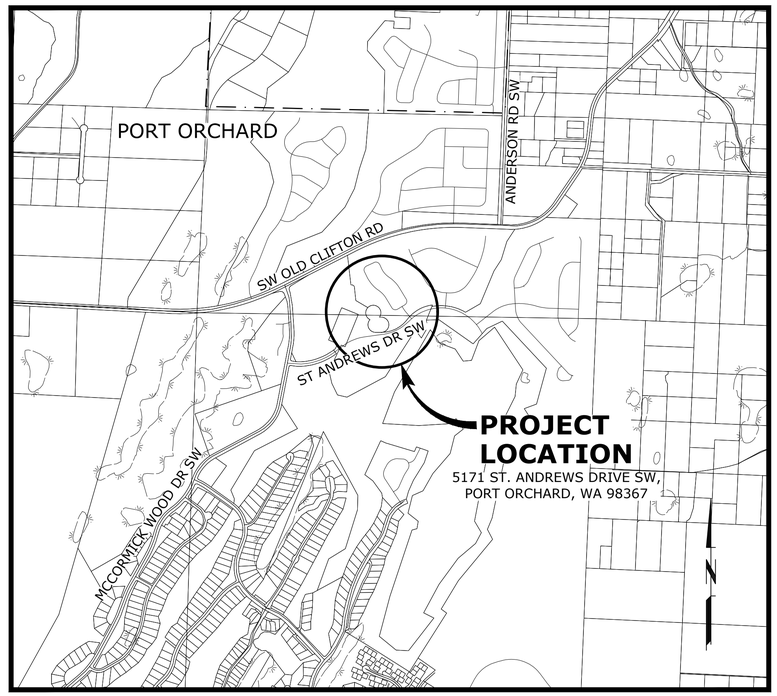
CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

APRIL 2023

INDEX OF DRAWINGS



VICINITY MAP

SCALE: 1"=500'

consor

600 UNIVERSITY STREET, SUITE 300
SEATTLE, WA 98101
P 206.462.7030

811 Know what's **below.** **Call** before you dig.

CITY OF PORT ORCHARD OFFICIALS

MAYOR
ROB PUTAANSUU

PUBIC WORKS DIRECTOR
TONY LANG

COUNCIL MEMBERS
SHAWN CUCCIARDI
JAY ROSAPEPE
SCOTT DIENER
JOHN CLAUSON
CINDY LUCARELLI
FRED CHANG
MARK TRENARY

APPROVAL OF CONSTRUCTION DATE

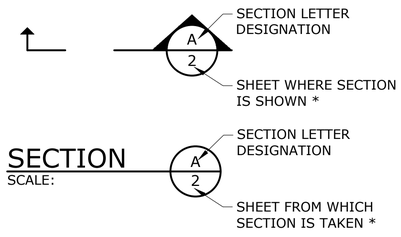
20-2839.01

PIPE & FITTING SYMBOLS

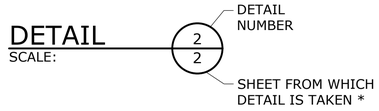
PLANT	SCHEMATIC	
		WELDED JOINT
		FLANGED JOINT
		GROOVED END JOINT
		MECHANICAL JOINT
		PUSH-ON JOINT (RUBBER GASKET)
		FLANGED COUPLING ADAPTER
		DOUBLE BALL FLEXIBLE EXTENSION COUPLING
		FLEXIBLE COUPLING W/ THRUST RING
		90° BEND UP
		90° BEND DOWN
		TEE UP
		TEE DOWN
		LATERAL UP
		LATERAL DOWN
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER
		UNION
		BLIND FLANGE
		CAP
		LONG SLEEVE
		FLEXIBLE COUPLING
		FITTING (45°)

SECTION AND DETAIL DESIGNATIONS

SECTION DESIGNATIONS



DETAIL DESIGNATIONS



* NOTE: IF PLAN AND SECTION FOR DETAIL CALL-OUT AND DETAIL ARE SHOWN ON THE SAME DRAWING, DRAWING NUMBER IS REPLACED WITH A DASH.

TOPOGRAPHIC LEGEND

	EXISTING	PROPOSED
WATERLINE	10"W	12"DI W
ELECTRICITY	E	E
GAS	4"G	4"G
TELEPHONE/TELEMETRY	T	T
CABLE TELEVISION	CATV	CATV
SANITARY SEWER LINE	8"SS	8"SS
SANITARY SEWER FORCE MAIN	6"FM	6"FM
STORM DRAIN	8"SD	8"SD
CULVERT		18"D
ABANDON PIPE		
DRAINAGE DITCH		
BARBWIRE FENCE		
CHAIN LINK FENCE		
TEMPORARY SILT FENCE		
GUARDRAIL		
ROCK WALL		
CENTERLINE		
EASEMENT/PROPERTY LINE		
RIGHT-OF-WAY		
EDGE OF PAVEMENT/AC		
EDGE OF GRAVEL		
CURB		
SIDEWALK	S/W	
TEMP CONSTRUCTION ENTRANCE		
STRUCTURE OR FACILITY		
CONTOUR MINOR		
CONTOUR MAJOR	200	200
MANHOLE		
CLEAN-OUT		
CATCH BASIN/FIELD INLET		
STORM DRAIN INLET PROTECTION		
THRUST BLOCK		
VALVE		
AIR INJECTION ASSEMBLY		
BLOW-OFF ASSEMBLY		
AIR RELEASE ASSEMBLY		
FIRE HYDRANT ASSEMBLY		
WATER METER		
PULL BOX/JUNCTION BOX		
UTILITY POLE		
GUY WIRE		
LIGHT POST		
SIGN		
BENCHMARK		
TREE DECIDUOUS		
TREE CONIFEROUS		
TREE TO BE REMOVED		
SURFACE ELEVATION	+ 176.63	+ 176.63

VALVE SYMBOLS

PLANT	SCHEMATIC	
		BUTTERFLY VALVE
		GATE VALVE
		GLOBE VALVE
		BALL VALVE
		BALANCING VALVE
		PLUG VALVE (TOP)
		PLUG VALVE (SIDE)
		3-WAY PLUG VALVE
		CHECK VALVE
		SWING CHECK VALVE
		DOUBLE CHECK ASSEMBLY
		BALL SWING CHECK
		SILENT CHECK VALVE
		PRESSURE REDUCING VALVE
		ALTITUDE CONTROL VALVE
S	S	SOLENOID VALVE
		RELIEF VALVE
		NEEDLE VALVE
		HOSE VALVE
		REDUCED PRESSURE BACKFLOW PREVENTER W/ GATE VALVES
		HOSE BIBB

MISCELLANEOUS PIPING SYMBOLS

	STRAINER
	SIGHT GLASS
	PRESSURE GAUGE W/ COCK
S	PRESSURE SWITCH W/ COCK
M	METER
SP	SLIP-ON JOINT PIPE
R	RESTRAINED JOINT PIPE

NO.	DATE	BY	REVISION

NOTICE

0 ½ 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

CLB DESIGNED

EJJ DRAWN

EKS CHECKED

PETER BENEDICT CUNNINGHAM STATE OF WASHINGTON 46352 REGISTERED PROFESSIONAL ENGINEER 4/21/2023

consor

Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

SYMBOLS AND LEGEND

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET G-2

@	AT
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS
AB	ANCHOR BOLT
ABAN(D)	ABANDON(ED)
ABS	ACRYLONITRILE BUTADIENE STYRENE
ABV	ABOVE / ALCOHOL BY VOLUME
AC	ASPHALTIC CONCRETE
ACP	ASPHALTIC CONCRETE PAVING
ADJ	ADJUSTABLE
ADJC	ADJACENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHR	ANCHOR
AHU	AIR HANDLING UNIT
AL	ALUMINUM
ALT	ALTERNATE
AMP	AMPERE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
APPVD	APPROVED
APWA	AMERICAN PUBLIC WORKS ASSOCIATION
ARCH	ARCHITECTURAL
ARV	AIR RELEASE VALVE
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASSN	ASSOCIATION
ASSY	ASSEMBLY
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
ATM	ATMOSPHERE
AUTO	AUTOMATIC
AUX	AUXILIARY
AVE	AVENUE
AVG	AVERAGE
AWWA	AMERICAN WATER WORKS ASSOCIATION
B&S	BELL & SPIGOT
BC	BOLT CIRCLE
BD	BOARD
BETW	BETWEEN
BF	BOTH FACE
BFD	BACKFLOW PREVENTION DEVICE
BFILL	BACKFILL
BFV	BUTTERFLY VALVE
BGS	BELOW GROUND SURFACE
BHP	BRAKE HORSEPOWER
BKGD	BACKGROUND
BLDG	BUILDING
BLK	BLOCK
BLVD	BOULEVARD
BM	BENCHMARK / BEAM
BMP	BEST MANAGEMENT PRACTICES
BO	BLOW-OFF
BOC	BACK OF CURB
BOT	BOTTOM
BS	BOTH SIDES
BSMT	BASEMENT
BTF	BOTTOM FACE
BTU	BRITISH THERMAL UNIT
BV	BALL VALVE
BW	BOTH WAYS
C	CELSIUS
C TO C	CENTER TO CENTER
CARV	COMBINATION AIR RELEASE VALVE
CATV	CABLE TELEVISION
CB	CATCH BASIN
CCP	CONCRETE CYLINDER PIPE
CCW	COUNTER CLOCKWISE
CDOT	COLORADO DEPARTMENT OF TRANSPORTATION
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CHAN	CHANNEL
CHEM	CHEMICAL
CHFR	CHAMFER
CHKV	CHECK VALVE
CI	CAST IRON
CIP	CAST IRON PIPE
CIPC	CAST IN PLACE CONCRETE
CISP	CAST IRON SOIL PIPE
CJ	CONSTRUCTION JOINT
CL OR C/L	CENTER LINE
CL2	CHLORINE
CLG	CEILING
CLJ	CONTROL JOINT
CLR	CLEAR

CLSM	CONTROLLED LOW STRENGTH MATERIAL
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CND	CONDUIT
CO	CLEANOUT
COL	COLUMN
COMB	COMBINATION
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS / CONTINUATION
CONTR	CONTRACT(OR)
COORD	COORDINATE
COP	COPPER
CORP	CORPORATION
CORR	CORRUGATED
CP	CONTROL POINT
CPLG	COUPLING
CPVC	CHLORINATED POLYVINYL CHLORIDE
CR	CRUSHED ROCK
CS	COMBINED SEWER
CSP	CONCRETE SEWER PIPE
CT	COURT
CTR	CENTER
CU	CUBIC
CULV	CULVERT
CV	CONTROL VALVE
CW	CLOCKWISE / COLD WATER
CY	CUBIC YARDS
CYL	CYLINDER LOCK
D	DRAIN
DC	DIRECT CURRENT
DEFL	DEFLECTION
DET	DETAIL
DI	DUCTILE IRON
DIA	DIAMETER
DIM	DIMENSION
DIR	DIRECTION
DIST	DISTANCE
DN	DOWN
DOH	DEPARTMENT OF HEALTH
DR	DRIVE
DS	DOWNSPOUT
DWG	DRAWING
DWL	DOWEL
DWV	DRAIN WASTE AND VENT
DWY	DRIVEWAY
E / ELEC	ELECTRICAL
EA	EACH
ECC	ECCENTRIC
ECY	DEPARTMENT OF ECOLOGY
EF	EACH FACE / EXHAUST FAN
EG	EXHAUST GRATE
EL	ELEVATION / EXHAUST LOUVER
ELB	ELBOW
ENCL	ENCLOSURE
EOP	EDGE OF PAVEMENT
EQ	EQUAL
EQL SP	EQUALLY SPACED
EQUIP	EQUIPMENT
ESC	EROSION & SEDIMENT CONTROL
ESMT	EASEMENT
EW	EACH WAY
EXC	EXCAVATE
EXIST	EXISTING
EXP	EXPANSION
EXP BT	EXPANSION BOLT
EXP JT	EXPANSION JOINT
EXT	EXTERIOR
F	FAHRENHEIT
F TO F	FACE TO FACE
FAB	FABRICATE
FB	FLAT BAR
FCA	FLANGED COUPLING ADAPTER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDN	FOUNDATION
FEXT	FIRE EXTINGUISHER
FF	FAR FACE
FGL	FIBERGLASS
FH	FIRE HYDRANT
FIN	FINISH(ED)
FIPT	FEMALE IRON PIPE THREAD
FITG	FITTING
FL	FLOOR LINE
FLEX	FLEXIBLE

FLG	FLANGE
FLL	FLOW LINE
FLR	FLOOR
FM	FORCE MAIN
FO	FIBER OPTIC
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FRP	FIBERGLASS REINFORCED PLASTIC
FT	FEET / FOOT
FTG	FOOTING
FUT	FUTURE
FXTR	FIXTURE
G	GAS
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GROOVED COUPLING
GFA	GROOVED FLANGE ADAPTER
GI	GALVANIZED IRON
GIP	GALVANIZED IRON PIPE
GJ	GRIP JOINT
GL	GLASS
GLV	GLOBE VALVE
GND	GROUND
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GPS	GALLONS PER SECOND
GR	GRADE
GR LN	GRADE LINE
GRTG	GRATING
GV	GATE VALVE
GRVL	GRAVEL
GYP	GYPSUM
HB	HOSE BIBB
HC	HOLLOW CORE
HDPE	HIGH DENSITY POLYETHYLENE
HDR	HEADER
HDWE	HARDWARE
HGR	HANGER
HGT	HEIGHT
HH	HANDHOLD
HM	HOLLOW METAL
HMAC	HOT MIX ASPHALT CONCRETE
HNDRL	HANDRAIL
HOA	HAND-OFF-AUTO
HOR	HAND-OFF-REMOTE
HORIZ	HORIZONTAL
HP	HIGH PRESSURE / HORSEPOWER
HPG	HIGH PRESSURE GAS
HPT	HIGH POINT
HPU	HEAT PUMP UNIT
HR	HOUR
HSB	HIGH STRENGTH BOLT
HV	HOSE VALVE
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HWL	HIGH WATER LINE
HWY	HIGHWAY
HYD	HYDRANT
HYDR	HYDRAULIC
I&C	INSTRUMENTATION & CONTROL
IAW	IN ACCORDANCE WITH
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IF	INSIDE FACE
IMPVT	IMPROVEMENT
IN	INCH
INCC	INCLUDE(D)(ING)
INFL	INFLUENT
INJ	INJECTION
INSTL	INSTALLATION / INSTALL
INSUL	INSULATION
INTER	INTERCEPTOR
INTR	INTERIOR
INV	INVERT
IP	IRON PIPE
IPT	IRON PIPE THREAD
IR	IRON ROD
IRRIG	IRRIGATION
JT	JOINT
JUNC	JUNCTION

KPL	KICK PLATE
KVA	KILOVOLT AMPERE
KW	KILOWATT
KWY	KEYWAY
L	LENGTH
LAB	LABORATORY
LAV	LAVATORY
LB	POUND
LF	LINEAR FOOT
LIN	LINEAL
LN	LANE
LOC	LOCATION
LONG	LONGITUDINAL
LP	LOW PRESSURE
LPT	LOW POINT
LRG	LARGE
LS	LONG SLEEVE / LUMP SUM
LT	LEFT
LVL	LEVEL
LWL	LOW WATER LINE
MAN	MANUAL
MAT	MATERIAL
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MCP	MASTER CONTROL PANEL
MECH	MECHANICAL
MET	METAL
MFR	MANUFACTURER
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MIN	MINIMUM
MIPT	MALE IRON PIPE THREAD
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MON	MONUMENT / MONOLITHIC
MOT	MOTOR
MP	MILEPOST
MSL	MEAN SEAL LEVEL
MTD	MOUNTED
NA	NOT APPLICABLE
NAVD	NORTH AMERICAN VERTICAL DATUM
NC	NORMALLY CLOSED
NF	NEAR FACE
NIC	NOT IN CONTRACT
NO / NO.	NORMALLY OPEN / NUMBER
NOM	NOMINAL
NORM	NORMAL
NRS	NON-RISING STEM
NTS	NOT TO SCALE
O TO O	OUT TO OUT
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OVERFLOW / OUTSIDE FACE
OPNG	OPENING
OPP	OPPOSITE
ORIG	ORIGINAL
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OVHD	OVERHEAD
P&ID	PROCESS & INSTRUMENTATION DIAGRAM
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PCVC	POINT OF CURVATURE ON VERTICAL CURVE
PE	PLAIN END
PERF	PERFORATED
PERM	PERMANENT
PERP	PERPENDICULAR
PG	PRESSURE GAUGE
PH	PIPE HANGER
PI	POINT OF INTERSECTION
PIVC	POINT OF INTERSECTION ON VERTICAL CURVE
PL OR P/L	PROPERTY LINE / PLATE / PLASTIC
PLBG	PLUMBING
PNL	PANEL
POC	POINT OF CURVATURE
POLY	POLYETHYLENE
PP	POWER POLE
PRC	POINT OF REVERSE CURVATURE
PRCST	PRECAST
PREP	PREPARATION
PRESS	PRESSURE

PRKG	PARKING
PROP	PROPERTY
PRV	PRESSURE REDUCING VALVE
PS	PUMP STATION
PSIG	POUNDS PER SQUARE INCH GAUGE
PSL	PIPE SLEEVE
PSPT	PIPE SUPPORT
PT	POINT OF TANGENCY
PTVC	POINT OF TANGENCY ON VERTICAL CURVE
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
PWR	POWER
QTY	QUANTITY
RAD	RADIUS
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD / ROOF DRAIN
RDCR	REDUCER
REF	REFERENCE
REINF	REINFORCE(D)(ING)(MENT)
REQ'D	REQUIRED
RESTR	RESTRAINED
RFCA	RESTRAINED FLANGE COUPLING ADAPTER
RM	ROOM
RND	ROUND
RO	ROUGH OPENING
R/W	RIGHT-OF-WAY
RPBPD	REDUCED PRESSURE BACKFLOW PREVENTION DEVICE
RPM	REVOLUTIONS PER MINUTE
RR	RAILROAD
RST	REINFORCED STEEL
RT	RIGHT
SALV	SALVAGE
SAN	SANITARY
SC	SOLID CORE
SCHED	SCHEDULE
SD	STORM DRAIN
SDL	SADDLE
SDR	STANDARD DIMENSION RATIO
SECT	SECTION
SG	SUPPLY GRATE
SHLDR	SHOULDER
SHT	SHEET
SIM	SIMILAR
SL	SUPPLY LOUVER
SLP	SLOPE
SLV	SLEEVE
SOLN	SOLUTION
SP	SOIL PIPE / SEWER PIPE
SPCL	SPECIAL
SPEC(S)	SPECIFICATION(S)
SPG	SPACING
SPL	SPOOL
SPRT	SUPPORT
SQ	SQUARE
SQ FT	SQUARE FOOT
SQ IN	SQUARE INCH
SQ YD	SQUARE YARD
SS	SANITARY SEWER
SST	STAINLESS STEEL
ST	STREET
STA	STATION
STD	STANDARD
STL	STEEL
STOR	STORAGE
STR	STRAIGHT
STRUCT	STRUCTURE / STRUCTURAL
SUBMG	SUBMERGED
SUCT	SUCTION
SV	SOLENOID VALVE
S/W	SIDEWALK
SWD	SIDEWATER DEPTH
SWGR	SWITCH GEAR
SYMM	SYMMETRICAL
SYS	SYSTEM
T OR TEL	TELEPHONE
T&B	TOP & BOTTOM

TAN	TANGENCY
TB	THRUST BLOCK
TBM	TEMPORARY BENCHMARK
TC	TOP OF CONCRETE / TOP OF CURB
TCE	TEMPORARY CONSTRUCTION EASEMENT
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPERATURE / TEMPORARY
T&G	TONGUE & GROOVE
THK	THICK / THICKNESS
THRD	THREAD (ED)
THRU	THROUGH
TOG	TOP OF GRATE
TP	TEST PIT / TOP OF PAVEMENT / TURNING POINT
TRANS	TRANSITION
TSP	TRI-SODIUM PHOSPHATE
TST	TOP OF STEEL
TW	TOP OF WALL
TYP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER
UN	UNION
UON	UNLESS OTHERWISE NOTED
USGS	UNITED STATES GEOLOGIC SURVEY
V	VENT / VOLT
VAC	VACUUM
VB	VACUUM BREAKER
VBOX	VALVE BOX
VC	VERTICAL CURVE
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VOL	VOLUME
VCP	VITRIFIED CLAY PIPE
VTR	VENT THROUGH ROOF
W	WATER
W/	WITH
W/IN	WITHIN
W/O	WITHOUT
W/W	WALL TO WALL
WD	WOOD
WF	WIDE FLANGE
WH	WATER HEATER
WI	WROUGHT IRON
WM	WATER METER
WP	WORKING POINT / WATERPROOFING
WS	WATER SERVICE
WSDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
WT	WEIGHT
WTP	WATER TREATMENT PLANT
WTRT	WATERTIGHT
WWF	WELDED WIRE FABRIC
X SECT	CROSS SECTION
XFMR	TRANSFORMER
YD	YARD DRAIN / YARD
YH	YARD HYDRANT
YR	YEAR
ZN	ZINC

NO.	DATE	BY	REVISION

NOTICE

0 ½ 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

CLB DESIGNED

EJJ DRAWN

EKS CHECKED

PETER BENEDICT CUNNINGHAM STATE OF WASHINGTON 24236 REGISTERED PROFESSIONAL ENGINEER 4/21/2023

consor

Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

ABBREVIATIONS

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET G-3

GENERAL NOTES

1. THE SCOPE OF WORK FOR THIS PROJECT CONSTITUTES AS PUBLIC WORK UNDER STATE LAW. BIDDERS SHOULD TAKE INTO CONSIDERATION STATUTORY LEGAL REQUIREMENTS, PARTICULARLY, THE PAYMENT OR PREVAILING WAGES, PAYMENT/PERFORMANCE BONDS AND SALES TAX IMPLICATIONS IN MAKING THEIR BID.

2. CONTRACTOR IS RESPONSIBLE FOR VERIFYING CONDITIONS IN THE FIELD PRIOR TO BID SUBMISSION. ANY DISCREPANCIES BETWEEN FIELD CONDITIONS AND PROJECT INTENT/CONTRACT DOCUMENTS AFFECTING THE COST OR THE PROJECT SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE IMMEDIATELY.

3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION. COST OF LOCATES IS THE SOLE RESPONSIBILITY OR THE CONTRACTOR.

4. THESE CONSTRUCTION DOCUMENTS ARE NOT COMPLETE UNLESS ACCOMPANIED BY THE PROJECT MANUAL, SPECIFICATIONS, AND BID FORM PROVIDED BY THE CITY OF PORT ORCHARD THAT CONFORM TO WASHINGTON STATE REGULATIONS.

5. CONTRACTOR IS RESPONSIBLE FOR INCIDENTAL TRAFFIC CONTROL MEASURES AS REQUIRED IN ACCORDANCE WITH THE MANUAL ON TRAFFIC CONTROL DEVICES (MUTCD) AND WASHINGTON STATE MODIFICATIONS TO THE MUTCD.

6. AREAS DISTURBED OR DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE CONSTRUCTED OR RESTORED TO ORIGINAL CONDITIONS OR BETTER. THE CONTRACTOR IS RESPONSIBLE FOR DOCUMENTING CONDITIONS PRIOR TO CONSTRUCTION ACTIVITIES AND ANY DAMAGES THAT MAY OCCUR.

7. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL CURRENTLY ADOPTED WSDOT AND APWA SPECIFICATIONS AND PLANS, AND THE CITY OF PORT ORCHARD MUNICIPAL CODE, THE CURRENTLY ADOPTED CITY OF PORT ORCHARD DEVELOPER'S HANDBOOK, THE CURRENTLY ADOPTED SURFACE WATER DESIGN MANUAL AND THE CONDITIONS OF PRELIMINARY SUBDIVISION APPROVAL. IT SHALL BE THE SOLE RESPONSIBILITY OF THE APPLICANT AND THE PROFESSIONAL CIVIL ENGINEER TO CORRECT ANY ERROR, OMISSION, OR VARIATION FROM THE ABOVE REQUIREMENTS FOUND IN THESE PLANS. ALL CORRECTIONS SHALL BE AT NO ADDITIONAL COST OR LIABILITY TO THE CITY OF PORT ORCHARD.

8. THE DESIGN ELEMENTS WITHIN THESE PLANS HAVE BEEN REVIEWED ACCORDING TO THE PORT ORCHARD DESIGN STANDARDS. SOME ELEMENTS MAY HAVE BEEN OVERLOOKED OR MISSED BY THE CITY OF PORT ORCHARD CITY ENGINEER. ANY DEVIATION FROM ADOPTED STANDARDS IS NOT ALLOWED UNLESS SPECIFICALLY APPROVED BY THE CITY OF PORT ORCHARD CITY ENGINEER, PRIOR TO CONSTRUCTION.

9. BEFORE ANY CONSTRUCTION OR DEVELOPMENT ACTIVITY, A PRECONSTRUCTION MEETING MUST BE HELD BETWEEN THE CITY OF PORT ORCHARD PUBLIC WORKS DEPARTMENT, THE APPLICANT AND THE APPLICANT'S CONSTRUCTION REPRESENTATIVE.

10. PROOF OF LIABILITY INSURANCE SHALL BE SUBMITTED TO THE CITY OF PORT ORCHARD PRIOR TO THE PRECONSTRUCTION MEETING.

11. A COPY OF THESE APPROVED PLANS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.

12. CONSTRUCTION NOISE SHALL COMPLY WITH THE CURRENT POMC SECTION 9.24.050.

13. IT SHALL BE THE APPLICANT'S/CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL RIGHT-OF-WAY PERMITS AND CONSTRUCTION EASEMENTS NECESSARY BEFORE INITIATING OFF-SITE WORK WITHIN A CITY OF PORT ORCHARD STREET RIGHT-OF-WAY.

14. FRANCHISED UTILITIES OR OTHER INSTALLATIONS THAT ARE NOT SHOWN ON THESE APPROVED PLANS SHALL NOT BE CONSTRUCTED UNLESS AN APPROVED SET OF PLANS IS SUBMITTED TO THE CITY OF PORT ORCHARD PRIOR TO CONSTRUCTION.

15. GROUNDWATER SYSTEM CONSTRUCTION SHALL BE WITHIN A RIGHT-OF-WAY OR APPROPRIATE DRAINAGE EASEMENT, BUT NOT UNDERNEATH THE ROADWAY SECTION.

16. ALL UTILITY TRENCHES SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE CITY OF PORT ORCHARD STANDARDS.

17. ALL ROADWAY SUBGRADE SHALL BE BACKFILLED, COMPACTED TO 95% MAXIMUM DENSITY AND PREPARED FOR SURFACING IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATION 2-06.3.

18. OPEN CUTTING OF EXISTING ROADWAYS IS NOT ALLOWED UNLESS SPECIFICALLY APPROVED BY THE CITY OF PORT ORCHARD CITY ENGINEER AND NOTED ON THESE APPROVED PLANS. ANY OPEN CUT SHALL BE RESTORED IN ACCORDANCE WITH THE CITY OF PORT ORCHARD STANDARD SPECIFICATIONS.

19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, FLAGGERS, AND ANY OTHER NEEDED ACTIONS TO PROTECT THE LIFE, HEALTH, AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACTOR. ANY WORK WITHIN THE TRAVELED RIGHT OF-WAY THAT MAY INTERRUPT NORMAL TRAFFIC FLOW SHALL REQUIRE AT LEAST ONE FLAGGER FOR EACH LANE OF TRAFFIC AFFECTED. REFER TO "TRAFFIC CONTROL," OF THE WSDOT STANDARD SPECIFICATIONS SHALL APPLY IN ITS ENTIRETY. TRAFFIC CONTROL PLANS SHALL FOLLOW THE CURRENTLY ADOPTED MUTCD MANUAL AS APPLICABLE.

20. TO PROTECT SIGNIFICANT TREES FROM THE IMPACTS OF THE PROPOSED DEVELOPMENT, THE APPLICANT SHALL PROVIDE THE BEST PROTECTION FOR SIGNIFICANT TREES PER THE REGULATIONS. AT A MINIMUM, ANY SIGNIFICANT TREES TO BE RETAINED SHALL BE FENCED TWO FEET OUTWARD FROM THE IDENTIFIED DRIP LINE. TREES THAT SUSTAIN DAMAGE DURING CONSTRUCTION SHALL BE REPLACED PURSUANT TO POMC. A REPRESENTATIVE OF THE CITY OF PORT ORCHARD DCD STAFF SHALL VERIFY PROTECTIVE FENCING PLACEMENT PER THIS CONDITION PRIOR TO ISSUANCE OF A NOTICE TO PROCEED FOR GRADING AND CLEARING. THE CITY SHALL INSPECT FOR COMPLIANCE WITH THE TREE PLAN PRIOR TO A FINAL INSPECTION. THE INSPECTION SHALL ALSO EVALUATE THE CONDITION OF RETAINED TREES AND ANY AND ALL CORRECTIONS WILL BE REQUIRED TO BE COMPLETED PRIOR TO A FINAL INSPECTION AND RELEASE OF ANY POST FINANCIAL GUARANTEES FOR THE SITE.

CONSTRUCTION SEQUENCING NOTES

1. SEE SPECIFICATION SECTION 01 12 16 - WORK SEQUENCE

DESIGN CRITERIA

WELL PUMP RATE	1250 GPM
WELL PUMP MOTOR	250 HP
BOOSTER PUMP MOTOR	75 HP
SYSTEM PRESSURE	11 PSI - 18 PSI
NAOCL METERING PUMPS	9 GPH - 18 GPH
HYPOCHLORITE STORAGE TANK	1000 GAL
BRINE TANK	200 GAL

NO.	DATE	BY	REVISION

NOTICE

0 ½ 1

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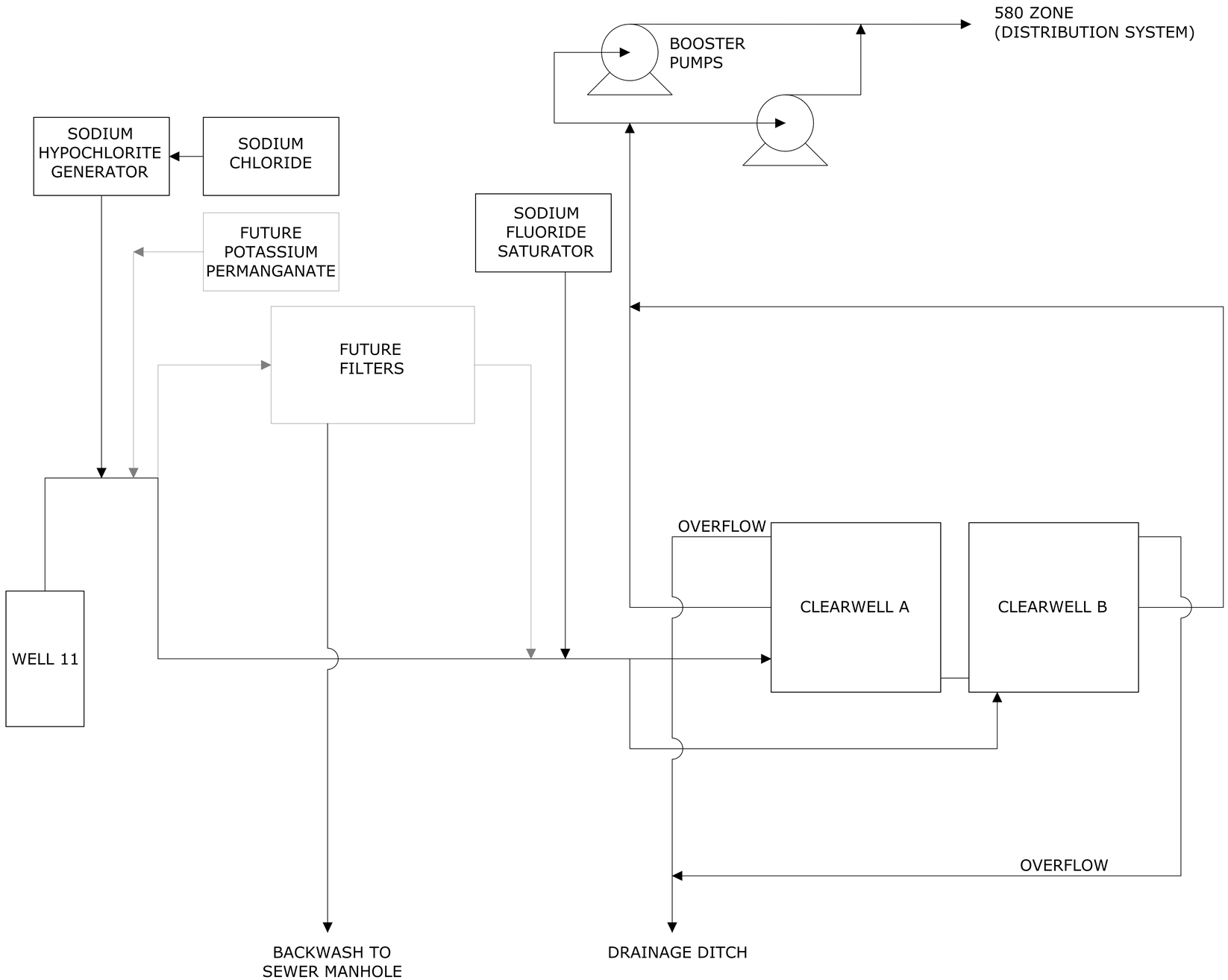
Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

GENERAL NOTES

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET G-4



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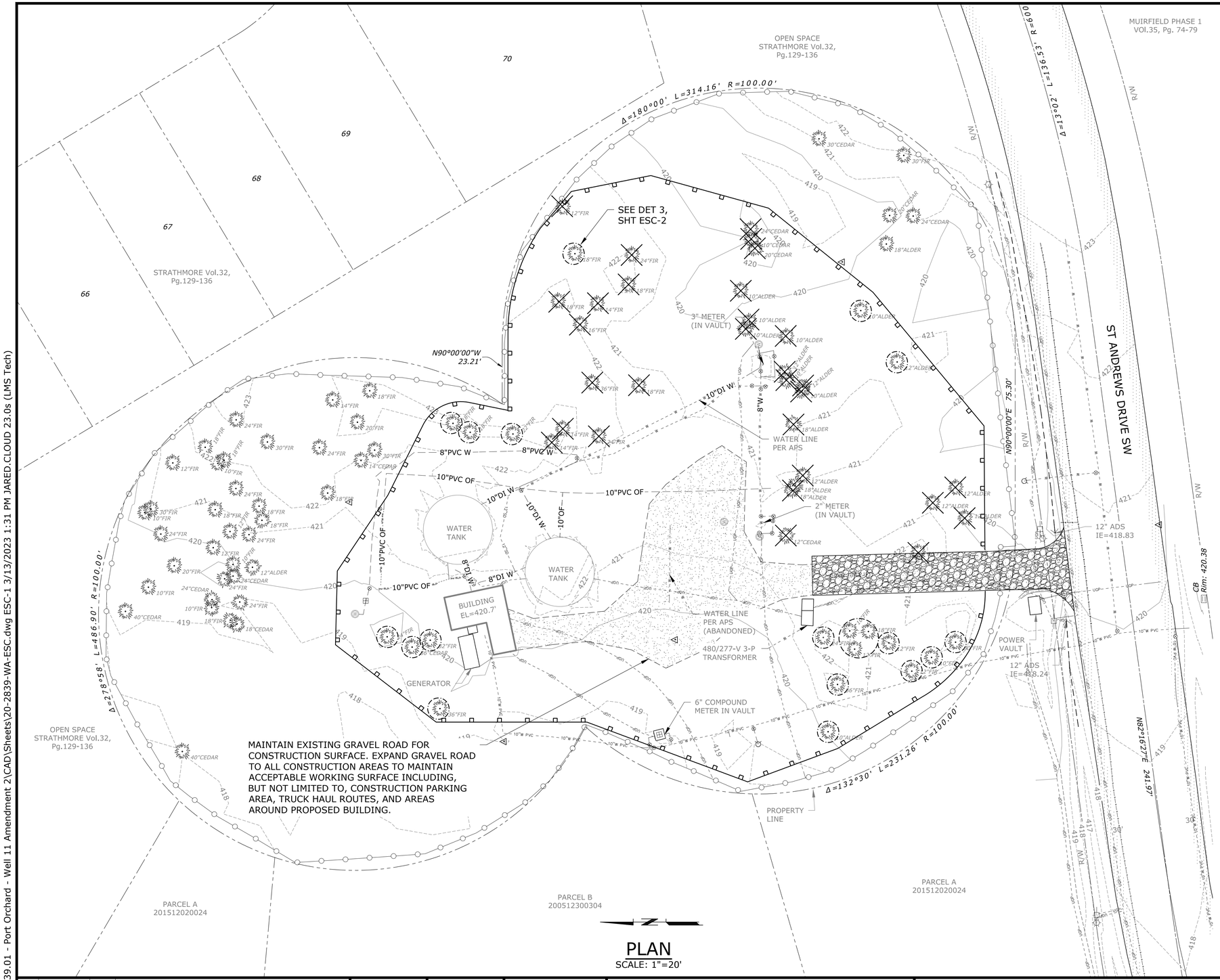
Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

FLOW SCHEMATIC

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET G-5



PLAN
SCALE: 1"=20'

EROSION CONTROL NOTES:

1. EROSION CONTROL MEASURES SHALL BE TAKEN BY THE CONTRACTOR DURING CONSTRUCTION TO PREVENT THE MIGRATION OF SILT AND DEBRIS. EROSION CONTROL BEST MANAGEMENT PRACTICES SHALL BE IN COMPLIANCE WITH THESE CONTRACT DOCUMENTS AND WITH THE CITY OF PORT ORCHARD STORMWATER MANUAL.

2. THE TEMPORARY EROSION CONTROL SYSTEM SHALL BE INSTALLED PRIOR TO ALL OTHER CONSTRUCTION AND SHALL BE MAINTAINED IN A SATISFACTORY CONDITION UNTIL CLEARING AND/OR CONSTRUCTION IS COMPLETED. PERMANENT DRAINAGE FACILITIES ARE OPERATIONAL AND THE POTENTIAL FOR EROSION HAS PASSED.

STANDARD NOTES:

1. APPROVAL OF THIS EROSION/SEDIMENT CONTROL (ESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G. SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.).

2. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.

3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF THE CONSTRUCTION.

4. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.

5. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE.

6. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.

7. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 48 HOURS FOLLOWING A MAJOR STORM EVENT.

8. AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A TRAPPED CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT LADEN WATER INTO THE DOWNSTREAM SYSTEM.

9. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.

LEGEND

- TREE PROTECTION, SEE DET 3, SHT ESC-2
- TREE TO BE REMOVED
- TEMPORARY CONSTRUCTION ENTRANCE, SEE DET 2, SHT ESC-2
- HIGH VISIBILITY SILT FENCE, SEE DET 1, SHT ESC-2

NO.	DATE	BY	REVISION

NOTICE
0 ½ 1
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EJJ DRAWN
EKS CHECKED

PETER BENEDICT CUNNINGHAM
STATE OF WASHINGTON
46352
REGISTERED
PROFESSIONAL ENGINEER
4/21/2023

consor

Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

ESC PLANS AND NOTES

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET
ESC-1
6 of 69

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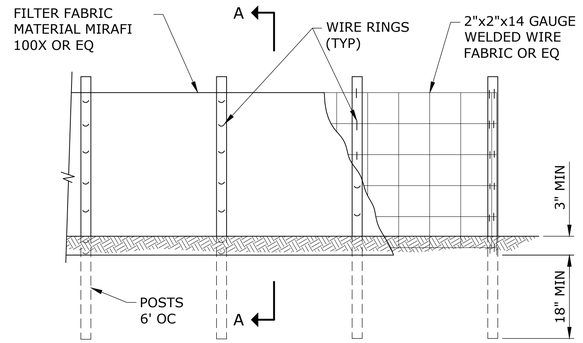
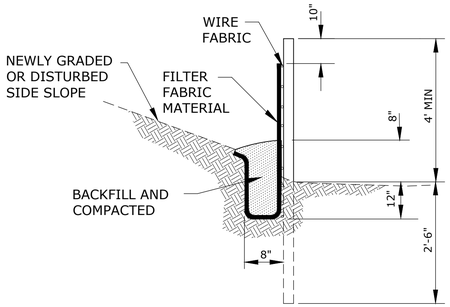


ELEVATION



SECTION A-A

NOTES:

1. BURY BOTTOM OF FILTER FABRIC 12" VERTICALLY BELOW FINISHED GRADE

2. 2"x 2" FIR, PINE OR STEEL FENCE POSTS

3. STITCHED LOOPS TO BE INSTALLED DOWNHILL SIDE OF SLOPE

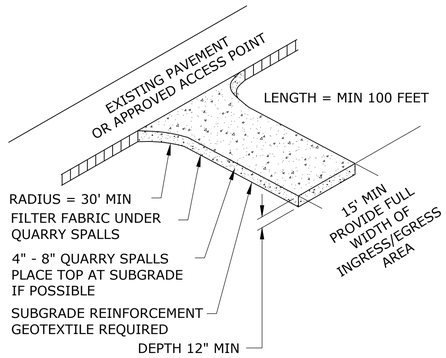
4. COMPACT ALL AREAS OF FILTER FABRIC TRENCH

5. LOCATE SILT FENCING AND SECURITY FENCING IMMEDIATELY NEXT TO ONE ANOTHER TO THE MAXIMUM EXTENT PRACTICAL, AT CONTRACTORS DISCRETION, AND CONTINGENT UPON APPROVAL BY OWNER, SILT AND SECURITY FENCING MAY BE COMBINED INTO A COMMON FENCE

HIGH VISIBILITY SILT FENCE

SCALE: NTS

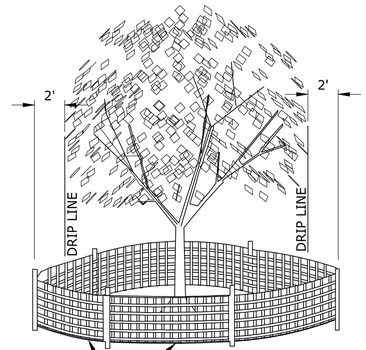
1 ESC-1



TEMP CONSTRUCTION ENTRANCE

SCALE: NTS

2 ESC-1



5-FOOT TALL METAL FENCING SECURED TO 1½-INCH DIAMETER STEEL OR ALUMINUM POSTS PLACED NO FURTHER THAN 8-FEET ON CENTER AND SHALL BE INSTALLED AT THE EDGE OF THE TREE PROTECTION ZONE PRIOR TO ANY CONSTRUCTION ACTIVITIES ON SITE

TREE PROTECTION

SCALE: NTS

3 ESC-1

NO.	DATE	BY	REVISION

NOTICE

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Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11 SITE IMPROVEMENT PROJECT

ESC DETAILS

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET ESC-2

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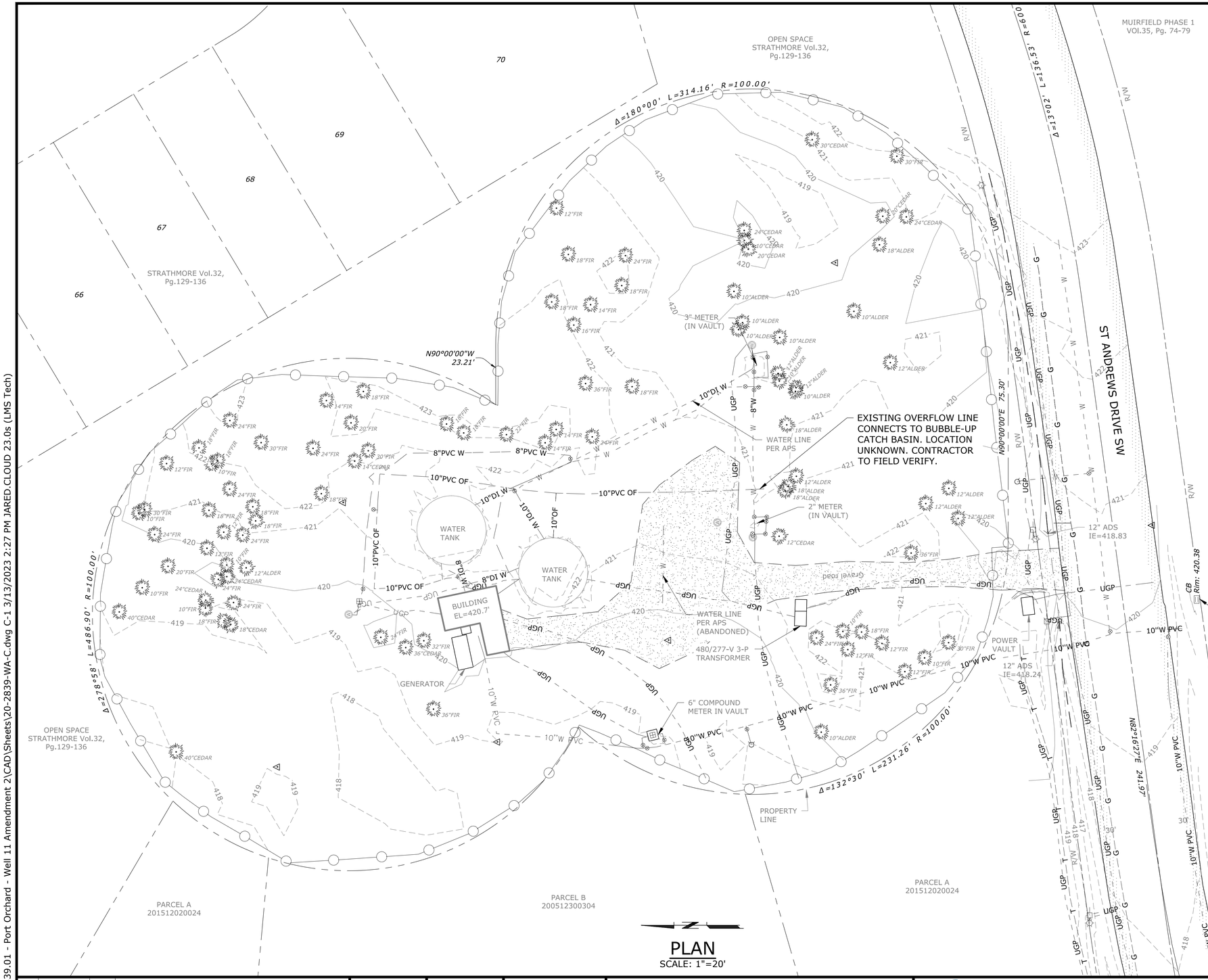

PLAN
SCALE: 1"=20'

HORIZONTAL DATUM:

WASHINGTON STATE COORDINATE SYSTEM , NORTH ZONE NAD83(11), US FEET UTILIZING RTK GPS FIELD PROCEDURES

CONTOUR INTERVAL:

ONE(1) FOOT CONTOURS

VERTICAL DATUM:

NORTH AMERICAN DATUM 1988 (NAVD88), US FEET. AS PRESCRIBED BY KITSAP COUNTY

UNDERGROUND UTILITIES NOTE:

THE LOCATION OF UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE ONLY AND HAVE BEEN LOCATED FROM VISIBLE EVIDENCE AND PAINT MARKS BY APPLIED PROFESSIONAL SERVICES, INC. AND THE CITY OF PORT ORCHARD. AES CONSULTANTS AND MURRAYSMITH AND ASSOCIATES MAKE NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION SHOWN OR COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE LOCATION OF CRITICAL UNDERGROUND UTILITIES SHOULD BE EXPOSED AND VERIFIED PRIOR TO CONSTRUCTION. PLEASE NOTIFY ONE CALL AT 1-800-424-5555 AND ARRANGE FOR FIELD LOCATION OF EXISTING FACILITIES PRIOR TO ANY CONSTRUCTION ACTIVITIES.

TOPOGRAPHIC MAPPING:

THE MAP SHOWN HEREIN IS THE RESULT OF A TOPOGRAPHIC SURVEY BY AES CONSULTANTS, INC (AES) COMPLETED IN JUNE 2020. AES ASSUMES NO LIABILITY, BEYOND SAID DATE, FOR ANY FUTURE SURFACE FEATURE MODIFICATIONS OR CONSTRUCTION ACTIVITIES THAT MAY OCCUR WITHIN OR ADJOINING THE PERMITER OF THIS SURVEY. CONTACT AES (360) 692-6400 FOR SITE UPDATES AND VERIFICATIONS.

NOTE: PROPERTY LINES HEREIN GENERATED FROM KITSAP GIS RECORDS AND ARE CONSIDERED APPROXIMATE IN LOCATION.

NO.	DATE	BY	REVISION

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PETER BENEDICT CUNNINGHAM
STATE OF WASHINGTON
24302
REGISTERED
PROFESSIONAL ENGINEER
4/21/2023

consor

Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

EXISTING SITE CONDITIONS AND SURVEY

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET
C-1
8 of 69

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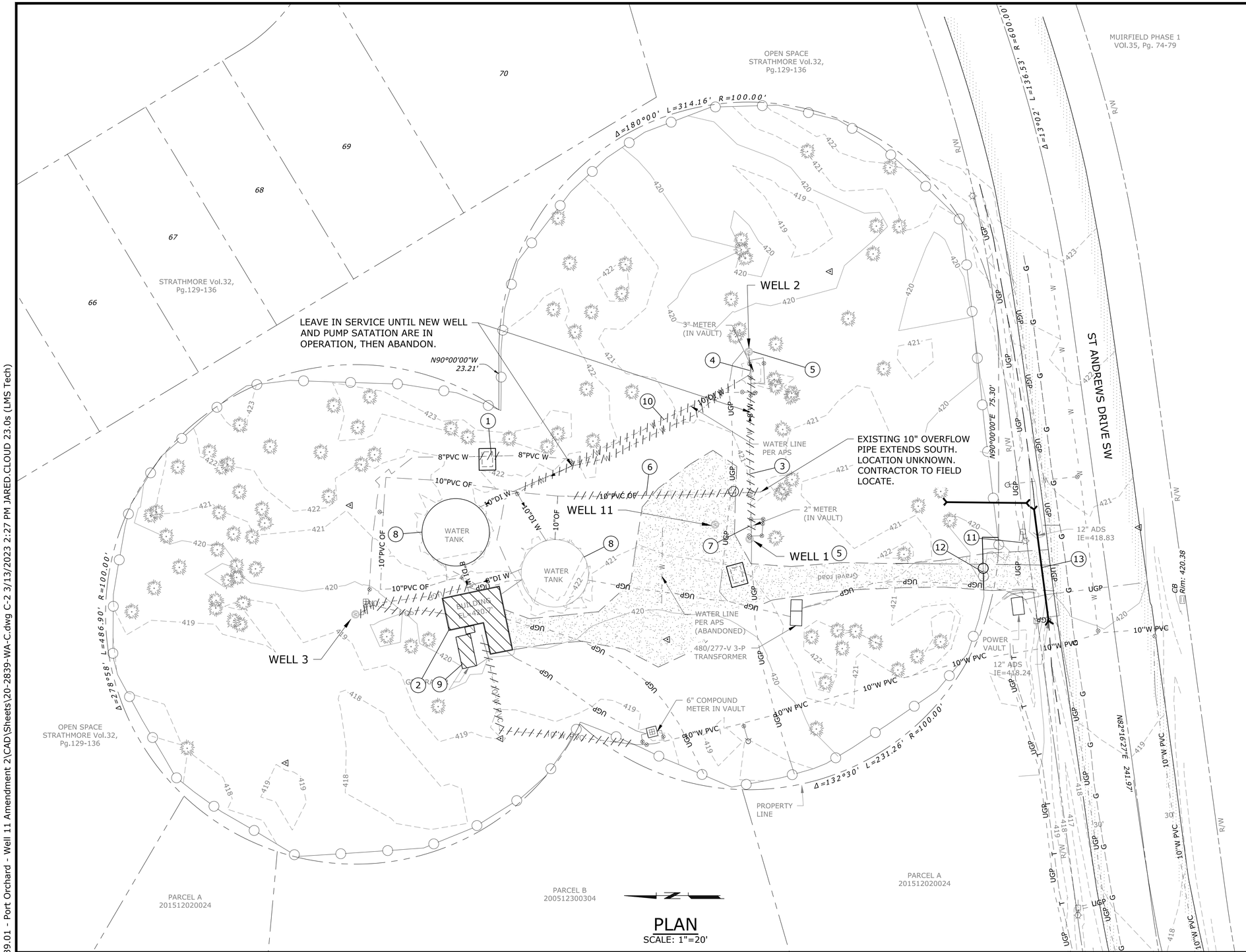

PLAN
SCALE: 1"=20'

DEMOLITION KEY NOTES:

1. CUT AND REMOVE APPROX. 8' OF EXISTING 8" WATER PIPE FROM WELL 3. INSTALL NEW 8" WATER PIPE AND VAULT AS SHOWN ON SHT C-4.
2. DEMO EXIST PUMP HOUSE
3. ABANDON YARD PIPING FROM EXISTING WELLS 1 AND 2 ONCE THE NEW WELL AND PUMP STATION ARE IN SERVICE. PLUG AND CAP ENDS OF PIPES WITH 2' MIN. CONCRETE
4. ABANDON EXIST METER VAULT. SALVAGE 3" METER AND (3) 6" GATE VALVES TO OWNER
5. CAP AND DECOMMISSION EXIST WELLS 1 AND 2 PER WAC 173-160-381 ONCE THE NEW WELL AND PUMP STATION ARE IN SERVICE
6. REMOVE EXISTING 10" OVERFLOW PIPE AND INSTALL NEW OVERFLOW PIPE, AS SHOWN ON SHT C-4, PRIOR TO PREPARING SOIL FOR PAVEMENT AND BUILDING FOUNDATION
7. ABANDON EXIST METER VAULT
SALVAGE 2" METER, (3) 4" GATE VALVES TO OWNER
8. CLEAN BLAST AND COAT INTERIOR AND EXTERIOR OF EXISTING TANKS. REPLACE ACCESS HATCHES, MECHANICAL FLOATS, VENTS AND TRANSDUCERS.
9. REMOVE EXIST GENSET AND DEMOLISH EXIST GENERATOR PAD, SALVAGE GENSET TO OWNER
10. REMOVE EXISTING 10" WATER PIPE AND INSTALL NEW WATER PIPE, AS SHOWN ON SHT C-4, PRIOR TO PREPARING SOIL FOR PAVEMENT AND BUILDING FOUNDATION.
11. RELOCATE EXISTING LIGHT POLE NEAR ACCESS ROAD, TO THE NORTHEAST, AS SHOWN ON SHEET C-3, PRIOR TO PREPARING SOIL FOR PAVEMENT.
12. REMOVE EXISTING GATE AND INSTALL NEW 20' WIDE GATE AS SHOWN ON SHEET C-3. ADJUST EXISTING FENCE AS NEEDED.
13. REMOVE EXISTING 12" CULVERT PIPE AND INSTALL NEW 12" DI CULVERT PIPE AS SHOWN ON SHEET C-3.

NOTES:

1. ALL EXISTING WELLS, WATERLINES, PUMP STATION AND BOOSTER PUMPS, WATER STORAGE TANKS AND GENERATOR MUST REMAIN IN OPERATION UNTIL NEW FACILITIES ARE ACCEPTED BY THE CITY ARE IN OPERATION.
2. SEE SHT G-4 AND SPECIFICATION SECTION 01 12 16 - WORK SEQUENCE FOR CONSTRUCTION SEQUENCING NOTES.
3. SEE SHT ESC-1 FOR TREE REMOVAL AND TREE PROTECTION DETAILS.

