

OPERATION & MAINTENANCE MANUAL

DFI No.: D00904

Facility Location: OR18B, Sheridan, OR

Facility Type: Biofiltration Swale



July 2015 - Facility Location prior to Construction



April 2017 - Facility Location following Construction

INDEX

1. IDENTIFICATION 1

2. FACILITY CONTACT INFORMATION 1

3. CONSTRUCTION 1

4. STORM DRAIN SYSTEM AND FACILITY OVERVIEW 2

5. FACILITY HAZ MAT SPILL FEATURE(S) 3

6. AUXILIARY OUTLET (HIGH FLOW BYPASS) 3

7. MAINTENANCE REQUIREMENTS 3

8. WASTE MATERIAL HANDLING 4

APPENDIX A: Operational Plan

APPENDIX B: Applicable Project Record Drawings

1. Identification

Drainage Facility ID (DFI): D00904
Facility Type: Biofiltration Swale
Construction Drawings: See Appendix A
Location: ODOT District: 3
Highway No.: 157
Mile Post: 6.44 to 6.46

Description: This facility is located on the north side of Highway OR18B (West Main Street, Sheridan, OR) east of the Union Pacific Railroad tracks.

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 (503) 986-2990

Or

Geo-Environmental Senior Hydraulics Engineer (503) 986-3365.

3. Construction

Engineer of Record: Consultant – Murraysmith
Gwen Chambers, P.E.
503-225-9010

Facility construction: 2015
Contractor: Gelco Construction Co.
Tom Jordan
503-364-2638

4. Storm Drain System and Facility Overview

Facility Type

A water quality swale is a flat-bottomed open channel designed to treat stormwater runoff from highway pavement areas. This type of facility is lined with grass. Treatment by trapping sedimentation occurs when stormwater runoff flows through the grass.

Location

The water quality facility is located in the city of Sheridan, Oregon. It is on the north side of OR18B, West Main Street, approximately 250 feet east of the Union Pacific Railroad grade crossing. The facility extends from MP 6.44 to MP 6.46.

Access

A. Maintenance equipment access:

The water quality facility is in line with the roadside ditch with no obstructions to access (see Appendix A Storm Water Plan). Access is available by travelling westbound on OR18B (West Main Street) and pulling onto the gravel shoulder east or west of the facility.

B. Heavy equipment access into facility:

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

C. Special Features:

- Amended Soils
- Porous Pavers
- Liners
- Underdrains

Drainage System

The swale is an open facility running parallel to the roadway, and appears as a widened, flat-bottom section of the ditched drainage system. Stormwater runoff is captured in the roadside ditch upstream from the swale, and travels east through the swale and back into the V-bottom ditch. Runoff also sheet flows directly off the roadway into the swale. There are no associated drainage structures.

The water quality seed mix used in the swale, and to be used in the event of reseeding, is as follows:

Botanical Name (Common Name)	PLS (lb/acre)	÷ (% Purity x % Germination) (minimum)	=	Amount (lb/acre)
Meadow Barley (<i>Hordeum brachyantherum</i>)	<u>8</u>	_____	_____	_____
Slender Hairgrass (<i>Deschampsia elongata</i>)	<u>2</u>	_____	_____	_____
Poverty Rush (<i>Juncus tenuis</i>)	<u>0.5</u>	_____	_____	_____

5. Facility Haz Mat Spill Feature(s)

The swale is not recommended to be used to store a liquid, as it does not have a discreet outlet location. In an emergency situation, the downstream end of the swale could be blocked with a temporary check dam to contain liquids within the swale section of the ditched system.

6. Auxiliary Outlet (High Flow Bypass)

The swale does not contain an Auxiliary Outlet structure. The downstream end of the swale transitions to the V-bottom roadside ditch. Under common storm conditions (half of the two-year 24-hour storm), the swale is designed to contain a stormwater depth of 0.2 feet. Under these conditions, the swale is designed to have another foot of freeboard above the water surface to the roadway elevation.

The auxiliary outlet feature for this facility is:

- Designed into facility
The downstream end of the swale transitions into the V-bottom ditch. Excess stormwater will continue flowing downstream, to the east, within the roadside ditch.
- Other, as noted below
Explain and describe the Location, the Type, the Purpose, or the Direction and Flow Path

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. There are no special maintenance requirements for this facility in addition to the routine requirements.

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

<http://www.oregon.gov/ODOT/HWY/OOM/MGuide.shtml>

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

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

8. Waste Material Handling

Material removed from the facility is defined as waste by DEQ. Refer to the roadwaste section of the ODOT Maintenance Yard Environmental Management System (EMS) Policy and Procedures Manual for disposal options: <http://egov.oregon.gov/ODOT/HWY/OOM/EMS.shtml>

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

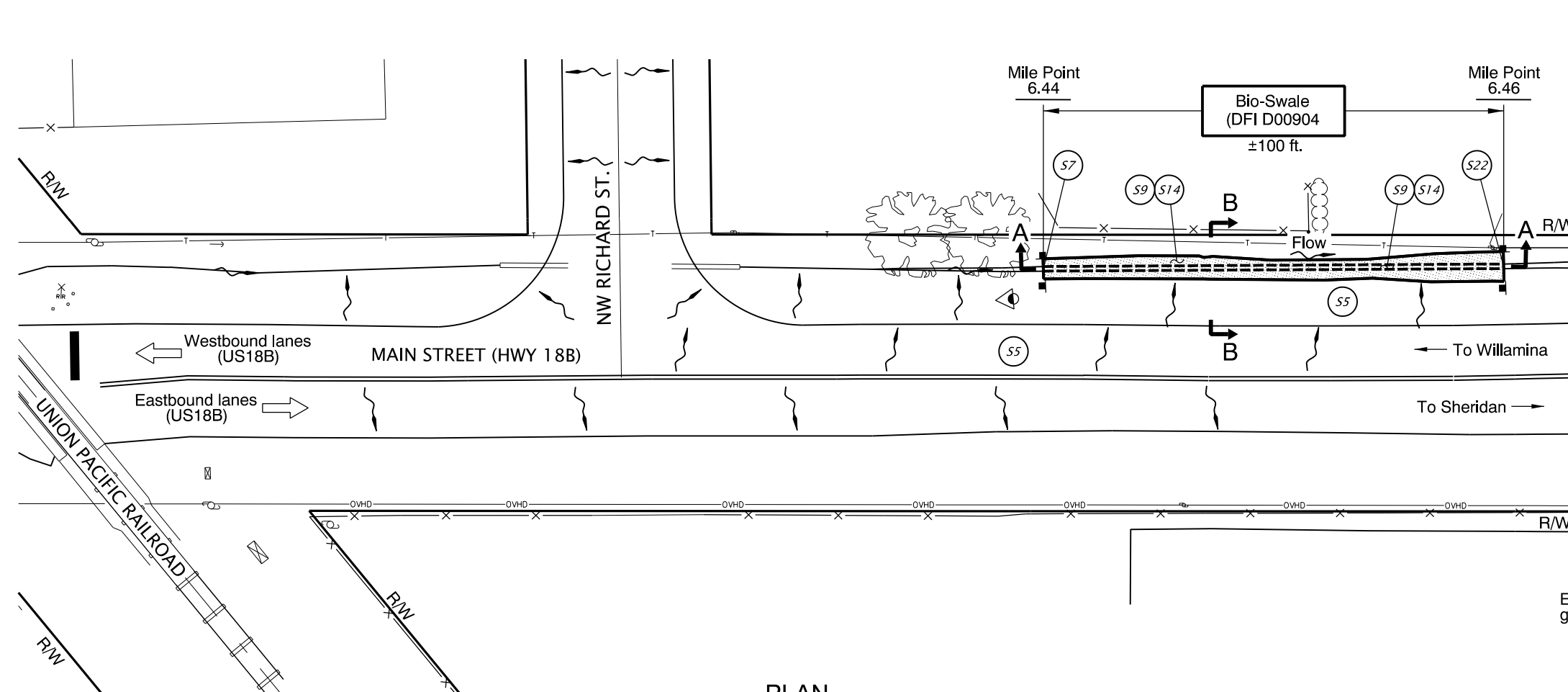
ODOT Clean Water Unit	(503) 986-3008
ODOT Statewide Hazmat Coordinator	(503) 229-5129
ODOT Region Hazmat Coordinator	
Bart Bretherton	(503) 986-2647
ODEQ Northwest Region Office	(503) 229-5263

