TAYLOR BAY BEACH CLUB HOA

PIERCE COUNTY **WASHINGTON**

TAYLOR BAY
BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

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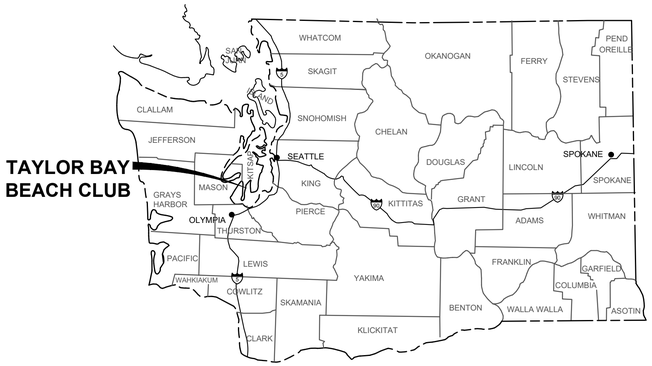
Steve Stemhagen

Wastewater Facilities Manager

Gray & Osborne, Inc.
CONSULTING ENGINEERS
1130 RAINIER AVENUE SOUTH, SUITE 300
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SEPTEMBER 2026
G&O #22848.01

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VICINITY MAP

NTS



LOCATION MAP

SCALE: 1" = 150'

NOTE:

TOPOGRAPHY IS FROM WASHINGTON DEPARTMENT OF NATURAL RESOURCE LIDAR PORTAL. TOPOGRAPHIC INTERVALS ARE FIVE FEET.

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9/4/2026

TAYLOR BAY
BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

8220 178TH AVENUE COURT SW,
LONGBRANCH, WA 98351

No.	DATE	REVISION

ISSUED FOR:

BID SET

ISSUE DATE:	SEPTEMBER 2026
APPROVED BY:	EFN
CHECKED BY:	EFN
DRAWN BY:	CRR
DESIGNER:	JESP
G & O JOB NO.:	22848.01
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0 1" 2"
TWO INCHES AT FULL SCALE.
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GENERAL

VICINITY AND LOCATION MAPS

DRAWING: **G-1** OF: **16**

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DRAWING: **G-2** OF: **16**

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ABBREVIATIONS

AB	ANCHOR BOLT
AC	ASPHALT CONCRETE
ACP	ACOUSTIC PANEL
ADJ	ADJUSTABLE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALTR	ALTERNATE
ALUM	ALUMINUM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASPH	ASPHALT
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS
ASSY	ASSEMBLY
AVE	AVENUE
AWS	AMERICAN WELDING SOCIETY
BFP	BELT FILTER PRESS
BI	BLACK IRON
BLD FLG	BLIND FLANGE
BLDG	BUILDING
BLK	BLOCK
BOD	BOTTOM OF DUCT, BIOCHEMICAL OXYGEN DEMAND
BOW	BOTTOM OF WALL
BTWN	BETWEEN
BVC	BEGIN VERTICAL CURVE
C	CONDUIT
CAP	CORRUGATED ALUMINUM PIPE
CB	CATCH BASIN
CCP	CONCRETE CYLINDER PIPE
CFM	CUBIC FEET PER MINUTE
CI	CAST IRON
CL	CLASS
CLAR	CLARIFIER
℄	CENTER LINE
CLR	CLEARANCE
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTRACTOR
CONV	CONVEYOR
CPLG	COUPLING
CONTIN	CONTINUED
COP	COPPER
CP	CORNER POST
CSH	CONCRETE SURFACE HARDENER
CTR	CENTER
D	DRAIN
DI	DUCTILE IRON
DIA	DIAMETER
DIR	DIRECTION
DISCH	DISCHARGE
DN	DOWN
DO	DISSOLVED OXYGEN
DP	DIFFERENTIAL PRESSURE
E	EAST
EA	EACH
ECC	ECCENTRIC
EFF	EFFLUENT
EL	ELEVATION
EL	ELBOW
ELEC	ELECTRICAL
EMERG	EMERGENCY
EXIST	EXISTING
EXP	EXPANSION
EW	EACH WAY
EVC	END VERTICAL CURVE
FAB	FABRICATED
FCA	FLANGED COUPLING ADAPTER
FD	FLOOR DRAIN
FF	FACTORY FINISH, FINISHED FLOOR
FIG	FIGURE
FIN	FINISHED
FL	FLANGE
FL	FLOW LINE
FLEX	FLEXIBLE
FLR	FLOOR
FPM	FEET PER MINUTE
FT	FEET
FT^2	SQUARE FEET
GA	GAUGE
GALV	GALVANIZED
GEN	GENERAL
GI	GALVANIZED IRON
GOVT	GOVERNMENT
GPD	GALLONS PER DAY
GPM	GALLONS PER MINUTE
GRD	GRADE
GRV	GROOVED PIPE OR COUPLING
GV	GATE VALVE
GWB	GYPSUM WALL BOARD
H	HEIGHT
HEX	HEXAGONAL
HDG	HOT DIP GALVANIZE
HORIZ	HORIZONTAL
HP	HORSEPOWER
HR	HOUR
HDPE	HIGH DENSITY POLYETHYLENE
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
INF	INFLUENT
INV	INVERT
J BOX	JUNCTION BOX
L	LENGTH
LB	POUND
LB/HR	POUNDS PER HOUR
LF	LINEAR FEET
MAG	MAGNETIC
MAX	MAXIMUM
MDO	MEDIUM DENSITY OVERLAY
MECH	MECHANICAL
MFGR, MFR	MANUFACTURER
MGD	MILLION GALLONS PER DAY
MG/L	MILLIGRAM PER LITER
MH	MANHOLE
MIN	MINIMUM
MJ	MECHANICAL JOINT
MO	MID ORDINATE
N	NORTH
No.	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OPNG	OPENING
OPP	OPPOSITE
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
P	POWER
PE	PLAIN END
PERF	PERFORATED
PL	PLATE
PLYWD	PLYWOOD
POT	POTABLE
PRV	PRESSURE REDUCING VALVE
PS	PUMP STATION, PRIMARY SLUDGE, PIPE SUPPORT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PTS	PAINTED SURFACE
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
QT	QUARTER
QUAD	QUADRANT
RAS	RETURN ACTIVATED SLUDGE
RD	ROOF DRAIN
RED	REDUCER
REJ	RUBBER EXPANSION JOINT
REINF	REINFORCE
REQD	REQUIRED
RESTL	REINFORCING STEEL
RM	ROOM
RO	ROUGH OPENING
RPBA	REDUCED PRESSURE BACKFLOW ASSEMBLY
RS	RAW SEWAGE
R/W	RIGHT-OF-WAY
S	SOUTH,
SC	SCUM
SCH	SCHEDULE
SF	SQUARE FEET
SHT	SHEET
SL	SLOPE
SL	SLUDGE
SMU	SUBMERGED MEMBRANE UNIT
SOC	SOCKET
SP	STATIC PRESSURE
SPECS	SPECIFICATIONS
SQ	SQUARE
SS	STAINLESS STEEL
STA	STATION
STD	STANDARD
STL	STEEL
STRG	STRONG
SUC	SUSPENDED CEILING
T	TELEMETRY
TAPD	TAPERED
TB	TOP AND BOTTOM
TC	TOP OF CURB
TDH	TOTAL DYNAMIC HEAD
TEL	TELEPHONE
THK	THICK
THRD	THREADED
THRU	THROUGH
TK	TANK
TOC	TOP OF CONCRETE
TOW	TOP OF WALL
TS	TOTAL SOLIDS
TYP	TYPICAL
VC	VERTICAL CURVE
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VIS	VINYL SHEET
VS	VOLATILE SOLIDS
W	WIDTH, WEST
W/	WITH
WAS	WASTE ACTIVATED SLUDGE
WD	WIDE
W/O	WITHOUT
WS	WATER SURFACE
WWM	WELDED WIRE MESH
WWF	WELDED WIRE FABRIC

GENERAL SYMBOLS

1/4" FT	SLOPE 1/4" PER FOOT
	FLOW DIRECTION (AIR, WATER)
	OPENING
	GROUND
	ASPHALT SECTION
	CONCRETE SECTION
	WATER SURFACE
	ELEVATION REFERENCE POINT
	LEGEND/NOTE CALL OUTS
	PIPE SUPPORT
	ELECTRICAL MAST
	SQUARE SECTION
	PIPE SECTION
@	SPACING CENTER ON CENTER
	SIZE OF DEFORMED BAR
Ø	DIAMETER
	RECTANGULAR SECTION
	ANGLE
W	WIDE-FLANGE SHAPE
C	CHANNEL
	PLATE
℄	CENTER LINE

EXAMPLE OF SECTION NUMBERING SYSTEM AND PLAN/DRAWING TITLES

FOR DETAILS, SUBSTITUTE DETAIL NUMBER FOR SECTION LETTER

ELEVATION VIEW ON SHT. M99-1: A / M99-1

SECTION CUT ON SHT. M99-9

SECTION LETTER OR DETAIL NUMBER: A / M99-1

SHEET ON WHICH SECTION OR DETAIL APPEARS

ON SHT. M99-9 THIS SECTION IS IDENTIFIED AS:

SECTION LETTER OR DETAIL NUMBER: A / M99-1

SHEET ON WHICH SECTION OR DETAIL APPEARS

SECTION
SCALE: X"=1'-0"

SECTION LETTER OR DETAIL NUMBER: A / –

SECTION APPEARS ON SAME DWG AS CUT

SECTION LETTER OR DETAIL NUMBER: A / TYP

SECTION SI TYPICAL TO MANY PLACES

DETAILS ARE REFERENCED IN A SIMILAR MANNER EXCEPT NUMBERS ARE USED INSTEAD OF LETTERS

DRAWING TITLE IDENTIFICATION :

DRAWING TITLE
SCALE: X"=1'-0"

GENERAL NOTES :

1. IN GENERAL, EXISTING STRUCTURES AND FACILITIES ARE NOTED AS "EXISTING" AND ARE SHOWN IN LIGHT LINE WEIGHTS OR AS SCREENED BACKGROUND. NEW CONSTRUCTION, STRUCTURES, FACILITIES, AND FEATURES ARE SHOWN IN HEAVY LINE WEIGHTS.
2. MANY OF THE SYMBOLS SHOWN ON THIS LEGEND ARE USED ONLY WHERE THEY PROVIDE CLARITY AND ARE NOT NECESSARILY USED IN ALL APPLICATIONS. SOME CONTRACT DRAWINGS MAY HAVE ADDITIONAL LEGENDS APPLICABLE FOR THAT SPECIFIC DRAWING. SYMBOLS SHOWN ON SPECIFIC DRAWINGS GOVERN.
3. THE CONTRACTOR SHALL VERIFY ALL PLANIMETRIC FEATURES AND DIMENSIONS PRIOR TO STARTING WORK AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
4. ALL DIMENSIONS SHOWN ON THE CONTRACT DRAWINGS AND DESCRIBED IN THE SPECIFICATIONS REFER TO THE HORIZONTAL AND VERTICAL PROJECTED PLANES, UNLESS OTHERWISE INDICATED.
5. EXISTING UNDERGROUND UTILITY INFORMATION AS SHOWN ON THOSE PLANS HAS BEEN PROVIDED BY THE INDIVIDUAL UTILITY COMPANIES. LOCATIONS ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. PROTECT EXISTING MONITORING WELLS.
6. REFER TO SHEET G-7 FOR SURVEY CONTROL.
7. FOR ADDITIONAL ABBREVIATIONS AND SYMBOLS, SEE SHEETS M-1, A-1, H-1, P-1, S-1, I-1, AND E-1.

SYMBOL LEGEND

EXISTING	NEW
ASPHALT PAVEMENT	ASPHALT PAVEMENT
GRAVEL SURFACING	GRAVEL SURFACING
CONCRETE SURFACING	CONCRETE SURFACING
FENCE	FENCE
ELECTRICAL LINE	SILT FENCE
FO — FIBER OPTICS	CLEARING AND GRUBBING LIMITS
ORDINARY HIGH WATER MARK	G — GAS MAIN (SIZE AS NOTED)
W — WATER MAIN (SIZE AS NOTED)	W — WATER MAIN (SIZE AS NOTED)
FM — FORCE MAIN	FM — FORCE MAIN
S — SANITARY SEWER	S — SANITARY SEWER
TELEPHONE LINE	GATE VALVE
GATE VALVE	BUTTERFLY VALVE
BUTTERFLY VALVE	CHECK VALVE
CHECK VALVE	PLUG VALVE
PLUG VALVE	THRUST BLOCK
THRUST BLOCK	UTILITY POLE WITH GUY WIRE
UTILITY POLE WITH GUY WIRE	UTILITY POLE
UTILITY POLE	LUMINAIRE (SEE ALSO ELECTRICAL)
LUMINAIRE	JUNCTION BOX (AS NOTED)
JUNCTION BOX (AS NOTED)	MANHOLE
MANHOLE	FIRE HYDRANT
FIRE HYDRANT	TYPE 1 CATCH BASIN OR CURB INLET
TYPE 1 CATCH BASIN OR CURB INLET	TYPE 2 CATCH BASIN
TYPE 2 CATCH BASIN	
SECTION CORNER	
1/4 CORNER	
WATER METER	WATER METER
MONUMENT	MONUMENT
TREES	TREES (SEE ALSO LANDSCAPE PLAN)
SHRUBS	SHRUBS
BORING AND TEST PIT LOCATIONS	BORING AND TEST PIT LOCATIONS
BUILDINGS	BUILDINGS
20 — CONTOUR	20 — CONTOUR
YH YARD HYDRANT	YH YARD HYDRANT
CO CLEANOUT	CO CLEANOUT
PIPE AND MATERIALS TO BE ABANDONED IN PLACE	
PIPE AND MATERIALS TO BE REMOVED/DEMOLISHED	
TREE LINE	
TREE HARVEST LINE	
RIGHT-OF-WAY LINE	

PROCESS PIPING ABBREVIATIONS

ALP	AIR LOW PRESSURE	PER	PERMEATE
BP	BYPASS	W	POTABLE WATER
CCS	CHEMICAL CLEANING SOLUTION	RS	RAW SEWAGE
D	DRAIN	RAS	RETURN ACTIVATED SLUDGE
EQ	EQUALIZATION	SAM	SAMPLE
FE	FINAL EFFLUENT	SD	STORM DRAIN
FM	FORCE MAIN	SE	SECONDARY EFFLUENT
I	IRRIGATION	SPD	SUMP PUMP DISCHARGE
LPG	LIQUID PROPANE GAS	SS	SANITARY SEWER
ML	MIXED LIQUOR	SUP	SUPERNATANT
NPW	NON-POTABLE WATER	V	VENT
OCD	ODOR CONTROL DUCT	WAS	WASTE ACTIVATED SLUDGE
OTF	OUTFALL	WS	WASTE SLUDGE
OF	OVERFLOW		

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WASTEWATER TREATMENT FACILITY UPGRADE

8220 178TH AVENUE COURT SW, LONGBRANCH, WA 98351

No.	DATE	REVISION

ISSUED FOR:

BID SET

ISSUE DATE:	SEPTEMBER 2026
APPROVED BY:	EFN
CHECKED BY:	EFN
DRAWN BY:	CRR
DESIGNER:	JESP
G & O JOB NO.:	22848.01
FILE:	G_ABBR-SYM.DWG

0 — 1" — 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

GENERAL

ABBREVIATIONS, SYMBOLS, LEGEND, AND GENERAL NOTES

DRAWING: **G-3** OF: **16**

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DESIGN CRITERIA AND PLANT DATA

DESIGN POPULATION	357 People
DESIGN ERU'S	141 ERU's

PLANT LOADINGS

Flow:	
Average Annual Flow	0.024 mgd (17 gpm)
Maximum Month Flow	0.038 mgd (26 gpm)
Peak Day Flow	0.062 mgd (43 gpm)
Peak Hour Flow	0.112 mgd (78 gpm)
Design Influent BOD_5	
Maximum Month	72 lb/d
Design Influent TSS	
Maximum Month	74 lb/d
Design Influent TKN	
Maximum Month	11 lb/d

EFFLUENT DESIGN CRITERIA

BOD_5 (Average Monthly)	30 mg/L
TSS (Average Monthly)	30 mg/L
Total Nitrogen	10 mg/L
pH	6 - 9
Fecal Coliform	200 col/100mL

INFLUENT PUMP STATION

Quantity of Pumps	2
Type	Submersible Centrifugal
Capacity, Each	78 gpm @ 14 ft TDH
Motor Size	3 hp

EQUALIZATION BASIN

Quantity	1
Volume	8,100 gal
Maximum Side Water Depth	9 ft

INFLUENT FLOW METER

Quantity	1
Type	Magnetic Flow Meter
Size	3-inch

INFLUENT SCREENS

Quantity	2
Type	Rotary Drum Screen
Screen Opening	2 mm
Capacity, Each	78 gpm
Motor Size	1 hp

SCREENINGS WASHER COMPACTOR

Quantity	1
Capacity	10 cfh
Motor Size	2 hp

ANOXIC BASIN

Quantity	1
Volume	4,040 gal
Side Water Depth	14.1 ft
Hydraulic Detention Time at AAF	3 hr
Hydraulic Detention Time at MMF	1.9 hr
Anoxic Basin Mixer:	
Quantity	1
Type	Submersible
Motor Size	2.5 hp

AERATION BASIN

Quantity	1
Volume, Total	14,000 gal
Side Water Depth	10 ft
Design MLSS	10,000 mg/L
Aerobic SRT (Excluding MBR's)	17.9 d
Aerobic HRT @ AAF (Excluding MBR's)	12.1 hr
Aerobic HRT @ MMF (Excluding MBR's)	7.8 hr
Aerobic Mass (M)	204 lb MLSS
Aerobic F/M	0.35
Net Sludge Production	57 lb/d
Net Yield	0.42 lb MLSS/lb BOD_5
Aerator Type	Fine Bubble Diffuser
Standard Oxygen Requirement	310 lb/d
Total Air Flow Requirement	68 scfm
Aeration Blowers:	
Quantity	1
Type	Positive Displacement
Capacity	68 scfm @ 5.7 psig
Motor Size	5 hp