LEGEND:

- REMOVE
- ABANDON
- REMOVE STRUCTURE

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4/21/2023

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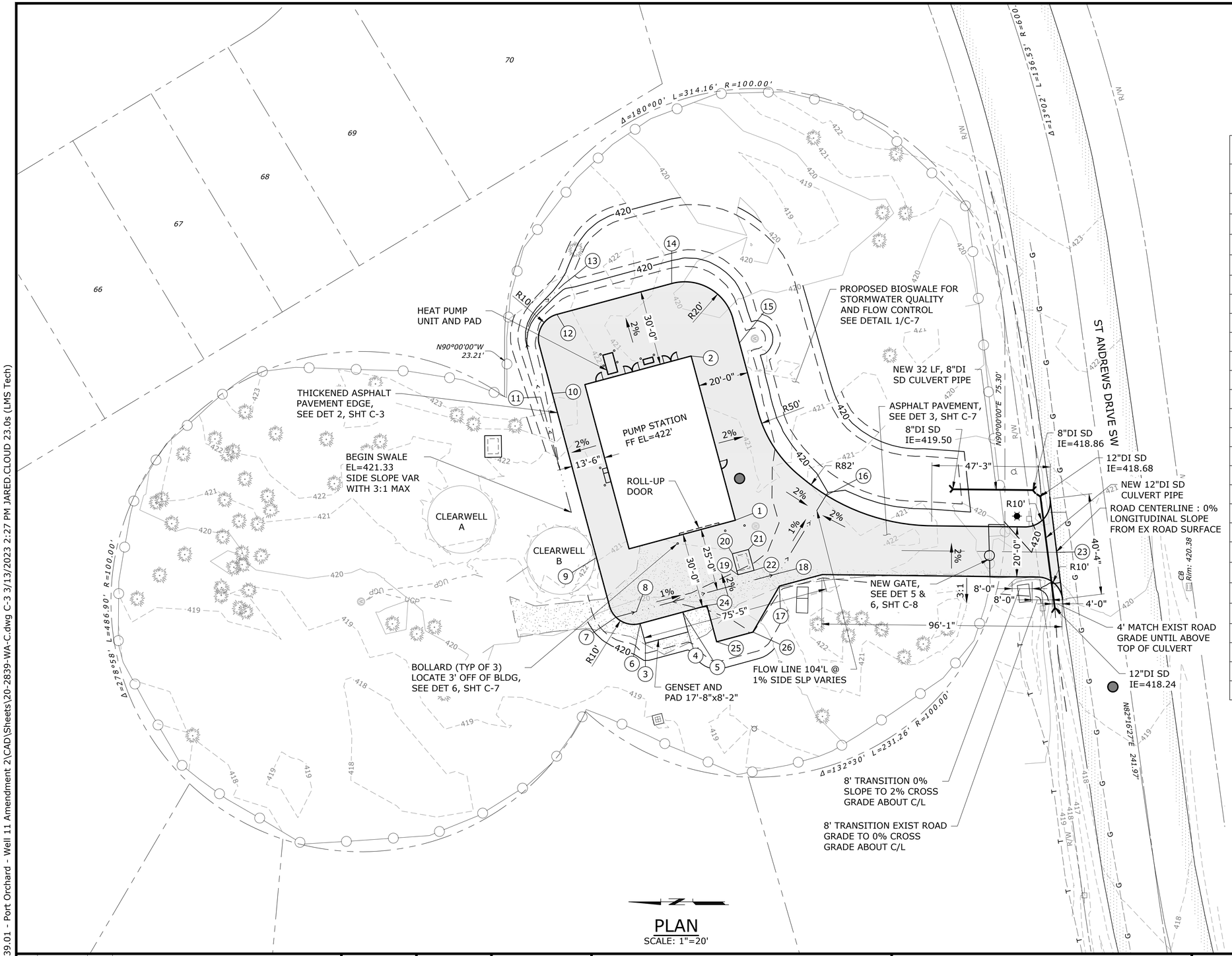
Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

SITE DEMOLITION PLAN

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET C-2



PLAN
SCALE: 1"=20'

NOTES:

1. SLOPE NEW PAVEMENT AREAS MIN 2% AWAY FROM BUILDING AND GENERATOR PAD

2. FIRE LANES SHALL BE MARKED AS "FIRE LANE - NO PARKING" IN ACCORDANCE WITH PORT ORCHARD MUNICIPAL CODE 10.60

GRADING CONTROL POINTS

PT NO.	DESCRIPTION	ELEVATION	NORTHING	EASTING
1	PUMP STATION CORNER GRADE, SW	422.00	189611.21	1182623.57
2	PUMP STATION CORNER GRADE, SE	422.00	189628.88	1182689.24
3	GENSET PAD CORNER, NW	421.33	189647.17	1182574.37
4	GENSET PAD CORNER, SW	421.15	189630.10	1182578.93
5	PAVEMENT EDGE	421.05	189632.21	1182586.82
6	PAVEMENT EDGE	421.23	189649.28	1182582.26
7	PAVEMENT EDGE	421.23	189658.88	1182584.85
8	PAVEMENT FLOW LINE	421.13	189650.77	1182587.04
9	PAVEMENT EDGE	421.73	189666.73	1182608.63
10	PAVEMENT EDGE	421.73	189684.40	1182674.30
11	SWALE FLOW LINE	420.33	189689.11	1182672.84
12	PAVEMENT EDGE	421.40	189682.54	1182705.87
13	SWALE FLOW LINE	419.33	189676.07	1182720.86
14	PAVEMENT EDGE	421.40	189636.67	1182718.21
15	PAVEMENT EDGE	421.57	189609.56	1182694.45
16	PAVEMENT EDGE	420.19	189574.79	1182633.53
17	PAVEMENT EDGE	420.67	189593.69	1182597.17
18	PAVEMENT FLOW LINE	420.57	189594.04	1182602.30
19	VAULT CORNER, NW	420.93	189610.16	1182601.79
20	VAULT CORNER, NE	421.39	189612.42	1182610.14
21	VAULT CORNER, SE	421.32	189605.99	1182611.89
22	VAULT CORNER, SW	420.86	189603.71	1182603.52
23	DRIVEWAY EDGE CENTERLINE	420.20	189482.81	1182610.76
24	PAVEMENT EDGE	420.96	189622.56	1182589.45
25	PAVEMENT EDGE	421.26	189618.66	1182574.97
26	PAVEMENT EDGE	420.97	189604.18	1182578.86

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Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

PAVING, GRADING AND DRAINAGE PLAN

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET
C-3
10 of 69

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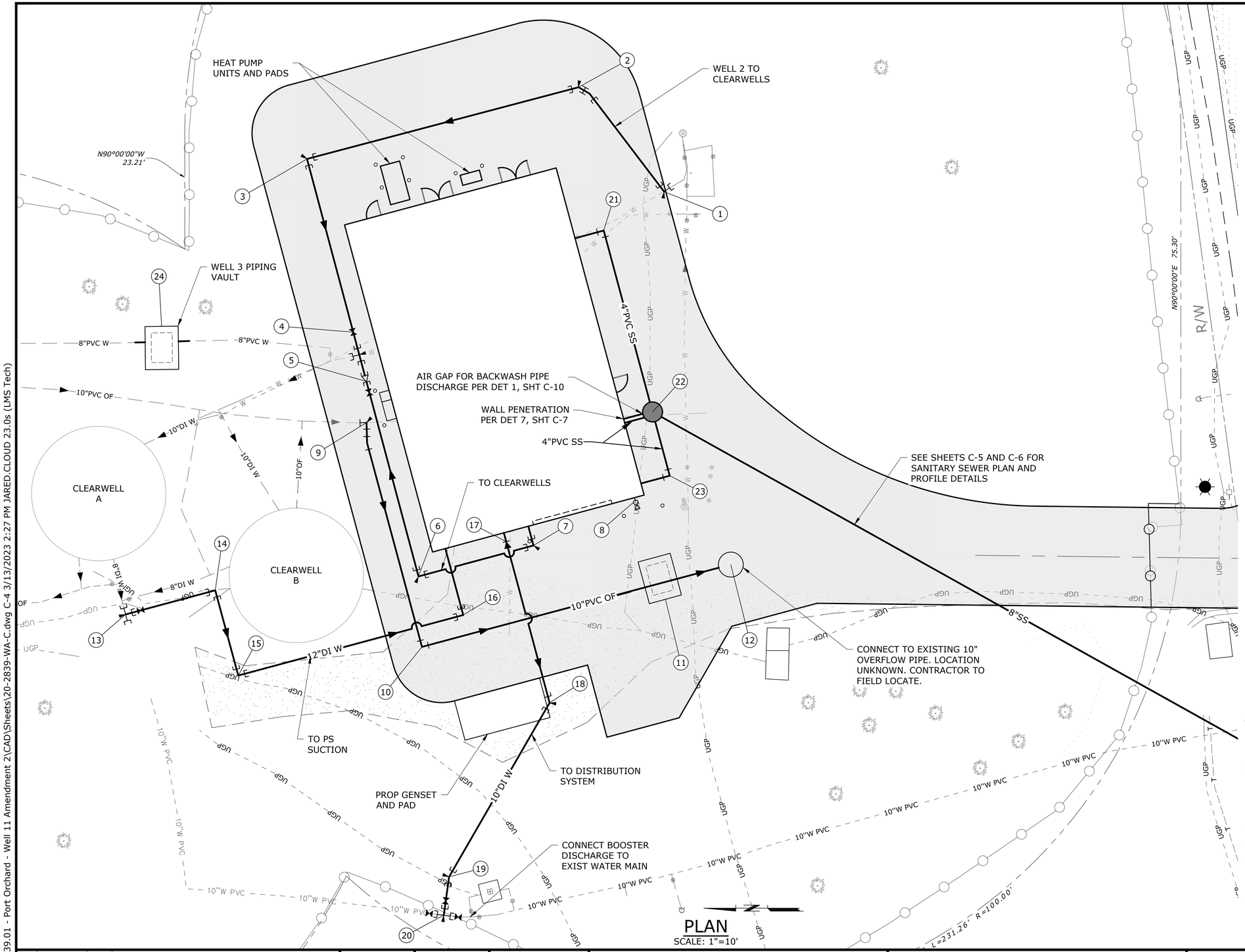

PLAN
SCALE: 1"=10'

PIPING KEY NOTES:

1. N189607.20,E1182684.48
1-10" DI 90° BEND, MJ RESTR
1-TB, SEE DET 2 &3, SHT C-10
CONNECT TO EXIST 10" DI
WATER PIPE FROM WELL 2
COORDINATE W/ CITY PRIOR TO
CONNECTING

2. N189624.44, E1182705.45
1-10" DI 90° BEND, MJ RESTR
1-10" DI 22.5° BEND, MJ RESTR
2-TB

3. N189678.89, E1182691.04
1-10" DI 90° BEND, MJ RESTR
1-TB

4. N189669.61, E1182656.29
1-10" GV, MJ
1-10" DI TEE, MJ RESTR
1-TB
CONNECT TO EXIST 10" DI
WATER PIPE TO CLEARWELLS
COORDINATE W/ CITY PRIOR TO
CONNECTING

5. N189666.94, E1182646.27
1-10"x8" DI RDCR, MJ RESTR
1-8" GV, MJ
CONNECT NEW WELL 11 PIPE TO
10" DI TEE TO CLEARWELLS
CUT AND CAP WELL 2 PIPE ONCE
NEW LINE IN OPERATION

6. N189656.52, E1182607.22
1-8" DI 90° BEND, MJ RESTR
1-TB

7. N189633.41, E1182613.45
1-8" DI BEND, MJ RESTR
1-TB

8. N189613.00, E1182622.54
1-NON-FREEZE WALL HYDRANT

9. N189682.15, E1182638.62
FURNISH & INSTALL:
1-10" SDR 35 90° BEND
1-10" SDR 35 11.25° BEND
CONNECT TO EXISTING 10" PVC
OVERFLOW PIPE

10. N189655.82, E1182593.09
1-10" SDR 35 90° BEND

11. N189606.93, E1182602.64
1-10" CHKV
1-CONC VAULT PER DET 5,
SHT C-12

12. N189593.81, E1182609.62
1-5' DIA DECHLORINATION
MANHOLE PER DET 1, SHT C-11
CONNECT TO EXISTING 10" PVC
OVERFLOW PIPE

13. N189715.32, E1182599.60
1-12"x8" DI TEE, MJ RESTR
1-12" GV, MJ
1-TB
CONNECT TO EXIST 8" DI WATER
PIPE FROM CLEARWELLS

14. N189697.32, E1182604.44
1-12" DI 90° BEND, MJ RESTR

15. N189692.70, E1182587.34
1-12" DI 90° BEND, MJ RESTR

16. N189647.53, E1182599.49
1-12" DI 90° BEND, MJ RESTR

17. N189638.89, E1182614.21
1-10"x8" DI RDCR, MJ RESTR

18. N189630.19, E1182581.87
1-10" DI 45° BEND, MJ RESTR
1-TB

19. N189650.37, E1182546.92
1-10" DI 22.5° BEND, MJ RESTR
1-TB

20. N189651.44, E1182539.22
1-10" DI TEE, MJ RESTR
3-10" GV, MJ
1-TB
CONNECT TO EXISTING 10"
WATER MAIN TO DISTRIBUTION
CUT AND CAP PIPE FROM
EXISTING PS ONCE NEW LINE IN
OPERATION

21. N189619.32, E1182676.67
1-4" SCH 40 PVC 90° BEND

22. N189609.51, E1182640.25
1-4' DIA CONCRETE MANHOLE W/
AIR GAP PER DET 1, SHT C-10

23. N189606.075, E1182627.45
1-4" SCH 40 PVC 90° BEND

24. N189708.09, E1182657.43
1-CONC VAULT PER DET 4,
SHT C-12
CONNECT TO EXISTING 8" DI
WATER PIPE FROM WELL 3

NOTES:

1. ALL PRESSURIZED WATER PIPELINES SHALL BE FULLY RESTRAINED. INCLUDE RESTRAINED MECHANICAL JOINTS AT ALL PIPE CONNECTIONS AND FITTINGS, AND INSTALL THRUST BLOCKING AT ALL BENDS, PER TABLE 1 ON SHEET C-6.
2. CONTRACTOR SHALL PROTECT EXISTING WATER MAIN EXCEPT WHERE THE PLANS CALL FOR ABANDONMENT.
3. SLOPE 10" PVC OVERFLOW AT A CONSTANT GRADE BETWEEN EXISTING CONNECTION POINTS.
4. SEE DET 1, SHT C-8 FOR WATER MAIN TRENCH DETAILS.
5. VALVE BOXES SHALL BE INSTALLED ON ALL BURIED VALVES PER DET 3 & 4, SHT C-9.
6. ALL EXISTING WELLS, WATERLINES, PUMP STATION AND BOOSTER PUMPS, WATER STORAGE TANKS, AND GENERATOR MUST REMAIN IN OPERATION UNTIL NEW FACILITIES ARE ACCEPTED BY THE CITY AND ARE IN OPERATION.
7. CONTRACTOR TO MAINTAIN MINIMUM CLEARANCE OF 18" BETWEEN CROSSING PIPES.

NO.	DATE	BY	REVISION

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

CLB DESIGNED
EJJ DRAWN
EKS CHECKED

PETER BENEDICT CUNNINGHAM
STATE OF WASHINGTON
45052
REGISTERED
PROFESSIONAL ENGINEER
4/21/2023

consor

Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS -
WELL NO. 11
SITE IMPROVEMENT
PROJECT

YARD PIPING PLAN

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET
C-4
11 of 69

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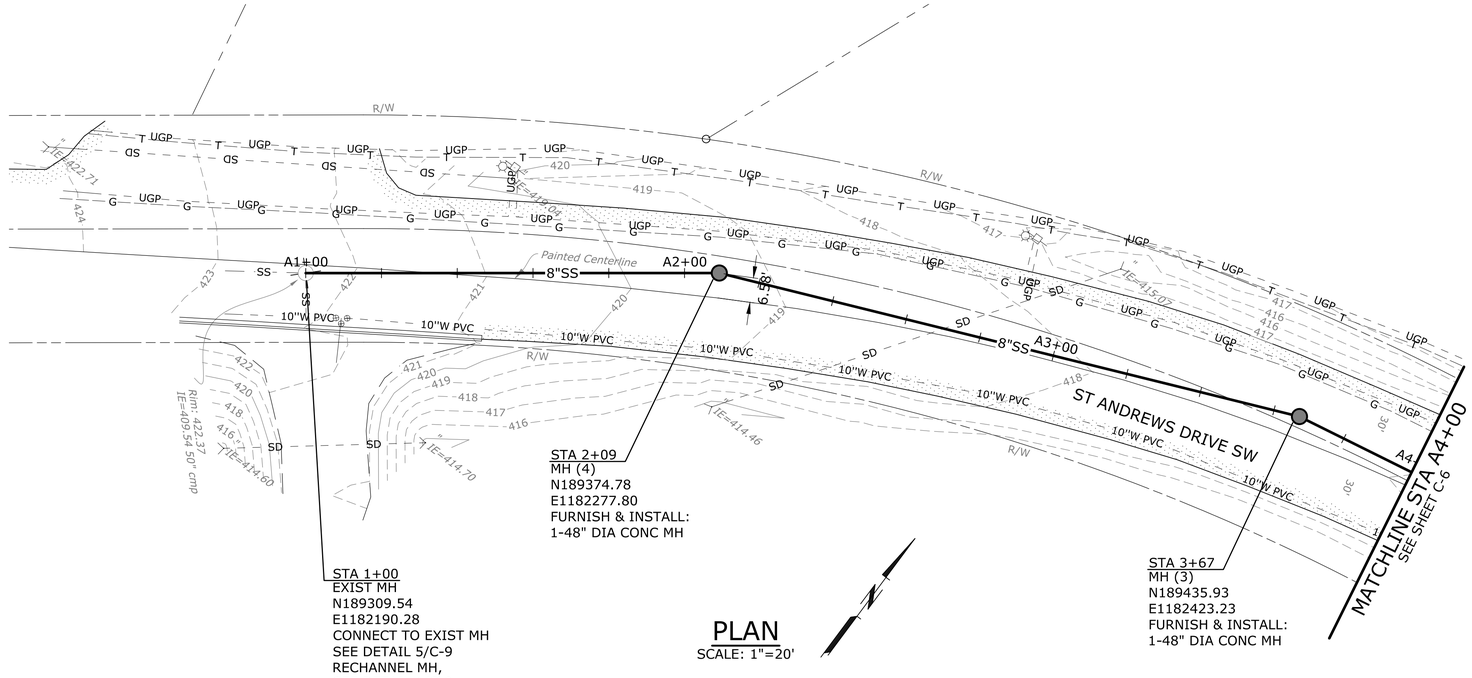
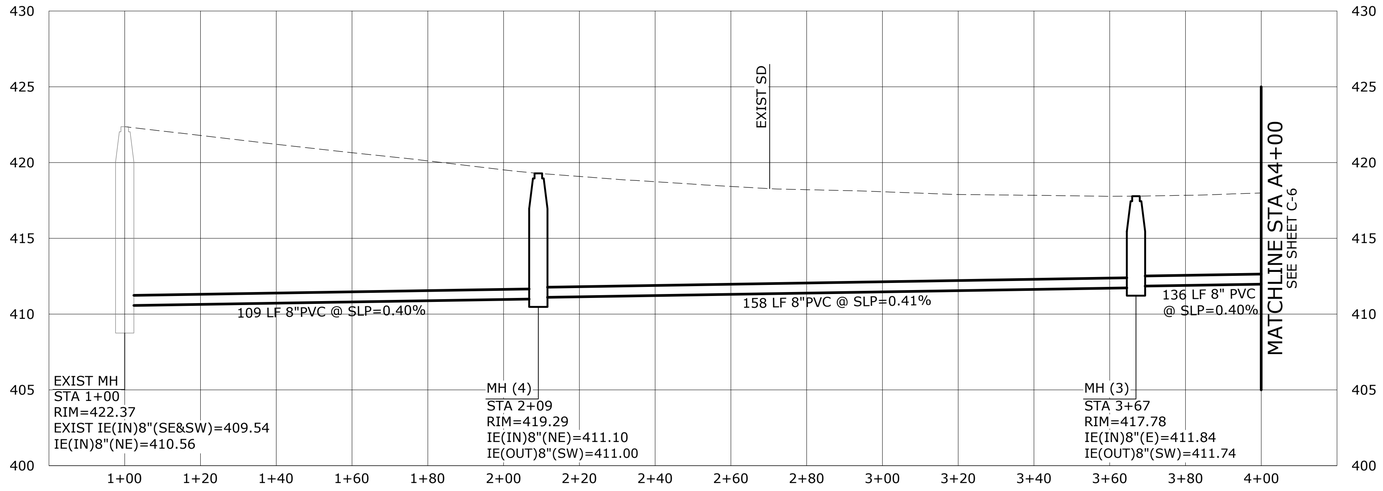


PLAN

SCALE: 1"=20'



PROFILE

SCALE: 1"=20' HORIZ, 1"=5' VERT

NOTES:

1. SEE DET 4 & 5, SHT C-7 FOR STREET RESTORATION.
2. SEE DET 2, SHT C-8 FOR SEWER TRENCH DETAILS.
3. MAINTAIN MINIMUM REQUIRED DISTANCE BETWEEN WATER LINES AND SANITARY SEWER PER DET 3, SHT C-8.
4. SEE DET 4, SHT C-8 AND DET 1 & 2, SHT C-9 FOR NEW 48" DIAMETER MANHOLES.

NO.	DATE	BY	REVISION

NOTICE

0 ½ 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

CLB DESIGNED

EJJ DRAWN

EKS CHECKED

PETER BENEDICT CUNNINGHAM — STATE OF WASHINGTON — 46362 — REGISTERED PROFESSIONAL ENGINEER — 4/21/2023

consor

Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

SANITARY SEWER PLAN AND PROFILE 1

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET C-5

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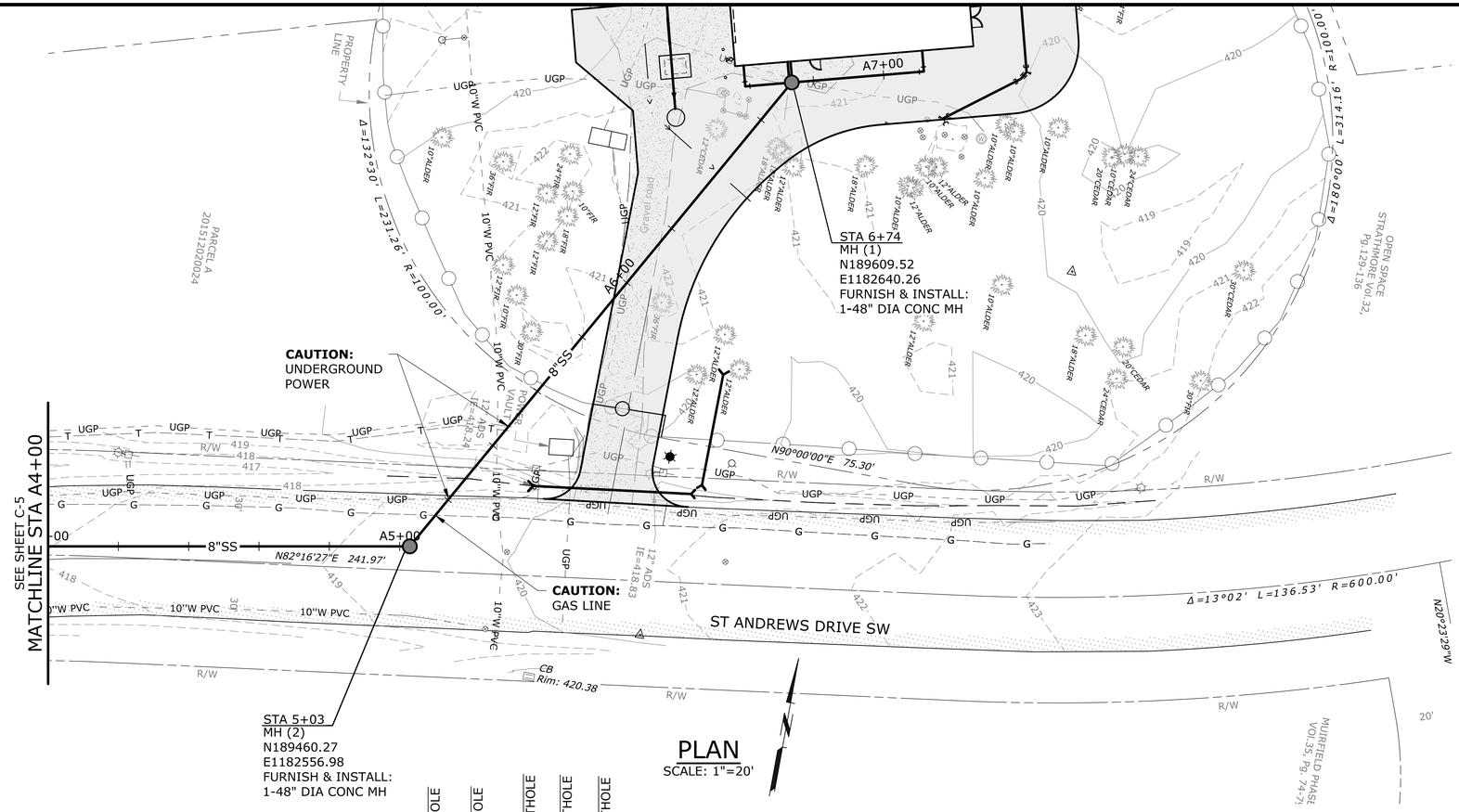
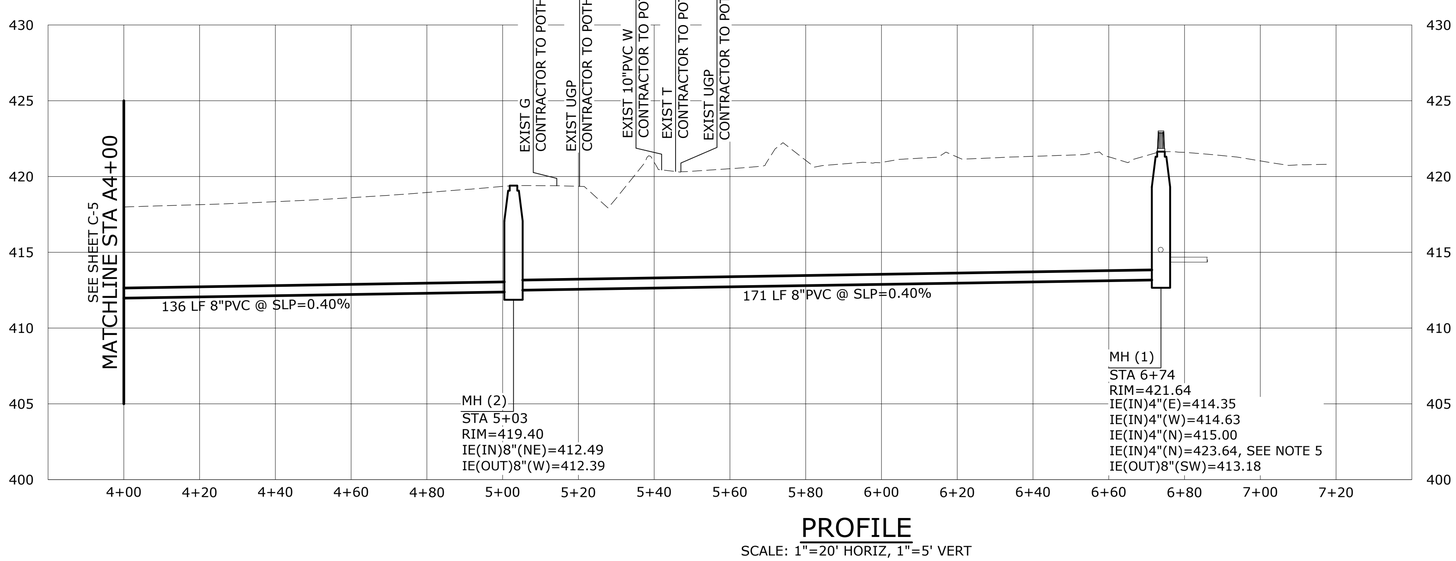




PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

NOTES:

1. SEE DET 4 & 5, SHT C-7 FOR STREET RESTORATION.
2. SEE DET 2, SHT C-8 FOR SEWER TRENCH DETAILS.
3. MAINTAIN MINIMUM REQUIRED DISTANCE BETWEEN WATER LINES AND SANITARY SEWER PER DET 3, SHT C-8.
4. SEE DET 4, SHT C-8 AND DET 1 & 2, SHT C-9 FOR NEW 48" DIAMETER MANHOLES.
5. SEE DTL 1, SHT C-10 FOR BACKWASH PIPE AIR GAP AND DEBRIS CAGE.

NO.	DATE	BY	REVISION

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

CLB DESIGNED
EJJ DRAWN
EKS CHECKED

PETER BENEDICT CUNNINGHAM
STATE OF WASHINGTON
48352
REGISTERED
PROFESSIONAL ENGINEER
4/21/2023

consor

Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

SANITARY SEWER PLAN AND PROFILE 2

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

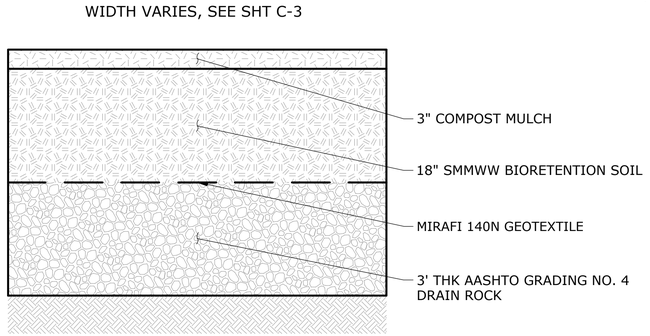
SHEET
C-6
13 of 69

H:\evt_projects\20\2839.01 - Port Orchard - Well 11 Amendment 2\CAD\Sheets\20-2839-WA-C-5.dwg C-6 3/13/2023 2:28 PM JARED.CLOUD 23.0s (LMS Tech)

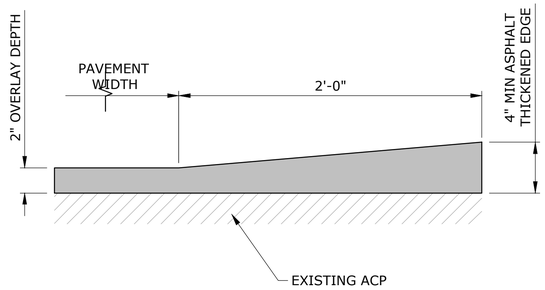
NOTES:

1.SEED BIORETENTION AREA WITH NATIVE SEED MIX "RAIN GARDEN SEED MIX" AS PRODUCED BY DIRECT SEED SALES, ISSAQUAH, WA. OR APPROVED EQUAL.

2. SLOPE SWALE 0.5%.



TYPICAL BIORETENTION SWALE SECTION
SCALE: NTS
1 / C-3

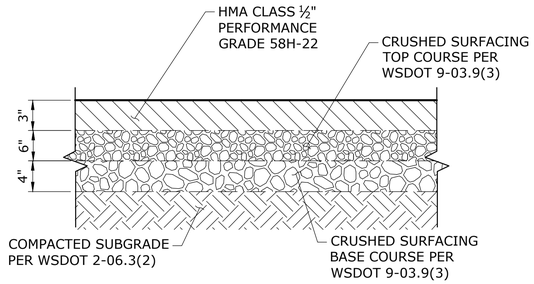


WITH EXISTING EDGE

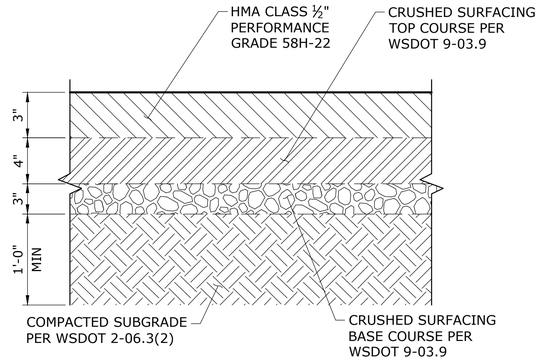
NOTE:

1. HMA THICKENED EDGE WILL BE MEASURED FOR PAYMENT ONLY WHERE NEW THICKENED EDGE IS INSTALLED OR INSTALLED OVER AN EXISTING HMA BERM.

HMA THICKENED EDGE
SCALE: NTS
2 / C-3

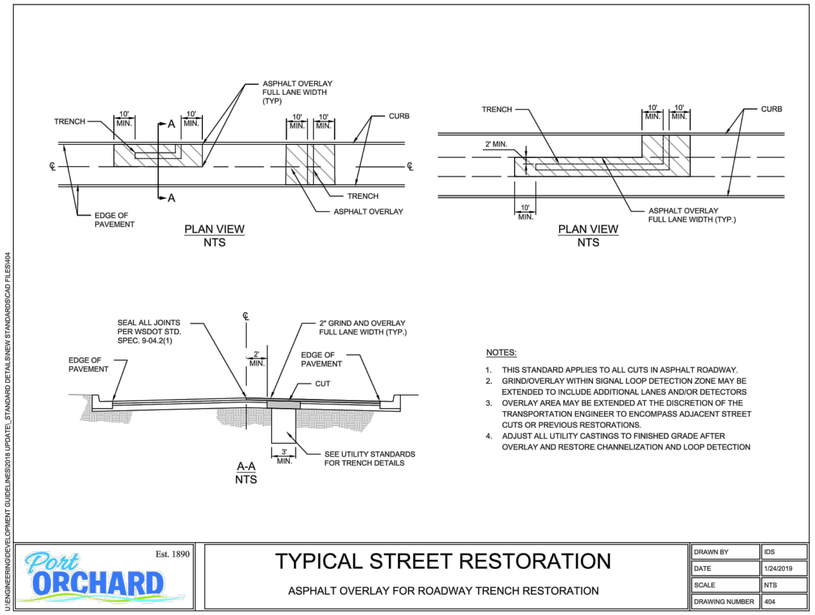


SITE PAVEMENT SECTION
SCALE: NTS
3 / C-3



STREET RESTORATION SECTION
SCALE: NTS
4 / C-5

C-6



NOTES:

1. THIS STANDARD APPLIES TO ALL CUTS IN ASPHALT ROADWAY.
2. GRIND/OVERLAY WITHIN SIGNAL LOOP DETECTION ZONE MAY BE EXTENDED TO INCLUDE ADDITIONAL LANES AND/OR DETECTORS
3. OVERLAY AREA MAY BE EXTENDED AT THE DISCRETION OF THE TRANSPORTATION ENGINEER TO ENCOMPASS ADJACENT STREET CUTS OR PREVIOUS RESTORATIONS.
4. ADJUST ALL UTILITY CASTINGS TO FINISHED GRADE AFTER OVERLAY AND RESTORE CHANNELIZATION AND LOOP DETECTION

Port ORCHARD Est. 1890

TYPICAL STREET RESTORATION

ASPHALT OVERLAY FOR ROADWAY TRENCH RESTORATION

DRAWN BY	IDS
DATE	1/24/2019
SCALE	NTS
DRAWING NUMBER	404

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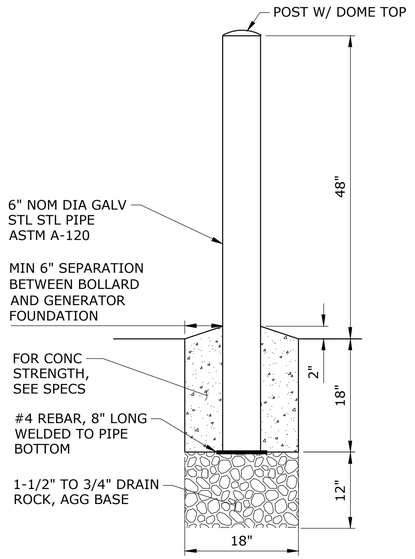
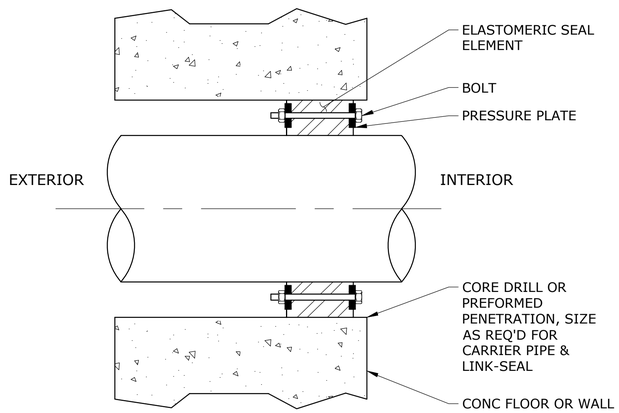
TYPICAL STREET RESTORATION
SCALE: NTS
5 / C-5 C-6



NOTE:

1. BOLLARD SHALL BE PAINTED SAFETY YELLOW.

BOLLARD
SCALE: NTS
6 / C-3



LINK SEAL DETAIL
SCALE: NTS
7 / C-4

NO.	DATE	BY	REVISION

NOTICE

0 ½ 1

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CLB DESIGNED

BAW DRAWN

EKS CHECKED

JEFFREY D. CUNNINGHAM — STATE OF WASHINGTON — 24576 — REGISTERED PROFESSIONAL ENGINEER — 6/7/2023

consor

Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

CIVIL DETAILS - 1

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET C-7

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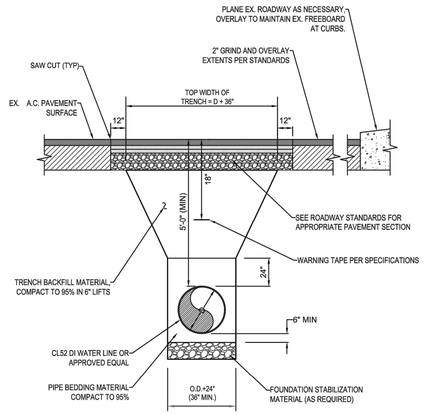
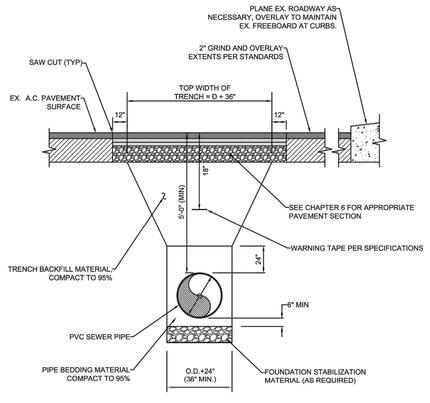


NOTES:
1) BED THE ENTIRE WIDTH OF THE TRENCH PAVEMENT
2) RESTORATION SHALL BE PER THE APPROPRIATE SECTION IN CHAPTER 6 (PAVEMENT SURFACING).
3) INSTALL TRACER WIRE PER SPECIFICATIONS

Port ORCHARD Est. 1890	RESTORATION, TAPS, AND BLOCKING B WATER MAIN TRENCH	DRAWN BY	IDS
		DATE	1/31/2019
		SCALE	NTS
		DRAWING NUMBER	801

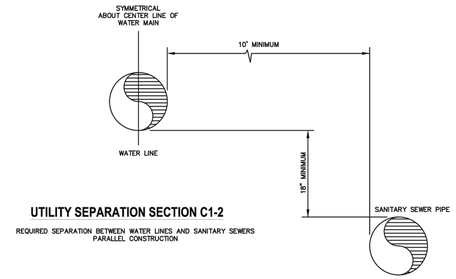
WATER MAIN TRENCH (1 / C-4)
SCALE: NTS



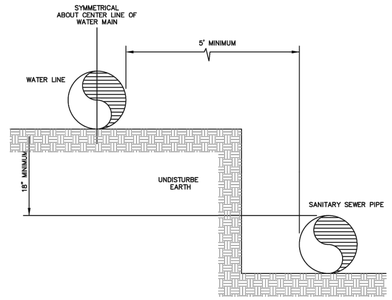
NOTES:
1) BED THE ENTIRE WIDTH OF THE TRENCH PAVEMENT
2) RESTORATION SHALL BE PER THE APPROPRIATE SECTION IN CHAPTER 6 (PAVEMENT SURFACING).

Port ORCHARD Est. 1890	TRENCHES AND PIPE CONNECTIONS A SEWER TRENCH DETAILS	DRAWN BY	IDS
		DATE	1/23/2019
		SCALE	NTS
		DRAWING NUMBER	900

SEWER TRENCH (2 / C-5) C-6
SCALE: NTS



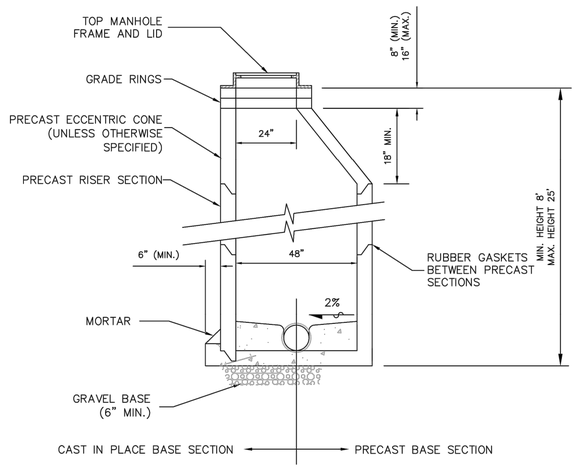
UTILITY SEPARATION SECTION C1-2
REQUIRED SEPARATION BETWEEN WATER LINES AND SANITARY SEWERS PARALLEL CONSTRUCTION



UTILITY SEPARATION SECTION C1-3
REQUIRED SEPARATION BETWEEN WATER LINES AND SANITARY SEWERS UNUSUAL CONDITIONS PARALLEL CONSTRUCTION

Port ORCHARD Est. 1890	RESTORATION, TAPS, AND BLOCKING A SEPARATION STANDARDS	DRAWN BY	IDS
		DATE	1/30/2019
		SCALE	NTS
		DRAWING NUMBER	800-B

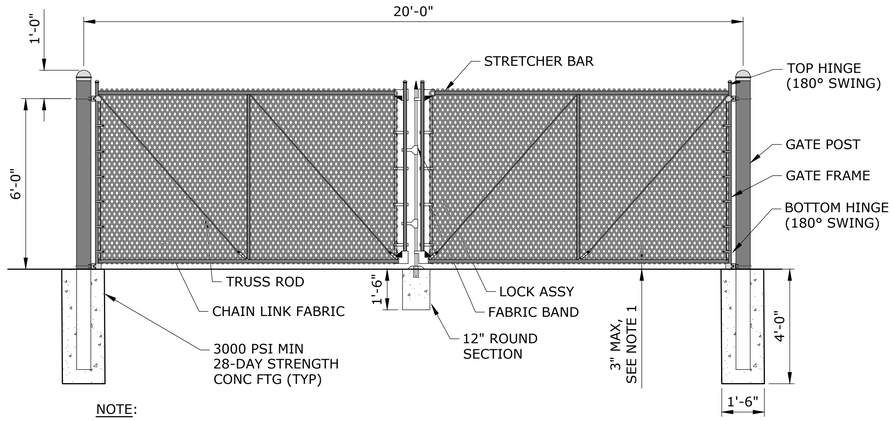
PIPE SEPARATION STANDARDS (3 / C-5) C-6
SCALE: NTS



NOTES:
1. MATCH CROWNS OF SEWERS.
2. FOR CAST IN PLACE BASE, CONSTRUCT IN FIELD CHANNEL AND SHELF TO THE CROWN OF THE PIPE.
3. FOR PRECAST BASE, USE GRAVEL BACKFILL, 6" MIN. COMPACTED DEPTH UNDER THE BASE.
4. ALL RIGID PIPE ENTERING OR LEAVING THE MANHOLE SHALL BE PROVIDED WITH FLEXIBLE JOINTS WITHIN 1 ½ PIPE DIAMETERS OF THE MANHOLE STRUCTURE.
5. INSTALL DROP MANHOLE CONNECTION IF INVERT OF ANY INCOMING SEWER IS MORE THAN 2'–0" ABOVE THE TOP OF THE MAIN SEWER.
6. IN UNIMPROVED AREAS AND EASEMENTS, MANHOLE SHALL EXTEND A MINIMUM OF 2" AND A MAXIMUM OF 4" ABOVE FINISHED GRADE.
7. MANHOLE RING AND COVER SHALL HAVE A CLEAR OPENING. WORDING ON COVER SHALL BE "SEWER" IN 3" RAISED LETTERS.
8. ALL MANHOLE JOINTS SHALL USE A CONFINED ROUND RUBBER GASKET MEETING ASTM C–443 SPECIFICAITONS.

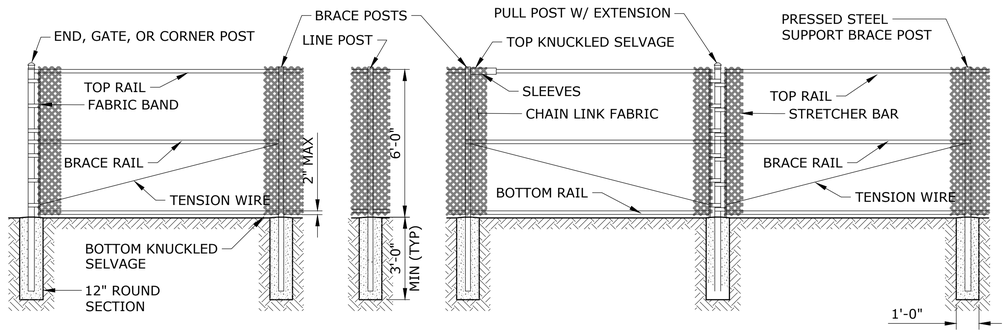
Port ORCHARD Est. 1890	MANHOLES A MANHOLE DETAIL 48"	DRAWN BY	IDS
		DATE	1/30/2019
		SCALE	NTS
		DRAWING NUMBER	920

48" DIA MANHOLE (4 / C-5) C-6
SCALE: NTS



NOTE:
1. THE SECURITY GATE SHALL BE CUSTOM FABRICATED TO FIT THE SLOPE OF THE DRIVEWAY. THE CLEARANCE BETWEEN THE BOTTOM RAIL AND THE DRIVEWAY SHALL NOT EXCEED 3 INCHES.

SWING GATE (5 / C-3)
SCALE: 3/8"=1'-0"



CHAIN LINK FENCE (6 / C-3)
SCALE: NTS

NO.	DATE	BY	REVISION

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

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PETER BENEDICT CUNNINGHAM — STATE OF WASHINGTON — 48302 — REGISTERED PROFESSIONAL ENGINEER — 4/21/2023

consor

Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

CIVIL DETAILS - 2

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET C-8

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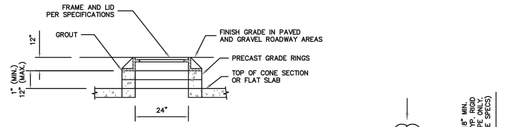
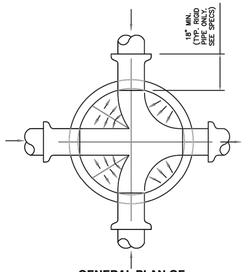
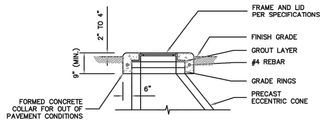


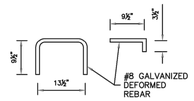
TYPICAL TOP SECTION



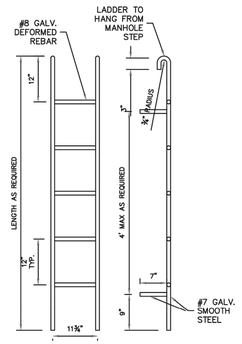
GENERAL PLAN OF CHANNEL INTERSECTION

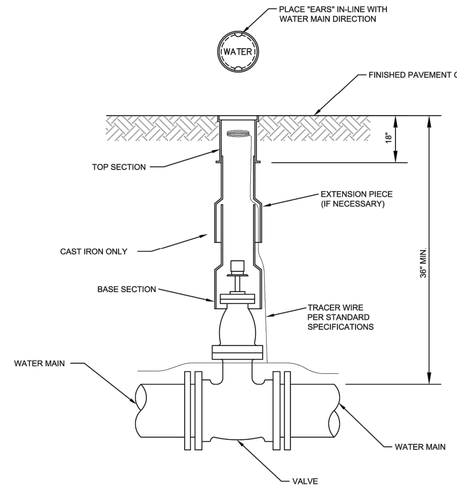


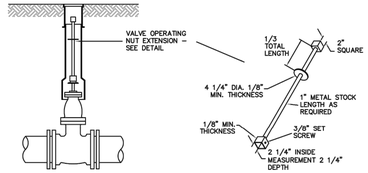
MANHOLE FRAME COLLAR UNPAVED AREAS



SAFETY STEP

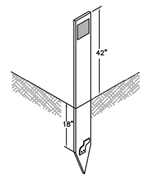






EXTENSIONS ARE REQUIRED WHEN THE VALVE NUT IS MORE THAN THREE (3) FEET BELOW FINISHED GRADE. EXTENSIONS ARE TO BE A MINIMUM OF ONE (1) FOOT LONG, ONLY ONE EXTENSION PER VALVE. ALL EXTENSIONS ARE TO MADE OF STEEL SIZED AS NOTED, AND PAINTED WITH TWO COATS OF CARBON ELASTIC (ATCO NO. 2221) OR APPROVED EQUAL.

VALVE OPERATING NUT EXTENSION



VALVE MARKER POST

PROVIDE A VALVE MARKER POST FOR EACH VALVE. THE FIBERGLASS VALVE MARKER POST SHALL BE BLUE IN COLOR, 4" WIDE (FLAT), 72" LONG AND FURNISHED WITH A 2"x2" HIGH-INTENSITY WHITE REFLECTOR (250 CANDLEPOWER) AND A FLEXIBLE ANCHOR BARB.

THE VALVE MARKER POST SHALL BE A CARSONITE CURV-FLEX MARKER OR APPROVED EQUAL.

THE POST SHALL BE SITUATED IN A SAFE, REASONABLY CONSPICUOUS LOCATION, AND AT A RIGHT ANGLE TO THE ROADWAY FROM THE VALVE.

THE DISTANCE FROM THE MARKER TO THE VALVE SHALL BE WRITTEN ON THE BACK OF THE MARKER IN 1-1/2" HIGH BLACK LETTERS.

VALVE MARKER

Est. 1890 Port ORCHARD	MANHOLES C	DRAWN BY	IDS
	TOP SECTION AND CHANNELIZATION	DATE	1/30/2019
		SCALE	NTS
		DRAWING NUMBER	922

MANHOLE TOP SECTION (1) C-5 C-6
SCALE: NTS

Est. 1890 Port ORCHARD	MANHOLES E	DRAWN BY	IDS
	MANHOLE DETAIL - LADDER	DATE	1/30/2019
		SCALE	NTS
		DRAWING NUMBER	924

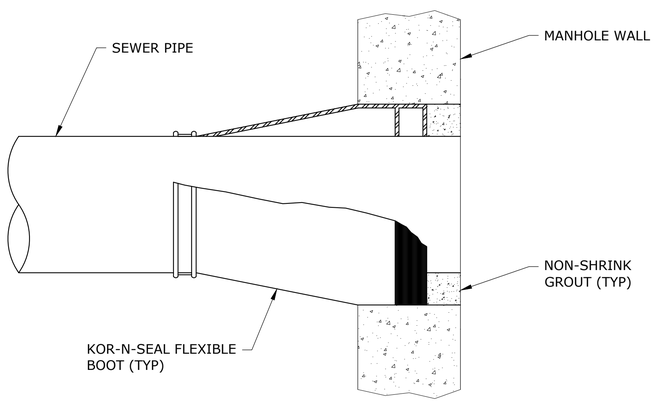
MANHOLE LADDER (2) C-5 C-6
SCALE: NTS

Est. 1890 Port ORCHARD	SYSTEM APPURTENANCES	DRAWN BY	IDS
	VALVE BOX	DATE	1/23/2019
		SCALE	NTS
		DRAWING NUMBER	884

VALVE BOX (3) C-4
SCALE: NTS

Est. 1890 Port ORCHARD	SYSTEM APPURTENANCES C	DRAWN BY	IDS
	VALVE MARKER AND VALVE EXTENSION	DATE	1/30/2019
		SCALE	NTS
		DRAWING NUMBER	882

VALVE MARKER AND EXTENSIONS (4) C-4
SCALE: NTS



RUBBER BOOT DETAIL (5) -
SCALE: NTS

NO.	DATE	BY	REVISION

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

CLB DESIGNED
BAW DRAWN
EKS CHECKED

PETER BENEDICT CUNNINGHAM STATE OF WASHINGTON 43952 REGISTERED PROFESSIONAL ENGINEER 4/21/2023

consor

Port ORCHARD

CITY OF PORT ORCHARD MCCORMICK WOODS - WELL NO. 11 SITE IMPROVEMENT PROJECT

CIVIL DETAILS - 3

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET C-9

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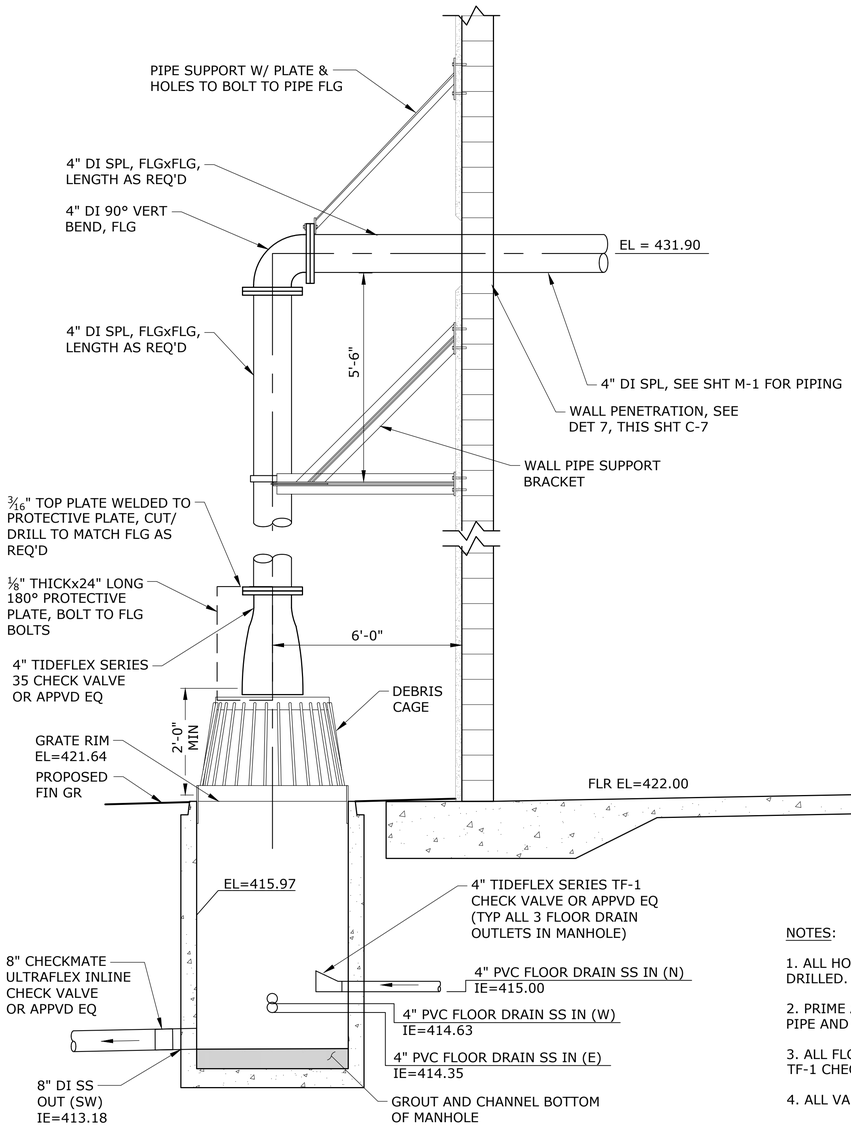


NOTES:

1. ALL HOLES IN PIPE AND APPURTENANCES TO BE DRILLED.
2. PRIME AND PAINT ALL EXTERIOR DUCTILE IRON PIPE AND FITTINGS PER SPECIFICATION 09 90 00.
3. ALL FLOOR DRAINS TO HAVE TIDEFLEX SERIES TF-1 CHECK VALVE OR APPVD EQ.
4. ALL VALVE GASKETS SHALL BE EPDM RUBBER.

