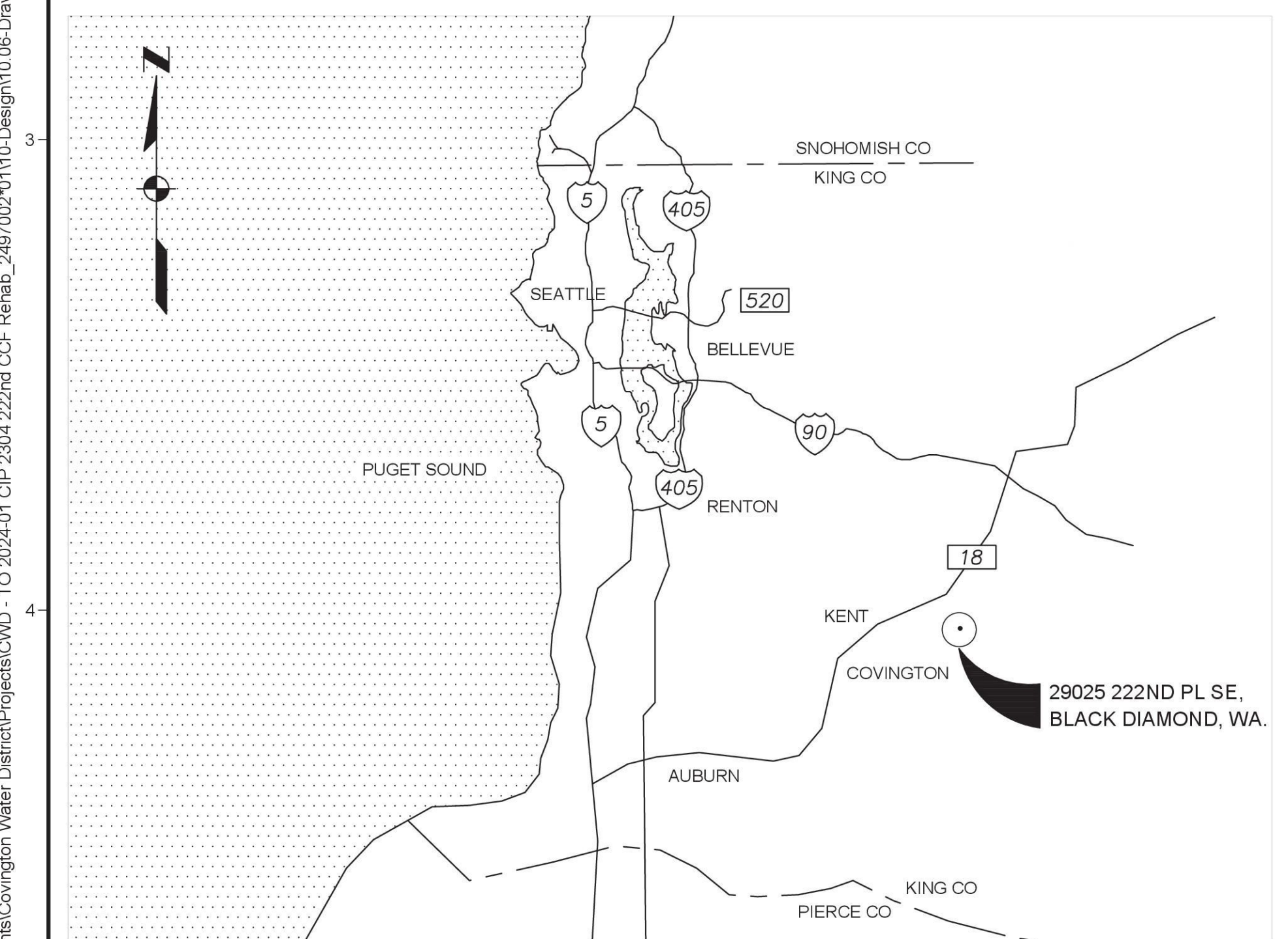


**LOCATION MAP**  
SCALE: NTS

# COVINGTON WATER DISTRICT COVINGTON, WASHINGTON 222ND PL CORROSION CONTROL FACILITY REHABILITATION

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**VICINITY MAP**  
SCALE: NTS



**ISSUED FOR BID**

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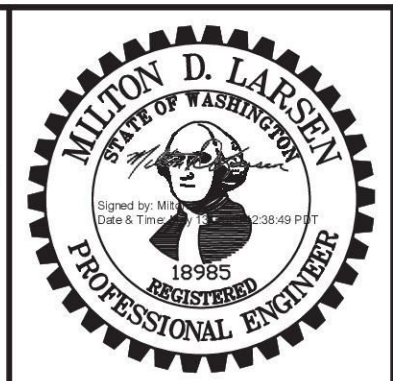
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**SCALES**

0 — 1" = 100'

0 — 25mm = 100mm

IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.



DESIGNED	MDL
DRAWN	RLH
CHECKED	JMF

COVINGTON WATER DISTRICT  
COVINGTON, WASHINGTON

**222ND PL CORROSION CONTROL  
FACILITY REHABILITATION**

Kennedy Jenks

SCALE	NTS
JOB NO	2497002.01
DATE	MAY 2026
SHEET OF	G-1

SCALE	NTS
JOB NO	2497002.01
DATE	MAY 2026
SHEET OF	G-1

ABBREVIATIONS	
'	FOOT, FEET
''	INCH, INCHES
#	POUND, NUMBER
%	PERCENT
@	AND
AT	CENTERLINE
PLATE	PLATE
APPROXIMATELY	APPROXIMATELY
LESS THAN	LESS THAN
EQUALS	EQUALS
>	GREATER THAN
Δ	DEFLECTION
∠	ANGLE
DEGREE(-S) (ANGULAR)	DEGREE(-S) (ANGULAR)
A	AMPERE(-S)
A/C	AIR CONDITIONING
A/D	ANALOG TO DIGITAL
A/M	AUTO/MANUAL
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS
AB	AGGREGATE BASE, ANCHOR BOLT(-S)
ABANDON(-ED)	ABANDON(-ED)
ABS	ABSOLUTE, ACRYLONITRILE- BUTADIENE-STYRENE
AC	ASPHALTIC CONCRETE, ALTERNATING CURRENT
ACH	AIR CHANGES PER HOUR
ACI	AMERICAN CONCRETE INSTITUTE
ACK	ACKNOWLEDGE
ACOUSTIC(-AL)	ACOUSTIC(-AL)
ACP	ASBESTOS CEMENT PIPE
ADA	AMERICANS WITH DISABILITIES ACT
ADDIT	ADDITIONAL
ADJUST(-ED, -MENT, -ABLE)	ADJUST(-ED, -MENT, -ABLE)
ADJ	ADJACENT
ADWF	AVERAGE DRY WEATHER FLOW
AF	ACRE-Feet, AMPERE FRAME
AFCI	ARC-FAULT CIRCUIT INTERRUPTER
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AGG	AGGREGATE
AI	ANALOG INPUT
AI	AMPERES INTERRUPTING CAPACITY
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AISI	AMERICAN IRON AND STEEL INSTITUTE
AITC	AMERICAN INSTITUTE OF TIMBER CONSTRUCTION
ALT	ALTERNAT(-E, -OR)
ALTD	ALTITUDE
ALUM	ALUMINUM
AMB	AMBIENT
ANC	ANCHOR
ANN	ANNUNCIATOR
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ANT	ANTENNA
AO	ANALOG OUTPUT
APA	AMERICAN PLYWOOD ASSOCIATION
APPROX	APPROXIMATE(-LY)
ARCH	ARCHITECT(-URAL)
AS	AMMETER SWITCH
ASBE	ASBESTOS
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASD	ADJUSTABLE SPEED DRIVE (DC)
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASPH	ASPHALT
ASSY	ASSEMBLY
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AT	AMPERE TRIP
ATM	ATMOSPHERE (14.7 LB/IN <sup>2</sup> )
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AVE	AVENUE
AVG	AVERAGE
AWG	AMERICAN WIRE GAGE
AWWS	AMERICAN WELDING SOCIETY
AWT	ADVANCED WATER TREATMENT
AWWA	AMERICAN WATER WORKS ASSOCIATION
B/W	BOTTOM OF WALL
BARM	BARMINUTOR
BATT	BATTERY
BB(S)	BEARING BAR(-S)
BC	BEGINNING OF HORIZONTAL CURVE, BARE COPPER
BCR	BEGIN CURB RETURN
BD	BOARD, BELT DRIVE
BDD	BACKDRAFT DAMPER
BF	BLIND FLANGE
BFP	BELT FILTER PRESS, BACKFLOW PREVENTER
BHP	BRAKE HORSEPOWER
BITUM	BITUMINOUS
BKR	BREAKER
BL	BUILDING LINE
BLDG	BUILDING
BLK	BLOCKING
BLKG	BLOCKING
BM	BEAM, BENCH MARK
BM-1	BEAM MEMBER 1
BN	BOUNDARY NAILING
BO	BLOWOFF
BOC	BACK OF CURB
BOD 5	BIOCHEMICAL OXYGEN DEMAND (5 DAY)
BOT	BOTTOM
BP	BASE PLATE
BRG	BEARING
BS	BLACK STEEL, BOTH SIDES
BSMT	BASEMENT
BLU	BRITISH THERMAL UNIT
BTWN	BETWEEN
BVC	BEGINNING OF VERTICAL CURVE
C	CURVE, CONDUCTOR, CONTACT
C/C	CENTER-TO-CENTER
C/S	CONSTANT SPEED
CAB	CABINET
CALL(C/S)	CALLULATION(S)
CAT	CATEGORY
CATV	CABLE TV
CB	CATCH BASIN, CIRCUIT BREAKER
CC	CUBIC CENTIMETER(-S)
CCT	CHLORINE CONTACT TANK
CCTV	CLOSED-CIRCUIT TELEVISION
CD	CONTROL DAMPER
CEN	CEMENT
CEN	CENTRAL
CENT	CENTRIFUGAL
CER	CEILING EXHAUST RETURN
CFM	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CH	CHAMBER
CHAN	CHANNEL
CHEM	CHEMICAL
CHK	CHECK
CHKD	CHECKED
CI	CAST IRON
CID1	CLASSIFICATION I, DIVISION 1
CID2	CLASSIFICATION I, DIVISION 2
CIP	CAST IRON PIPE, CAST IN PLACE, CLEAN IN PLACE
CIRC	CIRCULAR(-TION)
CIRCUM	CIRCUMFERENCE
CISP	CAST IRON SOIL PIPE
CJ	CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CKT	CIRCUIT
CL	CHLORINE
CL2	CHLORINE
CLASS	CLASSIFICATION
CLG	CEILING
CLOS	CLOSED
CLR	CLEAR(-ANCE)
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CM	CENTIMETERS
CNC	CEMENT MORTAR COATED
CML	CEMENT MORTAR LINED
CML&C	CEMENT MORTAR LINED AND COATED
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CNJ	CONTROL JOINT
CNTR	CENTER
CNTRSK	COUNTERSUNK
CO	CLEANOUT, CONDUIT ONLY
CO2	CARBON DIOXIDE
COAX	COAXIAL
COD	CHEMICAL OXYGEN DEMAND
COL	COLUMN
COM	COMMON
COMM	COMMUNICATION
COMP	COMPRESSOR
CONC	CONCRETE
COND	CONDENSATE, CONDUIT
CONJ	CONNECT (ED, -S, -ION)
CONSTR	CONSTRUCTION
CONT	CONTINU(-ED, -OUS, -ATION)
COORD	COORDINATE
COOP	COEFFICIENT OF PERFORMANCE
COR	CORNER
CORP	CORPORATION
CORR	CORRUGATED
COTG	CLEANOUT TO GRADE
CP	CONTROL POINT, CATHODIC PROTECTION
CPLG	COUPLING
CPT	CONTROL POWER TRANSFORMER
CPVC	CHLORINATED POLYVINYL CHLORIDE
CR	CONTROL RELAY, CRUSHED ROCK
CSD	CEILING SUPPLY DIFFUSER
CT	COURT, CURRENT TRANSFORMER, COOLING TOWER
CTRL	CONTROL
CTS	CATHODIC TEST STATION
CU FT	CUBIC FOOT, CUBIC FEET
CU IN	CUBIC INCH(-S)
CU M	CUBIC METER(-S)
CU YD	CUBIC YARD(-S)
CUR	CURRENT
CV	VALVE FLOW COEFFICIENT
CWT	ONE HUNDRED POUNDS
DB	DRY BULB
DBL	DOUBLE
DC	DIRECT CURRENT
DCA	DOUBLE CHECK ASSEMBLY (TWIN ELEMENT CHECK VALVE)
DCS	DISTRIBUTED CONTROL SYSTEM
DEFL	DEFLECTION
DEG	DEGREE(-S)
DEG C	DEGREES CELSIUS
DEG F	DEGREES FAHRENHEIT
DEMO	DEMOLISH
DEPT	DEPARTMENT
DH	HEAD LOSS (IN FEET), DOWNHOLE
DI	DUCTILE IRON, DROP INLET, DISCRETE INPUT
DIA	DIAMETER
DIAG	DIAGONAL, DIAGRAM
DIAPH	DIAPHRAGM
DIM(-S)	DIMENSION(-S)
DIP	DUCTILE IRON PIPE
DIR	DIRECTION
DISC	DISCONNECT
DISCH	DISCHARGE
DISTR	DISTRIBUTION
DL	DEAD LOAD
DN	DOWN
DO	DISSOLVED OXYGEN, DISCRETE OUTPUT
DPDT	DOUBLE POLE, DOUBLE THROW
DPST	DOUBLE POLE, SINGLE THROW
DR	DOOR, DRAIN, DRYER
DRG	DOUBLE RUBBER GASKET JOINT
DRS	DOWN SPOUT
DTL(-S)	DETAIL(-S)
DUPLEX	DUPLEX
DWG(-S)	DRAWING(-S)
E	EAST
EA	EACH, EXHAUST AIR
EC	END OF HORIZONTAL CURVE
ECC	ECCENTRIC
ECD	EPOXY COATED
EER	END CURB RETURN
EEF	ENERGY EFFICIENCY RATIO
EF	EACH FACE
EFFIC	EFFICIENCY
EFFL	EFFLUENT
EG	EXISTING GRADE
EGL	ENERGY GRADE LINE
EL	ELEVATION, EPOXY LINED
EL&C	EPOXY LINED AND COATED
ELEC	ELECTRIC(-AL)
ELEM	ELEMENTARY
ELL	ELBOW
HMI	HUMAN MACHINE INTERFACE
HMA	HAND-OFF-AUTOMATIC
HOR	HAND-OFF-REMOTE
HORZ	HORIZONTAL
HP	HORSEPOWER
H-P	HINGE POINT
HPT	HIGH POINT
HRS(-S)	HOUR(-S)
HRL	HANDRAIL
HSPF	HEATING SEASONAL PROFICIENCY
HSS	HOLLOW STRUCTURAL SECTION
HST	HOIST
HT	HEIGHT
MFRD	MANUFACTURED
MG	MILLIGRAM(-S), MILLION GALLON(-S)
MG/L	MILLIGRAMS PER LITER
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MHZ	MEGAHERTZ
MIL(-S)	MIL(-S) THICKNESS, MIL(-S) WIDTH
MIN	MINIMUM, MINUTE(-S)
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
ML	MILLILITER(-S)
MLO	MAIN LUGS ONLY
MM	MILLIMETER(-S), MULTIMODE (FIBER)
MMBH	BTU PER HOUR (MILLIONS)
MOC	MAXIMUM OCCURRENT PROTECTION
MON(-S)	MONUMENT
MOV	MOTOR OPERATED VALVE
MPH	MILES PER HOUR
MR	MOISTURE-RESISTANT
MSE	MECHANICALLY STABILIZED EARTH
MT(-D, -G)	MOUNT(-ED, -ING)
MTL	METAL
MTR	MOTOR
MTS	MANUAL TRANSFER SWITCH
MUL	MULTIPLY
MV	MEDIUM VOLTAGE
N	NORTH, NEUTRAL (ELECTRICAL)
N/A	NOT APPLICABLE
NAD	NORTH AMERICAN DATUM
NAOCL	SODIUM HYPOCHLORITE
NAOCH	SODIUM HYDROXIDE
NAVD	NORTH AMERICAN VERTICAL DATUM
NC	NORMALLY CLOSED
NDT	NON-DESTRUCTIVE TEST(ING)
NE	NORTHEAST
NEC	NATIONAL ELECTRICAL CODE (NFPA 70)
NECA	NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NETA	INTERNATIONAL ELECTRICAL TESTING ASSOCIATION
NF	NEAR FACE, NANOFILTRATION
NFC	NOT FOR CONSTRUCTION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NG	NATURAL GAS
NH3	AMMONIA
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN, NUMBER
NOM	NOMINAL
NORM	NORMAL
NPT	NATIONAL PIPE THREAD
NRS	NON-RISING STEM GATE VALVE
NS	NEAR SIDE
NSG	NON-SHRINK GROUT
NT	NORMALLY THROTTLED
NTS	NOT TO SCALE
NW	NORTHWEST
NWL	NORMAL WATER LEVEL
O/C	OPEN/CLOSE
O3	OZONE
OA	OVERALL
OB	OVERLAP
OB	OVERLAP BLADE DAMPER
OC	ON CENTER
OD	OUTSIDE DIAMETER
ODP	OPEN DRIP PROOF
OF	OVERFLOW, OUTSIDE FACE
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFS	OUTSIDE FACE OF STUD
OG	ORIGINAL GROUND
OH	OPPOSITE HAND, OVERHEAD
OIT	OPERATOR INTERFACE TERMINAL
OL	THERMAL OVERLOAD RELAY
OPNG(-S)	OPENING(-S)
OPP	OPPOSITE
ORIG	ORIGINAL
OS&Y	OUTSIDE SCREW AND YOKE (RISING STEM GATE VALVE)
OSA	OUTSIDE AIR
OSC	OPEN/STOP/CLOSE
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OT	OVER TEMPERATURE
OZ	OUNCE(-S)
P	PNEUMATIC, PIPE, POLE
P/L	PROPERTY LINE
PA	PUBLIC ADDRESS
PACP	PERFORATED ASBESTOS CEMENT PIPE
PAF	POWDER/POWER ACTUATED FASTENER
PB	PULLBOX, PUSH-BUTTON
PC(-S)	PIECE(-S), PHOTOCELL, POINT OF CURVE (BEGIN CURVE), PROGRESSIVE CAVITY
PCC	POINT OF COMPOUND CURVE, POINT OF COMMON COUPLING
PCCP	PRESTRESSED CONCRETE CYLINDER PIPE
PCF	POUNDS PER CUBIC FOOT
PCO	PRESSURE CLEANOUT
PCOCTG	PRESSURIZED CLEANOUT TO GRADE
PD	PRESSURE DROP, POSITIVE DISPLACEMENT
PE	POLYETHYLENE, FLAME END, POLYETHYLENE
PEMB	PRE-ENGINEERED METAL BUILDING
PEN	PENETRAT(-E, -ION)
PER	PERIODIC
PERC	PERCOLAT(-E, -ION)
PERF	PERFORAT(-E, -ED, -ES, -ATION)
PF	POWER FACTOR, PROFILE
PFAS	PER- AND POLYFLUOROALKYL SUBSTANCES
PFOA	PERFLUOROOCTANOIC ACID
PFOOS	PERFLUOROOCTANESULFONATE
PH	PIPE HANGER, PHASE
pH	MEASURE OF ACIDITY OR ALKALINITY
PHMS	PAN HEAD MACHINE SCREW
PHSMS	PAN HEAD SHEET METAL SCREW
PI	POINT OF INTERSECTION
PID	PROPORTIONAL-INTEGRAL-DERIVATIVE
PIV	POST INDICATOR VALVE
PLAS	PLASTER
PLC	PROGRAMMABLE LOGIC CONTROLLER
PLF	POUND PER LINEAL FOOT
PM	PROJECT MANAGER, POWER MONITOR
PNL	PANEL
PNLBD	PANELBOARD
POE	POWER OVER ETHERNET
POT	POTABLE
PP	PARTIAL PENETRATION, POWER POLE, PAGES
PPB	PARTS PER BILLION
PPE	PERSONAL PROTECTIVE EQUIPMENT
PPM	PARTS PER MILLION
PR	PAIR
PRE-ENG	PRE-ENGINEERED
PRESS	PRESSURE
PRI	PRIMARY
PROJ	PROJECT(-ION)
PROP	PROPERTY, PROPOSED, PROPELLER
PROT	PROTECT(-OR)
PRS	PRESSURE SNIJBBER
PRV	REDUCING VALVE
PS	PIPE SQUIP, POWER SUPPLY
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE (PRESSURE ABOVE VACUUM)
PSIG	POUNDS PER SQUARE INCH GAUGE (PRESSURE ABOVE ATMOSPHERE)
PSL	PIPE SLEEVE
PSTA	PUMP STATION
PSV	PRESSURE SUSTAINING VALVE
PT(-S)	POINT OF TANGENT (END CURVE), PRESSURE-TREATED, POTENTIAL TRANSFORMER, POINT(-S)
PU	POLYURETHANE
PVC	POLYVINYL CHLORIDE, POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT SURFACE
PVT	POINT OF VERTICAL TANGENCY
PW	POTABLE WATER
PWR	POWER
PWWF	PEAK WET WEATHER FLOW
Q	FLOW OR DISCHARGE
R	RADIUS
R	RIGHT OF WAY
RA	RETURN AIR
RB	RETURN ACTIVATED SLUDGE
RC	REINFORCED CONCRETE
RCOP	REINFORCED CONCRETE CYLINDER PIPE
RCPP	REINFORCED CONCRETE PIPE
RCPT	RECEPTACLE
RCT	REPEAT CYCLE TIMER
RD	ROAD
REC	RECEIVING
RECIRC	RECIRCULAT(-E, -ION)
RECT	RECTANG(-LE, -ULAR)
REG	REGULAT(-E, -OR, -ION, -ING)
REF	REFERENCE
REFR	REFRIGERATOR
REG	REGULAT(-E, -OR, -ION, -ING)
REINF	REINFORC(-E, -ED, -ING, -EMENT)
REL	RELATIVE
REQD	REQUIRED
REQT	REQUIREMENT
RESIL	RESILIENT
REV	REVISION
RH	RIGHT HAND
RIO	REMOTE INPUT/OUTPUT
RM	ROOM
RMT	REMOTE
RND	ROUND
RO	REVERSE OSMOSIS
RPM	REVOLUTIONS PER MINUTE
RPP	REDUCED PRESSURE PRINCIPLE
RPS	REVOLUTIONS PER SECOND
RRL	RAILROAD
RST	RESET
RT	RIGHT TURN, RESET TIMER
RTE	ROUTE
RTN	RETURN
RTU	ROOF TOP UNIT, REMOTE TELEMETRY UNIT
RVSS	REDUCED VOLTAGE, LOCAL STATE SEWER, SOUTH
S	START/STOP
SA	SIDEWALK
SA	SUPPLY AIR
SAN	SANITARY
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
SCFP	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SCR	SILICON CONTROLLED RECTIFIER
SD	STORM DRAIN, SMOKE DETECTOR
SDMH	STORM DRAIN MANHOLE
SE	SOUTH-EAST
SEC	SECONDARY, SECOND(-S)
SECT	SECTION
SED	SEDIMENTATION
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SER	SERVICE ENTRANCE RATED
SGNL	SIGNAL
SH	SHOWER
(SH)	SHIELDED
SHT	SHEET
SI	SIDE INLET
SIM	SIMILAR
SK	SINK
SL	SLUDGE
SLBB	SHORT LEGS BACK-TO-BACK
SLH	SHORT LEG HORIZONTAL
SLV	SHORT LEG VERTICAL
SM	SINGLE MODE (FIBER)
SMACNA	SHEET METAL & AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION
SMS	SHEET METAL SCREW
SO2	SULFUR DIOXIDE
SP	STATIC PRESSURE, SET POINT
SP GR	SPECIFIC GRAVITY
SPC(-S, -D)	SPACE(-S, -D)
SPD	SURGE PROTECTIVE DEVICE
SPDT	SINGLE POLE, DOUBLE THROW
SPEC(-S)	SPECIFICATION(-S)
SQ	SQUARE
SQ CM	SQUARE CENTIMETERS
SQ FT	SQUARE FEET
SQ IN	SQUARE INCHES
SQ M	SQUARE METER(-S)
SQ MI	SQUARE MILES
SO YD	SQUARE YARD(-S)
SRG	SINGLE RUBBER GASKET JOINT
SS	STAINLESS STEEL, SANITARY SEWER, SOLID STATE
SSD	SATURATED SURFACE DRY
ST	STREET
STA	STATION
STAG	STAGGER
STB	SHORTING TERMINAL BLOCK
STD(-S)	STANDARD(-S)
STIF(-ER)	STIFFEN(-ER)
STL	STEEL
STM	STEAM
STOR	STORAGE
STP	SHIELDED TWISTED PAIR
STRC	STRUCTUR(-E, -AL)
SUB	SUBNATANT
SUBM	SUBMISSION, SUBMIT
SUP	SUPERNATANT
SUPP	SUPPORT(-S)
SURF	SURFACE
SUSP	SUSPEND(-ED)
SW	SOUTHWEST, SWITCH
SWB	SWITCHBOARD
SWGR	SWITCHGEAR
SYM	SYMMETRICAL
SYNC	SYNCHRONIZING
SYS	SYSTEM
T	TIME(-R)
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
T/C	TOP OF CONCRETE
T/P	TOP OF PAVEMENT
T/S	TOP OF STEEL
T/W	TOP OF WALL
T--P	TYPE ____ PIPE
T--S	TYPE ____ SUPPORT
TA	TRANSFER AIR
TAN	TANGENT
THRU	THRUST BLOCK, TERMINAL BLOCK
TBM	TEMPORARY BENCHMARK, TUNNEL BORING MACHINE
TC	TRAY CABLE
TCP	TRANSMISSION CONTROL PROTOCOL
TDH	TOTAL DYNAMIC HEAD
TDS	TOTAL DISSOLVED SOLIDS
TEFC	TOTALLY ENCLOSED FAN COOLED
TEL	TELEPHONE
TEMP	TEMPERATURE, TEMPORARY
TEMPN	TEMPERING TANK
TEMPN	TOTALLY ENCLOSED NON-VENTILATED
THK	THICK(-ENED, -ENER, -NESS)
THRU	THROUGH
TMV	THERMOSTATIC MIXING VALVE
TNK	TANK
TOD	TOTAL OXYGEN DEMAND
TOPO	TOPOGRAPHY
TOT	TOTAL, TOTALIZE(-R)
TP	TREST PIT
TR	TREAD(S)
TR	TROUGH ROOF
TRMT	TREATMENT
TS	STRUCTURAL TUBING
TSS	TOTAL SUSPENDED SOLIDS
TSTAT	THERMOSTAT
TURB	TURBIDITY
TYP	TYPICAL
URNAL	URNAL
UBC	UNIFORM BUILDING CODE
UD	UNDERDRAIN
UF	SUPPLY AIR
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORIES
UNKN	UNKNOWN
UNON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
USGBC	UNITED STATES GREEN BUILDING COUNCIL
UT	ULTRASONIC TESTING
UTP	UNSHIELDED TWISTED PAIR
UV	ULTRAVIOLET
V	VOLTS
V/S	VARIABLE SPEED
VA	VOLT-AMPERES
VAC	VACUUM
VAR	VARIABLE, VARIABLE, VOLT-AMPERES REACTIVE
VAT	VINYL ASBESTOS TILE
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE, VENDOR CONTROL PANEL
VD	VOLUME DAMPER
VEL	VELOCITY
VERT	VERTICAL
VERTS	VERTICAL BARS
VFD	VARIABLE FREQUENCY DRIVE (AC)
VFI	VACUUM FAULT INTERRUPTER
VIF	VERIFY IN FIELD
VOL	VOLUME
VPI	VERTICAL POINT OF INTERSECTION
VS	VOLTMETER SWITCH
VT	VENT
VTP	VERTICAL TURBINE PUMP
VTR	VENT TO ROOF
VVT	VARIABLE VOLUME/TEMPERATURE
W	WIDE, WIDTH, WIRE, WATTS, WELDED, WEST

Plot Date: 5/16/2026 9:09 AM

User: RICHARD HILLS

p:\kpc-pw\Documents\Covington Water District\Projects\OVD - TO 2024-01 CIP 2304 222nd COF Rehab\_2497002\0110-Design\10.06-Drawings\General\249700201-G-3

NOTES

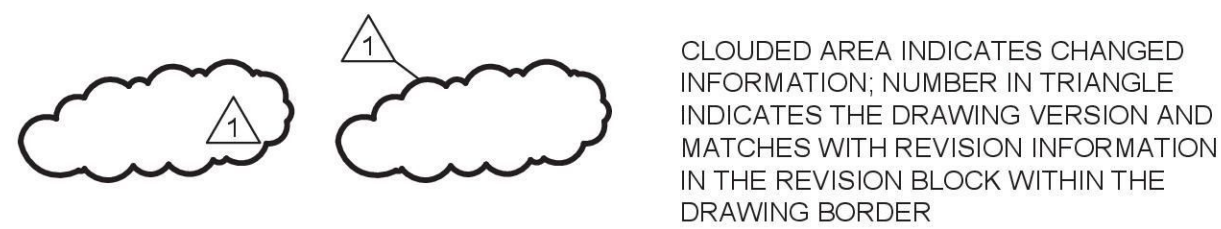
- GENERAL**
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS AND APPLICABLE AWWA STANDARDS.
  - A PRE-EXISTING SITE CONDITION VIDEO SHALL BE PROVIDED BY THE CONTRACTOR AND SHALL SHOW EXISTING CONDITIONS OF ALL CONCRETE, ASPHALT, LANDSCAPED AREAS, BUILDING EXTERIOR, ETC. SURROUNDING THE CONSTRUCTION AREAS. VIDEO SHALL BE SUBMITTED TO THE OWNER PRIOR TO BREAKING GROUND. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING IMPROVEMENTS WHICH ARE TO REMAIN IN PLACE FROM DAMAGE. ALL IMPROVEMENTS DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE EXPEDITIOUSLY REPAIRED OR RECONSTRUCTED AT THE CONTRACTOR'S EXPENSE WITHOUT ADDITIONAL COMPENSATION.
  - ALL BUILDING COORDINATES ARE TO OUTSIDE CORNER OF COLUMN OR BUILDING.
  - CONTRACTOR SHALL RESTORE ALL SURVEY MONUMENTS THAT ARE DAMAGED OR DESTROYED DURING CONSTRUCTION.
  - OBSERVATIONS OF WORK IN PROGRESS DURING SITE VISITS SHALL NOT ALTER THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
- UTILITIES**
- LOCATIONS OF UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS WERE OBTAINED FROM AVAILABLE RECORDS AND ARE SHOWN IN THEIR APPROXIMATE LOCATION. THERE IS NO GUARANTEE THAT ALL EXISTING PIPELINES AND OBSTRUCTIONS ARE SHOWN OR THAT LOCATIONS INDICATED ARE ACCURATE. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL POT-HOLE TO DETERMINE ACTUAL LOCATION AND ELEVATION OF ALL EXISTING UTILITIES IN AND AROUND THE AREAS OF NEW CONSTRUCTION.
  - THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT ALL REMAINING EXISTING UTILITIES WHETHER SHOWN OR NOT SHOWN.
  - PRIOR TO ANY CONNECTION TO AN EXISTING UTILITY, THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY OWNER.
  - PRIOR TO ANY EXCAVATION IN THE VICINITY OF ANY EXISTING UNDERGROUND FACILITIES, INCLUDING ALL WATER, SEWER, STORM DRAIN, GAS, PETROLEUM PRODUCTS, OR OTHER PIPELINES; ALL BURIED ELECTRIC POWER, COMMUNICATIONS, OR TELEVISION CABLES; ALL TRAFFIC SIGNAL AND STREET LIGHTING FACILITIES; AND ALL ROADWAY, STATE HIGHWAY, AND RAILROAD RIGHTS-OF-WAY, THE CONTRACTOR SHALL NOTIFY THE RESPECTIVE AUTHORITIES REPRESENTING THE OWNERS OR AGENCIES RESPONSIBLE FOR SUCH FACILITIES TO FACILITATE A TIMELY MANNER OF WORK SO THAT A REPRESENTATIVE OF SAID OWNERS OR AGENCIES CAN BE PRESENT DURING SUCH WORK IF THEY SO DESIRE. IN THE CASE OF THE UNDERGROUND UTILITY SERVICE ALERT CENTER, THIS NOTICE WILL GIVE THEM TIME TO MARK THE LOCATION OF THE UTILITIES. THE CONTRACTOR SHALL ALSO NOTIFY UNDERGROUND SERVICES ALERT (USA) AT (811) IN ACCORDANCE WITH THE SPECIFICATIONS TO FACILITATE A TIMELY MANNER OF WORK, PRIOR TO SUCH EXCAVATION.

NOTES (CONTINUED)

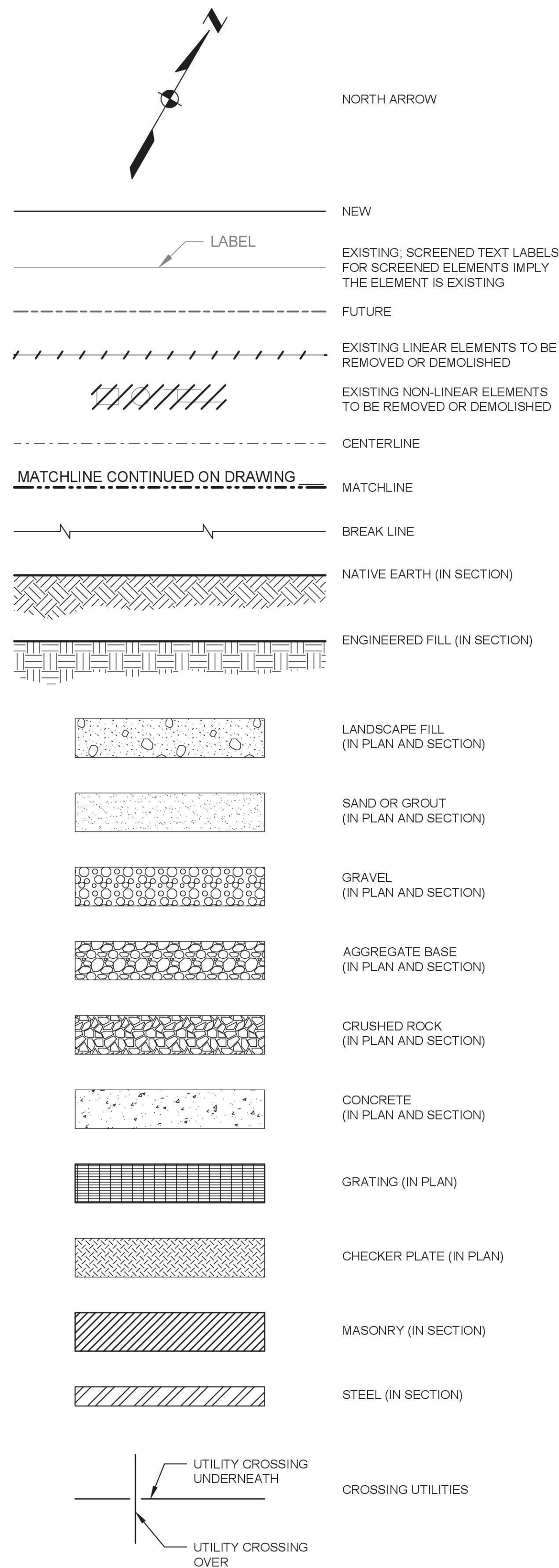
CALLOUTS AND SHORTHAND SYMBOLS

- DIRECTION OF FLOW
- SHEET KEYNOTE
- CENTERLINE
- PLATE
- DIAMETER
- APPROXIMATELY
- ANGLE
- WATER/FLUID SURFACE
- BUILDING GRID LABEL OR ACCESSORY NUMBER
- DOOR
- ROOM
- WALL
- WINDOW

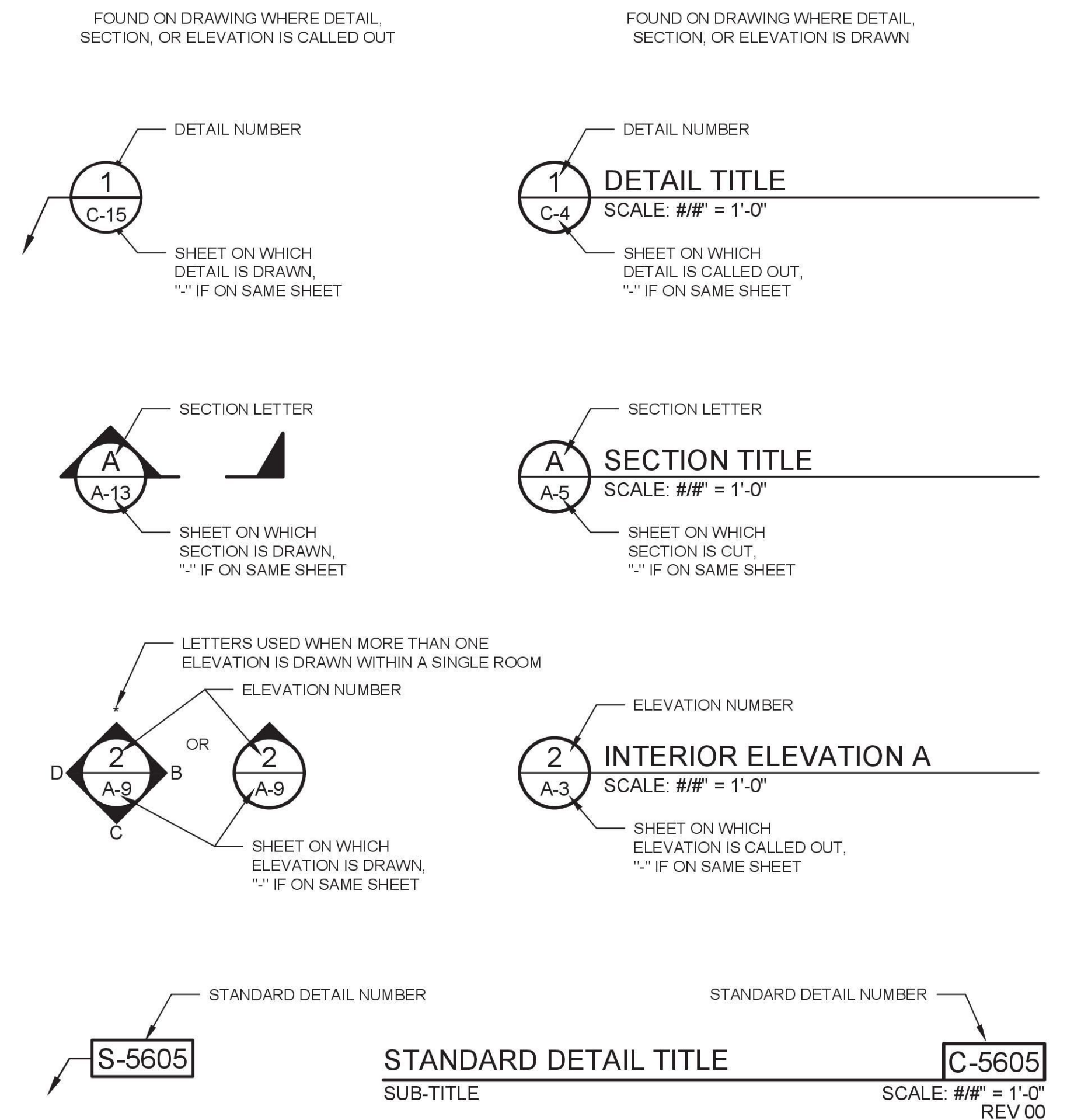
REVISION SYMBOLS



SYMBOLLOGY



CROSS-REFERENCING SYMBOLS



NOTE: STANDARD DETAILS ARE LOCATED WITHIN THEIR RESPECTIVE DISCIPLINE, IMMEDIATELY FOLLOWING THE GENERAL ABBREVIATIONS, NOTES, AND LEGEND SHEETS.

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ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS. USERS OF THIS DOCUMENT IN EDITABLE ELECTRONIC FORMATS ARE CAUTIONED AGAINST USE WITHOUT FIRST DETERMINING WHETHER CHANGES MAY HAVE BEEN MADE SUBSEQUENT TO ITS PREPARATION.

NO	REVISION	DATE	BY

SCALES  
 0" = 1"  
 0" = 25mm  
 IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.



