

THORNTON STREET

SANITARY SEWER

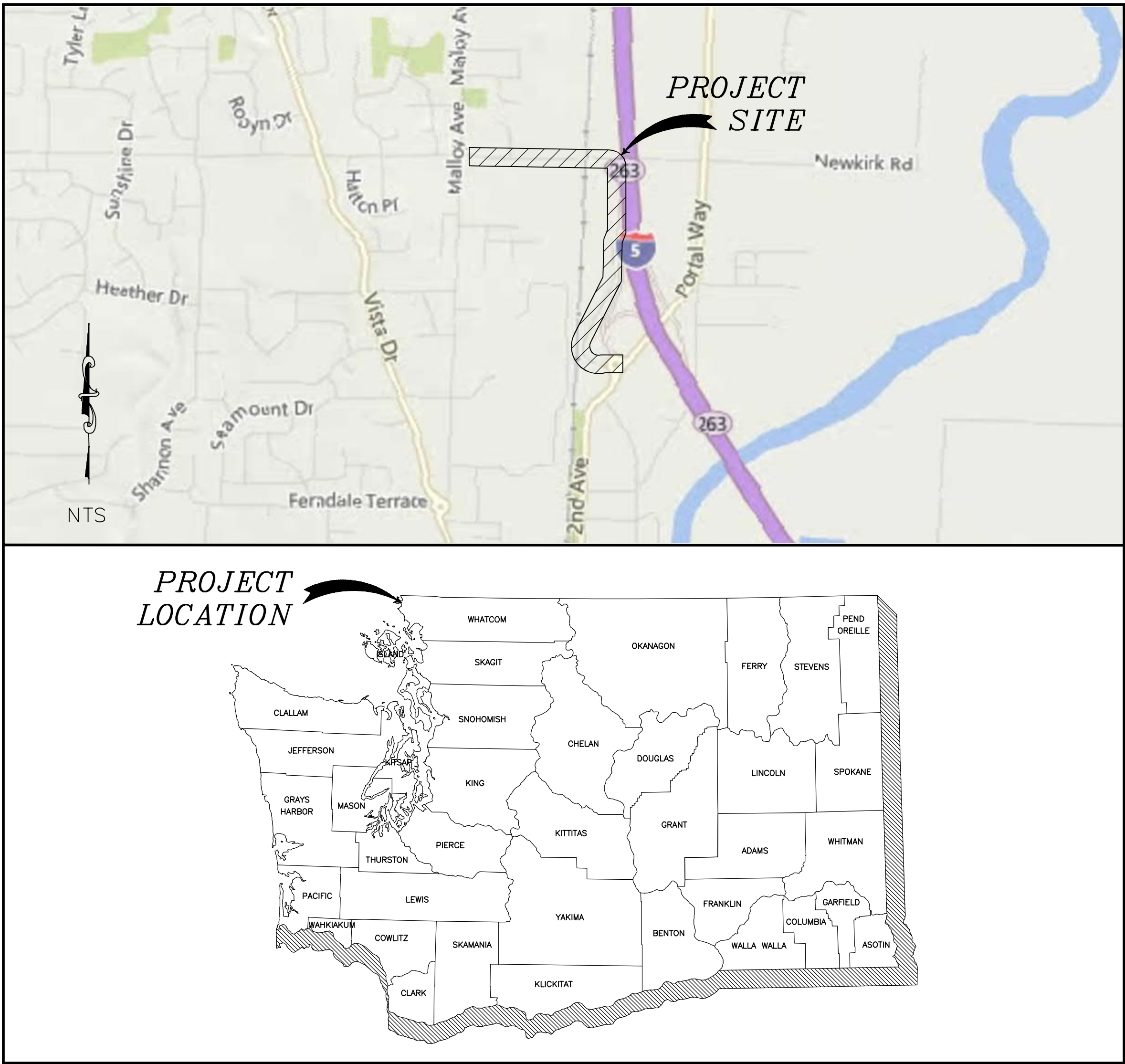
FERNDALE, WA

CITY OF FERNDALE

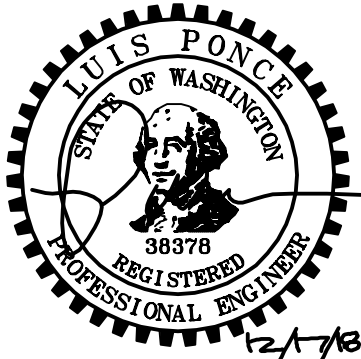
PROJECT NO. SS2015-03

VICINITY MAP

PROJECT LOCATED IN SECTION 17 & 20, TOWNSHIP 39N, RANGE 2E, W.M.



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12/17/18
AS-BUILT

DESIGNED BY
KJK
DRAWN BY
KJK/LMH
CHECKED BY
LP

R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687
813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713

NO.	DATE	DESCRIPTION	BY

CITY OF FERNDALE
2095 MAIN STREET
FERNDALE, WA 98248

THORNTON ST
SANITARY SEWER
COVER

DWG 16034 COVER		DATE
JOB#	SCALE	SHEET
16034	H: N/A V: N/A	1 of 24

LEGEND

EXISTING	
	= EXISTING TOP OF BANK
	= EXISTING BOTTOM OF BANK
	= EXISTING DITCH CL
	= EXISTING GRADE BREAK
	= EXISTING MAJOR CONTOUR
	= EXISTING MINOR CONTOUR
	= EXISTING GUARDRAIL
	= EXISTING FENCE
	= EXISTING HANDRAIL
	= EXISTING GRAVEL
	= EXISTING WALL
	= EXISTING BUILDING
	= EXISTING PROPERTY BOUNDARY
	= EXISTING RIGHT OF WAY
	= EXISTING RIGHT OF WAY CL
	= EXISTING EASEMENT
	= EXISTING SECTION LINE
	= EXISTING ROAD CL
	= EXISTING WETLANDS BOUNDARY
	= EXISTING STRIPE
	= EXISTING EDGE OF PAVEMENT
	= EXISTING FLOWLINE
	= EXISTING TOP BACK OF CURB
	= EXISTING SIDEWALK
	= EXISTING BURIED POWER
	= EXISTING OVERHEAD POWER
	= EXISTING BURIED COMMUNICATIONS
	= EXISTING OVERHEAD COMMUNICATIONS
	= EXISTING BURIED FIBER OPTICS
	= EXISTING BURIED TV
	= EXISTING BURIED TELEPHONE
	= EXISTING CONDUIT
	= EXISTING GAS MAIN
	= EXISTING WATER MAIN
	= EXISTING IRRIGATION LINE
	= EXISTING SANITARY SEWER FORCE MAIN
	= EXISTING SANITARY SEWER
	= EXISTING STORM DRAIN
	= EXISTING ORDINARY HIGH WATER
	= EXISTING RR TRACKS
	= EXISTING CULVERT
	= EXISTING TREE LINE
	= EXISTING CONCRETE

LINETYPES

PROPOSED	
	= PROPOSED TOP OF BANK
	= PROPOSED TOE OF BANK
	= PROPOSED DITCH CL
	= PROPOSED GRADE BREAK
	= PROPOSED MAJOR CONTOUR
	= PROPOSED MINOR CONTOUR
	= PROPOSED GUARDRAIL
	= PROPOSED FENCE
	= PROPOSED HANDRAIL
	= PROPOSED GRAVEL
	= PROPOSED WALL
	= PROPOSED BUILDING
	= PROPOSED PAVEMENT VALLEY
	= PROPOSED RIGHT OF WAY
	= PROPOSED CONSTRUCTION EASEMENT
	= PROPOSED ROAD CL
	= PROPOSED SAWCUT
	= PROPOSED STRIPE
	= PROPOSED EDGE OF PAVEMENT
	= PROPOSED CURB AND GUTTER
	= PROPOSED PATH
	= PROPOSED SIDEWALK
	= PROPOSED BURIED POWER
	= PROPOSED OVERHEAD POWER
	= PROPOSED TRAFFIC SIGNAL CONDUCTOR
	= PROPOSED FIBER OPTICS
	= PROPOSED BURIED COMMUNICATIONS
	= PROPOSED OVERHEAD COMMUNICATIONS
	= PROPOSED SILT FENCE
	= PROPOSED CONDUIT
	= PROPOSED IRRIGATION LINE
	= PROPOSED WATER MAIN
	= PROPOSED SANITARY SEWER FORCE MAIN
	= PROPOSED SANITARY SEWER
	= PROPOSED STORM DRAIN
	= PROPOSED CULVERT
	= PROPOSED TREE/SHRUB LINE
	= PROPOSED CONC. SIDEWALK/DRIVEWAY
	= PROPOSED INFILTRATION TRENCH
	= PROPOSED INFILTRATION FILTER MEDIA
	= PROPOSED GRIND
	= PROPOSED DEMOLITION AREA
	= PROPOSED ASPHALT
	= PROPOSED RIGHT OF WAY TAKE

EXISTING	
	= EXISTING SIGNAL POLE
	= EXISTING SIGNAL POLE W/ LUMINAIRE
	= EXISTING STREET LIGHT ASSEMBLY
	= EXISTING YARD LIGHT
	= EXISTING GUY WIRE
	= EXISTING GAS METER
	= EXISTING GAS VALVE
	= EXISTING TRANSFORMER PAD
	= EXISTING POWER VAULT
	= EXISTING JBOX
	= EXISTING SOIL BORING LOCATION
	= EXISTING MAIL BOX
	= EXISTING WATER SPIGOT
	= EXISTING WATER BLOW OFF
	= EXISTING WATER METER
	= EXISTING WATER VALVE
	= EXISTING FIRE HYDRANT
	= EXISTING TRAFFIC SIGNAL VAULT
	= EXISTING SEWER MANHOLE
	= EXISTING STORM AREA DRAIN
	= EXISTING STORM DRAIN CATCH BASIN TYPE I/INLET
	= EXISTING STORM DRAIN CATCH BASIN TYPE II
	= EXISTING UTILITY POLE
	= EXISTING MONITORING WELL
	= EXISTING STORM CLEANOUT
	= EXISTING SEWER CLEANOUT
	= EXISTING SIGN
	= EXISTING TELEPHONE PEDESTAL
	= EXISTING COMMUNICATIONS VAULT
	= EXISTING BENCH MARK
	= EXISTING NAIL AND SHINER
	= EXISTING IRON PIPE
	= EXISTING MONUMENT (IN CASE)
	= EXISTING MONUMENT (SURFACE)
	= EXISTING ANGLE POINT
	= EXISTING ROCK WALL
	= EXISTING TREE STUMP
	= EXISTING SHRUB
	= EXISTING TREE

SYMBOLS

PROPOSED	
	= PROPOSED STORM AREA DRAIN
	= PROPOSED COUPLER
	= PROPOSED WATER METER
	= PROPOSED WATER VALVE
	= PROPOSED STORM DRAIN CATCH BASIN TYPE II
	= PROPOSED SANITARY SEWER MANHOLE
	= PROPOSED STORM DRAIN CATCH BASIN TYPE I/INLET
	= PROPOSED HYDRANT
	= PROPOSED UTILITY POLE
	= PROPOSED JBOX (TYPE I, II, III)
	= PROPOSED MONITORING WELL
	= PROPOSED STORM CLEANOUT
	= PROPOSED SANITARY SEWER CLEAN OUT
	= PROPOSED SIGN
	= FLOW ARROW
	= PROPOSED ROCK WALL
	= PROPOSED TREE
	= SECTION MARK

ABBREVIATIONS

Ø = DIAMETER	EVCE = END VERTICAL CURVE ELEVATION	MIN = MINIMUM	RET = RETAINING
AC = ASBESTOS CEMENT	EVLS = END VERTICAL CURVE STATION	MJ = MECHANICAL JOINT	ROW = RIGHT OF WAY
AD = ALGEBRAIC DIFFERENCE	EX, EXIST = EXISTING	MOD = MODIFIED	RT = RIGHT
ASPH = ASPHALT	IR = EXISTING IRRIGATION	MON = MONUMENT	S = SOUTH
BLDG = BUILDING	F&C = FRAME & COVER	MPOC = MID-POINT ON CURVE	SCH = SCHEDULE
BVCE = BEGIN VERTICAL CURVE ELEVATION	F&G = FRAME & GRATE	MTR = METER	SD = STORM DRAIN
BVCE = BEGIN VERTICAL CURVE STATION	FF = FINISHED FLOOR	MW = MONITORING WELL	SDCB = STORM DRAIN CATCH BASIN
C&G = CURB & GUTTER	FG = FINISHED GRADE	N = NORTH	SDMH = STORM DRAIN MANHOLE
CATV = CABLE TELEVISION	FL = FLOW LINE, FLANGE	N/A = NOT APPLICABLE	SE = SOUTHEAST
CDF = CONTROLLED DENSITY FILL	FND = FOUND	NE = NORTHEAST	SN = EXISTING SIGN
CL = CLASS	FT = FEET	NW = NORTHWEST	SP = STANDARD PLAN
CMP = CORRUGATED METAL PIPE	FT/FT = FEET PER FOOT	NTS = NOT TO SCALE	SSMH = SANITARY SEWER MANHOLE
CMU = CONCRETE MASONRY UNIT	GALV = GALVANIZED	OC = ON CENTER	STA = STATION
COMP = COMPACTED	GRVL = GRAVEL	PVMT = PAVEMENT	STD = STANDARD
CON = CONIFER	GV = GATE VALVE	PC = POINT OF CURVATURE	SW = SOUTHWEST
CONC = CONCRETE	HDPE = HIGH DENSITY POLYETHYLENE	PCC = POINT OF COMPOUND CURVATURE, PORTLAND CEMENT CONCRETE	TBC = TOP BACK OF CONCRETE
CONT = CONTOUR	HMA = HOT MIX ASPHALT	PED = PEDESTAL	TEL = TELEPHONE
CPSSP = CORRUGATED POLYETHYLENE STORM SEWER PIPE	HP = HIGH POINT	POC = POINT ON CURVE	TL = TRAFFIC LOOP
CULV = CULVERT	HYD = HYDRANT	POSS = POSSIBLE	TYP = TYPICAL
D/W = DRIVEWAY	IE, INV = INVERT ELEVATION	PRC = POINT OF REVERSE CURVE	UP = UTILITY POLE
DEC = DECEQUOUS	IW = INJECTION WELL	PROP = PROPOSED	UTIL = UTILITY
DI = DUCTILE IRON	L = LENGTH	PT = POINT OF TANGENCY	VC = VERTICAL CURVE
E = EAST	LDSC = LANDSCAPING	PVC = POLYVINYL CHLORIDE	VLT = VAULT
EL = ELEVATION	LF = LINEAR FEET	PVI = POINT OF VERTICAL INTERSECTION	VPC = VERTICAL POINT OF CURVATURE
EOP, EP = EDGE OF PAVEMENT	LOC = LOCATION	PWR = POWER	VPI = VERTICAL POINT OF INTERSECTION
EQUIV = EQUIVALENT	LP = LOW POINT	R = RADIUS	VPT = VERTICAL POINT OF TANGENCY
	LT = LEFT	R&C = RING & COVER	W = WEST
	MAX = MAXIMUM		WM = WATER METER / WATER MAIN
			WSDOT = WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

SUBMITTED WITH
DESIGN PLAN

DESIGNED BY
KJK
DRAWN BY
KJK/LMH
CHECKED BY
LP



Reichhardt & Ebe
ENGINEERING INC

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2095 MAIN STREET
FERNDALE, WA 98248

THORNTON ST
SANITARY SEWER
LEGEND AND ABBREVIATIONS

DWG 16034 COVER

JOB#

16034

SCALE

H: N/A

V: N/A

DATE

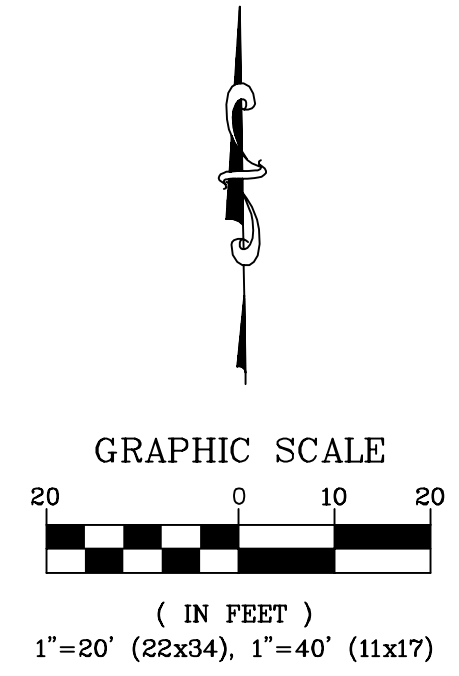
12/17/2018

SHEET

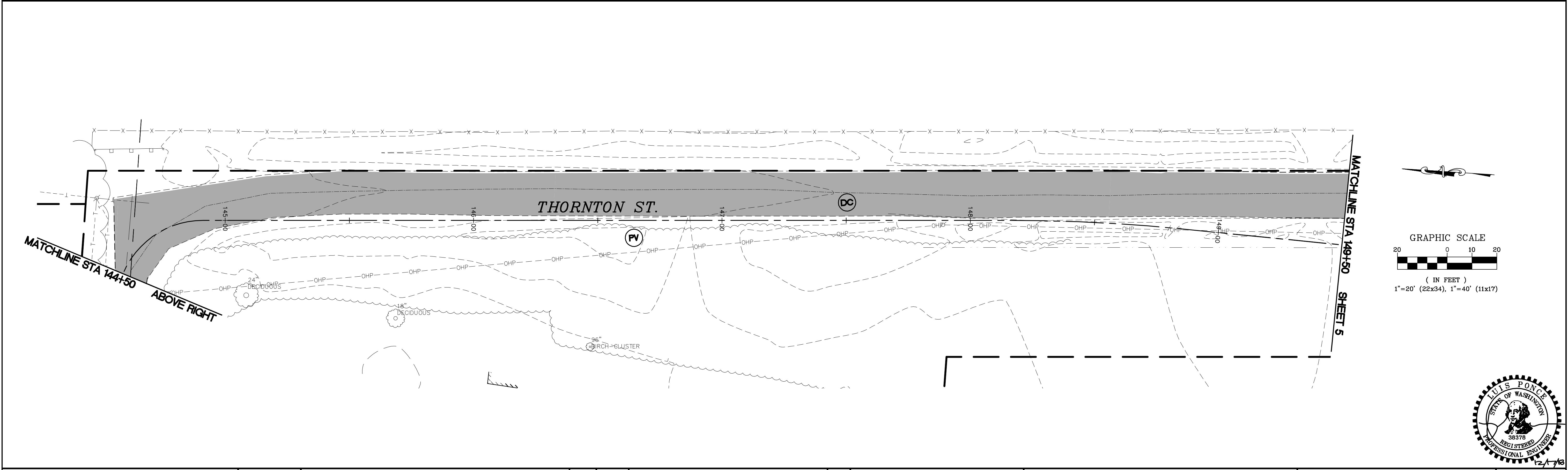
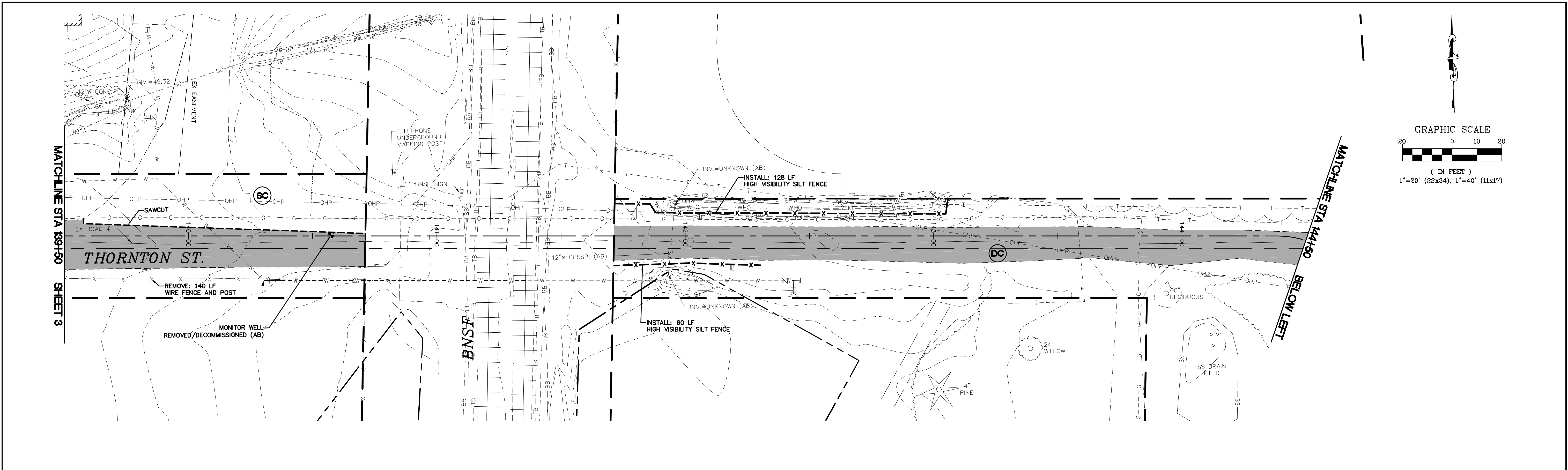
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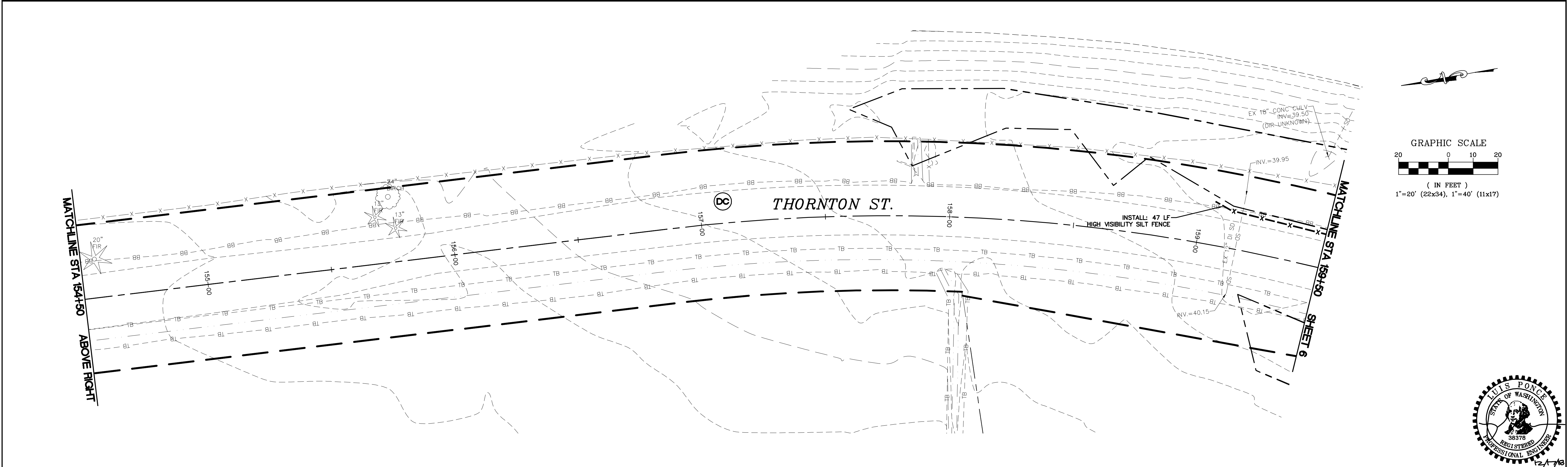
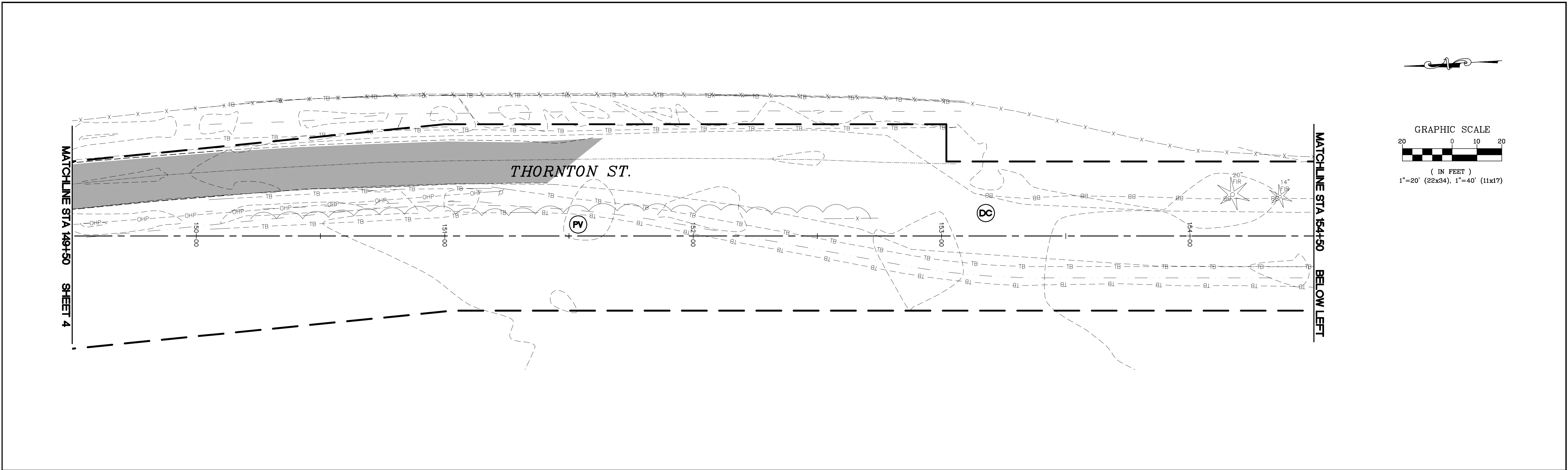