BACKWASH PIPE TO MANHOLE (1 / C-4)

SCALE: NTS

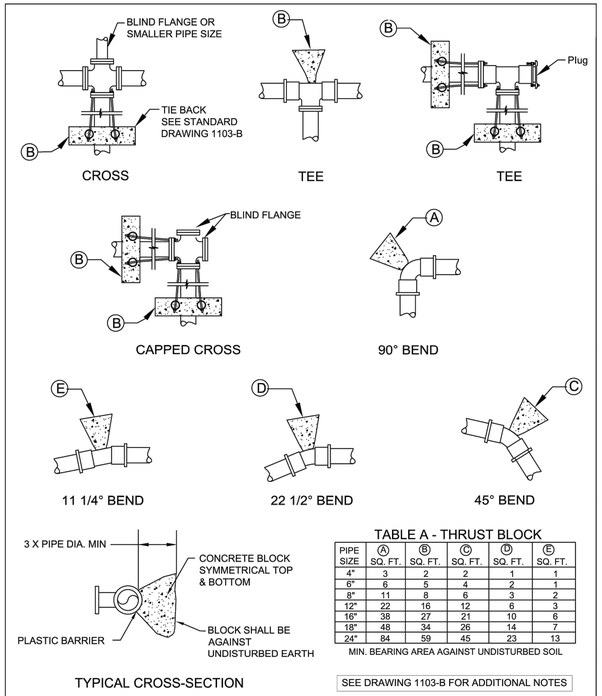


TABLE A - THRUST BLOCK

PIPE SIZE	(A) SQ. FT.	(B) SQ. FT.	(C) SQ. FT.	(D) SQ. FT.	(E) SQ. FT.
4"	3	2	2	1	1
6"	6	5	4	2	1
8"	11	8	6	3	2
12"	22	16	12	6	3
16"	38	27	21	10	6
18"	48	34	26	14	7
24"	84	59	45	23	13

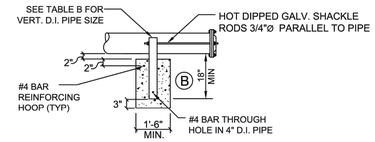
MIN. BEARING AREA AGAINST UNDISTURBED SOIL

SEE DRAWING 1103-B FOR ADDITIONAL NOTES

Port ORCHARD Est. 1890	RESTORATION, TAPS, AND BLOCKING THRUST BLOCKING AND TIE BACKS	DRAWN BY: IDS DATE: 1/15/2019 SCALE: NTS DRAWING NUMBER: 803-A

THRUST BLOCKS (2 / C-4)

SCALE: NTS



TIE BACK BLOCK DETAIL

TABLE B - TIE BACK

WATER MAIN PIPE	AMOUNT OF 3/4" GALV. SHACKLE RODS	SIZE OF VERT. PIPE IN CONC.	AMOUNT OF #4 REINFORCING BAR HOOPS
4"	2	4"	1
6"	2	4"	1
8"	2	4"	1
12"	4	4"	2
16"	6	6"	3
18"	6	6"	3
24"	6	6"	3

NOTES:

1. BEARING AREA OF CONCRETE THRUST BLOCK IS BASED ON 225 PSI PRESSURE AND SAFE SOIL BEARING LOAD OF 2000 PSF.
2. THE SAFE SOIL BEARING LOAD SHALL BE ADJUSTED TO MEASURED SOIL BEARING LOADS IN THE FIELD.
3. AREAS MUST BE ADJUSTED FOR OTHER PIPE SIZES, PRESSURES AND SOIL CONDITIONS.
4. CONCRETE BLOCKING SHALL BE CAST IN PLACE AND HAVE A MINIMUM OF 1/4 SQUARE FOOT BEARING AGAINST THE FITTING.
5. THE BLOCK SHALL BEAR AGAINST THE FITTINGS ONLY AND SHALL BE CLEAR OF JOINTS TO PERMIT TAKING UP AND DISMANTLING OF JOINT
6. THE CONTRACTOR SHALL INSTALL BLOCKING ADEQUATE TO WITHSTAND FULL TEST PRESSURE AS WELL AS TO CONTINUOUSLY WITHSTAND OPERATING PRESSURE UNDER ALL CONDITIONS OF SERVICE.
7. USE 2" THICK STYROFOAM TO FORM THE CONCRETE BLOCKING. PLASTIC SHALL BE INSTALLED BETWEEN ALL CONCRETE BLOCKING AND FITTINGS.

Port ORCHARD Est. 1890	RESTORATION, TAPS, AND BLOCKING THRUST BLOCKING AND TIE BACKS	DRAWN BY: IDS DATE: 1/15/2019 SCALE: NTS DRAWING NUMBER: 803-B

THRUST BLOCK TIE BACKS (3 / C-4)

SCALE: NTS

NO.	DATE	BY	REVISION

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

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Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

CIVIL DETAILS - 4

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET C-10

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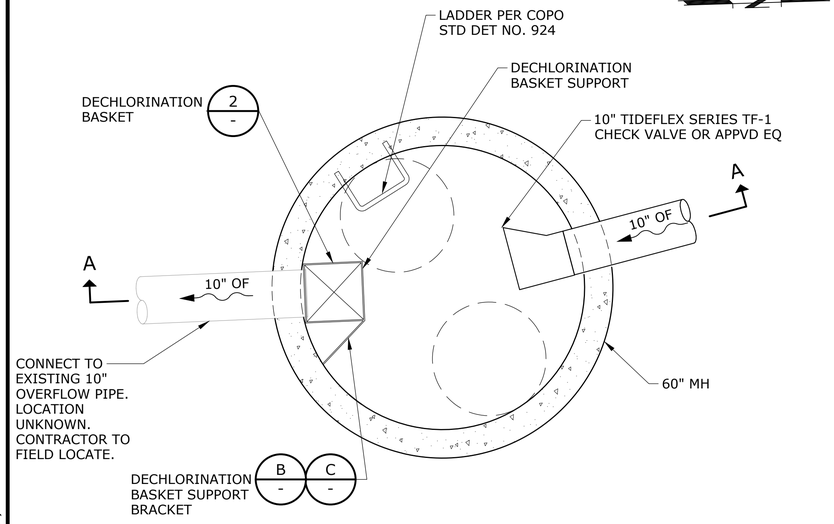
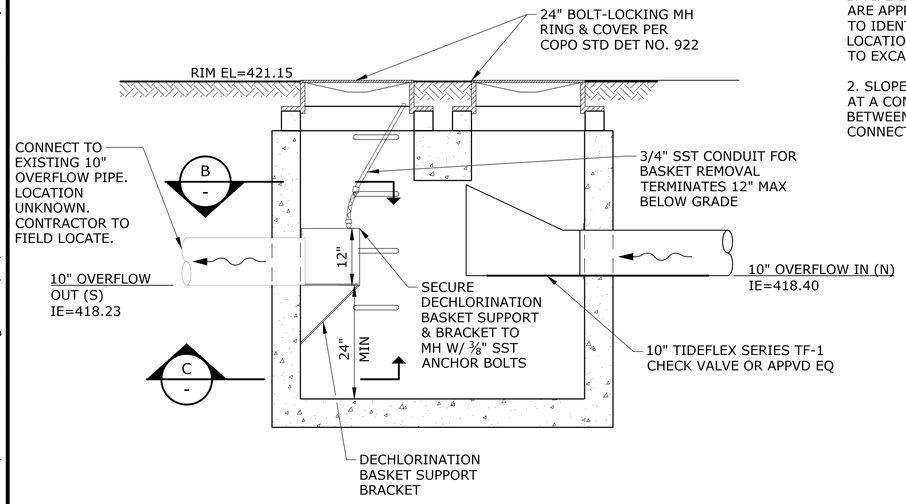


PLAN



SECTION A-A

DECHLORINATION MANHOLE

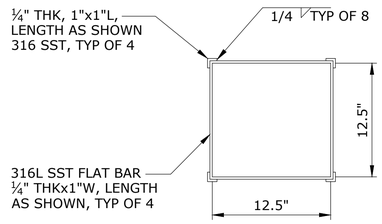
SCALE: 3/4"=1'-0"

1
C-4

NOTES:

1. PIPE ELEVATION SHOWN ARE APPROXIMATE. POTHOLE TO IDENTIFY EXISTING PIPE LOCATION AND DEPTH PRIOR TO EXCAVATION.

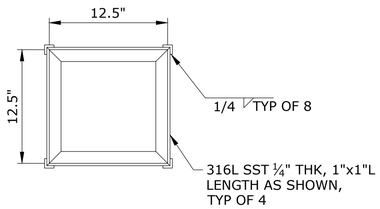
2. SLOPE 10" PVC OVERFLOW AT A CONSTANT GRADE BETWEEN EXISTING CONNECTION POINTS.



SUPPORT SECTION-UPPER

SCALE: 1- "=1'-0"

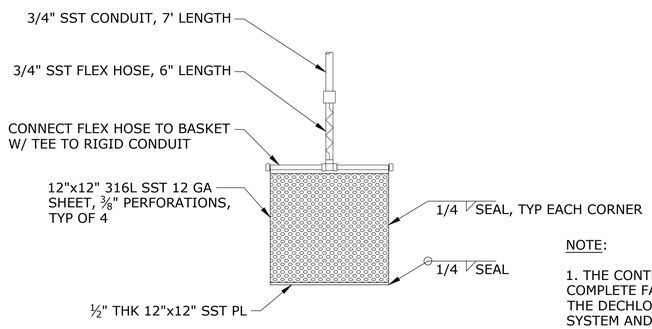
B
-



SUPPORT SECTION-LOWER

SCALE: 1- "=1'-0"

C
-



NOTE:

1. THE CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE FABRICATION AND INSTALLATION OF THE DECHLORINATION BASKET AND SUPPORT SYSTEM AND ENSURING THE INTENDED FUNCTION OF THE BASKET. THE BASKET SHALL ALLOW AT LEAST 600 GPM OF FLOW THROUGH THE INCOMING PIPE AND BASKET PENETRATIONS.

DECHLORINATION BASKET

SCALE: 1- "=1'-0"

2
-

NO.	DATE	BY	REVISION

NOTICE
0 ½ 1
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Port ORCHARD

CITY OF PORT ORCHARD MCCORMICK WOODS - WELL NO. 11 SITE IMPROVEMENT PROJECT

CIVIL DETAILS - 5

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET C-11

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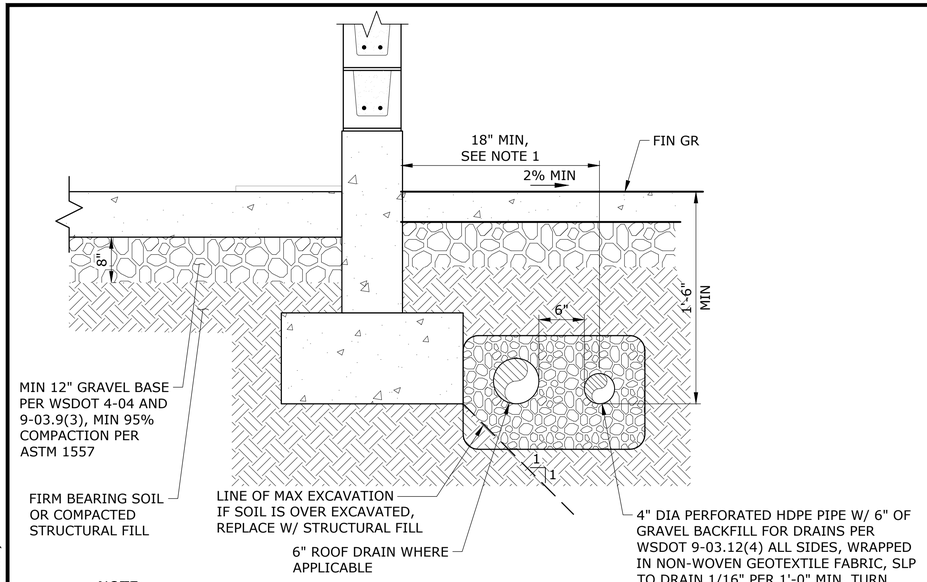
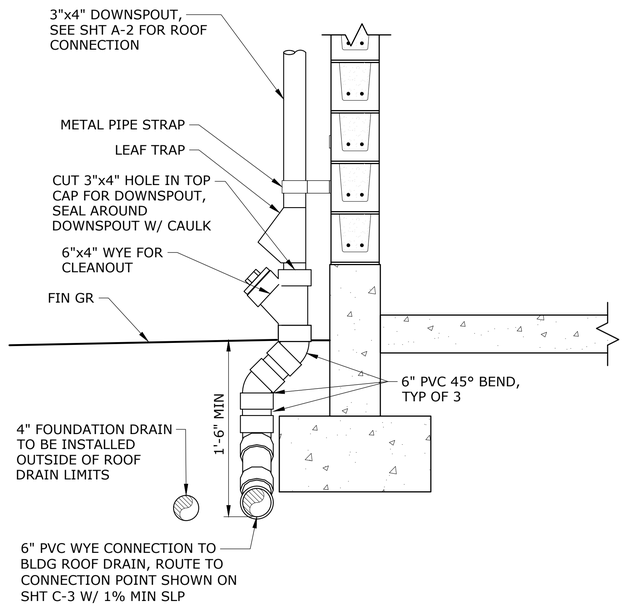


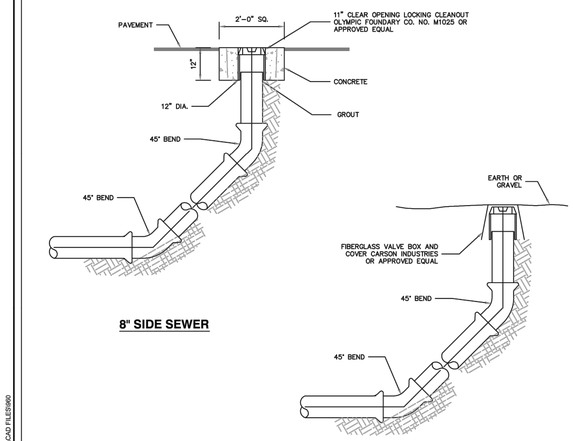
NOTE:

1. DISTANCE FROM OUTER WALL TO CENTERLINE OF 4" FOUNDATION DRAIN MAY BE REDUCED TO 12" WHEN NOT IN SAME TRENCH AS ROOF DRAIN.

TYPICAL FOUNDATION DRAIN
SCALE: NTS — 1 / C-3



ROOF DRAIN CONNECTION
SCALE: NTS — 2 / C-3



NOTES:
1. IF NOT PERMANENT END OF SEWER, USE TYLOX GASKET OR APPROVED EQUAL, AND SECURE WITH #8 WIRE PIN THRU HOLES DRILLED IN HUB. IF PERMANENT END OF SEWER USE MORTAR TO SECURE PLUG.
2. IF INSTALLATION OCCURS IN UNPAVED AREA USE CONCRETE ANCHOR AS SHOWN FOR ASPHALT PAVING AND BACKFILL TO TOP OF CAST IRON RING WITH SOIL.
3. RESTORATION SHALL BE IN ACCORDANCE WITH CHAPTER 6.
4. TRENCH BACKFILL SHALL BE COMPACTED AND TESTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS.

Port ORCHARD Est. 1890	CLEANOUTS A SEWER CLEANOUT DETAIL	DRAWN BY: IDS DATE: 1/30/2019 SCALE: NTS DRAWING NUMBER: 960

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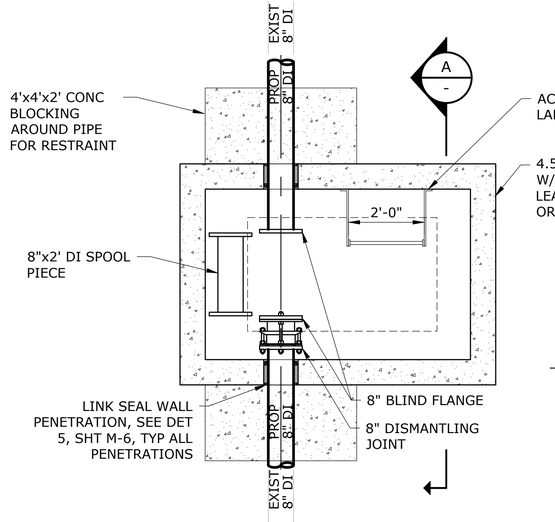
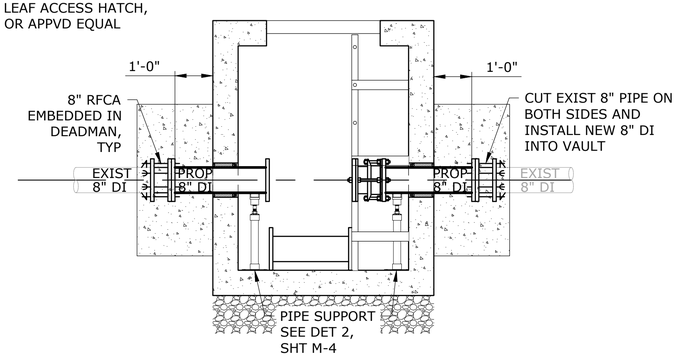
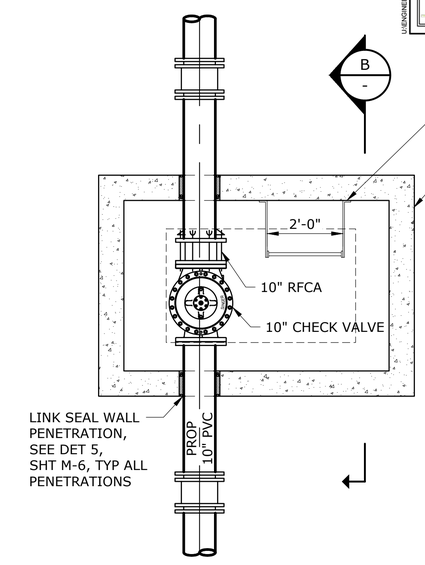
CLEANOUT
SCALE: NTS — 3 / P-1



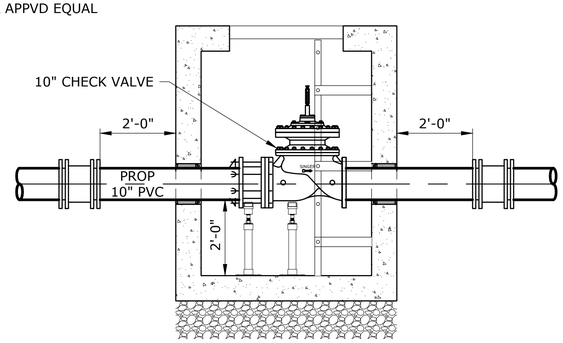
WELL 3 PIPING VAULT
SCALE: 1/2"=1' — 4 / C-4



WELL 3 PIPING VAULT SECTION
SCALE: 1/2"=1' — A / -



10IN VALVE VAULT
SCALE: 1/2"=1' — 5 / C-4



10IN VALVE SECTION
SCALE: 1/2"=1' — B / -

NO.	DATE	BY	REVISION

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Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

CIVIL DETAILS - 6

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET C-12

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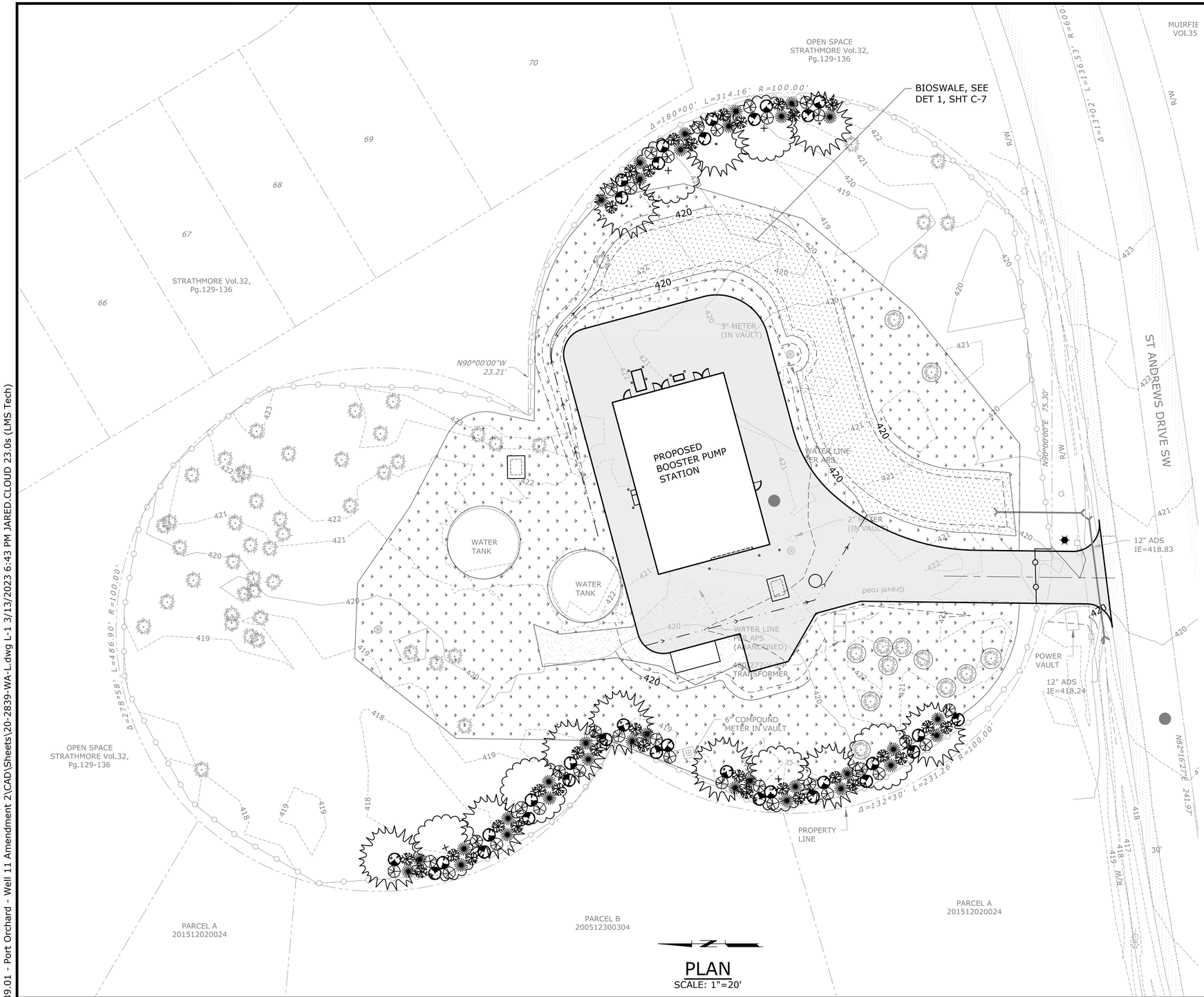

PLAN
SCALE: 1"=20'

LEGEND

SYMBOL	QTY	COMMON NAME BOTANICAL NAME	TYPE	PLANTING SIZE	NOTES
	6	BIGLEAF MAPLE ACER MACROPHYLLUM	TREE	1.5" CAL	
	10	WESTERN WHITE PINE PINUS MONTICOLA	TREE	6' HIGH	
	32	EVERGREEN HUCKLEBERRY VACCINIUM OVATUM	SHRUB	2 GAL	
	32	THIMBLEBERRY RUBUS PARVIFLORUS	SHRUB	2 GAL	
	32	TALL OREGON GRAPE MAHONIA AQUIFOLIUM	SHRUB	2 GAL	
	32	OCEANSPRAY HOLODISCUS DISCOLOR	SHRUB	2 GAL	
	30 LB	SEEDSMIX A - 23,341 SF	(SEE SHT L-2)		
		BIOSWALE - 5,173 SF	(SEE DET 1, SHT C-7)		
		EXISTING TREES			

NO.	DATE	BY	REVISION

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STATE OF WASHINGTON
43362
REGISTERED
PROFESSIONAL ENGINEER
4/21/2023

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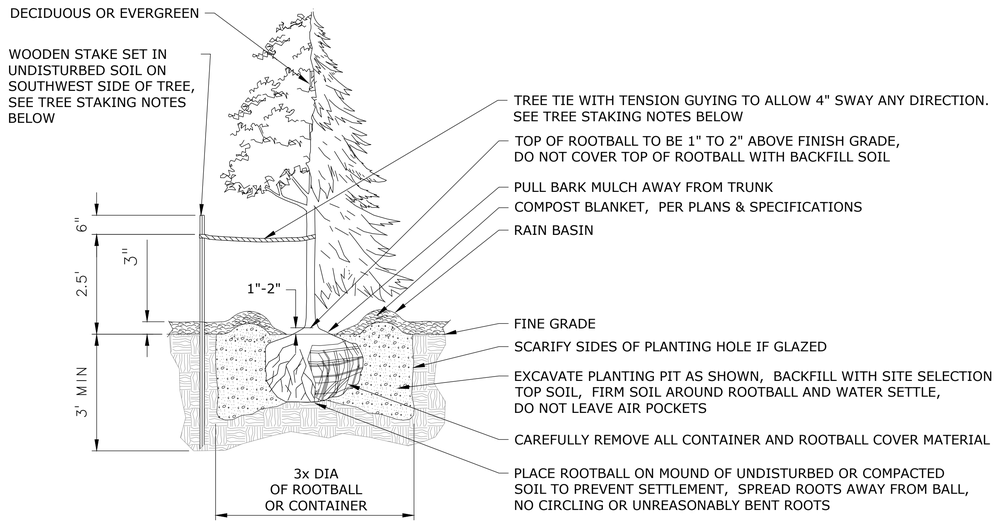
Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

LANDSCAPE PLAN

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET
L-1
20 of 69



NOTES:

1. TREE TIES TO BE EITHER:

   RIGID GUY SYSTEM WITH GALVANIZED WIRE TO BE APPROXIMATELY 1/8" THICKNESS AND 24" LENGTH. THERE IS A PLASTIC SLEEVE OVER PORTION THAT GOES AROUND TREE. THE WIRE TIE IS TO GO THRU THE WOOD STAKE AND BE SECURELY FASTENED.

   PLASTIC CHAIN TYPE, APPROXIMATELY 1" WIDTH BY 1/8" DEPTH WHERE TWO STAKES ARE REQUIRED. CROSS TIES BETWEEN STAKES AND WRAP TIE AROUND TREE. FASTEN SECURELY TO STAKE.

2. EXCAVATE ALL PLANT WELLS PER DETAIL AT 3X DIAMETER OF ROOTBALL OR CONTAINER AND BACKFILL WITH SITE SELECT TOPSOIL FREE OF NOXIOUS WEEDS PLANT MATERIAL INCLUDING ROOTS AND SPRIGS.

3. FURNISH TREE STAKES ON ALL TREE PLANTINGS. STAKES TO BE CONSTRUCTION GRADE, ROUGH SAWN OR FINISHED DOUGLAS FIR OR PINE. STAIN WITH APPROVED GREEN PENETRATING OIL. STAKE SIZE IS TO BE 1 1/2"x1-1/2" BY FOLLOWING LENGTHS:

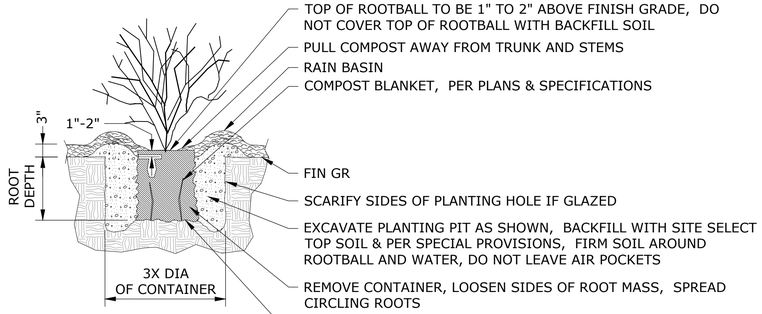
   TREES 36" AND SHORTER - USE ONE - 6' (APPROXIMATELY) STAKE

   TREES TALLER THAN 36" - USE ONE - 8' (APPROXIMATELY) STAKE

   DRIVE STAKES VERTICALLY AND AT LEAST 24" INTO UNDISTURBED SOIL. DO NOT DRIVE STAKES THRU ROOT BALL. LOCATE STAKES TO BEST RESIST PREVAILING WINDS.

TREE PLANTING DETAIL 1/-

SCALE: NTS



SHRUB PLANTING DETAIL 2/-

SCALE: NTS

PLANTING METHODS:

1. SOIL PREPARATION: TILL THE SUB-GRADE IN THESE AREAS TO A DEPTH OF AT LEAST FOUR INCHES AND ADD AT LEAST 12 INCHES OF CLEAN COMPOST-AMENDED TOPSOIL. THE COMPOST-AMENDED TOPSOIL SHALL HAVE A GOOD GROWING MEDIUM WITH TEXTURE MATERIAL THAT PASSES THROUGH ONE-INCH AND 35% ORGANIC MATTER FERTILITY.

2. PLANTING TIME: CONTAINERIZED STOCK SHALL BE INSTALLED ONLY FROM FEBRUARY 1 THROUGH MAY 1 AND OCTOBER 1 THROUGH NOVEMBER 15. PLANTINGS OUTSIDE THESE TIMES MAY REQUIRE ADDITIONAL MEASURES TO ENSURE SURVIVAL WHICH SHALL BE SPECIFIED ON THE PLANS.

3. INSTALLED PLANTS SHALL TAGGED FOR DORMANT SEASON IDENTIFICATION AND SHALL REMAIN ON PLANT MATERIALS AFTER PLANTING FOR MONITORING PURPOSES.

4. EROSION CONTROL: GRADING, SOIL PREPARATION, AND SEEDING SHALL BE PERFORMED DURING OPTIMAL WEATHER CONDITIONS AND AT LOW FLOW LEVELS TO MINIMIZE SEDIMENT IMPACTS.

5. MULCHING: TREES, SHRUBS, AND GROUNDCOVER AREAS SHALL BE MULCHED A MINIMUM OF THREE INCHES IN DEPTH AND 18 INCHES IN DIAMETER, TO RETAIN MOISTURE AND DISCOURAGE WEED GROWTH AROUND NEWLY INSTALLED PLANT MATERIAL. APPROPRIATE MULCHES ARE MADE FROM COMPOSTED BARK OR LEAVES THAT HAVE NOT BEEN CHEMICALLY TREATED.

6. WEED CONTROL: THE REMOVAL OF NON-NATIVE, INVASIVE WEEDS SHALL BE NECESSARY THROUGHOUT THE MAINTENANCE PERIOD, OR UNTIL A HEALTHY STAND OF DESIRABLE VEGETATION IS ESTABLISHED.

8. PLANT REPLACEMENT AND PRESERVATION: INSTALLED PLANTS THAT ARE UNHEALTHY OR DAMAGED SHALL BE REPLACED DURING THE MAINTENANCE PERIOD. PRIOR TO REPLACEMENT, THE CAUSE OF LOSS (WILDLIFE DAMAGE, POOR PLANT STOCK, ETC.) SHALL BE DOCUMENTED WITH A DESCRIPTION OF THE CORRECTIVE ACTIONS TAKEN.

9. IF PLANTING OCCURRED OUT OF PLANTING PERIODS INDICATED AT NOTE 2 ABOVE, THE FOLLOWING MEASURES SHOULD BE APPLIED:

A. HAVE PLANTS INSPECTED FOR EARLY SYMPTOMS OF POOR HEALTH. TREES AFFECTED BY EARLY STAGES OF STRESS COULD DISPLAY PREMATURE FALL COLOR IN LATE SUMMER, PARTIAL DEFOLIATION AND SYMPTOMS OF MOISTURE STRESS.
B. PROVIDE SUPPLEMENTAL IRRIGATION EACH WEEK OR MORE OFTEN ON NEWLY PLANTED TREES, SHRUBS AND OLDER PLANTS STRESSED WITH INSECT OR DISEASE PROBLEMS WHEN RAINFALL IS LACKING IN SUMMER.
C. PRUNE FLOWERING TREES AND SHRUBS ONCE FLOWER BUDS BEGIN TO FORM IN LATE SUMMER, JUDICIOUS PRUNING REDUCES THE BLOOM SOMEWHAT BUT SHOULD NOT IMPACT THE DISPLAY SIGNIFICANTLY.
D. INSPECT FOR PESTS THAT COMMONLY ARRIVE DURING HOT, DRY WEATHER AND APPLY TREATMENTS AS NEEDED.
E. ASSESS CANOPIES FOR DEAD BRANCHES AND STRUCTURAL WEAKNESSES THAT CAN BE PRUNED LATER IN WINTER.

PLANTS MAINTENANCE NOTES:

1. CONTRACTOR SHALL PROVIDE 2 YEARS PLANT ESTABLISHMENT PERIOD TO MAINTAIN PLANTS IN A VIGOROUS GROWING CONDITION THROUGH PERIODIC INSPECTIONS. PLANTS WATERING IS PARTICULARLY NEEDED DURING THE DRY SUMMER MONTHS. DURING PLANT ESTABLISHMENT PERIOD, THE CONTRACTOR SHALL ENSURE PLANTING AREAS ARE FREE OF INVASIVE WEEDS AND PLANTS SHALL BE FREE OF INSECTS AND DISEASES WHILE SHOWING SIGNS OF CONTINUING HEALTH. THE CONTRACTOR SHALL REPLACE ALL PLANTS THAT SHOW UNHEALTHY SIGNS OR ARE DEAD.

2. THE MAINTENANCE PERIOD BEGINS IMMEDIATELY AFTER THE COMPLETION OF ALL PLANTING OPERATION AND WRITTEN NOTIFICATION TO THE ENGINEER.

3. OTHER MAINTENANCE OPERATIONS DURING THE ONE-YEAR GUARANTEE PERIOD:

- RESET PLANTS TO FINISH GRADE AND RESTORATION OF PLANT SAUCERS, AS NECESSARY
- REPAIR DAMAGED OR WASHED OUT EROSION CONTROL SEEDING.
- PRUNING, INCLUDING REMOVAL OF DEAD OR BROKEN BRANCHES.
- DISEASE CONTROL.
- MAINTAINING WRAPPING, GUYS, [TURNBUCKLES,] AND STAKES. [ADJUST TURNBUCKLES TO KEEP GUY WIRES TIGHT.] REPAIR OR REPLACE ACCESSORIES WHEN REQUIRED.
- REPORT ANY PROBLEMS THAT MAY BE A HINDRANCE TO COMPLETING AND FULFILLING THE CONDITIONS OF THE PLANT GUARANTEE WITHIN

SEED MIX

SEED MIX A: FOR DISTURBED AREA

BOTANICAL NAME	COMMON NAME	PLS LBS. PER ACRE
ELYMUS GLAUCUS	BLUE WILDRYE	21.74
FESTUCA RUBRA RUBRA	NATIVE WILD FESCUE	6.52
HORDEUM BRACHYANTHERUM	MEADOW BARLEY	4.35
GLYCERIA OCCIDENTALLIS	WESTERN MANNAGRASS	4.35
BECKMANI SYZIGACHNE	AMERICAN SLOUGHGRASS	4.35
DESCHAMPSIA CAESPITOSA	TUFTED HAIRGRASS	2.17
	TOTAL	43.38

NO.	DATE	BY	REVISION

NOTICE
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Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

LANDSCAPE DETAILS

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET
L-2
21 of 69

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STRUCTURAL NOTES

(THESE NOTES ARE TYPICAL UNLESS NOTED OR DETAILED OTHERWISE ON DRAWINGS)

CODE

ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, AND THE INTERNATIONAL BUILDING CODE (IBC), 2018 EDITION. SPECIFICATIONS AND STANDARDS WHERE REFERENCED ON THE DRAWINGS ARE TO BE THE LATEST EDITION.

DESIGN LOADS

DEAD LOADS:
ROOF 15 PSF

LIVE LOADS:
ROOF (SNOW LOAD) 30 PSF (I_s = 1.2)

(LIVE LOADS ARE REDUCED WHERE PERMISSIBLE PER IBC SECTION 1607.11).

EARTHQUAKE LOADS:

EQUIVALENT LATERAL FORCE PROCEDURE PER ASCE 7-16 SECTION 12.8.

SITE CLASS	D
SHORT PERIOD SPECTRAL RESPONSE ACCEL (S_s)	1.631
ONE SECOND SPECTRAL RESPONSE ACCEL (S_1)	0.561
SHORT PERIOD DESIGN SPECTRAL RESPONSE ACCEL (S_{DS})	1.305
ONE SECOND DESIGN SPECTRAL RESPONSE ACCEL (S_{D1})	0.542
RISK CATEGORY	IV
SEISMIC IMPORTANCE FACTOR (I_E)	1.5
SEISMIC DESIGN CATEGORY	D
BASIC SEISMIC FORCE-RESISTING-SYSTEM	SPECIAL REINFORCED CMU BEARING WALLS
RESPONSE MODIFICATION FACTOR, (R)	5.0
REDUNDANCY FACTOR (ρ)	1.0
SEISMIC RESPONSE COEFFICIENT (C_s)	0.391

W = TOTAL SEISMIC DEAD LOAD AS DEFINED PER ASCE 7-16 SECTION 12.7.2.

BASE SHEAR (V), $V = C_sW = \frac{S_{DS}}{R/I} W$

WIND LOADS:

BASIC WIND SPEED (3 SECOND GUST)	108 MPH
EXPOSURE	C
K_{ZT}	1.0

SEE PLANS FOR ADDITIONAL DESIGN LOADS.

STATEMENT OF SPECIAL INSPECTIONS

SPECIAL INSPECTIONS ARE REQUIRED AS INDICATED IN THE FOLLOWING TABLE. THE CONTRACTOR SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND OWNER PRIOR TO COMMENCEMENT OF WORK IN ACCORDANCE WITH SECTION 1704.4 OF THE IBC.

STRUCTURAL OBSERVATION BY THE ENGINEER OF RECORD IS REQUIRED PER IBC SECTION 1704.6 TO VERIFY CONSTRUCTION HAS BEEN PERFORMED IN GENERAL CONFORMANCE TO THE APPROVED CONSTRUCTION DOCUMENTS AT SUBSTANTIAL COMPLETION OF THE WORK. THE CONTRACTOR SHALL NOTIFY THE ENGINEER A MINIMUM OF TWO WEEKS IN ADVANCE OF THE OBSERVATION.

1. OBSERVATION PRIOR TO POURING CONCRETE FOUNDATIONS
2. OBSERVATION PRIOR TO GROUTING CMU WALLS
3. FINAL OBSERVATION AT SUBSTANTIAL COMPLETION OF STRUCTURE

FREQUENCY AND DISTRIBUTION OF REPORTS - INSPECTION REPORTS SHALL BE PROVIDED FOR EACH DAY ON SITE BY SPECIAL INSPECTOR. STRUCTURAL OBSERVATION REPORTS SHALL BE PROVIDED AFTER EACH OBSERVATION. REPORTS SHALL BE DISTRIBUTED TO THE CONTRACTOR, ENGINEER AND BUILDING OFFICIAL.

SPECIAL INSPECTION

OPERATION	CONT	PERIODIC	REMARKS
SOILS			
EXCAVATION, FILL, COMPACTION, & DRAINAGE		X	GEOTECH ENGINEER
CONCRETE			
REINFORCING PLACEMENT		X	
CONCRETE TEST SPECIMENS	X		
CONCRETE PLACEMENT	X		
EPOXY THREADED RODS & REBAR	X		
MASONRY			
PRISM CONSTRUCTION	X		
REINFORCING PLACEMENT		X	
UNIT PLACEMENT	X		
GROUT PLACEMENT	X		
WOOD FRAME			
STRAP NAILING		X	
STRUCTURAL STEEL			
FABRICATION & ERECTION		X	

NOTE:
ALL ITEMS MARKED WITH AN "X" SHALL BE INSPECTED IN ACCORDANCE WITH IBC CHAPTER 17. SPECIAL INSPECTION SHALL BE PERFORMED BY A QUALIFIED TESTING AGENCY. THE STRUCTURAL ENGINEER AND BUILDING OFFICIAL SHALL BE FURNISHED WITH COPIES OF ALL RESULTS. ANY INSPECTION FAILING TO MEET THE PROJECT SPECIFICATIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE DESIGN TEAM.

SHOP DRAWINGS

SHOP DRAWINGS FOR THE FOLLOWING ITEMS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION:

1. CONCRETE MIX DESIGN
2. CONCRETE REINFORCING
3. CMU UNITS
4. CMU REINFORCING
5. CMU GROUT & MORTAR
6. STRUCTURAL STEEL

SHOP DRAWINGS SHALL BE REVIEWED, REVISED AS REQUIRED FOR FIELD CONDITIONS, AND DATE STAMPED BY THE CONTRACTOR PRIOR TO REVIEW BY THE ENGINEER. CONTRACTOR SHALL PROVIDE (3) SETS OF SHOP DRAWINGS FOR ENGINEER'S REVIEW. ALLOW TWO WEEKS FOR SHOP DRAWING APPROVAL BY ENGINEER.

ENGINEER'S SHOP DRAWING REVIEW IS FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AND CONTRACT DOCUMENTS. MARKINGS OR COMMENTS SHALL NOT BE CONSTRUED AS RELIEVING THE CONTRACTOR FROM COMPLIANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. THE CONTRACTOR REMAINS RESPONSIBLE FOR DETAILS AND ACCURACY, FOR CONFORMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS, FOR SELECTING FABRICATION PROCESSES, FOR TECHNIQUES OF ASSEMBLY, AND FOR PERFORMING THE WORK IN A SAFE MANNER.

ENGINEER'S SHOP DRAWING REVIEW OF STRUCTURAL COMPONENTS DESIGNED BY OTHERS IS FOR LOADS IMPOSED ON THE BASIC STRUCTURE. THE COMPONENT DESIGNER IS RESPONSIBLE FOR CODE CONFORMANCE AND ALL CONNECTIONS TO THE BASIC STRUCTURE. SHOP DRAWINGS SHALL INDICATE MAGNITUDE AND DIRECTION OF THE LOADS IMPOSED ON THE BASIC STRUCTURE AND SHALL BE STAMPED & SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE SAME STATE AS THE PROJECT.

FABRICATION SHALL BEGIN ONLY AFTER SHOP DRAWINGS BEARING THE STAMP AND SIGNATURE OF THE ENGINEER OF RECORD AND CONTRACTOR HAVE BEEN RECEIVED.

FOUNDATIONS: SPREAD FOOTINGS

SOILS REPORT: REPORT NO: 12309-018-00
PREPARED BY: GEOENGINEERS, INC.
DATED: 11/01/21

ALLOWABLE SOIL PRESSURE: 4000 PSF

FOOTINGS SHALL BEAR ON FIRM UNDISTURBED EARTH OR COMPACTED STRUCTURAL FILL AS SPECIFIED IN THE GEOTECHNICAL REPORTS. BOTTOM OF FOOTINGS SHALL EXTENT AT LEAST 18" BELOW ADJACENT EXTERIOR GRADE. ANY FOOTING ELEVATIONS SHOWN IN THE DRAWINGS REPRESENT MINIMUM DEPTHS AND ARE FOR BIDDING ONLY. ACTUAL FOOTING ELEVATIONS ARE SUBJECT TO SITE CONDITIONS AND MUST THEREFORE BE ESTABLISHED BY THE CONTRACTOR. FOOTINGS SHALL BE CENTERED BELOW COLUMNS OR WALLS ABOVE, UNLESS NOTED OTHERWISE.

EXCAVATIONS AND DRAINAGE INSTALLATION SHALL BE OBSERVED BY A SOILS ENGINEER. IF EXCAVATION SHOWS SOIL CONDITIONS TO BE OTHER THAN THOSE ASSUMED ABOVE NOTIFY THE STRUCTURAL ENGINEER FOR POSSIBLE FOUNDATION REDESIGN.

CONCRETE

ALL CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED, AND PLACED IN ACCORDANCE WITH CHAPTER 26 OF ACI 318 AND THE AMERICAN CONCRETE INSTITUTE'S SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301).

ALL CONCRETE SHALL BE STONE-AGGREGATE CONCRETE HAVING A UNIT WEIGHT OF APPROXIMATELY 150 POUNDS PER CUBIC FOOT.

CONCRETE STRENGTHS AT 28 DAYS (f'c) AND MIX CRITERIA SHALL BE AS FOLLOWS:

TYPE OF CONSTRUCTION	f'c	MAXIMUM WATER/CEMENT RATIO	MIN CEMENT CONTENT PER CUBIC YARD	MAXIMUM SHRINKAGE STRAIN
SLABS ON GRADE	4000 PSI	0.45	5 1/2 SACK	N/A
FOOTINGS & STEM WALLS	4000 PSI	0.45	5 1/2 SACK	N/A
ALL OTHER CONC	4000 PSI	0.45	5 1/2 SACK	N/A

THE MINIMUM AMOUNT OF CEMENT LISTED ABOVE MAY BE CHANGED IF A CONCRETE PERFORMANCE MIX IS SUBMITTED TO THE ENGINEER AND THE BUILDING DEPARTMENT FOR APPROVAL TWO WEEKS PRIOR TO PLACING ANY CONCRETE. THE PERFORMANCE MIX SHALL INCLUDE THE AMOUNTS OF CEMENT, FINE AND COARSE AGGREGATE, WATER, AND ADMIXTURES AS WELL AS THE WATER-CEMENT RATIO, SLUMP, CONCRETE YIELD, AND SUBSTANTIATING STRENGTH DATA IN ACCORDANCE WITH CHAPTER 26 OF ACI 318.

ALL CONCRETE EXPOSED TO WEATHER OR TO FREEZING TEMPERATURES SHALL BE AIR-ENTRAINED IN ACCORDANCE WITH ACI 318 TABLE 19.3.3.1 FOR MODERATE EXPOSURE CLASS F1.

REINFORCING STEEL

REINFORCING STEEL SHALL BE DEFORMED BILLET STEEL CONFORMING TO ASTM A615, AND SHALL BE GRADE 60 (Fy = 60,000 PSI), UNLESS NOTED OTHERWISE. GRADE 60 REINFORCING BARS INDICATED ON DRAWINGS TO BE WELDED SHALL CONFORM TO ASTM A706. REINFORCING COMPLYING WITH ASTM A615 MAY BE WELDED IF MATERIAL PROPERTY REPORTS INDICATING CONFORMANCE WITH WELDING PROCEDURES SPECIFIED IN AWS D1.4 ARE SUBMITTED.

WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. PROVIDE WELDED WIRE FABRIC IN SHEETS NOT ROLLS. LAP WELDED WIRE FABRIC 12" AT SIDES AND ENDS.

REINFORCING STEEL SHALL BE DETAILED INCLUDING HOOKS AND BENDS IN ACCORDANCE WITH ACI SP-66 AND ACI 318, LATEST EDITIONS. UNLESS OTHERWISE NOTED, REINFORCING SPLICE LENGTHS AND DEVELOPMENT LENGTHS SHALL BE PER SCHEDULE.

REINFORCING SHALL BE PLACED AND ADEQUATELY SUPPORTED PRIOR TO PLACING CONCRETE. WET-SETTING EMBEDDED ITEMS IS NOT ALLOWED WITHOUT PRIOR ENGINEER APPROVAL. BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE SHALL NOT BE FIELD BENT UNLESS SO DETAILED OR APPROVED BY THE STRUCTURAL ENGINEER. REFER TO CHAPTER 25 OF ACI 318 FOR OTHER REINFORCING STEEL REQUIREMENTS.

MINIMUM LAPS AND EMBEDMENT

UNLESS OTHERWISE NOTED, REINFORCING SPLICE LENGTHS AND DEVELOPMENT LENGTHS SHALL BE AS TABULATED BELOW:

f'c = 4000 PSI

BAR SIZE	DEVELOPMENT LENGTH			LAP SPLICE		
	TENSION		COMPRESSION	TENSION		COMPRESSION
	TOP BARS	OTHER BARS	ALL BARS	TOP BARS	OTHER BARS	ALL BARS
#3	19	15	8	24	19	12
#4	25	19	10	33	25	15
#5	31	24	12	41	31	19
#6	37	29	15	49	37	23
#7	54	42	17	71	54	27
#8	62	48	19	81	62	30

NOTES:
1. ALL LENGTHS ARE IN INCHES.
2. ALL LAP SPLICES ARE CLASS B.
3. "TOP BARS" ARE HORIZONTAL REINFORCEMENT PLACED SUCH THAT MORE THAN 12 INCHES OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.

CONCRETE COVER ON REINFORCING

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3"

CONCRETE EXPOSED TO EARTH AND WEATHER:
#6 BARS AND LARGER 2"
#5 BARS AND SMALLER 1 1/2"

CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
SLABS, WALLS AND JOISTS 3/4"
COLUMN TIES OR SPIRALS AND BEAM STIRRUPS 1 1/2"

CONCRETE GENERAL NOTES

VERTICAL BARS SHALL START FROM TOP OF FOOTING. HORIZONTAL BARS SHALL START A DISTANCE OF 1/2 THE NORMAL BAR SPACING FROM TOP OF FOOTING AND TOP OF FRAMED SLABS. IN ADDITION, THERE SHALL BE A HORIZONTAL BAR AT A MAXIMUM OF 3" FROM TOP OF WALL AND BOTTOM OF FRAMED SLABS.

PROVIDE CORNER BARS TO MATCH THE HORIZONTAL REINFORCING WITH TENSION LAP SPLICE AT EACH SIDE PER TABLE, OR BEND ONE SIDE OVER TO PROVIDE TENSION LAP.

PROVIDE CONTROL OR CONSTRUCTION JOINTS IN SLABS ON GRADE TO BREAK UP SLAB INTO RECTANGULAR AREAS OF NOT MORE THAN 400 SQUARE FEET EACH. AREAS TO BE AS SQUARE AS PRACTICAL AND HAVE NO ACUTE ANGLES. JOINT LOCATIONS TO BE APPROVED BY THE ENGINEER.

ALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED AND PROPERLY PREPARED IMMEDIATELY PRIOR TO POURING OF CONCRETE. DOWEL STEEL SHALL BE THE SAME SIZE AND SPACING AS MAIN REINFORCING DETAILED BEYOND JOINT.

SEE MECHANICAL DRAWINGS FOR EXACT LOCATIONS AND DIMENSIONS OF OPENINGS IN CONCRETE WALLS, FLOORS AND ROOF. UNLESS INDICATED OTHERWISE, REINFORCE AROUND OPENINGS GREATER THAN 12" IN EITHER DIRECTION WITH (2) #5 EACH SIDE AND (1) #5 x 4'-0" DIAGONAL AT EACH CORNER. EXTEND BARS 2'-0" BEYOND EDGE OF OPENING. IF 2'-0" IS UNAVAILABLE, EXTEND AS FAR AS POSSIBLE AND HOOK. HOOK ALL REINFORCING INTERRUPTED BY OPENINGS.

BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE SHALL NOT BE FIELD BENT UNLESS SO DETAILED OR APPROVED BY THE STRUCTURAL ENGINEER.

MASONRY

CONCRETE MASONRY UNITS SHALL BE ASTM C90, MEDIUM WT, TYPE I f'm = 2000 PSI. BLOCKS SHALL BE PLACED IN RUNNING BOND. ALL MASONRY CONTAINING REINFORCING AND CELLS BELOW GRADE SHALL BE GROUTED SOLID.

MORTAR SHALL CONFORM TO ASTM C 270 TYPE S.

GROUT SHALL CONFORM TO ASTM C 476 W/ f'c = 2000 PSI

PROVIDE CLEANOUTS IN THE BOTTOM COURSE OF MASONRY FOR EACH GROUT POUR EXCEEDING 5 FEET. IF THE CELLS ARE SOLID GROUTED, CLEANOUTS ARE REQUIRED AT 32" OC MAXIMUM. GROUT FOR EACH POUR SHALL BE STOPPED 1 1/2" BELOW THE TOP OF THE LAST COURSE OF BLOCK. ALL GROUT TO BE THOROUGHLY CONSOLIDATED BY VIBRATING IMMEDIATELY AFTER PLACING.

EXPANSION JOINTS @ 40'-0" OC UNO. PROVIDE MINIMUM #5 VERTICAL BAR EACH SIDE OF JOINT.

STRUCTURAL STEEL

STRUCTURAL STEEL DESIGN, FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS", LATEST EDITION.

WIDE FLANGE SHAPES SHALL CONFORM TO ASTM A992, Fy = 50 KSI.

PLATES, ANGLES, CHANNELS, AND RODS SHALL CONFORM TO ASTM A36, Fy = 36 KSI.

STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B, Fy = 46 KSI.

STEEL PIPE SHALL CONFORM TO ASTM A53 GRADE B, Fy = 35 KSI.

BOLTS CONNECTING STEEL MEMBERS SHALL CONFORM TO ASTM A325-N. BOLTS SHALL BE 3/4"Ø MINIMUM, UNO ANCHOR BOLTS SHALL CONFORM TO ASTM A307.

CONTRACTOR SHALL PROVIDE CONNECTION ADJUSTMENT TOLERANCES TO SATISFY THE REQUIREMENTS OF AISC MANUAL OF STEEL CONSTRUCTION.

UNLESS SPECIFIED AS STAINLESS STEEL, ALL STEEL MEMBERS, SHAPES, BOLTS, AND ACCESSORIES EXPOSED TO WEATHER SHALL BE HOT DIP GALVANIZED.

WELDING

WELDING SHALL CONFORM TO AWS "STRUCTURAL WELDING CODE", LATEST EDITION. ALL WELDING SHALL BE DONE WITH 70 KSI LOW HYDROGEN ELECTRODES. WHERE NOT CALLED OUT, MINIMUM FILLET WELD SIZE SHALL BE PER TABLE 5.8 IN AWS D1.1, LATEST EDITION.

WELDING OF REINFORCING BARS SHALL NOT BE PERMITTED UNLESS SPECIFICALLY CALLED OUT ON DRAWINGS OR APPROVED BY STRUCTURAL ENGINEER. WELDING OF GRADE 60 REINFORCING BARS SHALL BE PERFORMED USING LOW HYDROGEN ELECTRODES. WELDING OF GRADE 40 REINFORCING BARS SHALL BE PERFORMED USING E70XX ELECTRODES. SEE REINFORCING NOTES FOR MATERIAL REQUIREMENTS OF WELDED BARS. WELDING WITHIN 4" OF COLD BENDS IN REINFORCING BARS IS NOT PERMITTED.

ALL WELDING SHALL BE DONE BY WASHINGTON ASSOCIATION OF BUILDING OFFICIALS (WABO) CERTIFIED WELDERS.

NAILS, BOLTS, AND METAL CONNECTORS FOR WOOD

ALL NAILS SHALL CONFORM TO THE STANDARDS SET FORTH BY THE NATIONAL DESIGN STANDARDS (NDS) FOR WOOD CONSTRUCTION, LATEST EDITION. NAILING NOT SPECIFIED SHALL BE PER IBC TABLE 2304.10.1 NAILING SCHEDULE. ALL NAILS CALLED OUT ON PLANS SHALL BE COMMON NAILS UNLESS NOTED OTHERWISE AND SHALL MEET OR EXCEED THE FOLLOWING MINIMUM GUIDELINES:

NAIL	SHANK Ø	MIN LENGTH
8d COMMON	0.131Ø	2 1/2" SHANK
10d COMMON	0.148Ø	3" SHANK
12d COMMON	0.148Ø	3 1/4" SHANK
16d COMMON	0.162Ø	3 1/2" SHANK

10d BOX NAILS MAY BE SUBSTITUTED FOR 8d COMMON NAILS WITH NO CHANGE IN NAIL SPACING. FRAMING MEMBERS MAY BE NAILED WITH 16d SINKERS (0.148"Ø x 3 1/4"), BUT ONLY 16d COMMON NAILS SHALL BE USED WHERE 16d NAILS ARE INDICATED IN THIS DRAWING SET. ENGINEER MAY APPROVE OTHER NAILS IF NAIL LABELS ARE SUBMITTED TO ENGINEER PRIOR TO START OF CONSTRUCTION.

ALL BOLTS IN WOOD MEMBERS SHALL CONFORM TO ASTM A307. PROVIDE WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS BEARING ON WOOD. LEAD HOLES FOR LAG BOLTS SHALL BE BORED FOR THE SHANK AND THREADED PORTIONS PER NDS 12.1.4.2.

CONNECTORS CALLED OUT BY LETTERS AND NUMBERS SHALL BE "STRONG-TIE" BY SIMPSON COMPANY, CATALOG TO BE THE LATEST EDITION, OR ENGINEER APPROVED EQUAL. CONNECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND WITH THE NUMBER AND SIZE OF FASTENERS AS SPECIFIED BY THE MANUFACTURER. WHERE CONNECTOR STRAPS CONNECT TWO MEMBERS, PLACE ONE-HALF OF THE NAILS, SCREWS, OR BOLTS IN EACH MEMBER.

INSTALL SOLID BLOCKING AT ALL BEARING POINTS. ALL SHIMS SHALL BE SEASONED, DRIED, AND THE SAME GRADE (MINIMUM) AS MEMBERS CONNECTED.

GALVANIZATION

UNLESS NOTED OTHERWISE, STEEL CONNECTORS IN CONTACT WITH TREATED WOOD SHALL BE GALVANIZED ACCORDING TO THE FOLLOWING TABLE:

GALVANIZATION	UNTREATED WOOD	CCA-C	SBX	ACQ-C ACQ-D	CBA-A CA-B	BORATE	ACZA	OTHER PT WOOD
G90	X	X	X					
G185	X	X	X	X	X	X		
HDG	X	X	X	X	X	X		
STT300	X	X	X	X	X	X	X	X

G90 = 0.90 OZ. OF ZINC PER SQUARE FOOT OF AREA
G185 = 1.85 OZ. OF ZINC PER SQUARE FOOT OF AREA
HDG = HOT DIP GALVANIZED
SST300 = TYPE 316L STAINLESS STEEL

RATED SHEATHING

RATED SHEATHING SHALL BE GRADE C-D INT-APA WITH EXTERIOR GLUE OR OSB SHEATHING WITH EXTERIOR GLUE IN CONFORMANCE WITH IBC STANDARD 2303.1.5.