Appendix A – Site Specific Operational Plan

Content:

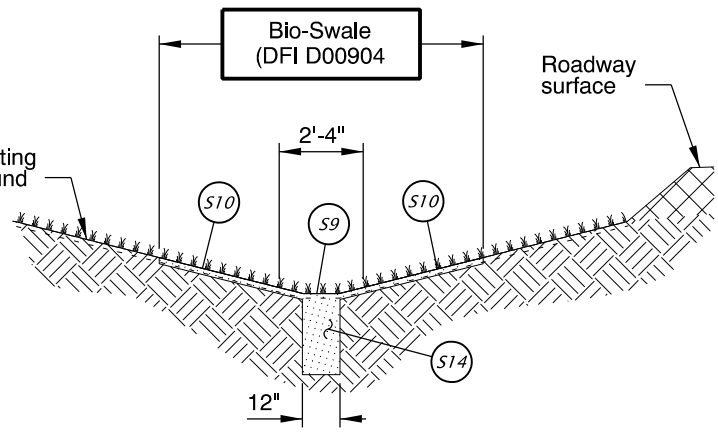
- **Operation Plan: DFI 00904**

Table 1: Swale Components		ID #
Manholes/Structures		
Pre-treatment manhole	<input type="checkbox"/>	S1
Weir type flow splitter/flow splitter	<input type="checkbox"/>	S2
Orifice type flow splitter/flow splitter	<input type="checkbox"/>	S3
Standard manhole	<input type="checkbox"/>	S4
Swale Inlet		
Pavement sheet flow	<input checked="" type="checkbox"/>	S5
Inlet Pipe (s)	<input type="checkbox"/>	S6
Open channel inlet	<input checked="" type="checkbox"/>	S7
Riprap pad	<input type="checkbox"/>	S8
Ground Cover		
Grass bottom	<input checked="" type="checkbox"/>	S9
Grass side slopes	<input checked="" type="checkbox"/>	S10
Granular drain rock	<input type="checkbox"/>	S11
Plantings	<input type="checkbox"/>	S12
Underground Components		
Geotextile fabric	<input type="checkbox"/>	S13
Water quality mix	<input checked="" type="checkbox"/>	S14
Perforated pipe	<input type="checkbox"/>	S15
Porous pavers (access grid)	<input type="checkbox"/>	S16
Flow Spreader		
Rock basin (used at inlet)	<input type="checkbox"/>	S17
Anchored board (midpoint of swale or every 50 feet along swale bottom)	<input type="checkbox"/>	S18
Other: describe type	<input type="checkbox"/>	S19
Swale Outlet		
Catch basin with grate	<input type="checkbox"/>	S20
Outlet Pipe (s)	<input type="checkbox"/>	S21
Open channel outlet	<input checked="" type="checkbox"/>	S22
Auxiliary Outlet: describe type	<input type="checkbox"/>	S23
Outfall Type		
Waterbody (Creek/Lake/Ocean)	<input type="checkbox"/> C <input type="checkbox"/> L <input type="checkbox"/> O	S24
Ditch	<input type="checkbox"/>	S25
Storm drain system	<input type="checkbox"/>	S26
Outfall Components		
Riprap pad	<input type="checkbox"/>	S27
Riprap bank protection	<input type="checkbox"/>	S28

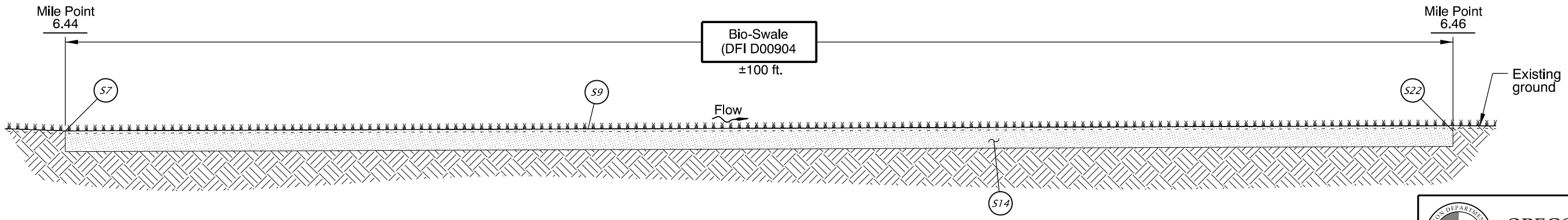


PLAN
N.T.S.

- LEGEND:
- Photo Location / Direction
 - Facility Component (see table 1 in O&M Manual)
 - Swale Bottom
 - Swale Boundary
 - Conveyance Direction
 - Pavement / Facility Flow Path



SECTION B-B
N.T.S.



SECTION A-A
N.T.S.



Prepared By:
Jason Stroud

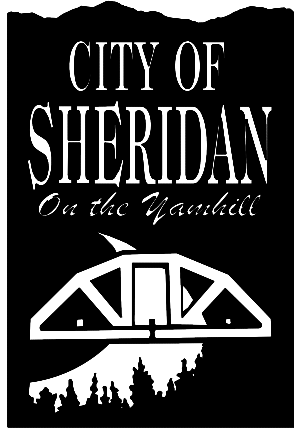
Drafted By:
Michael Skelton

DFI D00904
MAINTENANCE DISTRICT 3 OR18B
WATER QUALITY BIOSWALE
WILLAMINA-SHERIDAN HIGHWAY MP 6.44
YAMHILL COUNTY

Appendix B

Content:

- **Project Plan Sheets**
 - *Cover/Title Sheet*
 - *Storm Profile and Swale Section Sheet(s)*
 - *Signing and Striping Sheet*

