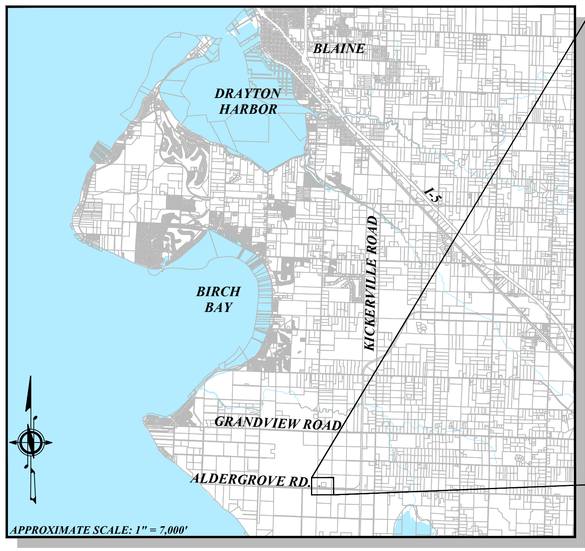
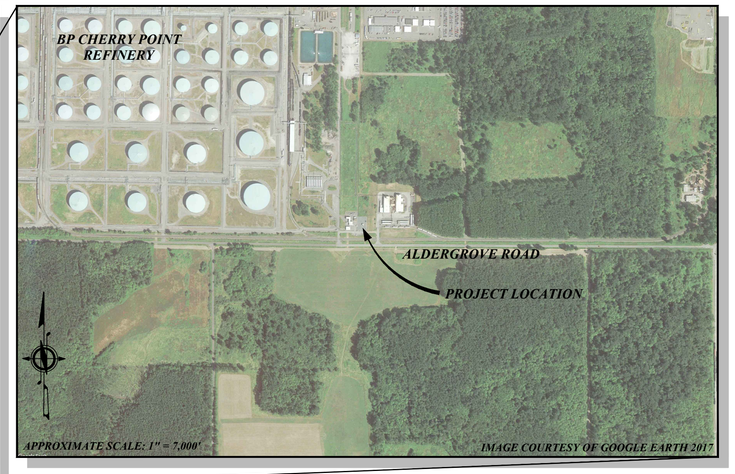
PUBLIC UTILITY DISTRICT No. 1
of Whatcom County

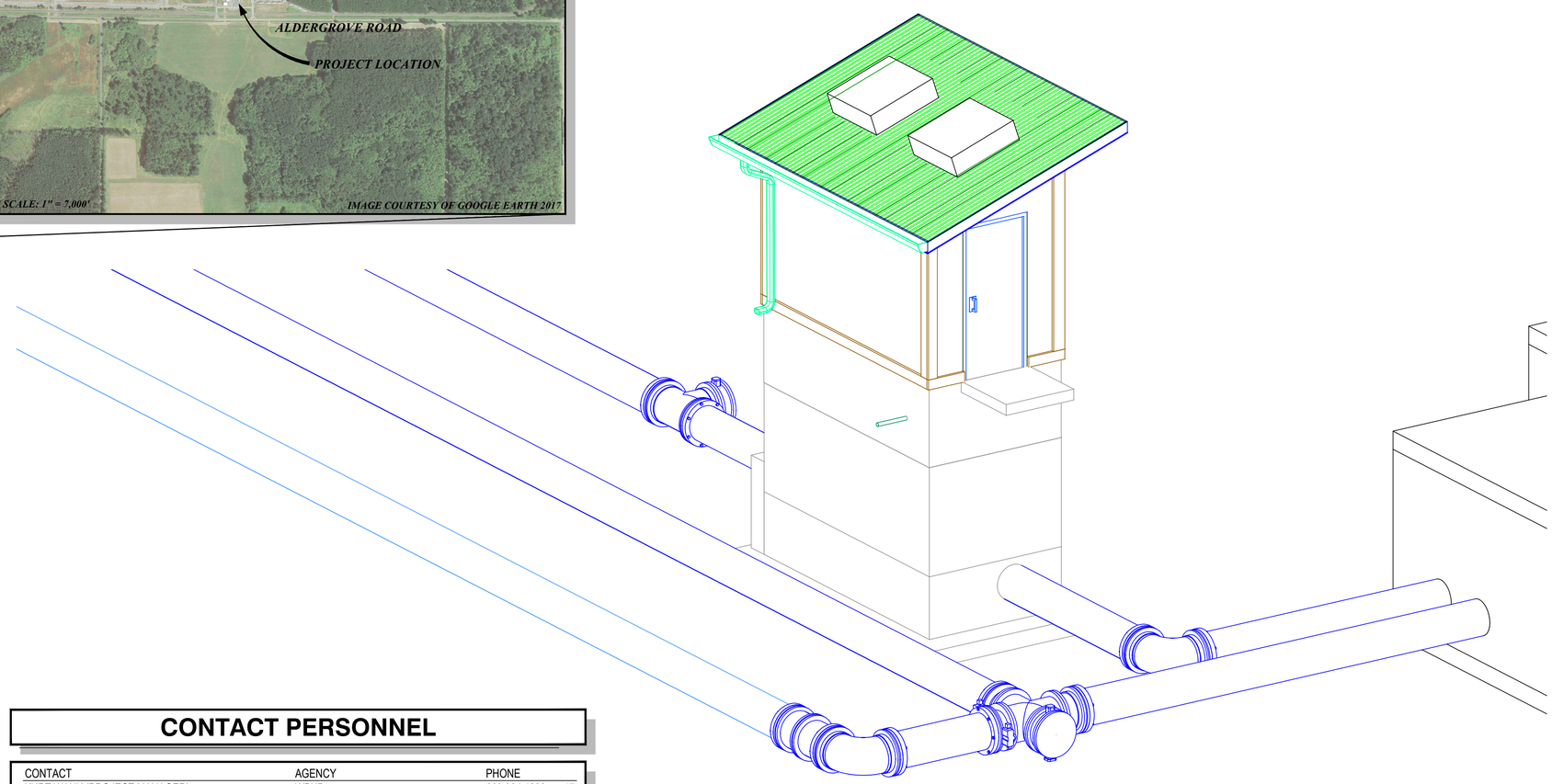
PUBLIC UTILITY DISTRICT NO. 1 OF WHATCOM COUNTY
D STATION - FLOW AND CONTROL IMPROVEMENTS

PROJECT VICINITY MAP



PROJECT LOCATION MAP





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CALL 48 HOURS BEFORE YOU DIG
ONE CALL 811

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

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\\DATA\WPUD\115-002\WO 8 PSE METER AT D STATION\CAD\WO8-P-COV

LEGEND

EXISTING LEGEND

- BENCH MARK
- SET MAG NAIL/FLASHER
- EASEMENT
- PROPERTY LINE
- RIGHT OF WAY
- 120 MAJOR CONTOUR
- 119 MINOR CONTOUR
- UTILITY POLE
- POWER PAD MOUNT TRANSFORMER
- T UNDERGROUND TELEPHONE
- P UNDERGROUND POWER
- OHP OVERHEAD POWER
- ST STORM DRAIN LINE
- W WATERMAIN
- WATERMAIN STRUCTURE
- RAILROAD TRACK
- MONITORING WELL
- FENCE
- BUILDING EDGE
- ROADWAY ASPHALT AREA
- CONCRETE
- SURVEY FEATURE INDICATED ON PLAN

DEMOLITION LEGEND

- GRAVEL REMOVAL
- UTILITY REMOVAL LIMITS

PROPOSED LEGEND

- BUILDING
- CRUSHED SURFACING TOP COURSE
- REVERSE THRUST BLOCK
- HORIZONTAL THRUST BLOCK
- WATER MAIN
- SUMP PUMP DISCHARGE PIPE
- CHAIN LINK FENCE
- TEE
- CROSS
- BEND
- REDUCER
- RESTRAINED JOINT
- VALVE

GENERAL NOTES

GENERAL NOTES

1. A COPY OF THE APPROVED PLANS MUST BE ON-SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
2. FORTY-EIGHT HOUR NOTICE WILL BE REQUIRED PRIOR TO STARTING NEW CONSTRUCTION AND THE CONTRACTOR MUST HOLD A PRECONSTRUCTION MEETING WITH THE OWNER PRIOR TO THE START OF CONSTRUCTION.
3. ALL WORKMANSHIP, CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THESE SPECIAL PROVISIONS, PLANS, WHATCOM COUNTY DEVELOPMENT STANDARDS (LATEST EDITION), AND THE 2023 EDITION OF THE WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, AS ISSUED BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION AND THE AMERICAN PUBLIC WORKS ASSOCIATION, WHICH IS HEREINAFTER REFERRED TO AS THE STANDARD SPECIFICATIONS.
4. CONSTRUCTION ACTIVITY SHALL OCCUR BETWEEN 7:00AM TO 8:00PM AND MAY BE MODIFIED AS NECESSARY TO COMPLETE THE CONSTRUCTION WITH WHATCOM COUNTY PUBLIC WORKS APPROVAL. HOURS OF WORK MAY BE RESTRICTED DURING CERTAIN HOURS OF THE DAY ON ALL ROADS AND STREETS PER WHATCOM COUNTY CODE 12.28.150 HOURS OF WORK. OFF HOURS AND OWNER HOLIDAYS (MEMORIAL DAY, INDEPENDENCE DAY, AND LABOR DAY) QUIET WORK IS ALLOWED WITH NO OFFSITE NOISE. WORK OUTSIDE WHATCOM COUNTY PUBLIC WORKS ALLOWABLE WORK HOURS SHALL BE APPROVED IN WRITING BY THE OWNER.
5. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE ENGINEER.
6. THE EXISTING TOPOGRAPHIC AND PHYSICAL FEATURES SHOWN ON THESE PLANS ARE BASED ON A FIELD SURVEY BY PACIFIC SURVEYING AND ENGINEERING, DECEMBER OF 2017, RECORD DRAWINGS, AND FIELD RECONNAISSANCE BY RH2 ENGINEERING.
7. 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.
8. THE CONTRACTOR SHALL CONTAIN WORK TO WITHIN PARCEL 'A' (D STATION).
9. ANY REVISIONS TO PLANS MUST BE REVIEWED BY THE ENGINEER AND APPROVED BY THE OWNER PRIOR TO ANY IMPLEMENTATION IN THE FIELD.
10. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO LOCATE AND PROTECT ALL EXISTING SURVEY MONUMENTS DURING CONSTRUCTION. ALL SURVEY MONUMENTS THAT MAY BE DISTURBED BY CONSTRUCTION SHALL BE IDENTIFIED, REFERENCED, AND REPLACED IN ACCORDANCE WITH RECOGNIZED SURVEYING PRACTICES BY A LICENSED LAND SURVEYOR PROVIDED BY THE CONTRACTOR.

EXISTING UTILITIES

1. THE LOCATION AND ELEVATIONS OF EXISTING UTILITIES INDICATED ON THE DRAWINGS ARE APPROXIMATE AND HAVE BEEN PLOTTED FROM THE INFORMATION AVAILABLE TO THE ENGINEER. THE SOURCE OF INFORMATION GENERALLY CONSISTS OF FIELD SURVEY, AVAILABLE RECORDS SUPPLIED BY THE OWNER OR THROUGH VERBAL COMMUNICATIONS WITH THE OWNER'S STAFF. THE OWNER AND ENGINEER DO NOT GUARANTEE AND ASSUME NO RESPONSIBILITY FOR THE ACCURACY OF THIS INFORMATION. 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 ACCURATELY 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 WORK.
2. AT ALL POTENTIAL UTILITY CROSSINGS, CONTRACTOR SHALL EXPOSE AND VERIFY DEPTH, LOCATION, ALIGNMENT, MATERIAL AND SIZE OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION OF THE PROPOSED UTILITY. THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY CONFLICTS BETWEEN THE EXISTING AND PROPOSED UTILITIES. VERIFICATION OF THE EXISTING UTILITIES SHALL BE COMPLETED EARLY ENOUGH TO ALLOW THE CONTRACTOR TO ADJUST THE PROPOSED UTILITY TO ACCOMMODATE ACTUAL FIELD CONDITIONS. THE OWNER WILL NOT PAY ADDITIONAL MONEY TO THE CONTRACTOR TO RE-LAY UTILITIES OR FITTINGS.
3. ABANDONED UTILITIES MAY EXIST WITHIN THE BOUNDARIES OF THE PROPOSED PROJECT AND RECORDS DO NOT EXIST TO SHOW THE ABANDONED UTILITIES ON THESE PLANS. NOTIFY THE OWNER OF ANY UTILITIES ENCOUNTERED DURING WORK THAT ARE NOT SHOWN ON THESE PLANS. NO CHANGES TO EXISTING UTILITIES SHALL BE MADE WITHOUT OWNER APPROVAL.

RESTORATION NOTES

1. THE CONTRACTOR SHALL COVER ALL TRENCH CUTS AT THE END OF EACH WORKING DAY WITH STEEL SHEETS WHERE REGULAR CROSSINGS ARE MADE.

WATER MAIN

1. ALL EXISTING VALVES SHALL BE OPERATED BY THE OWNER.
2. ALL WATER PIPE AND APPURTENANCES SHALL BE LEAD FREE IN ACCORDANCE WITH THE SAFE DRINKING WATER ACT, SECTION 1417.
3. ALL DISTURBED AREAS SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITION.

EROSION CONTROL AND WATER POLLUTION PREVENTION

1. CONTRACTOR SHALL PREPARE A PROJECT SPECIFIC CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN. SEE TECHNICAL SPECIFICATIONS DIVISION 2 FOR MORE INFORMATION.
2. 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.
3. 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 THE OWNER SHALL BE CORRECTED BY THE CONTRACTOR. UPON FINAL ACCEPTANCE BY THE OWNER, OR AS OTHERWISE DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY, NON-DEGRADABLE EROSION CONTROL MEASURES.

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

- X / X000 — PLAN REFERENCE BUBBLE - REFERS READER BACK TO THE PLAN FROM WHICH THE DETAIL OR SECTION ORIGINATED.
- X / X000 — DETAIL/SECTION REFERENCE BUBBLE - REFERS READER TO THE DRAWING ON WHICH THE DETAIL OR SECTION IS LOCATED.

WHERE, X = SECTION/DETAIL REFERENCE NUMBER
X000 = DRAWING NUMBER ON WHICH DETAIL ORIGINATED OR RESIDES.

SECTION REFERENCE LETTER CONVENTIONS:
SECTIONS OR ELEVATIONS SHOULD HAVE A LETTER REFERENCE (A THROUGH ZZ).
DETAIL REFERENCE NUMBER CONVENTIONS:
DETAIL REFERENCES SHOULD HAVE A NUMBER REFERENCE (100 THROUGH 900).

ABBREVIATIONS

APPROX	APPROXIMATE	LF	LINEAR FEET
CB	CATCH BASIN	N	NORTHING
CL	CENTERLINE	OCM	OVERHEAD COMMUNICATIONS
CMP	CORRUGATED METAL PIPE	OHE	OVERHEAD ELECTRICAL
CO	COUNTY	OHP	OVERHEAD POWER
CONC	CONCRETE	PE	POLYETHYLENE
CSBC	CRUSHED SURFACING BASE COURSE	PROP	PROPOSED
CSTC	CRUSHED SURFACING TOP COURSE	PUD	PUBLIC UTILITY DISTRICT (OWNER)
DI	DUCTILE IRON	PVC	POLYVINYL CHLORIDE
DIA	DIAMETER	RD	ROAD
DWG	DRAWING	REQ'D	REQUIRED
E	EASTING	ROW	RIGHT OF WAY
ELEV	ELEVATION	SPEC	SPECIFICATIONS
EX	EXISTING	SS	SANITARY SEWER
FL	FLANGED	SSMH	SANITARY SEWER MANHOLE
G	GAS	ST	STORM
HMA	HOT MIXED ASPHALT	SY	SQUARE YARDS
HDG	HOT DIPPED GALVANIZED	TYP	TYPICAL
IE	INVERT ELEVATION	UNK	UNKNOWN
		W	WATER

SURVEY NOTES

- VISIBLE & SURFACE UTILITIES ARE SHOWN AS MAPPED BY PACIFIC SURVEYING AND ENGINEERING INC. (PSE). DETECTIBLE BURIED UTILITIES PAINTED BY A.P.S. IN DECEMBER 2017.
- DATA FOR THIS SURVEY WAS GATHERED BY FIELD TRAVERSE UTILIZING ELECTRONIC DATA COLLECTION IN DECEMBER 2017.
- EQUIPMENT USED: THEOMAT 00'01.5"
  EDM: ± 2 PPM, ± 3 MM
- VERTICAL DATUM: NGVD29
- SURVEY CONTROL POINT #11571 (SHOWN HERON) EL=121.90'
- HORIZONTAL DATUM: WA. STATE PLANE NORTH ZONE NAD 83/91
- BASIS OF BEARINGS: FOUND SECTION MONUMENTS ON THE SOUTH LINE OF SECTION 8, BEARING N88°24'32"W AS SHOWN
- CONTOUR INTERVALS ARE 1 FOOT AND ARE COMPUTER GENERATED FROM GROUND FIELD TOPOGRAPHY GATHERED FOR THIS SURVEY UTILIZING ELECTRONIC DATA COLLECTION AS SHOWN HERON.
- THIS TOPOGRAPHY MAP WAS COMPLETED WITHOUT THE BENEFIT OF A TITLE REPORT. PARCEL LINES, EASEMENT LINES, & RIGHT OF WAY MARGINS ARE SHOWN PER AVAILABLE RECORD INFORMATION. A BOUNDARY SURVEY WAS NOT PERFORMED AND NO BOUNDARY MONUMENTS WERE SET DURING THIS SURVEY.

PIPE LENGTH MEASUREMENTS

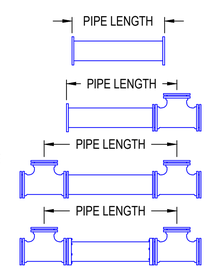
PIPE LENGTHS CALLED OUT ON PLANS ARE MEASURED AS FOLLOWS:

FLANGE x FLANGE (FLxFL) PIPE MEASURED FROM FACE OF FLANGE TO FACE OF FLANGE.

FLANGE x PLAIN END (FLxPE) PIPE MEASURED FROM FACE OF FLANGE TO CENTER OF FITTING.

PLAIN END x PLAIN END (PExPE) PIPE MEASURED FROM CENTER OF FITTING TO CENTER OF FITTING.

RESTRAINED JOINT x RESTRAINED JOINT (RJxRJ) PIPE MEASURED FROM CENTER OF FITTING TO CENTER OF FITTING.



NOTE: FITTINGS ARE ASSUMED TO BE STANDARD LENGTH 125#, 250# FLANGED OR COMPACT CLASS 350 MECHANICAL JOINTS. CONTRACTOR RESPONSIBLE FOR VERIFYING LENGTHS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO TAKE INTO ACCOUNT ANY VARIATIONS IN FITTING DIMENSIONS.