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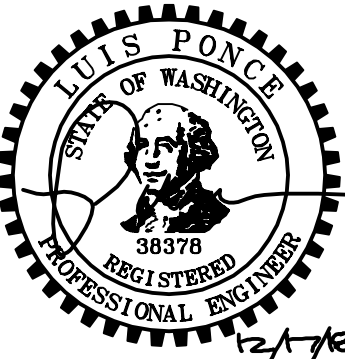


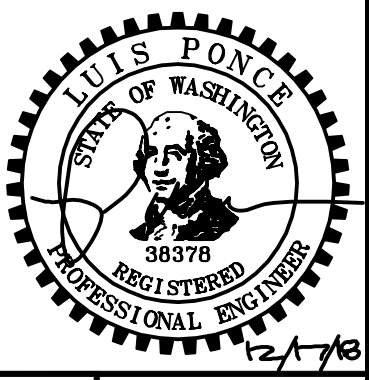
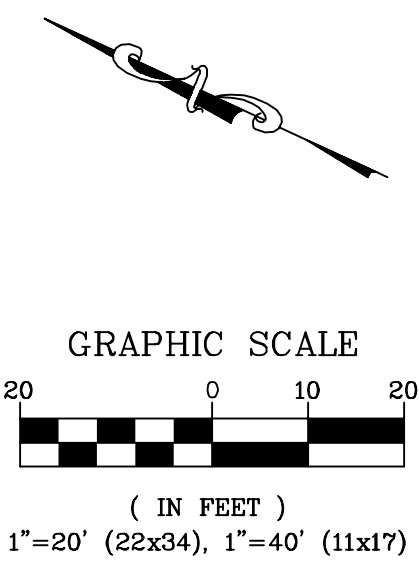
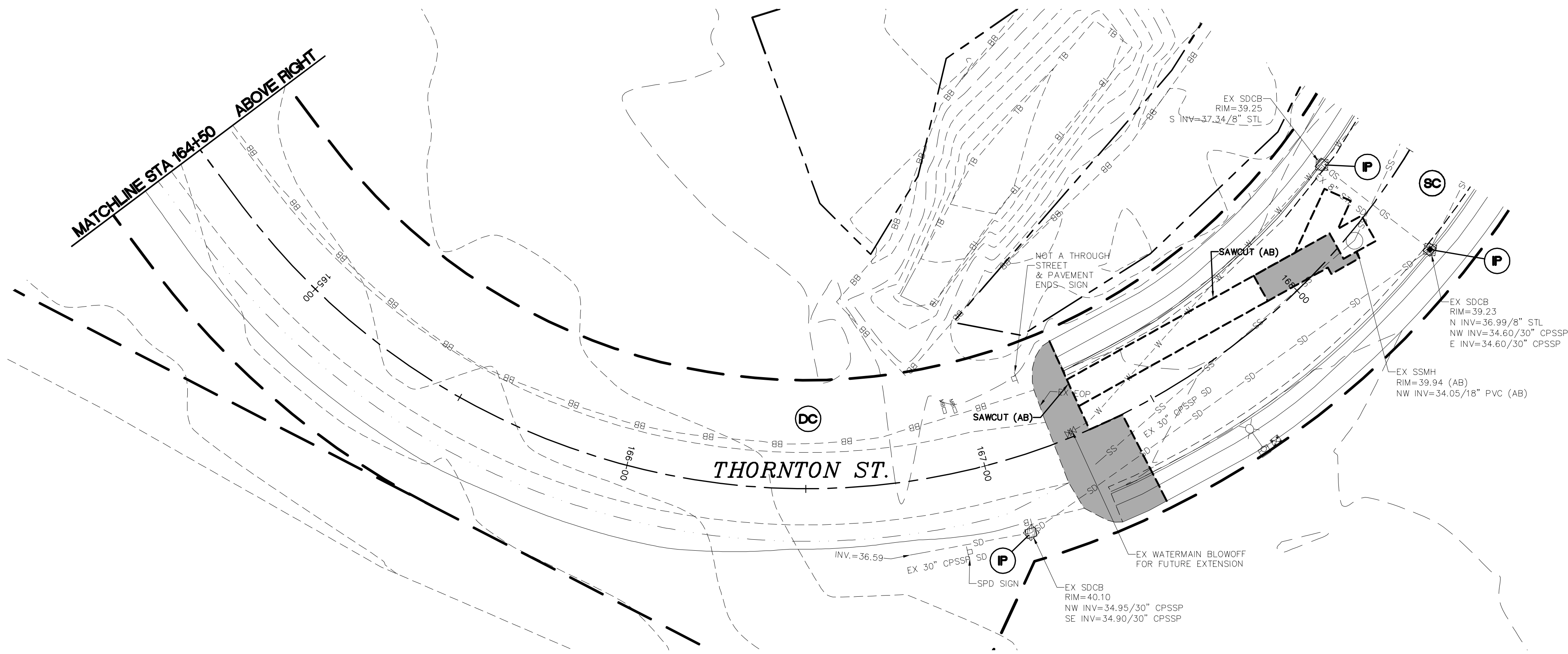
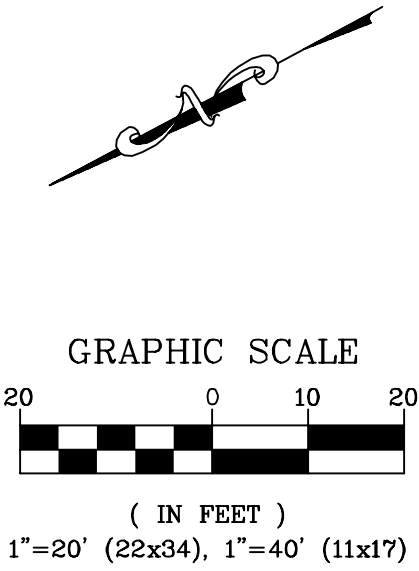
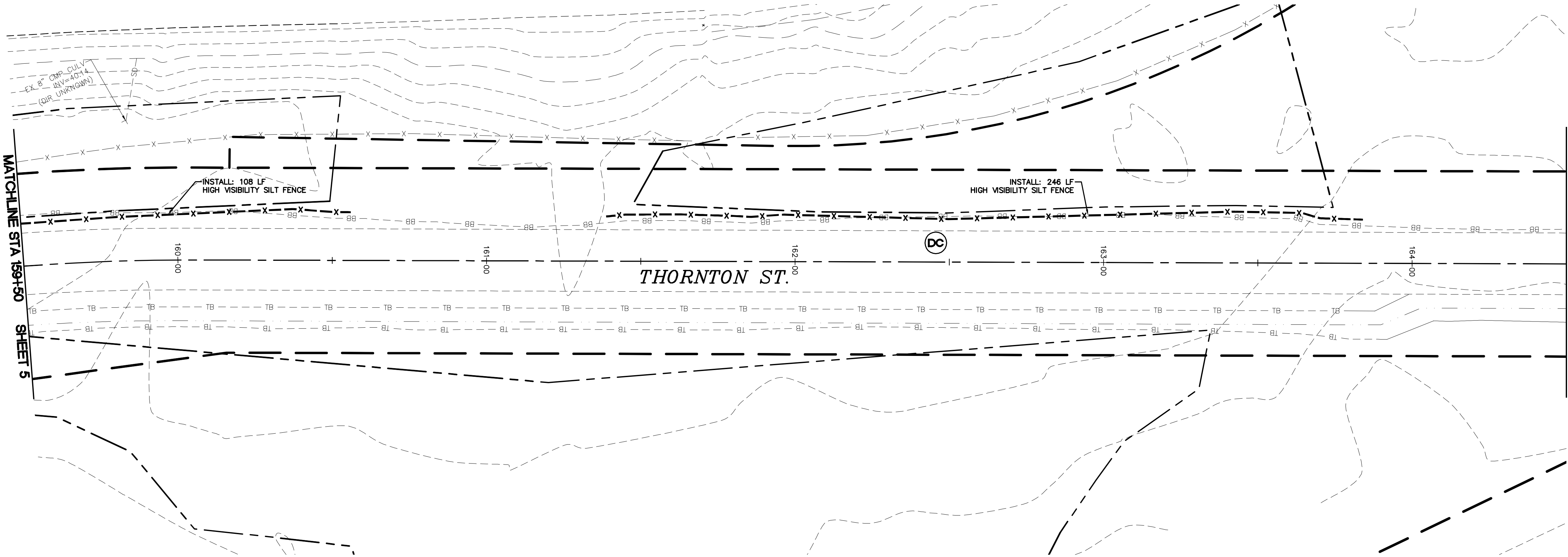
12/17/18 AS-BUILT		DESIGNED BY KJK	R&E Reichhardt & Ebe ENGINEERING INC P.O. Box 978 423 Front Street, Lynden, WA 98264 (360) 354-3687 813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713							CITY OF FERNDAL 2095 MAIN STREET FERNDAL, WA 98248	THORNTON ST SANITARY SEWER STA 139+50 TO 149+50	DWG 16034 EX COND		DATE 12/17/2018
		DRAWN BY KJK/LMH										JOB# 16034	SCALE H: 1"=20' V: N/A	SHEET 4
		CHECKED BY LP		NO.	DATE	DESCRIPTION	BY							of 24





SUBMITTED WITH DESIGN PLAN	DESIGNED BY KJK	 Reichhardt & Ebe ENGINEERING INC P.O. Box 978 423 Front Street, Lynden, WA 98264 (360) 354-3687 813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713						CITY OF FERNDAL 2095 MAIN STREET FERNDAL, WA 98248	THORNTON ST SANITARY SEWER STA 149+50 TO 159+50	DWG 16034 EX COND		DATE 12/17/2018		
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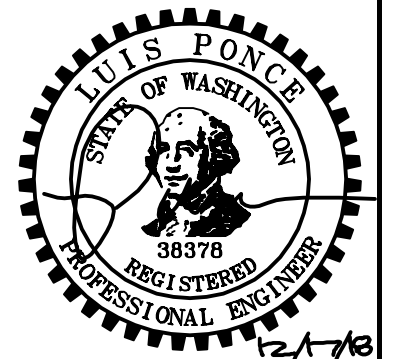
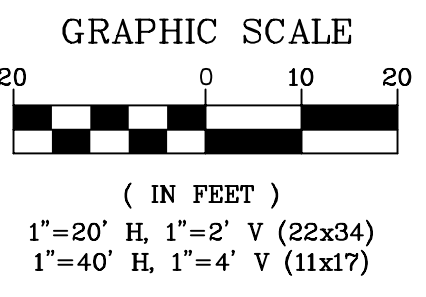
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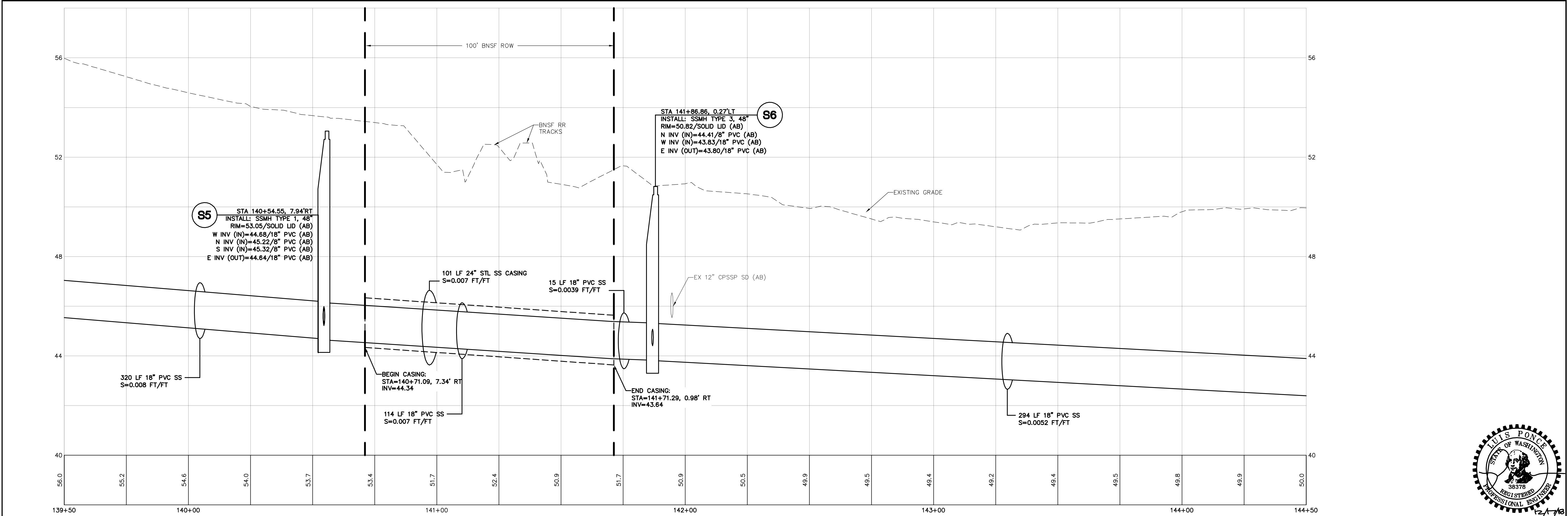
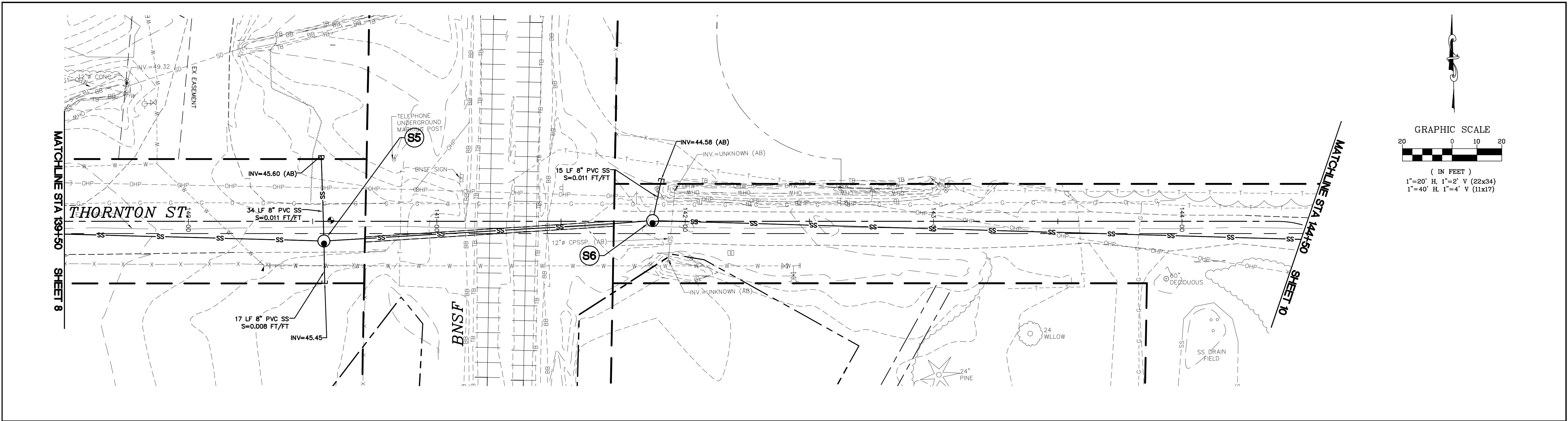
CITY OF FERNDAL
2095 MAIN STREET
FERNDAL, WA 98248

THORNTON ST
SANITARY SEWER
STA 159+50 TO 168+50

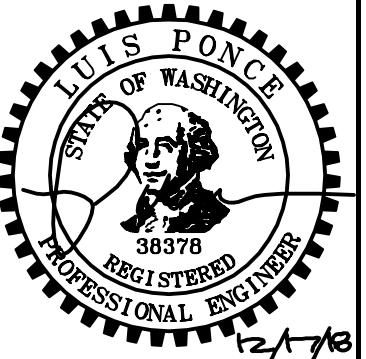
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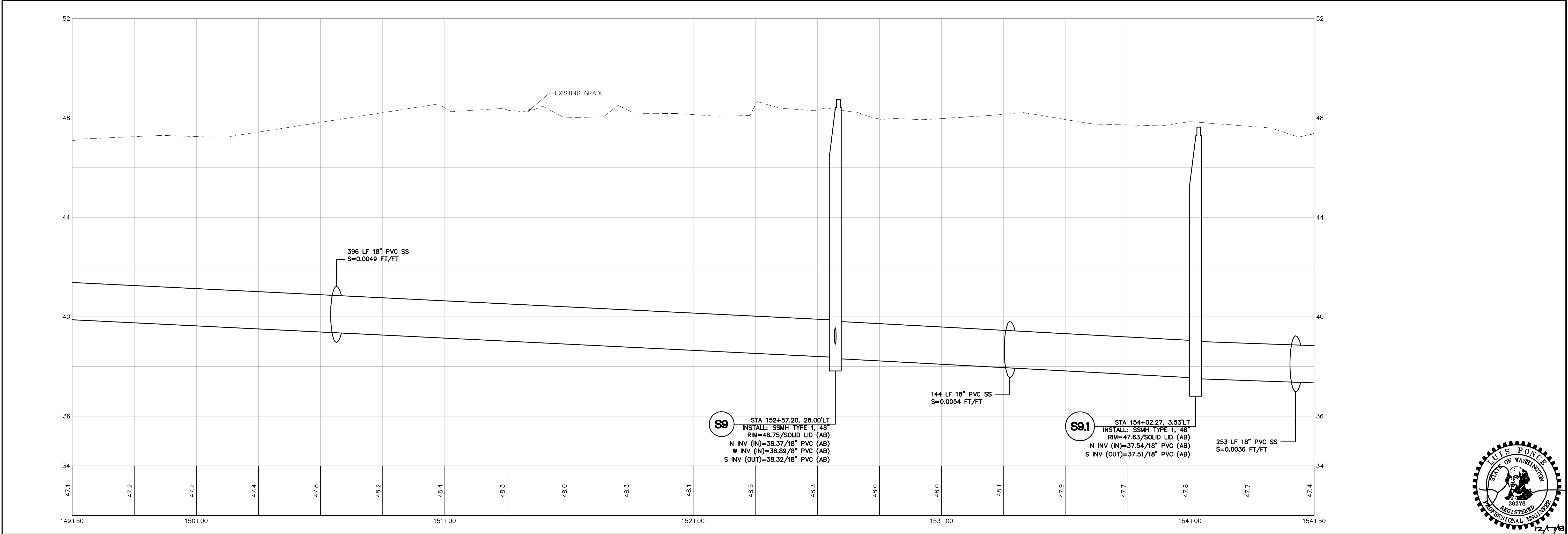
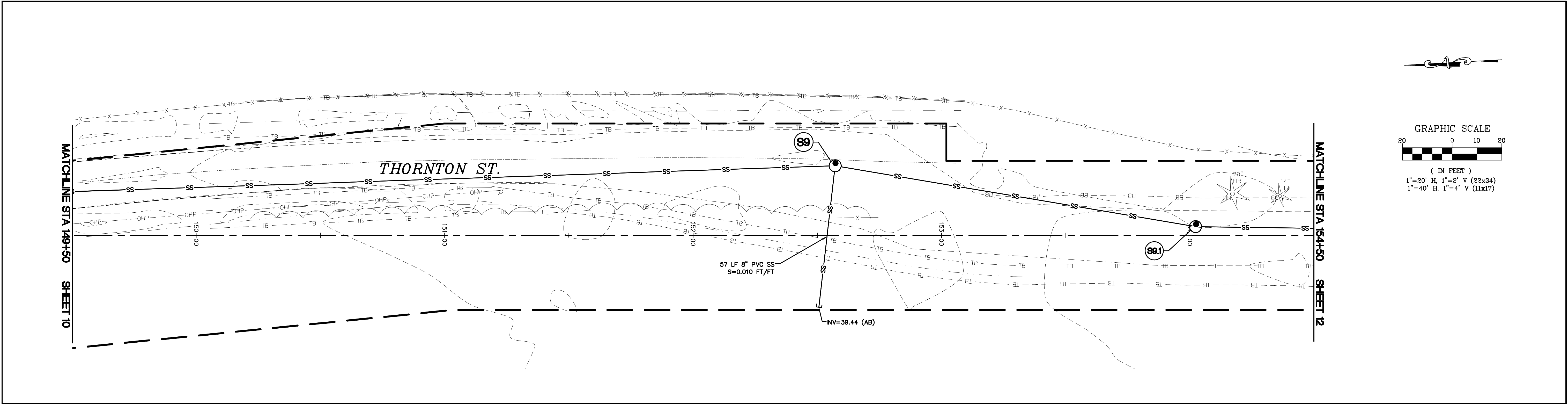
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SHEET 6 of 24





