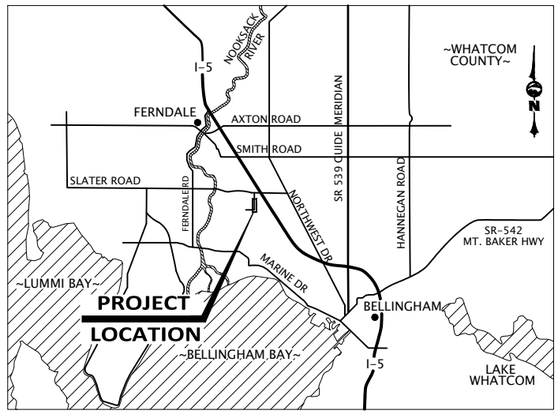
NO.	REVISIONS	BY	DATE

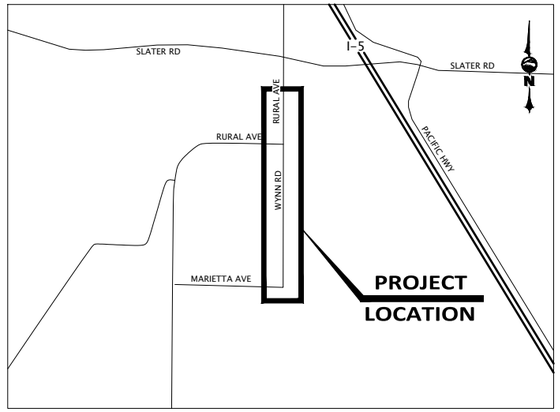
CITY OF FERNDALE

WATER SYSTEM EMERGENCY INTERTIE
RECORD DRAWINGS

AREA MAP - NOT TO SCALE



VICINITY MAP - NOT TO SCALE



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I HEREBY DECLARE THAT THESE DOCUMENTS WERE PREPARED UNDER MY DIRECT SUPERVISION AND THAT THE PLANS, SPECIFICATIONS AND DESIGN SHOWN HEREIN GENERALLY CONFORM TO ACCEPTED ENGINEERING STANDARDS AND MEET THE REQUIREMENTS SET FORTH UNDER THE WHATCOM COUNTY DEVELOPMENT STANDARDS.

SIGNED: _____

GENERAL NOTES

WHATCOM COUNTY GENERAL NOTES

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT WSDOT/APWA STANDARD SPECIFICATIONS, WHATCOM COUNTY DEVELOPMENT STANDARDS (WCDS), AND SHALL BE SUBJECT TO APPROVAL BY WHATCOM COUNTY PUBLIC WORKS DEPARTMENT – ENGINEERING DIVISION – PUBLIC WORKS ENGINEERING SERVICES (PWES).

2. DEVELOPER/CONTRACTOR/CONSULTING ENGINEER SHALL SCHEDULE A PRE–CONSTRUCTION CONFERENCE WITH THE PUBLIC WORKS ENGINEERING SERVICES PROJECT MANAGER A MINIMUM OF 3 WORKING DAYS PRIOR TO BEGINNING ANY WORK.

3. NORMAL WORKING HOURS ARE 7:30 AM. TO 4:00 PM., MONDAY THROUGH FRIDAY. WORK DURING HOLIDAYS, WEEKENDS, AND OUTSIDE THE NORMAL WORK HOURS REQUIRES PRIOR ARRANGEMENTS AND APPROVAL.

4. SIGHT DISTANCE REQUIRED AT ALL INTERSECTIONS PER WCDS CHAPTER 5.

5. A REVOCABLE ENCROACHMENT PERMIT SHALL BE OBTAINED PRIOR TO COMMENCING ANY WORK WITHIN COUNTY MAINTAINED ROAD RIGHTS–OF–WAY.

6. THE CONTRACTOR SHALL CONTACT UTILITY LOCATION SERVICE 48 HOURS PRIOR TO STARTING WORK AT (800)424–5555 OR 811.

7. A COPY OF THE COUNTY–APPROVED DRAWINGS MUST BE ON THE JOB SITE WHENEVER WORK IS IN PROCESS.

8. WHATCOM COUNTY RESERVES THE RIGHT TO INSPECT ALL WORK. THE CONTRACTOR SHALL CALL THE CONSULTING ENGINEER AND THE PUBLIC WORKS ENGINEERING SERVICES PROJECT MANAGER AT (360)778–6220 AT LEAST 24 HOURS IN ADVANCE OF THE FOLLOWING WORK ITEMS:
A. PLACEMENT OF TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES.
B. PLACEMENT OF WATER, SANITARY SEWER, AND STORM DRAINAGE LINES AND BACKFILLING OF THESE LINES WITHIN COUNTY MAINTAINED ROAD RIGHTS–OF–WAY.
C. PLACEMENT OF UNDERGROUND UTILITIES AND BACKFILLING WITHIN COUNTY MAINTAINED ROAD RIGHTS–OF–WAY.
D. ROADWAY GRADING AT THE COMPLETION OF THE SUBGRADE, BALLAST, AND OF CRUSHED SURFACING.
E. POURING OF CURB/GUTTER AND SIDEWALK.
F. ASPHALT PAVING, AT THE BEGINNING OF PAVING.
G. PRIOR TO PAVEMENT MARKING.
H. OVERALL INSPECTION OF FINISHED SHOULDERS, DITCHES, PERMANENT SEEDING, ROAD SIGNAGE, MONUMENT PLACEMENT, CLEANING OF DRAINAGE SYSTEM AND CONSTRUCTION DEBRIS.
I. ALL WORK REQUIRED TO RELEASE OF ANY POSTED SECURITY.

9. THE CONTRACTOR MUST PROVIDE THE FOLLOWING TESTS:
A. CURB/GUTTER, SIDEWALK, ROADWAY BASE COMPACTION – MINIMUM 1 TEST EVERY 1–3 STATIONS, VARIES WITH LENGTH, MINIMUM OF 2 TESTS PER CATEGORY OR AT THE DIRECTION OF COUNTY INSPECTOR.
B. PROOF ROLL OF BASE MATERIAL WITH COUNTY INSPECTOR PRESENT BEFORE CRUSHED TOP SURFACING IS PLACED.
C. CONCRETE CYLINDER COMPRESSION – 1 CYLINDER EVERY THIRD LOAD – MINIMUM OF 2 SAMPLES/DAY.
D. HMA PAVING DENSITY – PER WSDOT STANDARD SPECIFICATIONS.

10. ALL TESTING REQUIRED FOR THE WORK SHALL BE THE RESPONSIBILITY OF THE OWNER AND SHALL BE IN CONFORMANCE WITH WCDS WITH RESPECT TO THE CONSULTING ENGINEER.

11. THE CONTRACTOR SHALL RIP RAP ALL CULVERT INLETS AND OUTLETS.

12. THE CONTRACTOR SHALL RESTORE ALL PRIVATE AND PUBLIC PROPERTY DISTURBED BY THE WORK IMMEDIATELY AFTER CONSTRUCTION. THE CONTRACTOR SHALL NOT LEAVE ANY PART OF THE ROAD USED BY OTHERS UN–PASSABLE WITHOUT NOTIFICATIONS AND AGREEMENT OF OTHER USERS.

13. ALL CUT AND FILL SLOPES SHALL BE MULCHED AND SEEDED FOR EROSION CONTROL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SLOPE EROSION UNTIL VEGETATION IS FIRMLY ESTABLISHED.

14. CONTRACTOR SHALL SWEEP AND REMOVE ALL DEBRIS TRACKED ONTO EXISTING ROADS DURING ALL PHASES OF CONSTRUCTION.

15. ANY TREE, WHERE 1/3 OF THE ROOT SYSTEM IS DAMAGED BY WORK, SHALL BE REMOVED.

16. THE CONTRACTOR SHALL INFORM THE CONSULTING ENGINEER AND OBTAIN APPROVAL FROM WHATCOM COUNTY ENGINEERING DIVISION OF ANY PROPOSED CHANGES IN PLANS PRIOR TO IMPLEMENTATION OF THE CHANGE. THE CONTRACTOR SHALL KEEP RECORDS OF DEVIATIONS AND FORWARD TO THE ENGINEER OF RECORD AND WHATCOM COUNTY ENGINEERING DIVISION.

17. TRAFFIC CONTROL IS TO BE MAINTAINED IN ACCORDANCE WITH WSDOT/APWA STANDARD SPECIFICATIONS.

18. THE DEVELOPER/CONTRACTOR SHALL POST A WARRANTY SECURITY AS REQUIRED BY THE WHATCOM COUNTY DEVELOPMENT STANDARDS.

19. AN ENGINEER SHALL PROVIDE RECORD DRAWINGS PER WCDS 507.D.

20. REFER TO SPECIFICATIONS FOR WATER MAIN TESTING REQUIREMENTS.

811 Call 811 two business days before you dig

RECORD DRAWINGS

WILSON ENGINEERING
WILSONENGINEERING.COM

BRIAN SMITH – 24521 – REGISTERED PROFESSIONAL ENGINEER – STATE OF WASHINGTON – 5/31/23

DESIGNED BY	DRAWN BY	CHECKED BY
BMS	JCS	AWL

WASHINGTON

CITY OF FERNDALE

WATER SYSTEM EMERGENCY INTERTIE

COVER SHEET

DATE	SCALE	JOB NUMBER
5-31-23	AS SHOWN	2021-091

SHEET C0.1

PAGE 1 OF 25

LEGEND & ABBREVIATIONS– SIZE & SCALE MAY VARY

EXISTING HATCH PATTERNS

DESCRIPTION
EXIST. CONCRETE
EXIST. BUILDING
EXIST. EARTH
EXIST. GRAVEL
EXIST. SAND

PROPOSED HATCH PATTERNS

DESCRIPTION
PROP. CONCRETE
PROP. TOP COURSE GRAVEL
PROP. GRAVEL
PROP. ASPHALT
PROP. QUARRY SPALLS
WETLAND HATCH

SURFACE FEATURES
EXISTING PLAN LINETYPES

DESCRIPTION
BRIDGE
BUILDING LINE
BUILDING COLUMN
BUILDING OVERHANG
BULKHEAD
CONCRETE EDGE
CREEK EDGE
CROWN OF ROAD
CURB
DITCH CENTERLINE
DECK
DOCK
EDGE OF SAWCUT
EDGE OF PAVEMENT
FENCE
GATE
GRADE
GRAVEL
GUARDRAIL
JERSEY BARRIER
LAKE/POND WATER EDGE
LIP OF CURB
MISC SURFACE FEATURE
MISC TRAFFIC
PLANTER
PATH
RAILROAD
RAMP (WOOD)
HANDRAIL
RETAINING WALL
ROAD STRIPING
ROCKERY
RIVERBANK/SHORELINE
THALWAG LINE
TOP OF BANK/SLOPE
TOE OF BANK/SLOPE
VEGETATION/SHRUB LINE
WETLAND/SWAMP PERIMETER
WETLAND BUFFER

SURFACE FEATURES
PROPOSED PLAN LINETYPES

DESCRIPTION
BRIDGE
BUILDING LINE
CONCRETE
CURB
DITCH CENTERLINE
EDGE OF BIKE LANE
EDGE OF PAVEMENT
FENCE
GATE
GRAVEL
GUARDRAIL
JERSEY BARRIER
LIP OF CURB
REBAR
RETAINING WALL
ROCKERY
ROAD STRIPING
HANDRAIL
EDGE OF SAWCUT

UTILITIES
EXISTING PLAN LINETYPES

DESCRIPTION
CABLE TELEVISION (AERIAL)
CABLE TELEVISION (BURIED)
SURVEILLANCE CAMERA (BURIED
FIBER OPTIC/COMMUNICATIONS LINE (AERIAL)
FIBER OPTIC/COMMUNICATIONS LINE (BURIED)
TELEPHONE/COMMUNICATIONS (AERIAL)
TELEPHONE/COMMUNICATIONS (BURIED)
TRAFFIC SIGNAL CONDUIT LINE
POWER (AERIAL)
POWER (BURIED)
UTILITY (AERIAL)
UTILITY (BURIED)
POWER DUCT BANK (BURIED)
DRAIN FIELD
SANITARY SEWER
APPROXIMATE SANITARY SEWER
SANITARY SEWER (FORCE MAIN)
APPROXIMATE SANITARY SEWER (FORCE MAIN)
STORM DRAINAGE
APPROXIMATE STORM DRAINAGE
CULVERT (@ WIDTH)
CULVERT
RECLAIMED WATER
IRRIGATION
WATER
APPROXIMATE WATER
8" WATER
OVERFLOW
STEAM
GAS
GAS TANK/STRUCTURE
OIL
AIR LINE
BURIED UTILITY APPROX. EXTENTS
MISC UTILITY (BURIED)

PROPOSED PLAN UTILITY LINETYPES
WATER

DESCRIPTION
WATER
8" WATER
IRRIGATION
RECLAIMED WATER
POTABLE WATER
WATER SERVICE
WATER STRUCTURE
FIRE DEPARTMENT CONNECTION
FIRE PROTECTION LINE

SANITARY SEWER

DESCRIPTION
SEWER
8" SEWER
FORCE MAIN
DRAIN FIELD
SEWER SERVICE
SEWER STRUCTURE

STORM DRAIN

DESCRIPTION
STORM DRAIN
STORM DRAIN
STORM DRAIN
STORM SERVICE
FOOTING DRAIN
STORM STRUCTURE

MISC. UTILITIES

DESCRIPTION
GAS
POWER
TELEPHONE/COMMUNICATIONS

EROSION CONTROL

DESCRIPTION
EROSION TRIANGULAR SILT DIKE
EROSION CONTROL COMPOST BERM
EROSION CONTROL MINOR CONTOUR
EROSION CONTROL MAJOR CONTOUR
ORANGE BARRIER FENCE
SILT FENCE
STRAW WATTLE
EROSION CONTROL FLOWLINE
STRAW BALE
INLET PROTECTION
CHECK DAM

SURVEY
PLAN LINETYPES

DESCRIPTION
CENTERLINE (EXISTING)
CENTERLINE (CONSTRUCTION)
CENTERLINE (PROPOSED)
CONTOUR (EXISTING MINOR)
CONTOUR (EXISTING INDEX)
HYDRO CONTOUR (EXISTING INDEX)
CONTOUR (PROPOSED INDEX)
CONTOUR (PROPOSED MINOR)
DONATION LAND CLAIM (EXIST.)
EASEMENT (PROPOSED)
EASEMENT (EXISTING)
MEANDER LINE
ORDINARY HIGH WATER LINE
MEAN LOW LEVEL WATER LINE
OWNERSHIP LINE
PROPERTY LINE (RECORD OR ADJACENT)
PROPERTY LINE
QUARTER SECTION LINE
RANGE/TOWNSHIP LINE
RESERVATION/PARK/FOREST (EX)
RIGHT-OF-WAY ℄ (EXISTING)
RIGHT-OF-WAY (EXISTING)
RIGHT-OF-WAY (EXISTING USED)
RIGHT-OF-WAY (PROPOSED)
RIGHT-OF-WAY (EX. RECORD) (RECORD OR ADJACENT)
RIGHT-OF-WAY (LIMITED ACCESS)
RIGHT-OF-WAY (LIMITED ACCESS)
SECTION LINE
SETBACK LINE (EXISTING)
SIXTEENTH SECTION LINE
STATE/COUNTY/CORPORATE LIMIT
VACATED RIGHT-OF-WAY
EASEMENT (RECORD)
RIGHT-OF-WAY CENTER (RECORD)
DONATION LAND CLAIM (RECORD)
MEANDER LINE (RECORD)
PARK LINE (RECORD)
SECTION LINE (RECORD)
QUARTER SECTION LINE (RECORD)
SIXTEENTH SECTION LINE (RECORD)
STATE LINE (RECORD)
RANGE LINE (RECORD)

PROFILE LINETYPES

DESCRIPTION
PROFILE EX. GRND ℄
PROFILE FINISH GRND ℄
PROFILE GRID
PROFILE VERTICAL GRID
PROFILE EX. GROUND LEFT
PROFILE EXISTING GROUND RIGHT
FIBER OPTIC PROFILE (EXISTING)
GAS PROFILE (EXISTING)
POWER PROFILE (EXISTING)
RAILROAD PROFILE (EXISTING)
SANITARY PROFILE (EXISTING)
SANITARY PROFILE (PROPOSED)
STORM PROFILE (EXISTING)
TELEPHONE PROFILE (EXISTING)
STORM PROFILE (PROPOSED)
TV PROFILE (EXISTING)
UTILITY PROFILE (EXISTING)
WATER PROFILE (EXISTING)
WATER PROFILE (PROPOSED)

DEMOLITION

DESCRIPTION
SURFACE FEATURE OR UTILITY TO BE REMOVED
SAWCUT
CLEARING LIMIT
TREE OR BUSH TO BE REMOVED

GRADING

DESCRIPTION
GRADE BREAK
CATCHLINE
CUT LINE
FILL LINE
SLOPE ARROWS

SECTION/DETAIL CALL-OUTS

SECTION CALL-OUTS: (A) REPRESENTS THE SECTION LABEL, (B) INDICATES THE SHEET ON WHICH THE SECTION APPEARS.

DETAIL CALL-OUTS: (A) REPRESENTS THE DETAIL LABEL, (B) INDICATES THE SHEET ON WHICH THE DETAIL APPEARS.

MISC. SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		SOIL BORING
		MONITORING WELL
		TEST WELL
		TEST PIT
		EMBANKMENT
		MAIL BOX
		SIGN
		RIP RAP
		BOULDER
		SHRUB
		TREE (Conifer)*
		TREE (Deciduous)*
		STUMP–PLAN VIEW
		YARD LIGHT
		WELL
		PILE
		ROCKERY
		WHEEL STOP
		SPLASH BLOCK
		GAS METER
		GAS VALVE
		PAD MOUNTED TRANSFORMER
P	P	POWER VAULT
		TRANSMISSION TOWER
		POWER CABINET OR PANEL
		POWER METER
		GUY POLE
		UTILITY POLE
		UTILITY POLE ANCHOR
		TELE RISER
TV	TV	CABLE RISER
		FIBER OPTIC RISER
F	F	FIBER OPTIC MANHOLE
T	T	TELEPHONE MANHOLE
T	T	TELEPHONE VAULT
		STEAM MANHOLE
		PARKING METER
		POST
P	P	PUMP

SANITARY SEWER SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		SAN. SEWER CLEAN OUT
		SAN. SEWER MANHOLE

STORM DRAIN SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		STORM DRAIN CB TYPE 1
		STORM DRAIN CB TYPE 2
		STORM DRAIN CB TYPE 2 W/CB LID
		STORM DRAIN WITH OVERFLOW GRATE
		STORM DRAIN CLEAN–OUT
DS	DS	STORM DOWNSPOUTS

PIPE CALL-OUT

(A) 36–SS (B) XXXLF (C)

PIPE CALL–OUTS: (A) REPRESENTS THE PIPE SIZE IN INCHES, (B) INDICATES THE UTILITY TYPE (C) REPRESENTS THE PIPE LENGTH IN LINEAL FEET

SYMBOLS

°	=DEGREES
±	=PLUS/MINUS
ø	=DIAMETER
Δ	=DELTA
℄	=CENTERLINE
℄	=FLOWLINE
℘	=PROPERTY LINE

SPOT ELEVATIONS

190.00 ① TBC ②

①= ELEVATION
②= DESCRIPTION– SEE DEFINED ABBREVIATIONS ABOVE

DIRECTIONAL ABBREVIATIONS

N	=NORTH
NE	=NORTHEAST
E	=EAST
SE	=SOUTHEAST
S	=SOUTH
SW	=SOUTHWEST
W	=WEST
NW	=NORTHWEST

WATER SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		ARV VALVE
		GLOBE VALVE, FL
		BALL CHECK VALVE, FL
		BLOW–OFF VALVE
		SWING CHECK VALVE, FL
		BUTTERFLY VALVE, FL
		HOSE BIB/SPIGOT
		DOUBLE LEAF CHECK VALVE
		PLUG VALVE
		BALL VALVE
		FLOAT VALVE
		PINCH VALVE
		PRESSURE & VACUUM RELIEF VALVE
		VACUUM RELIEF VALVE
		PRESSURE RELIEF VALVE
		PRESSURE REGULATING VALVE (SELF CONTAINED)
		BACK PRESSURE REGULATING VALVE (SELF CONTAINED)
		IN–LINE SPRING LOADED RELIEF VALVE
		CAP/PLUG
		GUARD POST
		THRUST BLOCK
		WATER METER
		FIRE DEPARTMENT CONNECTION
		WATER VALVE
		FIRE HYDRANT
W		WATER MANHOLE
PIV	PIV	POST INDICATOR VALVE
		11–1/4 BEND, MJ–FL
		22–1/2 BEND, MJ–FL
		45 BEND, MJ–FL
		90 BEND, MJ–FL
		FLXMJ ADAPTER
		COUPLER
		BLIND FLANGE
		GATE VALVE, FLxMJ
		GATE VALVE, MJ
		REDUCER, MJxFL
		REDUCER, MJ
		TEE, FL
		TEE, MJ
		TEE, MJxFL
		TEE, FLxMJ
		CROSS, FL
		CROSS, MJ

SURVEY SYMBOLS

BRASS SURFACE MONUMENT
CONCRETE MONUMENT
FOUND REBAR
SET REBAR
MONUMENT IN CASE
TRAVERSE POINT

NOTE TO USER:
CONTENT SHOWN ON THIS PAGE IS SUBJECT TO CHANGE AND MAY DIFFER THROUGHOUT THE PLAN SET.

SECTION SHEET LABELS: (A) REPRESENTS THE SECTION LABEL, (B) INDICATES THE SHEET ON WHICH THE SECTION IS CALLED OUT.

DETAIL SHEET LABELS: (A) REPRESENTS THE DETAIL LABEL, (B) INDICATES THE SHEET(S) ON WHICH THE DETAIL IS CALLED OUT.

CX.XC (B)

ABBREVIATIONS

AB	=AS–BUILT (RECORD)
AC	=ASBESTOS CEMENT
AL	=ALIGNMENT
ANC	=UTILITY POLE ANCHOR
APPROX	=APPROXIMATE
ASPH or AC	=ASPHALT
ASSY	=ASSEMBLY
ASTM	=AMERICAN SOCIETY FOR TESTING & MATERIALS
BLDG	=BUILDING
BMP	=BEST MANAGEMENT PRACTICE
BVCS	=BEGIN VERTICAL CURVE STATION
BVCE	=BEGIN VERTICAL CURVE ELEVATION
CB	=CATCH BASIN
CK	=CHECK VALVE
C/L, ℄	=CENTERLINE
CESCL	=CERTIFIED EROSION SEDIMENT CONTROL LEAD
COL	=COLUMN
CMP	=CORRUGATED METAL PIPE
CMU	=CONCRETE MASONRY UNIT
C.O. or CO	=CLEAN OUT
CONC, C	=CONCRETE
COR	=CORNER
CRSI	=CONCRETE REINFORCING STEEL INSTITUTE
CPP	=CORRUGATED POLYETHYLENE PIPE
CSBC	=CRUSHED SURFACING BASE COURSE
CSTC	=CRUSHED SURFACING TOP COURSE
DCVA	=DOUBLE CHECK VALVE ASSEMBLY
DI, DIP	=DUCTILE IRON
DIAM	=DIAMETER
DO	=DISSOLVED OXYGEN
DR	=DIMENSION RATIO
DS	=DOWNSPOUT
EFFL	=EFFLUENT
EG	=EXISTING GRADE
ELEV, EL	=ELEVATION
EOG	=EDGE OF GRAVEL
EOP	=EDGE OF PAVEMENT
EP	=EXPLORATION PIT
EXIST, EX	=EXISTING
EVCS	=END VERTICAL CURVE STATION
EVCE	=END VERTICAL CURVE ELEVATION
FDC	=FIRE DEPARTMENT CONNECTION
FF	=FINISH FLOOR
FG	=FINISH GRADE
FL	=FLOWLINE OR FLANGE (CONNECTION)
℄	=FLOWLINE
FLC	=FLOWLINE OF CURB
FM	=FORCEMAIN
FNC	=FENCE
FRP	=FIBERGLASS REINFORCED PIPE
GB	=GRADE BREAK
GMET	=GAS METER
GP	=GUY POLE
GPM	=GALLONS PER MINUTE
GRVL, G	=GRAVEL
GV	=GATE VALVE
HB	=HOSE BIB
HDG	=HOT–DIP GALVANIZED
HDPE	=HIGH DENSITY POLYETHYLENE
HSS	=HOLLOW STRUCTURAL SECTION
H:V	=HORIZONTAL:VERTICAL
HWL	=HIGH WATER LEVEL
HYD	=HYDRANT
IBC	=INTERNATIONAL BUILDING CODE
IE	=INVERT ELEVATION
INFO	=INFORMATION
INV	=INVERT
IPS	=IRON PIPE SIZE
LF	=LINEAR FEET
LUM	=LUMINAIRE
LT	=LEFT
MAX	=MAXIMUM
MB	=MAIL BOX
MBR	=MEMBRANE BIO–REACTOR
MC	=MAINTENANCE CLEANING
MFR	=MANUFACTURER
MH	=MANHOLE
MIN	=MINIMUM
MISC	=MISCELLANEOUS
MJ	=MECHANICAL JOINT
MLSS	=MIXED LIQUOR SUSPENDED SOLIDS
MW	=MONITORING WELL
NPDES	=NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
O.C.	=ON CENTER
O.C.E.W	=ON CENTER EACH WAY
OD	=OUTSIDE DIAMETER
OHP	=OVERHEAD POWER
OHT	=OVERHEAD TELEPHONE
OSHA	=OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PC	=POINT OF CURVATURE
PCC	=POINT OF CONTINUING CURVATURE
PE	=POLYETHYLENE or PLAIN END
PIV	=POST INDICATOR VALVE
P/L, ℘	=PROPERTY LINE
PLC	=PROGRAMMABLE LOGIC CONTROLLER
PLTR	=PLANTER
POL	=POINT ON LINE
PROP	=PROPOSED
PS	=PUMP STATION
PSI	=POUNDS PER SQUARE INCH
PT	=POINT OF TANGENCY
PVC	=POLYVINYL CHLORIDE
PVI	=POINT OF VERTICAL INTERSECTION
PW	=POTABLE WATER
R	=RADIUS
RCK	=ROCK/BOULDER
RET	=RETAINING
REC	=RECORD
REINF	=REINFORCEMENT
REQ'D	=REQUIRED
RI	=RAPID INFILTRATION
RPBA	=REDUCED PRESSURE BACKFLOW ASSEMBLY
RR	=RAILROAD
RT	=RIGHT
R/W or ROW	=RIGHT–OF–WAY
RW	=REUSE WATER
SCADA	=SUPERVISORY CONTROL AND DATA ACQUISITION
SCH	=SCHEDULE
SDCB	=STORM DRAIN CATCH BASIN
SD	=STORM DRAIN
SDMH	=STORM DRAIN MANHOLE
SFH	=SINGLE FAMILY HOUSING
SN	=SIGN
SPD	=STANDARD PROCTOR DENSITY
SPK	=SPIKE
SS	=SANITARY SEWER
SSCO	=SANITARY SEWER CLEAN–OUT
SSMH	=SANITARY SEWER MANHOLE
SST	=STAINLESS STEEL
STA	=STATION
STEP	=SEPTIC TANK EFFLUENT PUMP
S/W	=SIDEWALK
SYMM	=SYMMETRY/SYMMETRICAL
TBC	=TOP BACK OF CURB
TBD	=TO BE DETERMINED
TBM	=TEMPORARY BENCH MARK
T.O.W.	=TOP OF WALL
TYP	=TYPICAL
UNK	=UNKNOWN
UP	=UTILITY POLE
VAC	=VACATED
VC	=VERTICAL CURVE
VEG	=VEGETATION
VFD	=VARIABLE FREQUENCY DRIVE
WA	=WATER
WAS	=WASTE ACTIVATED SLUDGE
WL	=WATERLINE
WM	=WATER METER
WS	=WATER SURFACE
WSDOT	=WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
WV	=WATER VALVE
YD	=YARD DRAIN
YL	=YARD LIGHT

811 Call 811 two business days before you dig

RECORD DRAWINGS

PLOT SETTINGS: W:\2021\2021-091 FERNDALE WATER MAIN INTERTIE\DWG\AS-BUILT\AB V2019_2021-091 C0.2 LEGEND & ABBREVIATIONS.DWG – 5/31/2023 11:18 AM – Jeff Smith
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BRIAN MARRIN SMITH — STATE OF WASHINGTON — 24521 — REGISTERED PROFESSIONAL ENGINEER — 5/31/23

DESIGNED BY	DRAWN BY	CHECKED BY
BMS	JCS	AWL

CITY OF FERNDALE
WASHINGTON
FERNDALE
WATER SYSTEM EMERGENCY INTERTIE
LEGEND & ABBREVIATIONS 2021

DATE	SCALE	JOB NUMBER
5-31-23	AS SHOWN	2021-091

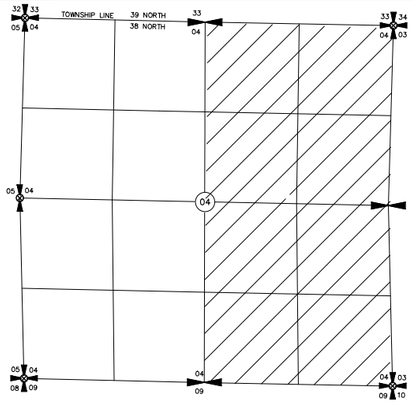
SHEET C0.2 — PAGE 2 OF 25

CITY OF FERNDALE

WATER SYSTEM EMERGENCY INTERTIE
W.A.C. 332-130 COMPLIANCE SHEET

NO.	REVISIONS	BY	DATE

SECTIONAL INDEX DATA



NE QTR & SE QTR, SEC. 04, TWP 38 NORTH, RGE 2 EAST, W.M.