RH2

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SIGNED: 04/13/2023

PUBLIC UTILITY DISTRICT NO. 1 OF WHATCOM COUNTY
D STATION - FLOW AND CONTROL IMPROVEMENTS

PUBLIC UTILITY DISTRICT No. 1 of Whatcom County

LEGEND AND GENERAL NOTES

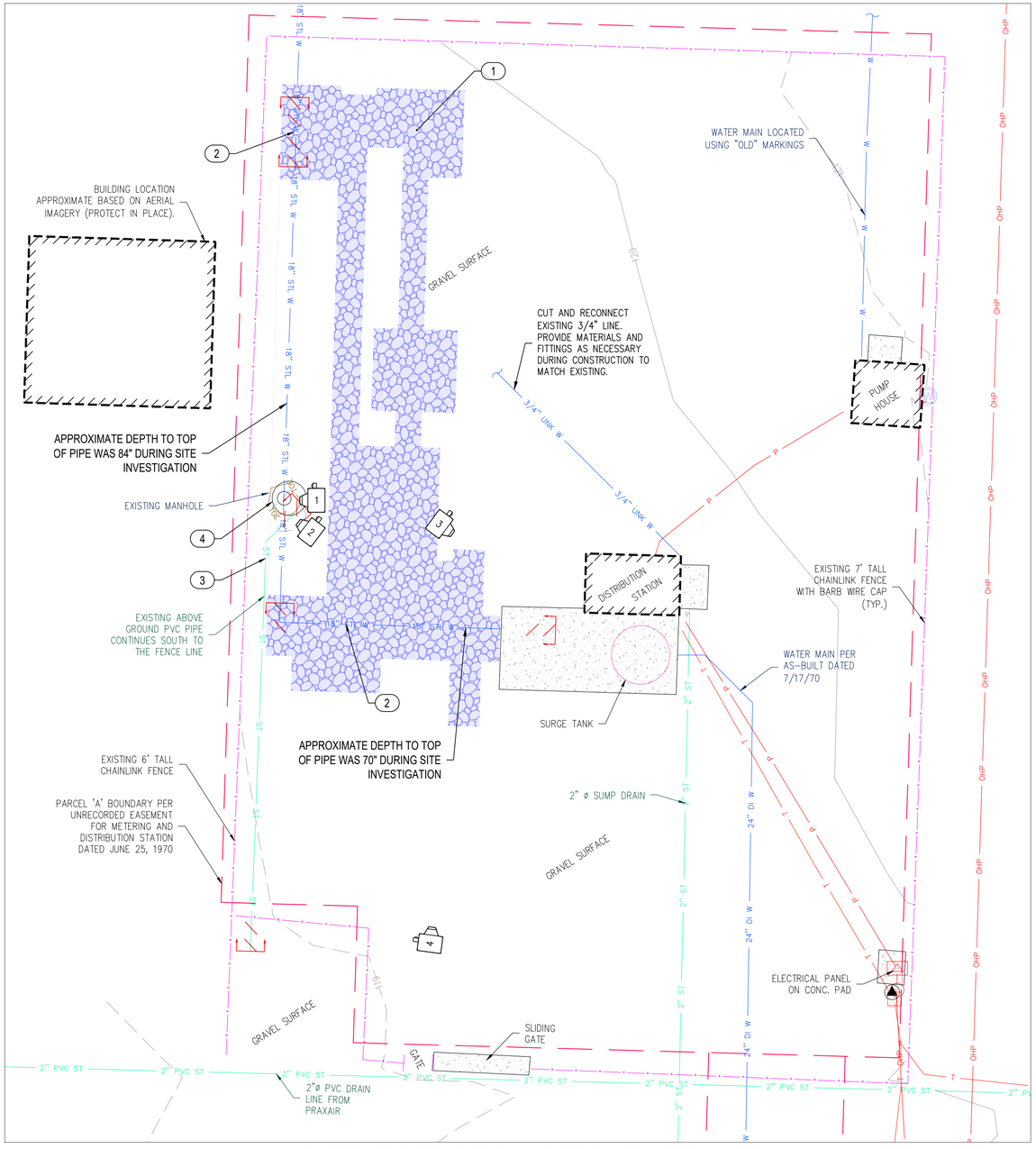
ENGINEER: OMP | REVIEWED: DWB | SAVE DATE: Apr 13, 2023 | PLOT DATE: Apr 13, 2023 | CLIENT: WPUD | FILENAME: DSTA-D-COV.DWG | JOB NO.: 21-0163

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

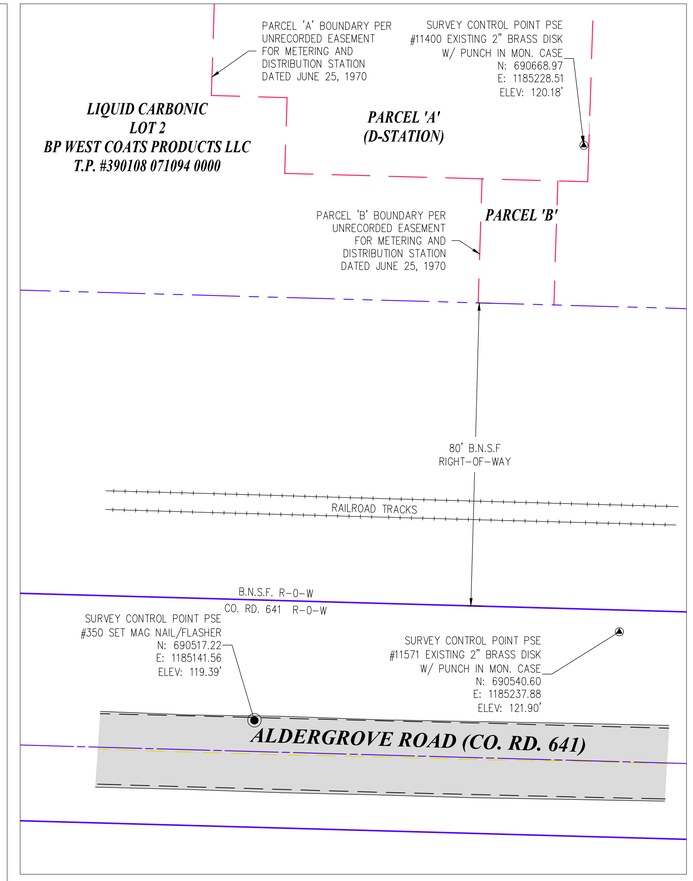
SCALE: SHOWN
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: G01 | SHEET NO.: 2 / 20



EXISTING SITE, TESC AND DEMOLITION PLAN

1" = 10'



SURVEY CONTROL MAP

1" = 20'

GENERAL NOTES

- CONNECTIONS TO THE NEW MAIN WILL REQUIRE SHUT DOWN OF THE MAIN WATER FEED TO BP WHICH IS USED FOR FIRE SUPPRESSION. THE CONTRACTOR SHALL PROVIDE A SCHEDULE AT THE PRECONSTRUCTION MEETING OF WHEN THE SHUTDOWN WILL OCCUR. THE CONTRACTOR SHALL AGAIN NOTIFY THE OWNER AND BP A MINIMUM OF 14 CALENDAR DAYS IN ADVANCE OF THE SHUTDOWN. SHUT DOWNS WILL BE LIMITED TO A MAXIMUM OF 4 HOURS AND CANNOT BE WITHIN 48 HOURS OF EACH OTHER.
- CONSTRUCTION SHALL BE LIMITED TO THE D STATION PROJECT SITE WITHIN THE CHAINLINK FENCE. THIS AREA IS DEFINED AS THE CONSTRUCTION LIMITS.
- ALL MATERIALS SHALL BE PROPERLY DISPOSED OF AT A CONTRACTOR-PROVIDED DISPOSAL SITE PER WSDOT SPECIFICATION SECTION 2-03.3(7)C.

DEMOLITION NOTES

1. REMOVE AND DISPOSE OF GRAVEL TO LIMITS SHOWN ON THIS SHEET. TRENCH WIDTHS SHALL BE PER SPECIFICATIONS DIVISION 15.11.
2. REMOVE EXISTING WATER MAIN AS NECESSARY TO MAKE CONNECTIONS SHOWN ON THE PHASING PLAN. THE WATER MAIN IS COATED WITH ASBESTOS CONTAINING MATERIAL. ASBESTOS ABATEMENT WILL NEED TO BE CONDUCTED IN ACCORDANCE WITH SPECIFICATIONS DIVISION 2.
3. REMOVE AND PROPERLY DISPOSE OF EXISTING ABOVE GROUND PVC PIPE IN ITS ENTIRETY.
4. ABANDON EXISTING MANHOLE. REMOVE STRUCTURE DOWN TO A DEPTH OF AT LEAST 4 FEET BELOW THE EXISTING GRADE. REMOVE EQUIPMENT AS NOTED IN THE PHOTOS ON THIS SHEET. FILL THE MANHOLE WITH SAND AND COMPACT TO 90 PERCENT DENSITY PER WSDOT SPECIFICATIONS SECTION 2-03.3(14)C METHOD B. DEBRIS FROM REMOVAL OF UPPER SECTION MAY BE MIXED WITH SAND SUBJECT TO OWNER APPROVAL.

PHASING NOTES

FOR PHASING PLAN AND NOTES, REFER TO DWG. NO. C02.

REMOVE EXISTING ELECTRICAL EQUIPMENT AND RETURN TO OWNER.
PLUG ANY PENETRATIONS INTO THE PIPE WITH APPROPRIATELY SIZED FITTINGS TO ENSURE NO LEAKAGE.
REMOVE EXISTING SUMP PUMP AND PIPING AND RETURN TO OWNER
REMOVE EXISTING ELECTRICAL EQUIPMENT AND RETURN TO OWNER.
ABANDON STEPS IN MANHOLE

1 **SITE PHOTO**

REMOVE RING AND COVER AND RETURN TO OWNER
REMOVE STRUCTURE BELOW GRADE AS NOTED ON THIS SHEET.
REMOVE SUMP PUMP PIPING.

2 **SITE PHOTO**

SURGE TANK (PROTECT IN PLACE)
D STATION ABOVE GRADE STRUCTURE (PROTECT IN PLACE)
D STATION BELOW GRADE STRUCTURE (PROTECT IN PLACE)

3 **SITE PHOTO**

APPROX. LOCATION OF NEW WATER MAIN PIPING
EXISTING METER ACCESS STRUCTURE TO BE ABANDONED
SUMP PUMP DISCHARGE PIPING TO BE REMOVED

4 **SITE PHOTO**

RH2

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PUBLIC UTILITY DISTRICT NO. 1 OF WHATCOM COUNTY
D STATION - FLOW AND CONTROL IMPROVEMENTS

PUBLIC UTILITY DISTRICT No. 1 of Whatcom County

EXISTING SITE, DEMOLITION & TESC PLAN

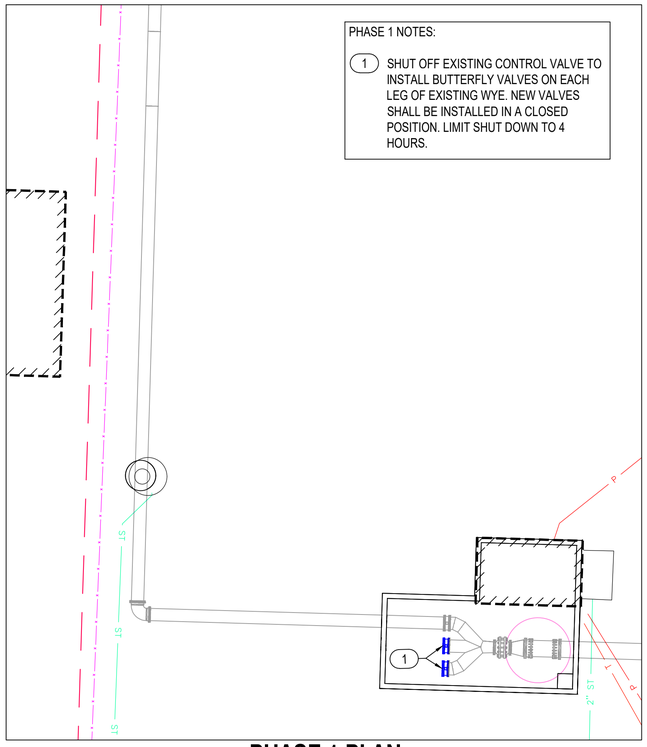
ENGINEER: OMP | SAVE DATE: Apr 13, 2023 | CLIENT: WPUD | JOB NO.: 21-0163
REVIEWED: DWB | PLOT DATE: Apr 13, 2023 | FILENAME: DSTA-D-PREP.DWG

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

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

DWG NO.: C01 | SHEET NO.: 3 / 20

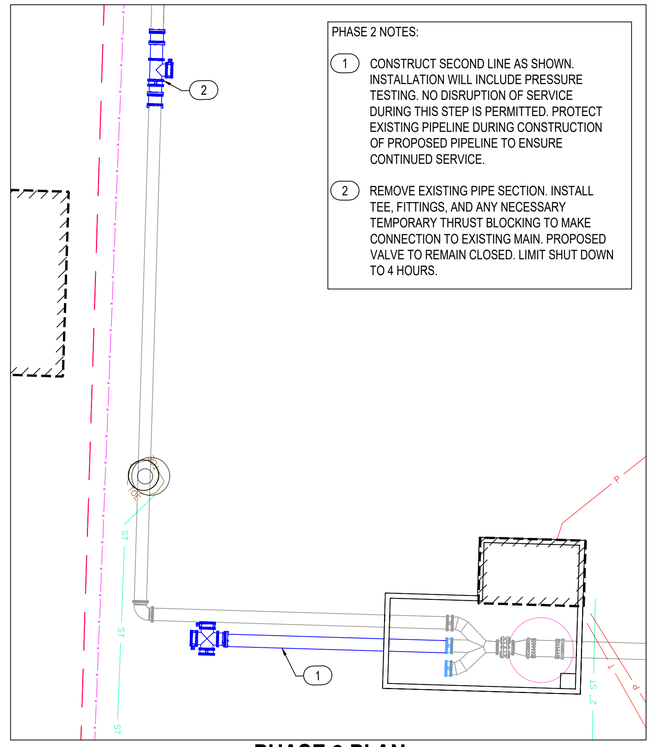


PHASE 1 NOTES:

1. SHUT OFF EXISTING CONTROL VALVE TO INSTALL BUTTERFLY VALVES ON EACH LEG OF EXISTING WYE. NEW VALVES SHALL BE INSTALLED IN A CLOSED POSITION. LIMIT SHUT DOWN TO 4 HOURS.

PHASE 1 PLAN

1" = 10'

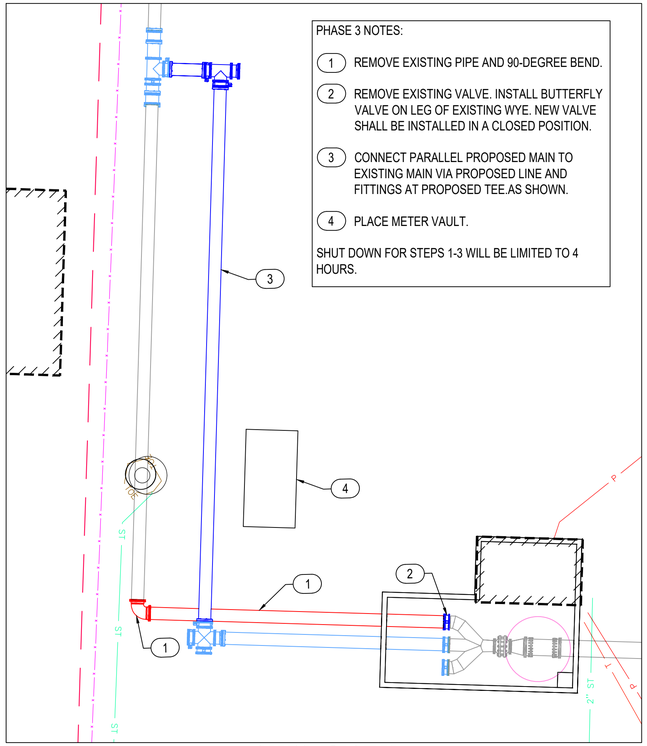


PHASE 2 NOTES:

1. CONSTRUCT SECOND LINE AS SHOWN. INSTALLATION WILL INCLUDE PRESSURE TESTING. NO DISRUPTION OF SERVICE DURING THIS STEP IS PERMITTED. PROTECT EXISTING PIPELINE DURING CONSTRUCTION OF PROPOSED PIPELINE TO ENSURE CONTINUED SERVICE.
2. REMOVE EXISTING PIPE SECTION. INSTALL TEE, FITTINGS, AND ANY NECESSARY TEMPORARY THRUST BLOCKING TO MAKE CONNECTION TO EXISTING MAIN. PROPOSED VALVE TO REMAIN CLOSED. LIMIT SHUT DOWN TO 4 HOURS.

PHASE 2 PLAN

1" = 10'



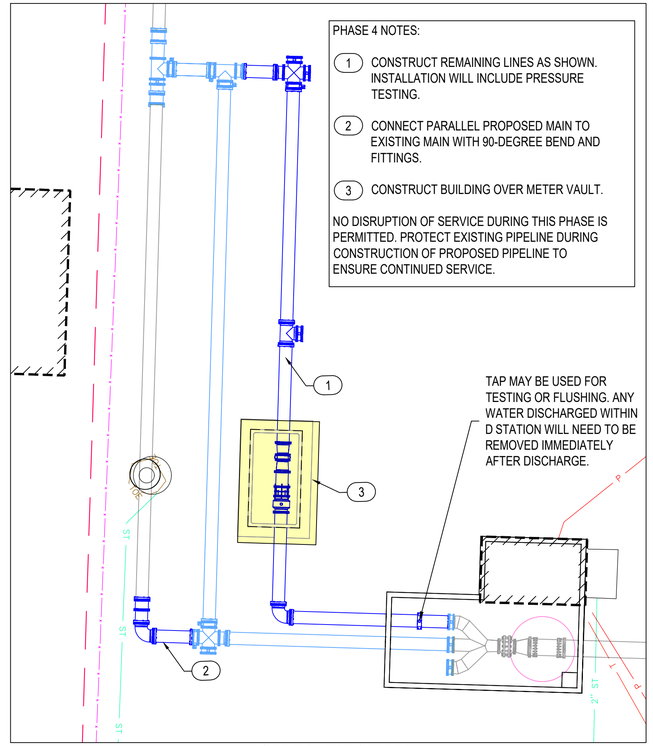
PHASE 3 NOTES:

1. REMOVE EXISTING PIPE AND 90-DEGREE BEND.
2. REMOVE EXISTING VALVE. INSTALL BUTTERFLY VALVE ON LEG OF EXISTING WYE. NEW VALVE SHALL BE INSTALLED IN A CLOSED POSITION.
3. CONNECT PARALLEL PROPOSED MAIN TO EXISTING MAIN VIA PROPOSED LINE AND FITTINGS AT PROPOSED TEE.AS SHOWN.
4. PLACE METER VAULT.

SHUT DOWN FOR STEPS 1-3 WILL BE LIMITED TO 4 HOURS.

PHASE 3 PLAN

1" = 10'



PHASE 4 NOTES:

1. CONSTRUCT REMAINING LINES AS SHOWN. INSTALLATION WILL INCLUDE PRESSURE TESTING.
2. CONNECT PARALLEL PROPOSED MAIN TO EXISTING MAIN WITH 90-DEGREE BEND AND FITTINGS.
3. CONSTRUCT BUILDING OVER METER VAULT.

NO DISRUPTION OF SERVICE DURING THIS PHASE IS PERMITTED. PROTECT EXISTING PIPELINE DURING CONSTRUCTION OF PROPOSED PIPELINE TO ENSURE CONTINUED SERVICE.

PHASE 4 PLAN

1" = 10'

PHASING LEGEND

- EXISTING PIPING
- EXISTING PIPING TO BE REMOVED
- CURRENT PHASE PIPING
- PREVIOUS PHASE PIPING

PHASING NOTES

PHASING PLAN SHOWN IN SCHEMATIC AND THE CONTRACTOR SHALL SUBMIT A PHASING PLAN TO THE DISTRICT FOR REVIEW AND APPROVAL PRIOR TO ANY EXCAVATION WORK. SUGGESTED PHASING IS AS FOLLOWS:

- SHUT OFF MAIN VALVE AND REMOVE BLIND FLANGES ON CENTER AND SOUTH PIPES TO INSTALL NEW VALVES. BLIND FLANGE SOUTH VALVE.
- WORK ON EXTERIOR TO 90° BEND. BLIND FLANGE AND PRESSURE TEST PIPE PER SPECIFICATIONS SECTION 15.18.02.
- INSTALL TEE AT NORTH END OF OLD LINE AND TIE IN 90° BEND ON SOUTH END OF OLD LINE. PRESSURE TEST AND BRING ONLINE.
- INSTALL REMAINING PIPE, VAULT, METER, VALVES, AND TEES. PRESSURE TEST AND BRING ONLINE.
- EXISTING CONTROL VALVE SHALL BE LEFT IN PLACE AND USED TO FACILITATE SHUT DOWNS.

NOTE: PROPOSED PIPE, FITTINGS, AND APPURTENANCES ARE DETAILED ON DWG NO. C03.

