85760PE
OREGON
SEPTEMBER 13, 2011
DANIEL R, SHAFAR
RENEWS: 6/30/2020

REGISTERED PROFESSIONAL ENGINEER
19731PE
OREGON
MAY 5, 1998
CHIVANNA T. POT
RENEWS: 12/31/2020

WSP USA Inc.
851 SW Sixth Ave
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OREGON DEPARTMENT OF TRANSPORTATION

OR211: OR213 - N HEZZIE LANE (MOLALLA)
WOODBURN - ESTACADA HIGHWAY
CLACKAMAS COUNTY

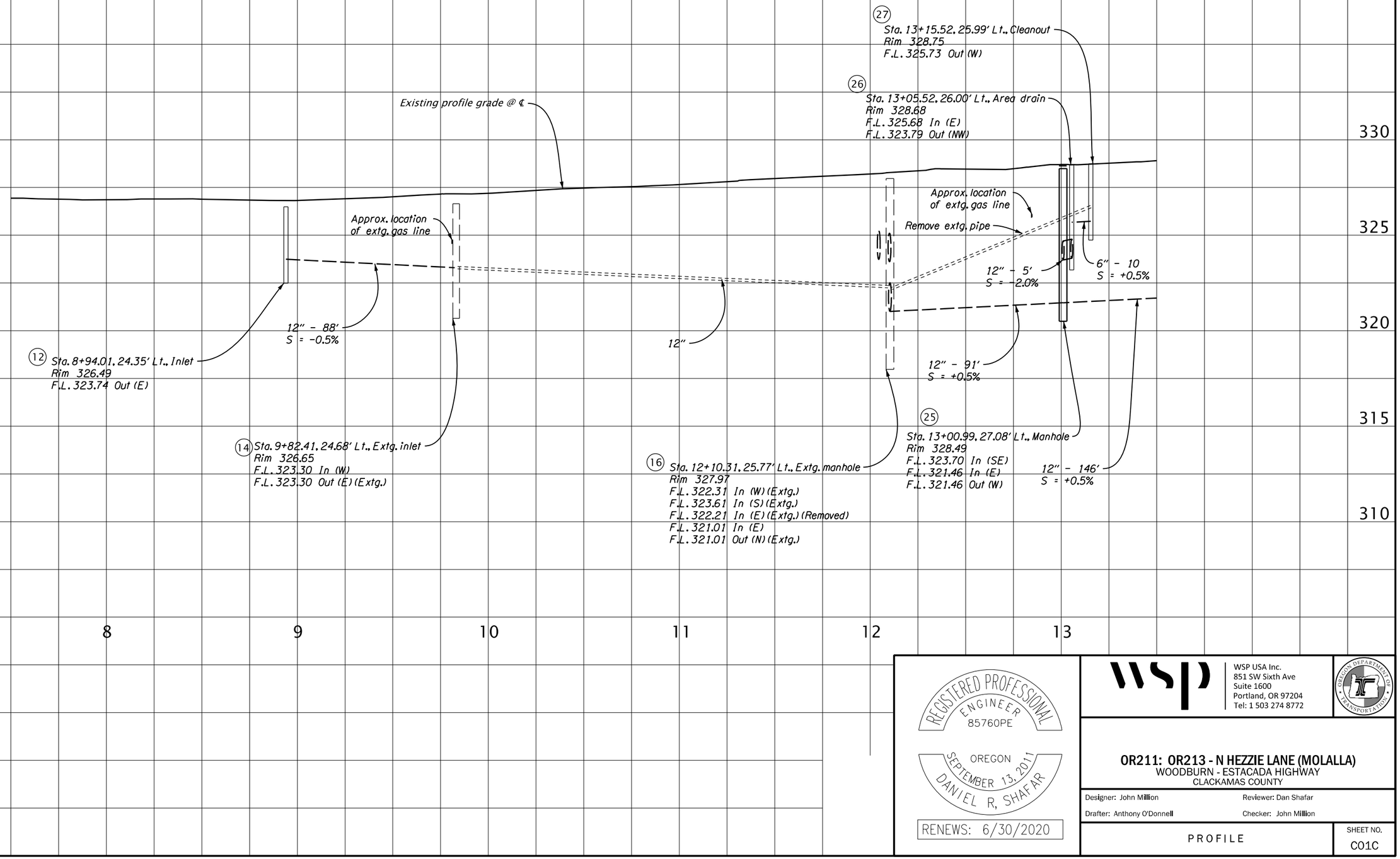
Designer: Natalie Owen | Reviewer: Brian Roche
Drafter: Anthony O'Donnell | Checker: Chivanna Pot

GENERAL CONSTRUCTION | SHEET NO. C01A

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Rotation: 0° Scale: 1"=50'

"L" LINE



REGISTERED PROFESSIONAL ENGINEER
85760PE
OREGON
SEPTEMBER 13, 2011
DANIEL R. SHAFAR
RENEWS: 6/30/2020

WSP USA Inc.
851 SW Sixth Ave
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OREGON DEPARTMENT OF TRANSPORTATION