DESIGNED MDL  
 DRAWN RLH  
 CHECKED JMF

COVINGTON WATER DISTRICT  
 COVINGTON, WASHINGTON  
 222ND PL CORROSION CONTROL  
 FACILITY REHABILITATION



GENERAL NOTES AND LEGEND

SCALE	NTS
JOB NO	2497002.01
DATE	MAY 2026
SHEET OF	G-3

EQUIPMENT DESIGNATIONS		EQUIPMENT PREFIXES (CONT)		PIPING DESIGNATIONS		PROCESS CODES (CONT)	
<p><b>NEW EQUIPMENT</b></p> <p>EQUIPMENT PREFIX (1-4 CHARACTERS) SEE LIST THIS SHEET</p> <p>WHEN USED, FIRST TWO DIGITS REFER TO PROCESS AREA WHERE EQUIPMENT IS LOCATED (SEE LIST THIS SHEET)</p> <p>SEQUENTIAL NUMBER OF EQUIPMENT IN PROCESS AREA</p> <p><b>EXISTING EQUIPMENT</b>      <b>FUTURE EQUIPMENT</b></p> <p>##-EQPM-XXX      ##-EQPM-XXX</p>		<p>SC SCREW COMPRESSOR</p> <p>SCAL WEIGHT SCALE</p> <p>SCRN SCREEN (BAR, ROTARY, ETC.)</p> <p>SEP SEPARATOR (SEDIMENTATION, TRAP, DRIP TRAP, CYCLONE, STRAINER, ETC.)</p> <p>SLGR SLUDGE GRINDER</p> <p>SIL SILENCER</p> <p>SMP SAMPLER</p> <p>SEPT SEPTAGE RECEIVING TANK</p> <p>SUF HVAC FAN (SUPPLY)</p> <p>SV SOLENOID VALVE OPERATOR</p> <p>SWBD SWITCHBOARD</p> <p>SWGR SWITCHGEAR</p> <p>T* TANK - SEE NOTES</p> <p>TP TRAP PRIMER</p> <p>UH HVAC UNIT HEATER</p> <p>UPS UNINTERRUPTIBLE POWER SUPPLY</p> <p>UV ULTRAVIOLET DISINFECTION UNIT</p> <p>V* VALVE - SEE NOTES</p> <p>VCP VENDOR CONTROL PANEL</p> <p>VFD VARIABLE FREQUENCY DRIVE (AC)</p> <p>WH WATER HEATER</p> <p>XFMR TRANSFORMER</p>		<p><b>NEW PIPING</b></p> <p>CENTERLINE ELEVATION (UNLESS OTHERWISE NOTED)</p> <p>XXX.X</p> <p>6"-RW</p> <p>PROCESS CODE, SEE PIPE SCHEDULE</p> <p>NOMINAL PIPE DIAMETER</p> <p><b>DOUBLE-CONTAINED PIPING</b></p> <p>1/2" (2")-LAS</p> <p>PROCESS PIPE DIAMETER</p> <p>CONTAINMENT PIPE DIAMETER</p> <p>PROCESS CODE, SEE PIPE SCHEDULE</p> <p><b>EXISTING PIPING</b>      <b>FUTURE PIPING</b></p> <p>6"-RW      6"-RW      6"-RW      6"-RW</p> <p><b>NOTE</b></p> <p>ALL PIPING CALLOUTS ON PROCESS AND INSTRUMENTATION DIAGRAMS, AND EXISTING PIPING CALLOUTS ON CIVIL DRAWINGS WILL APPEAR AS NORMAL TEXT WITHOUT THE CAPSULES SHOWN IN THE EXAMPLES ABOVE.</p>		<p>H2O2 HYDROGEN PEROXIDE</p> <p>HCA HYDROCHLORIC ACID</p> <p>HFA HYDROFLUOSILICIC ACID</p> <p>HHWR HVAC HEATING WATER RETURN</p> <p>HHWS HVAC HEATING WATER SUPPLY</p> <p>HWR HEATING WATER RETURN</p> <p>HWS HEATING WATER SUPPLY</p> <p>HYPO SODIUM HYPOCHLORITE</p> <p>IA INSTRUMENT AIR</p> <p>INJ INJECTOR WATER</p> <p>IRR LANDSCAPING SPRINKLER SYSTEM</p> <p>IXE ION EXCHANGE EFFLUENT</p> <p>LAS LIQUID AMMONIUM SULFATE</p> <p>LO LUBE OIL</p> <p>LOX LIQUID OXYGEN</p> <p>LPG LIQUIFIED PETROLEUM GAS</p> <p>LS LIME SLURRY</p> <p>MC MEMBRANE CONCENTRATE SUPPLY</p> <p>MCCR MEMBRANE CONCENTRATE RETURN</p> <p>MCP MEMBRANE CLEANING PERMEATE SUPPLY</p> <p>MCPR MEMBRANE CLEANING PERMEATE RETURN</p> <p>MCR MEMBRANE CLEANING RETURN</p> <p>MCS MEMBRANE CLEANING SUPPLY</p> <p>MCW MEMBRANE CLEANING WASTE</p> <p>METH METHANOL</p> <p>MF MEMBRANE FEED WATER</p> <p>MGOH MAGNESIUM HYDROXIDE</p> <p>ML MIXED LIQUOR</p> <p>MP MEMBRANE PERMEATE</p> <p>MUA MURIATIC ACID</p> <p>NAOH SODIUM HYDROXIDE</p> <p>NG NATURAL GAS</p> <p>NPW NON-POTABLE WATER</p> <p>OF OVERFLOW</p> <p>OG OFF GAS</p> <p>OYG GASEOUS OXYGEN</p> <p>OZ OZONE</p> <p>OZW OZONATED WATER</p> <p>PA PLANT AIR</p> <p>PAC POLYALUMINUM CHLORIDE</p> <p>PD PLANT DRAIN</p> <p>PEFF PRIMARY EFFLUENT</p> <p>PHOS PHOSPHATE</p> <p>POL POLYMER</p> <p>PP POTASSIUM PERMANGANATE</p> <p>PSL PRIMARY SLUDGE</p> <p>PW POTABLE WATER</p> <p>RAS RETURN ACTIVATED SLUDGE</p> <p>REW RECLAIMED WATER</p> <p>REF REFRIGERANT</p> <p>RS RAW SEWAGE</p> <p>RSL RAW SLUDGE</p> <p>RW RAW WATER</p> <p>SA SAMPLE LINE</p> <p>SBS SODIUM BUSULFITE</p> <p>SCI SCALE INHIBITOR</p> <p>SCM SCUM</p> <p>SD STORM DRAIN</p> <p>SEFF SECONDARY EFFLUENT</p> <p>SG SLUDGE GAS</p> <p>SH SODIUM HYDROXIDE/CAUSTIC SODA</p> <p>SI SODIUM SILICATE</p> <p>SL SLUDGE</p> <p>SN SUPERNATANT</p> <p>SO SULFUR DIOXIDE</p> <p>SO2 SULFUR DIOXIDE SOLUTION</p> <p>SO2V SULFUR DIOXIDE GAS UNDER VACUUM</p> <p>SOA SULFURIC ACID</p> <p>SPD SUMP PUMP DISCHARGE</p> <p>SS SANITARY SEWER</p> <p>ST STEAM (LOW PRESSURE &lt;10 PSI)</p> <p>SW SETTLED WATER</p> <p>TE TERTIARY EFFLUENT</p> <p>TPW PLUMBING TEMPERED WATER</p> <p>TS THICKENED SUPERNATANT</p> <p>TSL THICKENED SLUDGE</p> <p>TW TREATED WATER</p> <p>TWAS THICKENED WAS</p> <p>UW UTILITY WATER</p> <p>VT VENT</p> <p>VTR PLUMBING VENT TO ROOF</p> <p>WAS WASTE ACTIVATED SLUDGE</p> <p>WLO WASTE LUBE OIL</p> <p>WW WASTE WASHWATER</p> <p>WWR WASHWATER RETURN</p>	

**EQUIPMENT PREFIXES**

ACU	HVAC AIR CONDITIONING UNIT (SELF-CONTAINED)
AF	HVAC AIR FILTER
AGT	AGITATOR
AHU	HVAC AIR HANDLER UNIT
ASD	ADJUSTABLE SPEED DRIVE (DC)
ATS	AUTOMATIC TRANSFER SWITCH
BATT	BATTERY SYSTEM
BFP	BELT FILTER PRESS
BLWR	BLOWER
BOIL	HVAC BOILER
BP	BACKFLOW PREVENTER
CAP	CAPACITOR
CDU	HVAC CONDENSING UNIT
CH	HVAC CHILLER
CNV	CONVEYOR
COM	COMMINUTOR
COMP	AIR/GAS COMPRESSOR
COVR	COVER (FLOATING)
CPT	COMPACTOR (SCREENINGS, ETC.)
CPU	COMPUTER
CRAN	CRANE
CRCP	HVAC RECIRCULATING PUMP
CSTR*	COMBINATION MOTOR STARTER - SEE NOTES
CTFG	CENTRIFUGE
DCSW	DISCONNECT SWITCH
DHMD	HVAC DEHUMIDIFIER
DIS	DISTRIBUTOR (ARM TYPE, EJECTOR, EJECTOR, DIFFUSER, ETC.)
DMPR	HVAC CONTROL DAMPER
DP	DISTRIBUTION PANELBOARD
DR	DRYER
DU	DRIVE UNIT
ECU	HVAC EVAPORATIVE COOLING UNIT
EEW	EMERGENCY EYEWASH
ENG	ENGINE
EWS	EMERGENCY EYEWASH/SHOWER
EXF	HVAC FAN (EXHAUST)
FACP	FIRE ALARM CONTROL PANEL
FAN	HVAC FAN (RECIRCULATING)
FCU	HVAC FAN COIL UNIT
FILT	FILTER
FLAR	FLARE
FLOC	FLOCCULATOR
FURN	HVAC FURNACE
GATE*	GATE - SEE NOTES
GBT	GRAVITY BELT THICKENER
GEN	GENERATOR
GR	GRINDER
HC	HEATING COIL
HF	HARMONIC FILTER
HH	HANDHOLE
HPU	HEAT PUMP UNIT
HST	HOIST
HX	HEAT EXCHANGER
INJ	INJECTOR (INDUCTOR, EJECTOR)
LCP	LOCAL CONTROL PANEL
LCS	LOCAL CONTROL STATION
LVR	HVAC LOUVER
LP	LIGHTING PANELBOARD
M	MOTOR
MAU	MAKE-UP AIR UNIT
MCC	MOTOR CONTROL CENTER
MH	MANHOLE
MME	MISCELLANEOUS MECHANICAL EQUIPMENT
MOV	MOTORIZED VALVE OPERATOR
MTS	MANUAL TRANSFER SWITCH
MUX	MULTIPLEXER
MX*	MIXER - SEE NOTES
OCU	ODOR CONTROL UNIT
OIT	OPERATOR INTERFACE TERMINAL
P*	PUMP - SEE NOTES
POL	POLYMER DILUTION SYSTEM
PLC	PROGRAMMABLE LOGIC CONTROLLER
POV	PNEUMATIC VALVE OPERATOR
RH	ROOF HOOD
RIO	REMOTE INPUT/OUTPUT
RVAT	REDUCED VOLTAGE, AUTO TRANSFORMER MOTOR STARTER
RVPW	REDUCED VOLTAGE, PART WINDING MOTOR STARTER
RVSS	REDUCED VOLTAGE, SOLID STATE MOTOR STARTER

**NOTES**

THE EQUIPMENT PREFIXES LISTED ABOVE ARE USED TO UNIQUELY IDENTIFY EACH PIECE OF EQUIPMENT. PREFIXES SHOWN WITH AN ASTERISK (\*) MAY BE FURTHER REFINED BY SYMBOL, AND IDENTIFIED IN GREATER DETAIL IN EQUIPMENT SCHEDULES AND SPECIFICATIONS WITH THE ABBREVIATIONS SHOWN BELOW.

**COMBINATION MOTOR STARTERS**

FVNR	FULL VOLTAGE, NON-REVERSING
FVR	FULL VOLTAGE, REVERSING

**GATES**

SLID	SLIDE
FLAP	FLAP
TILT	TILTING WEIR

**MIXERS**

MECH	MECHANICAL
STATIC	STATIC
TANK	IN TANK (MOTORIZED)

**PUMPS**

CHOP	CHOPPER
DPHM	DIAPHRAGM
HOSE	HOSE
LOBE	LOBE (ROTARY LOBE)
PC	PROGRESSIVE CAVITY
PD	POSITIVE DISPLACEMENT
PERI	PERISTALTIC
SUBM	SUBMERSIBLE
SUMP	SUBMERSIBLE SUMP
VT	VERTICAL TURBINE
WELL	SUBMERSIBLE WELL

**TANKS**

NPRS	NON-PRESSURIZED (DIGESTER, STORAGE, ETC.)
PRS	PRESSURE VESSEL (AIR RECEIVER, ETC.)

**VALVES**

ALTD	ALTITUDE
AR	AIR RELEASE
ARVR	AIR RELEASE VACUUM RELIEF
AV	VACUUM RELIEF/AIR INLET
BV	BALL
BFV	BUTTERFLY
CAV	COMBINATION AIR/VACUUM
CV	CHECK
FCTL	FLOW CONTROL
GATE	GATE
GLOB	GLOBE
NEDL	NEEDLE
PCTL	PUMP CONTROL
PINC	PINCH
PLUG	PLUG
PRED	PRESSURE REDUCING
PREL	PRESSURE RELIEF
PSUS	PRESSURE SUSTAINING
SOL	SOLENOID

**PROCESS CODES**

AA	AERATION AIR
ALUM	LIQUID ALUM
AM	AMMONIA
AS	ACTIVATED SILICA
BA	BUBBLER AIR
BWS	BACKWASH SUPPLY
BWW	BACKWASH WASTE
CA	COMPRESSED AIR
CEN	CENTRATE
CHWR	HVAC CHILLED WATER RETURN
CHWS	HVAC CHILLED WATER SUPPLY
CLG	CHLORINE - GAS
CLL	CHLORINE - LIQUID
CLS	CHLORINE SOLUTION
CLV	CHLORINE GAS UNDER VACUUM
CLVD	CHLORINE VENT & DETECTION CONDENSATE
CND	CONDENSATE
CNDD	HVAC CONDENSATE DRAIN
CRD	CHEMICAL RESISTANT DRAIN
CRV	CORROSION RESISTANT VENT
CS	CIRCULATED SLUDGE
CTS	CALCIUM THIOSULFATE
CWR	CHILLED WATER RETURN
CWS	CHILLED WATER SUPPLY
D	PLUMBING SANITARY DRAIN & VENT
DCNT	DECANT
DHWR	PLUMBING DOMESTIC HOT WATER RETURN
DHWS	PLUMBING DOMESTIC HOT WATER SUPPLY
DR	PROCESS DRAIN
DS	DIGESTED SLUDGE
DW	DEMINERALIZED WATER
EBS	ENGINEERED BIOSOLIDS
EEX	ENGINE EXHAUST
EWR	ENGINE COOLING WATER RETURN
EWS	ENGINE COOLING WATER SUPPLY
FA	FOUL AIR
FAW	FILTER AIR WASH
FC	FERRIC CHLORIDE
FE	FINAL EFFLUENT
FI	FILTER INFLUENT
FM	FORCE MAIN
FOG	FATS, OILS, AND GREASE
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FSP	FIRE PROTECTION SPRINKLER
FSW	FILTER SURFACE WASHWATER
FTW	FILTER TO WASTE
FW	FILTERED WATER
FWS	FOOD WASTE SLURRY
FWW	FILTER WASTE WASHWATER
GR	GRIT

**PIPE SCHEDULE**

ID	DESCRIPTION	SERVICE	MATERIAL	VALVE SYSTEM	TEST PRESSURE	TEST MEDIUM	ALLOWABLE LEAKAGE	TEST DURATION	NOTES
AIR	AIR	E	PVC-1	-	5	AIR	NONE	1 HR	
BR	BRINE	E	PVC-1	C	150	WATER	NONE	4 HRS	
DR	DRAIN	E	PVC-1	-	-	-	-	-	
HYPO	SDDIUM HYPOCHLORITE	E	PVC-1	C	150	WATER	NONE	4 HRS	
NaOH	SODIUM HYDROXIDE	E	SS	-	-	-	NONE	-	1
PW	POTABLE WATER	E	CU	E	150	WATER	NONE	4 HRS	
SW	SOFTENED WATER	E	PVC-1	C	150	WATER	NONE	4 HRS	
VT	VENT	E	PVC-1	-	-	-	-	-	2
VTR	VENT TO ROOF	E	PVC-1	-	-	-	-	-	

**NOTES**

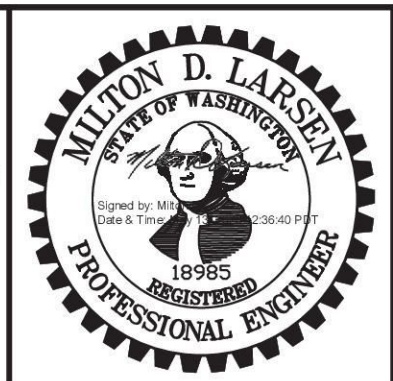
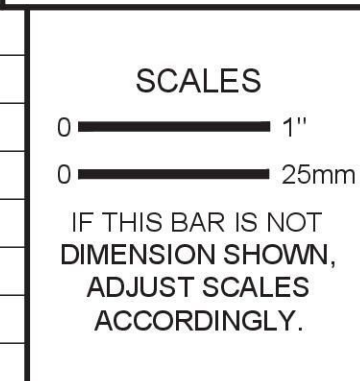
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2 TEST FOR HYDROGEN GAS LEAKS.

**ISSUED FOR BID**

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NO	REVISION	DATE	BY



DESIGNED	MDL
DRAWN	RLH
CHECKED	JMF

DESIGNED BY: MDL  
DRAWN BY: RLH  
CHECKED BY: JMF

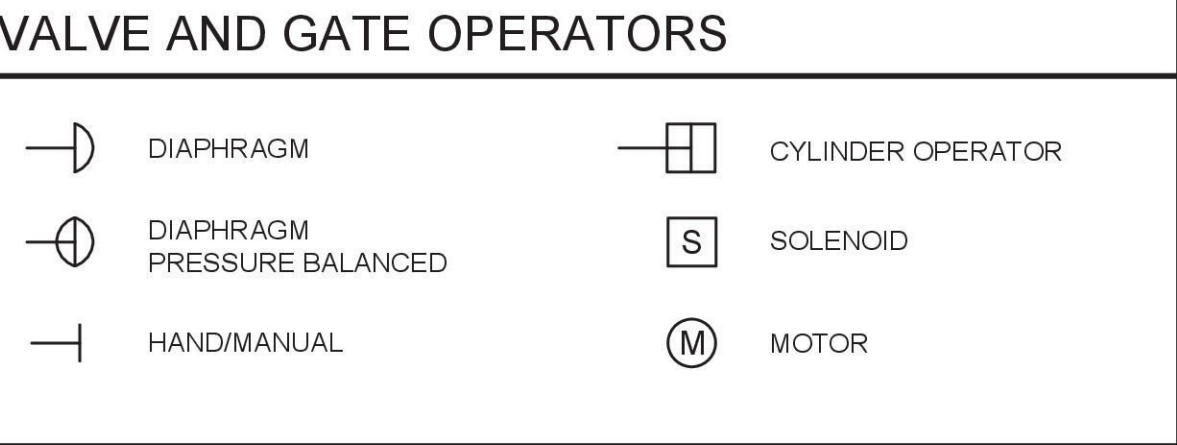
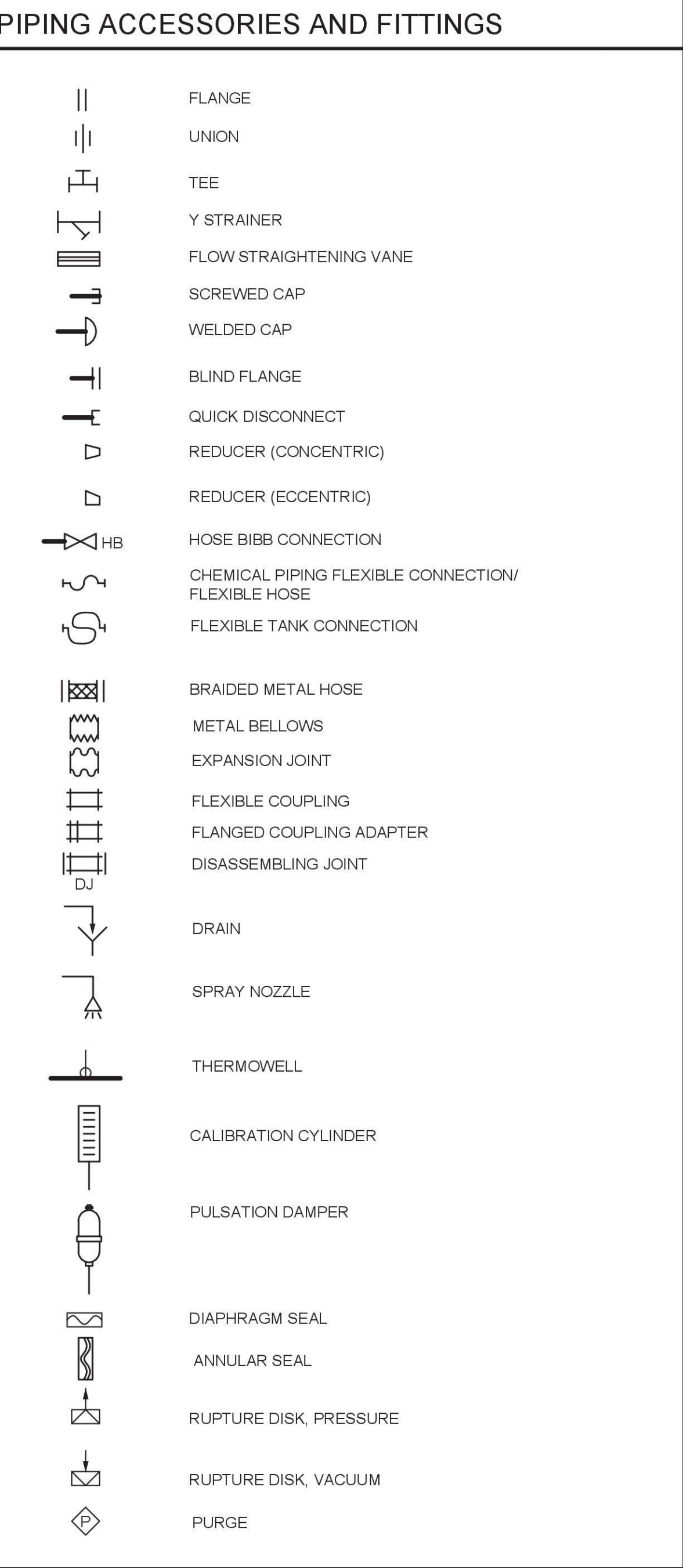
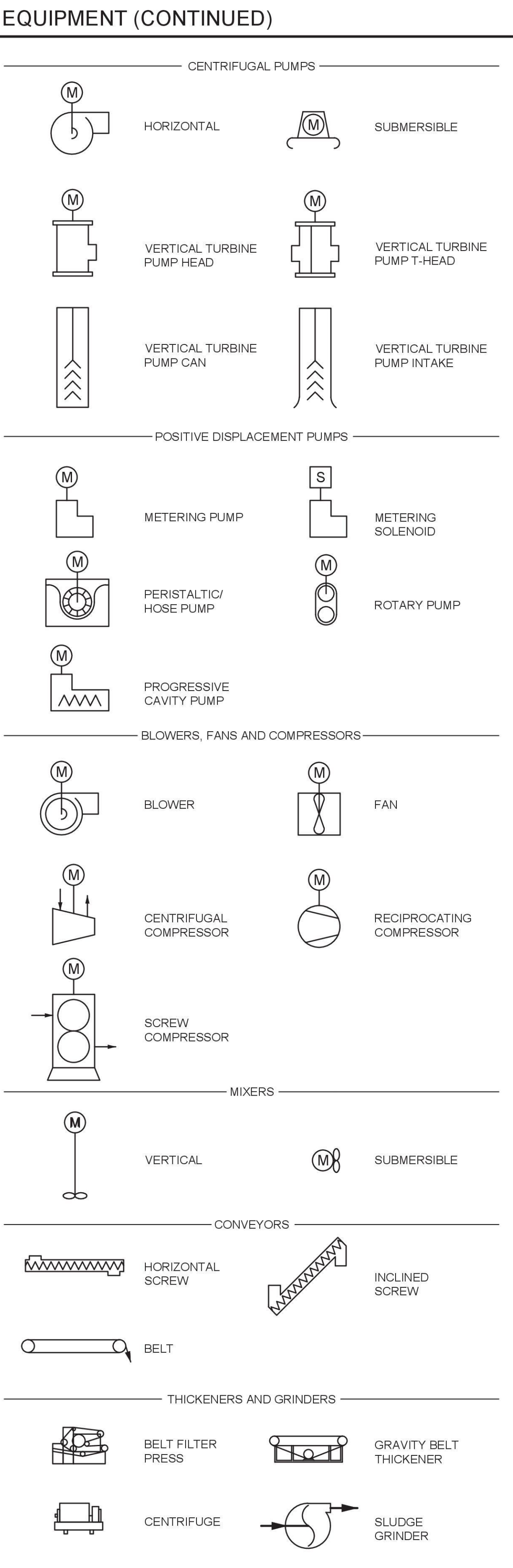
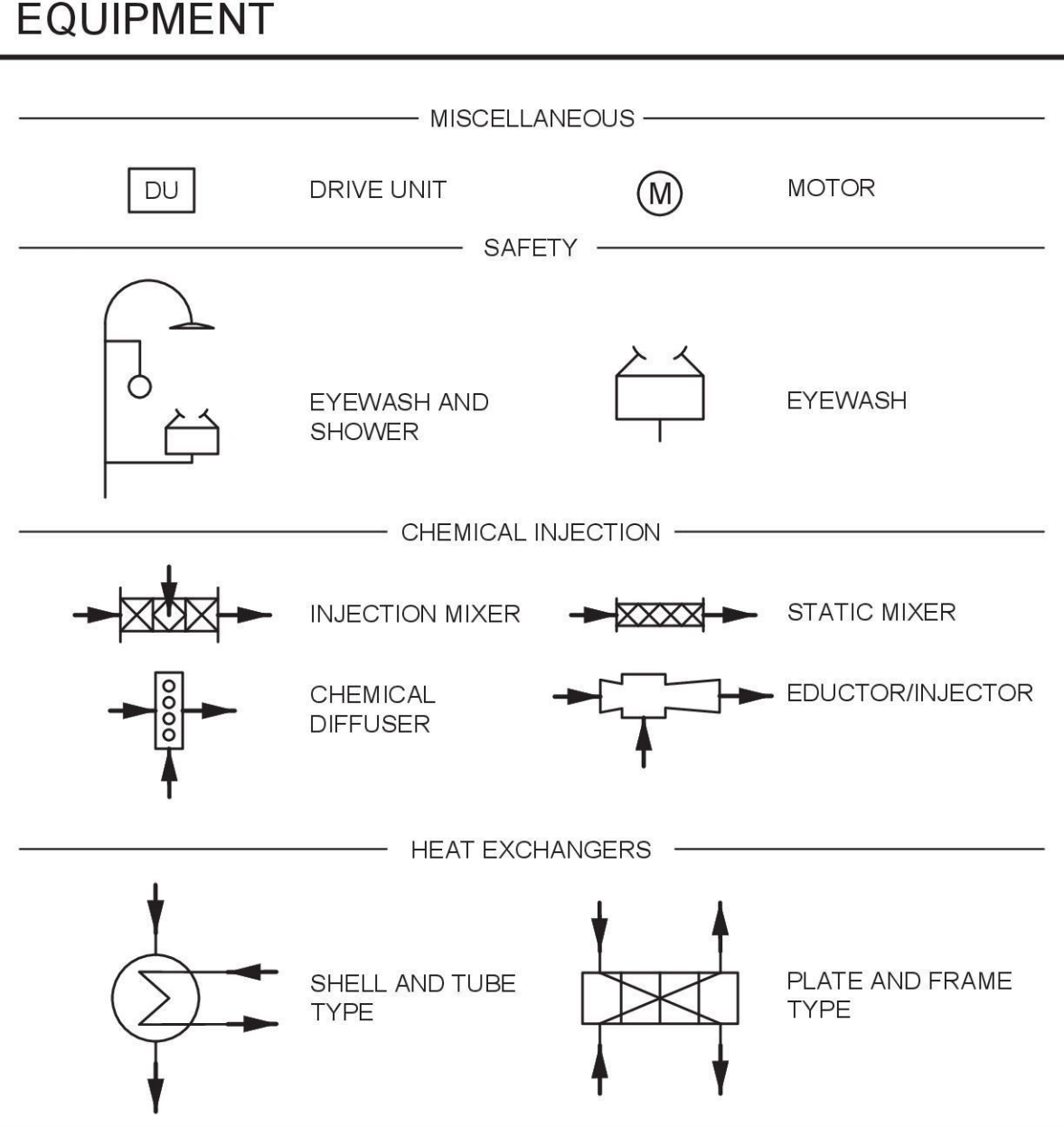
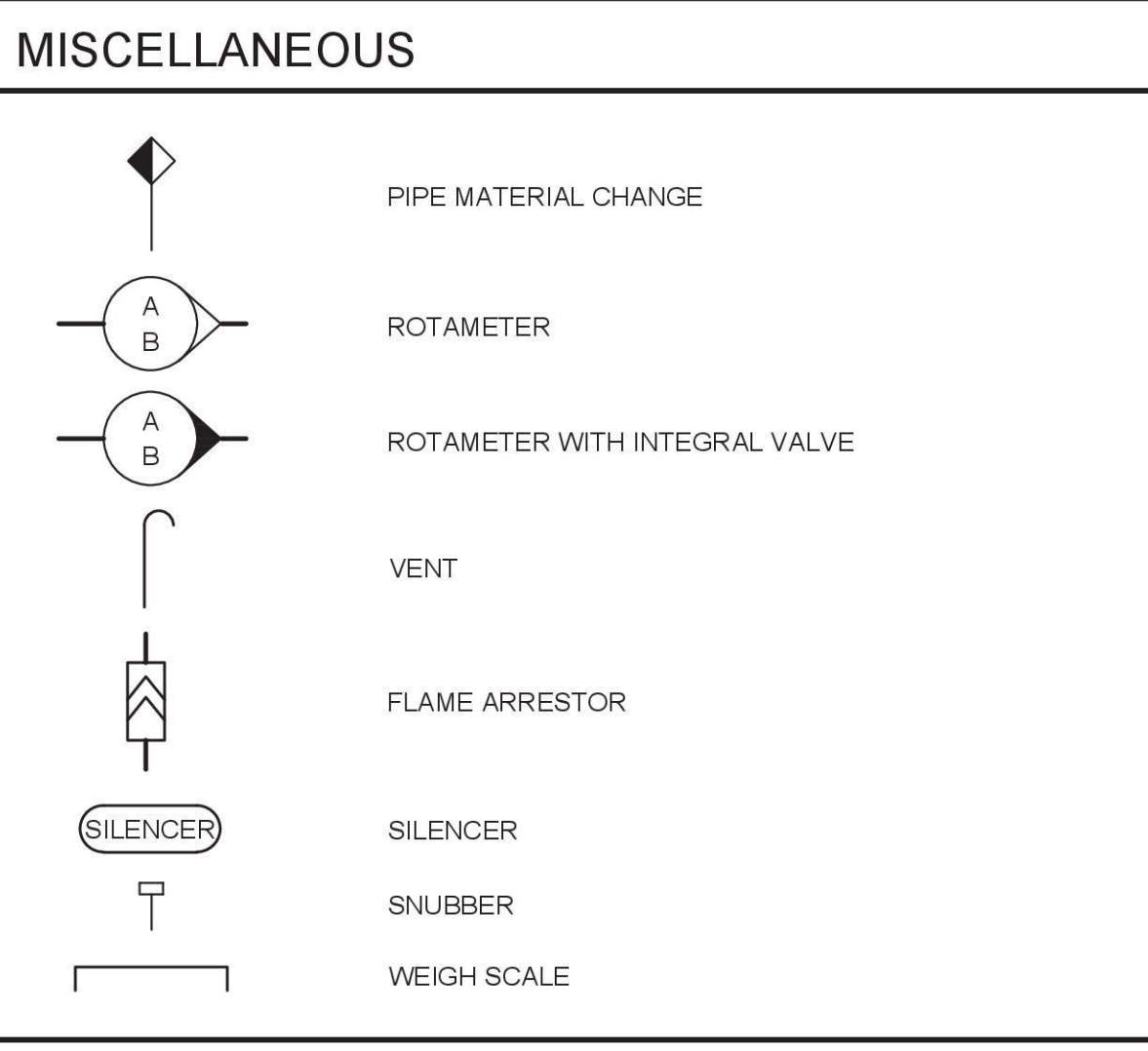
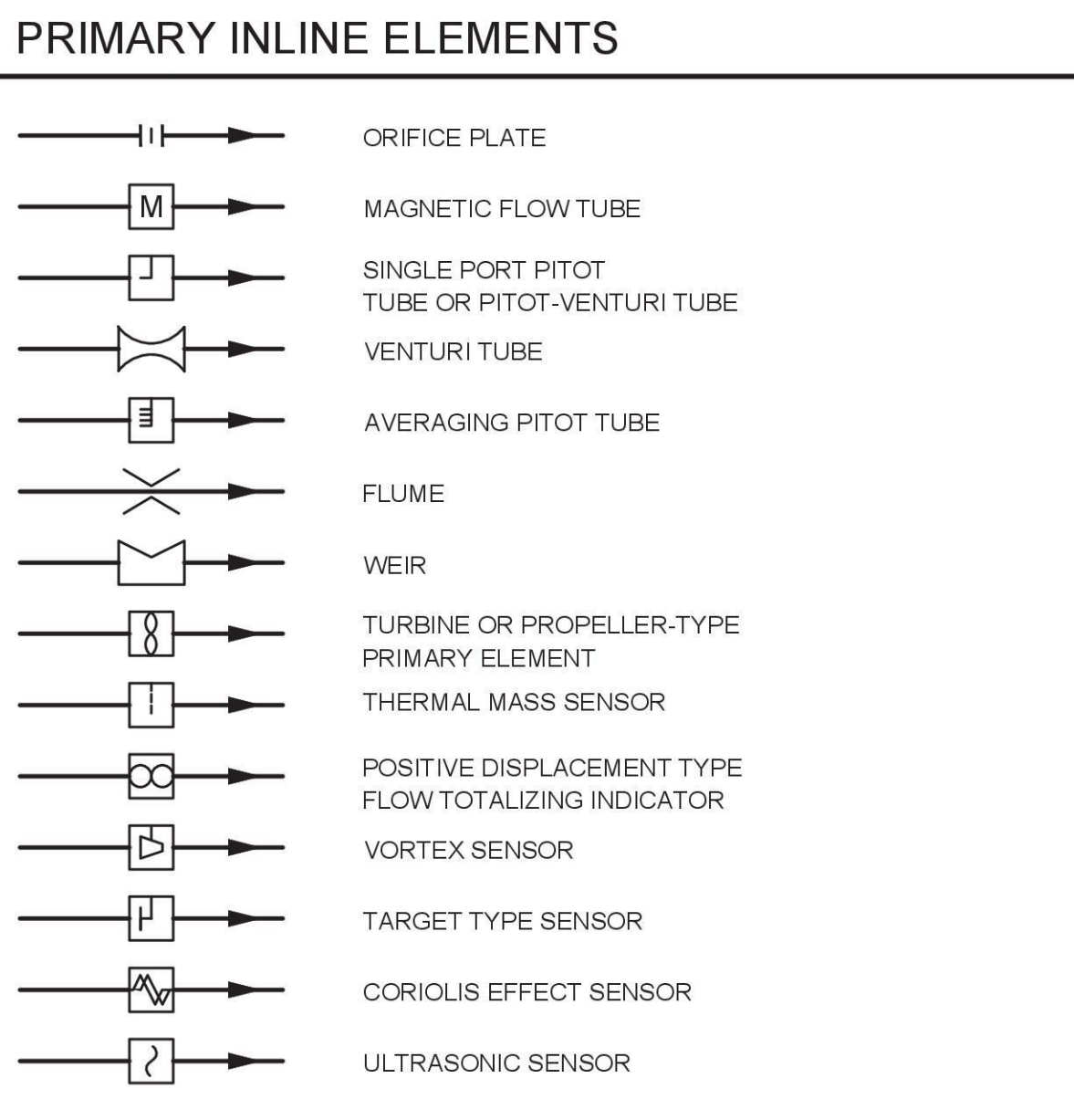
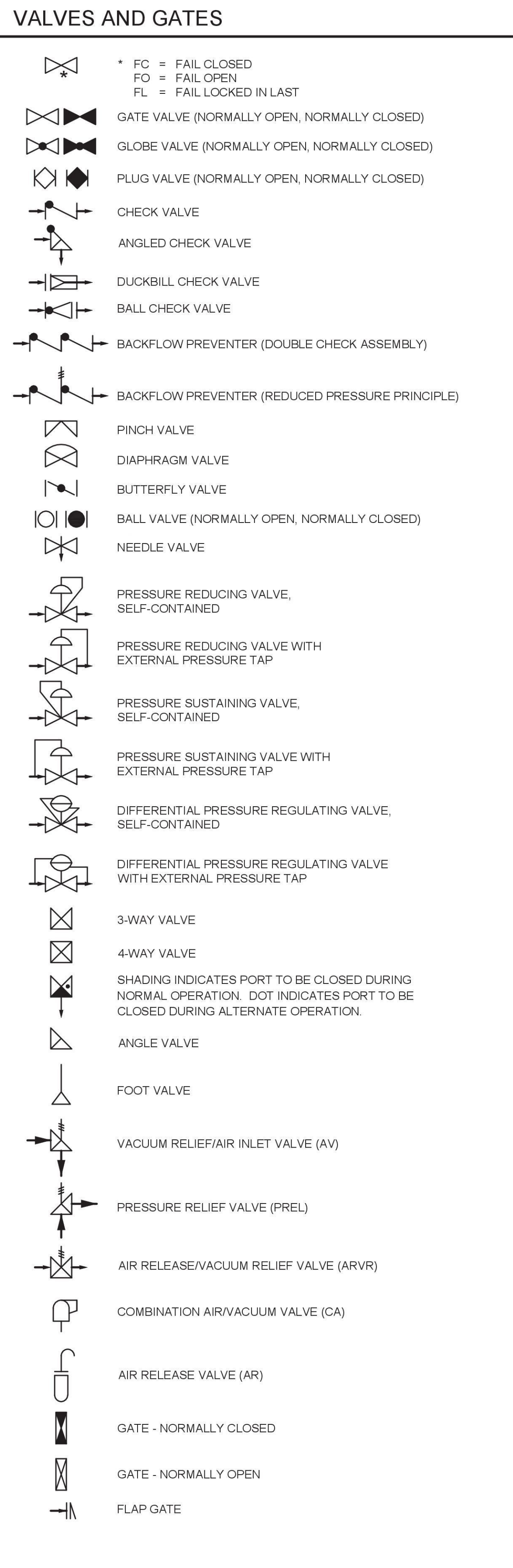
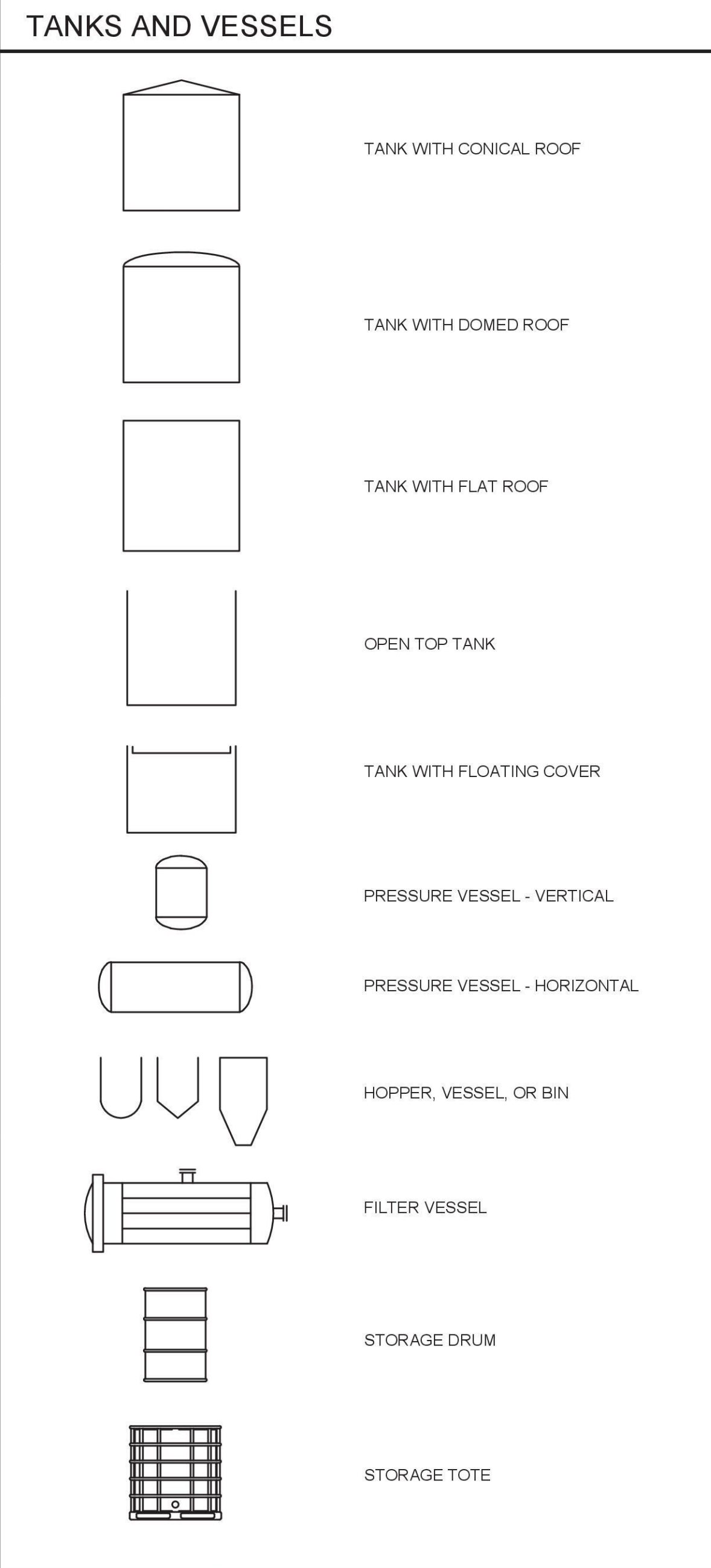
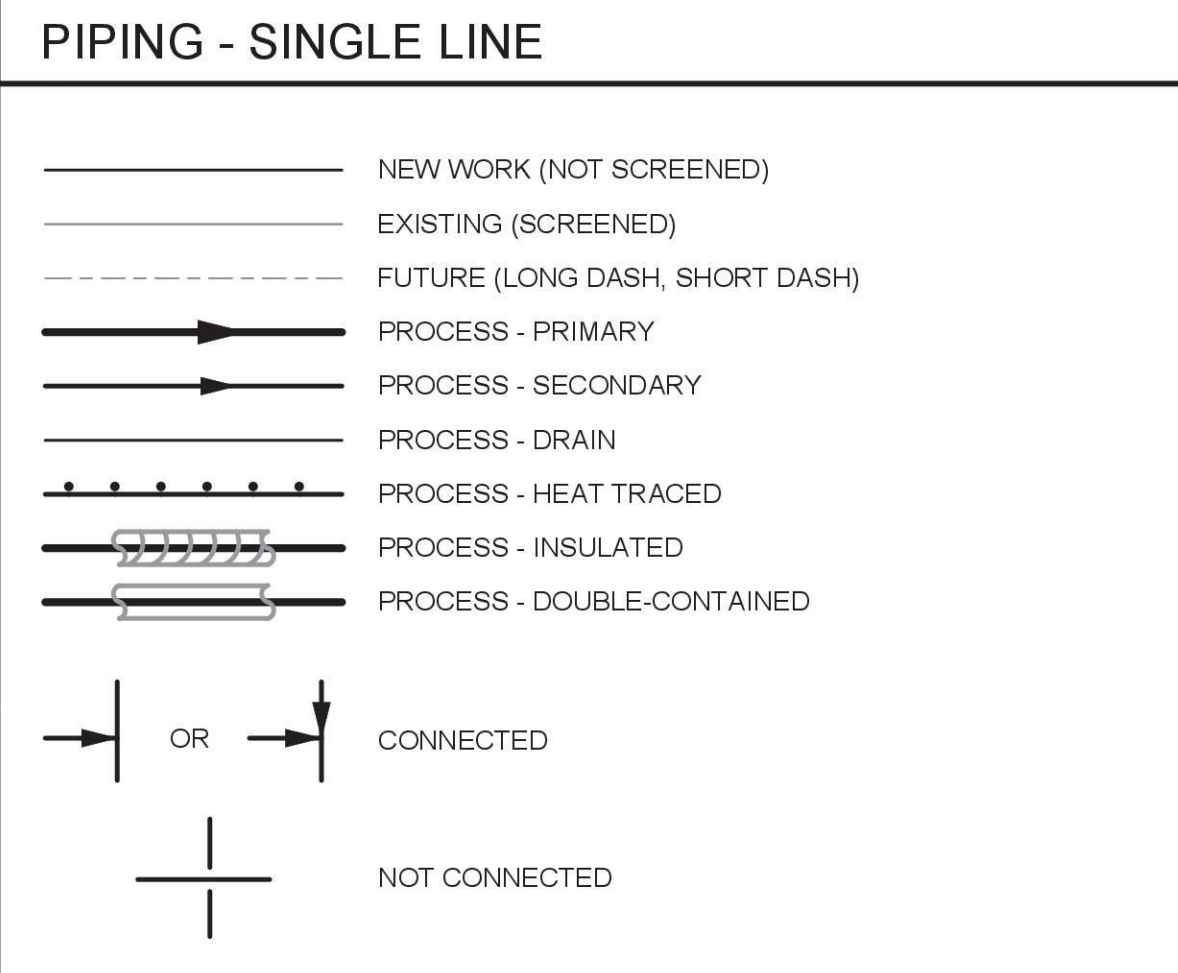
COVINGTON WATER DISTRICT  
COVINGTON, WASHINGTON

222ND PL CORROSION CONTROL  
FACILITY REHABILITATION

**KJ** Kennedy Jenks

SCALE	NTS
JOB NO	2497002.01
DATE	MAY 2026
SHEET	OF
	G-4

**GENERAL EQUIPMENT DESIGNATIONS AND PROCESS IDENTIFICATION CODES**



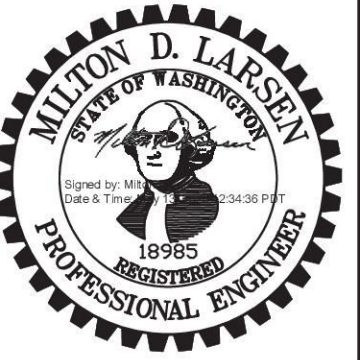
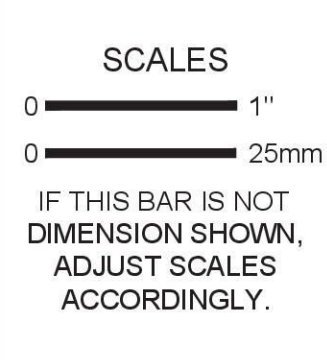
### NOTES

- SEE THE PRECEDING DRAWING FOR EQUIPMENT DESIGNATIONS AND PROCESS IDENTIFICATION CODES.
- THIS IS A GENERALIZED LEGEND SHEET. SEE ALSO ISA S5.1, S5.3 AND S7.3.

