

# CITY OF MILWAUKIE, OREGON

# 2020 SE MCBROD AVENUE IMPROVEMENTS

## CIP2015-W27



**CITY OF MILWAUKIE  
ENGINEERING DEPARTMENT**  
6101 SE JOHNSON CREEK BLVD  
MILWAUKIE, OR 97206  
PHONE (503) 786-7600  
FAX (503) 774-8236

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**PROJECT DESCRIPTION**

ASPHALT ROADWAY RESTORATION, SIDEWALK CONSTRUCTION, WATER LINE REPLACEMENT, SANITARY SEWER REPAIR, AND STORMWATER IMPROVEMENTS.

**PROJECT MANAGER**

NAME: JENNIFER GARBELY, P.E.  
TITLE: ASSISTANT CITY ENGINEER  
PHONE NUMBER: 503-786-7534  
EMAIL ADDRESS: GARBELYJ@MILWAUKIEOREGON.GOV

**ENGINEER**

NAME: ELIZABETH BRITELL, P.E.  
TITLE: CIVIL ENGINEER  
PHONE NUMBER: 503-786-7544  
EMAIL ADDRESS: BRITELLB@MILWAUKIEOREGON.GOV

**MILWAUKIE PUBLIC WORKS**

EMERGENCY ONLY: 503-348-8833  
NON-EMERGENCY: 503-786-7615

**PORTLAND GENERAL ELECTRIC**

CONTACT NAME: TODD JONES  
PHONE NUMBER (EMERGENCY): 503-464-7777  
PHONE NUMBER (SERVICE): 503-736-5404  
CELL NUMBER: 503-523-7131

**NORTHWEST NATURAL**

CONTACT NAME: JEREMY LORENCE  
PHONE NUMBER: 503-226-4211

**CENTURY LINK**

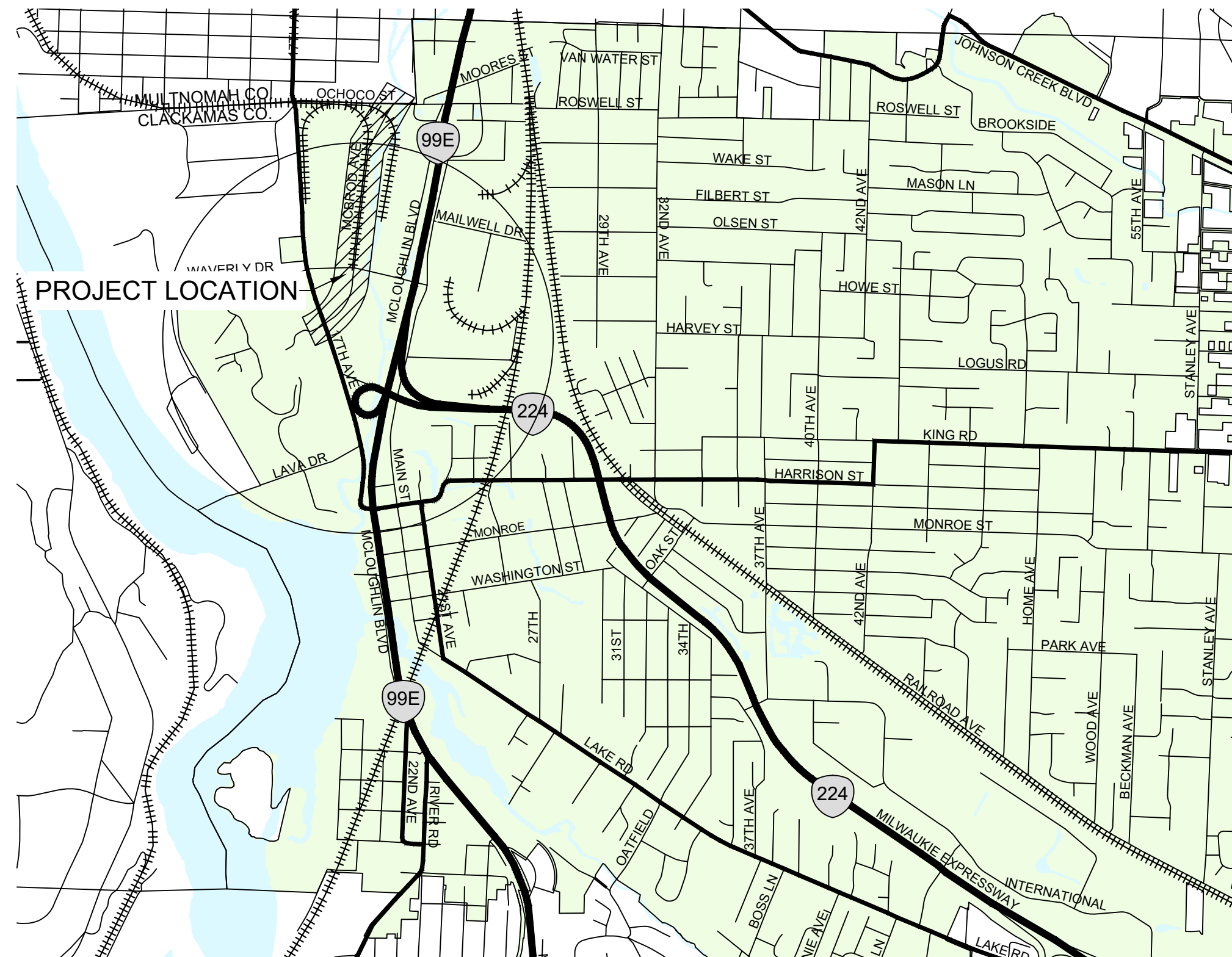
CONTACT NAME: SCOTT MILLER  
PHONE NUMBER: 503-242-4144  
CELL NUMBER: 503-754-7289

**COMCAST**

CONTACT NAME: CHAD VAUGHN  
PHONE NUMBER: 503-813-0484  
CELL NUMBER: 503-801-5813

**LEGEND**

EXISTING	PROPOSED	
---	---	ROAD CENTERLINE
---	---	RIGHT-OF-WAY
---	---	PROPERTY LINE
---	---	RAILROAD TRACK
---	---	WATER
⊗	⊗	WATER VALVE
---	---	REDUCER
---	---	TEE
---	---	CAP
---	---	FIRE HYDRANT
---	---	WATER SAMPLE STATION
---	---	WATER METER
---	---	SANITARY SEWER
---	---	SANITARY SEWER MANHOLE
---	---	STORM SEWER
---	---	STORM SEWER MANHOLE
---	---	STORM INLET
---	---	STORMWATER PLANTER
---	---	GAS
---	---	OVERHEAD POWER
---	---	COMMUNICATIONS
---	---	POWER
---	---	FIBER OPTIC
---	---	FENCE
---	---	POWER POLE
---	---	POWER POLE WITH LIGHT
---	---	STREET SIGN
---	---	TREE
---	---	SURVEY MARKER



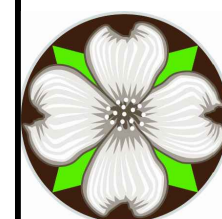
**PROJECT MAP**  
Scale: N.T.S.

OREGON LAW REQUIRES CONTRACTORS TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH 952-001-0090. CONTRACTORS MAY OBTAIN COPIES OF THE RULES BY CALLING THE OREGON UTILITY NOTIFICATION CENTER AT 503-232-1987.

**ABBREVIATIONS**

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	MIN	MINIMUM
ACP	ASPHALT CONCRETE PAVEMENT	MJ	MECHANICAL JOINT
AWWA	AMERICAN WATER WORKS ASSOCIATION	MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
BMP	BEST MANAGEMENT PRACTICE	N	NORTHING
CB	CATCH BASIN	OFF	OFFSET
CI	CAST IRON	OPRR	OREGON PACIFIC RAILROAD
CL	CENTERLINE	OSD	OREGON STANDARD DETAIL
DEQ	DEPARTMENT OF ENVIRONMENTAL QUALITY	OSSC	OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION
DI	DUCTILE IRON	OTTCH	OREGON TEMPORARY TRAFFIC CONTROL HANDBOOK
E	EASTING	PWS	CITY OF MILWAUKIE PUBLIC WORKS STANDARDS
EG	EXISTING GRADE	RD	ROADWAY SECTION
ELEV	ELEVATION	R/W	RIGHT-OF-WAY
EP	EDGE OF PAVEMENT	R/R	RAILROAD
ESCP	EROSION AND SEDIMENT CONTROL PLAN	SAN	SANITARY
ESMT	EASEMENT	STA	STATION
FLG	FLANGED	TYP	TYPICAL
FC	FACE OF CURB	WM	WATER METER
GB	GRADE BREAK	WAT	WATER
INV	INVERT ELEVATION		
LF	LINEAR FEET		
MH	MANHOLE		

BB	12/14/2018
DESIGNED	DATE
BB	5/8/2019
DRAFTED	DATE
WM	5/22/2019
CHECKED	DATE
JG	12/23/2019
APPROVED	DATE



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PHONE: 503-786-7600  
FAX: 503-774-8236

2020 SE MCBROD AVENUE IMPROVEMENTS

COVER SHEET

PROJECT NO.: CIP2015-W27

CONTRACT NO.:

DATE: 1/3/2020

SHEET NO.: CV1



# 2020 SE MCBROD AVENUE IMPROVEMENTS

## CIP2015-W27

### EROSION AND SEDIMENT CONTROL PLANS

**ENGINEER:**  
 NAME: CITY OF MILWAUKIE  
 ADDRESS: 6101 SE JOHNSON CREEK BOULEVARD  
 MILWAUKIE, OR 97206  
 PHONE: 503-786-7544  
 CONTACT: ELIZABETH BRITELL, P.E.

**PROPERTY LOCATION:**  
 ADDRESS: CITY OF MILWAUKIE

LATITUDE: 45°27'6.56" N  
 LONGITUDE: 122°38'28.43" W

**NARRATIVE DESCRIPTION:**

**EXISTING SITE CONDITIONS:**

PAVED INDUSTRIAL ROADWAY WITH SECTIONS THAT INCLUDE CURBS ON THE EAST OR WEST SIDE OF THE ROAD AND SIDEWALK ON THE EAST SIDE OF THE ROAD.

**DEVELOPED CONDITIONS:**

ROADWAY RECONSTRUCTION, SIDEWALK AND RAIL CROSSING CONSTRUCTION, AND STORMWATER IMPROVEMENTS.

**SITE SOIL CLASSIFICATION:**

53B - URBAN LAND - QUAFENO COMPLEX  
 0 TO 3 PERCENT SLOPES  
 82 - URBAN LAND

**RECEIVING WATER BODIES:**

JOHNSON CREEK

**NATURE OF CONSTRUCTION ACTIVITY AND ESTIMATED TIME TABLE**

- \*CLEARING MARCH 2020
- \*GRADING MARCH 2020
- \*UTILITY INSTALLATION APRIL 2020
- \*STREET CONSTRUCTION MAY 2020
- \*FINAL STABILIZATION JUNE 2020

TOTAL SITE AREA: 176,080 SF = 4.04 ACRES

TOTAL DISTURBED AREA: 103,715 SF = 2.38 ACRES

\*CONTRACTOR REQUIRED TO OBTAIN 1200-CN PERMIT

**BMP MATRIX FOR CONSTRUCTION PHASES**

REFER TO DEQ GUIDANCE MANUAL FOR A COMPREHENSIVE LIST OF AVAILABLE BMP'S.

	CLEARING	MASS GRADING	UTILITY INSTALLATION	STREET CONSTRUCTION	FINAL STABILIZATION	WET WEATHER (OCT 1-APR 30)
<b>EROSION PREVENTION</b>						
PRESERVE NATURAL VEGETATION	**X	X	X	X	X	X
GROUND COVER					X	X
HYDRAULIC APPLICATIONS					X	
PLASTIC SHEETING						X
MATTING					X	X
DUST CONTROL	X	X	X	X	X	X
TEMPORARY/ PERMANENT SEEDING					X	X
BUFFER ZONE	**X	X	X	X	X	X
OTHER:						
<b>SEDIMENT CONTROL</b>						
SEDIMENT FENCE (PERIMETER)	**X	X	X	X	X	X
SEDIMENT FENCE (INTERIOR)						
STRAW WATTLES						
FILTER BERM						
INLET PROTECTION	**X	X	X	X	X	X
DEWATERING			X	X		
SEDIMENT TRAP	X	X	X	X		
NATURAL BUFFER ENCROACHMENT	*X	*X	*X	*X	*X	*X
OTHER:						
<b>RUN OFF CONTROL</b>						
CONSTRUCTION ENTRANCE						
PIPE SLOPE DRAIN						
OUTLET PROTECTION	X	X	X	X	X	
SURFACE ROUGHENING						
CHECK DAMS						
OTHER:						
<b>POLLUTION PREVENTION</b>						
PROPER SIGNAGE						
HAZ WASTE MGMT						
SPILL KIT ON-SITE						
CONCRETE WASHOUT AREA						
OTHER:						

\* SIGNIFIES ADDITIONAL BMP'S REQUIRED FOR WORK WITHIN 50' OF WATER OF THE STATE.  
 \*\* SIGNIFIES BMP THAT WILL BE INSTALLED PRIOR TO ANY GROUND DISTURBING ACTIVITY.

**RATIONALE STATEMENT**

A COMPREHENSIVE LIST OF AVAILABLE BEST MANAGEMENT PRACTICES (BMP) OPTIONS BASED ON DEQ'S GUIDANCE MANUAL HAS BEEN REVIEWED TO COMPLETE THIS EROSION AND SEDIMENT CONTROL PLAN. SOME OF THE ABOVE LISTED BMP'S WERE NOT CHOSEN BECAUSE THEY WERE DETERMINED TO NOT EFFECTIVELY MANAGE EROSION PREVENTION AND SEDIMENT CONTROL FOR THIS PROJECT BASED ON SPECIFIC SITE CONDITIONS, INCLUDING SOIL CONDITIONS, TOPOGRAPHIC CONSTRAINTS, ACCESSIBILITY TO THE SITE, AND OTHER RELATED CONDITIONS, AS THE PROJECT PROGRESSES AND THERE IS A NEED TO REVISE THE ESC PLAN, AN ACTION PLAN WILL BE SUBMITTED.

INITIAL \_\_\_\_\_

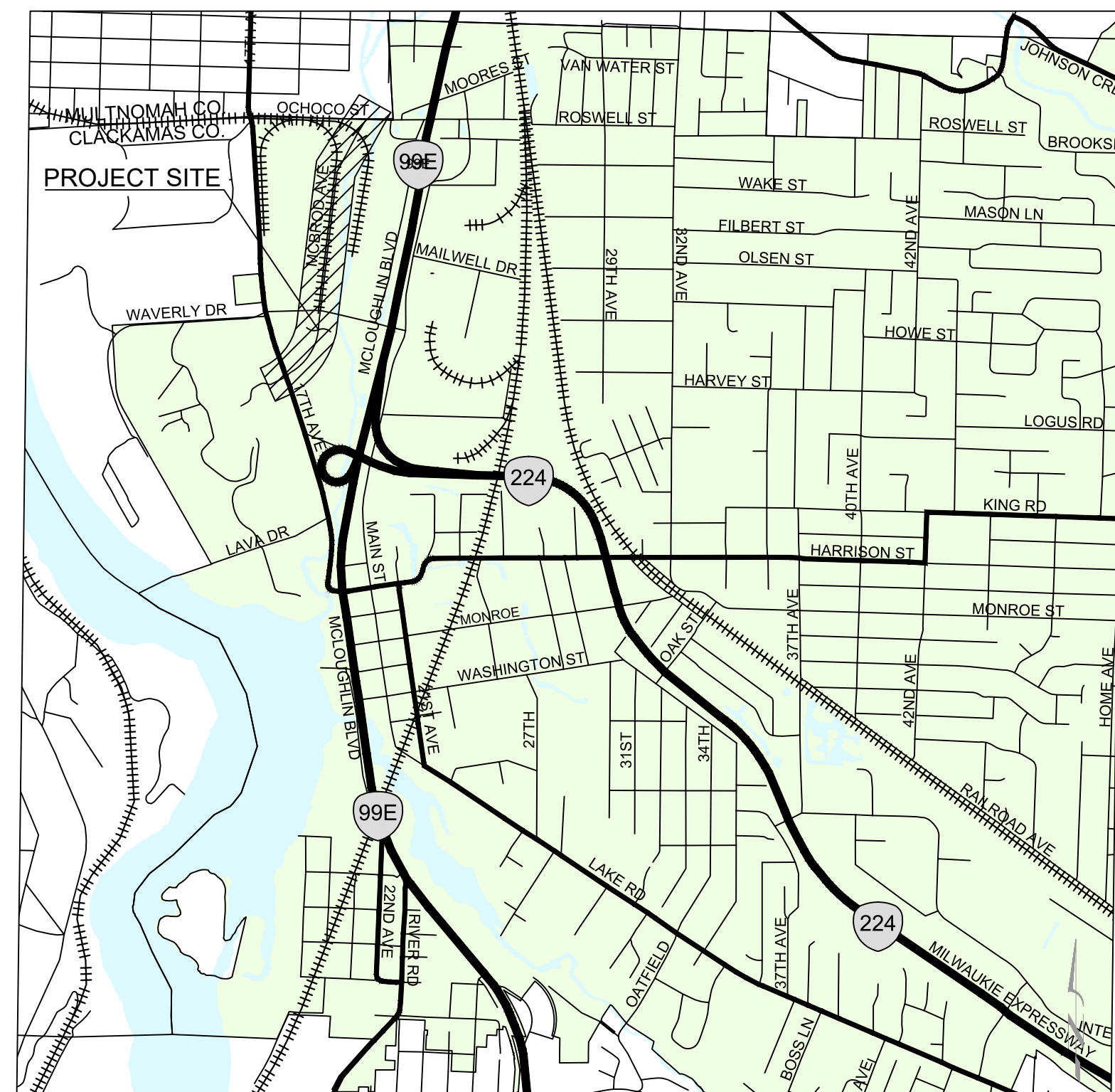
**PERMITTEE'S SITE INSPECTOR:**

COMPANY  
 NAME:  
 PHONE:  
 CONTACT:  
 E-MAIL:

THE PERMITTEE IS REQUIRED TO MEET ALL THE CONDITIONS OF THE DEQ 1200-CN PERMIT. THE ESC PLAN AND GENERAL CONDITIONS HAVE BEEN DEVELOPED TO FACILITATE COMPLIANCE WITH THE 1200-CN PERMIT REQUIREMENTS. IN CASES OF DISCREPANCIES OR OMISSIONS, THE 1200-CN PERMIT REQUIREMENTS SUPERCEDE REQUIREMENTS OF THIS PLAN.

**ATTENTION EXCAVATORS**

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VICINITY MAP  
 1" = 1,400'



SITE MAP  
 scale: 1"=500'

**INSPECTION FREQUENCY**

SITE CONDITION	MINIMUM FREQUENCY
1. ACTIVE PERIOD	DAILY WHEN STORMWATER RUNOFF, INCLUDING RUNOFF FROM SNOWMELT, IS OCCURRING.  AT LEAST ONCE EVERY MONTH, REGARDLESS OF WHETHER STORMWATER RUNOFF IS OCCURRING
2. PRIOR TO THE SITE BECOMING INACTIVE OR IN ANTICIPATION OF SITE INACCESSIBILITY.	ONCE TO ENSURE THAT EROSION AND SEDIMENT CONTROL MEASURES ARE IN WORKING ORDER. ANY NECESSARY MAINTENANCE AND REPAIR MUST BE MADE PRIOR TO LEAVING THE SITE.
3. INACTIVE PERIODS GREATER THAN FOURTEEN (14) CONSECUTIVE CALENDAR DAYS.	ONCE EVERY MONTH
4. PERIODS DURING WHICH THE SITE IS INACCESSIBLE DUE TO INCLEMENT WEATHER.	IF PRACTICAL, INSPECTIONS MUST OCCUR DAILY AT A RELEVANT AND ACCESSIBLE DISCHARGE POINT OR DOWNSTREAM LOCATION.
5. PERIODS DURING WHICH DISCHARGE IS LIKELY DUE TO FROZEN CONDITIONS.	MONTHLY. RESUME MONITORING IMMEDIATELY UPON MELT, OR WHEN WEATHER CONDITIONS MAKE DISCHARGES LIKELY.

- \* HOLD A PRE-CONSTRUCTION MEETING OF PROJECT CONSTRUCTION PERSONNEL, INCLUDING THE INSPECTOR, TO DISCUSS EROSION AND SEDIMENT CONTROL MEASURES AND CONSTRUCTION LIMITS.
- \* ALL INSPECTIONS MUST BE MADE IN ACCORDANCE WITH 1200-CN PERMIT REQUIREMENTS.
- \* INSPECTION LOGS MUST BE KEPT IN ACCORDANCE WITH 1200-CN PERMIT REQUIREMENTS.
- \* RETAIN A COPY OF THE ESC PLAN AND ALL REVISIONS ON SITE AND MAKE IT AVAILABLE ON REQUEST TO DEQ, AGENT, OR THE LOCAL MUNICIPALITY. DURING INACTIVE PERIODS OF GREATER THAN SEVEN (7) CONSECUTIVE CALENDAR DAYS, RETAIN THE ESC PLAN AT THE CONSTRUCTION SITE OR AT ANOTHER LOCATION.
- \* CHANGES TO THE APPROVED ESC PLAN MUST BE SUBMITTED TO DEQ IN THE FORM OF AN ACTION PLAN.

**SHEET INDEX**

SHEET NO.	DESCRIPTION
EC1	EROSION AND SEDIMENT CONTROL COVER SHEET
EC2	EROSION AND SEDIMENT CONTROL PLAN NOTES
EC3-EC8	EROSION AND SEDIMENT CONTROL PLAN

NO.	DATE	BY	REVISIONS

DESIGNED	BB	12/14/2018
		DATE
DRAFTED	BB	5/8/2019
		DATE
CHECKED	WM	5/22/2019
		DATE
APPROVED	JG	12/23/2019
		DATE

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 MILWAUKIE, OR 97206

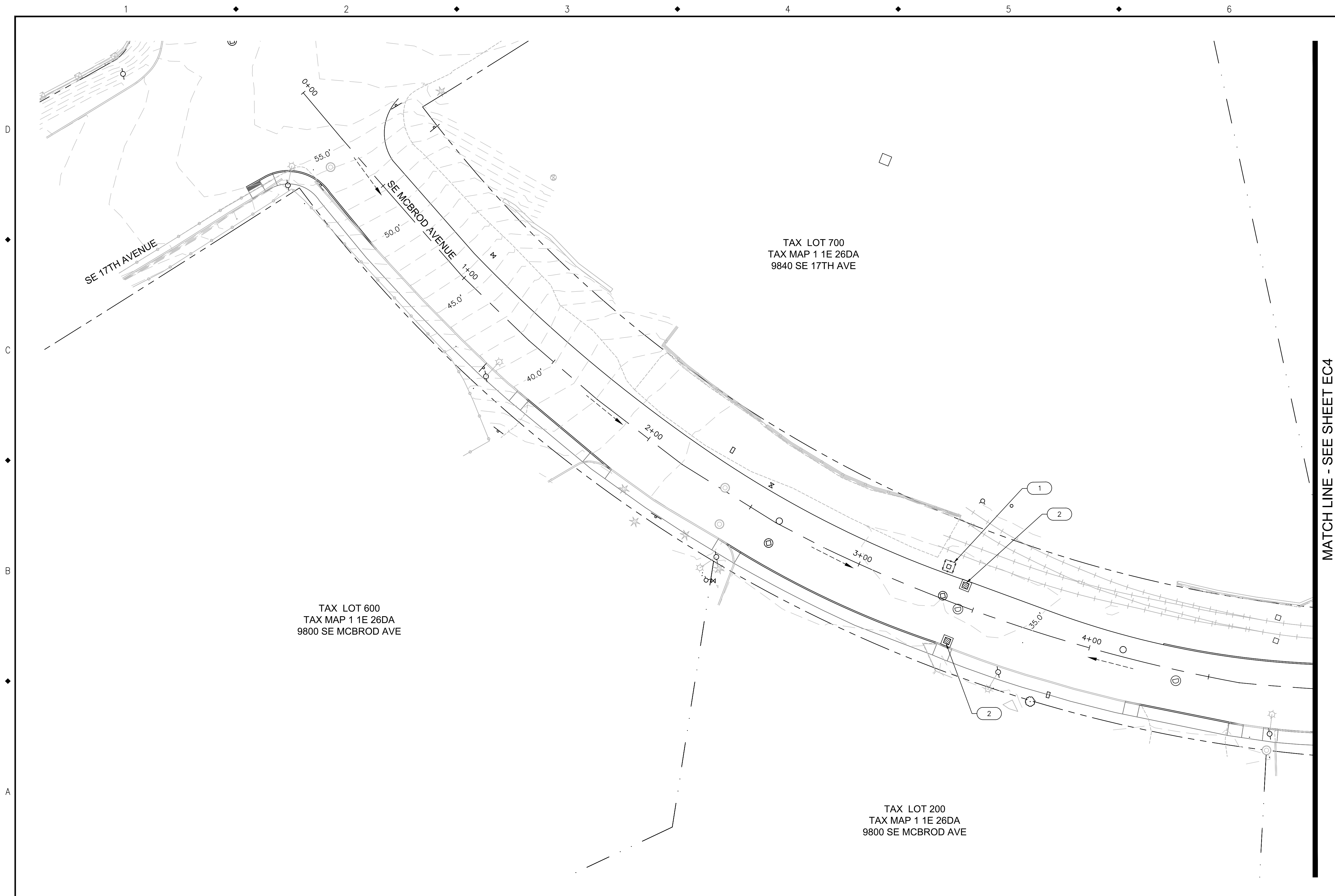
PHONE: 503-786-7600  
 FAX: 503-774-8236

## 2020 SE MCBROD AVENUE IMPROVEMENTS

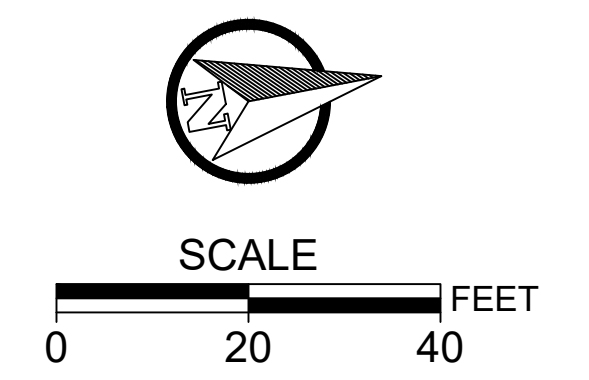
EROSION AND SEDIMENTATION CONTROL COVER SHEET

PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: EC1
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- EROSION CONTROL CONSTRUCTION NOTES:**
- 1 INSTALL INLET PROTECTION, TYPE 4. OSD RD 1015.
  - 2 INSTALL INLET PROTECTION, TYPE 3. OSD RD 1010.
- NOTES:**
- 1. PLUG STORM PIPE PRIOR TO REMOVAL OF EXISTING INLET OR INSTALLATION OF NEW INLET.
- LEGEND:**
- FLOW ARROW



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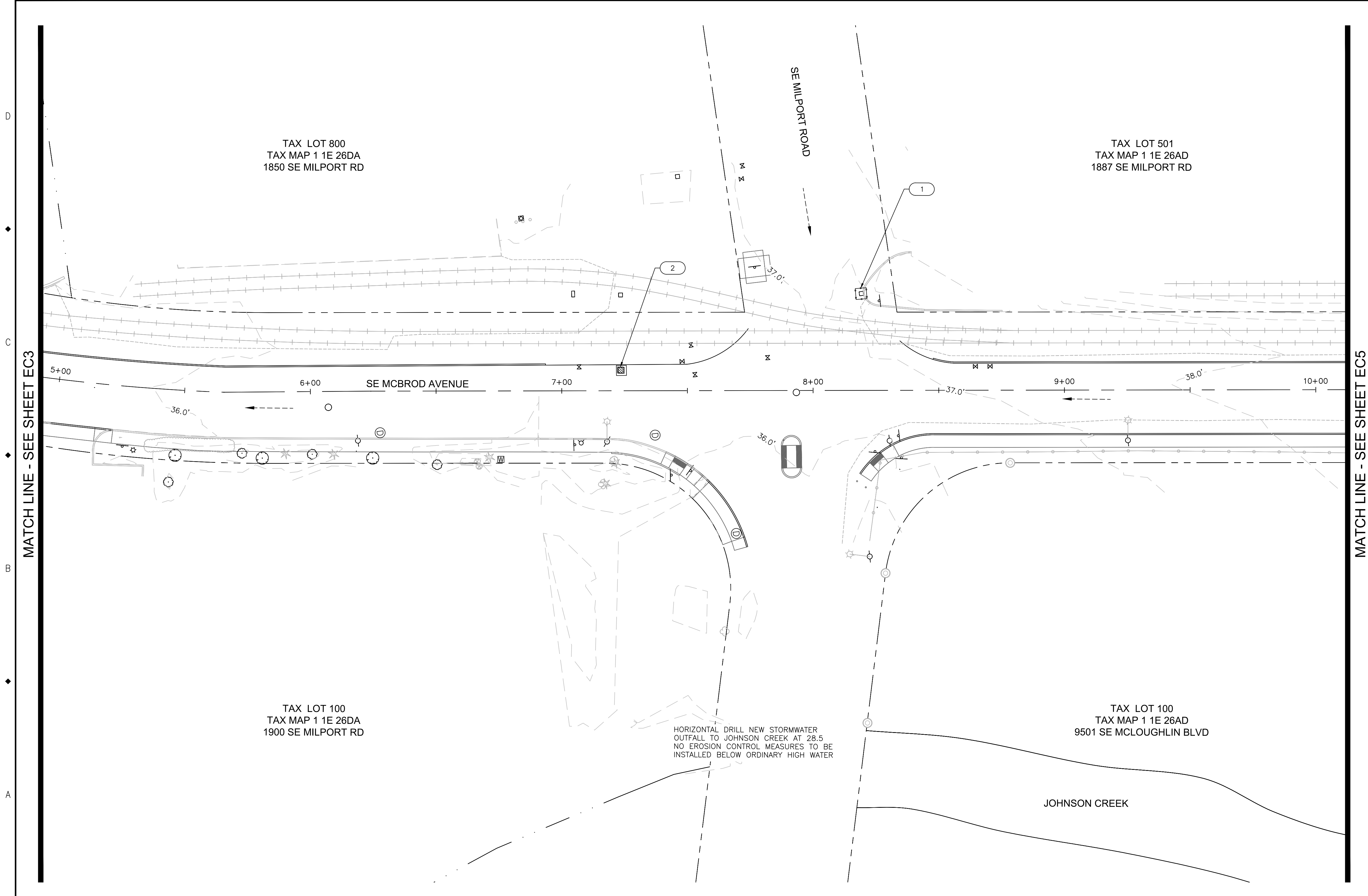
**2020 SE MCBROD AVENUE IMPROVEMENTS**

EROSION AND SEDIMENTATION CONTROL PLAN

PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: EC3
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- EROSION CONTROL CONSTRUCTION NOTES:**
- 1 INSTALL INLET PROTECTION, TYPE 4. OSD RD 1015.
  - 2 INSTALL INLET PROTECTION, TYPE 3. OSD RD 1010.
- NOTES:**
- 1. PLUG STORM PIPE PRIOR TO REMOVAL OF EXISTING INLET OR INSTALLATION OF NEW INLET.

**LEGEND:**  
 FLOW ARROW



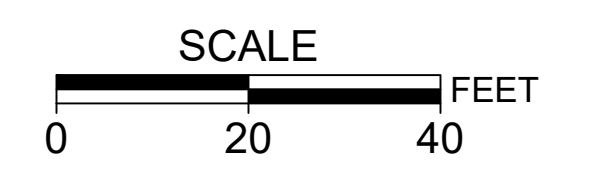
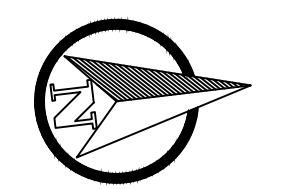
TAX LOT 800  
 TAX MAP 1 1E 26DA  
 1850 SE MILPORT RD

TAX LOT 501  
 TAX MAP 1 1E 26AD  
 1887 SE MILPORT RD

TAX LOT 100  
 TAX MAP 1 1E 26DA  
 1900 SE MILPORT RD

TAX LOT 100  
 TAX MAP 1 1E 26AD  
 9501 SE MCLOUGHLIN BLVD

HORIZONTAL DRILL NEW STORMWATER  
 OUTFALL TO JOHNSON CREEK AT 28.5  
 NO EROSION CONTROL MEASURES TO BE  
 INSTALLED BELOW ORDINARY HIGH WATER



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**2020 SE MCBROD AVENUE IMPROVEMENTS**

EROSION AND SEDIMENTATION CONTROL PLAN

PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: EC4
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TAX LOT 501  
TAX MAP 1 1E 26AD  
1887 SE MILPORT RD

TAX LOT 200  
TAX MAP 1 1E 26AD  
9333 SE MCBROD AVE

TAX LOT 100  
TAX MAP 1 1E 26AD  
9501 SE MCLOUGHLIN BLVD

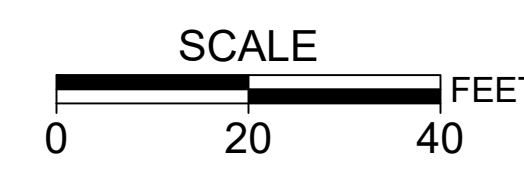
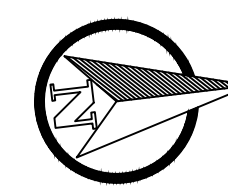
- EROSION CONTROL CONSTRUCTION NOTES:
- 1 INSTALL INLET PROTECTION, TYPE 4. OSD RD 1015.
  - 2 INSTALL INLET PROTECTION, TYPE 3. OSD RD 1010.
- NOTES:
1. PLUG STORM PIPE PRIOR TO REMOVAL OF EXISTING INLET OR INSTALLATION OF NEW INLET.

LEGEND:

FLOW ARROW

MATCH LINE - SEE SHEET EC4

MATCH LINE - SEE SHEET EC6



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**2020 SE MCBROD AVENUE IMPROVEMENTS**

EROSION AND SEDIMENTATION CONTROL PLAN

PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: EC5
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- EROSION CONTROL CONSTRUCTION NOTES:
- 1 INSTALL INLET PROTECTION, TYPE 4. OSD RD 1015.
  - 2 INSTALL INLET PROTECTION, TYPE 3. OSD RD 1010.
- NOTES:
1. PLUG STORM PIPE PRIOR TO REMOVAL OF EXISTING INLET OR INSTALLATION OF NEW INLET.

LEGEND:

FLOW ARROW

TAX LOT 200  
TAX MAP 1 1E 26AD  
9333 SE MCBROD AVE

TAX LOT 700  
TAX MAP 1 1E 26AA  
9255 SE MCBROD AVE

TAX LOT 402  
TAX MAP 1 1E 26AA  
9111 SE MCBROD AVE

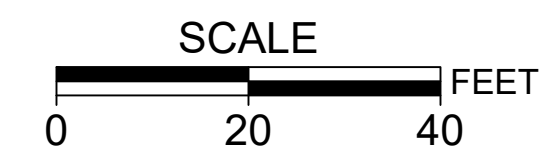
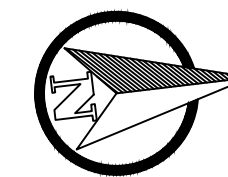
TAX LOT 100  
TAX MAP 1 1E 26AD  
9501 SE MCLOUGHLIN BLVD

TAX LOT 100  
TAX MAP 1 1E 26AA  
9200 SE MCLOUGHLIN BLVD

JOHNSON CREEK

MATCH LINE - SEE SHEET EC5

MATCH LINE - SEE SHEET EC7



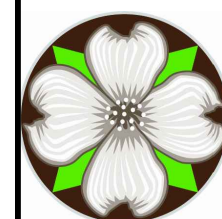
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EROSION AND SEDIMENTATION CONTROL PLAN

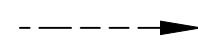
PROJECT NO.: CIP2015-W27

CONTRACT NO.:

DATE: 1/3/2020

SHEET NO.: EC6



- EROSION CONTROL CONSTRUCTION NOTES:**
- 1 INSTALL INLET PROTECTION, TYPE 4. OSD RD 1015.
  - 2 INSTALL INLET PROTECTION, TYPE 3. OSD RD 1010.
- NOTES:**
- 1. PLUG STORM PIPE PRIOR TO REMOVAL OF EXISTING INLET OR INSTALLATION OF NEW INLET.
- LEGEND:**
- FLOW ARROW 

TAX LOT 402  
TAX MAP 1 1E 26AA  
9111 SE MCBROD AVE

TAX LOT 403  
TAX MAP 1 1E 26AA  
1901 SE OCHOCO ST

TAX LOT 405  
TAX MAP 1 1E 26AA  
9001 SE MCBROD AVE

TAX LOT 100  
TAX MAP 1 1E 26AA  
9200 SE MCLOUGHLIN BLVD

JOHNSON CREEK

21+00 SE MCBROD AVENUE

22+00

23+00

24+00

25+00

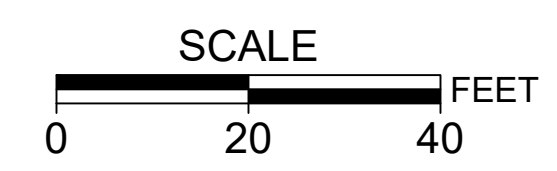
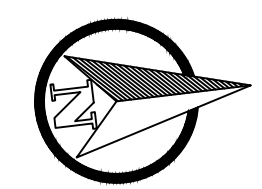
42.0'

43.0'

44.0'

MATCH LINE - SEE SHEET EC6

MATCH LINE - SEE SHEET EC8



NO.	DATE	BY	REVISIONS

DESIGNED	BB	12/14/2018
DRAFTED	BB	5/8/2019
CHECKED	WM	5/22/2019
APPROVED	JG	12/23/2019




**CITY OF MILWAUKIE**

6101 SE JOHNSON CREEK BLVD.  
MILWAUKIE, OR 97206

PHONE: 503-786-7600  
FAX: 503-774-8236

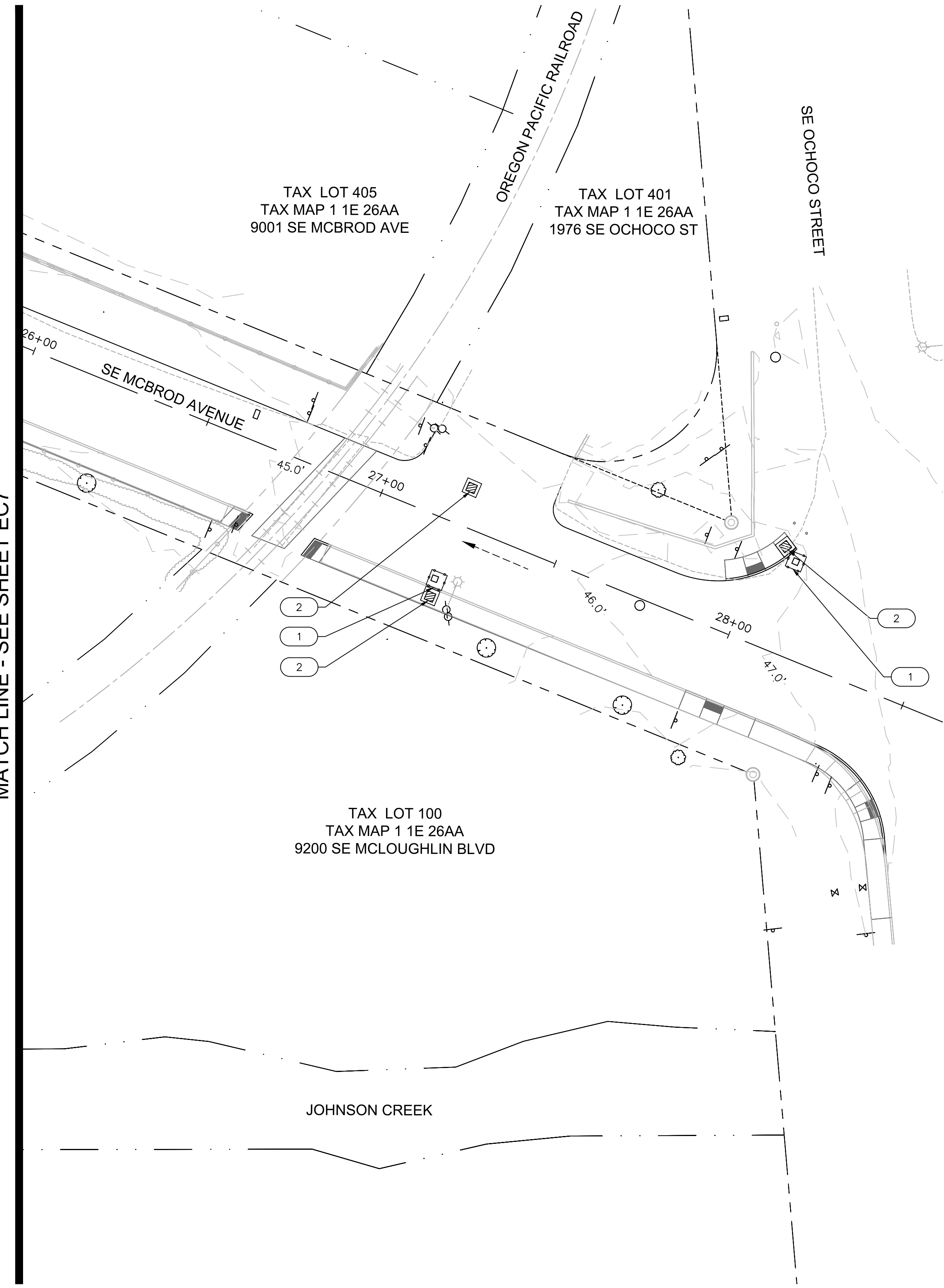
**2020 SE MCBROD AVENUE IMPROVEMENTS**

EROSION AND SEDIMENTATION CONTROL PLAN

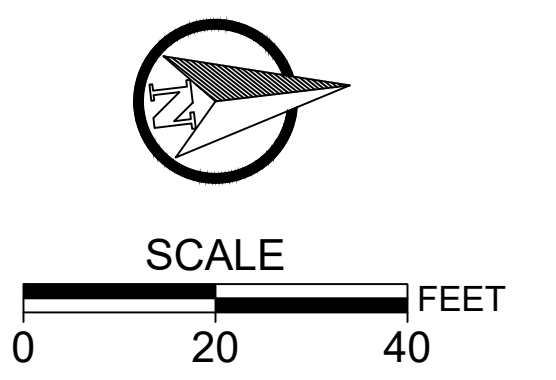
PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: EC7
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D  
C  
B  
A

MATCH LINE - SEE SHEET EC7



- EROSION CONTROL CONSTRUCTION NOTES:**
- 1 INSTALL INLET PROTECTION, TYPE 4. OSD RD 1015.
  - 2 INSTALL INLET PROTECTION, TYPE 3. OSD RD 1010.
- NOTES:**
1. PLUG STORM PIPE PRIOR TO REMOVAL OF EXISTING INLET OR INSTALLATION OF NEW INLET.
- LEGEND:**
- FLOW ARROW



NO.	DATE	BY	REVISIONS

DESIGNED	BB	12/14/2018
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		DATE
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APPROVED	JG	12/23/2019
		DATE



## CITY OF MILWAUKIE

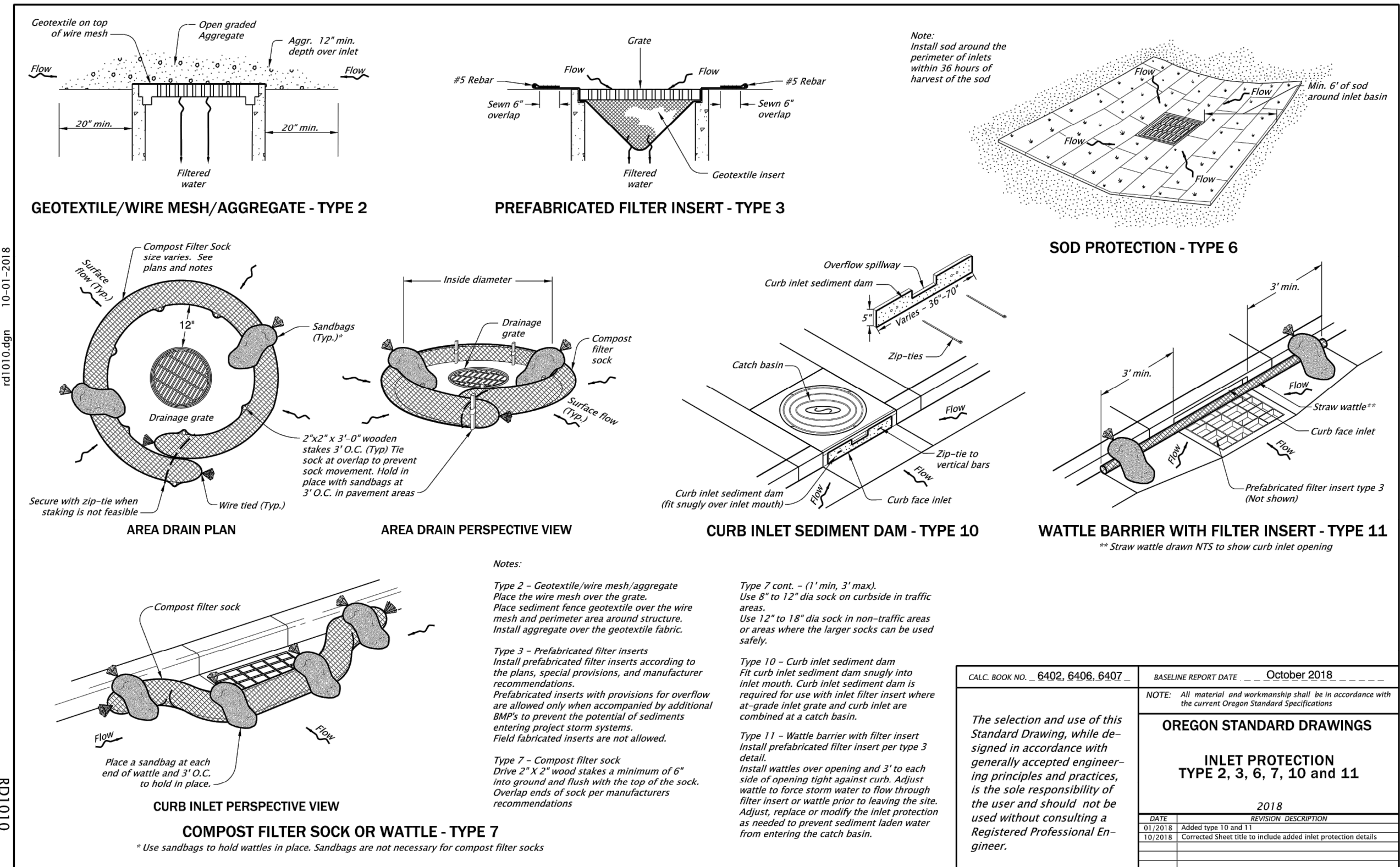
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### 2020 SE MCBROD AVENUE IMPROVEMENTS

EROSION AND SEDIMENTATION CONTROL PLAN

PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: EC8
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**Notes:**

**Type 2 - Geotextile/wire mesh/aggregate**  
Place the wire mesh over the grate.  
Place sediment fence geotextile over the wire mesh and perimeter area around structure.  
Install aggregate over the geotextile fabric.

**Type 3 - Prefabricated filter inserts**  
Install prefabricated filter inserts according to the plans, special provisions, and manufacturer recommendations.  
Prefabricated inserts with provisions for overflow are allowed only when accompanied by additional BMPs to prevent the potential of sediments entering project storm systems.  
Field fabricated inserts are not allowed.

**Type 7 - Compost filter sock**  
Drive 2" x 2" wood stakes a minimum of 6" into ground and flush with the top of the sock.  
Overlap ends of sock per manufacturer recommendations

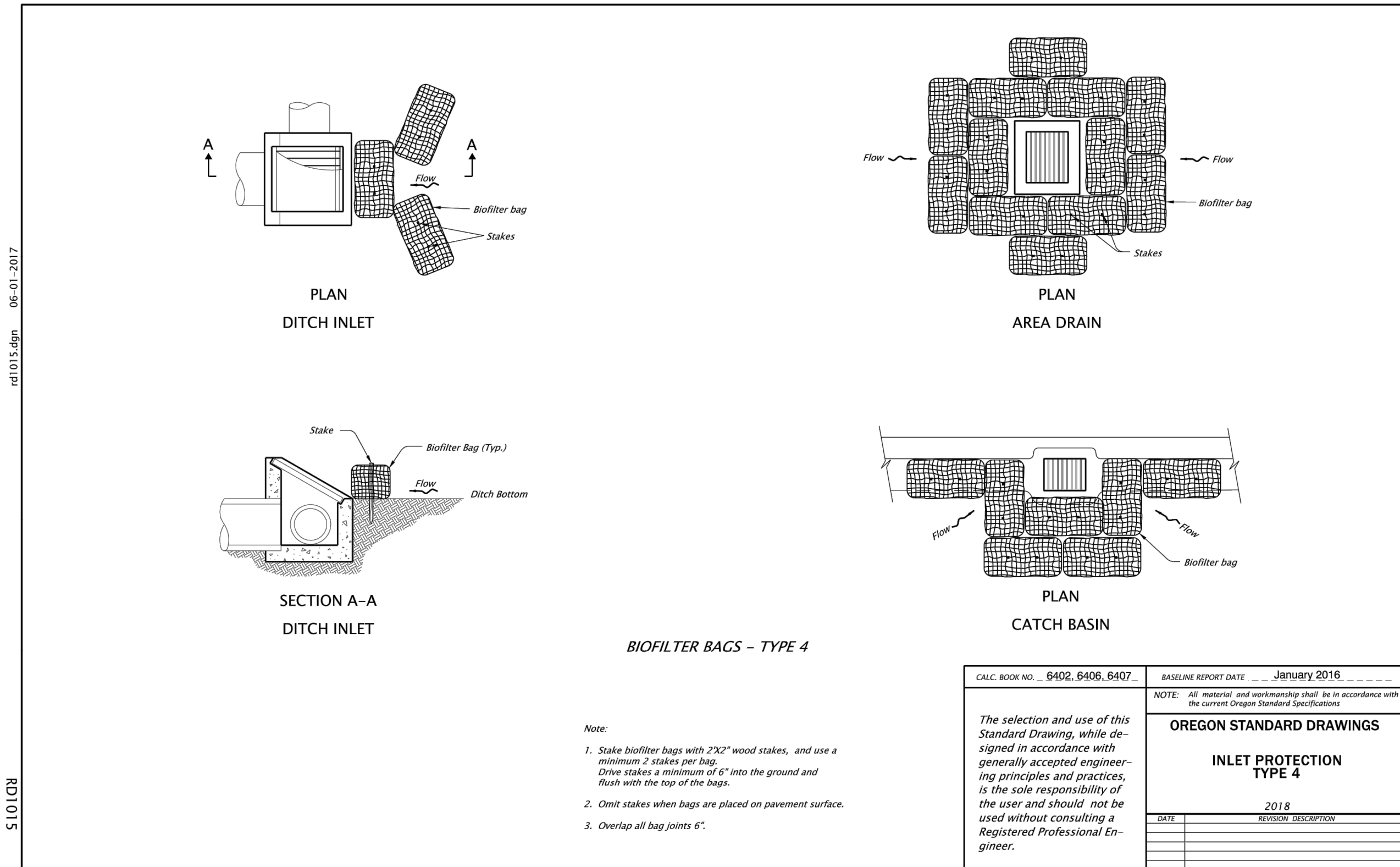
**Type 10 - Curb inlet sediment dam**  
Fit curb inlet sediment dam snugly into inlet mouth. Curb inlet sediment dam is required for use with inlet filter insert where at-grade inlet grate and curb inlet are combined at a catch basin.

