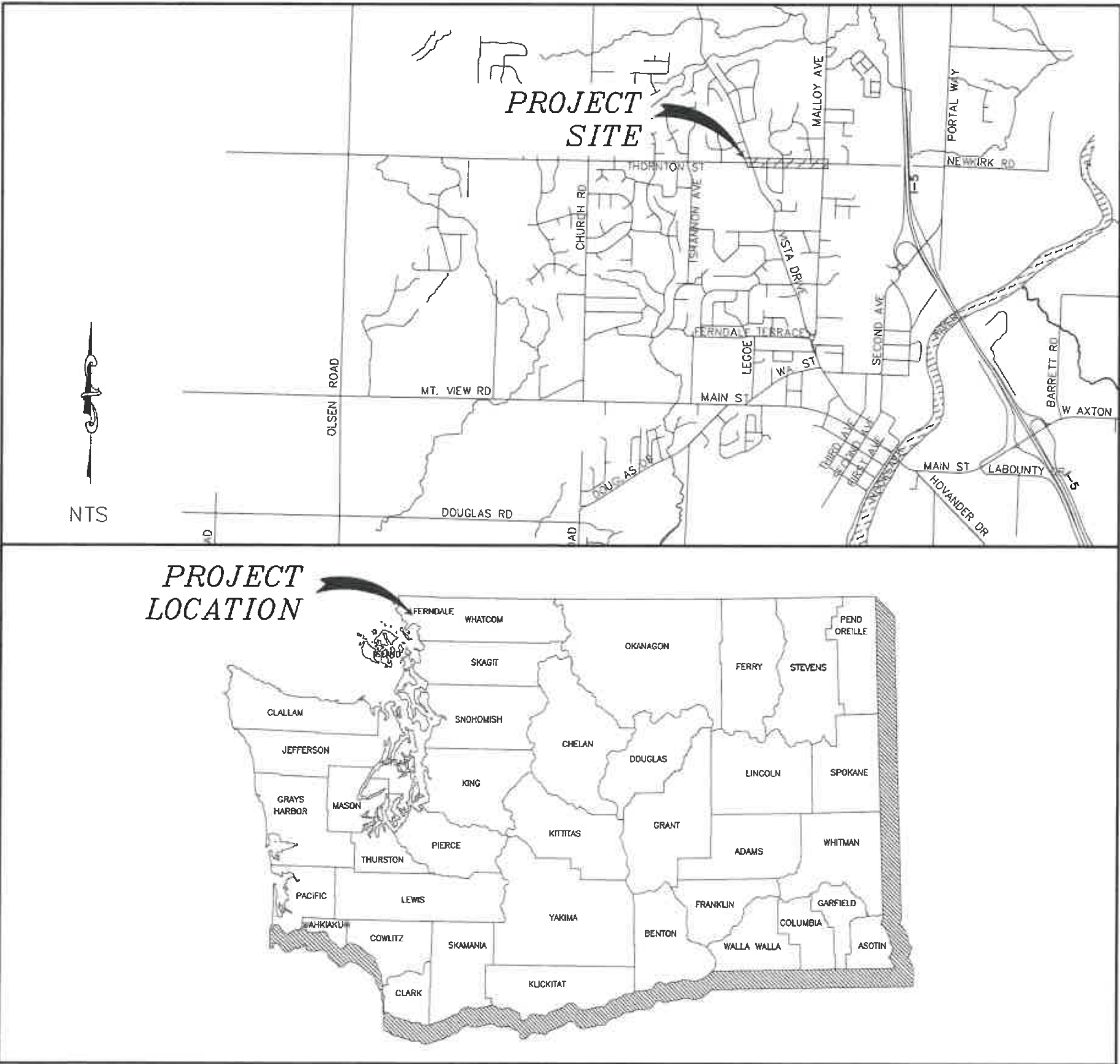


THORNTON STREET
VISTA TO MALLOY AVENUE
FERNDALE, WA

CITY - PROJECT NO. ST2015-04
FEDERAL AID NO. PROJECT NO. STPUS-STBG-8044(003); TA7460

VICINITY MAP

PROJECT LOCATED IN SECTION 17, 18, 19 & 20 TOWNSHIP 39N, RANGE 2E, W.M.



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APPROVED FOR CONSTRUCTION

KEVIN RENZ
PUBLIC WORKS DIRECTOR



5/22/24 AS-BUILT

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P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

NO.	DATE	DESCRIPTION	BY

CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE
COVER

DWG 19025 DETAILS		DATE
JOB#	SCALE	SHEET
19025	H: N/A V: N/A	1 of 64

LEGEND

EXISTING

---	TB	---	TB	=	EXISTING TOP OF BANK
---	BB	---	BB	=	EXISTING BOTTOM OF BANK
-.-.-		-.-.-		=	EXISTING DITCH CL
-.-.-		-.-.-		=	EXISTING GRADE BREAK
---	95	---		=	EXISTING MAJOR CONTOUR
---	94	---		=	EXISTING MINOR CONTOUR
---		---		=	EXISTING GUARDRAIL
---	X	---	X	=	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
---	UGP	---	UGP	=	EXISTING BURIED POWER
---	OHP	---	OHP	=	EXISTING OVERHEAD POWER
---	UGC	---	UGC	=	EXISTING BURIED COMMUNICATIONS
---	OHC	---	OHC	=	EXISTING OVERHEAD COMMUNICATIONS
---	FO	---	FO	=	EXISTING BURIED FIBER OPTICS
---	TV	---	TV	=	EXISTING BURIED TV
---	T	---	T	=	EXISTING BURIED TELEPHONE
---	C	---	C	=	EXISTING CONDUIT
---	G	---	G	=	EXISTING GAS MAIN
---	W	---	W	=	EXISTING WATER MAIN
---	IRR	---	IRR	=	EXISTING IRRIGATION LINE
---	FM	---	FM	=	EXISTING SANITARY SEWER FORCE MAIN
---	SS	---	SS	=	EXISTING SANITARY SEWER
---	SD	---	SD	=	EXISTING STORM DRAIN
---	OHW	---	OHW	=	EXISTING ORDINARY HIGH WATER
---		---		=	EXISTING RR TRACKS
---		---		=	EXISTING CULVERT
---		---		=	EXISTING TREE LINE
---		---		=	EXISTING CONCRETE
---		---		=	EXISTING WETLAND

LINETYPES

PROPOSED

---	TB	---	TB	=	PROPOSED TOP OF BANK
---	BB	---	BB	=	PROPOSED BOTTOM OF BANK
-.-.-		-.-.-		=	PROPOSED DITCH CL
-.-.-		-.-.-		=	PROPOSED GRADE BREAK
---	95	---		=	PROPOSED MAJOR CONTOUR
---	94	---		=	PROPOSED MINOR CONTOUR
---		---		=	PROPOSED GUARDRAIL
---	X	---	X	=	PROPOSED FENCE
---		---		=	PROPOSED HANDRAIL
---		---		=	PROPOSED GRAVEL
---		---		=	PROPOSED WALL
---		---		=	PROPOSED BUILDING
---		---		=	PROPOSED PAVEMENT VALLEY
---		---		=	PROPOSED RIGHT OF WAY
---		---		=	PROPOSED CONSTRUCTION EASEMENT
---	TCE	---	TCE	=	PROPOSED TEMPORARY CONSTRUCTION EASEMENT
---	TCP	---	TCP	=	PROPOSED TEMPORARY CONSTRUCTION PERMIT
---		---		=	PROPOSED ROAD CL
---		---		=	PROPOSED SAWCUT
---		---		=	PROPOSED STRIPE
---		---		=	PROPOSED EDGE OF PAVEMENT
---		---		=	PROPOSED CURB AND GUTTER
---		---		=	PROPOSED PATH
---		---		=	PROPOSED SIDEWALK
---	UGP	---		=	PROPOSED BURIED POWER
---	OHP	---		=	PROPOSED OVERHEAD POWER
---	TS	---		=	PROPOSED TRAFFIC SIGNAL CONDUCTOR
---	FO	---		=	PROPOSED FIBER OPTICS
---	UGC	---		=	PROPOSED BURIED COMMUNICATIONS
---	OHC	---		=	PROPOSED OVERHEAD COMMUNICATIONS
---	HVSF	---		=	PROPOSED HIGH VISIBILITY SILT FENCE
---	SF	---		=	PROPOSED SILT FENCE
---	C	---		=	PROPOSED CONDUIT
---	IRR	---		=	PROPOSED IRRIGATION LINE
---	W	---		=	PROPOSED WATER MAIN
---	FM	---		=	PROPOSED SANITARY SEWER FORCE MAIN
---	SS	---		=	PROPOSED SANITARY SEWER
---	SD	---		=	PROPOSED STORM DRAIN
---		---		=	PROPOSED CULVERT
---		---		=	PROPOSED TREE/SHRUB LINE
---		---		=	PROPOSED CONC. SIDEWALK/DRIVEWAY
---		---		=	PROPOSED TRENCH DRAIN, PER DETAIL
---		---		=	PROPOSED INFILTRATION FILTER MEDIA
---		---		=	PROPOSED GRIND
---		---		=	PROPOSED DEMOLITION AREA
---		---		=	PROPOSED ASPHALT
---		---		=	PROPOSED RIGHT OF WAY ACQUISITION

EXISTING

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

SYMBOLS

PROPOSED

	=	PROPOSED HYDRANT
	=	PROPOSED COUPLER
	=	PROPOSED WATER METER
	=	PROPOSED WATER VALVE
	=	PROPOSED WATER VAULT
	=	PROPOSED RIP RAP OR QUARRY SPALLS
	=	PROPOSED STORM AREA DRAIN
	=	PROPOSED STORM DRAIN CATCH BASIN TYPE I/INLET
	=	PROPOSED STORM DRAIN CATCH BASIN TYPE II
	=	PROPOSED STORM YARD BASIN
	=	PROPOSED SANITARY SEWER CLEAN OUT
	=	PROPOSED SANITARY SEWER MANHOLE
	=	PROPOSED UTILITY POLE
	=	PROPOSED JBOX (TYPE I, II, III)
	=	PROPOSED MONITORING WELL
	=	PROPOSED STOP BAR OR CROSSWALK
	=	PROPOSED SIGN
	=	FLOW ARROW
	=	PROPOSED ROCK WALL
	=	PROPOSED TREE
	=	SECTION MARK

NOTES

1. FIELD WORK PERFORMED BY COMPASS POINT SURVEY, LYNDEN, WA. TOPOGRAPHIC SURVEY PERFORMED IN 2015 TO 2021.
2. HORIZONTAL DATUM: WASHINGTON STATE PLANE (NORTH) COORDINATES – HORIZONTAL DATUM NAD 83/91 AND VERTICAL DATUM NGVD29.

EROSION CONTROL LEGEND

WASHINGTON STATE DEPT. OF ECOLOGY
BEST MANAGEMENT PRACTICES (BMP)
REF.: STORMWATER MANAGEMENT MANUAL
FOR WESTERN WASHINGTON, 2019

NOTES:

1. BMP C120 (PERMANENT SEEDING) AND BMP C130 (SURFACE ROUGHENING) SHOWN IN LANDSCAPING AND PLANTING PLAN.
2. SEE TESC DETAILS AND TESC GENERAL NOTES, SHEET 10
3. GENERALLY THE SILT FENCE AND CLEARING LIMITS FOLLOW THE RIGHT OF WAY OR CONSTRUCTION EASEMENTS UNLESS OTHERWISE DRAWN ON THE PLANS. THERE ARE AREAS WHERE THE HIGH VISIBILITY SILT FENCE IS DELINEATING THE MAXIMUM EXTENT OF WETLAND IMPACTS.

		=	BMP C103 AND C233: CLEARING LIMITS AND SILT FENCE – SEE DETAIL SHEET 11
		=	BMP C105/C106: STABILIZED CONSTRUCTION ENTRANCE – SEE DETAIL SHEET 11
		=	BMP C220: INLET PROTECTION – CB INSERT – SEE DETAIL SHEET 10
		=	BMP C208: GEOTEXTILE ENCASED CHECK DAM – SEE DETAIL SHEET 10
		=	BMP C105 AND C140: STREET CLEANING
		=	BMP C120: TEMPORARY & PERMANENT SEEDING & MULCHING. SEE PLANTING PLANS FOR LIMITS
		=	BMP C140: DUST CONTROL
		=	BMP C101: PRESERVE EXISTING VEGETATION

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

ABBREVIATIONS

5/22/24
AS-BUILT

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CHECKED BY
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R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

	3/24/23	REVISION No. 02 – GRADING REVISION	JUN	
NO.	DATE	DESCRIPTION	BY	

CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE

LEGEND AND ABBREVIATIONS

DWG 19025 DETAILS

JOB#

19025

SCALE

H: N/A

V: N/A

DATE

5/22/24

SHEET

2

of 64





LEGEND

= SIGN (SHOWN FACING LEFT)

= PROPOSED WORK AREA

A

48"

18"

DETOUR

M4-10L
B/O

E

36"

36"

ROAD
CLOSED
AHEAD

W20-3
B/O

H

36"

36"

SPECIAL
CONSTRUCTION SIGN
B/O

B

48"

18"

DETOUR

M4-10R
B/O

F

36"

36"

DETOUR
AHEAD

W20-2
B/O

I

30"

60"

ROAD CLOSED
AHEAD
LOCAL TRAFFIC ONLY

R11-3A
B/W

C

24"

12"

DETOUR

M4-8
B/O

G

36"

36"

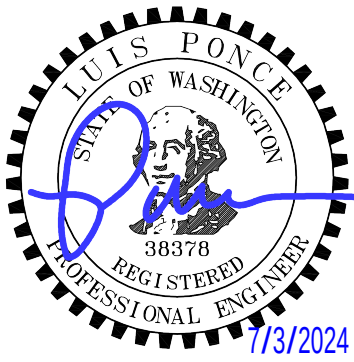
SPECIAL
CONSTRUCTION SIGN
B/O

D

TWO TYPE III R AND TYPE III
L BARRICADE WITH 2 TYPE
A FLASHING WARNING LIGHTS

SIGN SPACING = X (1)		
RURAL ROADS	45/55 MPH	500'±
URBAN ARTERIALS & RURAL ROADS	35/40 MPH	350'±
RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS	25/30 MPH	200'± (2)
URBAN STREETS	25 MPH OR LESS	100'± (2)
ALL SIGNS ARE BLACK ON ORANGE UNLESS DESIGNATED OTHERWISE		

- (1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE AT-GRADE INTERSECTIONS AND DRIVEWAYS.
- (2) THIS SIGN SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.



5/22/24
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NO.	DATE	DESCRIPTION	BY

CITY OF FERDALE
2095 MAIN ST
FERDALE, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE

DETOUR PLAN

DWG 19025 DETOUR		DATE 5/22/24	
JOB# 19025	SCALE H: 1"=500' V: N/A	SHEET 3 of 64	

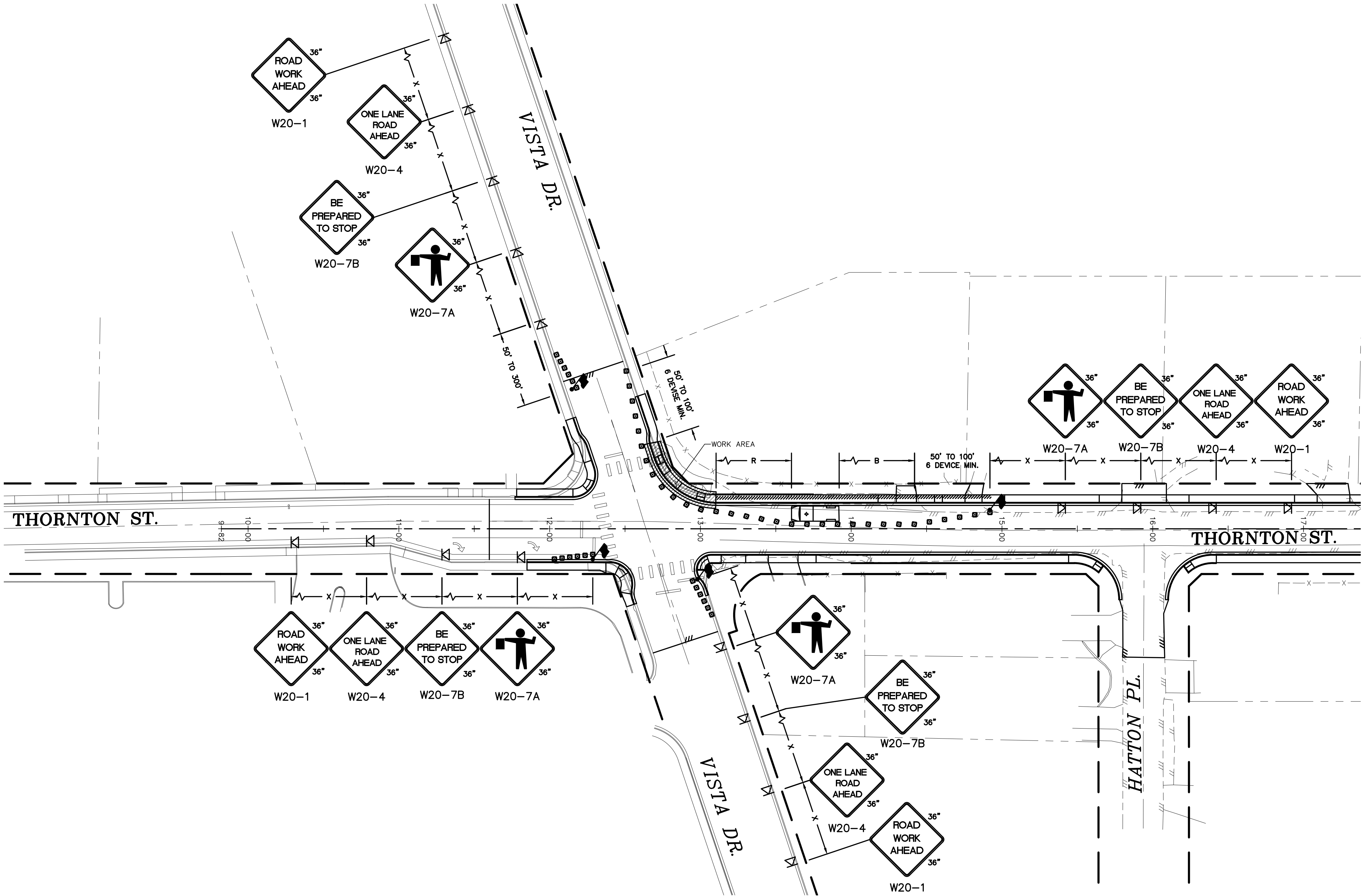
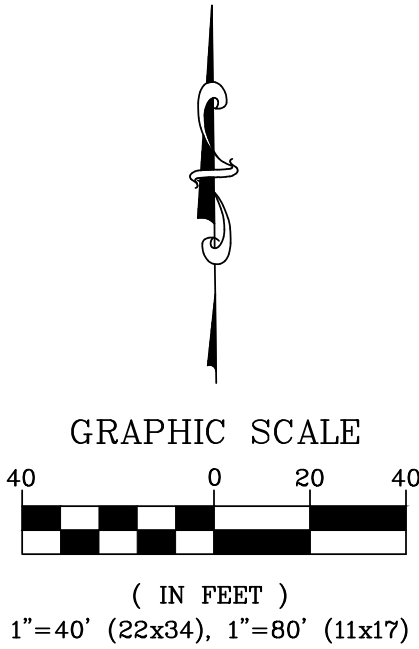
BUFFER DATA										
LONGITUDINAL BUFFER SPACE = B										
SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730
TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R										
HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.					HOST VEHICLE WEIGHT > 22,000 lbs.					
< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH
100'	123'	172'	74'	100'	150'	100'	123'	172'	74'	100'
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.

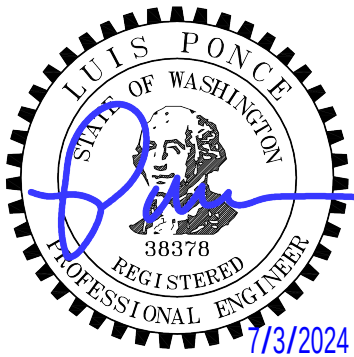
CHANNELIZATION DEVICE SPACING (FEET)		
MPH	TAPER	TANGENT
50/65	10 TO 20	80
35/45	10 TO 20	60
25/30	10 TO 20	40

- 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.



ONE-LANE, TWO-WAY TRAFFIC CONTROL
WITH FLAGGERS - FOR INTERSECTION WORK

- LEGEND**
- WORK ZONE
 - FLAGGING STATION
 - TEMPORARY SIGN LOCATION
 - CHANNELIZING DEVICES
 - PROTECTIVE VEHICLE



5/22/24
AS-BUILT

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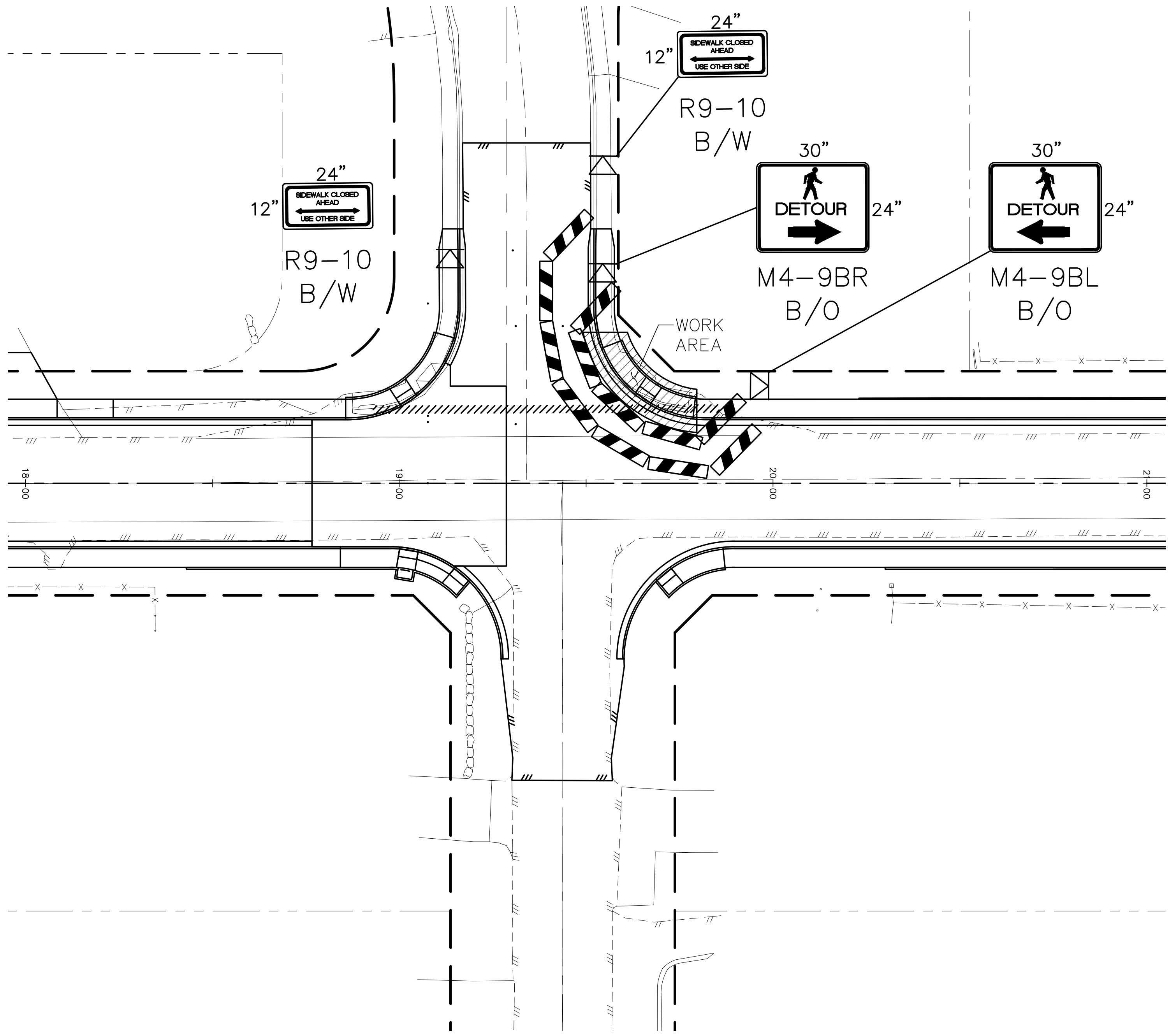
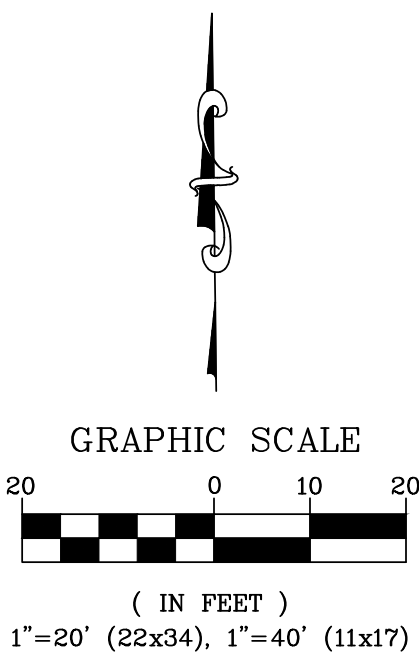
THORNTON STREET - VISTA TO MALLOY AVENUE
TRAFFIC CONTROL - ONE-LANE, TWO-WAY WITH FLAGGERS

DWG 19025 TC
JOB# 19025

SCALE
H: 1"=40' V: N/A

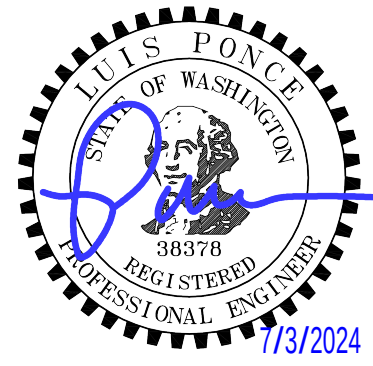
DATE
5/22/24
SHEET
4 of 64

- 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. ADA PEDESTRIAN FACILITIES MUST BE MAINTAINED. SEE STANDARD SPECIFICATION 1-10.2(1)B.
 5. CONTRACTOR TO PROVIDE PEDESTRIAN ACCESS THROUGHOUT THE ENTIRE PROJECT.



INTERSECTION PEDESTRIAN TRAFFIC CONTROL

- LEGEND**
- WORK ZONE
 - TEMPORARY SIGN LOCATION
 - CHANNELIZING DEVICES
 - PEDESTRIAN CHANNELIZING DEVICES
 - TEMPORARY PEDESTRIAN RAMP FOR SIDEWALKS



5/22/24
AS-BUILT

DESIGNED BY
JAM/LMH
DRAWN BY
JAM/LMH
CHECKED BY
LP

R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

NO.	DATE	DESCRIPTION	BY
1	9/28/22	ADDENDUM No. 03	JAM

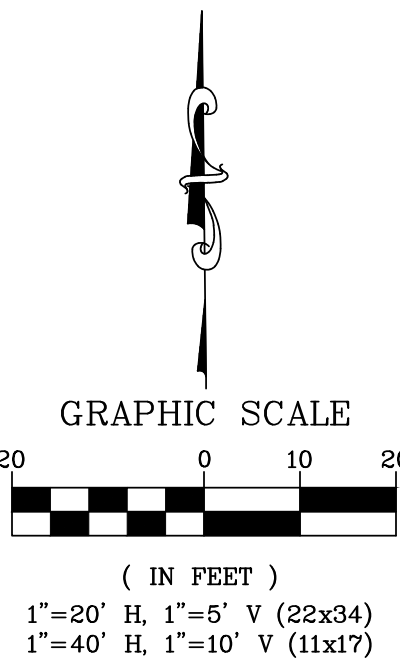
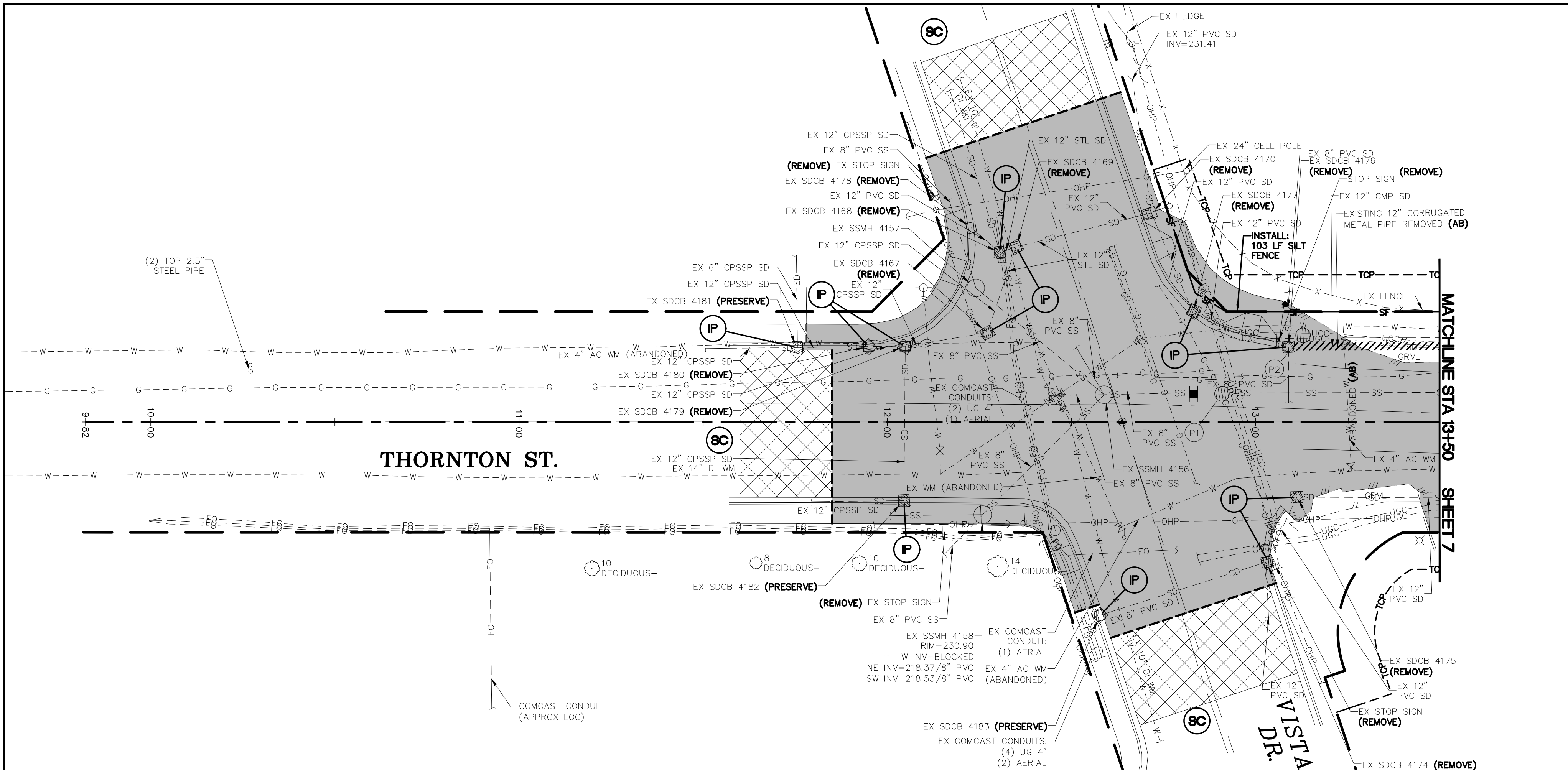
CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE
TRAFFIC CONTROL - PEDESTRIAN AT INTERSECTION

DWG 19025 TC
JOB# 19025

SCALE
H: 1"=20' V: N/A

DATE 5/22/24
SHEET 5 of 64



STORM
STRUCTURE NOTES:

EX SDCB 4167 (REMOVE)
RIM=230.35
N INV (IN)=227.72/12" CPSSP
W INV (OUT)=227.45/12" CPSSP

EX SDCB 4168 (REMOVE)
RIM=230.70
E INV (IN)=25TL19/12" RGS
NW INV (IN)=228.28/12" PVC
N INV (OUT)=228.07/12" CPSSP

EX SDCB 4169 (REMOVE)
RIM=230.78
W INV (OUT)=25TL10/12" RGS
E INV (OUT)=25TL3/12" RGS
S INV (OUT)=25TL16/12" RGS

EX SDCB 4170 (REMOVE)
RIM=231.30
W INV (IN)=227.34/12" PVC
N INV (IN)=227.33/12" PVC
S INV (OUT)=227.44/12" CPSSP

EX SDCB 4174 (REMOVE)
RIM=231.36
W INV (IN)=227.55/8" PVC
S INV (IN)=227.39/12" PVC
NE INV (OUT)=227.38/12" PVC

EX SDCB 4175 (REMOVE)
RIM=229.83
SW INV (IN)=225.29/12" PVC
E INV (OUT)=225.34/12" PVC

EX SDCB 4176 (REMOVE)
RIM=229.33
W INV (IN)=224.30/12" PVC
N INV (IN)=224.51/8" PVC
S INV (IN)=224.25/8" PVC
E INV (OUT)=224.17/12" CMP

EX SDCB 4177 (REMOVE)
RIM=230.41
N INV (IN)=227.01/12" PVC
E INV (OUT)=226.47/12" PVC

EX SDCB 4178 (REMOVE)
RIM=230.72
SE INV (OUT)=228.45/12" PVC

EX SDCB 4179 (REMOVE)
RIM=230.19
E INV (IN)=227.23/12" CPSSP
W INV (OUT)=227.26/12" CPSSP
S INV (OUT)=227.23/12" CPSSP

EX SDCB 4180 (REMOVE)
RIM=230.04
E INV (IN)=227.18/12" CPSSP
W INV (IN)=227.22/12" CPSSP

STORM
STRUCTURE NOTES:

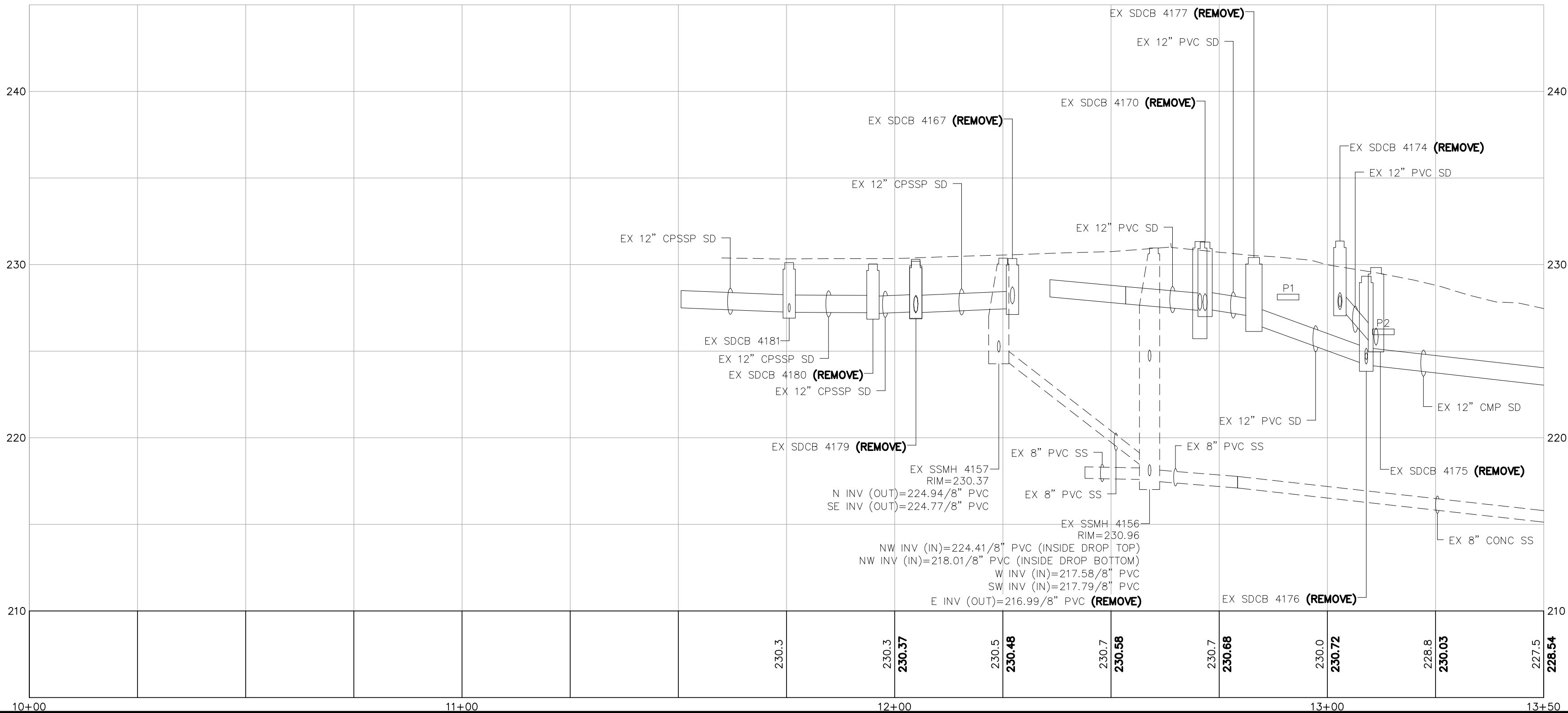
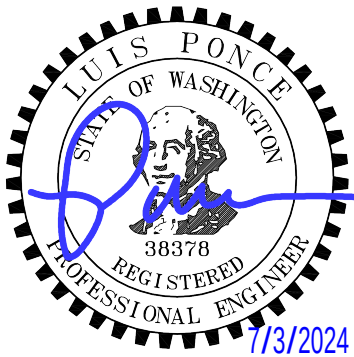
EX SDCB 4181 (PRESERVE)
RIM=230.11
W INV (IN)=227.26/12" CPSSP
N INV (IN)=227.26/6" CPSSP
E INV (OUT)=227.24/12" CPSSP

EX SDCB 4182 (PRESERVE)
RIM=229.78
N INV (IN)=226.95/12" CPSSP (REMOVE)
W INV (IN)=226.80/12" CPSSP

EX SDCB 4183 (PRESERVE)
RIM=231.41
E INV (OUT)=228.85/8" PVC

POTHOLES			
#	DESCRIPTION	TOP OF PIPE EL.	OWNER
P1	(1) 4" STL GAS	228.29	CNG
P2	(2) 4" PVC CONDUIT	226.28	ZIPLY

- NOTE:
1. POTHOLE DATA IS FOR INFORMATIONAL PURPOSES ONLY. POTHOLE DATA IS FROM SURVEY POINTS PROVIDED BY COMPASS POINT SURVEYING ON 10-27-21.
2. CNG DEPTHS WERE MEASURED WITH AN ELECTRIC DEVICE (NOT POTHOLED). INFO PROVIDED ON 10-30-21.
3. PSE DEPTHS WERE POTHOLED ON 03-28-22.
4. ZIPLY DEPTHS WERE POTHOLED ON 05-27-22.
UTILITY POTHOLE LOCATION



5/22/24
AS-BUILT

DESIGNED BY
JAM/LMH
DRAWN BY
JAM/LMH
CHECKED BY
LP

R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

NO.	DATE	DESCRIPTION	BY

CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE

EX CONC, TESC AND DEMO - STA 10+00 TO 13+50

DWG 19025 EX COND

JOB#

19025

SCALE

H: 1"=20'

V: 1"=5'

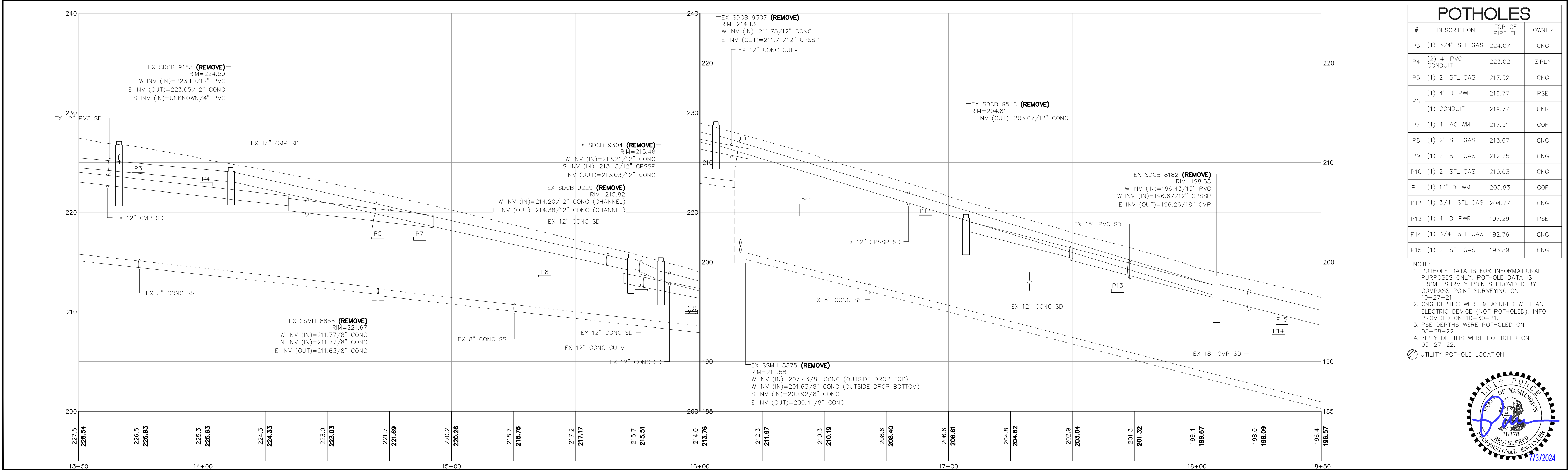
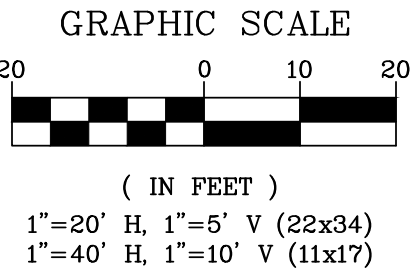
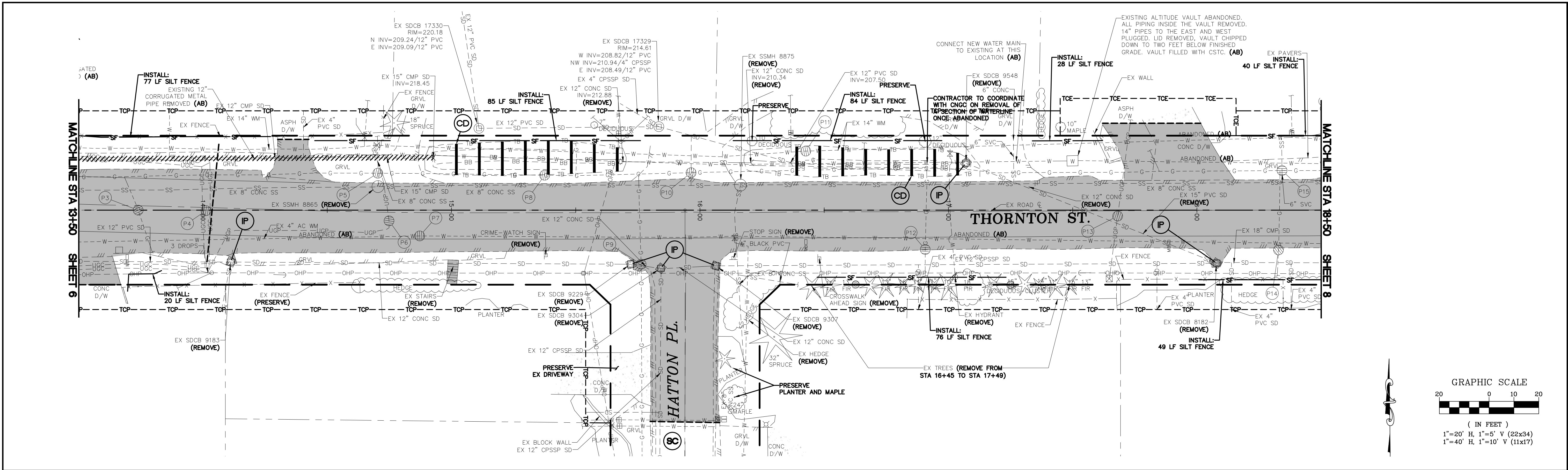
DATE

5/22/24

SHEET

6

of 64



POTHOLE			
#	DESCRIPTION	TOP OF PIPE EL.	OWNER
P3	(1) 3/4" STL GAS	224.07	CNG
P4	(2) 4" PVC CONDUIT	223.02	ZIPLY
P5	(1) 2" STL GAS	217.52	CNG
P6	(1) 4" DI PWR	219.77	PSE
	(1) CONDUIT	219.77	UNK
P7	(1) 4" AC WM	217.51	COF
P8	(1) 2" STL GAS	213.67	CNG
P9	(1) 2" STL GAS	212.25	CNG
P10	(1) 2" STL GAS	210.03	CNG
P11	(1) 14" DI WM	205.83	COF
P12	(1) 3/4" STL GAS	204.77	CNG
P13	(1) 4" DI PWR	197.29	PSE
P14	(1) 3/4" STL GAS	192.76	CNG
P15	(1) 2" STL GAS	193.89	CNG

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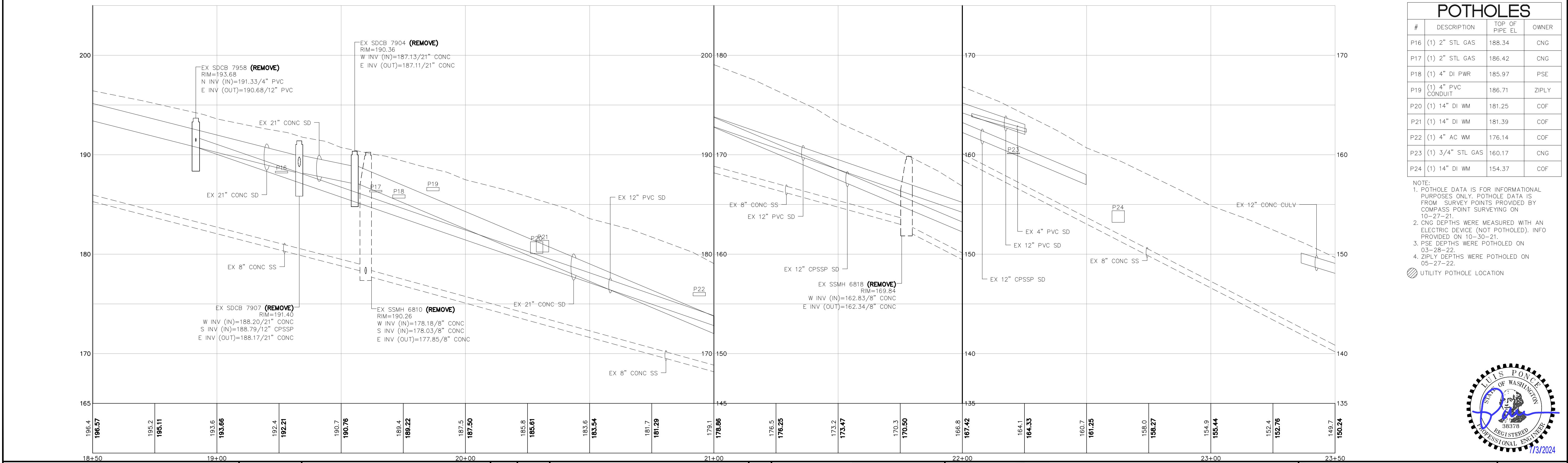
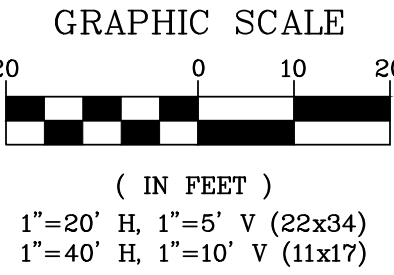
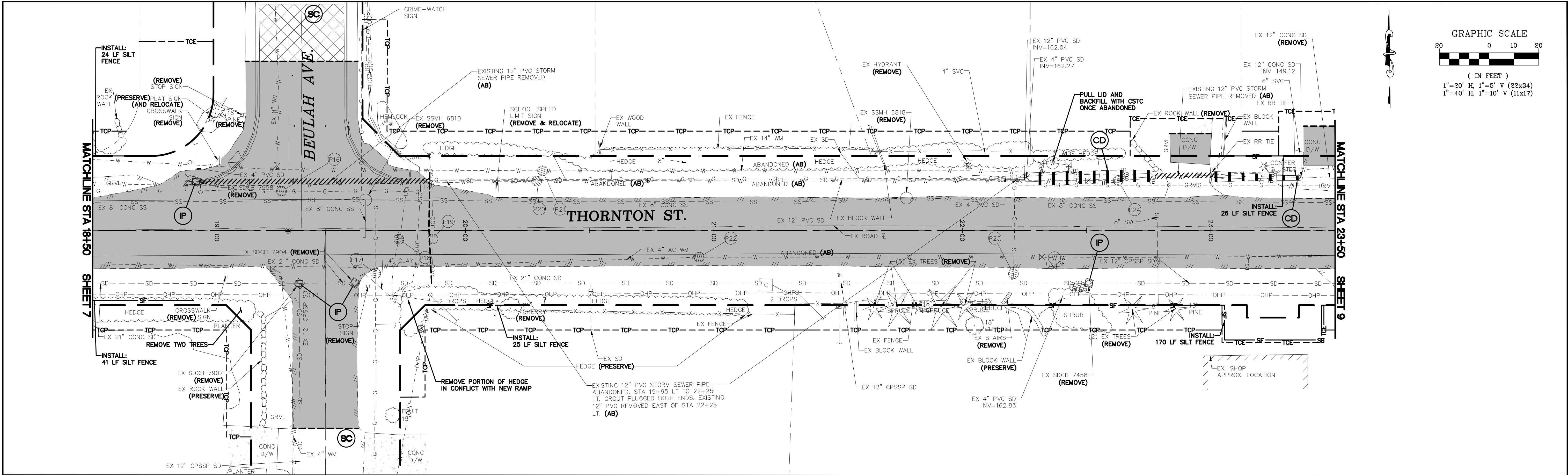
3. PSE DEPTHS WERE POTHOLED ON 03-28-22.

4. ZIPLY DEPTHS WERE POTHOLED ON 05-27-22.

UTILITY - POTHOLE LOCATION



5/22/24	AS-BUILT	DESIGNED BY JAM/LMH DRAWN BY JAM/LMH CHECKED BY LP	R&E Reichhardt & Ebe ENGINEERING INC P.O. Box 978 423 Front Street Lynden, WA 98264 (360) 354-3687	NO. DATE DESCRIPTION BY	CITY OF FERDALE 2095 MAIN ST FERDALE, WA 98248	THORNTON STREET - VISTA TO MALLOY AVENUE EX COND, TESC AND DEMO - STA 13+50 TO 18+50	DWG 19025 EX COND JOB# 19025 SCALE H: 1"=20' V: 1"=5'	DATE 5/22/24 SHEET 7 of 64
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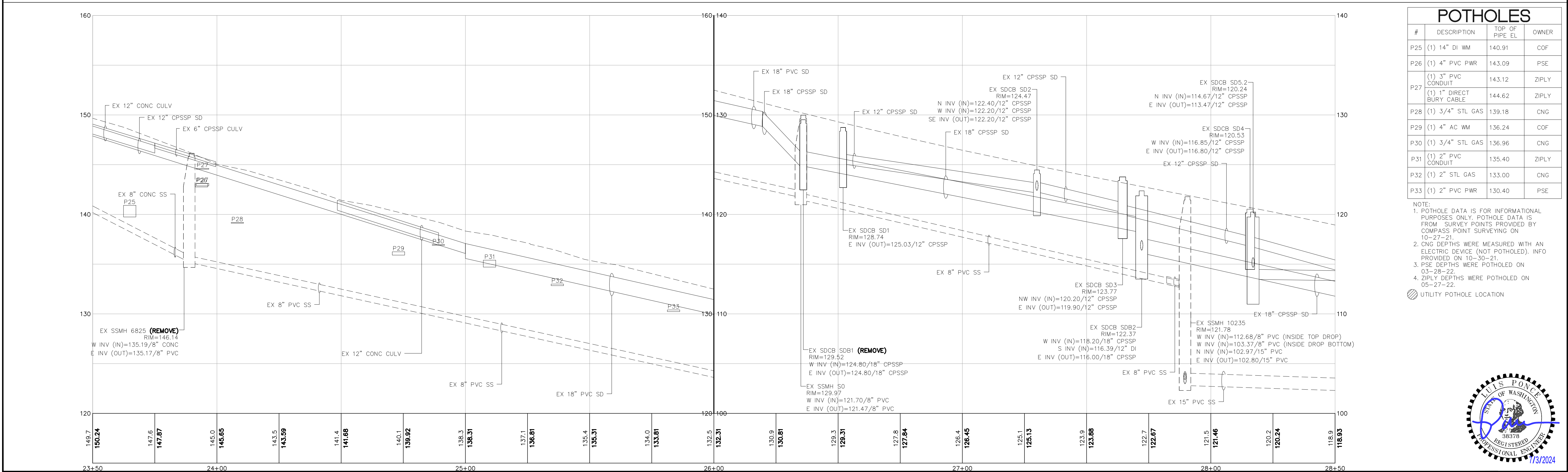
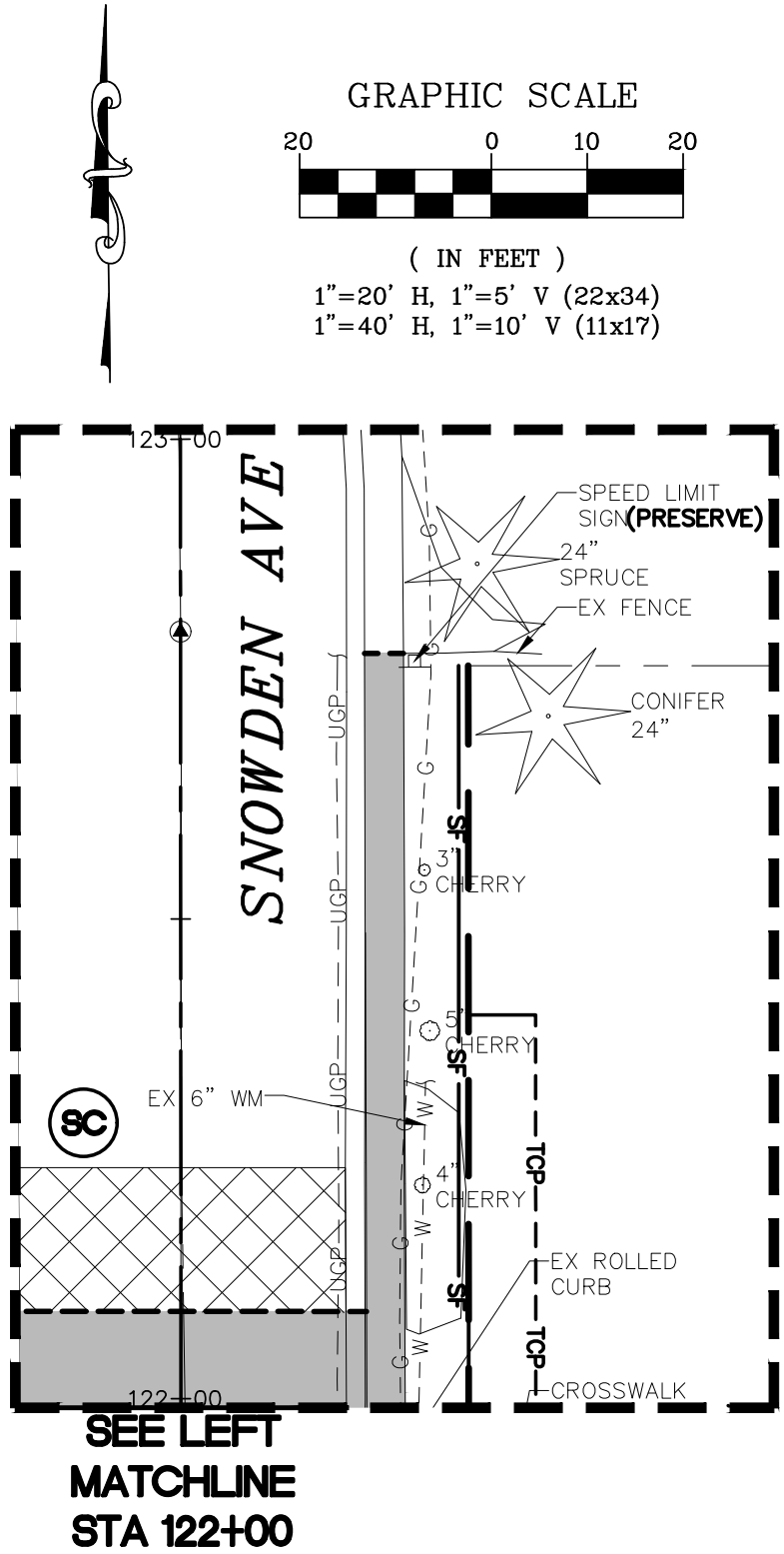
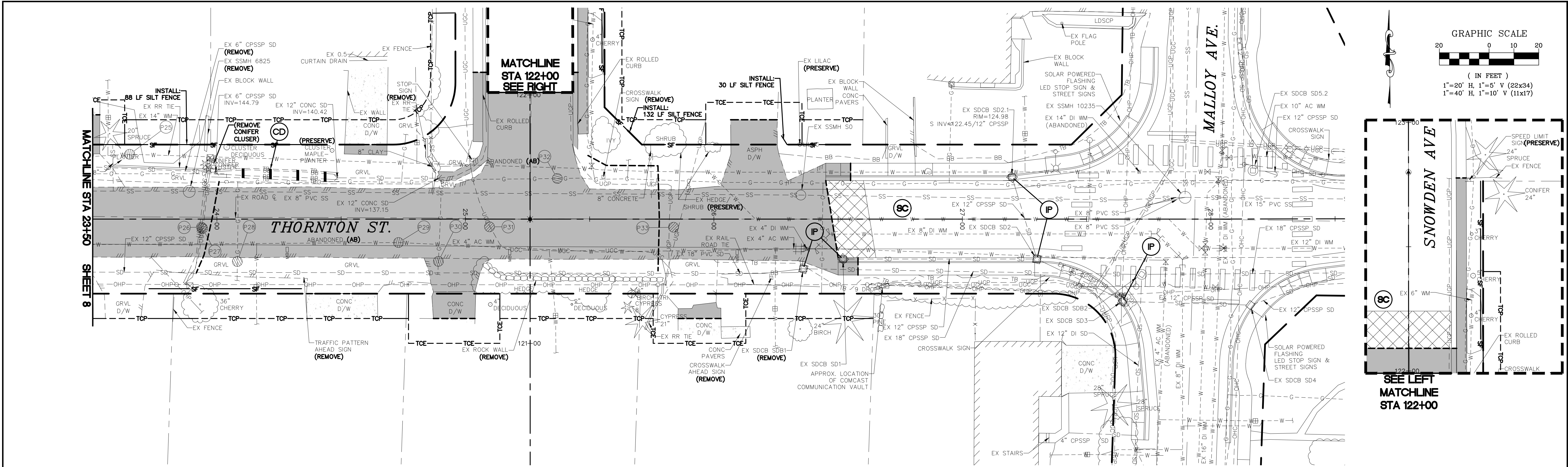
POTHOLE			
#	DESCRIPTION	TOP OF PIPE EL.	OWNER
P16	(1) 2" STL GAS	188.34	CNG
P17	(1) 2" STL GAS	186.42	CNG
P18	(1) 4" DI PWR	185.97	PSE
P19	(1) 4" PVC CONDUIT	186.71	ZIPLY
P20	(1) 14" DI WM	181.25	COF
P21	(1) 14" DI WM	181.39	COF
P22	(1) 4" AC WM	176.14	COF
P23	(1) 3/4" STL GAS	160.17	CNG
P24	(1) 14" DI WM	154.37	COF

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UTILITY POTHOLE LOCATION



5/22/24	AS-BUILT	DESIGNED BY JAM/LMH DRAWN BY JAM/LMH CHECKED BY LP	R&E Reichhardt & Ebe ENGINEERING INC P.O. Box 978 423 Front Street Lynden, WA 98264 (360) 354-3687	1	9/28/22	ADDENDUM No. 03	JAM	CITY OF FERNDAL 2095 MAIN ST FERNDAL, WA 98248	THORNTON STREET - VISTA TO MALLOY AVENUE EX COND, TESC AND DEMO - STA 18+50 TO 23+50	DWG 19025 EX COND		DATE 5/22/24
										JOB# 19025	SCALE H: 1"=20' V: 1"=5'	SHEET 8 of 64



POTHOLE			
#	DESCRIPTION	TOP OF PIPE EL.	OWNER
P25	(1) 14" DI WM	140.91	COF
P26	(1) 4" PVC PWR	143.09	PSE
P27	(1) 3" PVC CONDUIT	143.12	ZIPLY
	(1) 1" DIRECT BURY CABLE	144.62	ZIPLY
P28	(1) 3/4" STL GAS	139.18	CNG
P29	(1) 4" AC WM	136.24	COF
P30	(1) 3/4" STL GAS	136.96	CNG
P31	(1) 2" PVC CONDUIT	135.40	ZIPLY
P32	(1) 2" STL GAS	133.00	CNG
P33	(1) 2" PVC PWR	130.40	PSE

NOTE:
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UTILITY POTHOLE LOCATION



5/22/24	AS-BUILT	DESIGNED BY JAM/LMH DRAWN BY JAM/LMH CHECKED BY LP	R&E Reichhardt & Ebe ENGINEERING INC P.O. Box 978 423 Front Street Lynden, WA 98264 (360) 354-3687	NO. DATE DESCRIPTION BY	CITY OF FERDALE 2095 MAIN ST FERDALE, WA 98248	THORNTON STREET - VISTA TO MALLOY AVENUE EX COND, TESC AND DEMO - STA 23+50 TO 28+50	DWG 19025 EX COND JOB# 19025 SCALE H: 1"=20' V: 1"=5'	DATE 5/22/24 SHEET 9 of 64
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THIS PLAN PROVIDES THE MINIMUM REQUIREMENTS. THE CONTRACTOR SHALL ADAPT THE PLAN IN ORDER TO PREVENT SEDIMENT LADEN STORM WATER FROM LEAVING THE SITE. THE CONTRACTOR'S CERTIFIED EROSION AND SEDIMENT CONTROL LEAD (CESCL) SHALL UTILIZE THE WASHINGTON STATE DEPARTMENT OF ECOLOGY 2019 STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON (SWMMWW) FOR SELECTING, INSTALLING AND MAINTAINING THE CORRECT BMP'S BASED OF METHOD OF CONSTRUCTION UTILIZED BY THE CONTRACTOR. ALL ITEM'S SHALL BE OVERSEEN BY A CSECL AND BE SUBJECT TO INSPECTION BY THE ENGINEER AND/OR CITY OF FERNDALE PUBLIC WORKS DEPARTMENT.

- BEFORE BEGINNING LAND DISTURBING ACTIVITIES, INCLUDING CLEARING AND GRADING, CLEARLY MARK ALL CLEARING LIMITS, SENSITIVE AREAS AND THEIR BUFFERS, AND TREES THAT ARE TO BE PRESERVED WITHIN THE CONSTRUCTION AREA.
- RETAIN THE DUFF LAYER, NATIVE TOP SOIL, AND NATURAL VEGETATION IN AN UNDISTURBED STATE TO THE MAXIMUM DEGREE PRACTICABLE.

- LIMIT CONSTRUCTION VEHICLE ACCESS AND EXIT TO ONE ROUTE, IF POSSIBLE.
- STABILIZE ACCESS POINTS WITH A PAD OF QUARRY SPALLS, CRUSHED ROCK, OR OTHER EQUIVALENT BMPs, TO MINIMIZE TRACKING OF SEDIMENT ONTO PUBLIC ROADS.
- LOCATE WHEEL WASH OR TIRE BATHS ON SITE, IF THE STABILIZED CONSTRUCTION ENTRANCE IS NOT EFFECTIVE IN PREVENTING TRACKING SEDIMENT ONTO ROADS.
- IF IT IS NOT POSSIBLE TO STABILIZE THE CONSTRUCTION SITE, AFFECTED ROADWAY THOROUGHLY AT THE END OF EACH DAY, OR MORE FREQUENTLY AS NECESSARY (FOR EXAMPLE, DURING Wet WEATHER). REMOVE SEDIMENT FROM ROADS BY SHOVELING, SWEEPING, OR PICK UP AND TRANSPORT THE SEDIMENT TO A CONTROLLED SEDIMENT DISPOSAL AREA.
- CONDUCT STREET WASHING ONLY AFTER SEDIMENT IS REMOVED IN ACCORDANCE WITH THE ABOVE BULLET.
- PREVENT WASTEWATER FROM BACKFLOWING INTO THE STREET, OR OTHERWISE PREVENT IT FROM DISCHARGING INTO ANY STREET TRIBUTARY TO WATERS OF THE STATE.

BMP C105: STABILIZED CONSTRUCTION ENTRANCE/EXIT

* PROTECT PROPERTIES AND WATERWAYS DOWNSTREAM OF DEVELOPMENT SITES FROM EROSION AND THE ASSOCIATED DISCHARGE OF TURBID WATERS DUE TO INCREASES IN THE VELOCITY AND PEAK VOLUMETRIC FLOW RATE OF STORMWATER RUNOFF FROM THE PROJECT SITE.

* WHERE NECESSARY TO COMPLY WITH THE BULLET ABOVE, CONSTRUCT STORMWATER RETENTION OR DETENTION FACILITIES AS ONE OF THE FIRST STEPS IN GRADING. ASSURE THAT DETENTION FACILITIES FUNCTION PROPERLY BEFORE CONSTRUCTING SITE IMPROVEMENTS (E.G. IMPERVIOUS SURFACES).

* IF PERMANENT OR TEMPORARY EROSION PROTECTION IS REQUIRED FOR FLOW CONTROL DURING CONSTRUCTION, PROTECT THESE FACILITIES FROM SILTATION DURING THE CONSTRUCTION PHASE.

BMP C208: TRIANGULAR SILT DIKE (GEOTEXTILE-ENCASED CHECK DAM)

BMP C235: WATTLES

- DESIGN, INSTALL, AND MAINTAIN EFFECTIVE EROSION CONTROLS AND SEDIMENT CONTROLS TO MINIMIZE THE DISCHARGE OF POLLUTANTS.
- CONSTRUCT SEDIMENT CONTROL BMPs (SEDIMENT PONDS, TRAPS, FILTERS, ETC.) AS ONE OF THE FIRST STEPS IN THE DESIGN OF THESE BMPs SHALL BE FUNCTIONAL BEFORE OTHER LAND DISTURBING ACTIVITIES TAKE PLACE.
- MINIMIZE SEDIMENT DISCHARGES FROM THE SITE. THE DESIGN, INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROLS MUST ADDRESS FACTORS SUCH AS THE AMOUNT, FREQUENCY, INTENSITY AND DURATION OF PRECIPITATION, THE NATURE OF RESULTING STORMWATER RUNOFF, AND SOIL CHARACTERISTICS, INCLUDING THE RANGE OF SOIL PARTICLE SIZES EXPECTED TO BE PRESENT ON THE SITE.
- DIRECT STORMWATER RUNOFF FROM THE CONSTRUCTION AREA TO A SEDIMENT POND OR OTHER APPROPRIATE SEDIMENT REMOVAL BMP, BEFORE THE RUNOFF LEAVES A CONSTRUCTION SITE OR BEFORE DISCHARGE TO AN INFILTRATION FACILITY. RUNOFF FROM FULLY STABILIZED AREAS MAY BE DISCHARGED WITHOUT A SEDIMENT REMOVAL BMP, BUT MUST MEET THE FLOW CONTROL PERFORMANCE STANDARD IN ELEMENT #3, BULLET #1.
- LOCATE BMPs INTENDED TO TRAP SEDIMENT ON-SITE IN A MANNER TO AVOID INTERFERENCE WITH THE MOVEMENT OF MATERIALS ALREADY ON-SITE.
- WHERE FEASIBLE, DESIGN OUTLET STRUCTURES THAT WITHDRAW IMPOUNDED STORMWATER FROM THE SURFACE TO AVOID DISCHARGING SEDIMENT THAT IS STILL SUSPENDED LOWER IN THE WATER COLUMN.

BMP C208: TRIANGULAR SILT DIKE (GEOTEXTILE-ENCASED CHECK DAM)

- STABILIZE EXPOSED AND UNWORKED SOILS BY APPLICATION OF EFFECTIVE BMPs THAT PREVENT EROSION. APPLICABLE BMPs INCLUDE, BUT ARE NOT LIMITED TO: TEMPORARY AND PERMANENT SEEDING, SODDING, MULCHING, PLASTIC COVERING, EROSION CONTROL FABRICS AND MATTING, SOIL APPLICATION OF POLYACRYLAMIDE (PAM), THE EARLY APPLICATION OF GRAVEL BASE EROSION AREAS TO BE PAVED, AND DUST CONTROL.
- CONTROL STORMWATER VOLUME AND VELOCITY WITHIN THE SITE TO MINIMIZE SOIL EROSION.
- CONTROL STORMWATER DISCHARGES, INCLUDING BOTH PEAK FLOW RATES AND TOTAL STORMWATER VOLUME, TO MINIMIZE EROSION AT OUTLETS AND TO MINIMIZE DOWNSTREAM CHANNEL AND STREAM BANK EROSION.
- SOILS MUST NOT REMAIN EXPOSED AND UNWORKED FOR MORE THAN THE TIME PERIODS SET FORTH BELOW TO PREVENT EROSION:
 - DURING THE DRY SEASON (MAY 1 – SEPT. 30): 7 DAYS
 - DURING THE WET SEASON (OCTOBER 1 – APRIL 30): 2 DAYS
- STABILIZE SOILS AT THE END OF THE SHIFT BEFORE A HOLIDAY OR WEEKEND IF NEEDED BASED ON THE WEATHER FORECAST.
- STABILIZE SOIL STOCKPILES FROM EROSION, PROTECTED WITH SEDIMENT TRAPPING MEASURES, AND WHERE POSSIBLE, BE LOCATED AWAY FROM STORM DRAIN INLETS, WATERWAYS AND DRAINAGE CHANNELS.
- MINIMIZE THE AMOUNT OF SOIL EXPOSED DURING CONSTRUCTION ACTIVITY.
- MINIMIZE THE DISTURBANCE OF STEEP SLOPES.
- MINIMIZE SOIL COMPACTION AND, UNLESS INFEASIBLE, PRESERVE TOPSOIL.

BMP C120: TEMPORARY AND PERMANENT SEEDING

BMP C122: NETS AND BLANKETS

BMP C123: PLASTIC COVERING (AS NEEDED)

BMP C130: SURFACE ROUGHENING

BMP C140: DUST CONTROL

- DESIGN AND CONSTRUCT CUT-AND-FILL SLOPES IN A MANNER TO MINIMIZE EROSION. APPLICABLE PRACTICES INCLUDE, BUT ARE NOT LIMITED TO, REDUCING CONTINUOUS LENGTH OF SLOPE WITH TERRACING AND DIVERSIONS, REDUCING SLOPE STEEPNESS, AND ROUGHENING SLOPES (FOR EXAMPLE, TRACK WALKING).
- DIVERT OFF-SITE STORMWATER (RUN-ON) OR GROUND WATER AWAY FROM SLOPES AND DISTURBED AREAS WITH INTERCEPTOR DIKES, PIPES AND/OR SWALES. OFF-SITE STORMWATER SHOULD BE MANAGED SEPARATELY FROM STORMWATER GENERATED ON THE SITE.
- AT THE TOP OF SLOPES, COLLECT DRAINAGE IN PIPE SLOPE DRAINS OR PROTECTED CHANNELS TO PREVENT EROSION. THE PIPE SLOPE DRAINS MUST MAINTAIN THE SAME VOLUMETRIC FLOW RATE CALCULATED USING A 10-MINUTE TIME STEP FROM A TYPE 1A, 10-YEAR, 24-HOUR FREQUENCY STORM FOR THE DEVELOPED CONDITION. ALTERNATIVELY, THE 10-YEAR AND 1-HOUR FLOW RATE PREDICTED BY AN APPROVED CONTINUOUS RUNOFF MODEL, INCREASED BY A FACTOR OF 1.6, MAY BE USED. THE HYDROLOGIC ANALYSIS MUST USE THE EXISTING LAND COVER CONDITION FOR PREDICTING FLOW DURING THE PROJECT. AUTOMATICALLY DETERMINE THE PROJECT LIMITS, THE TRIBUTARY AREAS ON THE PROJECT SITE, THE ANALYSIS MUST USE THE TEMPORARY OR PERMANENT PROJECT LAND COVER CONDITION, WHICHEVER WILL PRODUCE THE HIGHEST FLOW RATES. IF USING THE WESTERN WASHINGTON HYDROLOGY MODEL (WWHM) TO PREDICT FLOWS, BARE SOIL AREAS SHOULD BE MODELED AS "LANDSCAPED" AREA.
- PLACE EXCAVATED MATERIAL ON THE UPHILL SIDE OF TRENCHES, CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS.
- PLACE CHECK DAMS AT REGULAR INTERVALS WITHIN CONSTRUCTED CHANNELS THAT ARE CUT DOWN A SLOPE.

BMP C120: TEMPORARY AND PERMANENT SEEDING
BMP C130: SURFACE ROUGHENING

- PROTECT ALL STORM DRAIN INLETS MADE OPERABLE DURING CONSTRUCTION SO THAT STORMWATER RUNOFF SHALL NOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR TREATED TO REMOVE SEDIMENT.
- CLEAN OR REMOVE AND REPLACE INLET PROTECTION DEVICES WHEN SEDIMENT HAS FILLED ONE-THIRD OF THE AVAILABLE STORAGE (UNLESS A DIFFERENT STANDARD IS SPECIFIED BY THE PRODUCT MANUFACTURER).

BMP C220: STORM DRAIN INLET PROTECTION

DESIGN, INSTALL, IMPLEMENT AND MAINTAIN EFFECTIVE POLLUTION PREVENTION MEASURES TO MINIMIZE THE DISCHARGE OF POLLUTANTS.

USE AND DISPOSE OF ALL POLLUTANTS, INCLUDING WASTE MATERIALS AND DEMOLITION DEBRIS THAT OCCUR ON-SITE IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF STORMWATER.

PROVIDE COVER, CONTAINMENT, AND PROTECTION FROM VANDALISM FOR ALL CHEMICALS, LIQUID PRODUCTS, PETROLEUM PRODUCTS, AND OTHER MATERIALS THAT HAVE THE POTENTIAL TO POSE A THREAT TO HUMAN HEALTH OR THE ENVIRONMENT. CONTAINMENT SHALL BE PROVIDED BY THE USE OF IMPERVIOUS TANKS OR STORAGE TANKS. STORAGE MEANS PLACING TANKS OR CONTAINERS WITHIN AN IMPERVIOUS STRUCTURE CAPABLE OF CONTAINING 110% OF THE VOLUME CONTAINED IN THE LARGEST TANK WITHIN THE CONTAINMENT STRUCTURE. DOUBLE-WALLED TANKS DO NOT REQUIRE ADDITIONAL SECONDARY CONTAINMENT.

MAINTAIN AND REPAIR HEAVY EQUIPMENT AND VEHICLES USING SPILL PREVENTION AND CONTROL MEASURES. CLEAN CONTAMINATED SURFACES IMMEDIATELY FOLLOWING ANY SPILL INCIDENT.

DISCHARGE WHEEL WASH OR TIRE BATH WASTEWATER TO A SEPARATE ON-SITE TREATMENT SYSTEM THAT PREVENTS DISCHARGE TO SURFACE WATER, SUCH AS CLOSED-LOOP RECIRCULATION OR UPLAND APPLICATION, OR TO THE SEWERAGE SYSTEM.

APPLY FERTILIZERS AND PESTICIDES IN A MANNER AND AT APPLICATION RATES THAT WILL NOT RESULT IN LOSS OF CHEMICAL TO STORMWATER RUNOFF. FOLLOW MANUFACTURERS' LABEL REQUIREMENTS FOR APPLICATION RATES AND PROCEDURES.

USE RUNOFF TO PREVENT CONTAMINATION OF STORMWATER RUNOFF BY PH MODIFYING SOURCES. THE SOURCES FOR THIS CONTAMINATION INCLUDE, BUT ARE NOT LIMITED TO: BULK CEMENT, CEMENT KILN DUST, FLY ASH, NEW CONCRETE WASHING AND CURING WATERS, WASTE STREAMS GENERATED FROM CONCRETE GRINDING AND SAWING, EXPOSED AGGREGATE PROCESSES, DEWATERING CONCRETE VAULTS, CONCRETE PUMPING AND MIXER WASHOUT WATERS.

USE CONCRETE WASHOUT WATER IF IT DOES NOT VIOLATE ANY STATE OR FEDERAL WATER QUALITY STANDARDS.

ASSURE THAT WASHOUT OF CONCRETE TRUCKS IS PERFORMED OFF-SITE, OR IN DESIGNATED CONCRETE WASHOUT AREAS, OR DO NOT WASH OUT CONCRETE TRUCKS ONTO THE GROUND, OR INTO STORM DRAINS, OPEN DITCHES, STREAMS, OR STREAMS. DO NOT DUMP EXCESS CONCRETE ON-SITE, EXCEPT IN DESIGNATED CONCRETE WASHOUTS.

USE CONCRETE TRUCKS TO DISCHARGE EXCESS CONCRETE TO SURFACE WATERS IF STATE PERMITS ARE OBTAINED.

OBTAIN WRITTEN APPROVAL FROM ECOLOGY BEFORE USING ANY CHEMICAL TREATMENT OTHER THAN CO₂ OR DRY ICE TO ADJUST PH.

DISCHARGE FOUNDATION, VAULT, AND TRENCH DE-WATERING WATER, WHICH HAS SIMILAR CHARACTERISTICS TO STORMWATER RUNOFF FROM THE SITE, INTO A CONTROLLED CONVEYANCE SYSTEM BEFORE DISCHARGE TO A SEDIMENT BASIN OR DRAINAGE POND.

DISCHARGE CLEAN, NON-TURBID DE-WATERING WATER, SUCH AS WELL-POINT GROUND WATER, TO SYSTEMS TRIBUTARY TO, OR DIRECTLY INTO SURFACE WATERS OF THE STATE, AS SPECIFIED IN ELEMENT #8, PROVIDED THE DE-WATERING WATER IS NOT CONTAMINATED BY OIL, GREASE, OR OTHER SOLIDS, AND DOES NOT ROUTE TO SURFACE WATER THROUGH STORMWATER SEDIMENT POUNDS. NOTE THAT SURFACE WATERS OF THE STATE MAY EXIST ON A CONSTRUCTION SITE AS WELL AS OFF SITE; FOR EXAMPLE, A CREEK RUNNING THROUGH A SITE.

HANDLE HIGHLY TURBID OR OTHERWISE CONTAMINATED DEWATERING WATER SEPARATELY FROM STORMWATER.

OTHER TREATMENT OR DISPOSAL OPTIONS MAY INCLUDE:

1. INFILTRATION.
2. TRANSPORT OFF-SITE IN A VEHICLE, SUCH AS A VACUUM FLUSH TRUCK, FOR LEGAL DISPOSAL IN A MANNER THAT MEETS ALL APPLICABLE STATE AND FEDERAL REQUIREMENTS.
3. ECOLOGY-APPROVED ON-SITE CHEMICAL TREATMENT OR OTHER SUITABLE TREATMENT TECHNOLOGIES.
4. SANITARY OR COMBINED SEWER DISCHARGE WITH LOCAL SEWER DISTRICT APPROVAL, IF THERE IS NO OTHER OPTION.
5. USE OF A SEDIMENTATION BAG THAT DISCHARGES TO A DITCH OR SWALE FOR SMALL VOLUMES OF LOCALIZED

- MAINTAIN AND REPAIR ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL BMPs AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION IN ACCORDANCE WITH BMP SPECIFICATIONS.
- REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMPs WITHIN 30 DAYS AFTER ACHIEVING FINAL SITE STABILIZATION OR AFTER THE TEMPORARY BMPs ARE NO LONGER NEEDED.

BMP C160: CERTIFIED EROSION AND SEDIMENT CONTROL LEAD

PHASE DEVELOPMENT PROJECTS TO THE MAXIMUM DEGREE PRACTICABLE AND TAKE INTO ACCOUNT SEASONAL WORK LIMITATIONS.