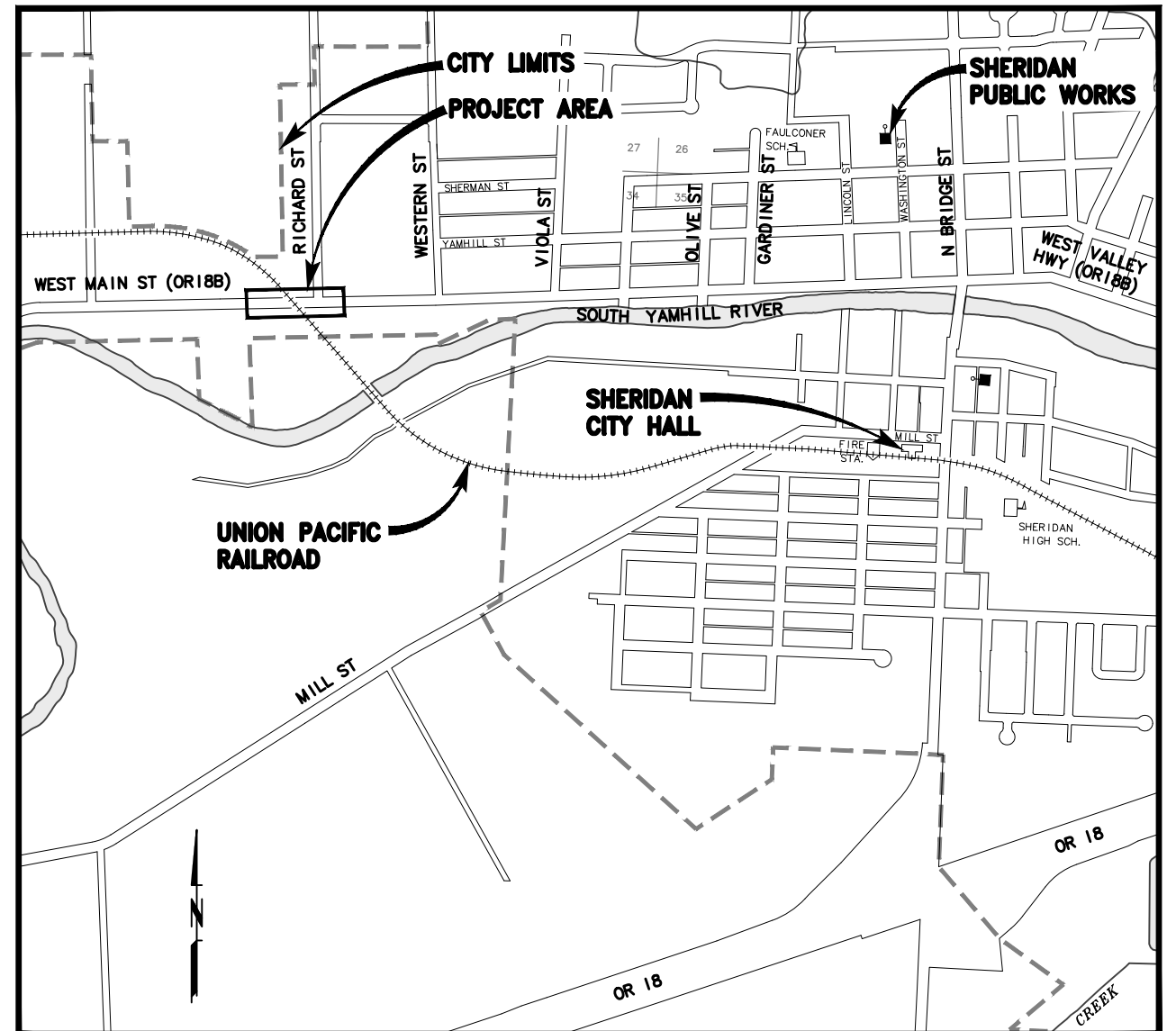


K 18339 WILLAMINA-SHERIDAN HWY (OR18B) RAIL X'ING SAFETY IMPROVEMENTS

OCTOBER 2015

INDEX OF DRAWINGS

NO.	SHEET	SHEET TITLE
1	G-1	TITLE PAGE, INDEX OF DRAWINGS AND VICINITY MAP
2	G-2	GENERAL NOTES, LEGEND AND ABBREVIATIONS
3	C-1	WILLAMINA-SHERIDAN HWY (OR18B): PLAN & PROFILE STA 3+00 TO STA 7+00
4	C-2	WILLAMINA-SHERIDAN HWY (OR18B): ROADWAY CROSS SECTIONS
5	C-3	WILLAMINA-SHERIDAN HWY (OR18B): STORM PROFILE AND SWALE PLAN AND TYPICAL SECTION
6	S-1	WILLAMINA-SHERIDAN HWY (OR18B): SIGNING & STRIPING
7	D-1	CURB, GUTTER & SIDEWALK DETAILS
8	D-2	EROSION CONTROL NOTES AND MISCELLANEOUS DETAILS
9	D-3	SIDEWALK GRADING DETAILS
10	D-4	RETAINING WALL DETAILS



VICINITY MAP
SCALE: 1"=500'

RECORD DRAWINGS

THIS DRAWING IS FOR RECORD PURPOSES ONLY, AND HAS BEEN PREPARED BASED IN PART ON INFORMATION PROVIDED BY OTHERS RELATIVE TO REPORTED CONSTRUCTED CONDITIONS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, MURRAYSMITH MAKES NO ASSURANCES, STATED OR IMPLIED, AS TO THE ACCURACY OF THIS DRAWING. THOSE RELYING ON THIS RECORD DRAWING FOR ANY PURPOSE ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY. CONTRACT MODIFICATION INFORMATION, FABRICATOR'S SHOP DRAWINGS AND OTHER PROJECT SUBMITTAL INFORMATION PROVIDED BY THE CONTRACTOR WHICH FURTHER CLARIFY DETAILS OF CONSTRUCTION MAY BE ON FILE. SEE ORIGINAL CONTRACT DRAWINGS FOR ENGINEER'S SEAL AND SIGNATURES.

VERSION 4.1 12-9-97

MSA Murray Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 PHONE 503-225-9010
Portland, Oregon 97204 FAX 503-225-9022

G:\PDX_Projects\00\0464\220_Rail-Highway Program\Project\CAD\DR\Sheets\00-0464-220-OR-G2-D1-R.dwg G-2 11/22/2017 2:28 PM BRETT.WILLIAMS 21.0s (LMS Tech)

GENERAL NOTES

- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ODOT STANDARD PLANS AND CONSTRUCTION SPECIFICATIONS AS WELL AS WITH CITY OF SALEM STANDARD PLANS AND CONSTRUCTION SPECIFICATIONS WHICH HAVE BEEN ADOPTED BY THE CITY OF SHERIDAN AS MODIFIED BY THESE CONTRACT DOCUMENTS, CONTRACTOR SHALL MAINTAIN A COPY OF SAID STANDARDS ON THE JOB SITE AT ALL TIMES.
- CONTRACTOR SHALL OBTAIN ALL NECESSARY LOCAL, COUNTY, STATE, AND UTILITY CONSTRUCTION PERMITS, AND SHALL CONTACT EACH PERMITTING AGENCY AT LEAST TWO (2) BUSINESS DAYS PRIOR TO STARTING WORK. CONTRACTOR SHALL OBTAIN ALL REQUIRED LICENSES BEFORE STARTING CONSTRUCTION.
- THE LOCATIONS OF ALL EXISTING UNDERGROUND FACILITIES SHOWN ON THE PLANS ARE BASED ON A FIELD SURVEY AND INFORMATION SUPPLIED BY UTILITY COMPANIES. LOCATIONS ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATE. THE CONTRACTOR SHALL VERIFY LOCATIONS, ELEVATIONS, TYPE AND SIZES OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTING NEW PIPING/CONDUITS AND SHALL ADJUST NEW PIPING/CONDUITS AS REQUIRED. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY OF ANY CONFLICTS AND SHALL KEEP EXISTING UTILITIES IN SERVICE AND PROTECT THEM DURING CONSTRUCTION. WHERE INTERRUPTION OF EXISTING FACILITIES IS REQUIRED, CONTRACTOR SHALL PROVIDE 72 HOUR NOTICE TO ENGINEER AND THE AFFECTED UTILITY. CONTRACTOR SHALL ARRANGE FOR THE RELOCATION OF ANY UTILITIES IN CONFLICT WITH THE PROPOSED CONSTRUCTION.
- THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF ORS 757.541 TO 757.571. THE CONTRACTOR SHALL NOTIFY EACH UNDERGROUND UTILITY AT LEAST 48 BUSINESS-DAY HOURS, BUT NOT MORE THAN 10 BUSINESS DAYS, PRIOR TO EXCAVATING, BORING, OR POTHOLING.
- NO ADDITIONAL PAYMENT WILL BE MADE FOR UTILITY RELOCATION COORDINATION OR DELAYS CAUSED BY UTILITY CONFLICTS. ALL COSTS RELATED TO UTILITY COORDINATION AND RELOCATION, INCLUDING ADDITIONAL POTHOLING, ARE TO BE CONSIDERED INCIDENTAL AND INCLUDED IN THE UNIT PRICES OF THE BID.
- UTILITIES OR INTERFERING PORTIONS OF UTILITIES THAT ARE ABANDONED IN PLACE SHALL BE REMOVED BY THE CONTRACTOR TO THE EXTENT NECESSARY TO ACCOMPLISH THE WORK. THE CONTRACTOR SHALL PLUG THE REMAINING EXPOSED ENDS OF ABANDONED UTILITIES, UNLESS OTHERWISE REQUIRED BY THE ENGINEER.
- CONTRACTOR SHALL KEEP AND MAINTAIN A CURRENT SET OF DRAWINGS ON SITE. CONTRACTOR TO KEEP ACCURATE "AS-BUILT" RECORD COPY OF PLANS. "AS-BUILT" PLANS SHALL BE PROVIDED TO ENGINEER AT COMPLETION OF PROJECT.
- CONTRACTOR SHALL MAINTAIN ACCESS TO ALL HOMES AND BUSINESSES AT ALL TIMES. PROVIDE WRITTEN NOTICE TO ALL PROPERTY OWNERS AT LEAST TWO BUSINESS DAYS IN ADVANCE OF WORK IN AND/OR CROSSING OF DRIVEWAYS.
- CONTRACTOR SHALL NOTIFY THE ENGINEER 48 HOURS BEFORE STARTING CONSTRUCTION, AND 24 HOURS BEFORE RESUMING WORK AFTER SHUTDOWNS EXCEPT FOR NORMAL RESUMPTION OF WORK FOLLOWING SATURDAYS, SUNDAYS, OR HOLIDAYS. CONTRACTOR SHALL NOTIFY THE ENGINEER A MINIMUM OF 48 HOURS PRIOR TO ANY TESTING OR REQUIRED INSPECTION.

