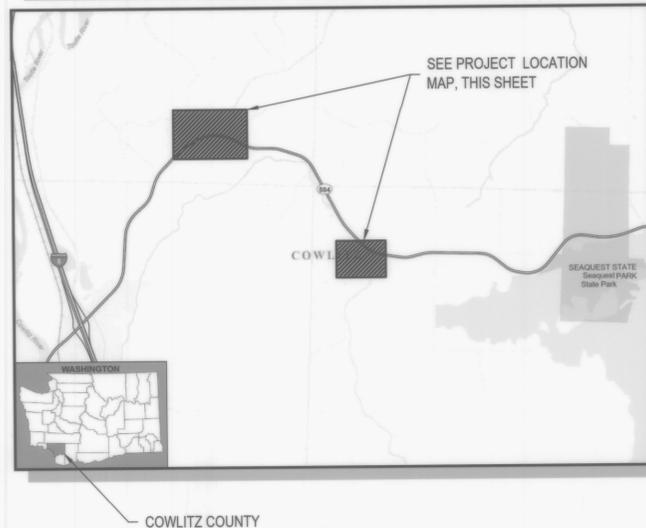


COWLITZ COUNTY

WINTER 2024

TOWER ROAD WATER MAIN AND JUANITA WAY BOOSTER PUMP STATION

PROJECT VICINITY MAP



SUBSURFACE UTILITY LEGEND

THE CLASSIFICATIONS FOR SUBSURFACE UTILITIES ARE OUTLINED AND EXPLAINED IN THE FOLLOWING LIST:

- UTILITY QUALITY LEVEL A.** - PRECISE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE OF (OR VERIFICATION OF PREVIOUSLY EXPOSED AND SURVEYED UTILITIES) AND SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES, USUALLY AT A SPECIFIC POINT. UNLESS OTHERWISE NOTED, QUALITY LEVEL A IS ONLY APPLICABLE AT POTHOLED LOCATIONS ON THE PLANS. AT ALL OTHER AREAS, THE UTILITY SHOULD BE ASSUMED TO BE QUALITY LEVEL B.

POT HOLE LOCATION
- UTILITY QUALITY LEVEL B.** - INFORMATION OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF SUBSURFACE UTILITIES.
- UTILITY QUALITY LEVEL C.** - INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE-GROUND UTILITY FEATURES
- UTILITY QUALITY LEVEL D.** - INFORMATION DERIVED FROM EXISTING RECORDS OR ORAL RECOLLECTIONS

NOTE: THE USE OF THE LINE TYPES PROVIDED ABOVE WAS A PRIMARY METHOD FOR INDICATING THE ACCURACY OF THE UTILITIES SHOWN WITHIN THESE PLANS. WHEN THE SOURCE OF THE INFORMATION WAS UNKNOWN OR THE METHOD FOR LOCATING THE UTILITIES WAS UNAVAILABLE, QUALITY LEVEL D WAS USED AS THE DEFAULT.

DRAWING INDEX

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04	WATER MAIN PLAN AND PROFILE 2	C02
05	WATER MAIN PLAN AND PROFILE 3	C03
06	WATER MAIN PLAN AND PROFILE 4	C04
07	WATER MAIN PLAN AND PROFILE 5	C05
08	WATER MAIN PLAN AND PROFILE 6	C06
09	JUANITA WAY BPS SITE PLAN	C07
10	COWLITZ COUNTY STANDARD DETAILS 1	D01
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12	SITE AND UTILITY DETAILS	D03
13	TOWER ROAD WATER SYSTEM CONNECTION DETAIL	D04
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SECTION AND DETAIL REFERENCES

THE FOLLOWING CONVENTIONS HAVE BEEN USED WITHIN THESE DRAWINGS TO REFER THE READER BETWEEN THE SECTION/DETAIL AND THE PLAN FROM WHICH IT IS REFERENCED.

REFERENCE BUBBLES



PLAN REFERENCE BUBBLE - REFERS READER BACK TO THE PLAN FROM WHICH THE DETAIL OR SECTION ORIGINATED.



DETAIL/SECTION REFERENCE BUBBLE - REFERS READER TO THE DRAWING ON WHICH THE DETAIL OR SECTION IS LOCATED.

WHERE, X = SECTION/DETAIL REFERENCE ID*
X## = DRAWING NUMBER ON WHICH DETAIL ORIGINATED OR RESIDES.

*SECTION/DETAIL REFERENCE ID CONVENTIONS:
SECTIONS OR ELEVATIONS SHOULD HAVE A LETTER REFERENCE ID (A - ZZ) AND DETAILS SHOULD HAVE A NUMERICAL REFERENCE ID (0 - 999)

ABBREVIATIONS

CB	CATCH BASIN	N	NORTHING
CONC	CONCRETE	PE	POLYETHYLENE
CL	CENTERLINE	PROP	PROPOSED
CPEP	CORRUGATED POLYETHYLENE	PVC	POLYVINYL CHLORIDE
CSBC	CRUSHED SURFACING BASE COURSE	R	RIGHT
CSTC	CRUSHED SURFACING TOP COURSE	RT	RIGHT
DIAM	DIAMETER	ROW	RIGHT-OF-WAY
DI	DUCTILE IRON	SPEC	SPECIFICATIONS
DWG	DRAWING	SS	SANITARY SEWER
E	EASTING	SSMH	SANITARY SEWER MANHOLE
ELEV	ELEVATION	ST	STORM
EOP	EDGE OF PAVEMENT	STA	STATION LINE
EX	EXISTING	STD	STANDARD
HMA	HOT MIXED ASPHALT	SY	SQUARE YARDS
L	LEFT	TYP	TYPICAL
LT	LEFT	W	WATER
LF	LINEAR FEET		

**CALL 48 HOURS BEFORE YOU DIG
ONE CALL 811**

**REPORT ALL SPILLS
DEPT. OF ECOLOGY 1-800-258-5990**

CONTACT PERSONNEL

CONTACT	AGENCY	PHONE
CHRIS ANDREWS, PE	COWLITZ COUNTY PUBLIC WORKS	(360) 577-3030
DAVE MATZ, PE	RH2 ENGINEERING	(253) 327-1521
PAVEL PISARCHUK	COWLITZ PUD (POWER)	(360) 501-9549
AARON PARKER	WILLIAMS PIPELINE (NATURAL GAS PIPELINES)	(360) 667-8997
DEAN CHRISTIANSEN	OLYMPIC PIPELINE CO. (OIL PIPELINE)	(360) 957-6640
LUMEN	LUMEN (FIBER OPTIC)	(888) 678-8080 (564) 888-2024

APPROVED BY:

Susan Eugenis
COUNTY ENGINEER

DATE: November 26, 2024



EXISTING LEGEND

	WATER METER
	WATER GATE VALVE
	WATER VAULT
	STORM DRAIN MANHOLE
	CATCH BASIN
	CULVERT DAYLIGHT
	TELEVISION PEDESTAL
	PEDESTAL
	TELEVISION VAULT
	UTILITY POLE
	GUY ANCHOR
	POWER TRANSFORMER
	POWER VAULT/JUNCTION BOX
	POWER METER
	NATURAL GAS VENT
	SIGN
	TREE (CONIFER)
	TREE (DECIDUOUS)
	BOLLARD
	MAILBOX
	BOULDER
	UNDERGROUND CABLE
	OVERHEAD CABLE
	UNDERGROUND TELEPHONE
	UNDERGROUND FIBER OPTICS
	NATURAL GAS
	PETROLEUM
	UNDERGROUND POWER
	OVERHEAD POWER
	STORM DRAIN CULVERT
	STORM DRAIN DITCH
	WATER LINE
	PROPERTY LINE
	RIGHT OF WAY CENTER LINE
	RIGHT OF WAY LINE
	BUILDING EDGE
	ROADWAY CURB
	GRAVEL ROAD EDGELINE
	GUARDRAIL
	FENCE
	PAINTED STRIPING
	ROADWAY ASPHALT AREA
	CONCRETE AREA
	GRAVEL AREA

PROPOSED LEGEND

	WATER MAIN
	FIRE HYDRANT
	THRUST BLOCK
	MECHANICAL JOINT FITTING
	CAP
	TAPPING TEE ASSEMBLY
	CONNECTION TO EXISTING
	PAVEMENT RESTORATION
	GRAVEL RESTORATION

SURVEY NOTES

THE PURPOSE OF THIS SURVEY WAS TO PROVIDE TOPOGRAPHIC SURVEY AND RIGHT OF WAY RESOLUTION FOR A PORTION OF SOUTH SILVER LAKE ROAD, KROLL ROAD, TOWER ROAD, SCHAFFRAN ROAD, AND OTHER PROPERTY, FOR PURPOSES OF DESIGNING NEW WATER SYSTEM IMPROVEMENTS.

VERTICAL DATUM:
ELEVATION DATUM: NAVD88 (DERIVED FROM OPUS AS BELOW)
BENCHMARK (SOUTH SILVER LAKE ROAD): CP #7
BENCHMARK (KROLL ROAD AND TOWER ROAD): CP #12
LOCATION: AS SHOWN HEREON
ELEVATION (SOUTH SILVER LAKE ROAD): 603.15'
ELEVATION (KROLL ROAD AND TOWER ROAD): 482.80'

BASIS OF BEARINGS/HORIZONTAL COORDINATES/CONTROL SCHEME:
WASHINGTON STATE PLANE, SOUTH ZONE (SPC 4602 WA S) - SEE BELOW:

HORIZONTAL COORDINATES AND BASIS OF BEARINGS ARE WASHINGTON STATE PLANE (SOUTH ZONE) - REFERENCE FRAME: NAD83 (2011) (EPOCH:2010.0000), US SURVEY FEET. ALL DISTANCES ARE GRID, AND WERE DETERMINED FROM NGS OPUS SOLUTIONS, WHICH WERE DERIVED FROM 2 HOUR MINIMUM GPS OBSERVATIONS ON CONTROL POINTS 1, 4, 6, 7, 10, AND 11 (SHOWN HEREON), UTILIZING THE FOLLOWING EXISTING BASE STATIONS:

PID	DESIGNATION	LATITUDE	LONGITUDE
AJ7204	CPXF CHARLES PACK CORS MONUMENT	N46°50'24.291"	W122°15'23.407"
AJ7210	TWHL TWHL_PNGA_WA2001 CORS GRP	N47°00'57.244"	W122°55'22.290"
DE9433	WDBN WOODBURN COOP CORS ARP	N45°10'15.096"	W122°52'12.130"
DF4068	ZSE1 SEATTLE WAAS 1 CORS ARP	N47°17'13.161"	W122°11'18.076"
DG8346	P420 FANTASYFD_WA2004 CORS GRP	N46°35'18.952"	W122°51'58.733"
DG8349	P432 PACKWOODF_WA2004 CORS GRP	N46°37'22.265"	W121°40'59.567"
DG8893	NWBG ADEPAZ COOP CORS ARP	N45°18'00.172"	W122°58'31.850"
DH4131	P698 MSH_SESLPEWA2004 CORS GRP	N46°10'24.461"	W122°09'38.141"
DH5821	P693 MSH_NWDOMEWA2004 CORS GRP	N46°12'37.142"	W122°12'08.394"
DK4153	P446 KELSO_AIR_WA2007 CORS GRP	N46°08'58.389"	W122°53'33.975"
DN2111	JIME JIM ELAM CORS ARP	N45°31'23.214"	W122°59'25.841"
DN6068	GRMD GRAND MOUND CORS GRP	N46°47'43.735"	W123°01'21.288"

CONTROL POINTS 1, 4, 6, 7, 10, AND 11 WERE THEN TIED TOGETHER USING STANDARD TRAVERSE AND RTK TECHNIQUES, THE RESULTS OF WHICH WERE ADJUSTED TOGETHER IN A WEIGHTED LEAST SQUARES ADJUSTMENT, UTILIZING STARNET SOFTWARE. AN AVERAGE PROJECT COMBINED SCALE FACTOR (0.9999023533) WAS CALCULATED IN ORDER TO COMPARE RECORD (GROUND) DIMENSIONS TO MEASURED (GRID) DIMENSIONS. 1000.0' GRID = 1000.10' GROUND. THE CONVERGENCE ANGLE IS -1.72152222" AT CONTROL POINT NUMBER 6, PER OPUS REPORT.

RELATIVE VERTICAL POSITIONAL ACCURACY:
THE CONTOURS SHOWN HEREON ARE FROM DIRECT FIELD OBSERVATIONS. THE RELATIVE VERTICAL POSITIONAL ACCURACY OF THE CONTOURS AND SPOT ELEVATIONS SHOWN HERE ON MEETS THOSE STANDARDS DEFINED BY THE NATIONAL SOCIETY OF PROFESSIONAL SURVEYORS (NSPS) PER THAT CERTAIN DOCUMENT ENTITLED "NSPS MODEL STANDARDS FOR TOPOGRAPHIC SURVEYS" (LABELED AS SECTION E), APPROVED 3/12/2002. THOSE STANDARDS ARE AS FOLLOWS FOR A 1' CONTOUR MAP:

CONTOUR LINES AT 1' INTERVALS: ±0.65' VERTICAL POSITIONAL ACCURACY
SPOT ELEVATIONS FOR WELL DEFINED PLANIMETRIC FEATURES: ±0.10' VERTICAL POSITIONAL ACCURACY

METHOD OF SURVEY:
FIELD SURVEYS WERE ACCOMPLISHED UTILIZING STANDARD CLOSED TRAVERSE AND RADIAL SURVEY METHODS, AS WELL AS STANDARD GLOBAL POSITIONING SYSTEM (GPS) REAL TIME KINEMATIC (RTK) AND STATIC GPS METHODS. MEASUREMENTS WERE PERFORMED USING A TRIMBLE S7 3-SECOND TOTAL STATION AND TRIMBLE R12i, SURVEY GRADE GPS UNITS. THE RELATIVE HORIZONTAL ACCURACY FOR CONTROL AND FOUND MONUMENTS SHOWN ON THIS SURVEY MEETS THE STANDARDS OF 0.07 FEET PLUS 200 PARTS PER MILLION AT THE NINETY-FIVE PERCENT CONFIDENCE LEVEL PER WAC332-130-085. A LEAST SQUARES ADJUSTMENT OF THE DATA WAS PERFORMED IN ORDER TO DETERMINE THAT IT MET THIS STANDARD.

WATER MAIN CONSTRUCTION NOTES

- EXISTING UTILITIES HAVE NOT BEEN POTHOLED TO IDENTIFY LOCATION, MATERIAL, SIZE OR GEOMETRY. UTILITY LOCATIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL POTHOLE AT ALL UTILITY CROSSINGS AND CONNECTION LOCATIONS PRIOR TO PURCHASE OR INSTALLATION OF ANY PIPE OR FITTINGS.
- WATER MAIN SHALL BE DISINFECTED, PRESSURE TESTED, FLUSHED, AND PASS BACTERIOLOGICAL TESTING PRIOR TO BEING PUT INTO SERVICE.
- WATER MAIN SHALL BE AWWA C151 CLASS 52 DI PIPE WITH ALL FITTINGS RESTRAINED.
- REFER TO COWLITZ COUNTY STANDARD DETAILS FOR GENERAL AND STREET CONSTRUCTION NOTES. ALL PAVEMENT RESTORATION SHALL BE PER APPLICABLE COUNTY STANDARDS.
- PROVIDE TRAFFIC CONTROL PER MUTCD STANDARDS AND COUNTY APPROVED TRAFFIC CONTROL PLAN.
- CONTRACTOR TO COORDINATE WITH COWLITZ PUD TO HAVE UTILITY POLES TEMPORARILY SUPPORTED AS REQUIRED TO PREVENT DAMAGE DURING TRENCH EXCAVATION. CONTRACTOR TO REPLACE GUY WIRES WHERE DISTURBED.
 - PROJECT CONTACT: PAVEL PISARCHUK, (360) 501-9549
- CLEAR 5 FEET MINIMUM ON EACH SIDE OF THE PROPOSED PIPE IN VEGETATED AREAS.
- DISTURBED AREAS OUTSIDE OF PAVEMENT TO BE RESTORED BY SEEDING, SEE DETAIL ON DWG NO. D03.
- SERVICE LINE ABANDONMENT SHALL OCCUR AT THE CONNECTION TO THE EXISTING MAIN BY CLOSING AND CAPPING THE CORP STOP.
- EXISTING SERVICE LINE MATERIAL AND SIZE WILL VARY. CONTRACTOR TO POTHOLE EXISTING SERVICE LINES TO DETERMINE SIZE AND MATERIAL. CONTRACTOR TO PROVIDE FITTINGS AS REQUIRED TO MAKE NEW CONNECTIONS AND ABANDON EXISTING SERVICE LINES.

GENERAL NOTES

- ALL WORKMANSHIP, CONSTRUCTION AND MATERIALS SHALL BE PERFORMED OR SUPPLIED IN ACCORDANCE WITH THESE SPECIAL PROVISIONS, PLANS, COWLITZ COUNTY STANDARD DETAILS, AND THE WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, 2024 EDITION, AS ISSUED BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION AND THE AMERICAN PUBLIC WORKS ASSOCIATION, WHICH IS HERINAFTER REFERRED TO AS THE STANDARD SPECIFICATIONS.
- A PRECONSTRUCTION CONFERENCE IS REQUIRED PRIOR TO CONSTRUCTION, AND 48 HOURS ADVANCE NOTIFICATION PRIOR TO ACTUAL START OF WORK IS REQUIRED.
- THE EXISTING TOPOGRAPHIC AND PHYSICAL FEATURES SHOWN ON THESE PLANS ARE BASED ON A FIELD SURVEY BY THE COUNTY, RECORD DRAWINGS, AND FIELD RECONNAISSANCE BY RH2 ENGINEERING.
- THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THE PLANS WERE OBTAINED FROM AVAILABLE RECORDS BUT HAVE NOT BEEN EXPOSED AND MEASURED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING WORK TO AVOID DAMAGE OR DISTURBANCE, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ALL UNDERGROUND UTILITIES. IT IS UNDERSTOOD THAT OTHER ABOVE GROUND AND UNDERGROUND FACILITIES NOT SHOWN ON THE PLANS MAY BE ENCOUNTERED DURING THE COURSE OF THE WORK.
- THE CONTRACTOR SHALL PROTECT BUILDINGS, FENCES, APPURTENANCES, ABOVE GROUND UTILITIES, AND OTHER PROPERTY ADJACENT TO ALL CONSTRUCTION AREAS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR REPAIRING ALL DAMAGE CAUSED BY CONSTRUCTION ACTIVITIES.
- IN ACCORDANCE WITH THE DEPARTMENT OF ECOLOGY AIR QUALITY STANDARDS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING ALL FUGITIVE DUST THAT MAY BE GENERATED BY THE CONSTRUCTION PROJECT.
- THE CONTRACTOR SHALL CONTAIN WORK TO WITHIN RIGHT-OF-WAY OR THE CONSTRUCTION LIMITS AS ILLUSTRATED IN THE PLANS.
- THE CONTRACTOR SHALL SECURE NECESSARY PERMITS PRIOR TO STARTING CONSTRUCTION. COWLITZ COUNTY WILL OBTAIN SOME OF THE REQUIRED PERMITS. SEE SPECIAL PROVISIONS FOR FURTHER INFORMATION REGARDING PERMITS.
- ONSITE EROSION CONTROL MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND BE IN PLACE PRIOR TO CONSTRUCTION. ANY PROBLEMS OCCURRING BEFORE FINAL ACCEPTANCE BY COWLITZ COUNTY SHALL BE CORRECTED BY THE CONTRACTOR. UPON FINAL ACCEPTANCE BY COWLITZ COUNTY, OR AS OTHERWISE DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY, NON-DEGRADABLE EROSION CONTROL MEASURES.
- ANY REVISIONS TO PLANS MUST BE MADE BY THE ENGINEER AND APPROVED BY COWLITZ COUNTY PRIOR TO ANY IMPLEMENTATION IN THE FIELD.
- ALL PAVEMENT MARKINGS AND SIGNING SHALL CONFORM TO THE REQUIREMENTS OF THE MUTCD.
- A COPY OF THE APPROVED PLANS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
- WHERE NEWLY CONSTRUCTED PAVING MEETS EXISTING PAVING, THE CONTRACTOR SHALL SAW CUT OR OVERLAY AND FEATHER NEW PAVEMENT TO PROVIDE A SMOOTH TRANSITION FROM EXISTING TO PROPOSED PAVING. APPLICATION OF A THIN TACK COAT OF EMULSIFIED ASPHALT SHALL BE APPLIED TO INSURE PROPER BONDING.
- THE COMPLETED SURFACE OF ALL COURSES SHALL BE OF UNIFORM TEXTURE, SMOOTH, UNIFORM AS TO CROWN AND GRADE, AND FREE FROM DEFECTS OF ALL KINDS. THE COMPLETED SURFACE OF THE WEARING COURSE SHALL NOT VARY MORE THAN 1/8 INCH FROM THE LOWER EDGE OF A 10-FOOT STRAIGHTEDGE PLACED ON THE SURFACE PARALLEL TO THE CENTERLINE. THE TRANSVERSE SLOPE OF THE COMPLETED SURFACE OF THE WEARING COURSE SHALL VARY NOT MORE THAN 1/4 INCH IN 10- FEET FROM THE RATE OF TRANSVERSE SLOPE SHOWN ON THE PLANS.
- MATERIALS SAMPLING AND TESTING SHALL BE AT A FREQUENCY AND MAGNITUDE AS SPECIFIED IN THE STANDARD SPECIFICATIONS OR DETERMINED BY THE ENGINEER. A PRIVATE AND INDEPENDENT TESTING LABORATORY SHALL PERFORM TESTING AND SAMPLING. CERTIFIED TEST REPORTS SHALL BE FURNISHED FOR ALL TESTS PERFORMED BY PRIVATE TESTING LABORATORIES. COWLITZ COUNTY WILL BE RESPONSIBLE FOR ACCEPTANCE TESTING.