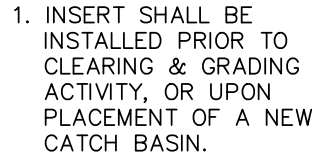
II. DESIGN AND MONITORING – INSPECT, MAINTAIN AND REPAIR ALL BMPs AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. PROJECTS REGULATED UNDER THE CONSTRUCTION STORMWATER GENERAL PERMIT MUST CONDUCT SITE INSPECTIONS AND MONITORING IN ACCORDANCE WITH SPECIAL CONDITION 54 OF THE CONSTRUCTION STORMWATER GENERAL PERMIT:

THE FOLLOWING ARE REQUIRED CONSTRUCTION SWPPP ELEMENTS TO MAINTAIN, UPDATE, AND IMPLEMENT THE SWPPP:

- PROJECTS THAT DISTURB ONE OR MORE ACRES MUST HAVE SITE INSPECTIONS CONDUCTED BY A CERTIFIED EROSION AND SEDIMENT CONTROL LEAD (CESCL) PROJECT SITES DISTURBING LESS THAN ONE ACRE MAY HAVE A CESCL OR A PERSON WITHOUT CESCL CERTIFICATION CONDUCT INSPECTIONS. BY THE INITIATION OF CONSTRUCTION, THE SWPPP MUST BE REVIEWED BY THE CESCL OR INSPECTOR TO PRESENT TO THE PERMITTING AGENCY AN INSPECTOR TIMELINE.
- THE CESCL OR INSPECTOR (PROJECT SITES LESS THAN ONE ACRE) MUST HAVE THE SKILLS TO ASSESS THE:
 - SITE CONDITIONS AND CONSTRUCTION ACTIVITIES THAT COULD IMPACT THE QUALITY OF STORMWATER.
 - EFFECTIVENESS OF EROSION AND SEDIMENT CONTROL MEASURES USED TO CONTROL THE QUALITY OF STORMWATER DISCHARGES.
- THE CESCL OR INSPECTOR MUST EXAMINE STORMWATER VISUALLY FOR THE PRESENCE OF SUSPENDED SEDIMENT, TURBIDITY, DISCOLORATION, AND OIL SHEEN. THEY MUST EVALUATE THE EFFECTIVENESS OF BMPs AND DETERMINE IF IT IS NECESSARY TO INSTALL, MAINTAIN, OR REPAIR BMPs TO IMPROVE THE QUALITY OF STORMWATER DISCHARGES.
- BASED ON THE RESULTS OF THE INSPECTION, CONSTRUCTION SITE OPERATORS MUST CORRECT THE PROBLEMS IDENTIFIED BY:
 - REVIEWING THE SWPPP FOR COMPLIANCE WITH THE 13 CONSTRUCTION SWPPP ELEMENTS AND MAKING APPROPRIATE REVISIONS WITHIN 7 DAYS OF THE INSPECTION.
 - BEING NOTIFIED OF THE PROBLEMS AND IMPLEMENTING AND MAINTAINING APPROPRIATE SOURCE CONTROL AND/OR TREATMENT BMPs AS SOON AS POSSIBLE, ADDRESSING THE PROBLEMS NOT LATER THAN WITHIN 10 DAYS OF THE INSPECTION. IF INSTALLATION OF NECESSARY TREATMENT BMPs IS NOT FEASIBLE WITHIN 10 DAYS, THE CONSTRUCTION SITE OPERATOR MAY REQUEST AN EXTENSION WITHIN THE INITIAL 10-DAY RESPONSE PERIOD.
 - BEING DOCUMENTING IMPLEMENTATION AND MAINTENANCE IN THE SITE LOG (BOOK SITES WITH MORE THAN 1 ACRE).
- THE CESCL OR INSPECTOR MUST INSPECT AND REPORT PROBLEMS TO ALL CONSTRUCTION SITES, AND ALL STORMWATER DISCHARGE POINTS AT LEAST EVERY CALENDAR WEEK AND WITHIN 24 HOURS OF ANY DISCHARGE FROM THE SITE. (FOR PURPOSES OF THIS CONDITION, INDIVIDUAL DISCHARGE EVENTS THAT LAST MORE THAN ONE DAY DO NOT REQUIRE DAILY INSPECTIONS. FOR EXAMPLE, IF A STORMWATER POND DISCHARGES CONTINUOUSLY OVER THE COURSE OF A MONTH AND INSPECTIONS ARE REQUIRED EVERY WEEK, INSPECTIONS MAY BE REQUIRED TO REDUCE THE INSPECTION FREQUENCY FOR TEMPORARY STABILIZED, INACTIVE SITES TO EVERY CALENDAR MONTH.

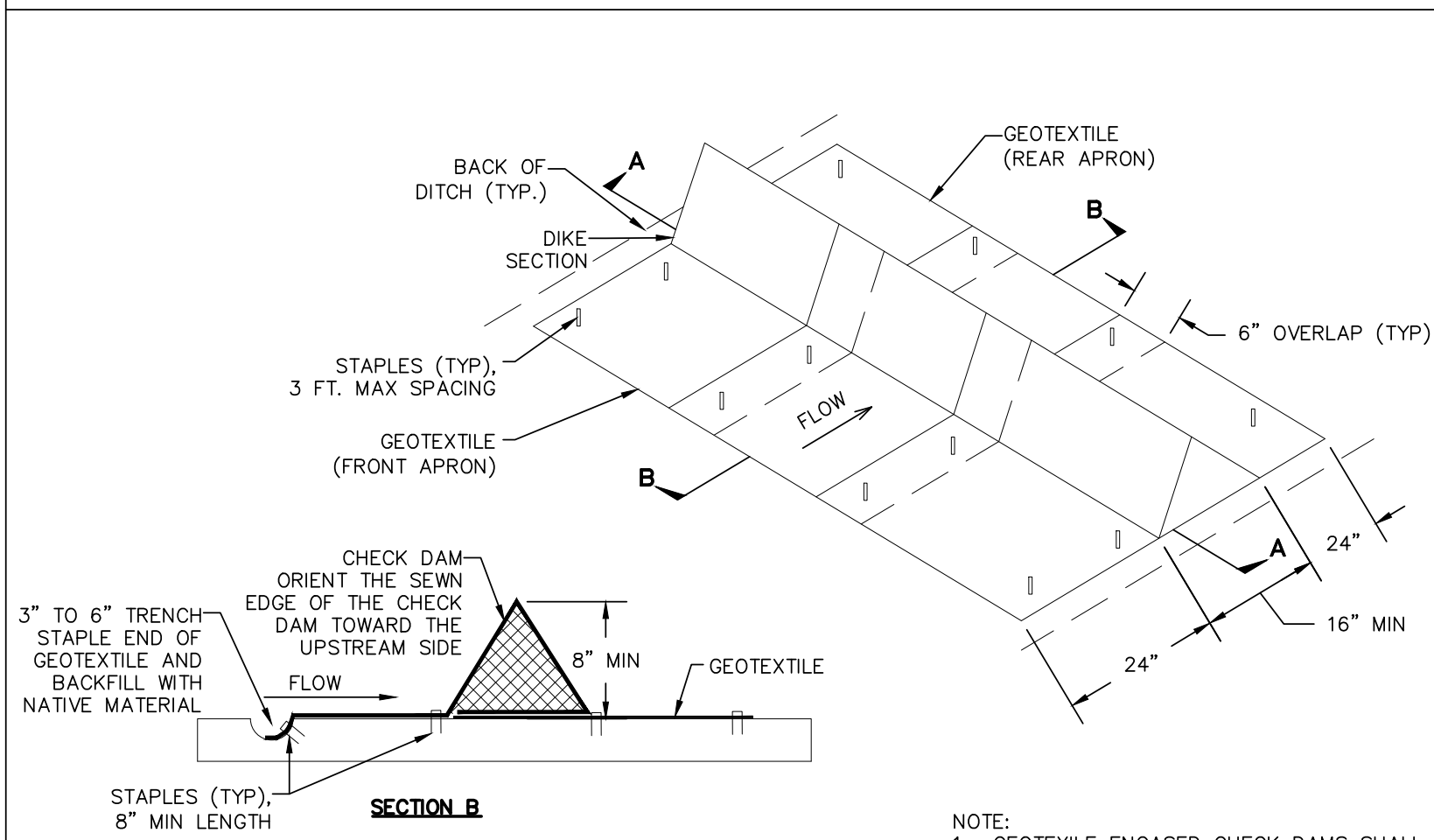
BMP C160: CERTIFIED EROSION AND SEDIMENT CONTROL LEAD

- NOT APPLICABLE; THERE ARE NO EXISTING LOW IMPACT DEVELOPMENT BMPs WITHIN THE PROJECT BOUNDS.



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.

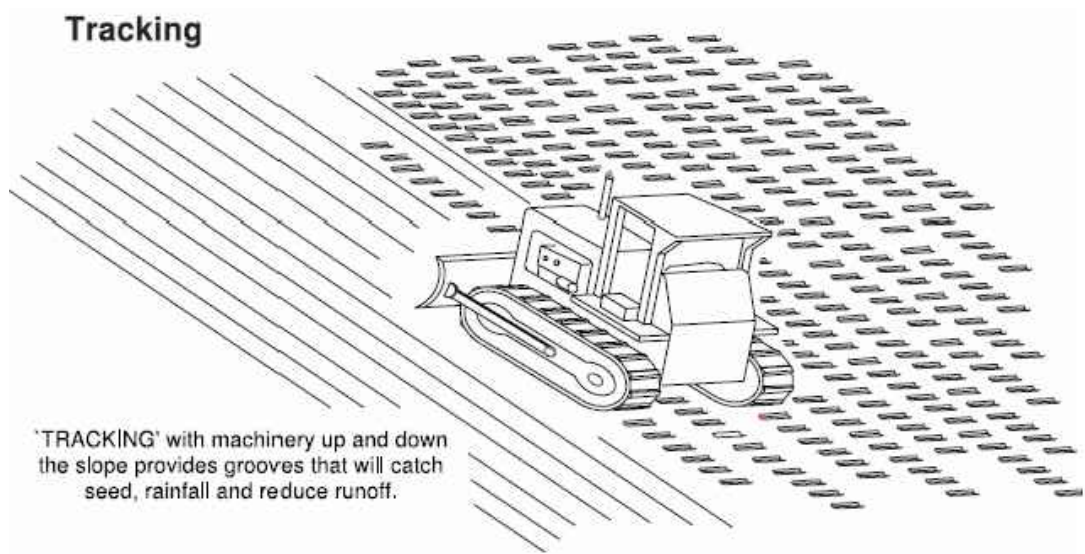
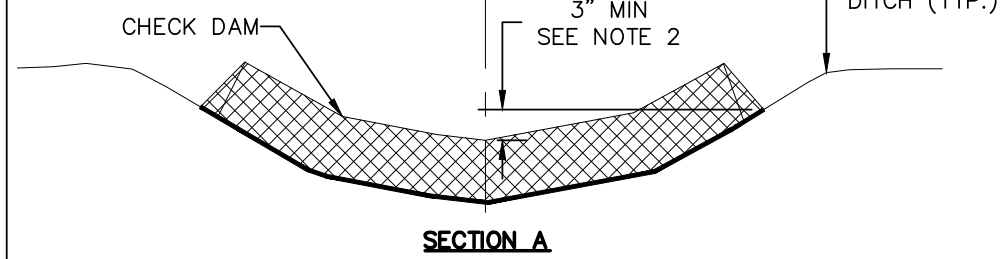
NTS



NOTE:

1. GEOTEXTILE ENCASED CHECK DAMS SHALL MEET THE REQUIREMENTS OF STANDARD SPECIFICATIONS 8-01.3(6)A & 9-14.5(4).
2. INSTALL THE SLOPED ENDS OF THE CHECK DAM A MINIMUM OF 3" HIGHER THAN THE TOP OF THE CHECK DAM IN THE CHANNEL TO ENSURE THAT WATER FLOWS OVER THE DAM AND NOT AROUND IT.
3. FLAT BOTTOM DITCH DESIGN SHOWN, CHECK DAM INSTALLATION DETAILS ARE SIMILAR FOR "V" BOTTOM DITCHES.
4. PERFORM MAINTENANCE IN ACCORDANCE WITH STANDARD SPECIFICATIONS 8-01.3(15).

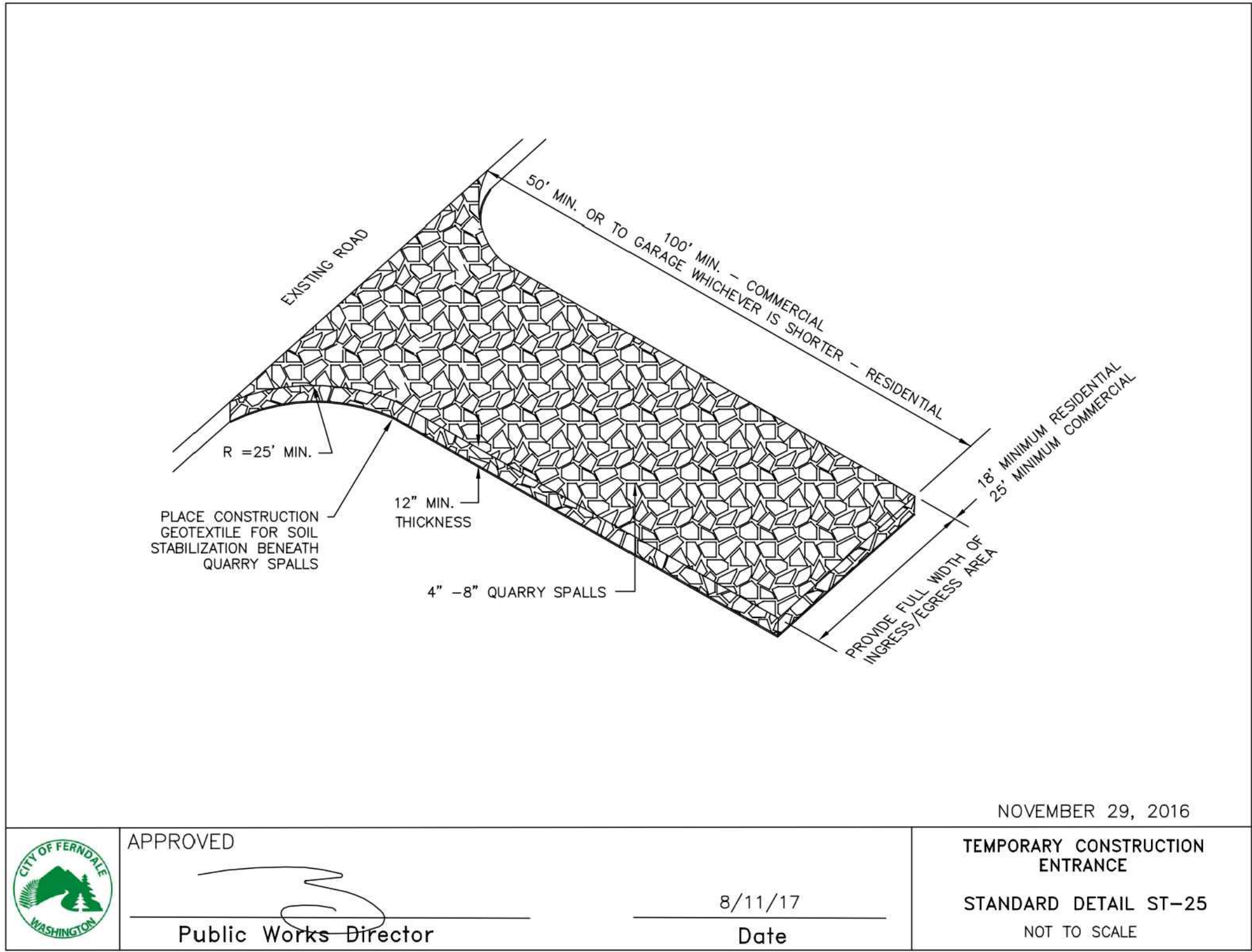
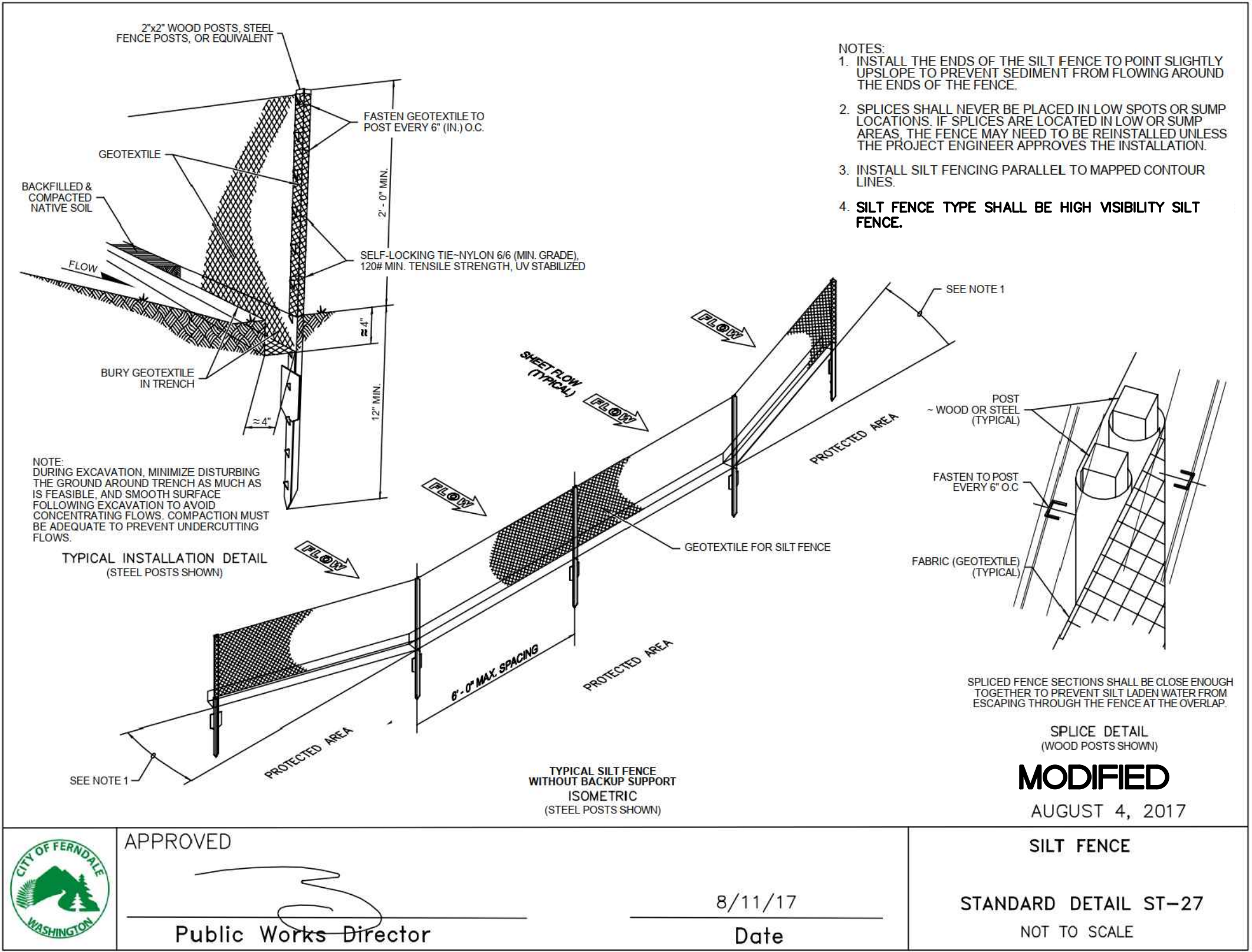
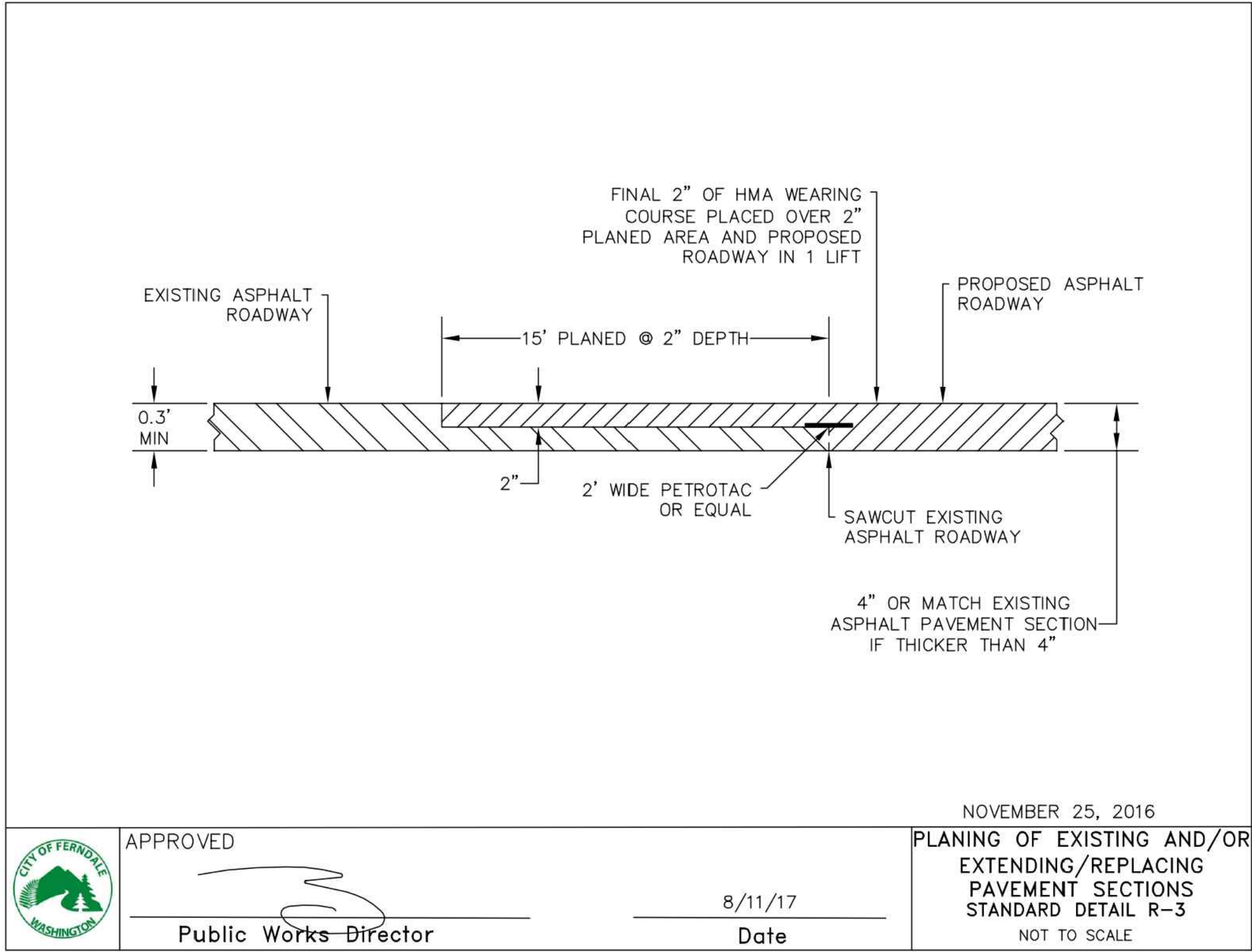
NTS



NTS

5/22/24 AS-BUILT	DESIGNED BY JAM/LMH	R&E Reichhardt & Ebe ENGINEERING INC P.O. Box 978 423 Front Street Lynden, WA 98264 (360) 354-3687					CITY OF FERNDAL 2095 MAIN ST FERNDAL, WA 98248	THORNTON STREET - VISTA TO MALLOY AVENUE TESC DETAILS 1	DWG 19025 DETAILS		DATE 5/22/24	
	DRAWN BY JAM/LMH									JOB#	SCALE	SHEET
	CHECKED BY LP									19025	H: N/A V: N/A	10 of 64
			NO.	DATE	DESCRIPTION	BY						





5/22/24
AS-BUILT

DESIGNED BY
JAM/LMH
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JAM/LMH
CHECKED BY
LP

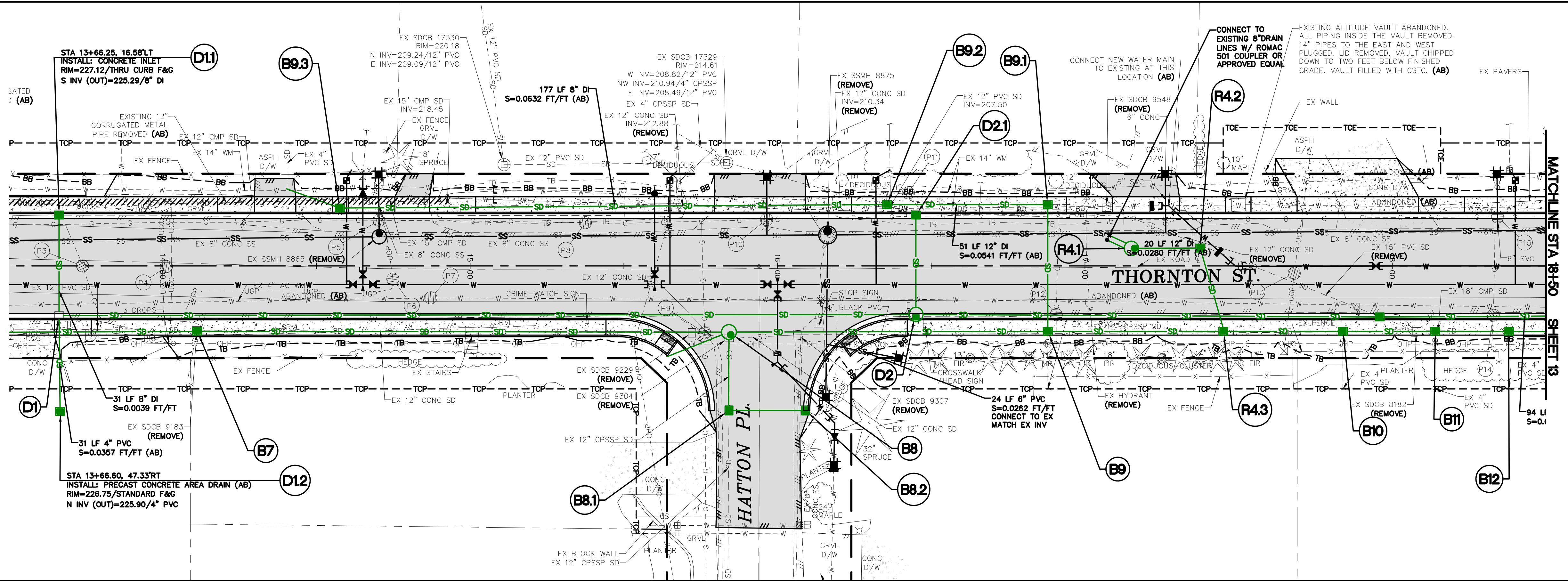
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NO.	DATE	DESCRIPTION	BY

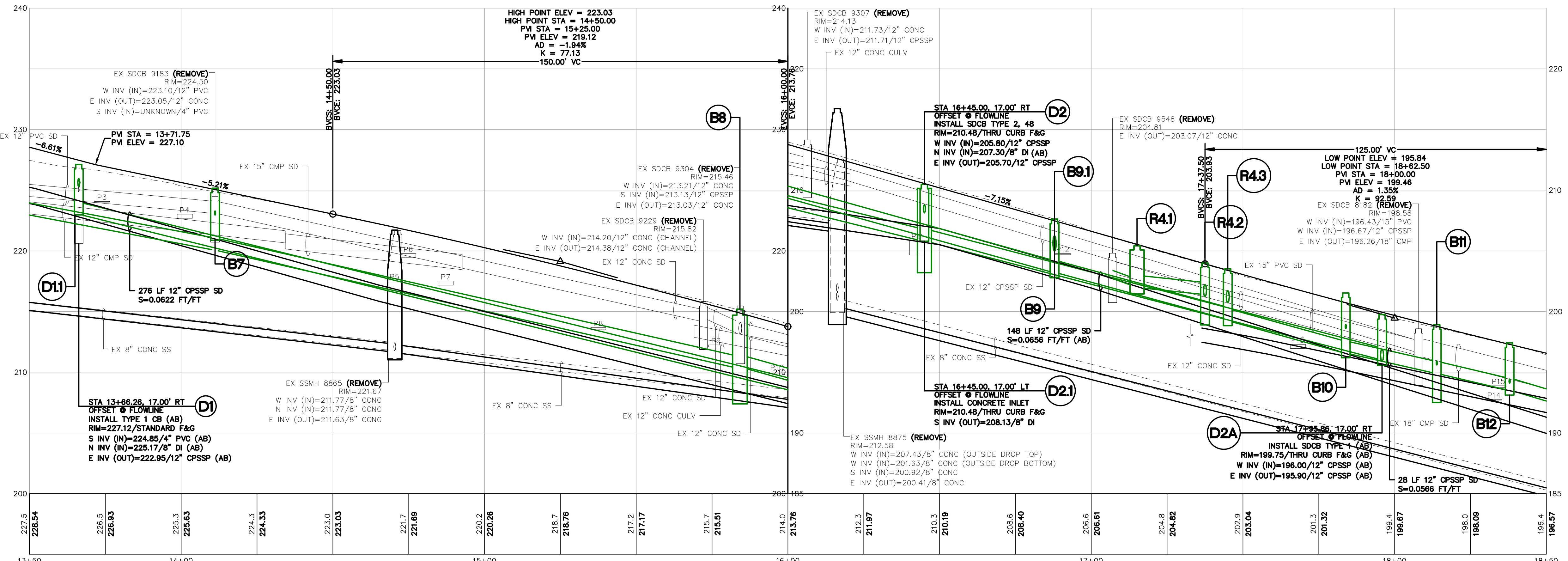
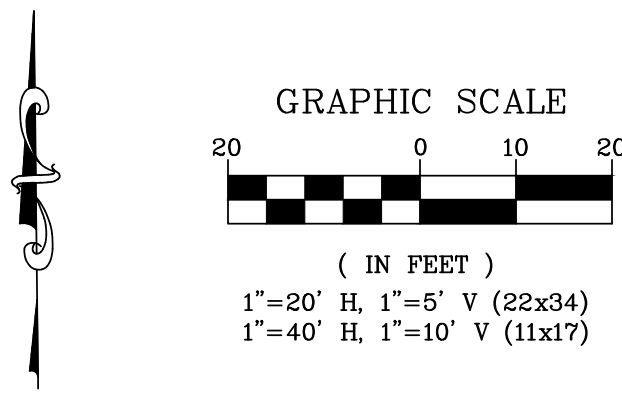
CITY OF FERDALE
2095 MAIN ST
FERDALE, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE
TESC DETAILS 2

DWG	19025 DETAILS	DATE	5/22/24
JOB#	19025	SCALE	H: N/A V: N/A
SHEET	11	of 64	



- NOTE:
1. CONTRACTOR TO POTHOLE AT EACH SPECIFIED LOCATION FIVE (5) WORKING DAYS PRIOR TO PLANNED INSTALLATION TO VERIFY LAYOUT, PIPE LOCATION, DEPTH, SIZE, MATERIAL, AND ALL OTHER ITEMS NEEDED FOR THE CONNECTION.
 2. CONTRACTOR SHALL POTHOLE THE WATER CONNECTIONS A MINIMUM OF FIFTEEN (15) WORKING DAYS PRIOR TO A PLANNED WATER SHUT-OFF TO VERIFY LAYOUT, PIPE LOCATION, DEPT, SIZE, MATERIAL, AND ALL OTHER ITEMS NEEDED FOR THE CONNECTION.
 3. ALL REVERSE THRUST BLOCKS SHALL BE POURED A MINIMUM OF FIVE (5) DAYS PRIOR TO A PLANNED CONNECTION.



POTHOLES				
#	DESCRIPTION	TOP OF PIPE EL	OWNER	
P3	(1) 3/4" STL GAS	224.07	CNG	
P4	(2) 4" PVC CONDUIT	223.02	ZIPLY	
P5	(1) 2" STL GAS	217.52	CNG	
P6	(1) 4" DI PWR	219.77	PSE	
P7	(1) CONDUIT	219.77	UNK	
P8	(1) 4" AC WM	217.51	COF	
P9	(1) 2" STL GAS	213.67	CNG	
P10	(1) 2" STL GAS	212.25	CNG	
P11	(1) 14" DI WM	205.83	COF	
P12	(1) 3/4" STL GAS	204.77	CNG	
P13	(1) 4" DI PWR	197.29	PSE	
P14	(1) 3/4" STL GAS	192.76	CNG	
P15	(1) 2" STL GAS	193.89	CNG	

- NOTE:
1. POT HOLE DATA IS FOR INFORMATIONAL PURPOSES ONLY. POT HOLE DATA IS FROM SURVEY POINTS PROVIDED BY COMPASS POINT SURVEYING ON 10-27-21
 2. CNG DEPTHS WERE MEASURED WITH AN ELECTRIC DEVICE (NOT POTHOLED). INFO PROVIDED ON 10-30-21.
 3. PSE DEPTHS WERE POTHOLED ON 03-28-22
 4. ZIPLY DEPTHS WERE POTHOLED ON 05-27-22.
- UTILITY POT HOLE LOCATION



5/22/24
AS-BUILT

DESIGNED BY
JAM/LMH
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JAM/LMH
CHECKED BY
LP

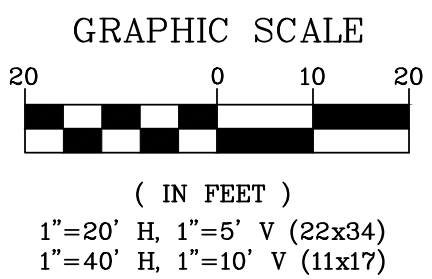
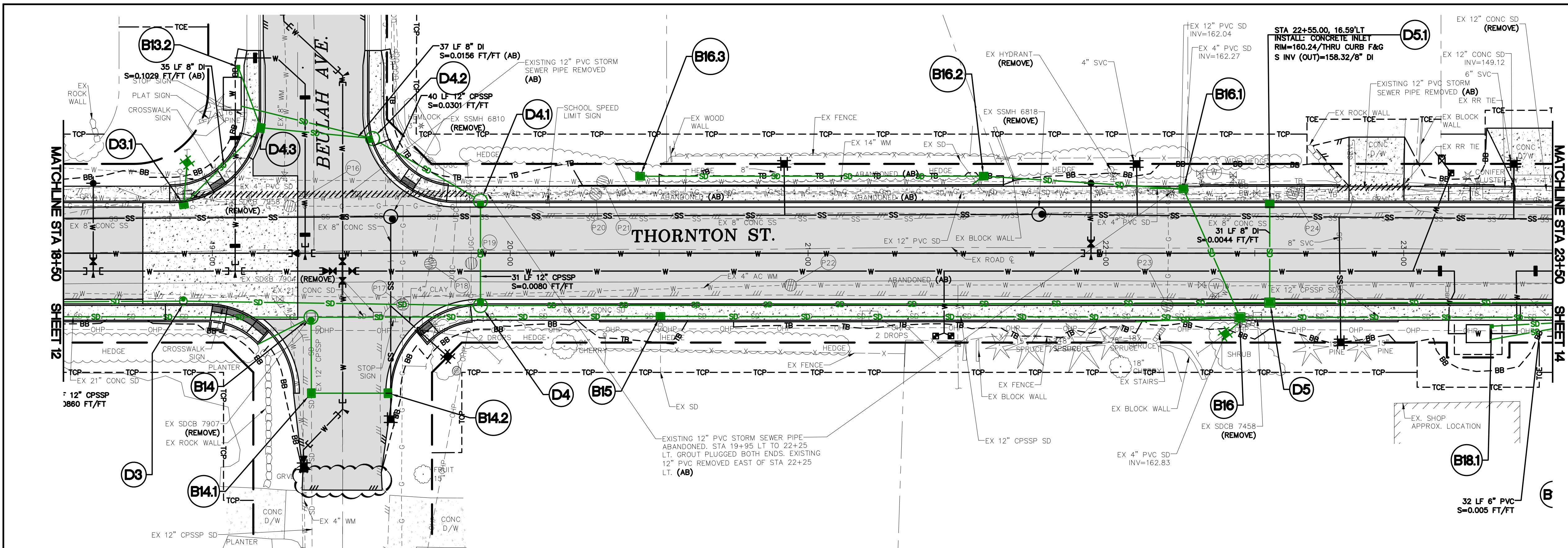
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ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

NO.	DATE	DESCRIPTION	BY

CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE
MAIN SYSTEM STORM PLAN - STA 13+50 TO 18+50

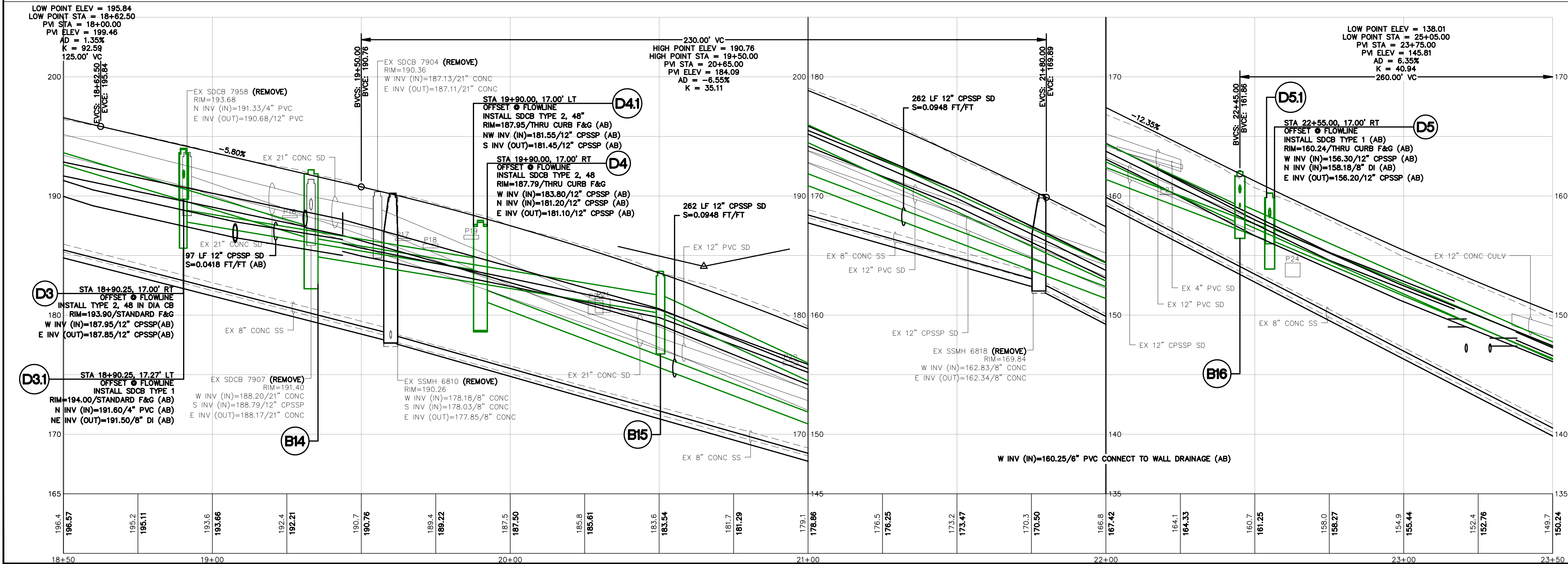
DWG	19025 PLAN	DATE	5/22/24
JOB#	19025	SCALE	H: 1"=20' V: 1"=5'
SHEET	12	of 64	



PROPOSED STORM STRUCTURE NOTES:

- STA 19+53.00, 38.53' LT**
INSTALL: SDCB TYPE 2, 48"
RIM=190.00/THRU CURB F&G
W INV (IN)=187.40/8" DI
N INV (IN)=182.79/6" PVC
SE INV (OUT)=182.69/12" CPSSP
- STA 19+16.26, 42.09' LT**
INSTALL: SDCB TYPE 1
RIM=191.08/THRU CURB F&G
N INV (IN)=188.15/6" PVC
SW INV (IN)=188.00/8" DI
E INV (OUT)=187.93/8" DI

- NOTE:
1. CONTRACTOR TO PATCH AT EACH SPECIFIED LOCATION FIVE (5) WORKING DAYS PRIOR TO PLANNED INSTALLATION TO VERIFY LAYOUT, PIPE LOCATION, DEPTH, SIZE, MATERIAL, AND ALL OTHER ITEMS NEEDED FOR THE CONNECTION.
- NOTE:
SEE SHEETS 38 & 55 FOR SPEED TABLE DETAILS FOR THE WEST BEULAH AVE CROSSING.



POTHOLES			
#	DESCRIPTION	TOP OF PIPE EL.	OWNER
P16	(1) 2" STL GAS	188.34	CNG
P17	(1) 2" STL GAS	186.42	CNG
P18	(1) 4" DI PWR	185.97	PSE
P19	(1) 4" PVC CONDUIT	186.71	ZIPLY
P20	(1) 14" DI WM	181.25	COF
P21	(1) 14" DI WM	181.39	COF
P22	(1) 4" AC WM	176.14	COF
P23	(1) 3/4" STL GAS	160.17	CNG
P24	(1) 14" DI WM	154.37	COF

- NOTE:
1. POT HOLE DATA IS FOR INFORMATIONAL PURPOSES ONLY. POT HOLE DATA IS FROM SURVEY POINTS PROVIDED BY COMPASS POINT SURVEYING ON 10-27-21.
2. CNG DEPTHS WERE MEASURED WITH AN ELECTRIC DEVICE (NOT POTHOLED). INFO PROVIDED ON 10-30-21.
3. PSE DEPTHS WERE POTHOLED ON 03-28-22.
4. ZIPLY DEPTHS WERE POTHOLED ON 05-27-22.

UTILITY POT HOLE LOCATION



5/22/24

AS-BUILT

DESIGNED BY
JAM/LMH

DRAWN BY
JAM/LMH

CHECKED BY
LP

R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

NO.	DATE	DESCRIPTION	BY

CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE
MAIN SYSTEM STORM PLAN - STA 18+50 TO 23+50

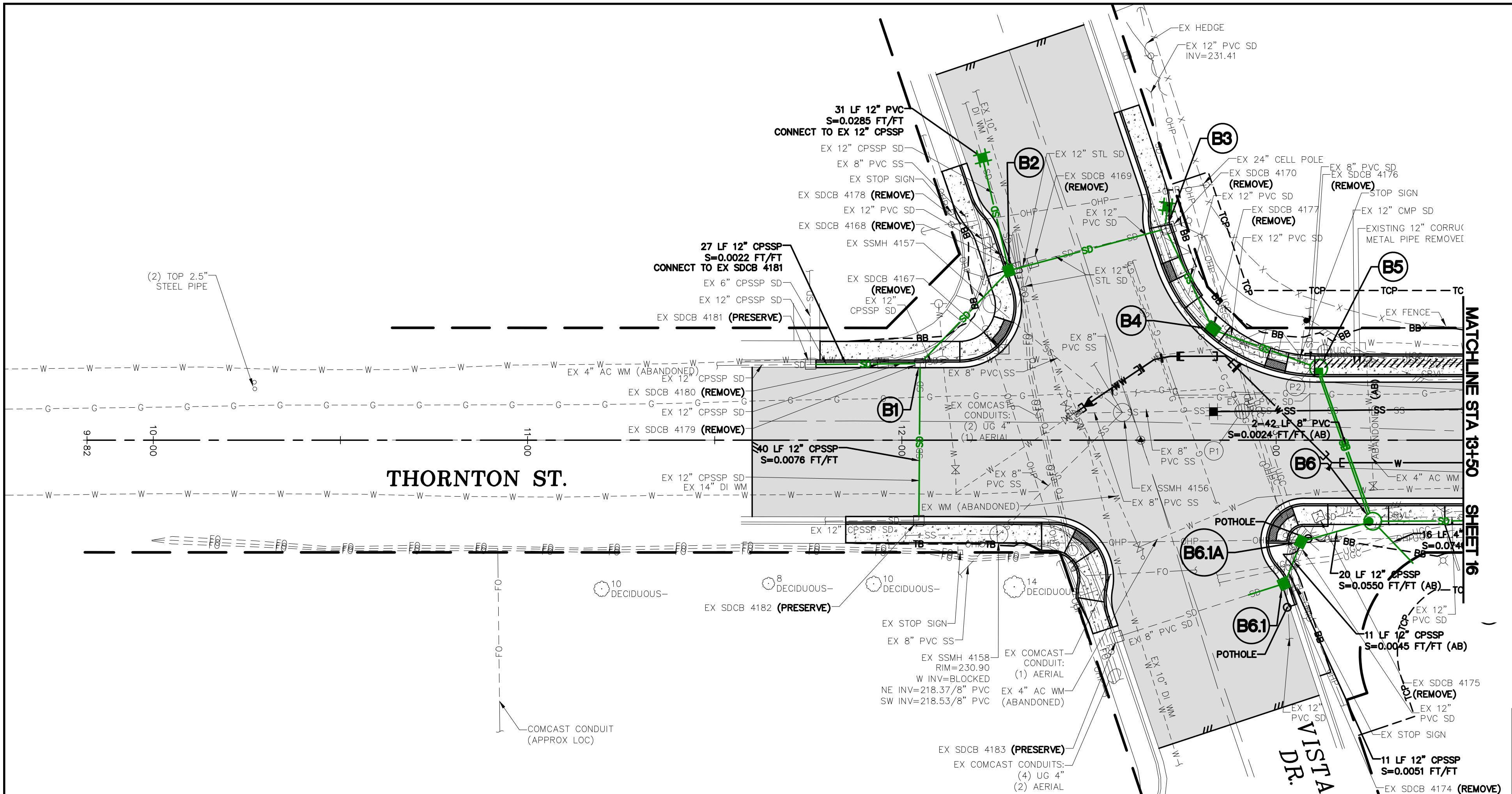
DWG 19025 PLAN

JOB# 19025

SCALE H: 1"=20' V: 1"=5'

DATE 06/06/23

SHEET 13 of 64



PROPOSED STORM
STRUCTURE NOTES:

- STA 12+04.86, 20.47'LT
EXISTING SDCB (AB)
B1 RIM=230.30/THRU CURB F&G (AB)
NE INV (IN)=227.30/12" CPSSP(AB)
W INV (OUT)=227.30/12" CPSSP(AB)
S INV (OUT)=227.20/12" CPSSP(AB)
- STA 12+28.58, 45.31'LT
INSTALL: SDCB TYPE 1
B2 RIM=230.80/STANDARD F&G
N INV (IN)=228.10/12" PVC(AB)
E INV (OUT)=227.97/12" CPSSP
SW INV (OUT)=227.97/12" CPSSP
- STA 12+70.53, 58.49'LT
EXISTING SDCB (AB)
B3 RIM=231.33/SOLID LOCKING F&G W/ NON-SLIP LID
W INV (IN)=227.35/12" CPSSP(AB)
N INV (IN)=227.35/12" PVC(AB)
SE INV (OUT)=227.20/12" CPSSP(AB)
- STA 12+83.02, 29.70'LT
INSTALL: SDCB TYPE 1 (AB)
B4 RIM=231.03/SOLID LOCKING F&G W/ NON-SLIP LID
NW INV (IN)=227.05/12" CPSSP(AB)
E INV (OUT)=226.81/12" CPSSP
- STA 13+11.34, 19.23'LT
INSTALL: SDCB TYPE 2, 48
B5 RIM=225.03/SOLID LOCKING F&G W/ NON-SLIP LID
W INV (IN)=226.45/12" CPSSP
S INV (OUT)=224.20/ DUAL 8" PVC
- STA 13+25.80, 21.65'RT
INSTALL: SDCB TYPE 2, 48 (AB)
B6 RIM=230.00/SOLID LOCKING R&C
W INV (IN)=228.10/12" CPSSP(AB)
SE INV (IN)=227.00/4" PVC(AB)
N INV (IN)=224.10/ DUAL 8" PVC (AB)
E INV (OUT)=224.10/12" CPSSP (AB)
- STA 13+02.03, 38.34'RT
INSTALL: SDCB TYPE 1
B6.1 RIM=231.20/THRU CURB F&G(AB)
W INV (IN)=227.50/8" PVC(AB)
S INV (IN)=227.40/12" PVC(AB)
N INV (OUT)=227.30/12" CPSSP(AB)
- STA 13+08.63, 27.12'RT
INSTALL: CONCRETE INLET(AB)
B6.1A RIM=231.00/SOLID LOCKING F&G(AB)
W INV (IN)=227.25/12" CPSSP(AB)
E INV (OUT)=227.20/12" CPSSP(AB)

STORM
STRUCTURE NOTES:

- EX SDCB 4167 (REMOVE)
RIM=230.35
N INV (IN)=227.72/12" CPSSP
W INV (OUT)=227.45/12" CPSSP
- EX SDCB 4168 (REMOVE)
RIM=230.70
E INV (IN)=228.19/12" RGS
NW INV (IN)=228.28/12" PVC
N INV (OUT)=228.07/12" CPSSP
- EX SDCB 4169 (REMOVE)
RIM=230.78
W INV (OUT)=228.10/12" RGS
E INV (OUT)=228.13/12" RGS
S INV (OUT)=228.16/12" RGS
- EX SDCB 4170 (REMOVE)
RIM=231.30
W INV (IN)=227.34/12" PVC
N INV (IN)=227.33/12" PVC
S INV (OUT)=227.44/12" PVC
- EX SDCB 4174 (REMOVE)
RIM=231.36
W INV (IN)=227.55/8" PVC
S INV (IN)=227.39/12" PVC
NE INV (OUT)=227.38/12" PVC
- EX SDCB 4175 (REMOVE)
RIM=229.83
SW INV (IN)=225.29/12" PVC
E INV (OUT)=225.34/12" PVC
- EX SDCB 4176 (REMOVE)
RIM=229.33
W INV (IN)=224.30/12" PVC
N INV (IN)=224.51/8" PVC
S INV (IN)=224.25/8" PVC
E INV (OUT)=224.17/12" CMP
- EX SDCB 4177 (REMOVE)
RIM=230.41
N INV (IN)=227.01/12" PVC
E INV (OUT)=226.47/12" PVC
- EX SDCB 4178 (REMOVE)
RIM=230.72
SE INV (OUT)=228.45/12" PVC
- EX SDCB 4179 (REMOVE)
RIM=230.19
E INV (IN)=227.23/12" CPSSP
W INV (OUT)=227.26/12" CPSSP
S INV (OUT)=227.23/12" CPSSP
- EX SDCB 4180 (REMOVE)
RIM=230.04
E INV (IN)=227.18/12" CPSSP
W INV (IN)=227.22/12" CPSSP

STORM
STRUCTURE NOTES:

- EX SDCB 4181 (PRESERVE)
RIM=230.11
W INV (IN)=227.26/12" CPSSP
N INV (IN)=227.26/6" CPSSP
E INV (OUT)=227.30/12" CPSSP
- EX SDCB 4182 (PRESERVE)
RIM=229.78
N INV (IN)=226.90/12" CPSSP
W INV (IN)=226.80/12" CPSSP
- EX SDCB 4183 (PRESERVE)
RIM=231.41
E INV (OUT)=228.85/8" PVC

POTHOLES

#	DESCRIPTION	TOP OF PIPE EL	OWNER
P1	(1) 4" STL GAS	228.29	CNG
P2	(2) 4" PVC CONDUIT	226.28	ZIPLY

- NOTE:
1. POTHOLES DATA IS FOR INFORMATIONAL
PURPOSES ONLY. POTHOLES DATA IS
FROM SURVEY POINTS PROVIDED BY
COMPASS POINT SURVEYING ON
10-27-21.
2. CNG DEPTHS WERE MEASURED WITH AN
ELECTRIC DEVICE (NOT POTHOLED). INFO
PROVIDED ON 10-30-21.
3. PSE DEPTHS WERE POTHOLED ON
03-28-22.
4. ZIPLY DEPTHS WERE POTHOLED ON
05-27-22.
- UTILITY POTHOLES LOCATION



5/22/24
AS-BUILT

DESIGNED BY
JAM/LMH
DRAWN BY
JAM/LMH
CHECKED BY
LP

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ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

NO.	DATE	DESCRIPTION	BY

CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE

BYPASS SYSTEM STORM PLAN - STA 10+00 TO 13+50

DWG 19025 PLAN

JOB#

19025

SCALE

H: 1"=20'

V: 1"=5'

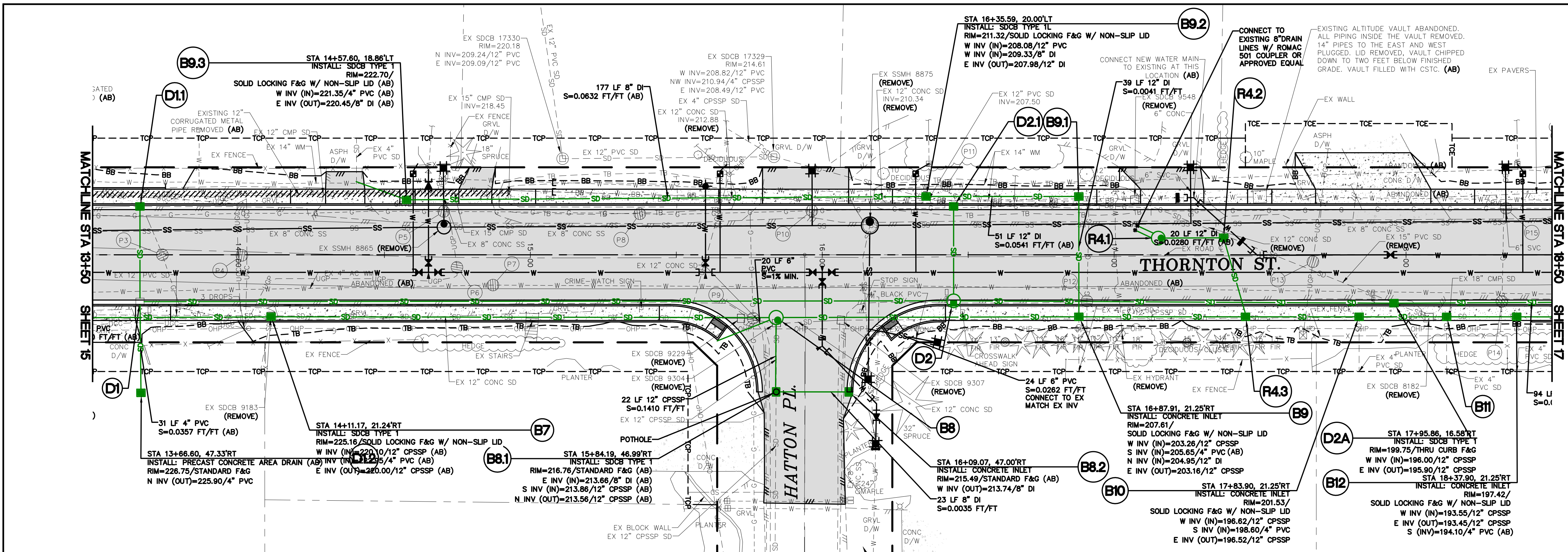
DATE

5/22/24

SHEET

15

of 64

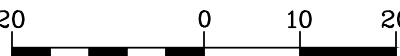


- NOTE:
- CONTRACTOR TO POTHOLE AT EACH SPECIFIED LOCATION FIVE (5) WORKING DAYS PRIOR TO PLANNED INSTALLATION TO VERIFY LAYOUT, PIPE LOCATION, DEPTH, SIZE, MATERIAL, AND ALL OTHER ITEMS NEEDED FOR THE CONNECTION.
 - CONTRACTOR SHALL POTHOLE THE WATER CONNECTIONS A MINIMUM OF FIFTEEN (15) WORKING DAYS PRIOR TO A PLANNED WATER SHUT-OFF TO VERIFY LAYOUT, PIPE LOCATION, DEPT, SIZE, MATERIAL, AND ALL OTHER ITEMS NEEDED FOR THE CONNECTION.
 - ALL REVERSE THRUST BLOCKS SHALL BE POURED A MINIMUM OF FIVE (5) DAYS PRIOR TO A PLANNED CONNECTION.

PROPOSED STORM
STRUCTURE NOTES:

- STA 17+15.09, 5.73'LT
INSTALL: SDCB TYPE 2, 48
R4.1 RIM=205.42/SOLID LOCKING R&C
NW INV (IN)=202.04/8" DI
E INV (OUT)=201.93/12" DI
- STA 17+38, 5.83'LT (AB)
INSTALL: SDCB TYPE 1
R4.2 RIM=204.00/SOLID LOCKING F&G (AB)
W INV (IN)=201.39/12" DI
S INV (OUT)=201.23/12" DI
- STA 17+45.00, 21.25'RT
INSTALL: SDCB TYPE 1
R4.3 RIM=203.52/STANDARD
N INV (IN)=200.73/12" DI
W INV (IN)=199.35/12" CPSSP
E INV (OUT)=199.17/12" CPSSP

GRAPHIC SCALE

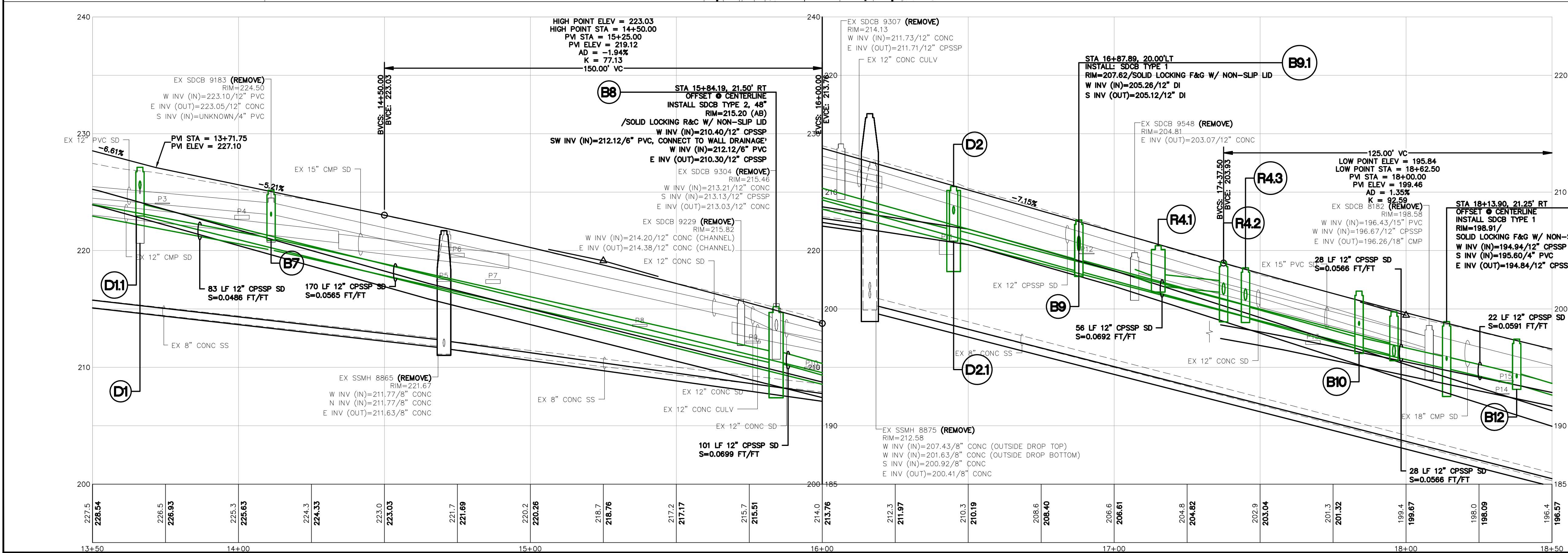


(IN FEET)
1"=20' H, 1"=5' V (22x34)
1"=40' H, 1"=10' V (11x17)

POTHOLES

#	DESCRIPTION	TOP OF PIPE EL.	OWNER
P3	(1) 3/4" STL GAS	224.07	CNG
P4	(2) 4" PVC CONDUIT	223.02	ZIPLY
P5	(1) 2" STL GAS	217.52	CNG
P6	(1) 4" DI PWR	219.77	PSE
P7	(1) CONDUIT	219.77	UNK
P8	(1) 4" AC WM	217.51	COF
P9	(1) 2" STL GAS	213.67	CNG
P10	(1) 2" STL GAS	212.25	CNG
P11	(1) 2" STL GAS	210.03	CNG
P12	(1) 14" DI WM	205.83	COF
P13	(1) 3/4" STL GAS	204.77	CNG
P14	(1) 4" DI PWR	197.29	PSE
P15	(1) 3/4" STL GAS	192.76	CNG
P16	(1) 2" STL GAS	193.89	CNG

- NOTE:
- POTHOLE DATA IS FOR INFORMATIONAL PURPOSES ONLY. POTHOLE DATA IS FROM SURVEY POINTS PROVIDED BY COMPASS POINT SURVEYING ON 10-27-21.
 - CNG DEPTHS WERE MEASURED WITH AN ELECTRIC DEVICE (NOT POTHOLED). INFO PROVIDED ON 10-30-21.
 - PSE DEPTHS WERE POTHOLED ON 03-28-22.
 - ZIPLY DEPTHS WERE POTHOLED ON 05-27-22.
- UTILITY POTHOLE LOCATION



5/22/24

AS-BUILT

DESIGNED BY
JAM/LMH

DRAWN BY
JAM/LMH

CHECKED BY
LP

R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

REV03 5/22/23
NO. DATE

REVISION No. 04 - TANK DRAIN LINE REVISION
DESCRIPTION

LP
BY

CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE
BYPASS SYSTEM STORM PLAN - STA 13+50 TO 18+50

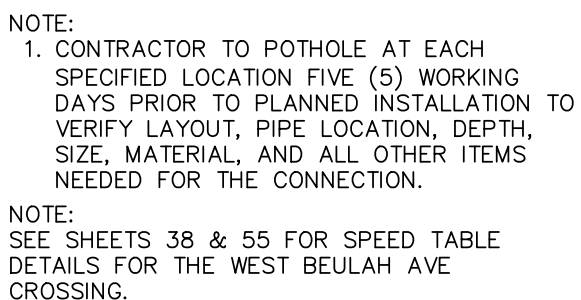
DWG 19025 PLAN

JOB# 19025

SCALE H: 1"=20' V: 1"=5'

DATE 05/22/23

SHEET 16 of 64

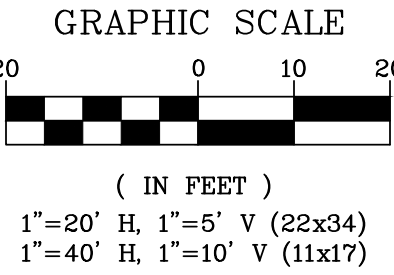
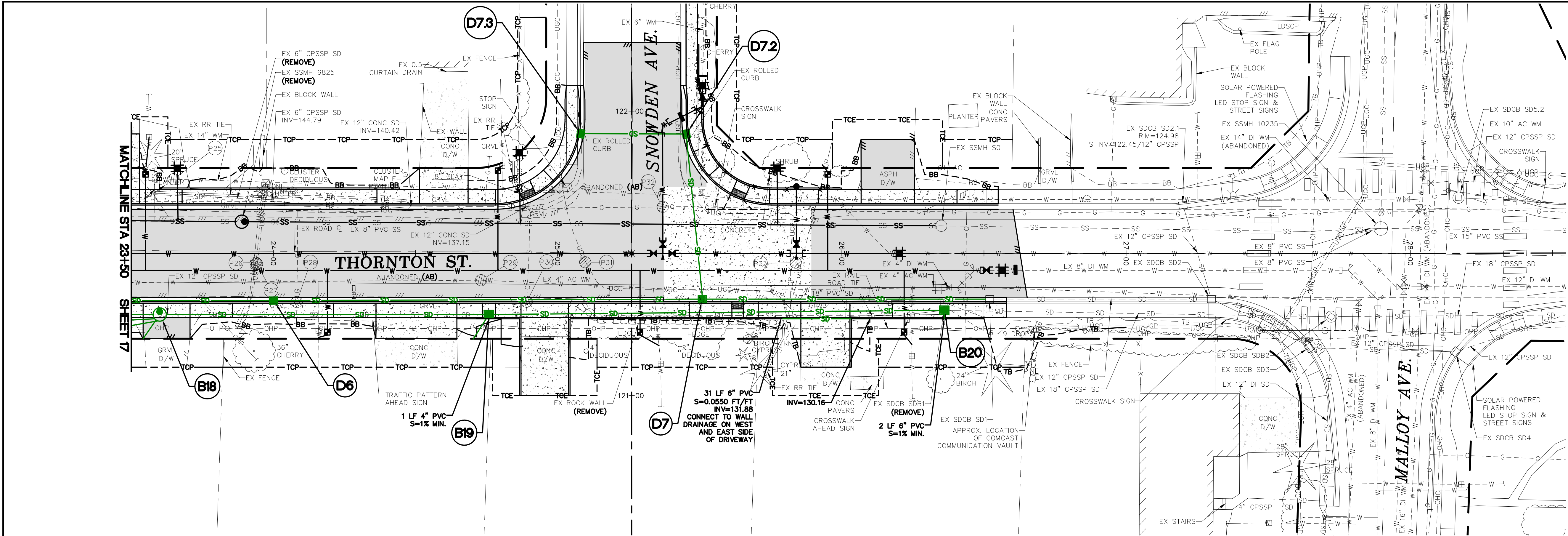


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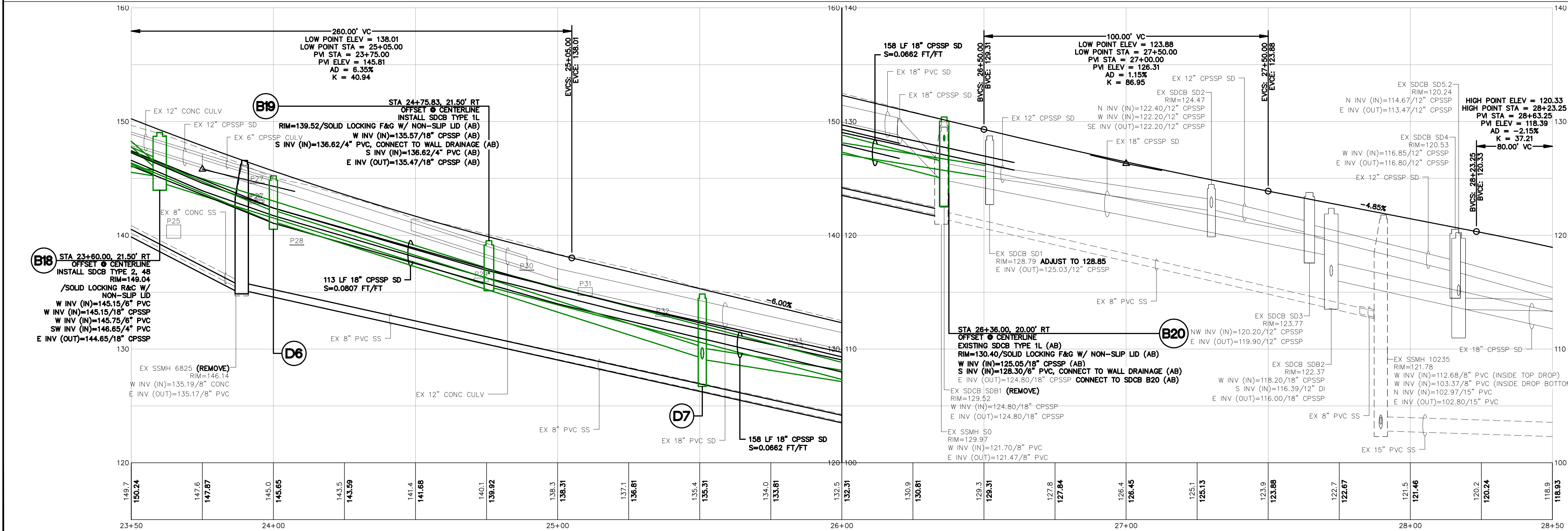
1. POTHOLE DATA IS FOR INFORMATIONAL PURPOSES ONLY. POTHOLE DATA IS FROM SURVEY POINTS PROVIDED BY COMPASS POINT SURVEYING ON 10-27-21.
2. CNG DEPTHS WERE MEASURED WITH AN ELECTRIC DEVICE (NOT POTHOLED). INFO PROVIDED ON 10-30-21.
3. PSE DEPTHS WERE POTHOLED ON 03-28-22.
4. ZIPLY DEPTHS WERE POTHOLED ON 05-27-22.

 UTILITY POTHOLE LOCATION





NOTE:
SEE SHEETS 39 & 55 FOR SPEED TABLE
DETAILS FOR THE EAST SNOWDEN AVE
CROSSING.



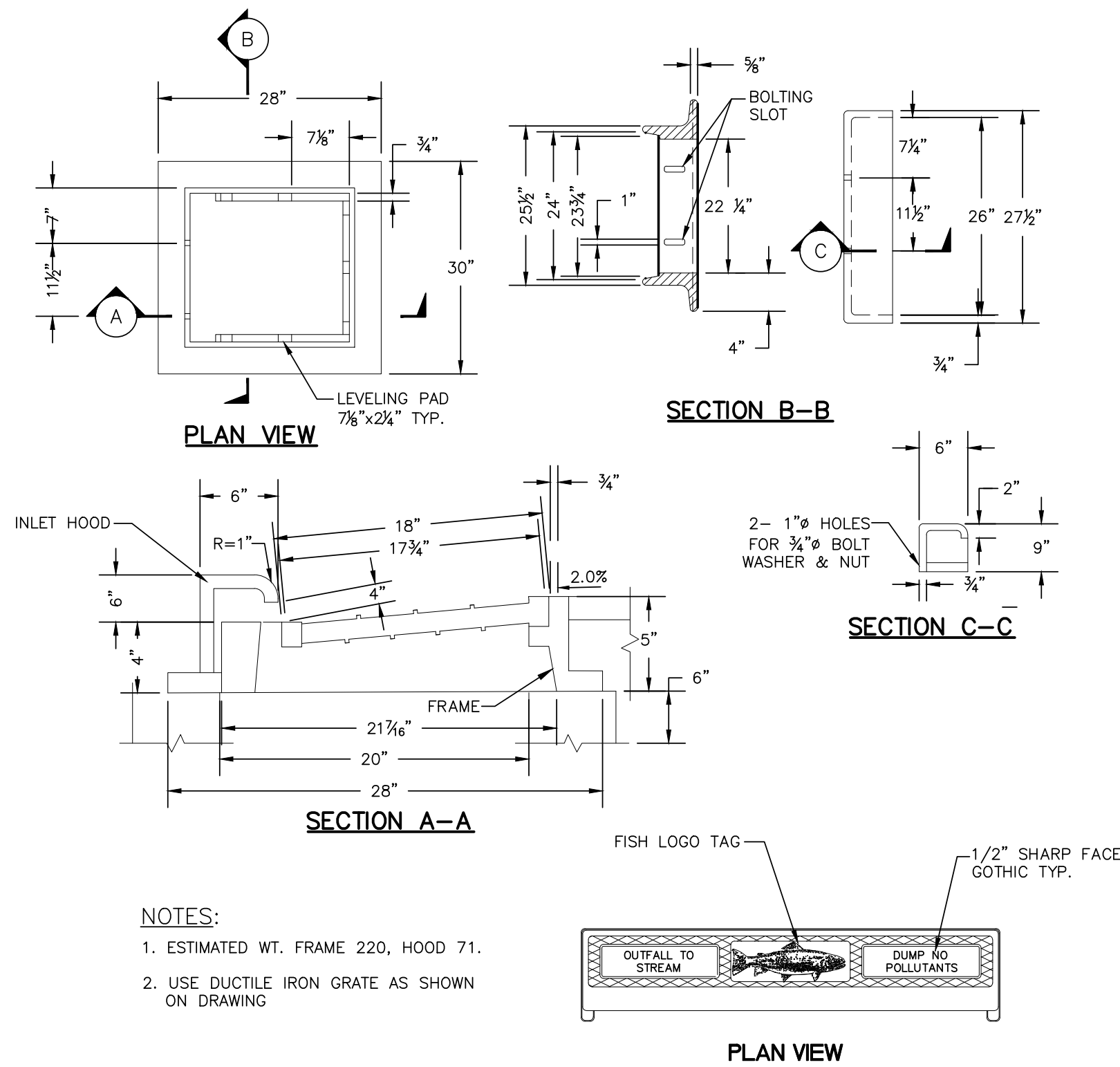
POTHOLE			
#	DESCRIPTION	TOP OF PIPE EL.	OWNER
P25	(1) 14" DI WM	140.91	COF
P26	(1) 4" PVC PWR	143.09	PSE
P27	(1) 3" PVC CONDUIT	143.12	ZIPLY
	(1) 1" DIRECT BURY CABLE	144.62	ZIPLY
P28	(1) 3/4" STL GAS	139.18	CNG
P29	(1) 4" AC WM	136.24	COF
P30	(1) 3/4" STL GAS	136.96	CNG
P31	(1) 2" PVC CONDUIT	135.40	ZIPLY
P32	(1) 2" STL GAS	133.00	CNG
P33	(1) 2" PVC PWR	130.40	PSE

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3. PSE DEPTHS WERE POTHOLED ON 03-28-22.
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UTILITY POTHOLE LOCATION

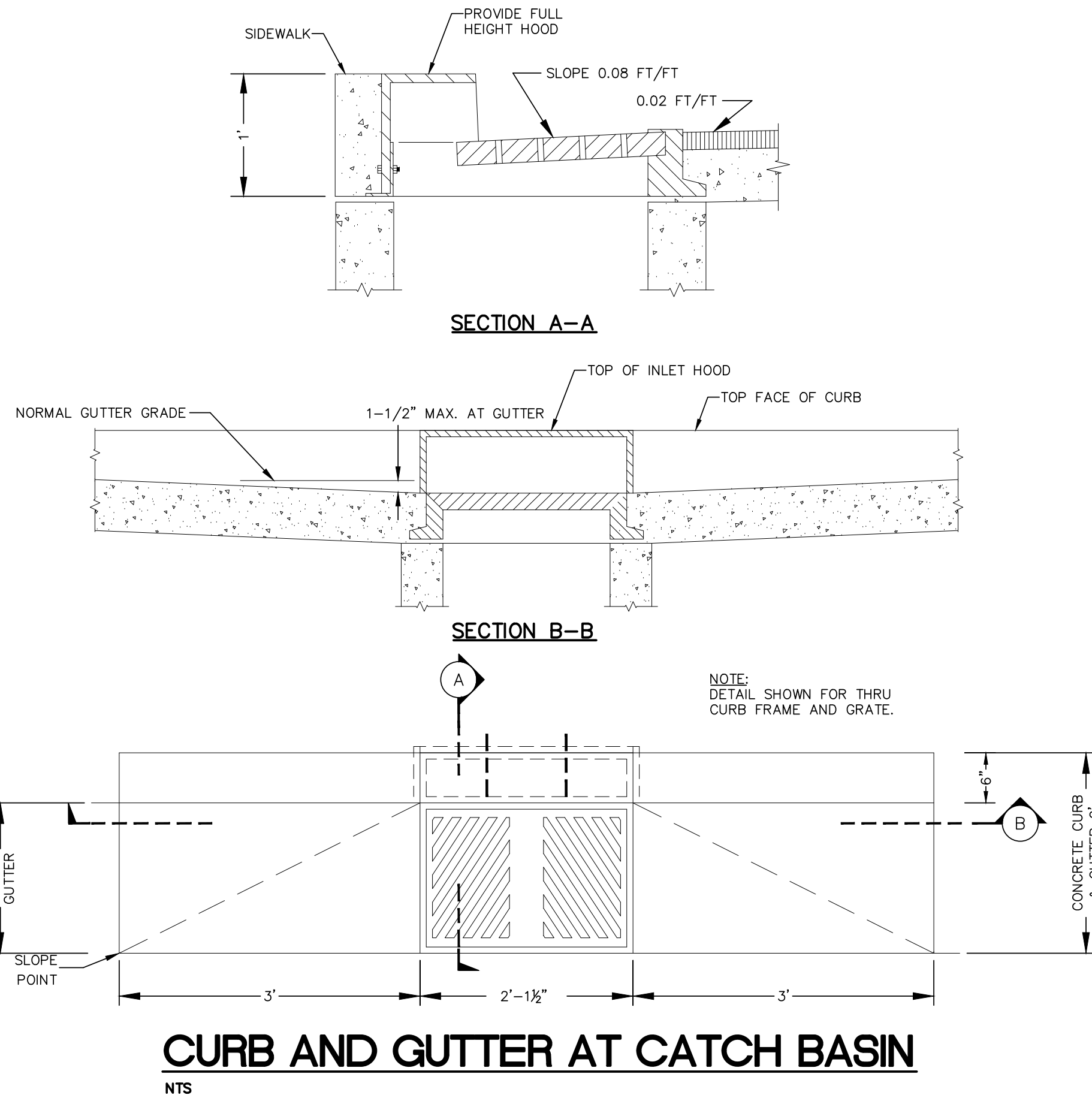


5/22/24	AS-BUILT	DESIGNED BY JAM/LMH	R&E Reichhardt & Ebe ENGINEERING INC P.O. Box 978 423 Front Street Lynden, WA 98264 (360) 354-3687					CITY OF FERNDAL 2095 MAIN ST FERNDAL, WA 98248	THORNTON STREET - VISTA TO MALLOY AVENUE BYPASS SYSTEM STORM PLAN - STA 23+50 TO 28+50	DWG 19025 PLAN		DATE 5/22/24	
		DRAWN BY JAM/LMH									JOB# 19025	SCALE H: 1"=20' V: 1"=5'	SHEET 18 of 64
		CHECKED BY LP		NO.	DATE	DESCRIPTION	BY						



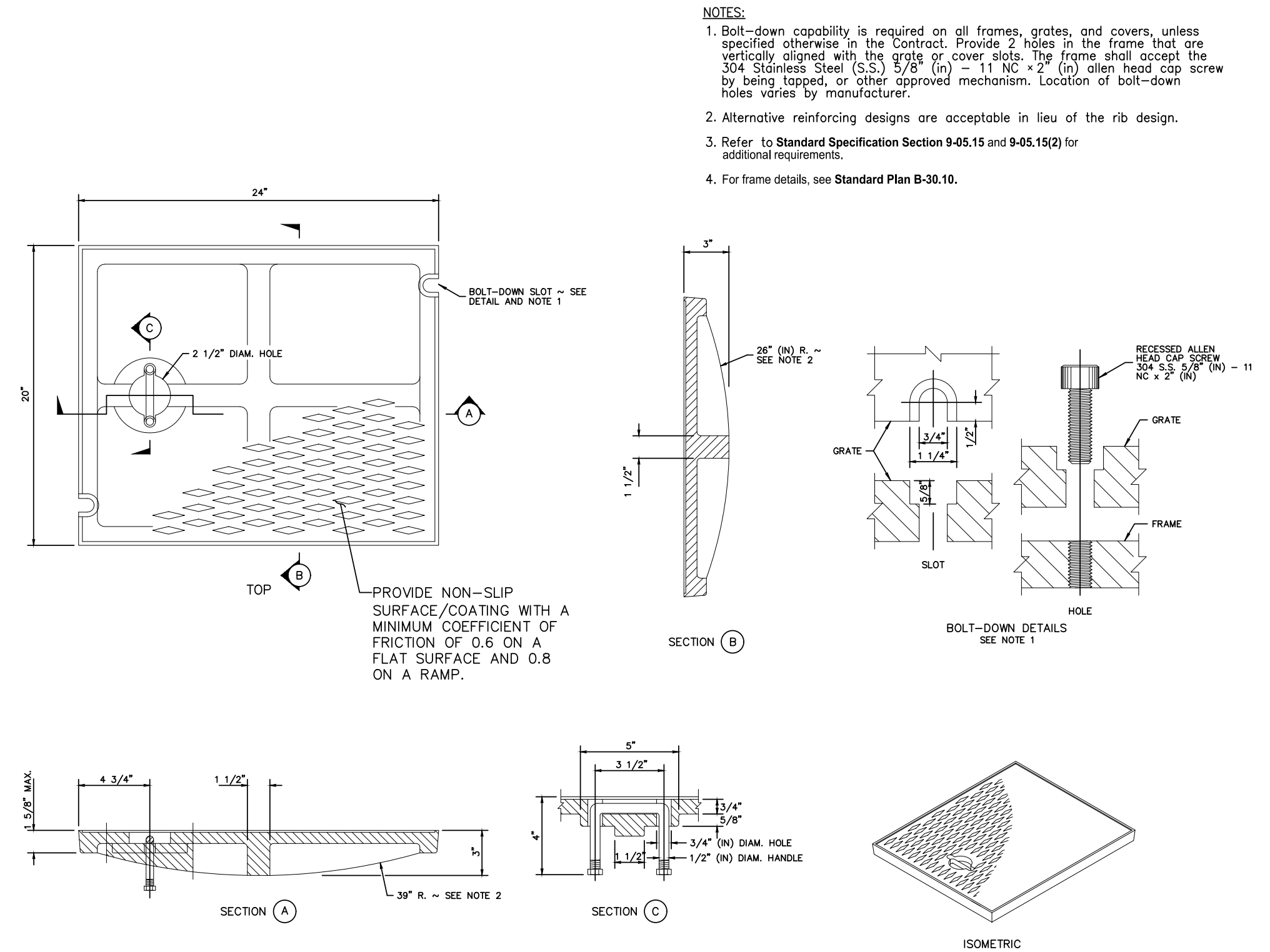
THRU CURB FRAME

NTS



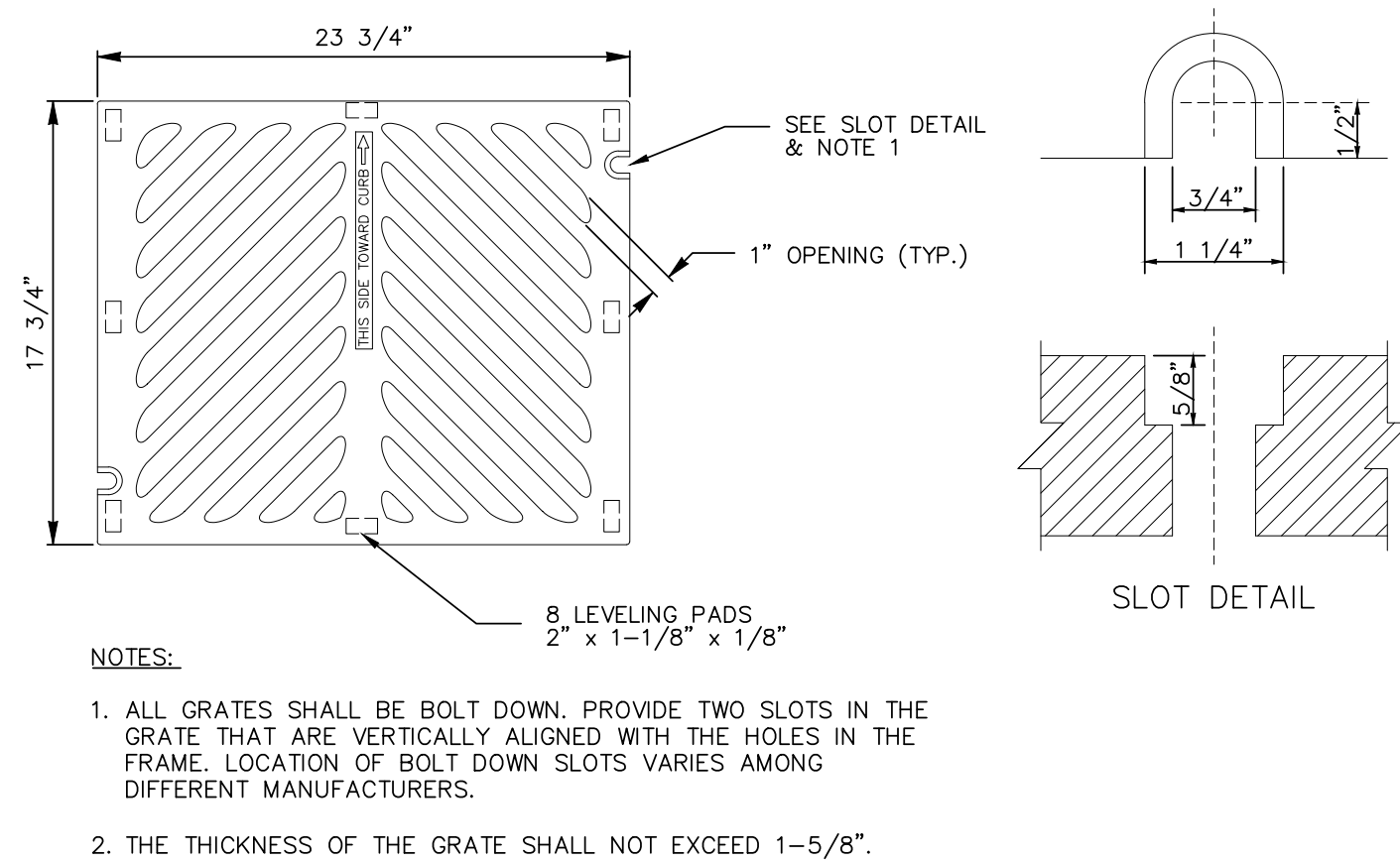
CURB AND GUTTER AT CATCH BASIN

NTS



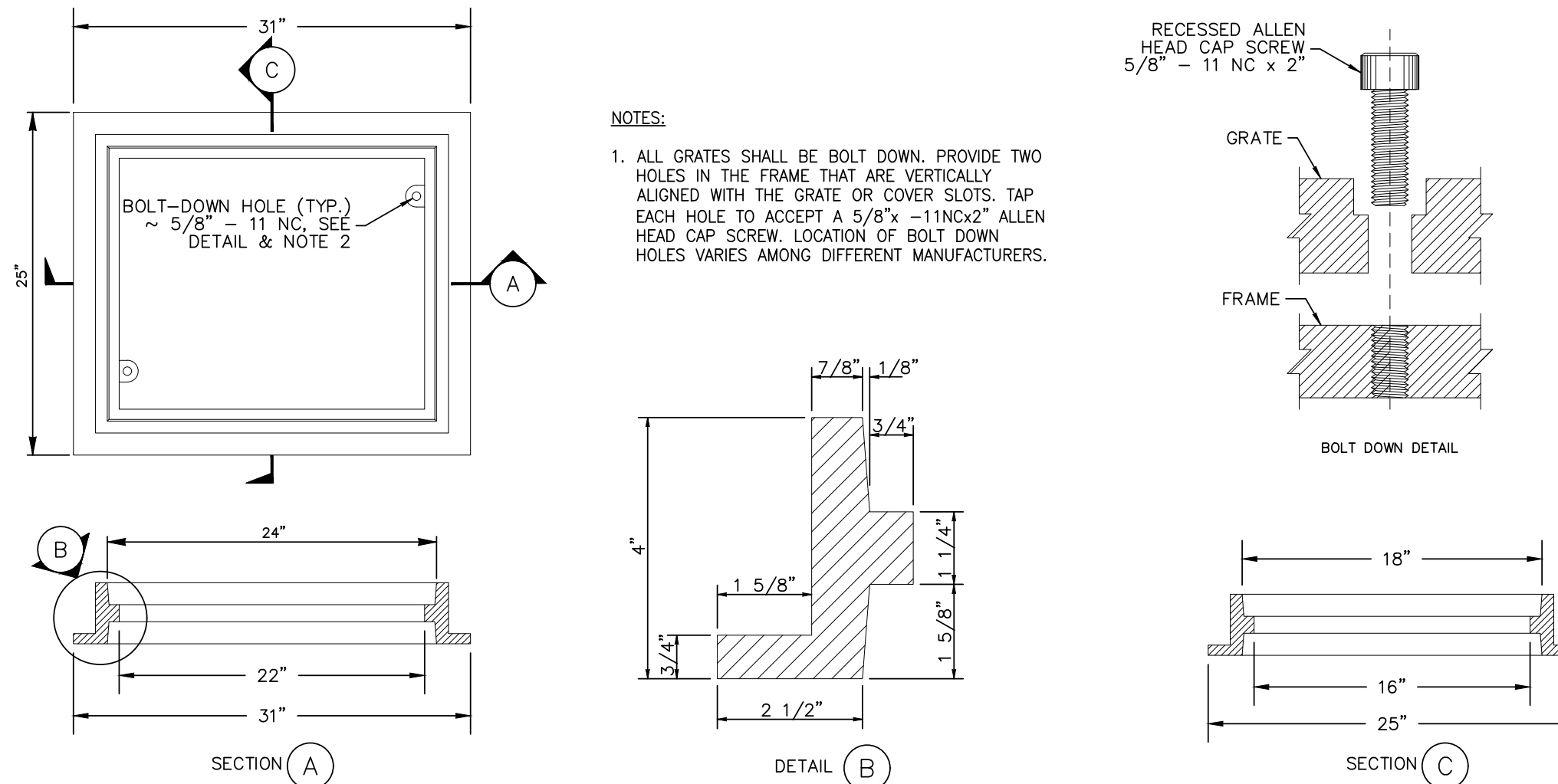
RECTANGULAR SOLID METAL COVER

NTS



HERRINGBONE GRATE

NTS



STANDARD FRAME

NTS

5/22/24
AS-BUILT

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JAM/LMH
CHECKED BY
LP

R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

NO.	DATE	DESCRIPTION	BY

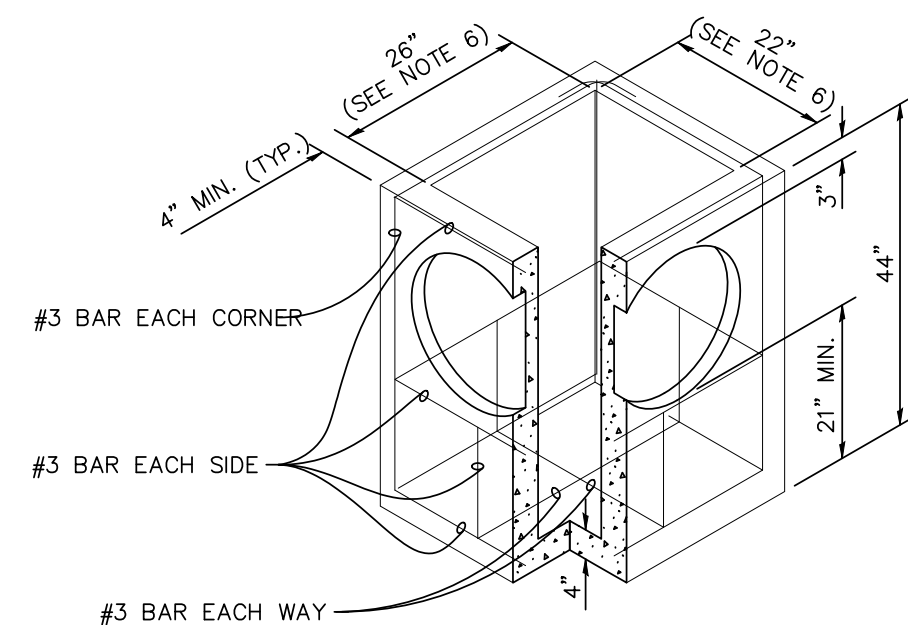
CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE
STORM DETAILS 1