GLUE-LAMINATED TIMBER

GLUE-LAMINATED TIMBER SHALL BE DOUGLAS FIR, FABRICATED IN CONFORMANCE WITH ANSI/AITC STANDARD A190.1, LATEST EDITION. EACH MEMBER SHALL BEAR AN AITC IDENTIFICATION MARK AND SHALL BE ACCOMPANIED BY AN AITC CERTIFICATE OF CONFORMANCE. FABRICATOR SHALL BE CERTIFIED. MEMBERS SHALL BE OF THE FOLLOWING MINIMUM STANDARDS:

SPAN	COMBINATION	Fb
SIMPLE SPAN BEAMS	24F-V4	2400 PSI
CANTILEVER OR MULTI-SPAN BEAMS	24F-V8	2400 PSI

TIMBERSTRAND, MICROLLAM, AND PARALLAM MEMBERS

FABRICATED IN CONFORMANCE WITH THE INTERNATIONAL CODE COUNCIL EVALUATION SERVICE (ICC-ES) REPORT NO. ESR-1387 OR CCMC REPORT NO. 12627-R, 08675-R, AND 11161-R. EACH MEMBER SHALL BE IDENTIFIED BY A STAMP INDICATING THE PRODUCT TYPE AND GRADE, ICC-ES OR CCMC REPORT NUMBER, MANUFACTURER'S NAME, PLANT NUMBER AND INDEPENDENT INSPECTION AGENCY'S LOGO. FABRICATOR SHALL BE CERTIFIED. MEMBERS SHALL MEET THE FOLLOWING MINIMUM STANDARDS:

SIZE CLASSIFICATION	SPECIES	GRADE	Fb (PSI)	Fv (PSI	Fc (PSI)
BEAMS & POSTS (d < 9 1/2")	LSL	1.3E	1,700	425	1,835
JOISTS & BEAMS (d ≥ 9 1/2")	LSL	1.55E	2,325	310	-
BEAMS & POSTS	LVL	2.0E	2,600	285	2,510
POSTS (d < 9 1/2")	PSL	1.8E	2,400	190	2,500
BEAMS (d ≥ 9 1/2")	PSL	2.0E	2,900	290	-

TIMBERSTRAND, MICROLLAM, AND UNTREATED PARALLAM MEMBERS ARE INTENDED FOR DRY-USE APPLICATIONS. UNLESS NOTED OTHERWISE, ENGINEERED WOOD BEAMS EXPOSED TO WEATHER SHALL BE TREATED PER MANUFACTURES RECOMMENDATIONS.

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CG# 21319.10

100% SUBMITTAL

NO.	DATE	BY	REVISION
	03/31/23	JGG	WALL REVISION
	02/16/23	JGG	PERMIT REVISIONS

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

BTJ DESIGNED
LVW DRAWN
JGG CHECKED

JOSEPH G. GALUSHA — STATE OF WASHINGTON — 16553 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER
03/31/23

consor

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

STRUCTURAL NOTES - 1

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: MARCH 2023

SHEET
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STRUCTURAL NOTES

(THESE NOTES ARE TYPICAL UNLESS NOTED OR DETAILED OTHERWISE ON DRAWINGS)

TYPICAL FRAMING NOTES

1. WOOD SILL PLATES ON CMU

SILL PLATES BEARING ON CMU SHALL BE PRESSURE-TREATED. BOLT SILLS TO CMU WITH 3/4 INCH DIAMETER ANCHOR BOLTS WITH 7 INCH MINIMUM EMBEDMENT. PLACE AT 24" ON MAXIMUM. USE MINIMUM OF TWO ANCHOR BOLTS PER SILL AND PLACE ONE WITHIN 16 INCHES OF EITHER END TYPICAL UNLESS NOTED OR DETAILED OTHERWISE.

2. ROOF AND FLOOR FRAMING

PROVIDE 1 1/2" FULL DEPTH BLOCKING FOR RAFTERS AT ALL SUPPORTS AND 8'-0" ON MAXIMUM UNO. INTERMEDIATE 8'-0" OC BLOCKING NOT REQ'D IF CEILING IS INSTALLED DIRECTLY TO UNDERSIDE OF FRAMING. PROVIDE BLOCKING FOR ROOF RAFTERS AT SUPPORTS, AND WHERE INDICATED ON PLANS AND DETAILS.

3. DIAPHRAGM NAILING

ALL DIAPHRAGM NAILINGS SHALL BE AS CALLED OUT OR ON THE PLANS OR IN THE PLAN NOTES.

THE USE OF NAIL GUNS WILL BE APPROVED IF NAILING INTO THE DIAPHRAGMS CAN BE INSTALLED FLUSH WITH FACE OF SHEATHING. NAIL PENETRATIONS GREATER THAN 1/16" ARE NOT ACCEPTABLE.

GENERAL

STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH CIVIL, ELECTRICAL, AND MECHANICAL DRAWINGS FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS FOR COMPATIBILITY BEFORE PROCEEDING. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN TEAM BEFORE PROCEEDING.

CONTRACTOR TO SEE CIVIL, ELECTRICAL AND MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF PIPE, VENT, DUCT AND OTHER OPENINGS AND DETAILS NOT SHOWN ON THESE DRAWINGS.

CONTRACTOR SHALL BE RESPONSIBLE FOR ERECTION STABILITY AND TEMPORARY SHORING AS NECESSARY UNTIL PERMANENT SUPPORT AND STIFFENING ARE INSTALLED.

CONTRACTOR-INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON SHOP DRAWINGS ONLY WILL NOT SATISFY THIS REQUIREMENT.

DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF A SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE STRUCTURAL ENGINEER.

LEGEND

DEFINITION	SYMBOL	DEFINITION	SYMBOL
DIRECTION OF FRAMING		NATIVE SOIL	
EXTENT OF FRAMING		GRANULAR FILL	
COLUMNS		STRUCTURAL STEEL	
COLUMN BEARING ON BEAM	(A)	RATED SHEATHING	
BEAM CONTINUOUS OVER SUPPORT	CM (B)	SHEAR WALL (SEE SCHEDULE)	SWX
CONCRETE WALL		COLUMN MARK (SEE SCHEDULE)	C#
BEARING STUD WALL		FOOTING MARK (SEE SCHEDULE)	FX
NON-BEARING STUD WALL		HOLDOWN MARK (SEE SCHEDULE)	
BEARING STUD SHEAR WALL		HANGER MARK (SEE SCHEDULE)	X
NON-BEARING STUD SHEAR WALL		FLAG NOTE (SEE PLAN NOTES)	X
CMU WALL		STEEL MOMENT FRAME CONN.	

ABBREVIATIONS

(A)	ABOVE	GLB	GLUE-LAMINATED BEAM
AB	ANCHOR BOLT	HORIZ	HORIZONTAL
ALT	ALTERNATE	KP	KING POST
ARCH	ARCHITECT	KSI	KIPS PER SQUARE INCH
(B)	BELOW	L	ANGLE
BD	BAR DIAMETER	MECH	MECHANICAL
BLKG	BLOCKING	MF	MOMENT FRAME
BM	BEAM	MTL	METAL
BOT	BOTTOM	NS	NEAR SIDE
BRNG	BEARING	OC	ON CENTER
BTWN	BETWEEN	OPP	OPPOSITE
CJP	COMPLETE JOINT PENETRATION	PL	PLATE
CLR	CLEAR	PLCS	PLACES
CMU	CONCRETE MASONRY UNIT	PSI	POUNDS PER SQUARE INCH
COL	COLUMN	PSF	POUNDS PER SQUARE FOOT
CONC	CONCRETE	P/T	POST TENSIONED
CONN	CONNECTION	PT	PRESSURE TREATED
CONT	CONTINUOUS	REINF	REINFORCING
COORD	COORDINATE	REQ'D	REQUIRED
DBL	DOUBLE	SCHED	SCHEDULE
DET	DETAIL	SIM	SIMILAR
DIA	DIAMETER	SOG	SLAB ON GRADE
DIM	DIMENSION	STD	STANDARD
DIR	DIRECTION	STIFF	STIFFENER
EA	EACH	STL	STEEL
ELEV	ELEVATION	SYMM	SYMMETRICAL
ES	EACH SIDE	SW	SHEARWALL
EX	EXISTING	TOC	TOP OF CONCRETE
EXP	EXPANSION	TOS	TOP OF STEEL
FLR	FLOOR	TOW	TOP OF WALL
FDN	FOUNDATION	TYP	TYPICAL
FTG	FOOTING	UNO	UNLESS NOTED OTHERWISE
FS	FAR SIDE	VERT	VERTICAL
GC	GENERAL CONTRACTOR	WF	WIDE FLANGE

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JOSEPH G. GALLISH — STATE OF WASHINGTON — 39553 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER
03/31/23

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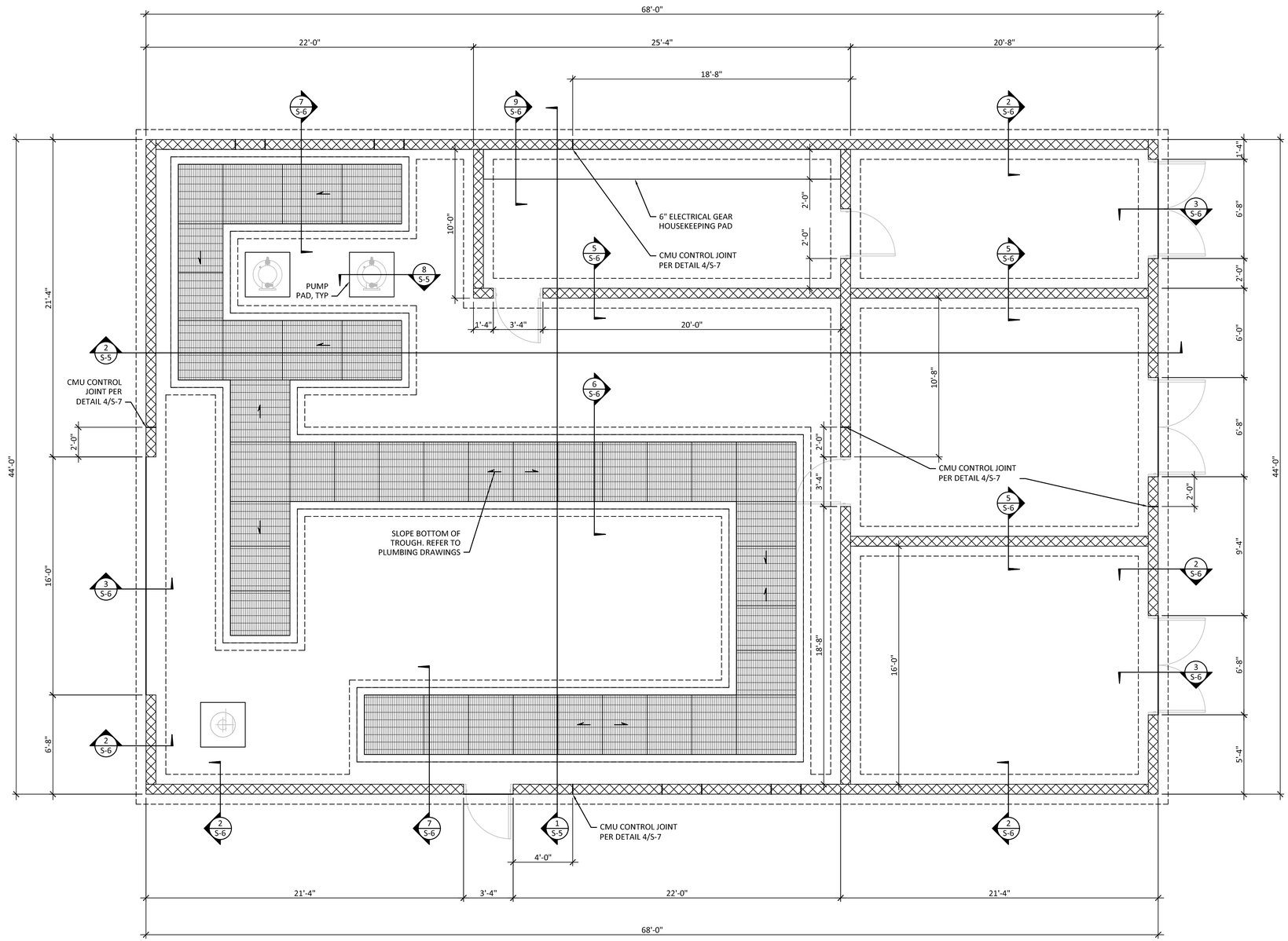
SITE IMPROVEMENT PROJECT

STRUCTURAL NOTES - 2

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: MARCH 2023

SHEET
S-2
X of X



FOUNDATION PLAN NOTES:

1. EXTERIOR FOOTINGS SHALL BEAR A MIN OF 1'-6" BELOW ADJACENT GRADE.
2. FOOTINGS AND SLAB ON GRADE SHALL BEAR ON FIRM NATIVE SOIL OR COMPACTED STRUCTURAL FILL AS SPECIFIED IN THE SOILS REPORT. REFER TO THE SOILS REPORT FOR THE SPECIFICS REGARDING EXCAVATION SUBGRADE PREPARATION BELOW THE FOUNDATION AND SLAB ON GRADE.
3. WHERE SLAB ON GRADE IS INDICATED, SLAB SHALL BE 5" THICK W/ #4 @ 12" OC WA WAY, CENTERED. SLAB SHALL BE POURED OVER A 10 MIL VAPOR BARRIER OVER GRAVEL AND/OR SUBGRADE RECOMMENDED BY THE SOILS ENGINEER.
4. REFER TO PLAN AND "CONCRETE GENERAL NOTES" ON SHEET S-1 FOR CONTROL JOINT PLACEMENT AND DETAIL 1/S-6 FOR CONTROL JOINT CONSTRUCTION.
5. REFER TO SHEET S-6 FOR FOUNDATION DETAILS.
6. PLACE ALL REINFORCEMENT PER THE STRUCTURAL NOTES AND FOUNDATION DETAILS. REFER TO SHEET S-1 FOR ADDITIONAL CONCRETE DETAILING REQUIREMENTS.
7. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, WALL LOCATIONS, AND CONCRETE ROUGH OPENINGS WITH MECHANICAL DRAWINGS AND NOTIFY ALL PARTIES OF ANY DISCREPANCIES.
8. REFER TO DETAIL 4/S-6 FOR PIPE PENETRATIONS THROUGH CONCRETE SLAB.
9. CONTRACTOR SHALL PROVIDE FOOTING AND SLAB SUBSTRATE PREPARATION, WATERPROOFING, AND BACKFILL & DRAINAGE PER GEOTECHNICAL REPORT. GEOTECHNICAL ENGINEER SHALL OBSERVE EXCAVATED SOIL CONDITIONS DURING CONSTRUCTION (AND GROUNDWATER CONDITIONS) AS REQUIRED, AND PROVIDE ADDITIONAL RECOMMENDATIONS IF NECESSARY BASED ON ACTUAL SITE CONDITIONS.

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

2'-0" 0 2'-0" 4'-0"

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NO.	DATE	BY	REVISION
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	02/16/23	JGG	PERMIT REVISIONS

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

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LVW DRAWN
JGG CHECKED

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03/31/23

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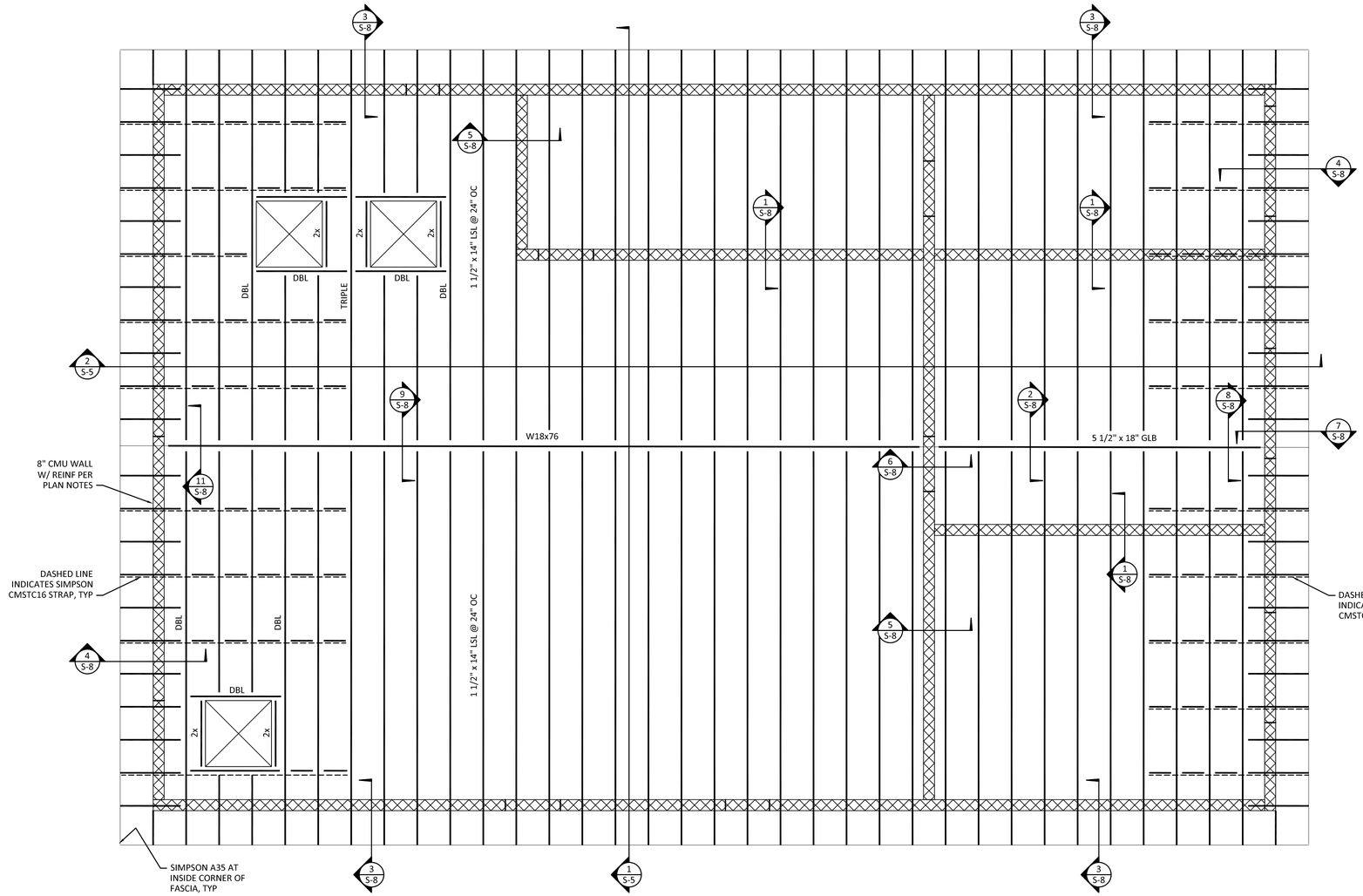
Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

FOUNDATION PLAN

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: MARCH 2023

SHEET
S-3
X of X



TYPICAL ROOF FRAMING PLAN NOTES:

1. WALLS SHOWN ON ROOF FRAMING PLAN ARE WALLS BELOW ROOF FRAMING.
2. ROOF SHEATHING SHALL BE 5/8" PI 40/20 WITH 8d COMMON NAILS SPACED AT 6" OC AT ALL DIAPHRAGM BOUNDARIES, PANEL EDGES, WALLS, AND BLOCKING. NAILING AT INTERMEDIATE FRAMING SHALL BE 8d COMMON NAILS @ 12" OC. REFER TO DETAIL 12/S-8 FOR SHEATHING LAYOUT AND NAILING.
3. REFER TO SHEET S-8 FOR ROOF FRAMING DETAILS.
4. ALL DIAPHRAGMS UNBLOCKED UNO.

MINIMUM CMU WALL REINFORCING (BEARING WALL AND NON BEARING WALL)		
THICKNESS	VERTICAL REINFORCING	HORIZONTAL REINFORCING
8"	#5 @ 16"	(2) #4 @ 48" OC

1 ROOF FRAMING PLAN

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

2'-0" 0 2'-0" 4'-0"

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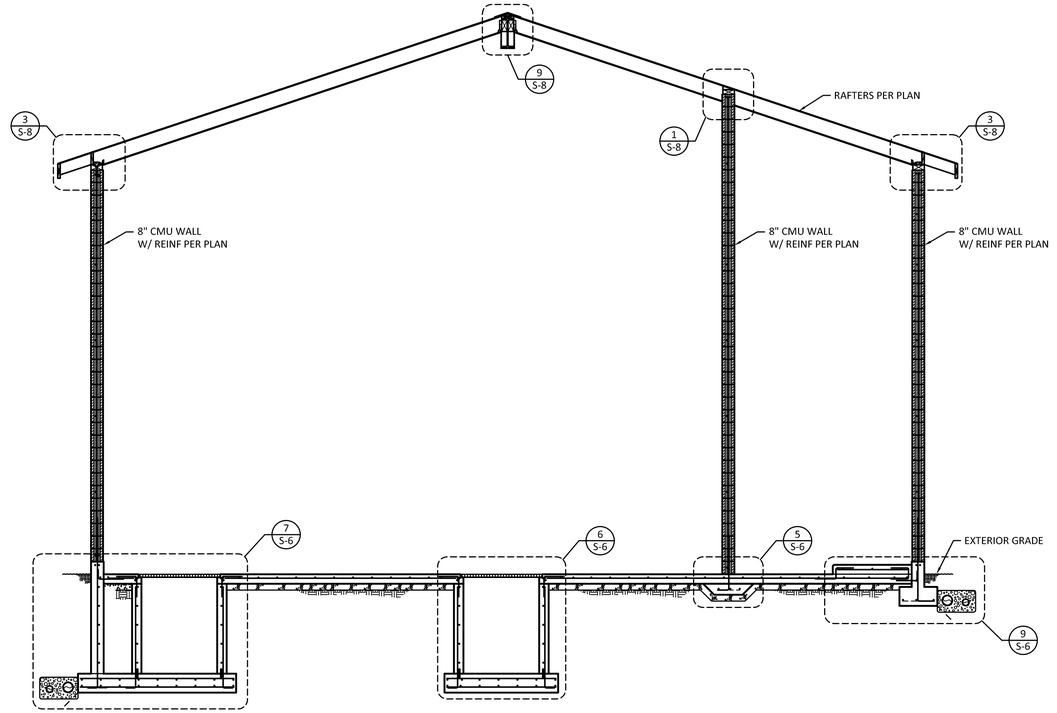
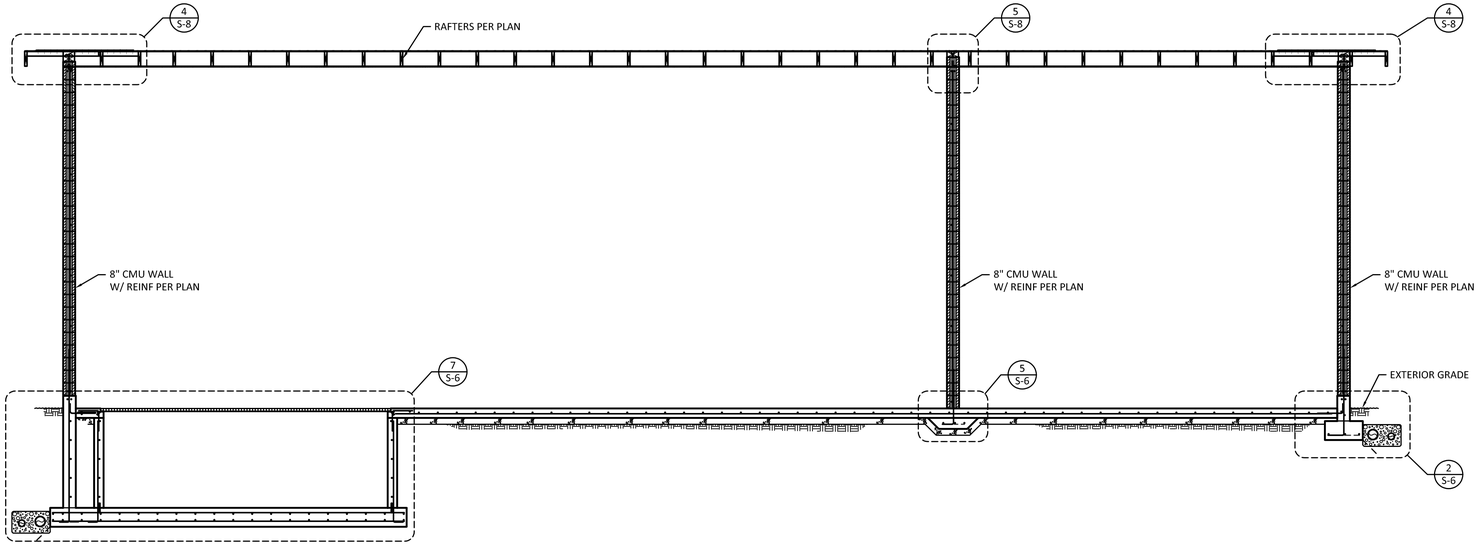
ROOF FRAMING PLAN

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: MARCH 2023

SHEET
S-4
X of X



1 BUILDING SECTION (TRANSVERSE)
SCALE: 1/4" = 1'-0"



2 BUILDING SECTION (LONGITUDINAL)
SCALE: 1/4" = 1'-0"

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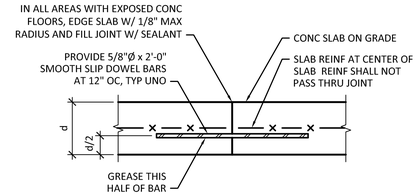
SITE IMPROVEMENT PROJECT

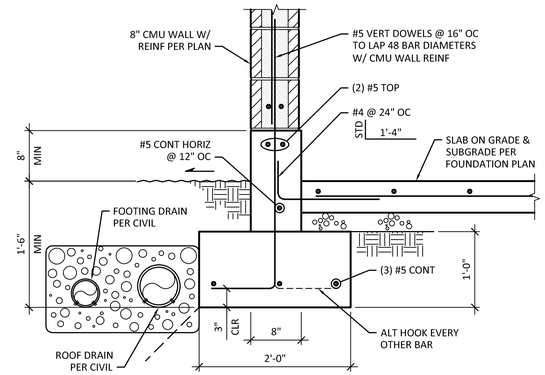
BUILDING SECTIONS

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: MARCH 2023

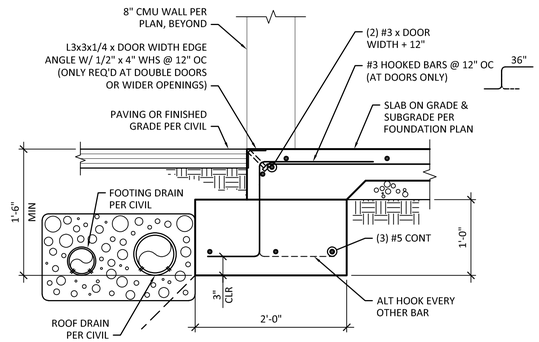
SHEET
S-5
X of X



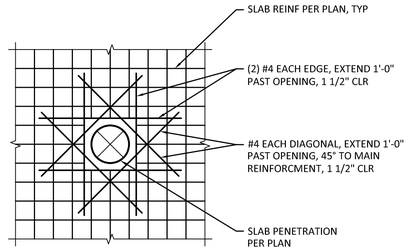
1 TYPICAL SLAB ON GRADE DETAILS
SCALE: 1" = 1'-0"



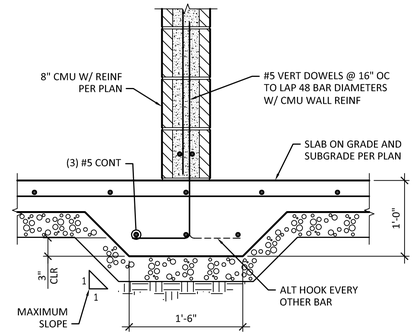
2 PERIMETER FOUNDATION SECTION
SCALE: 1" = 1'-0"



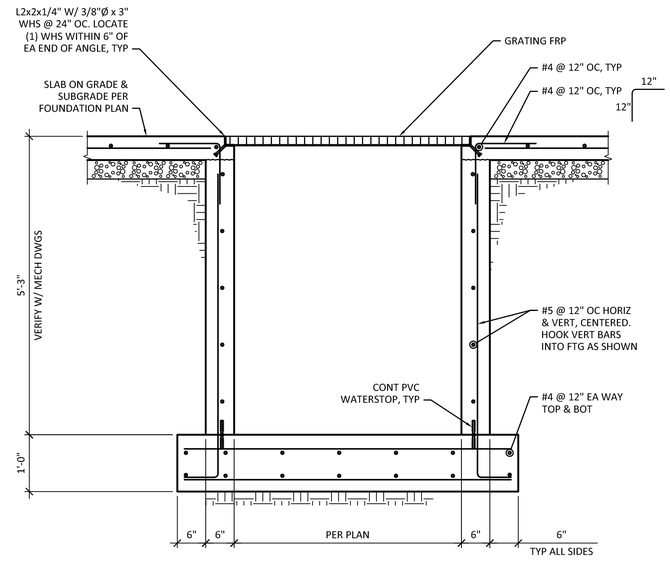
3 FOUNDATION SECTION AT DOOR OPENINGS
SCALE: 1" = 1'-0"



4 CONCRETE PENETRATION REINFORCING
SCALE: NTS

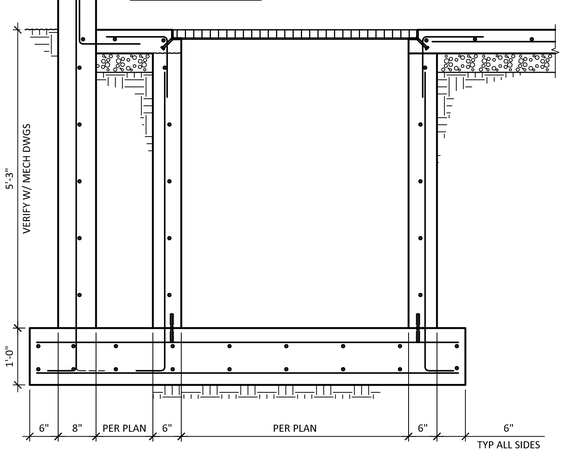


5 INTERIOR FOUNDATION SECTION
SCALE: 1" = 1'-0"

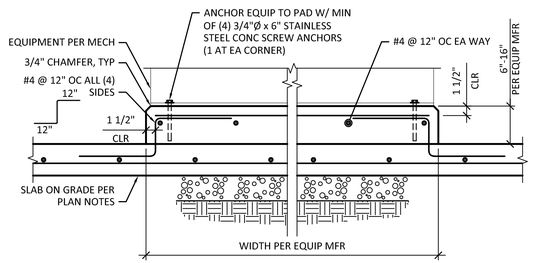


6 TYPICAL TRENCH SECTION
SCALE: 3/4" = 1'-0"

NOTE:
FOR NOTES & INFO NOT SPECIFICALLY CALLED OUT REFER TO DETAILS 2 & 6.

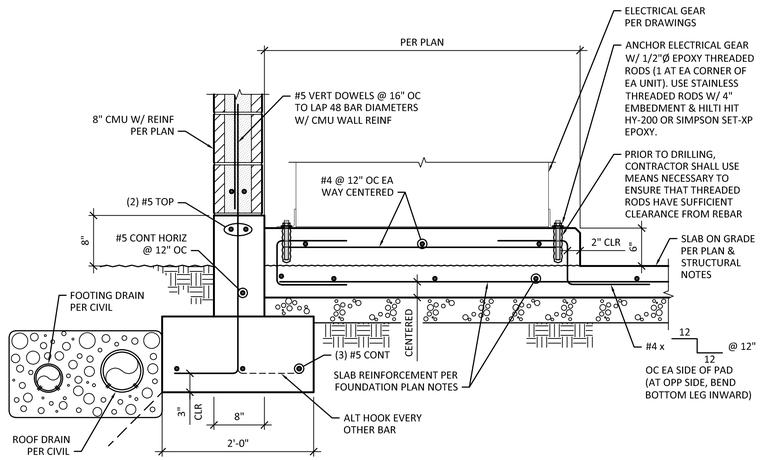


7 WALL & TRENCH SECTION
SCALE: 3/4" = 1'-0"

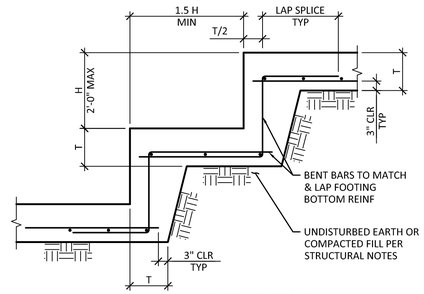


NOTES:
COORDINATE PAD HEIGHT WITH EQUIPMENT MANUFACTURERS. ADJUST PAD HEIGHT TO PROVIDE PIPING CENTERLINES AS SHOWN ON MECHANICAL SHEETS. PROVIDE ADDITIONAL LAYER OF #4 @ 12" OC EA WAY FOR PADS OVER 12" HIGH. THE ADDED LAYER SHALL MAINTAIN 2" CLEARANCE FROM THE TOP OF FLOOR SLAB.

8 PUMP & EQUIPMENT HOUSEKEEPING PAD
SCALE: 1" = 1'-0"



9 ELECTRICAL GEAR HOUSEKEEPING PAD
SCALE: 1" = 1'-0"



10 TYPICAL STEPPED WALL FOOTING
SCALE: 1/2" = 1'-0"

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05/31/23

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CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

FOUNDATION DETAILS

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: MARCH 2023

SHEET
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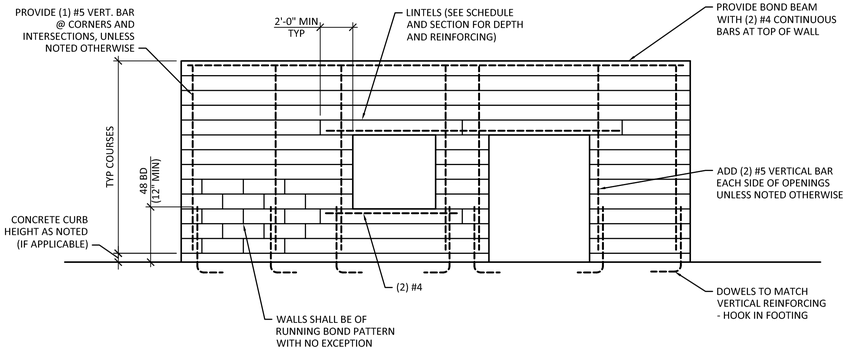
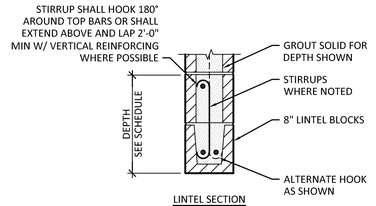
X of X

MINIMUM CMU WALL REINFORCING (BEARING WALL AND NON BEARING WALL)		
THICKNESS	VERTICAL REINFORCING	HORIZONTAL REINFORCING
8"	#5 @ 16"	(2) #4 @ 48" OC



TYPICAL CMU WALL ELEVATION



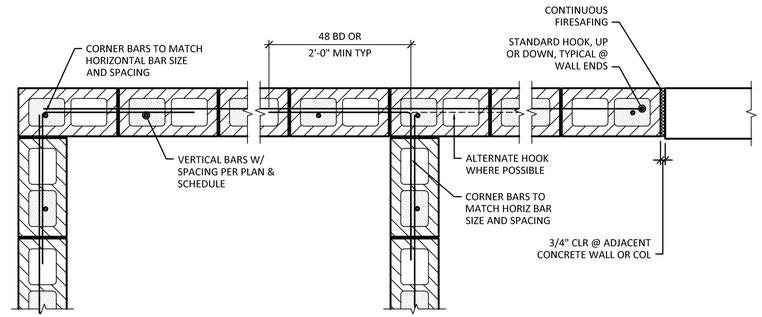
LINTEL SECTION

TYPICAL 8" CMU LINTEL REINFORCING			
CLEAR SPAN OR MARK	DEPTH	HORIZONTAL REINFORCING	STIRRUPS
4'-0" OR LESS	8"	(2) #4 BOT	#3 ⟆ @ 8" OC
4'-0" TO 6'-4"	16"	(1) #5 TOP (2) #5 BOT	#3 ⟆ @ 8" OC
6'-4" TO 9'-0"	16"	(1) #5 TOP (2) #6 BOT	#3 ⟆ @ 8" OC
9'-0" TO 16'-0"	24"	(2) #5 TOP (2) #6 BOT	#3 ⟆ @ 12" OC
16'-0" TO 20'-8"	48"	(2) #5 TOP (2) #7 BOT	#3 ⟆ @ 12" OC

NOTES:
1. FILL ALL CELLS CONTAINING REINFORCING OR EMBEDDED ITEMS AND ALL CELLS BELOW GRADE WITH GROUT. PROVIDE CLEANOUT HOLES AT BOTTOM OF ALL CELLS CONTAINING REINFORCING.
2. UNLESS OTHERWISE NOTED, LAP ALL REINFORCING 48 BAR DIAMETERS (BD) MINIMUM.

1 TYPICAL CMU DETAILS

SCALE: NTS

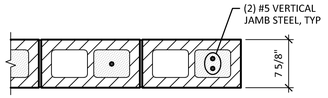


AT CORNER | AT INTERSECTION | AT END

SINGLE LAYER REINFORCING

2 TYPICAL CMU WALL REINFORCING

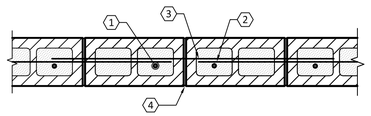
SCALE: 1" = 1'-0"



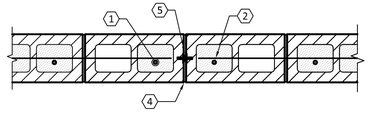
3 CMU JAMB STEEL

SCALE: 1" = 1'-0"

NOTES:
1. PROVIDE CONTROL JOINTS IN CMU AT LOCATIONS SHOWN ON PLANS.
2. HORIZONTAL BOND BEAMS AT FLOORS, ROOF, AND AT THE TOP OF PARAPET WALLS SHALL BE CONTINUOUS THROUGH CONTROL JOINTS.
3. RECOMMENDED CONTROL JOINT SPACING FOR EXPOSED MASONRY WALLS SHOULD NOT EXCEED LESSER OF 3 TIMES WALL HEIGHT OR 40 FEET.



B. DOWELLED CONTROL JOINT



A. TYPICAL VERTICAL PREFORMED CONTROL JOINT

1. ADDITIONAL #5 VERTICAL BAR ON EACH SIDE OF ALL CONTROL JOINTS.
2. TERMINATE ALL REINFORCING 2" FROM CONTROL JOINT EXCEPT BOND BEAMS PER NOTE 2.
3. 5/8"Ø x 4'-0" LONG SMOOTH DOWELS @ 48" OC ACROSS THE JOINT. GREASE OR SLEEVE DOWEL ONE SIDE OF JOINT ONLY. CAP ALL DOWELS TO ALLOW 1" OF MOVEMENT HORIZONTALLY.
4. 3/8" JOINT W/ 3/16" SEALANT OVER BACKER ROD, TYP.
5. CONTINUOUS VERTICAL PREFORMED DA2002 DUR-O-WALL OR EQUAL CONTROL JOINT.

4 TYPICAL CMU CONTROL JOINT DETAILS

SCALE: 1" = 1'-0"

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SITE IMPROVEMENT PROJECT

CMU DETAILS

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: MARCH 2023

SHEET
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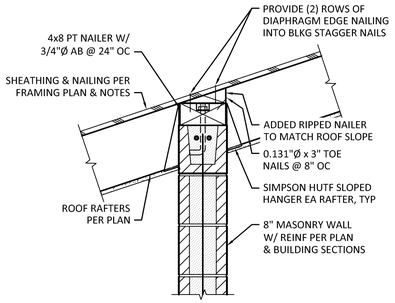
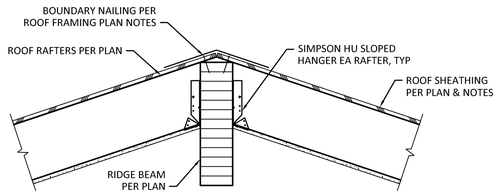
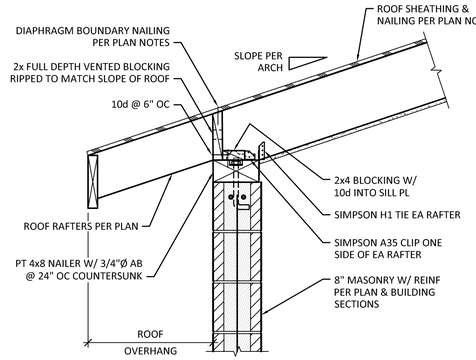
X of X



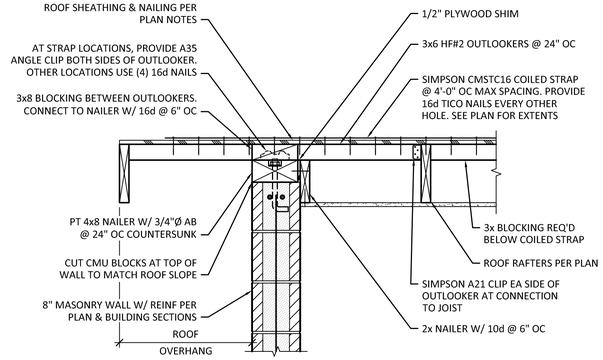
1 INTERIOR CMU WALL (PERPENDICULAR)
SCALE: 1" = 1'-0"



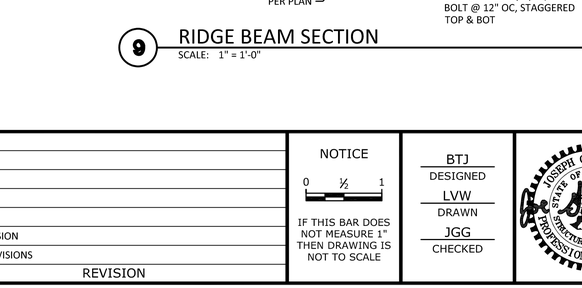
2 RIDGE BEAM SECTION
SCALE: 1" = 1'-0"



3 CMU WALL AT WOOD RAFTERS
SCALE: 1" = 1'-0"

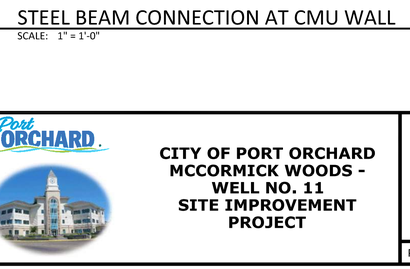


4 CMU GABLE END SECTION AT ROOF
SCALE: 1" = 1'-0"

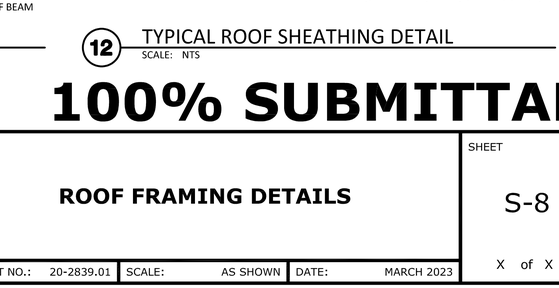


5 INTERIOR CMU WALL (PARALLEL)
SCALE: 1" = 1'-0"

6 BEAM CONNECTION (INTERIOR WALL)
SCALE: 1" = 1'-0"



7 GLULAM BEAM CONN (EXTERIOR WALL)
SCALE: 1" = 1'-0"



8 GLULAM BEAM CONN TO CMU WALL
SCALE: 1" = 1'-0"

9 RIDGE BEAM SECTION
SCALE: 1" = 1'-0"

KERF PLATE SCHEDULE

BEAM SIZE	BEARING PLATE	STIFFENER PLATE	BOLTS
5 1/8" GLB	1/2 x 5 x 0'-7 1/2"	1/4 x 6 x 0'-7 1/2"	(2) 3/4"Ø

10 KERF PLATE DETAIL
SCALE: NTS

11 STEEL BEAM CONNECTION AT CMU WALL
SCALE: 1" = 1'-0"

12 TYPICAL ROOF SHEATHING DETAIL
SCALE: NTS

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BTJ DESIGNED
LVW DRAWN
JGG CHECKED

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08/31/23

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CITY OF PORT ORCHARD
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SITE IMPROVEMENT PROJECT

ROOF FRAMING DETAILS

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: MARCH 2023

SHEET
S-8
X of X

CODE SUMMARY

Section I - Governing Codes	
2018 IBC & CHAPTER 51-50 WAC, 2018 UPC & CHAPTER 51-56 WAC	
2018 IECC COMMERCIAL PROVISIONS & CHAPTER 51-11C WAC	
Section II - Building "Construction" Data	
Type of Construction	Type VB - CMU, Wood Rafters
Maximum Building Height	26'-6" +/- (to roof ridge)
Maximum Allowable Height	35 FT, POMC 20.34.020
Number of Stories	1 story
Allowable Stories	2 stories, IBC TABLE 504.4
Basement	No
Total Floor Area Provided (Gross)	2,992 square feet
	Pump & Treatment Room = 1,813 square feet
	Controls Room = 270 square feet
	Fluoridation Room = 345 square feet
	Disinfection Room = 345 square feet
	Storage Room = 220 square feet
Minimum Required Property Setbacks	
Front Yard	10 FT, POMC 20.34.020
Side Yard	10 FT, POMC 20.34.020
Rear Yard	10 FT, POMC 20.34.020
Section III - Building "Occupancy" Data	
Building Occupancy Classification Group	F-2
Separated or Unseparated Use Areas	Separated
Accessory or Incidental Use Areas	N/A
Total Occupant Load by Floor	Not Customarily Occupied
Total Occupant Load for Each Room	Not Customarily Occupied
Total Occupant Load for Each Occupancy Group	Not Customarily Occupied
Section IV Building Area Data "Actual" and "Allowable"	
Actual Building Area	2,992 square feet
Allowable Base Area	13,000 square feet, IBC Table 506.2
Building Frontage	See Sheets A-4
Section V - "Fire Resistive" Building Elements	
Separation of Occupancies	N/A
Section VI - Building "Exiting"	
Maximum Floor Area Allowance per Occupant	N/A - Not Customarily Occupied
Exits Required in Each Room or Area	1
Exits Provided in Each Room or Area	1
Exits Required per Floor	Building is only one floor
Exits Provided per Floor	Building is only one floor
Exit Width Required per Exit	32 inches
Minimum Corridor Exit Width Required	30 inches
Emergency Exit Illumination	See Sheet E-5
Exit Sign Layout Plan	See Sheet E-5

Section VII - Buiding "Fire Detection and Suppression"	
Smoke Detection/Fire Alarm System Required	Yes, IBC 907.2.5
Smoke Detection/Fire Alarm System Provided	Yes, Tied to SCADA, see Sheet I-X
Type of System	Ionization Smoke Detector
Areas Protected	Pump & Treatment Room, Controls Room, Fluoridation Room, Disinfection Room
Sprinkler System Required	No, total storage capcaity does not exceed IFC 603.3.2.1
Standpipe System Required	No
Number of Fire Department Vehicle Accesses	1
Fire Extinguisher Locations	See sheets A-2
Section VIII - Occupancy Ventilation Requirements	
Ventilation Required	3,276 cfm (Pump & Treatment Room)
	432 cfm (Controls Room)
	254 cfm (Fluoridation Room)
	254 cfm (Disinfection Room)
Section IX - Energy Code Requirements	
Roof - rigid insulation between rafters	U = 0.027
Roof - attic / other	U = 0.021
Doors (steel door with polystyrene core)	U = 0.37
Slabs-On-Grade, Unheated Slabs	F = 0.54
CMU walls with integral perlite insulation	NA per Table C402.1.4, Footnote D
Roof Hatches (swinging opaque doors)	U = 0.37
Lighting Layout	See Electrical Sheets
Section X - Hazardous Materials	
Hazardous Materials Present: Up to 55 gal of 4% Liquid Sodium Fluoride	
Section XI - Accessibility	
Facillty is exempt from accessibility requirements per 2018 IBC 1103.2.9	
Section XII - Plumbing and Fixture Count Requirements	
No Fixtures Required - Not Customarily Occupied	
Section XIII - Underground and Padmounted Transformers	
See Electrical Sheets	
Section XIV - Special Inspection, Structural Observation	
Required Structural Inspections are listed on Sheet S-1	
Structural Observation requirements are indicated on Sheet S-1	
Submittals are listed in Specifications	
Section XV - Room Specific Requirements	
Not Applicable - Not Customarily Occupied	

FINISH SCHEDULE

ITEM/SURFACE	MATERIAL	FINISH	COLOR	SPECIFICATION
EXTERIOR WALLS	SPLIT FACE CMU	COATING 300	MUTUAL MATERIALS SAND STONE	09 90 00
EXTERIOR WALLS (ACCENT)	SPLIT FACE CMU	COATING 300	MUTUAL MATERIALS MOUNTAIN BROWN	09 90 00
INTERIOR WALLS	SMOOTH FACE CMU	COATING 302	OFF-WHITE	09 90 00
CEILING	MOISTURE RESISTANT GYPSUM BOARD	COATING 304	OFF-WHITE	09 90 00
INTERIOR FLOOR	SMOOTH SLAB ON GRADE	COATING 306	TRANSPARENT	09 90 00
ROOF	STANDING SEAM METAL	BAKED ENAMEL	COOL LEAF GREEN	07 41 13
LOUVERS	ALUMINUM	PER MANUFACTURER	COOL LEAF GREEN	08 91 19
GUTTERS AND DOWNSPOUTS	STEEL	BAKED ENAMEL	COOL LEAF GREEN	07 60 00
DOORS	STEEL	PER MANUFACTURER/ COATING 101	COOL LEAF GREEN	08 10 00
SOFFITS	FIBER CEMENT	COATING 302 / 300	COOL LEAF GREEN	09 90 00
ROOF HATCHES	ALUMINUM	PER MANUFACTURER	COOL LEAF GREEN	07 72 33

DOOR SCHEDULE

NO.	DESCRIPTION	ROUGH OPENING	SIZE	OPEN	HARDWARE	U-Value	SPECIFICATION	NOTE
1	STEEL DOUBLE DOOR	6-8"x7-4"	6'-0"x7'-0"	RHR ACT LEAF	GROUP 1	0.37	08 10 00 / 08 71 00	
2	STEEL DOUBLE DOOR	6-8"x7-4"	6'-0"x7'-0"	RHR ACT LEAF	GROUP 1	0.37	08 10 00 / 08 71 00	
3	STEEL DOUBLE DOOR	6-8"x7-4"	6'-0"x7'-0"	RHR ACT LEAF	GROUP 1	0.37	08 10 00 / 08 71 00	
4	STEEL DOOR	3-4"x7-4"	3'-0"x7'-0"	RHR OPENING	GROUP 2	0.37	08 10 00 / 08 71 00	
5	ALUMINUM CURTAIN	16'-0"x14-0"	PER MFR	ROLL-UP	PER MFR	0.37	08 10 00 / 08 71 00	
6	STEEL DOOR	3-4"x7-4"	3'-0"x7'-0"	RHR OPENING	GROUP 3	0.37	08 10 00 / 08 71 00	
7	STEEL DOOR	3-4"x7-4"	3'-0"x7'-0"	RHR OPENING	GROUP 3	0.37	08 10 00 / 08 71 00	
8	STEEL DOOR	3-4"x7-4"	3'-0"x7'-0"	LHR OPENING	GROUP 3	0.37	08 10 00 / 08 71 00	

ROOF HATCH SCHEDULE

ID	ROUGH OPENING	FRAME	U-VAULE	SPECIFICATION
A	4'-0"x4'-0"	ALUMINUM	0.37	07 72 33
B	4'-0"x4'-0"	ALUMINUM	0.37	07 72 33
C	5'-0"x5'-0"	ALUMINUM	0.37	07 72 33

NO.	DATE	BY	REVISION

NOTICE

0 ½ 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

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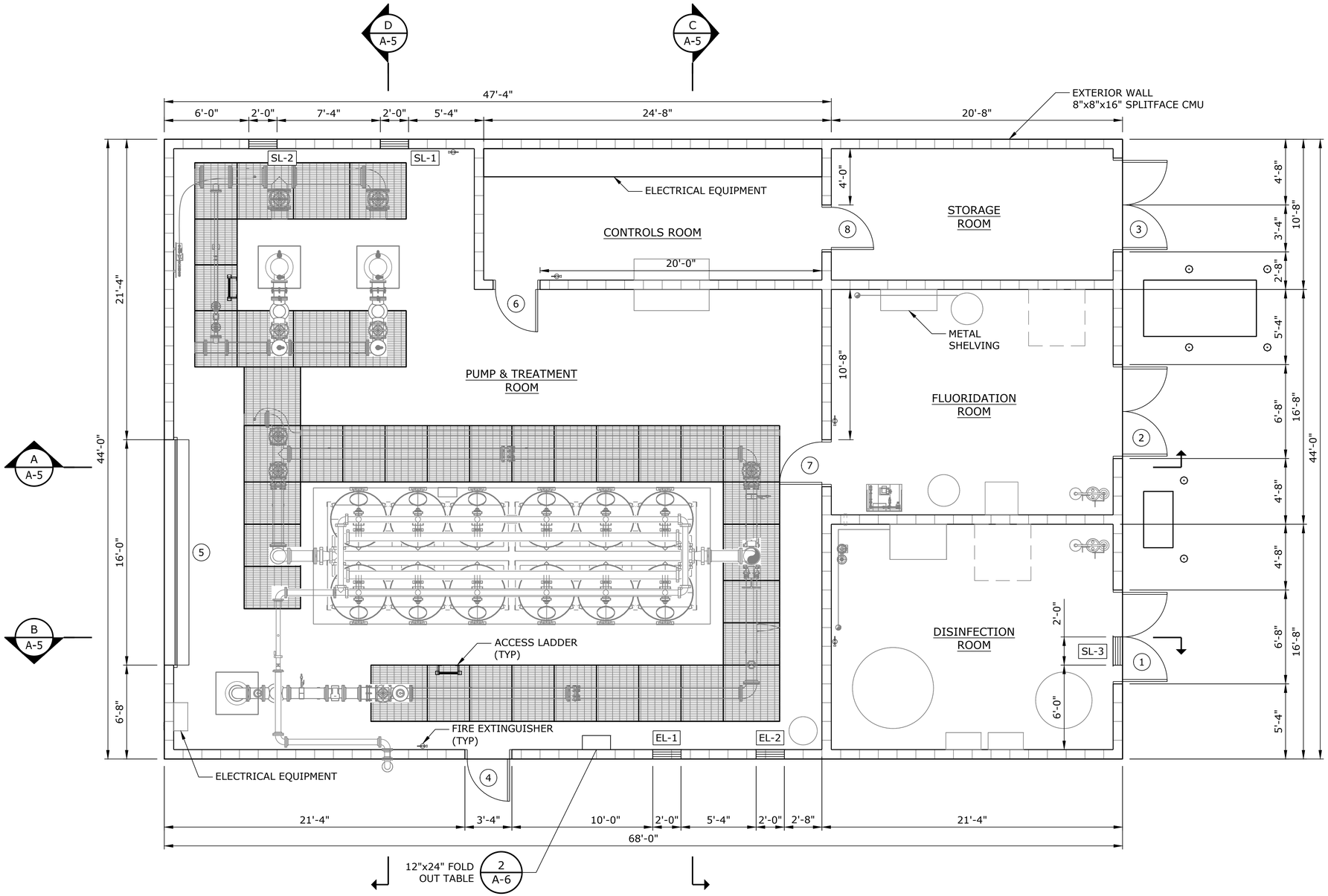
Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

CODE SUMMARY AND ARCHITECTURAL SCHEDULES

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET A-1



FLOOR PLAN

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

NOTES:

1. (#) REFER TO DOOR SCHEDULES, SEE SHT A-1.
2. SEE SHT H-1 FOR LOUVER SCHEDULES.