RH2

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SIGNED: 04/13/2023

PUBLIC UTILITY DISTRICT NO. 1 OF WHATCOM COUNTY

D STATION - FLOW AND CONTROL IMPROVEMENTS

PUBLIC UTILITY DISTRICT No. 1 of Whatcom County

PHASING PLAN

ENGINEER: OMP
REVIEWED: DWB
SAVE DATE: Apr 13, 2023
PLOT DATE: Apr 13, 2023
CLIENT: WPUD
FILENAME: DSTA-D-PHASING.DWG
JOB NO: 21-0163

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

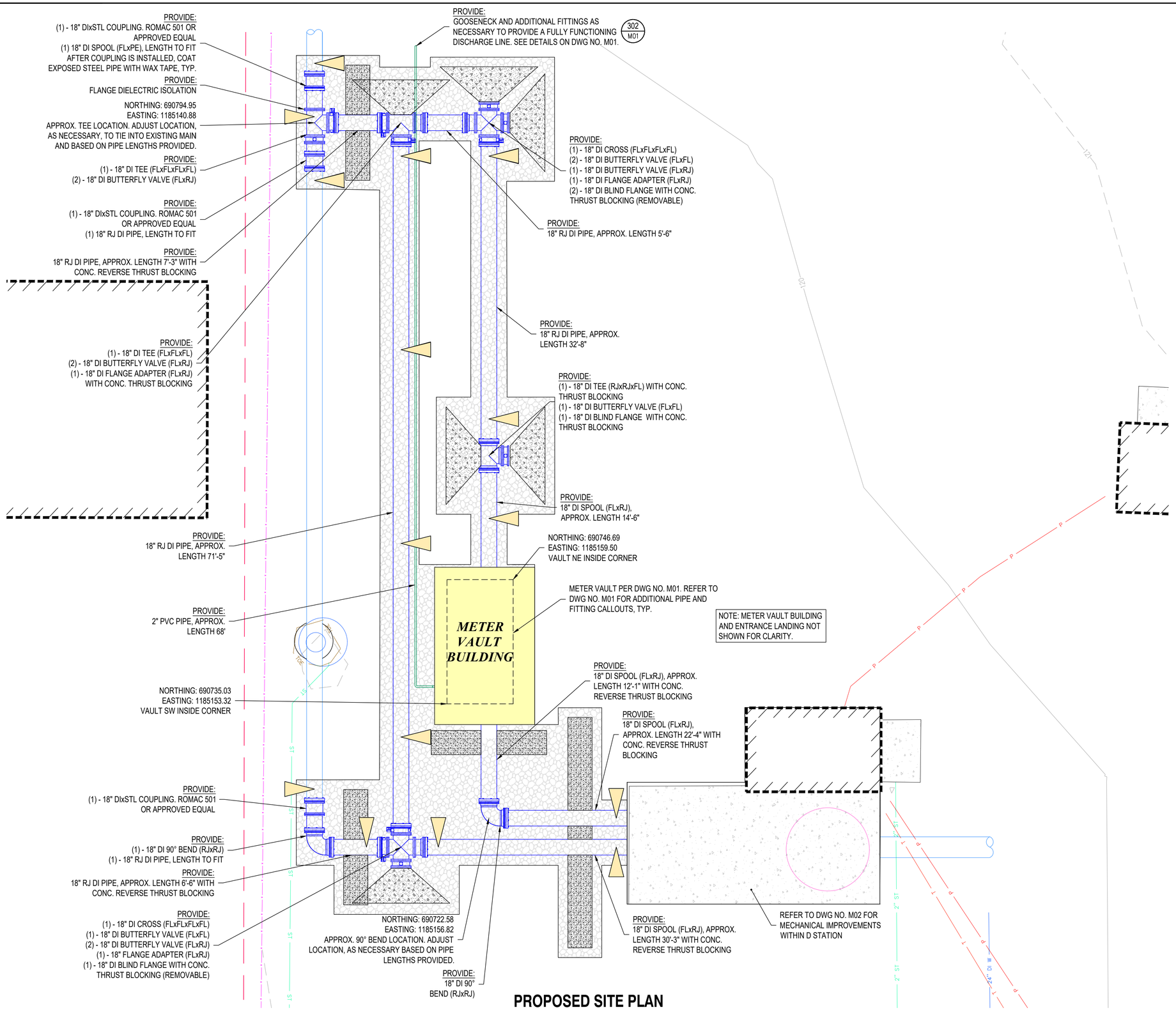
SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: C02

SHEET NO.: 4 / 20



PROPOSED SITE PLAN

1" = 5'

GENERAL NOTES

1) GRAVEL RESTORATION ELEVATIONS SHALL MATCH EXISTING. GRADE GRAVEL IN A MANNER TO PREVENT ANY LOW POINTS IN THE RESTORED LOCATIONS. SURFACE RESTORATION SHALL BE 4" GRAVEL TOP COURSE PER SPECIFICATIONS SECTION 2.11.8.
2) PROVIDE ANODES WHERE INDICATED ( ). SEE DETAILS ON DWG NO. C05 FOR ADDITIONAL INFORMATION.
3) PIPE TRENCH SHALL BE PER DETAIL ON DWG NO. C05.
4) ALL COUPLINGS ARE TO BE FULLY RESTRAINED THROUGH THE USE OF ANCHOR PINS OR AN APPROVED EQUIVALENT.
5) PROVIDE POLYETHYLENE ENCASEMENT PER DETAIL ON DWG NO. C04 FOR ALL BURIED PIPING.
6) ALL BURIED VALVES SHALL HAVE VALVE BOXES PER DIVISION 15.40.08. VALVE BOX ASSEMBLY SHALL BE ADJUSTABLE TO ACCOMMODATE TRENCH DEPTH.
7) CONCRETE HORIZONTAL THRUST BLOCKING SHALL BE PER DETAIL ON DWG NO. C05.
8) CONCRETE REVERSE THRUST BLOCKING SHALL BE PER DETAIL ON DWG NO. C05. SHACKLE RODS SHALL BE ATTACHED TO FITTINGS ON EITHER SIDE OF REVERSE BLOCKS, TYP.

RH2

DANIEL W. BURNETT — STATE OF WASHINGTON — 38508 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: 04/13/2023

ORIN M. FAU — STATE OF WASHINGTON — 57679 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: 04/13/2023

PUBLIC UTILITY DISTRICT NO. 1 OF WHATCOM COUNTY

D STATION - FLOW AND CONTROL IMPROVEMENTS

PUBLIC UTILITY DISTRICT No. 1 of Whatcom County

PROPOSED SITE PLAN

ENGINEER: CMP | SAVE DATE: Apr 13, 2023 | CLIENT: WPUD | JOB NO.: 21-0163

REVIEWED: DWB | PLOT DATE: Apr 13, 2023 | FILENAME: DSTA-D-CIV.DWG

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

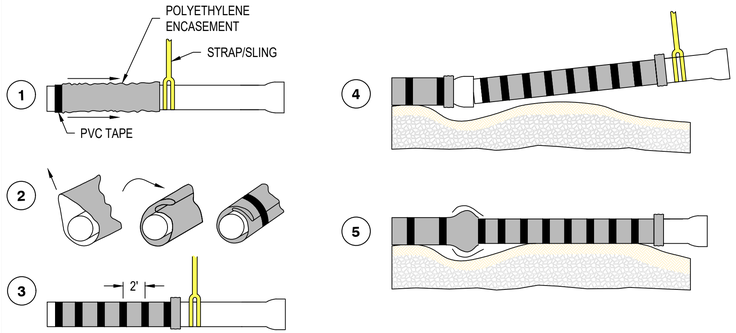
SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: C03

SHEET NO.: 5 / 20



INSTALLATION PROCEDURES FOR POLYETHYLENE ENCASEMENT ON BELL AND SPIGOT PIPE:

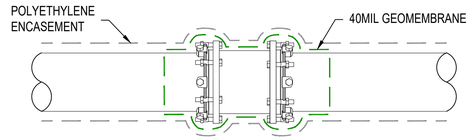
1. CUT THE POLYETHYLENE TUBE TWO FEET LONGER THAN PIPE AND SLIP OVER CLEAN PIPE STARTING AT THE SPIGOT END. CIRCUMFERNETIALLY TAPE THE SPIGOT END OF THE TUBE TO THE PIPE BARREL BEHIND THE INSERTION LINE SO IT WILL BE AS CLOSE AS POSSIBLE TO THE FACE OF THE BELL AFTER ASSEMBLY WITHOUT INTERFERING WITH THE GASKET.
2. TAKE UP SLACK IN THE TUBE ALONG THE PIPE BARREL WITH PVC TAPE, MAKING A SNUG BUT NOT TIGHT FIT. FOLD OVER ON TOP OF PIPE AND SECURE IN PLACE WITH 2 LAYERS OF CIRCUMFERENTIALLY WRAPPED TAPE.
3. SPREAD THE POLYETHYLENE TUBE AS SHOWN AND APPLY CIRCUMFERENTIAL WRAPS OF TAPE EVERY TWO FEET ON CENTER UNTIL YOU RUN OUT OF ROOM.
4. DIG A SHALLOW BELL HOLE IN THE TRENCH BOTTOM, LOWER THE PIPE (ENSURING OVERLAP IS ORIENTED AS SHOWN), AND MAKE UP THE JOINT. SLIDE THE SLING TO THE BELL END AND LIFT PIPE TO PROVIDE CLEARANCE TO SLIDE ENCASEMENT TO THE END, ENSURING NO DEBRIS IS ON PIPE OR ENTERS ENCASEMENT. CONTINUE FOLDING SNUGLY AND TAPING.
5. PULL POLYETHYLENE FORWARD FROM PREVIOUS JOINT OVER THE BELL, ENSURING THERE ARE AT LEAST 12" OF OVERLAP. SECURE WITH TAPE AT THE OVERLAP AND BEHIND THE PRECEDING BELL.

GENERAL NOTES:

1. REPAIR MINOR DAMAGE TO POLYETHYLENE ENCASEMENT WITH ADHESIVE TAPE OR WITH AN ADDITIONAL SHEET OF POLYETHYLENE WITH EDGES SEALED WITH ADHESIVE TAPE.
2. IN AREAS WITH NO GROUNDWATER AND NO PRECIPITATION IN FORECAST DURING INSTALLATION, A PIECE OF TAPE EVERY 6 FEET (OR MORE OFTEN AS REQUIRED) MAY BE USED IN LIEU OF FULL CIRCUMFERENTIAL WRAPPING EVERY 2 FEET. FULL CIRCUMFERENTIAL TAPE AT SPIGOT END AND ON EITHER SIDE OF BELL IS STILL REQUIRED.
3. FOR ODD-SHAPED APPURTENANCES, WRAP WITH A FLAT SHEET OR SPLIT LENGTH OF TUBE BY PASSING THE SHEET UNDER THE APPURTENANCE AND BRINGING THE SHEET AROUND THE BODY. MAKE SEAMS BY BRINGING THE EDGES OF THE POLYETHYLENE SHEET TOGETHER, FOLDING THEM OVER TWICE, AND TAPING THEM. TAPE THE POLYETHYLENE SECURELY IN PLACE AT THE VALVE STEM AND OTHER PENETRATIONS.
4. WHERE POLYETHYLENE-WRAPPED PIPE JOINS AN ADJACENT PIPE THAT IS NOT WRAPPED, EXTEND THE POLYETHYLENE WRAP TO COVER THE ADJACENT PIPE FOR A DISTANCE OF AT LEAST 3 FT. SECURE THE END WITH CIRCUMFERENTIAL WRAPS OF ADHESIVE TAPE.
5. SERVICE LINES OF DISSIMILAR METALS SHALL BE WRAPPED WITH POLYETHYLENE OR DIELECTRIC TAP FOR A MINIMUM CLEAR DISTANCE OF 3' AWAY FROM THE DUCTILE IRON PIPE.

POLYETHYLENE ENCASEMENT DETAIL

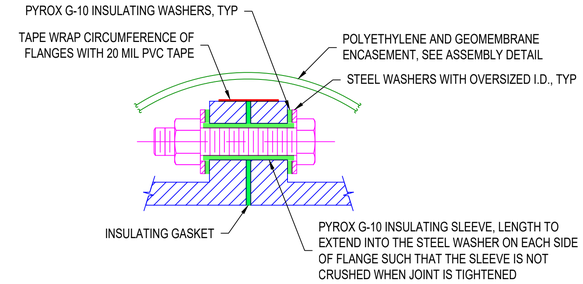
NOT TO SCALE



POLYETHYLENE ENCASEMENT AT MECHANICAL JOINTS NOTE:
WHERE THE POLYETHYLENE ENCASEMENT CAN BE PUNCTURED OR TORN BY FITTINGS OR BOLTS, INSTALL 40 MIL GEOMEMBRANE AROUND FITTING/JOINT. TAPE THE ENDS AND SEAMS OF THE GEOMEMBRANE WITH PVC TAPE AND THEN COVER THE PIPE JOINT WITH THE ADJOINING POLYETHYLENE ENCASEMENT.

POLYETHYLENE ENCASEMENT AT MECHANICAL JOINTS/SIMILAR

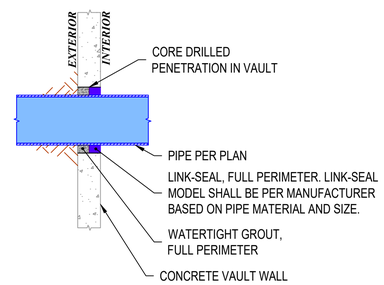
NOT TO SCALE



FLANGE JOINT NOTE:
HIGH STRENGTH BOLTS REQUIRE (2) ADDITIONAL HIGH STRENGTH, STEEL WASHERS.

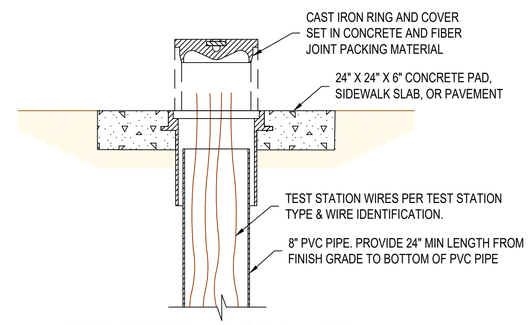
DIELECTRIC ISOLATION: FLANGE JOINT DETAIL

NOT TO SCALE



100 M01 **PIPE PENETRATION DETAIL**

NOT TO SCALE



TEST STATION INSTALLATION

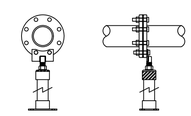
NOT TO SCALE

ITEM	WIRE COLOR	WIRE
NEW WATER MAIN	WHITE	8 AWG STRANDED COPPER WIRE, USE-TYPE INSULATION
EXISTING WATER MAIN	BLACK	8 AWG STRANDED COPPER WIRE, USE-TYPE INSULATION
ZINC REFERENCE CELL	YELLOW	12 AWG SOLID COPPER WIRE, TW OR THHN INSULATION
CP MONITORING COUPONS	PURPLE	12 AWG STRANDED COPPER WIRE, TW OR THHN INSULATION

NOTES:

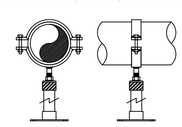
1. WIRE SHALL HAVE ENOUGH SLACK TO EXTEND A MIN OF 2 FT ABOVE FINISHED GRADE AFTER FINAL PAVING.
2. FOR AN ISOLATION JOINT RUN OF NEW WATER PIPE, WIRE ON THE UP STATION SIDE OF THE ISOLATION JOINT SHALL BE WHITE AND WIRE ON THE DOWN STATION SIDE OF THE ISOLATION JOINT SHALL BE BLACK.
3. COLOR CODE WIRES BY INSULATION COLOR, OR BY COLORED TAPE OR PAINT ON LAST 4 FT OF WIRE.

CORROSION CONTROL TEST WIRE IDENTIFICATION TABLE



TYPE A - FLANGE SUPPORT

(TYP. AT VALVES, METERS, AND FITTINGS)



TYPE C - SADDLE CLAMP SUPPORT

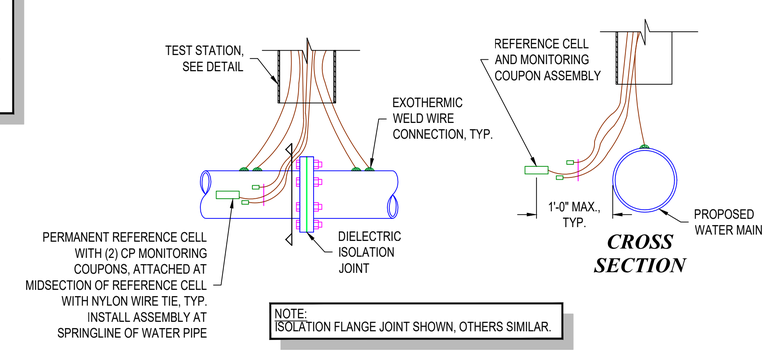
(TYP. AT PIPING)

PIPE SUPPORT NOTES:

- CONTRACTOR SHALL PROVIDE SUPPORTS AS NEEDED TO SECURE PIPING SYSTEM IN NORMAL AND TESTING CONDITIONS. CONTRACTOR IS RESPONSIBLE FOR DESIGN OF THE NECESSARY PIPE SUPPORTS, HANGERS AND SEISMIC BRACING. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- SADDLE AND SADDLE CLAMP SUPPORTS SHALL BE "STANDON" BRAND AS MANUFACTURED BY MATERIAL RESOURCES OR EQUAL.

101 M01 **PIPE SUPPORT DETAIL**

NOT TO SCALE



NOTE:
ISOLATION FLANGE JOINT SHOWN, OTHERS SIMILAR.

ISOLATION JOINT MONITORING TEST STATION (TS/IJ/M)

NOT TO SCALE

RH2

DANIEL W. BURRELL — STATE OF WASHINGTON — 38505 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: 04/13/2023

ORIN M. PAUL — STATE OF WASHINGTON — 57679 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: 04/13/2023

PUBLIC UTILITY DISTRICT NO. 1 OF WHATCOM COUNTY
D STATION - FLOW AND CONTROL IMPROVEMENTS

PUBLIC UTILITY DISTRICT No. 1 of Whatcom County

SITE DETAILS I

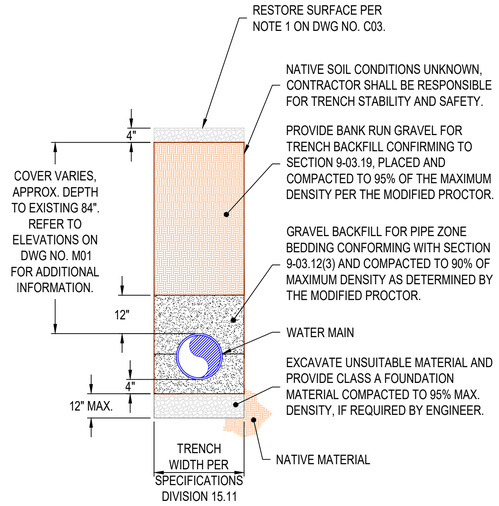
JOB NO.: 21-0163
CLIENT: WPUD
FILENAME: DSTA-D-CV.DWG
REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

ENGINEER: OMP
REVIEWED: DWB
SAVE DATE: Apr 13, 2023
PLOT DATE: Apr 13, 2023

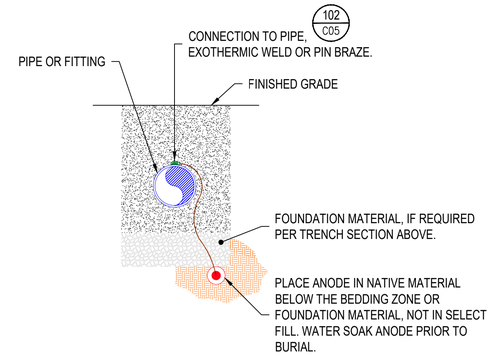
SCALE: SHOWN
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: C04
SHEET NO.: 6 / 20



TRENCH SECTION

NOT TO SCALE



GALVANIC ANODE NOTE:

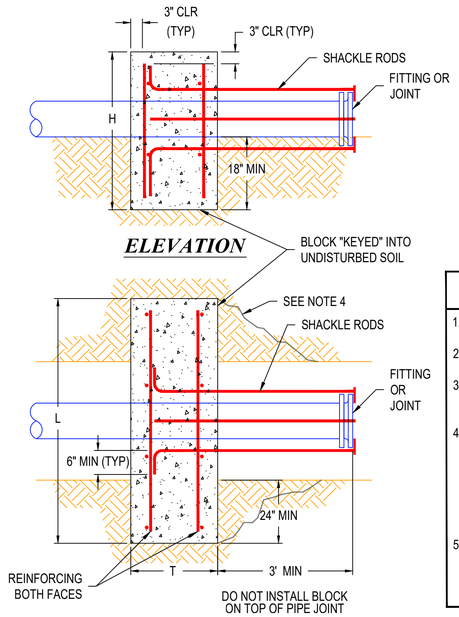
ANODE WIRE SHALL BE EXOTHERMIC WELDED DIRECTLY TO PIPE OR INCORPORATED INTO THE JOINT BOND WITH A SPLIT-BOLT CONNECTION.