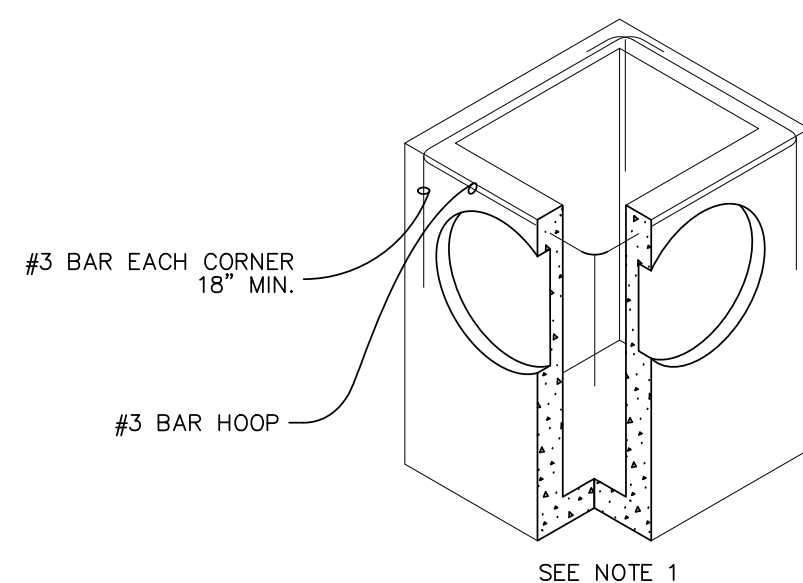
DWG 19025 DETAILS
JOB# 19025
SCALE H: N/A V: N/A

DATE 5/22/24
SHEET 19 of 64





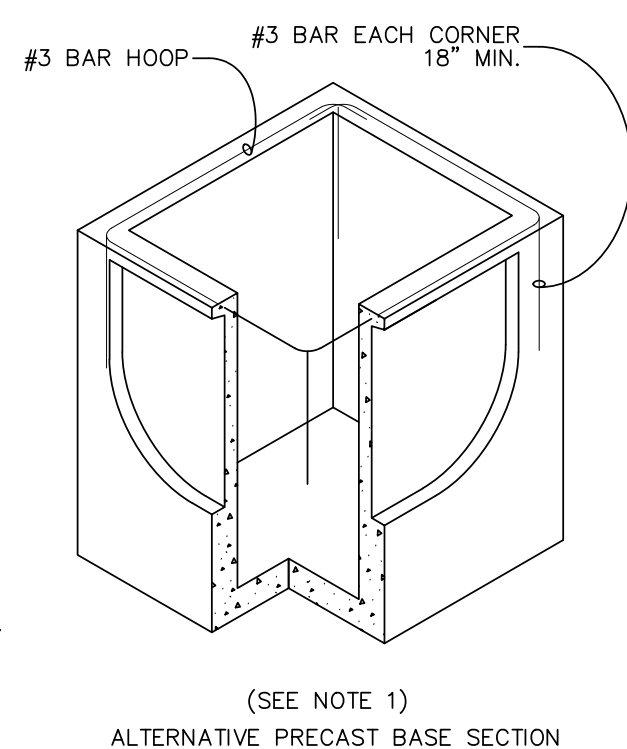
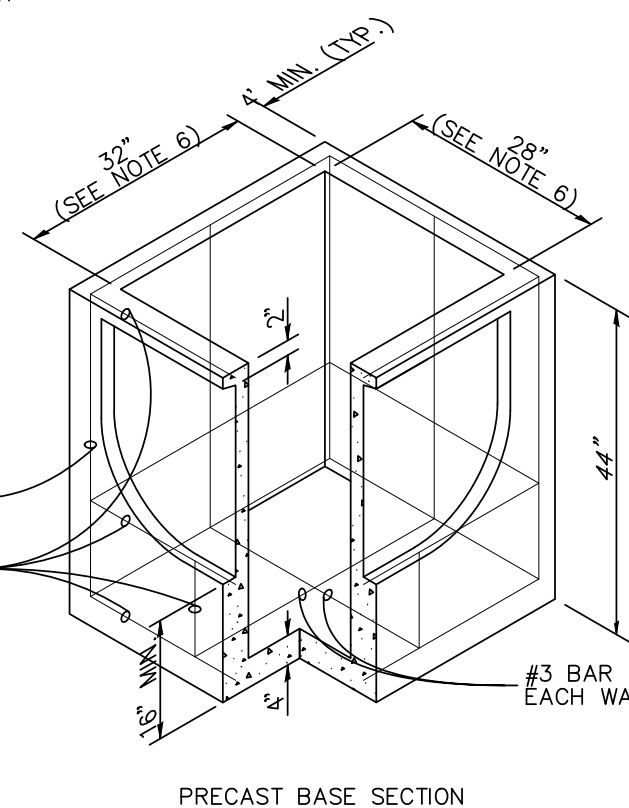
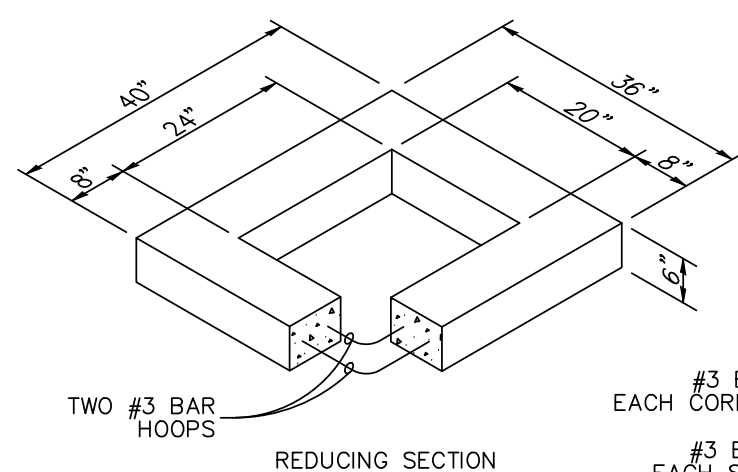
1. AS ACCEPTABLE ALTERNATIVES TO THE REBAR SHOWN IN THE PRECAST BASE SECTION, FIBERS (PLACED ACCORDING TO THE STANDARD SPECIFICATIONS), OR WIRE MESH HAVING A MINIMUM AREA OF 0.12 SQUARE INCHES PER FOOT SHALL BE USED WITH THE MINIMUM REQUIRED REBAR SHOWN IN THE ALTERNATIVE PRECAST BASE SECTION. WIRE MESH SHALL NOT BE PLACED IN THE KNOCKOUTS.
2. THE KNOCKOUT DIAMETER SHALL NOT BE GREATER THAN 20". KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM TO 2.5" MAXIMUM. PROVIDE A 1.5" MINIMUM WALL PICKUP FOR THE KNOCKOUTS OUTSIDE OF THE PIPE. AFTER THE PIPE IS INSTALLED, FILL THE GAP WITH JOINT MORTAR IN ACCORDANCE WITH STANDARD SPECIFICATION 9-04.3.
3. THE MAXIMUM DEPTH FROM THE FINISHED GRADE TO THE LOWEST PIPE INVERT SHALL BE 5'.
4. THE FRAME AND GRATE MAY BE INSTALLED WITH THE FLANGE UP OR DOWN. THE FRAME MAY BE CAST INTO THE ADJUSTMENT SECTION.
5. THE PRECAST BASE SECTION MAY HAVE A ROUNDED FLOOR, AND THE WALLS MAY BE SLOPED AT A RATE OF 1:24 OR STEEPER.
6. THE OPENING SHALL BE MEASURED AT THE TOP OF THE PRECAST BASE SECTION.
7. ALL PICKUP HOLES SHALL BE GROUTED FULL AFTER THE BASIN HAS BEEN PLACED.



NTS

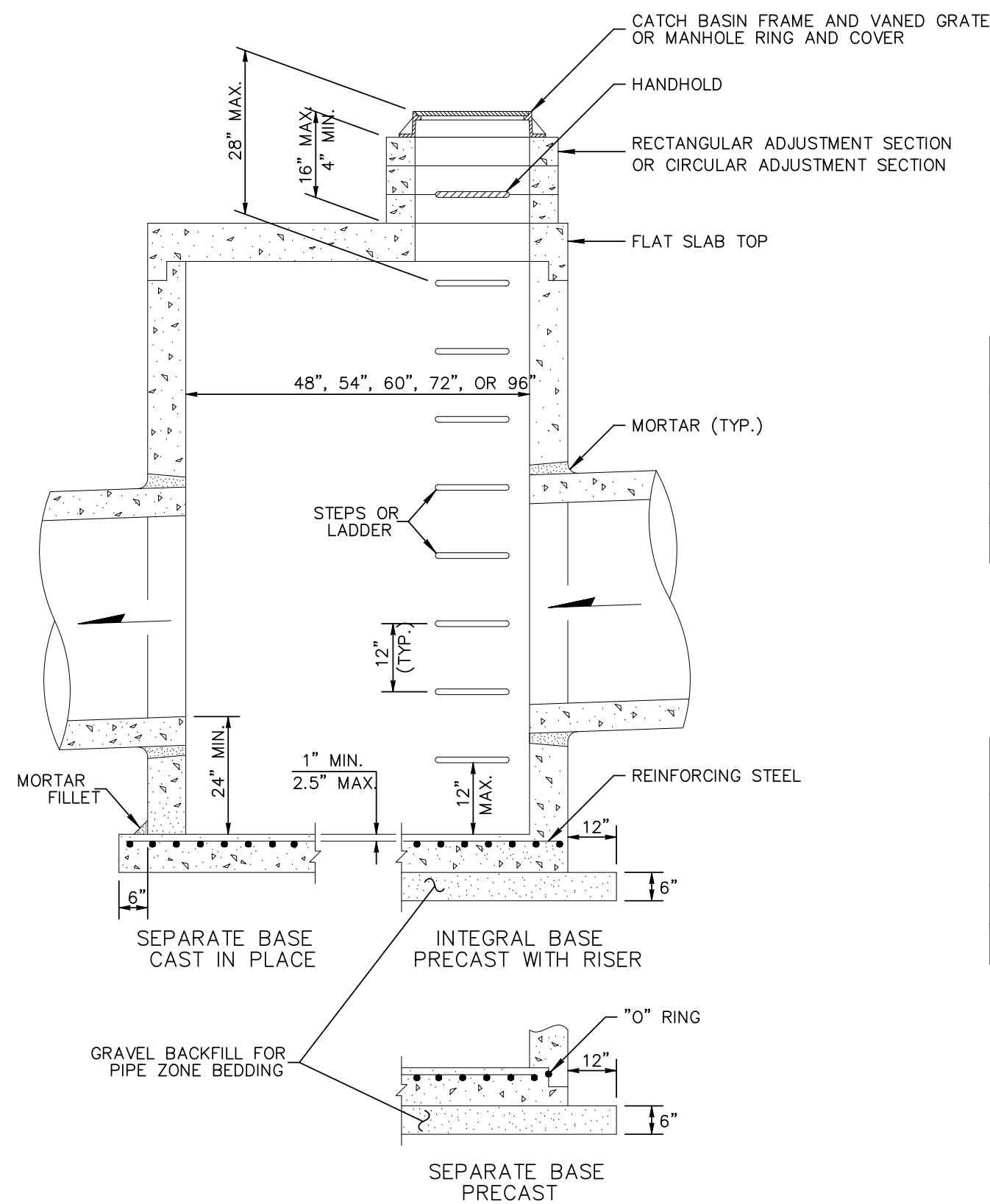
* CORRUGATED POLYETHYLENE
STORM SEWER PIPE

1. AS ACCEPTABLE ALTERNATIVES TO THE REBAR SHOWN IN THE PRECAST BASE SECTION, FIBERS (PLACED ACCORDING TO THE STANDARD SPECIFICATIONS), OR WIRE MESH HAVING A MINIMUM AREA OF 0.12 SQUARE INCHES PER FOOT, SHALL BE USED WITH THE MINIMUM REINFORCING RATIO SHOWN IN THE ALTERNATIVE PRECAST BASE SECTION. WIRE MESH SHALL NOT BE PLACED IN THE KNOCKOUTS.
2. THE KNOCKOUT SHALL NOT BE GREATER THAN 26", IN ANY DIRECTION. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM TO 2.5" MAXIMUM. PROVIDE A 1.5" MINIMUM GAP BETWEEN THE KNOCKOUT WALL AND THE OUTSIDE OF THE PIPE. AFTER THE PIPE IS INSTALLED, FILL THE GAP WITH JOINT MORTAR IN ACCORDANCE WITH STANDARD SPECIFICATION 9-04.3.
3. THE MAXIMUM DEPTH FROM THE FINISHED GRADE TO THE LOWEST PIPE INVERT SHALL BE 5'.
4. THE FRAME AND GRATE MAY BE INSTALLED WITH THE FLANGE DOWN OR INTEGRALLY CAST INTO THE ADJUSTMENT SECTION WITH FLANGE UP.
5. THE PRECAST BASE SECTION MAY HAVE A ROUNDED FLOOR, AND THE WALLS MAY BE SLOPED AT A RATE OF 1:24 OR STEEPER.
6. THE OPENING SHALL BE MEASURED AT THE TOP OF THE PRECAST BASE SECTION
7. ALL PICKUP HOLES SHALL BE GROUTED FULL AFTER THE BASIN HAS BEEN PLACED.



NTS

NO.	DATE	DESCRIPTION	BY



1. NO STEPS ARE REQUIRED WHEN HEIGHT IS 4' OR LESS.
2. THE BOTTOM OF THE PRECAST CATCH BASIN MAY BE SLOPED TO FACILITATE CLEANING.
3. FRAME AND GRATE MAY BE INSTALLED WITH FLANGE DOWN OR CAST INTO ADJUSTMENT SECTION.
4. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM TO 2.5" MAXIMUM. PROVIDE A 1.5" MINIMUM GAP BETWEEN THE KNOCKOUT WALL AND THE OUTSIDE OF THE PIPE. AFTER THE PIPE IS INSTALLED, FILL THE GAP WITH JOINT MORTAR IN ACCORDANCE WITH STD. SPEC. 9-04.3.

CATCH BASIN DIMENSIONS						
CATCH BASIN DIAMETER	WALL THICKNESS	BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS	BASE REINFORCING STEEL IN 2' FT IN EACH DIRECTION	
					INTEGRAL	SEPARATE
48"	4"	6"	36"	8"	0.15	0.23
54"	4.5"	8"	32"	8"	0.19	0.19

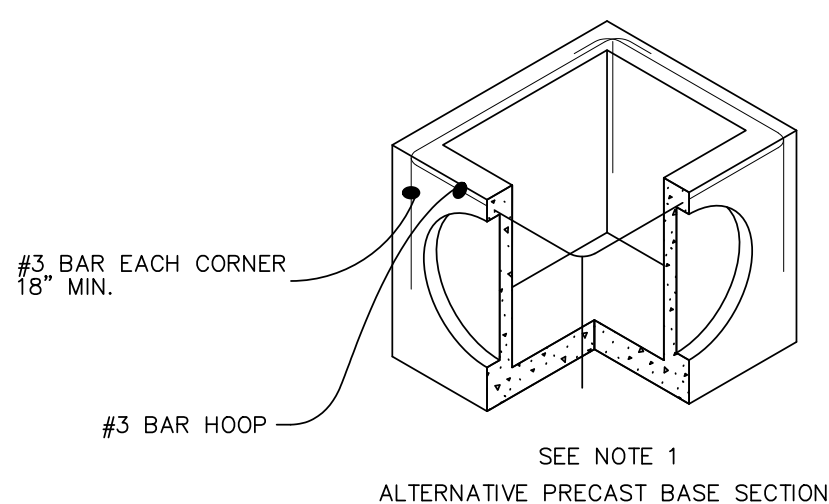
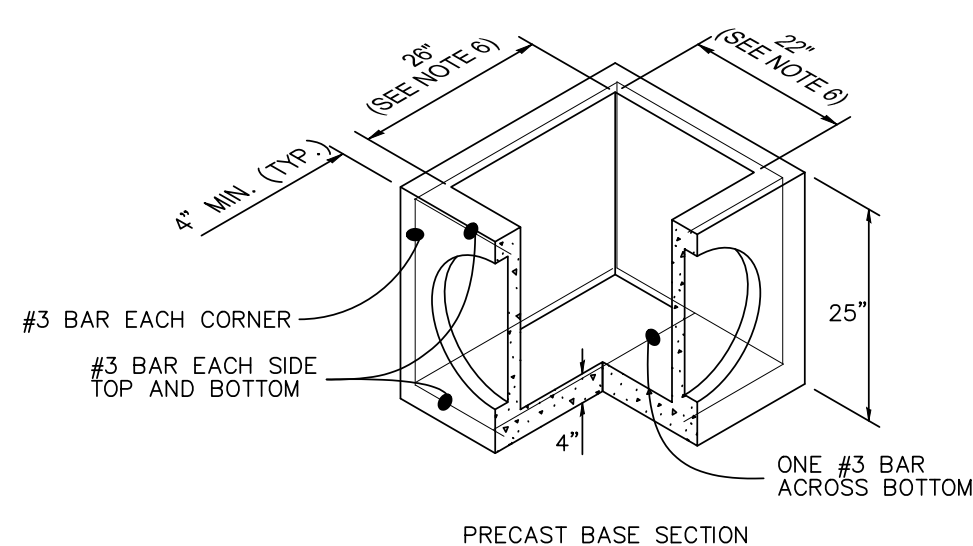
PIPE ALLOWANCES					
CATCH BASIN DIAMETER	PIPE MATERIAL WITH MAXIMUM INSIDE DIAMETER				
	CONCRETE	ALL METAL	CPSP ①	SOLID WALL PVC ②	PROFILE WALL PVC ③
48"	24"	30"	24"	30"	30"
54"	30"	36"	30"	36"	36"

① CORRUGATED POLYETHYLENE STORM SEWER PIPE (STD. SPEC. 9-05.20)
② (STD. SPEC. 9-05.12(1))
③ (STD. SPEC. 9-05.12(2))

NTS

* CORRUGATED POLYETHYLENE
STORM SEWER PIPE

1. AS ACCEPTABLE ALTERNATIVES TO THE REBAR SHOWN IN THE PRECAST BASE SECTION, FIBERS (PLACED ACCORDING TO THE STANDARD SPECIFICATIONS), OR WIRE MESH HAVING A MINIMUM AREA OF 0.12 SQUARE INCHES PER FOOT, SHALL BE USED WITH THE MINIMUM REQUIRED REBAR SHOWN IN THE ALTERNATIVE PRECAST BASE SECTION. WIRE MESH SHALL NOT BE PLACED IN THE KNOCKOUTS.
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6. THE OPENING SHALL BE MEASURED AT THE TOP OF THE PRECAST BASE SECTION.
7. ALL PICKUP HOLES SHALL BE GROUTED FULL AFTER THE BASIN HAS BEEN PLACED.



NTS

DWG 19025 DETAILS		DATE 5/22/24
JOB# 19025	SCALE H: N/A V: N/A	SHEET 20 of 64



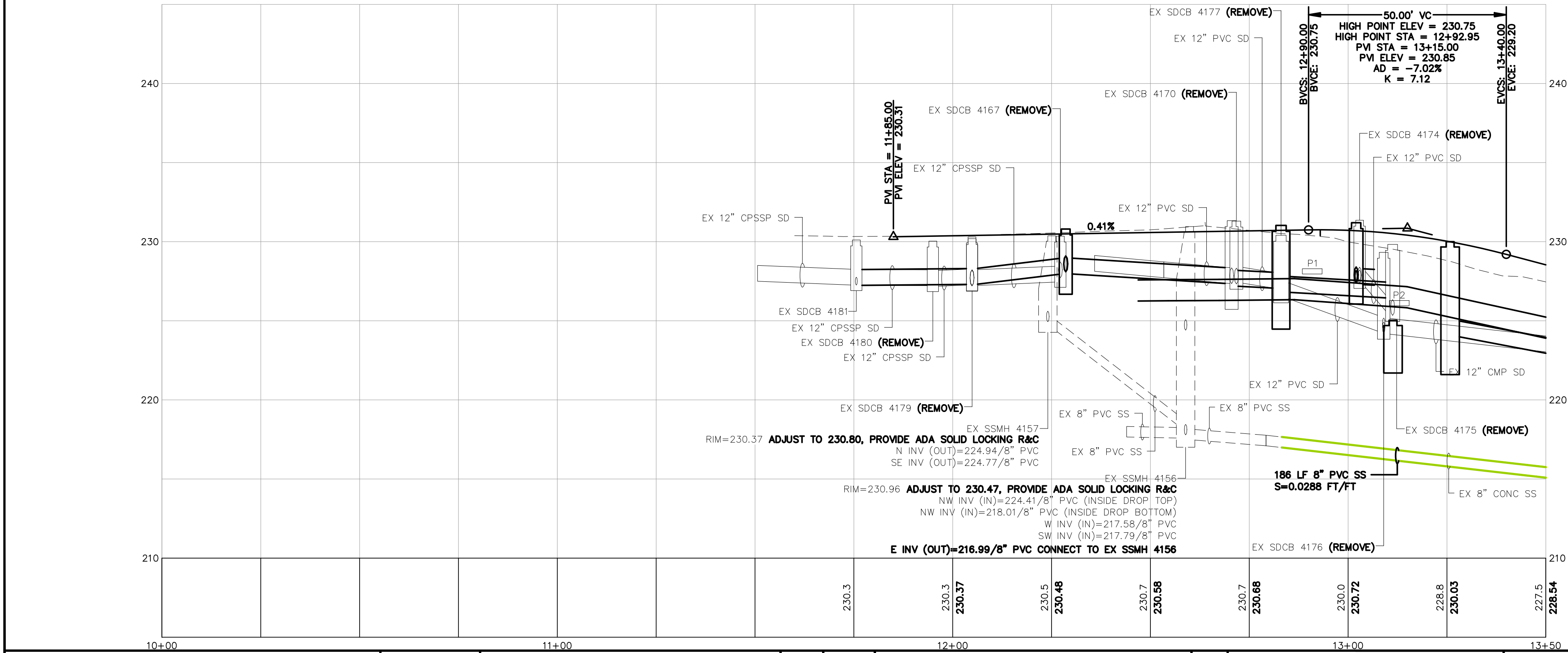
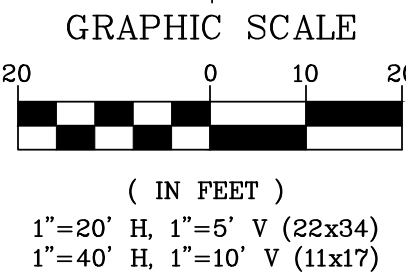
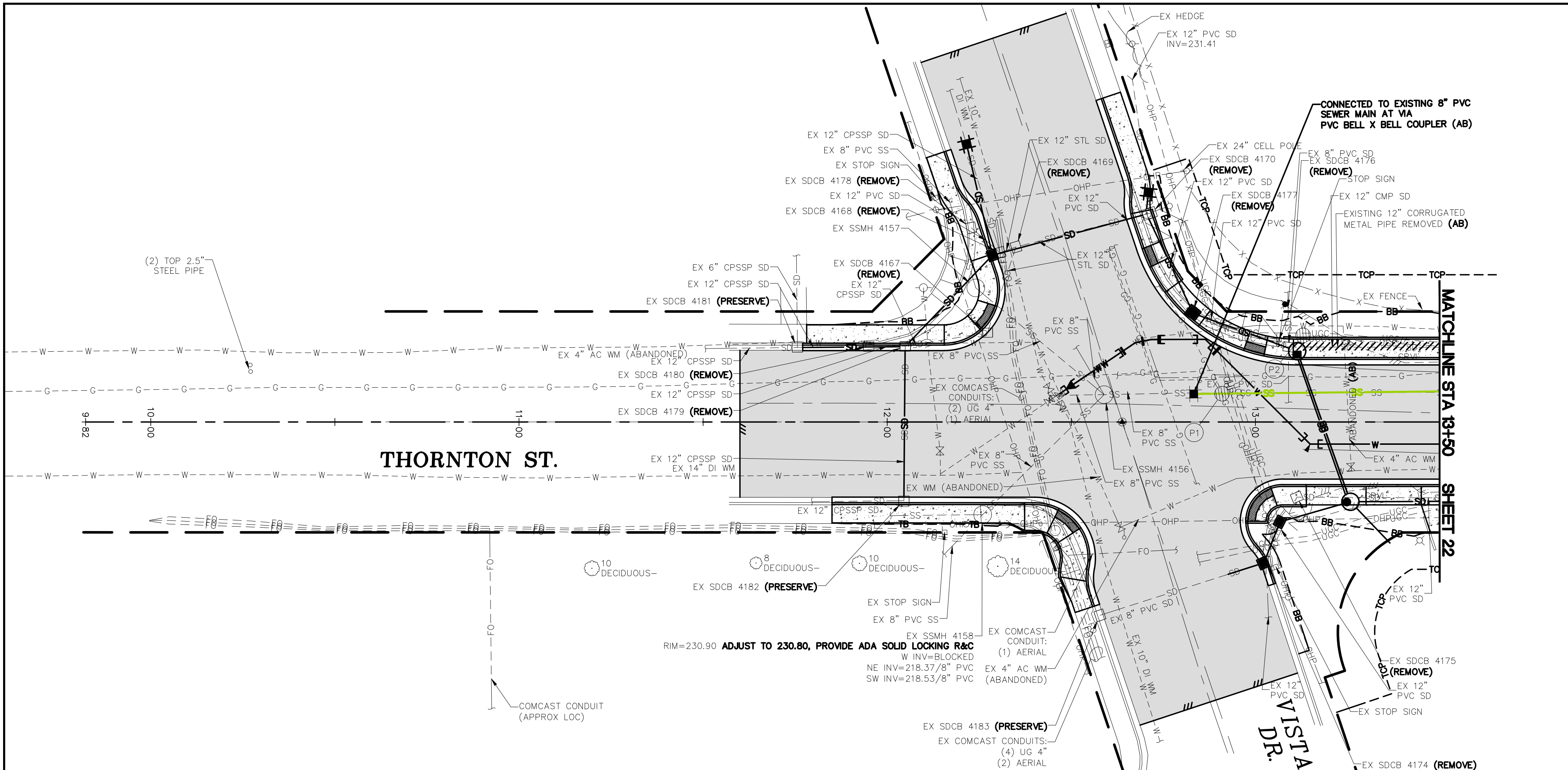
DESIGNED BY	JAM/LMH
DRAWN BY	JAM/LMH
CHECKED BY	LP

R&E **Reichhardt & Ebe**
ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

CITY OF FERNDALE
2095 MAIN ST
FERNDALE, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE

STORM DETAILS 2



STORM
STRUCTURE NOTES:

EX SDCB 4167 (REMOVE)
RIM=230.35
N INV (IN)=227.72/12" CPSSP
W INV (OUT)=227.45/12" CPSSP

EX SDCB 4168 (REMOVE)
RIM=230.70
E INV (IN)=227.19/12" RGS
NW INV (IN)=228.28/12" PVC
N INV (OUT)=228.07/12" CPSSP

EX SDCB 4169 (REMOVE)
RIM=230.78
W INV (OUT)=227.10/12" RGS
N INV (IN)=227.34/12" PVC
S INV (OUT)=227.16/12" RGS

EX SDCB 4170 (REMOVE)
RIM=231.30
W INV (IN)=227.34/12" PVC
N INV (IN)=227.33/12" PVC
S INV (OUT)=227.44/12" PVC

EX SDCB 4174 (REMOVE)
RIM=231.36
W INV (IN)=227.55/8" PVC
S INV (IN)=227.39/12" PVC
NE INV (OUT)=227.38/12" PVC

EX SDCB 4175 (REMOVE)
RIM=229.83
SW INV (IN)=225.29/12" PVC
E INV (OUT)=225.34/12" PVC

EX SDCB 4176 (REMOVE)
RIM=229.33
W INV (IN)=224.30/12" PVC
N INV (IN)=224.51/8" PVC
S INV (IN)=224.25/8" PVC
E INV (OUT)=224.17/12" CMP

EX SDCB 4177 (REMOVE)
RIM=230.41
N INV (IN)=227.01/12" PVC
E INV (OUT)=226.47/12" PVC

EX SDCB 4178 (REMOVE)
RIM=230.72
SE INV (OUT)=228.45/12" PVC

EX SDCB 4179 (REMOVE)
RIM=230.19
E INV (IN)=227.23/12" CPSSP
W INV (OUT)=227.26/12" CPSSP
S INV (OUT)=227.23/12" CPSSP

EX SDCB 4180 (REMOVE)
RIM=230.04
E INV (IN)=227.18/12" CPSSP
W INV (IN)=227.22/12" CPSSP

STORM
STRUCTURE NOTES:

EX SDCB 4181 (PRESERVE)
RIM=230.11
W INV (IN)=227.26/12" CPSSP
N INV (IN)=227.26/6" CPSSP
E INV (OUT)=227.24/12" CPSSP

EX SDCB 4182 (PRESERVE)
RIM=229.78
N INV (IN)=226.95/12" CPSSP
W INV (IN)=226.80/12" CPSSP

EX SDCB 4183 (PRESERVE)
RIM=231.41
E INV (OUT)=228.85/8" PVC

POTHOLES			
#	DESCRIPTION	TOP OF PIPE EL.	OWNER
P1	(1) 4" STL GAS	228.29	CNG
P2	(2) 4" PVC CONDUIT	226.28	ZIPLY

NOTE:
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3. PSE DEPTHS WERE POTHOLED ON 03-28-22.
4. ZIPLY DEPTHS WERE POTHOLED ON 05-27-22.
UTILITY POTHOLE LOCATION



5/22/24
AS-BUILT

DESIGNED BY
JAM/LMH
DRAWN BY
JAM/LMH
CHECKED BY
LP

R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

NO.	DATE	DESCRIPTION	BY

CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE

SANITARY SEWER PLAN - STA 10+00 TO 13+50

DWG 19025 SEWER

JOB#

19025

SCALE

H: 1"=20'

V: 1"=5'

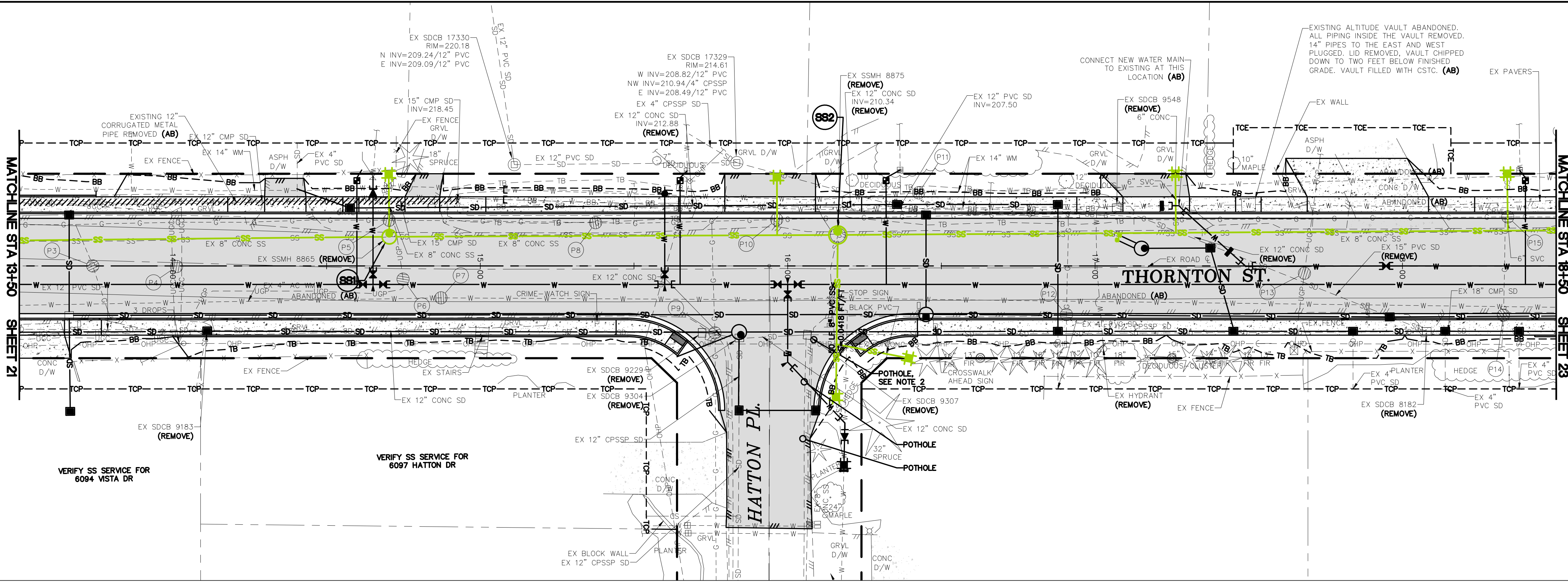
DATE

5/22/24

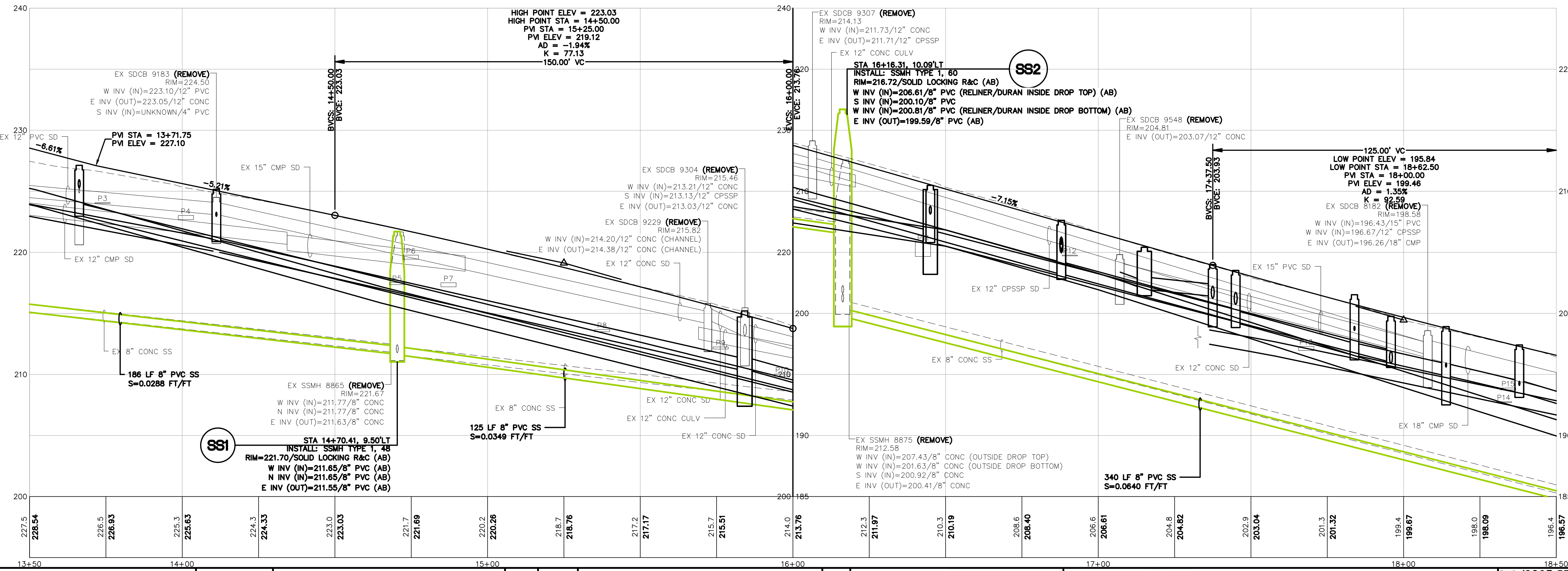
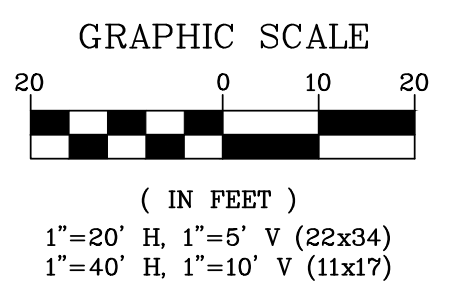
SHEET

21

of 64



- NOTE:
1. CONTRACTOR TO POTHOLE AT EACH SPECIFIED LOCATION 5 WORKING DAYS PRIOR TO PLANNED INSTALLATION TO VERIFY LAYOUT.
 2. POTHOLE HATTON SANITARY MAIN AND SERVICE LOCATION PRIOR TO ORDERING STRUCTURE SS2 TO VERIFY LOCATION AND ALIGNMENT/ANGLE FOR THE CONNECTION TO SS2.
 3. CONTRACTOR TO LOCATE AND CONNECT ALL SANITARY SERVICES TO PROPERTIES WITHIN THE PROJECT LIMITS.



POTHOLES			
#	DESCRIPTION	TOP OF PIPE EL.	OWNER
P3	(1) 3/4" STL GAS	224.07	CNG
P4	(2) 4" PVC CONDUIT	223.02	ZIPLY
P5	(1) 2" STL GAS	217.52	CNG
P6	(1) 4" DI PWR	219.77	PSE
	(1) CONDUIT	219.77	UNK
P7	(1) 4" AC WM	217.51	COF
P8	(1) 2" STL GAS	213.67	CNG
P9	(1) 2" STL GAS	212.25	CNG
P10	(1) 2" STL GAS	210.03	CNG
P11	(1) 14" DI WM	205.83	COF
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- UTILITY - POTHOLE LOCATION



5/22/24
AS-BUILT

DESIGNED BY
JAM/LMH
DRAWN BY
JAM/LMH
CHECKED BY
LP

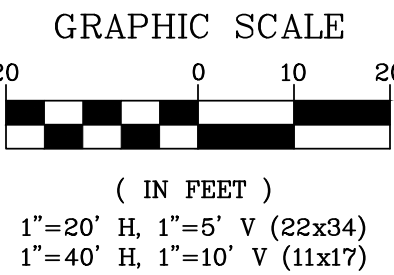
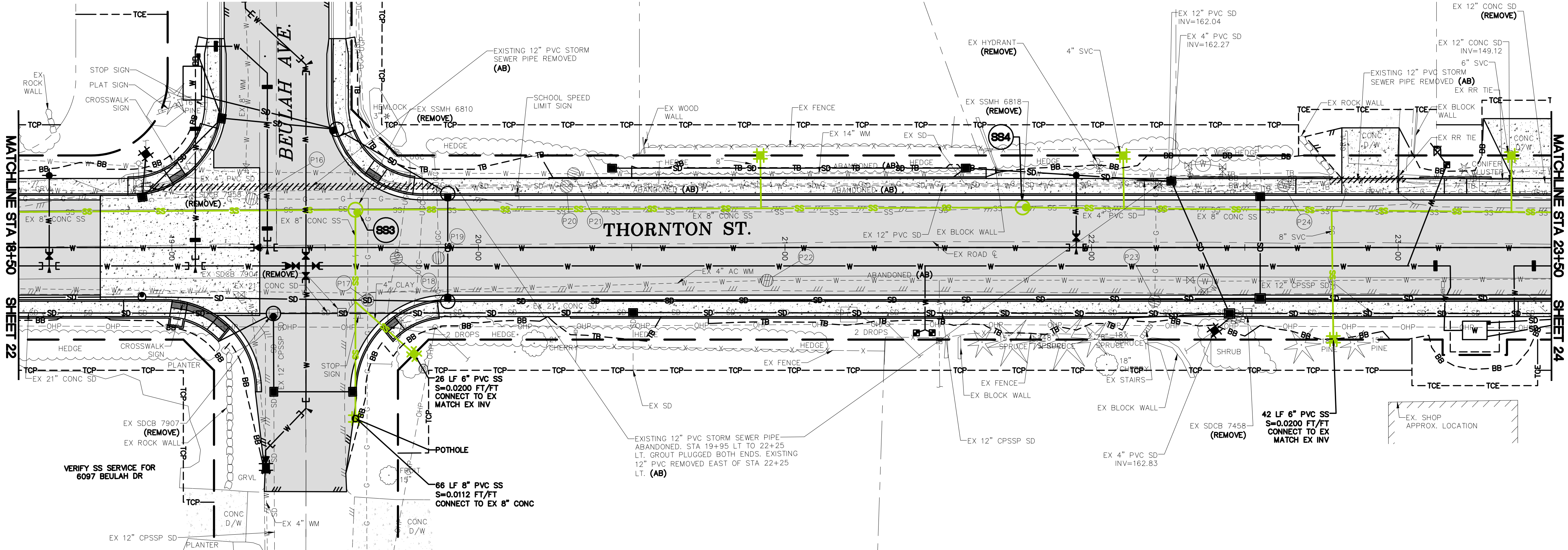
R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

NO.	DATE	DESCRIPTION	BY

CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE
SANITARY SEWER PLAN - STA 13+50 TO 18+50

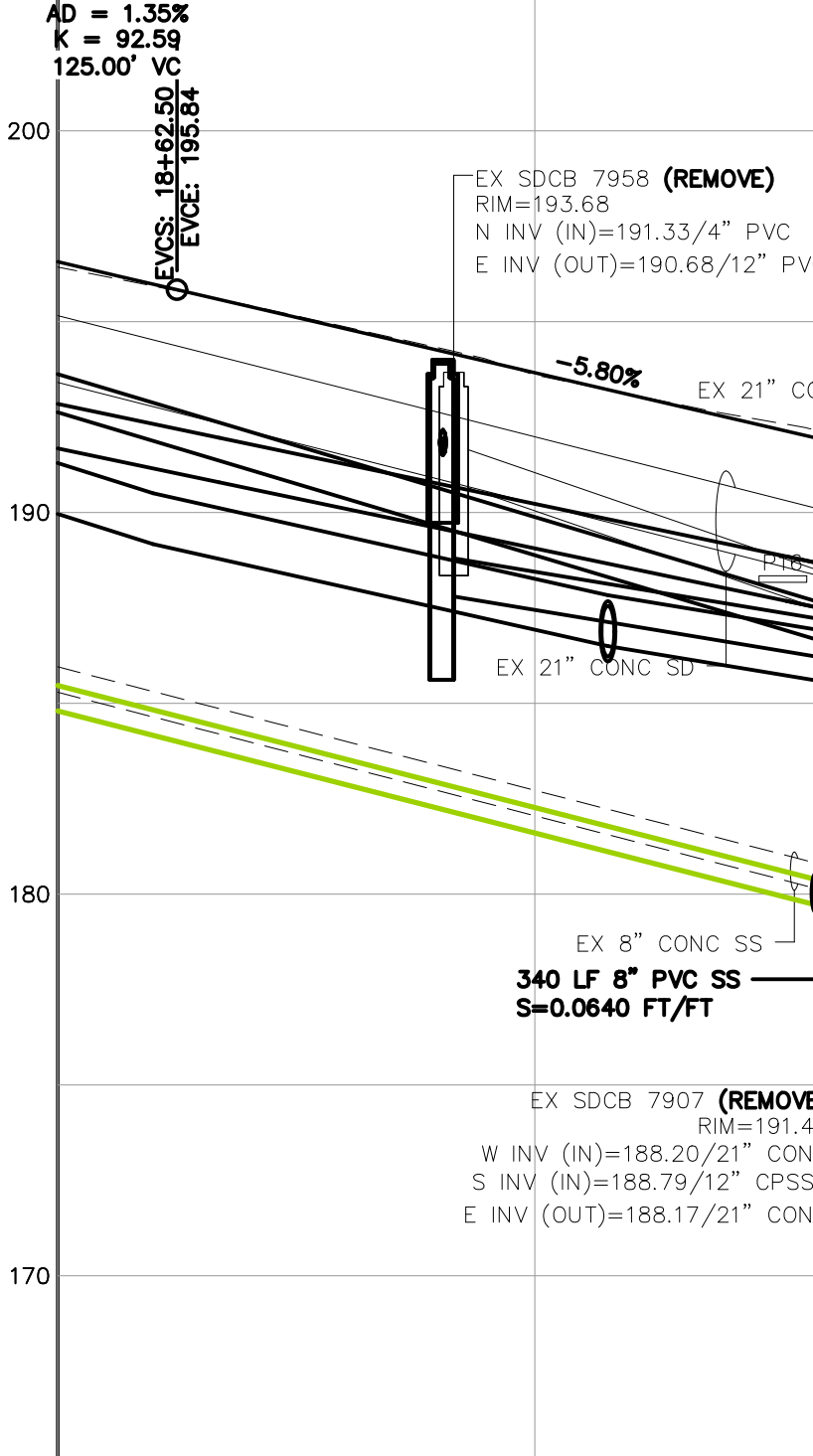
DWG 19025 SEWER		DATE	5/22/24
JOB#	19025	SHEET	22 of 64
SCALE	H: 1"=20' V: 1"=5'		



NOTE:
1. CONTRACTOR TO POTHOLE AT EACH SPECIFIED LOCATION FIVE (5) WORKING DAYS PRIOR TO PLANNED INSTALLATION TO VERIFY LAYOUT, PIPE LOCATION, DEPTH, SIZE, MATERIAL, AND ALL OTHER ITEMS NEEDED FOR THE CONNECTION.

NOTE:
SEE SHEETS 38 & 55 FOR SPEED TABLE DETAILS FOR THE WEST BEULAH AVE CROSSING.

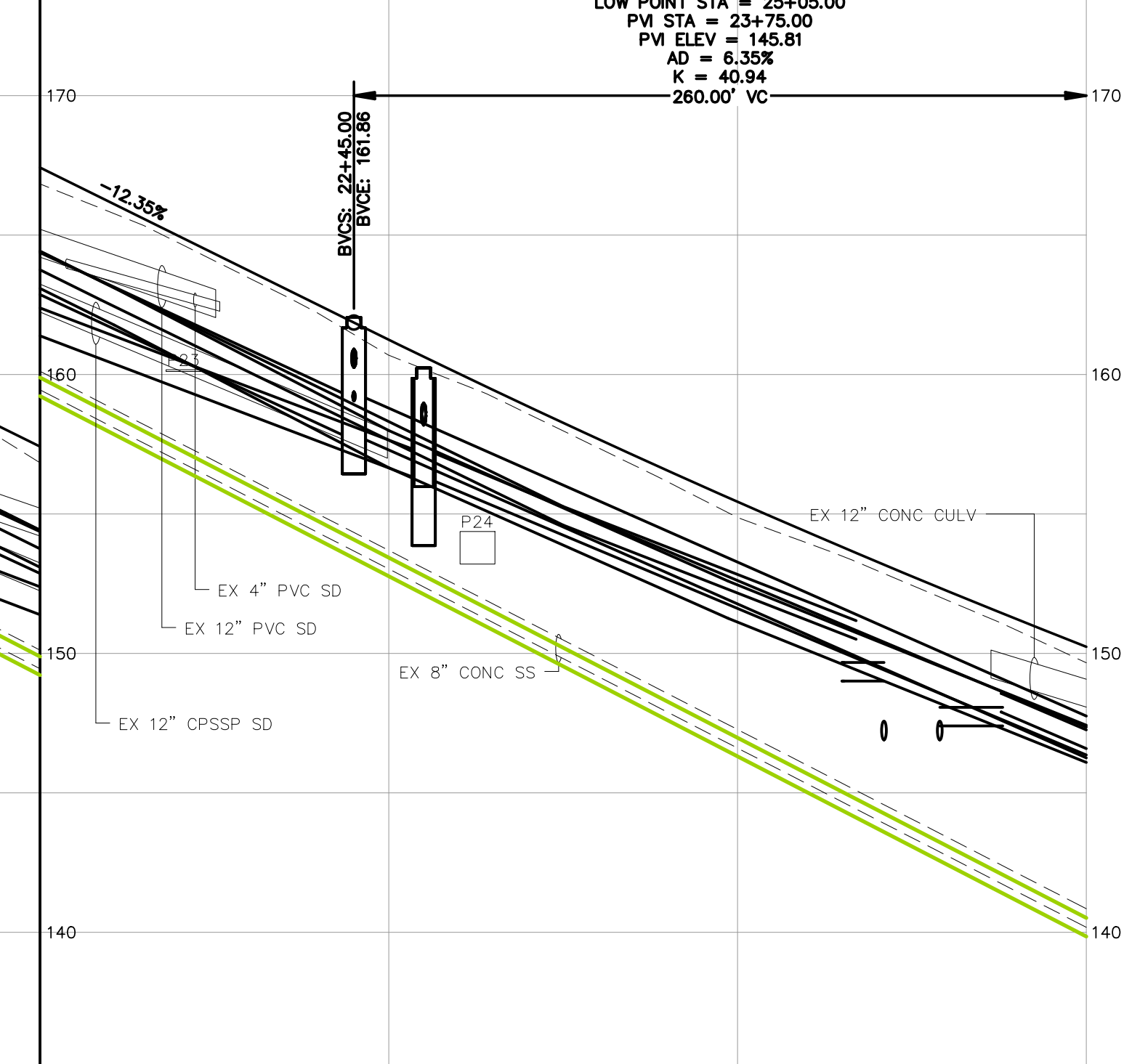
LOW POINT ELEV = 195.84
LOW POINT STA = 18+62.50
PVI STA = 18+00.00
PVI ELEV = 199.46
AD = 1.35%
K = 92.59
125.00' VC



230.00' VC
HIGH POINT ELEV = 190.76
HIGH POINT STA = 19+50.00
PVI STA = 20+65.00
PVI ELEV = 184.09
AD = -6.55%
K = 35.11



LOW POINT ELEV = 138.01
LOW POINT STA = 23+05.00
PVI STA = 23+75.00
PVI ELEV = 145.81
AD = 6.35%
K = 40.94
260.00' VC

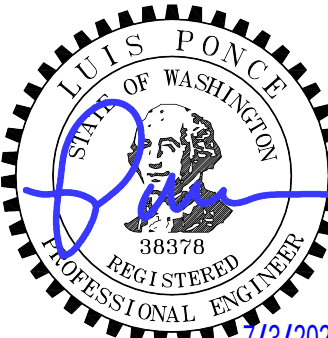


POTHOLES

#	DESCRIPTION	TOP OF PIPE EL	OWNER
P16	(1) 2" STL GAS	188.34	CNG
P17	(1) 2" STL GAS	186.42	CNG
P18	(1) 4" DI PWR	185.97	PSE
P19	(1) 4" PVC CONDUIT	186.71	ZIPLY
P20	(1) 14" DI WM	181.25	COF
P21	(1) 14" DI WM	181.39	COF
P22	(1) 4" AC WM	176.14	COF
P23	(1) 3/4" STL GAS	160.17	CNG
P24	(1) 14" DI WM	154.37	COF

NOTE:
1. POT HOLE DATA IS FOR INFORMATIONAL PURPOSES ONLY. POT HOLE DATA IS FROM SURVEY POINTS PROVIDED BY COMPASS POINT SURVEYING ON 10-27-21.
2. CNG DEPTHS WERE MEASURED WITH AN ELECTRIC DEVICE (NOT POTHOLED). INFO PROVIDED ON 10-30-21.
3. PSE DEPTHS WERE POTHOLED ON 03-28-22.
4. ZIPLY DEPTHS WERE POTHOLED ON 05-27-22.

UTILITY POT HOLE LOCATION



5/22/24
AS-BUILT

DESIGNED BY
JAM/LMH
DRAWN BY
JAM/LMH
CHECKED BY
LP

R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

NO.	DATE	DESCRIPTION	BY
1	9/28/22	ADDENDUM No. 03	JAM

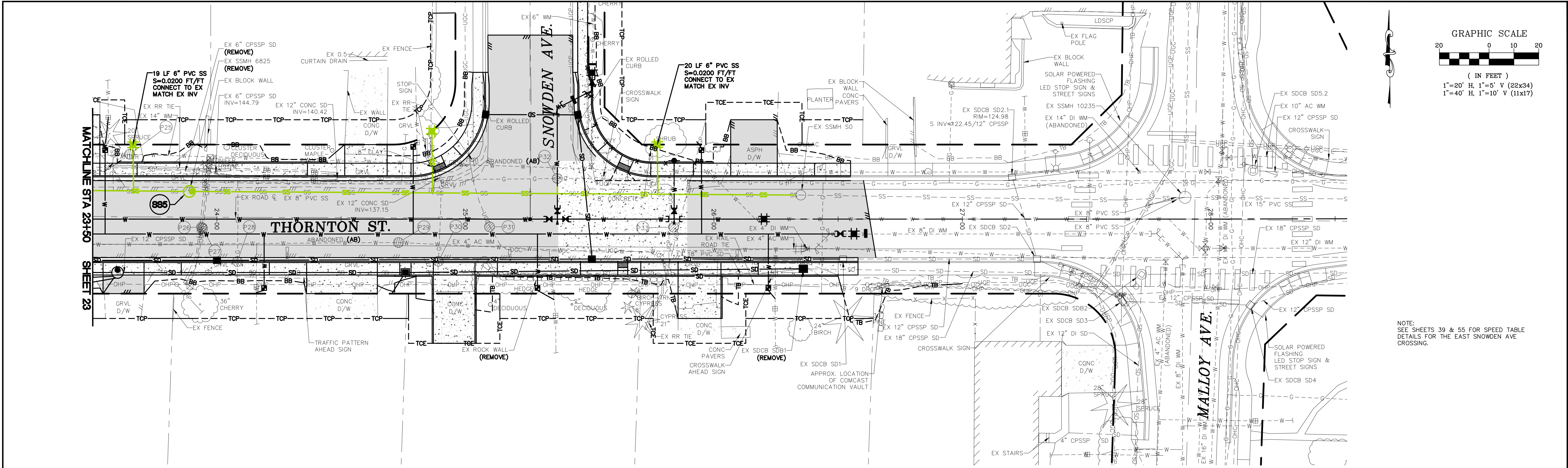
CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE
SANITARY SEWER PLAN - STA 18+50 TO 23+50

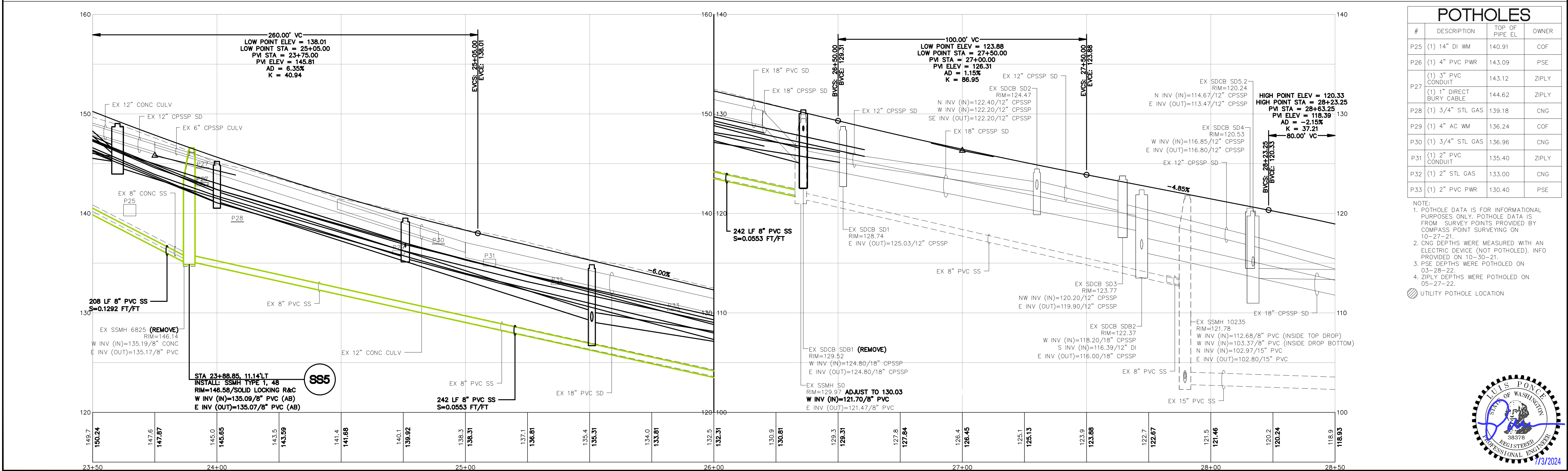
DWG 19025 SEWER
JOB# 19025

SCALE
H: 1"=20' V: 1"=5'

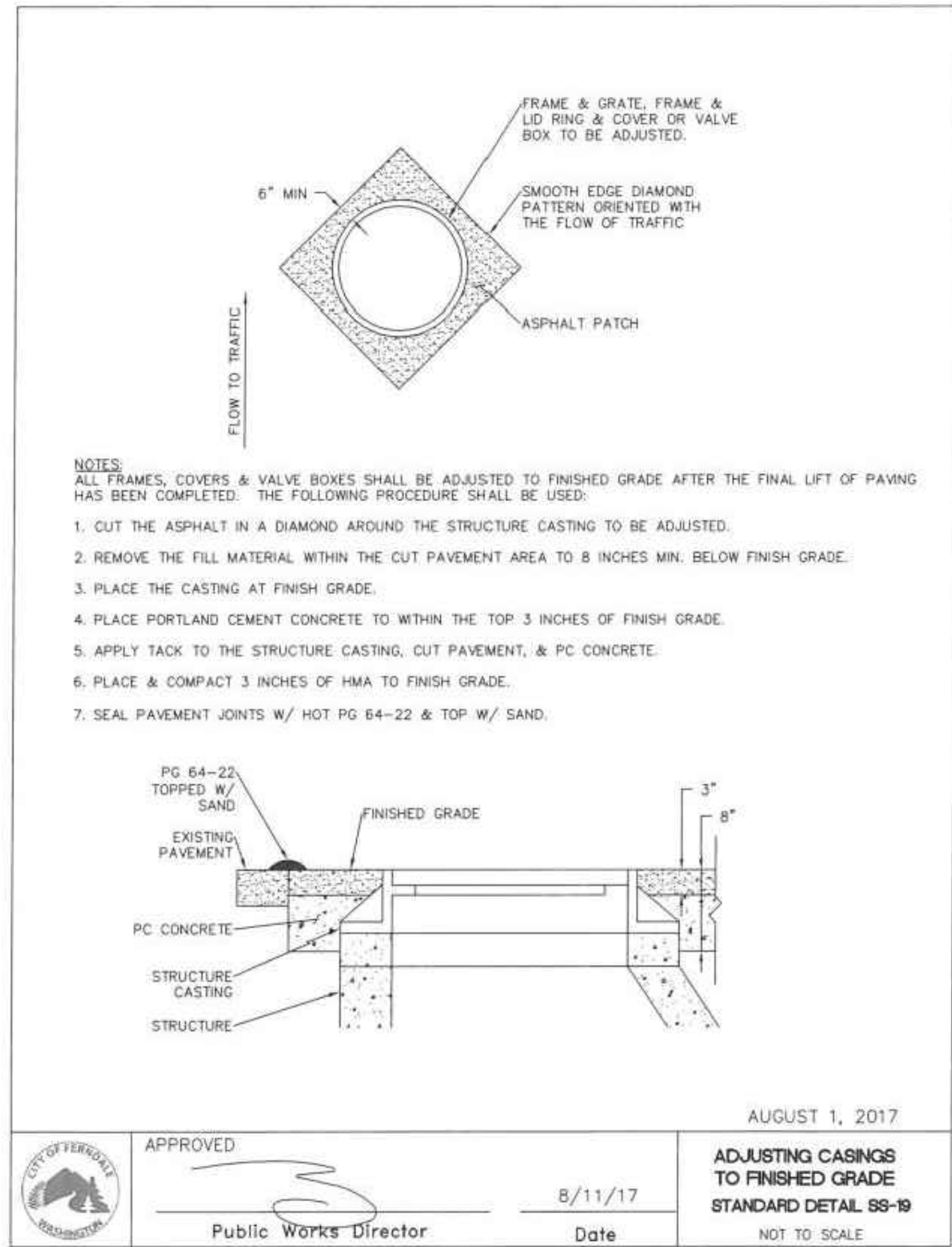
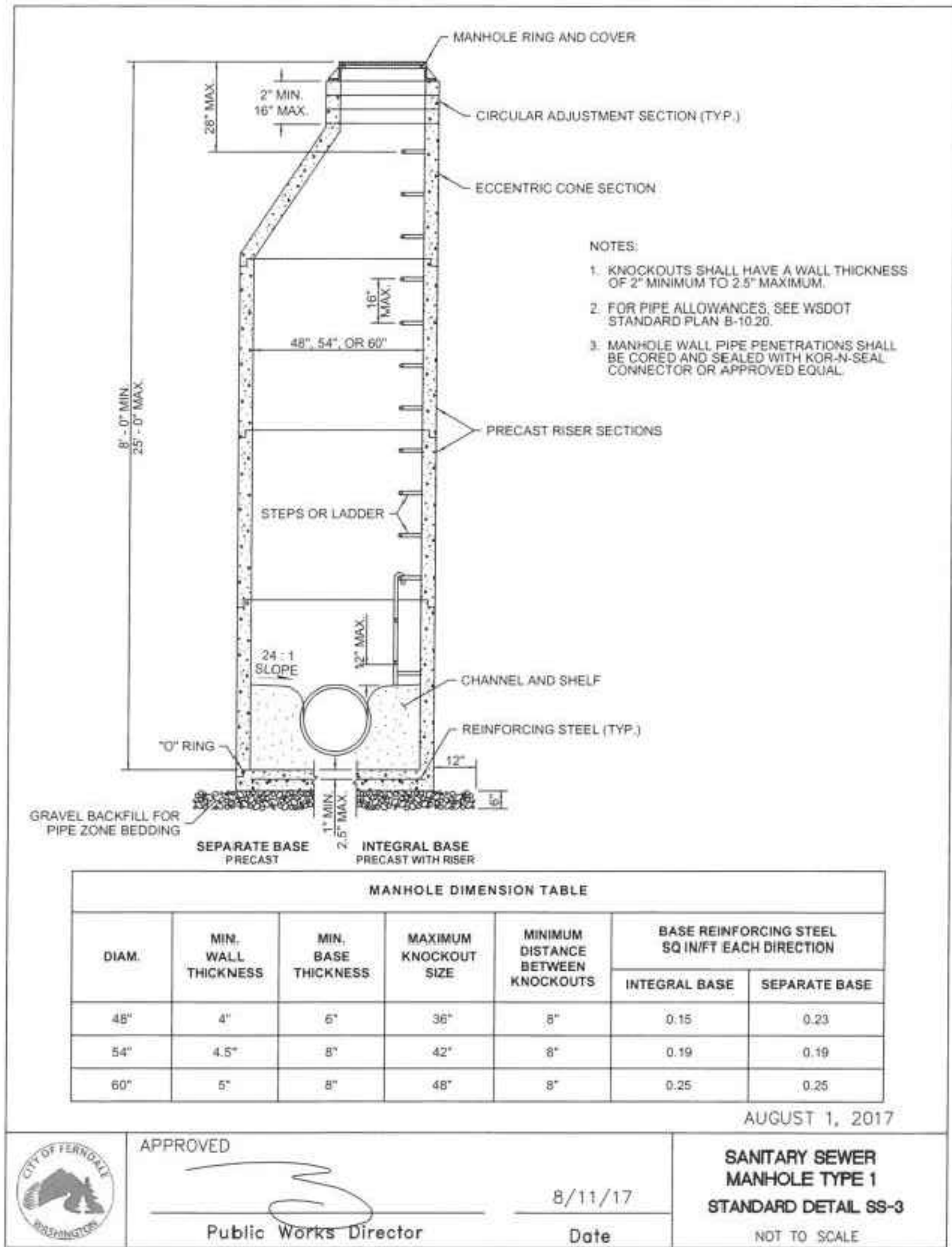
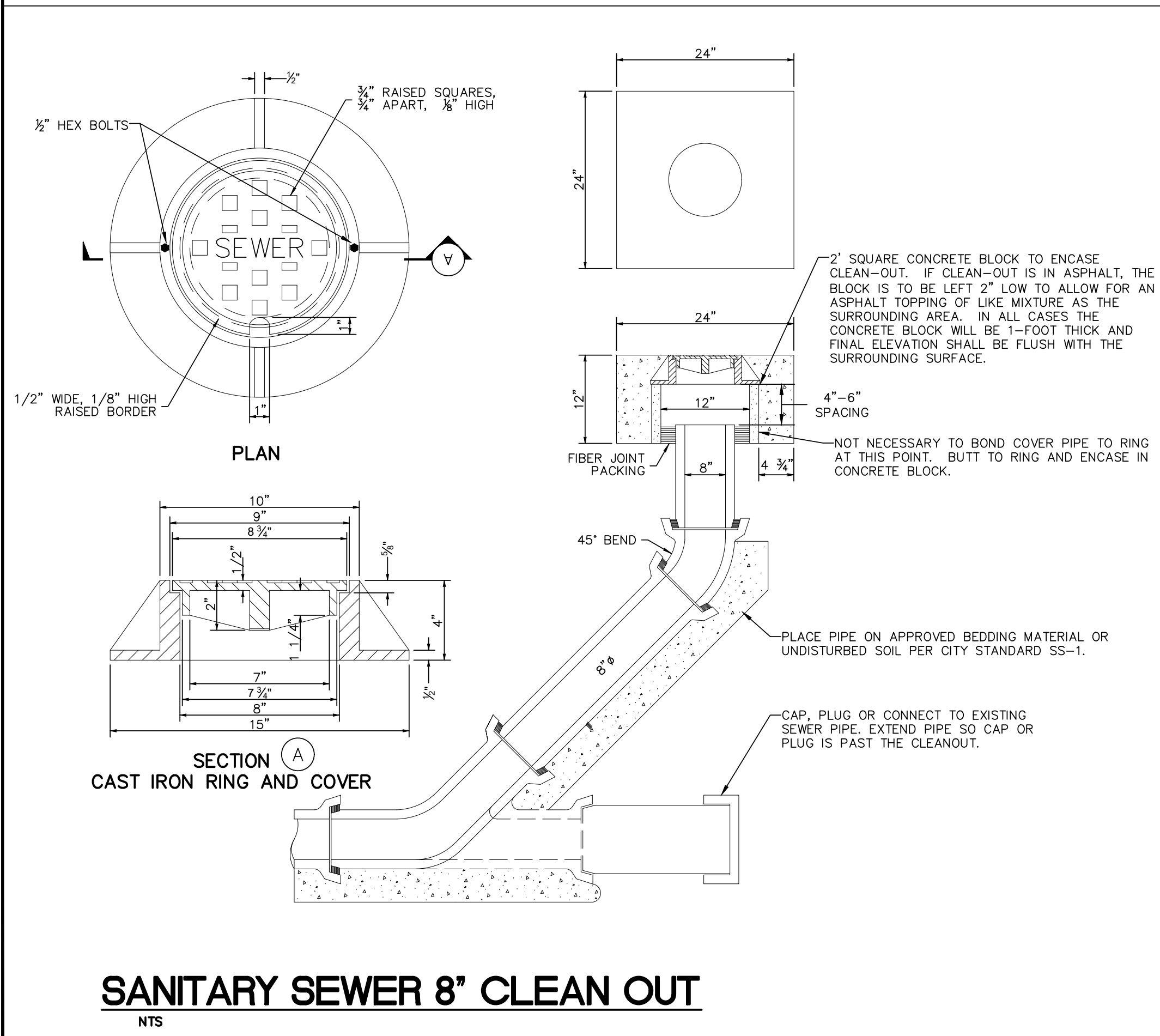
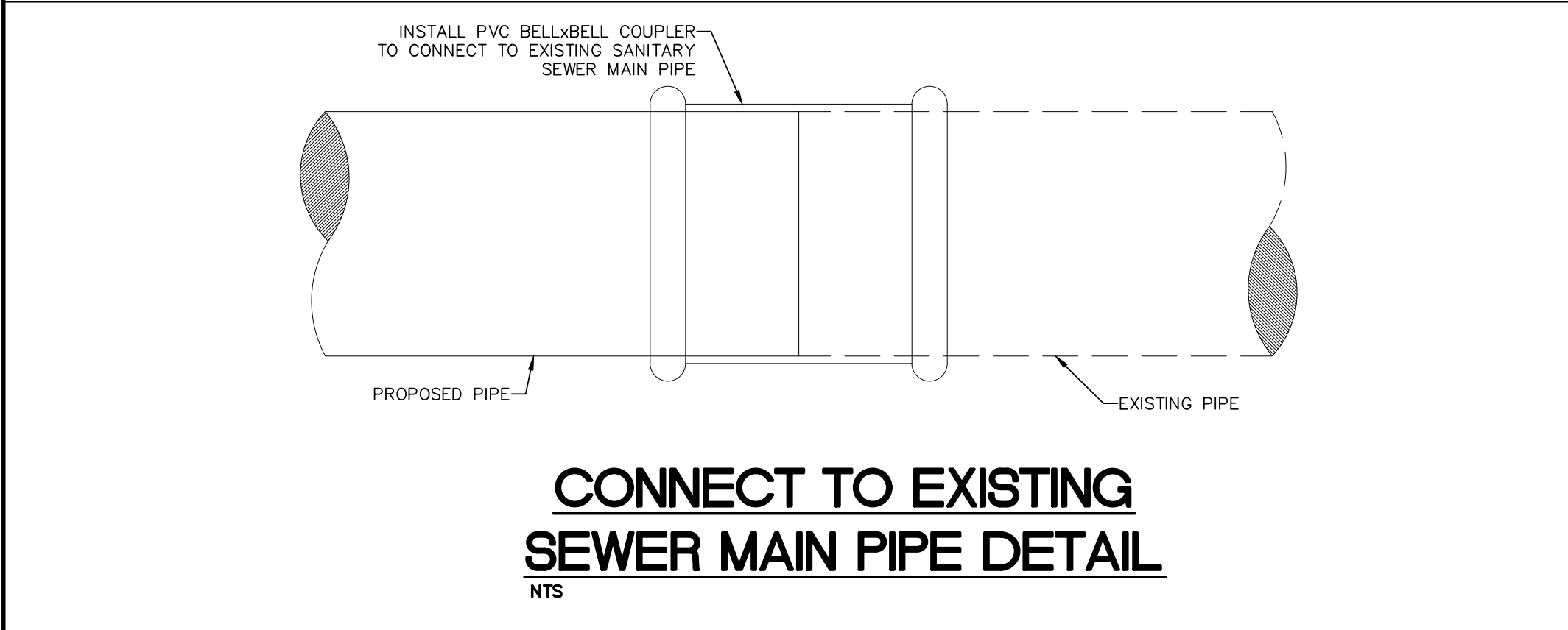
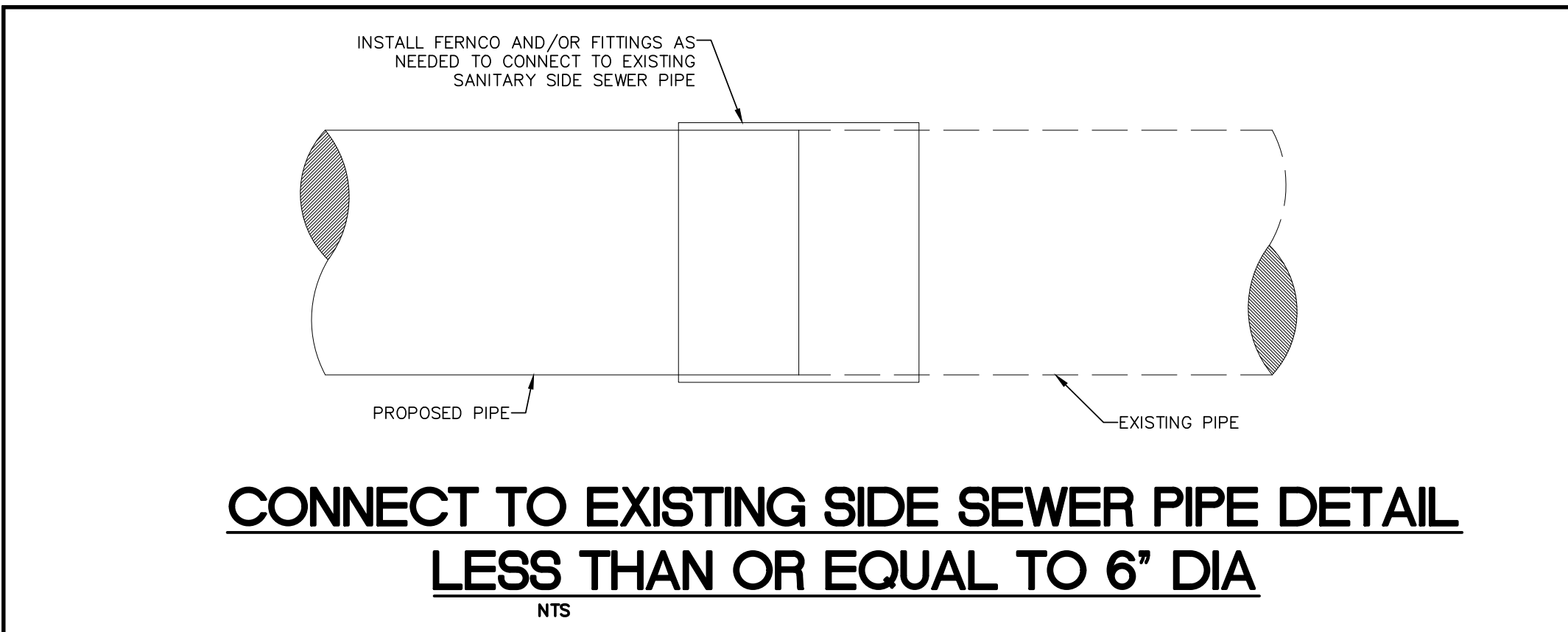
DATE
5/22/24
SHEET
23 of 64

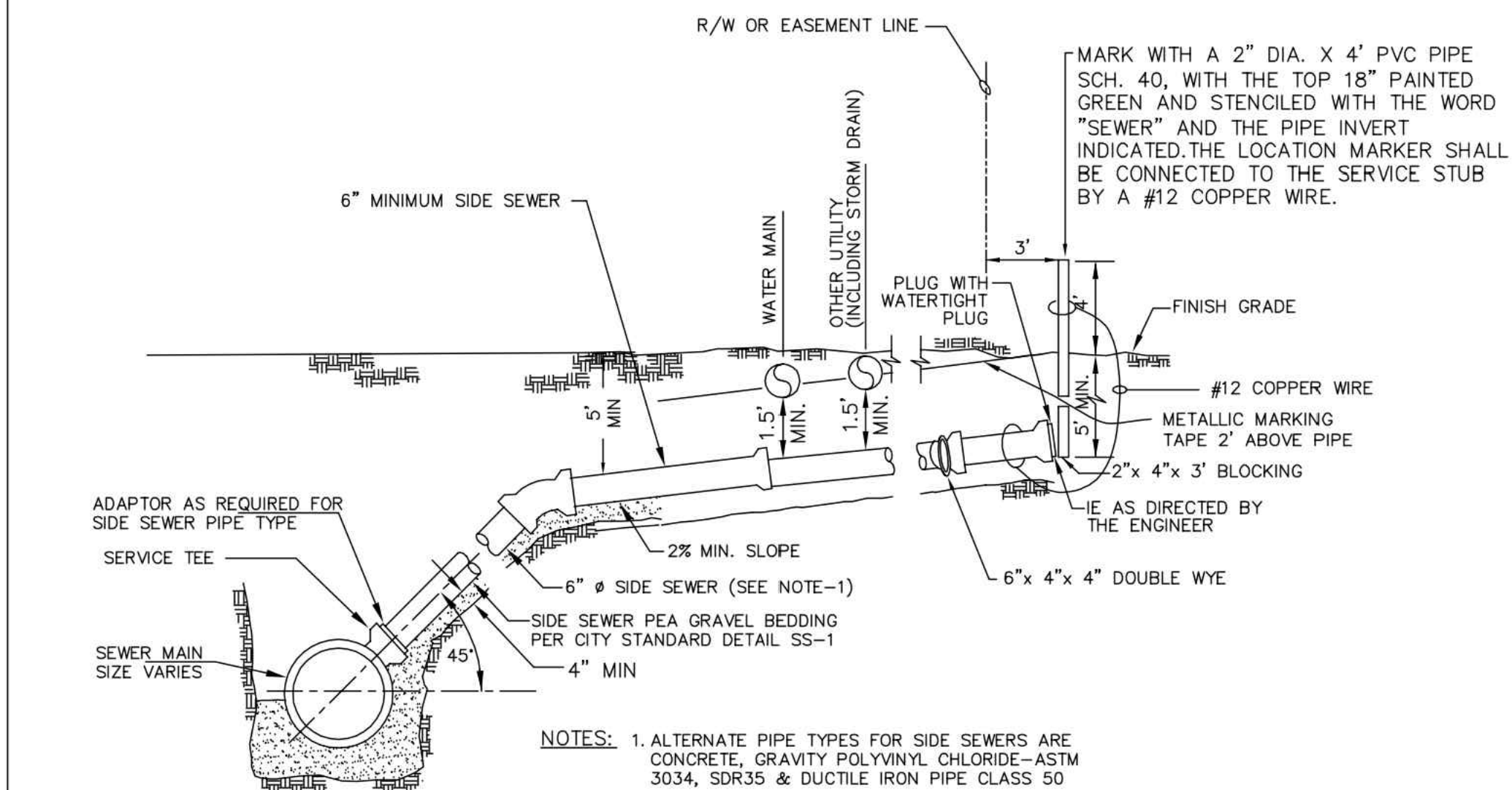


NOTE:
SEE SHEETS 39 & 55 FOR SPEED TABLE
DETAILS FOR THE EAST SNOWDEN AVE
CROSSING.