12/17/18 AS-BUILT	DESIGNED BY KJK	R&E Reichhardt & Ebe ENGINEERING INC P.O. Box 978 423 Front Street, Lynden, WA 98264 (360) 354-3687 813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							</
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12/17/18

AS-BUILT

DESIGNED BY
KJK

DRAWN BY
KJK/LMH

CHECKED BY
LP

R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687
813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713

NO.	DATE	DESCRIPTION	BY

CITY OF FERNDAL
2095 MAIN STREET
FERNDAL, WA 98248

THORNTON ST
SANITARY SEWER
STA 149+50 TO 154+50

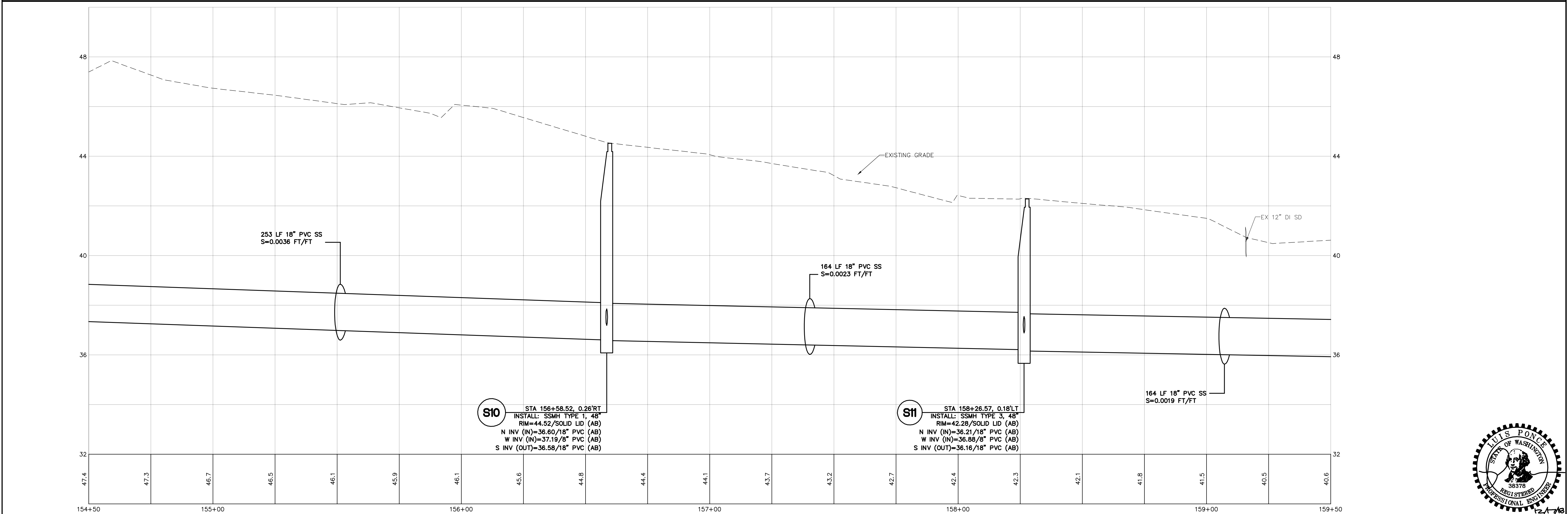
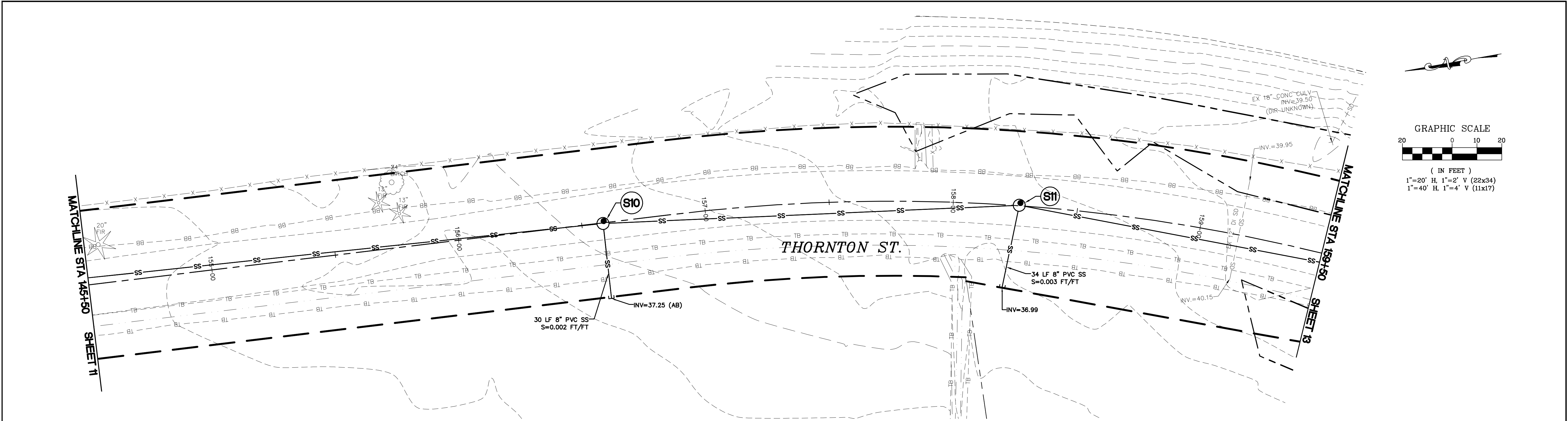
DWG 16034 SEWER

JOB# 16034

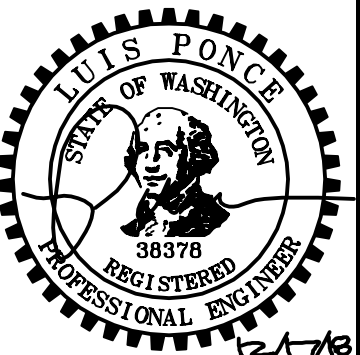
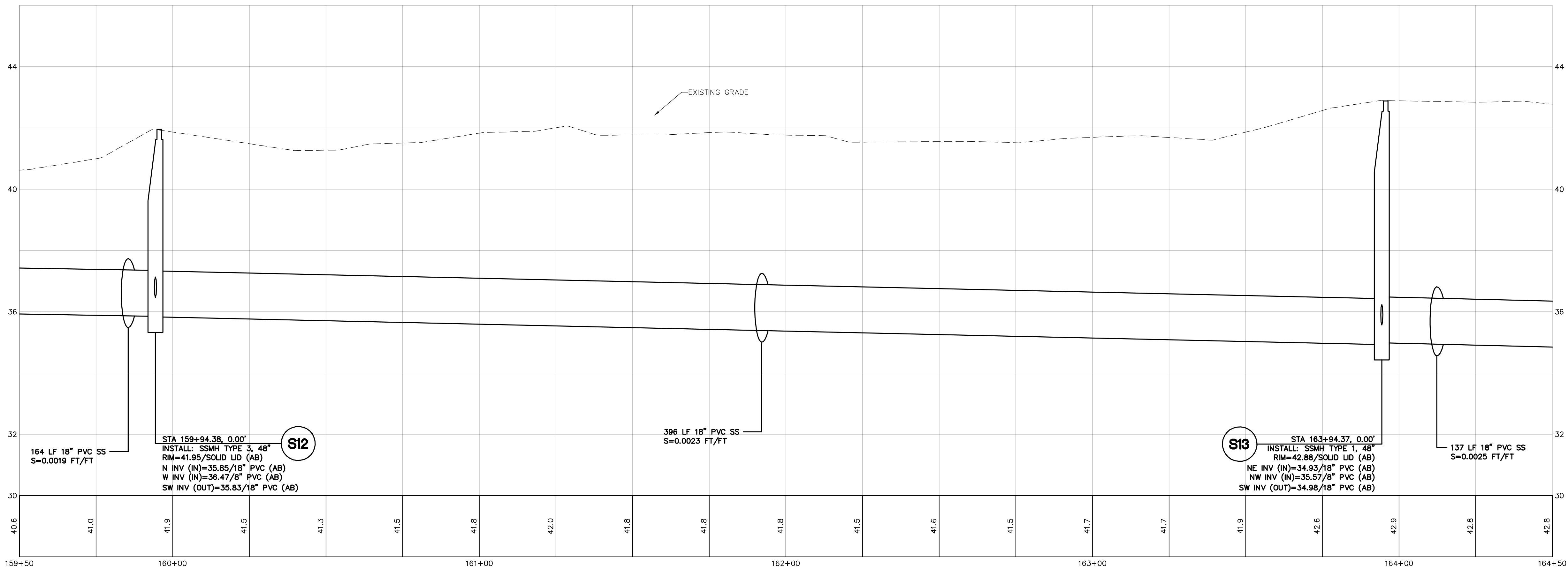
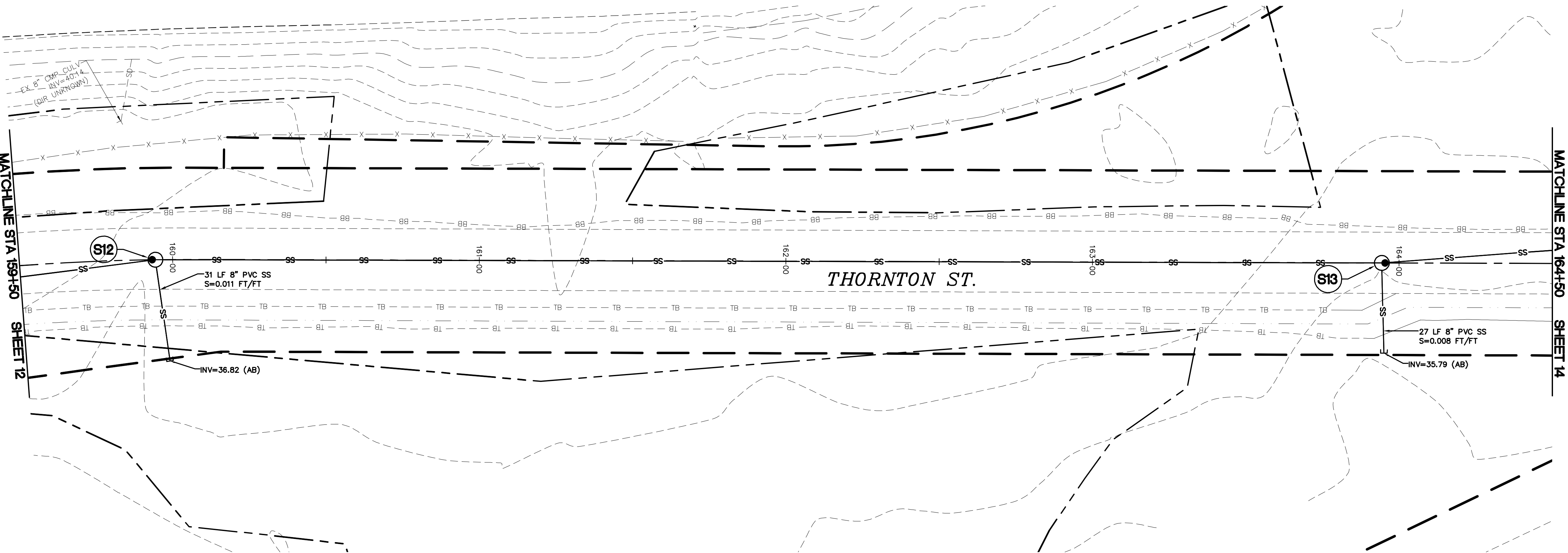
SCALE
H: 1"=20' V: 1"=2'

DATE 12/17/2018

SHEET 11 of 24



12/17/18 AS-BUILT	DESIGNED BY KJK	R&E Reichhardt & Ebe ENGINEERING INC P.O. Box 978 423 Front Street, Lynden, WA 98264 (360) 354-3687 813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713	NO.	DATE	DESCRIPTION	BY	CITY OF FERNDAL 2095 MAIN STREET FERNDAL, WA 98248	THORNTON ST SANITARY SEWER STA 154+50 TO 159+50	DWG 16034 SEWER		DATE 12/17/2018
	DRAWN BY KJK/LMH								JOB# 16034	SCALE H: 1"=20' V: 1"=2'	SHEET 12 of 24
CHECKED BY LP											



12/17/18
AS-BUILT

DESIGNED BY
KJK
DRAWN BY
KJK/LMH
CHECKED BY
LP

R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687
813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713

NO.	DATE	DESCRIPTION	BY	

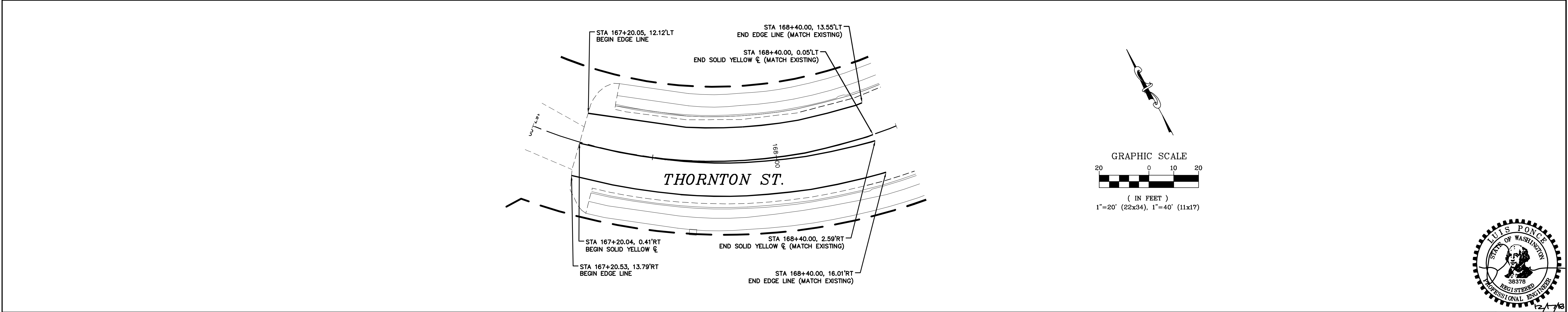
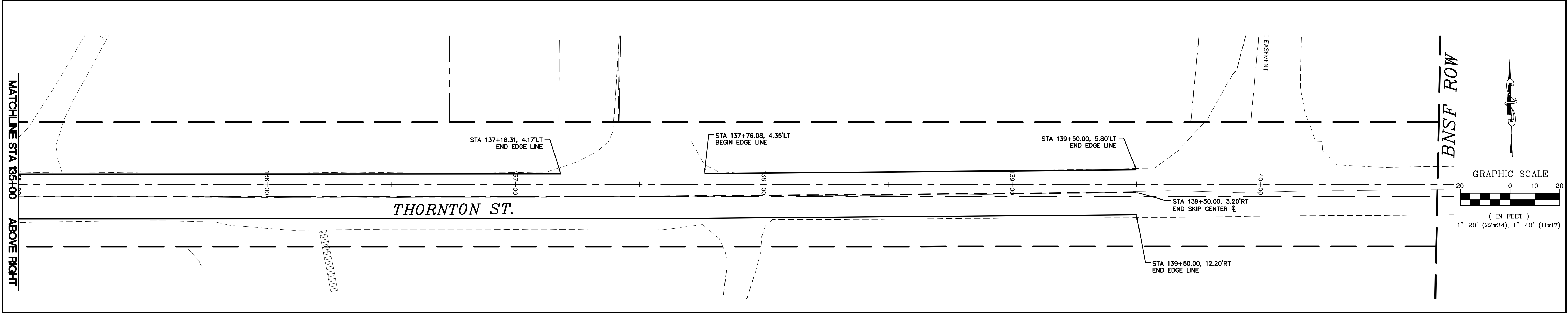
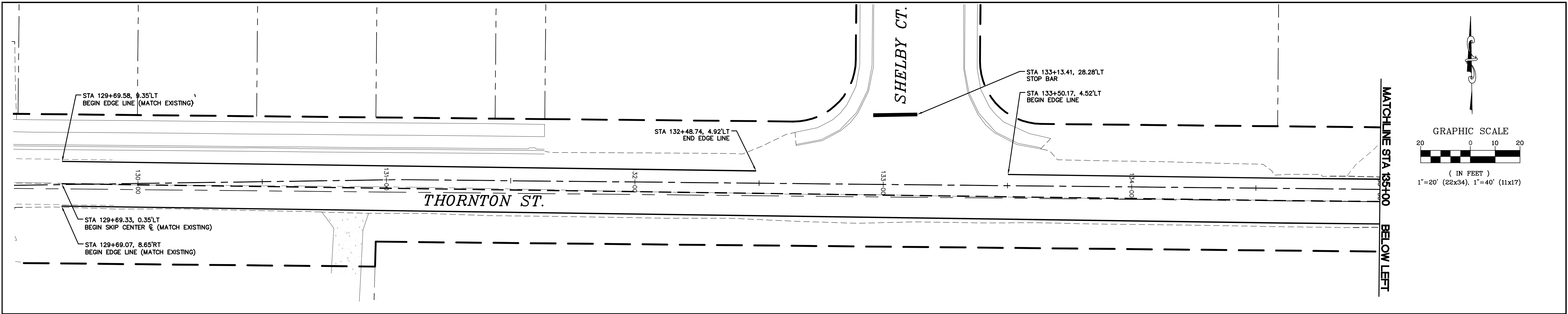
CITY OF FERNDALE
2095 MAIN STREET
FERNDALE, WA 98248

THORNTON ST
SANITARY SEWER
STA 159+50 TO 164+50

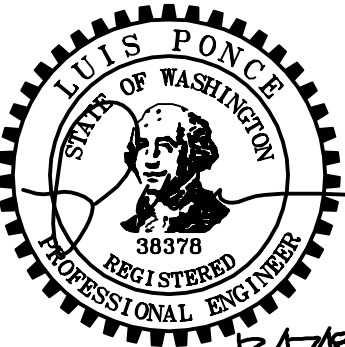
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JOB# 16034

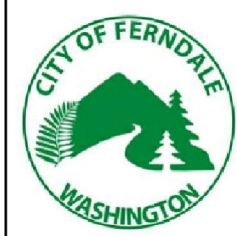
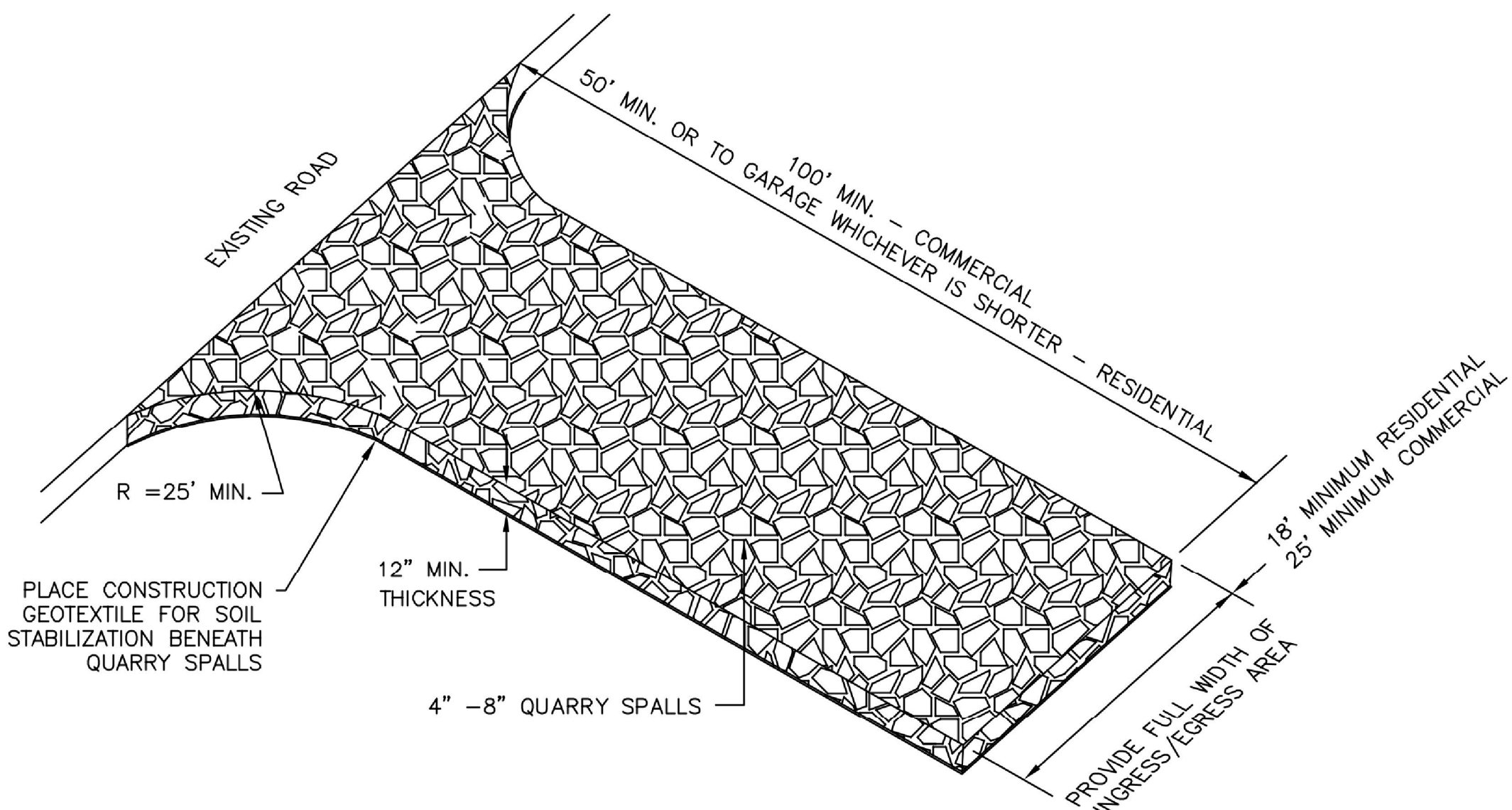
SCALE
H: 1"=20' V: 1"=2'

DATE 12/17/2018
SHEET 13 of 24



12/17/18 AS-BUILT	DESIGNED BY KJK DRAWN BY KJK/LMH CHECKED BY LP	R&E Reichhardt & Ebe ENGINEERING INC P.O. Box 978 423 Front Street, Lynden, WA 98264 (360) 354-3687 813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713	<table><tr><td></td><td></td><td></td><td></td></tr><tr><td>NO.</td><td>DATE</td><td>DESCRIPTION</td><td>BY</td></tr></table>					NO.	DATE	DESCRIPTION	BY	CITY OF FERNDALE 2095 MAIN STREET FERNDALE, WA 98248	THORNTON ST SANITARY SEWER STA 129+50 TO 140+75 AND STA 167+00 TO 168+50	DWG 16034 CHAN	DATE 12/17/2018
NO.	DATE	DESCRIPTION	BY												
JOB# 16034	SCALE H: 1"=20' V: N/A	SHEET 15 of 24													