MEMBRANES

Quantity of Membrane Bioreactors	2
Volume (each)	6,600 gal
Side Water Depth	10 ft
Quantity of Units Per Bioreactor	2
Quantity of Units, Total	4
Membrane Surface Area per Unit	1,290 ft^2
Total Membrane Surface Area	5,160 ft^2
Membrane Median Pore Size	0.4 µm
Membrane Flux at AAF	4.7 $gal/ft^2/d$
Membrane Flux at MMF	7.3 $gal/ft^2/d$
Membrane Flux at PDF	12 $gal/ft^2/d$
Membrane Flux at Peak Flux	21.7 $gal/ft^2/d$

PERMEATE PUMPS

Quantity	3
Pump Type	Rotary Lobe
Capacity, Each	45 gpm @ 18.6 psi
Motor size	5 hp

SCOUR AIR BLOWERS

Quantity of Blowers	3
Type	Positive Displacement
Capacity, Each	114 scfm @ 4.7 psig
Motor size	5 hp

UV SYSTEM

Quantity of Vessels	2
Type	Horizontal Closed Vessel
Peak Design Flow	0.062 mgd
Max Headloss at Peak Design Flow	24 inches
Design Effluent TSS	5 mg/L
Design UV Transmittance of Wastewater	65% (@ 253.7 nm)
Design Temperature Range	41°F to 86°F
UV Tube Type	Quartz
Minimum UV Dose at PDF	30 mj/cm²
Effluent Standard to be Achieved:	
Daily Maximum	200 MPN/100 mL

EFFLUENT FLOW METER

Quantity	2
Type	Magnetic Flow Meter
Size	3-inch

NON-POTABLE WATER SYSTEM

NPW Storage Volume	1,500 gal
Quantity of Pumps	2
Type	Multistage Centrifugal
Capacity, Each	30 gpm @ 212 ft TDH
Motor Size	3 hp
Non-potable Water Flow Meter:	
Quantity	1
Type	Magnetic Flow Meter
Size	2-inch

RAS PUMP STATION

Quantity of Pumps	2
Type	Submersible Centrifugal
Capacity, Each	105 gpm @ 16 ft TDH
Motor Size	3 hp
RAS Flow Meter:	
Quantity	1
Type	Magnetic Flow Meter
Size	3-inch

WAS HOLDING TANK

Quantity	1
Volume	10,700
Side Water Depth	13.0 ft
Design MLSS	10,000 mg/L
Solids Retention Time	15 d
Aerator Type	Coarse Bubble Diffuser
WAS Tank Blowers:	
Quantity	1
Type	Regenerative
Capacity	62 scfm @ 7.0 psig
Motor Size	7.5 hp
WAS Flow Meter:	
Quantity	1
Type	Magnetic Flow Meter
Size	3-inch
Waste Sludge Pump:	
Quantity	1
Type	Centrifugal Dry-Pit Non-clog
Capacity	172 gpm @ 19' TDH
Motor Size	3 hp

ODOR CONTROL SYSTEM

Quantity of Units	1
Type	Carbon Media
Quantity of Fans	1
Fan Motor Size	1.5 hp
Fan Capacity	400 cfm

AUXILIARY GENERATOR

Quantity	1
Fuel	Diesel
Rating	100 kW, 480 V, 3-phase, 4-wire

Gray & Osborne, Inc.
CONSULTING ENGINEERS
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SEATTLE, WASHINGTON 98144
(206) 284-0860

ERIC F. NUTTING — STATE OF WASHINGTON — 33900 — REGISTERED PROFESSIONAL ENGINEER

9/4/2026

TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

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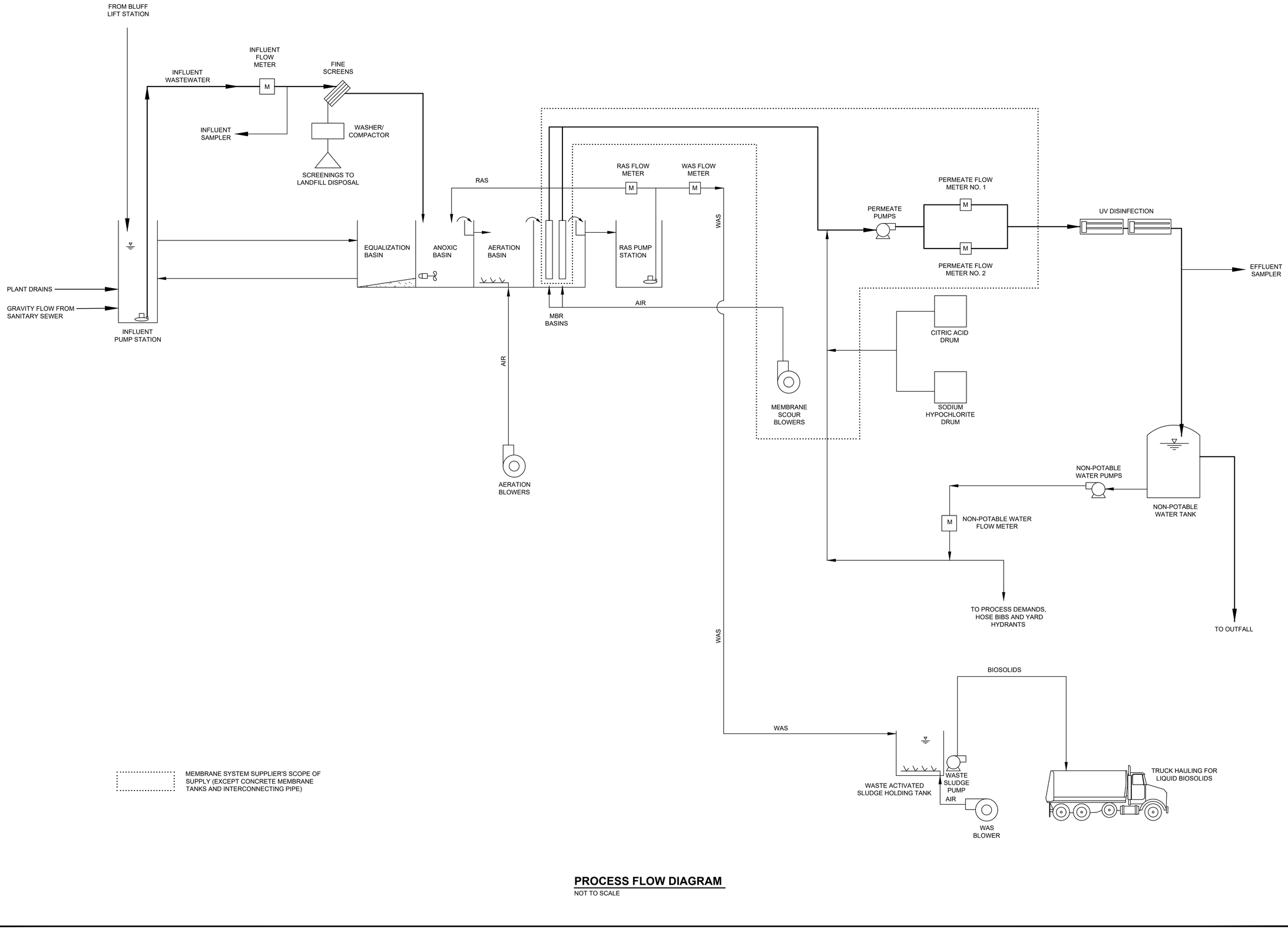
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DESIGN CRITERIA

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PROCESS FLOW DIAGRAM

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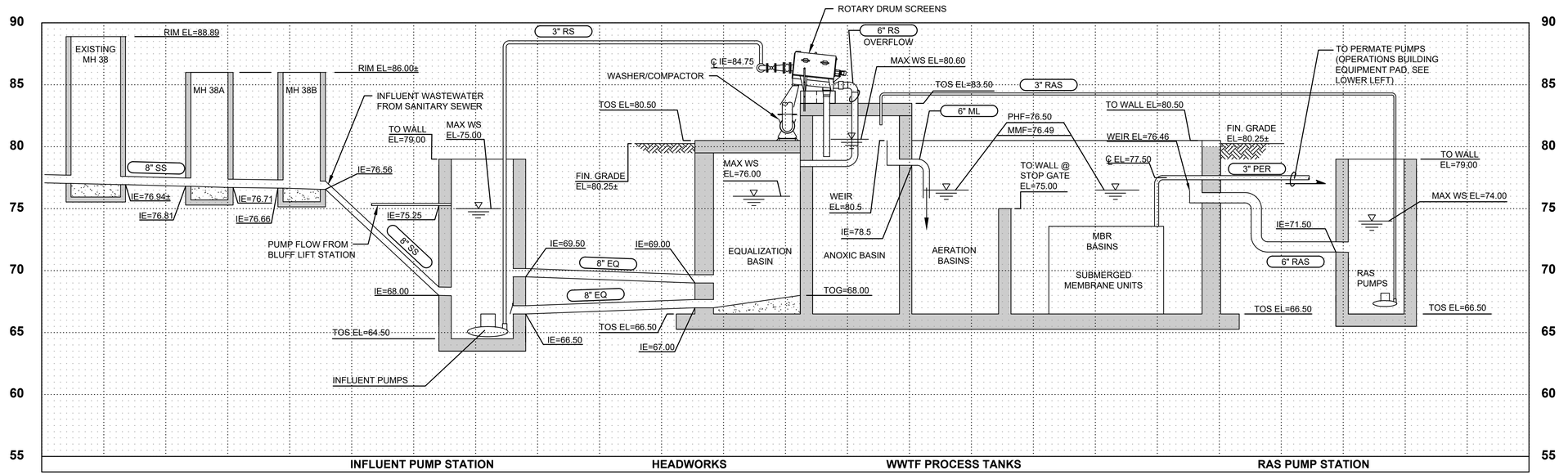
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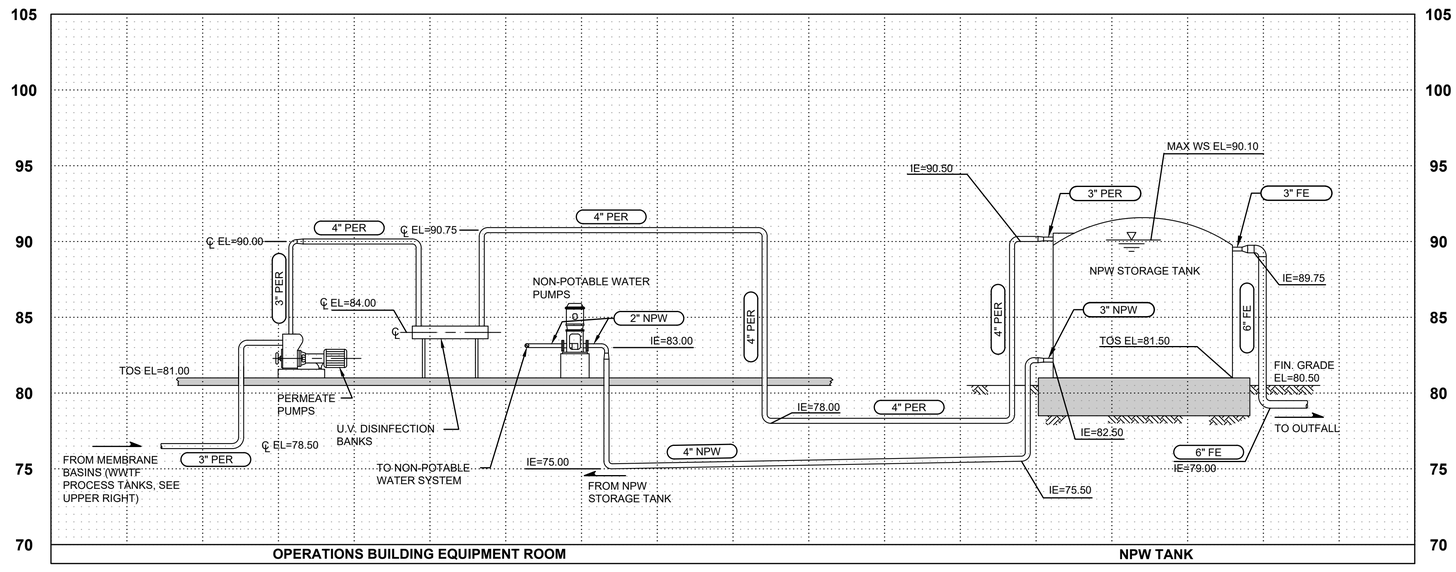
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PROCESS FLOW DIAGRAM

DRAWING: **G-5** OF: **16**

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LEGEND:

PHF = WATER SURFACE ELEVATION @ PEAK HOUR FLOW (0.112 MGD)

MMF = WATER SURFACE ELEVATION @ MAXIMUM MONTH FLOW (0.038 MGD)

WWTF HYDRAULIC PROFILE

SCALE: VERT 1"=5'-0", HORIZ NOT TO SCALE

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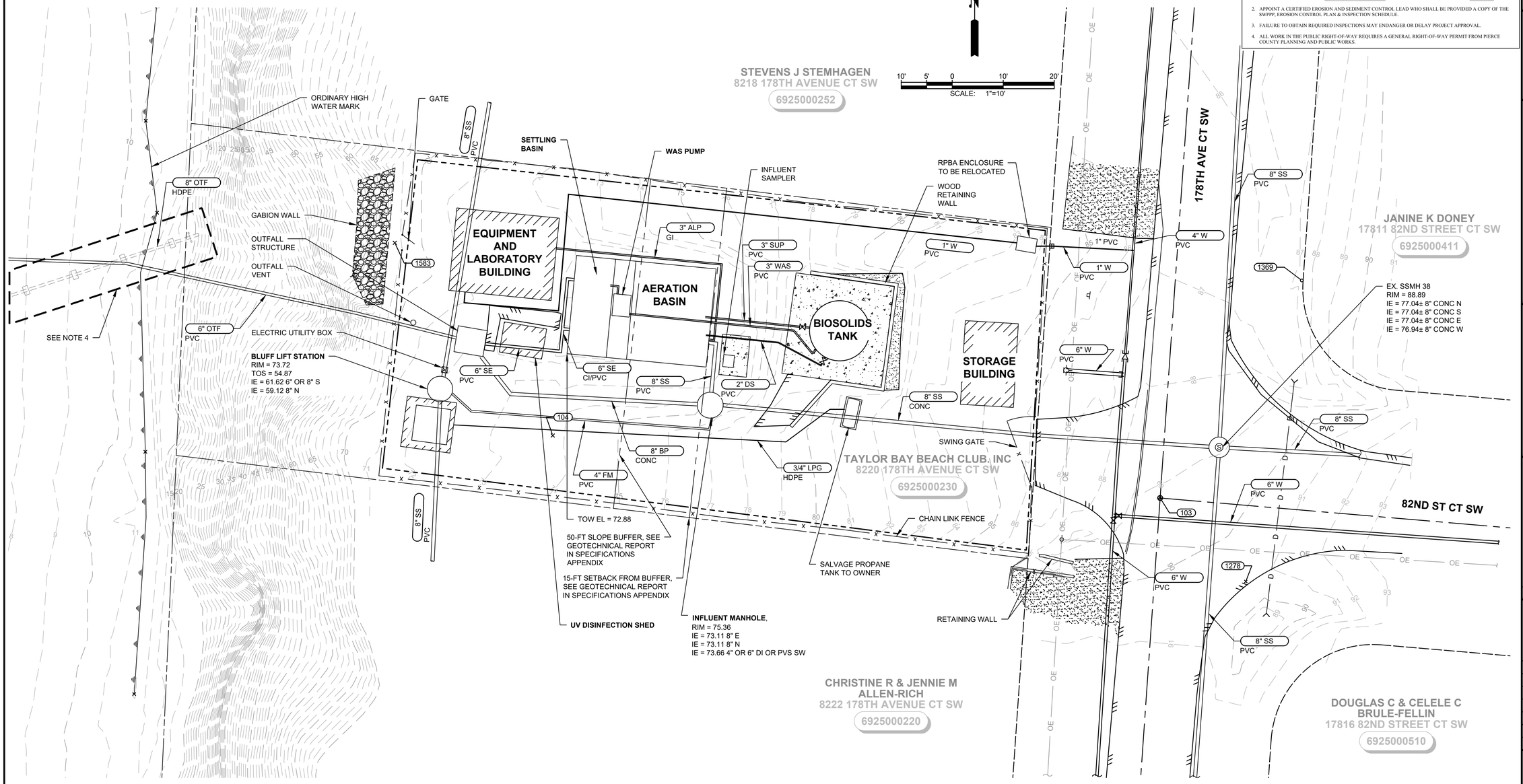
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HYDRAULIC PROFILE

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EXISTING SITE PLAN

SCALE: 1"=10'

NOTE:

1. (X) INDICATES CONTROL COORDINATE LOCATION, SEE TABLE.
2. REFER TO SHEET GD-3 FOR TESC NOTES.
3. CONTOURS ALONG THE BLUFF FROM THE ORDINARY HIGH WATER MARK TO ELEVATION 68 ARE BASED ON THE WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCE'S LIDAR PORTAL FOR THE FLIGHT SPECIFICALLY CALLED "PIERCE 2020 (COORDINATE SYSTEM : NAD 83 HARN STATE PLANE SOUTH, VERTICAL COORDINATE SYSTEM: NAVD88 HEIGHT) AND ARE CONSIDERED APPROXIMATE.
4. NEW OUTFALL TO BE COMPLETED AS PART OF THE TAYLOR BAY OUTFALL REPLACEMENT PROJECT. SEE SPECIFICATION SECTION 01110 FOR ADDITIONAL INFORMATION.

RIGHT-OF-WAY DISCLAIMER

THE RIGHT-OF-WAY AND/OR PROPERTY LINES SHOWN HEREON ARE BASED ON AVAILABLE INFORMATION, NOT ON A SURVEYED LOCATION AND ARE ONLY APPROXIMATE.

CONTROL COORDINATE TABLE

HORIZONTAL DATUM:	NAD83/2011, EPOCH 2010.00
WASHINGTON PLANE COORDINATE SYSTEM, SOUTH ZONE, GRID NORTH	
MODIFIED GROUND COORDINATES, SCALED TO GROUND USING AVG. CGF OF 0.99996708 AT BASE POINT G&O #1	
(WSDOT "TAYLOR BAY")	
VERTICAL DATUM:	NAVD88
HOLDING WSDOT "TAYLOR BAY" (G&O #1) PUBLISHED ELEVATION OF 115.781'.	