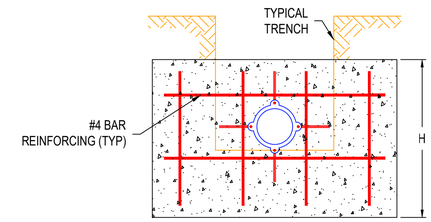
GALVANIC ANODE INSTALLATION

NOT TO SCALE

SIZING TABLE

PIPE DIA.	Bearing Area (Min.)	H (Min.)	L (Min.)	T (Min.)	REINFORCING
18"	57.3 SF	6.1'	11.9'	2.5'	#4 @ 6" OC EW



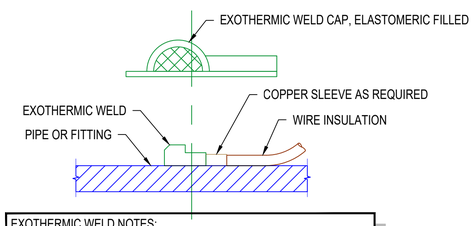


NOTES

1. MAINTAIN 18" MINIMUM COVER OVER THE TOP OF BLOCK.
2. BOTTOM OF BLOCK IS TO BE ON UNDISTURBED SOIL.
3. TRENCH TO BE BACKFILLED AND COMPACTED TO 95% DENSITY ON ALL SIDES OF BLOCK AND A DISTANCE OF 4' MIN. IN FRONT OF BLOCK TO FULL DEPTH OF BLOCK.
4. IF BLOCK CANNOT BE KEYED INTO UNDISTURBED SOIL TO THE SATISFACTION OF THE DISTRICT, 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 95% DENSITY A MINIMUM DISTANCE OF 15 FEET IN FRONT OF THE BLOCK TO THE SATISFACTION OF THE DISTRICT.
5. DESIGN CONSIDERATIONS:
   TEST PRESSURE: 225 PSI
   SOIL BEARING CAPACITY: 1,500 PSF
   FACTOR OF SAFETY: 1.5

REVERSE THRUST BLOCK DETAIL

NOT TO SCALE



EXOTHERMIC WELD NOTES:

- APPLY WELD CAP DIRECTLY TO PIPE, NOT TO PIPE WRAP. USE PRIMER AS REQUIRED BY THE MANUFACTURER.
- COMPLETELY ENCLOSE WIRE WITHIN WELD CAP.
- REPAIR ANY DAMAGED COATING NOT COVERED BY WELD CAP.

102/C05 EXOTHERMIC WELD DI & STEEL PIPE

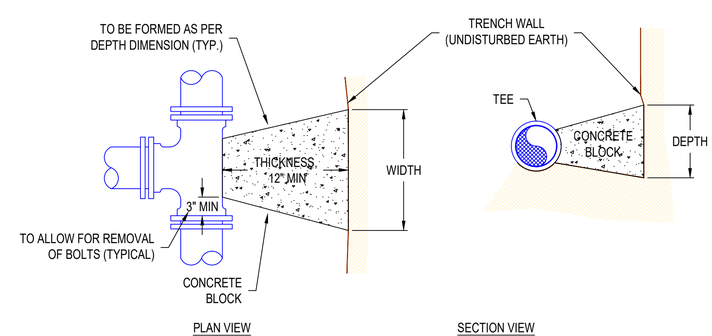
NOT TO SCALE

THRUST BLOCK SIZING TABLE

Diameter Size (inches)	Fitting	Thrust force (lb)	Bearing block area (sf)	Depth, D (ft)	Width, W (ft)	Thickness, T (ft)
18	TEES/DEAD ENDS	67,196	67.2	5.8	11.6	10.1

NOTES

TEST PRESSURE: 225 POUNDS PER SQUARE INCH (PSI)
SOIL BEARING CAPACITY: 1,500 POUND PER SQUARE FOOT (PSF), GLACIAL DRIFT MATERIAL
FACTOR OF SAFETY: 1.5



THRUST BLOCK - TEE/DEAD ENDS

HORIZONTAL THRUST BLOCKING

NOT TO SCALE

NOTES:

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

RH2

SIGNED: 04/13/2023

SIGNED: 04/13/2023

PUBLIC UTILITY DISTRICT NO. 1 OF WHATCOM COUNTY
D STATION - FLOW AND CONTROL IMPROVEMENTS

PUBLIC UTILITY DISTRICT No. 1 of Whatcom County

SITE DETAILS II

ENGINEER: CMP
REVIEWED: DWB
SAVE DATE: Apr 13, 2023
PLOT DATE: Apr 13, 2023
CLIENT: WPUD
FILENAME: DSTA-D-CIV.DWG
JOB NO.: 21-0163

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

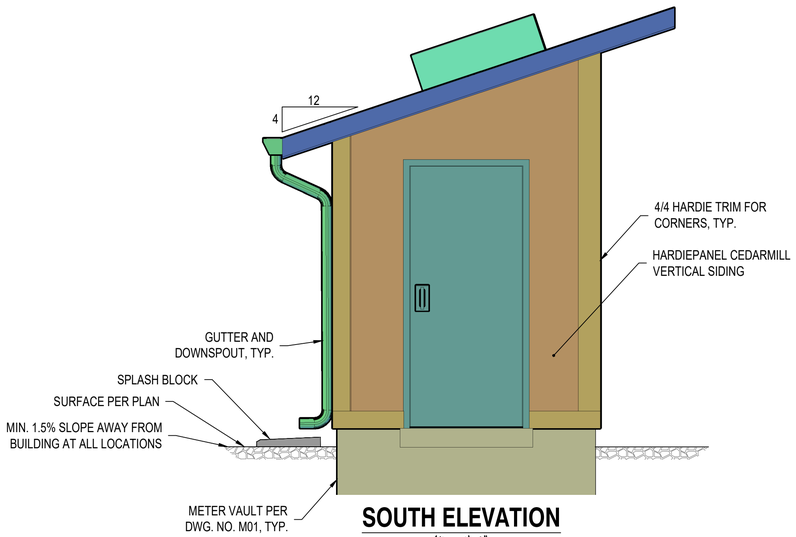
SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

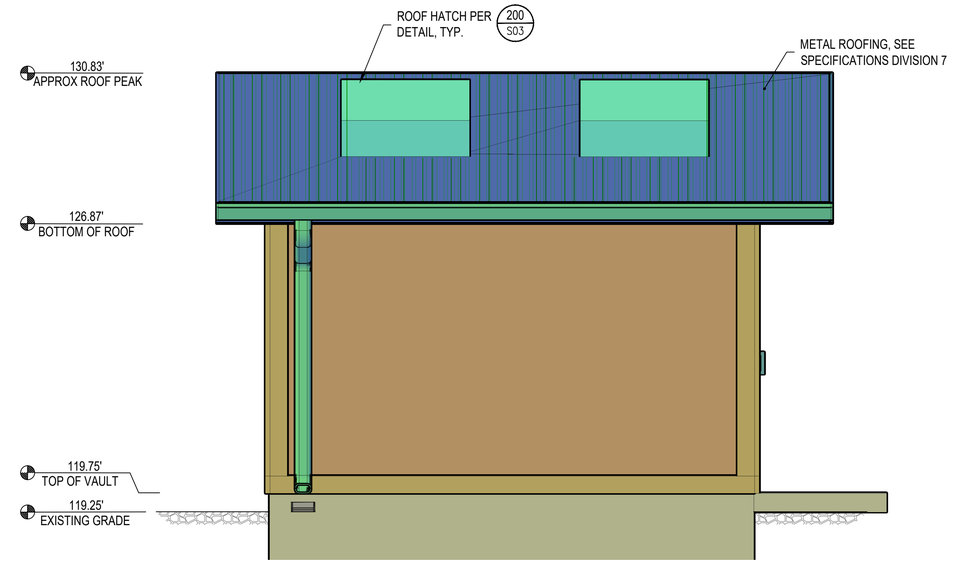
DWG NO.: C05

SHEET NO.: 7 / 20



SOUTH ELEVATION

½" = 1'-0"



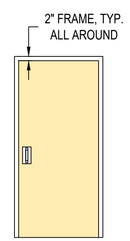
WEST ELEVATION

½" = 1'-0"

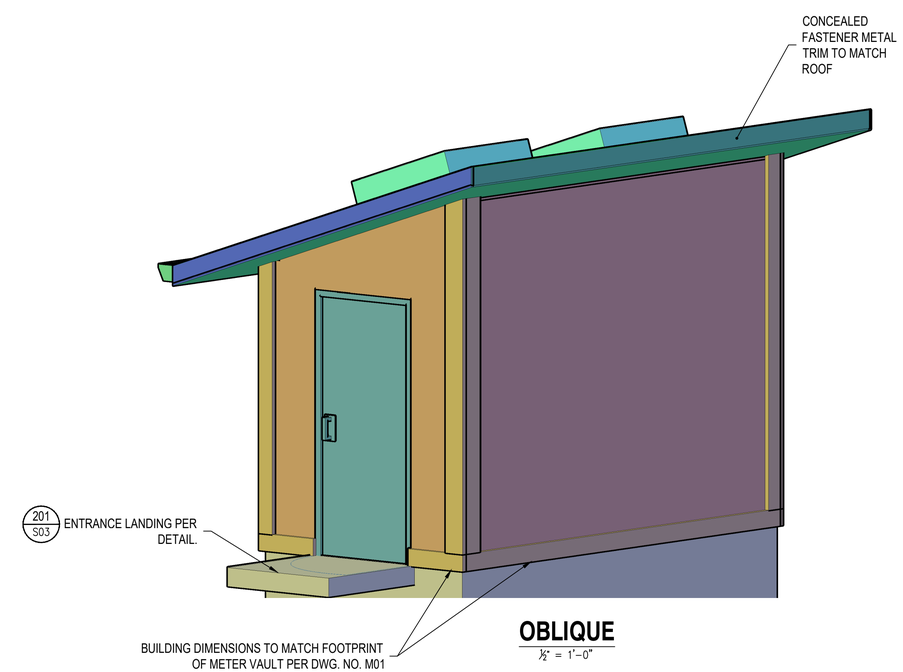
NOTES:
1. SEE DIVISION 8 OF THE SPECIFICATIONS FOR HARDWARE GROUP SCHEDULE.
2. BUILDING COATINGS PER DIVISION 9 OF THE SPECIFICATIONS.

DOOR AND FRAME SCHEDULE

DOOR NO.	TYPE	DOOR SIZE WIDTH	DOOR SIZE HEIGHT	DOOR MATERIAL	FRAME SIZE WIDTH	FRAME SIZE HEIGHT	FRAME MATERIAL	NOTES
D101	1	3'-0"	6'-8"	STEEL	3'-4"	6'-10"	STEEL	PROVIDE DOOR HARDWARE TO DOORS AS SPECIFIED IN DIVISION 8. PANIC BARS SHALL BE PROVIDED FOR EXTERIOR DOOR.



TYPE 1



OBLIQUE

½" = 1'-0"

RH2

DANIEL W. BURNETT, STATE OF WASHINGTON, 38308, REGISTERED PROFESSIONAL ENGINEER

SIGNED: 04/13/2023

ORIN M. FAU, STATE OF WASHINGTON, 57679, REGISTERED PROFESSIONAL ENGINEER

SIGNED: 04/13/2023

PUBLIC UTILITY DISTRICT NO. 1 OF WHATCOM COUNTY
D STATION - FLOW AND CONTROL IMPROVEMENTS

PUBLIC UTILITY DISTRICT No. 1 of Whatcom County

BUILDING ELEVATIONS

ENGINEER: CMP
REVIEWED: DWB
SAVE DATE: Apr 13, 2023
PLOT DATE: Apr 13, 2023
CLIENT: WPUD
FILENAME: DSTA-D-STRP.DWG
JOB NO.: 21-0163

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: S01

SHEET NO.: 8 / 20

GENERAL STRUCTURAL NOTES (300 TYP.)

GENERAL:

G1. SCOPE
THE NOTES ON THIS SHEET AND THE STANDARD STRUCTURAL DETAILS ARE GENERAL AND APPLY TO THE ENTIRE PROJECT WHETHER SPECIFICALLY CALLED OUT OR NOT, EXCEPT WHERE THERE ARE SPECIFIC INDICATIONS TO THE CONTRARY ON STRUCTURAL SHEETS. IF THERE ARE QUESTIONS, THEY SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER AND ANSWERED IN WRITING PRIOR TO CONSTRUCTION.

G2. APPLICABLE SPECIFICATIONS AND CODES
ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, AND THE INTERNATIONAL BUILDING CODE (2018 EDITION).

A. INTERNATIONAL BUILDING CODE:	IBC 2018 WITH APPLICABLE EDITIONS OF THE CODE REFERENCED STANDARDS.
B. AMERICAN CONCRETE INSTITUTE:	ACI 350-(01). (06)
C. LOCAL JURISDICTION AMENDMENTS:	WHATCOM COUNTY

G3: DESIGN CRITERIA

A. BASIC WIND SPEED:	105 MPH
B. ROOF SNOW LOAD:	25 PSF
C. ROOF LIVE LOAD:	20 PSF
D. SEISMIC, Sds:	0.91 g
E. FLOOR LIVE LOAD:	125 PSF

G4. SAFETY
SAFETY AND STRUCTURAL STABILITY DURING CONSTRUCTION ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. STRUCTURES HAVE BEEN DESIGNED TO RESIST THE DESIGN LOADS ONLY AS A COMPLETED STRUCTURE.

G5. GENERAL
LINES SHOWN ON DRAWINGS MAY BE ASSOCIATED WITH CAD MODELING AND MAY NOT REPRESENT REQUIRED OR ALLOWED JOINTS. SEE DETAILS FOR CLARIFICATION ON REQUIRED AND ALLOWED JOINTS.

G6. OPENINGS
OPENINGS FOR PIPES, DUCTS, CONDUITS, ETC. ARE NOT ALL SHOWN ON THE STRUCTURAL DRAWINGS. COORDINATE AND PROVIDE OPENINGS AS REQUIRED TO ACCOMMODATE ALL WORK SHOWN OR SPECIFIED IN TECH CONTRACT DOCUMENTS AND OTHERWISE REQUIRED FOR FURNISHING OF A FUNCTIONALLY COMPLETE PROJECT. REINFORCE AROUND OPENINGS PER STANDARD STRUCTURAL DETAILS UNLESS OTHERWISE SHOWN.

G7. SPECIAL INSPECTIONS
SPECIAL INSPECTIONS ARE REQUIRED IN ACCORDANCE WITH CHAPTER 1 AND CHAPTER 17 OF THE IBC (CBC). PAYMENT FOR THESE INSPECTIONS IS NOT THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE FOR FULL ACCESS TO THE WORK BY THE SPECIAL INSPECTOR AND SHALL PROVIDE FOR THESE INSPECTIONS IN THEIR CONSTRUCTION SCHEDULE IN ACCORDANCE WITH THE SPECIFICATIONS.

G8. STANDARD DETAILS
THE STANDARD DETAILS DEPICT TYPICAL DETAILING TO BE USED ON THIS PROJECT. IF CONDITIONS ARE NOT EXPLICITLY SHOWN ON THE DRAWING THEY SHALL BE MADE SIMILAR TO THE STANDARD DETAILS. OBTAIN APPROVAL OF ENGINEER IN WRITING FOR SIMILAR CONDITIONS PRIOR TO CONSTRUCTION.

G9. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS OF EXISTING CONSTRUCTION AS REQUIRED TO COORDINATE NEW CONSTRUCTION. SUBMIT REQUIRED CHANGES FOR APPROVAL.

G10. CONTRACTOR TO SUBMIT FOR REVIEW ALL EQUIPMENT SIZES, OPERATING WEIGHTS, VIBRATION FORCES, SUPPORT LOCATIONS, ALONG WITH ANY FLOOR OPENINGS, NOTCHES, AND RECESS REQUIRED BY SUCH EQUIPMENT. CONCRETE SUPPORT PADS AND/OR FRAMING REQUIRED TO SUPPORT SAID EQUIPMENT SHALL NOT BE FABRICATED.

STEEL

S1. DESIGN STRENGTHS:

WIDE FLANGE AND TEES:	FY = 50 KSI
PIPES:	FY = 35 KSI
STAINLESS STEEL:	FY = 33 KSI
HSS SECTIONS:	FY = 46 KSI
ALL OTHER PLATES AND SHAPES:	FY = 36 KSI

S2. DIMENSIONS
TO CENTERLINES OF COLUMNS AND BEAMS, TOP SURFACES OF BEAMS AND TUBES AND BACKS OF CHANNELS AND ANGLES, UNO.

S3. ELEVATIONS
TOP OF STEEL REFERS TO TOP OF SURFACE OF MEMBER OR FLANGE UNO.

S4. WHEN FILLET WELD SIZE IS NOT INDICATED, PROVIDE MAXIMUM WELD SIZE BASED ON MATERIAL THICKNESS IN ACCORDANCE WITH AISC SPECIFICATIONS.

S5. ALL BOLTED STRUCTURAL CONNECTIONS ARE BEARING TYPE CONNECTIONS UNLESS OTHERWISE SPECIFIED TO BE SLIP-CRITICAL. PROVIDE LOAD INDICATING WASHERS AT SLIP-CRITICAL CONNECTIONS.

S6. CONFORM TO AISC 360, STEEL CONSTRUCTION MANUAL AND AISC 341, SEISMIC DESIGN MANUAL.

S7. THE SEISMIC LOAD RESISTING SYSTEM (SLRS) IS DENOTED ON THE FRAMING PLANS AND FRAME ELEVATIONS. THE SLRS DESIGNATION INCLUDES THE MEMBER AND CONNECTION AT EACH END. FRAMES ARE DENOTED AS FOLLOWS:

A. MOMENT FRAME: (SLRS)
>----------<

B. CONCENTRICALLY BRACED FRAME: (SLRS)

FOR SLRS SYSTEMS OR PARTS OF SYSTEMS THAT ARE NOT INCLUDED IN FRAMES, (SLRS) IS PLACED NEXT TO THE BEAM SIZE ON THE FRAMING PLAN (EG: ON A COLLECTOR ELEMENT(DRAG STRUT): MEMBER DESIGNATION (SLRS)

S8. ALL STEEL BEAMS SHALL RECEIVE STANDARD CAMBER PER THE SPECIFICATIONS UNLESS NOTES OTHERWISE ON THE PLANS. BEAMS REQUIRING SPECIAL CAMBER ARE DENOTED ON THE BEAMS SHOWN ON THE FRAMING PLANS: EXAMPLE (+1/2") INDICATES 1/2".

CONCRETE

C1. DESIGN STRENGTHS:
FC = 4,000 PSI
FY = 60,000 PSI

C2. CONCRETE COVER

UNLESS OTHERWISE NOTES, PROVIDE CONCRETE COVER FOR REINFORCED CONCRETE DEPOSITED AGAINST EARTH:	3"
TIE REINFORCING AT COLS AND PILASTERS:	1 1/2"
ALL OTHERS:	2"
	SEE DRAWINGS FOR EXCEPTIONS

C3. SEE SPECIFICATIONS FOR REINFORCING PLACEMENT REQUIREMENTS

C4. REFER TO OTHER DISCIPLINE DRAWINGS PRIOR TO CONSTRUCTION FOR EMBEDDED ITEMS AND PENETRATIONS NOT SHOWN ON STRUCTURAL DRAWINGS. AS REQUIRED TO ACCOMMODATE ALL WORK SHOWN OR SPECIFIED IN THE CONTRACT DOCUMENTS AND OTHERWISE REQUIRED FOR THE FURNISHING OF A FUNCTIONALLY COMPLETE PROJECT REINFORCE AROUND OPENINGS PER STANDARD STRUCTURAL DETAILS UNLESS OTHERWISE SHOWN.