**Type 11 - Wattle barrier with filter insert**  
Install prefabricated filter insert per type 3 detail.  
Install wattles over opening and 3" to each side of opening tight against curb. Adjust wattle to force storm water to flow through filter insert or wattle prior to leaving the site. Adjust, replace or modify the inlet protection as needed to prevent sediment laden water from entering the catch basin.

CALC. BOOK NO. - 6402, 6406, 6407	BASELINE REPORT DATE - October 2018
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications.	
<b>OREGON STANDARD DRAWINGS</b>	
<b>INLET PROTECTION</b>	
<b>TYPE 2, 3, 6, 7, 10 and 11</b>	
DATE	REVISION DESCRIPTION
07/2018	Added type 10 and 11
10/2018	Completed sheet title to include added inlet protection details.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

Effective Date: June 1, 2019 - November 30, 2019 RD1010



**BIOFILTER BAGS - TYPE 4**

Note:  
1. Stake biofilter bags with 2"x2" wood stakes, and use a minimum 2 stakes per bag.  
Drive stakes a minimum of 6" into the ground and flush with the top of the bags.  
2. Limit stakes when bags are placed on pavement surface.  
3. Overlap all bag joints 6".

CALC. BOOK NO. - 6402, 6406, 6407	BASELINE REPORT DATE - January 2016
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications.	
<b>OREGON STANDARD DRAWINGS</b>	
<b>INLET PROTECTION</b>	
<b>TYPE 4</b>	
DATE	REVISION DESCRIPTION

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

Effective Date: June 1, 2019 - November 30, 2019 RD1015

NO.	DATE	BY	REVISIONS

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JG	12/23/2019	APPROVED	DATE



**CITY OF MILWAUKIE**

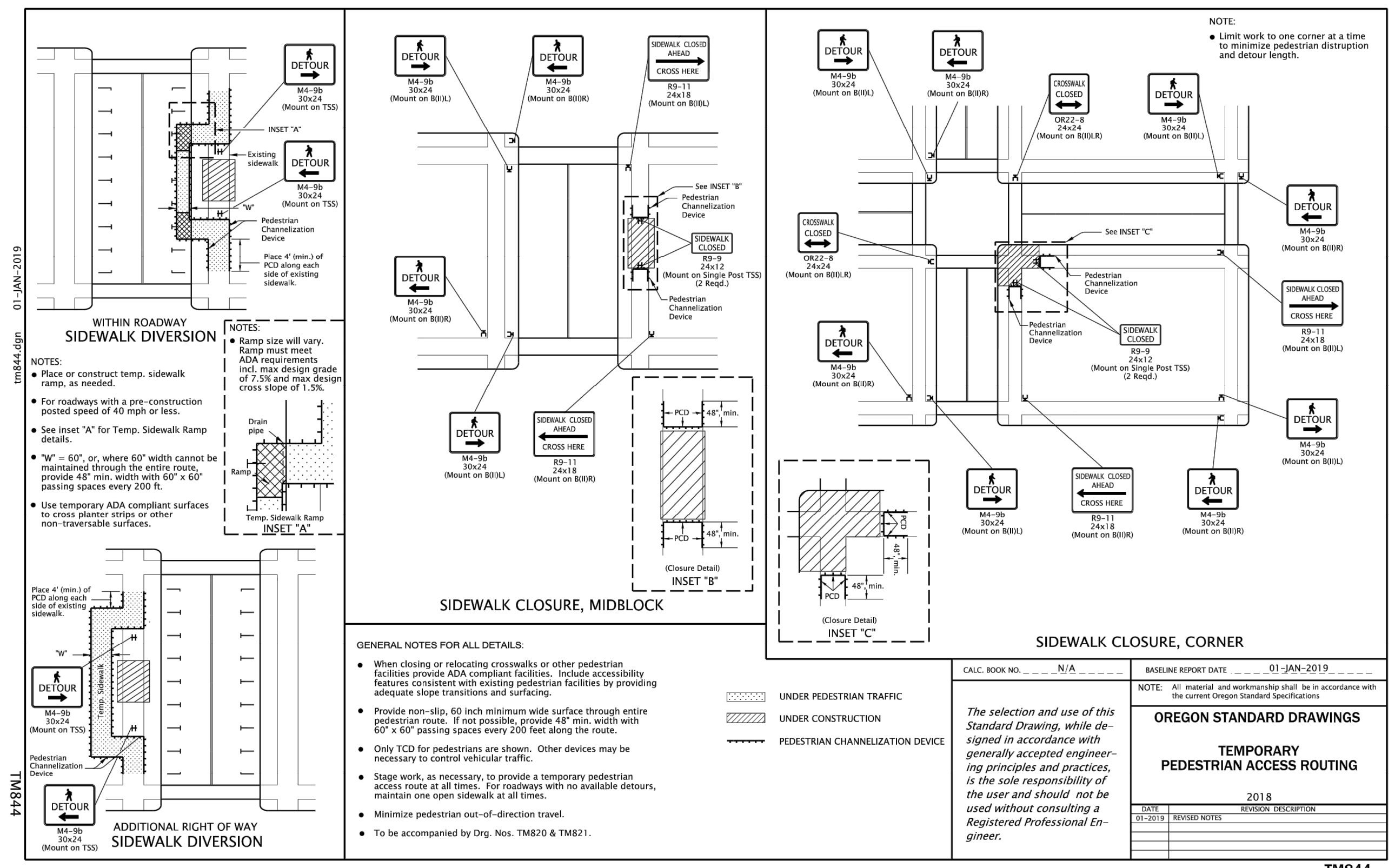
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**2020 SE MCBROD AVENUE IMPROVEMENTS**

EROSION AND SEDIMENTATION CONTROL DETAILS

PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: EC9
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- CITY OF MILWAUKIE TRAFFIC CONTROL
- ALL SIGNING, STRIPING AND PERMANENT BARRICADES TO BE INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLANS FOR THE WORK IN THE RIGHT-OF-WAY AT THE PRE-CONSTRUCTION MEETING.
  - ALL TRAFFIC CONTROL MEASURES SHALL CONFORM WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND LATEST EDITION OF THE OREGON TEMPORARY TRAFFIC CONTROL HANDBOOK (OTTCH) FOR OPERATIONS OF THREE DAYS OR LESS.
  - THESE TRAFFIC CONTROL PLANS ARE SCHEMATIC IN NATURE AND ARE CONSIDERED THE MINIMUM NECESSARY TO ADEQUATELY MANAGE TRAFFIC DURING CONSTRUCTION.
  - EACH TRAFFIC CONTROL DETAIL IS TO BE IMPLEMENTED WITH THE ASSOCIATED TYPE OF WORK. FOR EXAMPLE, THE "WATER MAIN & SERVICE INSTALLATION" DETAIL CAN BE FLIPPED TO USE ON THE OPPOSITE SIDE OF THE ROADWAY AND THE "LANE CLOSURE AT INTERSECTION WITH FLAGGING" DETAIL CAN BE FLIPPED TO USE ON ANY OF THE FOUR INTERSECTION CORNERS.
  - CONTRACTOR SHALL INSTALL AND MAINTAIN ALL TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THIS PLAN THROUGHOUT THE DURATION OF CONSTRUCTION.
  - ALL TRAVEL LANES, STREETS, DRIVEWAYS, AND POINTS OF ACCESS SHALL BE OPENED TO VEHICULAR TRAFFIC AT THE END OF EACH WORK DAY. ALL AREAS OF EXCAVATION WITHIN THE TRAVELED WAY SHALL BE TEMPORARILY COVERED WITH STEEL PLATES OR BACKFILLED AND TEMPORARILY SURFACED WITH ASPHALT CONCRETE PATCHING UNTIL FINAL PAVING.
  - CONTRACTOR SHALL PROVIDE VEHICULAR ACCESS TO SIDE STREETS AND DRIVEWAYS TO THE EXTENT PRACTICABLE. WHEN VEHICULAR ACCESS CANNOT BE PROVIDED, THE CONTRACTOR WILL NOTIFY THE AFFECTED BUSINESS / PROPERTY OWNER OF THE DATE AND DURATION OF THE INTERRUPTION, 14 DAYS IN ADVANCE OF THE CLOSURE. [24 HOURS IN ADVANCE OF THE CLOSURE]
  - SIGN LOCATIONS ARE APPROXIMATE. FINAL SIGN LOCATION SHALL BE DETERMINED BY CITY ENGINEER IN THE FIELD.
  - TRAFFIC CONTROL SIGNS SHALL BE SIZED IN ACCORDANCE WITH CONVENTIONAL ROADWAY STANDARDS OF THE MUTCD.
  - TRAFFIC CONTROL SIGNS SHALL BE SPACED IN ACCORDANCE WITH THE MUTCD AND OTTCH FOR 35 MPH VEHICULAR SPEEDS.
  - LANE SHIFTING AND MERGER TAPERS SHALL HAVE A LENGTH NECESSARY TO ACCOMMODATE 35 MPH VEHICULAR SPEEDS.
  - CONE LOCATIONS ARE SCHEMATIC AND DENOTE LANE LOCATIONS, LANE TAPERS, AND WORK AREAS AND DO NOT INDICATE THE NUMBER OF CONES TO BE PLACED. CONTRACTOR WILL PLACE CONES IN A NUMBER SUFFICIENT TO ADEQUATELY DELINEATE AND DIRECT TRAFFIC AROUND WORK AREAS.
  - THE MINIMUM VEHICLE TRAVEL LANE WIDTH SHALL BE A 12-FOOT CLEAR DISTANCE PERPENDICULAR TO THE DIRECTION OF TRAVEL.
  - CONTRACTOR TO PROVIDE TRAFFIC CONTROL PLAN FOR ASPHALT CONCRETE PAVING AT THE PRE-PAVING MEETING.
  - WORK AT SIGNALIZED INTERSECTIONS REQUIRES FLAGGERS TO BE STATIONED AT EACH LEG OF THE INTERSECTION AND THE TRAFFIC SIGNAL TURNED OFF. CONTACT CLACKAMAS COUNTY AT 503 650-3735 TO SCHEDULE SIGNAL SHUT DOWNS.

NO.	DATE	BY	REVISIONS

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BB 5/8/2019  
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WM 5/22/2019  
CHECKED DATE

JG 12/23/2019  
APPROVED DATE

**CITY OF MILWAUKIE**

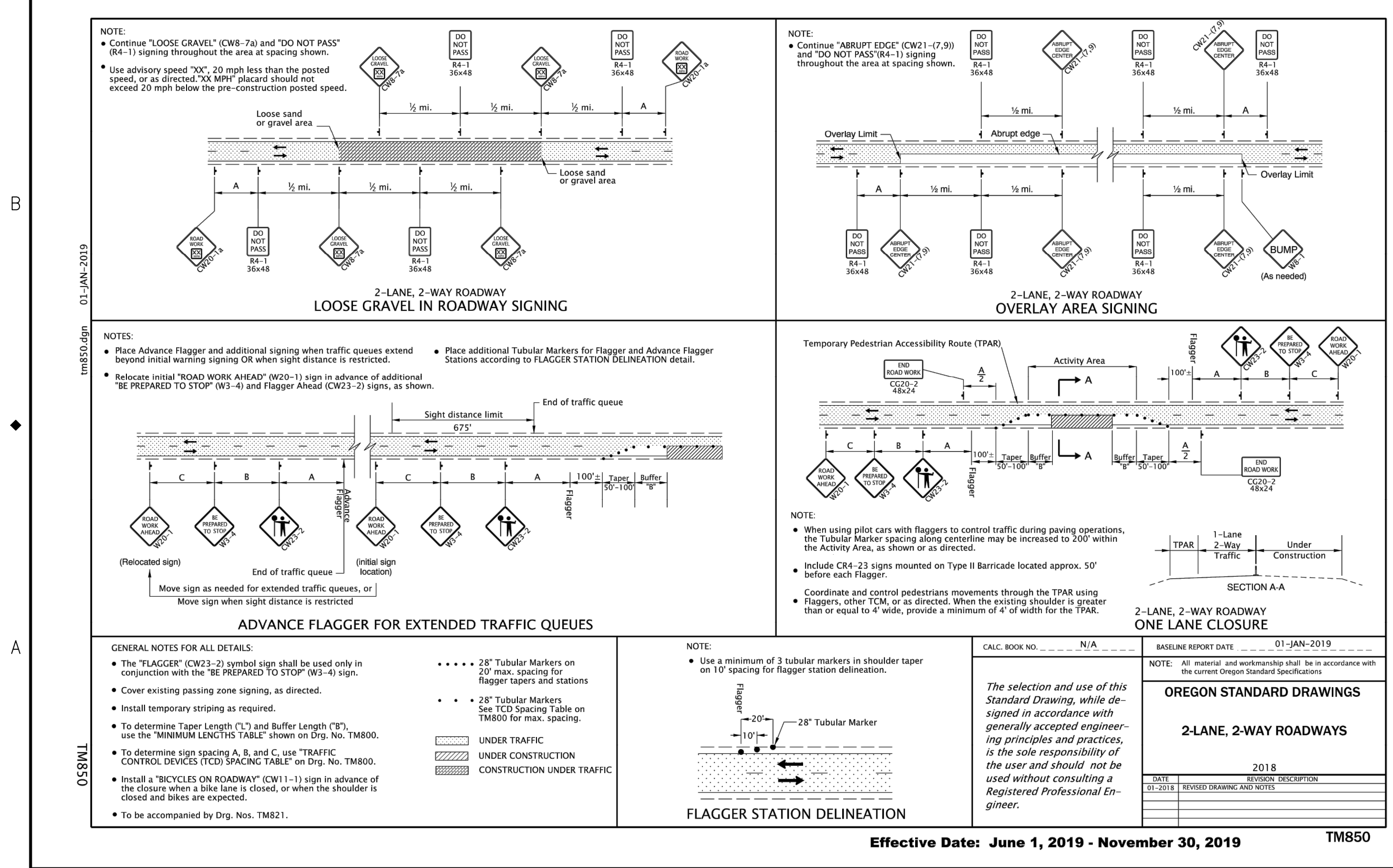
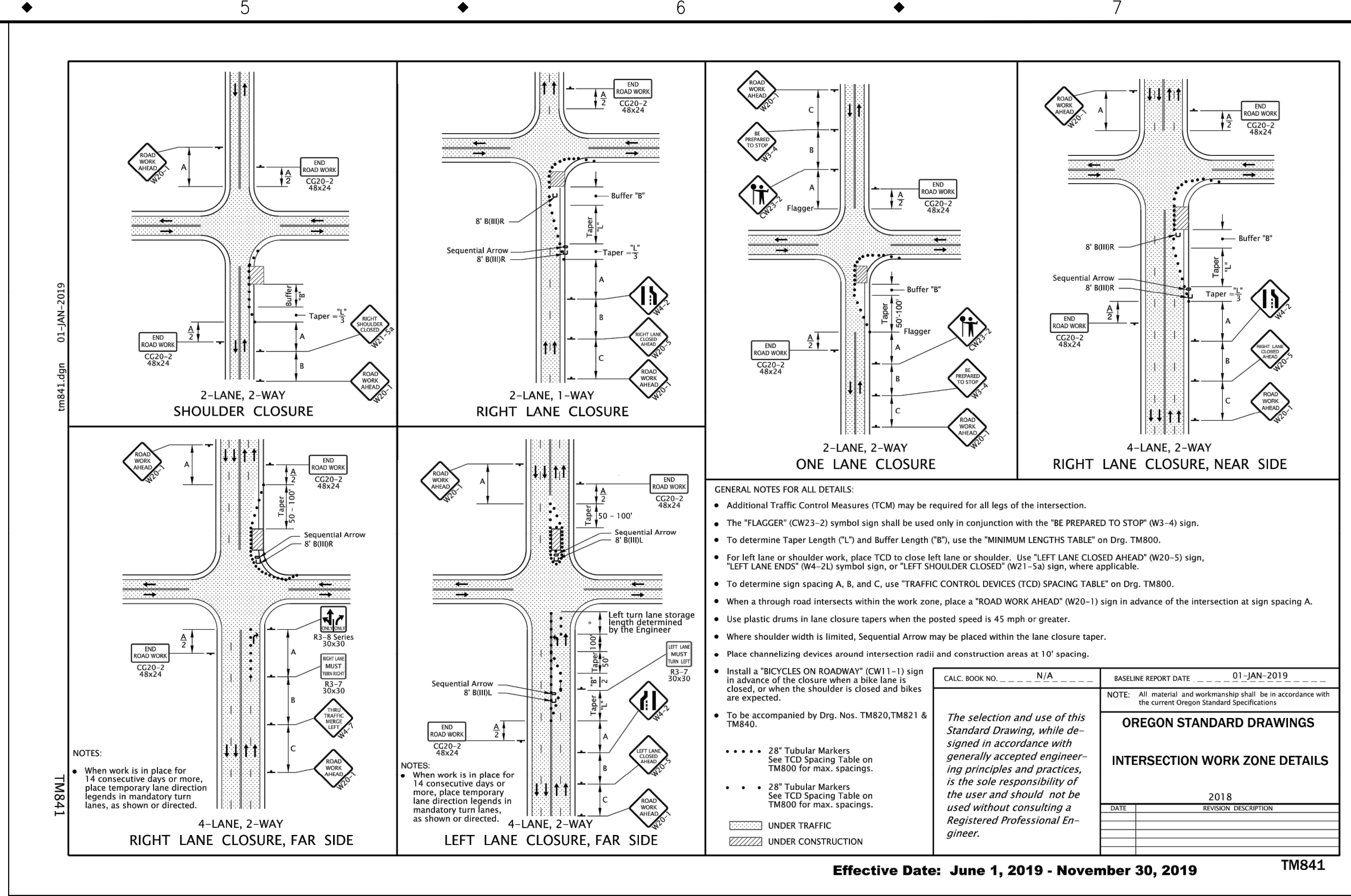
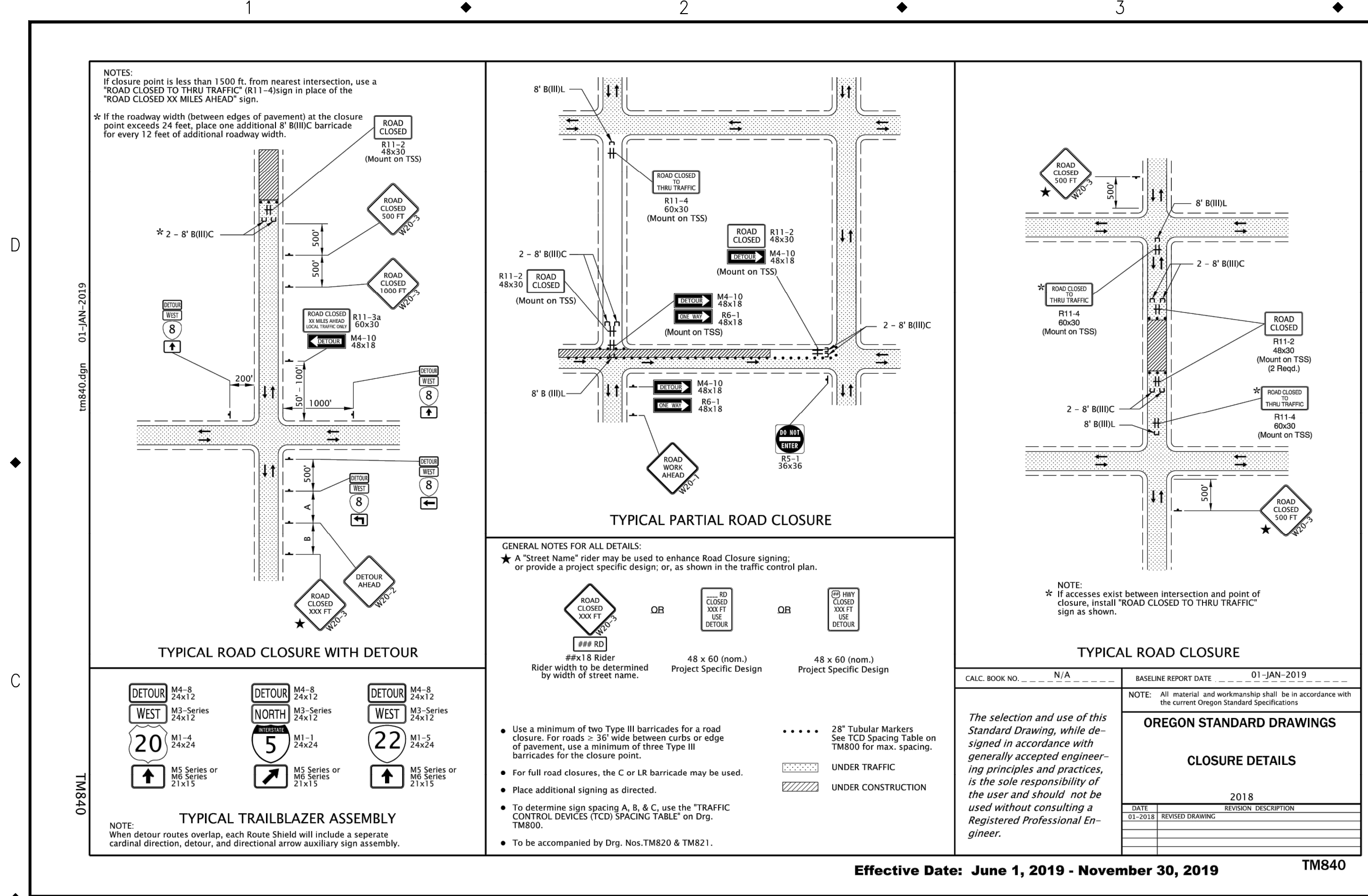
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MILWAUKIE, OR 97206

PHONE: 503-786-7600  
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2020 SE MCBROD AVENUE IMPROVEMENTS

TRAFFIC CONTROL PLAN

PROJECT NO.: CIP2015-W27 CONTRACT NO.: DATE: 1/3/2020 SHEET NO.: TR1



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**2020 SE MCBROD AVENUE IMPROVEMENTS**

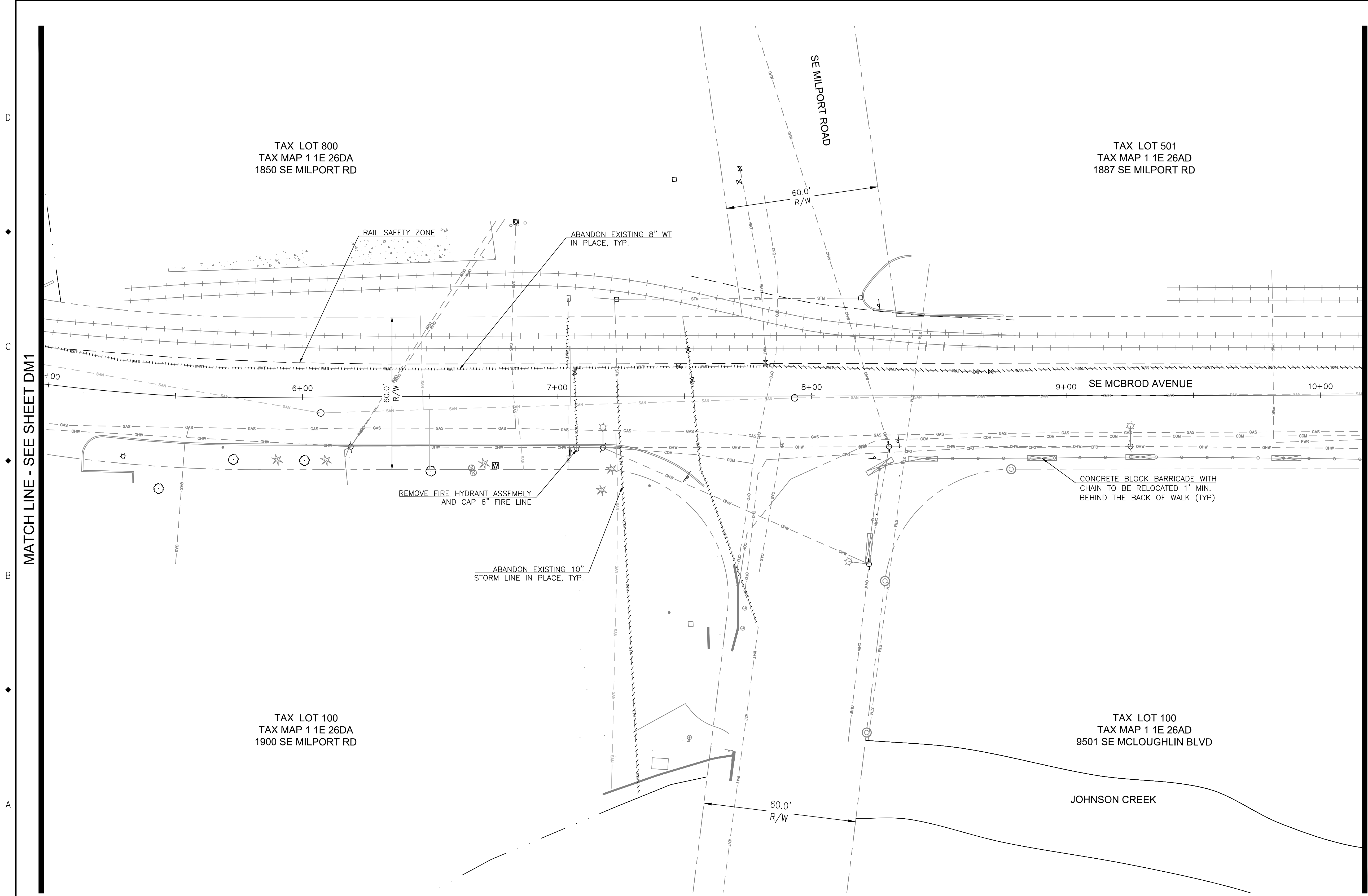
TRAFFIC CONTROL PLAN

PROJECT NO.: CIP2015-W27    CONTRACT NO.:  
 DATE: 1/3/2020    SHEET NO.: TR2



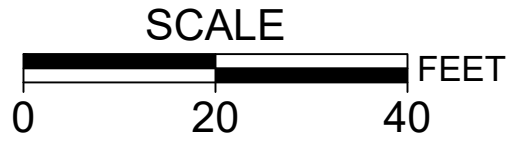
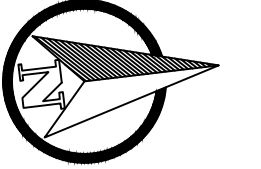
DEMOLITION NOTES:

1. REMOVE VALVE CAN TOPS FROM EXISTING 8" WATER LINE.
2. REMOVE FIRE HYDRANT: CUT 12" BELOW GRADE, FILL BARREL WITH ROCK AND CAP WITH 6" CONCRETE PLUG.



MATCH LINE - SEE SHEET DM3

MATCH LINE - SEE SHEET DM1



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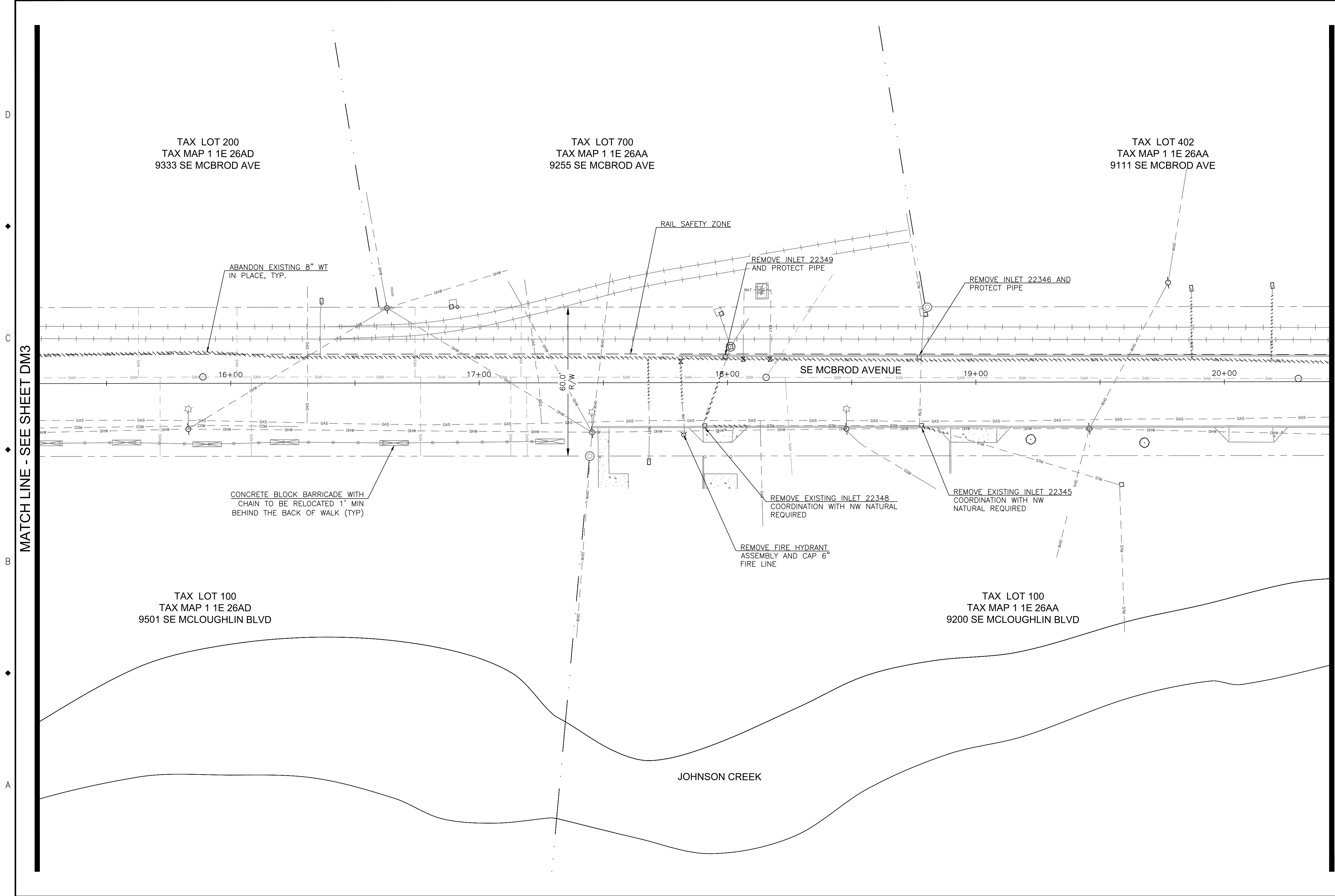
**2020 SE MCBROD AVENUE IMPROVEMENTS**

DEMOLITION PLAN

PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: DM2
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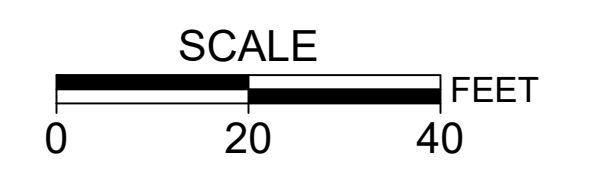
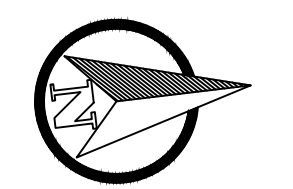




- DEMOLITION NOTES:**
1. REMOVE VALVE CAN TOPS FROM EXISTING 8" WATER LINE.
  2. REMOVE FIRE HYDRANT: CUT 12" BELOW GRADE, FILL BARREL WITH ROCK AND CAP WITH 6" CONCRETE PLUG.

MATCH LINE - SEE SHEET DM3

MATCH LINE - SEE SHEET DM5



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APPROVED	JG	12/23/2019	DATE



**CITY OF MILWAUKIE**

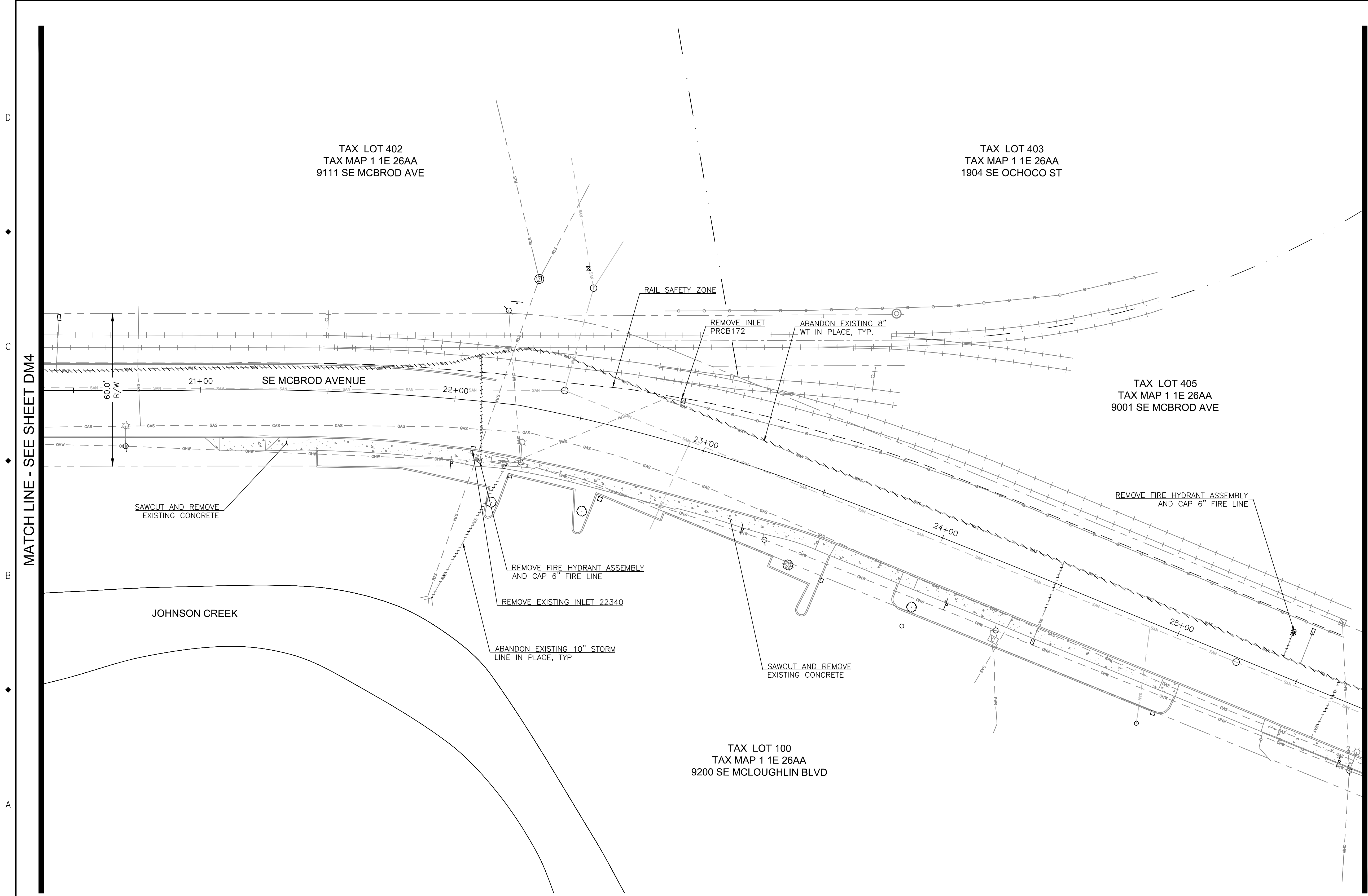
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**2020 SE MCBROD AVENUE IMPROVEMENTS**

DEMOLITION PLAN

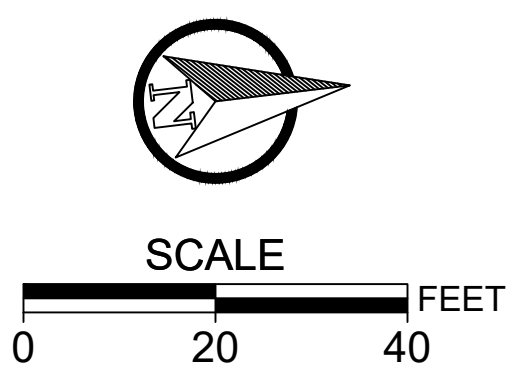
PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: DM4
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- DEMOLITION NOTES:**
1. REMOVE VALVE CAN TOPS FROM EXISTING 8" WATER LINE.
  2. REMOVE FIRE HYDRANT: CUT 12" BELOW GRADE, FILL BARREL WITH ROCK AND CAP WITH 6" CONCRETE PLUG.

MATCH LINE - SEE SHEET DM4

MATCH LINE - SEE SHEET DM6



NO.	DATE	BY	REVISIONS

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APPROVED	JG	12/23/2019



**CITY OF MILWAUKIE**

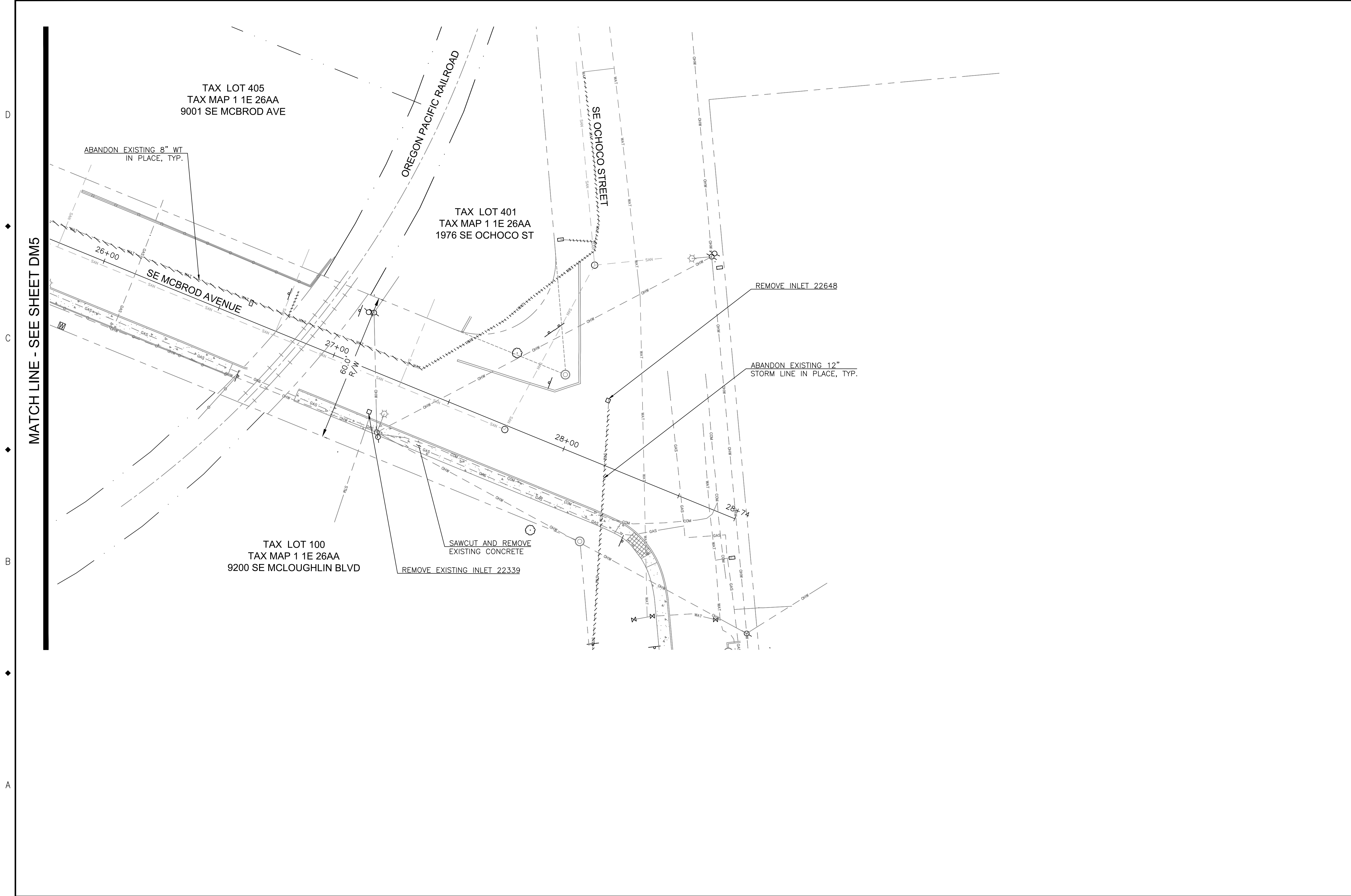
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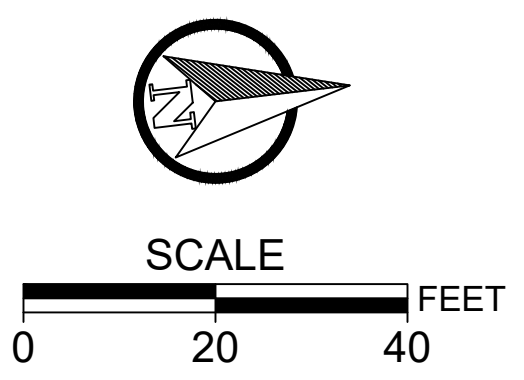
**2020 SE MCBROD AVENUE IMPROVEMENTS**

DEMOLITION PLAN

PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: DM5
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- DEMOLITION NOTES:**
1. REMOVE VALVE CAN TOPS FROM EXISTING 8" WATER LINE.
  2. REMOVE FIRE HYDRANT: CUT 12" BELOW GRADE, FILL BARREL WITH ROCK AND CAP WITH 6" CONCRETE PLUG.



NO.	DATE	BY	REVISIONS

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DRAFTED	BB	5/8/2019
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APPROVED	JG	12/23/2019



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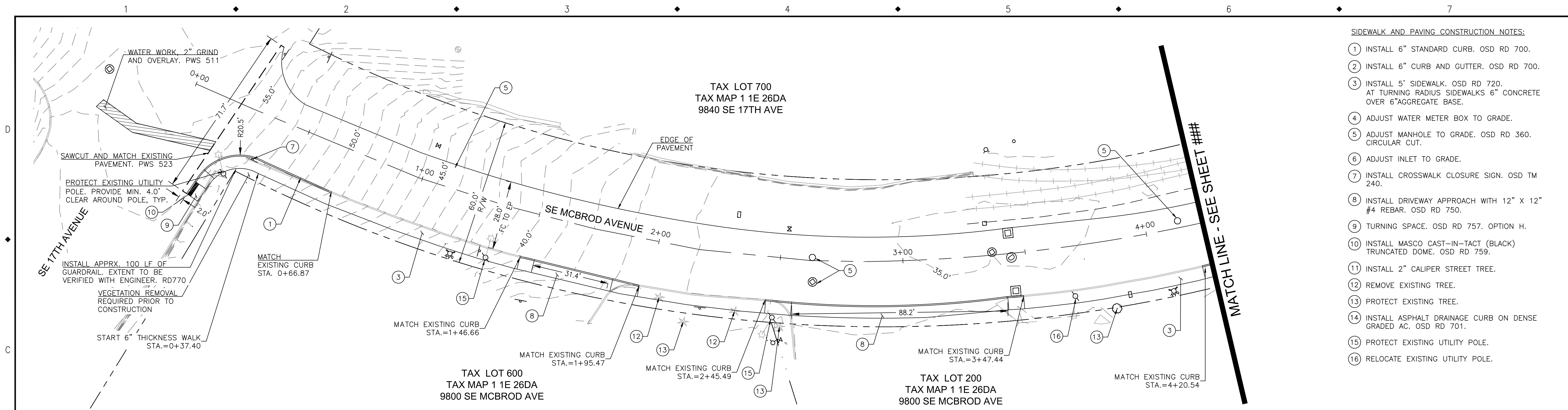
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**2020 SE MCBROD AVENUE IMPROVEMENTS**

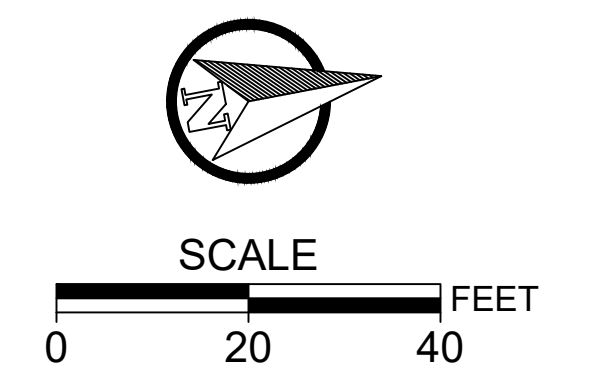
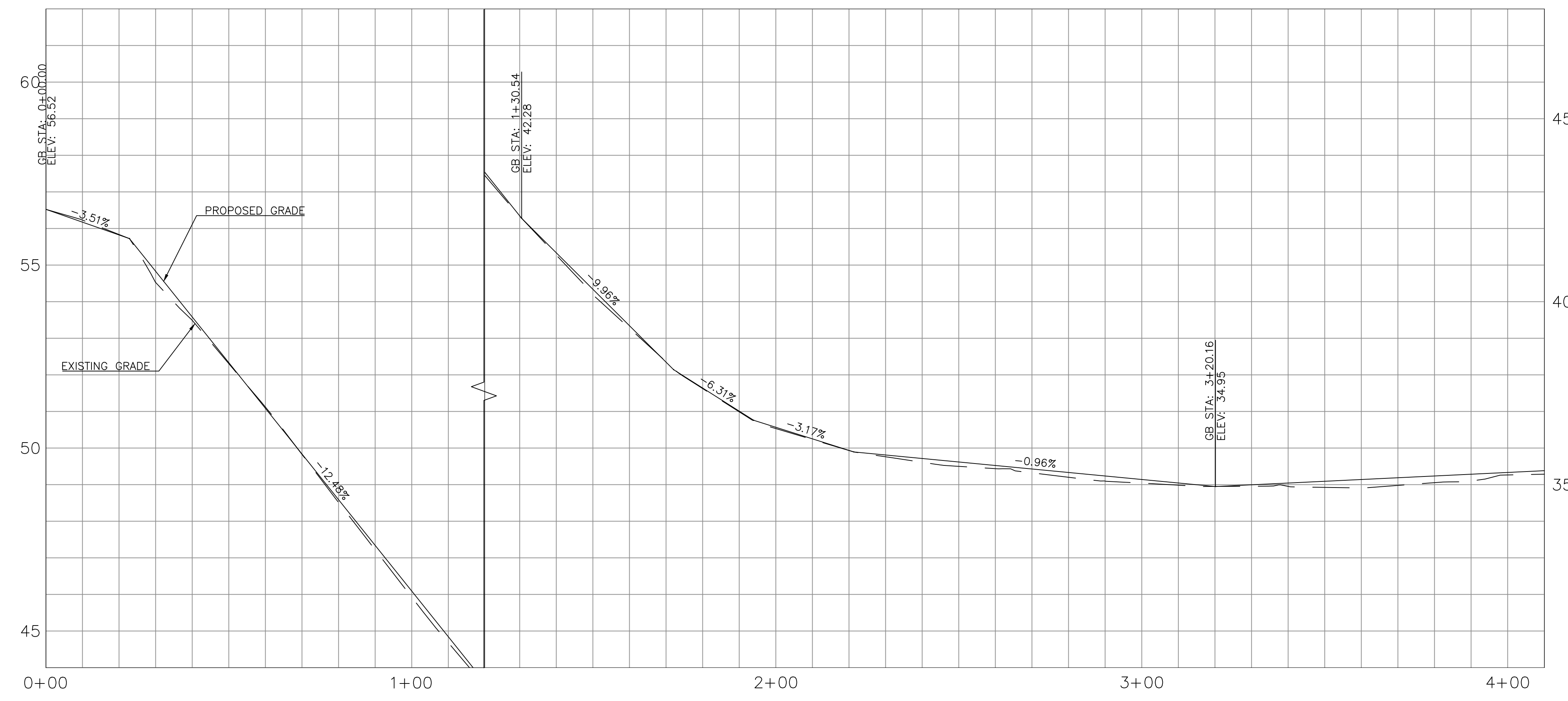
DEMOLITION PLAN

PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: DM6
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- SIDEWALK AND PAVING CONSTRUCTION NOTES:**
- ① INSTALL 6" STANDARD CURB. OSD RD 700.
  - ② INSTALL 6" CURB AND GUTTER. OSD RD 700.
  - ③ INSTALL 5' SIDEWALK. OSD RD 720. AT TURNING RADIUS SIDEWALKS 6" CONCRETE OVER 6" AGGREGATE BASE.
  - ④ ADJUST WATER METER BOX TO GRADE.
  - ⑤ ADJUST MANHOLE TO GRADE. OSD RD 360. CIRCULAR CUT.
  - ⑥ ADJUST INLET TO GRADE.
  - ⑦ INSTALL CROSSWALK CLOSURE SIGN. OSD TM 240.
  - ⑧ INSTALL DRIVEWAY APPROACH WITH 12" X 12" #4 REBAR. OSD RD 750.
  - ⑨ TURNING SPACE. OSD RD 757. OPTION H.
  - ⑩ INSTALL MASCO CAST-IN-TACT (BLACK) TRUNCATED DOME. OSD RD 759.
  - ⑪ INSTALL 2" CALIPER STREET TREE.
  - ⑫ REMOVE EXISTING TREE.
  - ⑬ PROTECT EXISTING TREE.
  - ⑭ INSTALL ASPHALT DRAINAGE CURB ON DENSE GRADED AC. OSD RD 701.
  - ⑮ PROTECT EXISTING UTILITY POLE.
  - ⑯ RELOCATE EXISTING UTILITY POLE.

- NOTE:**
1. FOR WORK WITHIN RAIL SAFETY ZONE CONTRACTOR REQUIRED TO OBTAIN APPROVED PERMIT FROM OREGON PACIFIC RAILROAD.
  2. AT RAIL CROSSINGS, ROADWAY APPROACH AT DISTANCE OF 30 FT MIN FROM OUTSIDE RAIL CANNOT BE MORE THAN 3" LOWER OR HIGHER THAN TOP OF RAIL PER OAR 741-120-0020.
  3. PROVIDE 4.0' MINIMUM CLEAR ZONE BETWEEN BACK OF CURB AND EXISTING UTILITY POLES. UTILITY POLE RELOCATION REQUIRED WHERE THERE IS LESS THAN 4.0' MINIMUM CLEARANCE.
  4. PORTLAND GENERAL ELECTRIC UTILITY POLE RELOCATION JOB M2400726.
  5. CROSSWALKS CROSS SLOPE 1.5% MAX AND LONGITUDINAL SLOPE 4.5% MAX.
  6. FOR STREET SECTIONS SEE SHEET DT1.
  7. RUBBERIZED SEALANT ON ALL COLD JOINTS.
  8. CONTRACTOR TO OBTAIN TEMPORARY STREET USE PERMIT FROM PORTLAND BUREAU OF TRANSPORTATION IF WORK IS REQUIRED IN NORTH SIDE OF OCHOCHO STREET.
  9. STREET TREE PLANTING TO INCLUDE AT LEAST TWO OF THE SPECIES LISTED BELOW WITH NO MORE THAN FIVE OF A SINGLE SPECIES TO BE PLANTED. LOCATIONS OF PLANTINGS TO BE VERIFIED WITH ENGINEER. SPECIES CAN INCLUDE WESTERN REDBUD, CERIS OCCIDENTALIS; ROCKY MOUNTAIN JUNIPER, JUNIPERUS SCOPULORUM AND CULTIVAR; CREPE MYRTLE, LAGERSTROEMIA; CHINESE PISTACHE, PISTACIA CHINENSIS; AND LITTLE GEM, MAGNOLIA, MAGNOLIA GRANDIFLORA 'LITTLE GEM'.