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NO	REVISION	DATE	BY



DESIGNED MDL  
DRAWN RLH  
CHECKED JMF

COVINGTON WATER DISTRICT  
COVINGTON, WASHINGTON  
222ND PL CORROSION CONTROL  
FACILITY REHABILITATION

**KJ** Kennedy Jenks

### GENERAL PROCESS SYMBOLS

SCALE NTS  
JOB NO 2497002.01  
DATE MAY 2026  
SHEET OF  
G-5

Plot Date: 5/16/2026 9:18 AM

User: RICHARD HILLS

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SITE PLAN  
SCALE: NTS



1 DETAIL  
SCALE: NTS

SHEET KEYNOTES

- A. RELOCATE EXISTING HYPOCHLORITE STORAGE TANK FROM INSIDE THE BUILDING TO PROVIDE TEMPORARY SERVICE. SEE DETAIL 1. THE OWNER WILL PROVIDE TEMPORARY PIPING CONNECTION TO HYPO PUMPS AND POWER AND SIGNAL WIRING.

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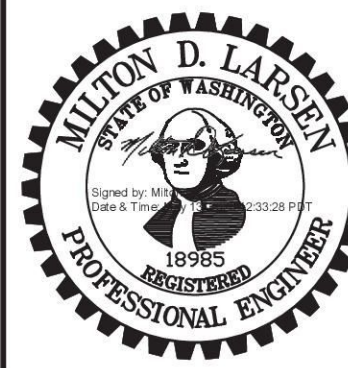
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SCALES

0 1" = 25mm

IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.



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DRAWN	NEB
CHECKED	JMF

COVINGTON WATER DISTRICT  
COVINGTON, WASHINGTON

222ND PL CORROSION CONTROL  
FACILITY REHABILITATION



SITE PLAN AND DETAIL

SCALE	NTS
JOB NO	2497002.01
DATE	MAY 2026
SHEET OF	C-1

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User: RICHARD HILLS

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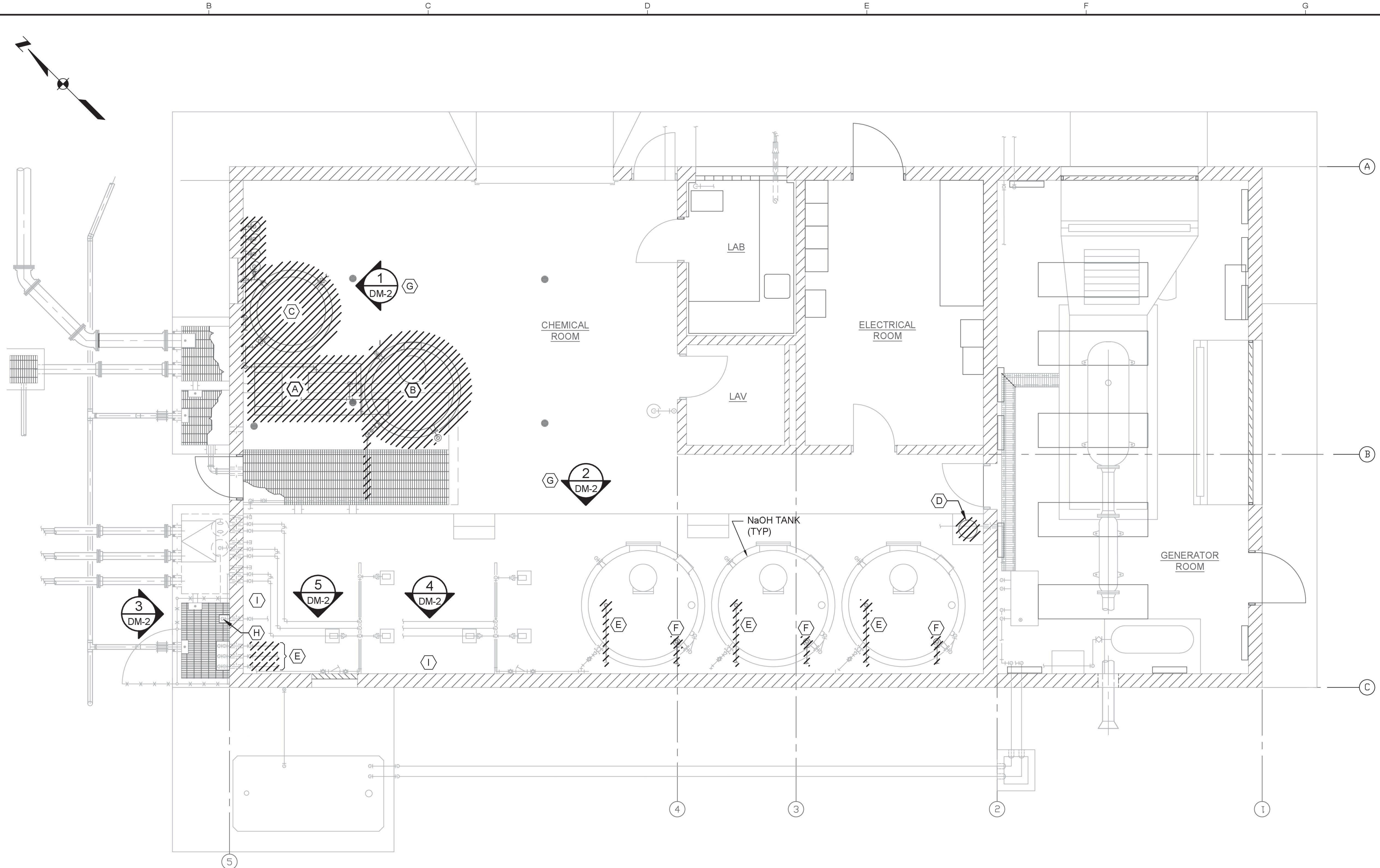
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COVINGTON WATER DISTRICT\Projects\CWD -

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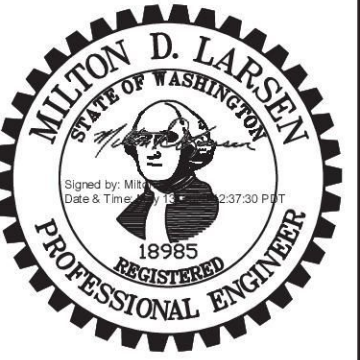
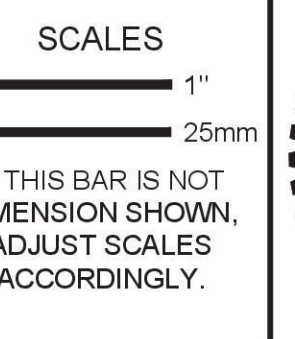
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- SHEET KEYNOTES**
- A. DEMOLISH CONCRETE HOUSEKEEPING PAD AND ONSITE HYPOCHLORITE GENERATION EQUIPMENT, AND PIPE. PROTECT AND RELOCATE WALL MOUNTED POINT-OF-USE HOT WATER HEATER. TO WHERE SHOWN ON M-3 AND M-5.
  - B. RELOCATE HYPOCHLORITE STORAGE TANK, ACTUATED OUTLET VALVE AND OUTLET PIPING ASSEMBLY TO BUILDING EXTERIOR WHERE DIRECTED BY OWNER. SEE DRAWING C-1 FOR APPROXIMATE LOCATION. DEMOLISH HYPOCHLORITE PIPING TO THE EXTENTS SHOWN.
  - C. DEMOLISH CONCRETE HOUSEKEEPING PAD, BRINE TANK, AND 4 WATER SOFTENERS.
  - D. DEMOLISH HOT WATER TANK AND KEEP PIPING FOR CONNECTION TO NEW WATER HEATER.
  - E. DEMOLISH NaOH PVC FILL PIPING FROM THE WALL PENETRATIONS TO THE TANK CONNECTIONS (TYP).
  - F. DEMOLISH NaOH 2" PVC VENT PIPING IN ITS ENTIRETY FROM THE TANK CONNECTIONS THROUGH THE ROOF (TYP).
  - G. REMOVE COPPER AND PVC WATER WATER PIPING ALONG WALL. REMOVE COPPER PIPE UP TO TEE BRANCHING TO LAVATORY. CAP ON DOWNSTREAM SIDE 1/2" TEE TO MAINTAIN SERVICE TO LAVATORY AND LAB. COORDINATE LIMITS OF DEMOLITION WITH OWNER.
  - H. REMOVE COMPRESSED AIR LINE IN ITS ENTIRETY FROM EXTERIOR CAUSTIC FILL STATION TO GENERATOR ROOM. SEAL WALL PENETRATIONS.
  - I. REMOVE PUMPING EQUIPMENT, PVC WATER PIPING, VALVES, AND APPURTENANCES ASSOCIATED WITH RWSS CHLORINATION SYSTEM INSIDE CONTAINMENT AREA. COORDINATE LIMITS OF DEMOLITION WITH OWNER.

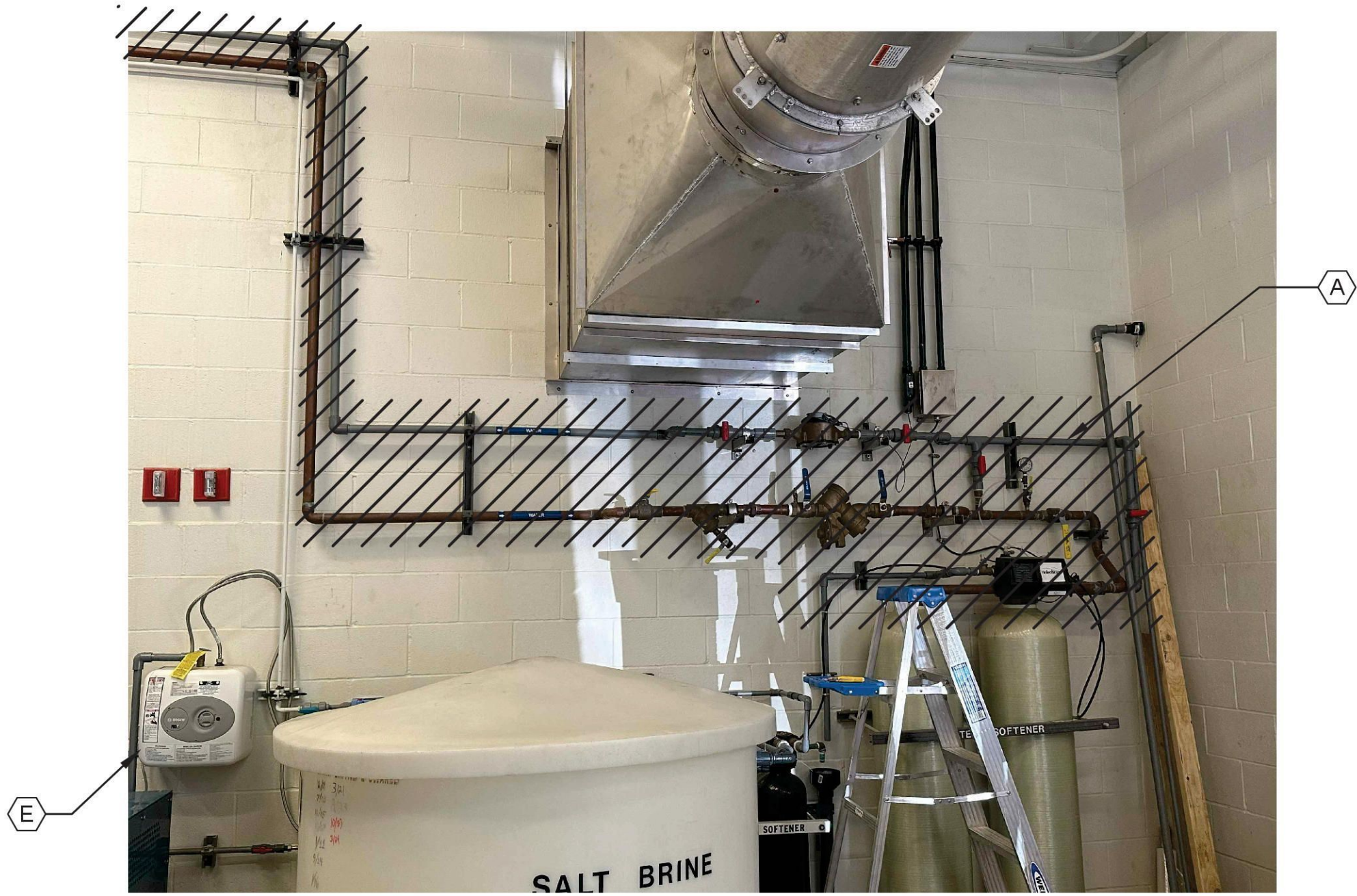
**DEMOLITION PLAN**  
SCALE: 1/4" = 1'-0"

<p><b>ISSUED FOR BID</b></p> <p>ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS. USERS OF THIS DOCUMENT IN EDITABLE ELECTRONIC FORMATS ARE CAUTIONED AGAINST USE WITHOUT FIRST DETERMINING WHETHER CHANGES MAY HAVE BEEN MADE SUBSEQUENT TO ITS PREPARATION.</p>	<p>NO                      REVISION                      DATE                      BY</p>				<p>DESIGNED: MDL</p> <p>DRAWN: NEB</p> <p>CHECKED: JMF</p>	<p>COVINGTON WATER DISTRICT COVINGTON, WASHINGTON</p> <p><b>222ND PL CORROSION CONTROL FACILITY REHABILITATION</b></p> <p><b>KJ Kennedy Jenks</b></p>	<p><b>DEMOLITION PLAN</b></p>	<p>SCALE: 1/4" = 1'-0"</p> <p>JOB NO: 2497002.01</p> <p>DATE: MAY 2026</p> <p>SHEET OF: DM-1</p>
	<p>NO                      REVISION                      DATE                      BY</p>				<p>DESIGNED: MDL</p> <p>DRAWN: NEB</p> <p>CHECKED: JMF</p>	<p>COVINGTON WATER DISTRICT COVINGTON, WASHINGTON</p> <p><b>222ND PL CORROSION CONTROL FACILITY REHABILITATION</b></p> <p><b>KJ Kennedy Jenks</b></p>	<p><b>DEMOLITION PLAN</b></p>	<p>SCALE: 1/4" = 1'-0"</p> <p>JOB NO: 2497002.01</p> <p>DATE: MAY 2026</p> <p>SHEET OF: DM-1</p>

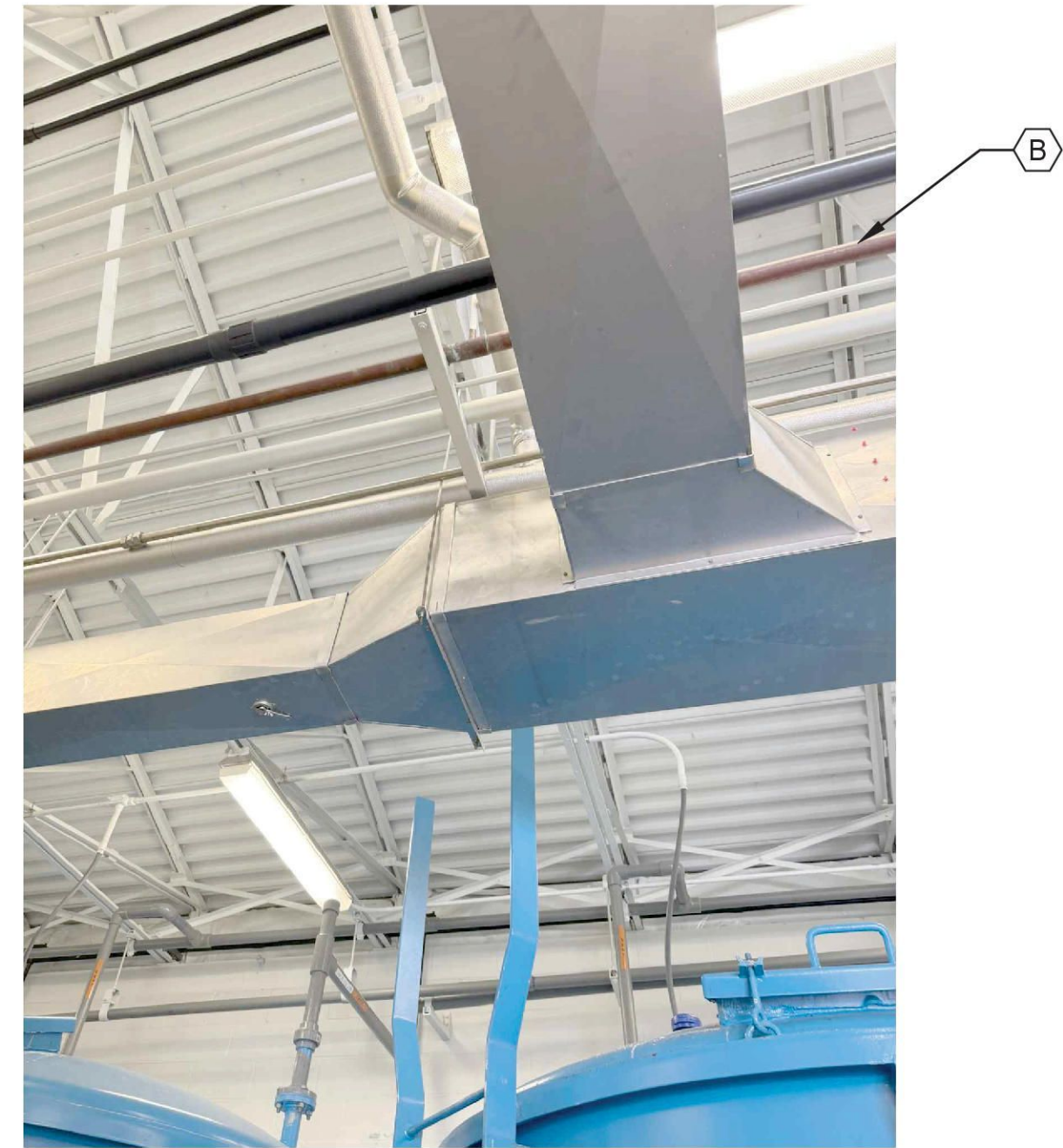


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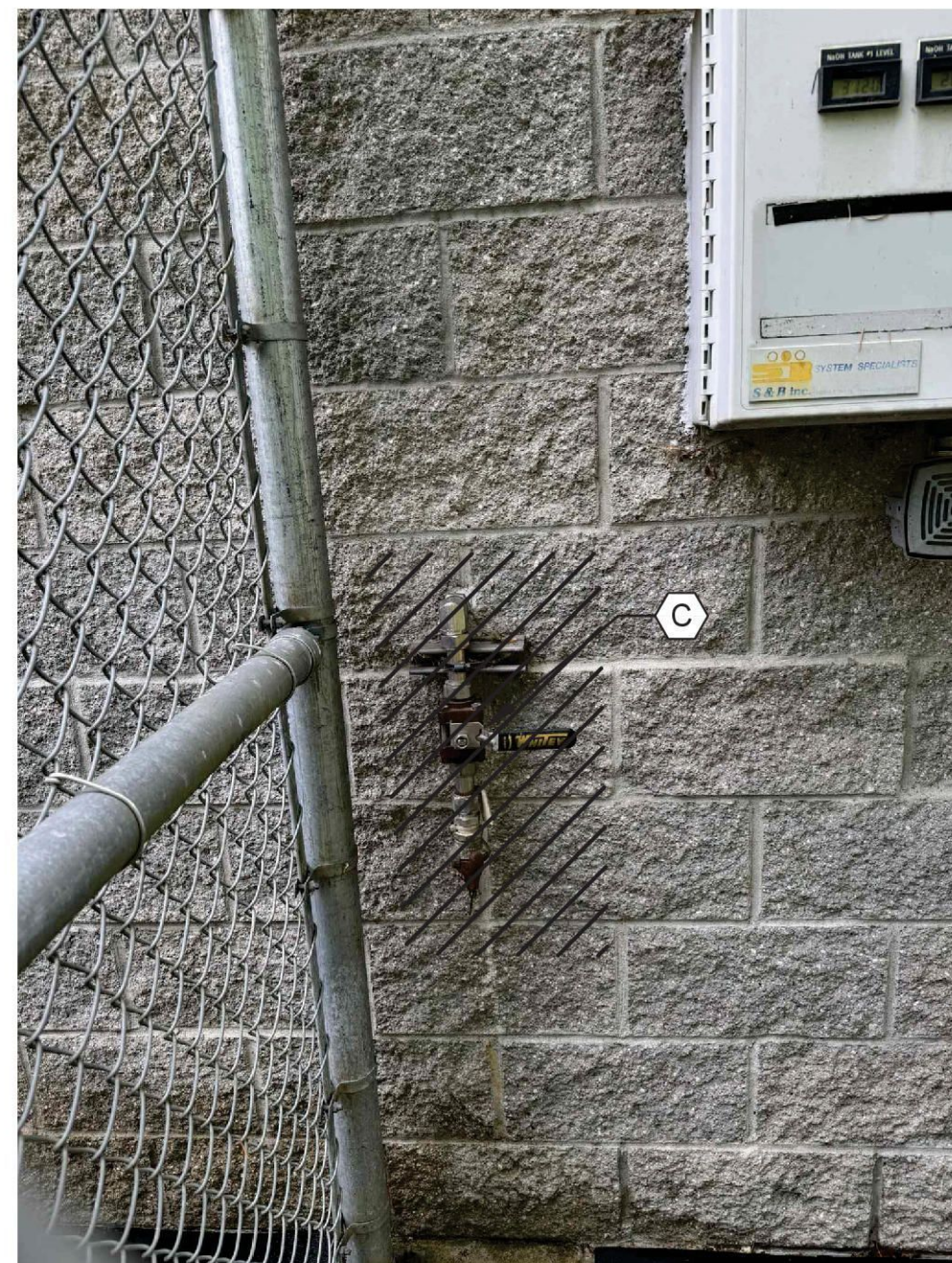
- SHEET KEYNOTES**
- A. REMOVE COPPER AND PVC WATER PIPING ALONG NORTHWEST WALL. COORDINATE LIMITS OF DEMOLITION WITH OWNER.
  - B. REMOVE OVERHEAD COPPER PIPE FROM NORTHWEST WALL UP TO TEE BRANCHING TO LAVATORY. CAP ON DOWNSTREAM SIDE 1/2" TEE TO MAINTAIN SERVICE TO LAVATORY AND LAB. COORDINATE LIMITS OF DEMOLITION WITH OWNER.
  - C. REMOVE COMPRESSED AIR LINE IN ITS ENTIRETY FROM EXTERIOR CAUSTIC FILL STATION TO GENERATOR ROOM. SEAL WALL PENETRATIONS IN ACCORDANCE WITH STRUCTURAL DETAILS.
  - D. REMOVE PUMPING EQUIPMENT, PVC WATER PIPING, VALVES, AND APPURTENANCES ASSOCIATED WITH RWSS CHLORINATION SYSTEM INSIDE CONTAINMENT AREA. COORDINATE LIMITS OF DEMOLITION WITH OWNER.
  - E. EXIST POINT-OF-USE WATER HEATER TO BE RELOCATED.



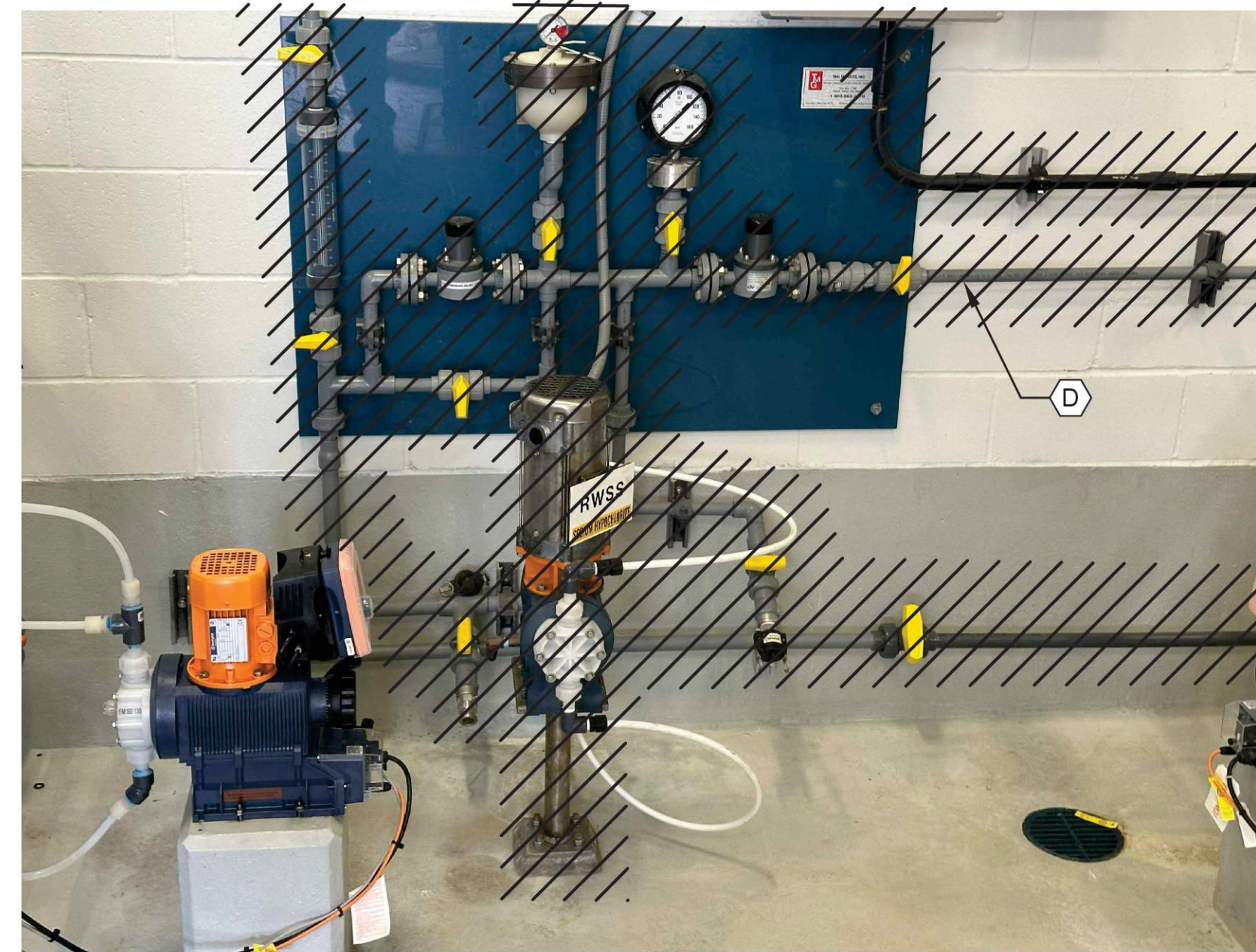
**1** DEMOLITION DETAIL  
DM-1 SCALE: NTS



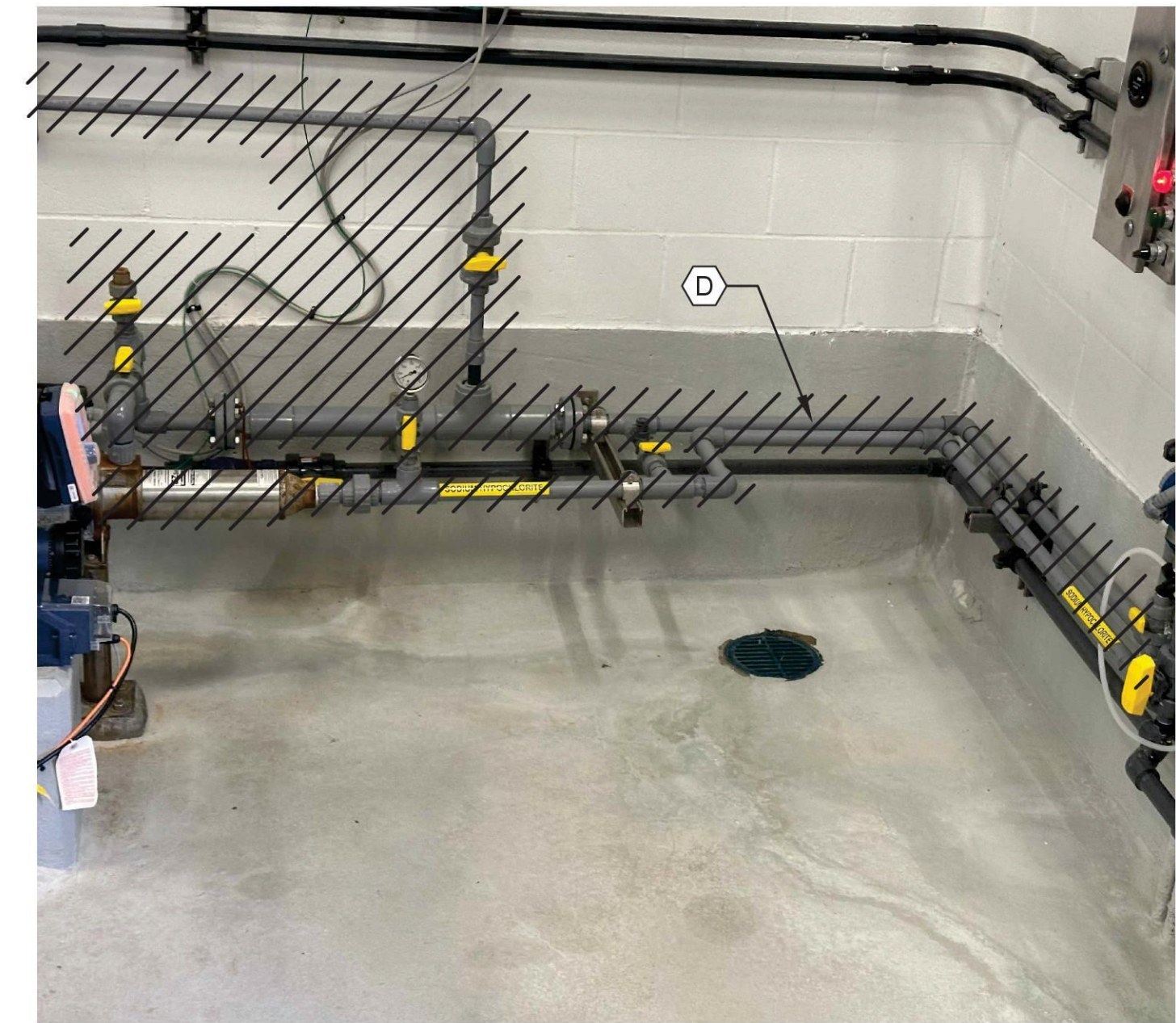
**2** DEMOLITION DETAIL  
DM-1 SCALE: NTS



**3** DEMOLITION DETAIL  
DM-1 SCALE: NTS



**4** DEMOLITION DETAIL  
DM-1 SCALE: NTS



**5** DEMOLITION DETAIL  
DM-1 SCALE: NTS

<b>ISSUED FOR BID</b>					<b>SCALES</b> 0 ——— 1" 0 ——— 25mm IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.		DESIGNED MDL DRAWN NEB CHECKED JMF	COVINGTON WATER DISTRICT COVINGTON, WASHINGTON <b>222ND PL CORROSION CONTROL          FACILITY REHABILITATION</b>	<b>DEMOLITION DETAILS</b>	SCALE NTS JOB NO 2497002.01 DATE MAY 2026 SHEET OF DM-2
	NO	REVISION	DATE	BY	<b>Kennedy Jenks</b>					

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### GENERAL STRUCTURAL NOTES

- GENERAL**
- DESIGN AND CONSTRUCTION SHALL CONFORM TO THE 2021 WASHINGTON STATE BUILDING CODE (WSBC), AND THE REFERENCED BUILDING CODE STANDARDS. THESE NOTES AS WELL AS THE TYPICAL DETAILS APPLY TO ALL PARTS OF THE PROJECT, UNLESS NOTED OTHERWISE.
  - SHOP DRAWINGS FOR THIS CONTRACT SHALL BE COORDINATED WITH FAVORABLY REVIEWED EQUIPMENT MANUFACTURER'S DRAWINGS.
  - DIMENSIONS NOTED WITH AN ASTERISK, "\*", ARE TO BE COORDINATED WITH FAVORABLY REVIEWED SUBMITTAL BY THE EQUIPMENT MANUFACTURER.
  - DETAILS CALLED OUT WITH XXXXX SHALL REFER TO THE STANDARD DETAIL FOR WHICH THEY ARE SO NAMED.
  - ALL DIMENSIONS SHOWN ARE APPROXIMATE AND PROVIDED AS AN AID IN INTERPRETING THE ANTICIPATED EXISTING CONDITIONS.
  - FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO ORDERING OR FABRICATING ANY MATERIALS. NOTIFY THE ENGINEER OF ANY POSSIBLE DISCREPANCIES BEFORE CONSTRUCTION.
  - DO NOT DAMAGE, OVERCUT, SCRATCH, OR CRACK ANY PORTION OF THE EXISTING STRUCTURE NOT INTENDED TO BE MODIFIED. PROTECT AND PRESERVE PORTIONS OF THE EXISTING STRUCTURE NOT INTENDED TO BE MODIFIED.

- COMPLIANCE**
- OBTAIN ALL PERMITS AND INSPECTIONS REQUIRED BY THE AUTHORITY HAVING JURISDICTION AND AS DESCRIBED IN THE SPECIFICATIONS.
  - THE OWNER OR THE OWNER'S AUTHORIZED AGENT, INDEPENDENT OF THE CONTRACTOR, SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PROVIDE SPECIAL INSPECTIONS AND TESTING IN ACCORDANCE WITH CHAPTER 17 OF THE WSBC DURING CONSTRUCTION ON THE TYPES OF WORK SPECIFIED. STRUCTURAL SPECIAL INSPECTIONS AND TESTING SHALL GOVERN THE QUALITY, WORKMANSHIP AND REQUIREMENTS FOR MATERIALS COVERED. MATERIALS OF CONSTRUCTION AND TESTING SHALL CONFORM TO THE APPLICABLE STANDARDS LISTED IN THE REFERENCED BUILDING CODE AND CONTRACT DOCUMENTS.
  - UNLESS OTHERWISE NOTED, COORDINATE WITH THE SPECIAL INSPECTOR. NOTIFY THE SPECIAL INSPECTOR AT LEAST (5) FIVE WORKING DAYS PRIOR TO EACH SPECIAL INSPECTIONS AND TESTING REQUIRED. PROVIDE ACCESS TO THE WORK REQUIRED FOR SPECIAL INSPECTIONS AND TESTING.
  - DESIGN, DETAIL, FABRICATE, INSTALL AND MAINTAIN SHORING, SHEETING, AND BRACING, AND SLOPING AS NECESSARY TO MAINTAIN SAFE WORK. COMPLY WITH 29 CFR PART 1926 OSHA SUBPART P EXCAVATIONS AND TRENCHES REQUIREMENTS. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH APPLICABLE LAW, INCLUDING LOCAL ORDINANCES, WASHINGTON CIVIL CODE, THE WASHINGTON DEPARTMENT OF INDUSTRIAL SAFETY, AND OSHA REQUIREMENTS.
  - SPECIAL INSPECTION IN ACCORDANCE WITH THE WSBC 2021, SECTION 1704, SHALL BE REQUIRED AS INDICATED IN THE SPECIAL INSPECTION AND TESTING SCHEDULE ON THIS SHEET.

- SOIL AND FOUNDATIONS**
- GEOTECHNICAL INVESTIGATIONS FOR DESIGN PURPOSES FOR THIS PROJECT WERE NOT PROVIDED.
  - IN ACCORDANCE WITH THE WSBC CHAPTER 18 THE MINIMUM PRESUMPTIVE SOILS HAVE BEEN ASSUMED.
  - THE DESIGN BEARING CAPACITY OF THE SOILS IS 1,500 PSF. BEARING CAPACITY OF SOILS ARE FOR DEAD AND LIVE LOADS FOR FOUNDATIONS. BEARING VALUES MAY BE INCREASED BY ONE-THIRD WHEN TRANSIENT LOADS SUCH AS WIND OR SEISMIC LOADS ARE INCLUDED.

- LOADING CRITERIA**
- MINIMUM LOADING REQUIREMENTS PER CHAPTER 16 OF THE 2021 WASHINGTON STATE BUILDING CODE INCLUDING LATEST REVISION.
  - LIVE LOADS:
 

FLOOR, LIGHT STORAGE	125 PSF UNIFORM
HANDRAIL, GUARDRAIL, AND GRAB BARS	50 PLF AT TOP OF RAIL, 200 LBS POINT
FIXED LADDERS	300 LBS POINT, ANY DIRECTION
GRATING	100 PSF UNIFORM, 300 LBS POINT
HYPO TANK	16,500 LBS MAX OPERATING WEIGHT
HYPO SKID TANK	990 LBS MAX OPERATING WEIGHT
  - WIND LOAD:
 

BASIC WIND SPEED, $V_{ULT}$	105 MPH
NOMINAL WIND SPEED, $V_{ASD}$	81 MPH
EXPOSURE	C
RISK CATEGORY	III
  - SNOW LOAD:
 

BASIC GROUND SNOW LOAD, $P_g$	23.5 PSF
SNOW EXPOSURE COEFFICIENT, $C_e$	0.9
IMPORTANCE FACTOR, $I_s$	1.10
THERMAL FACTOR, $C_t$	1.2
SLOPE FACTOR, $C_s$	NOT APPLICABLE
FLAT ROOF SNOW LOAD, $P_f$	NOT APPLICABLE
DRIFT SURCHARGE, $P_d$	NOT APPLICABLE
WIDTH OF SNOW DRIFT, $w$	NOT APPLICABLE
  - SEISMIC LOAD:
 

THE SEISMIC DESIGN PARAMETERS HAVE BEEN DEVELOPED IN ACCORDANCE WITH THE 2021 WASHINGTON STATE BUILDING CODE, ASCE 7-16, AND SUPPLEMENT NO. 3. CONSIDERING EXCEPTION 1 IN SECTION 11.4.8 OF ASCE 7-16 WHERE A SITE-SPECIFIC GROUND MOTION ANALYSIS IS NOT REQUIRED.	
SEISMIC IMPORTANCE FACTOR, $I_s$	1.25
SEISMIC IMPORTANCE FACTOR, $I_p$	1.50
MAPPED RESPONSE PARAMETER, $S_{DS}$	1.197
MAPPED RESPONSE PARAMETER, $S_1$	0.411
SITE CLASS	D
DESIGN RESPONSE PARAMETER, $S_{DS}$	0.968
DESIGN RESPONSE PARAMETER, $S_{D1}$	0.776
SEISMIC DESIGN CATEGORY	D
LONG PERIOD TRANSITION PERIOD, $T_L$	6
  - FLOOD LOAD:
 

FLOOD ZONE	X (UNSHADED)
------------	--------------
  - RAIN LOAD:
 

RAIN INTENSITY, $i$	NO DATA AVAILABLE
---------------------	-------------------

- REINFORCING STEEL**
- REINFORCING BARS SHALL BE ASTM A615-GRADE 60.
  - WELDED WIRE FABRIC SHALL CONFORM TO ASTM A1064.
  - ARRANGEMENT AND DETAILING OF REINFORCING STEEL, INCLUDING BAR SUPPORTS AND SPACERS, SHALL BE IN ACCORDANCE WITH THE LATEST ACI 315 DETAILING MANUAL.
  - REINFORCING SHALL LAP IN ACCORDANCE WITH THE CONCRETE REINFORCEMENT SPlice TABLE, UNLESS OTHERWISE SHOWN. WHEN BARS OF DIFFERENT SIZE LAP TO EACH OTHER, SPlice LENGTH FOR THE SMALLER BAR CAN BE USED. DOWELS SHALL HAVE THE SAME SIZE AND SPACING AS THAT OF THE REINFORCING STEEL THEY ARE SPliced AND SHALL HAVE A MINIMUM LAP AS NOTED ABOVE. BAR SPICES SHALL BE STAGGERED.
  - HOOK REINFORCING BARS INTERRUPTED BY OPENINGS.
  - NO WELDING OF REINFORCING BARS SHALL BE PERMITTED, UNLESS APPROVAL IN WRITING IS OBTAINED FROM THE ENGINEER PRIOR TO CONSTRUCTION.
  - DIMENSIONS TO REINFORCEMENT ARE TO CENTERLINES, UNLESS NOTED OTHERWISE. CLEAR DISTANCE BETWEEN THE REINFORCING EDGE AND THE CONCRETE SURFACE, UNLESS NOTED OR SHOWN OTHERWISE, COVER FOR REINFORCING STEEL:
 

INTERIOR DRY SURFACES FOR STIRRUPS OR TIES	1-1/2 INCH
SIDE AND TOP FORMED SURFACES	2-INCH
TOP SURFACES EXPOSED TO EARTH, WATER, OR WEATHER	2-INCH
BOTTOM AND SIDES IN CONTACT WITH EARTH	3-INCH

- CONCRETE**
- CONCRETE MIX DESIGNS SHALL BE IN ACCORDANCE WITH ACI 318-19 AND ACI 301-16. THE MINIMUM 28-DAY COMPRESSIVE STRENGTH (PSI) AS NOTED IN THE TABLE BELOW.

