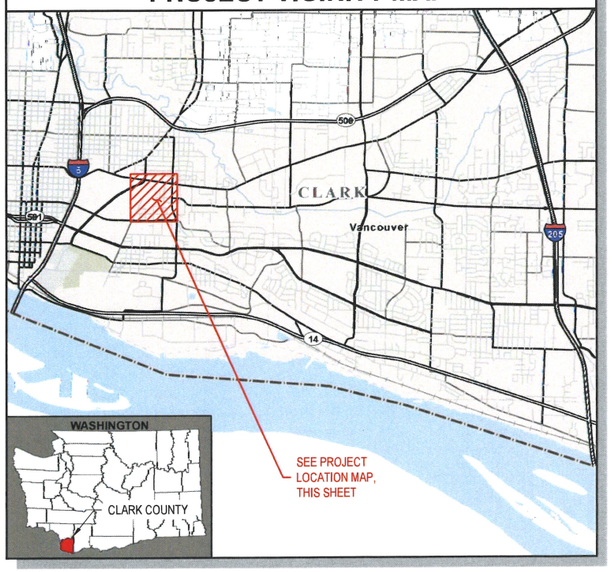
CITY OF Vancouver WASHINGTON

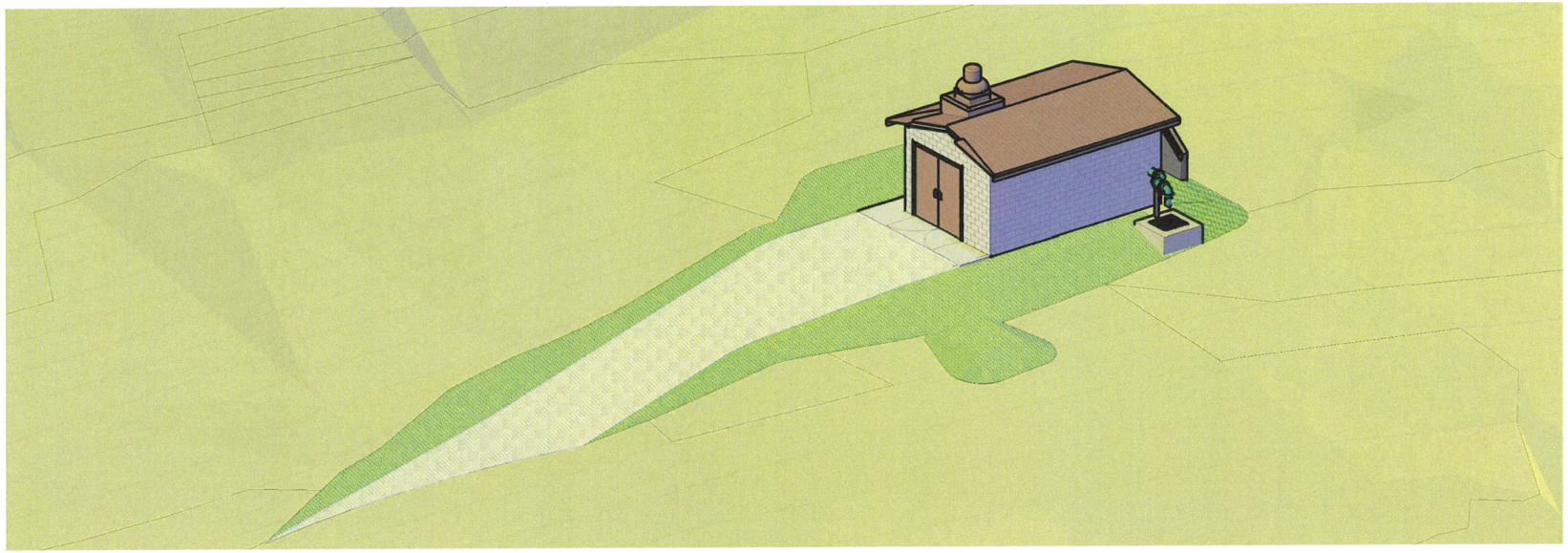
CITY OF VANCOUVER
WATER STATION 1 WELL NOS. 3B AND 5B FACILITIES

WINTER 2025
VOLUME III

PROJECT - 100490
FUND: 448
COST CENTER: 0194

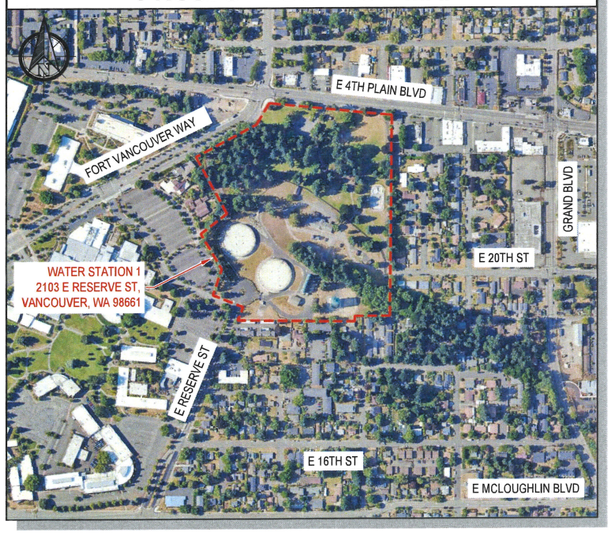
PROJECT VICINITY MAP

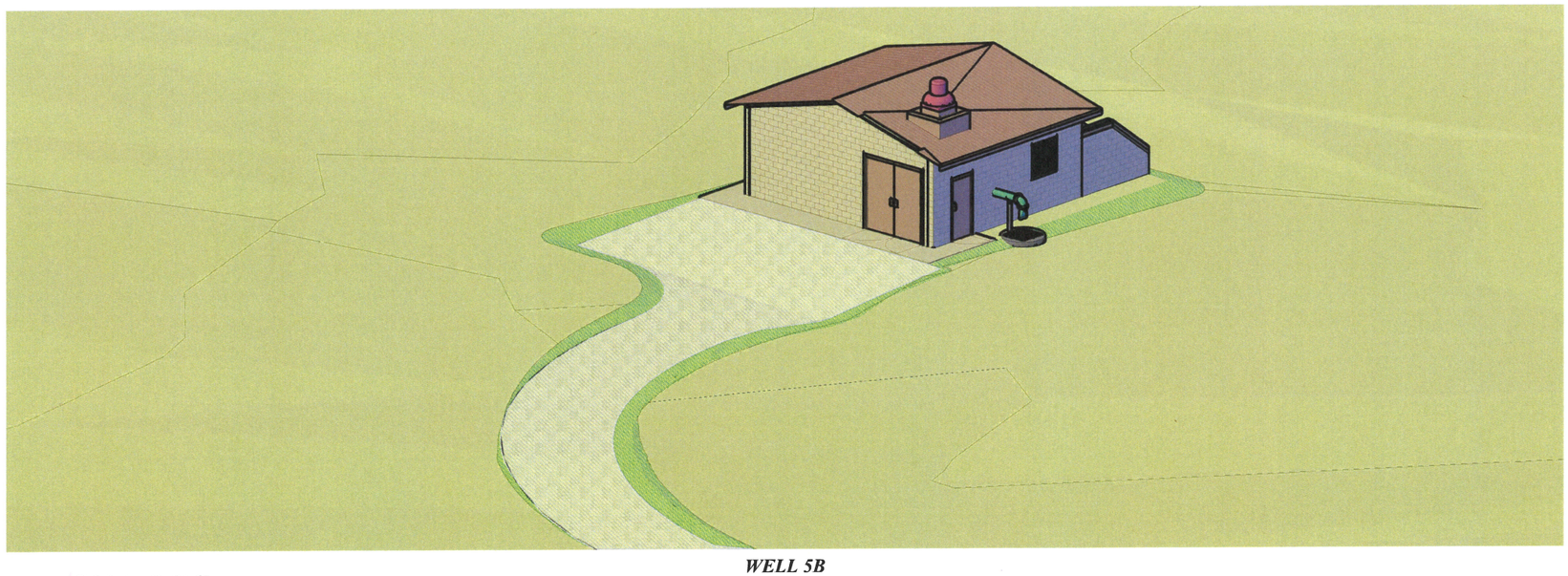




WELL 3B

PROJECT LOCATION MAP





WELL 5B

PREPARED BY:

RH2

APPROVAL BY: Kris Olinger Digitally signed by Kris Olinger Date: 2025.11.04 11:16:28 -08'00'

UTILITIES ENGINEERING DIVISION MANAGER

NO.	DATE	DESCRIPTION	BY	REVIEW

DRAWING INDEX

PLANS PREPARED BY OTHERS UNDER SEPARATE CITY CONTRACT AND INCORPORATED HEREIN.

GENERAL CONSTRUCTION NOTES

CRITERIA

1) CONSTRUCTION OF SITE, ROAD, AND UTILITY IMPROVEMENTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION, LATEST EDITION, AS ISSUES BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION AND THE AMERICAN PUBLIC WORKS ASSOCIATION AND CURRENT AWWA SPECIFICATIONS.

2) ALL BUILDING MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, AND THE INTERNATIONAL BUILDING CODE (2021).

3) ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS, AND THE PERMITTING CONDITIONS OF APPROVAL.

4) THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH THE PROVISIONS OF THE BUILDING PERMIT AS ISSUED BY CITY OF VANCOUVER AND OBTAINING ALL REQUIRED TRADE PERMITS..

GENERAL CONSTRUCTION

1) A COPY OF THE APPROVED PLANS AND SPECIFICATIONS MUST BE ON-SITE WHENEVER CONSTRUCTION IS IN PROGRESS. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY OTHER REQUIRED OR RELATED PERMITS PRIOR TO BEGINNING CONSTRUCTION.

2) IN THE EVENT THAT STANDARD CONSTRUCTION NOTES ARE FOUND TO BE IN CONFLICT WITH PROJECT SPECIFIC NOTES, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY. WHERE CONFLICTS ARISE, THE CONTRACTOR SHALL ASSUME THAT THE THE MORE RESTRICTIVE CONDITION SHALL APPLY.

GENERAL NOTES

1) THE WATER STATION NO. 1 FACILITIES MUST REMAIN OPERATIONAL AT ALL TIMES. THE CONTRACTOR SHALL MAINTAIN ACCESS TO CITY PERSONNEL TO THE WATER STATION FACILITIES AT ALL TIMES.

2) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, FLAGGERS, AND ANY OTHER NEEDED ACTIONS TO PROTECT THE LIFE, HEALTH, AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACTOR.

3) THE EXISTING PHYSICAL FEATURES SHOWN ON THESE PLANS ARE BASED ON RECORD DRAWINGS, FIELD RECONNAISSANCE, AND EXISTING SURVEY INFORMATION PROVIDED BY THE CITY. OWNER AND ENGINEER DO NOT GUARANTEE NOR ASSUME RESPONSIBILITY FOR THE ACCURACY OF THIS INFORMATION. THE CONTRACTOR SHALL VERIFY THE TRUE AND CORRECT LOCATION OF EXISTING UTILITIES, EQUIPMENT, STRUCTURES, AND FACILITIES TO AVOID DAMAGE OR DISTURBANCE. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROTECTING ALL EXISTING ITEMS.

4) A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE 48 HOUR ADVANCE NOTIFICATION TO THE OWNER, ENGINEER AND ALL AFFECTED UTILITY COMPANIES PRIOR TO ACTUAL START OF WORK.

5) PROTECTION OF THE ENVIRONMENT: NO CONSTRUCTION RELATED ACTIVITY SHALL CONTRIBUTE TO THE DEGRADATION OF THE ENVIRONMENT, ALLOW MATERIAL TO ENTER SURFACE OR GROUND WATERS, OR ALLOW PARTICULATE EMISSIONS TO THE ATMOSPHERE, WHICH EXCEED STATE OR FEDERAL STANDARDS. ANY ACTIONS THAT POTENTIALLY ALLOW DISCHARGE TO STATE WATERS MUST HAVE PRIOR APPROVAL.

6) CONTRACTOR INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE OWNER FOR APPROVAL PRIOR TO IMPLEMENTATION OR CONSTRUCTION. ANY SIGNIFICANT DEVIATIONS FROM THE PLANS WILL REQUIRED A REQUEST FROM THE APPLICANT'S ENGINEERING AND APPROVAL FROM THE CITY'S ENGINEER AND CITY INSPECTOR.

SITE

1) 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.

2) STORAGE OF ALL MATERIALS AND EQUIPMENT IS TO BE CONFINED TO WITHIN THE CONSTRUCTION LIMITS AS DEFINED ON THE PLANS. IF ADDITIONAL STORAGE IS NEEDED OUTSIDE THE CONSTRUCTION LIMITS THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM THE OWNER AND ADJACENT PROPERTY OWNERS.

3) MAINTAIN INTEGRITY AND SECURITY OF EXISTING SITE FENCE TO DISCOURAGE SITE ACCESS BY UNAUTHORIZED PERSONNEL.

SITE (CONTINUED)

4) CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO EXISTING OR BETTER CONDITION UNLESS OTHERWISE STATED ON THE PLANS.

5) THE CONTRACTOR SHALL CLEANUP ALL AREAS AFFECTED BY HIS ACTIVITIES TO THE SATISFACTION OF THE OWNER BY THE END OF EACH WORKING DAY OR MORE FREQUENTLY IF REQUIRED BY THE OWNER. THIS INCLUDES REMOVAL OF ALL DUST, MUD, ROCKS, ASPHALT DEBRIS, AND REFUSE FROM STREETS, SIDEWALKS, DRIVEWAYS, AND ANY OTHER AREAS AFFECTED BY THE CONSTRUCTION ACTIVITIES. FAILURE TO CLEANUP TO THE SATISFACTION OF THE OWNER WILL NECESSITATE A SHUTDOWN OF THE PROJECT UNTIL CLEANUP IS PROPERLY PERFORMED. DAILY CLEANUP IS AN INTEGRAL PART OF EROSION AND POLLUTION CONTROL.

6) CONTRACTOR IS RESPONSIBLE FOR MEETING ALL REQUIREMENTS FOR OFF SITE DISPOSAL INCLUDING ONLY DISPOSING OF WASTE MATERIAL AT APPROVED SITES.

UTILITIES

1) UTILITY LOCATIONS SHOWN HEREON ARE BASED UPON ON RECORD DRAWINGS, FIELD RECONNAISSANCE, AND EXISTING SURVEY INFORMATION PROVIDED BY THE OWNER. OTHER UTILITIES OR DEVIATIONS FROM THESE PLANS MAY EXIST. THE ROUTING OF ALL BURIED UTILITIES SHOULD BE CONFIRMED WITH THE UTILITY PURVEYOR AND EXPOSED IN AREAS CRITICAL TO CONSTRUCTION FOR VERIFICATION. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION, ELEVATION AND SIZE OF EXISTING UTILITIES PRIOR TO CONSTRUCTION OF ANY BURIED PROPOSED UTILITIES. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND THE OWNER WHEN A CONFLICT OCCURS OR WHEN A CONFLICT IS ANTICIPATED.

2) IT IS UNDERSTOOD THAT OTHER ABOVE GROUND AND UNDERGROUND FACILITIES NOT SHOWN ON THE DRAWINGS MAY BE ENCOUNTERED DURING THE COURSE OF THE WORK. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INDEPENDENTLY VERIFY THE ACCURACY OF ALL UTILITY LOCATIONS AND THE SIZE OF ALL UTILITIES SHOWN TO AVOID DAMAGE AND/OR DISTURBANCE TO SUCH UTILITIES, AND TO FURTHER DISCOVER AND AVOID ANY OTHER UTILITIES NOT SHOWN HEREON WHICH MAY BE AFFECTED BY THE IMPLEMENTATION OF THIS PLAN. CONTRACTOR SHALL PRESERVE, PROTECT AND SUPPORT ALL EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION.

3) EXISTING WATER AND POWER FACILITIES MAY NOT BE SHUT DOWN FOR ANY PERIOD WITHOUT PRIOR APPROVAL FROM OWNER. A MINIMUM OF ONE WEEK NOTICE TO THE OWNER IS REQUIRED FOR ANY SHUT DOWN. THE CONTRACTOR SHALL NOT OPERATE EXISTING WATER, SEWER, OR POWER SYSTEM EQUIPMENT (VALVES, SWITCHES, ETC.). NO SHUTDOWNS SHALL BE ALLOWED ON MONDAYS, FRIDAYS OR THE DAYS BEFORE OR AFTER A HOLIDAY.

4) OVERHEAD UTILITIES: NOT ALL OVERHEAD UTILITIES MAY BE SHOWN ON THE PLANS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE SITE TO INDEPENDENTLY VERIFY ALL OVERHEAD UTILITIES. THE CONTRACTOR SHALL ACCOUNT FOR ACCOMMODATING ALL OVERHEAD UTILITIES IN THEIR BID AND NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR FACILITATING OVERHEAD UTILITIES.

5) THE CONTRACTOR SHALL NOTIFY FRANCHISE OFFICIAL, A MINIMUM OF 72 HOURS IN ADVANCE OF ANY PLANNED DISRUPTION TO UTILITIES INCLUDING, BUT NOT LIMITED TO WATER, SEWER, NATURAL GAS, IRRIGATION, TELEPHONE, POWER, CABLE AND FIBER OPTICS.

6) ALL UTILITY CONSTRUCTION SHALL COMPLY WITH THE WASHINGTON DEPT. OF TRANSPORTATION AND UTILITY FRANCHISE STANDARDS.

7) CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING UTILITIES AND STRUCTURES AND SHALL PROVIDE SHORING AND SUPPORT AS NECESSARY.

TRAFFIC CONTROL

1) CONTRACTOR IS RESPONSIBLE FOR SUBMITTING AND OBTAINING ANY REQUIRED PERMITS, SUCH AS STREET USE AND/OR TRANSPORTATION, PRIOR TO BEGINNING CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH THE CITY AND COUNTY PRIOR TO AND DURING CONSTRUCTION TO ENSURE TRAFFIC CONTROL AND DETOURS EMPLOYED MEET CITY AND COUNTY REQUIREMENTS AND APPROVAL.

2) ALL TRAFFIC CONTROL DEVICES SHALL MEET MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES STANDARDS.

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	NIC	NOT IN CONTRACT
BE	BOTTOM ELEVATION	NOM	NOMINAL
BFV	BUTTERFLY VALVE	NO(S)	NUMBER(S)
B/G	BACKGROUND	OC	ON CENTER
CB	CATCH BASIN	P	POWER
COV	CITY OF VANCOUVER	PE	PLAIN END
CPEP	CORRUGATED POLYETHYLENE PIPE	PJF	PREMOLDED JOINT FILLER
CSBC	CRUSHED SURFACE BASE COURSE	PROP	PROPOSED
CSTC	CRUSHED SURFACE TOP COURSE	PVC	POLYVINYL CHLORIDE
D	DIAMETER	RE	RIM ELEVATION
DI	DUCTILE IRON	R	RADIUS
D/S	DOWNSTREAM	RJ	RESTRAINED JOINT
DR	DRAIN	RW	RAW WATER
EA	EACH	SIM	SIMILAR
EL	ELEVATION	SS	STAINLESS STEEL
ELEV	ELEVATION	SST	STAINLESS STEEL
EX	EXISTING	ST	STORM
EG	EXISTING GRADE	TESC	TEMPORARY EROSION AND SEDIMENT CONTROL
FF	FINISHED FLOOR		
FG	FINISHED GRADE	TYP	TYPICAL
F/G	FOREGROUND	U/S	UPSTREAM
FL	FLANGE	U.N.O	UNLESS NOTED OTHERWISE
GALV	GALVANIZED	W	WATER
GPS	GLOBAL POSITIONING SYSTEM		
GV	GATE VALVE		
IE	INVERT ELEVATION		
MAX	MAXIMUM		
MDD	MAX DRY DENSITY		
MH	MANHOLE		
MIN	MINIMUM		

CONTACTS

CONTACT	AGENCY	PHONE
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KYLE PETTIBONE, PE	RH2 ENGINEERING	(503) 446-2816
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CALL 48 HOURS BEFORE YOU DIG
ONE CALL 811

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

RH2

KYLE M PETTIBONE
STATE OF WASHINGTON
41857
REGISTERED PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

GENERAL INFORMATION

CITY OF Vancouver WASHINGTON

JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3B5B-P-COV.DWG
SAVE DATE: Nov 2, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: JKB
REVIEWED: KMP

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

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

DWG NO.: G01
SHEET NO.: 02
82

LEGEND

EXISTING		PROPOSED	
W	WELLHEAD	12" DI W	WATER PIPE
	TREE (CONIFER)	P	POWER LINE
	TREE (DECIDUOUS)		TELEMETRY LINE
M	WATER METER VAULT	10" PVC DR	DRAIN LINE
	FIRE HYDRANT		BUILDING AREA
	WATER GATE VALVE		GRAVEL AREA
	WATER BUTTERFLY VALVE		CONCRETE AREA
	WATER BLOW OFF VALVE		ASPHALT AREA
	CAP/PLUG		DRAIN MANHOLE
	STORM DRAIN MANHOLE	X	FENCE
	CATCH BASIN (ROUND)		TEE
	CATCH BASIN (RECTANGULAR)		BENDS
SS	SANITARY SEWER MANHOLE		BUTTERFLY VALVE
	IRRIGATION RISER		GATE VALVE
	IRRIGATION VALVE		LONG BODY SLEEVE
	UTILITY POLE		FIRE HYDRANT
	GUY ANCHOR		REDUCER
	PAD MOUNT TRANSFORMER		STRADDLE BLOCK
	POWER/COMM VAULT		
	LIGHT POLE		
	BUILDING		
	ASPHALT AREA		
	CONCRETE AREA		
	MAJOR CONTOUR		
	MINOR CONTOUR		
	BUILDING EDGE		
	ASPHALT EDGE		
	CONCRETE EDGE		
X	FENCE		
	TREE DRIP LINE		
FO	UNDERGROUND FIBER OPTICS		
G	NATURAL GAS		
P	UNDERGROUND POWER		
OHP	OVERHEAD POWER		
SS	SANITARY SEWER		
ST	STORM DRAIN LINE		
W	WATER LINE		

TEMPORARY / DEMO	
	UTILITY LINE TO BE ABANDONED
X X X X X X X X X X	UTILITY LINE TO BE REMOVED
	EXISTING STRUCTURE TO BE REMOVED
	SILT FENCE
	INLET PROTECTION
	CONSTRUCTION ENTRANCE
X	CONSTRUCTION FENCE
	MATERIAL STORAGE AREA

GENERAL CIVIL NOTES

EXISTING UTILITIES

1. POWER, TELEPHONE, FIBEROPTIC, GAS AND CABLE: WHERE THESE UTILITIES CROSS THE PROPOSED PIPE, THE DEPTH OF EACH IS SHOWN ON THE PROFILES AND IS BASED ON TYPICAL LAYING DEPTHS FOR EACH OF THESE UTILITIES. ACTUAL DEPTHS ARE UNKNOWN AND MAY VARY SIGNIFICANTLY. CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF UTILITY CROSSING DEPTH CONFLICTS ARISE.

2. WATER: THE VERTICAL AND HORIZONTAL LOCATIONS OF THE EXISTING WATER MAIN SHOWN ON THE PLANS ARE APPROXIMATE. DEVIATIONS FROM THESE PLANS MAY EXIST.

3. IN LOCATIONS WHERE THE EXISTING UTILITY IS EXPOSED IN ORDER TO CONSTRUCT THE NEW UTILITY, THE AMOUNT OF OPEN TRENCH SHALL BE MINIMIZED TO AVOID EXPOSING MORE THAN ONE EXISTING PIPE JOINT WHERE THE EXISTING PIPE IS TO REMAIN. THE CONTRACTOR SHALL CONDUCT THE WORK IN A MANNER THAT PREVENTS DAMAGE TO THE EXISTING UTILITY DURING THE CONSTRUCTION OF THE NEW UTILITY.

4. PROVIDE STYROFOAM CUSHION BETWEEN PIPING AT PIPE CROSSINGS WHERE PIPES CROSS WITH LESS THAN 12 INCHES OF VERTICAL SEPARATION. A SAND CUSHION MAY BE USED IN AREAS WHERE ADEQUATE COMPACTION CAN BE ACHIEVED AND AS APPROVED BY THE ENGINEER.

5. CONFLICTS WHICH MAY OCCUR DURING CONSTRUCTION OF THE PROPOSED WATER MAIN OR SERVICE LINES SHALL BE RESOLVED IN THE FOLLOWING MANNER, AS DIRECTED BY THE OWNER'S REPRESENTATIVE. CONTRACTOR SHALL SUBMIT PROPOSED CHANGES, AS MARK-UPS ON THE PLANS, TO THE ENGINEER FOR REVIEW:
   A. IF THE PROPOSED WATER MAIN CONFLICTS WITH A MAJOR UTILITY SUCH AS A 2" OR GREATER DIAMETER GAS MAIN OR STORM WATER MAIN, THE WATER LINE SHALL BE DEFLECTED WITHIN MANUFACTURER'S STANDARDS OR REALIGNED USING VERTICAL OR HORIZONTAL BENDS AS APPROVED BY THE ENGINEER. PAYMENT FOR THESE ALIGNMENT CHANGES SHALL BE BASED ON THE UNIT PRICES FOR BENDS AND FITTINGS AND TRENCH OVER-EXCAVATION AND BACKFILL AS ESTABLISHED PRIOR TO THE CHANGES BEING CONSTRUCTED AND AS APPROVED BY THE ENGINEER.
   B. IF THE PROPOSED WATER MAIN CONFLICTS WITH A MINOR UTILITY SUCH AS POWER, CABLE, GAS SERVICE AND TELEPHONE LINES, THE UTILITY COMPANY SHALL BE CONTACTED AND THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY TO REALIGN THE CONFLICTING UTILITY, UNLESS OTHERWISE APPROVED BY THE ENGINEER. PAYMENT FOR THESE ALIGNMENT CHANGES SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

WATER MAIN CONSTRUCTION NOTES

1. WATER MAINS SHALL BE DUCTILE IRON PIPE CONFORMING TO AWWA C151. PIPE IS TO HAVE CEMENT MORTAR LINING AND BITUMINOUS SEAL COAT CONFORMING TO AWWA C104. PIPE SHALL BE CLASS 52. PIPE FITTINGS ARE TO BE CAST IRON, OR DUCTILE IRON, CONFORMING TO AWWA C110 OR C153. PIPE IS TO BE LAID SUCH THAT IT IS SUPPORTED ALONG ITS FULL LENGTH, INCLUDING DIGGING OF "BELL HOLES".

2. PIPE SHALL BE LAID TO AVOID HIGH POINTS EXCEPT WHERE NOTED OTHERWISE.

3. WATER MAIN PIPE AND FITTING JOINTS SHALL BE FULLY RESTRAINED.

4. GATE VALVES (6-INCH THROUGH 12-INCH) SHALL BE RESILIENT-SEATED TYPE CONFORMING TO AWWA C509. BUTTERFLY VALVES 18-INCH AND LARGER SHALL BE CLASS 150 SHORT BODY TYPE IN CONFORMANCE WITH AWWA C504. WHERE WATER SYSTEM NORMAL PRESSURES EXCEED 100 PSI, BUTTERFLY VALVES SHALL BE CLASS 250B, SHORT BODY TYPE IN CONFORMANCE WITH AWWA C504. VALVE BOXES SHALL BE VANCOUVER 910/18-INCHES LONG WITH 6-INCH P.V.C. 3034 AS BOTTOM SECTION. VALVE BOXES THAT ARE LOCATED OUTSIDE AREAS TO BE PAVED SHALL HAVE A 2' X 2' X 2' THICK COLLAR OF HOT ASPHALT PLACED AROUND THEM. WHERE THE TOP OF THE VALVE OPERATING NUT IS 48-INCHES OR MORE BELOW FINISH GRADE, OPERATING EXTENSIONS SHALL BE PROVIDED TO BRING THE OPERATING NUT TO A POINT 18-INCHES BELOW FINISH GRADE. THE EXTENSION STEM SHALL BE CONSTRUCTED OF STEEL.

5. GRANULAR MATERIAL USED FOR TRENCH BACKFILL SHALL BE BANK RUN GRAVEL IN ACCORDANCE WITH WSDOT SECTION 9-03.19. PIPE ZONE GRANULAR MATERIAL SHALL BE IN ACCORDANCE WITH WSDOT SECTION 9-03.12(3). PIPE BEDDING SHALL BE A MINIMUM OF 4-INCHES DEEP AT THE PIPE BARREL, AND NOT LESS THAN 3-INCHES DEEP AT THE BELL. GRANULAR BACKFILL IS TO BE COMPACTED TO 95% MAXIMUM DENSITY PER AASHTO T99 TEST METHOD IN LIFTS NOT EXCEEDING 6". NATIVE MATERIAL SHALL BE COMPACTED TO 85% OF IN-PLACE DENSITY OF SURROUNDING SOIL.

6. INSPECTION OF THE WATER IMPROVEMENTS WILL BE MADE BY CITY PERSONNEL OR OTHERS DESIGNATED BY THE CITY. TEST PRESSURE SHALL BE 1.5 TIMES STATIC LINE PRESSURE (MINIMUM 150PSI) AT THE LOWEST POINT IN THE SYSTEM BEING TESTED; 30 MINUTES DURATION; NO PRESSURE LOSS.

7. ALL MATERIALS, INSTALLATIONS, TESTS, AND CHLORINATION ARE TO BE IN ACCORDANCE WITH THE STANDARDS AND CODES OF THE CITY OF VANCOUVER AND WAC 246-290-451..

8. WHERE SANITARY LINES CROSS WATER LINES, THE SYSTEMS NEED TO BE CONSTRUCTED SUCH THAT THE CROSSING WILL OCCUR AT THE CENTER OF A PIPE SEGMENT FOR BOTH LINES.

9. ALL VAULT HATCHES 2'X2' OR LARGER SHALL BE HINGED, SPRING ASSIST OPENING, INCLUDE RECESSED PADLOCK HASP, DRAINABLE FRAME (C OR U CHANNEL WITH PIPE CONNECTION), H20 RATED MINIMUM, ALUMINUM OR GALVANIZED STEEL. IF HATCH WILL BE LOCATED IN A TRAVELED AREA (ROAD OR DRIVEWAY), SUBMIT MANUFACTURER'S STATEMENT THAT HATCH IS RATED FOR CONTINUOUS AND DELIBERATE H20 TRAFFIC SERVICE. HATCHES SHALL BE CAST INTO VAULT LID OR RISER.

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

ID / #XX — PLAN REFERENCE BUBBLE – REFERS READER BACK TO THE PLAN FROM WHICH THE DETAIL OR SECTION ORIGINATED.

ID / #XX — DETAIL/SECTION REFERENCE BUBBLE – REFERS READER TO THE DRAWING ON WHICH THE DETAIL OR SECTION IS LOCATED.

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

SECTION/DETAIL REFERENCE NUMBER CONVENTIONS:

ALL SECTIONS OR ELEVATIONS SHALL HAVE A LETTER REFERENCE NUMBER (A THROUGH ZZ).
ALL DETAILS SHALL HAVE AN ALPHANUMERIC REFERENCE NUMBER (A-Z OR 1-1799). DISCIPLINE SPECIFIC STANDARD DETAILS FOLLOW THE DIVISION NUMBER.

EXAMPLES:
2XX = SITE WORK OR CIVIL STANDARD DETAILS
3XX = CONCRETE STANDARD DETAILS
4XX = MASONRY STANDARD DETAILS
15XX = MECHANICAL STANDARD DETAILS
16XX = ELECTRICAL STANDARD DETAILS

RH2

KYLE M. PETTIJOHN — STATE OF WASHINGTON — 41857 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CITY OF Vancouver WASHINGTON

CIVIL NOTES AND LEGENDS

JOB NO.:	21-0199
CLIENT:	VAN
FILENAME:	3B5B-P-COV.DWG
SAVE DATE:	Nov 2, 2025
PLOT DATE:	Nov 3, 2025
ENGINEER:	JRB
REVIEWED:	KMP

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

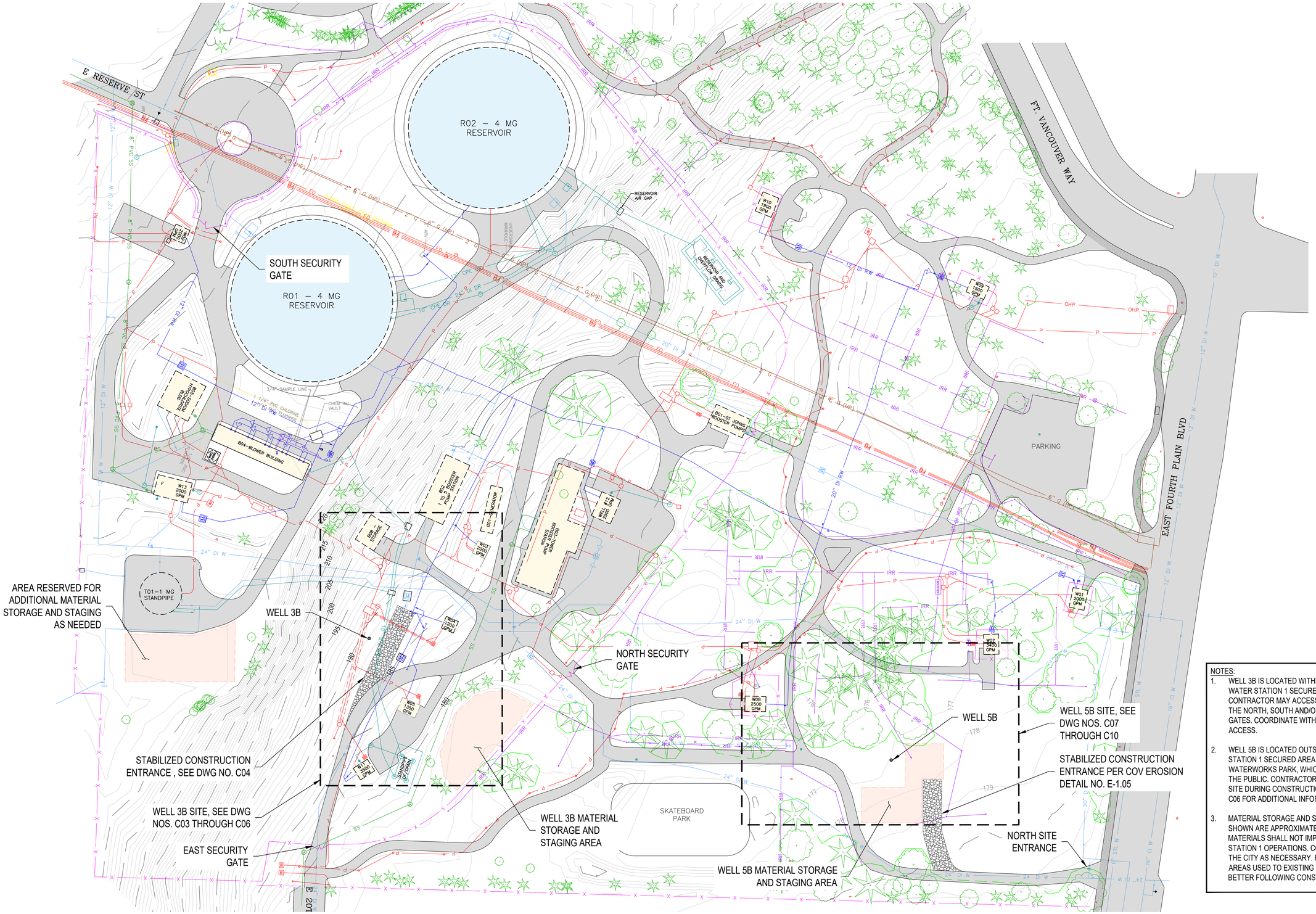
SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: C01

SHEET NO.: 03



OVERALL EXISTING SITE PLAN

1" = 50'

NOTES:

1. WELL 3B IS LOCATED WITHIN THE CITY'S WATER STATION 1 SECURED AREA. CONTRACTOR MAY ACCESS THE SITE VIA THE NORTH, SOUTH AND/OR EAST SECURITY GATES. COORDINATE WITH CITY FOR SITE ACCESS.
2. WELL 5B IS LOCATED OUTSIDE THE WATER STATION 1 SECURED AREA AND WITHIN WATERWORKS PARK, WHICH IS OPEN TO THE PUBLIC. CONTRACTOR MUST SECURE SITE DURING CONSTRUCTION. SEE DWG NO. C06 FOR ADDITIONAL INFORMATION.
3. MATERIAL STORAGE AND STAGING AREAS SHOWN ARE APPROXIMATE. STORED MATERIALS SHALL NOT IMPACT WATER STATION 1 OPERATIONS. COORDINATE WITH THE CITY AS NECESSARY. RESTORED AREAS USED TO EXISTING CONDITION OF BETTER FOLLOWING CONSTRUCTION.

RH2

ALLEN M PETTIJOHN STATE OF WASHINGTON 41857 REGISTERED PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CITY OF Vancouver WASHINGTON

OVERALL EXISTING SITE PLAN

JOB NO.:	21-0199
CLIENT:	VAN
FILENAME:	3B5B-P-SITEX.DWG
SAVE DATE:	Nov 3, 2025
PLOT DATE:	Nov 3, 2025
ENGINEER:	JRB
REVIEWED:	KMP

REVISIONS

NO.	DESCRIPTION	DATE	BY	REVIEW

SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: C02

SHEET NO.: 04

82

DEMOLITION KEY NOTES

01 RELOCATE EXISTING OVERFLOW DRAIN LINES. SEE DWG NO. C05. REMOVE AND DISPOSE OF EXISTING DRAIN PIPING TO FULL EXTENTS SHOWN.

02 RELOCATE EXISTING 16" AND 20" RAW WATER PIPING. REMOVE AND DISPOSE EXISTING PIPING AS NECESSARY FOR CONNECTION OF 3B WELL RAW WATER PIPING. SEE DWG NO. C05.

03 EXCAVATE, REMOVE, AND DISPOSE OF RAW WATER PIPING TO LIMITS SHOWN.

03 EXCAVATE, REMOVE, AND DISPOSE OF RAW WATER PIPING TO LIMITS SHOWN.

04 CAP AND ABANDON EXISTING PIPE IN PLACE.

05 DISCONNECT EXISTING 12" CI PIPE (WELL 3 RAW WATER DISCHARGE) FROM EXISTING 20"x12" TEE. REMOVE 12" VALVE AND 12" CI PIPING. VERIFY END CONNECTION AT EXISTING TEE AND INSTALL APPROPRIATE FITTING TO PLUG, CAP, OR FLANGE THE OPENING.

G01 – GENERATOR

W03 (ABANDONED)

W03 RECENTLY DEMOLISHED BY OTHERS

B02 – 1 TO 5 BOOSTER PUMP STATION

W04 1200 GPM

MATERIAL STORAGE AND STAGING AREA, APPROX., SEE DWG NO. C02

W05 (ABANDONED)

W05 RECENTLY DEMOLISHED BY OTHERS

STANDPIPE OF DRAIN

W11 3500 GPM

STANDPIPE AIR GAP

B08 – STORAGE

OUTLINE OF PROPOSED WELLHOUSE 3B

WELL 3B (APPROX.)

EXTENTS OF EXISTING DUCT BANK (APPROX.), TYP.

WELL 3B EXISTING CONDITIONS AND DEMOLITION PLAN

1" = 10'

RH2

KYLE M PETTIJOHN
STATE OF WASHINGTON
41957
REGISTERED PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

WELL 3B EXISTING SITE AND DEMOLITION PLAN

CITY OF Vancouver WASHINGTON

JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3B5B-P-SITEX.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
DESIGNER: JRB
REVIEWED: KMP

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: C03
SHEET NO.: 05
82

SMALL PROJECT EROSION PREVENTION PLAN NOTES

THE FOLLOWING BMP'S ARE REQUIRED FOR ALL CONSTRUCTION UNLESS IT CAN BE SHOWN THAT IT IS NOT NECESSARY:

1. CONTRACTOR SHALL CONFORM TO ALL EROSION PREVENTION AND SEDIMENT CONTROL NOTES AND DETAILS. AN EROSION CONTROL INSPECTION (ZON510) MUST BE SCHEDULED AND APPROVED PRIOR TO LAND DISTURBING ACTIVITY.
2. CONCRETE TRUCK CHUTES AND PUMPS SHALL BE WASHED OUT ONLY INTO A FORMED AREA. WHEN NO FORMED AREAS ARE AVAILABLE, WASHWATER AND LEFTOVER PRODUCT SHALL BE CONTAINED IN A LINED CONTAINER OR HAULED OFF-SITE BY CONTRACTOR.
3. A GRAVEL CONSTRUCTION ENTRANCE SHALL BE PLACED FROM THE CURB TO THE STRUCTURE PRIOR TO STARTING WORK. THE ROCK MUST EXTEND THE FULL WIDTH OF THE INGRESS/EGRESS AREA. THE CONSTRUCTION ENTRANCE SHALL BE KEPT FREE OF EXCESSIVE MUD AND SHALL BE REPAIRED TO GOOD WORKING CONDITION AS NECESSARY. IF IT IS DISCOVERED THAT THE CONSTRUCTION ENTRANCE IS BEING CIRCUMVENTED, CONSTRUCTION FENCING WILL BE IMMEDIATELY REQUIRED AROUND THE ENTIRE PROPERTY PERIMETER.
4. SILT FENCE SHALL BE INSTALLED ON THE ENTIRE FRONTAGE OF ALL IMPERVIOUS SURFACES. THE PURPOSE OF THIS FENCE IS TO PROTECT NEIGHBORING PROPERTIES, CRITICAL AREAS AND RIGHT-OF-WAYS FROM SEDIMENT DEPOSITS, DELINEATE CLEARING LIMITS, AND TO CHANNEL ALL CONSTRUCTION TRAFFIC TO THE GRAVEL CONSTRUCTION ENTRANCE.
5. INLET PROTECTION MUST BE INSTALLED (SEE DETAIL E-2.20a AND/OR E-2.20b). INLET PROTECTION SHALL BE MAINTAINED OR REPLACED AS NECESSARY UNTIL FINAL LANDSCAPING IS APPROVED.
6. ALL EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED BY THE APPROPRIATE BEST MANAGEMENT PRACTICES (BMPS). FROM OCTOBER 1 TO APRIL 30, NO SOILS SHALL BE EXPOSED AND UNWORKED FOR MORE THAN TWO (2) DAYS. FROM MAY 1 TO SEPTEMBER 30, NO SOILS SHALL BE EXPOSED AND UNWORKED FOR MORE THAN SEVEN (7) DAYS. SOIL STOCKPILES MUST BE COVERED BY THE END OF EACH WORKDAY.
7. PROTECT EXISTING AND PROPOSED LID BMPs (RAIN GARDENS & PERMEABLE PAVEMENT) IN THE ROAD AN ON-SITE FROM COMPACTION AND SEDIMENTATION. RESTORE LID BMPs TO THEIR FULLY FUNCTIONING CONDITION IF THEY ACCUMULATE SEDIMENT.
8. AN ABBREVIATED STORMWATER POLLUTION PREVENTION PLAN (SWPPP) MAY BE REQUIRED. THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IS A SEPARATE CHECKLIST THAT DESCRIBES HOW EROSION, SEDIMENT AND STORMWATER WILL BE CONTROLLED DURING CONSTRUCTION. THE FORM IS AVAILABLE ON THE CITY OF VANCOUVER'S WEBSITE.
9. THE CONTRACTOR/CESCL SHALL MAINTAIN AND HAVE ON-SITE A WRITTEN LOG OF EROSION PREVENTION AND SEDIMENT CONTROL BMP MAINTENANCE.
10. SUBMIT A DEWATERING PLAN PRIOR TO DISCHARGING TURBID AND CONTAMINATED STORMWATER AND GROUNDWATER OFF-SITE. TREATMENT OR DISPOSAL OPTIONS MAY INCLUDE: INFILTRATION, TRANSPORT OFF-SITE IN A VEHICLE, FOR LEGAL DISPOSAL IN A MANNER THAT DOES NOT POLLUTE STATE WATER; ECOLOGY APPROVED ON-SITE CHEMICAL TREATMENT; SANITARY OR COMBINED SEWER DISCHARGE WITH LOCAL SEWER DISTRICT APPROVAL; USE OF THE SEDIMENTATION BAG WITH OUTFALL TO A DITCH OR SWALE FOR SMALL VOLUMES OF LOCALIZED DEWATERING.
11. CONSIDER THE PLACEMENT OF STRAW WATTLES BEHIND CURBING AND AT DRIVEWAY DROPS DURING THE WET SEASON (OCTOBER 1ST–APRIL 30TH).
12. ADDITIONAL BMP'S MAY BE REQUIRED WHERE THOSE LISTED DO NOT ADEQUATELY PROTECT AGAINST EROSION AND SEDIMENT CONTROL.
13. IN AREA SUBJECT TO SURFACE AND AIR MOVEMENT OF DUST, REFER TO THE STORMWATER MANUAL FOR DUST CONTROL (BMP C140).
14. MARK ALL CLEARING LIMITS FOR CRITICAL AREAS AND THEIR BUFFERS, AND TREES THAT ARE TO BE PRESERVED WITHIN THE CONSTRUCTION AREA.

CITY OF Vancouver WASHINGTON

SMALL PROJECT EROSION CONTROL DETAIL

CITY OF VANCOUVER
DEPARTMENT OF PUBLIC WORKS
SURFACE WATER MANAGEMENT

DRAWN BY	APPROVED BY	APPROVAL DATE
MDH	AR	02-2024
REVISION	APPROVED BY	APPROVAL DATE
-	-	-

EROSION DETAIL NO. **E-0.20b**

SILT FENCE PER CITY EROSION DETAIL NO. E-2.33, TYP.

W04 1200 GPM

W05 (ABANDONED)

W11 3500 GPM

B08 - STORAGE

STANDPIPE AIR GAP

STANDPIPE OF/DRAIN

WELL 3B (APPROX.)

OUTLINE OF PROPOSED WELLHOUSE 3B

STABILIZED CONSTRUCTION ENTRANCE PER CITY EROSION DETAIL NO. E-1.05

WELL 3B STORM, EROSION, AND SEDIMENT CONTROL PLAN

1" = 10'

RH2

ELLIS M PETTIBONE — STATE OF WASHINGTON — 41857 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CITY OF Vancouver WASHINGTON

WELL 3B STORM, EROSION, AND SEDIMENT CONTROL PLAN

JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3BSB-P-SITEX.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: JRB
REVIEWED: KMP

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: C04
SHEET NO.: 06 82

DRAIN KEY NOTES

01 N: 117880.88 E: 1091423.17, PROVIDE:
(1) - 12" 22-1/2° BEND (RJxRJ)
(1) - 12" DI SPOOL (PExPE)
(1) - CONNECTION TO EX 12" STL DR

02 N: 117885.89 E: 1091440.46, PROVIDE:
(1) - 12" DI 45° BEND (RJxRJ)

03 N: 117863.74 E: 1091487.63, PROVIDE:
(1) - 12" 22-1/2° BEND (RJxRJ)
(1) - 12" DI SPOOL (PExPE)
(1) - 12" 11-1/4° BEND (RJxRJ)

04 N: 117866.27 E: 1091513.71, PROVIDE:
(1) - CONNECTION TO EX 12" STL DR

05 N: 117877.78 E: 1091422.48, PROVIDE:
(1) - 10" 22-1/2° BEND (RJxRJ)
(1) - 10" DI SPOOL (PExPE)
(1) - CONNECTION TO EX 10" STL DR

06 N: 117883.42 E: 1091441.04, PROVIDE:
(1) - 10" DI 45° BEND (RJxRJ)

07 N: 117858.76 E: 1091493.71, PROVIDE:
(1) - 10" 22-1/2° BEND (RJxRJ)
(1) - 10" DI SPOOL (PExPE)
(1) - 10" 11-1/4° BEND (RJxRJ)

08 N: 117861.34 E: 1091521.96, PROVIDE:
(1) - CONNECTION TO EX 10" STL DR

09 N: 117876.85 E: 1091457.43, PROVIDE:
(1) - AIR GAP STRUCTURE, SEE DWG NO. M02

SEE DWG NO. C11 FOR DRAIN PROFILE

RAW WATER KEY NOTES

01 N: 117898.78 E: 1091468.92, PROVIDE:
(1) - 16" BUTTERFLY VALVE (RJxRJ)
(2) - 16" DI SPOOL (PExPE)
(1) - CONNECTION TO EXISTING 16" DI RW

02 N: 117901.6 E: 1091463.15, PROVIDE:
(1) - 20" DI CROSS (RJxRJ)
(2) - 20" DI SPOOL (PExPE)
(1) - 12" x 20" REDUCER (RJxRJ)
(1) - 16" x 20" REDUCER (RJxRJ)
(1) - 20" DI PLUG

03 N: 117894.66 E: 1091459.88, PROVIDE:
(1) - 12" GATE VALVE (RJxRJ)
(1) - 12" DI SPOOL (PExPE)
(1) - 20" DI PLUG, WITH BLOWOFF ASSEMBLY

04 APPROX. 8 LF of 20" RJ DI PIPE

05 N: 117905.9 E: 1091454.09, PROVIDE:
(1) - 20" DI 45° BEND (RJxRJ), ROLL TO ACHIEVE VERTICAL AND HORIZONTAL ALIGNMENT

06 APPROX. 12 LF of 20" RJ DI PIPE

07 N: 117901.13 E: 1091440.34, PROVIDE:
(1) - 20" DI 45° BEND (RJxRJ), ROLL TO ACHIEVE VERTICAL AND HORIZONTAL ALIGNMENT

08 N: 117903.3 E: 1091435.11, PROVIDE:
(1) - 20" x 10" DI TEE (RJxRJ)
(2) - 20" DI SPOOL (PExPE)
(1) - 10" DI SPOOL (PExPE)
(1) - 10" GATE VALVE (RJxRJ)

09 N: 117910.5 E: 1091438, PROVIDE:
(1) CONNECTION TO EXISTING 10" CI RW
(1) - 10" DI SPOOL (PExPE)

10 N: 117906.89 E: 1091426.48, PROVIDE:
(1) CONNECTION TO EXISTING 20" CI RW

SEE DWG NO. C11 FOR RAW WATER PROFILE

G01 – GENERATOR

W03 (ABANDONED)

W04 1200 GPM

B02 – 1 TO 5 BOOSTER PUMP STATION

STRADDLE BLOCK, TYP. (D / C12)

STANDPIPE AIR GAP

WELL 3B (APPROX.), SEE SURVEY NOTE

OUTLINE OF PROPOSED WELLHOUSE 3B

W05 (ABANDONED)

STANDPIPE OF/DRAIN

W1 3500 GPM

20" CI RW · 24" DI W · 16" DI DR · 12" STL DR · 10" STL DR · 10" DR · 12" DR · 16" DI RW · SS · ST · P · 180 · 185 · 190 · 195 · 200 · 205 · 210

WELL 3B UTILITY RELOCATION PLAN

1" = 10'

SURVEY NOTE: EXISTING SITE PLAN HAS BEEN DEVELOPED FROM PRIOR SITE SURVEYS, AVAILABLE CONSTRUCTION RECORD DRAWINGS AND FIELD MEASUREMENTS. LOCATION WELL CASING IS APPROXIMATE. CONTRACTOR SHALL SURVEY CENTER OF WELL CASING AND CONFIRM LOCATIONS OF EXISTING WELL CASING AND PROPOSED WELLHOUSE FOUNDATION PRIOR TO CONSTRUCTION ACTIVITIES. NOTIFY ENGINEER OF ANY NECESSARY ADJUSTMENTS BASED ON SURVEY.

RH2

CHARLES M PETTIBONE · STATE OF WASHINGTON · 41957 · REGISTERED PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

WELL 3B UTILITY RELOCATION PLAN

CITY OF Vancouver WASHINGTON

JOB NO: 21-0199
CLIENT: VAN
FILENAME: 3B5B-P-SITEX.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: JRB
REVIEWED: KMP

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

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

DWG NO.: C05
SHEET NO.: 07

GRADING POINTS				
POINT NO.	ELEV.	NORTHING	EASTING	DESC.
1	189.50	117850.55	1091467.19	BLDG CORNER
2	189.50	117873.46	1091452.90	BLDG CORNER
3	189.11	117878.73	1091448.75	TOP OF FILL SLOPE
4	189.11	117864.84	1091478.31	TOP OF FILL SLOPE
5	188.90	117858.58	1091484.58	EDGE OF PAVEMENT
6	188.00	117851.24	1091500.21	EDGE OF PAVEMENT
7	187.83	117849.90	1091504.62	EDGE OF PAVEMENT
8	186.50	117846.00	1091530.56	MATCH EXISTING PAVEMENT

GRADING POINTS				
POINT NO.	ELEV.	NORTHING	EASTING	DESC.
9	186.58	117828.13	1091568.65	MATCH EXISTING PAVEMENT
10	188.07	117838.03	1091502.84	EDGE OF PAVEMENT
11	189.16	117841.25	1091481.48	EDGE OF PAVEMENT
12	189.25	117842.59	1091477.06	EDGE OF PAVEMENT
13	189.42	117846.14	1091469.53	EDGE OF PAVEMENT
14	189.42	117862.13	1091477.04	EDGE OF PAVEMENT
15	189.00	117858.27	1091441.35	DRAIN
16	189.00	117845.66	1091468.20	DRAIN

G01 – GENERATOR

W03 (ABANDONED)

B02 – 1 TO 5 BOOSTER PUMP STATION

W04 1200 GPM

W05 (ABANDONED)

W11 3500 GPM

RELOCATED RAW WATER PIPING, SEE DWG NO. C05

RELOCATED DRAIN PIPING, SEE DWG NO. C05

STANDPIPE AIR GAP

STANDPIPE OR DRAIN

ELECTRICAL VAULT AND TRANSFORMER, SEE ELECTRICAL DRAWINGS

A C12 CURTAIN DRAIN

B C12 ACCESS ROAD

KEY NOTES

01 1" TAP AND CORPORATION STOP FOR BUILDING WATER.

02 ROUTE 1" COPPER WS TO BUILDING INTERIOR. SEE DWG NO. M01.

03 ROUTE CURTAIN DRAIN TO AIR GAP STRUCTURE, SEE DWG NO. M01

04 PROVIDE TEMPORARY BLOWOFF ASSEMBLY FOR TESTING OF WELL DISCHARGE PIPING. REMOVE AS PART OF FINAL CONNECTION.

RAW WATER KEY NOTES

01 N: 117865.2 E: 1091446.08, PROVIDE:
(1) - 12" DI 90° BEND (RJxRJ), ROLLED DOWN 45°
(1) - 12" DI SPOOL (PExPE)
(1) - 12" DI VERTICAL 45° BEND (RJxRJ)

02 APPROX. 37 LF of 12" RJ DI PIPE

03 N: 117894.05 E: 1091459.58, PROVIDE:
(1) - CONNECTION TO INSTALLED 12" GATE VALVE, PROVIDE JOINT RESTRAINT
(1) - 12" DI SPOOL (PExPE)
(1) - 12" DI LONG BODY SLEEVE (RJxRJ)

SEE DWG NO. C11 FOR WELL 3B RAW WATER PROFILE

WELL 3B - PROPOSED SITE PLAN

1" = 10'

RH2

PHILIP M PETTIBONE — STATE OF WASHINGTON — 41857 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CITY OF Vancouver WASHINGTON

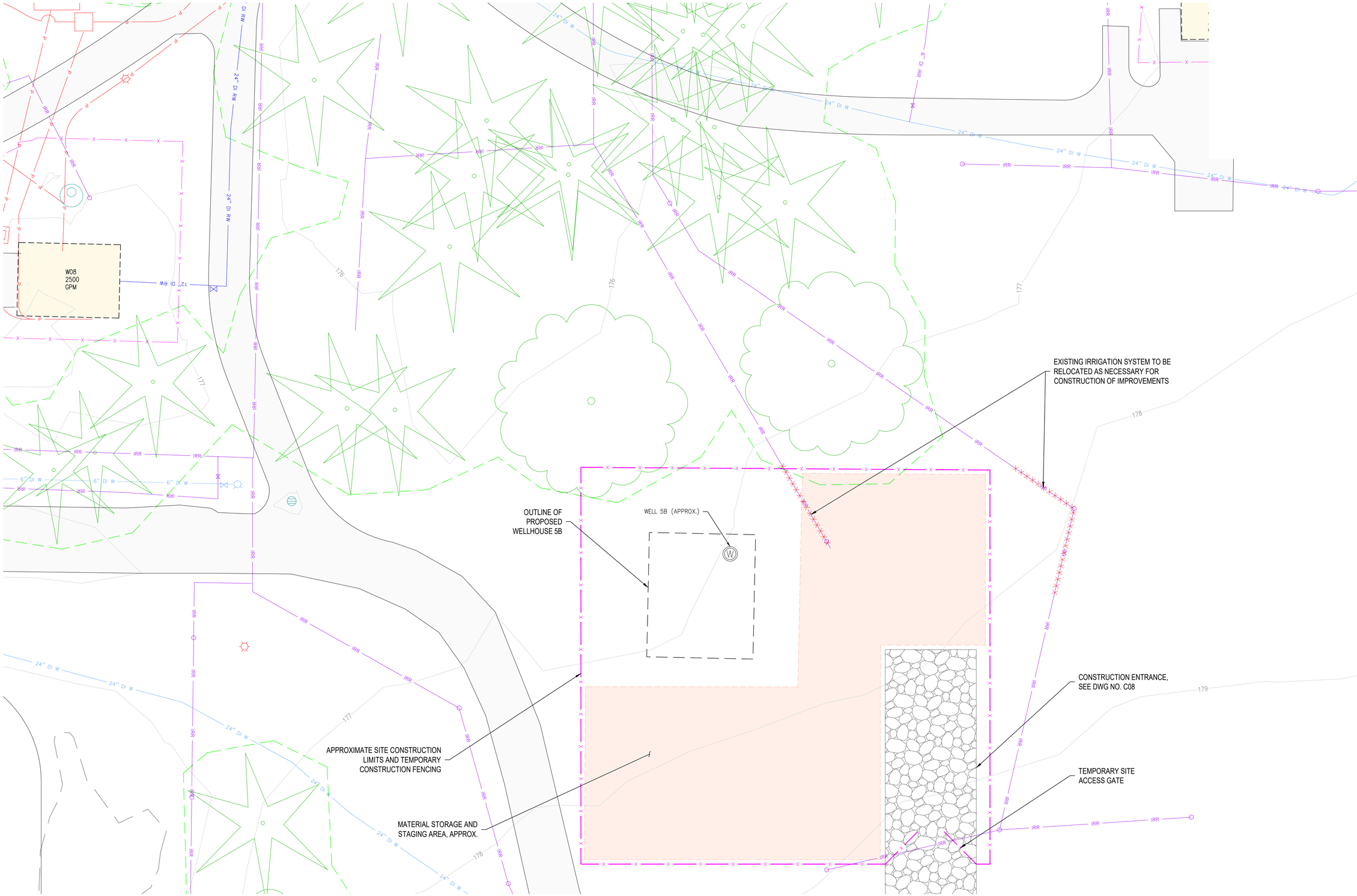
WELL 3B PROPOSED SITE PLAN

REVISIONS			
NO.	DATE	DESCRIPTION	BY
			REVIEW

JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3BSB-P-SITEP.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: JRB
REVIEWED: KMP

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

DWG NO.: C06
SHEET NO.: 08
82



WELL 5B EXISTING CONDITIONS, AND DEMOLITION PLAN

1" = 10'

RH2

ERIC M PETTIJOHN
STATE OF WASHINGTON
41857
REGISTERED
PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CITY OF Vancouver WASHINGTON

WELL 5B EXISTING SITE AND DEMOLITION PLAN

ENGINEER: JRB
REVIEWED: KMP
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
CLIENT: VAN
FILENAME: 3B5B-P-SITEX.DWG
JOB NO.: 21-0199

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: C07
SHEET NO.: 09
82

SMALL PROJECT EROSION PREVENTION PLAN NOTES

THE FOLLOWING BMP'S ARE REQUIRED FOR ALL CONSTRUCTION UNLESS IT CAN BE SHOWN THAT IT IS NOT NECESSARY:

1. CONTRACTOR SHALL CONFORM TO ALL EROSION PREVENTION AND SEDIMENT CONTROL NOTES AND DETAILS. AN EROSION CONTROL INSPECTION (ZON510) MUST BE SCHEDULED AND APPROVED PRIOR TO LAND DISTURBING ACTIVITY.
2. CONCRETE TRUCK CHUTES AND PUMPS SHALL BE WASHED OUT ONLY INTO A FORMED AREA. WHEN NO FORMED AREAS ARE AVAILABLE, WASHWATER AND LEFTOVER PRODUCT SHALL BE CONTAINED IN A LINED CONTAINER OR HAULED OFF-SITE BY CONTRACTOR.
3. A GRAVEL CONSTRUCTION ENTRANCE SHALL BE PLACED FROM THE CURB TO THE STRUCTURE PRIOR TO STARTING WORK. THE ROCK MUST EXTEND THE FULL WIDTH OF THE INGRESS/EGRESS AREA. THE CONSTRUCTION ENTRANCE SHALL BE KEPT FREE OF EXCESSIVE MUD AND SHALL BE REPAIRED TO GOOD WORKING CONDITION AS NECESSARY. IF IT IS DISCOVERED THAT THE CONSTRUCTION ENTRANCE IS BEING CIRCUMVENTED, CONSTRUCTION FENCING WILL BE IMMEDIATELY REQUIRED AROUND THE ENTIRE PROPERTY PERIMETER.
4. SILT FENCE SHALL BE INSTALLED ON THE ENTIRE FRONTAGE OF ALL IMPERVIOUS SURFACES. THE PURPOSE OF THIS FENCE IS TO PROTECT NEIGHBORING PROPERTIES, CRITICAL AREAS AND RIGHT-OF-WAYS FROM SEDIMENT DEPOSITS, DELINEATE CLEARING LIMITS, AND TO CHANNEL ALL CONSTRUCTION TRAFFIC TO THE GRAVEL CONSTRUCTION ENTRANCE.
5. INLET PROTECTION MUST BE INSTALLED (SEE DETAIL E-2.20a AND/OR E-2.20b). INLET PROTECTION SHALL BE MAINTAINED OR REPLACED AS NECESSARY UNTIL FINAL LANDSCAPING IS APPROVED.
6. ALL EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED BY THE APPROPRIATE BEST MANAGEMENT PRACTICES (BMPS). FROM OCTOBER 1 TO APRIL 30, NO SOILS SHALL BE EXPOSED AND UNWORKED FOR MORE THAN TWO (2) DAYS. FROM MAY 1 TO SEPTEMBER 30, NO SOILS SHALL BE EXPOSED AND UNWORKED FOR MORE THAN SEVEN (7) DAYS. SOIL STOCKPILES MUST BE COVERED BY THE END OF EACH WORKDAY.
7. PROTECT EXISTING AND PROPOSED LID BMPs (RAIN GARDENS & PERMEABLE PAVEMENT) IN THE ROAD AN ON-SITE FROM COMPACTION AND SEDIMENTATION. RESTORE LID BMPs TO THEIR FULLY FUNCTIONING CONDITION IF THEY ACCUMULATE SEDIMENT.
8. AN ABBREVIATED STORMWATER POLLUTION PREVENTION PLAN (SWPPP) MAY BE REQUIRED. THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IS A SEPARATE CHECKLIST THAT DESCRIBES HOW EROSION, SEDIMENT AND STORMWATER WILL BE CONTROLLED DURING CONSTRUCTION. THE FORM IS AVAILABLE ON THE CITY OF VANCOUVER'S WEBSITE.
9. THE CONTRACTOR/CESCL SHALL MAINTAIN AND HAVE ON-SITE A WRITTEN LOG OF EROSION PREVENTION AND SEDIMENT CONTROL BMP MAINTENANCE.
10. SUBMIT A DEWATERING PLAN PRIOR TO DISCHARGING TURBID AND CONTAMINATED STORMWATER AND GROUNDWATER OFF-SITE. TREATMENT OR DISPOSAL OPTIONS MAY INCLUDE: INFILTRATION, TRANSPORT OFF-SITE IN A VEHICLE, FOR LEGAL DISPOSAL IN A MANNER THAT DOES NOT POLLUTE STATE WATER; ECOLOGY APPROVED ON-SITE CHEMICAL TREATMENT; SANITARY OR COMBINED SEWER DISCHARGE WITH LOCAL SEWER DISTRICT APPROVAL; USE OF THE SEDIMENTATION BAG WITH OUTFALL TO A DITCH OR SWALE FOR SMALL VOLUMES OF LOCALIZED DEWATERING.
11. CONSIDER THE PLACEMENT OF STRAW WATTLES BEHIND CURBING AND AT DRIVEWAY DROPS DURING THE WET SEASON (OCTOBER 1ST–APRIL 30TH).
12. ADDITIONAL BMP'S MAY BE REQUIRED WHERE THOSE LISTED DO NOT ADEQUATELY PROTECT AGAINST EROSION AND SEDIMENT CONTROL.
13. IN AREA SUBJECT TO SURFACE AND AIR MOVEMENT OF DUST, REFER TO THE STORMWATER MANUAL FOR DUST CONTROL (BMP C140).
14. MARK ALL CLEARING LIMITS FOR CRITICAL AREAS AND THEIR BUFFERS, AND TREES THAT ARE TO BE PRESERVED WITHIN THE CONSTRUCTION AREA.