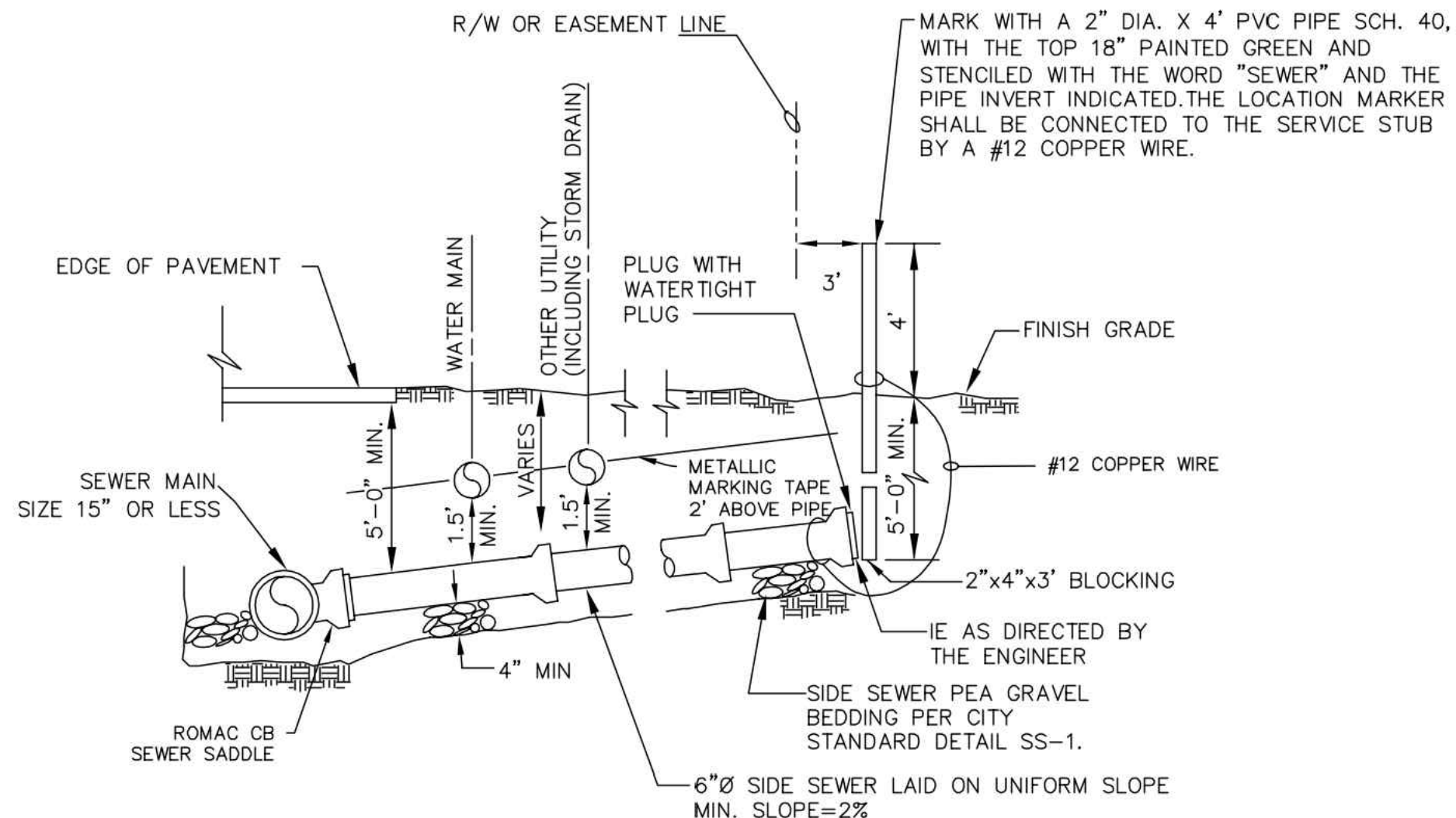
5/22/24	AS-BUILT	DESIGNED BY JAM/LMH	 Reichhardt & Ebe ENGINEERING INC					CITY OF FERNDAL 2095 MAIN ST FERNDAL, WA 98248	THORNTON STREET - VISTA TO MALLOY AVENUE	DWG 19025 SEWER		DATE 5/22/24	
		DRAWN BY JAM/LMH									JOB# 19025	SCALE H: 1"=20' V: 1"=5'	SHEET 24 of 64
		CHECKED BY LP		P.O. Box 978 423 Front Street Lynden, WA 98264 (360) 354-3687	NO.	DATE	DESCRIPTION			BY			





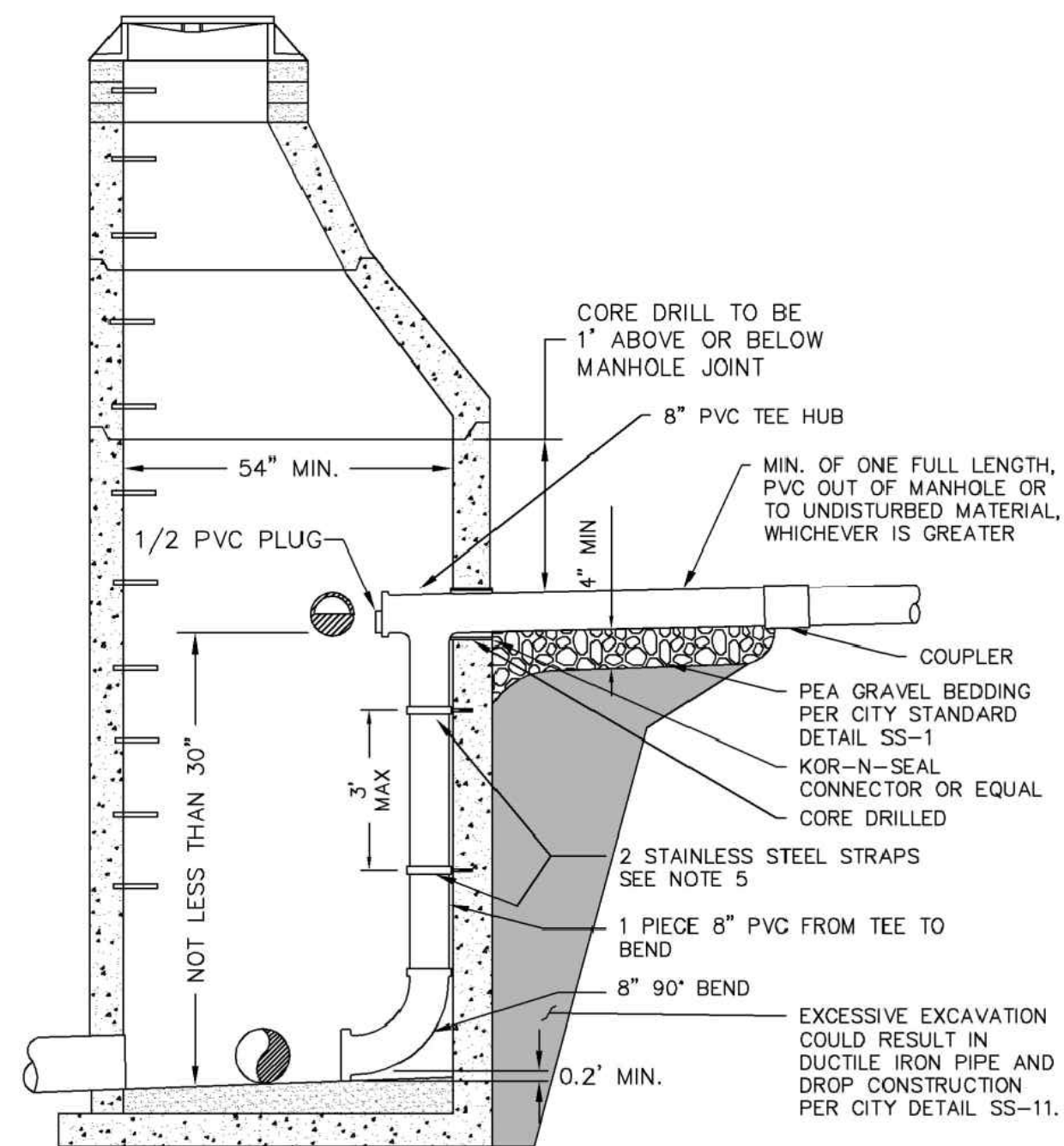
APPROVED
Public Works Director
8/11/17
Date

NOVEMBER 25, 2016
SANITARY SEWER SERVICE
CONNECTION 18" AND
LARGER MAINS
STANDARD DETAIL SS-7
NOT TO SCALE



APPROVED
Public Works Director
8/11/17
Date

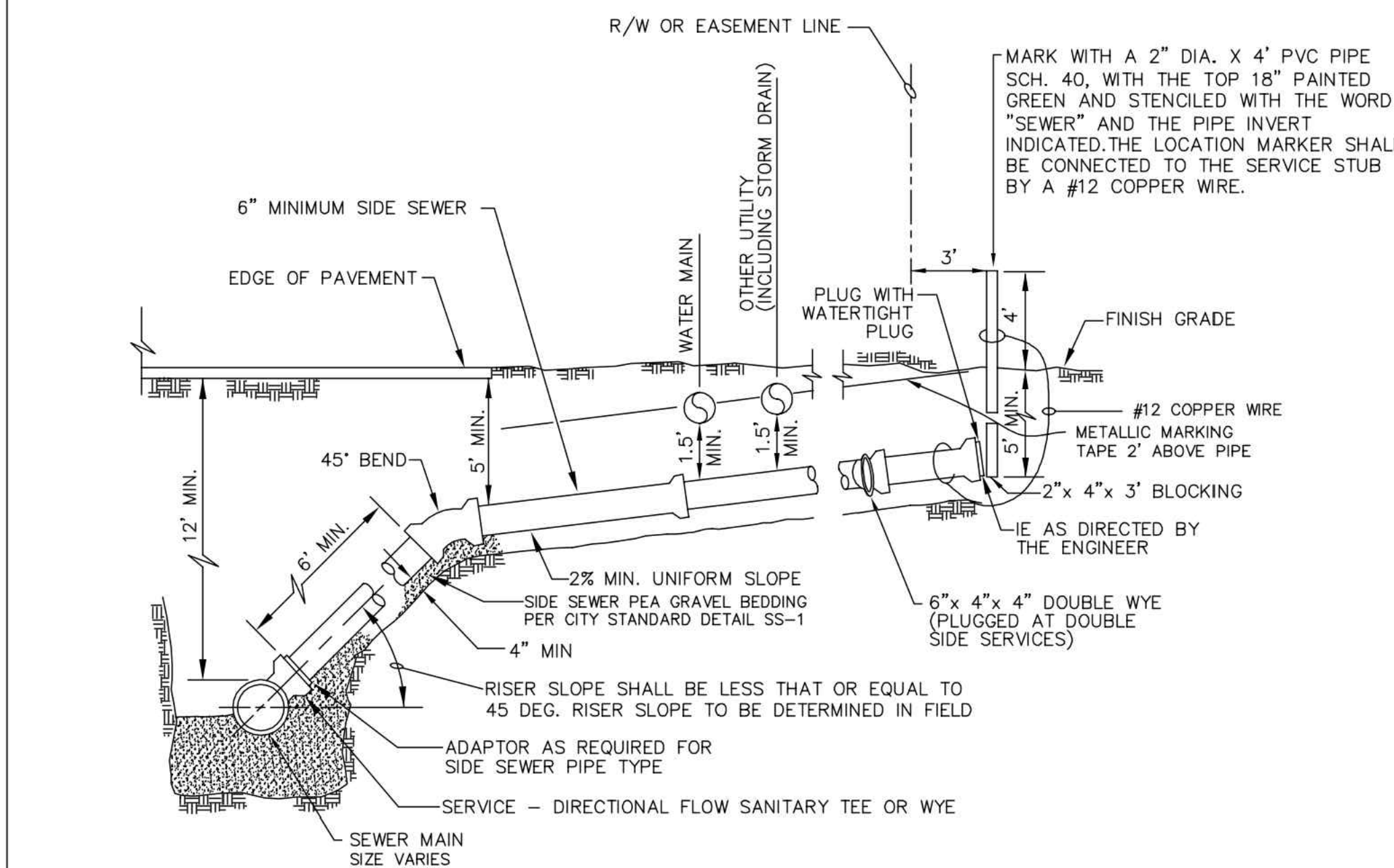
NOVEMBER 25, 2016
SANITARY SEWER SERVICE
CONNECTION 15" OR LESS
STANDARD DETAIL SS-6
NOT TO SCALE



- NOTES:
- DROP TEE TO BE INSTALLED MINIMUM OF 3' BELOW CONE SECTION.
 - INSIDE DROP MANHOLE SHALL BE INSTALLED ONLY WHERE APPROVED BY THE PUBLIC WORKS DIRECTOR.
 - SIZE OF MANHOLE WILL INCREASE WITH LARGER DIAMETER PIPE AND SHALL BE APPROVED BY THE PUBLIC WORKS DIRECTOR.
 - CHANNEL TO OUTLET.
 - STAINLESS ADJUSTABLE PIPE BRACKETS AS MANUFACTURED BY RELINER-DURAN INC. OR APPROVED EQUAL. ATTACH TO WALL WITH 3/8" SS ANCHOR BOLTS.
 - INSIDE DROP SEWER MANHOLE CONNECTION FOR EXISTING SANITARY MANHOLE STRUCTURES.

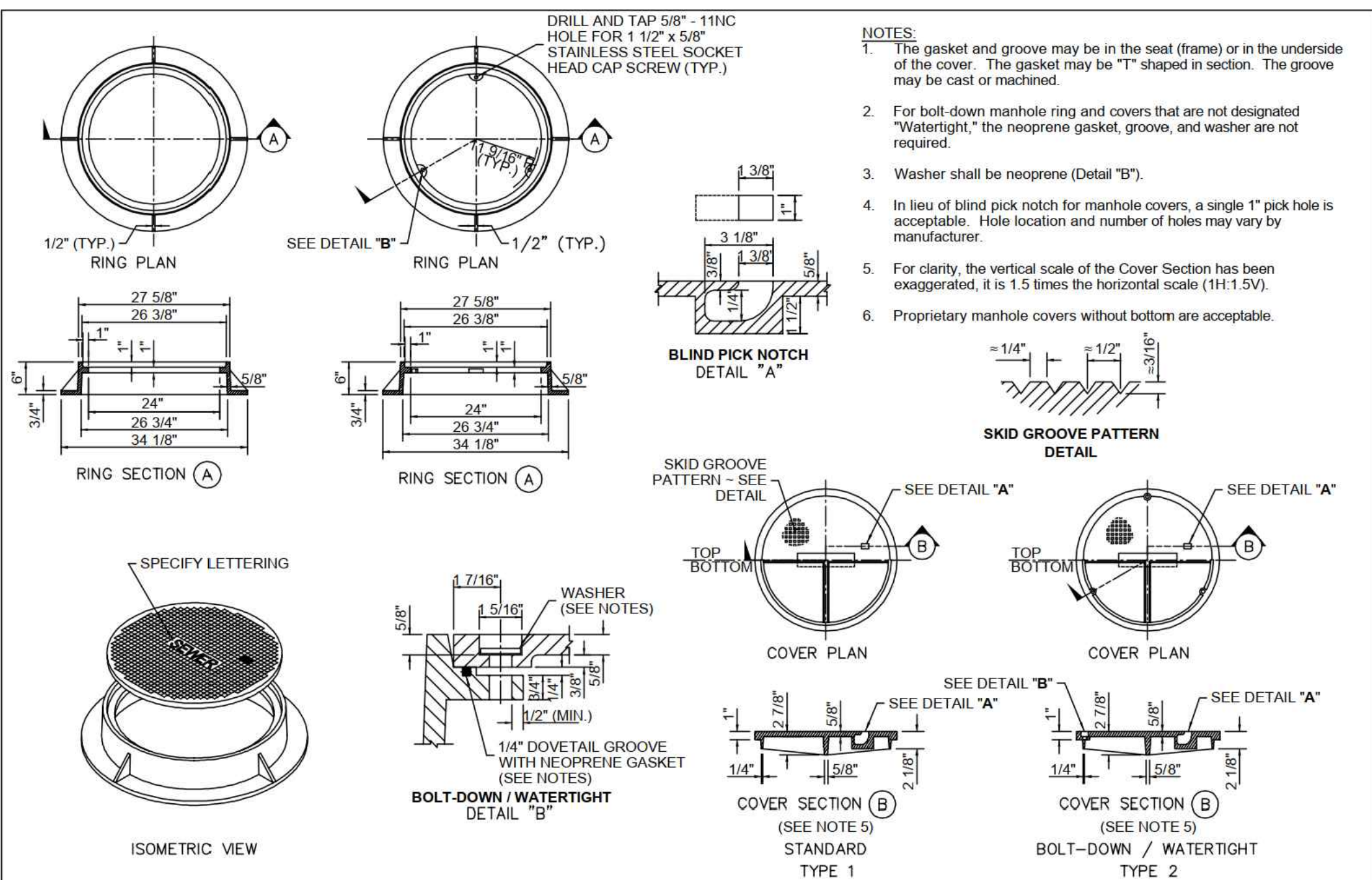
APRIL 25, 2018
APPROVED
Public Works Director
4/25/18
Date

INSIDE DROP SEWER
MANHOLE CONNECTION
STANDARD DETAIL SS-13
NOT TO SCALE



APPROVED
Public Works Director
8/11/17
Date

APRIL 18, 2017
SANITARY SEWER SERVICE
DEEP MAIN CONNECTION
STANDARD DETAIL SS-8
NOT TO SCALE



APPROVED
Public Works Director
8/11/17
Date

JUNE 14, 2017
CIRCULAR FRAME
AND COVER
STANDARD DETAIL SS-10
NOT TO SCALE



5/22/24
AS-BUILT

DESIGNED BY
JAM/LMH
DRAWN BY
JAM/LMH
CHECKED BY
LP

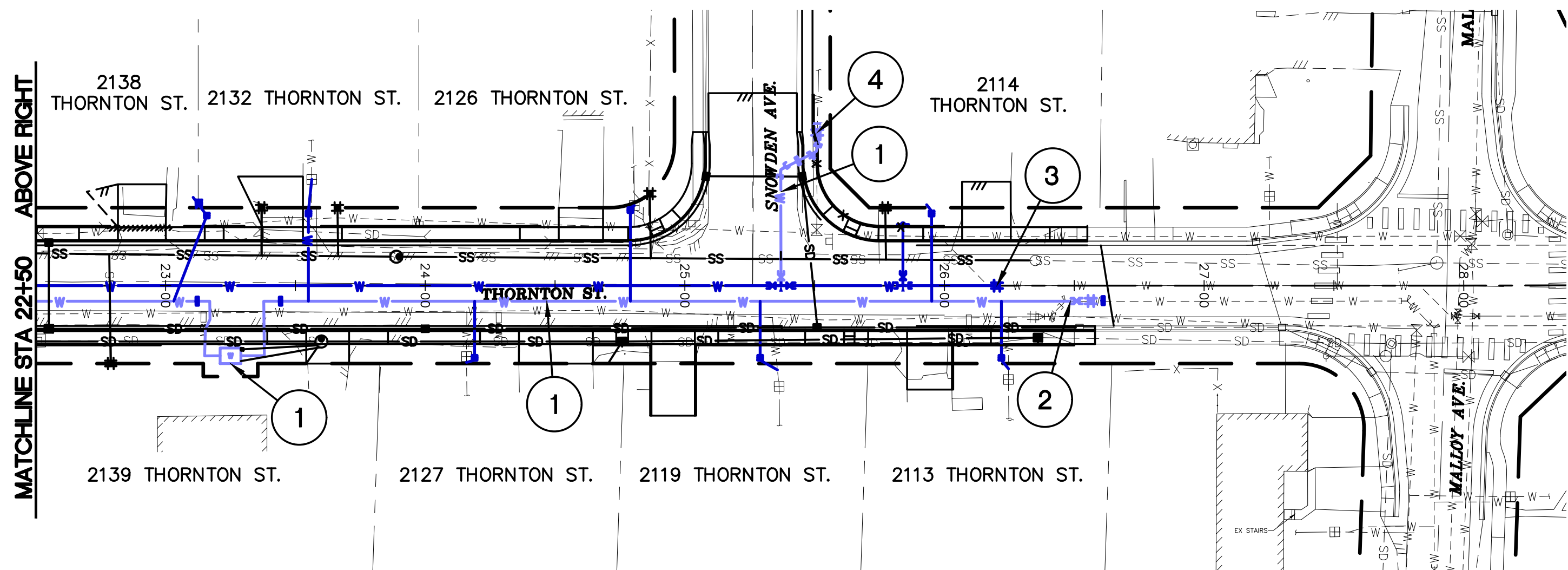
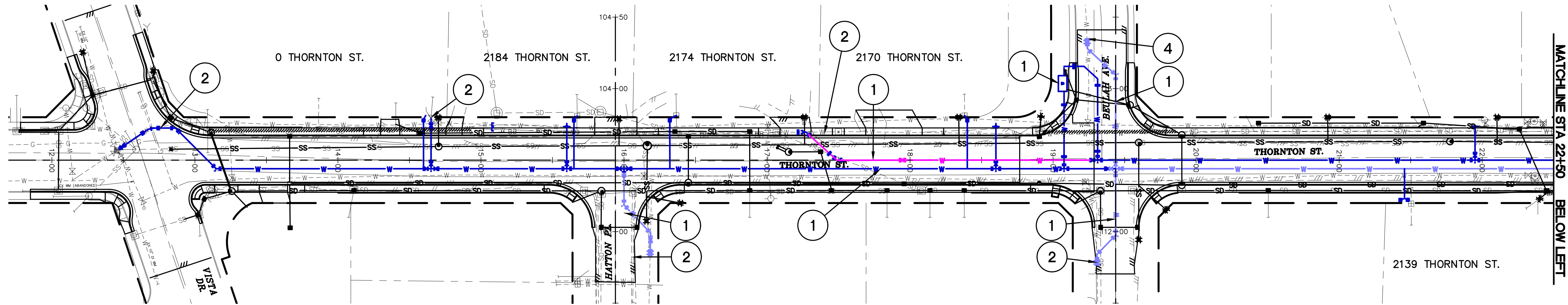
R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

NO.	DATE	DESCRIPTION	BY

CITY OF FERDALE
2095 MAIN ST
FERDALE, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE
SEWER DETAILS 2

DWG#	19025 DETAILS	DATE	5/22/24
JOB#	19025	SCALE	H: N/A v: N/A
SHEET	26	of 64	



ORDER OF WORK:

NOTES:

- CONTRACTOR SHALL COMPLETE ALL POTHOLES FOR WATERLINE CONNECTIONS A MINIMUM OF FIFTEEN (15) WORKING DAYS PRIOR TO A PLANNED WATER SHUT-OFF TO VERIFY LAYOUT, PIPE LOCATION, DEPTH, SIZE, MATERIAL AND ALL OTHER ITEMS NEEDED FOR THE CONNECTION.
- CONTRACTOR SHALL POTHOLE ALL SERVICES AT BACK OF METER TO VERIFY PIPE LOCATION, DEPTH, SIZE, MATERIAL AND ALL OTHER ITEMS NEEDED FOR THE CONNECTION.
- AFTER POTHOLE OPERATIONS, CONTRACTOR SHALL VERIFY THE MATERIAL REQUIRED FOR EACH CONNECTION AND SERVICE AND MUST HAVE THE MATERIAL ONSITE PRIOR TO A SCHEDULED WATER SHUT-OFF.
- CONTRACTOR SHALL COMPLETE ALL WATER CONNECTIONS WITHIN THREE (3) CONSECUTIVE CALENDAR DAYS. ORDER OF WORK (2), (3), AND (4) SHALL EACH BE COMPLETED WITHIN A 16 HOUR WORKDAY.

- W — =16-INCH WATERMAIN
— W — =14-INCH WATERMAIN
— W — =8-INCH WATERMAIN

1

INSTALL AND TEST:

- 16-INCH WATER VAULT AND 8-INCH WATER VAULT AND ASSEMBLY.
- 16-INCH WATERMAIN FROM APPROX. STA 13+00 TO 26+00, INCLUDING SERVICES.
- 14-INCH WATERMAIN FROM APPROX. STA 14+65 TO 19+45.
- 8-INCH WATERMAIN FROM APPROX. STA 18+65 TO 26+40, INCLUDING SERVICES; AND HATTON PLACE, BEULAH AVENUE & SNOWDEN AVENUE NORTH/SOUTH LEGS.

2

DAY 1:

CAP EXISTING WATERMAIN AT LOCATION SHOWN ON SHEET 29. COMPLETE 16-INCH WATERMAIN CONNECTIONS (2) AT VISTA DRIVE AND AT CITY WATER STORAGE TANK. COMPLETE 14-INCH WATERMAIN CONNECTION (1) AT CITY WATER STORAGE TANK. COMPLETE 8-INCH WATERMAIN CONNECTIONS (3) AT HATTON PLACE, BEULAH AVENUE SOUTH LEG, AND NEAR MALLOY AVENUE. CONNECT HOUSE SERVICES (12) IN ORDER TO RESTORE WATER SERVICE TO:

- 0 THORNTON STREET
- 2170 THORNTON STREET
- 2174 THORNTON STREET
- 2184 THORNTON STREET
- 2113 THORNTON STREET
- 2114 THORNTON STREET
- 2119 THORNTON STREET
- 2126 THORNTON STREET
- 2127 THORNTON STREET
- 2132 THORNTON STREET
- 2138 THORNTON STREET
- 2139 THORNTON STREET

3

DAY 2:

COMPLETE 16-INCH WATERMAIN CONNECTION (1) NEAR MALLOY AVENUE.

4

DAY 3:

COMPLETE 8-INCH WATERMAIN CONNECTIONS (2) AT THE BEULAH AVENUE NORTH LEG AND SNOWDEN AVENUE.



5/22/24

AS-BUILT

DESIGNED BY
JAM/LMH
DRAWN BY
JAM/LMH
CHECKED BY
LP

R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

NO.	DATE	DESCRIPTION	BY

CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE

WATER PLAN - ORDER OF WORK

DWG 19025 WATER

JOB#

19025

SCALE

H: 1"=40'

V: N/A

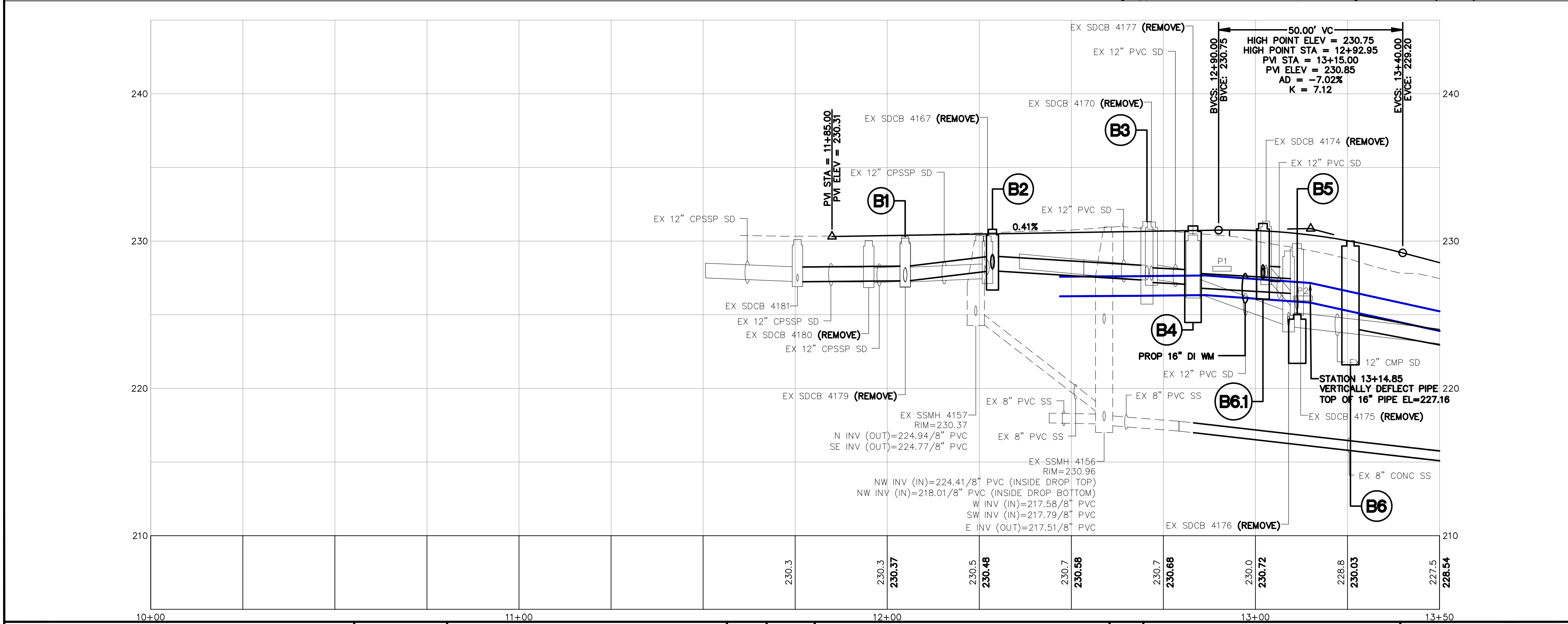
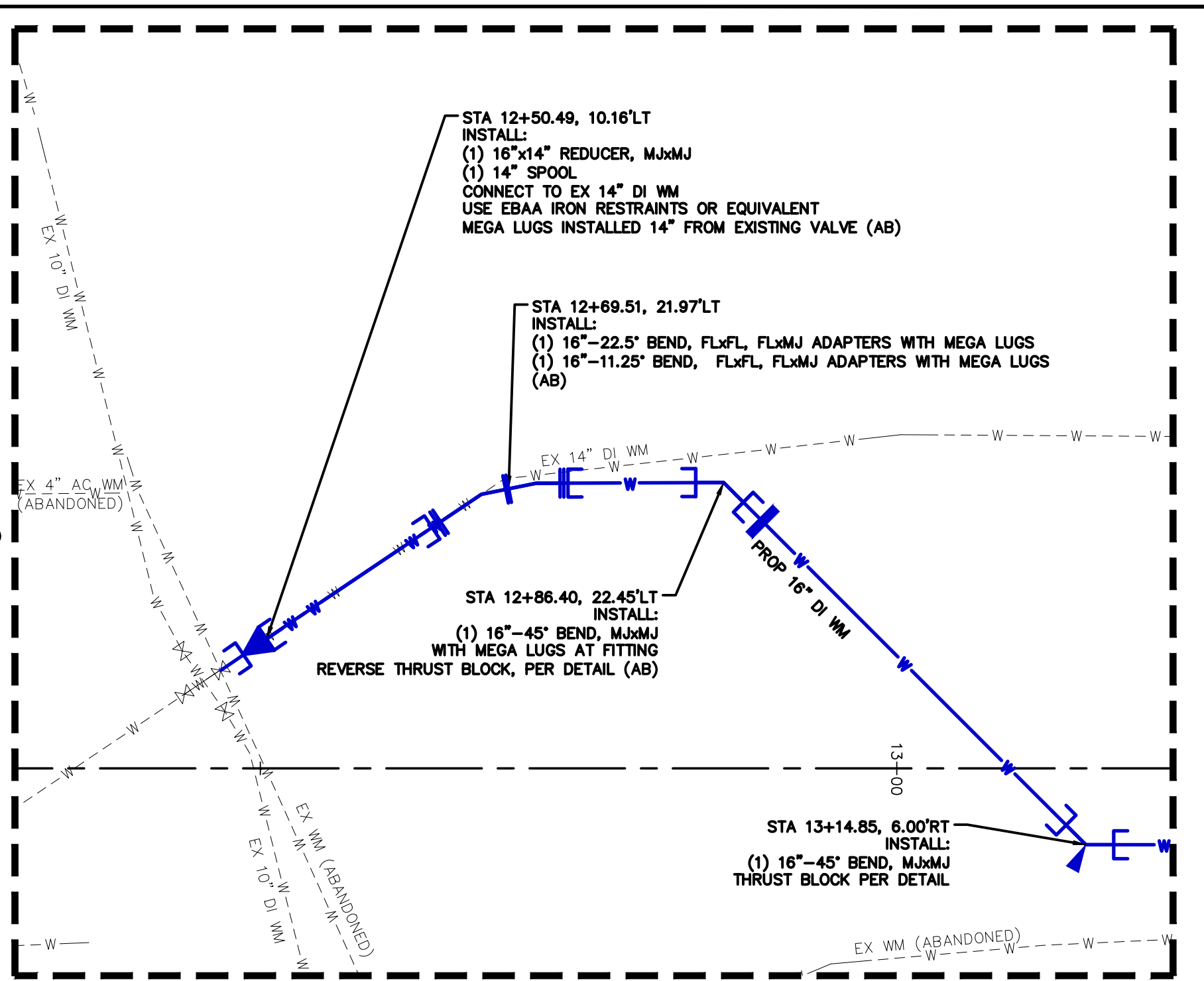
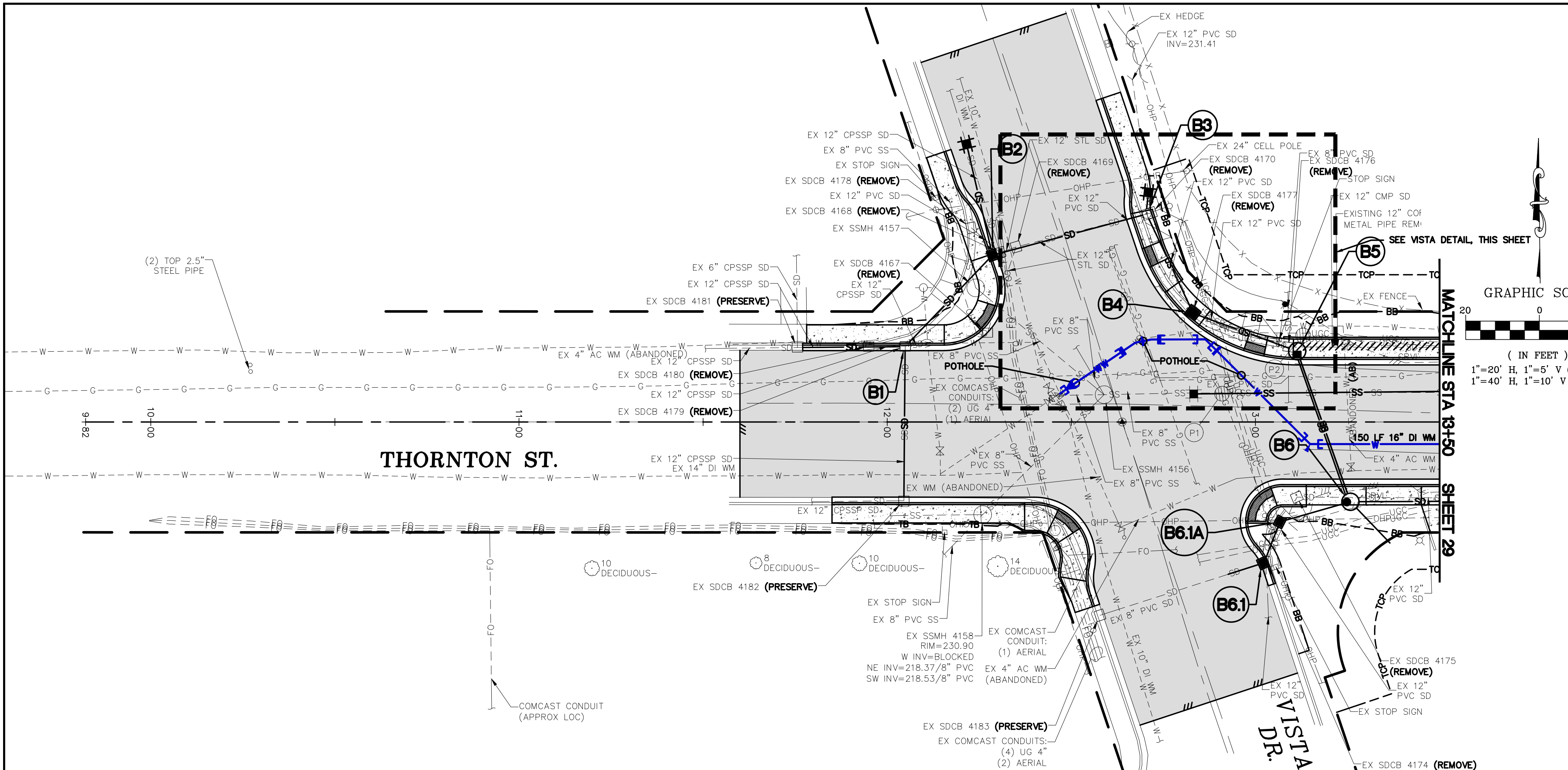
DATE

06/06/23

SHEET

27

of 64



STORM
STRUCTURE NOTES:

EX SDCB 4167 (REMOVE)
RIM=230.35
N INV (IN)=227.72/12" CPSSP
W INV (OUT)=227.45/12" CPSSP

EX SDCB 4168 (REMOVE)
RIM=230.70
E INV (IN)=25TL 9/12" RGS
NW INV (IN)=228.28/12" PVC
N INV (OUT)=228.07/12" CPSSP

EX SDCB 4169 (REMOVE)
RIM=230.78
W INV (OUT)=25TL 10/12" RGS
E INV (OUT)=25TL 3/12" RGS
S INV (OUT)=25TL 16/12" RGS

EX SDCB 4170 (REMOVE)
RIM=231.30
W INV (IN)=227.34/12" PVC
N INV (IN)=227.33/12" PVC
S INV (OUT)=227.44/12" PVC

EX SDCB 4174 (REMOVE)
RIM=231.36
W INV (IN)=227.55/8" PVC
S INV (IN)=227.39/12" PVC
NE INV (OUT)=227.38/12" PVC

EX SDCB 4175 (REMOVE)
RIM=229.83
SW INV (IN)=225.29/12" PVC
E INV (OUT)=225.34/12" PVC

EX SDCB 4176 (REMOVE)
RIM=229.33
W INV (IN)=224.30/12" PVC
N INV (IN)=224.51/8" PVC
S INV (IN)=224.25/8" PVC
E INV (OUT)=224.17/12" CMP

EX SDCB 4177 (REMOVE)
RIM=230.41
N INV (IN)=227.01/12" PVC
E INV (OUT)=226.47/12" PVC

EX SDCB 4178 (REMOVE)
RIM=230.72
SE INV (OUT)=228.45/12" PVC

EX SDCB 4179 (REMOVE)
RIM=230.19
E INV (IN)=227.23/12" CPSSP
W INV (OUT)=227.26/12" CPSSP
S INV (OUT)=227.23/12" CPSSP

EX SDCB 4180 (REMOVE)
RIM=230.04
E INV (IN)=227.18/12" CPSSP
W INV (IN)=227.22/12" CPSSP

STORM
STRUCTURE NOTES:

EX SDCB 4181 (PRESERVE)
RIM=230.11
W INV (IN)=227.26/12" CPSSP
N INV (IN)=227.26/6" CPSSP
E INV (OUT)=227.30/12" CPSSP

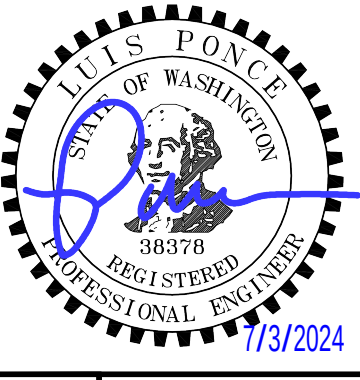
EX SDCB 4182 (PRESERVE)
RIM=229.78
N INV (IN)=226.90/12" CPSSP
W INV (IN)=226.80/12" CPSSP

EX SDCB 4183 (PRESERVE)
RIM=231.41
E INV (OUT)=228.85/8" PVC

POTHOLES			
#	DESCRIPTION	TOP OF PIPE EL.	OWNER
P1	(1) 4" STL GAS	228.29	CNG
P2	(2) 4" PVC CONDUIT	226.28	ZIPLY

NOTE:
1. POTHOLES DATA IS FOR INFORMATIONAL PURPOSES ONLY. POTHOLES DATA IS FROM SURVEY POINTS PROVIDED BY COMPASS POINT SURVEYING ON 10-27-21.
2. CNG DEPTHS WERE MEASURED WITH AN ELECTRIC DEVICE (NOT POTHOLED). INFO PROVIDED ON 10-30-21.
3. PSE DEPTHS WERE POTHOLED ON 03-28-22.
4. ZIPLY DEPTHS WERE POTHOLED ON 05-27-22.
UTILITY POTHOLES LOCATION

NOTE:
1. CONTRACTOR TO POTHOLES AT EACH SPECIFIED LOCATION FIVE (5) WORKING DAYS PRIOR TO PLANNED INSTALLATION TO VERIFY LAYOUT, PIPE LOCATION, DEPTH, SIZE, MATERIAL, AND ALL OTHER ITEMS NEEDED FOR THE CONNECTION.
2. CONTRACTOR SHALL POTHOLES THE WATER CONNECTIONS A MINIMUM OF FIFTEEN (15) WORKING DAYS PRIOR TO A PLANNED WATER SHUT-OFF TO VERIFY LAYOUT, PIPE LOCATION, DEPT, SIZE, MATERIAL, AND ALL OTHER ITEMS NEEDED FOR THE CONNECTION.
3. ALL REVERSE THRUST BLOCKS SHALL BE POURED A MINIMUM OF FIVE (5) DAYS PRIOR TO A PLANNED CONNECTION.



5/22/24

AS-BUILT

DESIGNED BY
JAM/LMH

DRAWN BY
JAM/LMH

CHECKED BY
LP

R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

NO.	DATE	DESCRIPTION	BY

CITY OF FERDALE
2095 MAIN ST
FERDALE, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE

WATER PLAN - STA 10+00 TO 13+50

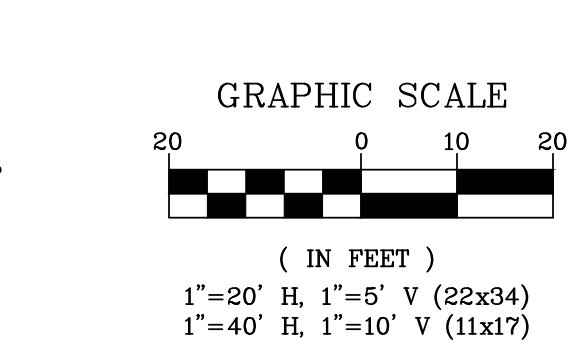
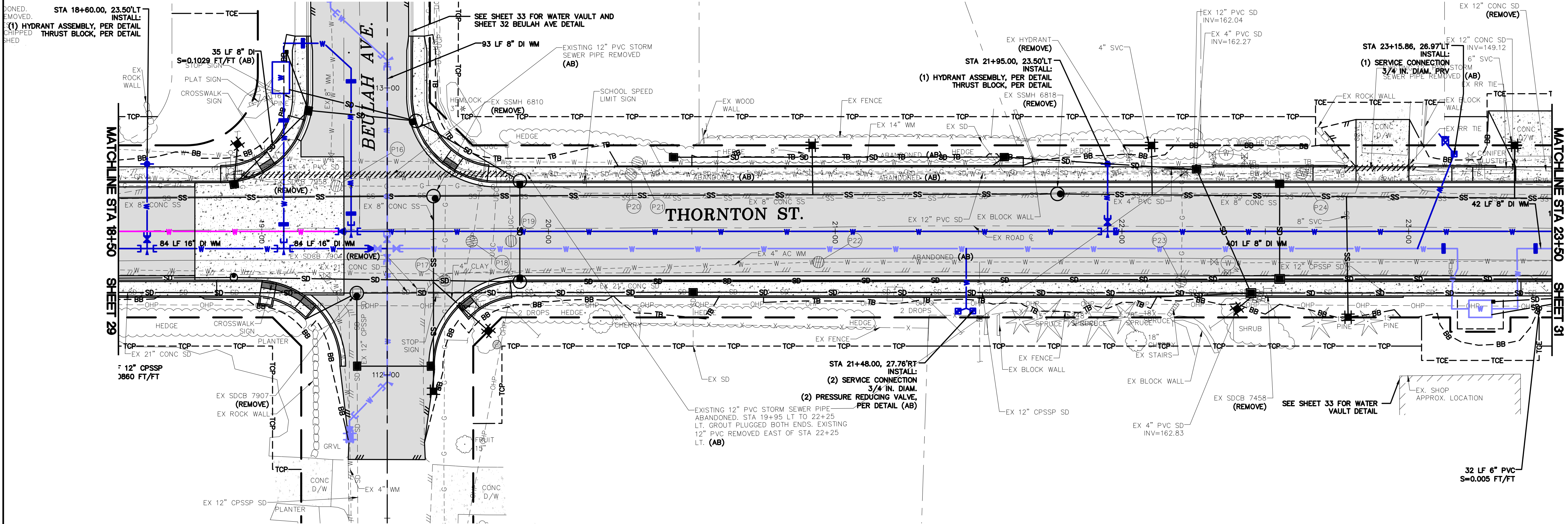
DWG 19025 WATER

JOB# 19025

SCALE H: 1"=20' V: 1"=5'

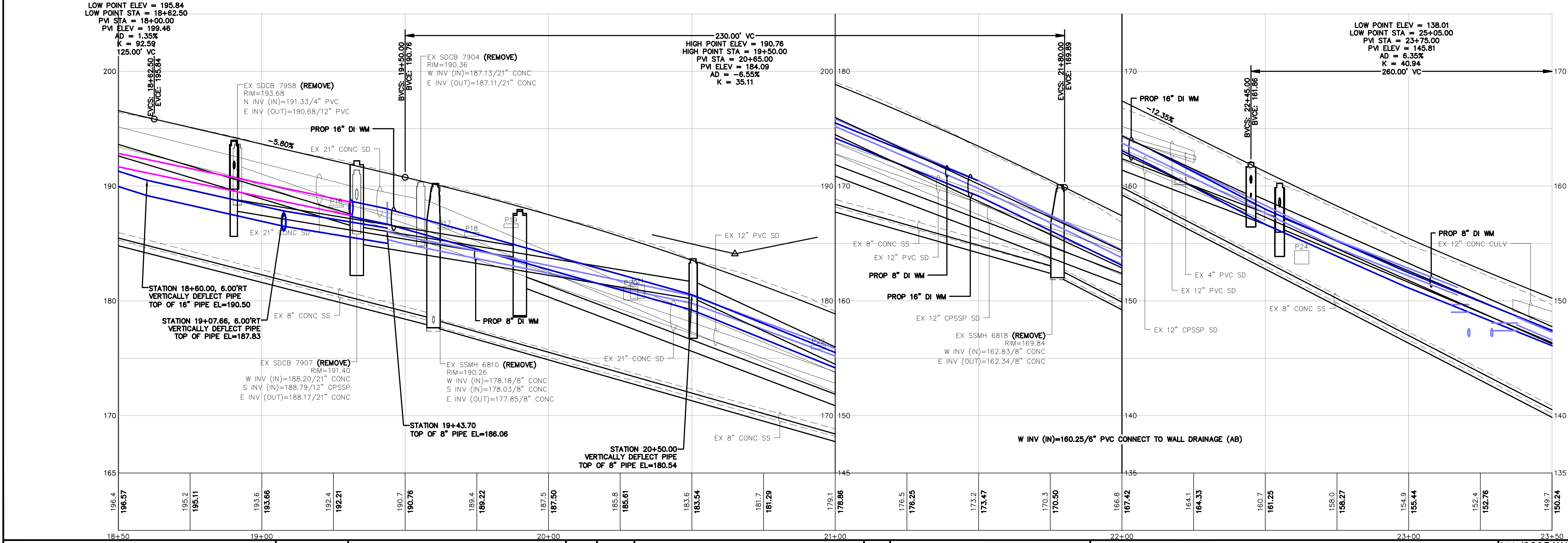
DATE 06/06/23

SHEET 28 of 64



- NOTE:
- CONTRACTOR TO POTHOLE AT EACH SPECIFIED LOCATION FIVE (5) WORKING DAYS PRIOR TO PLANNED INSTALLATION TO VERIFY LAYOUT, PIPE LOCATION, DEPTH, SIZE, MATERIAL, AND ALL OTHER ITEMS NEEDED FOR THE CONNECTION.
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NOTE:
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POTHOLES				
#	DESCRIPTION	TOP OF PIPE EL	OWNER	
P16	(1) 2" STL GAS	188.34	CNG	
P17	(1) 2" STL GAS	186.42	CNG	
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P20	(1) 14" DI WM	181.25	COF	
P21	(1) 14" DI WM	181.39	COF	
P22	(1) 4" AC WM	176.14	COF	
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P24	(1) 14" DI WM	154.37	COF	

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 - PSE DEPTHS WERE POTHOLED ON 03-28-22.
 - ZIPLY DEPTHS WERE POTHOLED ON 05-27-22.

UTILITY POTHOLE LOCATION



5/22/24

AS-BUILT

DESIGNED BY
JAM/LMH

DRAWN BY
JAM/LMH

CHECKED BY
LP

R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

NO.	DATE	DESCRIPTION	BY

CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE
WATER PLAN - STA 18+50 TO 23+50

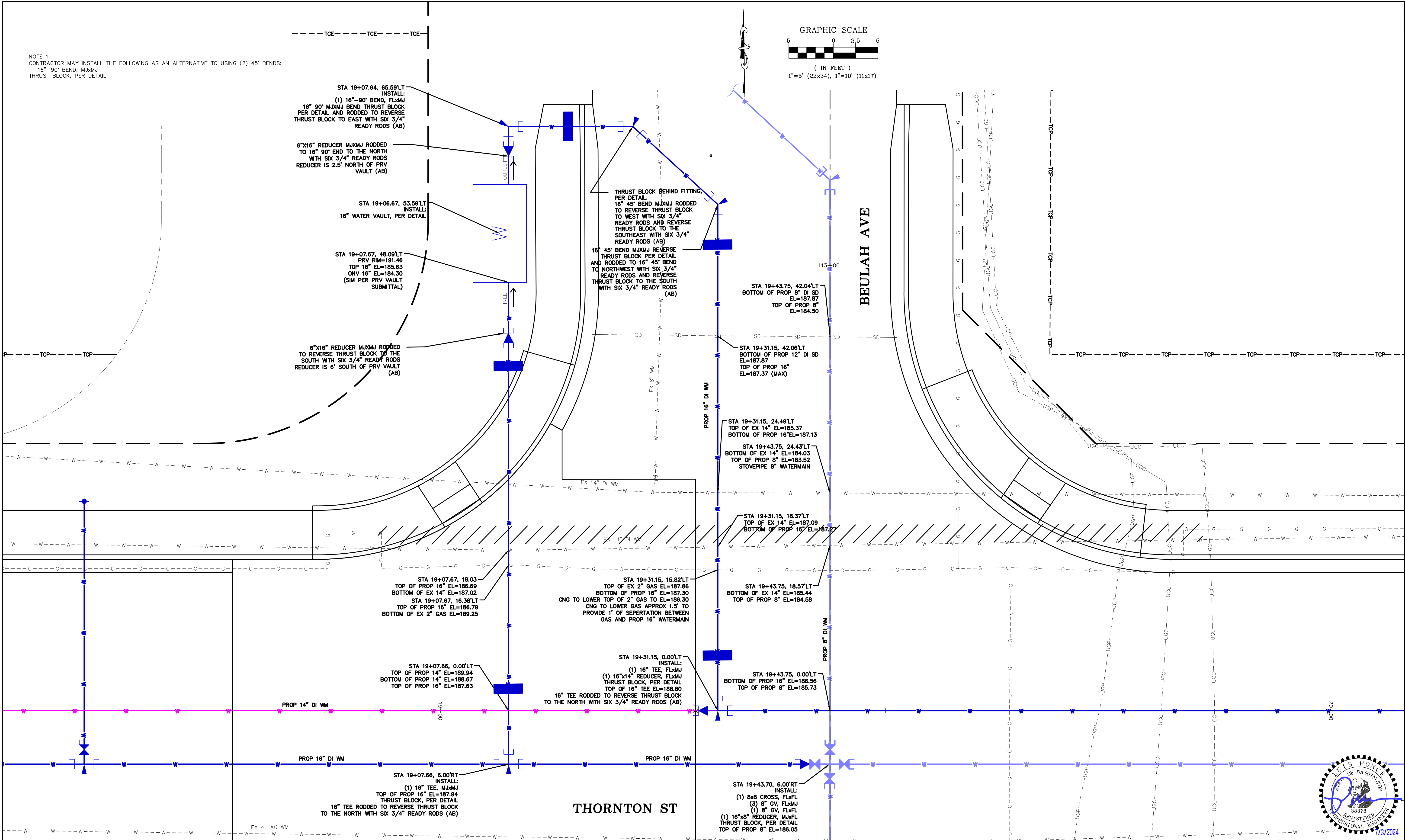
DWG 19025 WATER

JOB# 19025

SCALE H: 1"=20' V: 1"=5'

DATE 06/06/23

SHEET 30 of 64



5/22/24
AS-BUILT

DESIGNED BY
JAM/LMH
DRAWN BY
JAM/LMH
CHECKED BY
LP

R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

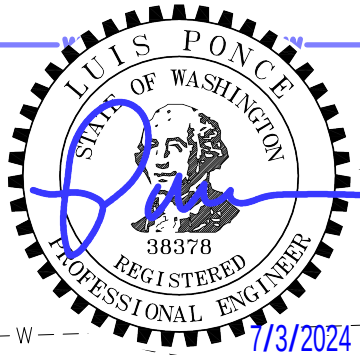
REV08	6/21/23	REVISION No. 08 - PRV SD DRAINAGE	LP
REV06	6/6/23	REVISION No. 06 - WATER MAIN FILL LINE REVISION	LP
NO.	DATE	DESCRIPTION	BY

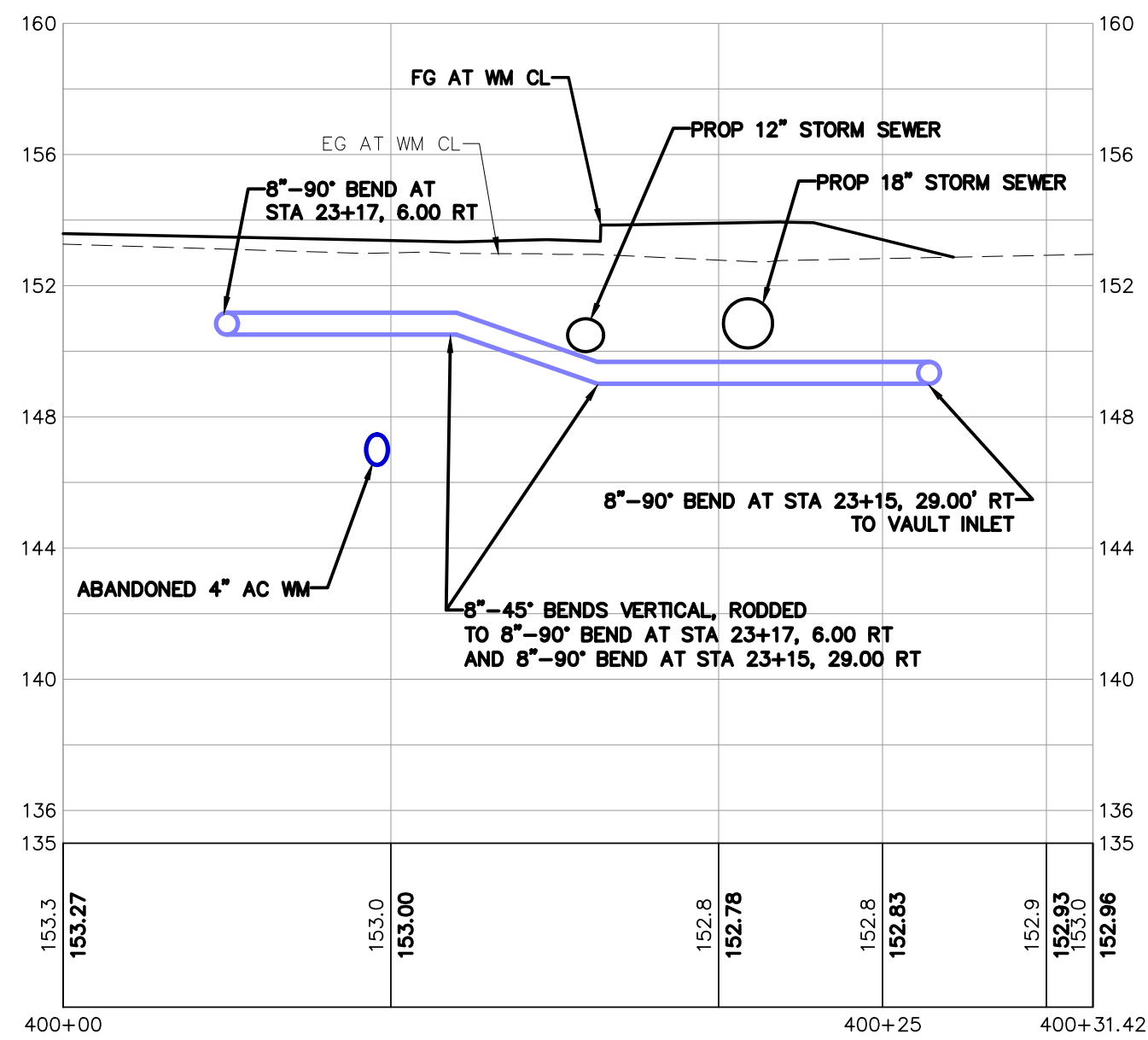
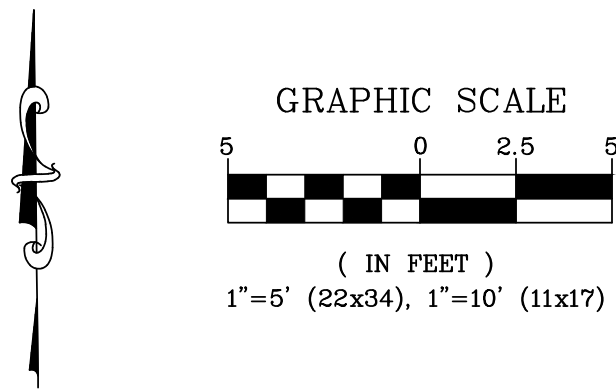
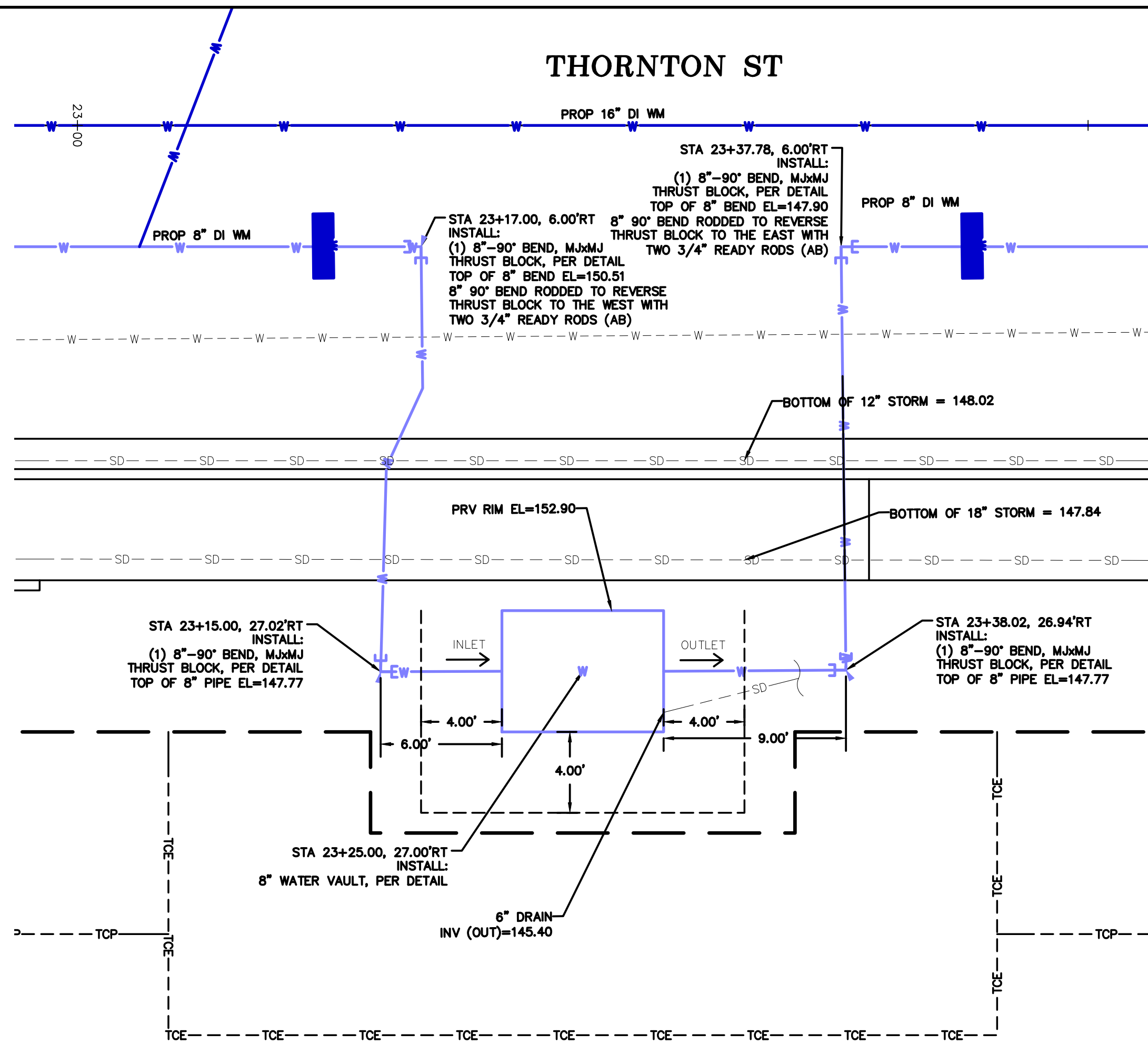
CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE
WATER VAULT BEULAH AVE

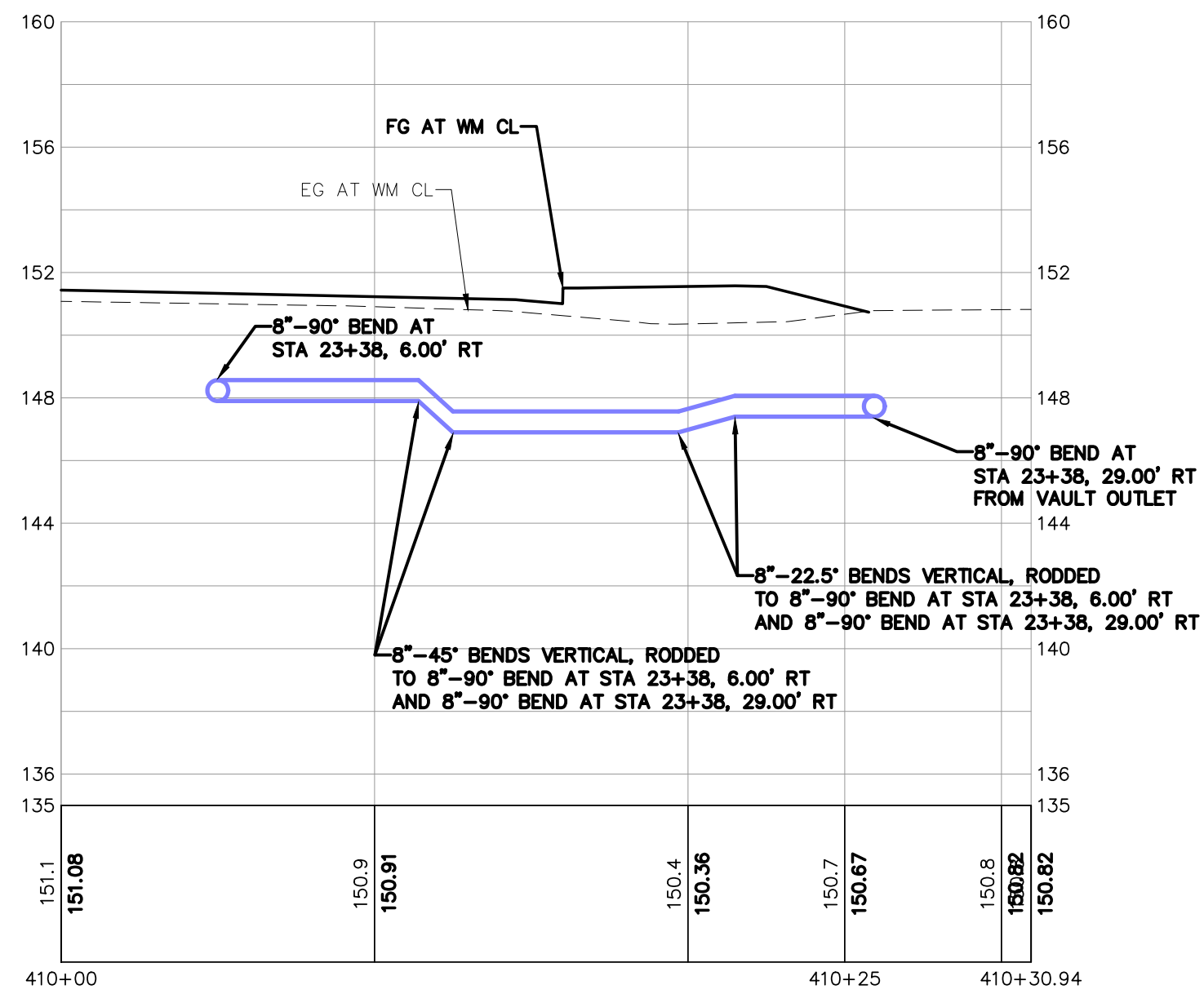
DWG 19025 WATER
JOB# 19025
SCALE H: 1"=5' v: N/A

DATE 06/21/23
SHEET 33
of 64

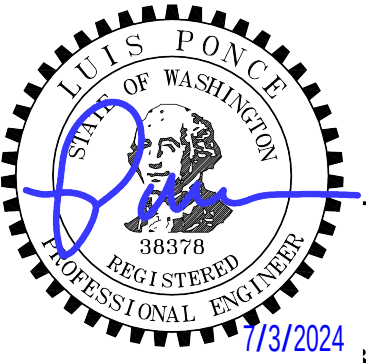




WEST SIDE OF VAULT PIPE PROFILE



EAST SIDE OF VAULT PIPE PROFILE



5/22/24
AS-BUILT

DESIGNED BY
JAM/LMH
DRAWN BY
JAM/LMH
CHECKED BY
LP

R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

REV	DATE	DESCRIPTION	BY
REV08	6/21/23	REVISION No. 08 - PRV SD DRAINAGE	LP
REV06	6/6/23	REVISION No. 06 - WATER MAIN FILL LINE REVISION	LP
NO.	DATE	DESCRIPTION	BY

CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE
WATER VAULT THORNTON

DWG	19025 WATER	DATE	06/21/23
JOB#	19025	SCALE	H: 1"=5' V: N/A
SHEET	33A	of 64	

NOTE:

- CARSON HEAVYWALL MODEL 1527BCF OR APPROVED EQUAL WITH DUCTILE LID
- METER BOXES LOCATED WITHIN THE SIDEWALK SHALL AT A MINIMUM BE A NON-SKID POLYMER LID, WITH 2" HOLE AS SHOWN BELOW AND SHALL HAVE A COEFFICIENT OF FRICTION OF 0.96 DRY AND 0.88 WET BASED ON TEST METHOD ASTM C-1028

3/4" AND 1" WATER METER BOX
NTS

NOTE:

- CARSON HEAVYWALL MODEL 1730BCF OR APPROVED EQUAL WITH DUCTILE LID
- METER BOXES LOCATED WITHIN THE SIDEWALK SHALL AT A MINIMUM BE A NON-SKID POLYMER LID, WITH 2" HOLE AS SHOWN BELOW AND SHALL HAVE A COEFFICIENT OF FRICTION OF 0.96 DRY AND 0.88 WET BASED ON TEST METHOD ASTM C-1028

2" WATER METER BOX
NTS

ELBOW

TO BE FORMED AS PER DEPTH DIMENSION

PLAN VIEW

SECTION VIEW

100 P.S.I. OPERATING PRESSURE

SIZE	11 1/4"	22 1/2"	45"	90"
6"	1'-0"	1'-0"	1'-0"	1'-6"
8"	1'-3"	1'-3"	1'-3"	2'-3"
10"	1'-9"	1'-9"	1'-9"	3'-0"
12"	2'-0"	2'-0"	2'-0"	4'-0"
16"	2'-9"	2'-9"	2'-9"	5'-0"
20"	3'-6"	3'-6"	3'-6"	6'-0"
24"	4'-6"	4'-6"	4'-6"	7'-0"

TEE

TO BE FORMED AS PER DEPTH DIMENSION

PLAN VIEW

SECTION VIEW

250 PSI TEST PRESSURE, 2000 PSF SAFE BEARING LOAD

SIZE	WIDTH	DEPTH
6"	1'-10"	1'-10"
8"	2'-6"	2'-6"
10"	3'-4"	3'-0"
12"	4'-3"	3'-4"
16"	6'-4"	4'-0"
20"	7'-10"	5'-0"
24"	9'-5"	6'-0"

REVERSE THRUST BLOCK

UNDISTURBED EARTH

PLAN VIEW

SECTION VIEW

"D"	WIDTH	DEPTH	LENGTH	*VOL.	# OF RODS	ROD DIA.
6"	1'-6"	1'-6"	12"	7.5	2	3/8"
8"	2'-0"	2'-0"	18"	20.0	2	3/8"
10"	2'-6"	2'-6"	24"	37.5	2	3/8"
12"	2'-9"	2'-9"	24"	44.0	4	3/8"
16"	4'-0"	5'-0"	24"	120	6	3/4"
20"						
24"						

*VOL. = Approx. Volume of Blocking Material Required in cu. ft.
RODS: A36 STEEL MINIMUM

4-WAY CROSS

TRENCH WALL UNDISTURBED EARTH

PLAN VIEW

SECTION VIEW

SIZE	WIDTH	DEPTH
6"	1'-0"	1'-0"
8"	1'-3"	1'-3"
10"	1'-6"	1'-6"
12"	1'-9"	1'-9"
16"	2'-3"	2'-6"
20"	2'-6"	3'-0"
24"	3'-0"	4'-0"

250PSI TEST PRESSURE, 2000 PSF SAFE BEARING LOAD

MODIFIED

NOVEMBER 23, 2016

THRUST BLOCKING
DETAIL
STANDARD DETAIL W-2
NOT TO SCALE

APPROVED

Public Works Director

8/11/17

Date

EXISTING OR PROPOSED NON-POTABLE PIPE

1/2 PIPE LENGTH, 9' MIN

PIPE BELL/JOINT, TYP.

18" MIN

PROPOSED 12" DI WM (TYP.)
USE FULL PIPE LENGTH
CENTERED ON CROSSING PIPE

NOTES:
SURROUND PIPELINES W/ 6" CONTROLLED DENSITY FILL WHEN 18" SEPARATION IS NOT ACHIEVED.
CENTER FULL PIPE LENGTH FOR CROSSING ABOVE OR BELOW NON-POTABLE PIPE.