C5. PROVIDE 3/4" CHAMFERS AT ALL EXPOSED EDGES (AND 1/2" CHAMFERS AT JOINTS AS SHOWN) NOT ALL CHAMFERS MAY BE SHOWN ON DRAWINGS.

C6. FIELD ADJUST REINFORCING AT OPENINGS AND EMBEDDED ITEMS AS INDICATED.

C7. ANCHOR BOLTS NOT SPECIFIED BY ENGINEER SHALL BE DESIGNED AND CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER RETAINED BY THE CONTRACTOR, IN ACCORDANCE WITH APPLICABLE PROJECT AND CODE REQUIREMENTS. SUBMIT AS A SHOP DRAWING FOR REVIEW AND APPROVAL BY THE ENGINEER. COORDINATE LOCATION, SIZE AND EMBEDMENT PRIOR TO CASTING CONCRETE.

C8. CONTINUOUS WATERSTOP SHALL BE INSTALLED IN JOINTS SUBJECT TO STATIC WATER PRESSURE.

C9. ABSOLUTELY NO WELDING OF REINFORCING BARS OR TORCHING TO BEND REINFORCING BARS SHALL BE ALLOWED WITHOUT SPECIFIC APPROVAL FROM THE STRUCTURAL ENGINEER.

C10. CONTRACTOR SHALL SUBMIT CONCRETE PLACEMENT PLAN (PER SPECIFICATION 03311) IDENTIFYING JOINT TYPES, JOINT LOCATIONS AND CONCRETE PLACEMENT SEQUENCE.

C11. ALL CAST IN PLACE AND POST-INSTALLED ANCHOR INDICATED IN THE STRUCTURAL DOCUMENTS SHALL COMPLY WITH APPENDIX D OF ACI 318 AND CHAPTER 19 OF ALL THE IBC. ALL EXPANSION AND ADHESIVE ANCHORS SHALL HAVE THE ICC REPORT SHOWING EQUIVALENT LOAD CAPACITY. SUBMIT AND INSTALL PER THE ICC EVALUATION REPORT.

REINFORCED CONCRETE:

1. REINFORCING STEEL SHALL BE DETAILED (INCLUDING HOOKS AND BENDS) IN ACCORDANCE WITH ACI 315-99 AND 318-14. LAP ALL REINFORCEMENTS IN ACCORDANCE WITH THE "REINFORCING SPLICE AND DEVELOPMENT LENGTH SCHEDULE" - SEE THIS SHEET. PROVIDE CORNER BARS AT ALL WALL INTERSECTIONS PER DETAIL 303. LAP ADJACENT MATS OF WELDED WIRE FABRIC A MINIMUM OF 8" AT SIDES AND ENDS.
2. NO BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE SHALL BE FIELD BENT UNLESS SPECIFICALLY DETAILED OR APPROVED BY THE STRUCTURAL ENGINEER.
3. A 6" WATERSTOP SHALL BE PLACED AT ALL BELOW GRADE CONCRETE SLAB AND WALL CONSTRUCTION JOINTS AND AS SHOWN TO PROVIDE A WATERTIGHT STRUCTURE.
4. CONCRETE PROTECTION FOR REINFORCING STEEL SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:
   4.1. FOOTINGS AND OTHER UNIFORMED SURFACES CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH . . . . . 3"
   4.2. FORMED SURFACES EXPOSED TO EARTH (WALLS BELOW GRADE), WATER OR WEATHER (#6 BARS OR LARGER) . . . . . 2"
   4.3. COLUMN TIES OR SPIRALS AND BEAM STIRRUPS . . . . . 2"
   4.4. SLABS AND INTERIOR FACES . . . . . 2"

ABBREVIATIONS:

AL - ALUMINUM
CHK - CHECKERED
CL - CENTERLINE
CLR - CLEAR
EA - EACH
EF - EACH FACE
FB - FLAT BAR
GALV - GALVANIZED
HORZ - HORIZONTAL
LLV - LONG LEG VERT
O.C. - ON CENTER
PL - PLATE
RB - ROUND BAR
RST - REINF. STEEL
SST - STAINLESS STEEL
T&B - TOP & BOTTOM
VERT - VERTICAL
PJF - PREMOLDED JOINT FILLER

REINFORCEMENT SPLICE AND DEVELOPMENT SCHEDULE

	Ld, MINIMUM STRAIGHT DEVELOPMENT LENGTHS			MINIMUM LAP SPLICE LENGTHS	
BAR	MINIMUM	TOP BARS	OTHERWISE	CLASS A	CLASS B
#3	19"	25"	29"	Ld	1.3xLd
#4	24"	32"	36"	Ld	1.3xLd
#5	29"	38"	43"	Ld	1.3xLd
#6	42"	55"	63"	Ld	1.3xLd

"MINIMUM" IF:
MIN COVER OF ONE BAR Ø AND MIN SPACING OF TWO BAR DIAMETERS
MIN COVER ONE Ø, MIN SPACING OF ONE BAR Ø, AND TIES OR STIRRUPS
LESS THAN 12" OF FRESH CONCRETE BELOW HORIZONTAL BARS
"TOP BARS" IF:
MEETS CRITERIA FOR MIN EXCEPT 12" OR MORE FRESH CONC BELOW
"OTHERWISE" IF:
DOES NOT MEET REQUIREMENTS FOR MIN DEVELOPMENT LENGTH
"CLASS A" IF:
ONLY HALF OF BARS LAPPED AT ONE LOCATION AND
TWICE THE REINFORCING FOR TENSION IS PROVIDED
"CLASS B" IF:
LAP SPLICES DO NOT MEET CLASS A REQUIREMENTS

CONCRETE ANCHORS SHALL BE EITHER HILTI HIT-RE 500-V3 INJECTABLE MORTAR, SIMPSON STRONG-TIE SET-XP ANCHORING ADHESIVE, OR POWERS PE1000+ ADHESIVE ANCHORS AS SPECIFIED. WHERE SIZE IS CALLED OUT ON THE DRAWINGS, PROVIDE MINIMUM EMBEDMENT DEPTHS AS SHOWN ON THE FOLLOWING TABLES. PROVIDE MINIMUM EDGE DISTANCES AND SPACING AS SHOWN ON THE FOLLOWING TABLES UNLESS SPECIFICALLY DETAILED OTHERWISE. SPECIAL INSPECTION REQUIRED.

INSTALL ANCHORS IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

NOTIFY OWNER 48 HOURS IN ADVANCE OF INSTALLATION OF ALL ANCHORS.

WHERE SIZE IS NOT CALLED OUT, ANCHOR SHALL BE SELECTED BASED ON DESIGN LOADS. IF THE MINIMUM EDGE DISTANCE AND/OR MINIMUM SPACING CAN NOT BE ACHIEVED, REFER TO PRODUCT INFORMATION FOR REDUCTION IN ALLOWABLE LOADS.

CONCRETE ANCHORS
HILTI HIT-RE 500-V3, SIMPSON STRONG-TIE SET-XP & POWERS PE1000+

DIA. OF ROD (INCHES) OR REBAR SIZE NO.	MIN. EDGE DISTANCE (INCHES)	MIN. EMBEDMENT (INCHES)	MIN. ANCHOR SPACING (INCHES)	ALLOWABLE LOAD BASED ON BOND STRENGTH (POUNDS)	
				TENSION	SHEAR
1/2	2-1/2	2-3/4	2-1/2	1,027	2,210
5/8	3-1/8	3-1/8	3-1/8	1,312	2,827
3/4	3-3/4	3-1/2	3-3/4	1,556	3,351
7/8	4-3/8	3-1/2	4-3/8	1,556	3,351
#4	2-1/2	4-1/2	2-1/2	1,520	3,618
#5	3-1/8	5-5/8	3-1/8	1,775	5,494
#6	3-3/4	6-3/4	3-3/4	2,225	7,570
#7	4-3/8	7-7/8	4-3/8	2,440	9,428
#8	5	9	5	4,520	11,507

CONCRETE ANCHOR (306 TYP.)

DEFERRED SUBMITTALS:
THE FOLLOWING ITEMS HAVE BEEN DEFERRED FOR SUBMITTAL TO THE BUILDING OFFICIAL UNTIL AFTER ISSUANCE OF THE BUILDING PERMIT:

- PREFABRICATED METAL-PLATE-CONNECTED WOOD TRUSSES
- MECHANICAL PIPING SUPPORTS AND LATERAL BRACING
- ANCHORAGE OF ELECTRICAL EQUIPMENT

WOOD

W1. FRAMING LUMBER

A. STUDS:	HEM FIR STUD GRADE
B. HEADERS:	HEM FIR #2 OR BETTER
C. RAFTERS:	HEM FIR #2 OR BETTER
W2. FASTENERS IN TREATED LUMBER:	HOT-DIPPED GALVANIZED

RH2

SIGNED: 04/13/2023

SIGNED: 04/13/2023

PUBLIC UTILITY DISTRICT NO. 1 OF WHATCOM COUNTY
D STATION - FLOW AND CONTROL IMPROVEMENTS

PUBLIC UTILITY DISTRICT No. 1 of Whatcom County

STRUCTURAL DETAILS I

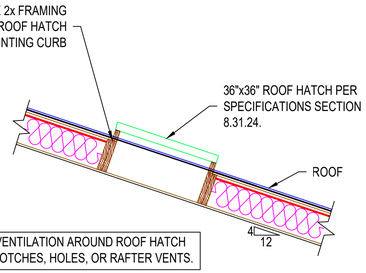
ENGINEER: OMP | REVIEWED: DWB | SAVE DATE: Apr 13, 2023 | PLOT DATE: Apr 13, 2023 | CLIENT: WPUD | FILENAME: DSTA-D-STRP.DWG | JOB NO.: 21-0163

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

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

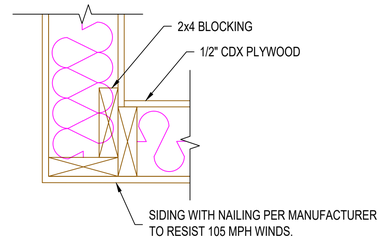
DWG NO.: S02
SHEET NO.: 9 / 20



NOTE: PROVIDE VENTILATION AROUND ROOF HATCH OPENINGS WITH NOTCHES, HOLES, OR RAFTER VENTS.

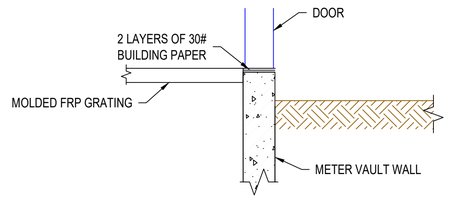
TYPICAL HATCH SECTION (200/S01)

NOT TO SCALE



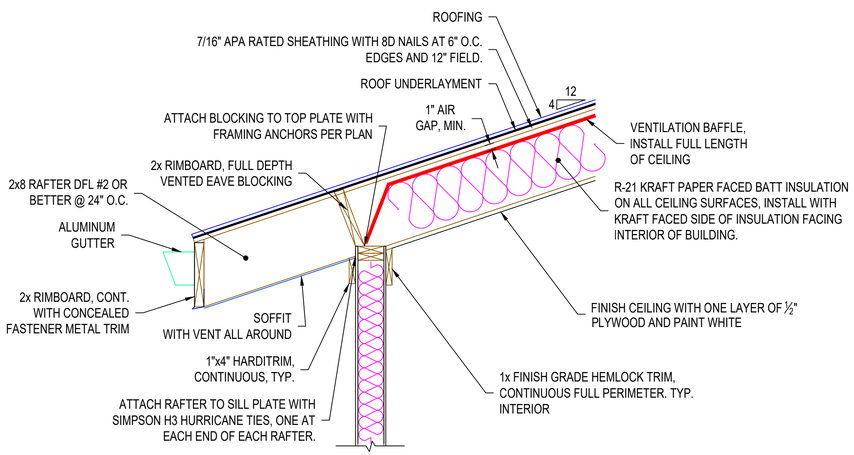
TYPICAL CORNER DETAIL

NOT TO SCALE



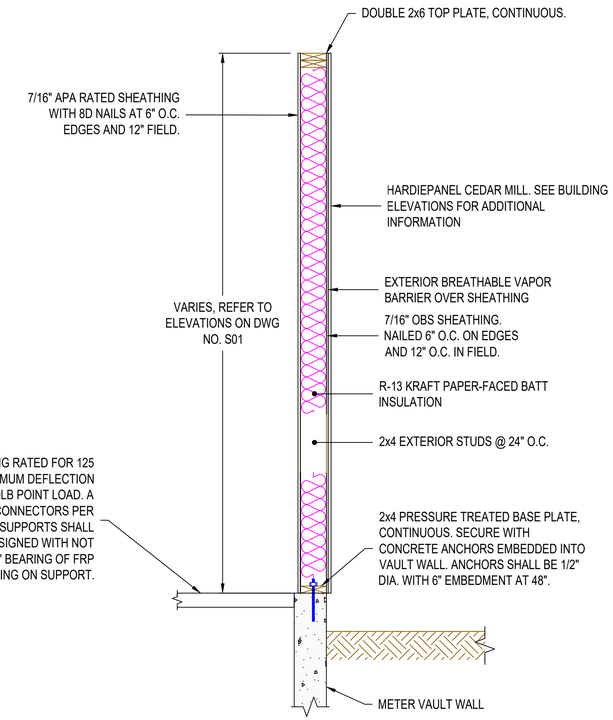
DOOR THRESHOLD

NOT TO SCALE



TYPICAL WALL/RAFTER CONNECTION

NOT TO SCALE

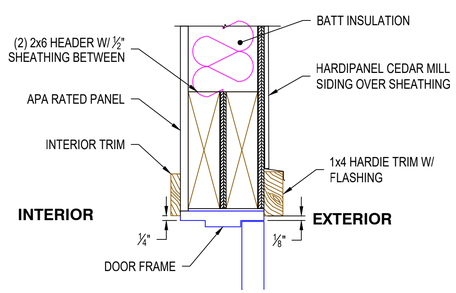


FOUNDATION ANCHOR NOTES:

1. ANCHOR BOLTS MUST BE PLACED WITHIN 12" OF EACH WALL CORNER AND ALL SILL PLATE SPLICES AT A MINIMUM 3 ½" FROM THE EDGE.
2. MAXIMUM SPACING OF BOLTS IS 6'- 0". ADJUST SPACING SO THERE ARE A MINIMUM OF FOUR ANCHORS ON THE LONG SIDE AND TWO ANCHORS ON THE SHORT SIDE OF THE BUILDING.
3. BOLTS MUST BE ½" DIAMETER MINIMUM SIZE WITH WASHERS.
4. ALTERNATE ANCHOR BOLTS AND ANCHOR STRAPS MAY BE USED AND MUST BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS AND MAY REQUIRE ENGINEER'S APPROVAL.

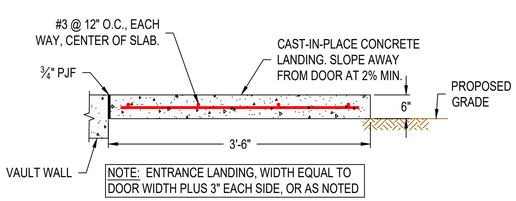
EXTERIOR WOOD-FRAMED WALL

NOT TO SCALE



EXTERIOR DOOR HEADER

NOT TO SCALE



NOTE: ENTRANCE LANDING, WIDTH EQUAL TO DOOR WIDTH PLUS 3" EACH SIDE, OR AS NOTED

TYPICAL ENTRANCE LANDING DETAIL (200/S01)

NOT TO SCALE

RH2

DANIEL W. BURNETT — STATE OF WASHINGTON — 38305 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: 04/13/2023

ORIN M. FAU — STATE OF WASHINGTON — 57679 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: 04/13/2023

PUBLIC UTILITY DISTRICT NO. 1 OF WHATCOM COUNTY

D STATION - FLOW AND CONTROL IMPROVEMENTS

PUBLIC UTILITY DISTRICT No. 1 of Whatcom County

STRUCTURAL DETAILS II

ENGINEER: OMP | SAVE DATE: Apr 13, 2023 | CLIENT: WPUD | JOB NO.: 21-0163

REVIEWED: DWB | PLOT DATE: Apr 13, 2023 | FILENAME: DSTA-D-STRP.DWG

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN

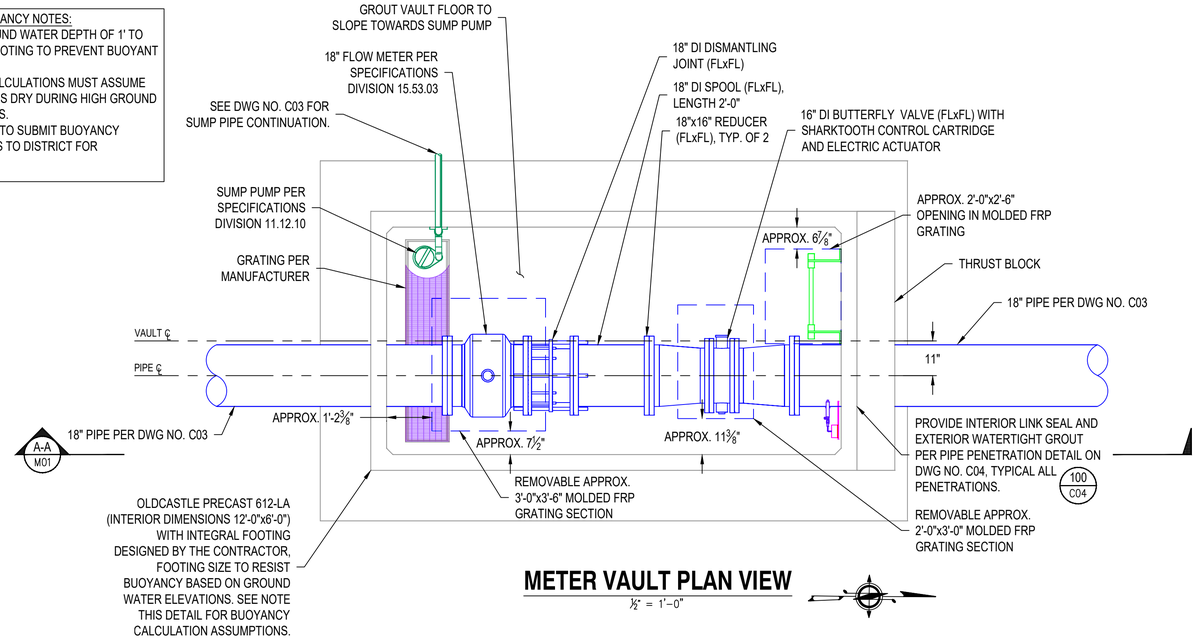
0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: S03

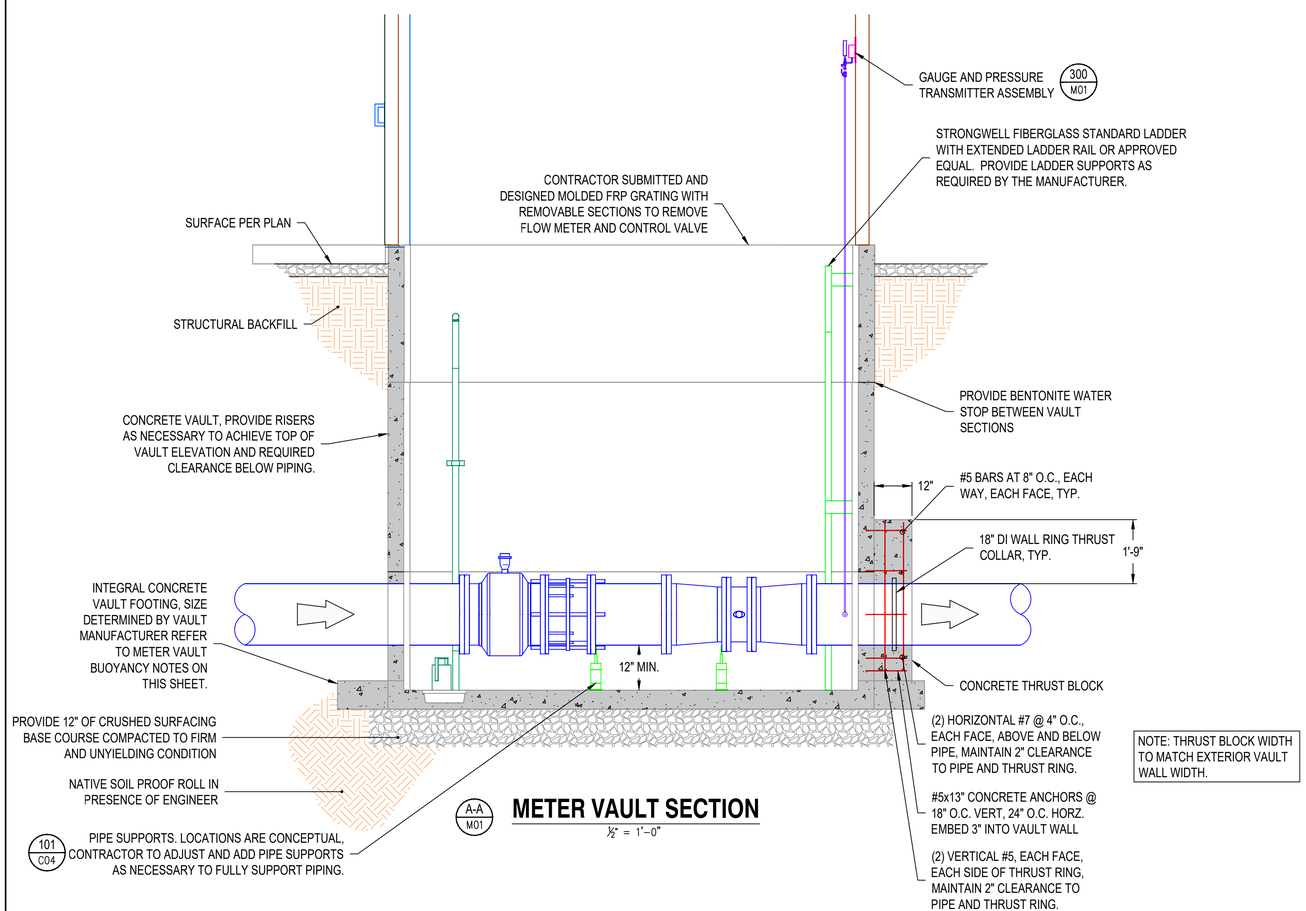
SHEET NO.: 10 / 20

METER VAULT BUOYANCY NOTES:
1. ASSUME GROUND WATER DEPTH OF 1' TO SIZE VAULT FOOTING TO PREVENT BUOYANT CONDITION.
2. BUOYANCY CALCULATIONS MUST ASSUME VAULT REMAINS DRY DURING HIGH GROUND WATER EVENTS.
3. CONTRACTOR TO SUBMIT BUOYANCY CALCULATIONS TO DISTRICT FOR APPROVAL.