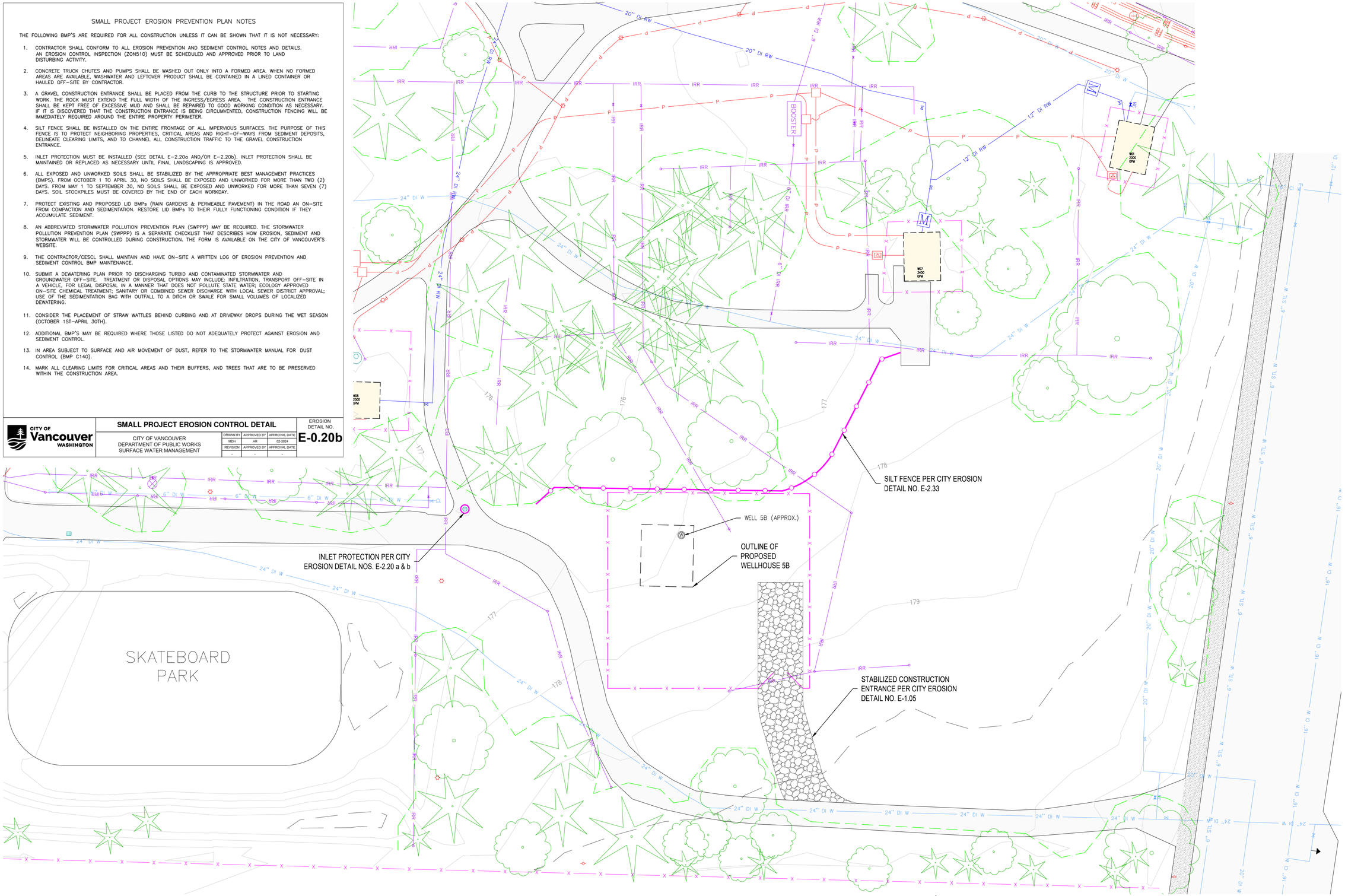
CITY OF Vancouver WASHINGTON

SMALL PROJECT EROSION CONTROL DETAIL

CITY OF VANCOUVER
DEPARTMENT OF PUBLIC WORKS
SURFACE WATER MANAGEMENT

DRAWN BY	APPROVED BY	APPROVAL DATE
MDH	AR	02-2024
REVISION	APPROVED BY	APPROVAL DATE
-	-	-

EROSION DETAIL NO. **E-0.20b**



WELL 5B STORM, EROSION, AND SEDIMENT CONTROL PLAN

1" = 20'

RH2

ELLIS M. PETTIBONE — STATE OF WASHINGTON — 41857 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CITY OF Vancouver WASHINGTON

WELL 5B STORM, EROSION, AND SEDIMENT CONTROL PLAN

JOB NO.: 21-0199

CLIENT: VAN
FILENAME: 3B5B-P-SITEX.DWG

SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025

DESIGNED: JRB
REVIEWED: KMP

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

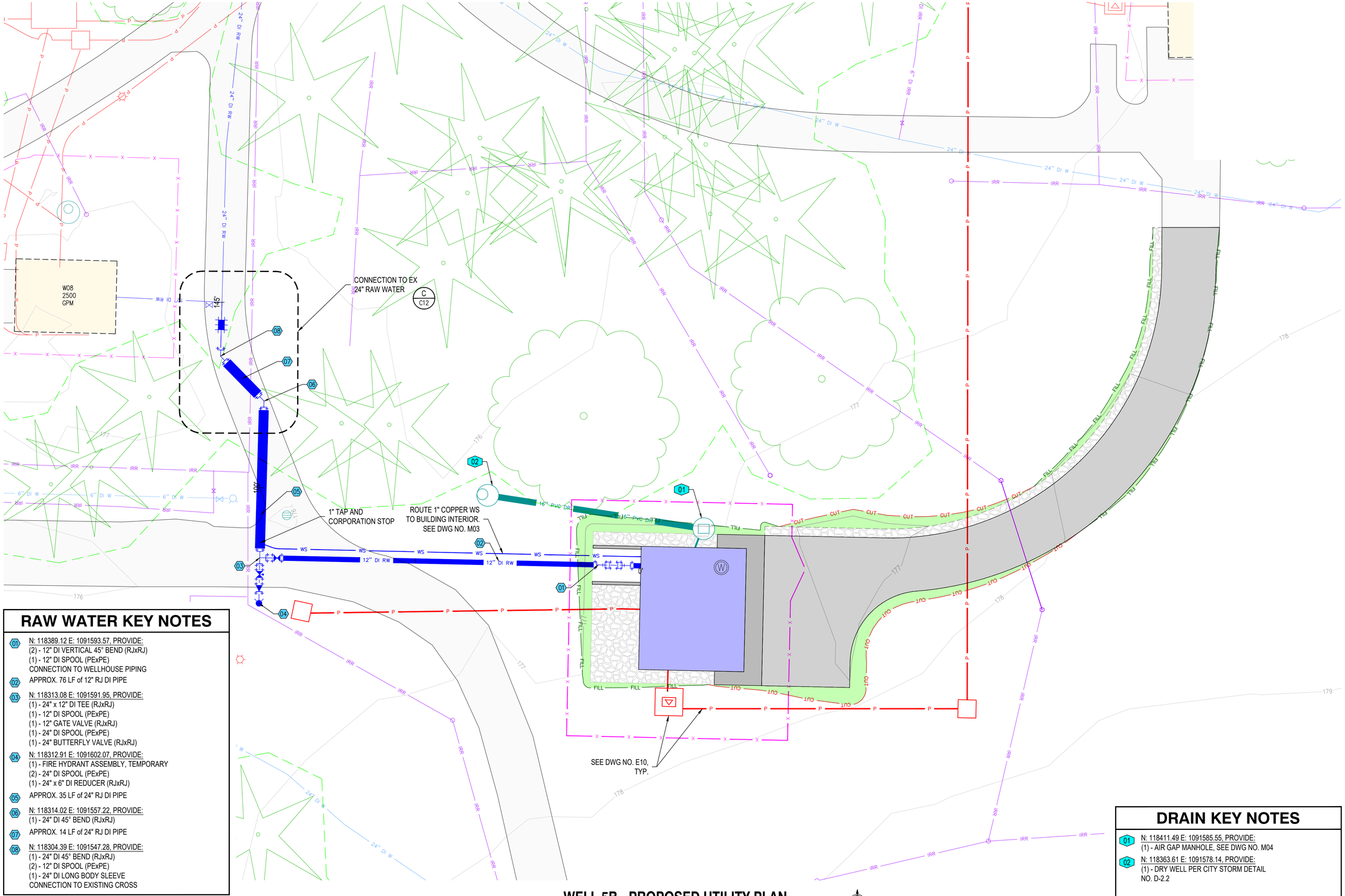
SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: C08

SHEET NO.: 10 / 82



RAW WATER KEY NOTES

01 N: 118389.12 E: 1091593.57, PROVIDE:
(2) - 12" DI VERTICAL 45° BEND (RJxRJ)
(1) - 12" DI SPOOL (PExPE)
CONNECTION TO WELLHOUSE PIPING

02 APPROX. 76 LF of 12" RJ DI PIPE

03 N: 118313.08 E: 1091591.95, PROVIDE:
(1) - 24" x 12" DI TEE (RJxRJ)
(1) - 12" DI SPOOL (PExPE)
(1) - 12" GATE VALVE (RJxRJ)
(1) - 24" DI SPOOL (PExPE)
(1) - 24" BUTTERFLY VALVE (RJxRJ)

04 N: 118312.91 E: 1091602.07, PROVIDE:
(1) - FIRE HYDRANT ASSEMBLY, TEMPORARY
(2) - 24" DI SPOOL (PExPE)
(1) - 24" x 6" DI REDUCER (RJxRJ)

05 APPROX. 35 LF of 24" RJ DI PIPE

06 N: 118314.02 E: 1091557.22, PROVIDE:
(1) - 24" DI 45° BEND (RJxRJ)

07 APPROX. 14 LF of 24" RJ DI PIPE

08 N: 118304.39 E: 1091547.28, PROVIDE:
(1) - 24" DI 45° BEND (RJxRJ)
(2) - 12" DI SPOOL (PExPE)
(1) - 24" DI LONG BODY SLEEVE
CONNECTION TO EXISTING CROSS

SEE DWG NO. C11 FOR RAW WATER PROFILE

DRAIN KEY NOTES

01 N: 118411.49 E: 1091585.55, PROVIDE:
(1) - AIR GAP MANHOLE, SEE DWG NO. M04

02 N: 118363.61 E: 1091578.14, PROVIDE:
(1) - DRY WELL PER CITY STORM DETAIL
NO. D-2.2

SEE DWG NO. C11 FOR DRAIN PROFILE

WELL 5B - PROPOSED UTILITY PLAN

1" = 10'

RH2

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CITY OF Vancouver WASHINGTON

WELL 5B PROPOSED UTILITY PLAN

REVISIONS			
NO.	DATE	DESCRIPTION	BY
			REVIEW

JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3B5B-P-SITEP.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: JKB
REVIEWED: KMP

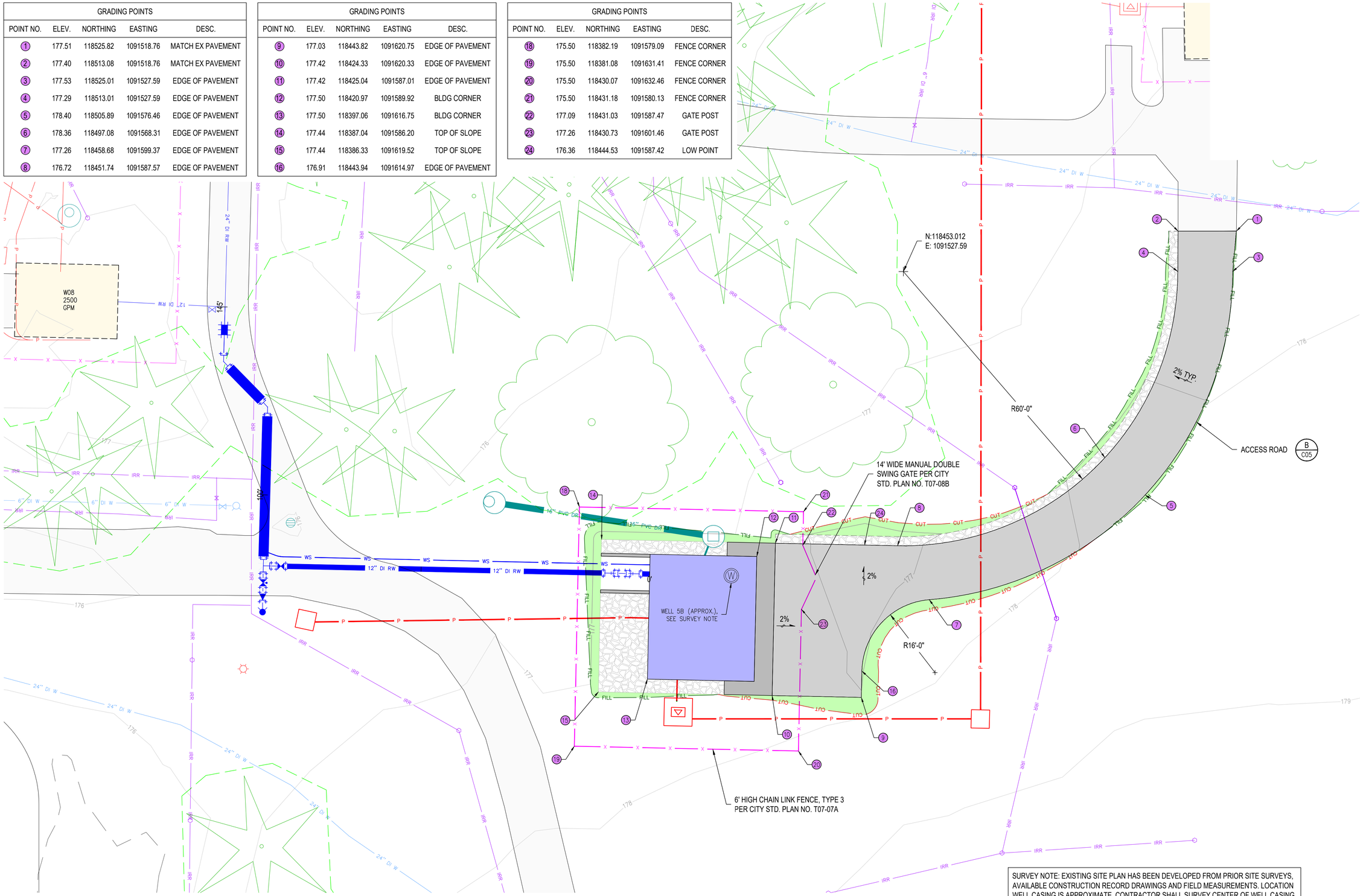
SCALE: SHOWN
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: C09
SHEET NO.: 11
82

GRADING POINTS				
POINT NO.	ELEV.	NORTHING	EASTING	DESC.
1	177.51	118525.82	1091518.76	MATCH EX PAVEMENT
2	177.40	118513.08	1091518.76	MATCH EX PAVEMENT
3	177.53	118525.01	1091527.59	EDGE OF PAVEMENT
4	177.29	118513.01	1091527.59	EDGE OF PAVEMENT
5	178.40	118505.89	1091576.46	EDGE OF PAVEMENT
6	178.36	118497.08	1091568.31	EDGE OF PAVEMENT
7	177.26	118458.68	1091599.37	EDGE OF PAVEMENT
8	176.72	118451.74	1091587.57	EDGE OF PAVEMENT

GRADING POINTS				
POINT NO.	ELEV.	NORTHING	EASTING	DESC.
9	177.03	118443.82	1091620.75	EDGE OF PAVEMENT
10	177.42	118424.33	1091620.33	EDGE OF PAVEMENT
11	177.42	118425.04	1091587.01	EDGE OF PAVEMENT
12	177.50	118420.97	1091589.92	BLDG CORNER
13	177.50	118397.06	1091616.75	BLDG CORNER
14	177.44	118387.04	1091586.20	TOP OF SLOPE
15	177.44	118386.33	1091619.52	TOP OF SLOPE
16	176.91	118443.94	1091614.97	EDGE OF PAVEMENT

GRADING POINTS				
POINT NO.	ELEV.	NORTHING	EASTING	DESC.
18	175.50	118382.19	1091579.09	FENCE CORNER
19	175.50	118381.08	1091631.41	FENCE CORNER
20	175.50	118430.07	1091632.46	FENCE CORNER
21	175.50	118431.18	1091580.13	FENCE CORNER
22	177.09	118431.03	1091587.47	GATE POST
23	177.26	118430.73	1091601.46	GATE POST
24	176.36	118444.53	1091587.42	LOW POINT



WELL 5B - PROPOSED GRADING AND PAVING PLAN

1" = 10'

SURVEY NOTE: EXISTING SITE PLAN HAS BEEN DEVELOPED FROM PRIOR SITE SURVEYS, AVAILABLE CONSTRUCTION RECORD DRAWINGS AND FIELD MEASUREMENTS. LOCATION WELL CASING IS APPROXIMATE. CONTRACTOR SHALL SURVEY CENTER OF WELL CASING AND CONFIRM LOCATIONS OF EXISTING WELL CASING AND PROPOSED WELLHOUSE FOUNDATION PRIOR TO CONSTRUCTION ACTIVITIES. NOTIFY ENGINEER OF ANY NECESSARY ADJUSTMENTS BASED ON SURVEY.

RH2

ERIC M PETTIBONE
STATE OF WASHINGTON
41957
REGISTERED PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CITY OF Vancouver WASHINGTON

WELL 5B PROPOSED SITE PLAN

JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 385B-P-SITEP.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: JRB
REVIEWED: KMP

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

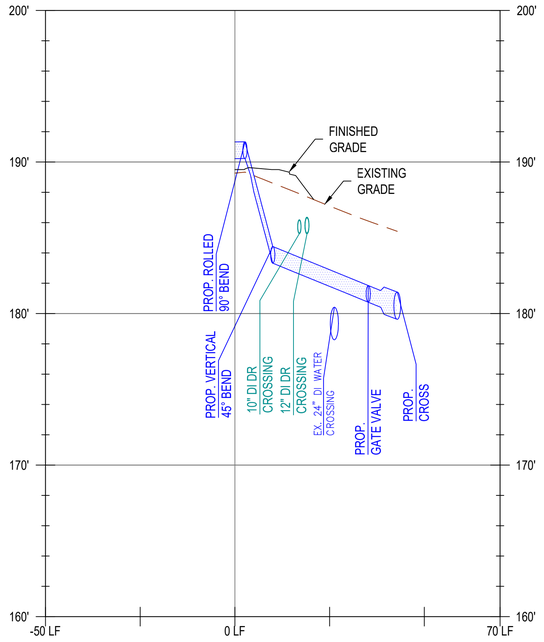
SCALE: SHOWN

0' 1' 2'

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

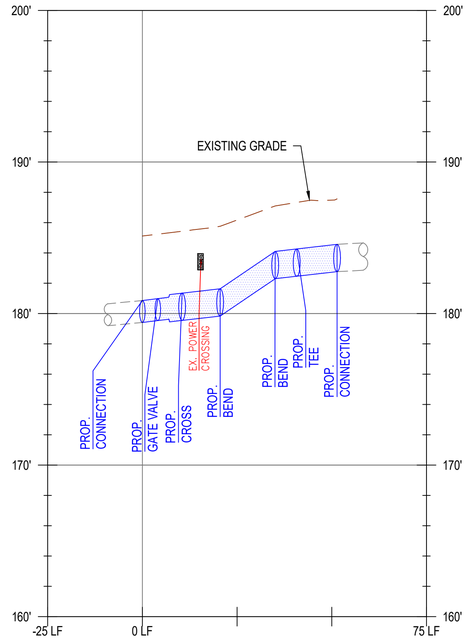
DWG NO.: C10

SHEET NO.: 12 82



3B RAW WATER PROFILE

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



20-INCH RW PROFILE

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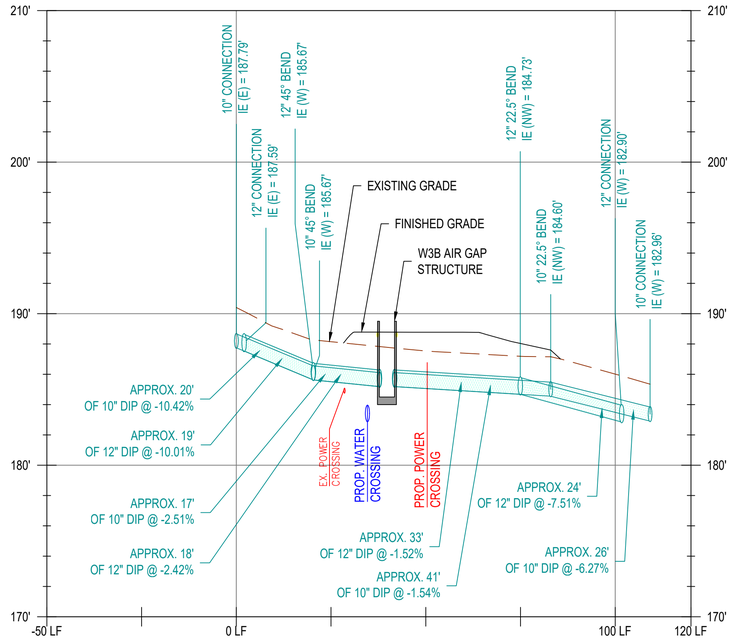
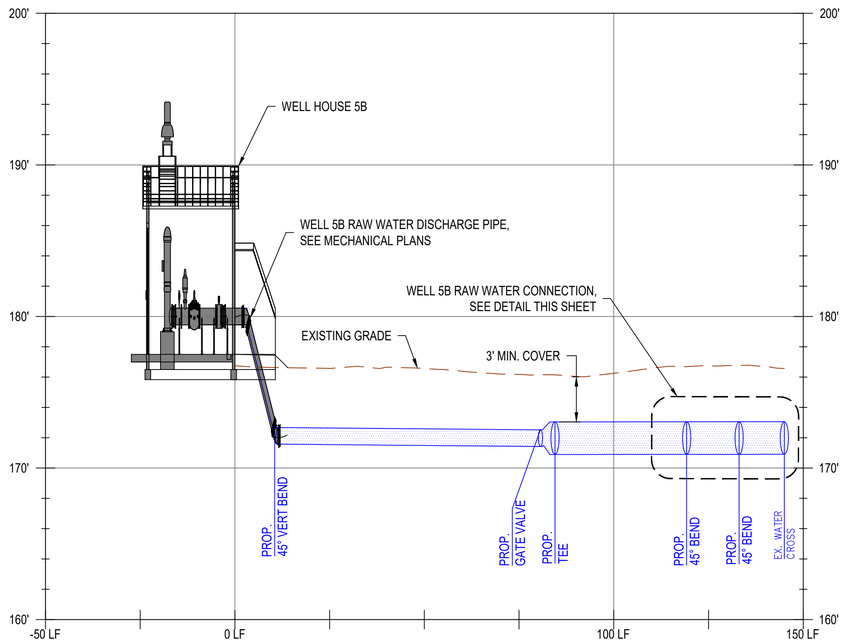


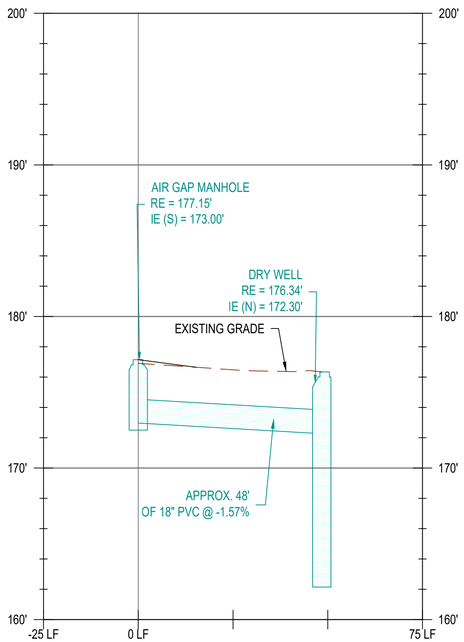
3B DRAIN PROFILE

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



5B RAW WATER PROFILE

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



5B DRAIN PROFILE

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

RH2

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CITY OF Vancouver WASHINGTON

UTILITY PROFILES

ENGINEER: JRB	JOB NO.: 21-0199
REVIEWED: KMP	CLIENT: VAN
SAVE DATE: Nov 3, 2025	FILENAME: 3B5B-P-SITEP.DWG
PLOT DATE: Nov 3, 2025	

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

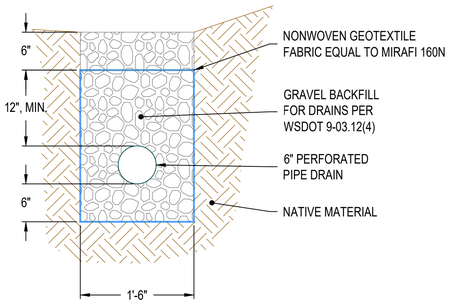
SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

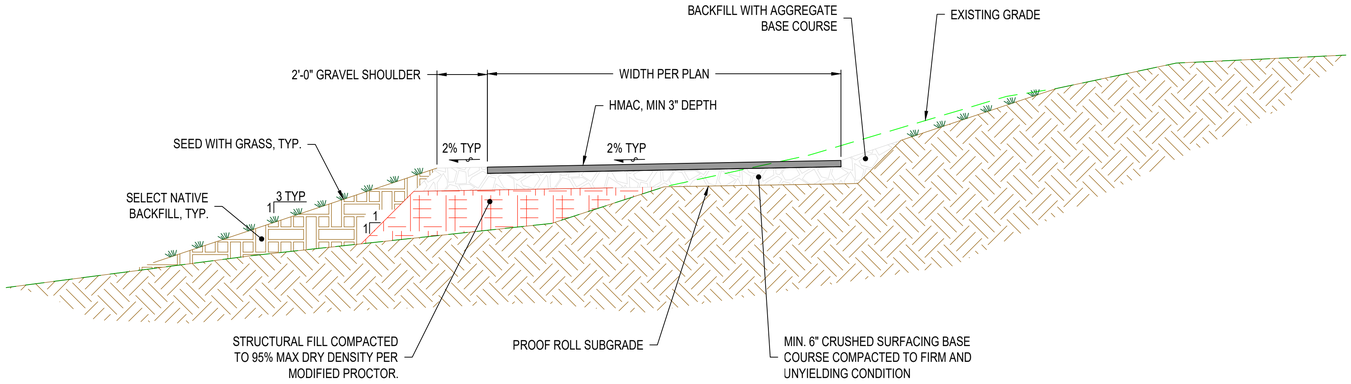
DWG NO.: C11

SHEET NO.: 13



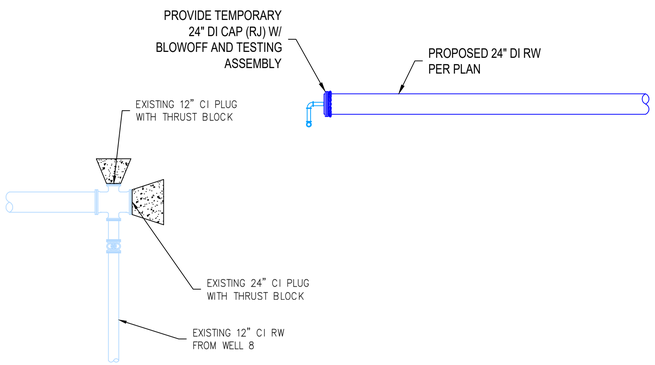
CURTAIN DRAIN DETAIL (A / C06)

NOT TO SCALE

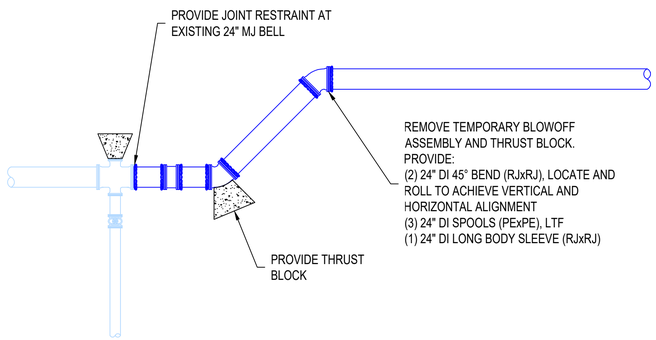


ACCESS ROAD DETAIL (B / C06) (B / C10)

NOT TO SCALE



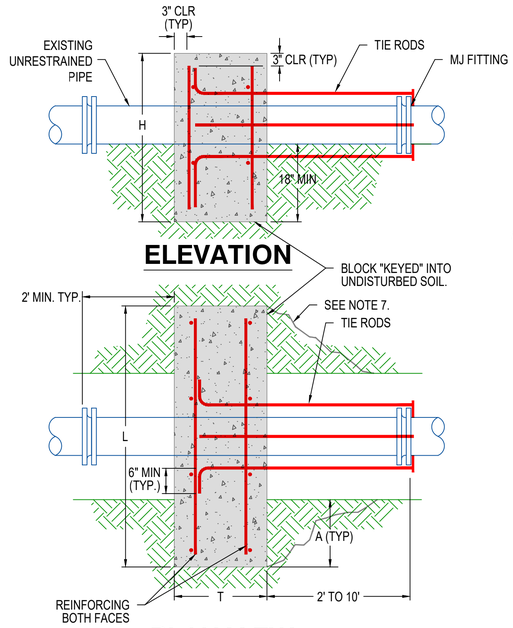
TESTING CONFIGURATION

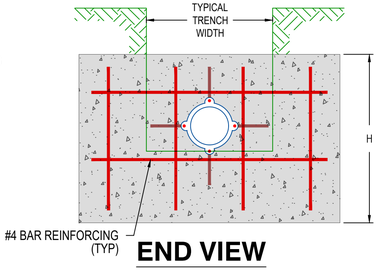


FINAL CONFIGURATION

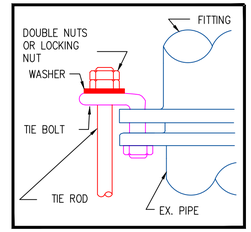
WELL 5B RW CONNECTION DETAIL (C / C09)

NOT TO SCALE





ATTACHMENT DETAIL



SIZING TABLE

PIPE DIA	T (MIN)	H (MIN)	A (MIN)	REINFORCING	NUMBER OF RODS PER JOINT 5/8" DIA. ROD	3/4" DIA. ROD
4" AND 6"	18"	36"	12"	#4 @ 10" OC EW	2	2
8"	18"	42"	12"	#4 @ 12" OC EW	4	3
10"	24"	52"	12"	#4 @ 12" OC EW	6	4
12"	24"	54"	18"	#4 @ 8" OC EW	8	6
14"	24"	56"	18"	#4 @ 6" OC EW	10	7
16"	30"	58"	18"	#4 @ 5" OC EW	12	8

MIN. BLOCK LENGTH (L)

PIPE DIA	SOIL CONDITION SOFT CLAY	SILT	SANDY SILT
4" AND 6"	54"	48"	48"
8"	80"	66"	48"
10"	98"	78"	54"
12"	SEE NOTE 6	92"	66"
14"	SEE NOTE 6	114"	78"
16"	SEE NOTE 6	144"	94"

NOTE: THIS DETAIL FOR PIPE TEST PRESSURES UP TO 200 PSI

NOTES

1. CONCRETE BLOCK SHALL BE CLASS 3000 PSI CONCRETE (MIN.) WITH 3/4" AGGREGATE AND SLUMP OF 2"-4".

2. MAINTAIN 18" MINIMUM COVER OVER THE TOP OF BLOCK.

3. BOTTOM OF BLOCK IS TO TO BE ON UNDISTURBED SOIL. DO NOT INSTALL BLOCK ON PIPE JOINT.

4. TRENCH TO BE BACKFILLED WITH CRUSHED ROCK COMPACTED TO 95% DENSITY ON ALL SIDES OF BLOCK AND A DISTANCE OF 4' MIN. IN FRONT OF BLOCK TO TOP OF BLOCK.

5. CONCRETE SHALL ACHIEVE AT LEAST 2700 PSI COMPRESSIVE STRENGTH AND (FOR ELASTICITY) HAVE CURED FOR AT LEAST 7 DAYS BEFORE PRESSURE TESTING OF CONNECTION.

6. FOR SOIL CONDITIONS NOT SHOWN, BLOCK IS TO BE DESIGNED BY OWNER'S REPRESENTATIVE.

7. IF BLOCK CANNOT BE KEYED INTO UNDISTURBED SOIL TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE, a) THE BLOCK LENGTH SHALL BE EXTENDED TO PROVIDE AN ADEQUATE KEY OR
b) THE TRENCH SHALL BE BACKFILLED AND COMPACTED TO 95% DENSITY A MINIMUM DISTANCE EQUAL TO NOMINAL PIPE SIZE NUMBER, BUT AS FEET (EXAMPLE: A 10" PIPE WOULD REQUIRE 10' OF BACKFILL) IN FRONT OF THE BLOCK TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE BEFORE PRESSURIZING.

TIE ROD GENERAL NOTES

1) WHERE EXISTING PIPE IS CAST IRON, USE TIE RODS AS SHOWN. WHERE EXISTING IS UNRESTRAINED DUCTILE IRON, INSTALL OPPOSED RESTRAINT GLANDS WRAPPED IN POLYWRAP CENTERED IN BLOCK.

1) ALL TIE RODS, TIE ROD COUPLINGS, TIE BOLTS, NUTS, WASHERS, FLANGE LUGS AND ANY OTHER METALLIC TIE ROD SYSTEM COMPONENT SHALL BE ASTM A242 (COR-TEN) STEEL. MILD STEEL IS NOT ALLOWED.
PROTECT TIE RODS, ROD COUPLINGS, AND TIE BOLTS/FLANGE LUGS WITH WAX TAPE COATING SYSTEM. WAX TAPE THE TIE RODS PRIOR TO POURING THE CONCRETE. EXTEND POLYETHYLENE WRAP FROM CONNECTION, OVER THE TIE RODS, TO THE FACE OF BLOCK.

2) TIE RODS SHALL BE "ALL THREAD" ROD.

3) TIE RODS SHALL HAVE "NATIONAL-COARSE" THREAD WITH EITHER TWO NUTS OR ONE SELF-LOCKING NUT.

4) TIE RODS SHALL BE ASSEMBLED SYMMETRICALLY ABOUT EACH JOINT (IF AN EVEN NUMBER OF RODS ARE USED THEN EACH ROD SHALL HAVE A ROD LOCATED ON THE DIRECT OPPOSITE SIDE OF JOINT. IF 3 OR 6 RODS ARE USED THEN AN EQUAL NUMBER OF UNSHACKLED BOLT HOLES SHALL BE LEFT BETWEEN ANY TWO TIE RODS.)

5) TIE ROD NUTS SHALL BE TIGHTENED UNIFORMLY AT EACH JOINT. DO NOT OVER TIGHTEN; HAND SNUG PLUS 1/2 TURN.

6) TIE ROD LENGTHS SHALL NOT EXCEED 10', UNLESS SPECIFICALLY SHOWN ON APPROVED PLANS.

7) TIE RODS SHALL BE ATTACHED TO MECHANICAL JOINTS WITH TIE BOLTS, EXCEPT FOR FIRE HYDRANT INSTALLATIONS WHICH SHALL USE TIE LUGS. TIE BOLTS SHALL BE ROMAC "90-DEGREE EYE BOLTS" OR APPROVED EQUAL. "DUC-LUGS" ARE NOT ALLOWED. FOR CONNECTION TO FLANGED FITTINGS, 3- HOLE FLANGE LUGS SHALL BE USED. TIE BOLTS AND FLANGE LUGS SHALL BE RATED FOR AT LEAST 7,500 LB EACH.

STRADDLE BLOCK (D / C05)

NOT TO SCALE

RH2

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CIVIL DETAILS 1

CITY OF Vancouver WASHINGTON

JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3B5B-P-SITEP.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: JRB
REVIEWED: KMP

REVISIONS

NO.	DESCRIPTION	DATE	BY	REVIEW

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

DWG NO.: C12
SHEET NO.: 14
82

GENERAL EROSION PREVENTION & SEDIMENT CONTROL NOTES

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE AND IN WORKING CONDITION PRIOR TO ANY LAND DISTURBING ACTIVITY INCLUDING CLEARING OR GRADING. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE APPROVED BY THE CITY EROSION SPECIALIST PRIOR TO THE COMMENCEMENT OF WORK. AN ON-SITE INSPECTION SHALL BE REQUESTED WHEN EROSION AND SEDIMENT CONTROL MEASURES ARE IN PLACE AND PRIOR TO COMMENCEMENT OF WORK. ONCE APPROVED, THE SITE MUST BE MAINTAINED THROUGH THE LIFE OF THE PROJECT, AS SHOWN ON THE PLANS. ADDITIONAL MEASURES MAY BE REQUIRED TO MEET THE PROVISIONS OF THE CITY EROSION PREVENTION AND SEDIMENT CONTROL ORDINANCE VMC 14.24.

2. EROSION AND SEDIMENT CONTROL BMPS SHALL BE SITED, DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS IN THE CITY OF VANCOUVER'S LATEST VERSION OF GENERAL REQUIREMENTS AND STANDARD DETAILS MANUAL AND THE WASHINGTON STATE DEPARTMENT OF ECOLOGY STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON, WHERE THE CITY OF VANCOUVER GENERAL REQUIREMENTS SHALL TAKE PRECEDENCE.

3. THE DEVELOPER AND/OR OWNER IS RESPONSIBLE FOR MAINTAINING EROSION PREVENTION AND SEDIMENT CONTROL BMPS DURING AND AFTER ALL WORK.

4. PRIOR TO ANY SITE EXCAVATION, ALL STORM DRAIN INLETS SHALL BE PROTECTED DOWN SLOPE FROM ANY DISTURBED OR CONSTRUCTION AREAS PER STANDARD DETAIL E-2.20 TO PREVENT SEDIMENT FROM ENTERING THE STORM DRAINAGE SYSTEM PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREAS. CLEAN INLET FILTER AS NECESSARY TO MAINTAIN DRAINAGE. REMOVE FILTER AND CLEAN CATCH BASINS FOLLOWING COMPLETION OF SITE WORK. BIOBAGS ARE NOT ALLOWED.

5. NEWLY CONSTRUCTED OR MODIFIED INLETS AND CATCH BASINS SHALL BE PROTECTED FROM SEDIMENT IMMEDIATELY UPON INSTALLATION.

6. THE CONTRACTOR SHALL NOT ALLOW SEDIMENT OR DEBRIS TO ENTER NEW OR EXISTING PIPES, CATCH BASINS OR INFILTRATION SYSTEMS. IF THIS OCCURS, THE CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT FROM THE CATCH BASINS, DRYWELLS, AND STORM PIPES IMMEDIATELY. FINAL ACCEPTANCE WILL NOT BE ISSUED BY THE CITY UNTIL THIS OCCURS.

7. PRIOR TO LEAVING A CONSTRUCTION SITE OR PRIOR TO DISCHARGING INTO AN INFILTRATION SYSTEM, SEDIMENT-LADEN WATER SHALL PASS THROUGH A SEDIMENT POND, TRAP, OR OTHER APPROVED BMP SYSTEM.

8. ALL EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED BY THE APPROPRIATE BEST MANAGEMENT PRACTICES (BMPS). FROM OCTOBER 1 TO APRIL 30, NO SOILS SHALL BE EXPOSED AND UNWORKED FOR MORE THAN TWO (2) DAYS. FROM MAY 1 TO SEPTEMBER 30, NO SOILS SHALL BE EXPOSED AND UNWORKED FOR MORE THAN SEVEN (7) DAYS.

9. SOIL STOCKPILES SHALL BE STABILIZED FROM EROSION, PROTECTED WITH SEDIMENT TRAPPING MEASURES, AND WHEN POSSIBLE, BE LOCATED AWAY FROM STORM DRAIN INLETS, WATER WAYS AND DRAINAGE CHANNELS. STOCKPILES SHALL BE STABILIZED AT THE END OF EACH WORKDAY.

10. CONSTRUCTION ROADS AND PARKING AREAS SHALL BE STABILIZED WHEREVER THEY ARE CONSTRUCTED, WHETHER PERMANENT OR TEMPORARY, FOR THE USE OF CONSTRUCTION TRAFFIC.

11. IF THE BMPS APPLIED TO A SITE ARE INSUFFICIENT TO PREVENT SEDIMENT FROM REACHING WATER BODIES, ADJACENT PROPERTIES, STORM FACILITIES OR PUBLIC RIGHT-OF-WAY, THEN THE CITY SHALL REQUIRE ADDITIONAL BMPS.

12. IF THE CITY INSPECTOR OR ENGINEER(S) HAS EVIDENCE OF POOR CONSTRUCTION PRACTICES OR IMPROPER EROSION PREVENTION BMPS, CITATIONS AND /OR A STOP WORK ORDER SHALL BE ISSUED UNTIL PROPER MEASURES HAVE BEEN TAKEN AND APPROVED BY THE CITY OF VANCOUVER.

PROTECTION OF ADJACENT PROPERTIES, ROADS/STREETS AND PAVED SURFACES

13. PROVIDE A 12-INCH DEEP PAD OF CRUSHED ROCK FOR A DISTANCE OF 100 FEET INTO THE SITE FOR CONSTRUCTION EQUIPMENT AND TRUCK ACCESS TO SITE. PAD WIDTH SHALL BE A MINIMUM OF 20 FEET. ALL VEHICLES LEAVING THE SITE SHALL EGRESS ACROSS THE PAD. CONSTRUCTION VEHICLE ACCESS SHALL BE LIMITED TO ONE ROUTE UNLESS APPROVED BY THE DIRECTOR. ACCUMULATED SEDIMENT SHALL BE PERIODICALLY REMOVED, OR ADDITIONAL ROCK SHALL BE PLACED UPON THE PAD SURFACE. ROCK SHALL BE CLEAN 4-INCH TO 8-INCH QUARRY SPALLS. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS SHALL BE REMOVED IMMEDIATELY. MECHANICAL BROOM SWEEPERS ARE NOT ALLOWED.

14. IF SEDIMENT, MUD OR DEBRIS IS TRANSPORTED ONTO A PAVED SURFACE OR ROADWAY, THE PAVED SURFACES SHALL BE THOROUGHLY CLEANED WITH HIGH EFFICIENCY STREET SWEEPERS AT THE END OF EACH WORKDAY, OR MORE OFTEN IF NECESSARY. PUBLICLY TRAVELED PAVED SURFACES NEED TO BE CLEANED IMMEDIATELY. SIGNIFICANT SOIL DEPOSITS SHALL BE REMOVED FROM ROADS BY SHOVELING AND SWEEPING. STREET WASHING IS NOT ALLOWED UNLESS APPROVED BY THE DIRECTOR AND ONLY AFTER SEDIMENT IS REMOVED IN THE MANNER DESCRIBED ABOVE. MECHANICAL BROOM SWEEPERS ARE NOT ALLOWED.

15. SLURRY AND CUTTINGS SHALL BE VACUUMED DURING CUTTING AND SURFACING OPERATIONS. COLLECTED SLURRY AND CUTTINGS SHALL BE DISPOSED OF IN A MANNER THAT DOES NOT VIOLATE GROUNDWATER OR SURFACE WATER QUALITY STANDARDS.

16. A WHEEL WASH MAY BE REQUIRED IF CONSTRUCTION ENTRANCE IS NOT SUFFICIENT IN PREVENTING SEDIMENT FROM BEING TRACKED ONTO PAVEMENT. WHEEL WASH SHALL BE PER STANDARD PLAN E-1.06 AND THE STORMWATER MANUAL.

17. INSTALL SEDIMENT FENCE PER STANDARD PLAN E-2.33 PRIOR TO BUILDING CONSTRUCTION AND/OR EXCAVATION TO PREVENT SILT INTRUSION UPON ADJACENT LOTS. IF CONSTRUCTION OCCURS SIMULTANEOUSLY ON ADJACENT LOTS AND THE LOTS HAVE THE SAME OWNER DURING CONSTRUCTION, THE SILT FENCE ALONG THE COMMON LOT LINE MAY BE ELIMINATED.

CITY OF Vancouver WASHINGTON | **EROSION PREVENTION & SEDIMENT CONTROL NOTES** | EROSION DETAIL NO. **E-1.00a**

CITY OF VANCOUVER
DEPARTMENT OF PUBLIC WORKS
SURFACE WATER MANAGEMENT

DRAWN BY	APPROVED BY	APPROVAL DATE
MDH	AR	02-2024
REVISION	APPROVED BY	APPROVAL DATE
-	-	-

GENERAL EROSION PREVENTION & SEDIMENT CONTROL NOTES (CONTINUED)

18. PROVIDE PROTECTION FOR ALL STORM DRAIN INLETS DOWNSLOPE AND WITHIN 500 FEET OF A DISTURBED OR CONSTRUCTION AREA, UNLESS THOSE INLETS ARE PRECEDED BY A SEDIMENT TRAPPING BMP.

19. WASHOUT OF CONCRETE TRUCKS MUST BE PERFORMED OFF-SITE OR IN DESIGNATED CONCRETE WASHOUT AREAS ONLY. WASHING OUT CONCRETE TRUCKS, CHUTES, TOOLS OR EQUIPMENT ON THE GROUND OR INTO STORM DRAINS, OPEN DITCHES, STREETS OR STREAMS IS PROHIBITED.

20. SUBMIT DEWATERING PLAN PRIOR TO DISCHARGING TURBID AND CONTAMINATED STORMWATER AND GROUNDWATER OFF-SITE. TREATMENT OR DISPOSAL OPTIONS MAY INCLUDE: INFILTRATION, TRANSPORT OFF-SITE IN A VEHICLE, FOR LEGAL DISPOSAL IN A MANNER THAT DOES NOT POLLUTE STATE WATER; ECOLOGY APPROVED ON-SITE CHEMICAL TREATMENT; SANITARY OR COMBINED SEWER DISCHARGE WITH LOCAL SEWER DISTRICT APPROVAL; USE OF THE SEDIMENTATION BAG WITH OUTFALL TO A DITCH OR SWALE FOR SMALL VOLUMES OF LOCALIZED DEWATERING.

21. PERMANENT STORM WATER FACILITIES SHALL BE ISOLATED AND PROTECTED FROM SEDIMENTATION WITH AN APPROVED BMP.

MAINTENANCE OF EROSION PREVENTION AND SEDIMENT CONTROL BMPS

22. ALL EROSION PREVENTION AND SEDIMENT CONTROL BMP'S SHALL BE REGULARLY INSPECTED AND MAINTAINED TO ENSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION.

23. THE CONTRACTOR/CESCL SHALL MAINTAIN AND HAVE ON-SITE A WRITTEN LOG OF EROSION PREVENTION AND SEDIMENT CONTROL BMP MAINTENANCE. CONSTRUCTION SITES SHALL BE INSPECTED AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL EVENT.

24. ALL TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER SITE STABILIZATION IS ACHIEVED OR AFTER TEMPORARY BMPS ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL AREAS RESULTING FROM REMOVAL SHALL BE PERMANENTLY STABILIZED PER THE STORMWATER MANUAL.

DUST CONTROL

25. IN AREAS SUBJECT TO SURFACE AND AIR MOVEMENT OF DUST, REFER TO THE STORMWATER MANUAL FOR DUST CONTROL BMP'S.

TEMPORARY SEEDING

26. EXPOSED SURFACES THAT WILL NOT BE BROUGHT TO FINAL GRADE OR GIVEN A PERMANENT COVER TREATMENT WITHIN 30 DAYS OF THE EXPOSURE SHALL HAVE SEED MIX AND MULCH PLACED TO STABILIZE THE SOIL AND REDUCE EROSION SEDIMENTATION. SEEDED AREAS SHALL BE CHECKED REGULARLY TO ASSURE A GOOD STAND OF GRASS IS BEING MAINTAINED. AREAS THAT FAIL TO ESTABLISH VEGETATION COVER ADEQUATE TO PREVENT EROSION WILL BE RESEEDED AS SOON AS SUCH AREAS ARE IDENTIFIED.

27. AN APPROVED TEMPORARY SEEDING MIXTURE SHALL BE APPLIED TO THE PREPARED SEED BED AT A RATE OF 120 LBS/ACRE. NOTE: "HYDROSEEDING" APPLICATIONS WITH APPROVED SEED-MULCH-FERTILIZER MIXTURES MAY ALSO BE USED.

PROTECTION OF LOW IMPACT DEVELOPMENT (LID) BMP'S

28. PROTECT ALL BIORETENTION AND RAIN GARDEN FACILITIES FROM SEDIMENTATION THROUGH INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL BMP'S.

29. RESTORE LID FACILITIES TO FULL FUNCTIONING CONDITION IF THEY ACCUMULATE SEDIMENT DURING CONSTRUCTION.

30. MAINTAIN THE INFILTRATION CAPABILITIES OF BIORETENTION AND RAIN GARDEN FACILITIES BY PROTECTING AGAINST COMPACTION.

31. PROPOSED PERMEABLE PAVEMENT AREAS SHALL BE SHOWN ON THE EROSION CONTROL PLAN. PERMEABLE PAVEMENT AREAS SHALL BE PROTECTED FROM SEDIMENT DURING AND AFTER INSTALLATION, AND UNTIL THE DEVELOPMENT CONSTRUCTION IS COMPLETED. CONTROL EROSION AND PREVENT SEDIMENT FROM CONTAMINATING PERMEABLE PAVEMENTS. CLEAN PERMEABLE PAVEMENT FOULED WITH SEDIMENT OR NO LONGER PASSING AN INITIAL INFILTRATION TEST.

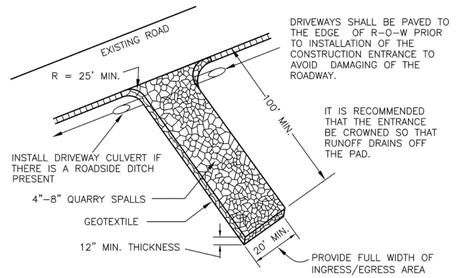
32. KEEP HEAVY EQUIPMENT OFF EXISTING SOILS UNDER PROPOSED LID FACILITIES THAT HAVE BEEN EXCAVATED TO FINAL GRADE TO RETAIN THE SOIL INFILTRATION RATE.

33. CLEARING LIMITS FOR CRITICAL AREAS AND THEIR BUFFERS, AND TREES THAT ARE TO BE PRESERVED WITHIN THE CONSTRUCTION AREA SHALL BE CLEARLY MARKED PRIOR TO LAND-DISTURBING ACTIVITY.

CITY OF Vancouver WASHINGTON | **EROSION PREVENTION & SEDIMENT CONTROL NOTES** | EROSION DETAIL NO. **E-1.00b**

CITY OF VANCOUVER
DEPARTMENT OF PUBLIC WORKS
SURFACE WATER MANAGEMENT

DRAWN BY	APPROVED BY	APPROVAL DATE
MDH	AR	02-2024
REVISION	APPROVED BY	APPROVAL DATE
-	-	-



NOTES:

1. IF THE ENTRANCE SITS ON A SLOPE, PLACE A FILTER FABRIC FENCE DOWN GRADIENT.
2. TOP DRESS THE PAD WITH CLEAN 3" MINUS ROCK WHEN THE CONSTRUCTION ENTRANCE BECOMES CLOGGED WITH SEDIMENTS.
3. ANY SEDIMENT CARRIED FROM THE SITE ONTO THE STREET OR PAVED SURFACES SHALL BE CLEANED UP IMMEDIATELY.
4. IF EQUIPMENT TRAVELS EXTENSIVELY ON UNSTABILIZED ROADS ON THE SITE, A TIRE AND VEHICLE UNDERCARRIAGE WASH NEAR THE ENTRANCE WILL BE NEEDED. PERFORM WASHING ON CRUSHED ROCK. WASH WATER WILL REQUIRE TREATMENT IN A SEDIMENT POND OR TRAP.
5. WHERE CONSTRUCTION ACCESS ABUTS A CURB, MINIMUM 2" DIAMETER PVC AND COLD-PATCH ASPHALT SHOULD BE USED TO CONSTRUCT THE APPROACH IN ORDER TO PROTECT THE CURB AND MINIMIZE OBSTRUCTION TO STORMWATER FLOW IN THE GUTTER.
6. TRUCKS LEAVING THE SITE SHALL EGRESS ACROSS THE FULL LENGTH OF THE PAD.
7. SINGLE FAMILY LOT ENTRANCES SHALL USE CLEANED ROCK 2 INCH TO 4 INCH.
8. ACCESS SHALL BE LIMITED TO ONE ROUTE UNLESS APPROVED BY DIRECTOR. WHEREVER TWO OR MORE ACCESSES ARE USED, A CONSTRUCTION ROAD (BMP C107) MUST BE CONSTRUCTED TO STABILIZE ROUTES USED BY ALL CONSTRUCTION TRAFFIC AND EQUIPMENT.
9. RELOCATING CONSTRUCTION ACCESS OR ADDING ADDITIONAL ACCESSES SHALL BE APPROVED BY DIRECTOR AND INDICATED ON APPROVED PLANS.
10. THE 100' MINIMUM LENGTH OF THE ACCESS SHALL BE REDUCED TO THE MAXIMUM PRACTICABLE SIZE WHEN THE SIZE OR CONFIGURATION OF THE SITE DOES NOT ALLOW THE FULL LENGTH (100').

N.T.S.

CITY OF Vancouver WASHINGTON | **STABILIZED CONSTRUCTION ENTRANCE** | EROSION DETAIL NO. **E-1.05**

CITY OF VANCOUVER
DEPARTMENT OF PUBLIC WORKS
SURFACE WATER MANAGEMENT

DRAWN BY	APPROVED BY	APPROVAL DATE
MDH	AR	02-2024
REVISION	APPROVED BY	APPROVAL DATE
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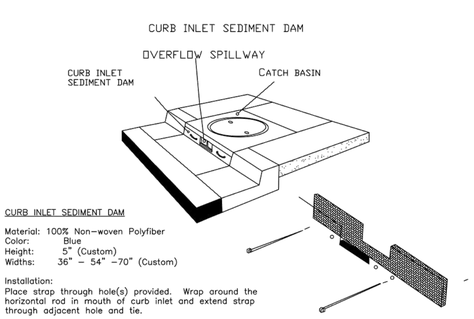


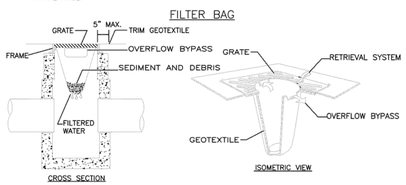
CURB INLET SEDIMENT DAM

Material: 100% Non-woven Polyfiber
Color: Blue
Height: 5" (Custom)
Widths: 36" - 54" -70" (Custom)

Installation:
Place strap through hole(s) provided. Wrap around the horizontal rod in mouth of curb inlet and extend strap through adjacent hole and tie.

1. INLET PROTECTION MUST BE REGULARLY INSPECTED TO INSURE PROPER PLACEMENT/FUNCTION AND MAINTENANCE.

FILTER BAG



NOTES:

1. SIZE THE BELOW GRATE INLET DEVICE (BGID) FOR THE STORM WATER STRUCTURE IT WILL SERVICE.
2. THE REMOVAL SYSTEM MUST ALLOW REMOVAL OF THE BGID WITHOUT SPILLING THE COLLECTED MATERIAL.
3. THE BGID SHALL HAVE A BUILT-IN HIGH-FLOW RELIEF SYSTEM (OVERFLOW BYPASS).
4. THE CONTRACTOR SHALL INSPECT THE BAG AFTER EACH STORM EVENT AND AT REGULAR INTERVALS.
5. THE FILTER BAG SHALL BE CLEANED OR REPLACED WHEN THE BAG BECOMES HALF FULL.

N.T.S.

CITY OF Vancouver WASHINGTON | **INLET PROTECTION** | EROSION DETAIL NO. **E-2.20a**

CITY OF VANCOUVER
DEPARTMENT OF PUBLIC WORKS
SURFACE WATER MANAGEMENT

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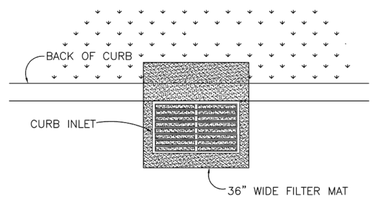
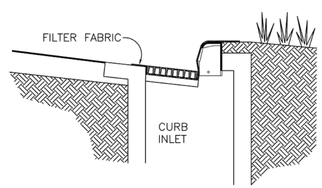


PLAN VIEW



NOTES:

1. USE FILTER MAT SEDIMENT BARRIER WHEN CURB INLET IS LOCATED IN GENTLY SLOPING STREET, WITH MINIMAL NEED, WHERE WATER CAN FILTER AND ALLOW SEDIMENT TO SEPARATE FROM RUNOFF.
2. BARRIER SHALL ALLOW FOR OVERFLOW FROM SEVERE STORM EVENT.
3. INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT. SEDIMENT MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.

N.T.S.

CITY OF Vancouver WASHINGTON | **INLET PROTECTION** | EROSION DETAIL NO. **E-2.20b**

CITY OF VANCOUVER
DEPARTMENT OF PUBLIC WORKS
SURFACE WATER MANAGEMENT

DRAWN BY	APPROVED BY	APPROVAL DATE
MDH	AR	02-2024
REVISION	APPROVED BY	APPROVAL DATE
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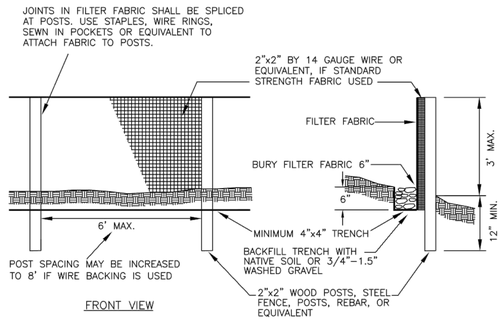

FRONT VIEW

SIDE VIEW

NOTE: FILTER FABRIC FENCES SHALL BE INSTALLED ALONG CONTOUR WHENEVER POSSIBLE

MAINTENANCE STANDARDS: ANY DAMAGE SHALL BE REPAIRED IMMEDIATELY

1. SILT FENCES AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
2. IF CONCENTRATED FLOWS ARE EVIDENT UPHILL OF THE FENCE, THEY MUST BE INTERCEPTED AND CONVEYED TO A SEDIMENT POND.
3. IT IS IMPORTANT TO CHECK THE UPHILL SIDE OF THE FENCE FOR SIGNS OF THE FENCE CLOGGING AND ACTING AS A BARRIER TO FLOW AND THEN CAUSING CHANNELIZATION OF FLOWS PARALLEL TO THE FENCE. IF THIS OCCURS, REPLACE THE FENCE OR REMOVE THE TRAPPED SEDIMENT.
4. SEDIMENT DEPOSITS SHALL EITHER BE REMOVED WHEN THE DEPOSIT REACHES APPROXIMATELY ONE-THIRD THE HEIGHT OF THE SILT FENCE, OR A SECOND SILT FENCE SHALL BE INSTALLED.
5. IF THE FILTER FABRIC (GEOTEXTILE) HAS DETERIORATED DUE TO ULTRAVIOLET BREAKDOWN, IT SHALL BE REPLACED.

N.T.S.

CITY OF Vancouver WASHINGTON | **SILT FENCE** | EROSION DETAIL NO. **E-2.33**

CITY OF VANCOUVER
DEPARTMENT OF PUBLIC WORKS
SURFACE WATER MANAGEMENT

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MDH	AR	02-2024
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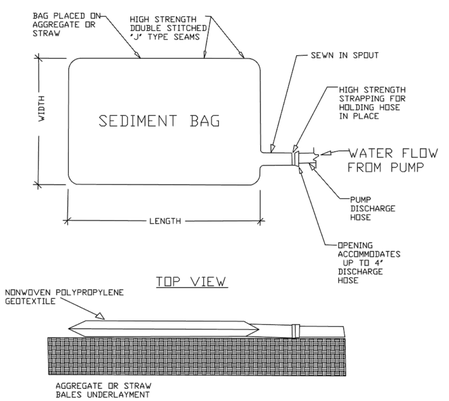


TOP VIEW

SIDE VIEW

NOTES:

1. INSTALL THE BAG ON A SLIGHT SLOPE SO INCOMING WATER FLOWS DOWNHILL THROUGH BAG. PLACE THE BAG ON AN AGGREGATE OR STRAW BALE BED TO MAXIMIZE WATER FLOW THROUGH THE SURFACE AREA OF THE BAG. STRAP THE NECK OF BAG TIGHTLY TO THE DISCHARGE HOSE.
2. FLOW RATES WILL VARY DEPENDING ON THE SIZE OF BAG, TYPE AND AMOUNT OF SEDIMENT DISCHARGED INTO BAG, THE SURFACE UNDER THE BAG AND THE DEGREE OF SLOPE THE BAG IS INSTALLED ON. CARE SHOULD BE TAKEN TO PROPERLY MONITOR PERFORMANCE TO ENSURE THAT PUMP RATES OR CONCENTRATIONS OF SEDIMENT ARE NOT EXCESSIVE. FAILURE TO DO SO MAY CAUSE BAG TO RUPTURE OR HOSE ATTACHMENT STRAPS TO FAIL.
3. FILTERED WATER MAY BE INFILTRATED INTO GROUND. FOLLOW APPROPRIATE EROSION PREVENTION BMPS FOR FILTERED WATER DISCHARGES.
4. BAGS SHALL BE MADE FROM NONWOVEN POLYPROPYLENE GEOTEXTILE.

N.T.S.

CITY OF Vancouver WASHINGTON | **SEDIMENT BAG** | EROSION DETAIL NO. **E-2.46**

CITY OF VANCOUVER
DEPARTMENT OF PUBLIC WORKS
SURFACE WATER MANAGEMENT

DRAWN BY	APPROVED BY	APPROVAL DATE
MDH	AR	02-2024
REVISION	APPROVED BY	APPROVAL DATE
-	-	-

RH2

KEVIN M. PETTIJOHN
STATE OF WASHINGTON
41857
REGISTERED
PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CITY OF Vancouver WASHINGTON

CIVIL DETAILS 2

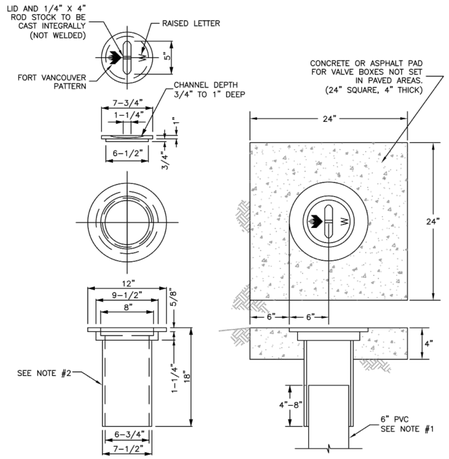
JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3B5B-P-C_DETS.DWG
SAVE DATE: Oct 27, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: JRB
REVIEWED: KMP

REVISIONS

NO.	DESCRIPTION	DATE	BY	REVIEW

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

DWG NO.: C13
SHEET NO.: 15
82

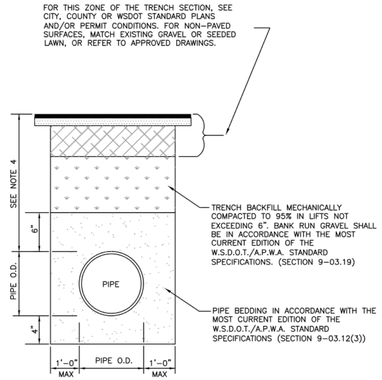


NOTES:

1. EXTENSIONS SHALL BE 6" ASTM D 3034 SDR 35 PVC PIPE (ONE PIECE)
2. VALVE BOX SHALL BE U.S. FILTER/PACIFIC WATER WORKS NO. 910 OR EQUAL.
3. FOR ARTERIAL TRAFFIC APPLICATIONS, USE EAST JORDON #3639A2 SOLID EXTRA DEEP VALVE BOX AND LID
4. THE LID SHALL INCLUDE THE FORT VANCOUVER LOGO AND "W" IN THE DESIGN.
5. IF THE ORIGIN IS OTHER THAN USA, THE COUNTRY OF ORIGIN SHALL BE CAST ON THE UNDERSIDE OF THE LID
6. THERE SHALL BE 1/2" CLEARANCE UNDER THE PIN CAST INTO THE LID.
7. THE OPERATOR NUT SHALL HAVE A DEPTH FROM 18"-36" FROM FINISH GRADE TO THE OPERATOR NUT.

N.T.S.

CITY OF Vancouver WASHINGTON	STANDARD VALVE BOX & COVER	WATER DETAIL NO. W-12
	CITY OF VANCOUVER DEPARTMENT OF PUBLIC WORKS WATER SYSTEMS PLANNING AND DESIGN	DRAWN BY: GPH; APPROVED BY: KAO; APPROVAL DATE: 03 - 2025 REVISION: -; APPROVED BY: -; APPROVAL DATE: -



NOTE:

1. CLEAN NATIVE MATERIAL MAY BE USED AS PIPE BEDDING AND TRENCH BACKFILL AS APPROVED BY CITY OF VANCOUVER CONSTRUCTION INSPECTOR PER WSDOT SPECIFICATION (SECTION 9-03.12(3)).
2. CONTROL DENSITY FILL (CDF) MAY BE REQUIRED BASED ON THE LOCAL JURISDICTION'S STANDARDS.
3. OVERSIZE MATERIAL (4"+) SHALL NOT BE ALLOWED IN TRENCH.
4. PIPE DEPTH OF BURY MEASURED FROM TOP OF PIPE TO FINISH GRADE:
   36" FOR ALL PIPE 10" AND SMALLER
   48" FOR ALL PIPE DIAMETERS 12" AND LARGER

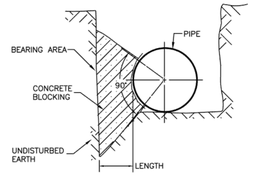
N.T.S.

CITY OF Vancouver WASHINGTON	WATER PIPE TRENCH BEDDING & BACKFILL	WATER DETAIL NO. W-13
	CITY OF VANCOUVER DEPARTMENT OF PUBLIC WORKS WATER SYSTEMS PLANNING AND DESIGN	DRAWN BY: GPH; APPROVED BY: KAO; APPROVAL DATE: 03 - 2025 REVISION: -; APPROVED BY: -; APPROVAL DATE: -

SOIL BEARING = 2000 LB/S.F.				
PIPE SIZE	HORZ. BENDS	MIN. BEARING AREA S.F.	MIN. VOL. OF BLOCKING C.F.	MIN. LENGTH OF BLOCKING
4"	TEE	2.7	0.9	1.00
	90°	3.8	1.4	1.00
	45°	2.1	0.5	0.75
	22-1/2°	1.1	0.2	0.50
	11-1/4°	–	–	–
6"	TEE	5.6	2.4	1.25
	90°	7.9	4.0	1.50
	45°	4.3	1.6	1.00
	22-1/2°	2.2	0.6	0.75
	11-1/4°	1.1	0.2	0.50
8"	TEE	9.6	5.6	1.75
	90°	13.6	9.1	2.00
	45°	7.4	3.7	1.50
	22-1/2°	3.8	1.3	1.00
	11-1/4°	1.9	0.5	0.50
10"	TEE	14.5	9.9	2.00
	90°	20.5	17.1	2.50
	45°	11.1	6.6	1.75
	22-1/2°	5.7	2.4	1.25
	11-1/4°	2.8	0.9	0.75
12"	TEE	20.5	17.1	2.50
	90°	29.0	29.0	3.00
	45°	15.7	11.2	2.00
	22-1/2°	8.0	4.1	1.25
	11-1/4°	4.0	1.5	0.75
16"	TEE	35.7	32.7	2.75
	90°	50.4	58.8	3.50
	45°	27.3	20.5	2.25
	22-1/2°	13.9	7.0	1.50
	11-1/4°	7.0	2.4	1.00
18"	TEE	55.0	55.0	3.00
	90°	77.7	97.2	3.75
	45°	42.1	38.6	2.75
	22-1/2°	21.4	12.5	1.75
	11-1/4°	10.8	3.6	1.00
24"	TEE	78.4	104.5	4.00
	90°	110.9	184.8	5.00
	45°	60.0	75.0	3.75
	22-1/2°	30.6	22.9	2.25
	11-1/4°	15.4	7.7	1.25

NOTES:

1. ALL BLOCKING SHALL BE POURED AGAINST FIRM UNDISTURBED SOIL.
2. ALL CONCRETE BLOCKING SHALL BE POURED IN PLACE WITHOUT DIRECT CONTACT TO PIPE, FITTINGS OR FLANGES. 15 LB. ASPHALT-IMPREGNATED FELT, OR EQUIVALENT AS APPROVED BY THE INSPECTOR, SHALL BE PLACED BETWEEN THE CONCRETE AND PIPE, FITTINGS OR FLANGES.
3. LAYOUT TO BE APPROVED BY THE INSPECTOR PRIOR TO AND AFTER CONCRETE POUR.
4. CONCRETE FOR ALL BLOCKING SHALL HAVE A 28-DAY MINIMUM COMPRESSIVE STRENGTH OF 3,000 P.S.I.
5. THIS CHART IS NOT APPLICABLE TO VERTICAL BENDS. LOCATION SPECIFIC DESIGN IS REQUIRED FOR SUCH INSTALLATIONS.
6. WHERE THE TRENCH SOIL HAS A BEARING PRESSURE LESS THAN 2000 POUNDS PER SQUARE FOOT, LOCATION SPECIFIC DESIGN IS REQUIRED.
7. THRUST BLOCKS SHALL ONLY BE USED AT CONNECTIONS TO EXISTING WATER MAIN AND AT ALL "LIVE TAP" CONNECTIONS



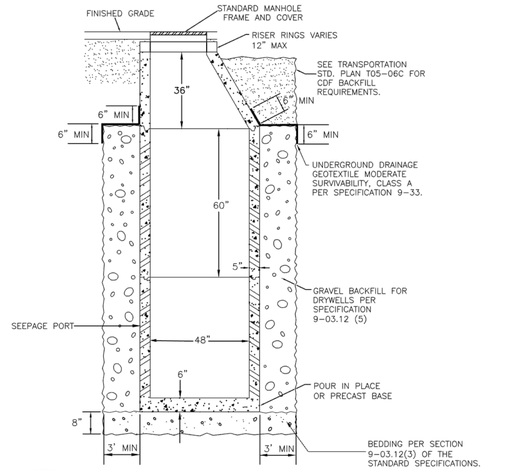
N.T.S.

CITY OF Vancouver WASHINGTON	STANDARD THRUST BLOCK	WATER DETAIL NO. W-16
	CITY OF VANCOUVER DEPARTMENT OF PUBLIC WORKS WATER SYSTEMS PLANNING AND DESIGN	DRAWN BY: GPH; APPROVED BY: KAO; APPROVAL DATE: 03 - 2025 REVISION: -; APPROVED BY: -; APPROVAL DATE: -

GENERAL STORM WATER CONSTRUCTION NOTES

1. ALL MATERIALS AND INSTALLATION OF STORM SEWERS AND DRAINAGE SYSTEMS SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS IN THE CITY OF VANCOUVER'S LATEST VERSION OF "GENERAL REQUIREMENTS AND STANDARD DETAILS MANUAL" AND THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION CHAPTER OF THE AMERICAN PUBLIC WORKS ASSOCIATION (APWA) AND THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION, WHERE THE CITY OF VANCOUVER GENERAL REQUIREMENTS SHALL TAKE PRECEDENCE. WHEREVER THE STANDARD SPECIFICATIONS REFER TO THE OWNER AS EITHER THE "STATE" OR "SECRETARY" OR WHEN REFERENCE IS MADE TO THE DEPARTMENT OF TRANSPORTATION IT SHALL BE UNDERSTOOD THAT THE STANDARD SPECIFICATIONS SHOULD READ THE "CITY".
2. ALL PUBLIC STORM SEWER AND DRAINAGE SYSTEM CONSTRUCTION IS SUBJECT TO INSPECTION AND APPROVAL BY THE CITY OF VANCOUVER'S DEPARTMENT OF PUBLIC WORKS. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION OFFICE (360) 487-7780 AT LEAST 48 HOURS PRIOR TO THE START OF ANY CONSTRUCTION. THE CITY MAY REQUIRE THAT A PRECONSTRUCTION CONFERENCE BE HELD.
3. THE CONTRACTOR IS REQUIRED TO NOTIFY ALL UTILITIES 48 HOURS PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR MAY CONTACT THE NORTHWEST UTILITY NOTIFICATION CENTER AT 1-800-424-5555 IN LIEU OF CONTACTING INDIVIDUAL UTILITIES.
4. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER AND/OR CONTRACTOR TO PROCURE AND COMPLY WITH THE PROVISIONS OF ALL APPLICABLE PERMITS, EASEMENTS, LICENSES AND CERTIFICATES IN CONJUNCTION WITH THE CONSTRUCTION OF STORM SEWERS AND DRAINAGE SYSTEMS. COMPLIANCE SHALL BE AT ALL LEVELS; FEDERAL, STATE, AND CITY, RELATING TO THE PERFORMANCE OF THIS WORK. THE CONTRACTOR SHALL OBTAIN A STREET CUT PERMIT FOR WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
5. THE CONTRACTOR SHALL OBTAIN AND SUBMIT AN APPROVED TRAFFIC CONTROL PLAN PRIOR TO BEGINNING CONSTRUCTION. THE PLAN SHALL BE APPROVED BY THE CITY TRANSPORTATION DIVISION (360) 487-7735.
6. A REGISTERED PROFESSIONAL ENGINEER, ENGINEERING GEOLOGIST, OR A DESIGNATED REPRESENTATIVE WORKING UNDER THEIR DIRECT SUPERVISION, SHALL OBSERVE THE CONSTRUCTION OF THE INFILTRATION FACILITY AND CONDUCT CONFIRMATION INFILTRATION TESTING ON SOILS EXPOSED AT THE BASE OF THE FACILITY. CONFIRMATION TESTING SHALL TAKE PLACE PRIOR TO INSTALLATION OF THE FACILITY (E.G. PLACEMENT OF DRAIN ROCK, PERFORATED PIPE, DRYWELLS, ETC.) AND SHALL BE CONDUCTED IN ACCORDANCE WITH THE RECOMMENDATIONS OUTLINED IN 6.2 CONSTRUCTION OBSERVATION AND TESTING OF SWWASCE INFILTRATION STANDARDS.
7. THE CONTRACTOR SHALL OBTAIN ALL OFFSITE CONSTRUCTION EASEMENTS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THAT ALL OFFSITE UTILITIES EASEMENTS HAVE BEEN OBTAINED BY THE OWNER PRIOR TO THE COMMENCEMENT OF ANY OFFSITE CONSTRUCTION.
8. THE CONTRACTOR IS TO REPORT ANY SITE DISCREPANCIES IMMEDIATELY TO THE ENGINEER. ITEMS TO REPORT INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
   -EXISTING PIPE SIZE, TYPE, SLOPE AND INVERT ELEVATION
   -ROADWAY CENTERLINE AND TOP OF CURB ELEVATIONS
   -GROUNDWATER ENCOUNTERED WITHIN 5-FEET OF THE BOTTOM OF INFILTRATION FACILITIES.
9. WATER QUALITY DEVICES WILL BE INSTALLED AND FUNCTIONING PRIOR TO COMMENCING WITH INSTALLATION OF PAVEMENT FOR ALL AREAS DRAINING INTO THE WATER QUALITY SYSTEM. BIORETENTION FACILITIES SHALL HAVE BIORETENTION SOIL MIX INSTALLED. MECHANICAL DEVICES SHALL HAVE FILTER MEDIA INSTALLED.
10. ALL NEW CATCH BASINS SHALL BE LABELED WITH "PROTECT WATER • ONLY RAIN IN DRAIN" MEDALLIONS. MEDALLIONS SHALL BE AFFIXED TO DRY SURFACES WITH HIGH QUALITY POLYURETHANE SEALANT AND RIVETS. APPROVED MEDALLIONS ARE AVAILABLE FOR PURCHASE AT THE CITY'S PERMIT COUNTER (360)487-7804.
11. ROOF DOWNSPOUT RUNOFF MUST BE RETAINED ON EACH SPECIFIC SITE. DOWNSPOUTS SHALL NOT DRAIN TO THE STREET OR ANY ADJACENT PROPERTIES UNLESS SPECIFIC APPROVAL HAS BEEN SHOWN ON APPROVED CIVIL ENGINEERING PLANS.
12. THE CONTRACTOR SHALL PROVIDE A TELEVISION REPORT, VIDEOS, AND TABULAR AS-BUILT OF ALL PUBLIC STORM MAINS AND LATERALS PRIOR TO PAVING. THIS TV INFORMATION SHALL BE SUBMITTED TO THE CITY INSPECTOR FOR REVIEW. TV INSPECTION SHALL DEMONSTRATE NO MANUFACTURING OR INSTALLATION DEFECTS, OR ANY DEBRIS IN THE LINES, FOR APPROVAL AND ACCEPTANCE BY THE CITY. FINAL ACCEPTANCE AND CONSTRUCTION OF STORM SEWERS ARE SUBJECT TO SECTIONS 1-05.12, AND 7-04.3 OF THE STANDARD SPECIFICATIONS. PIPE DEFLECTION TESTING MUST BE PER 7-17.3(2)G OF THE STANDARD SPECIFICATIONS AND ITS AMENDMENTS.