NO.	DATE	BY	REVISION

NOTICE

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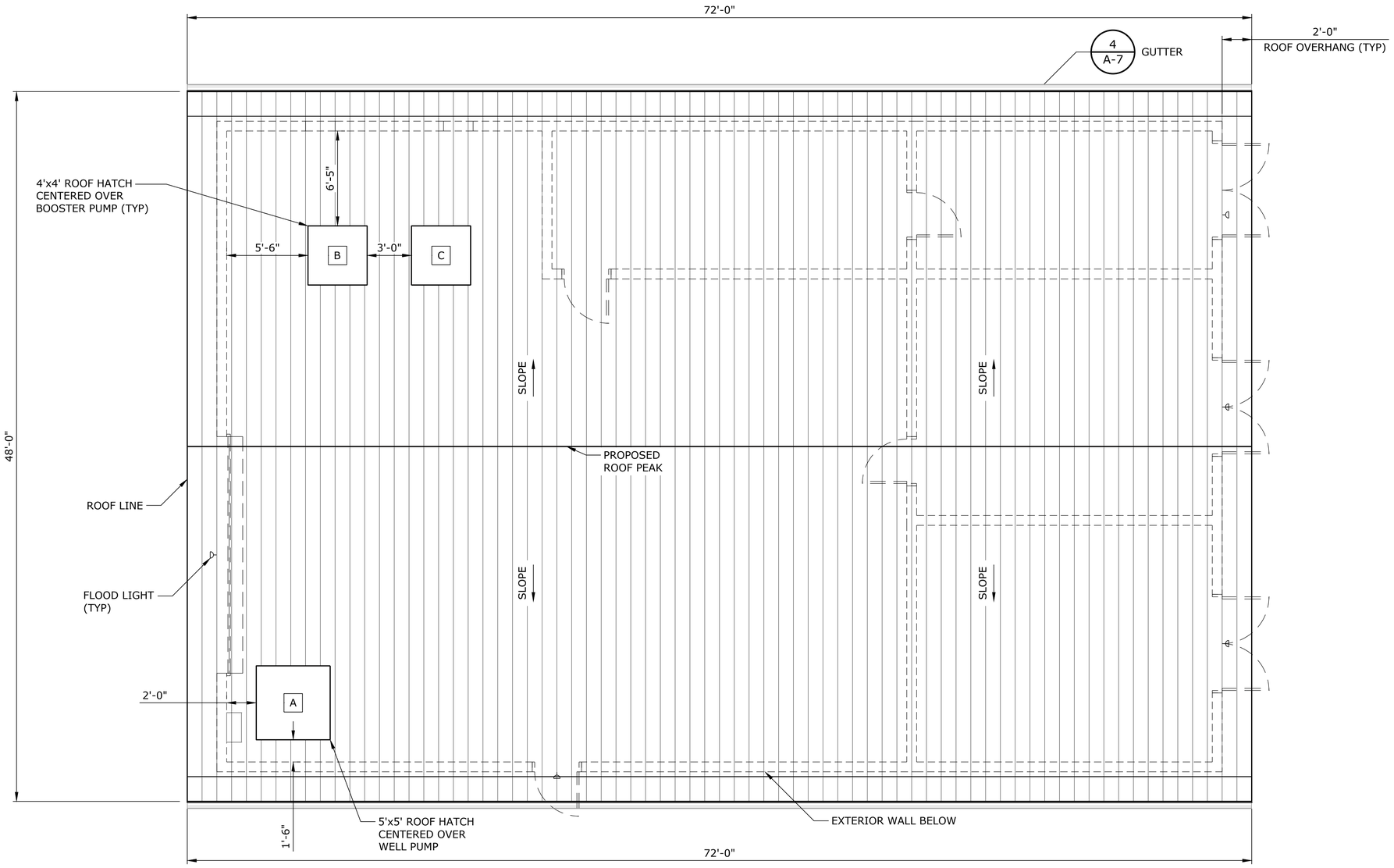
Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

PUMP STATION
FLOOR PLAN LAYOUT

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET A-2



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

NO.	DATE	BY	REVISION

NOTICE
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CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

PUMP STATION
ROOF PLAN LAYOUT

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET
A-3
32 of 69

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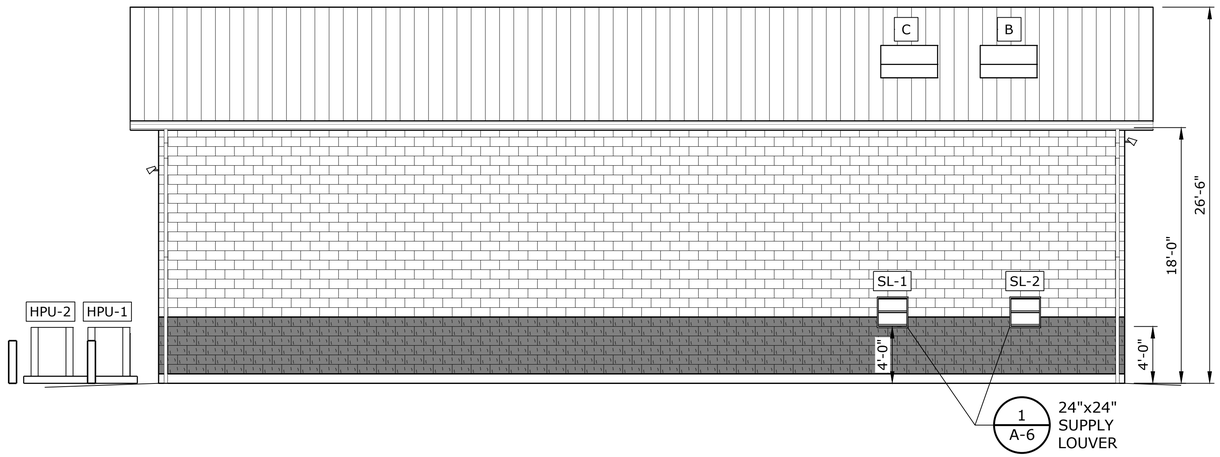
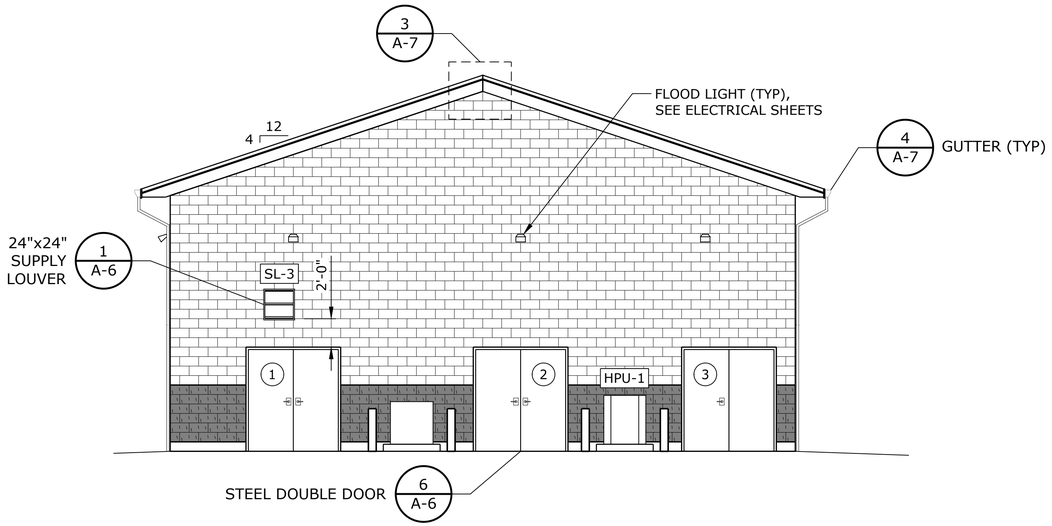
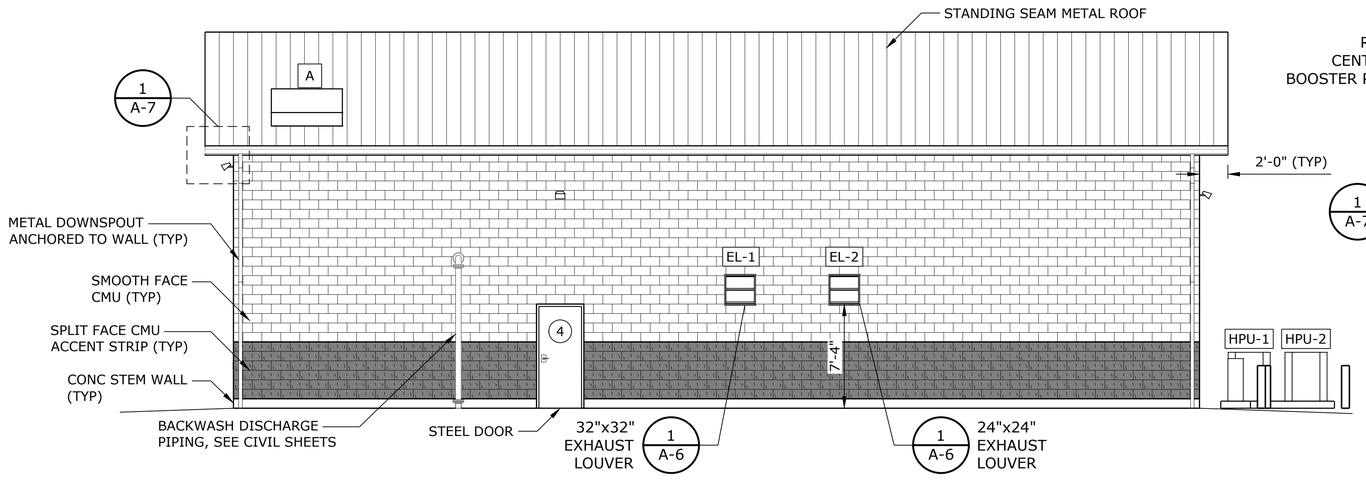


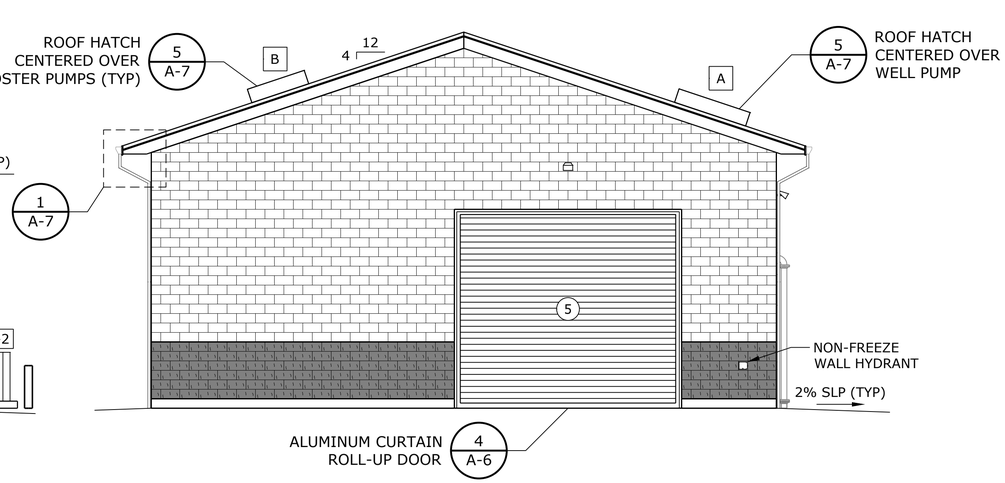
NORTH ELEVATION
SCALE: 3/16" = 1'-0"



EAST ELEVATION
SCALE: 3/16" = 1'-0"



SOUTH ELEVATION
SCALE: 3/16" = 1'-0"



WEST ELEVATION
SCALE: 3/16" = 1'-0"

NOTES:

1. (#) REFER TO DOOR SCHEDULES, SEE SHT A-1.
2. SEE SHT H-1 FOR LOUVER SCHEDULES.

NO.	DATE	BY	REVISION

NOTICE
0 ½ 1
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Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

PUMP STATION ARCHITECTURAL ELEVATIONS

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET
A-4
33 of 69

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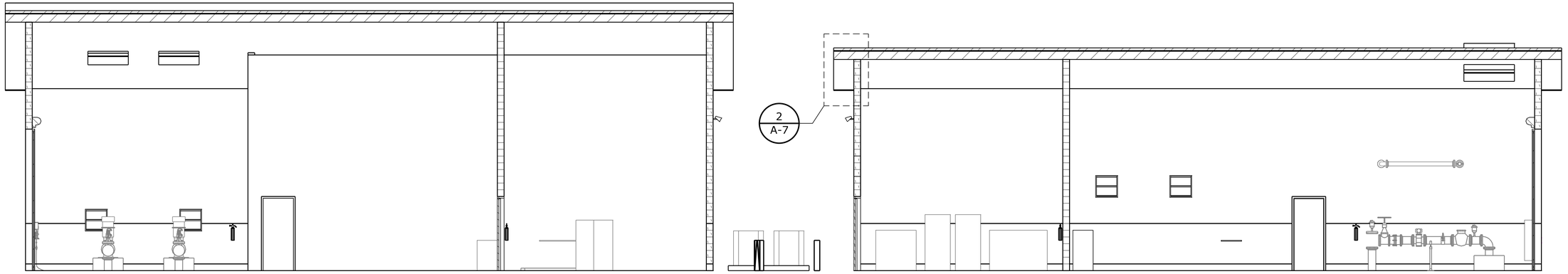
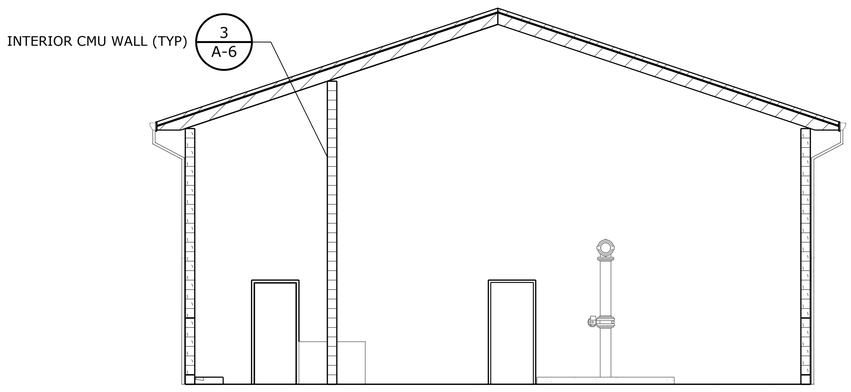


SECTION
SCALE: 3/16" = 1'-0"
A
A-2

SECTION
SCALE: 3/16" = 1'-0"
B
A-2



SECTION
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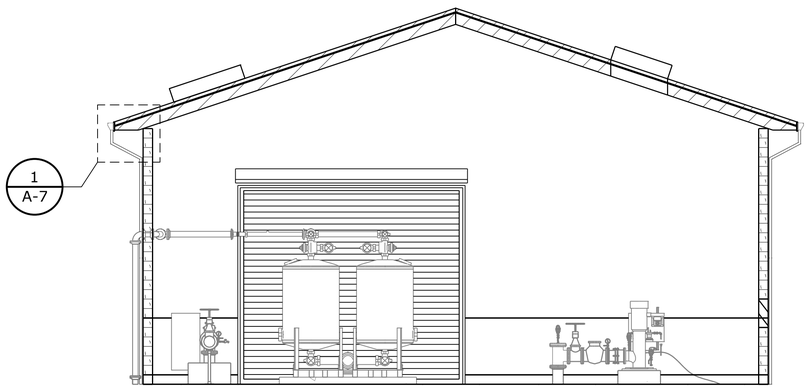
C
A-2



SECTION
SCALE: 3/16" = 1'-0"
D
A-2

NO.	DATE	BY	REVISION

NOTICE
0 ½ 1
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48352
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4/21/2023

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Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

PUMP STATION ARCHITECTURAL SECTIONS

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET
A-5
34 of 69

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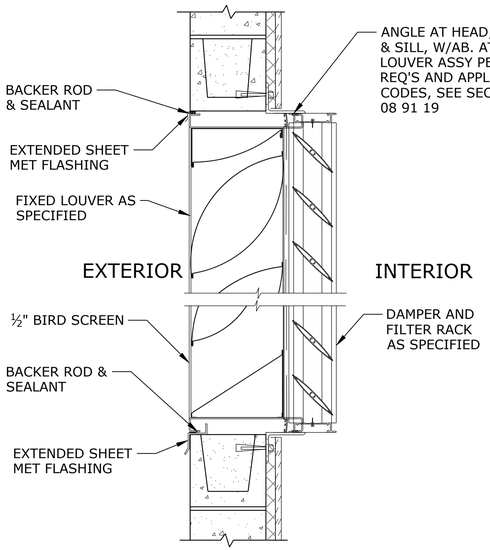
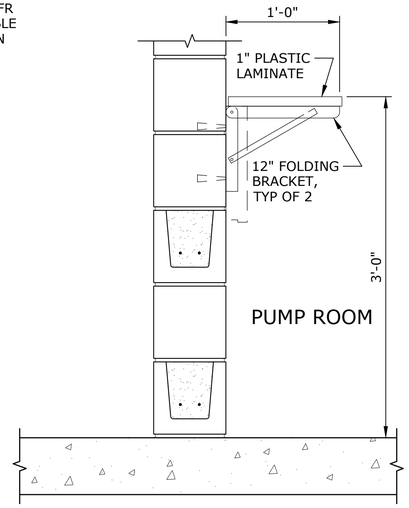


TYPICAL LOUVER

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

1

A-4



FOLD-OUT TABLE

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

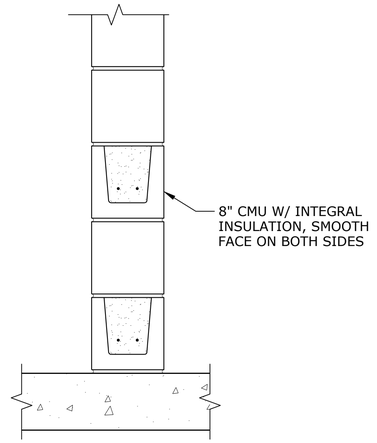
2

A-2

NOTES:

1. FOLDING BRACKET SHALL BE KNAPE AND VOGT 206 SERIES FOLDING L-BRACKET OR EQUAL. MINIMUM CAPACITY 880 LBS. PER PAIR. LOCKABLE WITH ONE-HAND RELEASE MECHANISM. CORROSION RESISTANT FINISH, COORDINATE COLOR WITH OWNER.

2. PRIOR TO INSTALLATION, COORDINATE LOCATION WITH OWNER.

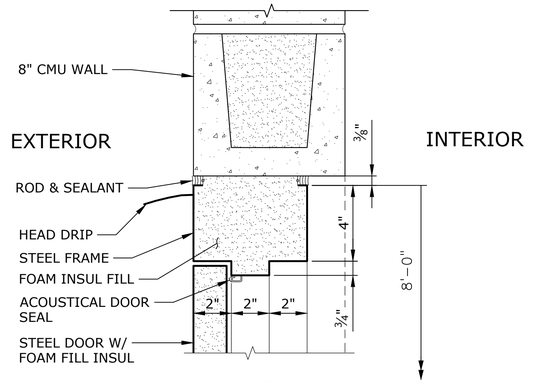


INTERIOR CMU WALL

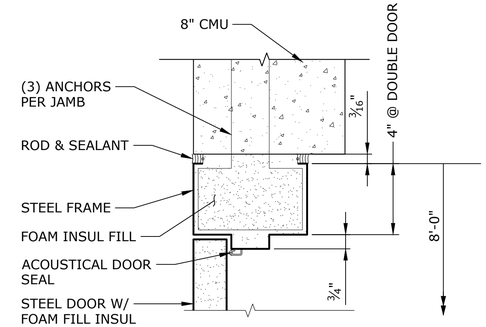
SCALE: NTS

3

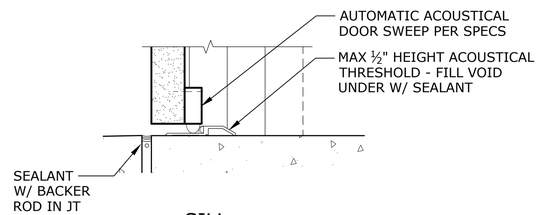
A-5



HEAD



JAMB



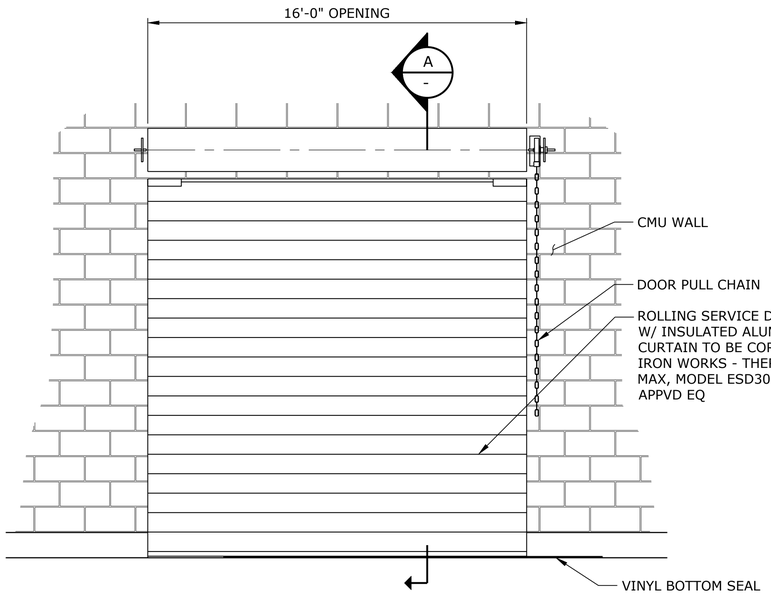
SILL

EXTERIOR DOORS

SCALE: 3" = 1'-0"

6

A-4

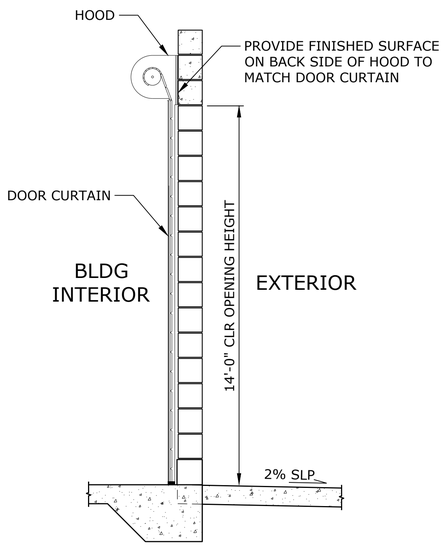


OVERHEAD DOOR ELEVATION, INTERIOR

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

4

A-4



OVERHEAD DOOR SECTION

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

A

-

NO.	DATE	BY	REVISION

NOTICE

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Port ORCHARD

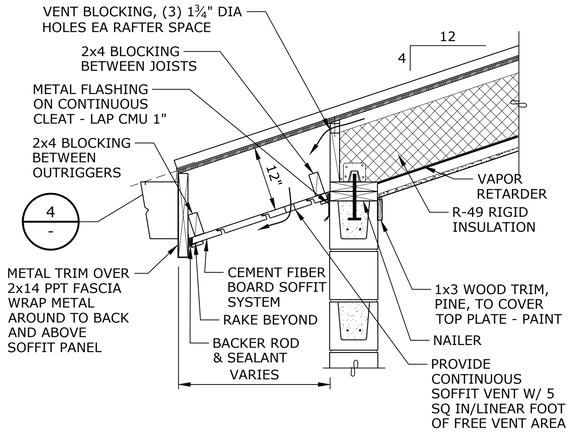
CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

ARCHITECTURAL DETAILS - 1

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET

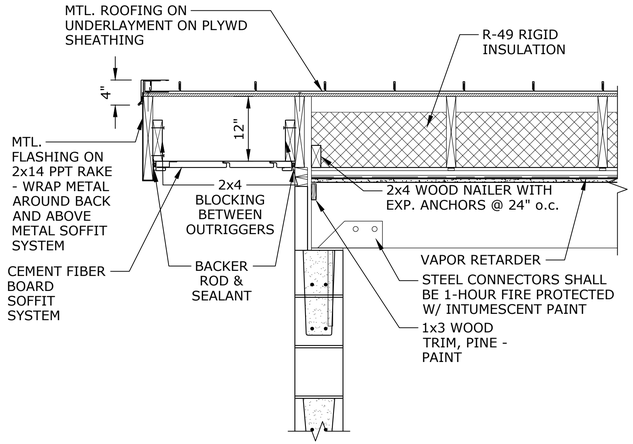
A-6



FASCIA

SCALE: 1" = 1'-0"

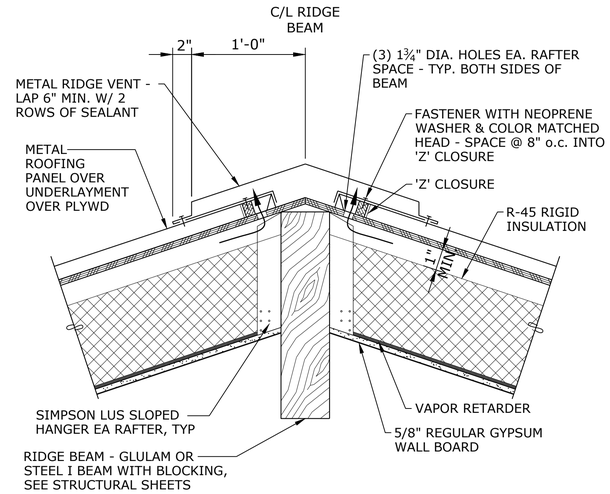
1 / A-4



RAKE

SCALE: 1" = 1'-0"

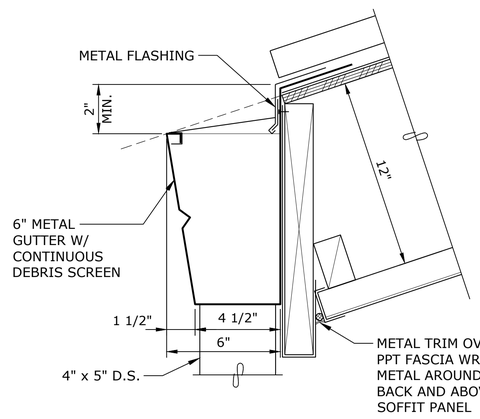
2 / A-5



RIDGE

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

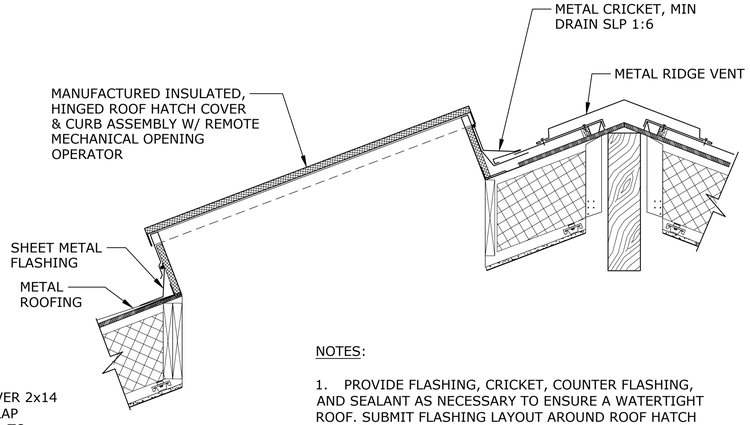
3 / A-4



TYPICAL 6" GUTTER

3" = 1'-0"

4 / A-4



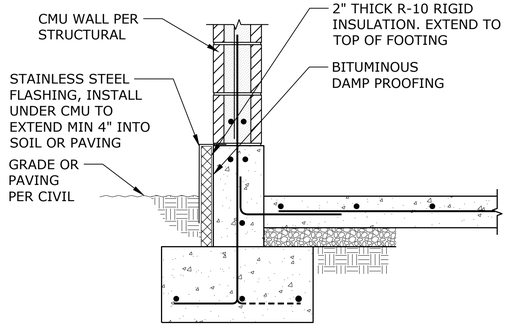
NOTES:

1. PROVIDE FLASHING, CRICKET, COUNTER FLASHING, AND SEALANT AS NECESSARY TO ENSURE A WATERTIGHT ROOF. SUBMIT FLASHING LAYOUT AROUND ROOF HATCH CURB FOR ENGINEER'S APPROVAL.

ROOF HATCH

1" = 1'-0"

5 / A-4



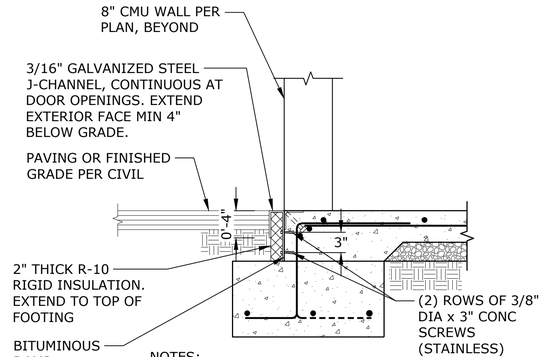
NOTES:

1. FABRICATE FLASHING TO FULLY CONCEAL INSULATION AT BUILDING CORNERS AND DOOR OPENINGS.

PERIMETER FOUNDATION INSULATION SECTION

SCALE: NTS

6 / -



NOTES:

1. FABRICATE FLASHING TO FULLY CONCEAL INSULATION AT BUILDING CORNERS AND DOOR OPENINGS.

FOUNDATION INSULATION SECTION AT DOOR OPENINGS

SCALE: NTS

7 / -

NO.	DATE	BY	REVISION

NOTICE

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Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

ARCHITECTURAL DETAILS - 2

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET A-7

NOTE:

SEE EQUIPMENT LIST AND NOTE REFERENCES ON SHT M-2

FROM CLEARWELL

TO DISTRIBUTION SYSTEM

TO CLEARWELL

DRAIN SUMP

1/2" SCH 80 PVC SAMPLING LINE, CONTRACTOR TO FIELD ROUTE TO SAMPLING STATION

WATER SAMPLING STATION, SEE DET 6, SHT M-6

SAMPLING LOCATION, SEE DET 1, SHT M-4

CONCRETE PEDESTALS, SEE STRUCTURAL (TYP)

SEE SHT M-2 FOR EQUIPMENT CALLOUTS

E&IC

CONTROLS ROOM

WELL PUMP VFD

CONTROL PANEL

STORAGE ROOM

3/8" CHEMICAL FEED LINE. CONTRACTOR TO FIELD ROUTE TO RISER (13)

METAL SHELVING

500L FLUORIDE SATURATOR

SPACE FOR STORAGE

HEAT PUMP UNIT AND PAD

PUMP & TREATMENT ROOM

2" DEEP MOLDED FIBERGLASS WALKING GRATE, SEE DET 5 & 6, SHT M-4

FLUORIDATION ROOM

WALL PENETRATION FOR FUTURE CHEMICAL TUBING

FUTURE SIMPLEX MnO_4 METERING PUMP SKID

FUTURE MnO_4 TANK

HEPA FILTRATION UNIT

FUTURE FILTER SKID

WATER SOFTENER

NaOCl DUPLEX METERING PUMP SKID

SPACE FOR PALLET

EMERGENCY EYEWASH & SHOWER (TYP)

3/8" CHEMICAL FEED LINE. CONTRACTOR TO FIELD ROUTE TO RISER (13)

DISINFECTION ROOM

HYPCHLORITE STORAGE TANK

BRINE TANK

NaOCl GENERATOR CONTROL & PLUMBING

WATER HEATER

BACKWASH FLOW METER (MANUFACTURER PROVIDED)

PUMP DISCONNECT PANEL

EXIST WELL #11 WELLHEAD

BACKWASH WATER TO ON-SITE MANHOLE, SEE SHEET C-4 & DET 1, SHT C-10

NOTES:

1. SEE EQUIPMENT LIST AND NOTE REFERENCES ON SHT M-2.

2. 1" POTABLE WATER LINE, CONTRACTOR TO FIELD ROUTE TO EMERGENCY EYEWASH & SHOWER STATION, SEE SHT P-1

PLAN

SCALE: 3/8" = 1'-0"

NO.	DATE	BY	REVISION

NOTICE

0 ½ 1

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CLB DESIGNED

JLC DRAWN

EKS CHECKED

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Port ORCHARD

CITY OF PORT ORCHARD MCCORMICK WOODS - WELL NO. 11 SITE IMPROVEMENT PROJECT

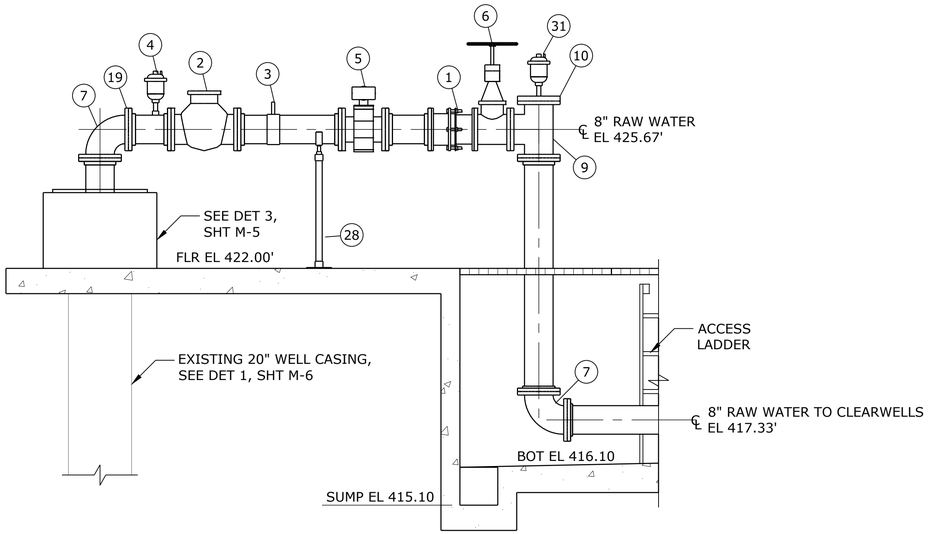
PUMP STATION MECHANICAL PLAN

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

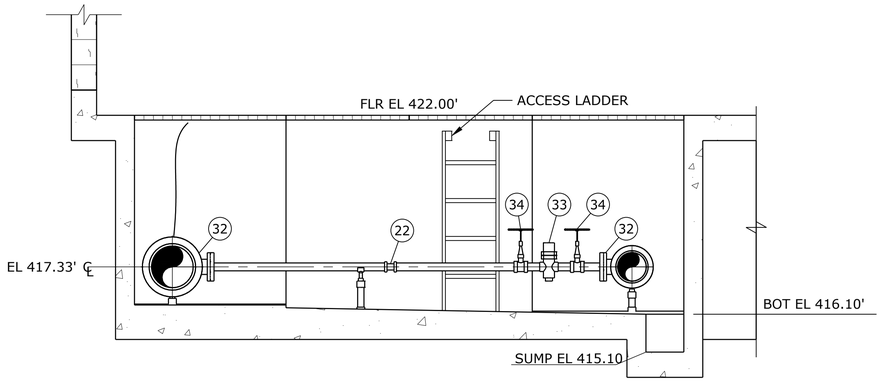
SHEET M-1

37 of 69

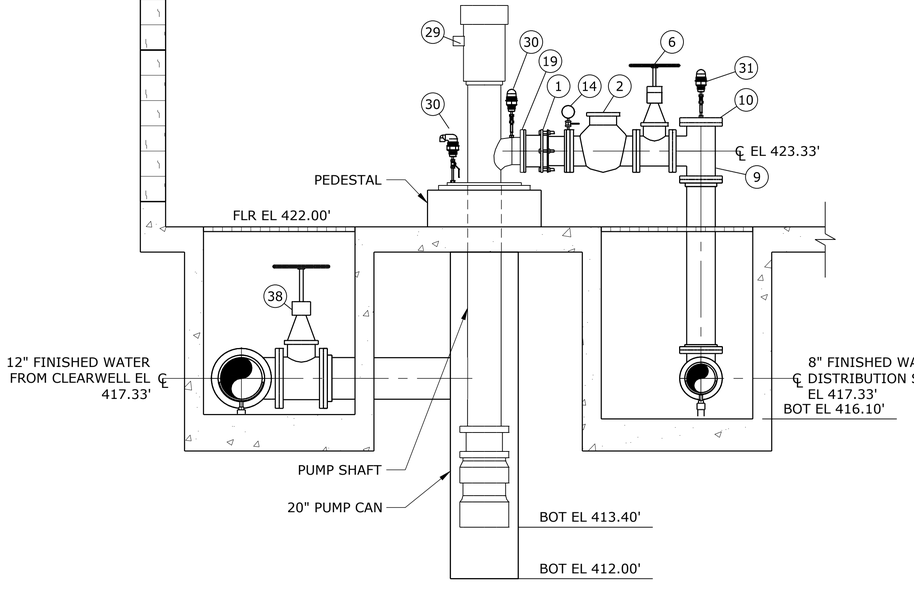
H:\evt_projects\20\2839.01 - Port Orchard - Well 11 Amendment 2\CAD\Sheets\20-2839-WA-M-1.dwg M-1 4/21/2023 7:10 AM JARED.CLOUD 23.0s (LMS Tech)



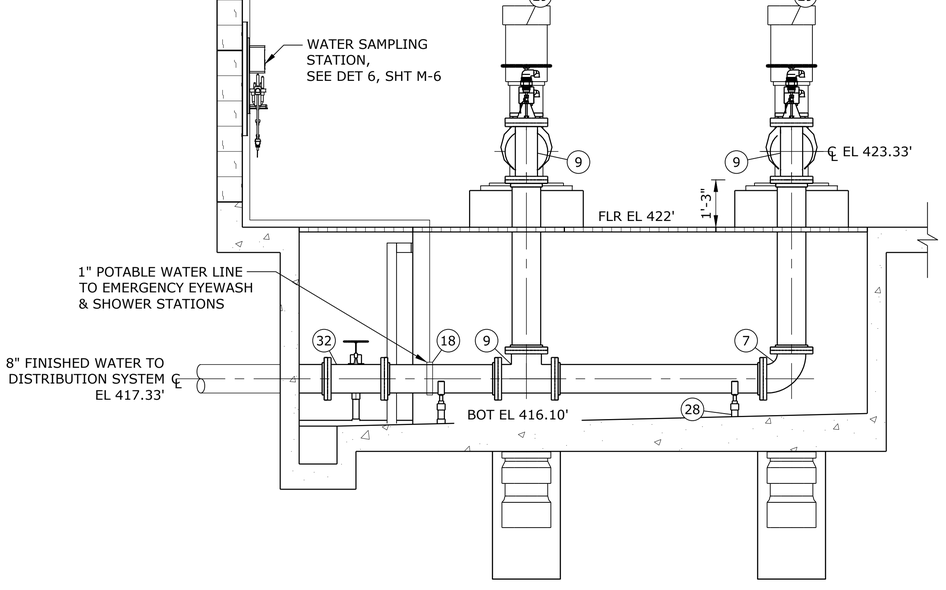
SECTION A
SCALE: 1/2" = 1'-0" — M-1



SECTION B
SCALE: 1/2" = 1'-0" — M-1



SECTION C
SCALE: 1/2" = 1'-0" — M-1



SECTION D
SCALE: 1/2" = 1'-0" — M-1

EQUIPMENT LIST:

1. 8" DISMANTLING JOINT, FLG
2. 8" CHECK VALVE
3. 1/2" SAMPLING TAP, SEE DET 3, SHT M-4
4. 2" CARV, SEE DET 1, SHT M-5
5. 8" FLOW METER
6. 8" GATE VALVE
7. 8" 90° BEND, FLG
8. 8" 90° BEND, MJ
9. 8" TEE, FLG
10. 8" BLIND FLANGE
11. 8" WYE, MJ
12. 2" ARV, SEE DET 1, SHT M-5
13. 3/8" CHEMICAL FEED LINE
14. ANNULAR PRESSURE GAUGE
15. 4" 90° BEND, FLG
16. 4" BLIND FLANGE
17. 4" 90° BEND, PVC
18. 1" TAP, SEE DET 3, SHT M-6
19. INSULATING FLANGE KIT, SEE DET 2, SHT M-5
20. 8" RESTRAINED FLANGED COUPLING ADAPTER
21. 8" 45° BEND, MJ
22. 2" RESTRAINED FLANGED COUPLING ADAPTER
23. 8" x 10" DI RDCR, MJ
24. 4" PVC CONDUIT AND 4" x 2" SCH 40 PVC SLIP x SPIG REDUCER BUSHING
25. 4" SDR 40 PVC CONDUIT SLEEVE
26. NaOCl AND KMnO4 INJECTION, SEE DET 1, SHT M-4
27. FLUORIDE INJECTION, SEE DET 1, SHT M-4
28. PIPE SUPPORT, SEE DET 2, SHT M-4
29. BOOSTER PUMP
30. STD 1/2" COMB AIR/VAC VALVE, LOW PRESSURE
31. 1/2" AIR RELEASE VALVE W/VACUUM CHECK
32. 12" x 4" TEE W/ BLIND FLANGE AND 2" THREADED TAP
33. 2" PRESSURE RELIEF VALVE, THREADED
34. 2" GATE VALVE, THREADED
35. 4" 90° BEND, MJ
36. 12" TEE, FLG
37. 12" 90° BEND, FLG
38. 12" GATE VALVE

NO.	DATE	BY	REVISION

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

CLB DESIGNED
JLC DRAWN
EKS CHECKED

PETER BENEDICT CUNNINGHAM — STATE OF WASHINGTON — 48352 — REGISTERED PROFESSIONAL ENGINEER — 4/21/2023

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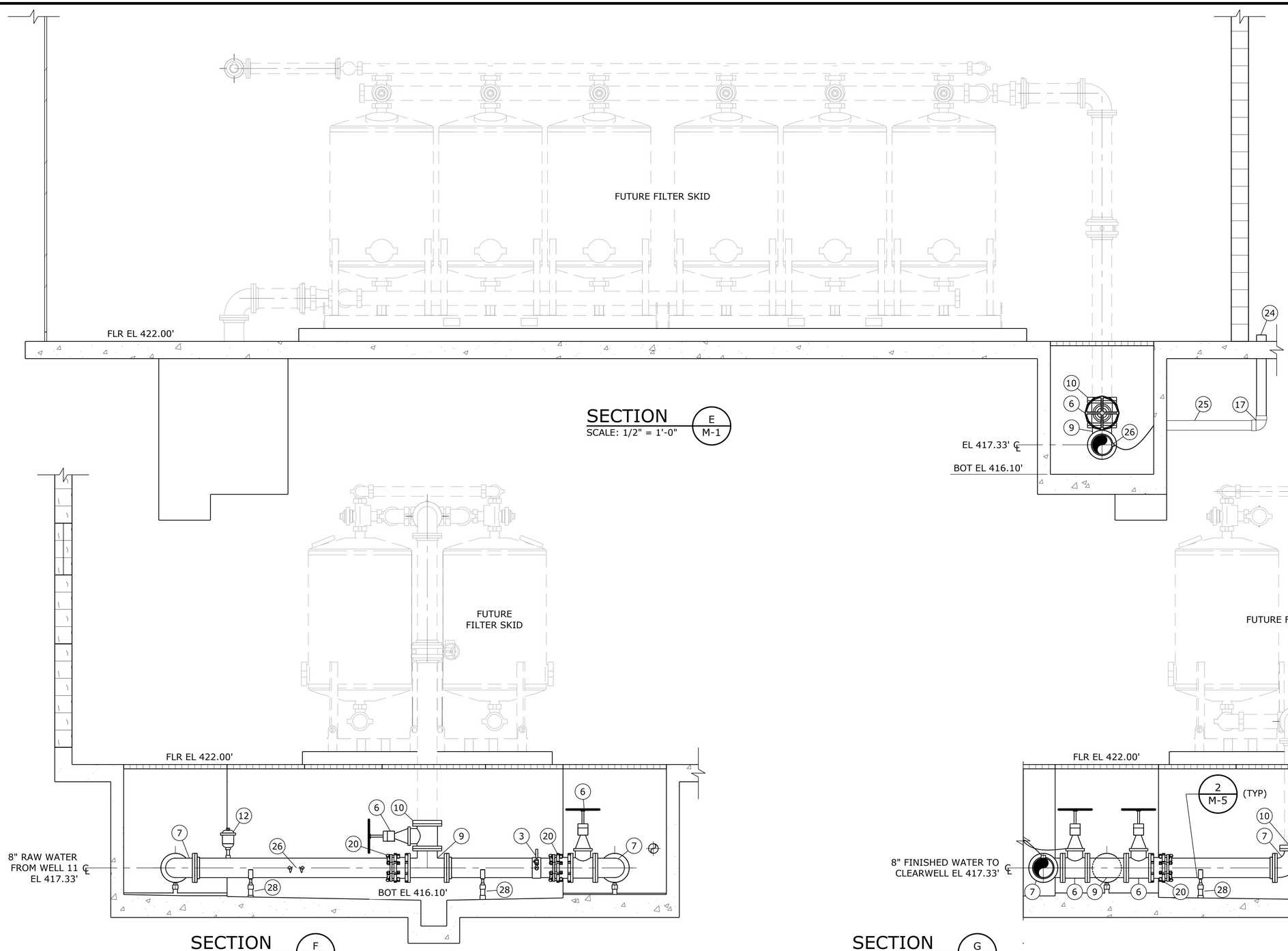
CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

PUMP STATION MECHANICAL SECTIONS 1 OF 2

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET M-2



NOTE:

SEE EQUIPMENT LIST AND NOTE REFERENCES ON SHT M-2

SECTION
SCALE: 1/2" = 1'-0" (E / M-1)

SECTION
SCALE: 1/2" = 1'-0" (F / M-1)

SECTION
SCALE: 1/2" = 1'-0" (G / M-1)

NO.	DATE	BY	REVISION

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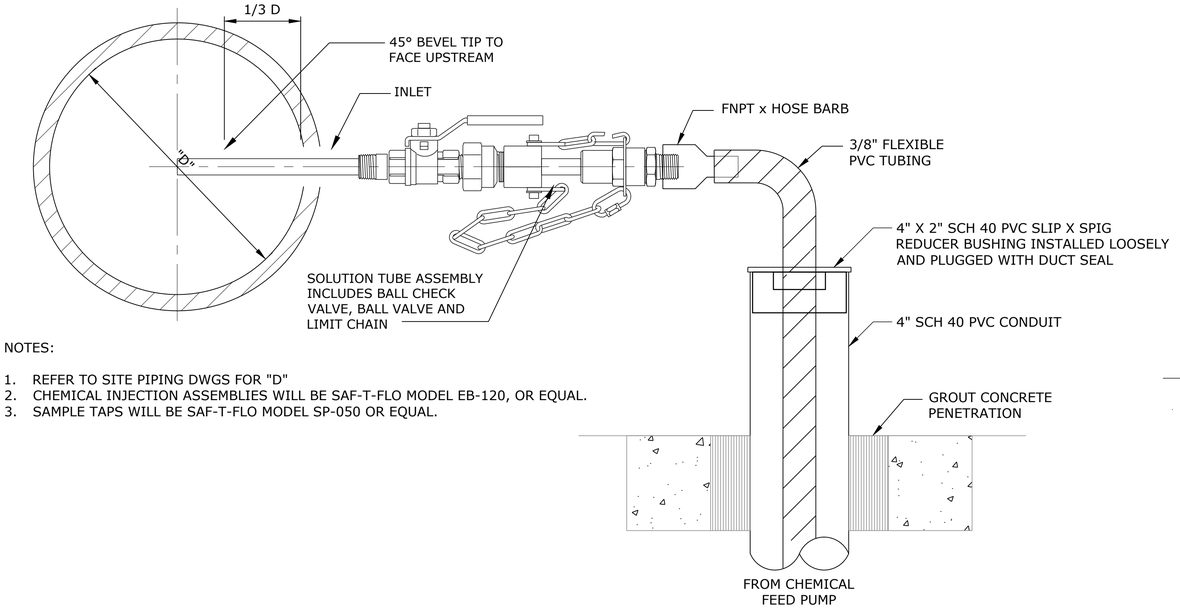
CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

PUMP STATION MECHANICAL SECTIONS 2 OF 2

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET M-3



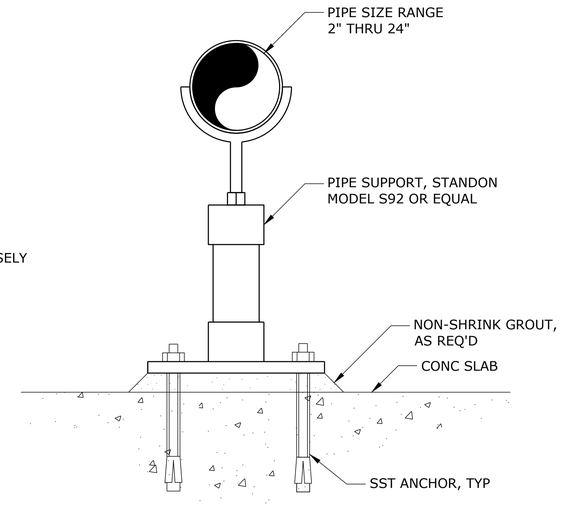
NOTES:

1. REFER TO SITE PIPING DWGS FOR "D"
2. CHEMICAL INJECTION ASSEMBLIES WILL BE SAF-T-FLO MODEL EB-120, OR EQUAL.
3. SAMPLE TAPS WILL BE SAF-T-FLO MODEL SP-050 OR EQUAL.

CHEMICAL INJECTION AND SAMPLE TAP

SCALE: NTS

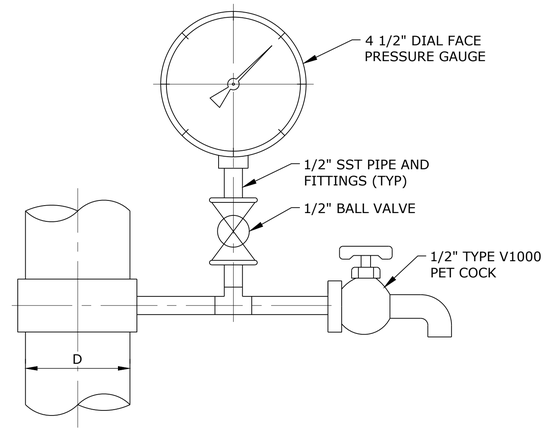
1 / M-2



PIPE SUPPORT

SCALE: NTS

2 / M-2



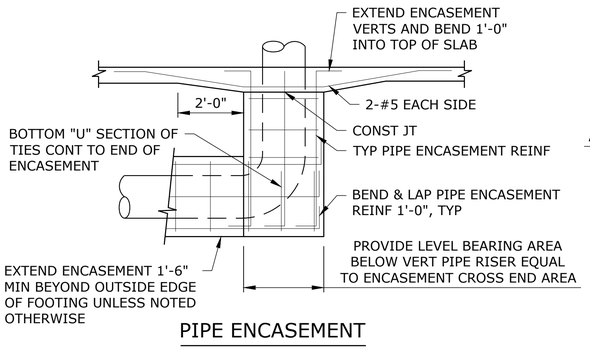
NOTES:

1. FOR STL, GALV & PVC 2-1/2" & SMALLER USE A BUSHING IN A TEE
2. FOR DI & FRP ALL SIZES, USE PIPE SADDLE W/BUSHING
3. FOR STL & SST PIPES 3" & LARGER, & PRESSURE VESSELS, USE THRED-O-LET
4. PROVIDE SNUBBER FOR POSITIVE DISPLACEMENT PUMP INSTALLATIONS
5. CONFIGURE GAUGE PET COCK AS NEEDED FOR VISIBILITY AND ACCESSIBILITY

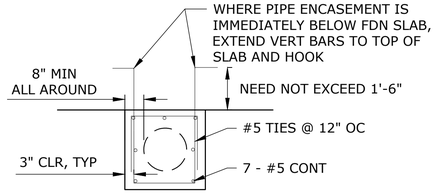
PRESSURE GAUGE AND GRAB SAMPLING TAP MOUNTING

SCALE: NTS

3 / M-2



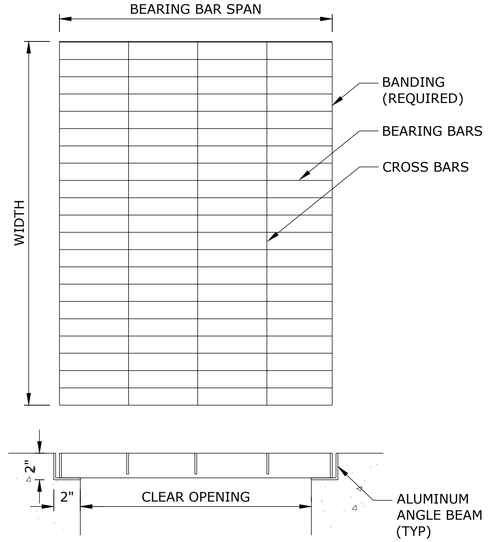
PIPE ENCASEMENT



CONCRETE PIPE ENCASEMENT

SCALE: NTS

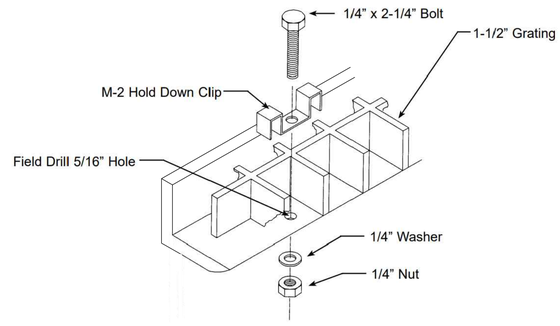
4 / M-1



WALKING GRATE MOUNTING DETAIL

SCALE: NTS

5 / M-1



WALKING GRATE MOUNTING DETAIL

SCALE: NTS

6 / M-1

NO.	DATE	BY	REVISION

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JLC DRAWN
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Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

MECHANICAL DETAILS - 1

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET M-4

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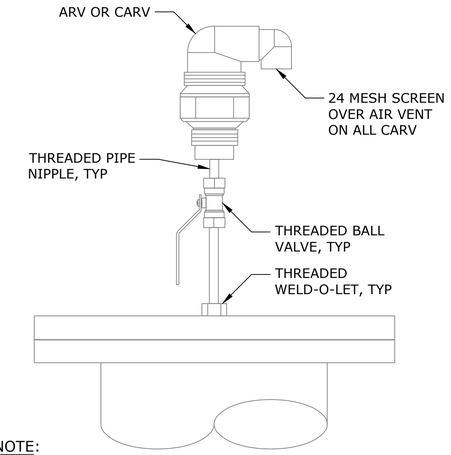


NOTE:

1. PIPE, FITTING, AND VALVE SIZES SHALL MATCH AIR VALVE INLET DIAMETER UNLESS NOTED OTHERWISE.

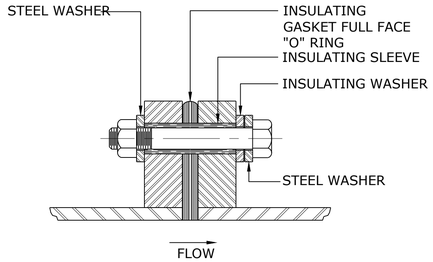
AIR RELEASE OR COMBINATION AIR/VAC VALVE

SCALE: NTS

1 / M-2

NOTES:

1. PLACE NON-INSULATED SIDE OF BOLT TOWARD VALVE
2. DO NOT APPLY METALLIC OR OTHER NON-INSULATING PAINTS TO INSULATING PARTS OR FLANGES
3. INSULATING SLEEVE TO BE 1/64" SHORTER THAN DISTANCE BETWEEN STEEL WASHERS WHEN BOLT IS FULLY TIGHTENED
4. COAT WITH COLD APPLIED COAL TAR MASTIC AFTER ASSEMBLING JOINT AND WRAP WITH A BUTYL RUBBER ADHESIVE, POLYETHLENE BACKED TAPE



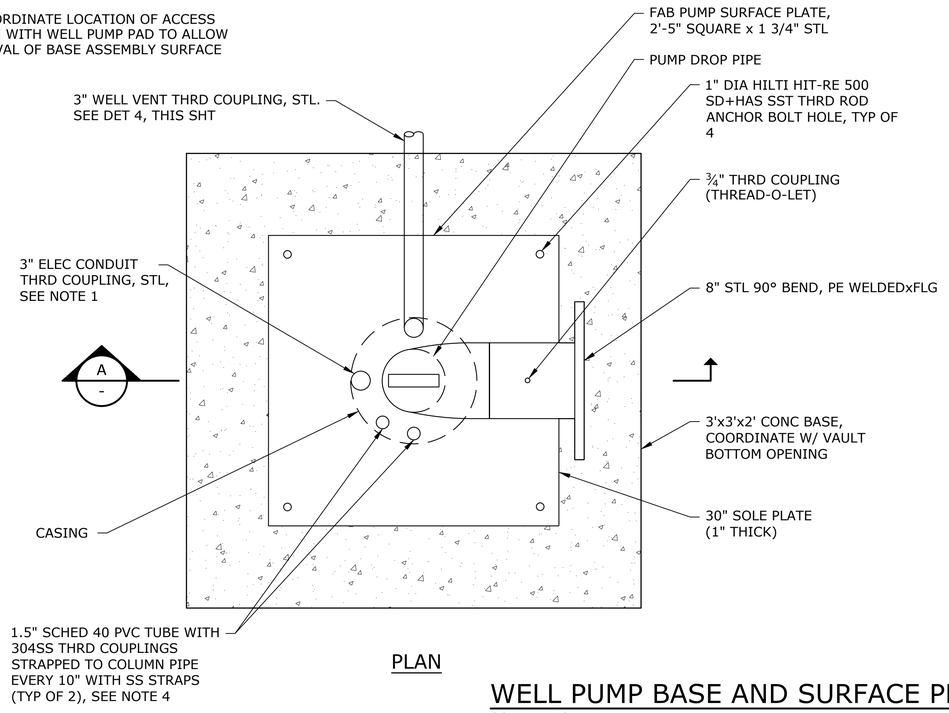
INSULATED FLANGE

SCALE: NTS

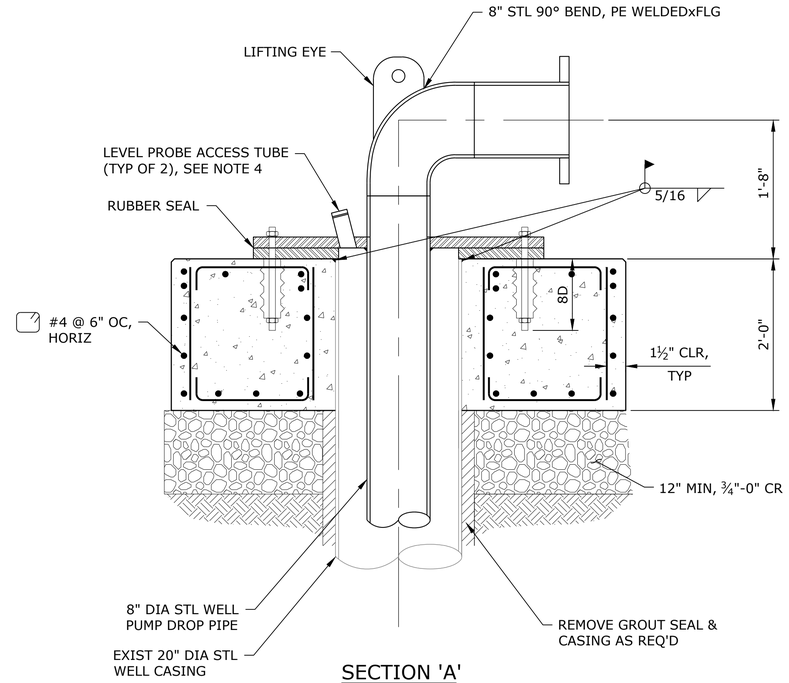
2 / M-2

NOTE:

1. COORDINATE LOCATION OF ACCESS HATCH WITH WELL PUMP PAD TO ALLOW REMOVAL OF BASE ASSEMBLY SURFACE PLATE.



PLAN

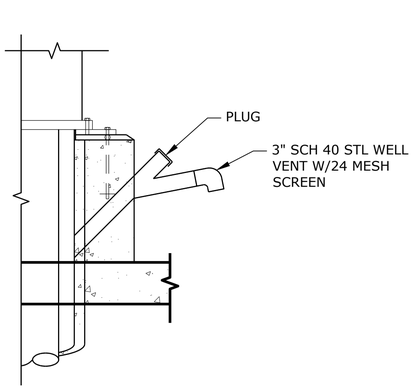


SECTION 'A'

WELL PUMP BASE AND SURFACE PLATE ASSEMBLY DETAIL

SCALE: NTS

3 / M-2



WELL VENT W/ INSECT SCREEN

SCALE: NTS

4 / -

SHEET NOTES:

1. FURNISH AND INSTALL WATERTIGHT CONDUIT SEALING BUSHINGS FOR PUMP POWER AND LEVEL SENSOR COUPLINGS THROUGH WELL SURFACE PLATE, SEE ELECTRICAL SPECIFICATIONS.
2. ALL THREADED COUPLINGS THROUGH SURFACE PLATE ASSEMBLY SHALL BE SEALED AND WATERTIGHT.
3. COMPLY WITH ALL REQUIREMENTS OF WASHINGTON DEPARTMENT OF ECOLOGY FOR WORK ON EXISTING WELL.
4. BOTTOM AND TOP 5' OF SOUNDING AND TRANSDUCERS PIPES SHALL HAVE MINIMUM OF 20 HOLES DRILLED IN PVC TO ALLOW WATER AND AIR TO ENTER. DRILL HOLE IN BOTTOM OF END CAP.