CLASS (OR TYPE)	(f'c) at 28 DAYS	LOCATION	WATER TO CEMENT RATIO
D	4,500 PSI	ALL STRUCTURAL CONCRETE	0.45 MAX

- MIX DESIGN :**
- |              |  |
|--------------|--|
| TEST RECORDS | SUBMIT IN ACCORDANCE WITH ACI 301, CHAPTER 4. PROVIDE RESULTS BASED ON EITHER FIELD, TRIAL, OR HISTORICAL DATA |
| AIR CONTENT  | 4.5% ± 1% IN ACCORDANCE WITH ASTM C231   |
| SLUMP        | 3 TO 4 INCHES (MAX) IN ACCORDANCE WITH ASTM C143   |

- CEMENTITIOUS MATERIALS :**
- |                                       |  |
|---------------------------------------|--|
| MINIMUM CEMENTITIOUS MATERIAL CONTENT | 540 LBS PER CUBIC YARD (CLASS A OR TYPE A)   |
| CEMENT TYPE                           | ASTM C150, TYPE II (LOW ALKALI), OR ASTM C595, TYPE II (MS) BLENDED HYDRAULIC CEMENT. DO NOT USE TYPE II (S) OR TYPE II (SA) |
| FLYASH                                | ASTM C618, CLASS F, NOT TO EXCEED 15% OF TOTAL CEMENTITIOUS MATERIALS  |

- AGGREGATES:**
- |        |   |
|--------|---|
| COARSE | CONFORMED TO ASTM C33, 3/4-INCH MAX AGGREGATE |
| FINE   | CONFORM TO TABLE 1 OF ASTM C33                |

Sieve Size	3/4"	1-1/2"	1"	3/8"	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100	No. 200
90-100	100	55 - 100	45-75	35-60	27-46	20-35	12-25	3-15	0-5	0-2	

AGGREGATES SHALL BE NON-REACTIVE AND CONFORM TO ONE OF THE FOLLOWING TESTING REQUIREMENTS: ASTM C1260 OR ASTM C1293. SUBMIT TEST RECORDS DEMONSTRATING AGGREGATES USED IN CONCRETE IS NOT REACTIVE.

- ADMIXTURES:**
- |                |                   |
|----------------|-------------------|
| AIR ENTRAINING | ASTM C260         |
| WATER REDUCING | ASTM C494, TYPE A |

- OPENINGS, PIPE SLEEVES, CONDUITS, INSERTS AND OTHER EMBEDDED ITEMS SHALL NOT BE PLACED IN THE CONCRETE FOUNDATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE CIVIL, MECHANICAL, ELECTRICAL, LANDSCAPING, PLUMBING, INSTRUMENTATION AND OTHER PLANS FOR ITEMS REQUIRING SLEEVES AND EMBEDMENTS IN CONCRETE WHICH ARE NOT INDICATED OR SHOWN ON STRUCTURAL DRAWINGS. NO PIPES OR SLEEVES SHALL PASS THROUGH STRUCTURAL MEMBERS (UNLESS SPECIFICALLY SHOWN ON STRUCTURAL DRAWINGS). COORDINATE WITH EQUIPMENT MANUFACTURER'S DRAWINGS FOR ANCHORING LOCATIONS AND HOLE SIZE. THE ANCHORAGE TO THE EXISTING AND NEW CONCRETE SHALL FOLLOW THESE DOCUMENTS.
- CONCRETE ENCASE ALL PIPES AND CONDUITS UNDER CONCRETE SLABS, FOUNDATIONS, AND STRUCTURES. DO NOT PLACE CONDUIT OR PIPING INSIDE (PARALLEL TO REINFORCEMENT) OF STRUCTURAL FOUNDATIONS OR SLABS-ON-GRADE.
- UNLESS OTHERWISE NOTED, ALL EXPOSED EDGES AND CORNERS SHALL BE CHAMFERED 3/4-INCH.
- PROVIDE SF-2.0 FINISH AT FORMED SURFACES IN ACCORDANCE WITH ACI 301.
- PROVIDE LIGHT TROWEL FINISH AT HORIZONTAL SURFACES IN ACCORDANCE WITH ACI 301. DO NOT PROVIDE HARD TROWEL FINISH FOR CONCRETE WITH ENTRAINED AIR.
- CURING: CONCRETE CURING SHALL FOLLOW ACI 308. SUBMIT CURING PLAN TO THE ENGINEER FOR REVIEW.
- CONCRETE SHALL BE PLACED AND CURED BETWEEN 50 AND 90 DEGREES F. CONCRETE SHALL NOT BE PLACED WHEN THE AMBIENT TEMPERATURE EXCEEDS 90 DEGREES F.

- CONCRETE MIX DESIGN(S) SUBMITTAL REQUIREMENTS**
- DEVIATIONS TO THE SPECIFIED CONCRETE MIX DESIGN CONSTITUENTS SHALL BE CLEARLY INDICATED IN ALL CONCRETE MIX DESIGN SUBMITTALS.
  - CONCRETE MIX PRODUCT CERTIFICATIONS. SUBMIT CERTIFIED LABORATORY TEST RESULTS THAT THE MIX PROPORTIONS AND MATERIALS COMPLY WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
  - READY-MIX PLANT CERTIFICATIONS OR ASTM C94 CERTIFICATION DOCUMENTATION.
  - MIX DESIGN: PROVIDE MIX DESIGN(S) WITH IDENTIFICATION NUMBER, PROPORTIONS, AND CHARACTERISTICS. CLEARLY INDICATE CONCRETE TYPE FOR EACH PROPOSED MIX DESIGN WITH THE PROPOSED LOCATION OF USE.
  - MIX DESIGN TEST RESULTS:
    - SUBMIT CONCRETE TEST RESULTS FOR EACH PROPOSED CONCRETE MIX DESIGNS THAT COMPLY WITH THE CONTRACT DOCUMENTS AND ACI FOR THE 28-DAY COMPRESSIVE STRENGTH. CONCRETE MIX DESIGN PROPORTIONS SHALL BE ESTABLISHED ON THE BASIS OF FIELD EXPERIENCE OR TRIAL BATCH CONCRETE MIX DESIGNS FOR THE PROJECT WITH MATERIALS TO BE EMPLOYED IN ACCORDANCE WITH ACI 301, SECTION 4.2.3.
    - ALL TESTING INFORMATION SUBMITTED SHALL BE CERTIFIED FROM AN INDEPENDENT TESTING LABORATORY COMPLYING WITH ASTM C1017, AND SHALL NOT BE MORE THAN 90 DAYS OLD.
  - COARSE AND FINE AGGREGATES: TYPE, PIT OR QUARRY LOCATIONS, PRODUCERS' NAMES, GRADATIONS, SPECIFIC GRAVITY, AND EVIDENCE THE INFORMATION SUBMITTED IS NOT MORE THAN 90-DAYS OLD DEMONSTRATING COMPLIANCE WITH THE MATERIAL REQUIREMENTS OF THE CONTRACT DOCUMENTS.
  - ADMIXTURES: TYPE, BRAND NAMES, PRODUCERS, MANUFACTURER'S TECHNICAL DATA, ASTM IDENTIFICATION AND COMPLIANCE, PRODUCT DATA SHEETS, SAFETY DATA SHEETS, AND CERTIFICATION OF DATA.
  - WATER: PROVIDE INFORMATION ON THE SOURCE OF SUPPLY AND COMPLIANCE WITH THE SPECIFIED STANDARDS.
  - DESCRIPTION OF CONVEYING AND PLACING EQUIPMENT.

- STAINLESS STEEL (STRUCTURAL)**
- STAINLESS STEEL CONSTRUCTION SHALL CONFORM TO AISC.
  - STAINLESS STEEL SHAPES: TYPE 304 (Fy = 30 KSI) OR TYPE 316 (Fy = 30 KSI).
  - BOLTED JOINTS IN STAINLESS STEEL:
    - ALL BOLTS SHALL BE TYPE 304, ALLOY GROUP 1 CW1, ASTM F593C. PROVIDE NUTS AND WASHERS AT ALL BOLTED CONNECTIONS.
    - NUTS SHALL BE HEX OR HEAVY HEX HEAD AND SHALL MEET THE DIMENSIONAL REQUIREMENTS OF ASME B18.2.2. NUT MATERIAL AND SHALL CONFORM TO: TYPE 304, ALLOY GROUP 1 CW1 (ASTM F594C) AND CW2 (ASTM F594D).
    - WASHERS SHALL BE (ROUND PER ASME B18.2.1); TYPE 304, STAINLESS STEEL.
  - WELDING OF STAINLESS STEEL:
    - WELD ELECTRODES (SMAW): E308L-XX (AWS A5.4) OR ER308L (AWS A5.9)
    - WELD FILLER METAL SHALL BE: 308 OR 316 (METAL GROUP B, 75 KSI)
    - WELDING SHALL CONFORM TO THE PROVISIONS OF THE LATEST STRUCTURAL WELDING CODE - STAINLESS STEEL
    - WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS. SUBMIT PROCEDURE QUALIFICATION RECORD (PQR), WELDING PROCEDURE SPECIFICATION (WPS), AND WELDER PERFORMANCE QUALIFICATION RECORD (WPQR).
  - CLEAN PER ASTM A380 AND PASSIVATE PER ASTM A967 AT ALL WELDS.

- STRUCTURAL STEEL**
- UNLESS OTHERWISE NOTED, STRUCTURAL STEEL SHALL CONFORM TO ASTM A36. W- AND WT- SHAPES SHALL CONFORM TO ASTM A992. PLATES CONNECTING TO W- AND WT- SHAPES SHALL CONFORM TO ASTM A572 GRADE 50. HOLLOW STRUCTURAL SECTIONS (HSS) SHALL CONFORM TO ASTM A500 GRADE B. STEEL PIPE SHALL CONFORM TO ASTM A53 TYPE E OR S.
  - ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERRECTED BY AN AISC CERTIFIED FABRICATOR IN CONFORMANCE WITH THE LATEST AISC SPECIFICATION PARTS 1 THRU 4 AND THE "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS"
  - CONNECTIONS AND BOLTS SHALL CONFORM TO THE AISC ALLOWABLE STRESS DESIGN SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM F3125, GRADE A325 BOLTS. CONNECTIONS SHALL USE ASTM F3125, GRADE A325 BOLTS UNLESS NOTED OTHERWISE. PROVIDE WASHERS AT ALL CONNECTIONS WITH OVERSIZE OR SHORT SLOTTED HOLES.
  - WELD ELECTRODES SHALL CONFORM TO AWS A5.1 OR A5.5 E70XX ELECTRODES. WELDING SHALL BE DONE BY CERTIFIED WELDERS. WELDING SHALL USE ONLY APPROVED ELECTRODES. WELDING SHALL CONFORM TO THE PROVISIONS OF THE LATEST STRUCTURAL WELDING CODE (AWS D1.1).
  - UNLESS NOTED OTHERWISE, STRUCTURAL STEEL COMPONENTS AND CONNECTIONS SHALL BE PAINTED OR PROTECTIVE COATED IN ACCORDANCE WITH THE SPECIFICATIONS.

- DEFERRED SUBMITTALS**
- IN ACCORDANCE WITH THE 2021 WSBC, SECTION 107.3.4.1 SUBMITTAL DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ENGINEER WHO SHALL REVIEW THEM AND FORWARD THEM TO THE AUTHORITY HAVING JURISDICTION WITH A NOTATION INDICATING THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND THAT THEY HAVE BEEN FOUND TO BE IN GENERAL CONFORMANCE WITH THE DESIGN. DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL OR AUTHORITY HAVING JURISDICTION.
  - PRIOR TO ORDERING OR FABRICATION OF ANY MATERIALS, AND PRIOR TO THE INSTALLATION OF THE INDICATED STRUCTURAL ELEMENTS, EQUIPMENT DISTRIBUTIONS SYSTEM, OR COMPONENT AND ANCHORAGE, SUBMIT THE REQUIRED CALCULATIONS, SUPPORTING INFORMATION, AND DRAWINGS FOR REVIEW AND ACCEPTANCE BY THE ENGINEER. ALL DEFERRED SUBMITTALS AND CALCULATIONS SHALL BE IN ACCORDANCE WITH THE 2021 WSBC, INCLUDING THE DESIGN CRITERIA AND SPECIFICATIONS WITHIN THESE CONSTRUCTION DOCUMENTS. ALL DEFERRED SUBMITTAL CALCULATIONS AND DRAWINGS SHALL BE SEALED AND SIGNED BY A REGISTERED PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF WASHINGTON. THE FOLLOWING IS A LIST OF DEFERRED SUBMITTALS THAT ARE EXPECTED TO BE SUBMITTED:

DEFERRED SUBMITTAL ITEMS
MECHANICAL AND ELECTRICAL EQUIPMENT ANCHORAGE
CONDUIT SUPPORTS, BRACING AND ANCHORAGE
PIPE SUPPORTS AND ANCHORAGE NOT SPECIFICALLY DETAILED ON THE DRAWINGS
HYPO TANK AND HYPO SKID ANCHORAGE

**SPECIAL INSPECTIONS AND TESTING TABLES:**

CONCRETE CONSTRUCTION REQUIRED SPECIAL INSPECTIONS AND TESTING (2021 WSBC, TABLE 1705.3)						
SPECIAL INSPECTION REQUIRED	TYPE	CONT	PERIODIC	REFERENCED STANDARD (1)	WSBC REF	
YES	1	INSPECT REINFORCEMENT AND VERIFY PLACEMENT.	--	X	ACI 318, CH. 20, 25.2, 25.3, 26.6.1 - 26.6.3	1908.4
YES	2	REINFORCING BAR WELDING (2): (a) VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706. (b) INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16". (c) INSPECT ALL OTHER WELDS.	--	X	AWS D1.4, 26.26.4	--
YES	3	INSPECT CAST-IN ANCHORS	--	X	ACI 318, 26.13.3.3	--
YES	4	INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS (2): (a) ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS. (b) MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN ITEM (4a), ABOVE.	X	--	ACI 318, 26.13.3.2	--
YES	5	VERIFY REQUIRED DESIGN MIX.	--	X	ACI 318, CH.19, 26.4.3, 26.4.4	1904.1, 1904.2
YES	6	PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, SLUMP, AIR CONTENT, AND TEMPERATURE.	X	--	ASTM C31, ASTM C172, ACI 318, 26.5, 26.12	--
YES	7	INSPECT CONCRETE PLACEMENT FOR PROPER TECHNIQUES.	X	--	ACI 318, 26.5	--
YES	8	VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	--	X	ACI 318, 26.5.3	--
YES	9	INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE FORMED.	--	X	ACI 318, 26.11.2(b)	--

**NOTES:**

- WHERE APPLICABLE, SEE SECTION 1705.13 OF THE 2021 WASHINGTON STATE BUILDING CODE.
- REQUIREMENTS FOR SPECIAL INSPECTION SHALL BE INCLUDED IN THE RESEARCH REPORT FOR THE ANCHOR ISSUED BY AN APPROVED SOURCE FOLLOWING ACI 318, CH. 26.13, WHERE SPECIFIC REQUIREMENTS ARE NOT PROVIDED, SPECIAL INSPECTION SHALL BE SPECIFIED BY THE ENGINEER AND SHALL BE APPROVED BY THE AUTHORITY HAVING JURISDICTION PRIOR TO THE COMMENCEMENT OF THE WORK.
- SPECIAL INSPECTIONS OF WELDING AND THE QUALIFICATIONS OF SPECIAL INSPECTORS FOR REINFORCING BARS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF AWS D1.4 FOR SPECIAL INSPECTION AND OF AWS D1.4 FOR SPECIAL INSPECTOR QUALIFICATION.

**CONCRETE CONSTRUCTION REQUIRED FIELD TESTING SCHEDULE**

TESTING TASK	TESTING REQUIRED	FREQUENCY	REFERENCE STANDARD
COMPRESSIVE STRENGTH	YES	(6) SIX 6"Ø CYLINDERS PER 100 CUBIC YARDS, 2 @ 7 DAYS, 2 @ 28 DAYS, HOLD 2 IN RESERVE. EACH MIX PLACED.	ASTM C39
SLUMP TEST	YES	TEST PERFORMED ON EACH 50 CUBIC YARD, OR A FRACTION THEREOF, TEST EACH SAMPLE FOR STRENGTH	ASTM C143
AIR CONTENT	YES	PERFORMED ON CONCRETE SAMPLES USED FOR STRENGTH TESTS. FIRST THREE (3) BATCHES IN THE PLACEMENT UNTIL THREE (3) CONSECUTIVE BATCHES HAVE AIR CONTENTS WITHIN THE RANGE SPECIFIED. ADJUST FREQUENCY TO EVERY FIFTH BATCH.	ASTM C231
TEMPERATURE	YES	AT EACH CONCRETE SAMPLE USED FOR STRENGTH TESTS. VERIFY AMBIENT TEMPERATURE, TEMPERATURE AT THE TIME OF ARRIVAL, AND TEMPERATURE OF FRESHLY PLACED CONCRETE	ASTM C1064
UNIT WEIGHT	YES	PERFORMED ON CONCRETE SAMPLES USED FOR STRENGTH TESTS. USE CALIBRATED EQUIPMENT TO PERFORM TESTS.	ASTM C138
SHRINKAGE	NO	(3) STANDARD 4" X 4" X 11" TEST PRISMS FOR EVERY 200 CUBIC YARDS, 28-DAY DRYING SHRINKAGE FIELD TEST: 0.065%	ASTM C157 MODIFIED

POST-INSTALLED ANCHORS IN MASONRY SHALL BE SPECIAL INSPECTED IN ACCORDANCE WITH THE APPLICABLE, CURRENT, AND RELATIVE ICC-ES OR IAPMO-UES REPORT FOR THAT SPECIFIC POST-INSTALLED ANCHOR SYSTEM.

**ABBREVIATIONS**

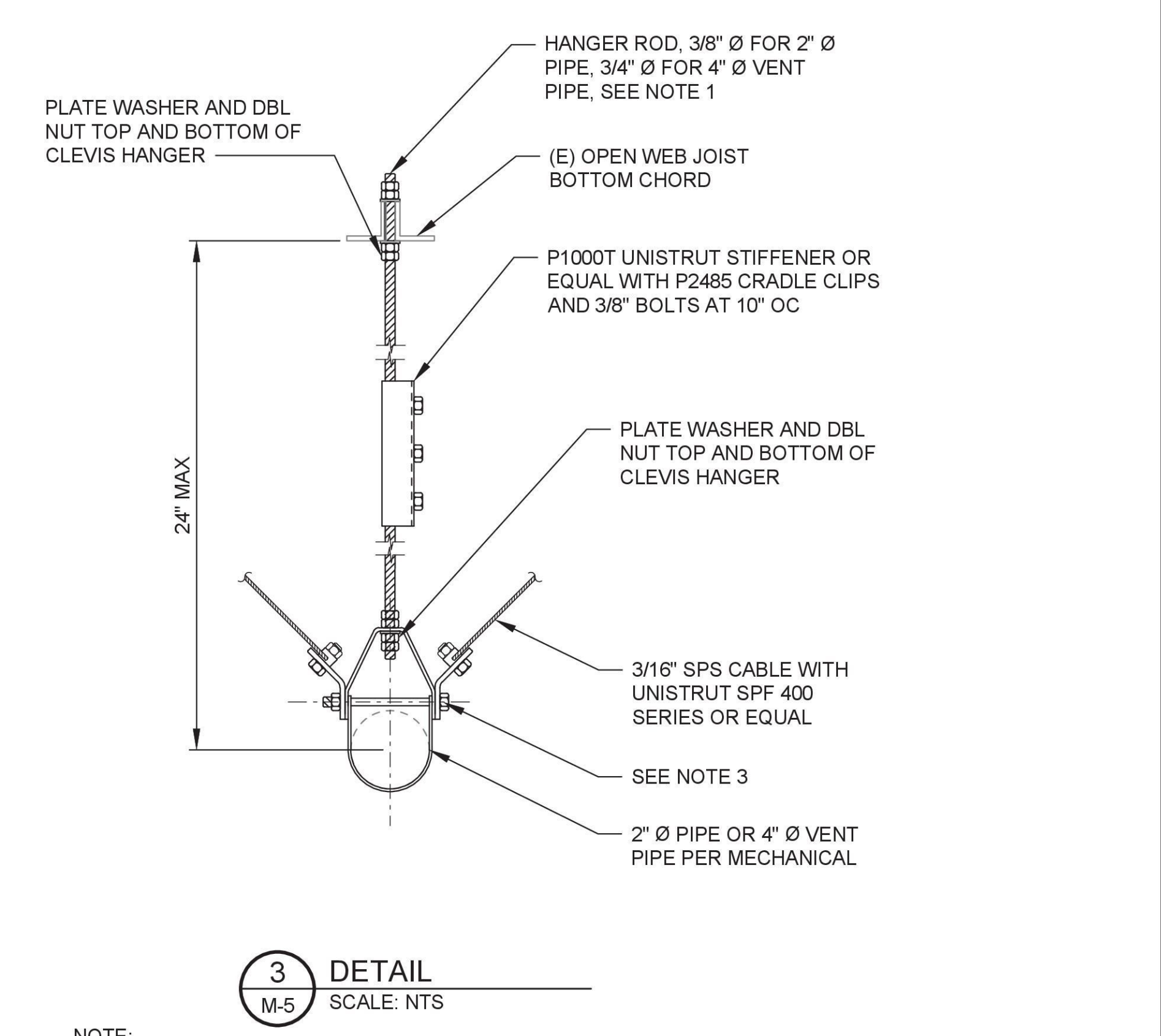
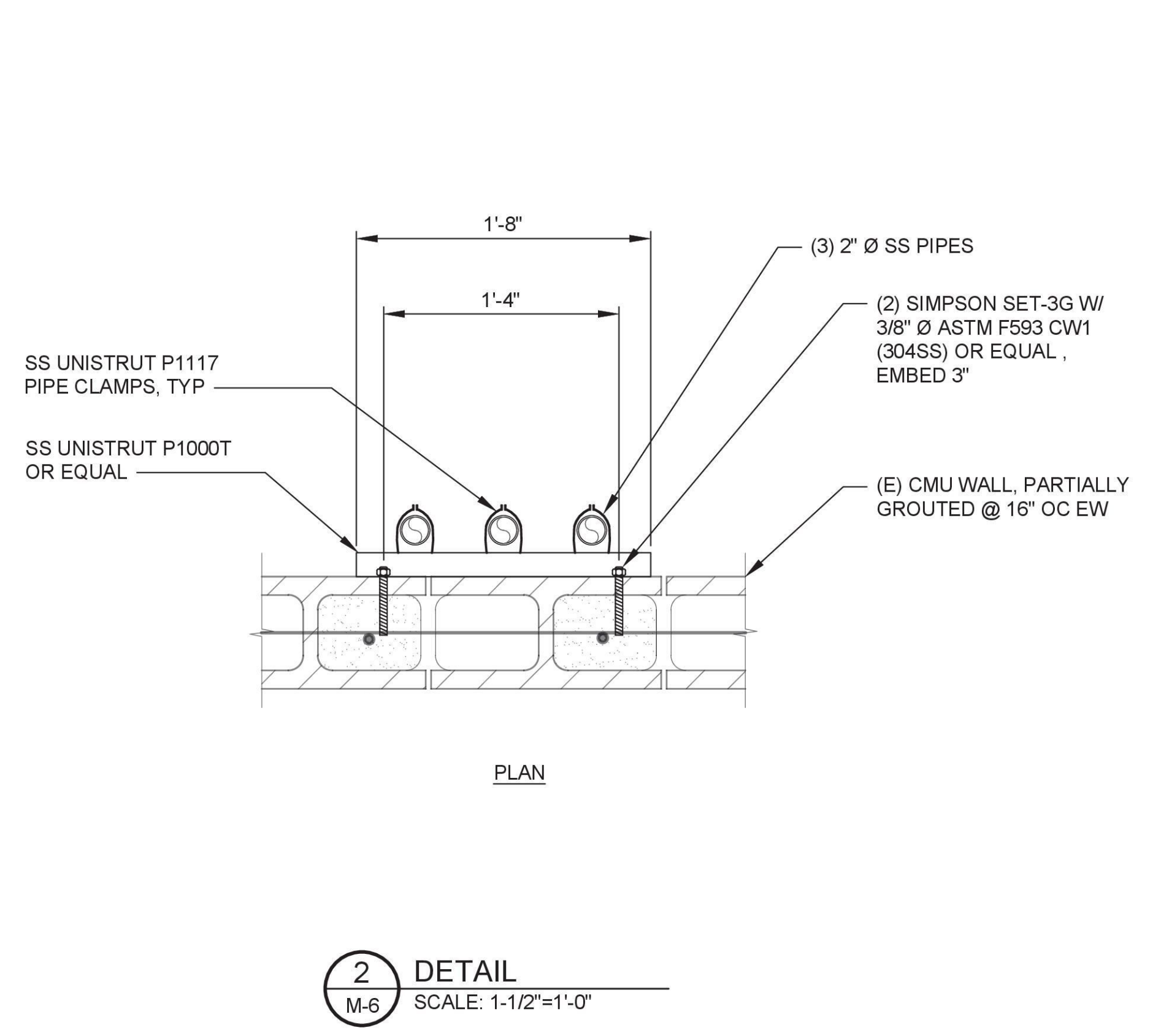
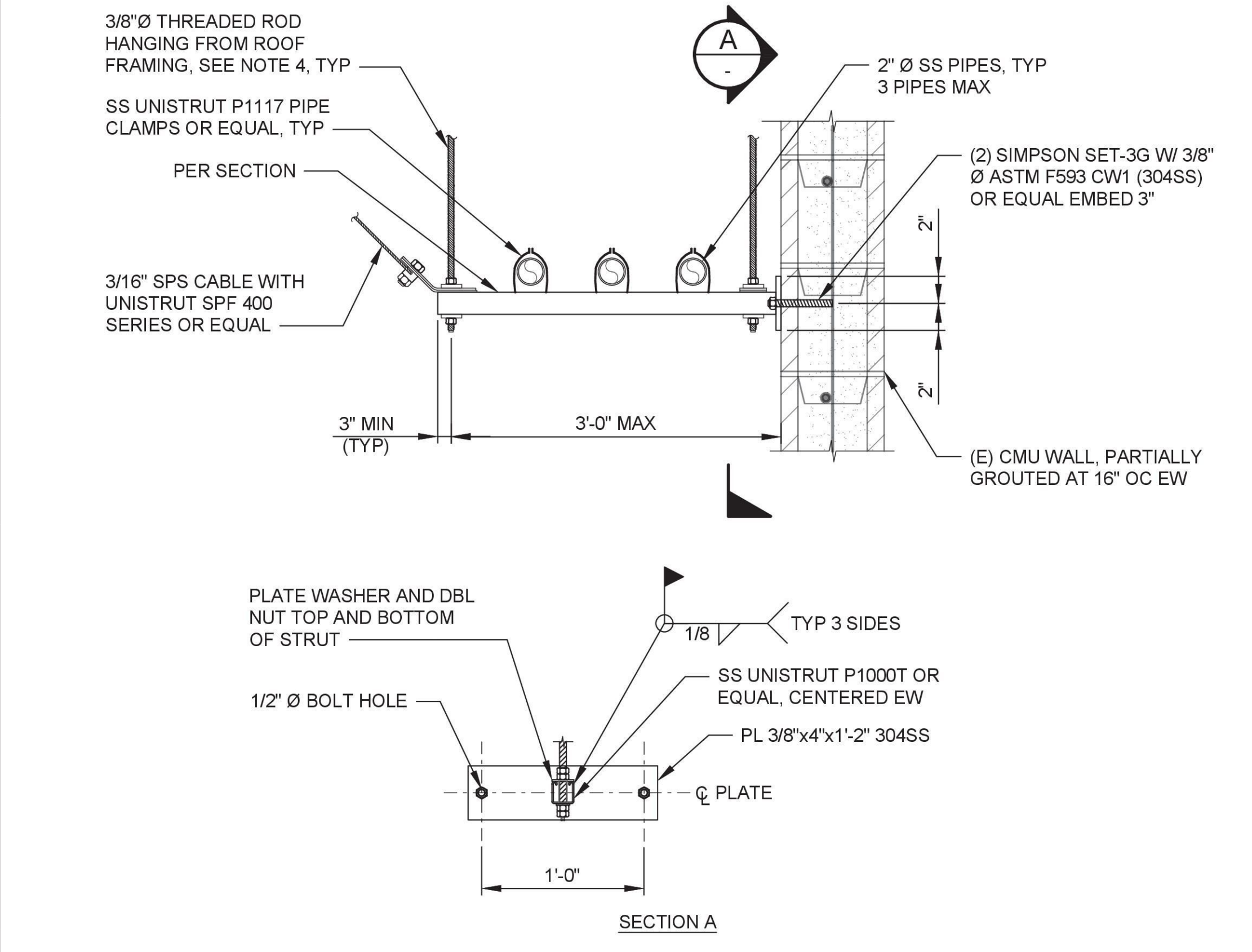
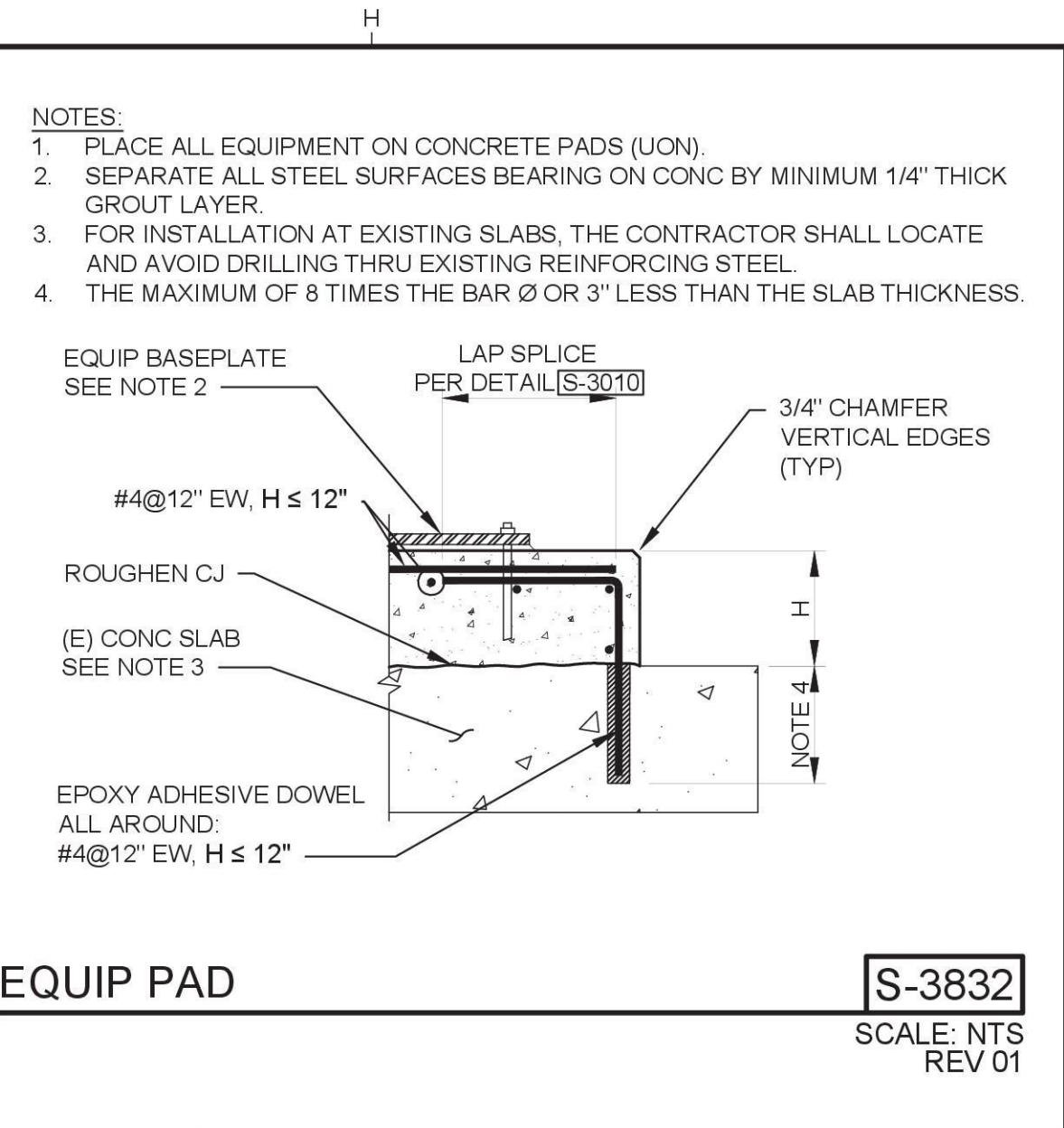
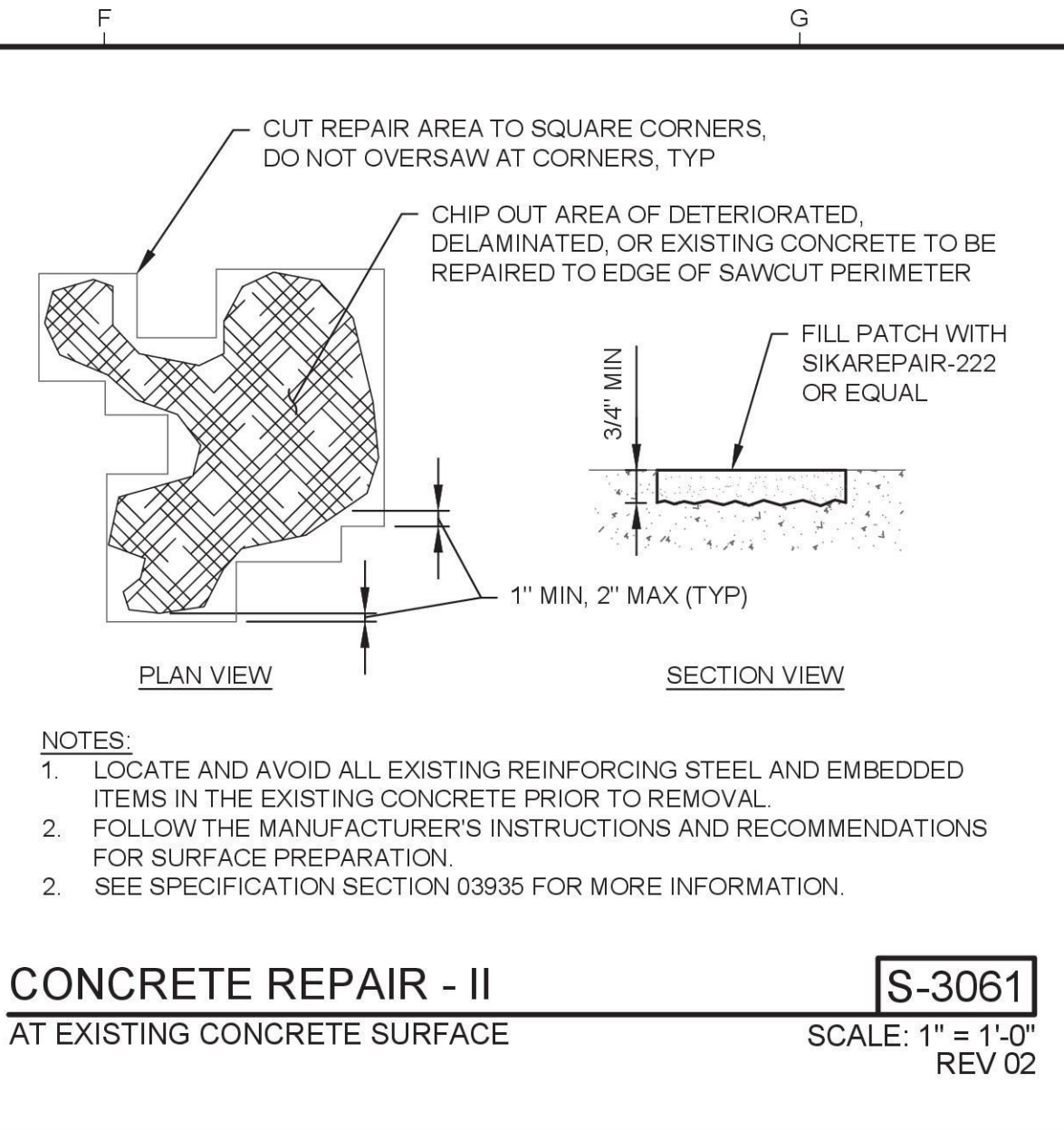
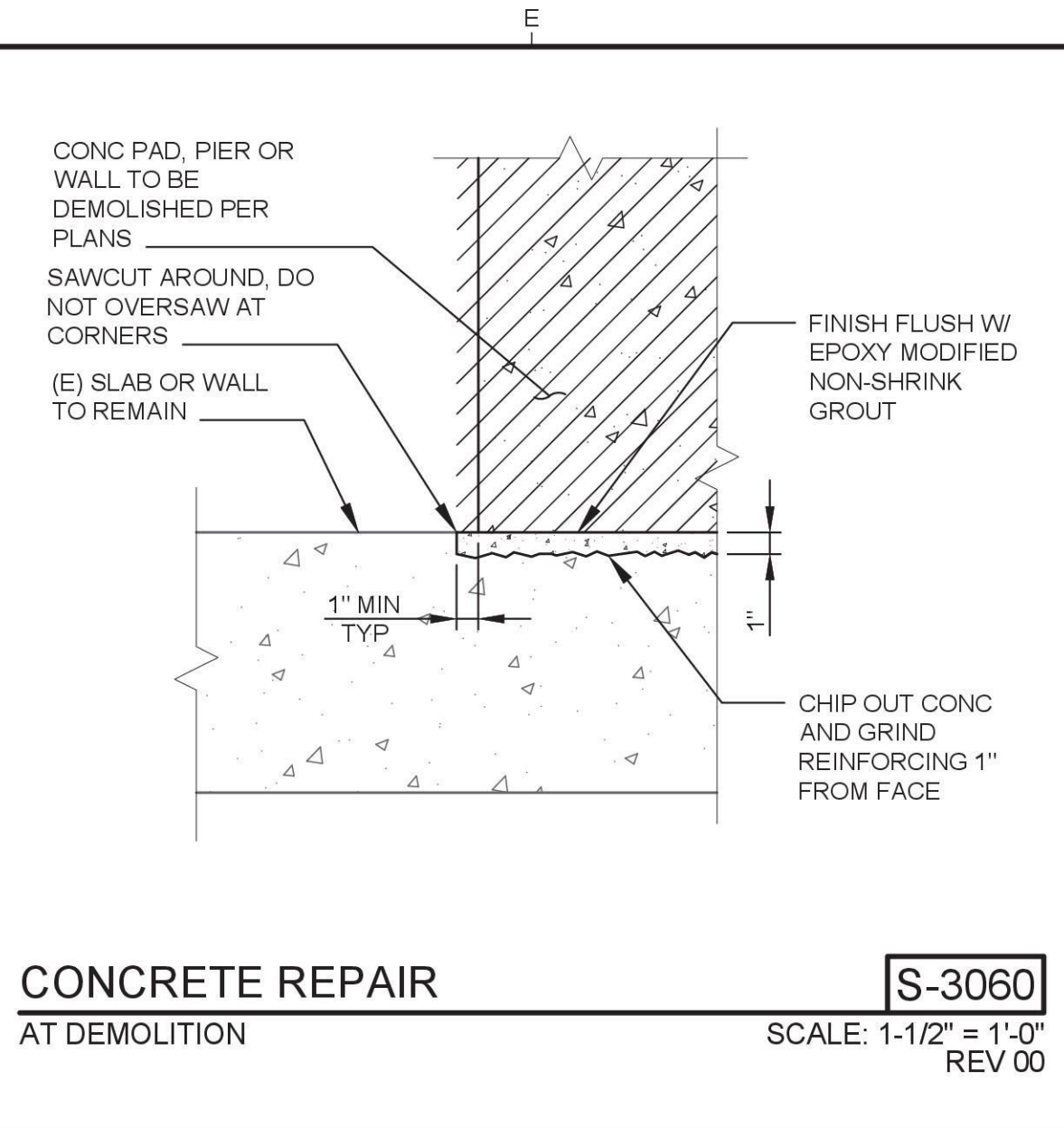
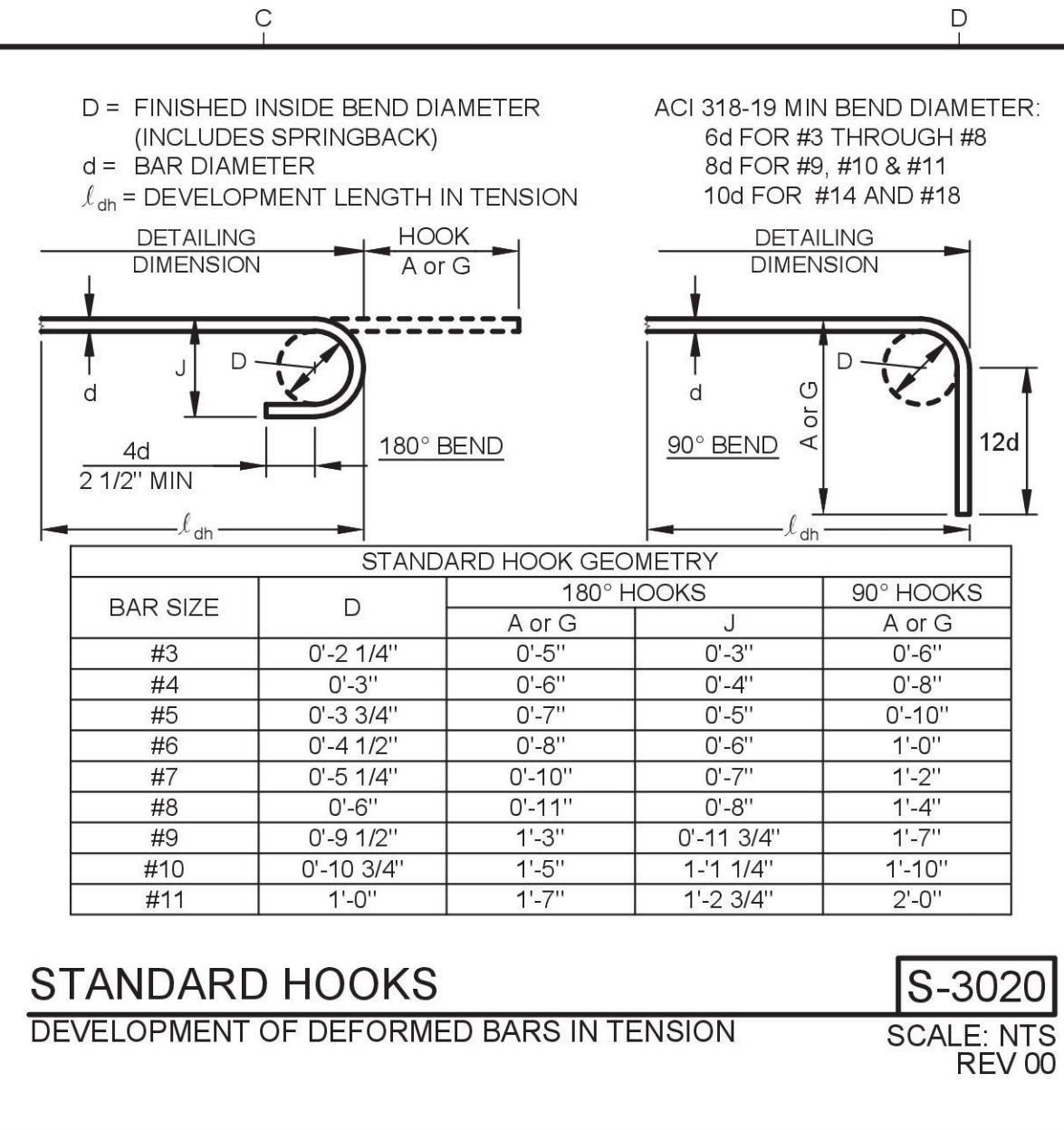
&	AND	JT	JOINT
@	AT		
#	NUMBER	KIP	1,000 POUNDS
Ø	DIAMETER	KSI	KIPS PER SQUARE INCH
L <sub>d</sub>	DEVELOPMENT LENGTH		
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY TESTING AND MATERIAL OFFICIALS	L, Z	ANGLE
		LEBSF	POUNDS PER SQUARE FOOT
		LL	LIVE LOAD
	AMERICAN CONCRETE INSTITUTE	LLH	LONG LEG HORIZONTAL
		LLV	LONG LEG VERTICAL
		LLBB	LONG LEG BACK-TO-BACK
ADDIT	ADJACENT	LCN/IT	LONGITUDINAL
ADJ	ADJACENT	LT	LIGHT
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	LW	LIGHT WEIGHT
ASIS	AMERICAN IRON AND STEEL INSTITUTE		
		MATL	MATERIAL
		MAX	MAXIMUM
AITC	AMERICAN INSTITUTE OF TIMBER CONSTRUCTION	MB	MACHINE BOLT
		MC	MOISTURE CONTENT
ALUM	ALUMINUM	MC	MISCELLANEOUS CHANNEL
ALT	ALTERNATE	MECH	MECHANICAL
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	MIN	MINIMUM
APA	AMERICAN PLYWOOD ASSOCIATION	MISC	MISCELLANEOUS
		MSE	MECHANICALLY STABILIZED EARTH
APPROX	APPROXIMATE		
ARCH	ARCHITECTURAL		
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	N/A	NOT APPLICABLE
		(N)	NEW
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	NDT	NON-DESTRUCTIVE TEST(ING)
AWS	AMERICAN WELDING SOCIETY	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
AWWA	AMERICAN WATER WORKS ASSOCIATION	NIC NO.	NOT IN CONTRACT NUMBER
		NOM	NOMINAL
		NS	NEAR SIDE
B/	BOTTOM OF	NSG	NON-SHRINK GROUT
BB(S)	BEARING BAR(S)	NTS	NOT TO SCALE
BLKG	BLOCKING		
BLDG	BUILDING		
BM	BEAM	OC	ON CENTERS
BM-1	BEAM MEMBER 1	OD	OUTSIDE DIAMETER
BN	BOUNDARY NAILING	OPH	OPPOSITE HAND, OVERHEAD
BT	BOTTOM	OPNG(S)	OPENING(S)
BP	BASE PLATE	OPP	OPPOSITE
BS	BOTH SIDES	OSHA	OCCUPATIONAL SAFETY AND HEALTH ASSOCIATION
BTWN	BETWEEN		
		PAF	POWDER/POWER ACTUATED FASTENER
C	CHANNEL	PER	PERIODIC
CALC/S	CALCULATIONS	PEMB	PRE-ENGINEERED METAL BUILDING
CC/CIC	CENTER-TO-CENTER		
CBC	CALIFORNIA BUILDING CODE	PL	PLATE
CIP	CAST IN PLACE	PLF	POUND PER LINEAL FOOT
CJ	CONSTRUCTION JOINT	PP	PARTIAL PENETRATION
CJP	COMPLETE JOINT PENETRATION	PSF	POUND PER SQUARE FOOT
CL	CENTERLINE	PSI	POUND PER SQUARE INCH
CLSM	CONTROLLED LOW STRENGTH MATERIAL	PT(S)	POINT(S)
CLR	CLEAR	PT	PRESSURE TREATED
CNJ	CONTROL JOINT		
COL	COLUMN		
CONC	CONCRETE	R, RAD	RADIUS
CONN	CONNECTION	RECT	RECTANGLE, RECTANGULAR
CONST	CONSTRUCTION	REINF	REINFORCING, -MENT
CONT	CONTINUOUS	REQD	REQUIRED
		SCH	SCHEDULE
DBL	DOUBLE	SF	SQUARE FOOT
DIA	DIAMETER	SH	SHEET
DIAG	DIAGONAL	SIM	SIMILAR
DIM	DIMENSION	SLBB	SHORT LEGS BACK-TO-BACK
DL	DEAD LOAD	SLH	SHORT LEG HORIZONTAL
DWN	DRAWING	SLV	SHORT LEG VERTICAL
DWG(S)	DRAWINGS	SMS	SHEET METAL SCREW
		SPEC(S)	SPECIFICATION(S)
(E)	EXISTING	SQ	SQUARE
EA	EACH	SS	STAINLESS STEEL
EF	EACH FACE	SSD	SATURATED SURFACE DRY
EL	ELEVATION	STAG	STAGER
ELEC	ELECTRICAL	STD	STANDARD
EMBED	EMBEDMENT	STIFF	STIFFENER
EN	EDGE NAILING	STL	STEEL
EQ	EQUAL	STRUC	STRUCTURE
EQUIP	EQUIPMENT	SUSP	SUSPENDED
ES	EACH SIDE	SYM	SYMMETRICAL
EW	EACH WAY		
EXP	EXPANSION	T/	TOP OF
EXT	EXTERIOR	T&B	TOP AND BOTTOM
		TS	STRUCTURAL TUBING
(F)	FUTURE	TYP	TYPICAL
FD	FLOOR DRAIN		
FF	FINISH FLOOR		
FIN	FINISH		
FLR	FLOOR	UNON	UNLESS OTHERWISE NOTED
FN	FIELD NAILING	UT	ULTRASONIC TESTING
FNDN	FOUNDATION		
FRP	FIBERGLASS REINFORCED PLASTIC	VERT	VERTICAL
		VIF	VERIFY IN FIELD
FS	FAR SIDE	W/	WITH
FT	FOOT/FEET	W/O	WITHOUT
FTG	FOOTING	W, WF	WIDE FLANGE
		WCLB	WEST COAST LUMBER
			INSPECTION BUREAU
GA	GAGE/AUGE	WP	WORK POINT
GLV	GALVANIZED	WSBC	WASHINGTON STATE BUILDING CODE
GLB	GLULAM BEAM		
		WSTP	WATERSTOP
HDG	HOT DIP GALVANIZE(D)	WT	WEIGHT, STRUCTURAL TEE
HORIZ	HORIZONTAL	WWF	WELDED WIRE FABRIC
HSS			