SURVEY CONTROL POINTS

POINT NUMBER	NORTHING	EASTING	POINT DESCRIPTION
1	363388.88	1037614.80	SET IRON ROD
2	363728.23	1038023.09	SET IRON ROD
3	363851.43	1038508.50	SET IRON ROD
12	363857.21	1038889.17	SET IRON ROD
13	364276.27	1039731.79	SET MAG NAIL



SIGNED: 10/18/2024



SIGNED: 10/18/2024

COWLITZ COUNTY
TOWER ROAD WATER MAIN AND
JUANITA BOOSTER PUMP STATION

GENERAL NOTES



NO.	DATE	DESCRIPTION	BY	REVIEW

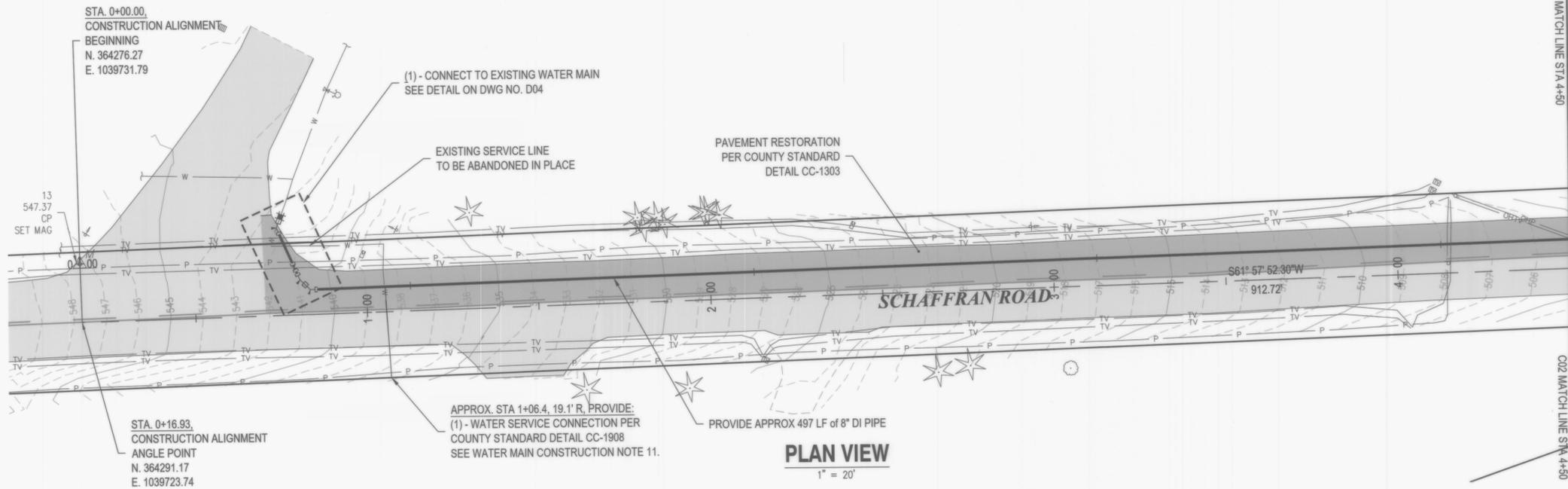
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DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

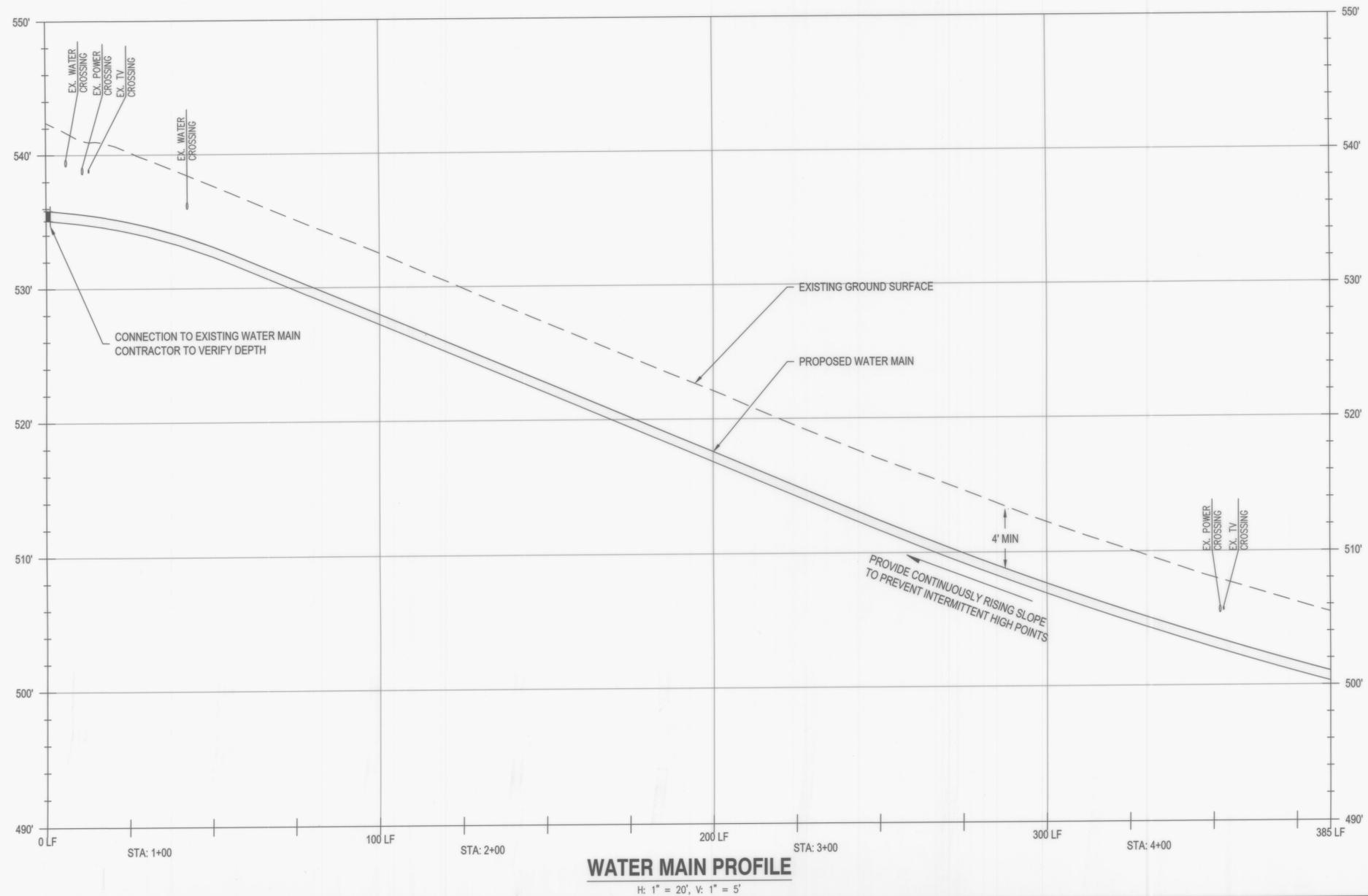
DWG NO.: G01 SHEET NO.: 02 23

ENGINEER: JTR SWF DATE: Oct 21, 2024 CLEN: CC JOB NO.: 22-0177
REVIEWED: DJM PLOT DATE: Oct 21, 2024 FILENAME: TRWMP-COV.DWG

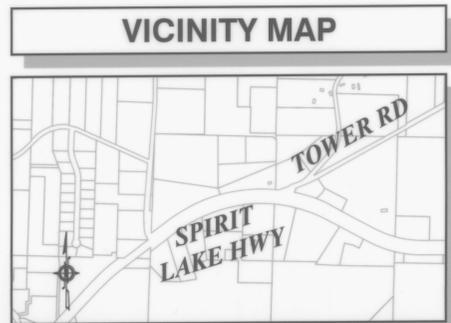
REVISIONS



PLAN VIEW
1" = 20'



WATER MAIN PROFILE
H: 1" = 20', V: 1" = 5'



COWLITZ COUNTY
TOWER ROAD WATER MAIN AND
JUANITA BOOSTER PUMP STATION
WATER MAIN PLAN AND PROFILE 1



NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"
DWG NO.: C01 SHEET NO.: 03 OF 23

ENGINEER: JTR
REVIEWED: DJM
DATE: Oct 21, 2024
PROJECT: TRWM-P-WATERP DWG
CLIENT: CC
REVISIONS

COWLITZ COUNTY
TOWER ROAD WATER MAIN AND
JUANITA BOOSTER PUMP STATION
WATER MAIN PLAN AND PROFILE 2

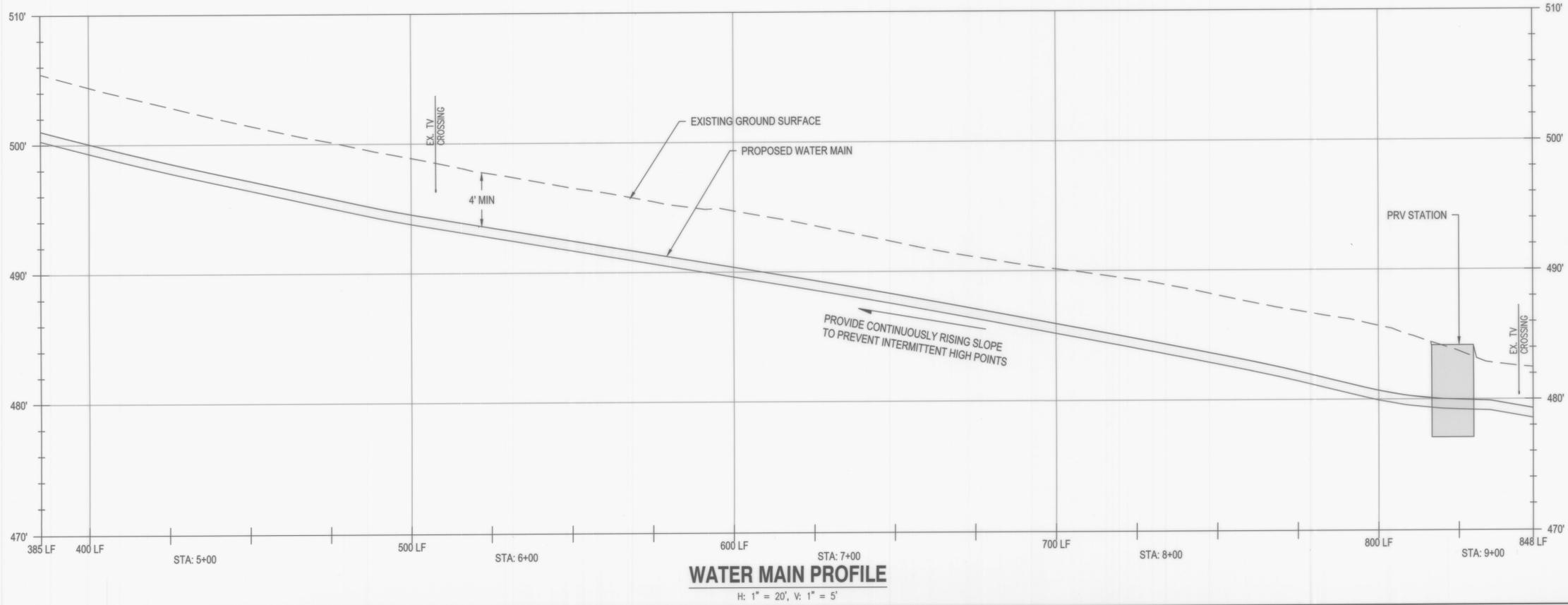
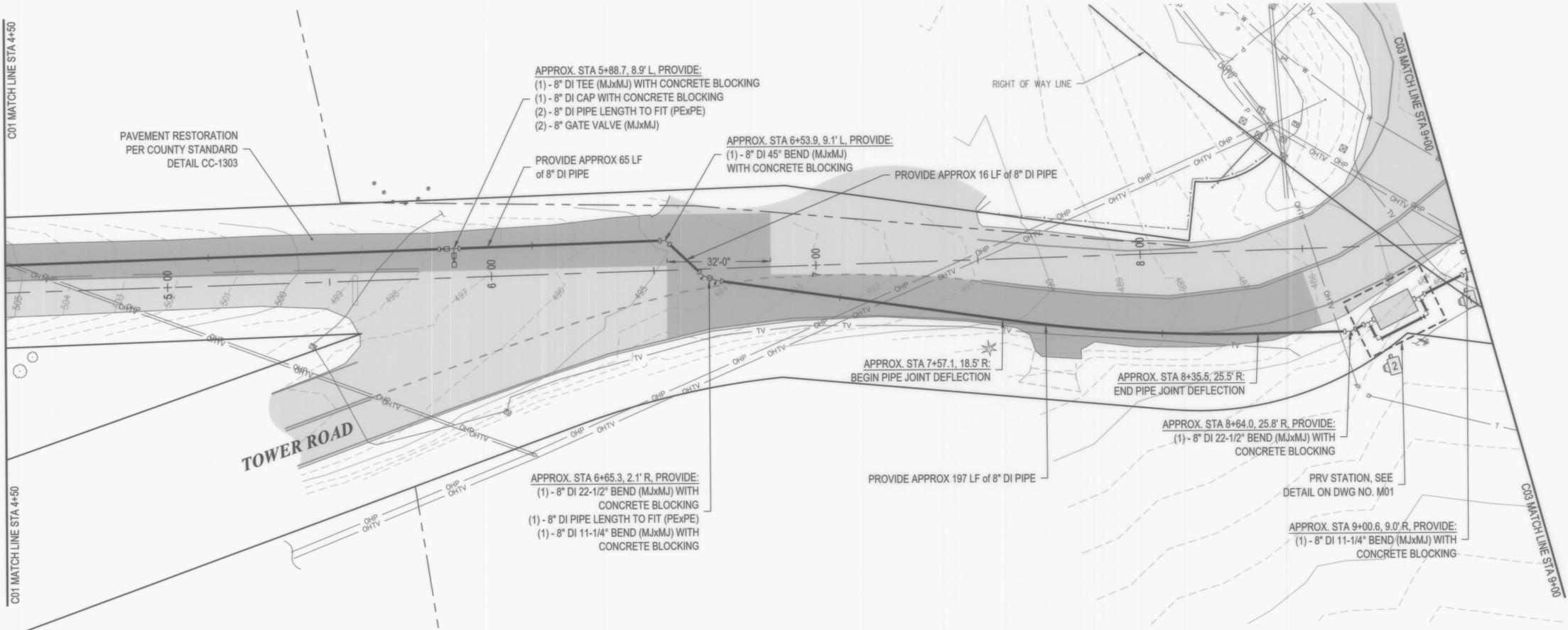
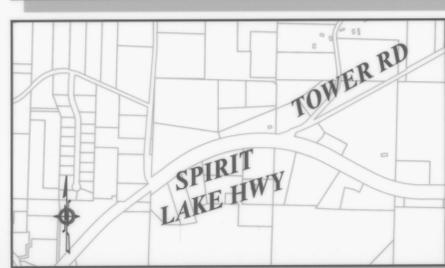