- HORIZONTAL DATUM: LOCAL DATUM PLANE. VERTICAL: NGVD29. COORDINATE WITH CITY SURVEYOR, NATHAN MAGNESS (1-971-237-3413), FOR LOCAL DATUM INFORMATION.
- ANY ALTERATION OR VARIANCE FROM THESE PLANS, EXCEPT MINOR FIELD ADJUSTMENT NOT AFFECTING DESIGN NEEDED TO MEET EXISTING FIELD CONDITIONS, SHALL FIRST BE APPROVED BY THE ENGINEER. ANY ALTERATIONS OR VARIANCE FROM THESE PLANS SHALL BE DOCUMENTED ON CONSTRUCTION FIELD PRINTS AND TRANSMITTED TO THE ENGINEER. ANY PROPOSED CHANGES IN CONSTRUCTION PLANS MUST BE SUBMITTED IN WRITING AND APPROVED BY ENGINEER PRIOR TO COMMENCING WORK.
- CONTRACTOR SHALL PROTECT ALL PROPERTY CORNERS, SURVEY MONUMENTS AND CONTROL POINTS. SURVEY MONUMENTS OF THIS TYPE DISTURBED DURING CONSTRUCTION SHALL BE REPLACED AT CONTRACTOR'S EXPENSE, WITH APPROPRIATE SURVEYS FILED WITH THE COUNTY SURVEYOR.
- THE CONTRACTOR SHALL DISPOSE OF ALL REMOVED OR REPLACED MATERIAL AND EQUIPMENT IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS, EXCEPT THOSE ITEMS DESIGNATED BY THE OWNER FOR SALVAGING. SALVAGED ITEMS SHALL REMAIN THE PROPERTY OF THE OWNER, AND SHALL BE CAREFULLY REMOVED AND STORED AS DIRECTED.
- CONTRACTOR SHALL RESTORE ALL STRUCTURES, LANDSCAPE, LOTS, SWALES, DITCHES, CURBS, FENCES, WALLS, MAILBOXES, SIGNS, POLES, GUY WIRES, PIPING, AND UTILITIES DISTURBED DURING CONSTRUCTION TO EXISTING CONDITION UNLESS OTHERWISE SPECIFIED.
- CONTRACTOR SHALL PROTECT TRAFFIC AT ALL TIMES DURING CONSTRUCTION. ALL TRAFFIC CONTROL MEASURES SHALL BE APPROVED BY CITY, COUNTY AND STATE AS REQUIRED AND IN PLACE PRIOR TO ANY CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL PLANS TO THE ENGINEER PRIOR TO COMMENCING ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
- FOR STREET IMPROVEMENTS, ADJUST ALL MANHOLES, VALVE BOXES AND OTHER EXISTING APPURTENANCES TO FINISH GRADE. FOR MANHOLE RISERS, MANHOLE RINGS SHALL BE GROUTED ON THE INSIDE WITH NON-SHRINK GROUT.
- PAVEMENT COMPACTION: COMPACT PER STANDARDS. TESTS SHALL BE TAKEN AT THE LOCATION AND FREQUENCY ESTABLISHED BY THE ENGINEER. SEE SPEC. SECTION 01100 SPECIAL PROVISIONS.
- REMOVE AND REINSTALL ALL SIGNS DISTURBED DURING CONSTRUCTION, SEE STANDARD SPECIFICATIONS. COORDINATE WITH SIGN OWNERS FOR REQUIREMENTS.
- CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION/SEDIMENTATION CONTROL DURING CONSTRUCTION (ANY TIME OF YEAR) PER THE REQUIREMENTS OF THE CITY OF SHERIDAN, THE OREGON DEQ AND SPEC SECTION 01100, SPECIAL PROVISIONS.

LEGEND

	EXISTING	PROPOSED
WATERLINE	-----W-----	
OVERHEAD POWER LINE	-----OVHD-----	
GAS	-----G-----	
STORM DRAIN		-----12"SD-----
SANITARY SEWER	-----SS-----	
ABANDONED UTILITY	+++++	
TELEPHONE	-----T-----	
DITCH CENTER LINE		-----
CHAIN-LINK FENCE	*****	
WOOD POST FENCE	o-o-o-o-o	
PEDESTRIAN RAILING	o-o-o-o-o	
GUARDRAIL	o-o-o-o-o	
RETAINING WALL	=====	
CULVERT	-----	
PERMANENT EASEMENT	-----	
TEMPORARY CONSTRUCTION EASEMENT	-----	
CENTER LINE	-----	
RIGHT-OF-WAY/PROPERTY LINE	-----	
SAW-CUT	-----	
EDGE OF PAVEMENT	=====	
BUILDING	=====	
CURB	=====	
SIDEWALK	=====	
AGGREGATE	=====	
ASPHALT	=====	
TRUNCATED DOMES	=====	
BIOFILTRATION SWALE	=====	
UTILITY POLE	⊕	
GUY ANCHOR	←	
MAILBOX	■	■
WATER METER	⊕	⊕
MANHOLE	⊙	⊙
CATCH BASIN	⊕	⊕
GAS STRUCTURE	⊕	
SURVEY BENCHMARK	⊕	
CROSSING SIGNAL	⊕	

ABBREVIATIONS

AC	ASPHALTIC CONCRETE	E	EXPOSURE	MATL(S)	MATERIAL(S)	REQ'D	REQUIRED
ACP	ASPHALTIC CONCRETE PAVEMENT	ELEC	ELECTRICAL	MAX	MAXIMUM	RR	RAILROAD
ABAN	ABANDON(ED)	EA	EACH	MECH	MECHANICAL	RT	RIGHT
ADA	AMERICANS WITH DISABILITIES ACT	ELEV	ELEVATION	MFR	MANUFACTURER	ROW	RIGHT OF WAY
AGG	AGGREGATE	EMBED	EMBEDDED	MH	MANHOLE		
APPROX	APPROXIMATELY	EOP	EDGE OF PAVEMENT	MIN	MINIMUM	SCHED	SCHEDULE
APVVD	APPROVED	EQ	EQUAL	MIPT	MALE IRON PIPE THREAD	SD	STORM DRAIN
ASPH	ASPHALT(IC)	ESC	EROSION AND SEDIMENTATION CONTROL	MJ	MECHANICAL JOINT	SDMH	STORM DRAIN MANHOLE
ASSY	ASSEMBLY			MTR	METER	SHLDR	SHOULDER
AWWA	AMERICAN WATER WORKS ASSOCIATION	EVCE	END VERTICAL CURVE ELEVATION	MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES	SHT	SHEET
BC	BOTTOM OF CURB	EVCS	END VERTICAL CURVE STATION			SLP	SLOPE
BVCE	BEGINNING VERTICAL CURVE ELEVATION	EXIST	EXISTING			SPEC'D	SPECIFIED
BVCS	BEGINNING VERTICAL CURVE STATION	EXIST GR	EXISTING GRADE	NOM	NOMINAL	SPECS	SPECIFICATIONS
BLDG	BUILDING	FB	FLAT BAR	NSF	NATIONAL SANITATION FOUNDATION	SQ	SQUARE
BTM	BOTTOM	FAB	FABRICATE(D)	NTS	NOT TO SCALE	SQ FT	SQUARE FOOT
BV	BALL VALVE	FL	FLOW LINE	NIC	NOT IN CONTRACT	SS	SANITARY SEWER
CL	CENTER LINE	FLG	FLANGE(D)			SST	STAINLESS STEEL
CB	CATCH BASIN	FITG	FITTING	OC	ON CENTER	STA	STATION
CI	CAST IRON	FM	FORCE MAIN	OD	OUTSIDE DIAMETER	STL	STEEL
CL	CLASS	FO	FIBER OPTIC	ODOT	OREGON DEPARTMENT OF TRANSPORTATION	STD	STANDARD
CLR	CLEARANCE	FPS	FEET PER SECOND			ST	STREET
CLSM	CONTROLLED LOW STRENGTH MATERIAL			OVHD	OVERHEAD POWER LINE	S/W	SIDEWALK SPACES
		OUT				SPC'S	
CMU	CONCRETE MASONRY UNIT	G	GAS	P	POWER	T, TEL	TELEPHONE
CONC	CONCRETE	GALV	GALVANIZED	TC	TOP OF CURB	TEMP	TEMPORARY
CONST	CONSTRUCT(ION)	GEN	GENERAL	PE	PERFORATED	THK	THICKNESS
COORD	COORDINATE	GI	GALVANIZED IRON GRADE	PERF	PERFORATED	THRU	THROUGH
COS	CITY OF SHERIDAN	GR	GRADE	PL	PROPERTY LINE	TYP	TYPICAL
CPLG	COUPLING	GRVL	GRAVEL	PL	PROPERTY LINE		
CR	CRUSHED ROCK	HMAC	HOT MIX ASPHALTIC CONCRETE (HMAC IS ACP, SEE ACP)	PRESS	PRESSURE	VERT	VERTICAL(LY)
CSP	CONCRETE SEWER PIPE			PROP	PROPOSED		
CY	CUBIC YARD	HORIZ	HORIZONTAL	PRV	PRESSURE REDUCING VALVE		
CU	COPPER	HWY	HIGHWAY	PVC	POLYVINYL CHLORIDE		
				PVT	POINT OF VERTICAL INTERSECTION		
D	DEPTH	IE	INVERT ELEVATION	PVMT	PAVEMENT	W/	WITH
DET	DETAIL	INSTL	INSTALL			W/IN	WITHIN
DFI	DRAINAGE FACILITY IDENTIFICATION	JT(S)	JOINT(S)	RCP	REINFORCED CONCRETE PIPE	W/O	WITHOUT
DI	DUCTILE IRON			RD	ROAD	WS	WATER SERVICE
DIA	DIAMETER	LOC	LOCATION	RED	REDUCER	WTRT	WATERTIGHT
DIM	DIMENSION	LT	LEFT	REINF	REINFORCE(D)(ING)(MENT)	WSE	WATER SURFACE ELEVATION
DRG	DRAWING	LVC	LENGTH OF VERTICAL CURVE	RESTR	RESTRAIN(ED)		
DWPP	DUAL WALL POLYPROPYLENE						