LAP SPLICE LENGTH FOR REINFORCING BARS IN WALLS, SLABS & FTNGS (INCHES)

BAR SIZE	CONCRETE COMPRESSIVE STRENGTH, $f_c \geq 3,000$ PSI		COVER=1.00 IN.		COVER=1.50 IN.		COVER=2.00 IN.	
	IMPERIAL [SOFT METRIC]	TOP <sup>4</sup>	OTHER	TOP <sup>4</sup>	OTHER	TOP <sup>4</sup>	OTHER	
#3 [#10]	17	13	17	13	17	13	13	
#4 [#13]	23	17	23	17	23	17	17	
#5 [#16]	33	26	28	22	28	22	22	
#6 [#19]	46	35	34	26	34	26	26	
#7 [#22]	74	57	55	43	49	38	38	
#8 [#25]	93	72	70	54	56	43	43	
#9 [#32]	113	87	86	66	69	53	53	
#10 [#32]	137	106	105	81	85	66	66	
#11 [#36]	162	125	125	97	102	79	79	

NOTES:  
 1. THE LAP SPLICE LENGTH SCHEDULE IS SPECIFIC TO TENSION DEVELOPMENT OF REINFORCING STEEL WITH A STANDARD HOOK AND TENSION LAP SPLICE LENGTHS FOR WALLS, SLABS, AND FOOTINGS IN ACCORDANCE WITH ACI 318-19, CHAPTER 25 AND ACI 350-20, CHAPTER 12.  
 2. LAP SPLICE LENGTHS ARE CLASS B LAPS, IN INCHES, FOR GRADE 60 REINFORCEMENT IN NORMAL WEIGHT CONCRETE WITH  $f_c$  GREATER THAN OR EQUAL TO 3,000 PSI.  
 3. CENTER-TO-CENTER SPACING OF REINFORCEMENT SHALL BE GREATER THAN TWICE THE CONCRETE COVER PLUS ONE BAR DIAMETER.  
 4. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE CAST BELOW BARS.  
 5. FOR BARS OF DIFFERENT SIZES, THE LAP SPLICE LENGTHS OF THE SMALLER BAR SHALL BE USED.  
 6. STAGGER LAPS A DISTANCE OF ONE-HALF THE SPLICE LENGTH, UON.  
 7. DO NOT LOCATE LAP SPLICE IN CONSTRUCTION JOINTS (CJ), EXPANSION JOINTS (EJ), OR CONTRACTION JOINTS (CNJ). LOCATE THE START OF LAPS AT LEAST 2' PAST JOINTS UON, TYP.

**REINFORCING LAP SPLICE SCHEDULE** **S-3010**  
 FOR CAST-IN-PLACE CONCRETE SCALE: NTS REV 00



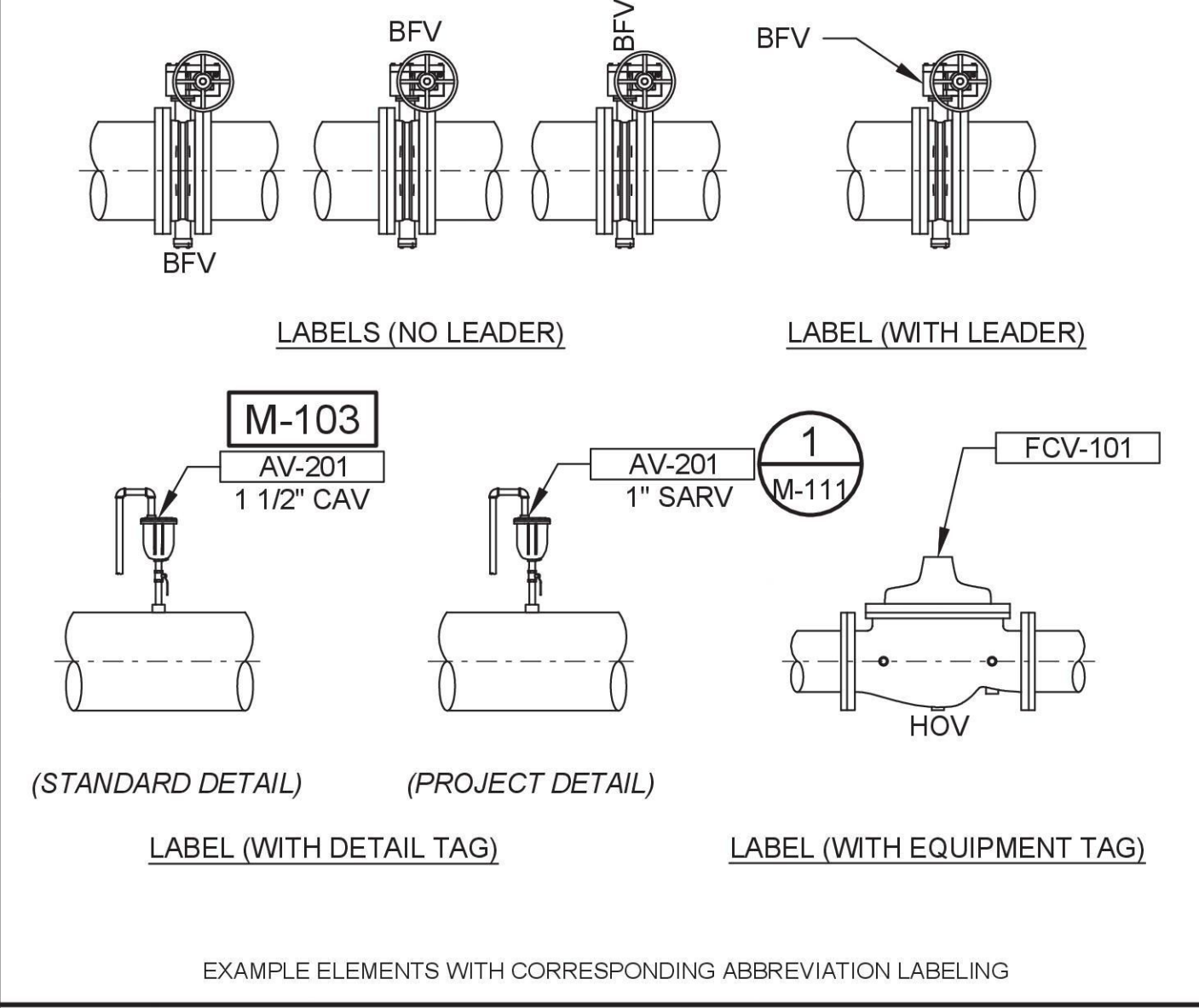
- NOTE:**
- VERIFY ALL EXISTING CONDITIONS PRIOR TO ORDERING AND FABRICATING ANY MATERIALS. CONTACT THE ENGINEER FOR ANY DISCREPANCIES.
  - ANCHORS TO BE LOCATED IN GROUTED CMU CELLS. LOCATE EXISTING REINFORCEMENT PRIOR TO INSTALLATION OF POST-INSTALLED ANCHORS.
  - MAXIMUM SPACING = 8'-0" OC.
  - PROVIDE ISOLATION USING NYLON WASHER OR EQUAL WHERE DISSIMILAR METALS OCCUR.
  - ALTERNATIVE TO WALL ANCHORING, PROVIDE 3/16" SPS CABLE BRACING WITH UNISTRUT SPF 400 SERIES OR EQUAL. TOTAL OF TWO PER HANGER ROD OR FOUR PER STRUT. SPLAY 45 DEGREES TYPICAL. BOLT BETWEEN EXISTING BOTTOM CHORD DOUBLE ANGLES SIMILAR TO HANGER ROD.
  - LOADS TO EXISTING BOTTOM CHORD NOT TO EXCEED 100 LBS.

- NOTE:**
- VERIFY EXISTING CONDITIONS PRIOR TO ORDERING AND FABRICATING ANY MATERIALS. CONTACT THE ENGINEER FOR ANY DISCREPANCIES.
  - ANCHORS TO BE LOCATED IN GROUTED CMU CELLS. LOCATE EXISTING REINFORCEMENT PRIOR TO INSTALLATION OF POST-INSTALLED ANCHORS.
  - MAXIMUM SPACING = 8'-0" OC.

- NOTE:**
- VERIFY ALL EXISTING CONDITIONS PRIOR TO ORDERING AND FABRICATING ANY MATERIALS. CONTACT THE ENGINEER FOR ANY DISCREPANCIES.
  - PLACE HANGER ROD AT EACH EXISTING TRUSS. EXISTING TRUSS SPACING 5'-0" O.C. MAXIMUM.
  - | PIPE DIA. | PIPE MATERIAL | MCMaster-CARR HANGER PART ID OR EQUAL |
|-----------|---------------|---------------------------------------|
| 2"        | 316 SS        | 3309T723                              |
| 4"        | PVC           | 3037T81                               |
  - PROVIDE 3/16" CABLE BRACING WITH UNISTRUT 400 SERIES OR EQUAL. TOTAL OF FOUR PER HANGER ROD. SPLAY 45 DEGREES TYPICAL. BOLT BETWEEN EXISTING BOTTOM CHORD DOUBLE ANGLES SIMILAR TO HANGER ROD.
  - LOADS TO EXISTING BOTTOM CHORD NOT TO EXCEED 100 LBS.

<p><b>ISSUED FOR BID</b></p> <p>ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS. USERS OF THIS DOCUMENT IN EDITABLE ELECTRONIC FORMATS ARE CAUTIONED AGAINST USE WITHOUT FIRST DETERMINING WHETHER CHANGES MAY HAVE BEEN MADE SUBSEQUENT TO ITS PREPARATION.</p>	NO	REVISION	DATE	BY	<p>SCALES</p> <p>0" = 1"</p> <p>0" = 25mm</p> <p>IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.</p>		<p>DESIGNED: NJM</p> <p>DRAWN: AW</p> <p>CHECKED: PIB</p>	<p>COVINGTON WATER DISTRICT                  COVINGTON, WASHINGTON</p> <p>222ND PL CORROSION CONTROL                  FACILITY REHABILITATION</p> <p><b>KJ</b> Kennedy Jenks</p>	<p>SCALE: AS NOTED</p> <p>JOB NO: 2497002.01</p> <p>DATE: MAY 2026</p> <p>SHEET OF: S-2</p>
	<p>STRUCTURAL DETAILS</p>								

### MECHANICAL ELEMENT IDENTIFICATION



### MECHANICAL ELEMENT ABBREVIATIONS

ARV	AIR RELEASE VALVE (WATER)
AVV	AIR VACUUM VALVE
BCV	BALL CHECK VALVE
BFP	BACKFLOW PREVENTER
BFV	BUTTERFLY VALVE
BV	BALL VALVE
CAV	AIR RELEASE/VACUUM RELEASE COMBINATION VALVE (WATER)
CV	SWING CHECK VALVE
DBC	DUCKBILL CHECK VALVE
DCV	DOUBLE DISC CHECK VALVE
DJ	DISMANTLING JOINT
DV	DIAPHRAGM VALVE
FCA	FLANGED COUPLING ADAPTER
FIT	FLOW INDICATING TRANSMITTER
FRC	FLEXIBLE RUBBER COUPLING
FT	FLOW TRANSMITTER (NO LOCAL INDICATION)
GLV	GLOBE VALVE
GV	GATE VALVE
HOV	HYDRAULICALLY OPERATED VALVE
KGV	KNIFE GATE VALVE
NV	NEEDLE VALVE
PI	PRESSURE INDICATOR (GAUGE)
PIT	PRESSURE INDICATING TRANSMITTER
PNV	PINCH VALVE
PT	PRESSURE TRANSMITTER (NO LOCAL INDICATION)
PV	PLUG VALVE
RFCA	RESTRAINED FLANGED COUPLING ADAPTER
SARV	AIR RELEASE VALVE (SEWAGE)
SAVV	AIR VACUUM VALVE (SEWAGE)
SCAV	AIR RELEASE/VACUUM RELEASE COMBINATION VALVE (SEWAGE)
SCV	SILENT CHECK VALVE
SOV	SOLENOID VALVE

NOTE:  
FOR ABBREVIATIONS NOT FOUND IN THIS LIST, SEE THE GENERAL DRAWINGS.

### MECHANICAL NOTES

- PIPING
1. INFORMATION PROVIDED ARE MINIMUM REQUIREMENTS.
  2. SIZE AND MATERIAL OF FITTINGS SHOWN ON DRAWINGS SHALL CORRESPOND TO ADJACENT STRAIGHT RUN OF PIPE, UNLESS OTHERWISE INDICATED. TYPE OF JOINT SHALL BE AS SHOWN ON THE DRAWING.
  3. PIPE SUPPORTS ARE SHOWN TO ILLUSTRATE GENERAL LOCATION AND CONFIGURATION ONLY. NUMBER OF SUPPORTS SHOWN IS APPROXIMATE. SPACING AND OTHER SUPPORT REQUIREMENTS ARE IN THE PIPE SUPPORT SPECIFICATION.
  4. ALL FLEXIBLE CONNECTORS OR FLANGED COUPLING ADAPTERS SHALL BE PROVIDED WITH THRUST TIES, BLOCKS, OR ANCHORS, UNLESS OTHERWISE NOTED. THRUST PROTECTION SHALL BE ADEQUATE FOR TEST PRESSURES SPECIFIED.
  5. SYMBOLS, LEGENDS, AND PIPE IDENTIFICATIONS SHOWN ON THIS SHEET ARE USED THROUGHOUT THE DRAWINGS. ALL OF THE ITEMS SHOWN ARE NOT NECESSARILY USED IN THE PROJECT.
  6. NUMBER AND LOCATION OF UNIONS SHOWN ON DRAWINGS ARE APPROXIMATE. PROVIDE ALL UNIONS NECESSARY TO FACILITATE CONVENIENT REMOVAL OF VALVES AND MECHANICAL EQUIPMENT.
  7. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND CONNECTING THE PIPING AND APPURTENANCES PROVIDED UNDER THIS CONTRACT TO THE EXISTING PIPING AND FACILITIES.
  8. ALL PIPING IS TO BE LABELED UNLESS NOTED OTHERWISE. LABELING SHALL INCLUDE FLOW DIRECTION ARROW AND PIPE USE.
  9. INSTALL ALL PIPING TO AVOID ARCHITECTURAL OPENINGS, STRUCTURAL MEMBERS, DUCTS, FIXTURES AND OTHER OBSTRUCTIONS.

### ISSUED FOR BID

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NO	REVISION	DATE	BY

**SCALES**

0 ——— 1"  
0 ——— 25mm

IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.

DESIGNED	MDL
DRAWN	NEB
CHECKED	JMF

COVINGTON WATER DISTRICT  
COVINGTON, WASHINGTON

222ND PL CORROSION CONTROL  
FACILITY REHABILITATION

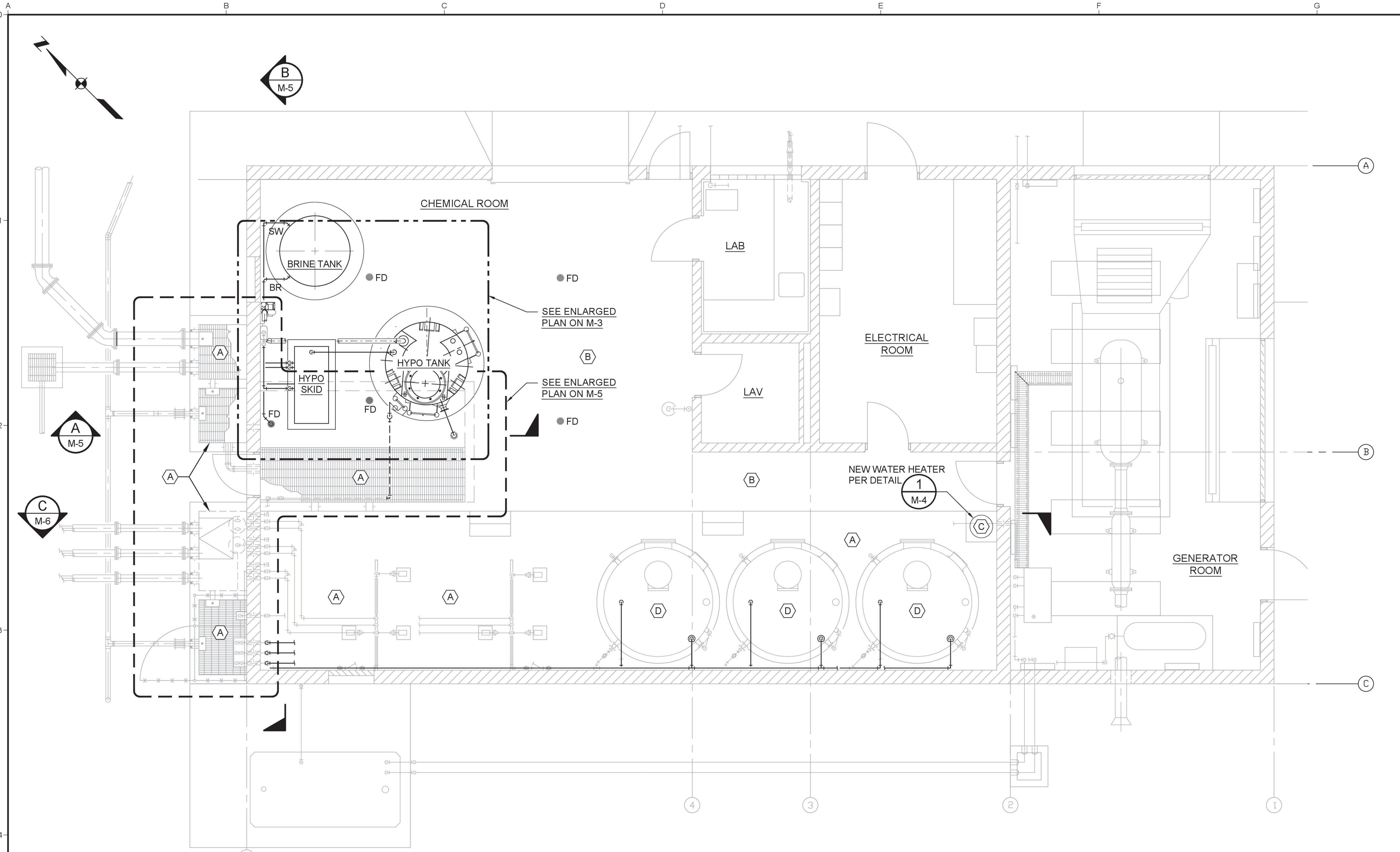
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JOB NO	2497002.01
DATE	MAY 2026
SHEET OF	M-1

Plot Date: 5/16/2026 9:53 AM

User: RICHARD HILLS

M-2

p:\kpc-pw\Documents\Covington Water District\Projects\CWD - TO 2024-01 CIP 2304 222nd COF Rehab\_2497002\0110-Design\10.06-Drawings\Mechanical\Process\249700201-M-2



**PLAN**  
SCALE: 1/4" = 1'-0"

- SHEET KEYNOTES**
- A. PROVIDE SECONDARY CONTAINMENT COATING TO HYPO CONTAINMENT SUMP, AND THE NaOH CONTAINMENT AREA, AND THE EXTERIOR CHEMICAL SUMPS PER SPECIFICATION SECTION 09679. DISCONNECT CHEMICAL PIPING AS REQUIRED TO REPAIR AND ABRASE CONCRETE AND CMU SURFACES AND APPLY SECONDARY CONTAINMENT COATING. COORDINATE W/ OWNER.
  - B. PROVIDE CHEMICAL RESISTANT AND EPOXY FLOORING IN CHEMICAL ROOM PER SPECIFICATION 09679.
  - C. REPLACE EXISTING WATER HEATER TANK WITH A0 SMITH ELECTRIC WATER HEATER MODEL DEN-52. CONTRACTOR TO CONNECT EXISTING PIPING TO NEW UNIT AND ENSURE PROPER FUNCTIONALITY.
  - D. EXISTING NaOH STORAGE TANKS. SEE C/M-6 FOR NaOH FILL PIPING AND NaOH STORAGE TANK VENTS.

**ISSUED FOR BID**

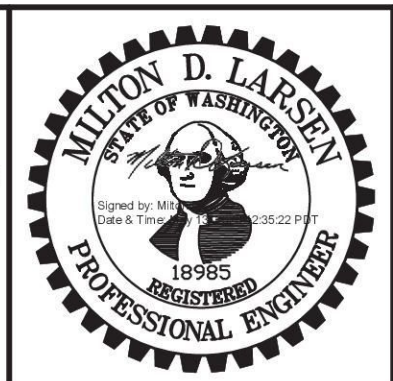
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NO	REVISION	DATE	BY

**SCALES**

0 — 1"  
0 — 25mm

IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.



DESIGNED: MDL  
DRAWN: NEB  
CHECKED: JMF

COVINGTON WATER DISTRICT  
COVINGTON, WASHINGTON  
222ND PL CORROSION CONTROL  
FACILITY REHABILITATION

**KJ Kennedy Jenks**

**CHEMICAL ROOM EQUIPMENT AND COATING PLAN**

SCALE: 1/4" = 1'-0"  
JOB NO: 2497002.01  
DATE: MAY 2026  
SHEET OF: M-2

Plot Date: 5/6/2026 10:02 AM

User: RICHARD HILLS

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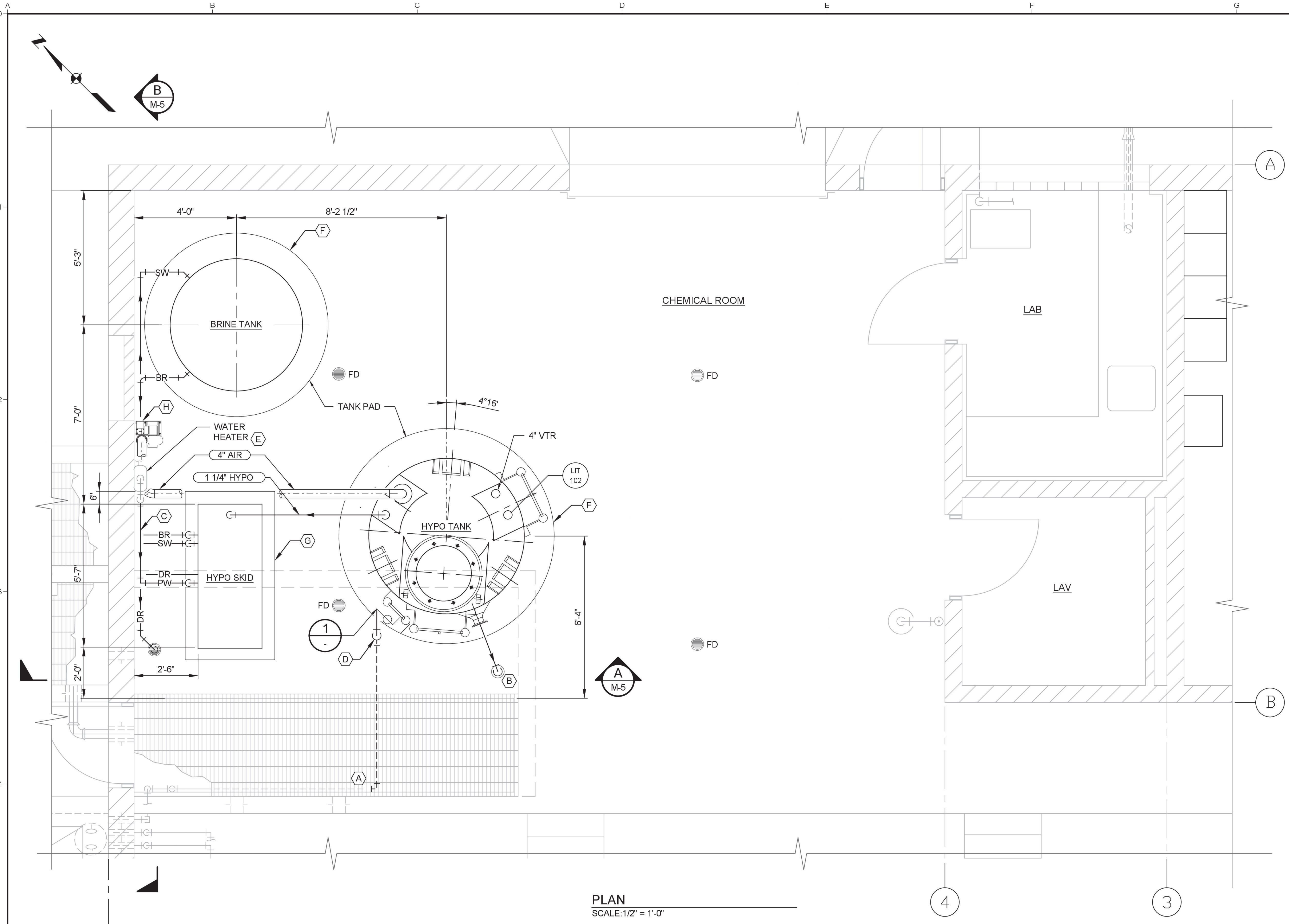
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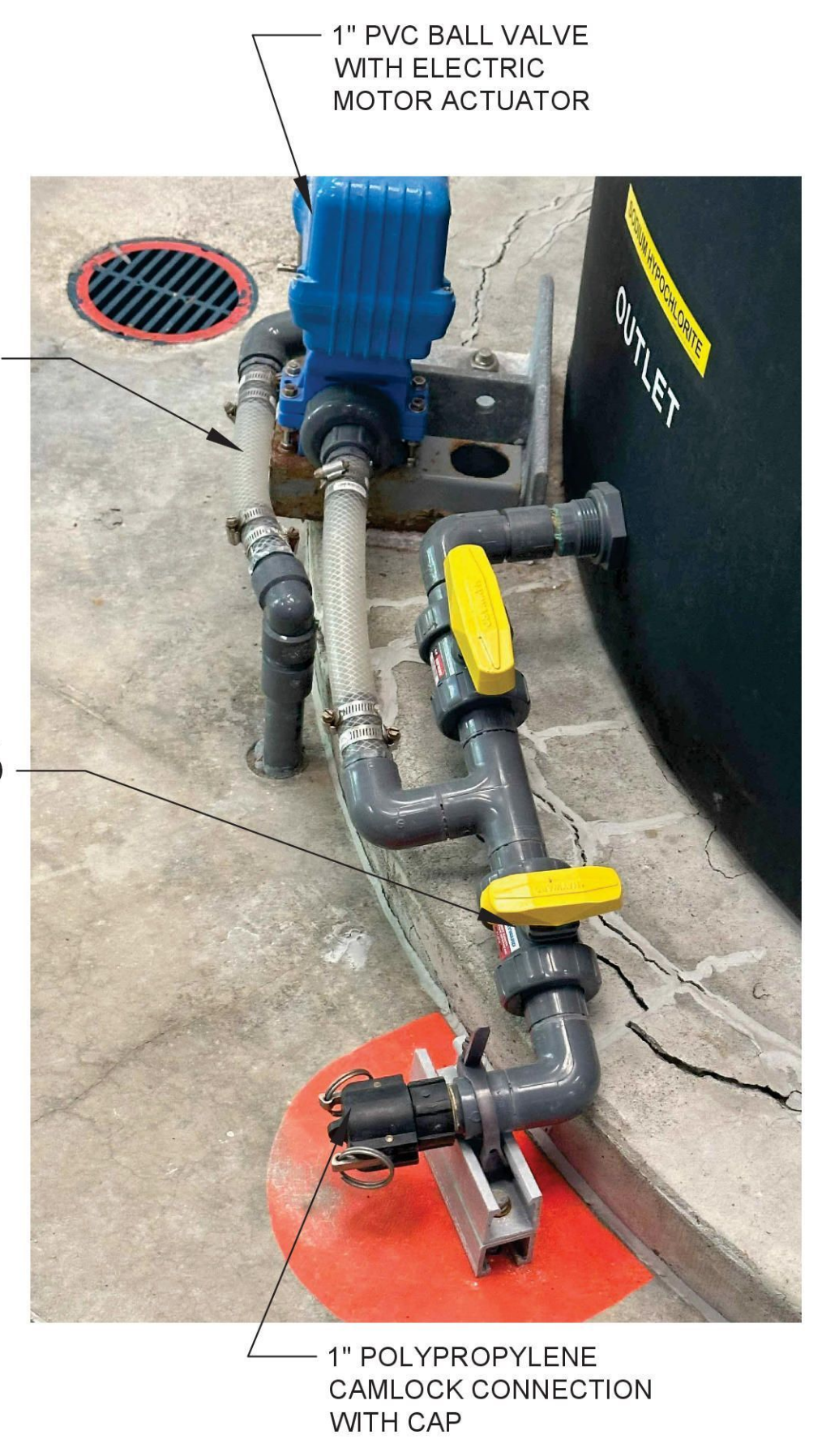
9

10



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

- GENERAL SHEET NOTES**
- SEE I-3 FOR ON-SITE HYPOCHLORITE GENERATION SYSTEM PIPING, INCLUDING PIPE SIZE.
  - SEE DETAIL S-3832 ON S-2 FOR CONCRETE PAD REINFORCING
- SHEET KEYNOTES**
- CONNECT TO EXISTING 1" HYPO PIPING.
  - EXTEND 2" TANK OVERFLOW AND DRAIN TO DISCHARGE THROUGH EXISTING FLOOR OPENING.
  - CONNECT EXIST PW TO EXIST POINT-OF-USE WATER HEATER AND EXTEND TO HYPO SKID CONNECTION.
  - PROVIDE OUTLET PIPING AND VALVE ASSEMBLY TO MATCH EXISTING AS SHOWN IN DETAIL 1. CONNECT TO EXISTING PIPE ELBOW WHERE PIPE PASSES THROUGH FLOOR.
  - RELOCATE EXISTING POINT-OF-USE WATER HEATER.
  - CONCRETE TANK PAD DIAMETER IS TANK OD + 24" AND 8" HIGH.
  - HYPO SKID CONCRETE PAD IS 42"x96"x6".
  - DILUTION BLOWER.



**1** DETAIL  
SCALE: NTS

**ISSUED FOR BID**

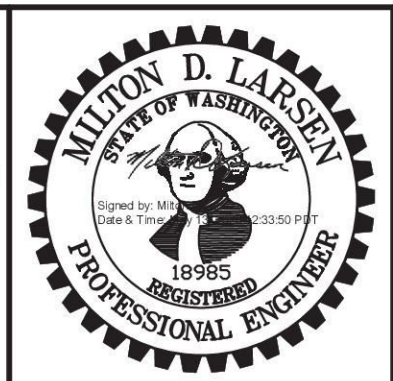
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NO	REVISION	DATE	BY

**SCALES**

0" = 1"  
0" = 25mm

IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.



DESIGNED MDL  
DRAWN NEB  
CHECKED JMF

COVINGTON WATER DISTRICT  
COVINGTON, WASHINGTON

**222ND PL CORROSION CONTROL FACILITY REHABILITATION**

**KJ Kennedy Jenks**

**ONSITE SODIUM HYPOCHLORITE SYSTEM PLAN**

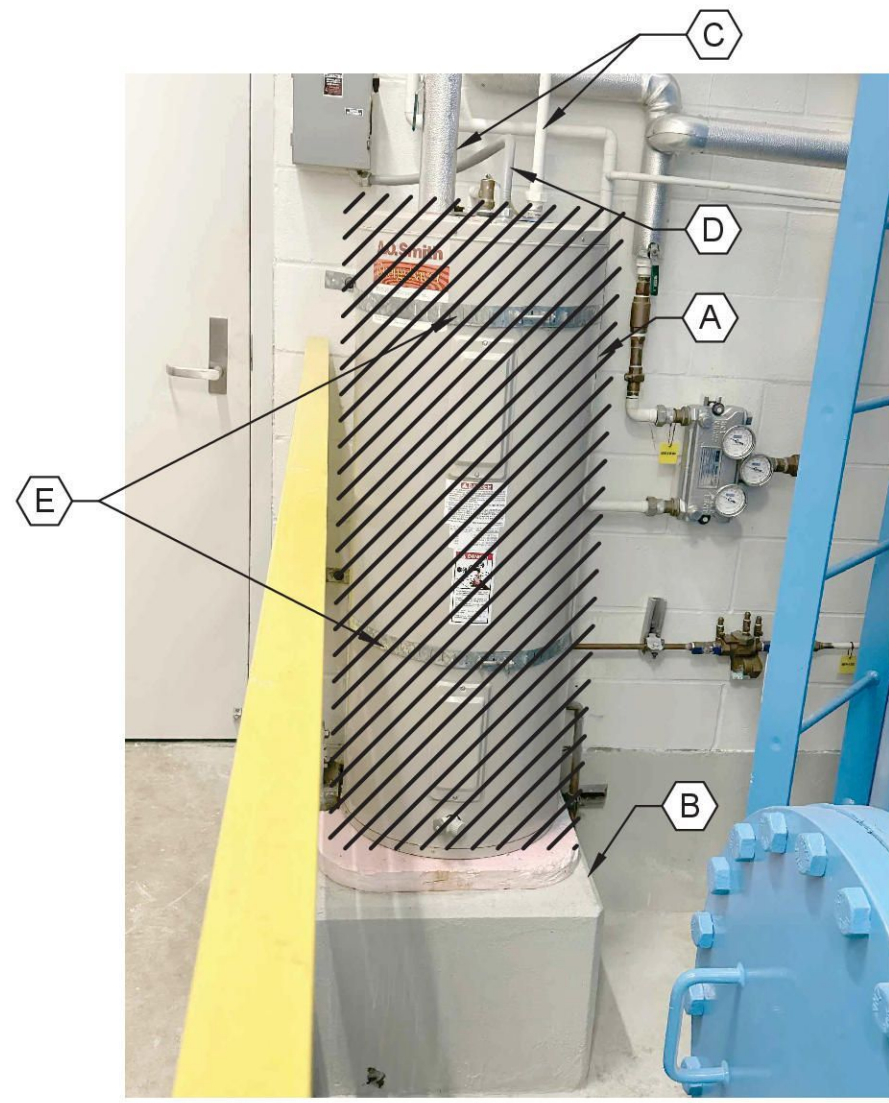
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JOB NO 2497002.01  
DATE MAY 2026  
SHEET OF M-3

Plot Date: 5/16/2026 10:04 AM

User: RICHARD HILLS

2

p:\kce-pw\Documents\Clients\Covington Water District\Projects\OVD - TO 2024-01 CIP 2304 222nd CCF Rehab\_2497002\0110-Design\10 06-Drawings\Mechanical\Process\249700201-M-4



**1 WATER HEATER DEMOLITION**  
M-2 SCALE: NOT TO SCALE

WATER HEATER SCHEDULE								
TAG NO.	LOCATION	AREA SERVED	TYPE	CAPACITY (GAL)	KW OR MBH INPUT	VOLTS/ PHASE	FLA	NOTES
DWH-151	TREATMENT BUILDING	CHEMICAL ROOM	ELECTRIC WATER HEATER	50	4.5	208	21.6	1

WATER HEATER NOTES:  
1) WATER HEATER SHALL BE FURNISHED WITH DUAL 4500 W HEATING ELEMENTS CONFIGURED FOR NON-SIMULTANEOUS OPERATION.

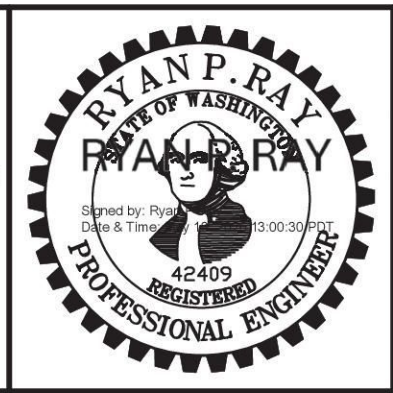
- SHEET KEYNOTES**
- A. THE EXISTING WATER HEATER SHALL BE REMOVED AND REPLACED WITH A NEW AO SMITH WATER HEATER MODEL DEN-52. REFER TO WATER HEATER SCHEDULE.
  - B. EXISTING PAD TO REMAIN AND BE UTILIZED FOR THE NEW WATER HEATER INSTALLATION.
  - C. EXISTING PIPING TO REMAIN AND BE CONNECTED TO THE NEW WATER HEATER.
  - D. POWER WATER HEATER FROM EXISTING SERVICE/DISCONNECT. EXTEND POWER TO NEW WATER HEATER SERVICE CONNECTION AS NECESSARY AND IN ACCORDANCE WITH THE ELECTRICAL DRAWINGS, SPECIFICATION.
  - E. PROVIDE SEISMIC RESTRAINT PER SECTION 01190.