CITY OF Vancouver WASHINGTON	CONSTRUCTION NOTES FOR STORM SEWERS	STORM DETAIL NO. D-1.0
	CITY OF VANCOUVER DEPARTMENT OF PUBLIC WORKS SURFACE WATER MANAGEMENT	DRAWN BY: MDH; APPROVED BY: AR; APPROVAL DATE: 02-2024 REVISION: -; APPROVED BY: -; APPROVAL DATE: -

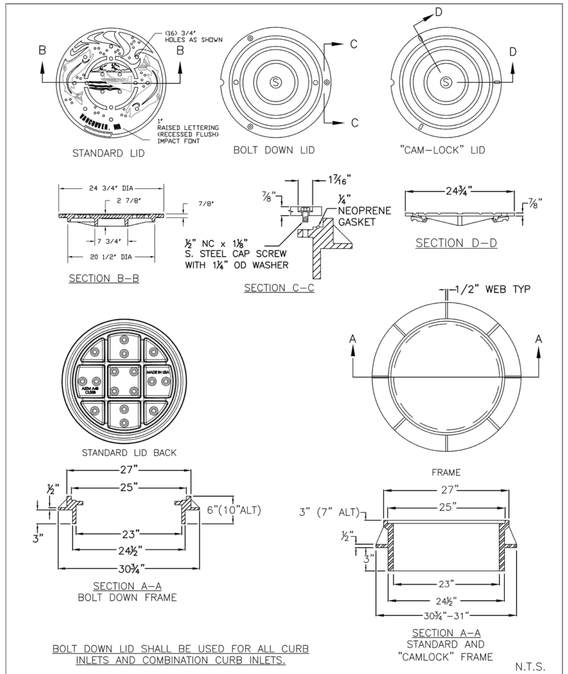


NOTES:

1. ALL PRECAST SECTIONS SHALL CONFORM TO REQUIREMENTS OF A.S.T.M. C478.
2. ALL PIPING TO AND FROM PRECAST DRYWELLS SHALL HAVE AT LEAST 8" OF 1-½" MINUS CLEAN CRUSHED ROCK COVER CONTINUOUSLY AROUND PIPE WHERE DRAIN ROCK WOULD OTHERWISE BE IN CONTACT WITH PIPE.
3. PERFORATIONS SHALL BE HORIZONTAL ROWS OF (14) 2-¼" SQUARE OR (14) 2-⅜" ROUND HOLES, EQUALLY SPACED. ROWS SHALL BE SPACED 6-½" CENTER TO CENTER. SEEPAGE PORTS SHALL BE ANGLED AS SHOWN OR HORIZONTAL. SEEPAGE PORTS ORIENTATED UP AT THE OUTSIDE WALL MAY BE ALLOWED PROVIDED THE DRYWELL IS WRAPPED WITH APPROVED GEOGRID; MIRAFI MIRAMESH, NORPLEX HN1460L-70, OR EQUAL.
4. STANDARD DRYWELL DEPTH SHALL BE 13 FEET UNLESS NOTED OTHERWISE, MAXIMUM DEPTH IS 18 FEET.
5. ANY PROTRUDING ENDS OF PIPES SHALL BE TRIMMED FLUSH WITH THE INSIDE WALLS AND GROUTED.

N.T.S.

CITY OF Vancouver WASHINGTON	STANDARD PRE-CAST DRYWELL	STORM DETAIL NO. D-2.2
	CITY OF VANCOUVER DEPARTMENT OF PUBLIC WORKS SURFACE WATER MANAGEMENT	DRAWN BY: MDH; APPROVED BY: AR; APPROVAL DATE: 02-2024 REVISION: -; APPROVED BY: -; APPROVAL DATE: -



BOLT DOWN LID SHALL BE USED FOR ALL CURB INLETS AND COMBINATION CURB INLETS.

N.T.S.

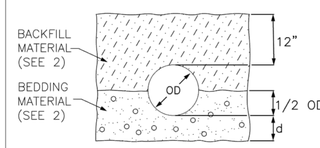
CITY OF Vancouver WASHINGTON	MANHOLE COVER AND FRAME	STORM DETAIL NO. D-2.4
	CITY OF VANCOUVER DEPARTMENT OF PUBLIC WORKS SURFACE WATER MANAGEMENT	DRAWN BY: MDH; APPROVED BY: AR; APPROVAL DATE: 02-2024 REVISION: -; APPROVED BY: -; APPROVAL DATE: -

NOTES:

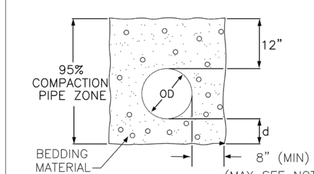
1. BEDDING AND COMPACTION ABOVE THE PIPE ZONE SHALL BE AS SHOWN IN STANDARD DETAIL D-3.2.
2. BEDDING MATERIALS SHALL CONFORM TO SECTION 9-03.12(3).
3. BEDDING AND BACKFILL MATERIALS IN THE PIPE ZONE SHALL BE COMPACTED TO 95%.

DEPTH OF BEDDING MATERIAL BELOW PIPE	
OD	d (MIN)
27" & SMALLER	4"
LARGER THAN 27"	6"

4. FOR ROCK AND OTHER INCOMPRESSIBLE MATERIALS, THE TRENCH SHALL BE OVER EXCAVATED A MINIMUM OF 6 INCHES AND REFILLED WITH GRANULAR MATERIAL AS DIRECTED BY THE ENGINEER.
5. NATIVE MATERIAL MAY BE USED IN LIEU OF IMPORTED MATERIAL FOR BEDDING SPECIFIED PROVIDED THAT THE NATIVE MATERIAL CONFORMS TO SECTION 9-03.12(3) OF THE STANDARD SPECIFICATIONS AND IS APPROVED BY THE ENGINEER. THE CONTACTOR SHALL SUBMIT A SAMPLE OF THE NATIVE MATERIAL TO A GEOTECHNICAL ENGINEER FOR LABORATORY TESTING AND ANALYSIS. THE GEOTECHNICAL ENGINEER SHALL PROVIDE A REPORT OF THE SUITABILITY OF THE NATIVE MATERIAL FOR PIPE BEDDING PRIOR TO USE.
6. TRENCH WIDTH SHALL NOT EXCEED 1-1/2 TIMES THE OD OF THE PIPE PLUS 18 INCHES AT THE TOP OF THE PIPE ZONE.
7. ALL JOINTS SHALL BE AIR-TIGHT FOR NON-PERFORATED PIPE. THE ENGINEER MAY REQUIRE TESTING OF ANY OR ALL JOINTS AND CONNECTIONS.



RIGID PIPE BEDDING DETAIL



FLEXIBLE PIPE BEDDING DETAIL

N.T.S.

CITY OF Vancouver WASHINGTON	RIGID & FLEXIBLE PIPE BEDDING	STORM DETAIL NO. D-3.1B
	CITY OF VANCOUVER DEPARTMENT OF PUBLIC WORKS SURFACE WATER MANAGEMENT	DRAWN BY: MDH; APPROVED BY: AR; APPROVAL DATE: 02-2024 REVISION: -; APPROVED BY: -; APPROVAL DATE: -

RH2

HELEN M. PETTIBONE STATE OF WASHINGTON 41857 REGISTERED PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CIVIL DETAILS 3

CITY OF Vancouver WASHINGTON

ENGINEER: JRB; REVIEWED: KMP; SAVE DATE: Oct 27, 2025; PLOT DATE: Nov 3, 2025; CLIENT: VAN; FILENAME: 3B5B-P-C_DETS.DWG; JOB NO.: 21-0199

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

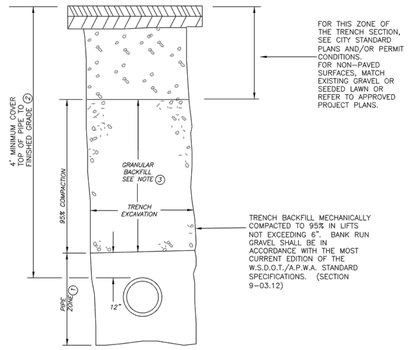
SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: C14

SHEET NO.: 16 / 82



NOTES:

1. FOR PIPE ZONE BEDDING, SEE STANDARD DETAIL D-3.1A FOR PERFORATED PIPE OR STANDARD DETAIL D-3.1B FOR RIGID & FLEXIBLE PIPE.
2. MINIMUM COVER FROM TOP OF PIPE TO FINISHED GRADE MAY BE REDUCED TO 3' WHEN DUCTILE IRON PIPE IS USED AND APPROVED BY THE CITY OF VANCOUVER.
3. CONTROLLED DENSITY FILL (CDF) MAY BE REQUIRED BASED ON THE CITY STANDARDS.
4. OVERSIZE MATERIAL (4"OR LARGER) SHALL NOT BE ALLOWED IN TRENCH.

N.T.S.

CITY OF Vancouver WASHINGTON

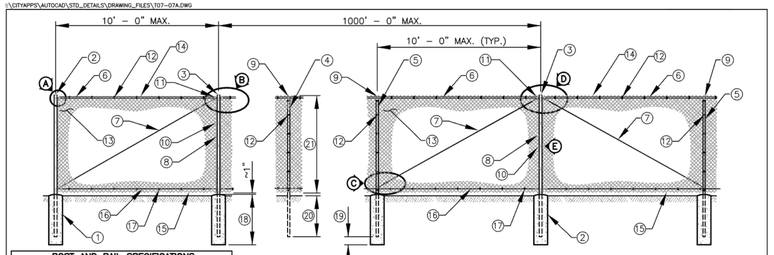
TRENCH BACKFILL

CITY OF VANCOUVER
DEPARTMENT OF PUBLIC WORKS
SURFACE WATER MANAGEMENT

DRAWN BY	APPROVED BY	APPROVAL DATE
MDH	AR	02-2024
REVISION	APPROVED BY	APPROVAL DATE
-	-	-

STORM DETAIL NO. **D-3.2**

\\CITYAPPS\AUTOCAD\STD_DETAILS\DRAWING_FILES\T07-07A.DWG



POST AND RAIL SPECIFICATIONS	
POST	PIPE NOM. SIZE (SCH. 40) I.D.
END, CORNER, OR PULL POST	2 1/2" DIAM.
LINE OR BRACE POST	2" DIAM.
TOP RAIL POST	1 1/4" DIAM.

NOTES:

1. ALL CONCRETE POST BASES SHALL BE 10" (IN) MINIMUM DIAMETER.
2. ALONG THE TOP AND BOTTOM, USING HOG RINGS, FASTEN THE CHAIN LINK FENCE FABRIC TO THE TENSION WIRE WITHIN THE LIMITS OF THE FIRST FULL FABRIC WEAVE.
3. DETAILS ARE ILLUSTRATIVE AND SHALL NOT LIMIT HARDWARE DESIGN OR POST SELECTION OF ANY PARTICULAR FENCE TYPE.
4. FENCING SHALL BE USED FOR SECURITY AND BOUNDARY DELINEATION ONLY.
5. ALL FENCE MATERIAL SHALL BE BLACK VINYL COATED.
6. SEE **CHAIN LINK FENCE BLOW-UP DETAILS ON T07-07B.**

(1) CONCRETE POST BASE (TYP.)
(2) END OR CORNER POST AND CAP (TYP.)
(3) PULL POST – SPACED AT 1,000' (FT.) MAX. (TYP.)
(4) LINE POST – SPACED AT ~10' (FT.) MAX. (TYP.)
(5) BRACE POST (TYP.)
(6) TOP RAIL
(7) TENSION WIRE
(8) STRETCHER BAR (TYP.)
(9) FENCE POST LOOP CAP
(10) FABRIC BAND (TYP.)
(11) FENCE RAIL END (TYP.)
(12) TIE WIRE (TYP.)
(13) CHAIN LINK FENCE FABRIC (TYP.)
(14) TWISTED SELVAGE (TYP.)
(15) TWISTED KNUCKLED SELVAGE (TYP.)
(16) TENSION WIRE ALONG BOTTOM OF FENCE (TYPE 3 FENCE ONLY) (TYP.)
(17) HOG RINGS (TYPE 3 FENCE ONLY) SPACED AT 24" (IN.) MAX. (TYP.)
(18) POST BASE DEPTH:
TYPE 3 FENCE = 3'–0" (TYP.)
TYPE 4 FENCE = 2'–0" (TYP.)
(19) CONCRETE DEPTH BELOW POST:
TYPE 3 FENCE = 0'–6" (TYP.)
TYPE 4 FENCE = 0'–2" (TYP.)
(20) LINE POST DEPTH:
TYPE 3 FENCE = 2'–6" (TYP.)
TYPE 4 FENCE = 1'–10" (TYP.)
(21) FABRIC HEIGHT:
TYPE 3 FENCE = 6'–0" (TYP.)
TYPE 4 FENCE = 4'–0" (TYP.)

CITY OF Vancouver WASHINGTON

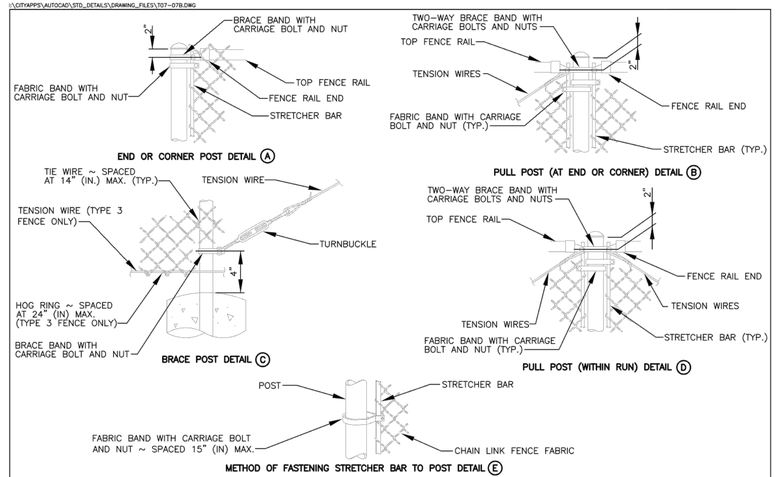
CHAIN LINK FENCE TYPES 3 AND 4

CITY OF VANCOUVER
DEPARTMENT OF PUBLIC WORKS
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	[illegible]	3/16
REVISION	APPROVED BY	APPROVAL DATE
3	[illegible]	3/24

STD. PLAN NO. **T07-07A**

\\CITYAPPS\AUTOCAD\STD_DETAILS\DRAWING_FILES\T07-07B.DWG



CITY OF Vancouver WASHINGTON

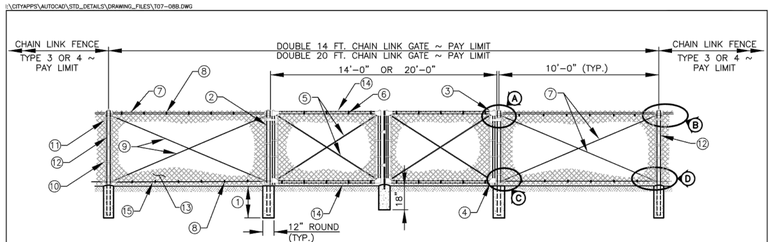
CHAIN LINK FENCE BLOW-UP DETAILS TYPES 3 AND 4

CITY OF VANCOUVER
DEPARTMENT OF PUBLIC WORKS
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	[illegible]	3/16
REVISION	APPROVED BY	APPROVAL DATE
3	[illegible]	3/24

STD. PLAN NO. **T07-07B**

\\CITYAPPS\AUTOCAD\STD_DETAILS\DRAWING_FILES\T07-08B.DWG



(1) CONCRETE POST BASE DEPTH (TYP.):
TYPE 3 FENCE = 3'–0"
TYPE 4 FENCE = 2'–0"
(2) GATE POST (TYP.) ~ 3 1/2" (IN.) DIAM. (NOM. SCH. 40)
(3) TOP HINGE ~ 180° SWING (TYP.)
(4) BOTTOM HINGE ~ 180° SWING (TYP.)
(5) TRUSS ROD (TYP.)
(6) TIE WIRES (TYP.) ~ SPACED AT 14" (IN.) MAX.
(7) TOP RAIL (TYP.)
(8) HOG RINGS ~ SPACED AT 24" (IN.) MAX. (TYP.)
(9) TENSION WIRES (TYP.)
(10) FABRIC BAND (TYP.)
(11) STRETCHER BAR (TYP.)
(12) PULL POST
(13) CHAIN LINK FENCE FABRIC (TYP.)
(14) MATCH FENCE SELVAGE (TYP.)
(15) TENSION WIRE ALONG BOTTOM OF FENCE (TYPE 3 FENCE ONLY) (TYP.)

NOTES:

1. MATERIALS SHALL MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS 9-16.
2. ALL FENCE MATERIAL SHALL BE BLACK VINYL COATED.
3. SEE **CHAIN LINK GATE BLOW-UP DETAILS ON SHEET T07-08C.**

CITY OF Vancouver WASHINGTON

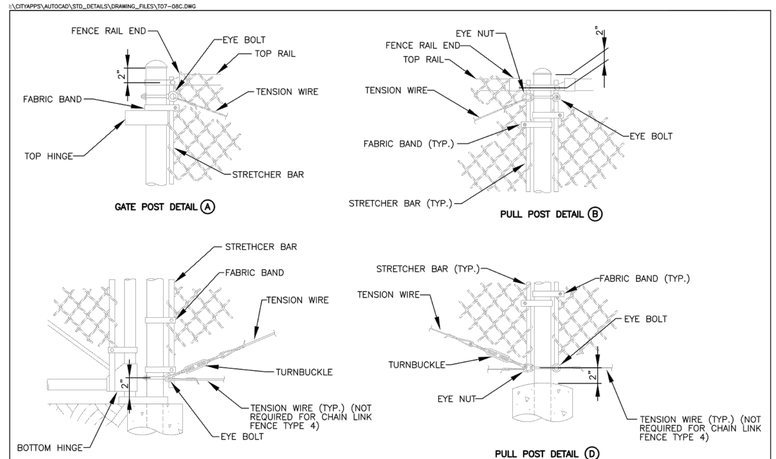
CHAIN LINK DOUBLE GATE TYPES 3 AND 4

CITY OF VANCOUVER
DEPARTMENT OF PUBLIC WORKS
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	[illegible]	3/16
REVISION	APPROVED BY	APPROVAL DATE
3	[illegible]	3/24

STD. PLAN NO. **T07-08B**

\\CITYAPPS\AUTOCAD\STD_DETAILS\DRAWING_FILES\T07-08C.DWG



CITY OF Vancouver WASHINGTON

CHAIN LINK GATE BLOW-UP DETAILS TYPES 3 AND 4

CITY OF VANCOUVER
DEPARTMENT OF PUBLIC WORKS
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	[illegible]	3/16
REVISION	APPROVED BY	APPROVAL DATE
3	[illegible]	3/24

STD. PLAN NO. **T07-08C**

RH2

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES
CIVIL DETAILS 4

CITY OF Vancouver WASHINGTON

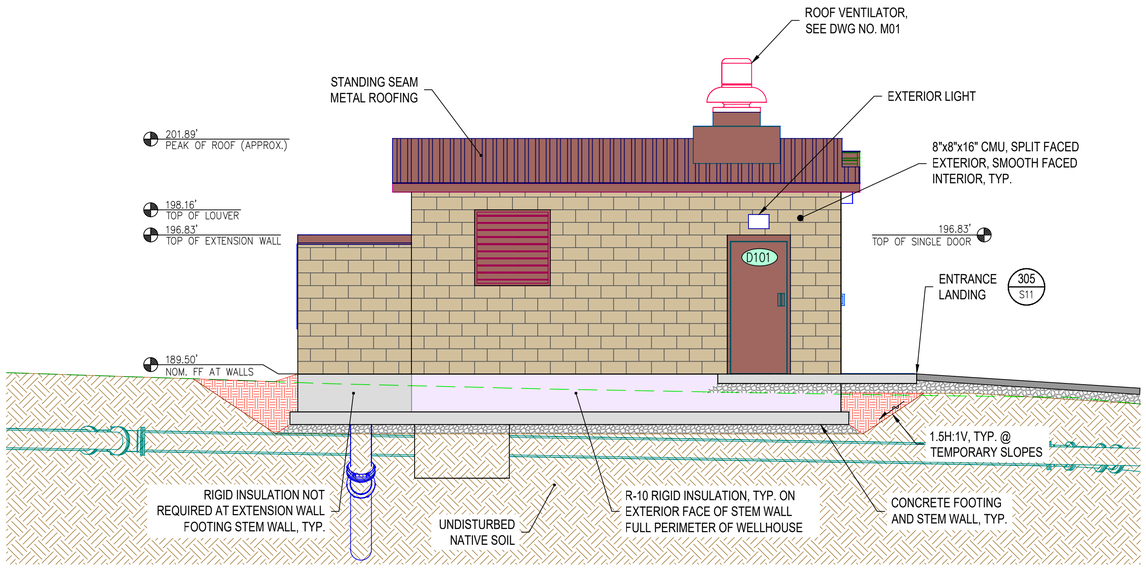
REVISIONS			
NO.	DATE	DESCRIPTION	BY
			REVIEW

JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3858-P-C_DETS.DWG
SAVE DATE: Oct 27, 2025
PLOT DATE: Nov 3, 2025
DESIGNED: JRB
REVIEWED: KMP

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

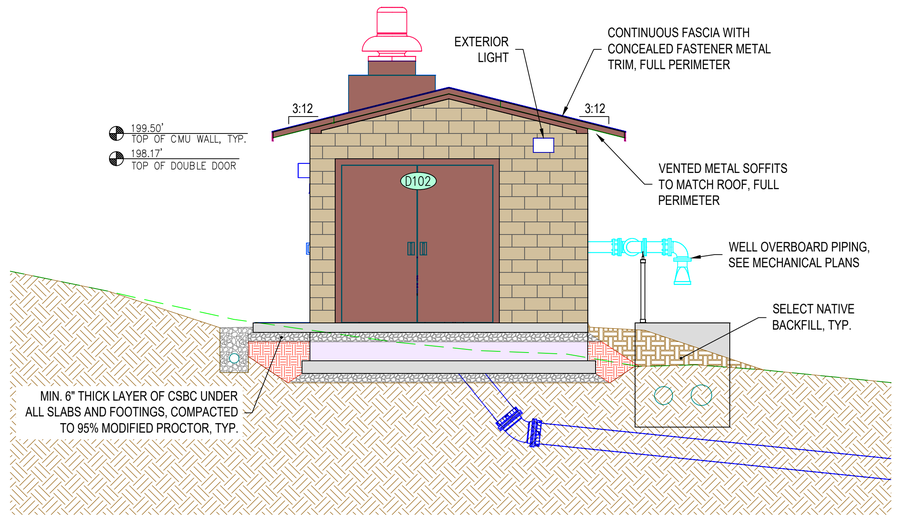
DWG NO.: C15
SHEET NO.: 17
82

(DXXX) SEE DWG NO. S02 FOR DOOR SCHEDULE



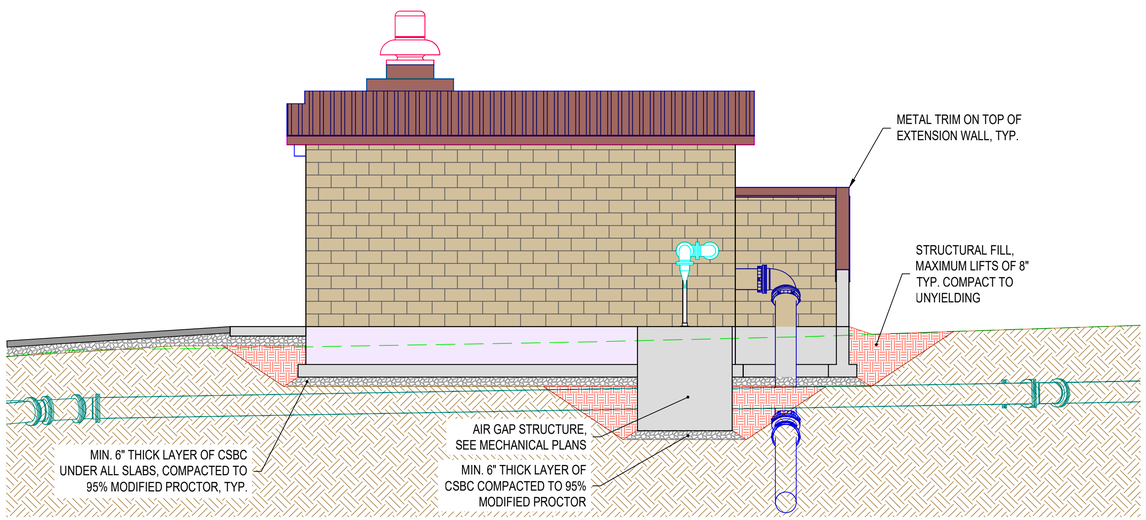
SOUTH ELEVATION

¼" = 1'–0"



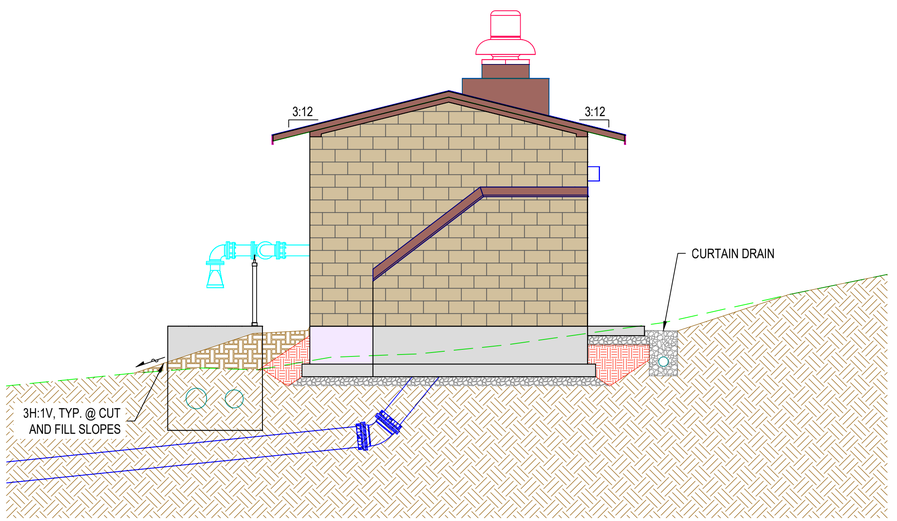
EAST ELEVATION

¼" = 1'–0"



NORTH ELEVATION

¼" = 1'–0"



WEST ELEVATION

¼" = 1'–0"

RH2

JON MARSHALL CONNER — STATE OF WASHINGTON — 44672 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CITY OF Vancouver WASHINGTON

WELL 3B EXTERIOR ELEVATIONS

JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3BSB-P-ARCH_3B.DWG
SAVE DATE: Oct 27, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: JRB
REVIEWED: KMP

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN

0" 1" 2"

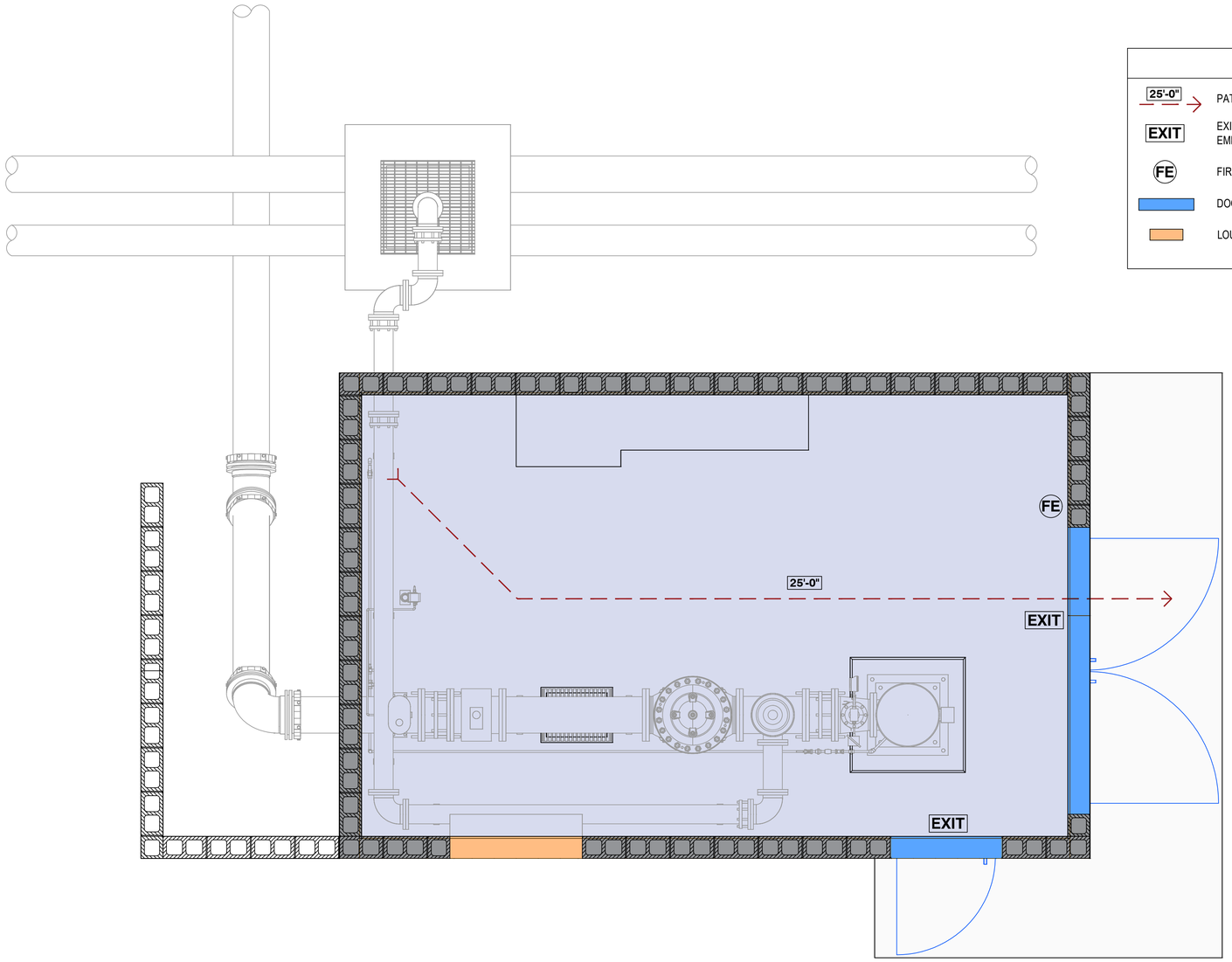
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: A01

SHEET NO.: 18

CODE SUMMARY

SECTION 1 - GOVERNING CODES	
WASHINGTON STATE BUILDING CODE, IBC 2021	
SECTION 2 - BUILDING "CONSTRUCTION" DATA	
TYPE OF CONSTRUCTION	V-B
MAXIMUM BUILDING HEIGHT	16 FT
MAXIMUM ALLOWABLE HEIGHT	55 FT
NUMBER OF STORIES	1
ALLOWABLE NUMBER OF STORIES	3
BASEMENT	NO
TOTAL FLOOR AREA PROVIDED	332 SF
SECTION 3 - BUILDING "OCCUPANCY" DATA	
BUILDING OCCUPANCY CLASSIFICATION GROUP(S)	U
OCCUPANCY CLASSIFICATION GROUP BY FLOOR	U
OCCUPANCY CLASSIFICATION GROUP BY ROOM	U
ACCESSORY OR INCIDENTAL USE AREAS	NONE
TOTAL OCCUPANT LOAD BY FLOOR	3
TOTAL OCCUPANT LOAD FOR EACH ROOM	3
TOTAL OCCUPANT LOAD FOR EACH OCCUPANCY GROUP	N/A
SECTION 4 - BUILDING AREA DATA "ACTUAL" AND "ALLOWABLE"	
ACTUAL BUILDING AREA	250 SF
ALLOWABLE BASE AREA	5,500 SF
SECTION 5 - "FIRE RESISTIVE" BUILDING ELEMENTS	
SEPARATION OF OCCUPANCIES	N/A
SECTION 6 - BUILDING "EXITING"	
MAXIMUM FLOOR AREA ALLOWANCE PER OCCUPANT	300 SF
EXITS REQUIRED FOR EACH ROOM	1
EXITS PROVIDED FOR EACH ROOM	2
MINIMUM EXIT WIDTH	36 IN
EXIT TRAVEL DISTANCE	20 FT
EMERGENCY EXIT ILLUMINATION	EMERGENCY LIGHT WITH BATTERY
EXIT SIGN LAYOUT	N/A
SECTION 7 - BUILDING "FIRE DETECTION AND SUPPRESSION"	
SMOKE DETECTION/FIRE ALARM SYSTEM REQUIRED	NO
SMOKE DETECTION/FIRE ALARM SYSTEM PROVIDED	YES
TYPE OF SYSTEM	PHOTOELECTRIC SMOKE DETECTOR WITH LOCAL AND AUDIBLE ALARM, CONNECTED TO SCADA SYSTEM FOR REMOTE MONITORING.
AREAS PROTECTED	ALL ROOMS
SPRINKLER SYSTEM REQUIRED	NO
STANDPIPE SYSTEM REQUIRED	NO
NUMBER OF FIRE DEPARTMENT VEHICLE ACCESS	1
FIRE EXTINGUISHER LOCATIONS	AT PRIMARY EXIT
SECTION 8 - OCCUPANCY VENTILATION REQUIREMENTS	
APPROXIMATELY 7 ACPH (OR 1 CFM/SF OF FLOOR AREA) VENTILATION PROVIDED	
SECTION 9 - ENERGY CODE REQUIREMENTS	
CONDITIONED SPACE	
LIGHTING LAYOUT	SEE DWG NO. E15
SECTION 10 - HAZARDOUS MATERIALS	
HAZARDOUS MATERIALS PRESENT	NO
SECTION 11 - ACCESSIBILITY	
FACILITY IS FOR EQUIPMENT ACCESS ONLY AND DOES NOT REQUIRE ACCESSIBILITY	
SECTION 12 - PLUMBING FIXTURE COUNT REQUIREMENTS	
NOT APPLICABLE – NOT CUSTOMARILY OCCUPIED	
SECTION 13 - UNDERGROUND UTILITIES	
SEE DWG NO. C05	
SECTION 14 - SPECIAL INSPECTION, STRUCTURAL OBSERVATION, AND DEFERRED SUBMITTALS	
REQUIRED SPECIAL INSPECTIONS, REQUIRED STRUCTURAL OBSERVATIONS, AND DEFERRED SUBMITTALS ARE INDICATED ON STRUCTURAL SHEETS AND WITHIN THE SPECIFICATIONS	
SECTION 15 - ROOM SPECIFIC REQUIREMENTS	
NOT APPLICABLE – NOT CUSTOMARILY OCCUPIED	



LEGEND

- 25'-0" — PATH OF EGRESS & TRAVEL DISTANCE
- EXIT — EXIT DOOR WITH EXIT DEVICE AND EMERGENCY LIGHTING
- FE — FIRE EXTINGUISHER
- DOOR
- LOUVER

WELL 3B - FIRE AND LIFE SAFETY PLAN

½" = 1'-0"

RH2

JON MARSHALL CONNER — STATE OF WASHINGTON — 44672 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

WELL 3B CODE SUMMARY AND FIRE & LIFE SAFETY PLAN

CITY OF Vancouver WASHINGTON

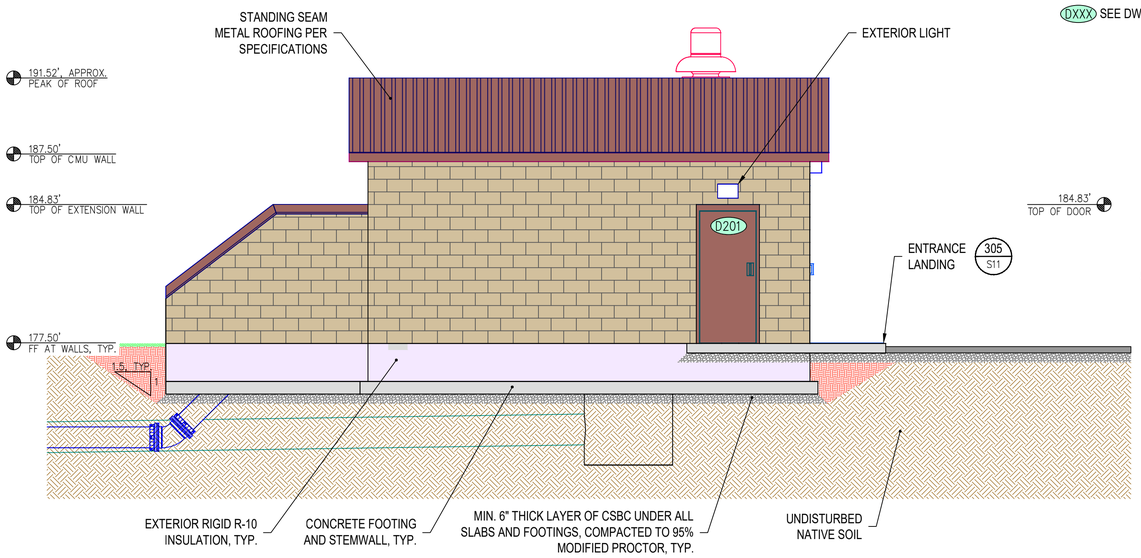
ENGINEER: JRB
REVIEWED: KMP
SAVE DATE: Oct 27, 2025
PLOT DATE: Nov 3, 2025
CLIENT: VAN
FILENAME: 3B&B-P-CODE_3B.DWG
JOB NO.: 21-0199

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

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

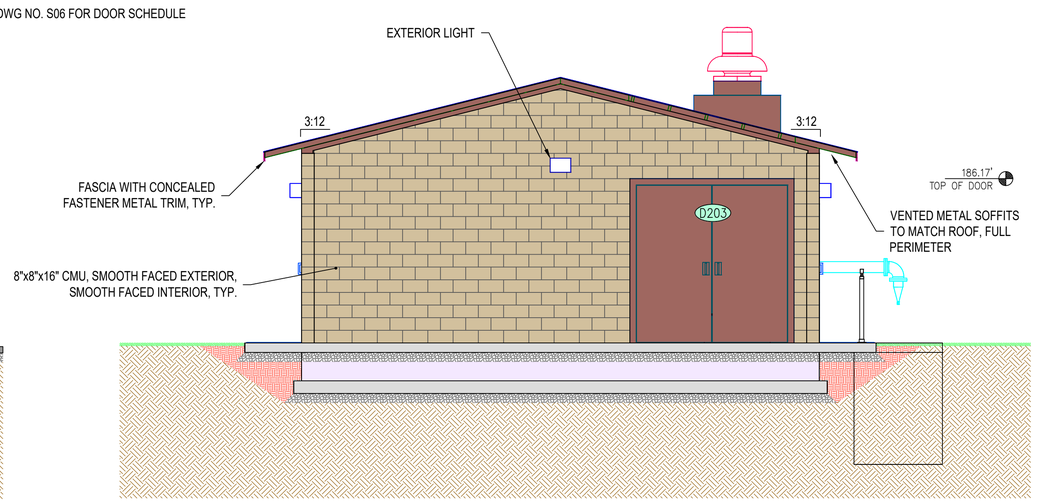
DWG NO.: A02
SHEET NO.: 19
82



EAST ELEVATION

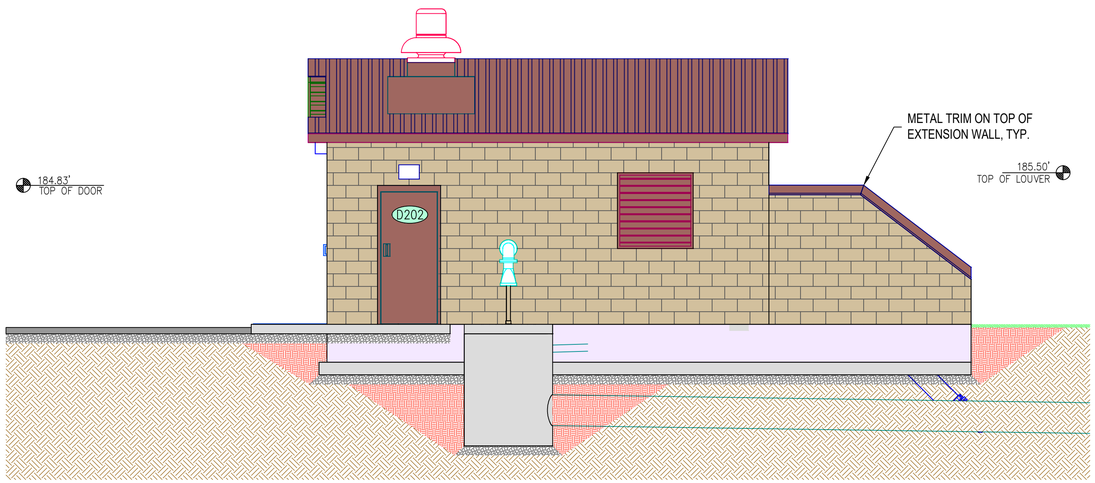
¼" = 1'-0"

DXXX SEE DWG NO. S06 FOR DOOR SCHEDULE



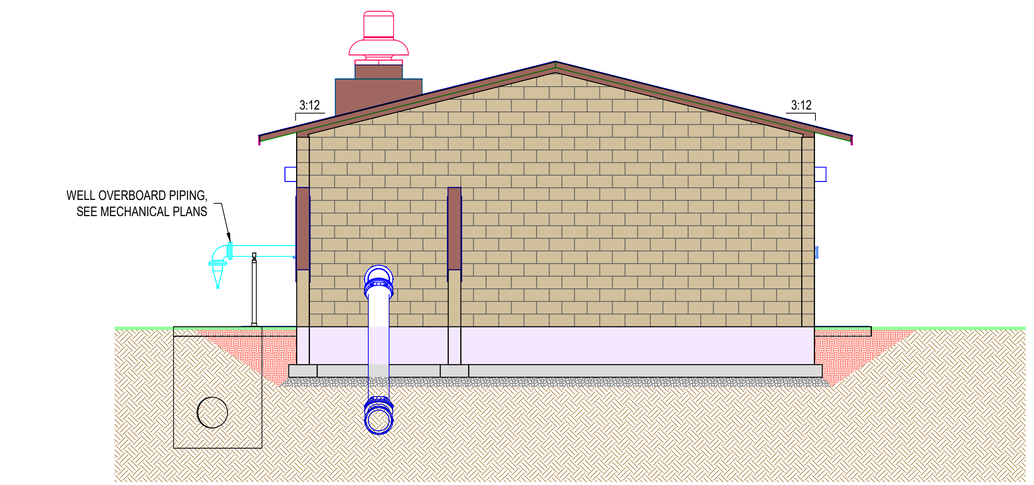
NORTH ELEVATION

¼" = 1'-0"



WEST ELEVATION

¼" = 1'-0"



SOUTH ELEVATION

¼" = 1'-0"

RH2

JON MARSHALL CONNER
STATE OF WASHINGTON
44672
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

WELL 5B EXTERIOR ELEVATIONS

JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3B5B-P-ARCH_5B.DWG
SAVE DATE: Oct 27, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: JRB
REVIEWED: KMP

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN

0" 1" 2"

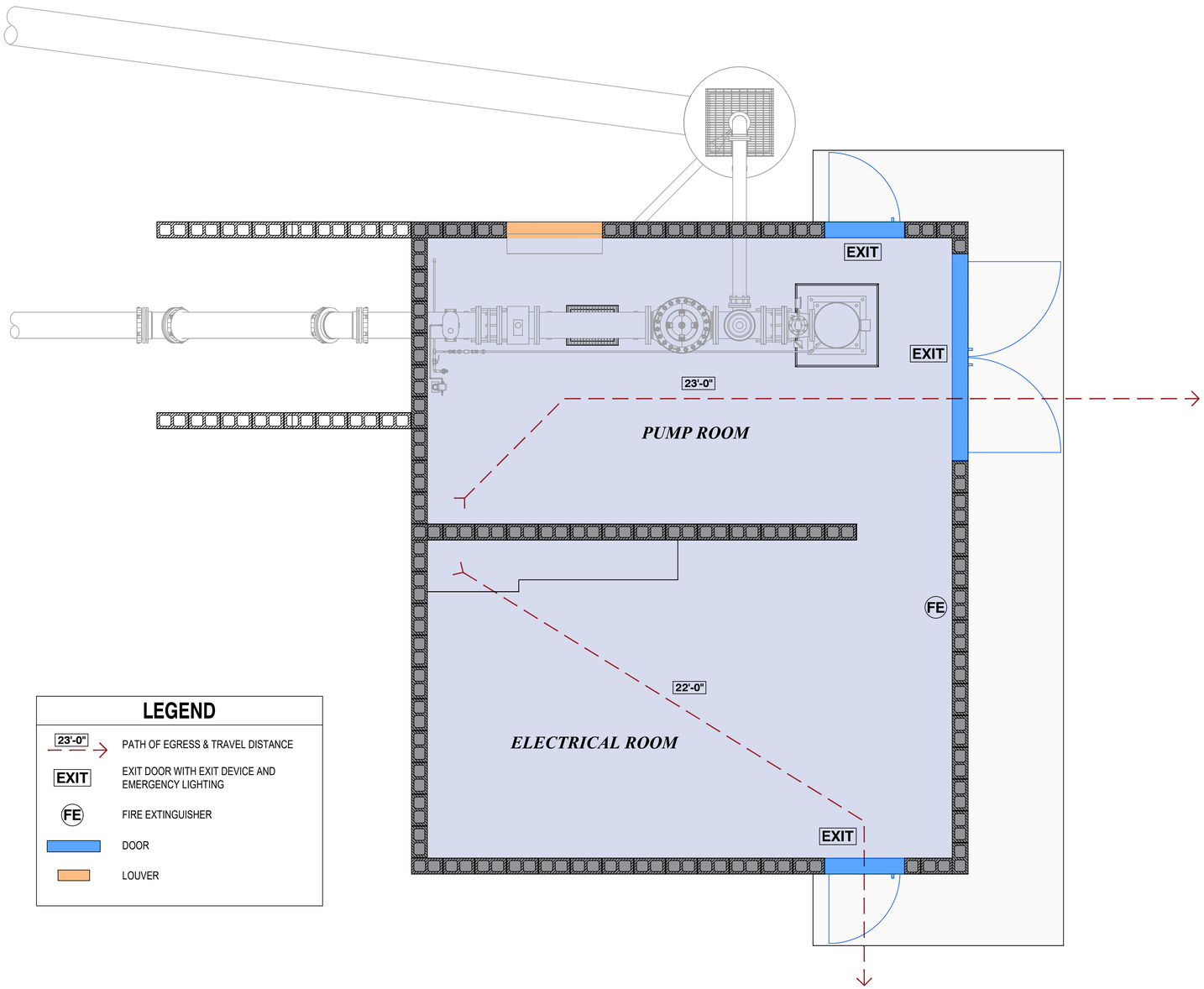
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: A03

SHEET NO.: 20 82

CODE SUMMARY

SECTION 1 - GOVERNING CODES	
WASHINGTON STATE BUILDING CODE, IBC 2021	
SECTION 2 - BUILDING "CONSTRUCTION" DATA	
TYPE OF CONSTRUCTION	V-B
MAXIMUM BUILDING HEIGHT	16 FT
MAXIMUM ALLOWABLE HEIGHT	55 FT
NUMBER OF STORIES	1
ALLOWABLE NUMBER OF STORIES	3
BASEMENT	NO
TOTAL FLOOR AREA PROVIDED	638 SF
SECTION 3 - BUILDING "OCCUPANCY" DATA	
BUILDING OCCUPANCY CLASSIFICATION GROUP(S)	U
OCCUPANCY CLASSIFICATION GROUP BY FLOOR	U
OCCUPANCY CLASSIFICATION GROUP BY ROOM	U
ACCESSORY OR INCIDENTAL USE AREAS	NONE
TOTAL OCCUPANT LOAD BY FLOOR	3
TOTAL OCCUPANT LOAD FOR EACH ROOM	3
TOTAL OCCUPANT LOAD FOR EACH OCCUPANCY GROUP	N/A
SECTION 4 - BUILDING AREA DATA "ACTUAL" AND "ALLOWABLE"	
ACTUAL BUILDING AREA	638 SF
ALLOWABLE BASE AREA	5,500 SF
SECTION 5 - "FIRE RESISTIVE" BUILDING ELEMENTS	
SEPARATION OF OCCUPANCIES	N/A
SECTION 6 - BUILDING "EXITING"	
MAXIMUM FLOOR AREA ALLOWANCE PER OCCUPANT	300 SF
EXITS REQUIRED FOR EACH ROOM	1
EXITS PROVIDED FOR EACH ROOM	2
MINIMUM EXIT WIDTH	36 IN
EXIT TRAVEL DISTANCE	23 FT
EMERGENCY EXIT ILLUMINATION	EMERGENCY LIGHT WITH BATTERY
EXIT SIGN LAYOUT	N/A
SECTION 7 - BUILDING "FIRE DETECTION AND SUPPRESSION"	
SMOKE DETECTION/FIRE ALARM SYSTEM REQUIRED	NO
SMOKE DETECTION/FIRE ALARM SYSTEM PROVIDED	YES
TYPE OF SYSTEM	PHOTOELECTRIC SMOKE DETECTOR WITH LOCAL AND AUDIBLE ALARM, CONNECTED TO SCADA SYSTEM FOR REMOTE MONITORING.
AREAS PROTECTED	ALL ROOMS
SPRINKLER SYSTEM REQUIRED	NO
STANDPIPE SYSTEM REQUIRED	NO
NUMBER OF FIRE DEPARTMENT VEHICLE ACCESS	1
FIRE EXTINGUISHER LOCATIONS	AT PRIMARY EXIT
SECTION 8 - OCCUPANCY VENTILATION REQUIREMENTS	
APPROXIMATELY 7 ACPH (OR 1 CFM/SF OF FLOOR AREA) VENTILATION PROVIDED	
SECTION 9 - ENERGY CODE REQUIREMENTS	
CONDITIONED SPACE	
LIGHTING LAYOUT	SEE DWG NO. E17
SECTION 10 - HAZARDOUS MATERIALS	
HAZARDOUS MATERIALS PRESENT	NO
SECTION 11 - ACCESSIBILITY	
FACILITY IS FOR EQUIPMENT ACCESS ONLY AND DOES NOT REQUIRE ACCESSIBILITY	
SECTION 12 - PLUMBING FIXTURE COUNT REQUIREMENTS	
NOT APPLICABLE – NOT CUSTOMARILY OCCUPIED	
SECTION 13 - UNDERGROUND UTILITIES	
SEE DWG NO. C09	
SECTION 14 - SPECIAL INSPECTION, STRUCTURAL OBSERVATION, AND DEFERRED SUBMITTALS	
REQUIRED SPECIAL INSPECTIONS, REQUIRED STRUCTURAL OBSERVATIONS, AND DEFERRED SUBMITTALS ARE INDICATED ON STRUCTURAL SHEETS AND WITHIN THE SPECIFICATIONS	
SECTION 15 - ROOM SPECIFIC REQUIREMENTS	
NOT APPLICABLE – NOT CUSTOMARILY OCCUPIED	



LEGEND

23'-0"	PATH OF EGRESS & TRAVEL DISTANCE
EXIT	EXIT DOOR WITH EXIT DEVICE AND EMERGENCY LIGHTING
FE	FIRE EXTINGUISHER
	DOOR
	LOUVER

WELL 5B - FIRE AND LIFE SAFETY PLAN

3/8" = 1'-0"

RH2

JON MARSHALL CONNER
STATE OF WASHINGTON
44672
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

WELL 5B CODE SUMMARY AND FIRE & LIFE SAFETY PLAN

CITY OF Vancouver WASHINGTON

JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3B5B-P-CODE_5B.DWG
SAVE DATE: Oct 27, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: JRB
REVIEWED: KMP

REVISIONS

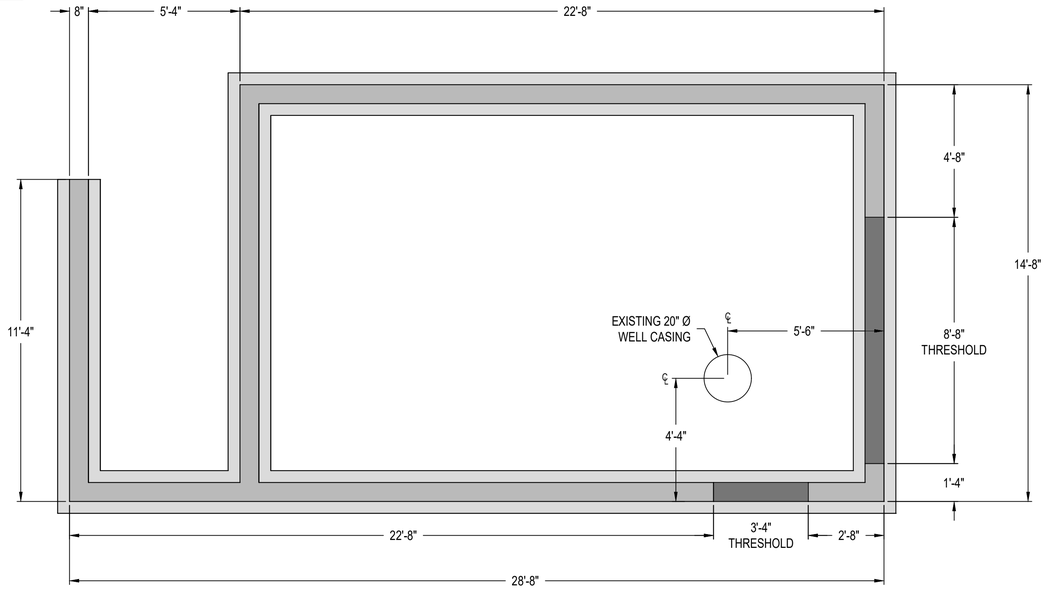
NO.	DATE	DESCRIPTION	BY	REVIEW

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

DWG NO.: A04
SHEET NO.: 21
82

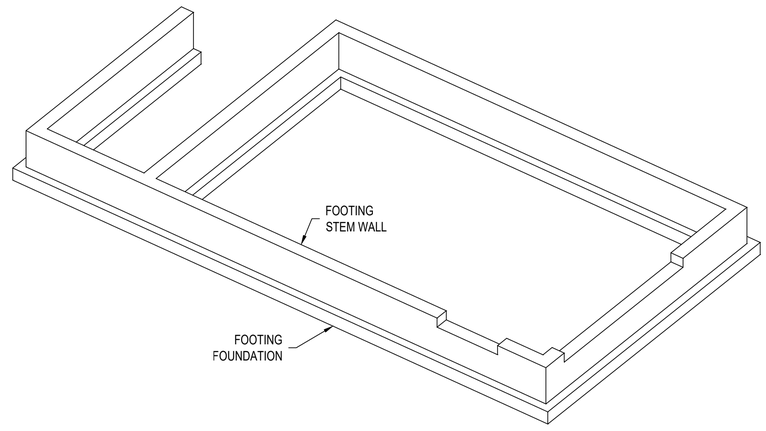
LEGEND

- SPREAD FOOTING
- STEM WALL
- DOOR THRESHOLD



WELL 3B - FOUNDATION PLAN

3/8" = 1'-0"



FOUNDATION OBLIQUE

NOT TO SCALE

RH2

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SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

WELL 3B FOUNDATION PLAN

CITY OF Vancouver WASHINGTON

JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3B5B-P-STRC_3B.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: JRB
REVIEWED: KMP

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

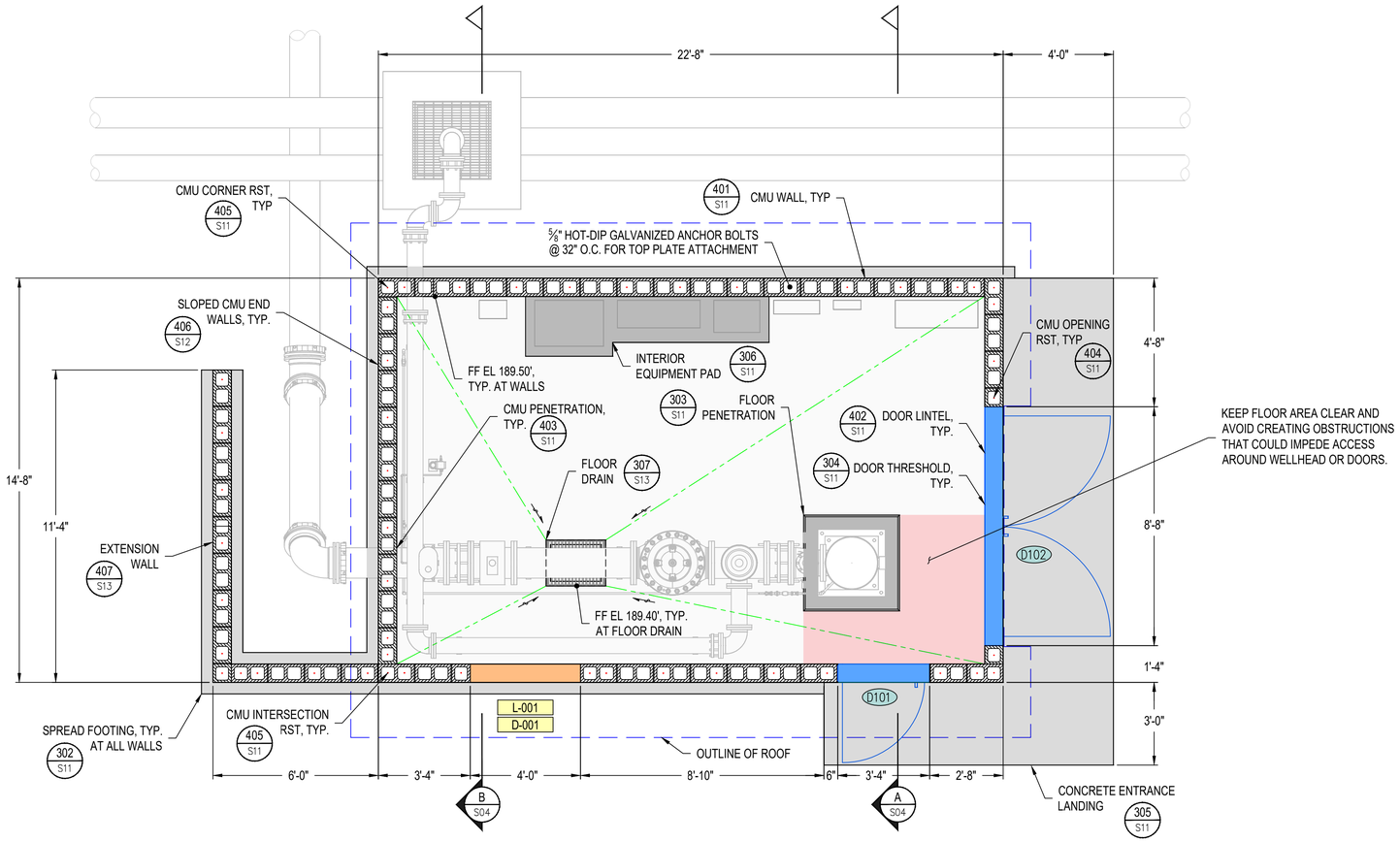
SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

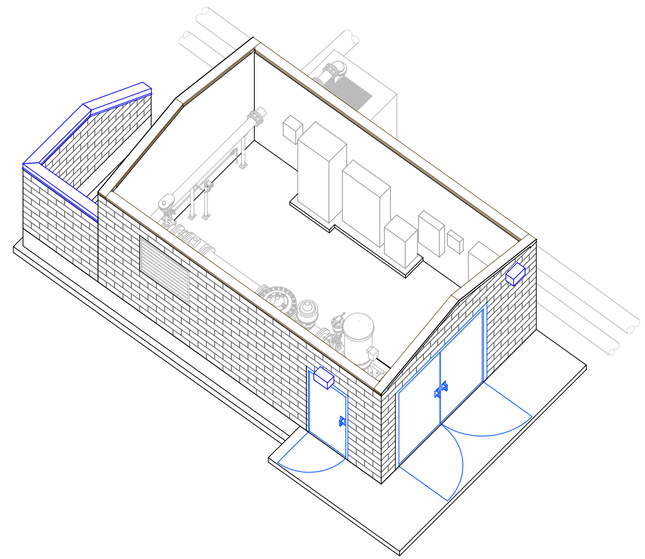
DWG NO.: S01

SHEET NO.: 22



WELL 3B - FLOOR PLAN

⅜" = 1'-0"



WALL AND FLOOR OBLIQUE

NOT TO SCALE

NOTES:

1) SEE MECHANICAL, PLUMBING, AND ELECTRICAL PLANS FOR ADDITIONAL UNDER/IN SLAB PIPING AND CONDUIT.

2) SEE 300 S09 FOR GENERAL STRUCTURAL NOTES.

3) SEE MECHANICAL DRAWINGS FOR PIPE AND OTHER PENETRATION LOCATIONS.

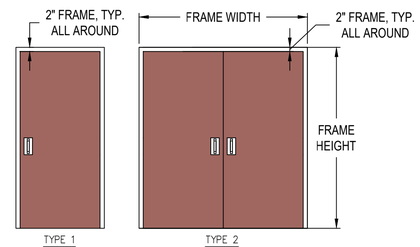
LEGEND

- SPREAD FOOTING
- ENTRANCE LANDING
- EQUIPMENT PAD
- PUMP PAD
- DOOR
- LOUVER
- ROOF OUTLINE
- FLOOR VALLEY
- CMU BLOCK

DOOR AND FRAME SCHEDULE

DOOR NO.	TYPE	DOOR					FRAME			NOTES
		SIZE		MATERIAL	LOUVER		SIZE		MATERIAL	
		WIDTH	HEIGHT		WIDTH	HEIGHT	WIDTH	HEIGHT		
D101	1	3'-0"	7'-2"	STEEL	--	--	3'-4"	7'-4"	STEEL	--
D102	2	8'-0"	8'-4"	STEEL	--	--	8'-8"	8'-8"	STEEL	--

NOTES:
1. PROVIDE PANIC HARDWARE ON ALL EXTERIOR DOORS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.



RH2

JON MARSHALL CONNER
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PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

WELL 3B FLOOR PLAN

CITY OF Vancouver WASHINGTON

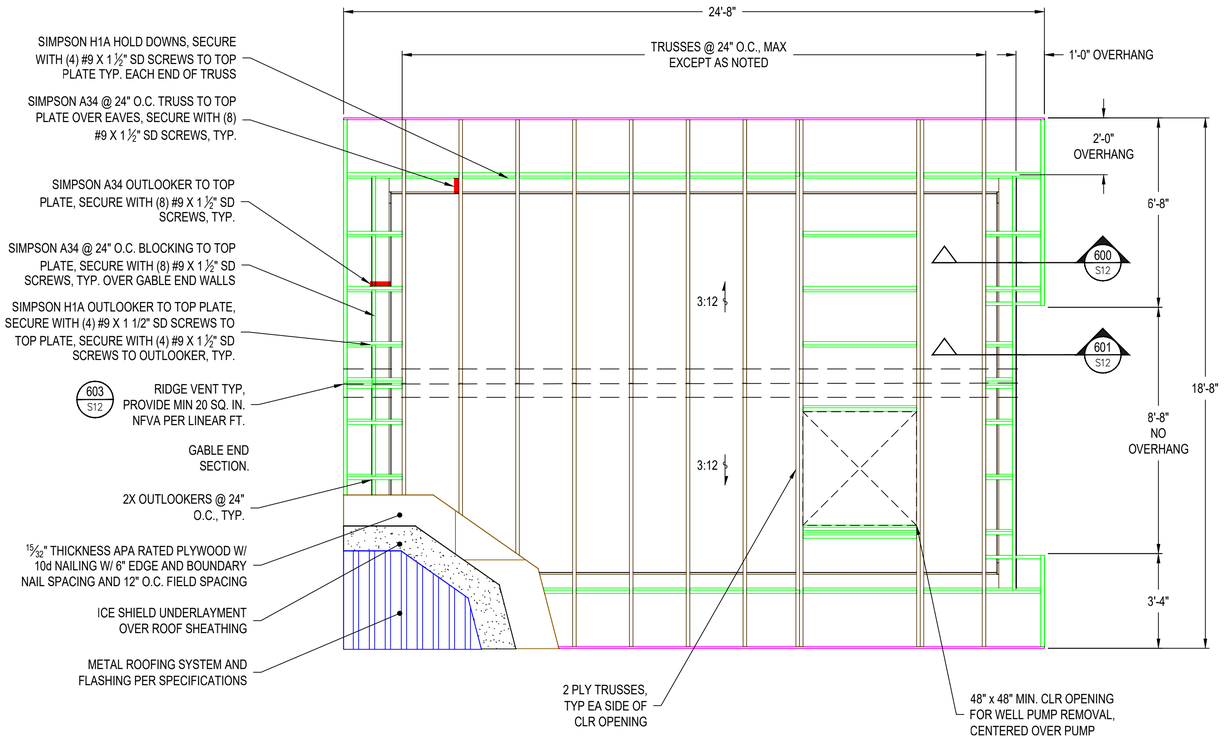
JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3B5B-P-STRC_3B.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: JRB
REVIEWED: KMP

REVISIONS

NO.	DESCRIPTION	DATE	BY	REVIEW

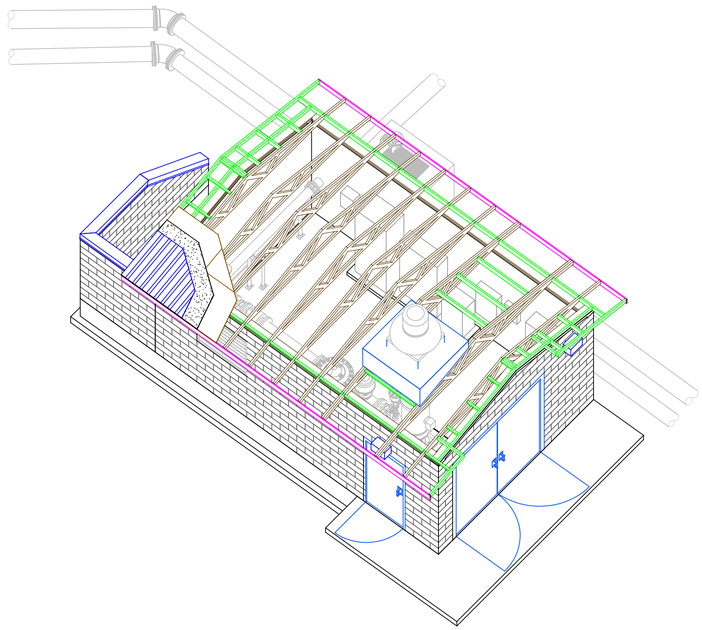
SCALE: SHOWN
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: S02
SHEET NO.: 23



WELL 3B - ROOF PLAN

⅜" = 1'-0"



ROOF FRAMING OBLIQUE

NOT TO SCALE

TRUSS NOTES:

TRUSS PLANS AND SPECS NEED TO BE ON SITE FOR INSPECTION

PREFABRICATED CONNECTOR PLATE WOOD ROOF TRUSSES AND OTHER FRAMING SHALL BE DESIGNED BY T HE MANUFACTURER IN ACCORDANCE WITH ANSI/TPI 1-2014 FOR THE SPANS AND CONDITIONS SHOWN ON THE DRAWINGS.

LOADING SHALL BE AS FOLLOWS:

ROOF DEAD LOAD

TOTAL DEAD LOAD = 12 PSF, INCLUDES:

ROOFING: 1.5 PSF

SHEATHING: 2.0 PSF

TRUSSES: 2.0 PSF

INSULATION: 0.5 PSF

(1) LAYER OF PAINTED EXTERIOR GRADE PLYWOOD: 3.0 PSF

MISCELLANEOUS MECHANICAL: 3.0 PSF

SNOW LOADS , WIND, SEISMIC LOADING SHOWN PAGE S09

MAX BOTTOM CHORD DEFLECTION: L/360

ALL METAL IN CONTACT WITH TREATED WOOD SHALL BE APPROVED FOR THAT USE.