METER VAULT PLAN VIEW

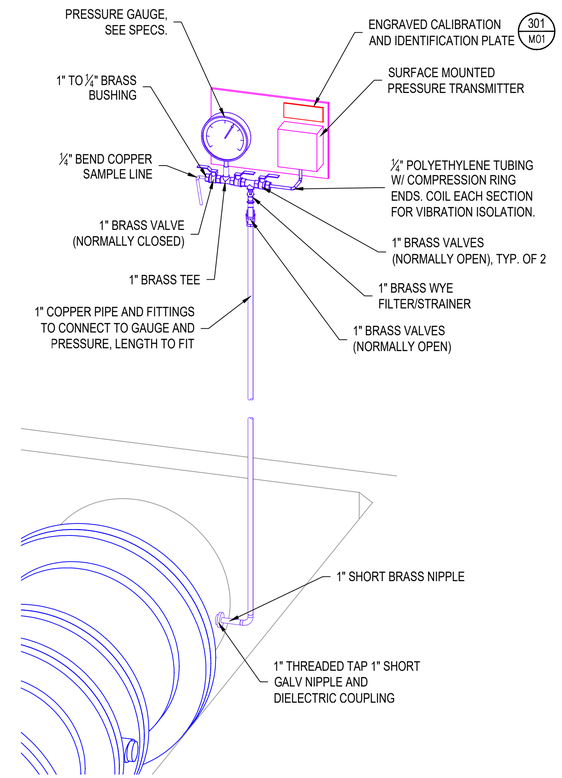
½" = 1'-0"



NOTE: THRUST BLOCK WIDTH TO MATCH EXTERIOR VAULT WALL WIDTH.

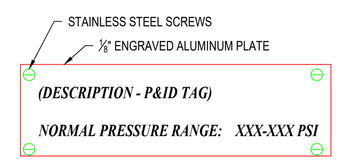
A-A M01 METER VAULT SECTION

½" = 1'-0"



300 M01 GAUGE AND PRESSURE TRANSMITTER ASSEMBLY

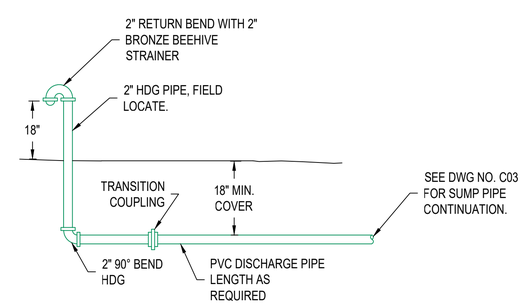
NOT TO SCALE



NOTE: SEE SPECIFICATIONS FOR DESCRIPTION, P&ID TAG, AND PRESSURE RANGE INFO.

301 M01 IDENTIFICATION AND CALIBRATION PLATE DETAIL

NOT TO SCALE



302 C03 GOOSE NECK DISCHARGE DETAIL

NOT TO SCALE

RH2

DANIEL W. BURRELL, STATE OF WASHINGTON, 38508, REGISTERED PROFESSIONAL ENGINEER
SIGNED: 04/13/2023

ORIN M. FAU, STATE OF WASHINGTON, 57679, REGISTERED PROFESSIONAL ENGINEER
SIGNED: 04/13/2023

PUBLIC UTILITY DISTRICT NO. 1 OF WHATCOM COUNTY
D STATION - FLOW AND CONTROL IMPROVEMENTS

PUBLIC UTILITY DISTRICT No. 1 of Whatcom County

MECHANICAL PLAN & SECTIONS

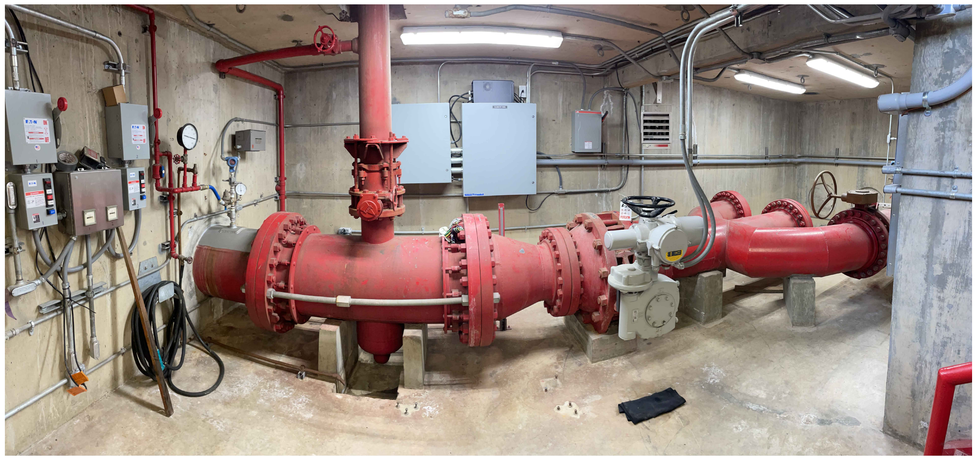
ENGINEER: CMP | SAVE DATE: Apr 13, 2023 | CLIENT: WPUD | JOB NO: 21-0163
REVIEWED: DWB | PLOT DATE: Apr 13, 2023 | FILENAME: DSTA-D-MECH01.DWG

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

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

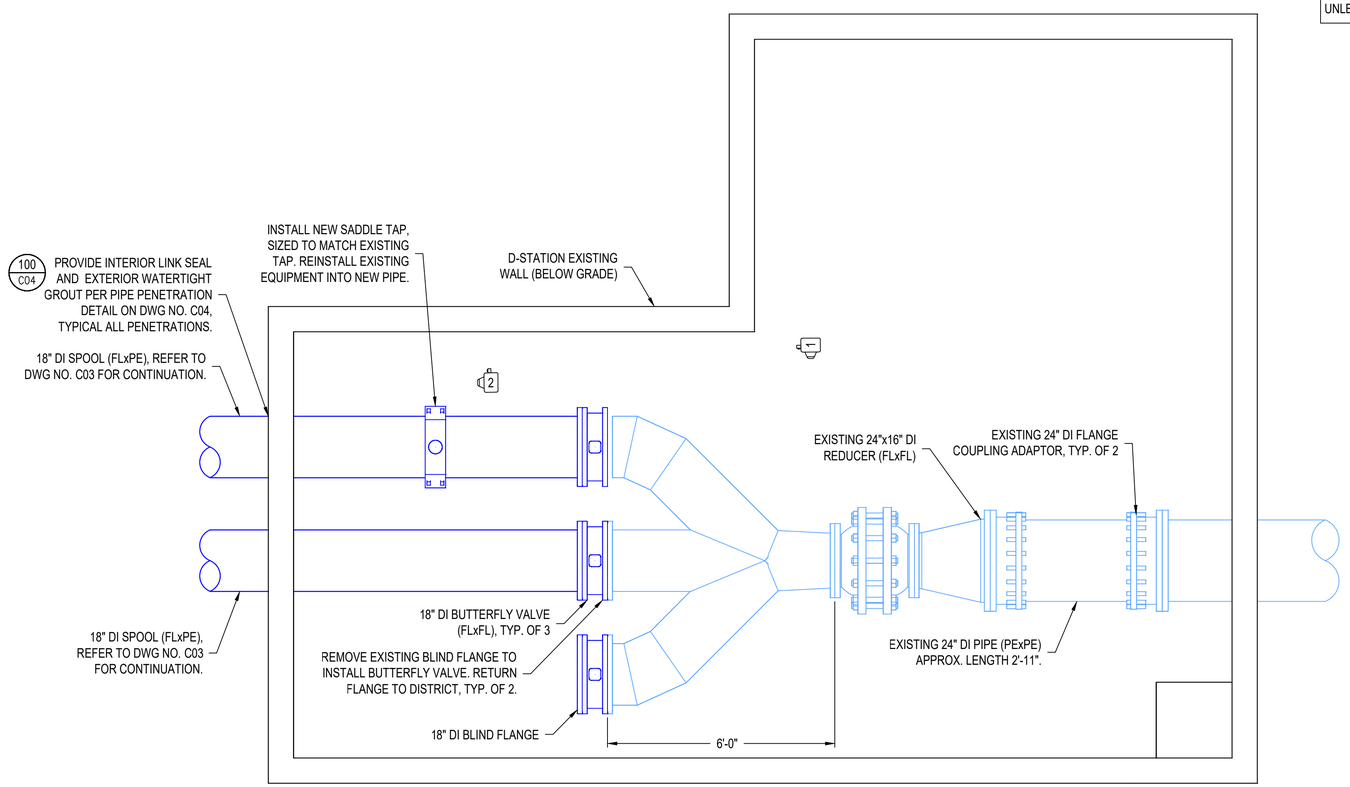
DWG NO.: M01 | SHEET NO.: 11 / 20



1 EXISTING MECHANICAL LAYOUT

2 EXISTING MECHANICAL LAYOUT

NOTE: DO NOT DISTURB EXISTING FITTINGS UNLESS OTHERWISE NOTED ON THESE PLANS.



MECHANICAL PLAN VIEW

½" = 1'-0"

RH2

DANIEL W. BURRELL
STATE OF WASHINGTON
38508
REGISTERED PROFESSIONAL ENGINEER

SIGNED: 04/13/2023

ORIN M. FAUL
STATE OF WASHINGTON
57679
REGISTERED PROFESSIONAL ENGINEER

SIGNED: 04/13/2023

PUBLIC UTILITY DISTRICT NO. 1 OF WHATCOM COUNTY
D STATION - FLOW AND CONTROL IMPROVEMENTS

PUBLIC UTILITY DISTRICT No. 1 of Whatcom County

D STATION MECHANICAL IMPROVEMENTS

ENGINEER: OMP
REVIEWED: DWB
SAVE DATE: Apr 13, 2023
PLOT DATE: Apr 13, 2023
CLIENT: WPUD
FILENAME: DSTA-D-MECH01.DWG
JOB NO.: 21-0163

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: M02

SHEET NO.: 12 / 20

ONE-LINE DIAGRAM SYMBOLS

- CIRCUIT BREAKER
  - XXX/YY – CB SIZE & NO. OF POLES
  - ET – ELECTRONIC TRIP
  - TM – THERMAL MAGNETIC BREAKER
  - MCP – MOTOR CIRCUIT PROTECTOR
  - SE – SERVICE ENTRANCE
  - GFI – GROUND FAULT INTERRUPTER
- FUSE
- FUSED DISCONNECT SWITCH
- PLUG–IN CONNECTION
- RTM — RUN TIME METER
- OC — MOTOR OPERATION COUNTER
- SSRVS — SSRVS – SOLID STATE REDUCED VOLTAGE STARTER
- VARIABLE FREQUENCY DRIVE
- MOTOR STARTER
- A B / C D — MOTOR STARTER W/ OPERATOR DEVICES
  - A – HAND–OFF–AUTO
  - B – OPERATIONAL COUNTER
  - C – RUN TIME METER
  - D – RUN LIGHT
  - E – FAIL LIGHT
  - F – EMERGENCY STOP
- K — KIRK KEY INTERLOCK
- POWER TRANSFORMER
- CONTROL POWER TRANSFORMER
- TRANSFORMER
- CURRENT TRANSFORMER
- VOLTAGE TRANSFORMER
- CONTACTOR
- CAPACITOR
- ENGINE GENERATOR
- GENERATOR CONNECTION RECEPTACLE
- S/N — SOLID NEUTRAL
- TB — TERMINAL BLOCK
- SURGE PROTECTION DEVICE
- SPD — SURGE PROTECTION DEVICE (ALTERNATIVE)

GROUNDING SYSTEM SYMBOLS

- GROUND
- METAL PIPE GROUND
- CONNECTION POINT, EXOTHERMIC WELD. CADWELD OR APPROVED EQUAL.
- GROUND ROD SIZED PER N.E.C. USE EXOTHERMIC WELD CONNECTION AT THE GROUND ROD.
- PIGTAIL, BARE COPPER, LENGTH AS REQUIRED, 8' MINIMUM.
- CONNECTION POINT, MECHANICAL, COMPRESSION TYPE.

ELECTRICAL SITE PLAN SYMBOLS

- UTILITY POLE AND GUY WIRE
- HH — MANHOLE OR HANDHOLE
- P — BURIED POWER VAULT OR MANHOLE
- T — TELEPHONE VAULT OR PEDESTAL
- F — FIBER OPTICS VAULT OR PEDESTAL
- LUMINAIRE
- PAD–MOUNT TRANSFORMER

PANELBOARDS, SWITCHES, AND EQUIPMENT

- SERVICE ENTRANCE, SWITCHGEAR, MOTOR CONTROL CENTER, OR PANELBOARD
- SURFACE MOUNTED PANELBOARD
- FLUSHED MOUNTED PANELBOARD
- NXX — FIELD CONTROL STATION WITH NEMA REQUIREMENTS.
  - N1 – NEMA 1
  - N3R – NEMA 3R
  - N4 – NEMA 4
  - N4SS – NEMA 4 STAINLESS STEEL
  - N4F – NEMA 4 FIBERGLASS
  - N6 – NEMA 6
  - N12 – NEMA 12 GASKETED
- EQUIPMENT MOUNTING STAND
- T — HEATER, WATTAGE NOTED
- EQUIPMENT CONNECTION
- M — SINGLE PHASE MOTOR. HORSEPOWER AS NOTED
- HP — THREE PHASE MOTOR. HORSEPOWER AS NOTED
- HP — SINGLE PHASE MOTOR. HORSEPOWER AS NOTED
- ELECTRICAL PLUG
- DISCONNECT SWITCH
- F — FUSED DISCONNECT SWITCH
- COMBINATION MOTOR STARTER AND DISCONNECT SWITCH

RECEPTACLES AND JUNCTION BOX SYMBOLS

- J — CEILING JUNCTION BOX
- J — WALL JUNCTION BOX
- J — FLOOR JUNCTION BOX
- DUPLEX WALL RECEPTACLE , 120V
  - WP = WEATHERPROOF
  - G = GROUNDED
  - IG = ISOLATED GROUND
  - GFI = GROUND FAULT INTERRUPTER
- DOUBLE DUPLEX
- SINGLE RECEPTACLE, 120V
- SINGLE RECEPTACLE, 208V
- DUPLEX FLOOR RECEPTACLE, 120V
- SPECIAL PURPOSE WALL RECEPTACLE, RATING AS NOTED
- CLOCK
- TV — TELEVISION
- TELEPHONE
- TELEPHONE/DATA WITH CABLE
- TELEPHONE/DATA WITHOUT CABLE

SWITCH OUTLETS

- S — STANDARD SWITCH, 120VAC, 20 AMP
- S 3 3WAY — 3–WAY SWITCH, 120VAC, 20 AMP
- S HOA HOA — 3–POSITION SWITCH, 120VAC, 20 AMP, LABEL SWITCH POSITION HAND–OFF–MOTION OR PHOTO

S DEE SINGLE–POLE	S P PILOT–LIGHTED
S 2 DOUBLE–POLE	S K KEY–OPERATED
S 3 THREE WAY	S LV LOW VOLTAGE
S 4 FOUR WAY	S M MASTER
S D DIMMER	PUSHBUTTON
S OS OCCUPANCY SENSOR	

LIGHTING FIXTURES/DEVICES

- FLUORESCENT FIXTURE
- WALL/CEILING MOUNTED FIXTURE
- EMERGENCY LIGHT WITH SELF CONTAINED BATTERY
- SURFACE OR PENDANT MOUNTED FIXTURE
- RECESSED FIXTURE
- MD — MOTION DETECTOR
- PC — PHOTO CONTROL CELL

FIRE SYSTEM SYMBOLS

- H — HEAT DETECTOR
- S — SMOKE DETECTOR
- D — FIRE ALARM DISPATCH STROBE ALARM
- A — FIRE ALARM AUDIBLE/VISUAL ALARM
- F — FIRE ALARM MANUAL PULL STATION

ADDITIONAL SYMBOLS

- S — SOUND SYSTEM SPEAKER
- V — SOUND SYSTEM VOLUME CONTROL
- B — DOORBELL

VALVE SYMBOLS

- PILOT VALVE SOLENOID
- VALVE
- CHECK VALVE
- CONTROL VALVE

ABBREVIATIONS

- SPDT – SINGLE POLE, DOUBLE THROW
- SPST – SINGLE POLE, SINGLE THROW
- DPST – DOUBLE POLE, SINGLE THROW
- WP – WEATHER–PROOF
- GFI – GROUND FAULT INTERRUPT
- P – POWER
- C – CONTROL
- J – INSTRUMENTATION
- PC – POWER & CONTROL
- CJ – CONTROL & INSTRUMENTATION
- CKT. – CIRCUIT
- C.O. – CONDUIT ONLY
- N.L. – NIGHT LIGHT
- AL. – ALUMINUM
- CU. – COPPER

HOA	HAND–OFF–AUTO SWITCH
RTM	RUN TIME METER
OC	OPERATION COUNTER
MRIL	MOTOR RUN INDICATION LIGHT
SFIL	SEAL FAIL INDICATION LIGHT
SFTR	SEAL FAIL TRIP RESET
OTIL	OVER TEMPERATURE INDICATION LIGHT
MOIL	MOTOR OVERLOAD INDICATION LIGHT

INDICATE TYPE BY LETTER	INSTRUMENT METER	
V	A – AMMETER	VAR – VARMETER
AH	AH – AMPERE–HOUR	VARH – VARHOUR METER
	PF – POWER FACTOR	W – WATTMETER
	V – VOLTMETER	WH – WATTHOUR METER
	VA – VOLT AMMETER	