**ISSUED FOR BID**

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NO	REVISION	DATE	BY

**SCALES**  
0 — 1"  
0 — 25mm  
IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.



DESIGNED: KJ  
DRAWN: RH  
CHECKED: JMF

COVINGTON WATER DISTRICT  
COVINGTON, WASHINGTON  
222ND PL CORROSION CONTROL  
FACILITY REHABILITATION

**KJ Kennedy Jenks**

**HOT WATER HEATER SCHEDULE AND DETAIL**

SCALE: NTS  
JOB NO: 2497002.01  
DATE: MAY 2026  
SHEET OF: M-4

Plot Date: 5/6/2026 10:13 AM

User: RICHARD HILLS

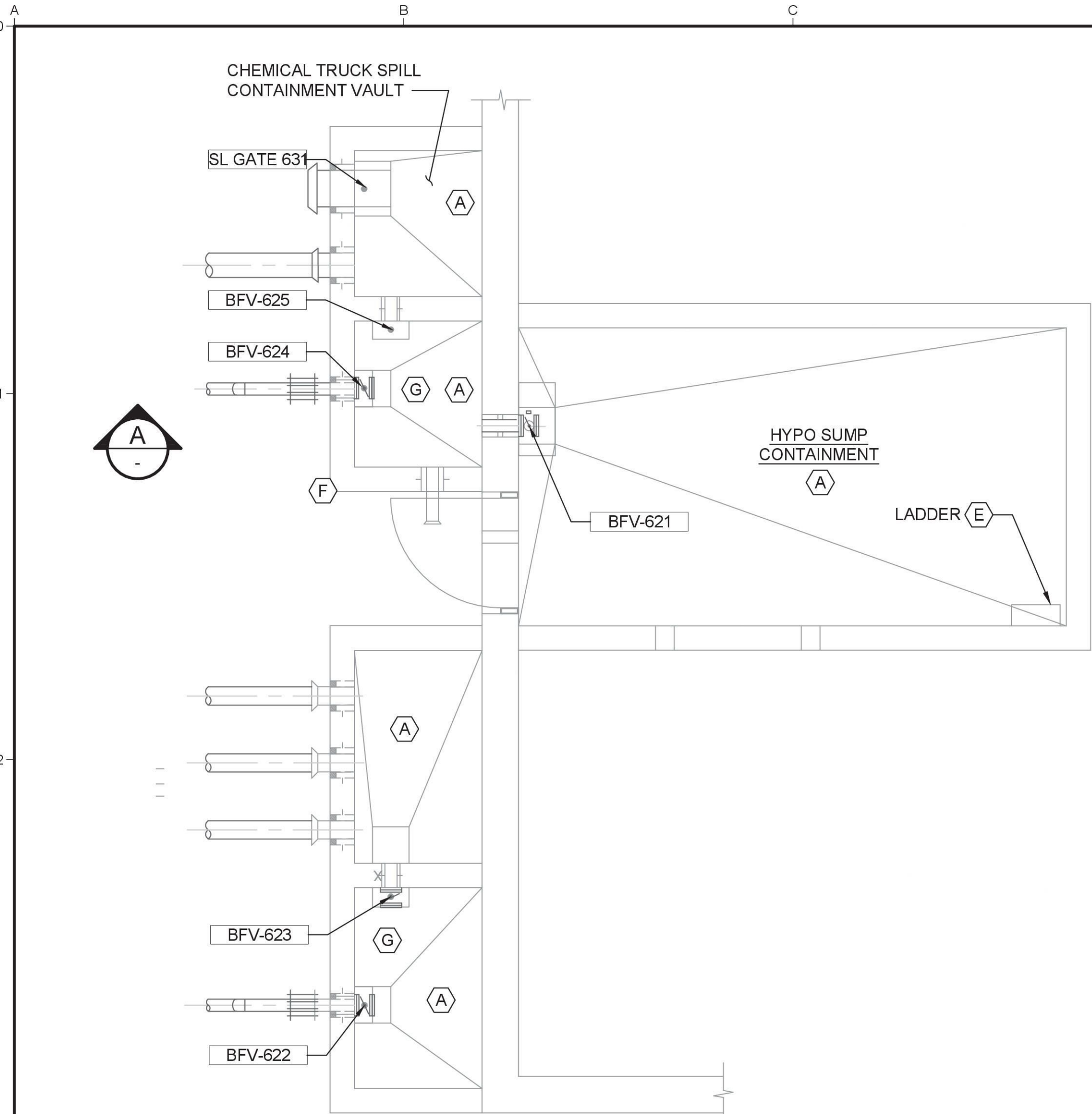
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1

2

3

4

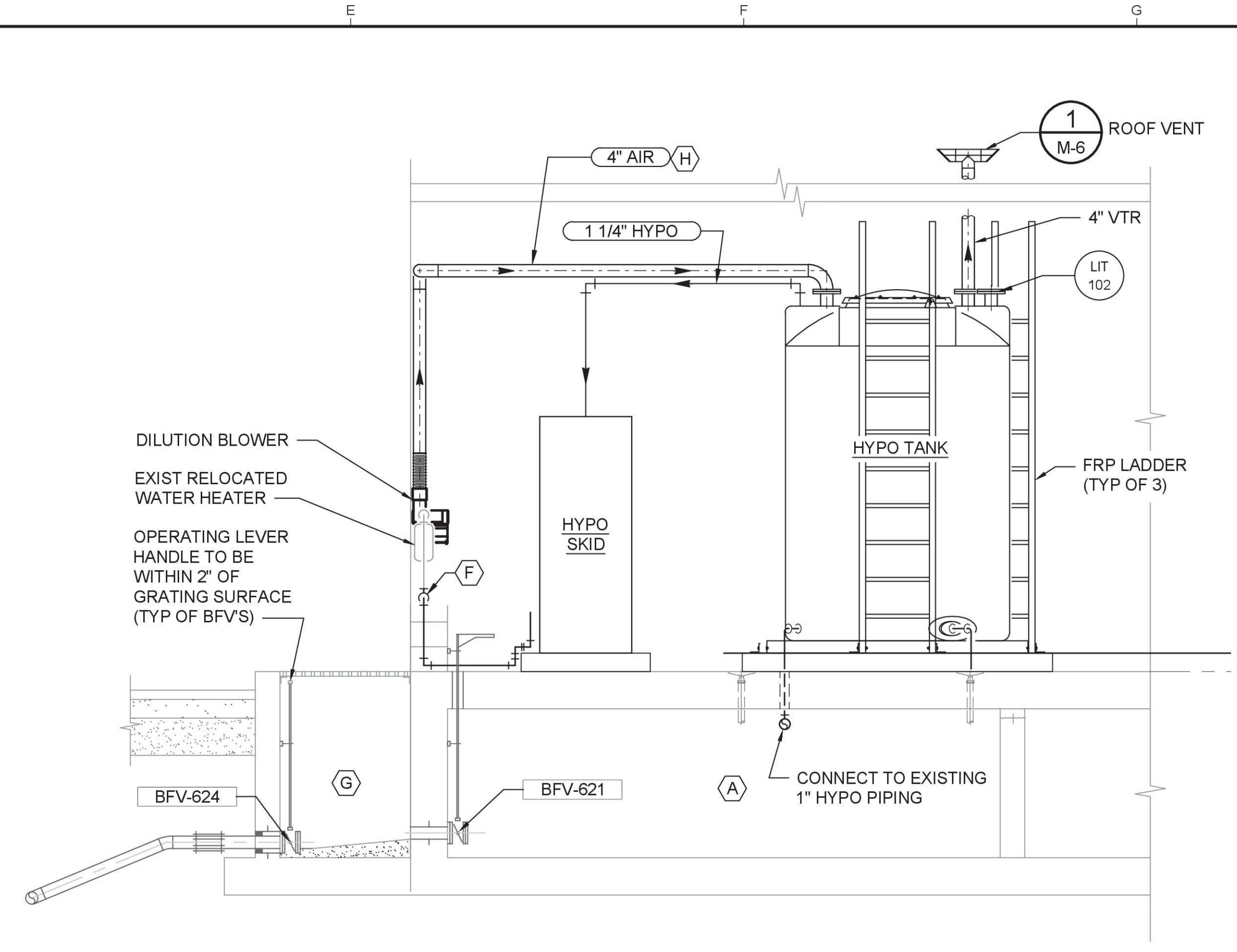


**SUMP AREA PLAN**  
SCALE: 3/8" = 1'-0"

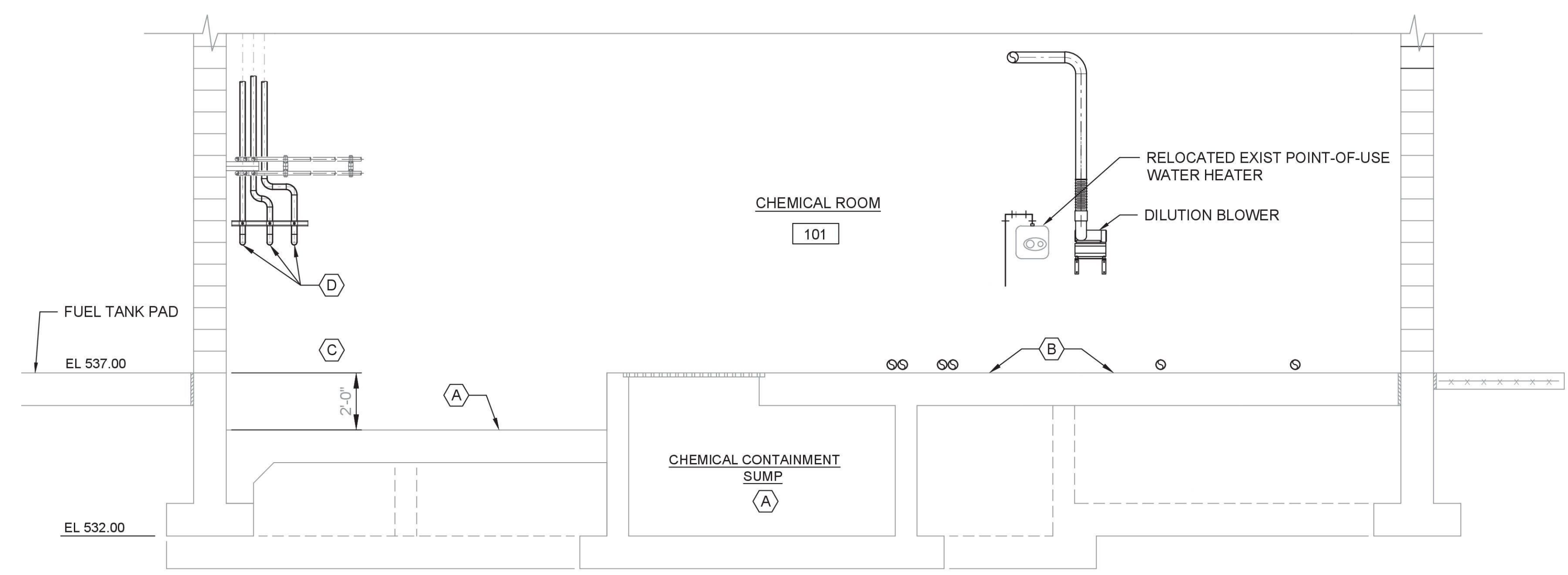


REPLACE PVC NaOH FILL PIPING W/ SCH 40 316L SS PIPE

**1** DETAIL  
NTS



**A** SECTION  
M-3 SCALE: 3/8" = 1'-0"



**B** SECTION  
M-2 SCALE: 3/8" = 1'-0"  
M-3

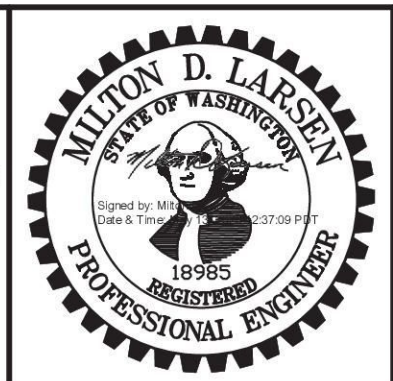
- SHEET KEYNOTES**
- A. REMOVE EXISTING COATING AND APPLY SECONDARY CONTAINMENT COATING PER SPECIFICATION SECTION 09679.
  - B. APPLY CHEMICAL RESISTANT EPOXY FLOORING PER SPECIFICATION SECTION 09679.
  - C. TOP OF SECONDARY CONTAINMENT COATING.
  - D. REPLACE 2" PVC NaOH FILL PIPE W/ 2" SCH 40 316L SS PIPE, SEE DETAIL 1.
  - E. REMOVE LADDER TO PREPARE CONCRETE SURFACE AND APPLY SECONDARY CONTAINMENT COATING. THEN REINSTALL LADDER.
  - F. CONNECT EXIST PW TO EXIST POINT-OF-USE WATER HEATER AND EXTEND TO HYPO SKID CONNECTION.
  - G. REPLACE ALL BFV. REMOVE DEBRIS FROM SUMP AND SPOOLS DOWNSTREAM OF BFV-621.
  - H. SUPPORT AIR AND HYPO PIPING PER DETAIL 3, ON SHEET S-2.

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NO	REVISION	DATE	BY

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0" = 25mm  
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DESIGNED MDL  
DRAWN NEB  
CHECKED JMF

COVINGTON WATER DISTRICT  
COVINGTON, WASHINGTON  
222ND PL CORROSION CONTROL  
FACILITY REHABILITATION

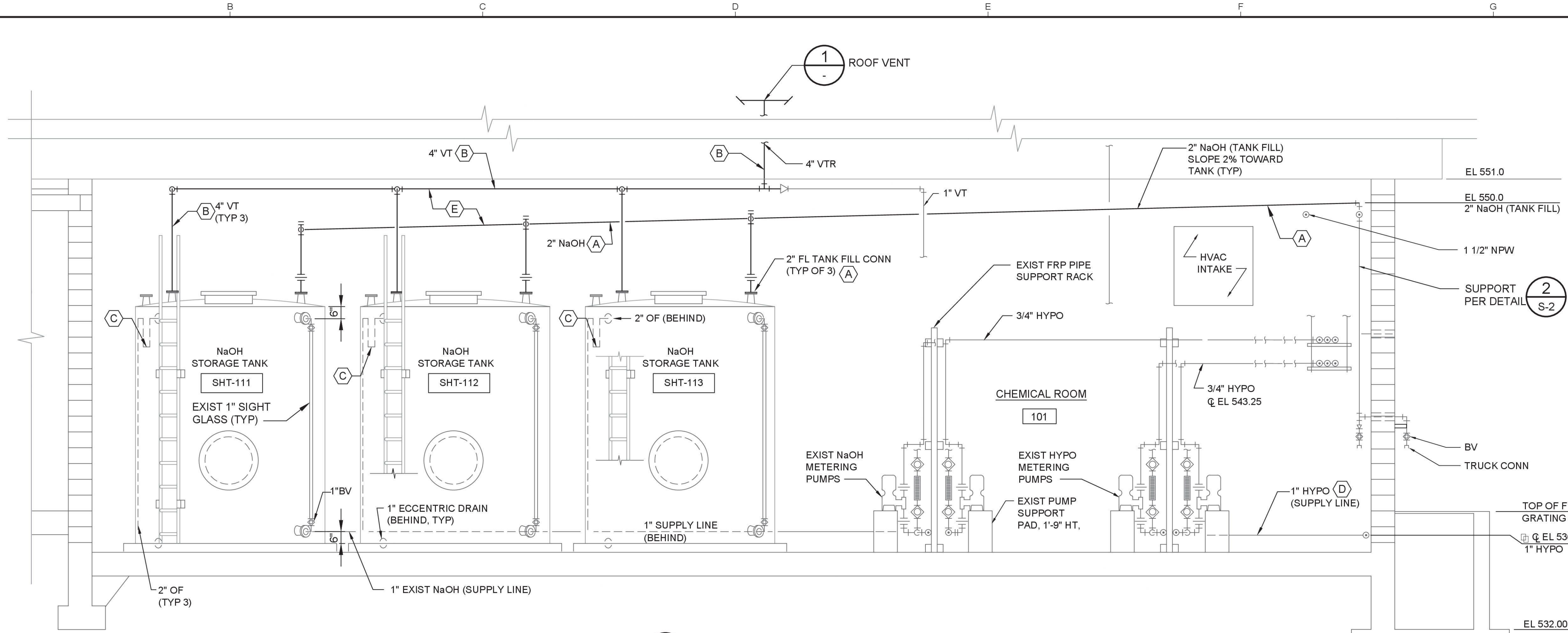


**CHEMICAL ROOM  
PLAN, SECTIONS AND DETAILS**

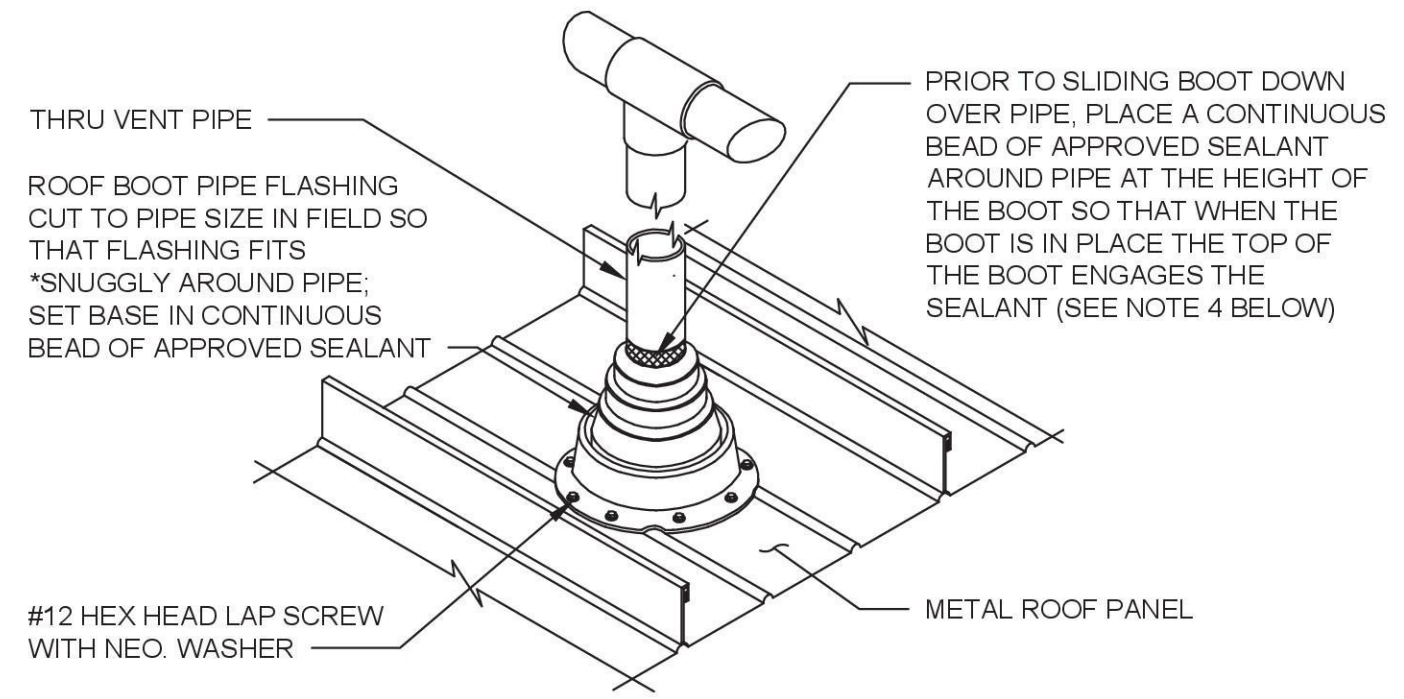
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JOB NO	2497002.01
DATE	MAY 2026
SHEET OF	M-5

Plot Date: 5/16/2026 10:16 AM  
 User: RICHARD HILLS  
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SHEET KEYNOTES	
A.	REPLACE 2" PVC NaOH TANK FILL PIPE WITH SCH 40 316L SS PIPE.
B.	REPLACE 2" PVC VT WITH 4" SCH 80 PVC. ENLARGE EXISTING ROOF VENT OPENING AS REQUIRED FOR NEW VENT.
C.	REPLACE THE 2" OVERFLOW PIPE WATER TRAP SECTION WITH SCH 80 CLEAR PVC (TYP).
D.	ALL OF EXISTING PIPING ALONG THE WALL IS NOT SHOWN.
E.	REPLACE EXISTING NaOH AND VT PIPING SUPPORTS PER DETAIL 1, ON SHEET S-2



**C SECTION**  
 M-2 SCALE: 3/8" = 1'-0"



- \*SNUGGLY MEANS NO WATER CAN PENETRATE BETWEEN TOP OF BOOT & PIPE
- NOTES:**
1. THE ROOF PIPE FLASHING MUST BE FASTENED TO THE PANEL ONLY AND NOT INTO THE ROOF SUBSTRATE TO ALLOW THE PANEL TO MOVE THERMALLY.
  2. ADEQUATE CLEARANCE MUST BE LEFT BETWEEN THE PIPE AND THE PANEL TO ALLOW FOR THERMAL MOVEMENT WITHOUT INTERFERENCE.
  3. APPLY A SEALED, SMOOTH COLLAR ON PIPE, IF NECESSARY, AT BOOT INTERFACE TO ENSURE PROPER SEAL.

**1 ROOF VENT PENETRATION DETAIL**  
 M-5 SCALE: NOT TO SCALE  
 M-6

<b>ISSUED FOR BID</b>	NO	REVISION	DATE	BY	SCALES 0" = 1" 0" = 25mm IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.		DESIGNED MDL	COVINGTON WATER DISTRICT COVINGTON, WASHINGTON <b>222ND PL CORROSION CONTROL          FACILITY REHABILITATION</b>	<b>SODIUM HYDROXIDE PIPING MODIFICATIONS -          SECTIONS AND DETAILS</b>	SCALE NTS
	ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS. USERS OF THIS DOCUMENT IN EDITABLE ELECTRONIC FORMATS ARE CAUTIONED AGAINST USE WITHOUT FIRST DETERMINING WHETHER CHANGES MAY HAVE BEEN MADE SUBSEQUENT TO ITS PREPARATION.						DRAWN NEB CHECKED JMF			Kennedy Jenks



### SINGLE LINE DIAGRAM SYMBOLS

- BUS
- BUS (EXISTING)
- FEEDER
- FEEDER (EXISTING)
- AMPS FRAME  
LOW VOLTAGE THERMAL-MAGNETIC CIRCUIT BREAKER  
3-POLE EXCEPT WHERE NOTED  
X = CIRCUIT NUMBER OR LOCATION (SEE ELEVATION)
- AMPS TRIP  
LOW VOLTAGE MOTOR CIRCUIT PROTECTOR  
3-POLE EXCEPT WHERE NOTED  
X = CIRCUIT NUMBER OR LOCATION (SEE ELEVATION)
- LOW VOLTAGE DRAWOUT CIRCUIT BREAKER  
INCLUDING L-S-I-G SETTINGS UNLESS NOTED OTHERWISE  
L = LONG TIME  
S = SHORT TIME  
I = INSTANTANEOUS  
G = GROUND FAULT
- MEDIUM VOLTAGE DRAWOUT CIRCUIT BREAKER
- FULL VOLTAGE COMBINATION STARTER  
WITH CONTROL POWER TRANSFORMER  
# = NEMA SIZE  
FVR = REVERSING TYPE  
FVNR = NON-REVERSING TYPE
- REDUCED VOLTAGE STARTER  
WITH CONTROL POWER TRANSFORMER  
RATING IN AMPERES AS INDICATED  
RVSS = SOLID STATE TYPE  
RVAT = AUTO-TRANSFORMER TYPE
- VARIABLE FREQUENCY DRIVE  
WITH CONTROL POWER TRANSFORMER  
RATING IN AMPERES AS INDICATED
- DISCONNECT SWITCH  
3 POLE EXCEPT WHERE NOTED  
RATING IN AMPERES AS INDICATED
- FUSED DISCONNECT SWITCH  
3 POLE EXCEPT WHERE NOTED  
RATINGS IN AMPERES AS INDICATED
- POTENTIAL TRANSFORMER  
RATIO AND NUMBER OF PT'S AS INDICATED
- CURRENT TRANSFORMER  
RATIO AND NUMBER OF CT'S AS INDICATED
- METERING DEVICE  
\* = METER TYPE  
WHM = WATT HOUR METER    VM = VOLTMETER  
WM = WATT METER        PFM = POWER FACTOR METER  
AM = AMMETER
- RELAY DEVICE FUNCTION  
# PER ANSI NUMBER C37.2
- 15/25 AUTO SYNCHRONIZER RELAY
- 25 SYNCHRONISM CHECK RELAY
- 27 UNDERVOLTAGE RELAY
- 27/59 UNDER/OVERVOLTAGE RELAY
- 32 DIRECTIONAL POWER RELAY
- 37 UNDERCURRENT RELAY
- 38 HIGH TEMP (BEARING)
- 39 VIBRATION RELAY
- 40 LOSS OF FIELD/UNDER EXCITATION RELAY
- 41 FIELD CONTACTOR
- 43 SELECTOR SWITCH
- 46 CURRENT IMBALANCE RELAY
- 47 PHASE SEQUENCE/FAILURE RELAY
- 48 GROUND FAULT INCOMPLETE SEQUENCE RELAY
- 49 HIGH TEMP (OIL OR STATOR)
- 50/51 INST/TIME OVERCURRENT RELAY
- 50/51G INST/TIME DIRECTLY CONNECTED GND OVERCURRENT RELAY
- 50/51N INST/TIME RESIDUALLY CONNECTED GND OVERCURRENT
- 51G GND FAULT RELAY
- 52 POWER CIRCUIT BREAKER
- 55 POWER FACTOR TRIP RELAY
- 60 VOLTAGE BALANCE
- 62 TIME DELAY
- 65 GOVERNOR LOAD SHARING/SOFT LANDING CONTROL
- 66 TIME BETWEEN STARTS RELAY
- 67 DIRECTIONAL REVERSE VAR/KW RELAY
- 71L LOW OIL LEVEL RELAY
- 81OU OVER/UNDER FREQUENCY RELAY
- 83 CONTROL POWER TRANSFORMER
- 86 UTILITY LOCKOUT RELAY
- 87TL TRANSFORMER DIFFERENTIAL RELAY
- 87M MOTOR DIFFERENTIAL RELAY
- 90 VAR/PF AND CROSS CURRENT COMPENSATION CONTROLLER

### CONTROL SCHEMATIC SYMBOLS

- CONDUCTORS - NOT CONNECTED
- CONDUCTORS - CONNECTED
- TERMINAL
- CONTROL DEVICE COIL  
# = TYPE  
CR = CONTROL RELAY  
TD = TIME DELAY RELAY  
ISR = INTRINSICALLY SAFE RELAY  
PC = PHOTOCELL
- SOLENOID COIL
- CONTACT  
NORMALLY OPEN / CLOSED
- CIRCUIT BREAKER OR MCP AS NOTED  
1-POLE / 3-POLE
- OVERLOAD (THERMAL OR SOLID STATE)
- DISCONNECT SWITCH  
1-POLE / 3-POLE
- MOTOR
- CONTROL POWER TRANSFORMER
- BATTERY
- FUSE  
RATING IN AMPERES
- EARTH GROUND CONNECTION
- CHASSIS GROUND CONNECTION  
(NOT NECESSARILY EARTH GROUNDED)
- DIGITAL INPUT TO PLC/RTU/DCS
- DIGITAL OUTPUT FROM PLC/RTU/DCS  
NORMALLY OPEN
- DIGITAL OUTPUT FROM PLC/RTU/DCS  
NORMALLY CLOSED
- ANALOG INPUT TO PLC/RTU/DCS  
4-20 mA (UNLESS INDICATED OTHERWISE)
- ANALOG OUTPUT FROM PLC/RTU/DCS  
4-20 mA (UNLESS INDICATED OTHERWISE)

- SINGLE POLE SWITCH  
NORMALLY OPEN / CLOSED
- THREE-POSITION SELECTOR SWITCH  
X: INDICATES CONTACTS CLOSED  
H-O-A: HAND-OFF-AUTO  
L-O-R: LOCAL-OFF-REMOTE  
O-S-C: OPEN-STOP-CLOSE
- TWO-POSITION SELECTOR SWITCH  
X: INDICATES CONTACTS CLOSED  
L-R: LOCAL-REMOTE  
O-C: OPEN-CLOSE  
A-M: AUTO-MANUAL
- THREE-POSITION SELECTOR SWITCH  
WITH SPRING-RETURN MOMENTARY CONTACT
- EMERGENCY PUSHBUTTON  
NORMALLY OPEN / CLOSED
- PUSHBUTTON  
NORMALLY OPEN / CLOSED
- MULTI-POSITION SELECTOR SWITCH
- PUSH-TO-TEST INDICATING LIGHT  
X = COLOR  
A = AMBER  
B = BLUE  
G = GREEN  
R = RED  
W = WHITE
- INDICATING LIGHT
- ELAPSED TIME METER
- BUZZER
- BELL
- HORN
- RESISTANCE TEMPERATURE DETECTOR (RTD)
- HEATER
- COMMUNICATION JACK  
(ETHERNET UNLESS INDICATED OTHERWISE)
- RECEPTACLE, 120V
- NEUTRAL GROUNDING RESISTOR
- LOCATION SYMBOL  
LEGEND SHOWN ON SCHEMATIC DRAWINGS  
ALL DEVICES ARE LOCATED IN THE MCC  
UNLESS INDICATED OTHERWISE

- POTENTIOMETER
- REACTOR (LINE OR LOAD  
DEPENDING ON PLACEMENT)

SENSING SWITCHES			
CLOSE ON		SENSED VARIABLE	
RIISING	FALLING		
		FLOW	
		LEVEL	
		PRESSURE	
		TEMPERATURE	
LIMIT SWITCHES			
	NORMALLY OPEN, CLOSE ON REACHING LIMIT		
	NORMALLY CLOSED, OPEN ON REACHING LIMIT		
TORQUE SWITCH			
	NORMALLY CLOSED, OPEN ON INCREASING TORQUE		
TIMED CONTACTS			
SYMBOL	NORMAL	OPEN TO CLOSED	CLOSED TO OPEN
	OPEN	DELAYED	INSTANTANEOUS
	CLOSED	INSTANTANEOUS	DELAYED
	OPEN	INSTANTANEOUS	DELAYED
	CLOSED	DELAYED	INSTANTANEOUS

**ISSUED FOR BID**

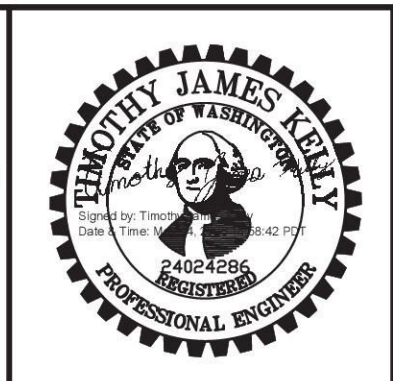
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NO	REVISION	DATE	BY

**SCALES**

0 ——— 1"  
0 ——— 25mm

IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.



DESIGNED: TK  
DRAWN: TK  
CHECKED: ZD

DESIGNED BY: TK  
DRAWN BY: TK  
CHECKED BY: ZD

COVINGTON WATER DISTRICT  
COVINGTON, WASHINGTON

222ND PL CORROSION CONTROL  
FACILITY REHABILITATION

**KJ** Kennedy Jenks

**ELECTRICAL LEGEND - I**

SCALE: NTS

JOB NO: 2497002.01

DATE: MAY 2026

SHEET: 18 OF 26

E-2

PLAN SYMBOLS

CONDUIT AND RACEWAYS

CONDUIT - MULTIPLE IN DUCT BANK

MULTIPLE CONDUIT RUN

CONDUIT - ENCASED OR UNDERGROUND

CONDUIT - EXPOSED OR CONCEALED

CALLOUT INDICATING CONDUIT PER SCHEDULE

HOME RUN TO PANELBOARD OR AS INDICATED (3/4" CONDUIT, 2 #12, 1 #12 GND UNLESS INDICATED OTHERWISE)

FLEXIBLE CONDUIT

CONDUIT RUN, CONTINUES ON SAME SHEET OR AS NOTED

CONDUIT - CAPPED OR SEALED

OPEN CIRCLE DENOTES UPWARD CONDUIT RISER

SEMI CIRCLE DENOTES DOWNWARD CONDUIT RISER

JUNCTION BOX

UNDERGROUND RACEWAY HANDHOLE DIMENSIONS AS NOTED

UNDERGROUND RACEWAY MANHOLE DIMENSIONS AS NOTED

EQUIPMENT

MOTOR

PANEL OR CABINET - AS LABELED SWBD, SWGR, MCC, LP, PNLBD, PLC, ETC

GROUNDING

BARE COPPER GROUND TO GROUND WIRE IN SLAB, OR UNDERGROUND GROUND GRID, SIZE AS NOTED

GROUND CONNECTION - BOLTED

GROUND CONNECTION - EXOTHERMICALLY WELDED

GROUND ROD - IN WELL WITH BOX

GROUND ROD - BURIED

FIRE PROTECTION

FIRE ALARM PULL STATION

FIRE ALARM STROBE

FIRE ALARM HORN

FIRE ALARM HORN/STROBE

SMOKE DETECTOR

HEAT DETECTOR

LIGHTING

LUMINAIRE CALLOUT

A = LUMINAIRE TYPE

\* = APPROXIMATE MOUNTING HEIGHT AFF

CLG = CEILING MOUNT (SEE LUMINAIRE SCHEDULE FOR MORE DETAILS)

LUMINAIRE - STRIP OR TROFFER TYPE (SWITCHED/UNSWITCHED)

X = LIGHTING PANEL DESIGNATION

# = CIRCUIT NUMBER

a = SWITCH DESIGNATION

WALL MOUNTED LUMINAIRE (SWITCHED/UNSWITCHED)

PENDANT/CEILING MOUNTED LUMINAIRE (SWITCHED/UNSWITCHED)

POLE, BRACKET, ARM, AND MOUNTED LUMINAIRE

RECESSED CAN LUMINAIRE (SWITCHED/UNSWITCHED)

EMERGENCY LUMINAIRE WITH SELF CONTAINED BATTERY

WALL/CEILING MOUNTED EXIT LIGHT DIRECTIONAL ARROW WHERE INDICATED, SHADED AREA INDICATES ILLUMINATED FACE

LIGHT SWITCH

X = LIGHTING PANEL DESIGNATION

# = CIRCUIT NUMBER

a = SWITCH DESIGNATION

\* = SWITCH TYPE

1 1 WAY

3 3 WAY

4 4 WAY

D DIMMER

MOTION SENSOR

OCCUPANCY SENSOR

PHOTOCELL

TIME CLOCK

RECEPTACLES

DUPLEX RECEPTACLE, 120V, WALL MOUNT NEMA 5-20R CONFIGURATION

X = LIGHTING PANEL DESIGNATION

# = CIRCUIT NUMBER

\* = RECEPTACLE TYPE

WP WEATHERPROOF

XP EXPLOSION PROOF

GFCI GROUND FAULT CIRCUIT INTERRUPTER

DUPLEX RECEPTACLE, 120V, FLOOR MOUNT NEMA 5-20R CONFIGURATION

SINGLE SPECIAL RECEPTACLE, 208V OR 240V, 1-PHASE

X = PANEL DESIGNATION

# = CIRCUIT NUMBER

A = AMPERAGE

SINGLE SPECIAL/WELDING RECEPTACLE, 208V OR 240V, 3-PHASE

X = PANEL DESIGNATION

# = CIRCUIT NUMBER

A = AMPERAGE

SINGLE SPECIAL RECEPTACLE, 480V, 3-PHASE

X = PANEL DESIGNATION

# = CIRCUIT NUMBER

A = AMPERAGE

SECURITY AND COMMUNICATION

ANTENNA

VIDEO CAMERA

\* = TYPE

F FIXED

PTZ PAN-TILT-ZOOM

360 360 DEGREE FIXED

SECURITY ACCESS DEVICE

\* = TYPE

CR CARD READER

KS KEY SWITCH

KP KEYPAD

RF RADIO FREQUENCY ID

TELEPHONE OUTLET WALL MOUNTED/FLOOR MOUNTED

DATA OUTLET WALL MOUNTED/FLOOR MOUNTED

TELEPHONE/DATA COMBINATION OUTLET WALL MOUNTED/FLOOR MOUNTED

TELEVISION ANTENNA/CABLE OUTLET

MISCELLANEOUS

DISCONNECT SAFETY SWITCH

INSTRUMENT

SWITCH - SPECIAL PURPOSE

X = LIGHTING PANEL DESIGNATION

# = CIRCUIT NUMBER

\* = SWITCH TYPE

M MOTOR RATED

K KEY OPERATED

T TIMER

THERMOSTAT

CLASS I, DIVISION 1 HAZARDOUS AREA BOUNDARY (LABEL APPEARS IN CLASSIFIED AREA)

CLASS I, DIVISION 2 HAZARDOUS AREA BOUNDARY (LABEL APPEARS IN CLASSIFIED AREA)

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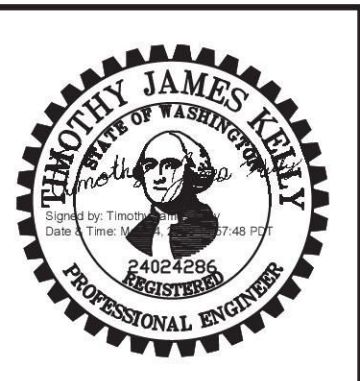
NO	REVISION	DATE	BY

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DESIGNED	TK
DRAWN	TK
CHECKED	ZD

COVINGTON WATER DISTRICT  
COVINGTON, WASHINGTON

222ND PL CORROSION CONTROL  
FACILITY REHABILITATION

Kennedy Jenks

ELECTRICAL LEGEND - II

SCALE	NTS
JOB NO	2497002.01
DATE	MAY 2026
SHEET	19 OF 26

Plot Date: 5/16/2026 10:29 AM

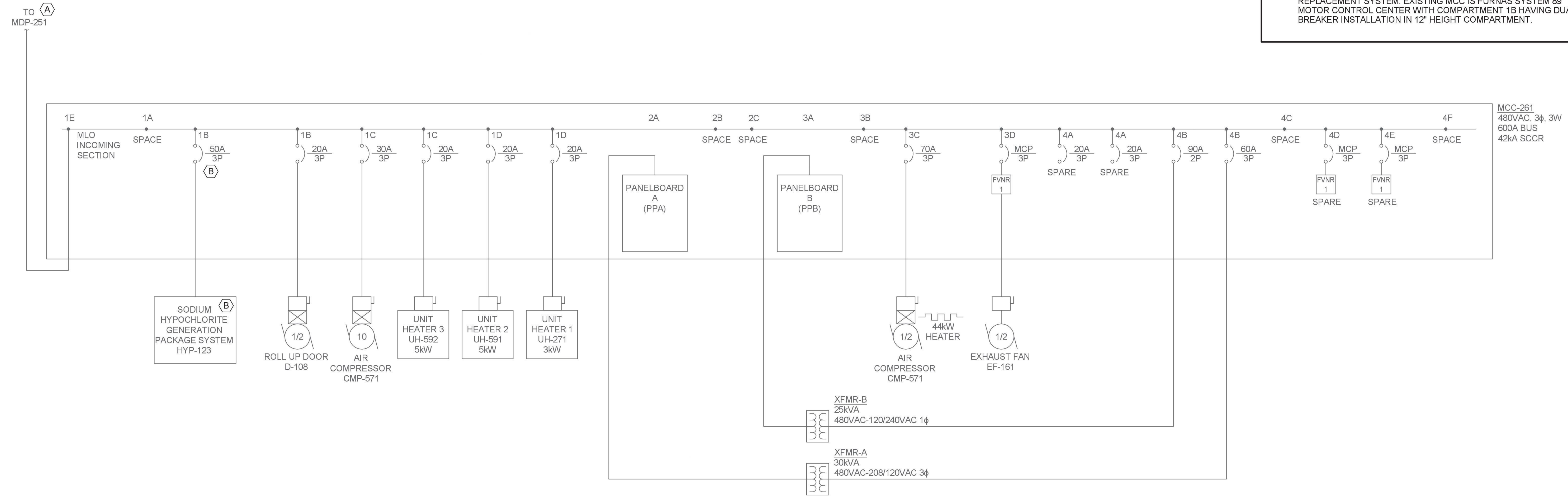
User: RICHARD HILLS

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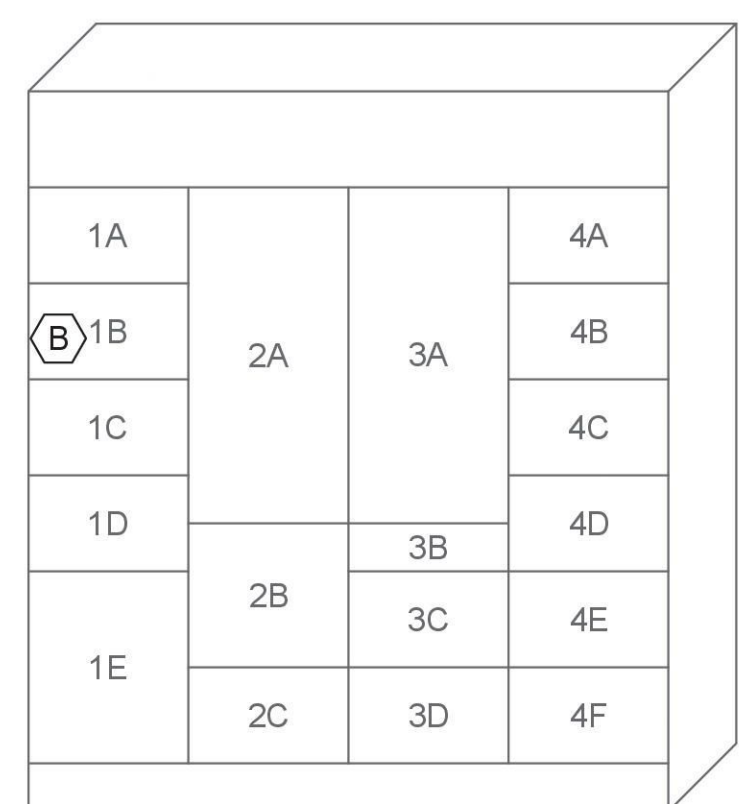
**SHEET KEYNOTES**

A. POWER DISTRIBUTION ONE-LINE DIAGRAM AND UPSTREAM EQUIPMENT BASED ON DRAWING NUMBER 303 TITLED 'ELECTRICAL MAIN POWER DISTRIBUTION ONE-LINE DIAGRAM' OF AS-BUILT DRAWINGS FOR PROJECT COVINGTON WATER DISTRICT 222nd PLACE WELLFIELD WATER TREATMENT UPGRADE PROJECT DATED MARCH 2000.

B. SODIUM HYPOCHLORITE GENERATION PACKAGE SYSTEM, NAMED MANUFACTURER & MODEL IS OSEC B-PAK 130 WITH CONNECTED LOAD OF 12.3kW WITHOUT PREHEATER AND 15.8kW WITH PREHEATER. CONTRACTOR SHALL UTILIZE EXISTING 50AT/3P CIRCUIT BREAKER IN MCC-261 COMPARTMENT 1B FOR REPLACEMENT SYSTEM. EXISTING MCC IS FURNAS SYSTEM 89 MOTOR CONTROL CENTER WITH COMPARTMENT 1B HAVING DUAL BREAKER INSTALLATION IN 12" HEIGHT COMPARTMENT.



**ELECTRICAL ONE-LINE DIAGRAM**  
SCALE:NTS



**MCC-261 ELEVATION**  
SCALE:NTS

**ISSUED FOR BID**

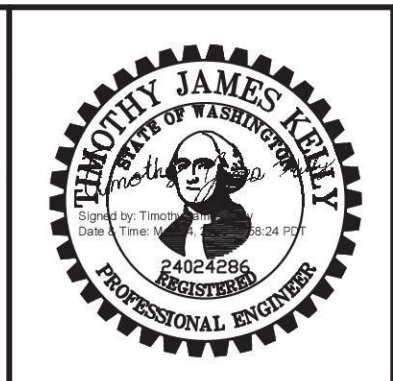
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NO	REVISION	DATE	BY

**SCALES**

0 — 1" = 25mm

IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.