OR211: OR213 - N HEZZIE LANE (MOLALLA)
WOODBURN - ESTACADA HIGHWAY
CLACKAMAS COUNTY

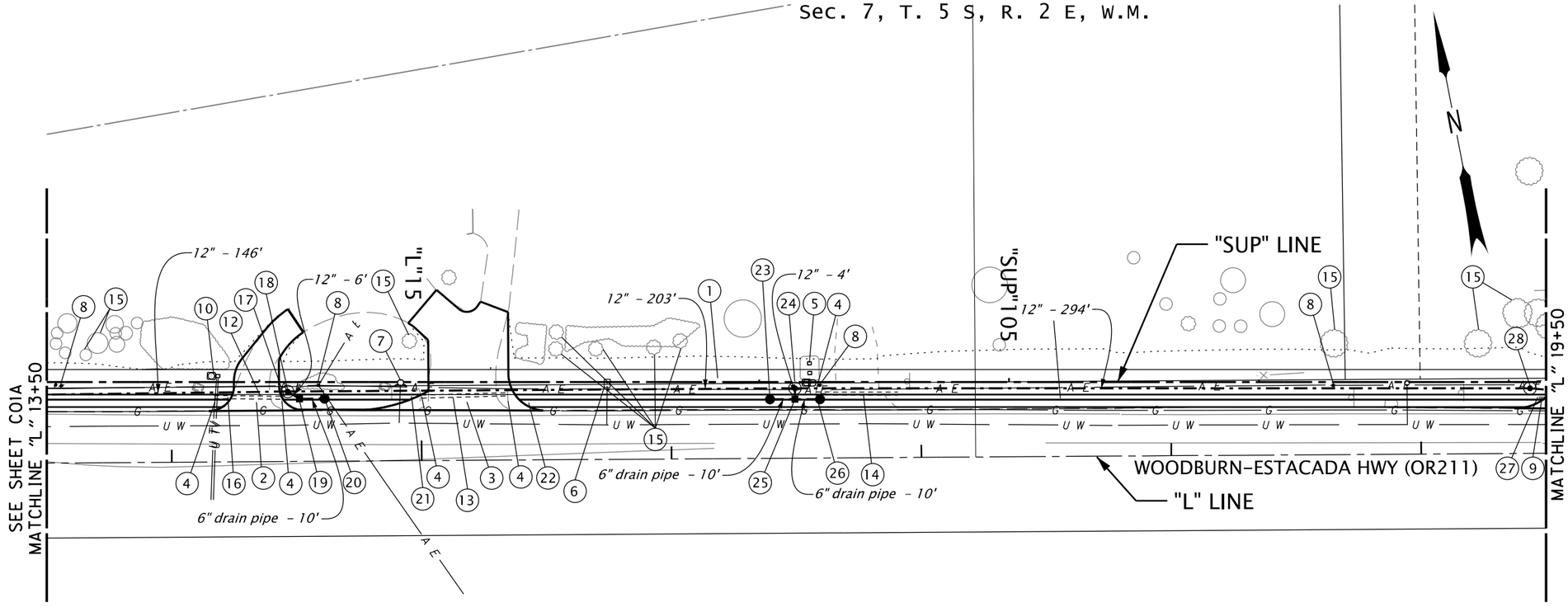
Designer: John Million | Reviewer: Dan Shafar
Drafter: Anthony O'Donnell | Checker: John Million

PROFILE | SHEET NO. C01C

Rotation: 0° Scale: 1"=50'

Sec. 7, T. 5 S, R. 2 E, W.M.

53V-037



(1) *Const. 10' Asphalt conc. shared use path*

(2) *Const. 16' driveway, Sta. "L" 14+34.09, Lt.*

(3) *Const. 32' driveway, Sta. "L" 15+18.90, Lt.*

(4) *Remove extg. retaining wall*

(5) *Extg. communication vault to be relocated by others*

(6) *Adjust extg. water meter*

(7) *Relocate extg. fire hydrant to Sta. "L" 14+92.09, 38.00' Lt.*

(8) *Extg. utility pole to be relocated by others*

(9) *Relocate extg. mailbox on new single support to "L" 19+46.01, 21.00' Lt.*

(10) *Extg. riser box and vault to be relocated by others*

(12) *Remove extg. pipe - 27'*

(13) *Remove extg. pipe - 35'*

(14) *Remove extg. pipe - 33'*

(15) *Prune extg. tree to provide 8' of vertical clearance above finished grade*

(16) *Sta. "L" 14+23.56, 26.39', Lt.*
Begin bioslope B4
See detail sheet HA01
Inst. field facility maker "Type S2" - 1
DFI no. DO1245
Inst. field facility maker "Type S1" red - 1
See Oregon Std. Drg. RD339

(17) *Sta. "L" 14+44.64, 26.20', Lt.*
End bioslope B3
See detail sheet HA01
Inst. field facility maker "Type S2" Green - 1
See Oregon Std. Drg. RD339

(18) *Sta. "L" 14+46.54, 28.01' Lt.*
Const. conc. storm sewer manhole
Inst. 12" storm sew. pipe - 203'
10' depth
Inst. 12" storm sew. pipe - 6'
5' depth

(19) *Sta. "L" 14+51.30, Lt.*
Const. area drain
Inst. 6" drain pipe - 10'
5' depth

(20) *Sta. "L" 14+61.30, Lt.*
Inst. 6" cleanout
See detail sheet HA01

(21) *Sta. "L" 14+97.76, 25.94', Lt.*
Begin bioslope B3
See detail sheet HA01
Inst. field facility maker "Type S2" - 1
DFI no. DO1245
Inst. field facility maker "Type S1" red - 1
See Oregon Std. Drg. RD339

(22) *Sta. "L" 15+38.66, 25.66', Lt.*
End bioslope B2
See detail sheet HA01
Inst. field facility maker "Type S2" Green - 1
See Oregon Std. Drg. RD339

(23) *Sta. "L" 16+39.55, Lt.*
Inst. 6" cleanout
See detail sheet HA01

(24) *Sta. "L" 16+49.58, 27.97' Lt.*
Const. conc. storm sewer manhole
Inst. 12" storm sew. pipe - 294'
10' depth
Inst. 12" storm sew. pipe - 4'
5' depth

(25) *Sta. "L" 16+49.55, Lt.*
Const. area drain
Inst. 6" drain pipe - 10'
5' depth
Inst. 6" drain pipe - 10'
5' depth