APPROVED

Public Works Director

8/11/17

Date

NOVEMBER 29, 2016

TEMPORARY CONSTRUCTION
ENTRANCE

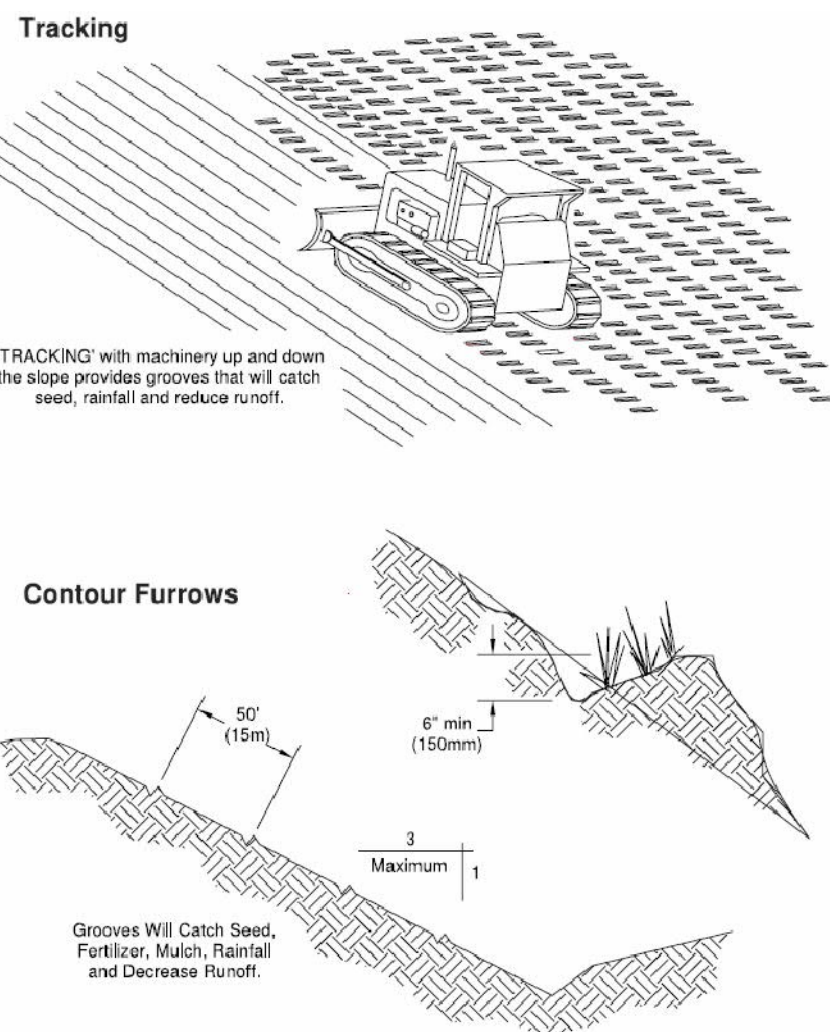
STANDARD DETAIL ST-25
NOT TO SCALE

TESC GENERAL NOTES

1. THIS PLAN REPRESENTS THE MINIMUM REQUIREMENTS FOR THIS PROJECT. ADDITIONAL EROSION CONTROL MAY BE REQUIRED BY THE ENGINEER AS ARE FOUND NECESSARY.
2. THE TEMPORARY EROSION CONTROL SYSTEMS SHALL BE INSTALLED PRIOR TO ALL OTHER SITE CONSTRUCTION.
3. ALL CLEARING LIMITS SHALL BE VISIBLY MARKED PRIOR TO CLEARING.
4. ANY VEGETATION NOT IN THE CONSTRUCTION AREA SHALL BE LEFT UNDISTURBED.
5. CONTRACTOR SHALL INFORM THE ENGINEER AND OBTAIN APPROVAL FROM THE ENGINEER OF ANY PROPOSED CHANGES IN PLAN PRIOR TO CONSTRUCTION OF THAT CHANGE. CONTRACTOR SHALL KEEP RECORD OF DEVIATIONS AND FORWARD TO THE ENGINEER.
6. MAINTENANCE AND OPERATION OF THE EROSION CONTROL AND SEDIMENTATION SYSTEM SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION OF THE SEDIMENTATION AND EROSION CONTROL MEASURES, AS SHOWN AND AS INSTALLED ON AN AS NEEDED BASIS.
7. THE CONSTRUCTED EROSION CONTROL AND SEDIMENTATION PLAN SHALL BE APPROVED BY THE ENGINEER PRIOR TO PERFORMING ANY SITE GRADING OR CLEARING.
8. CONTRACTOR WILL HAVE A WATER TRUCK AVAILABLE ON SITE AT ALL TIMES. CONTRACTOR WILL WATER SURFACES OFTEN ENOUGH TO ABATE DUST AS APPROVED BY THE ENGINEER. WATERING WILL INCLUDE WEEKENDS AND HOLIDAYS.
9. THE CONTRACTOR SHALL PERFORM ALL STREET CLEANING BY HAND OR WITH A SELF-PROPELLED PICKUP STREET SWEEPER. A STANDARD SELF-PROPELLED STREET SWEEPER WILL NOT BE ALLOWED.
10. ALL DISTURBED AREAS SHALL BE HYDROSEEDED. GRASS SEEDING SHALL BE BROADCAST IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
11. ALL CUT AND FILL SLOPES SHALL BE SEEDED AND FERTILIZED FOR EROSION CONTROL. CONTRACTOR SHALL BE RESPONSIBLE FOR SLOPE EROSION UNTIL VEGETATION IS FIRMLY ESTABLISHED.
12. ALL STORM DRAIN FACILITIES WITHIN THE PROJECT BOUNDARY, OR WHICH ARE IMPACTED BY THE PROJECT ARE TO BE CLEARED OF SEDIMENT AND DEBRIS PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.
13. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

DUST CONTROL:
CONTRACTOR SHALL LIMIT DUST GENERATION BY CLEARING ONLY THOSE AREAS WHERE IMMEDIATE EXCAVATION AND GRADING SHALL TAKE PLACE MAINTAINING THE ORIGINAL GROUND COVER AS LONG AS PRACTICAL. DUST CONTROL METHODS SHALL BE PERFORMED BY METHODS LISTED IN NOTE NUMBER EIGHT OF THE TESC GENERAL NOTES. SURFACES SHALL BE SPRAYED WITH WATER AS NEEDED IN ORDER TO ABATE DUST AS APPROVED BY THE ENGINEER.

STREET CLEANING:
CONTRACTOR SHALL PERFORM ALL STREET CLEANING AT A MINIMUM OF AT LEAST ONCE AT THE END OF EVERY DAY WORKED AND ON AN AS NEEDED BASIS BASED ON VEHICLE TRACK OUT. STREET CLEANING SHALL BE PERFORMED BY THE METHODS LISTED IN NOTE NUMBER 10 OF THE TESC GENERAL NOTES AND SHALL NOT ALLOW SEDIMENT INTO STORMWATER CONVEYANCE DITCHES OR STRUCTURES. STREET CLEANING METHODS SHALL BE APPROVED BY THE ENGINEER PRIOR TO THE BEGINNING OF CONSTRUCTION.



SURFACE ROUGHENING

NTS



APPROVED

Public Works Director

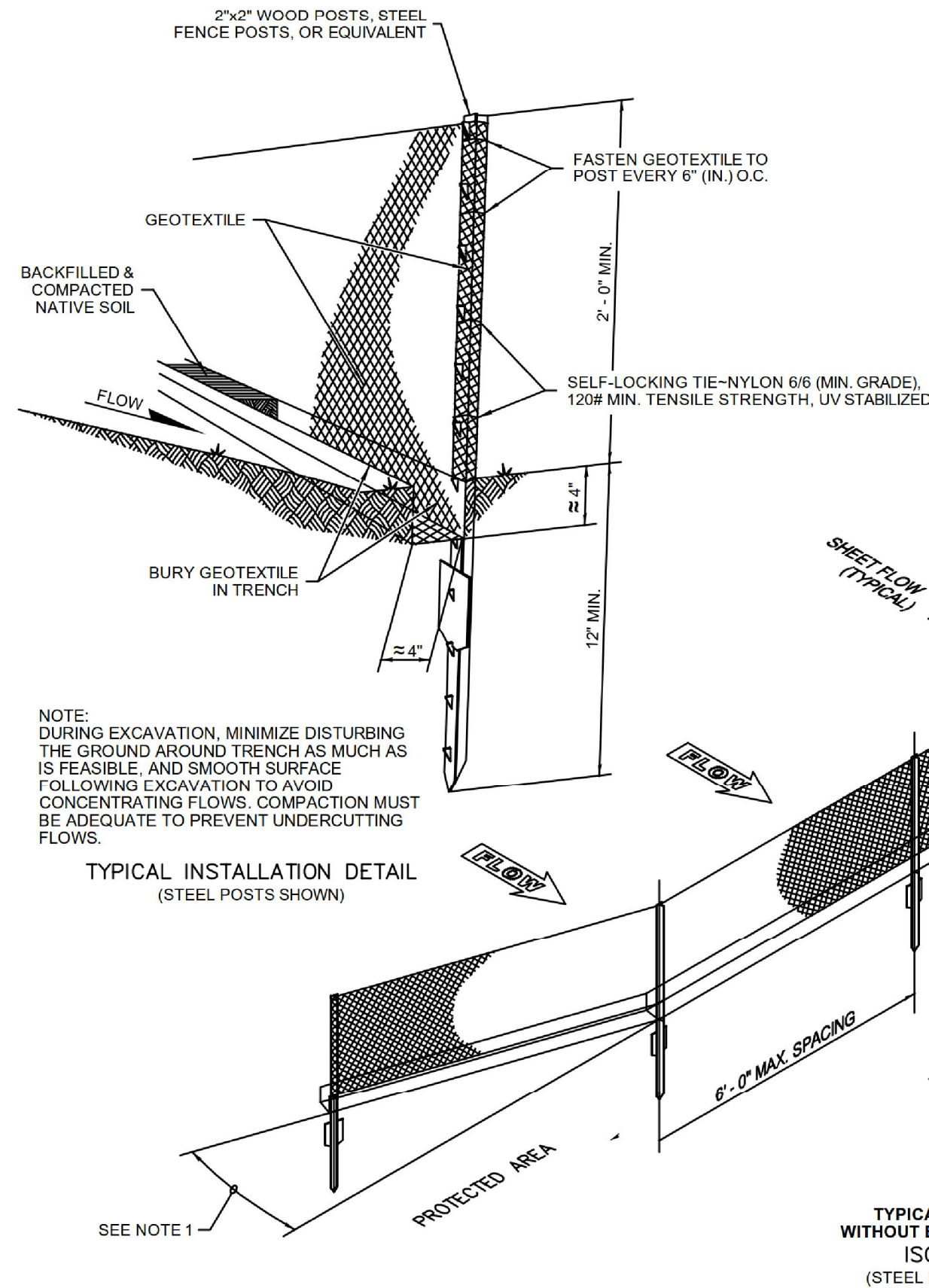
8/11/17

Date

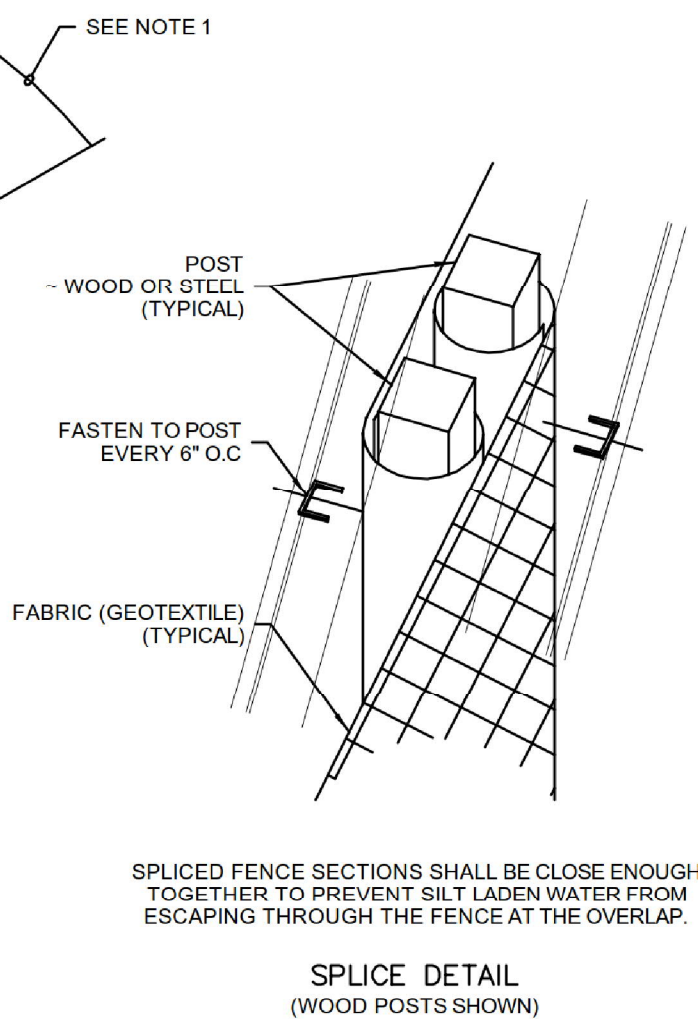
AUGUST 4, 2017

SILT FENCE

STANDARD DETAIL ST-27
NOT TO SCALE



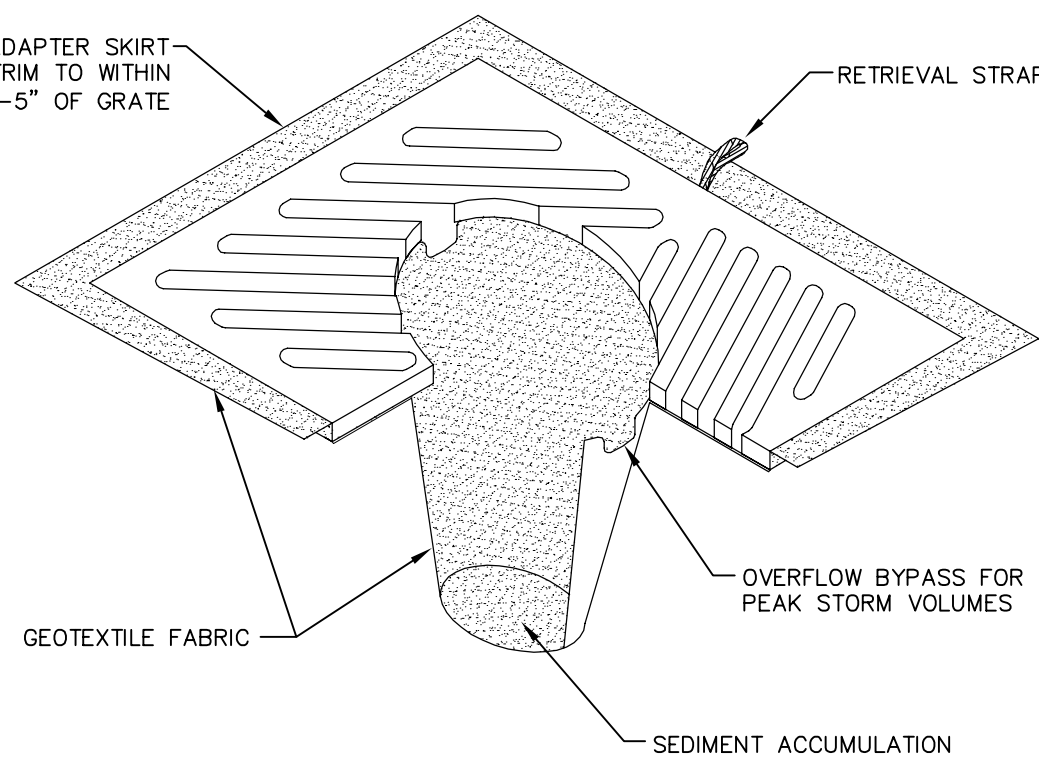
- NOTES:
1. INSTALL THE ENDS OF THE SILT FENCE TO POINT SLIGHTLY UPSLOPE TO PREVENT SEDIMENT FROM FLOWING AROUND THE ENDS OF THE FENCE.
 2. SPLICES SHALL NEVER BE PLACED IN LOW SPOTS OR SUMP AREAS. THE FENCE MAY NEED TO BE REINSTALLED UNLESS THE PROJECT ENGINEER APPROVES THE INSTALLATION.
 3. INSTALL SILT FENCING PARALLEL TO MAPPED CONTOUR LINES.
 4. SILT FENCE TYPE SHALL BE DETERMINED BY CITY ENGINEER DURING PROJECT REVIEW.



AUGUST 4, 2017

SILT FENCE

STANDARD DETAIL ST-27
NOT TO SCALE



INLET PROTECTION

NTS

- NOTES:
1. INSERT SHALL BE INSTALLED PRIOR TO CLEARING & GRADING ACTIVITY, OR UPON PLACEMENT OF A NEW CATCH BASIN.
 2. SEDIMENT SHALL BE REMOVED FROM THE UNIT WHEN IT BECOMES HALF FULL.
 3. SEDIMENT REMOVAL SHALL BE ACCOMPLISHED BY REMOVING THE INSERT, EMPTYING, & RE-INSERTING IT INTO THE CATCH BASIN.



SUBMITTED WITH
DESIGN PLAN

DESIGNED BY
KJK
DRAWN BY
KJK/LMH
CHECKED BY
LP

R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687
813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713

NO.	DATE	DESCRIPTION	BY

CITY OF FERNDAL
2095 MAIN STREET
FERNDAL, WA 98248

THORNTON ST
SANITARY SEWER
EROSION TESC-DETAIL 1

DWG 16034 DETAIL

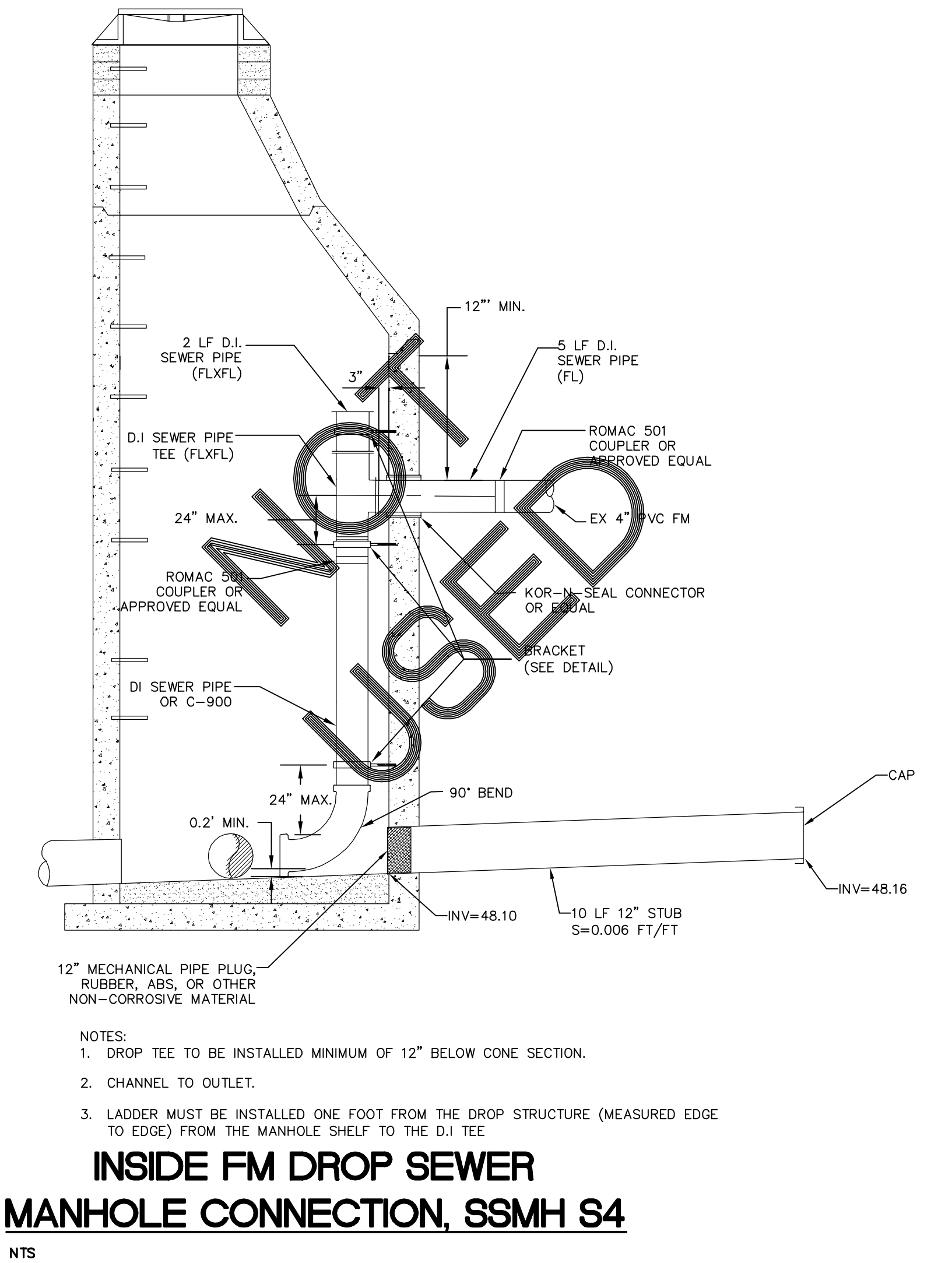
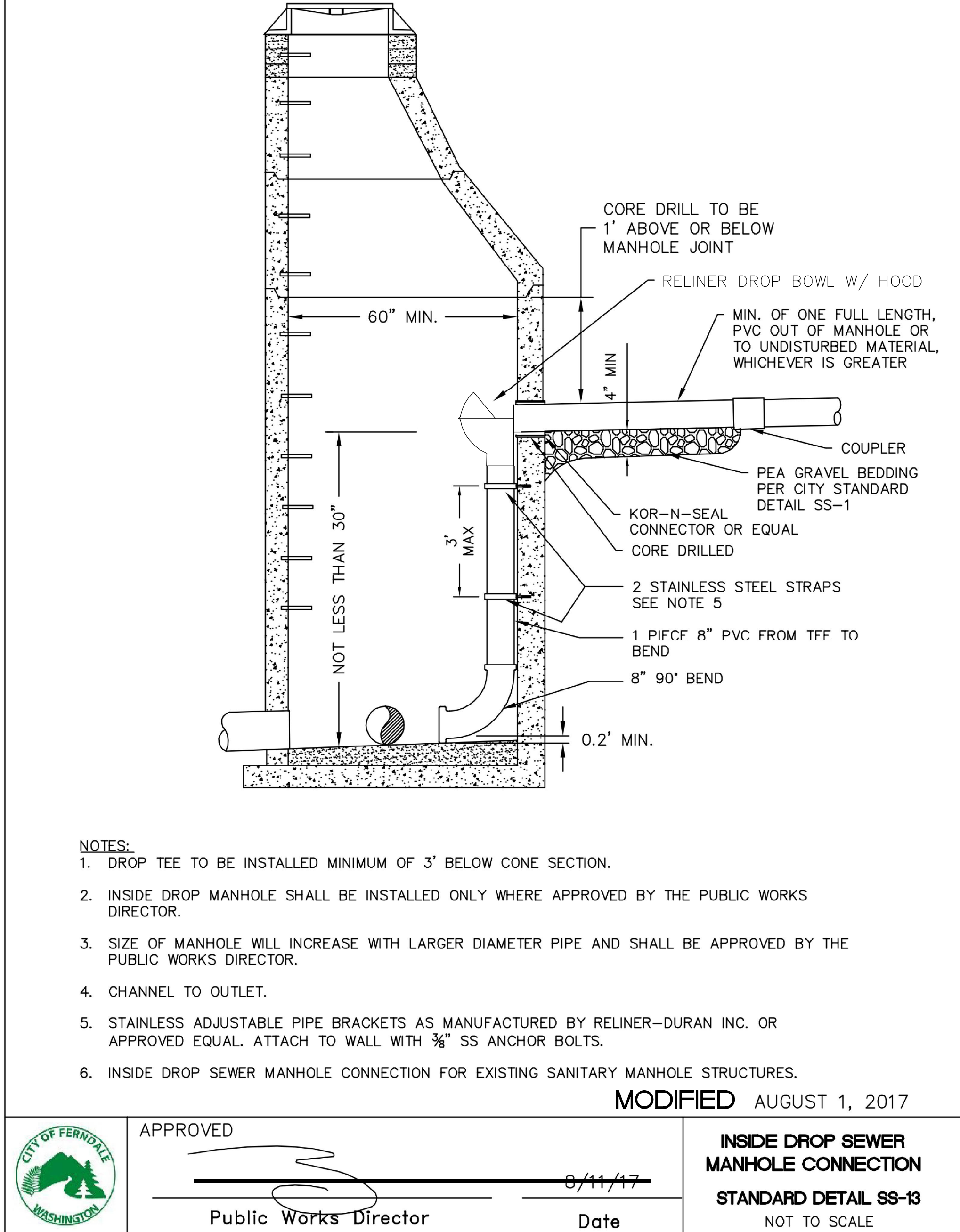
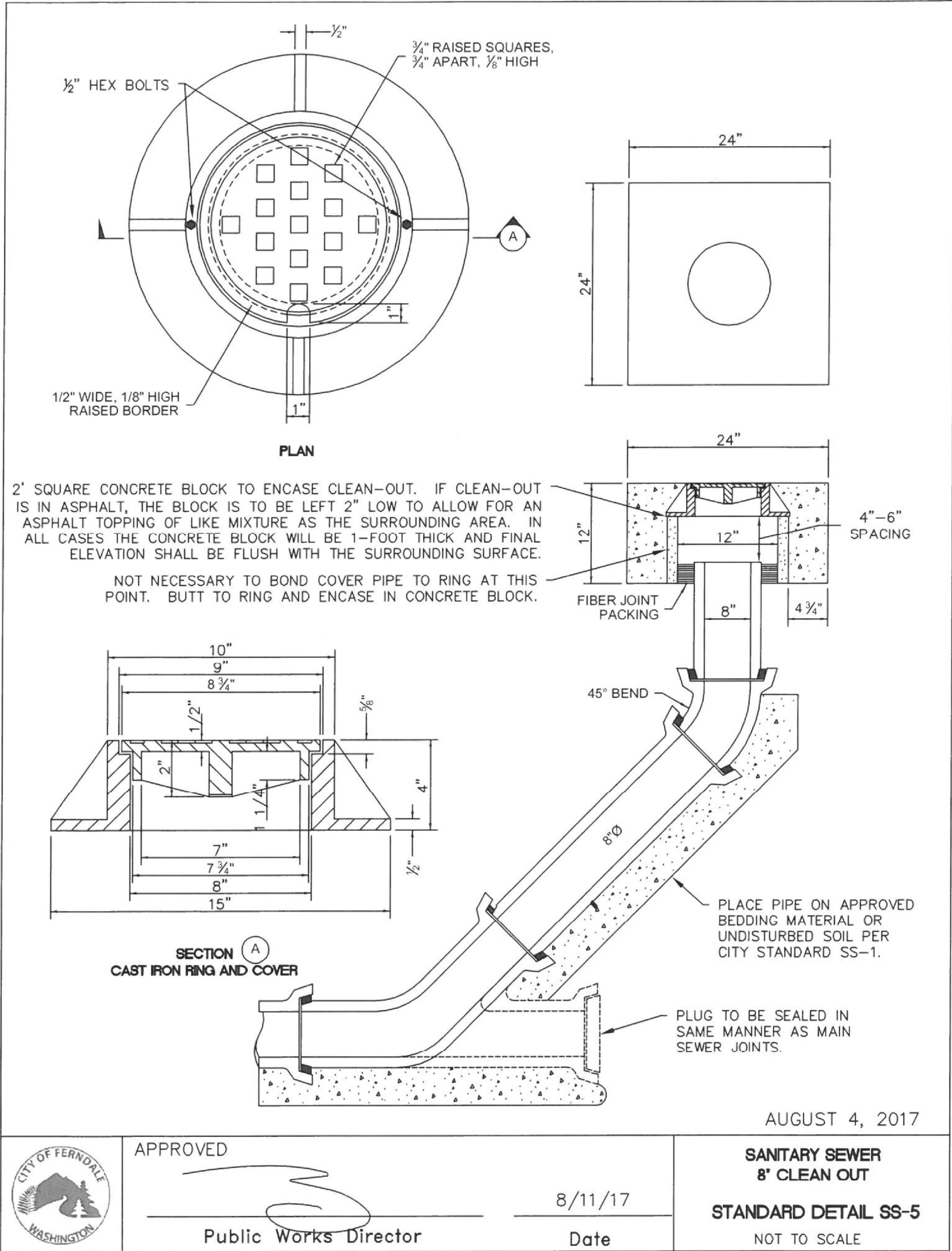
JOB#
16034