WATERMAIN CROSSING
NON-POTABLE PIPE
NTS

LUIS PONCE
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER
38378
7/3/2024

5/22/24

AS-BUILT

DESIGNED BY
JAM/LMH
DRAWN BY
JAM/LMH
CHECKED BY
LP

R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

NO.	DATE	DESCRIPTION	BY

CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE

WATER DETAILS 1

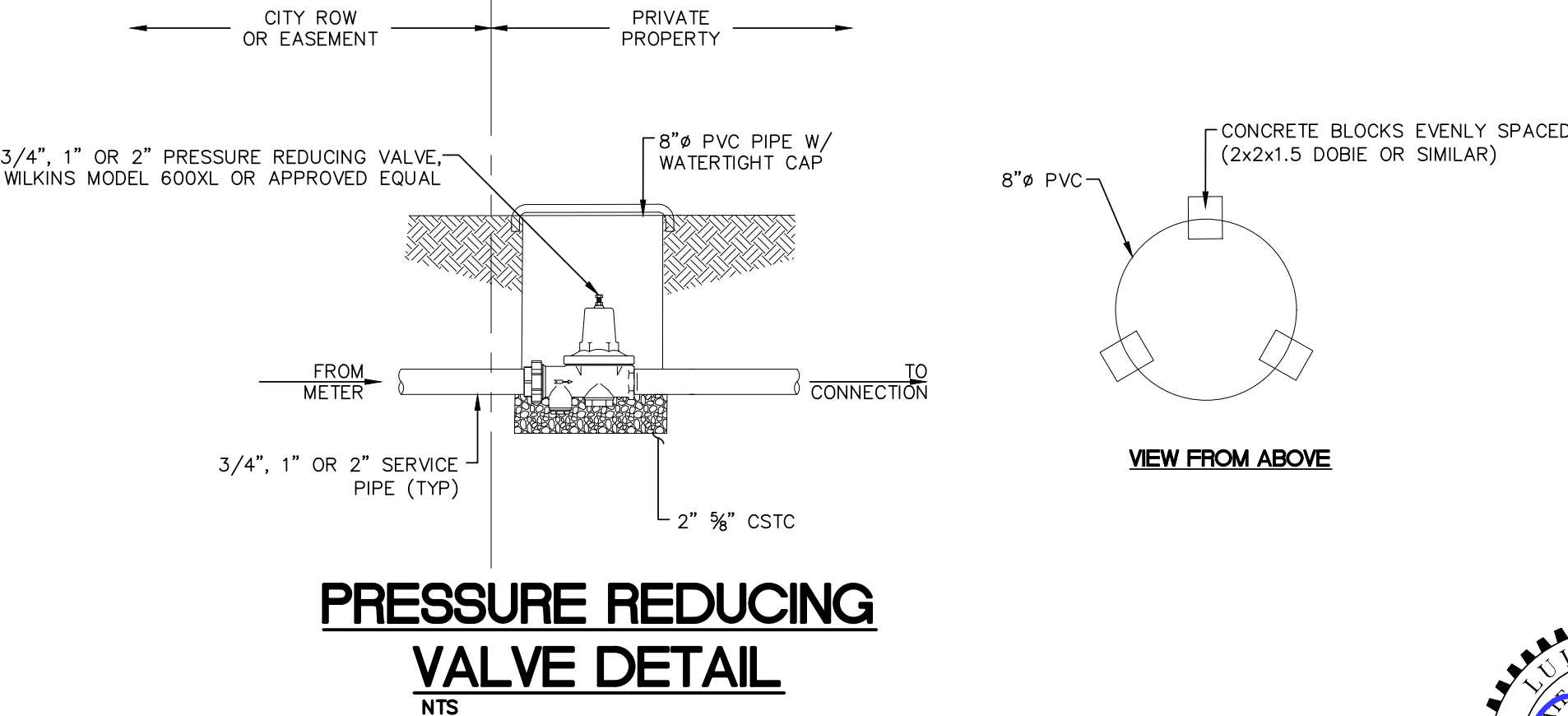
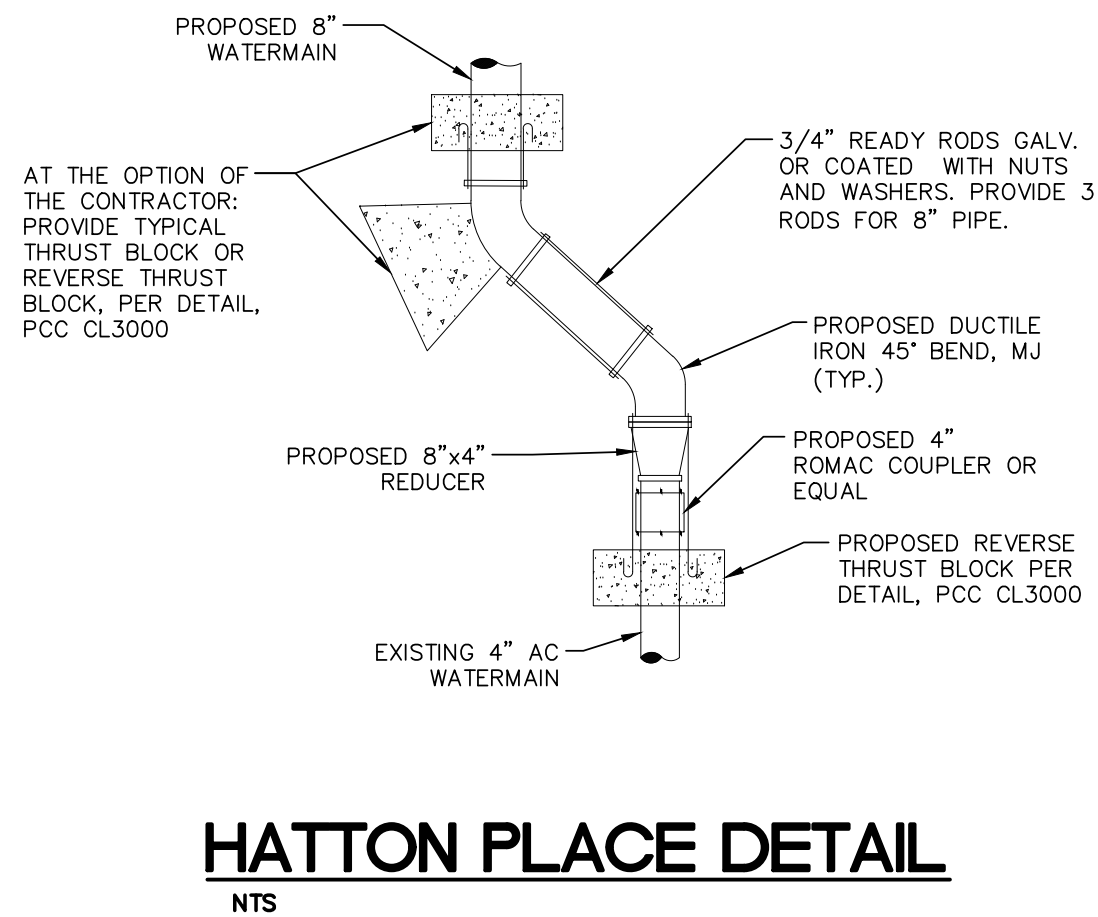
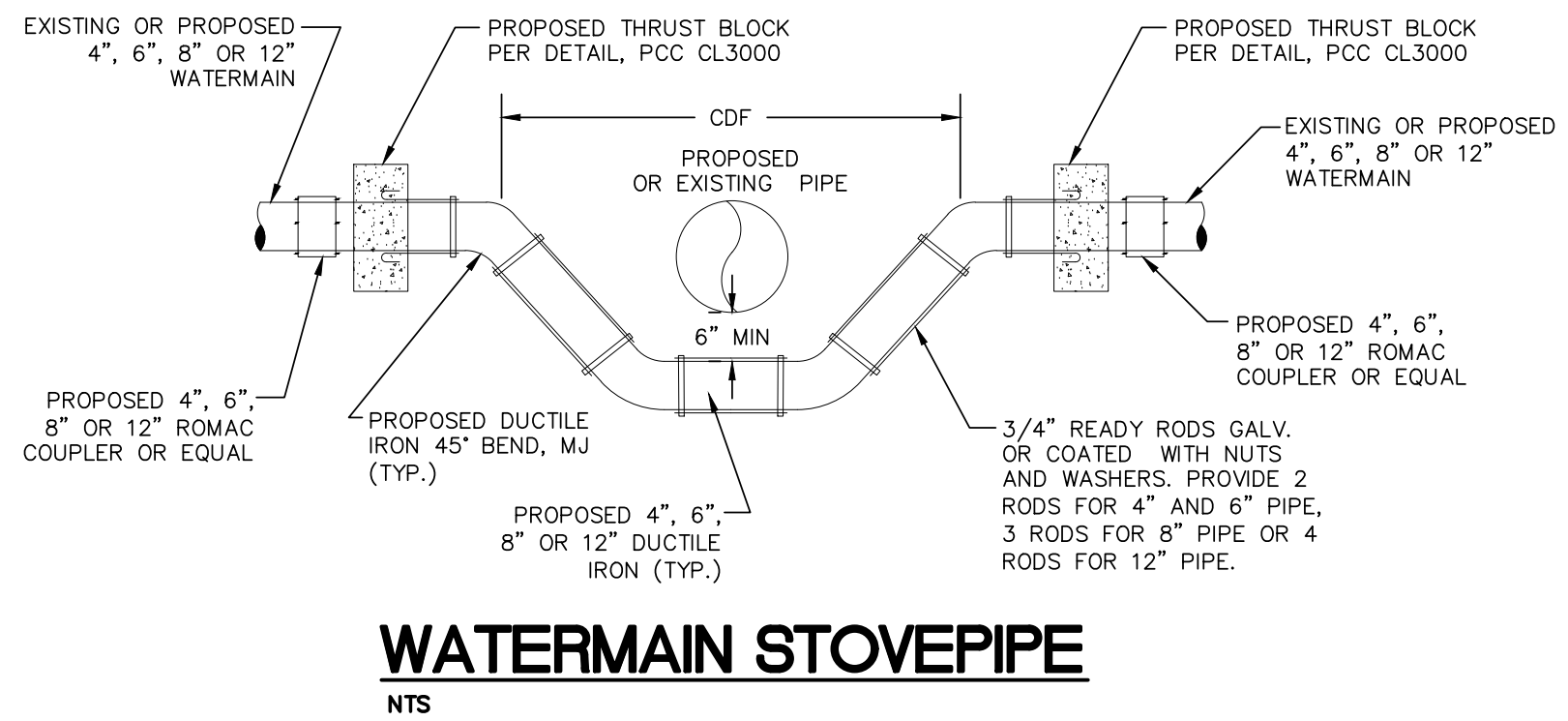
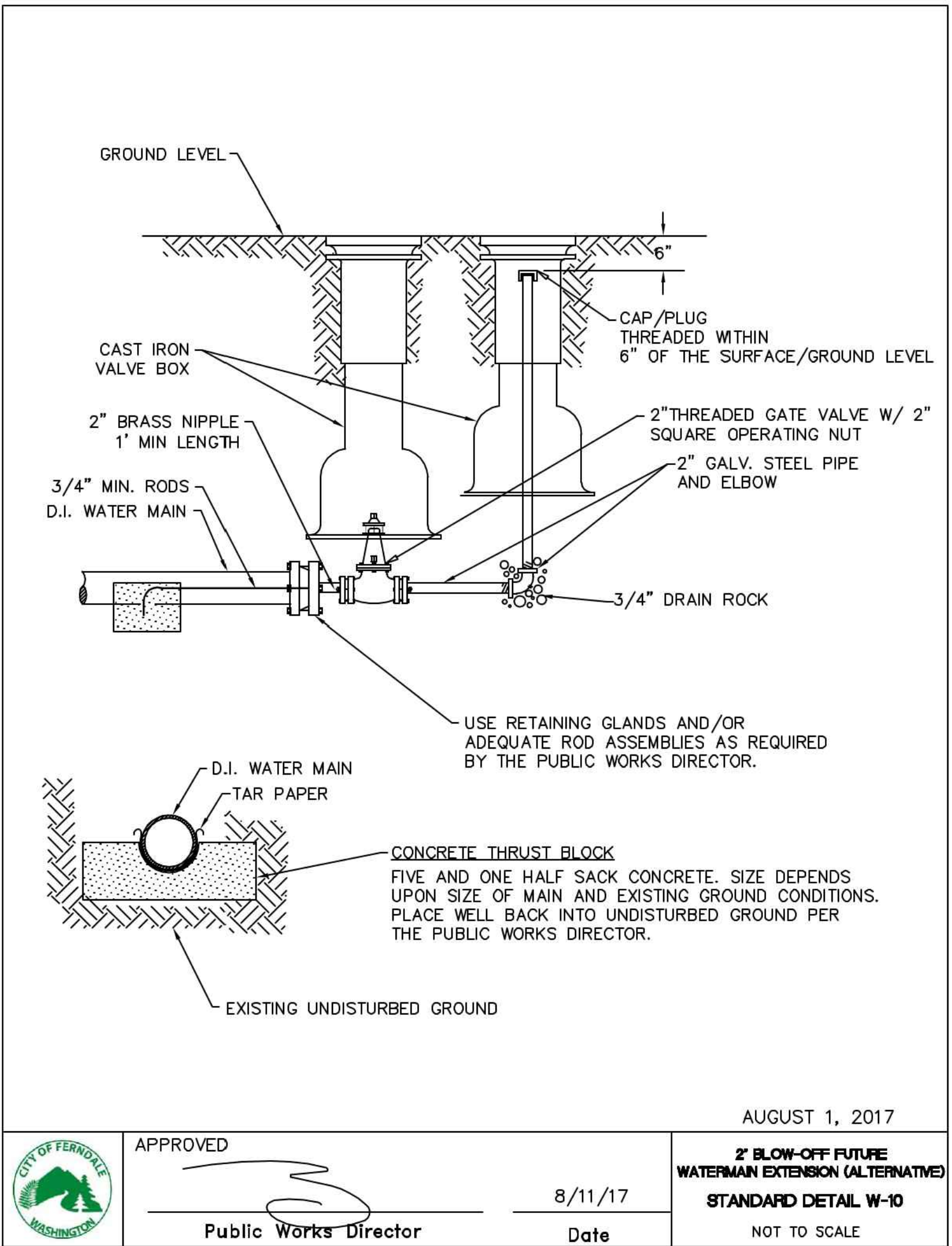
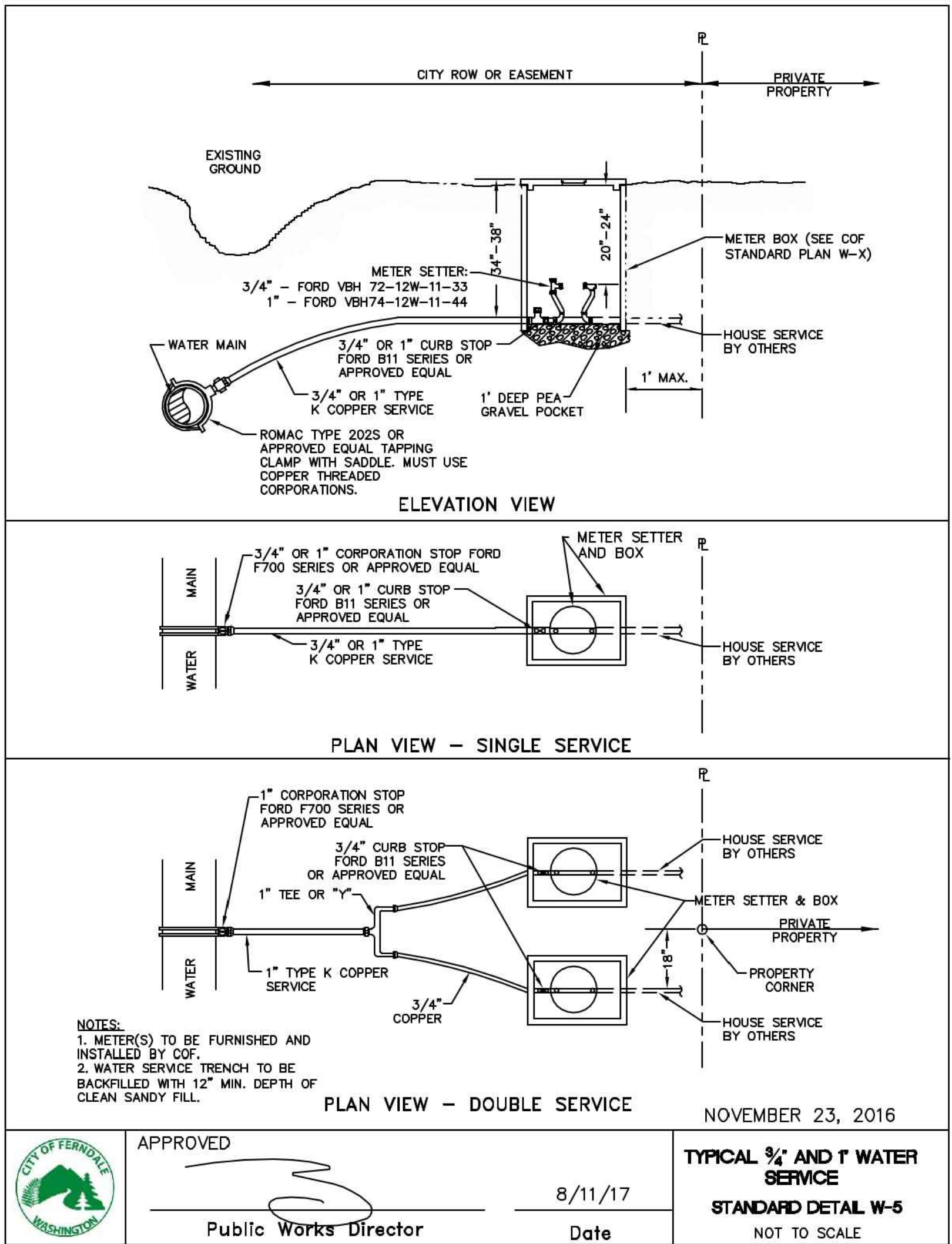
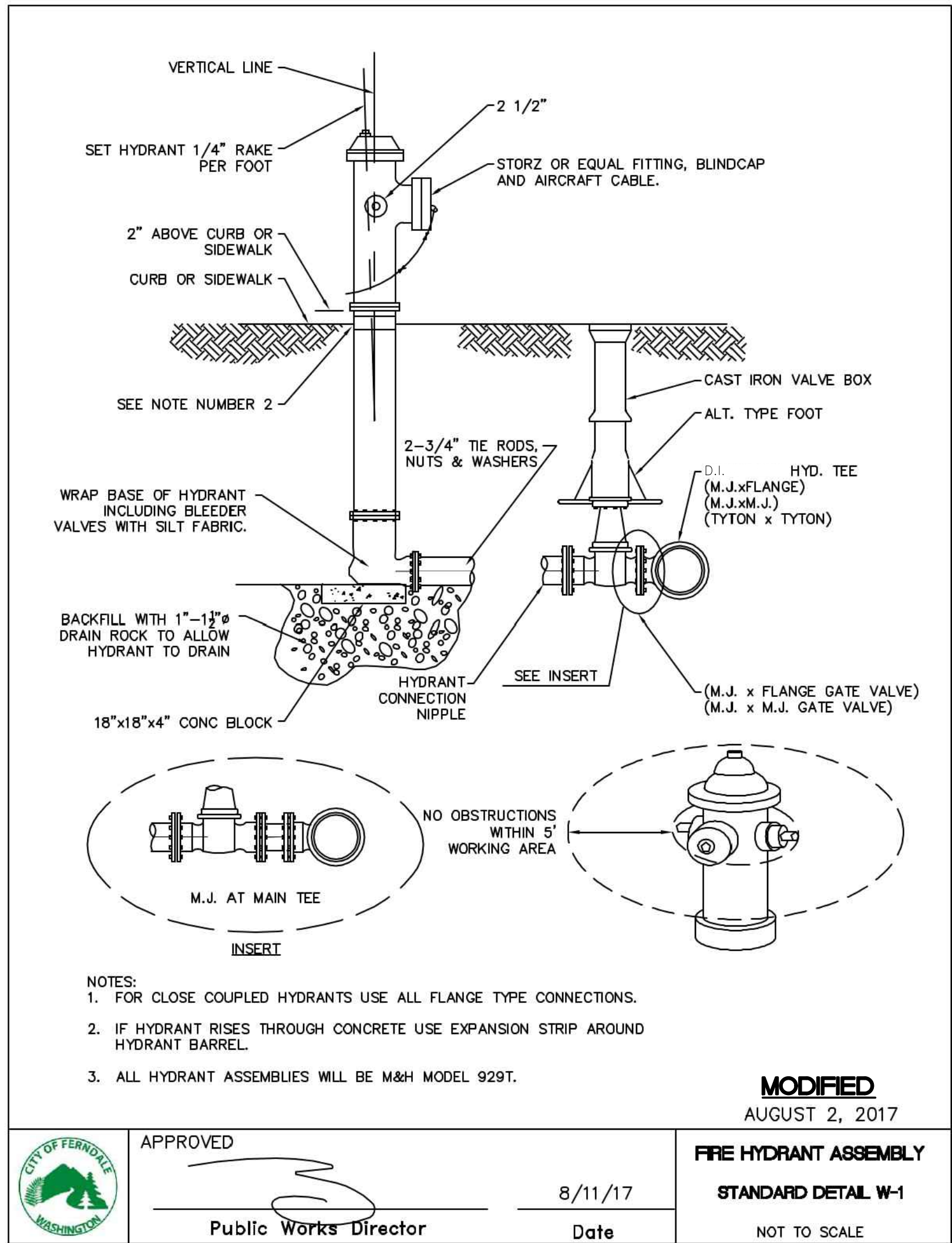
DWG 19025 DETAILS

JOB# 19025

SCALE H: N/A V: N/A

DATE 5/22/24

SHEET 34 of 64



5/22/24
AS-BUILT

DESIGNED BY
JAM/LMH
DRAWN BY
JAM/LMH
CHECKED BY
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P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

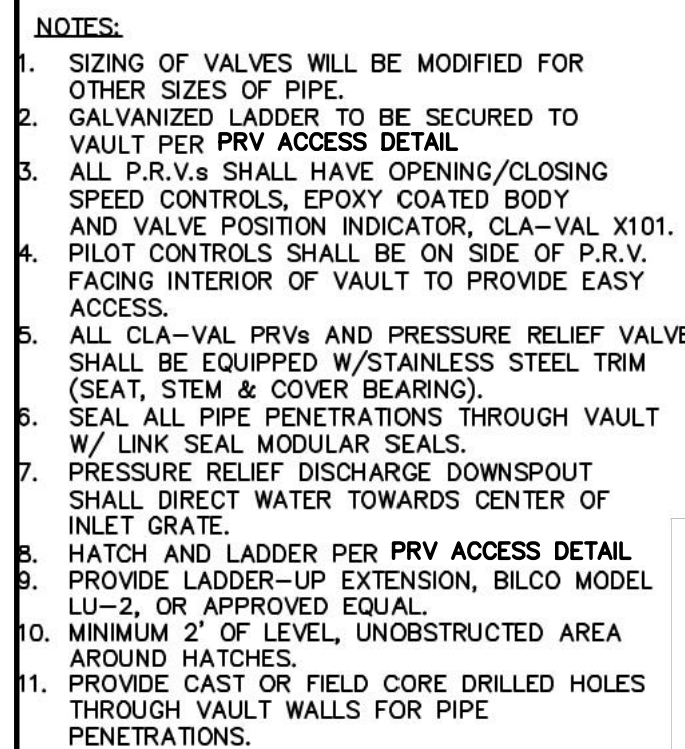
NO.	DATE	DESCRIPTION	BY
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CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

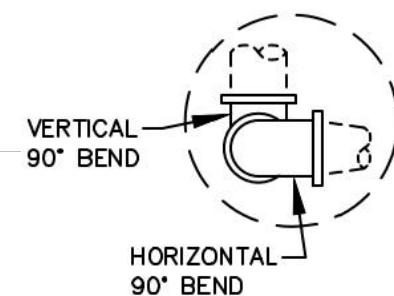
THORNTON STREET - VISTA TO MALLOY AVENUE
WATER DETAILS 2

DWG 19025 DETAILS
JOB# 19025
SCALE H: N/A V: N/A

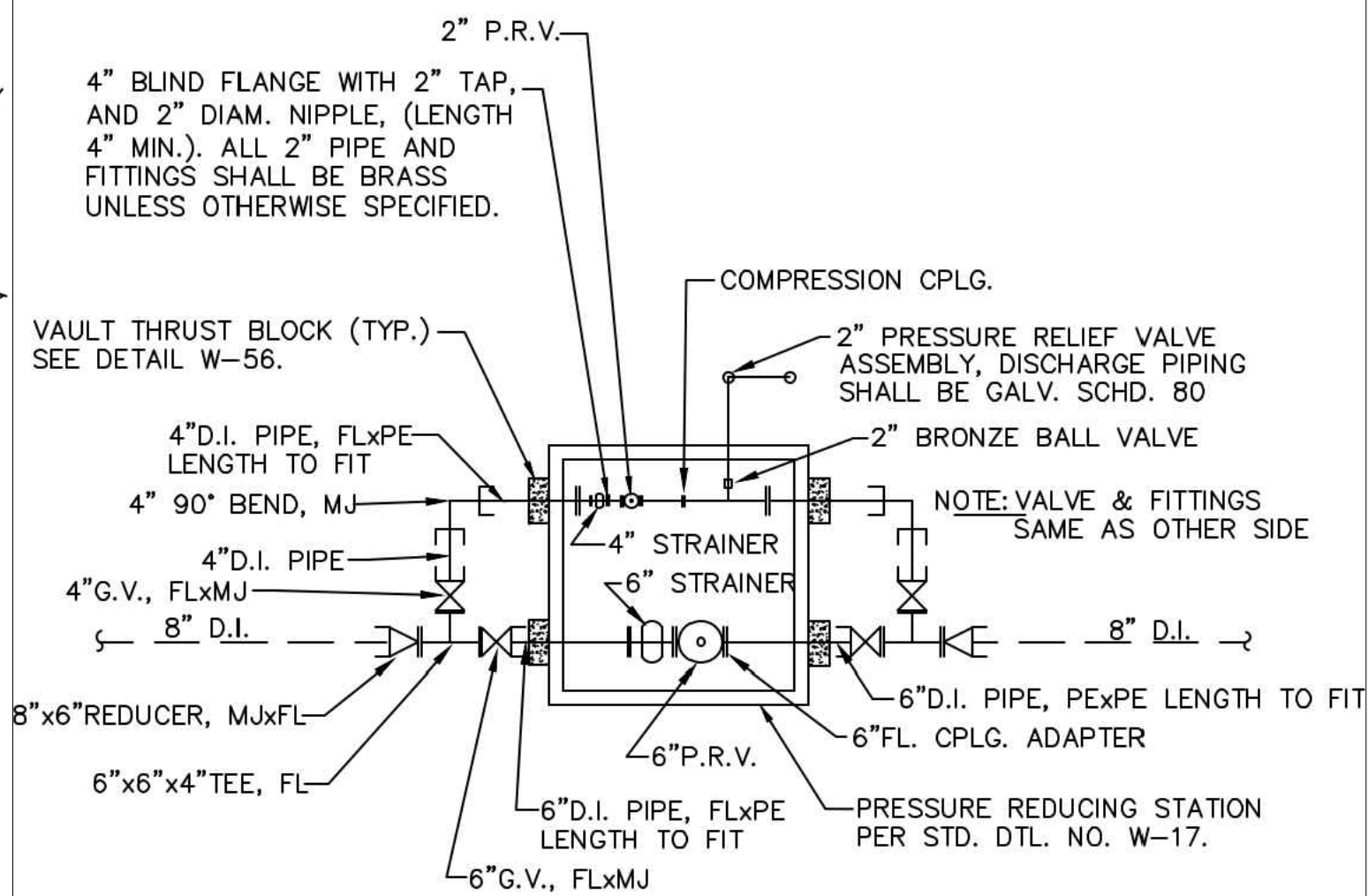
DATE 5/22/24
SHEET 35 of 64



NTS

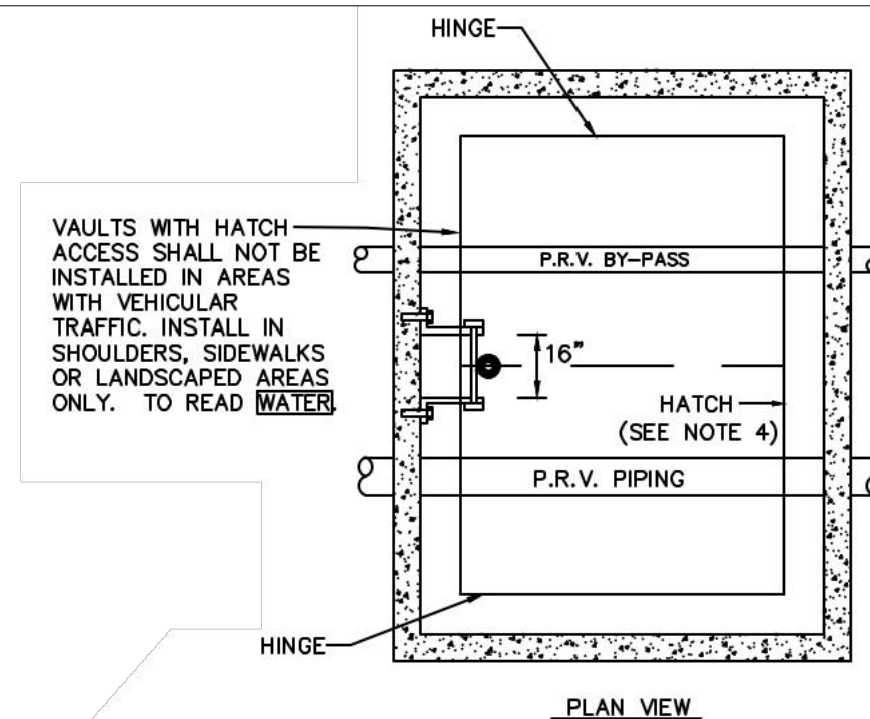


NTS



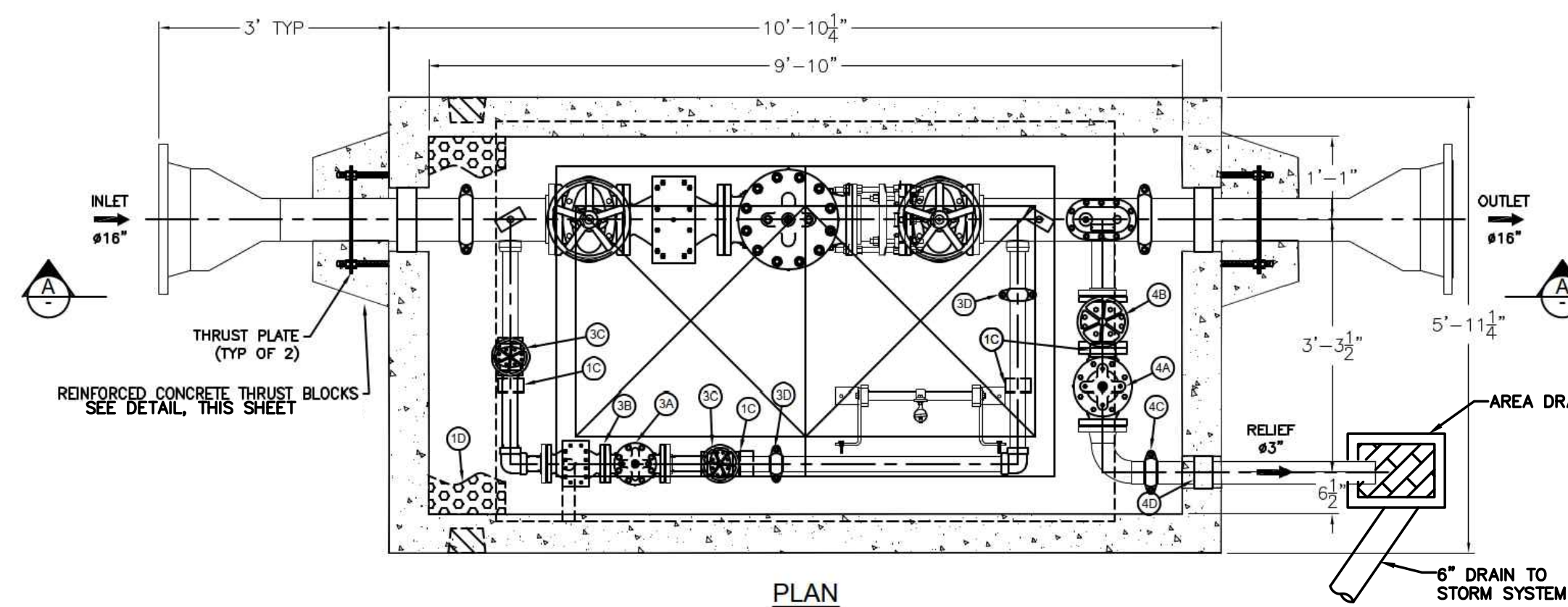
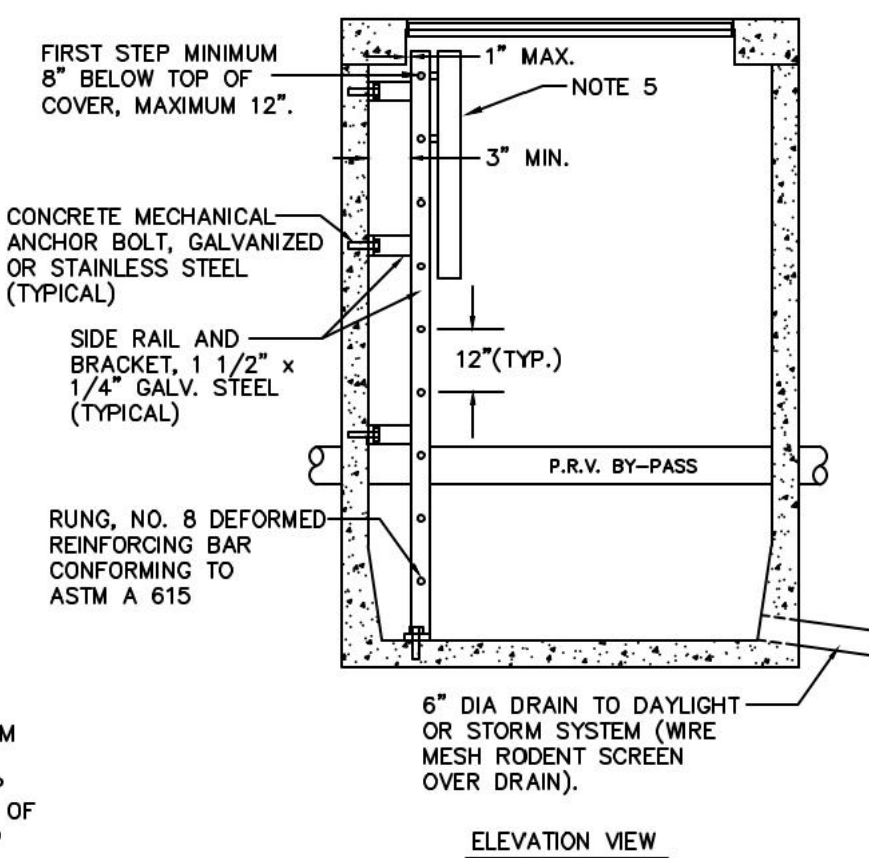
NTS

- NOTES:
1. SIZING OF VALVES WILL BE MODIFIED FOR OTHER SIZES OF PIPE.
 2. GALVANIZED LADDER TO BE SECURED TO VAULT PER STD. DTL. NO. W-19.
 3. ALL P.R.V.s SHALL HAVE OPENING/CLOSING SPEED CONTROLS, EPOXY COATED BODY AND VALVE POSITION INDICATOR, CLA-VAL X101.
 4. PILOT CONTROLS SHALL BE ON SIDE OF P.R.V. FACING INTERIOR OF VAULT TO PROVIDE EASY ACCESS.
 5. SEAL ALL PIPE PENETRATIONS THROUGH VAULT W/ LINK SEAL MODULAR SEALS.
 6. D.I. PIPING TO BE CLASS 52.

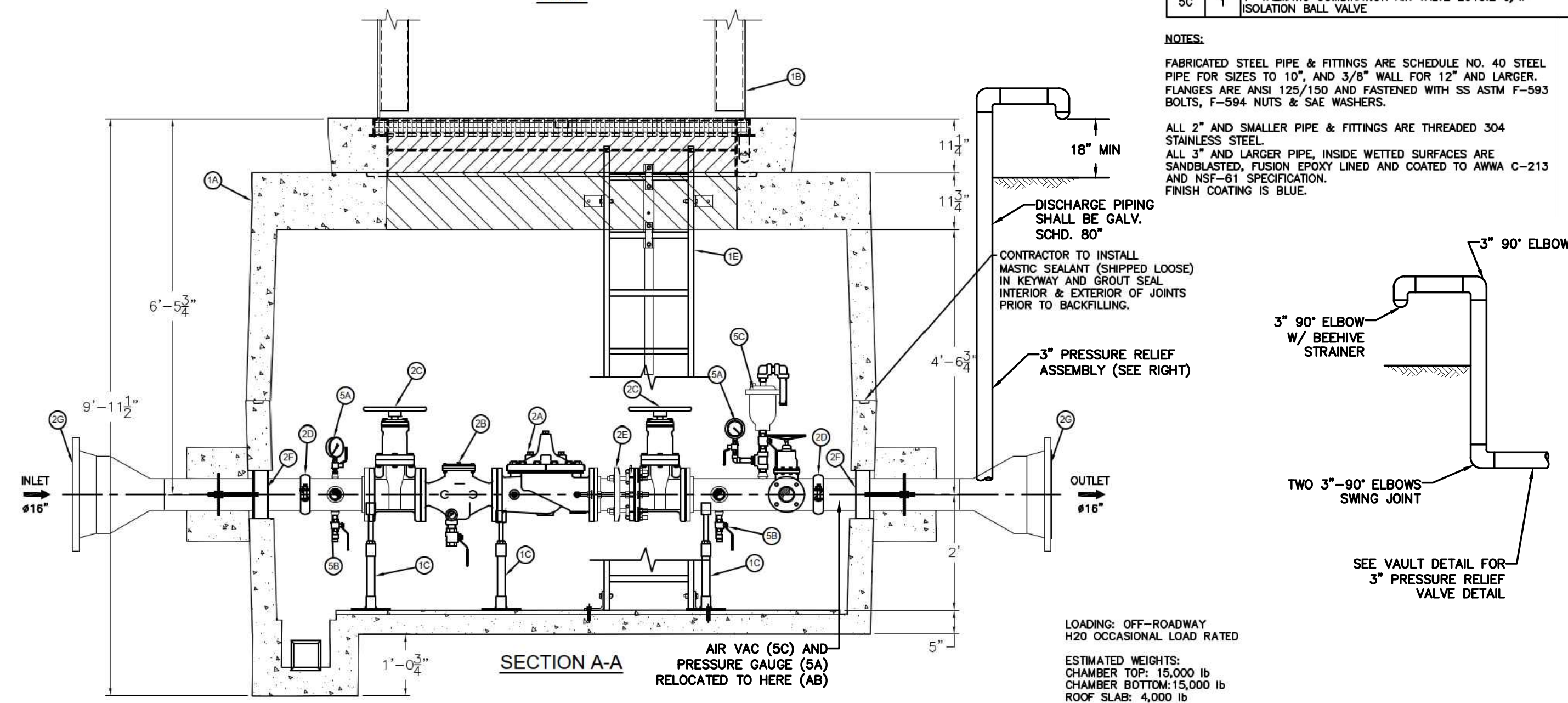


NT

- NOTES:**
1. LADDER TO BE SECURED TO VAULT WALL AT 3 LOCATIONS, ONE AT THE TOP, MIDDLE AND BOTTOM.
 2. ALL LADDER PARTS TO BE GALVANIZED CONFORMING TO ASTM A 123
 3. LOCATE PRESSURE RELIEF DRAIN OUTSIDE PEDESTRIAN AND TRAFFIC AREAS.
 4. ACCESS HATCH SHALL BE LOCKING ALUMINUM LU PRODUCTS HHD 48"x60" DOUBLE DOOR MODEL RATED FOR H-30 LOADING WITH SLIP RESISTANT TREATMENT PER SECTION W4-17 OF THE ENGINEERING STANDARDS OR APPROVED EQUAL. HATCHES SHALL INCLUDE RECESSED CONTACT HASPS DESIGNED TO ACCEPT CITY OF BOSTON WATER DEPARTMENT PADLOCKS (ADDOCK LU PRODUCTS).
 5. LADDER-UP ATTACHMENT REQUIRED ON ALL VAULT LADDERS. BILCO MODEL LU-2, OR APPROVED EQUAL.
 6. MANHOLE LID IS OPTIONAL. ONLY WHEN STATION COVER IS LOCATED IN TRAFFIC.
 7. DRAIN HATCH GUTTER DRAIN TO EXISTING CB OR DAYLIGHT.



NTS



NTS

BILL OF MATERIALS		
ITEM	QTY	DESCRIPTION
1A	1	3152 PRECAST CONCRETE CHAMBER c/w WHITE INTERIOR & BLACK EXTERIOR COATINGS
1B	1	1212 ROOF SLAB 12' X 12' ALUMINUM HATCH CAST IN (H2O OCCASIONAL, OFF-ROAD LOADING)
1C	7	ADJUSTABLE GALV STEEL SADDLE STYLE PIPE STAND
1D	1	ALUMINUM LADDER c/w RETRACTABLE SAFETY POST (SHIPPED LOOSE)
1E	1	ALUMINUM SUMP GRATE
2A	1	6" CLA-VAL 90G-01 BCSVYK PRESSURE REDUCING VALVE c/w X101 POSITION INDICATOR, DISST, 150# FLANGED, CRD 18-75 psi
2B	1	6" CLA-VAL X43H STRAINER c/w BLOWDOWN
2C	2	6" MUELLER NRS GATE VALVE c/w HANDWHEEL
2D	2	6" SHURJOINT ZOT COUPLING
2E	1	6" ROBAR DISASSEMBLY JOINT
2F	2	LINK SEAL ASSEMBLY FOR 6" STEEL PIPE, LS-475
2G	2	16" RF WELD NECK ANSI 150 FLANGE WELDED TO 16" SCH 40 CONCENTRIC REDUCER
3A	1	6" CLA-VAL 90G-01 BCSVYK PRESSURE REDUCING VALVE c/w X101 POSITION INDICATOR, DISST, 150# FLANGED, CRD 18-75 psi
3B	2	6" CLA-VAL X43H STRAINER c/w BLOWDOWN
3C	2	6" MUELLER NRS GATE VALVE, THREADED c/w HANDWHEEL
3D	2	6" SHURJOINT ZOT COUPLING
4A	1	3" CLA-VAL 50G-01 BKC PRESSURE REDUCING VALVE, DISST, CRD 0-75psi, W/X101
4B	1	3" MUELLER NRS GATE VALVE c/w HANDWHEEL
4C	1	3" SHURJOINT ZOT COUPLING
4D	1	LINK SEAL ASSEMBLY FOR 3" STEEL PIPE, LS-300
5A	1	3/4" PRESSURE GAUGE c/w ISOLATION VALVE INLET 0-150 PSI, OUTLET 0-100 PSI
5B	1	3/4" HOSE BIB c/w ISOLATION VALVE
5C	1	1" VALMATIC COMBINATION AIR VALVE 201C.2 c/w ISOLATION VALVE

NOTES:

FABRICATED STEEL PIPE & FITTINGS ARE SCHEDULE NO. 40 STEEL PIPE FOR SIZES TO 10", AND 3/8" WALL FOR 12" AND LARGER. FLANGES ARE ANSI 125/150 AND FASTENED WITH SS ASTM F-593 BOLTS, F-594 NUTS & SAE WASHERS.

ALL 2" AND SMALLER PIPE & FITTINGS ARE THREADED 304 STAINLESS STEEL.

ALL 3" AND LARGER PIPE, INSIDE WETTED SURFACES ARE SANDBLASTED, FUSION EPOXY LINED AND COATED TO AWWA C-213 AND NSF-61 SPECIFICATION.

FINISH COATING IS BLUE.

3" 90° ELBOW

3" 90° ELBOW
W/ BEEHIVE
STRAINER

TWO 3"-90° ELBOWS

SWING JOINT

SEE PLANT DRAWING

SEE VAULT DETAIL FOR—
3" PRESSURE RELIEF
VALVE DETAIL

HTS:
15,000 lb
OM: 15,000 lb



DESIGNED BY	JAM/LMH
DRAWN BY	JAM/LMH
CHECKED BY	LP

R&E **Reichhardt & Ebe**
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REV05	5/30/23	REVISION No. 06 – PRV STATION	LP
NO.	DATE	DESCRIPTION	BY

CITY OF FERNDALE
2095 MAIN ST
FERNDALE, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE

WATER DETAILS 3

DWG 19025 DETAILS

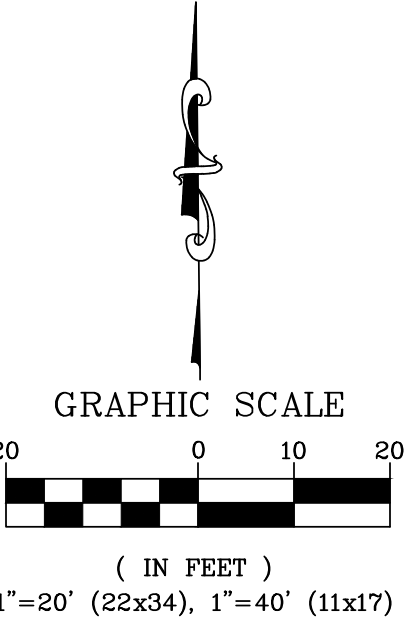
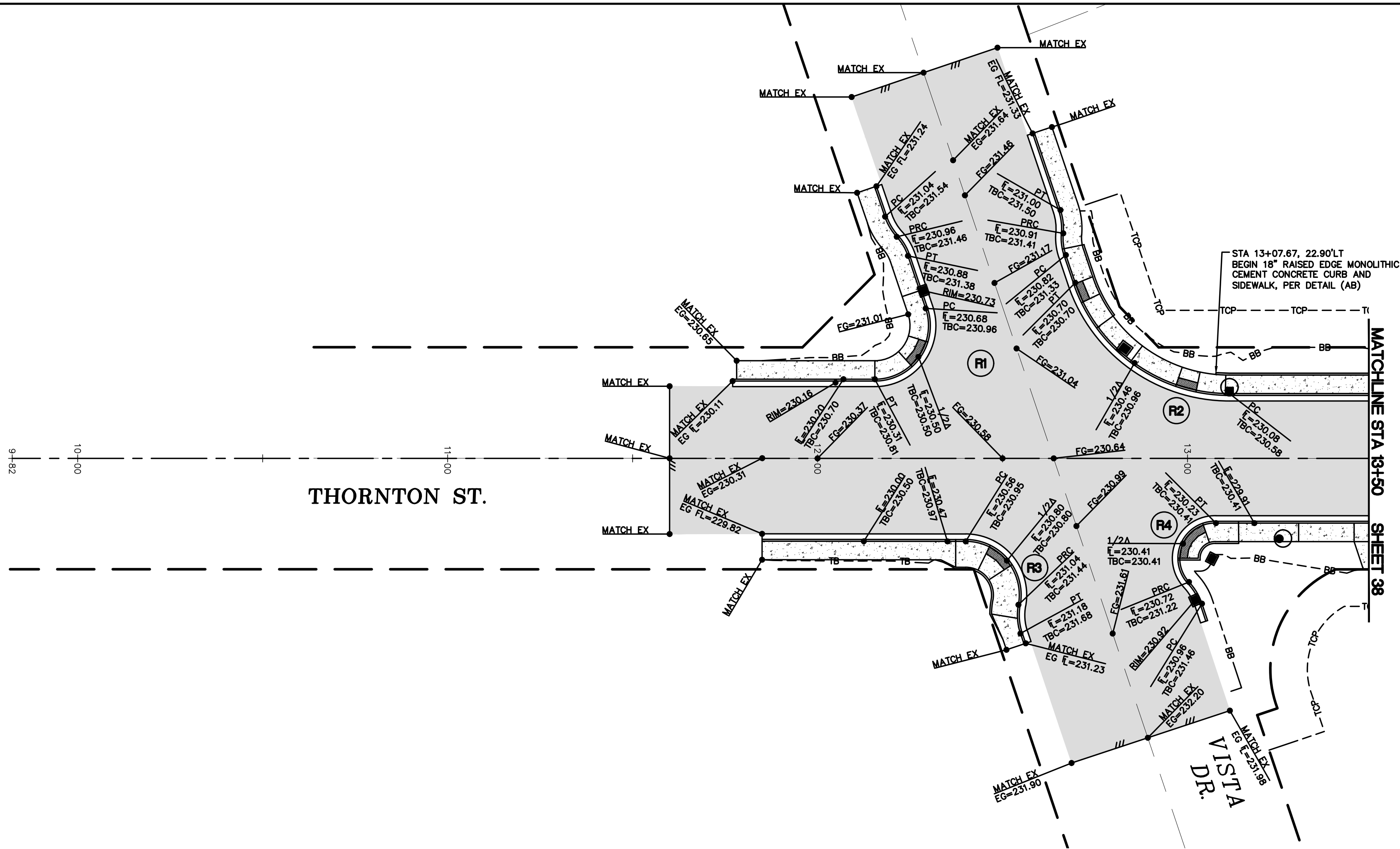
	JOB
--	-----

SCALE

V: N/A

DATE

SHEET 36 of 64



LEGEND

- = RADII
- = DRIVEWAY

SEE SHEET 40 - 43 FOR CURB RAMP DETAILS

SEE SHEET 44 - 48 FOR DRIVEWAY GRADING DETAILS



5/22/24
AS-BUILT

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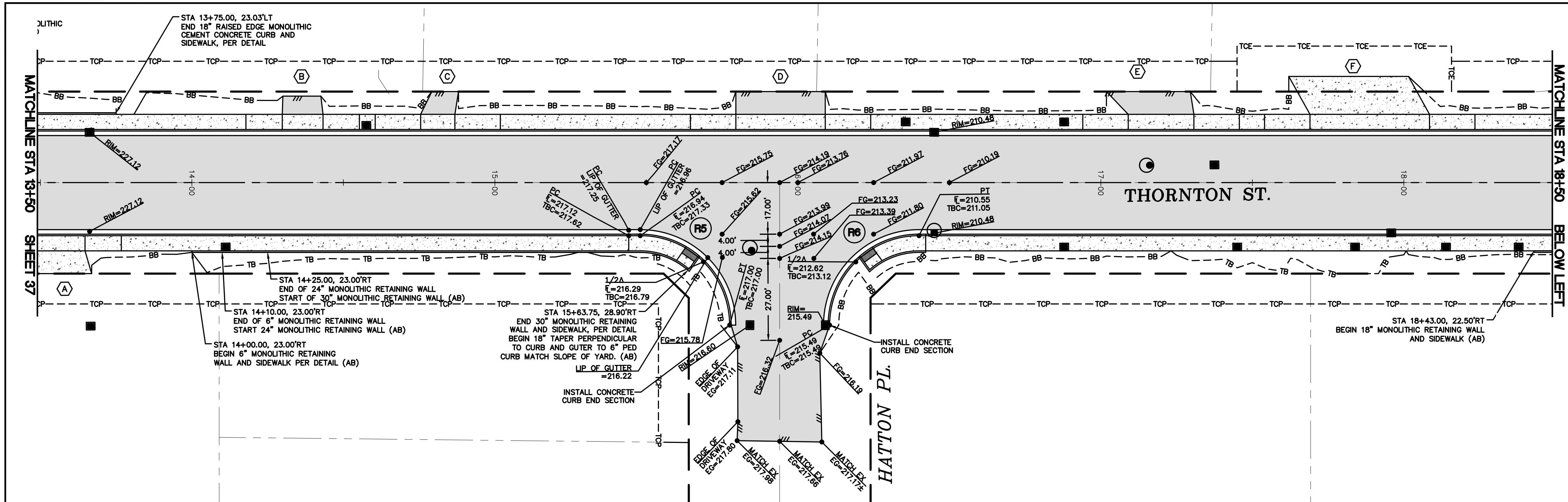
R&E Reichhardt & Ebe
ENGINEERING INC
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Lynden, WA 98264 (360) 354-3687

NO.	DATE	DESCRIPTION	BY
	3/24/23	REVISION No. 02 - GRADING REVISION	JUN

CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE
GRADING PLAN - STA 10+00 TO 13+50

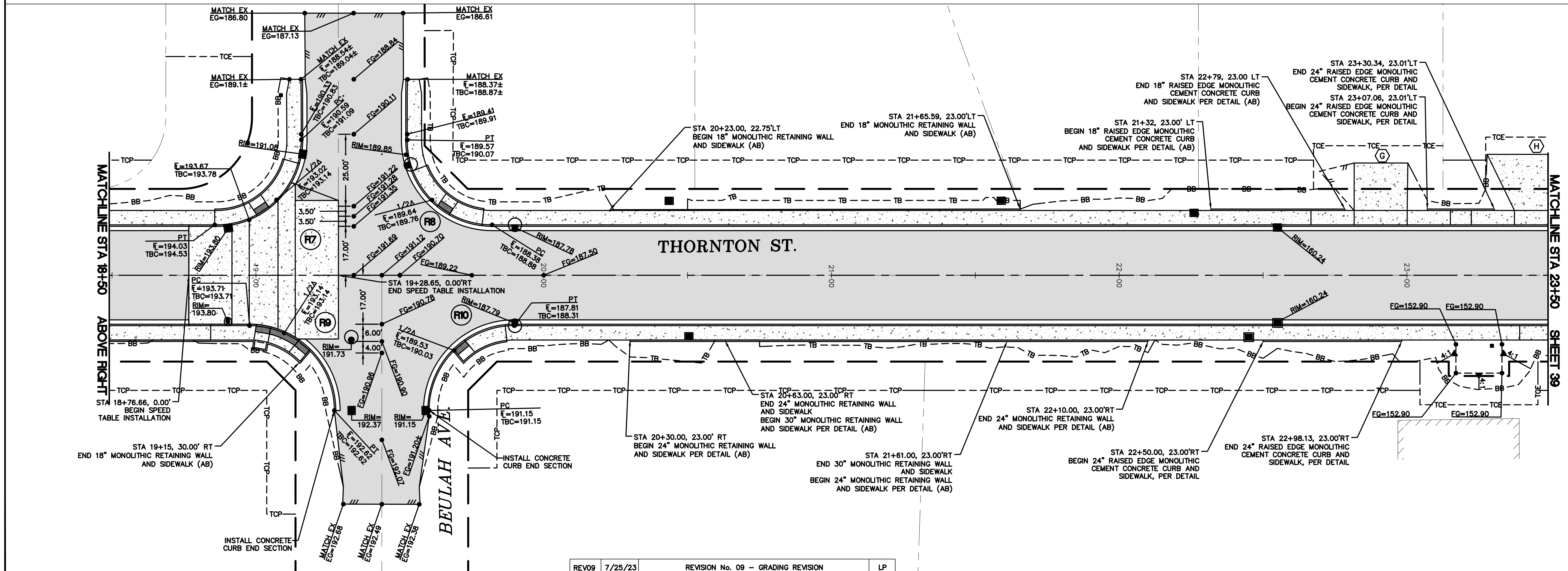
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JOB#	19025	SCALE	H: 1"=20' V: N/A
SHEET	37	of 64	



LEGEND

- (RX)** = RADII
(A) = DRIVEWAY

SEE SHEET 40 - 43 FOR CURB RAMP DETAILS
SEE SHEET 44 - 48 FOR DRIVEWAY GRADING DETAILS



5/22/24
AS-BUILT

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JAM/LMH
CHECKED BY
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REV	DATE	DESCRIPTION	BY
09	7/25/23	REVISION No. 09 - GRADING REVISION	LP
08	3/24/23	REVISION No. 02 - GRADING REVISION	JUN
07	1/25/23	REVISION No. 01 - SPEED TABLE GRADES	JUN
06	9/28/22	ADDENDUM No. 03	JUN
05			

CITY OF FERNDAL
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FERNDAL, WA 98248

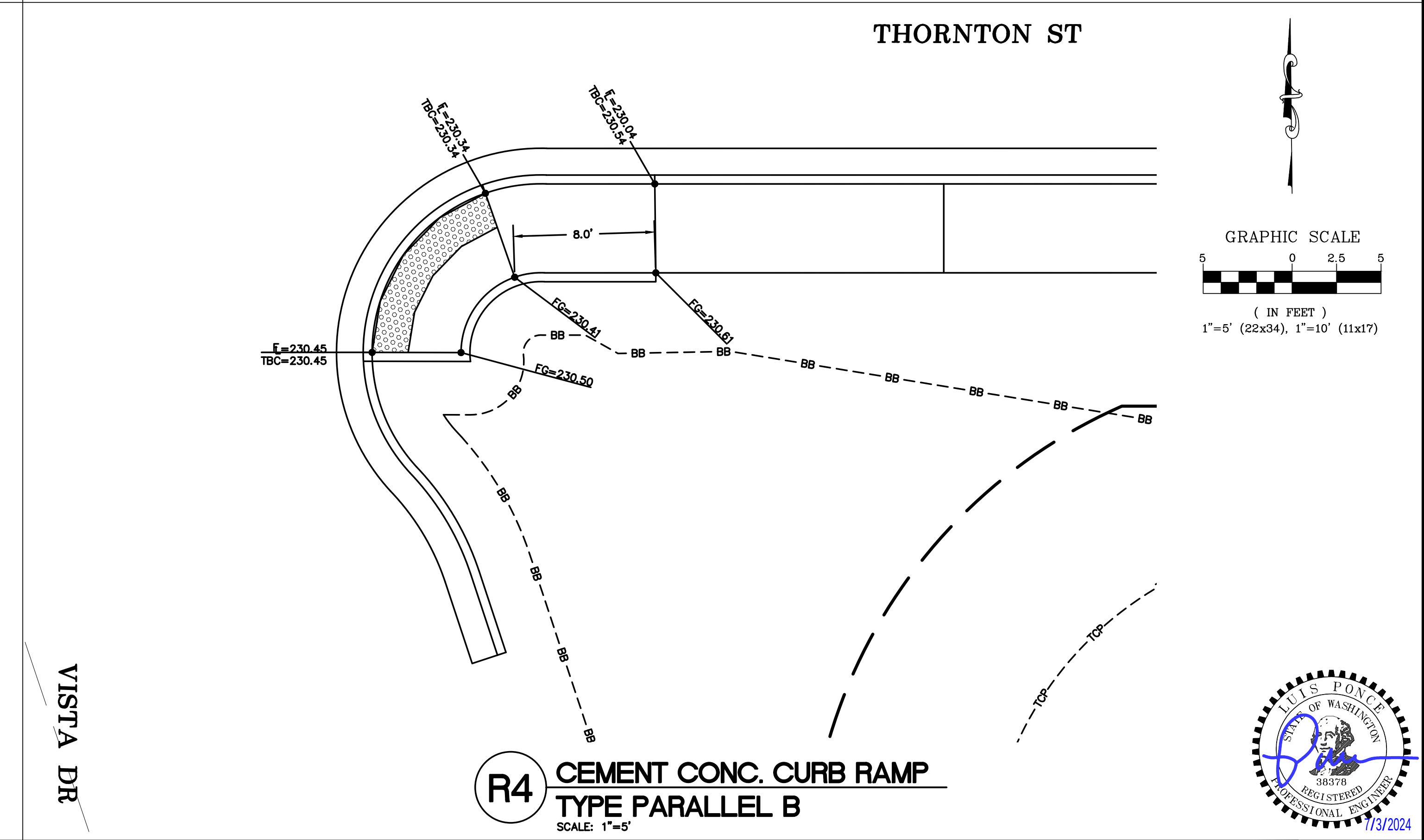
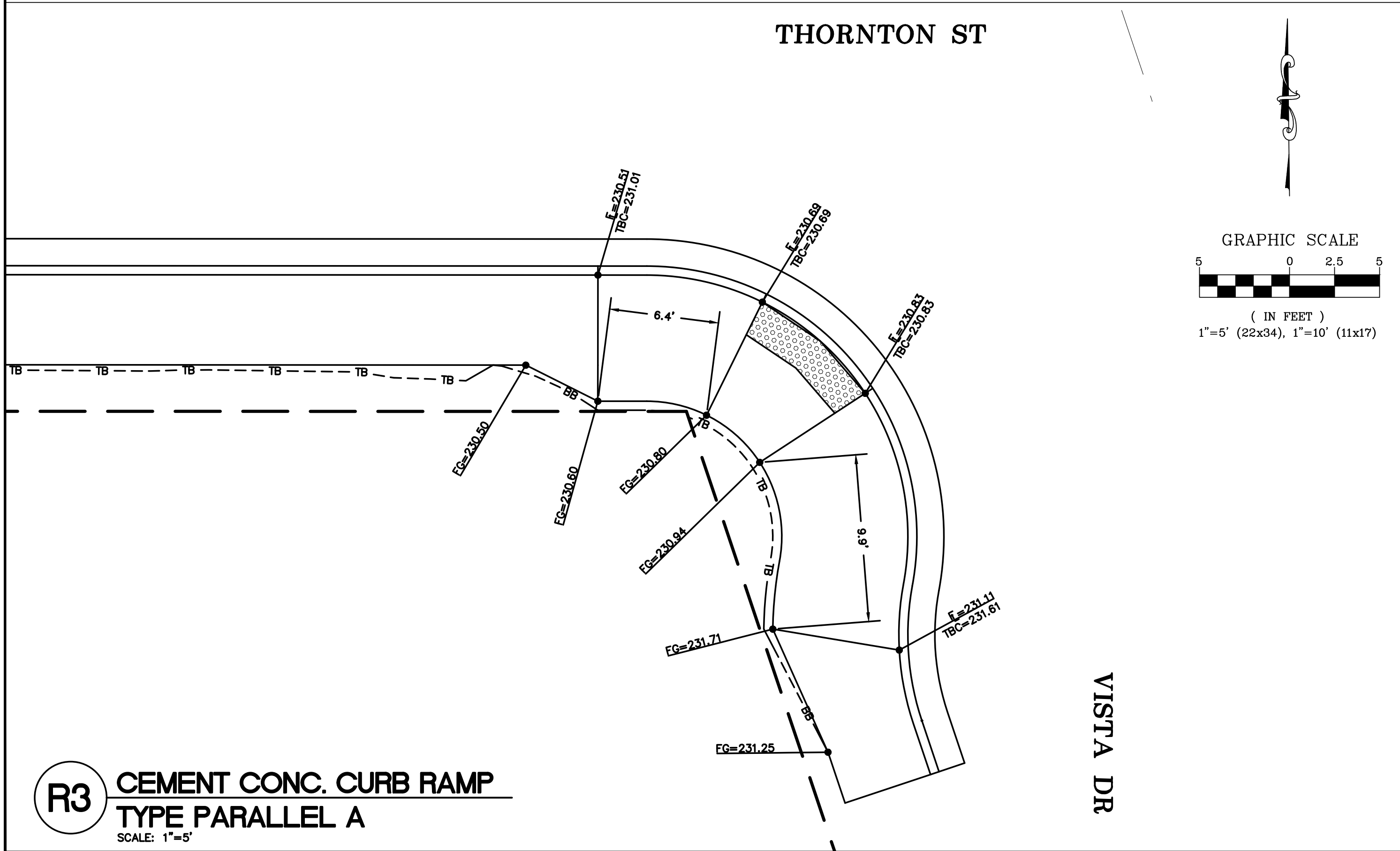
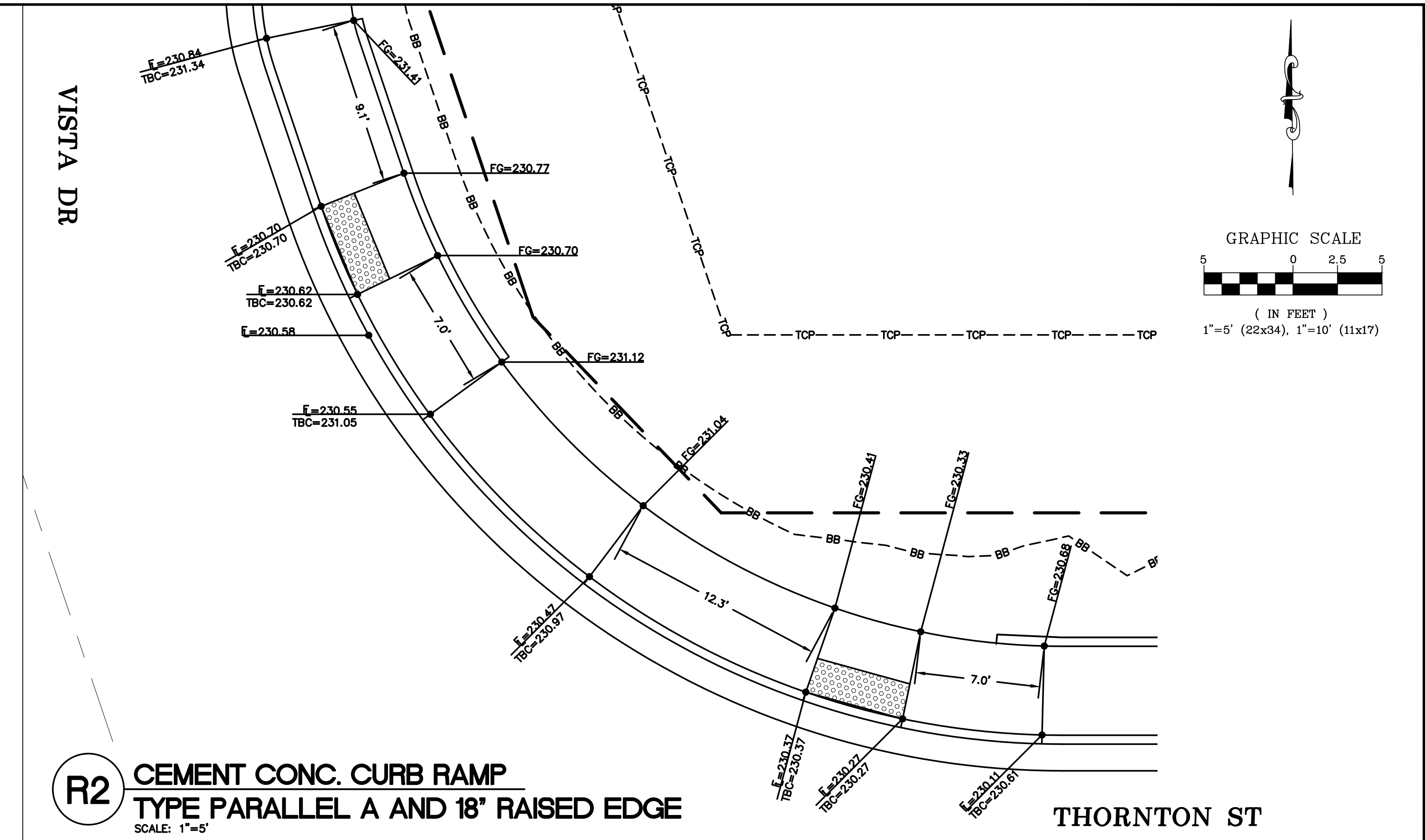
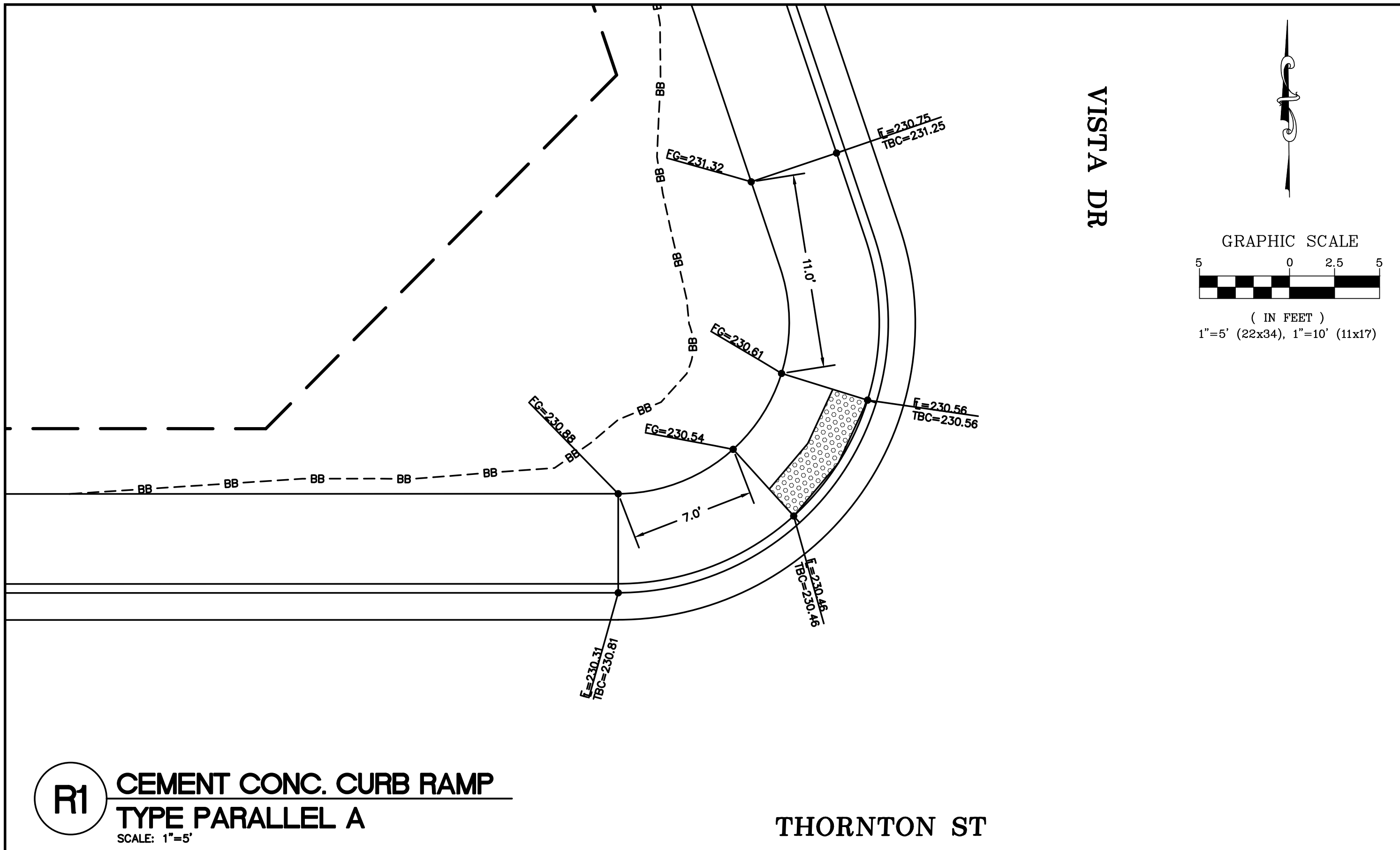
THORNTON STREET - VISTA TO MALLOY AVENUE
GRADING PLAN - STA 13+50 TO 23+50

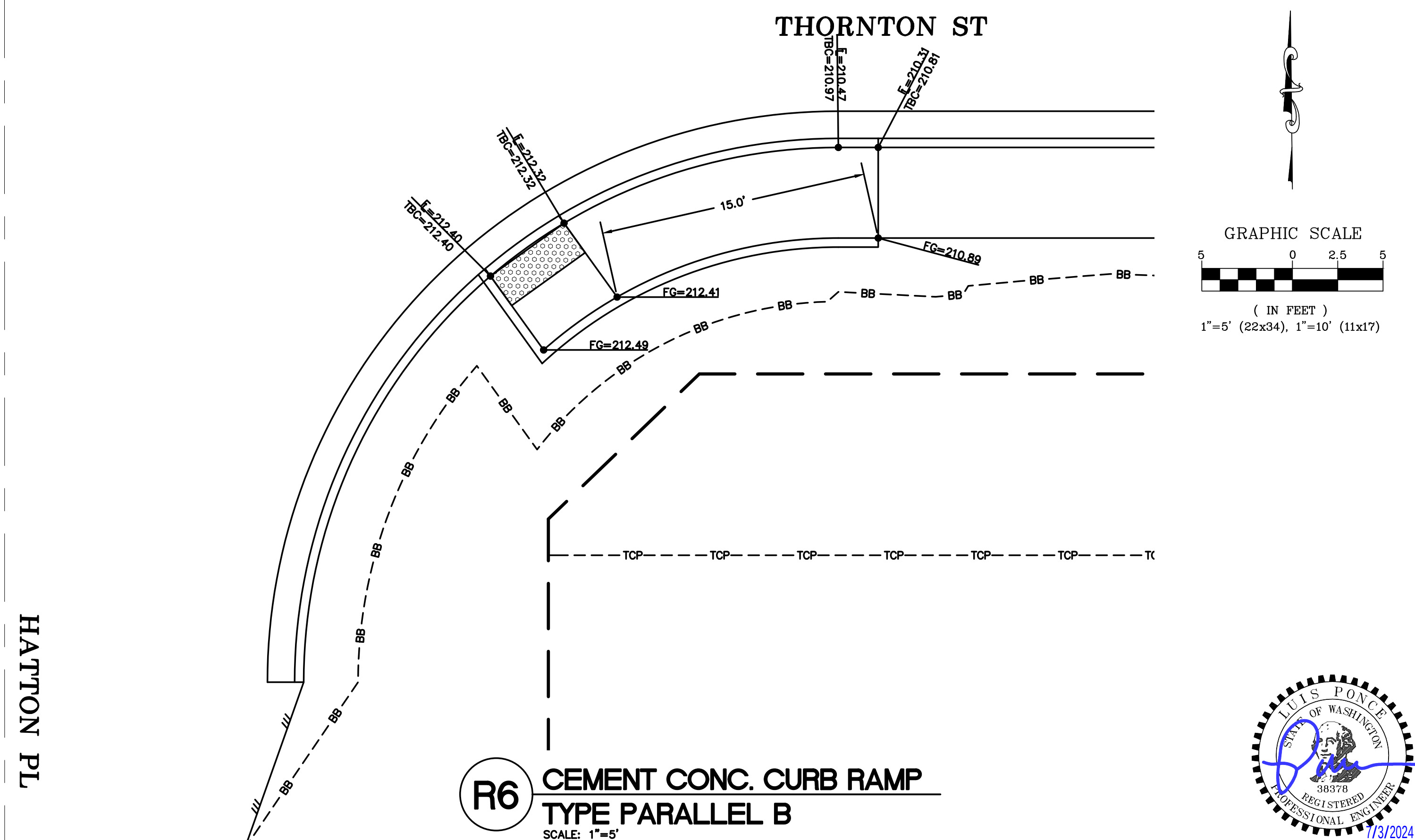
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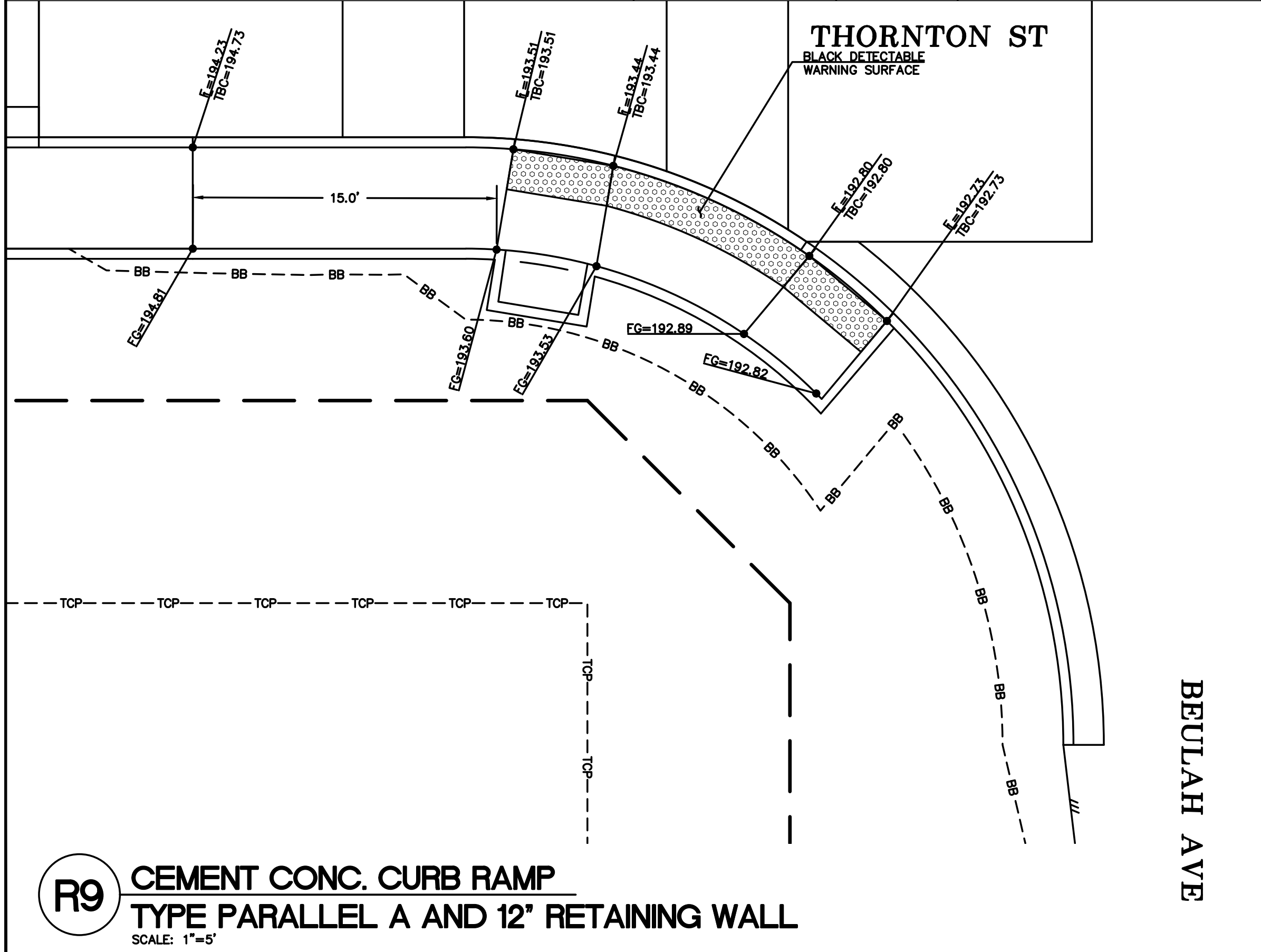
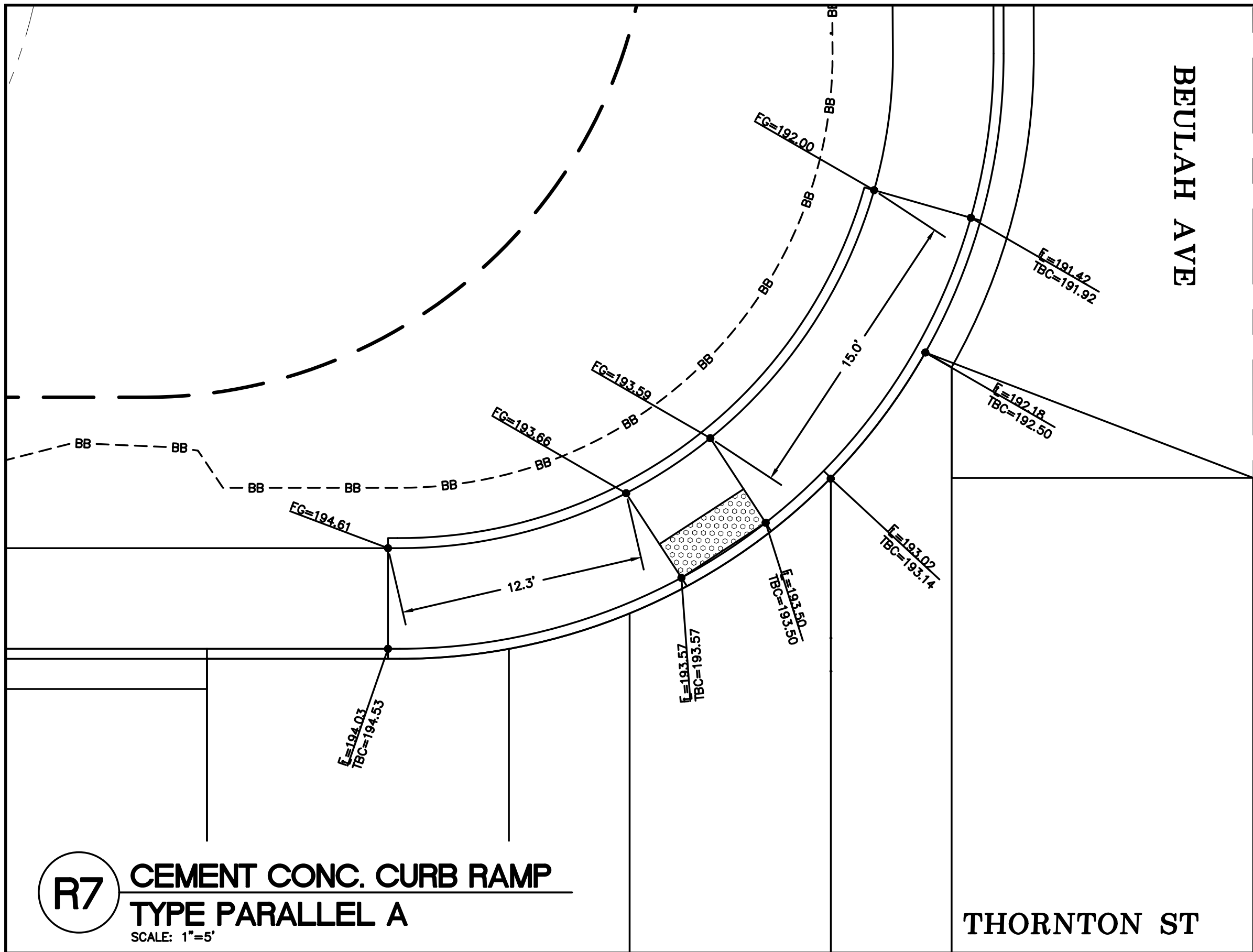
DATE
5/22/24
SHEET
38
of 64







5/22/24 AS-BUILT	DESIGNED BY JAM/LMH	 Reichhardt & Ebe ENGINEERING INC P.O. Box 978 423 Front Street Lynden, WA 98264 (360) 354-3687					CITY OF FERNDALE 2095 MAIN ST FERNDALE, WA 98248	THORNTON STREET - VISTA TO MALLOY AVENUE GRADING PLAN - CURB RAMPS 5-6	DWG 19025 GRADE		DATE 5/22/24
	DRAWN BY JAM/LMH		REV09	7/24/23	REVISION No. 09 - GRADING REVISION	LP			JOB# 19025	SCALE H: 1"=5' V: N/A	SHEET 41 of 64
	CHECKED BY LP		NO.	DATE	DESCRIPTION	BY					

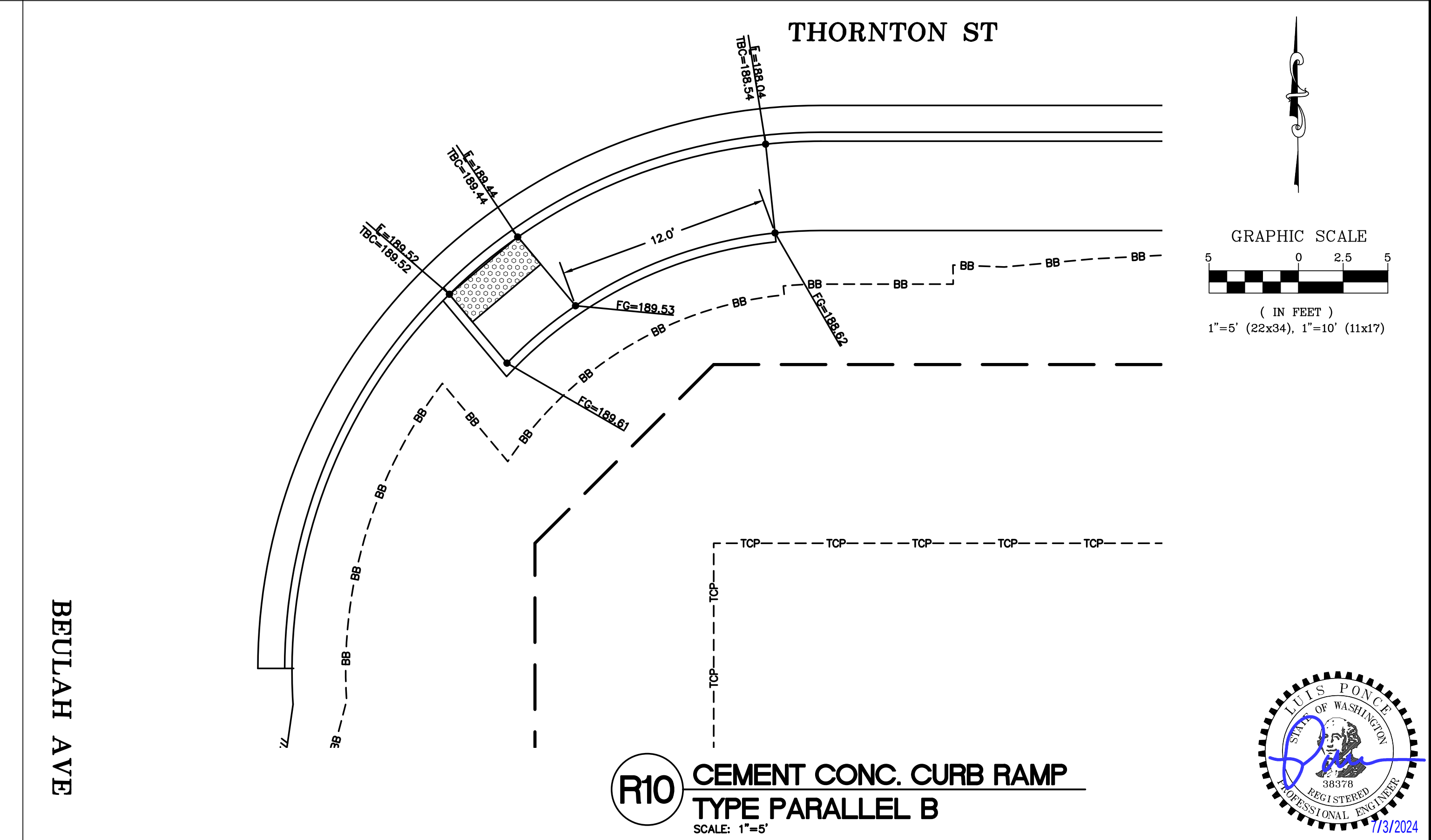
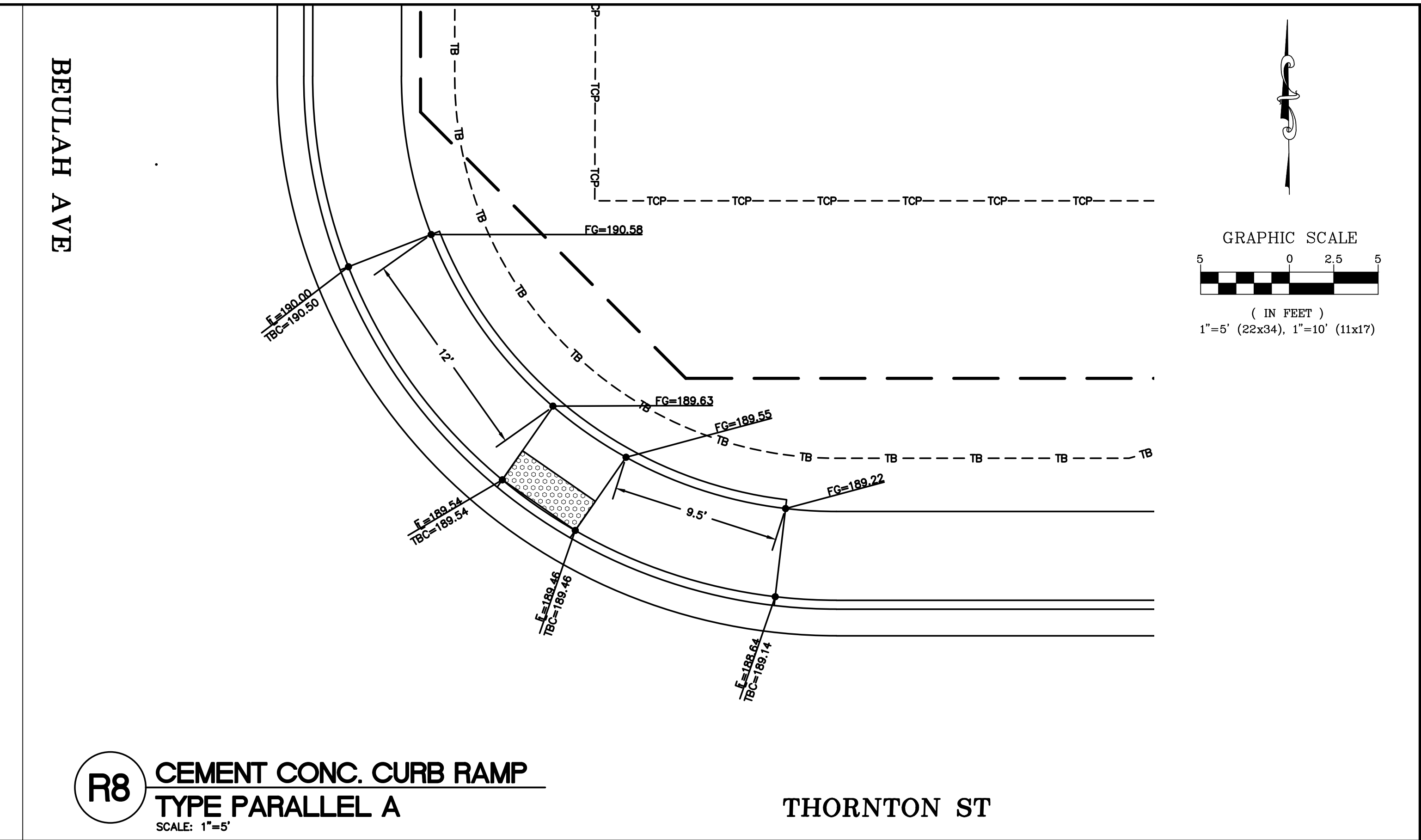


5/22/24
AS-BUILT

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NO.	DATE	DESCRIPTION	BY
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	1/25/23	REVISION No. 01 - SPEED TABLE GRADES	JAM

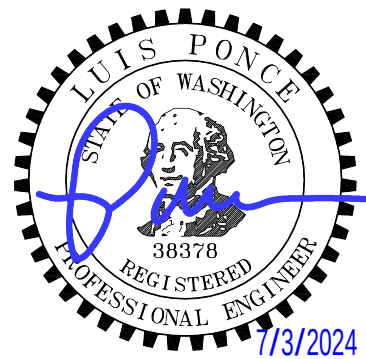


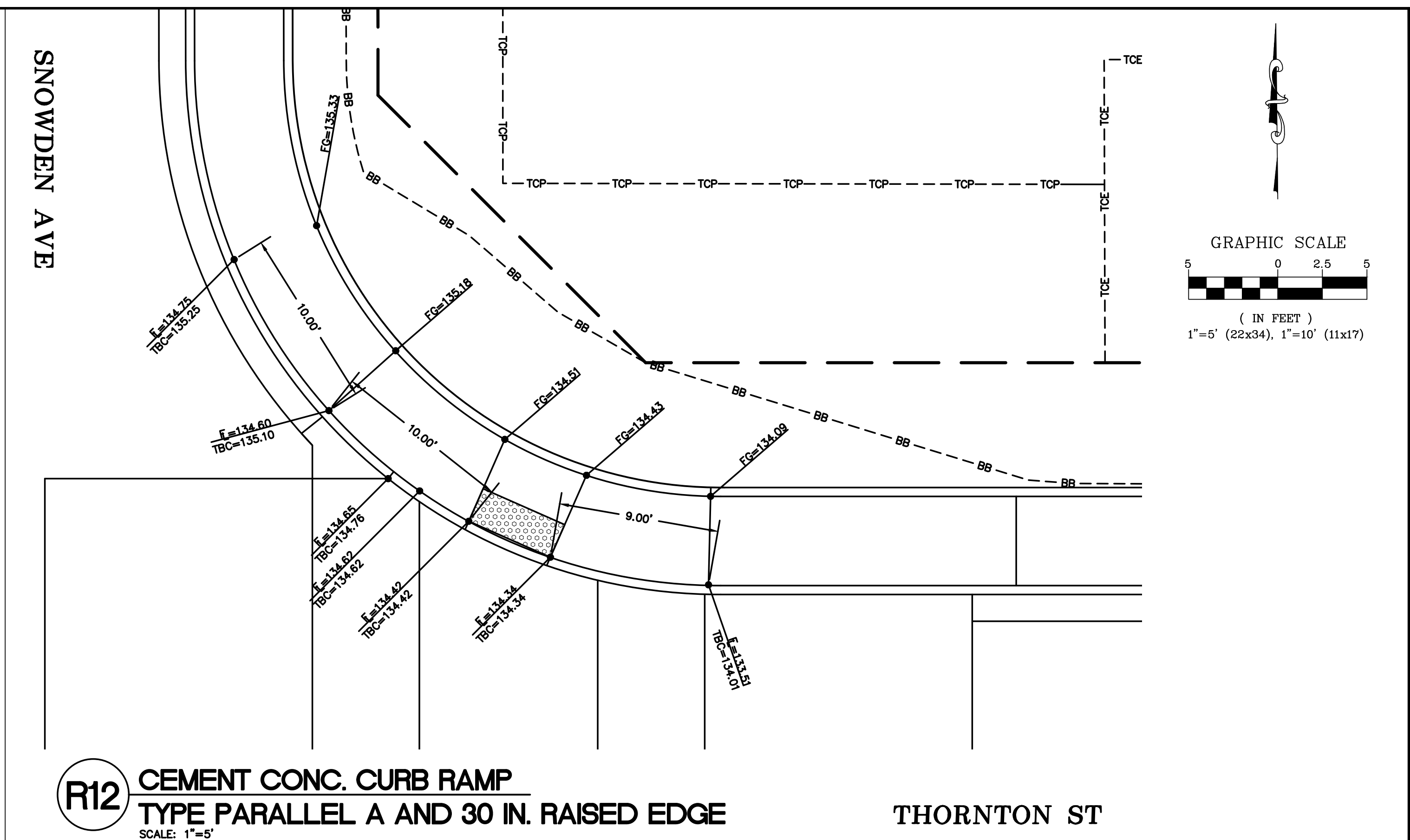
CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