NOTICE TO USER

EFFECTIVE JANUARY 13, 2019, ALL TOPOGRAPHIC MAPS PREPARED BY A LICENSED SURVEYOR IN THE STATE OF WASHINGTON, AND SUBJECT TO THE LICENSURE AND PRACTICE REQUIREMENTS ESTABLISHED BY THE WASHINGTON STATE BOARD OF REGISTRATION FOR ENGINEERS AND LAND SURVEYORS, MUST INCLUDE THE DESCRIPTIVE NOTES AND METADATA ENUMERATED UNDER W.A.C 332-130-145 AND ITS APPURTENANT SECTIONS OF 332-130. THIS EXHIBIT IS INTENDED TO ADDRESS THE STATUTORY REQUIREMENTS STIPULATED BY THIS W.A.C DIRECTIVE.

W.A.C. 332-130-145 REQUIRED DATA

THIS SURVEY WAS PREPARED UNDER THE DIRECT SUPERVISION OF:

PAUL J. DARROW, WA PLS #50697

SR. PROJECT SURVEYOR

WILSON ENGINEERING LLC

805 DUPONT STREET, SUITE 7

BELLINGHAM, WA 98225

360-733-6100 (EXT. 243)

pdarrow@wilsonengineering.com

1. BASIS OF ELEVATIONS: ELEVATION VALUES AND CONTOURS DEPICTED ON THIS SURVEY ARE BASED UPON HOLDING AS FIXED THE CITY OF FERNDALE NGVD BENCHMARK MONUMENT FERN 15, HAVING AN ELEVATION OF 89.31'.
2. PURPOSE OF SURVEY: WILSON ENGINEERING PERFORMED THIS SURVEY DURING JUNE, JULY, AND SEPTEMBER OF 2021, AT THE REQUEST OF THE CITY OF FERNDALE PURSUANT TO WATERMAIN DESIGN.
3. SOURCE OF CONTOURS: ONE-FOOT CONTOURS DEPICTED ON THIS SURVEY ARE BASED ON DIRECT FIELD OBSERVATIONS USING A TRIMBLE S-7 ROBOTIC TOTAL STATION AND UAV DRONE PICTOMETRY.
4. ELEVATIONS WERE ESTABLISHED ON SITE USING REDUNDANT GPS TIES TO THE FERNDALE CONTROL NETWORK. SITE BENCHMARK IS WSE#100, SHOWN HEREON. ELEVATION=181.51'.
5. ELEVATION AND/OR CONTOUR ACCURACY: CONTOURS DEPICTED ON THE FACE OF THIS SURVEY, IF OBSERVED RELATIVE TO THE CONTROL POINTS SPECIFICALLY ENUMERATED IN THE ACCOMPANYING CONTROL TABLE, WILL BE, IN FACT, WITHIN ONE-HALF OF THE MINOR-CONTOUR INTERVAL DEPICTED HEREON. SPECIFIC ELEVATIONS DEPICTED HEREON, IF ANY, ARE EXPECTED TO BE WITHIN ONE INTEGRAL VALUE OF THE FINAL DEPICTED SIGNIFICANT FIGURE. FURTHERMORE, 90% OF ELEVATIONS EXPRESSED TO THE TENTH-FOOT, SHOULD BE WITHIN 0.1 FEET OF THAT VALUE, IF OBSERVED RELATIVE TO THE SURVEY CONTROL SPECIFICALLY ENUMERATED IN THE ACCOMPANYING CONTROL TABLE. IF OFF-SITE CONTROL IS EMPLOYED, EVEN CONTROL PURPORTING TO BE ON THE SAME DATUM OR BASED ON THE SAME OFF-SITE BENCHMARK, THEN NO ABSOLUTE STATEMENT REGARDING THE ACCURACY OF THE DEPICTED POINTS CAN BE MADE, AND VALUES SO OBSERVED ARE OUTSIDE OF THIS SURVEY'S AUTHORITY OR INTEREST.
6. STATEMENT OF USE: AS NOTED IN SECTION 2.B, THIS SURVEY WAS PREPARED FOR THE SPECIFIC PURPOSE OF WATERMAIN DESIGN. IN THE COURSE OF PREPARING THIS SURVEY, PURSUANT TO THIS PURPOSE, ANCILLARY DATA NECESSARY TO ACCOMPLISH THIS SURVEYS INTENDED PURPOSE MAY HAVE BEEN CAPTURED. IN THE CASE OF THIS SURVEY PARCEL BOUNDARIES ARE DEPICTED, BUT THE DEPICTION OF SAME SHOULD NOT BE CONSIDERED AUTHORITATIVE AND THIS TOPOGRAPHIC SURVEY DOES NOT CONSTITUTE A RECORD OF SURVEY.
7. SOURCE OF CONTROLLING BOUNDARY INFORMATION: THE OWNERSHIP BOUNDARIES DEPICTED ON THIS SURVEY ARE BASED UPON THE DOCUMENTS ENUMERATED IN THE ACCOMPANYING "REFERENCE DOCUMENTS". BEARINGS HAVE BEEN ROTATED FROM THE RECORD VALUES IF NECESSARY TO COHERE TO THE CITY OF FERNDALE CONTROL NETWORK.
8. SOURCE OF DEPICTED UTILITY INFORMATION: UTILITY LINES DEPICTED ON THIS SURVEY ARE BASED UPON PAINT MARKS SET BY FRANCHISE UTILITY OWNERS RESPONDING TO WASHINGTON ONE-CALL DIG TICKET #550004484 ISSUED ON SEPTEMBER 13, 2021 AND PRIVATE UTILITY LOCATES PERFORMED BY APPLIED PROFESSIONAL SERVICES. THE FOLLOWING UTILITY PROVIDERS ARE IDENTIFIED AS HAVING FACILITIES IN THE AREA: CASCADE NATURAL GAS, CITY OF FERNDALE, CITY OF BELLINGHAM, COMCAST, CENTURYLINK, ZIPLY FIBER, BP/OLYMPIC PIPELINE, AND PUGET SOUND ENERGY.
9. ACCURACY OF DEPICTED UTILITY INFORMATION: WILSON ENGINEERING DOES NOT PROVIDE FOR-HIRE UTILITY LOCATION AND/OR MARKING SERVICES, AND CAN NOT INDEPENDENTLY ASCERTAIN THE ACCURACY OF ANY DEPICTED UTILITY THAT WAS NOT DIRECTLY OBSERVED IN THE COURSE OF THIS SURVEY.
10. STATEMENT OF LIMITATIONS REGARDING UTILITY-DEPICTION ACCURACY: USER HAS BEEN NOTIFIED THAT WILSON CAN NOT, AND DOES NOT, GUARANTEE THE ACCURACY, AT ANY LEVEL, OF DEPICTED UTILITIES BASED ON THIRD-PARTY PAINT MARKS OR RECORD INFORMATION.

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT I AM A LICENSED LAND SURVEYOR IN THE STATE OF WASHINGTON, THAT THIS MAP IS BASED ON AN ACTUAL FIELD SURVEY DONE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT ALL DATA SHOWN HEREON ACTUALLY EXISTS IN THE LOCATIONS SHOWN AT THE TIME OF THIS SURVEY. THIS EXISTING CONDITIONS MAP WAS DONE AT THE REQUEST OF CITY OF FERNDALE IN 2021.

PAUL JONATHAN DARROW, P.L.S. NO. 50697 DATE

ON-SITE SURVEY CONTROL TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
100	663438.23	1225693.31	181.51	ASPHALT SURFACE MONUMENT
101	665577.42	1225677.30	96.30	ASPHALT SURFACE MONUMENT
102	663976.02	1225700.53	155.22	REBAR & PLASTIC CAP
103	664468.42	1225697.89	126.45	REBAR & PLASTIC CAP
104	664817.32	1225675.27	111.45	MAG NAIL
105	665378.69	1225670.98	104.51	REBAR & PLASTIC CAP
106	666015.10	1225704.04	80.59	REBAR & PLASTIC CAP
107	665577.42	1225677.31	96.28	ASPHALT SURFACE MONUMENT
108	666015.10	1225704.02	80.56	REBAR & PLASTIC CAP
109	666655.71	1225682.22	70.41	MAG NAIL
110	667671.92	1225729.49	65.49	REBAR & PLASTIC CAP
FERN 12	673760.11	1222546.51	31.27	BRASS MONUMENT
FERN 14	668540.03	1215874.62	11.60	BRASS MONUMENT
FERN 15	667222.30	1226895.75	89.31	BRASS MONUMENT

NAD 83/91 SURVEY CONTROL DIAGRAM N.T.S.

CONTROL NOTES

HORIZONTAL DATUM:
NAD83/91

BASIS OF COORDINATES: COORDINATION AND MENSURATION ARE LOCAL GROUND VALUES, BASED UPON HOLDING THE PUBLISHED POSITION FOR THE CITY OF FERNDALE MONUMENT FERN 15, SAID MONUMENT HAS THE FOLLOWING PUBLISHED POSITION:

NORTHING = 667,222.30 USFT
EASTING = 1,226,895.75 USFT

BASIS OF BEARINGS: BEARINGS ARE BASED UPON HOLDING THE PUBLISHED POSITIONS OF CITY OF FERNDALE MONUMENTS #15 AND #12 PER THE DATA SHEETS THEREOF.
THE DERIVED INVERSE BETWEEN SAID MONUMENTS # 15 AND # 12 IS **NORTH 33° 38' 00" WEST**, AT A DISTANCE OF **7852.33 USFT**. THE PUBLISHED POSITION FOR THE MONUMENT # 12 IS:

NORTHING = 673,760.11 USFT
EASTING = 1,222,546.51 USFT

VERTICAL DATUM:
NGVD29 CITY OF FERNDALE

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RECORD DRAWINGS

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JONATHAN DARROW — STATE OF WASHINGTON — 50697 — REGISTERED PROFESSIONAL LAND SURVEYOR

DESIGNED BY	DRAWN BY	CHECKED BY
BMS	JGS	AWL

CITY OF FERNDALE
WATER SYSTEM EMERGENCY INTERTIE
W.A.C. 332-130 COMPLIANCE SHEET

FERNDALE WASHINGTON

DATE	SCALE	JOB NUMBER
5-31-23	AS SHOWN	2021-091

SHEET C1.1

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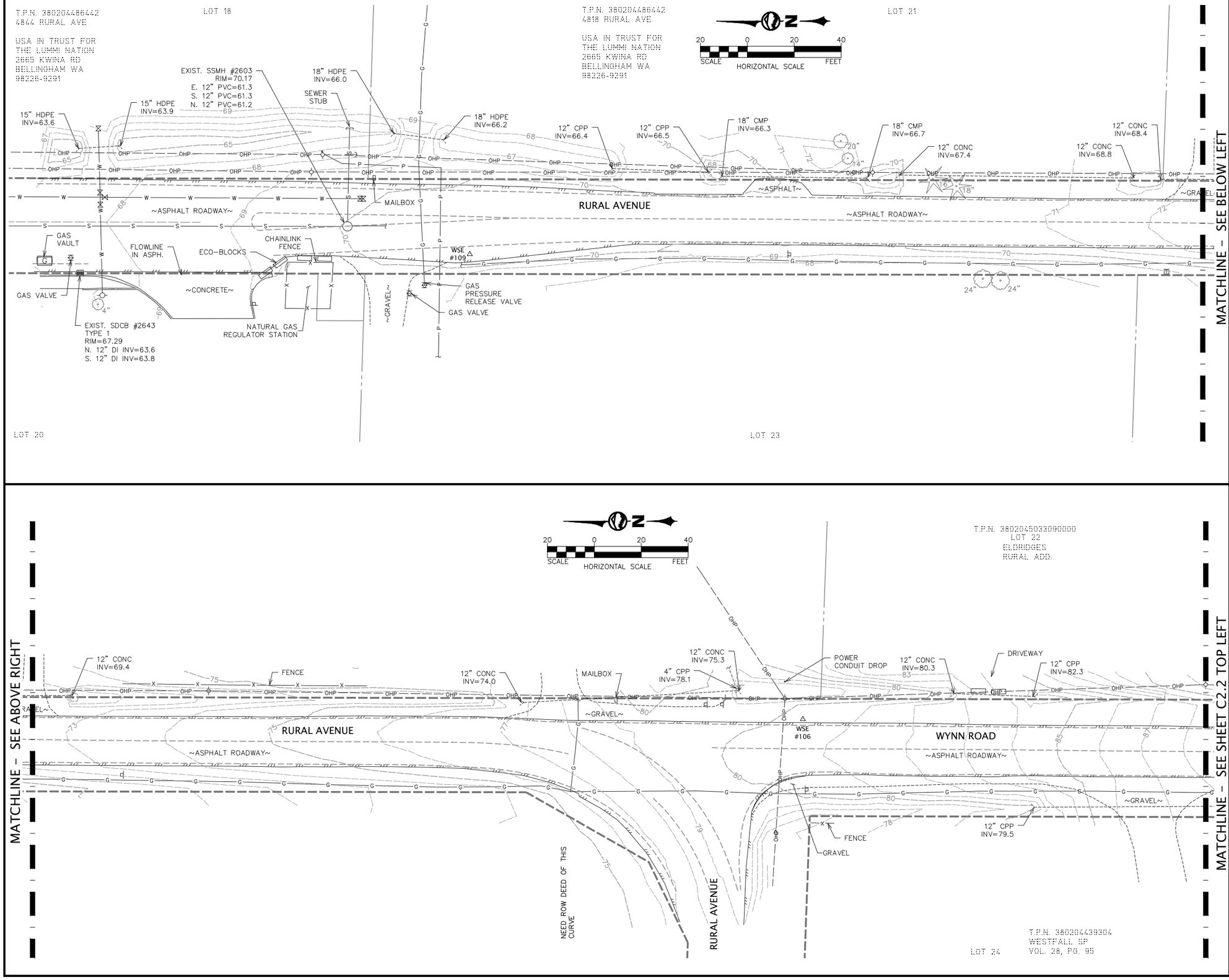

NO.	REVISIONS	BY	DATE

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JONATHAN DARROW
STATE OF WASHINGTON
21605
REGISTERED
PROFESSIONAL LAND SURVEYOR

DESIGNED BY	DRAWN BY	CHECKED BY
BMS	JCS	AWL

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RECORD DRAWINGS

CITY OF FERNDALE

WATER SYSTEM EMERGENCY INTERTIE

FERNDALE WASHINGTON

EXISTING CONDITIONS (1)

SHEET	DATE	SCALE	JOB NUMBER
C2.1	5-31-23	AS SHOWN	2021-091

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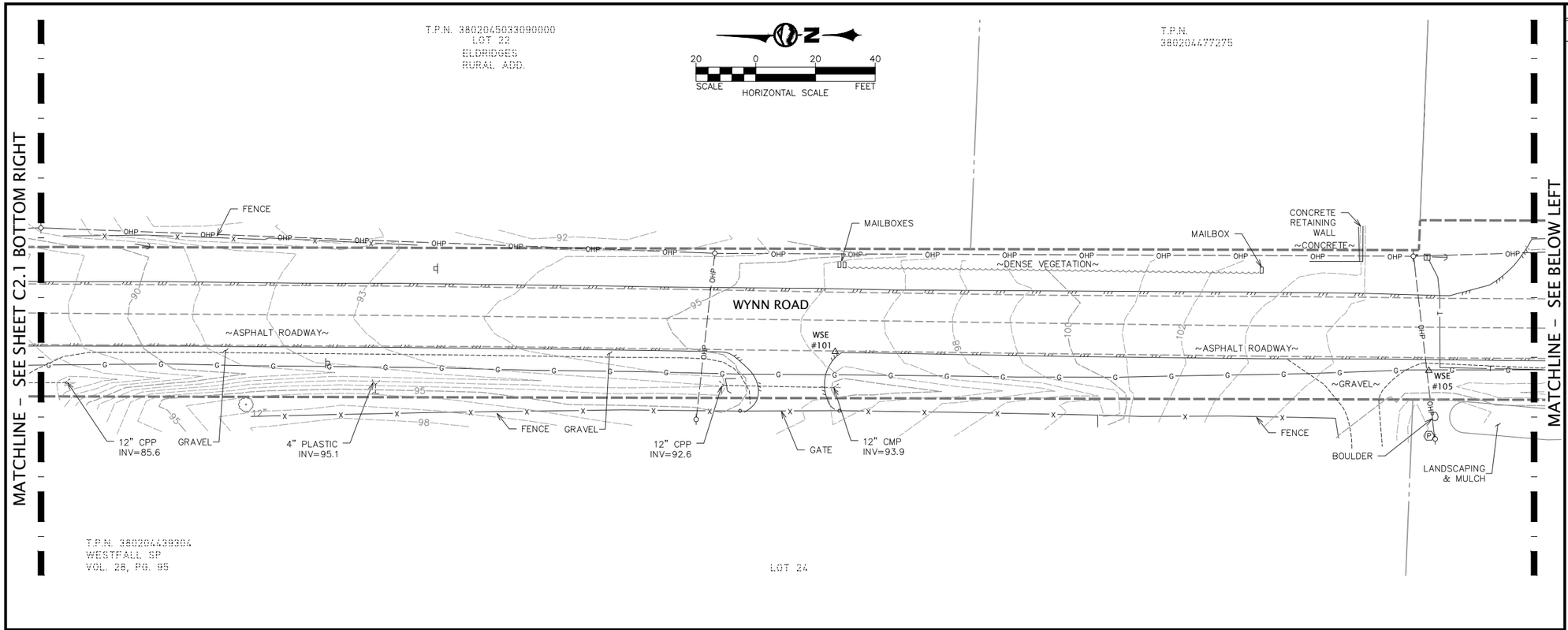

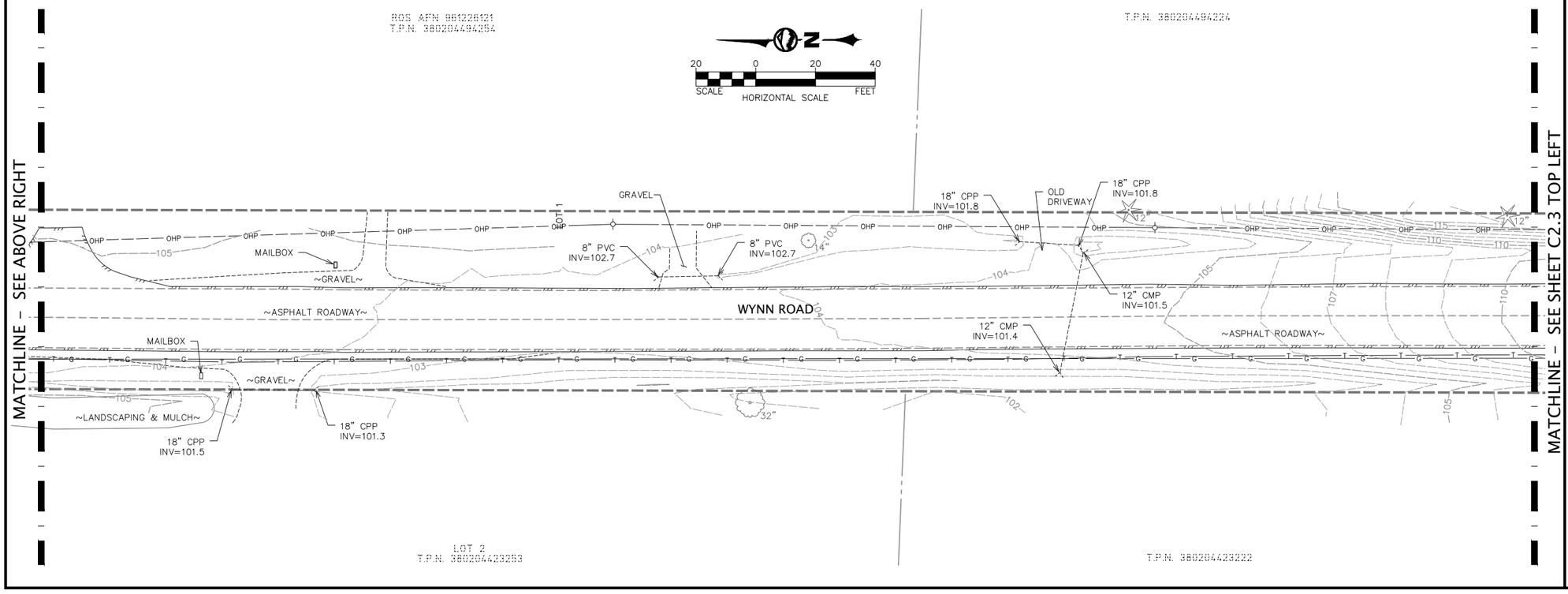

NO.	REVISIONS	BY	DATE

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JONATHAN DARROW WASHINGTON 22906 STATE OF WASHINGTON LAND SURVEYOR PROFESSIONAL

DESIGNED BY	DRAWN BY	CHECKED BY
BMS	JCS	AWL

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RECORD DRAWINGS

CITY OF FERNDALE

WATER SYSTEM EMERGENCY INTERTIE

FERNDALE WASHINGTON

EXISTING CONDITIONS (2)

SHEET	DATE	SCALE	JOB NUMBER
C2.2	5-31-23	AS SHOWN	2021-091

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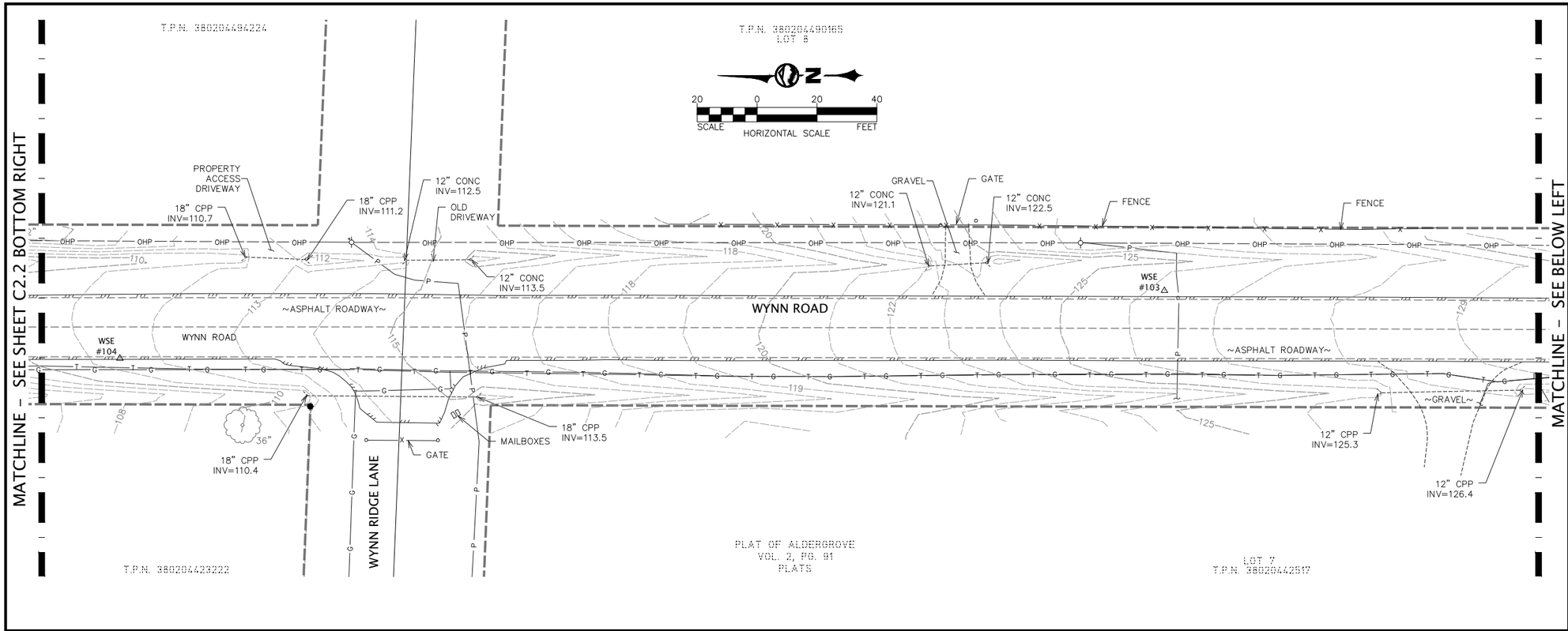