(26) *Sta. "L" 16+59.55, Lt.*
Inst. 6" cleanout
See detail sheet HA01

(27) *Sta. "L" 19+49.99, 22.95', Lt.*
Begin bioslope B2
See detail sheet HA01
Inst. field facility maker "Type S2" - 1
DFI no. DO1245
Inst. field facility maker "Type S1" red - 1
See Oregon Std. Drg. RD339

(28) *Sta. "L" 19+43.71, 26.04' Lt.*
Const. conc. storm sewer manhole
Inst. 12" storm sew. pipe - 46'
10' depth

50 25 0 50

REGISTERED PROFESSIONAL ENGINEER
85760PE
OREGON
SEPTEMBER 13, 2011
DANIEL R, SHAFAR
RENEWS: 6/30/2020

REGISTERED PROFESSIONAL ENGINEER
19731PE
OREGON
MAY 5, 1998
CHIVANNA T. POT
RENEWS: 12/31/2020

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OREGON DEPARTMENT OF TRANSPORTATION

OR211: OR213 - N HEZZIE LANE (MOLALLA)
WOODBURN - ESTACADA HIGHWAY
CLACKAMAS COUNTY

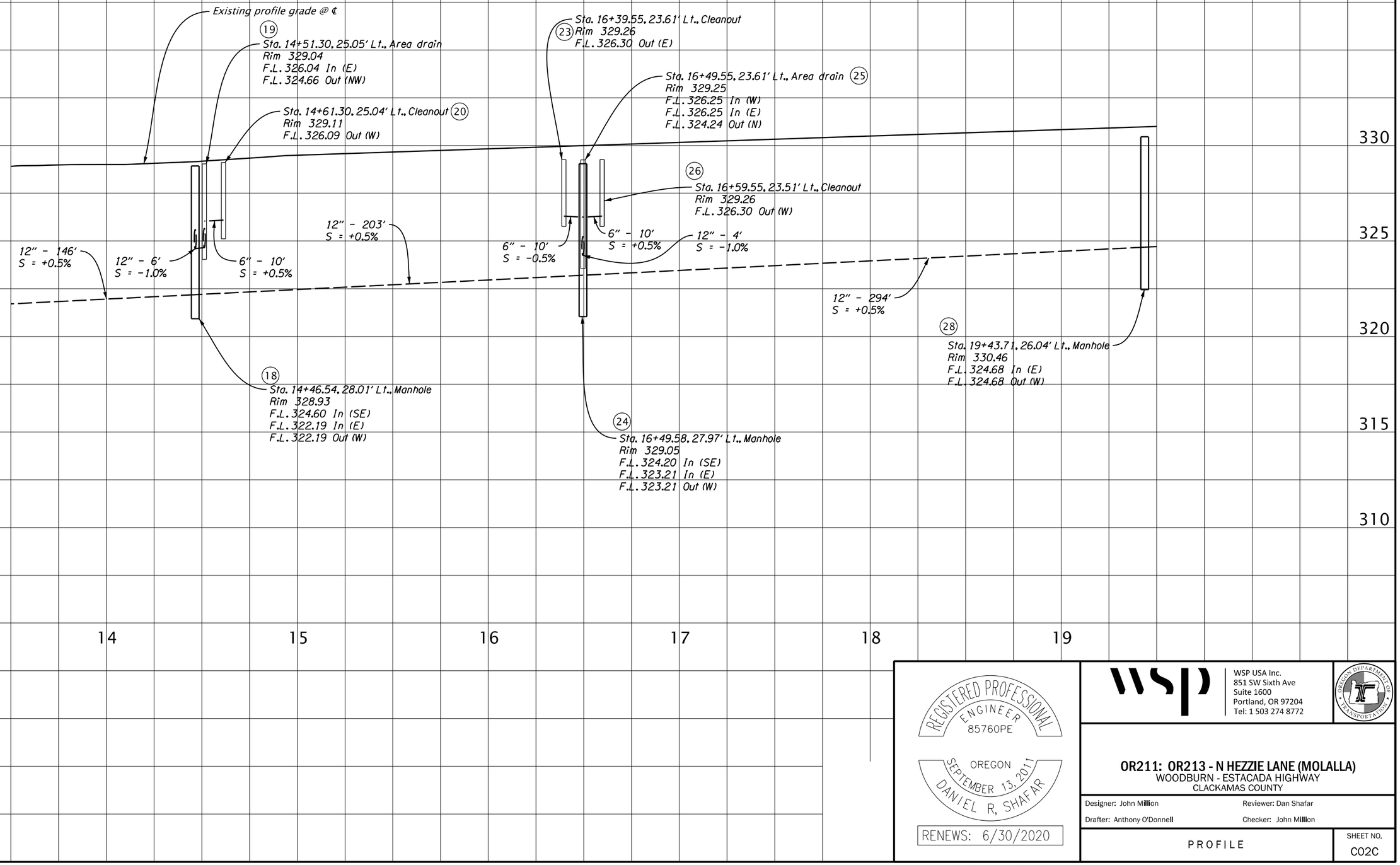
Designer: Natalie Owen
Reviewer: Brian Roche
Drafter: Anthony O'Donnell
Checker: Chivanna Pot

GENERAL CONSTRUCTION

SHEET NO.
C02A

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

"L" LINE



REGISTERED PROFESSIONAL ENGINEER
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OREGON
SEPTEMBER 13, 2011
DANIEL R. SHAFAR
RENEWS: 6/30/2020

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OREGON DEPARTMENT OF TRANSPORTATION

OR211: OR213 - N HEZZIE LANE (MOLALLA)
WOODBURN - ESTACADA HIGHWAY
CLACKAMAS COUNTY

Designer: John Million | Reviewer: Dan Shafar
Drafter: Anthony O'Donnell | Checker: John Million