NOTICE TO EXCAVATORS:
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 NOTIFICATION CENTER IS (503)-232-1987).

POTENTIAL UNDERGROUND FACILITY OWNERS

Dig Safely.
 Call the Oregon One-Call Center
 1-800-332-2344

DETAIL DESIGNATIONS

DETAIL	SCALE
2	2

SHEET FROM WHICH DETAIL IS CALLED OUT *

* NOTE: IF PLAN AND SECTION FOR DETAIL CALL-OUT AND DETAIL ARE SHOWN ON THE SAME DRAWING, DRAWING NUMBER IS REPLACED WITH A DASH.

NO.	DATE	BY	REVISION
1	06/16	JHF	RECORD DRAWING

NOTICE

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

RER DESIGNED
 BAW DRAWN
 WSE CHECKED

RECORD DRAWING

SEE DISCLAIMER, SHEET 1.

VERSION 4.1
 12-9-97

MSA Murray Smith & Associates, Inc.
Engineers/Planners

888 S.W. 5th Ave, Suite 1170 PHONE 503-225-9010
 Portland, Oregon 97204 FAX 866-274-9007

CITY OF SHERIDAN

K 18339 WILLAMINA-SHERIDAN HWY (OR18B) RAIL X'ING SAFETY IMPROVEMENTS

GENERAL NOTES, LEGEND AND ABBREVIATIONS

PROJECT NO.: 00-0464.220 SCALE: AS SHOWN DATE: JULY 2015

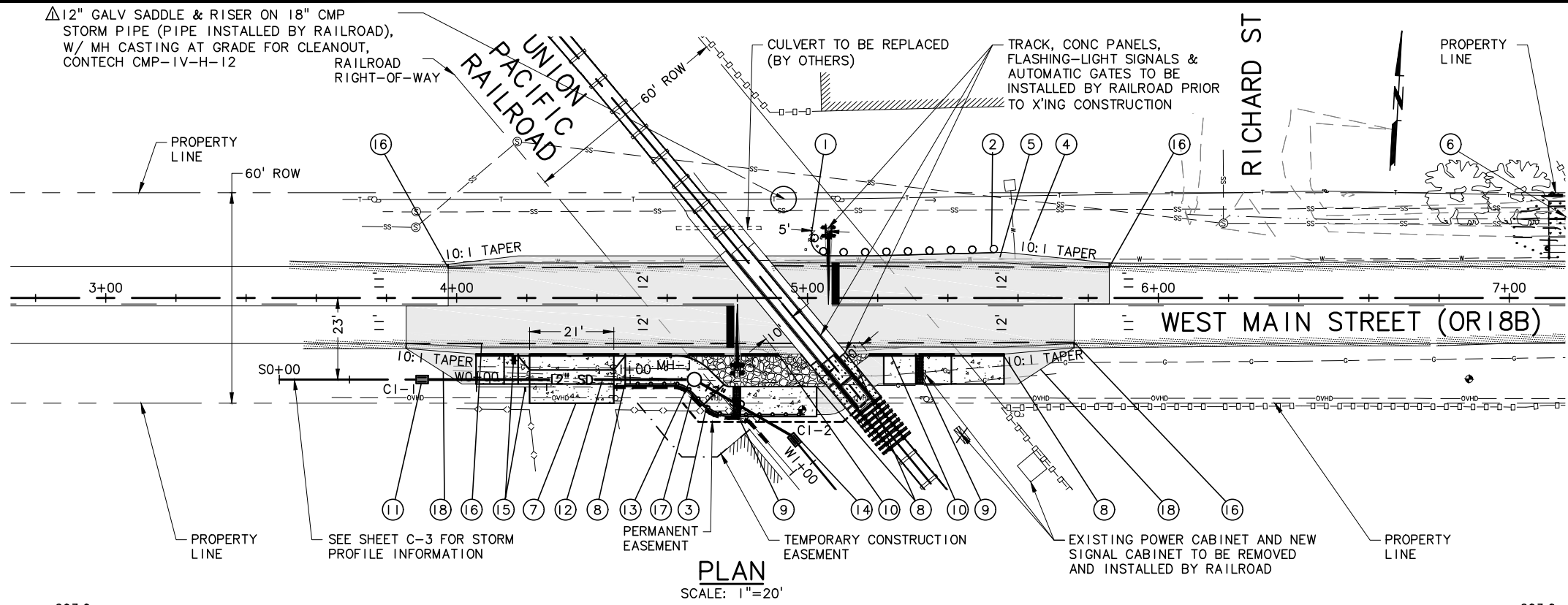
SHEET

G-2

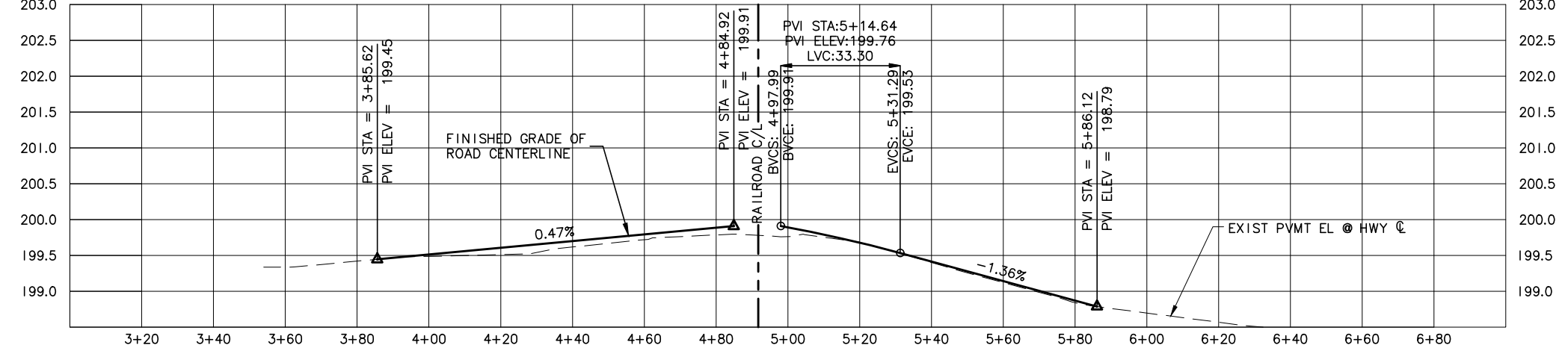
2 of 10

C:\PDX_Projects\00\0464\220_Rail-Highway Program Project\CAD\DRS\Sheets\00-0464-220-OR-C-R.dwg C-1 11/27/2017 9:45 AM JHF 21.0s (LMS Tech)