RACEWAY LEGEND

SITE PLAN LEGEND

- P — PROPOSED POWER
- TEL — PROPOSED TELEPHONE
- TELM — PROPOSED INSTRUMENTATION
- FO — PROPOSED FIBER OPTICS

BUILDING OR FACILITY PLAN LEGEND

- 480 VOLT EXPOSED RACEWAY
- 480 VOLT WIRING CONCEALED, UNDERGROUND, EMBEDDED, OR CONCRETE ENCASED RACEWAY
- 120/208/240 VOLT EXPOSED RACEWAY
- 120/208/240V WIRING CONCEALED, UNDERGROUND, EMBEDDED, OR CONCRETE ENCASED RACEWAY
- CONTROL OR INSTRUMENTATION EXPOSED RACEWAY
- CONTROL OR INSTRUMENTATION, UNDERGROUND, EMBEDDED, OR CONCRETE ENCASED RACEWAY
- HOME RUN TO PANELBOARD OR AS INDICATED
- CONDUIT RUN, BROKEN AND CONTINUED SAME SHEET OR AS NOTED
- FLEXIBLE CONDUIT
- CONDUIT RUN. HATCH MARKS INDICATE NUMBER OF CONDUCTORS
- ½" GRC, 2–#12 — CALLOUT INDICATING CONDUIT SIZE, NUMBER AND SIZE OF WIRE.
- XXX — CALLOUT INDICATING CONDUIT PER SCHEDULE
- CONDUIT BENT UP OR TOWARD
- CONDUIT BENT DOWN OR AWAY
- CAPPED CONDUIT

ONE-LINE DIAGRAM INFORMATION

- EXISTING EQUIPMENT AND CONDUIT
- PROPOSED EQUIPMENT AND CONDUIT
- GROUNDING EQUIPMENT AND CONDUCTORS
- CONDUIT, WIRING OR EQUIPMENT TO BE REMOVED

LADDER LOGIC SYMBOL LEGEND

- INDICATOR LIGHT — INDICATOR LIGHT
  - A – AMBER G – GREEN
  - B – BLUE R – RED
  - C – CLEAR W – WHITE
- RELAY — XYZ 123 — RELAY
  - TR – TIMED RELAY
  - CR – CONTROL RELAY
- LIMIT SWITCH — LIMIT SWITCH, NORMALLY OPEN
- FLOAT SWITCH — FLOAT SWITCH, NORMALLY OPEN
- LIMIT SWITCH — LIMIT SWITCH, NORMALLY CLOSED
- FLOAT SWITCH — FLOAT SWITCH, NORMALLY CLOSED
- TIME DELAY CONTACT — TIME DELAY CONTACT, NORMALLY OPEN, TIME TO CLOSE
- PUSHBUTTON — PUSHBUTTON, NORMALLY CLOSED
- TIME DELAY CONTACT — TIME DELAY CONTACT, NORMALLY CLOSED, TIME TO OPEN
- PUSHBUTTON — PUSHBUTTON, NORMALLY OPEN
- TIME DELAY CONTACT — TIME DELAY CONTACT, NORMALLY OPEN, TIME TO OPEN
- THERMOSTAT — THERMO SWITCH, NORMALLY OPEN
- TIME DELAY CONTACT — TIME DELAY CONTACT, NORMALLY CLOSED, TIME TO CLOSE
- THERMOSTAT — THERMO SWITCH, NORMALLY CLOSED
- RELAY CONTACT, NC / RELAY CONTACT, NO — RELAY CONTACT, INSTANTANEOUS CHANGE
- FLOWSWITCH — FLOWSWITCH, NORMALLY OPEN
- PRESSURE SWITCH — PRESSURE SWITCH, NORMALLY OPEN
- FLOWSWITCH — FLOWSWITCH, NORMALLY CLOSED
- PRESSURE SWITCH — PRESSURE SWITCH, NORMALLY CLOSED
- 2 POLE SWITCH
- 3 POLE SWITCH

LADDER LOGIC LINETYPES

- COMPONENT INSTALLED INSIDE ENCLOSURE
- COMPONENT INSTALLED ON FRONT OF ENCLOSURE
- FIELD CONNECTED COMPONENT

GENERAL NOTES

1. THIS IS A STANDARD LEGEND. NOT ALL OF THE INFORMATION SHOWN ON THIS PAGE WILL APPEAR IN THIS SET OF PLANS.

2. THESE DRAWINGS ARE DIAGRAMMATIC ONLY; EXACT LOCATIONS OF ELECTRICAL EQUIPMENT SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR. THE INSTALLATION OF ALL EQUIPMENT SHOWN ON THESE DRAWINGS OR DESCRIBED IN THE SPECIFICATIONS SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN THE LATEST EDITIONS OF ALL APPLICABLE CODES AND UTILITY COMPANY STANDARDS. CONTACT THE UTILITY COMPANY REPRESENTATIVES AND VERIFY THEIR REQUIREMENTS.

3. NOTIFY THE ENGINEER IMMEDIATELY IF CONFLICTS IN EQUIPMENT LOCATIONS ARE DISCOVERED OR IF PROBLEMS ARISE DUE TO FIELD CONDITIONS, LACK OF INFORMATION OR ANY OTHER REASON. NO PAYMENT WILL BE MADE FOR CHANGES WHICH HAVE NOT BEEN REVIEWED BY THE ENGINEER.

RH2

MARK W. BRAASCH — STATE OF WASHINGTON — 51635 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: 04/13/2023

PUBLIC UTILITY DISTRICT NO. 1 OF WHATCOM COUNTY
D STATION - FLOW AND CONTROL IMPROVEMENTS

PUBLIC UTILITY DISTRICT No. 1 of Whatcom County

ELECTRICAL LEGEND

ENGINEER: BPC | SAVE DATE: Apr 13, 2023 | CLIENT: WPUD | JOB NO.: 21-0163
REVIEWED: MWB | PLOT DATE: Apr 13, 2023 | FILENAME: DSTA-D-ELEC01.DWG

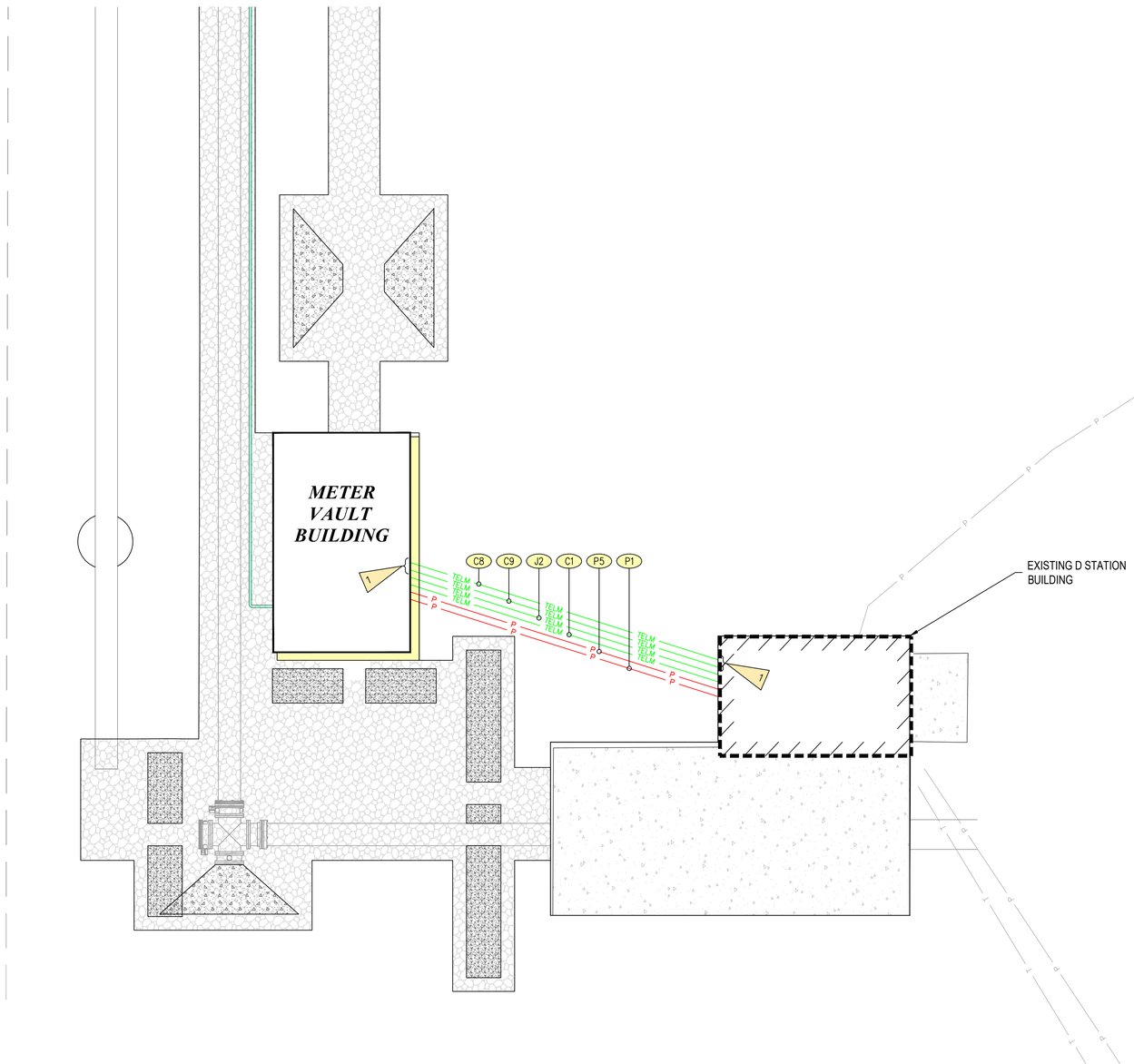
REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

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

DWG NO.: E01 | SHEET NO.: 13 / 20

ELECTRICAL NOTES	
1	1. STUB-UP PROPOSED SPARE CONDUIT INSIDE BUILDING.
XX	2. SEE DWG NO. E07 FOR CONDUIT AND CONDUCTOR SCHEDULE.



ELECTRICAL SITE PLAN

1" = 5'

RH2

SIGNED: 04/13/2023

PUBLIC UTILITY DISTRICT NO. 1 OF WHATCOM COUNTY
D STATION - FLOW AND CONTROL IMPROVEMENTS

PUBLIC UTILITY DISTRICT No. 1 of Whatcom County

ELECTRICAL SITE PLAN

ENGINEER: BPC
REVIEWED: MWB
SAVE DATE: Apr 13, 2023
PLOT DATE: Apr 13, 2023
CLIENT: WPUD
FILENAME: DSTA-D-ELEC02.DWG
JOB NO.: 21-0163

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN

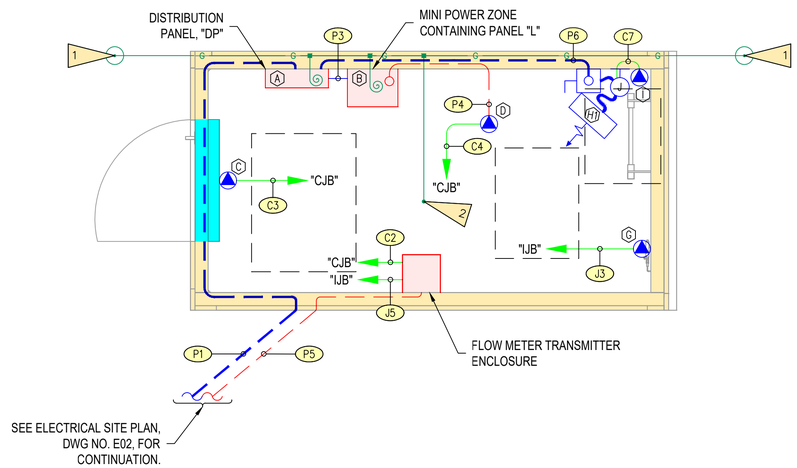
0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: E02

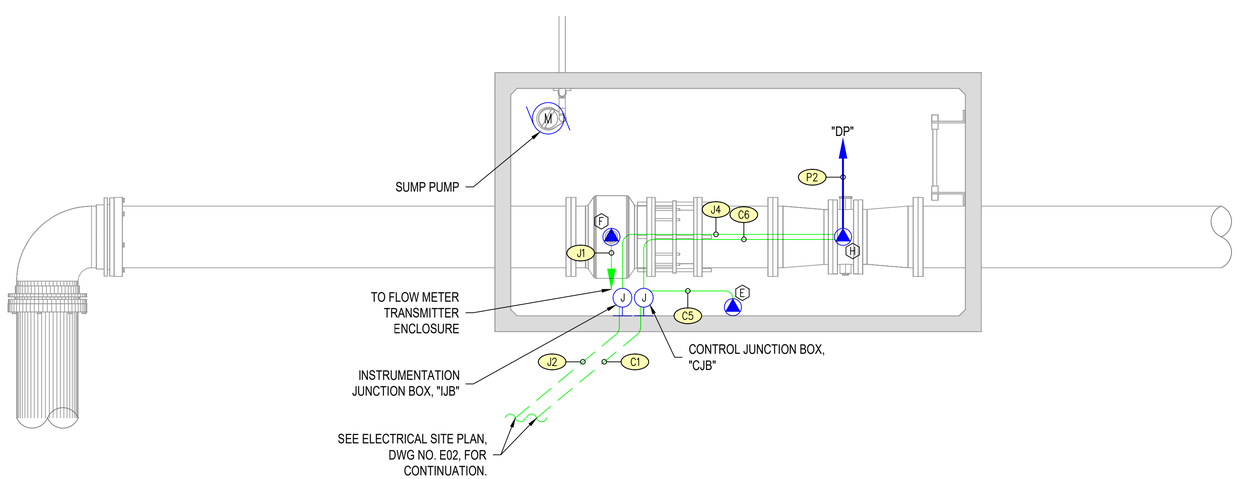
SHEET NO.: 14 / 20

ELECTRICAL NOTES	
1	1. GROUND ROD PER N.E.C. (TYPICAL). USE EXOTHERMIC WELD CONNECTION AT THE GROUND ROD. SEE DWG NO. E08 FOR DETAIL. LOCATE GROUND RODS 2' MINIMUM FROM BUILDING FOUNDATION.
2	2. BOND GROUND SYSTEM TO WATER PIPING IN VAULT.
XX	3. SEE DWG NO. E07 FOR CONDUIT AND CONDUCTOR SCHEDULE.
X	4. SEE DWG NO. E07 FOR ELECTRICAL EQUIPMENT SCHEDULE.



UPPER METER VAULT BUILDING ELECTRICAL PLAN

½" = 1'-0"



LOWER METER VAULT BUILDING ELECTRICAL PLAN

½" = 1'-0"

RH2

MARK W. BRAASCH, STATE OF WASHINGTON, 51635, REGISTERED PROFESSIONAL ENGINEER

SIGNED: 04/13/2023

PUBLIC UTILITY DISTRICT NO. 1 OF WHATCOM COUNTY
D STATION - FLOW AND CONTROL IMPROVEMENTS

PUBLIC UTILITY DISTRICT No. 1 of Whatcom County

ELECTRICAL PLAN I

ENGINEER: BPC
REVIEWED: MWB
SAVE DATE: Apr 13, 2023
PLOT DATE: Apr 13, 2023
CLIENT: WPUD
FILENAME: DSTA-D-ELEC03.DWG
JOB NO.: 21-0163

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

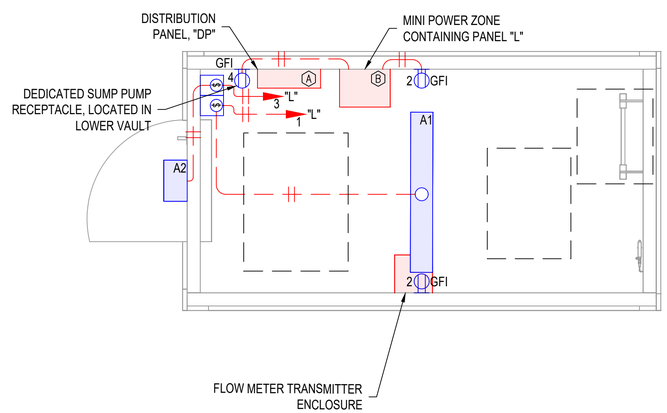
SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: E03

SHEET NO.: 15 / 20



METER VAULT BUILDING LIGHTING AND RECEPTACLE PLAN

½" = 1'-0"

ELECTRICAL NOTES	
X	1. SEE DWG NO. E07 FOR ELECTRICAL EQUIPMENT SCHEDULE.
A#	2. SEE DWG NO. E07 FOR LIGHTING SCHEDULE.

RH2

MARK W. BRAASCH
STATE OF WASHINGTON
51635
REGISTERED PROFESSIONAL ENGINEER

SIGNED: 04/13/2023

PUBLIC UTILITY DISTRICT NO. 1 OF WHATCOM COUNTY
D STATION - FLOW AND CONTROL IMPROVEMENTS

PUBLIC UTILITY DISTRICT No. 1 of Whatcom County

ELECTRICAL PLAN II

ENGINEER: BPC
REVIEWED: MWB
SAVE DATE: Apr 13, 2023
PLOT DATE: Apr 13, 2023
CLIENT: WPUD
FILENAME: DSTA-D-ELEC03.DWG
JOB NO.: 21-0163

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: E04

SHEET NO.: 16 / 20

ELECTRICAL NOTES	
XX	1. SEE DWG NO. E07 FOR CONDUIT AND CONDUCTOR SCHEDULE.

SEE D STATION INTERIOR 2, THIS SHEET, FOR CONTINUATION

SEE D STATION INTERIOR 1, THIS SHEET, FOR CONTINUATION

EXISTING TELEMETRY PANELS

EXISTING TELEMETRY PANEL

D STATION INTERIOR 1

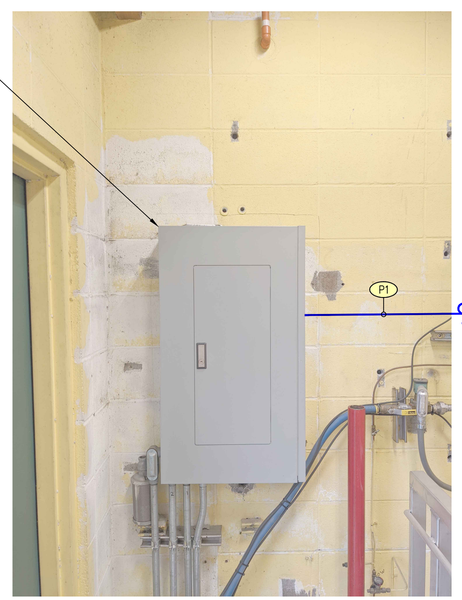
NO SCALE

SEE D STATION INTERIOR 4, THIS SHEET, FOR CONTINUATION

D STATION INTERIOR 2

NO SCALE

EXISTING 480V DISTRIBUTION PANEL



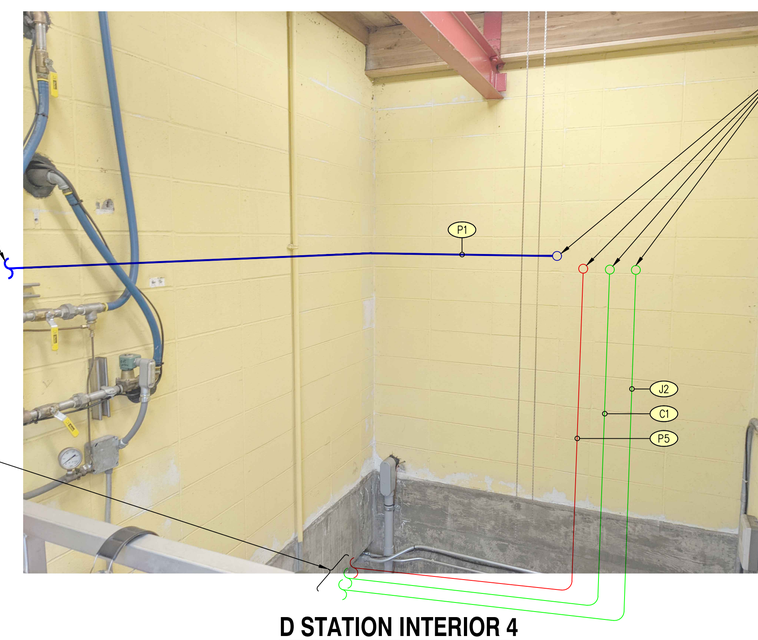
SEE D STATION INTERIOR 4, THIS SHEET, FOR CONTINUATION

D STATION INTERIOR 3

NO SCALE

CONDUITS PENETRATE WALL AND CONTINUE TO METER VAULT BUILDING. SEE D STATION EXTERIOR, THIS SHEET, FOR CONTINUATION. PENETRATIONS SHALL BE GROUTED AND SEALED WATER TIGHT.