NO.	DATE	BY	REVISION

NOTICE

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JLC DRAWN
EKS CHECKED

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CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

MECHANICAL DETAILS - 2

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET M-5

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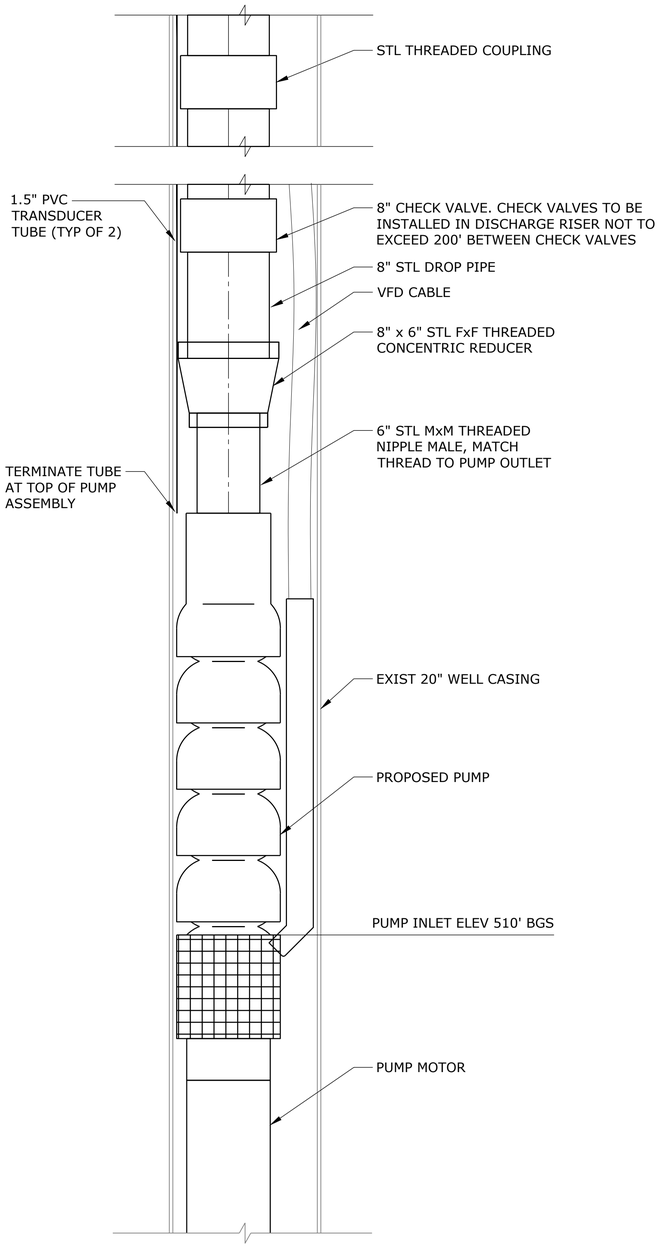
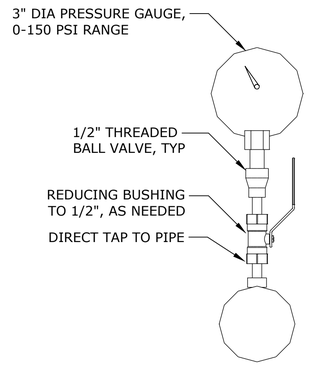
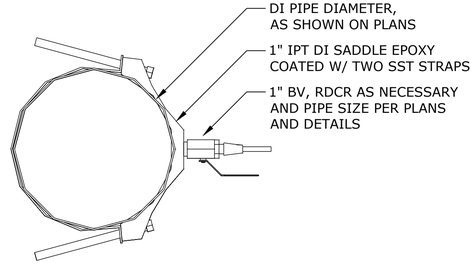


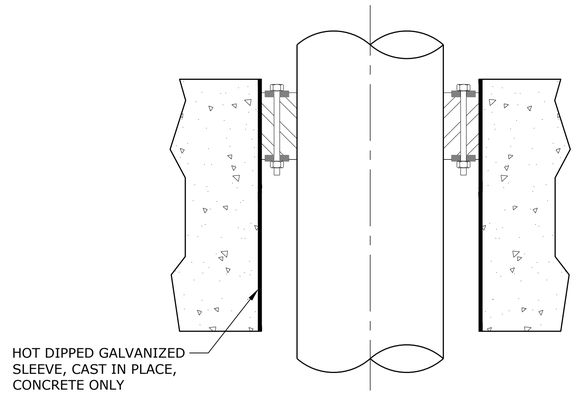
WELL SECTION (1 / M-2)
SCALE: NTS



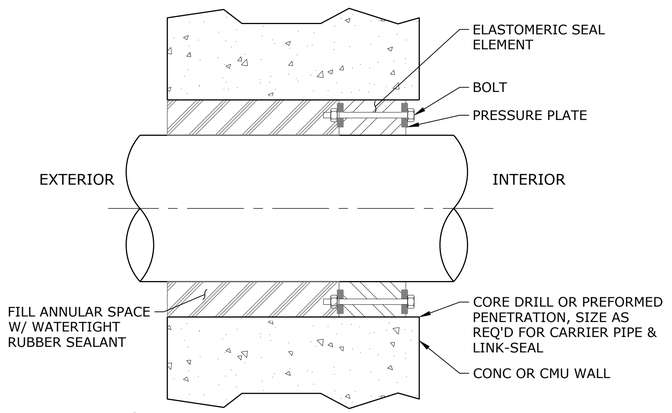
PRESSURE GAUGE (2 / M-2)
SCALE: NTS



TAP DETAIL (3 / M-2)
SCALE: NTS



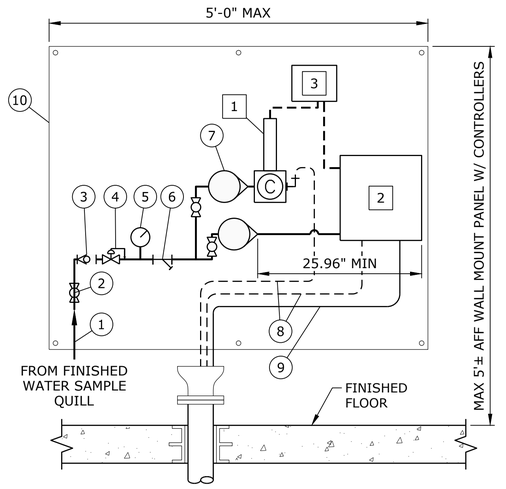
FLOOR PENETRATION DETAIL (4 / M-1)
SCALE: NTS



NOTE:

1. GROUT CMU WALL TO 12" ABOVE PENETRATION PRIOR TO CORE DRILLING.

LINK SEAL DETAIL (5 / M-1)
SCALE: NTS



KEY NOTES:

1. ALL PIPING TO BE 1/2" SCH 90 CVPC
2. BALL VALVE (TYP)
3. BALL CHECK VALVE (TYP)
4. PRESSURE REDUCING VAVLE (TYP)
5. PRESSURE GAUGE (TYP)
6. Y-STRAINER
7. ROTOMETER W/INTEGRAL NEEDLE VALVE (TYP)
8. 1/2'' DRAIN, ROUTE TO HUB DRAIN
9. OVERFLOW, ROUTE TO HUB DRAIN
10. PROVIDE MOUNTING BOARD, SIZE AS NEEDED, MOUNT TO WALL

MATERIAL LIST:

1. FLUORIDE ANALYZER (PROMINENT DULCOTEST FLEP 010-SE OR EQUAL)
2. CHLORINE ANALYZER (PROMINENT DULCOTEST CLE 3.1 OR
3. MULTI-PARAMETER ANALYZER SYSTEM

NOTES:

1. COORDINATE CONNECTION OF PIPING WITH INSTRUMENT AND INSTRUMENT CELL CONNECTIONS.
2. INSTALL ANALYZERS PER MANUFACTURER'S INSTRUCTIONS.
3. ROUTE POWER AND SIGNAL CABLES TO ELECTRIC WIREWAY AT TOP OF PANEL. USE LIQUID TIGHT FLEXIBLE METAL CONDUIT FOR SIGNAL AND POWER TERMINATION TO ALL INSTRUMENTS.
4. CONTRACTOR TO SUPPORT ALL PIPING TO THE MOUNTING BOARD PER SPECIFICATION 40_05_07.
5. USE CPVC PIPE UP TO THE ROTAMETER INLETS. USE FLEXIBLE HOSE FROM THE ROTAMETER OUTLETS TO THE ANALYZERS.

FINISHED WATER SAMPLE PANEL (6 / M-1)
SCALE: NTS

NO.	DATE	BY	REVISION

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JLC DRAWN
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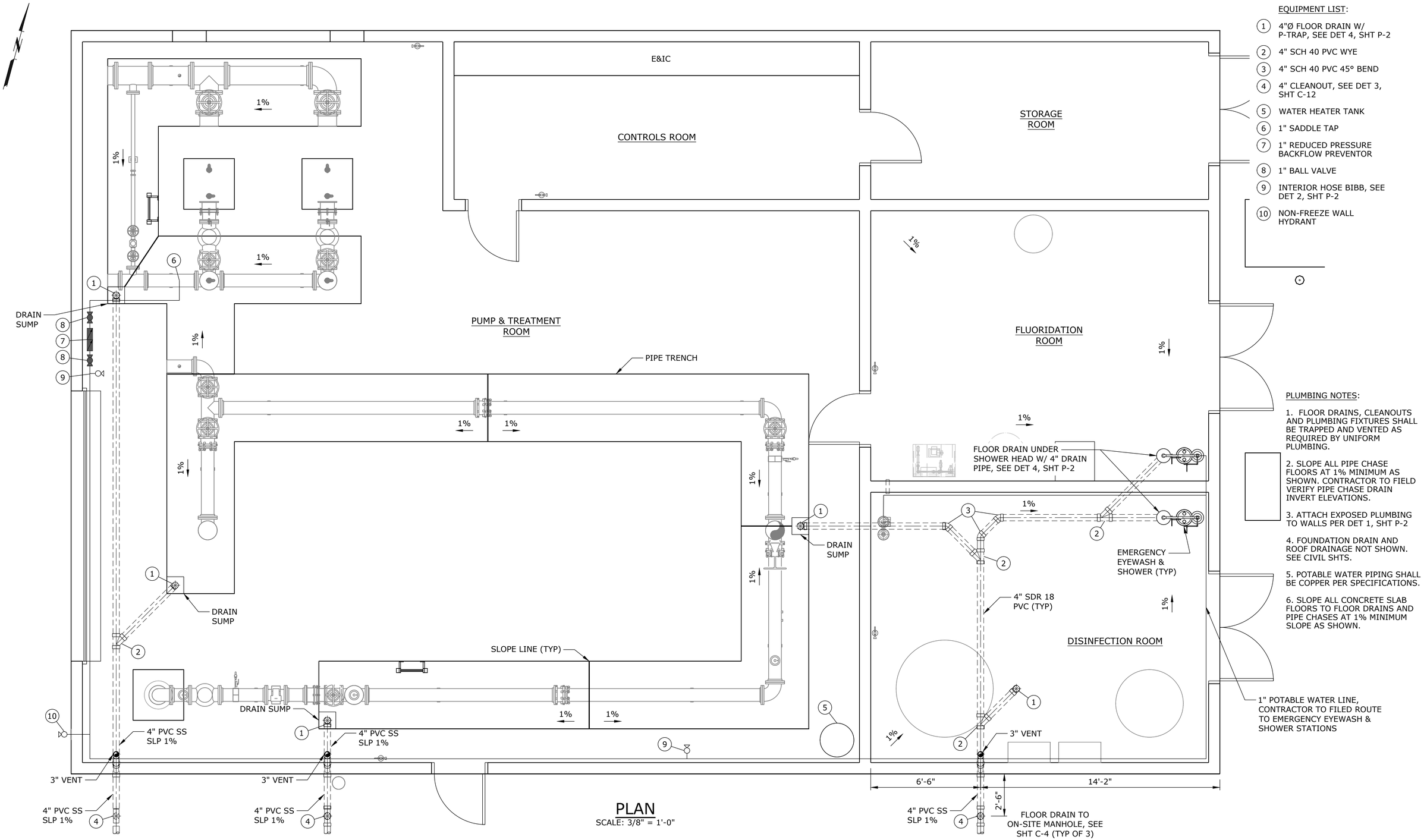
Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

MECHANICAL DETAILS - 3

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET M-6



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

EQUIPMENT LIST:

1. 4"Ø FLOOR DRAIN W/ P-TRAP, SEE DET 4, SHT P-2
2. 4" SCH 40 PVC WYE
3. 4" SCH 40 PVC 45° BEND
4. 4" CLEANOUT, SEE DET 3, SHT C-12
5. WATER HEATER TANK
6. 1" SADDLE TAP
7. 1" REDUCED PRESSURE BACKFLOW PREVENTOR
8. 1" BALL VALVE
9. INTERIOR HOSE BIBB, SEE DET 2, SHT P-2
10. NON-FREEZE WALL HYDRANT

PLUMBING NOTES:

1. FLOOR DRAINS, CLEANOUTS AND PLUMBING FIXTURES SHALL BE TRAPPED AND VENTED AS REQUIRED BY UNIFORM PLUMBING.
2. SLOPE ALL PIPE CHASE FLOORS AT 1% MINIMUM AS SHOWN. CONTRACTOR TO FIELD VERIFY PIPE CHASE DRAIN INVERT ELEVATIONS.
3. ATTACH EXPOSED PLUMBING TO WALLS PER DET 1, SHT P-2
4. FOUNDATION DRAIN AND ROOF DRAINAGE NOT SHOWN. SEE CIVIL SHTS.
5. POTABLE WATER PIPING SHALL BE COPPER PER SPECIFICATIONS.
6. SLOPE ALL CONCRETE SLAB FLOORS TO FLOOR DRAINS AND PIPE CHASES AT 1% MINIMUM SLOPE AS SHOWN.

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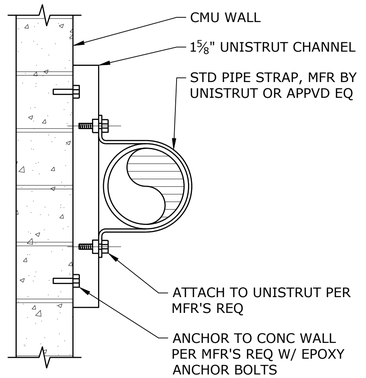
SITE IMPROVEMENT PROJECT

PUMP STATION PLUMBING PLAN

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

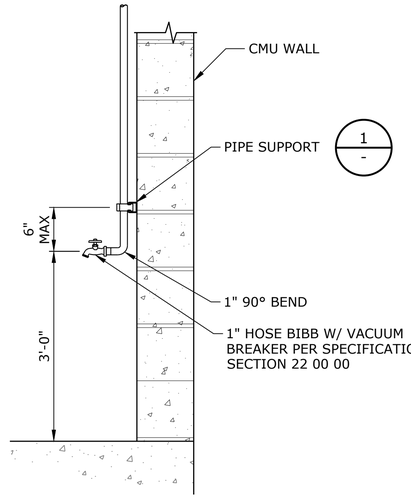
SHEET P-1



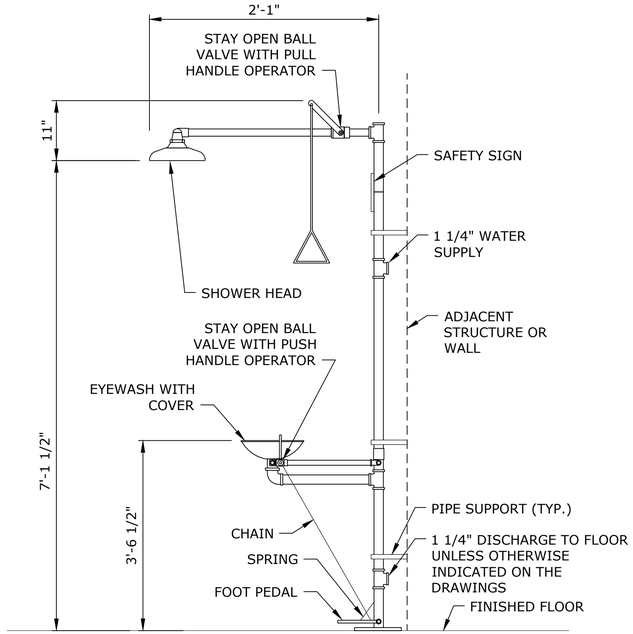
NOTES:

1. ORIENT UNISTRUT CHANNEL VERTICALLY OR HORIZONTALLY DEPENDING ON APPLICATION.
2. SUPPORT PIPE HORIZONTALLY EVERY 6 FEET (MINIMUM), AND VERTICALLY AT EVERY 10 FEET (MINIMUM).
3. ALL SUPPORT MATERIALS SHALL BE PER SPECIFICATION SECTION 22 05 29.

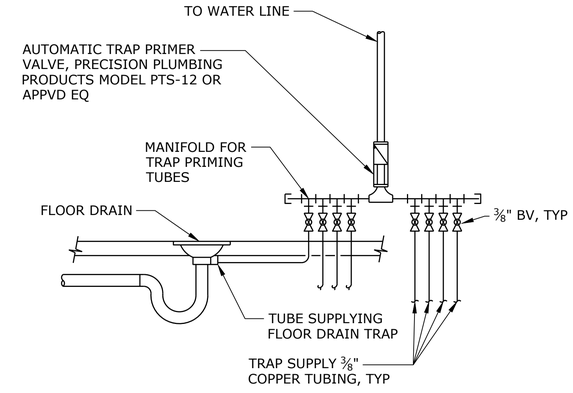
PIPE SUPPORT
SCALE: NTS — 1 / P-1



TYPICAL INTERIOR HOSE BIBB CONNECTION
SCALE: NTS — 2 / P-1



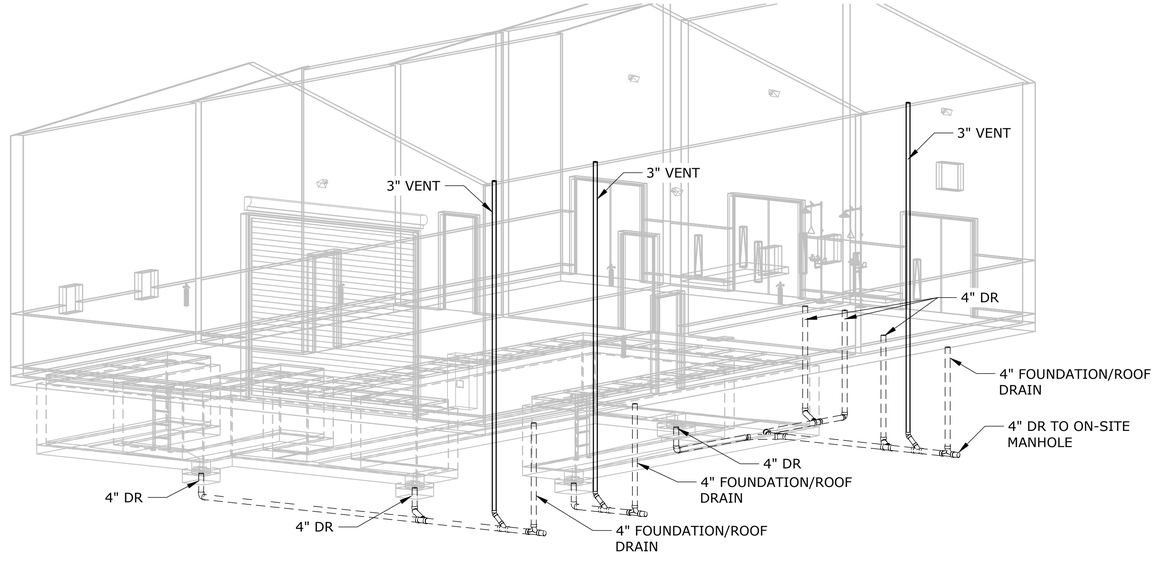
EYEWASH & SHOWER DETAIL
SCALE: NTS — 3 / P-1



NOTES:

1. TRAP SUPPLY PIPING SHALL CONSTANTLY SLOPE DOWNWARD ON RUN HORIZONTALLY FROM TRAP PRIMER TO FLOOR DRAIN CONNECTION.
2. INSTALL TRAP PRIMER PER MANUFACTURER'S REQUIREMENTS.

FLOOR DRAIN TRAP PRIMER
SCALE: NTS — 4 / P-1



VENT ISOMETRIC
SCALE: NTS

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JLC DRAWN
EKS CHECKED

PETER BENEDICT CUNNINGHAM — STATE OF WASHINGTON — 48352 — REGISTERED PROFESSIONAL ENGINEER — 4/21/2023

consor

Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

PLUMBING DETAILS

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET P-2

HVAC ABBREVIATIONS

ABBREVIATION	MEANING
AHU	AIR HANDLING UNIT
AO	AIR TO OPEN
BDD	BACK DRAFT DAMPER
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CV	CONSTANT AIR VOLUME
(D)	DEMO
DIR	DIRECT-ACTING
DWV	DOMESTIC WASTE AND VENT
EC	ENERGIZE TO CLOSE
ED	EXHAUST DAMPER
EF	EXHAUST FAN
EG	EXHAUST GRILL
EL	EXHAUST LOUVER
EO	ENERGIZE TO OPEN
ES	ELECTRIC SUPPLY
ESP	EXTERNAL STATIC PRESSURE
EV	SOLENOID VALVE
ESD	EMERGENCY SHUTDOWN
EXH	EXHAUST
(F)	FUTURE
FC	FAIL CLOSED
FD	FIRE DAMPER
FFU	FAN FILTER UNIT
FL	FAIL LOCKED OR LAST
FO	FAIL OPEN
GD	GRAVITY DAMPER
IN HG	INCHES OF MERCURY
HH	HAND HOLE
HS	HYDRAULIC SUPPLY
HT	HEAT TRACED
IA	INTAKE AIR
MBH	THOUSANDS OF BTU'S PER HOUR
MA	MAKE-UP AIR
(N)	NEW
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OA, OSA	OUTSIDE AIR
OC	OCCUPIED
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
P	PNEUMATIC SIGNAL
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
RA	RETURN AIR
RH	RELATIVE HUMIDITY
RTD	RESISTANCE TEMPERATURE DETECTOR
RTU	ROOF TOP UNIT
SA	SUPPLY AIR
SD	SUPPLY DAMPER
SCFM	STANDARD CUBIC FEET PER MINUTE
SF	SUPPLY FAN
SG	SUPPLY GRILL
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION
SP	SET-POINT
TP	TRAP
TC	THERMOCOUPLE
VAV	VARIABLE AIR VOLUME
IN WG	INCHES WATER GAUGE

HEAT PUMPS

LOCATION	OUTDOOR UNIT				INDOOR UNIT					THERMAL CAPACITY	
	NO.	VOLTAGE/PH/AMPS	CONTROL	MANUFACTURER & MODEL	NO.	VOLTAGE/PH/AMPS	FAN MIN CFM	CONTROL	MANUFACTURER & MODEL	TOTAL CAPACITY HEATING (BTU/H)	TOTAL CAPACITY COOLING (BTU/H)
CONTROL ROOM	HPU-1	208(230)/1/30(30)	AHU-1	GOODMAN GVZC20 0481	AHU-1	208(230)/1/8(8)	1,600	T-1	GOODMAN ASPT 48D14	46,000	46,500
PUMP & TREATMENT ROOM	HPU-2	208(230)/1/30(30)	AHU-2	GOODMAN GVZC20 0482	AHU-2	208(230)/1/8(8)	1,400	T-2	GOODMAN ASPT 36C14	35,400	35,800
DISINFECTION ROOM	HPU-3	208(230)/1/30(30)	AHU-3	24RLXFZ	AHU-3	208(230)/1/8(8)	250	T-3	ASU12RLF1	24,000/12,000	24,000/12,000
FLUORIDATION ROOM	HPU-3	208(230)/1/30(30)	AHU-4	24RLXFZ	AHU-4	208(230)/1/8(8)	250	T-4	ASU12RLF1	24,000/12,000	24,000/12,000

LOUVERS

TAG	LOCATION	AREA SERVED	MANUFACTURER & MODEL	APPLICATION	WIDTH (IN)	HEIGHT (IN)	DEPTH (IN)	VOLUME (CFM)	MAX PRESSURE DROP (IN. WG)	FREE AREA VELOCITY (FT/MIN)	FREE AREA (SQ FT)	NOTES
SL-1	PUMP STATION	PUMP & TREATEMENT ROOM	GREENHECK, ECD-601	INTAKE	24	24	6	500	0.03	294	1.7	COMBO LOUVER/DAMPER
SL-2	PUMP STATION	PUMP & TREATEMENT ROOM	GREENHECK, ECD-601	INTAKE	24	24	6	500	0.03	294	1.7	COMBO LOUVER/DAMPER
EL-1	PUMP STATION	PUMP & TREATEMENT ROOM	GREENHECK, ECD-601	EXHAUST	24	24	6	1000	0.06	588	1.7	COMBO LOUVER/DAMPER
SL-3	PUMP STATION	CHEMICAL ROOMS	GREENHECK, ECD-601	INTAKE	24	24	6	1000	0.06	588	1.7	COMBO LOUVER/DAMPER
EL-2	PUMP STATION	CHEMICAL ROOMS	GREENHECK, ECD-601	EXHAUST	24	24	6	1000	0.06	588	1.7	COMBO LOUVER/DAMPER

FANS

TAG	LOCATION	AREA SERVED	MANUFACTURER & MODEL	DRIVE TYPE	CFM	TOTAL EXTERNAL SP	FAN RPM	BHP	MOTOR HP	V/C/P	SONES (INLET)	NOTES
EF-1	PUMP STATION	PUMP & TREATEMENT ROOM	GREENHECK, SQ-130	DIRECT	1,000	0.30	1,140	0.18	1/4	460/60/3	6.7	
EF-2	PUMP STATION	CHEMICAL ROOMS	GREENHECK, SQ-130	DIRECT	1,000	0.30	1,140	0.18	1/4	460/60/3	6.7	
RF-1	PUMP STATION	FLUORIDATION ROOM	MONOXIVENT, PHS-10	DIRECT	750	-	1,140	-	1-1/2	120/60/1	20	PORTABLE UNIT

DIFFUSERS/GRILLS

TAG	LOCATION	AREA SERVED	CFM	FRAME SIZE	MANUFACTURER & MODEL	NOTES
RG-1	PUMP STATION	ELECTRICAL ROOM	1400	20X20	TITUS 350 RL-SS	
RG-2	PUMP STATION	PUMP & TREATMENT ROOM	1400	20X20	TITUS 350 RL-SS	
SG-1	PUMP STATION	ELECTRICAL ROOM	650	14X14	TITUS 300 RL-SS	
SG-2	PUMP STATION	ELECTRICAL ROOM	650	14X14	TITUS 300 RL-SS	
SG-3	PUMP STATION	STORAGE ROOM	100	10X6	TITUS 300 RL-SS	
SG-4	PUMP STATION	PUMP & TREATMENT ROOM	500	12X10	TITUS 301 RL-SS	
SG-5	PUMP STATION	PUMP & TREATMENT ROOM	500	12X10	TITUS 301 RL-SS	
SG-6	PUMP STATION	PUMP & TREATMENT ROOM	400	12X8	TITUS 301 RL-SS	
SG-7	PUMP STATION	DISINFECTION ROOM	500	20X10	TITUS 300 RL-SS	
SG-8	PUMP STATION	FLORIDATION ROOM	500	20X10	TITUS 300 RL-SS	
EG-1	PUMP STATION	PUMP & TREATMENT ROOM	1000	18X18	TITUS 350 RL-SS	
EG-2	PUMP STATION	DISINFECTION ROOM	500	14X14	TITUS 350 RL-SS	
EG-3	PUMP STATION	FLORIDATION ROOM	500	14X14	TITUS 350 RL-SS	

DAMPER ACTUATORS

NO.	TYPE	CONTROL	MANUFACTURER & MODEL
SD-1	MOTORIZED	EF-1	BELIMO, LF120-S
ED-1	MOTORIZED	EF-1	BELIMO, LF120-S
SD-2	MOTORIZED	EF-1	BELIMO, LF120-S
SD-3	MOTORIZED	EF-2	BELIMO, LF120-S
ED-2	MOTORIZED	EF-2	BELIMO, LF120-S

THERMOSTATS

TAG	AREA SERVED	CONTROLS	NOTES
T-1	CONTROLS ROOM	AHU-1	
T-2	PUMP & TREATMENT ROOM	AHU-2	
T-3	DISINFECTION ROOM	AHU-3	
T-4	FLUORIDATION ROOM	AHU-4	

DUCTWORK SYMBOLS AND LEGEND

- DUCTWORK WITH DUCT LINING
- REDUCER OR INCREASER
- NEW DUCTWORK
- RADIUS ELBOW
- VANED ELBOW
- BRANCH DUCT TAKE-OFF (TAG)
- DIFFUSER (TAG)
- CEILING RETURN EXHAUST REGISTER (R) OR GRILLE (G) (TAG)
- SUPPLY/RETURN AIR GRILLE (G) OR SUPPLY/RETURN AIR REGISTER (R) (TAG)
- FLEXIBLE DUCT

EQUIPMENT SYMBOLS

- SMOKE DETECTOR (SD)
- THERMOSTAT (T)
- TEMPERATURE SENSOR (T)
- DIFFUSER
- MOTORIZED ACTUATOR (M)

NOTES:

1. ALL FANS AND OVERHEAD DUCTWORK TO BE MOUNTED 8-FEET CLEAR ABOVE FLOOR (MINIMUM) AND SUSPENDED FROM ROOF FRAMING. FAN TO BE SUSPENDED OR MOUNTED ON VIBRATION ISOLATED HANGERS PER MANUFACTURER'S REQUIREMENTS.
2. FURNISH SEISMIC RESTRAINTS FOR ALL DUCTWORK SYSTEMS AND SWAY BRACING AS DESCRIBED IN SMACNA "GUIDELINES FOR SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS".
3. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR LOCATION OF LOUVER WALL OPENINGS AND DETAILS.
4. SHOWN SIZES OF EQUIPMENT MOUNTING PLATFORMS, CEILING AND WALL PENETRATIONS SHALL BE VERIFIED PRIOR TO FABRICATION OR ORDERING OF EQUIPMENT.
5. LOCATE ALL CONTROLS, PANELS, AND DISCONNECT SWITCHES APPROXIMATELY 4 FEET ABOVE FINISHED FLOOR. COORDINATE LOCATIONS WITH ELECTRICAL.
6. ALL DUCTWORK TO HAVE EQUIVALENT AREA UNLESS OTHERWISE SHOWN OR SPECIFIED. PROVIDE MOUNTING AND TRANSITIONS TO ALL EQUIPMENT AND ACCESSORIES AS NECESSARY AND AS RECOMMENDED BY MANUFACTURER.
7. EQUIPMENT MANUFACTURERS AND MODEL NUMBERS ARE PROVIDED FOR REFERENCE ONLY AND SHALL BE USED TO ESTABLISH EQUIPMENT SIZES AND REQUIRED PERFORMANCE. APPROVED EQUAL MANUFACTURES WILL BE ACCEPTED.

NO.	DATE	BY	REVISION

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

AMB DESIGNED
JLC DRAWN
EKS CHECKED

PETER BENEDICT CUNNINGHAM — STATE OF WASHINGTON — 46352 — REGISTERED PROFESSIONAL ENGINEER — 4/21/2023

consor

Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

HVAC SYMBOLS, ABBREVIATIONS AND SCHEDULES

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET H-1

SL-2
SL-1
SG-6
T1
T2
SG-1
16" DUCT
SG-2
CONTROLS ROOM
10" DUCT
SG-3
D
H-3
AHU-1
RG-1
HPU/AHU REFRIGERANT ROUTING (TYP)
AHU-2
16" DUCT
RG-2
SG-5
SG-4
E
H-3
C
H-3
PUMP & TREATMENT ROOM
T4
HPU-1
HPU-2
CONCRETE PAD
BOLLARD (TYP)
FLUORIDATION ROOM
B
H-3
RF-1, HEPA FILTRATION UNIT
SG-8
CONCRETE PAD
EG-3
AHU-4
HPU-3
EG-2
AHU-3
T3
DISINFECTION ROOM
SG-7
SL-3
A
H-3
EF-1
EG-1
EF-2
EL-1
EL-2

NOTES:

1. CHEMICAL ROOM EXHAUST GRATES BOTTOM LOCATED AT 4" ABOVE FINISHED FLOOR.

2. CONTROLS ROOM AND PUMP & TREATMENT ROOM AHUS MOUNTED ON FLOOR WITH DUCTING ALONG CEILING.

3. HPUS MOUNTED ON EQUIPMENT PADS AS SHOWN. ROUTE REFRIGERANT LINES IN EXPANDABLE LINESET COVERS ON EXTERIOR OF BUILDING.

4. ALL EXPOSED REFRIGERANT LINES (OUTSIDE OF HVAC EQUIPMENT) SHALL BE INSULATED. COORDINATE ROUTING OF REFRIGERANT LINES WITH OTHER DISCIPLINES. ROUTING MAY CHANGE TO AVOID CONFLICT WITH STRUCTURE AND EQUIPMENT

5. ROUTE AHU CONDENSATE PIPING TO SS DRAIN, COORDINATE WITH PLUMBING.

6. LOCATION OF AIR HANDLERS SHALL BE COORDINATED AND VERIFIED PRIOR TO INSTALLATION. LOCATION MAY CHANGE TO AVOID CONFLICT WITH OTHER EQUIPMENT.

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

NO.	DATE	BY	REVISION

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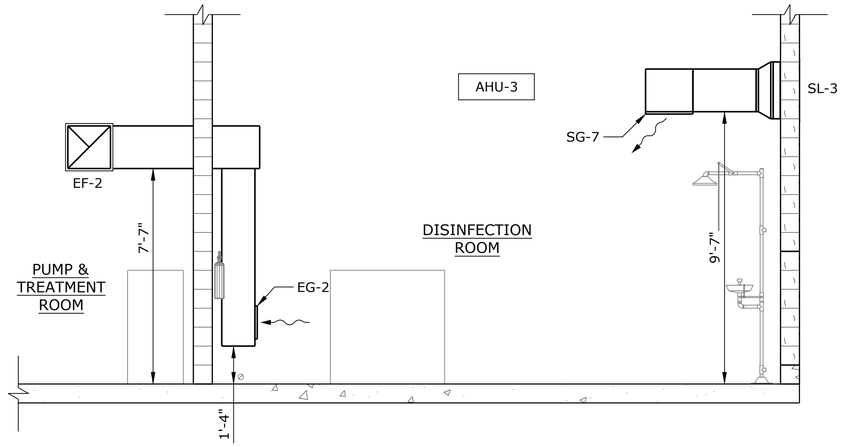
MCCORMICK WOODS - WELL NO. 11 SITE IMPROVEMENT PROJECT

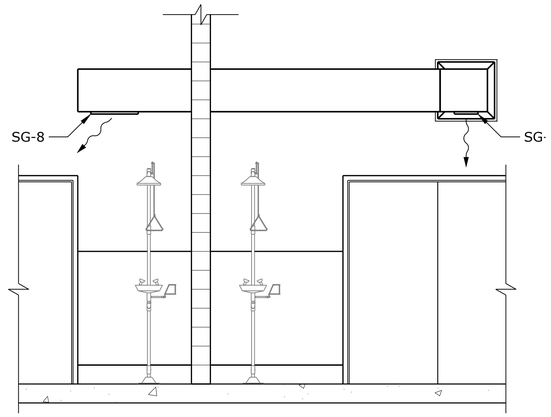
PUMP STATION HVAC PLAN

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

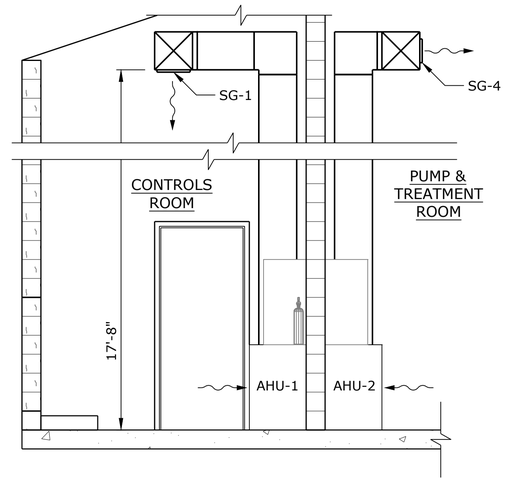
SHEET
H-2
46 of 69



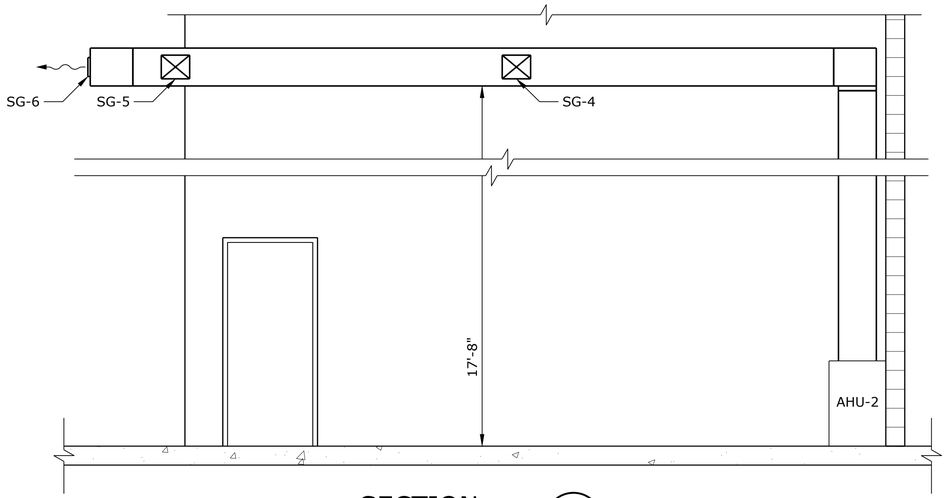
SECTION A H-2
SCALE: 3/8" = 1'-0"



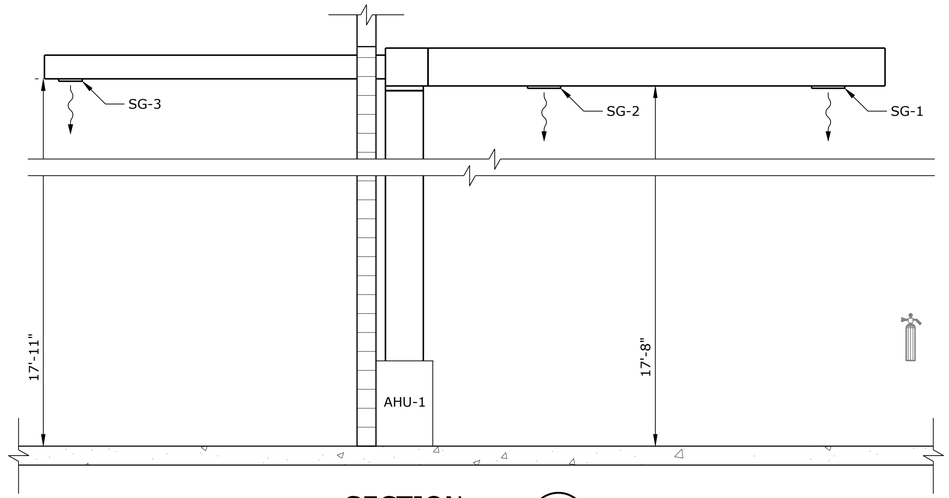
SECTION B H-2
SCALE: 3/8" = 1'-0"



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



SECTION D H-2
SCALE: 3/8" = 1'-0"



SECTION E H-2
SCALE: 3/8" = 1'-0"

NO.	DATE	BY	REVISION

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MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

PUMP STATION HVAC SECTIONS

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET H-3

GENERAL NOTES

1. ALL MATERIALS AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE LATEST NATIONAL ELECTRICAL CODE. INSTALLATION DRAWINGS, CONSTRUCTION SPECIFICATIONS AND LOCAL CODES. ALL MATERIALS SHALL BE NEW AND LISTED BY THE UNDERWRITERS' LABORATORY INC. (UL). ALL ELECTRICAL WORK SHALL BE INSTALLED IN A GOOD AND WORKMANLIKE MANNER.
2. REFER TO THE ELECTRICAL CIRCUIT SCHEDULE FOR CIRCUIT IDENTIFICATIONS, ROUTING, CONDUCTOR SIZES, ETC.
3. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER DISCIPLINES AS REQUIRED TO MITIGATE INTERFERENCES.
4. CONDUIT MATERIAL SHOWN ON ELECTRICAL PLANS ARE SPECIFIC FOR THE LOCATION WHERE THE CONDUIT STARTS. CONTRACTOR IS RESPONSIBLE FOR TRANSITIONING TO APPROVED CONDUIT MATERIAL BASED ON LOCATION AND IN ACCORDANCE TO ELECTRICAL SPECIFICATIONS.

SYMBOLS

NEW ELECTRICAL EQUIPMENT

EXISTING ELECTRICAL EQUIPMENT

EQUIPMENT TO BE DEMO'D OR REMOVED

SURFACE MOUNTED LED LUMINAIRE *

RECESSED MOUNTED LED LUMINAIRE *

WALL MOUNTED LED LUMINAIRE *

* SHADED LUMINAIRE INDICATES BATTERY BACKED UNIT

$ $3 — WALL SWITCH STANDARD TOGGLE, DESIGNATOR
3 = 3-WAY
D = DIMMER
T = TIMER

GFI — DUPLEX, QUADPLEX RECEPTACLE, W/DESIGNATOR
GFI = GROUND FAULT INTERRUPTING
WP = WEATHERPROOF
+48 = HEIGHT AFF.

M — METERBASE W/UTILITY METER

DISCONNECT RECEPTACLE AND PLUG

SPECIAL EQUIPMENT CONNECTION AS SHOWN

MOTOR CONNECTION, HORSEPOWER INDICATED

J J — JUNCTION BOX

20A 30A — DISCONNECT SWITCH, AMPERAGE RATING SHOWN

F 60/40 — FUSED DISCONNECT SWITCH, SWITCH AND FUSE RATING SHOWN
60/40 = 60A SWITCH WITH 40A FUSE

5A — FUSE, SIZE SHOWN

THERMAL MAGNETIC CIRCUIT BREAKER

30AC 150AT — MAGNETIC ONLY CIRCUIT BREAKER (MOTOR CIRCUITS ONLY) CONTINUOUS CURRENT RATING AND TRIP SETTINGS SHOWN

2 — MOTOR STARTER, SIZE SHOWN

VARIABLE FREQUENCY DRIVE

LINE OR LOAD REACTOR, IMPEDENCE SHOWN

T — TRANSFORMER

SPD — SURGE PROTECTIVE DEVICE

CURRENT TRANSFORMER

GROUND ROD

GROUND ROD TEST WELL

AUTOMATIC TRANSFER SWITCH

DOUBLE THROW SWITCH

GROUND CONNECTION PER NEC ARTICLE 250

CR — 120V CONTROL RELAY, DPDT MINIMUM

CR — 24VDC CONTROL RELAY, DPDT MINIMUM

RELAY CONTACT - NO, NC

PUSHBUTTON OR SWITCH CONTACT BLOCK - NO, NC

OFF HAND AUTO — THREE POSITION SWITCH

ON OFF — TWO POSITION SWITCH, KEYED

R R — PUSH-TO-TEST LED PILOT LIGHT

FLOAT SWITCH - NO, NC

TEMPERATURE SWITCH - NO, NC

LIMIT SWITCH - NO, NC

TIME DELAY CONTACTS, NORMALLY OPEN TIMED CLOSED NORMALLY CLOSED TIMED OPEN

ETM — ELAPSED TIME METER

CNT — COUNTER

TX — WALL MOUNTED THERMOSTAT

FU 1A — FUSED TERMINAL, SIZE SHOWN

FIELD TERMINAL

LOCAL TERMINAL OR LUG CONNECTION

S — SMOKE/HEAT DETECTOR

I — INTRUSION SWITCH

T — THERMOSTAT/TEMPERATURE TRANSMITTER

MD — MOTION DETECTOR/OCCUPANCY SENSOR

CONDUIT SEAL-OFF

CONDUIT CONCEALED UNDERFLOOR OR UNDERGROUND

CONDUIT CONCEALED IN WALL OR ABOVE CEILING IN FINISHED AREAS, EXPOSED IN PROCESS AND EQUIPMENT AREAS.

CONDUIT UP

CONDUIT DOWN

CONDUIT UP FROM UNDERGROUND RACEWAY

CONDUIT STUB

FLEXIBLE CONDUIT OR MFR CABLE

XXX — HOME RUN, ELECTRICAL PANEL DESTINATION SHOWN.

1. RUNS MARKED WITH CROSS-HATCHES INDICATE NUMBER OF NO.12 WIRE. LARGER GAUGES ARE SHOWN OR NOTED ELSEWHERE. LONG CROSS HATCH INDICATES NEUTRAL, SHORT INDICATES PHASE CONDUCTOR, SLANT INDICATES GROUND WIRE PER NEC ARTICLE 250.
2. FOR UNMARKED CONDUIT RUNS, CONTRACTOR SHALL INSTALL REQUIRED NUMBER OF WIRES FOR POWER AND/OR CONTROL OF ELEMENTS IN CIRCUIT(S) SHOWN. SIZE OF WIRE SHALL BE NO. 12, UNLESS OTHERWISE NOTED OR REQUIRED BY CODE.
3. SIZE CONDUIT ACCORDING TO SPECIFICATIONS AND APPLICABLE CODE.
4. DASHED LINE INDICATE CONDUITS CONCEALED UNDERGROUND OR UNDERFLOOR.
5. SOLID HOME RUN INDICATES CONDUIT ABOVE CEILING IN FINISHED AREA, CONCEALED IN WALL OR EXPOSED IN PROCESS AND EQUIPMENT AREAS.

P1 — ELECTRICAL CIRCUIT IDENTIFICATION

P1 P2 / C1 C2 — MULTIPLE ELECTRICAL CIRCUITS, SEPARATE CONDUITS

1"C P1 P2 / P3 P4 — MULTIPLE ELECTRICAL CIRCUITS, COMMON CONDUIT (SIZE SHOWN)

SIMPLEX RECEPTACLE

RECEPTACLE

FAN

ABBREVIATIONS

a	CIRCUIT BREAKER AUX. CONTACT, CLOSED WHEN BREAKER IS CLOSED
A	AMMETER, AMPERES
AC	ALTERNATING CURRENT
A/D	ANALOG TO DIGITAL
AF	AMPERE FRAME
AFE	ACTIVE FRONT END (VFD)
AIC	AMPERES INTERRUPTING CAPACITY
ALT	ALTERNATOR
A/M	AUTO/MANUAL CONTROLLER
ANN	ANNUNCIATOR
AS	AMMETER SWITCH
ASD	ADJUSTABLE SPEED DRIVE
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AWG	AMERICAN WIRE GAGE
b	CIRCUIT BREAKER AUX. CONTACT, CLOSED WHEN BREAKER IS OPEN
BCG	BARE COPPER GROUND
C	CONDUIT, CONTACTOR
CAP	CAPACITOR
CB	CIRCUIT BREAKER
CC	CONTROL CABLE, CLOSING COIL
CHH	COMMUNICATION HANDHOLE
CL	CHLORINE
CKT	CIRCUIT
CMH	COMMUNICATION MANHOLE
CO	CONDUIT ONLY
COMM	COMMUNICATION
CON	CONTACTOR
COND	CONDUCTOR
CONT	CONTINUED, CONTINUATION
CPT	CONTROL POWER TRANSFORMER
CP	CONTROL PANEL
CR	CONTROL RELAY
CS	CONTROL SWITCH
CT	CURRENT TRANSFORMER
CWP	COLD WATER PIPE
DC	DIRECT CURRENT
DIAG	DIAGRAM
DISC	DISCONNECT
DISTR	DISTRIBUTION
DP	DISTRIBUTION PANEL
DPDT	DOUBLE POLE, DOUBLE THROW
DPST	DOUBLE POLE, SINGLE THROW
(E)	EXISTING
EF	EXHAUST FAN
EHH	ELECTRICAL HANDHOLE
ELEM	ELEMENTARY
EMERG	EMERGENCY
EFFL	EFFLUENT
EQ	EQUAL
EQUIP	EQUIPMENT
ETM	ELAPSED TIME METER
FACP	FIRE ALARM CONTROL PANEL
FIN FL	FINISHED FLOOR
FLEX	FLEXIBLE
FLUOR	FLUORESCENT
FO	FIBER OPTIC
FREQ	FREQUENCY
FU	FUSE
FUT	FUTURE
FVNR	FULL VOLTAGE, NON REVERSING
FVR	FULL VOLTAGE, REVERSING
FWD	FORWARD
GA	GAUGE
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTER
GRS	GALVANIZED RIGID STEEL
H_2O_2	HYDROGEN PEROXIDE
HMI	HUMAN MACHINE INTERFACE
HOA	HAND-OFF-AUTOMATIC
HOR	HAND-OFF-REMOTE
HORZ	HORIZONTAL
HPS	HIGH PRESSURE SODIUM
HTR	HEATER
HV	HIGH VOLTAGE
HZ	HERTZ (CYCLES PER SECOND)
IND LT	INDICATING LIGHT
INCAND	INCANDESCENT
I/O	INPUT/OUTPUT
JB	JUNCTION BOX
KA	KILOAMPERES
KCMIL	THOUSANDS OF CIRCULAR MILS
KV	KILOVOLTS
KVA	KILOVOLT AMPERES
KVAR	KILOVOLT AMPERES REACTIVE
KVARH	KILOVOLT AMPERES REACTIVE HOURS
KW	KILOWATTS
KWH	KILOWATT HOURS
LCP	LIGHTING CONTROL PANEL
LP	LIGHTING PANEL
LPS	LOW PRESSURE SODIUM
LTG	LIGHTING
LT(S)	LIGHT(S)
(M)	MODIFIED
Ma	MILLIAMPERES
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MOV	MOTOR OPERATED VALVE
MS	MOTOR STARTER
MTD	MOUNTED
MTG	MOUNTING
MTS	MANUAL TRANSFER SWITCH
(N)	NEW
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOC.
NEUT	NEUTRAL
NO	NORMALLY OPEN, NUMBER
NTS	NOT TO SCALE
OVHD	OVERHEAD
OL	THERMAL OVERLOAD RELAY
OT	OVER TEMPERATURE
PB	PULLBOX, PUSHBUTTON
PD	POSITIVE DISPLACEMENT
PE	PHOTOELECTRIC
PEC	PHOTOELECTRIC CELL
PF	POWER FACTOR
pH	MEASURE OF ACIDITY OR ALKALINITY
PH	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PM	POWER MONITOR
PNL	PANEL
PNLBD	PANELBOARD
PRI	PRIMARY
PS	PRESSURE SWITCH
PSI	POUNDS PER SQUARE INCH
PWR	POWER
(RL)	RELOCATE
(RLD)	RELOCATED
RCPT	RECEPTACLE
RCT	REPEAT CYCLE TIMER
RPM	REVOLUTIONS PER MINUTE
RT	RESET TIMER
SCR	SILICON CONTROLLED RECTIFIER
SD	SMOKE DETECTOR
SDBC	SOFT-DRAWN BARE COPPER
SEC	SECONDS, SECONDARY
SECT	SECTION
SF	SUPPLY FAN
SHH	SIGNAL HANDHOLE
SIG	SIGNAL
SN	SOLID NEUTRAL
SPEC	SPECIFICATIONS
SPD	SURGE PROTECTIVE DEVICE
SPDT	SINGLE POLE, DOUBLE THROW
SS	STAINLESS STEEL, SOLID
SW	STATE SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYNC	SYNCHRONIZING TERMINAL
TB	BOX, TERMINAL BOARD
TC	TELEPHONE CABINET
TEMP	TEMPERATURE
TP	TWISTED PAIR UNSHIELDED
TSP	TWISTED SHIELDED PAIR
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
UH	UNIT HEATER
UV	ULTRA VIOLET
V	VOLTS
VA	VOLT-AMPERES
VFD	VARIABLE FREQUENCY DRIVE
VAR	VOLT AMPERES REACTIVE
VERT	VERTICAL
VH	VAR-HOUR
VS	VOLTMETER SWITCH
W	WIRE, WATTS
WHM	WATTHOUR METER
WHDM	WATTHOUR DEMAND METER
WP	WEATHERPROOF
WTRT	WATERTIGHT
WTP	WATER TREATMENT PLANT
XDCR	TRANSDUCER
XMTR	TRANSMITTER

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OR CCB #196597 WA #INDUSSI880K9
AK #1018436
PROJECT#: 21.55.01

NO.	DATE	BY	REVISION

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

MWA DESIGNED
AAB DRAWN
TBC CHECKED

MICHAEL EZRA WALLIS — STATE OF WASHINGTON — 57964 — REGISTERED PROFESSIONAL ENGINEER — 4/21/23

consor

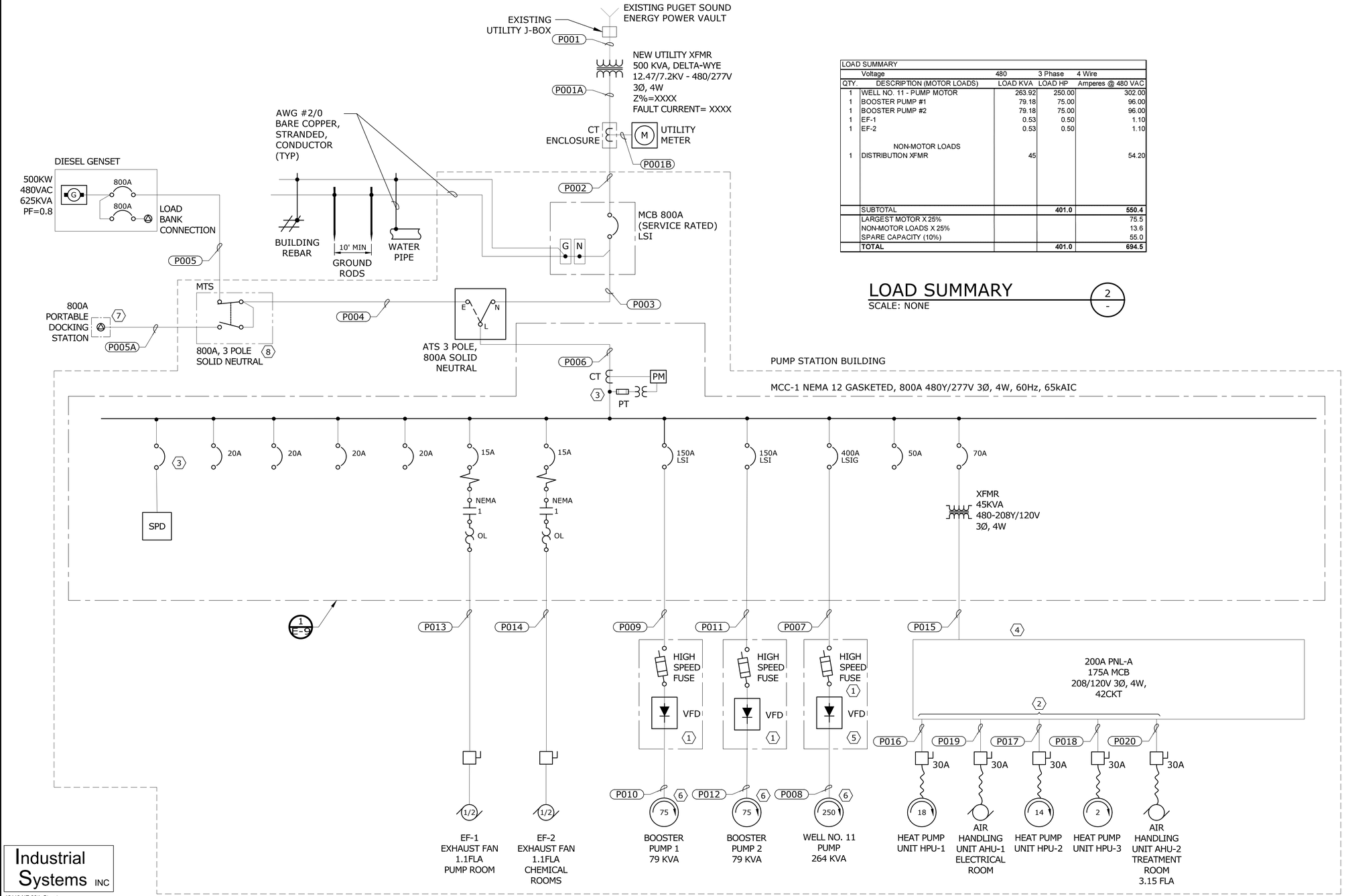
Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS
WELL NO. 11
AMENDMENT 2

ELECTRICAL
LEGEND, SYMBOLS AND ABBREVIATIONS

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET E-1



LOAD SUMMARY

Voltage		480	3 Phase	4 Wire
QTY.	DESCRIPTION (MOTOR LOADS)	LOAD KVA	LOAD HP	Amperes @ 480 VAC
1	WELL NO. 11 - PUMP MOTOR	263.92	250.00	302.00
1	BOOSTER PUMP #1	79.18	75.00	96.00
1	BOOSTER PUMP #2	79.18	75.00	96.00
1	EF-1	0.53	0.50	1.10
1	EF-2	0.53	0.50	1.10
	NON-MOTOR LOADS			
1	DISTRIBUTION XFMR	45		54.20
	SUBTOTAL		**401.0**	**550.4**
	LARGEST MOTOR X 25%			75.5
	NON-MOTOR LOADS X 25%			13.6
	SPARE CAPACITY (10%)			55.0
	TOTAL		**401.0**	**694.5**

LOAD SUMMARY

SCALE: NONE

2 / -

GENERAL NOTES:

1. ONE-LINE DIAGRAM IS STRICTLY DIAGRAMMATIC. ARRANGEMENT OF EQUIPMENT IN MCC SECTIONS IS PER THE MANUFACTURER'S RECOMMENDATIONS.
2. COORDINATE SERVICE WITH PUGET SOUND ENERGY (PSE). CONTRACTOR TO COMPLY WITH ALL THE REQUIREMENTS OF PSE, REFERENCE THE LATEST EDITION OF "ELECTRICAL SERVICE HANDBOOK". REVIEW THIS DOCUMENT PRIOR TO BID AND INCLUDE ALL ASSOCIATED COSTS IN BID PRICE FOR A COMPLETE OPERABLE SYSTEM. CONTRACTOR TO VERIFY NEW UTILITY TRANSFORMER INFORMATION WITH PSE.