POINT	NORTHING	EASTING	ELEV.	DESCRIPTION
103	682425.43	1074541.56	89.13	SFM, COTTON GIN SPINDLE IN ASPHALT AT GRADE. INTX 82ND ST CT SW & 178TH AVE CT SW. 4.5' E OF W WEDGE CURB FLOWLINE. AT CENTERLINE 82ND ST CT SW EXTENDED.
104	682437.68	1074422.50	73.80	SSN=SET NAIL, 60-D NAIL W/ BLUE WHISKERS & PINK FLAGGING. DOWN 0.1' IN GRASS/GRAVEL OF WWTP SITE. 16' SSE OF SW CORNER OF SETTLING TANK.
1278	682409.06	1074558.35	90.60	SFNT=NAIL W/ TAG, NAIL W/ "ASPEN LS 28408" TAG.
1369	682468.09	1074569.32	87.20	SFRC, 5/8" REBAR W/ DESTROYED YELLOW PLASTIC CAP. BENT 0.15' TO W, SHOT AT BEND. UP 0.7' ABOVE GRADE.
1583	682475.47	1074391.53	68.62	SSN*TEMP, TEMPORARY CONTROL POINT.

PRIVATE IMPROVEMENTS

PERMIT # 1068155

DEVELOPMENT ENGINEER

DATE 08/20/2026

PIERCE COUNTY ORDINANCE NOs: STORM 2026-530s ROAD 2022-7s

1. A PRE-CONSTRUCTION MEETING SHALL BE REQUESTED AT LEAST 48-HOURS IN ADVANCE OF THE START OF CONSTRUCTION. CONTACT Sam Knox, THE AREA INSPECTOR, AT 253-798- 3709.
2. APPOINT A CERTIFIED EROSION AND SEDIMENT CONTROL LEAD WHO SHALL BE PROVIDED A COPY OF THE SWPPP, EROSION CONTROL PLAN & INSPECTION SCHEDULE.
3. FAILURE TO OBTAIN REQUIRED INSPECTIONS MAY ENDANGER OR DELAY PROJECT APPROVAL.
4. ALL WORK IN THE PUBLIC RIGHT-OF-WAY REQUIRES A GENERAL RIGHT-OF-WAY PERMIT FROM PIERCE COUNTY PLANNING AND PUBLIC WORKS.

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EXISTING SITE AND PROCESS PIPING PLAN, CONTOURS, AND CONTROL COORDINATES

DRAWING: G-7 OF: 16

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GENERAL NOTES:

1. SEE SHEET G-9 FOR GENERAL NOTES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL ON-SITE. SEE SPECIFICATION SECTION 02370.
3. REFER TO SHEET GD-3 FOR TESC NOTES.
4. CONTRACTOR SHALL REFER TO SPECIFICATION SECTION 02240 FOR DEWATERING.
5. NEW OUTFALL TO BE COMPLETED AS PART OF THE TAYLOR BAY OUTFALL REPLACEMENT PROJECT, SEE SPECIFICATION SECTION 01110 FOR ADDITIONAL INFORMATION.
6. CONTRACTOR SHALL USE STRAW WATTLES AS NECESSARY TO PREVENT THE MOVEMENT OF SEDIMENT. SEE DETAIL (6/GD-3).
7. THE IMPLEMENTATION OF THIS CONSTRUCTION SWPPP AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE CONSTRUCTION STORMWATER BMPS IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.
8. 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 CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
9. THE CONSTRUCTION STORMWATER BMPS SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.
10. THE CONSTRUCTION STORMWATER BMPS SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE CONSTRUCTION STORMWATER BMPS SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE.
11. THE CONSTRUCTION STORMWATER BMPS SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
12. THE CONSTRUCTION STORMWATER BMPS ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 48 HOURS FOLLOWING A MAJOR STORM EVENT.
13. STABILIZED CONSTRUCTION ACCESSES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.

PRIVATE IMPROVEMENTS

PERMIT # 1068155

DEVELOPMENT ENGINEER

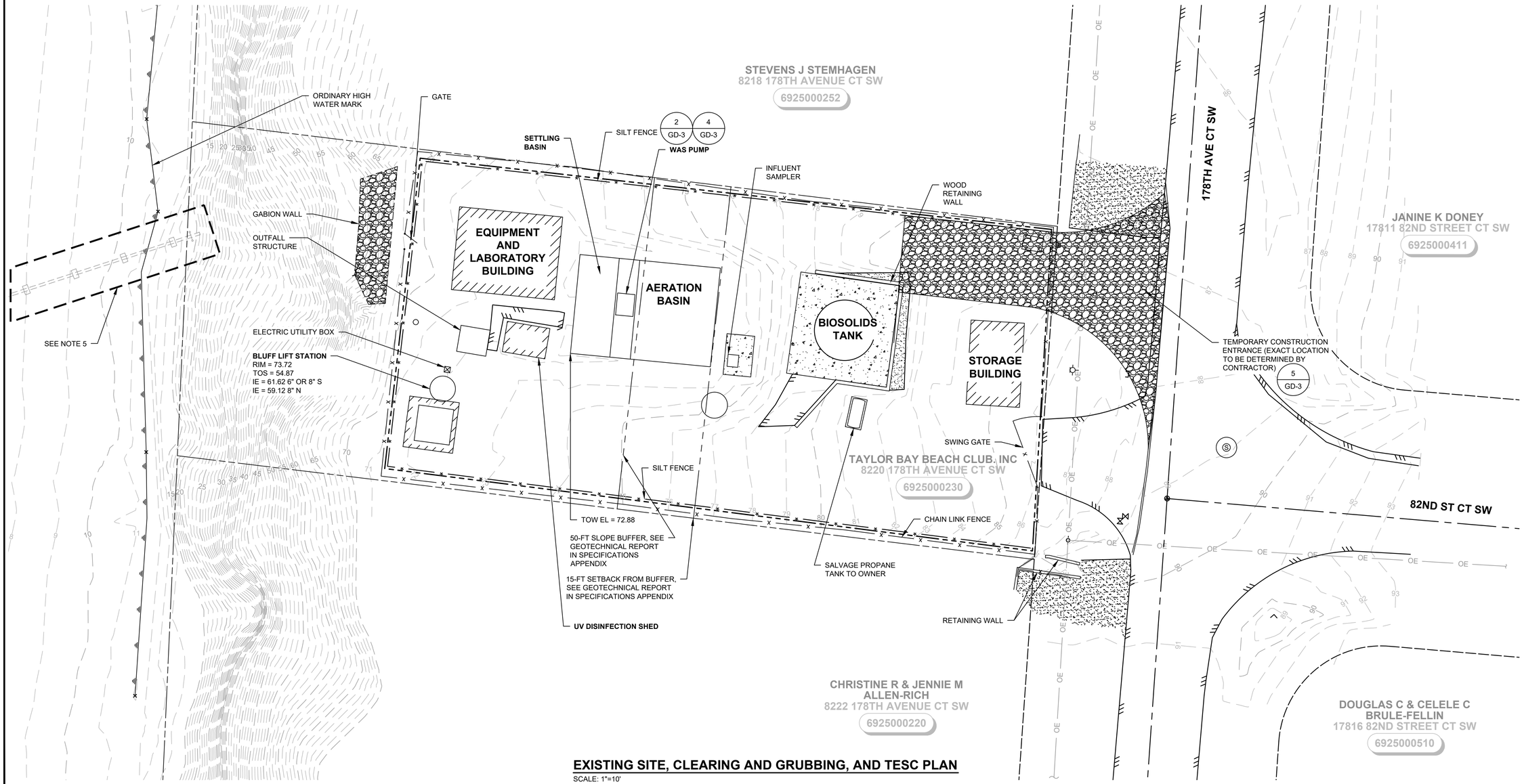
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4. ALL WORK IN THE PUBLIC RIGHT-OF-WAY REQUIRES A GENERAL RIGHT-OF-WAY PERMIT FROM PIERCE COUNTY PLANNING AND PUBLIC WORKS.

10' 5' 0 10' 20'
SCALE: 1"=10'

LEGEND:
- CLEARING AND GRUBBING LIMITS
- SILT FENCE
- RIGHT-OF-WAY
- PROPERTY LINE



EXISTING SITE, CLEARING AND GRUBBING, AND TESC PLAN

SCALE: 1"=10'

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EXISTING SITE, CLEARING AND GRUBBING, AND TESC PLAN

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GENERAL NOTES:

1. EXISTING TREATMENT PLANT TO REMAIN IN SERVICE AT ALL TIMES. CONTRACTOR TO COORDINATE REMOVAL AND/OR ABANDONMENT OF EXISTING STRUCTURAL, PIPING AND UTILITIES WITH CONSTRUCTION OF NEW UTILITIES AND TREATMENT FACILITIES. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS REGARDING ORDER OF WORK FOR DEMOLITION AND DISPOSAL AND SALVAGE OF EQUIPMENT.
2. ADDITIONAL DEMOLITION NOTES SHOWN ON THE MECHANICAL, ARCHITECTURAL, HVAC, PLUMBING, STRUCTURAL AND ELECTRICAL SHEETS.
3. REMOVE EXISTING ASPHALT PAVING AND CONCRETE AS REQUIRED TO CONSTRUCT NEW FACILITIES.
4. RECORD DRAWINGS ARE AVAILABLE FOR EXISTING STRUCTURES IF ADDITIONAL INFORMATION IS REQUIRED. THE OWNER/ENGINEER DOES NOT WARRANT THE ACCURACY OF THE RECORD DRAWINGS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE SITE AND VERIFY EXISTING CONDITIONS PRIOR TO BIDDING. WHERE EXISTING CONDITIONS DIFFER FROM THOSE SHOWN TO THE EXTENT THAT THEY WILL IMPACT THE COST OF THE CONTRACTOR'S WORK, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING PRIOR TO BIDDING.
5. THE CONTRACTOR SHALL PROVIDE THE TREATMENT PLANT OPERATOR WITH ACCESS TO ALL EXISTING FACILITIES STILL IN SERVICE AT ALL TIMES. IF ACCESS CANNOT BE MAINTAINED, THE CONTRACTOR SHALL PROVIDE THE EQUIPMENT AND LABOR NECESSARY TO AID THE OPERATORS IN ACCESSING THE FACILITIES.
6. IN ADDITION TO THE ITEMS SHOWN TO BE DEMOLISHED, THE CONTRACTOR SHALL REMOVE ALL ASPHALT, CONCRETE WALLS, CONCRETE SLABS, PIPING, ELECTRICAL CONDUIT, CONCRETE ENCASEMENTS, AND ANY OTHER ITEMS REQUIRED TO CONSTRUCT THE NEW FACILITIES.
7. TEMPORARY SHORING SHALL BE INSTALLED AS REQUIRED TO PROTECT EXISTING FACILITIES.
8. PROTECTION OF THE ENVIRONMENT: NO CONSTRUCTION RELATED ACTIVITY SHALL CONTRIBUTE TO THE DEGRADATION OF THE ENVIRONMENT, ALLOW MATERIAL TO ENTER SURFACE OR GROUND WATERS, OR ALLOW PARTICULATE EMISSIONS TO THE ATMOSPHERE, WHICH EXCEED STATE OR FEDERAL STANDARDS. ANY ACTIONS THAT POTENTIALLY ALLOW A DISCHARGE TO STATE WATERS MUST HAVE PRIOR APPROVAL OF THE WASHINGTON STATE DEPARTMENT OF ECOLOGY.
9. SEE SECTION 01110 OF THE CONTRACT SPECIFICATIONS FOR INFORMATION REGARDING THE ORDER OF WORK REQUIREMENTS AND SUGGESTED CONSTRUCTION PHASING.
10. LOCATIONS SHOWN FOR EXISTING PIPING ARE BASED ON RECORD DRAWINGS AND ON-SITE SURVEY OF EXPOSED PIPES AND VALVES AND ARE FOR CONTRACTORS INFORMATION ONLY. THE OWNER/ENGINEER DOES NOT WARRANT THE ACCURACY OF THE RECORD DRAWINGS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE SITE AND VERIFY EXISTING CONDITIONS PRIOR TO BIDDING. WHERE EXISTING CONDITIONS DIFFER FROM THOSE SHOWN TO THE EXTENT THEY WILL IMPACT THE COST OF THE CONTRACTOR'S WORK, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO BIDDING.
11. TREATMENT PLANT TO REMAIN IN SERVICE AT ALL TIMES. THE CONTRACTOR SHALL COORDINATE REMOVAL AND/OR ABANDONMENT OF EXISTING PIPING AND UTILITIES WITH CONSTRUCTION OF NEW UTILITIES AND TREATMENT FACILITIES. CONTRACTOR TO PROVIDE TEMPORARY PUMPING AND PIPING AS REQUIRED DURING CONSTRUCTION. ACCESS TO THE EXISTING OPERATIONS AREAS SHALL BE MAINTAINED. ANY DISRUPTIONS TO THIS ACCESS OR TREATMENT OPERATIONS MUST BE PREARRANGED THROUGH THE ENGINEER WITH THE TREATMENT PLANT OPERATORS.
12. PLUG OPEN ENDS OF PIPE TO BE ABANDONED IN-PLACE WITH NON-SHRINK GROUT. CAP OR PLUG EXPOSED END OF ACTIVE PIPES. MATCH EXISTING SIZE, MATERIAL AND DUTY RATING. REMOVE EXPOSED VERTICAL PIPING SECTIONS, VALVES AND CLEANOUTS ON LINES TO BE ABANDONED TO FOUR FEET BELOW FINISHED GRADE.
13. TEMPORARY BYPASS PIPING FROM SSMH 38 AND FROM BLUFF LIFT STATION TO THE EXISTING AERATION BASIN SCREENS MUST BE INSTALLED AND IN OPERATIONAL BEFORE THIS PIPING IS DEMOLISHED. CONTRACTOR SHALL RELOCATE THE EXISTING PALMER-BOWLUS FLUME AND ASSOCIATED ULTRASONIC LEVEL TRANSMITTER TO THE BYPASS PIPING TO PROVIDE MEASUREMENT OF TOTAL PLANT INFLUENT WASTEWATER FLOW AT ALL TIMES.
14. RELOCATE RPBA AND ASSOCIATED ENCLOSURE TO NEW WATER SERVICE. PROVIDE PREMISE ISOLATION OF THE WWTF VIA RPBA AT ALL TIMES.
15. CONTRACTOR SHALL AT MINIMUM DEMOLISH THE EXISTING TANK AND APPURTENANCES TO 4 FEET BELOW FINISHED GRADE AND DRILL 4-INCH HOLES IN THE BASE OF THE TANK AND CONCRETE SLAB, AND 8 4-INCH HOLES IN THE REMAINING WALLS.
16. CONTRACTOR SHALL DEMOLISH THE PORTION OF THE EXISTING OUTFALL EXPOSED ON THE BLUFF FACE. THE REMAINING PORTION OF THE EXISTING OUTFALL ON THE BLUFF SHALL BE PLUGGED AND ABANDONED BY THE CONTRACTOR. THE PORTION OF THE EXISTING OUTFALL ON THE BEACH SHALL BE ABANDONED AS PART OF THE TAYLOR BAY OUTFALL REPLACEMENT PROJECT. SEE SPECIFICATION SECTION 01110 FOR ORDER OF WORK, AND SPECIFICATION SECTION 02240 FOR INFORMATION REGARDING USE OF THE EXISTING OUTFALL FOR CONSTRUCTION DEWATERING.
17. NEW OUTFALL TO BE COMPLETED AS PART OF THE TAYLOR BAY OUTFALL REPLACEMENT PROJECT. SEE SPECIFICATION SECTION 01110 FOR ADDITIONAL INFORMATION.

PRIVATE IMPROVEMENTS — PERMIT # 1068155

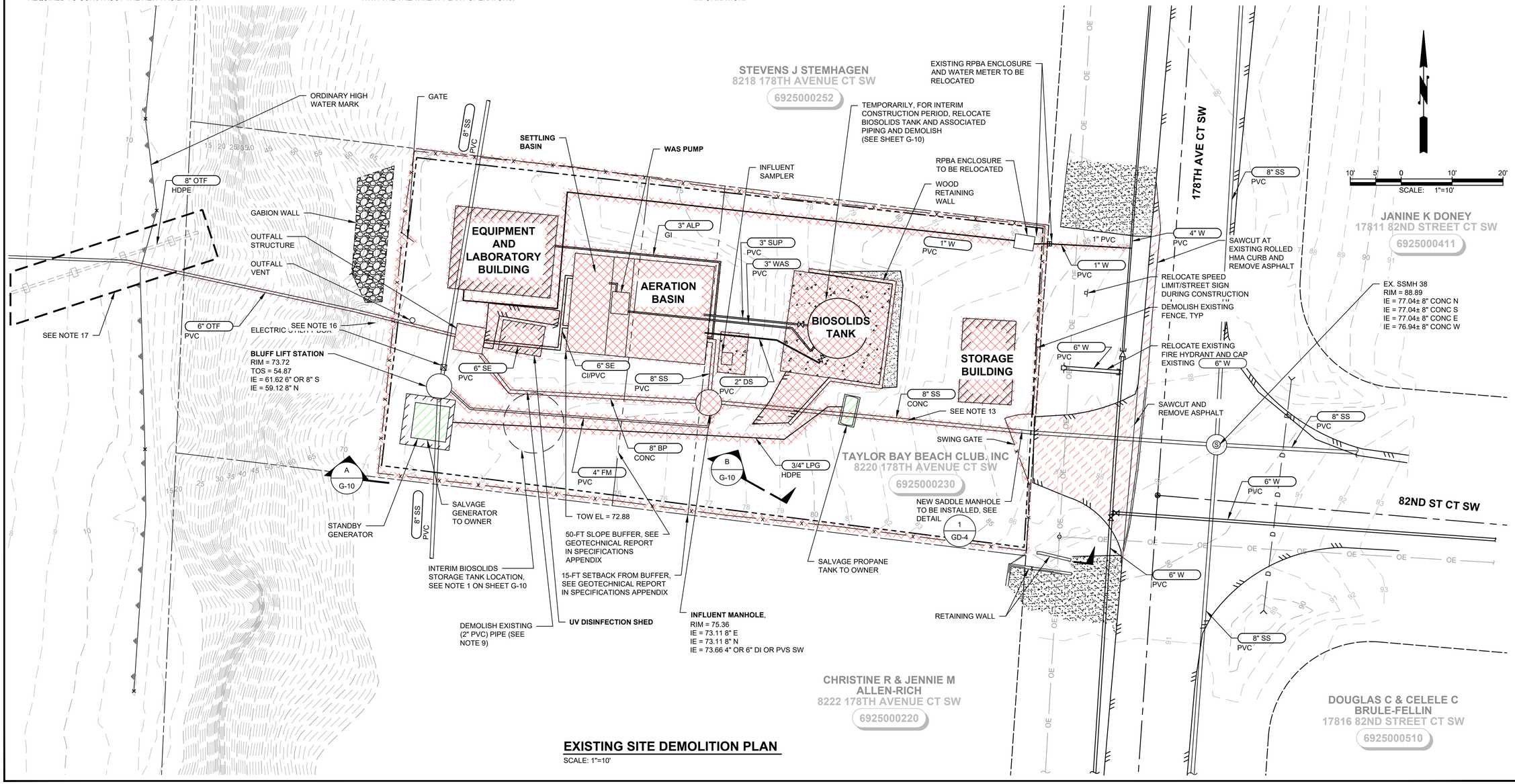
DEVELOPMENT ENGINEER — DATE 08/20/2026

PIERCE COUNTY ORDINANCE NOs: STORM 2026-530s ROAD 2022-7s

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4. ALL WORK IN THE PUBLIC RIGHT-OF-WAY REQUIRES A GENERAL RIGHT-OF-WAY PERMIT FROM PIERCE COUNTY PLANNING AND PUBLIC WORKS.