ALL FASTENERS INTO TREATED WOOD SHALL BE HOT-DIP GALVANIZED

RH2

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SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

WELL 3B ROOF PLAN

CITY OF Vancouver WASHINGTON

JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3B5B-P-STRC_3B.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: JRB
REVIEWED: KMP

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

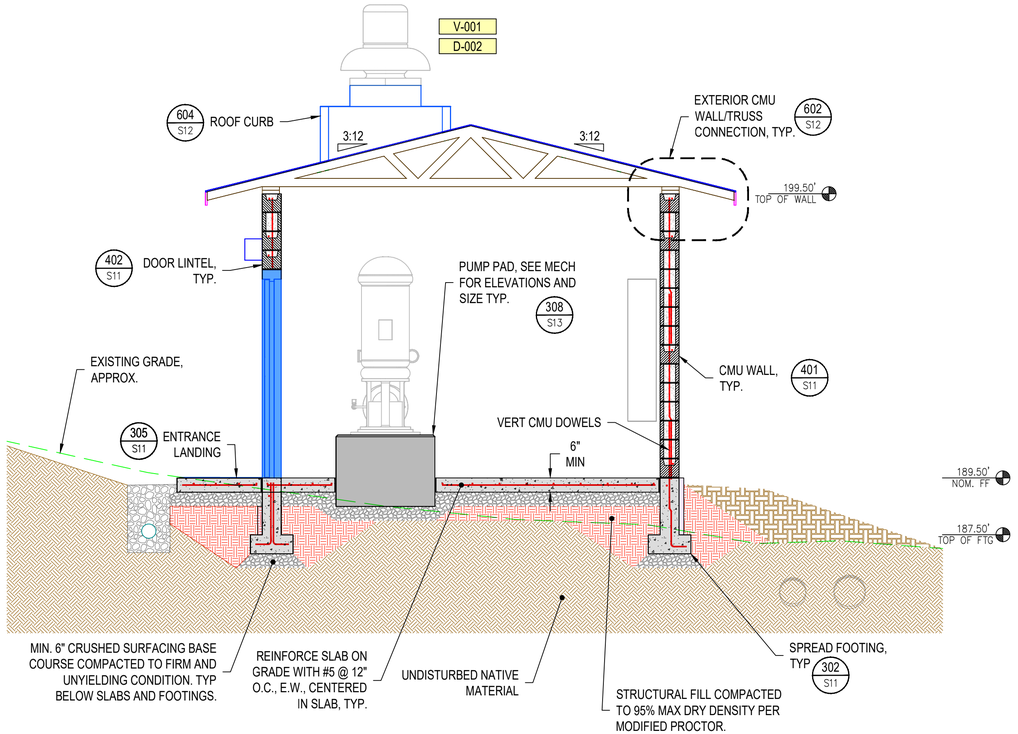
SCALE: SHOWN

0" 1" 2"

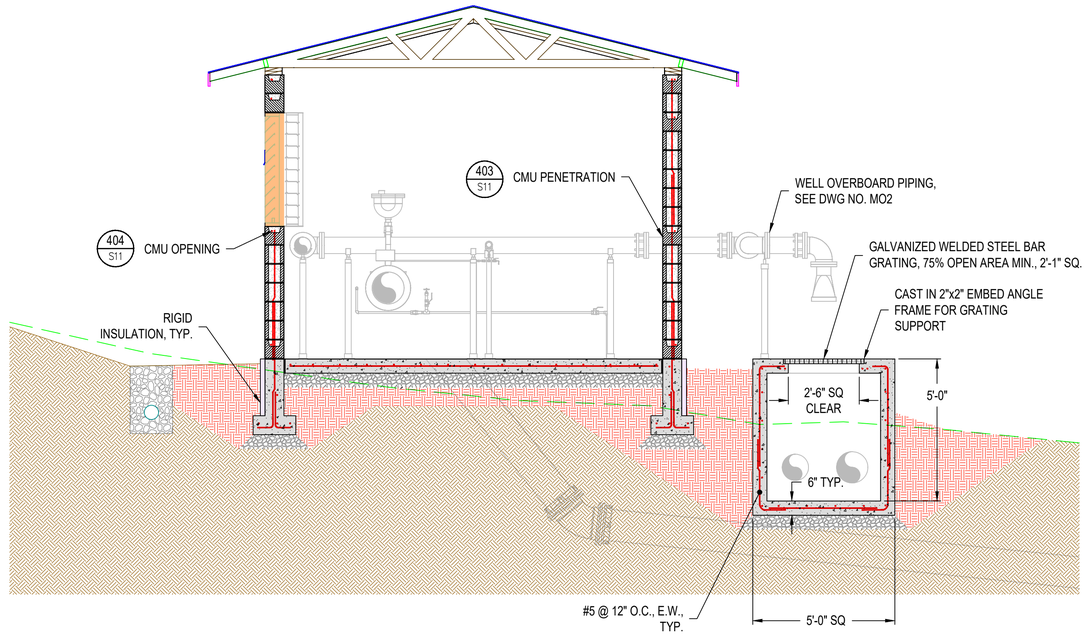
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: S03

SHEET NO.: 24



SECTION A S02
3/8" = 1'-0"



SECTION B S02
3/8" = 1'-0"

RH2

JON MARSHALL CONNER — STATE OF WASHINGTON — 44672 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

WELL 3B STRUCTURAL SECTIONS

CITY OF Vancouver WASHINGTON

JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3BSB-P-STRC_3B.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: JRB
REVIEWED: KMP

REVISIONS

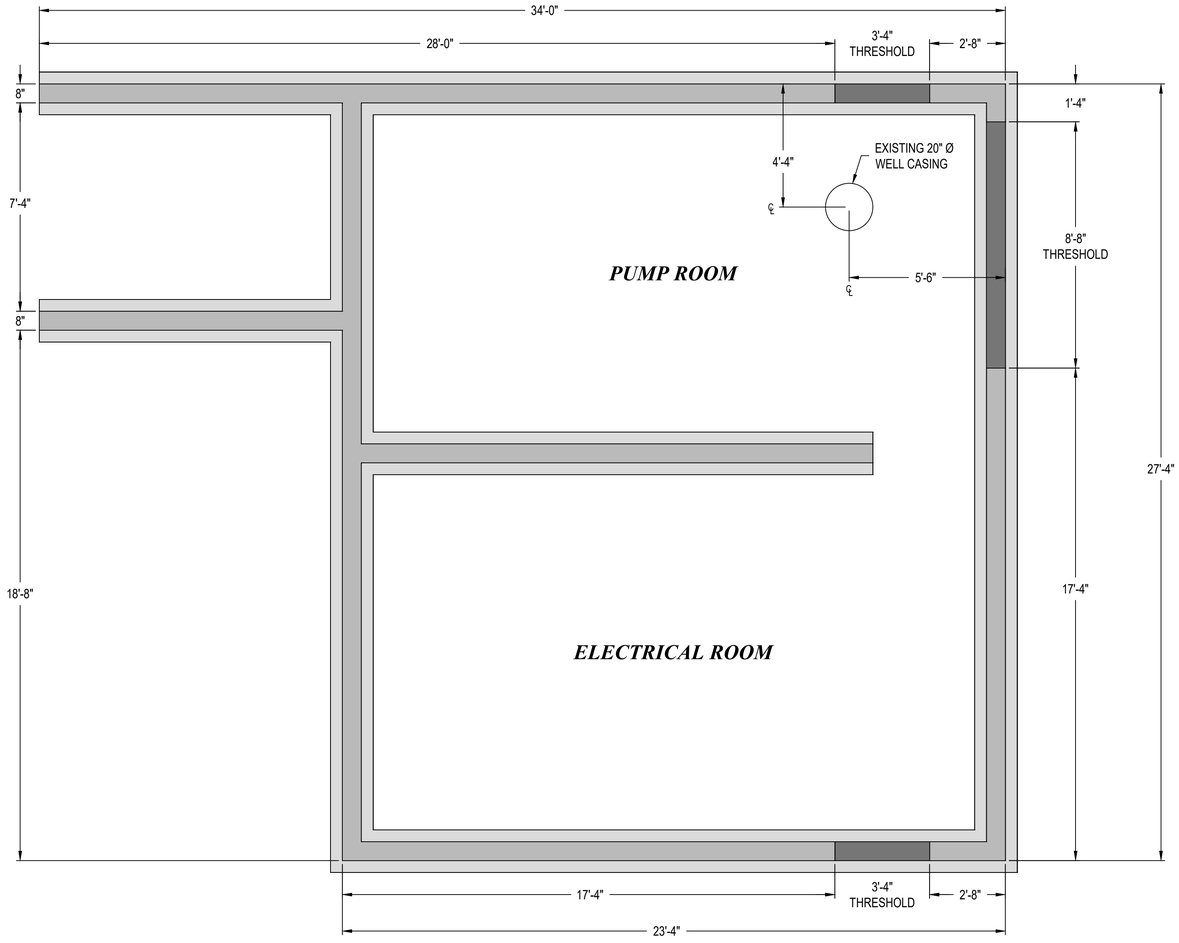
NO.	DATE	DESCRIPTION	BY	REVIEW

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

DWG NO.: S04
SHEET NO.: 25
82

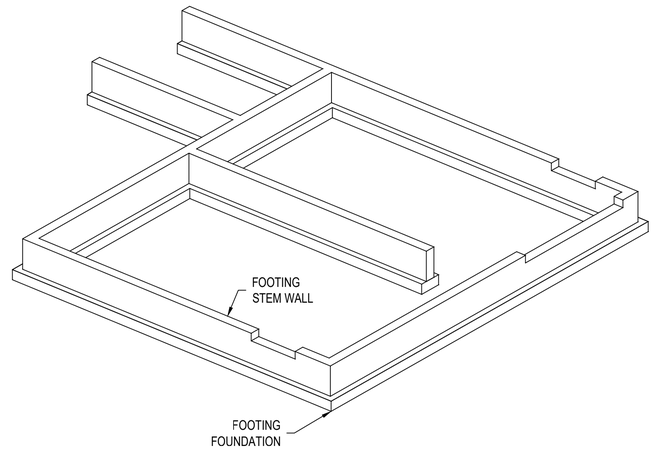
LEGEND

- SPREAD FOOTING
- STEM WALL
- DOOR THRESHOLD



WELL 5B - FOUNDATION PLAN

3/8" = 1'-0"



FOUNDATION OBLIQUE

NOT TO SCALE

RH2

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STATE OF WASHINGTON
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PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CITY OF Vancouver WASHINGTON

WELL 5B FOUNDATION PLAN

JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3B5B-P-STRC_5B.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: JRB
REVIEWED: KMP

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

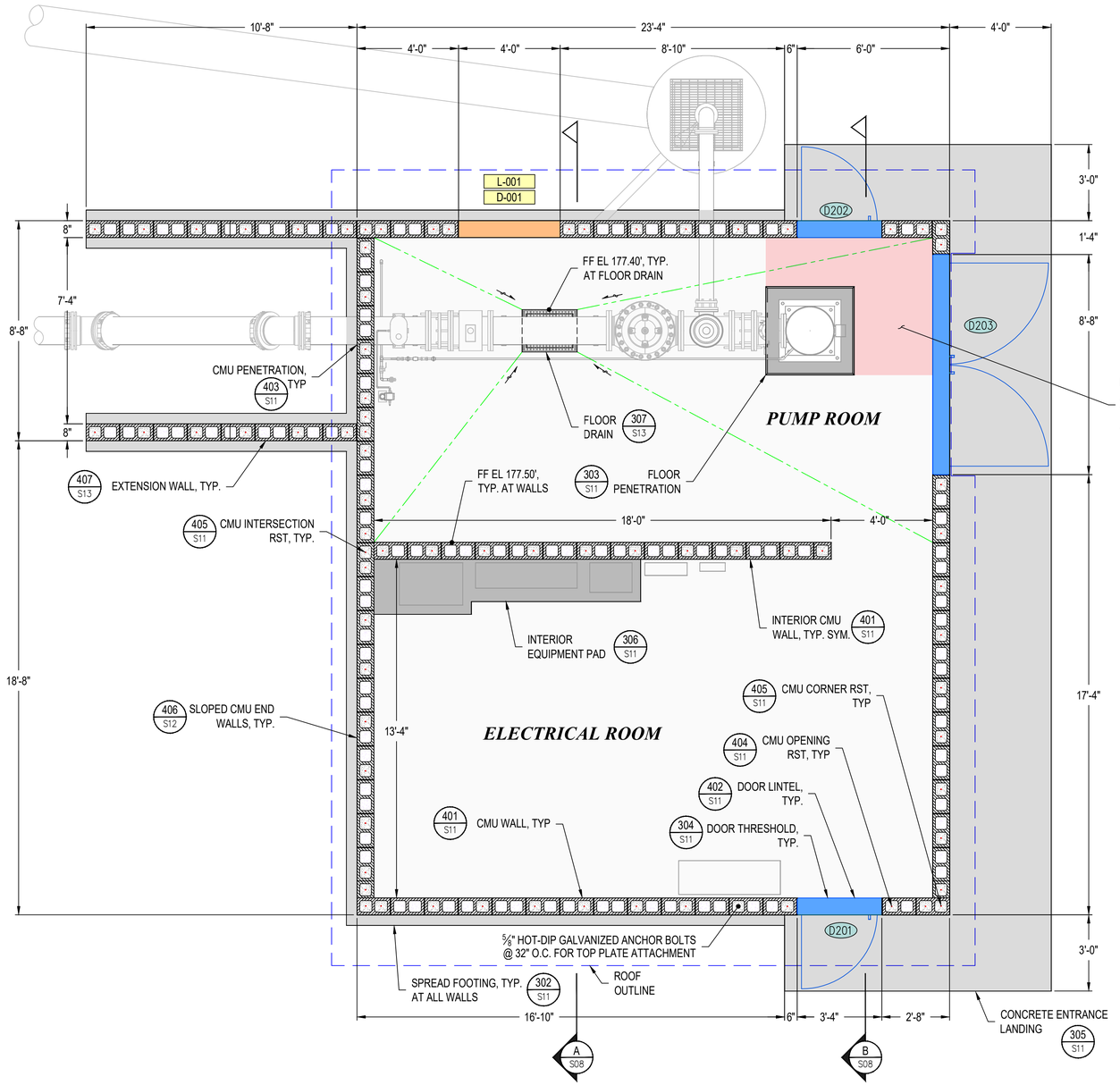
SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: S05

SHEET NO.: 26



KEEP FLOOR AREA CLEAR AND AVOID CREATING OBSTRUCTIONS THAT COULD IMPEDE ACCESS AROUND WELLHEAD OR DOORS.

WELL 5B - FLOOR PLAN

3/8" = 1'-0"

LEGEND

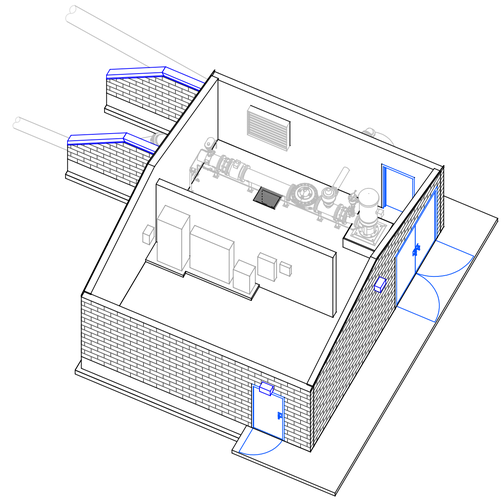
- SPREAD FOOTING
- ENTRANCE LANDING
- EQUIPMENT PAD
- PUMP PAD
- DOOR
- LOUVER
- ROOF OUTLINE
- FLOOR VALLEY
- CMU BLOCK

NOTES:

1) SEE MECHANICAL, PLUMBING, AND ELECTRICAL PLANS FOR ADDITIONAL UNDER/IN SLAB PIPING AND CONDUIT.

2) SEE NOTES. 300 S09 FOR GENERAL STRUCTURAL

3) SEE MECHANICAL DRAWINGS FOR PIPE AND OTHER PENETRATION LOCATIONS.



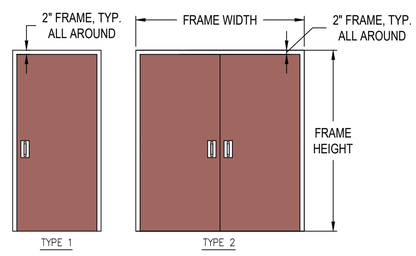
WALL AND FLOOR OBLIQUE

NOT TO SCALE

DOOR AND FRAME SCHEDULE

DOOR NO.	TYPE	DOOR					FRAME			NOTES
		SIZE		MATERIAL	LOUVER		SIZE		MATERIAL	
		WIDTH	HEIGHT		WIDTH	HEIGHT	WIDTH	HEIGHT		
D201	1	3'-0"	7'-2"	STEEL	--	--	3'-4"	7'-4"	STEEL	--
D202	1	3'-0"	7'-2"	STEEL	--	--	3'-4"	7'-4"	STEEL	--
D203	2	8'-0"	8'-4"	STEEL	--	--	8'-8"	8'-8"	STEEL	--

NOTES:
1. PROVIDE PANIC HARDWARE ON ALL EXTERIOR DOORS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.



RH2

JON MARSHALL CONNER
STATE OF WASHINGTON
44672
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

WELL 5B FLOOR PLAN

CITY OF Vancouver WASHINGTON

JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3B5B-P-STRC_5B.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: JRB
REVIEWED: KMP

REVISIONS

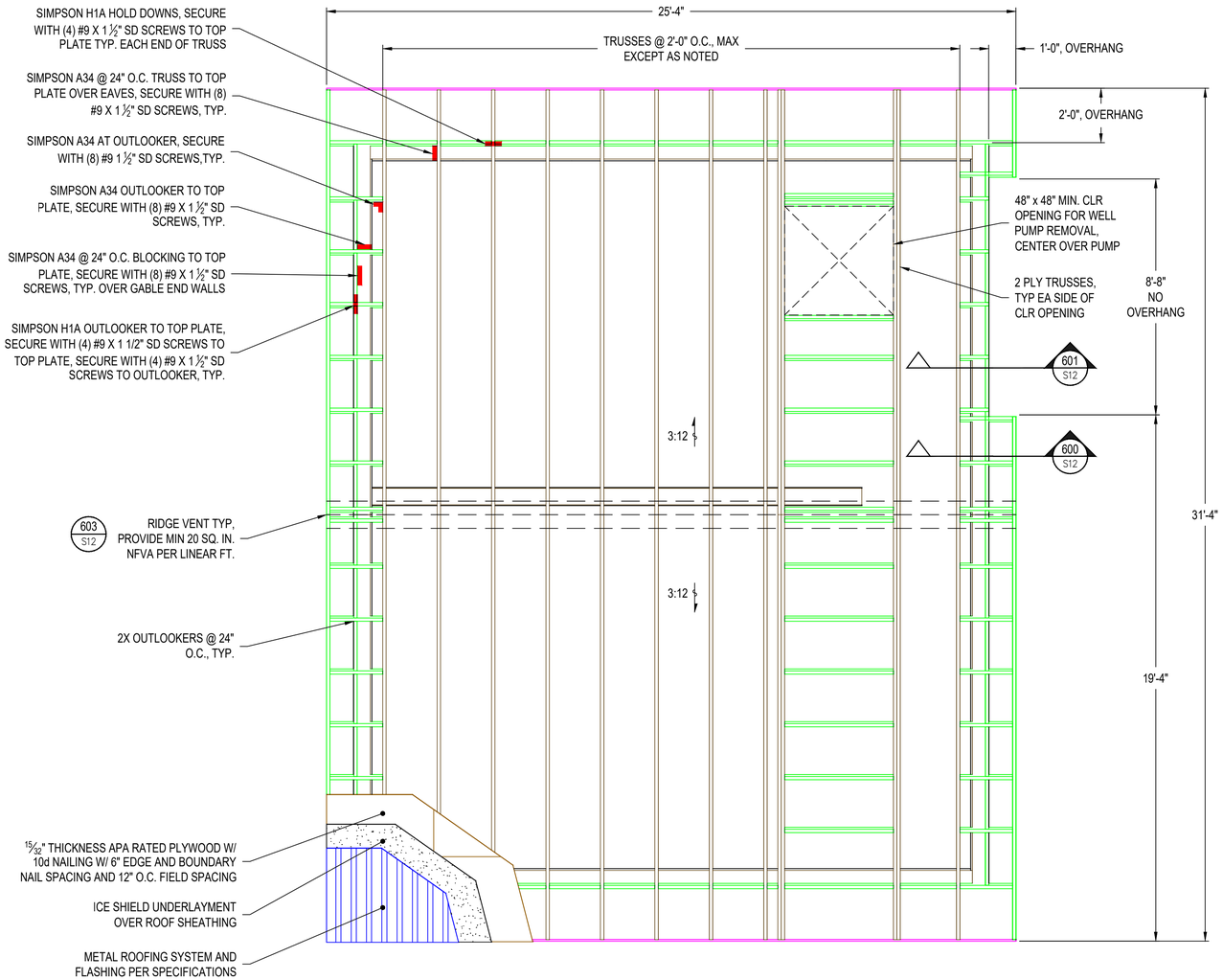
NO.	DESCRIPTION	DATE	BY	REVIEW

SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: S06
SHEET NO.: 27
82



WELL 5B - ROOF PLAN

3/8" = 1'-0"

TRUSS NOTES:

TRUSS PLANS AND SPECS NEED TO BE ON SITE FOR INSPECTION

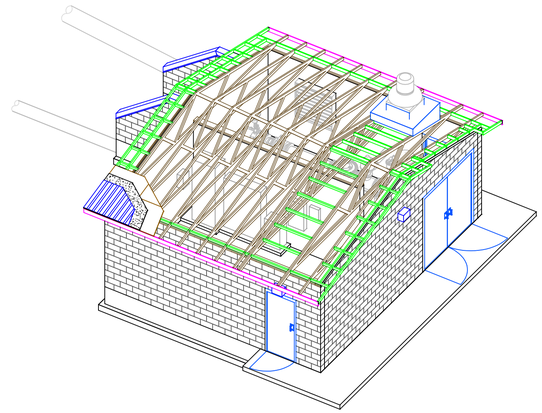
PREFABRICATED CONNECTOR PLATE WOOD ROOF TRUSSES AND OTHER FRAMING SHALL BE DESIGNED BY T HE MANUFACTURER IN ACCORDANCE WITH ANSI/TPI 1-2014 FOR THE SPANS AND CONDITIONS SHOWN ON THE DRAWINGS.

LOADING SHALL BE AS FOLLOWS:
- ROOF DEAD LOAD
  - TOTAL DEAD LOAD = 12 PSF, INCLUDES:
  - ROOFING: 1.5 PSF
  - SHEATHING: 2.0 PSF
  - TRUSSES: 2.0 PSF
  - INSULATION: 0.5 PSF
  - (1) LAYER OF PAINTED EXTERIOR GRADE PLYWOOD: 3.0 PSF
  - MISCELLANEOUS MECHANICAL: 3.0 PSF
- SNOW LOADS , WIND, SEISMIC LOADING SHOWN PAGE S09

MAX BOTTOM CHORD DEFLECTION: L/360

ALL METAL IN CONTACT WITH TREATED WOOD SHALL BE APPROVED FOR THAT USE.

ALL FASTENERS INTO TREATED WOOD SHALL BE HOT-DIP GALVANIZED



ROOF FRAMING OBLIQUE

NOT TO SCALE

RH2

TON MARSHALL CONNER — STATE OF WASHINGTON — 44672 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

WELL 5B ROOF PLAN

CITY OF Vancouver WASHINGTON

ENGINEER: JRB
REVIEWED: KMP
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
CLIENT: VAN
FILENAME: 3B5B-P-STRC_5B.DWG
JOB NO.: 21-0199

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

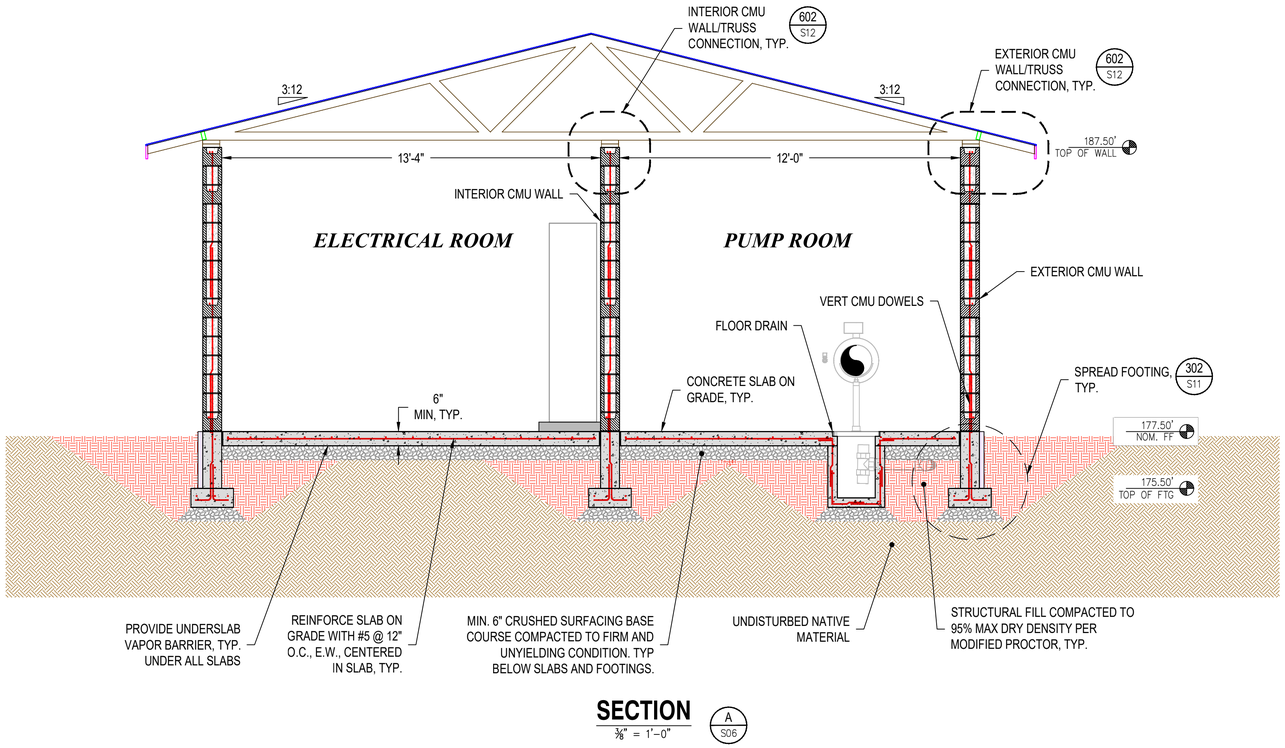
SCALE: SHOWN

0" 1" 2"

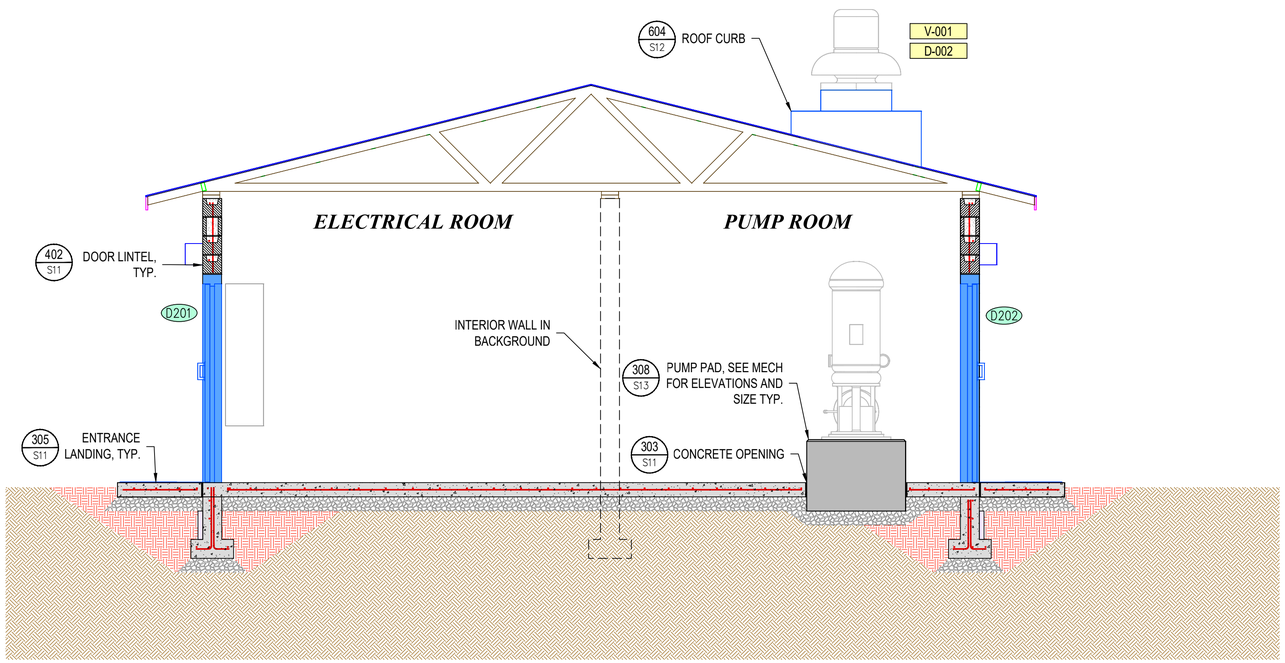
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: S07

SHEET NO.: 28 82



SECTION A S06
3/8" = 1'-0"



SECTION B S06
3/8" = 1'-0"

RH2

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STATE OF WASHINGTON
44672
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CITY OF Vancouver WASHINGTON

WELL 5B STRUCTURAL SECTIONS

NO.	DATE	DESCRIPTION
		REVIEW
		BY

REVISIONS

ENGINEER: JRB
REVIEWED: KMP
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
CLIENT: VAN
FILENAME: 3B5B-P-STRC_5B.DWG
JOB NO.: 21-0199

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

DWG NO.: S08
SHEET NO.: 29
82

GENERAL

(300 TYP.)

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.

APPLICABLE SPECIFICATIONS AND CODES
ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, ASCE 7-16 AND THE 2021 INTERNATIONAL BUILDING CODE.

GENERAL
THE CONTRACT STRUCTURAL DRAWINGS REPRESENT THE FINISHED STRUCTURE. METHODS, PROCEDURES, AND SEQUENCE OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN AND ENSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.

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.

APPLICABLE SHOP DRAWINGS AND STRUCTURAL CALCULATIONS SHALL BE STAMPED BY A PROFESSIONAL ENGINEER IN WASHINGTON STATE.

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

CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN LIVE LOAD FOR THE STRUCTURE. PROVIDE SHORING AND/OR BRACING WHERE LOADS EXCEED DESIGN CAPACITY AND WHERE STRUCTURES HAVE NOT ATTAINED DESIGN STRENGTH.

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 COMPLETED STRUCTURE.

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.

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.

DESIGN CRITERIA (BUILDING)

SITE LOCATION:

LATITUDE, LONGITUDE:	45.637694, -122.645665

LIVE LOADS:

SLAB ON GRADE	250 PSF
ROOF LIVE LOAD	25 PSF

SNOW LOAD DATA:

GROUND SNOW LOAD, pg:	25 PSF (PER CITY OF VANCOUVER)
SNOW EXPOSURE FACTOR, Ce:	1.0
SNOW IMPORTANCE FACTOR, Is:	1.0
THERMAL FACTOR, Ct:	1.2
SLOPE FACTOR, Cs:	1.0

WIND DESIGN DATA:

BASIC WIND SPEED, V	107 MPH
RISK CATEGORY	IV
WIND EXPOSURE	C
APPLICABLE INTERNAL PRESSURE COEFFICIENT	±0.18
WIND PRESSURE FOR C&C	N/A

EARTHQUAKE DESIGN DATA:

RISK CATEGORY	IV
SEISMIC IMPORTANCE FACTOR(S), Ie	1.0
MAPPED SPECTRAL RESPONSE PARAMETERS	Sms =1.11, Sm1 = 0.74
SITE CLASS	D
DESIGN SPECTRAL RESPONSE PARAMETERS	Sds = 0.74, Sd1 = 0.49
SEISMIC DESIGN CATEGORY	D
BASIC SEISMIC FORCE RESISTING SYSTEM	SPECIAL REINFORCED MASONRY
DESIGN BASE SHEAR	15.85 KIPS
SEISMIC RESPONSE COEFFICIENT, Cs	0.22
RESPONSE MODIFICATION FACTOR, R	5
ANALYSIS PROCEDURES USED	ELF

GEOTECHNICAL INFORMATION:

ALLOWABLE (NET) SOIL BEARING:	1500 PSF
SOIL SITE CLASS:	D
GROUND WATER TABLE:	N/A
MINIMUM FROST DEPTH:	12" PER CITY OF VANCOUVER

MASONRY

DESIGN STANDARDS AND REFERENCES:

ALL CMU STRUCTURES:	TMS 402-2016

DESIGN STRENGTHS

MASONRY:	F'm = 1,500 PSI
REINFORCEMENT:	Fy = 60,000 PSI

GROUT FOR FILLING MASONRY CAVITIES TO BE COURSE GROUT UNO. MAXIMUM COURSE AGGREGATE SIZE IS 3/8".

GROUT POURS SHALL NOT EXCEED 4 FEET IN HEIGHT UNLESS CLEANOUTS ARE PROVIDED IN THE BOTTOM COURSE OF THE CELL(S) TO BE GROUTED AND WRITTEN PERMISSION IS OBTAINED FOR HIGH LIFT GROUTING.

RESTRICTED BAR ANCHORAGE IN CASES WHERE REINFORCING BAR CANNOT BE EXTENDED AS FAR AS REQUIRED, THE BARS SHALL EXTEND AS FAR AS POSSIBLE AND END IN STANDARD HOOK. SHOW ON SHOP DRAWINGS AND HIGHLIGHT WITH A BOX TO BRING TO ENGINEER'S ATTENTION.

MASONRY ANCHORS

ALL EXPANSION AND ADHESIVE ANCHORS SHALL HAVE THE ICC REPORT SHOWING EQUIVALENT LOAD CAPACITY. SUBMIT AND INSTALL PER ICC EVALUATION REPORT.

IF BOND BEAMS AT INTERSECTING WALLS ARE SHOWN ON THE DRAWING TO MEET AT DIFFERENT ELEVATIONS, EXTEND REINFORCING OF BOTH BOND BEAMS AROUND INTERSECTING CORNER NOT LESS THAN 4 FEET IN EACH DIRECTION.

LINTEL BLOCKS SHALL NOT BE USED AS BOND BEAM BLOCKS EXCEPT AT OPENINGS WHERE BOND BEAMS AND LINTELS COINCIDE.

CMU ANCHORS FOR USE GROUTED CMU CELLS SHALL BE SIMPSON SET-XP OR EQUAL ANCHORING ADHESIVE. CMU ANCHORS FOR USE IN UNGROUTED CMU CELL SHOULD BE AVOIDED. WHEN UNAVOIDABLE, ANCHORS SHALL BE SIMPSON SET-XP WITH OPTI MESH ADHESIVE ANCHORING SCREEN TUBE.

EQUIPMENT WEIGHING LESS THAN 250 LBS MAY BE ANCHORED TO CMU WALLS W/ SIMPSON TITEN-HD HEAVY DUTY SCREW ANCHORS

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.

INSTALL ANCHORS IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

NOTIFY OWNER 24 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.

FORCES ARE DETERMINED BY THE FOLLOWING FORMULA: (Ps / Pt) + (Vs / Vt) = 1

WHERE: Ps = APPLIED SERVICE TENSION LOAD
Pt = ALLOWABLE SERVICE TENSION LOAD
Vs = APPLIED SERVICE SHEAR LOAD
Vt = ALLOWABLE SERVICE SHEAR LOAD

THE ABOVE FORMULA IS FOR THE ALLOWABLE LOADS FOR ANCHORS SUBJECTED TO COMBINED TENSION AND SHEAR.

GROUTED CMU ANCHORS
SIMPSON STRONG-TIE SET-3G OR AT-3G

DIAMETER OF ROD [INCHES] OR REBAR SIZE NO.	MIN EDGE DISTANCE [INCHES]	MIN EMBEDMENT [INCHES]	MIN ANCHOR SPACING [INCHES]	ALLOWABLE LOAD BASED ON BOND STRENGTH [LBS]	
				TENSION	SHEAR
3/8	12	3-3/8	(1) PER CELL	1,490	1,145
1/2	12	4-1/2	(1) PER CELL	1,825	1,350
5/8	12	5-5/8	(1) PER CELL	1,895	1,350
3/4	12	6-1/2	(1) PER CELL	1,895	1,350
#3	12	3-3/8	(1) PER CELL	1,395	1,460
#4	12	4-1/2	(1) PER CELL	1,835	1,505
#5	12	5-5/8	(1) PER CELL	2,185	1,505

UNGROUTED GROUTED CMU ANCHORS
SIMPSON STRONG-TIE SET-3G OR AT-3G WITH ANCHORING SCREEN TUBE

DIAMETER OF ROD [INCHES] OR REBAR SIZE NO.	MIN EDGE DISTANCE [INCHES]	MIN EMBEDMENT [INCHES]	MIN ANCHOR SPACING [INCHES]	ALLOWABLE LOAD BASED ON BOND STRENGTH [LBS]	
				TENSION	SHEAR
3/8	12	3	(1) PER CELL	280	285
1/2	12	3	(1) PER CELL	280	285
5/8	12	3	(1) PER CELL	280	285
3/4	12	3	(1) PER CELL	280	285
#3	12	3	(1) PER CELL	280	285
#4	12	3	(1) PER CELL	280	285
#5	12	3	(1) PER CELL	280	285

REINFORCED CONCRETE

DESIGN STANDARDS AND REFERENCES:

GENERAL CONCRETE STRUCTURES:	ACI 318-19
CONCRETE LIQUID HOLDING STRUCTURES:	ACI 350-06 AND ACI 350.3-20

CONCRETE MIX DESIGNS:

SPEC 3.31 STRUCTURAL CONCRETE:	F'C = 4500 PSI
SPEC 3.31.32 HYDRAULIC CONCRETE:	F'C = 4500 PSI
REINFORCING STEEL:	FY = 60 KSI UNLESS NOTED OTHERWISE

CONCRETE COVER PROTECTION UNLESS OTHERWISE NOTED:

FOOTINGS AND OTHER UNIFORMED SURFACES CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH. . . . . 3"

FORMED SURFACES EXPOSED TO EARTH (WALLS BELOW GRADE), WATER OR WEATHER (#6 BARS OR LARGER) . . . . . 2"

COLUMN TIES OR SPIRALS AND BEAM STIRRUPS . . . . . 2"

SLABS AND INTERIOR FACES . . . . . 2"

SEE DRAWINGS FOR EXCEPTIONS

REINFORCING STEEL
REINFORCING STEEL SHALL BE DETAILED (INCLUDING HOOKS AND BENDS) IN ACCORDANCE WITH ACI 315-18 AND 318-19. LAP ALL REINFORCEMENTS IN ACCORDANCE WITH THE "REINFORCING SPLICE AND DEVELOPMENT LENGTH SCHEDULE" - SEE THIS SHEET. PROVIDE CORNER BARS AT ALL WALL INTERSECTIONS PER STRUCTURAL DETAILS. LAP ADJACENT MATS OF WELDED WIRE FABRIC A MINIMUM OF 8" AT SIDES AND ENDS.

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

NO BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE SHALL BE FIELD BENT UNLESS SPECIFICALLY DETAILED OR APPROVED BY THE STRUCTURAL ENGINEER.

FORMWORK
FORMWORK SHALL BE IN ACCORDANCE WITH ACI - 347 "RECOMMENDED PRACTICE FOR CONCRETE FORMWORK". FORMS SHALL BE DESIGNED BY THE CONTRACTOR. BRACING SHALL BE PROVIDED AS REQUIRED OR UNTIL THE CONCRETE HAS REACHED ITS SPECIFIED 28 - DAY STRENGTH. ALL SHORING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. FORMWORK, SUPPORTS, AND SHORING SHALL PROVIDE FINISHED CONCRETE SURFACES AT ALL FACES: LEVEL, PLUMB, AND TRUE TO DIMENSIONS AND ELEVATIONS SHOWN IN THE DRAWINGS. FORMS SHALL BE CLEAN AND FREE OF DEBRIS AND ALL WIRE TIES BENT AWAY FROM FINISHED SURFACES PRIOR TO CONCRETE INSTALLATION.

EMBEDDED ITEMS AND PENETRATIONS
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.

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

CONTRACTOR SHALL SUBMIT CONCRETE PLACEMENT PLAN IDENTIFYING JOINT TYPES, JOINT LOCATIONS AND CONCRETE PLACEMENT SEQUENCE.

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

REINFORCEMENT SPLICE AND DEVELOPMENT SCHEDULE

BAR	Ld, MINIMUM STRAIGHT DEVELOPMENT LENGTHS				MINIMUM LAP SPLICE LENGTHS	Ldh, MINIMUM HOOKED DEVELOPMENT LENGTHS
	BOT MIN	BOT OTHER	TOP MIN	TOP OTHER	CLASS B	
#3	14"	21"	18"	27"	1.3xLd	6"
#4	18"	27"	24"	35"	1.3xLd	9"
#5	24"	34"	30"	44"	1.3xLd	12"
#6	27"	41"	35"	53"	1.3xLd	16"
#7	40"	59"	51"	77"	1.3xLd	20"
#8	45"	68"	59"	88"	1.3xLd	24"
#9	51"	76"	66"	99"	1.3xLd	29"
#10	57"	86"	74"	111"	1.3xLd	34"
#11	63"	95"	82"	123"	1.3xLd	40"

REFERENCE: ACI 318-19 CHAPTER 25
1.) REINFORCEMENT FY = 60 KSI, CONCRETE F'C = 4500 PSI
2.) REINFORCEMENT UNCOATED, NORMAL WEIGHT CONCRETE
3.) "MIN" IF: CLEAR SPACING OF BARS OR WIRES BEING DEVELOPED OR LAP SPLICED NOT LESS THAN BAR DIA., CLEAR COVER AT LEAST BAR DIA., AND STIRRUPS OR TIES THROUGHOUT Ld NOT LESS THAN CODE MIN
4.) "OTHER" IF: DOES NOT MEET REQUIREMENTS FOR MIN DEVELOPMENT LENGTH
5.) "BOT" IF: LESS THAN 12" FRESH CONCRETE PLACED BELOW HORZ. REINFORCEMENT
6.) "TOP" IF: MORE THAN 12" FRESH CONCRETE PLACED BELOW HORZ. REINFORCEMENT
7.) CONTACT ENGINEER FOR ADJUSTED PARAMETERS

CONCRETE ANCHORS

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.

ALL CAST IN PLACE AND POST-INSTALLED ANCHOR INDICATED IN THE STRUCTURAL DOCUMENTS SHALL COMPLY WITH CHAPTER 17 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

CONCRETE ANCHORS SHALL BE EITHER HILTI HIT-RE 500-V3 INJECTABLE MORTAR OR SIMPSON STRONG-TIE AT-3G ANCHORING ADHESIVE 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 AND SIMPSON STRONG-TIE AT-3G

DIAMETER OF ROD [INCHES] OR REBAR SIZE NO.	MIN EDGE DISTANCE [INCHES]	MIN EMBEDMENT [INCHES]	MIN ANCHOR SPACING [INCHES]	ALLOWABLE LOAD BASED ON BOND STRENGTH [LBS]	
				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	3,616
#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

WOOD

TRUSSES	PER TRUSS MANUFACTURER
FRAMING LUMBER	
A. STUDS:	HEM FIR
B. HEADERS:	HEM FIR
FASTENERS IN TREATED LUMBER:	HOT-DIPPED GALVANIZED

ABBREVIATIONS

ACI - AMERICAN CONCRETE INSTITUTE
AL - ALUMINUM
ASCE - AMERICAN SOCIETY OF CIVIL ENGINEERS
CHK - CHECKERED
CL - CENTERLINE
CLR - CLEAR
EA - EACH
EF - EACH FACE
EW - EACH WAY
FB - FLAT BAR
GR - GRADE
HORZ - HORIZONTAL
HDG - HOT-DIPPED GALVANIZED
IBC - INTERNATIONAL BUILDING CODE
LB - POUND
LLV - LONG LEG VERTICAL
MPH - MILES PER HOUR
O.C. - ON CENTER
PL - PLATE
PJF - PREMOLDED JOINT FILLER
PSF - POUNDS PER SQ FT
RB - ROUND BAR
RST - REINFORCING STEEL
SST - STAINLESS STEEL
T&B - TOP AND BOTTOM
VERT - VERTICAL

SPECIAL INSPECTIONS

SPECIAL INSPECTIONS ARE REQUIRED IN ACCORDANCE WITH CHAPTER 1 AND CHAPTER 17 OF THE IBC. 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.

DEFERRED SUBMITTALS

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

- MECHANICAL PIPING SUPPORTS AND LATERAL BRACING
- ANCHORAGE OF ELECTRICAL EQUIPMENT
- WOOD TRUSS DESIGN AND CALCULATIONS (BY MANUFACTURER)

SUBMITTAL DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD, WHO SHALL REVIEW AND FORWARD THEM TO THE BUILDING OFFICIAL WITH A NOTATION INDICATING THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND FOUND TO BE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE FACILITY.

THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THEIR DESIGN AND SUBMITTED DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.

RH2

JON MARSHALL CONNER — STATE OF WASHINGTON — 44672 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CITY OF Vancouver WASHINGTON

STRUCTURAL NOTES 1

JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3B5B-P-S03.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: JRB
REVIEWED: KMP

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

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

DWG NO.: S09
SHEET NO.: 30
82

STATEMENT OF SPECIAL INSPECTIONS

TABLE 1705.3
REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD	IBC REFERENCE
1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	---	X	ACI 318 CH. 20, 25.2, 25.3, 26.6.1-26.6.3	---
2. REINFORCING BAR WELDING:				
A. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A 706;	---	X	AWS D1.4	---
B. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"; AND	---	X	ACI 318: 26.6.4	---
C. INSPECT ALL OTHER WELDS.	X	---		
3. INSPECT ANCHORS CAST IN CONCRETE	---	X	ACI 318: 17.8.2	---
4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS. B				
A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.	X	---	ACI 318: 17.8.2.4	---
B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.A.	---	X	ACI 318: 17.8.2	---
5. VERIFY USE OF REQUIRED DESIGN MIX.	---	X	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	---	ASTM C31 ASTM C172 ACI 318: 26.5, 26.12	---
7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	---	ACI 318: 26.5	---
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	---	X	ACI 318: 26.5.3-26.5.5	---
9. INSPECT PRESTRESSED CONCRETE FOR:				
A. APPLICATION OF PRESTRESSING FORCES; AND	X	---	ACI 318: 26.10	---
B. GROUTING OF BONDED PRESTRESSING TENDONS.	X	---		
10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.	---	X	ACI 318: CH. 26.9	---
11. FOR PRECAST CONCRETE DIAPHRAGM CONNECTIONS OR REINFORCEMENT AT JOINTS CLASSIFIED AS MODERATE OR HIGH DEFORMABILITY ELEMENTS (MDE OR HDE) IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY C, D, E, OR F, INSPECT SUCH CONNECTIONS AND REINFORCEMENT IN THE FIELD FOR:				
A. INSTALLATION OF THE EMBEDDED PARTS.	X	---	ACI 318: 26.13.1.3 ACI 550.5	---
B. COMPLETION OF THE CONTINUITY OF REINFORCEMENT ACROSS JOINTS.	X	---		
C. COMPLETION OF CONNECTIONS IN THE FIELD.	X	---		
12. INSPECT INSTALLATION TOLERANCES OF PRECAST CONCRETE DIAPHRAGM CONNECTIONS FOR COMPLIANCE WITH ACI 550.5.	---	X	ACI 318: 26.13.1.3	---
13. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	---	X	ACI 318: 26.11.2	---
14. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	---	X	ACI 318: 26.11.1.2(b)	---

FOR SI: 1 INCH = 25.4 MM.

A. WHERE APPLICABLE, SEE ALSO SECTION 1705.13.

B. SPECIFIC REQUIREMENTS FOR SPECIAL INSPECTION SHALL BE INCLUDED IN THE RESEARCH REPORT FOR THE ANCHOR ISSUED BY AN APPROVED SOURCE IN ACCORDANCE WITH 17.8.2 IN ACI 318, OR OTHER QUALIFICATION PROCEDURES. WHERE SPECIFIC REQUIREMENTS ARE NOT PROVIDED, SPECIAL INSPECTION REQUIREMENTS SHALL BE SPECIFIED BY THE REGISTERED DESIGN PROFESSIONAL AND SHALL BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO THE COMMENCEMENT OF THE WORK.

TMS 602-16 TABLE 4
MINIMUM SPECIAL INSPECTION REQUIREMENTS OF MASONRY CONSTRUCTION

INSPECTION TASK	LEVEL 3 FREQUENCY		REFERENCE FOR CRITERIA	
	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	TMS 402	TMS 602
1. AS MASONRY CONSTRUCTION BEGINS, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:				
A. PROPORTIONS OF SITE-PREPARED MORTAR	---	X		ART. 2.1, 2.6 A, & 2.6 C
B. GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES	---	X		ART. 2.4 B, & 2.4 H
C. GRADE, TYPE AND SIZE OF REINFORCEMENT, CONNECTORS, ANCHOR BOLTS, AND PRESTRESSING TENDONS AND ANCHORAGES	---	X		ART. 3.4, & 3.6 A
D. PRESTRESSING TECHNIQUE	---	X		ART. 3.6 B
E. PROPERTIES OF THIN-BED MORTAR FOR ACC MASONRY	X	---		ART. 2.1 C.1
F. SAMPLE PANEL CONSTRUCTION	X	---		ART. 1.6 D
2. PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:				
A. GROUT SPACE	X	---		ART. 3.2 D & 3.2 F
B. PLACEMENT OF PRESTRESSING TENDONS AND ANCHORAGES	---	X	SEC. 10.8 & 10.9	ART. 2.4 & 3.6
C. PLACEMENT OF REINFORCEMENT, CONNECTORS, AND ANCHOR BOLTS	X	---	SEC. 6.1, 6.3.1, 6.3.6, & 6.3.7	ART. 3.2 E & 3.4
D. PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS	---	X		ART. 2.6 B & 2.4 G.1.b
3. VERIFY COMPLIANCE OF THE FOLLOWING DURING CONSTRUCTION:				
A. MATERIALS ANS PROCEDURES WITH THE APPROVED SUBMITTALS	---	X		ART. 1.5
B. PLACEMENT OF MASONRY UNITS AND MORTAR JOINT CONSTRUCTION	---	X		ART. 3.3 B
C. SIZE AND LOCATION OF STRUCTURAL MEMBERS	---	X		ART. 3.3 F
D. TYPE, SIZE, AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, AND OTHER CONSTRUCTION	X	---	SEC. 1.2.1(e), 6.2.1 & 6.3.1	
E. WELDING OF REINFORCEMENT	X	---	SEC. 6.1.6.1.2	
F. PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURES BELOW 40° F) OR HOT WEATHER (TEMPERATURES ABOVE 90° F)	---	X		ART. 1.8 C & 1.8 D
G. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE	X	---		ART. 3.6B
H. PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE	X	---		ART. 3.5 & 3.6 C
I. PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN-BED MORTAR JOINTS	X	---		ART. 3.3 B.9 & 3.3 F.1.b

TABLE 1705.6
REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOILS

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	---	X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	---	X
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	---	X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	---
5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	---	X

RH2

JON MARSHALL CONNER
STATE OF WASHINGTON
44672
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CITY OF Vancouver WASHINGTON

STRUCTURAL NOTES 2

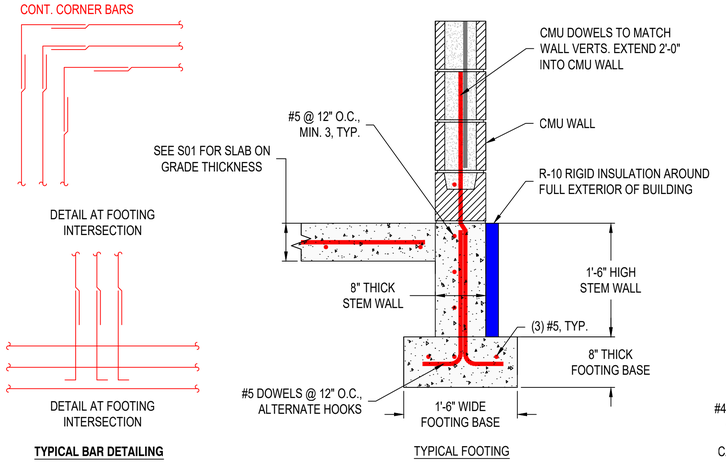
JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3B5B-P-S03.DWG
SAVE DATE: Nov 2, 2025
PLOT DATE: Nov 3, 2025
DESIGNED: JRB
REVIEWED: KMP

REVISIONS

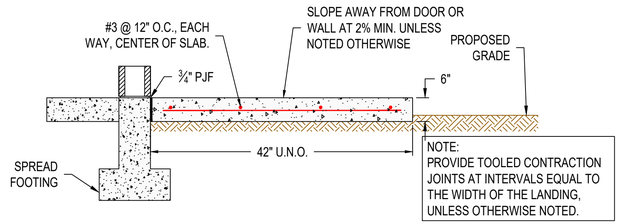
NO.	DATE	DESCRIPTION	BY	REVIEW

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

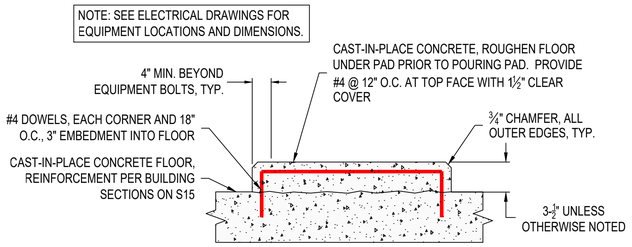
DWG NO.: S10
SHEET NO.: 31
82



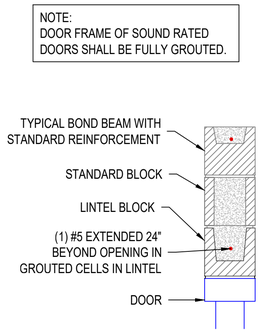
SPREAD FOOTING
1" = 1'-0"
302 TYP.



TYPICAL ENTRANCE LANDING DETAIL
NOT TO SCALE
305 TYP.

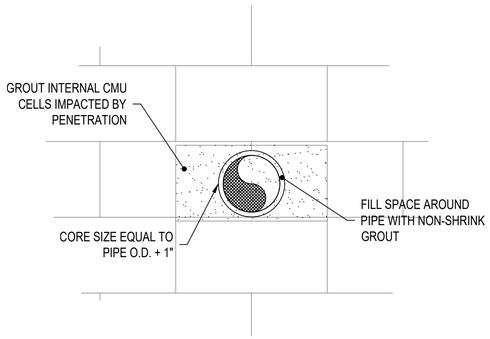


INTERIOR EQUIPMENT PAD
1" = 1'-0"
306 TYP.

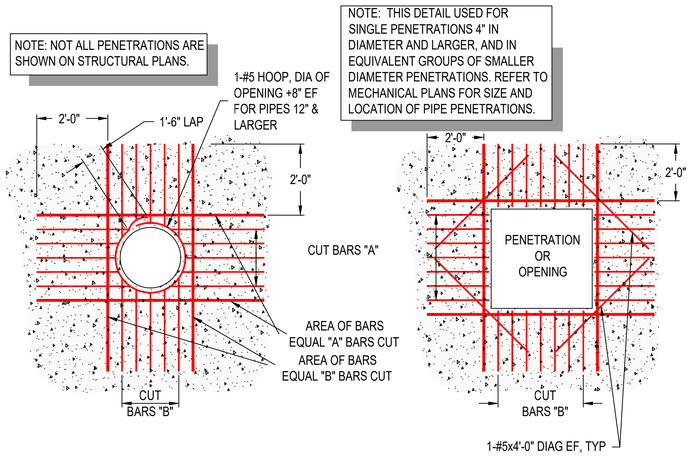


LINTEL OVER MAN DOOR

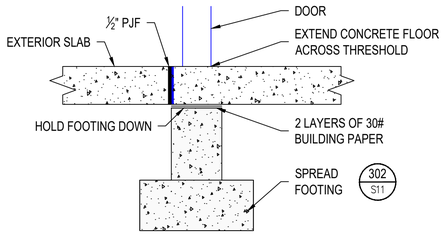
DOOR LINTEL
1" = 1'-0"
402 TYP.



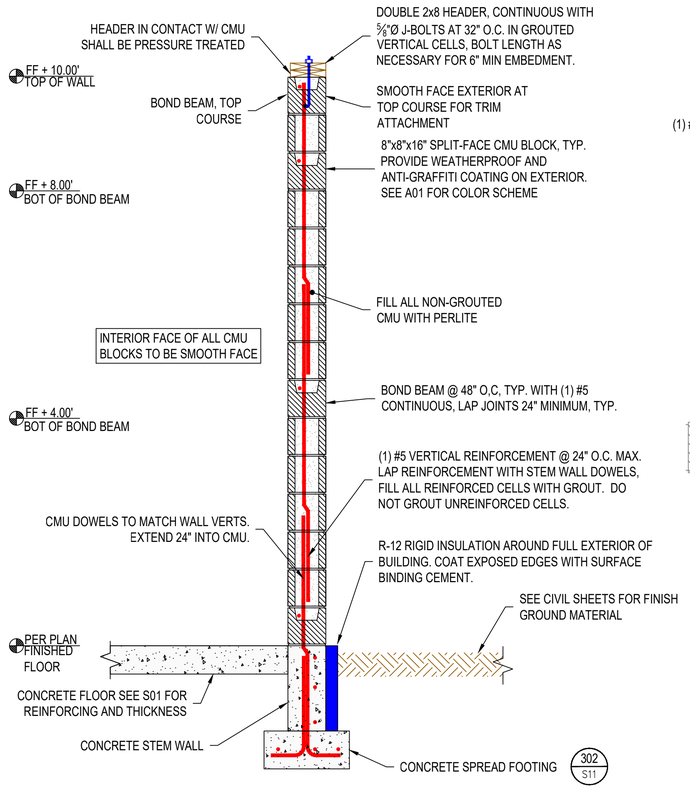
CMU PENETRATION
NOT TO SCALE
403 TYP.



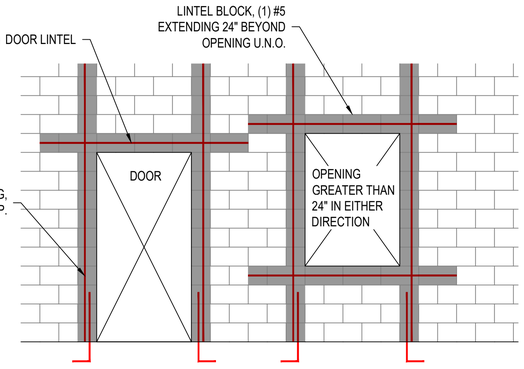
PENETRATION AND OPENING REINFORCEMENT
NOT TO SCALE
303 TYP.



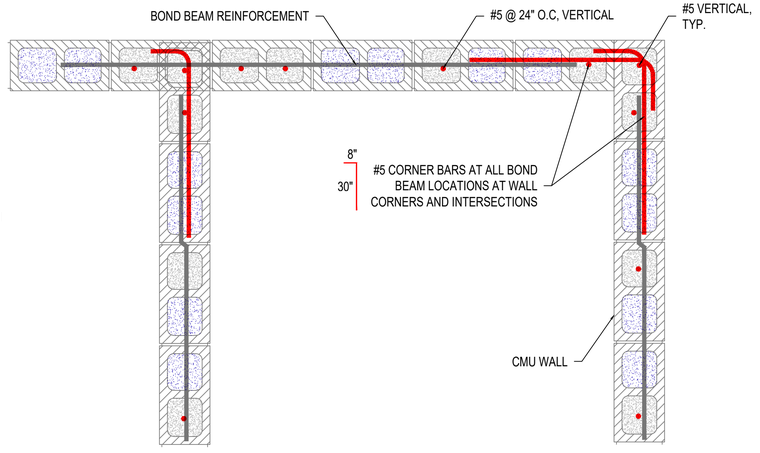
DOOR THRESHOLD
NOT TO SCALE
304 TYP.



CMU WALL
NOT TO SCALE
401 TYP.



TYPICAL CMU OPENING
NOT TO SCALE
404 TYP.



CMU WALL INTERSECTION / CORNER
1" = 1'-0"
405 TYP.

RH2

JON MARSHALL CONNER — STATE OF WASHINGTON — 44672 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CITY OF Vancouver WASHINGTON

STRUCTURAL DETAILS 1

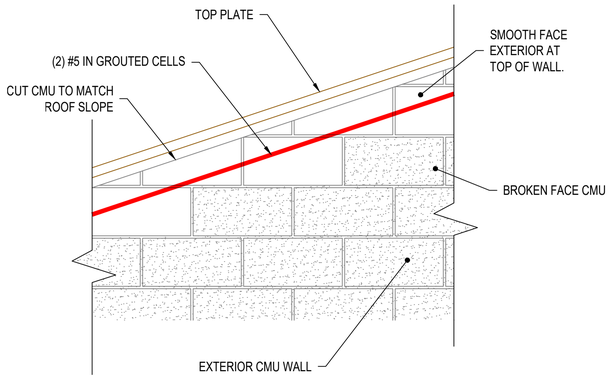
JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3B5B-P-S03.DWG
SAVE DATE: Nov 2, 2025
PLOT DATE: Nov 3, 2025
DESIGNER: JRB
REVIEWED: KNP

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

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

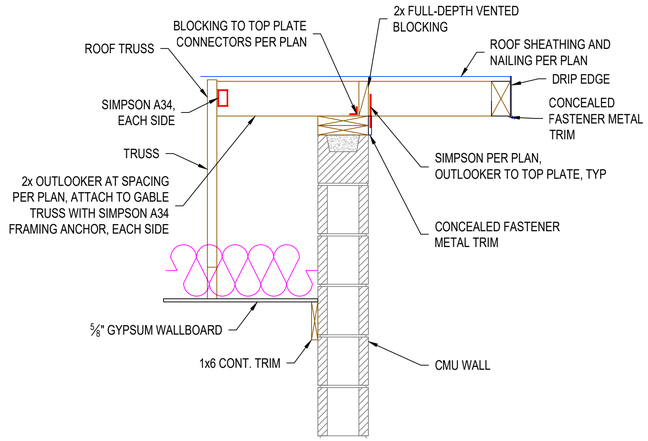
DWG NO.: S11
SHEET NO.: 32
82



SLOPED END WALL DETAIL

406 TYP.

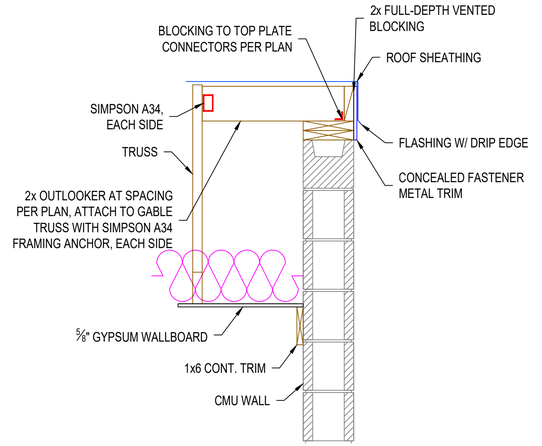
1" = 1'-0"



GABLE END SECTION

600 TYP

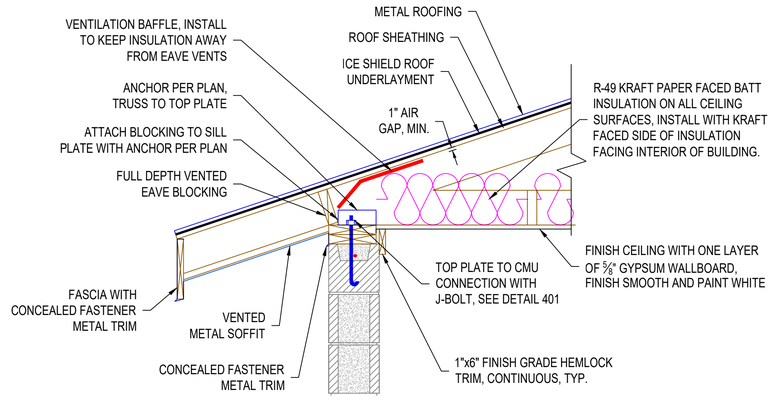
1"=1'-0"



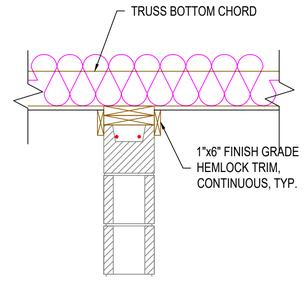
GABLE END SECTION @ DOUBLE DOORWAY

601 TYP

1"=1'-0"



(EXTERIOR WALL)



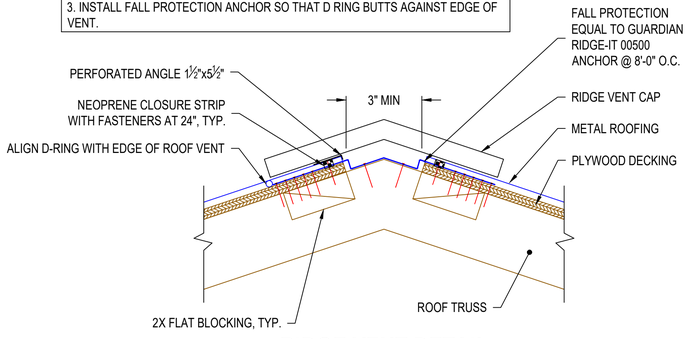
(INTERIOR WALL)

CMU WALL/TRUSS CONNECTIONS

602 TYP.

1" = 1'-0"

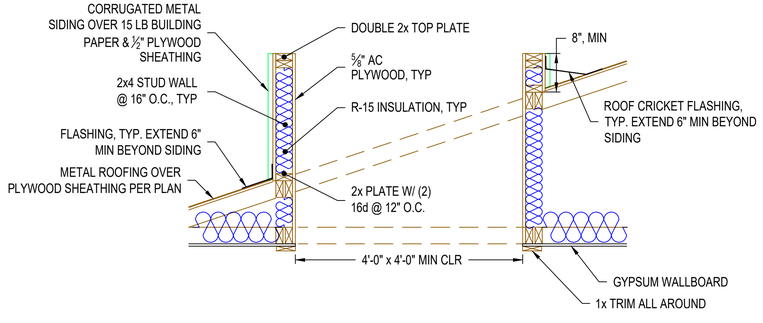
RIDGE VENT NOTES:
1. INSTALL FALL PROTECTION AT ROOF PEAK OVER METAL ROOFING AND FASTEN TO TRUSS WITH 16d NAILS PER MFR RECOMMENDATIONS PRIOR TO INSTALLATION OF RIDGE VENT.
2. PROVIDE END CAPS FOR RIDGE VENT PER MANUFACTURER'S SPECIFICATIONS.
3. INSTALL FALL PROTECTION ANCHOR SO THAT D RING BUTTS AGAINST EDGE OF VENT.



RIDGE VENT DETAIL

603 TYP.

NOT TO SCALE



ROOF CURB

604 TYP.

¾" = 1'-0"

RH2

JON MARSHALL CONNER — STATE OF WASHINGTON — 44672 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

STRUCTURAL DETAILS 2

CITY OF Vancouver WASHINGTON

DESIGNED: JRB
REVIEWED: KMP
DATE: Nov 2, 2025
PLOT DATE: Nov 3, 2025
CLIENT: VAN
FILENAME: 3B5B-P-S03.DWG
JOB NO.: 21-0199

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

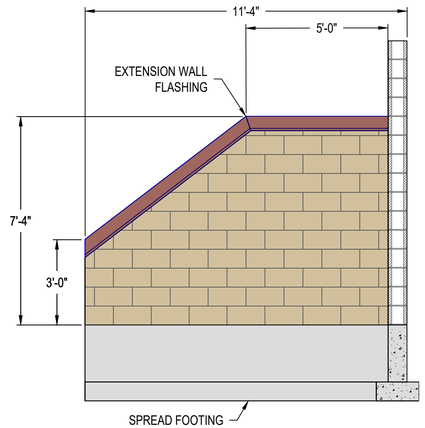
SCALE: SHOWN

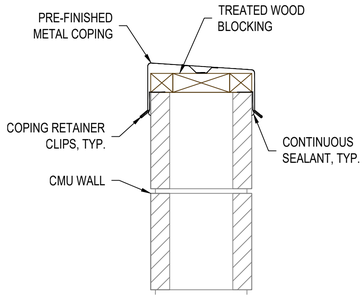
0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: S12

SHEET NO.: 33

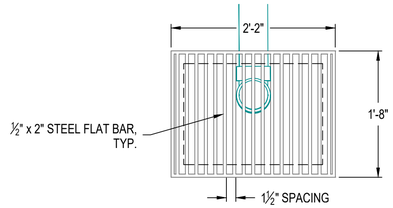




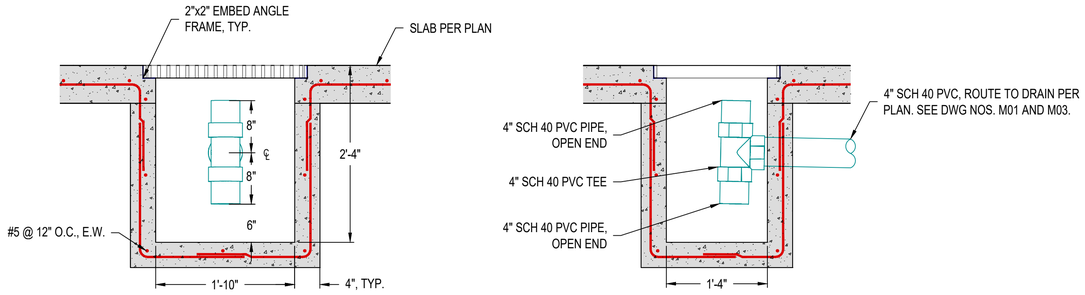
EXTENSION WALL FLASHING

EXTENSION WALL
NOT TO SCALE

407 TYP.

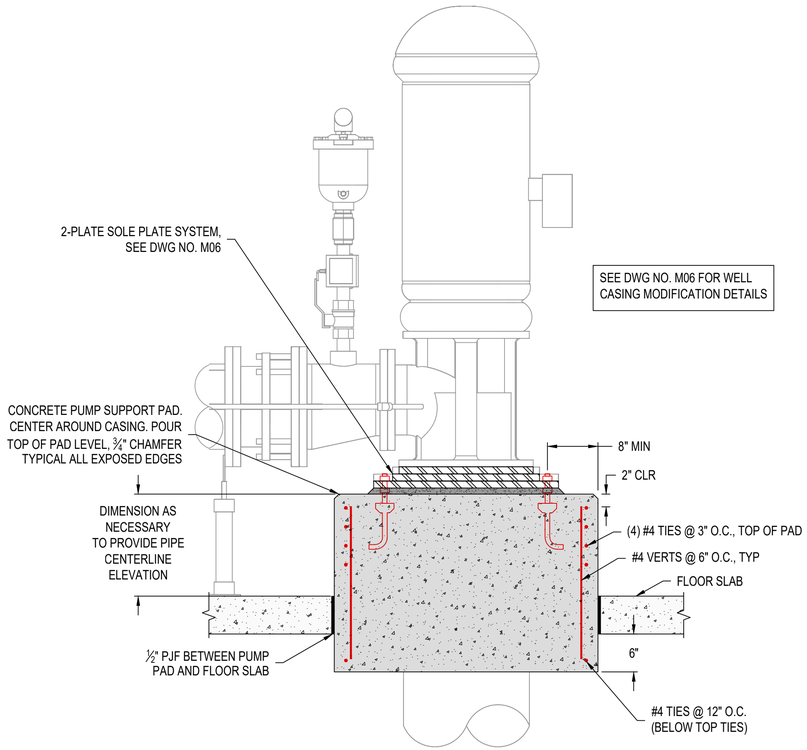


NOTES:
1. FABRICATE OF ASTM A36 STEEL USING FILLET WELDS.
2. HOT DIP GALVANIZE AFTER FABRICATION.