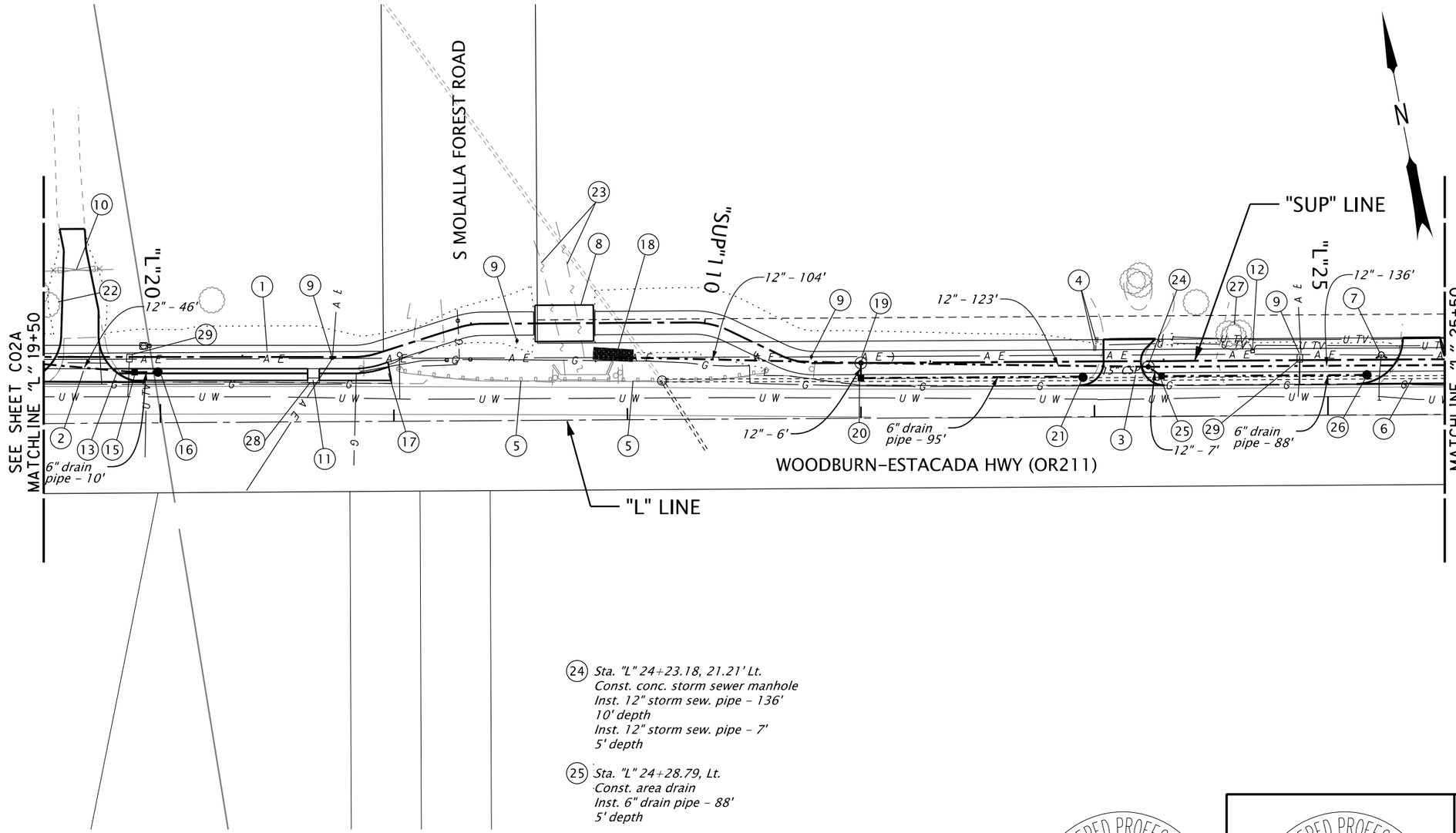
PROFILE

SHEET NO. C02C

Rotation: 0° Scale: 1"=50'

Sec. 8, T. 5 S, R. 2 E, W.M.

53V-037



1. Const. 10' Asphalt conc. shared use path
2. Const. 16' driveway, Sta. "L" 19+65.71, Lt. Notify property owner 30 days prior to start of driveway construction.
3. Const. 16' driveway, Sta. "L" 24+12.03, Lt.
4. Relocate extg. mailbox to "L" 24+01, 34.38' Lt.
5. Protect extg. guardrail
6. Const. 16' driveway, Sta. "L" 25+40.30, Lt.
7. Relocate extg. fire hydrant to Sta. "L" 25+23.00, 30.12' Lt.
8. Sta. "SUP" 109+26.76 to Sta. "SUP" 109+53.01 const. pedestrian bridge (for details, see sheets J01 - J07)
9. Extg. utility pole to be relocated by others
10. Extg. gate to be removed by property owner except gate posts. Protect posts in place
11. Const. asphalt ramp. See sheet BC04 for details
12. Extg. riser box and vault to be relocated by others
13. Sta. "L" 19+81.10, 22.76' Lt.
    End bioslope B1
    See detail sheet HA01
    Inst. field facility maker "Type S2" Green - 1
    See Oregon Std. Drg. RD339
14. Note not used
15. Sta. "L" 19+89.06, Lt.
    Const. area drain
    Inst. 6" drain pipe - 10'
    5' depth
16. Sta. "L" 19+99.06, Lt.
    Inst. 6" cleanout
    See detail sheet HA01
17. Sta. "L" 20+97.18, 24.62' Lt.
    Begin bioslope B3
    See detail sheet HA01
    Inst. field facility maker "Type S2" - 1
    DFI no. DO1245
    Inst. field facility maker "Type S1" red - 1
    See Oregon Std. Drg. RD339
18. Sta. "L" 21+95.89, 26.79 Lt.
    Const. riprap basin - 1
    Inst. 12" storm sew. pipe - 104'
    5' depth
    Const. Paved end slope - 32 sq. ft.
    See detail sheet HA02
19. Sta. "L" 23+00.08, 23.66' Lt.
    Const. conc. storm sewer manhole
    Inst. 12" storm sew. pipe - 123'
    5' depth
    Inst. 12" storm sew. pipe - 6'
    5' depth
20. Sta. "L" 23+00.08, Lt.
    Const. area drain
    Inst. 6" drain pipe - 95'
    5' depth
21. Sta. "L" 23+95.16, Lt.
    Inst. 6" cleanout
    See detail sheet HA01
22. Protect extg. tree
23. Ordinary highwater line.
24. Sta. "L" 24+23.18, 21.21' Lt.
    Const. conc. storm sewer manhole
    Inst. 12" storm sew. pipe - 136'
    10' depth
    Inst. 12" storm sew. pipe - 7'
    5' depth
25. Sta. "L" 24+28.79, Lt.
    Const. area drain
    Inst. 6" drain pipe - 88'
    5' depth
26. Sta. "L" 25+16.77, Lt.
    Inst. 6" cleanout
    See detail sheet HA01
27. Prune tree to provide 8' of vertical clearance above finished grade.
28. Install truncated dome detectable warning surface per Oregon Std. Drg. RD759
29. Adjust extg. water meter