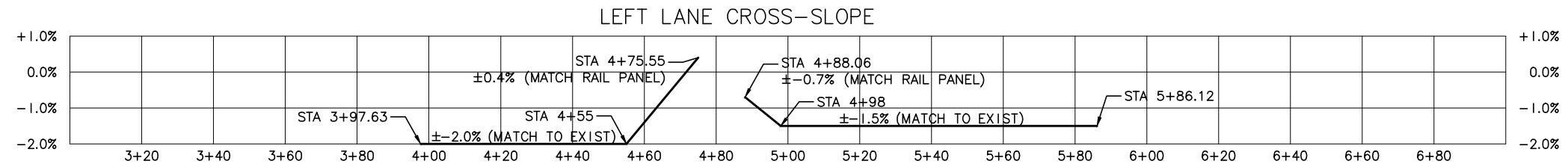
△ 12" GALV SADDLE & RISER ON 18" CMP STORM PIPE (PIPE INSTALLED BY RAILROAD), W/ MH CASTING AT GRADE FOR CLEANOUT, CONTECH CMP-IV-H-12



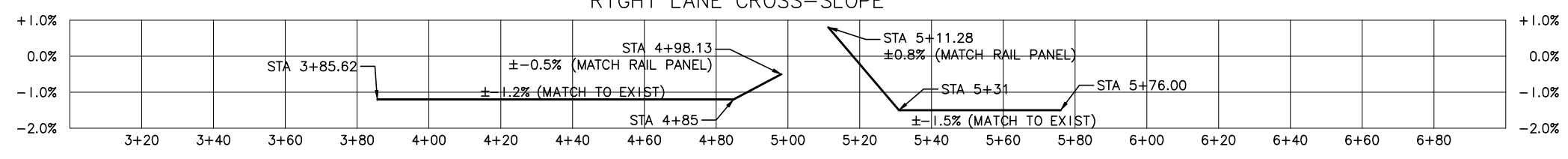
PLAN
SCALE: 1"=20'



CENTERLINE PROFILE
SCALE: 1"=20' HORIZ, 1"=1' VERT



LEFT LANE CROSS-SLOPE



RIGHT LANE CROSS-SLOPE

SHEET NOTES:

1. NO PART OF THE GUARDRAIL OR CURB SHALL BE CLOSER THAN TEN (10) FEET FROM CENTERLINE OF NEAREST TRACK.
2. INSTALL GUARDRAIL FACE (5) FEET FROM OFFSET CENTERLINE OF FLASHING-LIGHT SIGNAL MAST.
3. CONSTRUCT SIDEWALK CROSS SLOPE AT 1.5% TO DRAIN TOWARD THE ROADWAY, UNLESS OTHERWISE SHOWN ON SHEET D-3.
4. SEE SHEET C-2, ROADWAY CROSS SECTIONS, FOR MORE DETAIL.
5. MAINTAIN MINIMUM OF (5) FEET FROM OFFSET CENTERLINE OF FLASHING-LIGHT SIGNAL MAST TO EDGE OF SIDEWALK.

KEY NOTES:

- ① INSTALL RURAL GUARDRAIL FROM STA 5+01.00, 20.0' LT TO STA 5+56.00, 12.0' LT (OREGON STD DRG RD445). SEE NOTE 2 ABOVE.
- ② INSTALL NON-FLARED ENERGY-ABSORBING TERMINAL TEST LEVEL 3 (OREGON STD DRG NO RD 420)
- △ ③ INSTALL TWO-RAIL HANDRAIL BOLT DOWN OPTION FROM STA 4+48.00, 26.6' RT TO STA 4+99.00, 32.8' RT, (OREGON STD DRG RD770 AND RD771)
- ④ WIDEN SHOULDER AND ADJUST SHOULDER SLOPE FOR GUARDRAIL INSTALLATION. (OREGON STD DRG RD420, RD445 & RD610)
- ⑤ PLACE PAVEMENT ON WIDENED SHOULDER FOR GUARDRAIL RUN. (SEE DET 1, SHEET D-4 AND OREGON STD DRG RD420, RD445 AND RD610)
- ⑥ CONSTRUCT BIOFILTRATION SWALE STA 7+43.55, 17.8 LT TO STA 8+43.55, 17.8 LT (SEE SHEET S-1 FOR LOCATION AND SHEET C-3 FOR DETAIL)
- ⑦ CONSTRUCT CONCRETE DRIVEWAY, SEE CITY OF SALEM DET NO. 301 LOCATION SHOWN IS APPROXIMATE, COORDINATE WITH ENGINEER PRIOR TO CONSTRUCTION.
- △ ⑧ CONSTRUCT STANDARD 8' CONC SIDEWALK
 - STA 4+06.00, 16.5' RT TO STA 4+18.00, 16.5' RT,
 - AND STA 5+21.79, 18.9' RT TO STA 5+56.00, 16.5' RT;
 - REINFORCED 8.5' SIDEWALK
 - STA 4+48.00, 16.5' RT TO STA 4+99.00, 25.3' RT;
 - AND STA 4+99.00, 25.3' RT TO STA 5+02.66, 25.3' RT ,
 - STANDARD 8' AC SIDEWALK
 - STA 5+02.66, 25.3' RT TO STA 5+06.66, 25.2' RT,
 - AND 5+13.89, 19.3' RT TO STA 5+21.79, 16.5' RT
 - (SEE SHEET D-1 AND D-3 FOR DETAILS)
- ⑨ INSTALL TRUNCATED DOME DETECTABLE WARNING SURFACE (SEE SHEET D-3 AND OREGON STD DRG RD759 FOR MORE DETAILS)
- ⑩ CONSTRUCT STANDARD CURB "E"=7" MAX STA 4+07.62, 16.0' RT TO STA 4+91.77, 16.0' RT; AND STA 5+18.00, 16.0' RT TO STA 5+56.00, 16.0' RT (SEE SHEET D-1 FOR DETAILS)
- ⑪ INSTALL CONC INLET TYPE M-E (SEE STORM PROFILE ON SHEET C-3 AND OREGON STD DRG RD368 FOR MORE DETAIL)
- ⑫ INSTALL 12" DWPP STORM PIPE, REMOVE EXISTING CULVERT AT DRIVEWAY (SEE STORM PROFILE ON SHEET C-3 FOR MORE DETAIL)
- ⑬ INSTALL STANDARD 48" STORM MANHOLE (SEE STORM PROFILE ON SHEET C-3 AND OREGON STD DRG RD335 FOR MORE DETAIL)
- ⑭ INSTALL 12" DWPP STORM PIPE AND CONC INLET TYPE M-0 (SEE STORM PROFILE ON SHEET C-3 AND OREGON STD DRG RD368 FOR MORE DETAIL)
- ⑮ REMOVE EXIST MAILBOX AND SUPPORT AND INSTALL NEW MAILBOX AND SUPPORT (SINGLE SUPPORT). COORDINATE NEW LOCATION WITH POST MASTER AND PROPERTY OWNER. (OREGON STD DRG RD100 AND RD101)
- ⑯ SAWCUT ALONG EXISTING FOG LINE, REMOVE EXISTING ASPHALT EDGE, AND WIDEN SHOULDER (SEE SHEET C-1, D-1 AND RD610):
 - STA 3+85.62, 13.0' RT TO 4+95.61, 13.0' RT;
 - STA 5+08.62, 13.0' RT TO 5+76.00, 13.0' RT;
 - STA 3+97.63, 8.5' LT TO 4+77.47, 8.5' LT;
 - STA 4+90.38, 8.5' LT TO 5+86.12, 8.5' LT
- ⑰ CONSTRUCT CMU RETAINING WALL:
 - APPROXIMATELY STA 4+45, 25.4' RT TO 4+89, 42.1' RT
 - (SEE SHEET D-4 FOR MORE DETAIL)
- ⑱ CONSTRUCT ASPHALT PEDESTRIAN LANDING (SEE SHEET D-3 AND OREGON STD DRG RD756, OPTION F FOR MORE DETAIL)

NO.	DATE	BY	REVISION
△	06/16	JHF	RECORD DRAWING

NOTICE
0 1/2 1
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BAW DRAWN
WSE CHECKED