LEGEND:

- DENOTES ITEM TO BE DEMOLISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS
- DENOTES ITEMS TO BE ABANDONED IN PLACE BY THE CONTRACTOR IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS
- DENOTES ITEMS TO BE SALVAGED TO OWNER
- DENOTES THE MINIMUM AREA OF EXISTING ASPHALT PAVING THAT SHALL BE REMOVED AS PART OF THIS PROJECT. IN ADDITION TO THE AREA SHOWN HERE THE CONTRACTOR SHALL REMOVE ANY ADDITIONAL PAVEMENT REQUIRED TO CONSTRUCT THE NEW FACILITIES.



EXISTING SITE DEMOLITION PLAN

SCALE: 1"=10'

Gray & Osborne, Inc.
CONSULTING ENGINEERS
1130 RAINIER AVENUE SOUTH, SUITE 300
SEATTLE, WASHINGTON 98144
(206) 284-0860

ERIC F. NUTTING — STATE OF WASHINGTON — 33900 — REGISTERED PROFESSIONAL ENGINEER

7/31/2026

TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

8220 178TH AVENUE COURT SW, LONGBRANCH, WA 98351

No.	DATE	REVISION

ISSUED FOR:

PIERCE COUNTY BUILDING PERMIT

ISSUE DATE:	MAY 2026
APPROVED BY:	EFN
CHECKED BY:	EFN
DRAWN BY:	CRR
DESIGNER:	JESP
G & O JOB NO.:	22848.01
FILE:	G-SITE.DWG

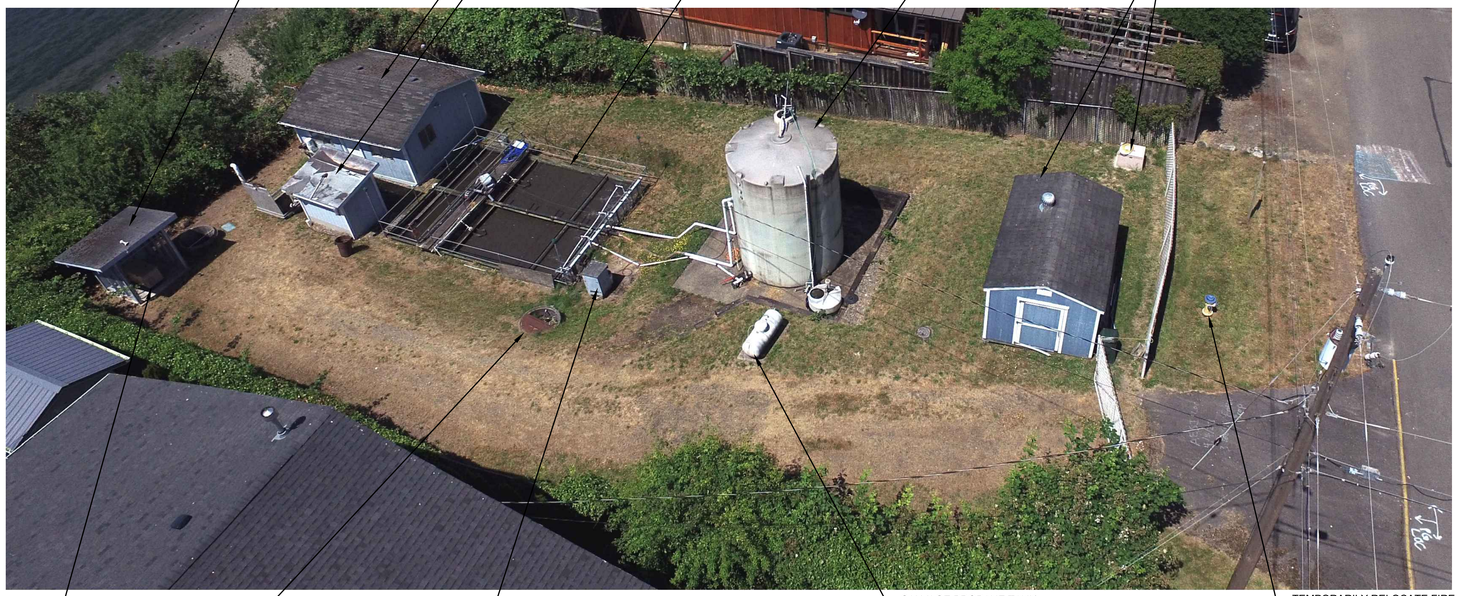
0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

GENERAL

EXISTING SITE DEMOLITION PLAN

DRAWING: G-9 OF: 16

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A G-9 **WASTEWATER TREATMENT PLANT PHOTO**
NOT TO SCALE



B G-9 **BIOSOLIDS TANK PHOTO**
NOT TO SCALE



C G-9 **GENERATOR AND CANOPY PHOTO**
NOT TO SCALE

PRIVATE IMPROVEMENTS

1068155 PERMIT #

DEVELOPMENT ENGINEER

08/20/2026 DATE

PIERCE COUNTY ORDINANCE NOs: STORM 2026-530s ROAD 2022-7s

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GENERAL NOTES:

1. CONTRACTOR SHALL RELOCATE EXISTING 12,000 GALLON VERTICAL, PAD-MOUNTED, POLYETHELENE BIOSOLIDS STORAGE TANK TO THE LOCATION SHOWN ON SHEET G-9 FOR INTERIM OPERATION DURING CONSTRUCTION UNTIL THE NEW WAS STORAGE TANK IS OPERATIONAL SEE SPECIFICATION SECTION 01110 FOR ADDITIONAL INFORMATION REGARDING THE INTERIM BIOSOLIDS TANK LOCATION AND OPERATION. INTERIM TANK SHALL BE PLACED ON COMPACTED SOIL WITH MIN. 6" OF LEVEL SAND OR 3/8" PEA GRAVEL CONTAINED TO PREVENT RUNOFF USING GALVANIZED TANK RING (AMERICAN TANK CO. INC., ULC, OR EQUAL) OR WITH FOAM CORE TANK BASE (ULC OR EQUAL). CONTRACTOR SHALL PROVIDE TEMPORARY PIPING TO AND FROM THE RELOCATED BIOSOLIDS TANK TO MATCH THE EXISTING PIPING MATERIAL AND SIZE AS DESCRIBED BELOW:

   PROVIDE 3" WAS PIPING FROM EXISTING WAS PUMP TO EXISTING BIOSOLIDS TANK. PROVIDE 3" SUP PIPING AND VALVE FROM EXISTING BIOSOLIDS TANK TO PROCESS TANKS INLET. PROVIDE 3"DS/2"D CONNECTION FROM EXISTING BIOSOLIDS, WITH EXISTING TANK CONNECTION INCLUDING 3" VALVE, 3"X2" TEE, 3" QUICK CONNECT COUPLING (FOR CONNECTION TO BIOSOLIDS HAUL TRUCK), AND 2" DRAIN PIPING TO PROCESS TANKS INLET. PROVIDE AIR HOSE/PIPING CONNECTION AND VALVE FROM AIR LINE AT PROCESS TANKS INLET TO BIOSOLIDS TANK AIR CONNECTION.

2. EXISTING BLUFF LIFT STATION SHALL REMAIN OPERATIONAL AT ALL TIMES. EXISTING BLUFF LIFT STATION CONTROL PANEL SHALL BE RELOCATED FROM THE EXISTING EQUIPMENT AND LABORATORY BUILDING TO THE EXISTING CANOPY ADJACENT TO THE LIFT STATION.

3. EXISTING INFLUENT FLOW METER, SAMPLER, AND SAMPLER ENCLOSURE SHALL BE RELOCATED TO NEW MANHOLE 38B UNTIL NEW FACILITIES ARE OPERATIONAL. SEE SPECIFICATION SECTION 01110. SEE SHEET G-11 FOR LOCATION OF MANHOLE 38B.

Gray & Osborne, Inc.
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ERIC F. NUTTING
STATE OF WASHINGTON
33900
REGISTERED
PROFESSIONAL ENGINEER
7/31/2026

TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

8220 178TH AVENUE COURT SW, LONGBRANCH, WA 98351

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DESIGNER:	JESP
G & O JOB NO.:	22848.01
FILE:	G-SITE.DWG

0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

GENERAL

DEMOLITION PHOTOS AND TEMPORARY BIOSOLIDS TANK RELOCATION

DRAWING: **G-10** OF: **16**

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NOTES:

1. (X) INDICATES STRUCTURE OR FEATURE COORDINATE LOCATION. SEE COORDINATE TABLE ON SHEET G-17.
2. [X] INDICATES CATCH BASIN OR MANHOLE COORDINATE LOCATION. SEE COORDINATE TABLE ON SHEET G-17.
3. SEE SECTION 01110 OF THE CONTRACT SPECIFICATIONS FOR INFORMATION REGARDING THE ORDER OF WORK.
4. CONTRACTOR SHALL INSTALL TEMPORARY SHORING AS REQUIRED TO PROTECT EXISTING FACILITIES, STRUCTURES AND PIPING.
5. TEMPORARY BYPASS PIPING SHALL BE INSTALLED DURING CONSTRUCTION AS REQUIRED TO OPERATE EXISTING FACILITIES DURING CONSTRUCTION.
6. CONTRACTOR TO VERIFY LOCATION AND DEPTH OF EXISTING 8" SS PRIOR TO BEGINNING WORK.
7. EXISTING INFLUENT FLOW METER AND SAMPLER SHALL BE RELOCATED TO NEW MANHOLE 38B DURING CONSTRUCTION.
8. CONTRACTOR SHALL COORDINATE WITH OWNER REGARDING LIMITED AREA AVAILABLE FOR OFFICE TRAILERS AND PARKING AT THE BEACHFRONT PARK AREA, AT THE END OF 81 ST STREET SW, APPROXIMATELY 700 NORTH OF THE WWTF. CONTRACTOR SHALL COORDINATE WITH INDIVIDUAL PROPERTY OWNERS REGARDING USE OF VACANT PROPERTIES NEARBY FOR TEMPORARY STORAGE AND STOCKPILING OF EQUIPMENT AND MATERIALS.
9. NEW WAS STORAGE TANK SHALL BE INSTALLED AFTER DEMOLITION OF THE EXISTING TREATMENT FACILITIES. THE EXISTING BIOSOLIDS TANK SHALL BE TEMPORARILY RELOCATED DURING CONSTRUCTION OF THE NEW FACILITIES UNTIL THE NEW WAS STORAGE TANK HAS BEEN COMMISSIONED. SEE SHEET G-9 FOR LOCATION AVAILABLE FOR RELOCATED BIOSOLIDS TANK.
10. EXISTING AERATION BASIN/SETTLING BASIN SHALL BE DEMOLISHED AND IS SHOWN ON THE PROPOSED SITE PLAN FOR LOCATION REFERENCE ONLY.
11. THE CONTRACTOR SHALL NOTE THAT THE AREA WITHIN THE 50-FOOT TOP OF SLOPE SETBACK IS AT RISK OF LANDSLIDING. THIS AREA MAY BE USED FOR TEMPORARY STORAGE AND LAYDOWN AT THE CONTRACTOR'S RISK.
12. DURING CONSTRUCITON, THE CONTRACTOR SHALL UTILIZE INLET PROTECTION FILTER FABRIC AFTER CATCH BASIN PLACEMENT. SEE DETAIL (3/GD-3).
13. AUXILIARY GENERATOR WITH 250 GALLON SUB-BASE FUEL TANK, 5 GALLON FUEL FILL SPILL CONTAINER, AND NORMAL VENT TO 12 FEET ABOVE GRADE.

AREA IDENTIFICATION	
(X)	AREA
(1)	OPERATIONS BUILDING
(2)	PROCESS TANKS AND HEADWORKS
(3)	BLUFF LIFT STATION

LEGEND:

NEW ASPHALT SURFACE

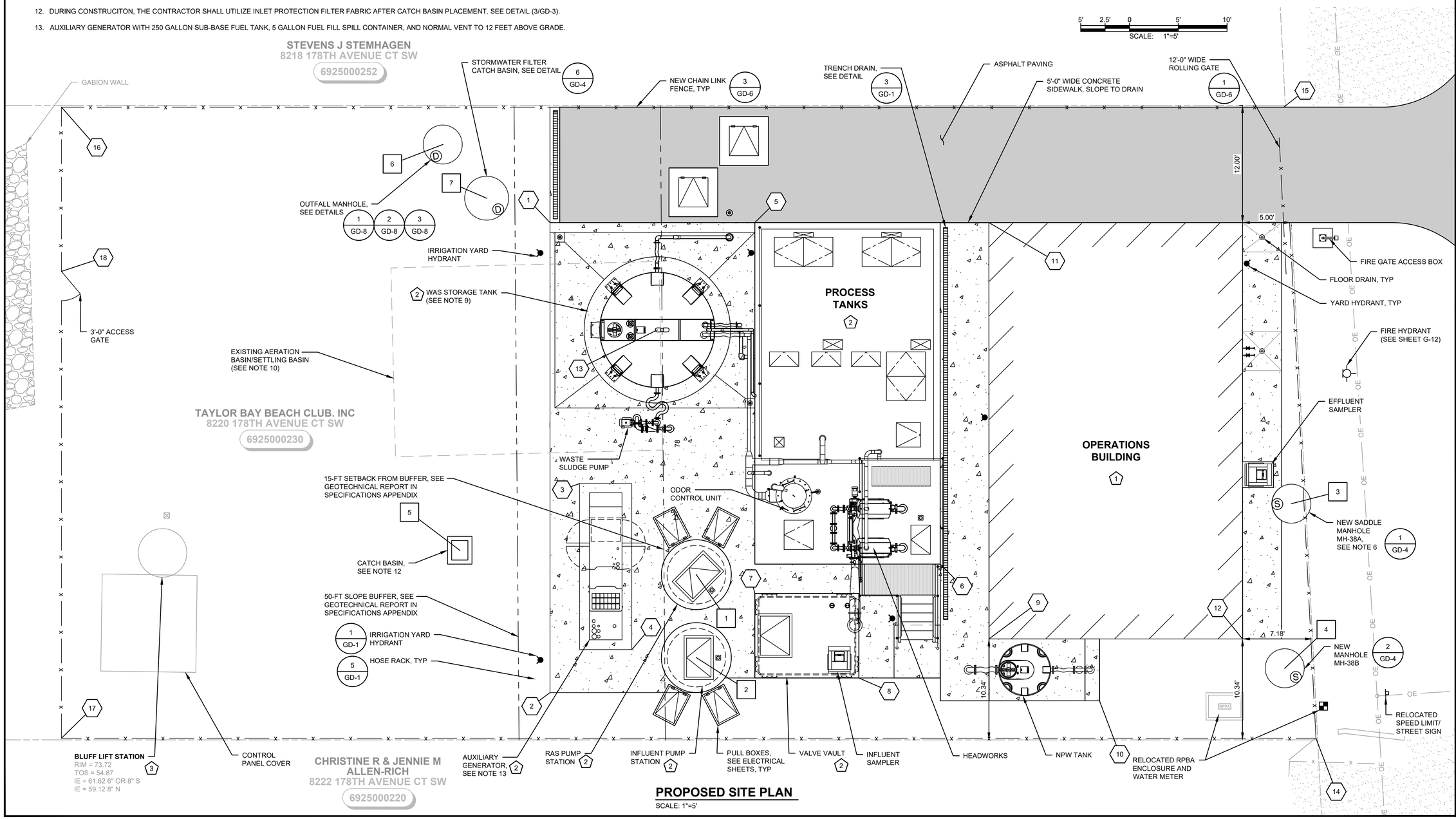
NEW CONCRETE SIDEWALK/SURFACES

PRIVATE IMPROVEMENTS 1068155 PERMIT #

DEVELOPMENT ENGINEER 08/20/2026 DATE

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PROPOSED SITE PLAN

SCALE: 1"=5'

Gray & Osborne, Inc.
CONSULTING ENGINEERS
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SEATTLE, WASHINGTON 98144
(206) 284-0860

ERIC F. NUTTING — STATE OF WASHINGTON — 33900 — REGISTERED PROFESSIONAL ENGINEER

7/31/2026

TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

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G & O JOB NO.:	22848.01
FILE:	G-PSITE.DWG

0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

GENERAL

PROPOSED SITE PLAN AND AREA IDENTIFICATION

DRAWING: G-11 OF: 16

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NOTES:

1. XX INDICATES YARD PIPING COORDINATE LOCATION AND IDENTIFICATION. COORDINATES SHOWN LOCATE CENTERS OF FITTINGS OR CHANGES IN GRADE.
2. SEE SHEET G-17 FOR COORDINATE TABLE.
3. PIPING BETWEEN POINT OF INDICATED ELEVATIONS TO BE SET AT A SINGLE UNIFORM GRADE.
4. CONTRACTOR SHALL POTHOLE TO FIELD VERIFY LOCATION AND ELEVATION OF EXISTING (8" SS).
5. ALL PIPING SHALL HAVE RESTRAINED JOINTS.
6. WHERE PIPES CROSS WITH LESS THAN ONE FOOT OF CLEARANCE, CRUSHED SURFACING TOP COURSE SHALL BE USED BETWEEN THE PIPES. THE CRUSHED ROCK SHALL BE HAND TAMPED AND COMPACTED BETWEEN THE PIPES.
7. FOR PIPE TRENCH SECTIONS SEE DETAIL (5/GD-2).
8. FOR INVERT ELEVATION AT STRUCTURES, SEE MECHANICAL SHEETS.
9. FOR VALVE BOX DETAIL, SEE DETAIL (6/GD-1).
10. FOR PIPE CLEANOUTS (CO), SEE DETAIL (1/GD-3).
11. WHEN CONNECTING NEW PIPING TO EXISTING PIPING THE CONTRACTOR SHALL PROVIDE ALL COUPLINGS AND FITTINGS NECESSARY TO PROVIDE A CONNECTION THAT MEETS OR EXCEEDS THE PRESSURE RATING OF THE NEW PIPING.
12. PLUG OPEN ENDS OF PIPE TO BE ABANDONED IN-PLACE WITH NON-SHRINK GROUT. CAP OR PLUG EXPOSED END OF ACTIVE PIPES. MATCH EXISTING SIZE, MATERIAL AND DUTY RATING. REMOVE EXPOSED VERTICAL PIPING SECTIONS, VALVES AND CLEANOUTS ON LINES TO BE ABANDONED TO FOUR FEET BELOW FINISHED GRADE.
13. PLACE FIRE HYDRANT FROM TEMPORARY LOCATION BACK TO ORIGINAL POSITION.
14. CONNECT NEW (1" W) TO EXISTING 6" PVC WATER MAIN.
15. CONNECT NEW 2" PVC PIPING TO EXISTING PIPE AT MANHOLE AND GROUT ANNULAR SPACE.