UTILITY CONTACT INFORMATION:
CONTACT: JAMIE SILVERSON
PHONE: (360) 353-6005
EMAIL: JAMIE.SILVERSON@PSE.COM
REF#: 513333693

KEY NOTES:

1. VFD'S FOR WELL NO. 11 AND BOOSTER PUMPS SHALL BE IGBT BASED ACTIVE FRONT END VFD'S. SEE SPECIFICATION SECTION 26 29 24. SEE E-9 FOR VFD CONTROL DIAGRAMS.
2. COORDINATE CIRCUIT BREAKER SIZING WITH HVAC EQUIPMENT SUPPLIER.
3. OVERCURRENT PROTECTIVE DEVICES FOR SURGE PROTECTION DEVICE (SPD) AND POWER MONITORING (PM) SHALL BE SIZED BY EQUIPMENT MANUFACTURER.
4. SEE SHEET E-7 FOR PANEL SCHEDULE.
5. VFD FOR WELL NO. 11 PUMP SHALL INCLUDE A DVDT FILTER
6. CABLE FROM VFD TO PUMP SHALL BE SHIELDED VFD CABLE. SEE CIRCUIT SCHEDULE ON SHEET E-6 FOR MORE DETAILS.
7. PORTABLE GENERATOR CONNECTION SHALL USE DUAL 400A SERIES 16 CAMLOCK CONNECTORS ESL 3680 SERIES OR APPROVED EQUAL.
8. MTS SHALL BE HEAVY DUTY DOUBLE THROW SAFETY SWITCH.
   *LABEL MTS UP POSITION AS "ONSITE GENERATOR",
   *MIDDLE POSITION AS "OFF",
   *DOWN POSITION AS "PORTABLE GENERATOR".

ONE-LINE DIAGRAM

SCALE: NONE

1 / -

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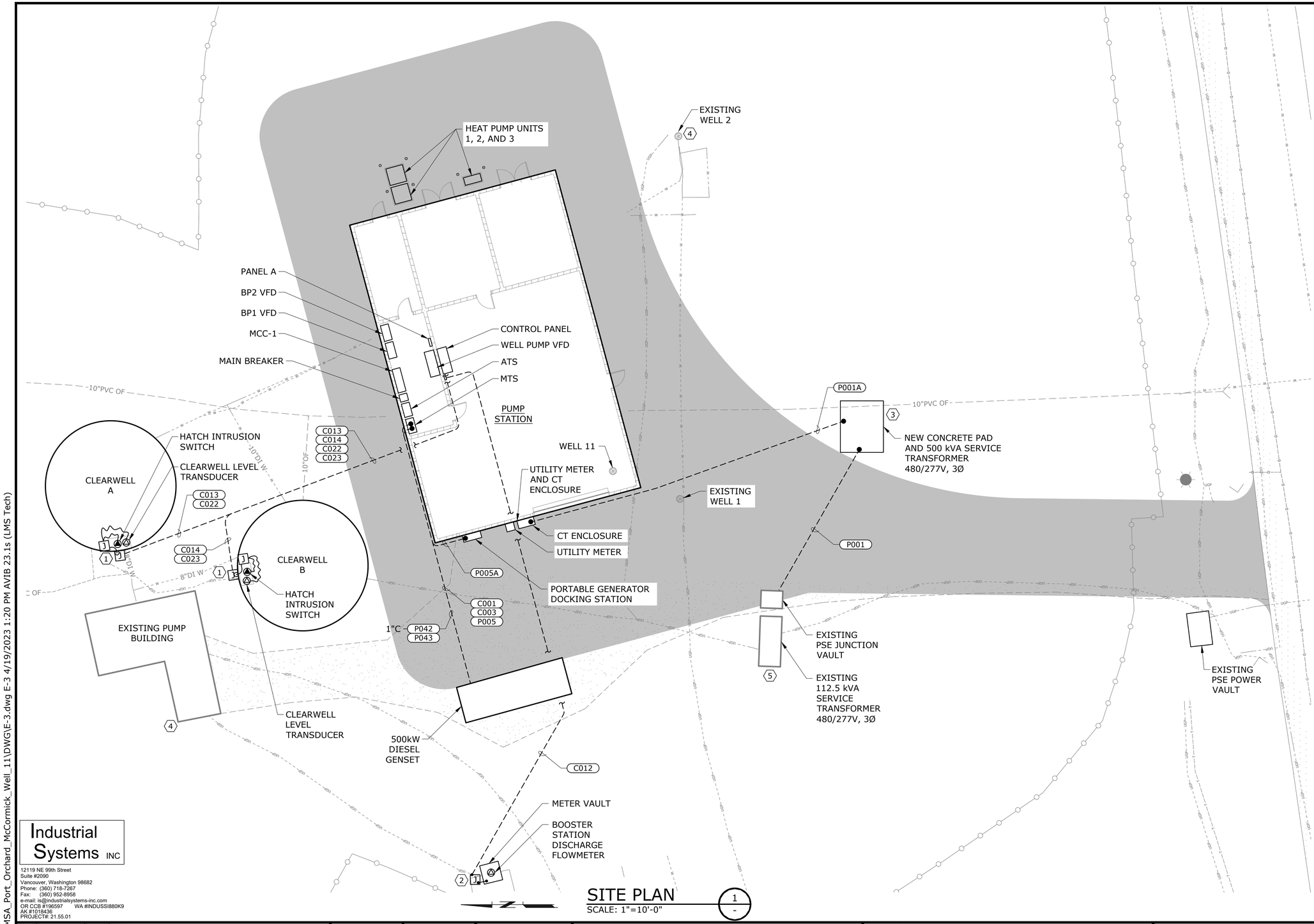
Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS
WELL NO. 11
AMENDMENT 2

ELECTRICAL
ONE LINE DIAGRAM
AND LOAD CALCULATION

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET E-2



KEY NOTES:

1. REUSE EXISTING JUNCTION BOX ON CLEARWELL WALLS FOR CLEARWELL LEVEL INSTRUMENTS, SIGNALS.
2. CONNECT TO BOOSTER DISCHARGE FLOWMETER IN METER VAULT VIA EXISTING JUNCTION BOX.
3. CONTRACTOR SHALL COORDINATE WITH PSE TO PROVIDE NEW SERVICE TRANSFORMER, TRANSFORMER PAD, CONNECTION TO EXISTING PRIMARY, AND ALL REQUIRED EQUIPMENTS AND INSTALLATIONS TO FACILITATE THE NEW SERVICE.
4. COORDINATE WITH PUD TO PROVIDE TEMPORARY POWER TO EXISTING PUMP HOUSE AND WELL 2.
5. EXISTING SERVICE TRANSFORMER TO REMAIN IN SERVICE.

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MQH DESIGNED
JLB DRAWN
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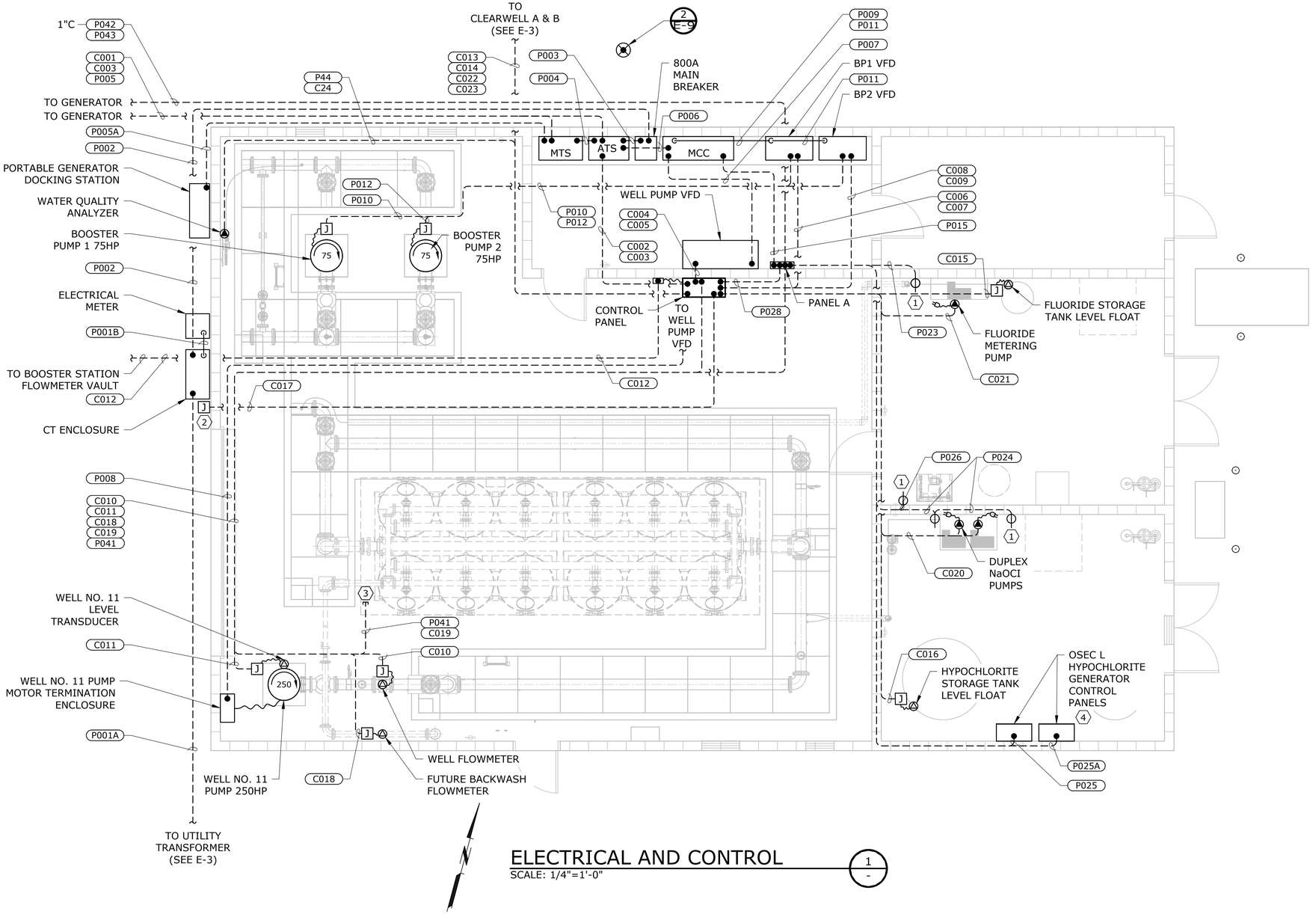
CITY OF PORT ORCHARD
MCCORMICK WOODS
WELL NO. 11
AMENDMENT 2

ELECTRICAL
SITE PLAN

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET
E-3
50 of 65

P:\Projects\21.55.01_MSA_Port_Orchard_McCormick_Well_11\DWG\E-3.dwg E-3 4/19/2023 1:20 PM AVIB 23.1s (LMS Tech)



KEY NOTES:

1. DEDICATED SIMPLEX RECEPTACLES FOR CHEMICAL EQUIPMENT.
2. MOUNT ANTENNA ON BUILDING EVE WITH 2" ANTENNA MOUNTING KIT. EXTEND ANTENNA MAST 5'-0" ABOVE HIGH POINT OF ROOF OR AS DIRECTED BY SYSTEM INTEGRATOR TO ENSURE ADEQUATE COMMUNICATIONS.
3. STUB CONDUITS 6 INCHES ABOVE FINISHED FLOOR AND CAP.
4. COORDINATE WIRING TERMINATIONS INSIDE CONTROL PANELS WITH EQUIPMENT VENDOR.

ELECTRICAL AND CONTROL

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

1 / -

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Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS
WELL NO. 11
AMENDMENT 2

ELECTRICAL AND CONTROL
PUMP STATION BUILDING PLAN

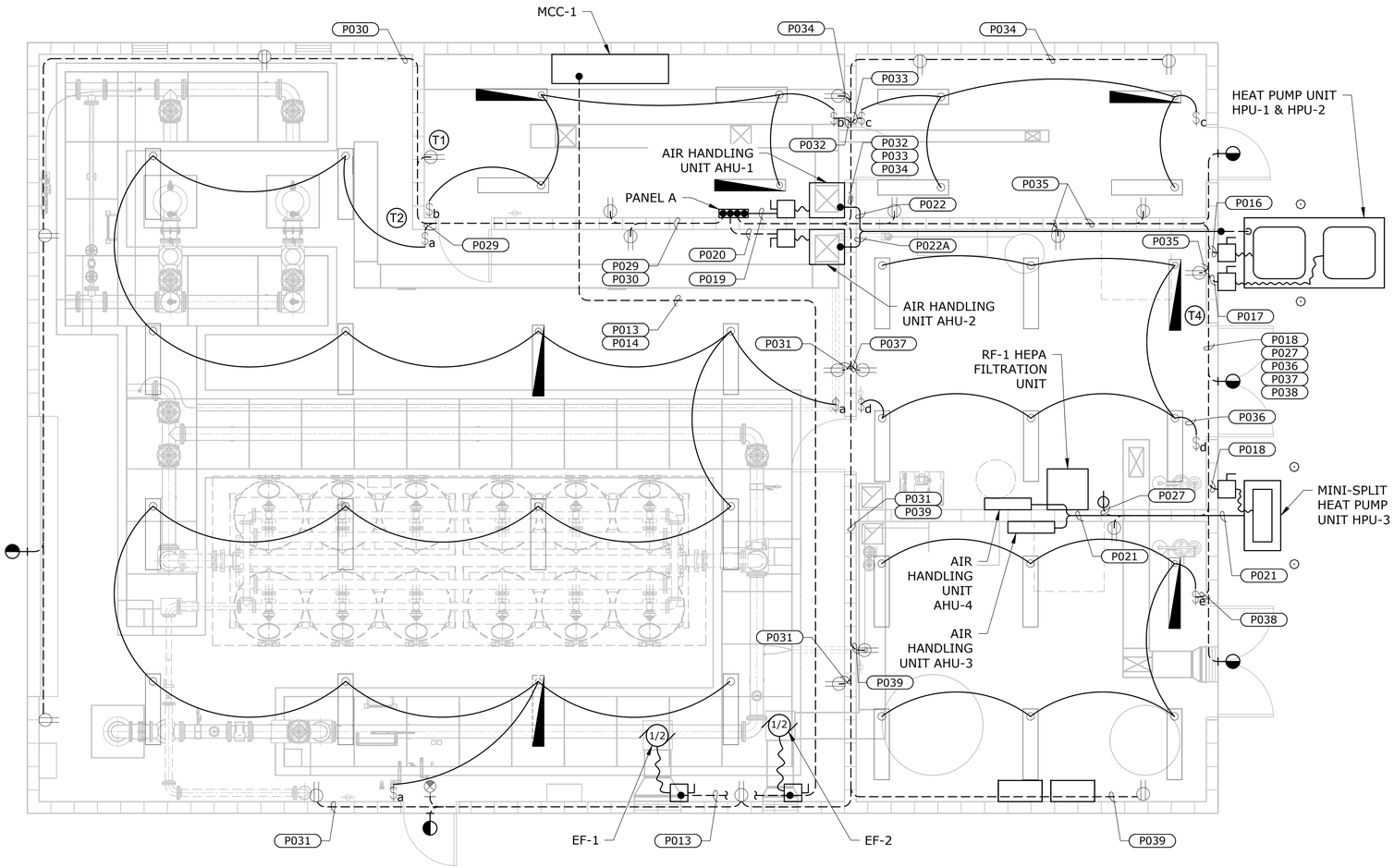
PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET

E-4

GENERAL NOTES:

1. PURSUANT TO WAC C405.2 LIGHTING CONTROLS LIST OF EXCEPTIONS, LIGHTING CONTROLS ARE NOT REQUIRED FOR AREAS OF THIS FACILITY WHERE SUCH CONTROL WOULD IMPACT PRODUCTION AND SAFETY.



LIGHT FIXTURE , LUMINAIRE AND RECEPTACLE SCHEDULE

DEVICE/LOCATION/USE	DESCRIPTION	VOLTS	WATTS	SUGGESTED MANUFACTURER & CATALOG NUMBER
BUILDING INTERIOR LIGHT	6000 LUMEN LED LUMINAIRE FEM SERIES 48"	120V	37.5	LITHONIA FEM L48 6000LM LPACL MD 120 GZ10 40K 80CRI OR EQUAL
BUILDING INTERIOR LIGHT, BATTERY BACKED	6000 LUMEN LED LUMINAIRE FEM SERIES 48" WITH BUILT IN BATTERY BACKUP	120V	37.5	LITHONIA FEM L48 6000LM LPACL MD 120 GZ10 40K 80CRI BE6WCP OR EQUAL
WALL MOUNT LUMINAIRE LED TYPE INTERIOR/EXTERIOR	3,132 LUMEN LED LUMINAIRE WALL PACK DESIGN WITH BATTERY BACKUP	120V	18	LITHONIA WDGE2 LED P3 40K 80CRI T2M 120 SRM PE E10WH DBLXD OR EQUAL
CEILING MOUNTED EXIT SIGN	SELF-CONTAINED BATTERY EMERGENCY EXIT LIGHT FIXTURE RED EXIT SIGN	120V	1.0	LITHONIA EXR LED EL M6 OR EQUAL
WALL MOUNTED EXIT SIGN	SELF-CONTAINED BATTERY EMERGENCY EXIT LIGHT FIXTURE RED EXIT SIGN WALL MOUNT	120V	1.0	LITHONIA EXR LED EL M6 OR EQUAL
GFCI RECEPTACLE	RECEPTACLE, 20A, 120V, MOUNTED IN UL LISTED HOUSING	120V	-	HUBBELL STD RECEPTACLE HBL5362W OR EQUAL HUBBELL GFCI RECEPTACLE GFR5362SGW OR EQUAL WHEATHERPROOF HOUSING HUBBELL MX-3200 OR EQUAL
$_a ON/OFF DIMMING SWITCH	NLIGHT ON/OFF RAISE/LOWER 3-WAY CAPABLE LIGHT SWITCH.	-	-	NLIGHT nPODMA DX
(P) OCCUPANCY SENSOR	LITHONIA OCCUPANCY SENSOR 452 FT^2	-	-	LITHONIA CMR 9 P 347

LIGHTING AND HVAC

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

1

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WELL NO. 11
AMENDMENT 2

LIGHTING AND HVAC
PUMP STATION BUILDING PLAN

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET

E-5

ALL CIRCUITS ARE IDENTIFIED ON THE PLANS WITH THE DIAMOND SYMBOL. CONDUCTOR SIZES ARE BASED ON COPPER CONDUCTORS. CONDUIT SIZES ARE SHOWN FOR CASES WHEN CIRCUIT CONDUCTORS ARE RUN WITHOUT OTHER CIRCUITS. MULTIPLE CIRCUITS RUN IN COMMON CONDUITS ARE SHOWN ON PLANS AND SUPERSEDE THE BASIC CONDUIT SIZE SHOWN.

RACEWAY SIZES ARE IN INCHES WITH QUANTITIES IN EXCESS OF (1) SHOWN IN ADJACENT PARENTHESIS. CONDUCTOR CONFIGURATIONS ARE CODED AS FOLLOWS: P- FOR POWER CONDUCTORS, G - FOR GROUND CONDUCTORS, N - FOR NEUTRAL CONDUCTORS, C - FOR CONTROL CONDUCTORS, AND SP - FOR SPARE CONDUCTORS.

CIRCUITS REVISED SINCE LAST ISSUE ARE INDICATED BY AN ASTERISK(*).

CIRCUIT NUMBER	FROM	TO	CONDUCTORS	RACEWAY	NOTES
P001	EXISTING UTILITY J-BOX	NEW UTILITY TRANSFORMER	PULL STRING	(3) 3"	NEW 800A SERVICE COORDINATE WITH PUGET SOUND ENERGY
P001A	NEW UTILITY TRANSFORMER	CT ENCLOSURE	PULL STRING	(3) 3"	COORDINATE WITH PUGET SOUND ENERGY
P001B	CT ENCLOSURE	ELECTRICAL METER	PULL STRING	1.25"	COORDINATE WITH PUGET SOUND ENERGY
P002	CT ENCLOSURE	800A MAIN BREAKER	(9) 300 KCMIL, P (3) 300 KCMIL, N	(3) 3"	
P003	800A MAIN BREAKER	AUTOMATIC TRANSFER SWITCH	(9) 300 KCMIL, P (3) 300 KCMIL, N (3) 2/0 AWG, G	(3) 3"	
P004	AUTOMATIC TRANSFER SWITCH	MANUAL TRANSFER SWITCH	(9) 300 KCMIL, P (3) 300 KCMIL, N (3) 2/0 AWG, G	(3) 3"	
P005	MANUAL TRANSFER SWITCH	GENERATOR	(9) 300 KCMIL, P (3) 300 KCMIL, N (3) 2/0 AWG, G	(3) 3"	
P005A	MANUAL TRANSFER SWITCH	PORTABLE GENERATOR DOCKING STATION	(9) 300 KCMIL, P (3) 300 KCMIL, N (3) 2/0 AWG, G	(3) 3"	
P006	AUTOMATIC TRANSFER SWITCH	MCC -1	(9) 300 KCMIL, P (3) 300 KCMIL, N (3) 2/0 AWG, G	(3) 3"	
P007	MCC -1	WELL NO. 11 PUMP VFD	(6) 3/0 KCMIL, P (2) #3 AWG, G	(2) 2.5"	
P008	WELL NO. 11 PUMP VFD	WELL NO. 11 PUMP 250HP	VFD CABLE	3.5"	BELDEN 29535 OR APPROVED EQUAL VIA MOTOR TERMINATION ENCLOSURE
P009	MCC -1	BOOSTER PUMP 1 VFD	(3) 1/0 AWG, P (1) #6 AWG, G	1.5"	
P010	BOOSTER PUMP 1 VFD	BOOSTER PUMP 1 - 75HP	VFD CABLE	2"	BELDEN 29528 OR APPROVED EQUAL
P011	MCC -1	BOOSTER PUMP 2 VFD	(3) 1/0 AWG, P (1) #6 AWG, G	1.5"	
P012	BOOSTER PUMP 2 VFD	BOOSTER PUMP 2 - 75HP	VFD CABLE	2"	BELDEN 29528 OR APPROVED EQUAL
P013	MCC -1	EXHAUST FAN, EF - 1	(3) #12 AWG, P (1) #12 AWG, G	3/4"	
P014	MCC -1	EXHAUST FAN, EF - 2	(3) #12 AWG, P (1) #12 AWG, G	3/4"	
P015	45 KVA TRANSFORMER	PANEL A	(3) 2/0 AWG, P (1) 2/0 AWG, N (1) #6 AWG, G	2"	
P016	PANEL A	HEAT PUMP HPU-1	(2) #10 AWG, P (1) #12 AWG, G	1"	VIA 30A LOCAL DISCONNECT
P017	PANEL A	HEAT PUMP HPU-2	(2) #10 AWG, P (1) #12 AWG, G	1"	VIA 30A LOCAL DISCONNECT
P018	PANEL A	HEAT PUMP HPU-3	(2) #10 AWG, P (1) #12 AWG, G	1"	VIA 30A LOCAL DISCONNECT
P019	PANEL A	AIR HANDLING UNIT AHU-1	(2) #12 AWG, P (1) #12 AWG, G	3/4"	VIA 30A LOCAL DISCONNECT
P020	PANEL A	AIR HANDLING UNIT AHU-2	(2) #12 AWG, P (1) #12 AWG, G	3/4"	VIA 30A LOCAL DISCONNECT
P021	HEAT PUMP HPU-3	AIR HANDLING UNIT AHU-3 AIR HANDLING UNIT AHU-4	(2) #12 AWG, P (2) #12 AWG, N (2) #12 AWG, G	1"	
P022	HEAT PUMP HPU-1	AIR HANDLING UNIT AHU-1	MANUFACTURER CABLE	1"	
P022A	HEAT PUMP HPU-2	AIR HANDLING UNIT AHU-2	MANUFACTURER CABLE	1"	
P023	PANEL A	FLUORIDE METERING PUMP	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	VIA DEDICATED RECEPTACLE
P024	PANEL A	DUPLEX CHLORINE METERING PUMPS	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	VIA DEDICATED RECEPTACLES
P025	PANEL A	HYPOCHLORITE GENERATOR SKID OSEC L UNIT1	(1) #10 AWG, P (1) #10 AWG, N (1) #10 AWG, G	3/4"	
P025A	PANEL A	HYPOCHLORITE GENERATOR SKID OSEC L UNIT2	(1) #10 AWG, P (1) #10 AWG, N (1) #10 AWG, G	3/4"	
P026	PANEL A	FUTURE PERMANGANATE METERING PUMP	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	VIA DEDICATED RECEPTACLE
P027	PANEL A	HEPA FILTRATION UNIT	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	VIA DEDICATED RECEPTACLE
P028	PANEL A	CONTROL PANEL	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	
P029	PANEL A	TREATMENT AREA LIGHTS	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	
P030	PANEL A	TREATMENT AREA WEST NORTH AND ELECTRICAL WEST, SOUTH RECEPTACLES	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	
P031	PANEL A	TREATMENT AREA EAST AND SOUTH RECEPTACLES	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	
P032	PANEL A	ELECTRICAL ROOM LIGHTS	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	
P033	PANEL A	STORAGE ROOM LIGHTS	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	
P034	PANEL A	ELECTRICAL ROOM EAST AND STORAGE ROOM NORTH RECEPTACLES	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	
P035	PANEL A	STORAGE SOUTH, FLUORIDE ROOM NORTH AND EAST RECEPTACLES	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	
P036	PANEL A	FLUORIDE ROOM LIGHTS	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	
P037	PANEL A	FLUORIDE ROOM WEST AND SOUTH RECEPTACLES	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	
P038	PANEL A	HYPOCHLORITE ROOM LIGHTS	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	
P039	PANEL A	HYPOCHLORITE ROOM RECEPTACLES	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	
P040	PANEL A	EXTERIOR BUILDING LIGHTS	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	
P041	PANEL A	FUTURE BACKWASH FLOW CONTROL VALVE	PULL STRING	1"	STUB AND CAP FOR FUTURE FLOWMETER
P042	PANEL A	GENERATOR BLOCK HEATER	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	
P043	PANEL A	GENERATOR BATTERY CHARGER	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	
P044	CONTROL PANEL	WATER QUALITY ANALYZER	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	

C001	AUTOMATIC TRANSFER SWITCH	GENERATOR	(2) #14 AWG, C (2) #14 AWG, SP (1) #14 AWG, G	3/4"	GENSET ENGINE START SIGNAL
C002	CONTROL PANEL	AUTOMATIC TRANSFER SWITCH	(3) #14 AWG, C (4) #14 AWG, SP (1) #14 AWG, G	3/4"	ATS EMERGENCY POWER ATS NORMAL POWER
C003	CONTROL PANEL	GENERATOR	(3) #14 AWG, C (4) #14 AWG, SP (1) #14 AWG, G	3/4"	GENERATOR RUNNING GENERATOR TROUBLE ROUTE VIA ATS
C004	CONTROL PANEL	WELL NO. 11 PUMP VFD	(10) #14 AWG, C (4) #14 AWG, SP (1) #14 AWG, G	1"	VFD CONTROL & STATUS
C005	CONTROL PANEL	WELL NO. 11 PUMP VFD	(1) CAT6 (2) TSP #18 AWG, C	3/4"	ETHERNET/IP COMMUNICATION VFD REMOTE SPEED REFERENCE VFD SPEED FEEDBACK
C006	CONTROL PANEL	BOOSTER PUMP 1 VFD	(10) #14 AWG, C (4) #14 AWG, SP (1) #14 AWG, G	1"	VFD CONTROL & STATUS
C007	CONTROL PANEL	BOOSTER PUMP 1 VFD	(1) CAT6 (2) TSP #18 AWG, C	3/4"	ETHERNET/IP COMMUNICATION VFD REMOTE SPEED REFERENCE VFD SPEED FEEDBACK
C008	CONTROL PANEL	BOOSTER PUMP 2 VFD	(10) #14 AWG, C (4) #14 AWG, SP (1) #14 AWG, G	1"	VFD CONTROL & STATUS
C009	CONTROL PANEL	BOOSTER PUMP 2 VFD	(1) CAT6 (2) TSP #18 AWG, C	3/4"	ETHERNET/IP COMMUNICATION VFD REMOTE SPEED REFERENCE VFD SPEED FEEDBACK
C010	CONTROL PANEL	WELL FLOWMETER TRANSMITTER	(2) #14 AWG, P (4) #14 AWG, C (1) #14 AWG, G (1) TSP #18 AWG, C	1"	WELL FLOW TOTALIZER PULSE
C011	CONTROL PANEL	WELL LEVEL TRANSDUCER	(1) TSP #18 AWG, C	1"	WELL LEVEL
C012	CONTROL PANEL	BOOSTER DISCHARGE FLOWMETER	(2) #14 AWG, P (4) #14 AWG, C (1) #14 AWG, G (1) TSP #18 AWG, C	1"	VIA REMOTE FLOW TRANSMITTER
C013	CONTROL PANEL	CLEARWELL A LEVEL TRANSDUCER	(2) #14 AWG, P (1) TSP #18 AWG, C (1) #14 AWG, G	3/4"	
C014	CONTROL PANEL	CLEARWELL B LEVEL TRANSDUCER	(2) #14 AWG, P (1) TSP #18 AWG, C (1) #14 AWG, G	3/4"	
C015	CONTROL PANEL	FLUORIDE STORAGE TANK LEVEL TRANSDUCER	(2) #14 AWG, P (1) TSP #18 AWG, C (1) #14 AWG, G	3/4"	
C016	CONTROL PANEL	HYPOCHLORITE STORAGE TANK LEVEL TRANSDUCER	(2) #14 AWG, P (1) TSP #18 AWG, C (1) #14 AWG, G	3/4"	
C017	CONTROL PANEL	ANTENNA MAST	ANTENNA COAX CABLES	2"	
C018	CONTROL PANEL	FUTURE BACKWASH FLOWMETER	PULL STRING	1"	TERMINATE AT J-BOX
C019	CONTROL PANEL	FUTURE BACKWASH FLOW CONTROL VALVE	PULL STRING	1"	STUB AND CAP FOR FUTURE FLOWMETER
C020	CONTROL PANEL	EXISINT NaClO DUPLEX PUMPS	(4) #14 AWG, C (2) TSP #18 AWG, C (1) #14 AWG, G	3/4"	START/STOP CMD DOSING SPEED CONTROL TYP. 2
C021	CONTROL PANEL	FLUORIDE PUMP	(2) #14 AWG, C (2) TSP #18 AWG, C (1) #14 AWG, G	3/4"	START/STOP CMD DOSING SPEED CONTROL
C022	CONTROL PANEL	CLEARWELL A HATCH INTRUSION SWITCH	(2) #14 AWG, P (1) #14 AWG, G	3/4"	
C023	CONTROL PANEL	CLEARWELL B HATCH INTRUSION SWITCH	(2) #14 AWG, P (1) #14 AWG, G	3/4"	
C024	CONTROL PANEL	WATER QUALITY ANALYZER	(3) TSP #18 AWG, C (1) TSP #18 AWG, SP (2) #14 AWG, SP	1"	PH, RESIDUAL CHLORINE, FLUORIDE SPARE

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AK #1018436
PROJECT#: 21.55.01

CIRCUIT SCHEDULES

SCALE: NTS

1 / -

NO.	DATE	BY	REVISION

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

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CITY OF PORT ORCHARD
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WELL NO. 11
AMENDMENT 2

ELECTRICAL SCHEDULES, 1

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

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KEY NOTES:

(1) COORDINATE CIRCUIT BREAKER SIZING WITH HVAC EQUIPMENT SUPPLIER.

PANEL: PNL-A	VOLTAGE: 208/120V, 1PH, 3 WIRE	MOUNTING: WALL
LOCATION: WELL 11 BLDG	BUS: 125A COPPER	AIC: 10,000
FEEDER: MCC-1	MAIN: 125A	

CKT NO	CIRCUIT DESCRIPTION	BREAKER POLES	BREAKER AMPS	LOAD VA	PHASE	LOAD VA	BREAKER POLES	BREAKER AMPS	CIRCUIT DESCRIPTION	CKT NO	
1	LIGHTING - TREATMENT ROOM	1	20	525	A	225	1	20	LIGHTING - FLUORIDATION ROOM	2	
3	LIGHTING - ELECTRICAL ROOM	1	20	150	B	225	1	20	LIGHTING - DISINFECTION ROOM	4	
5	LIGHTING - STORAGE ROOM	1	20	150	C	90	1	20	LIGHTING - EXTERIOR	6	
7	CHLORINE GENERATOR - UNIT 1	1	30	1800	A				SPARE	8	
9	RECEPTACLES - TREATMENT WEST/NORTH ELECTRICAL WEST	1	20	180	B	180	1	20	RECEPTACLES - TREATMENT EAST/SOUTH GFCI	10	
11	RECEPTACLES - ELECTRICAL EAST/SOUTH, STORAGE NORTH	1	20	180	C	1200	1	30	HEPA FILTRATION UNIT RF-1	12	(1)
13	FUTURE PERMANGANATE DOSING PUMP	1	20	180	A	1200				14	
15	FLUORIDE DOSING PUMP	1	20	180	B	120	1	20	RECEPTACLES - STORAGE SOUTH, FLUORIDE NORTH, EAST (	16	
17	CONTROL PANEL CP-1	1	20	1440	C	180	1	20	RECEPTACLES -FLUORIDE WEST, SOUTH GFCI	18	
19	SPARE				A	3099	2	30	HEAT PUMP HPU-2	20	(1)
(1) 21	HEAT PUMP HPU-1	2	40	3099	B	3099				22	
23				3099	C				SPARE	24	
25	RECEPTACLES - HYPOCHLORITE ROOM, GFCI	1	20	180	A	692	2	20	AIR HANDLING UNIT AHU-1	26	(1)
27	CHLORINE DOSING PUMP	1	20	180	B	692				28	
(1) 29	HEAT PUMP HPU-3	2	30	1466	C	328	2	20	AIR HANDLING UNIT AHU-2	30	(1)
31				1466	A	328				32	
33	GENERATOR BATTERY CHARGER	1	20	720	B	1800	1	30	CHLORINE GENERATOR - UNIT 2	34	
35	GENERATOR BLOCK HEATER	1	20	1000	C				SPARE	36	
37	CHLORINE GENERATOR - UNIT 1				A					38	
39					B					40	
41					C					42	

LOAD PER PHASE

PHASE A	9.7	KVA
PHASE B	10.6	KVA
PHASE C	9.1	KVA

AMPS PER PHASE

PHASE A	80.79
PHASE B	88.54
PHASE C	76.11

TOTAL LOAD	29.5	KVA
TOTAL AMPS	82	AMPS

PANEL A - SCHEDULE (1)

SCALE: NTS

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ELECTRICAL SCHEDULES, 2

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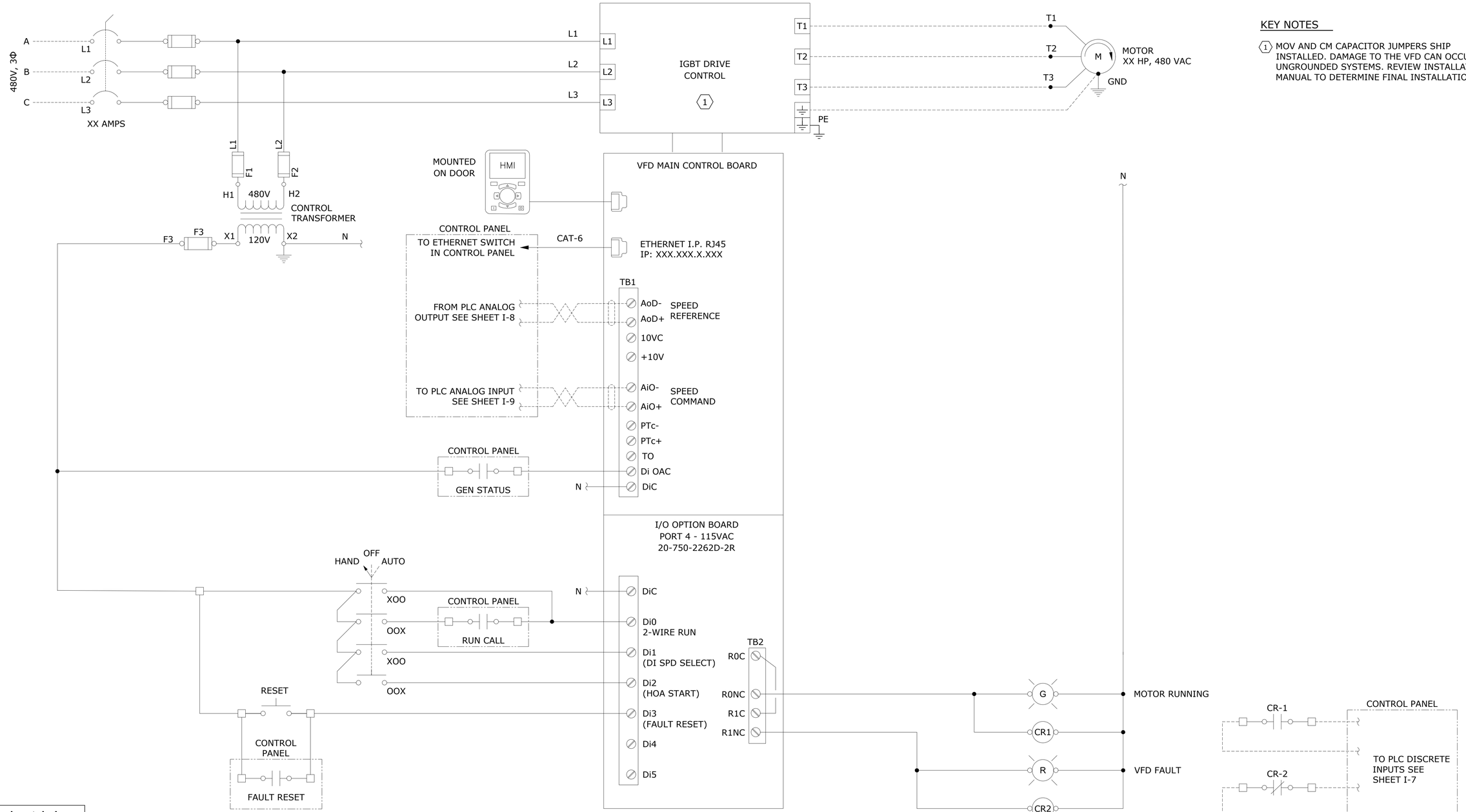
SHEET E-7



VFD WIRING DIAGRAM - WELL & BOOSTER PUMPS (TYP. 3) 1/-

SCALE: NONE

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ELECTRICAL
MOTOR CONTROL DIAGRAMS

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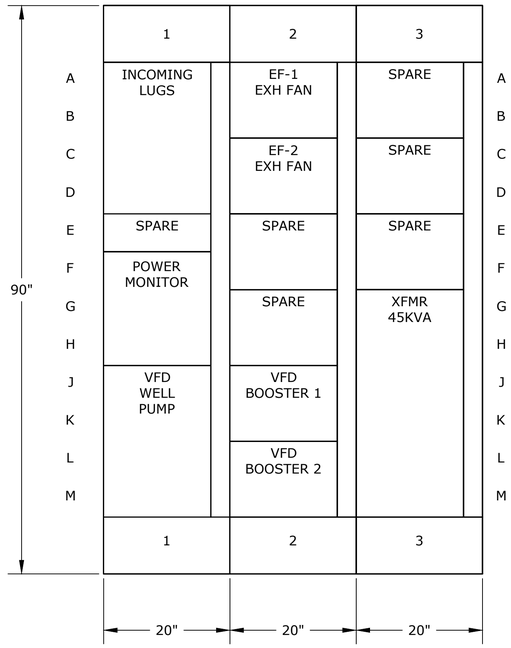
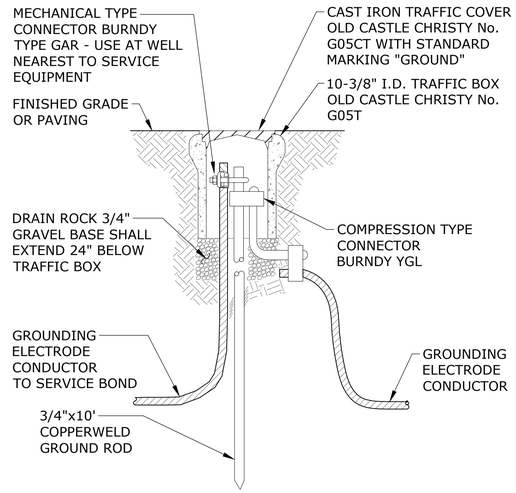


MCC-1 ELEVATION

SCALE: 1"=1'-0"

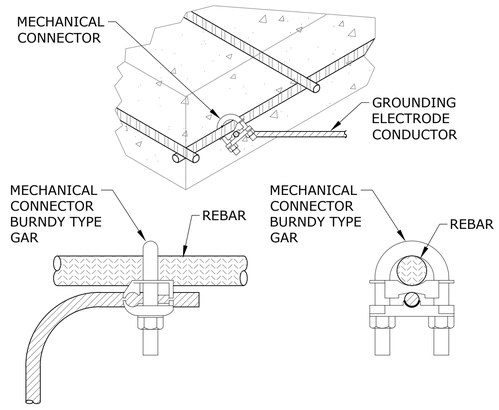
1 / -



GROUND ROD TEST WELL

SCALE: NONE

2 / -



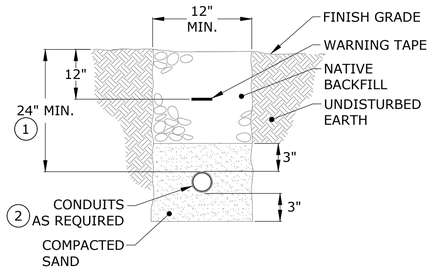
REBAR GROUNDING

SCALE: NONE

3 / -

DETAIL NOTES

1. VERIFY TRENCH DEPTH AND COVERING FOR INCOMING SERVICE CONDUIT WITH LOCAL UTLITY.
2. COORDINATE WITH CIVIL DISCIPLINE FOR INTERSECTING PIPES.



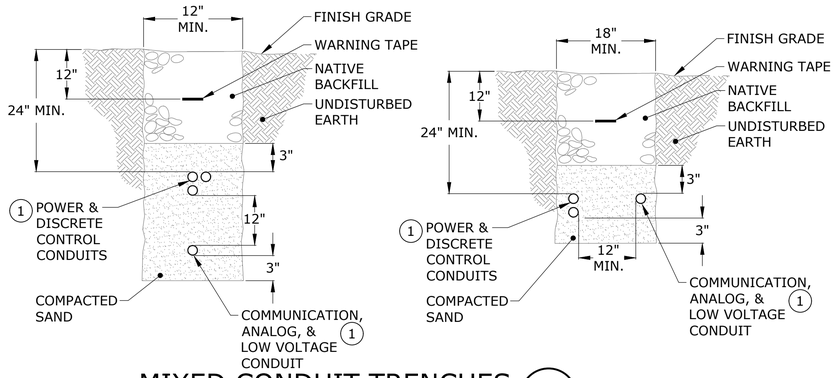
TYP. CONDUIT TRENCH

SCALE: NONE

4 / -

DETAIL NOTES

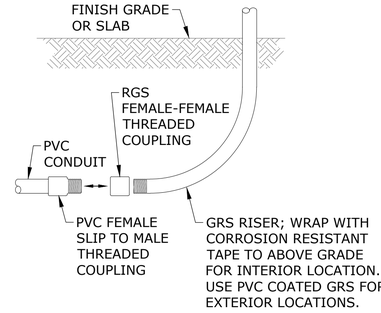
1. COORDINATE WITH CIVIL DISCIPLINE FOR INTERSECTING PIPES.