SITE PHOTO 1



SITE PHOTO 2

VICINITY MAP



NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: C02 SHEET NO.: 04 23

CLIENT: CC
 REVISIONS
 DATE: Oct 21, 2024
 PROJECT: TRWM-P-WATERP DWG



SIGNED: 10/18/2024



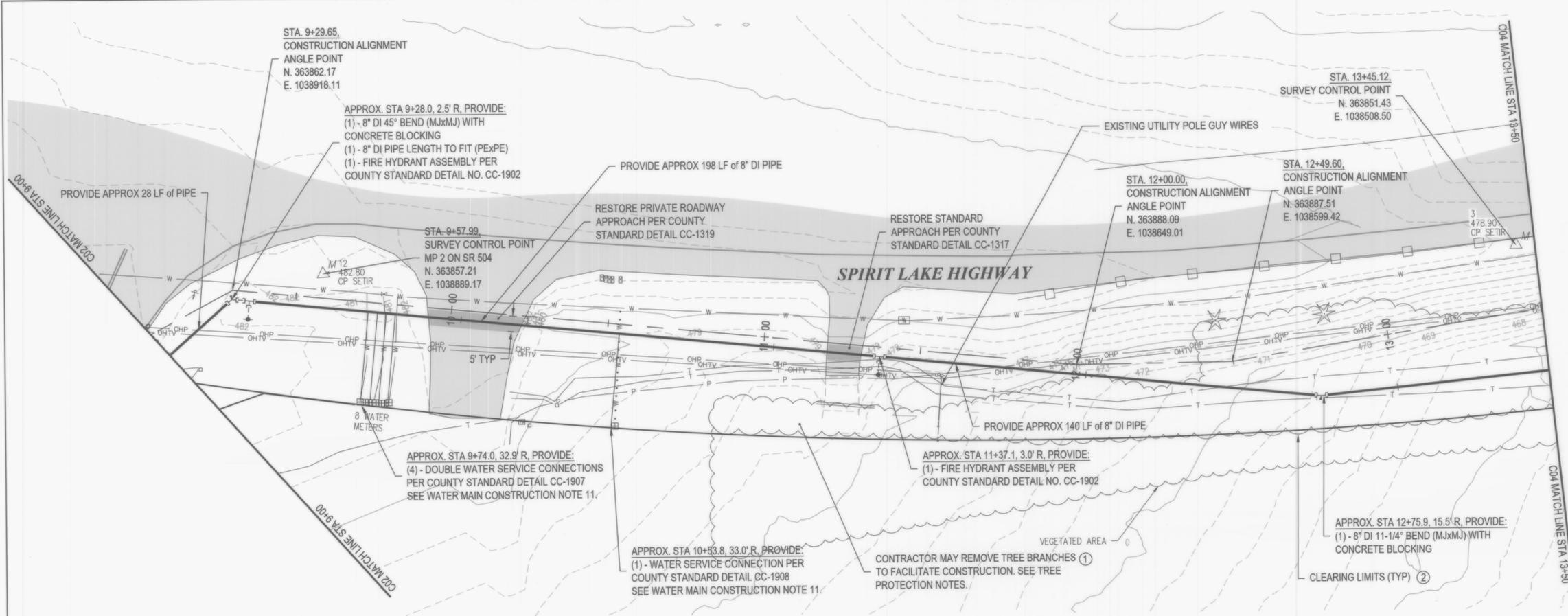
SIGNED: 10/18/2024

**COWLITZ COUNTY
TOWER ROAD WATER MAIN AND
JUANITA BOOSTER PUMP STATION
WATER MAIN PLAN AND PROFILE 3**

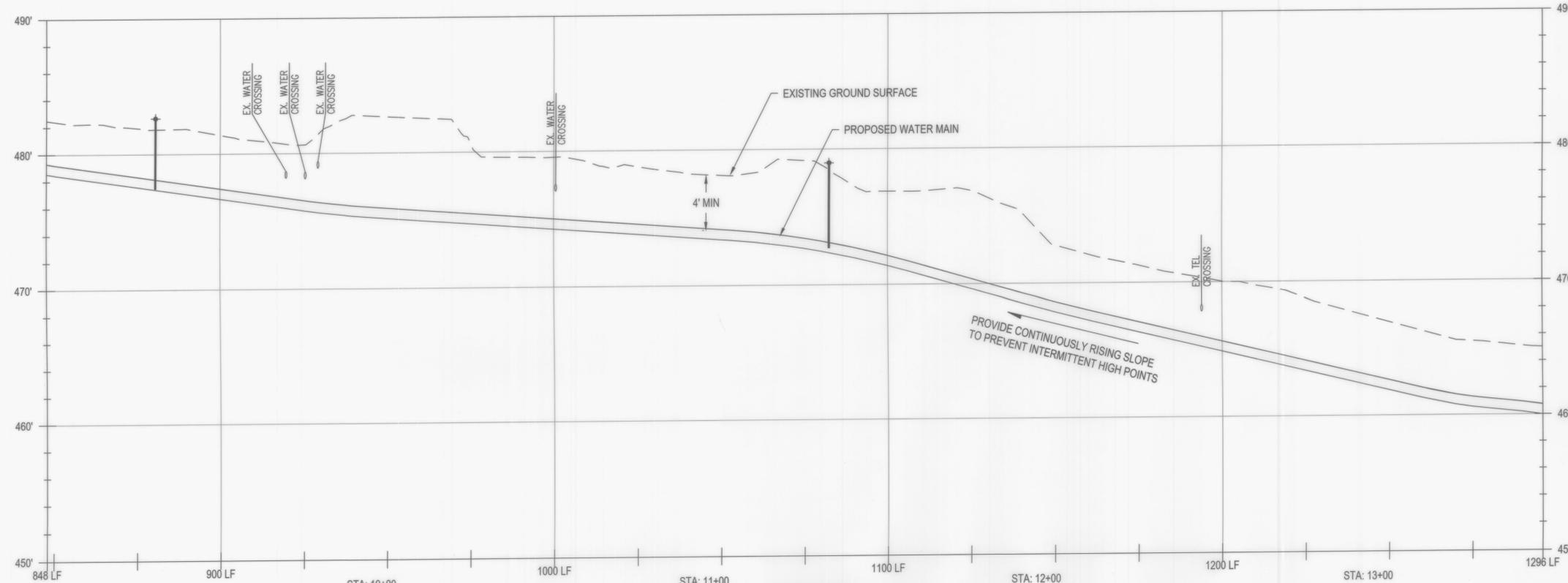


NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"
DWG NO.: C03 SHEET NO.: 05 23



PLAN VIEW
1" = 20'



WATER MAIN PROFILE
H: 1" = 20', V: 1" = 5'

TREE PROTECTION NOTES

- TREE PROTECTION NOTES APPLICABLE FROM STA: 11+75 TO STA 16+25.
- CONTRACTOR MAY LIMB TREE BRANCHES WITHIN WSDOT RIGHT-OF-WAY TO ALLOW CONSTRUCTION ACCESS. LIMBING OF TREE BRANCHES SHALL NOT EXCEED 20' MAXIMUM HEIGHT, MEASURED FROM THE GROUND SURFACE AT THE TRUNK OF THE TREE.
 - CONTRACTOR SHALL PROTECT TREE ROOTS GREATER THAN 3" IN DIAMETER FROM STA 11+75 TO STA 16+25. REMOVAL OF ANY TREE ROOT GREATER THAN 3" SHALL BE APPROVED BY COWLITZ COUNTY.
 - A QUALIFIED ARBORIST SHALL BE ONSITE FOR ALL CONSTRUCTION FROM STA 11+75 TO STA 16+25. THE ARBORIST SHALL DECIDE WHICH ROOTS SHALL REMAIN TO ENSURE EXISTING TREES ARE PROTECTED.
 - CONTRACTOR TO HAND-DIG ALL EXCAVATION FROM STA 11+75 TO STA 16+25. ROOTS SHALL BE PROTECTED TO MAXIMUM EXTENT PRACTICABLE.
 - CONTRACTOR TO BACKFILL W/ NATIVE MATERIAL FROM STA 11+75 TO STA 16+25 AND HAND-COMPACT TO A FIRM CONDITION.

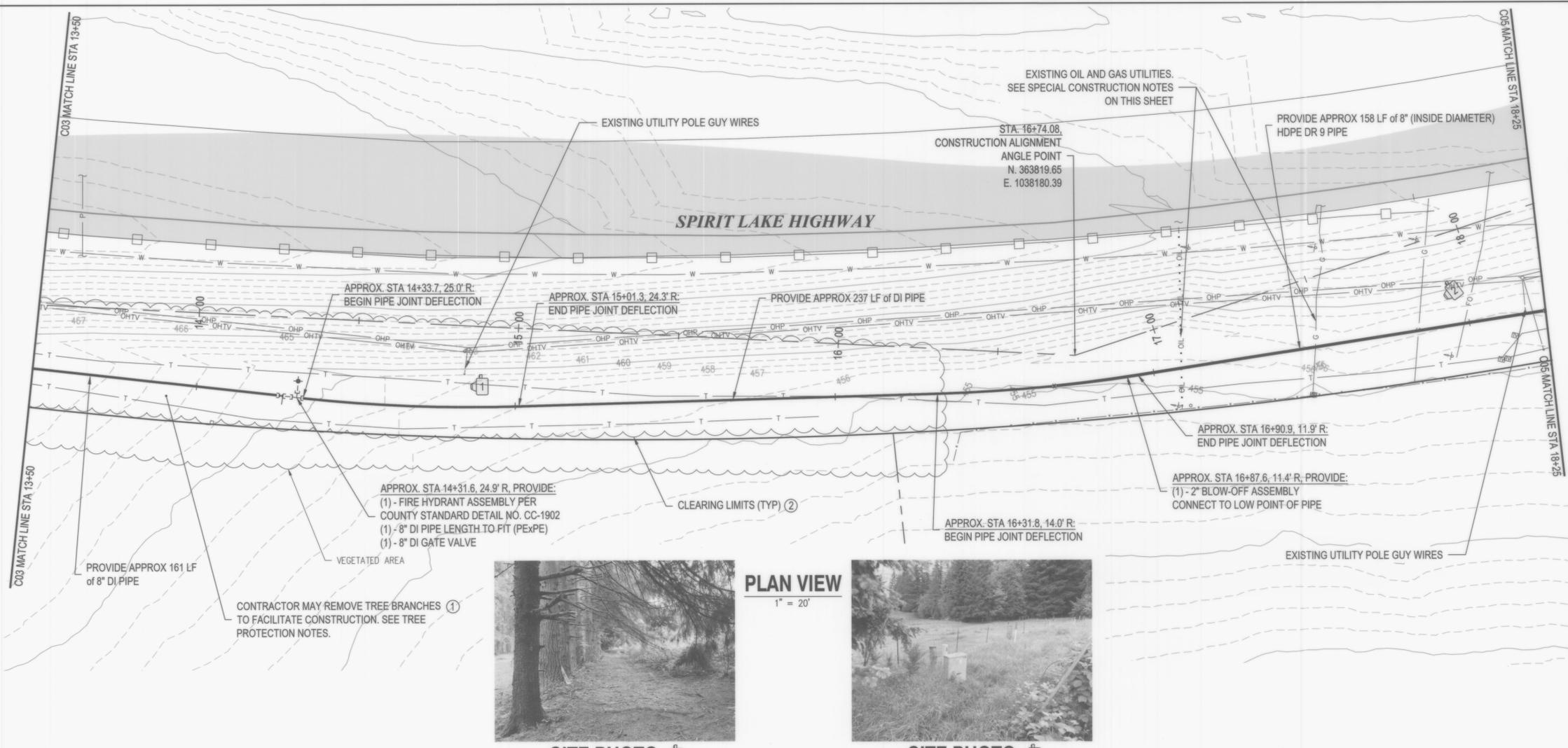
VICINITY MAP



SPECIAL CONSTRUCTION NOTES

SPECIAL CONSTRUCTION NOTES APPLICABLE FROM APPROX. STA: 16+90 TO STA: 18+00.

- NO TRACK TYPE CONSTRUCTION EQUIPMENT SHALL BE PERMITTED TO PIVOT OR TURN DIRECTLY OVER THE TOP OF FUEL/OIL/GAS PIPELINES.
- A SCRAPER OR PAN TYPE TRACTOR SHALL NOT BE USED FOR REMOVAL OF SOIL WITHIN TEN (10) FEET OF THE CENTERLINE OF FUEL/OIL/GAS PIPELINES. RUBBER TIRE OR SMALL TRACK TYPE EQUIPMENT IS AN ACCEPTABLE ALTERNATIVE.
- A SHEEPSFOOT ROLLER SHALL NOT BE USED FOR COMPACTION PURPOSES WITHIN THE OLYMPIC ROW.
- NO VIBRATORY ROLLERS SHALL BE USED WITHIN OLYMPIC ROW.
- IF HDPE CASING IS INSTALLED PER TRENCHLESS OPERATION (DIRECTIONAL DRILLING), CDF CAN BE ELIMINATED.
- CONTRACTOR SHALL POTHOLE DEPTH AND LOCATION OF OIL, GAS, AND FIBER OPTIC UTILITIES AT THE BEGINNING OF THE PROJECT.
- COORDINATE WITH WILLIAMS PIPELINE ON EASEMENT CONSTRUCTION AND MEET ANY REQUIREMENTS AS PART OF THIS PROJECT.
 - PROJECT CONTACT: AARON PARKER, (360) 667-8997
- NOTIFY WILLIAMS' PIPELINE 3 FULL WORKING DAYS PRIOR TO ANY CONSTRUCTION WITHIN THE WILLIAMS' RIGHT OF WAY. SEE PROJECT CONTACT, ABOVE.
- 24" MINIMUM CLEARANCE REQUIRED BETWEEN TRANSMISSION MAINS AND GAS PIPELINE.
- A 6" VINYL DIRECT BURIAL WARNING TAPE SHALL BE PLACED 12"-18" ABOVE THE WATER MAIN AND EXTEND THE ENTIRE WIDTH OF THE RIGHT OF WAY.
- CONSTRUCTION WITHIN THE UTILITY EASEMENT (APPROX STA 16+90 TO STA 18+00) AND AT UTILITY CROSSINGS SHALL CONFORM TO WILLIAMS REQUIREMENTS.
- FINAL DEPTH OF ENCASED WATER MAIN SHALL BE DETERMINED AFTER ALL UTILITY CROSSINGS ARE POTHOLED AND VERIFIED. CONTRACTOR SHALL COORDINATE CROSSING LOCATION AND DEPTHS WITH OWNER AND ENGINEER PRIOR TO CONSTRUCTION.

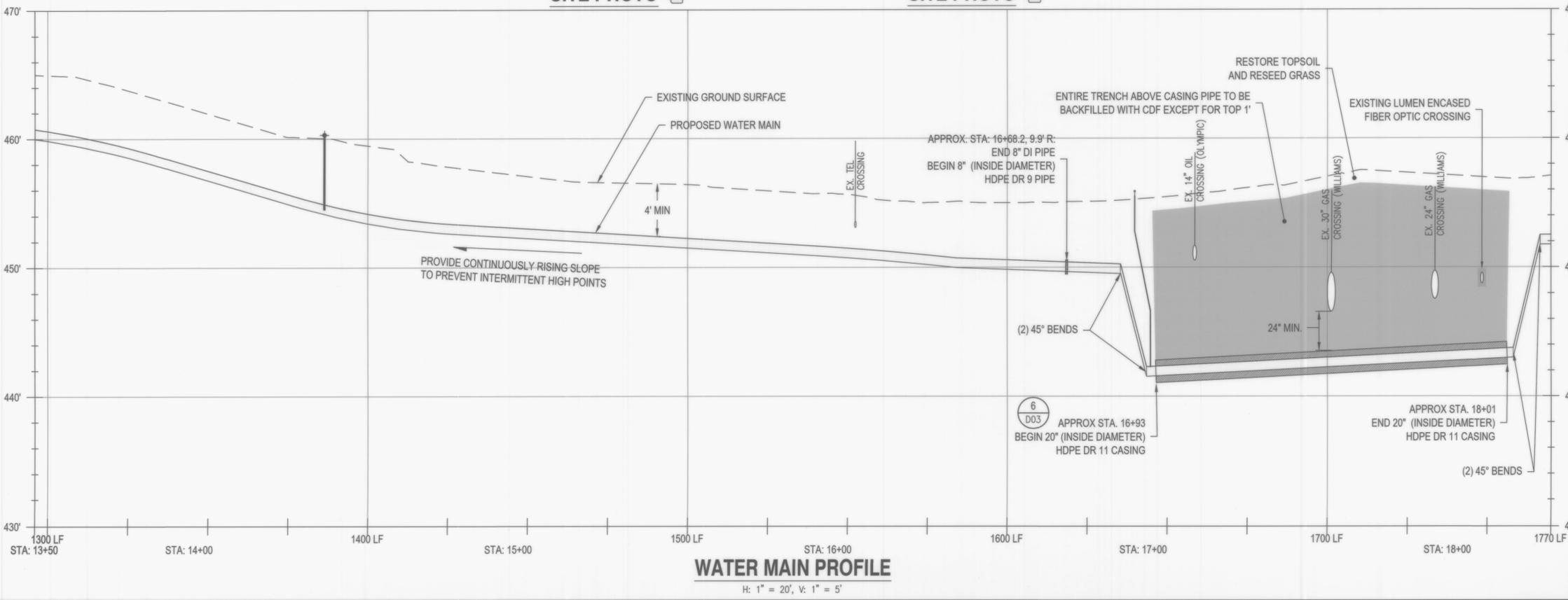


SITE PHOTO 1



SITE PHOTO 2

PLAN VIEW
1" = 20'



WATER MAIN PROFILE
H: 1" = 20', V: 1" = 5'

VICINITY MAP



**COWLITZ COUNTY
TOWER ROAD WATER MAIN AND
JUANITA BOOSTER PUMP STATION
WATER MAIN PLAN AND PROFILE 4**

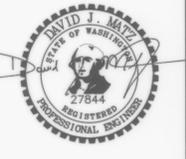
NO.	DATE	DESCRIPTION	BY	REVIEW

ENGINEER: JTR SWE DATE: Oct 21, 2024 CLIENT: CC ARJ NO.: 22-0177
 REVISION: DJM PLOT DATE: Oct 21, 2024 RESUME: TRMM-P-WATERP.DWG

SCALE: SHOWN
 DRAWING IS FULL SCALE WHEN BAR MEASURES 2"
 DWG NO.: C04 SHEET NO.: 06 23



SIGNED: 10/18/2024

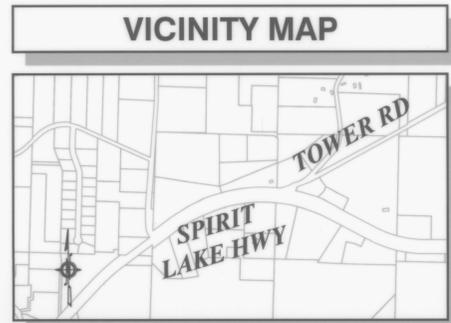
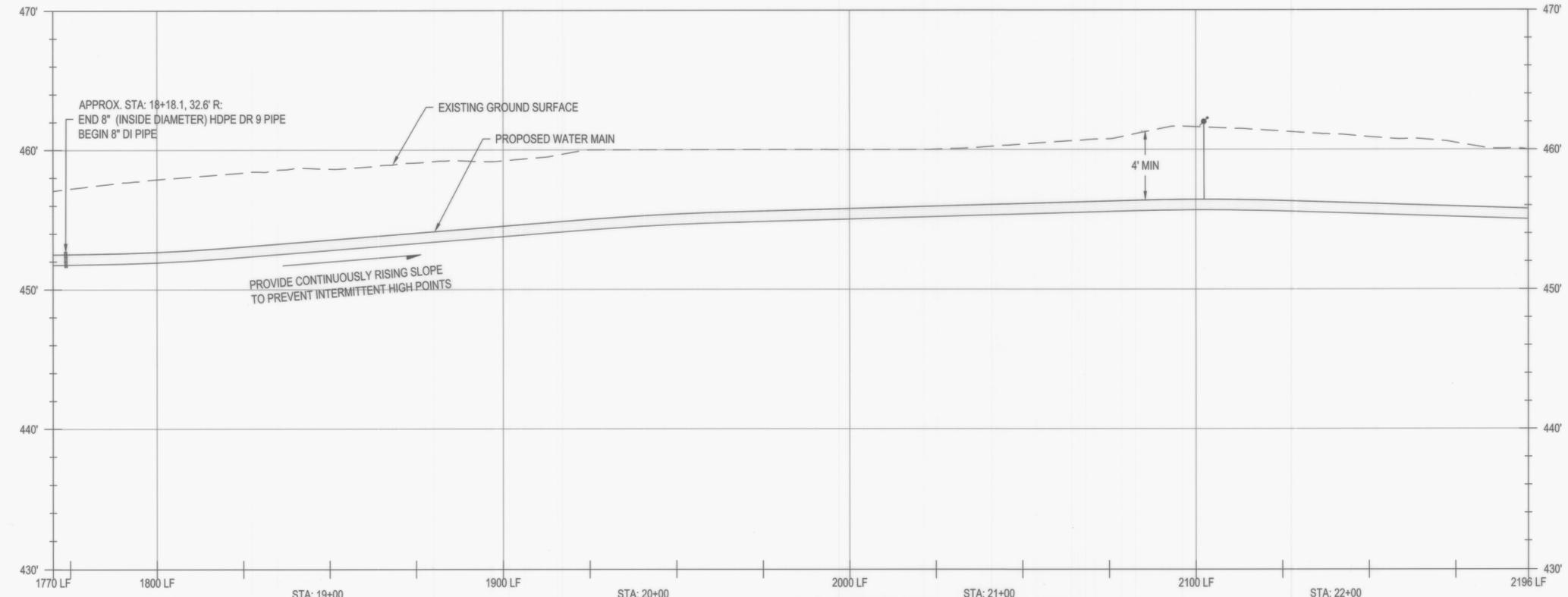
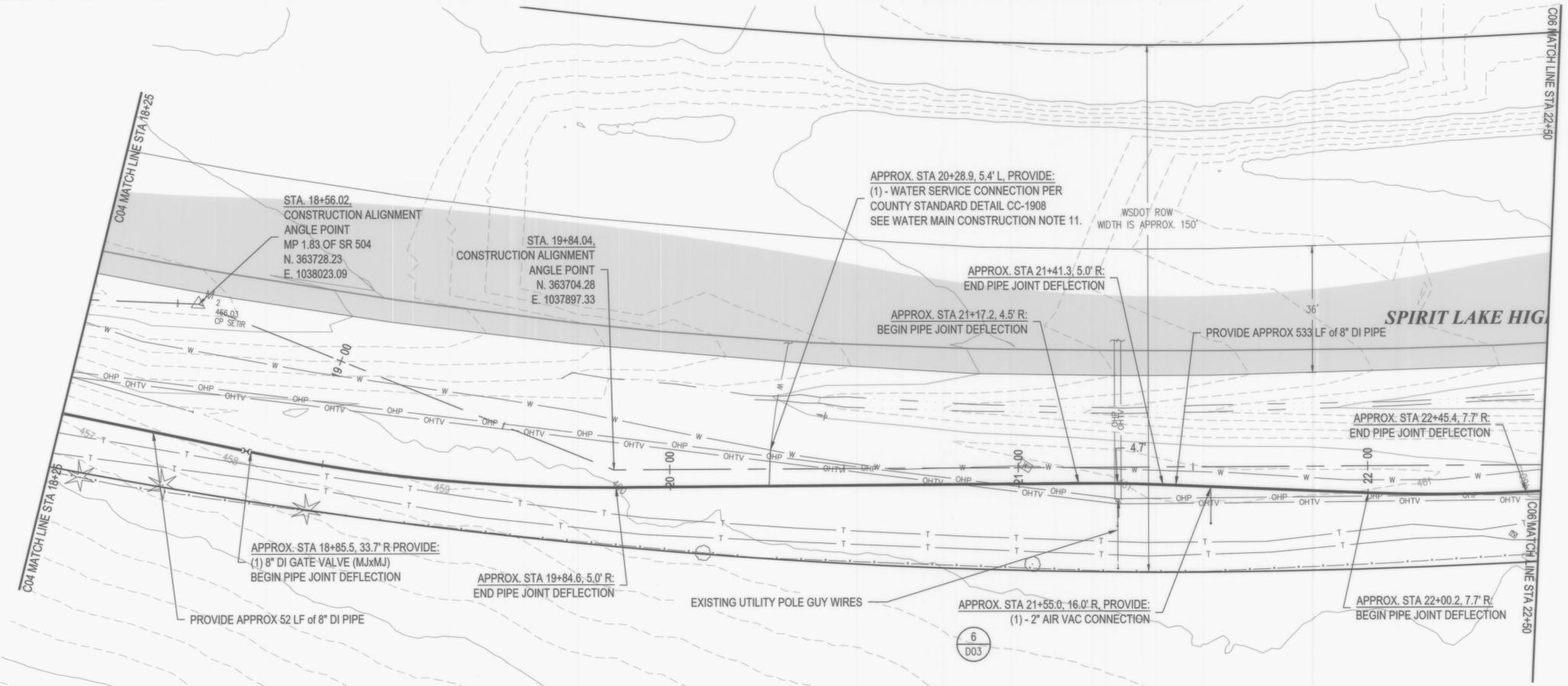