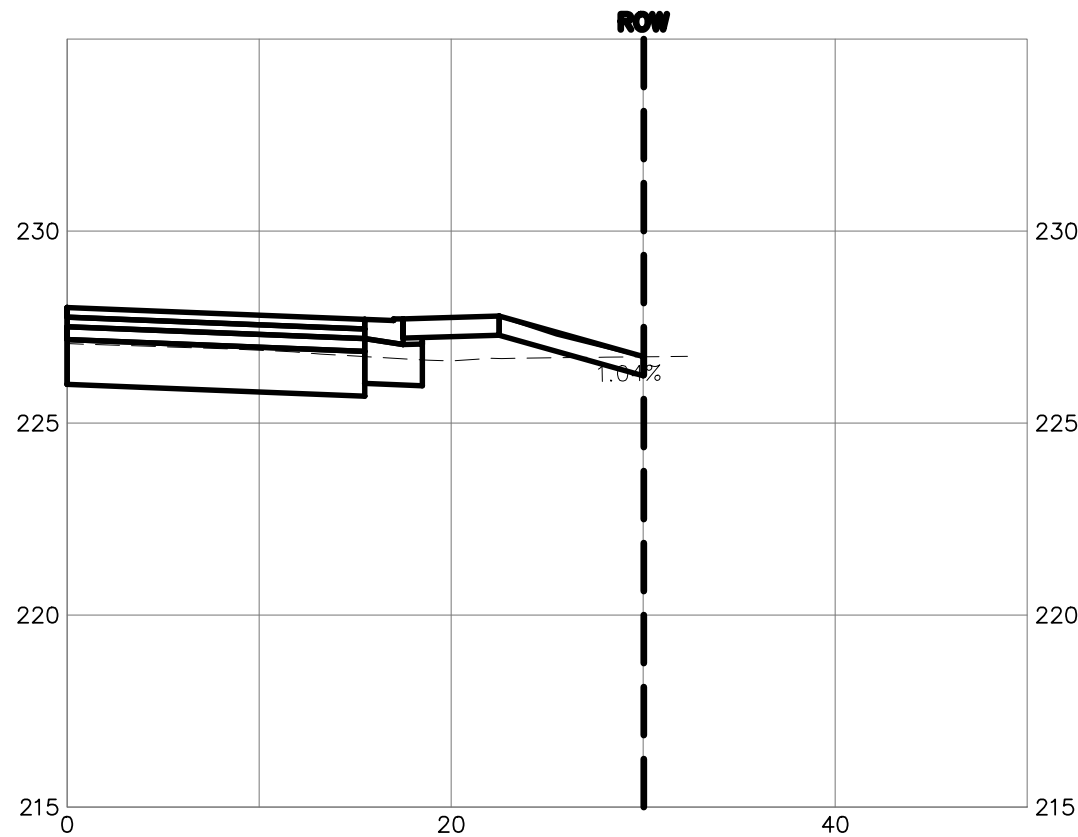
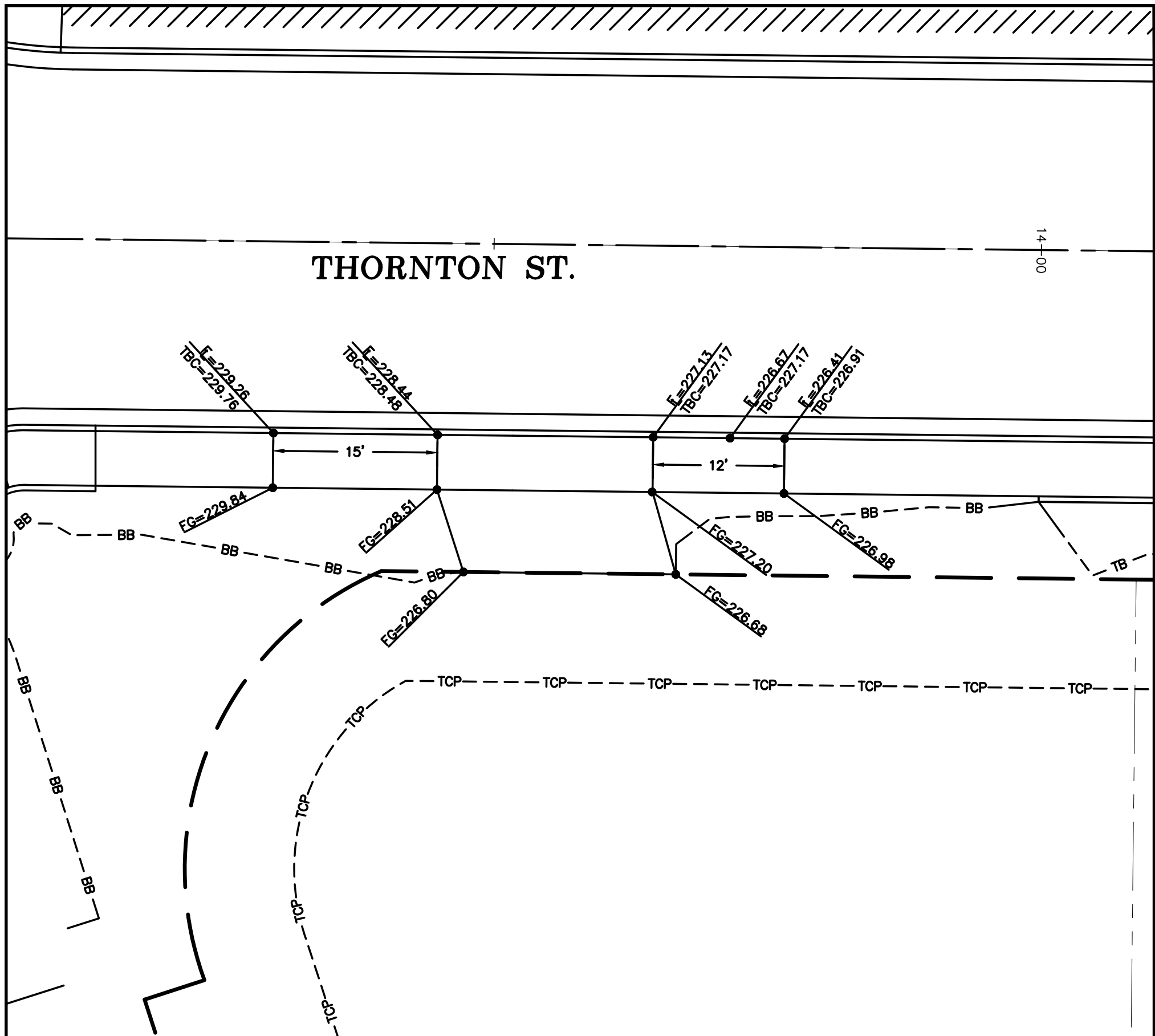
THORNTON STREET - VISTA TO MALLOY AVENUE

GRADING PLAN - CURB RAMPS 7-10

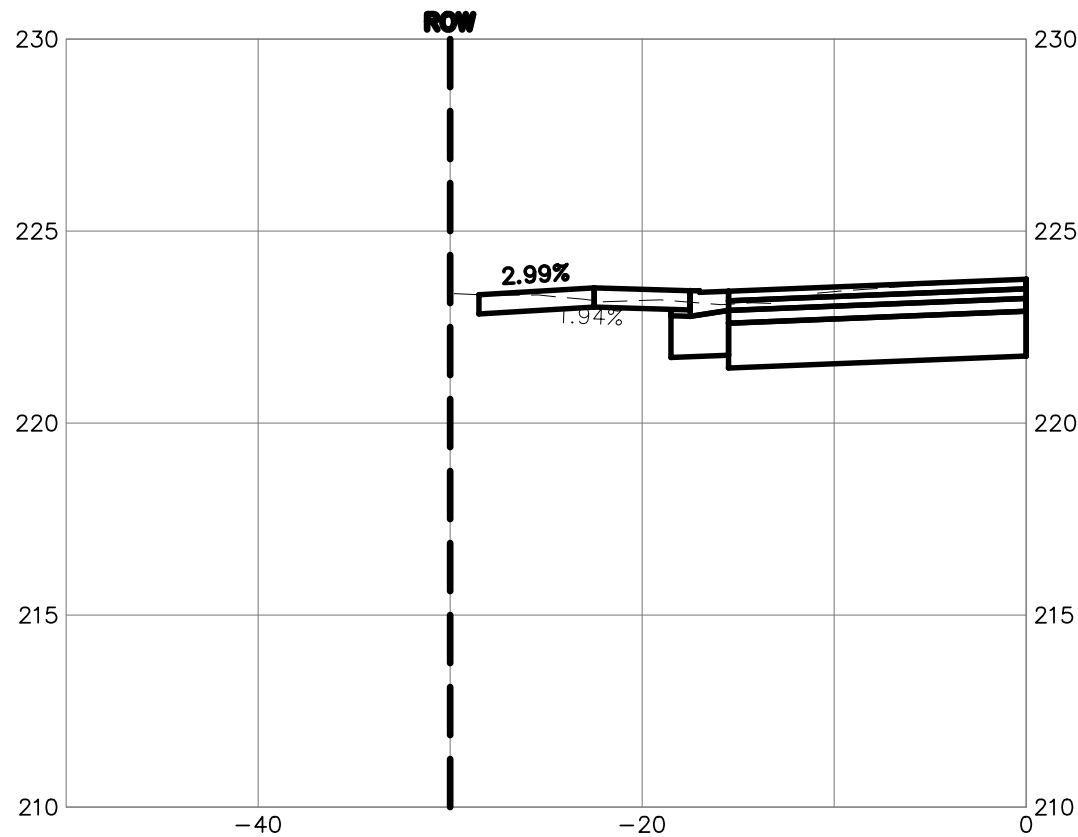
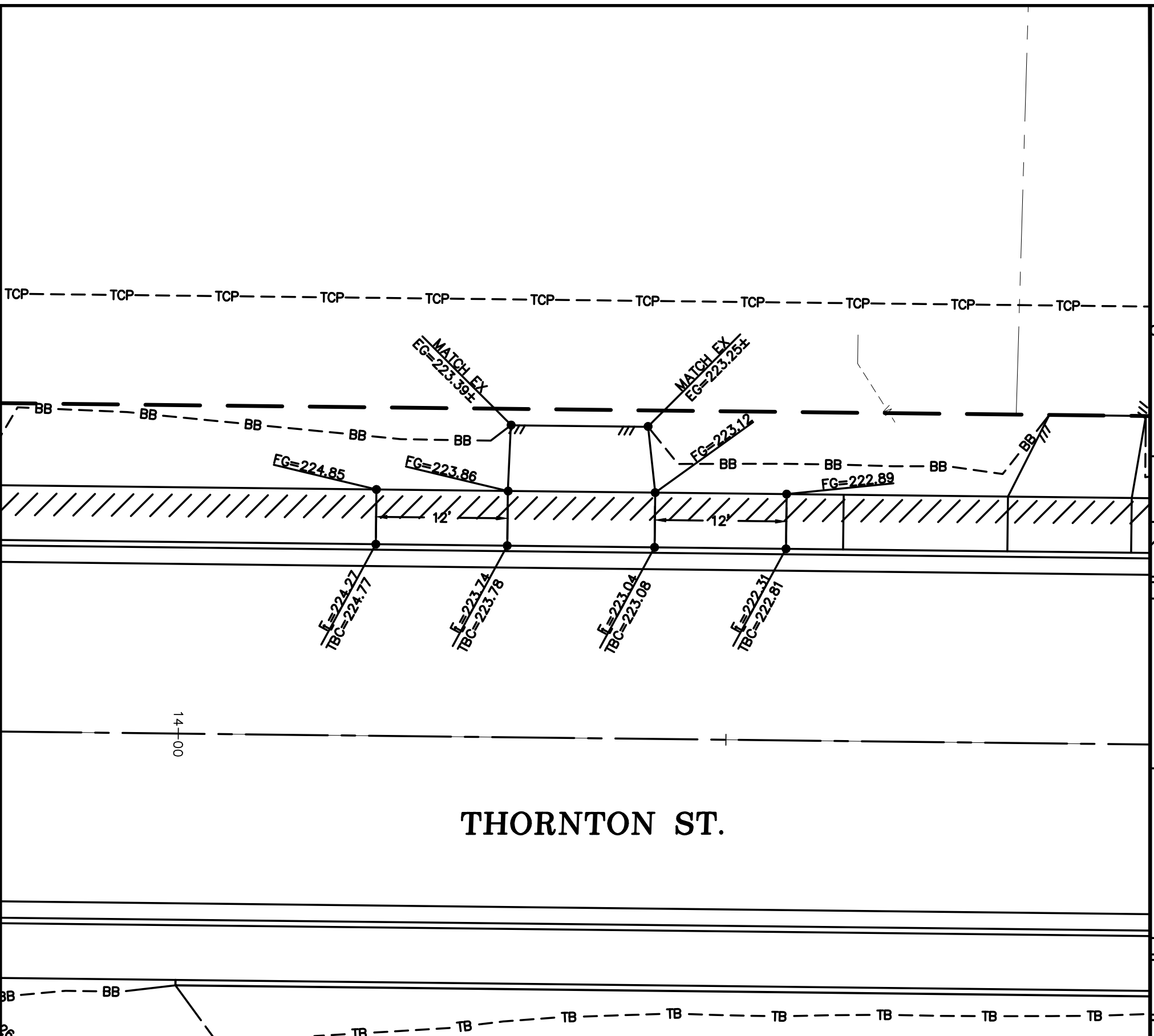
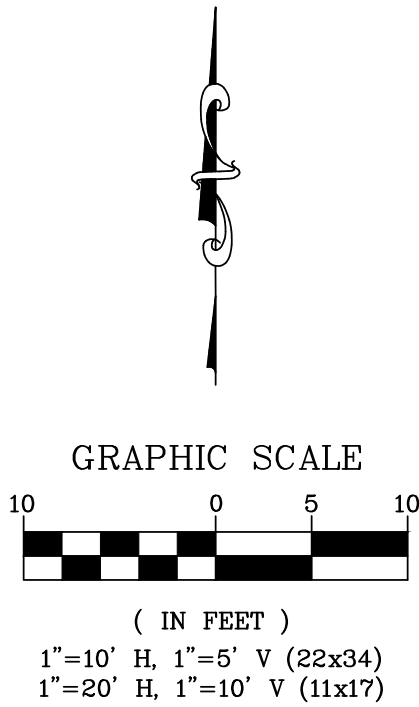
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JOB#	19025	SCALE	H: 1"=5' v: N/A
SHEET	42	of 64	



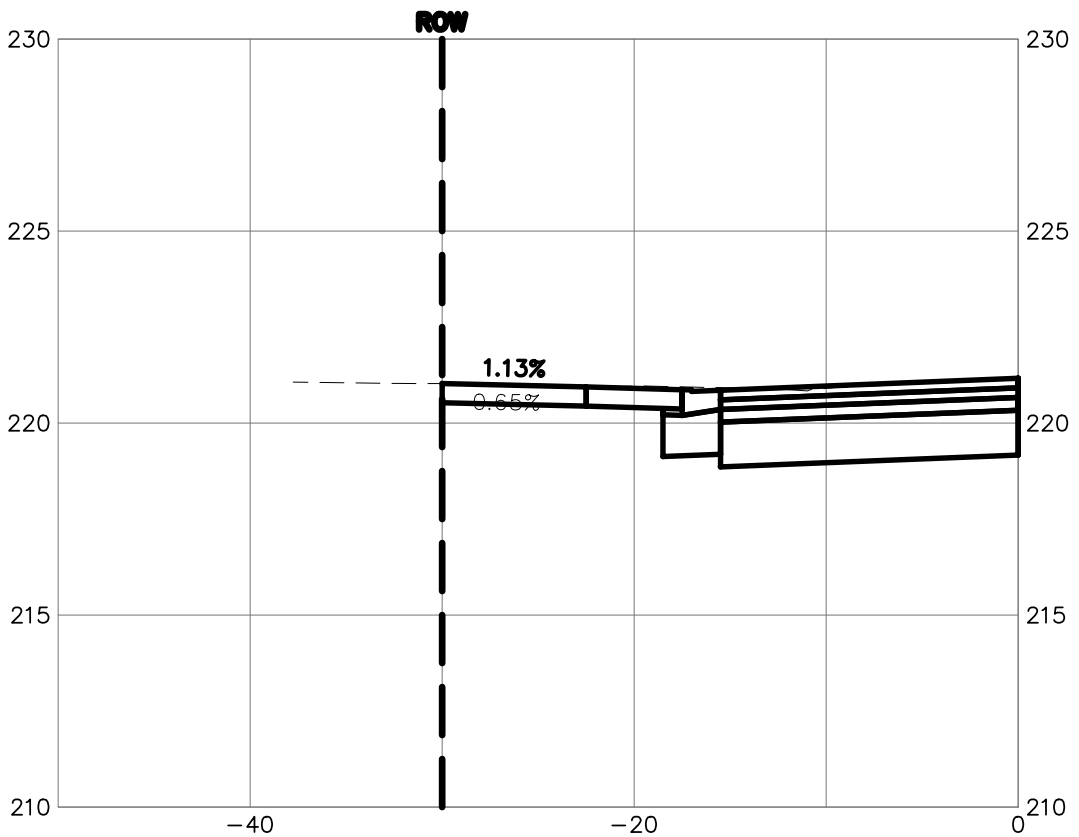
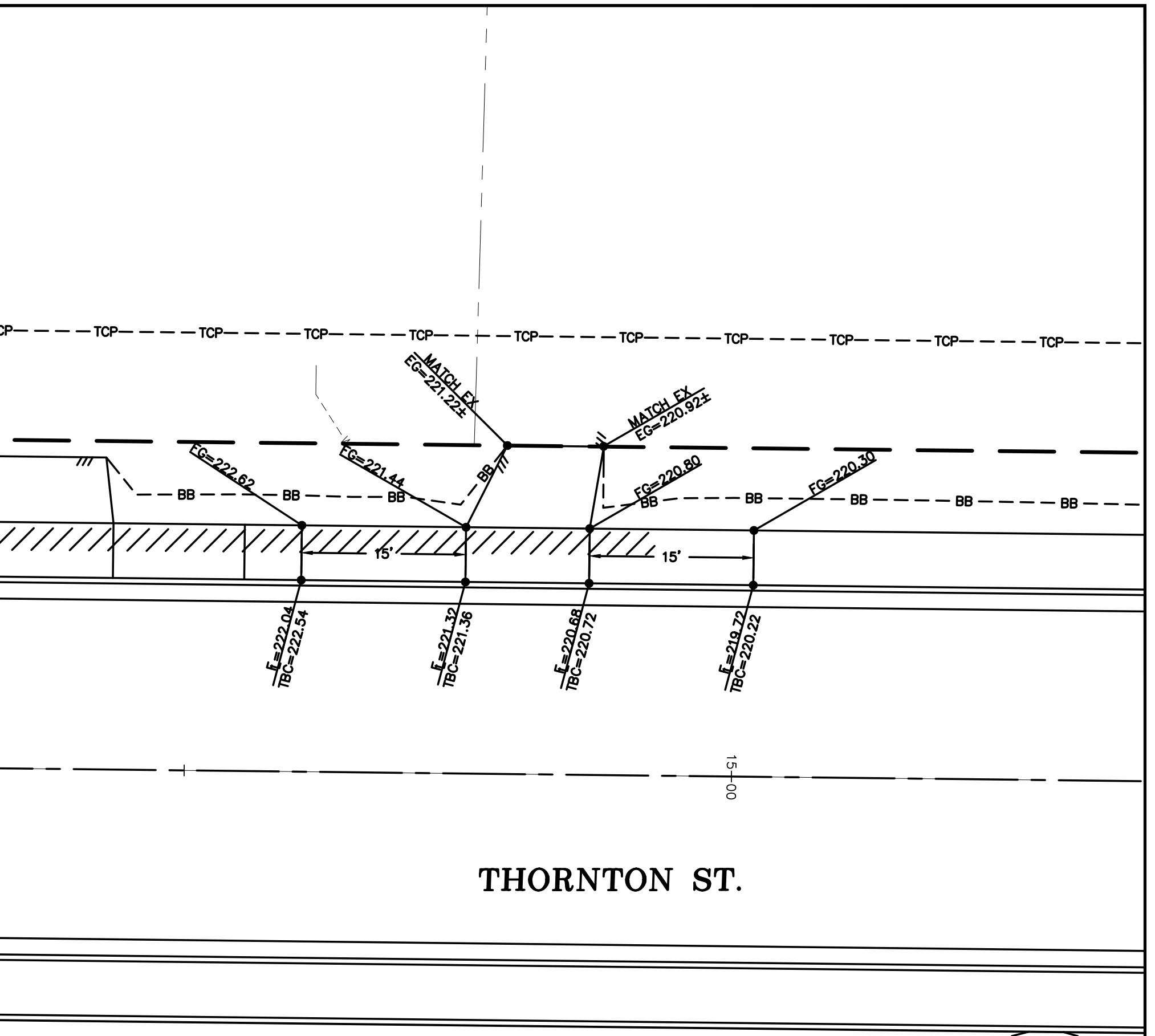
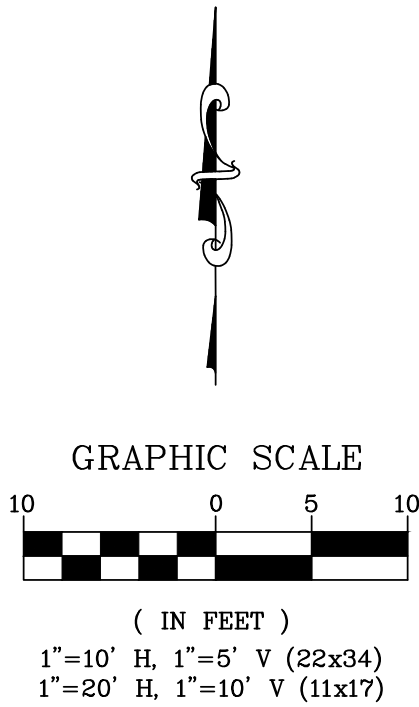




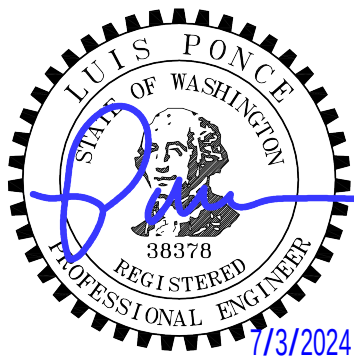
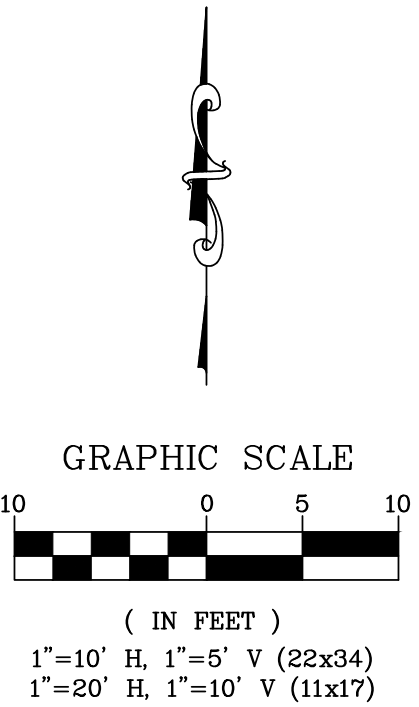
DRIVEWAY A
STA 13+58 FT
6094 VISTA DR



DRIVEWAY B
STA 14+36 LT
0 THORNTON ST



DRIVEWAY C
STA 14+84 LT
2184 THORNTON ST

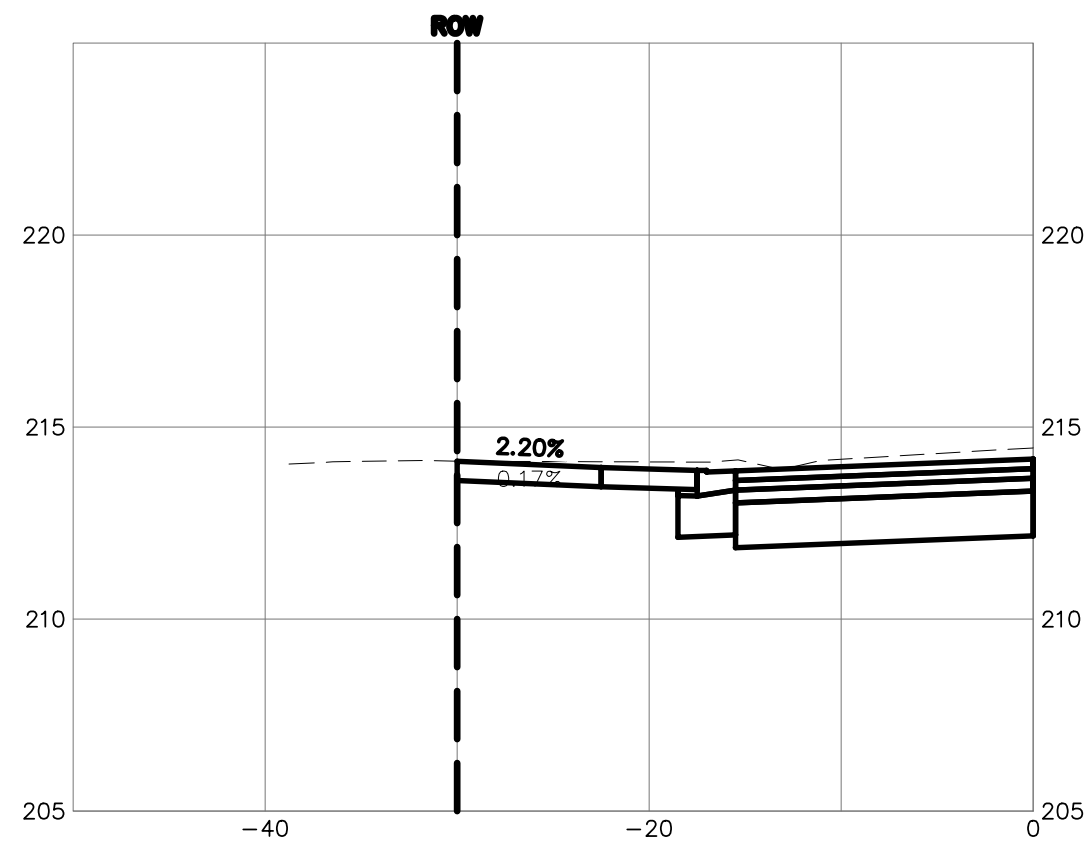
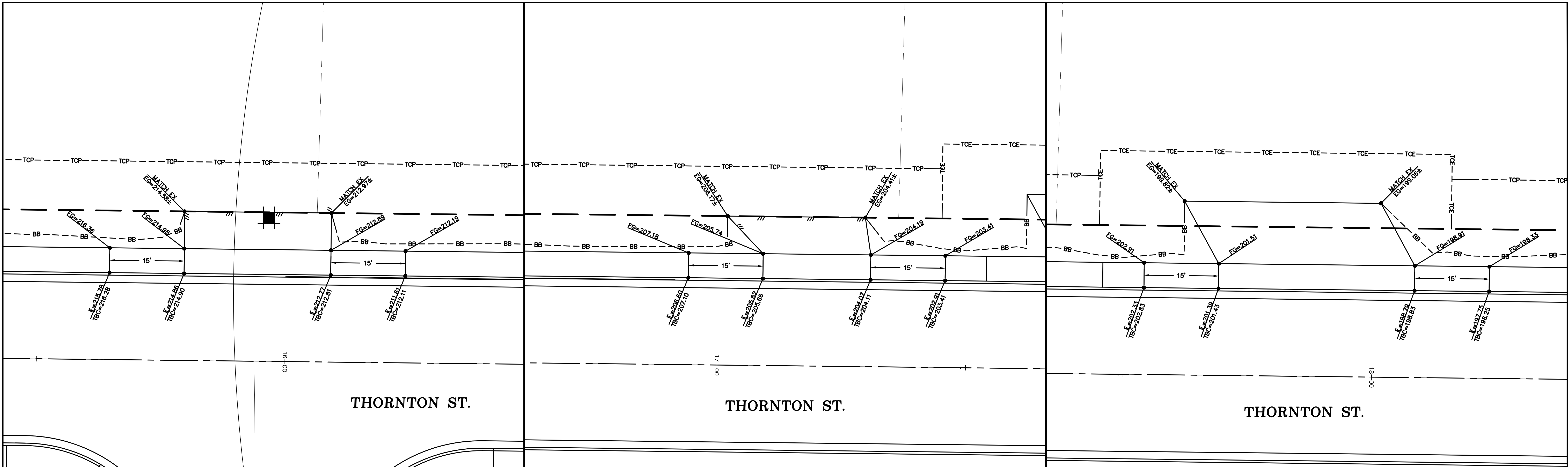


5/22/24
AS-BUILT

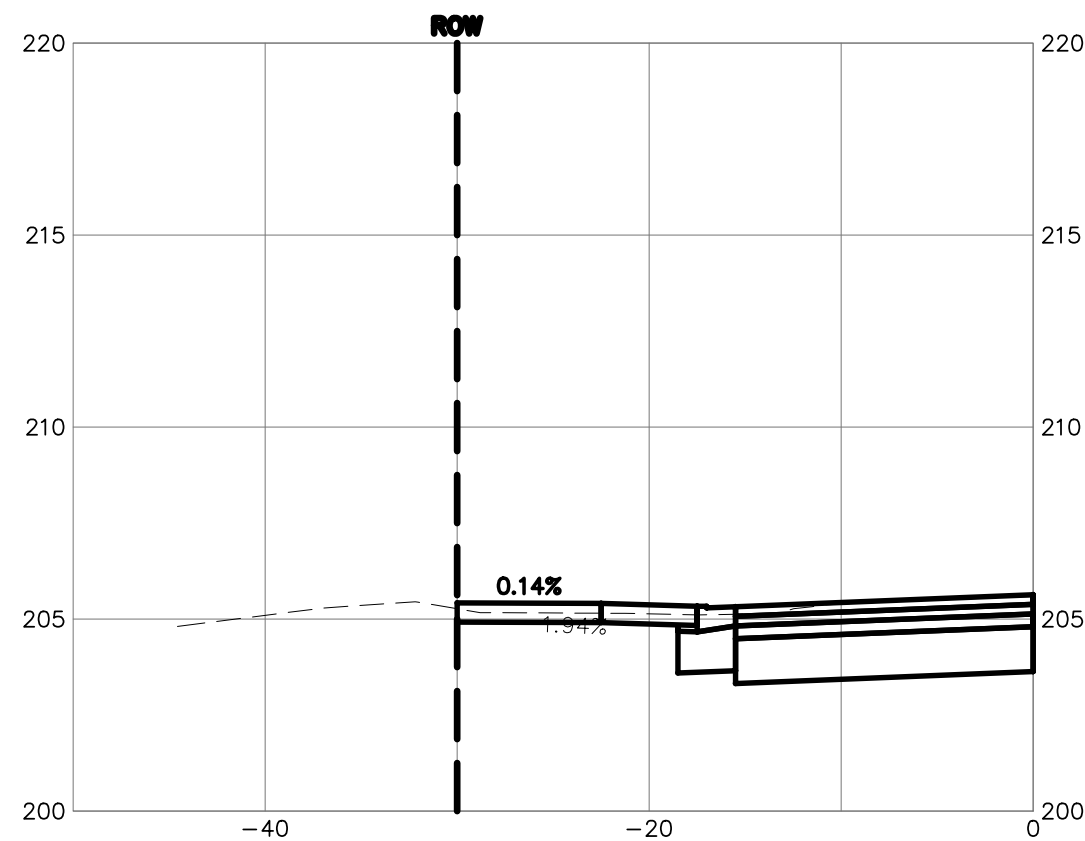
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JAM/LMH
DRAWN BY
JAM/LMH
CHECKED BY
LP
R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

NO.	DATE	DESCRIPTION	BY

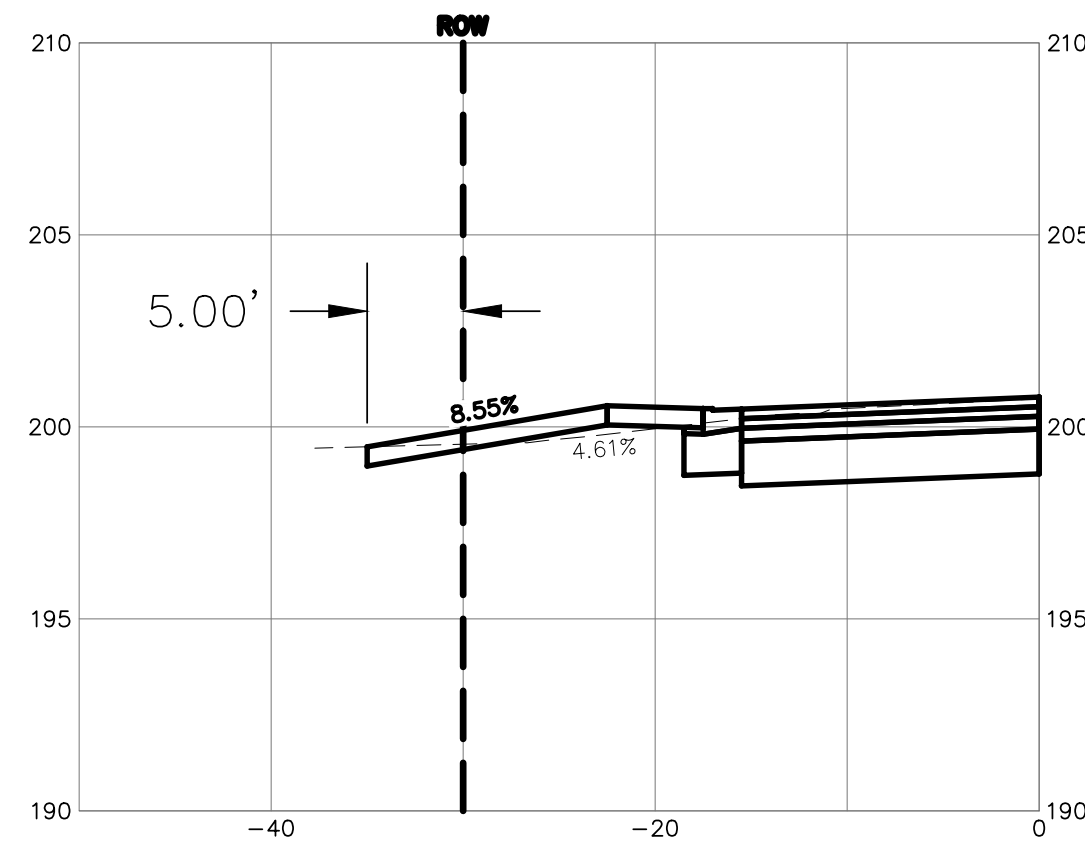
CITY OF FERNDAL 2095 MAIN ST FERNDAL, WA 98248		THORNTON STREET - VISTA TO MALLOY AVENUE		DWG 19025 DWY		DATE 5/22/24	
DRIVEWAYS - A, B, + C		JOB# 19025		SCALE H: 1"=10' V: 1"=5'		SHEET 44 of 64	



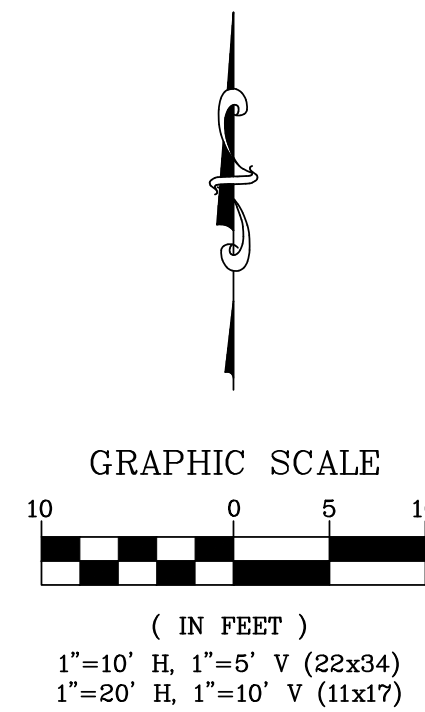
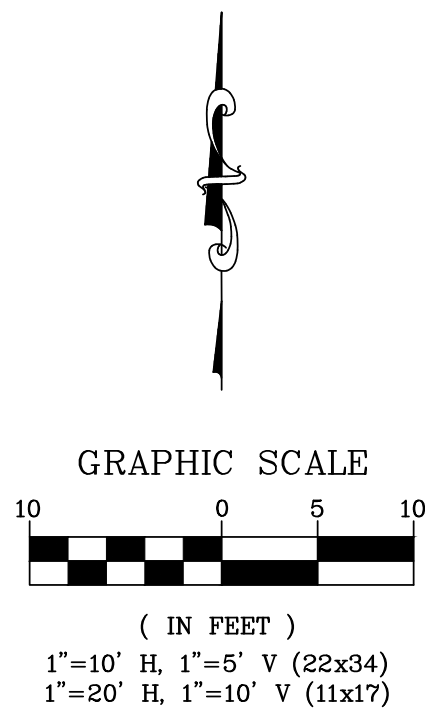
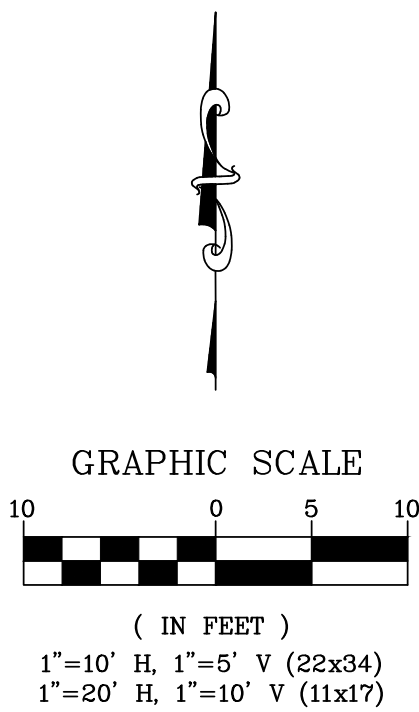
DRIVEWAY D
STA 15+94 LT
2184 THORNTON ST



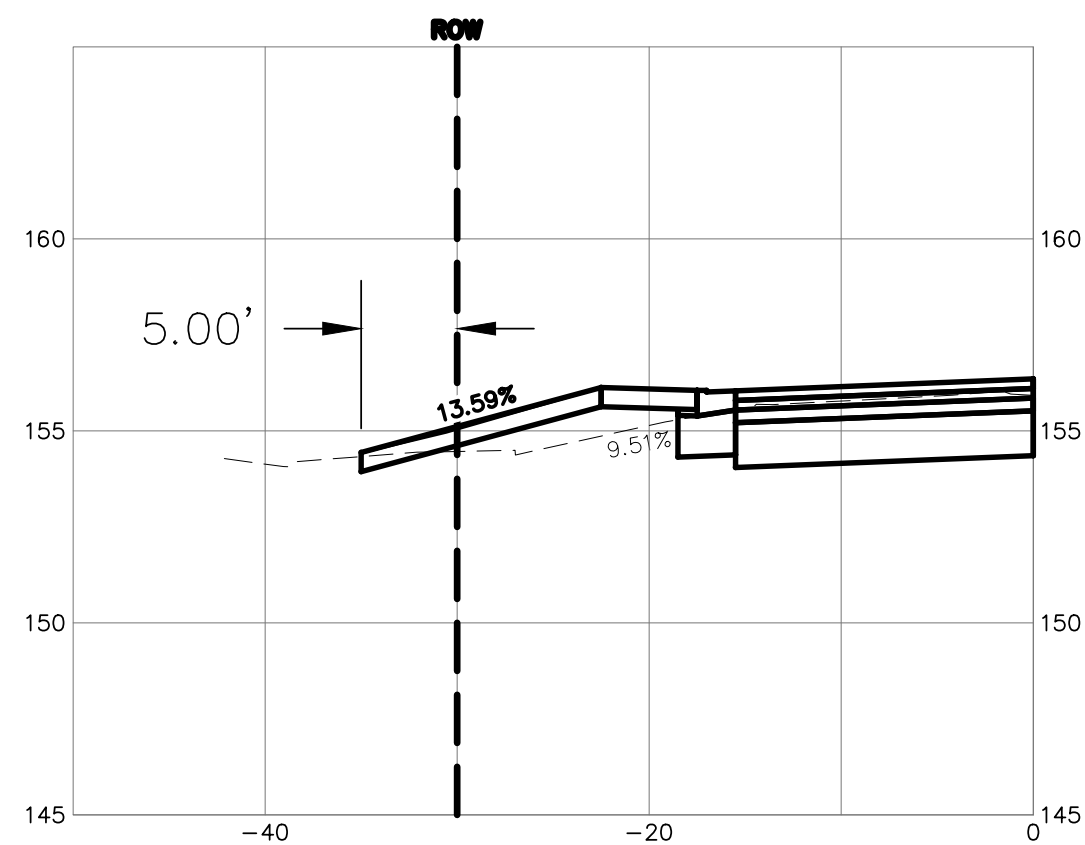
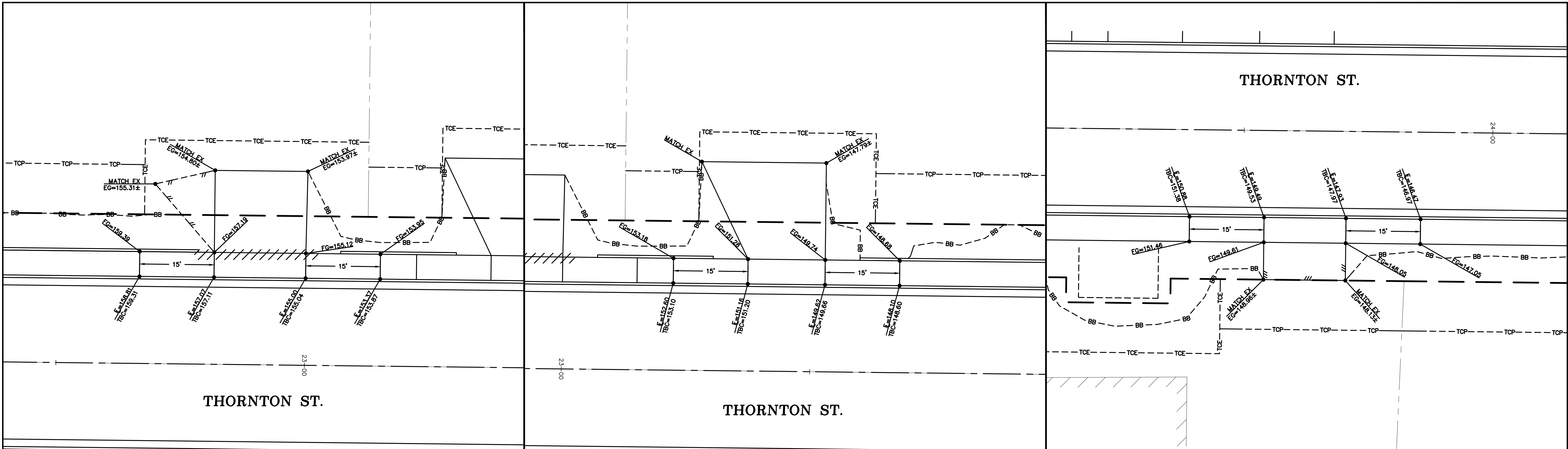
DRIVEWAY E
STA 17+14 LT
2174 THORNTON ST



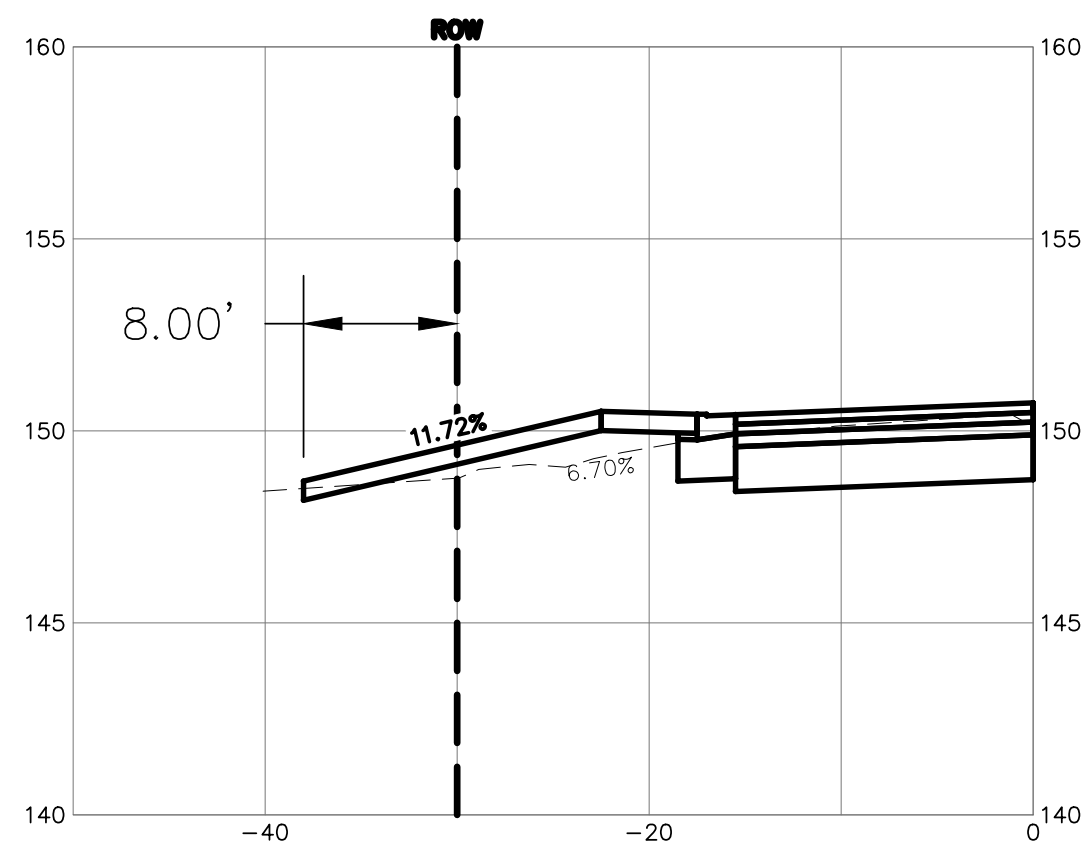
DRIVEWAY F
STA 17+83 LT
2170 THORNTON ST



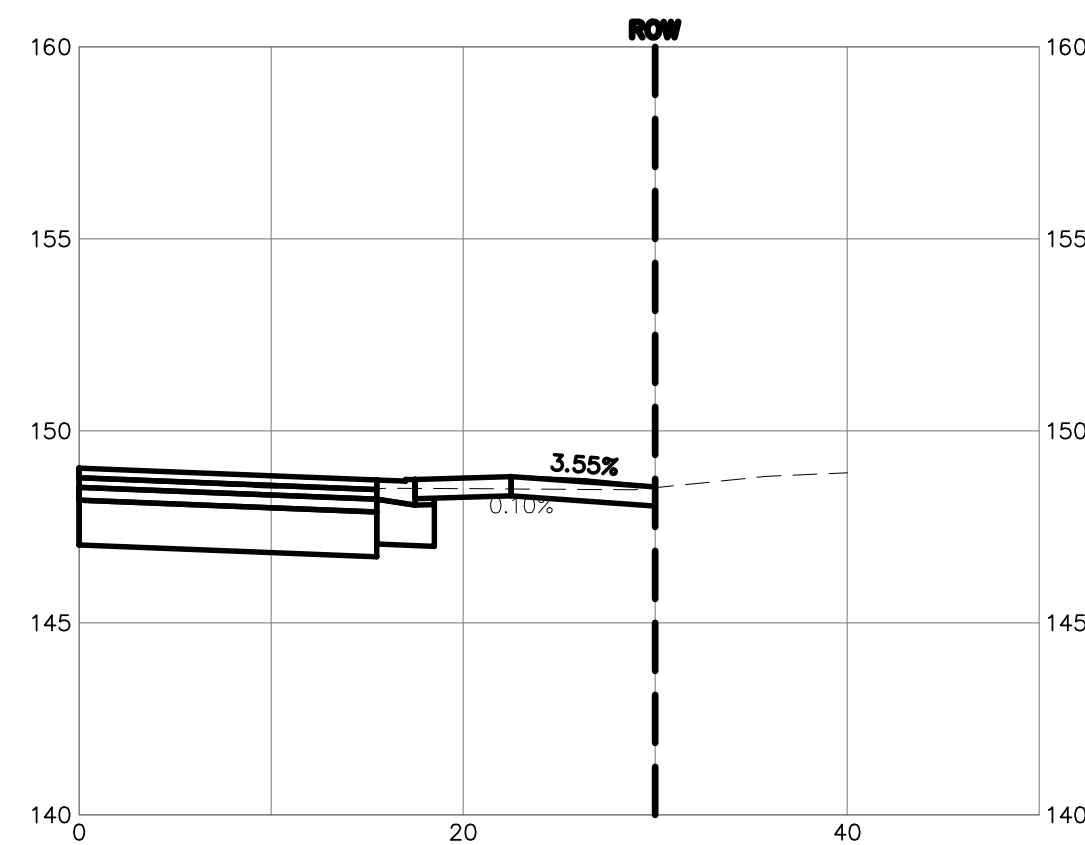
5/22/24 AS-BUILT	DESIGNED BY JAM/LMH	R&E Reichhardt & Ebe ENGINEERING INC P.O. Box 978 423 Front Street Lynden, WA 98264 (360) 354-3687					CITY OF FERDALE 2095 MAIN ST FERDALE, WA 98248	THORNTON STREET - VISTA TO MALLOY AVENUE DRIVEWAYS - D, E, + F	DWG 19025 DWY		DATE 5/22/24
	DRAWN BY JAM/LMH								JOB# 19025	SCALE H: 1"=10' V: 1"=5'	SHEET 45 of 64
	CHECKED BY LP										
			NO.	DATE	DESCRIPTION	BY					



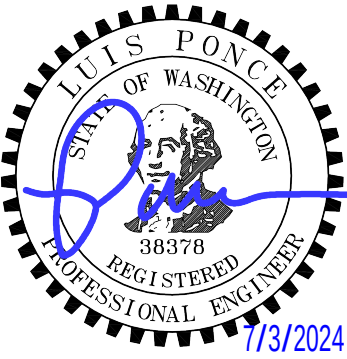
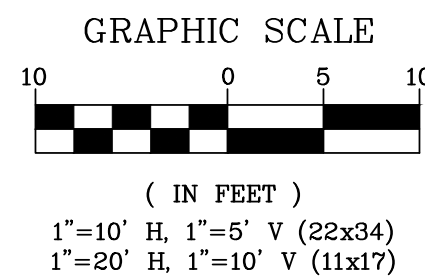
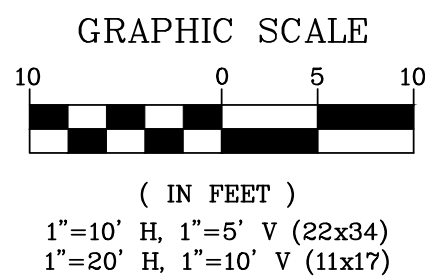
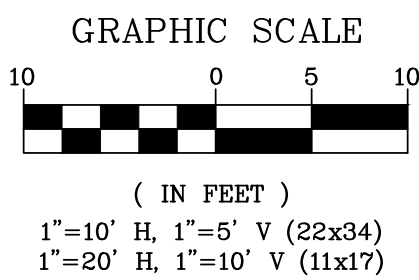
DRIVEWAY G
STA 22+92 LT
2138 THORNTON ST



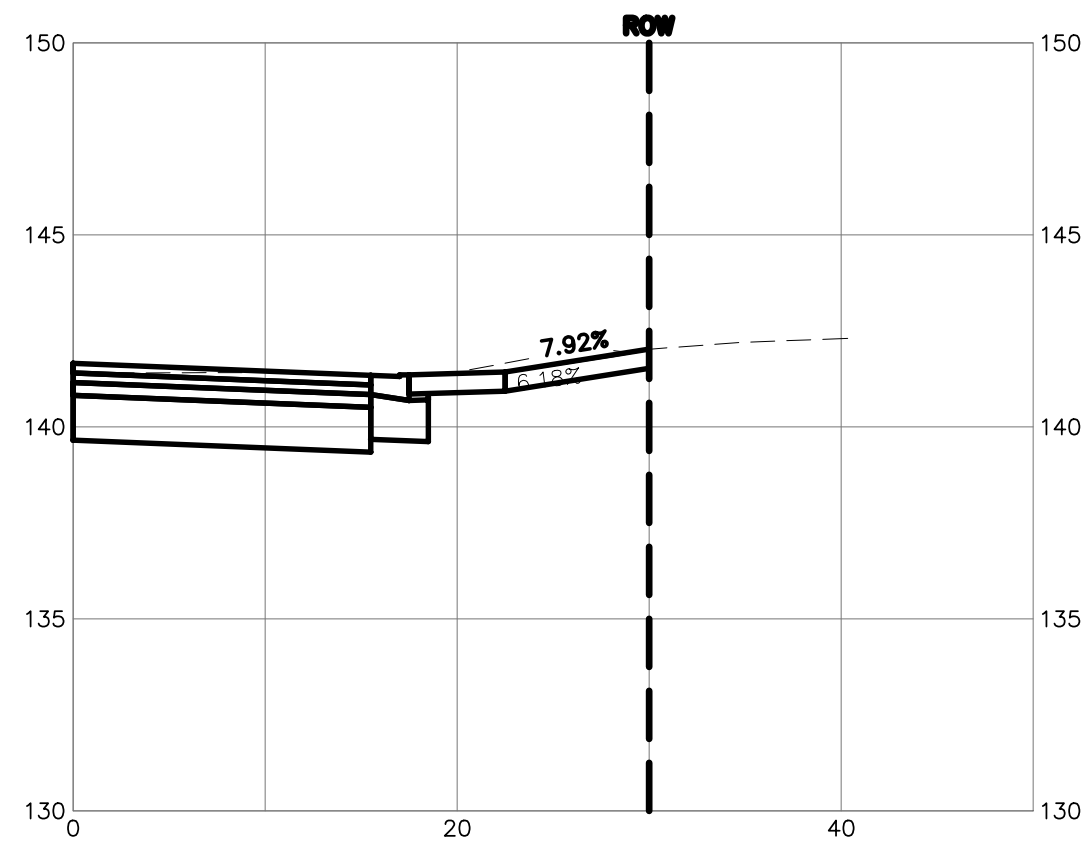
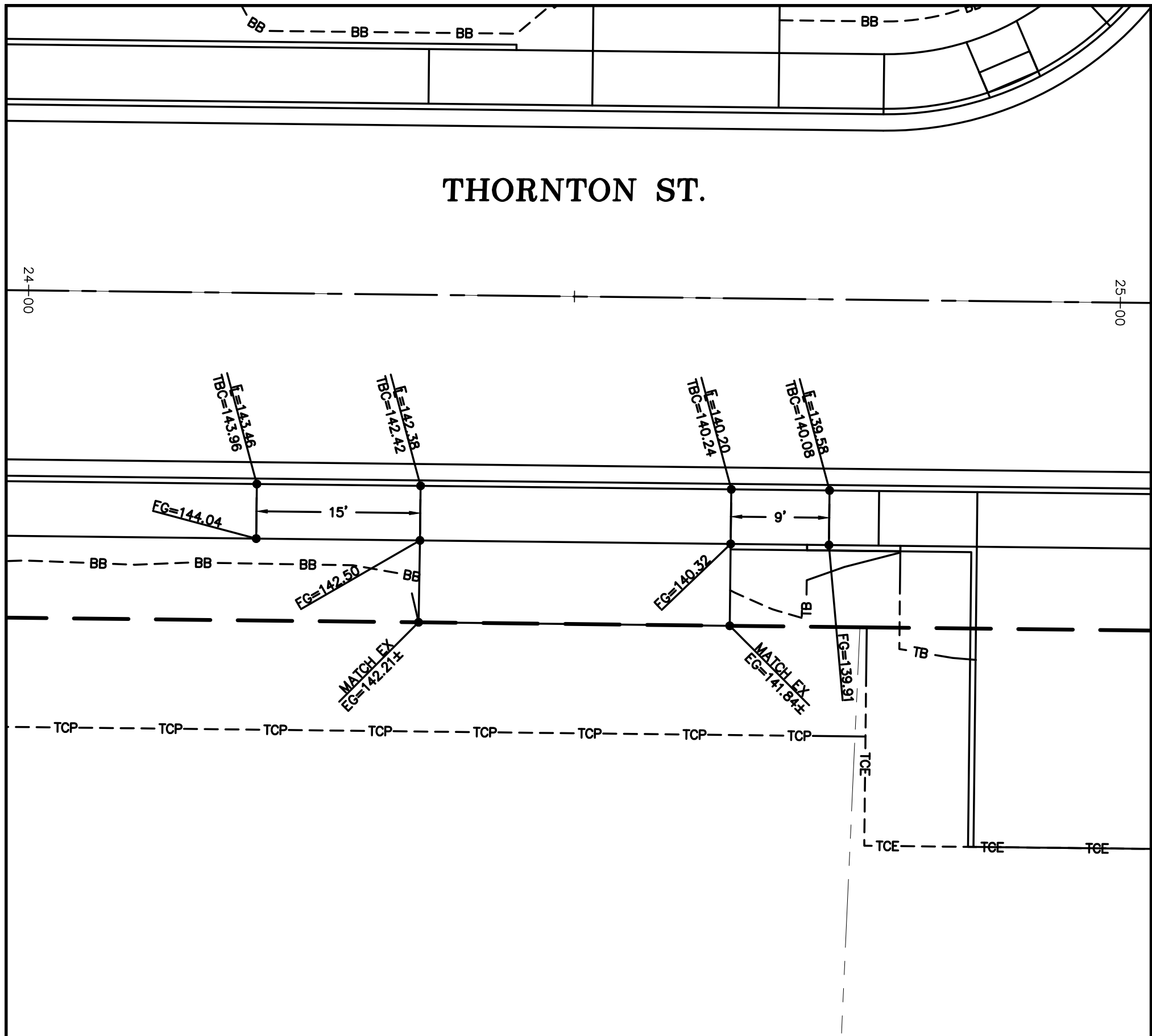
DRIVEWAY H
STA 23+45 LT
2132 THORNTON ST



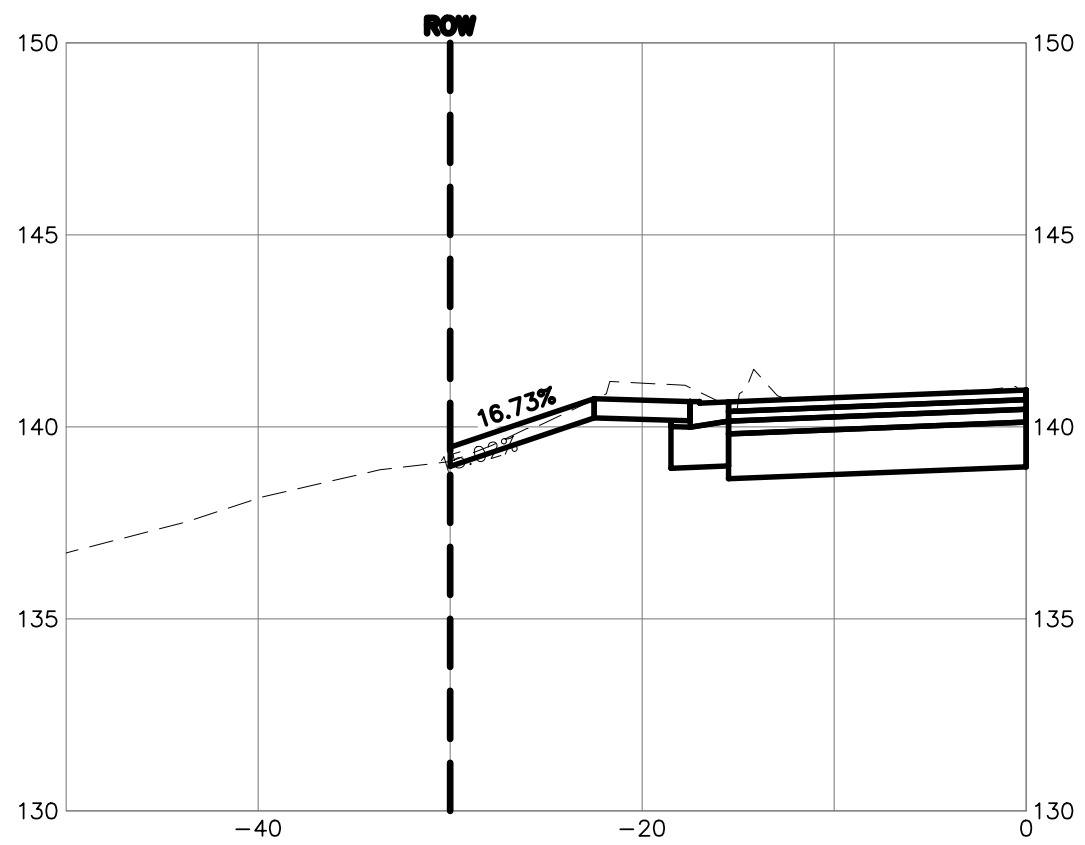
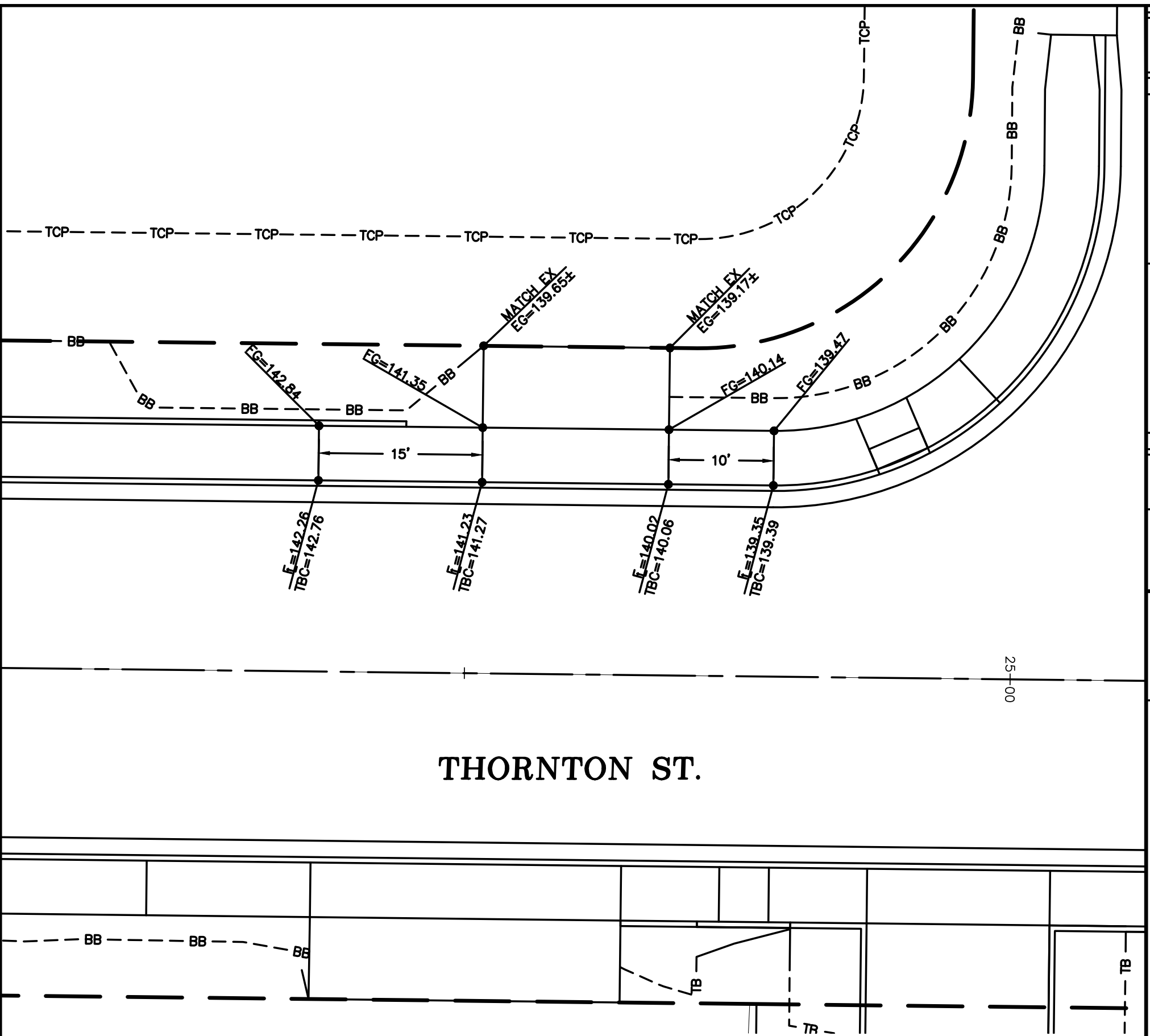
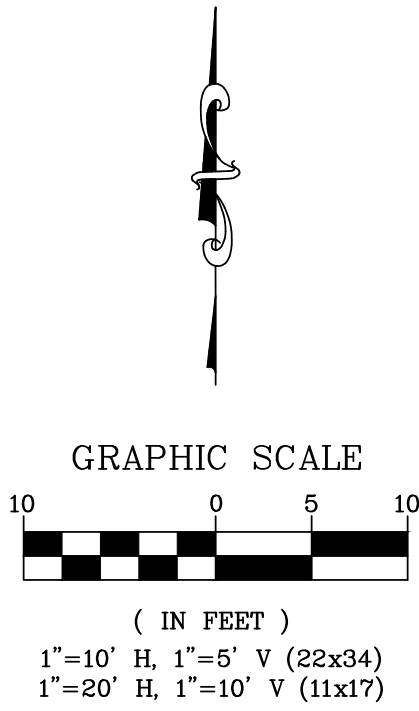
DRIVEWAY I
STA 23+63 RT
2139 THORNTON ST



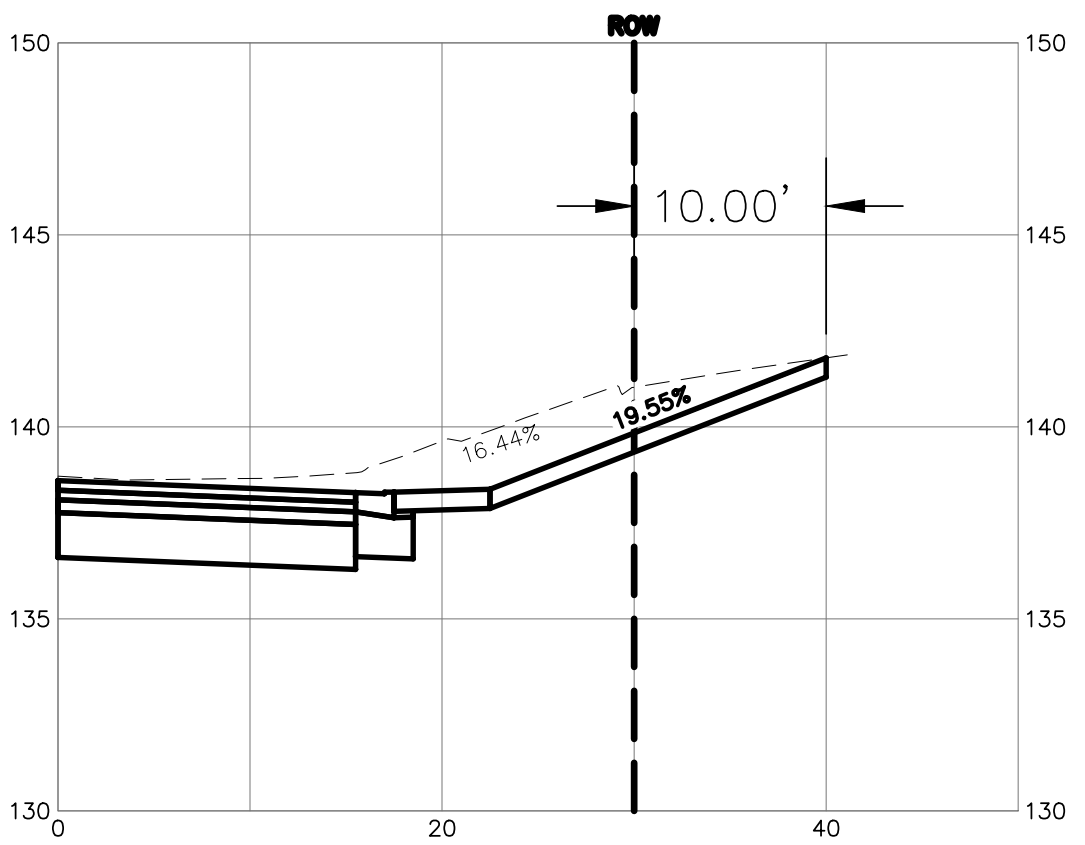
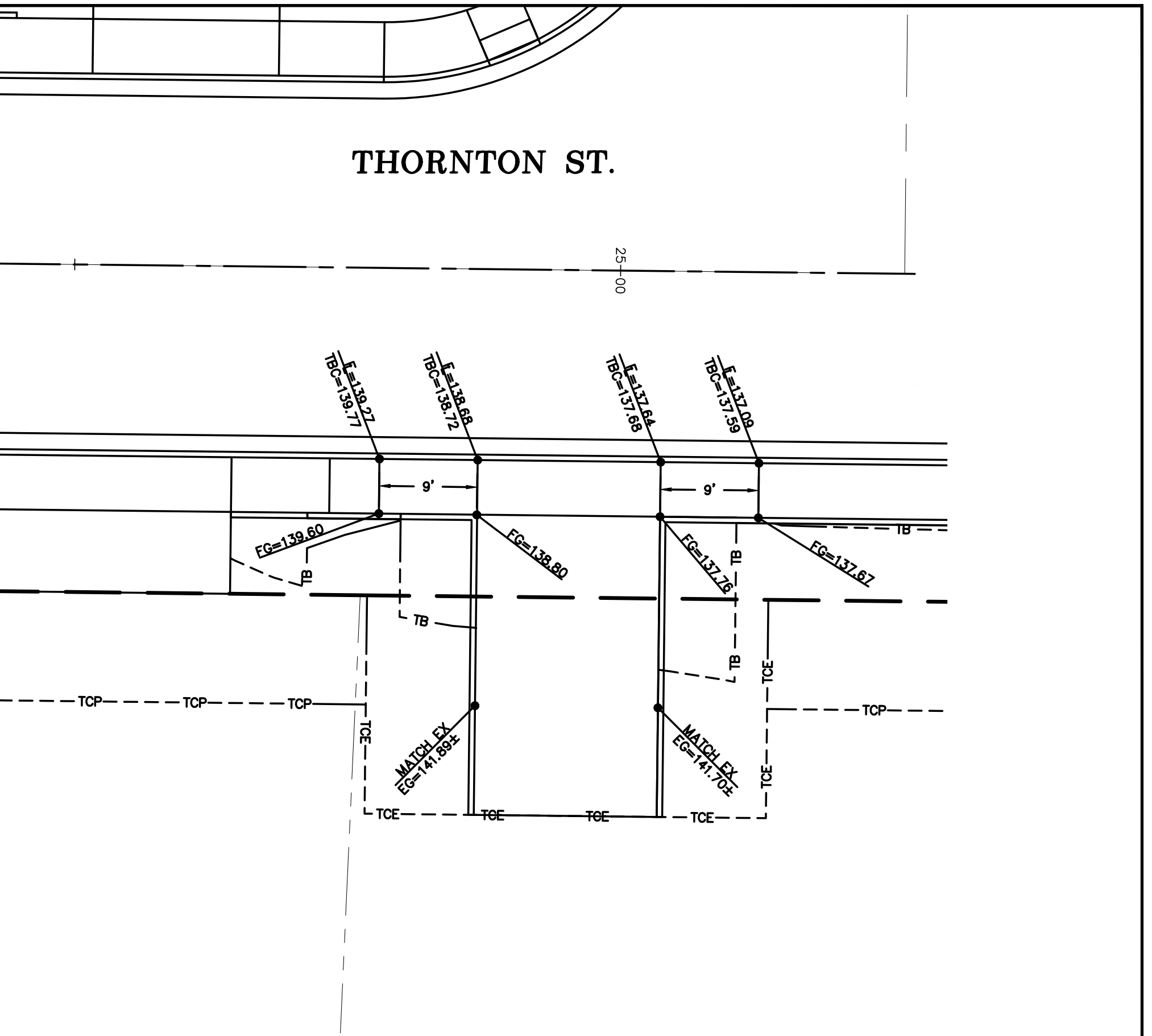
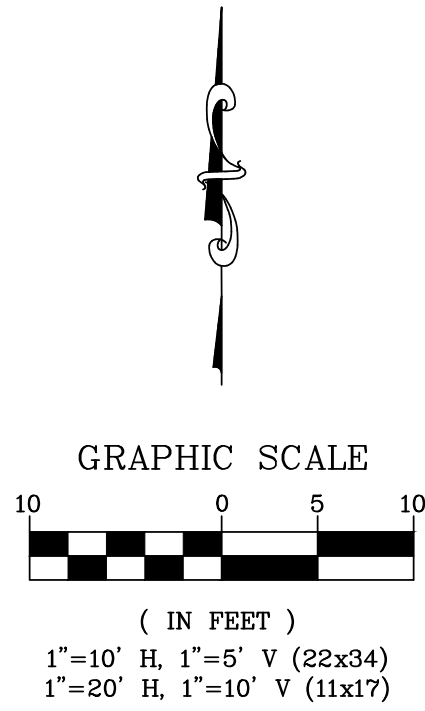
5/22/24	AS-BUILT	DESIGNED BY JAM/LMH	R&E Reichhardt & Ebe ENGINEERING INC P.O. Box 978 423 Front Street Lynden, WA 98264 (360) 354-3687					CITY OF FERDALE 2095 MAIN ST FERDALE, WA 98248	THORNTON STREET - VISTA TO MALLOY AVENUE DRIVEWAYS - G, H, + I	DWG 19025 DWY		DATE 5/22/24
		DRAWN BY JAM/LMH										
		CHECKED BY LP										
				NO.	DATE	DESCRIPTION	BY				SHEET 46 of 64	



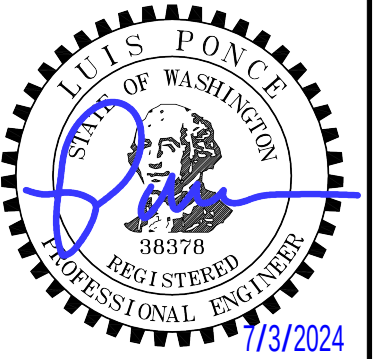
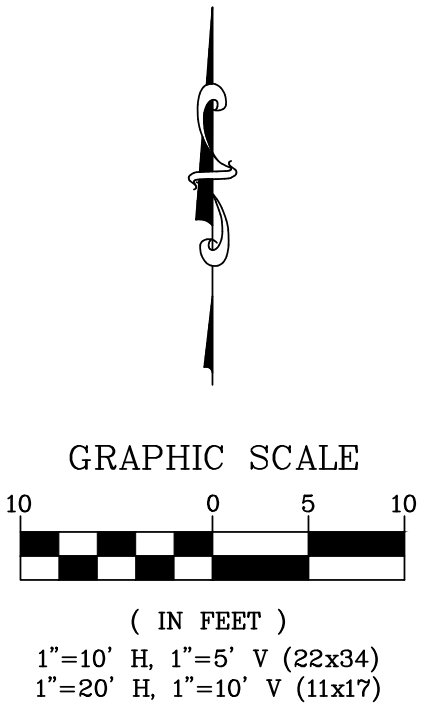
DRIVEWAY J
STA 24+50 RT
2127 THORNTON ST



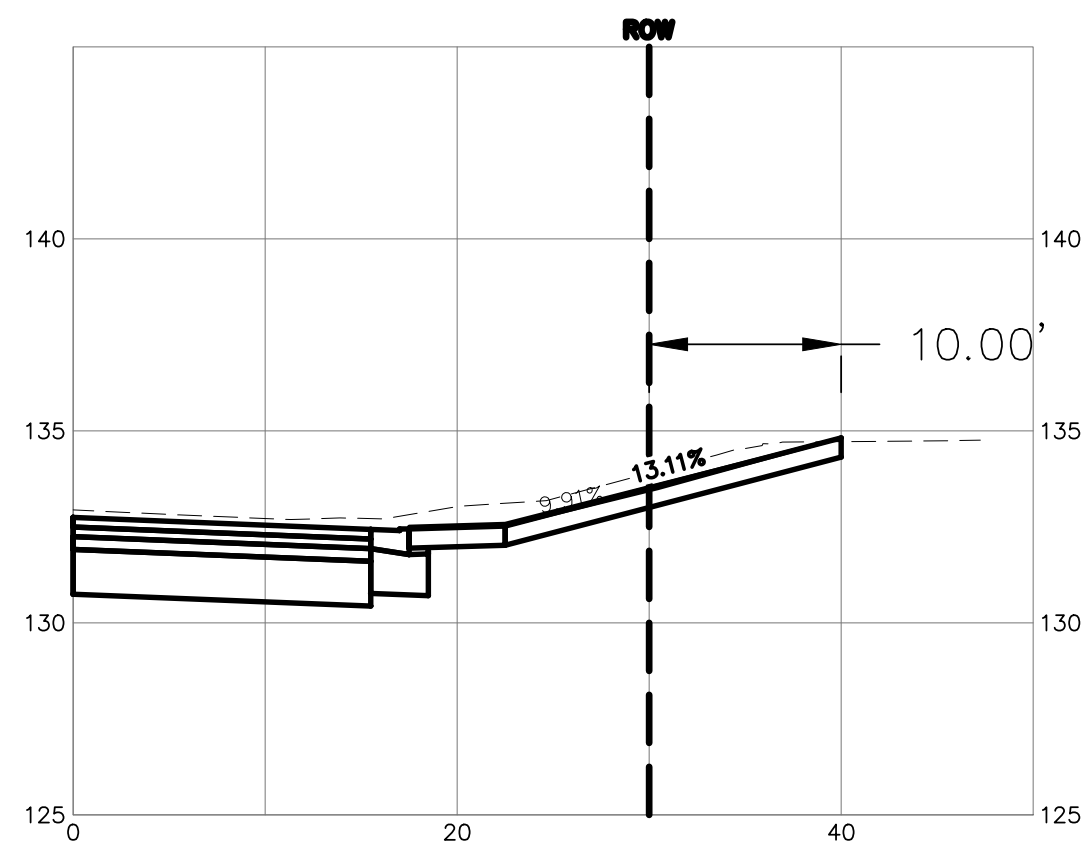
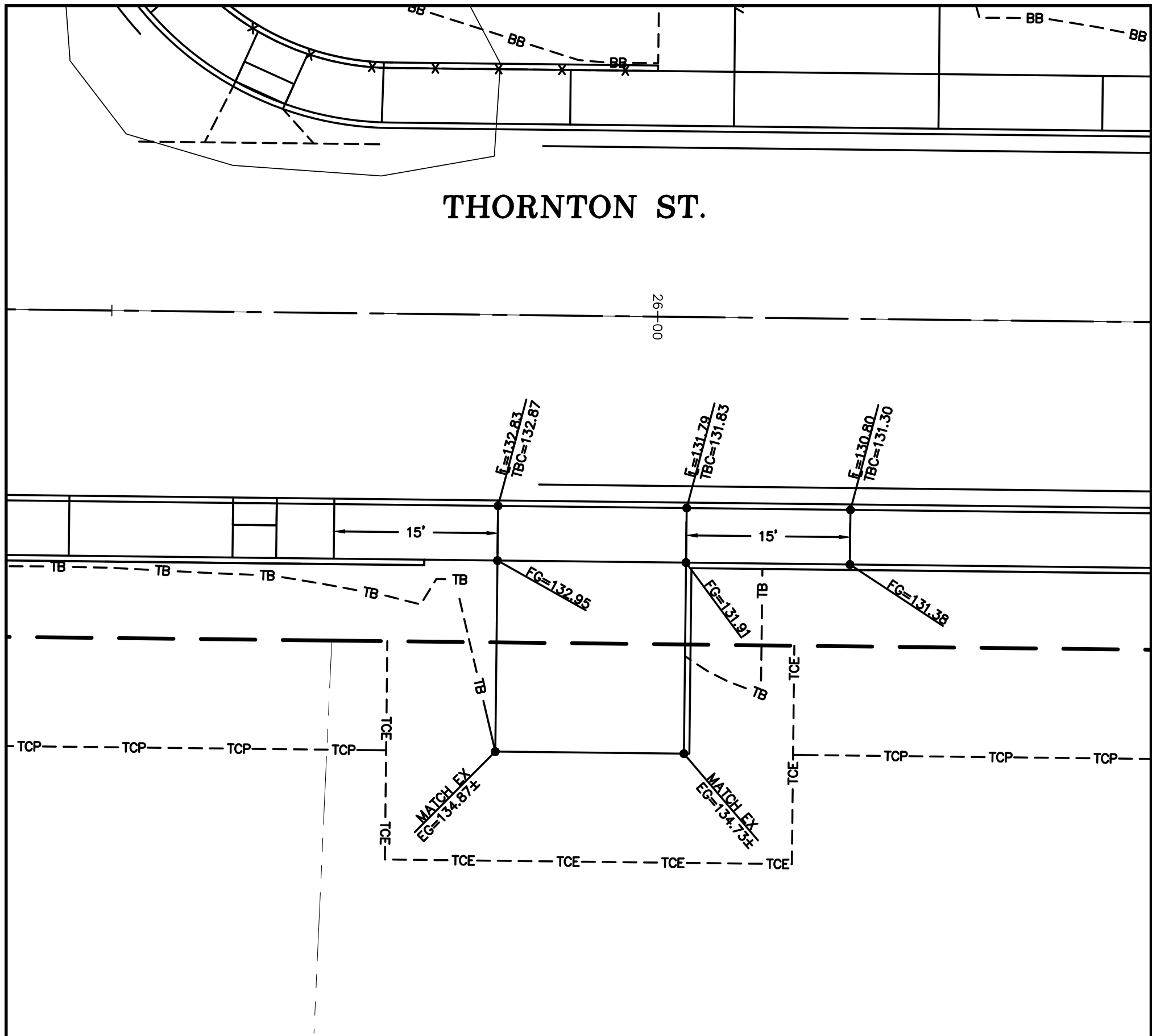
DRIVEWAY K
STA 24+61 LT
2126 THORNTON ST