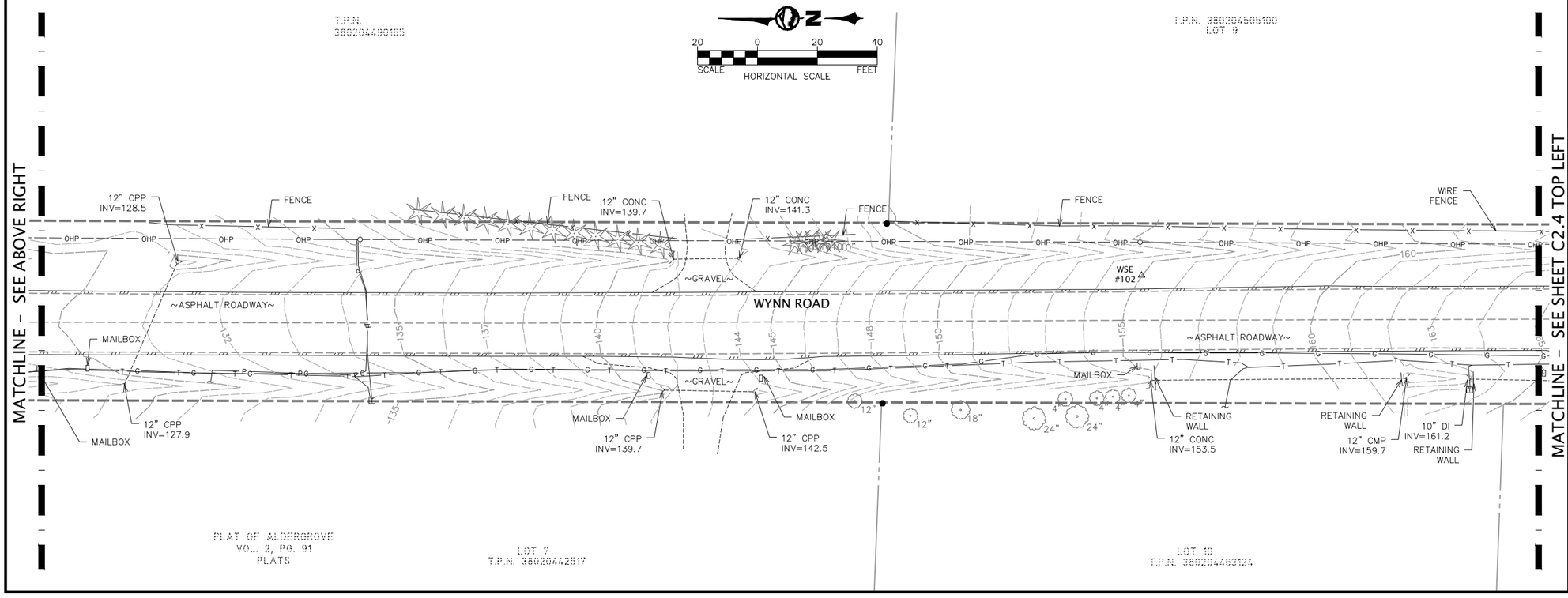

NO.	REVISIONS	BY	DATE

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JONATHAN DARROW WASHINGTON 22908 STATE OF WASHINGTON REGISTERED PROFESSIONAL LAND SURVEYOR

DESIGNED BY	DRAWN BY	CHECKED BY
BMS	JCS	AWL

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RECORD DRAWINGS

CITY OF FERNDALE

WATER SYSTEM EMERGENCY INTERTIE

FERNDALE WASHINGTON

EXISTING CONDITIONS (3)

SHEET	DATE	SCALE	JOB NUMBER
C2.3	5-31-23	AS SHOWN	2021-091

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PLOT SETTINGS: WE AutoCAD PDF (General Documentation).pc3, WILSON 11X17, Portrait, 1:2, WE APWA_UNSCREENED.ctb
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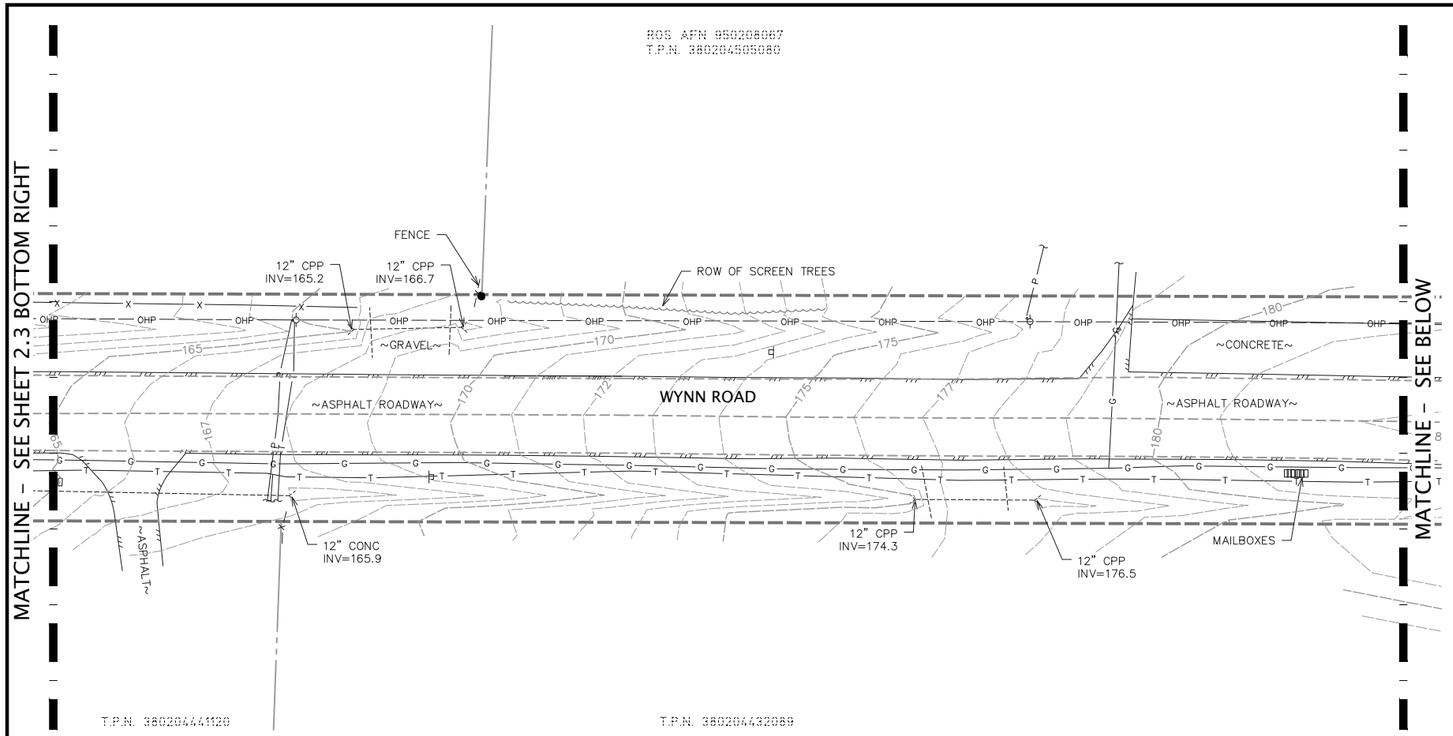

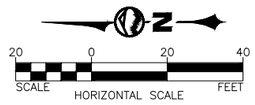

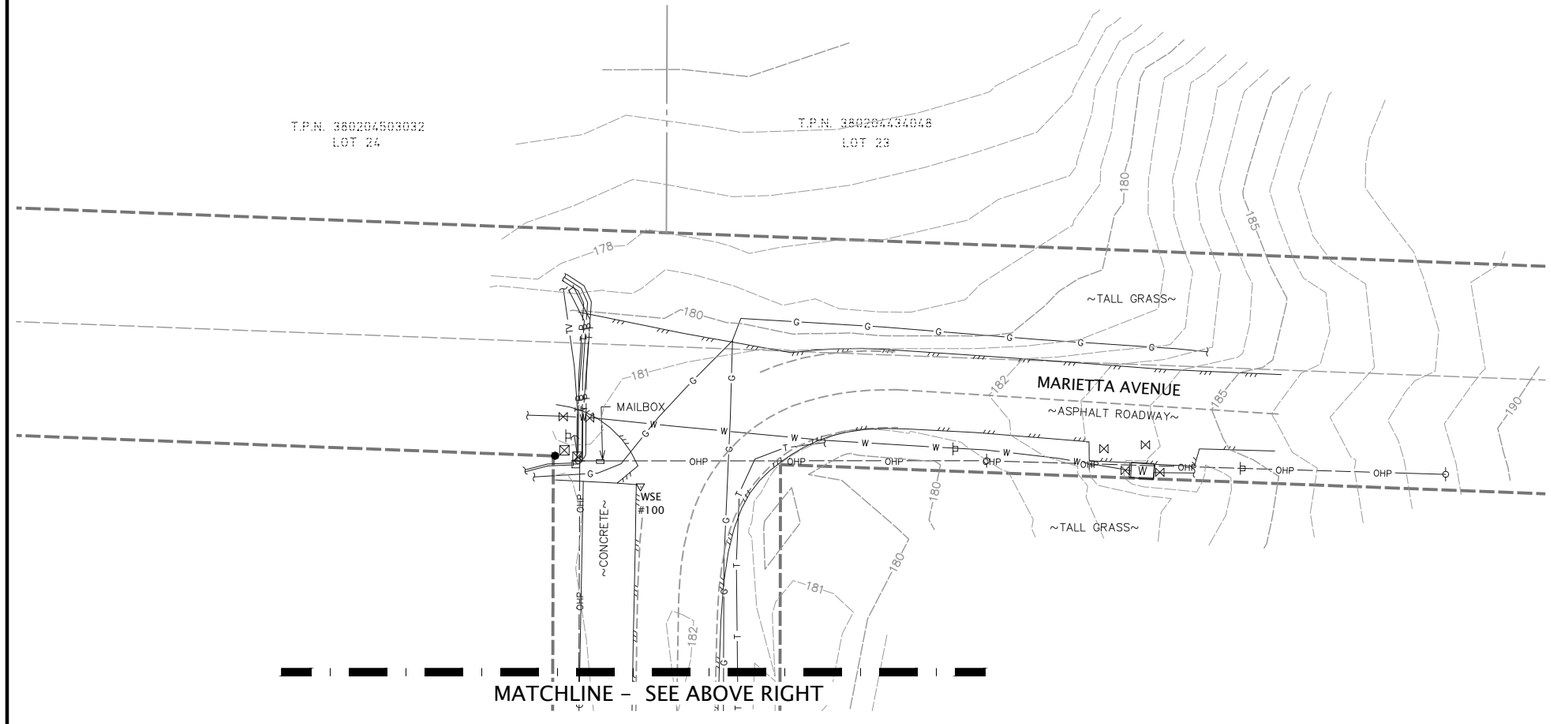

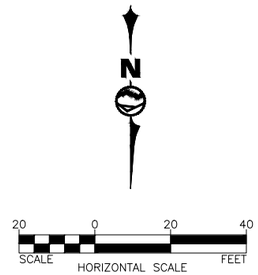

NO.	REVISIONS	BY	DATE

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RECORD DRAWINGS

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JONATHAN DARROW — STATE OF WASHINGTON — 22503 — REGISTERED PROFESSIONAL LAND SURVEYOR

DESIGNED BY	DRAWN BY	CHECKED BY
BMS	JCS	AWL

WASHINGTON

CITY OF FERNDALE

FERNDALE

WATER SYSTEM EMERGENCY INTERTIE

EXISTING CONDITIONS (4)

DATE	SCALE	JOB NUMBER
5-31-23	AS SHOWN	2021-091

SHEET C2.4

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BMP C233 – SILT FENCE

PURPOSE: Use of a silt fence reduces the transport of coarse sediment from a construction site by providing a temporary physical barrier to sediment and reducing the runoff velocities of overland flow.

INSTALLATION: Use down slope of disturbed areas as shown on the plan and as needed to respond to site specific conditions. Geotextile shall meet the following standards: Polymetric Mesh AOS (ASTM D4751) = 0.60 mm maximum for slit film wovens, 0.30 mm maximum for all other geotextiles types, and 0.15 mm for all fabric types, Water Permittivity (ASTM D4491) = 0.2 sec(–1) minimum, Grab Tensile Strength (ASTM D4632) = 180 pounds minimum for extra strength fabric, 100 pounds minimum for standard strength fabric, Grab Tensile Elongation (ASTM D4632) = 30% maximum, Ultraviolet Resistance (ASTM D4355) = 70% minimum.

Standard strength fabrics shall be supported with wire mesh, chicken wire, 2–inch x 2–inch wire, safety fence, or jute mesh to increase the strength of the fabric. Silt fence materials are available that have synthetic mesh backing attached.

The minimum height of the top of the silt fence shall be 2 feet and the maximum height shall be 2.5 feet.

MAINTENANCE. Inspect the fence after rainfall events for sediment deposits upstream of the fence. Remove sediment deposits when they reach a depth of approximately 8 inches deep. Replace filter fabric fences damaged by construction equipment or ultraviolet breakdown.

BMP C123 – PLASTIC COVERING

PURPOSE: Plastic covering provides immediate, short–term erosion protection for emergency protection of slopes during heavy rains.

INSTALLATION: Place plastic up and down, not across slope with a minimum 8–inch overlap at seams. Place plastic end in a small (12–inch wide by 6–inch deep) slot trench at the top of the slope and backfill with soil to keep water from flowing underneath. Sandbags shall be placed ever 3 to 6 feet along seams and a wooden stake pounded in each to hold in place. If erosion of the toe is likely, a gravel berm riprap, or on the suitable protection shall be installed at the toe of the slope in order to reduce the velocity of runoff. Plastic sheeting shall have a minimum thickness of 0.06 millimeters.

MAINTENANCE. Torn sheet must be replaced and open seams repaired. When plastic is no longer needed, it shall be completely removed.

BMP C152: SAWCUTTING AND SURFACING POLLUTION PREVENTION

Purpose: Sawcutting and surfacing operations generate slurry and process water that contains fine particles and high pH (concrete cutting), both of which can violate the water quality standards in the receiving water. This BMP is intended to minimize and eliminate process water and slurry from entering waters of the State.

- Conditions of Use: Anytime sawcutting or surfacing operations take place, these management practices shall be utilized. Sawcutting and surfacing operations include, but are not limited to: sawing, coring, grinding, roughening, hydro–demolition, and bridge and road surfacing.

Design and Installation Specifications:

- Slurry and cuttings shall not remain on permanent concrete or asphalt pavement overnight.
- Slurry and cuttings shall not drain to any natural or constructed drainage conveyance.
- Collected slurry and cuttings shall be disposed of in a manner that does not violate groundwater or surface water quality standards.
- Process water that is generated during hydro–demolition, surface roughening or similar operations shall not drain to any natural or constructed drainage conveyance and shall be disposed of in a manner that does not violate groundwater or surface water quality standards.
- Cleaning waste material and demolition debris shall be handled and disposed of in a manner that does not cause contamination of water. If the area is swept with a pick–up sweeper, the material must be hauled out of the area to an appropriate disposal site.

Maintenance Standards: Continually monitor operations to determine whether slurry, cuttings, or process water could enter waters of the state. If inspections show that a violation of water quality standards could occur, stop operations and immediately implement preventive measures such as berms, barriers, secondary containment, and vacuum trucks.

BMP C121 – MULCHING

PURPOSE: Mulching provides immediate temporary protection from erosion. Mulch also enhances plant establishment by conserving moisture, holding fertilizer, seed, and topsoil in place, and moderating soil temperatures.

INSTALLATION: Apply as needed to areas subject to higher risks of erosion such as all slopes steeper than 4H:1V. Mulch with straw that is air–dried and free from seed and coarse material. Apply straw 2"–3" in thickness or application rate of 5 bales per 100 sf or 2–3 tons per acre.

MAINTENANCE. Thickness of cover must be maintained. Any areas that experience erosion shall be remulched and/or protected with a net or blanket. If the erosion problem is drainage related, then the problem shall be fixed and the eroded material remulched.

BMP C130 – SURFACE ROUGHENING

PURPOSE: Surface roughening aids in the establishment of vegetative cover, reduces runoff velocity, increases infiltration, and provides for sediment trapping through the provision of a rough soil surface. Horizontal depressions are created by operating a tiller or other suitable equipment on the contour.

INSTALLATION: All slopes steeper than 3H:1V and greater than 5 vertical feet require surface roughening. Areas steeper than 3H:1V shall be roughened to a depth of 2 to 4 inches prior to seeding. Areas that will not be stabilized immediately may be roughened to reduce runoff velocity until seeding takes place.

Areas that will be mowed (slopes 3H:1V or shallower) shall have small furrows left by disking, harrowing, raking, or seed–planting machinery operated on the contour.

Graded areas with slopes greater than 3H:1V but less than 2H:1V shall be roughened before seeding. This can be accomplished in a variety of ways, including "track walking,", or driving a crawler tractor up and down the slope leaving a pattern of cleat prints parallel to the slope contours.

MAINTENANCE: Areas that are graded in this manner shall be seeded as quickly as possible. Regular inspections should be made of the area. If rills appear, they shall be regraded and re–seeded immediately.

BMP C151: CONCRETE HANDLING

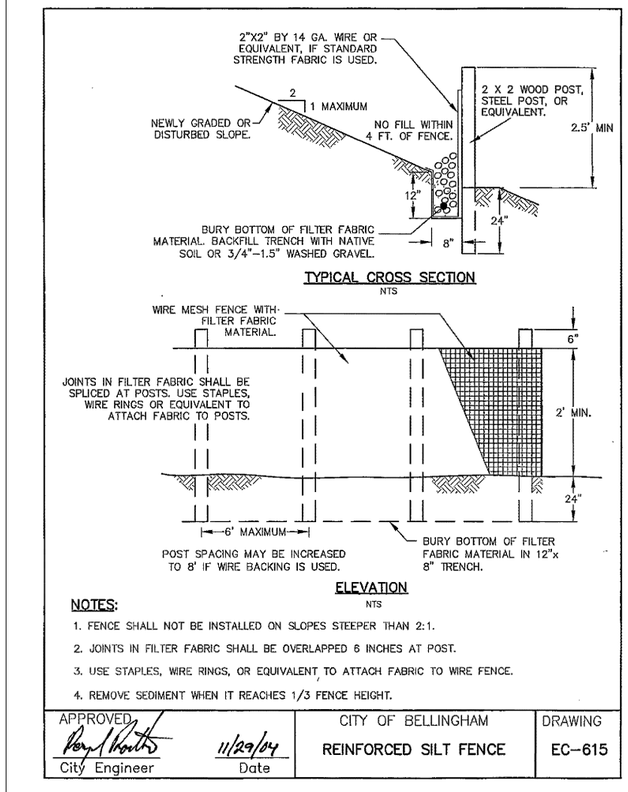
Purpose: Concrete work can generate process water and slurry that contain fine particles and high pH, both of which can violate water quality standards in the receiving water. This BMP is intended to minimize and eliminate concrete process water and slurry from entering waters of the state.

- Conditions of Use: Any time concrete is used, these management practices shall be utilized. Concrete construction projects include, but are not limited to: curbs, sidewalks, roads, bridges, foundations, floors, and runways.

Design and Installation Specifications:

- Concrete truck chutes, pumps, and internals shall be washed out only into formed areas awaiting installation of concrete or asphalt.
- Unused concrete remaining in the truck and pump shall be returned to the originating batch plant for recycling.
- Hand tools including, but not limited to, screeds, shovels, rakes, floats, and trowels shall be washed off only into formed areas awaiting installation of concrete or asphalt.
- Equipment that cannot be easily moved, such as concrete pavers, shall only be washed in areas that do not directly drain to natural or constructed stormwater conveyances.
- Washdown from areas such as concrete aggregate driveways shall not drain directly to natural or constructed stormwater conveyances.
- When no formed areas are available, washwater and leftover product shall be contained in a lined container. Contained concrete shall be disposed of in a manner that does not violate groundwater or surface water quality standards.

Maintenance Standards: Containers shall be checked for holes in the liner daily during concrete pours and repaired the same day.

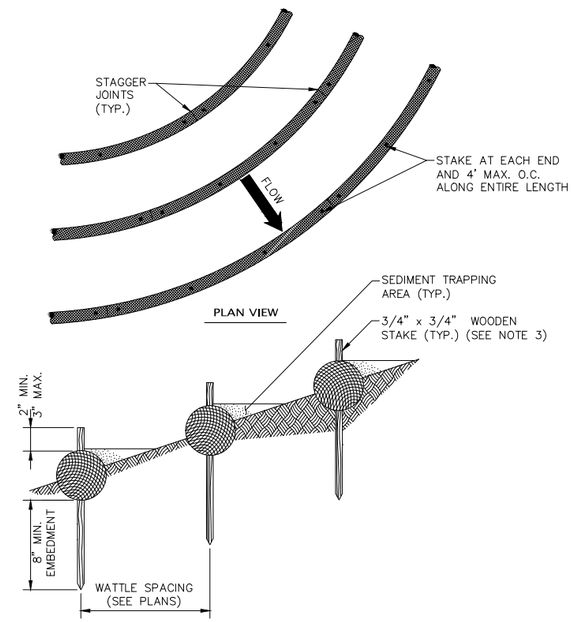


NOTES:

1. FENCE SHALL NOT BE INSTALLED ON SLOPES STEEPER THAN 2:1.
2. JOINTS IN FILTER FABRIC SHALL BE OVERLAPPED 6 INCHES AT POST.
3. USE STAPLES, WIRE RINGS, OR EQUIVALENT TO ATTACH FABRIC TO WIRE FENCE.
4. REMOVE SEDIMENT WHEN IT REACHES 1/3 FENCE HEIGHT.

APPROVED		CITY OF BELLINGHAM	DRAWING
City Engineer	11/29/04 Date	REINFORCED SILT FENCE	EC–615

1 REINFORCED SILT FENCE
NOT TO SCALE



NOTES:

1. INSTALL WATTLES ALONG CONTOURS (SEE STANDARD SPECIFICATION 8–01.3(10)).
2. WATTLES SHALL BE INSPECTED REGULARLY, AND IMMEDIATELY AFTER A RUNOFF PRODUCING RAINFALL, TO ENSURE THEY REMAIN THOROUGHLY ENTRENCHED AND IN CONTACT WITH THE SOIL.
3. LIVE STAKES MAY BE USED FOR PERMANENT INSTALLATIONS.
4. PERFORM MAINTENANCE IN ACCORDANCE WITH STANDARD SPECIFICATION 8–01.3(15).
5. INSTALL WATTLES SNUGLY INTO THE TRENCH. ABUT ADJACENT WATTLES TIGHTLY, END TO END, WITHOUT OVERLAPPING THE ENDS.
6. PILOT HOLES MAY BE DRIVEN THROUGH THE WATTLE AND INTO THE SOIL, WHEN SOIL CONDITIONS REQUIRE.

2 STRAW WATTLE CHECK DAM
NOT TO SCALE

RECORD DRAWINGS

WILSON ENGINEERING
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BRIAN MARTIN SMITH — REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON — 34521 — 5/31/23

DESIGNED BY	DRAWN BY	CHECKED BY
BMS	PMT	AWL

WASHINGTON

CITY OF FERNDALE

WATER SYSTEM EMERGENCY INTERTIE

TESC NOTES AND DETAILS

DATE	SCALE	JOB NUMBER
5-31-23	AS SHOWN	2021-091

FERNDALE

SHEET C2.5

PAGE 8 OF 25

1. CONSTRUCTION STORMWATER POLLUTION PREVENTION ELEMENTS.

ELEMENTS OF CONSTRUCTION STORMWATER POLLUTION PREVENTION.

ELEMENT 1 – Mark Clearing Limits. Prior to beginning land–disturbing activities, including clearing and grading, all clearing limits, sensitive areas and their buffers, and trees that are to be preserved within the construction area should be clearly marked, both in the field and on the plans, to prevent damage and off–site impacts. Plastic, metal, or stake wire fence may be used to mark the clearing limits.

ELEMENT 2 – Establish Construction Access.
a. Construction vehicle access and exit shall be limited to one route if possible.
b. Access points shall be stabilized with quarry spall or crushed rock to minimize the tracking of sediment onto public roads.
c. Wheel wash or tire baths should be located on site, if applicable.
d. Public roads shall at a minimum be cleaned thoroughly at the end of each day. Sediment shall be removed from roads by shoveling or pickup sweeping and shall be transported to a controlled sediment disposal area. Street washing will be allowed only after sediment is removed in this manner.
e. Street wash wastewater shall be controlled by pumping back on site, or otherwise be prevented from discharging into systems tributary to state surface waters.

ELEMENT 3 – Control Flow Rates – N/A

ELEMENT 4 – Install Sediment Controls.
a. Prior to leaving a construction site, or prior to discharge to an infiltration facility, stormwater runoff from disturbed areas shall pass through an appropriate sediment removal BMP. Full stabilization means concrete or asphalt paving; quarry spalls used as ditch lining; or the use of rolled erosion products, a bonded fiber matrix product, or vegetative cover in a manner that will fully prevent soil erosion. Sediment ponds, vegetated buffer strips, sediment barriers or filters, dikes, and other BMPs intended to trap sediment on site shall be constructed as one of the first steps in grading. These BMPs shall be functional before other land–disturbing activities take place.
b. Earthen structures such as dams, dikes, and diversions shall be seeded and mulched according to the timing indicated in Element 5 below.

ELEMENT 5 – Stabilize Soils.
a. All exposed and unworked soils shall be stabilized by application of effective BMPs that protect the soil from the erosive forces of raindrop impact and flowing water, and wind erosion.
a. From October 1st through April 30th of each year, no soils shall remain exposed and unworked for more than two days. From May 1st to September 30th of each year, no soils shall remain exposed and unworked for more than seven days. This condition applies to all soils on site, whether at final grade or not.
b. Applicable practices include, but are not limited to, temporary and permanent seeding, sodding, mulching, plastic covering, soil application of polyacrylamide (PAM), early application of gravel base on areas to be paved, and dust control.
c. Soil stabilization measures selected should be appropriate for the time of year, site conditions, estimated duration of use, and potential water quality impacts that stabilization agents may have on downstream waters or ground water.
d. Soil stockpiles must be stabilized and protected with sediment trapping measures.
e. Work on linear construction sites and activities, including right–of–way and easement clearing, roadway development, pipelines, and trenching for utilities, shall not exceed the capability of the individual contractor for his portion of the project to install the bedding materials, roadbeds, structures, pipelines, and/or utilities, and to restabilize the disturbed soils, meeting the timing conditions listed above.
f. In addition, at the discretion of the public works director, those sites unable to maintain the quality of their stormwater discharge may be required to provide soil stabilization to all exposed soil areas regardless of the working status of the area. Upon written notification, the property owner shall provide full stabilization of all exposed soil areas within 24 hours.

ELEMENT 6 – Protect Slopes.
a. Cut and fill slopes shall be designed and constructed in a manner that will minimize erosion.
b. Consider soil type and its potential for erosion.
c. Reduce slope runoff velocities by reducing the continuous length of slope with terracing and diversions, reduce slope steepness, and roughen slope surface.
d. Divert upslope drainage and run–on waters from off site with interceptors at top of slope. Off–site stormwater should be handled separately from stormwater generated on the site. Diversion of off–site stormwater around the site may be a viable option. Diverted flows shall be redirected to the natural drainage location at or before the property boundary.
e. Contain down slope collected flows in pipes, slope drains, or protected channels.
f. Provide drainage to remove ground water intersecting the slope surface of exposed soil areas.
g. Excavated material shall be placed on the uphill side of trenches, consistent with safety and space considerations.
h. Check dams shall be placed at regular intervals within trenches that are cut down a slope.
i. Stabilize soils on slopes, as specified in Element No. 5.

ELEMENT 7 – Protect Drain Inlets.
a. All storm drain inlets made operable during construction shall be protected so that stormwater runoff shall not enter the conveyance system without first being filtered or treated to remove sediment.
b. All approach roads shall be kept clean, and all sediment and street wash water shall not be allowed to enter storm drains without prior and adequate treatment unless treatment is provided before the storm drain discharges to waters of the state.

ELEMENT 8 – Stabilize Channels and Outlets.
a. All temporary on–site conveyance channels shall be designed, constructed and stabilized to prevent erosion from the expected velocity of flow from a two–year, 24–hour frequency storm for the developed condition.
b. Stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes and downstream reaches shall be provided at the outlets of all conveyance systems.