50 25 0 50

REGISTERED PROFESSIONAL ENGINEER
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OREGON
SEPTEMBER 13, 2011
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CLACKAMAS COUNTY

Designer: Natalie Owen | Reviewer: Brian Roche
Drafter: Anthony O'Donnell | Checker: Chivanna Pot

GENERAL CONSTRUCTION

SHEET NO. C03A

"L" LINE

340
335
330
325
320
315

20
21
22
23
24
25

(15) Sta. 19+89.06, 21.74' Lt., Area drain
Rim 330.77
F.L. 327.77 In (E)
F.L. 324.91 Out (W)

(16) Sta. 19+99.06, 21.73' Lt., Cleanout
Rim 330.84
F.L. 327.82 Out (W)

Existing profile grade @ ℄

(20) Sta. 23+00.08, 17.20' Lt. Area drain
Rim 333.83
F.L. 331.85 In (E)
F.L. 330.21 Out (N)

(21) Sta. 23+95.16, 17.19' Lt., Cleanout
Rim 335.09
F.L. 333.09 Out (W)

(25) Sta. 24+28.79, 17.15' Lt., Area drain
Rim 335.79
F.L. 333.79 In (E)
F.L. 333.44 Out (NW)

(26) Sta. 25+16.77, 17.15' Lt., Cleanout
Rim 337.67
F.L. 335.67 Out (W)

6" - 10'
S = +0.5%

Approx. location
of extg. gas line

12" - 46'
S = +0.5%

(18) Sta. 21+95.89, 26.79' Lt.,
Riprap basin
F.L. 329.04 In (E)

12" - 104'
S = +1.0%

Existing sanitary
sewer manhole

(19) Sta. 23+00.08, 23.66' Lt.,
Manhole
Rim 333.80
F.L. 330.08 In (S)
F.L. 330.08 In (E)
F.L. 330.08 Out (W)

12" - 6'
S = -2.0%

6" - 95'
S = +1.3%

12" - 123'
S = +1.0%

(24) Sta. 24+23.18, 21.21' Lt., Manhole
Rim 335.68
F.L. 333.30 In (SE)
F.L. 331.31 In (E)
F.L. 331.31 Out (W)

6" - 88'
S = +2.14%

Approx. location
of extg. gas line

12" - 7'
S = -2.0%

12" - 136'
S = +1.0%

Existing
sanitary sewer pipe

REGISTERED PROFESSIONAL ENGINEER
85760PE
OREGON
SEPTEMBER 13, 2011
DANIEL R. SHAFAR
RENEWS: 6/30/2020

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OREGON DEPARTMENT OF TRANSPORTATION

OR211: OR213 - N HEZZIE LANE (MOLALLA)
WOODBURN - ESTACADA HIGHWAY
CLACKAMAS COUNTY

Designer: John Million
Reviewer: Dan Shafar
Drafter: Anthony O'Donnell
Checker: John Million