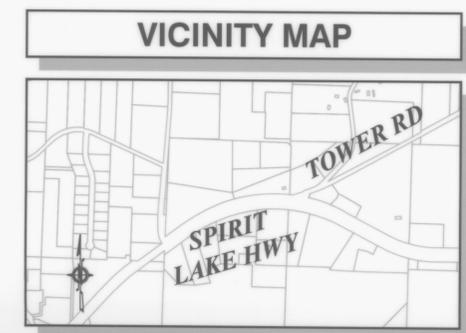
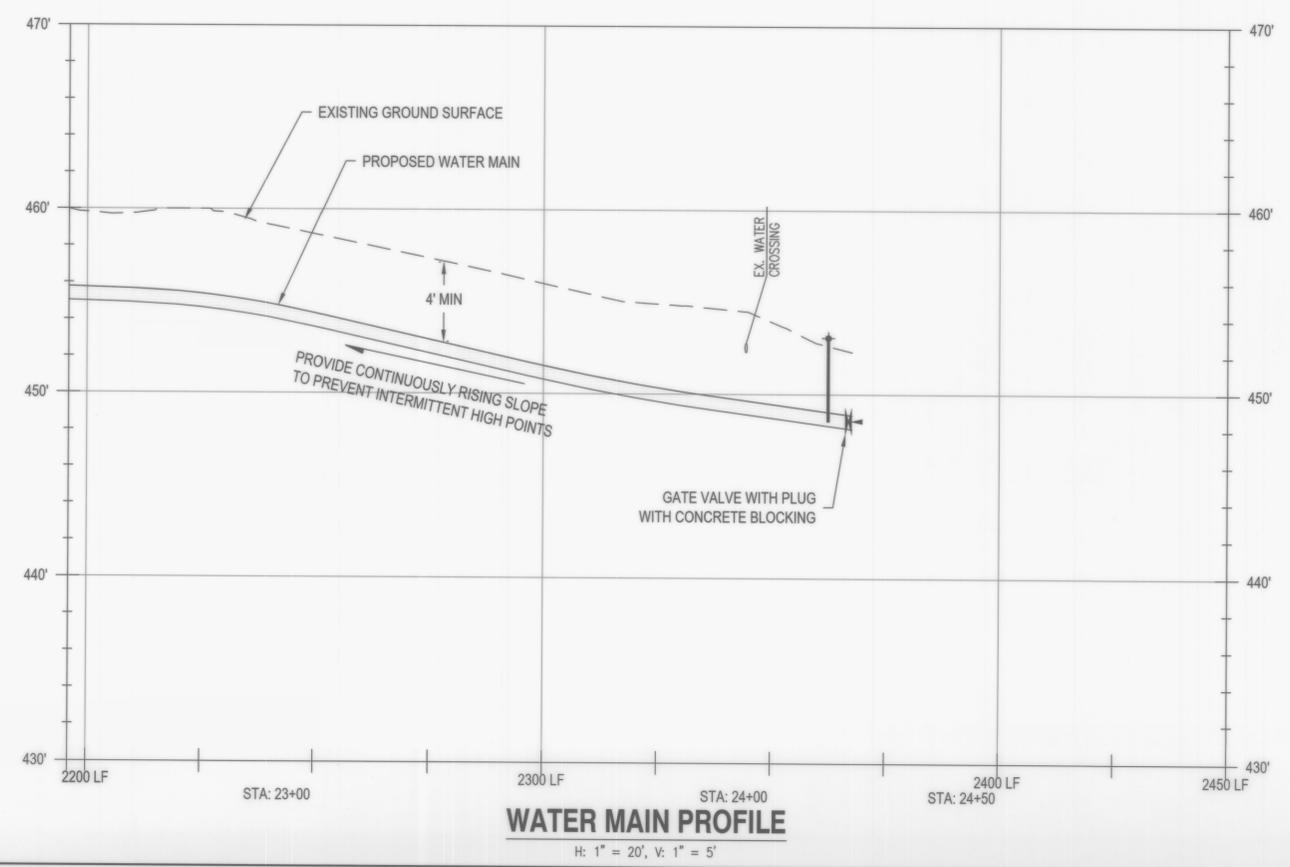
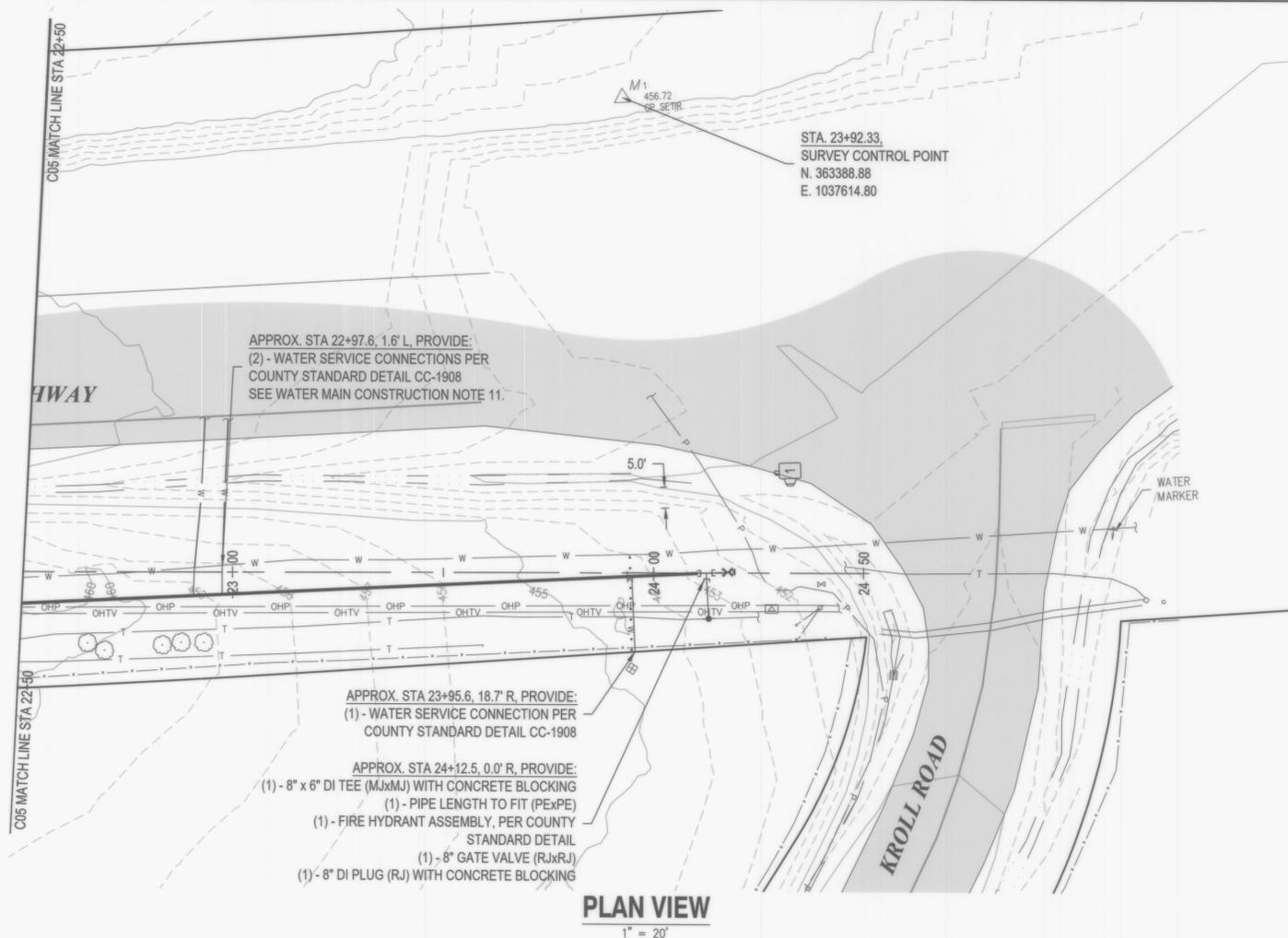
SIGNED: 10/18/2024

**COWLITZ COUNTY
TOWER ROAD WATER MAIN AND
JUANITA BOOSTER PUMP STATION
WATER MAIN PLAN AND PROFILE 5**



JOB NO.: 22-0177	CLIENT: CC	ENGINEER: JTR	DATE: 10/18/2024	REVISIONS	NO.	DATE	DESCRIPTION	BY	REVIEW
FILE NAME: TRWMLP-WATERP.DWG	PLANT DATE: Oct 21, 2024	REVISION: DJM	DATE: Oct 21, 2024						
SCALE: SHOWN					DRAWING IS FULL SCALE WHEN BAR MEASURES 2"				
DWG NO.: C05					SHEET NO.: 07				
					23				





RH2

Geoffrey G. Dillard
31196
PROFESSIONAL ENGINEER
SIGNED: 10/18/2024

David J. Mize
27844
PROFESSIONAL ENGINEER
SIGNED: 10/18/2024

COWLITZ COUNTY
TOWER ROAD WATER MAIN AND
JUANITA BOOSTER PUMP STATION
WATER MAIN PLAN AND PROFILE 6

NO.	DATE	DESCRIPTION	BY	REVIEW
REVISIONS				

OWNER: JTR SWE DATE: Oct 21, 2024 CLIENT: CC JOB NO.: 22-0177
 REVIEWED: DJM PLOT DATE: Oct 21, 2024 REVISION: TRIMP-WATERP.DWG

SCALE: SHOWN
 0' 1" 2'
 DRAWING IS FULL SCALE WHEN
 BAR MEASURES 2"

DWG NO.: C06 SHEET NO.: 08 23

JUANITA WAY BPS NOTES

1. BPS BUILDING AND VAULT TO BE EQUIPPED WITH FLOOD SENSORS.
2. EXISTING UTILITIES SHOWN ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY LOCATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. POTHOLE CRITICAL UTILITY CROSSING LOCATIONS PRIOR TO COMMENCING CONSTRUCTION.
3. PROPOSED PIPING DEPTH SHALL BE ADJUSTED BASED ON POTHOLES OF EXISTING WATER LINES.
4. DEPTH OF EXISTING PIPE WAS ASSUMED AT CONNECTION POINTS AND SHALL BE POTHOLED PRIOR TO PURCHASING THE FITTINGS FOR THE CONNECTIONS TO THE EXISTING WATER SYSTEM.
5. GUARD RAILS TO BE APPROXIMATELY 5 FEET FROM BOOSTER PUMP STATION ON EAST SIDE TO ALLOW FULL ACCESS THROUGH DOORS.
6. CONTRACTOR TO ISOLATE WATER MAIN PRIOR TO INSTALLATION OF CONNECTIONS. CONTRACTOR SHALL ISOLATE ALL SERVICE CONNECTIONS IMPACTED BY CONNECTIONS AT THE METER. PURGE WATER MAIN AT EXISTING HYDRANT.

POINT TABLE - SITE PLAN

POINT NO.	DESC.	EX. ELEVATION	NORTHING	EASTING
①	PUMP STATION PAD CORNER	607.89	358754.69	1045017.28
②	PUMP STATION PAD CORNER	608.04	358744.57	1045025.68
③	VALVE VAULT CORNER	608.02	358742.34	1045018.26
④	VALVE VAULT CORNER	608.02	358736.01	1045026.09



SITE PHOTO

VICINITY MAP

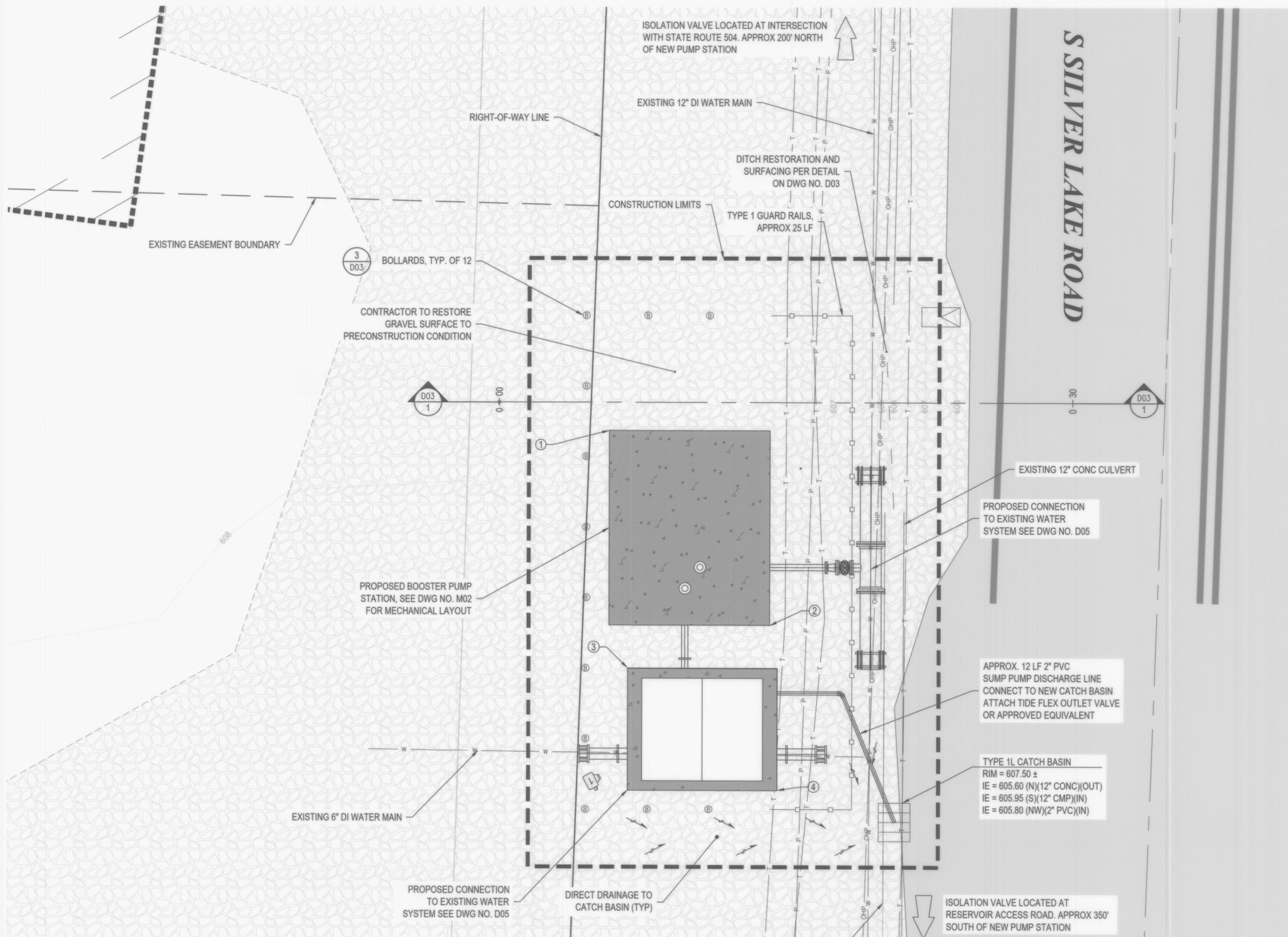


**COWLITZ COUNTY
TOWER RD & JUANITA WAY IMPROVEMENTS**

JUANITA WAY BPS SITE PLAN



NO.	DATE	DESCRIPTION	BY	REVIEW



PROPOSED SITE PLAN
1" = 3'



SIGNED: 10/18/2024



SIGNED: 10/18/2024

COWLITZ COUNTY
TOWER ROAD WATER MAIN AND
JUANITA BOOSTER PUMP STATION
COWLITZ COUNTY STANDARD
DETAILS 1



NO.	DATE	DESCRIPTION	BY	REVIEW

ALL WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE LATEST EDITION OF THE WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION

HYDRANT SETTING DETAIL

DEPARTMENT OF PUBLIC WORKS
 1600-12TH AVENUE SOUTH
 KELSO, WASHINGTON 98626
 DRAWING:CC-1902

DESIGNED BY: DJB 10/14/10
 CHECKED BY: BAB
 APPROVED BY: 4/30/12
 DATE

1. Hydrant shall be breakaway traffic model: Waterous Pacer WB67-250 or Mueller Super Centurion 250.
 2. A minimum 36 inch radius unobstructed working area shall be provided around each hydrant.
 3. All fittings in contact with concrete shall be wrapped in plastic.
 4. Gravel Backfill for Drains shall be placed a minimum of 6" above drain outlet.
 5. Hydrant valve shall be 6" Resilient Seat AWWA C 2506 Gate Valve, FLXMI.
 6. Each pipe joint 6" #1106 EBAA Iron, Inc. Megalug or approved equal, or 3/4" restraining rods, or thrust blocking as approved.