ELEMENT 9 – Control Pollutants.
a. All pollutants, including waste materials and demolition debris, that occur on site during construction shall be handled and disposed of in a manner that does not cause contamination of stormwater.
b. Cover, containment, and protection from vandalism shall be provided for all chemicals, liquid products, petroleum products, and non–inert wastes present on the site (see Chapter 173–304 WAC, as currently enacted or hereafter modified, for the definition of inert waste, which is incorporated herein by this reference).
c. Maintenance and repair of heavy equipment and vehicles involving oil changes, hydraulic system drain down, solvent and de–greasing cleaning operations, fuel tank drain down and removal, and other activities which may result in discharge or spillage of pollutants to the ground or into stormwater runoff must be conducted using spill prevention measures, such as drip pans. Contaminated surfaces shall be cleaned immediately following any discharge or spill incident. Emergency repairs may be performed on site using temporary plastic placed beneath and, if raining, over the vehicle.
d. Wheel wash, or tire bath wastewater, shall be discharged to a separate on–site treatment system or to the sanitary sewer.
e. Application of agricultural chemicals, including fertilizers and pesticides, shall be conducted in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Manufacturers' recommendations shall be followed for application rates and procedures.
f. Management of pH–modifying sources shall prevent contamination of runoff and stormwater collected on the site. These sources 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, and concrete pumping and mixer washout waters.

ELEMENT 10 – Control Dewatering.
a. All foundation, vault, and trench dewatering water, which has similar characteristics to stormwater runoff at the site, shall be discharged into a controlled conveyance system, prior to discharge to a sediment trap or sediment pond. Channels must be stabilized, as specified in Element No. 8.
b. Clean, nonturbid dewatering water, such as well–point ground water, can be discharged to systems tributary to state surface waters, as specified in Element No. 8, provided the dewatering flow does not cause erosion or flooding of the receiving waters. These clean waters should not be routed through sediment ponds with stormwater.
c. Highly turbid or otherwise contaminated dewatering water, such as from construction equipment operation, clamshell digging, concrete tremie pour, or work inside a cofferdam, shall be handled separately from stormwater at the site.
d. Other disposal options, depending on site constraints, may include, by way of example: (1) infiltration, (2) transport off site in vehicle, such as a vacuum flush truck, for legal disposal in a manner that does not pollute state waters, (3) on–site treatment using chemical treatment or other suitable treatment technologies.

ELEMENT 11 – Maintain BMPs.
a. All temporary and permanent erosion and sediment control BMPs shall be maintained and repaired as needed to assure continued performance of their intended function. All maintenance and repair shall be conducted in accordance with BMPs.
b. Sediment control BMPs shall be inspected weekly or after a runoff–producing storm event during the dry season and daily during the wet season. All projects that disturb an area greater than one acre shall have a certified erosion control lead available to the site. This erosion control lead shall be responsible to provide overview of ongoing day–to–day erosion control requirements. The erosion control lead shall (within 24 hours) report to the city and Department of Ecology any site discharges that exceed state water quality standards that have or are likely to have entered waters of the state.
c. All temporary erosion and sediment control BMPs shall be removed within 30 days after final site stabilization is achieved or after the temporary BMPs are no longer needed. Trapped sediment shall be removed or stabilized on site. Disturbed soil areas resulting from removal of BMPs or vegetation shall be permanently stabilized.

ELEMENT 12 – Manage the Project.
a. Phasing of Construction. Development projects shall be phased where feasible in order to prevent, to the maximum extent practicable, the transport of sediment from the development site during construction. Revegetation of exposed areas and maintenance of that vegetation shall be an integral part of the clearing activities for any phase.
b. Inspection and Monitoring. All BMPs shall be inspected, maintained, and repaired as needed to assure continued performance of their intended function.
c. For any project disturbing more than one acre, a certified professional in erosion and sediment control shall be identified in the construction SWPPP and shall be on site or on call at all times. Certification may be through the Washington State Department of Transportation/Associated General Contractors (WSDOT/AGC) Construction Site Erosion and Sediment Control Certification Program or any equivalent local or national certification and/or training program, in the city's discretion.
d. Whenever inspection and/or monitoring reveals that the BMPs identified in the construction SWPPP are inadequate, due to the actual discharge of or potential to discharge a significant amount of any pollutant, the SWPPP shall be modified, as appropriate, in a timely manner.
e. Maintenance of the Construction SWPPP. The construction SWPPP shall be retained on site. The construction SWPPP shall be modified whenever there is a significant change in the design, construction, operation, or maintenance of any BMP.

ELEMENT #13 – Protection of Low Impact Development BMPs – N/A

2. PROJECT DESCRIPTION

a. TOTAL PROJECT AREA. 0.55 acres

b. TOTAL PROPOSED IMPERVIOUS AREA. 3458 sqft of impervious surfacing will be removed and replaced as part of the project. The concrete equipment vaults will introduce 200 sqft of new impervious area.

c. TOTAL PROPOSED AREA TO BE DISTURBED. 0.55 acres

d. TOTAL VOLUME OF PROPOSED CUT/FILL. No cut/fill are proposed, only excavation and backfill. Excavation = 2511 CY, Backfill = 2295 CY. (Estimated volume between existing ground surface and proposed finish grades for base bid and all alternates. No shrink or swell factors applied.) Volumes are for SWPPP narrative only and are not intended for bidding or take–off purposes.

3. EXISTING SITE CONDITIONS

a. DESCRIPTION OF EXISTING TOPOGRAPHY. Existing slopes vary throughout the project site. The existing roadway grade varies from flat to 7%. The backslopes of the roadside ditches are 50% in some areas.

b. DESCRIPTION OF EXISTING VEGETATION. Vegetation within the project area is predominantly vegetated roadside (grass and weeds) and roadside ditches.

c. DESCRIPTION OF EXISTING DRAINAGE. The project site is located in Lower Nooksack subbasin. Stormwater flows north into the roadside ditches and then into Silver Creek. Silver Creek eventually flows into the Nooksack and then into Bellingham Bay.

4. ADJACENT AREAS

a. DESCRIPTION OF ADJACENT AREAS WHICH MAY BE AFFECTED BY SITE DISTURBANCE:

i. STREAMS. Silver Creek.

ii. LAKES. There are no lakes located nearby.

WETLANDS. A critical areas investigation was completed by Welch Ecological Services February 18, 2022. No wetlands were identified in the project work area. There are some adjacent wetland outside the R–O–W.

iv. RESIDENTIAL AREAS. There are low density residential areas located both to the west and east of the site.

ROADS. The project directly parallels Wynn Road from Marietta Ave at its south end to Rural Avenue at its north end.
vi. OTHER. None.

b. DESCRIPTION OF THE DOWNSTREAM DRAINAGE PATH LEADING FROM THE SITE TO THE RECEIVING BODY OF WATER (MINIMUM DISTANCE OF 400 YARDS.)
a. Stormwater flows north into the roadside ditches and then into Silver Creek. Silver Creek eventually flows into the Nooksack and then into Bellingham Bay.

5. CRITICAL AREAS

a. DESCRIPTION OF CRITICAL AREAS THAT ARE ON OR ADJACENT TO THE SITE. There are no critical areas that are on or adjacent to the site.

6. DESCRIPTION OF ONSITE SOILS

a. The soil in the area are Whatcom silt loam with grades ranging from 0 to 7%.

7. EROSION PROBLEM AREAS. Runoff pathways are short. Surface treatments will mitigate erosion. The roadside ditches that will be disturbed during the trenching for the water main presents potential erosion concerns. A ditch with many culverts is present along the full length of the project. These will be flowing during and after rainstorms.

8. CONSTRUCTION PHASING.

a. CONSTRUCTION SEQUENCE. The construction sequence will generally be as follows: install erosion prevention facilities (straw wattle check dams, construction entrances, silt fence); install utilities (water mains and culverts); backfill, pave and install final surfaces, hydroseed disturbed areas.

b. CONSTRUCTION PHASING. Not Applicable.

9. CONSTRUCTION SCHEDULE

a. PROVIDE A PROPOSED CONSTRUCTION SCHEDULE. See general conditions of contract for contractual completion dates.

b. WET SEASON CONSTRUCTION ACTIVITIES

i. PROPOSED WET SEASON CONSTRUCTION ACTIVITIES. Site work and land disturbing activities are scheduled to be performed in the drier months.

ii. PROPOSED WET SEASON CONSTRUCTION RESTRAINTS FOR ENVIRONMENTALLY SENSITIVE/CRITICAL AREAS. Site work and land disturbing activities shall be limited to small areas that can be protected and stabilized at the end of each work day. Areas not complete shall be temporarily stabilized with mulch or seeding through the wet season.

10. FINANCIAL/OWNERSHIP RESPONSIBILITY

a. IDENTIFY THE PROPERTY OWNER RESPONSIBLE FOR THE INITIATION OF BONDS AND/OR OTHER FINANCIAL SECURITIES. The City of Ferndale.

b. DESCRIBE BONDS AND/OR OTHER EVIDENCE OF FINANCIAL RESPONSIBILITY FOR LIABILITY ASSOCIATED WITH EROSION AND SEDIMENTATION IMPACTS. City of Bellingham requires that all permit applicants sign their "Erosion Control Acknowledgment Form and Supplement to Small Parcel Stormwater Site Plan" form. The form will be signed by the Contractor prior to beginning construction. No bonds or other evidence of financial responsibility are known to be required for this project.

11. ENGINEERING CALCULATIONS

a. SEDIMENT PONDS/TRAPS. None used.

b. DIVERSIONS. None used.

c. WATERWAYS. None used.

d. RUNOFF/STORMWATER DETENTION CALCULATIONS. None used.

12. TESC CONTACT. Questions or concerns regarding the design, installation, or function of erosion control BMPs should be directed to:
Wilson Engineering, LLC, 805 Dupont Street, Suite 7, Bellingham, WA 98225, (360) 733–6100.

STANDARD NOTES

Approval of this erosion control (ESC) plan does not constitute an approval of permanent road or drainage design (e.g. size and location of roads, pipes, restrictors, channels, retention facilities, utilities, etc.).

The implementation of these ESC plans and the construction, maintenance, replacement, and upgrading of these ESC facilities is the responsibility of the applicant/contractor until all construction is completed and approved and vegetation/landscaping is established.

The boundaries of the clearing limits shown on this plan shall be clearly flagged in the field prior to construction. during the construction period, no disturbance beyond the flagged clearing limits shall be permitted. The flagging shall be maintained for the duration of construction.

The ESC facilities shown on this plan must be constructed in conjunction with all clearing and grading activities, and in such a manner as to insure that sediment and sediment laden water do not enter the drainage system, roadways, or violate applicable water standards.

The ESC facilities shown on this plan are the minimum requirements for anticipated site conditions. During the construction period, these ESC facilities shall be upgraded as needed for unexpected storm events and to ensure that sediment and sediment laden water do not leave the site.

The ESC facilities shall be inspected daily by the applicant/contractor and maintained as necessary to ensure their continued functioning.

The ESC facilities on inactive sites shall be inspected and maintained a minimum of once a month or within the 48 hours following a major storm event.

RECORD DRAWINGS

WILSON ENGINEERING
WILSONENGINEERING.COM

BRIAN MARRIN SMITH – STATE OF WASHINGTON – 34521 – REGISTERED PROFESSIONAL ENGINEER – 5/31/23

DESIGNED BY	DRAWN BY	CHECKED BY
BMS	PMT	AWL

CITY OF FERNDALE

WATER SYSTEM EMERGENCY INTERTIE

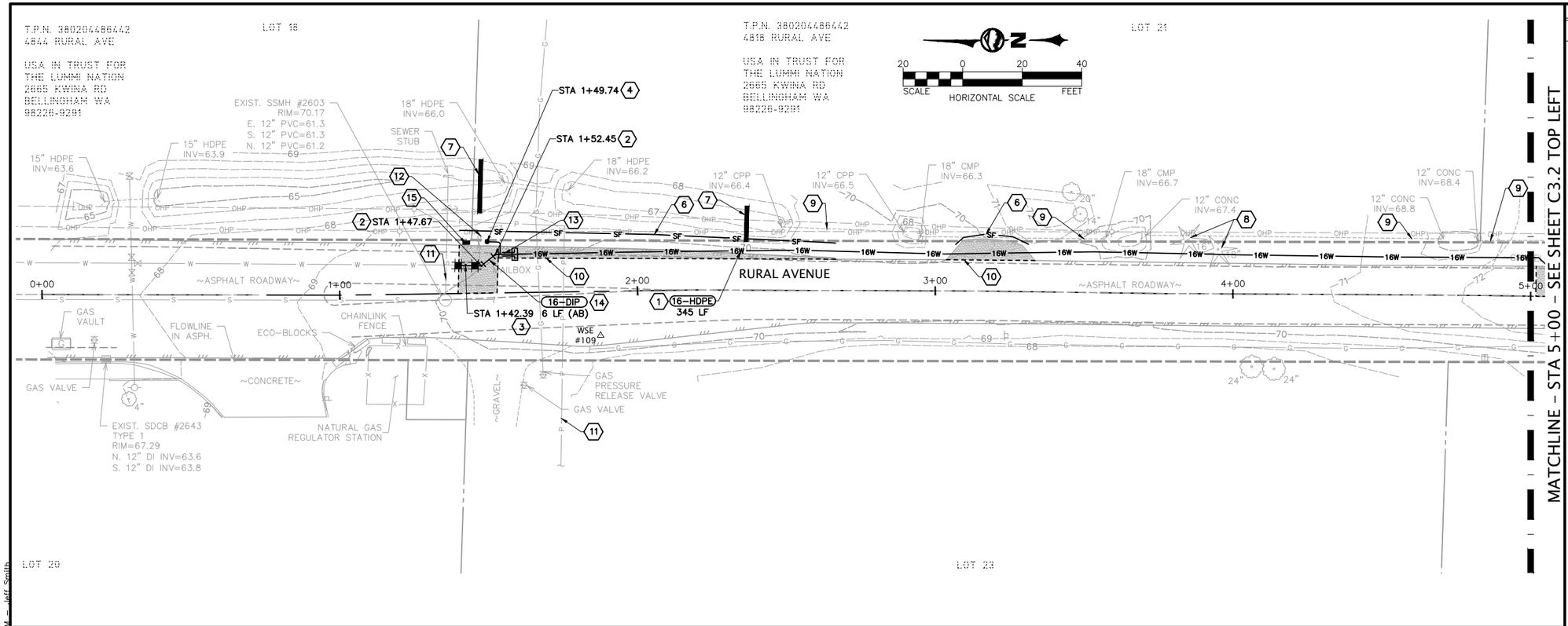
FERNDALE WASHINGTON

TESC NOTES

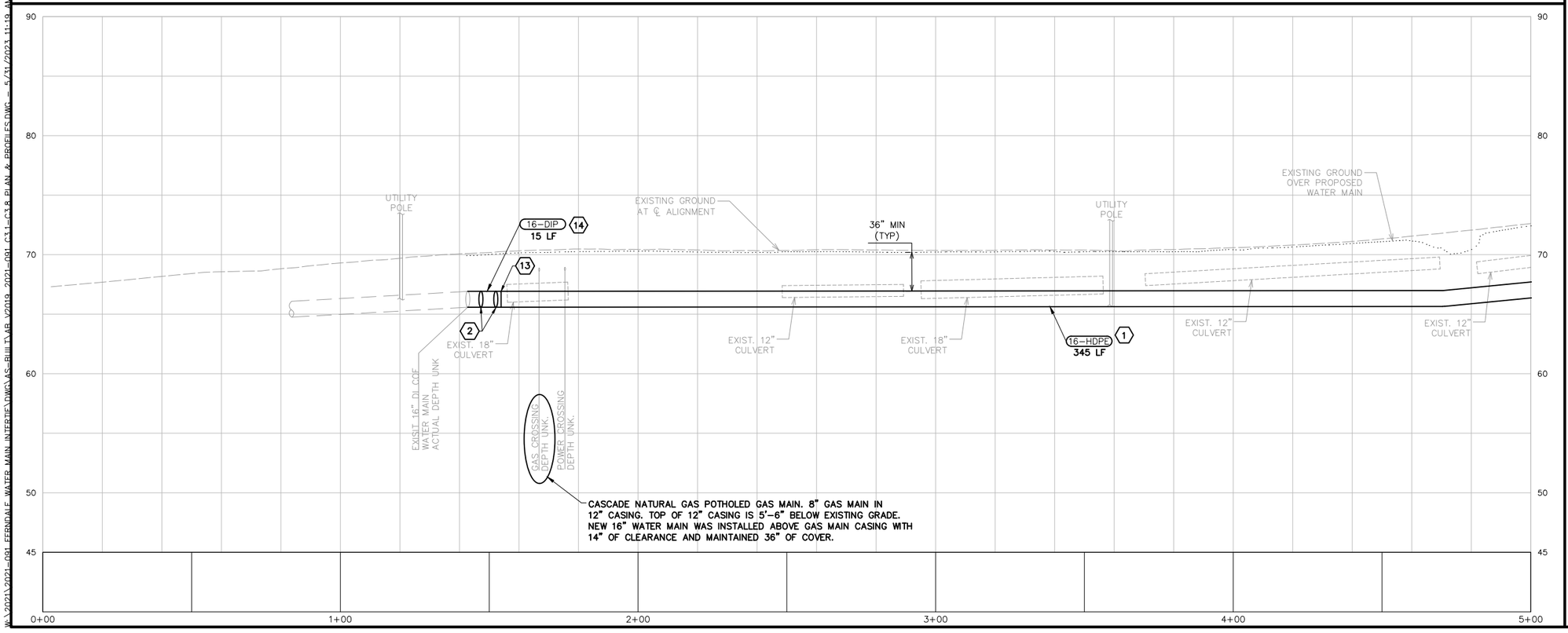
DATE	SCALE	JOB NUMBER
5-31-23	AS SHOWN	2021-091

SHEET C2.5

PAGE 9 OF 25



MATCHLINE – STA 5+00 – SEE SHEET C3.2 TOP LEFT



NO.	REVISIONS	BY	DATE

KEYED NOTES

1. = PROPOSED 16"ø HDPE, IPS, DR11 WATER LINE INTERTIE PER (1/C5.4) (2/C5.2)
2. = 16" 45° HORIZONTAL BEND – DUCTILE IRON. THRUST BLOCK PER (3/C5.4)
3. = TIE INTO EXISTING CITY OF FERNDALE WATER LINE. CONTRACTOR TO VERIFY LOCATION & ELEVATION PRIOR TO CONSTRUCTION
4. = PRESSURE TESTING/FLUSHING CONNECTION PER (2/C5.3)
5. = NOT USED
6. = INSTALL SILT FENCE PER (1/C2.5)
7. = INSTALL STRAW WATTLE CHECK DAM PER (2/C2.5)
8. = EXISTING TREES TO BE REMOVED
9. = PROTECT EXISTING CULVERT IN PLACE
10. = SAWCUT, REMOVE, AND REPLACE ASPHALT PER (3/C5.6) (4/C5.6)

TOTAL SAWCUTTING, THIS SHEET: 185 LF
TOTAL ASPHALT, THIS SHEET: 665 SF

11. = PROTECT EXISTING UTILITY IN PLACE
12. = REMOVE AND REINSTALL MAILBOX PER (2/C5.6)
13. = TRANSITION FROM 16" DUCTILE IRON TO 16" HDPE WATER MAIN PER (4/C5.3) AND INSTALL REVERSE THRUST BLOCK PER (5/C5.3)
14. = PROPOSED 16" DIP WATER MAIN INTERTIE PER (1/C5.4) (2/C5.2)
15. = TRACER WIRE PEDESTAL PER (2/C5.2)

NOTES

1. ALL SOILS ON SITE ARE WHATCOM/WHATCOM–LABOUNTY SILT LOAM.
2. EXISTING VEGETATIVE COVER OF ROADSIDE DITCHES ARE GRASSES AND NATIVE COVER PLANTS.
3. ALL DISTURBED AREA TO BE PERMANENTLY SEEDED WITH NATIVE SEED MIX AFTER CONSTRUCTION IS COMPLETE
4. ALL WATER MAIN JOINTS SHALL BE RESTRAINED

20 0 20 40
SCALE HORIZONTAL SCALE FEET

5 0 5 10
SCALE VERTICAL SCALE FEET

811 Call 811 two business days before you dig

RECORD DRAWINGS

WILSON ENGINEERING
WILSONENGINEERING.COM

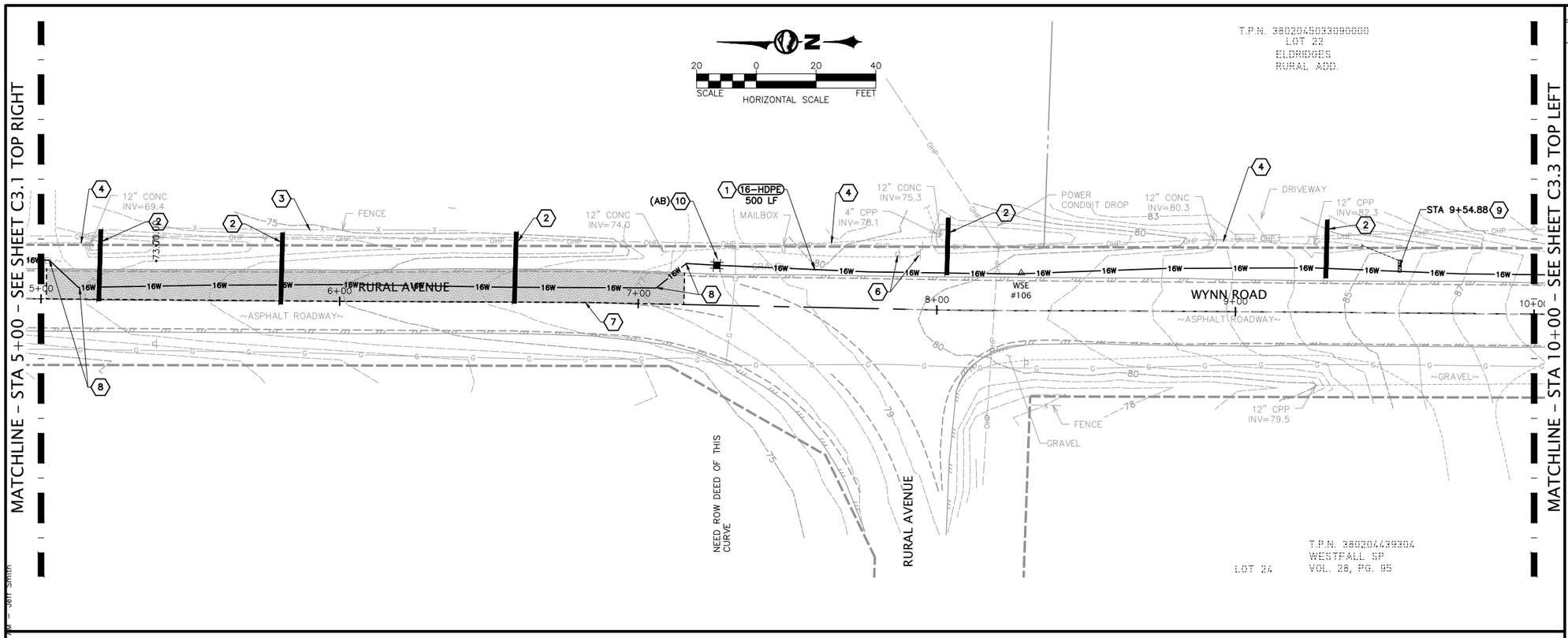
BRIAN MARRIN SMITH — STATE OF WASHINGTON — 34521 — REGISTERED PROFESSIONAL ENGINEER — 7/31/23

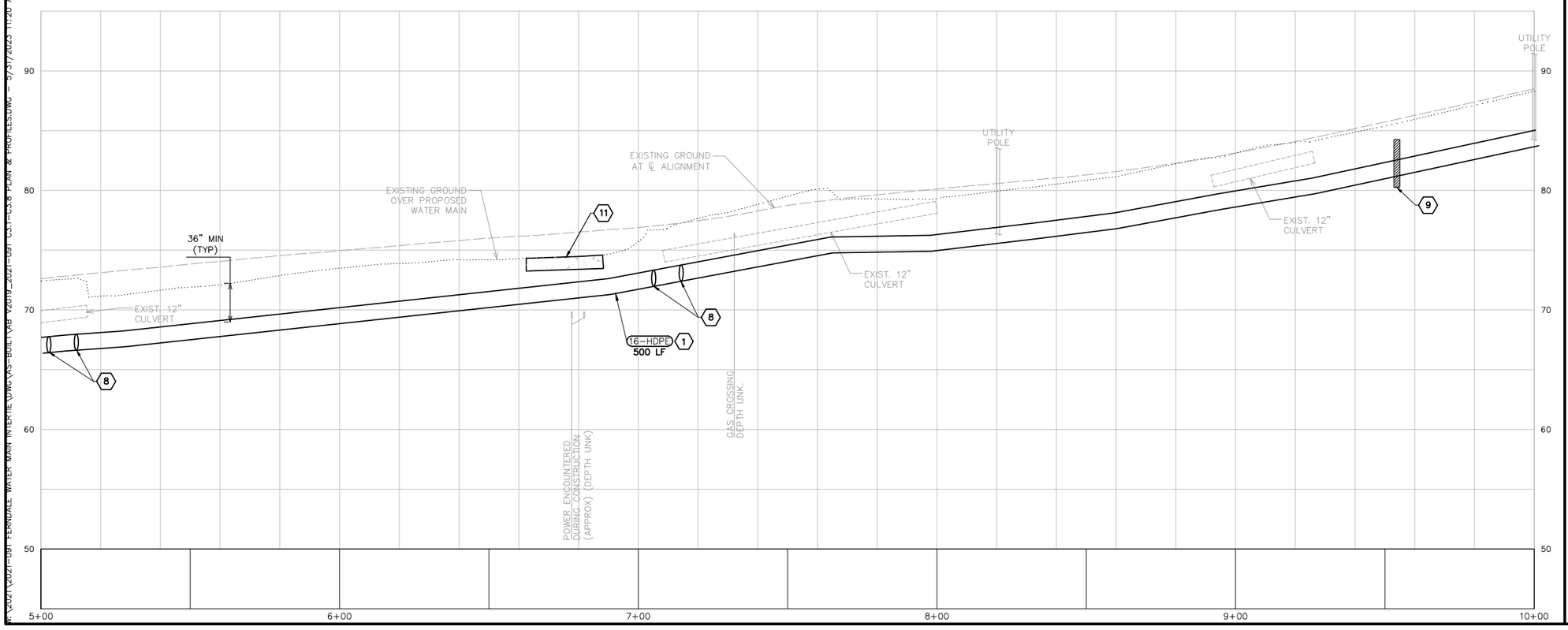
DESIGNED BY	DRAWN BY	CHECKED BY
BMS	JCS	AWL

CITY OF FERNDALE
WASHINGTON
FERNDALE
WATER SYSTEM EMERGENCY INTERTIE
PLAN AND PROFILE STA 0+00 – 5+00

DATE	SCALE	JOB NUMBER
5-31-23	AS SHOWN	2021-091

SHEET C3.1
PAGE 10 OF 25





NO.	REVISIONS	BY	DATE

KEYED NOTES

1. = PROPOSED 16"ø HDPE, IPS, DR11 WATER MAIN INTERTIE PER (1/C5.4) (2/C5.2)
2. = INSTALL STRAW WATTLE CHECK DAM PER (2/C2.5)
3. = PROTECT EXISTING FENCE IN PLACE
4. = PROTECT EXISTING CULVERT IN PLACE
5. = INSTALL HYDRANT ASSEMBLY AND BOLLARDS PER (3/C5.3) (3/C5.5)
6. = REMOVE AND REINSTALL EXISTING SIGNS AS NECESSARY FOR CONSTRUCTION. ENSURE TEMPORARY OR PERMANENT SIGNS SERVING THESE PURPOSES ARE IN PLACE AT ALL TIMES ROAD IS OPEN TO TRAFFIC AND FLAGGERS ARE NOT PRESENT TO OTHERWISE DIRECT TRAFFIC.
7. = SAWCUT FOR TRENCH, REMOVE ASPHALT FOR TRENCH, AND RESTORE TRENCH PATCH. THEN PLANE REMAINING LANE PAVEMENT AND OVERLAY ONE LANE, ALL PER (4/C5.6)

   ANTICIPATED TOTAL SAWCUTTING, THIS SHEET = 450 LF
   ANTICIPATED ASPHALT PLANING = 150 SY
   ANTICIPATED TOTAL ASPHALT (TRENCH PATCH AND OVERLAY), THIS SHEET = 22 TON
8. = 16" FUSED HDPE 45° HORIZONTAL BEND
9. = TRENCH DAM PER (4/C5.2)
10. = ELECTRO-FUSION COUPLER (AB)
11. = WATER MAIN'S PROFILE FIELD ADJUSTED TO GO OVER EXISTING POWER LINES. CONCRETE BLOCK INSTALLED WHERE COVER WAS SHALLOW. SHOWN APPROX. EXTENTS AND DEPTH NOT KNOWN (AB)

NOTES

1. ALL SOILS ON SITE ARE WHATCOM/WHATCOM-LABOUNTY SILT LOAM.
2. EXISTING VEGETATIVE COVER OF ROADSIDE DITCHES ARE GRASSES AND NATIVE COVER PLANTS.
3. ALL DISTURBED AREA TO BE PERMANENTLY SEEDED WITH NATIVE SEED MIX AFTER CONSTRUCTION IS COMPLETE
4. ALL WATER MAIN JOINTS SHALL BE RESTRAINED

20 0 20 40 SCALE HORIZONTAL SCALE FEET

5 0 5 10 SCALE VERTICAL SCALE FEET

811 Call 811 two business days before you dig

RECORD DRAWINGS

WILSON ENGINEERING
WILSONENGINEERING.COM

BRIAN MARRIN SMITH — STATE OF WASHINGTON — 34452 — REGISTERED PROFESSIONAL ENGINEER — 7/31/23

DESIGNED BY	DRAWN BY	CHECKED BY
BMS	JCS	AWL

CITY OF FERNDALE
WASHINGTON
FERNDALE
WATER SYSTEM EMERGENCY INTERTIE
PLAN AND PROFILE STA 5+00 – 10+00

DATE	SCALE	JOB NUMBER
5-31-23	AS SHOWN	2021-091

SHEET C3.2
PAGE 11 OF 25

MATCHLINE – STA 10+00 – SEE SHEET C3.2 TOP RIGHT

MATCHLINE – STA 15+00 – SEE SHEET C3.4 TOP LEFT

T.P.N. 380204503390000
LOT 22
ELDRIDGES
RURAL ADD.