MIXED CONDUIT TRENCHES

SCALE: NONE

5 / -



CONDUIT TRANSITION

SCALE: NONE

6 / -

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ELECTRICAL
ELEVATIONS AND DETAILS

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

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GENERAL INSTRUMENT SYMBOLS

LOCATION/ACCESSIBILITY	DISCRETE INSTRUMENTS	SHARED DISPLAY AND CONTROL (DCS)	PLC	DISCRETE HARDWARE INTERLOCK
FIELD MOUNTED 1. FIELD OR LOCALLY MOUNTED. 2. ACCESSIBLE TO AN OPERATOR AT DEVICE.	○	▢	◇	◇
PRIMARY LOCATION NORMALLY ACCESSIBLE TO AN OPERATOR 1. CENTRAL OR MAIN CONTROL ROOM. 2. FRONT OF MAIN PANEL OR CONSOLE MOUNTED. 3. VISIBLE ON VIDEO DISPLAY. 4. ACCESSIBLE TO AN OPERATOR AT DEVICE OR CONSOLE.	⊖	▢	◇	
PRIMARY LOCATION NORMALLY INACCESSIBLE TO AN OPERATOR 1. CENTRAL OR MAIN CONTROL ROOM. 2. REAR OF PANEL OR CABINET MOUNTED. 3. NOT VISIBLE ON VIDEO DISPLAY. 4. NOT NORMALLY ACCESSIBLE TO AN OPERATOR AT DEVICE OR CONSOLE.	⊖	▢	◇	
AUXILIARY LOCATION NORMALLY ACCESSIBLE TO AN OPERATOR 1. SECONDARY OR LOCAL CONTROL ROOM. 2. FIELD OR LOCAL CONTROL PANEL. 3. FRONT OF SECONDARY OR LOCAL PANEL MOUNTED. 4. VISIBLE ON VIDEO DISPLAY. 5. ACCESSIBLE TO AN OPERATOR AT DEVICE OR CONSOLE.	⊖	▢	◇	
AUXILIARY LOCATION NORMALLY INACCESSIBLE TO AN OPERATOR 1. SECONDARY OR LOCAL CONTROL ROOM. 2. FIELD OR LOCAL CONTROL PANEL. 3. REAR OF SECONDARY OR LOCAL PANEL OR CABINET MOUNTED. 4. NOT VISIBLE ON VIDEO DISPLAY. 5. NOT NORMALLY ACCESSIBLE TO AN OPERATOR AT DEVICE OR CONSOLE.	⊖	▢	◇	

ABBREVIATIONS

AG	ABOVE GROUND	LO	LOCKED OPEN
ATM	ATMOSPHERE	LP	LOW PRESSURE
BYP	BYPASS	LPT	LOW POINT
CC	CHEMICAL CLEANOUT	MTL	MATERIAL
CL	CENTERLINE	MAX	MAXIMUM
CO	CLEANOUT	MCC	MOTOR CONTROL CENTER
CONN	CONNECTION	MCP	MAIN CONTROL PANEL
CVLS	CHECK VALVE LIMIT SWITCH	MIN	MINIMUM
CTR	CENTER	MOV	MOTOR OPERATED VALVE
DCS	DISTRIBUTED CONTROL SYSTEM	MW	MANWAY
DES	DESIGN	NC	NORMALLY CLOSED
DIA	DIAMETER	NNF	NORMALLY NO FLOW
DP	DESIGN PRESSURE	NO	NORMALLY OPEN
D/P	DIFFERENTIAL PRESSURE	NOZ	NOZZLE
DRN	DRAIN	O/C	OPEN/CLOSE
DT	DESIGN TEMPERATURE	O/O	ON/OFF
DWG	DRAWING	OIT	OPERATOR INTERFACE TERMINAL
(E)	EXISTING	OP	OUTPUT
EL	ELEVATION	OVHD	OVERHEAD
ESD	EMERGENCY SHUTDOWN	PLC	PROGRAMMABLE LOGIC CONTROLLER
FOF	FACE OF FLANGE	PRESS	PRESSURE
(F)	FURNISHED	PV	PROCESS VARIABLE
FC	FAIL CLOSED	(R)	RELOCATED
FI	FAIL INDETERMINATE	REQD	REQUIRED
FL	FAIL LOCKED (LAST POSITION)	RIO	REMOTE I/O PANEL
FLG	FLANGE	RTD	RESISTANCE TEMPERATURE DETECTOR
FO	FAIL OPEN	SC	SAMPLE CONNECTION
FP	FULL PORT	SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
FV	FULL VACUUM	SCH	SCHEDULE
GO	GEAR OPERATED	SD	SHUTDOWN
GR	GRADE	SG	SPECIFIC GRAVITY
HC	HOSE CONNECTION	SIS	SAFETY INSTRUMENTED SYSTEM
HDR	HEADER	SO	STEAM OUT
HH	HAND HOLE	SP	SET POINT
HOA	HAND/OFF/AUTOMATIC	SS	STAINLESS STEEL S/S or START/STOP
HP	HIGH PRESSURE	STD	STANDARD
HPT	HIGH POINT	T/C	THERMOCOUPLE
IAS	INSTRUMENT AIR SUPPLY	TDH	TOTAL DIFFERENTIAL HEAD
LC	LOCKED CLOSED	TEMP	TEMPERATURE
LCP	LOCAL CONTROL PANEL	THRD	THREADED
		TSO	TIGHT SHUT-OFF
		TYP	TYPICAL
		UG	UNDERGROUND
		VNT	VENT
		VAC	VACUUM
		VB	VORTEX BREAKER
		VFD	VARIABLE FREQUENCY DRIVE
		W/	WITH
		W/O	WITHOUT

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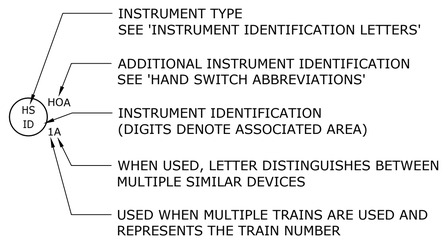
INSTRUMENT IDENTIFICATION LETTERS

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, FLAME, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE (TYPICALLY CONDUCTIVITY - ELECTRICAL)			CONTROL, COMMAND	CLOSED
D	USER'S CHOICE (TYPICALLY DENSITY OR SPECIFIC GRAVITY)	DIFFERENTIAL			DIVERT
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE OR GAUGING (DIMENSIONAL)		GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	USER'S CHOICE (TYPICALLY MOISTURE OR HUMIDITY)	MOMENTARY			MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		OPEN
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY OR HEAT DUTY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	THROUGH
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE, TORQUE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

TYPICAL INSTRUMENT TAG NUMBERS & DESIGNATION



HAND SWITCH ABBREVIATIONS

AO = AUTO/OFF	LOS = LOCKOUT/STOP
AM = AUTO/MANUAL	LA = LOCAL/AUTO
CM = COMPUTER/MANUAL	LR = LOCAL/REMOTE
CL = COMPUTER LOCAL	OC = OPEN/CLOSE
ES = EMERGENCY STOP	OCA = OPEN/CLOSE/AUTO
FR = FORWARD/REVERSE	OO = ON/OFF
FOR = FORWARD/OFF/REVERSE	OOA = ON/OFF/AUTO
FS = FAST/SLOW	OSC = OPEN/STOP/CLOSE
FOS = FAST/OFF/SLOW	RES = RESET
HA = HAND/AUTO	RF = RUN/FAULT
HIM = HUMAN INTERFACE MODULE	RSL = RAISE/STOP/LOWER
HOA = HAND/OFF/AUTOMATIC	SS = START/STOP
LLS = LEAD/LAG/STANDBY	SOR = START/OFF/RESET
LOC = LOCAL/OFF/COMPUTER	V/B = VFD/BYPASS
LOR = LOCAL/OFF/REMOTE	

PIPING LINE SYMBOLS

PRIMARY (AG & UG)

SECONDARY / UTILITY (AG & UG)

FUTURE OR EXISTING ON NEW P&IDs

JACKETED OR DOUBLE CONTAINMENT

INSTRUMENT LINE SYMBOLS

INSTRUMENT SUPPLY OR CONNECTION TO PROCESS

PNEUMATIC SIGNAL

ELECTRIC SIGNAL (ANALOG)

ELECTRIC SIGNAL (DISCRETE)

HYDRAULIC SIGNAL

CAPILLARY TUBE

ELECTROMAGNETIC, SONIC, OPTICAL, OR NUCLEAR SIGNAL

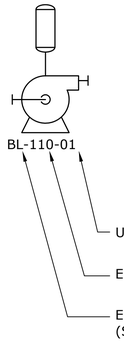
SOFTWARE OR DATA LINK

MECHANICAL LINK

FLOW STREAM IDENTIFIERS

ABE = AERATION BASIN EFFLUENT
BD = BASIN DRAIN
CS = COMBINED SLUDGE
CAS = CAUSTIC SODA
DR = DRAIN
DS = DIGESTER SOLIDS
FBW = FILTER BACKWASH
FE = FINAL EFFLUENT
GR = GRIT
ICE = INTERMEDIATE CLARIFIER EFFLUENT
LPA = LOW PRESSURE AIR
ML = MIXED LIQUOR
NPW = NON POTABLE WATER
PE = PRIMARY EFFLUENT
PI = PRIMARY INFLUENT
PLE = PLANT EFFLUENT
PS = PRIMARY SLUDGE
RAS = RETURN ACTIVATED SLUDGE
RS = RAW SEWAGE
SSL = SECONDARY SLUDGE
SCM = SCUM
SSCM = SECONDARY SCUM
SCRN = SCREENINGS
SE = SECONDARY EFFLUENT
TE = TERTIARY EFFLUENT
TWAS = THICKENED WASTE ACTIVATED SLUDGE
UW = UTILITY WATER
WAS = WASTE ACTIVATED SLUDGE

TYPICAL EQUIPMENT TAG NUMBERS & DESIGNATION



AER = AERATOR
BIN = BIN
BL = BLOWER
CEL = CELL
CLA = CLARIFIER
CLS = CLASSIFIER
CND = CONDENSATE TRAP
CON = CONVEYOR
CMP = COMPRESSOR
DIF = DIFFUSER
DIG = DIGESTER
DIS = DISINFECTION UNIT
FED = FEEDER
FLT = FILTER
HEX = HEAT EXCHANGER
MIX = MIXER
PMP = PUMP
PRS = PRESS
SCN = SCREEN
SDG = SLIDE GATE
SL = SLUICE GATE
SMP = SUMP
THK = THICKENER
TNK = TANK
WEL = WET WELL

OFF-PAGE CONNECTORS AND TIE-IN SYMBOL

A. OFF-PLOT CONNECTOR

CONNECTOR NUMBER — SERVICE DESCRIPTION / XX | P&ID No / ORIGIN/DESTINATION

B. PRIMARY/SECONDARY LINES AND INSTRUMENT SIGNAL CONNECTOR

CONNECTOR NUMBER — SERVICE DESCRIPTION / XX | P&ID No / ORIGIN /DESTINATION

C. UTILITY CONNECTOR

CONNECTOR NUMBER — XX / P&ID No

D. TIE-IN SYMBOL

TIE-IN NUMBER — T / XXX

INPUT / OUTPUT SIGNALS

DRAIN CONNECTORS

CLOSED DRAIN

CONNECTOR NUMBER — XXXX
DESTINATION LINE — YYY
SERVICE CODE — P&ID#

OPEN DRAIN

CONNECTOR NUMBER — XXXX
DESTINATION LINE — YYY
SERVICE CODE — P&ID#

CLOSED DRAIN (NO P&ID)

DESTINATION LINE — YYY
SERVICE CODE

OPEN DRAIN (NO P&ID)

DESTINATION LINE — YYY
SERVICE CODE

NO.	DATE	BY	REVISION

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AAB DRAWN
TBC CHECKED

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P&ID
LEGENDS, SYMBOLS AND ABBREVIATIONS 1

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

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PRIMARY ELEMENT SYMBOLS

- XX — GENERAL SYMBOL IN-LINE ELEMENT XX = FS, FG, FE, FT
- FIT, XXXX — IN-LINE FLOW ELEMENT WITH INTEGRAL INDICATING TRANSMITTER XXXX = MASS, CORIOLIS, THERMAL, INT. ORIFICE ...
- FIT / FE, XXXX — IN-LINE FLOW ELEMENT WITH SEPARATE INDICATING TRANSMITTER XXXX = MASS, CORIOLIS, THERMAL...
- ORIFICE
- M — MAGNETIC
- TURBINE OR PROPELLER
- ULTRASONIC
- VORTEX
- PITOT TUBE
- AVERAGING PITOT TUBE
- FLOW NOZZLE
- VENTURI
- WEDGE METER
- LE — RADAR (NON-CONTACT)
- LE — ULTRASONIC LEVEL SENSOR
- LE — RADAR (GUIDED)
- LS* — FLOAT SWITCH; FLOAT SWITCH * = L/LL/H/HH
- FS* — FLOW SWITCH * = H/L
- FG — FLOW GLASS
- FLOW CONDITIONING DEVICES (e.g., STRAIGHTENING VANES)
- FO — RESTRICTION ORIFICE
- AE X — ANALYZER ELEMENT X INDICATES TYPE
  - pH = HYDROGEN POTENTIAL
  - DO = DISSOLVED OXYGEN
  - H2S = HYDROGEN SULFIDE
  - LEL = LOWER EXPLOSIVE LIMIT
  - O2 = OXYGEN
  - ORP = OXYGEN REDUCTION POTENTIAL
  - TUR = TURBIDITY
- ROTAMETER
- FI — ROTAMETER WITH INTEGRAL VALVE (SHOWN WITH OPTIONAL INTEGRAL VALVE)
- FLUME
- WEIR
- POSITIVE DISPLACEMENT
- ORIFICE IN QUICK CHANGE FITTING
- TARGET
- ANNULAR SEAL

CONTROL VALVE ACTUATOR SYMBOLS

- MANUAL OPERATOR
- DIAPHRAGM
- PRESSURE BALANCED DIAPHRAGM
- HANDWHEEL WITH ACTUATOR
- CYLINDER - PISTON
- M — MOTOR OPERATED - CONSTANT SPEED
- E/P — ELECTRO-PNEUMATIC
- S — SINGLE SOLENOID
- S, R — SINGLE SOLENOID - MANUAL RESET
- S, R — SINGLE SOLENOID - REMOTE RESET

PROCESS EQUIPMENT

- VERTICAL INLINE PUMP
- SUBMERSIBLE PUMP
- CHEMICAL STORAGE TANK

MISCELLANEOUS INSTRUMENT SYMBOLS

- CHEMICAL SEAL- DIAPHRAGM
- LEVEL SENSOR
- X — PILOT LIGHT OR GAUGE GLASS ILLUMINATOR X INDICATES COLOR
  R = RED B = BLUE G = GREEN
  A = AMBER W = WHITE
- DUAL FUNCTION OR INSTRUMENTS SHARING COMMON HOUSING
- I — UNDEFINED INTERLOCK LOGIC

VALVE SYMBOLS (N.C. WHEN SHADED)

- GATE VALVE
- CHECK VALVE
- STOP CHECK VALVE
- GLOBE VALVE
- BUTTERFLY VALVE
- NEEDLE VALVE
- BALL VALVE
- BALANCING VALVE
- PLUG VALVE
- DIAPHRAGM VALVE
- 3-WAY VALVE
- 4-WAY VALVE
- PINCH VALVE
- ANGLE VALVE
- KNIFE VALVE
- SLUICE OR SLIDE GATE
- AIR RELEASE VALVE

PIPING FITTINGS

- FLANGE
- WELDED CONNECTION
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- SPACER
- BLANK
- OPEN FIGURE 8 BLIND
- CLOSED FIGURE 8 BLIND
- PLUG
- BLIND FLANGE
- HOSE CONNECTION
- CAP

PIPING SPECIALTY ITEMS

- Y-TYPE STRAINER
- CONE STRAINER
- T-TYPE STRAINER
- DUPLEX STRAINER
- BASKET STRAINER
- TEMPORARY STRAINER
- FILTER
- D — DETONATION ARRESTOR
- F — FLAME ARRESTOR
- T — STEAM TRAP
- EXHAUST HEAD
- S — IN-LINE SILENCER
- S — VENT SILENCER
- MECHANICAL COUPLING
- EJECTOR
- RS — REMOVABLE SPOOL
- DS — DESUPERHEATER
- FLEXIBLE HOSE
- EXPANSION JOINT
- DAMPER
- BREATHER
- VENT COVER
- IN-LINE MIXER
- DIVERTER VALVE
- ROTARY VALVE
- EXCESS FLOW VALVE
- PULSATION DAMPENER
- INJECTION SPOOL

SELF-ACTUATED DEVICES

- RUPTURE DISC - PRESSURE RELIEF SAFETY HEAD FOR PRESSURE RELIEF (EXPLOSION PANEL)
- RUPTURE DISC - VACUUM RELIEF SAFETY HEAD FOR VACUUM RELIEF (EXPLOSION PANEL)
- PRESSURE RELIEF - SAFETY VALVE
- VACUUM RELIEF VALVE
- PRESSURE AND VACUUM RELIEF VALVE CONSERVATION VENT
- P — PILOT OPERATED RELIEF VALVE WITH REMOTE SENSOR (USE APPROPRIATE RELIEF VALVE SYMBOL)
- PRESSURE REDUCING REGULATOR (SELF-CONTAINED)
- BACK PRESSURE REGULATOR (SELF-CONTAINED)
- BACK PRESSURE REGULATOR W/ EXTERNAL TAP
- PRESSURE REDUCING REGULATOR W/ EXTERNAL TAP
- DIFFERENTIAL PRESSURE REDUCING REGULATOR
- TEMPERATURE REGULATOR FILLED SYSTEM TYPE

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AK #1018436
PROJECT#: 21.55.01

NO.	DATE	BY	REVISION

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

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AAB DRAWN
TBC CHECKED

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Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS
WELL NO. 11
AMENDMENT 2

P&ID
LEGENDS, SYMBOLS AND ABBREVIATIONS 2

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET I-2

SCADA

PLC

FIELD

WELL LEVEL LI
RUN YC
FLT RESET YC
TOTAL STARTS QI
RUN'G YI
RUNTIME KI
AUTO YI
FAULT XA
SPD CTRL SC
SPD FDBK SI
READY YI
AMPS YI
WELL FLOW FI
TOTAL PULSE QI
FLOW TOTAL QI
FILTER SYSTEM ALARM UAI

FILTER SYSTEM ALARM UAI
FILTER SYSTEM IN BW UAI
MANUAL BW START UAI

BACKWASH FLOW FI
BACKWASH TOTAL PULSE QI
BACKWASH FLOW TOTAL QI

WELL PUMP MOTOR/VFD
FLT YL
RUN YL
HOA HS
HIM HS

LIT
LE

WELL PUMP
1150 GPM

8" RW DI
8" VLV
1/2" BV
1" ARV
FIT
FE
M
8" GV
1" ARV

1/2" BV
8" GV

FILTER CONTROL PANEL
FILTER SYSTEM ALARM UA
FILTER SYSTEM IN BW ZS
MANUAL BW START HS

FUTURE 8" BFV 8"x6"

FUTURE FILTER SYSTEM

FIT
FE
M
FUTURE 4" BW DI
FUTURE BACKWASH
- -
TO MANHOLE

FUTURE BACKWASH FLOW CONTROL VALVE AND FLOWMETER

NaOCl
- -
FROM EXISTING SODIUM HYPOCHLORITE DOSING PUMP
3/8" NaOCl FLEXIBLE PVC TUBING
3/8" BV

FUTURE MnO4
- -
FROM FUTURE SODIUM PERMANGANATE DOSING PUMP
FUTURE 3/8" MnO4 FLEXIBLE PVC TUBING
3/8" BV

NaF
- -
FROM SODUIM FLUORIDE DOSING PUMP
3/8" NaF FLEXIBLE PVC TUBING
3/8" BV

6"x8"
8" GV
8" GV
8" FW DI
FINISHED WATER
- -
TO CLEAR WELLS

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P&ID
SHEET 1

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET
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SCADA

PLC

FIELD

CLEAR WELL A HATCH INTRUSION — YA — ZO
CLEAR WELL A LEVEL — LI — LI
CLEAR WELL B HATCH INTRUSION — YA — ZO
CLEAR WELL B LEVEL — LI — LI
SODIUM FLUORIDE TANK LEVEL — LI — LI
NaClO TANK LEVEL — LI — LI
CHEMICAL DOSING SPEED CTRL (TYP. OF 3) — SC — SC
RUN (TYP. OF 3) — YC — YC
FINISHED WATER pH — AI — AI
FINISHED WATER FLUORIDE — AI — AI
FINISHED WATER CL2 — AI — AI
FW HIGH CL2 ALARM — LAH
FW LOW CL2 ALARM — LAL

TYPICAL OF 2

RUN — YC — YC
FLT RESET — YC — YC
TOTAL STARTS — QI — YI
RUNTIME — KI — YI
AUTO — YI — YI
FAULT — XA — YA
SPD CTRL — SC — SC
SPD FDBK — SI — SI
READY — YI — YI
AMPS — YI — YI

BOOSTER FLOW — FI — FI
BOOSTER TOTAL PULSE — QI — QI
FLOW TOTAL — QI

ZSC
LIT
LE

EXISTING 8" GV
EXISTING CLEARWELL A
EXISTING 8" GV

ZSC
LIT
LE

FINISHED WATER
FROM FILTER PACKAGED SYSTEM
8" FW DI

EXISTING 8" GV
EXISTING CLEARWELL B
EXISTING 8" GV

FINISHED WATER SAMPLE PANEL
AIT
AE pH
AE CL2
AE FLUORIDE

FUTURE BOOSTER PUMP MOTOR/VFD (TYPICAL OF 2)
FLT — YL
RUN — YL
HOA — HS
HIM — HS

2" ARV
8" GV
8"x6"
BOOSTER PUMP 1
1150 GPM
8"x6"
PE
1/2" BV
8" VLV
8" GV

2" ARV
8" GV
8"x6"
BOOSTER PUMP 2
1150 GPM
8"x6"
PE
1/2" BV
8" VLV
8" GV

FIT
FE
M
10" GV
10" GV
10" FW DI
8"x10"
EXISTING 10" GV
FINISHED WATER
TO EXISTING DISTRIBUTION LINE

OSEC L
CONTROL PANEL
OSEC L
NaClO GENERATOR

1" PVC
LIT
LE
NaClO STORAGE TANK
EXISTING NaClO DUPLEX PUMP SKID
NaOCl DOSING
TO FILTER INTAKE

LIT
LE
SODIUM FLUORIDE STORAGE TANK
FLUORIDE PUMP SKID
FLUORIDE DOSING
TO FILTER INTAKE

FUTURE KMnO4 STORAGE TANK
FUTURE KMnO4 PUMP SKID
FUTURE MnO4 DOSING
TO FILTER INTAKE

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WELL NO. 11
AMENDMENT 2

P&ID
SHEET 2

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET
I-4
60 of 65

P:\Projects\21.55.01_MSA_Port_Orchard_McCormick_Well_11\DWG\I-4.dwg I-4 4/21/2023 9:45 AM AVIB 23.1s (LMS Tech)

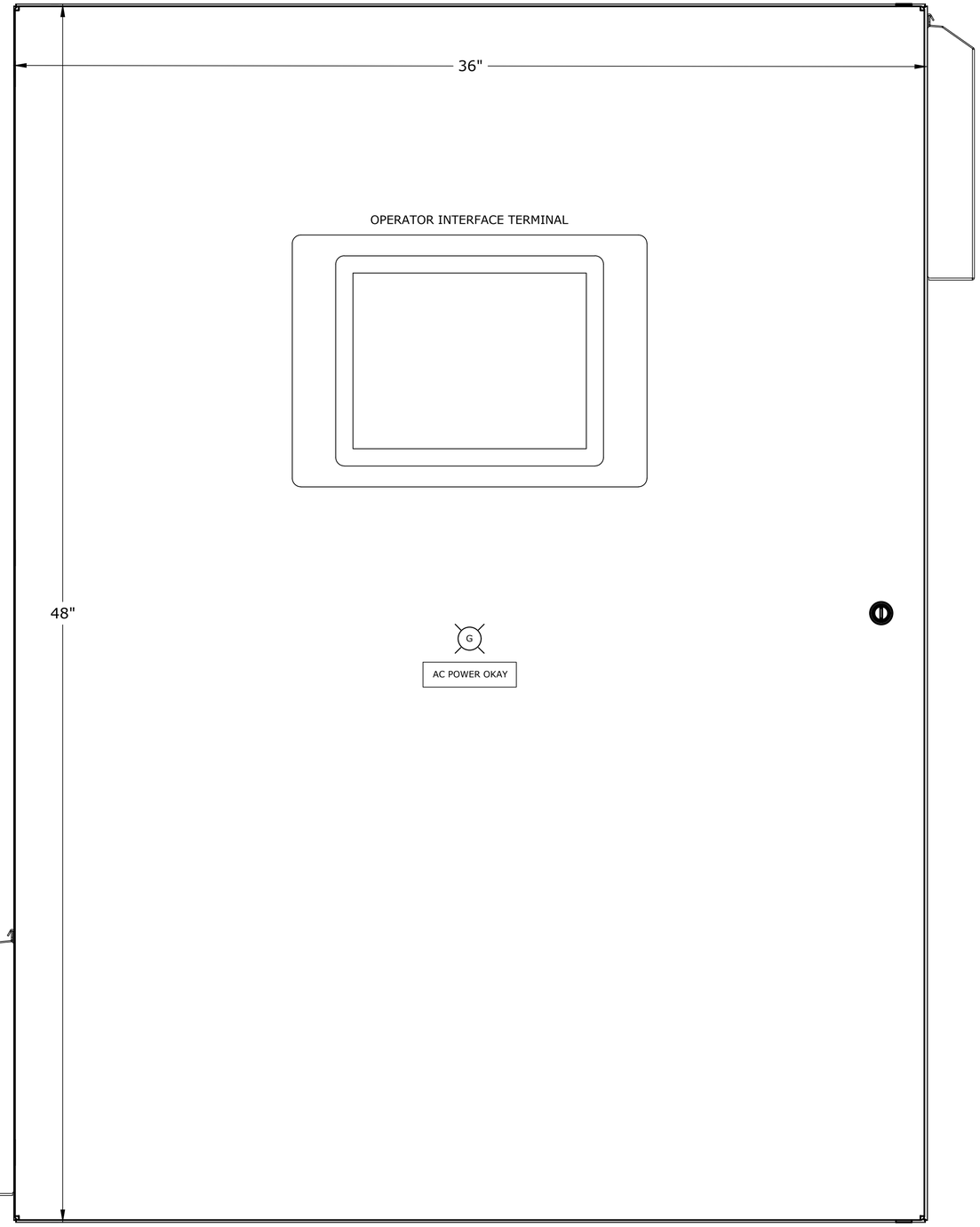
GENERAL NOTES:

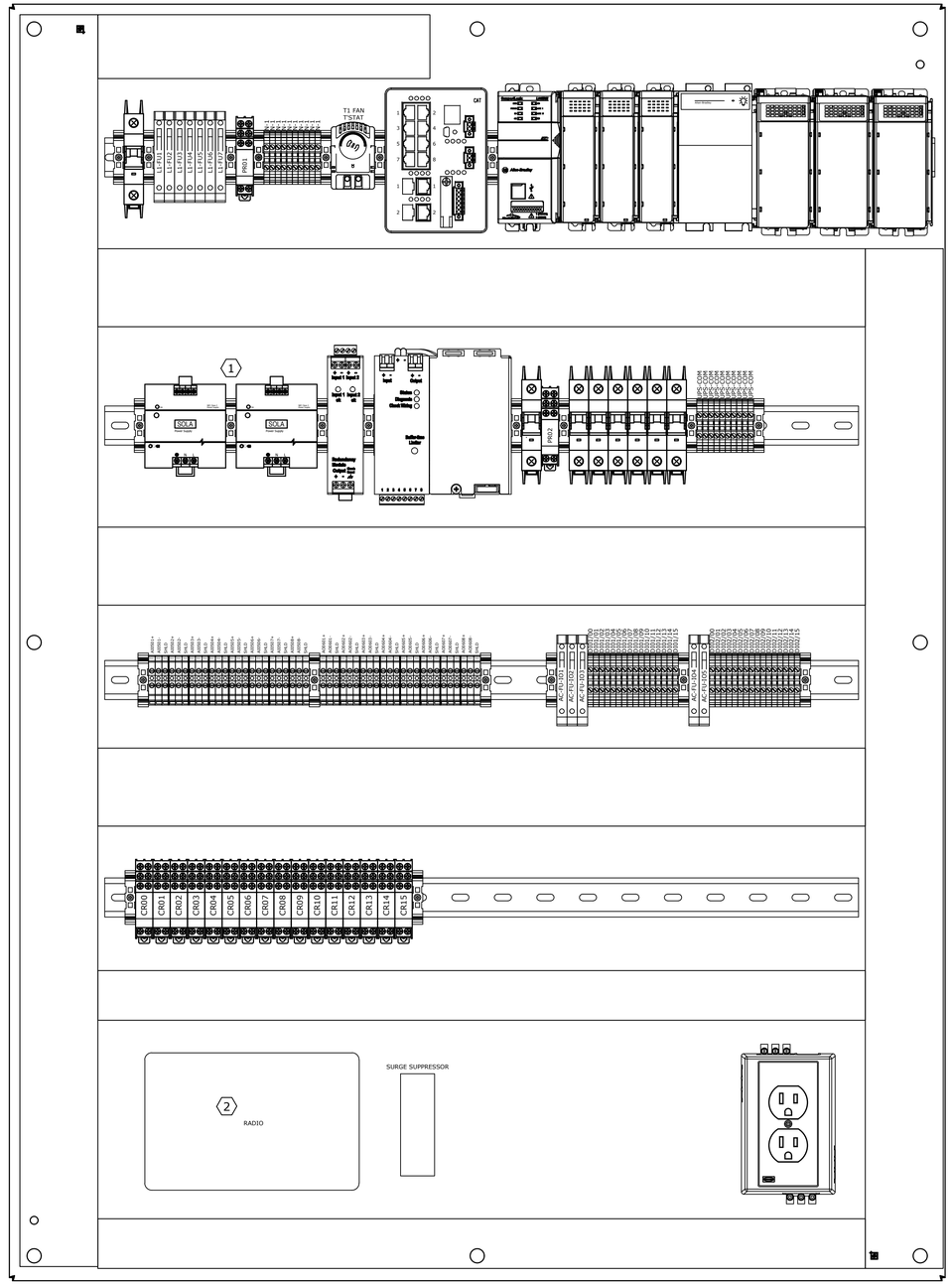
1. PANEL LAYOUT IS CONCEPTUAL AND FINALIZED LAYOUT SHALL BE PROVIDED BY MANUFACTURER PER UL-508 REQUIREMENTS.

KEY NOTES:

(1) PROVIDE REDUDANT POWER SUPPLIES WITH REDUNDANCY CONTROLLER.

(2) PROVIDE RADIO PER CITY STANDARD.





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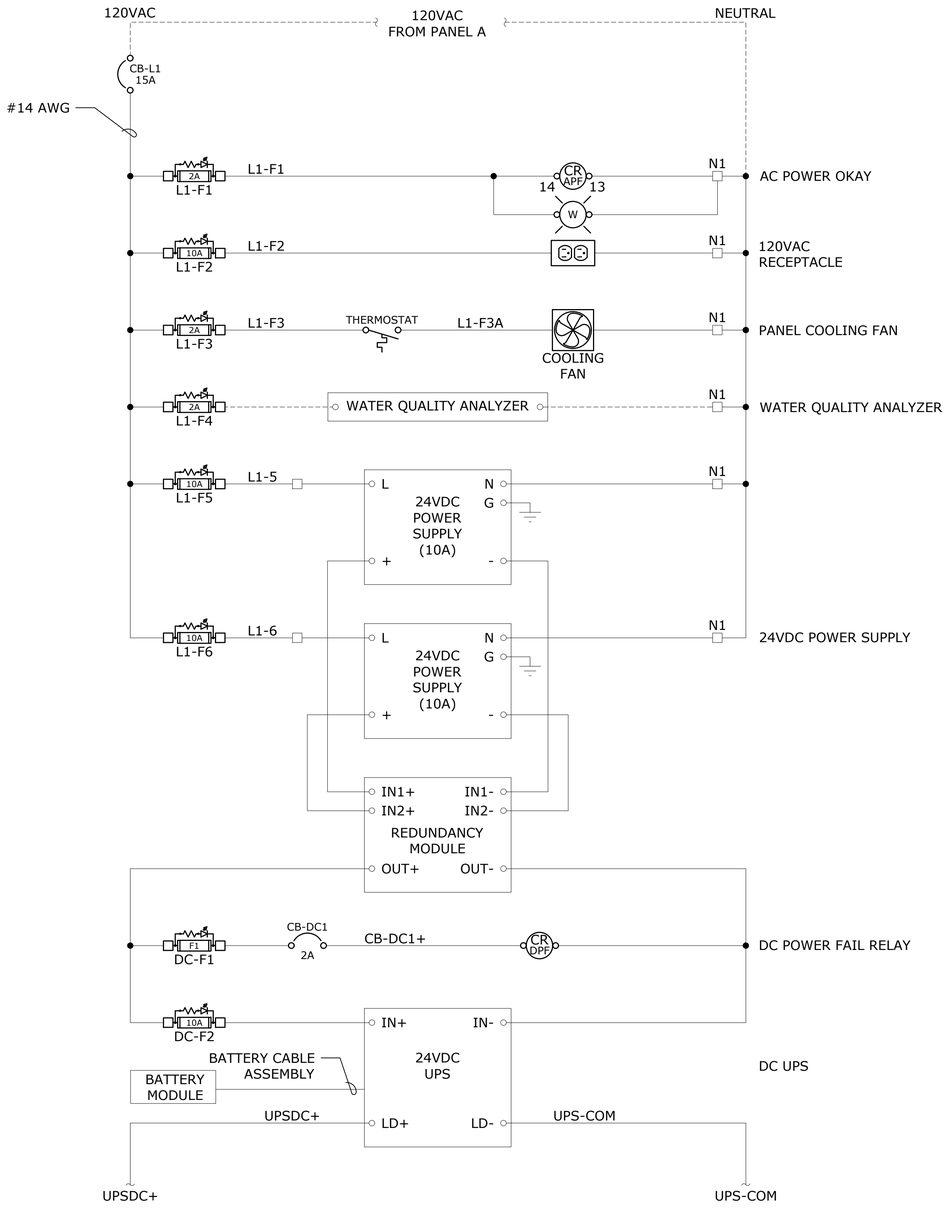
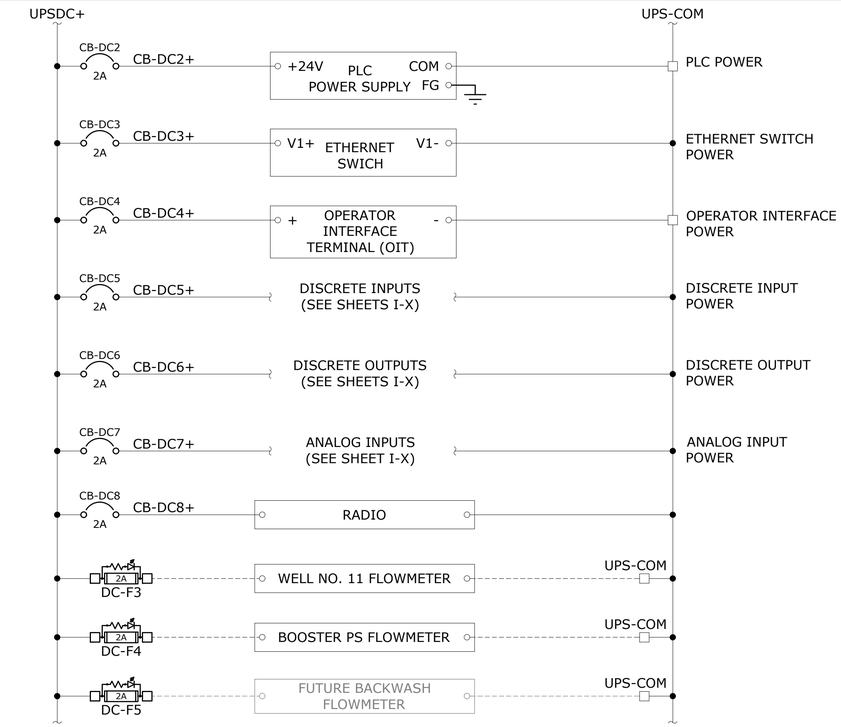
MCCORMICK WOODS
WELL NO. 11
AMENDMENT 2

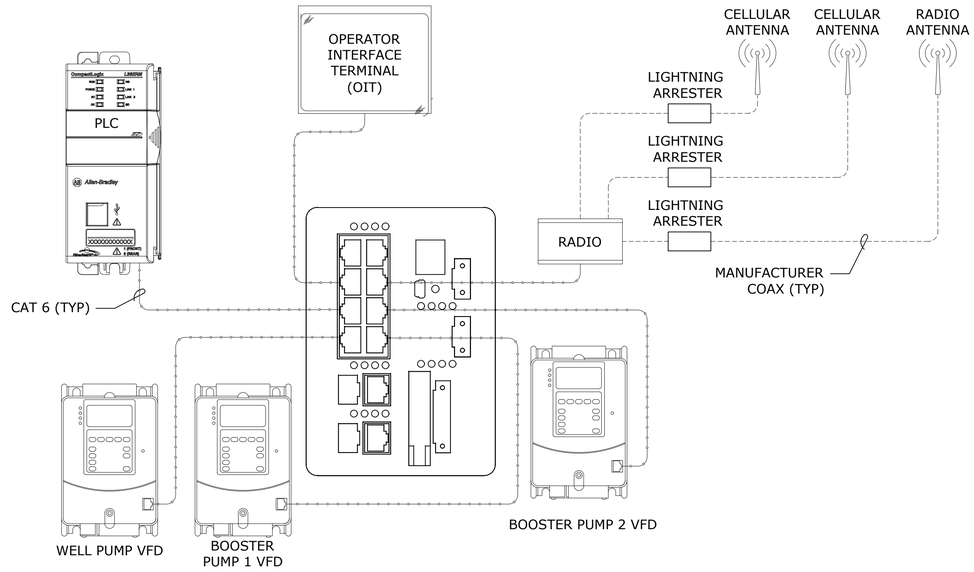
CONTROL PANEL LAYOUT AND ARRANGEMENT

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET I-5







CONTROL PANEL POWER DIAGRAM 1
SCALE: NTS

NETWORK BLOCK DIAGRAM 2
SCALE: NTS

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WELL NO. 11
AMENDMENT 2

CONTROL PANEL POWER DISTRIBUTION AND NETWORK BLOCK DIAGRAM

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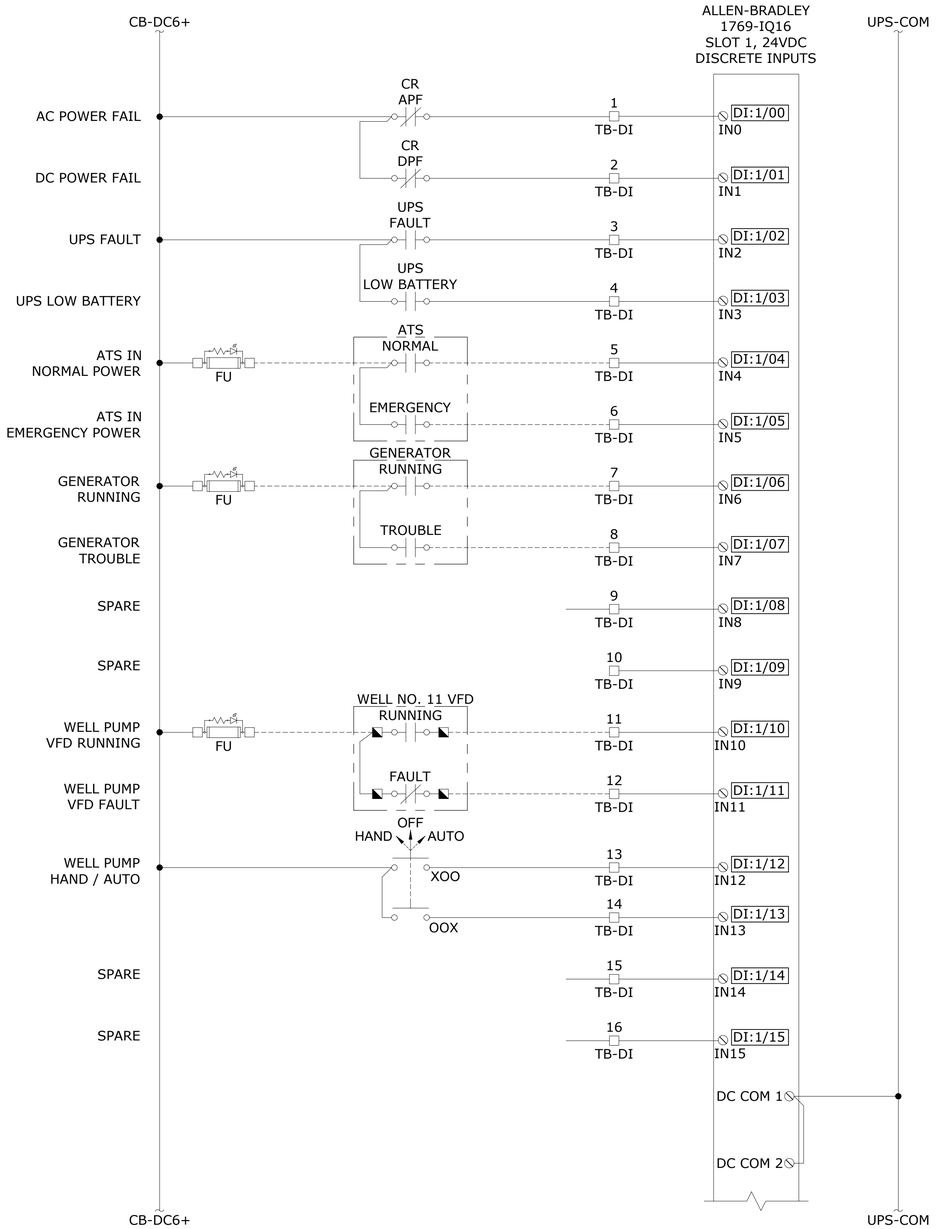
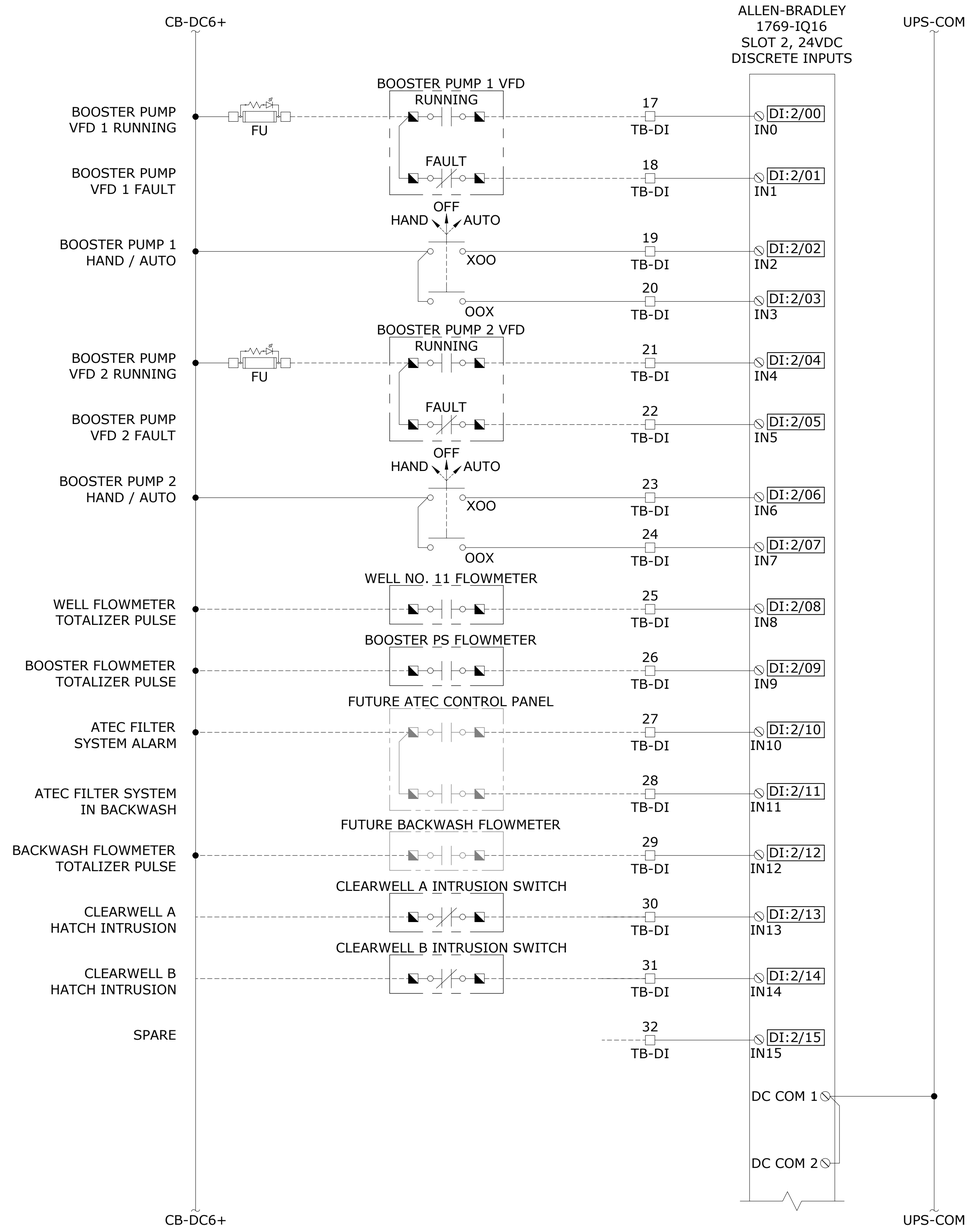
SHEET I-6





DISCRETE INPUTS MODULE 1 (1 / -)
SCALE: NTS

DISCRETE INPUTS MODULE 2 (2 / -)
SCALE: NTS

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WELL NO. 11
AMENDMENT 2

CONTROL PANEL
I/O WIRING 1

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET
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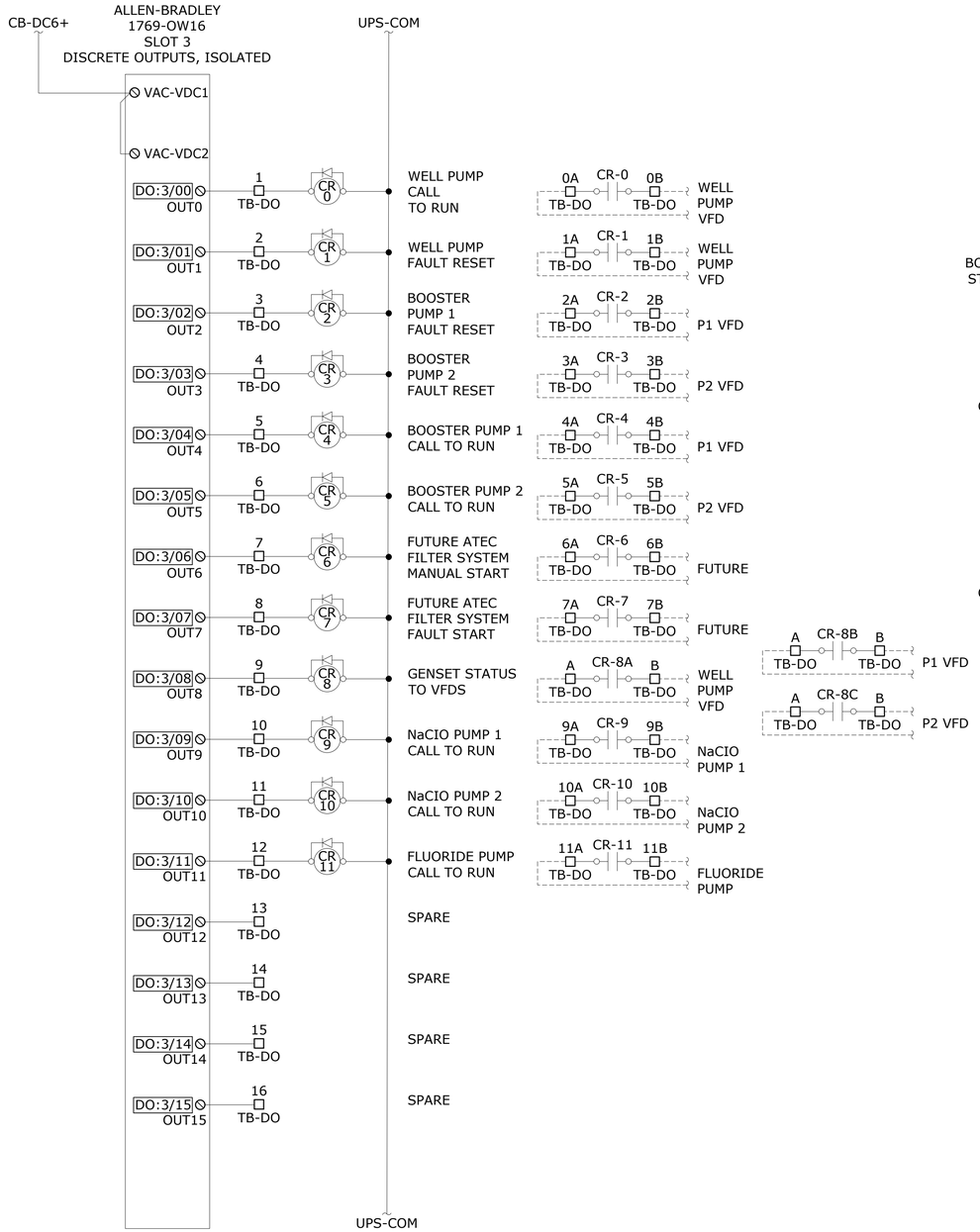
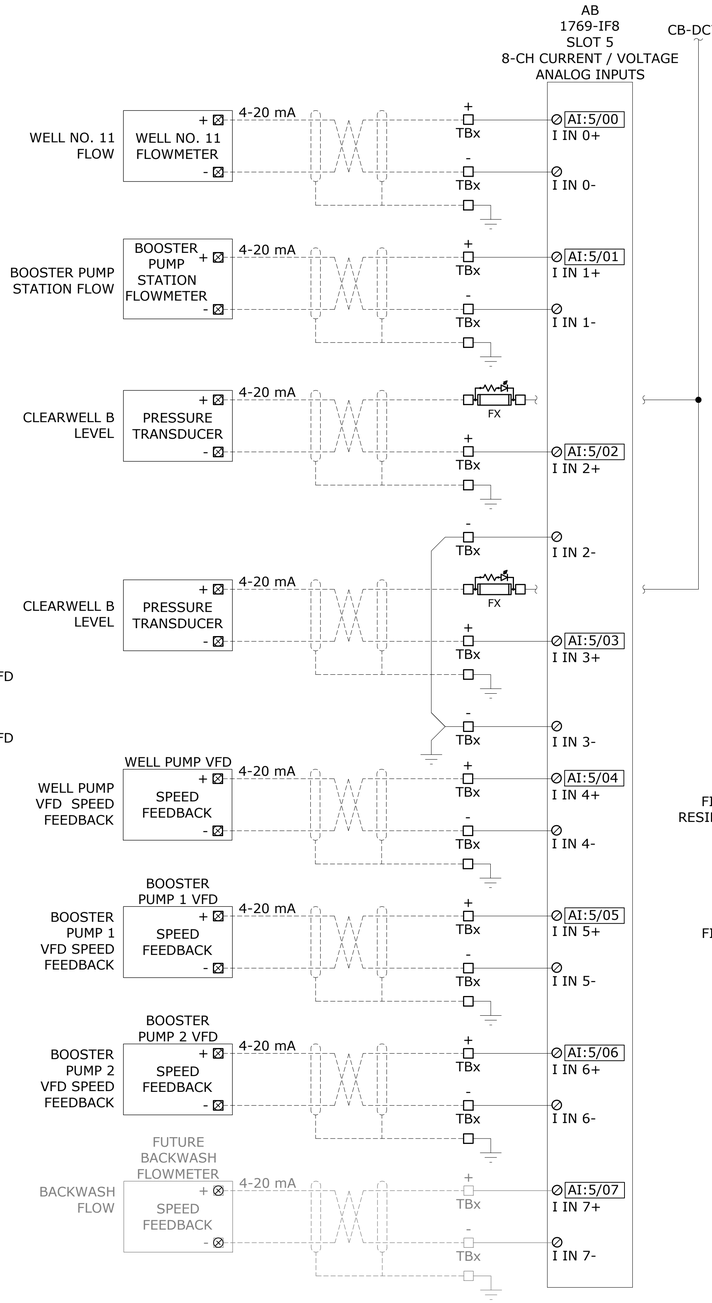
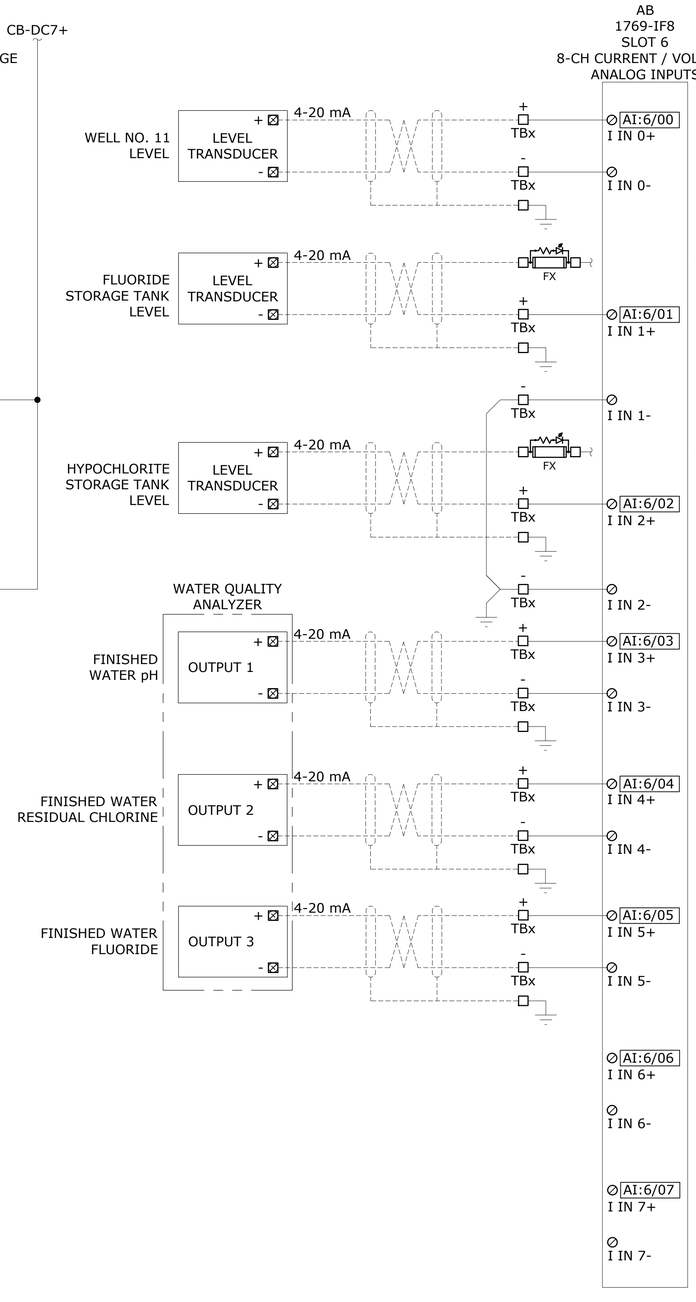


DIGITAL OUTPUTS MODULE 1
SCALE: NTS



ANALOG INPUTS MODULE 2
SCALE: NTS



ANALOG INPUTS MODULE 3
SCALE: NTS

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WELL NO. 11
AMENDMENT 2

CONTROL PANEL I/O WIRING 2

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SHEET I-8

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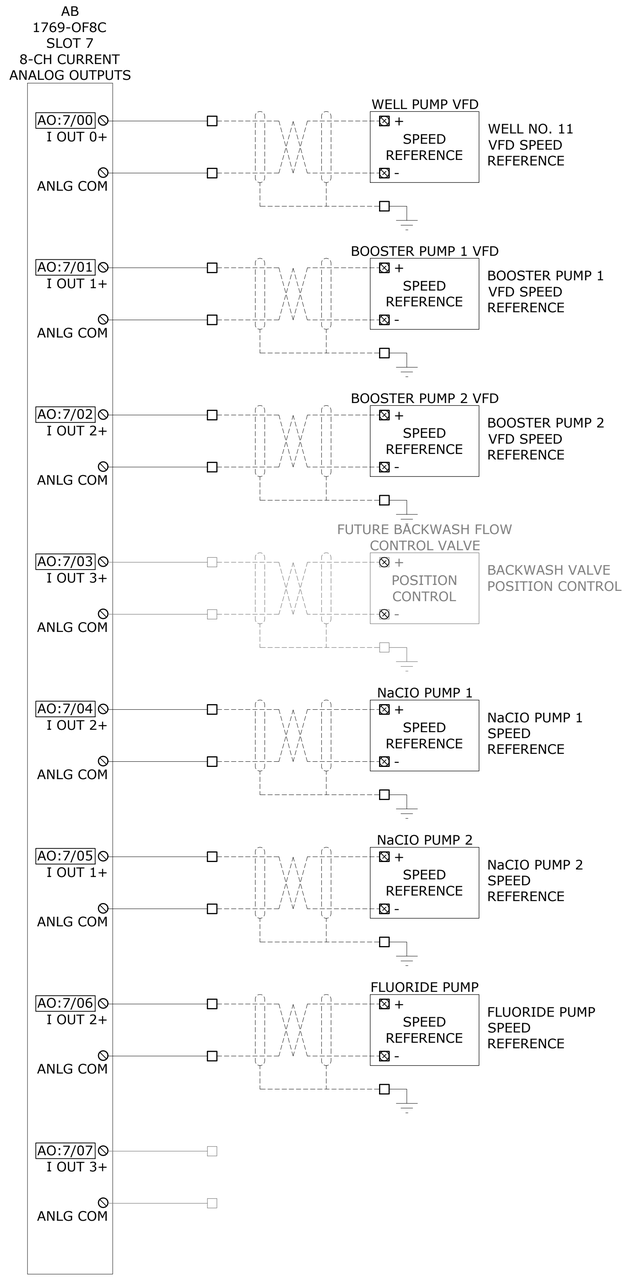

ANALOG OUTPUTS MODULE

SCALE: NTS

1
-

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MICHAEL EZRA WALLIS
STATE OF WASHINGTON
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REGISTERED
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4/21/23

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MCCORMICK WOODS
WELL NO. 11
AMENDMENT 2

CONTROL PANEL
I/O WIRING 3

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

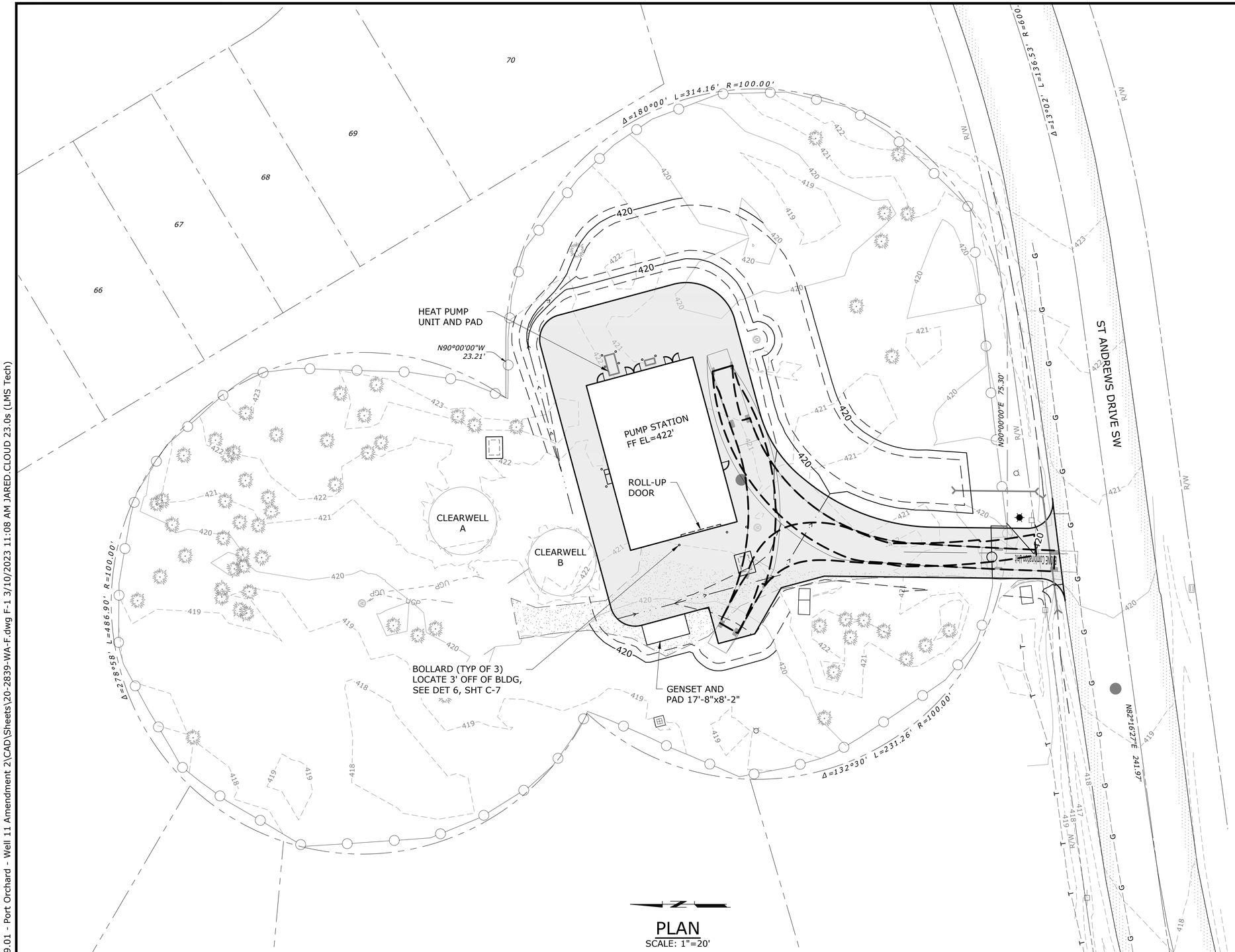
SHEET

I-9

65 of 65

NOTES:

1. FIRE LANES SHALL BE MARKED AS "FIRE LANE - NO PARKING" IN ACCORDANCE WITH PORT ORCHARD MUNICIPAL CODE 10.60



PLAN
SCALE: 1"=20'

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EJJ DRAWN
EKS CHECKED

PETER BENEDICT CUNNINGHAM — STATE OF WASHINGTON — 46352 — REGISTERED PROFESSIONAL ENGINEER — 4/21/2023

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Port ORCHARD

CITY OF PORT ORCHARD
MCCORMICK WOODS - WELL NO. 11
SITE IMPROVEMENT PROJECT

FIRE APPARATUS ACCESS TURNAROUND

PROJECT NO.: 20-2839.01 | SCALE: AS SHOWN | DATE: APRIL 2023

SHEET
F-1
69 of 69

H:\evt_projects\20\2839.01 - Port Orchard - Well 11 Amendment 2\CAD\Sheets\20-2839-WA-F.dwg F-1 3/10/2023 11:08 AM JARED.CLOUD 23.0s (LMS Tech)