RECORD DRAWING
SEE DISCLAIMER, SHEET 1.
VERSION 4.1
12-9-97

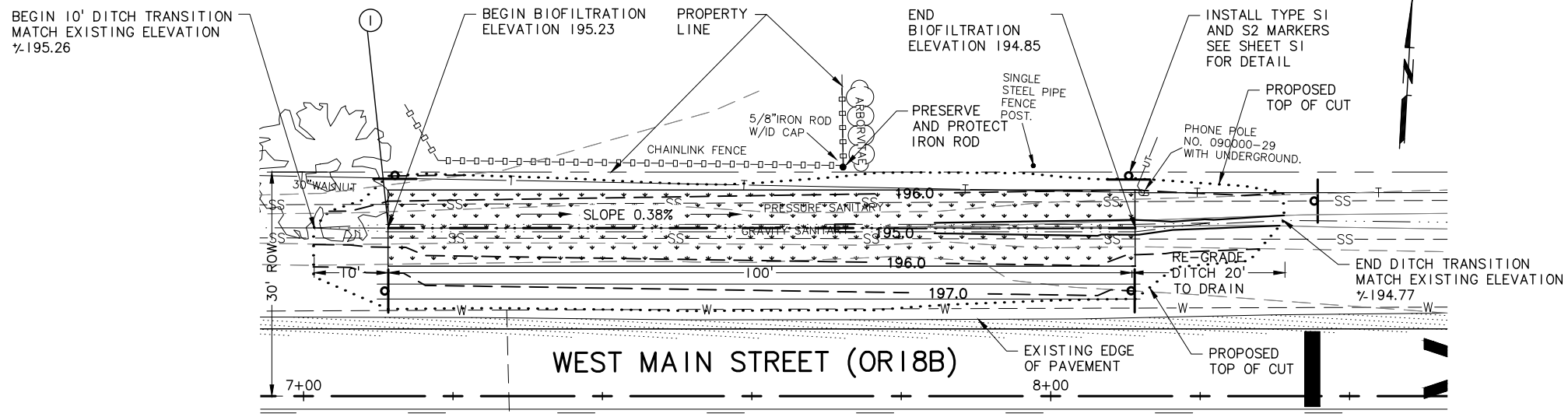
MSA Murray Smith & Associates, Inc.
Engineers/Planners
888 S.W. 5th Ave, Suite 1170 PHONE 503-225-9010
Portland, Oregon 97204 FAX 866-274-9807

CITY OF SHERIDAN
K 18339 WILLAMINA-SHERIDAN HWY (OR18B) RAIL X'ING SAFETY IMPROVEMENTS

WILLAMINA-SHERIDAN HWY (OR18B) PLAN & PROFILE STA 3+00 TO STA 7+00

PROJECT NO.: 00-0464.220 SCALE: AS SHOWN DATE: JULY 2015

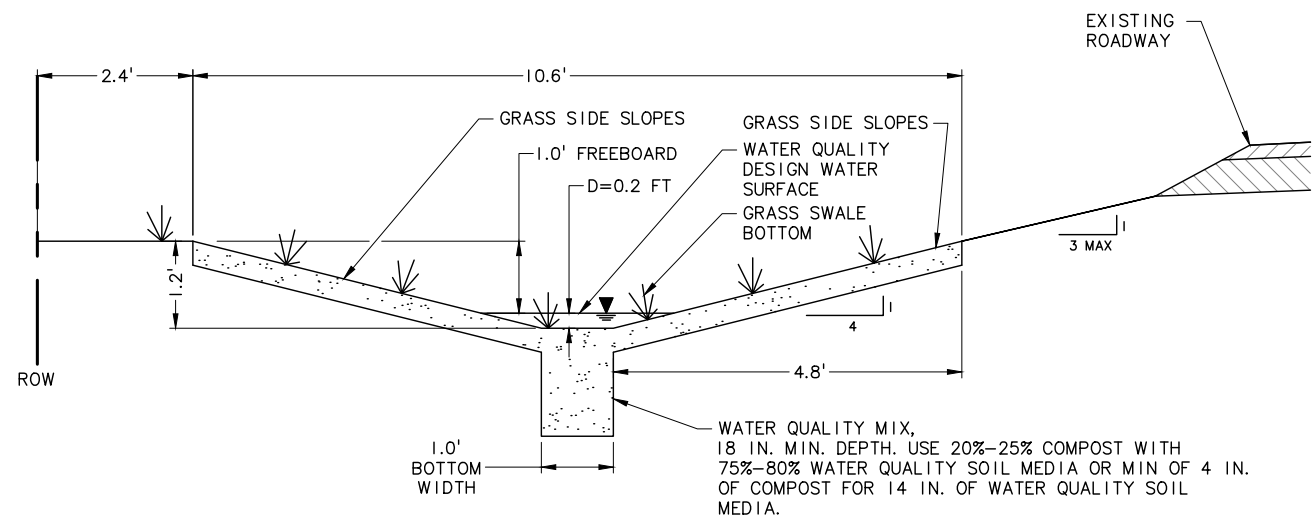
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SWALE PLAN
SCALE: 1"=10'

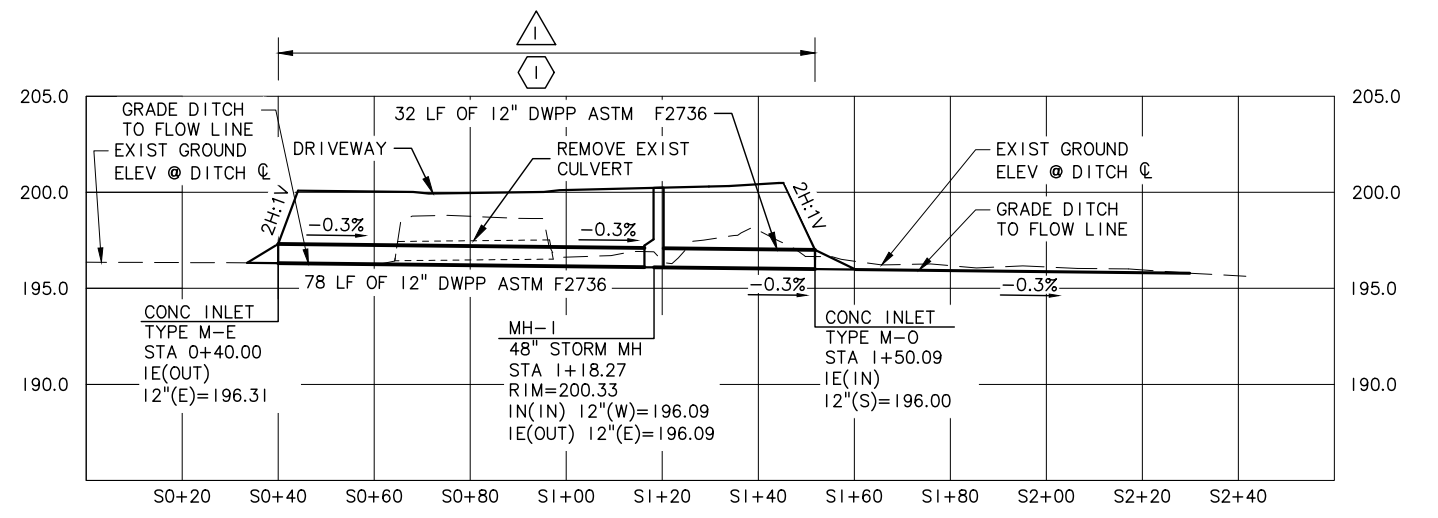
SWALE KEY NOTES:

① CONSTRUCT BIOFILTRATION SWALE (PER CHAPTER 14 APPENDIX B OF THE ODOT HYDRAULICS MANUAL), STA 7+11.30, 24.5 LT TO STA 8+11.30, 24.5 LT (SEE TYPICAL SECTION BELOW FOR DETAIL)



SWALE TYPICAL SECTION
BIOFILTRATION SWALE
NTS

- NOTES:**
- CONTRACTOR TO REMOVE TOP 6 INCHES OF SOIL PRIOR TO CONSTRUCTION.
 - GRASS SEED MUST BE WATER QUALITY SEED MIX (SEE O&M MANUAL FOR DETAIL):
 - 8 PLS (LB/ACRE) MEADOW BARLEY
 - 2 PLS (LB/ACRE) SLENDER HAIRGRASS
 - 0.5 PLS (LB/ACRE) POVERTY RUSH
 - SEE SHEET PLAN ABOVE FOR BIOFILTRATION SWALE LOCATION AND EXTENTS.