T.P.N.
380204477275

SCALE 20 0 20 40 FEET
HORIZONTAL SCALE

16-HDPE 500 LF (1)

STA 13+55.22 (13)

STA 14+63.98 SHOWN APPROX (11)

FENCE (3)

MAILBOXES (7)

MAILBOX (7)

CONCRETE RETAINING WALL ~CONCRETE~ (6)

~DENSE VEGETATION~ (10)

WYNN ROAD

~ASPHALT ROADWAY~

~GRAVEL~

WSE #101

WSE #105

12" CPP INV=85.6

GRAVEL

4" PLASTIC INV=95.1

FENCE

GRAVEL

12" CPP INV=92.6

GATE

12" CMP INV=93.9

FENCE

BOULDER

LANDSCAPING & MULCH

T.P.N. 380204439304
WESTFALL SP
VOL. 28, PG. 95

LOT 24

10+00 11+00 12+00 13+00 14+00 15+00

110 100 90 80 70

EXISTING GROUND OVER PROPOSED WATER MAIN

EXISTING GROUND AT ℄ ALIGNMENT

36" MIN (TYP)

UTILITY POLE

16-HDPE (1) 500 LF

COMM. CROSSING DEPTH UNK.

SCALE 20 0 20 40 FEET
HORIZONTAL SCALE

SCALE 5 0 5 10 FEET
VERTICAL SCALE

811 Call 811 two business days before you dig

RECORD DRAWINGS

NO.	REVISIONS	BY	DATE

KEYED NOTES

(1) = PROPOSED 16"ø HDPE, IPS, DR11 WATER MAIN INTERTIE PER (1/C5.4) (2/C5.2)

(2) = INSTALL STRAW WATTLE CHECK DAM PER (2/C2.5)

(3) = PROTECT EXISTING FENCE IN PLACE

(4) = NOT USED

(5) = PROTECT EXISTING GUY LINE ANCHOR IN PLACE

(6) = PROTECT EXISTING CONCRETE/WALL IN PLACE

(7) = REMOVE AND REINSTALL MAILBOX PER (2/C5.6)

(8) = SAWCUT, REMOVE, AND REPLACE ASPHALT PER (3/C5.6)
TOTAL SAWCUTTING BETWEEN THIS SHEET AND NEXT: 85 LF
TOTAL ASPHALT BETWEEN THIS SHEET AND NEXT: 235 SF

(9) = PROTECT EXISTING UTILITY IN PLACE

(10) = CLEAR DENSE VEGETATION AS NECESSARY

(11) = 2" COMBINATION AIR/VACUUM RELIEF ASSEMBLY. LOCATE AT THE APPROXIMATE HIGH POINT, PER (1/C5.5)

(12) = TRACER WIRE PEDESTAL PER (2/C5.2)

(13) = TRENCH DAM PER (4/C5.2)

NOTES

1. ALL SOILS ON SITE ARE WHATCOM/WHATCOM-LABOUNTY SILT LOAM.

2. EXISTING VEGETATIVE COVER OF ROADSIDE DITCHES ARE GRASSES AND NATIVE COVER PLANTS.

3. ALL DISTURBED AREA TO BE PERMANENTLY SEEDED WITH NATIVE SEED MIX AFTER CONSTRUCTION IS COMPLETE

4. ALL WATER MAIN JOINTS SHALL BE RESTRAINED

WILSON ENGINEERING
WILSONENGINEERING.COM

BRIAN MARIN SMITH — 34425 — REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON — 5/31/23

DESIGNED BY BMS | DRAWN BY JCS | CHECKED BY AWL

CITY OF FERNDALE
WATER SYSTEM EMERGENCY INTERTIE
FERNDALE WASHINGTON
PLAN AND PROFILE STA 10+00 – 15+00

DATE 5-31-23 | SCALE AS SHOWN | JOB NUMBER 2021-091

SHEET C3.3 | PAGE 12 OF 25

PLOT SETTINGS: WE AutoCAD PDF (General Documentation).pc3, WILSON 11X17, Portrait, 1:2, WE APWA_UNSCREENED.ctb
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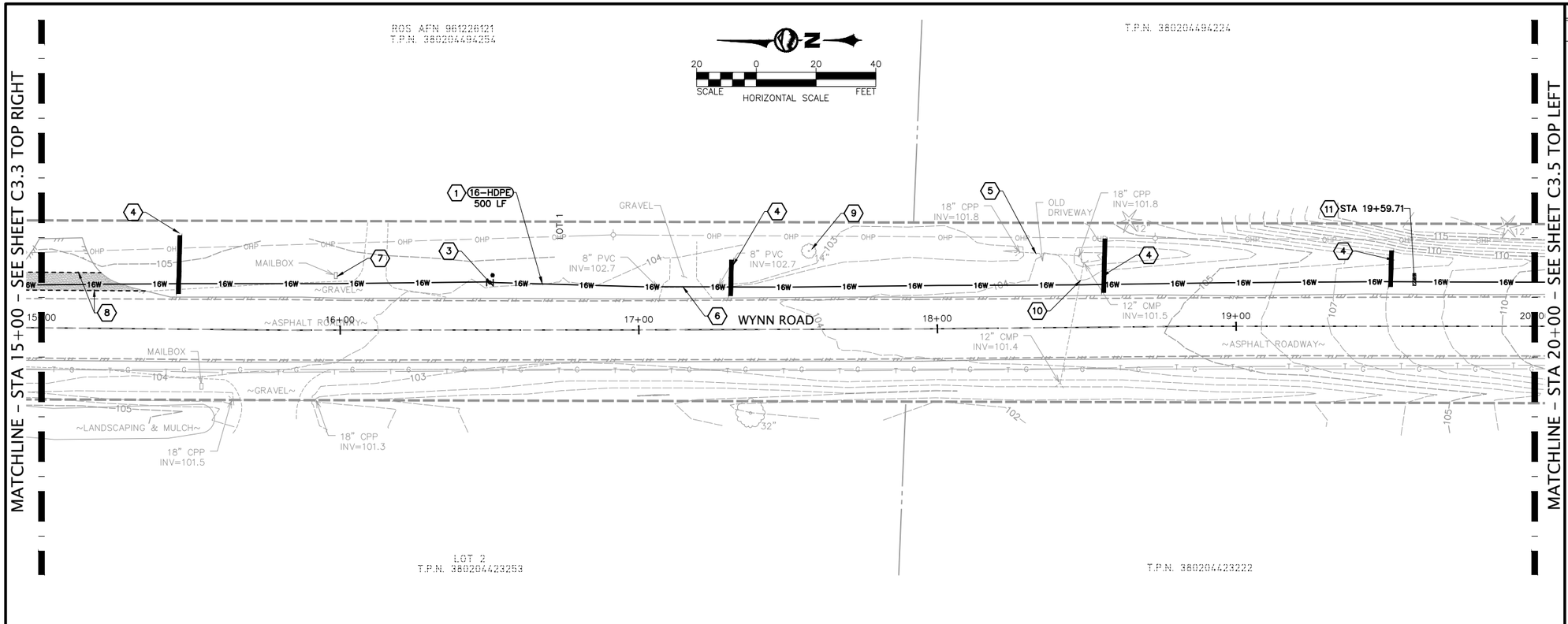

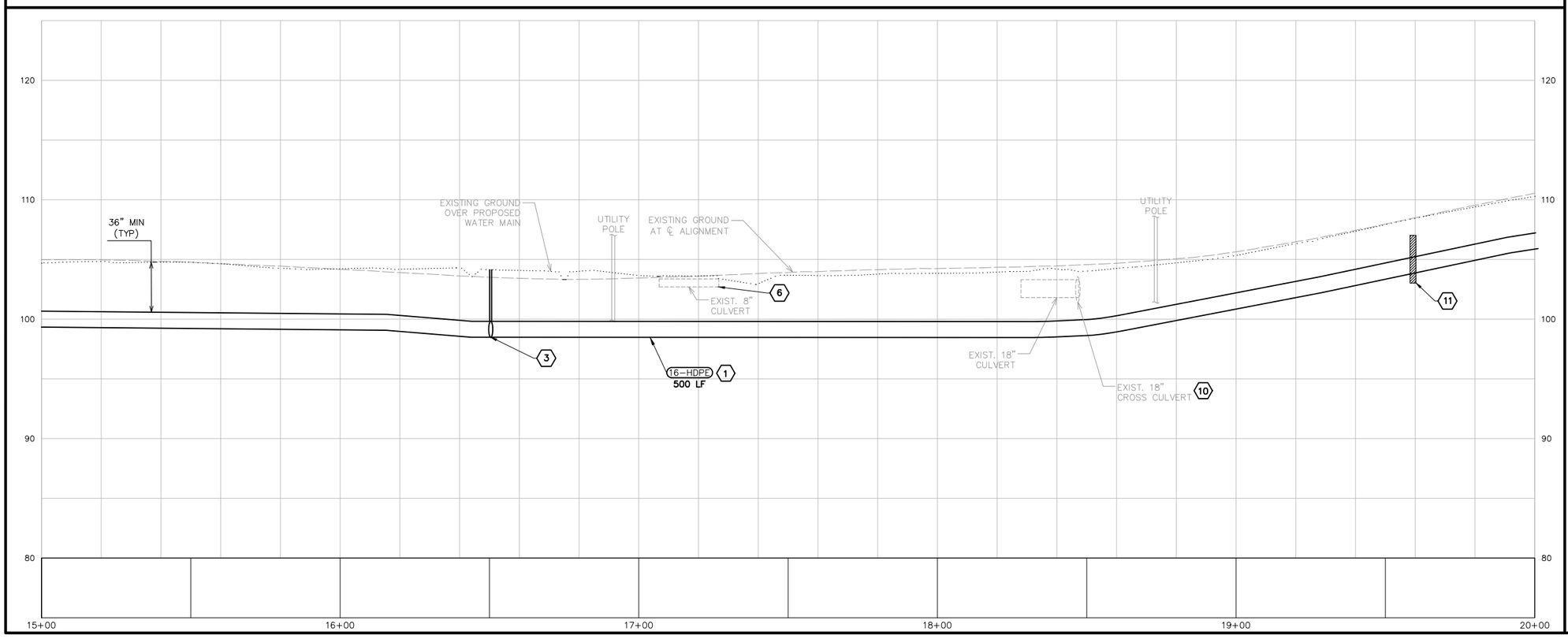

NO.	REVISIONS	BY	DATE

KEYED NOTES

1. = PROPOSED 16"ø HDPE, IPS, DR11 WATER MAIN INTERTIE PER (1/C5.4) (2/C5.2)
2. = NOT USED.
3. = 16" BUTTERFLY VALVE w/ MARKER POST PER (3/C5.5)
4. = INSTALL STRAW WATTLE CHECK DAM PER (2/C2.5)
5. = PROTECT EXISTING CULVERT IN PLACE
6. = REMOVE AND REINSTALL EXISTING CULVERT PER (1/C5.6)
7. = REMOVE AND REINSTALL MAILBOX PER (2/C5.6)
8. = SAWCUT, REMOVE, AND REPLACE ASPHALT PER (3/C5.6)

   TOTAL SAWCUTTING BETWEEN THIS SHEET AND PREVIOUS: 85 LF
   TOTAL ASPHALT BETWEEN THIS SHEET AND PREVIOUS: 235 SF
9. = PROTECT TREE
10. = CULVERT CROSSING PER (2/C5.4)

    PROTECT CULVERT IN PLACE WITH 18" MIN. VERTICAL SEPARATION FROM WATER LINE
    CONTRACTOR TO VERIFY CULVERT LOCATION AND ELEVATION PRIOR TO CONSTRUCTION
11. = TRENCH DAM PER (4/C5.2)

NOTES

1. ALL SOILS ON SITE ARE WHATCOM/WHATCOM–LABOUNTY SILT LOAM.
2. EXISTING VEGETATIVE COVER OF ROADSIDE DITCHES ARE GRASSES AND NATIVE COVER PLANTS.
3. ALL DISTURBED AREA TO BE PERMANENTLY SEEDED WITH NATIVE SEED MIX AFTER CONSTRUCTION IS COMPLETE
4. ALL WATER MAIN JOINTS SHALL BE RESTRAINED

20 0 20 40
SCALE HORIZONTAL SCALE FEET

5 0 5 10
SCALE VERTICAL SCALE FEET

811 Call 811 two business days before you dig

RECORD DRAWINGS

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BRIAN MARTIN SMITH — STATE OF WASHINGTON — 34452 — REGISTERED PROFESSIONAL ENGINEER — 5/31/23

DESIGNED BY	DRAWN BY	CHECKED BY
BMS	JCS	AWL

CITY OF FERNDALE
WATER SYSTEM EMERGENCY INTERTIE
PLAN AND PROFILE STA 15+00 – 20+00
FERNDALE WASHINGTON

DATE	SCALE	JOB NUMBER
5-31-23	AS SHOWN	2021-091

SHEET C3.4
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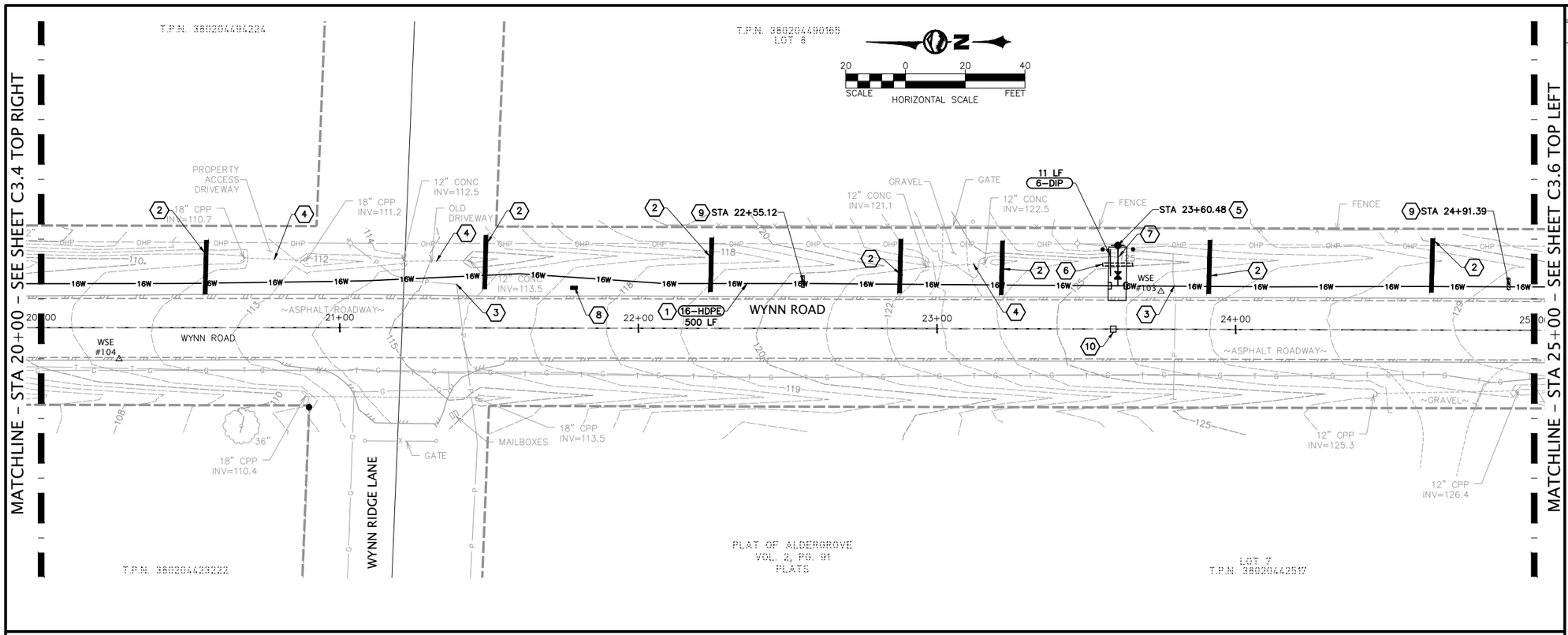

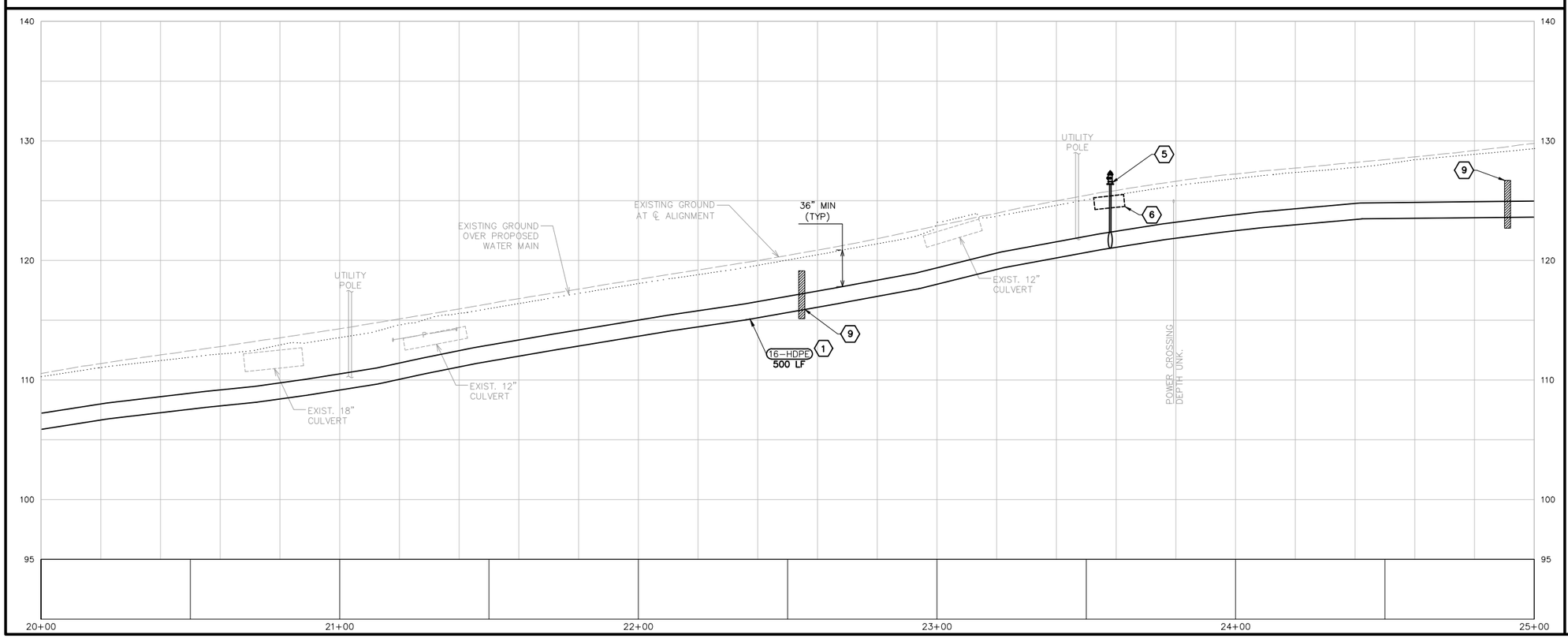

NO.	REVISIONS	BY	DATE

KEYED NOTES

1. = PROPOSED 16"ø HDPE, IPS, DR11 WATER MAIN INTERTIE PER (1/C5.4) (2/C5.2)
2. = INSTALL STRAW WATTLE CHECK DAM PER (2/C2.5)
3. = PROTECT EXISTING UTILITY IN PLACE
4. = PROTECT EXISTING CULVERT IN PLACE
5. = INSTALL HYDRANT ASSEMBLY AND BOLLARDS PER (3/C5.3) (2/C5.5)
6. = INSTALL 12" DIA CULVERT AND BACKFILL WITH CSBC INLET/OUTLET PROTECTION PER (1/C5.6)
7. = 6' WIDE FLAT CSBC ACCESS PATH PER (1/C5.6)
8. = TRACER WIRE PEDESTAL PER (2/C5.2)
9. = TRENCH DAM PER (4/C5.2)
10. = BLUE-RETROREFLECTOR (2/C5.5)

NOTES

1. ALL SOILS ON SITE ARE WHATCOM/WHATCOM-LABOUNTY SILT LOAM.
2. EXISTING VEGETATIVE COVER OF ROADSIDE DITCHES ARE GRASSES AND NATIVE COVER PLANTS.
3. ALL DISTURBED AREA TO BE PERMANENTLY SEEDED WITH NATIVE SEED MIX AFTER CONSTRUCTION IS COMPLETE
4. ALL WATER MAIN JOINTS SHALL BE RESTRAINED

20 0 20 40
SCALE HORIZONTAL SCALE FEET

5 0 5 10
SCALE VERTICAL SCALE FEET

811 Call 811 two business days before you dig

RECORD DRAWINGS

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CITY OF FERNDALE
WASHINGTON
FERNDALE
WATER SYSTEM EMERGENCY INTERTIE
PLAN AND PROFILE STA 20+00 – 25+00

DATE	SCALE	JOB NUMBER
5-31-23	AS SHOWN	2021-091

SHEET C3.5
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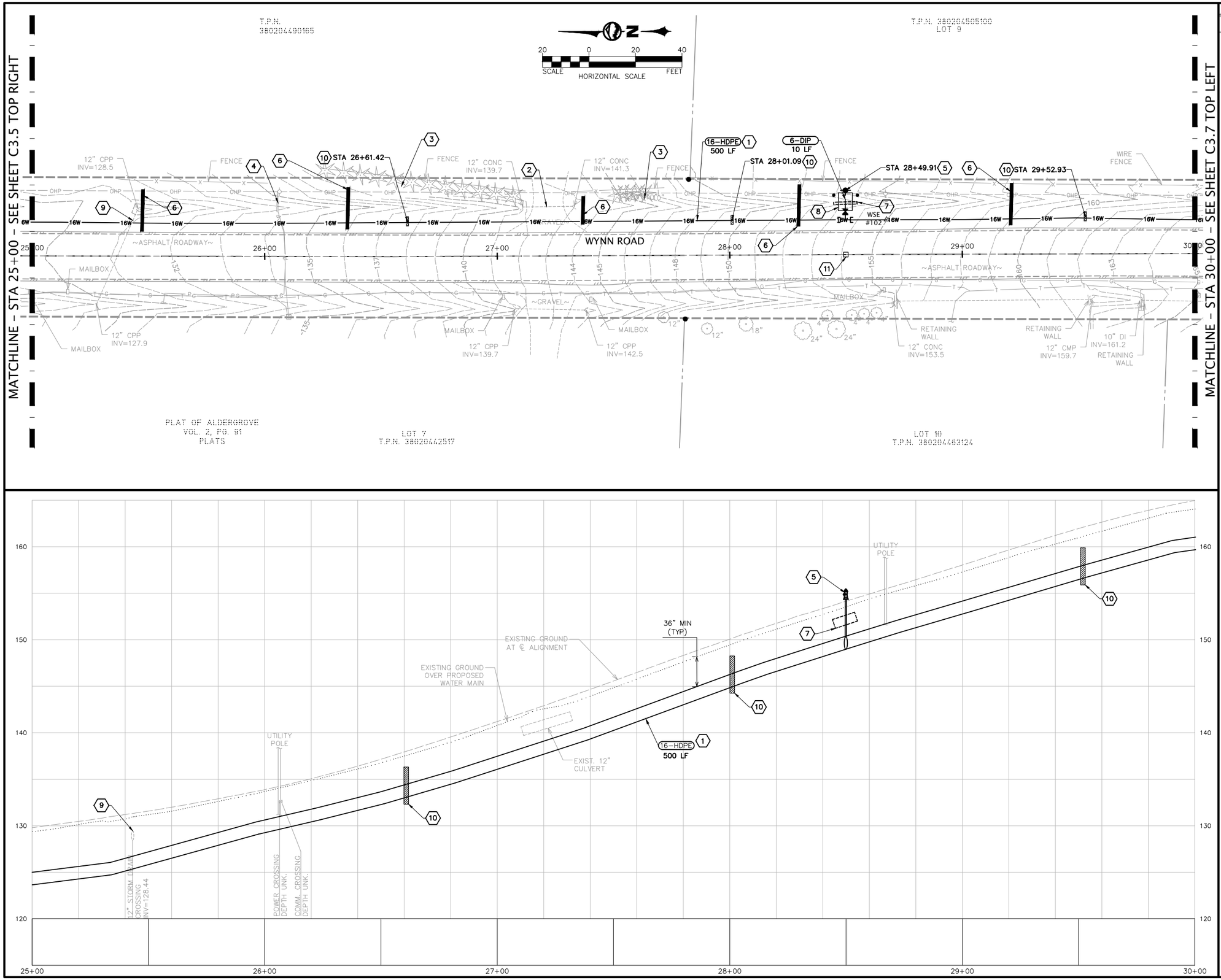