ALL WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE LATEST EDITION OF THE WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION

THRUST BLOCKING DETAILS

DEPARTMENT OF PUBLIC WORKS
 1600-12TH AVENUE SOUTH
 KELSO, WASHINGTON 98626
 DRAWING:CC-1903

DESIGNED BY: JMC 2/8/06
 CHECKED BY: BAB
 APPROVED BY: 4/30/12
 DATE

Size	Test Pressure (PSI)	Thrust at Fittings in Pounds			
		A Tee and Dead Ends	B 90° Bend	C 45° Bend	D 22.5° Bend
4"	250	3,140	4,440	2,405	1,225
6"	250	7,070	9,995	5,410	2,760
8"	250	12,565	17,770	9,620	4,905
10"	250	19,635	27,770	15,030	7,660
12"	250	28,275	39,985	21,640	11,030
14"	250	38,485	54,425	29,455	15,015
16"	250	50,265	71,085	38,470	19,615

Muck, peat, etc.	0
Soft clay	1,000
Sand	2,000
Sand and gravel	3,000
Sand and gravel cemented with clay	4,000
Hard shale	10,000

1. Contractor to provide blocking adequate to withstand full test pressure.
 2. Divide thrust by safe bearing load to determine required area (in square feet) of concrete to distribute load.
 3. Areas to be adjusted for other pressure conditions.
 4. Provide two 1" minimum diameter rods on valves up through 10" diameter. Valves larger than 10" require special tie rod design.
 5. Concrete thrust blocking to be poured against undisturbed earth.
 6. Keep concrete clear of joint and accessories.

ALL WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE LATEST EDITION OF THE WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION

VERTICAL THRUST BLOCKING DETAIL

DEPARTMENT OF PUBLIC WORKS
 1600-12TH AVENUE SOUTH
 KELSO, WASHINGTON 98626
 DRAWING:CC-1904

DESIGNED BY: JMC 2/9/06
 CHECKED BY: BAB
 APPROVED BY: 4/30/12
 DATE

PIPE DIAM.	TEST PRESSURE (PSI)	BEND ANGLE	CONCRETE VOLUME (Cu Ft)	CUBE SIZE (Ft)	TIE ROD DIAM.	TIE ROD EMBEDMENT
4"	250	11.25°	6	1.8	5/8"	17"
		22.5°	12	2.3		
		45°	22	2.8		
6"	250	11.25°	14	2.4	5/8"	17"
		22.5°	27	3.0		
		45°	50	3.7		
8"	250	11.25°	25	2.9	5/8"	17"
		22.5°	48	3.6		
		45°	89	4.5		
10"	250	11.25°	38	3.4	5/8"	17"
		22.5°	75	4.2		
		45°	139	5.2		
12"	250	11.25°	55	3.8	5/8"	17"
		22.5°	108	4.8		
		45°	200	5.8		
14"	250	11.25°	75	4.2	5/8"	17"
		22.5°	147	5.3		
		45°	272	6.5		
16"	250	11.25°	98	4.6	5/8"	17"
		22.5°	192	5.8		
		45°	355	7.1		

NOTE: Steel tie rods to be heavily coated with asphalt after installation.

ALL WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE LATEST EDITION OF THE WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION

2" BLOWOFF ASSEMBLY

DEPARTMENT OF PUBLIC WORKS
 1600-12TH AVENUE SOUTH
 KELSO, WASHINGTON 98626
 DRAWING:CC-1905

DESIGNED BY: SMK 04/24/12
 CHECKED BY: BAB
 APPROVED BY: 4/30/12
 DATE

1. Paint pipe threads with asphalt paint after assembly.
 2. All piping to be galvanized steel.
 3. Valve and piping to valve to be 2" unless otherwise noted on plan.
 4. Valve marker to be in general conformance with WSDOT Specification 9-17.
 5. County approved locate wire and/or detectable marking tape shall be installed over non-metallic lines as directed by Utilities Manager. Place tape approximately 1 foot above top of the line for its full length. Detectable marking tape shall meet the requirements of WSDOT Standard specifications, Section 9-15-18

ALL WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE LATEST EDITION OF THE WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION

DUAL WATER SERVICE CONNECTION, 3/4" METER

DEPARTMENT OF PUBLIC WORKS
 1600-12TH AVENUE SOUTH
 KELSO, WASHINGTON 98626
 DRAWING:CC-1907

DESIGNED BY: JAS 11/17/05
 CHECKED BY: BAB
 APPROVED BY: 4/30/12
 DATE

1. See Standard Plan CC-1908 for additional requirements.
 2. County approved locate wire and/or detectable marking tape shall be installed over non-metallic lines as directed by Utilities Manager. Place tape approximately 1 foot above top of the line for its full length. Detectable marking tape shall meet the requirements of WSDOT Standard specifications, Section 9-15-18

ALL WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE LATEST EDITION OF THE WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION

WATER SERVICE CONNECTION 3/4" or 1" METER

DEPARTMENT OF PUBLIC WORKS
 1600-12TH AVENUE SOUTH
 KELSO, WASHINGTON 98626
 DRAWING:CC-1908

DESIGNED BY: DJB 1/14/11
 CHECKED BY: BAB
 APPROVED BY: 4/30/12
 DATE

1. Bed all around main, service line, and meter base with 6" Min. depth Crushed Surfacing Top Course, or approved equivalent.
 2. Backfill excavation with suitable onsite or imported material, compacted to 95% of the materials maximum density, as required in the road Right of Way Permit.
 3. The water service line shall not be installed in the same trench with other utilities. The minimum lateral clearances are:
 Telephone and Cable TV - 3 FEET
 Power - 3 FEET
 Sewer - 10 FEET
 4. County approved locate wire and/or detectable marking tape shall be installed over non-metallic lines as directed by Utilities Manager. Place tape approximately 1 foot above top of the line for its full length. Detectable marking tape shall meet the requirements of WSDOT Standard specifications, Section 9-15-18
 5. Contractor must be licensed, bonded, insured, and have qualifying experience in municipal water works connections. Contractor shall contact County Public Works Utilities, a minimum of two working days prior to construction, to coordinate tap, tests, and approved materials for project.
 6. All materials shall be for municipal water works. Corp. stop, meter stop, or other brass fittings shall be Mueller, or approved equivalent. Any deviations from County Standards will NOT be approved.

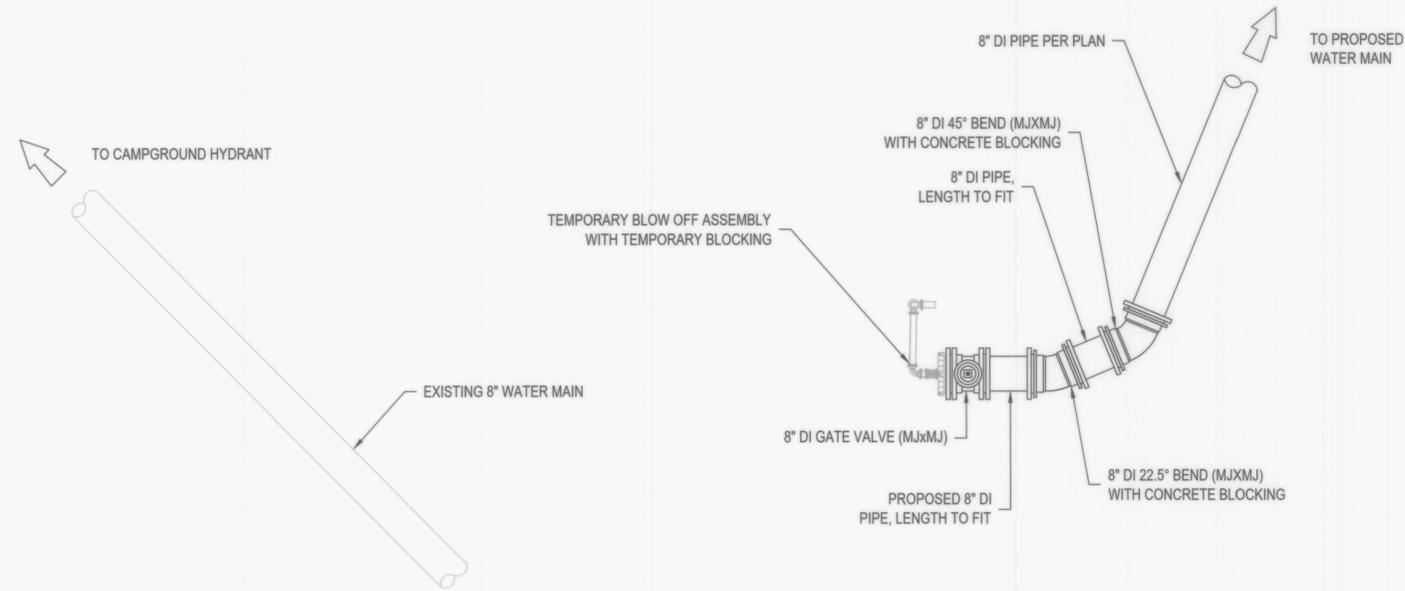


SIGNED: 10/18/2024



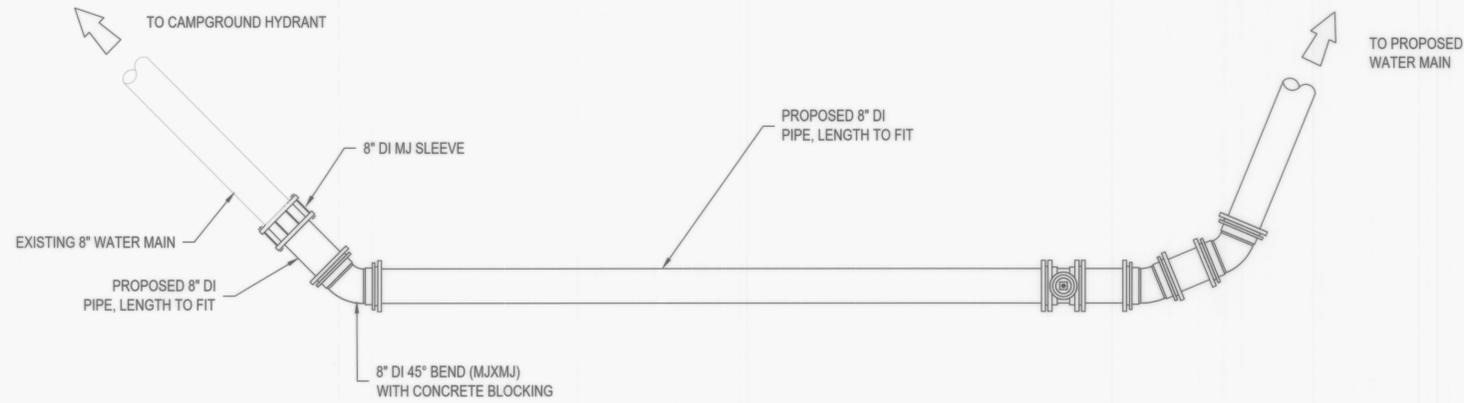
SIGNED: 10/18/2024

COWLITZ COUNTY
TOWER ROAD WATER MAIN AND
JUANITA BOOSTER PUMP STATION
CONNECTION DETAIL



STA. 0+00: CONNECTION DETAIL
TESTING CONFIGURATION

NTS



STA. 0+00: CONNECTION DETAIL
FINAL CONFIGURATION

NTS



NO.	DATE	DESCRIPTION	BY	REVIEW
REVISIONS				

JOB NO.: 22-0177

CLIENT: CC FILENAME: TRWM-D-WATERPX.DWG

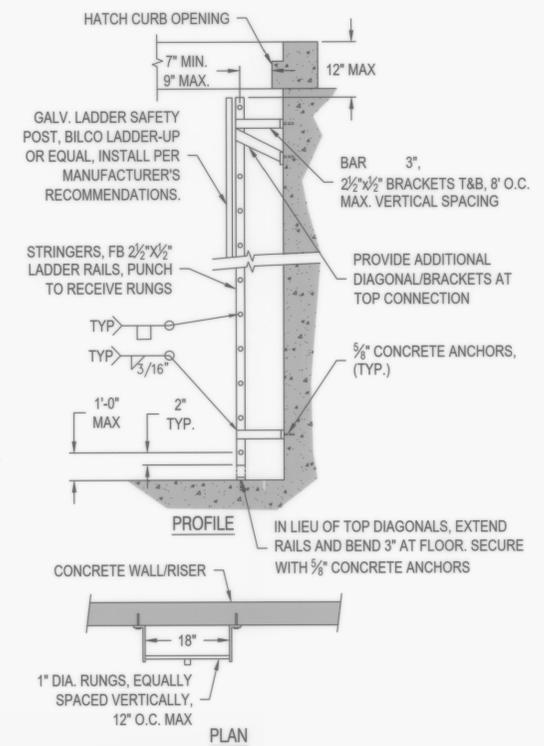
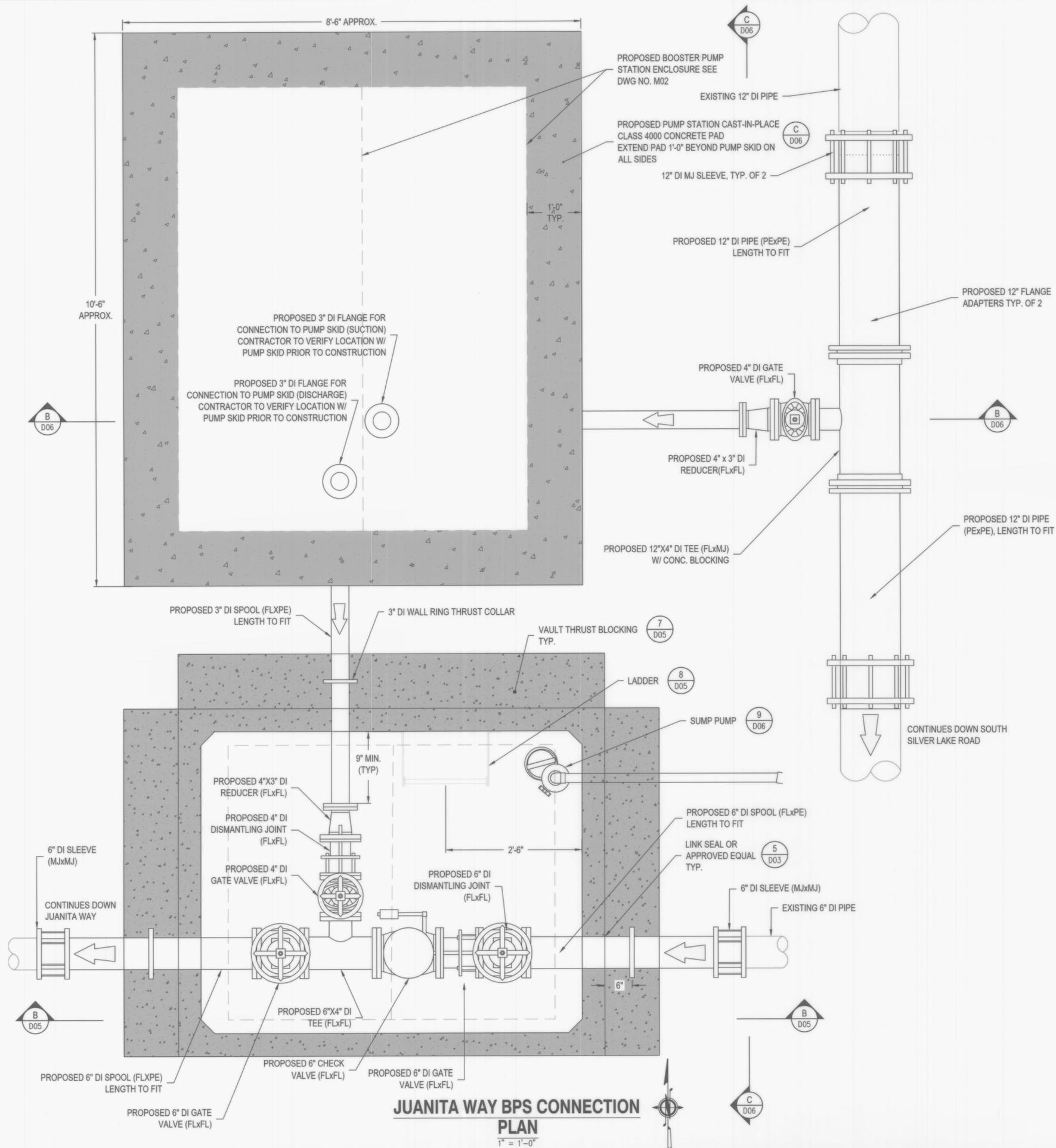
SWF DATE: Oct 18, 2024 PLOT DATE: Oct 21, 2024