FLOOR DRAIN
NOT TO SCALE

307 TYP.



PUMP PAD SECTION
1"=1'-0"

308 TYP.

RH2

JON MARSHALL CONNER
STATE OF WASHINGTON
44672
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CITY OF Vancouver WASHINGTON

STRUCTURAL DETAILS 3

JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3B5B-P-S03.DWG
SAVE DATE: Nov 2, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: JRB
REVIEWED: NMP

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

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

DWG NO.: S13
SHEET NO.: 34

LOUVER SCHEDULE

No.	Description	Air Direction	Louver Type	Manufacturer and Model No.	Size	Damper	Notes
L-001	PUMP ROOM	INTAKE	DRAINABLE	POTTORFF EFD-645	48"X48"	YES	1,2

LOUVER NOTES
1. PROVIDE LOUVER WITH 18" LONG SLEEVE TO ACCOMMODATE DAMPERS
2. PROVIDE BIRD SCREEN

VENTILATOR SCHEDULE

No.	Description	Air Direction	Fan Type	Airflow (CFM)	SP (Inch WG)	Motor HP and Speed	Voltage	Drive Type	Basis of Design	Notes
V-001	PUMP ROOM	EXHAUST	ROOF	3,745	0.25	¾ HP @ 1075 RPM	480V, 3 PHASE	DIRECT	LOREN COOK ACED 180	1, 2, 3, 4

VENTILATOR NOTES
1. PROVIDE TESC MOTOR, ROOF CURB WITH MOTORIZED ISOLATION DAMPER, ACTUATOR, REMOTE THERMOSTAT AND CONTROL.
2. INTERLOCK FAN WITH INTAKE DAMPER. FAN SHALL NOT START UNTIL BOTH INLET AND EXHAUST DAMPERS ARE PROVEN OPEN.
3. PROVIDE ROOF CURB TO MATCH ROOF SLOPE. ROOF CURB SHALL MAXIMIZE OPENING DIMENSIONS BETWEEN TRUSSES. PROVIDE HINGED CURB CAP / ADAPTER TO FAN WITH DAMPER TRAY.
4. PROVIDE QUICK DISCONNECT FOR FAN REMOVAL.

MOTORIZED DAMPER SCHEDULE

No.	Description	Air Direction	Damper Configuration	Blade Type	Nominal Size	Actuator Type	Leakage Rating	Basis of Design	Notes
D-001	PUMP ROOM LOUVER	INTAKE	PARALLEL	AIRFOIL	48"X48"	ELEC	3.0 CFM/FT^2 @ 1.0 IN. WC.	RUSKIN CD50	1,2,3
D-002	ROOF FAN	EXHAUST	PARALLEL	AIRFOIL	– –	ELEC	– –	– –	3,4

DAMPER NOTES
1. PROVIDE NUMBER AND SIZE OF DAMPER MODULES TO MATCH CONFIGURATION OF INSTALLATION.
2. PROVIDE A CONTINUOUS JACK-SHAFT TO OPERATE DAMPERS IN MULTIPLE DAMPER MODULE INSTALLATIONS.
3. PROVIDE DAMPERS WITH 120V/1PH DAMPER ACTUATOR.
4. DAMPER PROVIDED WITH EXHAUST FAN. SIZE AND VELOCITY PER FAN MANUFACTURER'S RECOMMENDATION.

UNIT HEATER SCHEDULE

No.	Description	Nominal Airflow (CFM)	Capacity (BTU/HR)	Electrical Data		Motor Data (HP)	Basis of Design	Notes
				KW	V/PH			
H-001	UNIT HEATER WITH UNIVERSAL MOUNTING BRACKET	350	17,000	5	480/3	1/100	QMARK MUH05-41	1,2

UNIT HEATER NOTES
1. PROVIDE UNIT MOUNTED MOTOR STARTER, DISCONNECT, AND THERMOSTAT. PROVIDE INTERNAL TRANSFORMER AS REQUIRED FOR MOTOR.
2. MOUNT BOTTOM OF HEATER 7'-0" ABOVE FLOOR.

DRAIN, WASTE AND VENT (DWV) PLUMBING NOTES

1) THE WASTE AND WATER PIPING SYSTEM AS SHOWN ON THIS DRAWING IS DIAGRAMMATIC AND DOES NOT SHOW ALL DETAIL OR OFFSETS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CORRECTLY LOCATE AND INSTALL THIS PLUMBING SYSTEM.

2) ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE UNIFORM PLUMBING CODE, LATEST EDITION, AND ALL OTHER APPLICABLE CODES AND STANDARDS.

3) ALL WASTE PIPING TO BE SLOPED AT ¼"/FT MIN. UNLESS OTHERWISE NOTED. ALL ELEVATIONS AND SLOPES TO BE FIELD VERIFIED BEFORE INSTALLATION.

4) ALL WASTE, DRAIN, AND VENT PIPING SHALL BE PVC UNLESS OTHERWISE NOTED.

5) ALL DWV PIPES SHALL BE LABELED WITH FUNCTION AND FLOW DIRECTION.

6) PROVIDE PIPE SUPPORTS AND STRAPS AS NECESSARY TO SECURE PIPE TO NEAREST WALL / BEAM / CEILING.

WATER PLUMBING NOTES

1) WATER SUPPLY TO BUILDING AND PRE-LUBE SYSTEM IS RAW WATER AND IS NON-POTABLE.

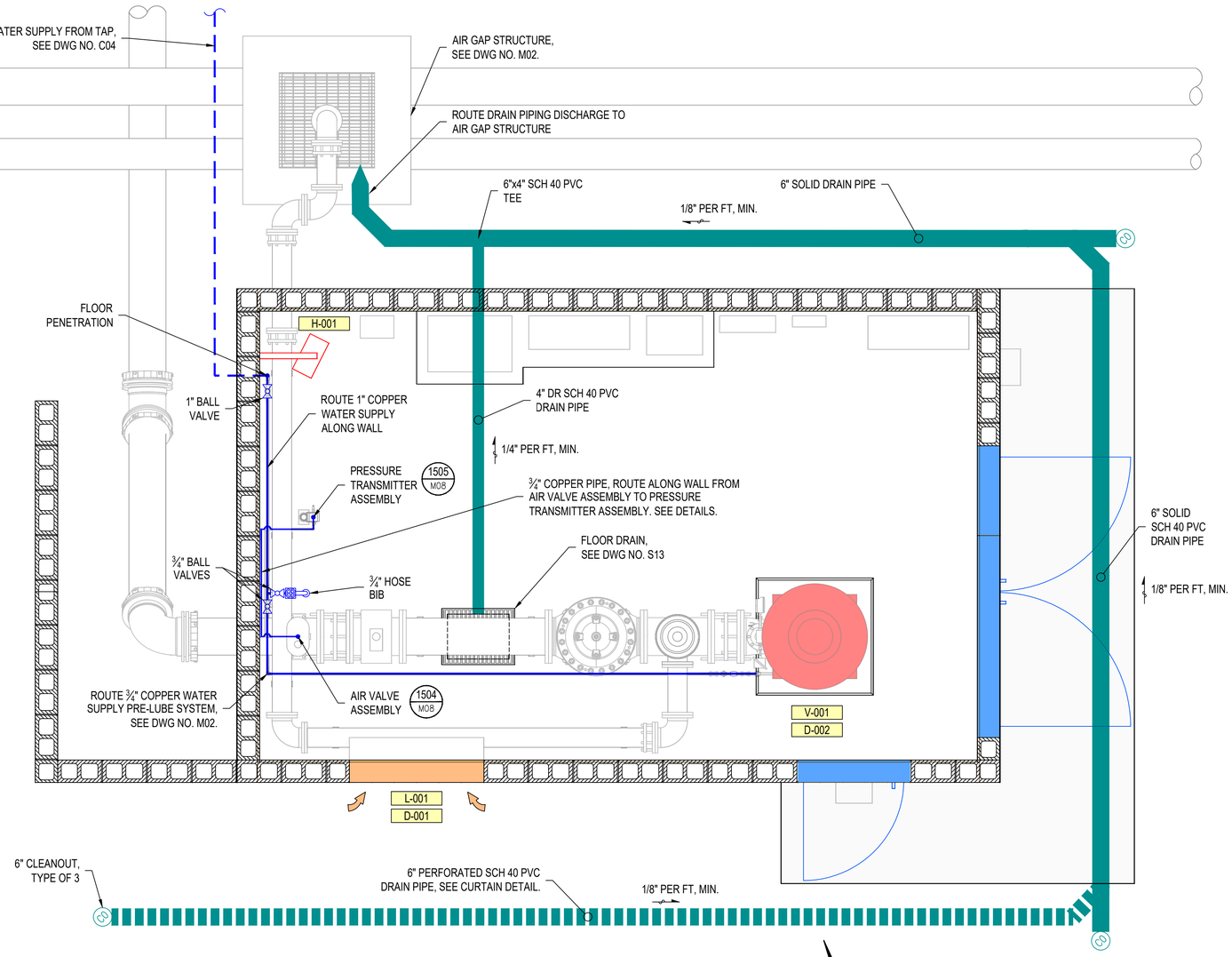
1) ALL COPPER PIPING SHALL BE INSULATED AND SEAMS SEALED TO PREVENT CORROSION.

2) ALL PLUMBING PIPES SHALL BE LABELED WITH FUNCTION AND FLOW DIRECTION.

3) ALL WATER PLUMBING SHALL BE COPPER. CONTRACTOR SHALL PROVIDE ALL NECESSARY FITTINGS AND SUPPORTS.

HVAC NOTES

1) EQUIPMENT SCHEDULES ARE NOT REPRESENTATIVE OF QUANTITIES REQUIRED. PROVIDE QUANTITIES AS REQUIRED DWG NOS. M01 AND M03 PLAN VIEWS.



WELL 3B - MINOR MECHANICAL AND HVAC PLAN

½" = 1'-0"

RH2

SIGNED: 10/27/2025

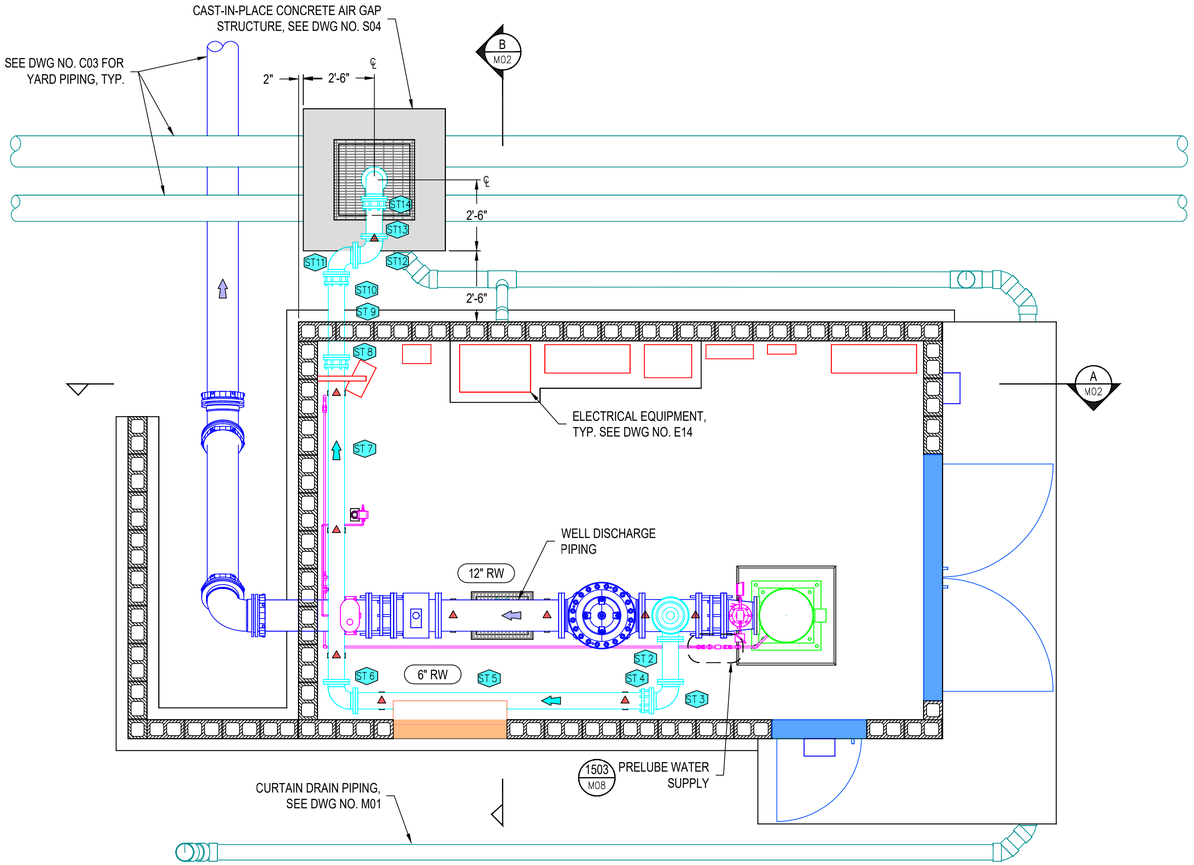
CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES
WELL 3B MINOR MECHANICAL AND HVAC PLAN

REVISIONS			
NO.	DATE	DESCRIPTION	BY
			REVIEW

JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3BSB-P-HVAC_3B.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: JRB
REVIEWED: KMP

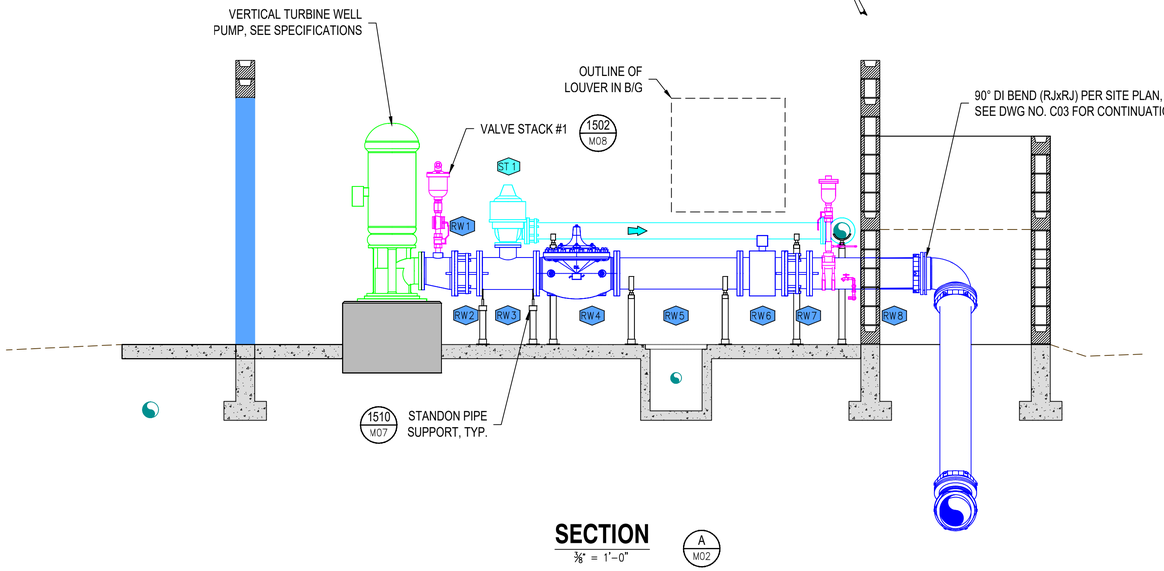
SCALE: SHOWN
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: M01
SHEET NO.: 35
82



WELL 3B - MECHANICAL PLAN

⅜" = 1'-0"



SECTION

⅜" = 1'-0"

A
M02

MECHANICAL FITTING LEGEND

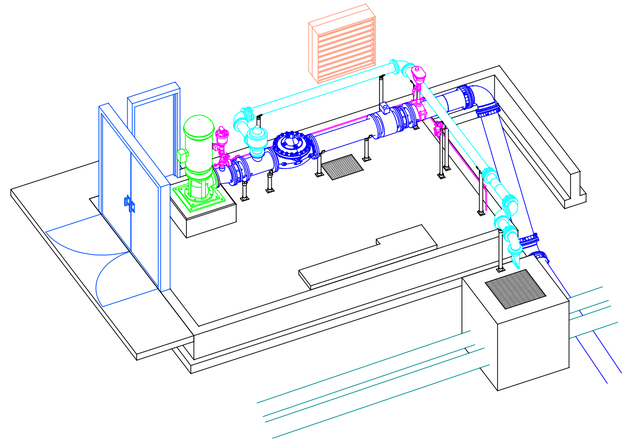
NOTE:
1) NOT ALL PIPE AND FITTINGS ARE IDENTIFIED IN MECHANICAL LEGEND(S). CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING PIPE AND FITTINGS AS NECESSARY FOR A COMPLETE AND FUNCTIONING SYSTEM.
2) SPOOL LENGTHS DO NOT ACCOUNT FOR GASKETS. CONTRACTOR SHALL CONFIRM ALL PIPE AND FITTING DIMENSIONS PRIOR TO PURCHASE AND ASSEMBLY.

WELL PUMP DISCHARGE

- RW1 12"x10" ECCENTRIC REDUCER (FLxFL), WITH 2" THREADED BOSS FOR VALVE STACK #1 ASSEMBLY.
- RW2 12" DISMANTLING JOINT (FLxFL), WITH TIE RODS
- RW3 12"x6" DI TEE (FLxFL)
- RW4 12" HYDRAULIC CHECK VALVE (FLxFL)
- RW5 12" DI SPOOL (FLxFL), 4'-4" LENGTH
- RW6 12" ELECTRO-MAGNETIC FLOWMETER (FLxFL)
- RW7 12" DISMANTLING JOINT (FLxFL), WITH TIE RODS
- RW8 12" DI SPOOL (FLxPE), 4'-2" LENGTH APPROX.

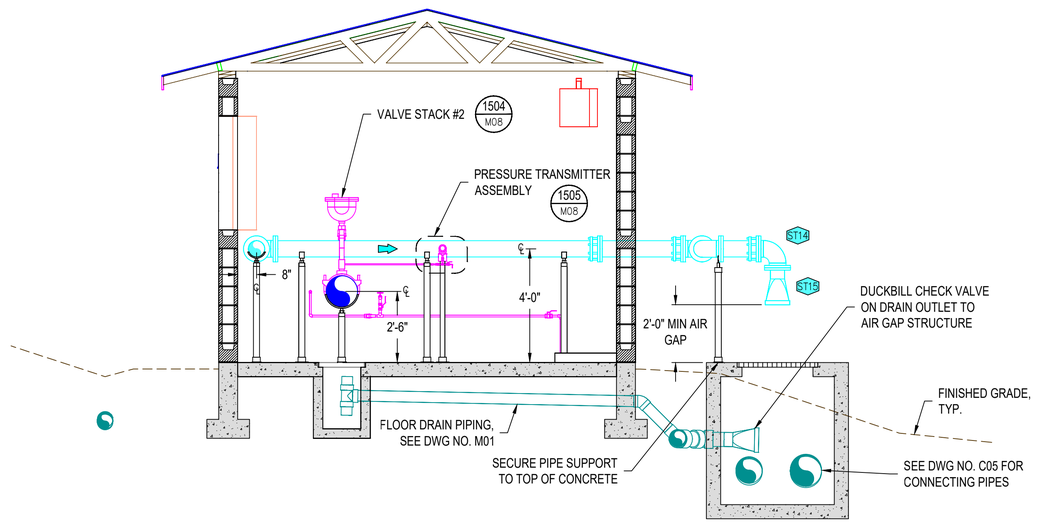
OVERBOARD PIPING

- ST1 6" DEEP WELL PUMP CONTROL VALVE, ANGLE STYLE (FLxFL)
- ST2 6" DI SPOOL (FLxFL), 1'-6" LENGTH
- ST3 6" DI 90°BEND (FLxFL)
- ST4 6" RESTRAINED FCA
- ST5 6" DI SPOOL (FLxPE), 10'-5" LENGTH APPROX.
- ST6 6" DI 90°BEND (FLxFL)
- ST7 6" DI SPOOL (FLxPE), 11'-5" LENGTH APPROX.
- ST8 6" RESTRAINED FCA
- ST9 6" DI SPOOL (FLxPE), 3'-1" LENGTH APPROX.
- ST10 6" RESTRAINED FCA
- ST11 6" DI 90°BEND (FLxFL)
- ST12 6" DI 90°BEND (FLxFL)
- ST13 6" DI SPOOL (FLxPE), 1'-4" LENGTH APPROX.
- ST14 6" RESTRAINED FCA
- ST15 6" DI 90°VERTICAL BEND (FLxFL)
- ST16 6" DUCKBILL CHECK VALVE (FL)



MECHANICAL OBLIQUE

NOT TO SCALE



SECTION

⅜" = 1'-0"

B
M02

RH2

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

WELL 3B MECHANICAL PLAN

CITY OF Vancouver WASHINGTON

ENGINEER: JRB
REVIEWED: KMP
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
CLIENT: VAN
JOB NO.: 21-0199
FILENAME: 3BSB-P-MECH_3B.DWG

REVISIONS

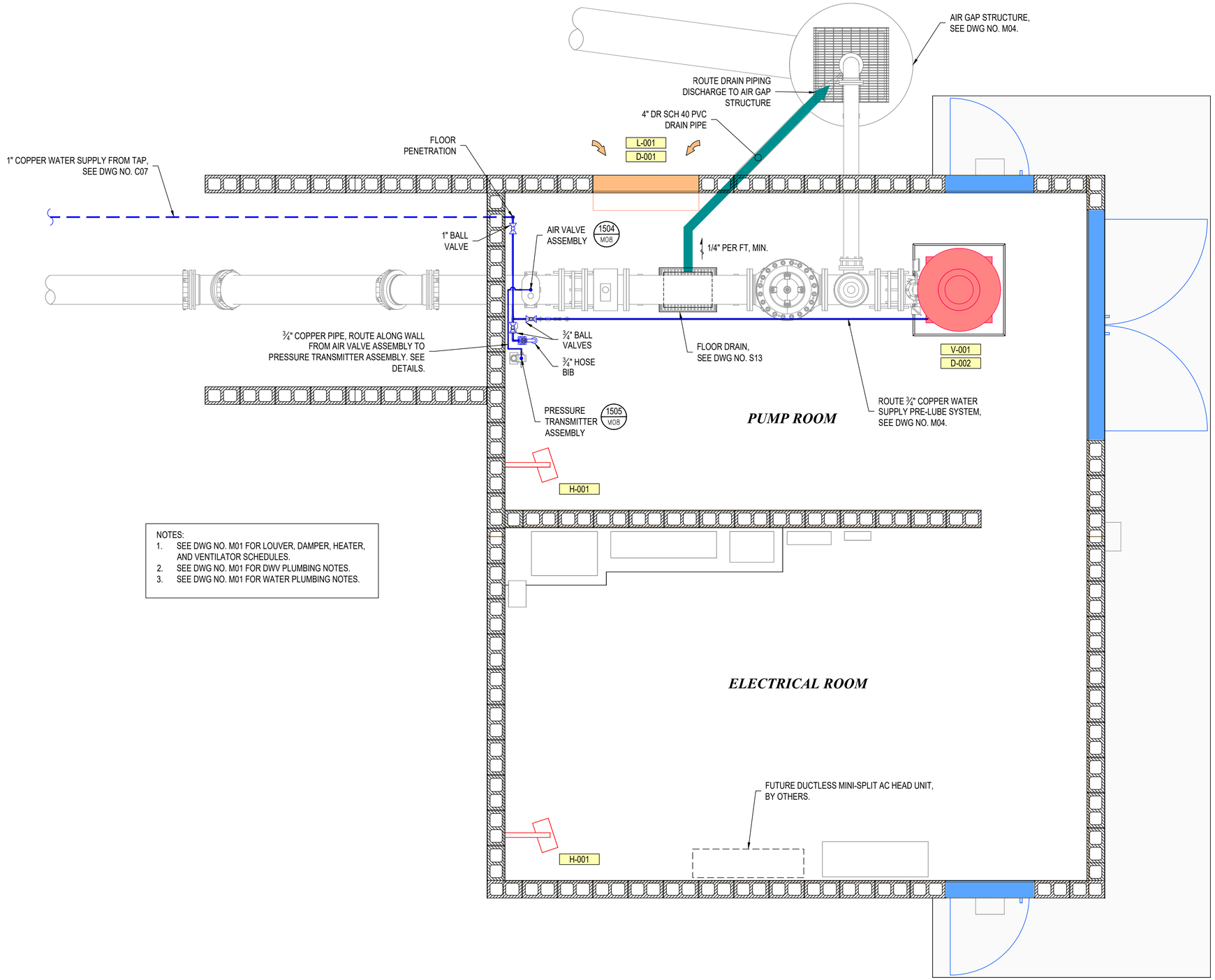
NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: M02
SHEET NO.: 36
82



NOTES:
1. SEE DWG NO. M01 FOR LOUVER, DAMPER, HEATER, AND VENTILATOR SCHEDULES.
2. SEE DWG NO. M01 FOR DWV PLUMBING NOTES.
3. SEE DWG NO. M01 FOR WATER PLUMBING NOTES.

WELL 5B - MINOR MECHANICAL AND HVAC PLAN

½" = 1'-0"

RH2

PHILIP M PETTIBONE — STATE OF WASHINGTON — 41857 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

WELL 5B MINOR MECHANICAL AND HVAC PLAN

CITY OF Vancouver WASHINGTON

JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3B5B-P-HVAC_5B.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: JRB
REVIEWED: KMP

REVISIONS

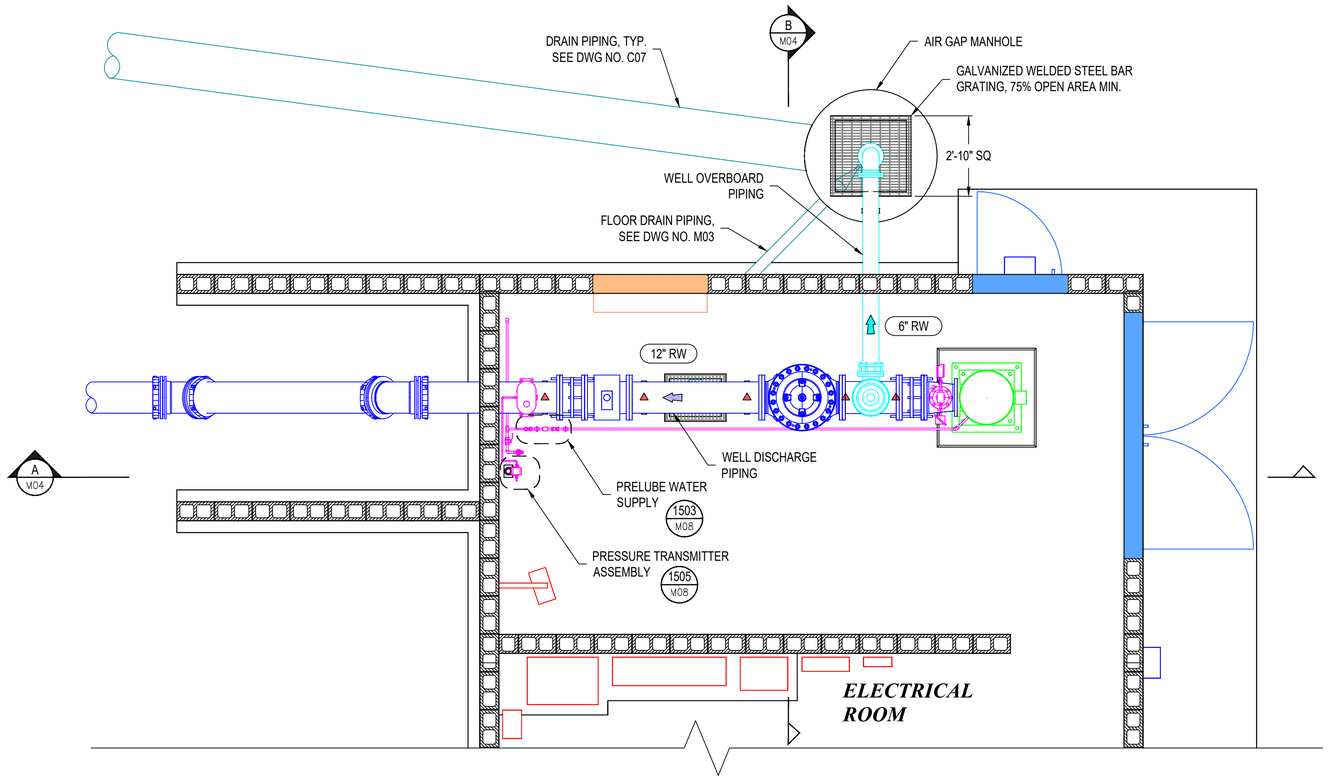
NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: M03
SHEET NO.: 37 82



WELL 5B - PUMP ROOM MECHANICAL PLAN

3/8" = 1'-0"

MECHANICAL FITTING LEGEND

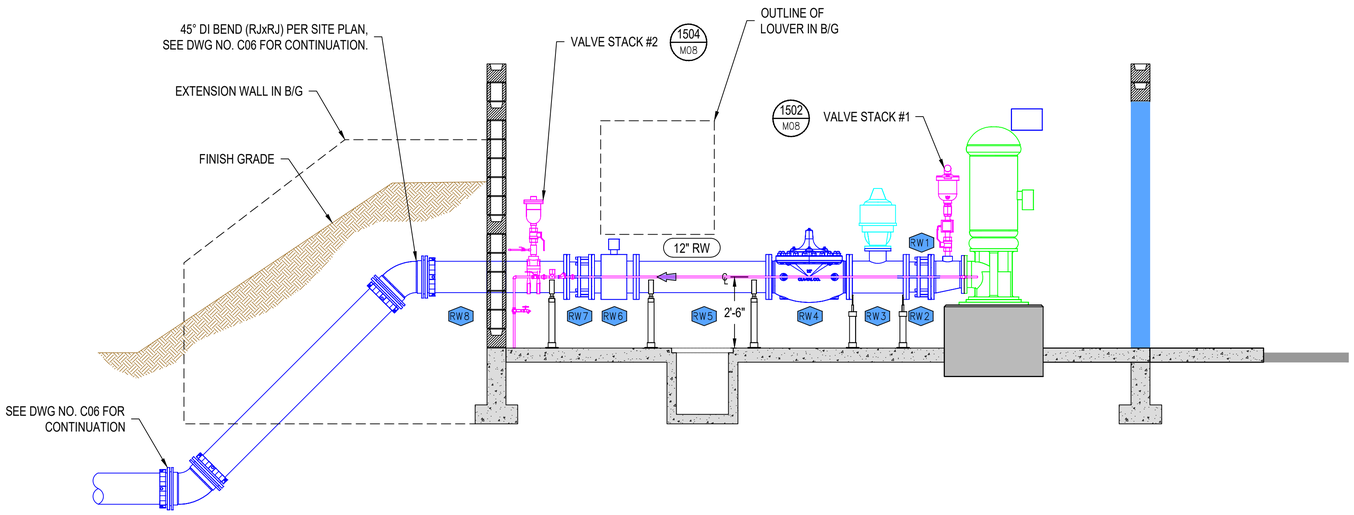
NOTE:
1) NOT ALL PIPE AND FITTINGS ARE IDENTIFIED IN MECHANICAL LEGEND(S). CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING PIPE AND FITTINGS AS NECESSARY FOR A COMPLETE AND FUNCTIONING SYSTEM.
2) SPOOL LENGTHS DO NOT ACCOUNT FOR GASKETS. CONTRACTOR SHALL CONFIRM ALL PIPE AND FITTING DIMENSIONS PRIOR TO PURCHASE AND ASSEMBLY.

WELL PUMP DISCHARGE

- RW1 — 12"x10" ECCENTRIC REDUCER (FLxFL), WITH 2" THREADED BOSS FOR VALVE STACK #1 ASSEMBLY.
- RW2 — 12" DISMANTLING JOINT (FLxFL), WITH TIE RODS
- RW3 — 12"x6" DI TEE (FLxFL)
- RW4 — 12" HYDRAULIC CHECK VALVE (FLxFL)
- RW5 — 12" DI SPOOL (FLxFL), 4'-4" LENGTH
- RW6 — 12" ELECTRO-MAGNETIC FLOWMETER (FLxFL)
- RW7 — 12" DISMANTLING JOINT (FLxFL), WITH TIE RODS
- RW8 — 12" DI SPOOL (FLxPE), 5'-2" LENGTH APPROX.

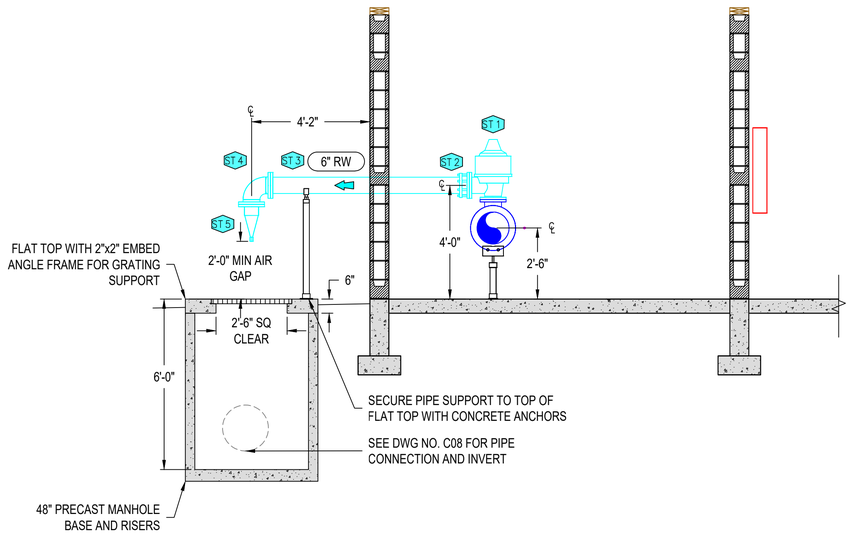
OVERBOARD PIPING

- ST1 — 6" DEEP WELL PUMP CONTROL VALVE, ANGLE STYLE (FLxFL)
- ST2 — 6" RESTRAINED FCA
- ST3 — 6" DI SPOOL (FLxPE), 7'-0" LENGTH APPROX.
- ST4 — 6" DI 90°VERTICAL BEND (FLxFL)
- ST5 — 6" DUCKBILL CHECK VALVE (FL)



SECTION A

3/8" = 1'-0"



SECTION B

3/8" = 1'-0"

RH2

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

WELL 5B MECHANICAL PLAN

CITY OF Vancouver WASHINGTON

REVISIONS			
NO.	DATE	DESCRIPTION	BY
			REVIEW

JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3B5B-P-MECH_5B.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: JRB
REVIEWED: KMP

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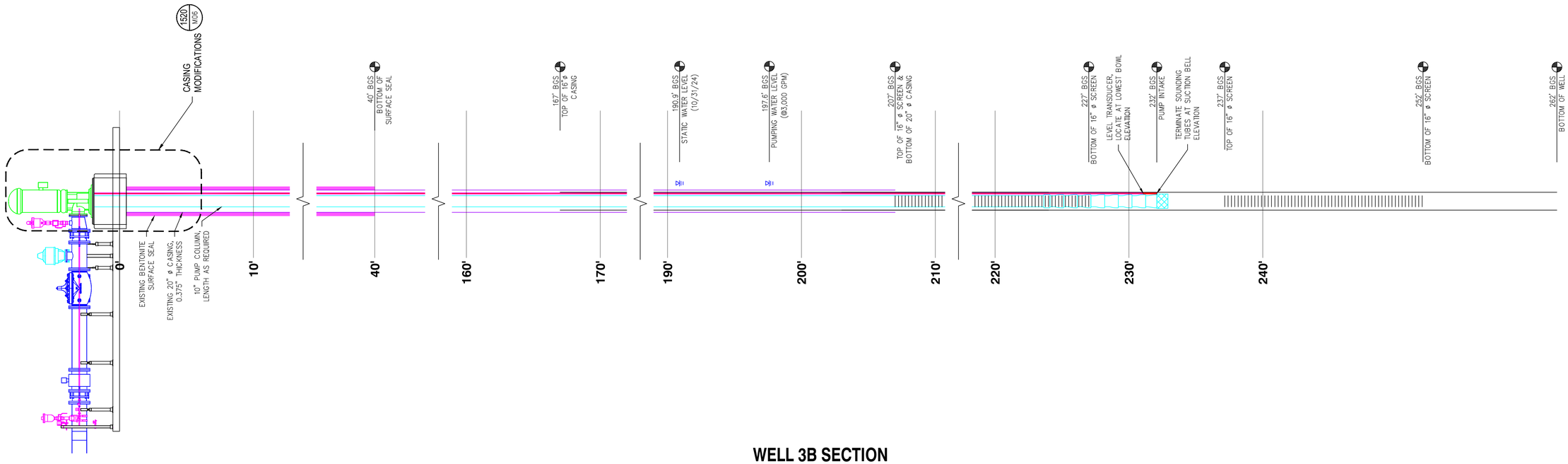
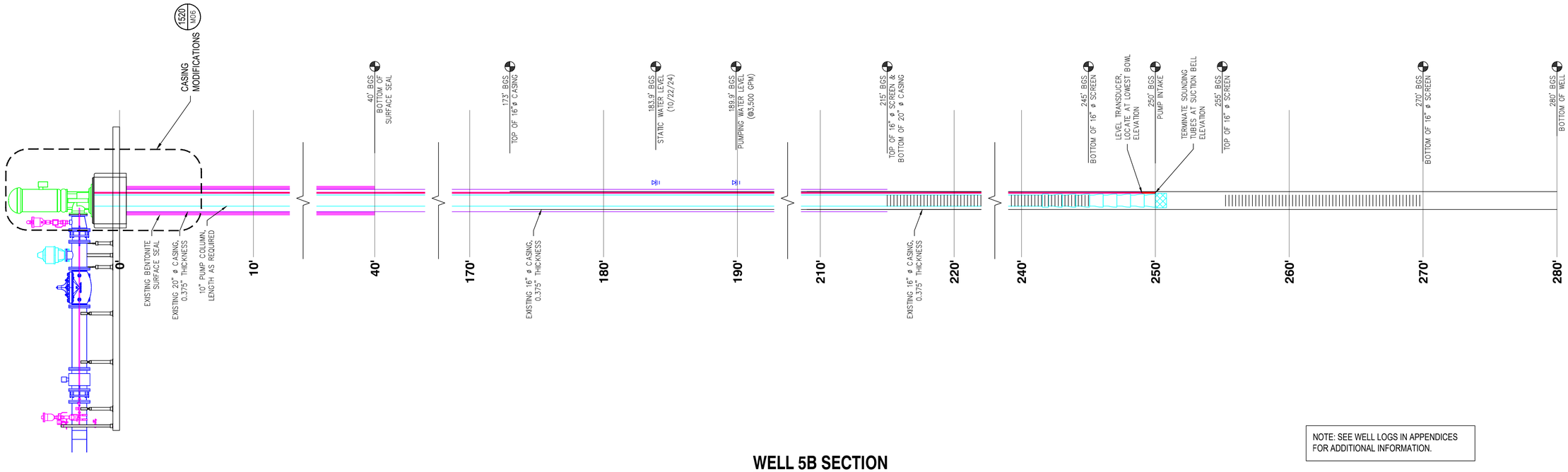
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: M04
SHEET NO.: 38
82



WELL 3B SECTION

¼" = 1'-0"



WELL 5B SECTION

¼" = 1'-0"

NOTE: SEE WELL LOGS IN APPENDICES FOR ADDITIONAL INFORMATION.

RH2

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

WELL SECTIONS

CITY OF Vancouver WASHINGTON

JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3B5B-P-WELLS.DWG
SAVE DATE: Nov 2, 2025
PLOT DATE: Nov 3, 2025
DESIGNER: JRB
REVIEWED: KMP

REVISIONS

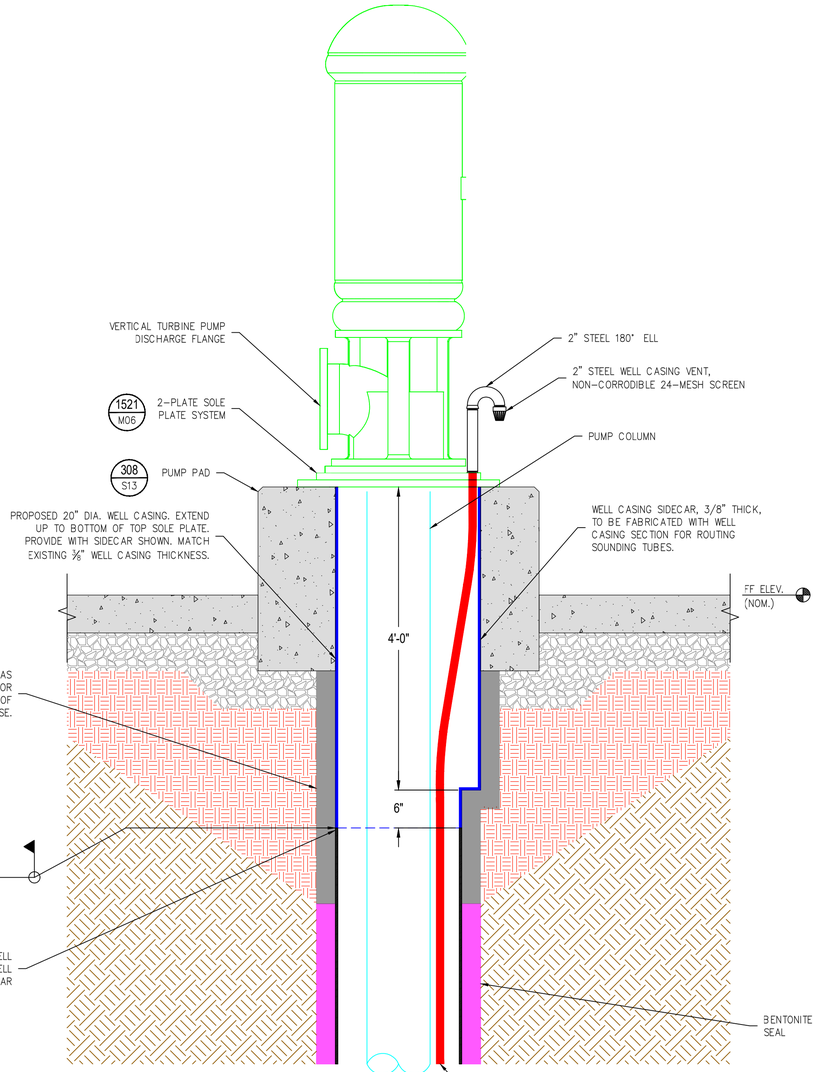
NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

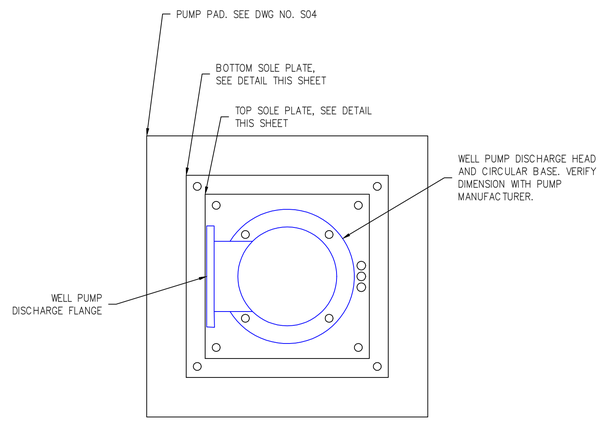
DWG NO.: M05
SHEET NO.: 39 82



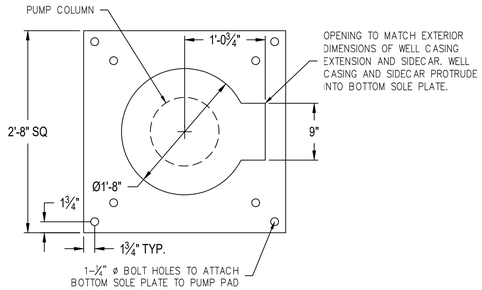
NOTES:
1. MODIFICATIONS TO WELLHEAD AND SEAL TO BE PERFORMED BY LICENSED WELL CONTRACTOR.
2. WELL CASING PLATE AND PUMP COLUMNS SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C654 PRIOR TO INSTALLATION.

WELL CASING MODIFICATIONS
1" = 1'-0"

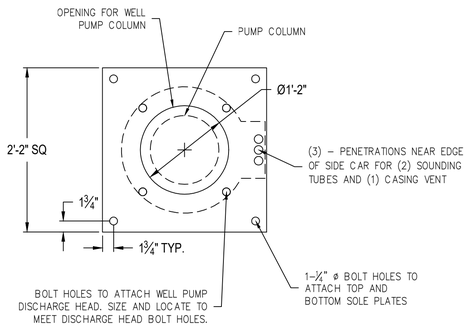
1520 M05



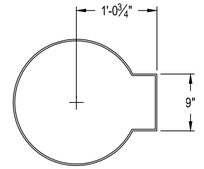
WELL PUMP DISCHARGE HEAD AND 2-PLATE SOLE PLATE SYSTEM



BOTTOM SOLE PLATE



TOP SOLE PLATE



WELL CASING AND SIDE CAR PLAN

NOTES:
1. DIMENSIONS SHOWN FOR 2-PLATE SOLE PLATE SYSTEM AND PUMP PAD ARE BASED ON THE WELL PUMP DISCHARGE HEAD AND CIRCULAR BASE SHOWN. DURING WELL PUMP SUBMITTAL, CONTRACTOR SHALL VERIFY WELL PUMP DISCHARGE HEAD DIMENSIONS WITH PUMP MANUFACTURER AND SUBMIT FOR ENGINEER APPROVAL. REVISION TO 2-PLATE SYSTEM AND PUMP PAD ARE SUBJECT TO ENGINEER REVIEW AND APPROVAL AND CONTRACTOR IS RESPONSIBLE FOR ADDITIONAL COSTS.
2. BOLTS NOT SHOWN FOR CLARITY.
3. SEAL ALL PENETRATIONS INTO CASING, SEALANT SHALL BE APPROVED FOR POTABLE WATER.

WELL PUMP 2-PLATE SOLE PLATE SYSTEM AND DISCHARGE HEAD CONNECTIONS
1" = 1'-0"

1521 M06

RH2

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

WELL DETAILS

CITY OF Vancouver WASHINGTON

JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3B5B-P-WELLS.DWG
SAVE DATE: Nov 2, 2025
PLOT DATE: Nov 3, 2025
DESIGNED: ARB
REVIEWED: KMP

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

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

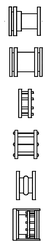
DWG NO.: M06
SHEET NO.: 40
82

GENERAL MECHANICAL NOTES

1. CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT, MATERIALS, LABOR, AND EXPERTISE TO CONSTRUCT MAJOR AND MINOR PIPING SYSTEMS ACCORDING TO APPLICABLE CODES, STANDARDS, AND MANUFACTURER RECOMMENDATIONS.
2. CONTRACTOR SHALL CONFORM TO PIPE ROUTING AND ARRANGEMENT AS SHOWN IN THESE PLANS AND SHALL NOTIFY THE ENGINEER AND OWNER IF LOCATIONS EXISTING WHERE THAT IS NOT POSSIBLE. CONTRACTOR SHALL PREPARE AND SUBMIT DETAILED DIMENSIONAL DRAWINGS BASED ON APPROVED EQUIPMENT, PIPE FITTINGS AND VALVES. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL PIPING DIMENSIONS.
3. CONTRACTOR SHALL ROUTE PIPE IN A NEAT MANNER SUCH THAT THEY ARE PARALLEL AND PERPENDICULAR TO THE WALLS, FLOORS, AND CEILING.
4. FITTINGS AND/OR PIPING THAT MAY BE REQUIRED IN ORDER TO OPERATE SOME MINOR MECHANICAL SYSTEMS, INSTRUMENTATION, AND EQUIPMENT MAY NOT BE SHOWN IN THE PLANS. THE CONTRACTOR SHALL PROVIDE FITTINGS AND PIPING AS NECESSARY TO HAVE A COMPLETE AND FUNCTIONAL SYSTEM.
5. CONTRACTOR SHALL CONNECT EQUIPMENT, VALVES, METERS, AND OTHER SIMILAR FITTINGS TO PIPING SYSTEM SUCH THAT IT CAN BE READILY DISASSEMBLED FOR MAINTENANCE OF THE EQUIPMENT. THIS MAY REQUIRE PROVIDING ADDITIONAL FITTINGS OR SUPPORTS NOT SHOWN IN THE PLANS.
6. DISASSEMBLY JOINTS OR FLANGE COUPLING ADAPTORS WITH SHACKLE RODS MAY BE ADDED WITH ENGINEER APPROVAL TO FACILITATE PIPE ASSEMBLY.
7. CONTRACTOR SHALL PROVIDE ANY AND ALL VALVED VENTS AT HIGH POINTS AND VALVED DRAINS AT LOW POINTS AND ALL OTHER LOCATIONS AS NECESSARY TO SUCCESSFULLY TEST PIPING SYSTEMS.
8. NOT ALL PIPE SUPPORTS ARE SHOWN IN THE PLANS. CONTRACTOR SHALL PROVIDE AND INSTALL PIPE SUPPORTS AS NECESSARY TO PROVIDE A RIGID, SECURE, NON-SAGGING SYSTEM. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
9. FITTING TAPS SHALL BE DONE AT THE FACTORY. PIPE TAPS MAY BE DONE ON SITE USING A TAPPING MACHINE BY AN EXPERIENCED OPERATOR. ALL TAPS ARE SUBJECT TO OWNER APPROVAL AND ANY REJECTED MATERIALS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. TAPPED DI PIPE SHALL BE CLASS 53 MINIMUM. FOR STEEL PIPE, PROVIDE REINFORCING COLLAR AT ALL TAPPING LOCATIONS. REINFORCING COLLAR THICKNESS TO BE EQUAL TO STEEL PIPE CYLINDER OR 0.25", WHICHEVER IS GREATER. DIRECT TAPS ON PIPE ARE TO BE LOCATED SUCH THAT ADJACENT FITTING BOLTS OR SHACKLE RODS DO NOT INTERFERE WITH INSTALLATION OF GAUGES, SWITCHES OR AIR VALVES. TAPPED PIPE WILL BE REJECTED IF EQUIPMENT CANNOT BE INSTALLED CLEANLY AND DISASSEMBLED EASILY.
10. ALL NON-BURIED VALVES 2" AND LARGER SHALL INCLUDE HANDWHEEL OPERATORS. ALL BALL VALVES SMALLER THAN 2" SHALL HAVE ¼ TURN FULL HANDLES AND BE RATED FOR SPECIFIED WORKING PRESSURE.
11. PLUMB ALL CONTROL VALVE PILOT DRAINS, AIR VALVE OUTLETS, AND PUMP HEAD DRAINS TO FLOOR DRAINS USING COPPER AND COMPRESSION FITTINGS OR SCH 40 PVC PIPE AND FITTINGS. SECURE TO PIPE RUNS OR SUPPORTS AWAY FROM TRAVELED PATHS. PROVIDE UNIONS OR COUPLINGS AS NECESSARY TO ALLOW COMPLETE DISASSEMBLY. MAINTAIN CONTINUOUS DRAINING GRADE ON PIPE RUNS.
12. CONTRACTOR SHALL PROVIDE ALL NECESSARY THRUST RESTRAINT, INCLUDING BUT NOT LIMITED TO CONCRETE BLOCKING, SHACKLE RODS MECHANICAL THRUST RESTRAINT (MEGALUGS OR EQUAL) AND TRUE RESTRAINED JOINT PIPE (TRJ) PIPE.
13. IN THE EVENT THAT A SECTION OF PIPING FAILS A PRESSURE TEST, AND ANY MECHANICAL JOINTS WITH MEGA-LUG STYLE RESTRAINTS NEED TO BE DISASSEMBLED, THE MEGA-LUGS AND THE ASSOCIATED PIPE MAY NOT BE REUSED AND MUST BE REPLACED AT THE CONTRACTOR'S EXPENSE.
14. CONTRACTOR SHALL PROVIDE INSULATING FLANGE KITS OR TRANSITION COUPLINGS BETWEEN ALL DISSIMILAR PIPING MATERIALS.
15. ALL NON-DRAIN PVC FITTINGS SHALL BE SOCKET END-TYPE FITTINGS UNLESS OTHERWISE NOTED. ALL SOCKET STYLE PVC PIPE AND FITTINGS TO BE SOLVENT WELDED. INSTALLATION SHALL FOLLOW MANUFACTURER RECOMMENDATIONS AND SHALL INCLUDE PRIMER AND SOLVENT CEMENT EQUAL TO IPS CORPORATION WELD-ON AND SUITABLE FOR THE INTENDED FLUID TYPE CONVEYED IN THE PIPE.
16. ALL VALVES SHALL BE REMOVABLE WITHOUT HAVING TO CUT PIPE.
17. FLANGE COUPLING ADAPTERS (FCA), RESTRAINED FLANGE COUPLING ADAPTERS (RFCA), AND COUPLINGS SHALL BE EQUAL TO ROMAC.
18. PROVIDE UNION OR FLANGED CONNECTION WITHIN 3-FT. MAX. OF ANY CHANGE IN DIRECTION (I.E. ELBOW, TEE, ETC.)
19. ALL PRESSURE PIPE SHALL HAVE RESTRAINED JOINTS. EXPOSED PIPING SHALL BE FLANGED; BURIED PIPING SHALL BE MECHANICALLY RESTRAINED JOINTS (END CONFIGURATION DENOTED AS "RJ"). PUSH ON JOINTS WITH FIELD LOK (OR APPROVED EQUAL) ARE ACCEPTABLE RESTRAINED JOINT IN STRAIGHT SECTIONS WITH BLOCKING OR RESTRAINED FITTINGS AS SPECIFIED. PROVIDE TRUE (BOLTLESS) RESTRAINED JOINT PIPE (END CONFIGURATION DENOTED AS "TRJ") AND CONCRETE BLOCKING WHERE SPECIFIED ON PLANS.
20. PIPING WHICH NORMALLY OPERATES UNDER FULL CONDITIONS WITH HYDROSTATIC HEAD HIGHER THAN THE CROWN OF THE PIPE SHALL BE CONSIDERED PRESSURE PIPING. PIPING WHICH NORMALLY OPERATES AT A HYDROSTATIC HEAD NO HIGHER THAN THE PIPE CROWN SHALL BE CONSIDERED GRAVITY PIPELINES. ALL PIPING SHALL BE HYDROSTATICALLY TESTED AND DISINFECTED (WHERE APPLICABLE) IN ACCORDANCE WITH THE GUIDELINES IDENTIFIED IN THE SPECIFICATIONS.
21. ALL PIPE PENETRATIONS SHALL BE SEALED WATERTIGHT.

MAJOR MECHANICAL LEGEND:

PIPE AND PIPE JOINING (PLAN VIEW)



ADAPTER, FLxMJ SHOWN. OTHER END CONFIGURATIONS WHERE REQUIRED

LONG BODY SLEEVE

FCA WITH SHACKLE RODS, SHACKLE RODS NOT SHOWN

COUPLING, TRANSITION OR RESTRAINED WHERE REQUIRED

EXPANSION JOINT WITH LIMIT RODS

DISMANTLING JOINT WITH LIMIT RODS

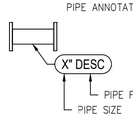
PIPE SUPPORTS (PLAN VIEW)

- STAND-ON/CONCRETE
- CEILING HUNG
- WALL SUPPORTED
- BASE BEND/RISER

OTHER PIPING SYMBOLS

- PIPE FLOW ARROW (COLOR BY PIPE FUNCTION)
- STL / DI — PIPE MATERIAL TRANSITION

PROCESS PIPING LEGEND AND ABBREVIATIONS

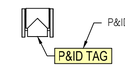


PROCESS PIPING ABBREVIATIONS SEE PIPE SCHEDULE.

PIPE MATERIAL

MATERIAL ABBREVIATION	MATERIAL DESCRIPTION
DI	DUCTILE IRON
GSP	GALVANIZED STEEL PIPE
SSP	STAINLESS STEEL PIPE
STL	FABRICATED STEEL PIPE
HDPE	HIGH DENSITY POLY ETHYLENE
PE	POLY ETHYLENE
PVC	POLYVINYL CHLORIDE
CPEP	CORRUGATED POLYETHYLENE PIPE
COP	COPPER
BIP	BLACK IRON PIPE
PP	POLYPROPYLENE

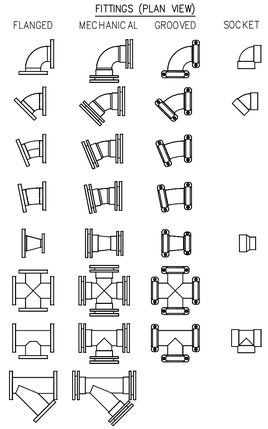
VALVE, EQUIPMENT, OR INSTRUMENTATION ANNOTATION



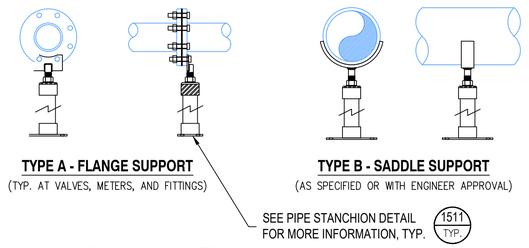
VALVE AND MECHANICAL EQUIPMENT ABBREVIATIONS

GV GATE VALVE
BFV BUTTERFLY VALVE
BV BALL VALVE
PV PLUG (ECCENTRIC) VALVE
CV CHECK VALVE

FITTINGS (PLAN VIEW)



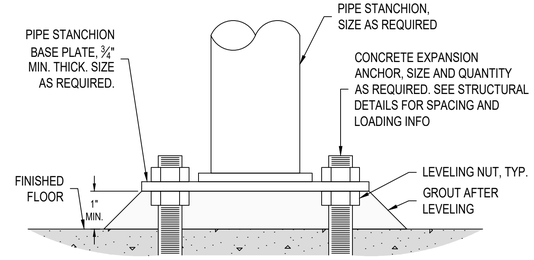
VALVES AND METERS (PLAN VIEW)



1. FLANGE, SADDLE, AND SADDLE CLAMP SUPPORTS SHALL BE "STANDON" BRAND AS MANUFACTURED BY MATERIAL RESOURCES OR EQUAL.

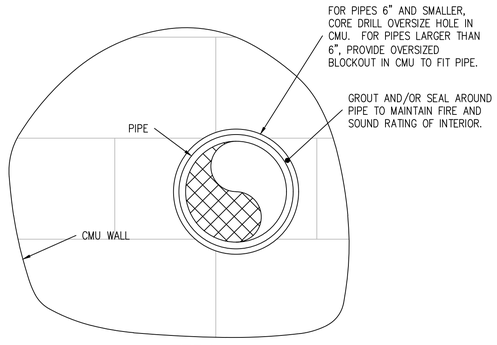
STANDON PIPE SUPPORT 1510 TYP.

NOT TO SCALE



PIPE STANCHION DETAIL 1511

NOT TO SCALE



TYPE A
CMU WALL

TYPICAL USAGE: CMU WALL PIPE PENETRATION. MAY ALSO BE USED ON ABOVE GRADE PENETRATIONS IN CONCRETE WALLS (NON-WATER BEARING STRUCTURES ONLY) WITH ENGINEER APPROVAL.

PIPE PENETRATION, TYPE 3 - CMU WALL 1573 TYP.

NOT TO SCALE

GENERAL PIPE SUPPORT NOTES 1550 TYP.

TABLE A: PIPE SUPPORT DESIGN CRITERIA

PIPE SIZE	ROD SIZE	MAX. SPAN FOR PIPE SUPPORTS (FT) STEEL	DUCTILE IRON	COPPER	PLASTIC
1"	3/8"	7	10	5	5
1-1/2"	3/8"	9	10	7	5
2"	3/8"	10	10	8	6
2-1/2"	1/2"	10	10	9	6
3"	1/2"	10	10	10	7
4"	5/8"	10	10	10	7
6"	3/4"	10	10	10	8
8"	3/4"	10	10	10	8
10"	7/8"	10	10	10	10
12"	7/8"	10	10	10	10
14"	1"	10	10	–	10
16"	1"	10	10	–	10
18"	1-1/4"	10	10	–	10
20"	1-1/4"	10	10	–	10
24"	1-1/2"	10	10	–	10
30"	1-1/2"	10	10	–	10
36"	2"	10	10	–	10

1. FOR PIPE SIZES THAT ARE NOT LISTED IN ABOVE TABLE, THE NEXT LARGER PIPE SIZE SHALL BE USED FOR DETERMINING LOADING AND SUPPORT SPACING.
2. ROD SIZE IS BASED ON CARRYING SINGLE PIPE. WHEN MORE THAN ONE PIPE IS TO BE SUPPORTED, RODS SHALL BE SIZED USING SUM OF DESIGN WEIGHTS TO DETERMINE TOTAL LOAD.
3. PLASTIC PIPE SUPPORT SPACING BASED ON SCH 80 PIPE AT 100 DEG F. SCH 40 PIPE OR HIGHER TEMPERATURES REQUIRE SHORTER SPANS. SEE MANUFACTURER'S RECOMMENDATIONS.
4. INSTALL AT LEAST ONE HANGER PER PIPE LENGTH. LOCATE AS NEAR THE END CONNECTION AS POSSIBLE.
5. PROVIDE TURNBUCKLE WITH SUPPORT ROD FOR PIPES SUBJECT TO HORIZONTAL MOVEMENT.
6. PROVIDE LATERAL AND SEISMIC BRACING AS SPECIFIED & REQUIRED.
7. DESIGN WEIGHTS ARE BASED ON SCH 80 STEEL PIPE AT 10 FT SUPPORT SPACING.
8. ALL CONNECTIONS TO CONCRETE SHALL BE CONCRETE ANCHORS PER SPECIFICATIONS & STRUCTURAL DETAILS.
9. MSS REFERS TO MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTING INDUSTRY, STANDARD PRACTICE SP 58 AND SP 69.
10. IF SUPPORT IS SUBMERGED OR LOCATED BELOW THE TOP OF THE WALL WITHIN A WATER BEARING STRUCTURE, ALL HARDWARE AND SUPPORT MATERIAL SHALL BE STAINLESS STEEL. IN ALL OTHER AREAS, MATERIALS SHALL BE HOT-DIP GALVANIZED UNLESS NOTED OTHERWISE.
11. CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT, MATERIALS, AND LABOR FOR CONSTRUCTING PIPE SUPPORT SYSTEMS.
12. PIPE SUPPORT SYSTEMS AS DETAILED PROVIDE GENERAL GUIDELINES FOR HOW PIPES SHALL BE SUPPORTED. ADDITIONAL SUPPORT CONFIGURATIONS MAY BE REQUIRED. CONTRACTOR SHALL SUBMIT ALTERNATE SUPPORT DETAILS FOR APPROVAL.
13. CONTRACTOR SHALL PROVIDE SUPPORTS AS NEEDED TO SECURE PIPING SYSTEM IN NORMAL AND TEST OPERATING CONDITIONS.
14. CONTRACTOR IS RESPONSIBLE FOR DESIGN OF PIPE SUPPORTS, HANGERS AND SEISMIC BRACING. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

RH2

ALLEN M. PETTIJOHN — STATE OF WASHINGTON — 41857 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CITY OF Vancouver WASHINGTON

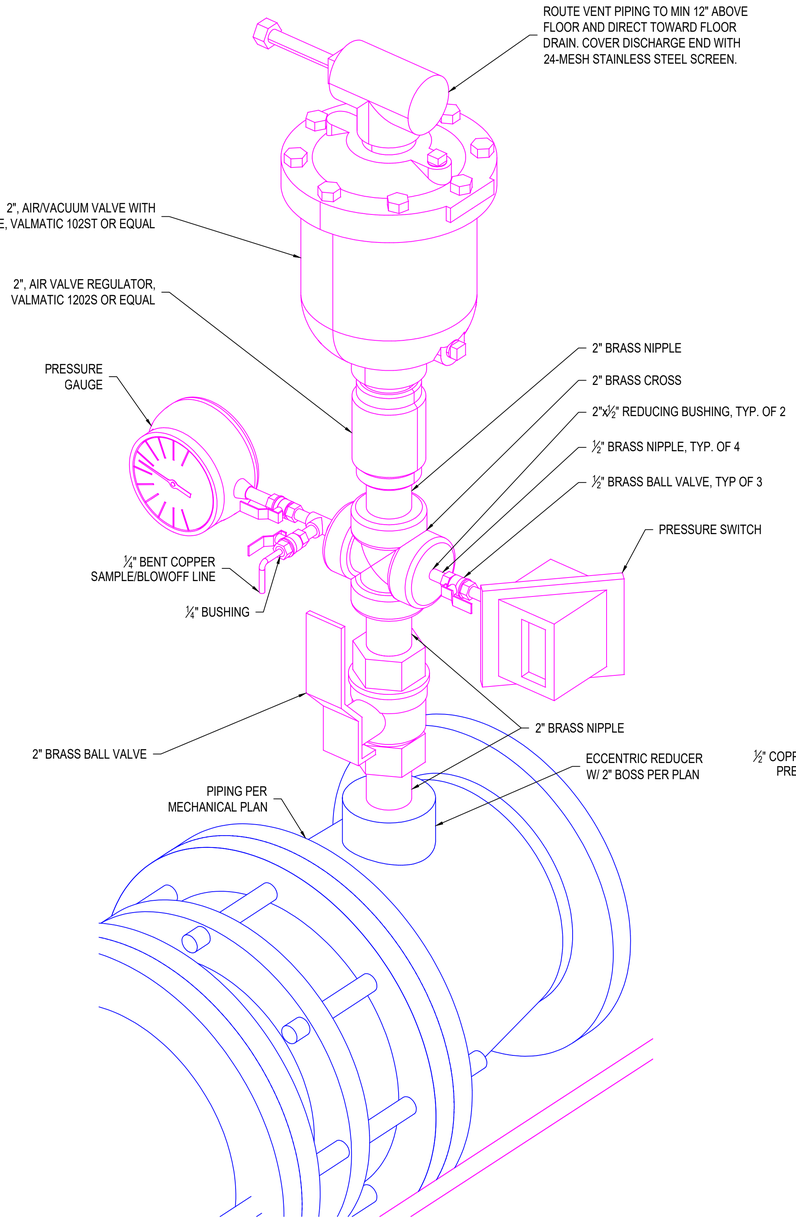
MECHANICAL DETAILS 1

REVISIONS			
NO.	DATE	DESCRIPTION	BY
			REVIEW

JOB NO.: 21-0199
CLIENT: VAN
FILENAME: 3B5B-P-ML_DETS.DWG
SAVE DATE: Nov 2, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: JRB
REVIEWED: KNP

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

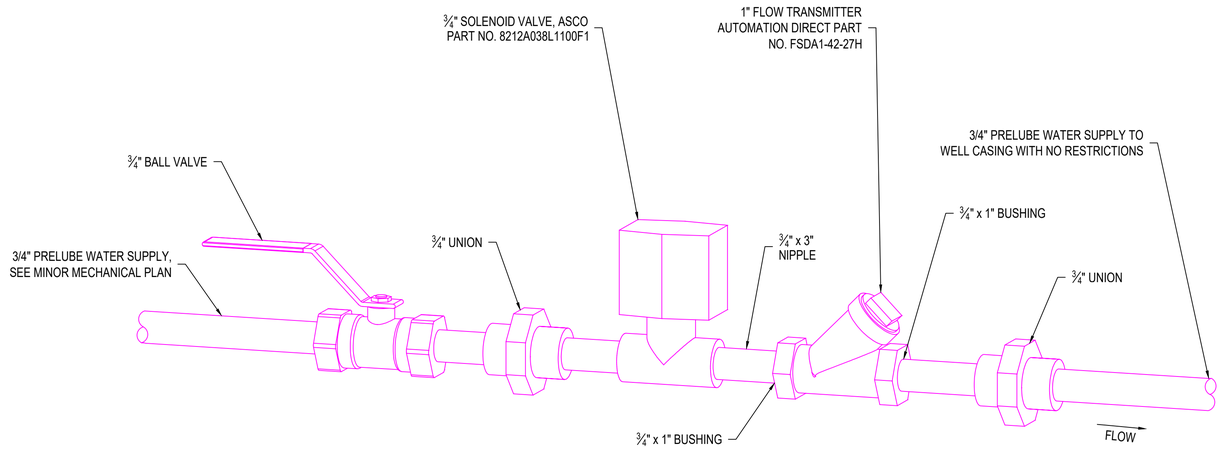
DWG NO.: M07
SHEET NO.: 41



VALVE STACK #1

NOT TO SCALE

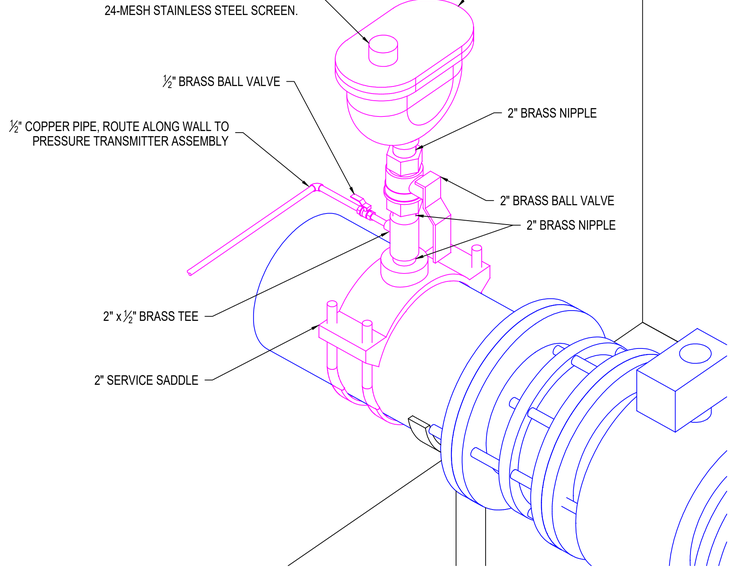
1502 TYP



PRELUBE WATER SUPPLY

NOT TO SCALE

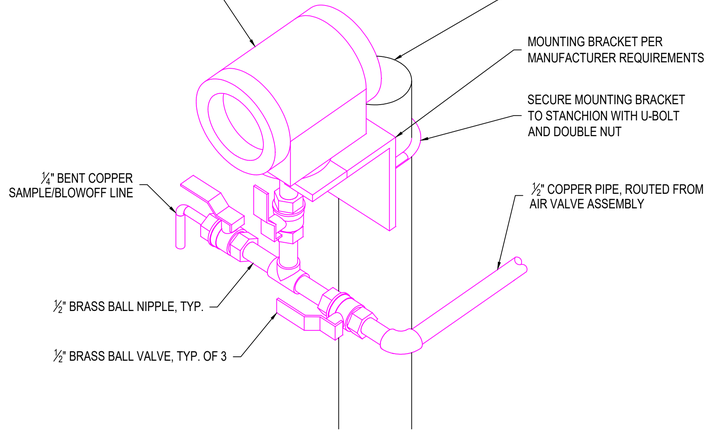
1503 TYP



VALVE STACK #2

NOT TO SCALE

1504 TYP



PRESSURE TRANSMITTER ASSEMBLY

NOT TO SCALE

1505 TYP

RH2

SIGNED: 10/27/2025

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

MECHANICAL DETAILS 2

CITY OF Vancouver WASHINGTON

REVISIONS			
NO.	DATE	DESCRIPTION	BY
			REVIEW

DESIGNED: JRB
REVIEWED: KMP
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
CLIENT: VAN
FILENAME: 3B5B-P-M_DETS2.DWG
JOB NO.: 21-0199

SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: M08
SHEET NO.: 42 82

LEGEND

CONDUIT AND RACEWAY

CABLE SPECIFICATION: SEE SPECS FOR CONDUCTOR TYPE BY APPLICATION.