NO.	REVISIONS	BY	DATE

KEYED NOTES

1. = PROPOSED 16"ø HDPE, IPS, DR11 WATER MAIN INTERTIE PER (1/C5.4) (2/C5.2)
2. = PROTECT EXISTING CULVERT IN PLACE
3. = PROTECT EXISTING ROW OF TREES
4. = PROTECT EXISTING UTILITY IN PLACE
5. = INSTALL HYDRANT ASSEMBLY AND BOLLARDS PER (3/C5.3) (2/C5.5)
6. = INSTALL STRAW WATTLE CHECK DAM PER (2/C2.5)
7. = INSTALL 12" DIA CULVERT AND BACKFILL WITH CSBC INLET/OUTLET PROTECTION PER (1/C5.6)
8. = 6' WIDE FLAT CSBC ACCESS PATH PER (1/C5.6)
9. = CULVERT CROSSING. PROTECT CULVERT IN PLACE WITH 18" MIN. VERTICAL SEPARATION FROM WATER LINE CONTRACTOR TO VERIFY CULVERT LOCATION AND ELEVATION PRIOR TO CONSTRUCTION PER (2/C5.4)
10. = TRENCH DAM PER (4/C5.2)
11. = BLUE RETRO-REFLECTOR (2/C5.5)

NOTES

1. ALL SOILS ON SITE ARE WHATCOM/WHATCOM-LABOUNTY SILT LOAM.
2. EXISTING VEGETATIVE COVER OF ROADSIDE DITCHES ARE GRASSES AND NATIVE COVER PLANTS.
3. ALL DISTURBED AREA TO BE PERMANENTLY SEEDED WITH NATIVE SEED MIX AFTER CONSTRUCTION IS COMPLETE
4. ALL WATER MAIN JOINTS SHALL BE RESTRAINED

20 0 20 40
SCALE HORIZONTAL SCALE FEET

5 0 5 10
SCALE VERTICAL SCALE FEET

811 Call 811 two business days before you dig

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CITY OF FERNDALE
WASHINGTON

WATER SYSTEM EMERGENCY INTERTIE

PLAN AND PROFILE STA 25+00 – 30+00

FERNDALE

DATE	SCALE	JOB NUMBER
5-31-23	AS SHOWN	2021-091

SHEET C3.6

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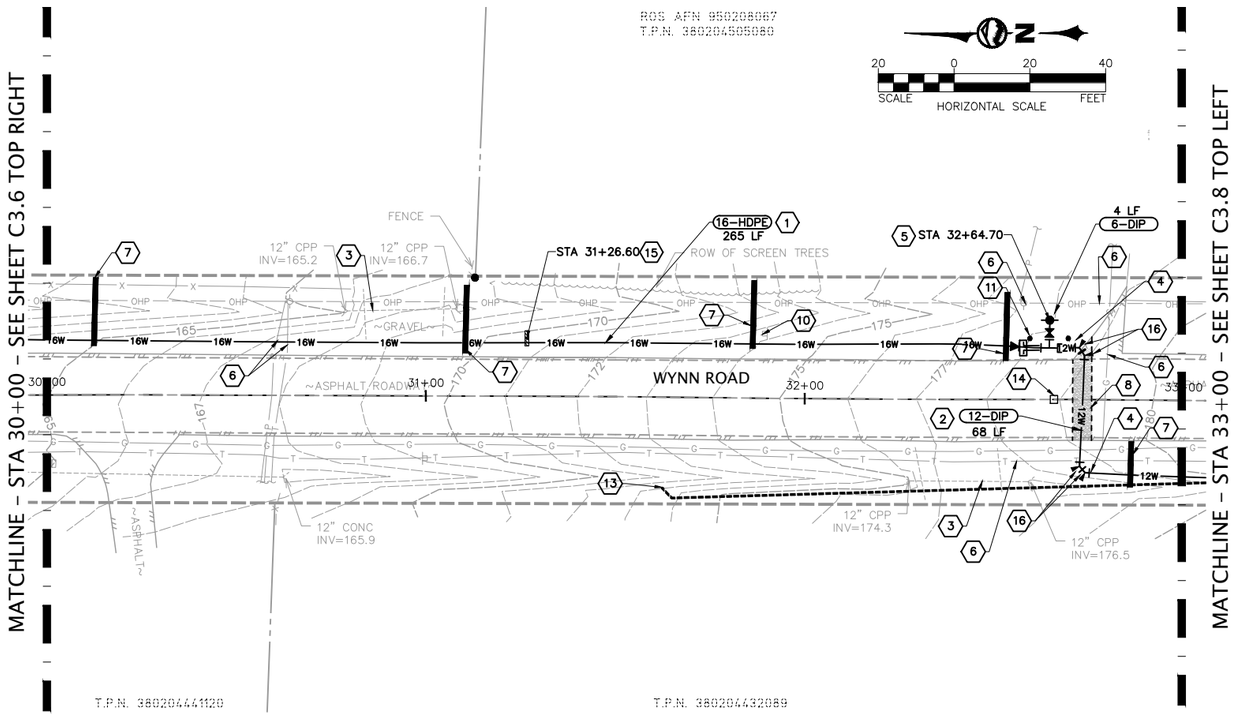

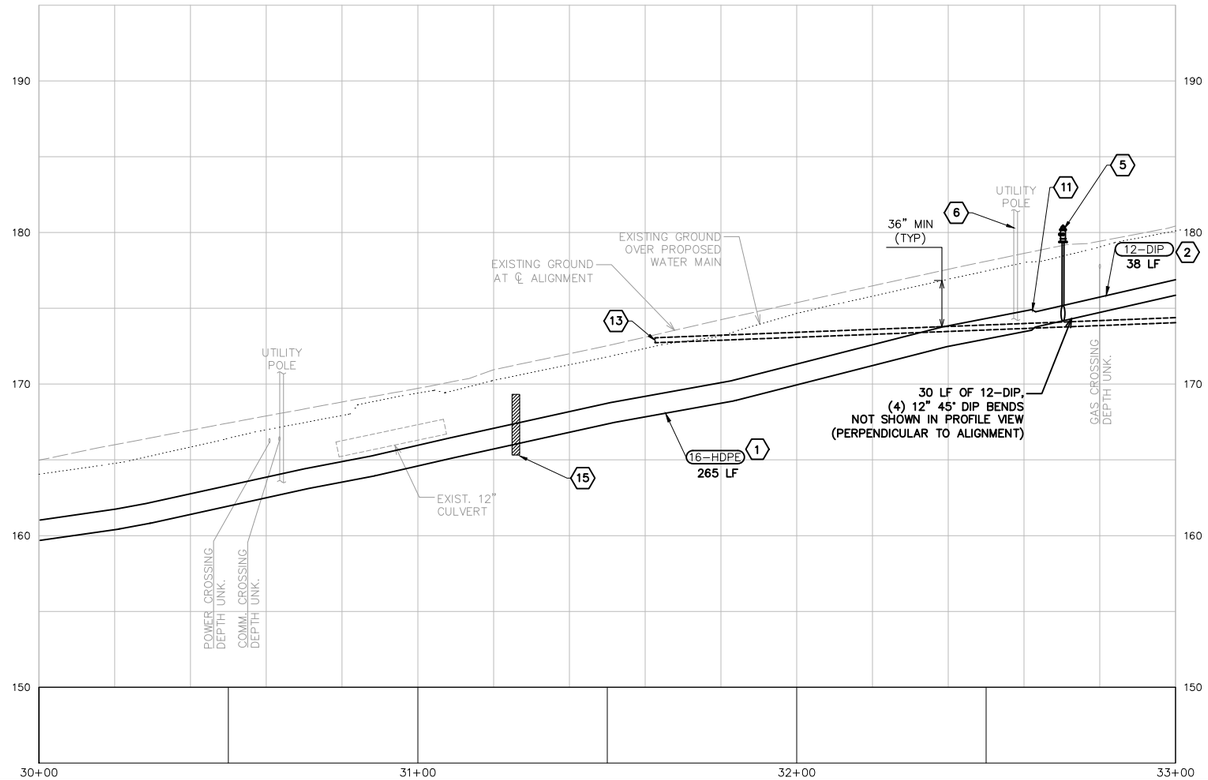

NO.	REVISIONS	BY	DATE

KEYED NOTES

1. = PROPOSED 16"ø HDPE, IPS, DR11 WATER MAIN INTERTIE PER (1/C5.4) (2/C5.2)
2. = PROPOSED 12"ø DIP, IPS, DR11 WATER LINE INTERTIE PER (1/C5.4)
3. = PROTECT EXISTING CULVERT IN PLACE
4. = (2) DIP 12" 45° HORIZONTAL BENDS
5. = INSTALL HYDRANT ASSEMBLY AND BOLLARDS PER (3/C5.3) (2/C5.5)
6. = PROTECT EXISTING UTILITY IN PLACE
7. = INSTALL STRAW WATTLE CHECK DAM PER (2/C2.5)
8. = SAWCUT, REMOVE, AND REPLACE ASPHALT
   TOTAL SAWCUTTING, THIS SHEET: 48 LF
   TOTAL ASPHALT, THIS SHEET: 121 SF
   PER (3/C5.6)
9. = NOT USED
10. = REMOVE AND REINSTALL SIGN AS NECESSARY FOR CONSTRUCTION. ENSURE TEMPORARY OR PERMANENT SIGN SERVING THIS PURPOSE IS IN PLACE AT ALL TIMES ROAD IS OPEN TO TRAFFIC.
11. = TRANSITION FROM 16" HDPE TO 12" DUCTILE IRON WATER MAIN PER (4/C5.3)
    AND INSTALL REVERSE THRUST BLOCK PER (5/C5.3)
13. = ROUTE 4" PVC VAULT DRAINS NORTH TO ROADSIDE DITCH AT 1% PER DETAIL PER (1/C5.2) (3/C5.2)
    INV. OUT: 172.89
14. = BLUE RETRO-REFLECTOR (2/C5.5)
15. = TRENCH DAM PER (4/C5.2)
16. = STANDARD CONCRETE THRUST BLOCKS PER COF DETAIL W-2 (AB)

NOTES

1. ALL SOILS ON SITE ARE WHATCOM/WHATCOM-LABOUNTY SILT LOAM.
2. EXISTING VEGETATIVE COVER OF ROADSIDE DITCHES ARE GRASSES AND NATIVE COVER PLANTS.
3. ALL DISTURBED AREA TO BE PERMANENTLY SEEDED WITH NATIVE SEED MIX AFTER CONSTRUCTION IS COMPLETE
4. ALL WATER MAIN JOINTS SHALL BE RESTRAINED

SCALE 20 0 20 40 FEET
HORIZONTAL SCALE

SCALE 5 0 5 10 FEET
VERTICAL SCALE

811 Call 811 two business days before you dig

RECORD DRAWINGS

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BRIAN MARTIN SMITH — REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON — 34521 — 5/31/23

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CITY OF FERNDALE

WATER SYSTEM EMERGENCY INTERTIE

FERNDALE

PLAN AND PROFILE STA 30+00 – 35+00

DATE	SCALE	JOB NUMBER
5-31-23	AS SHOWN	2021-091

SHEET C3.7

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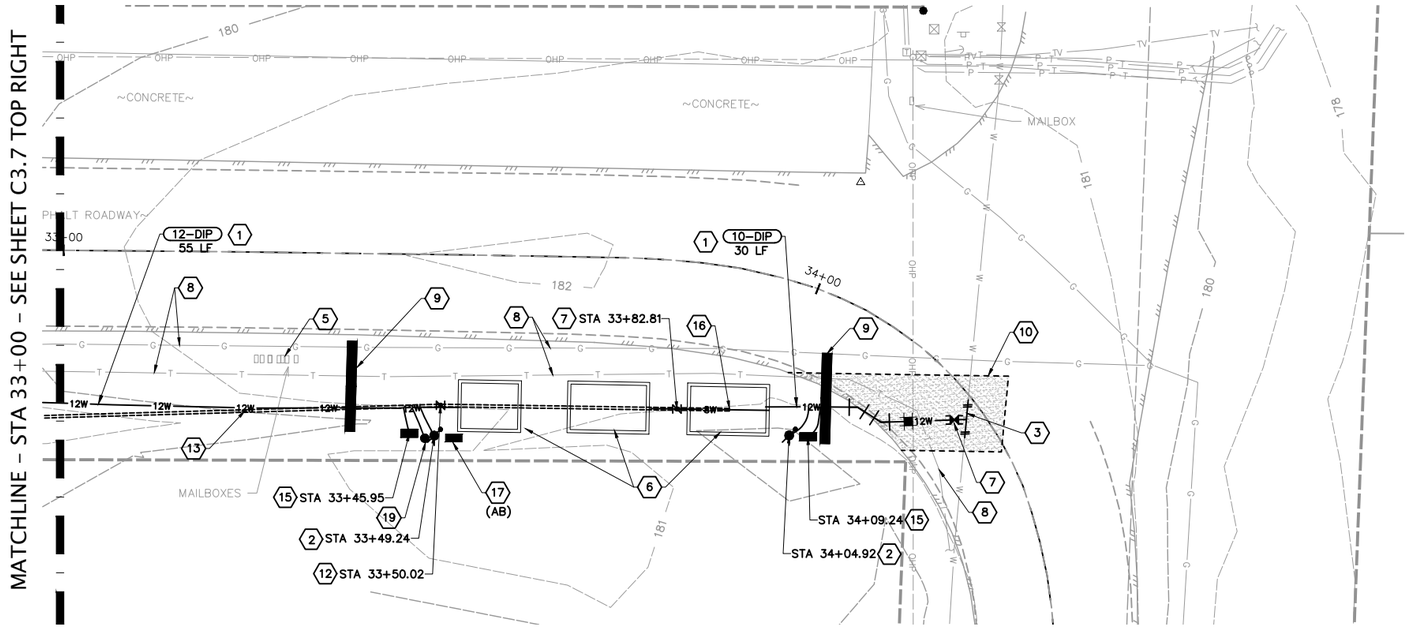

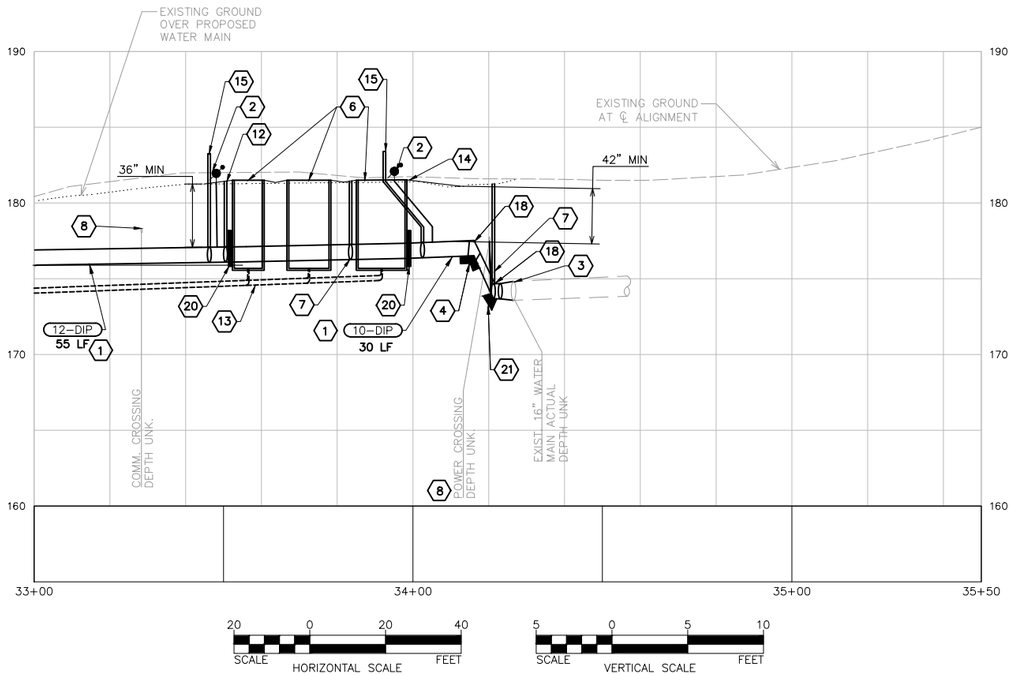

20 0 20 40
SCALE FEET
HORIZONTAL SCALE

5 0 5 10
SCALE FEET
VERTICAL SCALE

NOTE: CONTRACTOR TO POTHOLE AT THE BEGINNING OF CONSTRUCTION AND EXPOSE EXISTING COB 16 INCH WATER MAIN.

ANTICIPATED DEPTH TO TOP OF MAIN IS 9 FT.

FOR BOTH INITIAL POTHOLING AND EXCAVATION DURING CONNECTION TO EXISTING SYSTEM, CONTRACTOR SHALL EXCAVATE AND PROVIDE SUFFICIENT TRENCH SAFETY AND SHORING TO SAFELY ENTER EXCAVATION.

EXCAVATION FOR CONNECTION TO EXISTING SYSTEM SHALL FOLLOW COB STANDARD DETAIL WA–872.

CONTRACTOR TO CONTACT ENGINEER IF CONDITIONS VARY SIGNIFICANTLY FROM THE CONDITIONS SHOWN ON THE PLANS

N

10 0 10 20
SCALE FEET
HORIZONTAL SCALE

Ferndale - Water System Emergency Intertie - HDPE Weld Location Asbuilts

Weld # per Data Logger	Northing	Easting	Elevation	Description
1	664946.03	1225700.12	102.5	TOP PIPE @ WELD
2	664995.11	1225699.40	100.9	TOP PIPE @ WELD
3	665043.08	1225699.19	100.9	TOP PIPE @ WELD
4	665092.90	1225698.64	100.9	TOP PIPE @ WELD
5	665142.58	1225698.77	100.6	TOP PIPE @ WELD
6	665294.75	1225699.80	101.3	TOP PIPE @ WELD
7	665344.60	1225699.40	101.6	TOP PIPE @ WELD
8	665394.48	1225699.10	101.3	TOP PIPE @ WELD
9	665444.82	1225699.81	99.4	TOP PIPE @ WELD
11	665868.05	1225703.54	84.1	TOP PIPE @ WELD
12	665917.38	1225705.54	81.8	TOP PIPE @ WELD
13	665967.33	1225705.35	79.4	TOP PIPE @ WELD
14	666017.18	1225703.49	78.0	TOP PIPE @ WELD
15	666066.77	1225704.20	76.4	TOP PIPE @ WELD
16	665568.46	1225701.46	93.7	TOP PIPE @ WELD
17	665618.21	1225701.17	92.1	TOP PIPE @ WELD
18	665668.40	1225702.83	91.2	TOP PIPE @ WELD
19	665718.48	1225703.67	90.8	TOP PIPE @ WELD
20	665768.21	1225703.88	89.6	TOP PIPE @ WELD
21	666390.32	1225708.37	68.3	TOP PIPE @ WELD
22	666440.18	1225709.07	67.7	TOP PIPE @ WELD
23	666490.18	1225710.11	67.1	TOP PIPE @ WELD
24	666540.13	1225709.38	66.9	TOP PIPE @ WELD
25	666589.81	1225710.65	67.3	TOP PIPE @ WELD
26	666640.86	1225710.10	67.3	TOP PIPE @ WELD
35	666188.64	1225699.07	73.1	TOP PIPE @ WELD
36	666238.12	1225699.96	72.1	TOP PIPE @ WELD
39	666288.24	1225699.74	70.9	TOP PIPE @ WELD
40	666346.22	1225708.16	69.2	TOP PIPE @ WELD
41	665817.98	1225702.93	87.0	TOP PIPE @ WELD
42	663645.04	1225699.04	171.7	TOP PIPE @ WELD
43	663694.93	1225699.49	168.9	TOP PIPE @ WELD
44	663744.84	1225699.45	167.2	TOP PIPE @ WELD
45	663794.80	1225699.76	164.9	TOP PIPE @ WELD
46	663844.64	1225700.21	161.8	TOP PIPE @ WELD
47	664534.44	1225699.94	120.2	TOP PIPE @ WELD
48	664584.26	1225700.33	117.7	TOP PIPE @ WELD
49	664634.19	1225700.31	115.6	TOP PIPE @ WELD
50	664683.11	1225703.61	x	TOP PIPE @ WELD
51	664733.67	1225701.29	111.5	TOP PIPE @ WELD
52	664796.73	1225700.34	109.1	TOP PIPE @ WELD
53	664846.72	1225700.28	107.0	TOP PIPE @ WELD
55	665244.92	1225699.79	101.1	TOP PIPE @ WELD
56	665194.17	1225700.38	x	TOP PIPE @ WELD
57	665519.22	1225700.56	96.5	TOP PIPE @ WELD
58	665191.49	1225700.16	x	TOP PIPE @ WELD
59	664896.15	1225700.45	104.8	TOP PIPE @ WELD
60	664484.54	1225699.59	121.4	TOP PIPE @ WELD
61	664747.14	1225701.01	110.7	TOP PIPE @ WELD
63	664481.15	1225699.54	121.4	TOP PIPE @ WELD
64	664431.46	1225699.23	123.9	TOP PIPE @ WELD
65	664381.46	1225699.34	125.2	TOP PIPE @ WELD
66	664331.52	1225699.16	126.4	TOP PIPE @ WELD
67	664282.72	1225698.68	128.3	TOP PIPE @ WELD
68	664232.77	1225698.70	131.2	TOP PIPE @ WELD
69	663992.05	1225700.14	151.0	TOP PIPE @ WELD
70	663942.33	1225700.29	154.5	TOP PIPE @ WELD
75	663995.23	1225700.19	150.8	TOP PIPE @ WELD
78	663894.42	1225701.02	158.3	TOP PIPE @ WELD
80	663589.01	1225698.55	174.8	TOP PIPE @ WELD
81	663601.62	1225699.08	174.1	TOP PIPE @ WELD
82	663607.88	1225699.17	173.7	TOP PIPE @ WELD

NO.	REVISIONS	BY	DATE

KEYED NOTES

1. = PROPOSED 12"ø DIP WATER MAIN INTERTIE PER (1/C5.4) (2/C5.2)
2. = 2" COMBINATION AIR/VACUUM RELIEF ASSEMBLY. LOCATE AT HIGH POINTS, EITHER SIDE OF VAULTS, PER (1/C5.4)
3. = TIE INTO EXISTING CITY OF BELLINGHAM WATER LINE WITH 16x10 FABRICATED STEEL TAPPING SLEEVE SEE NOTE, THIS SHEET
4. = REVERSE THRUST BLOCK PER COF DETAIL W–5 BUT WITH BENT #4 REBAR INSTEAD OF PIPE CLAMP (AB)
5. = REMOVE AND REINSTALL MAILBOX PER (2/C5.6)
6. = PROPOSED VAULTS PER (1/C5.1)
7. = 10" GATE VALVE WITH RESTRAINED JOINTS
8. = PROTECT EXISTING UTILITIES IN PLACE
9. = INSTALL STRAW WATTLE CHECK DAM PER (2/C2.5)
10. = SAWCUT, REMOVE, AND REPLACE ASPHALT
    TOTAL SAWCUTTING, THIS SHEET: 52 LF
    TOTAL ASPHALT, THIS SHEET: 195 SF
    PER (3/C5.6)
11. = INSTALL (1) BOLLARD PER (3/C5.3) (NOT INSTALLED, AB)
12. = 12" BUTTERFLY VALVE
13. = ROUTE 4" PVC VAULT DRAINS NORTH TO ROADSIDE DITCH AT 2% PER (1/C5.2)
14. = TOP OF VAULTS AT ELEV: 181.50. GRADE AWAY FROM VAULTS AT 3:1 SLOPE TO EXISTING GRADE (TYP)
15. = WATER SAMPLING STATION PER (1/C5.3)
16. = CONTRACTOR TO INSTALL VAULT WITH PIPING. CITY CREW TO CUT IN METER AFTER APPROVAL FOR SERVICE
17. = TRACER WIRE PEDESTAL PER (2/C5.2)
18. = DIP 10" VERTICAL 45° BENDS
19. = AUTOMATIC FLUSHING UNIT, MUELLER HYDRO–GUARD FC100, INSTALLED PER MANUFACTURER INSTALLATION INSTRUCTIONS, WITH 2" SADDLE & 2" BURIED GATE VALVE WITH VALVE BOX FOR ISOLATION (AB)
20. = PIPE ANCHOR & CONCRETE (AB)
21. = STANDARD CONCRETE THRUST BLOCK PER COF DETAIL W–2 (AB)

NOTES

1. ALL SOILS ON SITE ARE WHATCOM/WHATCOM–LABOUNTY SILT LOAM.
2. EXISTING VEGETATIVE COVER OF ROADSIDE DITCHES ARE GRASSES AND NATIVE COVER PLANTS.
3. ALL DISTURBED AREA TO BE PERMANENTLY SEEDED WITH NATIVE SEED MIX AFTER CONSTRUCTION IS COMPLETE
4. ALL WATER MAIN JOINTS SHALL BE RESTRAINED

811 Call 811 two business days before you dig

RECORD DRAWINGS

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BMS	JCS	AWL

CITY OF FERNDALE
WASHINGTON

WATER SYSTEM EMERGENCY INTERTIE

PLAN AND PROFILE STA 33+00 – 36+20

FERNDALE

DATE	SCALE	JOB NUMBER
5-31-23	AS SHOWN	2021-091

SHEET	PAGE
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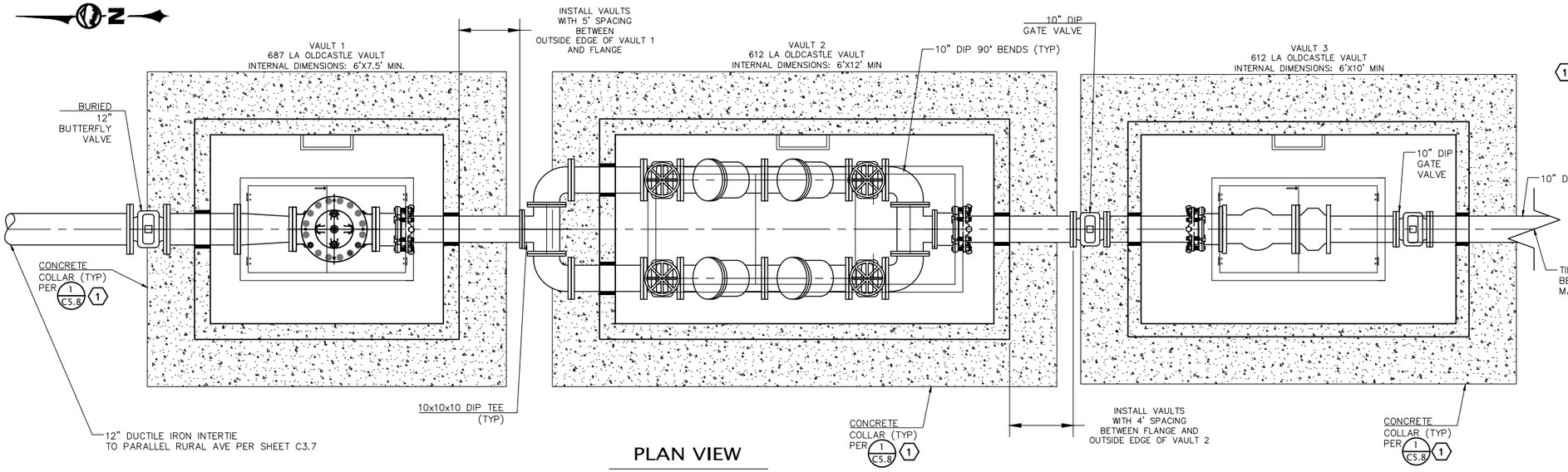
NO.	REVISIONS	BY	DATE