ENGINEER: JTR REVIEWED: DJM

**COWLITZ COUNTY
TOWER ROAD WATER MAIN AND
JUANITA BOOSTER PUMP STATION
JUANITA WAY WATER SYSTEM
CONNECTION DETAIL**



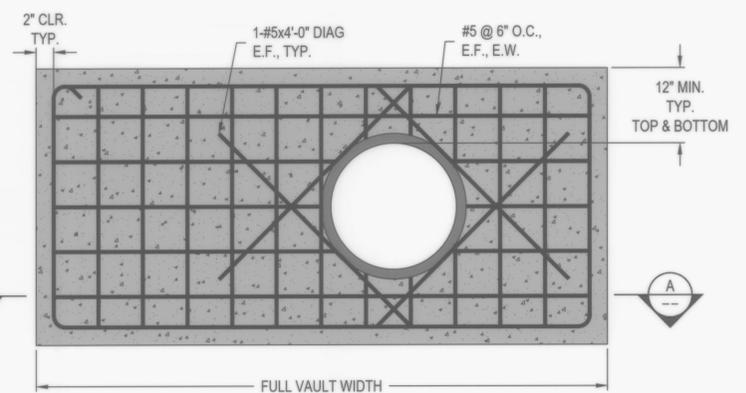
NO.	DATE	DESCRIPTION	BY	REVIEW



VAULT LADDER DETAIL
NTS

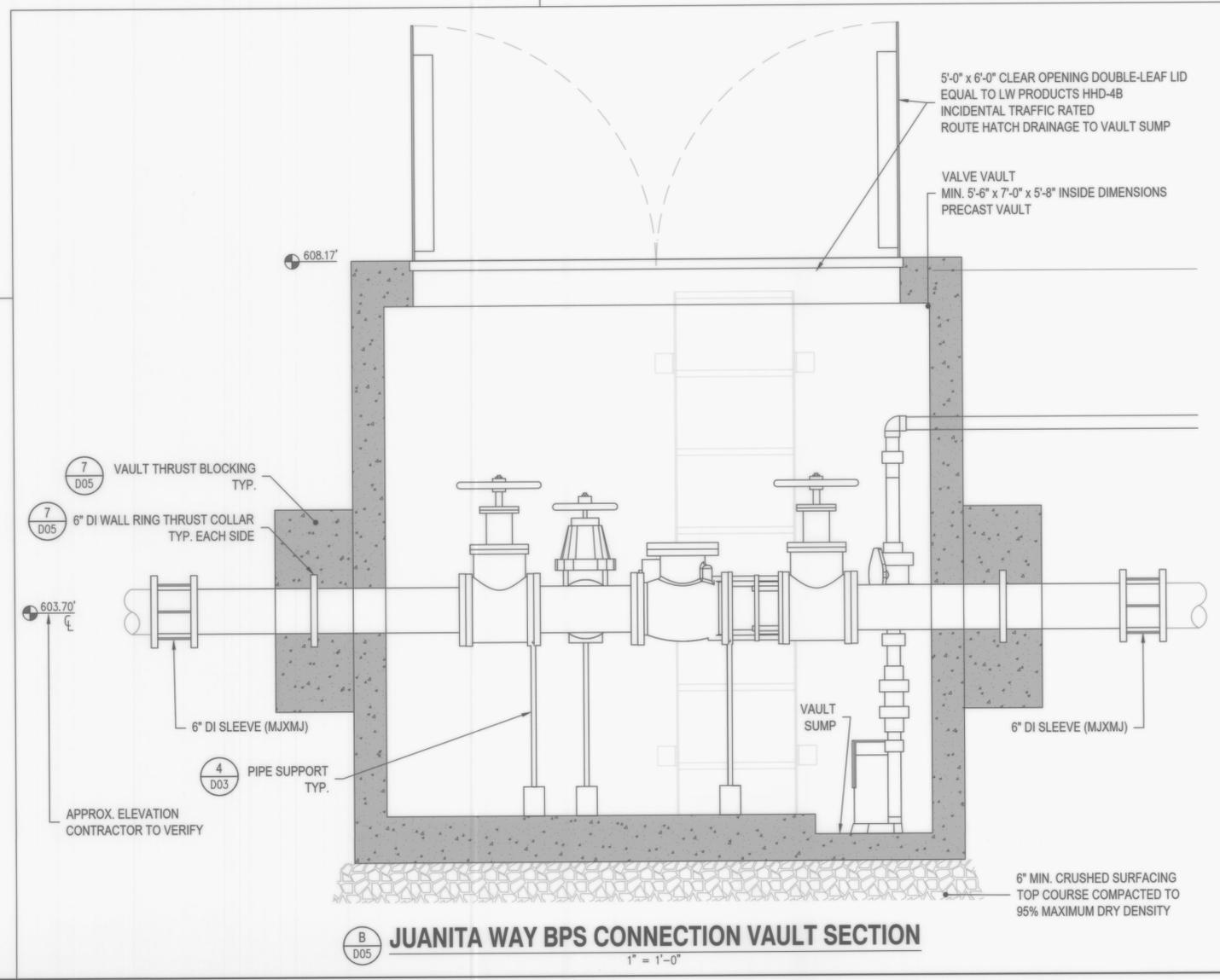
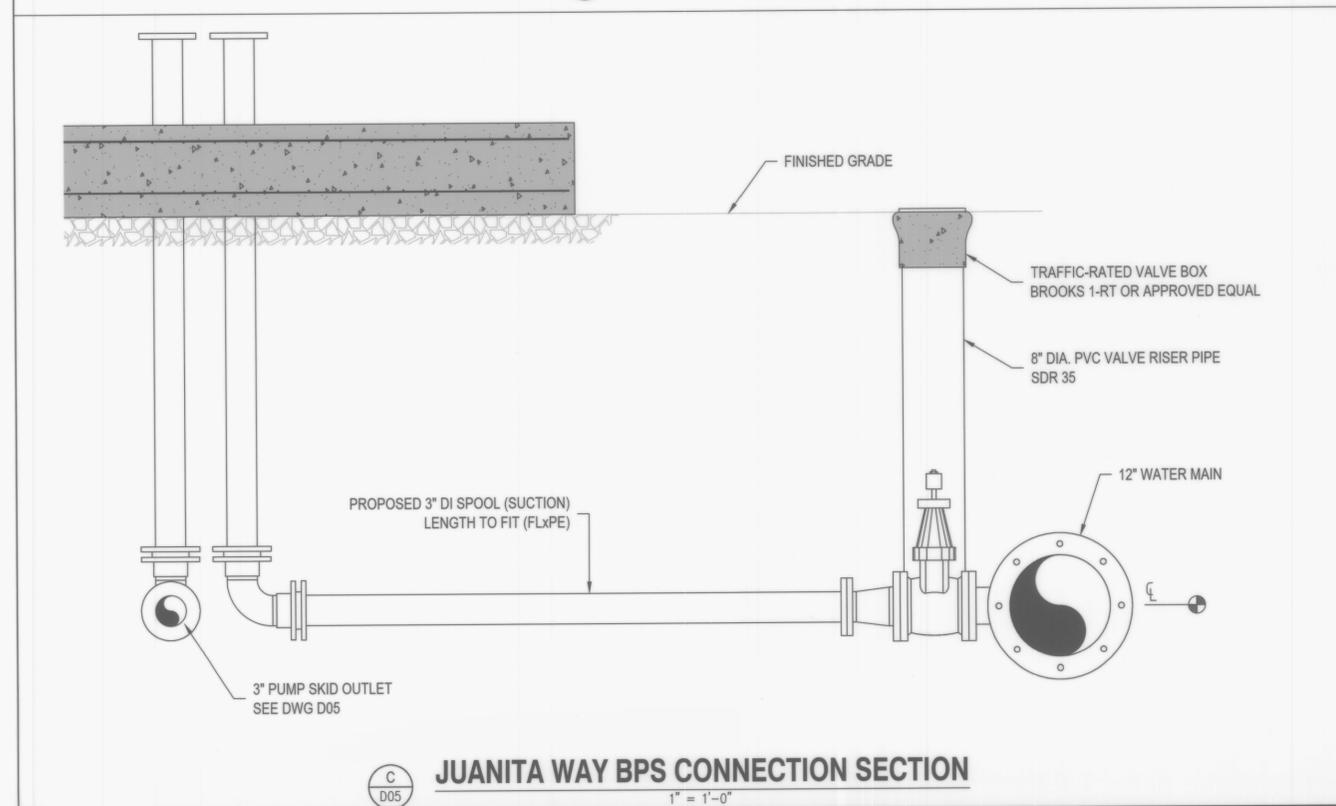
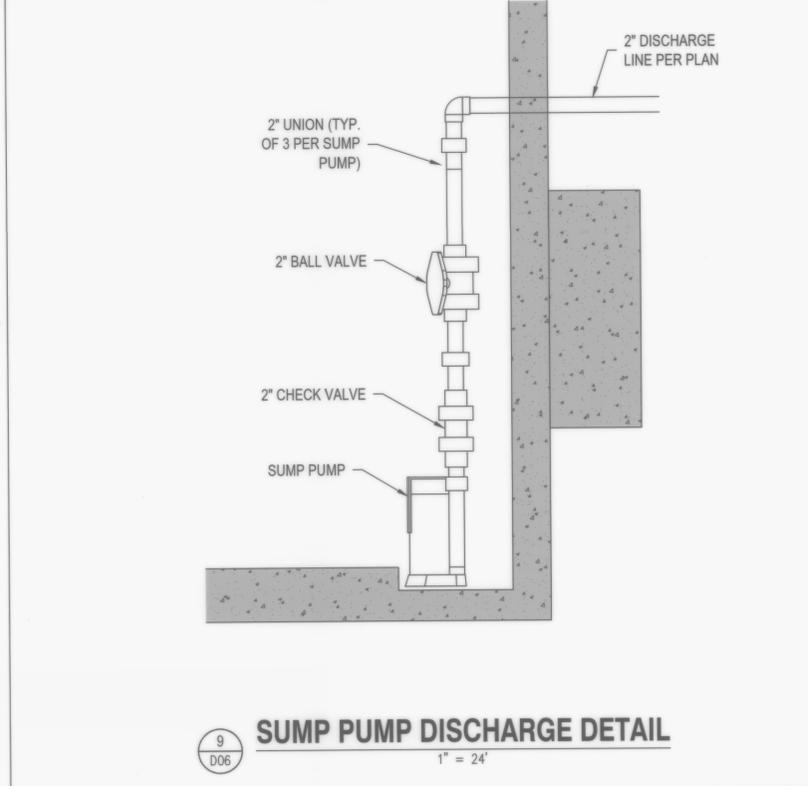
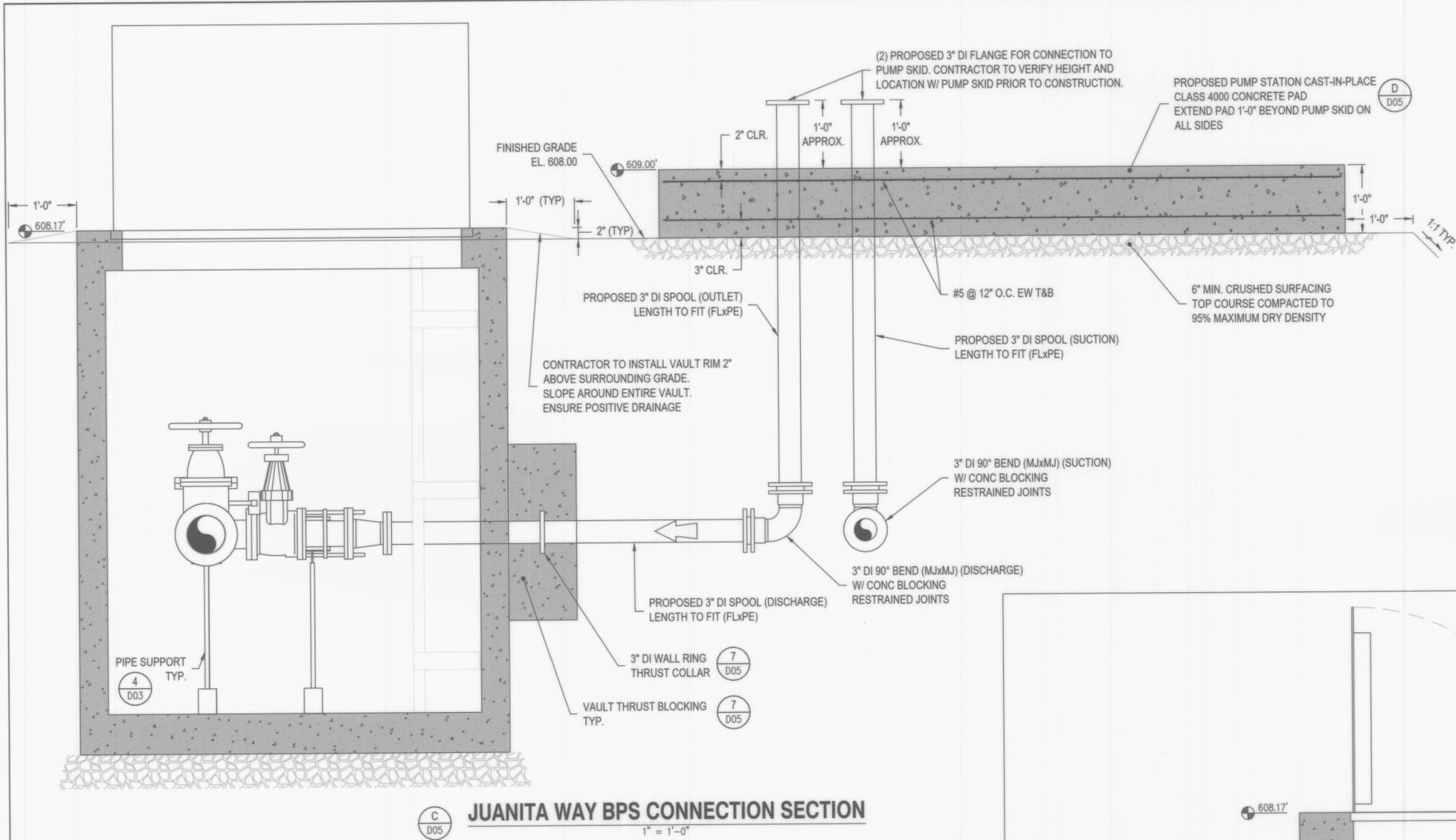


VAULT THRUST BLOCK SECTION
NTS



VAULT THRUST BLOCK DETAIL
NTS

JOB NO: 22-0177
CLIENT: CC
ENGINEER: DJM
REVISIONS
DATE: 10/20/2024
REVISION: DJM
DATE: 10/21/2024
REVISION: JWB-D-WATERP.DWG



RH2

DAVID J. MAPE
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER
31198
SIGNED: 10/18/2024

DAVID J. MAPE
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER
27844
SIGNED: 10/18/2024

COWLITZ COUNTY
TOWER ROAD WATER MAIN AND
JUANITA BOOSTER PUMP STATION
CONNECTION SECTION

JUANITA WAY WATER SYSTEM
CONNECTION SECTION

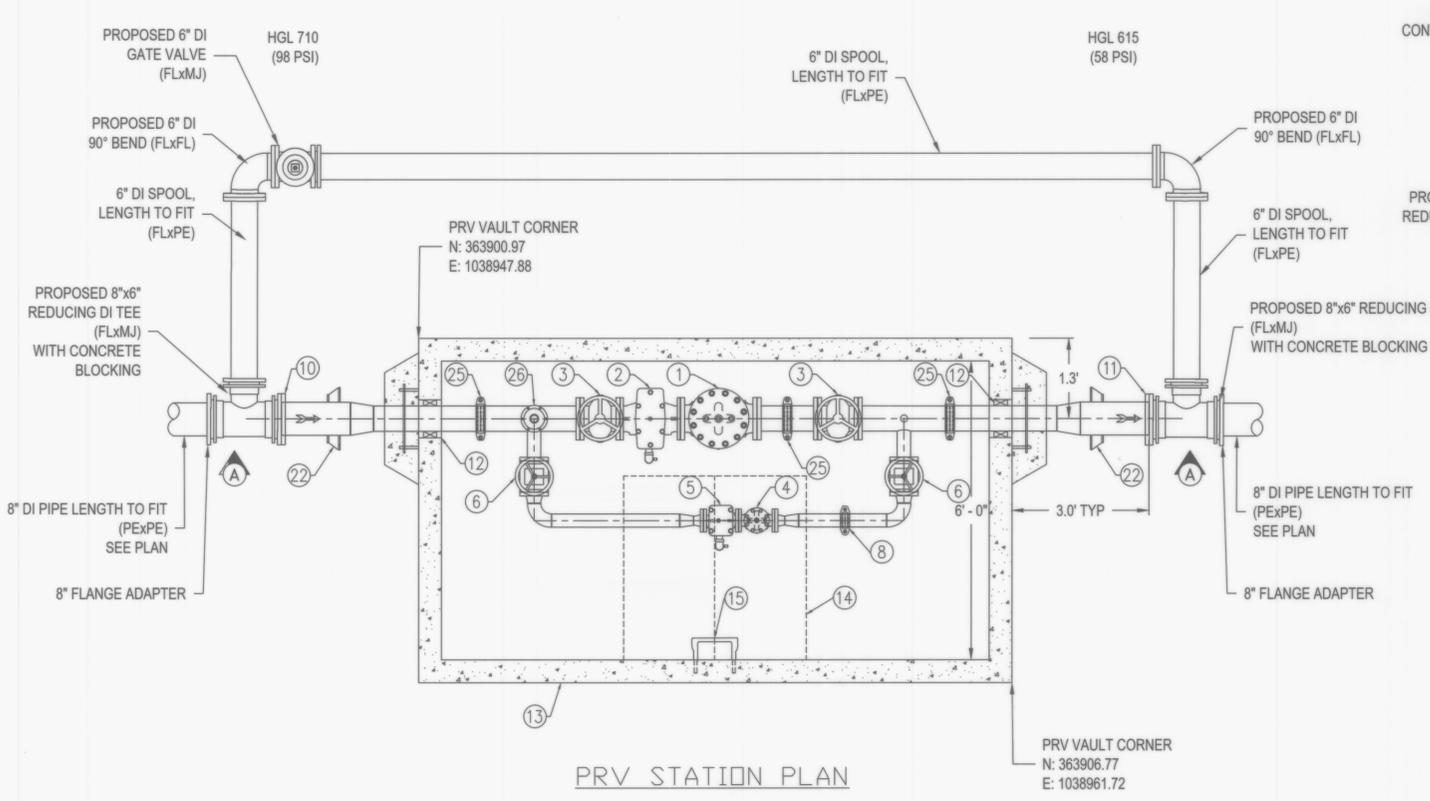
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REVISIONS

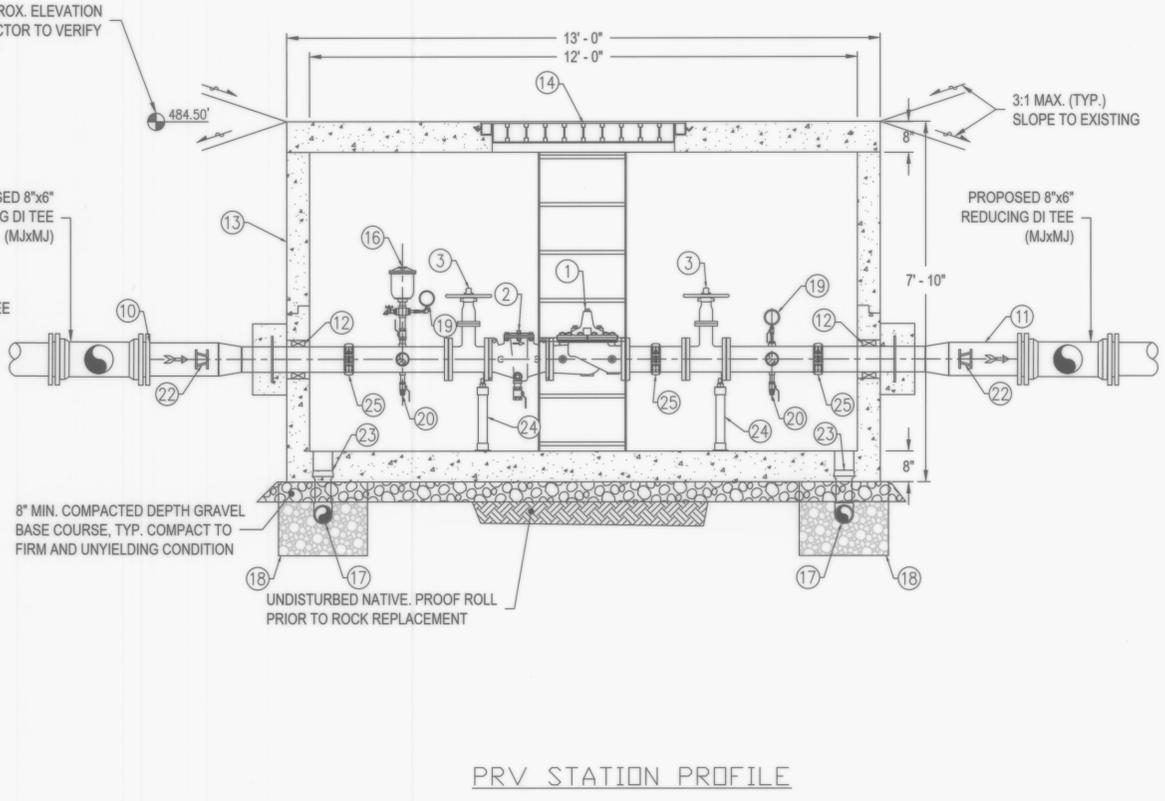
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DESIGNER: JMBP-D-WATERP.DWG
DATE: OCT 20, 2024
DATE: OCT 21, 2024