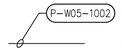
CONDUCTOR QUANTITY - SIZE CHART:

CABLE FROM: POWER SOURCE, CONTROL SOURCE, OR LOCATION.

CABLE TO: POWER LOAD, MONITORED EQUIPMENT, OR LOCATION.

VIA RACEWAY(S): (OPTIONAL) CABLE IS ROUTED FROM SOURCE TO DESTINATION USING DENOTED RACEWAYS, VAULTS AND/OR HANDHOLES.

RACEWAY SIZE: CONDUIT TRADE SIZE. SEE SPECS FOR CONDUIT TYPE BY APPLICATION.



CABLE OR RACEWAY IDENTIFIER (EXAMPLE)

CONDUIT EXPOSED OR NEW

CONDUIT CONCEALED OR DIRECT BURIED

CONDUIT EXISTING OR SCREENED

CONDUIT UP

CONDUIT DOWN

CONDUIT STUBBED AND CAPPED AS SHOWN

HOMERUN TO PANEL WITH CONDUCTORS SHOWN. LETTERS INDICATE PANEL, NUMBERS INDICATE CIRCUIT.

POWER

JUNCTION BOX, SIZE PER CODE

CONNECTION POINT TO EQUIPMENT SPECIFIED, FURNISHED, AND INSTALLED UNDER OTHER SECTIONS. RACEWAY, CONDUIT, AND CONDUCTORS PROVIDED BY ELECTRICAL.

SPECIALTY RECEPTACLE, RATING AS SHOWN

DUPLEX RECEPTACLE

3 PHASE RECEPTACLE

WALL SWITCH

OR PANEL AND ENCLOSURE

LIGHTING

LED FIXTURE

SINGLE FACED CEILING OR WALL MOUNTED EXIT LIGHT

EMERGENCY LIGHT FIXTURE

WALL MOUNTED LIGHT FIXTURE

X LIGHTING CONTROL USAGE IDENTIFICATION

ONE-LINE DIAGRAM

200 AC MOTOR, SQUIRREL CAGE INDUCTION - HORSEPOWER AS SHOWN

POWER TRANSFORMER

400A CIRCUIT BREAKER, THERMAL MAGNETIC TRIP, 3-POLE, SIZE SHOWN

100A SWITCH, 3-POLE, SIZE SHOWN

30A FUSED DISCONNECT SWITCH, NUMBER OF POLES AND FUSE SIZE SHOWN ON ONE-LINE DIAGRAM

100A FUSE, SIZE SHOWN, ONE PER PHASE

10 POWER FACTOR CORRECTION CAPACITOR, KVAR INDICATED

CONTACT - NORMALLY OPEN

GROUND CONNECTION

GROUND ROD

GROUND TEST WELL

EXOTHERMIC TYPE GROUND CONNECTION

BOLTED TYPE GROUND CONNECTION

DEMOLISH

NON-FUSED DISCONNECT SWITCH

GROUND CABLE / WIRE

ABBREVIATIONS

A	AMMETER, AMPERE
AIC	AMPERE INTERRUPTING CAPACITY
APPROX	APPROXIMATE
ATS	AUTOMATIC TRANSFER SWITCH
CB	CIRCUIT BREAKER
CF	EXHAUST FAN
CKT	CIRCUIT
CT	CURRENT TRANSFORMER
CU	COPPER
DB	DUCT BANK
DIA	DIAMETER
DS	DISCONNECT SWITCH
DP	DISTRIBUTION PANELBOARD
EA	EACH
EX, EXST	EXISTING
EUH	ELECTRIC UNIT HEATER
FC	FOOTCANDLE
FU	FUSE
G	GROUND
GALV	GALVANIZED
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
HH	HANDHOLE
HP	HORSEPOWER
HZ	HERTZ
JB	JUNCTION BOX
KAIC	THOUSAND AMPS INTERRUPTING CAPACITY
KCMIL	THOUSANDS OF CIRCULAR MILS
KVA	KILOVOLT AMPERE
KW	KILOWATT
LP	LIGHT POLE, LIGHTING PANEL, LOCAL PANEL
MB	METER BASE
MCC	MOTOR CONTROL CENTER
MCS	MOLDED CASE SWITCH
MH	MAINTENANCE HOLE
MIN	MINIMUM
MPC	MINI-POWER CENTER
MTS	MANUAL TRANSFER SWITCH
N	NEW, NEUTRAL
N/A	NOT APPLICABLE
NEC	NATIONAL ELECTRICAL CODE (NFPA 70)
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NO	NUMBER
NTS	NOT TO SCALE
P	POLE, POWER
PH	PHASE
PIR	PASSIVE INFRARED MOTION SENSOR
PMS	PAD MOUNTED SWITCH
PNL	PANEL, PANELBOARD
PFC	POWER FACTOR CORRECTION
RCPT	RECEPTACLE
RVAT	REDUCED VOLTAGE AUTO-TRANSFORMER
RVSS	REDUCED VOLTAGE SOFT STARTER
SECT	SECTION
SOW	SCOPE OF WORK
S/N	SOLID NEUTRAL
TYP	TYPICAL
V	VOLT
W	WIRE
WSEC	WASHINGTON STATE ENERGY CODE
TX	TRANSFORMER

GENERAL NOTES

1. CONDUIT AND WIRING SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ROUTING.
2. THE INTENT OF THESE DRAWINGS IS TO SHOW ALL WORK REQUIRED FOR A COMPLETE ELECTRICAL INSTALLATION. IF ACTUAL FIELD CONDITIONS ARE FOUND TO DIFFER SIGNIFICANTLY FROM WHAT IS SHOWN, THEN OBTAIN THE OWNER'S APPROVAL PRIOR TO COMMENCING THE WORK.
3. ALL ELECTRICAL WORK SHALL BE PERFORMED BASED ON THESE DRAWINGS USING THE LATEST INDUSTRY ACCEPTED STANDARDS AND SHALL BE IN COMPLIANCE WITH ALL LOCAL CODE AMENDMENTS AND REGULATIONS. ANY INCIDENTAL MATERIALS AND LABOR THAT IS NOT INDICATED ON THESE DRAWINGS BUT IS REQUIRED FOR A COMPLETE FUNCTIONING INSTALLATION SHALL BE PROVIDED BY THE CONTRACTOR.
4. THE CONTRACTOR SHALL VISIT THE SITE TO VERIFY THE PROPOSED INSTALLATION, EXISTING FIELD CONDITIONS, SITE ACCESS AND STORAGE AREAS.
5. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS AND LICENSES.
6. COORDINATE THE ELECTRICAL INSTALLATION WITH THE APPROVED SHOP DRAWINGS.
7. PROVIDE A WORK PLAN FOR THE OWNER'S REVIEW AND APPROVAL OF THE PROPOSED CONSTRUCTION ACTIVITIES.
8. ALL EQUIPMENT AND ROUTING SHOWN ON THESE DRAWINGS IS APPROXIMATE. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION AND FIELD MEASUREMENTS AND FOR COORDINATING THIS WORK WITH THE APPROVED SHOP DRAWINGS.
9. ALL EQUIPMENT PLACEMENT AND ROUTING SHALL PROVIDE PROPER ACCESS AND CLEARANCES.
10. THE CONTRACTOR SHALL MAINTAIN THE RATING OF ALL PENETRATIONS THROUGH FIRE AND SMOKE RATED WALLS AND SURFACES.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING A SAFE WORK ENVIRONMENT. ANY UNSAFE EXPOSURES OR SAFETY VIOLATIONS BROUGHT TO THE ATTENTION OF THE CONTRACTOR SHALL BE RECTIFIED IMMEDIATELY.

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21006672
REGISTERED
PROFESSIONAL ENGINEER

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CITY OF Vancouver WASHINGTON

ELECTRICAL LEGEND

ENGINEER: HM
REVIEWED: TJ
SAVE DATE: Nov. 3, 2025
PLOT DATE: Nov. 3, 2025
CLIENT: CITY OF VANCOUVER
JOB NO.: XXXXXXX

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: NONE
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: E01
SHEET NO.: 43
82

GENERAL SHEET NOTES

A. ALL EQUIPMENT SHOWN DEMOLISHED OR EQUIPMENT TAKEN OUT OF SERVICE BECAUSE OF WORK PERFORMED IN THIS CONTRACT SHALL BE REMOVED AND DEMOLISHED UNLESS NOTED OTHERWISE. DEMOLISH ALL CONDUCTORS, WIRES AND CABLES SERVING DEMOLISHED ELECTRICAL EQUIPMENT. CONDUITS SERVING DEMOLISHED EQUIPMENT CAN BE REUSED WHERE IN GOOD CONDITION AND USEFUL TO SERVE NEW EQUIPMENT. WHERE CONDUIT IS TO BE REUSED, PREP AND PAINT EXTERIOR CONDUIT SURFACE AND MANDREL CONDUIT TO BE FREE OF SHARP EDGES, DEMOLISH ALL CONDUITS THAT NO LONGER SERVE A USEFUL PURPOSE AFTER COMPLETION OF THE WORK. ALL NEW AND REPURPOSED CONDUITS SHALL BE PAINTED WHITE. EXISTING CONDUITS FOUND TO HAVE PEELING OR MISSING PAINT SHALL BE CLEANED AND RE-PAINTED TO MATCH THE OTHER CONDUITS IN THE FACILITY.

B. DEMOLISH ASSOCIATED CONDUITS AND WIRING FOR EXISTING EQUIPMENT, INCLUDING RELATED PULL BOXES AND WIREWAYS. CUT CONDUITS FLUSH WITH GRADE. GROUT, AND ABANDON IN PLACE.

(#) SHEET KEYNOTES

1. RETURN EQUIPMENT TO OWNER.
2. DEMOLISH CABLE P-W03-1000. CABLE IS FED FROM B03SWBD100 LOCATED IN ELECTRICAL ROOM B03108.
3. WELL NO.3 BUILDING WILL BE REMOVED BY OWNER PRIOR TO THE WORK. ONLY THE CONDUITS TO THE BUILDING WILL REMAIN

DEMOLITION LEGEND

FIELD DEMOLISHED BY OWNER

PROPOSED DEMOLITION

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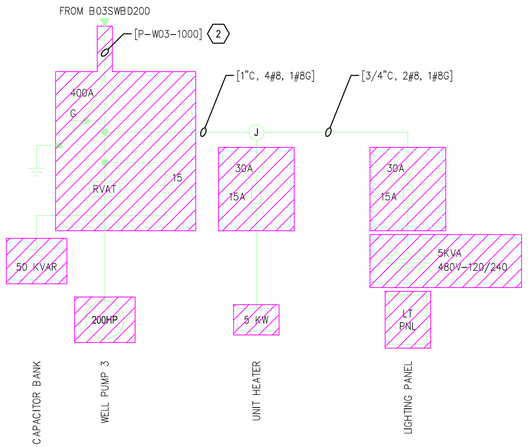
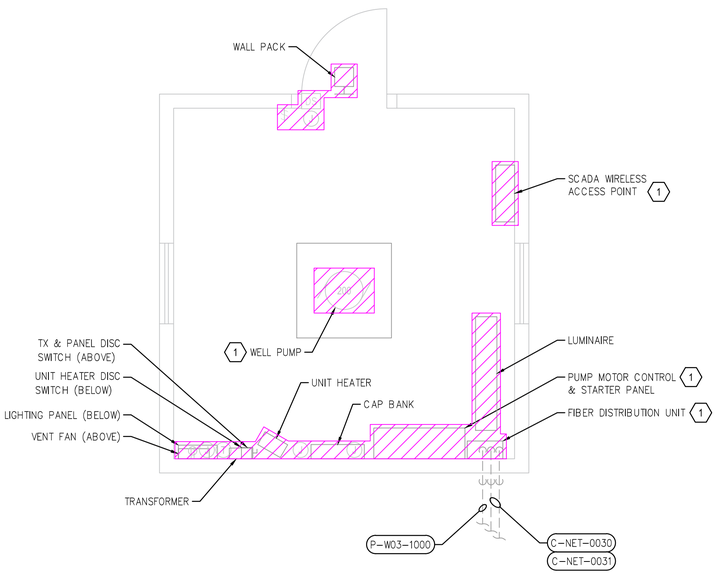
CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

EXISTING WELL 3 DEMOLITION PLAN AND ONE-LINE DIAGRAM



3 EXISTING WELL 3 - DEMOLITION ONE-LINE DIAGRAM



3 EXISTING WELL 3 - ELECTRICAL DEMOLITION PLAN

3/8" = 1'-0"

ENGINEER: HM
REVIEWED: TA
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
CLIENT: CITY OF VANCOUVER
JOB NO.: XXXXXXX

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: AS SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: E02

SHEET NO.: 44

GENERAL SHEET NOTES

A. ALL EQUIPMENT SHOWN DEMOLISHED OR EQUIPMENT TAKEN OUT OF SERVICE BECAUSE OF WORK PERFORMED IN THIS CONTRACT SHALL BE REMOVED AND DEMOLISHED UNLESS NOTED OTHERWISE. DEMOLISH ALL CONDUCTORS, WIRES AND CABLES SERVING DEMOLISHED ELECTRICAL EQUIPMENT. CONDUITS SERVING DEMOLISHED EQUIPMENT CAN BE REUSED WHERE IN GOOD CONDITION AND USEFUL TO SERVE NEW EQUIPMENT. WHERE CONDUIT IS TO BE REUSED, PREP AND PAINT EXTERIOR CONDUIT SURFACE AND MANDREL CONDUIT TO BE FREE OF SHARP EDGES, DEMOLISH ALL CONDUITS THAT NO LONGER SERVE A USEFUL PURPOSE AFTER COMPLETION OF THE WORK. ALL NEW AND REPURPOSED CONDUITS SHALL BE PAINTED WHITE. EXISTING CONDUITS FOUND TO HAVE PEELING OR MISSING PAINT SHALL BE CLEANED AND RE-PAINTED TO MATCH THE OTHER CONDUITS IN THE FACILITY.

B. DEMOLISH ASSOCIATED CONDUITS AND WIRING FOR EXISTING EQUIPMENT, INCLUDING RELATED PULL BOXES AND WIREWAYS. CUT CONDUITS FLUSH WITH GRADE. GROUT, AND ABANDON IN PLACE.

SHEET KEYNOTES

1. RETURN EQUIPMENT TO OWNER.
2. DEMOLISH CABLE P-MV-1002. CABLE IS FED FROM PMS-1.
3. WELL NO.5 BUILDING WILL BE REMOVED BY OWNER PRIOR TO THE WORK. ONLY THE CONDUITS TO THE BUILDING WILL REMAIN

DEMOLITION LEGEND

FIELD DEMOLISHED BY OWNER

PROPOSED DEMOLITION

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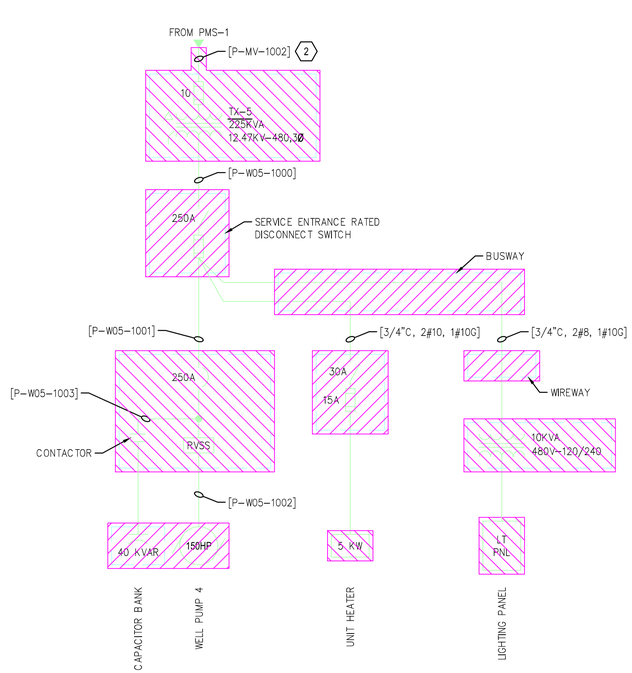
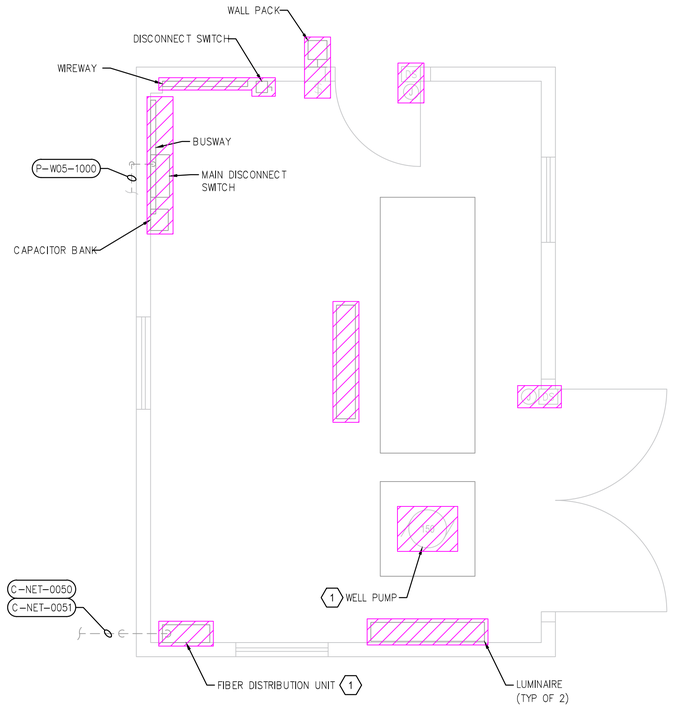
CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

EXISTING WELL 5 DEMOLITION PLAN AND ONE-LINE DIAGRAM



3 EXISTING WELL 5 - DEMOLITION ONE-LINE DIAGRAM



3 EXISTING WELL 5 - ELECTRICAL DEMOLITION PLAN

3/8" = 1'-0"

ENGINEER: HM	JOB NO.: XXXXXXX
REVIEWED: TA	CLIENT: CITY OF VANCOUVER
SAVE DATE: Nov 3, 2025	FILENAME: 3B5B-E03.DWG
PLOT DATE: Nov 3, 2025	

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: AS SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: E03

SHEET NO.: 45 82

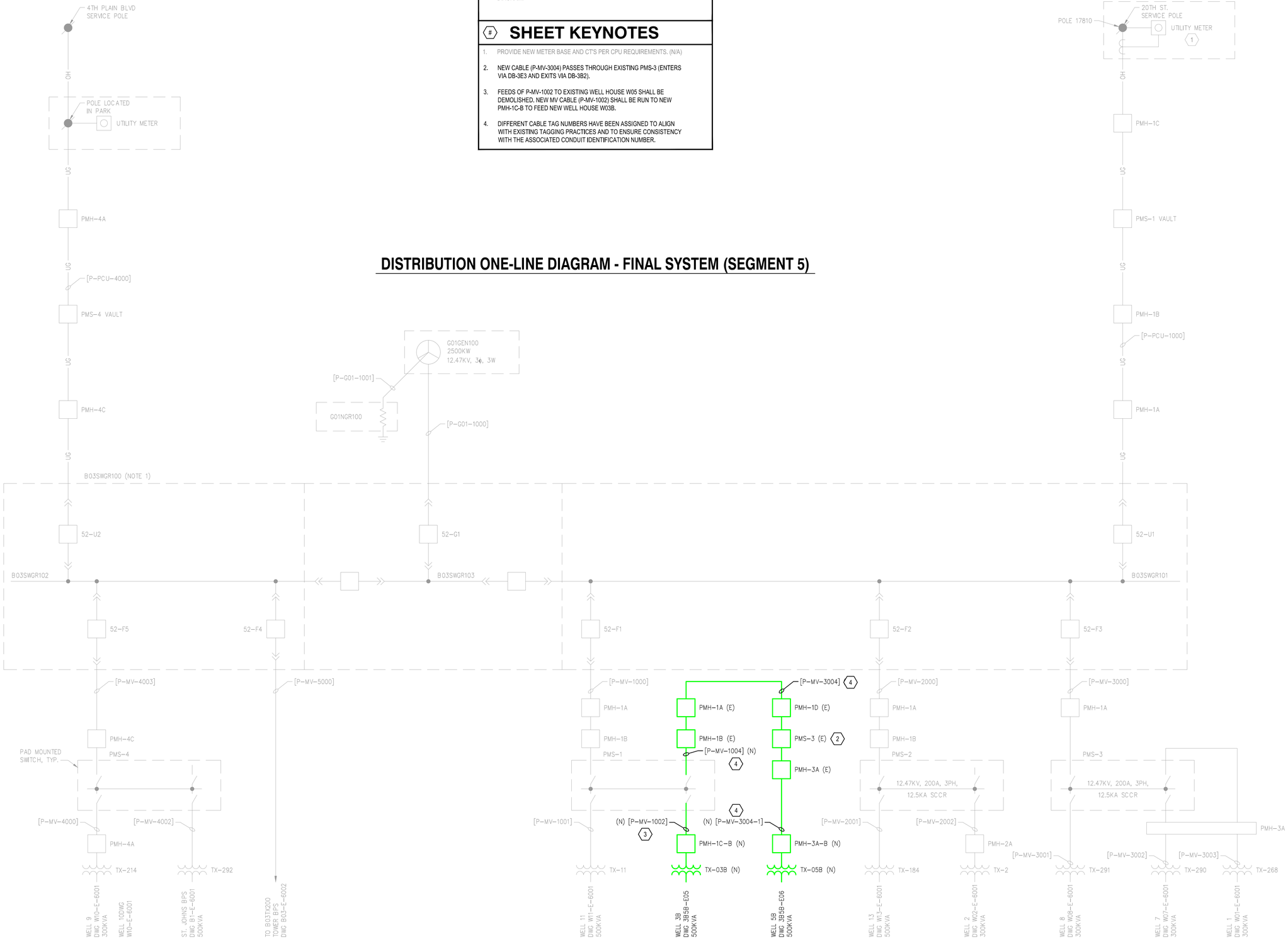
GENERAL SHEET NOTES

1. REFERENCE DRAWING 90-E-6001 FOR DETAILED SWITCHGEAR ONE-LINE DIAGRAM.

SHEET KEYNOTES

1. PROVIDE NEW METER BASE AND CT'S PER CPU REQUIREMENTS. (N/A)
2. NEW CABLE (P-MV-3004) PASSES THROUGH EXISTING PMS-3 (ENTERS VIA DB-3E3 AND EXITS VIA DB-3B2).
3. FEEDS OF P-MV-1002 TO EXISTING WELL HOUSE W05 SHALL BE DEMOLISHED. NEW MV CABLE (P-MV-1002) SHALL BE RUN TO NEW PMH-1C-B TO FEED NEW WELL HOUSE W03B.
4. DIFFERENT CABLE TAG NUMBERS HAVE BEEN ASSIGNED TO ALIGN WITH EXISTING TAGGING PRACTICES AND TO ENSURE CONSISTENCY WITH THE ASSOCIATED CONDUIT IDENTIFICATION NUMBER.

DISTRIBUTION ONE-LINE DIAGRAM - FINAL SYSTEM (SEGMENT 5)



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CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

DISTRIBUTION ONE-LINE DIAGRAM
FINAL SYSTEM

CITY OF Vancouver WASHINGTON

NO.	DESCRIPTION	DATE	BY	REVIEW

REVISIONS

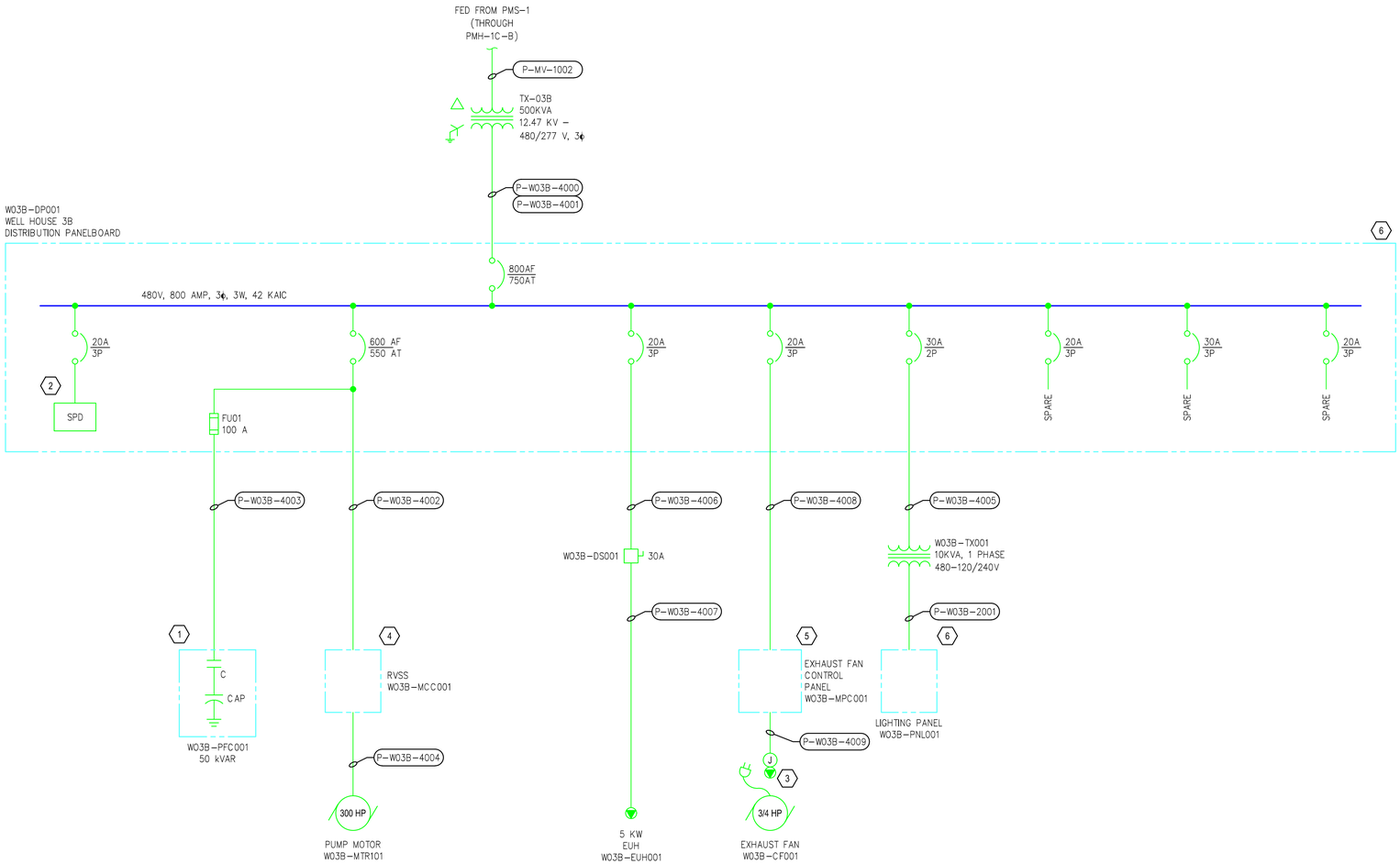
JOB NO.: XXXXXXX
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-E04.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: HM
REVIEWED: TA

SCALE: NONE
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: E04
SHEET NO.: 46
82

SHEET KEYNOTES

1. PROVIDE SEPARATELY MOUNTED POWER FACTOR CORRECTION CAPACITOR WITH SUITABLE RATING FOR WELL PUMP 3B AND WITH NEMA 12 ENCLOSURE. CONTROL CIRCUIT TO TURN ON OR TURN OFF THE CAPACITOR CONTACTOR, SHALL BE COORDINATED WITH RVSS MANUFACTURER RECOMMENDATION.
2. CIRCUIT BREAKER SHALL BE SIZED PER NEC TO ACCOMMODATE SPD INSTALLATION REQUIREMENTS.
3. PROVIDE TYPE SOOW FLEXIBLE CORD AND MOTOR RATED NEMA L5-20 PLUG/RECEPTACLE (MELTRIC, OR EQUAL) AS NEEDED TO ALLOW REMOVAL OF FAN ASSEMBLY. COORDINATE CABLE CONDUCTOR SIZE AND QUANTITY REQUIREMENTS.
4. THE NEW MOTOR CONTROLLER FOR RVSS (MCC001) SHALL BE UL LISTED AND ITS TYPE AND MANUFACTURER APPROVED BY THE OWNER. SEE TYPICAL WELL PUMP CONTROL SCHEMATIC IN E25.
5. SEE CONTROL POWER SCHEMATIC DIAGRAM IN DRAWING E24.
6. SEE PANEL SCHEDULE IN DRAWING E20.



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WATER STATION 1
WELLS 3B AND 5B FACILITIES

CITY OF Vancouver WASHINGTON

WELL 3B ONE-LINE DIAGRAM

JOB NO.: XXXXXXX
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-E05.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: HM
REVIEWED: TA

REVISIONS

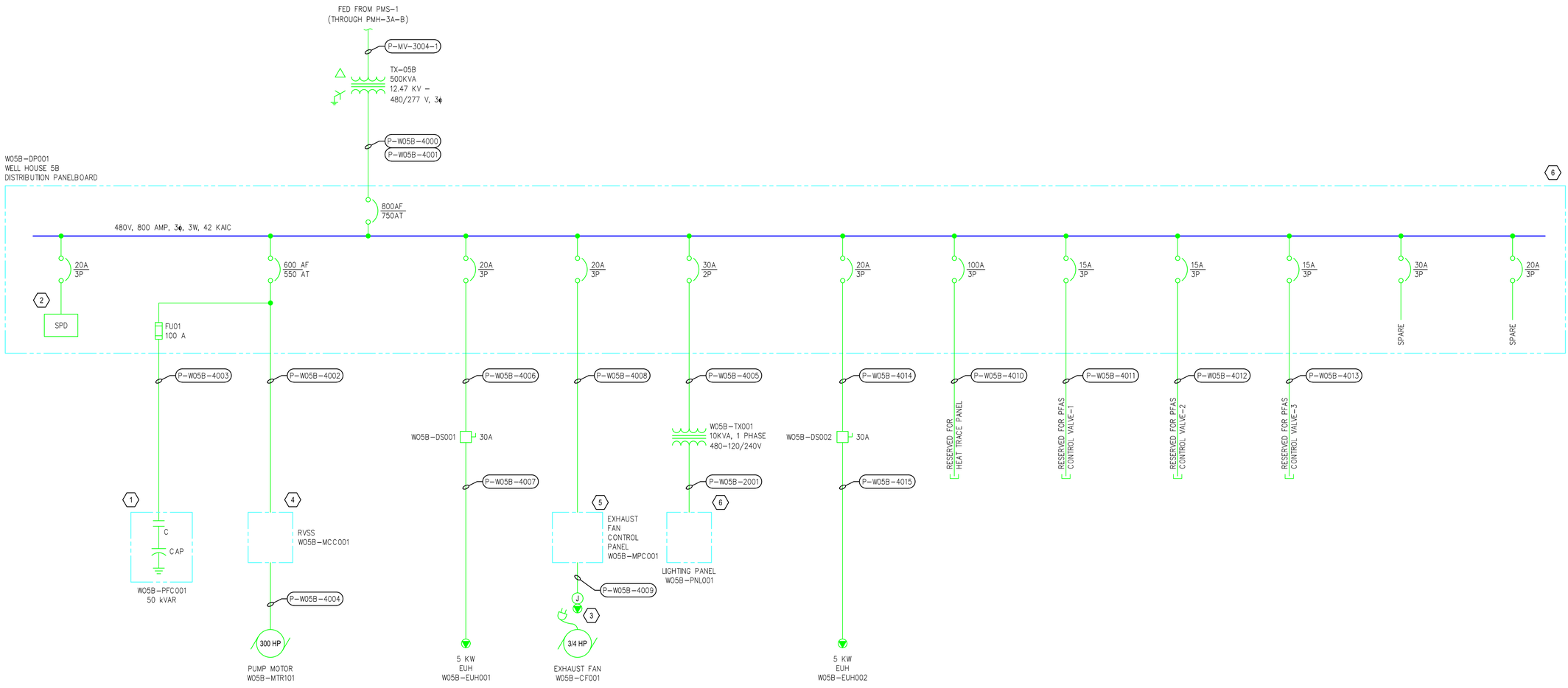
NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: NONE
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: E05
SHEET NO.: 47

SHEET KEYNOTES

1. PROVIDE SEPARATELY MOUNTED POWER FACTOR CORRECTION CAPACITOR WITH SUITABLE RATING FOR WELL PUMP 5B AND WITH NEMA 12 ENCLOSURE. CONTROL CIRCUIT TO TURN ON OR TURN OFF THE CAPACITOR CONTACTOR, SHALL BE COORDINATED WITH RVSS MANUFACTURER RECOMMENDATION.
2. CIRCUIT BREAKER SHALL BE SIZED PER NEC TO ACCOMMODATE SPD INSTALLATION REQUIREMENTS.
3. PROVIDE TYPE SOOW FLEXIBLE CORD AND MOTOR RATED NEMA L5-20 PLUG/RECEPTACLE (MELTRIC, OR EQUAL) AS NEEDED TO ALLOW REMOVAL OF FAN ASSEMBLY. COORDINATE CABLE CONDUCTOR SIZE AND QUANTITY REQUIREMENTS.
4. THE NEW MOTOR CONTROLLER FOR RVSS (MCC001)SHALL BE UL LISTED AND ITS TYPE AND MANUFACTURER APPROVED BY THE OWNER. SEE CONTROL POWER SCHEMATIC DIAGRAM IN E25.
5. SEE TYPICAL WELL PUMP CONTROL SCHEMATIC IN DRAWING E24.
6. SEE PANEL SCHEDULE IN DRAWING E21.



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WATER STATION 1
WELLS 3B AND 5B FACILITIES

WELL 5B ONE-LINE DIAGRAM

CITY OF Vancouver WASHINGTON

ENGINEER: HM	JOB NO.: XXXXXXX
REVIEWED: TA	CLIENT: CITY OF VANCOUVER
SAVE DATE: Nov 3, 2025	FILENAME: 3B5B-E06.DWG
PLOT DATE: Nov 3, 2025	

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

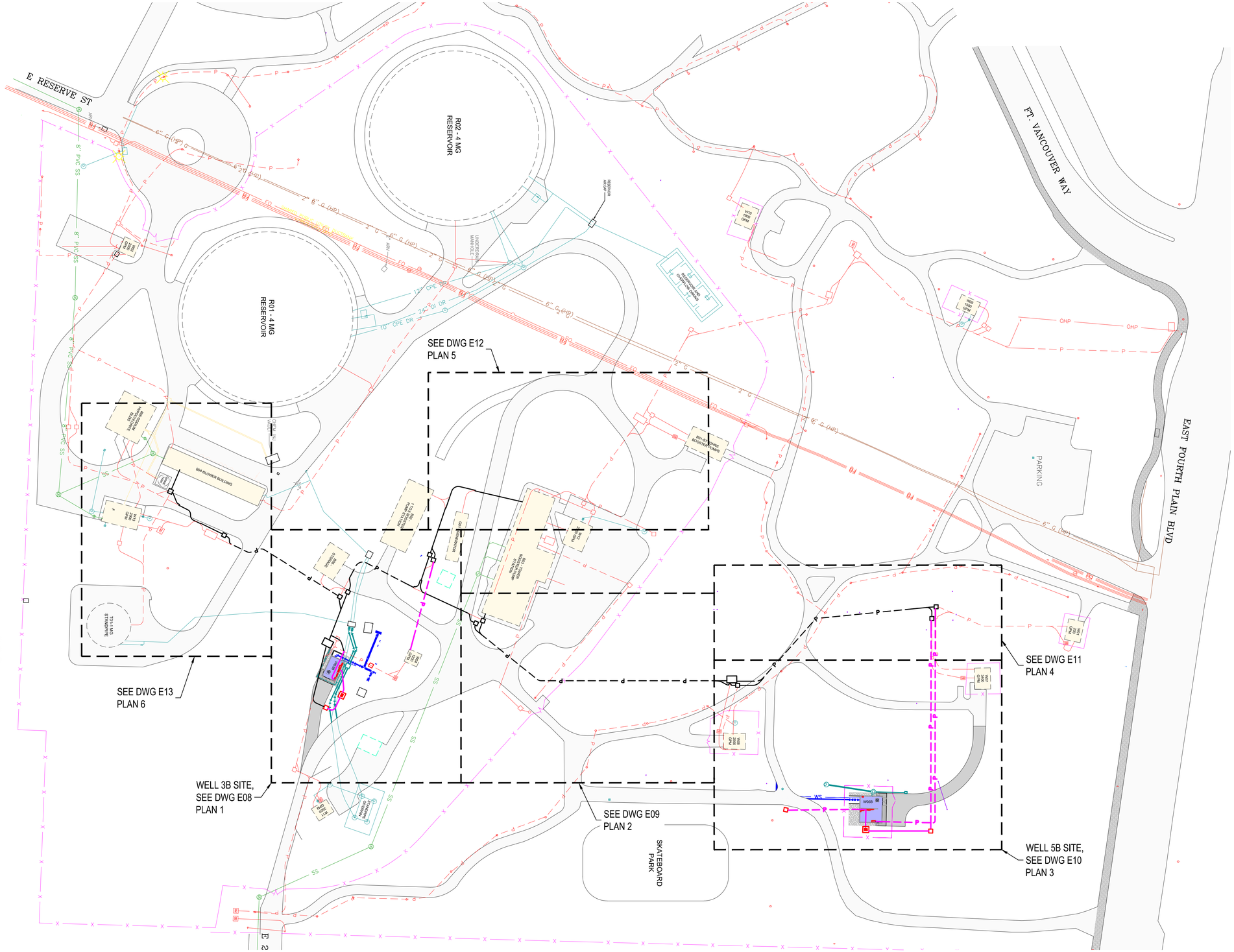
SCALE: NONE

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: E06

SHEET NO.: 48



ELECTRICAL SITE PLAN

1" = 50'

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CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

ELECTRICAL SITE PLAN

CITY OF Vancouver WASHINGTON

REVISIONS			
NO.	DATE	DESCRIPTION	BY
			REVIEW

JOB NO: XXXXXXX
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-E07.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: HM
REVIEWED: TA

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

DWG NO.: E07
SHEET NO.: 49 82

SEE DWG E09 FOR CONTINUATION

SEE DWG E12 FOR CONTINUATION

GENERATOR

B02 - PUMP STATION

B08 - STORAGE

WELL HOUSE W03 TO BE DEMOLISHED BY OTHERS

WELL HOUSE W05 TO BE DEMOLISHED BY OTHERS

W04 1200 GPM

W03B

(N) WELL HOUSE W03B

PMH-1A

LMH-1A

PMH-1B

CMH-1B

CMH-1C

PMS-1

PMH-1C

(N) PMH-1C-B

TX-4

TX-03B (N)
500 kVA
12470-480/277 V

DB-1A8
P-STOR-1000
P-W04-1002 (N)
C-NET-B020

DB-1A6
P-MV-1000
P-MV-1004
P-CPU-1000
P-MV-2000
P-MV-2003
P-MV-3000
P-MV-3004
P-STOR-1000
P-W04-1002 (N)
C-NET-B020

DB-1B5
P-MV-1000
P-MV-1004 (N)
P-MV-3000
P-MV-3004 (N)
P-CPU-1000
P-MV-2000
P-MV-2003
P-STOR-1000
C-NET-B020
C-NET-0030
C-NET-0031

DB-1B5A
P-MV-1000
P-MV-1004 (N)
P-CPU-1000
P-MV-2000
P-MV-2003
P-STOR-1000
C-NET-0030
C-NET-0031

DB-1B3
P-MV-3000
P-MV-3004 (N)
C-NET-1005
C-NET-1007
C-NET-B020

DB-XXX
P-MV-3000
P-MV-3004 (N)
C-NET-B020

DB-1B14 (N)
P-W04-1002 (N)
A / E21

DB-1B6
P-MV-1000
P-MV-1004 (N)
P-CPU-1000
P-MV-2000
P-MV-2003
P-STOR-1000
C-NET-1005
C-NET-1007
C-NET-0030
C-NET-0031

DB-1B7
P-MV-1000
P-MV-1004 (N)
P-CPU-1000
P-MV-2000
P-MV-2003

DB-1C4
P-MV-1003
C-NET-0040
C-NET-0041

DB-1C16
P-MV-1003

[C-NET-5030] (N)

[C-NET-1006] (N)

[C-NET-1007] (N)

DB-1B12
P-MV-1000
P-MV-1004 (N)
P-CPU-1000
C-NET-1002
C-NET-1006 (N)

DB-1C17
P-MV-1001
P-MV-1002 (N)
P-MV-1004
P-CPU-1000

DB-1C3
P-MV-1001
P-MV-1002 (N)
P-MV-1004
P-CPU-1000
C-NET-0050
C-NET-0051
C-NET-0110
C-NET-0111

DB-1C9
P-MV-1002 (N)
C-NET-0050
C-NET-0051

DB-1C9B (N)
P-MV-1002 (N)
A / E22

P-W03B-4000 (N)
P-W03B-4001 (N)

SEE DWG E13 FOR CONTINUATION

CONDUIT ROUTING PLAN 1

1" = 10'

SHEET NOTES

1. ALL ELECTRICAL EQUIPMENT IN THE EXISTING WELL HOUSES (W03, AND W05) WILL BE DEMOLISHED. FOR FURTHER DETAILS, PLEASE REFER TO THE DEMOLITION PLAN DRAWINGS E02, AND E03.
2. ALL WIRES AND CABLES FROM PMS-1 TO TX-4 AND FROM TX-4 TO THE EXISTING W04 SHALL REMAIN. W04 WILL REMAIN IN SERVICE AND CONTINUE TO BE OPERATIONAL.
3. ALL WIRES AND CABLES FROM PMS-1 TO TX-5 AND FROM TX-5 TO THE EXISTING W05, SHALL BE REMOVED AND DEMOLISHED.
4. ALL WIRES AND CABLES FROM LMH-1A TO THE EXISTING W03 SHALL BE REMOVED AND DEMOLISHED.
5. DUCT BANKS FROM PMS-1 TO TX-5 AND FROM LMH-1A TO W03 SHALL REMAIN.
6. A NEW PRE-CAST VAULT SHALL BE INSTALLED ON THE MAIN ROUTE OF THE DUCT BANK FROM PMS-1 TO TX-4. THE OTHER SEGMENTS OF THE EXISTING DUCT BANK (FROM PMS-1 TO TX-4) SHALL REMAIN.
7. WELL HOUSE W04 ELECTRICAL SERVICE TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT VIA DB-1B14.
8. TRANSFORMER TX-5 HAS BEEN REMOVED.

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CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CONDUIT ROUTING PLAN 1

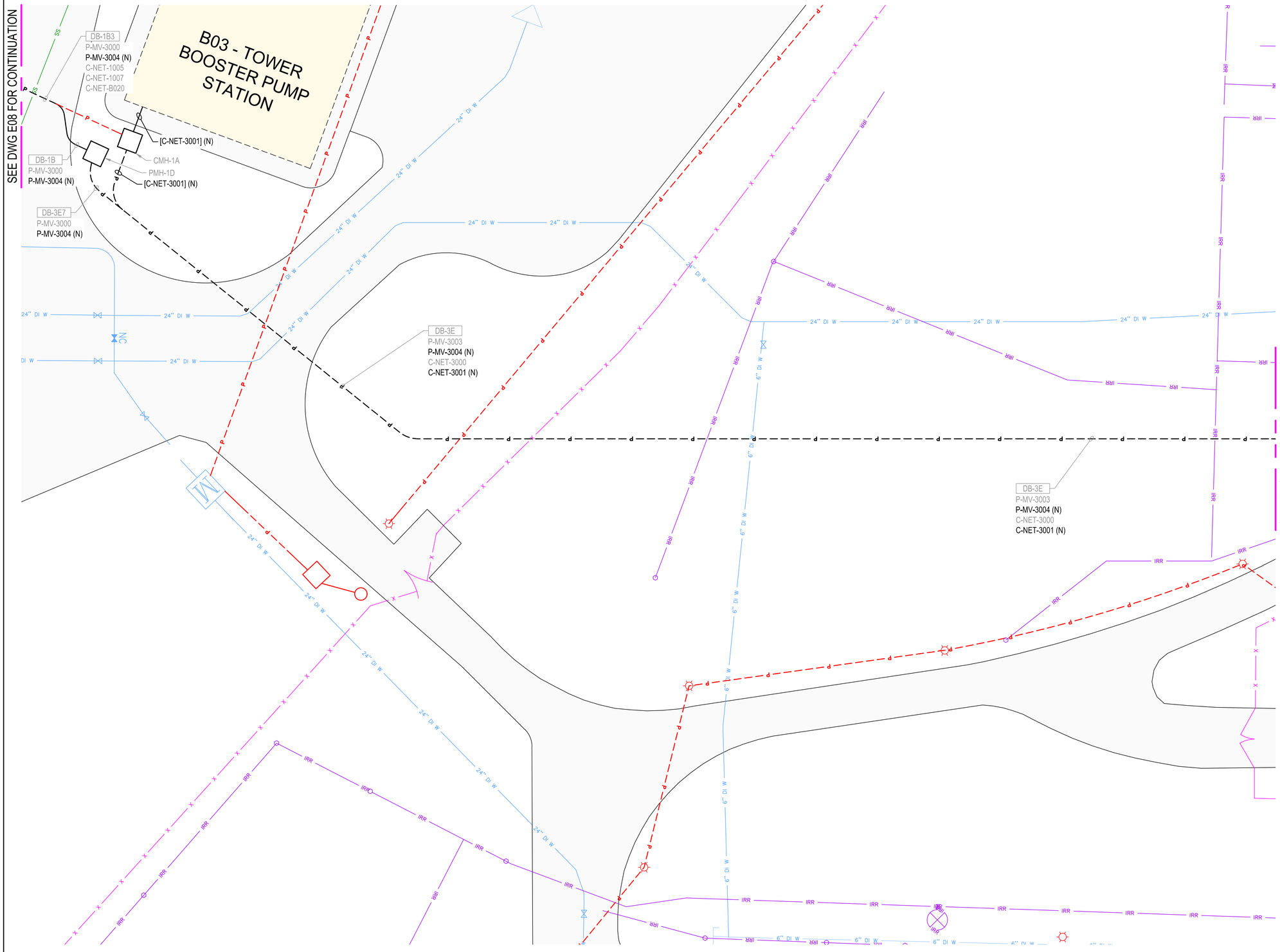
REVISIONS

NO.	DESCRIPTION	DATE	BY	REVIEW

JOB NO.: XXXXXXX
CLIENT: CITY OF VANCOUVER
FILENAME: 385B-E08.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: HM
REVIEWED: TA

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

DWG NO.: E08
SHEET NO.: 50 / 82



CONDUIT ROUTING PLAN 2

1" = 10'

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REGISTERED PROFESSIONAL ENGINEER

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CONDUIT ROUTING PLAN 2

CITY OF Vancouver WASHINGTON

ENGINEER: HMI	
REVIEWED: TA	
SAVE DATE: Nov 3, 2025	
PLOT DATE: Nov 3, 2025	
CLIENT: CITY OF VANCOUVER	
FILENAME: 3B5B-E09.DWG	
JOB NO.: XXXXXXX	

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: AS SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: E09

SHEET NO.: 51

SEE DWG E11 FOR CONTINUATION

SEE DWG E09 FOR CONTINUATION

SEE DWG E11 FOR CONTINUATION

PMS-3

DB-3E3
P-MV-3000
P-MV-3004 (N)

DB-3E
P-MV-3000
P-MV-3004 (N)
C-NET-3000
C-NET-3001 (N)

DB-3B2
P-MV-3002
P-MV-3003
P-MV-3004 (N)

DB-3B
P-MV-3002
P-MV-3003
P-MV-3004 (N)
C-NET-3000
C-NET-3001 (N)

CMH-3B

[C-NET-3001] (N)

[C-NET-3001] (N)

W08
2500
GPM

W07
3400
GPM

[C-NET-5050] (N)

TX-290

DB-3B6 (N)
P-MV-3004-1

DB-3B6 (N) A E22
P-MV-3004-1

(N) WELL HOUSE W05B

W05B

(N) PMH-3A-C
CAPPED CONDUIT FOR
FUTURE CONTROL VALVES
OF PFAS TREATMENT AND
HEAT TRACE PANEL.

B E22 (N) DB-3B6-2
P-W05-4010
P-W05-4011
P-W05-4012
P-W05-4013

P-W05B-4000 (N)
P-W05B-4001 (N)

TX-05B (N)
500 kVA
12470 - 480/277 V

DB-3B6-1 (N) A E22
P-MV-3004-1

[C-NET-5050] (N)

(N) PMH-3A-B

CONDUIT ROUTING PLAN 3

1" = 10'

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Phone: 503.644.2490

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REGISTERED
PROFESSIONAL ENGINEER

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CONDUIT ROUTING PLAN 3

CITY OF Vancouver WASHINGTON

JOB NO.: XXXXXXX
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-E10.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: HM
REVIEWED: TA

REVISIONS

NO.	DESCRIPTION	DATE	BY	REVIEW

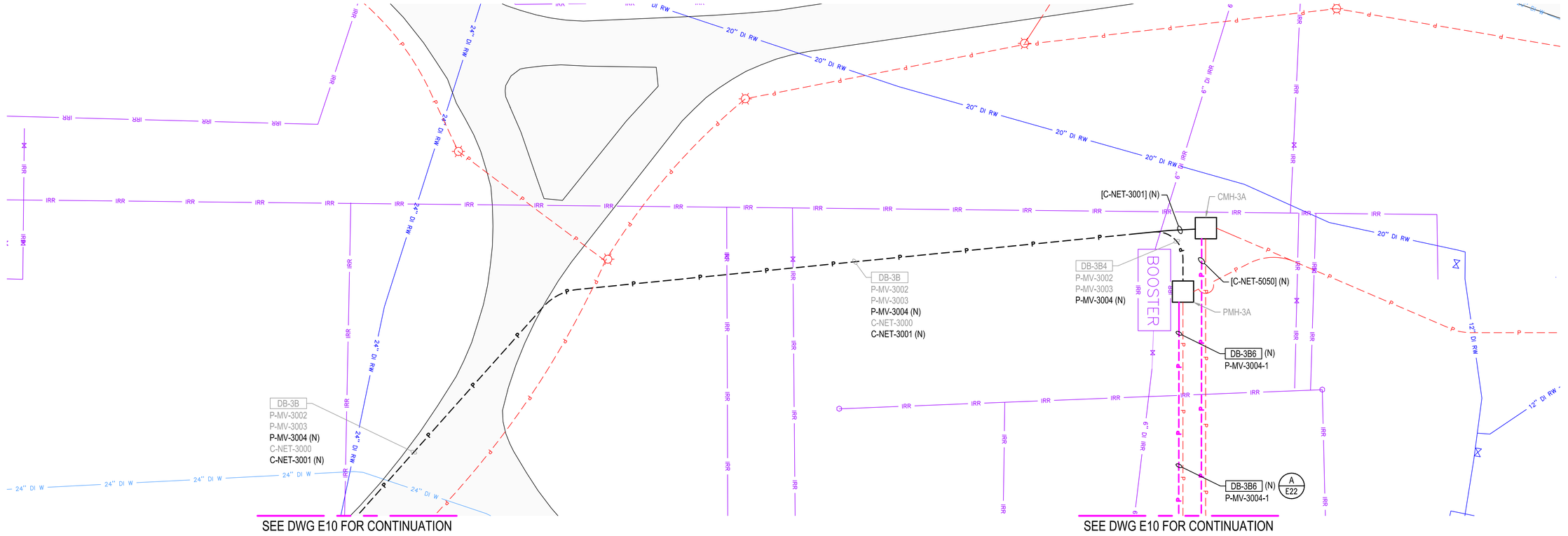
SCALE: AS SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: E10

SHEET NO.: 52 82



CONDUIT ROUTING PLAN 4

1" = 10'

DAVID EVANS AND ASSOCIATES INC.
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CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CONDUIT ROUTING PLAN 4

CITY OF Vancouver WASHINGTON

ENGINEER: HM	JOB NO.: XXXXXXX
REVIEWED: TA	CLIENT: CITY OF VANCOUVER
SAVE DATE: Nov 3, 2025	FILENAME: 3B5B-E11.DWG
PLOT DATE: Nov 3, 2025	

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

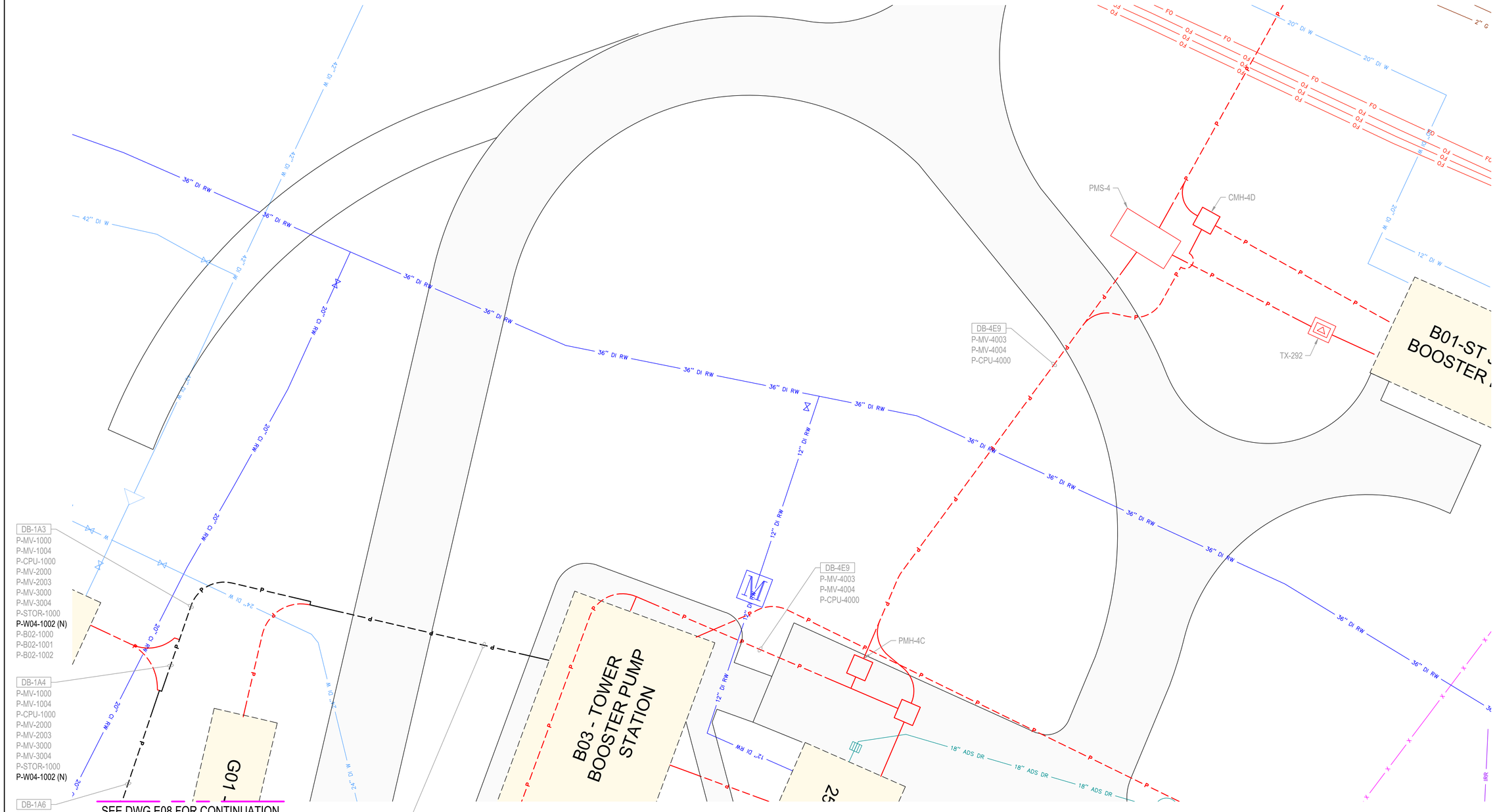
SCALE: AS SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: E11

SHEET NO.: 53



SEE DWG E08 FOR CONTINUATION

CONDUIT ROUTING PLAN 5

1" = 10'

DAVID EVANS AND ASSOCIATES INC.
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WATER STATION 1
WELLS 3B AND 5B FACILITIES

CONDUIT ROUTING PLAN 5

CITY OF Vancouver WASHINGTON

REVISIONS			
NO.	DATE	DESCRIPTION	BY
			REVIEW

JOB NO.: XXXXXXX
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-E12.DWG
SAVE DATE: Nov. 3, 2025
PLOT DATE: Nov. 3, 2025
ENGINEER: HM
REVIEWED: TA

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

DWG NO.: E12
SHEET NO.: 54

SEE DWG E08 FOR CONTINUATION

SHEET KEYNOTES

1. TERMINATE NEW MULTI-MODE FIBER OPTIC CABLE TO B04NIP001.

B04-BLOWER BUILDING

B05-SODIUM HYPOCHLORITE BLDG

BRINE TANK

W13 2000 GPM

F

T01-1 MG STANDPIPE

CMH-2A

CMH-2B

CMH-2D

PMS-2

TX-184

[C-NET-1007] (N)

12" DI RW

24" DI W

16" DI DR

2" COP W

CONDUIT ROUTING PLAN 6

1" = 10'

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CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CONDUIT ROUTING PLAN 6

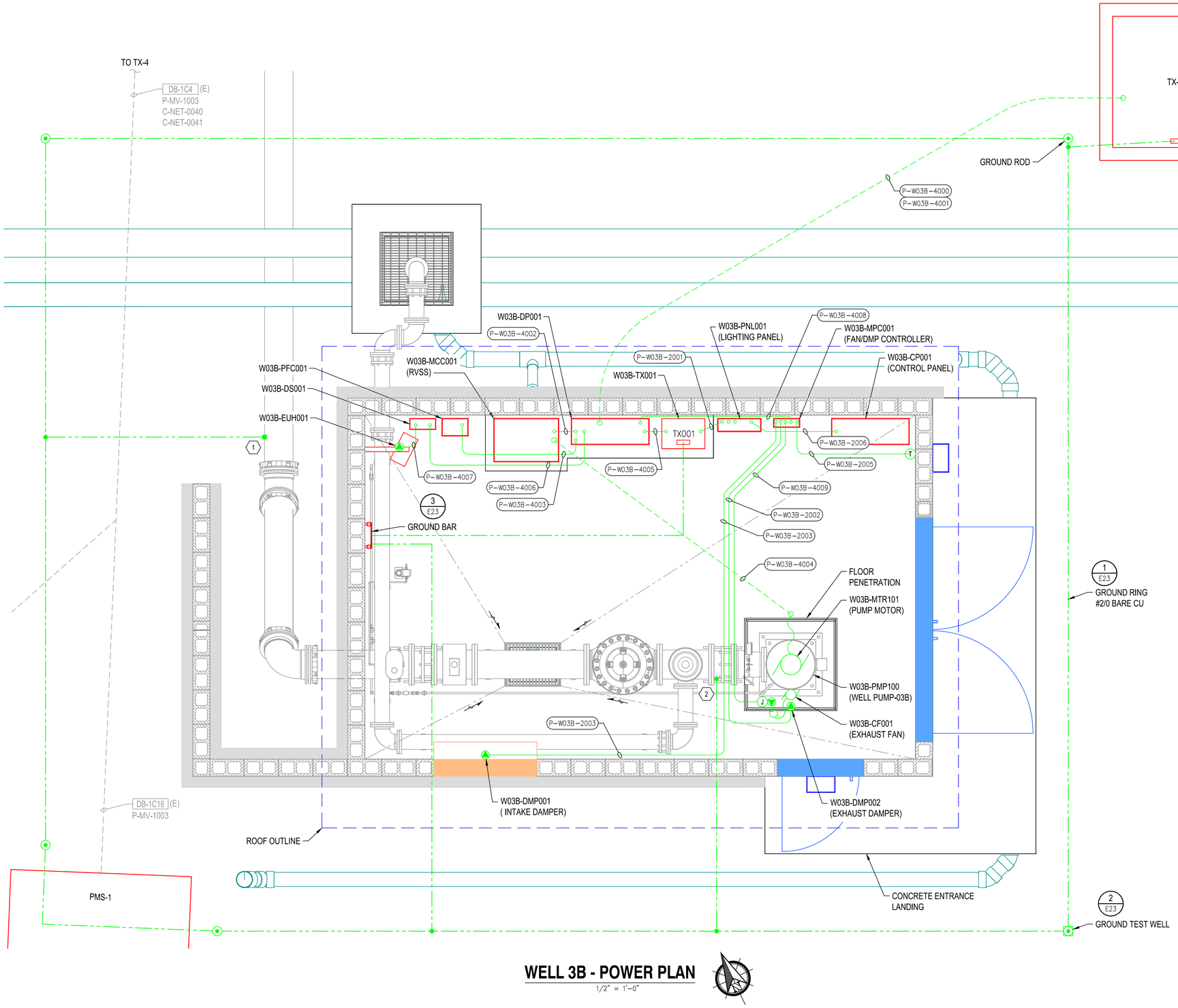
CITY OF Vancouver WASHINGTON

REVISIONS			
NO.	DATE	DESCRIPTION	BY
			REVIEW

ENGINEER: HM
REVIEWED: TA
DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-E13.DWG
JOB NO: XXXXXXX

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

DWG NO.: E13
SHEET NO.: 55
82



WELL 3B - POWER PLAN

1/2" = 1'-0"

GENERAL SHEET NOTES

A. FOR CABLE AND CONDUIT SIZE, SEE SHEETS E05 ONE-LINE DIAGRAM AND E19 CABLE AND CONDUIT SCHEDULE.

B. FOR GROUNDING DETAILS, SEE DRAWING E23.

SHEET KEYNOTES

1. BOND PIPE TO GROUND.
2. BOND FLOW SENSOR FLANGE AND GROUND RINGS ACCORDING TO THE FLOW METER MANUFACTURES INSTRUCTIONS.

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WATER STATION 1
WELLS 3B AND 5B FACILITIES

WELL 3B
POWER PLAN

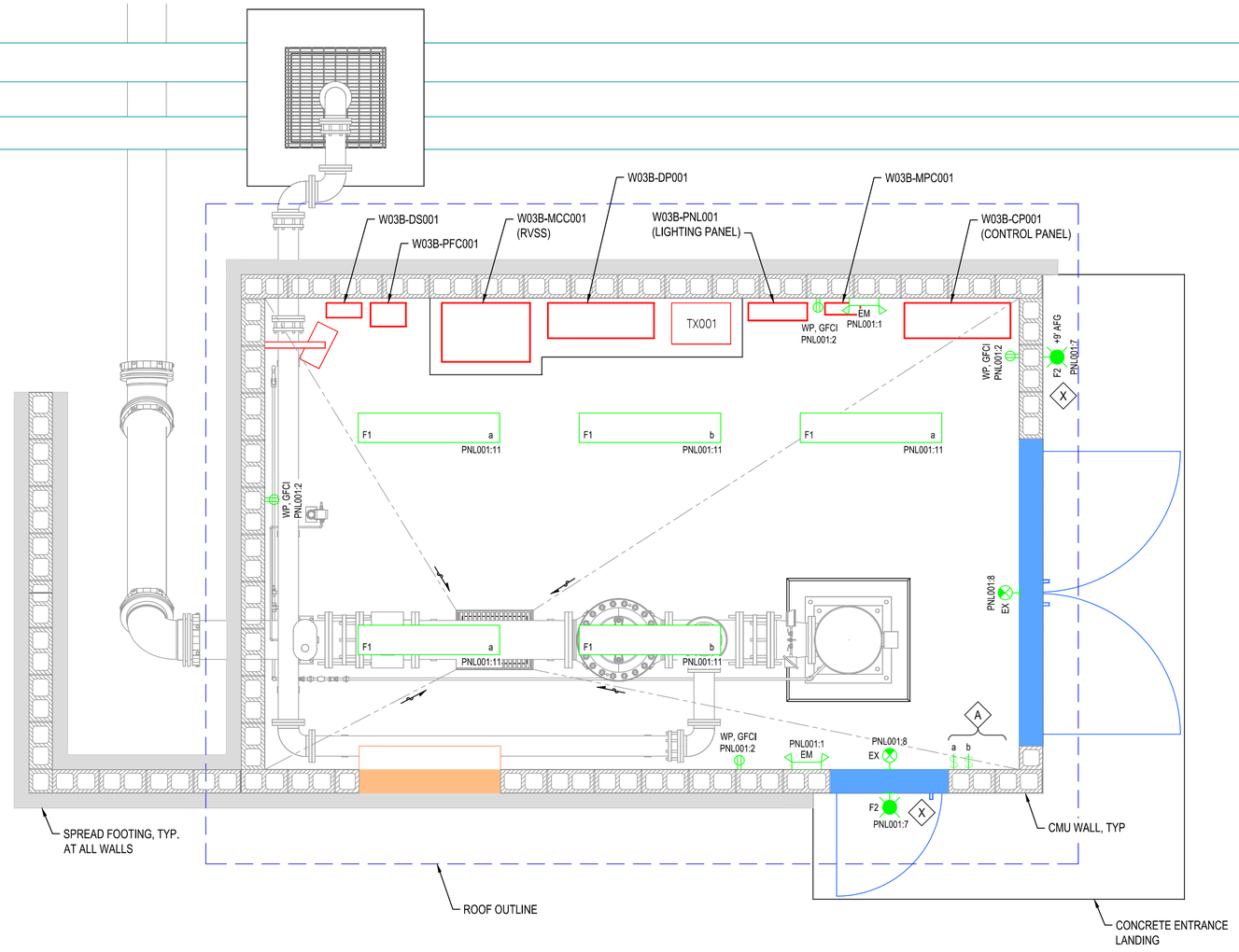
CITY OF Vancouver WASHINGTON

REVISIONS			
NO.	DATE	DESCRIPTION	BY
			REVIEW

JOB NO.: XXXXXXX
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-E14.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: HM
REVIEWED: TA

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

DWG NO.: E14
SHEET NO.: 56
82



WELL 3B - LIGHTING & RECEPTACLE PLAN

1/2" = 1'-0"

GENERAL SHEET NOTES

A. FOR CABLE AND CONDUIT SIZE, SEE SHEETS E05 ONE-LINE DIAGRAM AND E19 CABLE AND CONDUIT SCHEDULE.

B. SEE DRAWING E18 FOR LUMINAIRE SCHEDULE AND LIGHTING CONTROLS SCHEDULE.

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WATER STATION 1
WELLS 3B AND 5B FACILITIES

WELL 3B
LIGHTING & RECEPTACLE PLAN

CITY OF Vancouver WASHINGTON

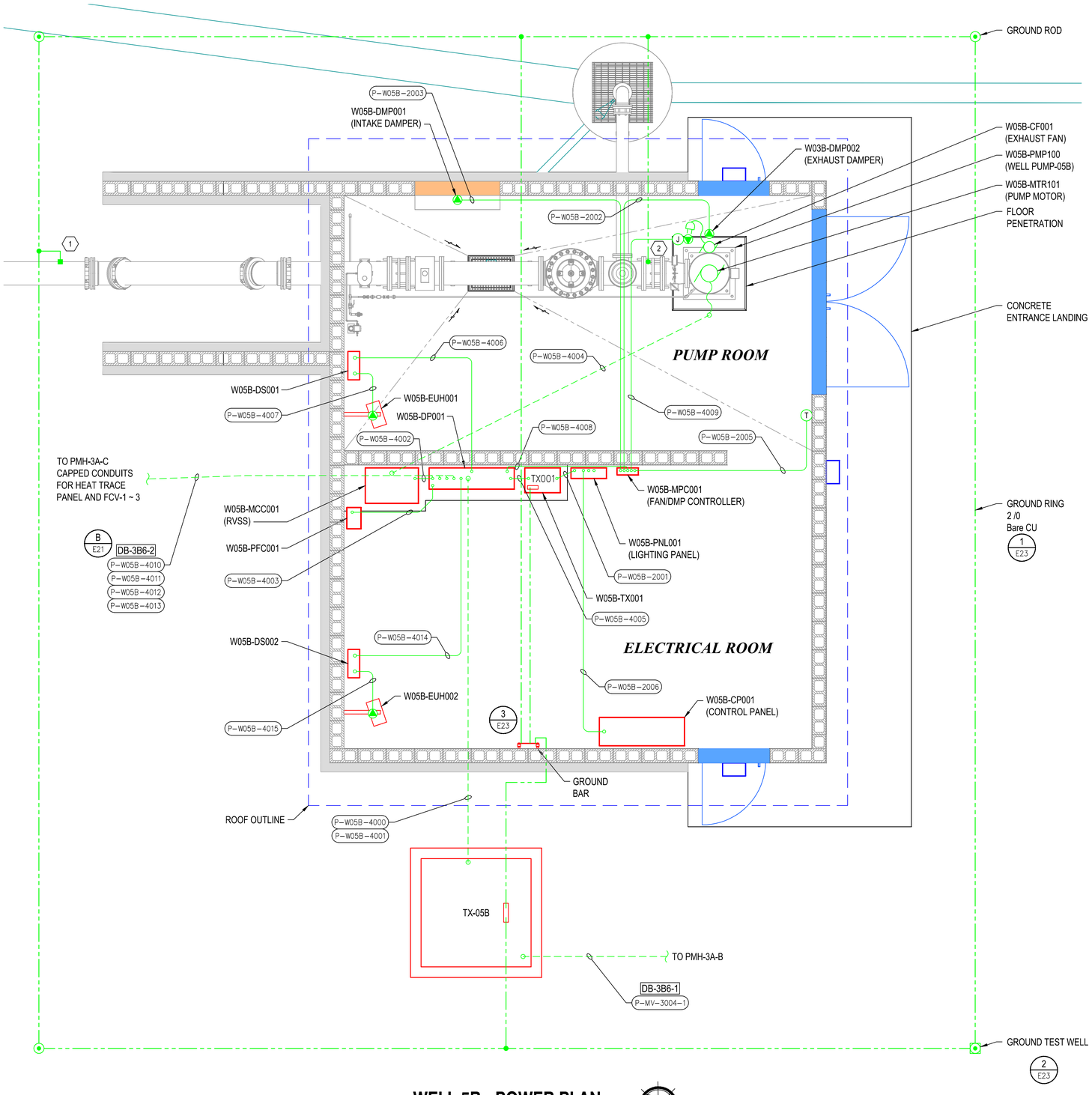
JOB NO.: XXXXXXX
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-E15.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: HM
REVIEWED: TA

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

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

DWG NO.: E15
SHEET NO.: 57
82



WELL 5B - POWER PLAN

3/8" = 1'–0"

GENERAL SHEET NOTES

A. FOR CABLE AND CONDUIT SIZE, SEE SHEETS E06 ONE-LINE DIAGRAM AND E19 CABLE AND CONDUIT SCHEDULE.

B. FOR GROUNDING DETAILS, SEE DRAWING E23.

⟨#⟩ SHEET KEYNOTES

1. BOND PIPE TO GROUND.
2. BOND FLOW SENSOR FLANGE AND GROUND RINGS ACCORDING TO THE FLOW METER MANUFACTURES INSTRUCTIONS.