NO.	DATE	BY	REVISIONS

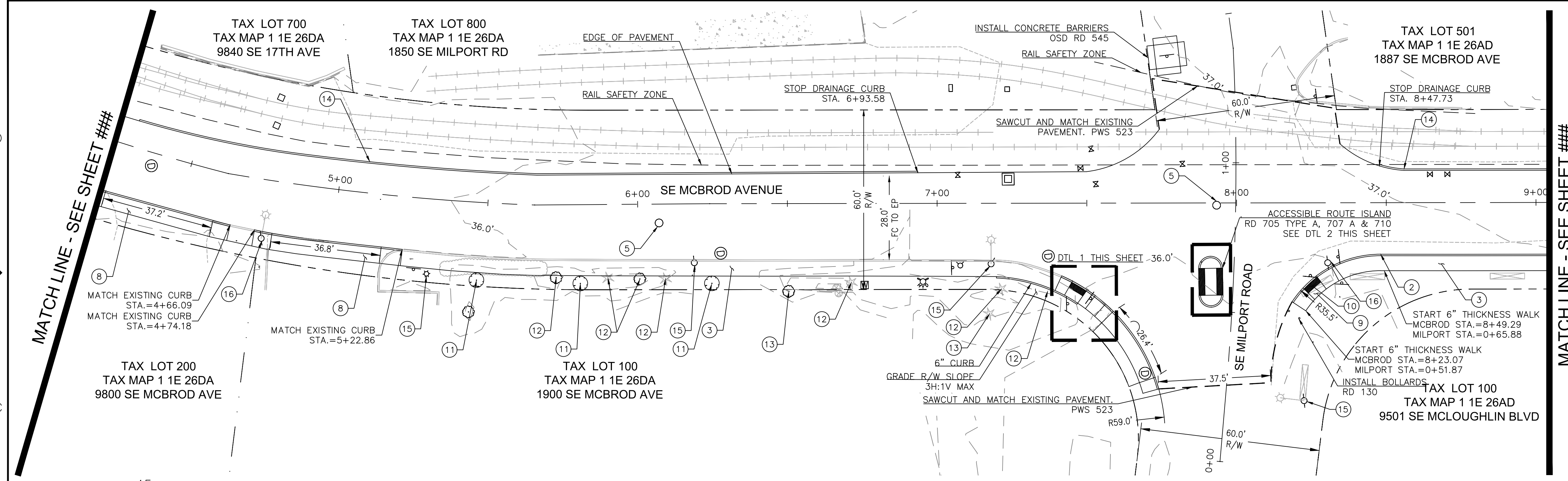
DESIGNED	BB	12/14/2018
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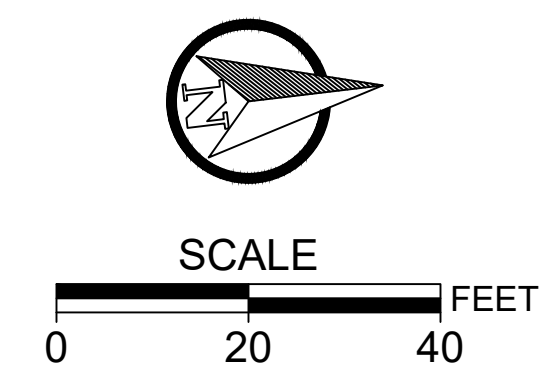
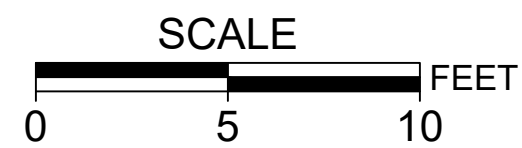
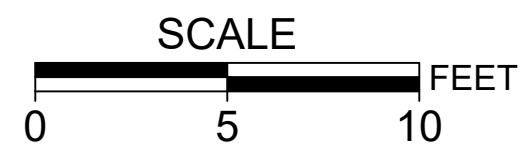
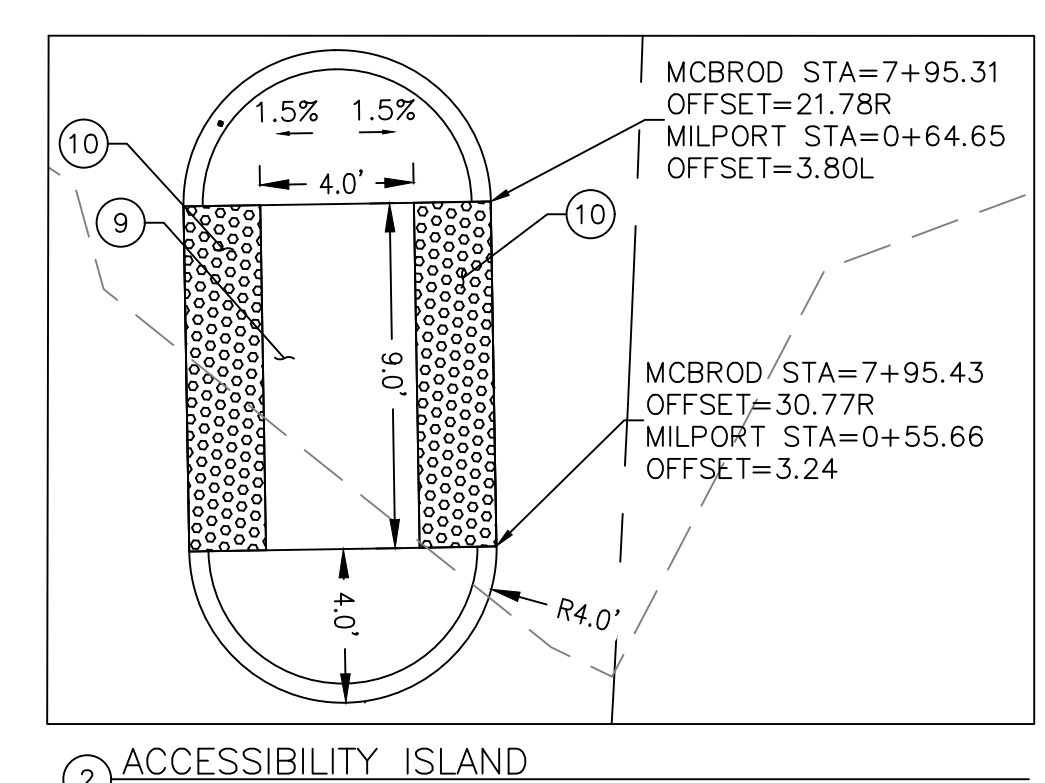
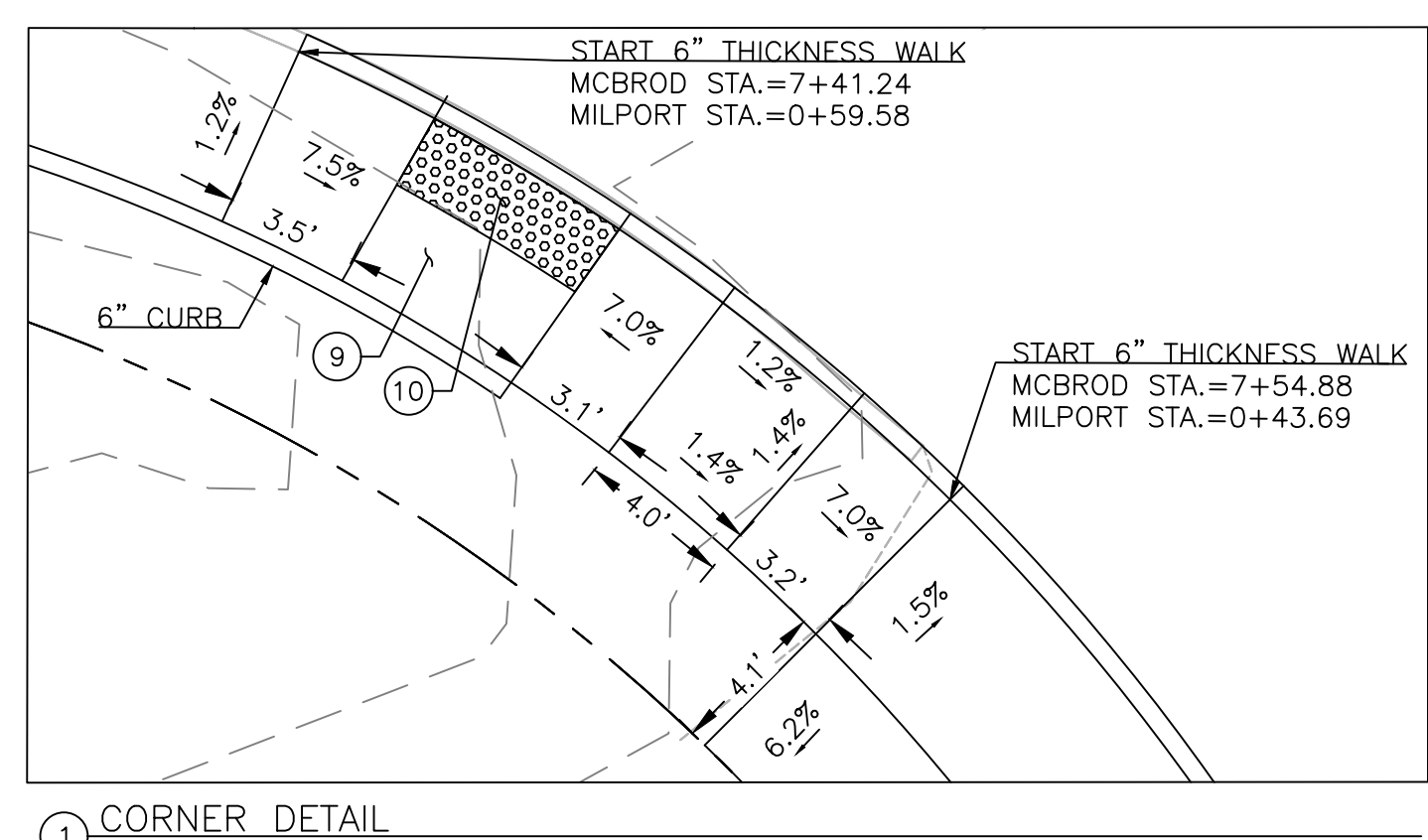
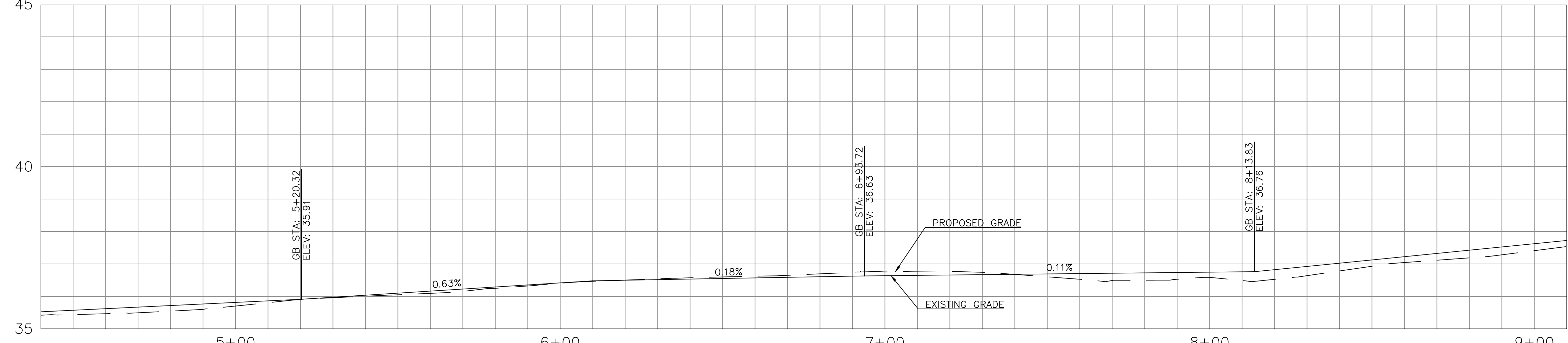
**2020 SE MCBROD AVENUE IMPROVEMENTS**  
**SIDEWALK AND PAVING PLAN**

PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: SW1
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- SIDEWALK AND PAVING CONSTRUCTION NOTES:**
- 1 INSTALL 6" STANDARD CURB. OSD RD 700.
  - 2 INSTALL 6" CURB AND GUTTER. OSD RD 700.
  - 3 INSTALL 5' SIDEWALK. OSD RD 720. AT TURNING RADIUS SIDEWALKS 6" CONCRETE OVER 6" AGGREGATE BASE.
  - 4 ADJUST WATER METER BOX TO GRADE.
  - 5 ADJUST MANHOLE TO GRADE. OSD RD 360. CIRCULAR CUT.
  - 6 ADJUST INLET TO GRADE.
  - 7 INSTALL CROSSWALK CLOSURE SIGN. OSD TM 240.
  - 8 INSTALL DRIVEWAY APPROACH WITH 12" X 12" #4 REBAR. OSD RD 750.
  - 9 TURNING SPACE. OSD RD 757. OPTION H.
  - 10 INSTALL MASCO CAST-IN-TACT (BLACK) TRUNCATED DOME. OSD RD 759.
  - 11 INSTALL 2" CALIPER STREET TREE.
  - 12 REMOVE EXISTING TREE.
  - 13 PROTECT EXISTING TREE.
  - 14 INSTALL ASPHALT DRAINAGE CURB ON DENSE GRADED AC. OSD RD 701.
  - 15 PROTECT EXISTING UTILITY POLE.
  - 16 RELOCATE EXISTING UTILITY POLE.

- NOTE:**
1. FOR WORK WITHIN RAIL SAFETY ZONE CONTRACTOR REQUIRED TO OBTAIN APPROVED PERMIT FROM OREGON PACIFIC RAILROAD.
  2. AT RAIL CROSSINGS, ROADWAY APPROACH AT DISTANCE OF 30 FT MIN FROM OUTSIDE RAIL CANNOT BE MORE THAN 3" LOWER OR HIGHER THAN TOP OF RAIL PER OAR 741-120-0020.
  3. PROVIDE 4.0' MINIMUM CLEAR ZONE BETWEEN BACK OF CURB AND EXISTING UTILITY POLES. UTILITY POLE RELOCATION REQUIRED WHERE THERE IS LESS THAN 4.0' MINIMUM CLEARANCE.
  4. PORTLAND GENERAL ELECTRIC UTILITY POLE RELOCATION JOB M2400726.
  5. CROSSWALKS CROSS SLOPE 1.5% MAX AND LONGITUDINAL SLOPE 4.5% MAX.
  6. FOR STREET SECTIONS SEE SHEET DT1.
  7. RUBBERIZED SEALANT ON ALL COLD JOINTS.
  8. CONTRACTOR TO OBTAIN TEMPORARY STREET USE PERMIT FROM PORTLAND BUREAU OF TRANSPORTATION IF WORK IS REQUIRED IN NORTH SIDE OF OCHOCHO STREET.
  9. STREET TREE PLANTING TO INCLUDE AT LEAST TWO OF THE SPECIES LISTED BELOW WITH NO MORE THAN FIVE OF A SINGLE SPECIES TO BE PLANTED. LOCATIONS OF PLANTINGS TO BE VERIFIED WITH ENGINEER. SPECIES CAN INCLUDE WESTERN REDBUD, CERIS OCCIDENTALIS; ROCKY MOUNTAIN JUNIPER, JUNIPERUS SCOPULORUM AND CULTIVAR; CREPE MYRTLE, LAGERSTROEMIA; CHINESE PISTACHE, PISTACIA CHINENSIS; AND LITTLE GEM, MAGNOLIA, MAGNOLIA GRANDIFLORA 'LITTLE GEM'.



NO.	DATE	BY	REVISIONS

DESIGNED	BB	12/14/2018	DATE
DRAFTED	BB	5/8/2019	DATE
CHECKED	WM	5/22/2019	DATE
APPROVED	JG	12/23/2019	DATE



**CITY OF MILWAUKIE**

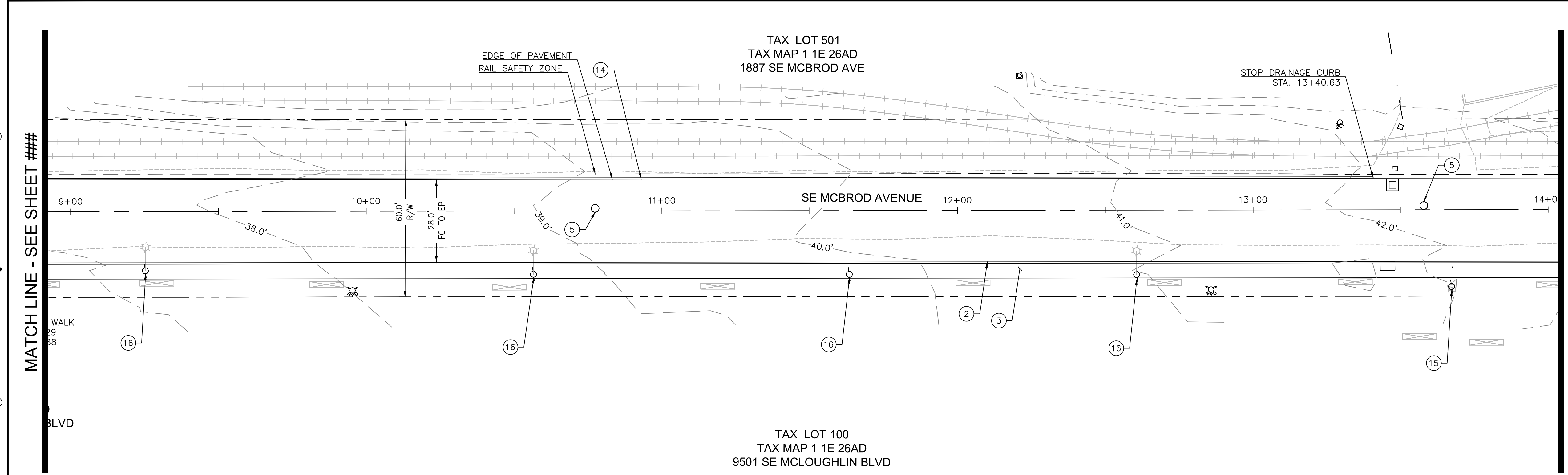
6101 SE JOHNSON CREEK BLVD.  
MILWAUKIE, OR 97206

PHONE: 503-786-7600  
FAX: 503-774-8236

**2020 SE MCBROD AVENUE IMPROVEMENTS**

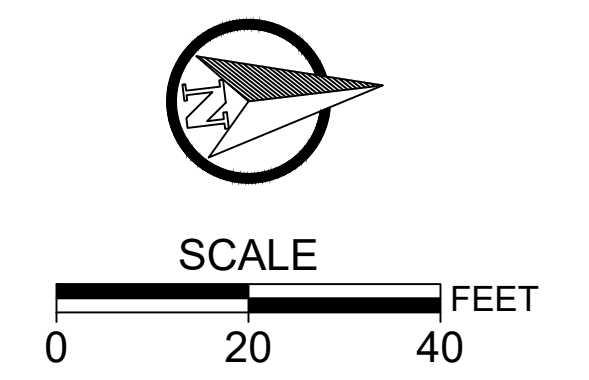
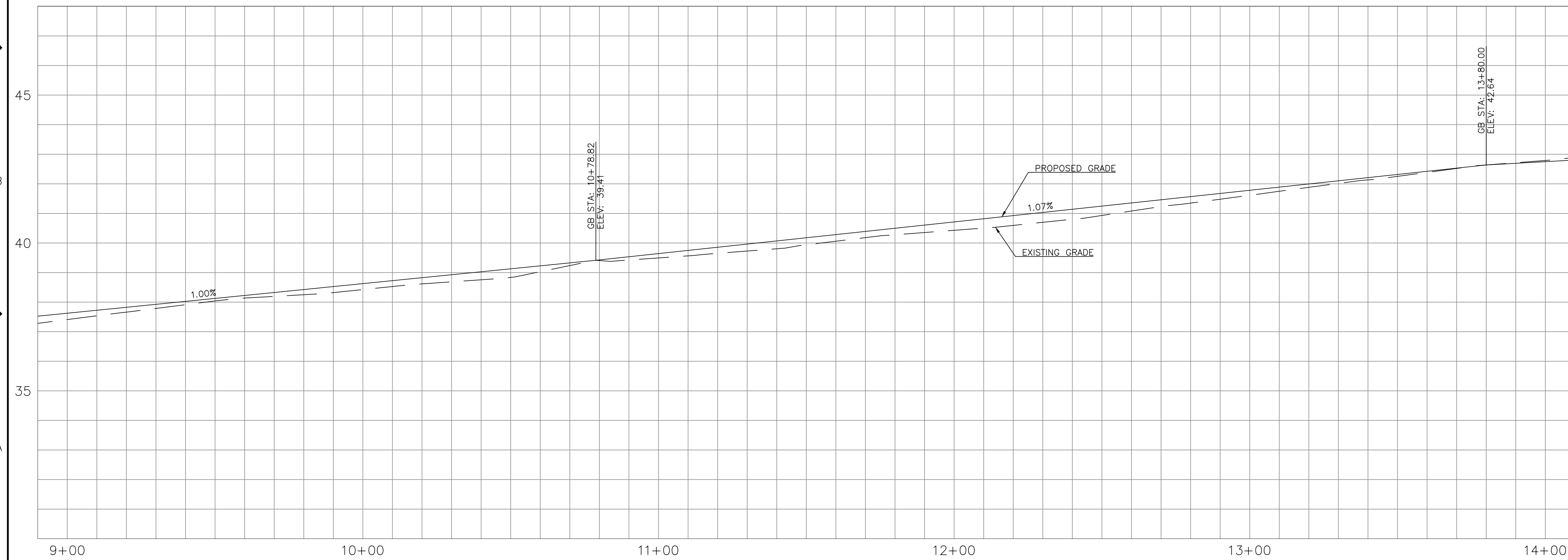
SIDEWALK AND PAVING PLAN

PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: SW2
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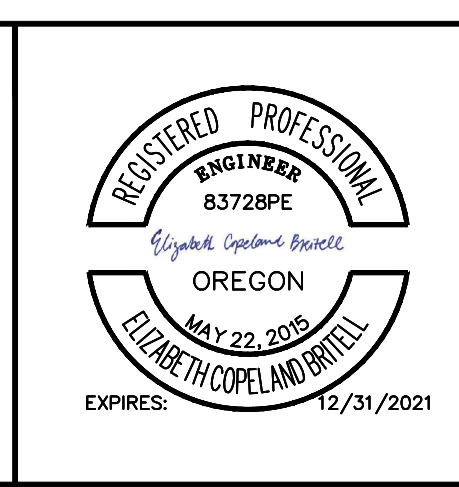
- SIDEWALK AND PAVING CONSTRUCTION NOTES:**
- ① INSTALL 6" STANDARD CURB. OSD RD 700.
  - ② INSTALL 6" CURB AND GUTTER. OSD RD 700.
  - ③ INSTALL 5' SIDEWALK. OSD RD 720. AT TURNING RADIUS SIDEWALKS 6" CONCRETE OVER 6" AGGREGATE BASE.
  - ④ ADJUST WATER METER BOX TO GRADE.
  - ⑤ ADJUST MANHOLE TO GRADE. OSD RD 360. CIRCULAR CUT.
  - ⑥ ADJUST INLET TO GRADE.
  - ⑦ INSTALL CROSSWALK CLOSURE SIGN. OSD TM 240.
  - ⑧ INSTALL DRIVEWAY APPROACH WITH 12" X 12" #4 REBAR. OSD RD 750.
  - ⑨ TURNING SPACE. OSD RD 757. OPTION H.
  - ⑩ INSTALL MASCO CAST-IN-TACT (BLACK) TRUNCATED DOME. OSD RD 759.
  - ⑪ INSTALL 2" CALIPER STREET TREE.
  - ⑫ REMOVE EXISTING TREE.
  - ⑬ PROTECT EXISTING TREE.
  - ⑭ INSTALL ASPHALT DRAINAGE CURB ON DENSE GRADED AC. OSD RD 701.
  - ⑮ PROTECT EXISTING UTILITY POLE.
  - ⑯ RELOCATE EXISTING UTILITY POLE.

- NOTE:**
1. FOR WORK WITHIN RAIL SAFETY ZONE CONTRACTOR REQUIRED TO OBTAIN APPROVED PERMIT FROM OREGON PACIFIC RAILROAD.
  2. AT RAIL CROSSINGS, ROADWAY APPROACH AT DISTANCE OF 30 FT MIN FROM OUTSIDE RAIL CANNOT BE MORE THAN 3" LOWER OR HIGHER THAN TOP OF RAIL PER OAR 741-120-0020.
  3. PROVIDE 4.0' MINIMUM CLEAR ZONE BETWEEN BACK OF CURB AND EXISTING UTILITY POLES. UTILITY POLE RELOCATION REQUIRED WHERE THERE IS LESS THAN 4.0' MINIMUM CLEARANCE.
  4. PORTLAND GENERAL ELECTRIC UTILITY POLE RELOCATION JOB M2400726.
  5. CROSSWALKS CROSS SLOPE 1.5% MAX AND LONGITUDINAL SLOPE 4.5% MAX.
  6. FOR STREET SECTIONS SEE SHEET DT1.
  7. RUBBERIZED SEALANT ON ALL COLD JOINTS.
  8. CONTRACTOR TO OBTAIN TEMPORARY STREET USE PERMIT FROM PORTLAND BUREAU OF TRANSPORTATION IF WORK IS REQUIRED IN NORTH SIDE OF OCHOCO STREET.
  9. STREET TREE PLANTING TO INCLUDE AT LEAST TWO OF THE SPECIES LISTED BELOW WITH NO MORE THAN FIVE OF A SINGLE SPECIES TO BE PLANTED. LOCATIONS OF PLANTINGS TO BE VERIFIED WITH ENGINEER. SPECIES CAN INCLUDE WESTERN REDBUD, CERIS OCCIDENTALIS; ROCKY MOUNTAIN JUNIPER, JUNIPERUS SCOPULORUM AND CULTIVAR; CREPE MYRTLE, LAGERSTROEMIA; CHINESE PISTACHE, PISTACIA CHINENSIS; AND LITTLE GEM, MAGNOLIA, MAGNOLIA GRANDIFLORA 'LITTLE GEM'.



NO.	DATE	BY	REVISIONS

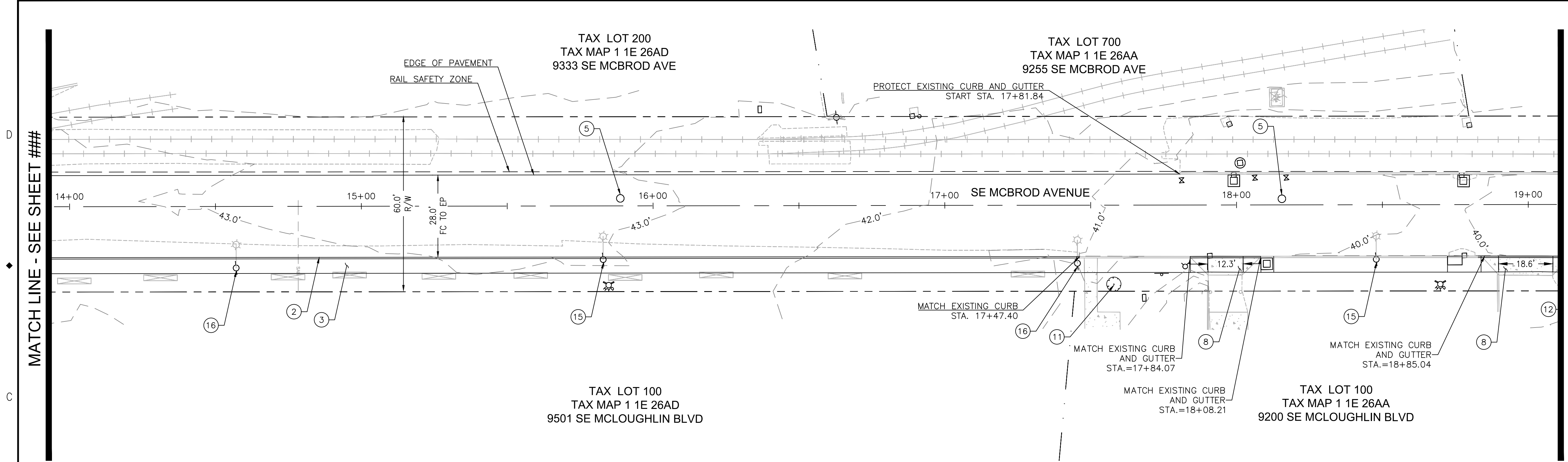
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DRAFTED	BB	5/8/2019
CHECKED	WM	5/22/2019
APPROVED	JG	12/23/2019




**CITY OF MILWAUKIE**  
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 PHONE: 503-786-7600  
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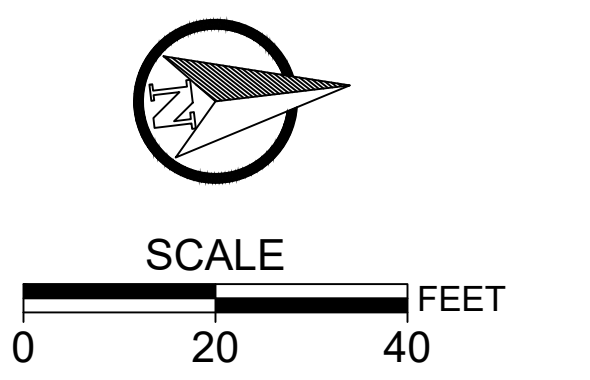
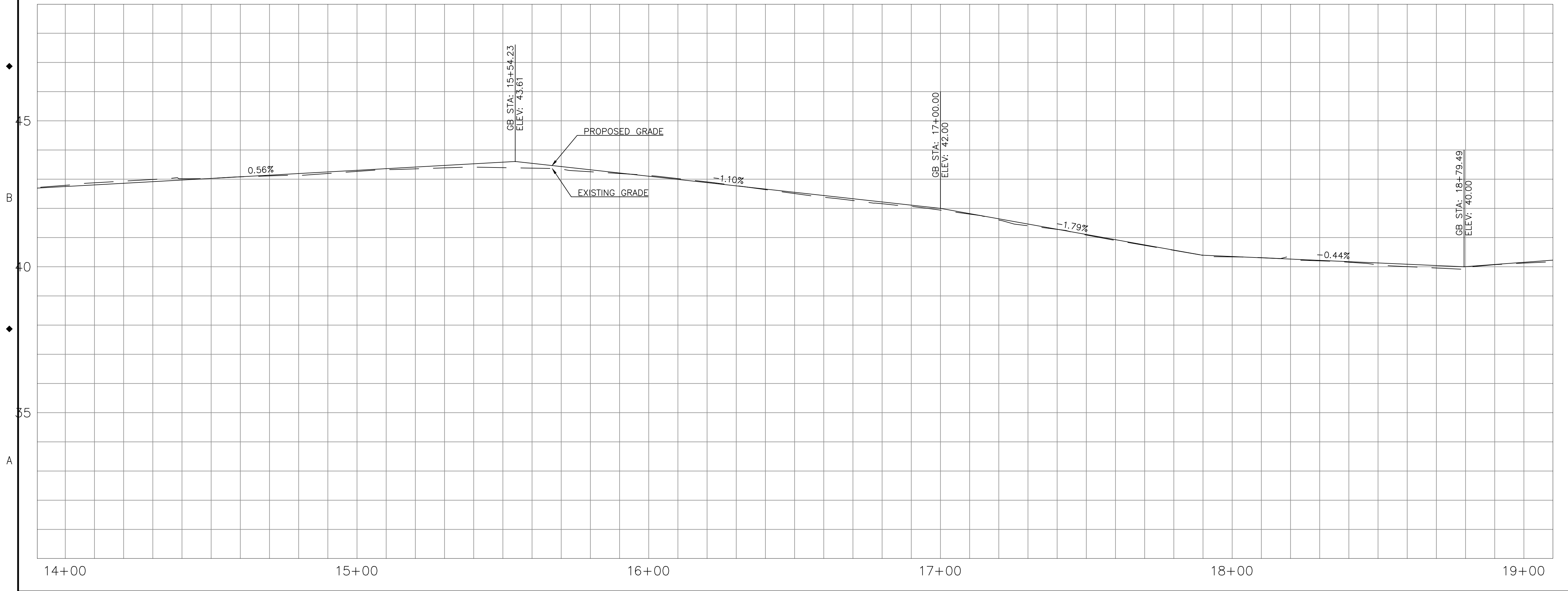
**2020 SE MCBROD AVENUE IMPROVEMENTS**  
**SIDEWALK AND PAVING PLAN**

PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: SW3
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- SIDEWALK AND PAVING CONSTRUCTION NOTES:**
- ① INSTALL 6" STANDARD CURB. OSD RD 700.
  - ② INSTALL 6" CURB AND GUTTER. OSD RD 700.
  - ③ INSTALL 5' SIDEWALK. OSD RD 720. AT TURNING RADIUS SIDEWALKS 6" CONCRETE OVER 6" AGGREGATE BASE.
  - ④ ADJUST WATER METER BOX TO GRADE.
  - ⑤ ADJUST MANHOLE TO GRADE. OSD RD 360. CIRCULAR CUT.
  - ⑥ ADJUST INLET TO GRADE.
  - ⑦ INSTALL CROSSWALK CLOSURE SIGN. OSD TM 240.
  - ⑧ INSTALL DRIVEWAY APPROACH WITH 12" X 12" #4 REBAR. OSD RD 750.
  - ⑨ TURNING SPACE. OSD RD 757. OPTION H.
  - ⑩ INSTALL MASCO CAST-IN-TACT (BLACK) TRUNCATED DOME. OSD RD 759.
  - ⑪ INSTALL 2" CALIPER STREET TREE.
  - ⑫ REMOVE EXISTING TREE.
  - ⑬ PROTECT EXISTING TREE.
  - ⑭ INSTALL ASPHALT DRAINAGE CURB ON DENSE GRADED AC. OSD RD 701.
  - ⑮ PROTECT EXISTING UTILITY POLE.
  - ⑯ RELOCATE EXISTING UTILITY POLE.

- NOTE:**
1. FOR WORK WITHIN RAIL SAFETY ZONE CONTRACTOR REQUIRED TO OBTAIN APPROVED PERMIT FROM OREGON PACIFIC RAILROAD.
  2. AT RAIL CROSSINGS, ROADWAY APPROACH AT DISTANCE OF 30 FT MIN FROM OUTSIDE RAIL CANNOT BE MORE THAN 3" LOWER OR HIGHER THAN TOP OF RAIL PER OAR 741-120-0020.
  3. PROVIDE 4.0' MINIMUM CLEAR ZONE BETWEEN BACK OF CURB AND EXISTING UTILITY POLES. UTILITY POLE RELOCATION REQUIRED WHERE THERE IS LESS THAN 4.0' MINIMUM CLEARANCE.
  4. PORTLAND GENERAL ELECTRIC UTILITY POLE RELOCATION JOB M2400726.
  5. CROSSWALKS CROSS SLOPE 1.5% MAX AND LONGITUDINAL SLOPE 4.5% MAX.
  6. FOR STREET SECTIONS SEE SHEET DT1.
  7. RUBBERIZED SEALANT ON ALL COLD JOINTS.
  8. CONTRACTOR TO OBTAIN TEMPORARY STREET USE PERMIT FROM PORTLAND BUREAU OF TRANSPORTATION IF WORK IS REQUIRED IN NORTH SIDE OF OCHOCO STREET.
  9. STREET TREE PLANTING TO INCLUDE AT LEAST TWO OF THE SPECIES LISTED BELOW WITH NO MORE THAN FIVE OF A SINGLE SPECIES TO BE PLANTED. LOCATIONS OF PLANTINGS TO BE VERIFIED WITH ENGINEER. SPECIES CAN INCLUDE WESTERN REDBUD, CERIS OCCIDENTALIS; ROCKY MOUNTAIN JUNIPER, JUNIPERUS SCOPULORUM AND CULTIVAR; CREPE MYRTLE, LAGERSTROEMIA; CHINESE PISTACHE, PISTACIA CHINENSIS; AND LITTLE GEM, MAGNOLIA, MAGNOLIA GRANDIFLORA 'LITTLE GEM'.



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**CITY OF MILWAUKIE**

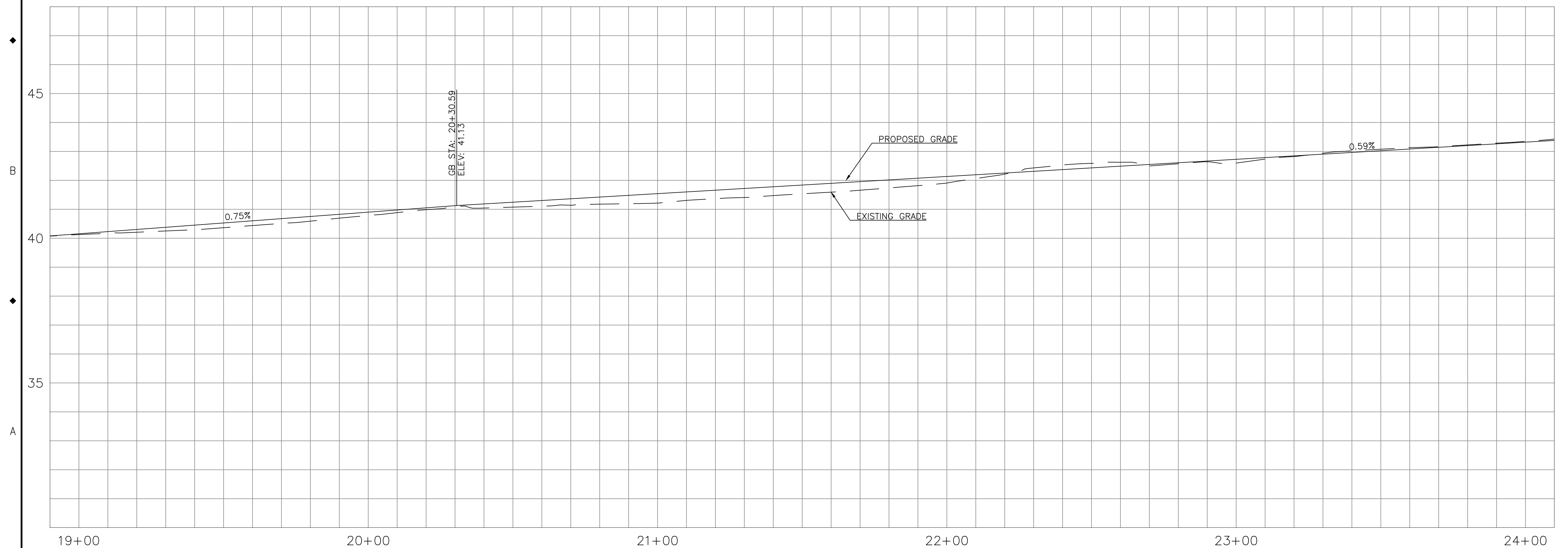
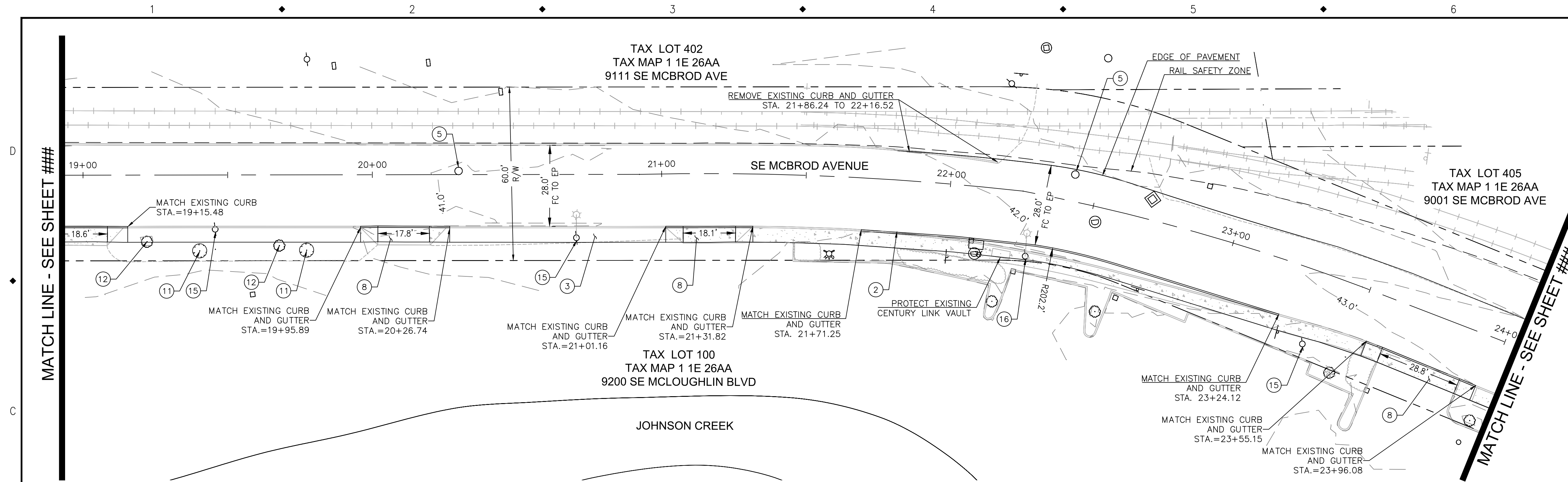
6101 SE JOHNSON CREEK BLVD.  
MILWAUKIE, OR 97206

PHONE: 503-786-7600  
FAX: 503-774-8236

**2020 SE MCBROD AVENUE IMPROVEMENTS**

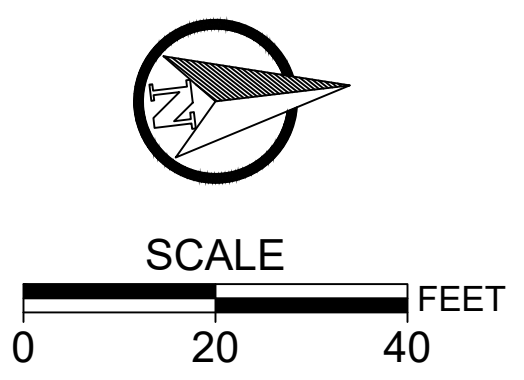
SIDEWALK AND PAVING PLAN

PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: SW4
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- SIDEWALK AND PAVING CONSTRUCTION NOTES:**
- ① INSTALL 6" STANDARD CURB. OSD RD 700.
  - ② INSTALL 6" CURB AND GUTTER. OSD RD 700.
  - ③ INSTALL 5' SIDEWALK. OSD RD 720. AT TURNING RADIUS SIDEWALKS 6" CONCRETE OVER 6" AGGREGATE BASE.
  - ④ ADJUST WATER METER BOX TO GRADE.
  - ⑤ ADJUST MANHOLE TO GRADE. OSD RD 360. CIRCULAR CUT.
  - ⑥ ADJUST INLET TO GRADE.
  - ⑦ INSTALL CROSSWALK CLOSURE SIGN. OSD TM 240.
  - ⑧ INSTALL DRIVEWAY APPROACH WITH 12" X 12" #4 REBAR. OSD RD 750.
  - ⑨ TURNING SPACE. OSD RD 757. OPTION H.
  - ⑩ INSTALL MASCO CAST-IN-TACT (BLACK) TRUNCATED DOME. OSD RD 759.
  - ⑪ INSTALL 2" CALIPER STREET TREE.
  - ⑫ REMOVE EXISTING TREE.
  - ⑬ PROTECT EXISTING TREE.
  - ⑭ INSTALL ASPHALT DRAINAGE CURB ON DENSE GRADED AC. OSD RD 701.
  - ⑮ PROTECT EXISTING UTILITY POLE.
  - ⑯ RELOCATE EXISTING UTILITY POLE.

- NOTE:**
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  3. PROVIDE 4.0' MINIMUM CLEAR ZONE BETWEEN BACK OF CURB AND EXISTING UTILITY POLES. UTILITY POLE RELOCATION REQUIRED WHERE THERE IS LESS THAN 4.0' MINIMUM CLEARANCE.
  4. PORTLAND GENERAL ELECTRIC UTILITY POLE RELOCATION JOB M2400726.
  5. CROSSWALKS CROSS SLOPE 1.5% MAX AND LONGITUDINAL SLOPE 4.5% MAX.
  6. FOR STREET SECTIONS SEE SHEET DT1.
  7. RUBBERIZED SEALANT ON ALL COLD JOINTS.
  8. CONTRACTOR TO OBTAIN TEMPORARY STREET USE PERMIT FROM PORTLAND BUREAU OF TRANSPORTATION IF WORK IS REQUIRED IN NORTH SIDE OF OCHOCHO STREET.
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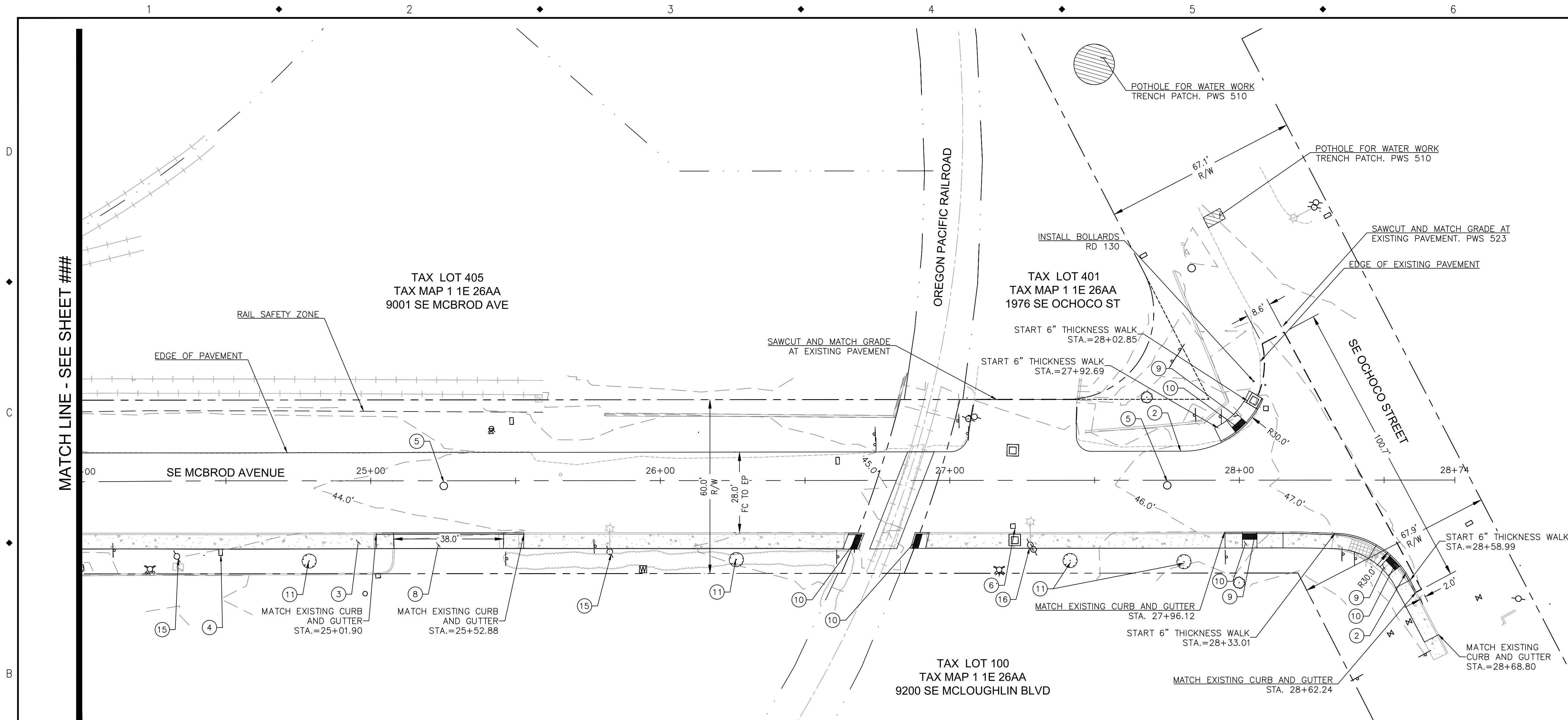

**CITY OF MILWAUKIE**  
 6101 SE JOHNSON CREEK BLVD.  
 MILWAUKIE, OR 97206

**2020 SE MCBROD AVENUE IMPROVEMENTS**

SIDEWALK AND PAVING PLAN

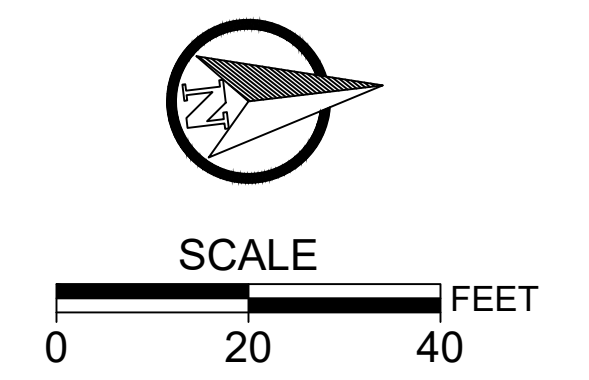
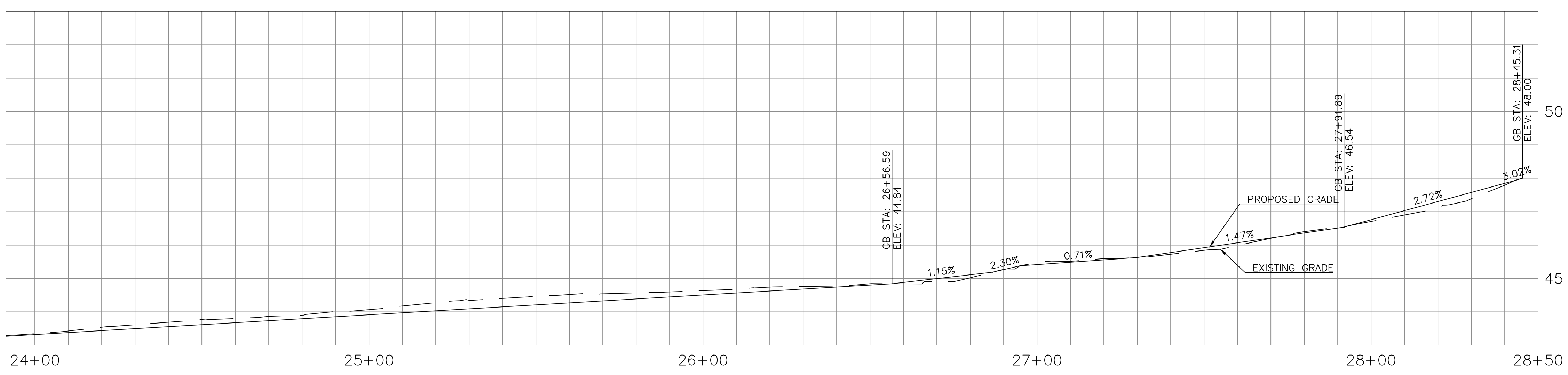
PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: SW5
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- SIDEWALK AND PAVING CONSTRUCTION NOTES:**
- ① INSTALL 6" STANDARD CURB. OSD RD 700.
  - ② INSTALL 6" CURB AND GUTTER. OSD RD 700.
  - ③ INSTALL 5' SIDEWALK. OSD RD 720. AT TURNING RADIUS SIDEWALKS 6" CONCRETE OVER 6" AGGREGATE BASE.
  - ④ ADJUST WATER METER BOX TO GRADE.
  - ⑤ ADJUST MANHOLE TO GRADE. OSD RD 360. CIRCULAR CUT.
  - ⑥ ADJUST INLET TO GRADE.
  - ⑦ INSTALL CROSSWALK CLOSURE SIGN. OSD TM 240.
  - ⑧ INSTALL DRIVEWAY APPROACH WITH 12" X 12" #4 REBAR. OSD RD 750.
  - ⑨ TURNING SPACE. OSD RD 757. OPTION H.
  - ⑩ INSTALL MASCO CAST-IN-TACT (BLACK) TRUNCATED DOME. OSD RD 759.
  - ⑪ INSTALL 2" CALIPER STREET TREE.
  - ⑫ REMOVE EXISTING TREE.
  - ⑬ PROTECT EXISTING TREE.
  - ⑭ INSTALL ASPHALT DRAINAGE CURB ON DENSE GRADED AC. OSD RD 701.
  - ⑮ PROTECT EXISTING UTILITY POLE.
  - ⑯ RELOCATE EXISTING UTILITY POLE.