PRIVATE IMPROVEMENTS

PERMIT # 1068155

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5' 2.5' 0 5' 10'
SCALE: 1"=5'

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8218 178TH AVENUE CT SW
6925000252

TAYLOR BAY BEACH CLUB. INC
8220 178TH AVENUE CT SW
6925000230

CHRISTINE R & JENNIE M ALLEN-RICH
8222 178TH AVENUE CT SW
6925000220

GABION WALL
OUTFALL MANHOLE, SEE DETAILS 1 GD-8, 2 GD-8, 3 GD-8
NEW CHAIN LINK FENCE, TYP 3 GD-6
1 GD-5
PIPE PENETRATION, SEE DETAIL 4 GD-8
8" OTF HDPE
8" OTF DI
PIPE VENT ASSEMBLY, SEE DETAIL 5 GD-8
TRENCH PIPE ANCHOR, SEE DETAIL 2 GD-7
STORMWATER FILTER CATCH BASIN, SEE DETAIL 6 GD-4
3'-0" ACCESS GATE
8" SS
6" FE
6" SD
8" SD
4" SD
4" WS
0.75" NPW
1.5" NPW
3" D
6" ML
PROCESS TANKS
FROM TRENCH DRAIN, SEE DETAIL 3 GD-1
3" PER
4" ALP
4" D
OPERATIONS BUILDING
4" NPW
YARD HYDRANT, TYP
FIRE HYDRANT, SEE NOTE 13
6" W
EFFLUENT SAMPLER
CONNECT EXISTING 8" SANITARY SEWER LINE TO NEW 48" SADDLE MANHOLE, SEE NOTE 4, SEE DETAIL 1 GD-4
NEW SADDLE MANHOLE MH-38A
NEW MANHOLE MH-38B 2 GD-4
RELOCATED SPEED LIMIT/ STREET SIGN
WATER SERVICE METER 2 GD-5
1" W SEE NOTE 14
RELOCATED RPPA, COMPOSITE BASE, AND INSULATED ENCLOSURE
IRRIGATION YARD HYDRANT
WAS STORAGE TANK
WASTE SLUDGE PUMP
ODOR CONTROL UNIT
3" WAS
3" RAS
3" RS
8" EQ
4" GW
BLUFF LIFT STATION
RIM = 73.72
TOS = 54.87
IE = 61.62 6" OR 8" S
IE = 59.12 8" N
CATCH BASIN 3 GD-5
2" FM
CONNECT NEW 2" FORCEMAIN TO EXISTING BLUFF LIFT STATION MANHOLE (SEE NOTE 15)
CONTROL PANEL COVER
AUXILIARY GENERATOR
RAS PUMP STATION
INFLUENT PUMP STATION
VALVE VAULT
INFLUENT SAMPLER
HEADWORKS
NPW TANK
OE
8" SS
1" W
4" PER
4" NPW

PROPOSED PROCESS PIPING SITE PLAN

SCALE: 1"=5'

Gray & Osborne, Inc.
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0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

GENERAL

PROPOSED SITE PROCESS PIPING PLAN

DRAWING: G-12 OF: 16

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NOTES:

1. LOCATIONS SHOWN FOR EXISTING PIPING ARE BASED ON RECORD DRAWINGS AND ON-SITE SURVEY OF EXPOSED PIPES AND VALVES AND ARE FOR CONTRACTORS INFORMATION ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE SITE AND VERIFY EXISTING CONDITIONS PRIOR TO BIDDING. WHERE EXISTING CONDITIONS DIFFER FROM THOSE SHOWN TO THE EXTENT THEY WILL IMPACT THE COST OF THE CONTRACTOR'S WORK, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING PRIOR TO BIDDING.
2. REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS REGARDING TIMING OF DEMOLITION AND CONSTRUCTION ACTIVITIES, DISPOSAL, AND DISPOSITION OF SALVAGED VALVES AND EQUIPMENT.
3. FOR TYPICAL PIPE TRENCHING, SEE DETAIL (5/GD-2).
4. SEE SHEET G-17 FOR CATCH BASIN COORDINATE LOCATIONS.
5. CATCH BASINS SHALL CONFORM TO WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD PLANS.
6. ADJUST RIM ELEVATIONS OF CATCH BASINS TO MATCH FINISHED GRADE IN ACCORDANCE WITH THE DETAILS AND SPECIFICATIONS.

PRIVATE IMPROVEMENTS

PERMIT # 1068155

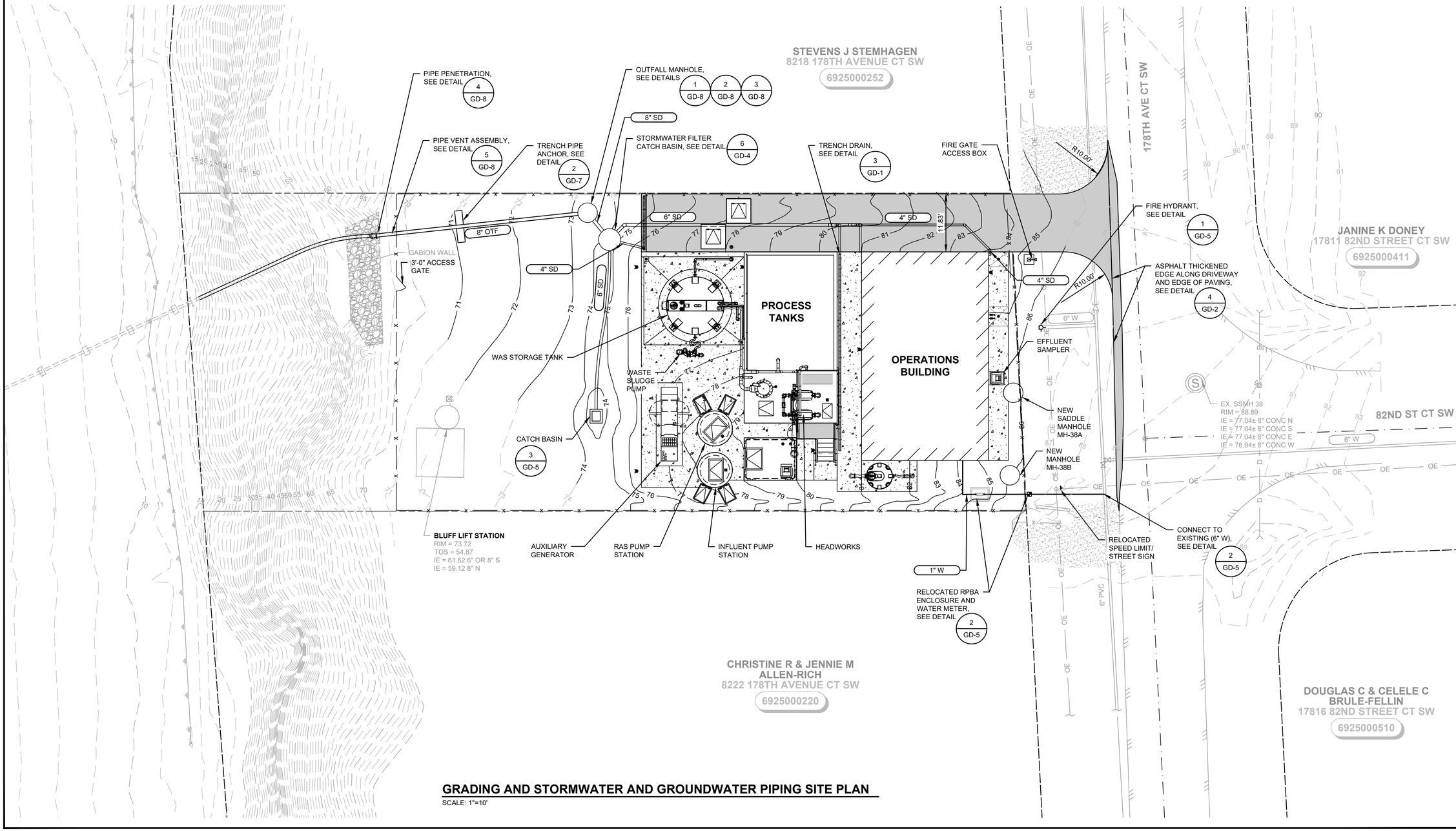
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5' 2.5' 0 5' 10'
SCALE: 1"=5'



GRADING AND STORMWATER AND GROUNDWATER PIPING SITE PLAN

SCALE: 1"=10'

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0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

GENERAL

GRADING AND STORMWATER PIPING PLAN

DRAWING: G-13 OF: 16

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NOTES:

1. (X) INDICATES PAVING COORDINATE LOCATION, SEE SHEET G-17 FOR COORDINATE TABLE.
2. SEE SHEET GD-2 FOR ROAD SECTIONS AND PAVING DETAILS.
3. MATCH EXISTING PAVEMENT ELEVATION.

5' 2.5' 0 5' 10'
SCALE: 1"=5'

PRIVATE IMPROVEMENTS

1068155 PERMIT #

DEVELOPMENT ENGINEER

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STORMWATER FILTER CATCH BASIN
OUTFALL MANHOLE, SEE DETAILS
NEW CHAIN LINK FENCE, TYP
TRENCH DRAIN, SEE DETAIL
ASPHALT PAVING
5'-0" WIDE CONCRETE SIDEWALK, SLOPE TO DRAIN
12'-0" WIDE ROLLING GATE
SEE NOTE 3
R10' TYP
FIRE GATE ACCESS BOX
FIRE HYDRANT
EFFLUENT SAMPLER
NEW SADDLE MANHOLE
NEW MANHOLE
RELOCATED SPEED LIMIT/ STREET SIGN
WAS STORAGE TANK
PROCESS TANKS
OPERATIONS BUILDING
WASTE SLUDGE PUMP
ODOR CONTROL UNIT
CATCH BASIN RIM EL=73.75
BLUFF LIFT STATION
CONTROL PANEL COVER
AUXILIARY GENERATOR
RAS PUMP STATION
INFLUENT PUMP STATION
VALVE VAULT
INFLUENT SAMPLER
HEADWORKS
NPW TANK
RELOCATED RPBA ENCLOSURE AND WATER METER

ENLARGED PAVING AND GRADING PLAN

SCALE: 1"=5'

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7/31/2026

TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

8220 178TH AVENUE COURT SW, LONGBRANCH, WA 98351

No.	DATE	REVISION

ISSUED FOR:

PIERCE COUNTY BUILDING PERMIT

ISSUE DATE:	MAY 2026
APPROVED BY:	EFN
CHECKED BY:	EFN
DRAWN BY:	CRR
DESIGNER:	JESP
G & O JOB NO.:	22848.01
FILE:	G-PAVE-GRADE.DWG

0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

GENERAL

ENLARGED PAVING AND GRADING PLAN

DRAWING: G-14 OF: 16

m:\taylor bay beach club hoa\22848.01 construction plans, spec, & permitting wa doh grant\01 design\wwtf upgrade\Planset\General\G-PAVE-GRADE.dwg, 7/30/2026 12:43 PM, CHARLEY REID

NOTES:

1. ONLY GROUND COVER SHALL BE PLANTED WITHIN 5 FEET OF SHALLOW UNDERGROUND PIPING. SEE SHEET G-11 FOR PROPOSED PIPING.
2. CONTRACTOR SHALL IMPORT, PLACE, & FINE GRADE 6" DEPTH OF SPECIFIED TOPSOIL WITHIN ALL HYDROSEED AREAS. SOIL WITHIN HYDROSEE AND PLANTING AREAS SHALL BE AMENDED PER PIERCE COUNTY BMP C125 USING IMPORTED COMPOST AND TOPSOIL.
3. ALL WORK SHALL BE PERFORMED TO THE SATISFACTION OF THE OWNER.
4. CONTRACTOR IS RESPONSIBLE FOR FINE GRADING % HYDROSEED RESTORATION OF ALL AREAS SHOWN & INCIDENTAL AREAS DISTURBED DURING CONSTRUCTION OPERATIONS IN ADDITION TO WHAT IS DEPICTED ON THESE PLANS.
5. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
6. SHEET GD-9 FOR IRRIGATION AND LANDSCAPING DETAILS.
7. TEMPORARY EROSION CONTROL MEASURES SHALL REMAIN IN PLACE THROUGHOUT ALL PLANTING ACTIVITIES. SEE SHEET GD-3 FOR TESC NOTES.

LANDSCAPING SCHEDULE

SYMBOL	PLANT	QUANTITY	MINIMUM SIZE	MINIMUM SPACING	TYPE
	CASCARA *RHAMNUS PURSHIANA*	1	3 GALLON OR 3'-0" TALL	4'-0" ON CENTER	TREE, DECIDUOUS
	COMMON SNOWBERRY *SYMPHORICARPOS ALBUS*	15	1 GALLON	3'-0" ON CENTER	SHRUB, DECIDUOUS
	NOOTKA ROSE *SYMPHORICARPOS ALBUS*	10	1 GALLON OR 2'-0" TALL	3'-0" ON CENTER	SHRUB, DECIDUOUS
	RED FLOWERING CURRANT *RIBES SANGUINEUM*	3	3'-0" TALL	6'-0" ON CENTER	SHRUB, DECIDUOUS
	TALL OREGON GRAPE *MAHONIA AQUIFOLIUM*	17	2'-0" TALL	3'-0" ON CENTER	SHRUB, EVERGREEN
	EVERGREEN HUCKLEBERRY *VACCINIUM OVATUM*	60	3 GALLON	2'-0" ON CENTER	SHRUB, EVERGREEN
	MANZANITA HYBRID *ARCTOSTAPHYLOS X. MEDIA*	26	1 GALLON	2'-6" ON CENTER	GROUND COVER / SHRUB, EVERGREEN
	THRIFT/SEA PINK *AMERIA MARITIMA*	53	4" POT	1'-0" ON CENTER	GROUND COVER, EVERGREEN
	KINNINNICK *ARCTOSTAPHYLOS UVA-URSI*	84	1 GALLON	2'-6" ON CENTER	GROUND COVER, EVERGREEN

ZONE SUMMARY

ZONE SUMMARY	AREA, FT2	EMITTER SPACING, IN.	LATERAL SPACING, IN.
Z1	141.2	18"	18"
Z2	75.0	18"	18"

LEGEND

- HYDROSEED - 1955 SF
- CONCRETE SURFACE
- ASPHALT PAVING

PRIVATE IMPROVEMENTS — PERMIT # 1068155

DEVELOPMENT ENGINEER — DATE 08/20/2026

PIERCE COUNTY ORDINANCE NOs: STORM 2026-530s ROAD 2022-7s

1. A PRE-CONSTRUCTION MEETING SHALL BE REQUESTED AT LEAST 48-HOURS IN ADVANCE OF THE START OF CONSTRUCTION. CONTACT Sam Knox, THE AREA INSPECTOR, AT 253-798-3709.
2. APPOINT A CERTIFIED EROSION AND SEDIMENT CONTROL LEAD WHO SHALL BE PROVIDED A COPY OF THE SWPPP, EROSION CONTROL PLAN & INSPECTION SCHEDULE.
3. FAILURE TO OBTAIN REQUIRED INSPECTIONS MAY ENDANGER OR DELAY PROJECT APPROVAL.
4. ALL WORK IN THE PUBLIC RIGHT-OF-WAY REQUIRES A GENERAL RIGHT-OF-WAY PERMIT FROM PIERCE COUNTY PLANNING AND PUBLIC WORKS.