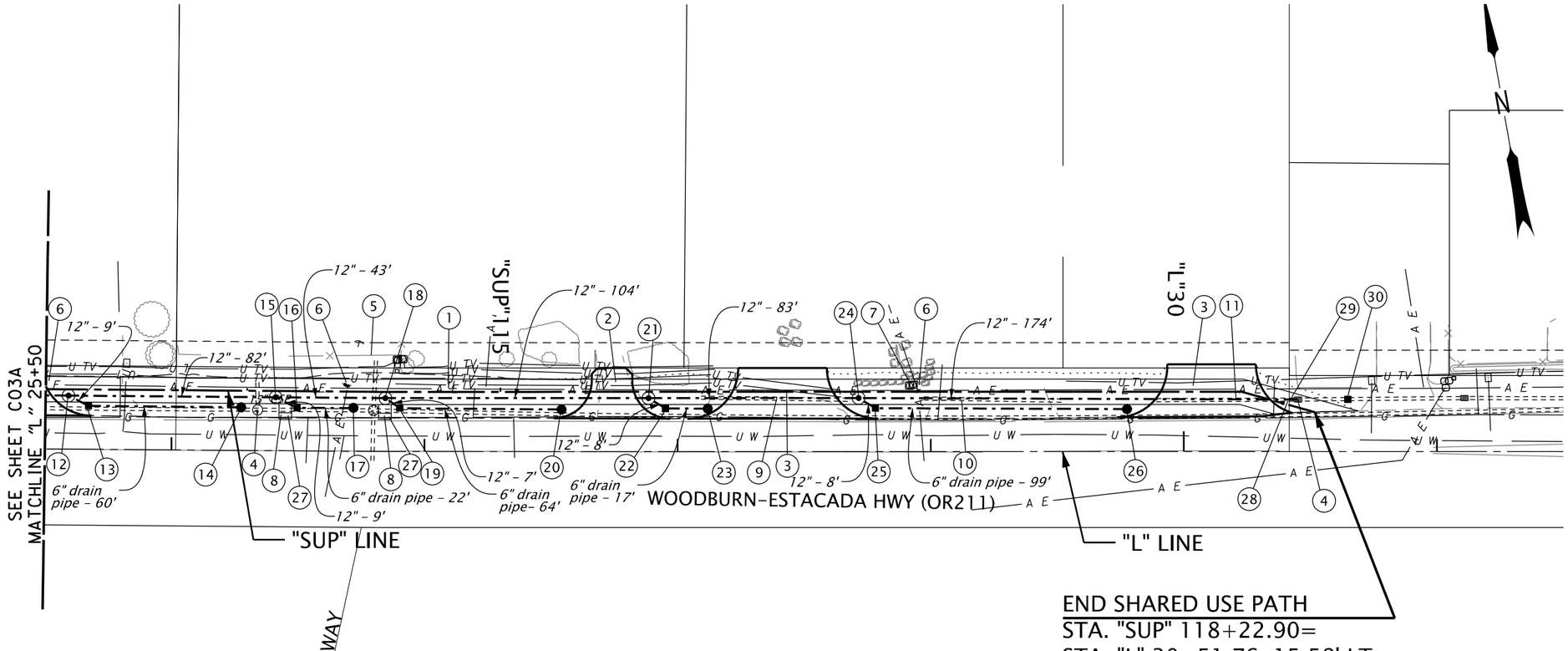
PROFILE

SHEET NO.
C03C

Rotation: 0° Scale: 1"=50'

Sec. 8, T. 5 S, R. 2 E, W.M.

53V-037



1. Const. 10' Asphalt conc. shared use path
2. Const. 16' driveway, Sta. "L" 27+74.10, Lt.
3. Const. 35' driveway
   Sta. "L" 28+41.50, Lt. and Sta. "L" 30+14.00, Lt.
4. Protect extg. structure. Adjust rim to new grade.
5. Protect extg. fence.
6. Extg. utility pole to be relocated by others
7. Extg. utility riser box to be relocated by others.
8. Const. asphalt ramp. See sheet BC05 for details
9. Remove extg. pipe - 59'
10. Remove extg. pipe - 55'
11. Remove extg. pipe - 56'
12. Sta. "L" 25+59.15, 21.12' Lt.
    Const. conc. storm sewer manhole
    Inst. 12" storm sew. pipe - 82'
    10' depth
    Inst. 12" storm sew. pipe - 9'
    5' depth
13. Sta. "L" 25+67.11, Lt.
    Const. area drain
    Inst. 6" drain pipe - 60'
    5' depth
14. Sta. "L" 26+27.43, Lt.
    Const. 6" cleanout
    See detail sheet HA01
15. Sta. "L" 26+40.99, 21.11' Lt.
    Const. conc. storm sewer manhole
    Inst. 12" storm sew. pipe - 43'
    10' depth
    Inst. 12" storm sew. pipe - 9'
    5' depth
16. Sta. "L" 26+49.50, Lt.
    Const. area drain
    Inst. 6" drain pipe - 22'
    5' depth
17. Sta. "L" 26+71.64, Lt.
    Const. 6" cleanout
    See detail sheet HA01
18. Sta. "L" 26+84.54, 21.10' Lt.
    Const. conc. storm sewer manhole
    Inst. 12" storm sew. pipe - 104'
    10' depth
    Inst. 12" storm sew. pipe - 7'
    5' depth
19. Sta. "L" 26+90.33, Lt.
    Const. area drain
    Inst. 6" drain pipe - 64'
    5' depth
20. Sta. "L" 27+54.13, Lt.
    Const. 6" cleanout
    See detail sheet HA01
21. Sta. "L" 27+88.51, 21.10' Lt.
    Const. conc. storm sewer manhole
    Inst. 12" storm sew. pipe - 83'
    10' depth
    Inst. 12" storm sew. pipe - 8'
    5' depth
22. Sta. "L" 27+95.25, Lt.
    Const. area drain
    Inst. 6" drain pipe - 17'
    5' depth
23. Sta. "L" 28+11.91, Lt.
    Const. 6" cleanout
    See detail sheet HA01
24. Sta. "L" 28+71.51, 21.13' Lt.
    Const. conc. storm sewer manhole
    Inst. 12" storm sew. pipe - 174'
    10' depth
    Inst. 12" storm sew. pipe - 8'
    5' depth
25. Sta. "L" 28+78.16, Lt.
    Const. area drain
    Inst. 6" drain pipe - 99'
    5' depth
26. Sta. "L" 29+77.54, Lt.
    Const. 6" cleanout
    See detail sheet HA01
27. Install truncated dome detectable warning surface per Oregon Std. Drg. RD759
28. Const. bollard per per Oregon Std. Drg. RD130
    Sta. "L" 30+41.20, 20.51' Lt.
29. Const. asphalt ramp. See sheet BC06 for details.
30. Sta. "L" 30+64.84, Lt.
    Const. type "G-2" inlet
    Connect to existing structures

50 25 0 50

REGISTERED PROFESSIONAL ENGINEER
85760PE
OREGON
SEPTEMBER 13, 2011
DANIEL R. SHAFAR
RENEWS: 6/30/2020

REGISTERED PROFESSIONAL ENGINEER
19731PE
OREGON
MAY 5, 1998
CHIVANNA T. POT
RENEWS: 12/31/2020

WSP USA Inc.
851 SW Sixth Ave
Suite 1600
Portland, OR 97204
Tel: 1 503 274 8772

OR211: OR213 - N HEZZIE LANE (MOLALLA)
WOODBURN - ESTACADA HIGHWAY
CLACKAMAS COUNTY

Designer: Natalie Owen
Drafter: Anthony O'Donnell
Reviewer: Brian Roche
Checker: Chivanna Pot