PLAN VIEW

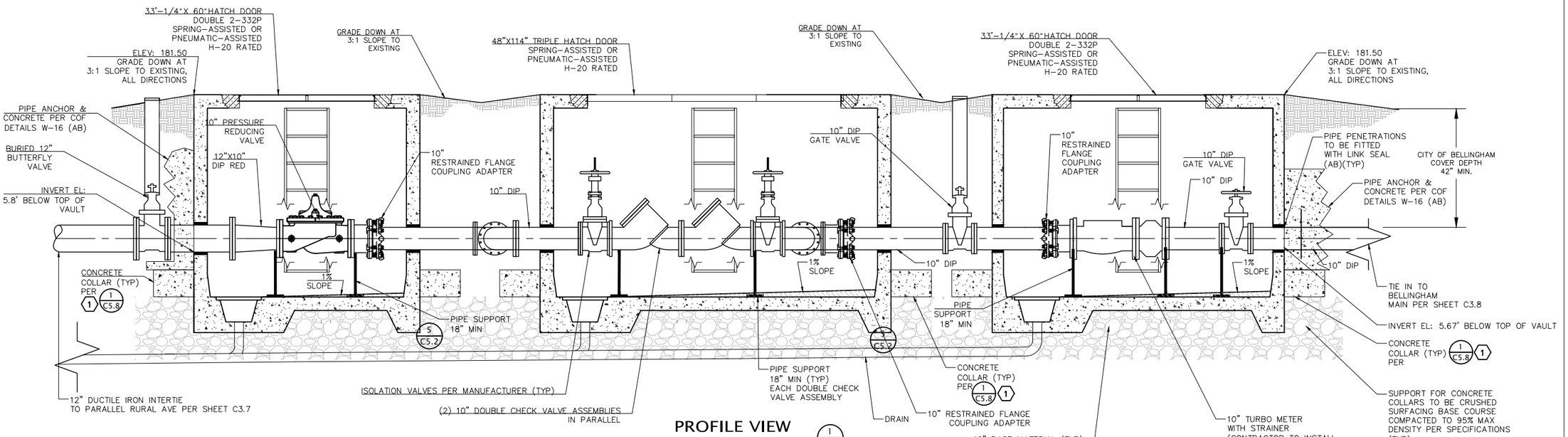
NOT TO SCALE

NOTE

1. ALL WATER MAIN JOINTS SHALL BE RESTRAINED

AS-BUILT KEYED NOTE

1 = CAST-IN-PLACE CONCRETE COLLAR WAS REPLACED BY 6" WIDE PRE-CAST COLLAR ON VAULT - SEE VAULT SUBMITTAL FOR DETAILS



PROFILE VIEW

NOT TO SCALE

1/C5.2

1 VAULT DETAILS

NOT TO SCALE

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CITY OF FERNDALE

WATER SYSTEM EMERGENCY INTERTIE

FERNDALE WASHINGTON

VAULT DETAILS

DATE	SCALE	JOB NUMBER
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SHEET C5.1

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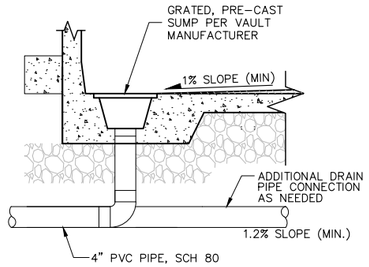
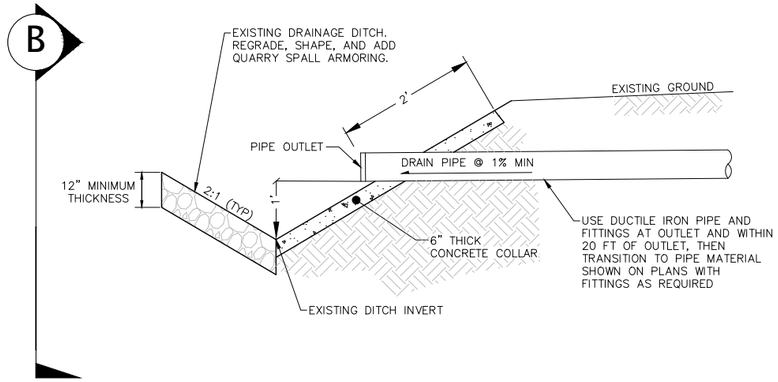
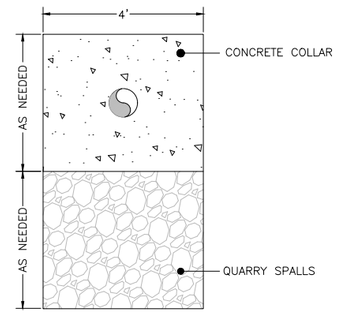


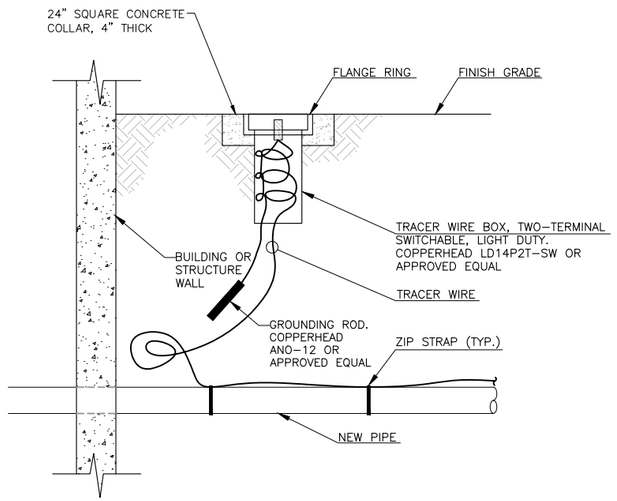
1 TYPICAL VAULT/FLOOR DRAIN
NOT TO SCALE



3 PIPE OUTLET PROTECTION
NOT TO SCALE

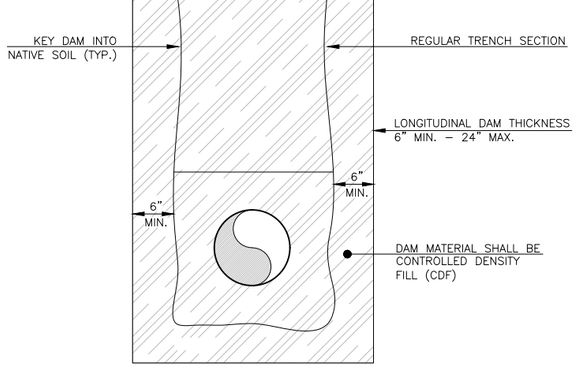


SECTION B



1. TRACER WIRE SHALL BE ZIP-STRAPPED TO THE PIPE AT 6-FOOT INTERVALS
2. TRACER WIRE SHALL BE CONTINUOUS WITH NO SPLICES UNLESS AUTHORIZED BY THE ENGINEER. IF WIRE REQUIRES SPLICING, SPLICES SHALL BE WITH A SPLICE CONNECTOR DESIGNED FOR DIRECT BURY APPLICATION FILLED WITH MOISTURE DISPLACING SILICONE FOR CORROSION RESISTANCE PROTECTION, COPPERHEAD MAINLINE-TO-SERVICE CONNECTOR, PART NUMBER 3WB-01 OR APPROVED EQUAL
3. TRACER WIRE CONNECTIONS AT THE TRACER WIRE BOX SHALL BE WRAPPED WITH CORROSION RESISTANT TAPE.
4. LOOP 18"-24" OF EXTRA TRACER WIRE AT BOTH THE PIPE AND THE TRACER WIRE BOX.
5. CONTRACTOR SHALL PERFORM A CONDUCTIVITY/LOCATE UPON COMPLETION OF THE INSTALLATION.
6. TRACER WIRE IS TO BE PROVIDED FOR ALL NEW PIPING, AS SHOWN ON PLANS. BOXES TO BE LOCATED NEXT TO ALL BUILDINGS OR STRUCTURES WHERE PIPE ENTERS. FINAL LOCATIONS TO BE SUBMITTED TO THE ENGINEER.
7. TRACER WIRE SHALL BE COPPERHEAD SOLOSHOT 1245EHS OR APPROVED EQUAL FOR HORIZONTAL DIRECTIONAL DRILLING APPLICATIONS. JACKET COLOR PURPLE.

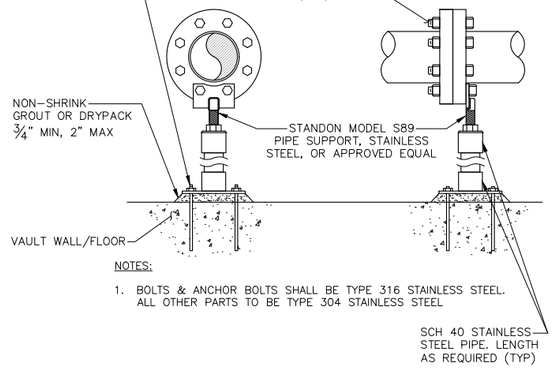
2 TRACER WIRE SYSTEM DETAILS
NOT TO SCALE



NOTES:

1. SEE PLAN AND PROFILE SHEETS FOR LOCATIONS OF DAMS.

4 TRENCH DAM
NOT TO SCALE



NOTES:

1. BOLTS & ANCHOR BOLTS SHALL BE TYPE 316 STAINLESS STEEL. ALL OTHER PARTS TO BE TYPE 304 STAINLESS STEEL

5 SUPPORT DETAIL
NOT TO SCALE

RECORD DRAWINGS

WILSON ENGINEERING
WILSONENGINEERING.COM

BRIAN MARRIN SMITH 34521 REGISTERED PROFESSIONAL ENGINEER STATE OF WASHINGTON 7/31/23

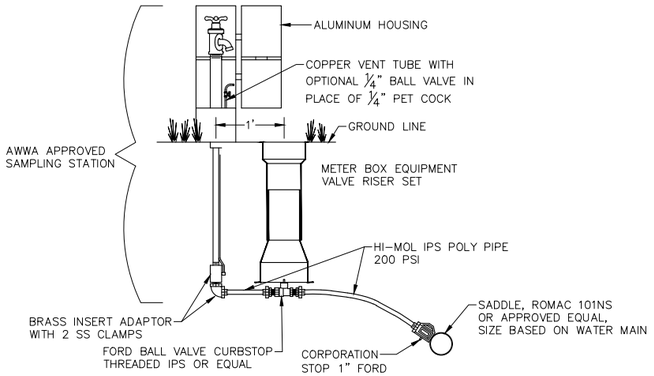
DESIGNED BY	DRAWN BY	CHECKED BY
BMS	JGS	AWL

CITY OF FERNDALE
WASHINGTON
WATER SYSTEM EMERGENCY INTERTIE
FERNDALE
CIVIL DETAILS (1)

DATE	SCALE	JOB NUMBER
5-31-23	AS SHOWN	2021-091

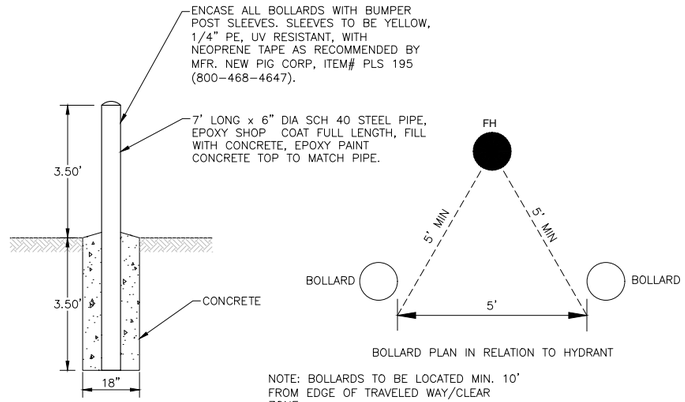
SHEET	PAGE
C5.2	19 OF 25

NO.	REVISIONS	BY	DATE



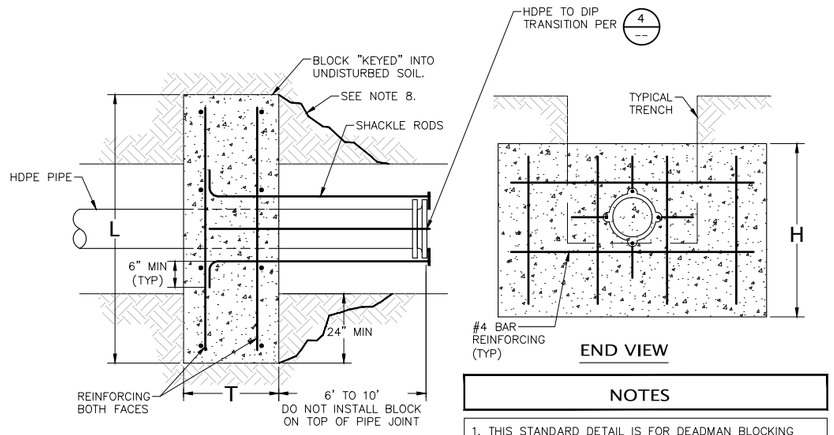
1. SAMPLING STATIONS SHALL BE A 2.5' BURY, WITH A ¾" FIP INLET, AND A (¾" HOSE OR UNTHREADED) NOZZLE.
2. ALL STATIONS SHALL BE ENCLOSED IN A LOCKABLE, NONREMOVABLE, ALUMINUM-CAST HOUSING. HOUSING SHALL BE PAINTED GREEN.
3. WHEN OPENED, THE STATION SHALL REQUIRE NO KEY FOR OPERATION, AND THE WATER WILL FLOW IN AN ALL BRASS WATERWAY.
4. ALL WORKING PARTS WILL ALSO BE OF BRASS AND BE REMOVABLE FROM ABOVE GROUND WITH NO DIGGING. EXTERIOR PIPING SHALL BE GALVANIZED STEEL (BRASS PIPE ALSO AVAILABLE).
5. A COPPER VENT TUBE WILL ENABLE EACH STATION TO BE PUMPED FREE OF STANDING WATER TO PREVENT FREEZING AND TO MINIMIZE BACTERIA GROWTH.
6. SAMPLING STATION SHALL BE ECLIPSE NO. 88, MANUFACTURED BY KUPFERLE FOUNDRY, ST. LOUIS, MO 63102.

1 WATER SAMPLING STATION
NOT TO SCALE



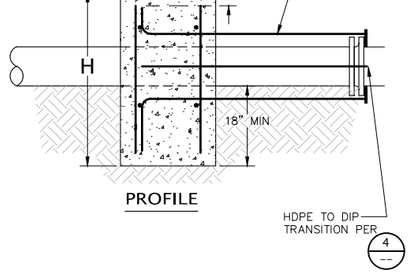
NOTE: BOLLARDS TO BE LOCATED MIN. 10' FROM EDGE OF TRAVELED WAY/CLEAR ZONE

3 BOLLARD DETAIL
NOT TO SCALE



PLAN VIEW

END VIEW

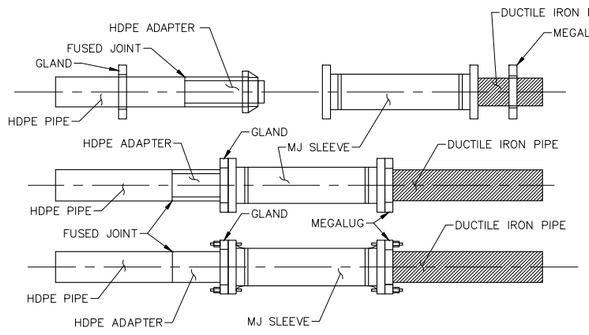


PROFILE

NOTES

1. THIS STANDARD DETAIL IS FOR DEADMAN BLOCKING ONLY.
2. CONCRETE BLOCK SHALL BE PER APWA SPECIFICATION 7-11.3(13), CURRENT EDITION.
3. MAINTAIN 18" MINIMUM COVER OVER THE TOP OF BLOCK.
4. BOTTOM OF BLOCK IS TO BE ON UNDISTURBED SOIL.
5. TRENCH TO BE BACKFILLED WITH CRUSHED ROCK COMPACTED TO FIRM AND UNYIELDING CONDITION ON ALL SIDES OF BLOCK AND A DISTANCE OF 4' MIN. IN FRONT OF BLOCK TO FULL DEPTH OF BLOCK.
6. UPON EXTENSION OF WATER MAIN, SHACKLE RODS ARE TO BE CUT, REMOVE PLUG. CONCRETE BLOCK TO REMAIN IN PLACE.
7. FOR SOIL CONDITIONS NOT SHOWN, BLOCK IS TO BE DESIGNED BY ENGINEER.
8. IF BLOCK CANNOT BE KEYED INTO UNDISTURBED SOIL TO THE SATISFACTION OF THE ENGINEER,
   a) THE BLOCK LENGTH SHALL BE EXTENDED TO PROVIDE AN ADEQUATE KEY OR
   b) CDF SHALL BE USED TO FILL BACK TO NATIVE SOIL OR
   c) THE TRENCH SHALL BE BACKFILLED AND COMPACTED TO FIRM AND UNYIELDING CONDITION A MINIMUM DISTANCE OF 15 FEET IN FRONT OF THE BLOCK TO THE SATISFACTION OF THE DISTRICT ENGINEER.
9. SHACKLE RODS AND NUTS TO BE STAINLESS STEEL OR HOT DIP GALVANIZED WITH ASPHALTIC COATING APPLIED AFTER INSTALLATION.

2 PRESSURE TESTING / FLUSHING CONNECTION
NOT TO SCALE



4 HDPE TO DIP TRANSITION DETAIL
NOT TO SCALE

SIZING TABLE

PIPE DIA	T (min)	H (min)	SHACKLE RODS	REINFORCING
6"	18"	36"	(4) 5/8" dia	#4 @ 10" OC EW
8"	18"	42"	(4) 3/4" dia	#4 @ 12" OC EW
10"	24"	52"	(6) 3/4" dia	#4 @ 12" OC EW
12"	24"	54"	(6) 7/8" or (8) 3/4" dia	#4 @ 8" OC EW
14"	24"	56"	(8) 7/8" or (10) 3/4" dia	#4 @ 6" OC EW
16"	30"	58"	(10) 7/8" dia	#4 @ 5" OC EW

BLOCK SIZES GOOD TO MAXIMUM 300psi TEST PRESSURE

MIN. BLOCK LENGTH (L)

	SOIL CONDITION					
PIPE ø	SOFT CLAY	SILT	SANDY SILT	SAND	SANDY CLAY	HARD CLAY
6"	84"	72"	72"	72"	72"	72"
8"	108"	84"	75"	75"	75"	75"
10"	132"	104"	77"	77"	77"	77"
12"	180"	138"	82"	80"	80"	80"
14"	228"	174"	102"	82"	82"	82"
16"	288"	216"	126"	100"	84"	84"

5 REVERSE THRUST BLOCK DETAIL
NOT TO SCALE

RECORD DRAWINGS

WILSON ENGINEERING
WILSONENGINEERING.COM

BRIAN SMITH — WASHINGTON — 24521 — REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON — 7/31/23

DESIGNED BY	DRAWN BY	CHECKED BY
BMS	JCS	AWL

WASHINGTON

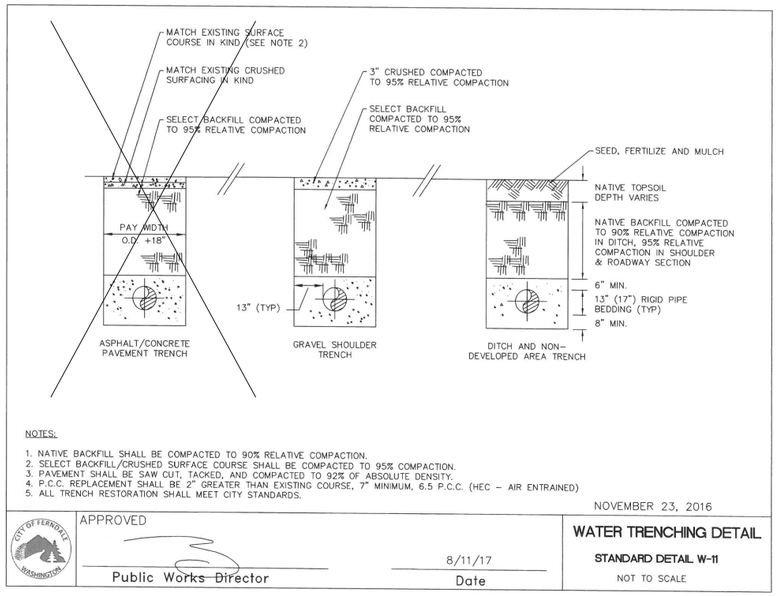
CITY OF FERNDALE
FERNDALE

WATER SYSTEM EMERGENCY INTERTIE

CIVIL DETAILS (2)

DATE	SCALE	JOB NUMBER
5-31-23	AS SHOWN	2021-091

SHEET	PAGE
C5.3	20 OF 25



NOTES:

1. NATIVE BACKFILL SHALL BE COMPACTED TO 90% RELATIVE COMPACTION.
2. SELECT BACKFILL/CRUSHED SURFACE COURSE SHALL BE COMPACTED TO 95% COMPACTION.
3. PAVEMENT SHALL BE SAW CUT, TACKED, AND COMPACTED TO 92% OF ABSOLUTE DENSITY.
4. P.C.C. REPLACEMENT SHALL BE 2" GREATER THAN EXISTING COURSE, 7" MINIMUM, 6.5 P.C.C. (HEC – AIR ENTRAINED)
5. ALL TRENCH RESTORATION SHALL MEET CITY STANDARDS.

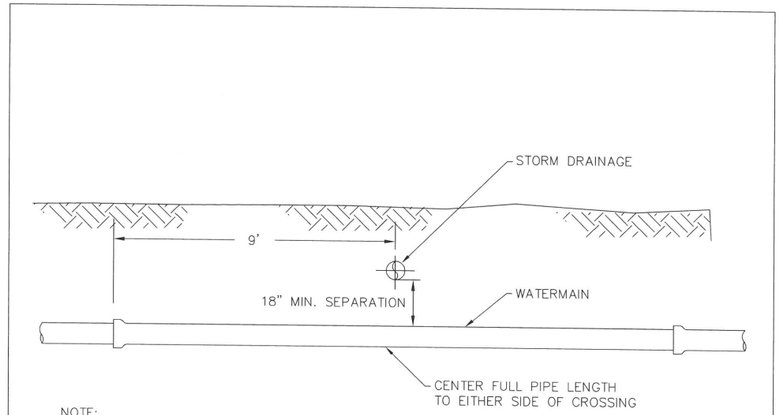
NOVEMBER 23, 2016

APPROVED

Public Works Director — 8/11/17 Date

WATER TRENCHING DETAIL
STANDARD DETAIL W-11
NOT TO SCALE

1 WATER TRENCHING DETAIL
NOT TO SCALE



NOTE:
1. TRENCH DETAIL NOT SHOWN FOR CLARITY.

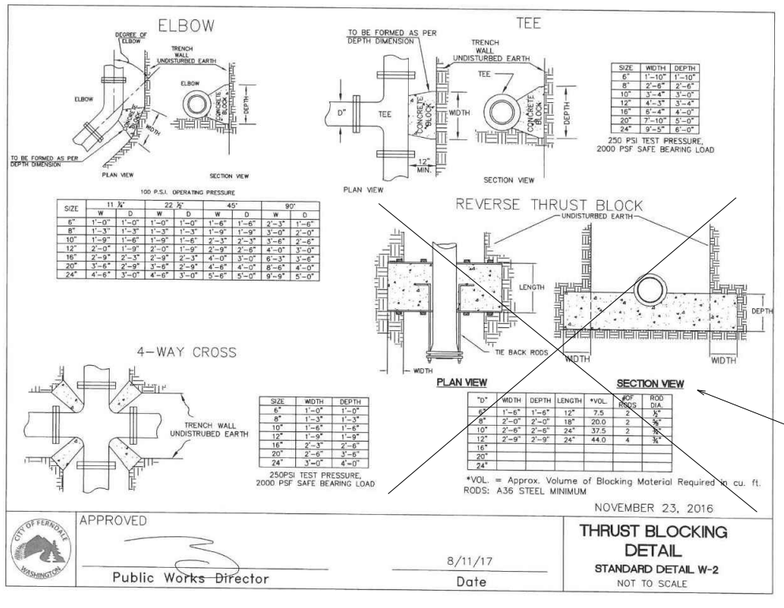
AUGUST 1, 2017

APPROVED

Public Works Director — 8/11/17 Date

WATER CROSSING DETAIL
STANDARD DETAIL W-12
NOT TO SCALE

2 WATER CROSSING DETAIL
NOT TO SCALE



100 P.S.I. OPERATING PRESSURE

SIZE	11 ¼° W	11 ¼° D	22 ½° W	22 ½° D	45° W	45° D	90° W	90° D
6"	1'-0"	1'-0"	1'-0"	1'-0"	1'-6"	1'-6"	2'-3"	1'-6"
8"	1'-3"	1'-3"	1'-3"	1'-3"	1'-9"	1'-9"	3'-0"	2'-0"
10"	1'-9"	1'-6"	1'-9"	1'-6"	2'-3"	2'-3"	3'-6"	2'-6"
12"	2'-0"	1'-9"	2'-0"	1'-9"	2'-9"	2'-6"	4'-0"	3'-0"
16"	2'-9"	2'-3"	2'-9"	2'-3"	4'-0"	3'-0"	6'-3"	3'-6"
20"	3'-6"	2'-9"	3'-6"	2'-9"	4'-6"	4'-0"	8'-6"	4'-0"
24"	4'-6"	3'-0"	4'-6"	3'-0"	5'-6"	5'-0"	9'-9"	5'-0"

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

250 PSI TEST PRESSURE, 2000 PSF SAFE BEARING LOAD

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'-6"
24"	3'-0"	4'-0"

250PSI TEST PRESSURE, 2000 PSF SAFE BEARING LOAD

PLAN VIEW / SECTION VIEW

"D"	WIDTH	DEPTH	LENGTH	*VOL	#OF RODS	ROD DIA
6"	1'-6"	1'-6"	12"	7.5	2	¾"
8"	2'-0"	2'-0"	18"	20.0	2	¾"
10"	2'-6"	2'-6"	24"	37.5	2	¾"
12"	2'-9"	2'-9"	24"	44.0	4	¾"
16"						
20"						
24"						

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

ALTERNATE THRUST BLOCK DETAIL TO BE USED PER (5 / C5.3)

NOVEMBER 23, 2016

APPROVED

Public Works Director — 8/11/17 Date

THRUST BLOCKING DETAIL
STANDARD DETAIL W-2
NOT TO SCALE

3 THRUST BLOCKING DETAIL
NOT TO SCALE

RECORD DRAWINGS

NO.	REVISIONS	BY	DATE

WILSON ENGINEERING
WILSONENGINEERING.COM

BRIAN MARRIN SMITH — STATE OF WASHINGTON — 34521 — REGISTERED PROFESSIONAL ENGINEER — 7/31/23

DESIGNED BY BMS | DRAWN BY JCS | CHECKED BY AWL

CITY OF FERNDALE
WASHINGTON

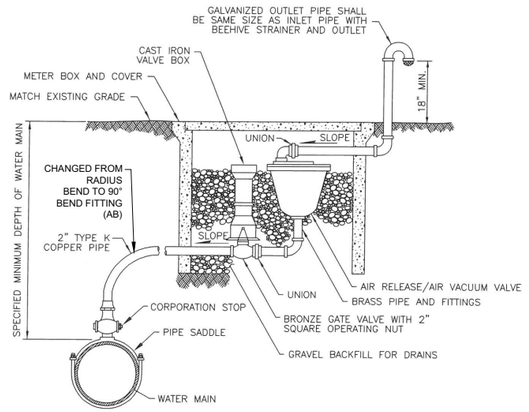
WATER SYSTEM EMERGENCY INTERTIE

CIVIL DETAILS (3)

DATE 5-31-23 | SCALE AS SHOWN | JOB NUMBER 2021-091

SHEET C5.4 | PAGE 21 OF 25

NO.	REVISIONS	BY	DATE

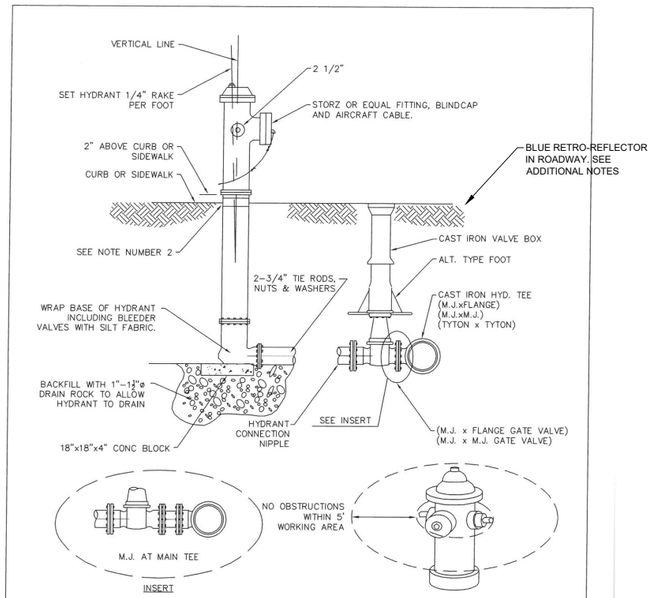


NOTES:
1. THE SIZE OF THE COMBINATION AIR RELEASE/AIR VACUUM VALVE SHALL BE SPECIFIED IN THE CONTRACT. THE PIPING AND VALVES SHALL BE THE SAME SIZE AS THE COMBINATION AIR RELEASE/AIR VACUUM VALVE.
2. LOCATE AT THE HIGH POINT OF THE MAIN, TAP TOP OF MAIN.