- NOTE:**
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  2. AT RAIL CROSSINGS, ROADWAY APPROACH AT DISTANCE OF 30 FT MIN FROM OUTSIDE RAIL CANNOT BE MORE THAN 3" LOWER OR HIGHER THAN TOP OF RAIL PER OAR 741-120-0020.
  3. PROVIDE 4.0' MINIMUM CLEAR ZONE BETWEEN BACK OF CURB AND EXISTING UTILITY POLES. UTILITY POLE RELOCATION REQUIRED WHERE THERE IS LESS THAN 4.0' MINIMUM CLEARANCE.
  4. PORTLAND GENERAL ELECTRIC UTILITY POLE RELOCATION JOB M2400726.
  5. CROSSWALKS CROSS SLOPE 1.5% MAX AND LONGITUDINAL SLOPE 4.5% MAX.
  6. FOR STREET SECTIONS SEE SHEET DT1.
  7. RUBBERIZED SEALANT ON ALL COLD JOINTS.
  8. CONTRACTOR TO OBTAIN TEMPORARY STREET USE PERMIT FROM PORTLAND BUREAU OF TRANSPORTATION IF WORK IS REQUIRED IN NORTH SIDE OF OCHOCO STREET.
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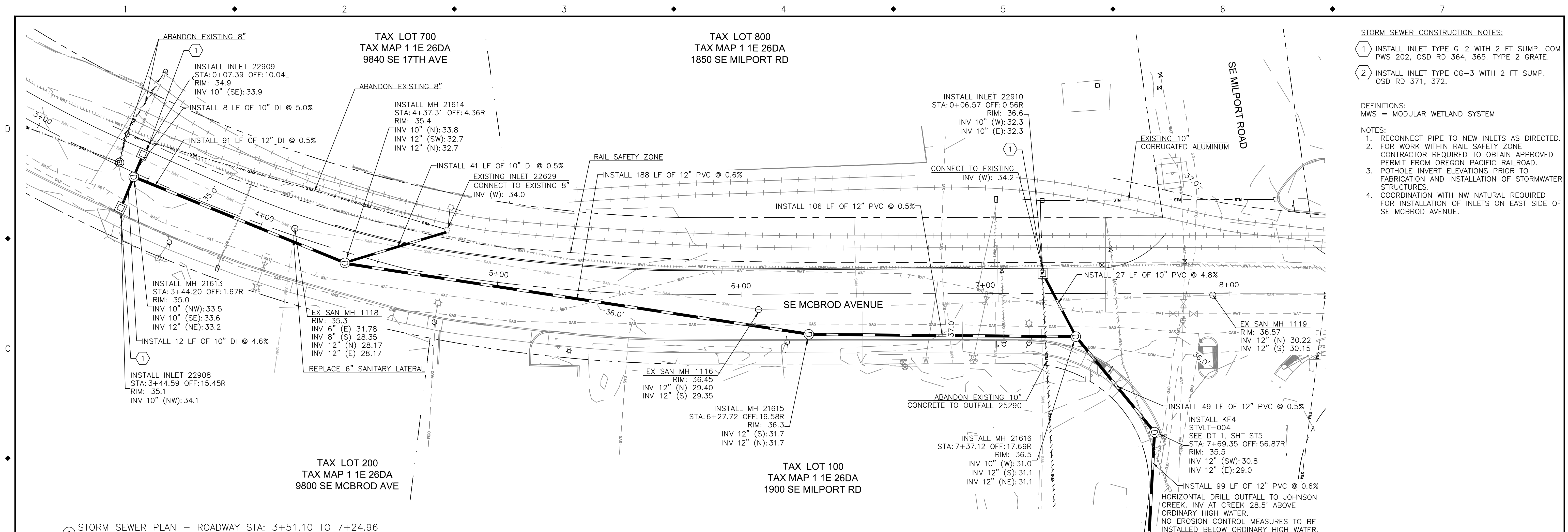



**CITY OF MILWAUKIE**  
 6101 SE JOHNSON CREEK BLVD.  
 MILWAUKIE, OR 97206  
 PHONE: 503-786-7600  
 FAX: 503-774-8236

**2020 SE MCBROD AVENUE IMPROVEMENTS**

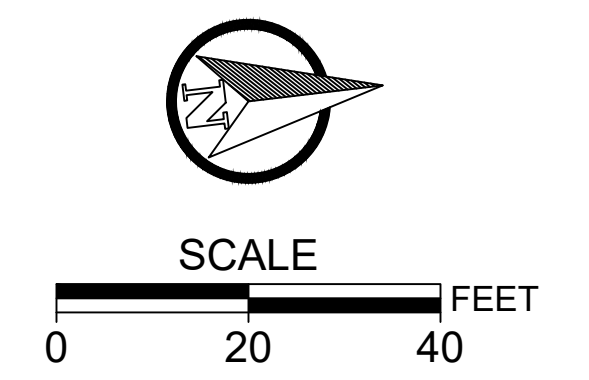
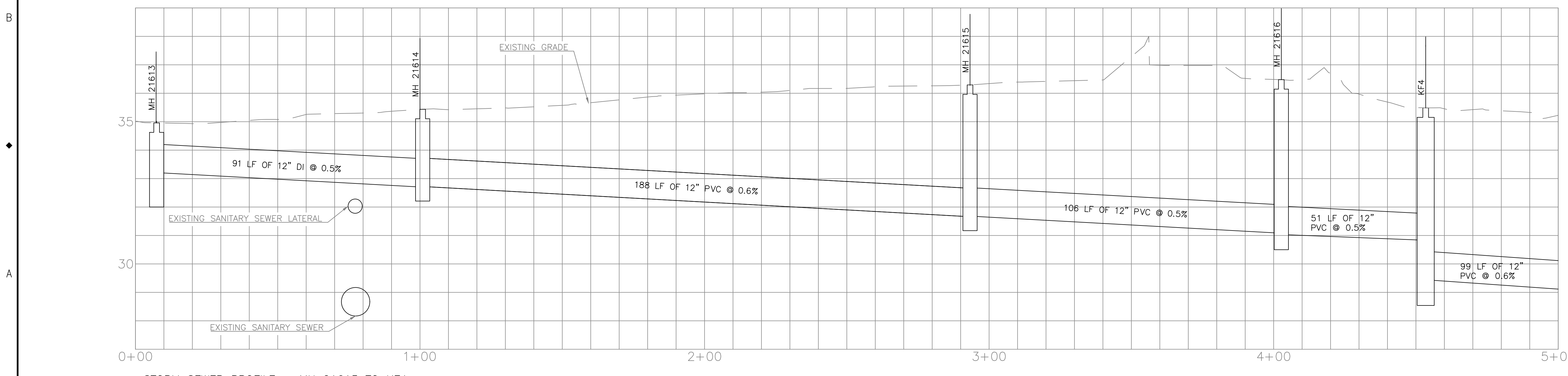
**SIDEWALK AND PAVING PLAN**

PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: SW6
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- STORM SEWER CONSTRUCTION NOTES:**
- ① INSTALL INLET TYPE G-2 WITH 2 FT SUMP. COM PWS 202, OSD RD 364, 365. TYPE 2 GRATE.
  - ② INSTALL INLET TYPE CG-3 WITH 2 FT SUMP. OSD RD 371, 372.
- DEFINITIONS:**  
MWS = MODULAR WETLAND SYSTEM
- NOTES:**
1. RECONNECT PIPE TO NEW INLETS AS DIRECTED.
  2. FOR WORK WITHIN RAIL SAFETY ZONE CONTRACTOR REQUIRED TO OBTAIN APPROVED PERMIT FROM OREGON PACIFIC RAILROAD.
  3. POTHOLE INVERT ELEVATIONS PRIOR TO FABRICATION AND INSTALLATION OF STORMWATER STRUCTURES.
  4. COORDINATION WITH NW NATURAL REQUIRED FOR INSTALLATION OF INLETS ON EAST SIDE OF SE MCBROD AVENUE.

① STORM SEWER PLAN – ROADWAY STA: 3+51.10 TO 7+24.96



② STORM SEWER PROFILE – MH 21613 TO KF4

NO.	DATE	BY	REVISIONS

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APPROVED	JG	12/23/2019



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**2020 SE MCBROD AVENUE IMPROVEMENTS**

STORM SEWER PLAN AND PROFILE

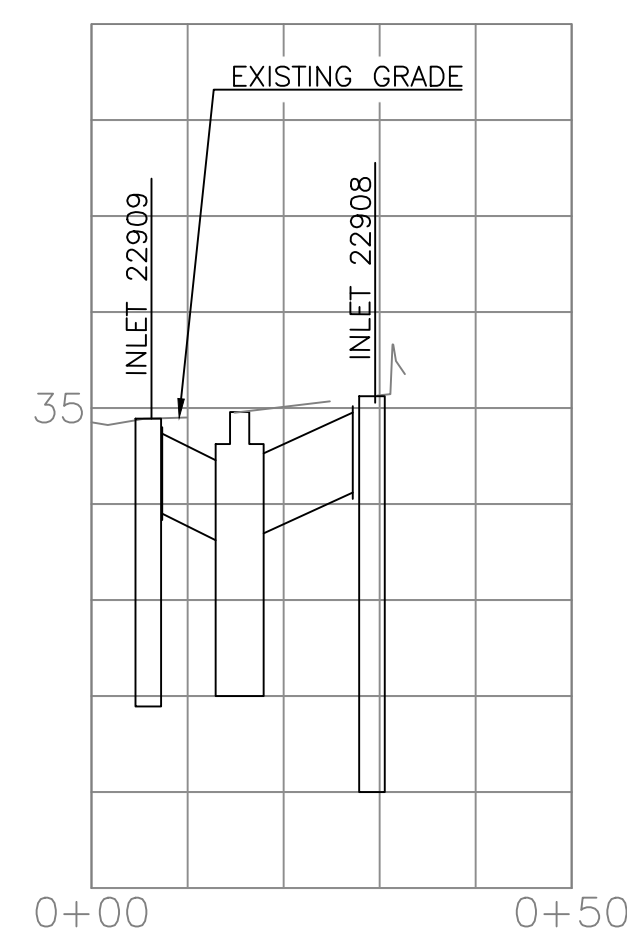
PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: ST1
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STORM SEWER CONSTRUCTION NOTES:

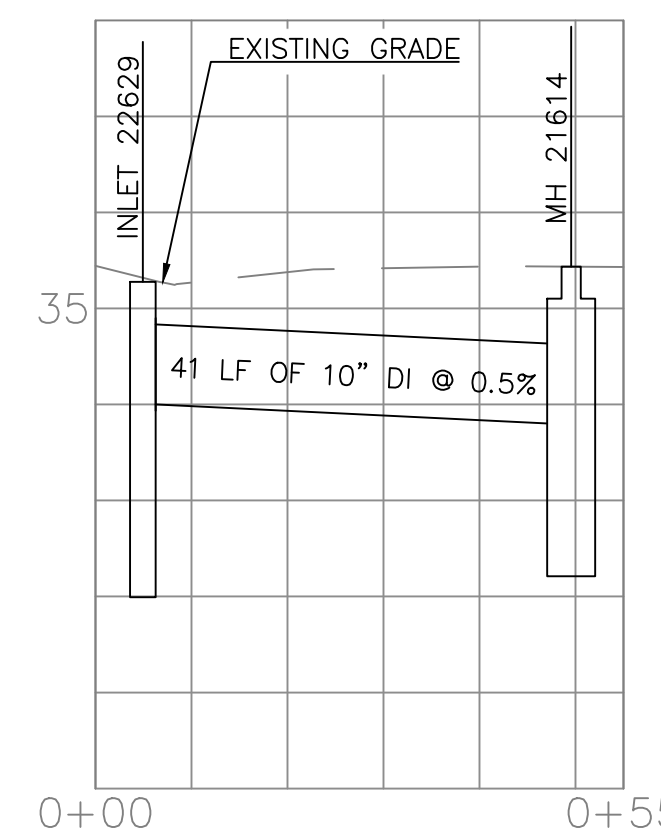
- ① INSTALL INLET TYPE G-2 WITH 2 FT SUMP. COM PWS 202, OSD RD 364, 365. TYPE 2 GRATE.
- ② INSTALL INLET TYPE CG-3 WITH 2 FT SUMP. OSD RD 371, 372.

DEFINITIONS:  
MWS = MODULAR WETLAND SYSTEM

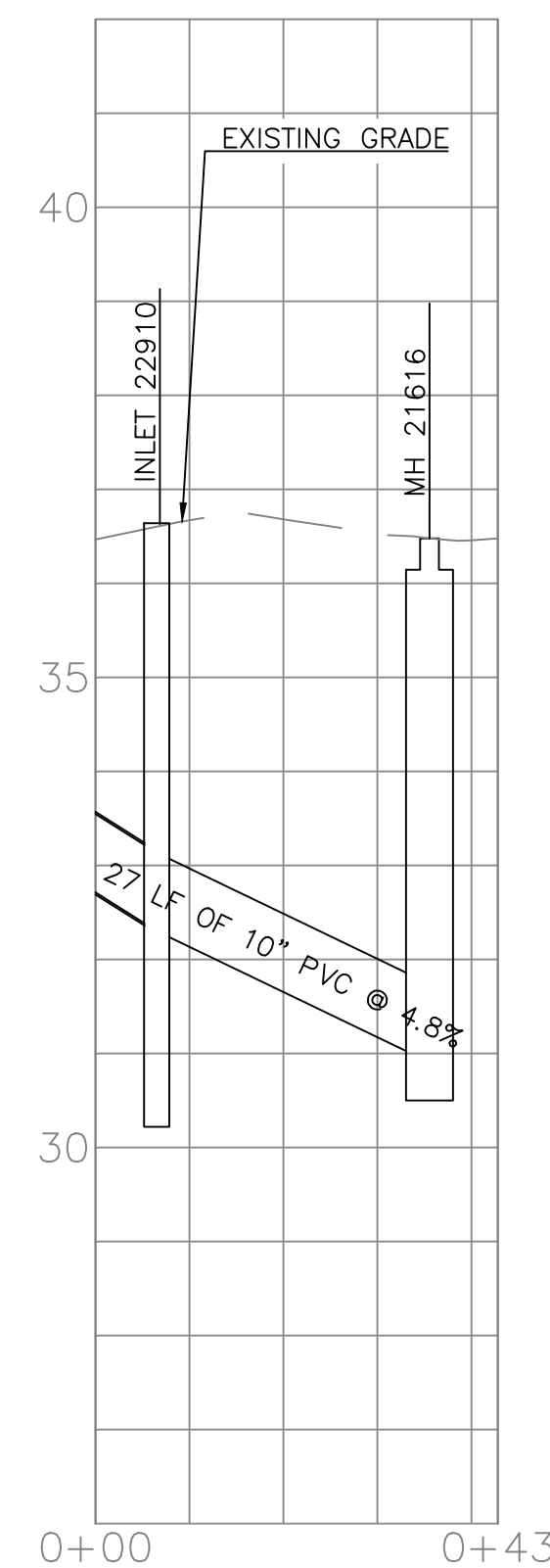
- NOTES:
1. RECONNECT PIPE TO NEW INLETS AS DIRECTED.
  2. FOR WORK WITHIN RAIL SAFETY ZONE CONTRACTOR REQUIRED TO OBTAIN APPROVED PERMIT FROM OREGON PACIFIC RAILROAD.
  3. POT HOLE INVERT ELEVATIONS PRIOR TO FABRICATION AND INSTALLATION OF STORMWATER STRUCTURES.
  4. COORDINATION WITH NW NATURAL REQUIRED FOR INSTALLATION OF INLETS ON EAST SIDE OF SE MCBROD AVENUE.



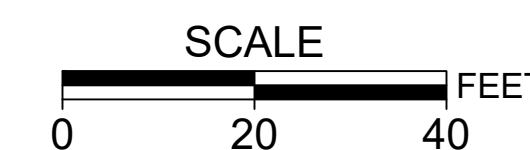
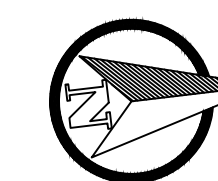
① STORM SEWER PROFILE – INLET 22909 TO INLET 22908



② STORM SEWER PROFILE – INLET 22629 TO MH 21614



③ STORM SEWER PROFILE – INLET 22910 TO MH 21616



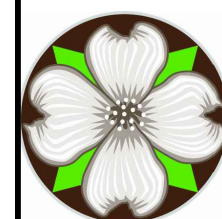
NO.	DATE	BY	REVISIONS

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WM 5/22/2019  
CHECKED DATE

JG 12/23/2019  
APPROVED DATE



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2020 SE MCBROD AVENUE IMPROVEMENTS

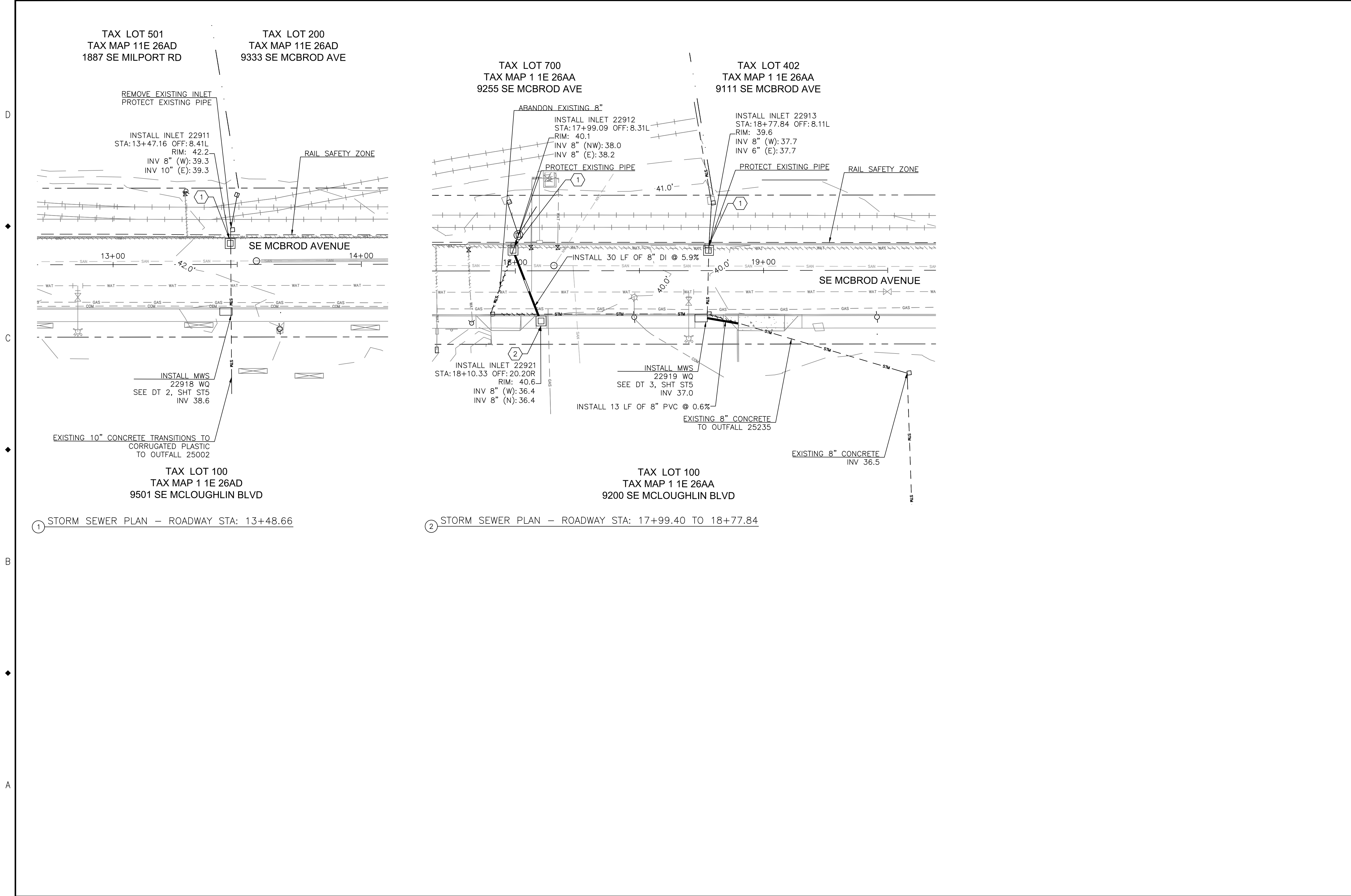
STORM SEWER PROFILE

PROJECT NO.: CIP2015-W27

CONTRACT NO.:

DATE: 1/3/2020

SHEET NO.: ST2

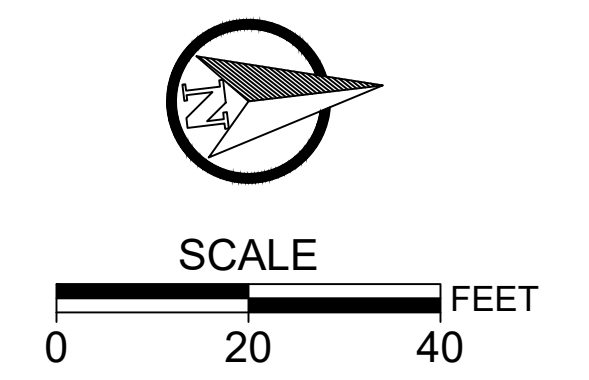


- STORM SEWER CONSTRUCTION NOTES:**
- 1 INSTALL INLET TYPE G-2 WITH 2 FT SUMP. COM PWS 202, OSD RD 364, 365. TYPE 2 GRATE.
  - 2 INSTALL INLET TYPE CG-3 WITH 2 FT SUMP. OSD RD 371, 372.

- DEFINITIONS:**  
MWS = MODULAR WETLAND SYSTEM
- NOTES:**
1. RECONNECT PIPE TO NEW INLETS AS DIRECTED.
  2. FOR WORK WITHIN RAIL SAFETY ZONE CONTRACTOR REQUIRED TO OBTAIN APPROVED PERMIT FROM OREGON PACIFIC RAILROAD.
  3. POT HOLE INVERT ELEVATIONS PRIOR TO FABRICATION AND INSTALLATION OF STORMWATER STRUCTURES.
  4. COORDINATION WITH NW NATURAL REQUIRED FOR INSTALLATION OF INLETS ON EAST SIDE OF SE MCBROD AVENUE.

1 STORM SEWER PLAN - ROADWAY STA: 13+48.66

2 STORM SEWER PLAN - ROADWAY STA: 17+99.40 TO 18+77.84



NO.	DATE	BY	REVISIONS

BB	12/14/2018
DESIGNED	DATE
BB	5/8/2019
DRAFTED	DATE
WM	5/22/2019
CHECKED	DATE
JG	12/23/2019
APPROVED	DATE



**CITY OF MILWAUKIE**

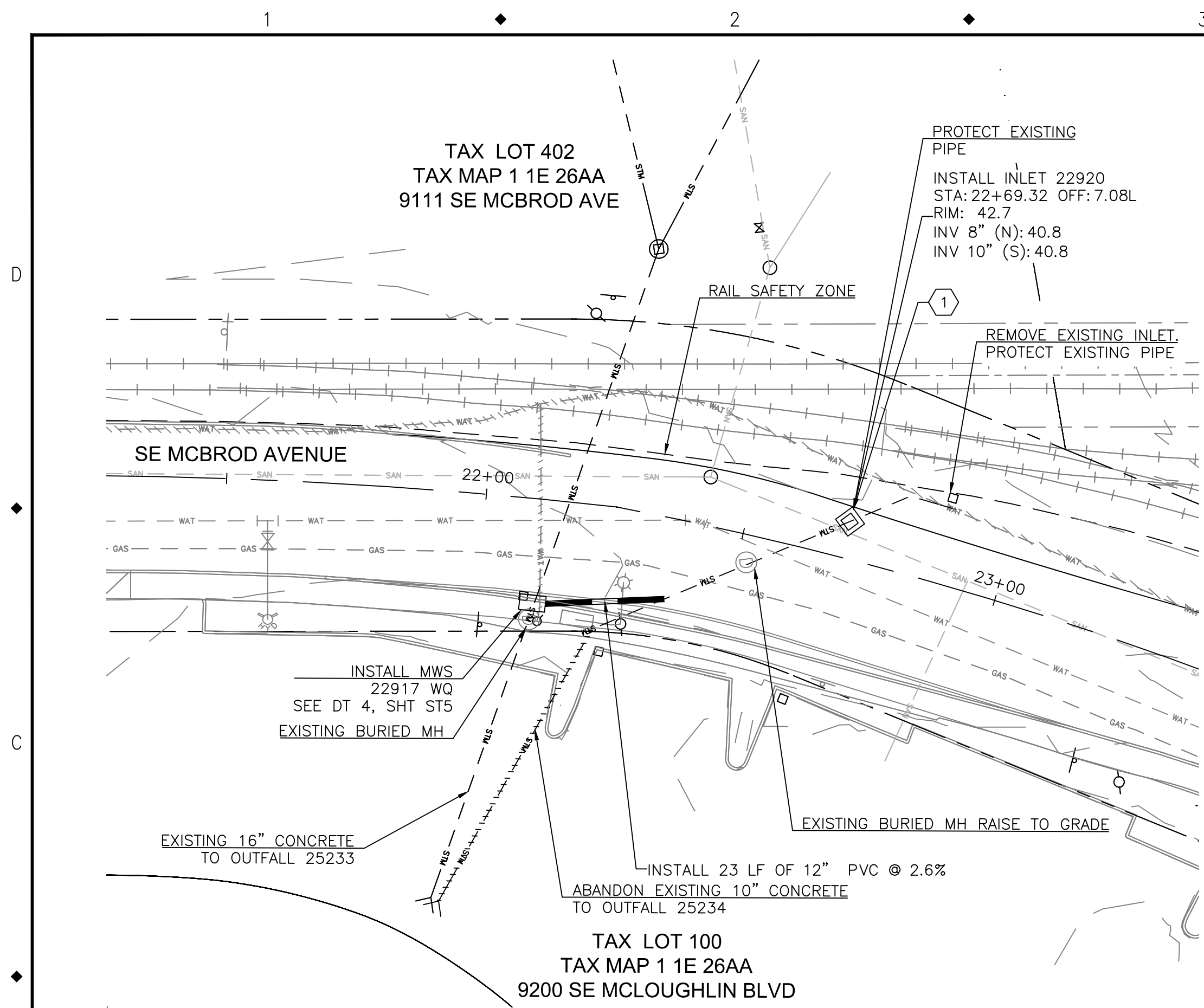
6101 SE JOHNSON CREEK BLVD.  
MILWAUKIE, OR 97206

PHONE: 503-786-7600  
FAX: 503-774-8236

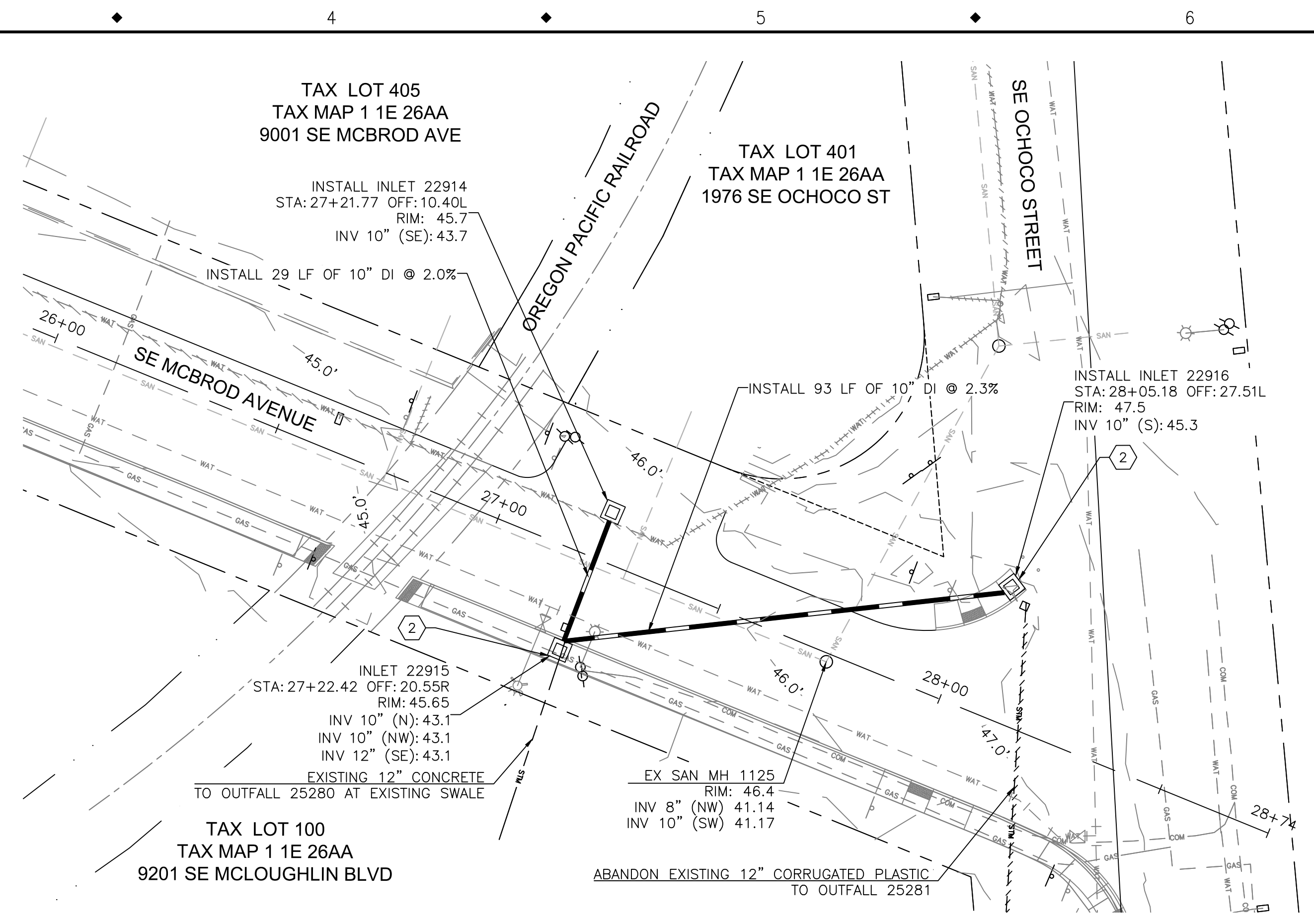
**2020 SE MCBROD AVENUE IMPROVEMENTS**

STORM SEWER PLAN

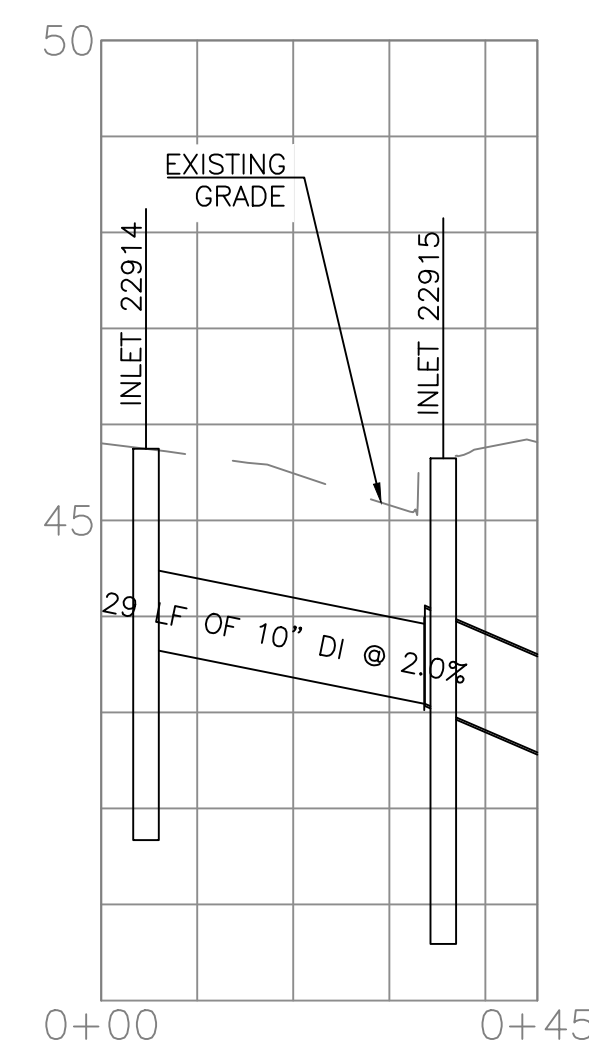
PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: ST3
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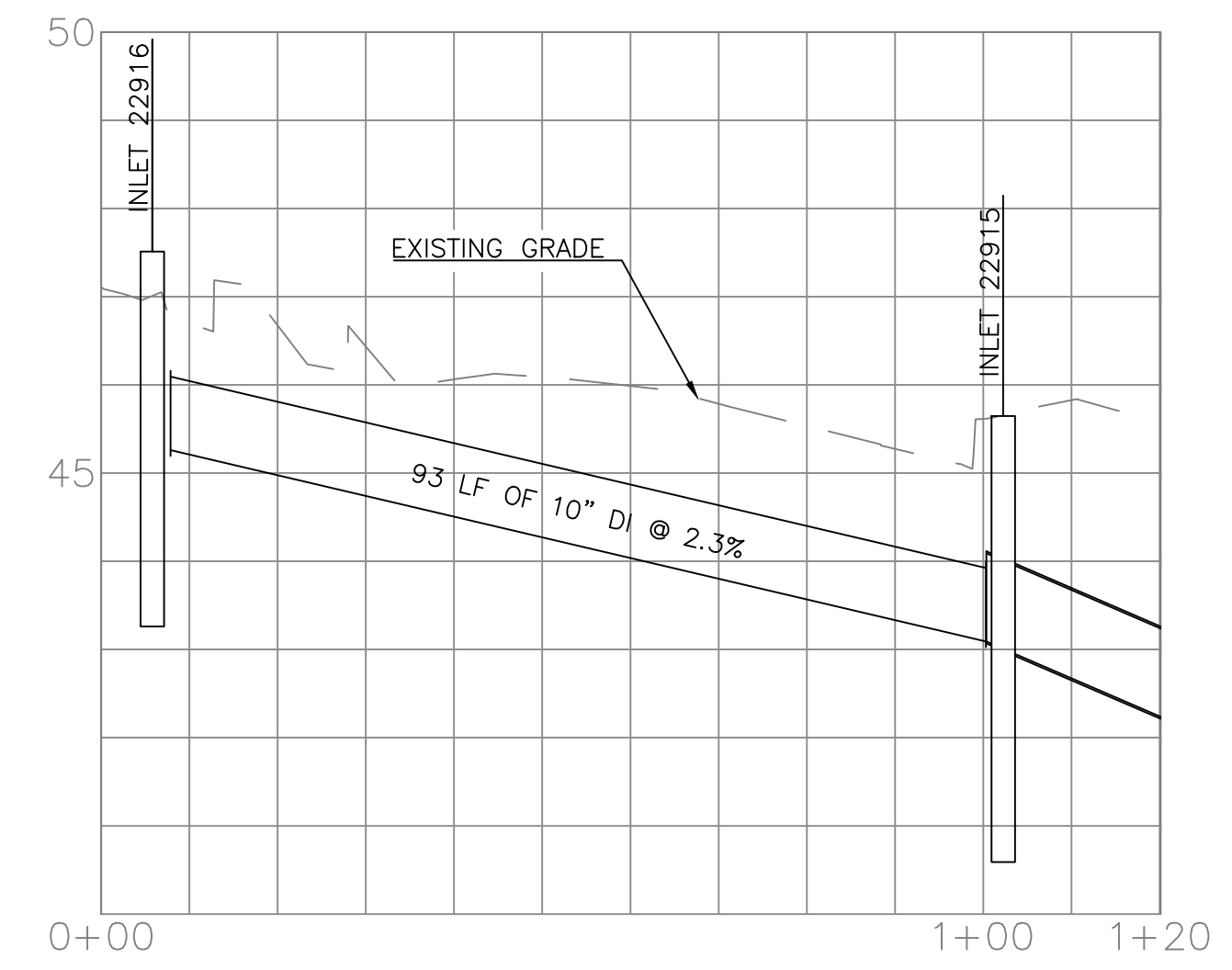
1 STORM SEWER PLAN - ROADWAY STA: 22+11.67 TO 22+84.63



2 STORM SEWER PLAN - ROADWAY STA: 27+24.42 TO 28+10.28



3 STORM SEWER PROFILE - INLET 22914 TO 22915

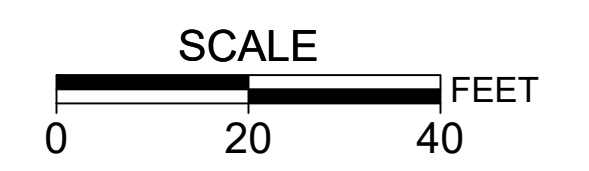
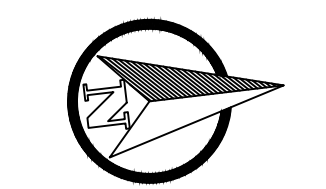


4 STORM SEWER PROFILE - INLET 22916 TO 22915

- STORM SEWER CONSTRUCTION NOTES:
- 1 INSTALL INLET TYPE G-2 WITH 2 FT SUMP. COM PWS 202, OSD RD 364, 365. TYPE 2 GRATE.
  - 2 INSTALL INLET TYPE CG-3 WITH 2 FT SUMP. OSD RD 371, 372.

DEFINITIONS:  
MWS = MODULAR WETLAND SYSTEM

- NOTES:
1. RECONNECT PIPE TO NEW INLETS AS DIRECTED.
  2. FOR WORK WITHIN RAIL SAFETY ZONE CONTRACTOR REQUIRED TO OBTAIN APPROVED PERMIT FROM OREGON PACIFIC RAILROAD.
  3. POTHOLE INVERT ELEVATIONS PRIOR TO FABRICATION AND INSTALLATION OF STORMWATER STRUCTURES.
  4. COORDINATION WITH NW NATURAL REQUIRED FOR INSTALLATION OF INLETS ON EAST SIDE OF SE MCBROD AVENUE.



NO.	DATE	BY	REVISIONS

DESIGNED	BB	12/14/2018
DRAFTED	BB	5/8/2019
CHECKED	WM	5/22/2019
APPROVED	JG	12/23/2019



**CITY OF MILWAUKIE**

6101 SE JOHNSON CREEK BLVD.  
MILWAUKIE, OR 97206

PHONE: 503-786-7600  
FAX: 503-774-8236

**2020 SE MCBROD AVENUE IMPROVEMENTS**

STORM SEWER PLAN

PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: ST4
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**SITE SPECIFIC DATA\***

PROJECT NUMBER	9804		
PROJECT NAME	MCBROD AVENUE		
PROJECT LOCATION	MILWAUKIE, WA		
STRUCTURE ID	KRUMEN FILTER		
WATER QUALITY FLOW RATE (CFS)	0.036		
PEAK FLOW RATE (CFS)	0.140		
PEAK STORM DURATION (HOURS)	C	ZB	
PIPE DATA	LC	MATERIAL	DIAMETER
INLET PIPE 1	30.80	RCP	12"
OUTLET PIPE 1	29.00	RCP	12"
R/W ELEVATION	35.52		
SURFACE LOADING REQUIREMENT		H-20	
FRAME AND COVER		#30"	
CORROSION SOIL CONDITIONS		N/A	
KNOWN GROUNDWATER ELEVATION		N/A	

**KF PERFORMANCE DATA**

CARTRIDGE HEIGHT (IN)	19.50
CARTRIDGE FLOW RATE (GPM)	4.50
NUMBER OF CARTRIDGES	4
TOTAL TREATMENT FLOW RATE (CFS)	0.040

**PLAN VIEW**

**INLET ELEVATION VIEW**

**OUTLET ELEVATION VIEW**

**GENERAL NOTES**

1. BID CLEAN TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS, AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS, AND ACCESSORIES PLEASE CONTACT BIO CLEAN.

**INSTALLATION NOTES**

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE KF UNIT AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURER'S CONTRACT.
2. MANUFACTURER RECOMMENDS A 4" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE FOR VERIFYING PROJECT ENGINEER'S RECOMMENDED BASE SPECIFICATIONS.
3. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. (PIPES CANNOT INTERFERE BEHIND FLOWS).
4. ALL GAPS AROUND PIPES SHALL BE SEALED WATER/TIGHT WITH A NON-SHRINK GROUT PER MANUFACTURER'S STANDARD CONNECTION DETAIL AND SHALL MEET OR EXCEED REGIONAL PIPE CONNECTION STANDARDS.
5. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL RISERS, MANHOLES, AND HATCHES. ALL COVERS SHALL BE SHIPPED LOOSE. CONTRACTOR TO GROUT ALL MANHOLES AND HATCHES TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.

**SCALE = 1:20**

**BIO Clean** A Forterra Company

**KF-4 MEMBRANE FILTRATION SYSTEM SITE SPECIFIC DETAIL**

1 BIO CLEAN KF-4 MEMBRANE FILTRATION SYSTEM

**SITE SPECIFIC DATA**

PROJECT NUMBER	9804		
PROJECT NAME	MCBROD AVENUE		
PROJECT LOCATION	MILWAUKIE, WA		
STRUCTURE ID	SOUTH		
TREATMENT REQUIRED			
VOLUME BASED (CF)	FLOW BASED (CFS)		
PEAK BYPASS REQUIRED (CFS) - IF APPLICABLE	0.018		
PIPE DATA	LC	MATERIAL	DIAMETER
INLET PIPE	36.00	N/A	10"
OUTLET PIPE	36.00	N/A	10"
PRETREATMENT	BIOFILTRATION	DISCHARGE	
R/W ELEVATION	41.80	41.80	41.80
SURFACE LOAD	PEDESTRIAN	PEDESTRIAN	
FRAME & COVER		36" X 60"	
METALMEDIUM VOLUME (CY)	0.74		
ORIFICE SIZE (DIA. INCHES)	4 EA #0.61"		

**PLAN VIEW**

**LEFT END VIEW**

**RIGHT END VIEW**

**ELEVATION VIEW**

**INTERNAL BYPASS DISCLOSURE:**

TREATMENT FLOW (CFS)	0.04
OPERATING HEAD (FT)	2.0
PRETREATMENT LOADING RATE (GPM/SF)	1.5
METALMEDIUM LOADING RATE (GPM/SF)	1.0

**GENERAL NOTES**

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURER'S CONTRACT.
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5. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO GROUT ALL MANHOLES AND HATCHES TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
6. DRIP OR SPRAY IRRIGATION REQUIRED ON ALL UNITS WITH VEGETATION. CAPACITY SHOWN ON DRAWING ARE USED FOR GUIDANCE ONLY.

**INSTALLATION NOTES**

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**BIO Clean** A Forterra Company

**MWS-L-4-6-33-2'-6"-C-UG STORMWATER BIOFILTRATION SYSTEM STANDARD DETAIL**

2 BIO CLEAN MODULAR WETLAND SYSTEM

**SITE SPECIFIC DATA**

PROJECT NUMBER	9804		
PROJECT NAME	MCBROD AVENUE		
PROJECT LOCATION	MILWAUKIE, WA		
STRUCTURE ID	NORTH		
TREATMENT REQUIRED			
VOLUME BASED (CF)	FLOW BASED (CFS)		
PEAK BYPASS REQUIRED (CFS) - IF APPLICABLE	0.018		
PIPE DATA	LC	MATERIAL	DIAMETER
INLET PIPE 1	37.00	N/A	12"
INLET PIPE 2	37.00	N/A	6"
OUTLET PIPE	37.00	N/A	12"
PRETREATMENT	BIOFILTRATION	DISCHARGE	
R/W ELEVATION	40.40	40.40	40.40
SURFACE LOAD	PEDESTRIAN	PEDESTRIAN	
FRAME & COVER		36" X 60"	
METALMEDIUM VOLUME (CY)	0.74		
ORIFICE SIZE (DIA. INCHES)	4 EA #0.61"		

**PLAN VIEW**

**LEFT END VIEW**

**RIGHT END VIEW**

**ELEVATION VIEW**

**INTERNAL BYPASS DISCLOSURE:**

TREATMENT FLOW (CFS)	0.04
OPERATING HEAD (FT)	2.0
PRETREATMENT LOADING RATE (GPM/SF)	1.5
METALMEDIUM LOADING RATE (GPM/SF)	1.0

**GENERAL NOTES**

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURER'S CONTRACT.
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**INSTALLATION NOTES**

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**BIO Clean** A Forterra Company

**MWS-L-4-6-33-2'-8-1/2"-C-UG STORMWATER BIOFILTRATION SYSTEM STANDARD DETAIL**

3 BIO CLEAN MODULAR WETLAND SYSTEM

**SITE SPECIFIC DATA**

PROJECT NUMBER	9804		
PROJECT NAME	MCBROD AVENUE		
PROJECT LOCATION	MILWAUKIE, WA		
STRUCTURE ID			
TREATMENT REQUIRED			
VOLUME BASED (CF)	FLOW BASED (CFS)		
PEAK BYPASS REQUIRED (CFS) - IF APPLICABLE	0.014		
PIPE DATA	LC	MATERIAL	DIAMETER
INLET PIPE	39.90	N/A	12"
OUTLET PIPE	39.90	N/A	12"
PRETREATMENT	BIOFILTRATION	DISCHARGE	
R/W ELEVATION	42.50	42.50	42.50
SURFACE LOAD	PEDESTRIAN	PEDESTRIAN	
FRAME & COVER		36" X 60"	
METALMEDIUM VOLUME (CY)	0.53		
ORIFICE SIZE (DIA. INCHES)	2 EA #0.75"		

**PLAN VIEW**

**LEFT END VIEW**

**RIGHT END VIEW**

**ELEVATION VIEW**

**INTERNAL BYPASS DISCLOSURE:**

TREATMENT FLOW (CFS)	0.03
OPERATING HEAD (FT)	1.4
PRETREATMENT LOADING RATE (GPM/SF)	1.8
METALMEDIUM LOADING RATE (GPM/SF)	1.0

**GENERAL NOTES**

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURER'S CONTRACT.
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**INSTALLATION NOTES**

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**BIO Clean** A Forterra Company

**MWS-L-4-6-33-1'-11"-V-UG STORMWATER BIOFILTRATION SYSTEM STANDARD DETAIL**

4 BIO CLEAN MODULAR WETLAND SYSTEM

NO.	DATE	BY	REVISIONS

**REGISTERED PROFESSIONAL ENGINEER**  
83728PE  
Oregon  
MAY 22, 2015  
ELIZABETH COPELAND-BRITELL  
EXPIRES: 12/31/2021

**CITY OF MILWAUKIE**

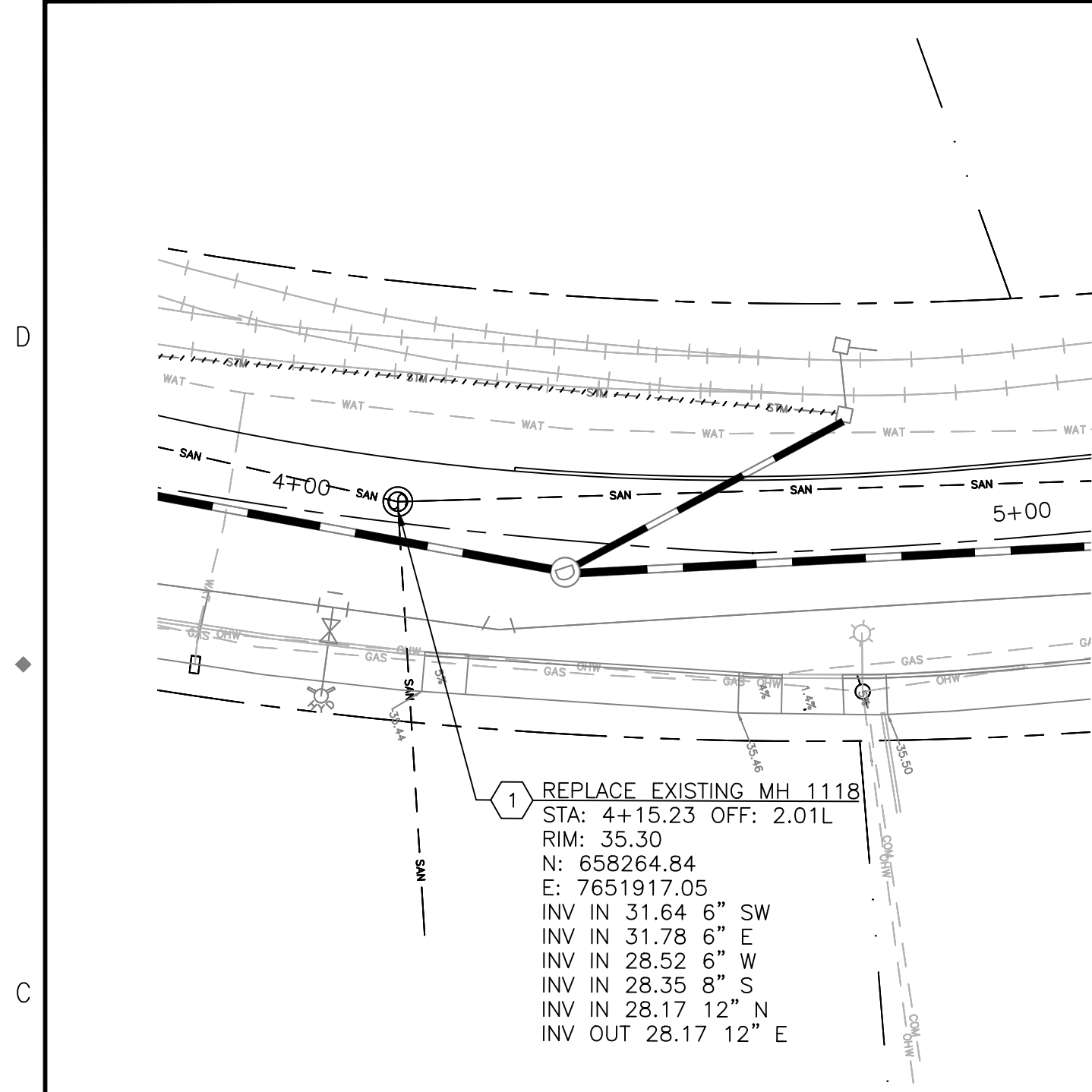
6101 SE JOHNSON CREEK BLVD.  
MILWAUKIE, OR 97206

PHONE: 503-786-7600  
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**2020 SE MCBROD AVENUE IMPROVEMENTS**

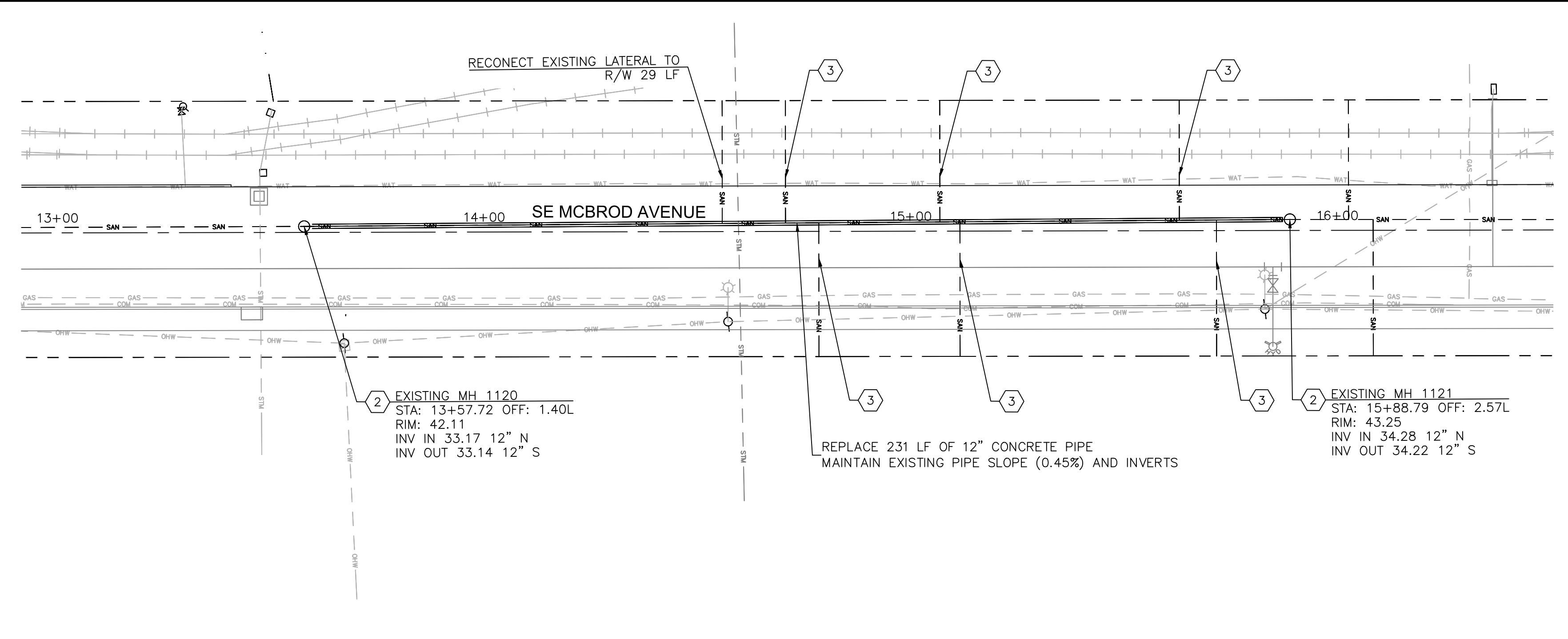
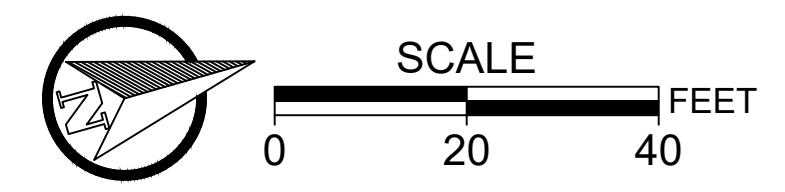
STORMWATER TREATMENT DETAILS

PROJECT NO.: CIP2015-W27    CONTRACT NO.:    DATE: 1/3/2020    SHEET NO.: ST5



1 REPLACE EXISTING MH 1118  
 STA: 4+15.23 OFF: 2.01L  
 RIM: 35.30  
 N: 658264.84  
 E: 7651917.05  
 INV IN 31.64 6" SW  
 INV IN 31.78 6" E  
 INV IN 28.52 6" W  
 INV IN 28.35 8" S  
 INV IN 28.17 12" N  
 INV OUT 28.17 12" E

1 SANITARY SEWER PLAN - ROADWAY STA: 4+15.23

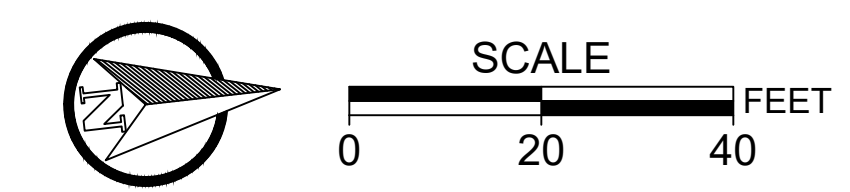


2 EXISTING MH 1120  
 STA: 13+57.72 OFF: 1.40L  
 RIM: 42.11  
 INV IN 33.17 12" N  
 INV OUT 33.14 12" S

2 EXISTING MH 1121  
 STA: 15+88.79 OFF: 2.57L  
 RIM: 43.25  
 INV IN 34.28 12" N  
 INV OUT 34.22 12" S

REPLACE 231 LF OF 12" CONCRETE PIPE  
 MAINTAIN EXISTING PIPE SLOPE (0.45%) AND INVERTS

2 SANITARY SEWER PLAN - ROADWAY STA: 13+58.99 TO 15+90.02



- SANITARY SEWER CONSTRUCTION NOTES:
- 1 REPLACE EXISTING MANHOLE. OSD RD 338.
  - 2 CONNECT NEW PIPE TO EXISTING MANHOLE.
  - 3 ABANDON EXISTING SEWER LATERAL.
- NOTES:
- 1. FOR WORK WITHIN RAIL SAFETY ZONE CONTRACTOR REQUIRED TO OBTAIN APPROVED PERMIT FROM OREGON PACIFIC RAILROAD.