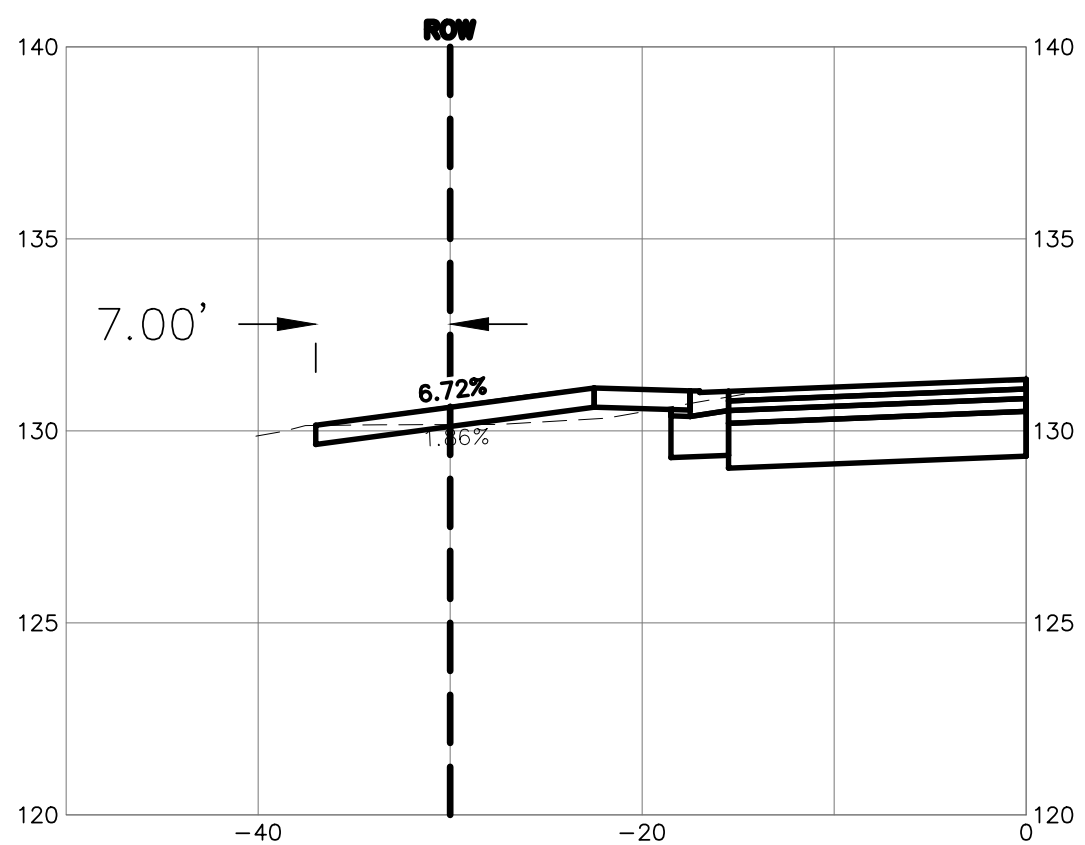
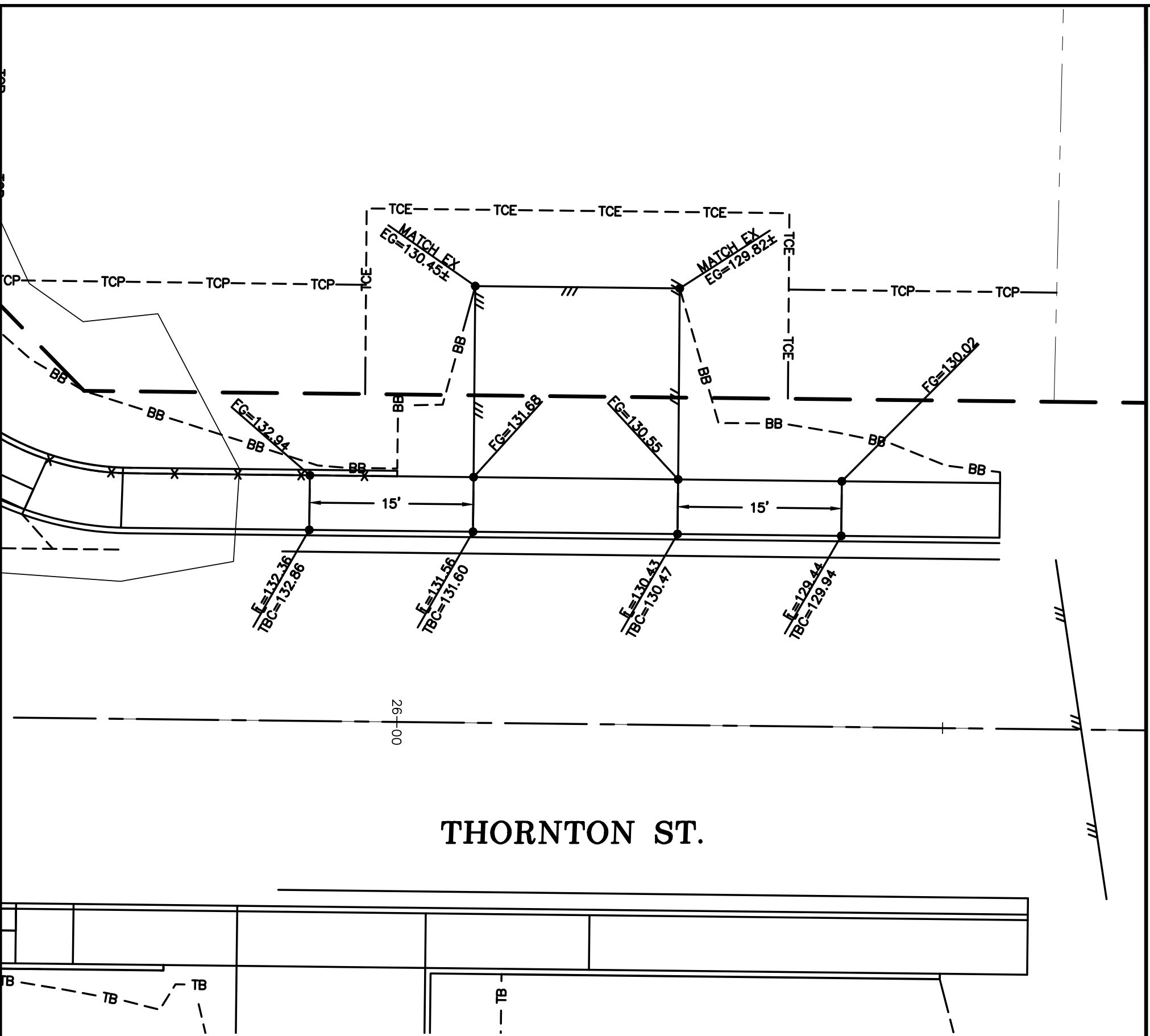
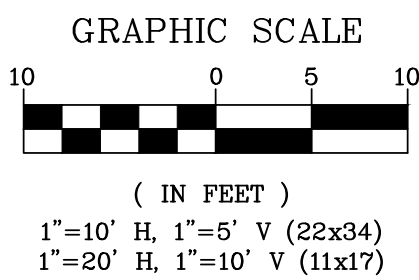
DRIVEWAY L
STA 24+95 RT
2119 THORNTON ST



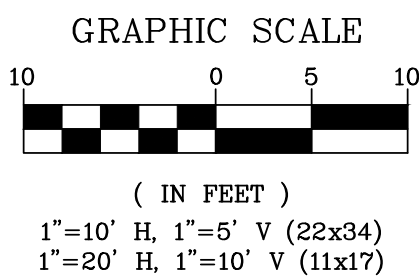
5/22/24	AS-BUILT	DESIGNED BY JAM/LMH	R&E Reichhardt & Ebe ENGINEERING INC P.O. Box 978 423 Front Street Lynden, WA 98264 (360) 354-3687																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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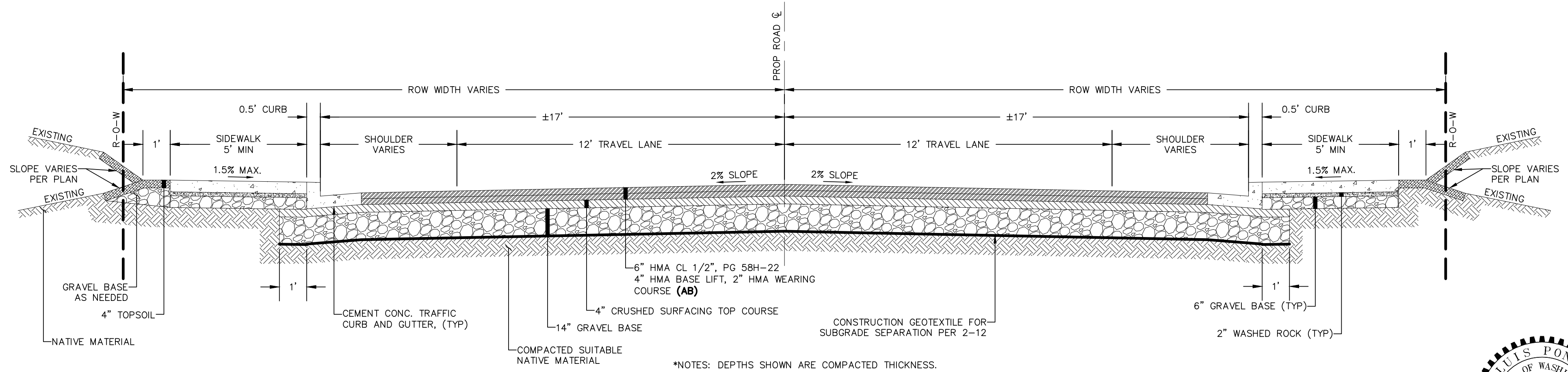
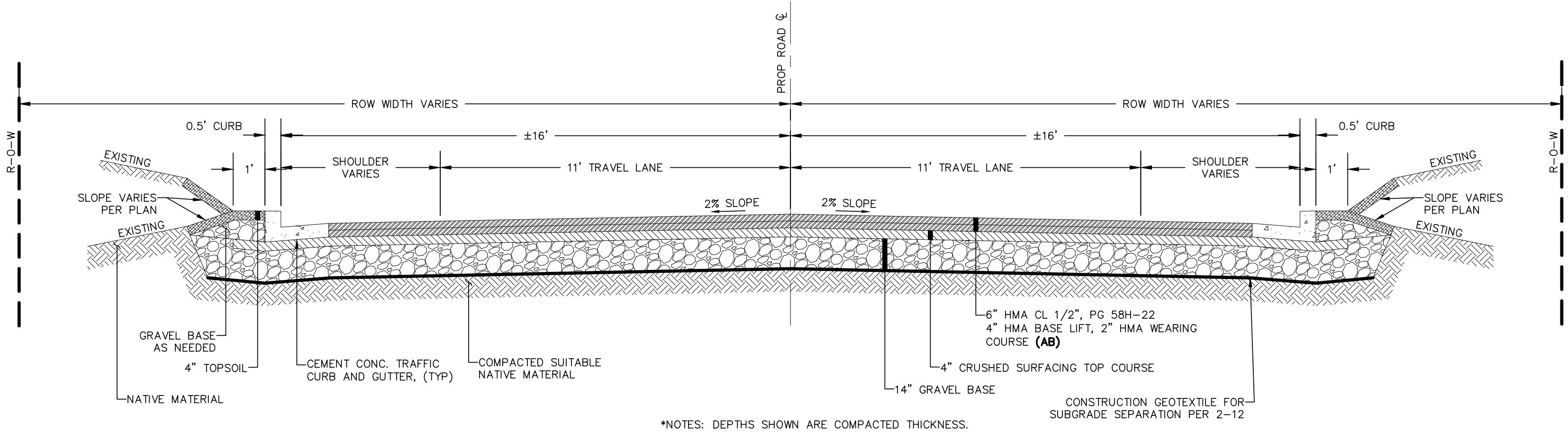
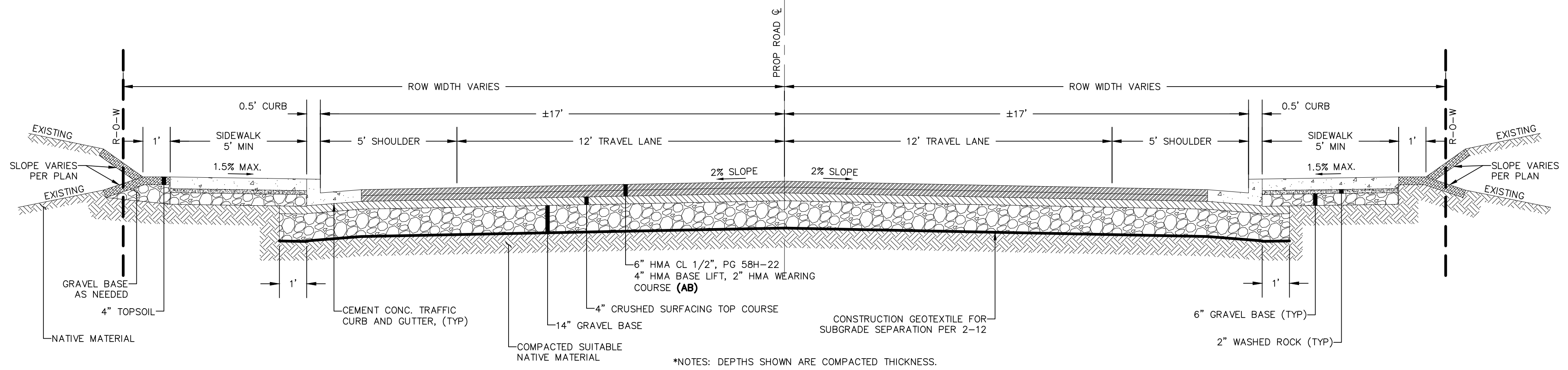
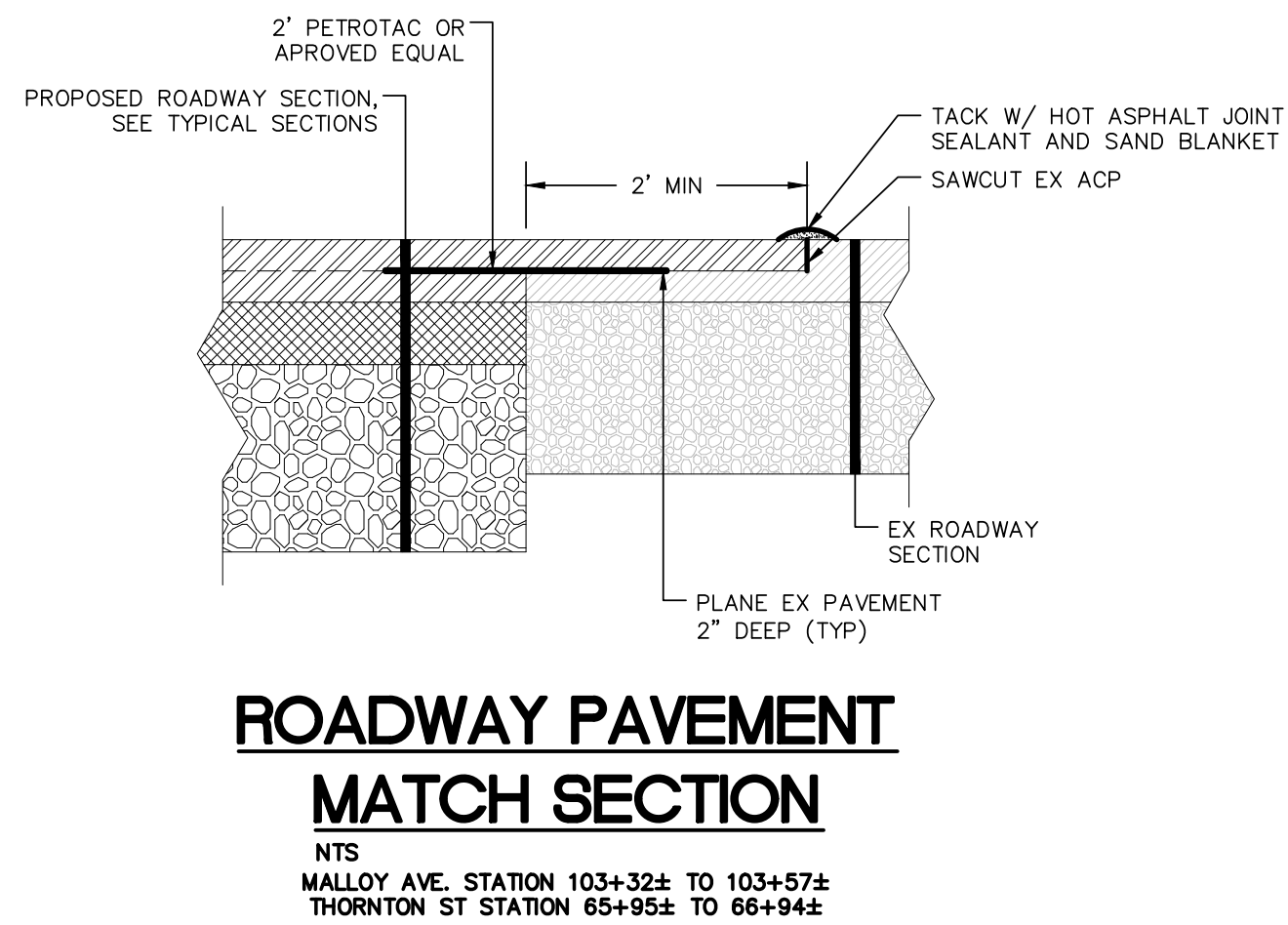
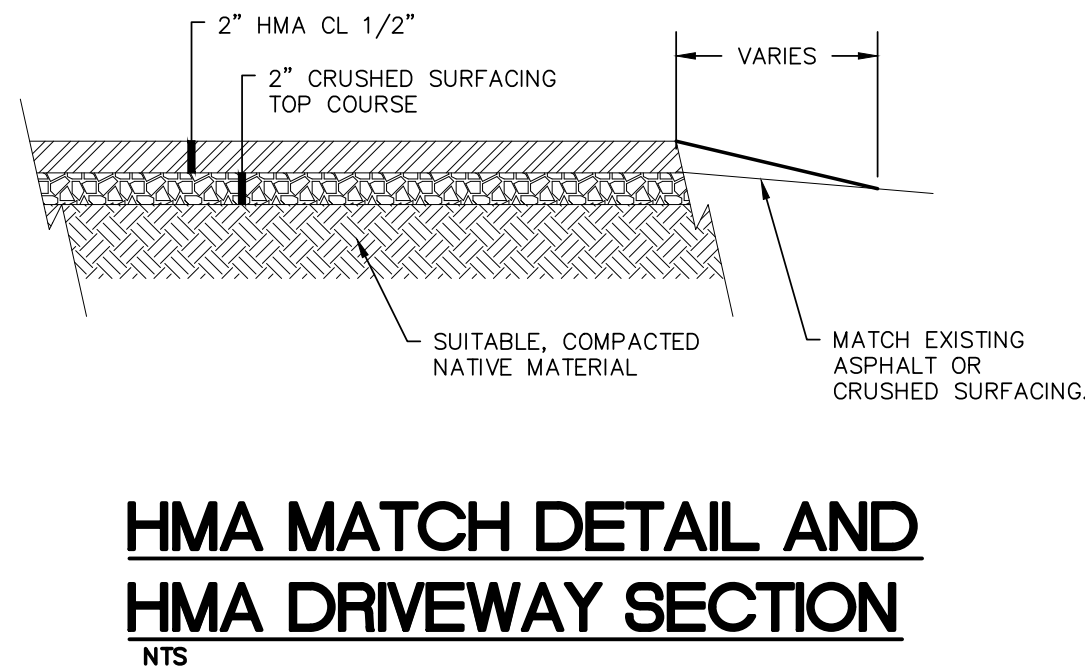
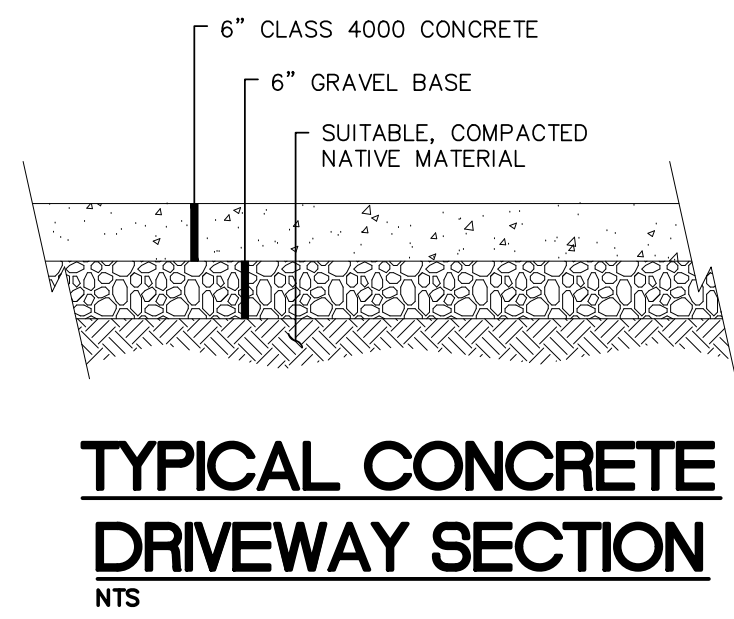
DRIVEWAY M
STA 25+93 RT
2113 THORNTON ST



DRIVEWAY N
STA 26+16 LT
2114 THORNTON ST



5/22/24	AS-BUILT	DESIGNED BY JAM/LMH	R&E Reichhardt & Ebe ENGINEERING INC P.O. Box 978 423 Front Street Lynden, WA 98264 (360) 354-3687	NO.	DATE	DESCRIPTION	BY	CITY OF FERDALE 2095 MAIN ST FERDALE, WA 98248	THORNTON STREET - VISTA TO MALLOY AVENUE DRIVEWAYS - M, + N	DWG 19025 DWY	DATE 5/22/24
		DRAWN BY JAM/LMH								JOB# 19025	SHEET 48 of 64



5/22/24
AS-BUILT

DESIGNED BY
JAM/LMH
DRAWN BY
JAM/LMH
CHECKED BY
LP

R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

NO.	DATE	DESCRIPTION	BY

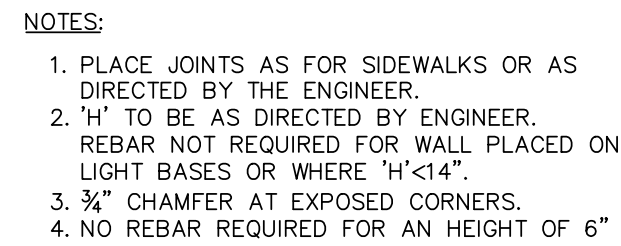
CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE
TYPICAL SECTIONS

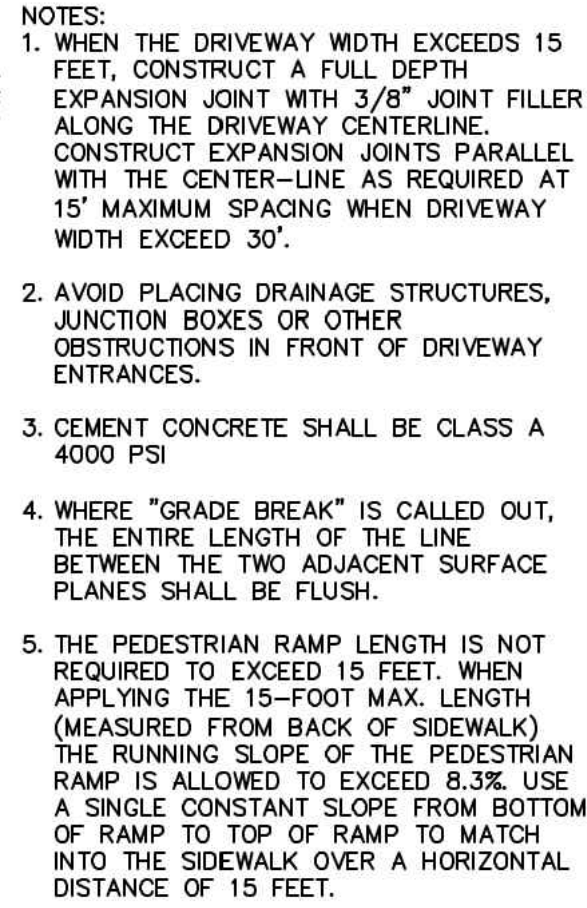
DWG 19025 DETAILS	DATE 5/22/24
JOB# 19025	SCALE H: N/A V: N/A
SHEET 49 of 64	



TYPICAL SECTION W/ MONOLITHIC CURB,
RAISED SIDEWALK EDGE AND FILL

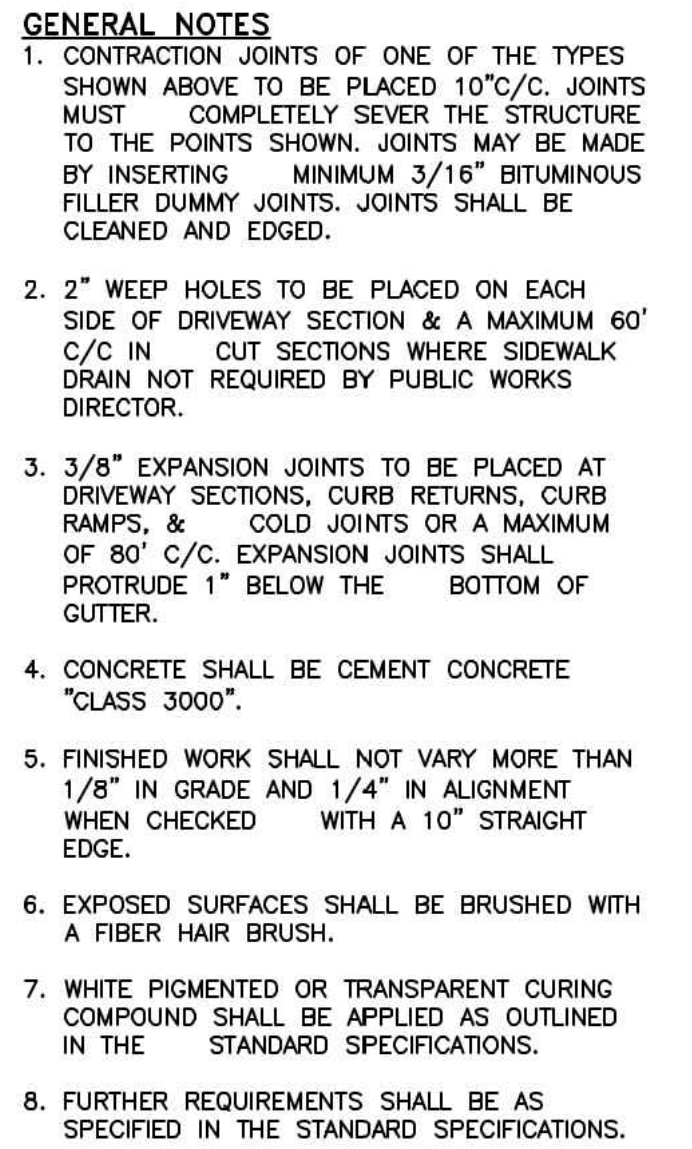


" MONOLITHIC RETAINING WALL AND SIDEWALK (TYP)



NOVEMBER 25, 2016

CEMENT CONCRETE
DRIVEWAY ENTRANCE
STANDARD DETAIL R-6
NOT TO SCALE



CURB RAMP/DRIVEWAY SECTION



NOVEMBER 25, 2016

**CURB AND GUTTER
INSTALLATION**

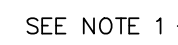
STANDARD DETAIL R-9

NOT TO SCALE



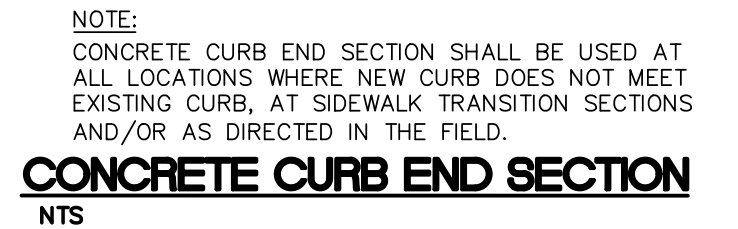
NOTES

1. 3/8" EXPANSION JOINT.
2. SIDEWALK RAMPS SHALL NOT BE POURED INTEGRAL WITH SIDEWALK AND SHALL BE ISOLATED BY EXPANSION JOINT MATERIAL ON ALL SIDES, EXCEPT AT END OF RAMP ADJACENT TO ROADWAY.



ISOMETRIC VIEW

SIDEWALK END RAMP



AS-BUILT

DESIGNED BY JAM/LMH
DRAWN BY JAM/LMH
CHECKED BY LP

R&E **Reichhardt & Ebe**
ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

CITY OF FERNDALE
2095 MAIN ST
FERNDALE, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE

GRADING DETAILS

DWG 19025 DETAILS

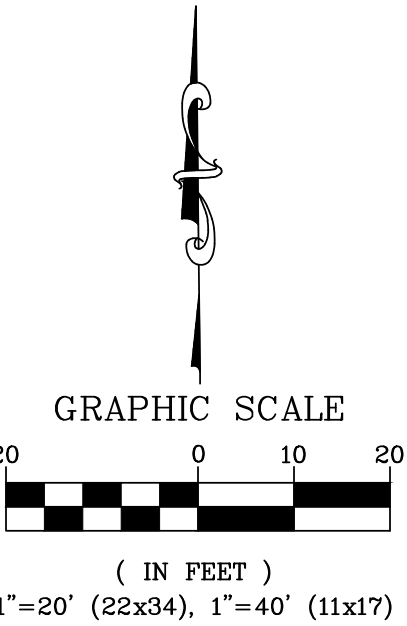
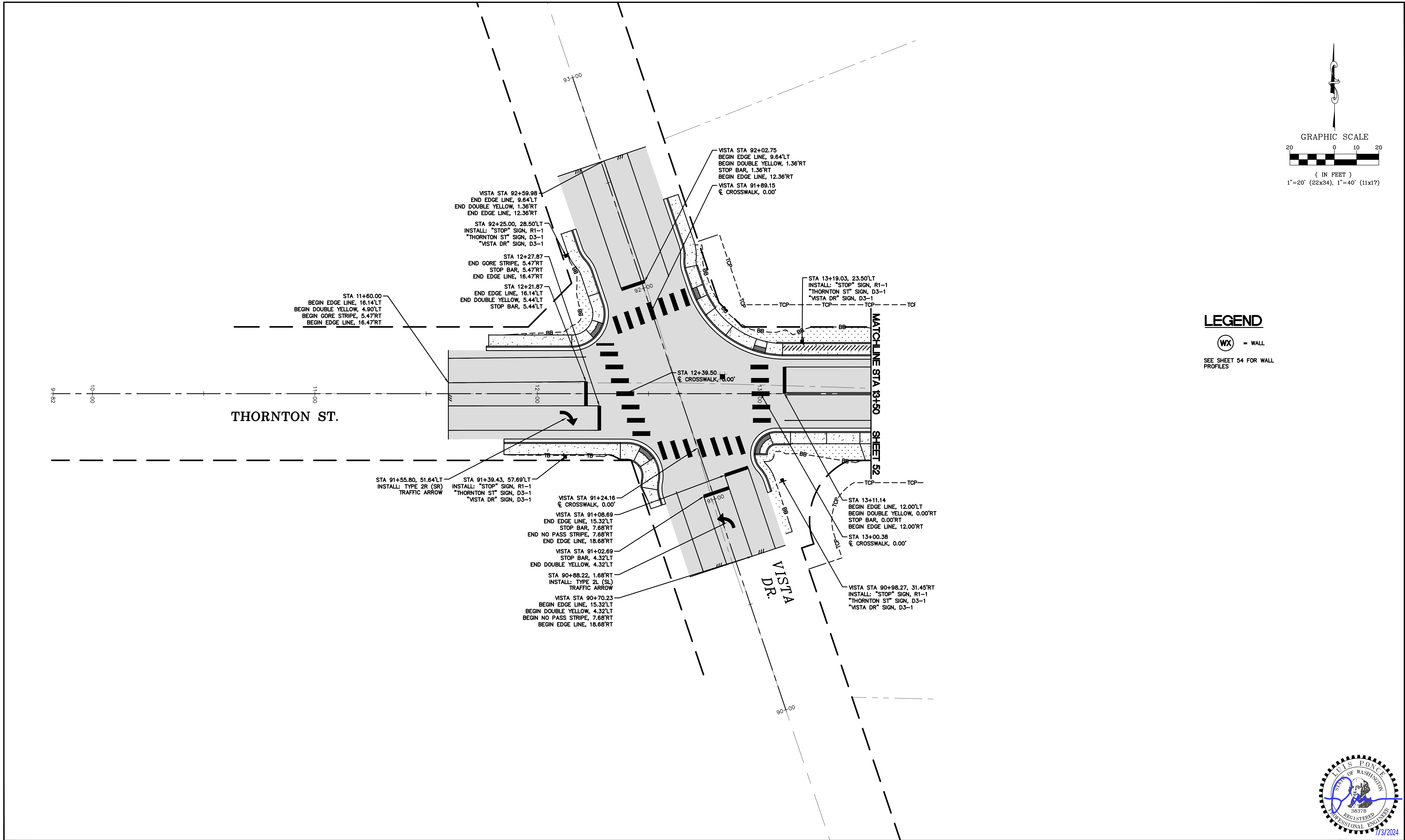
JOB#	
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SCALE

DATE _____

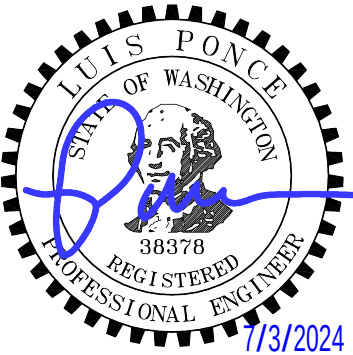
SHEET 50

30
of 64

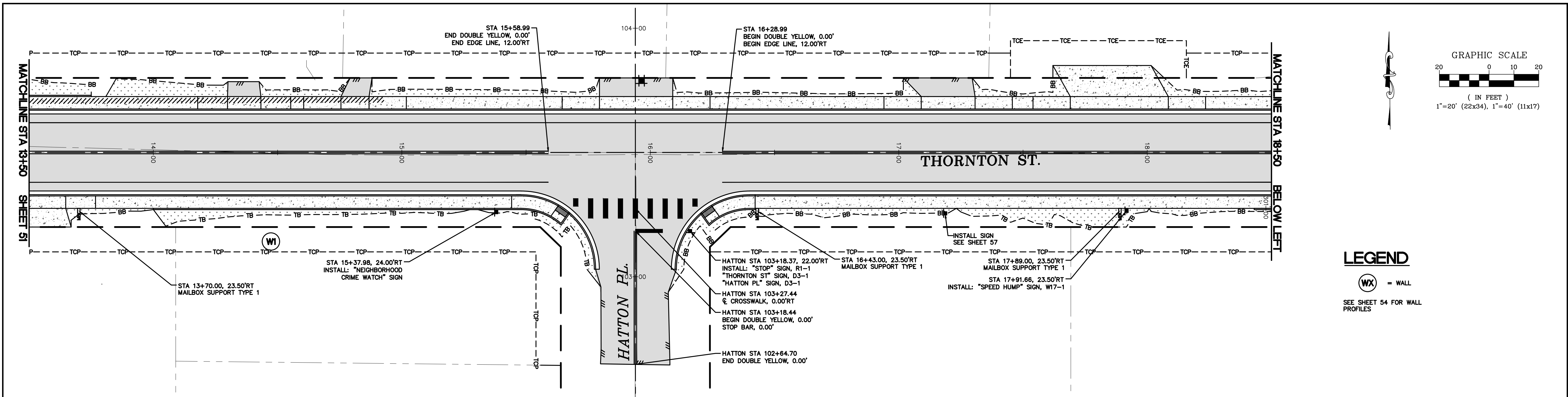


LEGEND

-  = WALL
SEE SHEET 54 FOR WALL PROFILES



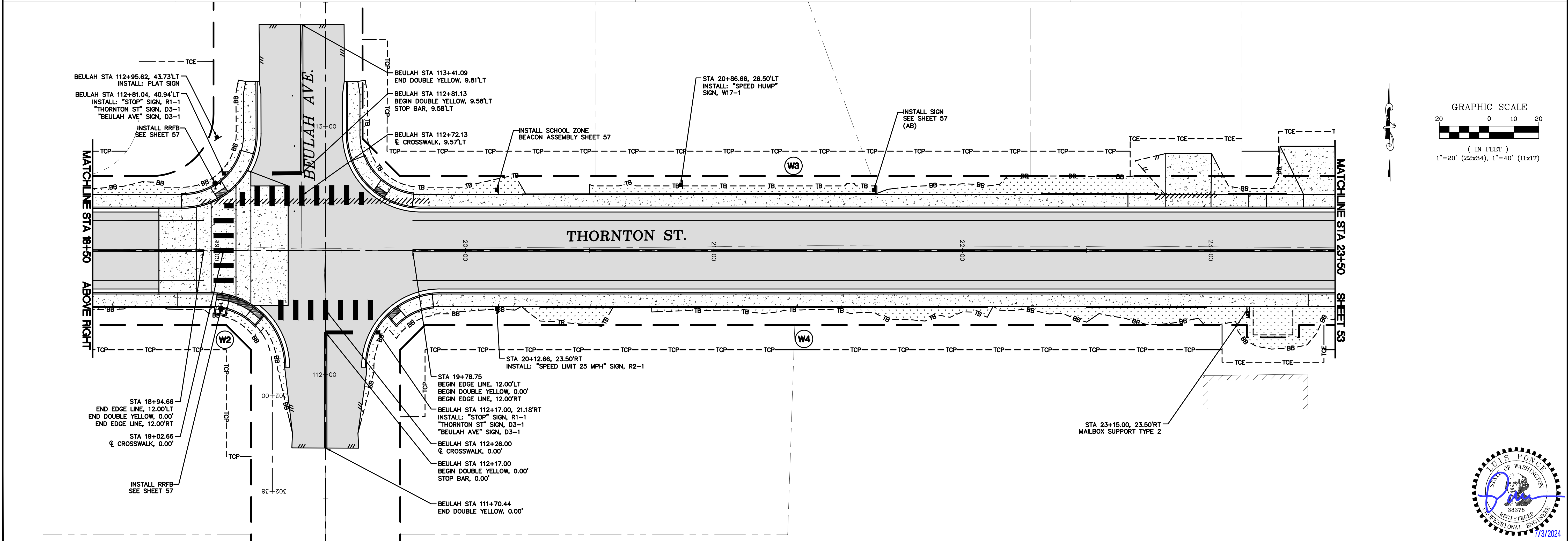
5/22/24 AS-BUILT	DESIGNED BY JAM/LMH	R&E Reichhardt & Ebe ENGINEERING INC P.O. Box 978 423 Front Street Lynden, WA 98264 (360) 354-3687																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																</
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LEGEND

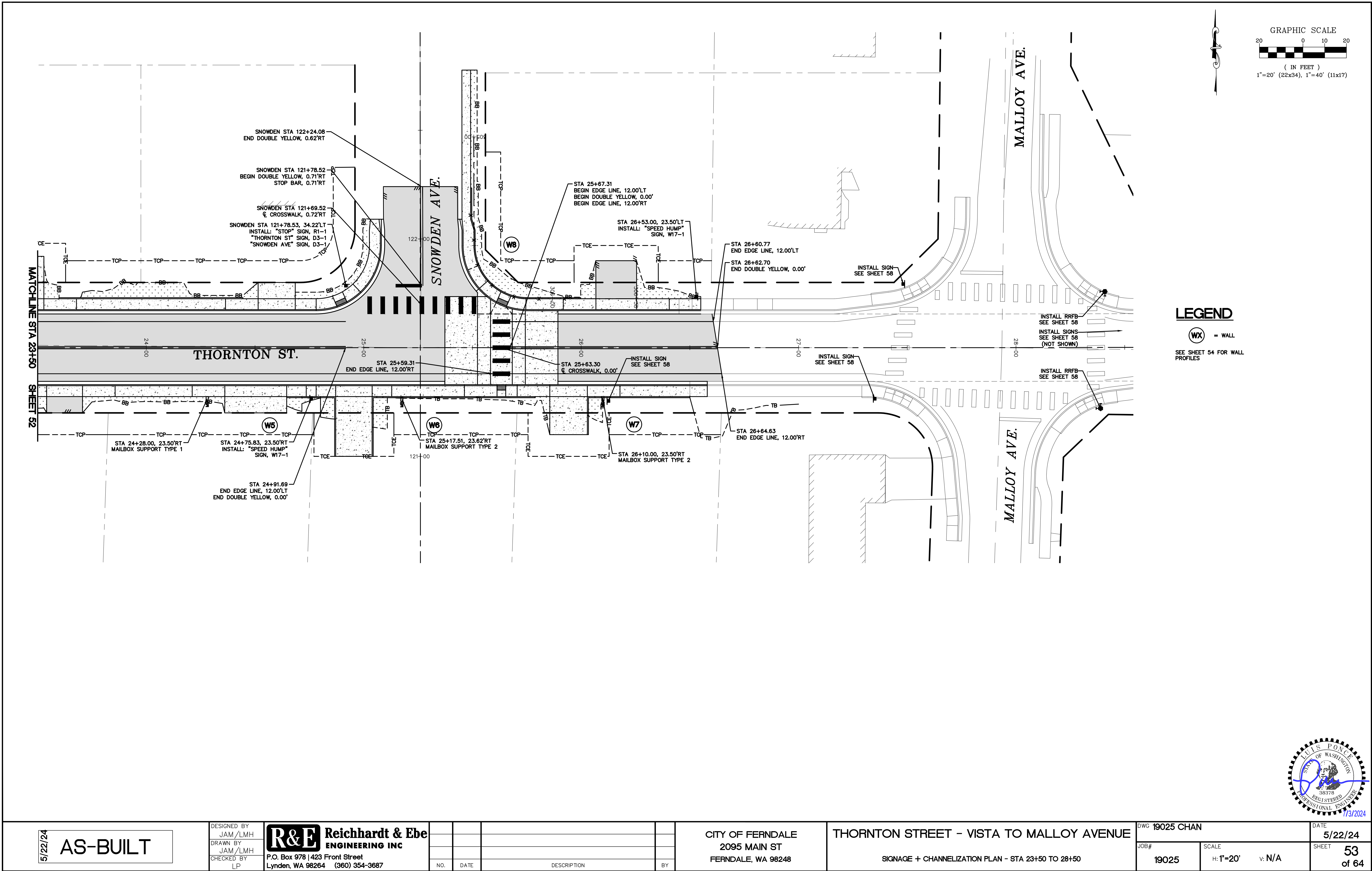
(WX) = WALL

SEE SHEET 54 FOR WALL PROFILES



5/22/24	AS-BUILT	DESIGNED BY JAM/LMH DRAWN BY JAM/LMH CHECKED BY LP	R&E Reichhardt & Ebe ENGINEERING INC P.O. Box 978 423 Front Street Lynden, WA 98264 (360) 354-3687	NO.	DATE	DESCRIPTION	BY	CITY OF FERNDAL 2095 MAIN ST FERNDAL, WA 98248	THORNTON STREET - VISTA TO MALLOY AVENUE SIGNAGE + CHANNELIZATION PLAN - STA 13+50 TO 23+50	DWG 19025 CHAN		DATE 5/22/24
										JOB# 19025	SCALE H: 1"=20' V: N/A	SHEET 52 of 64





5/22/24
AS-BUILT

DESIGNED BY
JAM/LMH
DRAWN BY
JAM/LMH
CHECKED BY
LP

R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

NO.	DATE	DESCRIPTION	BY

CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

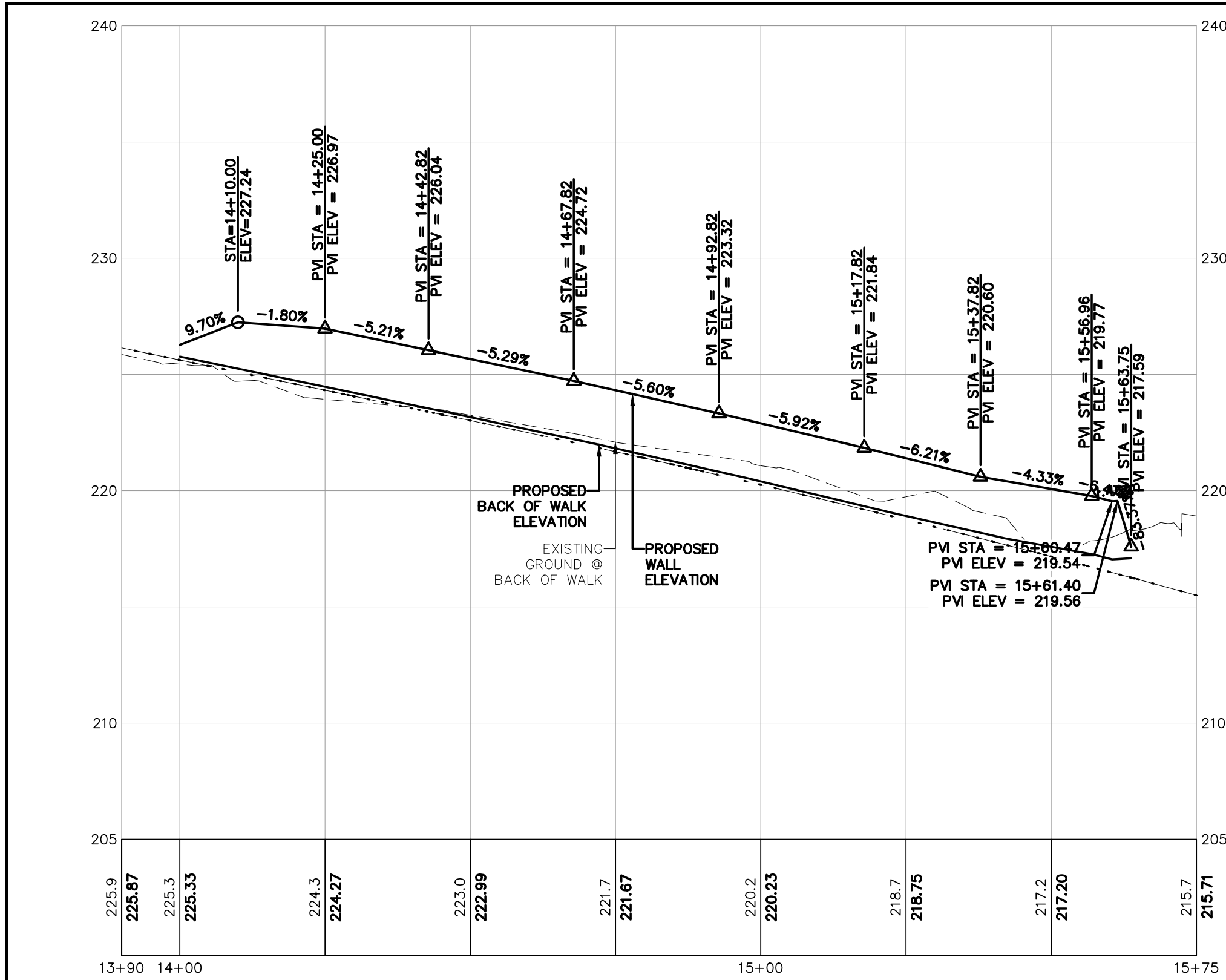
THORNTON STREET - VISTA TO MALLOY AVENUE
SIGNAGE + CHANNELIZATION PLAN - STA 23+50 TO 28+50

DWG 19025 CHAN
JOB# 19025

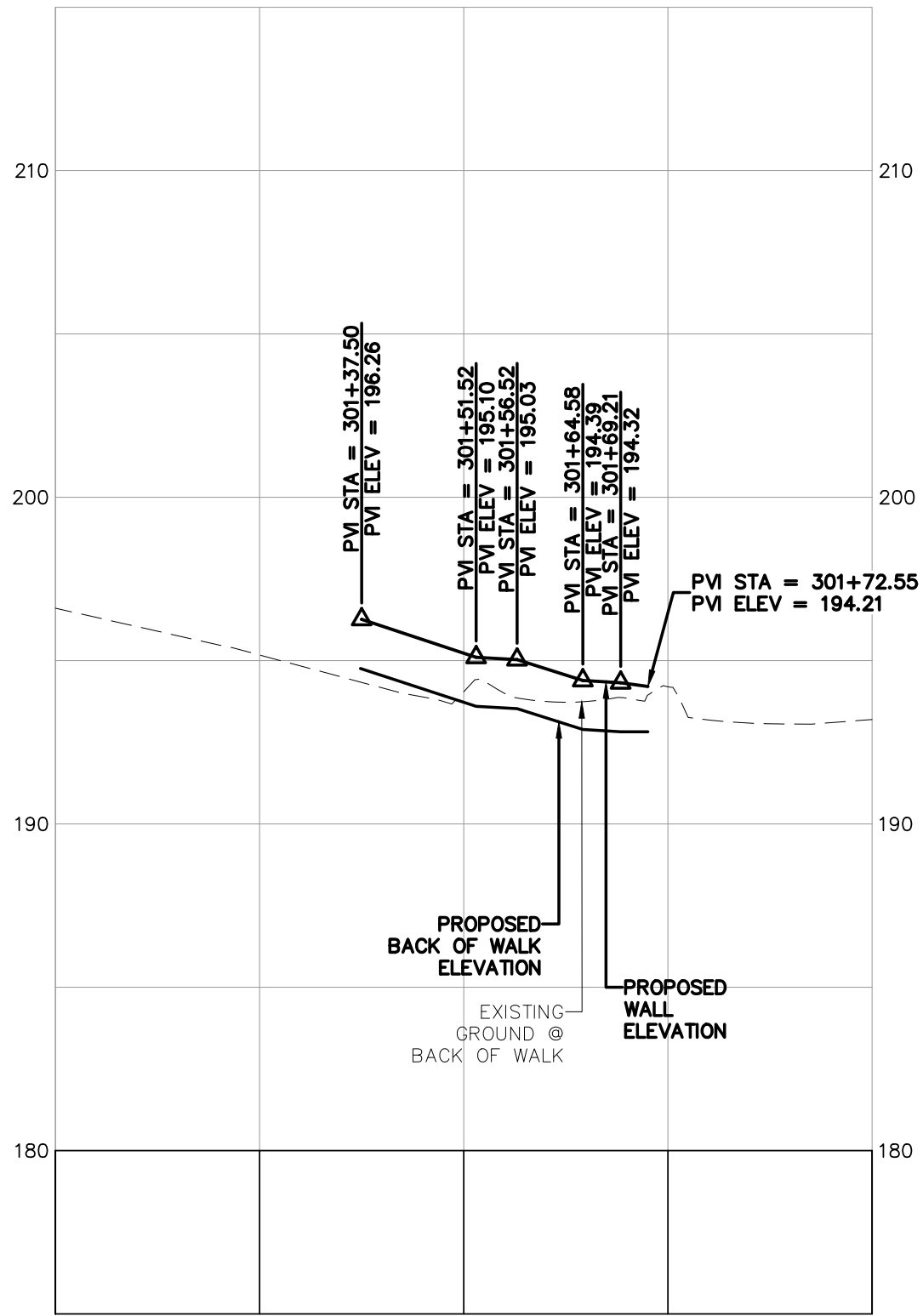
SCALE
H: 1"=20' V: N/A

DATE 5/22/24
SHEET 53 of 64

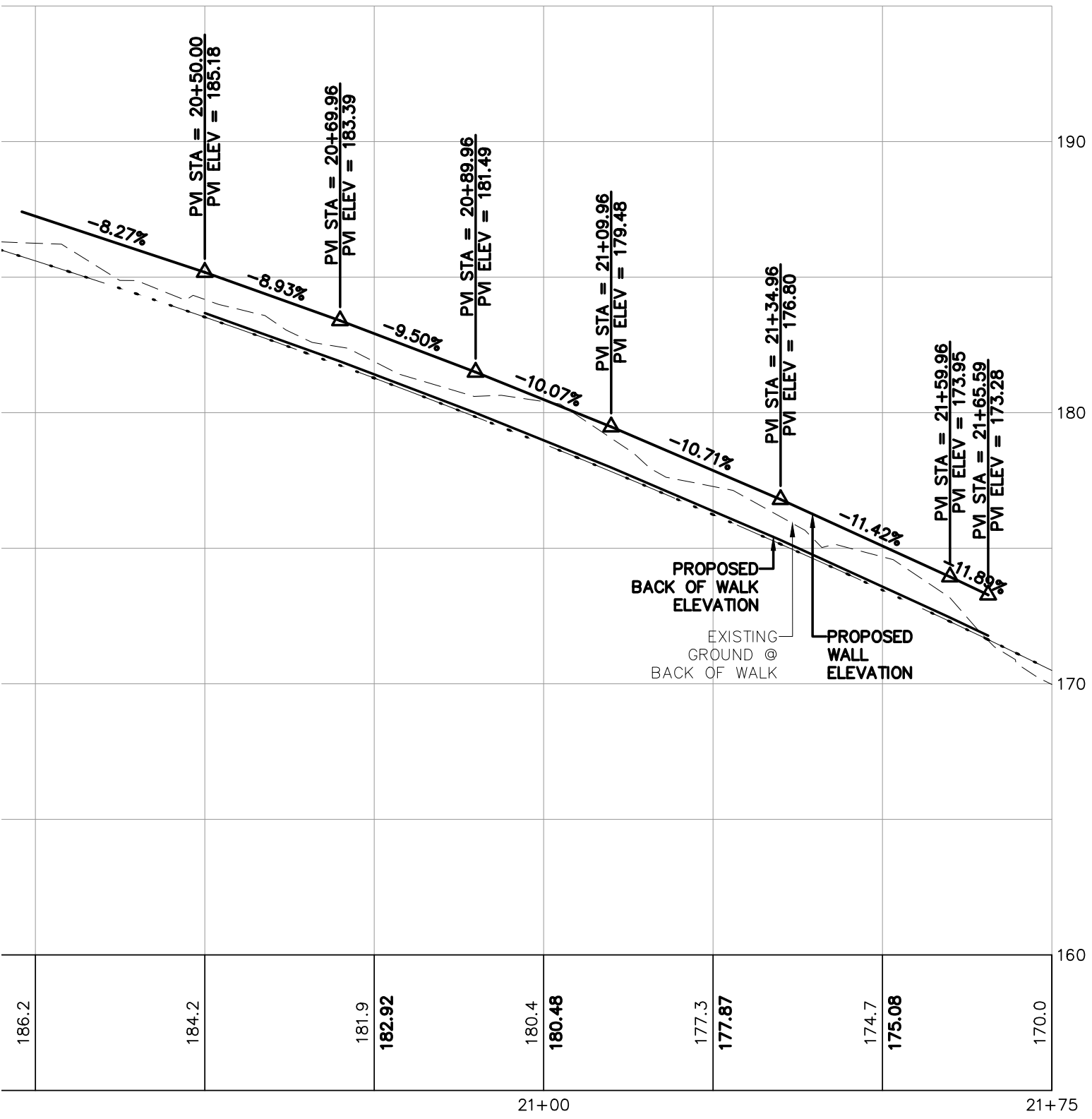




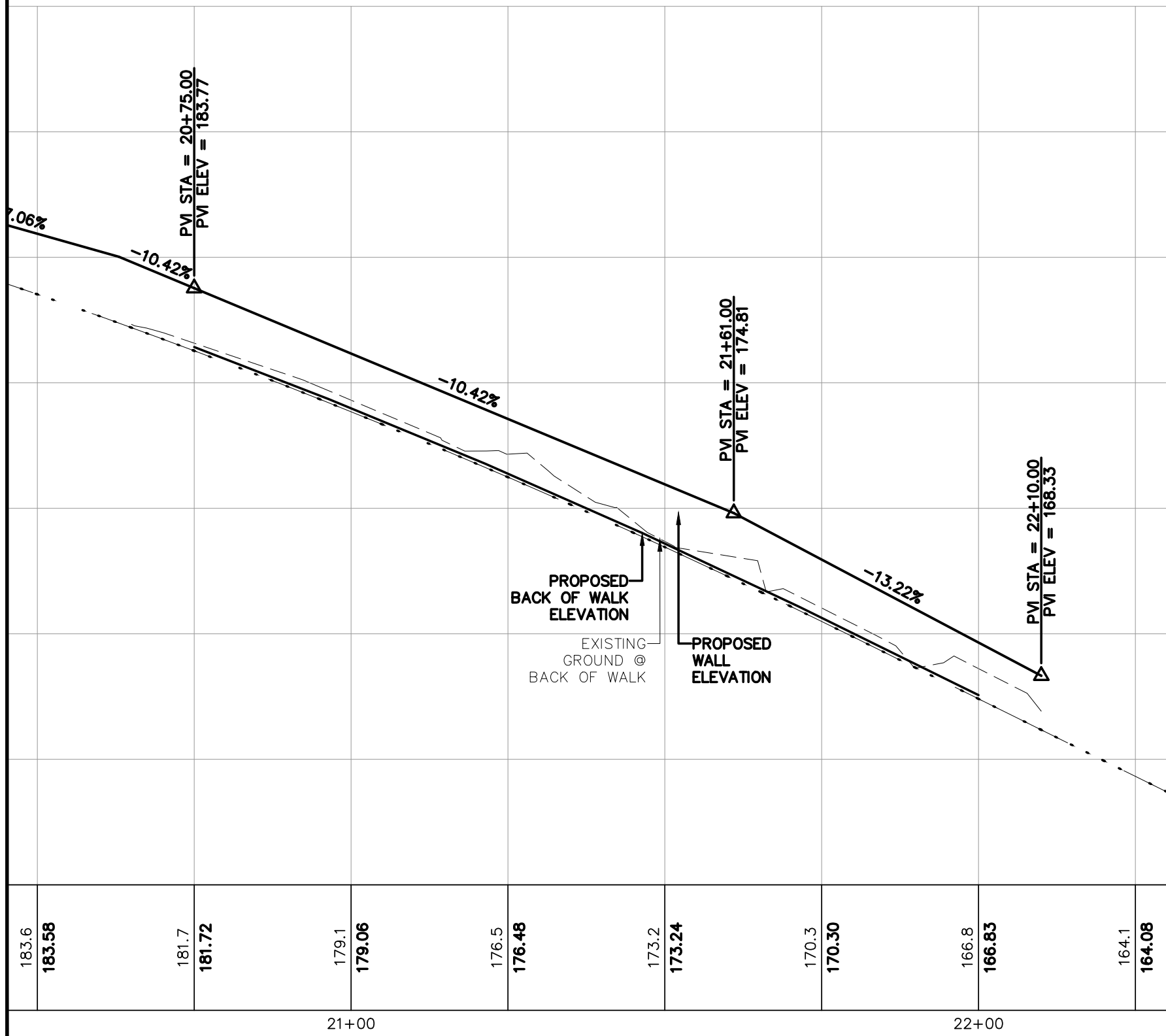
WALL W1
STA 13+90 TO 15+75 RT
SCALE= H: 1"=20', V: 1"=5'



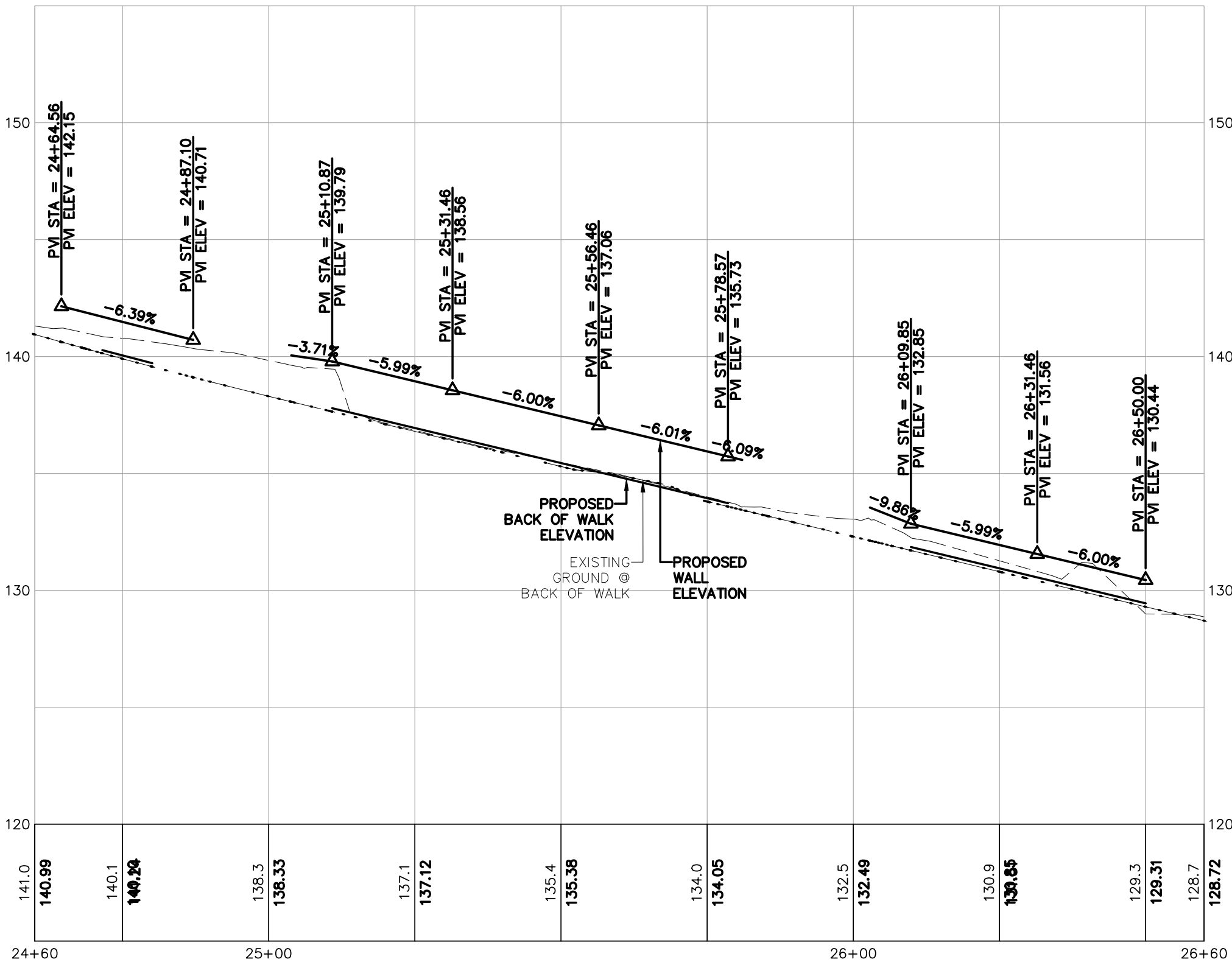
WALL W2
STA 18+30 TO 19+40
SCALE= H: 1"=20', V: 1"=5'



WALL W3
STA 20+23 TO 21+66 LT
SCALE= H: 1"=20', V: 1"=5'



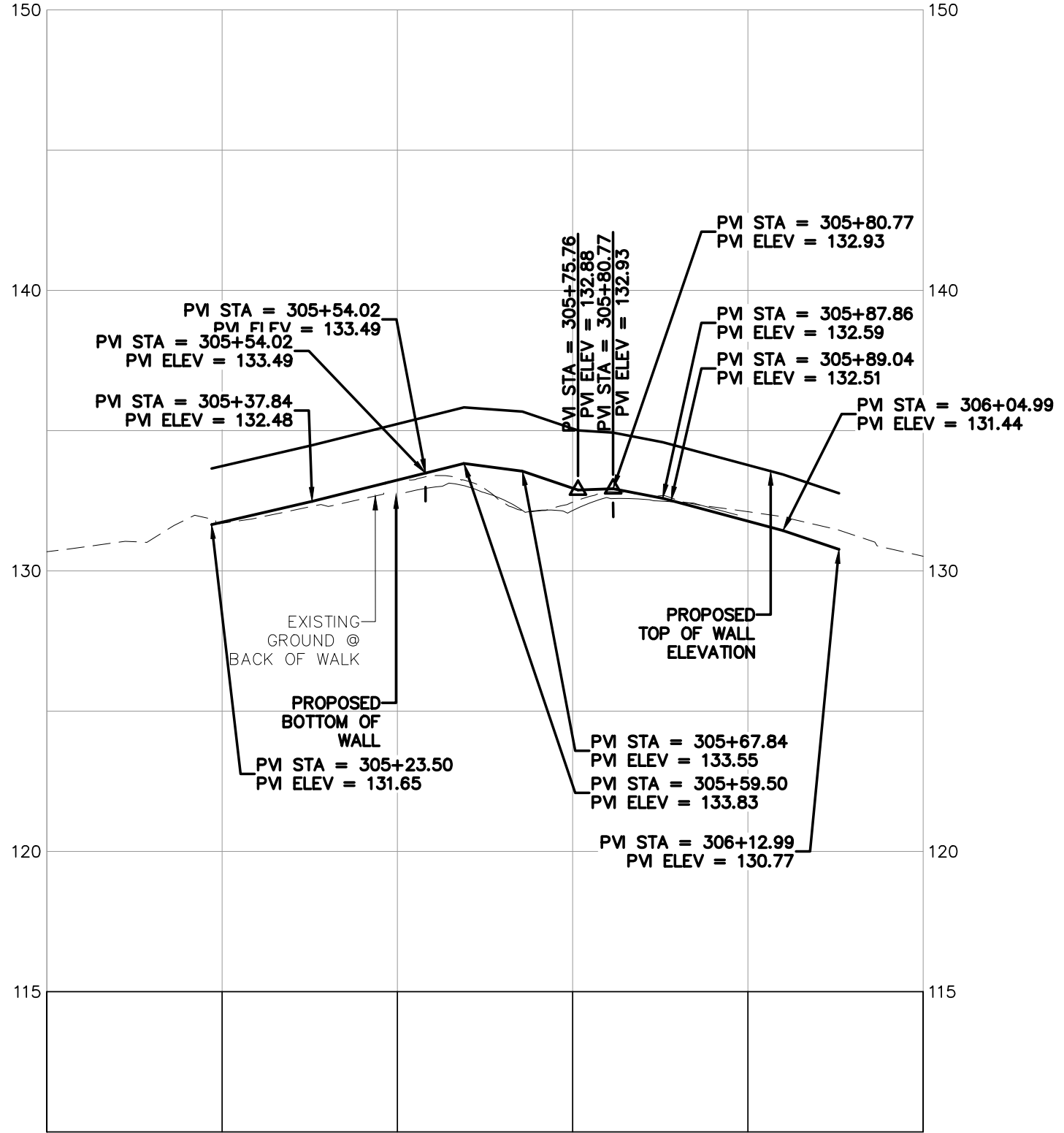
WALL W4
STA 20+30 TO 22+10 RT
SCALE= H: 1"=20', V: 1"=5'



WALL W5
STA 24+65 TO 24+87 RT

WALL W6
STA 25+04 TO 25+81 RT

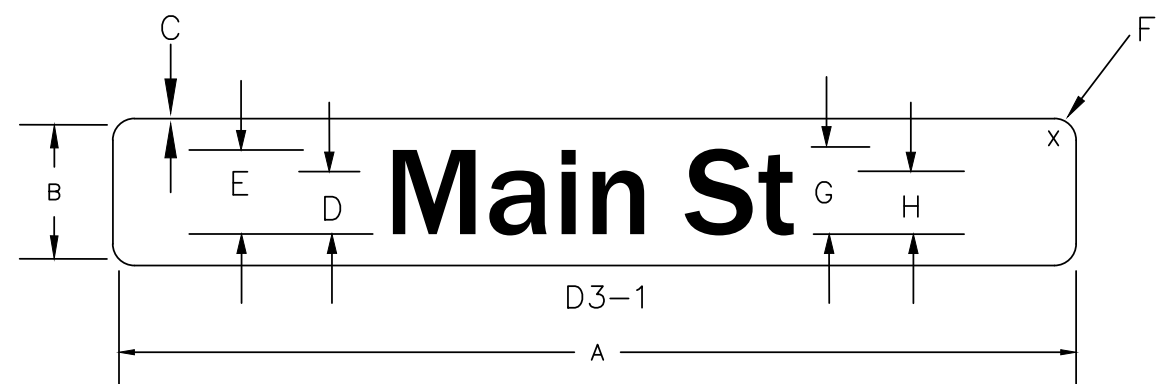
WALL W7
STA 26+03 TO 26+50 RT



WALL W8
STA 25+45 TO 26+10
SCALE= H: 1"=20', V: 1"=5'



5/22/24	AS-BUILT	DESIGNED BY JAM/LMH DRAWN BY JAM/LMH CHECKED BY LP	R&E Reichhardt & Ebe ENGINEERING INC P.O. Box 978 423 Front Street Lynden, WA 98264 (360) 354-3687	NO.	DATE	DESCRIPTION	BY	CITY OF FERNDALE 2095 MAIN ST FERNDALE, WA 98248	THORNTON STREET - VISTA TO MALLOY AVENUE WALL PROFILE	DWG 19025 CHAN		DATE 5/22/24	
										JOB#	19025	SCALE H: 1"=20' V: 1"=5'	SHEET
													54
													of 64



SIGNING DETAILS (TYP)

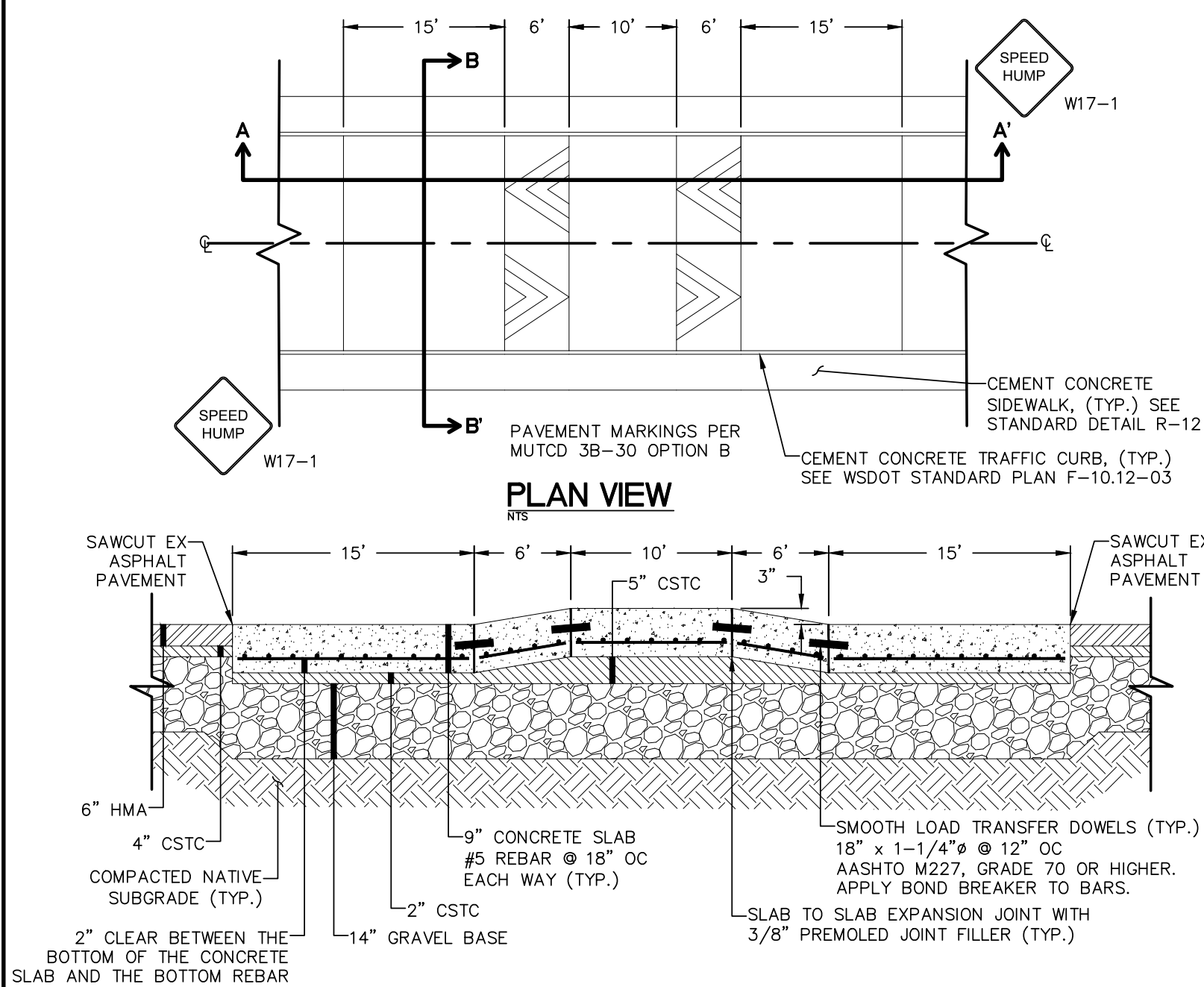
DIMENSIONS (INCHES)							
A	B	C	D	E	F	G	H
VA	6	5/8	3	4	1 1/2	3	2 1/4

COLORS

LETTERS - WHITE (REFL)
BACKGROUND - GREEN (REFL)

TYPICAL SIGN DETAIL

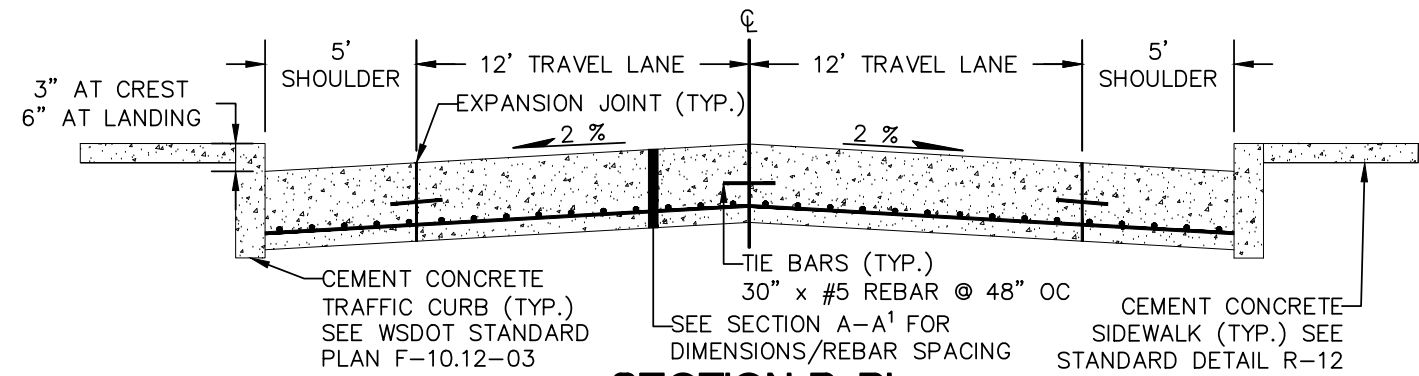
NTS



NOTE:
SEE WSDOT STANDARD PLAN A-40.10-03
FOR CEMENT CONCRETE PAVEMENT JOINTS

SECTION A-A'

NTS

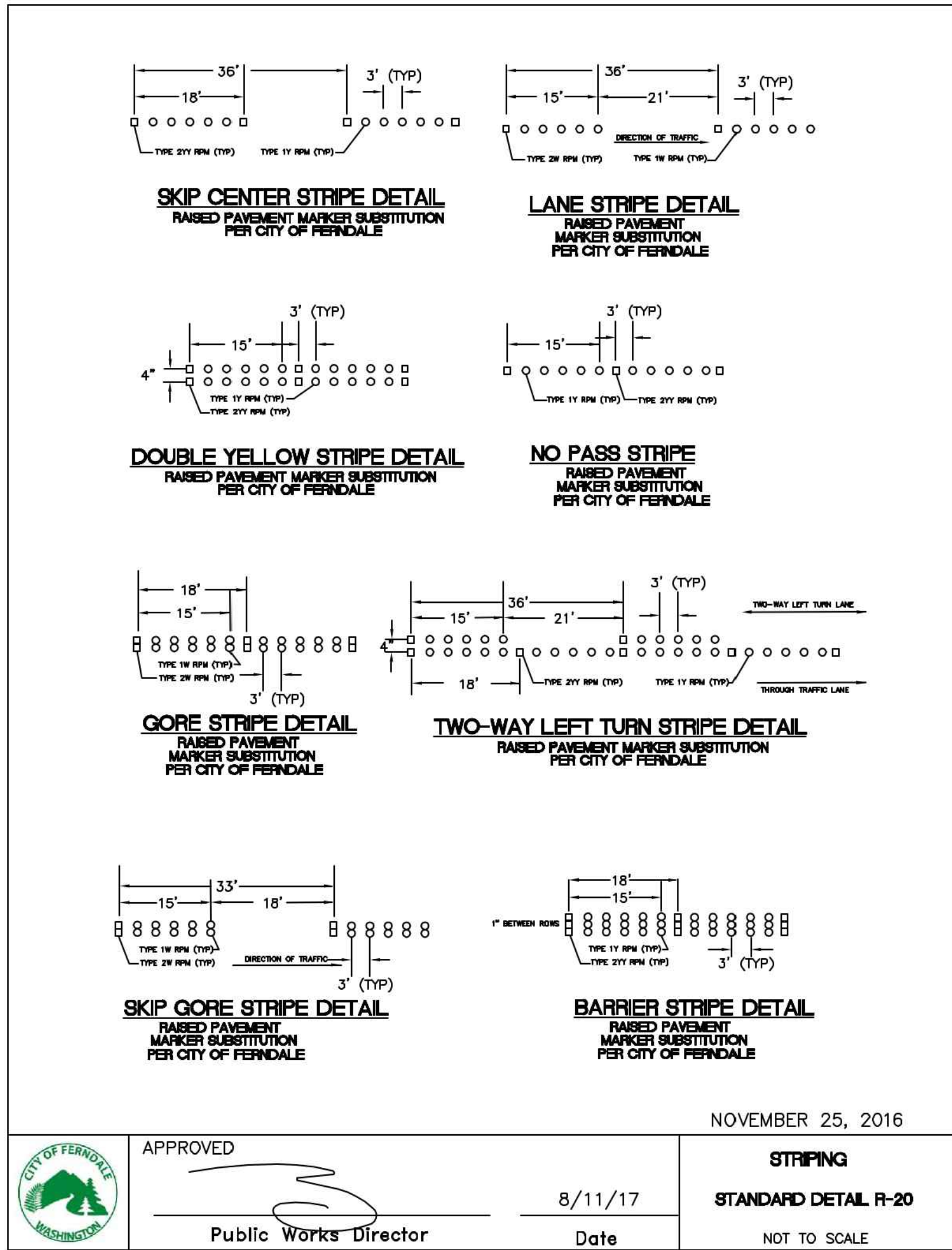
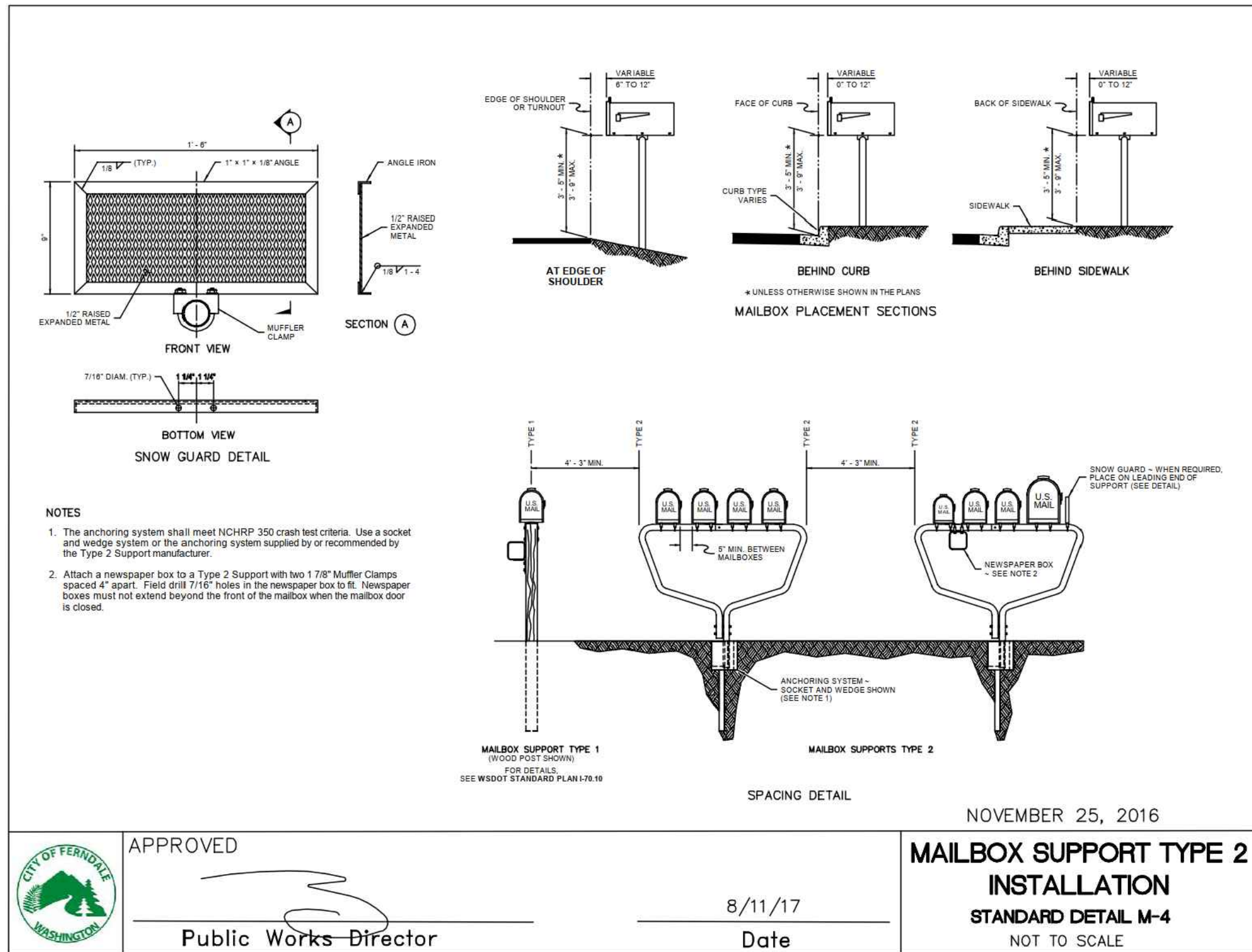
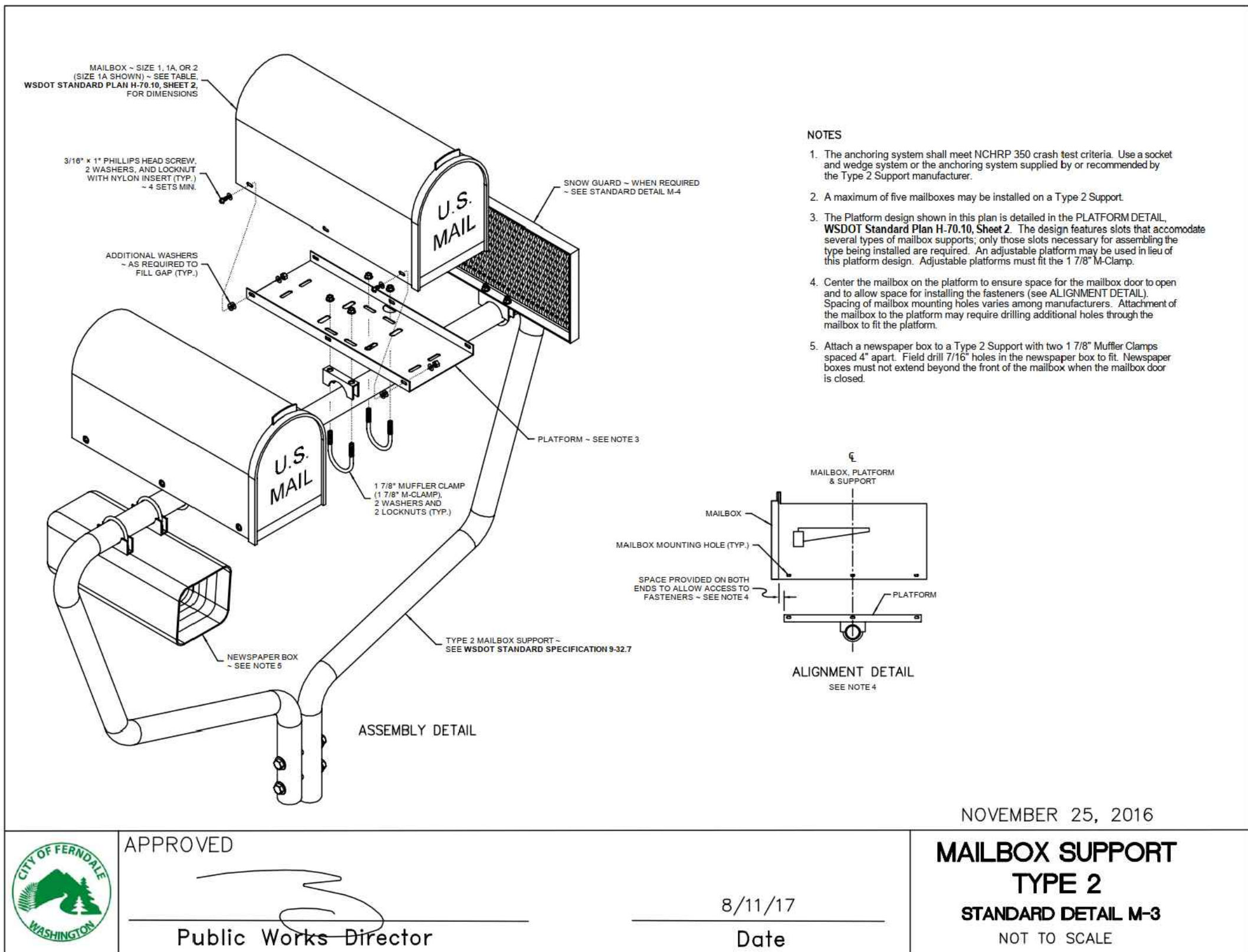