STORM PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

- NOTES:**
- SEE SHEET D-2 AND OREGON STD DRG RD310 FOR ADDITIONAL DETAILS AND DEFINITION OF SYMBOLS.
 - FOR STORM PLAN, SEE SHEET C-1.

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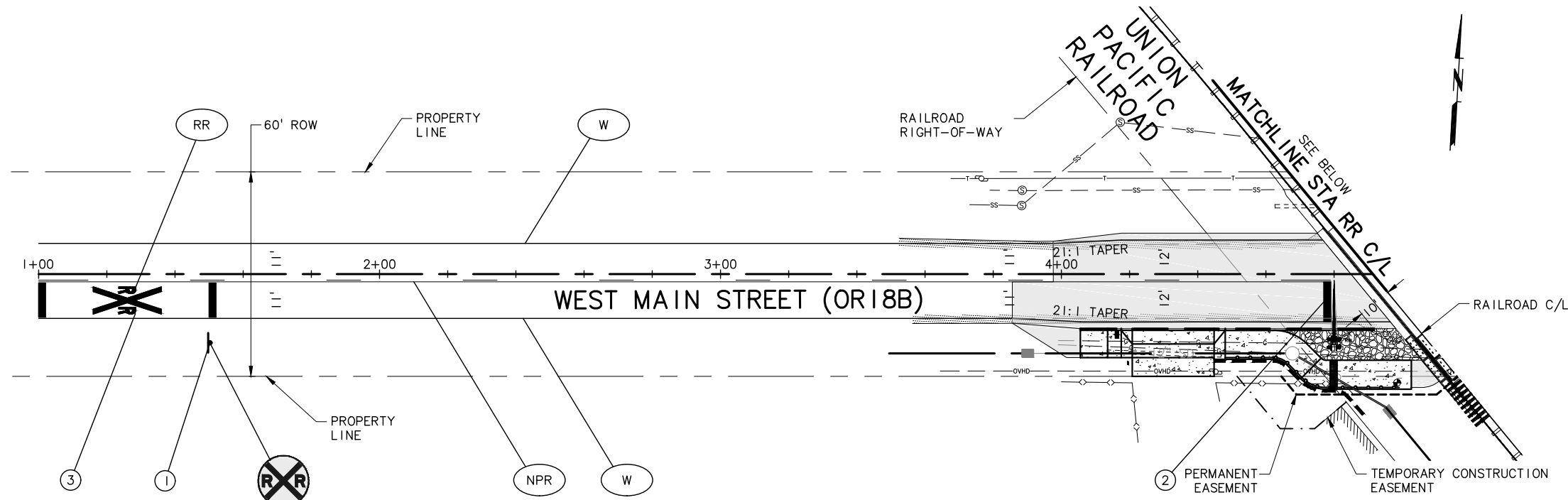
CITY OF SHERIDAN

K 18339 WILLAMINA-SHERIDAN HWY (OR18B) RAIL X'ING SAFETY IMPROVEMENTS

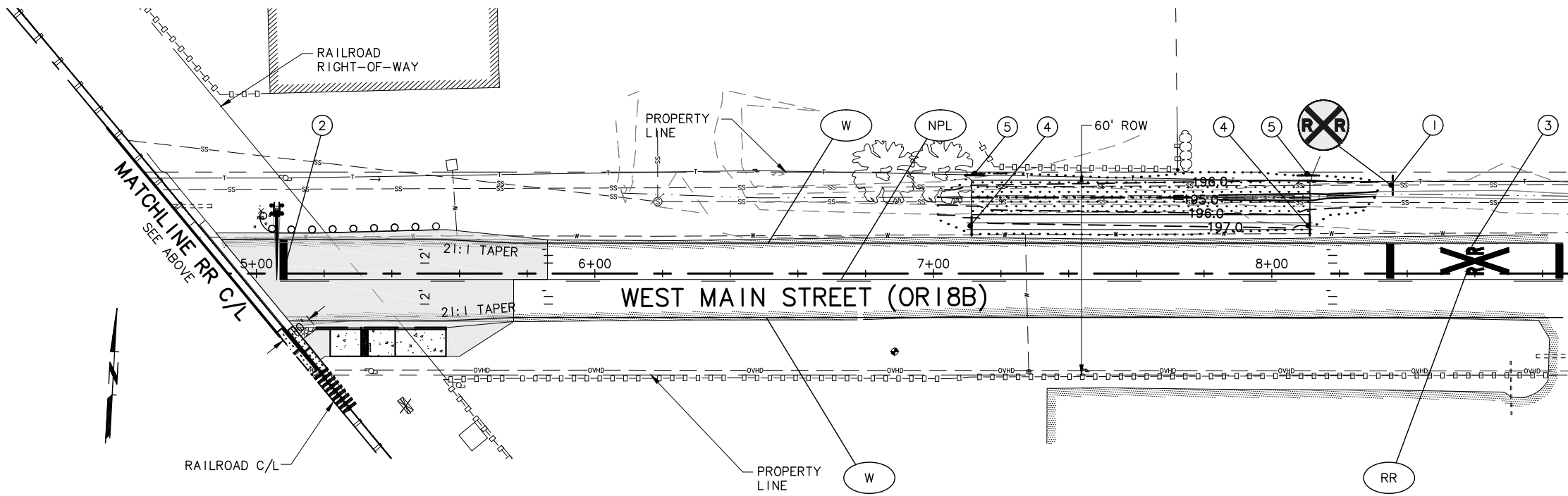
WILLAMINA-SHERIDAN HWY (OR18B) STORM PROFILE AND SWALE PLAN AND TYPICAL SECTION

PROJECT NO.: 00-0464.220 SCALE: AS SHOWN DATE: JULY 2015

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PLAN
SCALE: 1"=20'



PLAN
SCALE: 1"=20'

SHEET NOTES:

1. ALL LONGITUDINAL PERMANENT PAVEMENT STRIPING SHALL BE METHOD "D" THERMOPLASTIC
2. ALL TRANSVERSE PAVEMENT MARKINGS SHALL BE METHOD "B-HS", PREFORMED, FUSED THERMOPLASTIC HIGH SKID FILM.
3. MATCH POINTS TO EXISTING STRIPING AND STATION CALLOUTS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED.

SIGNING KEY NOTES:

- ① INSTALL MUTCD W10-1 SIGNS ON 2½" 10 GAUGE PERFORATED STEEL SQUARE TUBE OR 4"x6" WOOD SUPPORTS. PLACE THE SIGNS 360' IN ADVANCE OF STOP CLEARANCE LINE PER OREGON STD DRG NO TM505 AND TM200, IN A DIRECTION AS DIRECTED BY OWNERS REPRESENTATIVE IN THE FIELD.
- ② INSTALL STOP CLEARANCE LINE 1' IN ADVANCE OF GATE (PER OREGON STD DRG TM 505)
- ③ INSTALL ADVANCE WARNING PAVEMENT MARKINGS (PER OREGON STD DRG TM501)
- ④ INSTALL TYPE S1 MARKERS. SEE OREGON STD DRG NO RD399, TM570 AND TM571.
- ⑤ INSTALL TYPE S2 MARKERS (DFI D00904). SEE OREGON STD DRG NO RD399, TM570 AND TM571.

STRIPING KEY NOTES:

- W INSTALL 4" WHITE LINE (PER OREGON STD DRGS. TM500)
- NPR INSTALL NO-PASS RIGHT 4" YELLOW LINE (PER OREGON STD DRGS. TM500)
- NPL INSTALL NO-PASS LEFT 4" YELLOW LINE (PER OREGON STD DRGS. TM500)
- RR INSTALL RAILROAD CROSSING (WHITE) (PER OREGON STD DRGS. TM501)

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1	06/16	JHF	RECORD DRAWING

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K 18339 WILLAMINA-SHERIDAN HWY (OR18B) RAIL X'ING SAFETY IMPROVEMENTS

WILLAMINA-SHERIDAN HWY (OR18B) SIGNING AND STRIPING

PROJECT NO.: 00-0464.220 SCALE: AS SHOWN DATE: JULY 2015

SHEET
S-1
6 of 10