DESIGNED: TK  
DRAWN: TK  
CHECKED: ZD

COVINGTON WATER DISTRICT  
COVINGTON, WASHINGTON

**222ND PL CORROSION CONTROL FACILITY REHABILITATION**

**KJ Kennedy Jenks**

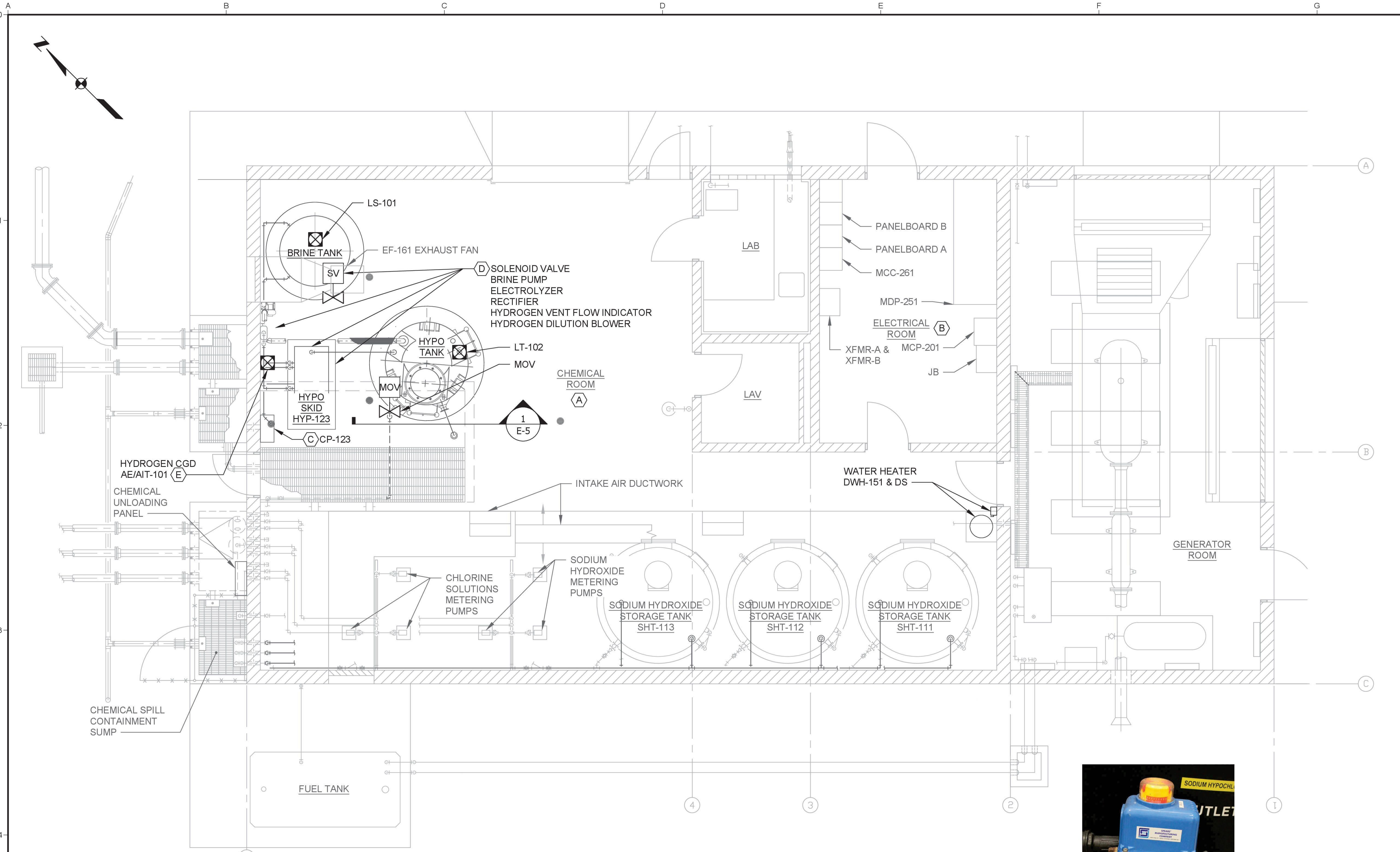
**MCC-261 ONE-LINE DIAGRAM MODIFICATIONS/EQUIPMENT ELEVATION**

SCALE: NTS  
JOB NO: 2497002.01  
DATE: MAY 2026  
SHEET: 20 OF 26  
**E-4**

Plot Date: 5/6/2026 10:31 AM

User: RICHARD HILLS

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**POWER AND SIGNAL PLAN**  
SCALE: 1/4" = 1'-0"



- GENERAL SHEET NOTES**
- CONTRACTOR SHALL SUBMIT CONDUIT ROUTING PLANS TO ENGINEER FOR APPROVAL IN ACCORDANCE WITH SECTION 01 33 00. CONDUITS SHALL NOT INTERFERE WITH MECHANICAL EQUIPMENT MAINTENANCE CLEARANCES AND SHALL NOT CREATE TRIPPING HAZARDS.

- SHEET KEYNOTES**
- ALL ELECTRICAL EQUIPMENT AND ENCLOSURES SHALL BE NEMA 4X SS UNLESS OTHERWISE NOTED.
  - ALL ELECTRICAL EQUIPMENT AND ENCLOSURES SHALL BE NEMA 12 WITHIN THE ELECTRICAL ROOM.
  - CP-123: CONTRACTOR SHALL REMOVE EXISTING SODIUM HYPOCHLORITE ON-SITE GENERATION SYSTEM AND CONTROL PANEL. REFER TO DEMOLITION PLAN DM-1 FOR ADDITIONAL INFORMATION. INSTALL NEW SODIUM HYPOCHLORITE ON-SITE GENERATION SYSTEM AS SHOWN.
  - SODIUM HYPOCHLORITE ON-SITE GENERATION SYSTEM: COORDINATE EXACT LOCATION OF ANCILLARY EQUIPMENT WITH MANUFACTURER'S FINAL APPROVED SHOP DRAWINGS, MECHANICAL DRAWINGS, AND INSTRUMENTATION DRAWINGS.
  - H2 HYDROGEN COMBUSTIBLE GAS DETECTOR ELEMENT SHALL BE MOUNTED NEAR THE CEILING AVOIDING OBSTRUCTIONS SUCH AS LIGHTS, PIPING AND OTHER OBJECTS AND NOT ON THE DIRECT PATH OF ANY POTENTIAL AIRFLOW FROM THE AIR INLET TO THE EXHAUST FAN TO AVOID SENSITIVITY TO AIRFLOW VARIATIONS AND DILUTION IN ACCORDANCE WITH NFPA 2. COORDINATE EXACT LOCATION WITH FIELD CONDITIONS AND FINAL INSTALLATION. H2 CGD TRANSMITTER WITH DISPLAY SHALL BE MOUNTED AT EYE LEVEL APPROXIMATELY 60" AFF TO CENTER OF DISPLAY.
  - CONTRACTOR TO TEMPORARILY INSTALL EXISTING HYPO TANK PER CONTRACT DRAWING C-1. OWNER WILL FURNISH AND INSTALL TEMPORARY CONDUIT AND WIRING EXTENSION(S) TO HYPO TANK AS NECESSARY FOR CONSTRUCTION PURPOSES INCLUDING EXTENSION OF CONDUIT AND CONDUCTORS FOR 24VDC OPERATED MOV VALVE w/ OPEN/CLOSE AUXILIARY CONTACTS MONITORED BY PLC.



1 HYPO TANK REFERENCE IMAGE (E)



2 HYPO TANK MOV REFERENCE IMAGE (E)

**ISSUED FOR BID**

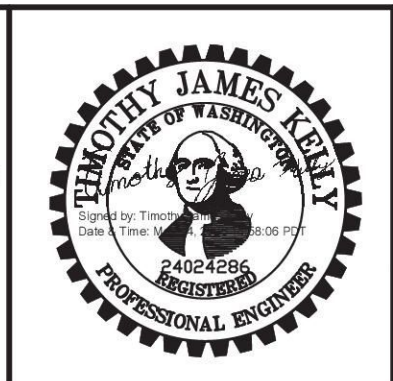
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NO	REVISION	DATE	BY

**SCALES**

0 — 1"  
0 — 25mm

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COVINGTON WATER DISTRICT  
COVINGTON, WASHINGTON  
222ND PL CORROSION CONTROL  
FACILITY REHABILITATION

**KJ Kennedy Jenks**

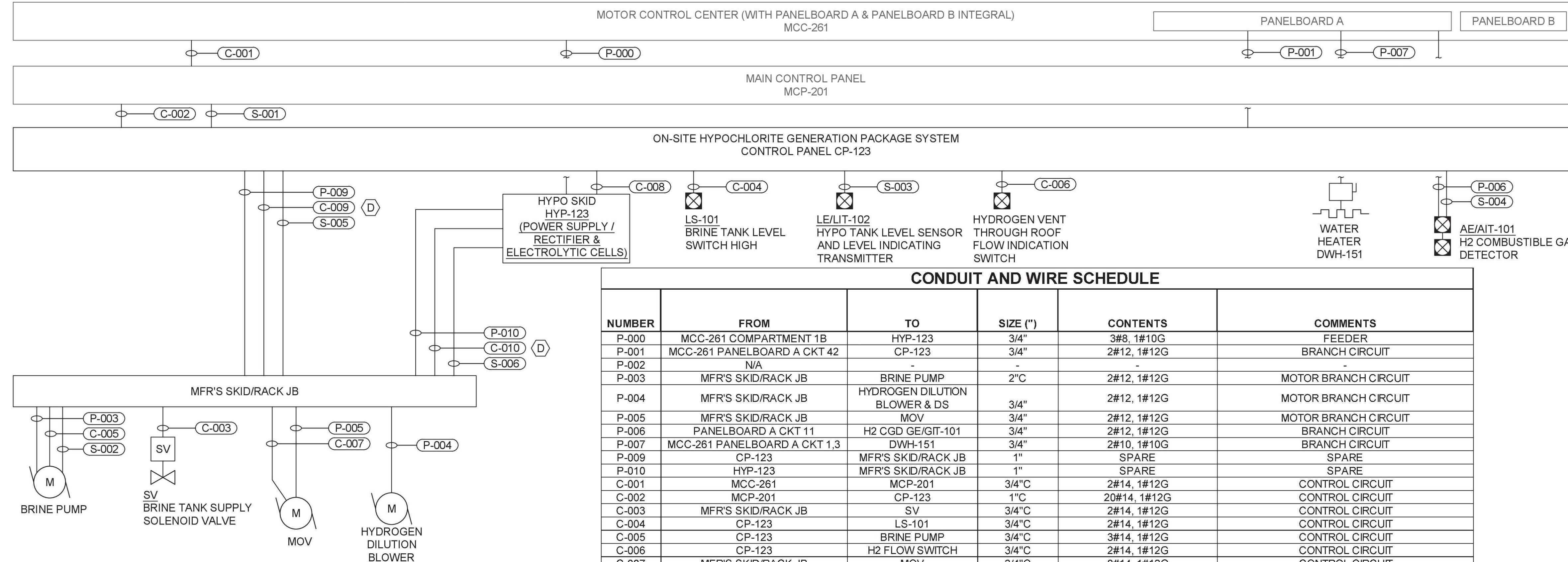
**POWER AND SIGNAL PLAN**

SCALE: 1/4" = 1'-0"  
JOB NO: 2497002.01  
DATE: MAY 2026  
SHEET: 21 OF 26  
E-5

Plot Date: 5/16/2026 10:33 AM

User: RICHARD HILLS

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**GENERAL SHEET NOTES**

- CONTRACTOR SHALL SUBMIT CONDUIT ROUTING PLANS TO ENGINEER FOR APPROVAL IN ACCORDANCE WITH SECTION 01 33 00. CONDUITS SHALL NOT INTERFERE WITH MECHANICAL EQUIPMENT MAINTENANCE CLEARANCES AND SHALL NOT CREATE TRIPPING HAZARDS.

**SHEET KEYNOTES**

- UTILIZE EXISTING 30A/2P CIRCUIT BREAKER A-1,3 FOR REPLACEMENT WATER HEATER DHW-151.
- UTILIZE EXISTING 2011/1P CIRCUIT BREAKER A-42 FOR REPLACEMENT CP-123 CP.
- UTILIZE SPARE CIRCUIT BREAKER AND RELABEL PANELBOARD SCHEDULE IN FIELD AS SHOWN.
- MULTIPLE INSTRUMENTATION DEVICES NOT SHOWN INCLUDING TEMPERATURE SWITCHES, FLOW SWITCHES, FLOW METERS AND/OR LEVEL SWITCHES MAY BE LOCATED ON THE GENERATION SYSTEM MFR'S SKID/RACK. COORDINATE WITH FINAL APPROVED GENERATION SYSTEM SHOP DRAWING SUBMITTAL. UTILIZE SPARE CONDUITS P-009, P-010, C-009, C-010, S-005, AND S-006 AS REQUIRED TO CONNECT THESE DEVICES TO CP-123 OR HYP-123.

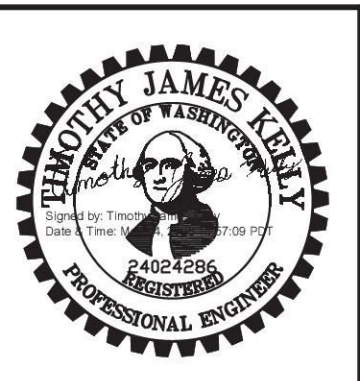
**CONDUIT AND WIRE SCHEDULE**

NUMBER	FROM	TO	SIZE (")	CONTENTS	COMMENTS
P-000	MCC-261 COMPARTMENT 1B	HYP-123	3/4"	3#8, 1#10G	FEEDER
P-001	MCC-261 PANELBOARD A CKT 42	CP-123	3/4"	2#12, 1#12G	BRANCH CIRCUIT
P-002	N/A	-	-	-	-
P-003	MFR'S SKID/RACK JB	BRINE PUMP	2"C	2#12, 1#12G	MOTOR BRANCH CIRCUIT
P-004	MFR'S SKID/RACK JB	HYDROGEN DILUTION BLOWER & DS	3/4"	2#12, 1#12G	MOTOR BRANCH CIRCUIT
P-005	MFR'S SKID/RACK JB	MOV	3/4"	2#12, 1#12G	MOTOR BRANCH CIRCUIT
P-006	PANELBOARD A CKT 11	H2 CGD GE/GIT-101	3/4"	2#12, 1#12G	BRANCH CIRCUIT
P-007	MCC-261 PANELBOARD A CKT 1,3	DWH-151	3/4"	2#10, 1#10G	BRANCH CIRCUIT
P-009	CP-123	MFR'S SKID/RACK JB	1"	SPARE	SPARE
P-010	HYP-123	MFR'S SKID/RACK JB	1"	SPARE	SPARE
C-001	MCC-261	MCP-201	3/4"C	2#14, 1#12G	CONTROL CIRCUIT
C-002	MCP-201	CP-123	1"C	20#14, 1#12G	CONTROL CIRCUIT
C-003	MFR'S SKID/RACK JB	SV	3/4"C	2#14, 1#12G	CONTROL CIRCUIT
C-004	CP-123	LS-101	3/4"C	2#14, 1#12G	CONTROL CIRCUIT
C-005	CP-123	BRINE PUMP	3/4"C	3#14, 1#12G	CONTROL CIRCUIT
C-006	CP-123	H2 FLOW SWITCH	3/4"C	2#14, 1#12G	CONTROL CIRCUIT
C-007	MFR'S SKID/RACK JB	MOV	3/4"C	8#14, 1#12G	CONTROL CIRCUIT
C-008	CP-123	HYP-123	1"C	20#14, 1#12G	CONTROL CIRCUIT
C-009	CP-123	MFR'S SKID/RACK JB	1"	SPARE	SPARE
C-010	HYP-123	MFR'S SKID/RACK JB	1"	SPARE	SPARE
S-001	MCP-201	CP-123	1.25"C	(3) #16 TSP	INSTRUMENTATION CIRCUIT
S-002	MFR'S SKID/RACK JB	BRINE PUMP	3/4"C	(2) #16 TSP	INSTRUMENTATION CIRCUIT
S-003	CP-123	LE/LIT-102	3/4"C	(1) #16 TSP	INSTRUMENTATION CIRCUIT
S-004	CP-123	H2 CGD GE/GIT-101	3/4"C	(1) #16 TSP	INSTRUMENTATION CIRCUIT
S-005	CP-123	MFR'S SKID/RACK JB	1"	SPARE	SPARE
S-006	HYP-123	MFR'S SKID/RACK JB	1"	SPARE	SPARE

PANELBOARD A				FED FROM: XFMR-A							
208/120 VOLTS, THREE PHASE, 4 WIRE				BUS: - AIC: 10kA MAIN: 100A/3P MOUNTING: WITHIN MCC							
CKT. NO.	DESCRIPTION	CONNECTED KVA			TRIP AMPS/POLES	CKT. NO.	DESCRIPTION	CONNECTED KVA			
		A	B	C				A	B	C	
1	DWH 151	2.25			30/2	2	LTG GENERATOR ROOM	0.77			
3	HOT WATER HEATER (A)		2.25			4	RCP GENERATOR ROOM		0.72		15/3
5	BBH-351			0.50		6	LTG ELEC ROOM			0.32	
7	BASEBOARD HEATER LAB	0.50				8	RCP ELEC ROOM	0.54			25/1
9	PREHEATER (C)		1.50		20/1	10	LTG LABORATORY		0.19		15/1
11	MOV (C)			0.51	20/1	12	RCP LABORATORY			0.90	20/1
13	SPARE				20/1	14	LTG LAVATORY	0.96			20/1
15	SPARE				20/1	16	FIRE DAMPERS RM/BATH 344, 402, 404, EF401		0.51		20/1
17	BATTERY CHARGER			0.50	20/1	18	LTG CHEM ROOM			0.38	20/1
19	GENERATOR	1.25			20/2	20	LTG CHEM ROOM	0.38			20/1
21	BLOCK HEATER		1.25			22	RCP CHEM ROOM		0.54		20/1
23	REF 576 AIR DRYER			0.18		24	RCP CHEM ROOM			0.54	20/1
25	DFP-512, DFP-513 DAY FUEL TANK	0.18			15/3	26	EXIT SIGNS	0.20			20/1
27	CP-601 FIRE ALARM PANEL		0.50			28	EXTERIOR LTS		0.25		20/1
29	GENERATOR DAMPERS			0.50	20/1	30	SPARE				20/1
31	FIRE DAMPERS AND EXHAUST FANS 342	1.13			20/1	32	SPARE				20/1
33	SPARE				20/1	34	OUTSIDE RCP		0.36		20/1
35	RCP LAVATORY			0.18	20/1	36	EF 272 EXHAUST FAN / DAMPER ELECT ROOM			0.67	20/1
37					20/1	38	SPARE				20/1
39					20/1	40	SPARE				20/1
41	P-CW-104				20/1	42 (B)	CP-123 GENERATOR CLORTEL CONTROL POWER			1.31	20/1
PHASE SUBTOTALS (KVA):		5.3	5.5	2.4				2.9	2.6	4.1	
PHASE TOTALS (KVA):								8.2	8.1	6.5	
PHASE TOTALS (AMPS):								22.6	22.4	18.0	
TOTAL (KVA):										22.7 KVA	
MAX PHASE AMPS										22.6 A	
PERCENT LOAD MAX PHASE:										22.6 %	
TOTAL (AMPERES):										63 A	

PANELBOARD B				FED FROM: XFMR-B				
120/240 VOLTS, SINGLE PHASE, 3 WIRE				BUS: - AIC: 10kA MAIN: 125A/2P MOUNTING: WITHIN MCC				
CKT. NO.	DESCRIPTION	TRIP AMPS/POLES	CONNECTED KVA		CKT. NO.	DESCRIPTION	CONNECTED KVA	
			A	B			A	B
1	SPARE	20/1			2	SPARE		
3	AE/AIT-321,311,CL2 ANALYZER 770	20/1		0.18	4			
5	AE/AIT-322,312,CL2 ANALYZER 660N	20/1	0.18		6			
7	AE/AIT-323,313,CL2 ANALYZER 660S	20/1	0.18	0.18	8	SPARE		
9	MCP-201 CONTROL POWER	20/1	0.18		10			
11	P-711, LCP-711	20/2		1.15	12	SPARE		
13	GRINDER PUMP	20/2	1.15		14	WS-104		
15	SHP111	20/2		0.56	16	SPARE		
17	660 SOUTH INJ. PUMP NaOH	20/2	0.56		18	SPARE		
19	SHP112	20/1		1.13	20	CSP 121		0.56
21	660N INJ. PUMP	20/1	1.13		22	660 SOUTH INJ. PUMP CL2	0.56	0.56
23	SHP-113 - 770 PUMP	20/1		1.13	24	CSP 122 INJ. PUMP		1.13
25	SPARE	20/1			26	660 NORTH	1.13	
27	FUTURE	20/2			28	CSP 123 770 PUMP		1.13
29	SPARE	20/2			30	SPARE		
31	FUTURE	20/2			32	FUTURE		
33	SPARE	20/2			34	SPARE		
35	FUTURE	20/2			36	FUTURE		
37	SPARE	20/2			38	SPARE		
39	FUTURE	20/2			40			
41	SPARE	20/2			42	P-CF-104		
PHASE SUBTOTALS (KVA):			3.2	4.3			1.7	2.8
PHASE TOTALS (KVA):							4.9	7.1
PHASE TOTALS (AMPS):							40.7	59.5
TOTAL (KVA):								12.0 KVA
MAX PHASE AMPS								59.5 A
PERCENT LOAD MAX PHASE:								59.5 %
TOTAL (AMPERES):								50 A

<b>ISSUED FOR BID</b>			
NO	REVISION	DATE	BY

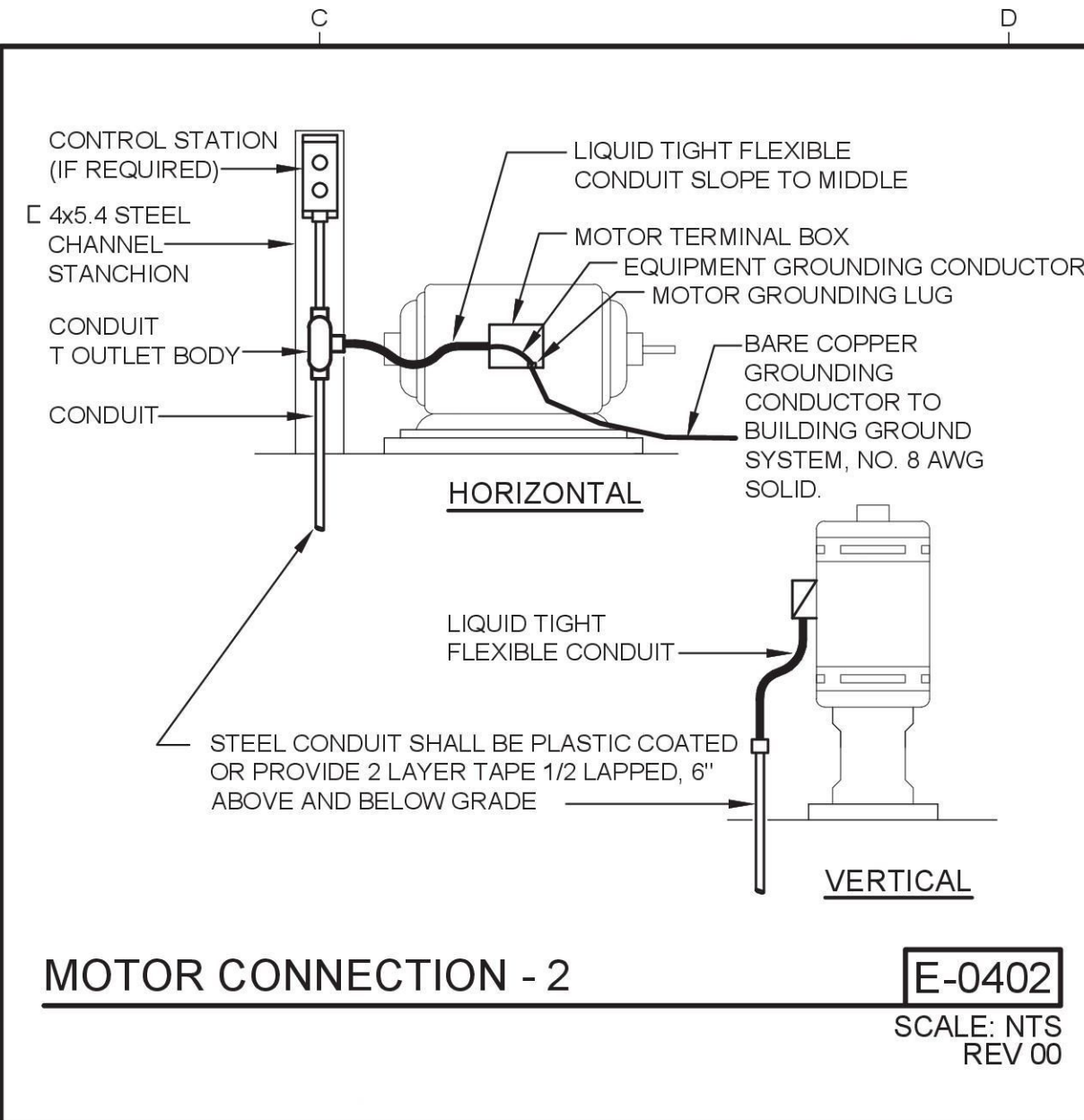


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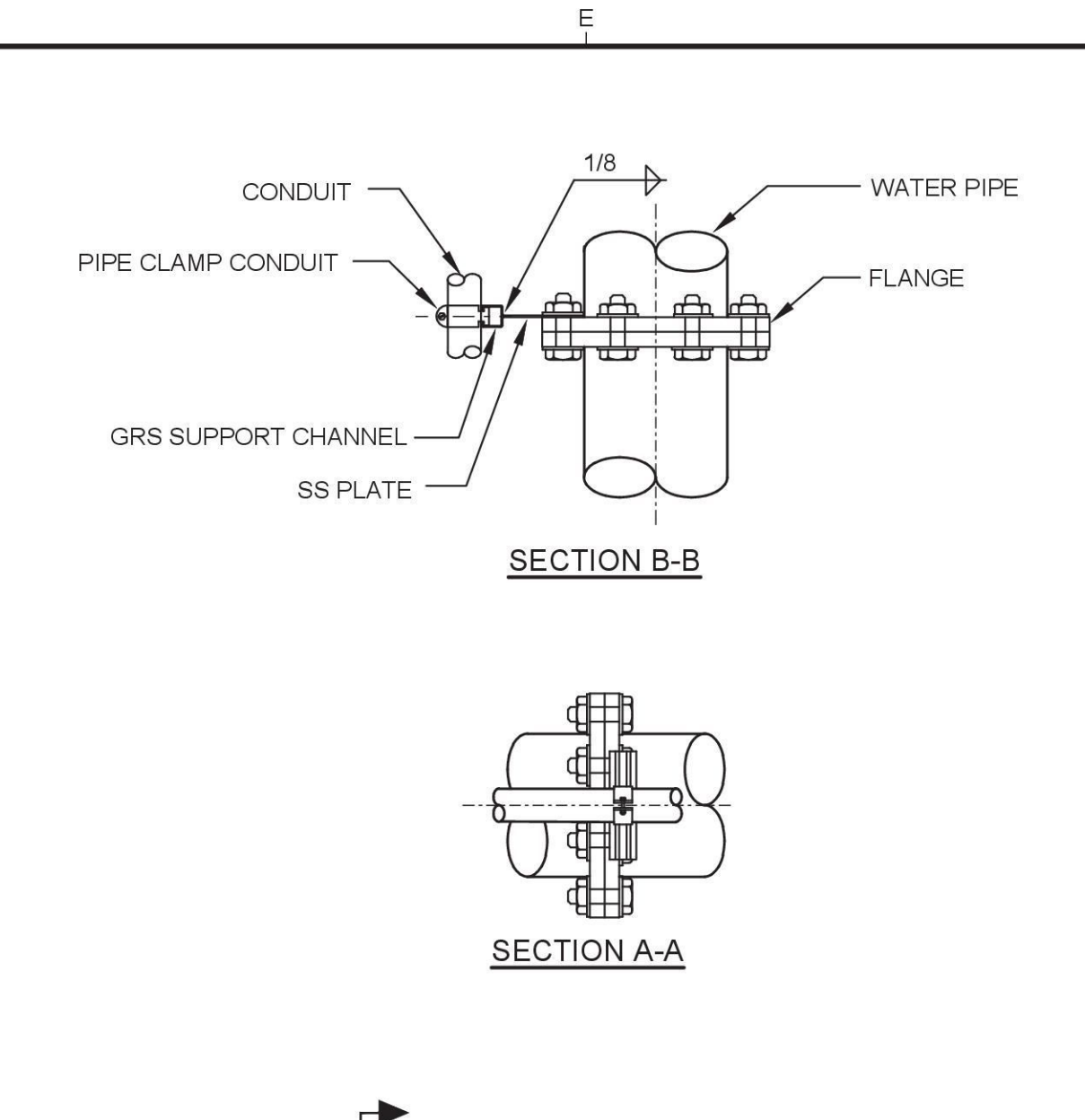
COVINGTON WATER DISTRICT  
COVINGTON, WASHINGTON

222ND PL CORROSION CONTROL  
FACILITY REHABILITATION

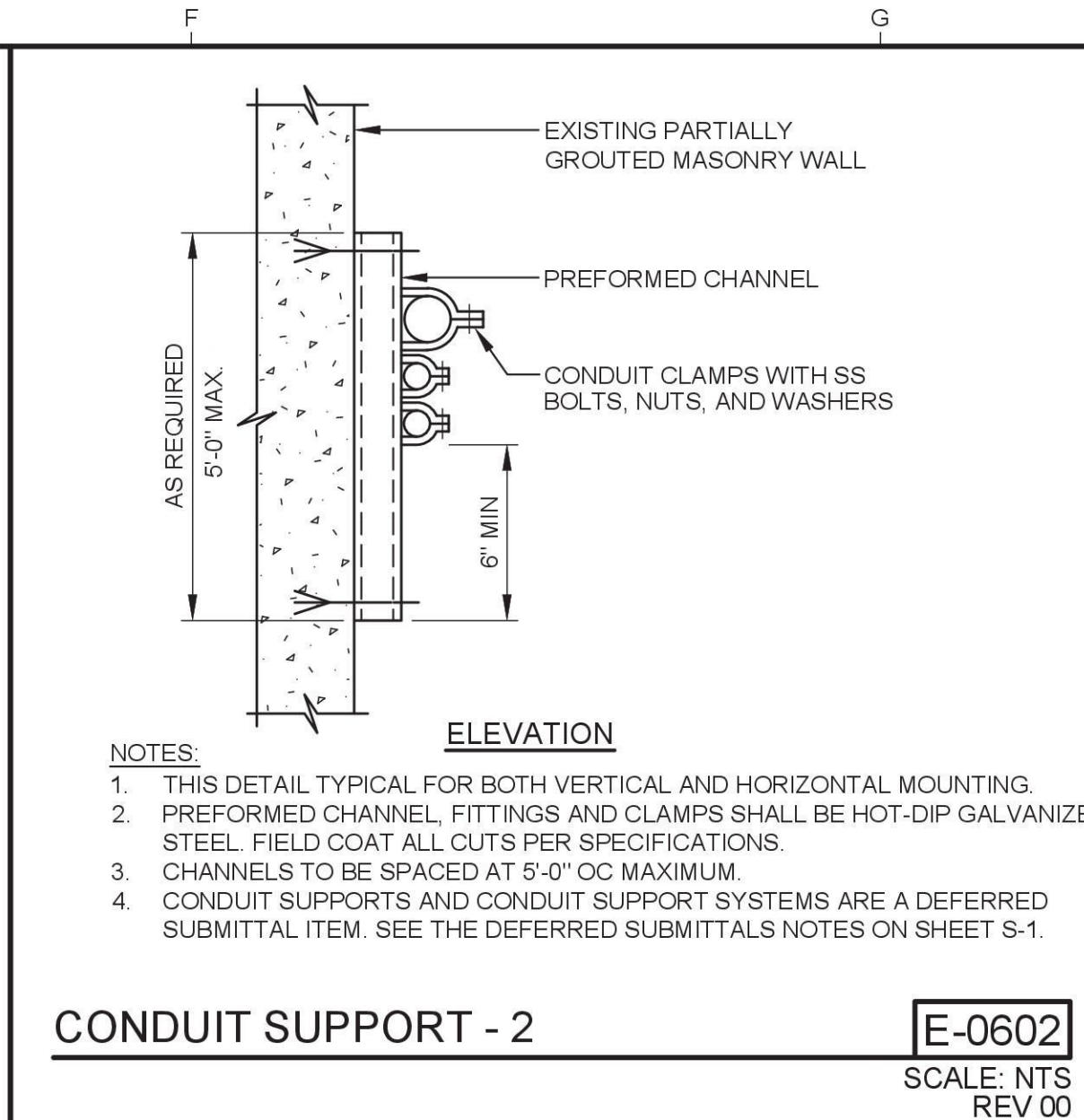
<b>CONDUIT BLOCK DIAGRAM AND CABLE SCHEDULE</b>	
SCALE: NTS	JOB NO: 2497002.01
DATE: MAY 2026	SHEET: 22 OF 26
E-6	



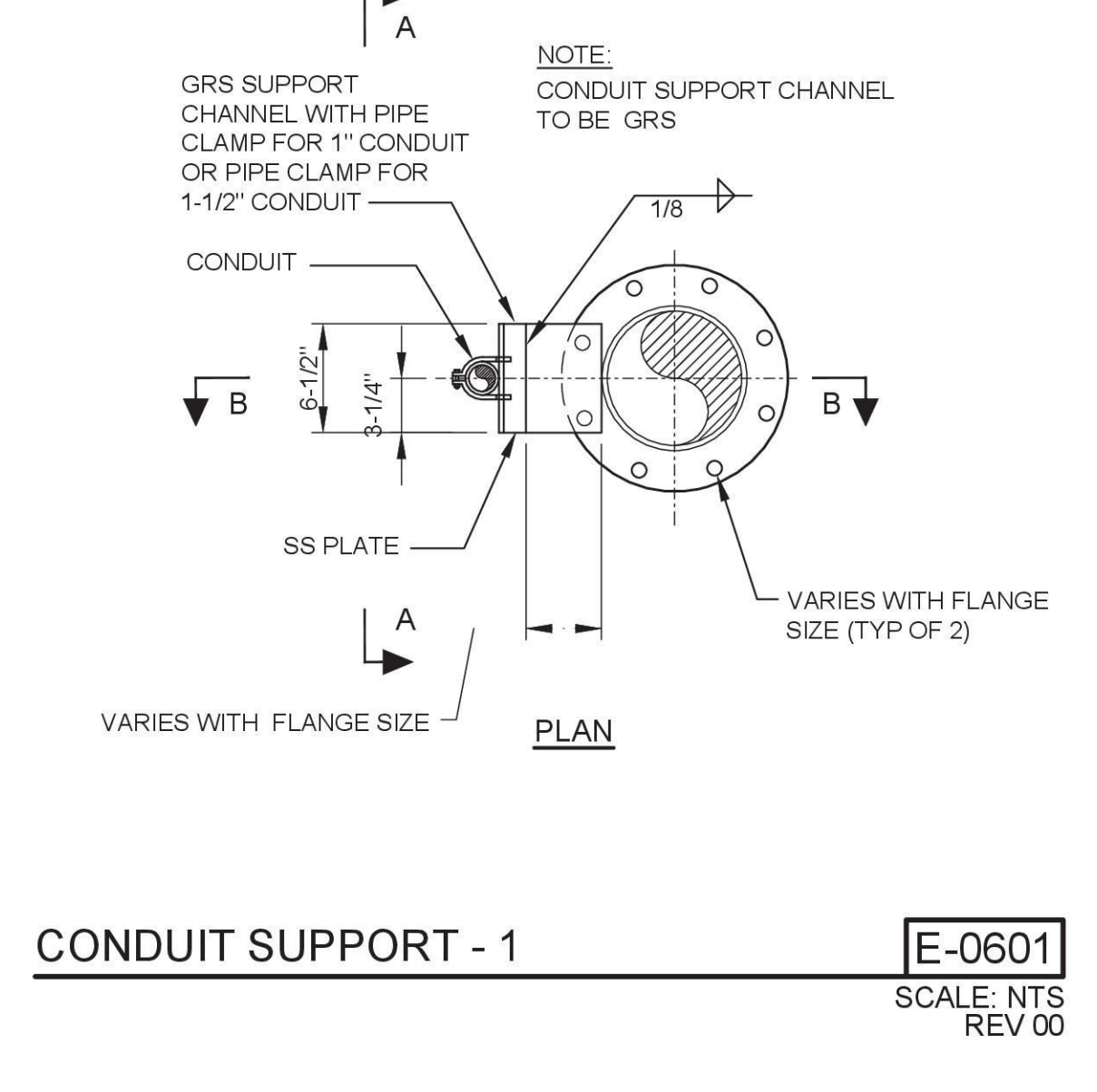
**MOTOR CONNECTION - 2** E-0402  
SCALE: NTS  
REV 00



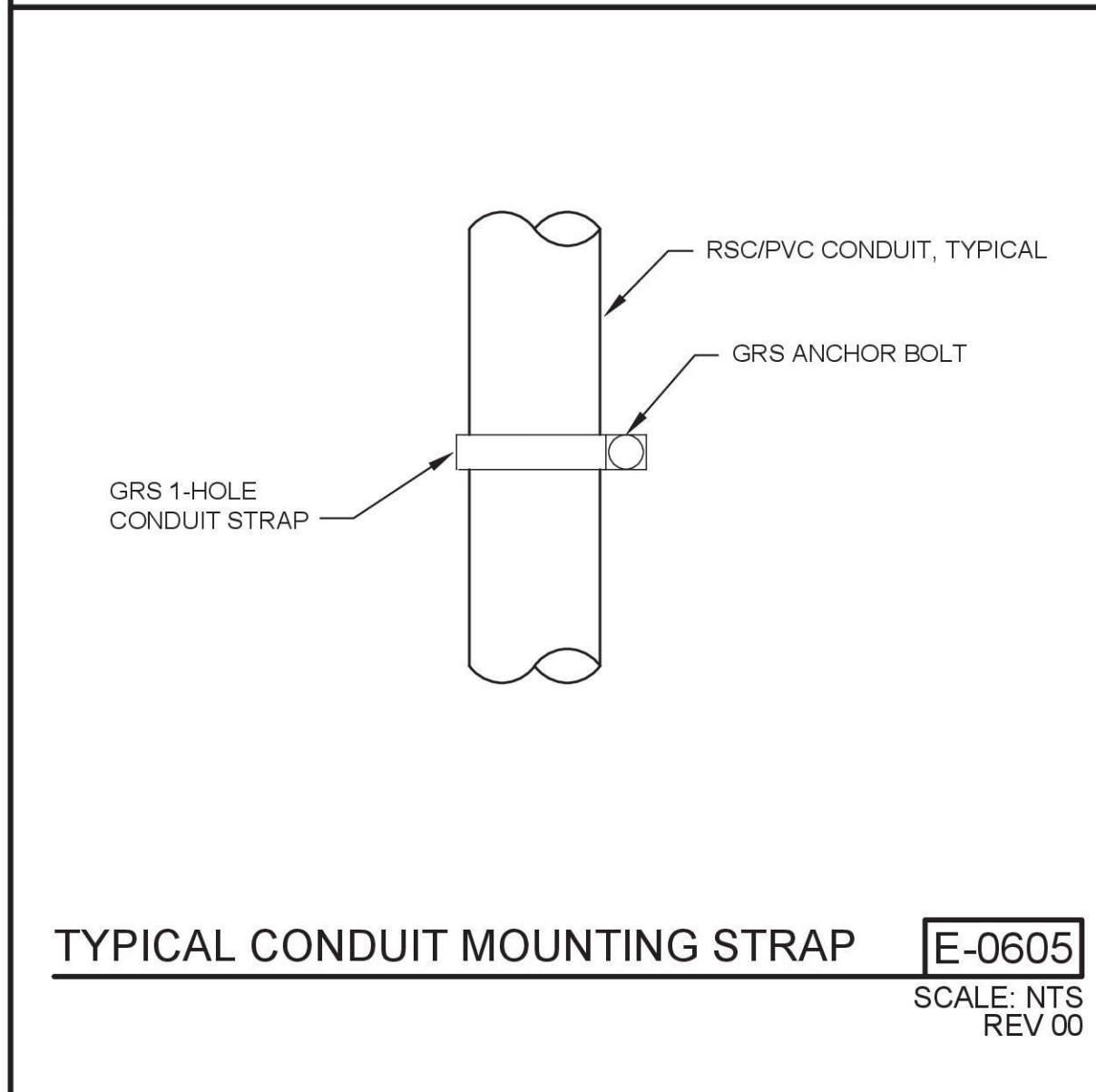
**CONDUIT SUPPORT - 2** E-0602  
SCALE: NTS  
REV 00