SCALE
H: N/A

V: N/A

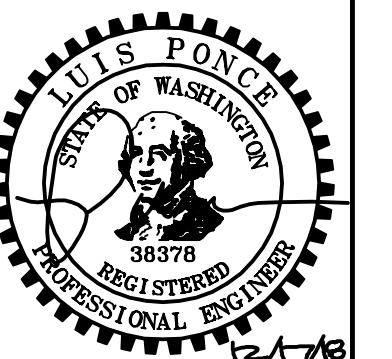
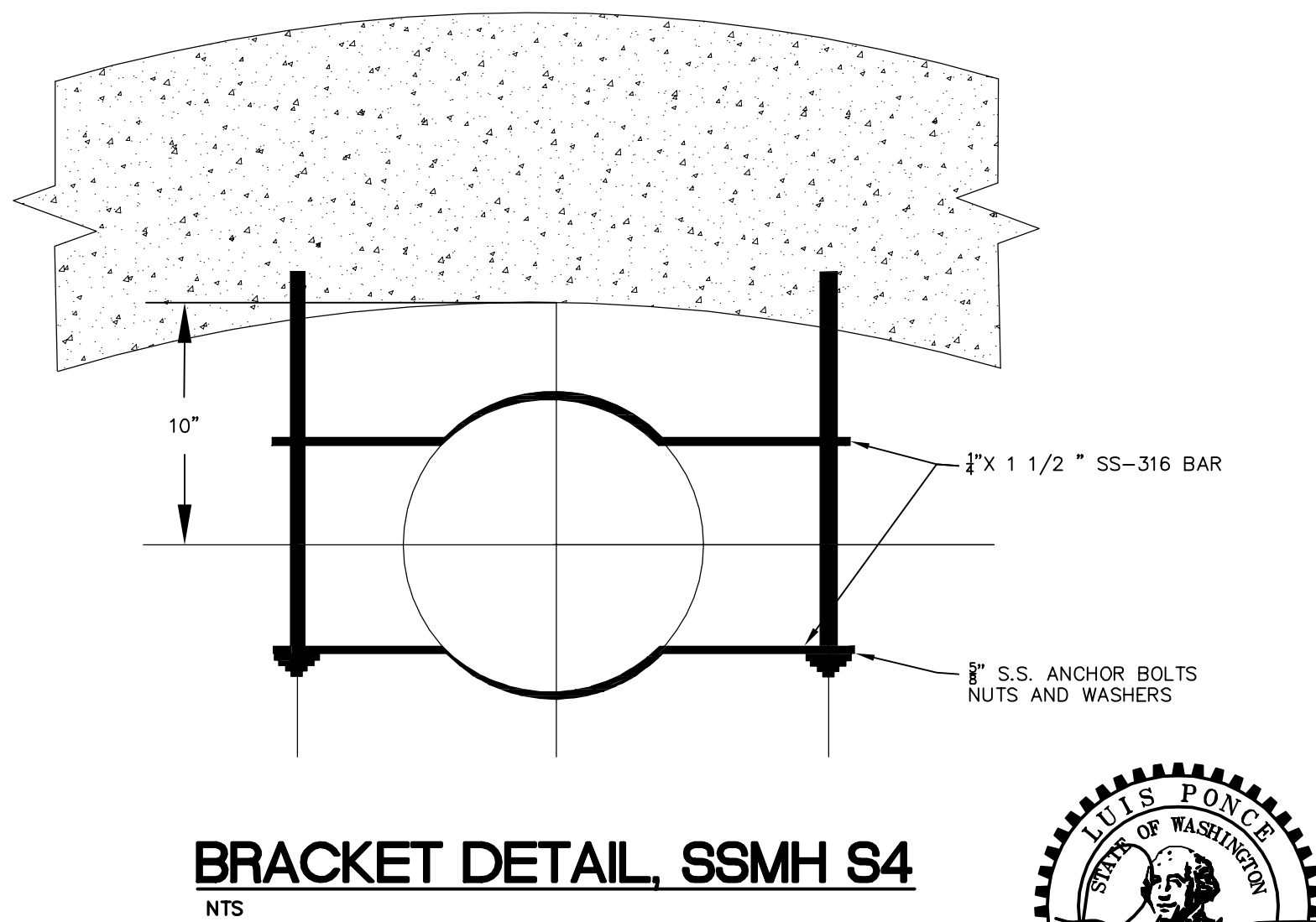
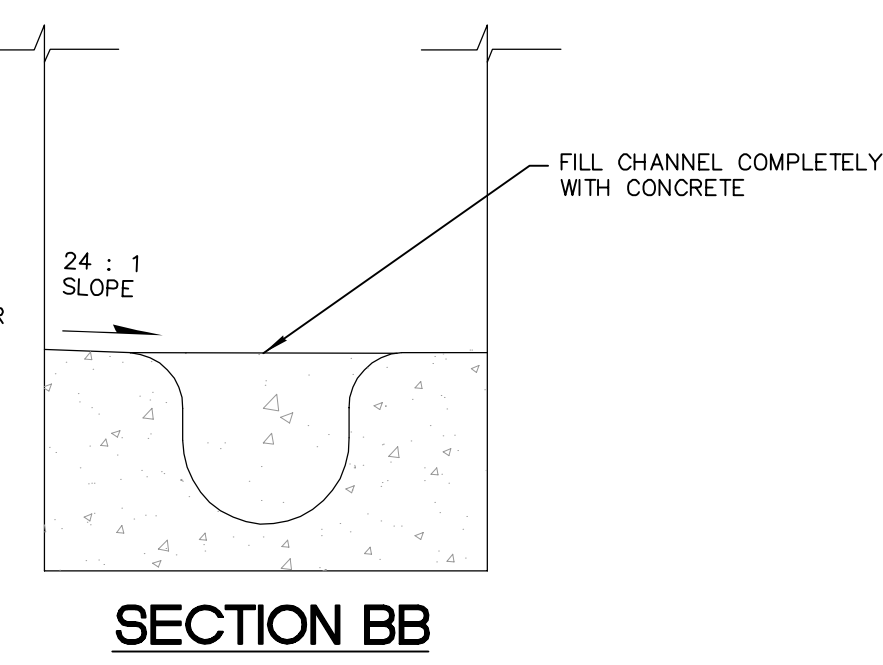
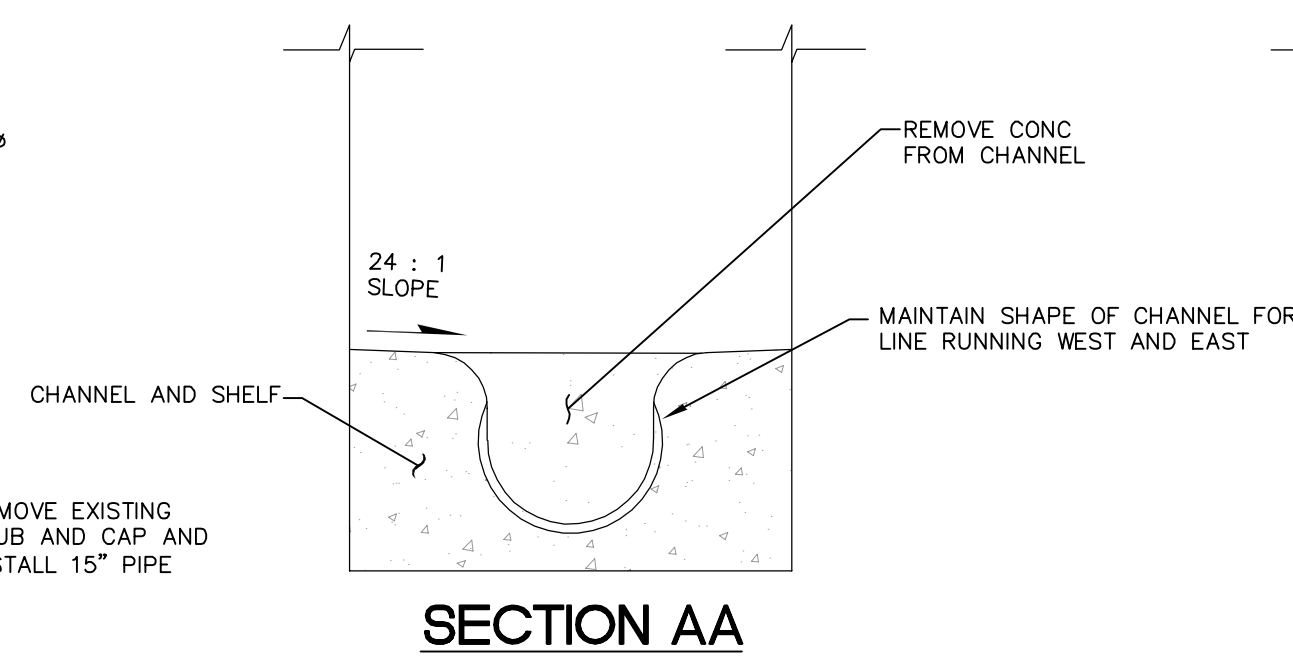
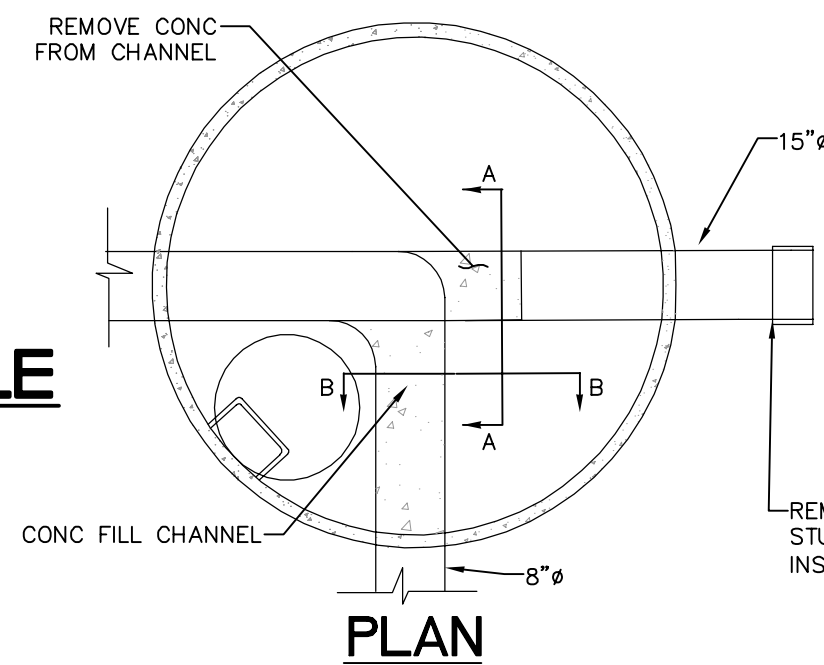
DATE
12/17/2018

SHEET
17
of 24



54' CHanneled Manhole AT STA 129+80

NOTE: 1. INSIDE DROP TO NORTH NOT SHOWN FOR CLARITY



12/17/18 AS-BUILT

DESIGNED BY KJK
DRAWN BY KJK/LMH
CHECKED BY LP

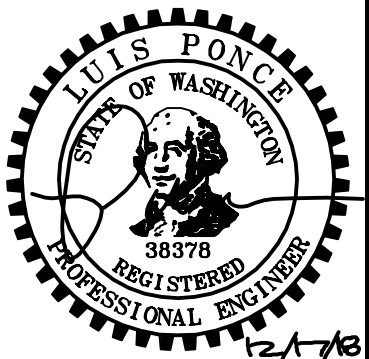
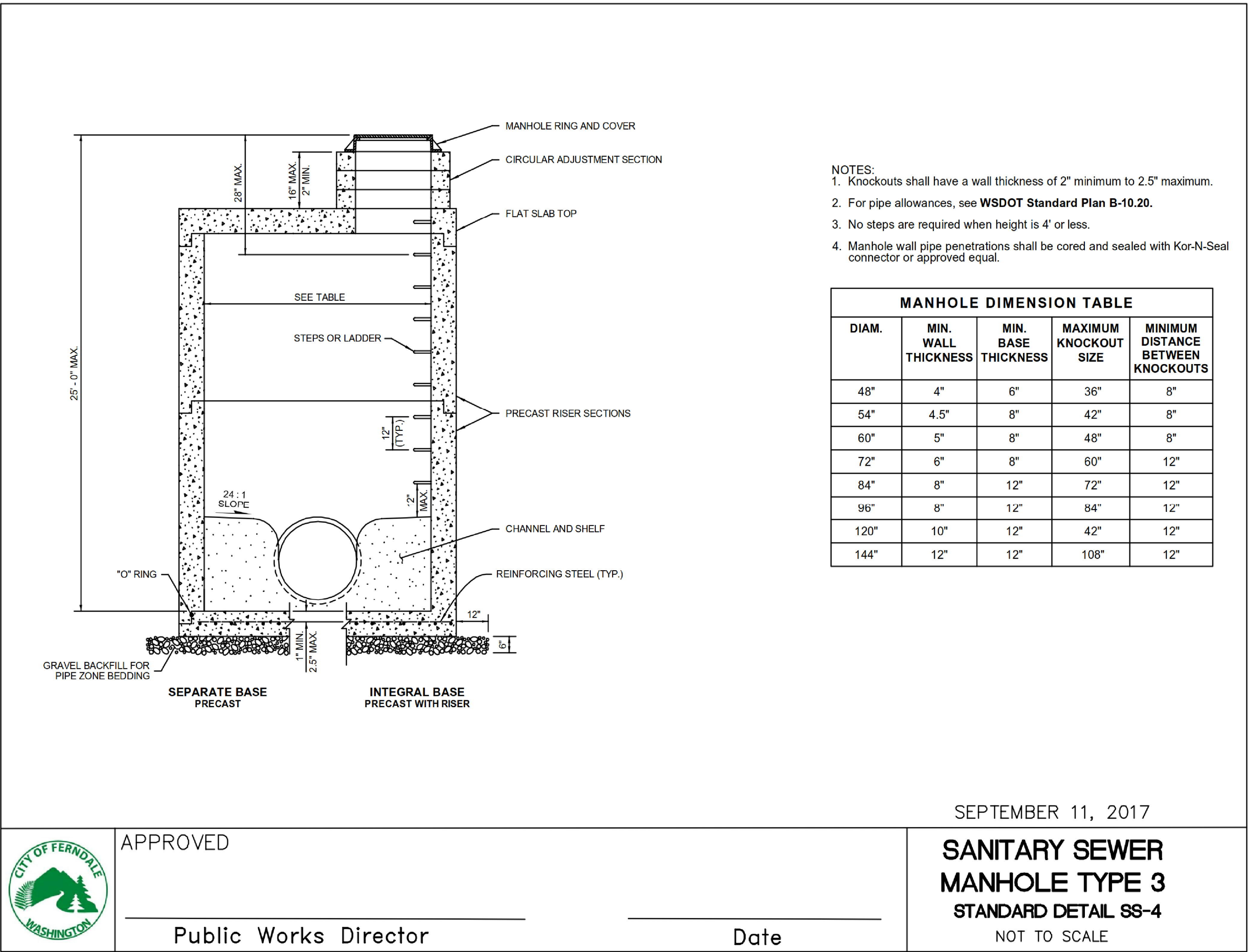
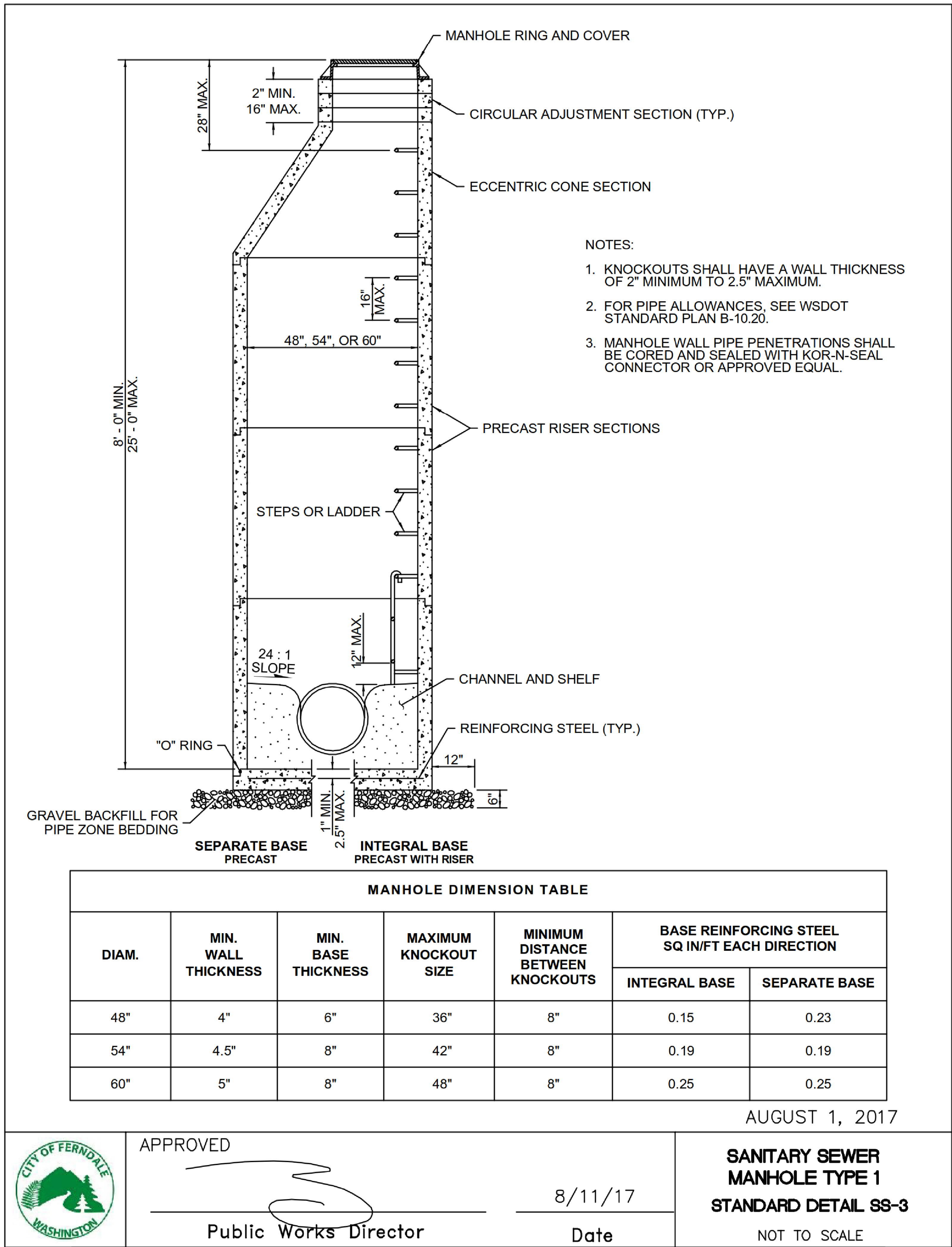
R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687
813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713