STEVENS J STEMHAGEN
8218 178TH AVENUE CT SW
6925000252

TAYLOR BAY BEACH CLUB, INC
8220 178TH AVENUE CT SW
6925000230

CHRISTINE R & JENNIE M ALLEN-RICH
8222 178TH AVENUE CT SW
6925000220

SCALE: 1"=5'

GABION WALL
STORMWATER FILTER CATCH BASIN
OUTFALL MANHOLE, SEE DETAILS
NEW CHAIN LINK FENCE, TYP (3 / GD-6)
TRENCH DRAIN, SEE DETAIL (3 / GD-1)
ASPHALT PAVING
5'-0" WIDE CONCRETE SIDEWALK, SLOPE TO DRAIN
12'-0" WIDE ROLLING GATE (1 / GD-6)
IRRIGATION YARD HYDRANT
3'-0" ACCESS GATE
WAS STORAGE TANK
PROCESS TANKS
OPERATIONS BUILDING
WASTE SLUDGE PUMP
ODOR CONTROL UNIT
CATCH BASIN RIM EL=73.75
IRRIGATION YARD HYDRANT
IRRIGATION POINT OF CONNECTION:
- MANUAL DRAIN VALVE IN 10" ROUND VALVE BOX
- MASTER CONTROL VALVE IN 16"X22" VALVE BOX
- ZONE CONTROL VALVES IN 19"X23" VALVE BOX

SEE SHEET GD-9 FOR DETAILS
1.5" I
3/4" NPW-P BRANCH LINES TO ZONES AS REQUIRED
FIRE GATE ACCESS BOX
FIRE HYDRANT
EFFLUENT SAMPLER
NEW SADDLE MANHOLE
NEW MANHOLE
RELOCATED SPEED LIMIT/ STREET SIGN
RELOCATED RPBA ENCLOSURE AND WATER METER
BLUFF LIFT STATION
CONTROL PANEL COVER
AUXILIARY GENERATOR
RAS PUMP STATION
INFLUENT PUMP STATION
VALVE VAULT
INFLUENT SAMPLER
HEADWORKS
NPW TANK

LANDSCAPING AND RESTORATION SITE PLAN

SCALE: 1"=5'

Gray & Osborne, Inc.
CONSULTING ENGINEERS
1130 RAINIER AVENUE SOUTH, SUITE 300
SEATTLE, WASHINGTON 98144
(206) 284-0860

ERIC F. NUTTING — STATE OF WASHINGTON — 33900 — REGISTERED PROFESSIONAL ENGINEER

7/31/2026

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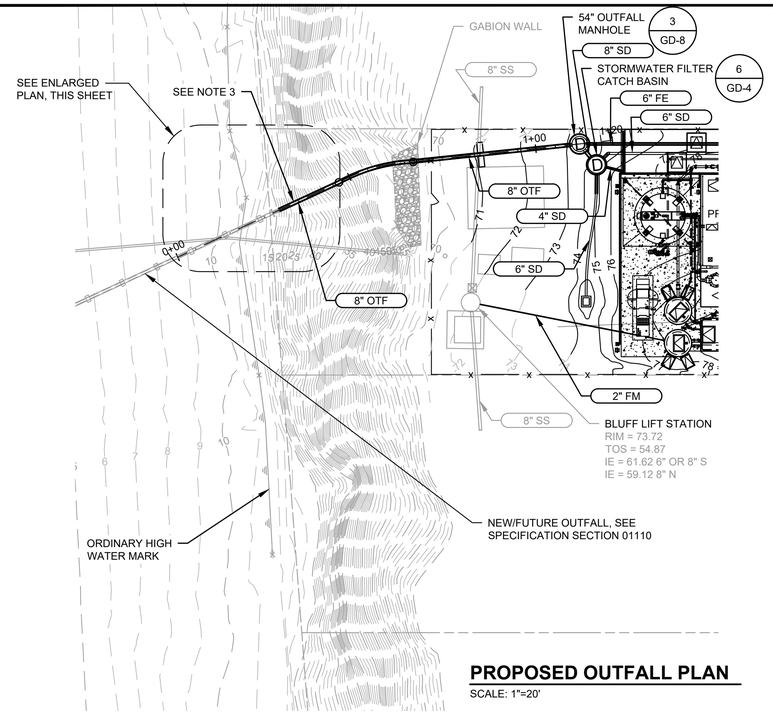
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TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

GENERAL

LANDSCAPING, IRRIGATION, AND RESTORATION PLAN

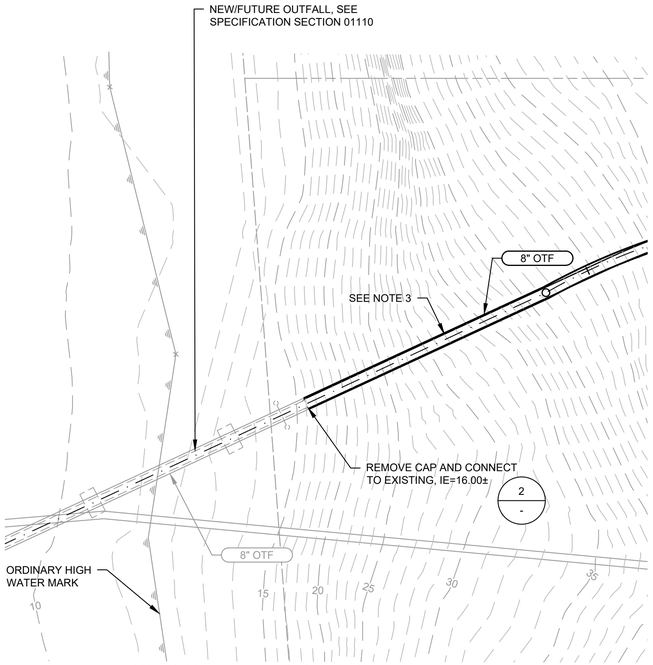
DRAWING: G-15 OF: 16

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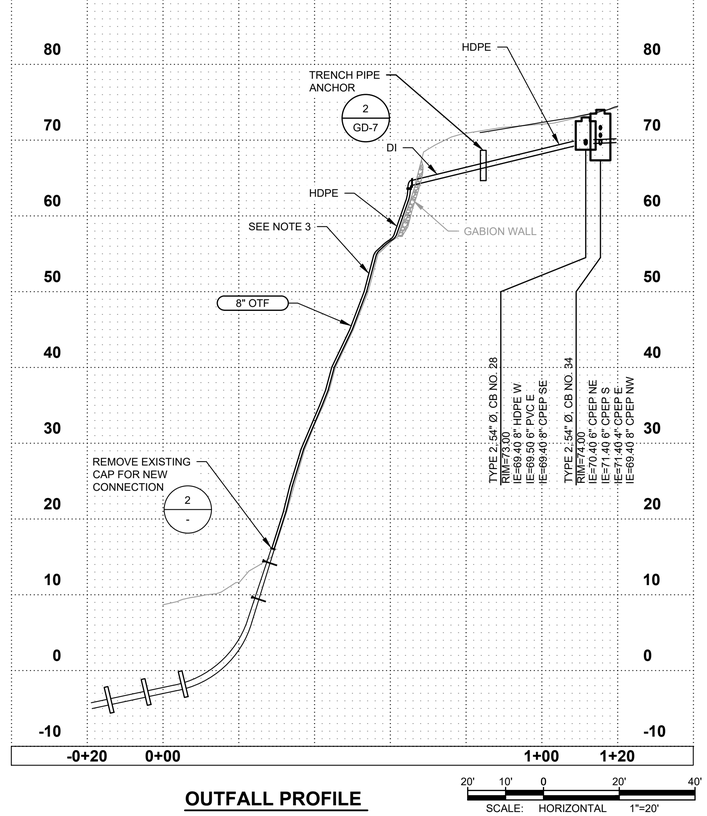
PROPOSED OUTFALL PLAN

SCALE: 1"=20'



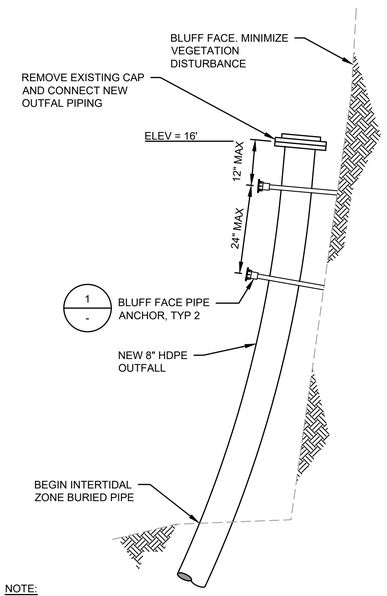
ENLARGED OUTFALL PIPING PLAN

SCALE: 1"=5'



OUTFALL PROFILE

SCALE: HORIZONTAL 1"=20'
VERTICAL 1"=10'

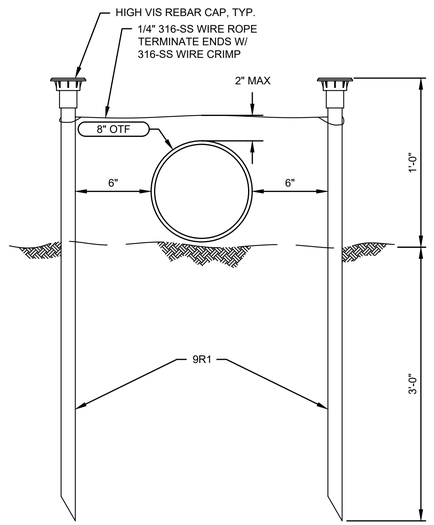


NOTE:

CONTRACTOR SHALL PROVIDE TEMPORARY CONNECTION TO NEW OUTFALL OR FLOW DISPERSION STRUCTURE FOR DEWATERING AT ALL TIMES UNTIL THE NEW SYSTEMS ARE OPERATIONAL. SEE SPECIFICATION SECTION 02240.

2 - **FORCE MAIN STUB-OUT**

SCALE: NTS



NOTES FOR BLUFF FACE PIPE ANCHORS:

1. DRIVE REBAR STAKES TO A DEPTH OF 3' OR PRACTICAL REFUSAL.
2. MINIMIZE DISTURBANCE TO BLUFF FACE VEGETATION. PRESERVE ROOT ZONE AND 6" ABOVE.

1 - **BLUFF FACE PIPE ANCHORS**

SCALE: NTS

NOTE:

1. CONTOURS ALONG THE BLUFF FROM THE ORDINARY HIGH WATER MARK TO ELEVATION 68 ARE BASED ON THE WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCE'S LIDAR PORTAL FOR THE FLIGHT SPECIFICALLY CALLED "PIERCE 2020 (COORDINATE SYSTEM : NAD 83 HARN STATE PLANE SOUTH, VERTICAL COORDINATE SYSTEM: NAVD88 HEIGHT) AND ARE CONSIDERED APPROXIMATE.
2. CONTRACTOR SHALL MAINTAIN A 6' MAXIMUM VEGETATION CLEARING LIMIT CENTERED ON THE (8" OTF) AND SHALL NOT REMOVE ROOT MASS OF CUT VEGETATION AND MINIMIZE DISTURBANCES TO THE GREATEST EXTENT POSSIBLE.
3. INSTALL BLUFF FACE PIPE ANCHORS ON (8" OTF) AT 15 LF OF PIPE MAX SPACING. SEE DETAIL 1. SEE ALSO NOTE 2.
4. THE CONTRACTOR SHALL PROTECT THE GABION WALL THROUGHOUT THE EXTENT OF CONSTRUCTION.

PRIVATE IMPROVEMENTS

1068155 PERMIT #

DEVELOPMENT ENGINEER

08/20/2026 DATE

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OUTFALL PLAN, PROFILE, AND DETAILS

DRAWING: **G-16** OF: **16**

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SITE FEATURE COORDINATE TABLE

X	NORTHING	EASTING	DESCRIPTION	COMMENT
1	682473.10	1074449.93	RETAINING WALL	NW CORNER
2	682426.33	1074438.43	CONCRETE PAVING	SE CORNER
3	682453.84	1074443.24	GENERATOR EQUIPMENT PAD	NW CORNER
4	682437.87	1074449.61	GENERATOR EQUIPMENT PAD	SE CORNER
5	682470.76	1074468.21	PROCESS TANKS	NW CORNER
6	682432.27	1074478.29	PROCESS TANKS	SE CORNER
7	682435.79	1074459.67	VALVE VAULT	NW CORNER
8	682425.66	1074467.39	VALVE VAULT	SE CORNER
9	682420.93	1074483.45	NPW STORAGE TANK PAD	NW CORNER
10	682413.27	1074488.08	NPW STORAGE TANK PAD	SE CORNER
11	682462.37	1074493.62	OPERATIONS BUILDING	NW CORNER
12	682414.73	1074508.69	OPERATIONS BUILDING	SE CORNER
13	682464.73	1074452.31	WAS STARAGE TANK	CENTER
14	682406.61	1074509.81	FENCE CORNER POST	SE CORNER
15	682471.55	1074514.32	FENCE CORNER POST	NE CORNER
16	682486.63	1074389.76	FENCE CORNER POST	NW CORNER
17	682422.26	1074381.96	FENCE CORNER POST	SW CORNER
18	682469.75	1074387.71	ACCESS GATE POST	

CATCH BASIN AND MANHOLE COORDINATE TABLE

X	NORTHING	EASTING	RIM EL	INVERT EL	COMMENT
1	682438.02	1074454.46	79.00	SEE M SHEETS	RAS PUMP STATION MANHOLE
2	682429.58	1074453.43	79.00	SEE M SHEETS	INFLUENT PUMP STATION MANHOLE
3	682437.91	1074515.89	86.00	78.92 4" N 76.81 8" E 76.71 8" S	MANHOLE 38A, 48" DIA SADDLE MANHOLE
4	682421.24	1074513.19	86.00	78.92 4" N 76.66 8" N 76.56 8" W	MANHOLE 38B, 48" DIA
5	682443.41	1074430.68	73.75	70.75 6" SE	CATCH BASIN TYPE I, SQUARE GRATED, NON-LOCKING
6	682484.91	1074433.94	73.60	69.50 8" NE 69.50 6" E 69.40 8" W	OUTFALL MANHOLE 48" DIA
7	682478.90	1074437.75	74.00	70.40 E, 71.40 S, 69.40 SW	STORMWATER FILTER CATCH BASIN TYPE II, 54" DIA, SEE (6/GD-4)

SITE PAVING COORDINATE TABLE

X	NORTHING	EASTING	ELEVATION	COMMENTS
1	682470.23	1074488.58	81.00	ASPHALT/CONC PAVING NW CORNER OF OPERATIONS BUILDING
2	682470.83	1074483.61	80.90	CONC PAVING NE CORNER OF PROCESS TANKS
3	682427.87	1074483.45	81.00	CONC PAVING SW CORNER OF OPERATIONS BUILDING
4	682430.37	1074479.49	80.90	CONC PAVING SE CORNER OF TRENCH DRAIN
5	682424.50	1074478.00	80.40	CONC LANDING CORNER
6	682422.19	1074477.72	80.90	CONC PAVING CORNER
7	682424.75	1074509.26	85.55	CONC PAVING SE CORNER OF OPERATIONS BUILDING
8	682424.27	1074513.23	85.50	CONC PAVING CORNER
9	682440.14	1074511.12	85.65	CONC PAVING AT EQUIPMENT PAD
10	682441.05	1074514.78	85.60	CONC PAVING
11	682442.78	1074511.44	85.40	CONC PAVING AT EQUIPMENT PAD
12	682449.64	1074512.27	85.30	CONC PAVING
13	682449.16	1074516.24	85.20	CONC PAVING
14	682451.39	1074514.50	85.00	FLOOR DRAIN
15	682453.61	1074512.75	85.20	CONC PAVING
16	682453.13	1074516.73	85.21	CONC PAVING
17	682464.13	1074514.03	84.50	CONC PAVING
18	682463.65	1074518.00	84.40	CONC PAVING
19	682467.11	1074514.39	84.20	CONC PAVING
20	682466.62	1074518.36	84.30	CONC PAVING
21	682465.38	1074516.19	84.15	FLOOR DRAIN
22	682437.44	1074468.25	80.60	CONC PAVING
23	682437.05	1074471.46	80.50	CONC PAVING
24	682425.07	1074473.31	80.30	CONC PAVING CORNER OF CONC LANDING
25	682434.11	1074470.77	80.25	CONC PAVING NE CORNER OF VALVE VAULT
26	682425.50	1074469.73	80.00	CONC PAVING SE CORNER OF VALVE VAULT
27	682438.37	1074460.54	79.15	CONC PAVING SW CORNER OF PROCESS TANKS
28	682435.39	1074460.18	79.10	CONC PAVING NW CORNER OF VALVE VAULT
29	682426.79	1074459.14	79.00	CONC PAVING SW CORNER OF VALVE VAULT
30	682453.76	1074462.41	77.00	CONC PAVING CORNER
31	682456.28	1074441.56	76.50	CONC PAVING CORNER
32	682427.82	1074438.11	76.50	CONC PAVING CORNER
33	682475.64	1074443.91	76.17	TRENCH DRAIN
34	682487.39	1074445.32	76.67	TRENCH DRAIN
35	682477.13	1074530.02	85.41	ASPHALT PAVING, R=10'-0"
36	682465.26	1074529.61	86.03	ASPHALT PAVING, R=10'-0"
37	682486.21	1074541.18	MATCH EXISTING	ASPHALT PAVING
38	682454.46	1074538.37	MATCH EXISTING	ASPHALT PAVING

SITE PIPING COORDINATE TABLE

X	NORTHING	EASTING	INVERT ELEVATION	SIZE-PROCESS	COMMENT
1	682478.13	1074456.61	72.00	3" WS	90° ELBOW, GRADE CHANGE
2	682470.95	1074515.85	77.70	3" WS	90° ELBOW, GRADE CHANGE
3	682478.42	1074487.48	70.50	6" FE	90° ELBOW
4	682475.93	1074487.30		6" SD	WYE
5	682476.42	1074483.25		6" SD	WYE
6	682473.16	1074510.19		4" SD	45° ELBOW
7	682446.04	1074402.76	75.70	2" FM	CONNECT TO EXISTING BLUFF LIFT STATION
8	682453.20	1074453.60	72.00	3" WS	90° ELBOW, GRADE CHANGE
9	682485.24	1074407.70	66.50±	8" OTF	TRENCH ANCHOR
10	682485.43	1074393.79	65.33±	8" OTF	VENT ASSEMBLY
11	682485.47	1074389.73	64.00±	8" OTF	90° ELBOW
12	682475.34	1074463.02		6" ML	45° ELBOW
13	682471.84	1074458.57		6" ML	45° ELBOW

NOTE:

1. FOR SITE FEATURE COORDINATE PLAN, SEE SHEET G-11.
2. FOR CATCH BASIN AND MANHOLE COORDINATE PLAN, SEE SHEET G-11.
3. FOR SITE PAVING COORDINATE PLAN, SEE SHEET G-14.
4. FOR SITE PIPING COORDINATE PLAN, SEE SHEET G-12.