SCALE: SHOWN

DWG NO.: D06
SHEET NO.: 15
23



PRV STATION PLAN



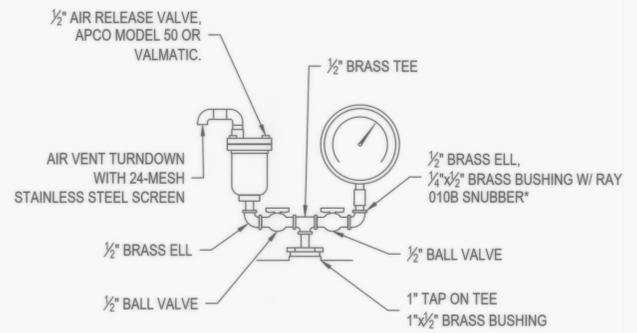
PRV STATION PROFILE

DESIGN NOTES

- | | |
|--|--|
| 1 6" CLA-VAL 90G-01BCSVYKXC PRESSURE REDUCING VALVE, DUCTILE IRON BODY, EPOXY LINED AND COATED, STAINLESS STEEL TRIM, TUBING & FITTINGS, 150# FLANGED, WITH X101 VALVE POSITION INDICATOR AND 20-105 PSI ADJUSTMENT RANGE. KX-AIS COMPLIANT. | 9 NOT USED |
| 2 6" CLA-VAL X43HKX "H" STYLE STRAINER, DUCTILE IRON BODY. EPOXY LINED AND COATED, STAINLESS STEEL TRIM, 150# FLANGED, WITH STANDARD 10 MESH STAINLESS STEEL SCREEN. KX-AIS COMPLIANT. | 10 8" STEEL PIPE FLANGED INLET CONNECTION |
| 3 6" NRS GATE VALVE (OPEN LEFT) | 11 8" STEEL PIPE FLANGED OUTLET CONNECTION |
| 4 2" CLA-VAL 90G-01BCSVYKXC PRESSURE REDUCING VALVE, DUCTILE IRON BODY, EPOXY LINED AND COATED, STAINLESS STEEL TRIM, TUBING & FITTINGS, 150# FLANGED, WITH X101 VALVE POSITION INDICATOR AND 20-105 PSI ADJUSTMENT RANGE. KX-AIS COMPLIANT. | 12 PIPE PENETRATION SEAL |
| 5 2" CLA-VAL X43HKX "H" STYLE STRAINER, DUCTILE IRON BODY. EPOXY LINED AND COATED, STAINLESS STEEL TRIM, 150# FLANGED, WITH STANDARD 10 MESH STAINLESS STEEL SCREEN. KX-AIS COMPLIANT. | 13 PRECAST CONCRETE VAULT |
| 6 3" NRS GATE VALVE (OPEN LEFT) | 14 48" X 48" ALUMINUM HATCH (H20 RATED FOR INCIDENTAL TRAFFIC) |
| 7 NOT USED | 15 LADDER |
| 8 3" VICTAULIC COUPLING | 16 1" COMBINATION AIR VALVE |
| | 17 4" VAULT OUTLET DRAINED (SCREENED) |
| | 18 APPROX. 0.25 CY GRAVEL BACKFILL FOR DRAINS |
| | 19 0-200 PSI GAUGE ASSEMBLY |
| | 20 3/4" SS BALL VALVE & PLUG |
| | 21 NOT USED |
| | 22 RESTRAINT LUGS |
| | 23 TRENCH DRAIN W/ GRATING AND 4" FEMALE SOCKET CONNECTION ON THE EXTERIOR OF BOTH SIDES |
| | 24 PIPE SUPPORT |
| | 25 6" VICTAULIC COUPLING |

5
C04 **PRESSURE REDUCING STATION**

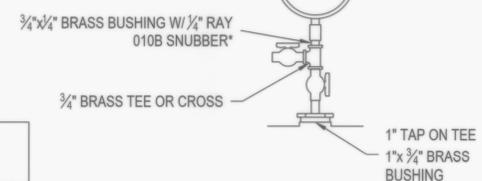
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PRESSURE GAUGE AND AIR VALVE DETAIL

NTS

PRESSURE GAUGE w/4 1/2" FACE, OVERALL ACCURACY ± 1/2% OF FULL SCALE, RANGE 0-200 psi OR AS OTHERWISE APPROVED BY CITY.



PRESSURE GAUGE DETAIL

NTS

*OR APPROVED EQUAL
NOTE, BRASS NIPPLES NOT CALLED OUT, PROVIDE AS NECESSARY.

NO.	DATE	DESCRIPTION	BY	REVIEW



SIGNED: 10/18/2024

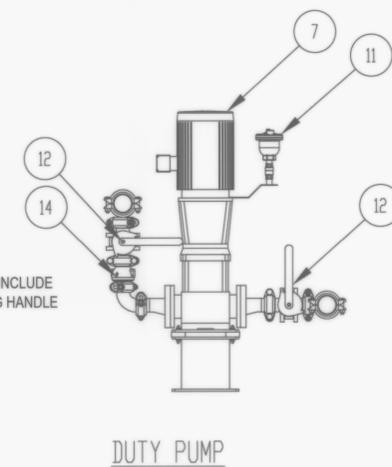
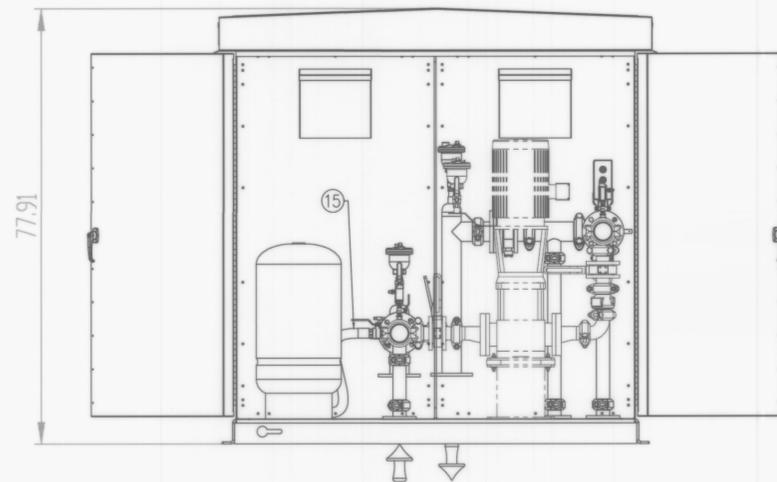
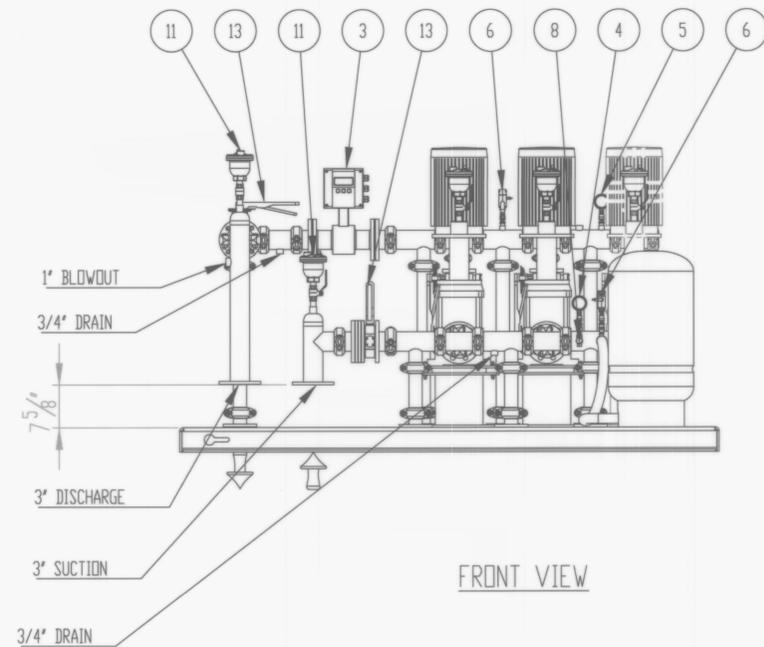
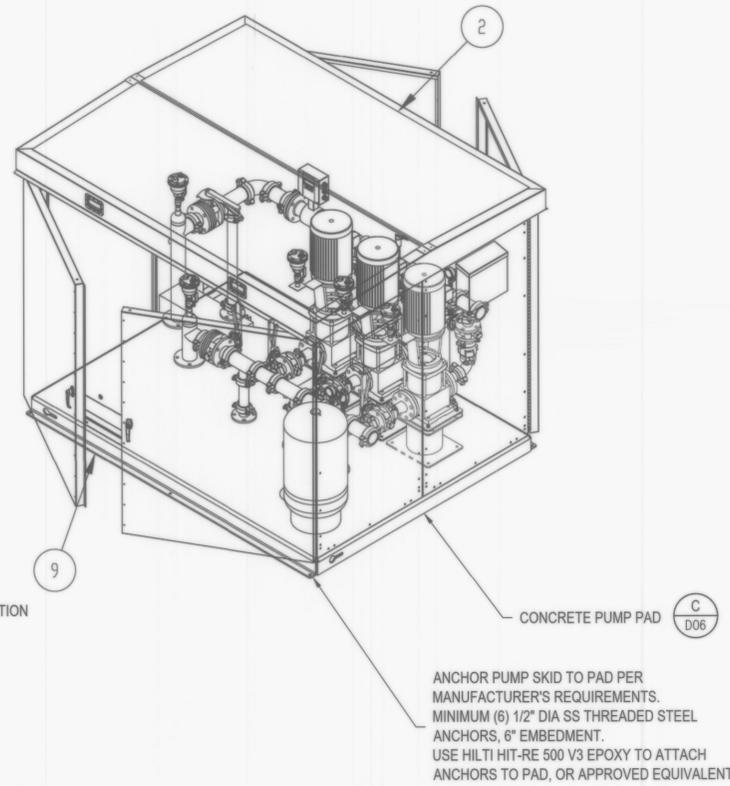
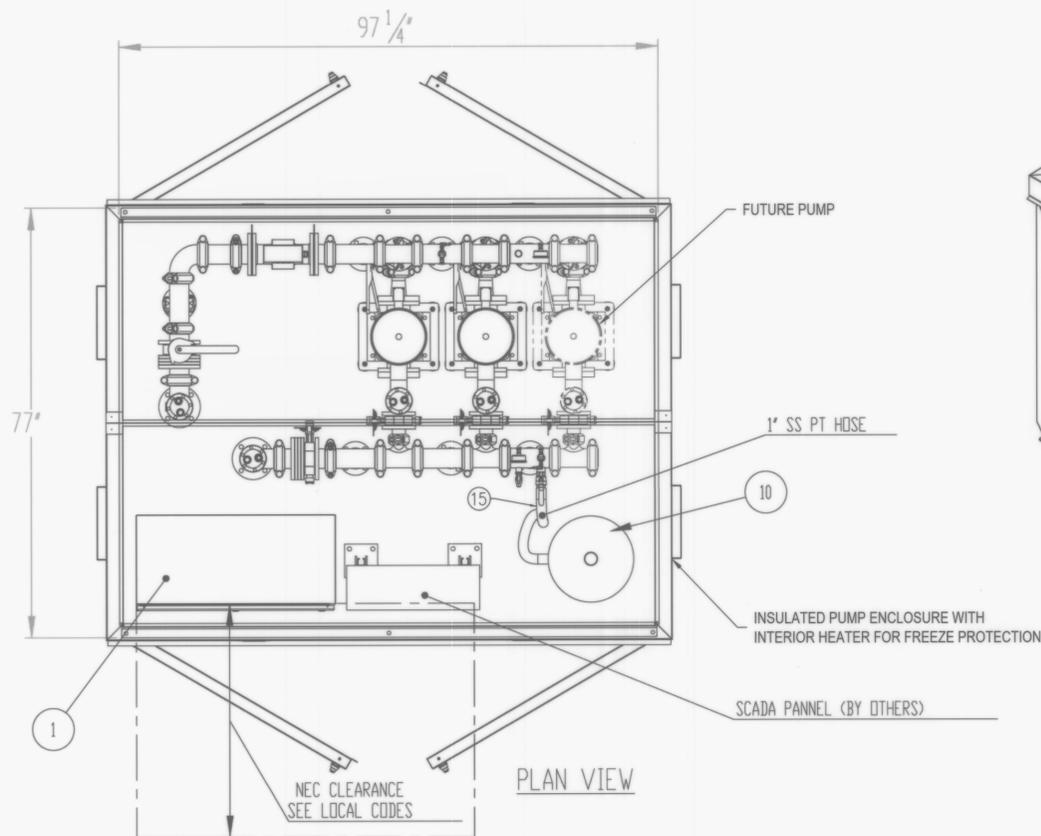


SIGNED: 10/18/2024

COWLITZ COUNTY
TOWER ROAD WATER MAIN AND
JUANITA BOOSTER PUMP STATION
JUANITA WAY BPS MECHANICAL PLAN



ITEM NO.	DESCRIPTION	Size	QTY.
1	CONTROL PANEL	60"x36"x16"	1
2	ENCLOSURE, MARINE GRADE ALUMINUM	72"x96"x66"	1
3	FLOW METER, BADGER	3"	1
4	PRESSURE GAUGE, 100PSI, NSF	2-1/2"	1
5	PRESSURE GAUGE, 160PSI, NSF	2-1/2"	1
6	PRESSURE SENSOR, -14.5..145PSI, LED DISPLAY, 4-20MA, IFM	1/4"	2
7	PUMP, VMS, 33SV	3 HP	2
8	SAMPLE TAP	1/2"	1
9	SKID, BENT	72x96	1
10	TANK, PRESSURE, WX-202	20 Gal	1
11	VALVE, AIR RELIEF	3/4"	4
12	VALVE, BUTTERFLY, LUG, LEVER, 250 PSI	2"	4
13	VALVE, BUTTERFLY, LUG, LEVER, 250 PSI	3"	2
14	VALVE, CHECK, GROOVED	2"	2
15	1/2" PRV W/ 24-MESH STAINLESS STEEL SCREEN ON VENT AND ROUTE RELIEF LINE OUT OF BPS	-	1



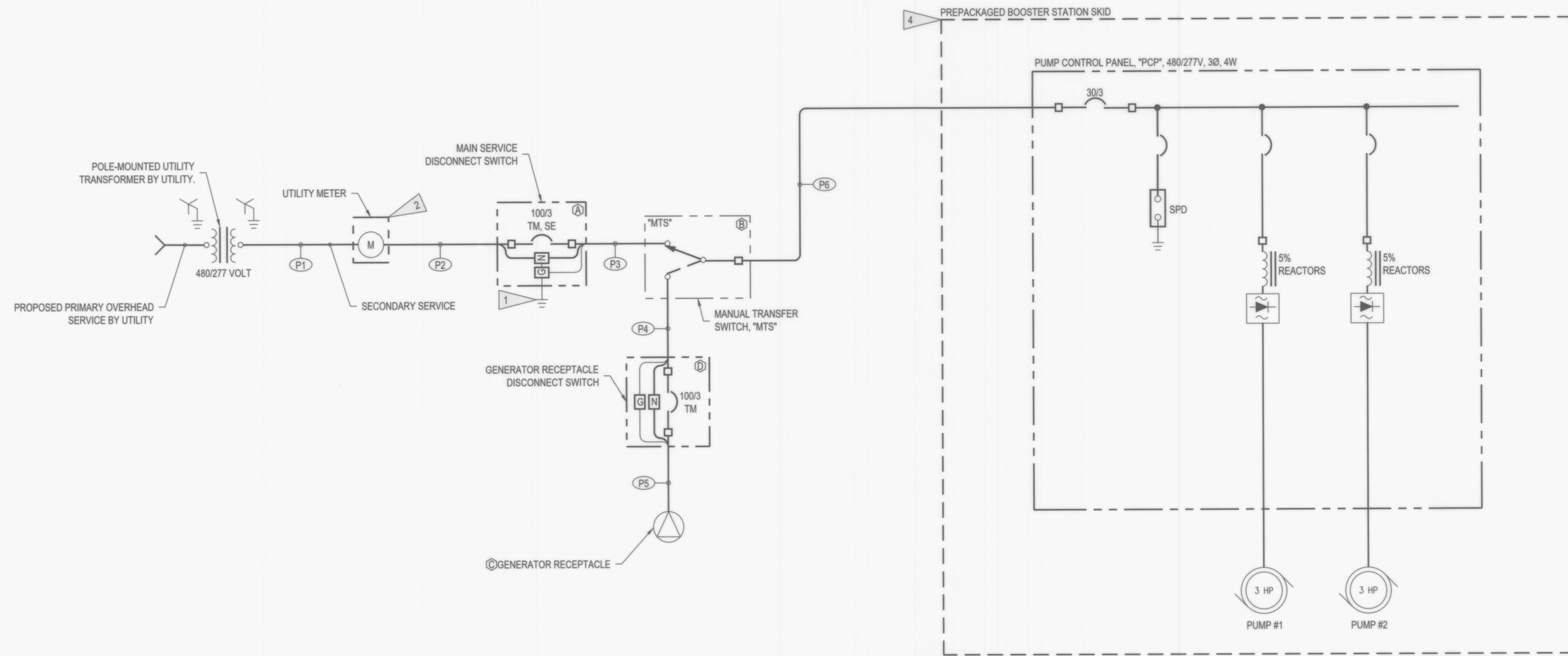
ENCLOSURE
COLOR - PPS BEIGE
POTABLE

 PRECISION PUMPING SYSTEMS 6515 BUSINESS WAY BOISE, IDAHO 83716 208-323-5300 www.gopps.us	MATERIAL Piping: STEEL A53, NSF NAPGUARD BLUE Skid: STEEL A36, GALVANIZED	TITLE: BOOSTER SYSTEM PUMP STATION
	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL: ±1/8" ONE PLACE DECIMAL: ±.10 TWO PLACE DECIMAL: ±.05 DO NOT SCALE DRAWING	PROJECT: JUANITA LANE LEVEL: 60% Pre-Final
SALESMAN: Matt Purdy	PART NO: 3V-3-NJ-XX-NF-FM-AL-PT	DRAWN: CZ DATE: 6/13/2024

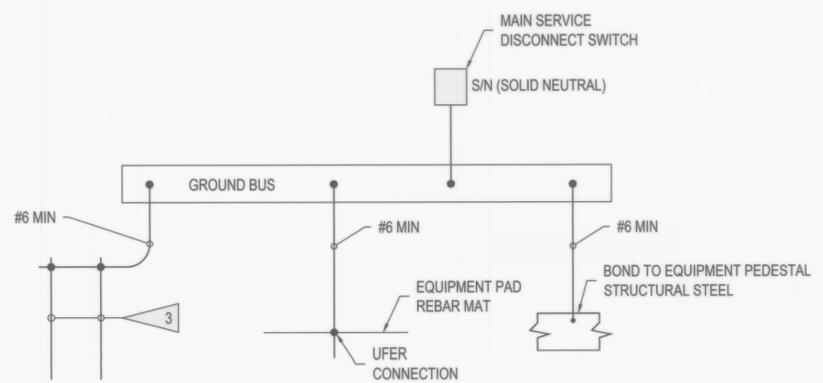
NO.	DATE	DESCRIPTION	BY	REVIEW



SIGNED: 10/18/2024



ONE-LINE DIAGRAM
NO SCALE



GROUNDING
NO SCALE

STATION LOAD CALCULATIONS		
PUMP #1 (3 HP)	4.8A X 1.25 =	6.00 AMPS
PUMP #2 (3 HP) (REDUNDANT)	0.0A X 1.00 =	0.00 AMPS
TOTAL		6.00 AMPS

- ELECTRICAL NOTES**
1. SEE GROUNDING DETAIL, THIS SHEET.
 2. UTILITY METERING. METER BASE AND ENCLOSURE BY CONTRACTOR TO MEET UTILITY REQUIREMENTS. METER BY COWLITZ PUD.
 3. GROUND ROD PER N.E.C. (TYPICAL). SEE DWG NO. E05 FOR DETAIL.
 4. ALL CONNECTIONS SHOWN INSIDE PREPACKAGED BOOSTER PUMP STATION ARE PREINSTALLED.
 5. SEE DWG NO. E06 FOR CONDUIT AND CONDUCTOR SCHEDULES.
 6. SEE DWG NO. E06 FOR ELECTRICAL EQUIPMENT AND INSTRUMENTATION SCHEDULE.