NO.	DATE	BY	REVISIONS

DESIGNED	BB	12/14/2018
DRAFTED	BB	5/8/2019
CHECKED	WM	5/22/2019
APPROVED	JG	12/23/2019



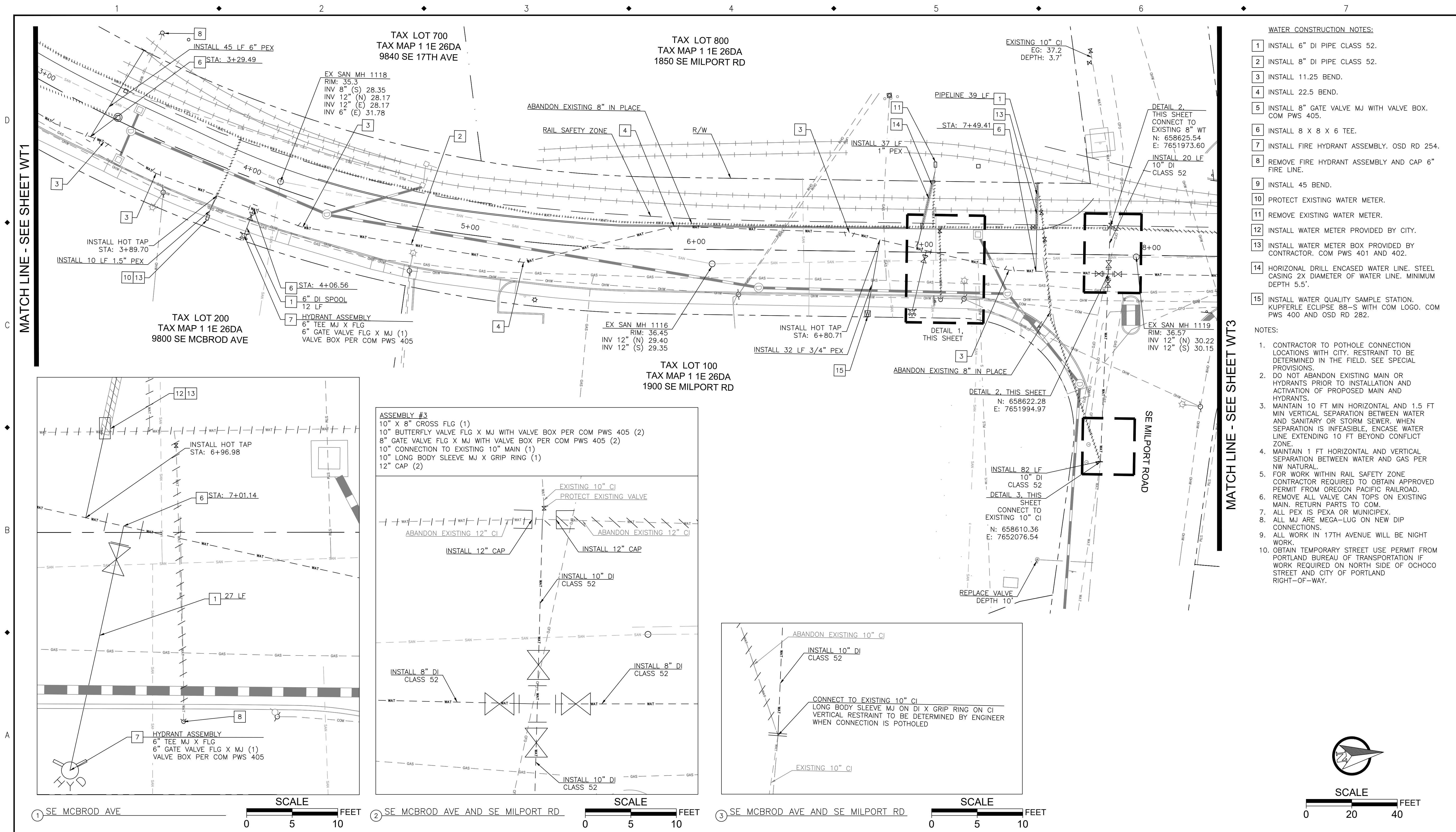

**CITY OF MILWAUKIE**  
 6101 SE JOHNSON CREEK BLVD.  
 MILWAUKIE, OR 97206  
 PHONE: 503-786-7600  
 FAX: 503-774-8236

**2020 SE MCBROD AVENUE IMPROVEMENTS**  
 SANITARY SEWER PLAN

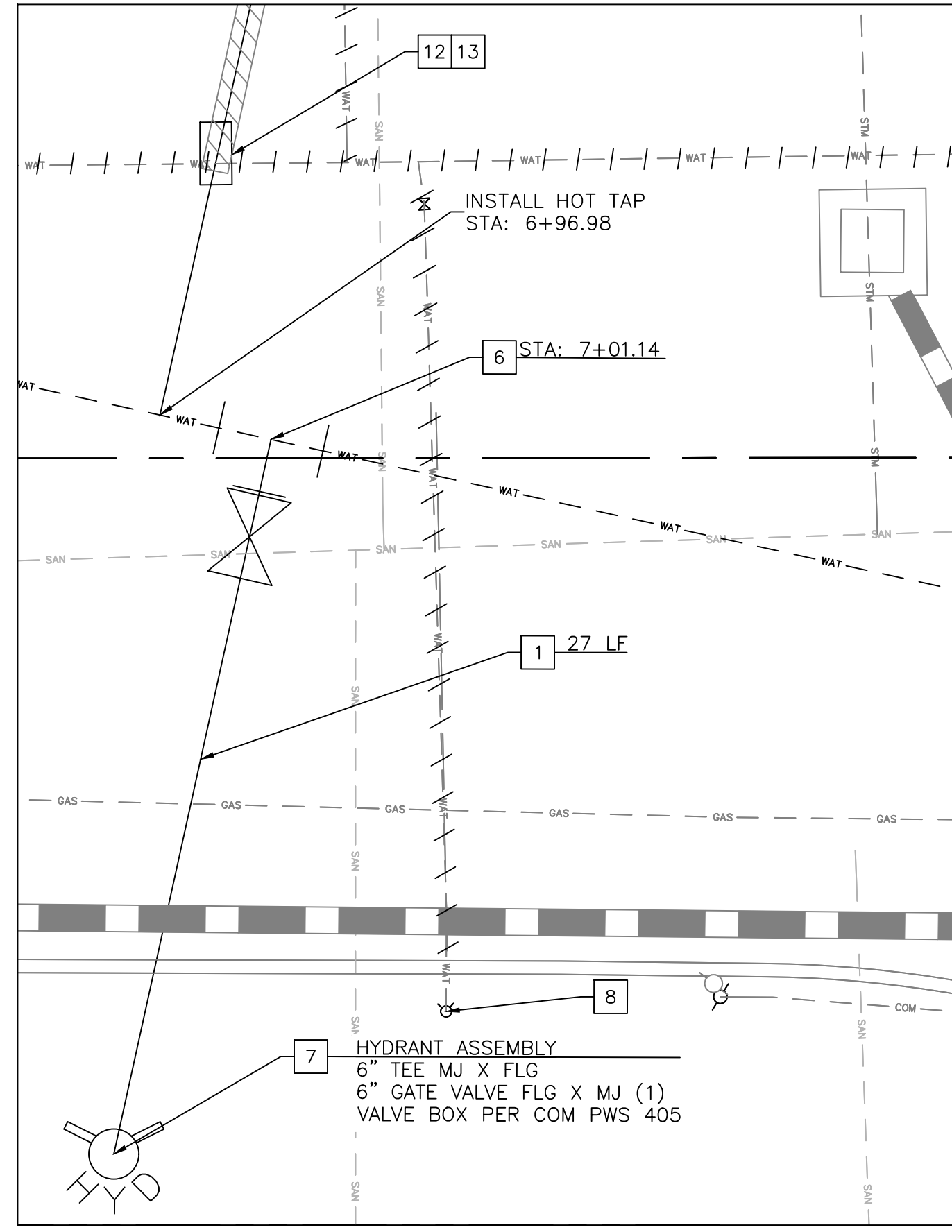
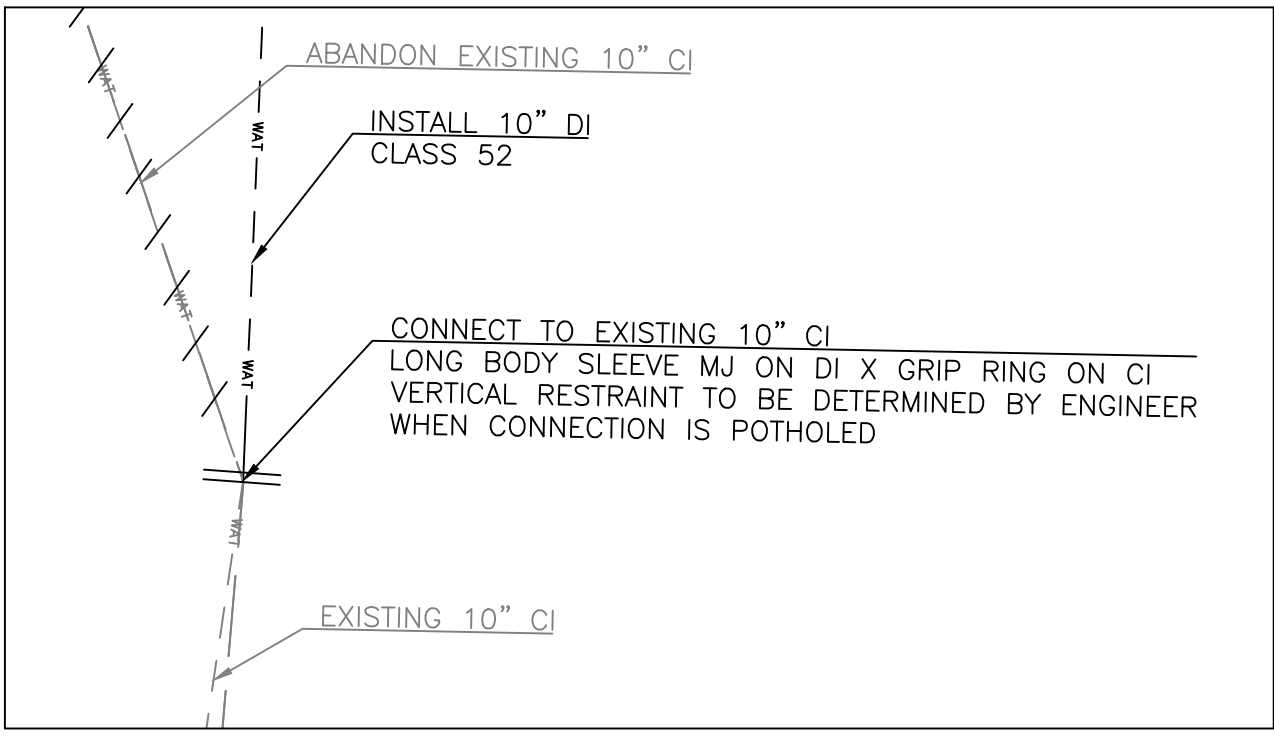
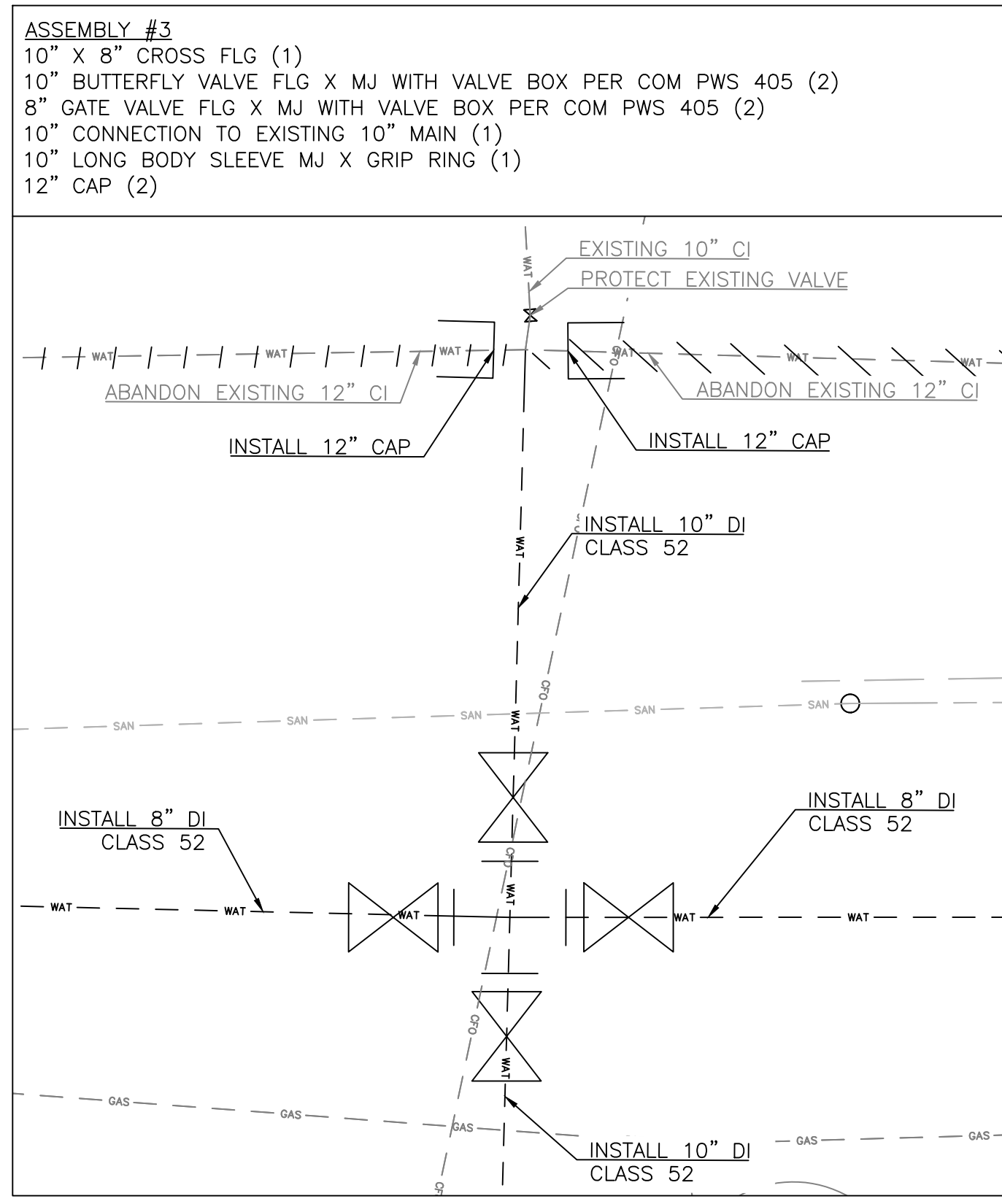
PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: SS1
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- WATER CONSTRUCTION NOTES:**
- 1 INSTALL 6" DI PIPE CLASS 52.
  - 2 INSTALL 8" DI PIPE CLASS 52.
  - 3 INSTALL 11.25 BEND.
  - 4 INSTALL 22.5 BEND.
  - 5 INSTALL 8" GATE VALVE MJ WITH VALVE BOX. COM PWS 405.
  - 6 INSTALL 8 X 8 X 6 TEE.
  - 7 INSTALL FIRE HYDRANT ASSEMBLY. OSD RD 254.
  - 8 REMOVE FIRE HYDRANT ASSEMBLY AND CAP 6" FIRE LINE.
  - 9 INSTALL 45 BEND.
  - 10 PROTECT EXISTING WATER METER.
  - 11 REMOVE EXISTING WATER METER.
  - 12 INSTALL WATER METER PROVIDED BY CITY.
  - 13 INSTALL WATER METER BOX PROVIDED BY CONTRACTOR. COM PWS 401 AND 402.
  - 14 HORIZONTAL DRILL ENCASED WATER LINE. STEEL CASING 2X DIAMETER OF WATER LINE. MINIMUM DEPTH 5.5'.
  - 15 INSTALL WATER QUALITY SAMPLE STATION. KUPFERLE ECLIPSE 88-S WITH COM LOGO. COM PWS 400 AND OSD RD 282.
- NOTES:**
1. CONTRACTOR TO POTHOLE CONNECTION LOCATIONS WITH CITY. RESTRAINT TO BE DETERMINED IN THE FIELD. SEE SPECIAL PROVISIONS.
  2. DO NOT ABANDON EXISTING MAIN OR HYDRANTS PRIOR TO INSTALLATION AND ACTIVATION OF PROPOSED MAIN AND HYDRANTS.
  3. MAINTAIN 10 FT MIN HORIZONTAL AND 1.5 FT MIN VERTICAL SEPARATION BETWEEN WATER AND SANITARY OR STORM SEWER. WHEN SEPARATION IS INFEASIBLE, ENCASE WATER LINE EXTENDING 10 FT BEYOND CONFLICT ZONE.
  4. MAINTAIN 1 FT HORIZONTAL AND VERTICAL SEPARATION BETWEEN WATER AND GAS PER NW NATURAL.
  5. FOR WORK WITHIN RAIL SAFETY ZONE CONTRACTOR REQUIRED TO OBTAIN APPROVED PERMIT FROM OREGON PACIFIC RAILROAD.
  6. REMOVE ALL VALVE CAN TOPS ON EXISTING MAIN. RETURN PARTS TO COM.
  7. ALL PEX IS PEXA OR MUNICIPEX.
  8. ALL MJ ARE MEGA-LUG ON NEW DIP CONNECTIONS.
  9. ALL WORK IN 17TH AVENUE WILL BE NIGHT WORK.
  10. OBTAIN TEMPORARY STREET USE PERMIT FROM PORTLAND BUREAU OF TRANSPORTATION IF WORK REQUIRED ON NORTH SIDE OF OCHOCO STREET AND CITY OF PORTLAND RIGHT-OF-WAY.



NO.	DATE	BY	REVISIONS

DESIGNED	BB	12/14/2018	DATE
DRAFTED	BB	5/8/2019	DATE
CHECKED	WM	5/22/2019	DATE
APPROVED	JG	12/23/2019	DATE



**CITY OF MILWAUKIE**

6101 SE JOHNSON CREEK BLVD.  
 MILWAUKIE, OR 97206

PHONE: 503-786-7600  
 FAX: 503-774-8236

**2020 SE MCBROD AVENUE IMPROVEMENTS**

WATER PLAN

PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: WT2
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TAX LOT 501  
TAX MAP 1 1E 26AD  
1887 SE MILPORT RD

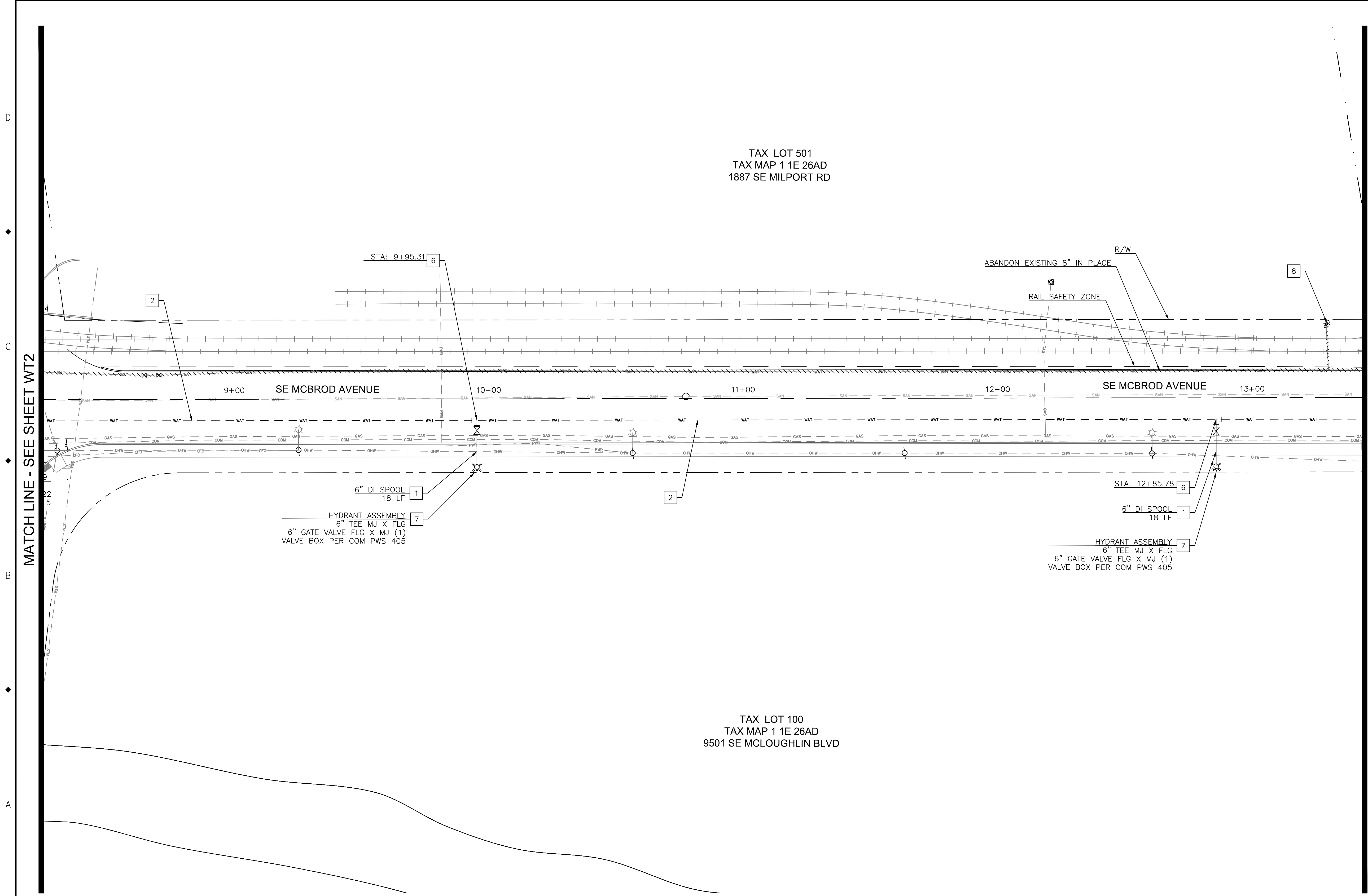
TAX LOT 100  
TAX MAP 1 1E 26AD  
9501 SE M'CLOUGHLIN BLVD

WATER CONSTRUCTION NOTES:

- 1 INSTALL 6" DI PIPE CLASS 52.
- 2 INSTALL 8" DI PIPE CLASS 52.
- 3 INSTALL 11.25 BEND.
- 4 INSTALL 22.5 BEND.
- 5 INSTALL 8" GATE VALVE MJ WITH VALVE BOX. COM PWS 405.
- 6 INSTALL 8 X 8 X 6 TEE.
- 7 INSTALL FIRE HYDRANT ASSEMBLY. OSD RD 254.
- 8 REMOVE FIRE HYDRANT ASSEMBLY AND CAP 6" FIRE LINE.
- 9 INSTALL 45 BEND.
- 10 PROTECT EXISTING WATER METER.
- 11 REMOVE EXISTING WATER METER.
- 12 INSTALL WATER METER PROVIDED BY CITY.
- 13 INSTALL WATER METER BOX PROVIDED BY CONTRACTOR. COM PWS 401 AND 402.
- 14 HORIZONTAL DRILL ENCASED WATER LINE. STEEL CASING 2X DIAMETER OF WATER LINE. MINIMUM DEPTH 5.5'.
- 15 INSTALL WATER QUALITY SAMPLE STATION. KUPFERLE ECLIPSE 88-S WITH COM LOGO. COM PWS 400 AND OSD RD 282.

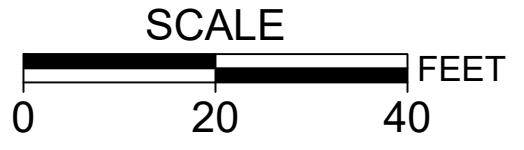
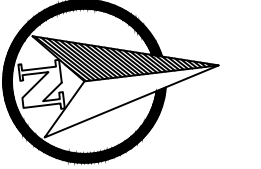
NOTES:

- 1. CONTRACTOR TO POTHOLE CONNECTION LOCATIONS WITH CITY. RESTRAINT TO BE DETERMINED IN THE FIELD. SEE SPECIAL PROVISIONS.
- 2. DO NOT ABANDON EXISTING MAIN OR HYDRANTS PRIOR TO INSTALLATION AND ACTIVATION OF PROPOSED MAIN AND HYDRANTS.
- 3. MAINTAIN 10 FT MIN HORIZONTAL AND 1.5 FT MIN VERTICAL SEPARATION BETWEEN WATER AND SANITARY OR STORM SEWER. WHEN SEPARATION IS INFEASIBLE, ENCASE WATER LINE EXTENDING 10 FT BEYOND CONFLICT ZONE.
- 4. MAINTAIN 1 FT HORIZONTAL AND VERTICAL SEPARATION BETWEEN WATER AND GAS PER NW NATURAL.
- 5. FOR WORK WITHIN RAIL SAFETY ZONE CONTRACTOR REQUIRED TO OBTAIN APPROVED PERMIT FROM OREGON PACIFIC RAILROAD.
- 6. REMOVE ALL VALVE CAN TOPS ON EXISTING MAIN. RETURN PARTS TO COM.
- 7. ALL PEX IS PE-XA OR MUNICIPEX.
- 8. ALL MJ ARE MEGA-LUG ON NEW DIP CONNECTIONS.
- 9. ALL WORK IN 17TH AVENUE WILL BE NIGHT WORK.
- 10. OBTAIN TEMPORARY STREET USE PERMIT FROM PORTLAND BUREAU OF TRANSPORTATION IF WORK REQUIRED ON NORTH SIDE OF OCHOCO STREET AND CITY OF PORTLAND RIGHT-OF-WAY.



MATCH LINE - SEE SHEET WT2

MATCH LINE - SEE SHEET WT4



NO.	DATE	BY	REVISIONS

DESIGNED	BB	12/14/2018
DRAFTED	BB	5/8/2019
CHECKED	WM	5/22/2019
APPROVED	JG	12/23/2019



**CITY OF MILWAUKIE**

6101 SE JOHNSON CREEK BLVD.  
MILWAUKIE, OR 97206

PHONE: 503-786-7600  
FAX: 503-774-8236

**2020 SE MCBROD AVENUE IMPROVEMENTS**

WATER PLAN

PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: WT3
--------------------------	---------------	----------------	----------------

1

2

3

4

5

6

7

TAX LOT 200  
TAX MAP 1 1E 26AD  
9333 SE MCBROD AVE

TAX LOT 700  
TAX MAP 1 1E 26AA  
9255 SE MCBROD AVE

TAX LOT 100  
TAX MAP 1 1E 26AD  
9501 SE M CLOUGHLIN BLVD

TAX LOT 100  
TAX MAP 1 1E 26AA  
9200 SE M CLOUGHLIN BLVD

SE MCBROD AVENUE

14+00

15+00

16+00

17+00

18+00

STA: 15+84.76

6" DI SPOOL  
19 LF

HYDRANT ASSEMBLY  
6" TEE MJ X FLG  
6" GATE VALVE FLG X MJ (1)  
VALVE BOX PER COM PWS 405

INSTALL HOT TAP  
STA: 16+36.43

INSTALL HOT TAP  
STA: 17+68.32

INSTALL 20 LF 2" PEX

INSTALL HOT TAP  
STA: 18+06.55

SAN MH  
IE IN 35.74 8" NW  
IE IN 35.59 10" N  
IE OUT 35.47 12" S

STM MH  
IE IN 38.28 8" W  
IE IN 38.00 6" NW  
IE OUT 37.91 8" SE

INSTALL 39 LF 1" PEX TO  
EXISTING METER

INSTALL 46 LF 1.5" PEX TO DOUBLE  
CHECK ASSEMBLY

ABANDON EXISTING 8" IN PLACE

RAIL SAFETY ZONE

R/W

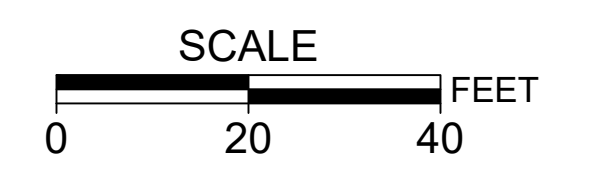
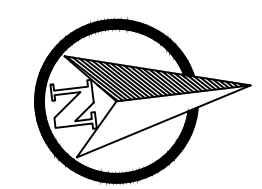
EXISTING 6" FIRE LINE

WATER CONSTRUCTION NOTES:

- 1 INSTALL 6" DI PIPE CLASS 52.
- 2 INSTALL 8" DI PIPE CLASS 52.
- 3 INSTALL 11.25 BEND.
- 4 INSTALL 22.5 BEND.
- 5 INSTALL 8" GATE VALVE MJ WITH VALVE BOX. COM PWS 405.
- 6 INSTALL 8 X 8 X 6 TEE.
- 7 INSTALL FIRE HYDRANT ASSEMBLY. OSD RD 254.
- 8 REMOVE FIRE HYDRANT ASSEMBLY AND CAP 6" FIRE LINE.
- 9 INSTALL 45 BEND.
- 10 PROTECT EXISTING WATER METER.
- 11 REMOVE EXISTING WATER METER.
- 12 INSTALL WATER METER PROVIDED BY CITY.
- 13 INSTALL WATER METER BOX PROVIDED BY CONTRACTOR. COM PWS 401 AND 402.
- 14 HORIZONTAL DRILL ENCASED WATER LINE. STEEL CASING 2X DIAMETER OF WATER LINE. MINIMUM DEPTH 5.5'.
- 15 INSTALL WATER QUALITY SAMPLE STATION. KUPFERLE ECLIPSE 88-S WITH COM LOGO. COM PWS 400 AND OSD RD 282.

NOTES:

- 1. CONTRACTOR TO POTHOLE CONNECTION LOCATIONS WITH CITY. RESTRAINT TO BE DETERMINED IN THE FIELD. SEE SPECIAL PROVISIONS.
- 2. DO NOT ABANDON EXISTING MAIN OR HYDRANTS PRIOR TO INSTALLATION AND ACTIVATION OF PROPOSED MAIN AND HYDRANTS.
- 3. MAINTAIN 10 FT MIN HORIZONTAL AND 1.5 FT MIN VERTICAL SEPARATION BETWEEN WATER AND SANITARY OR STORM SEWER. WHEN SEPARATION IS INFEASIBLE, ENCASE WATER LINE EXTENDING 10 FT BEYOND CONFLICT ZONE.
- 4. MAINTAIN 1 FT HORIZONTAL AND VERTICAL SEPARATION BETWEEN WATER AND GAS PER NW NATURAL.
- 5. FOR WORK WITHIN RAIL SAFETY ZONE CONTRACTOR REQUIRED TO OBTAIN APPROVED PERMIT FROM OREGON PACIFIC RAILROAD.
- 6. REMOVE ALL VALVE CAN TOPS ON EXISTING MAIN. RETURN PARTS TO COM.
- 7. ALL PEX IS PE-XA OR MUNICIPEX.
- 8. ALL MJ ARE MEGA-LUG ON NEW DIP CONNECTIONS.
- 9. ALL WORK IN 17TH AVENUE WILL BE NIGHT WORK.
- 10. OBTAIN TEMPORARY STREET USE PERMIT FROM PORTLAND BUREAU OF TRANSPORTATION IF WORK REQUIRED ON NORTH SIDE OF OCHOCO STREET AND CITY OF PORTLAND RIGHT-OF-WAY.



MATCH LINE - SEE SHEET WT3

MATCH LINE - SEE SHEET WT5

NO.	DATE	BY	REVISIONS

DESIGNED	BB	12/14/2018
DRAFTED	BB	5/8/2019
CHECKED	WM	5/22/2019
APPROVED	JG	12/23/2019



 **CITY OF MILWAUKIE**

6101 SE JOHNSON CREEK BLVD.  
MILWAUKIE, OR 97206

PHONE: 503-786-7600  
FAX: 503-774-8236

**2020 SE MCBROD AVENUE IMPROVEMENTS**

WATER PLAN

PROJECT NO.:	CIP2015-W27	CONTRACT NO.:		DATE:	1/3/2020	SHEET NO.:	WT4
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TAX LOT 402  
TAX MAP 1 1E 26AA  
9111 SE MCBROD AVE

TAX LOT 100  
TAX MAP 1 1E 26AA  
9200 SE M'CLOUGHLIN BLVD

TAX LOT 100  
TAX MAP 1 1E 26AA  
9200 SE M'CLOUGHLIN BLVD

WATER CONSTRUCTION NOTES:

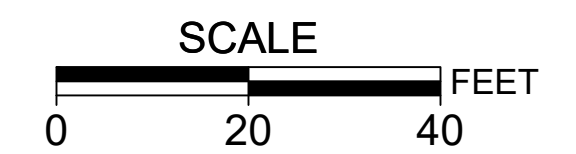
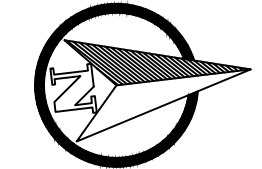
- 1 INSTALL 6" DI PIPE CLASS 52.
- 2 INSTALL 8" DI PIPE CLASS 52.
- 3 INSTALL 11.25 BEND.
- 4 INSTALL 22.5 BEND.
- 5 INSTALL 8" GATE VALVE MJ WITH VALVE BOX. COM PWS 405.
- 6 INSTALL 8 X 8 X 6 TEE.
- 7 INSTALL FIRE HYDRANT ASSEMBLY. OSD RD 254.
- 8 REMOVE FIRE HYDRANT ASSEMBLY AND CAP 6" FIRE LINE.
- 9 INSTALL 45 BEND.
- 10 PROTECT EXISTING WATER METER.
- 11 REMOVE EXISTING WATER METER.
- 12 INSTALL WATER METER PROVIDED BY CITY.
- 13 INSTALL WATER METER BOX PROVIDED BY CONTRACTOR. COM PWS 401 AND 402.
- 14 HORIZONTAL DRILL ENCASED WATER LINE. STEEL CASING 2X DIAMETER OF WATER LINE. MINIMUM DEPTH 5.5'.
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NOTES:

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- 4. MAINTAIN 1 FT HORIZONTAL AND VERTICAL SEPARATION BETWEEN WATER AND GAS PER NW NATURAL.
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- 10. OBTAIN TEMPORARY STREET USE PERMIT FROM PORTLAND BUREAU OF TRANSPORTATION IF WORK REQUIRED ON NORTH SIDE OF OCHOCO STREET AND CITY OF PORTLAND RIGHT-OF-WAY.

MATCH LINE - SEE SHEET WT4

MATCH LINE - SEE SHEET WT6



NO.	DATE	BY	REVISIONS

DESIGNED	BB	12/14/2018
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CHECKED	WM	5/22/2019
APPROVED	JG	12/23/2019

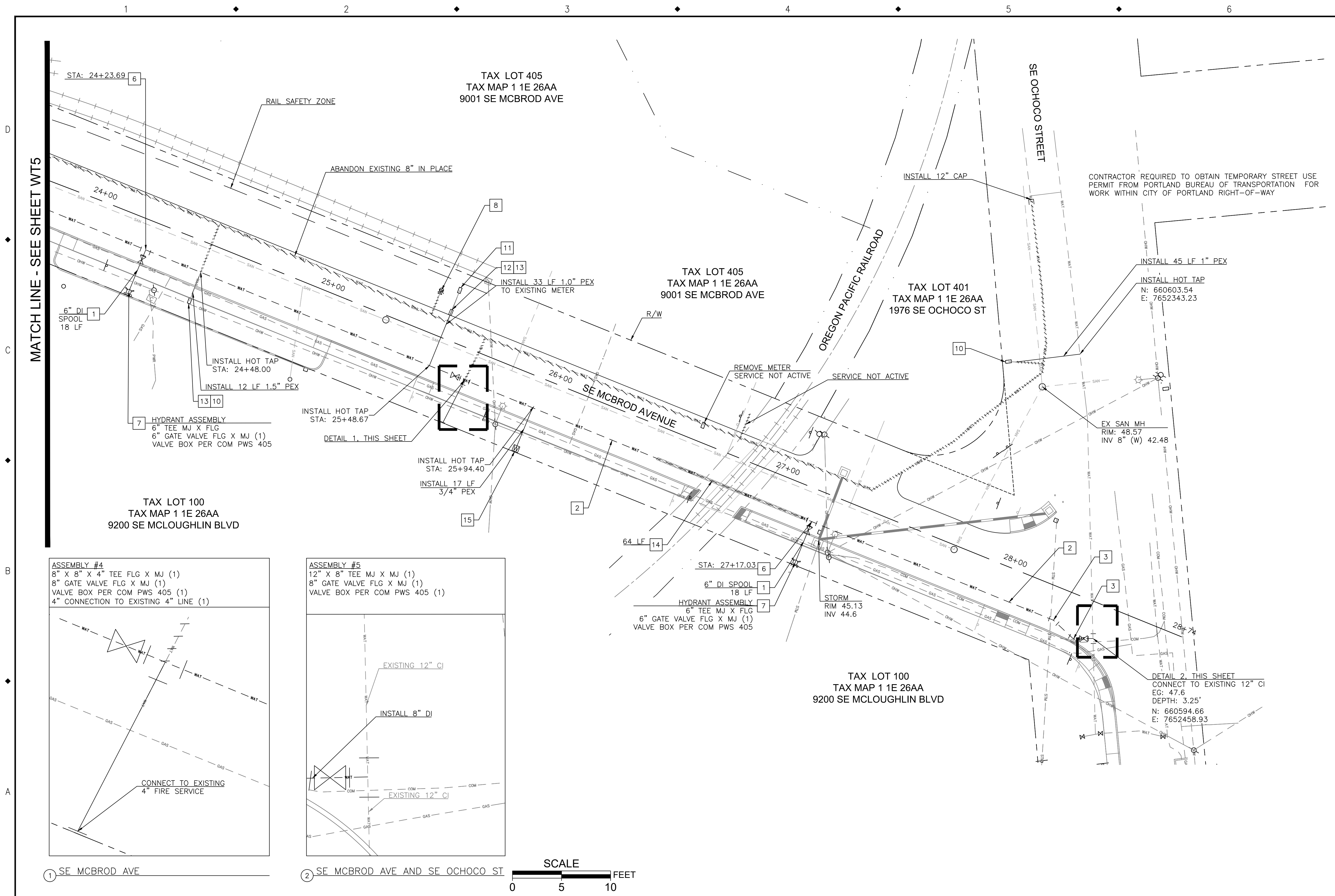



**CITY OF MILWAUKIE**  
 6101 SE JOHNSON CREEK BLVD.  
 MILWAUKIE, OR 97206  
 PHONE: 503-786-7600  
 FAX: 503-774-8236

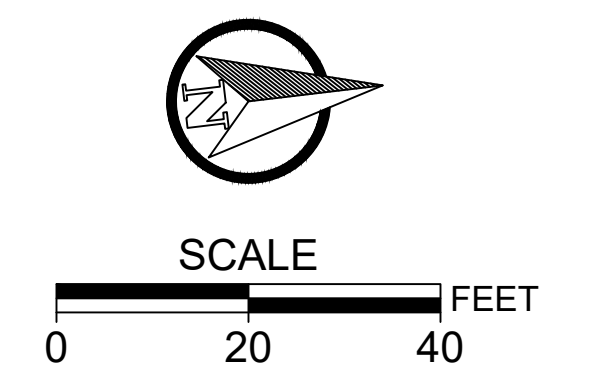
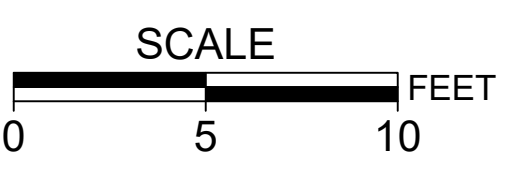
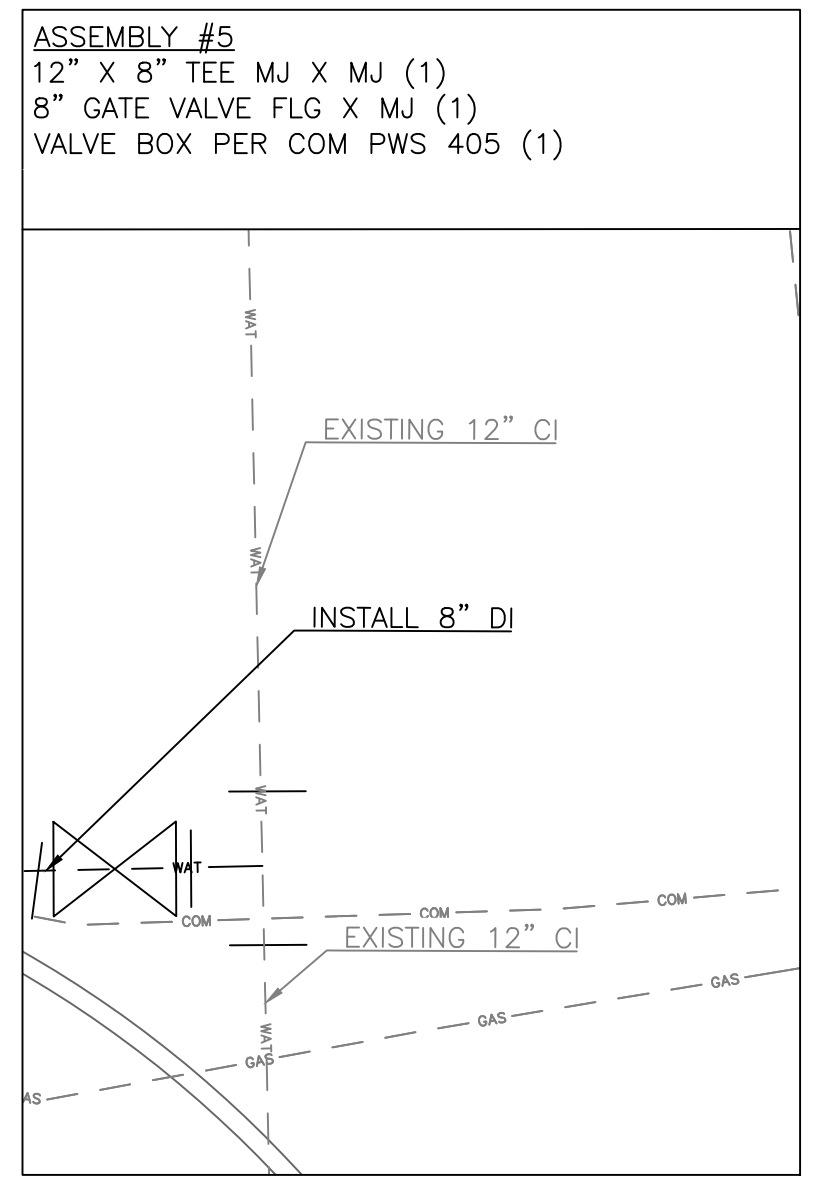
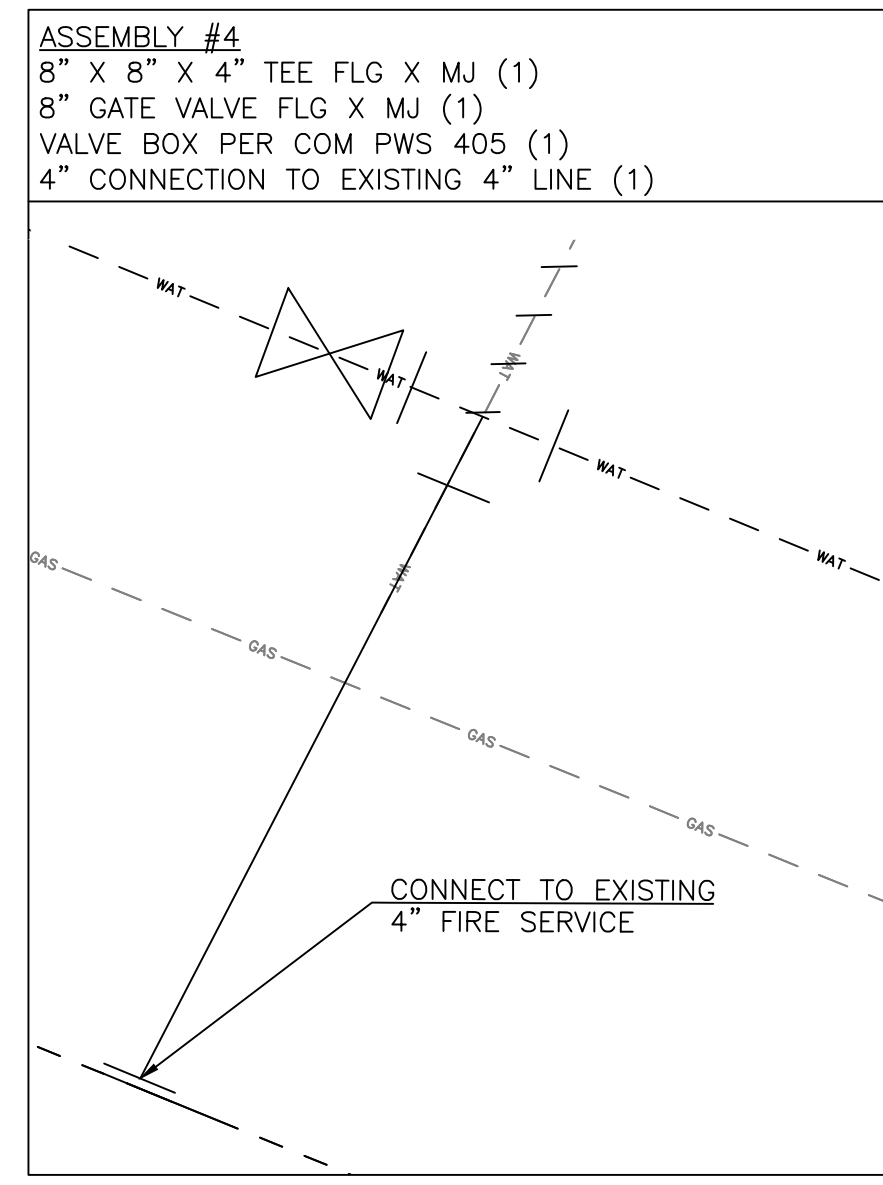
**2020 SE MCBROD AVENUE IMPROVEMENTS**

WATER PLAN

PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: WT5
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- WATER CONSTRUCTION NOTES:**
- 1 INSTALL 6" DI PIPE CLASS 52.
  - 2 INSTALL 8" DI PIPE CLASS 52.
  - 3 INSTALL 11.25 BEND.
  - 4 INSTALL 22.5 BEND.
  - 5 INSTALL 8" GATE VALVE MJ WITH VALVE BOX. COM PWS 405.
  - 6 INSTALL 8 X 8 X 6 TEE.
  - 7 INSTALL FIRE HYDRANT ASSEMBLY. OSD RD 254.
  - 8 REMOVE FIRE HYDRANT ASSEMBLY AND CAP 6" FIRE LINE.
  - 9 INSTALL 45 BEND.
  - 10 PROTECT EXISTING WATER METER.
  - 11 REMOVE EXISTING WATER METER.
  - 12 INSTALL WATER METER PROVIDED BY CITY.
  - 13 INSTALL WATER METER BOX PROVIDED BY CONTRACTOR. COM PWS 401 AND 402.
  - 14 HORIZONTAL DRILL ENCASED WATER LINE. STEEL CASING 2X DIAMETER OF WATER LINE. MINIMUM DEPTH 5.5'.
  - 15 INSTALL WATER QUALITY SAMPLE STATION. KUPFERLE ECLIPSE 88-S WITH COM LOGO. COM PWS 400 AND OSD RD 282.
- NOTES:**
1. CONTRACTOR TO POTHOLE CONNECTION LOCATIONS WITH CITY. RESTRAINT TO BE DETERMINED IN THE FIELD. SEE SPECIAL PROVISIONS.
  2. DO NOT ABANDON EXISTING MAIN OR HYDRANTS PRIOR TO INSTALLATION AND ACTIVATION OF PROPOSED MAIN AND HYDRANTS.
  3. MAINTAIN 10 FT MIN HORIZONTAL AND 1.5 FT MIN VERTICAL SEPARATION BETWEEN WATER AND SANITARY OR STORM SEWER. WHEN SEPARATION IS INFEASIBLE, ENCASE WATER LINE EXTENDING 10 FT BEYOND CONFLICT ZONE.
  4. MAINTAIN 1 FT HORIZONTAL AND VERTICAL SEPARATION BETWEEN WATER AND GAS PER NW NATURAL.
  5. FOR WORK WITHIN RAIL SAFETY ZONE CONTRACTOR REQUIRED TO OBTAIN APPROVED PERMIT FROM OREGON PACIFIC RAILROAD.
  6. REMOVE ALL VALVE CAN TOPS ON EXISTING MAIN. RETURN PARTS TO COM.
  7. ALL PEX IS PEXA OR MUNICIPEX.
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  9. ALL WORK IN 17TH AVENUE WILL BE NIGHT WORK.
  10. OBTAIN TEMPORARY STREET USE PERMIT FROM PORTLAND BUREAU OF TRANSPORTATION IF WORK REQUIRED ON NORTH SIDE OF OCHOCO STREET AND CITY OF PORTLAND RIGHT-OF-WAY.