NO.	DATE	DESCRIPTION	BY

CITY OF FERDALE
2095 MAIN STREET
FERDALE, WA 98248

THORNTON ST
SANITARY SEWER
SEWER DETAILS 1

DWG 16034 DETAIL	DATE 12/17/2018
JOB# 16034	SHEET 18 of 24
SCALE H: N/A V: N/A	



SUBMITTED WITH
DESIGN PLAN

DESIGNED BY
KJK
DRAWN BY
KJK/LMH
CHECKED BY
LP



Reichhardt & Ebe
ENGINEERING INC

P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687
813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713

NO.	DATE	DESCRIPTION	BY	

CITY OF FERNDALE
2095 MAIN STREET
FERNDALE, WA 98248

THORNTON ST
SANITARY SEWER
SEWER DETAILS 2

DWG 16034 DETAIL

JOB#
16034

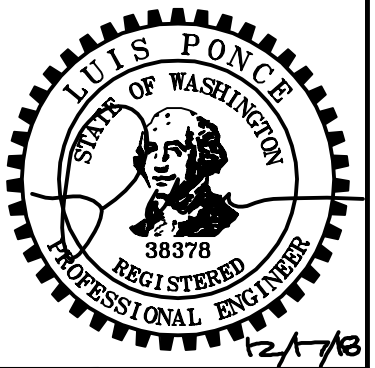
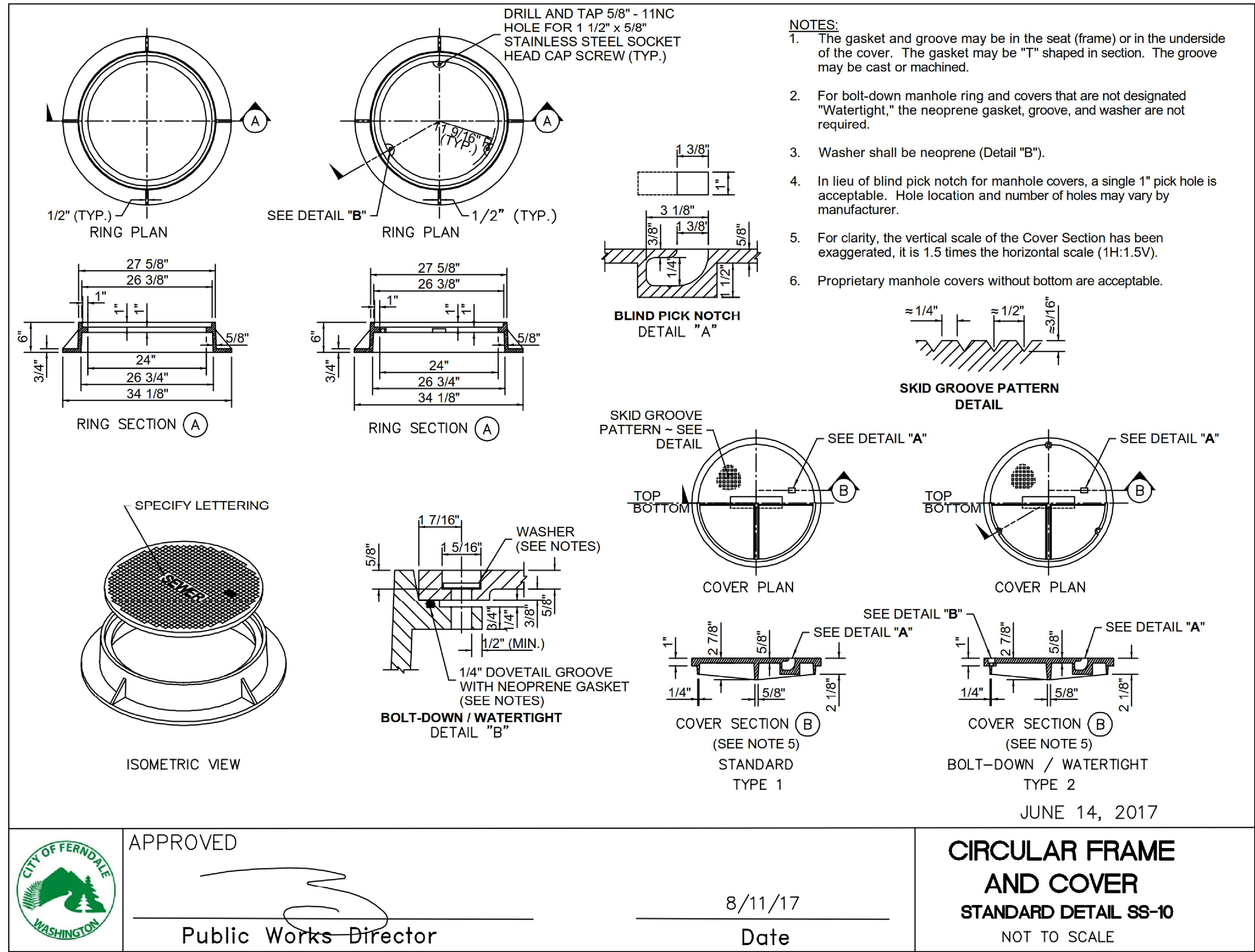
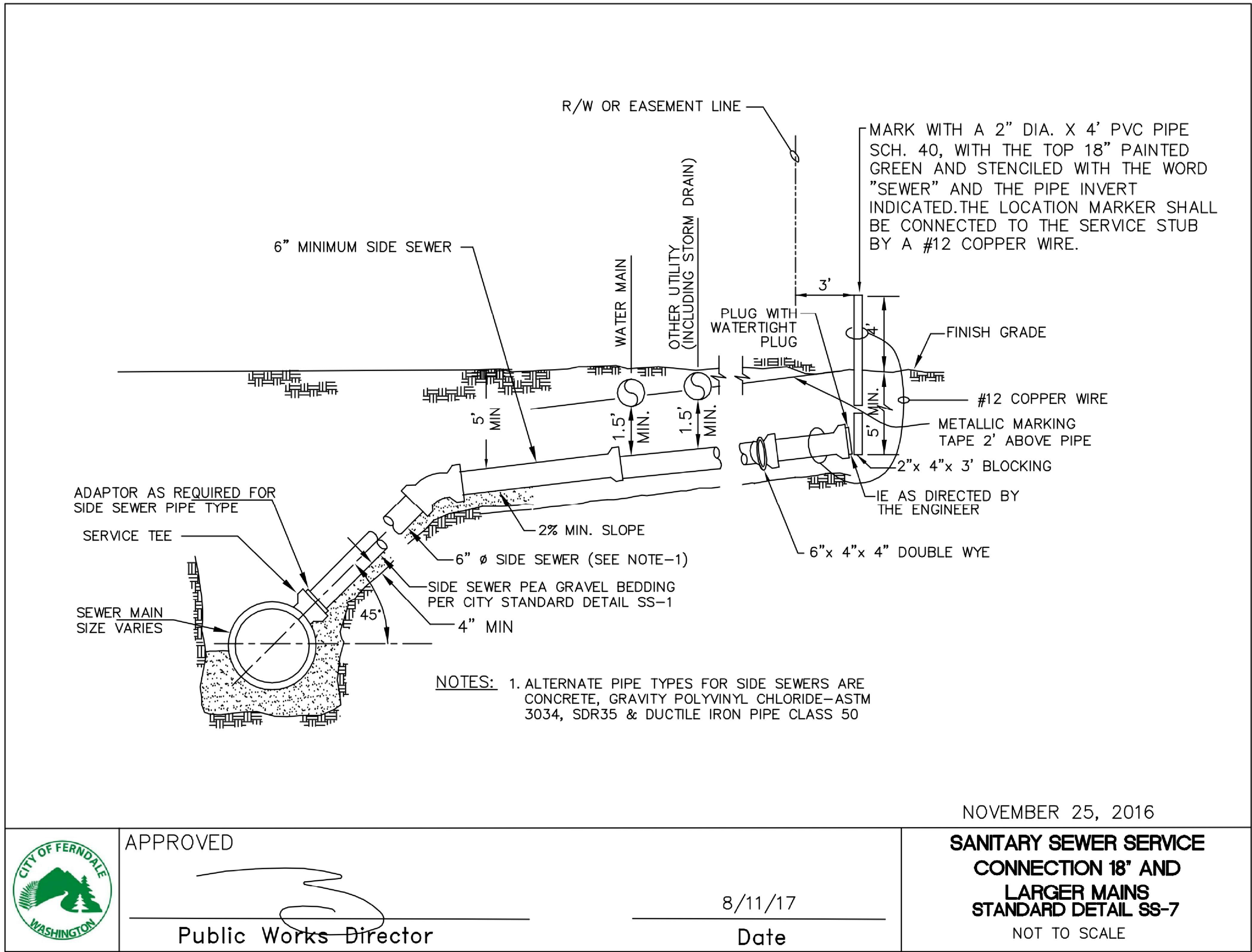
SCALE

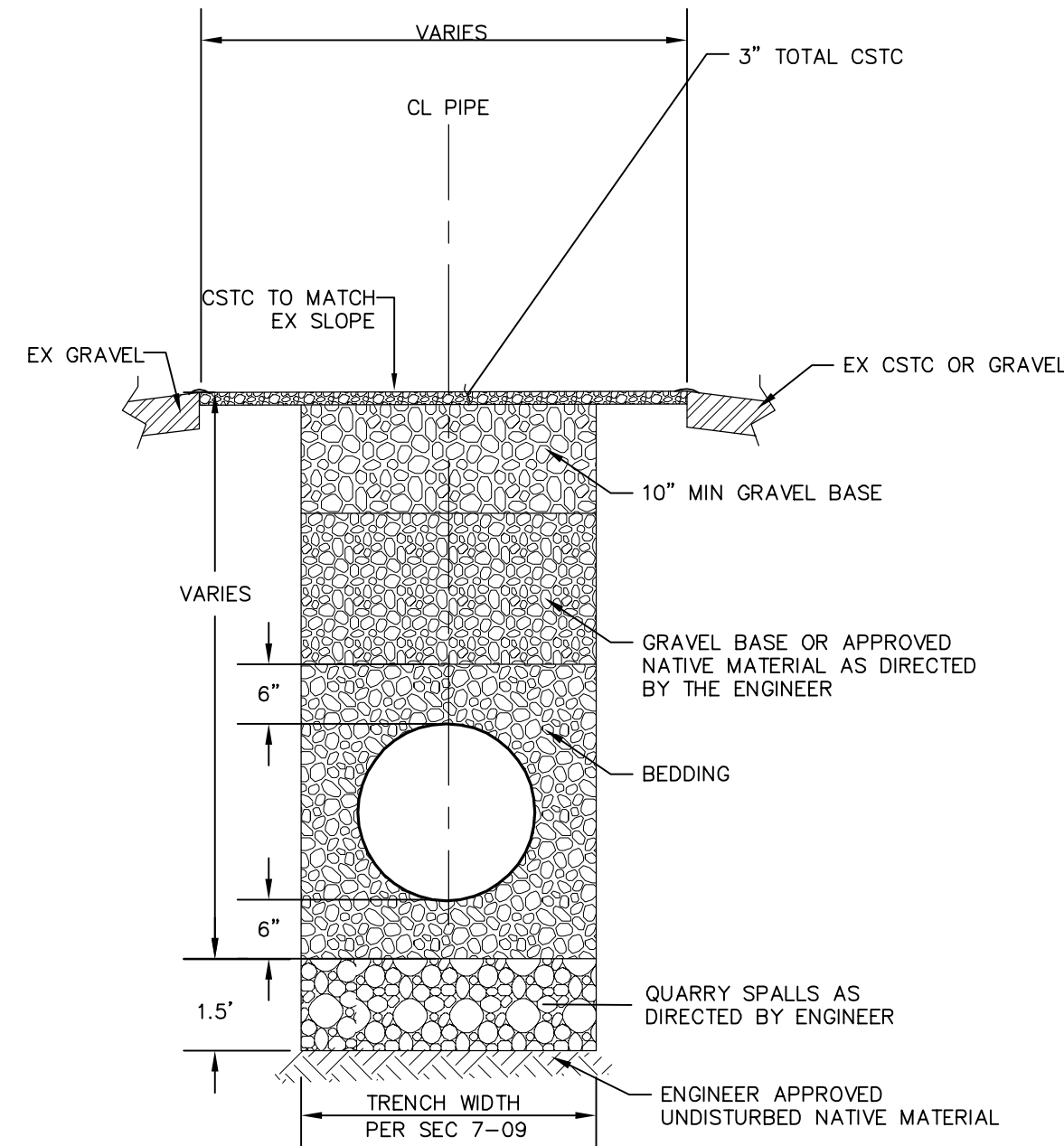
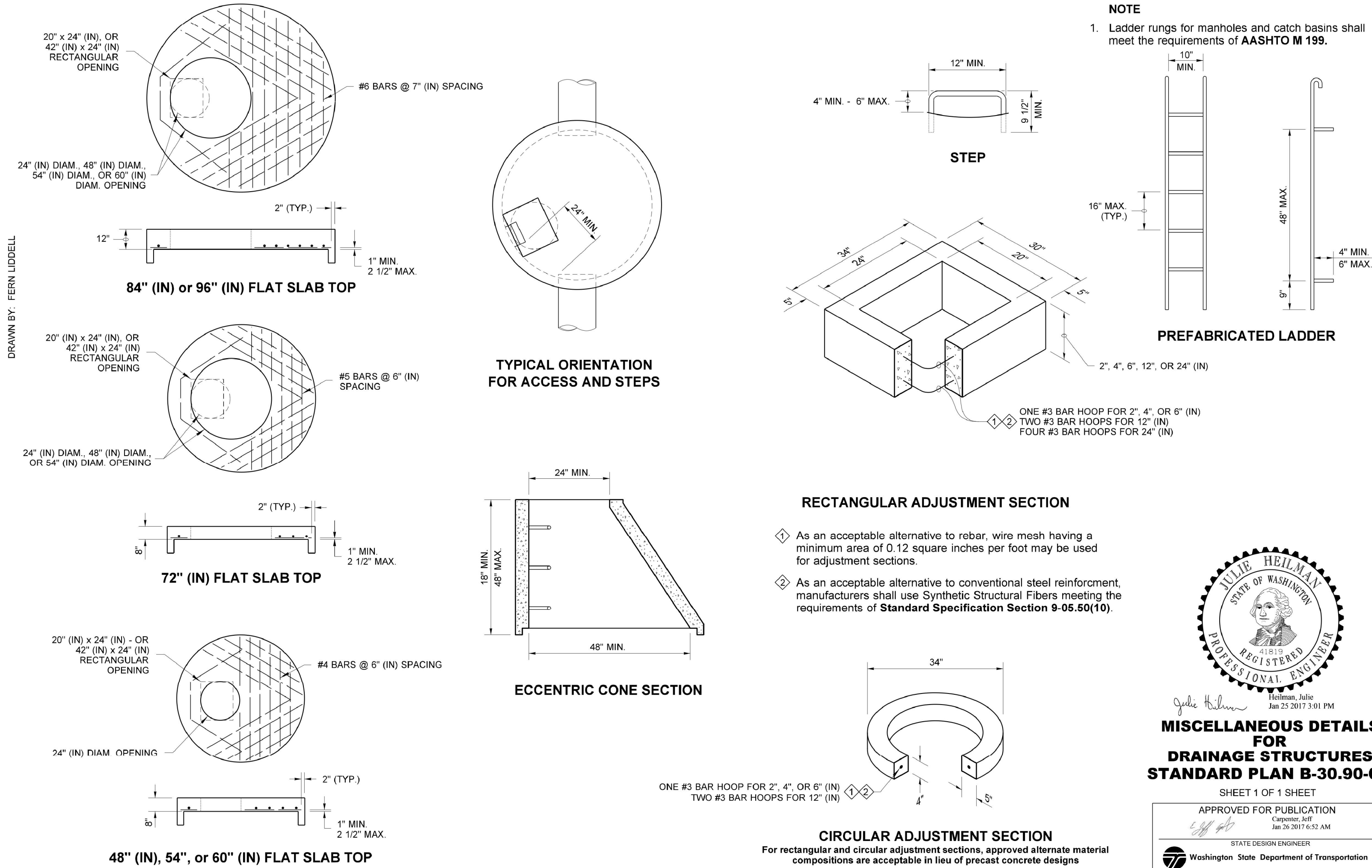
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DATE
12/17/2018

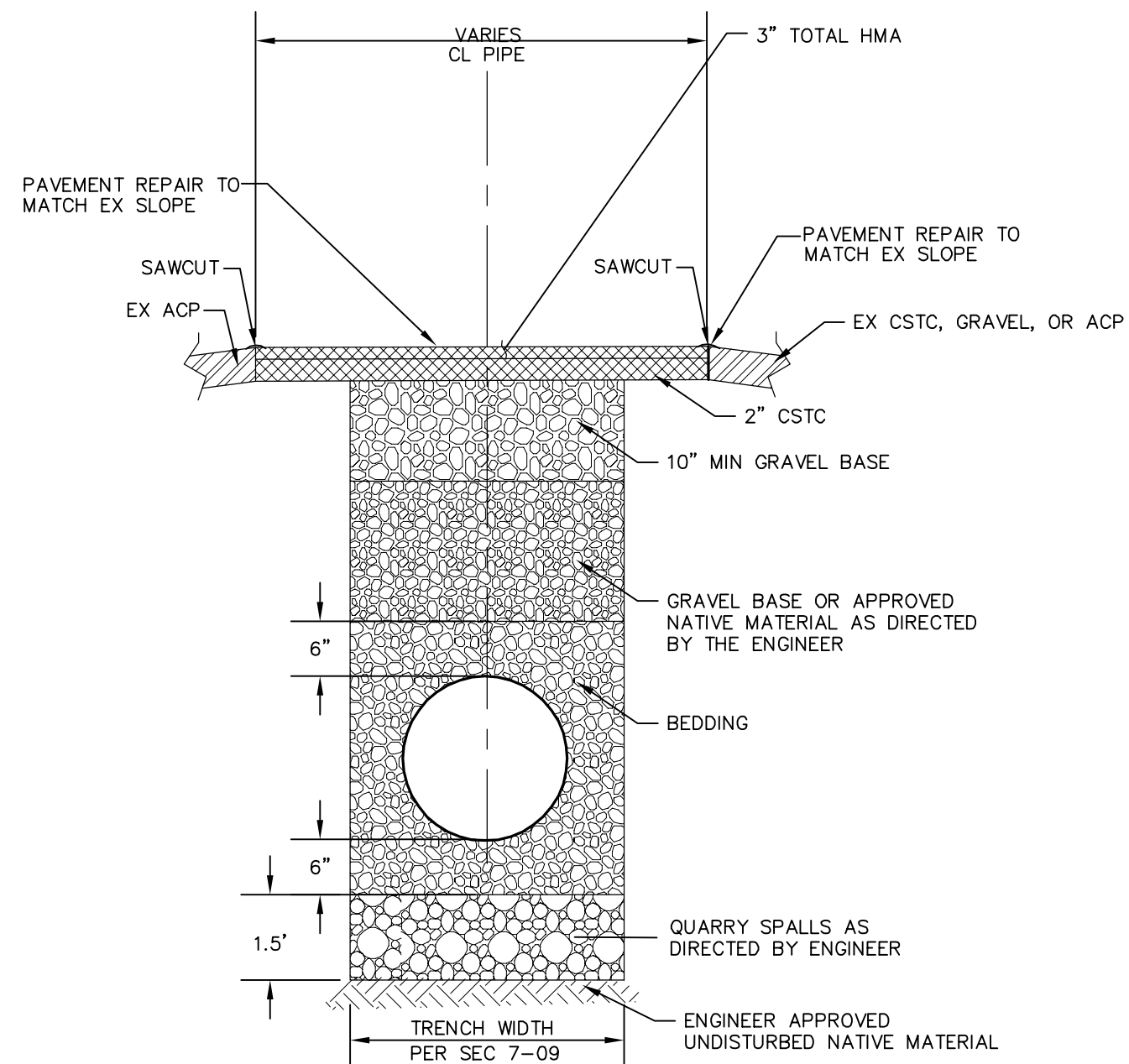
SHEET
19
of 24





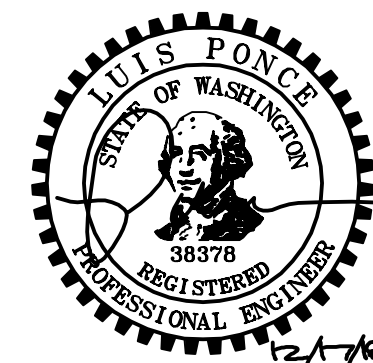
TYPICAL TRENCH SECTION
GRAVEL ROAD SECTION

NTS



TYPICAL TRENCH SECTION
ASPHALT CONCRETE PAVEMENT SECTION

NTS



SUBMITTED WITH
DESIGN PLAN

DESIGNED BY
KJK
DRAWN BY
KJK/LMH
CHECKED BY
LP

R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687
813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713