COWLITZ COUNTY
TOWER ROAD WATER MAIN AND
JUANITA BOOSTER PUMP STATION
ELECTRICAL ONE-LINE

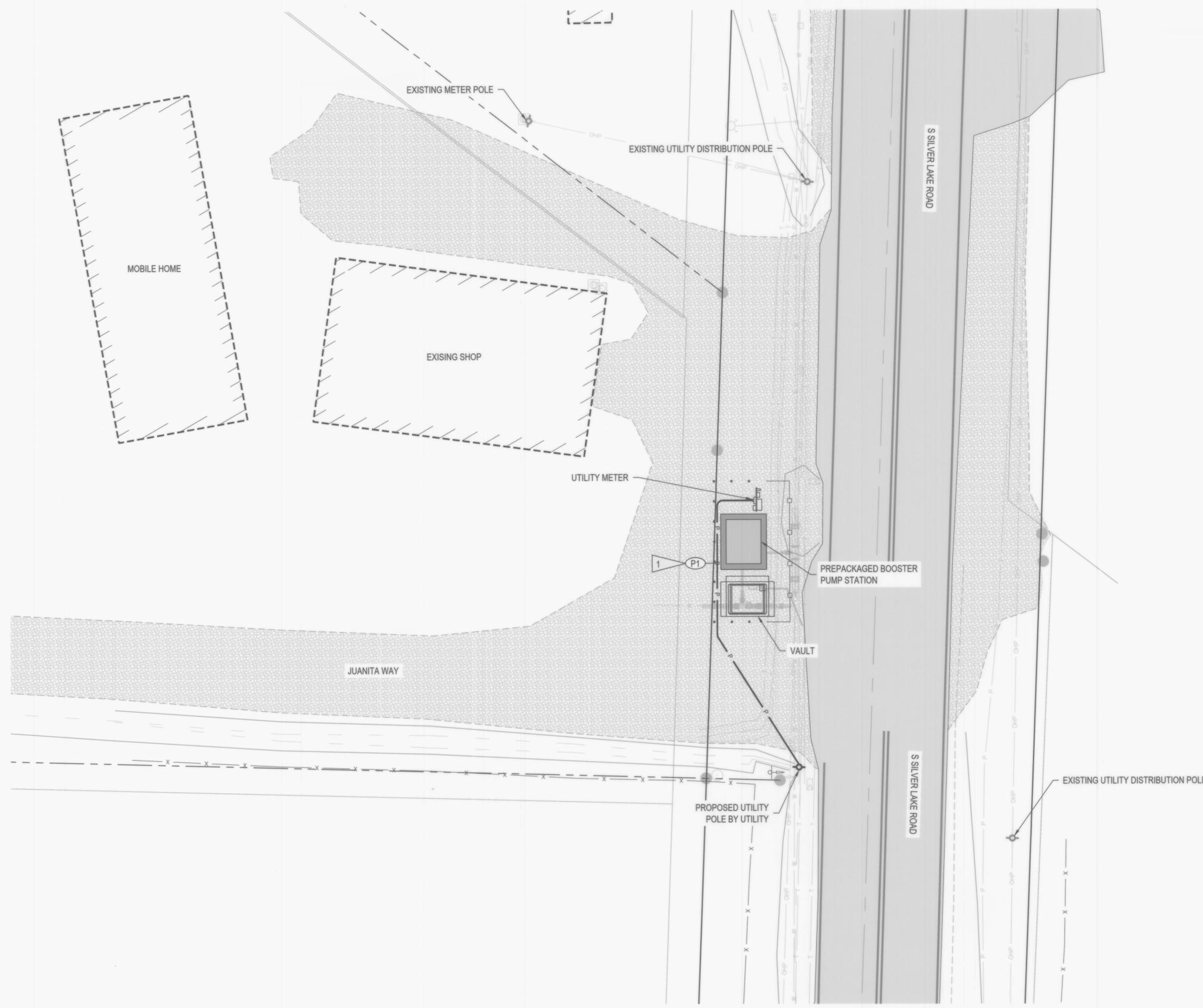


NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: E02 SHEET NO.: 19 OF 23



ELECTRICAL SITE PLAN

1" = 10'



- ELECTRICAL NOTES**
1. CONTRACTOR SHALL PROVIDE ALL TRENCHING, BACKFILL, AND RESTORATION TO THE UTILITY DISTRIBUTION POLE. CONTRACTOR SHALL INSTALL CONDUIT AND CAP AT BASE OF UTILITY DISTRIBUTION POLE. COWLITZ PUD TO INSTALL CONDUCTORS AND MAKE FINAL CONNECTIONS. REFER TO SPECIFICATIONS AND COWLITZ PUD SERVICE REQUIREMENTS FOR MORE DETAILS.
 2. SEE DWG NO. E06 FOR CONDUIT AND CONDUCTOR SCHEDULES.



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**COWLITZ COUNTY
TOWER ROAD WATER MAIN AND
JUANITA BOOSTER PUMP STATION
ELECTRICAL SITE PLAN**



NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN

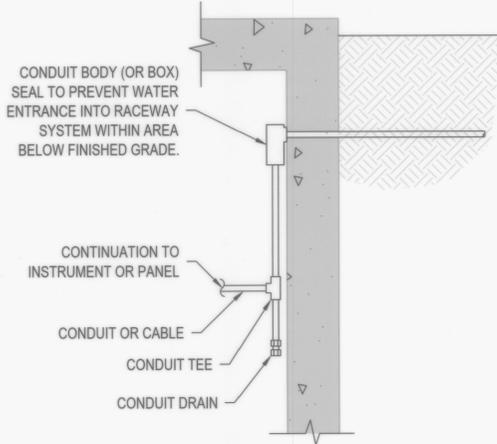
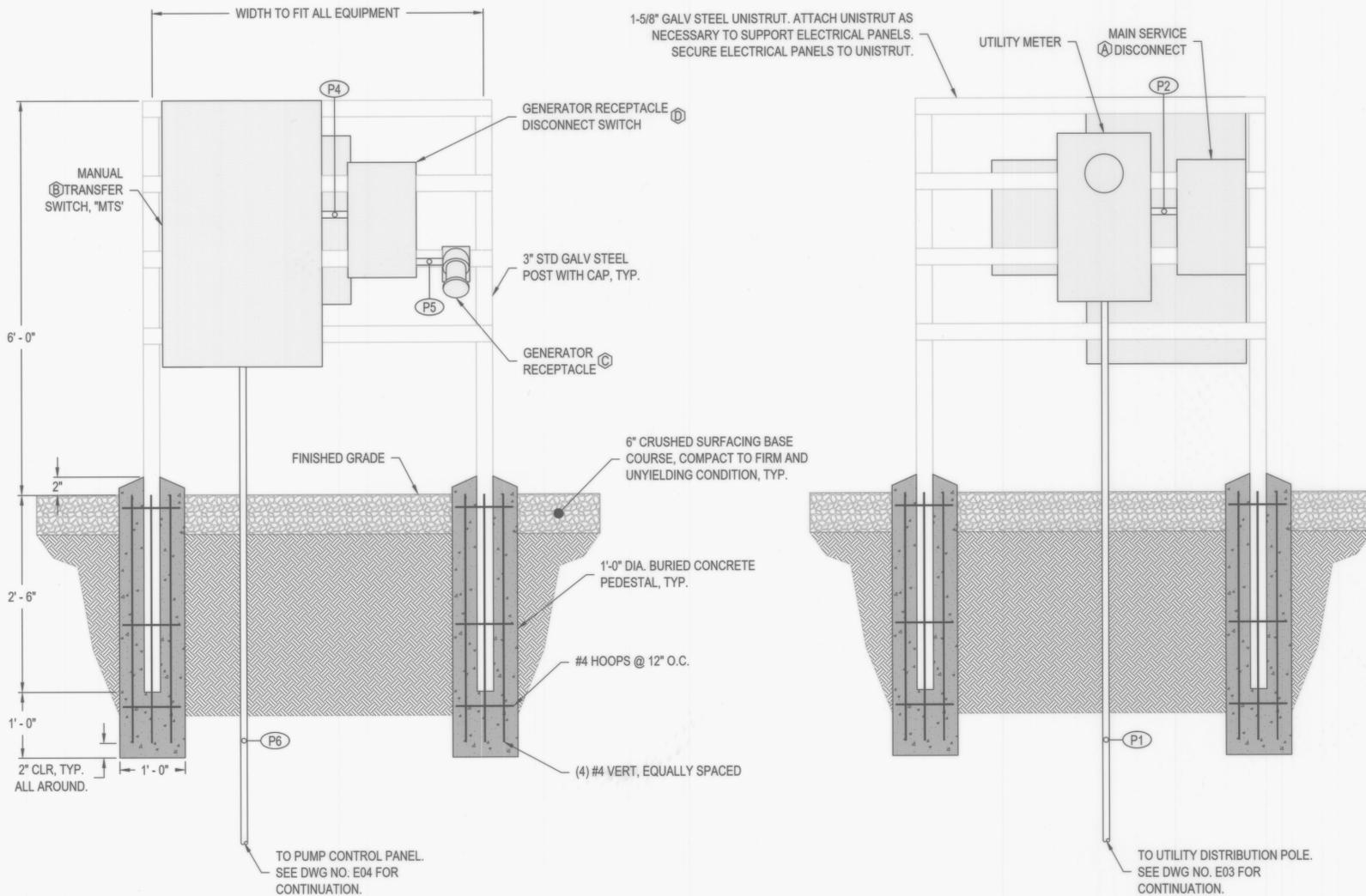
DRAWING IS FULL SCALE WHEN BAR MEASURES 2'

DWG NO.: **E03** SHEET NO.: **20** OF **23**

ENGINEER: CLC
REVIEWED: MMS
JOB NO.: 22-0177
CLIENT: CC
FILENAME: JWBP-P-E03.DWG
DATE: Oct 18, 2024
PLOT DATE: Oct 21, 2024

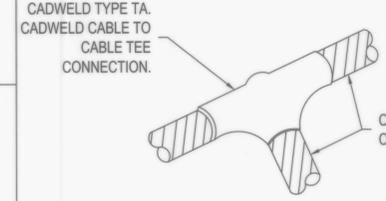
REVISIONS

ELECTRICAL NOTES	
(XX)	1. SEE DWG NO. E06 FOR CONDUIT AND CONDUCTOR SCHEDULES.
(X)	2. SEE DWG NO. E06 FOR ELECTRICAL EQUIPMENT AND INSTRUMENTATION SCHEDULE.

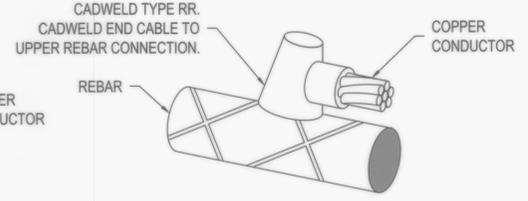


CONDUIT SEAL/DRAIN INSTALLATION
NOT TO SCALE

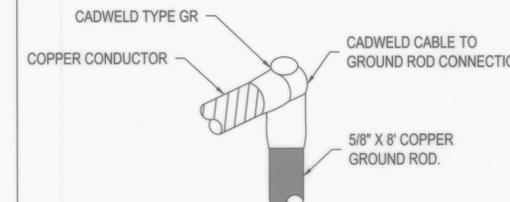
**COWLITZ COUNTY
TOWER ROAD WATER MAIN AND
JUANITA BOOSTER PUMP STATION
ELECTRICAL DETAILS**



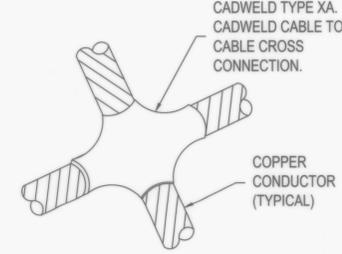
GROUND TEE DETAIL
NOT TO SCALE



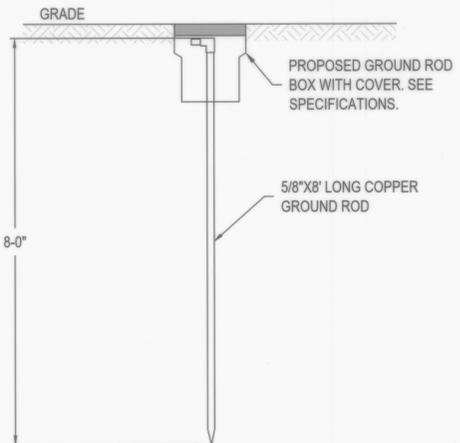
GROUND REBAR DETAIL
NOT TO SCALE



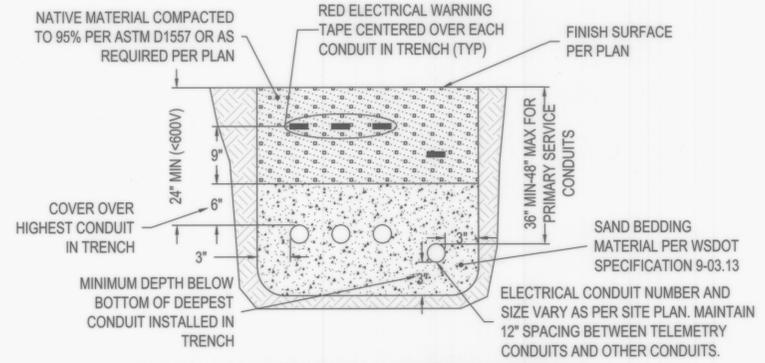
GROUND TEE DETAIL
NOT TO SCALE



GROUND CROSS DETAIL
NOT TO SCALE



GROUND ROD DETAIL
NOT TO SCALE



TYPICAL ELECTRICAL TRENCH DETAIL
NOT TO SCALE

NOTE: BURY DEPTH OF CONDUIT AND HORIZONTAL SPACING SHALL BE CONFIRMED WITH SERVING UTILITY BEFORE CONSTRUCTION.

NO.	DATE	DESCRIPTION	BY	REVIEW

REVISIONS

OWNER: CLC	DATE: Oct 8, 2024	CLIENT: CC	JOB NO.: 22-0177
DESIGNED: MMS	PLOT DATE: Oct 21, 2024	REVISIONS: JWB-P-E05.DWG	

DWG NO.: E05	SHEET NO.: 22	TOTAL SHEETS: 23
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SCALE: SHOWN
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"
1" = 2'



SIGNED: 10/18/2024

POWER CONDUIT AND CONDUCTOR SCHEDULE					
CIRCUIT	SOURCE	DESTINATION	TRADE SIZE	(QUANTITY) CONDUCTORS	NOTES
P1	UTILITY DISTRIBUTION POLE	UTILITY METER	4"	2500LB MULE TAPE	
P2	UTILITY METER	MAIN SERVICE DISCONNECT	1 1/4"	(3) - #3, (1) - #3 N	
P3	MAIN SERVICE DISCONNECT	MANUAL TRANSFER SWITCH, "MTS"	1 1/4"	(3) - #3, (1) - #3 N, (1) - #8 GND	
P4	MANUAL TRANSFER SWITCH, "MTS"	GENERATOR RECEPTACLE DISCONNECT SWITCH	1 1/4"	(3) - #3, (1) - #3 N, (1) - #8 GND	
P5	GENERATOR RECEPTACLE DISCONNECT SWITCH	GENERATOR RECEPTACLE	1 1/4"	(3) - #3, (1) - #3 N, (1) - #8 GND	
P6	MANUAL TRANSFER SWITCH, "MTS"	PUMP CONTROL PANEL, "PCP"	1 1/4"	(3) - #3, (1) - #3 N, (1) - #8 GND	
P7	PUMP CONTROL PANEL, "PCP"	MISSION CONTROL PANEL, "MCP"	3/4"	(2) - #12, (1) - #12 GND	USE 15 AMP BREAKER IN "PCP"
P8	PUMP CONTROL PANEL, "PCP"	VAULT SUMP PUMP RECEPTACLE	3/4"	(2) - #12, (1) - #12 GND	USE 20 AMP BREAKER IN "PCP"

ELECTRICAL EQUIPMENT AND INSTRUMENTATION SCHEDULE			
ITEM	DESCRIPTION	MANUFACTURER	MODEL NO.
A	MAIN SERVICE DISCONNECT SWITCH - NEMA 4X STAINLESS STEEL ENCLOSURE, HEAVY DUTY, SERVICE ENTRANCE RATED, THERMAL MAGNETIC, 100A, 600 VOLT, 3 ϕ , 42 KAIC WITHSTAND, CIRCUIT BREAKER SWITCH, FLEX HANDLE OPERATOR MOUNTED ON SIDE OF ENCLOSURE.	SIEMENS	ED6 OR EQUAL
B	MANUAL TRANSFER SWITCH, "MTS" - 100A, 480 VOLT, HEAVY DUTY DOUBLE-THROW NON-FUSIBLE SAFETY SWITCH, NEMA 3R ENCLOSURE.	SIEMENS	DTNF363R OR EQUAL
C	GENERATOR RECEPTACLE - 480 VOLT, 3 ϕ , 4W SERVICE, 100 AMP WITH REVERSED CONTACTS (FEMALE). RECEPTACLE SHALL BE PROVIDED WITH CAST BACK BOX, ANGLE ADAPTER, GASKETS, ADNA GASKETED SCREW-TYPE, WEATHERTIGHT CAP WITH CHAIN FASTENER.	APPLETON	ADR1034 OR EQUAL
D	GENERATOR RECEPTACLE DISCONNECT SWITCH - NEMA 4X STAINLESS STEEL ENCLOSURE, HEAVY DUTY BREAKER, THERMAL MAGNETIC, 100 AMP, 480 VOLT, 3 ϕ , 42 KAIC WITHSTAND, CIRCUIT BREAKER SWITCH, FLEX HANDLE OPERATOR MOUNTED ON SIDE OF ENCLOSURE.	SQUARE D	ED6 OR EQUAL

CONTROL CONDUIT AND CONDUCTOR SCHEDULE					
CIRCUIT	SOURCE	DESTINATION	TRADE SIZE	(QUANTITY) CONDUCTORS	NOTES
C1	PUMP CONTROL PANEL, "PCP"	MISSION CONTROL PANEL, "MCP"	1 1/4"	(24) - #14, (1) - #14 GND	FOR ALL DIGITAL INPUTS SHOWN IN TABLE, THIS SHEET.

INSTRUMENTATION CONDUIT AND CONDUCTOR SCHEDULE					
CIRCUIT	SOURCE	DESTINATION	TRADE SIZE	(QUANTITY) CONDUCTORS	NOTES
I1	PUMP CONTROL PANEL, "PCP"	MISSION CONTROL PANEL, "MCP"	1 1/4"	(3) - 2-CONDUCTOR SHIELDED CABLES	FOR ALL ANALOG INPUTS SHOWN IN TABLE, THIS SHEET.

MISSION CONTROL PANEL ANALOG INPUTS	
#	ANALOG INPUTS
1	SUCTION PRESSURE TRANSMITTER
2	DISCHARGE PRESSURE TRANSMITTER
3	DISCHARGE FLOW METER

MISSION CONTROL PANEL DIGITAL INPUTS	
#	DIGITAL INPUTS
1	PUMP #1 IN HAND
2	PUMP #1 IN AUTO
3	VFD #1 RUNNING
4	VFD #1 FAULT
5	PUMP #2 IN HAND
6	PUMP #2 IN AUTO
7	VFD #2 RUNNING
8	VFD #2 FAULT
9	STATION INTRUSION ALARM
10	STATION POWER FAIL
11	STATION FLOOD ALARM
12	FLOW METER TOTALIZER

COWLITZ COUNTY
TOWER ROAD WATER MAIN AND
JUANITA BOOSTER PUMP STATION
ELECTRICAL SCHEDULES



NO.	DATE	DESCRIPTION	BY	REVIEW