SEE D STATION INTERIOR 3, THIS SHEET, FOR CONTINUATION



SEE D STATION INTERIOR 2, THIS SHEET, FOR CONTINUATION

D STATION INTERIOR 4

NO SCALE

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SIGNED: 04/13/2023

PUBLIC UTILITY DISTRICT NO. 1 OF WHATCOM COUNTY
D STATION - FLOW AND CONTROL IMPROVEMENTS

PUBLIC UTILITY DISTRICT No. 1 of Whatcom County

ELECTRICAL PLAN III

ENGINEER: BPC
REVIEWED: MWB
SAVE DATE: Apr 13, 2023
PLOT DATE: Apr 13, 2023
CLIENT: WPUD
FILENAME: DSTA-D-ELEC03.DWG
JOB NO.: 21-0163

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: E05

SHEET NO.: 17 / 20

CONDUITS PENETRATE WALL AND CONTINUE INTO D STATION. SEE D STATION INTERIOR 4, DWG NO. E05, FOR CONTINUATION. PENETRATIONS SHALL BE GROUTED AND SEALED WATER TIGHT.

CONDUITS CONTINUE TO METER VAULT BUILDING, SEE ELECTRICAL SITE PLAN, DWG NO. E02, FOR CONTINUATION

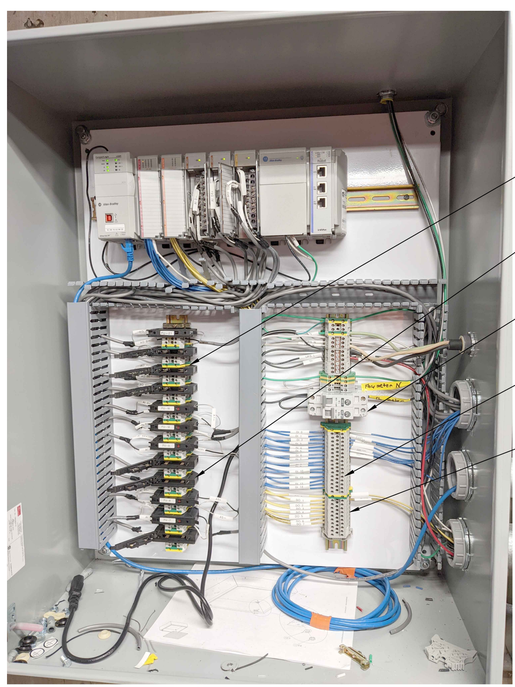
D STATION EXTERIOR

NO SCALE

EXISTING SPARE 40 AMP CIRCUIT BREAKER TO BE REMOVED AND REPLACED WITH EATON GHB3080 80 AMP CIRCUIT BREAKER FOR PROPOSED DISTRIBUTION PANEL, "DP"

EXISTING 480V DISTRIBUTION PANEL

NO SCALE



CONNECT PROPOSED ANALOG OUTPUT CIRCUIT TO SPARE OUTPUT

CONNECT PROPOSED ANALOG INPUT CIRCUITS TO SPARE INPUT

CONNECT PROPOSED FLOW METER POWER TO EXISTING SPARE CIRCUIT BREAKER

CONNECT PROPOSED DIGITAL INPUT CIRCUITS TO SPARE INPUTS

CONNECT PROPOSED DIGITAL OUTPUT CIRCUITS TO SPARE OUTPUTS

EXISTING TELEMETRY PANEL

NO SCALE

DISCRETE INPUTS
METER BUILDING FLOOD SWITCH
FLOW TOTALIZER PULSE
VALVE OPEN STATUS
VALVE CLOSE STATUS
VALVE FAULT
VALVE IN REMOTE
METER BUILDING SMOKE DETECTOR
METER BUILDING INTRUSION SWITCH
DISCRETE OUTPUTS
VALVE OPEN CALL
VALVE CLOSE CALL
ANALOG INPUTS
VALVE POSITION FEEDBACK
FLOW METER
PRESSURE TRANSMITTER
ANALOG OUTPUTS
VALVE POSITION COMMAND

PROPOSED PLC INPUTS/OUTPUTS

NO SCALE

RH2

MARK W. BRAASCH, STATE OF WASHINGTON, 51635, REGISTERED PROFESSIONAL ENGINEER

SIGNED: 04/13/2023

PUBLIC UTILITY DISTRICT NO. 1 OF WHATCOM COUNTY
D STATION - FLOW AND CONTROL IMPROVEMENTS

PUBLIC UTILITY DISTRICT No. 1 of Whatcom County

ELECTRICAL PLAN IV

ENGINEER: BPC | SAVE DATE: Apr 13, 2023 | CLIENT: WPUD | JOB NO.: 21-0163
REVIEWED: MWB | PLOT DATE: Apr 13, 2023 | FILENAME: DSTA-D-ELEC03.DWG

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: E06 | SHEET NO.: 18 / 20

POWER CONDUIT AND CONDUCTOR SCHEDULE

CIRCUIT	SOURCE	DESTINATION	TRADE SIZE	(QUANTITY) CONDUCTORS	NOTES
P1	EXISTING 480V DISTRIBUTION PANEL	DISTRIBUTION PANEL, "DP"	1 1/4"	(3) – #4, (1) – #4 N, (1) – #8 GRD	
P2	DISTRIBUTION PANEL, "DP"	VALVE ACTUATOR	3/4"	(3) – #12, (1) – #12 GRD	
P3	DISTRIBUTION PANEL, "DP"	MINI POWER ZONE (LIGHTING PANEL "L")	3/4"	(2) – #6, (1) – #10 GRD	
P4	LIGHTING PANEL "L"	METER BUILDING SMOKE DETECTOR	3/4"	(2) – #14, (1) – #14 GRD	
P5	EXISTING TELEMETRY PANEL	FLOW METER TRANSMITTER ENCLOSURE	3/4"	(2) – #10, (1) – #10 GRD	
P6	DISTRIBUTION PANEL, "DP"	METER BUILDING HEATER	3/4"	(3) – #12, (1) – #12 GRD	

CONTROL CONDUIT AND CONDUCTOR SCHEDULE

CIRCUIT	SOURCE	DESTINATION	TRADE SIZE	(QUANTITY) CONDUCTORS	NOTES
C1	EXISTING TELEMETRY PANEL	CONTROL JUNCTION BOX, "CJB"	1 1/4"	(18) – #14, (1) – #14 GRD	
C2	CONTROL JUNCTION BOX, "CJB"	FLOW METER TRANSMITTER ENCLOSURE	3/4"	(2) – #14, (1) – #14 GRD	
C3	CONTROL JUNCTION BOX, "CJB"	METER BUILDING INTRUSION SWITCH	3/4"	(2) – #14, (1) – #14 GRD	
C4	CONTROL JUNCTION BOX, "CJB"	METER BUILDING SMOKE DETECTOR	3/4"	(2) – #14, (1) – #14 GRD	
C5	CONTROL JUNCTION BOX, "CJB"	METER BUILDING FLOOD SWITCH	3/4"	(2) – #14, (1) – #14 GRD	
C6	CONTROL JUNCTION BOX, "CJB"	VALVE ACTUATOR	3/4"	(12) – #14, (1) – #14 GRD	
C7	METER BUILDING HEATER	METER BUILDING HEATER THERMOSTAT	3/4"	(2) – #14, (1) – #14 GRD	
C8	EXISTING D STATION BUILDING	METER VAULT BUILDING	1"	NYLON PULL-CORD	SPARE CONDUIT FOR FUTURE USE
C9	EXISTING D STATION BUILDING	METER VAULT BUILDING	1"	NYLON PULL-CORD	SPARE CONDUIT FOR FUTURE USE

INSTRUMENTATION CONDUIT AND CONDUCTOR SCHEDULE

CIRCUIT	SOURCE	DESTINATION	TRADE SIZE	(QUANTITY) CONDUCTORS	NOTES
J1	FLOW METER TRANSMITTER ENCLOSURE	FLOW METER	(2) 1 1/2"	MANUFACTURER'S CABLE(S)	
J2	EXISTING TELEMETRY PANEL	INSTRUMENTATION JUNCTION BOX, "IJB"	1"	(4) 2-CONDUCTOR SHIELDED CABLES	
J3	INSTRUMENTATION JUNCTION BOX, "IJB"	PRESSURE TRANSMITTER	3/4"	(1) 2-CONDUCTOR SHIELDED CABLE	
J4	INSTRUMENTATION JUNCTION BOX, "IJB"	VALVE ACTUATOR	3/4"	(2) 2-CONDUCTOR SHIELDED CABLES	
J5	INSTRUMENTATION JUNCTION BOX, "IJB"	FLOW METER TRANSMITTER ENCLOSURE	3/4"	(1) 2-CONDUCTOR SHIELDED CABLE	

PANEL SCHEDULE L

NO. L — LOCATION: MINI POWER ZONE — SERVING: METER VAULT BUILDING LOADS

240/120 VOLTS 1ϕ 3 WIRE — 60 AMP MAIN

CIRCUIT DESCRIPTION	KVA	AMP		AMP	KVA	CIRCUIT DESCRIPTION
INDOOR LIGHTS	0.06	20	1 – 2	20	0.36	INDOOR RECEPTACLES
OUTDOOR LIGHTS	0.08	20	3 – 4	20	0.45	SUMP PUMP DEDICATED RECEPTACLE
SMOKE DETECTOR	–	20	5 – 6	20	–	SPARE
SPARE	–	20	7 – 8	20	–	SPARE
SPARE	–	20	9 – 10	20	–	SPARE

CONNECTION LOAD: 0.95 KVA 7.92 AMPS

DEMAND: LIGHTING & RECEPTACLE LOAD

DEMAND LOAD: 0.95 KVA 7.92 AMPS

PANEL SCHEDULE DP

NO. DP — LOCATION: METER VAULT BUILDING — SERVING: METER VAULT BUILDING LOADS

480/277 VOLTS 3ϕ 4 WIRE — 80 AMP MAIN

CIRCUIT DESCRIPTION	KVA	AMP		AMP	KVA	CIRCUIT DESCRIPTION
VALVE ACTUATOR	0.83	20	1 – 2	60	10	MINI POWER ZONE
–	–	3P	3 – 4	3P	–	–
–	–	3P	5 – 6	3P	–	–
METER BUILDING HEATER	3.75	20	7 – 8	20	–	SPARE
–	–	3P	9 – 10	3P	–	–
–	–	3P	11 – 12	3P	–	–
SPARE	–	20	13 – 14	–	–	
–	–	3P	15 – 16	–	–	
–	–	3P	17 – 18	–	–	

CONNECTION LOAD: 14.58 KVA 17.55 AMPS

DEMAND: METER VAULT BUILDING LOADS

DEMAND LOAD: 14.58 KVA 17.55 AMPS

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER NAME	MANUFACTURER CATALOG NO.	LAMP QTY. *	LAMP CATALOG NO.	REMARKS
A1	LED LIGHT FIXTURE, 120 VAC, 4'-4" LONG, 45 WATT, 5000K COLOR TEMPERATURE, 60,000 HOUR LED, HIGH EFFICIENCY DRIVER, HIGH-IMPACT ACRYLIC LENS, MOLDED FIBERGLASS HOUSING, CEILING MOUNTED, U.L. LISTED FOR WET LOCATIONS.	LITHONIA	FEM L48 6000LM IMAFL 50K	1	INTEGRATED LED	
A2	LED OUTDOOR AREA LIGHT – (1)-27W 10C LED. 700mA, 5000K COLOR TEMPERATURE, 120VAC, MOUNT BOTTOM OF FIXTURE 6" ABOVE DOOR, U.L. LISTED FOR WET LOCATIONS.	LITHONIA	DSXW1 LED 10C 700 50K T3M 120 DDBXD	1	INTEGRATED LED	

* NUMBER OF LAMPS PER FIXTURE

ELECTRICAL EQUIPMENT AND INSTRUMENTATION SCHEDULE

ITEM	DESCRIPTION	MANUFACTURER	MODEL NO.
A	POWER DISTRIBUTION PANEL – 480/277 VOLT, 3ϕ, 4 WIRE, 42 KAIC WITHSTAND, 200A MAIN CIRCUIT BREAKER, COPPER MAIN BUS, MINIMUM 18 CIRCUIT BREAKER SPACES, NEMA 3R ENCLOSURE	SIEMENS	P1 OR EQUAL
B	MINI POWER ZONE – 10KVA, 480-120/240 VAC, 1ϕ, 3 WIRE, NEMA 3R ENCLOSURE.	SQUARE D	MPZ10S40F OR EQUAL
C	INTRUSION ALARM SWITCH – CONTRACTOR SHALL SELECT ACTUATOR LEVER ARM BEST SUITED FOR MOUNTING CONFIGURATION	SQUARE D	HEAVY DUTY TYPE C, CLASS 9007 OR EQUAL
D	SMOKE DETECTOR – PHOTOELECTRIC, 120 VDC POWERED WITH LOCAL AND AUDIBLE ALARM SIGNAL AND CONTACTS FOR REMOTE ANNUNCIATION THROUGH FOUR WIRE CONNECTION TO RTU.	GENTEX	S1209F OR EQUAL
E	FLOOD SWITCH – N.O. REED TYPE FLOAT SWITCH, 20 VA. SEE DWG NO. E08 FOR DETAILS.	OMEGA	LVN-20 OR EQUAL
F	FLOW METER	SEE SPECIFICATIONS	SEE SPECIFICATIONS
G	PRESSURE TRANSMITTER	SEE SPECIFICATIONS	SEE SPECIFICATIONS
H	VALVE ACTUATOR	SEE SPECIFICATIONS	SEE SPECIFICATIONS
I	THERMOSTAT	SEE SPECIFICATIONS	SEE SPECIFICATIONS

HEATER SCHEDULE

ITEM	DESCRIPTION	MANUFACTURER	MODEL NO.
H1	ELECTRICAL HEATER WITH UNIVERSAL MOUNTING BRACKET – 3KW, 480V, THREE PHASE, WITH 24V CONTROL TRANSFORMER AND POWER CONTACTOR FOR THERMOSTAT CONNECTION. MOUNT BOTTOM OF HEATER 7'-0" ABOVE FLOOR.	QMARK	MUH0341

RH2

MARK N. BRAASCH — STATE OF WASHINGTON — 51635 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: 04/13/2023

PUBLIC UTILITY DISTRICT NO. 1 OF WHATCOM COUNTY
D STATION - FLOW AND CONTROL IMPROVEMENTS

PUBLIC UTILITY DISTRICT No. 1 of Whatcom County

ELECTRICAL SCHEDULES

ENGINEER: BPC — REVIEWED: MWB — SAVE DATE: Apr 13, 2023 — PLOT DATE: Apr 13, 2023 — CLIENT: WPUD — FILENAME: DSTA-D-ELEC04.DWG — JOB NO.: 21-0163

REVISIONS

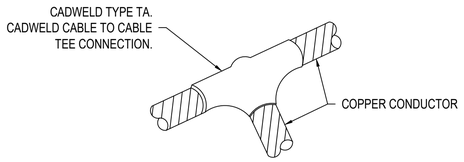
NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN

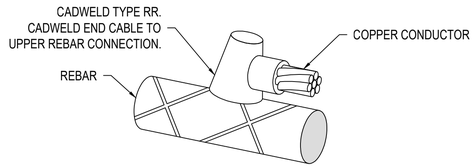
0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

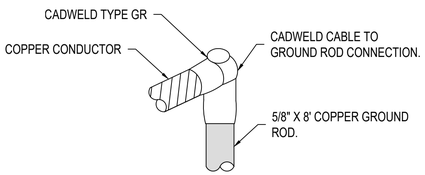
DWG NO.: E07 — SHEET NO.: 19 / 20



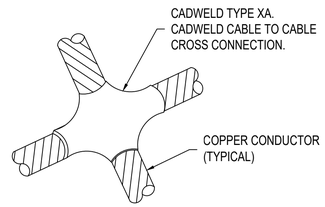
GROUND TEE DETAIL
NO SCALE



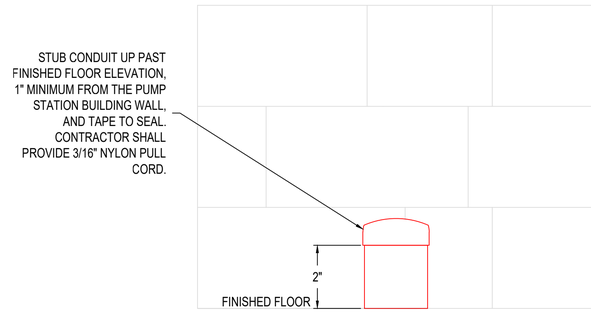
GROUND REBAR DETAIL
NO SCALE



GROUND TEE DETAIL
NO SCALE

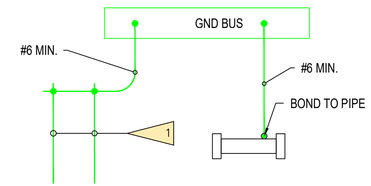


GROUNDING CROSS DETAIL
NO SCALE

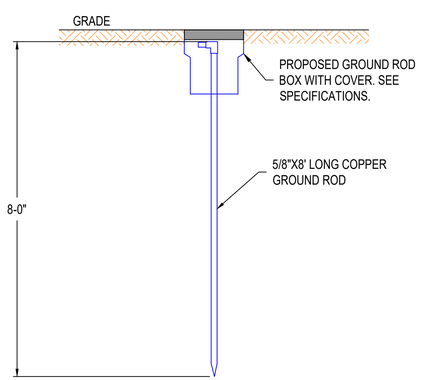


CONDUIT STUB-UP DETAIL
NOT TO SCALE

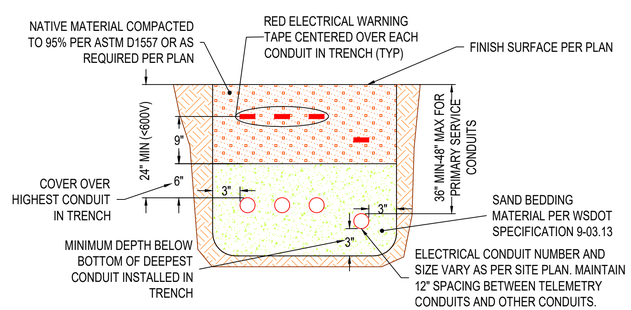
ELECTRICAL NOTES	
1	1. GROUND ROD PER N.E.C. (TYPICAL). SEE THIS SHEET FOR DETAIL.
X	2. SEE DWG NO. E07 FOR ELECTRICAL EQUIPMENT SCHEDULE.



GROUNDING
NO SCALE

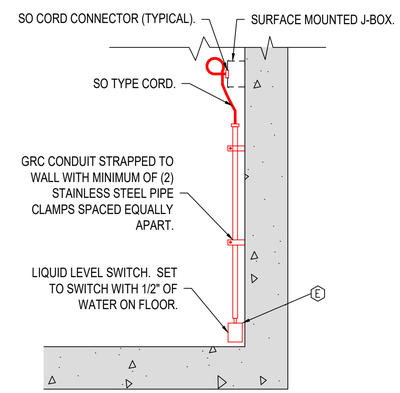


GROUND ROD DETAIL
NOT TO SCALE



TYPICAL ELECTRICAL TRENCH DETAIL
NOT TO SCALE

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



FLOOD SWITCH DETAIL
NOT TO SCALE

RH2

MARK W. BRAASCH
STATE OF WASHINGTON
51635
REGISTERED PROFESSIONAL ENGINEER

SIGNED: 04/13/2023

PUBLIC UTILITY DISTRICT NO. 1 OF WHATCOM COUNTY
D STATION - FLOW AND CONTROL IMPROVEMENTS

Public Utility District No. 1 of Whatcom County

ELECTRICAL DETAILS

ENGINEER: BPC
REVIEWED: MWB
SAVE DATE: Apr 13, 2023
PLOT DATE: Apr 13, 2023
CLIENT: WPUD
FILENAME: DSTA-D-ELEC05.DWG
JOB NO.: 21-0163

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

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

DWG NO.: E08
SHEET NO.: 20 / 20