NOVEMBER 23, 2016

APPROVED		
Public Works Director	8/11/17 Date	COMBINATION AIR RELEASE AIR VACUUM VALVE ASSEMBLY STANDARD DETAIL W-13 NOT TO SCALE

1 COMBINATION AIR RELEASE/AIR VACUUM VALVE ASSEMBLY
NOT TO SCALE



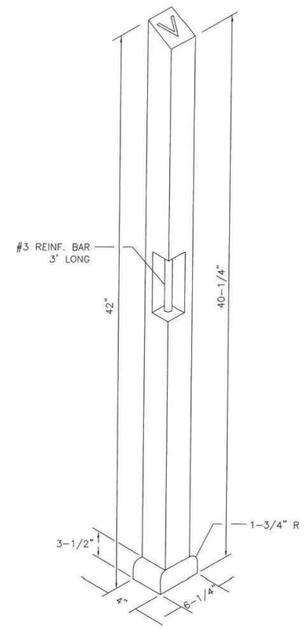
NOTES:
1. FOR CLOSE COUPLED HYDRANTS USE ALL FLANGE TYPE CONNECTIONS.
2. IF HYDRANT RISES THROUGH CONCRETE USE EXPANSION STRIP AROUND HYDRANT BARREL.
3. ALL HYDRANT ASSEMBLIES WILL BE M&H MODEL 129S, 5-1/4" 3-WAY

AUGUST 2, 2017

APPROVED		
Public Works Director	8/11/17 Date	FIRE HYDRANT ASSEMBLY STANDARD DETAIL W-1 NOT TO SCALE

ADDITIONAL NOTES
1. A BLUE-RETROREFLECTORS RPM SHALL BE INSTALLED WHERE A FIRE HYDRANT IS LOCATED WITHIN THE ROADWAY OR STREET RIGHT-OF-WAY.
2. ALL BLUE-RETROREFLECTORS RPMS SHALL BE TWO-WAY MARKERS VISIBLE IN BOTH DIRECTIONS OF TRAVEL.
3. A BLUE-RETROREFLECTORS RPM SHALL BE PLACED AT AN APPROXIMATELY RIGHT ANGLE TO THE FIRE HYDRANT LOCATION.

2 FIRE HYDRANT ASSEMBLY
NOT TO SCALE



NOVEMBER 23, 2016

APPROVED		
Public Works Director	8/11/17 Date	CONCRETE WATER VALVE MARKER POST STANDARD DETAIL W-14 NOT TO SCALE

3 CONCRETE WATER VALVE MARKER POST
NOT TO SCALE

RECORD DRAWINGS

WILSON ENGINEERING
WILSONENGINEERING.COM

BRIAN MARRIN SMITH — STATE OF WASHINGTON — 34521 — REGISTERED PROFESSIONAL ENGINEER — 7/31/23

DESIGNED BY	DRAWN BY	CHECKED BY
BMS	JGS	AWL

CITY OF FERNDALE
WASHINGTON

WATER SYSTEM EMERGENCY INTERTIE

CIVIL DETAILS (4)

DATE	SCALE	JOB NUMBER
5-31-23	AS SHOWN	2021-091

SHEET C5.5

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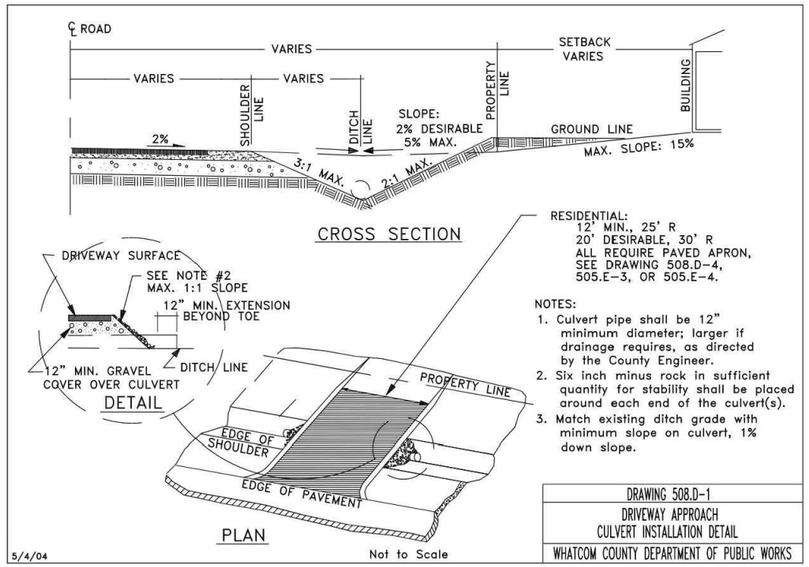
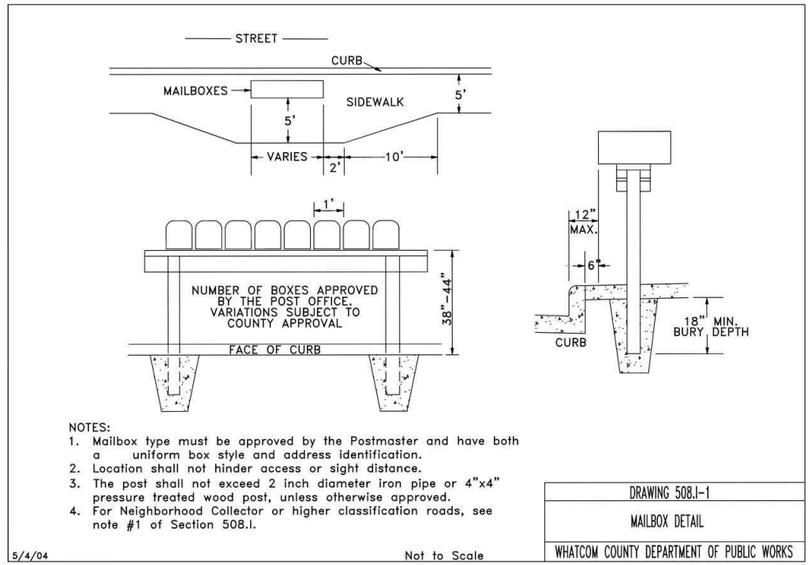
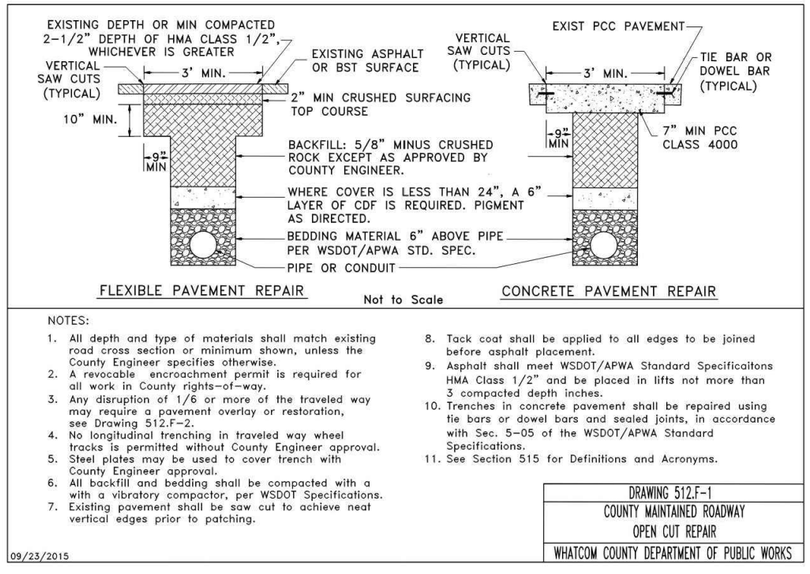
NO.	REVISIONS	BY	DATE



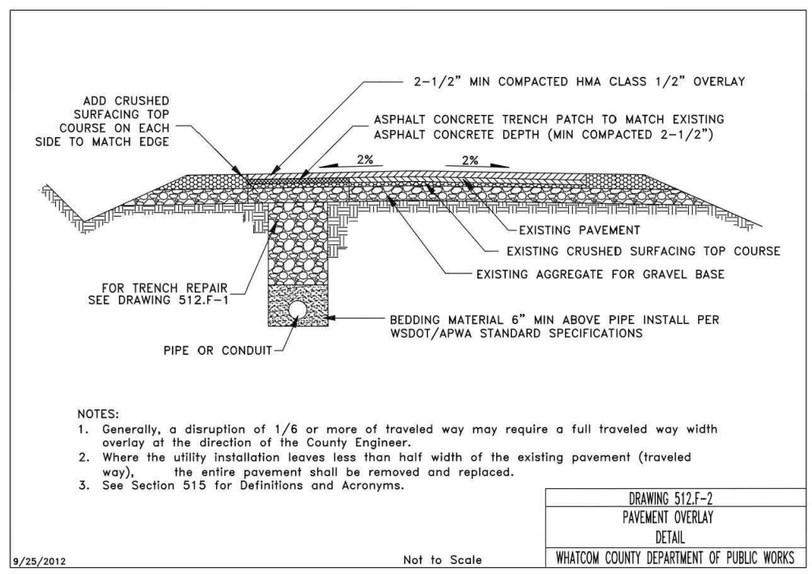
1 DRIVEWAY APPROACH CULVERT INSTALLATION
NOT TO SCALE



2 MAILBOX DETAIL
NOT TO SCALE



3 ROADWAY OPEN CUT REPAIR
NOT TO SCALE



4 PAVEMENT OVERLAY DETAIL
NOT TO SCALE

RECORD DRAWINGS

WILSON ENGINEERING
WILSONENGINEERING.COM

BRIAN MARRIN SMITH — STATE OF WASHINGTON — 34452 — REGISTERED PROFESSIONAL ENGINEER — 7/31/23

DESIGNED BY	DRAWN BY	CHECKED BY
BMS	JCS	AWL

WASHINGTON

CITY OF FERNDALE

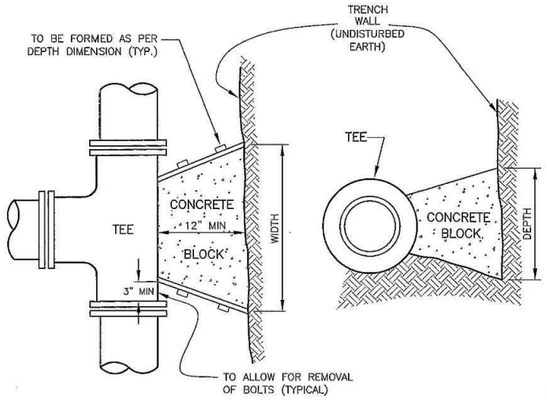
FERNDALE

WATER SYSTEM EMERGENCY INTERTIE

CIVIL DETAILS (5)

DATE	SCALE	JOB NUMBER
5-31-23	AS SHOWN	2021-091

SHEET	PAGE
C5.6	23 OF 25



PLAN VIEW SECTION VIEW

NOTE

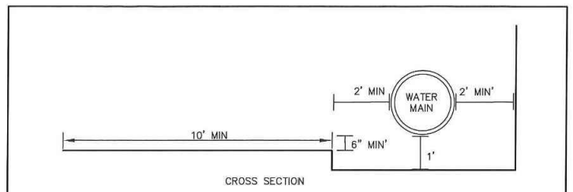
- ALL DIMENSIONS APPLY TO STABLE TRENCH WALLS. UNDER VARIABLE CONDITIONS, SIZE OF THRUST BLOCK SHALL BE DETERMINED BY THE CITY ENGINEER.
- WRAP ALL FITTINGS WITH VISQUINE MIN. 6" PAST FLANGES, PRIOR TO POURING CONCRETE THRUST BLOCK.

100 P.S.I. OPERATING PRESSURE

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

APPROVED	CITY OF BELLINGHAM	DRAWING
City Engineer 1/11/05 Date	THRUST BLOCK–TEE	WA–862

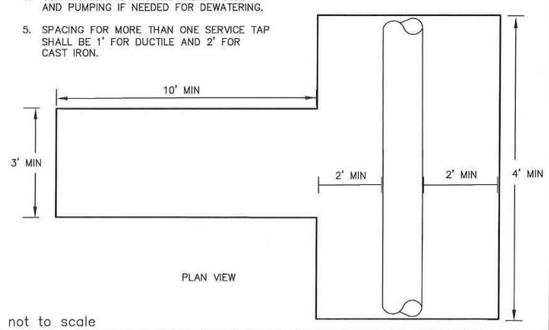
1 THRUST BLOCK – TEE
NOT TO SCALE



CROSS SECTION

NOTES:

1. POTHOLE TAP LOCATION TO IDENTIFY POSSIBLE CONFLICTS WITH BELL JOINTS.
2. 2' MIN CLEARANCE FROM BELL TO TAP LOCATION.
3. CONTRACTOR TO PROVIDE SHORING FOR EXCAVATION OVER 4' DEEP. ADJUST TRENCH DIMENSIONS TO ALLOW FOR MIN CLEARANCE WITH SHORING.
4. CONTRACTOR TO PROVIDE TRENCH SUMP AND PUMPING IF NEEDED FOR DEWATERING.
5. SPACING FOR MORE THAN ONE SERVICE TAP SHALL BE 1' FOR DUCTILE AND 2' FOR CAST IRON.



PLAN VIEW

not to scale

APPROVED	CITY OF BELLINGHAM	DRAWING
City Engineer 26 APR 2017 Date	WATER TAP EXCAVATION 4" AND LARGER	WA–872

2 WATER TAP EXCAVATION
NOT TO SCALE

RECORD DRAWINGS

NO.	REVISIONS	BY	DATE

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BRIAN MARRIN SMITH — STATE OF WASHINGTON — 34521 — REGISTERED PROFESSIONAL ENGINEER — 5/31/23

DESIGNED BY	DRAWN BY	CHECKED BY
BMS	JCS	AWL

WASHINGTON

CITY OF FERNDALE

FERNDALE

WATER SYSTEM EMERGENCY INTERTIE

CIVIL DETAILS (6)

DATE	SCALE	JOB NUMBER
5-31-23	AS SHOWN	2021-091

SHEET C5.7

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NO.	REVISIONS	BY	DATE

STRUCTURAL NOTES

01000 GENERAL

1. EMPLOY GOOD STANDARDS OF WORKMANSHIP THROUGHOUT. PROVIDE ALL MATERIALS AND PERFORM ALL CONSTRUCTION AS INDICATED. SECURE THE APPROVAL OF THE ENGINEER OF RECORD FOR SUBSTITUTIONS.
2. SEE THE SPECIFICATIONS FOR DETAILED MATERIAL AND METHODS NOT CALLED OUT HERE. IN CASE OF CONFLICT BETWEEN APPLICABLE CODES, THESE NOTES, THE SPECIFICATIONS, AND THE DRAWINGS, THE MOST SPECIFIC WILL GOVERN. IN CASES WHERE CONFLICTS EXIST BETWEEN EQUALLY SPECIFIC PROVISIONS, THE MOST STRINGENT WILL GOVERN.
3. VERIFY ALL DIMENSIONS IN THE FIELD, AND UPON DISCOVERY OF ANY DISCREPANCY BETWEEN THE STRUCTURAL DRAWINGS AND FIELD CONDITIONS OR OTHER DRAWINGS, NOTIFY THE PROJECT MANAGER.
4. USE THESE DRAWINGS IN CONJUNCTION WITH THE OTHER DISCIPLINES DRAWINGS. THEY ARE NOT TO STAND ALONE. THESE DRAWINGS AND THE DESIGNS HEREIN ARE FOR USE ON THIS PROJECT ONLY.
5. DO NOT SCALE DRAWINGS.
6. USE TYPICAL DETAILS AND SCHEDULES WHEREVER APPLICABLE. SPECIFIC NOTES AND DETAILS SHALL GOVERN OVER TYPICAL DETAILS, BUT ANY PARTS OF TYPICAL DETAILS NOT SO ALTERED WILL STILL APPLY.
7. THE STRUCTURE AS SHOWN ON THESE DRAWINGS IS DESIGNED TO BE STABLE AND TO RESIST IT'S LOADS IN THE COMPLETED CONDITION. THE DRAWINGS DO NOT INDICATE THE METHOD OR SEQUENCE OF CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR TEMPORARY BRACING AND SHORING, AND FOR SAFETY PROGRAMS, METHODS, AND PROCEDURES OF OPERATION FOR THE CONSTRUCTION OF THE DESIGN.

03100 FORMWORK

1. BUILD FORMWORK TO STANDARDS CALLED OUT IN THE SPECIFICATIONS SO AS TO MINIMIZE FINS OR BULGES.

03200 REINFORCING

1. REINFORCING BARS SHALL BE ASTM A615, GRADE 60
2. BAR DETAILING AND SUPPORT OF REINFORCING BARS SHALL CONFORM TO THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI) MANUAL OF STANDARD PRACTICE. REBAR WHICH IS MARKED "CONTINUOUS" ON DRAWINGS SHALL EXTEND AS FAR AS POSSIBLE AND TERMINATE IN A 12-DIAMETER BEND OR PER TYPICAL DETAILS. SHOP-FABRICATE ALL BENDS.
3. WELDING OF REINFORCING IS NOT PERMITTED.
4. PROVIDE THE MINIMUM COVER FROM FACE OF BAR TO FACE OF CONCRETE, AS DETAILED; PROVIDE NECESSARY ACCESSORIES TO MAINTAIN CLEARANCES.

03300 CONCRETE

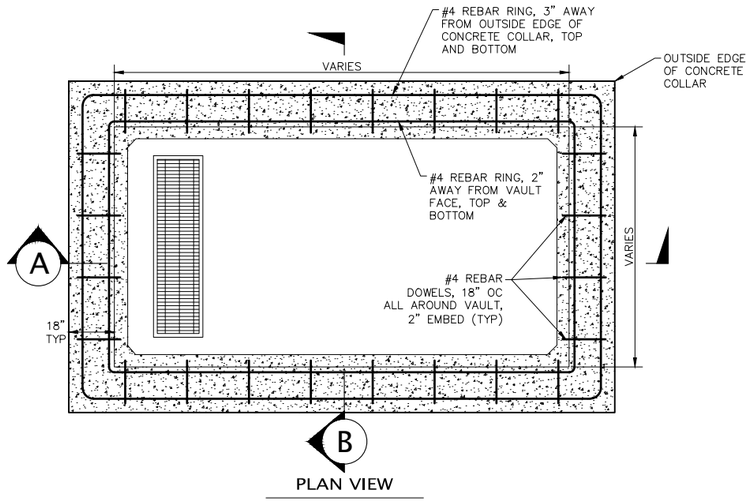
1. MATERIALS SHALL BE:
   AGGREGATE: STONE (NOT GRAVEL) AGGREGATE PER ASTM C33
   CEMENT: TYPE I OR II PER ASTM C150
   ADMIXTURES: AIR: ASTM C260 HRWDA: ASTM C494 TYPE A
   ALL CONCRETE SHALL BE READY-MIX. COMPLY WITH ASTM C 94 AND AS SPECIFIED.
2. PROPERTIES INCLUDING 28-DAY STRENGTHS SHALL BE AS FOLLOWS:

APPLICATION	F'C (PSI)	W/C (MAX)	AGG (MAX)
CONCRETE VAULT COLLAR:	3000	0.55	1"

3. DRYPACK: PORTLAND CEMENT, ASTM C150, TYPE I, AND CLEAN, NATURAL SAND, ASTM C404. MIX AT RATIO OF 1.0 PART CEMENT TO 3.0 PARTS SAND, BY VOLUME, WITH MINIMUM WATER REQUIRED FOR PLACEMENT AND HYDRATION. MINIMUM STRENGTH OF GROUT, 5000 PSI AT 28 DAYS.
4. ALL CONSTRUCTION JOINTS, INCLUDING CONNECTIONS TO PRE-EXISTING CONCRETE, SHALL BE CLEAN AND FREE FROM FOREIGN SUBSTANCES, LOOSE MATERIAL OR LAITANCE. WHERE NOTED ON DRAWINGS AS "ROUGHENED," MECHANICALLY ROUGHEN TO FRACTURE COARSE AGGREGATE ON THE ENTIRE SURFACE TO AT LEAST 1/4" AMPLITUDE AND REMOVE ALL LOOSE MATERIAL. DAMPEN JOINTS FOR AT LEAST ONE-HALF HOUR PRIOR TO CONCRETE PLACEMENT BUT LEAVE NO STANDING WATER.
5. PLACE CONSTRUCTION JOINTS PERPENDICULAR TO MAIN REINFORCEMENT. CONTINUE REINFORCEMENT ACROSS CONSTRUCTION JOINTS. DO NOT PLACE CONSTRUCTION JOINTS IN HORIZONTAL PLANE IN SLABS.
6. HOLD BOLTS, ANCHORS, DOWELS, REINFORCING, AND METAL INSERTS FIRMLY AND ACCURATELY IN PLACE BEFORE CONCRETE IS PLACED; DO NOT INSERT ("STAB") AFTER PLACING CONCRETE.

03150 POST-INSTALLED CONCRETE & REINFORCING

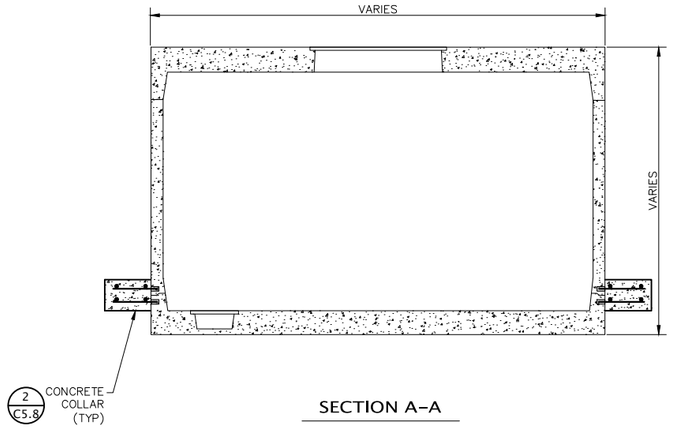
1. POST-INSTALLED ADHESIVE REINFORCING SHALL BE OF STEEL CONFORMING TO THE REQUIREMENTS OF THE APPLICABLE ICC-ES REPORT FOR THE ADHESIVE SYSTEM. MAKE AND CLEAN HOLES WITH EQUIPMENT PER THE ICC-ES REPORT. DO NOT PLACE ANY ANCHOR WITHIN SIX INCHES (6") OF A FREE EDGE OF CONCRETE. SEE THE DRAWINGS FOR EMBEDMENT.
   ACCEPTED ADHESIVE PRODUCTS INCLUDE:
   A. ITW-RAMSET COMPANY: EPCON C6 SYSTEM
   B. HILTI INC: RE-500 SD SYSTEM
   C. SIMPSON STRONG-TIE COMPANY: SET-XP EPOXY
   D. OTHER SYSTEMS WITH WRITTEN APPROVAL OF THE ENGINEER OF RECORD



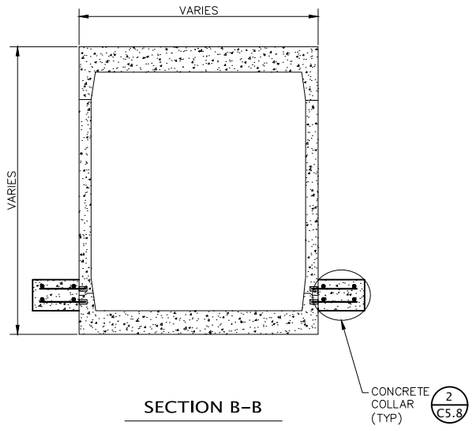
PLAN VIEW

RECORD DRAWING NOTE:

CAST-IN-PLACE ANTI-BUOYANCY CONCRETE COLLAR WAS REPLACED BY 6" WIDE PRE-CAST COLLAR ON VAULT. SEE VAULT SUBMITTAL FOR DETAILS.



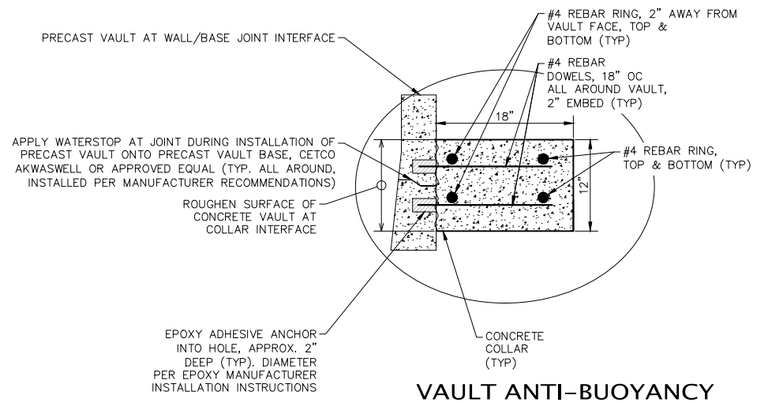
SECTION A-A



SECTION B-B

1 VAULT ANTI-BUOYANCY CONCRETE COLLAR SECTIONS

NOT TO SCALE



2 VAULT ANTI-BUOYANCY CONCRETE COLLAR DETAIL

NOT TO SCALE

RECORD DRAWINGS

WILSON ENGINEERING
WILSONENGINEERING.COM

BRIAN MARRIN SMITH — STATE OF WASHINGTON — 24521 — REGISTERED PROFESSIONAL ENGINEER — 7/31/23

DESIGNED BY	DRAWN BY	CHECKED BY
BMS	JCS	AWL

CITY OF FERNDALE
WATER SYSTEM EMERGENCY INTERTIE
FERNDALE WASHINGTON
CIVIL DETAILS (7)

DATE	SCALE	JOB NUMBER
5-31-23	AS SHOWN	2021-091

SHEET C5.8
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