NO.	DATE	BY	REVISIONS

DESIGNED	BB	12/14/2018	DATE
DRAFTED	BB	5/8/2019	DATE
CHECKED	WM	5/22/2019	DATE
APPROVED	JG	12/23/2019	DATE



**CITY OF MILWAUKIE**

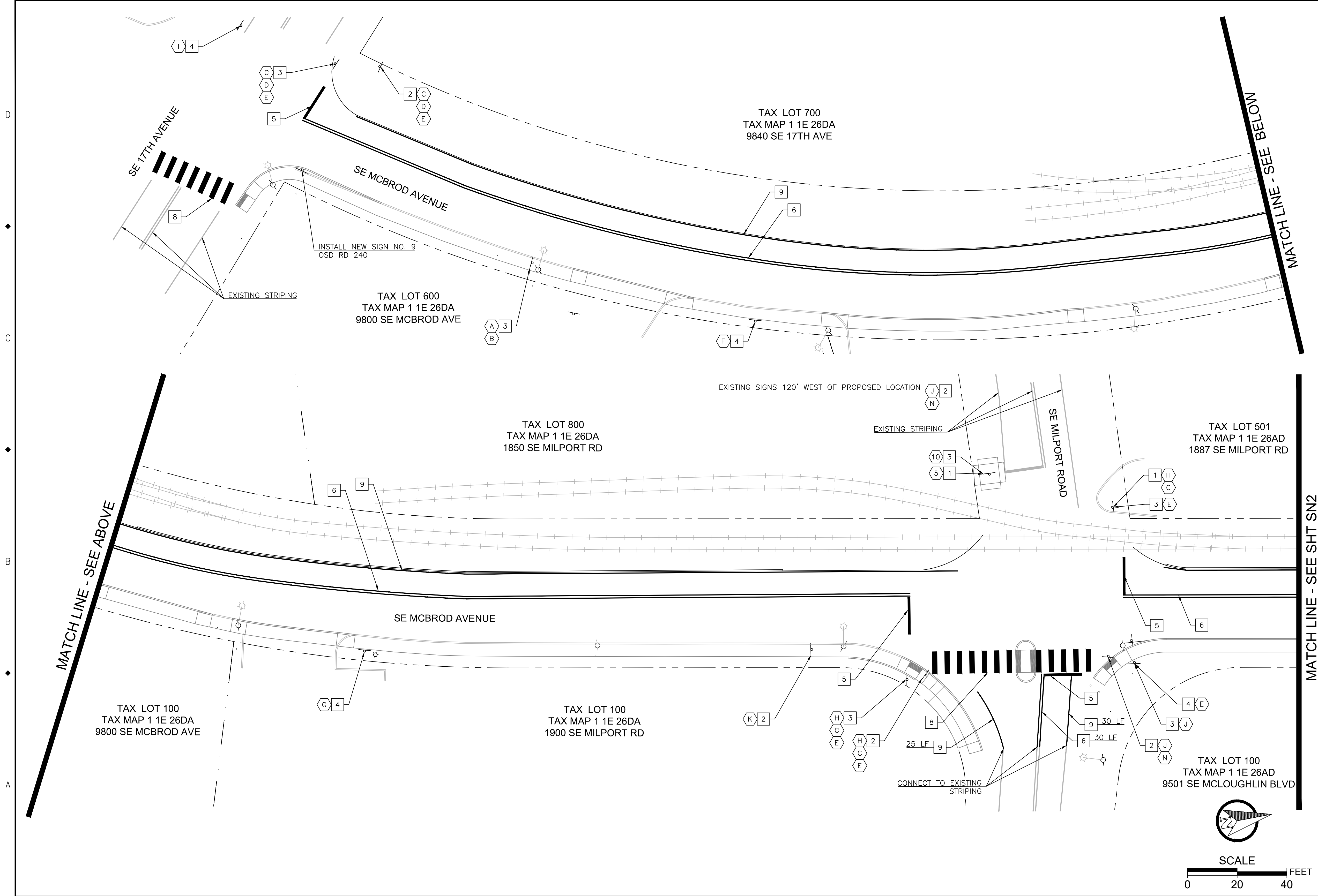
6101 SE JOHNSON CREEK BLVD.  
 MILWAUKIE, OR 97206

PHONE: 503-786-7600  
 FAX: 503-774-8236

**2020 SE MCBROD AVENUE IMPROVEMENTS**

WATER PLAN

PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: WT6
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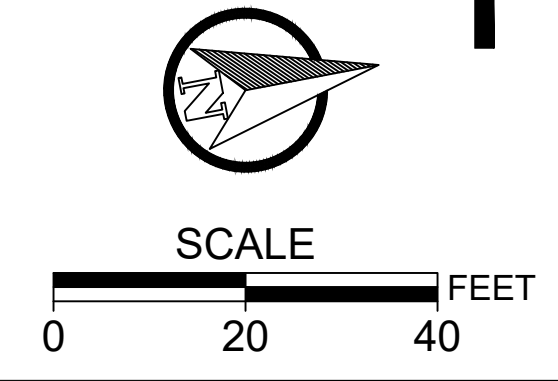


- SIGNAGE AND STRIPING CONSTRUCTION NOTES:**
- 1 INSTALL NEW STREET SIGN(S).
  - 2 REMOVE EXISTING STREET SIGN(S) AND POST. SALVAGE STREET SIGN(S).
  - 3 REINSTALL EXISTING STREET SIGN(S) ON NEW 2"-12 GA (1) POST LOCATED BEHIND SIDEWALK. OSD TM 200, 681, 687.
  - 4 INSTALL NEW STREET SIGN(S) ON NEW 2"-12 GA (1) POST LOCATED BEHIND SIDEWALK. OSD TM 200, 681, 687.
  - 5 INSTALL WHITE THERMOPLASTIC STRIPE (METHOD AB), TYPE S. OSD TM 503 AND TM 530.
  - 6 INSTALL YELLOW PAINTED PAVEMENT MARKINGS, TYPE D. OSD TM 500 AND 561.
  - 7 INSTALL WHITE THERMOPLASTIC STRIPE (METHOD AB) TYPE RR. OSD TM 501 AND TM 505.
  - 8 INSTALL WHITE THERMOPLASTIC PAVEMENT MARKING (METHOD AB INSTALL), TYPE CW-SC. OSD TM 500 AND TM 530.
  - 9 INSTALL WHITE PAINTED PAVEMENT MARKINGS, TYPE W. OSD TM 500 AND TM 530.

- NOTES:**
1. INSTALL TEMPORARY NO PARKING SIGNS THROUGHOUT PROJECT AREA PRIOR TO THE START OF CONSTRUCTION.
  2. INSTALL TEMPORARY NEW TRAFFIC PATTERN AHEAD SIGNAGE ON MILPORT ROAD PRIOR TO THE REMOVAL OF YIELD SIGNS AND INSTALLATION OF STOP SIGNS.
  3. ALL EXISTING STREET SIGNS TO BE REMOVED SHALL BE SALVAGED AND RETURNED TO PUBLIC WORKS.
  4. CONFIRM FINAL STREET SIGNAGE WITH CITY PRIOR TO INSTALLATION.
  5. FOR WORK WITHIN RAIL SAFETY ZONE CONTRACTOR REQUIRED TO OBTAIN APPROVED PERMIT FROM OREGON PACIFIC RAILROAD.

**SIGN TABLE**

Code	Sign Description	Sign Type	Sign Size	Color/Background
A	SPEED LIMIT 20	OR2-1	24X30	RED ON WHITE HIP
B	NO PARKING IN THIS BLOCK	R7-1	12X18	GREEN ON WHITE HIP
C	SE MCBROD AVE	D3	30X8	GREEN ON WHITE HIP
D	SE 17th AVE	D3	30X8	GREEN ON WHITE HIP
E	STOP	R1-1	30X30	RED ON WHITE HIP
F	NO PARKING IN THIS BLOCK	R-7	12X18	RED ON WHITE HIP
G	NO PARKING IN THIS BLOCK	R-7	12X18	RED ON WHITE HIP
H	SE Milport Rd	D3	30X8	GREEN ON WHITE HIP
I	CROSSWALK CLOSED	OR2-1	24X30	
J	RAILROAD CROSSING	OPRR		
K	YIELD	W3-3	30X30	BLACK WITH RED STOP ON YELLOW HIP
L	SE OCHOCO ST	D3	30X8	GREEN ON WHITE HIP
M	Railroad Crossing Advance	W10-1	30	BLACK ON YELLOW HIP
N	YIELD	R1-2	30	RED ON WHITE HIP
O	Walking	W11-2	30X30	BLACK ON YELLOW HIP



NO.	DATE	BY	REVISIONS

BB 12/14/2018  
 DESIGNED DATE  
 BB 5/8/2019  
 DRAFTED DATE  
 WM 5/22/2019  
 CHECKED DATE  
 JG 12/23/2019  
 APPROVED DATE

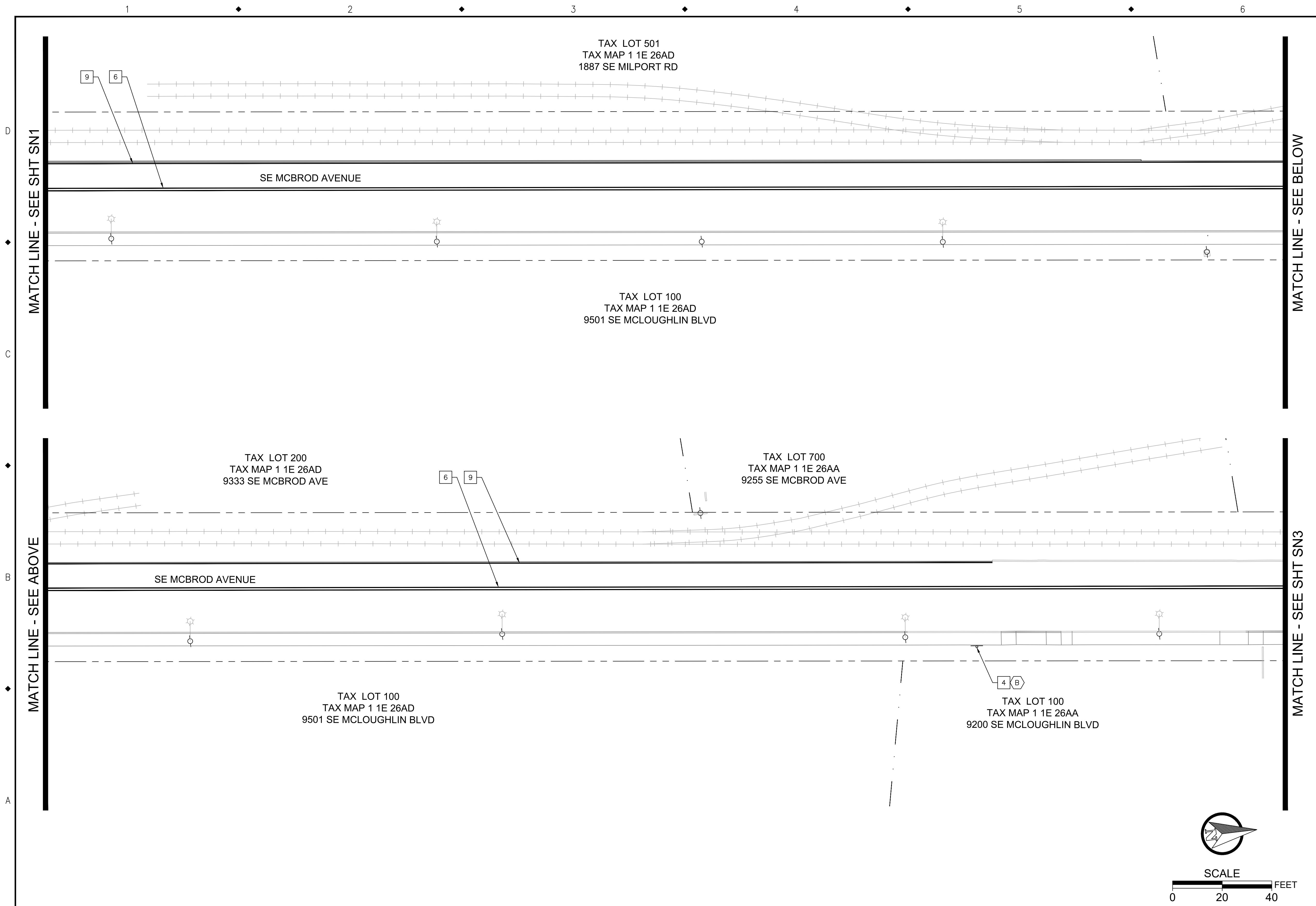


**CITY OF MILWAUKIE**  
 6101 SE JOHNSON CREEK BLVD.  
 MILWAUKIE, OR 97206  
 PHONE: 503-786-7600  
 FAX: 503-774-8236

**2020 SE MCBROD AVENUE IMPROVEMENTS**

SIGNAGE AND STRIPING PLAN

PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: SN1
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**SIGNAGE AND STRIPING CONSTRUCTION NOTES:**

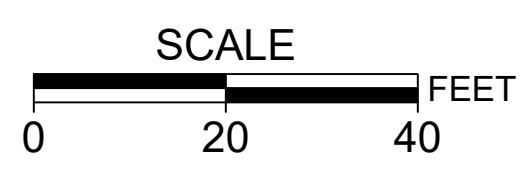
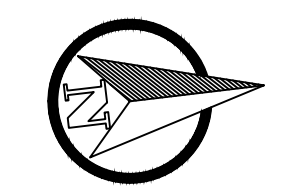
- 1 INSTALL NEW STREET SIGN(S).
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- 3 REINSTALL EXISTING STREET SIGN(S) ON NEW 2"-12 GA (1) POST LOCATED BEHIND SIDEWALK. OSD TM 200, 681, 687.
- 4 INSTALL NEW STREET SIGN(S) ON NEW 2"-12 GA (1) POST LOCATED BEHIND SIDEWALK. OSD TM 200, 681, 687.
- 5 INSTALL WHITE THERMOPLASTIC STRIPE (METHOD AB), TYPE S. OSD TM 503 AND TM 530.
- 6 INSTALL YELLOW PAINTED PAVEMENT MARKINGS, TYPE D. OSD TM 500 AND 561.
- 7 INSTALL WHITE THERMOPLASTIC STRIPE (METHOD AB) TYPE RR. OSD TM 501 AND TM 505.
- 8 INSTALL WHITE THERMOPLASTIC PAVEMENT MARKING (METHOD AB INSTALL), TYPE CW-SC. OSD TM 500 AND TM 530.
- 9 INSTALL WHITE PAINTED PAVEMENT MARKINGS, TYPE W. OSD TM 500 AND TM 530.

**NOTES:**

1. INSTALL TEMPORARY NO PARKING SIGNS THROUGHOUT PROJECT AREA PRIOR TO THE START OF CONSTRUCTION.
2. INSTALL TEMPORARY NEW TRAFFIC PATTERN AHEAD SIGNAGE ON MILPORT ROAD PRIOR TO THE REMOVAL OF YIELD SIGNS AND INSTALLATION OF STOP SIGNS.
3. ALL EXISTING STREET SIGNS TO BE REMOVED SHALL BE SALVAGED AND RETURNED TO PUBLIC WORKS.
4. CONFIRM FINAL STREET SIGNAGE WITH CITY PRIOR TO INSTALLATION.
5. FOR WORK WITHIN RAIL SAFETY ZONE CONTRACTOR REQUIRED TO OBTAIN APPROVED PERMIT FROM OREGON PACIFIC RAILROAD.

**SIGN TABLE**

Letter	Sign Description	Code	Size	Color/Background
A	SPEED LIMIT 20	OR2-1	24X30	RED ON WHITE HIP
B	NO PARKING IN THIS BLOCK	R7-1	12X18	GREEN ON WHITE HIP
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E	STOP	R1-1	30X30	RED ON WHITE HIP
F	NO PARKING IN THIS BLOCK	R-7	12X18	RED ON WHITE HIP
G	NO PARKING IN THIS BLOCK	R-7	12X18	RED ON WHITE HIP
H	SE Milport RD	D3	30X8	GREEN ON WHITE HIP
I	CROSSWALK CLOSED	OR2-1	24X30	
J	RAILROAD CROSSING	OPRR		
K	YIELD	W3-3	30X30	BLACK WITH RED STOP ON YELLOW HIP
L	SE MCBROD ST	D3	30X8	GREEN ON WHITE HIP
M	RAILROAD CROSSING	W10-1	30	BLACK ON YELLOW HIP
N	YIELD	R1-2	30	RED ON WHITE HIP
O	PEDESTRIAN	W11-2	30X30	BLACK ON YELLOW HIP



NO.	DATE	BY	REVISIONS

DESIGNED	BB	12/14/2018
DRAFTED	BB	5/8/2019
CHECKED	WM	5/22/2019
APPROVED	JG	12/23/2019



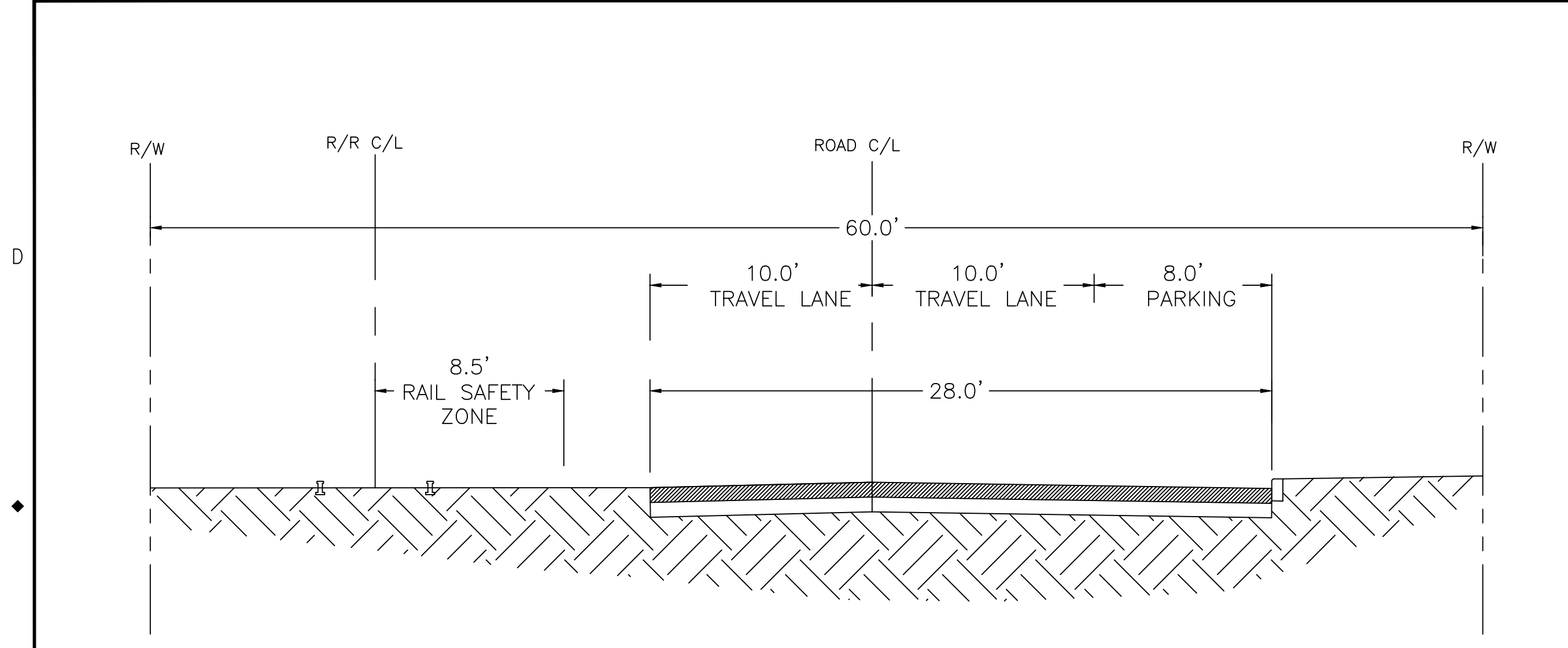

**CITY OF MILWAUKIE**  
 6101 SE JOHNSON CREEK BLVD.  
 MILWAUKIE, OR 97206  
 PHONE: 503-786-7600  
 FAX: 503-774-8236

**2020 SE MCBROD AVENUE IMPROVEMENTS**  
**SIGNAGE AND STRIPING PLAN**

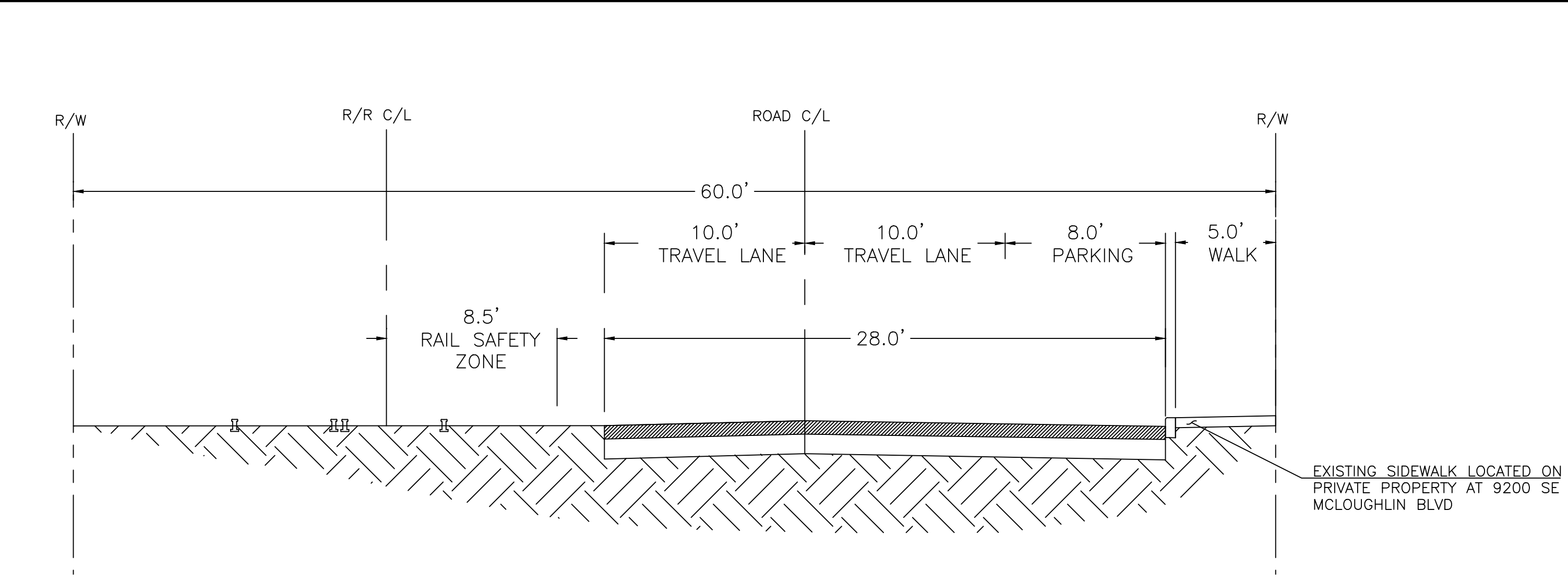
PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: SN2
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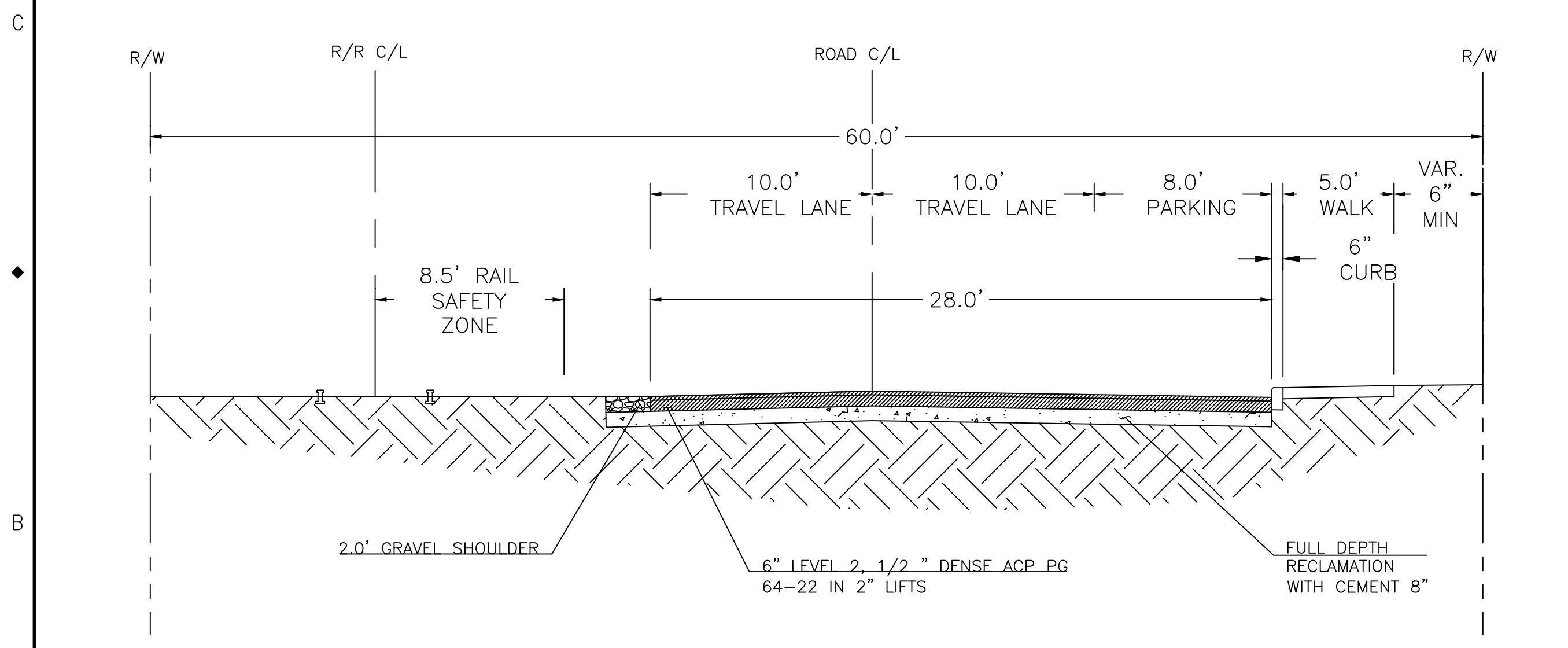




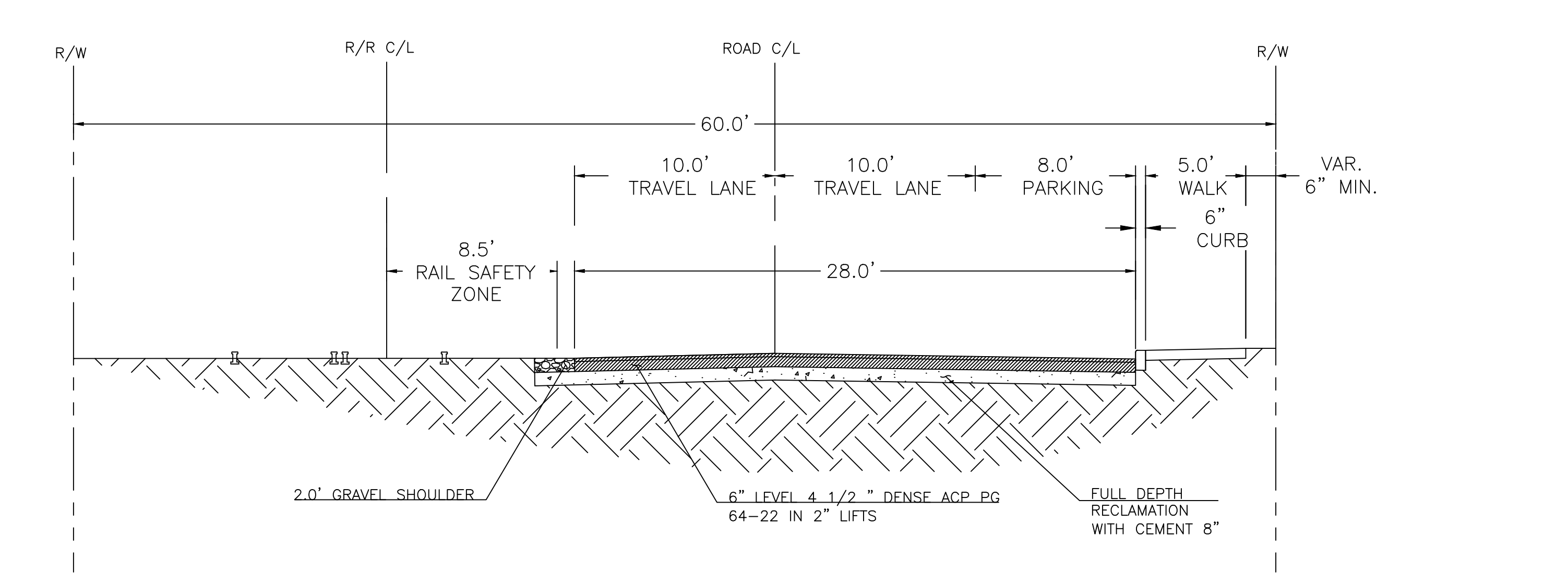
1 EXISTING SE MCBROD AVE SECTION STA. 3+31.11 TO 21+75.00, STA. 22+67.40 TO 25+60.71



3 EXISTING SE MCBROD AVE SECTION STA. 21+75.00 TO 22+67.40



2 PROPOSED SE MCBROD AVE SECTION STA. 3+31.11 TO 21+75.00, STA. 22+67.40 TO 25+60.71



4 PROPOSED SE MCBROD AVE SECTION STA. 21+75.00 TO 22+67.40

NOTES.

- 1. RAIL SAFETY ZONE EXTENDS 8.5' FROM TRACK CENTERLINE. CONTRACTOR REQUIRED TO OBTAIN ROADWAY PROTECTION PERMIT FROM OREGON PACIFIC RAILROAD FOR ALL WORK WITHIN RAIL SAFETY ZONE.

NO.	DATE	BY	REVISIONS

DESIGNED	BB	12/14/2018
DRAFTED	BB	5/8/2019
CHECKED	WM	5/22/2019
APPROVED	JG	12/23/2019



**CITY OF MILWAUKIE**

6101 SE JOHNSON CREEK BLVD.  
MILWAUKIE, OR 97206

PHONE: 503-786-7600  
FAX: 503-774-8236

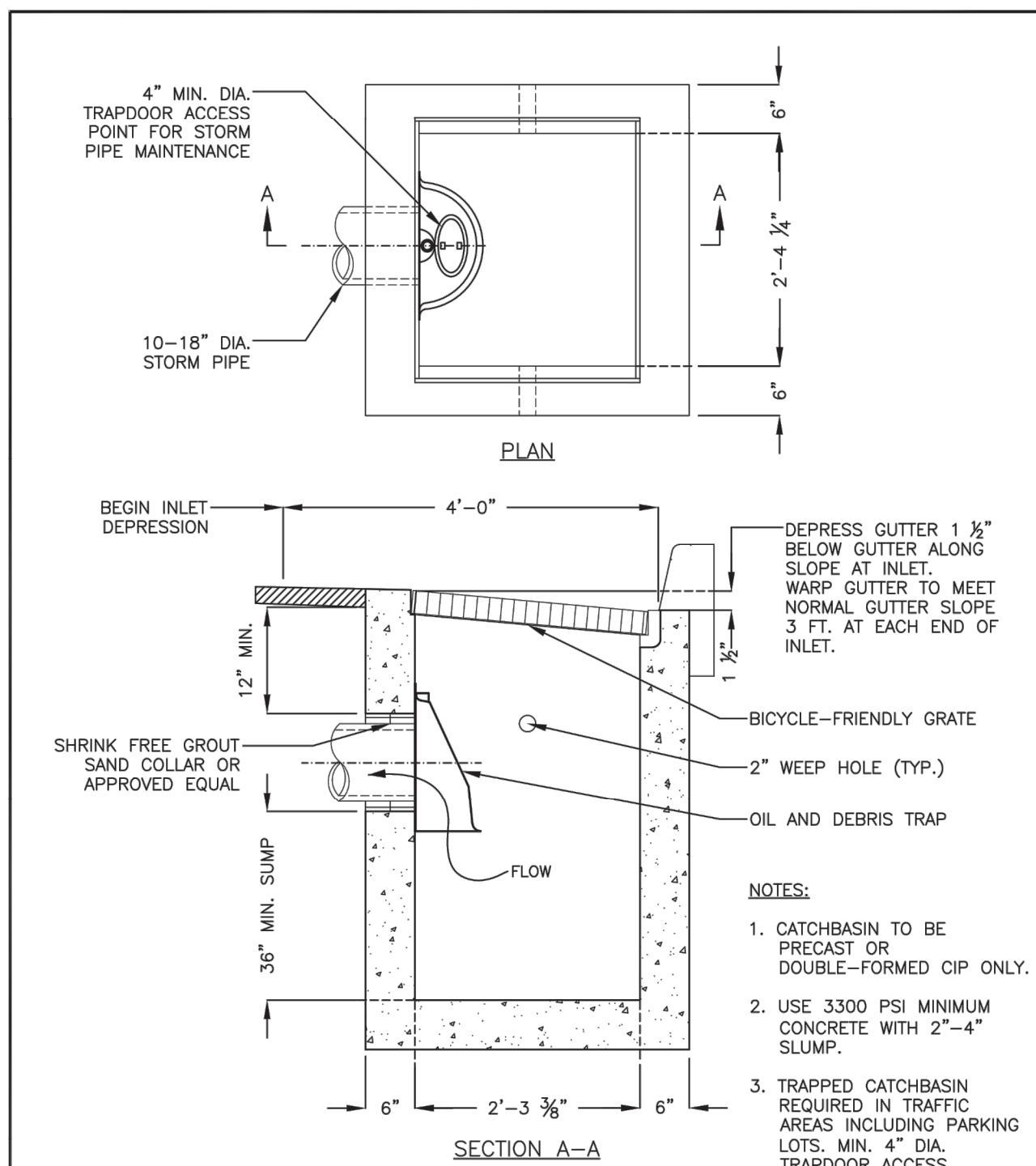
**2020 SE MCBROD AVENUE IMPROVEMENTS**

TYPICAL SECTIONS

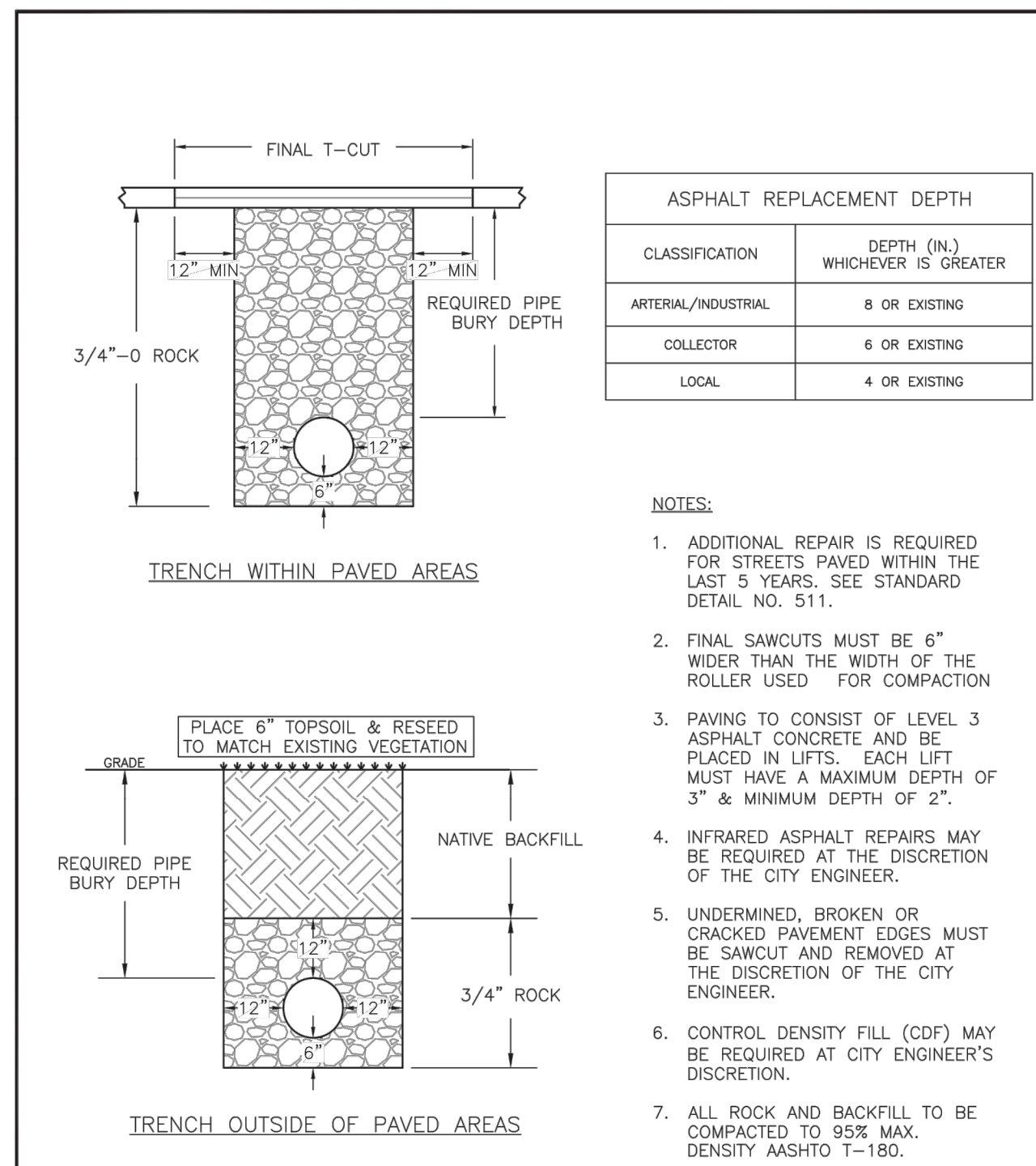
PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: DT1
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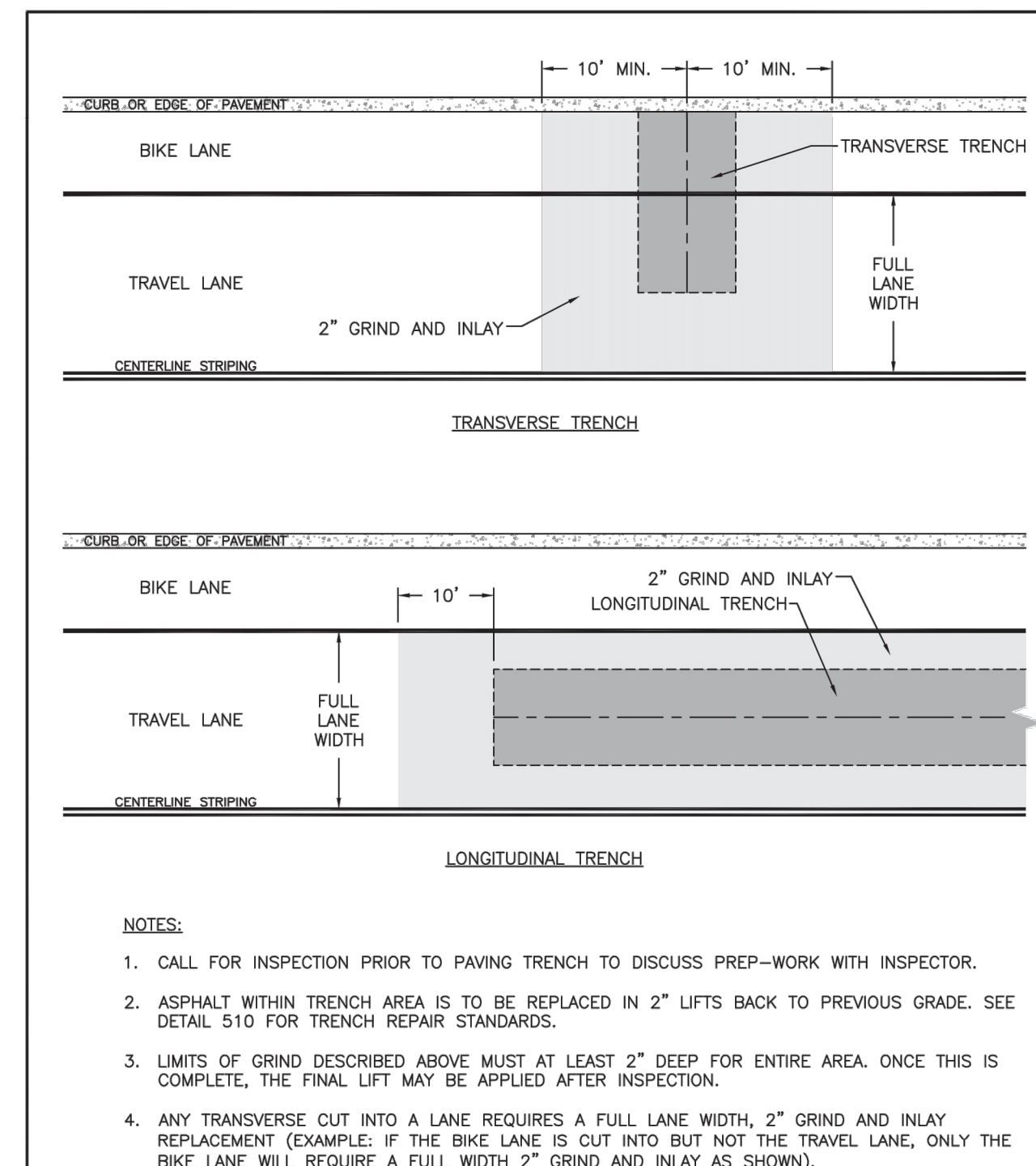




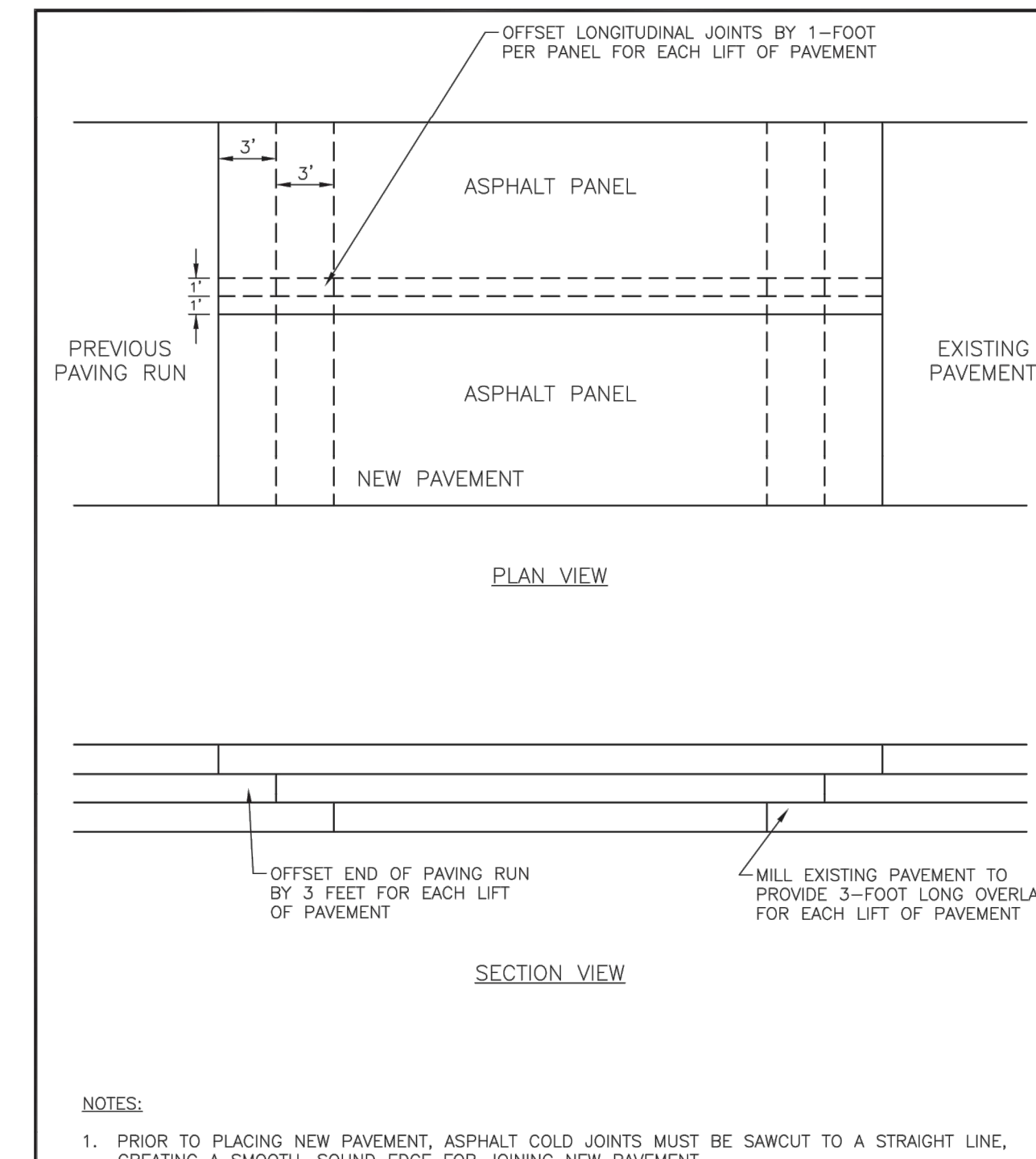
CITY OF MILWAUKIE, OREGON – PUBLIC WORKS DEPT.		DRAWING NO.	
<b>G-2 Trapped Catchbasin</b>		<b>202</b>	
APPROVED	NO.	REVISIONS	DATE BY
CITY ENGINEER	1	ADJUST MIN. PIPE SIZE, FORMATTING	12/19 MCB
	2	RENAMBERED DRAWING, ADDED NOTE	11/18 TAP
	3	RENAMBERED DRAWING	08/19 TAP



CITY OF MILWAUKIE, OREGON – PUBLIC WORKS DEPT.		DRAWING NO.	
<b>Trench Patch</b>		<b>510</b>	
APPROVED	NO.	REVISIONS	DATE BY
CITY ENGINEER	3	ADDED T-CUT LANGUAGE	12/14 AB
	4	DRAWING NUMBER CHANGED	11/18 TAP
	5	UPDATED NOTES, DRAWING NUMBER CHANGE	08/19 TAP



CITY OF MILWAUKIE, OREGON – PUBLIC WORKS DEPT.		DRAWING NO.	
<b>Asphalt Repair for Newly Paved Road</b>		<b>511</b>	
APPROVED	NO.	REVISIONS	DATE BY
CITY ENGINEER	3	CLASSIFIED DIMENSIONS	12/14 AB
	4	DRAWING NUMBER CHANGED	11/18 TAP
	5	DRAWING NUMBER CHANGED	08/19 TAP



CITY OF MILWAUKIE, OREGON – PUBLIC WORKS DEPT.		DRAWING NO.	
<b>Asphalt Concrete Pavement Placement</b>		<b>523</b>	
APPROVED	NO.	REVISIONS	DATE BY
CITY ENGINEER	1	NEW DRAWING	08/19 TAP

NO.	DATE	BY	REVISIONS

DESIGNED	BB	12/14/2018
DRAFTED	BB	5/8/2019
CHECKED	WM	5/22/2019
APPROVED	JG	12/23/2019



**CITY OF MILWAUKIE**

6101 SE JOHNSON CREEK BLVD.  
MILWAUKIE, OR 97206

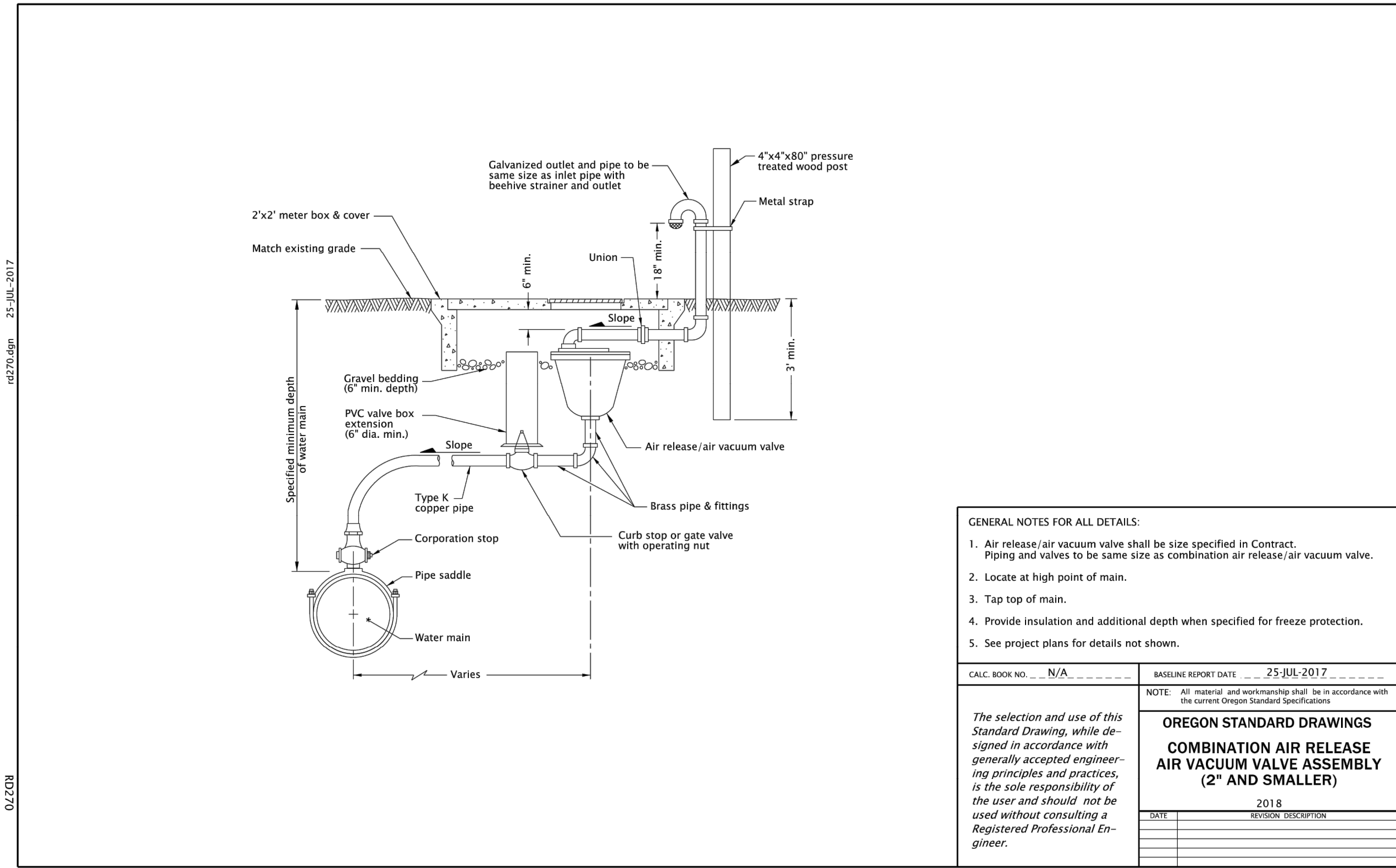
PHONE: 503-786-7600  
FAX: 503-774-8236

**2020 SE MCBROD AVENUE IMPROVEMENTS**

**DETAILS**

PROJECT NO.: CIP2015-W27    CONTRACT NO.:    DATE: 1/3/2020    SHEET NO.: DT3





**GENERAL NOTES FOR ALL DETAILS:**

- Air release/air vacuum valve shall be size specified in Contract. Piping and valves to be same size as combination air release/air vacuum valve.
- Locate at high point of main.
- Tap top of main.
- Provide insulation and additional depth when specified for freeze protection.
- See project plans for details not shown.