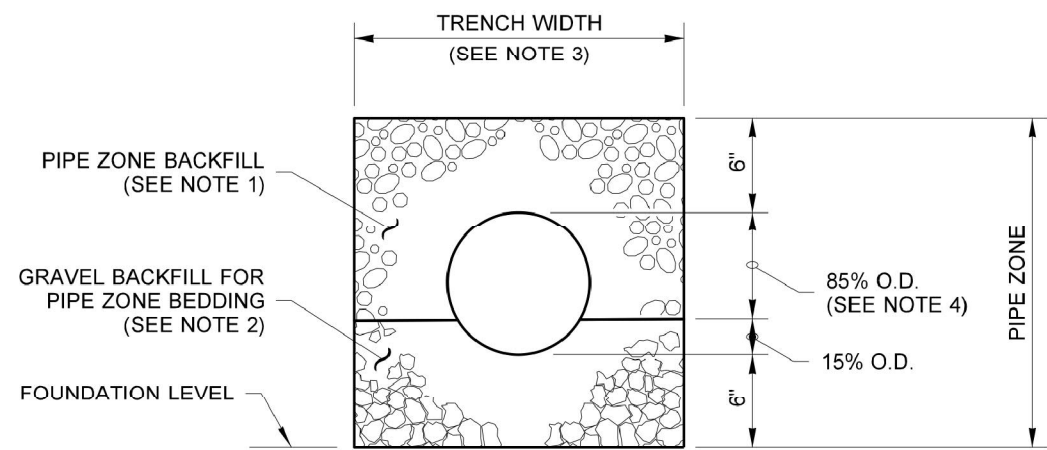
NO.	DATE	DESCRIPTION	BY

CITY OF FERNDAL
2095 MAIN STREET
FERNDAL, WA 98248

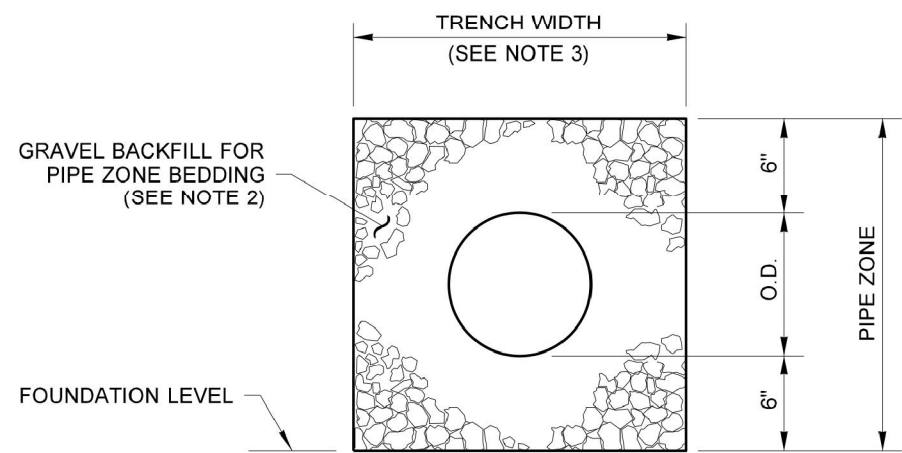
THORNTON ST
SANITARY SEWER
SEWER DETAILS 4

DWG 16034 DETAIL		DATE
12/17/2018		
JOB#	SCALE	SHEET
16034	H: N/A V: N/A	21 of 24

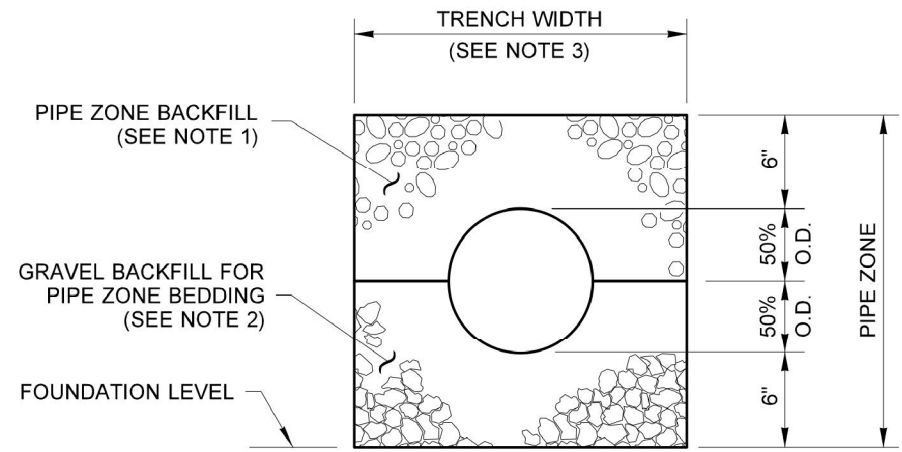
DRAWN BY: FERN LIDDELL



CONCRETE AND DUCTILE IRON PIPE



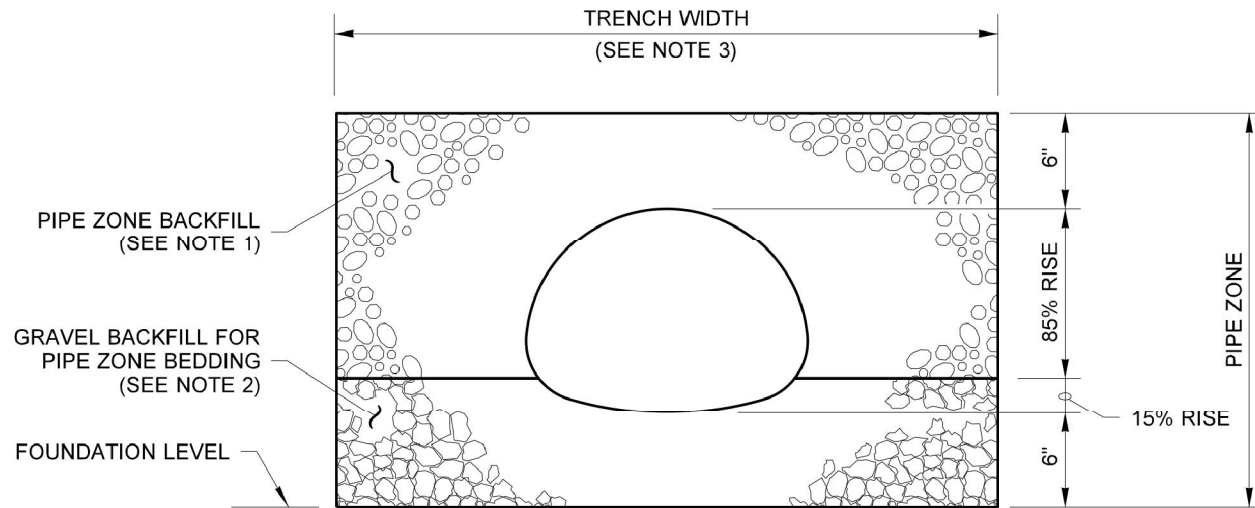
THERMOPLASTIC PIPE



METAL AND STEEL RIB
REINFORCED POLYETHYLENE PIPE

NOTES

1. See **Standard Specifications Section 7-08.3(3)** for Pipe Zone Backfill.
2. See **Standard Specifications Section 9-03.12(3)** for Gravel Backfill for Pipe Zone Bedding.
3. See **Standard Specifications Section 2-09.4** for Measurement of Trench Width.
4. For sanitary sewer installation, concrete pipe shall be bedded to spring line.



PIPE ARCHES

CLEARANCE BETWEEN PIPES
FOR MULTIPLE INSTALLATIONS

PIPE	SIZE	MINIMUM DISTANCE BETWEEN BARRELS
CIRCULAR PIPE (DIAMETER)	12" to 24"	12"
	30" to 96"	DIAM. /2
	102" to 180"	48"
PIPE ARCH (SPAN) METAL ONLY	18" to 36"	12"
	43" to 142"	SPAN /3
	148" to 200"	48"



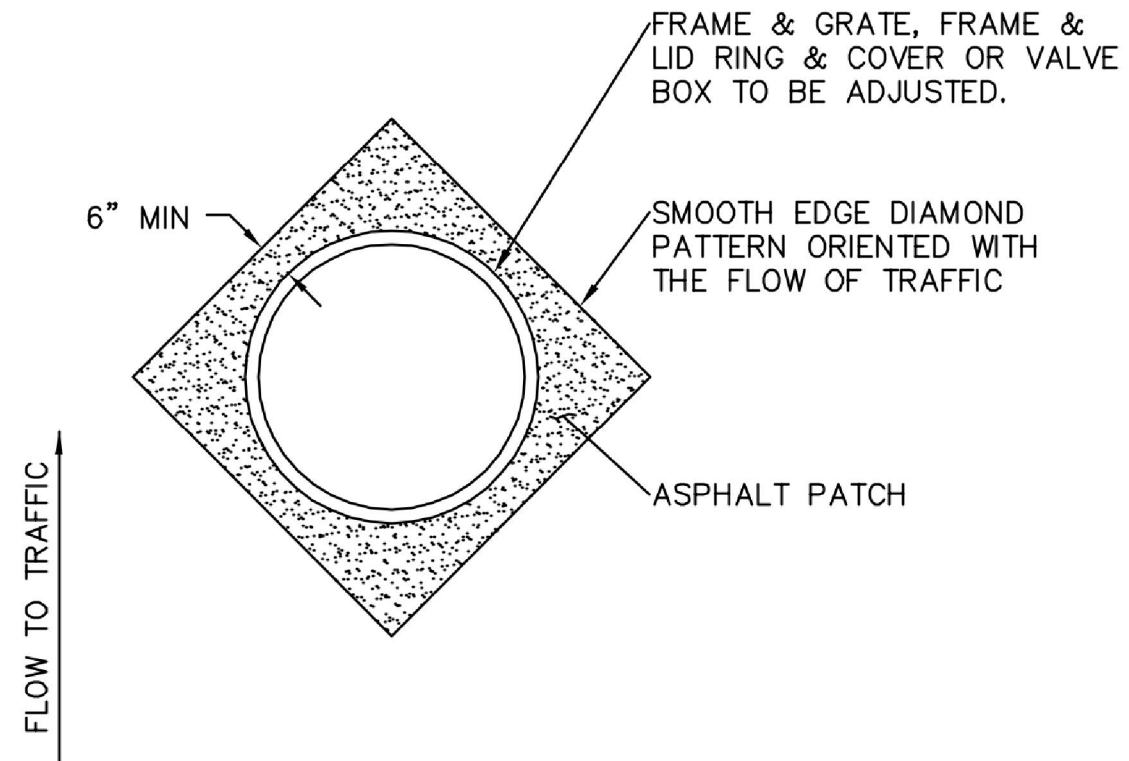
Julie Heilman
Heilman, Julie
Jan 25 2017 3:01 PM
**PIPE ZONE BEDDING
AND BACKFILL**

STANDARD PLAN B-55.20-01

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

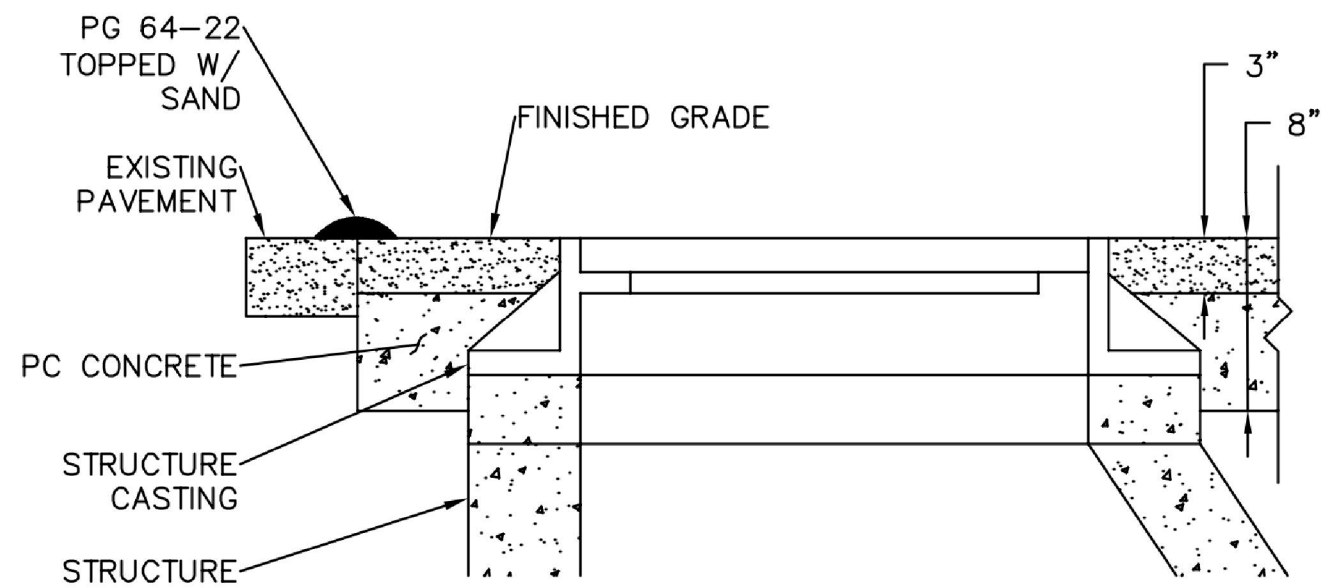
Carpenster, Jeff
Jan 26 2017 4:53 AM
STATE DESIGN ENGINEER
Washington State Department of Transportation



NOTES:

ALL FRAMES, COVERS & VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADE AFTER THE FINAL LIFT OF PAVING HAS BEEN COMPLETED. THE FOLLOWING PROCEDURE SHALL BE USED:

1. CUT THE ASPHALT IN A DIAMOND AROUND THE STRUCTURE CASTING TO BE ADJUSTED.
2. REMOVE THE FILL MATERIAL WITHIN THE CUT PAVEMENT AREA TO 8 INCHES MIN. BELOW FINISH GRADE.
3. PLACE THE CASTING AT FINISH GRADE.
4. PLACE PORTLAND CEMENT CONCRETE TO WITHIN THE TOP 3 INCHES OF FINISH GRADE.
5. APPLY TACK TO THE STRUCTURE CASTING, CUT PAVEMENT, & PC CONCRETE.
6. PLACE & COMPACT 3 INCHES OF HMA TO FINISH GRADE.
7. SEAL PAVEMENT JOINTS W/ HOT PG 64-22 & TOP W/ SAND.



AUGUST 1, 2017



APPROVED

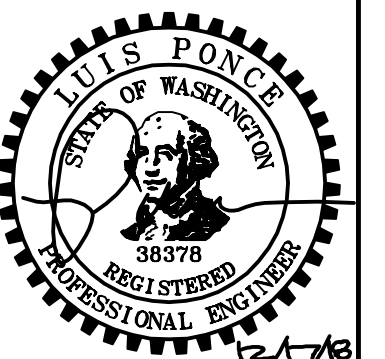
Public Works Director

8/11/17

Date

**ADJUSTING CASINGS
TO FINISHED GRADE
STANDARD DETAIL SS-19**

NOT TO SCALE



SUBMITTED WITH
DESIGN PLAN

DESIGNED BY
KJK
DRAWN BY
KJK/LMH
CHECKED BY
LP



**Reichhardt & Ebe
ENGINEERING INC**

P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687
813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713

NO.	DATE	DESCRIPTION	BY

CITY OF FERNDAL
2095 MAIN STREET
FERNDAL, WA 98248

**THORNTON ST
SANITARY SEWER
SEWER DETAILS 5**

DWG 16034 DETAIL

JOB#

16034

SCALE

H: N/A

V: N/A

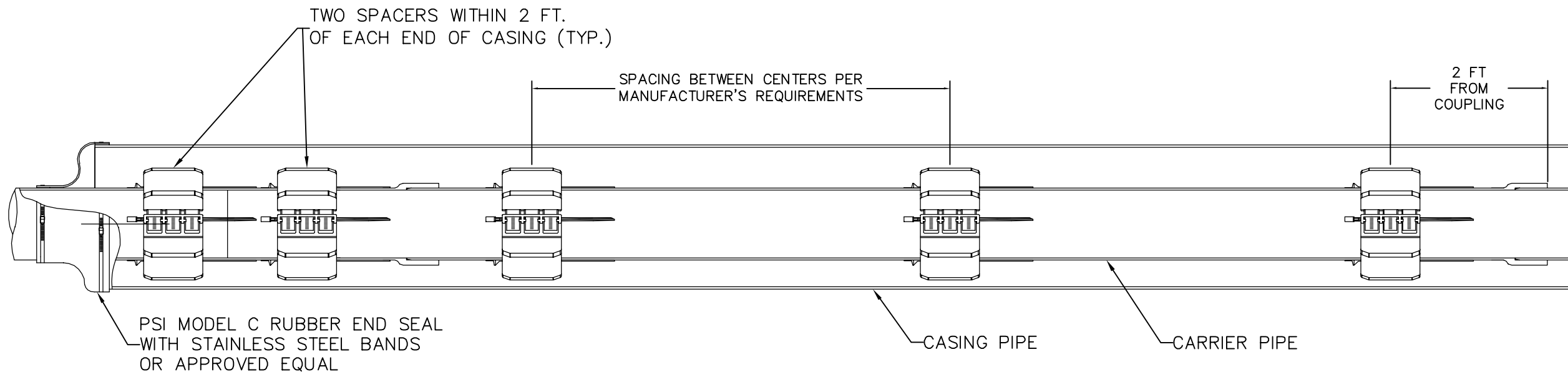
DATE

12/17/2018

SHEET

22

of 24



NOTES:

A. CASING SPACERS
UPON COMPLETION OF THE INSTALLATION OF THE STEEL PIPE ENCASEMENT, THE CONTRACTOR SHALL FURNISH AND INSTALL A RANGER II® BOLTLESS CASING SPACER (OR APPROVED EQUAL) ON THE CARRIER PIPE AS DESCRIBED BELOW. WOOD SKIDS ARE NOT AN ACCEPTABLE METHOD OF SUPPORTING THE CARRIER PIPE.

1. CASING SPACERS SHALL BE ALL NON-METALLIC (POLYPROPYLENE), MOLDED IN SEGMENTS FOR FIELD ASSEMBLY WITHOUT ANY SPECIAL TOOLS. SPACER SEGMENTS SHALL BE SECURED AROUND CARRIER PIPE BY INSERTION OF A SLIDE-LOCK. THE CASING SPACER POLYMER SHALL CONTAIN ULTRAVIOLET INHIBITORS AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI, AN 800 VOLTS/MIL DIELECTRIC STRENGTH AND IMPACT STRENGTH OF 1.5 FT-LBS./INCH. EACH CASING SPACER SHALL HAVE FULL LENGTH, INTEGRALLY MOLDED SKIDS EXTENDING BEYOND THE BELL OR MECHANICAL JOINT OF THE CARRIER PIPE. CASING SPACERS SHALL BE SPECIFIED TO "CLEAR BELL ONLY" OR "CENTERED/RESTRAINED".

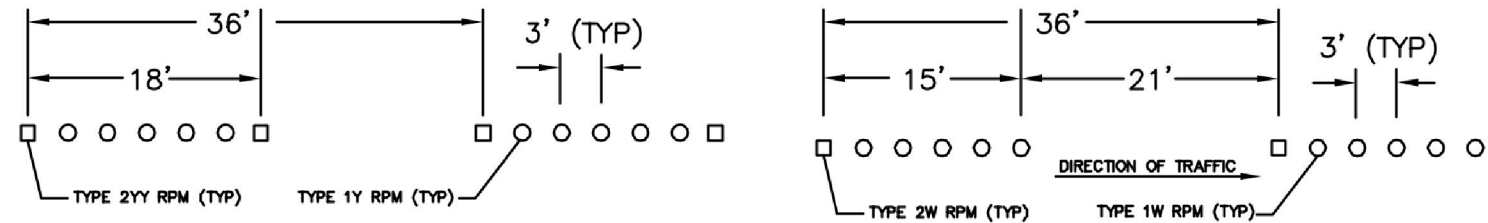
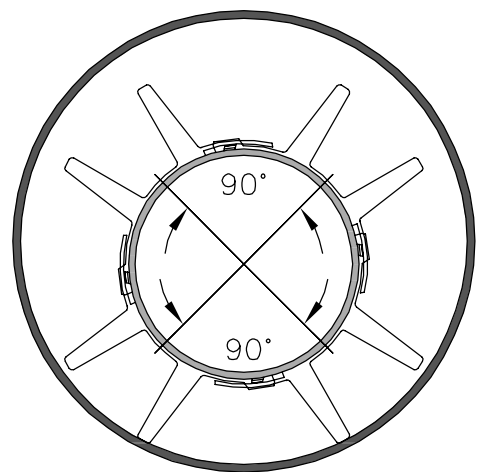
2. SPACERS SHALL BE AT LEAST AS WIDE AS LISTED BELOW.

CARRIER PIPE DIAMETER INCHES	(MM)	RANGER II MODEL	LENGTH INCHES	(MM)
0.83 TO 3.07"	(21 TO 78)	MICRO	2.13"	(54)
2.48 TO 5.51"	(63 TO 140)	MINI	3.15"	(80)
5.51 TO 16.65"	(140 TO 423)	MIDI	5.12"	(130)
16.77 TO 25.98"	(426 TO 660)	MEDI	6.87"	(175)
21.22 TO 37.60"	(539 TO 955)	MAXI	8.86"	(225)

B. END SEALS
AFTER INSERTION OF THE CARRIER PIPE INTO THE CASING, THE ENDS OF THE CASING SHALL BE CLOSED BY INSTALLING 1/8" THICK SYNTHETIC RUBBER END SEALS EQUAL TO THE PSI MODEL "C" END SEAL AS MANUFACTURED BY PIPELINE SEAL AND INSULATOR, INC., HOUSTON, TEXAS OR APPROVED EQUAL.