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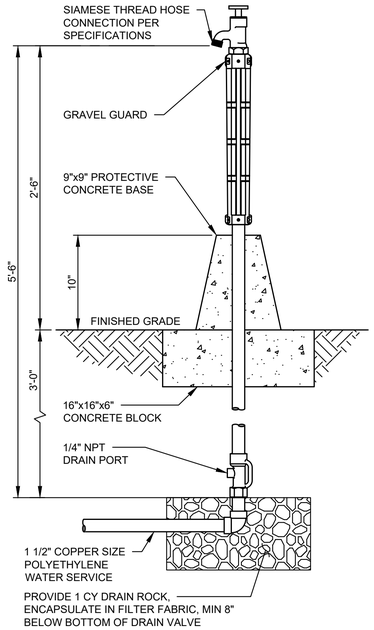
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TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

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SITE FEATURES AND STRUCTURE, PROCESS PIPING AND UTILITY PIPING COORINATE TABLES

DRAWING: **G-17** OF: **16**



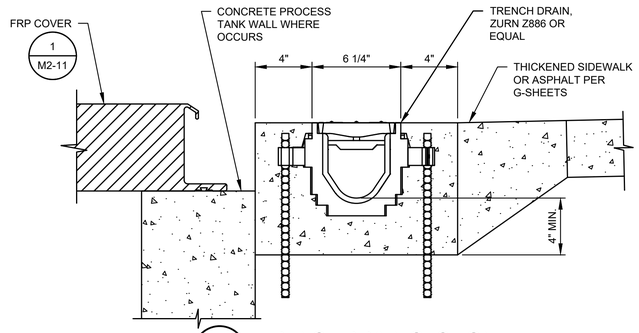
NOTE: THERE ARE TWO IRRIGATION YARD HYDRANTS INDICATED ON THE PLANS THAT SHALL BE SIZE 3/4" SERVICE. ALL OTHER YARD HYDRANTS SHALL BE 1 1/2" SERVICE.

1 TYP — **NON-FREEZE POST HYDRANT DETAIL**
SCALE: 1 1/2"=1'-0"

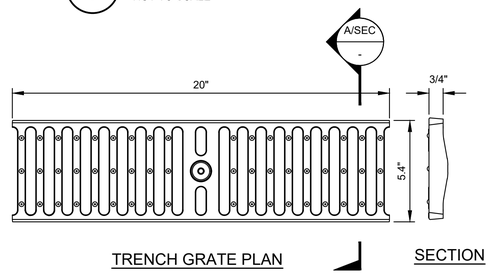


NOTE:
INSTALL NEXT TO ALL NON-POTABLE WATER HOSE BIBS, YARD HYDRANTS, LAB SINKS, ETC.

2 TYP — **NON-POTABLE WATER SIGN DETAIL**
NOT TO SCALE



A — **TRENCH DRAIN SECTION**
NOT TO SCALE



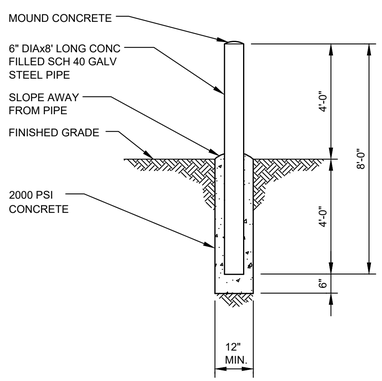
TRENCH GRATE PLAN — SECTION

NOTE:
CONTRACTOR SHALL CONNECT TRENCH DRAIN TO CB NO. 14 WITH 6" CPEP AS DESIGNATED ON SHEET G-18.

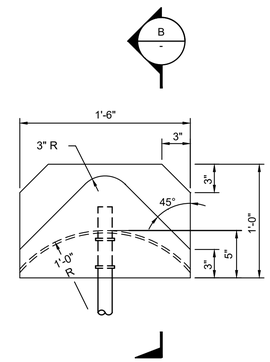
3 TYP — **TRENCH DRAIN DETAIL**
NOT TO SCALE

NOTES:

1. THE EXACT LOCATION OF THE GUARD POSTS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
2. GUARD POSTS SHALL BE PAINTED WITH TWO (2) COATS OF "STEELCOTE FEDERAL YELLOW" PAINT.



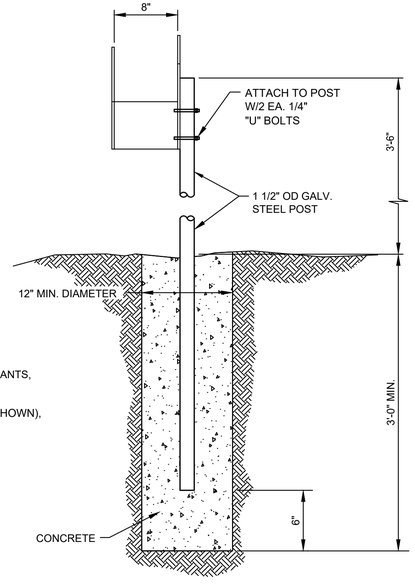
4 TYP — **FIXED GUARD POST DETAIL**
NOT TO SCALE



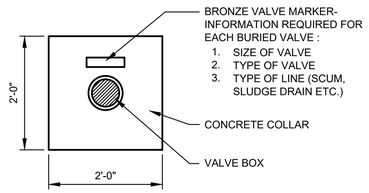
NOTES:

1. TO BE LOCATED AT ALL WALL AND YARD HYDRANTS, HOSE BIBS AND INDOOR UTILITY STATIONS.
2. ATTACH TO POST EMBEDDED IN CONC. (AS SHOWN), RAILING OR CONC. WALL, DEPENDING UPON LOCATION.
3. FABRICATE RACK OF 1/4" STL ℄ & HDG AFTER FABRICATION. RACK TO BE 8" WIDE.

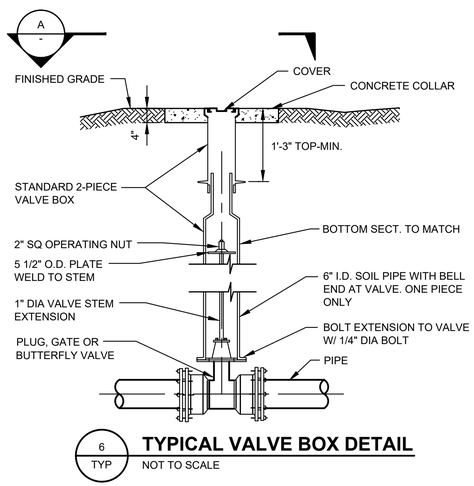
5 TYP — **HOSE RACK DETAIL**
NOT TO SCALE



B — **SECTION**
NOT TO SCALE



A — **SECTION**
NOT TO SCALE



6 TYP — **TYPICAL VALVE BOX DETAIL**
NOT TO SCALE

PRIVATE IMPROVEMENTS

1068155
PERMIT #

DEVELOPMENT ENGINEER

08/20/2026
DATE

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SEATTLE, WASHINGTON 98144
(206) 284-0860

ERIC F. NUTTING — STATE OF WASHINGTON — 33900 — REGISTERED PROFESSIONAL ENGINEER
7/31/2026

TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

8220 178TH AVENUE COURT SW, LONGBRANCH, WA 98351

No.	DATE	REVISION

ISSUED FOR:

PIERCE COUNTY BUILDING PERMIT

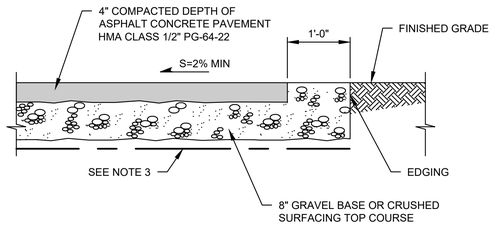
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DRAWN BY:	CRR
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TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

GENERAL DETAILS

DRAWING: **GD-1** OF: **9**

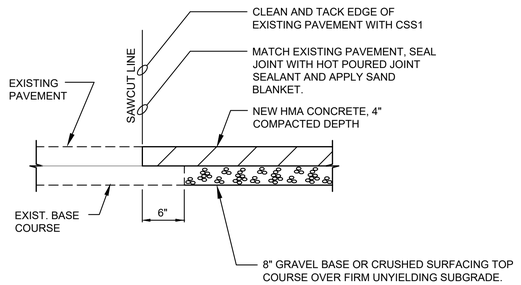
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NOTES:

1. SEE SHEETS G-19 AND G-20 FOR FINISHED GRADE ELEVATION AND ROAD LAYOUT.
2. WHERE PAVEMENT SECTION IS PLACED OVER EXISTING ASPHALT, THE EXISTING ASPHALT SHALL BE REMOVED AND REPLACED BY THE PAVEMENT SECTION.
3. INSTALL GEOGRID BELOW PAVEMENT SECTION WHERE SHOWN ON SHEET G-22 IN ACCORDANCE WITH THE SPECIFICATIONS.

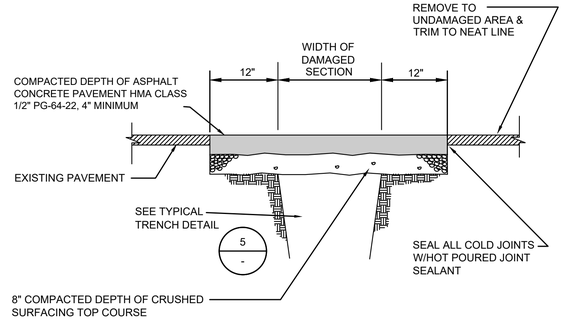
1 TYP **ASPHALT PAVEMENT DETAIL**
NOT TO SCALE



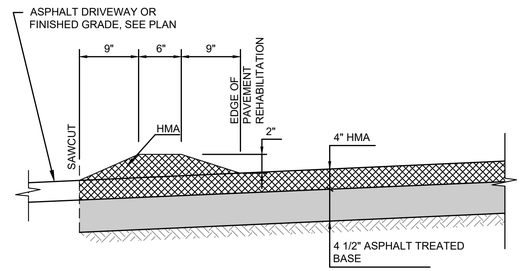
NOTES:

1. ALL JOINTS SHALL BE FULL DEPTH SAW CUT.
2. ALL CATCH BASINS, VALVES AND OTHER APPURTENANCES SHALL BE TACK COATED WITH AN ASPHALT EMULSION PRIOR TO THE APPLICATION OF ASPHALT CONCRETE.
3. COMPACTED ASPHALT CONCRETE SHALL NOT EXTEND MORE THAN 1/4" ABOVE THE EXISTING SURFACE.

2 TYP **ASPHALT BUTT JOINT DETAIL**
NOT TO SCALE



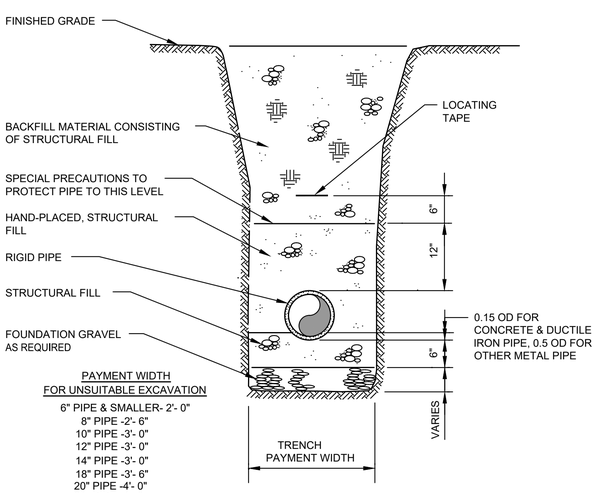
3 TYP **ASPHALT PAVEMENT RESTORATION DETAIL**
NOT TO SCALE



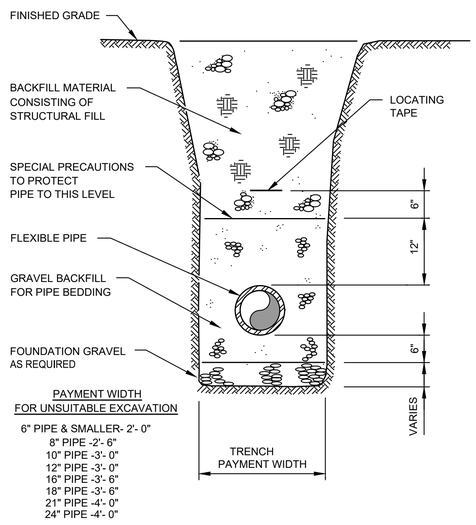
NOTES:

1. CONSTRUCT ASPHALT THICKENED EDGE AT DRIVEWAYS AT STA 18+00, RT AND STA 21+40, RT AS SHOWN ON THE PLANS

4 TYP **ASPHALT THICKENED EDGE**
NOT TO SCALE

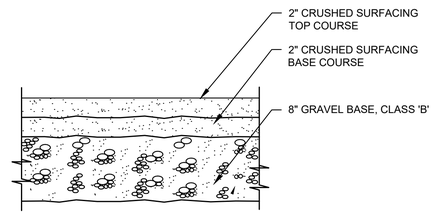


RIGID PIPE
NOT TO SCALE



FLEXIBLE PIPE
NOT TO SCALE

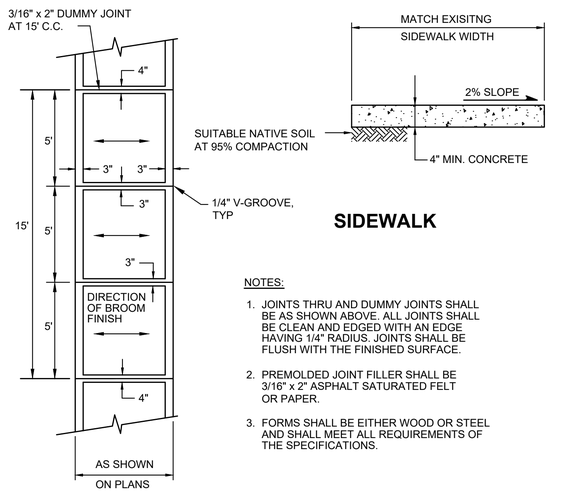
5 TYP **TYPICAL TRENCH SECTIONS**
NOT TO SCALE



NOTES:

1. SURFACING MATERIALS AND PREPARATION SHALL BE PER THE SPECIFICATIONS.
2. SURFACING MUST BE SMOOTHED AND FREE FROM LOCAL DIPS, RISES OR DEPRESSIONS.
3. PROVIDE SMOOTH TRANSITIONS FROM CRUSHED SURFACING ROADWAY TO NATIVE ROADWAY AND WWTF PLANT ENTRANCE.

6 TYP **CRUSHED SURFACING PAVEMENT DETAIL**
NOT TO SCALE



SIDEWALK

NOTES:

1. JOINTS THRU AND DUMMY JOINTS SHALL BE AS SHOWN ABOVE. ALL JOINTS SHALL BE CLEAN AND EDGED WITH AN EDGE HAVING 1/4" RADIUS. JOINTS SHALL BE FLUSH WITH THE FINISHED SURFACE.
2. PREMOLDED JOINT FILLER SHALL BE 3/16" x 2" ASPHALT SATURATED FELT OR PAPER.
3. FORMS SHALL BE EITHER WOOD OR STEEL AND SHALL MEET ALL REQUIREMENTS OF THE SPECIFICATIONS.

7 TYP **CONCRETE SIDEWALK**
NOT TO SCALE

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PERMIT # 1068155

DEVELOPMENT ENGINEER

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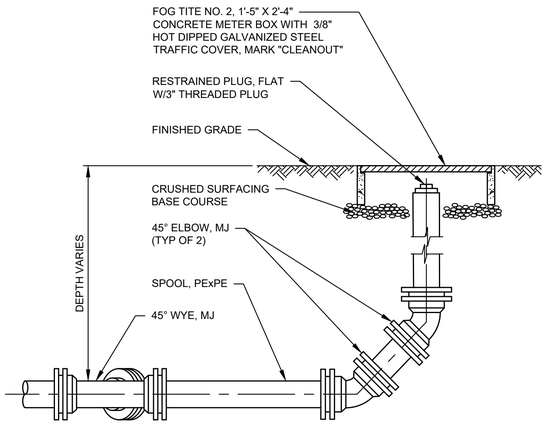
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DRAWING: **GD-2** OF: **9**

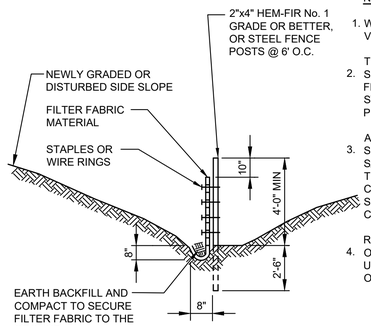
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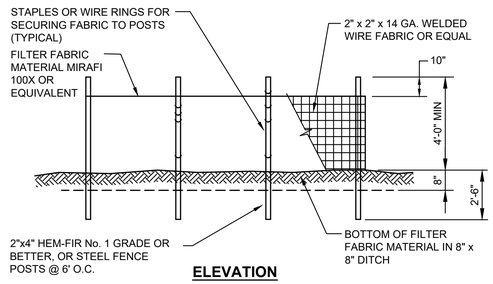
NOTES:

1. ALL PIPE MATERIALS ARE DUCTILE IRON PIPE, SIZE AS SHOWN ON PLANS UNLESS NOTED OTHERWISE.
2. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION ON GRAVEL MATERIALS.
3. 6" AND SMALLER CLEANOUT TO MATCH PIPE SIZE.
4. 8" AND LARGER TO HAVE 8" CLEANOUT.
5. ALL MJ TO BE RESTRAINED WITH RETAINER GLAND.

1 TYP — **TYPICAL RESTRAINED PLUG CLEANOUT DETAIL**
NOT TO SCALE



SECTION

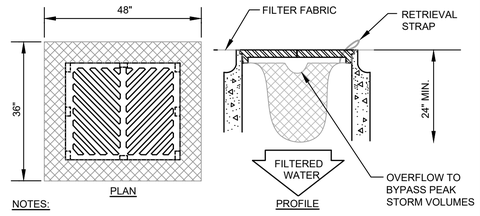


ELEVATION

NOTES:

1. WHERE POSSIBLE, MAINTAIN NATURAL VEGETATION FOR SILTATION CONTROL.
2. TEMPORARY SILTATION CONTROL SHALL BE CONSTRUCTED BY PLACING FILTER FABRIC FENCES ACROSS SWALES UTILIZING FILTER SYSTEM PRIOR TO DISCHARGE.
3. ALL TEMPORARY SILTATION CONTROL SHALL BE MAINTAINED IN A SATISFACTORY CONDITION UNTIL SUCH TIME THAT CLEARING AND/OR CONSTRUCTION IS COMPLETED AND SURFACE RESTORATION HAS BEEN COMPLETED.
4. RETURN SILTATION CONTROL AREAS TO ORIGINAL GROUND CONDITIONS, UNLESS SPECIFICALLY DIRECTED OTHERWISE BY THE ENGINEER.