GENERAL CONSTRUCTION

SHEET NO. C04A

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Rotation: 0° Scale: 1"=50'

"L" LINE

(13) Sta. 25+67.11, 17.12' Lt. Area drain
Rim 338.60
F.L. 336.60 In (E)
F.L. 334.93 Out (NW)

Approx. location of extg. gas line

(14) Sta. 26+27.43, 17.02' Lt. Cleanout
Rim 339.58
F.L. 337.58 Out (W)

6" - 22'
S = +1.52%

12" - 9'
S = -2.0%

6" - 60'
S = +1.62%

12" - 9'
S = -2.0%

12" - 82'
S = +1.0%

Existing sanitary sewer manhole

(12) Sta. 25+59.15, 21.12' Lt., Manhole
Rim 338.55
F.L. 334.75 In (SE)
F.L. 332.67 In (E)
F.L. 332.67 Out (W)

(17) Sta. 26+71.64, 17.08' Lt. Cleanout
Rim 340.28
F.L. 338.28 Out (W)

(18) Sta. 26+84.54, 21.10' Lt., Manhole
Rim 340.43
F.L. 336.10 In (SE)
F.L. 333.92 In (E)
F.L. 333.92 Out (W)

(19) Sta. 26+90.33, 17.09' Lt. Area drain
Rim 340.55
F.L. 338.55 In (E)
F.L. 336.24 Out (NW)

6" - 64'
S = +1.54%

Approx. location of extg. gas line

12" - 7'
S = -2.0%

12" - 43'
S = +1.0%

(16) Sta. 26+49.50, 16.98' Lt. Area drain
Rim 339.94
F.L. 337.94 In (E)
F.L. 335.99 Out (NW)

Existing sanitary sewer manhole

(15) Sta. 26+40.99, 21.11' Lt., Manhole
Rim 339.78
F.L. 335.80 In (SE)
F.L. 333.49 In (E)
F.L. 333.49 Out (W)

(20) Sta. 27+54.13, 16.62' Lt. Cleanout
Rim 341.53
F.L. 339.53 Out (W)

(22) Sta. 27+95.25, 17.02' Lt. Area drain
Rim 342.03
F.L. 340.03 In (E)
F.L. 337.36 Out (NW)

(23) Sta. 28+11.91, 16.96' Lt. Cleanout
Rim 342.22
F.L. 340.22 Out (W)

6" - 17'
S = +1.14%

12" - 8'
S = -2.0%

12" - 104'
S = +1.0%

12" - 83'
S = +1.0%

Existing sanitary sewer pipe

(21) Sta. 27+88.51, 21.10' Lt., Manhole
Rim 341.92
F.L. 337.20 In (SE)
F.L. 334.96 In (E)
F.L. 334.96 Out (W)

(25) Sta. 28+78.16, 17.13' Lt. Area drain
Rim 342.98
F.L. 340.98 In (E)
F.L. 338.16 Out (NW)

6" - 99'
S = +1.22%

Approx. location of extg. gas line

Approx. location of extg. gas line

12" - 174'
S = +1.0%

12" - 8'
S = -2.0%

(24) Sta. 28+71.51, 21.13' Lt., Manhole
Rim 342.84
F.L. 338.00 In (SE)
F.L. 335.79 In (E)
F.L. 335.79 Out (W)

(26) Sta. 29+77.54, 16.77' Lt. Cleanout
Rim 344.20
F.L. 342.20 Out (W)

(4) Sta. 30+45.02, 20.53' Lt., Extg. in. Grate
Grate 345.08
F.L. 341.72 In (E) (Extg.)
F.L. 339.92 Out (NW)

Existing profile grade @ ℄

12"

12"

(30) Sta. 30+64.84, 20.71' Lt., inlet
Grate 344.97
F.L. 341.86 In (E) (Extg.)
F.L. 341.86 Out (W) (Extg.)

Existing sanitary sewer pipe

345 340 335 330 325 320

26 27 28 29 30 31 31

RESISTERED PROFESSIONAL ENGINEER
85760PE
OREGON
SEPTEMBER 13, 2011
DANIEL R. SHAFAR
RENEWS: 6/30/2020

WSP USA Inc.
851 SW Sixth Ave
Suite 1600
Portland, OR 97204
Tel: 1 503 274 8772

OREGON DEPARTMENT OF TRANSPORTATION

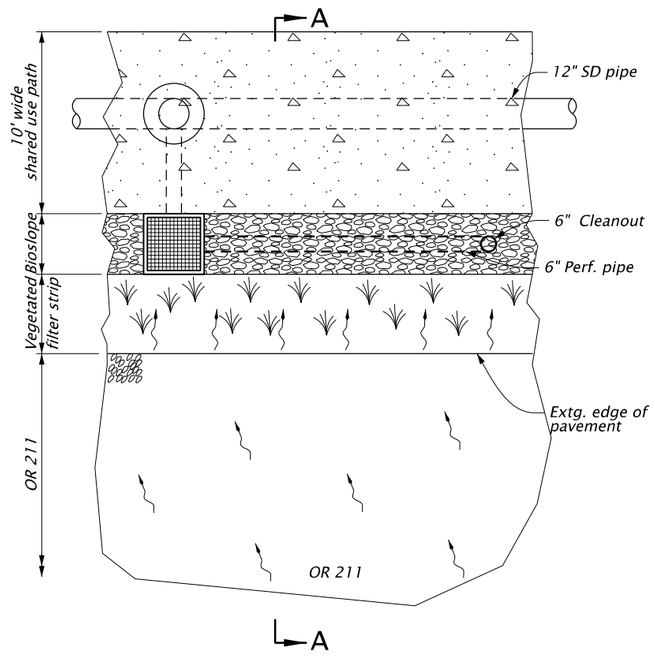
OR211: OR213 - N HEZZIE LANE (MOLALLA)
WOODBURN - ESTACADA HIGHWAY
CLACKAMAS COUNTY