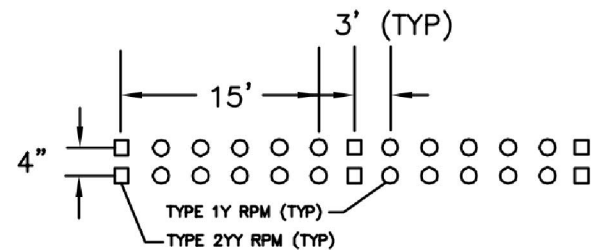
CASING SPACER DETAIL
NTS

END VIEW

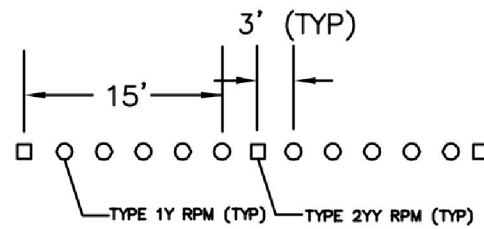


SKIP CENTER STRIPE DETAIL
RAISED PAVEMENT
MARKER SUBSTITUTION
PER CITY OF FERNDALÉ

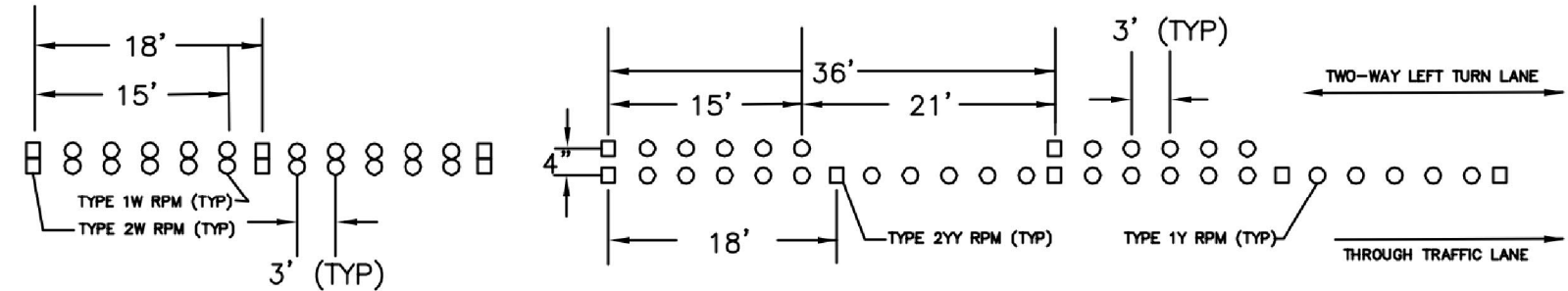
LANE STRIPE DETAIL
RAISED PAVEMENT
MARKER SUBSTITUTION
PER CITY OF FERNDALÉ



DOUBLE YELLOW STRIPE DETAIL
RAISED PAVEMENT MARKER SUBSTITUTION
PER CITY OF FERNDALÉ

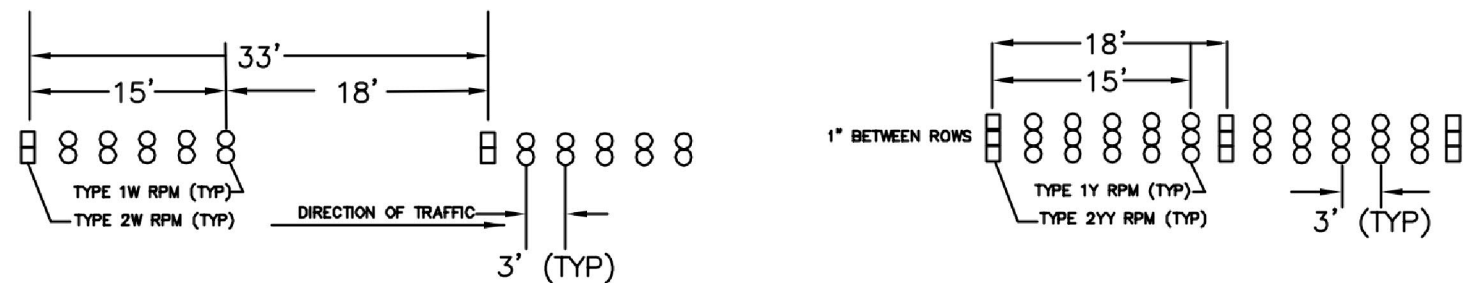


NO PASS STRIPE
RAISED PAVEMENT
MARKER SUBSTITUTION
PER CITY OF FERNDALÉ



GORE STRIPE DETAIL
RAISED PAVEMENT
MARKER SUBSTITUTION
PER CITY OF FERNDALÉ

TWO-WAY LEFT TURN STRIPE DETAIL
RAISED PAVEMENT MARKER SUBSTITUTION
PER CITY OF FERNDALÉ



SKIP GORE STRIPE DETAIL
RAISED PAVEMENT
MARKER SUBSTITUTION
PER CITY OF FERNDALÉ

BARRIER STRIPE DETAIL
RAISED PAVEMENT
MARKER SUBSTITUTION
PER CITY OF FERNDALÉ

NOVEMBER 25, 2016



APPROVED

Public Works Director

8/11/17

Date

STRIPING

STANDARD DETAIL R-20

NOT TO SCALE

SUBMITTED WITH
DESIGN PLAN

DESIGNED BY
KJK
DRAWN BY
KJK/LMH
CHECKED BY
LP



Reichhardt & Ebe
ENGINEERING INC

P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687
813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713

NO.	DATE	DESCRIPTION	BY

CITY OF FERNDALÉ
2095 MAIN STREET
FERNDALÉ, WA 98248

THORNTON ST
SANITARY SEWER
MISC. DETAILS

DWG 16034 DETAIL

JOB#

16034

SCALE

H: N/A

V: N/A

DATE

12/17/2018

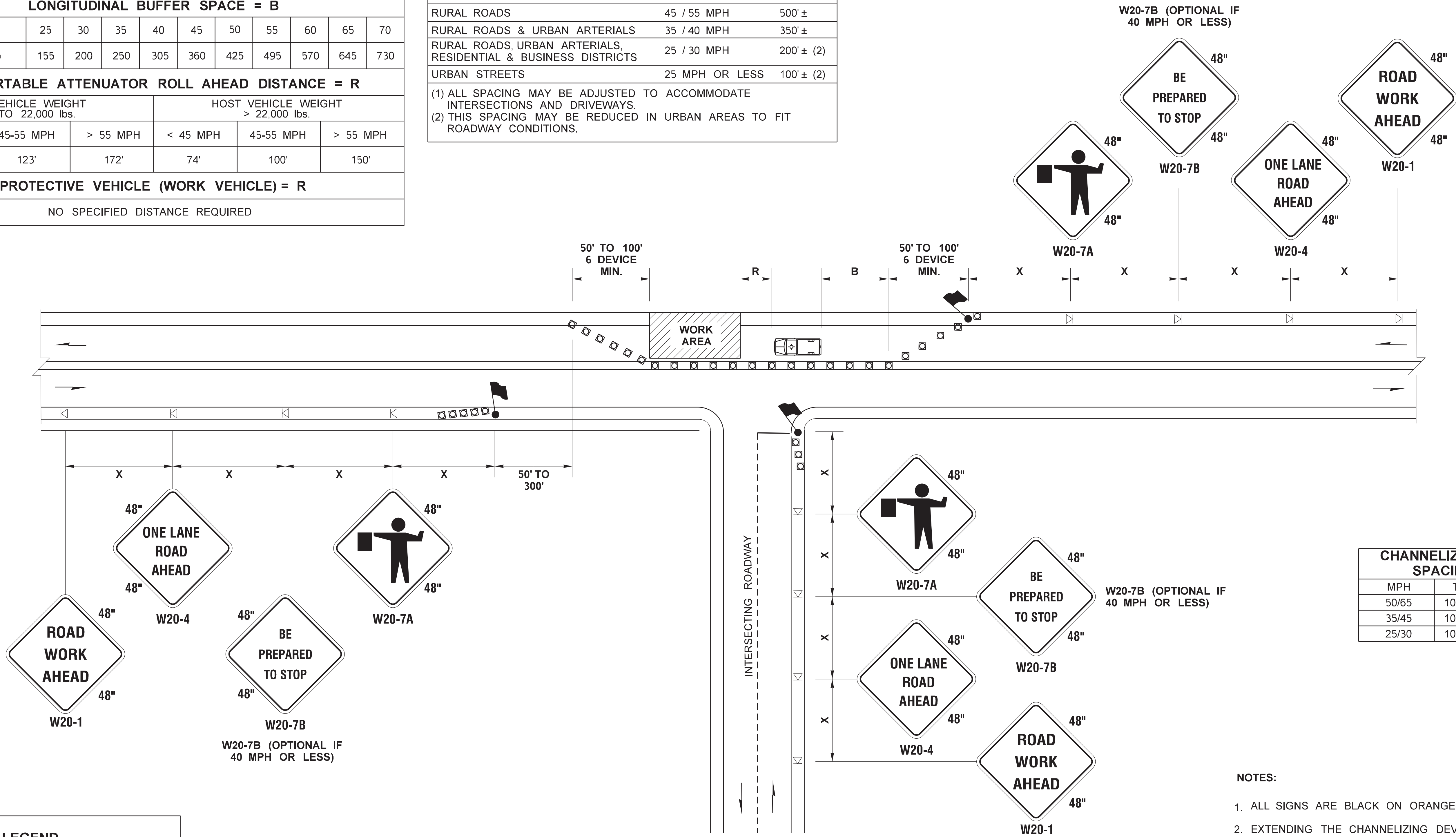
SHEET

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of 24



BUFFER DATA										
LONGITUDINAL BUFFER SPACE = B										
SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730
TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R										
HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.				HOST VEHICLE WEIGHT > 22,000 lbs.						
< 45 MPH	45-55 MPH	> 55 MPH		< 45 MPH	45-55 MPH		> 55 MPH			
100'	123'	172'		74'	100'		150'			
PROTECTIVE VEHICLE (WORK VEHICLE) = R										
NO SPECIFIED DISTANCE REQUIRED										

SIGN SPACING = X (1)		
RURAL HIGHWAYS	60 / 65 MPH	800' ±
RURAL ROADS	45 / 55 MPH	500' ±
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' ±
RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS	25 / 30 MPH	200' ± (2)
URBAN STREETS	25 MPH OR LESS	100' ± (2)
(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERSECTIONS AND DRIVEWAYS.		
(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.		



CHANNELIZATION DEVICE SPACING (FEET)		
MPH	TAPER	TANGENT
50/65	10 TO 20	80
35/45	10 TO 20	60
25/30	10 TO 20	40

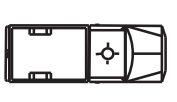
- NOTES:
- ALL SIGNS ARE BLACK ON ORANGE.
 - EXTENDING THE CHANNELIZING DEVICE TAPER ACROSS SHOULDER IS RECOMMENDED.
 - NIGHT WORK REQUIRES ADDITIONAL ROADWAY LIGHTING AT FLAGGING STATIONS. SEE THE STANDARD SPECIFICATIONS FOR ADDITIONAL DETAILS.
 - SEE SPECIAL PROVISIONS FOR WORK HOUR RESTRICTIONS.

LEGEND

 FLAGGING STATION

 TEMPORARY SIGN LOCATION

 CHANNELIZING DEVICES

 PROTECTIVE VEHICLE

SUBMITTED WITH
DESIGN PLAN

ONE-LANE, TWO-WAY TRAFFIC CONTROL
WITH FLAGGERS

NOT TO SCALE

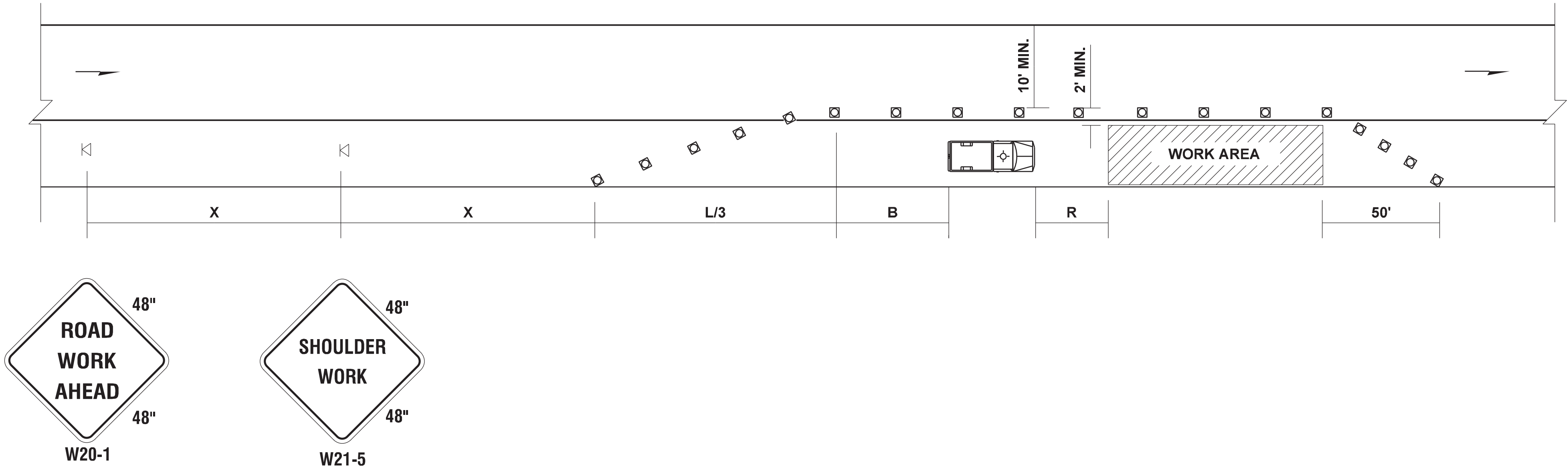
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DATE 10/14/2016												TC1					
PLOTTED BY liddelf																	
DESIGNED BY												SHEET					
ENTERED BY												OF					
CHECKED BY												SHEETS					
PROJ. ENGR.																	
REGIONAL ADM.			REVISION			DATE			BY								

SIGN SPACING = X (1)		
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' ±
RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS	25 / 30 MPH	200' ± (2)
URBAN STREETS	25 MPH OR LESS	100' ± (2)
(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERSECTIONS AND DRIVEWAYS. (2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.		

MINIMUM SHOULDER TAPER LENGTH = L/3 (feet)										
SHOULDER WIDTH (feet)	Posted Speed (mph)									
	25	30	35	40	45	50	55	60	65	70
8'	40	40	60	90	-	-	-	-	-	-
10'	40	60	90	90	-	-	-	-	-	-
USE A 3 DEVICES TAPER FOR SHOULDERS LESS THEN 8'										

CHANNELIZATION DEVICE SPACING (feet)		
MPH	TAPER	TANGENT
35/40	30	60
25/30	20	40

BUFFER DATA										
LONGITUDINAL BUFFER SPACE = B										
SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730
TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R										
HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.					HOST VEHICLE WEIGHT > 22,000 lbs.					
< 45 MPH	45-55 MPH		> 55 MPH		< 45 MPH	45-55 MPH		> 55 MPH		
100'	123'		172'		74'	100'		150'		
PROTECTIVE VEHICLE (WORK VEHICLE) = R										
NO SPECIFIED DISTANCE REQUIRED										



LEGEND

TEMPORARY SIGN LOCATION

CHANNELIZING DEVICES

PROTECTIVE VEHICLE

SUBMITTED WITH
DESIGN PLAN

SHOULDER CLOSURE - LOW SPEED
(40 MPH OR LESS)

NOT TO SCALE

- NOTES:
- 1. DEVICE SPACING FOR THE DOWNSTREAM TAPER SHALL BE 20' (FT).
 - 2. ALL SIGNS ARE BLACK ON ORANGE.

FILE NAME										S:\Design R P & S\4-Standards\2-Plan Sheet Library\02-PSL Work in Progress\Fern\TC1 - TC-17 Buffer Data table replacement\TC-5.dgn																										Plot 1			
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REGIONAL ADM.																																							

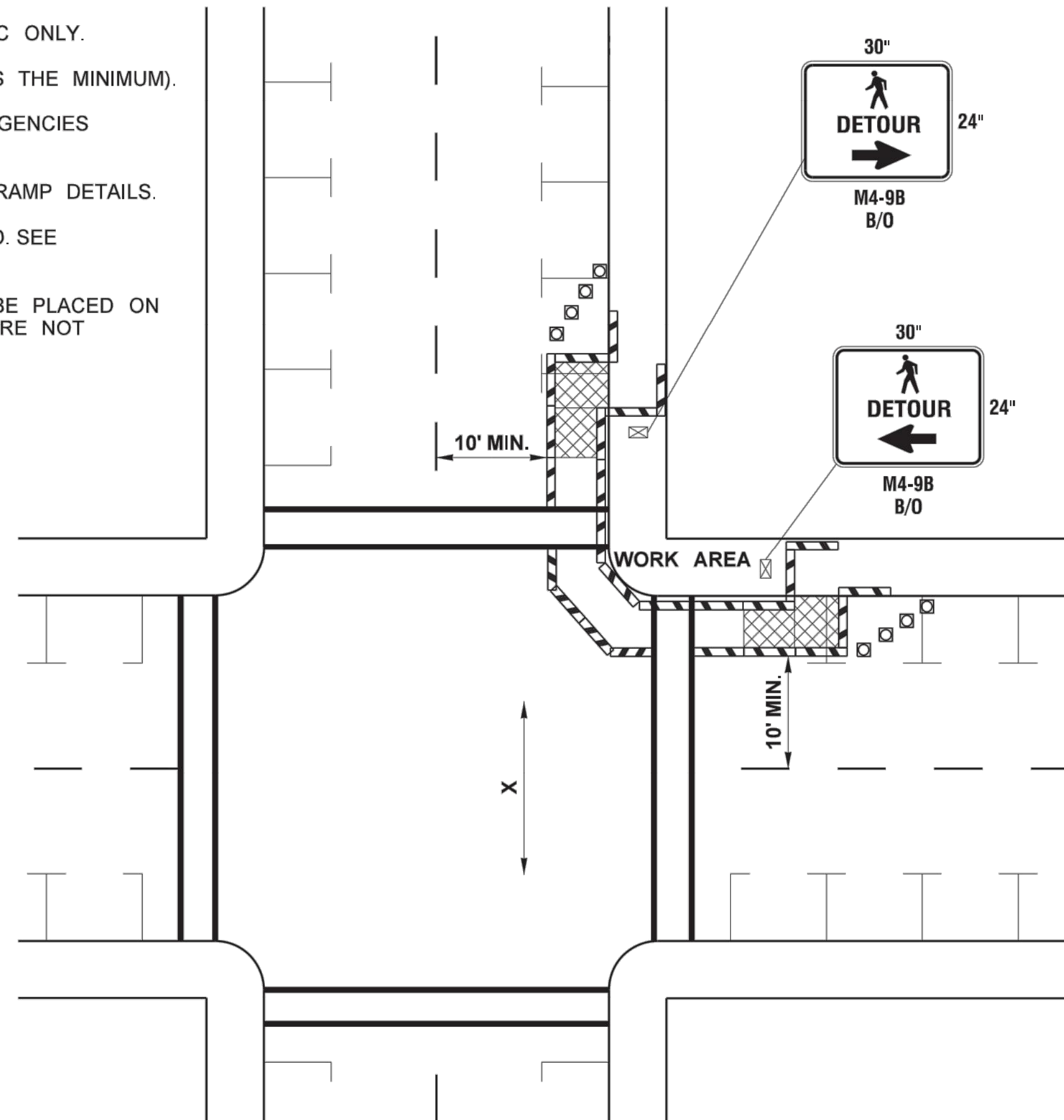


R8-3
24" x 30"
R/W

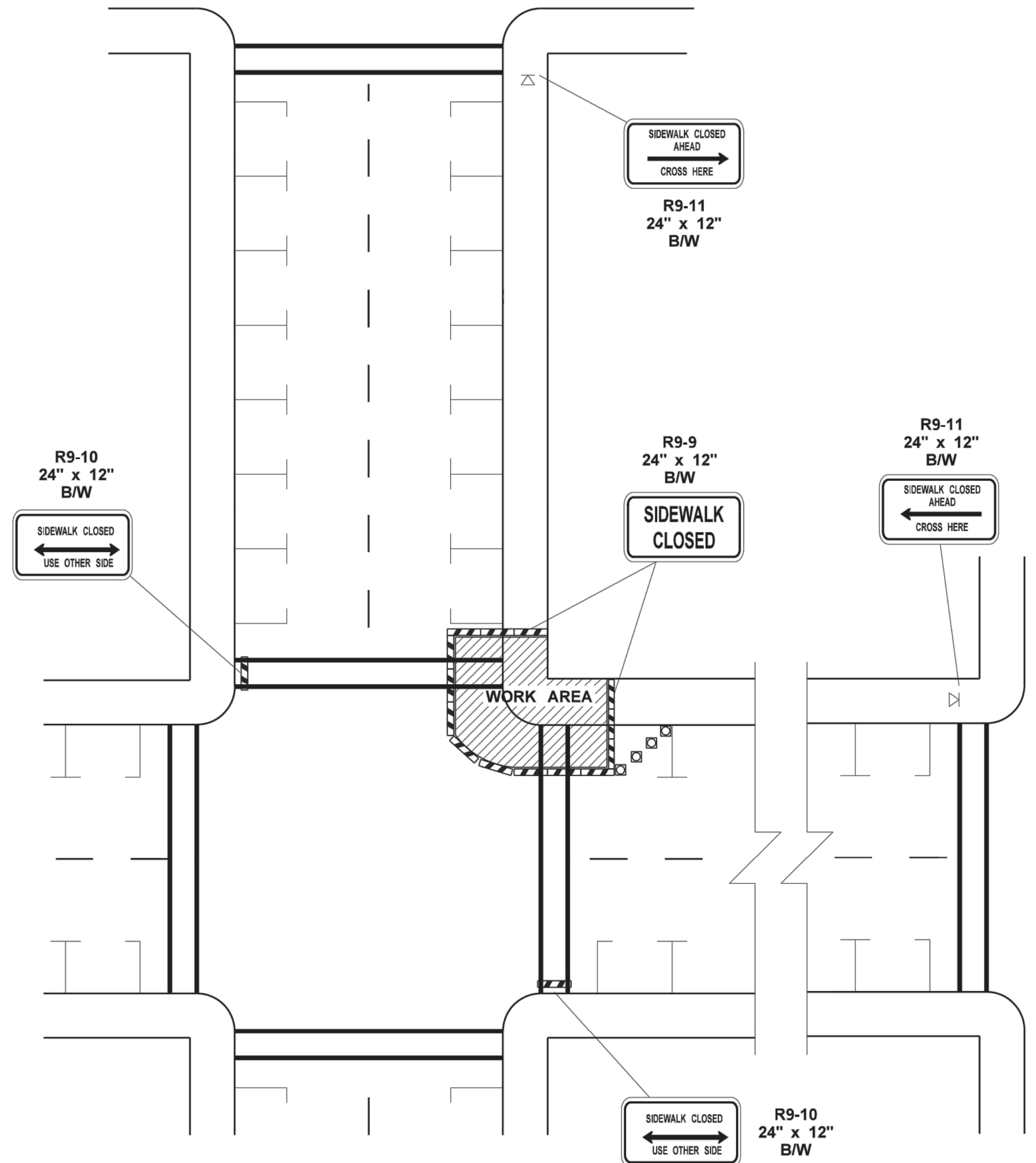
INSTALL ON TYPE 2 BARRICADES THROUGHOUT THE WORK AREA
24 HOURS PRIOR TO IMPLEMENTING TRAFFIC CONTROL.
PRIOR NOTIFICATION OF LOCAL LAW ENFORCEMENT REQUIRED.

NOTES

1. CONTROLS SHOWN ARE FOR PEDESTRIAN TRAFFIC ONLY.
2. A 60" PATH WIDTH SHOULD BE MAINTAINED (48" IS THE MINIMUM).
3. CONTACT AND COORDINATE IMPACTED TRANSIT AGENCIES PRIOR TO IMPLEMENTING ANY CLOSURES.
4. SEE SHEET TC-52 FOR TEMPORARY PEDESTRIAN RAMP DETAILS.
5. ADA PEDESTRIAN FACILITIES MUST BE MAINTAINED. SEE STANDARD SPECIFICATION 1-10.2(1)B.
6. TEMPORARY PEDESTRIAN PUSH BUTTONS SHALL BE PLACED ON THE DIVERTED PATH WHEN EXISTING BUTTONS ARE NOT ACCESSIBLE TO PEDESTRIANS.



SIDEWALK DIVERSION



SIDEWALK DETOUR

LEGEND

- TEMPORARY SIGN LOCATION
- CHANNELIZING DEVICES
- PEDESTRIAN CHANNELIZING DEVICES
- TEMPORARY PEDESTRIAN RAMP FOR SIDEWALKS

INTERSECTION PEDESTRIAN TRAFFIC CONTROL

NOT TO SCALE

SUBMITTED WITH
DESIGN PLAN

FILE NAME	S:\Design R P& S\4-Standards\2-Plan Sheet Library\01-Published PSL(TC) Work Zone Traffic Control\W(TC-16) Intersection Pedestrian Traffic Control\TC-16.dgn	REGION NO.	STATE	FED.AID PROJ.NO.	DATE	P.E. STAMP BOX	DATE	P.E. STAMP BOX	Washington State Department of Transportation	Plot 1 PLAN REF NO TC16
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DATE	9/18/2014									OF
PLOTTED BY	FletcCo									SHEETS
DESIGNED BY										
ENTERED BY										
CHECKED BY										
PROJ. ENGR.										
REGIONAL ADM.		REVISION	DATE	BY						