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CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

WELL 5B
POWER PLAN

CITY OF Vancouver WASHINGTON

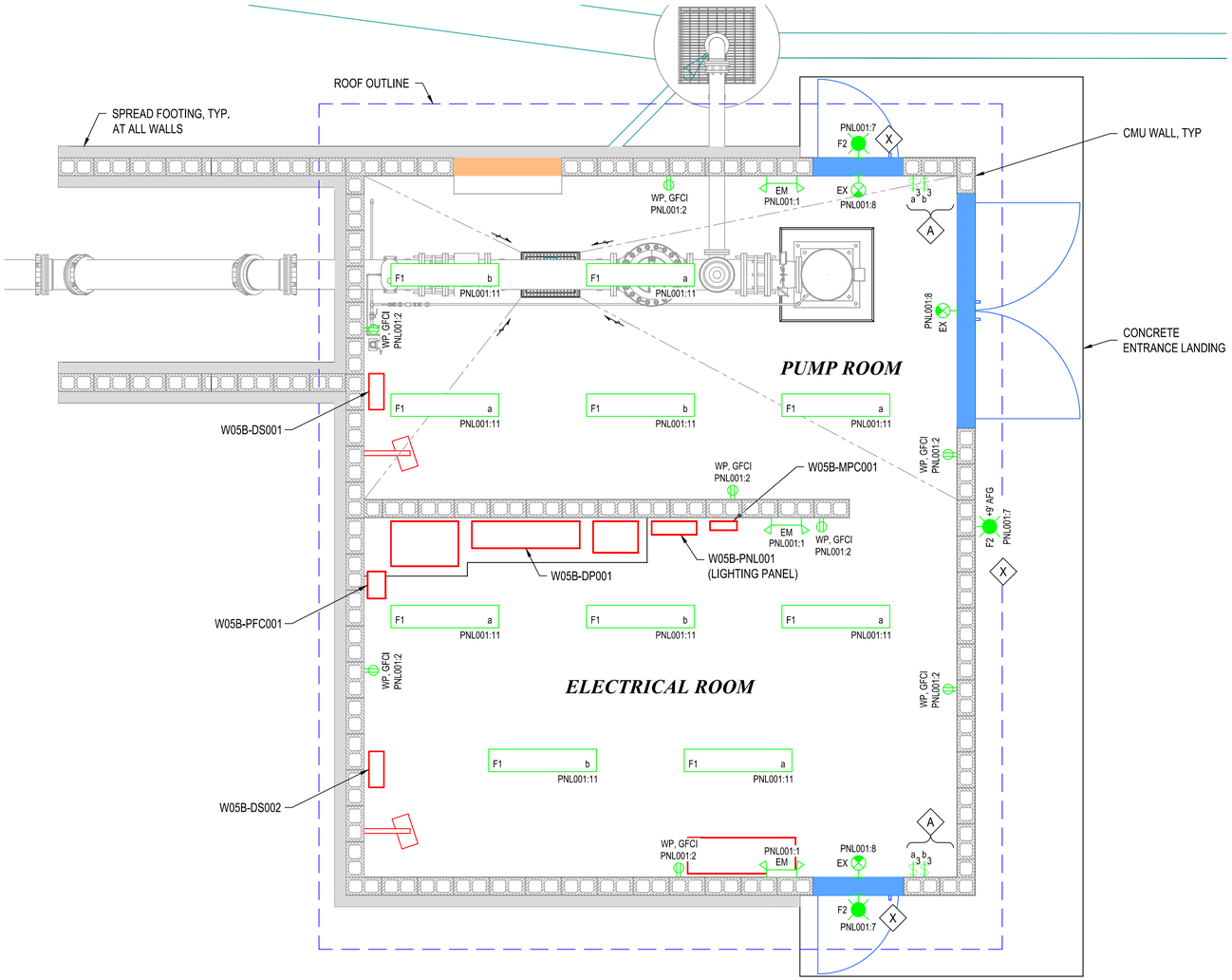
JOB NO.: XXXXXXX
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-E16.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: HM
REVIEWED: TA

REVISIONS

NO.	DESCRIPTION	DATE	BY	REVIEW

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

DWG NO.: E16
SHEET NO.: 58



WEL 5B - LIGHTING & RECEPTACLE PLAN

3/8" = 1'-0"

GENERAL SHEET NOTES

A. FOR CABLE AND CONDUIT SIZE, SEE SHEETS E06 ONE-LINE DIAGRAM AND E19 CABLE AND CONDUIT SCHEDULE.

B. SEE DRAWING E18 FOR LUMINAIRE SCHEDULE AND LIGHTING CONTROLS SCHEDULE.

LIGHTING NOTES

LIGHTING FIXTURE LUMINAIR TYPES:

F1	4' LED LOW-PROFILE ENCLOSED AND GASKETED INDUSTRIAL TYPE
F2	ARCHITECTURAL WALL SCONCE TYPE LIGHTING FIXTURE
EX	INDUSTRIAL GRADE EXIT LIGHT FIXTURE FOR WET LOCATIONS
EM	DUAL-HEAD WET LOCATION EMERGENCY LIGHT WITH BATTERY AND CHARGER

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CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

WELL 5B
LIGHTING & RECEPTACLE PLAN

CITY OF Vancouver WASHINGTON

JOB NO.: XXXXXXX
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-E17.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: HM
REVIEWED: TA

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

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

DWG NO.: E17
SHEET NO.: 59
82

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER - SERIES	DESCRIPTION	LAMP DATA	VOLTAGE	MAX. INPUT WATTAGE	MOUNTING TYPE	MOUNTING HEIGHT	NOTES
F1	LITHONIA - FEM LED	4' LED LOW-PROFILE ENCLOSED AND GASKETED INDUSTRIAL: FIBERGLASS HOUSING, LOW PROFILE FROSTED ACRYLIC LENS. MEDIUM BEAM DISTRIBUTION (NOMINAL 110° 50% BEAMSPREAD), FIXED OUTPUT DRIVER. STAINLESS STEEL LATCHES. UL LISTED FOR WET LOCATIONS. FIXTURE ELIGIBLE FOR WSEC C405.1 EXCEPTION IN INDUSTRIAL PROCESS AREAS.	80 CRI, 3500K, 3,800 LUMENS MINIMUM	MVOLT	24	SURFACE/ CEILING	--	--
F2	LITHONIA - WDGE LED P1	ARCHITECTURAL WALL SCONCE: FULL CUTOFF, TYPE IV MEDIUM DISTRIBUTION, SURGE PROTECTOR, PHOTOCELL, COLD TEMPERATURE EMERGENCY BATTERY BACKUP , PRECISION MOLDED ACRYLIC LENS, WEDGE PROFILE DIE-CAST ALUMINUM HOUSING, INTEGRAL BI-LEVEL MOTION SENSOR/PHOTOCELL. OPERATION DOWN TO -20°C/-4°F. 116 LUMENS/WATT EFFICIENCY.	70 CRI, 3000K, 1,200 LUMENS MINIMUM	MVOLT	18	WALL	8'-0" AFG UNLESS NOTED OTHERWISE	--
EM	LITHONIA - WLTU LED	DUAL-HEAD WET LOCATION EMERGENCY LIGHT: CORROSION RESISTANT THERMOPLASTIC ENCLOSURE. MAINTENANCE FREE NICKEL CADMIUM BATTERY. UL LISTED FOR WET LOCATIONS. OPERATION DOWN TO 0°C/32°F.	PAR STYLE 1.9 WATT WHITE LED LAMPS	120V	9	WALL	8'-6" AFF UNLESS NOTED OTHERWISE	--
EX	LITHONIA - LV SERIES DUAL LITE - LN4X SERIES	INDUSTRIAL GRADE EXIT SIGN FOR WET LOCATIONS: NEMA 4X POLYCARBONATE HOUSING WITH WHITE FACE AND RED LETTERING. NICKEL CADMIUM BATTERY. OPERATION DOWN TO -20°C/-4°F.	LED STRIP RED	120V	5	AS INDICATED	6" ABOVE DOOR	--

LIGHTING CONTROL SCHEDULE

USAGE I.D.	USAGE DESCRIPTION	CONTROL FUNCTION	DAYLIGHT ZONE THRESHOLD (FC)	NOTES
◇A	INDUSTRIAL/ ELECTRICAL ROOM	MANUAL ON/OFF	N/A	LINE VOLTAGE SWITCH, WSEC C405.2 EXCEPTION 4 (INDUSTRIAL PROCESS AREA... FOR PRODUCTION AND SAFETY)
◇X	EXTERIOR EGRESS	AUTO ON/OFF/DIM, PIR MOTION SENSOR	1	30% LIGHT OUTPUT FROM PHOTOCELL 'ON' TO PHOTOCELL 'OFF', MOTION TRIGGER TO FULL LIGHT OUTPUT WITH 5 MINUTE TIME DELAY TO DIMMED STATE. UL 924 RELAY TRIGGERS LIGHTING TO FULL LIGHT OUTPUT DURING A POWER LOSS EVENT, REGARDLESS OF DIMMED/OFF STATE.

FIXTURE SCHEDULE NOTES

A. PROVIDE ADDITIONAL CONDUCTORS FOR AN UNSWITCHED SOURCE OF POWER FOR ALL EMERGENCY BATTERY BACKUPS AND MINI-INVERTERS.

B. PROVIDE ALL MOUNTING HARDWARE, FLANGES, STEMS, SLOPED CEILING ADAPTERS, SWIVEL HANGERS, ELECTRICAL CONNECTORS, ETC FOR THE FINAL CEILING CONSTRUCTION TYPE.

C. VERIFY VOLTAGE FROM CIRCUITRY AS INDICATED ON DRAWINGS PRIOR TO LUMINAIRE PROCUREMENT. ARCHITECT TO SELECT FROM STANDARD FINISHES TO BE USED ON LIGHT FIXTURES UNLESS NOTED OTHERWISE.

D. REFER TO ARCHITECTURAL ELEVATIONS, SECTIONS, AND DETAILS FOR MOUNTING HEIGHTS UNLESS NOTED OTHERWISE.

E. PROVIDE GASKETING BETWEEN DISSIMILAR METALS TO PREVENT ELECTROLYSIS AND CORROSION.

CONTROLS NOTES

1. FOR ALL SPACES INDICATED ON THE LIGHTING CONTROL SCHEDULE, DESIGN AND PROVIDE A COMPLETE AND FULLY FUNCTIONING LIGHTING CONTROL SYSTEM. EACH SPACE SHALL INCLUDE SUFFICIENT QUANTITY OF CONTROL DEVICES, INCLUDING BUT NOT LIMITED TO SWITCHES, DIMMERS, PHOTOCELLS, OCCUPANCY SENSORS, CONTACTORS, TIMECLOCKS AND POWER PACKS, TO MEET ALL OF THE LIGHTING CONTROL SCHEDULE REQUIREMENTS.
2. ALL LIGHTING CONTROL EQUIPMENT SHALL BE COMPLIANT WITH CURRENT WASHINGTON STATE ENERGY CODE (WSEC) REQUIREMENTS.
3. ALL EQUIPMENT LOCATED OUTDOORS MUST BE RATED FOR 10 DEG F MINIMUM.
4. MOTION SENSORS AND/OR PHOTOCELL CONTROLS INTEGRAL TO THE FIXTURE PROVIDED BY LIGHT FIXTURE MANUFACTURER UNLESS NOTED OTHERWISE. SEE LUMINAIRE SCHEDULE.
5. PROVIDE DEDICATED NEUTRAL FOR EACH LIGHTING CIRCUIT. SHARING NEUTRALS SHALL NOT BE ALLOWED.
6. LIGHTING CONTROL SYSTEM PROGRAMMING AND OWNER TRAINING SHALL BE INCLUDED AS PART OF THE CONTRACTOR BASE BID.

CLOSEOUT REQUIREMENTS

PROVIDE PROJECT CLOSE OUT DOCUMENTATION INCLUDING WSEC LIGHTING COMPLIANCE REPORTS THAT DOCUMENT ALL INTERIOR AND EXTERIOR LIGHTING AREA AND / OR SURFACE TYPES, LIGHTING POWER ALLOWANCES, AND INSTALLED DENSITIES PER WSEC C103.6.3.

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CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CITY OF Vancouver WASHINGTON

WELL 3B AND 5B
LIGHTING SCHEDULES

JOB NO.: XXXXXXX
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-E18.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: HM
REVIEWED: TA

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: NONE
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: E18
SHEET NO.: 60

CONDUIT AND CABLE SCHEDULE FOR MEDIUM VOLTAGE (MV) DISTRIBUTION

MV POWER SUPPLY TO:	CONDUIT	FROM	TO	VIA	CONDUCTORS	SIZE	NOTES
NEW WELL HOUSE (W- 05B)	P-MV-1004	PMS-1	PMH-1B	DB-1B12	3#2 (15 kV), 1#6 G (600 V)	4"	USE EXISTING PULL CORD (1004) FOR RUNNING NEW CABLE
	P-MV-1004	PMH-1B	PMH-1A	DB-1B7, DB-1B6, DB-1B5A, DB-1B5	3#2 (15 kV), 1#6 G (600 V)	4"	USE EXISTING PULL CORD (1004) FOR RUNNING NEW CABLE
	P-MV-3004	PMH-1A	PMH-1D	DB-1B5, DB-1B3, DB-1B	3#2 (15 kV), 1#6 G (600 V)	4"	NEEDS U-TURN IN THE PMH-1A
	P-MV-3004	PMH-1D	PMS-3 (PASSING)	DB-3E7, DB-3E, DB-3E3	3#2 (15 kV), 1#6 G (600 V)	4"	USE EXISTING PULL CORD (3004) FOR RUNNING THE CABLE. USE PMS-3's AS A PULL BOX (PASSING) TO PMH-3A
	P-MV-3004 (NEW)	PMS-3 (PASSING)	PMH-3A	DB-3B2, DB-3B, DB-3B4	3#2 (15 kV), 1#6 G (600 V)	4"	USE EXISTING PULL CORD (3004) FOR RUNNING THE CABLE
	P-MV-3004-1 (NEW)	PMH-3A	PMH-3A-B (NEW)	DB-3B6 (NEW)	3#2 (15 kV), 1#6 G (600 V)	4"	NEW CONDUIT/DB FROM PMH-3A TO NEW PMH-3A-B
	P-MV-3004-1 (NEW)	PMH-3A-B (NEW)	TX-05B (NEW)	DB-3B6-1 (NEW)	3#2 (15 kV), 1#6 G (600 V)	4"	NEW CONDUIT/DB FROM PMH-3A-B TO NEW TX-05B
	P-W05B-4000 (NEW) P-W05B-4001 (NEW)	TX-05B (NEW)	W05B-DP001 (New)	P-W05B-4000 (NEW) (CONDUIT) P-W05B-4001 (NEW) (CONDUIT)	(6) 500 kCMIL, (2) #1/0 G	2(3")	UNDER 1000 VOLT (LV) POWER CABLE
NEW WELL HOUSE (W- 03B)	P-MV-1002 (NEW)	PMS-1 (E)	Precast Vault (NEW) PMH-1C-B	DB-1C17, DB-1C3, DB-1C9	3#2 (15 kV), 1#6 G (600 V)	4"	PMS-1 SWITCH IS EXISTING AND TX-03B IS NEW ONE. INSTALL NEW PRECAST VAULT (PMH-1C-B) IN THE MIDDLE OF EXISTING DUCT BANK.
	P-MV-1002 (NEW)	PRECAST VAULT (NEW) PMH-1C-B	TX-03B (NEW)	DB-1C9B (NEW)(Conduit /DB)	3#2 (15 kV), 1#6 G (600 V)	4"	FROM NEW PRECAST VAULT PMH-1C-B) TO THE NEW TRANSFORMER (TX-03B) VIA NEW DUCT BANK/CONDUIT.
	P-W03B-4000 (NEW) P-W03B-4001 (NEW)	TX-03B (NEW)	W03B-DP001 (NEW)	P-W03B-4000 (NEW) (Conduit) P-W03B-4001 (NEW) (Conduit)	(6) 500 kCMIL, (2) #1/0 G	2(3")	UNDER 1000 VOLT (LV) POWER CABLE

GENERAL NOTE: SEE THE RELEVANT SPECIFICATION FOR CABLE TYPES.

CONDUIT AND UNDER 1000 VOLT (LV) POWER CABLE SCHEDULE

LV POWER SUPPLY TO:	CONDUIT	FROM	TO	CONDUCTORS	CONDUIT SIZE	NOTES
NEW WELL HOUSE (W - 03B) (3-PHASE CABLES)	P-W03B-4000 P-W03B-4001	TX-03B	W03B-DP001	(6) 500 kCMIL, (2) #1/0 G	(2) 3"	480 V CABLE FROM 500 kVA TRANSFORMER
	P-W03B-4002	W03B-DP001	W03B-MCC001 (RVSS)	(6) 350 kCMIL, (2) #2 G	(2) 2"	2 RUNS OF LV CABLES TO MAIN PUMP (300 HP)
	P-W03B-4003	W03B-DP001	W03B-PFC001	(3) #4 AWG, (1) #6 G	1"	50 kVAR POWER FACTOR CORRECTION CAPACITOR
	P-W03B-4004	W03B-MCC001 (RVSS)	W03B-MTR101	(6) 350 kCMIL, (2) #2 G	3-1/2"	300 HP MAIN PUMP MOTOR
	P-W03B-4005	W03B-DP001	W03B-TX001	(2)#10 AWG , (1) #10 G	3/4"	10 kVA TRANSFORMER, 1 PH
	P-W03B-4006	W03B-DP001	W03B-DS001	(3) #12 AWG , (1) #12 G	3/4"	DISCONNECT SWITCH FOR UNIT HEATER -5 kW
	P-W03B-4007	W03B-DS001	W03B-EUH001	(3) #12 AWG , (1) #12 G	3/4"	5 kW HEATER WITH FAN - 480 V
	P-W03B-4008	W03B-DP001	W03B-MPC001	(3) #12 AWG , (1) #12 G	3/4"	EXHAUST FAN AND DAMPERS CONTROLLER PANEL
	P-W03B-4009	W03B-MPC001	W03B-CF001	(3) #12 AWG , (1) #12 G	3/4"	EXHAUST FAN MOTOR 3/4 HP-3 PHASE
NEW WELL HOUSE (W - 05B) (3-PHASE CABLES)	P-W05B-4000 P-W05B-4001	TX-05B	W05B-DP001	(6) 500 kCMIL, (2) #1/0 G	(2) 3"	480 V CABLE FROM 500 kVA TRANSFORMER
	P-W05B-4002	W05B-DP001	W05B-MCC001 (RVSS)	(6) 350 kCMIL, (2) #2 G	(2) 2"	2 RUNS OF LV CABLES TO MAIN PUMP (300 HP)
	P-W05B-4003	W05B-DP001	W05B-PFC001	(3) #4 AWG, (1) #6 G	1"	50 kVAR POWER FACTOR CORRECTION CAPACITOR
	P-W05B-4004	W05B-MCC001 (RVSS)	W05B-MTR101	(6) 350 kCMIL, (2) #2 G	3-1/2"	300 HP MAIN PUMP MOTOR
	P-W05B-4005	W05B-DP001	W05B-TX001	(2)#10 AWG , (1) #10 G	3/4"	10 kVA TRANSFORMER, 1 PH
	P-W05B-4006	W05B-DP001	W05B-DS001	(3) #12 AWG , (1) #12G	3/4"	DISCONNECTOR SWITCH FOR UNIT HEATER-1 -5 kW
	P-W05B-4007	W05B-DS001	W05B-EUH001	(3) #12 AWG , (1) #12G	3/4"	5 kW HEATER WITH FAN-1 - 480 V
	P-W05B-4008	W05B-DP001	W05B-MPC001	(3) #12 AWG , (1) #12 G	3/4"	EXHAUST FAN AND DAMPERS CONTROLLER PANEL
	P-W05B-4009	W05B-MPC001	W05B-CF001	(3) #12 AWG , (1) #12 G	3/4"	EXHAUST FAN MOTOR 3/4 HP-3 PHASE
	P-W05B-4010	W05B-DP001	PMH-3A-C	PULL CORD	DB-3B6-2	PULL CORD (FOR FUTURE HEAT TRACE PANEL)
	P-W05B-4011	W05B-DP001	PMH-3A-C	PULL CORD	DB-3B6-2	PULL CORD (FOR FUTURE PFAS TREATMENT - FCV-1)
	P-W05B-4012	W05B-DP001	PMH-3A-C	PULL CORD	DB-3B6-2	PULL CORD (FOR FUTURE PFAS TREATMENT - FCV-2)
	P-W05B-4013	W05B-DP001	PMH-3A-C	PULL CORD	DB-3B6-2	PULL CORD (FOR FUTURE PFAS TREATMENT - FCV-3)
	P-W05B-4014	W05B-DP001	W05B-DS002	(3) #12 AWG , (1) #12 G	3/4"	DISCONNECTOR SWITCH FOR UNIT HEATER-2 -5 kW
	P-W05B-4015	W05B-DS002	W05B-EUH002	(3) #12 AWG , (1) #12G	3/4"	5 kW HEATER WITH FAN-2 - 480 V
POWER TO THE EXISTING W04 EXISTING WELL HOUSE (W - 04) (3-PHASE CABLES)	P-W04-1002	B03SWBD200	LMH-1A	(3) 500 kcmil, (1) 1/0 G	4"	FEEDER FROM EXISTING 400 A BREAKER TO LMH-1A (RUN NEW CABLE THROUGH EXISTING CONDUITS FROM SWBD TO LMH-1A)
	P-W04-1002	LMH-1A	W04DSW100	(3) 500 kcmil, (1) 1/0 G	4"	CONNECT TO EXISTING SERVICE ENTRANCE DISCONNECT SWITCH (RUN NEW CABLE FROM LMH-1A THROUGH NEW DUCT BANK/CONDUIT (DB-1B14) TO THE MAIN DS AT EXISTING W04)
NEW WELL HOUSE (W - 03B) (1-PHASE CABLES)	P-W03B-2001	W03B-TX001	W03B-PNL001	(3) #6 AWG, (1)#8 G	1"	LIGHTING PANEL
	P-W03B-2002	W03B-MPC001	W03B-DMP002	(4) #12 AWG, 1#12 G	3/4"	POWER TO DAMPER AND FEED BACK FROM ITS LIMIT SWITCH
	P-W03B-2003	W03B-MPC001	W03B-DMP001	(4) #12 AWG, 1#12 G	3/4"	POWER TO DAMPER AND FEED BACK FROM ITS LIMIT SWITCH
	P-W03B-2004					
	P-W03B-2005	W03B-MPC001	THERMOSTAT	(2) #12 AWG, 1#12 G	3/4"	THERMOSTAT FOR ROOM TEMPRATURE
	P-W03B-2006	W03B-PNL001	W03B-CP001	(2) #12 AWG, 1#12 G	3/4"	1 PHASE POWER SUPPLY TO THE CONTROL PANEL
NEW WELL HOUSE (W - 05B) (1-PHASE CABLES)	P-W05B-2001	W05B-TX001	W05B-PNL001	(3) #6 AWG, (1)#8 G	1"	LIGHTING PANEL
	P-W05B-2002	W05B-MPC001	W05B-DMP002	(4) #12 AWG, 1#12 G	3/4"	POWER TO DAMPER AND FEED BACK FROM ITS LIMIT SWITCH
	P-W05B-2003	W05B-MPC001	W05B-DMP001	(4) #12 AWG, 1#12 G	3/4"	POWER TO DAMPER AND FEED BACK FROM ITS LIMIT SWITCH
	P-W05B-2004					
	P-W05B-2005	W05B-MPC001	THERMOSTAT	(2) #12 AWG, 1#12 G	3/4"	THERMOSTAT FOR ROOM TEMPRATURE
	P-W05B-2006	W05B-PNL001	W05B-CP001	(2) #12 AWG, 1#12 G	3/4"	1 PHASE POWER SUPPLY TO THE CONTROL PANEL

GENERAL NOTE: SEE THE RELEVANT SPECIFICATION FOR CABLE TYPES.

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CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CABLE AND CONDUIT SCHEDULE

CITY OF Vancouver WASHINGTON

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

ENGINEER: HM
REVIEWED: TA
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-E19.DWG
JOB NO: XXXXXXX

SCALE: NONE
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: E19
SHEET NO.: 61
82

PANEL SCHEDULE — DISTRIBUTION PANELBOARD — (N) PANEL W03B-DP001 (NEW)

											NEED
480 /	VOLTS	Normal	POWER	BUS RATING:	800	AMPS	LOCATION:	WH-03B	FEED-THRU LUGS		Y
3 -PHASE		PNL. MFR.:	TBD	MAIN BKR:	800 AF / 750AT	AMPS	MOUNTING:	TBD	DOUBLE LUGS		Y
3 -WIRE		CAT. NO.:	TBD	A.I.C. RATING:	42 KAIC SYM		FED FROM:	TX-03B (500 KVA - TX)	ISOLATED GND		NO.
NEMA: 12		REF. DWG.: E05					CONDUCTORS:	(6)500 kcmil, (2) #1/0 G	NEUTRAL		NO.

CKT NO.	CIRCUIT DESCRIPTION	LOAD LOCATION (ROOM NO.)	CODE	LOAD (kVA)	BKR AMPS	PH	BKR AMPS	LOAD (kVA)	CODE	LOAD LOCATION (ROOM NO.)	CIRCUIT DESCRIPTION	CKT NO.
1		IN THE PANEL	Z	0.01		- A -		100.04	LM	WH-03B		2
3	SURGE PROTECTION DEVICE (SPD)	-	Z	0.01	20/3	- B -	600/3	100.04	LM	-	WELL PUMP MOTOR-03B (W03B-MTR101) (300 HP)	4
5		-	Z	0.01		- C -		100.04	LM	-		6
7		WH-03B	H	1.70		- A -	30/2	0.74	L	WH-03B		8
9	UNIT HEATER (W03B-EUH001)	-	H	1.70	20/3	- B -		1.17	L	-	W03B-TX001 (10 kVA TRANSAFORMER, 1PH, FEEDS LIGHTING PANEL)	10
11		-	H	1.70		- C -	-			-	SPACE	12
13		WH-03B	H	0.42		- A -						14
15	EXHAUST FAN CONTROLLER (W03B-MPC001)	-	H	0.42	20/3	- B -	20/3			-	SPARE	16
17		-	H	0.42		- C -				-		18
19						- A -			-	-		20
21		-			30/3	- B -	20/3			-		22
23	SPARE	-				- C -			-	-	SPARE	24
25	SPACE	-			-	- A -				-	SPACE	26
27	SPACE	-			-	- B -	-		-	-	-	28
29	SPACE	-			-	- C -	-		-	-	-	30
		-										

CODES:

		CONNECTED LOAD		CALCULATED DEMAND LOAD		
H	= HVAC LOADS	6.36	kVA	6.36	kVA	(100%)
K	= KITCHEN EQUIPMENT	0.00	kVA	0.00	kVA	(100%)
L	= LIGHTING LOADS	1.91	kVA	2.39	kVA	(125%)
LM	= LARGEST SINGLE MOTOR	300.12	kVA	375.15	kVA	(125%)
M	= OTHER MOTOR LOADS	0.00	kVA	0.00	kVA	(100%)
NC	= NON-COINCIDENTAL LOADS	0.00	kVA	0.00	kVA	(0%)
R	= GENERAL USE RECEPTACLES	0.00	kVA	0.00	kVA	(50%>10kVA)
S	= DEDICATED RECEPTACLES	0.00	kVA	0.00	kVA	(100%)
Z	= MISC. OR APPLIANCES	0.03	kVA	0.03	kVA	(100%)
TOTALS:		308.42	kVA	383.93	kVA	
		371	AMPS	462	AMPS	

REMARKS:
CONDUCTOR TYPE: XHHW-2
TERMINAL TEMPERATURE: 75° C

CONNECTED LOAD PHASE BALANCE

PHASE A:	371	AMPS
PHASE B:	373	AMPS
PHASE C:	369	AMPS

PANEL SCHEDULE — LIGHTING PANEL — (N) PANEL W03B-PNL001 (NEW)

											NEED
240 / 120	VOLTS	Normal	POWER	BUS RATING:	100	AMPS	LOCATION:	WELL HOUSE - 03B	FEED-THRU LUGS		NO.
1 -PHASE		PNL. MFR.:	TBD	MAIN BKR:	100 AF / 50 AT	AMPS	MOUNTING:	SURFACE	DOUBLE LUGS		NO.
3 -WIRE		CAT. NO.:	TBD	A.I.C. RATING:	22 KAIC SYM		FED FROM:	W03B-TX001 (10 kVA, 1ph)	ISOLATED GND		NO.
NEMA: 12		REF. DWG.: N/A					CONDUCTORS:	(3) # 6 AWG, (1) #8G	100% NEUTRAL		Y

CKT NO.	CIRCUIT DESCRIPTION	LOAD LOCATION (ROOM NO)	CODE	LOAD (VA)	BKR AMPS	PH	BKR AMPS	LOAD (VA)	CODE	LOAD LOCATION (ROOM NO)	CIRCUIT DESCRIPTION	CKT NO.
1	EM - (EMERGENCY LIGHTINGS)	WH - 3B	L	18	20/1	- A -	20/1	720	R	WH - 3B	1PH, RECEPTACLES	2
3	SPARE				20/1	- B -	20/1	1000	S	WH - 3B	CONTROL PANEL W03B-CP001	4
5	SPARE				20/1	- A -	20/1			-	SPARE	6
7	F2 - (OUTSIDE LIGHTS)	OUTSIDE OF WH-3B	L	36	20/1	- B -	20/1	10	L	WH - 3B	EX - (EXIT LIGHTS)	8
9	SPARE	-			20/1	- A -	20/1			-	SPARE	10
11	F1 - (CEILING LIGHTS)	WH - 3B	L	120	20/1	- B -	20/1			-	SPARE	12
13	SPACE	-			-	- A -	-			-	SPACE	14
15	SPACE	-			-	- B -	-			-	SPACE	16
17	SPACE	-			-	- A -	-			-	SPACE	18
19	SPACE	-			-	- B -	-			-	SPACE	20

CODES:

		CONNECTED LOAD		CALCULATED DEMAND LOAD		
H	= HVAC LOADS	0.00	VA	0.00	VA	(100%)
K	= KITCHEN EQUIPMENT	0.00	VA	0.00	VA	(100%)
L	= LIGHTING LOADS	184.00	VA	230.00	VA	(125%)
LM	= LARGEST SINGLE MOTOR	0.00	VA	0.00	VA	(125%)
M	= OTHER MOTOR LOADS	0.00	VA	0.00	VA	(100%)
NC	= NON-COINCIDENTAL LOADS	0.00	VA	0.00	VA	(0%)
R	= GENERAL USE RECEPTACLES	720.00	VA	720.00	VA	(50%>10kVA)
S	= DEDICATED RECEPTACLES	1000.00	VA	1000.00	VA	(100%)
Z	= MISC. OR APPLIANCES	0.00	VA	0.00	VA	(100%)
TOTALS:		1904.00	VA	1950.00	VA	
		8	AMPS	8	AMPS	

REMARKS:
CONDUCTOR TYPE : XHHW
TERMINAL TEMPERATURE : 60° C

PHASE BALANCE

PHASE A:	6	AMPS
PHASE B:	10	AMPS

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CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CITY OF Vancouver WASHINGTON

W03B PANEL SCHEDULES

REVISIONS

NO.	DESCRIPTION	DATE	BY	REVIEW

JOB NO.: XXXXXXX
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-E20.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: HM
REVIEWED: TA

SCALE: NONE
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: E20
SHEET NO.: 62 / 82

PANEL SCHEDULE — DISTRIBUTION PANELBOARD — (N) PANEL W05B-DP001 (NEW)

											NEED
480 /	VOLTS	Normal	POWER	BUS RATING:	800	AMPS	LOCATION:	WH-05B	FEED-THRU LUGS		Y
3 -PHASE		PNL. MFR.:	TBD	MAIN BKR:	800 AF / 750AT	AMPS	MOUNTING:	TBD	DOUBLE LUGS		Y
3 -WIRE		CAT. NO.:	TBD	A.I.C. RATING:	42 KAIC SYM		FED FROM:	TX-05B (500 KVA - TX)	ISOLATED GND		NO.
NEMA: 12		REF. DWG.: E06					CONDUCTORS:	(6)500 kcmil, (2) #1/0 G	NEUTRAL		NO.

CKT NO.	CIRCUIT DESCRIPTION	LOAD LOCATION (ROOM NO.)	CODE	LOAD (kVA)	BKR AMPS	PH	BKR AMPS	LOAD (kVA)	CODE	LOAD LOCATION (ROOM NO.)	CIRCUIT DESCRIPTION	CKT NO.
1		IN THE PANEL	Z	0.01		- A -		100.04	LM	WH-05B		2
3	SURGE PROTECTION DEVICE (SPD)	-	Z	0.01	20/3	- B -	600/3	100.04	LM	-	WELL PUMP MOTOR-05B (W05B-MTR101)	4
5		-	Z	0.01		- C -		100.04	LM	-		6
7		WH-05B	H	1.70		- A -	30/2	1.29	L	WH-05B	W05B-TX001 (10 kVA TRANSAFORMER, 1PH, FEEDS LIGHTING PANEL)	8
9	UNIT HEATER (W05B-EUH001)	-	H	1.70	20/3	- B -		1.31	L	-		10
11		-	H	1.70		- C -	-			-	SPACE	12
13		WH-05B	H	0.42		- A -		1.70	H	WH-05B		14
15	EXHAUST FAN CONTROLLER (W05B-MPC001)	-	H	0.42	20/3	- B -	20/3	1.70	H	-	UNIT HEATER (W05B-EUH002)	16
17		-	H	0.42		- C -		1.70	H	-		18
19			Z	27.00		- A -		3.00	M	Future PFAS area		20
21	HEAT TRACE PANEL (FUTURE)	-	Z	27.00	100/3	- B -	15/3	3.00	M	-	FCV-2 (For FUTURE PFAS Treatment)	22
23		-	Z	27.00		- C -		3.00	M	-		24
25		Future PFAS area	M	3.00		- A -		3.00	M	Future PFAS area		26
27	FCV-1 (For FUTURE PFAS Treatment)	-	M	3.00	15/3	- B -	15/3	3.00	M	-	FCV-3 (For FUTURE PFAS Treatment)	28
29		-	M	3.00		- C -		3.00	M	-		30
31				-		- A -		-				32
33	SPARE			-	30/3	- B -	20/3	-			SPARE	34
35				-		- C -		-				36
37	SPACE					- A -					SPACE	38
39	SPACE					- B -					SPACE	40
41	SPACE					- C -					SPACE	42

CODES:		CONNECTED LOAD		CALCULATED DEMAND LOAD		
H	= HVAC LOADS	11.46	kVA	11.46	kVA	(100%)
K	= KITCHEN EQUIPMENT	0.00	kVA	0.00	kVA	(100%)
L	= LIGHTING LOADS	2.60	kVA	3.25	kVA	(125%)
LM	= LARGEST SINGLE MOTOR	300.12	kVA	375.15	kVA	(125%)
M	= OTHER MOTOR LOADS	27.00	kVA	27.00	kVA	(100%)
NC	= NON-COINCIDENTAL LOADS	0.00	kVA	0.00	kVA	(0%)
R	= GENERAL USE RECEPTACLES	0.00	kVA	0.00	kVA	(50%>10kVA)
S	= DEDICATED RECEPTACLES	0.00	kVA	0.00	kVA	(100%)
Z	= MISC. OR APPLIANCES	81.03	kVA	81.03	kVA	(100%)
	TOTALS:	422.21	kVA	497.89	kVA	
		508	AMPS	599	AMPS	

REMARKS:
CONDUCTOR TYPE: XHHW-2
TERMINAL TEMPERATURE: 75° C

CONNECTED LOAD PHASE BALANCE
PHASE A: 509 AMPS
PHASE B: 509 AMPS
PHASE C: 505 AMPS

PANEL SCHEDULE — LIGHTING PANEL — (N) PANEL W05B-PNL001 (NEW)

											NEED
240 /	120 VOLTS	Normal	POWER	BUS RATING:	100	AMPS	LOCATION:	WELL HOUSE - 05B	FEED-THRU LUGS		NO.
1 -PHASE		PNL. MFR.:	TBD	MAIN BKR:	100 AF / 50 AT	AMPS	MOUNTING:	SURFACE	DOUBLE LUGS		NO.
3 -WIRE		CAT. NO.:	TBD	A.I.C. RATING:	22 KAIC SYM		FED FROM:	W05B-TX001 (10 kVA, 1ph)	ISOLATED GND		NO.
NEMA: 12		REF. DWG.: N/A					CONDUCTORS:	(3) # 6 AWG, (1) #8G	100% NEUTRAL		Y

CKT NO.	CIRCUIT DESCRIPTION	LOAD LOCATION (ROOM NO.)	CODE	LOAD (VA)	BKR AMPS	PH	BKR AMPS	LOAD (VA)	CODE	LOAD LOCATION (ROOM NO.)	CIRCUIT DESCRIPTION	CKT NO.
1	EM - (EMERGENCY LIGHTINGS)	WH - 5B	L	27	20/1	- A -	20/1	1260	R	WH - 5B	1PH, RECEPTACLES	2
3	SPARE				20/1	- B -	20/1	1000	S	WH - 5B	CONTROL PANEL W05B-CP001	4
5	SPARE				20/1	- A -	20/1			-	SPARE	6
7	F2 - (OUTSIDE LIGHTS)	OUTSIDE OF WH-5B	L	54	20/1	- B -	20/1	15	L	WH - 5B	EX - (EXIT LIGHTS)	8
9	SPARE	-			20/1	- A -	20/1			-	SPARE	10
11	F1 - (CEILING LIGHTS)	WH - 5B	L	240	20/1	- B -	20/1			-	SPARE	12
13	SPACE	-			-	- A -	-			-	SPACE	14
15	SPACE	-			-	- B -	-			-	SPACE	16
17	SPACE	-			-	- A -	-			-	SPACE	18
19	SPACE	-			-	- B -	-			-	SPACE	20

CODES:		CONNECTED LOAD		CALCULATED DEMAND LOAD		
H	= HVAC LOADS	0.00	VA	0.00	VA	(100%)
K	= KITCHEN EQUIPMENT	0.00	VA	0.00	VA	(100%)
L	= LIGHTING LOADS	336.00	VA	420.00	VA	(125%)
LM	= LARGEST SINGLE MOTOR	0.00	VA	0.00	VA	(125%)
M	= OTHER MOTOR LOADS	0.00	VA	0.00	VA	(100%)
NC	= NON-COINCIDENTAL LOADS	0.00	VA	0.00	VA	(0%)
R	= GENERAL USE RECEPTACLES	1260.00	VA	1260.0	VA	(50%>10kVA)
S	= DEDICATED RECEPTACLES	1000.00	VA	1000.0	VA	(100%)
Z	= MISC. OR APPLIANCES	0.00	VA	0.00	VA	(100%)
	TOTALS:	2596.00	VA	2680.0	VA	
		11	AMPS	11	AMPS	

REMARKS:
CONDUCTOR TYPE : XHHW
TERMINAL TEMPERATURE : 60° C

PHASE BALANCE
PHASE A: 11 AMPS
PHASE B: 11 AMPS

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CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

W05B PANEL SCHEDULES

CITY OF Vancouver WASHINGTON

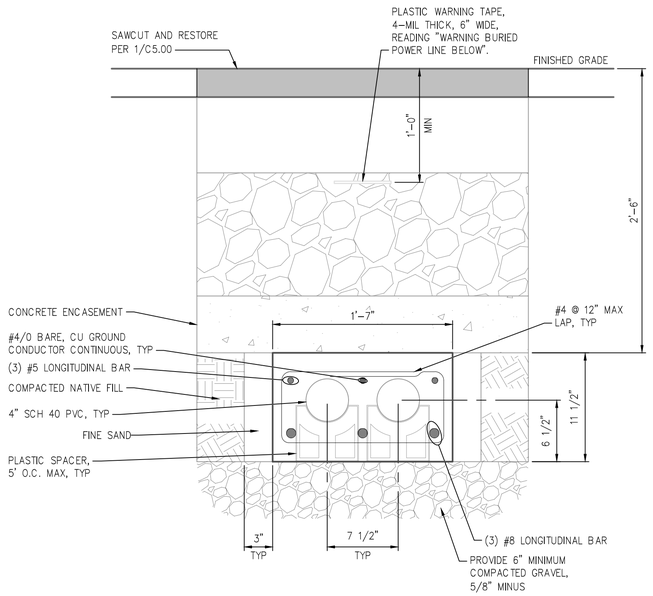
REVISIONS

NO.	DESCRIPTION	DATE	BY	REVIEW

ENGINEER: HM
REVIEWED: TA
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-E21.DWG
JOB NO.: XXXXXX

SCALE: NONE
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

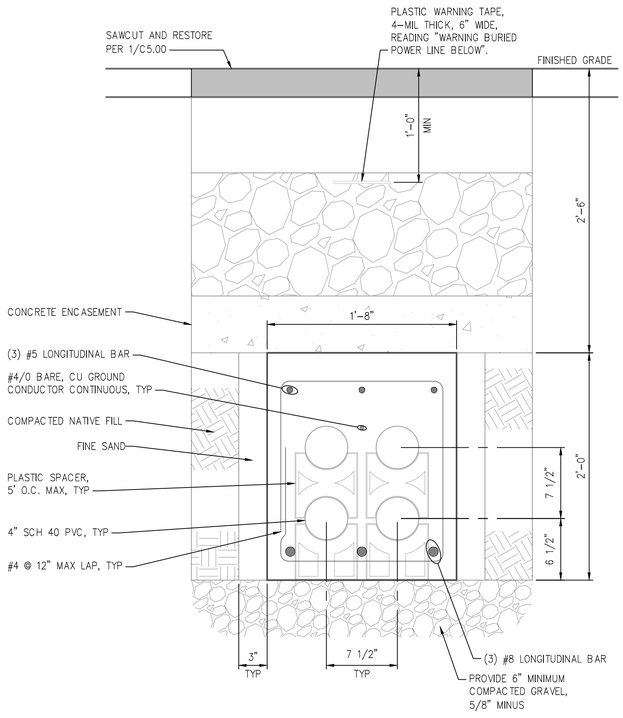
DWG NO.: E21
SHEET NO.: 63
82



A DUCTBANK SECTION

SCALE: 1-1/2" = 1'-0"

E08, E10, E14



B DUCTBANK SECTION

SCALE: 1-1/2" = 1'-0"

E10

DUCTBANK NOTES:

1. WARNING TAP SHALL BE INSTALLED PER SPECIFICATION.
2. ALL LONGITUDINAL REBAR SHALL BE CONTINUOUS. LAP SPLICE 1'-10".
3. SPACER CONFIGURATION MAY VARY. CONTRACTOR TO COORDINATE REBAR LOCATIONS WITH SELECTED SPACERS.
4. FORMING IS REQUIRED FOR BOTH SIDES OF DUCTBANK TO CONFORM TO DIMENSIONS SHOWN.
5. ANCHOR DUCT ASSEMBLY AND/OR POUR ENCASEMENT IN MULTIPLE LIFTS TO PREVENT FLOTATION.
6. IF TOTAL CONDUIT COVER IS LESS THAN THIS MINIMUM, ADD CONCRETE THICKNESS, TO THE CONCRETE COVER AS FOLLOWS:

POWER DB TOTAL CONDUIT COVER (IN)	ADDED CONCRETE (IN)	TOTAL CONCRETE COVER (IN)
30+	0	5
24–30	2	7
18–24	4	9

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CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

ELECTRICAL DETAILS 1

CITY OF Vancouver WASHINGTON

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

JOB NO.: XXXXXXX
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-E22.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: HM
REVIEWED: TA

SCALE: AS SHOWN

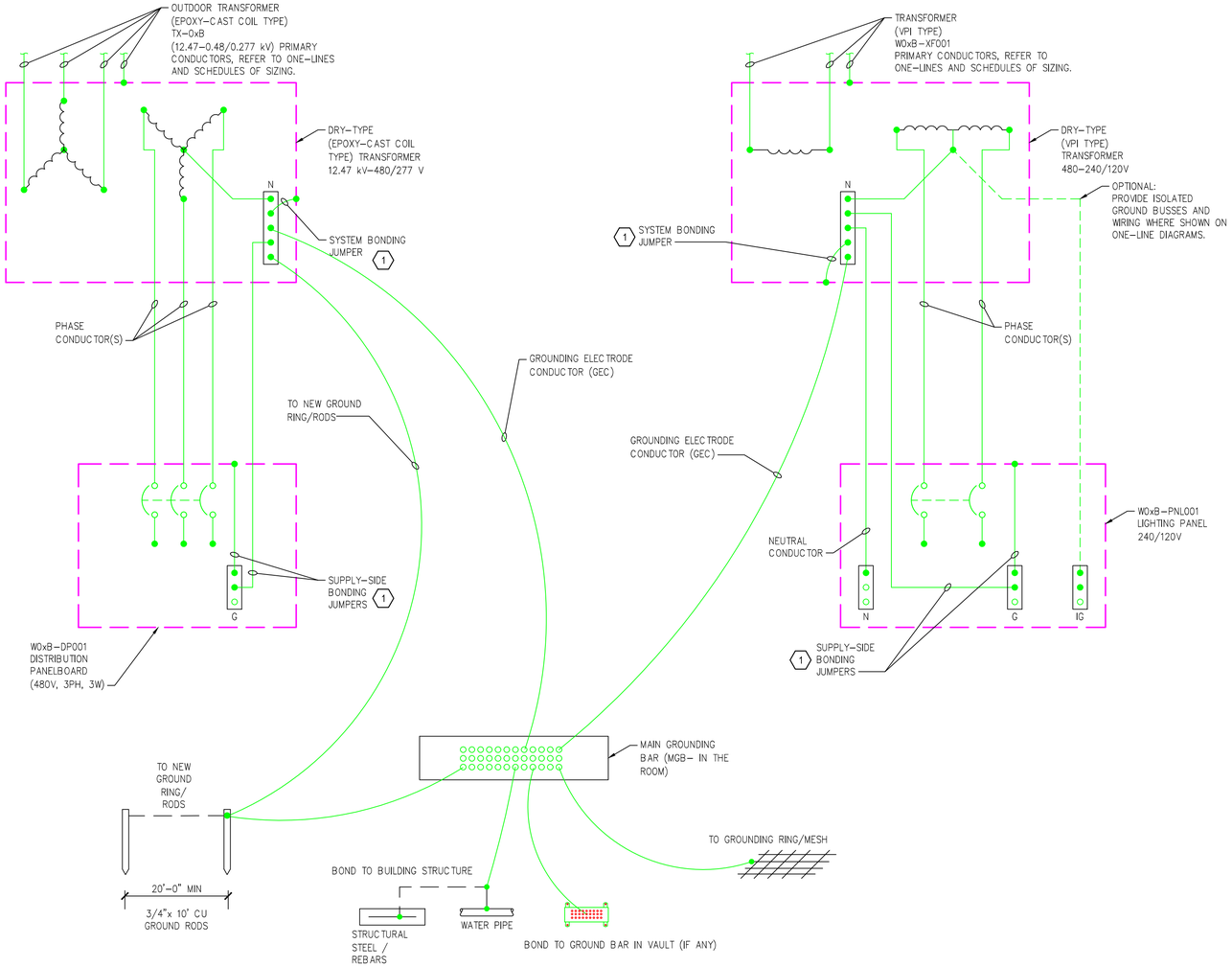
0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: E22
SHEET NO.: 64
82

SHEET KEYNOTES

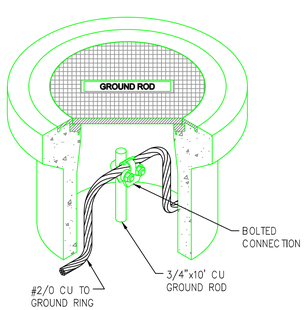
1. THE BONDING JUMPER MATCHES THE GROUNDING CONDUCTOR IN BOTH SIZE AND QUANTITY (NEC 250.102(C)(1).



1 DRY-TYPE TRANSFORMER AND PANELBOARD SCHEMATIC CONNECTION DIAGRAM

NONE

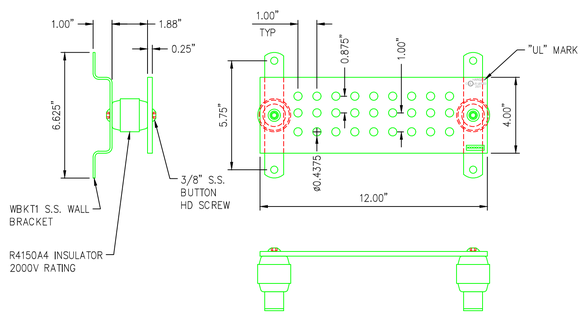
E14, E16



2 GROUND TEST WELL

NTS

E14, E16



3 COPPER GROUNDING BAR ASSEMBLY

NTS

E14, E16

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CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CITY OF Vancouver WASHINGTON

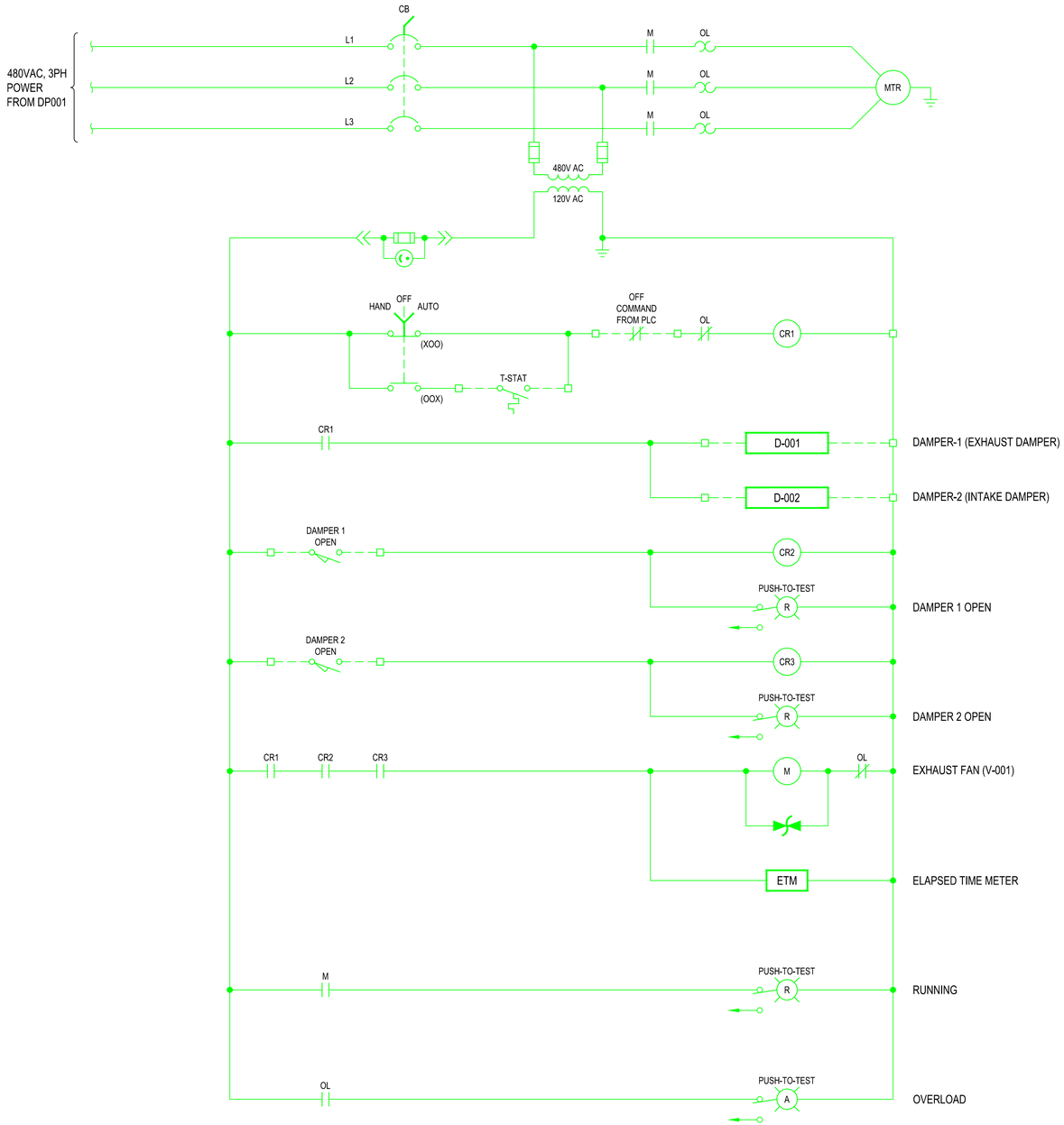
ELECTRICAL DETAILS 2

REVISIONS			
NO.	DATE	DESCRIPTION	BY
			REVIEW

JOB NO: XXXXXXX
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-E23.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: HM
REVIEWED: TA

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

DWG NO.: E23
SHEET NO.: 65
82



CONTROL PANEL (MPC001)
POWER & CONTROL SCHEMATIC DIAGRAM
FOR EXHAUST FAN AND DAMPER(S)

DAVID EVANS AND ASSOCIATES INC.
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WATER STATION 1
WELLS 3B AND 5B FACILITIES

CONTROL PANEL (MPC001)
SCHEMATIC DIAGRAM

CITY OF Vancouver WASHINGTON

ENGINEER: HM
REVIEWED: TA
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-E24.DWG
JOB NO.: XXXXXXX

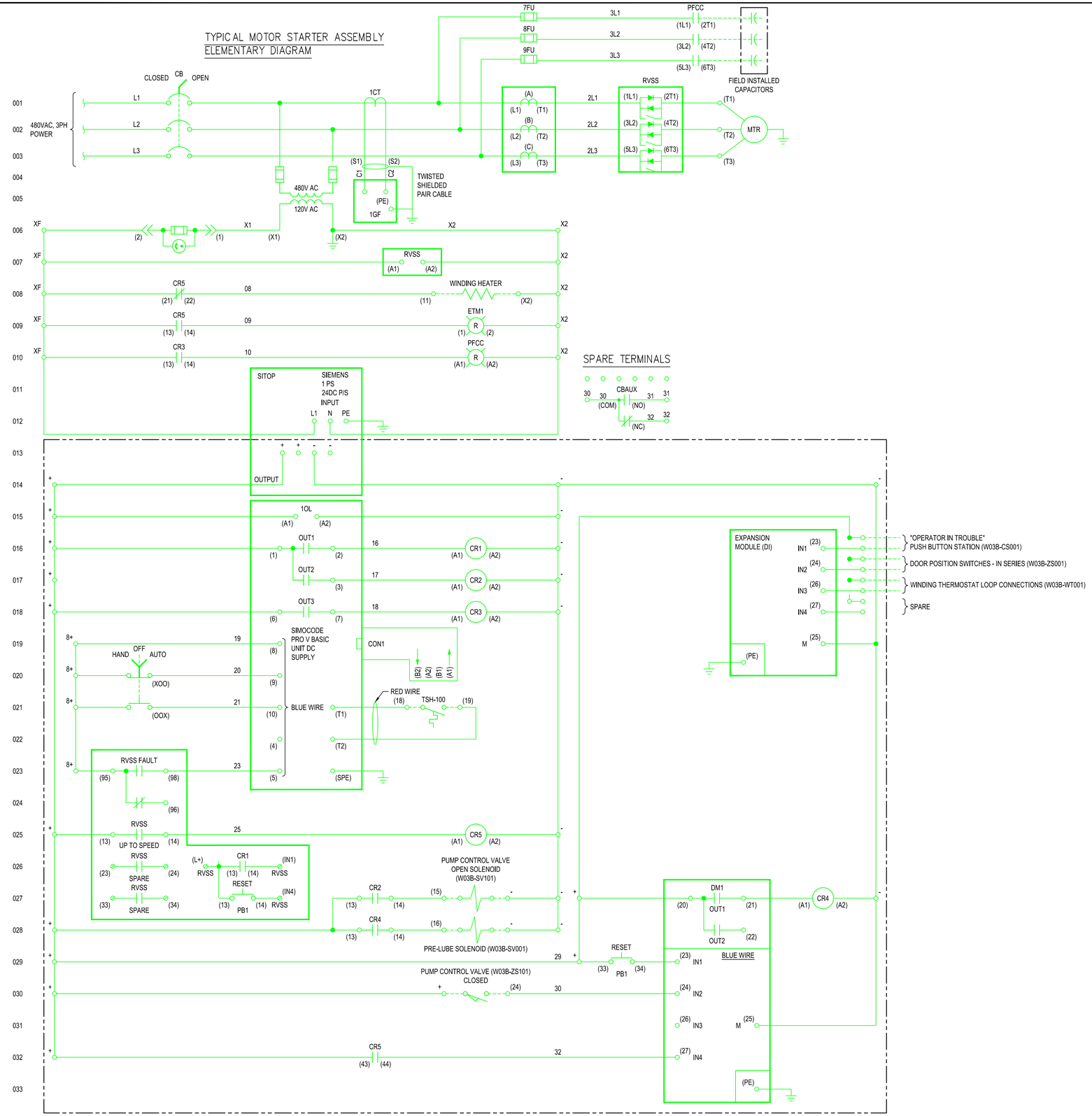
REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: NONE
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: E24
SHEET NO.: 66
82

TYPICAL MOTOR STARTER ASSEMBLY ELEMENTARY DIAGRAM



GENERAL SHEET NOTES

A. FLOW SIGNAL FROM MAGMETER SHALL BE CONNECTED TO THE SEMICODE CONTROLLER IN THE MOTOR STARTER ASSEMBLY FOR REMOTE MONITORING.

B. TROUBLE SIGNAL FROM THE "OPERATOR IN TROUBLE" PUSH BUTTON STATION SHALL BE CONNECTED TO THE SEMICODE CONTROLLER IN THE MOTOR STARTER ASSEMBLY FOR REMOTE MONITORING.

C. PROVIDE FIELD WIRING TERMINAL BLOCKS AS NEEDED TO COMPLETE THE SIGNAL WIRING IN THE MOTOR STARTER FROM THE SEMICODE EXPANSION MODULE TO THE FIELD WIRING TERMINAL BLOCKS.

D. SEE SHEET R05 FOR ADDITIONAL INFORMATION ON PROFIBUS DP CABLE WIRING BETWEEN THE WELL FLOW TRANSMITTER AND THE RVSS SIMCODE BASE UNIT.

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WATER STATION 1
WELLS 3B AND 5B FACILITIES

TYPICAL WELL PUMP CONTROL SCHEMATIC

CITY OF Vancouver WASHINGTON

ENGINEER: HM	JOB NO.: XXXXXXX
REVIEWED: TA	CLIENT: CITY OF VANCOUVER
SAVE DATE: Nov 3, 2025	FILENAME: 3B5B-E25.DWG
PLOT DATE: Nov 3, 2025	

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

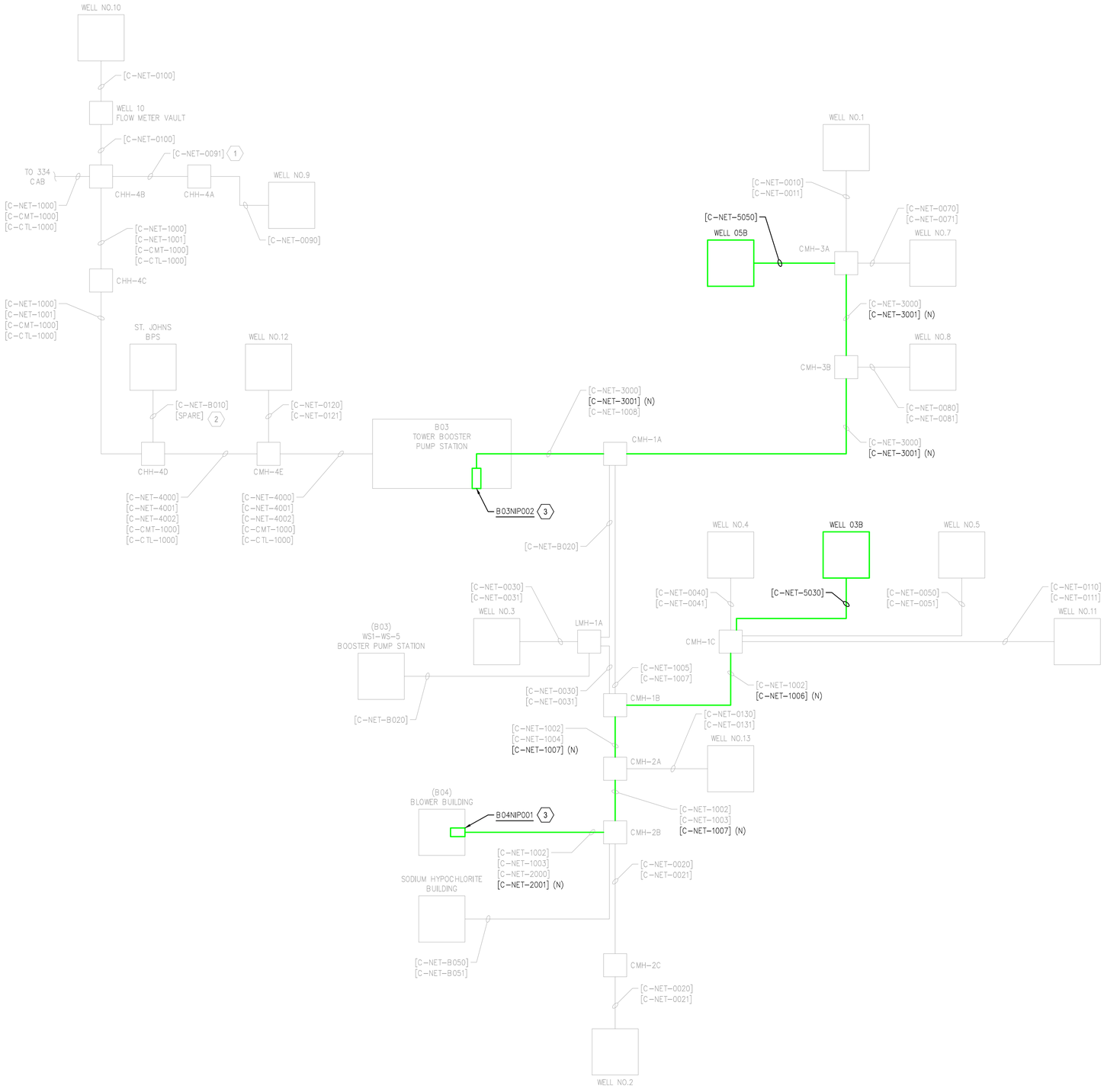
SCALE: NONE

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: E25

SHEET NO.: 67 82



FIBER ROUTING DIAGRAM

SHEET KEYNOTES

1. RELABEL C-NET-1001 TO C-NET-0091 BETWEEN CHH-4B AND CHH-4A.
2. RELABEL C-NET-1000 TO C-NET-B010 BETWEEN CHH-4D TO THE ST. JOHNS BOOSTER PUMP STATION.
3. TERMINATE NEW MULTI-MODE FIBER OPTIC CABLE TO NOTED FIBER PATCH PANEL.

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WATER STATION 1
WELLS 3B AND 5B FACILITIES

FIBER ROUTING DIAGRAM

CITY OF Vancouver WASHINGTON

ENGINEER: NT	JOB NO.: XXXXXXX
REVIEWED: TA	CLIENT: CITY OF VANCOUVER
SAVE DATE: Nov 3, 2025	FILENAME: 3B5B-I01.DWG
PLOT DATE: Nov 3, 2025	

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

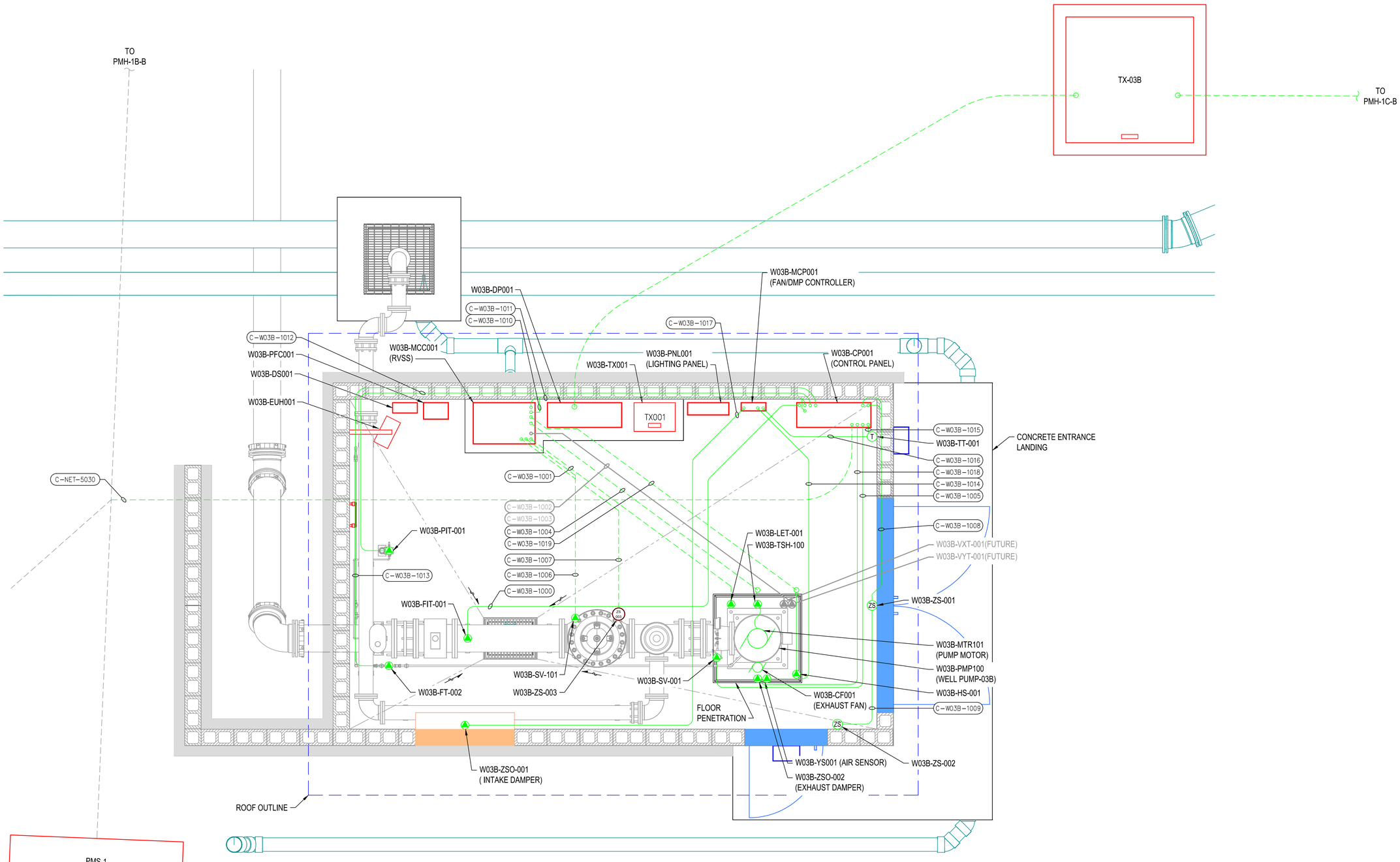
SCALE: NONE

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: I01

SHEET NO.: 68



WELL 3B - INSTRUMENTATION PLAN

1/2" = 1'–0"

GENERAL SHEET NOTES

A. FOR CABLE AND CONDUIT SIZE, SEE SHEETS E05 ONE-LINE DIAGRAM AND I04 CABLE AND CONDUIT SCHEDULE.

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WATER STATION 1
WELLS 3B AND 5B FACILITIES

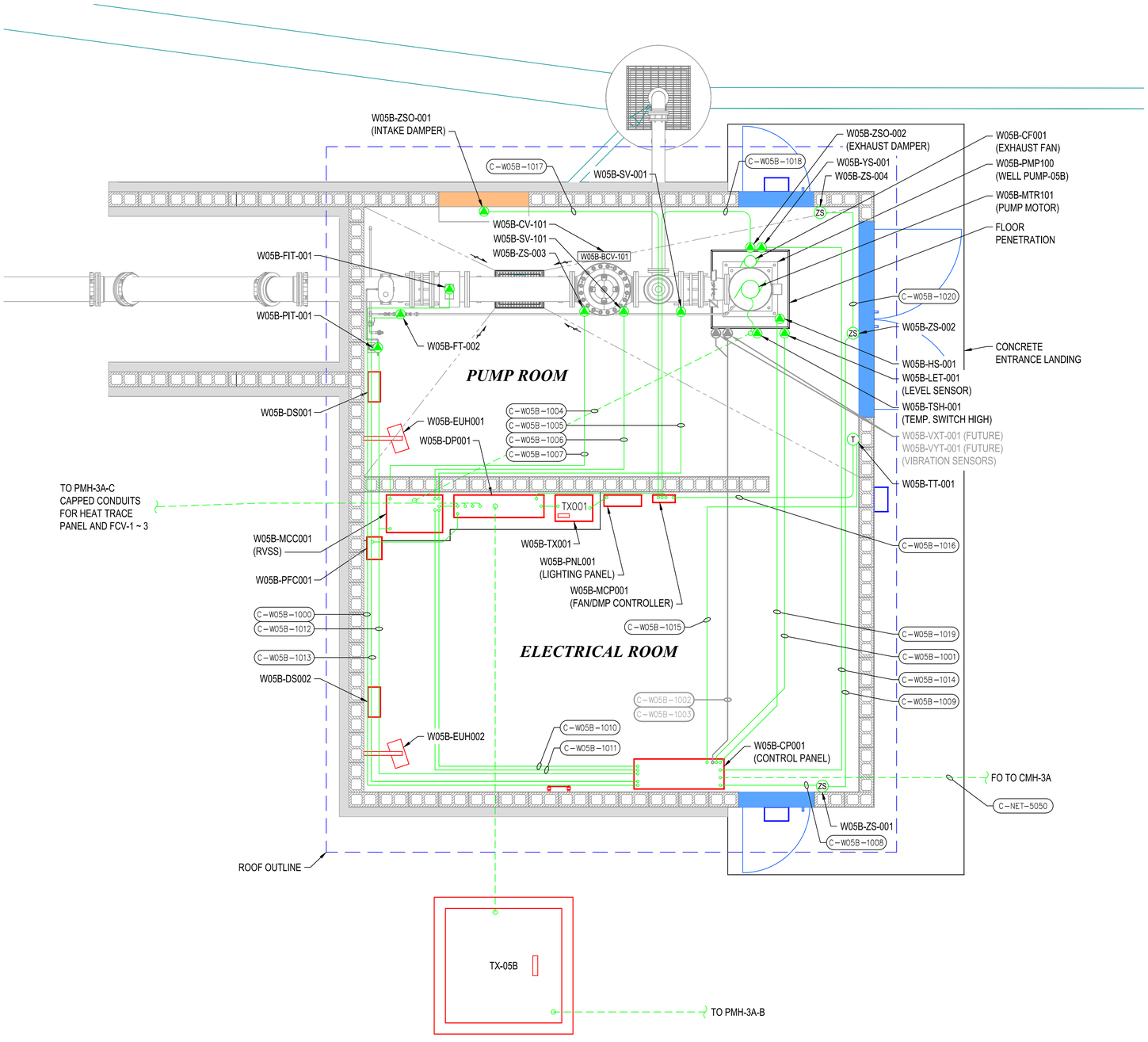
WELL 3B
INSTRUMENTATION PLAN

CITY OF Vancouver WASHINGTON

ENGINEER: NT	SCALE: AS SHOWN
REVIEWED: TA	0" 1" 2"
SAVE DATE: Nov 3, 2025	DRAWING IS FULL SCALE WHEN BAR MEASURES 2"
PLOT DATE: Nov 3, 2025	DWG NO.: I02
CLIENT: CITY OF VANCOUVER	SHEET NO.: 69 82
FILENAME: 3BSB-I02.DWG	
JOB NO.: XXXXXXX	

REVISIONS

NO.	DESCRIPTION	DATE	BY	REVIEW



WELL 5B - INSTRUMENTATION PLAN

3/8" = 1'-0"

GENERAL SHEET NOTES

A. FOR CABLE AND CONDUIT SIZE, SEE SHEETS E06 ONE-LINE DIAGRAM AND I04 CABLE AND CONDUIT SCHEDULE.

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PROFESSIONAL ENGINEER

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

CITY OF Vancouver WASHINGTON

WELL 5B INSTRUMENTATION PLAN

REVISIONS			
NO.	DATE	DESCRIPTION	BY
			REVIEW

JOB NO.: XXXXXXX
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-I03.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: NT
REVIEWED: TA

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

DWG NO.: I03
SHEET NO.: 70

CONDUIT AND CABLE SCHEDULE FOR FIBER OPTIC CABLES

FIBER OPTIC CABLE TO:	CONDUIT	FROM	TO	VIA	CONDUCTORS	SIZE	NOTES
NEW WELL HOUSES (W- 03B) & (W-05B)	C-NET-5030	WELL 03B	CMH-1C	C-NET-5030	2X MULTIMODE FO + 12 FIBER CABLE W/ INNERDUCT	3"	
	C-NET-1006	CMH-1C	CMH-1B		2X MULTIMODE FO + 12 FIBER CABLE W/ INNERDUCT	3"	USE EXISTING PULL CORD (IN 1006) TO RUN FO NEW CABLE.
	C-NET-1007	CMH-1B	CMH-2B	CMH-2A	2X MULTIMODE FO + 12 FIBER CABLE W/ INNERDUCT	3"	USE EXISTING PULL CORD (IN 1007) TO RUN FO NEW CABLE.
	C-NET-2001	CMH-2B	B04NIP001		2X MULTIMODE FO + 12 FIBER CABLE W/ INNERDUCT	3"	USE EXISTING PULL CORD (IN 2001) TO RUN FO NEW CABLE.
	C-NET-5050	WELL 05B	CMH-3A	C-NET-5050	2X MULTIMODE FO + 12 FIBER CABLE W/ INNERDUCT	3"	
	C-NET-3001	CMH-3A	B03NIP002	CMH-3B, CMH-1A	2X MULTIMODE FO + 12 FIBER CABLE W/ INNERDUCT	3"	USE EXISTING PULL CORD (IN 3001) TO RUN FO NEW CABLE.