Designer: John Million | Reviewer: Dan Shafar
Drafter: Anthony O'Donnell | Checker: John Million

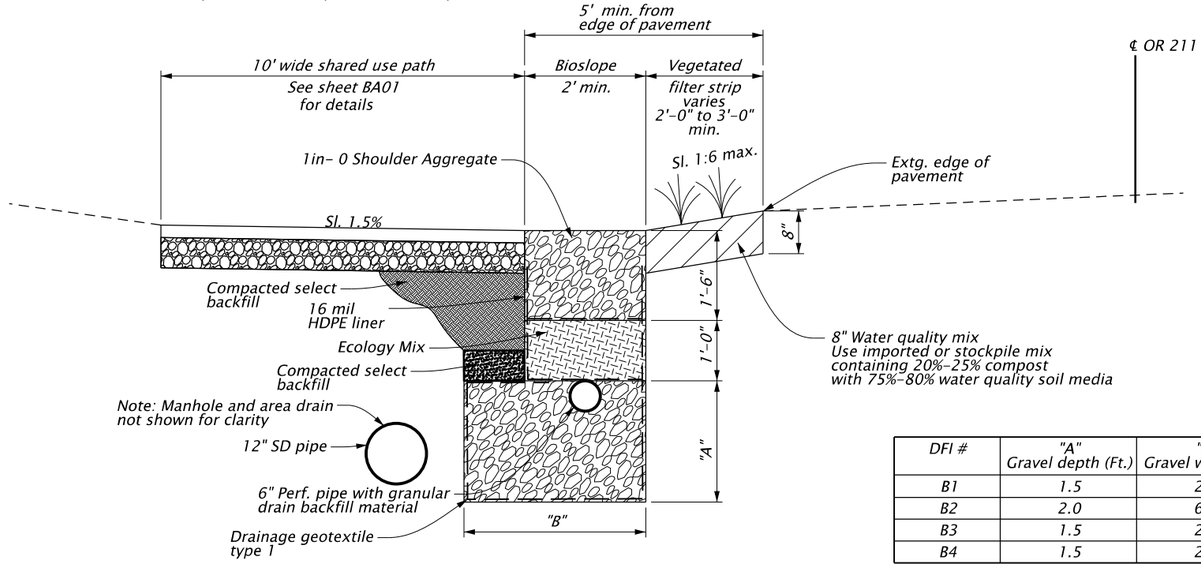
PROFILE | SHEET NO. C04C

Rotation: 0° Scale: 1"=50'

Sec. 7 & 8, T. 5 S, R. 2 E, W.M.

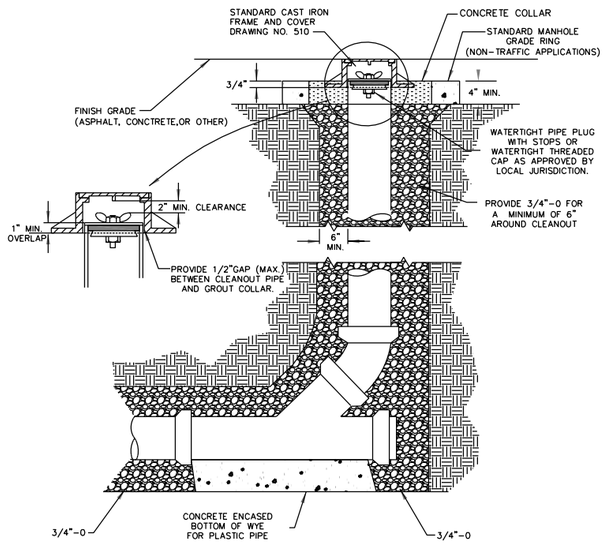


BIOSLOPE DETAIL
NTS



BIOSLOPE
SECTION A-A
NTS

DFI #	"A" Gravel depth (Ft.)	"B" Gravel width (Ft.)
B1	1.5	2.0
B2	2.0	6.0
B3	1.5	2.0
B4	1.5	2.0



NOTE:

1. CONCRETE ENCASE ENTIRE WYE SECTION AND 45° BEND IF CONCRETE PIPE.
2. STAND PIPE TO BE SAME SIZE AS MAINLINE UP TO AND INCLUDING 8" PIPE. MAINLINE GREATER THAN 8" SHALL HAVE A 8" STANDPIPE.

CLEANOUT DETAIL
NTS

STORMWATER FACILITY MARKER TABLE							
FACILITY LOCATION		BIOSLOPE		TYPE S2 MARKER LOCATION		TYPE S1 MARKER LOCATION	
STATION	MP	#	DFI #	BEGIN	END	RED	GREEN
"L" 20+97.18	11.69	B1	D01245	✓			✓
"L" 19+49.99	11.67	B2	D01245	✓			
"L" 14+97.76	11.59	B3	D01245	✓			
"L" 14+23.56	11.57	B4	D01245	✓		✓	

✓ CHECK WHERE APPROPRIATE
RED = RED - BEGINNING OF FACILITY
GREN = GREEN - END OF FACILITY

REGISTERED PROFESSIONAL ENGINEER
85760PE
OREGON
SEPTEMBER 13, 2011
DANIEL R, SHAFAR
RENEWS: 6/30/2020

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OREGON DEPARTMENT OF TRANSPORTATION

OR211: OR213 - N HEZZIE LANE (MOLALLA)
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CLACKAMAS COUNTY

Designer: John Million | Reviewer: Dan Shafar
Drafter: Anthony O'Donnell | Checker: John Million

DETAILS

SHEET NO.
HA01

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Rotation: 0° Scale: Full Size 1=1