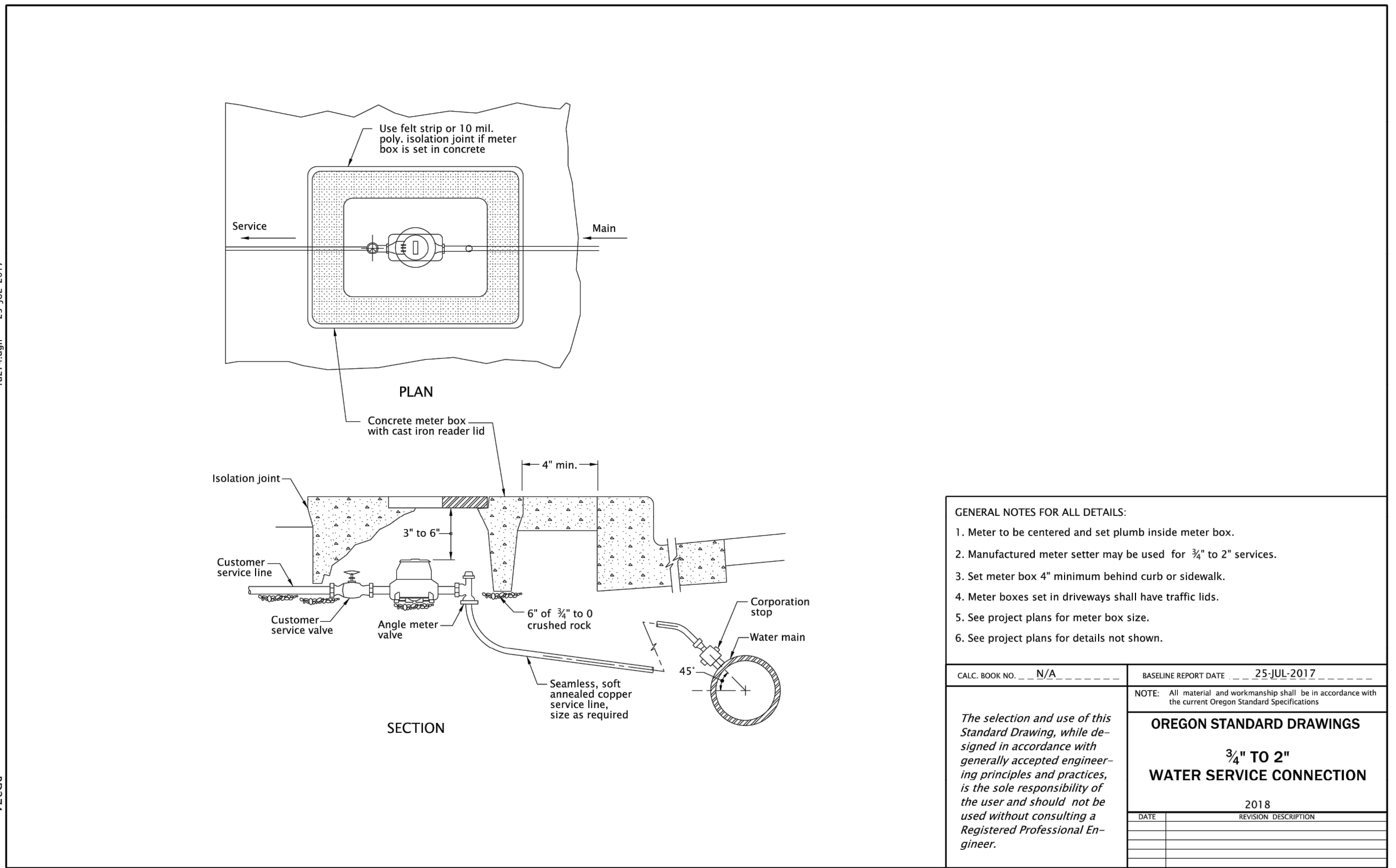
CALC. BOOK NO. N/A BASELINE REPORT DATE 25-JUL-2017

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications.

**OREGON STANDARD DRAWINGS**  
**COMBINATION AIR RELEASE AIR VACUUM VALVE ASSEMBLY (2" AND SMALLER)**

DATE 2018 REVISION DESCRIPTION

Effective Date: June 1, 2019 - November 30, 2019 RD270



**GENERAL NOTES FOR ALL DETAILS:**

- Meter to be centered and set plumb inside meter box.
- Manufactured meter setter may be used for 3/4" to 2" services.
- Set meter box 4" minimum behind curb or sidewalk.
- Meter boxes set in driveways shall have traffic lids.
- See project plans for meter box size.
- See project plans for details not shown.

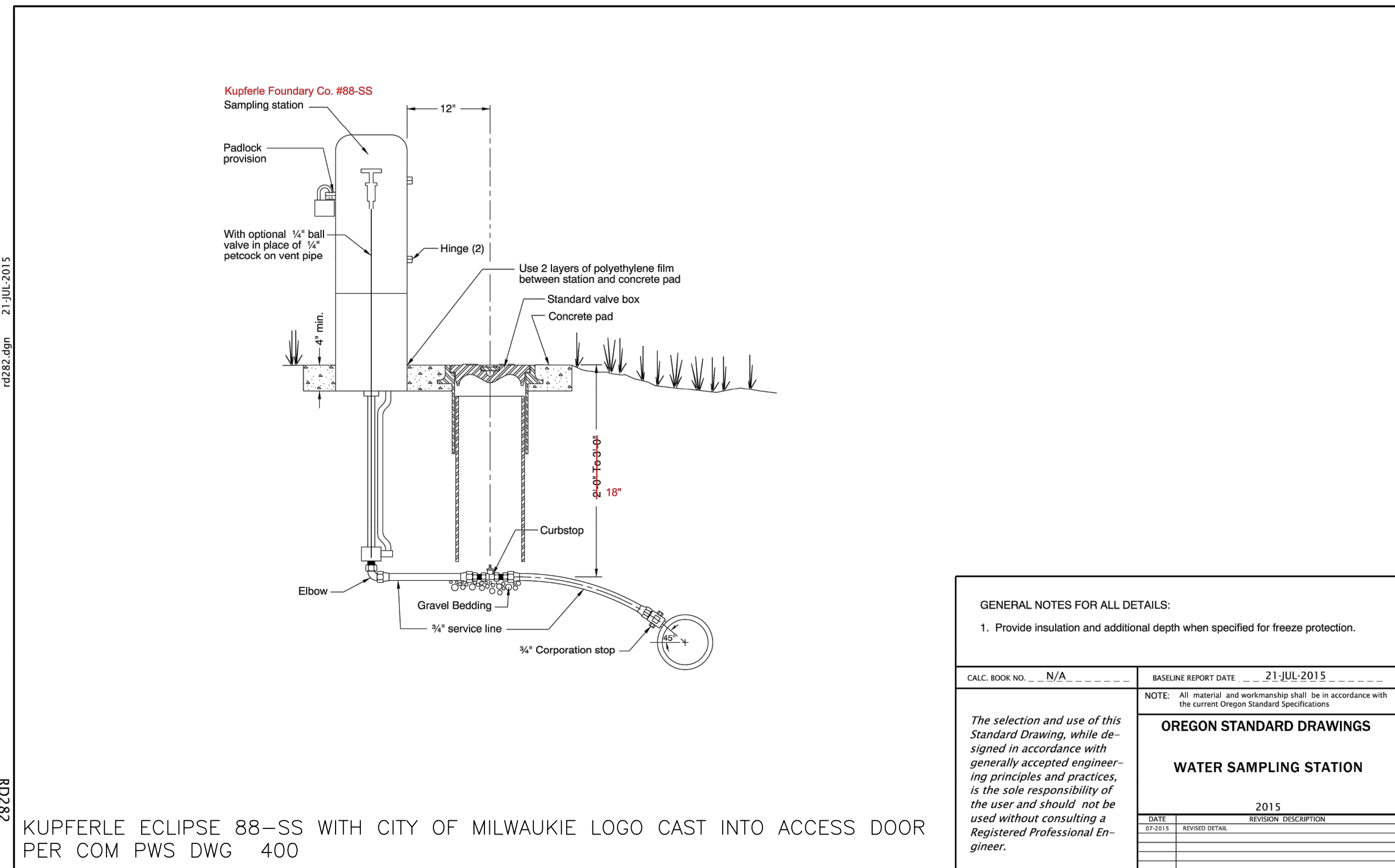
CALC. BOOK NO. N/A BASELINE REPORT DATE 25-JUL-2017

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications.

**OREGON STANDARD DRAWINGS**  
**3/4" TO 2" WATER SERVICE CONNECTION**

DATE 2018 REVISION DESCRIPTION

Effective Date: June 1, 2019 - November 30, 2019 RD274



**GENERAL NOTES FOR ALL DETAILS:**

- Provide insulation and additional depth when specified for freeze protection.

CALC. BOOK NO. N/A BASELINE REPORT DATE 21-JUL-2015

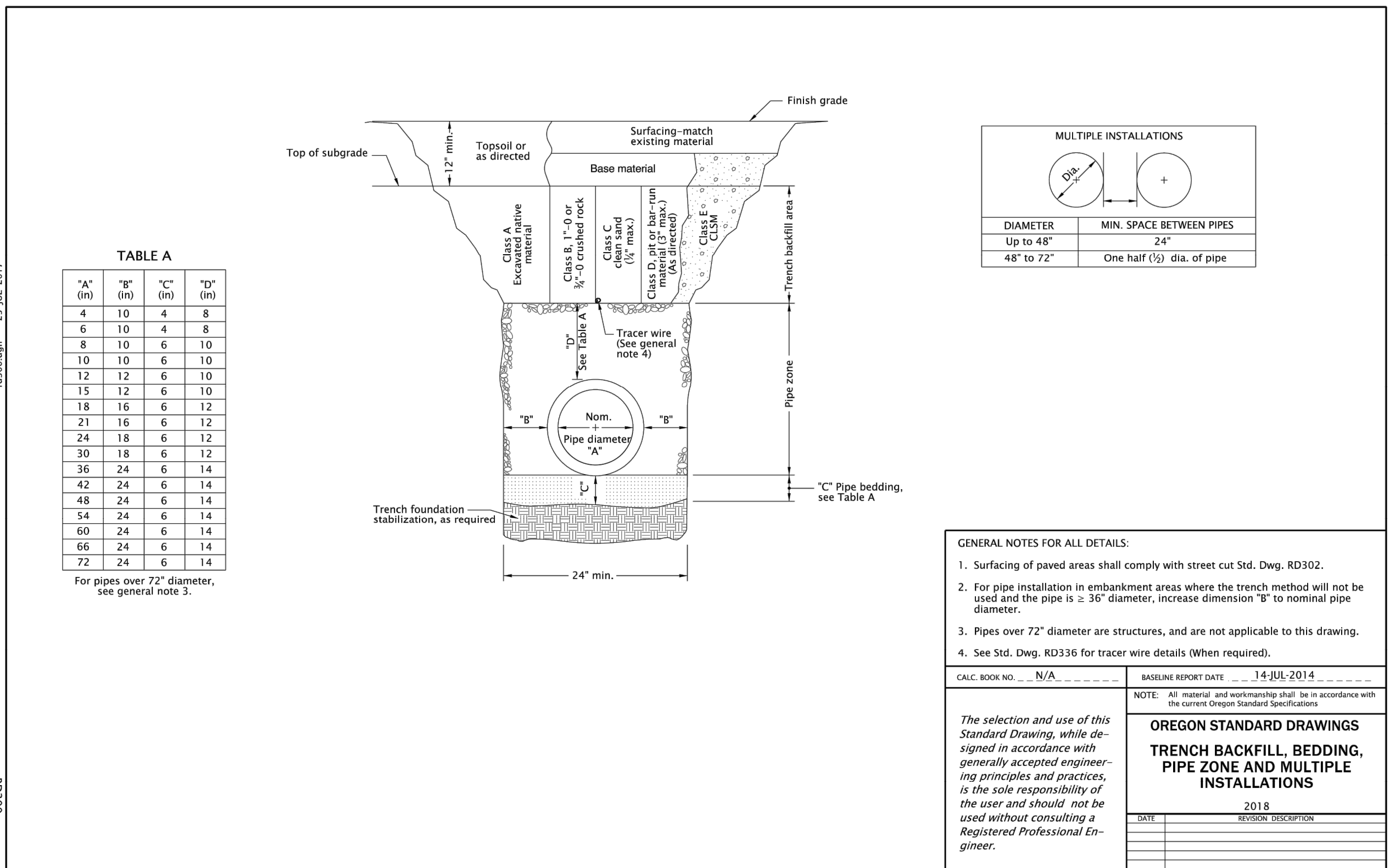
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications.

**OREGON STANDARD DRAWINGS**  
**WATER SAMPLING STATION**

DATE 2015 REVISION DESCRIPTION

KUPFERLE ECLIPSE 88-SS WITH CITY OF MILWAUKIE LOGO CAST INTO ACCESS DOOR PER COM PWS DWG 400

Effective Date: December 1, 2016 - May 31, 2017 RD282



**GENERAL NOTES FOR ALL DETAILS:**

- Surfacing of paved areas shall comply with street cut Std. Dwg. RD302.
- For pipe installation in embankment areas where the trench method will not be used and the pipe is  $\geq 36"$  diameter, increase dimension "B" to nominal pipe diameter.
- Pipes over 72" diameter are structures, and are not applicable to this drawing.
- See Std. Dwg. RD336 for tracer wire details (When required).

CALC. BOOK NO. N/A BASELINE REPORT DATE 14-JUL-2014

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications.

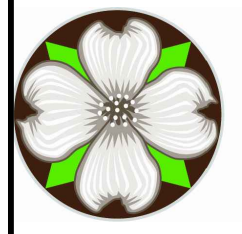
**OREGON STANDARD DRAWINGS**  
**TRENCH BACKFILL, BEDDING, PIPE ZONE AND MULTIPLE INSTALLATIONS**

DATE 2018 REVISION DESCRIPTION

Effective Date: June 1, 2019 - November 30, 2019 RD300

NO.	DATE	BY	REVISIONS

DESIGNED	BB	12/14/2018
DRAFTED	BB	5/8/2019
CHECKED	WM	5/22/2019
APPROVED	JG	12/23/2019



**CITY OF MILWAUKIE**

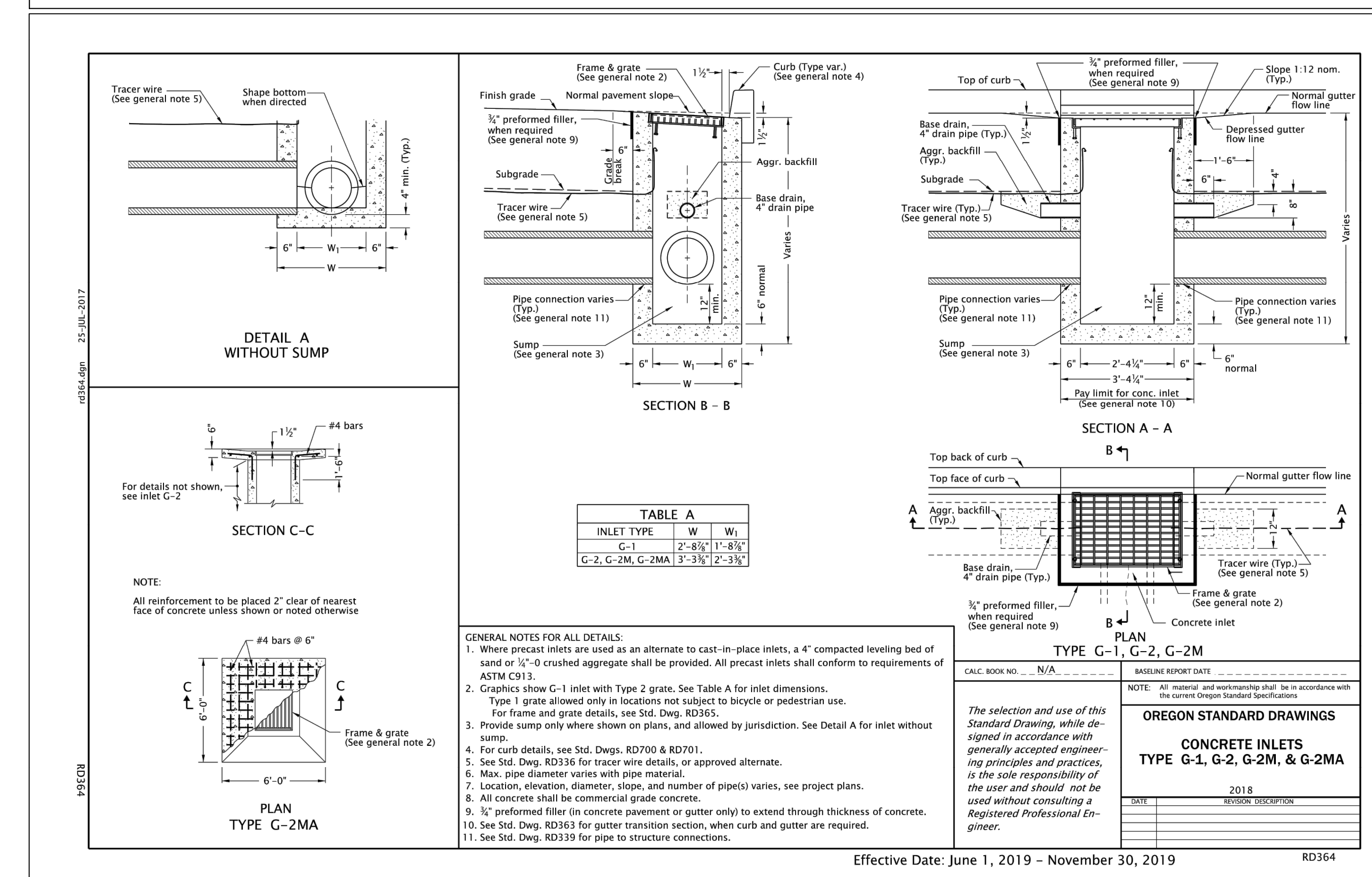
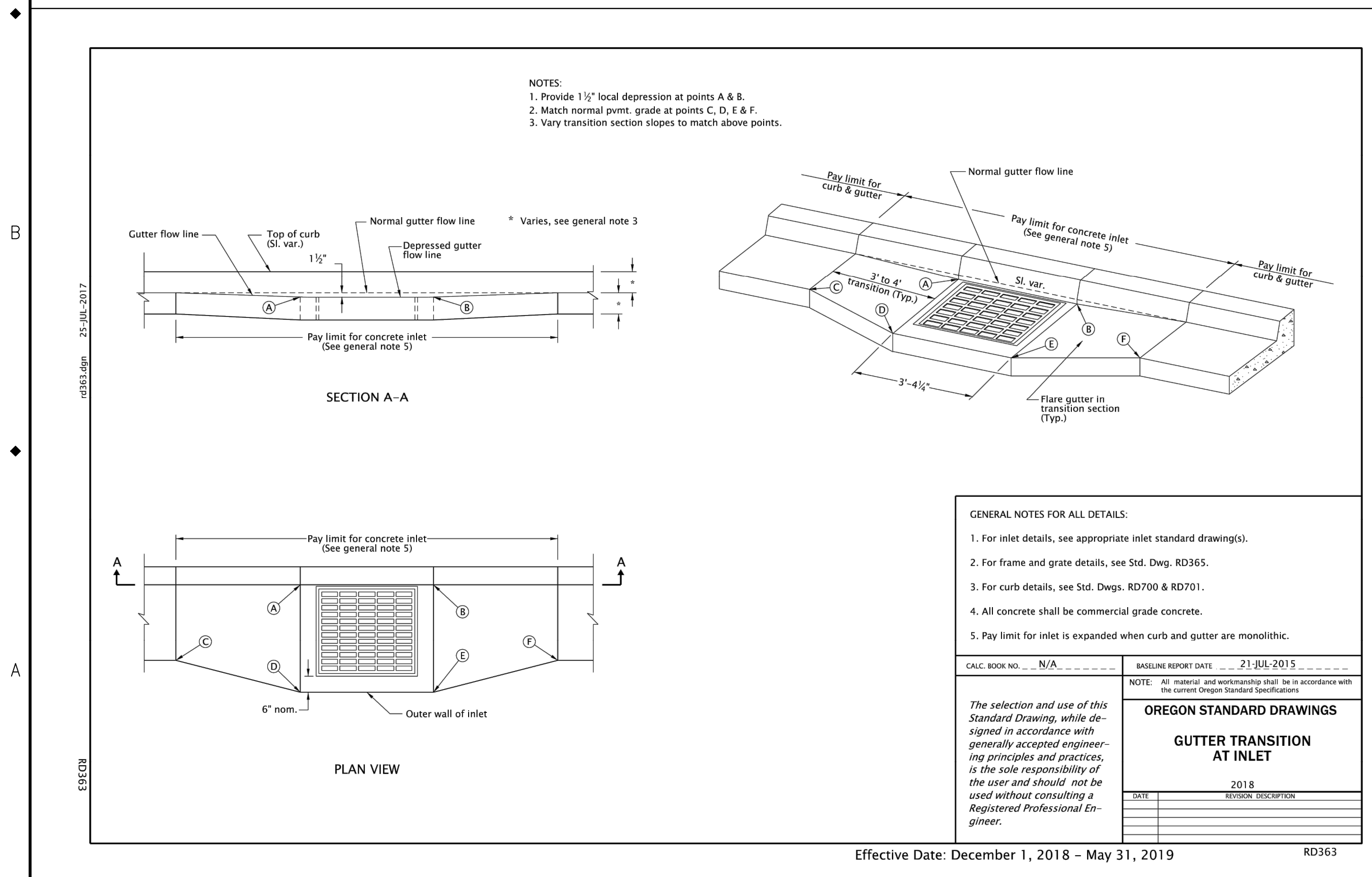
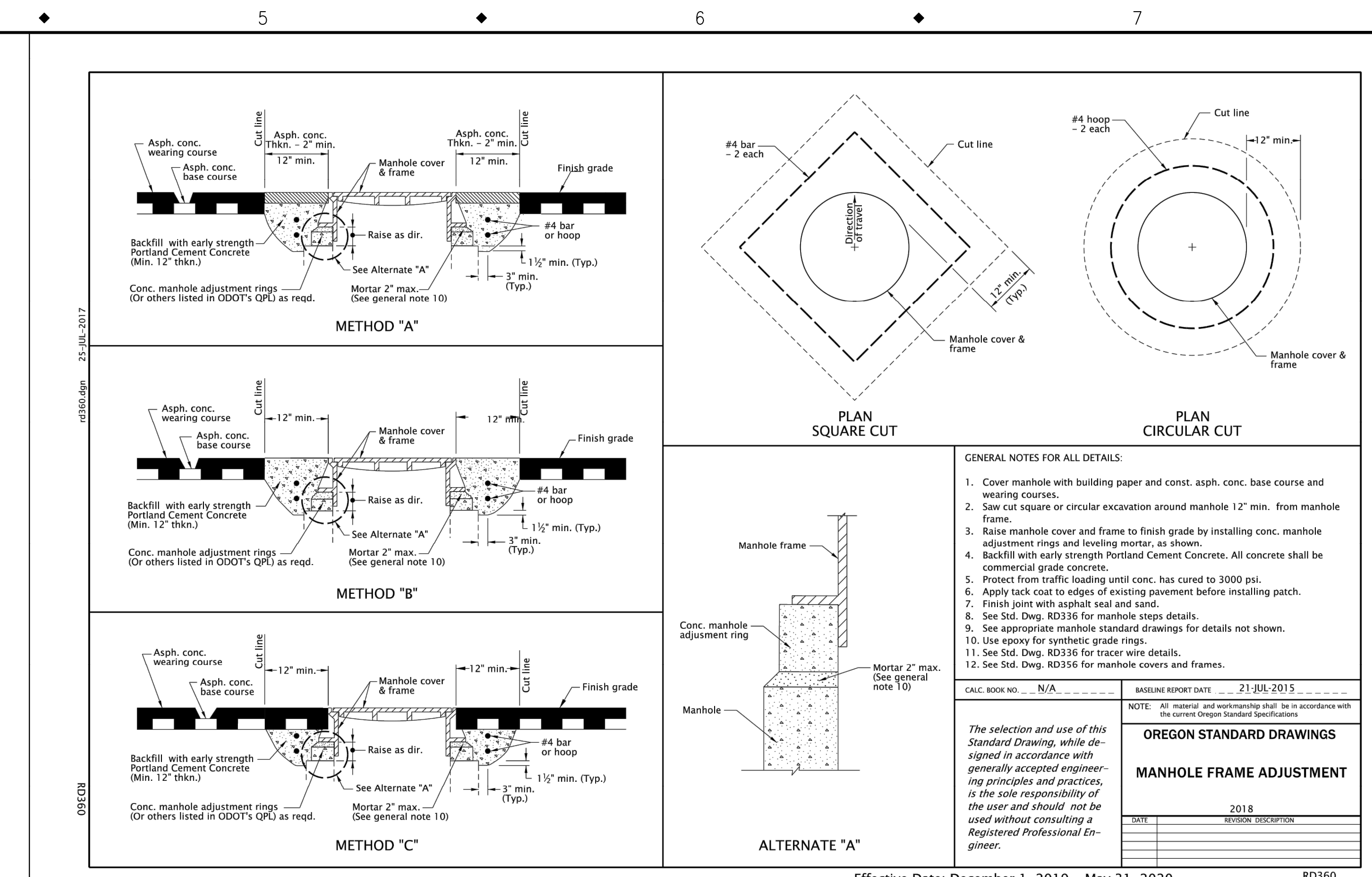
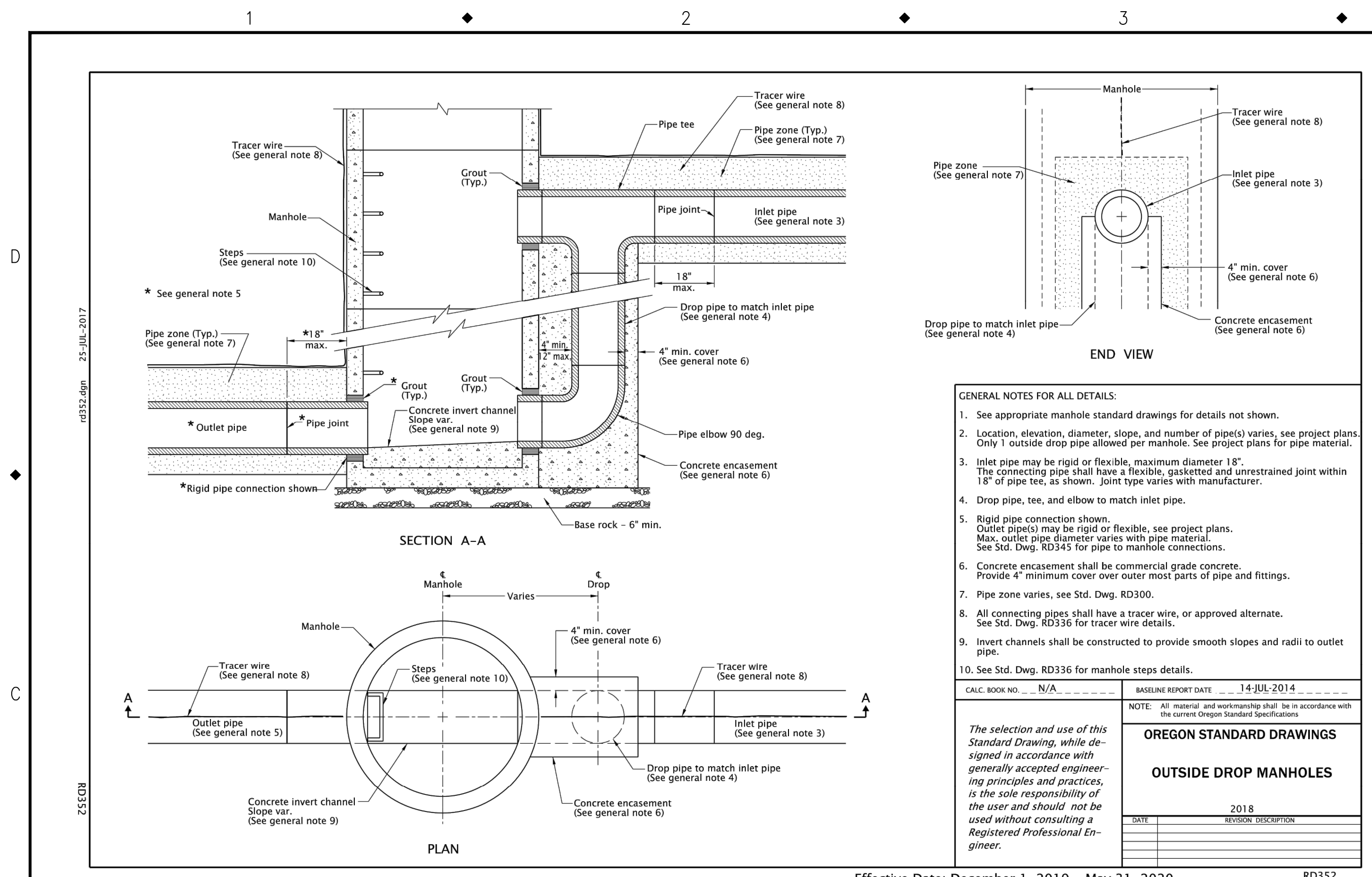
6101 SE JOHNSON CREEK BLVD.  
MILWAUKIE, OR 97206

PHONE: 503-786-7600  
FAX: 503-774-8236

**2020 SE MCBROD AVENUE IMPROVEMENTS**

**DETAILS**

PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: DT5
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NO.	DATE	BY	REVISIONS

DESIGNED	BB	12/14/2018
DRAFTED	BB	5/8/2019
CHECKED	WM	5/22/2019
APPROVED	JG	12/23/2019



**CITY OF MILWAUKIE**

6101 SE JOHNSON CREEK BLVD.  
MILWAUKIE, OR 97206

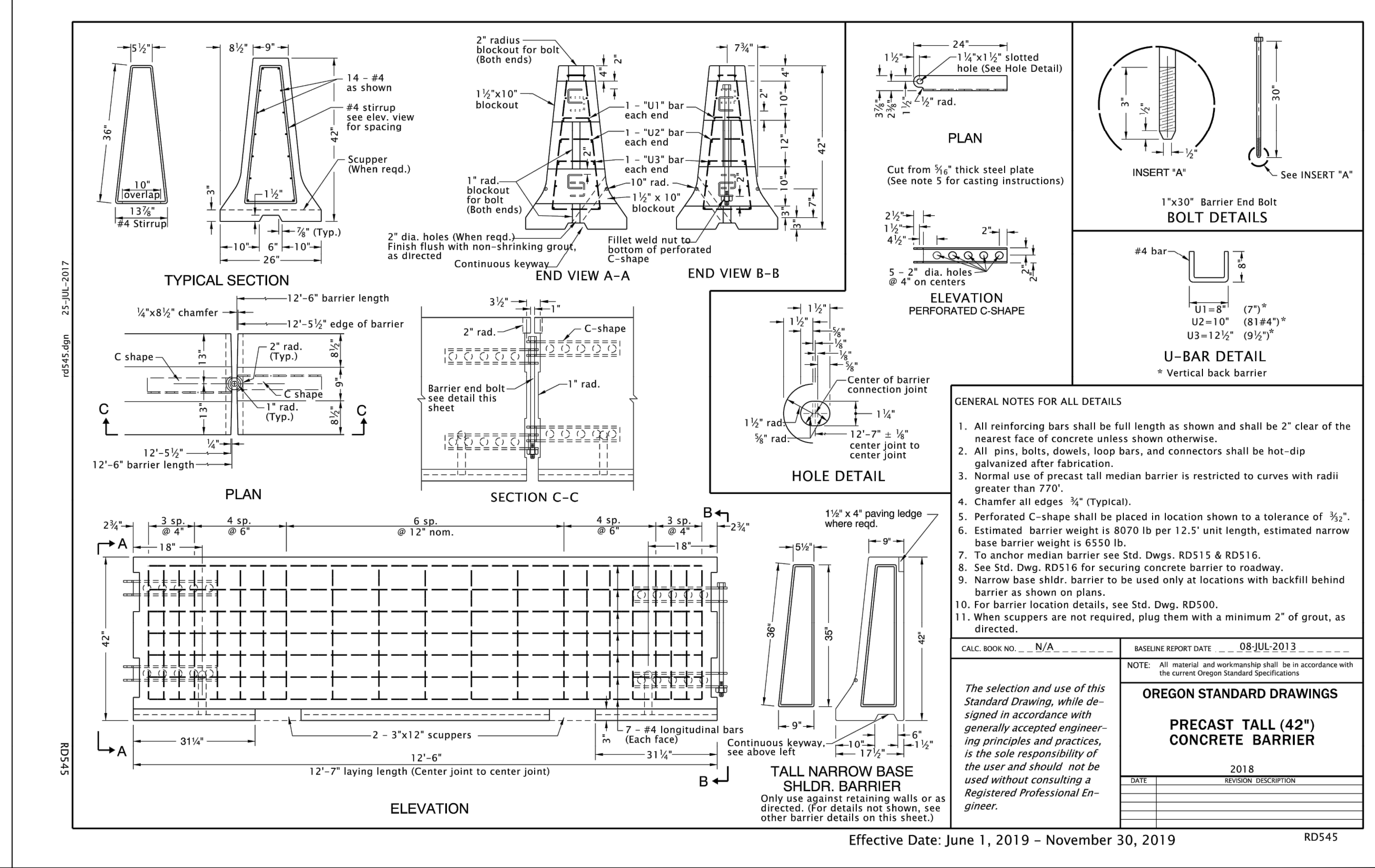
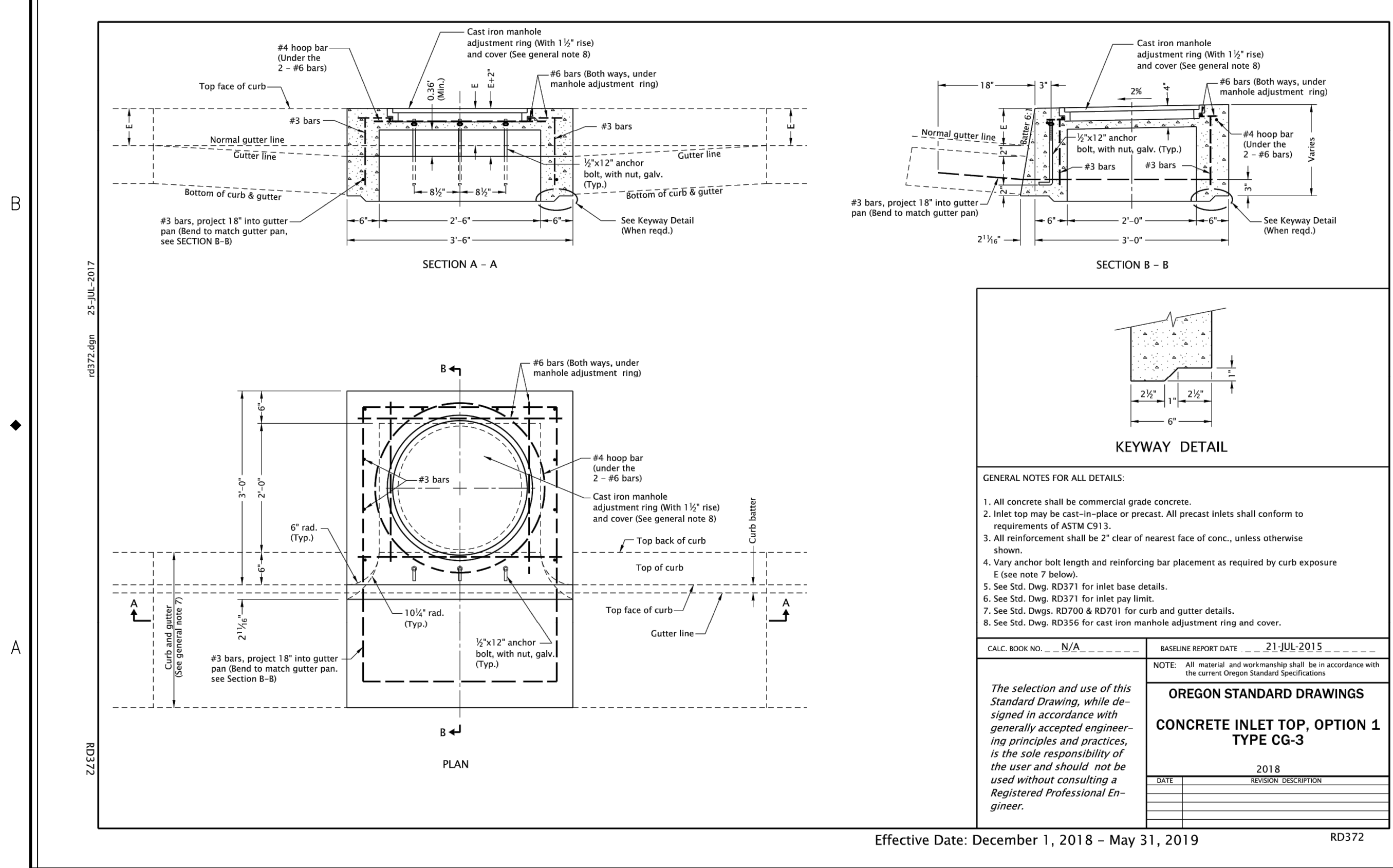
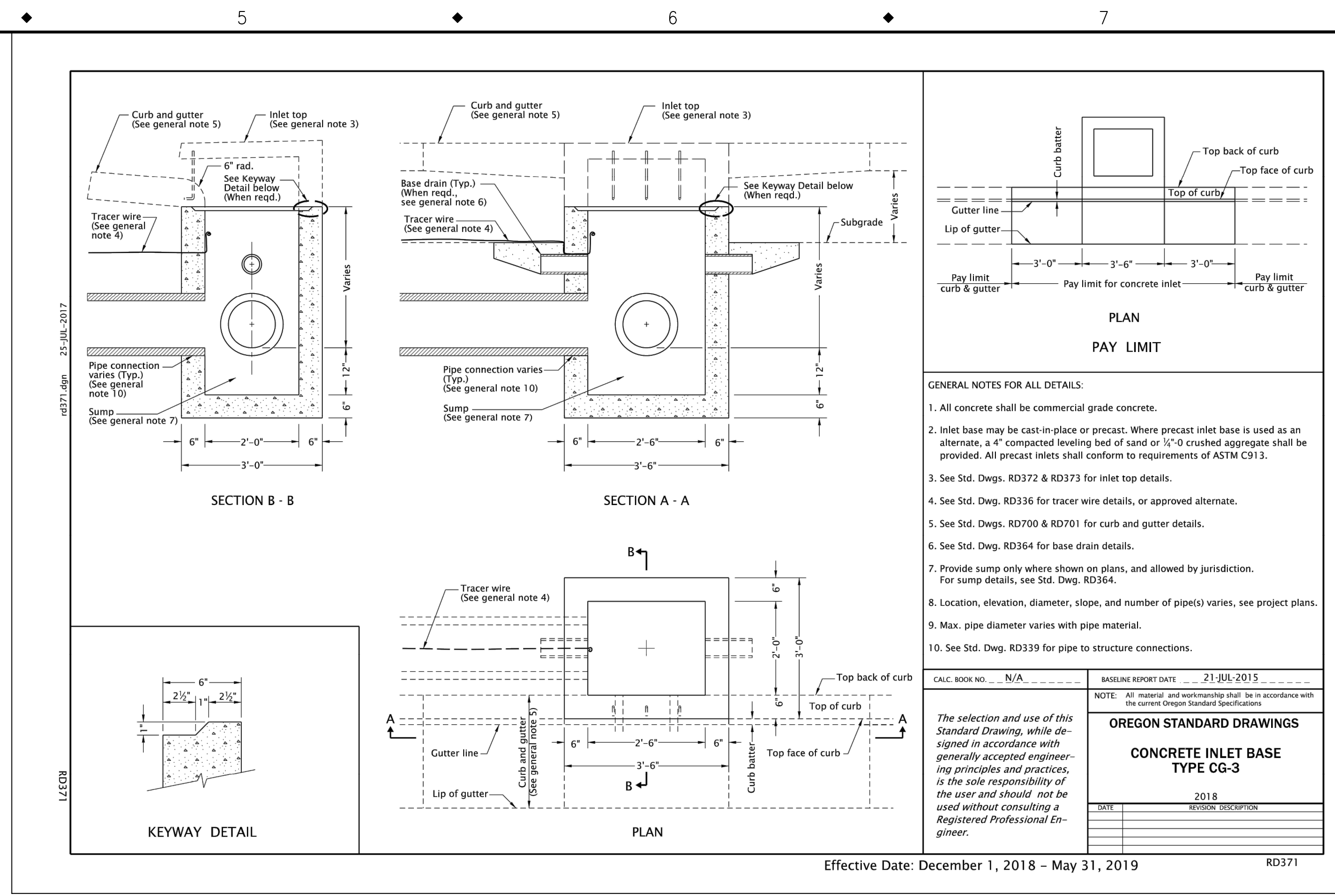
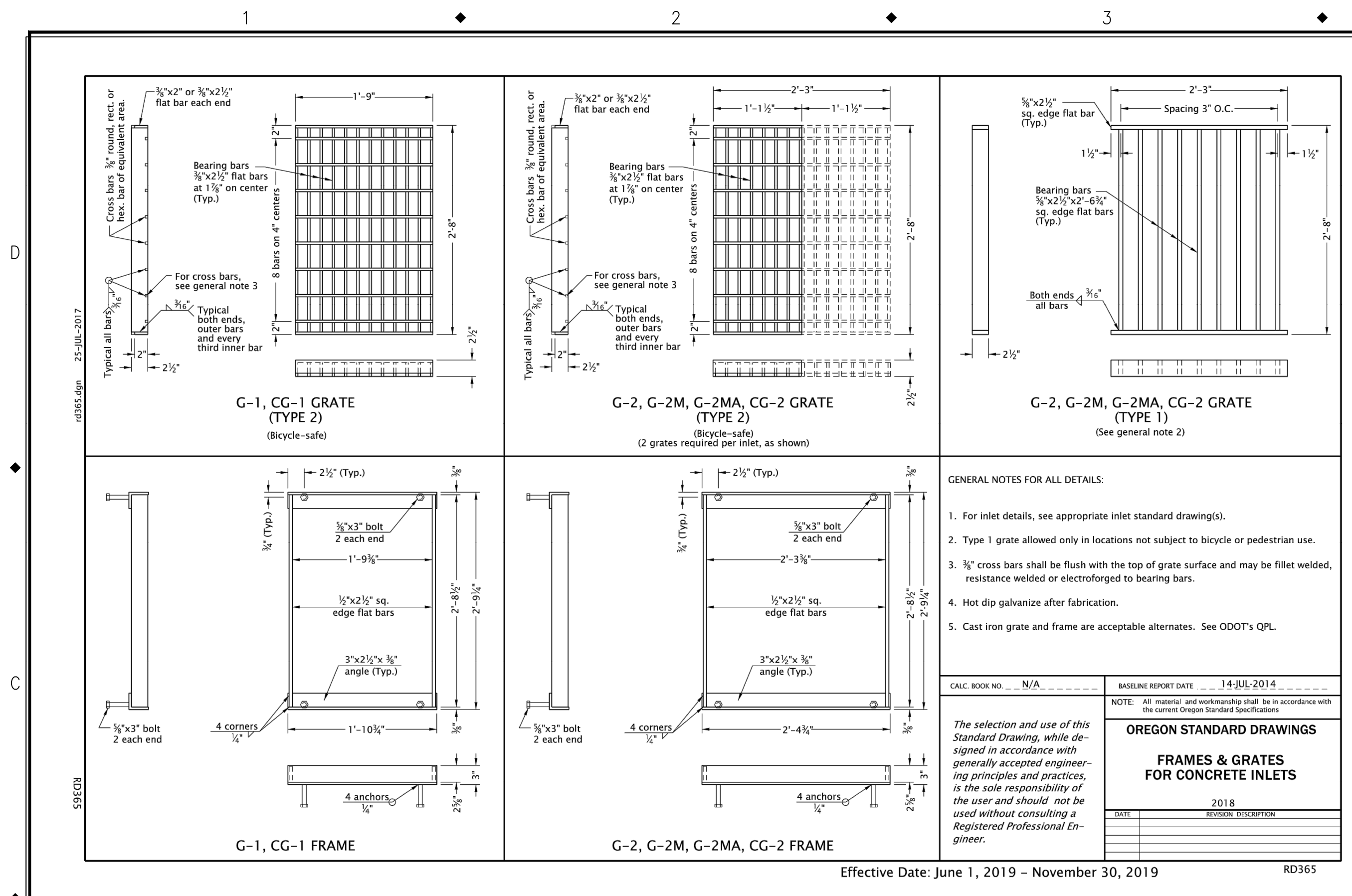
PHONE: 503-786-7600  
FAX: 503-774-8236

**2020 SE MCBROD AVENUE IMPROVEMENTS**

**DETAILS**

PROJECT NO.: CIP2015-W27 | CONTRACT NO.:

DATE: 1/3/2020 | SHEET NO.: DT7



NO.	DATE	BY	REVISIONS

BB	12/14/2018	DESIGNED	DATE
BB	5/8/2019	DRAFTED	DATE
WM	5/22/2019	CHECKED	DATE
JG	12/23/2019	APPROVED	DATE



**CITY OF MILWAUKIE**

6101 SE JOHNSON CREEK BLVD.  
MILWAUKIE, OR 97206

PHONE: 503-786-7600  
FAX: 503-774-8236

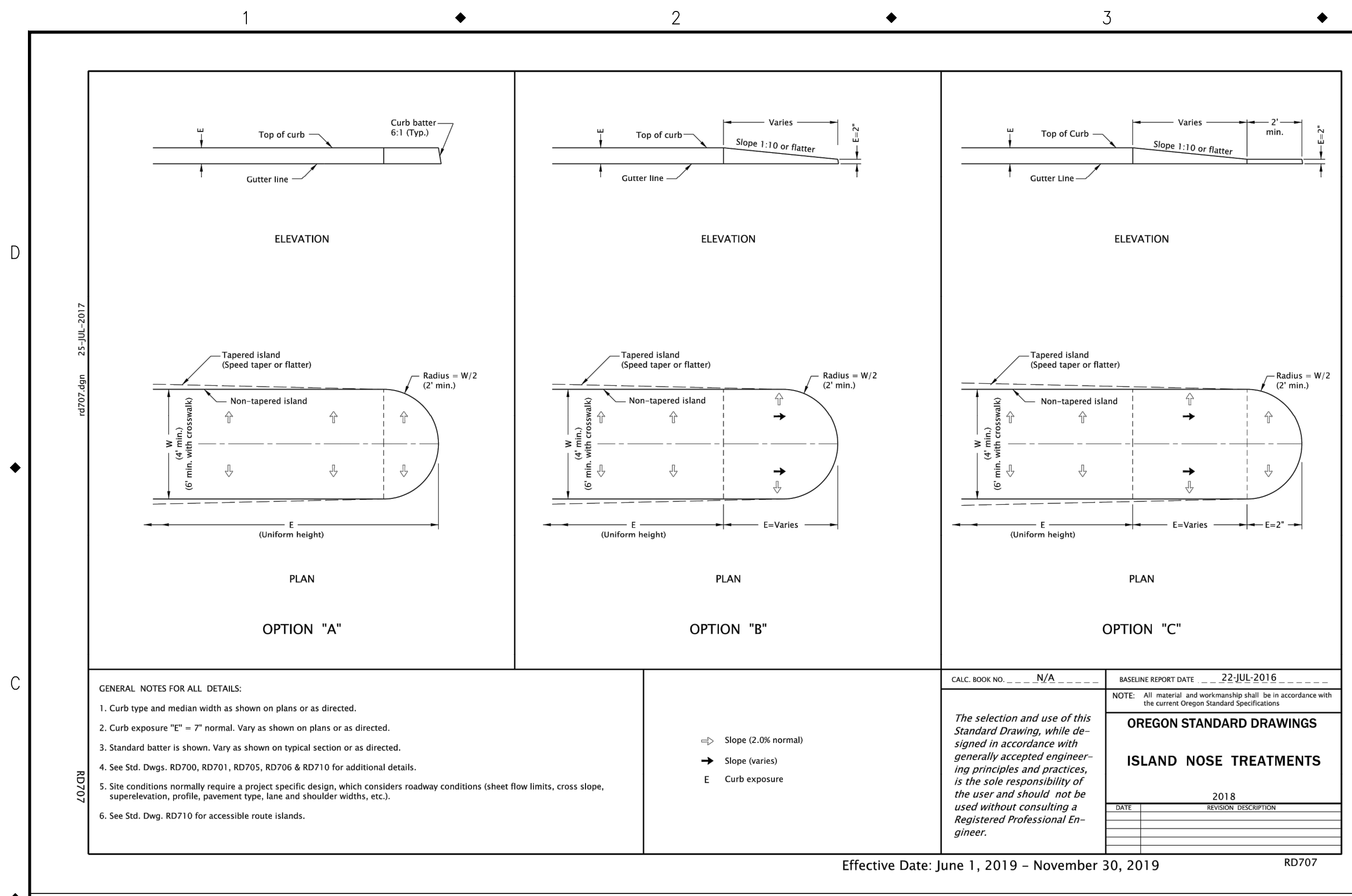
**2020 SE MCBROD AVENUE IMPROVEMENTS**

**DETAILS**

PROJECT NO.: CIP2015-W27  
CONTRACT NO.:  
DATE: 1/3/2020  
SHEET NO.: DT8



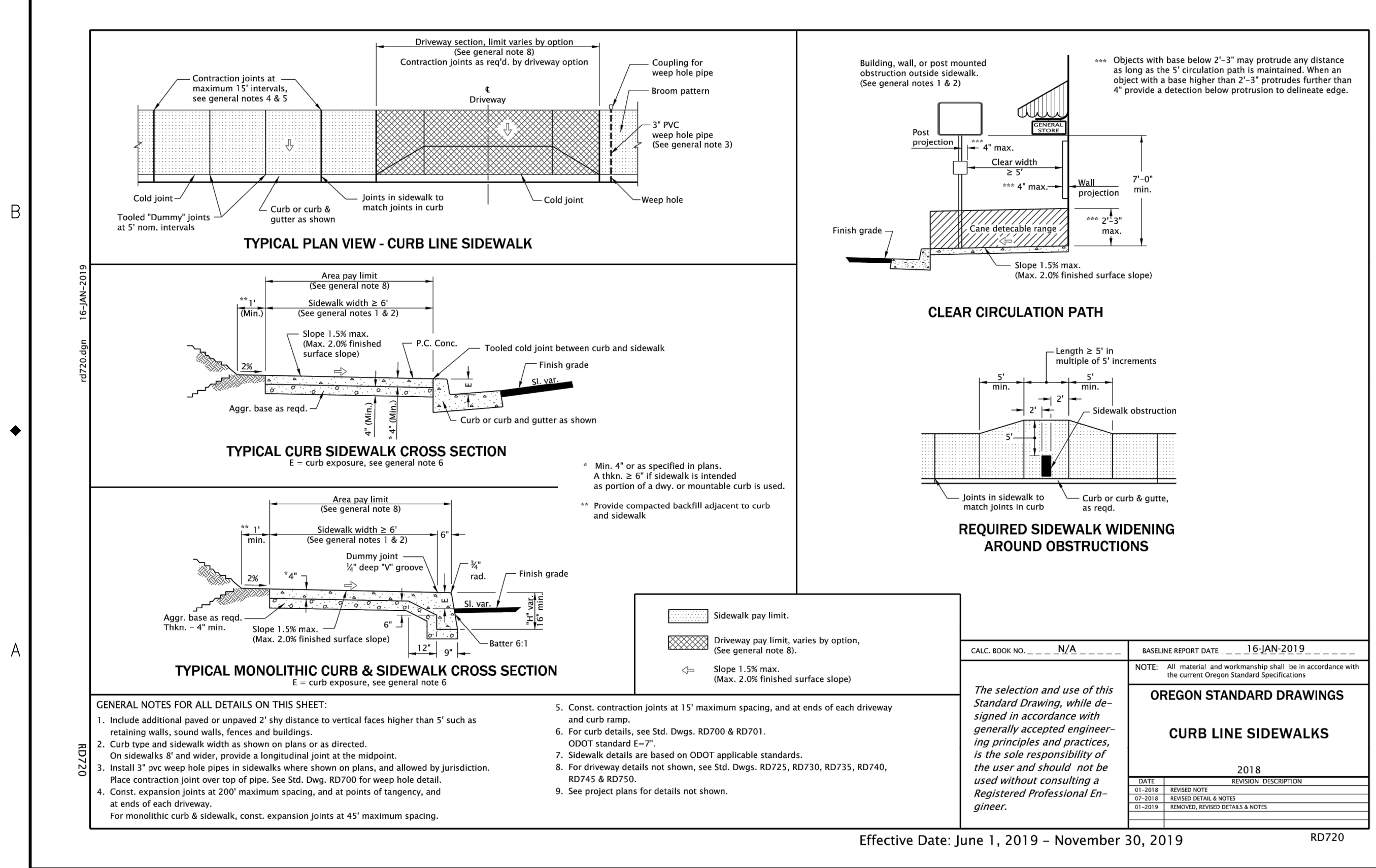




GENERAL NOTES FOR ALL DETAILS:

- Curb type and median width as shown on plans or as directed.
- Curb exposure "E" = 7" normal. Vary as shown on plans or as directed.
- Standard batter is shown. Vary as shown on typical section or as directed.
- See Std. Dwg. RD700, RD701, RD705, RD706 & RD710 for additional details.
- Site conditions normally require a project specific design, which considers roadway conditions (sheet flow limits, cross slope, superlevation, profile, pavement type, lane and shoulder widths, etc.).
- See Std. Dwg. RD710 for accessible route islands.