SECTION B-B'

NTS

SPEED TABLE DETAIL

NTS



5/22/24
AS-BUILT

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JAM/LMH
CHECKED BY
LP

R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

NO.	DATE	DESCRIPTION	BY

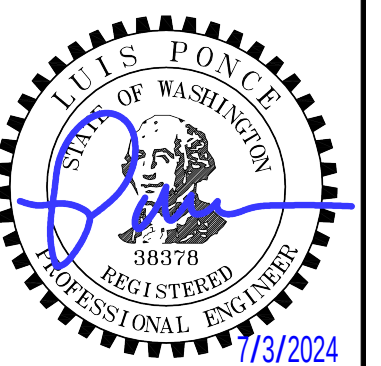
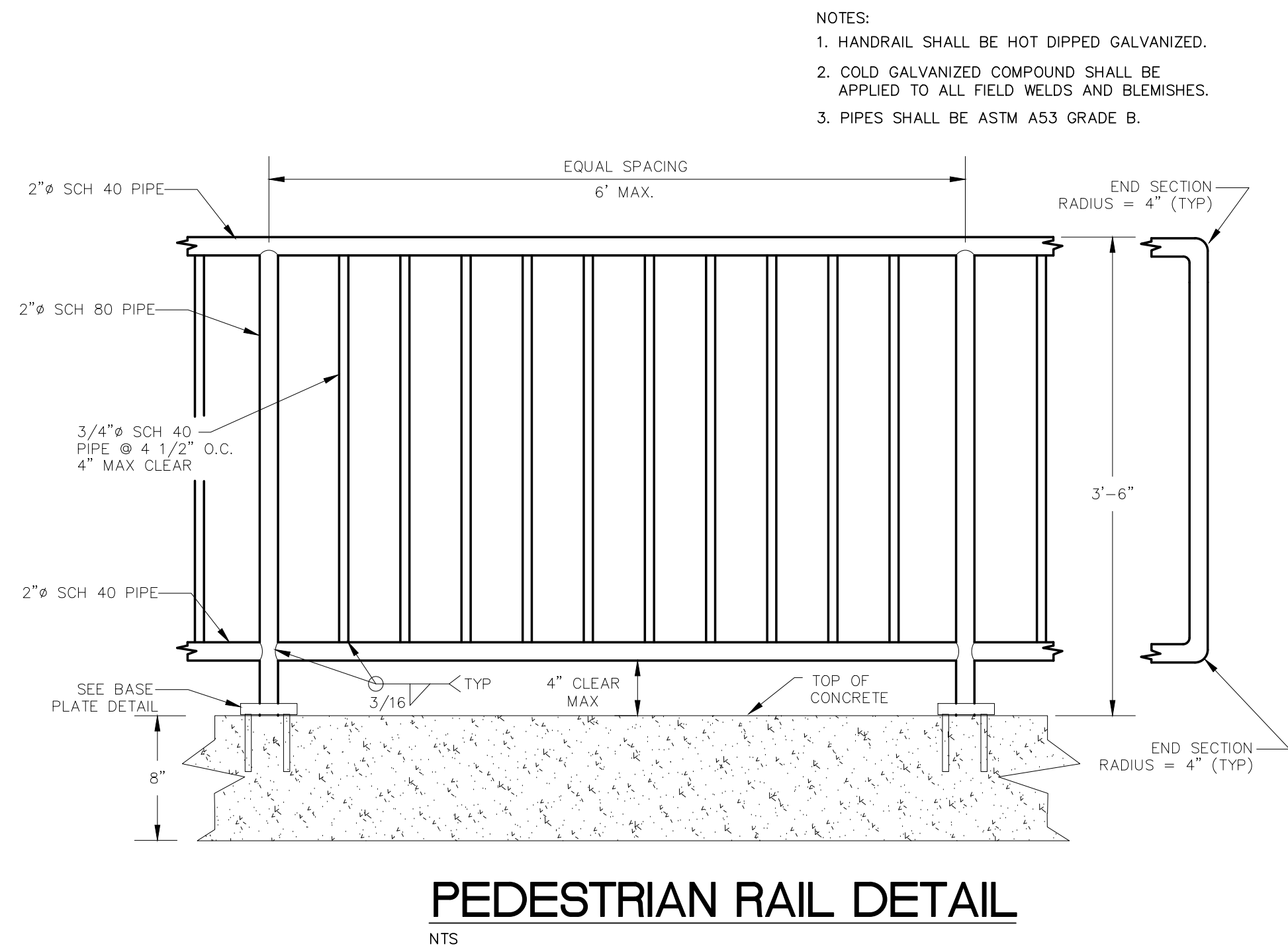
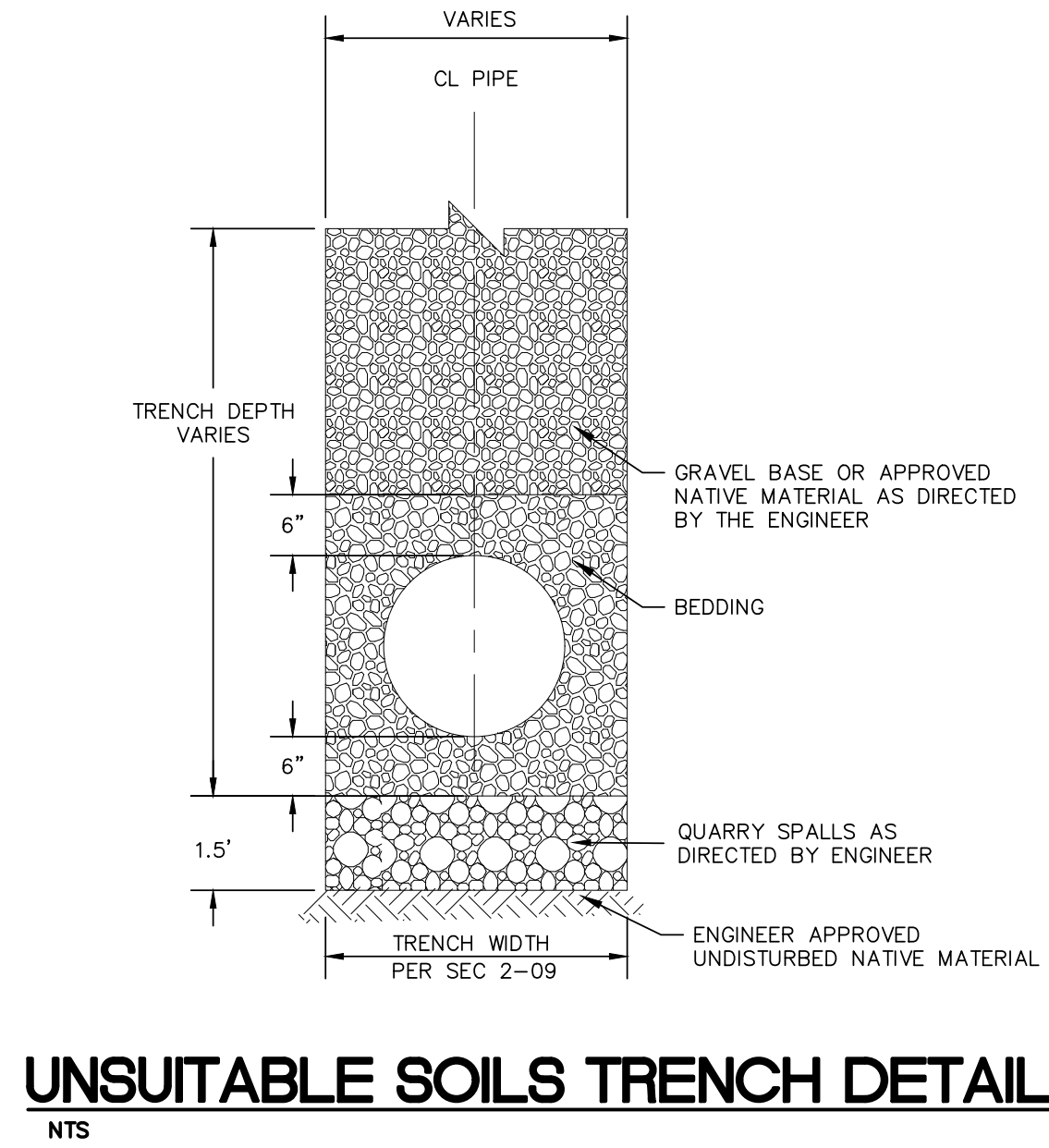
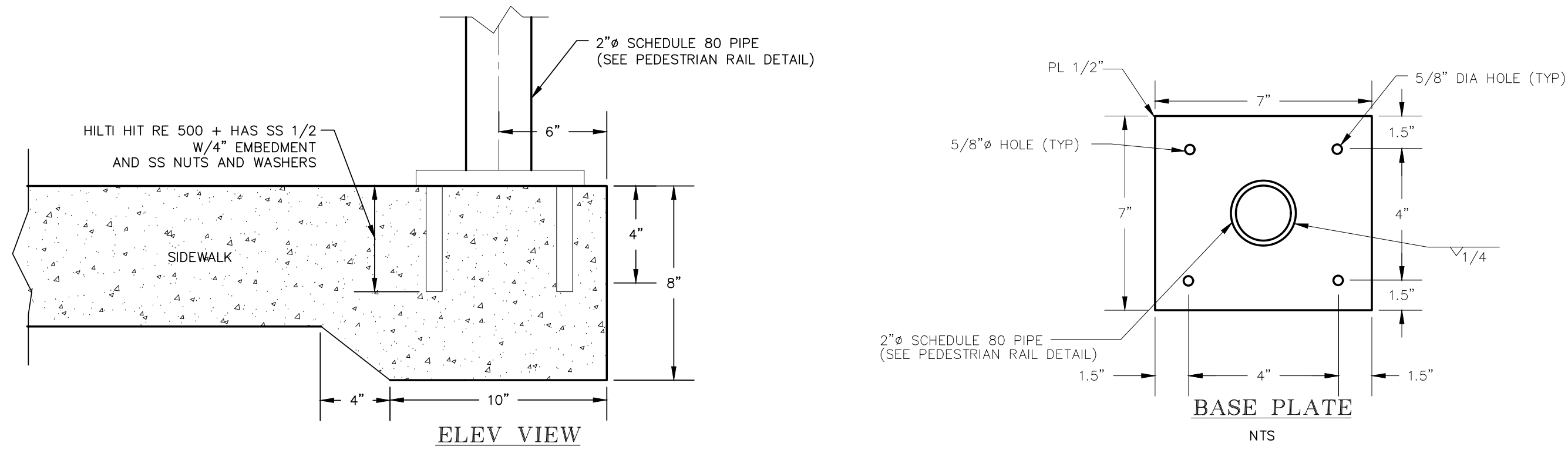
CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE
CHANNELIZATION LANDSCAPING AND MISCELLANEOUS DETAILS

DWG 19025 DETAILS
JOB# 19025
SCALE H: N/A v: N/A

DATE 5/22/24
SHEET 55
of 64





5/22/24
AS-BUILT

DESIGNED BY
JAM/LMH
DRAWN BY
JAM/LMH
CHECKED BY
LP

R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

NO.	DATE	DESCRIPTION	BY
1	9/28/22	ADDENDUM No. 03	JAM

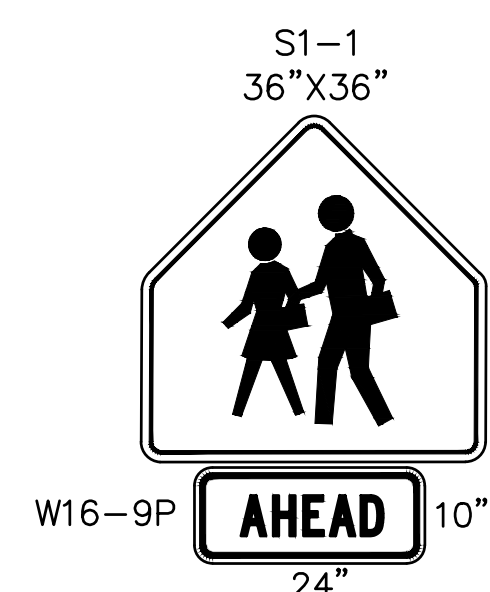
CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE
MISCELLANEOUS DETAILS

DWG #	19025	SCALE	H: N/A V: N/A	DATE	5/22/24
JOB #	19025			SHEET	56 of 64

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE 2022 WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION AND ITS AMENDMENTS, SPECIAL PROVISIONS, WSDOT STANDARD PLANS AND NATIONAL ELECTRICAL CODE (ALL CURRENT VERSIONS).
2. THIS PROJECT INVOLVES CONTRACTING AGENCY-SUPPLIED MATERIALS. ALL MATERIALS NOT LISTED AS AGENCY-SUPPLIED SHALL BE FURNISHED BY THE CONTRACTOR. SEE SPECIAL PROVISIONS.
3. ALL VATCS AND RRFB FOUNDATIONS AND SIGN LOCATIONS SHALL BE POTHOLED FOR UNDERGROUND UTILITIES PRIOR TO INSTALLATION.
4. ALL PERMANENT WARNING SIGNS SHALL BE BLACK SYMBOLS/LEGENDS/BORDERS ON FLUORESCENT YELLOW GREEN BACKGROUND.
5. CONTRACTOR SHALL INSTALL TEMPORARY 36"x36" W20-901 "TRAFFIC REVISION AHEAD" SIGNS WITH BLACK LEGENDS AND ORANGE BACKGROUNDS ON 4"x4" TIMBER POSTS AT THE LOCATIONS STAKED BY ENGINEER (TOTAL OF FOUR AT THORNTON/BEULAH AND TOTAL OF FOUR AT THORNTON/MALLOY) PRIOR TO RRFB TURN-ON. INSTALL TWO ORANGE FLAGS AT TOP OF EACH POST. REMOVE SIGNS, FLAGS AND POSTS 30 DAYS AFTER TURN-ON.
6. RRFB AT THORNTON/MALLOY SHALL NOT BE ACTIVATED UNLESS THE EASTBOUND AND WESTBOUND APPROACHES TO THE INTERSECTION OPERATE IN AN UNCONTROLLED MANNER (I.E., NO STOP, YIELD OR SIGNAL CONTROL).
7. ANY OVERHEAD POWER (INCLUDING NEUTRAL CONDUCTORS) THAT WOULD BE LESS THAN 10' AWAY FROM ANY PART OF THE VATCS OR RRFB SYSTEMS SHALL BE MODIFIED TO PROVIDE MIN. 10' OF CLEARANCE PRIOR TO INSTALLING SAID EQUIPMENT.
8. ANY OVERHEAD COMMUNICATIONS CABLES THAT WOULD BE LESS THAN 1' AWAY FROM ANY PART OF THE VATCS OR RRFB SYSTEMS SHALL BE MODIFIED TO PROVIDE MIN. 1' OF CLEARANCE PRIOR TO INSTALLING SAID EQUIPMENT.

- ① NOT USED.
- ② CONSTRUCT CURB TYPE FOUNDATION AT LOCATION SHOWN PER WSDOT STANDARD PLAN J-20.11-03, EXCEPT ANCHOR BOLTS SHALL BE PER POLE MANUFACTURER'S RECOMMENDATION. INSTALL RRFB ASSEMBLY PER DETAILS ON SHEET BC3.
- ③ INSTALL FOUNDATION, SQUARE STEEL SIGN SUPPORT AND TWO TRAFFIC SIGNS AT LOCATION SHOWN. USE WSDOT STANDARD PLAN G-24.50-05, TYPE ST-2. MOUNT W16-9P SIGN AT 7' ABOVE GRADE. MOUNT S1-1 SIGN DIRECTLY ABOVE W16-9P.
- ④ CONSTRUCT FOUNDATION AT LOCATION SHOWN PER WSDOT STANDARD PLAN J-21.10-04, EXCEPT ANCHOR BOLTS SHALL MATCH EXISTING. RELOCATE EXISTING SCHOOL ZONE BEACON ASSEMBLY TO NEW FOUNDATION. REMOVE EXISTING FOUNDATION.

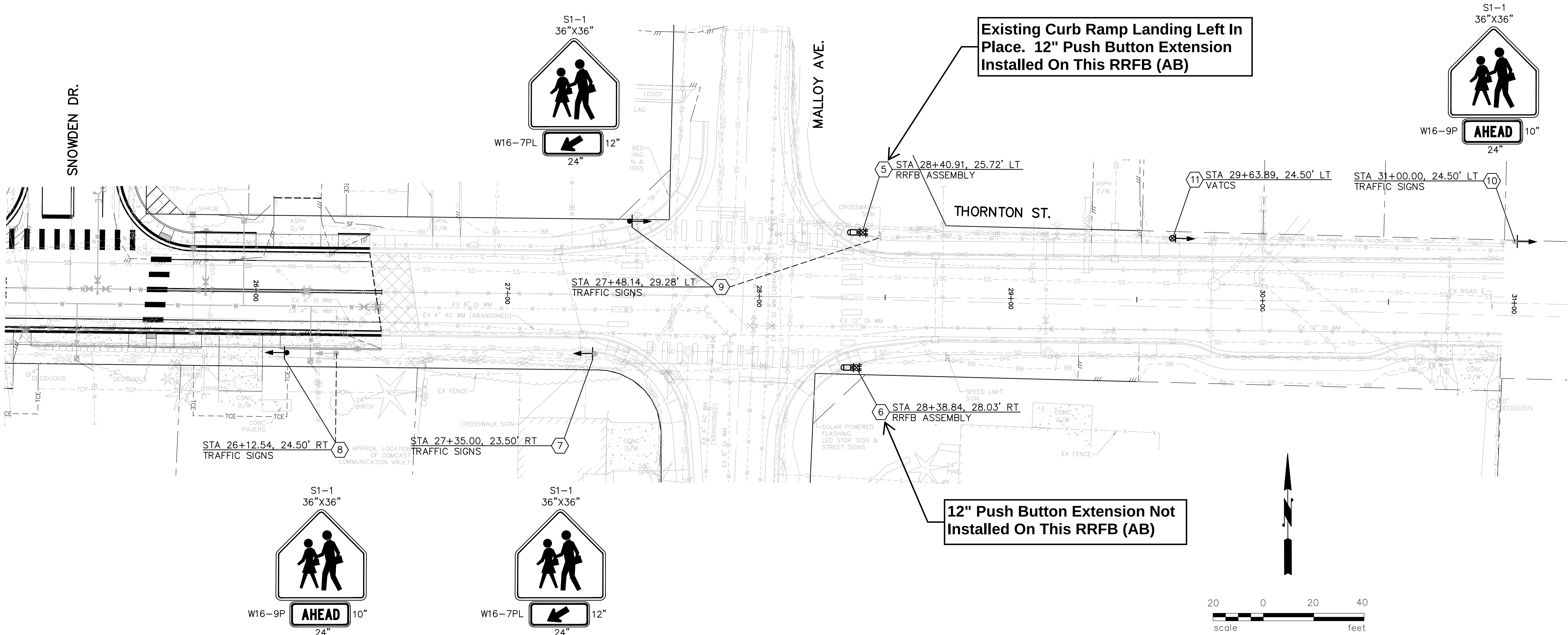


						FOR:				CITY OF FERDALE WASHINGTON		BC1	
DRAWN RMH						REICHHARDT & EBE ENGINEERING, INC.		HTE HERMAN TRAFFIC ENGINEERING, INC.		THORNTON STREET IMPROVEMENTS		SHEET	
DESIGNED RMH						P.O. Box 978		11215 Southeast 220th Place, Kent, Washington 98031		RECTANGULAR RAPID FLASH BEACON PLAN		57	
CHECKED 9/6/22 RMH						Lynden, WA 98264		253-236-4941 tel. hte@comcast.net		THORNTON ST./BEULAH AVE.		OF	
PROJ. ENGR.												64	
DRAWING FILE RRFB_Rev1.DWG												SHEETS	
		DATE		REVISION		BY		APP'D					

CONSTRUCTION NOTES

- 5 REMOVE EXISTING CURB RAMP LANDING AND ADJACENT PEDESTRIAN CURB. CONSTRUCT CURB TYPE FOUNDATION AT LOCATION SHOWN PER WSDOT STANDARD PLAN J-20.11-03, EXCEPT ANCHOR BOLTS SHALL BE PER POLE MANUFACTURER'S RECOMMENDATION. INSTALL RRFB ASSEMBLY PER DETAILS ON SHEET BC3. ~~REPLACE CURB RAMP LANDING AND PEDESTRIAN CURB. (AB)~~
- 6 CONSTRUCT FOUNDATION AT LOCATION SHOWN PER WSDOT STANDARD PLAN J-21.10-04, EXCEPT ANCHOR BOLTS SHALL BE PER POLE MANUFACTURER'S RECOMMENDATION. INSTALL RRFB ASSEMBLY PER DETAILS ON SHEET BC4. ~~WITH 12" PUSH BUTTON EXTENSION (AGENCY SUPPLIED). (AB)~~
- 7 REMOVE EXISTING SIGNS AND DELIVER TO CITY SHOPS. INSTALL NEW SIGNS AS SHOWN ON EXISTING SIGN POST. MOUNT W16-7PL SIGN AT 7' ABOVE GRADE. MOUNT S1-1 SIGN DIRECTLY ABOVE W16-7PL.

- 8 REMOVE EXISTING SIGNS AND DELIVER TO CITY SHOPS. INSTALL NEW FOUNDATION PER WSDOT STANDARD PLAN G-24.50-05, TYPE ST-2 AND RELOCATE EXISTING SIGN POST TO NEW FOUNDATION. INSTALL NEW SIGNS AS SHOWN. MOUNT W16-9P SIGN AT 7' ABOVE GRADE. MOUNT S1-1 SIGN DIRECTLY ABOVE W16-9P. REMOVE EXISTING FOUNDATION.
- 9 REMOVE EXISTING SIGNS AND DELIVER TO CITY SHOPS. INSTALL NEW FOUNDATION PER WSDOT STANDARD PLAN G-24.50-05, TYPE ST-2 AND RELOCATE EXISTING SIGN POST TO NEW FOUNDATION. INSTALL NEW SIGNS AS SHOWN. MOUNT W16-7PL SIGN AT 7' ABOVE GRADE. MOUNT S1-1 SIGN DIRECTLY ABOVE W16-7PL. REMOVE EXISTING FOUNDATION.
- 10 REMOVE EXISTING SIGNS AND DELIVER TO CITY SHOPS. INSTALL NEW SIGNS AS SHOWN ON EXISTING SIGN POST. MOUNT W16-9P SIGN AT 7' ABOVE GRADE. MOUNT S1-1 SIGN DIRECTLY ABOVE W16-9P.
- 11 CONSTRUCT FOUNDATION AT LOCATION SHOWN PER WSDOT STANDARD PLAN J-21.10-04, EXCEPT ANCHOR BOLTS SHALL BE PER POLE MANUFACTURER'S RECOMMENDATION. INSTALL VATCS ASSEMBLY PER DETAILS ON SHEET BC4.



DRAWN	RMH				
DESIGNED	RMH				
CHECKED	9/6/22 RMH				
PROJ. ENGR.					
DRAWING FILE	RRFB_Rev1.DWG				
DATE		REVISION		BY	APP'D

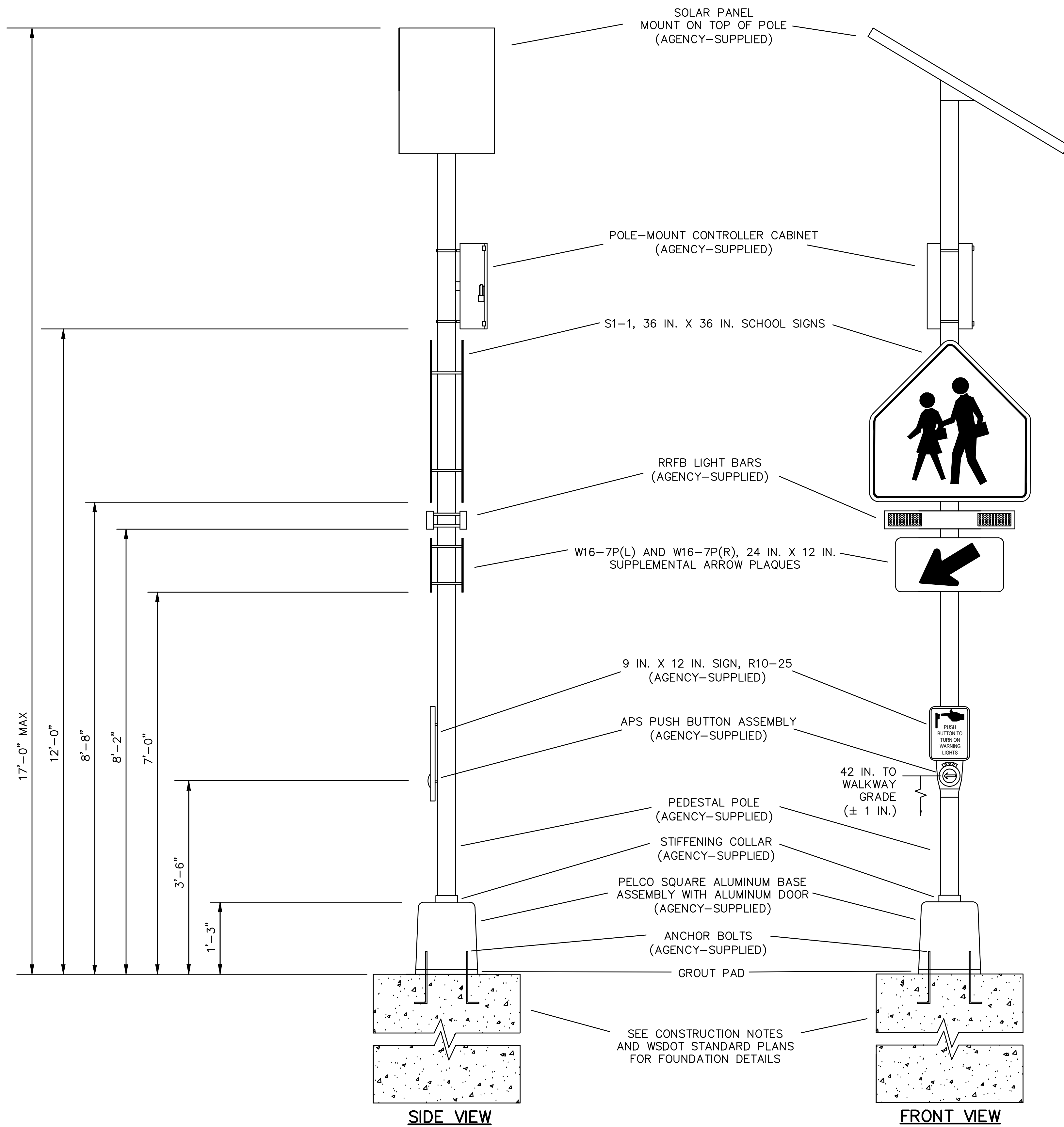
FOR:
REICHHARDT & EBE ENGINEERING, INC.
P.O. Box 978
Lynden, WA 98264



HTE HERMAN TRAFFIC ENGINEERING, INC.

11215 Southeast 220th Place, Kent, Washington 98031
253-236-4941 tel. hte@comcast.net

CITY OF FERDALE	WASHINGTON	BC2
THORNTON STREET IMPROVEMENTS		
RRFB AND VATCS PLAN THORNTON ST./MALLOY AVE.		SHEET 58 OF 64 SHEETS



RRFB NOTES

1. USE STAINLESS STEEL MOUNTING CLAMPS AND BRACKETS TO MOUNT SIGNS, RRFB AND CONTROLLER CABINET TO POLE.
2. ALL APS PUSH BUTTONS (FACE OF PUSH BUTTON) SHALL BE ORIENTED AS SHOWN ON PLANS AND PARALLEL WITH CROSSWALK.
3. CONTRACTOR SHALL CONSTRUCT EACH RRFB ASSEMBLY AS SHOWN INCLUDING INTERNAL WIRING TERMINATIONS PER MANUFACTURER'S RECOMMENDATIONS.
4. ALL MOUNTING HEIGHTS SHOWN SHALL BE MEASURED FROM ADJACENT SIDEWALK ELEVATION, NOT TOP OF FOUNDATION.

RECTANGULAR RAPID FLASH BEACON (RRFB) ASSEMBLY DETAIL
(NOT TO SCALE)

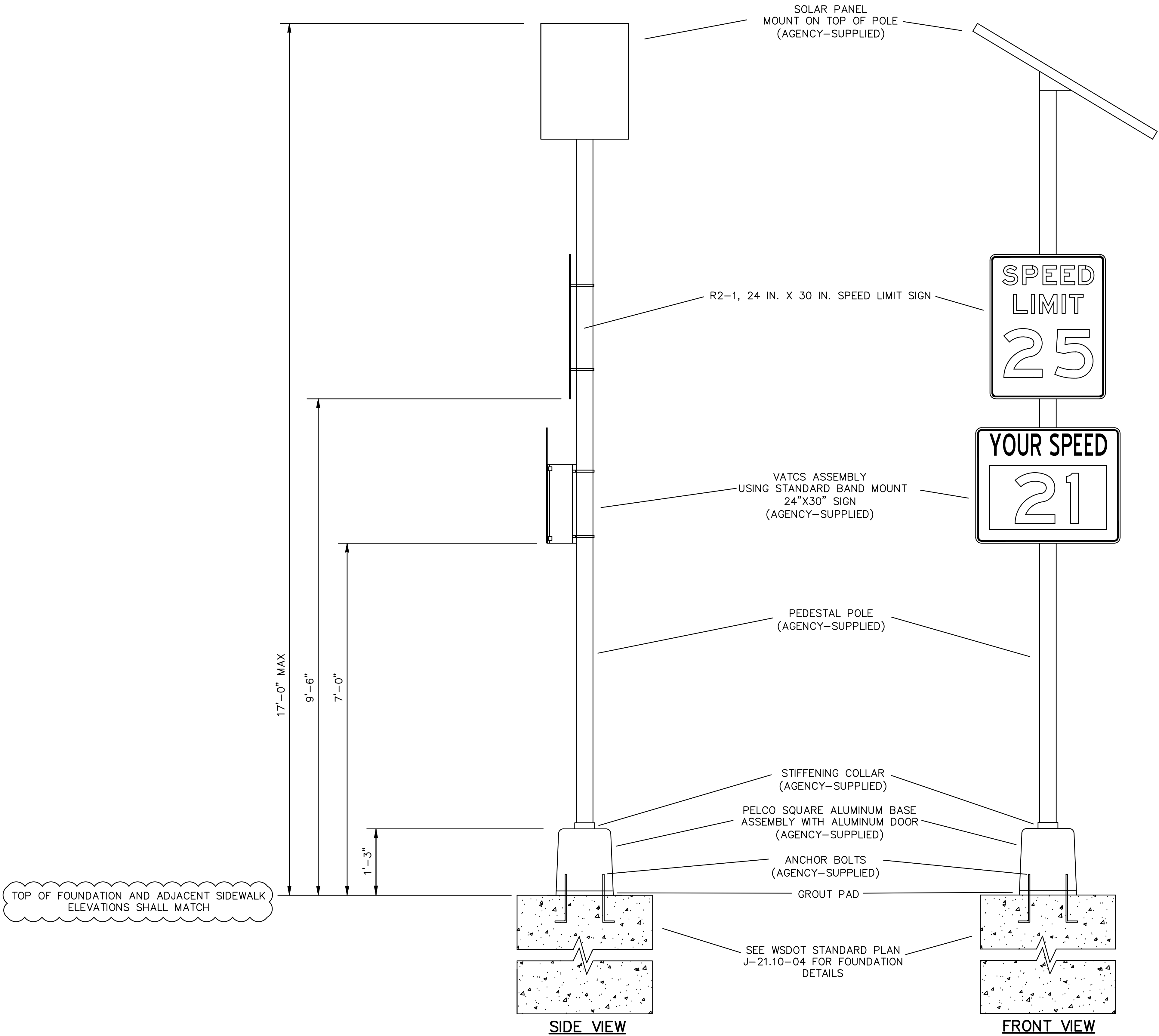
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DESIGNED	RMH				
CHECKED	9/23/22 RMH				
PROJ. ENGR.					
DRAWING FILE	RRFB_Rev2.DWG	9/27/22	ADDENDUM No. 3	RMH	
		DATE	REVISION	BY	APP'D

FOR:
REICHHARDT & EBE ENGINEERING, INC.
P.O. Box 978
Lynden, WA 98264



HTE HERMAN TRAFFIC ENGINEERING, INC.
11215 Southeast 220th Place, Kent, Washington 98031
253-236-4941 tel. hte@comcast.net

CITY OF FERNDALE	WASHINGTON	BC3
THORNTON STREET IMPROVEMENTS		
RRFB ASSEMBLY DETAIL		
		SHEET 59 OF 64 SHEETS



VATCS NOTES

1. USE STAINLESS STEEL MOUNTING CLAMPS AND BRACKETS TO MOUNT SIGNS AND VATCS TO POLE.
2. CONTRACTOR SHALL CONSTRUCT EACH VATCS ASSEMBLY AS SHOWN INCLUDING INTERNAL WIRING TERMINATIONS PER MANUFACTURER'S RECOMMENDATIONS.

DRAWN	RMH				
DESIGNED	RMH				
CHECKED	9/23/22 RMH				
PROJ. ENGR.					
DRAWING FILE	RRFB_Rev2.DWG	9/27/22	ADDENDUM No. 3	RMH	
		DATE	REVISION	BY	APP'D

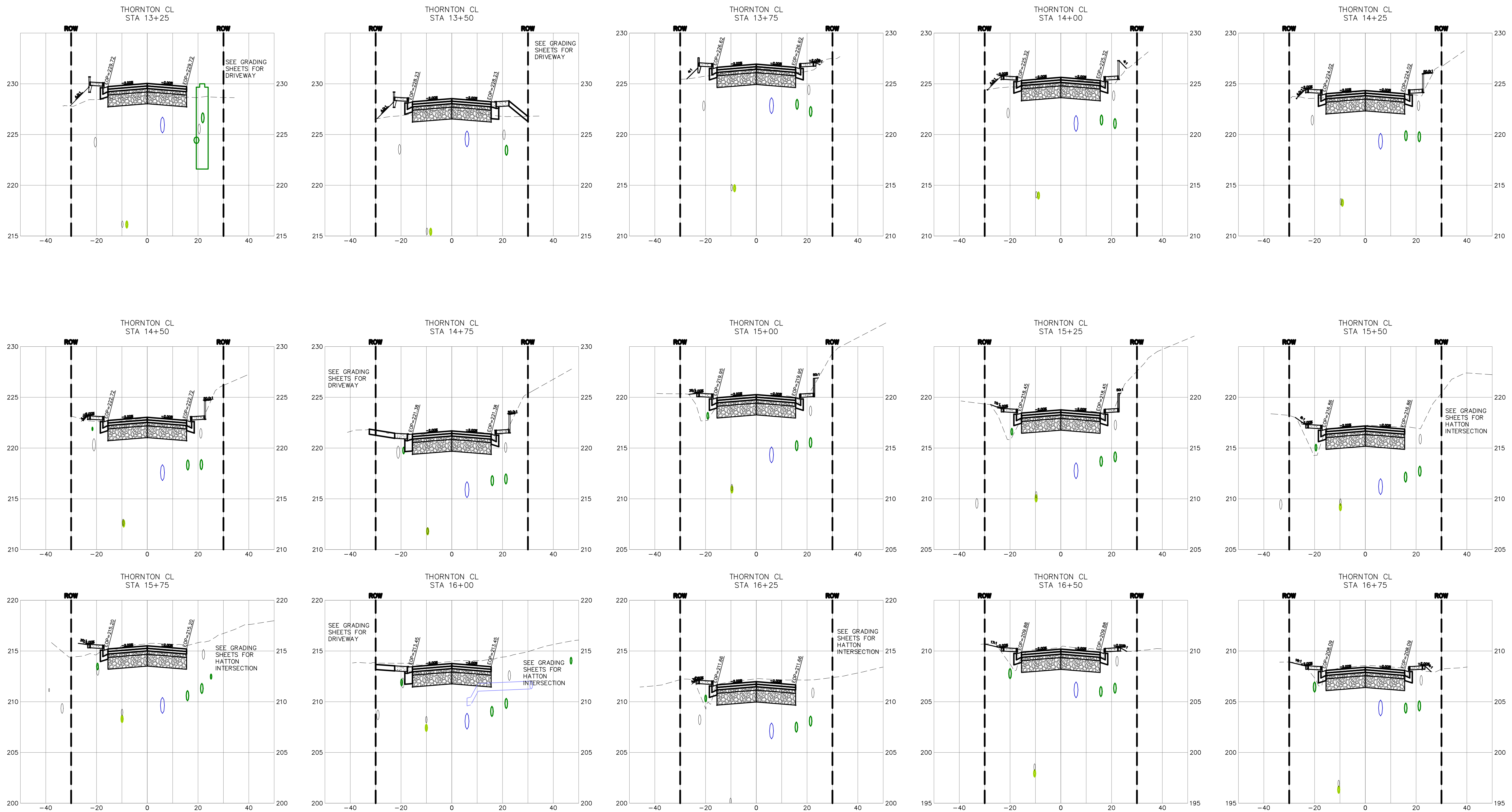
FOR:
REICHHARDT & EBE ENGINEERING, INC.
P.O. Box 978
Lynden, WA 98264



HTE
HERMAN TRAFFIC ENGINEERING, INC.

11215 Southeast 220th Place, Kent, Washington 98031
253-236-4941 tel. hte@comcast.net

CITY OF FERNDALE	WASHINGTON	BC4
THORNTON STREET IMPROVEMENTS		
VATCS ASSEMBLY DETAIL		SHEET 60 OF 64 SHEETS



5/22/24
AS-BUILT

DESIGNED BY
JAM/LMH
DRAWN BY
JAM/LMH
CHECKED BY
LP

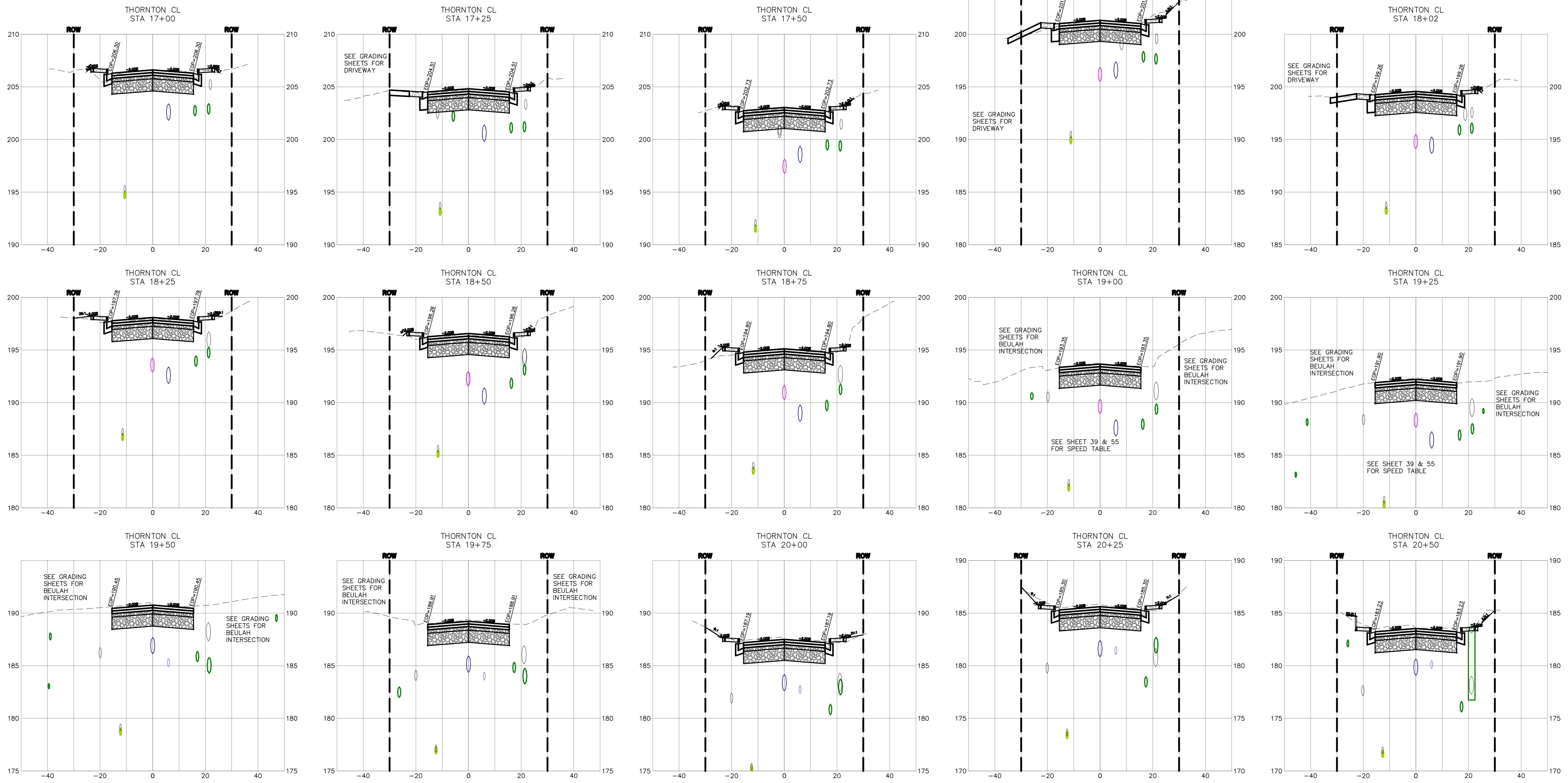
R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street
Lynden, WA 98264 (360) 354-3687

NO.	DATE	DESCRIPTION	BY

CITY OF FERDALE
2095 MAIN ST
FERDALE, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE
CROSS SECTION (1)

DWG	19025 PLAN	DATE	5/22/24
JOB#	19025	SCALE	H: 1"=20' V: 1"=5'
SHEET	61	of 64	



5/22/24
AS-BUILT

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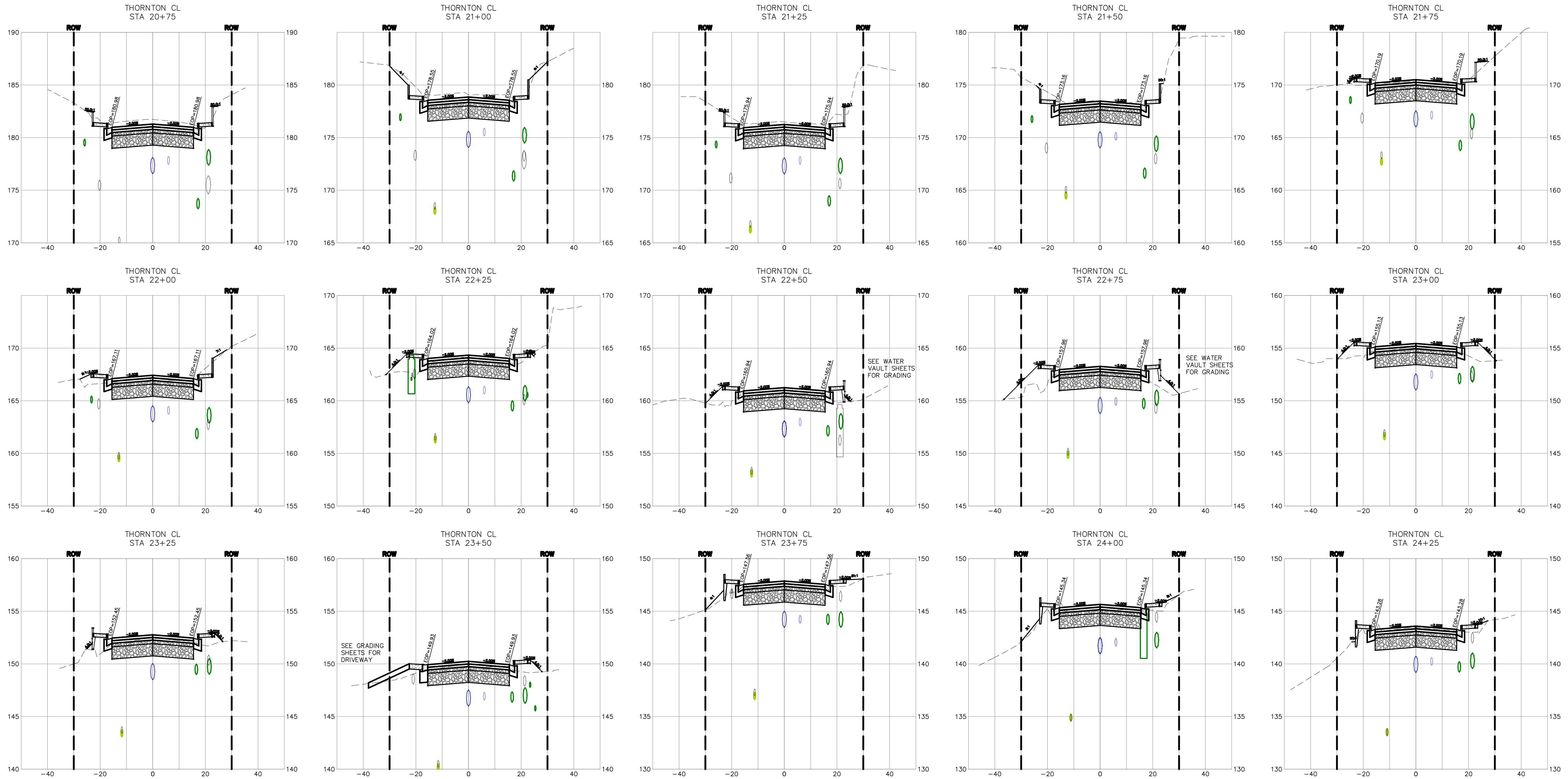
NO.	DATE	DESCRIPTION	BY

CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE

CROSS SECTION (2)

DWG 19025 PLAN		DATE	5/22/24
JOB#	SCALE	SHEET	62
19025	H: 1"=20' V: 1"=5'	of 64	



5/22/24
AS-BUILT

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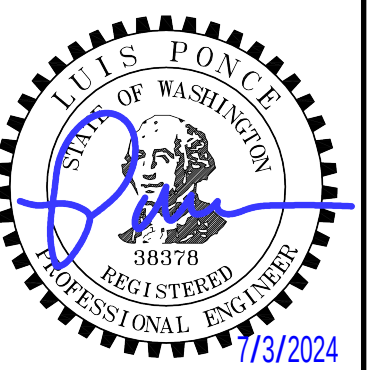
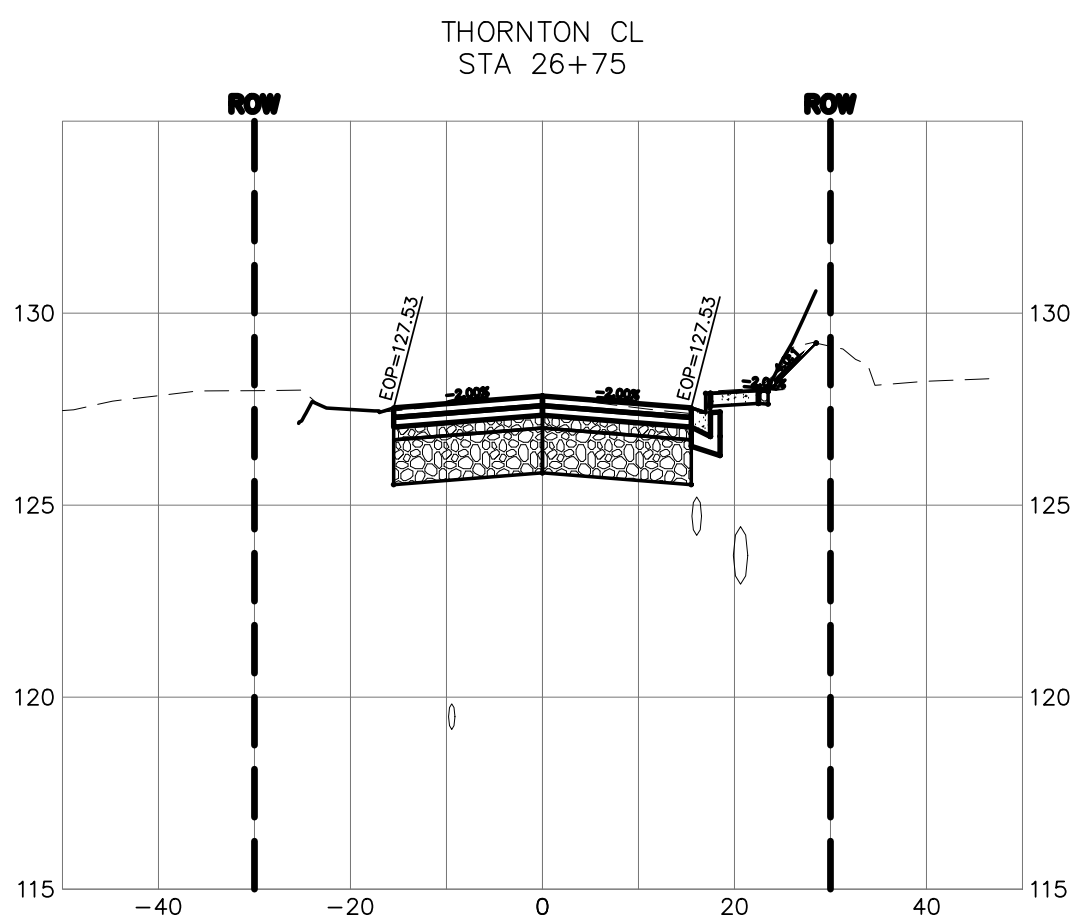
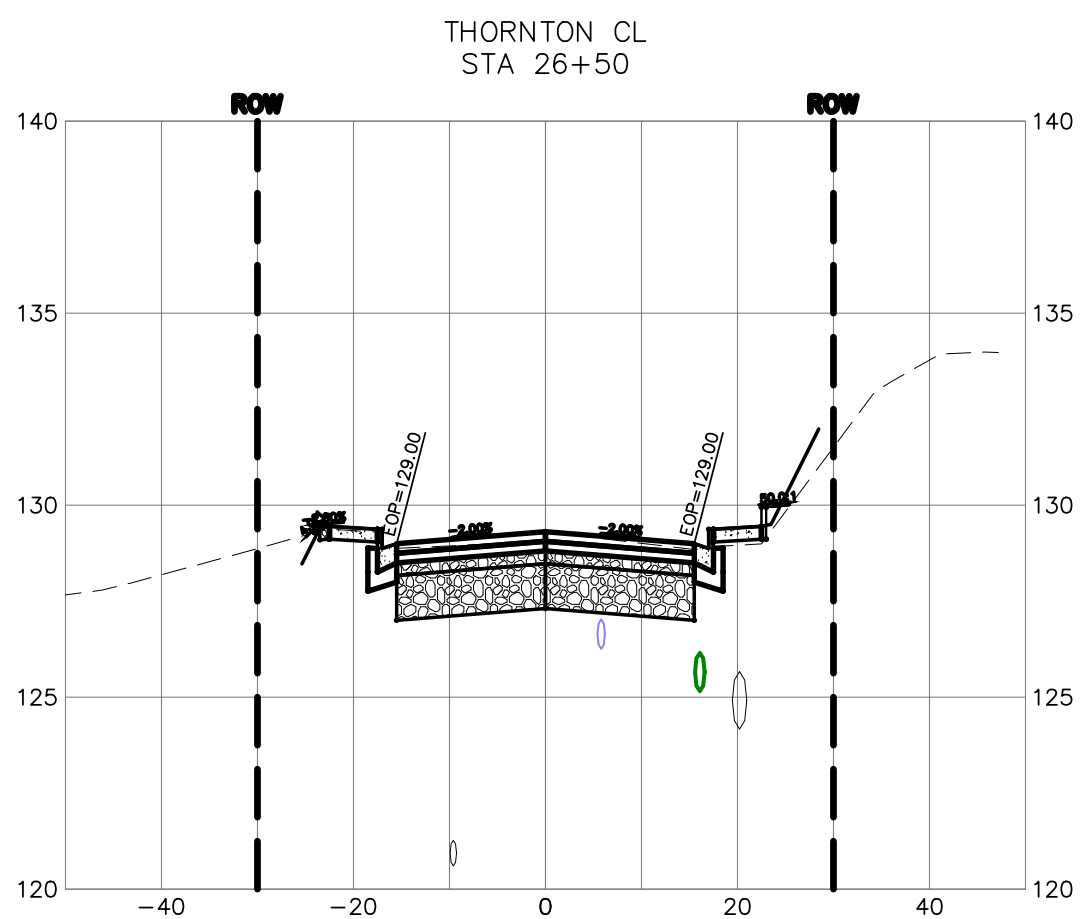
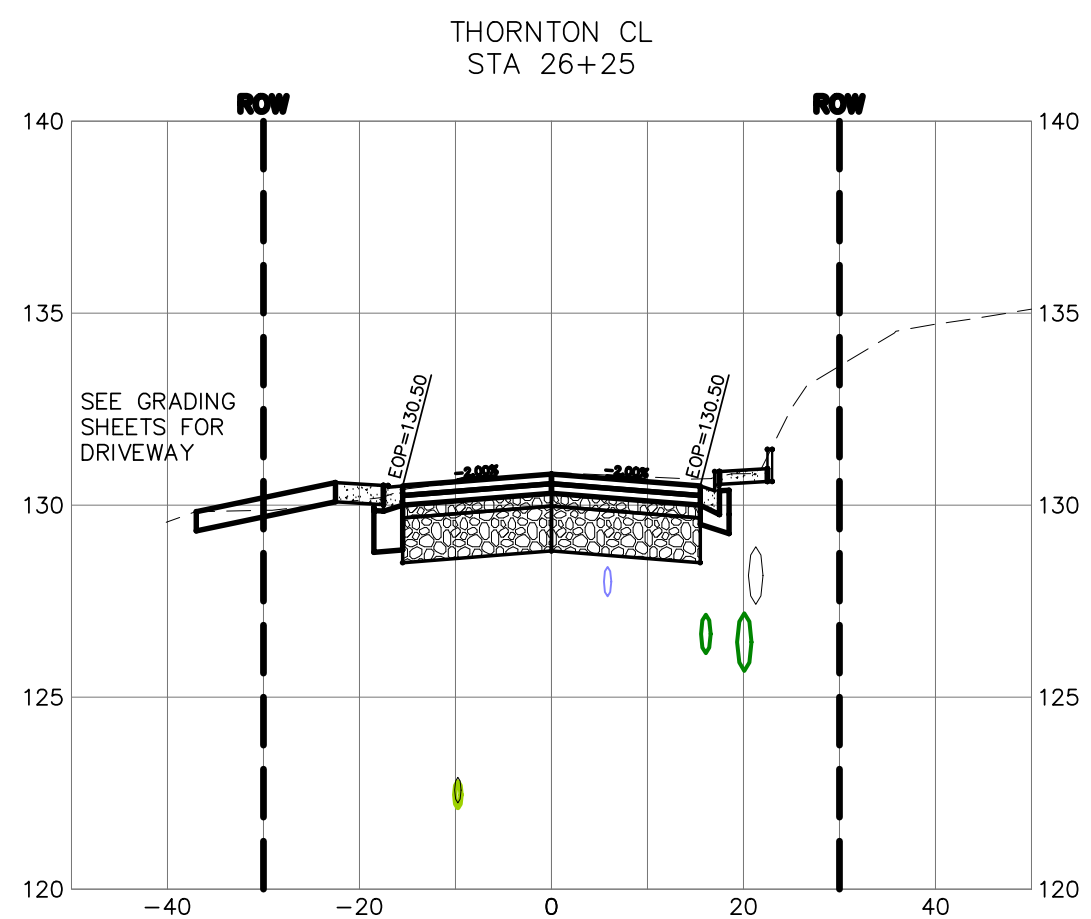
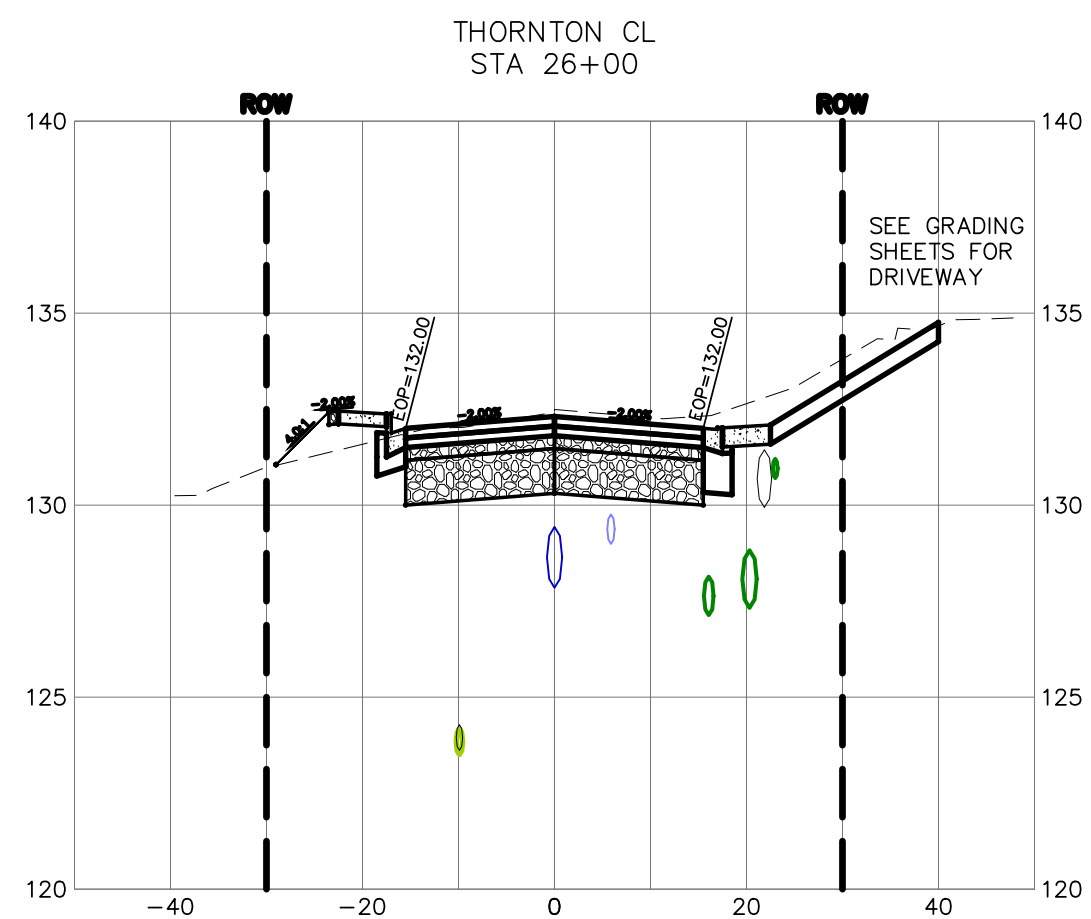
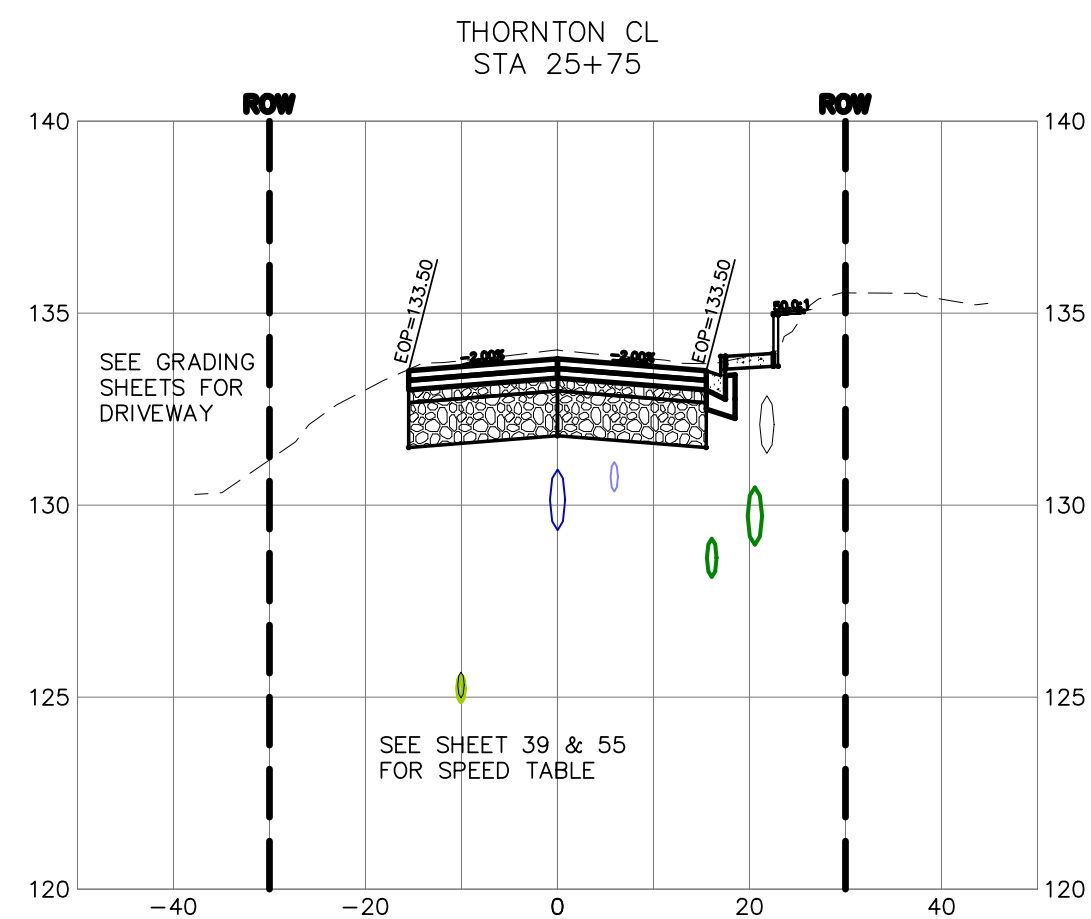
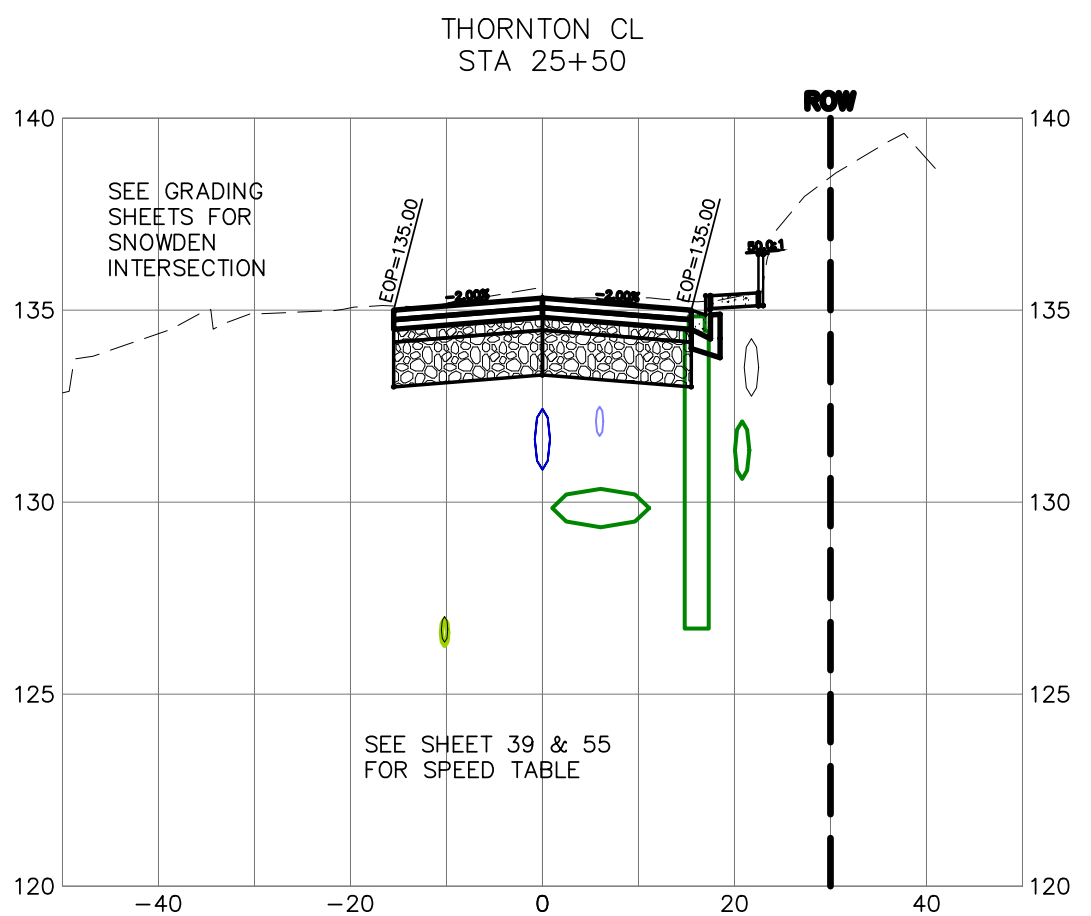
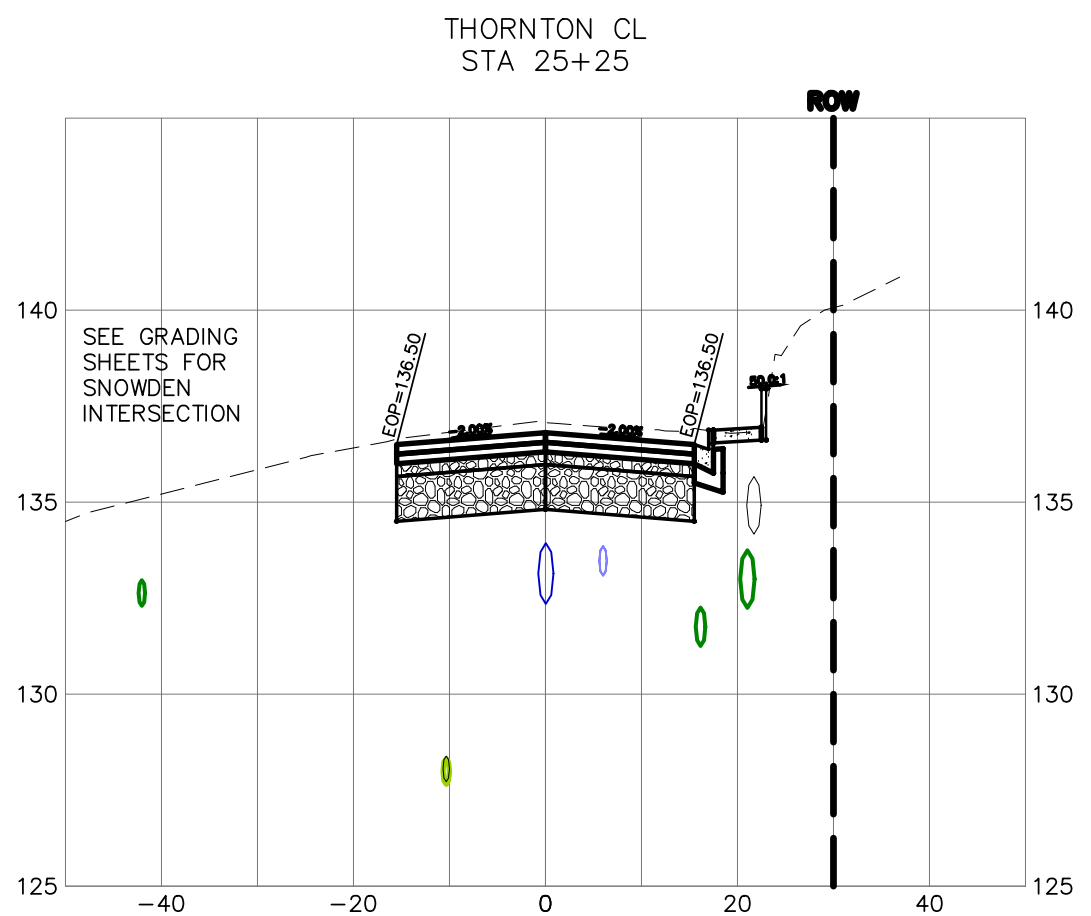
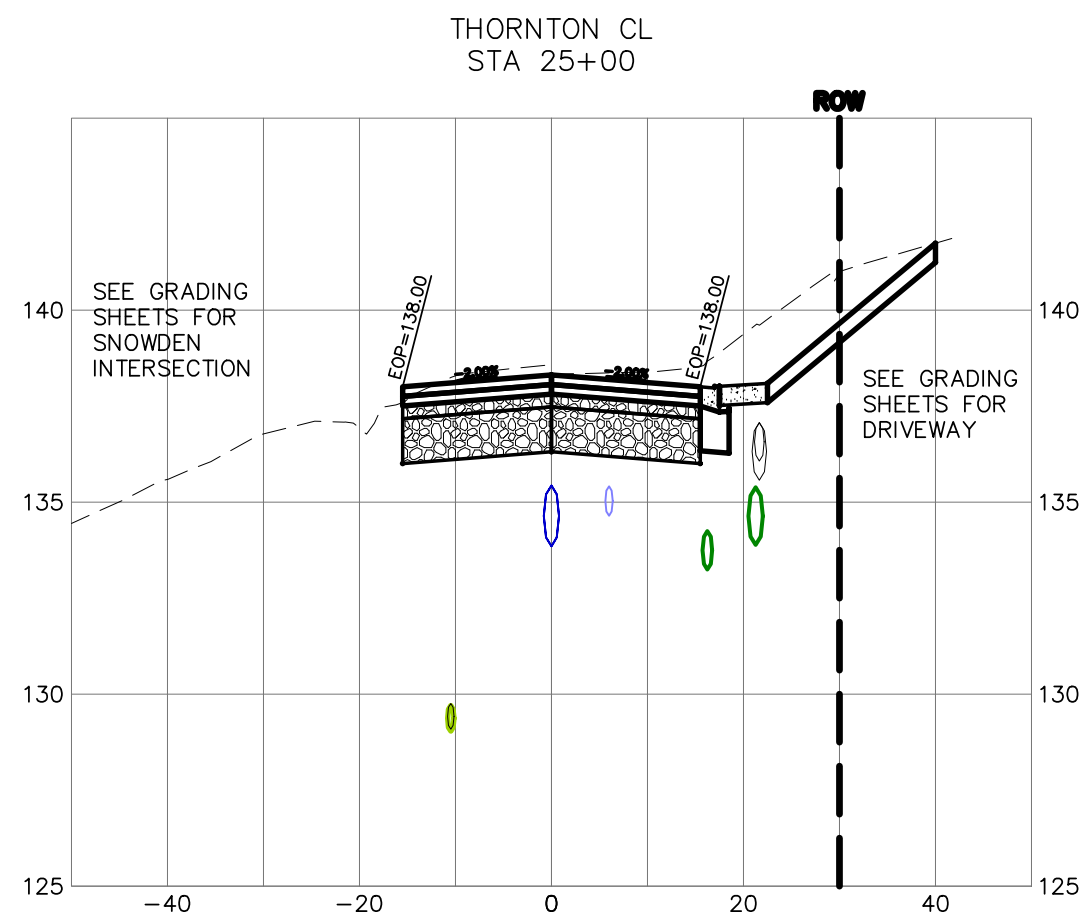
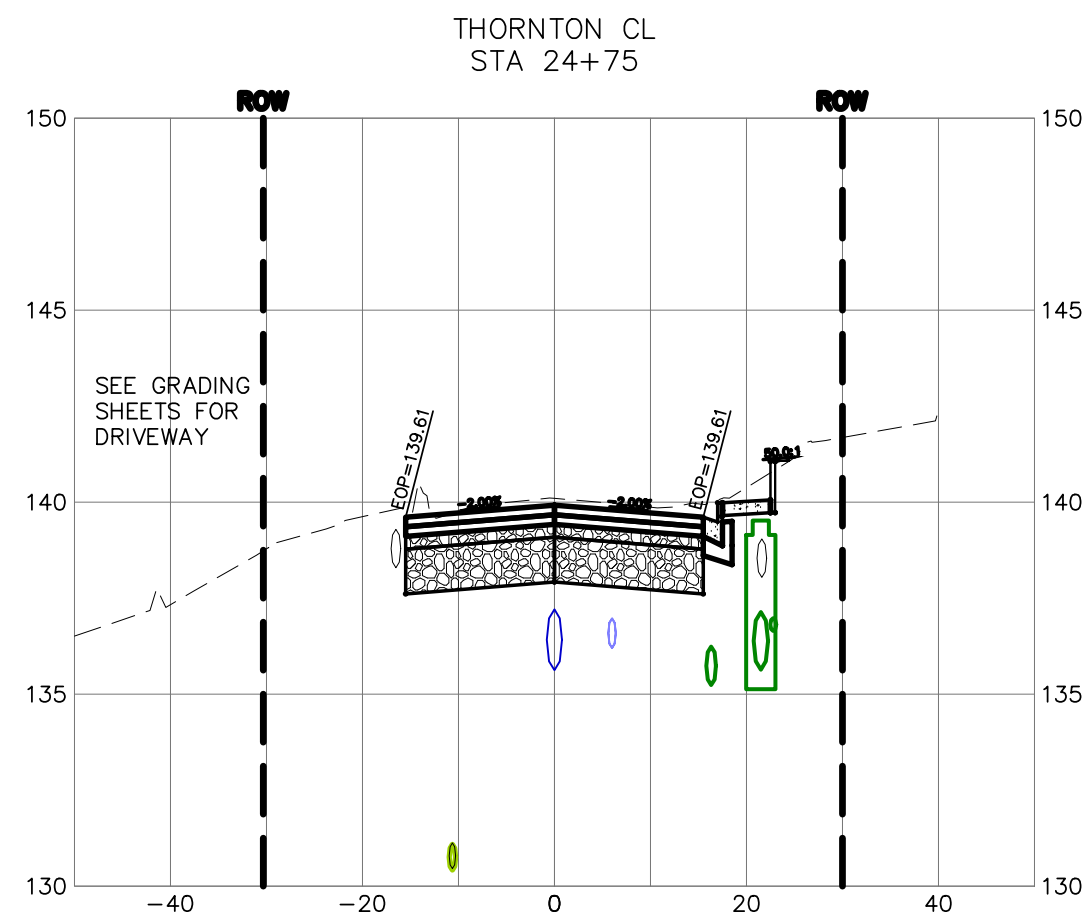
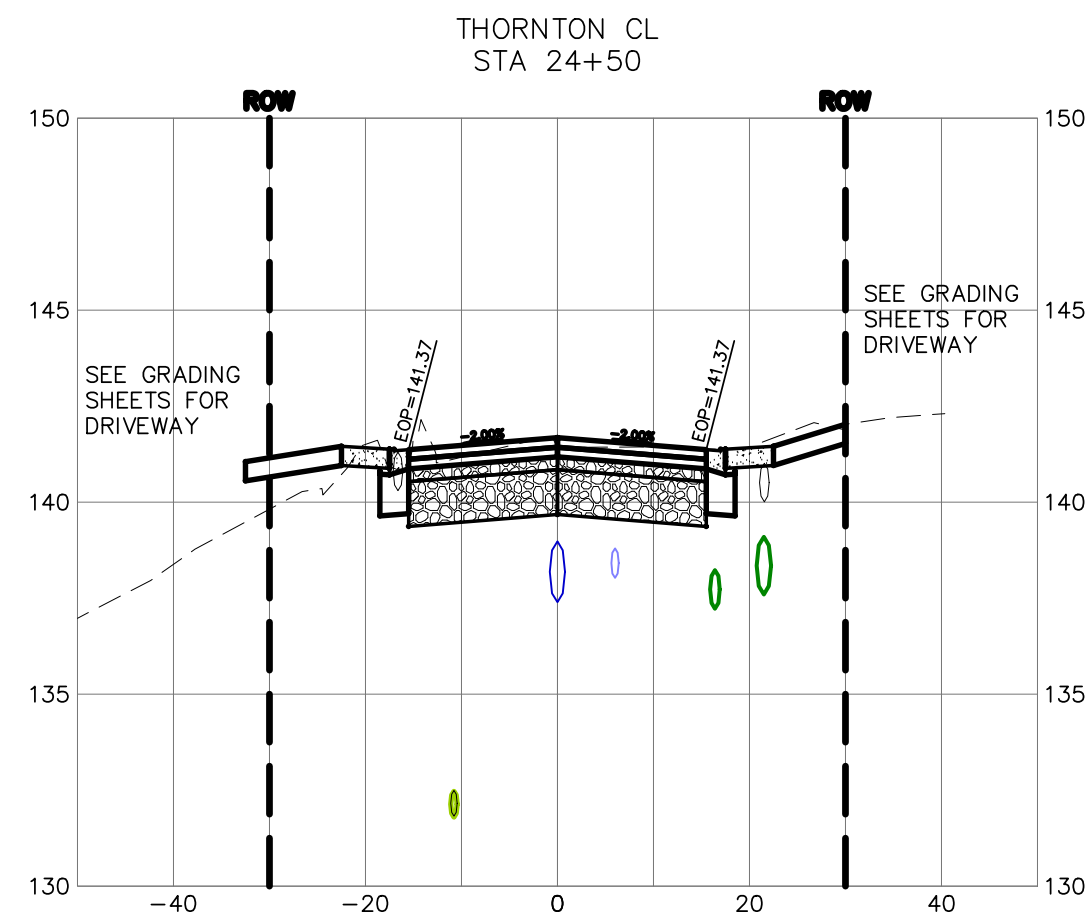
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NO.	DATE	DESCRIPTION	BY

CITY OF FERNDAL
2095 MAIN ST
FERNDAL, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE
CROSS SECTION (3)

DWG 19025 PLAN		DATE	5/22/24
JOB#	SCALE	SHEET	63
19025	H: 1"=20' V: 1"=5'	of 64	



5/22/24
AS-BUILT

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JAM/LMH
CHECKED BY
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NO.	DATE	DESCRIPTION	BY

CITY OF FERDALE
2095 MAIN ST
FERDALE, WA 98248

THORNTON STREET - VISTA TO MALLOY AVENUE
CROSS SECTION (4)

DWG 19025 PLAN	DATE 5/22/24
JOB# 19025	SCALE H: 1"=20' V: 1"=5'
SHEET 64 of 64	