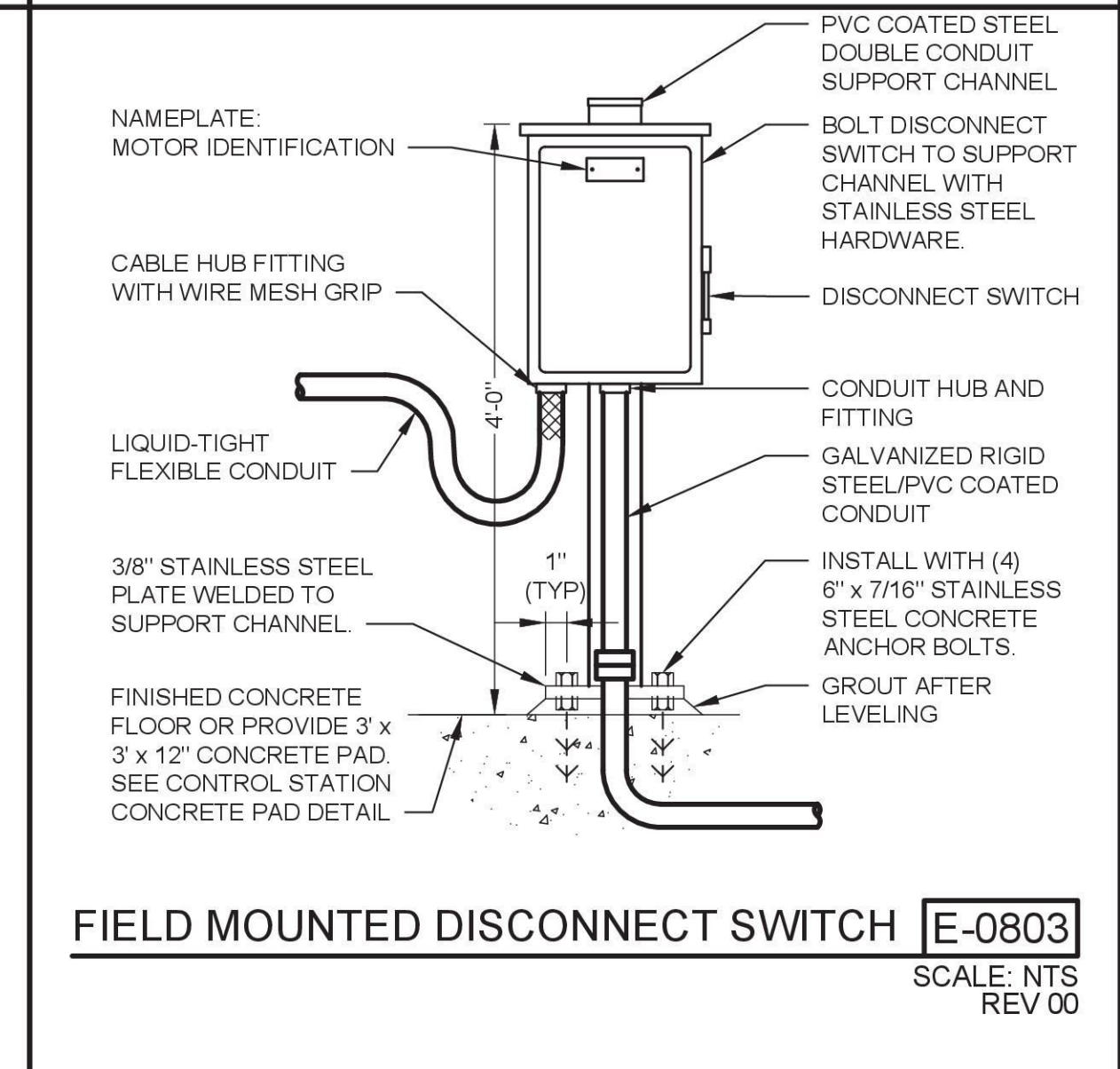
**CONDUIT SUPPORT FROM CEILING** E-0603  
SCALE: NTS  
REV 00



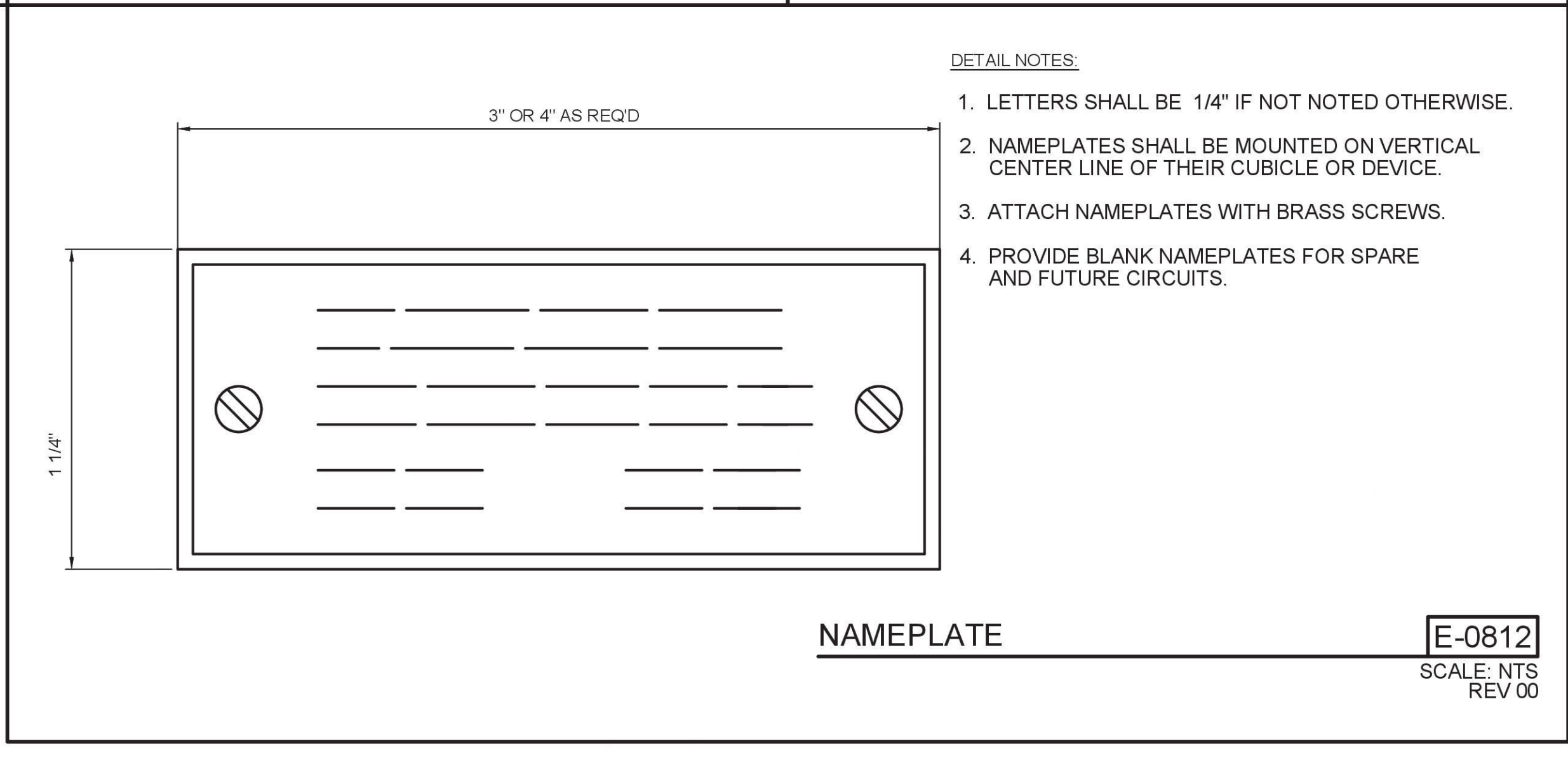
**CONDUIT SUPPORT - 1** E-0601  
SCALE: NTS  
REV 00



**TYPICAL CONDUIT MOUNTING STRAP** E-0605  
SCALE: NTS  
REV 00



**FIELD MOUNTED DISCONNECT SWITCH** E-0803  
SCALE: NTS  
REV 00



**NAMEPLATE** E-0812  
SCALE: NTS  
REV 00

**ISSUED FOR BID**

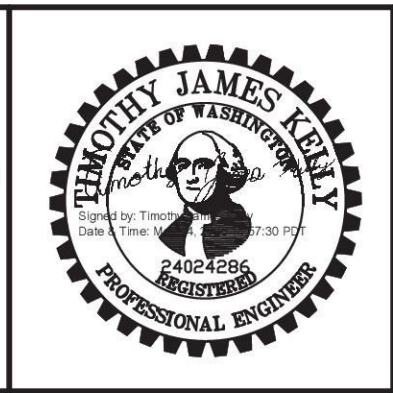
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COVINGTON, WASHINGTON

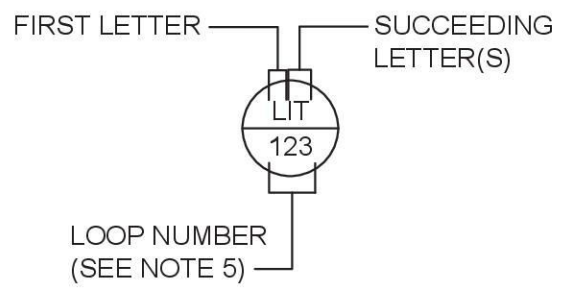
**222ND PL CORROSION CONTROL FACILITY REHABILITATION**

**KJ Kennedy Jenks**

**ELECTRICAL DETAILS**

SCALE: NTS  
JOB NO: 2497002.01  
DATE: MAY 2026  
SHEET: 23 OF 26  
E-7

### INSTRUMENT CALLOUTS AND TAG SCHEMA



**TYPICAL TAG FORMAT**  
 LIT-123 INSTRUMENT TAG NUMBER  
 LIT FUNCTIONAL IDENTIFICATION  
 LIT FIRST LETTER  
 IT SUCCEEDING LETTER(S)  
 IT 123 LOOP NUMBER

**EXPANDED TAG FORMAT**  
 20LIT-123A INSTRUMENT TAG NUMBER  
 20 AREA NUMBER  
 LIT FUNCTIONAL IDENTIFICATION  
 LIT FIRST LETTER  
 IT SUCCEEDING LETTER(S)  
 IT 123 LOOP NUMBER  
 A OPTIONAL SUFFIX

FIRST LETTER (1)		SUCCEEDING LETTERS (15)		
MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS (2)(3)(4)		ALARM	
B	BURNER, COMBUSTION (2)		USER'S CHOICE (5)	USER'S CHOICE (5)
C	USER'S CHOICE (3a)(5)		CONTROL (23a)(23e)	CLOSED (27b)
D	DENSITY	DIFFERENTIAL	DAMPER	
E	VOLTAGE (2)		SENSOR (PRIMARY ELEMENT)	
F	FLOW, FLOW RATE (2)	RATIO (FRACTION) (2b)		
G	USER'S CHOICE		GLASS, VIEWING DEVICE (16)	
H	HAND (2)			HIGH (27A)(28A)(29)
I	CURRENT (ELECTRICAL)(2)		INDICATE (17)	
J	POWER (2)		SCAN (18)	
K	TIME, TIME SCHEDULE (2)	TIME RATE OF CHANGE (12c)(13)		CONTROL STATION (24)
L	LEVEL (2)		LIGHT (19)	LOW (27b)(28)(29)
M	MOISTURE	MOMENTARY		MIDDLE, INTERMEDIATE
N	USER'S CHOICE (5)		USER'S CHOICE (5)	USER'S CHOICE (5)
O	USER'S CHOICE (5)		ORIFICE, RESTRICTION	OPEN (27a)
P	PRESSURE, VACUUM (2)		POINT (TEST) CONNECTION	
Q	QUANTITY (2)	INTEGRATE, TOTALIZE	INTEGRATE, TOTALIZE	
R	RADIATION (2)		RECORD (20)	RUN
S	SPEED, FREQUENCY (2)	SAFETY (14)		SWITCH (23b)
T	TEMPERATURE (2)			TRANSMIT
U	MULTI VARIABLE (2)(6)		MULTIFUNCTION (21)	MULTIFUNCTION (21)
V	VIBRATION, MECHANICAL ANALYSIS (2)(4)(7)			VALVE, DAMPER, OR LOUVER (23c)(23e)
W	WEIGHT, FORCE (2)		WELL, PROBE	
X	UNCLASSIFIED (8)	X AXIS (11c)	ACCESSORY DEVICES (22) UNCLASSIFIED (8)	UNCLASSIFIED (8)
Y	EVENT, STATE, PRESENCE (2)(9)	Y AXIS (11c)		RELAY, COMPUTE, CONVERT
Z	POSITION, DIMENSION (2)	Z AXIS (11c), SAFETY INSTRUMENTED SYSTEM (30)		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT

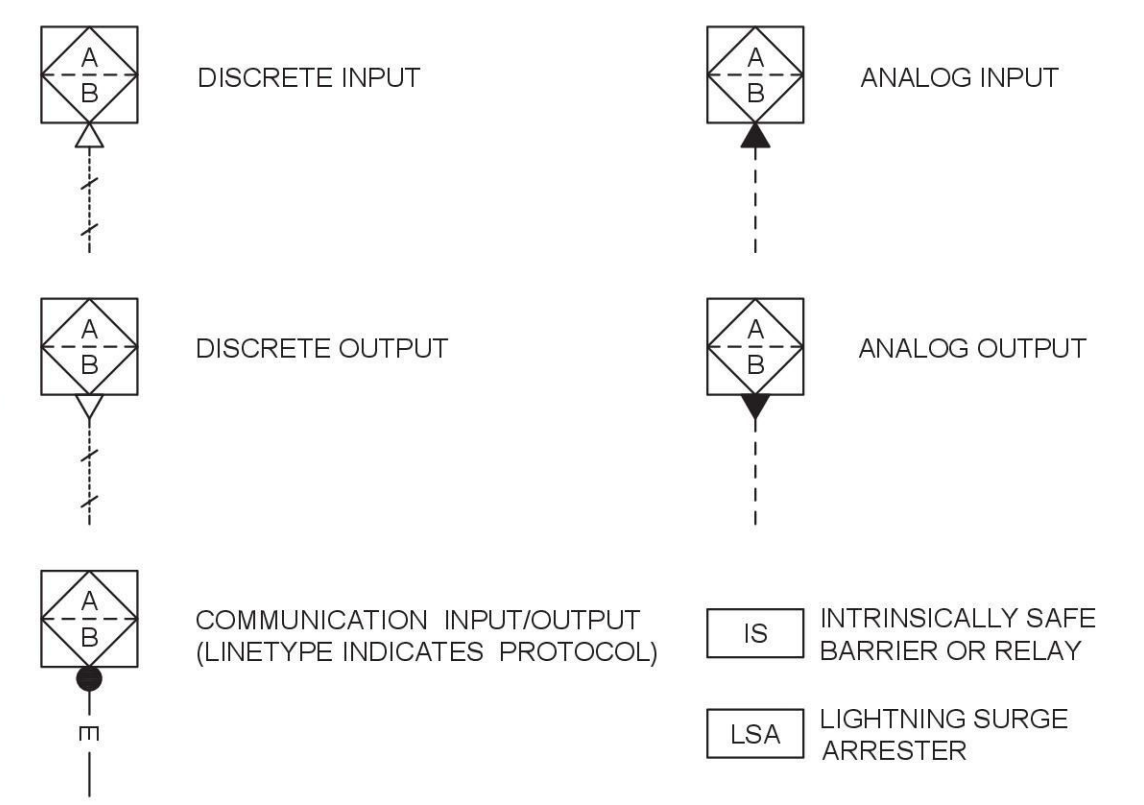
NOTE: NUMBERS IN PARENTHESES REFER TO EXPLANATORY NOTES IN ANSI/ISA-5.1-2009, SECTION 4.2

	LOCATED IN FIELD VISIBLE AT LOCATION OPERATOR ACCESSIBLE	LOCATED ON MAIN PANEL VISIBLE ON PANEL FRONT OPERATOR ACCESSIBLE	LOCATED IN MAIN PANEL CABINET NOT VISIBLE ON PANEL FRONT NOT OPERATOR ACCESSIBLE	LOCATED ON SECONDARY PANEL VISIBLE ON PANEL FRONT OPERATOR ACCESSIBLE	LOCATED IN SECONDARY PANEL CABINET NOT VISIBLE ON PANEL FRONT NOT OPERATOR ACCESSIBLE
SHARED DISPLAY SHARED CONTROL					
PROGRAMMABLE LOGIC CONTROL					
COMPUTER FUNCTION					
INSTRUMENT					
PILOT LIGHT					

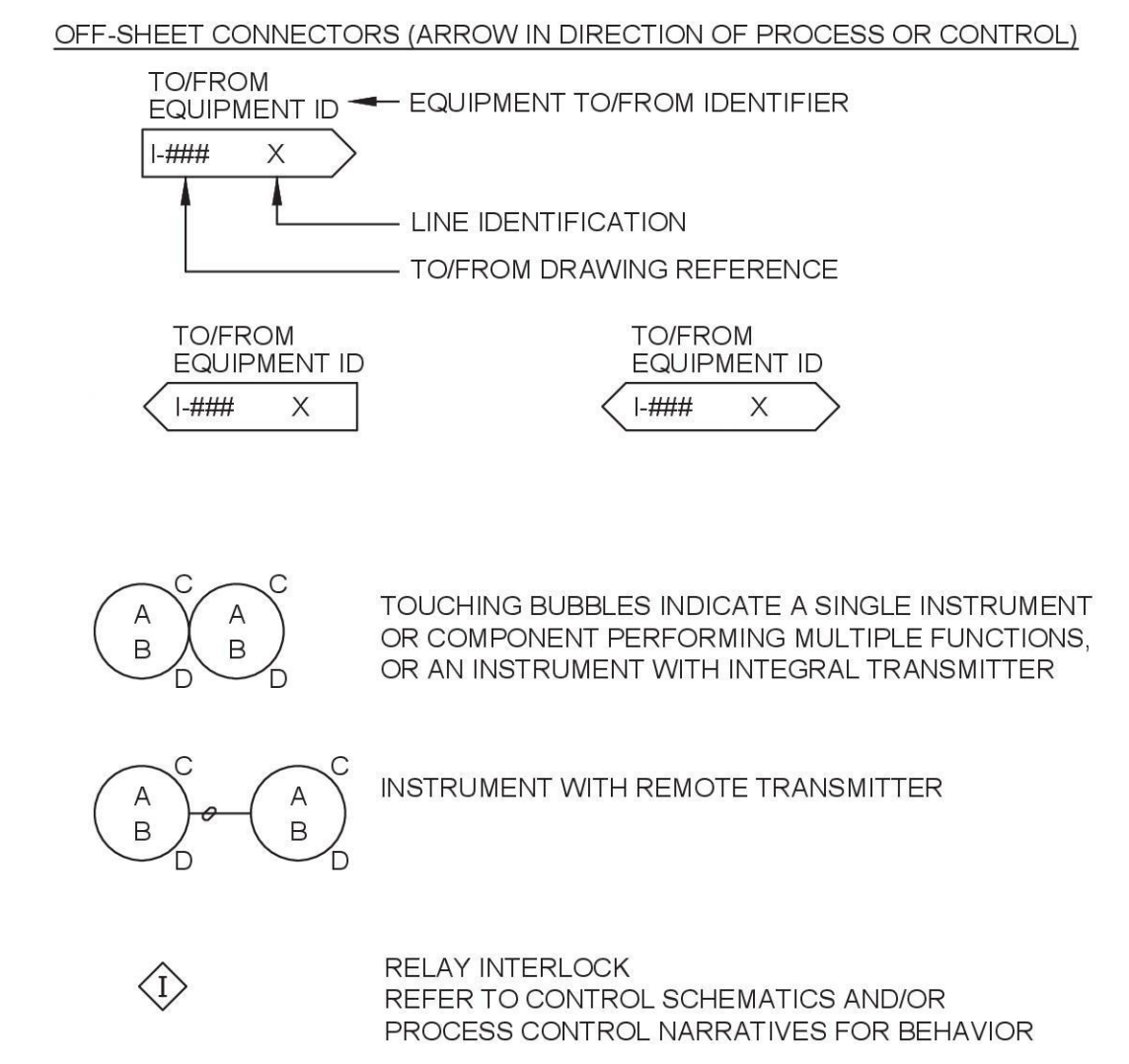
DISPLAY AND CONTROL SYMBOLS FOR ANALOG MEASURED VARIABLES MAY ALSO INDICATE THE PRESENCE OF DERIVED SETPOINTS USED FOR ALARM GENERATION

**LETTER MAPPING:**  
 A: IDENTIFICATION LETTERS (SEE TABLE OR REFER TO ANSI/ISA-5.1-2009; TABLE 4.1)  
 B: LOOP NUMBER  
 C: USER DESCRIPTOR/FUNCTION DESIGNATION (SEE LIST THIS SHEET)  
 D: MEASUREMENT (REFER TO ANSI/ISA-5.1-2009; TABLE 5.2.2)  
 E: PROCESS CONTROL DESCRIPTOR LINE 1  
 F: PROCESS CONTROL DESCRIPTOR LINE 2  
 G: PROCESS CONTROL DESCRIPTOR LINE 3

### PLC I/O



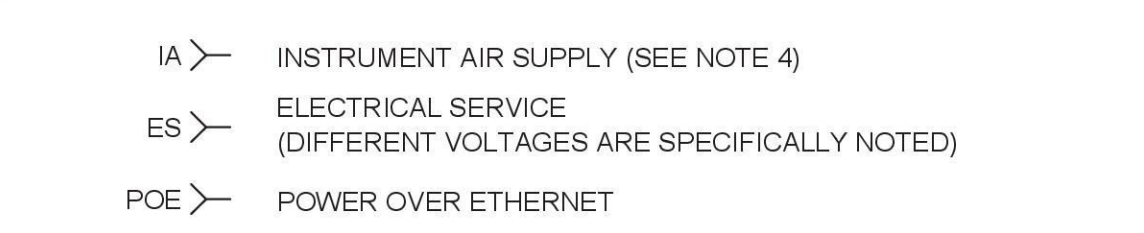
### MISCELLANEOUS



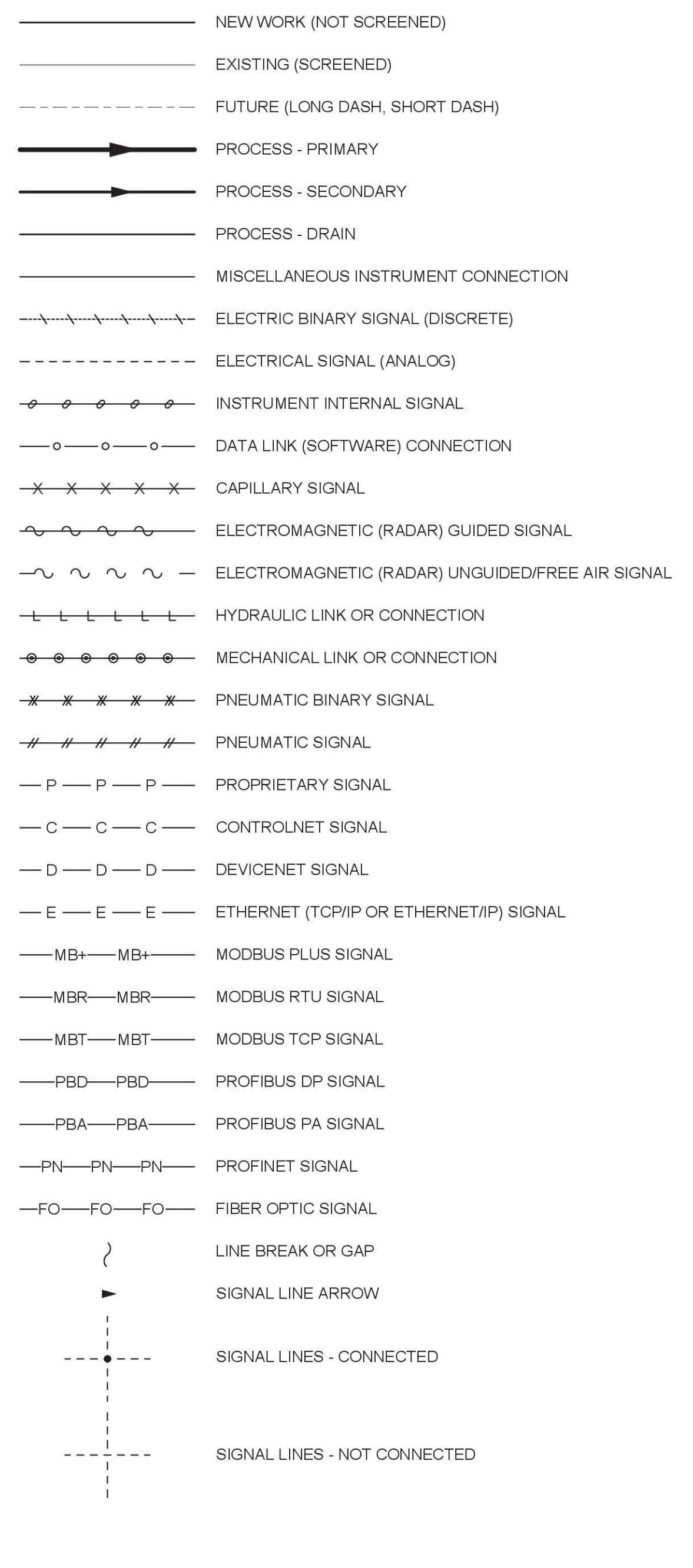
### FUNCTION DESIGNATIONS

SWITCHES	ANALYTICAL INSTRUMENTS
A/M AUTO-MANUAL	ALK ALKALINITY
ESTOP EMERGENCY STOP	CL2* CHLORINE CONCENTRATION
F-R FORWARD-REVERSE	CO CARBON MONOXIDE
HOA HAND-OFF-AUTO	CO2 CARBON DIOXIDE
HOR HAND-OFF-REMOTE	COMB COMBUSTIBLE GAS
LJR LOCAL-REMOTE	COND CONDUCTIVITY
LOR LOCAL-OFF-REMOTE	COMB COMBUSTIBLE GAS
O/C OPEN-CLOSE	DO DISSOLVED OXYGEN
OCA OPEN-CLOSE-AUTO	H2S HYDROGEN SULFIDE
O-O ON-OFF	HUM HUMIDITY
OSC OPEN-STOP-CLOSE	NO3 NITRATE
POT POTENTIOMETER	O2 OXYGEN CONCENTRATION
RST RESET	O3 OZONE
S-S START-STOP	ORP OXIDATION REDUCTION POTENTIAL
	PH PH
	SO2 SULFUR DIOXIDE
	TH TOTAL HARDNESS
	TURB TURBIDITY
	UV ULTRAVIOLET TRANSMITTANCE OR INTENSITY
	* NOTED AS TOTAL OR FREE

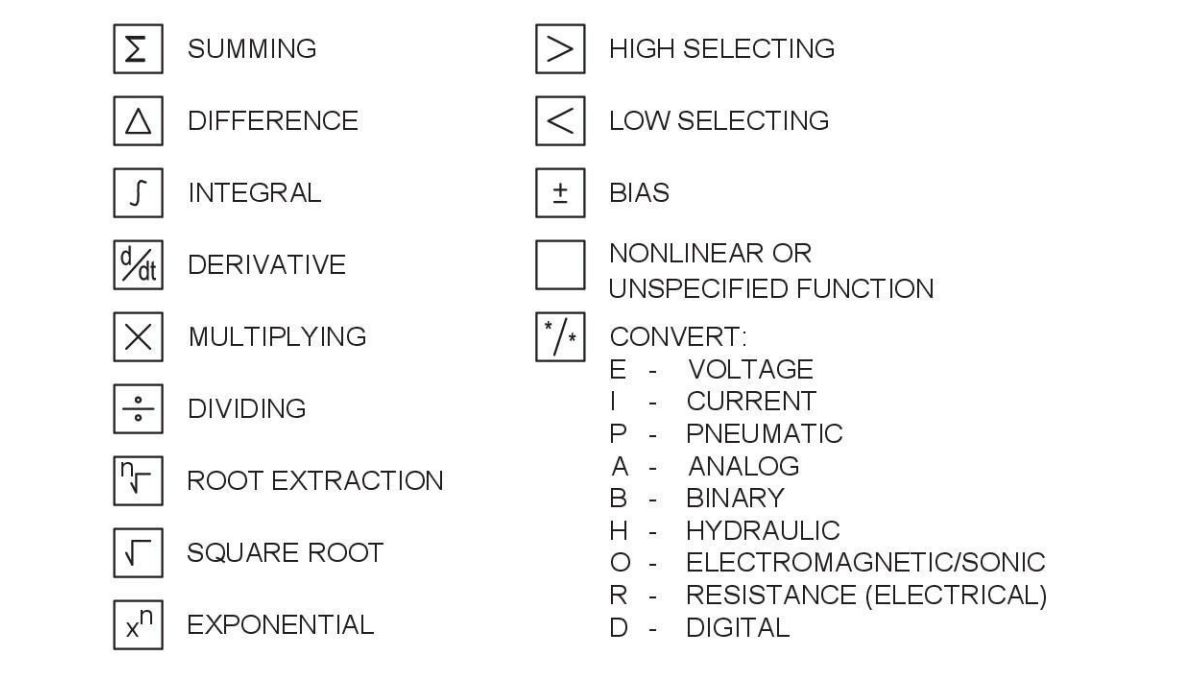
### INSTRUMENT AND EQUIPMENT SERVICES



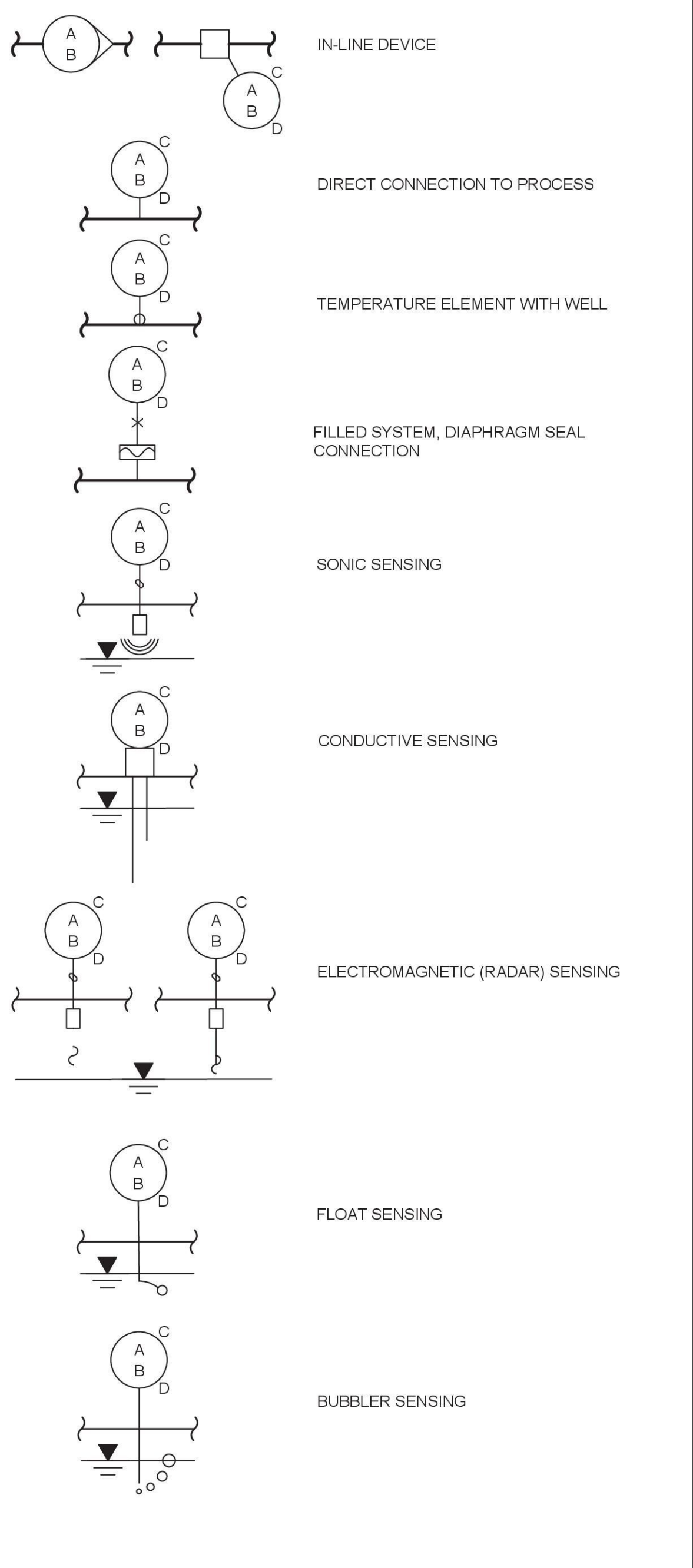
### LINE SYMBOLOGY



### SIGNAL PROCESSING FUNCTIONS



### TYPICAL CONNECTIONS



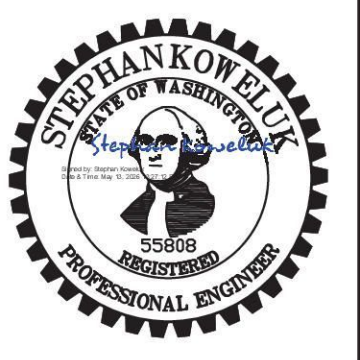
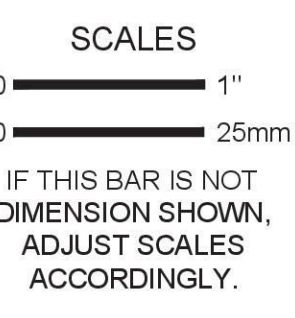
### NOTES

- SEE THE GENERAL AND ELECTRICAL DISCIPLINE DRAWINGS FOR ADDITIONAL SYMBOLS AND ABBREVIATIONS.
- SEE THE GENERAL DISCIPLINE DRAWINGS FOR EQUIPMENT DESIGNATIONS AND PROCESS IDENTIFICATION CODES.
- THIS IS A GENERALIZED LEGEND SHEET. SEE ALSO ISA S5.1, S5.3 AND S7.3.
- FOR INSTRUMENT AIR QUALITY STANDARDS, REFER TO ISA RP7.7.
- WHERE LOOP NUMBERS EXCEED THE LENGTH AVAILABLE WITHIN A BUBBLE, THE LOWER HALF OF THE BUBBLE MAY APPEAR BROKEN TO ALLOW SPACE FOR THE LOOP NUMBER.
- SEE SPECIFICATION 17010 FOR COMPLETE DETAILS OF LOOP DRAWING AND INTERCONNECTION DRAWING SUBMITTAL REQUIREMENTS.
- POWER SUPPLIES FOR INSTRUMENT LOOPS OR SYSTEMS SHALL BE PROVIDED BY THE INSTRUMENTATION SUPPLIER TO MEET THE VOLTAGE AND CURRENT REQUIREMENTS OF THE COMPONENTS IN EACH LOOP OR SYSTEM.
- FIELD SWITCHES FOR ELECTRICAL MOTOR OPERATION SHALL BE SUPPLIED BY THE ELECTRICAL CONTRACTOR UNLESS THEY ARE PART OF A VENDOR PACKAGE.

### ISSUED FOR BID

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NO	REVISION	DATE	BY



DESIGNED	SAK	COVINGTON WATER DISTRICT COVINGTON, WASHINGTON  <b>222ND PL CORROSION CONTROL          FACILITY REHABILITATION</b>	Kennedy Jenks
DRAWN	JL		
CHECKED	LGR		

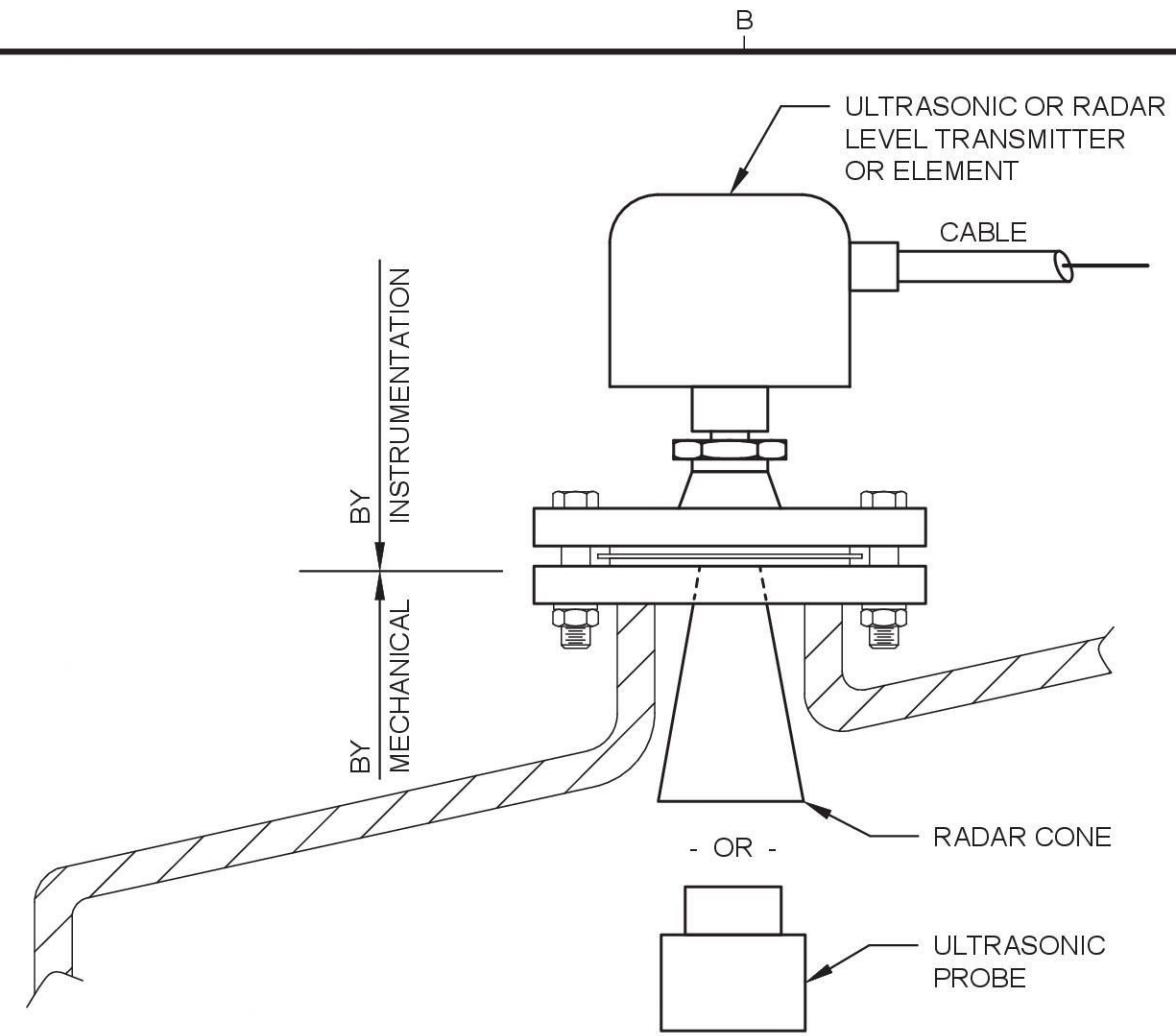
### INSTRUMENTATION LEGEND AND NOTES

SCALE	NTS
JOB NO	2497002.01
DATE	MAY 2026
SHEET	OF
	I-1

Plot Date: 5/16/2026 10:38 AM

User: RICHARD HILLS

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**RADAR OR ULTRASONIC TRANSMITTER** I-0403  
 FLANGED CONNECTION SCALE: NTS  
 REV 00

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NO	REVISION	DATE	BY

**SCALES**  
 0 ——— 1"  
 0 ——— 25mm  
 IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.



DESIGNED	SAK
DRAWN	SAK
CHECKED	LGR

COVINGTON WATER DISTRICT  
 COVINGTON, WASHINGTON  
**222ND PL CORROSION CONTROL  
 FACILITY REHABILITATION**

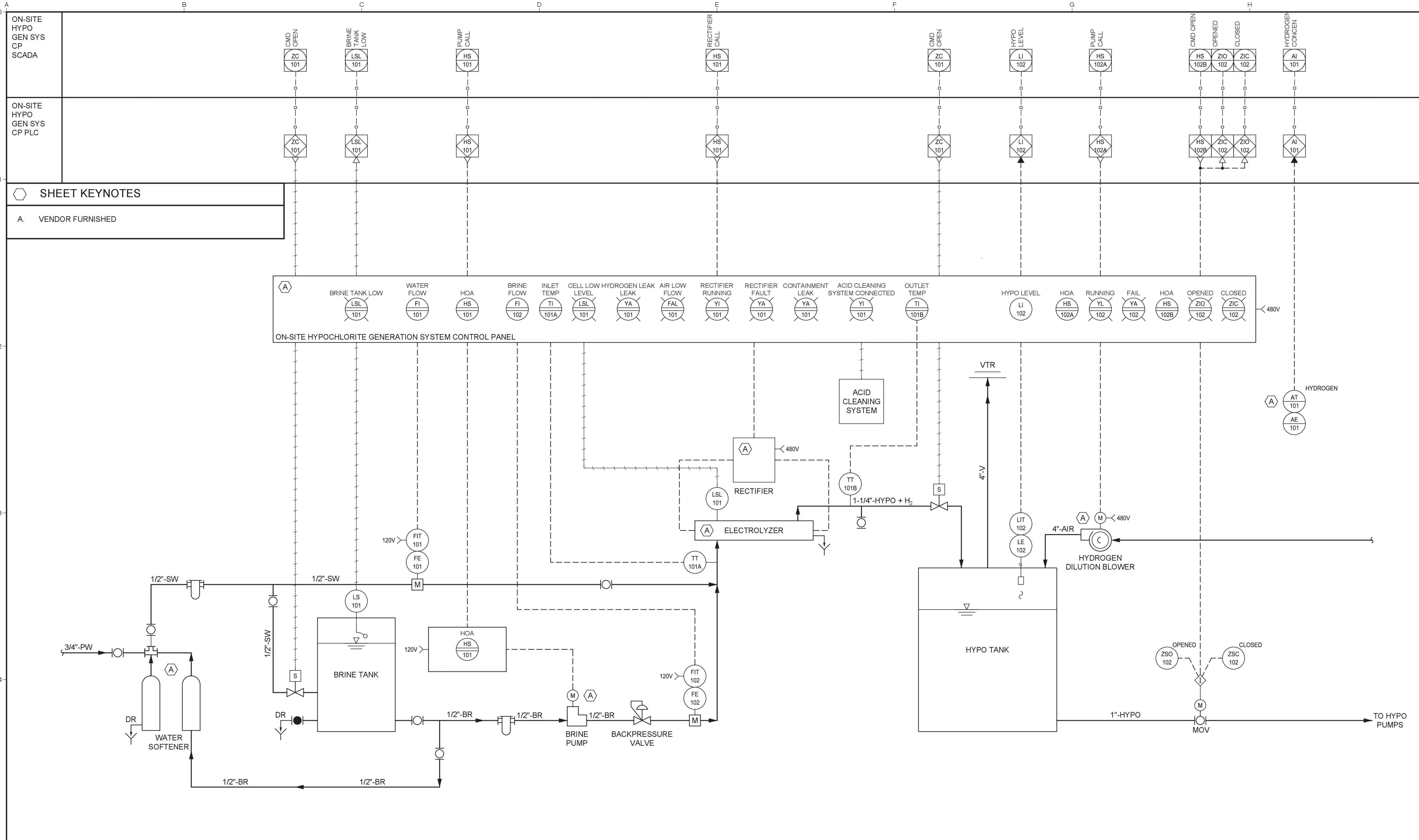
**KJ** Kennedy Jenks

<b>INSTRUMENTATION DETAILS</b>		SCALE
		JOB NO 2497002.01
		DATE MAY 2026
		SHEET OF I-2

Plot Date: 5/6/2026 10:39 AM

User: RICHARD HILLS

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**ISSUED FOR BID**

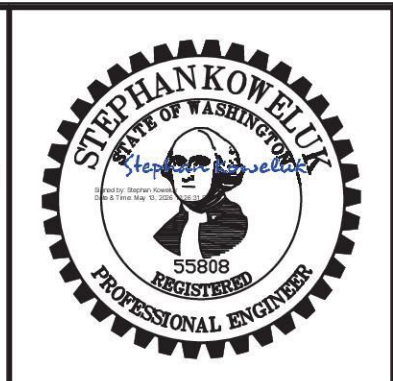
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NO	REVISION	DATE	BY

**SCALES**

0 — 1"  
0 — 25mm

IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.



DESIGNED: ML  
DRAWN: SAK  
CHECKED: LGR

COVINGTON WATER DISTRICT  
COVINGTON, WASHINGTON

222ND PL CORROSION CONTROL  
FACILITY REHABILITATION

**KJ Kennedy Jenks**

SCALE: NTS

JOB NO: 2497002.01

DATE: MAY 2026

SHEET OF: I-3

**PROCESS AND INSTRUMENTATION DIAGRAM  
ON-SITE HYPOCHLORITE GENERATION SYSTEM**