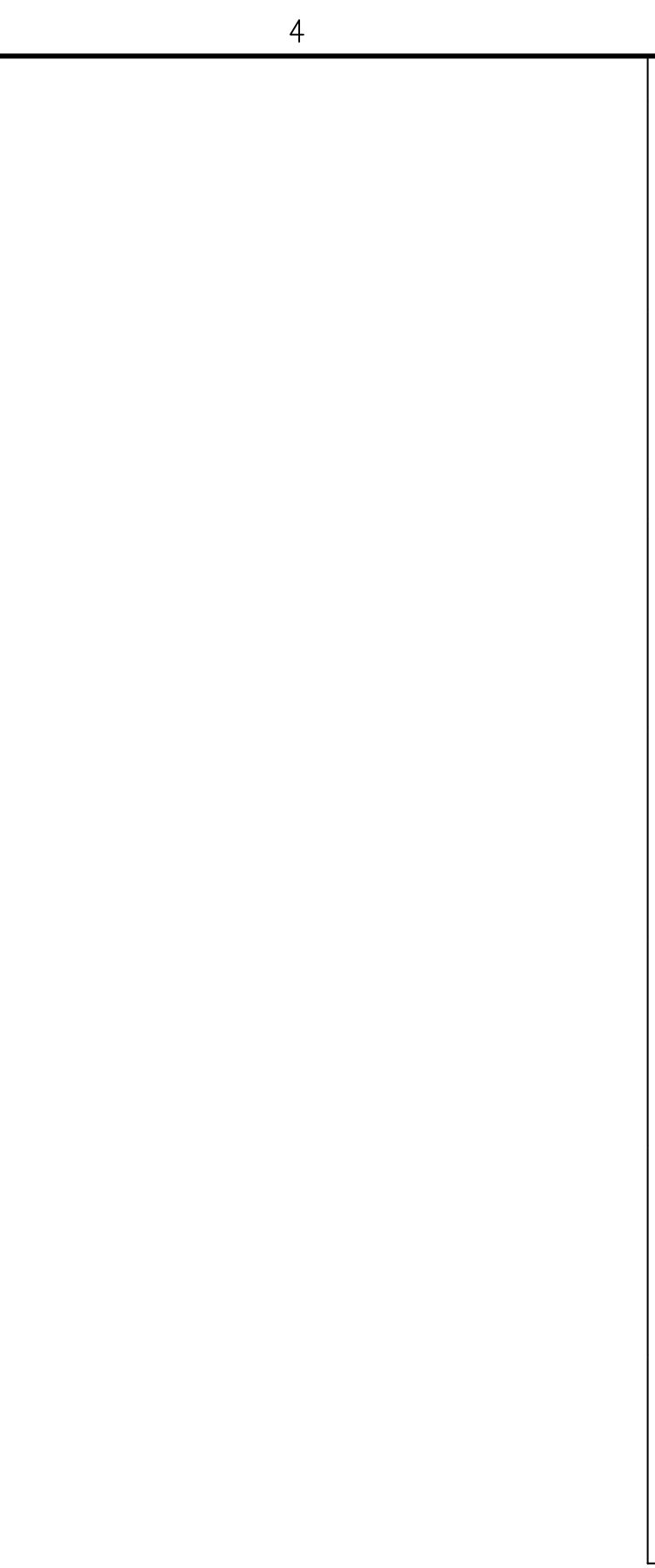
Effective Date: June 1, 2019 - November 30, 2019



GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- Include additional gaved or unspaced 2" shy distance to vertical faces higher than 5' such as retaining walls, sound walls, fences and buildings.
- On sidewalks 8' and wider, provide a longitudinal joint at the midpoint.
- Install 3" PVC weep hole pipes in sidewalks where shown on plans, and allowed by jurisdiction. Place contraction joint over top of pipe. See Std. Dwg. RD700 for weep hole detail.
- Const. expansion joints at 200' maximum spacing, and at points of tangency, and at ends of each driveway.
- For monolithic curb & sidewalk, const. expansion joints at 45' maximum spacing.
- Const. contraction joints at 15' maximum spacing, and at ends of each driveway and curb ramp.
- For curb details, see Std. Dwg. RD700 & RD701.
- Sidewalk details are based on ODOT applicable standards.
- For driveway details not shown, see Std. Dwg. RD725, RD730, RD735, RD740, RD745 & RD750.
- See project plans for details not shown.

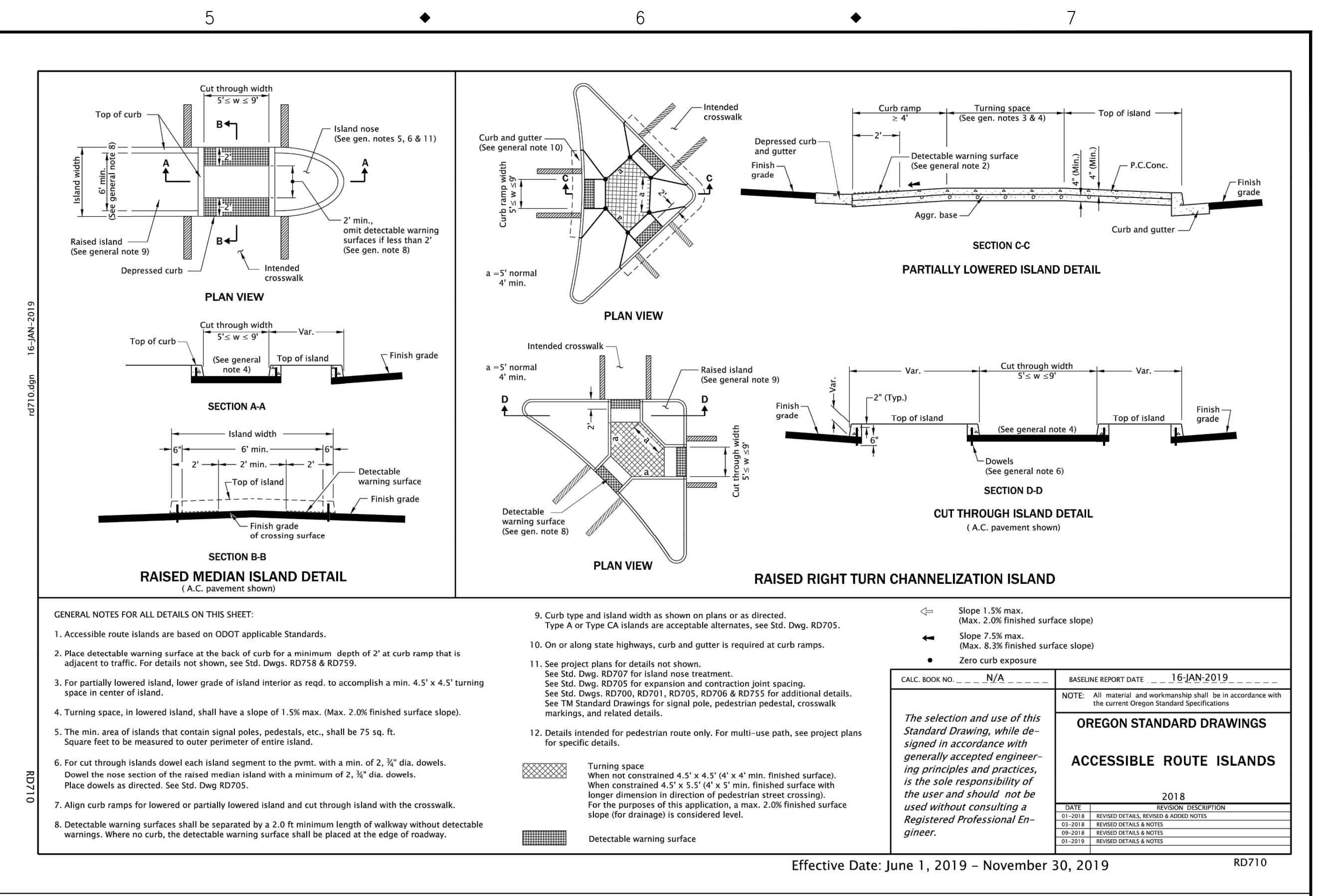
Effective Date: June 1, 2019 - November 30, 2019



GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- Accessible route islands are based on ODOT applicable Standards.
- Place detectable warning surface at the back of curb for a minimum depth of 2' at curb ramp that is adjacent to traffic. For details not shown, see Std. Dwg. RD758 & RD759.
- For partially lowered island, lower grade of island interior as req'd. to accomplish a min. 4.5' x 4.5' turning space in center of island.
- Turning space, in lowered island, shall have a slope of 1.5% max. (Max. 2.0% finished surface slope).
- The min. area of islands that contain signal poles, pedestals, etc., shall be 75 sq. ft. Square feet to be measured to outer perimeter of entire island.
- For cut through islands dowel each island segment to the pmvt. with a min. of 2 3/4" dia. dowels. Place the nose section of the raised median island with a minimum of 2 3/4" dia. dowels.
- Align curb ramps for lowered or partially lowered island and cut through island with the crosswalk.
- Detachable warning surfaces shall be separated by a 2.0' minimum length of walkway without detectable warnings. Where no curb, the detectable warning surface shall be placed at the edge of roadway.

Effective Date: June 1, 2019 - November 30, 2019



GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- Curbs and island width as shown on plans or as directed.
- Type A or Type CA islands are acceptable alternatives, see Std. Dwg. RD705.
- On or along state highways, curb and gutter is required at curb ramps.
- See project plans for details not shown.
- See Std. Dwg. RD707 for island nose treatment.
- See Std. Dwg. RD705 for expansion and contraction joint spacing.
- See Std. Dwg. RD700, RD701, RD705, RD706 & RD755 for additional details. See TM Standard Drawings for signal pole, pedestrian pedestal, crosswalk markings, and related details.
- Details intended for pedestrian route only. For multi-use path, see project plans for specific details.

Effective Date: June 1, 2019 - November 30, 2019

NO.	DATE	BY	REVISIONS

DESIGNED: BB 12/14/2018  
 DATE: 5/8/2019  
 DRAFTED: BB  
 DATE: 5/22/2019  
 CHECKED: WM  
 DATE: 12/23/2019  
 APPROVED: JG

REGISTERED PROFESSIONAL ENGINEER  
 B3728PE  
 OREGON  
 MAY 22, 2015  
 ELIZABETH COPELAND BRITELL  
 EXPIRES: 12/31/2021

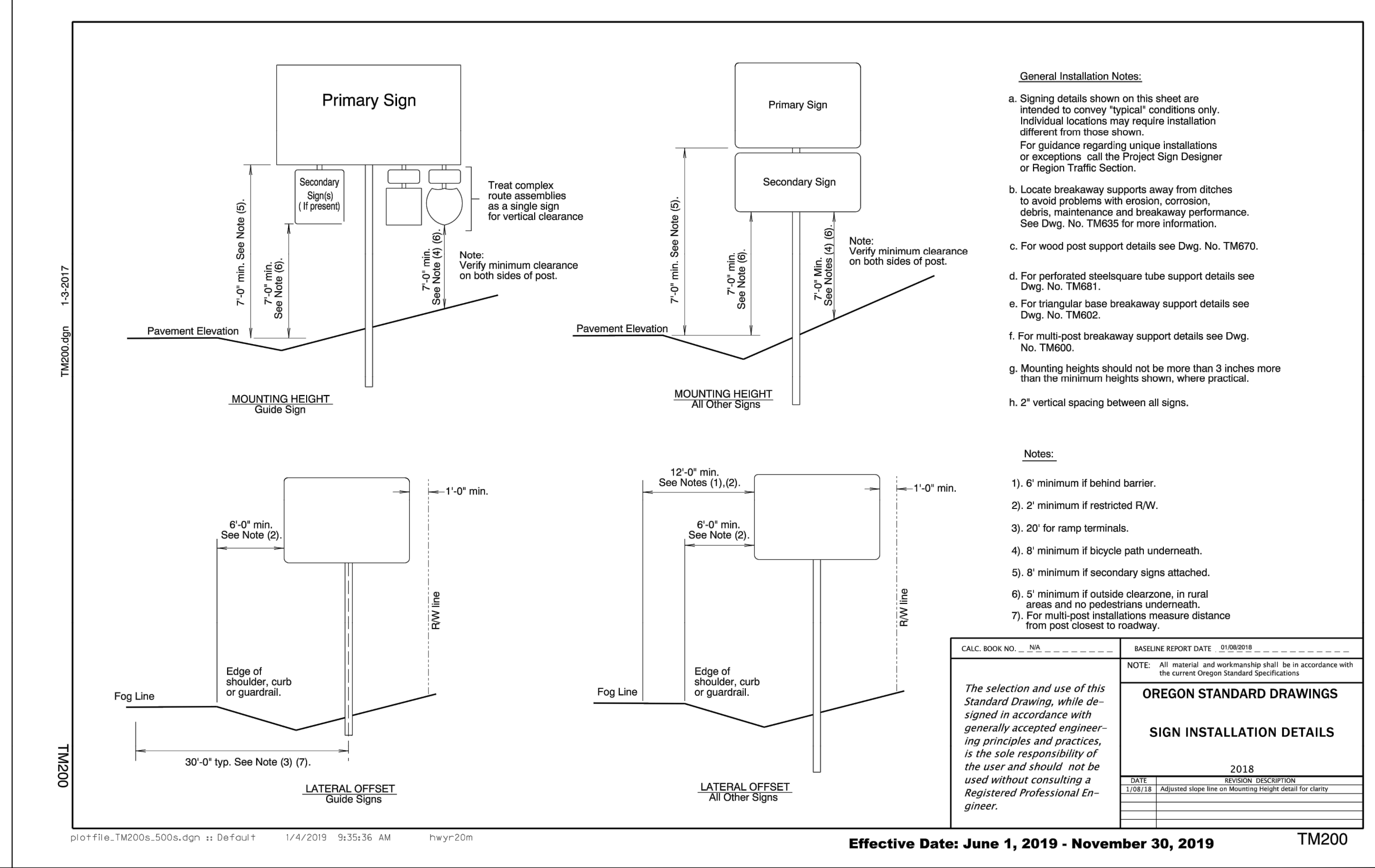
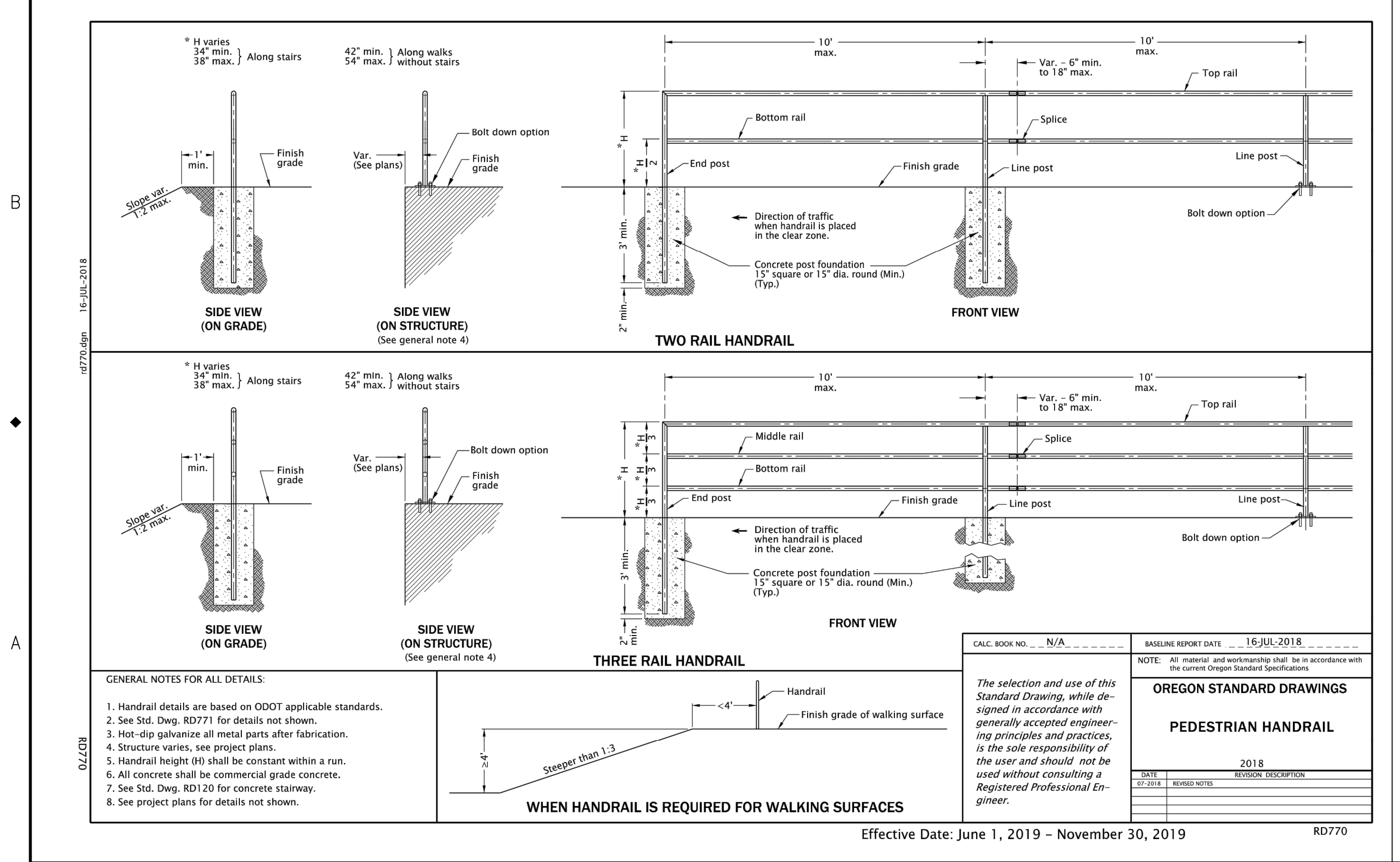
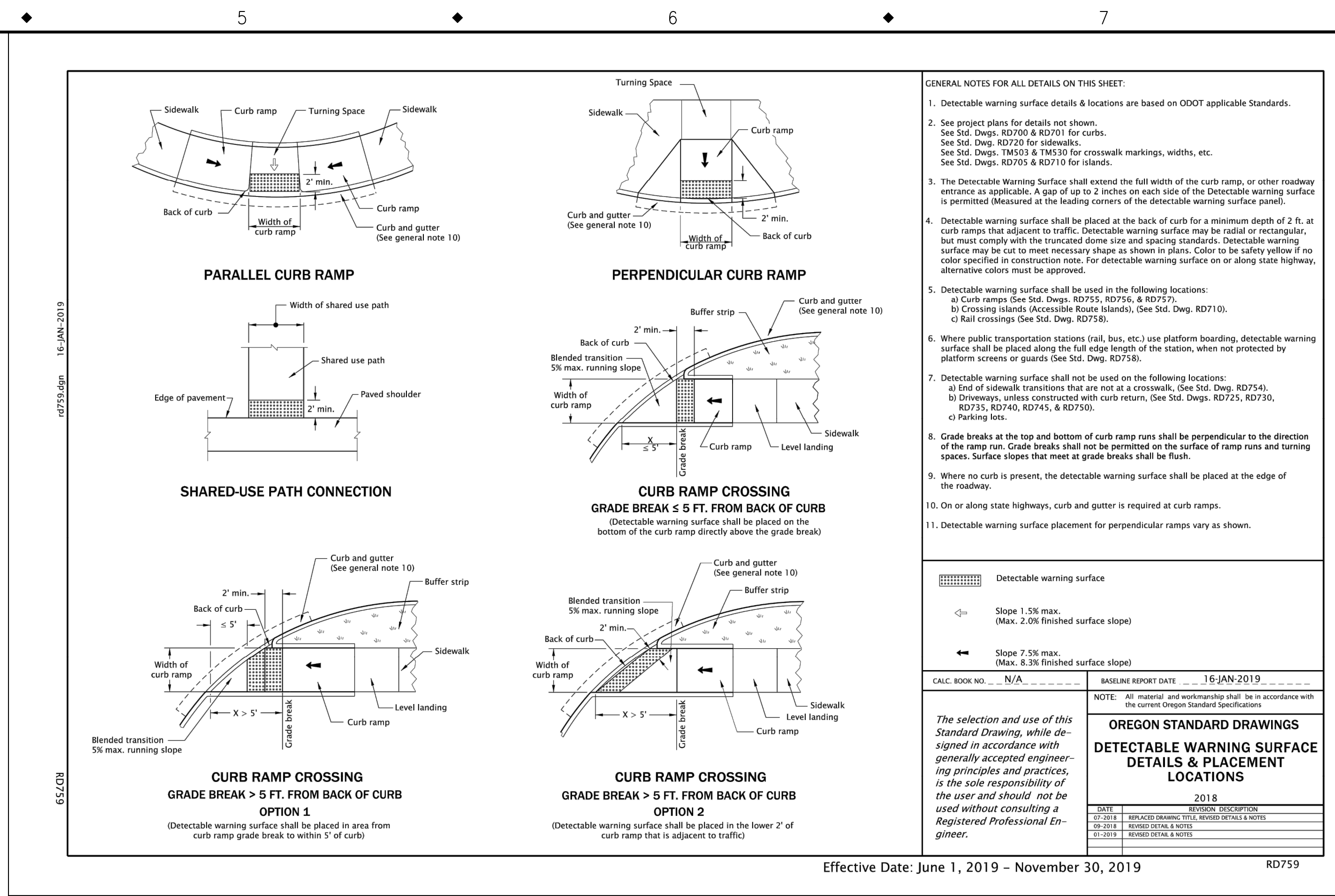
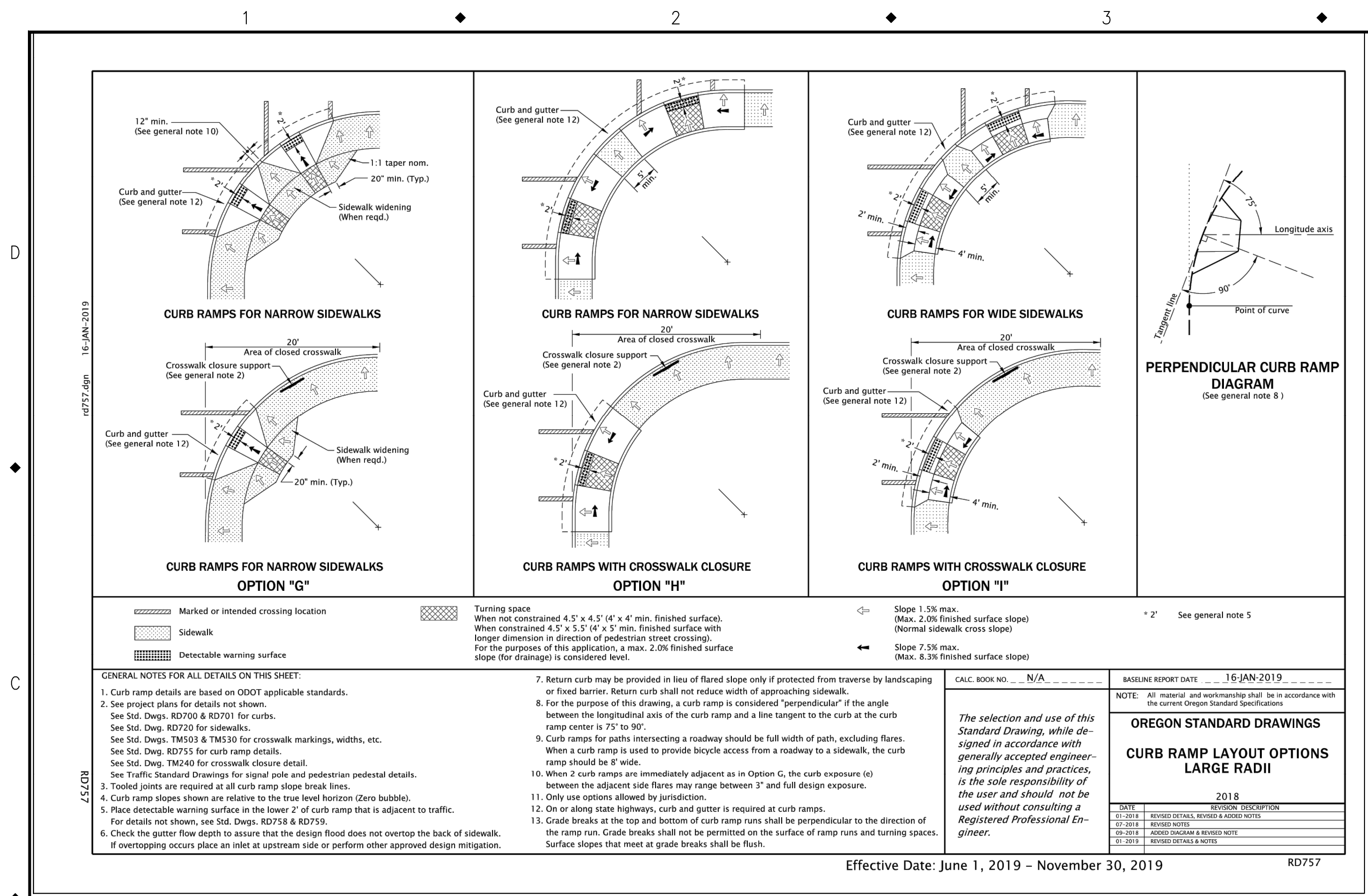
CITY OF MILWAUKIE  
 6101 SE JOHNSON CREEK BLVD.  
 MILWAUKIE, OR 97206

PHONE: 503-786-7600  
 FAX: 503-774-8236

2020 SE MCBROD AVENUE IMPROVEMENTS

DETAILS

PROJECT NO.: CIP2015-W27 CONTRACT NO.: DATE: 1/3/2020 SHEET NO.: DT10



DESIGNED	BB	12/14/2018
DRAFTED	BB	5/8/2019
CHECKED	WM	5/22/2019
APPROVED	JG	12/23/2019



**CITY OF MILWAUKIE**

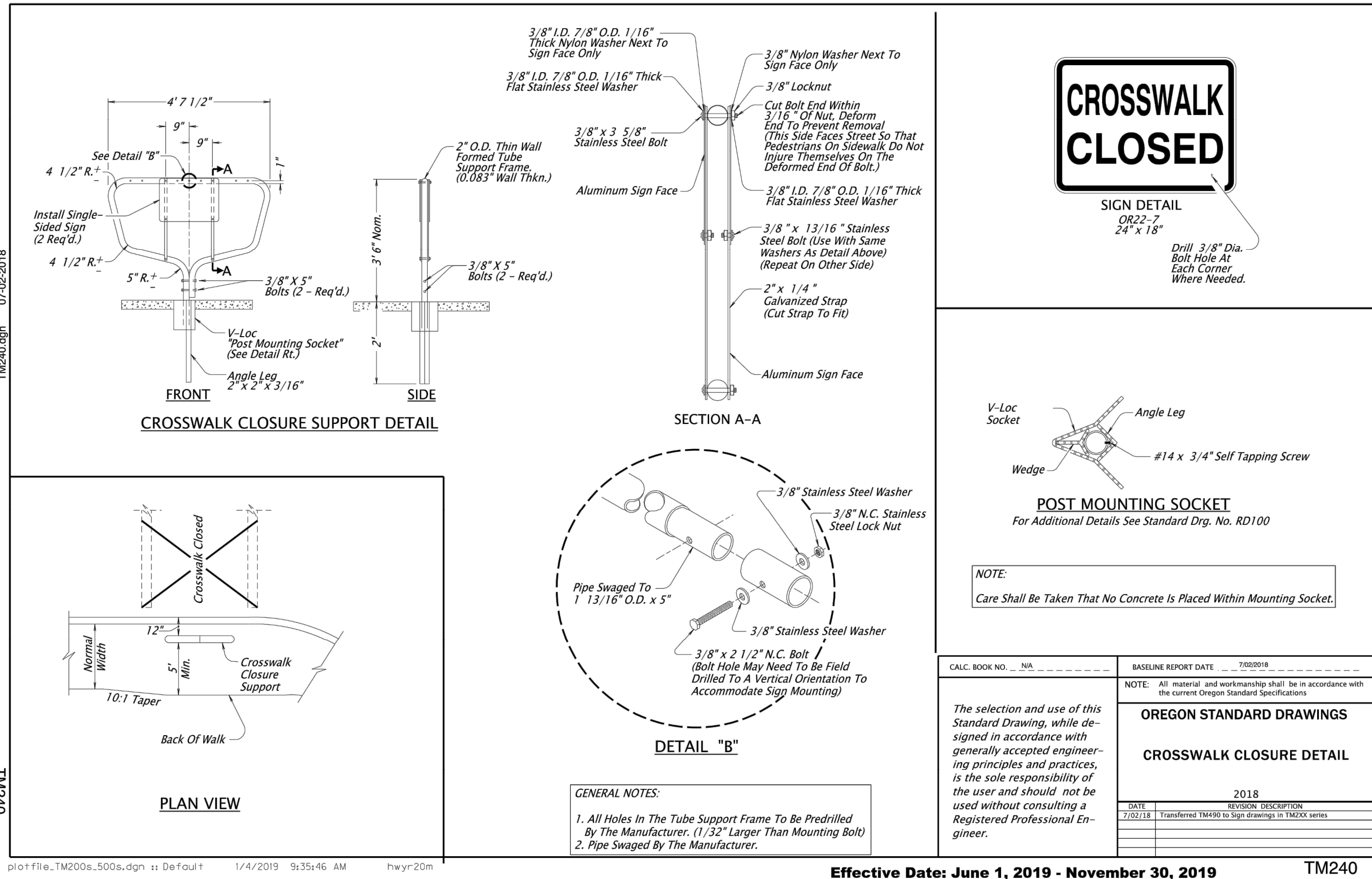
6101 SE JOHNSON CREEK BLVD.  
MILWAUKIE, OR 97206

PHONE: 503-786-7600  
FAX: 503-774-8236

**2020 SE MCBROD AVENUE IMPROVEMENTS**

**DETAILS**

PROJECT NO.: CIP2015-W27  
CONTRACT NO.:  
DATE: 1/3/2020  
SHEET NO.: DT11



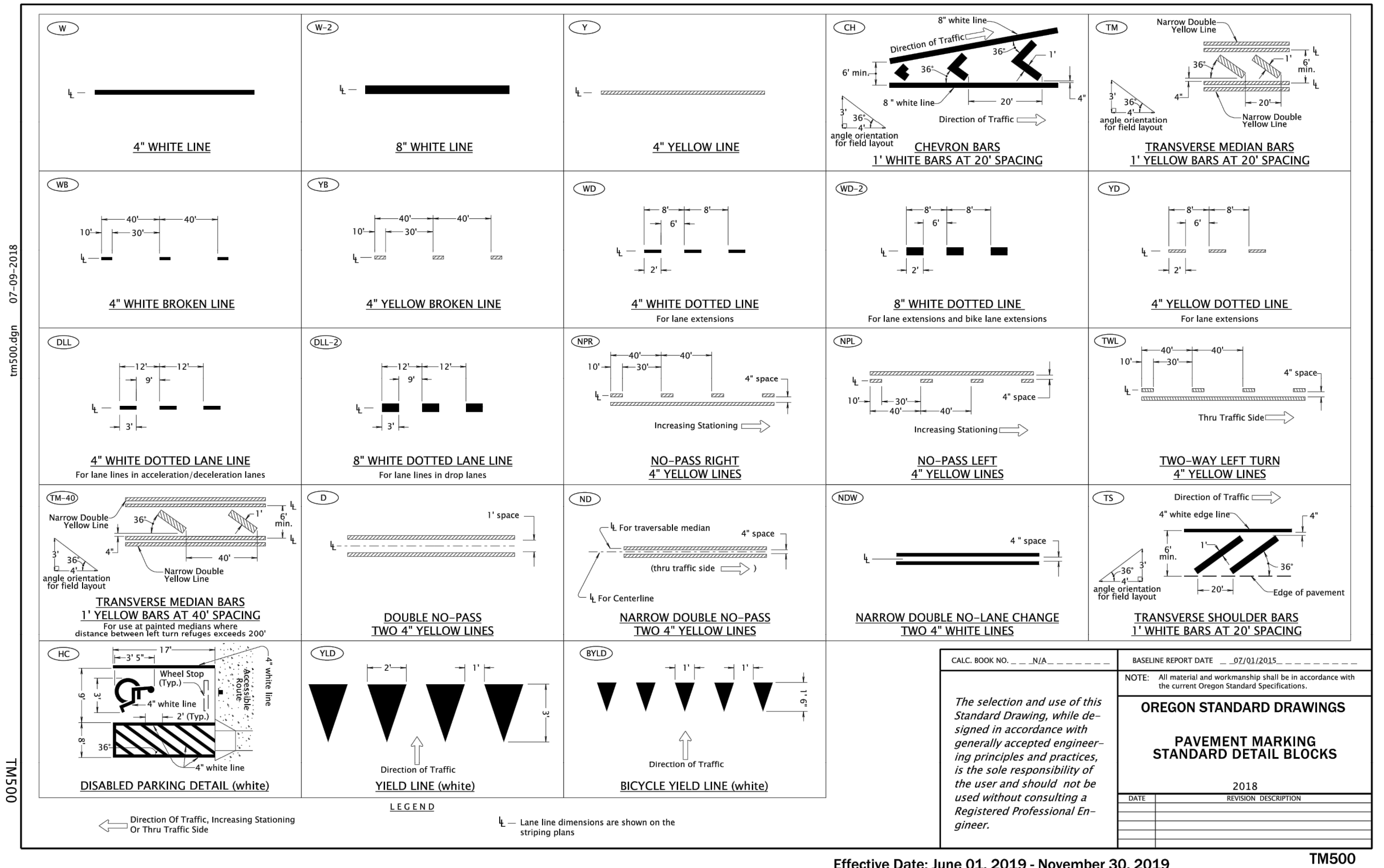
DATE	REVISION DESCRIPTION
7/02/18	Transferred TM490 to Sign drawings in TMOXX series

**OREGON STANDARD DRAWINGS**

**CROSSWALK CLOSURE DETAIL**

2018

Effective Date: June 1, 2019 - November 30, 2019 **TM240**



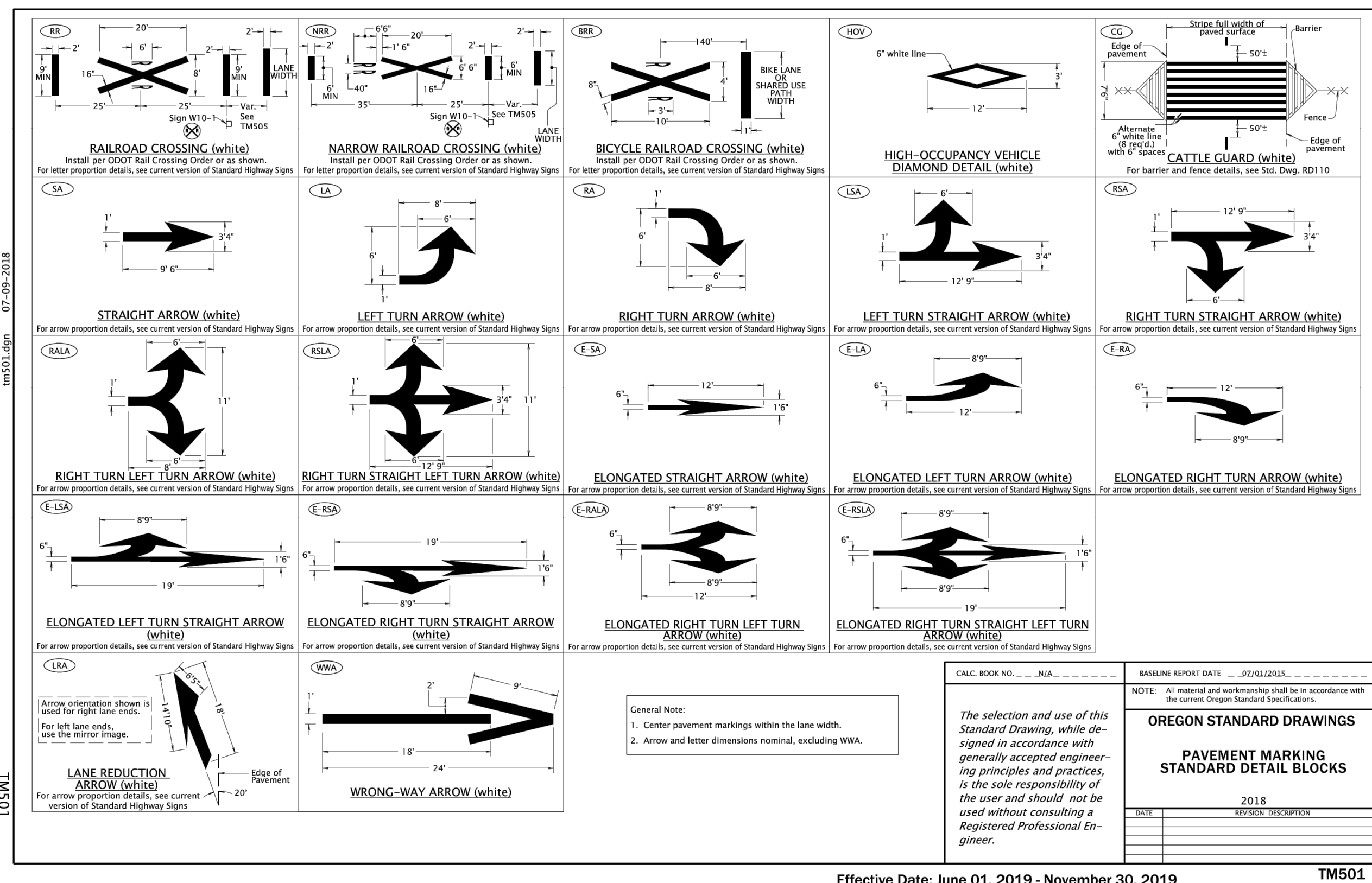
DATE	REVISION DESCRIPTION
2018	

**OREGON STANDARD DRAWINGS**

**PAVEMENT MARKING STANDARD DETAIL BLOCKS**

2018

Effective Date: June 01, 2019 - November 30, 2019 **TM500**



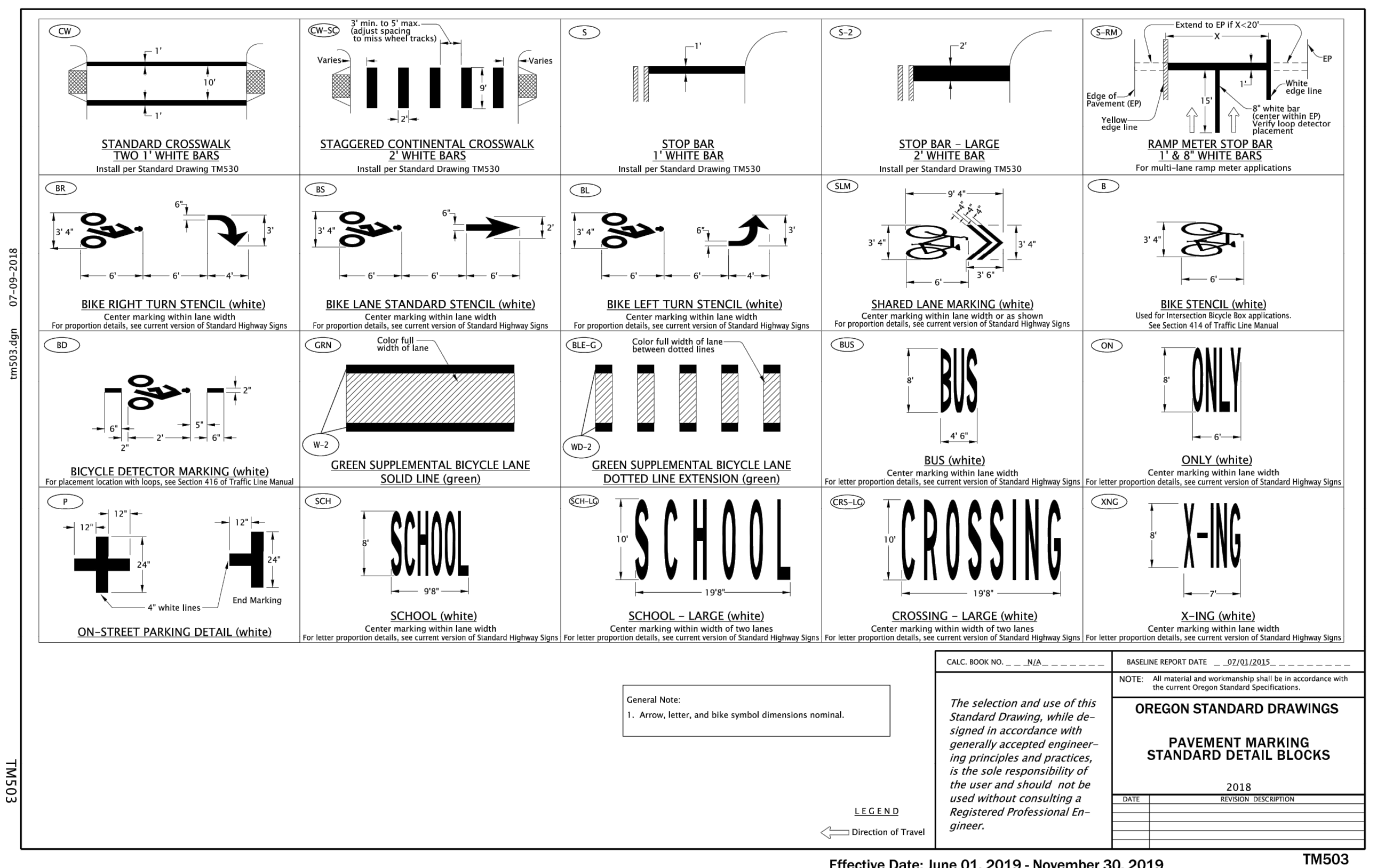
DATE	REVISION DESCRIPTION
2018	

**OREGON STANDARD DRAWINGS**

**PAVEMENT MARKING STANDARD DETAIL BLOCKS**

2018

Effective Date: June 01, 2019 - November 30, 2019 **TM501**



DATE	REVISION DESCRIPTION
2018	

**OREGON STANDARD DRAWINGS**

**PAVEMENT MARKING STANDARD DETAIL BLOCKS**

2018

Effective Date: June 01, 2019 - November 30, 2019 **TM503**

NO.	DATE	BY	REVISIONS

DESIGNED: BB 12/14/2018  
 DRAFTED: BB 5/8/2019  
 CHECKED: WM 5/22/2019  
 APPROVED: JG 12/23/2019

**REGISTERED PROFESSIONAL ENGINEER**  
 B3728PE  
 OREGON  
 MAY 22, 2015  
 ELIZABETH COPELAND BRITELL  
 EXPIRES: 12/31/2021

**CITY OF MILWAUKIE**  
 6101 SE JOHNSON CREEK BLVD.  
 MILWAUKIE, OR 97206

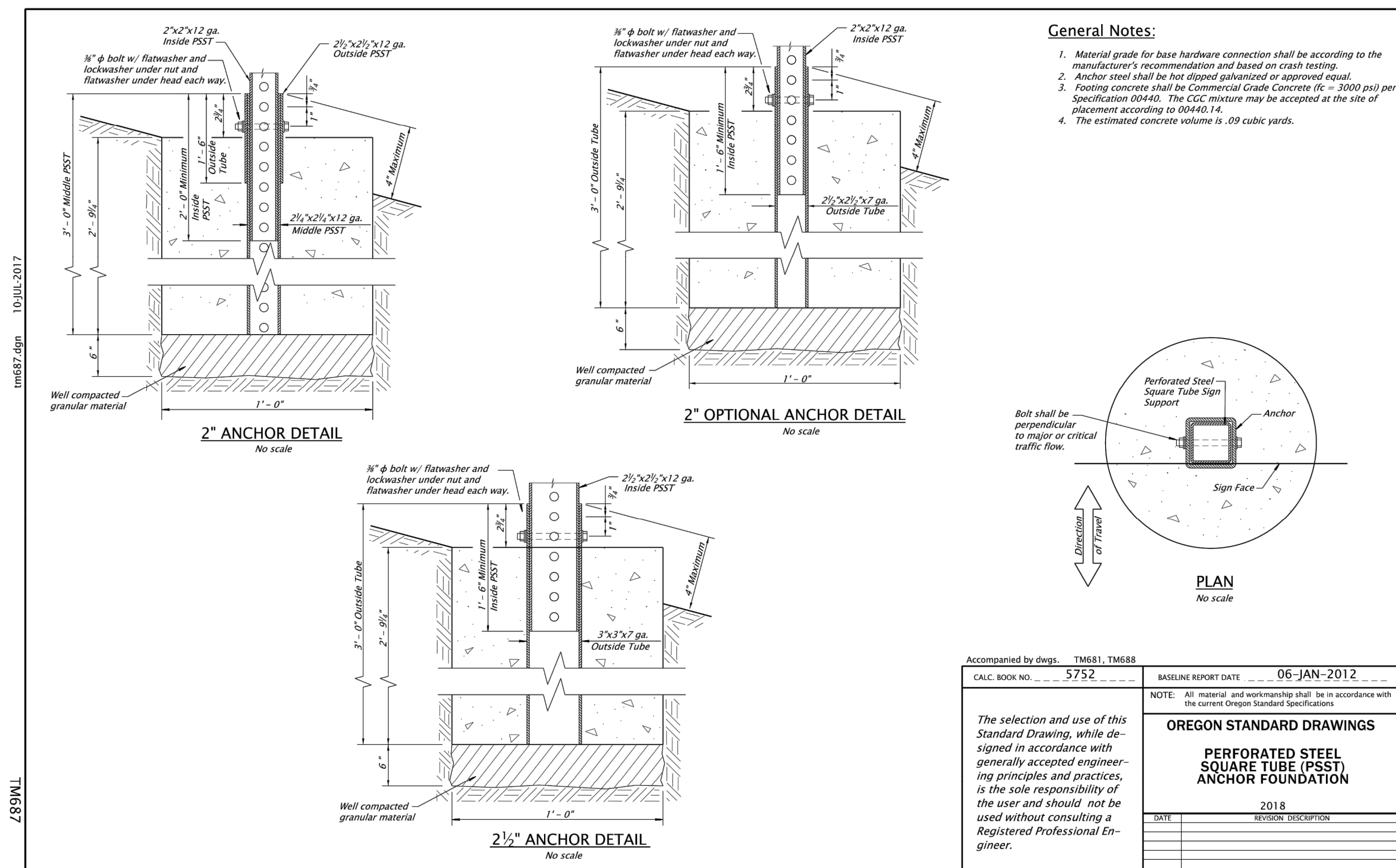
PHONE: 503-786-7600  
 FAX: 503-774-8236

**2020 SE MCBROD AVENUE IMPROVEMENTS**

**DETAILS**

PROJECT NO.: CIP2015-W27 CONTRACT NO.: DATE: 1/3/2020 SHEET NO.: DT12





Accompanied by dwgs: TM651, TM688

CALC. BOOK NO. 5752	BASELINE REPORT DATE 06-JAN-2012
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications	
<b>OREGON STANDARD DRAWINGS</b>	
<b>PERFORATED STEEL SQUARE TUBE (PSS) ANCHOR FOUNDATION</b>	
DATE 2018	REVISION DESCRIPTION

Effective Date: June 1, 2019 - November 30, 2019 TM687

D  
C  
B  
A

NO.	DATE	BY	REVISIONS

DESIGNED	BB	12/14/2018
DRAFTED	BB	5/8/2019
CHECKED	WM	5/22/2019
APPROVED	JG	12/23/2019



**CITY OF MILWAUKIE**

6101 SE JOHNSON CREEK BLVD.  
MILWAUKIE, OR 97206

PHONE: 503-786-7600  
FAX: 503-774-8236

**2020 SE MCBROD AVENUE IMPROVEMENTS**

**DETAILS**

PROJECT NO.: CIP2015-W27	CONTRACT NO.:	DATE: 1/3/2020	SHEET NO.: DT14
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