CONDUIT AND INSTRUMENTATION CABLE SCHEDULE

INSTRUMENTATION FIELD WIRING TO:	CONDUIT	FROM	TO	CONDUCTORS	CONDUIT SIZE	NOTES
NEW WELL HOUSE (W - 03B) (INSTRUMENTATION FIELD WIRING)	C-W03B-1000	W03B-CP001	W03B-FIT-001	(1) TSP-PROFIBUS, 2#16	(2) 3/4"	PROFIBUS COMPATIBLE CONNECTION AND 24VDC
	C-W03B-1001	W03B-CP001	W03B-LET-001	(1) TSP	3/4"	
	C-W03B-1002	W03B-CP001	W03B-VXT-001	(1) TSP	3/4"	
	C-W03B-1003	W03B-CP001	W03B-VYT-001	(1) TSP	3/4"	
	C-W03B-1004	W03B-MCC001	W03B-TSH-001	2 #16	3/4"	
	C-W03B-1005	W03B-MCC001	W03B-SV-001	2 #16	3/4"	
	C-W03B-1006	W03B-MCC001	W03B-SV-101	2 #16	3/4"	
	C-W03B-1007	W03B-MCC001	W03B-ZS-003	2 #16	3/4"	BLOW OFF BYPASS VALVE
	C-W03B-1008	W03B-CP001	W03B-ZS-001	2 #16	3/4"	INTRUSION ALARM
	C-W03B-1009	W03B-ZS-001	W03B-ZS-002	2 #16	3/4"	INTRUSION ALARM
	C-W03B-1010	W03B-CP001	W03B-MCC001	2 #16	3/4"	JE-001 POWER FAIL SIGNAL
	C-W03B-1011	W03B-MC001	W03B-CP-001	TSP-PROFIBUS	3/4"	PROFIBUS COMPATIBLE CONNECTION
	C-W03B-1012	W03B-CP001	W03B-PIT-001	(1) TSP	3/4"	
	C-W03B-1013	W03B-CP001	W03B-FT-002	(1) TSP, 2 #16	(2) 3/4"	1 ANALOG LOOP SIGNAL WITH 24VDC
	C-W03B-1014	W03B-CP001	W03B-YS-001	2 #16	3/4"	PROOF OF FLOW SWITCH
	C-W03B-1015	W03B-CP001	W03B-TT-001	(1) TSP	3/4"	
	C-W03B-1016	C-W03B-MCP001	W03B-TT-001	2 #16	3/4"	
	C-W03B-1017	C-W03B-MCP001	W03B-ZSO-001	2 #16	3/4"	
	C-W03B-1018	C-W03B-MCP001	W03B-ZSO-002	2 #16	3/4"	
	C-W03B-1019	C-W03B-MCC001	W03B-HS-001	2 #16	3/4"	
NEW WELL HOUSE (W - 05B) (INSTRUMENATION FIELD WIRING)	C-W05B-1000	W05B-CP001	W05B-FIT-001	(1) TSP-PROFIBUS, 2#16	(2) 3/4"	PROFIBUS COMPATIBLE CONNECTION AND 24VDC
	C-W05B-1001	W05B-CP001	W05B-LET-001	(1) TSP	3/4"	
	C-W05B-1002	W05B-CP001	W05B-VXT-001	(1) TSP	3/4"	
	C-W05B-1003	W05B-CP001	W05B-VYT-001	(1) TSP	3/4"	
	C-W05B-1004	W05B-MCC001	W05B-TSH-001	2 #16	3/4"	
	C-W05B-1005	W05B-MCC001	W05B-SV-001	2 #16	3/4"	
	C-W05B-1006	W05B-MCC001	W05B-SV-101	2 #16	3/4"	
	C-W05B-1007	W05B-MCC001	W05B-ZS-003	2 #16	3/4"	
	C-W05B-1008	W05B-CP001	W05B-ZS-001	2 #16	3/4"	
	C-W05B-1009	W05B-ZS-001	W05B-ZS-002	2 #16	3/4"	
	C-W05B-1010	W05B-CP001	W05B-MCC001	2 #16	3/4"	JE-001 POWER FAIL SIGNAL
	C-W05B-1011	W05B-MC001	W05B-CP001	TSP-PROFIBUS	3/4"	PROFIBUS COMPATIBLE CONNECTION
	C-W05B-1012	W05B-CP001	W05B-PIT-001	(1) TSP	3/4"	
	C-W05B-1013	W05B-CP001	W05B-FT-002	(1) TSP, 2 #16	(2) 3/4"	1 ANALOG LOOP SIGNAL WITH 24VDC
	C-W05B-1014	W05B-CP001	W05B-YS-001	2 #16	3/4"	PROOF OF FLOW SWITCH
	C-W05B-1015	W05B-CP001	W05B-TT-001	(1) TSP	3/4"	
	C-W05B-1016	C-W05B-MCP001	W05B-TT-001	2 #16	3/4"	
	C-W05B-1017	C-W05B-MCP001	W05B-ZSO-001	2 #16	3/4"	
	C-W05B-1018	C-W05B-MCP001	W05B-ZSO-002	2 #16	3/4"	
	C-W05B-1019	C-W05B-MCC001	W05B-HS-001	2 #16	3/4"	
	C-W05B-1020	W05B-ZS-002	W05B-ZS-004	2 #16	3/4"	

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CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

I&C CABLE AND CONDUIT SCHEDULE

CITY OF Vancouver WASHINGTON

ENGINEER: NT
REVIEWED: TA
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-I04-DWG
JOB NO.: XXXXXXX

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

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

DWG NO.: I04
SHEET NO.: 71
82

Control Panel	Site	Facility	Class (ISA)	Loop #	Seq #	Equipment Tag	I/O Point Description	I/O Type	PLC Name
2155-W3B-CP001	2155	W3B	LET		101	2155-W3B-LET-101	Well Water Level Transmitter	AI	2155-W3B-PLC001
2155-W3B-CP001	2155	W3B	TT	001		2155-W3B-TT001	Room Temp Transmitter	AI	2155-W3B-PLC001
2155-W3B-CP001	2155	W3B	FT	002		2155-W3B-FT002	Pre-Lube Flow Meter	AI	2155-W3B-PLC001
2155-W3B-CP001							SPARE	AI	
2155-W3B-CP001							SPARE	AI	
2155-W3B-CP001							SPARE	AI	
2155-W3B-CP001							SPARE	AI	
2155-W3B-CP001							SPARE	AI	
2155-W3B-CP001	2155	W3B	JE	001		2155-W3B-JE001	Power Fail	DI	2155-W3B-PLC001
2155-W3B-CP001	2155	W3B	YS	001		2155-W3B-YS001	Air Sensor Alarm	DI	2155-W3B-PLC001
2155-W3B-CP001	2155	W3B	HS	001		2155-W3B-HS001	Operator-in-Trouble	DI	2155-W3B-PLC001
2155-W3B-CP001	2155	W3B	ZS	001		2155-W3B-ZS001	Well Door Intrusion Switch	DI	2155-W3B-PLC001
2155-W3B-CP001	2155	W3B	ZS	002		2155-W3B-ZS002	Double Door Intrusion Switch	DI	2155-W3B-PLC001
2155-W3B-CP001	2155	W3B	ZS	003		2155-W3B-ZS003	Discharge Bypass Switch	DI	2155-W3B-PLC001
2155-W3B-CP001	2155	W3B	ZS	004		2155-W3B-ZS004	Elec. Room Door Intrusion Switch	DI	2155-W3B-PLC001
2155-W3B-CP001							SPARE	DI	
2155-W3B-CP001							SPARE	DI	
2155-W3B-CP001							SPARE	DI	
2155-W3B-CP001							SPARE	DI	
2155-W3B-CP001							SPARE	DI	
2155-W3B-CP001							SPARE	DI	
2155-W3B-CP001							SPARE	DI	
2155-W3B-CP001							SPARE	DI	
2155-W3B-CP001	2155	W3B	JC	001		2155-W3B-JC001	Lighting Contactor On	DO	2155-W3B-PLC001
2155-W3B-CP001	2155	W3B	YA	001		2155-W3B-YA001	Intrustion Horn	DO	2155-W3B-PLC001
2155-W3B-CP001	2155	W3B	YS	001	RST	2155-W3B-YS001RST	Air Sensor Alarm Reset	DO	2155-W3B-PLC001
2155-W3B-CP001	2155	W3B	EXH	100		2155-W3B-EXH100	Exhaust Fan	DO	2155-W3B-PLC001
2155-W3B-CP001	2155	W3B	FIT	001		2155-W3B-FIT001	Well 5B Flow Meter	Profinet	2155-W3B-PLC001
2155-W3B-CP001	2155	W3B	PMP	100		2155-W3B-PMP100	Well 5B SIMOCODE	Profinet	2155-W3B-PLC001
2155-W3B-CP001	2155	W3B	SV	201		2155-W3B-SV201	Pre-Lube Solenoid Valve	DO	2155-W3B-PLC001
2155-W3B-CP001	2155	W3B	SV	101		2155-W3B-SV101	Discharge Bypass Solenoid Valve	DO	2155-W3B-PLC001
2155-W3B-CP001									
2155-W3B-CP001									
2155-W3B-CP001									
2155-W3B-CP001									
2155-W3B-CP001									
2155-W3B-CP001									
2155-W5B-CP001	2155	W5B	LET		101	2155-W5B-LET-101	Well Water Level Transmitter	AI	2155-W5B-PLC001
2155-W5B-CP001	2155	W5B	TT	001		2155-W5B-TT001	Room Temp Transmitter	AI	2155-W5B-PLC001
2155-W5B-CP001	2155	W5B	FT	002		2155-W5B-FT002	Pre-Lube Flow Meter	AI	2155-W5B-PLC001
2155-W5B-CP001							SPARE	AI	
2155-W5B-CP001							SPARE	AI	
2155-W5B-CP001							SPARE	AI	
2155-W5B-CP001							SPARE	AI	
2155-W5B-CP001							SPARE	AI	

Control Panel	Site	Facility	Class (ISA)	Loop #	Seq #	Equipment Tag	I/O Point Description	I/O Type	PLC Name
2155-W5B-CP001	2155	W5B	JE	001		2155-W5B-JE001	Power Fail	DI	2155-W5B-PLC001
2155-W5B-CP001	2155	W5B	YS	001		2155-W5B-YS001	Air Sensor Alarm	DI	2155-W5B-PLC001
2155-W5B-CP001	2155	W5B	HS	001		2155-W5B-HS001	Operator-in-Trouble	DI	2155-W5B-PLC001
2155-W5B-CP001	2155	W5B	ZS	001		2155-W5B-ZS001	Well Door Intrusion Switch	DI	2155-W5B-PLC001
2155-W5B-CP001	2155	W5B	ZS	002		2155-W5B-ZS002	Double Door Intrusion Switch	DI	2155-W5B-PLC001
2155-W5B-CP001	2155	W5B	ZS	003		2155-W5B-ZS003	Discharge Bypass Switch	DI	2155-W5B-PLC001
2155-W5B-CP001	2155	W5B	ZS	004		2155-W5B-ZS004	Elec. Room Door Intrusion Switch	DI	2155-W5B-PLC001
2155-W5B-CP001							SPARE	DI	
2155-W5B-CP001							SPARE	DI	
2155-W5B-CP001							SPARE	DI	
2155-W5B-CP001							SPARE	DI	
2155-W5B-CP001							SPARE	DI	
2155-W5B-CP001							SPARE	DI	
2155-W5B-CP001							SPARE	DI	
2155-W5B-CP001							SPARE	DI	
2155-W5B-CP001	2155	W5B	JC	001		2155-W5B-JC001	Lighting Contactor On	DO	2155-W5B-PLC001
2155-W5B-CP001	2155	W5B	YA	001		2155-W5B-YA001	Intrustion Horn	DO	2155-W5B-PLC001
2155-W5B-CP001	2155	W5B	YS	001	RST	2155-W5B-YS001RST	Air Sensor Alarm Reset	DO	2155-W5B-PLC001
2155-W5B-CP001	2155	W5B	EXH	100		2155-W5B-EXH100	Exhaust Fan	DO	2155-W5B-PLC001
2155-W5B-CP001	2155	W5B	FIT	001		2155-W5B-FIT001	Well 5B Flow Meter	Profinet	2155-W5B-PLC001
2155-W5B-CP001	2155	W5B	PMP	100		2155-W5B-PMP100	Well 5B SIMOCODE	Profinet	2155-W5B-PLC001
2155-W5B-CP001	2155	W5B	SV	201		2155-W5B-SV201	Pre-Lube Solenoid Valve	DO	2155-W5B-PLC001
2155-W5B-CP001	2155	W5B	SV	101		2155-W5B-SV101	Discharge Bypass Solenoid Valve	DO	2155-W5B-PLC001
2155-W5B-CP001									
2155-W5B-CP001									
2155-W5B-CP001									
2155-W5B-CP001									
2155-W5B-CP001									
2155-W5B-CP001									
2155-W5B-CP001									
2155-W5B-CP001									

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24001753
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PROFESSIONAL ENGINEER

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

INPUT AND OUTPUT SCHEDULE

CITY OF Vancouver WASHINGTON

JOB NO.: XXXXXXX
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-I05.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: JRB
REVIEWED: KMP

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

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

DWG NO.: I05
SHEET NO.: 72
82

WELLHOUSE 3B					
Site Code (WATER STATION)	Facility Code (STRUCTURE)	Equipment Code	Unit ID	Unit Type	Definition
2155	W3B	WELL HOUSE 3B	2155-W3B		BUILDING
2155	W3B	WELL3B	2155-W3B-WELL3B	WELL	WELL
2155	W3B	ELE001	2155-W3B-ELE001	ELE	ELECTRICAL
2155	W3B	PIP001	2155-W3B-PIP001	PIP	PIPING
2155	W3B	SCA001	2155-W3B-SCA001	SCA	SCADA
2155	W3B	PMP100	2155-W3B-PMP100	VERT-TURB	PUMP - SIMOCODE (Profinet)
2155	W3B	MTR101	2155-W3B-MTR101	MTR	PUMP MOTOR
2155	W3B	VC101	2155-W2B-CV101	CV	CONTROL VALVE
2155	W3B	PI100	2155-W3B-PI101	PI	PRESSURE INDICATOR
2155	W3B	EUH001	2155-W3B-EUH001	EUH	ELECTRIC UNIT HEATER
2155	W3B	CF001	2155-W3B-CF001	CF	COOLING FAN
SCADA TAGS - DO NO INCLUDE IN ASSET INVENTORY					
2155	W3B	CP001	2155-W3B-CP001	CP	SCADA Control Panel
2155	W3B	ZS001	2155-W3B-ZS001	ZS	Well Door Intrusion Switch
2155	W3B	ZS002	2155-W3B-ZS002	ZS	Double Door Intrusion Switch
2155	W3B	FIT001	2155-W3B-FIT001	FIT	Well 3B Flow Meter
2155	W3B	ZS003	2155-W3B-ZS003	ZS	Discharge Bypass Siwtch
2155	W3B	SV101	2155-W3B-SV101	SV	Discharge Bypass Solenoid
2155	W3B	SV001	2155-W3B-SV001	SV	Pre-Lube Solenoid
2155	W3B	FT002	2155-W3B-FT002	FIT	Pre-Lube Flow Meter
2155	W3B	LET001	2155-W3B-LET001	LET	Well Water Level Transmitter
2155	W3B	JE001	2155-W3B-JE001	JE	Power Fail
2155	W3B	HS001	2155-W3B-HS001	HS	Operator-In-Trouble
2155	W3B	YS001	2155-W3B-YS001	YS	Air Sensor Alarm
2155	W3B	YA001	2155-W3B-YA001	YA	Intrusion Horn
2155	W3B	JC001	2155-W3B-JC001	JC	Outdoor Light On
2155	W3B	YS001-RST	2155-W3B-YS001-RST	RST	Air Sensor Alarm Reset
2155	W3B	TT001	2155-W3B-TT001	TT	Room Temp Transmitter
2155	W3B	EXH100	2155-W3B-EXH100	EXH	Exhaust Fan
EQUIPMENT TAGS - DO NOT INCLUDE IN ASSET INVENTORY					
2155	W3B	MCC001	2155-W3B-MCC001	MCC	Well Motor Control
2155	W3B	DP001	2155-W3B-DP001	DP	Distribution Panelboard
2155	W3B	TX001	2155-W3B-TX001	TX	Transformer
2155	W3B	PNL001	2155-W3B-PNL001	PNL	Lighting Panel
2155	W3B	MPC001	2155-W3B-MPC001	MPC	Exhaust Fan Control Panel
2155	W3B	PFC001	2155-W3B-PFC001	PFC	PF Correction Capacitor
2155	W3B	DMP001	2155-W3B-DMP001	DMP	Exhaust Damper
2155	W3B	DMP002	2155-W3B-DMP002	DMP	Intake Damper
2155	W3B	DS001	2155-W3B-DS001	DS	Heater Off Switch

WELLHOUSE 5B					
Site Code (WATER STATION)	Facility Code (STRUCTURE)	Equipment Code	Unit ID	Unit Type	Definition
2155	W5B	WELL HOUSE 5B	2155-W5B		BUILDING
2155	W5B	WELL5B	2155-W5B-WELL5B	WELL	WELL
2155	W5B	ELE001	2155-W5B-ELE001	ELE	ELECTRICAL
2155	W5B	PIP001	2155-W5B-PIP001	PIP	PIPING
2155	W5B	SCA001	2155-W5B-SCA001	SCA	SCADA
2155	W5B	PMP100	2155-W5B-PMP100	VERT-TURB	PUMP - SIMOCODE (Profinet)
2155	W5B	MTR101	2155-W5B-MTR101	MTR	PUMP MOTOR
2155	W5B	CV101	2155-W2B-CV101	CV	CONTROL VALVE
2155	W5B	PI100	2155-W5B-PI101	PI	PRESSURE INDICATOR
2155	W5B	EUH001	2155-W5B-EUH001	EUH	ELECTRIC UNIT HEATER
2155	W5B	EUH002	2155-W5B-EUH002	EUH	ELECTRIC UNIT HEATER
2155	W5B	CF001	2155-W5B-CF001	CF	COOLING FAN
SCADA TAGS - DO NO INCLUDE IN ASSET INVENTORY					
2155	W5B	CP001	2155-W5B-CP001	CP	SCADA Control Panel
2155	W5B	ZS001	2155-W5B-ZS001	ZS	Well Door Intrusion Switch
2155	W5B	ZS002	2155-W5B-ZS002	ZS	Double Door Intrusion Switch
2155	W5B	ZS004	2155-W5B-ZS004	ZS	Elec Room Door Intrusion Switch
2155	W5B	FIT001	2155-W5B-FIT001	FIT	Well 3B Flow Meter
2155	W5B	ZS003	2155-W5B-ZS003	ZS	Discharge Bypass Switch
2155	W5B	SV101	2155-W5B-SV101	SV	Discharge Bypass Solenoid
2155	W5B	SV001	2155-W5B-SV001	SV	Pre-Lube Solenoid
2155	W5B	FT002	2155-W5B-FT002	FIT	Pre-Lube Flow Meter
2155	W5B	LET001	2155-W5B-LET001	LET	Well Water Level Transmitter
2155	W5B	JE001	2155-W5B-JE001	JE	Power Fail
2155	W5B	HS001	2155-W5B-HS001	HS	Operator-In-Trouble
2155	W5B	YS001	2155-W5B-YS001	YS	Air Sensor Alarm
2155	W5B	YA001	2155-W5B-YA001	YA	Intrusion Horn
2155	W5B	JC001	2155-W5B-JC001	JC	Outdoor Light On
2155	W5B	YS001-RST	2155-W5B-YS001-RST	RST	Air Sensor Alarm Reset
2155	W5B	TT001	2155-W5B-TT001	TT	Room Temp Transmitter
2155	W5B	EXH100	2155-W5B-EXH100	EXH	Exhaust Fan
EQUIPMENT TAGS - DO NOT INCLUDE IN ASSET INVENTORY					
2155	W5B	MCC001	2155-W5B-MCC001	MCC	Well Motor Control
2155	W5B	DP001	2155-W5B-DP001	DP	Distribution Panelboard
2155	W5B	TX001	2155-W5B-TX001	TX	Transformer
2155	W5B	PNL001	2155-W5B-PNL001	PNL	Lighting Panel
2155	W5B	MPC001	2155-W5B-MPC001	MPC	Exhaust Fan Control Panel
2155	W5B	PFC001	2155-W5B-PFC001	PFC	PF Correction Capacitor
2155	W5B	DMP001	2155-W5B-DMP001	DMP	Exhaust Damper
2155	W5B	DMP002	2155-W5B-DMP002	DMP	Intake Damper
2155	W5B	DS001	2155-W5B-DS001	DS	Heater Off Switch

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CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

INSTRUMENT ASSET TAG SCHEDULE

CITY OF Vancouver WASHINGTON

JOB NO.: XXXXXX
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-I06.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: JRB
REVIEWED: KMP

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

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

DWG NO.: I06
SHEET NO.: 73
82

P&ID

INSTRUMENT SYMBOL IDENTIFIERS

J-1: IDENTIFICATION LETTERS (SEE TABLE BELOW)
J-2: LOOP NUMBER
J-3: VENDOR DESIGNATOR (NOTE 3)
J-4: FUNCTION BLOCK (SEE TABLE BELOW)
J-5: NAME OR FUNCTION (SEE TABLE RIGHT)
J-6: HANDSWITCH DESIGNATOR (SEE BELOW)

	FIRST LETTERS		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	VARIABLE MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT/ACTIVE FUNCTION	VARIABLE MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE			CONTROL	CLOSE
D	USER'S CHOICE	DIFFERENCE, DIFFERENTIAL			DEVIATION
E	VOLTAGE		SENSOR, PRIMARY ELEMENT		
F	FLOW, FLOW RATE	RATIO			
G	USER'S CHOICE		GLASS, GAUGE, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT		INDICATE		
J	POWER		SCAN		
K	TIME, SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	USER'S CHOICE				MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		OPEN
P	PRESSURE		POINT (TEST CONNECTION)		
Q	QUANTITY	INTEGRATE, TOTALIZE	INTEGRATE, TOTALIZE		
R	RADIATION		RECORD		RUN
S	SPEED, FREQUENCY	SAFETY		SWITCH	STOP
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL, PROBE		
X	UNCLASSIFIED	X-AXIS	ACCESSORY DEVICES, UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE, PRESENCE	Y-AXIS		AUXILIARY DEVICES	
Z	POSITION, DIMENSION	Z-AXIS SAFETY INSTRUMENTED SYSTEM		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

J-4 FUNCTION BLOCK DESIGNATORS

- Σ SUMMING
- △ DIFFERENCE
- ∫ INTEGRAL
- d/dt DERIVATIVE
- × MULTIPLYING
- ÷ DIVIDING
- f(x) CONVERT
- √ ROOT EXTRACTION
- √ SQUARE ROOT
- x^n EXPONENTIAL
- > HIGH SELECTION
- < LOW SELECTION
- ± BIAS
- F(x) NONLINEAR OR UNSPECIFIED FUNCTION

* E- VOLTAGE
I- CURRENT
P- PNEUMATIC
A- ANALOG
B- BINARY
H- HYDRAULIC
O- ELECTROMAGNETIC, SONIC
D- DIGITAL
R- RESISTANCE (ELECTRICAL)

J-6 HANDSWITCH DESIGNATORS

ES	EMERGENCY STOP	RST	RESET
F/R	FORWARD-REVERSE	SP	STOP
LOR	LOCAL-OFF-REMOTE	S/S	START-STOP
OCR	OPEN-CLOSE-REMOTE	ST	START

INSTRUMENT SERVICES

- HPA — INSTRUMENT QUALITY AIR SUPPLY (NOTE 4)
- ES — ELECTRICAL SERVICE (VOLTAGES ARE SPECIFICALLY NOTED. E.G., 480V)

PLC INPUT/OUTPUT

- DISCRETE INPUT
- ANALOG INPUT
- DISCRETE OUTPUT
- ANALOG OUTPUT

P&ID BLOCKS

GENERAL INSTRUMENT OR FUNCTION SYMBOLS	FIELD MOUNTED	PRIMARY LOCATION ACCESSIBLE TO OPERATOR	AUXILIARY LOCATION ACCESSIBLE TO OPERATOR	PRIMARY LOCATION INACCESSIBLE OR BEHIND PANEL	AUXILIARY LOCATION INACCESSIBLE OR BEHIND PANEL
DISCRETE INSTRUMENTS	FU / LN	FU / LN	FU / LN	FU / LN	FU / LN
SHARED DISPLAY, SHARED CONTROL	FU / LN	FU / LN	FU / LN	FU / LN	FU / LN
COMPUTER FUNCTION	FU / LN	FU / LN	FU / LN	FU / LN	FU / LN
PROGRAMMABLE LOGIC CONTROL	FU / LN	FU / LN	FU / LN	FU / LN	FU / LN
LIGHT	FU / LN	FU / LN	FU / LN	FU / LN	FU / LN

FLOW PRIMARY ELEMENTS

- ORIFICE PLATE
- SINGLE PORT PITOT TUBE OR PITOT-VENTURI TUBE
- VENTURI TUBE
- AVERAGING PITOT TUBE
- FLUME
- WEIR
- TUBING OR PROPELLER TYPE PRIMARY ELEMENT
- THERMAL MASS-FLOWMETER
- POSITIVE DISPLACEMENT TYPE FLOW TOTALIZING INDICATOR
- VORTEX SENSOR
- TARGET TYPE SENSOR
- FLOW NOZZLE
- M — MAGNETIC FLOWMETER
- SONIC FLOWMETER
- ROTAMETER
- ROTAMETER WITH INTEGRAL VALVE
- EDUCTOR

LINES

- MAIN PROCESS
- SECONDARY PROCESS
- INSTRUMENT CONNECTION
- EQUIPMENT ENCLOSURE
- EQUIPMENT ID — EQUIPMENT TO/FROM IDENTIFIER
- SHEET (#) — REFERENCE SHEET/GRID NUMBER
- SYSTEM — SYSTEM DESCRIPTOR
- 24" BW — PIPE SYSTEM / PIPE SIZE IN INCHES
- ELECTRICAL SIGNAL (ANALOG)
- (OR) ELECTRICAL SIGNAL (DISCRETE)
- ELECTRICAL SIGNAL (OR DIAGRAM)
- PNEUMATIC SIGNAL
- COMMUNICATION LINK (SHARED)
- COMMUNICATION LINK (INDEPENDENT)
- COMMUNICATION LINK (INTELLIGENT)
- COMMUNICATION LINK (SMART)
- GUIDED SIGNAL (E-MAGNETIC, SONIC, FIBER OPTIC SIGNAL)
- HYDRAULIC SIGNAL
- CAPILLARY TUBE OR FILLED ELEMENT
- MECHANICAL LINK OR CONNECTION

MECHANICAL — OR — ELECTRICAL
CONNECTED
NOT CONNECTED

VALVES

- GATE VALVE
- GATE VALVE CLOSED
- GLOBE VALVE
- PLUG VALVE
- PLUG VALVE CLOSED
- CHECK VALVE
- PINCH VALVE
- DIAPHRAGM VALVE
- BUTTERFLY VALVE
- BALL VALVE
- BALL VALVE CLOSED
- BALL-CHECK VALVE
- NEEDLE VALVE
- PLUG (COCK)
- PRESSURE REDUCING REGULATING VALVE, SELF-CONTAINED
- BACK PRESSURE REGULATING VALVE, SELF-CONTAINED
- PRESSURE REDUCING REGULATOR WITH EXTERNAL PRESSURE TAP
- 3-WAY VALVE
- 4-WAY VALVE
- ANGLE VALVE
- PRESSURE RELIEF VALVE
- FC = FAIL CLOSED; FO = FAIL OPEN; LC = LOCKED CLOSED; LO = LOCKED OPEN. SHADING INDICATES PORT TO BE CLOSED DURING NORMAL OPERATION. DOT INDICATES PORT TO BE CLOSED DURING ALTERNATE OPERATION.
- AIR AND VACUUM RELIEF VALVE (AVRV)

VALVE OPERATORS

- DIAPHRAGM
- CYLINDER OPERATOR
- DIAPHRAGM PRESSURE BALANCED
- S — SOLENOID
- M — MOTOR
- SV — SOLENOID VALVE

TYPICAL CONNECTION

- IN-LINE DEVICE
- DIRECT CONNECTION TO PROCESS
- TEMPERATURE ELEMENT WITH WELL
- RADIATION OR SONIC SENSING
- FILLED SYSTEM, DIAPHRAGM SEAL CONNECTION

MISCELLANEOUS

- FLANGE
- UNION
- Y STAINER
- FLOW STRAIGHTENING VANE
- TEE
- SCREWED CAP
- CAMLOCK HOSE FITTING
- WELDED CAP
- BLIND FLANGE
- REDUCER
- HB — HOSE BIBB CONNECTION
- EXPANSION JOINT
- FLEXIBLE COUPLING
- FLANGE COUPLING ADAPTER
- SLUICE GATE OR SLIDE GATE
- DRAIN
- INSTRUMENT
- DIAPHRAGM SEAL
- ANNULAR SEAL
- RUPTURE DISK, PRESSURE
- RUPTURE DISK, VACUUM
- P — PURGE
- THERMOMETER WELL
- CALIBRATION CYLINDER
- PULSATION DAMPER
- AIR RELIEF VALVE
- AIR RELEASE
- LEVEL PROBE
- CHEMICAL DIFFUSER
- STATIC MIXER
- INJECTOR
- EDUCTOR
- I OR 1 — INTERLOCKING OR SEQUENTIAL CONTROL FUNCTION. SEE INTERLOCK NOTES FOR REFERENCE TO SPECIFIC NUMBERS.
- WATER LINE
- GRAVITY FLOW

* AV- AIR VALVE
F- FILTER
T- TRAP
FH- FIRE HYDRANT

EQUIPMENT

- M — MIXER
- M — VERTICAL TURBINE PUMP
- M — SUBMERSIBLE PUMP
- BLOWER FAN
- PUMP
- METERING PUMP
- PUMP PROGRESSIVE CAVITY
- ROTARY PUMP
- HOSE PUMP
- ROCK TRAP
- M — GRINDER
- HEAT EXCHANGER

NAME AND FUNCTION DESIGNATORS

ACK	ACKNOWLEDGEMENT
BTN	BUTTON
CMD	COMMAND
CR	CARD READER
CRNT	CURRENT
CTRL	CONTROL
FWD	FORWARD
HS	HAND SWITCH
HOA	HAND/OFF/AUTO
MOIST	MOISTURE
POS	POSITION
PRESS	PRESSURE
REM	REMOTE
REV	REVERSE
REQ	REQUEST
VFD	VARIABLE FREQUENCY DRIVE

NOTES:

1. THIS IS A GENERALIZED LEGEND SHEET.
2. SEE ALSO ISA S5.1, S5.3, AND S7.3.
3. INSTRUMENTS MARKED WITH AND ASTERISK ON THE PID ARE FURNISHED WITH THE EQUIPMENT.
4. REFER TO ISA RP7.7 FOR INSTRUMENT AIR QUALITY STANDARDS.

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CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES
PROCESS AND INSTRUMENTATION
- LEGEND SHEET

CITY OF Vancouver WASHINGTON

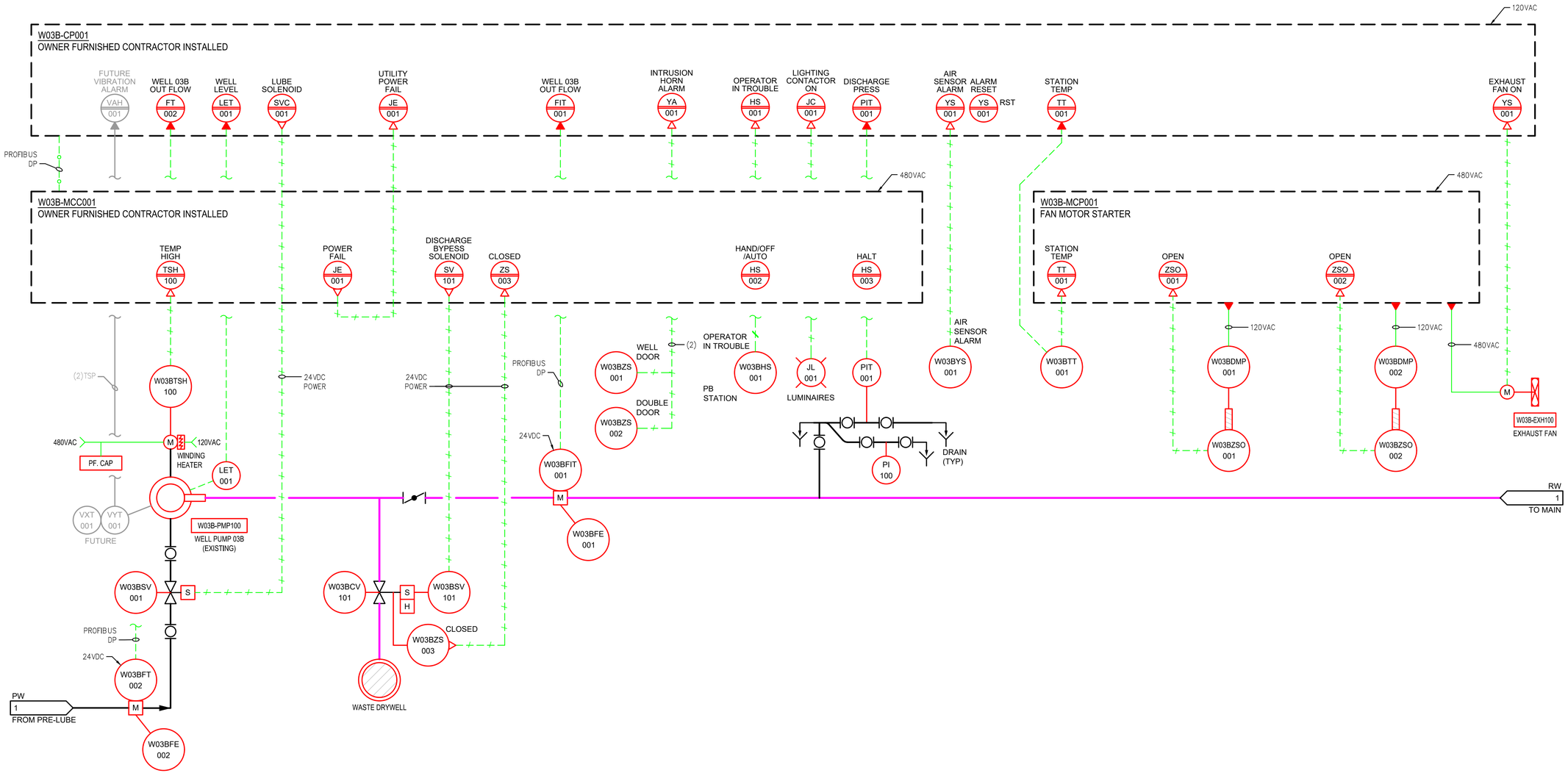
JOB NO.: XXXXXXX
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-P01.DWG
SAVE DATE: Nov 3, 2025
PLOT DATE: Nov 3, 2025
ENGINEER: NT
REVIEWED: TA

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

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

DWG NO.: P01
SHEET NO.: 74



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CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

PROCESS AND INSTRUMENTATION - WELL 03B

CITY OF Vancouver WASHINGTON

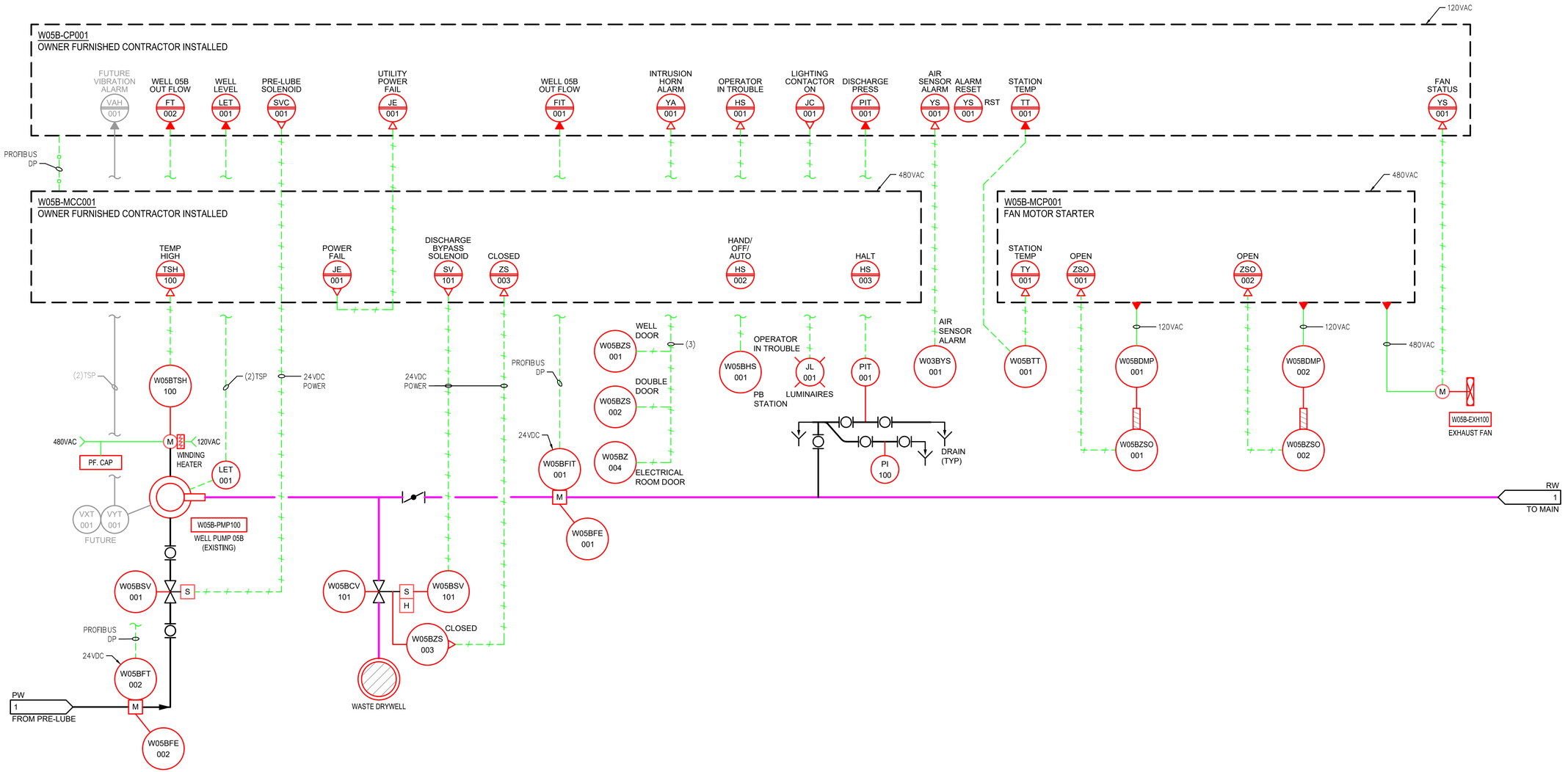
JOB NO.:	XXXXXXX
CLIENT:	CITY OF VANCOUVER
FILENAME:	3B5B-P02.DWG
SAVE DATE:	Nov 3, 2025
PLOT DATE:	Nov 3, 2025
ENGINEER:	NT
REVIEWED:	TA

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

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

DWG NO.: P02
SHEET NO.: 75
82



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CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

PROCESS AND INSTRUMENTATION - WELL 05B

CITY OF Vancouver WASHINGTON

JOB NO.:	XXXXXXX
CLIENT:	CITY OF VANCOUVER
FILENAME:	3B5B-P03.DWG
SAVE DATE:	Nov 3, 2025
PLOT DATE:	Nov 3, 2025
ENGINEER:	NT
REVIEWED:	TA

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NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: AS SHOWN
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DWG NO.: P03
SHEET NO.: 76
82

120VAC SCHEMATIC

120VAC/1ϕ/60Hz
FROM LOAD PANEL

L N G

MCB 15A

MCB–1L

SURGE PROTECTION DEVICE L1 N

NORMAL POWER MONITOR RELAY SHEET 102 LINE 150

RZ

NORMAL POWER MONITOR RELAY SHEET 3 LINE XXXX

RECEPTACLE RCPT1

CB1 10A — CB1–1L — N

CB2 1A — CB2–1L — FAN1 — TS1 — COOLING FAN FAN1 L1 N — N

CB3 2A — CB3–1L — FAN1 SPARE — N

500VA UPS
120VAC 60Hz
L N G
L N G

UPS–1L

CB4 3A — CB4–1L — UPS-N

PS1
24VDC 2.5A
L N PE
+ M
PS1+ PS1–
SEE DC SCHEMATIC LINE 050

CB5 2A — CB5–1L — UPS-N

PS2
54VDC 1.2A
L N G
+ –
PS2+ PS2–
SEE DC SCHEMATIC LINE 080

CB6 2A — CB6–1L — TO INTRUSION HORN RELAY SEE DC SCHEMATIC LINE 251, 253 — UPS-N

UPS–1L
(CONTINUED TO THE RIGHT)

UPS–N
(CONTINUED TO THE RIGHT)

120VAC SCHEMATIC

(CONTINUED FROM THE LEFT)
UPS–1L

CB7 2A — CB7–1L — SPARE — UPS-N

CB8 2A — CB8–1L — SPARE — UPS-N

(CONTINUED FROM THE LEFT)
UPS–N

24VDC SCHEMATIC

PS1+ — PS1–

CPU
PLC POWER
L1 M

CB050 3A — CB050+ — PS1-

CB051 1A — CB051+ — DOOR SWITCH DSW1 — DSW1–1 — PANEL LIGHT — PS1-

CB052 1A — W03B–FIT001–CB052+ — FIT–101 — W03B–FIT001–PS1– — PS1-

CB053 2A — W05B–FIT001–CB053+ — FIT–001 — W05B–FIT001–PS1– — PS1-

CB054 2A — CB053+ — SPARE — PS1-

FU1 0.25A — FU1+ — SPARE — PS1-

FU2 0.25A — FU2+ — SPARE — PS1-

FU3 0.25A — FU3+ — ONBOARD ANALOG INPUT POWER REF SHT R02, LINE 140 — PS1-

FU4 1A — FU4+ — ONBOARD I/O POWER REF SHT I02, LINE 144 REF SHT R02 & R03, LINE 143, 203, 245 — PS1-

FU5 0.25A — FU5+ — ANALOG INPUT MODULE S7–1200 SLOT 2 REF SHT R04, LINE 301 — PS1-

FU6 0.5A — FU6+ — L+ SIMATIC HMI M — PS1-

2155–W05B–SV001
R3 W05B–SV00–1
REF SHT R03, LINE267

FU7 2A — FU7+ — PS1-

FU8 2A — FU8+ — SPARE — PS1-

PoE SCHEMATIC

PS2+ — PS2–

SWITCH1
ETHERNET SWITCH POWER
DC A+ DC A–

FU51 1A — FU51+ — PS2-

FU52 2A — FU52+ — SPARE — PS2-

FU53 2A — FU53+ — SPARE — PS2-

REFERENCE ONLY

REFERENCE ONLY

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES
TYPICAL WELL CONTROL PANEL SCHEMATIC 1

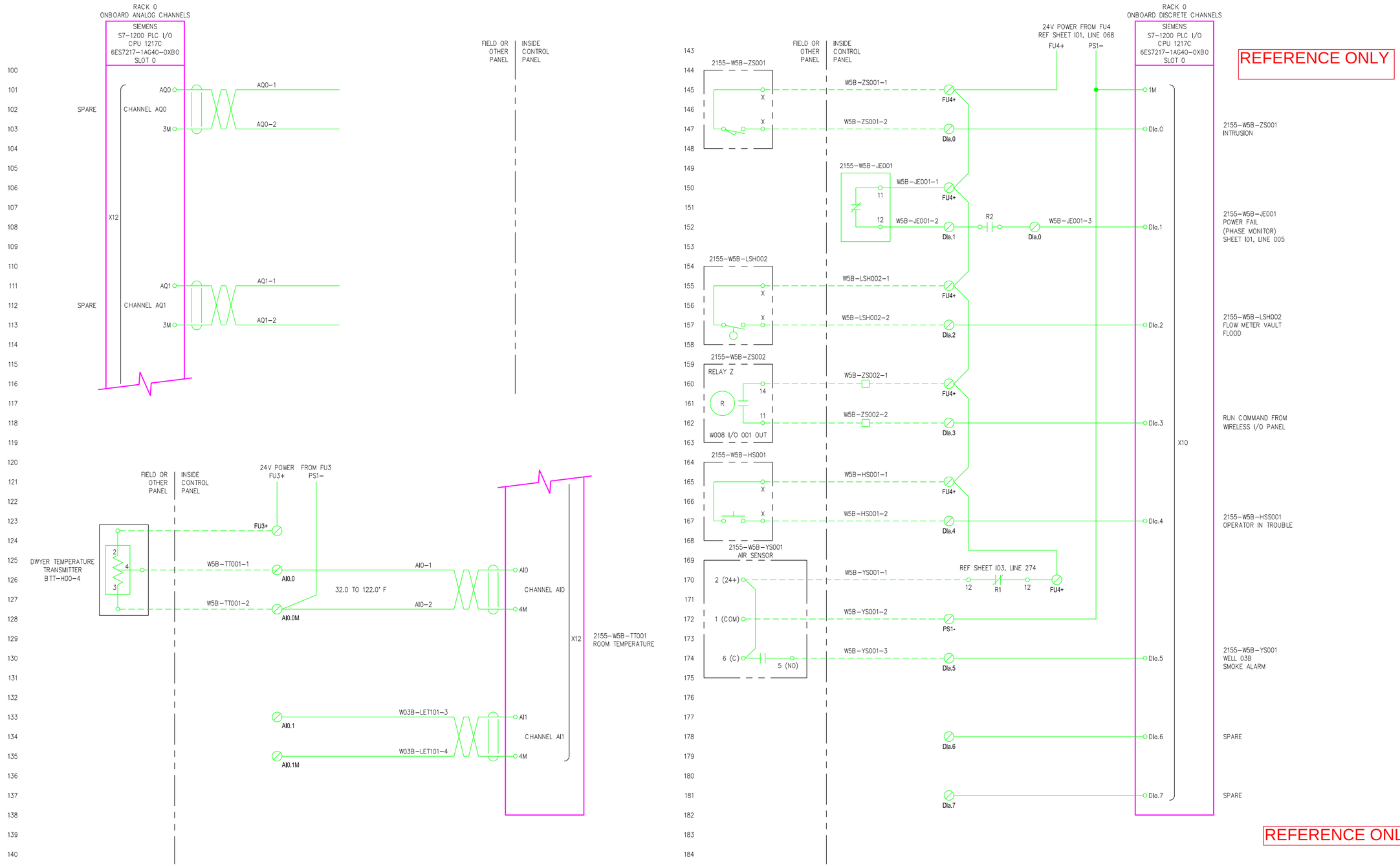
JOB NO.: XXXXXXX
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-R01.DWG
SAVE DATE: Oct 8, 2025
PLOT DATE: Oct 8, 2025
ENGINEER: NT
REVIEWED: TA

REVISIONS

NO.	DESCRIPTION	DATE	BY	REVIEW
	100% DESIGN			

SCALE: NONE
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: R01
SHEET NO.: 77



REFERENCE ONLY

REFERENCE ONLY

SHEET KEYNOTES

1. 500 OHM, 1/4 PERC

PLC ONBOARD I/O RACK 0

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

TYPICAL WELL CONTROL PANEL SCHEMATIC 2

JOB NO.: XXXXXXX
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-R02.DWG
SAVE DATE: Oct 8, 2025
PLOT DATE: Oct 8, 2025
ENGINEER: NT
REVIEWED: TA

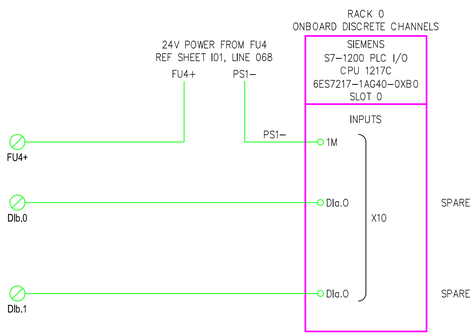
REVISIONS

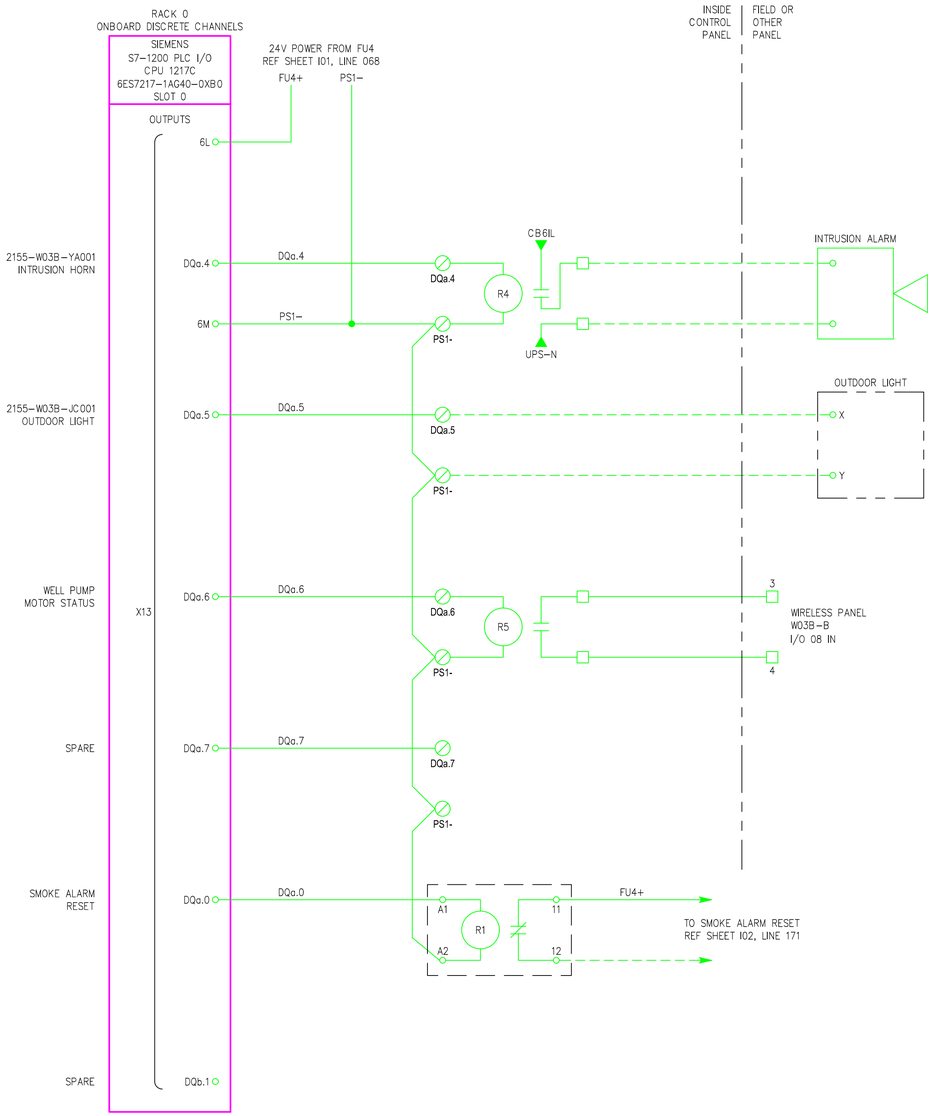
NO.	DESCRIPTION	DATE	BY	REVIEW
	100% DESIGN			

SCALE: NONE
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: R02
SHEET NO.: 78

REFERENCE ONLY





PLC ONBOARD I/O RACK 0 (CONTD.)

REFERENCE ONLY

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

TYPICAL WELL CONTROL PANEL SCHEMATIC 3

ENGINEER: NT	JOB NO.: XXXXXX
REVIEWED: TA	CLIENT: CITY OF VANCOUVER
SAVE DATE: Oct 6, 2025	FILENAME: 3B5B-R03.DWG
PLOT DATE: Oct 6, 2025	

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

100% DESIGN

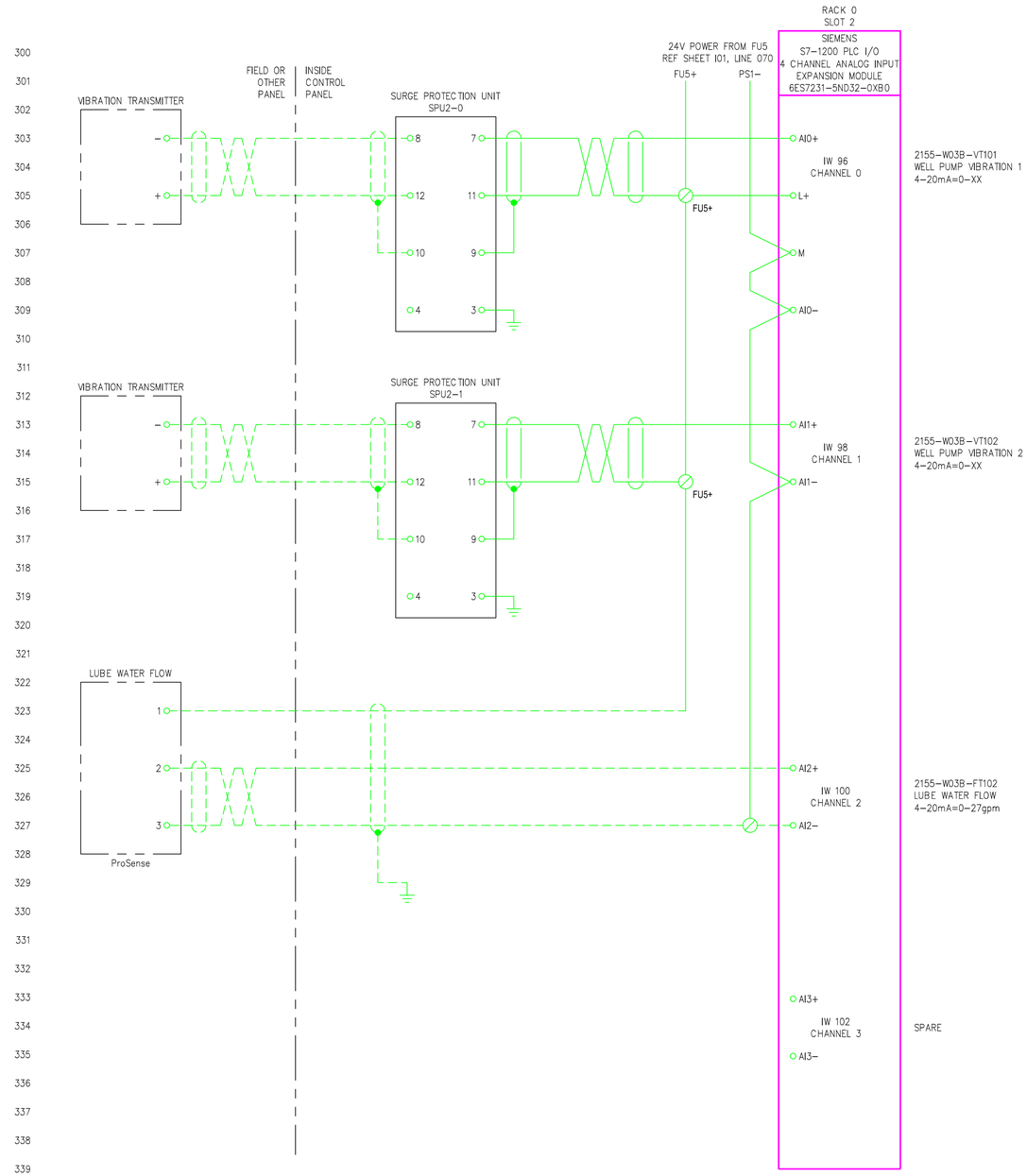
SCALE: NONE

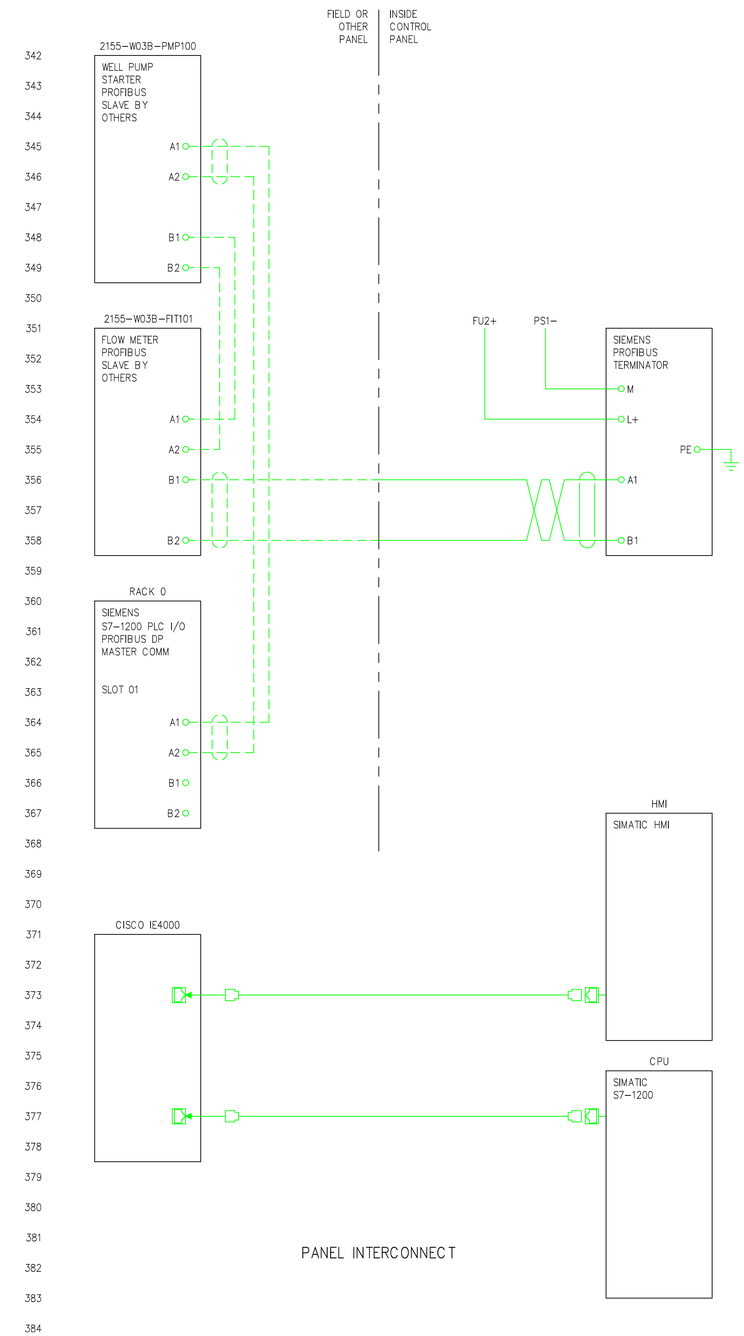
0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: R03

SHEET NO.: 79





REFERENCE ONLY

ANOLOG INPUT EXPANSION MODULE
RACK 0, SLOT 2

REFERENCE ONLY

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

TYPICAL WELL CONTROL PANEL SCHEMATIC 4

JOB NO.: XXXXXX
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-R04.DWG
SAVE DATE: Oct 6, 2025
PLOT DATE: Oct 6, 2025
ENGINEER: NT
REVIEWED: TA

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

100% DESIGN

SCALE: NONE
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: R04
SHEET NO.: 80

REFERENCE ONLY

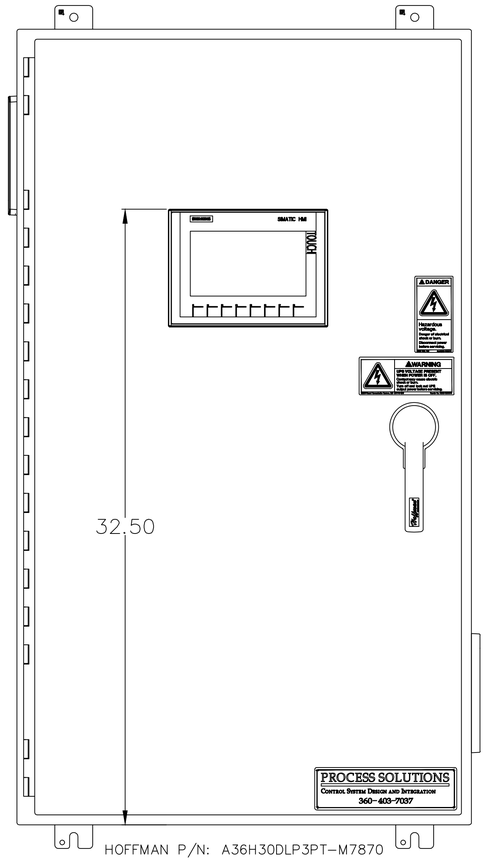
HS001

ALLEN BRADLEY P/N: 800T-1TZ

(651560-37)
4.2"H X 3.9"W X 3.22"D
SURFACE MOUNT
NEMA XX
MILD STEEL

REMOTE EMERGENCY PUSH BUTTON

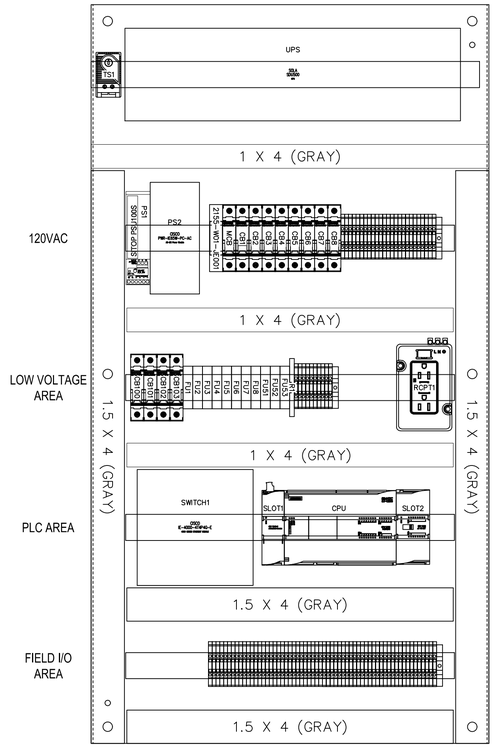
WELL 8 CONTROL PANEL



HOFFMAN P/N: A36H30DLP3PT-M7870

(651560-07)
42"H X 24"W X 12"D
WALL MOUNT
NEMA 12
MILD STEEL
PAINTED S079 PRECAUTION BLUE

FRONT COVER VIEW



HOFFMAN P/N: A42P24
(651560-07)
39"H X 21"W

BACKPAN LAYOUT

REFERENCE ONLY

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

TYPICAL CONTROL PANEL LAYOUT

CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-R05.DWG
JOB NO: XXXXXXX

SAVE DATE: Oct 8, 2025
PLOT DATE: Oct 8, 2025

ENGINEER: NT
REVIEWED: TA

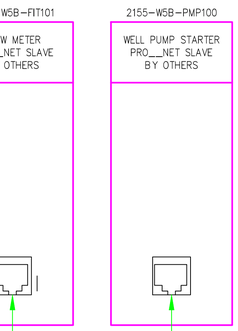
REVISIONS

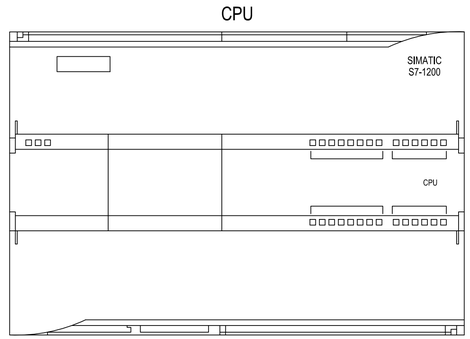
NO.	DATE	DESCRIPTION	BY	REVIEW
		100% DESIGN		

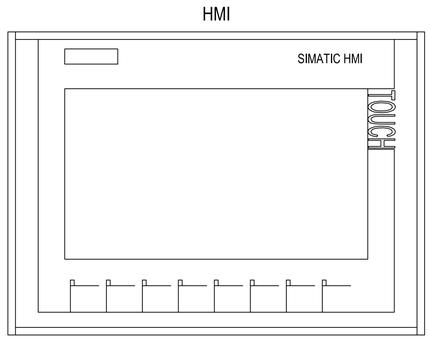
SCALE: NTS
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

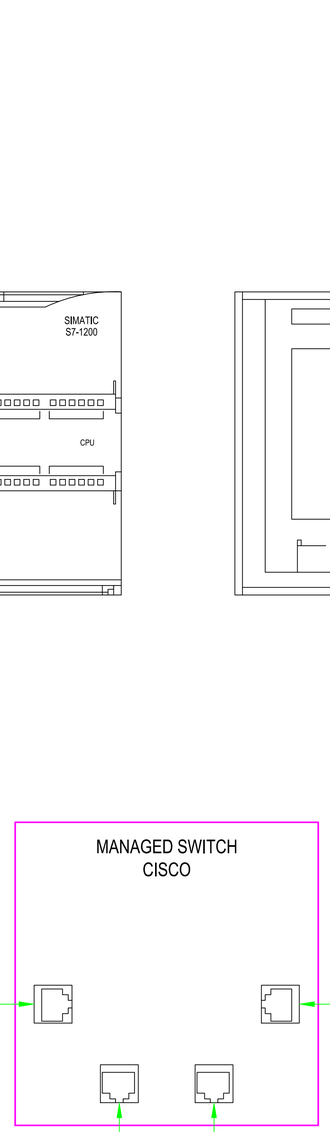
DWG NO.: R05
SHEET NO.: 81

REFERENCE ONLY









REFERENCE ONLY

CITY OF VANCOUVER
WATER STATION 1
WELLS 3B AND 5B FACILITIES

COMMUNICATION DIAGRAM - RACK 0

JOB NO.: XXXXXXX
CLIENT: CITY OF VANCOUVER
FILENAME: 3B5B-R06.DWG
SAVE DATE: Oct 8, 2025
PLOT DATE: Oct 8, 2025
ENGINEER: NT
REVIEWED: TA

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW
		100% DESIGN		

SCALE: NONE

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: R06

SHEET NO.: 82