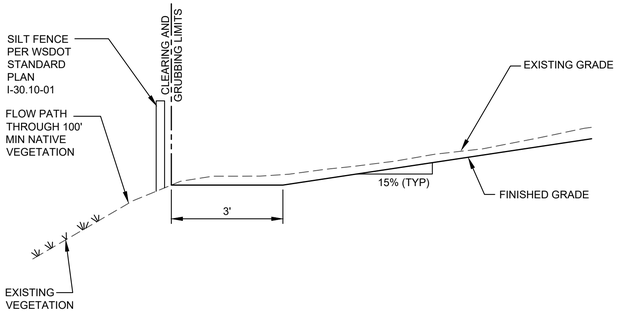
2 TYP — **SILT FENCE**
NOT TO SCALE



NOTES:

1. REMOVE CATCH BASIN GRATING.
2. CLEAN DIRT AND DEBRIS FROM GRATING LEDGE.
3. LAY THE CATCH BASIN INSERT INSIDE THE BASIN
4. REPLACE THE GRATING, PINCHING THE INSERT FABRIC BETWEEN THE GRATING AND THE CATCH BASIN FRAME.
5. CUT OFF THE EXCESS FABRIC OFF WITH A BLADE KNIFE. A 3 TO 5 INCH WIDE STRIP OF FABRIC SHOULD BE LEFT AROUND THE OUTSIDE OF THE GRATING IF THE INSERT IS TO BE USED MORE THAN ONCE.

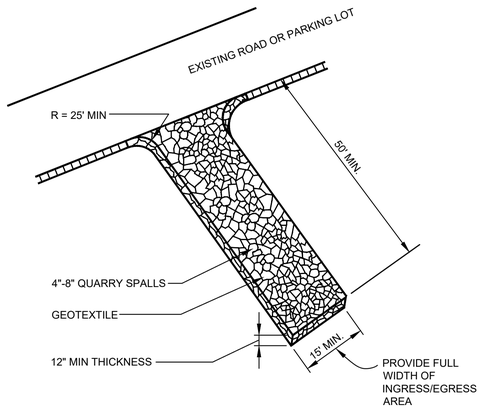
3 TYP — **INLET PROTECTION FILTER FABRIC CATCH BASIN**
NOT TO SCALE



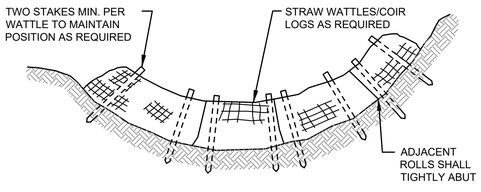
NOTES:

1. 3' HORIZONTAL FLAT SHELF. CONSTRUCTED FLAT TO PREVENT CHANNELIZATION OF STORMWATER AND PROMOTE DISPERSION.
2. CONTRACTOR TO PREVENT COMPACTION OF NATIVE SOILS UNDER ROCK GALLERIES.
3. CONTRACTOR TO PREVENT SILT AND SEDIMENTS FROM ENTERING INFILTRATION GALLERIES.
4. STOCK PILE TOP SOIL IN ADJACENT FIELD, CONSTRUCT IN STAGES.
5. CONTRACTOR TO INSTALL UPHILL INFILTRATION TRENCHES FIRST AND CONTINUE INSTALLATION TOWARD DOWNHILL SLOPE. CONTRACTOR TO STOCKPILE TRENCH SOIL ON DOWNHILL SIDE OF TRENCH TO PREVENT SILT FROM ENTERING TRENCH.

4 TYP — **EROSION CONTROL SECTION**
NOT TO SCALE



5 TYP — **CONSTRUCTION ENTRANCE**
NOT TO SCALE



SECTION

NOTES:

1. WHERE POSSIBLE, MAINTAIN NATURAL VEGETATION FOR SILT CONTROL.
2. TEMPORARY SILTATION AND DETENTION PONDS TO BE CONSTRUCTED BY PLACING STRAW WATTLES/COIR LOGS OR FILTER FABRIC FENCES ACROSS SWALES AND DITCHES.
3. FILTER FABRIC FENCES OR STRAW WATTLES/COIR LOGS TO BE LOCATED AS INDICATED ON THE PLANS OR DIRECTED BY THE ENGINEER.
4. CONSTRUCT ROCK CHECK DAMS IN OPEN DITCHES AS REQUIRED BY THE ENGINEER
5. TO PROVIDE EROSION CONTROL ON STEEP AND NEWLY GRADED SLOPES, CONTRACTOR SHALL EMPLOY EROSION CONTROL BLANKET OR CLEAR PLASTIC IMMEDIATELY AFTER GRADING SLOPES AND THE APPLICATION OF SEEDING. THIS SHALL BE DONE AND IN PLACE BEFORE THE FALL RAINFALL BEGINS.
6. ALL TEMPORARY EROSION CONTROL STRUCTURES SHALL BE MAINTAINED IN SATISFACTORY CONDITION UNTIL CLEARING AND/OR CONSTRUCTION IS COMPLETED AND SURFACE RESTORATION HAS BEEN COMPLETED.
7. RETURN SILTATION CONTROL AREAS TO ORIGINAL GROUND CONDITIONS.

6 TYP — **STRAW WATTLES/COIR LOGS**
NOT TO SCALE

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PERMIT # 1068155

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TEMPORARY EROSION AND SEDIMENT CONTROL (TESC) NOTES:

TEMPORARY COVER PRACTICES:

1. DISTURBED AREAS WHICH ARE TO REMAIN WITHOUT PERMANENT COVER FOR MORE THAN 30 DAYS, SHALL BE STABILIZED BY PROVIDING TEMPORARY SEEDING, MULCHING, MATTING, OR CLEAR PLASTIC COVERING AS A GUARD AGAINST EROSION.

FILTER FENCE

1. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6 INCH OVERLAP, AND BOTH ENDS SECURELY FASTENED TO THE POST.
2. POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 30 INCHES (WHERE PHYSICALLY POSSIBLE).
3. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 8 INCHES WIDE AND 8 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER. THE TRENCH SHALL BE CONSTRUCTED TO FOLLOW THE CONTOUR.
4. WHEN SILT FILM FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING TIE WIRES, HOG RINGS, OR HEAVY-DUTY WIRE STAPLES AT LEAST 1 INCH LONG. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 4 INCHES AND SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
5. SILT FILM FILTER FABRIC SHALL BE WIRED TO THE FENCE, AND 20 INCHES OF THE FABRIC SHALL EXTEND INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES. OTHER TYPES OF FABRIC MAY BE STAPLED TO THE FENCE.
6. WHEN EXTRA-STRENGTH OR MONOFILAMENT FABRIC AND CLOSER POST SPACING ARE USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED. IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POSTS WITH ALL OTHER PROVISIONS OF FILTER FENCE NOTE 5 APPLYING. EXTRA CARE SHOULD BE USED WHEN JOINING OR OVERLAPPING THESE STIFFER FABRICS.
7. FILTER FABRIC FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED. RETAINED SEDIMENT MUST BE REMOVED AND PROPERLY DISPOSED OF, OR MULCHED AND SEEDED.

FILTER FENCE MAINTENANCE

8. INSPECT IMMEDIATELY AFTER EACH RAINFALL, AND AT LEAST DAILY DURING PROLONGED RAINFALL. REPAIR AS NECESSARY.
9. SEDIMENT MUST BE REMOVED WHEN IT REACHES APPROXIMATELY ONE THIRD THE HEIGHT OF THE FENCE, ESPECIALLY IF HEAVY RAINS ARE EXPECTED.
10. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE FILTER FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.

STABILIZATION AND REMOVAL

1. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY "BEST MANAGEMENT PRACTICES" ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL AREAS RESULTING FROM REMOVAL SHALL BE PERMANENTLY STABILIZED.

HYDROSEEDING

1. CONSTRUCTION ACCEPTANCE: WILL BE SUBJECT TO A WELL-ESTABLISHED GROUND COVER THAT FULFILLS THE REQUIREMENT OF THE APPROVED CONSTRUCTION PLANS
2. HYDROSEED (WITH MULCH) ALL DISTURBED AREA (2,000 LB/ACRE). APPLY EROSION CONTROL NETTING ON ALL SLOPES GREATER THAN 4:1, STAPLE NETTING TO SLOPES, AS REQUIRED.
3. FERTILIZER: SHALL BE APPLIED AT 400# PER ACRE OF 10-20-20 (10 POUNDS PER 1100 SQUARE FEET) OR EQUIVALENT. DEVELOPMENTS ADJACENT TO WATER BODIES SHALL USE NON-PHOSPHORUS FERTILIZER.

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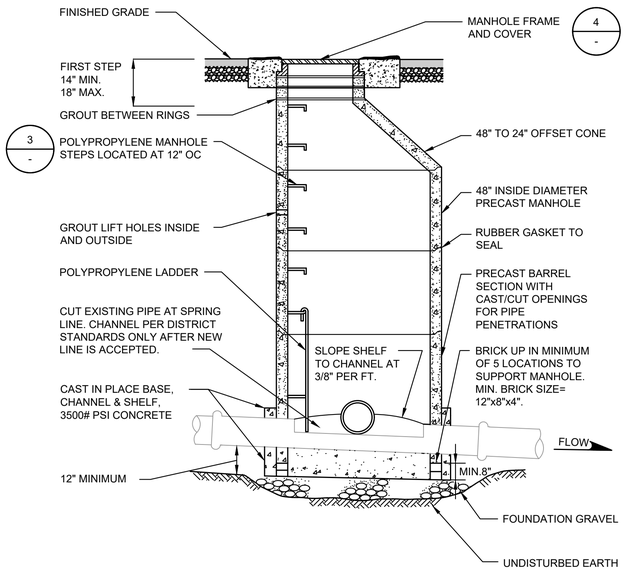
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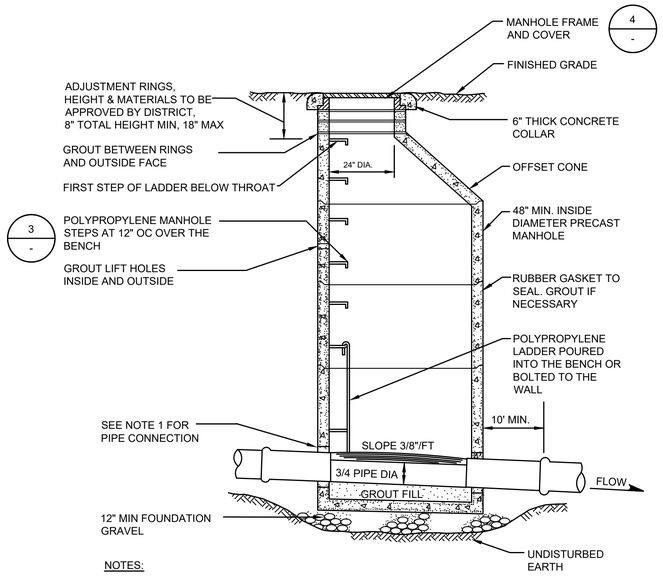
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1 TYP **SANITARY SEWER SADDLE MANHOLE DETAIL**

NOT TO SCALE

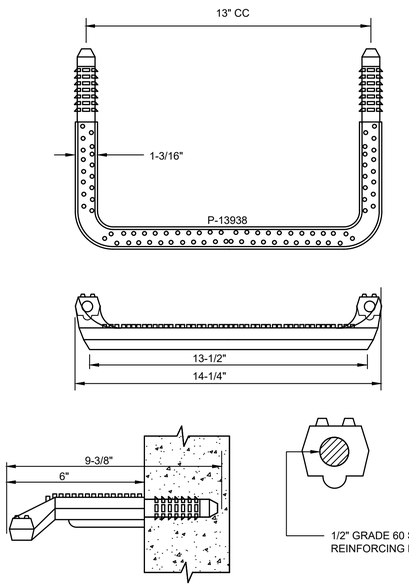


NOTES:

1. CORE MANHOLE AND CONNECT SEWER PIPE WITH A KOR-N-SEAL BOOT OR EQUAL.
2. DROP OF GRADE THRU MANHOLE SHALL BE 0.10' UNLESS OTHERWISE APPROVED.

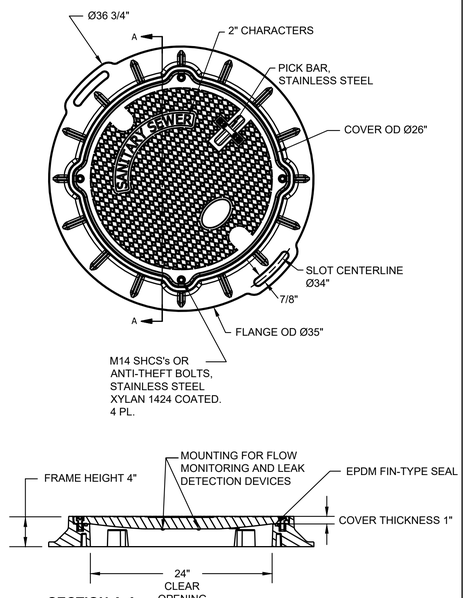
2 TYP **SANITARY SEWER MANHOLE DETAIL**

NOT TO SCALE



3 TYP **POLYPROPYLENE MANHOLE STEP DETAIL**

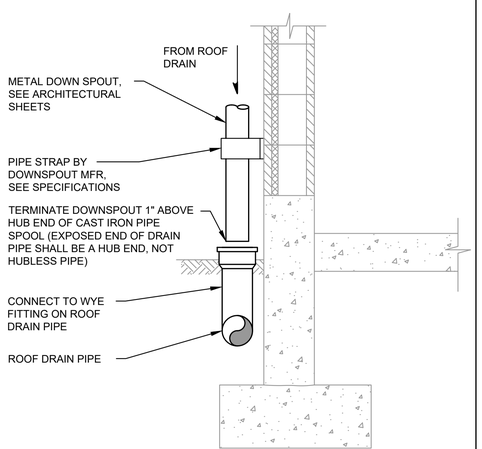
NOT TO SCALE



SECTION A-A

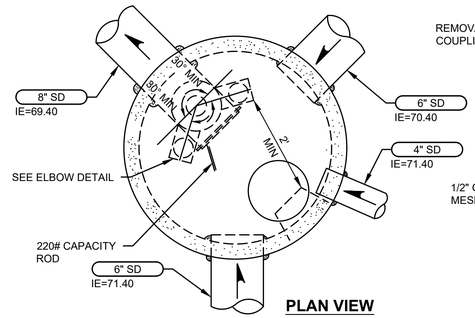
4 TYP **MANHOLE RING AND COVER**

NOT TO SCALE

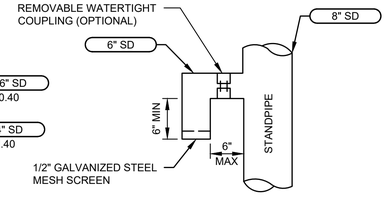


5 TYP **TYPICAL ROOF DRAIN DETAIL**

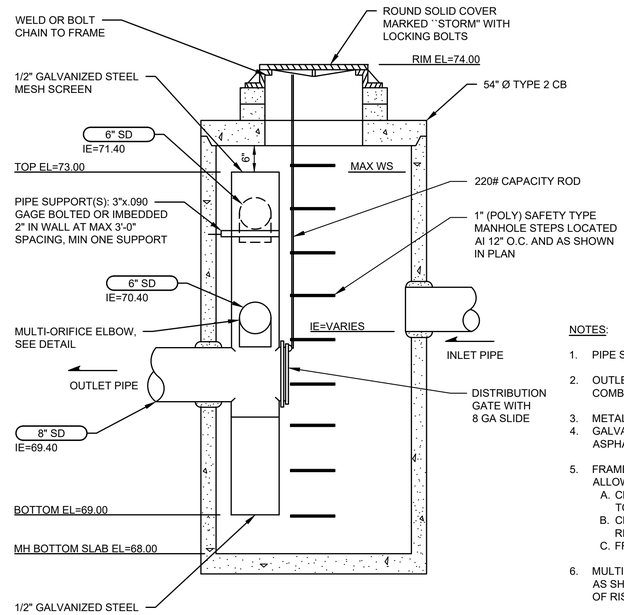
NOT TO SCALE



PLAN VIEW



ELBOW DETAIL



NOTES:

1. PIPE SIZES AND SLOPES: PER PLANS.
2. OUTLET CAPACITY: NOT LESS THAN COMBINED INLETS.
3. METAL PARTS: CORROSION RESISTANT.
4. GALVANIZED PIPE PARTS TO HAVE ASPHALT TREATMENT 1.
5. FRAME & LADDER OR STEPS OFFSET TO ALLOW:
   A. CLEANOUT GATE IS VISIBLE FROM TOP.
   B. CLIMB-DOWN SPACE IS CLEAR OF RISER AND CLEANOUT GATE.
   C. FRAME IS CLEAR OF CURB.
6. MULTI-ORIFICE ELBOWS MAY BE LOCATED AS SHOWN OR ENTIRELY ON ONE SIDE OF RISER TO ASSURE LADDER ACCESS.

6 TYP **STORMWATER FILTER CATCH BASIN**

NOT TO SCALE

PRIVATE IMPROVEMENTS

PERMIT # 1068155

DEVELOPMENT ENGINEER

DATE 08/20/2026

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ERIC F. NUTTING — 33900 — REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON

7/31/2026

TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

8220 178TH AVENUE COURT SW, LONGBRANCH, WA 98351

No.	DATE	REVISION

ISSUED FOR:

PIERCE COUNTY BUILDING PERMIT

ISSUE DATE:	MAY 2026
APPROVED BY:	EFN
CHECKED BY:	EFN
DRAWN BY:	CRR
DESIGNER:	JESP
G & O JOB NO.:	22848.01
FILE:	GEN_DET.DWG

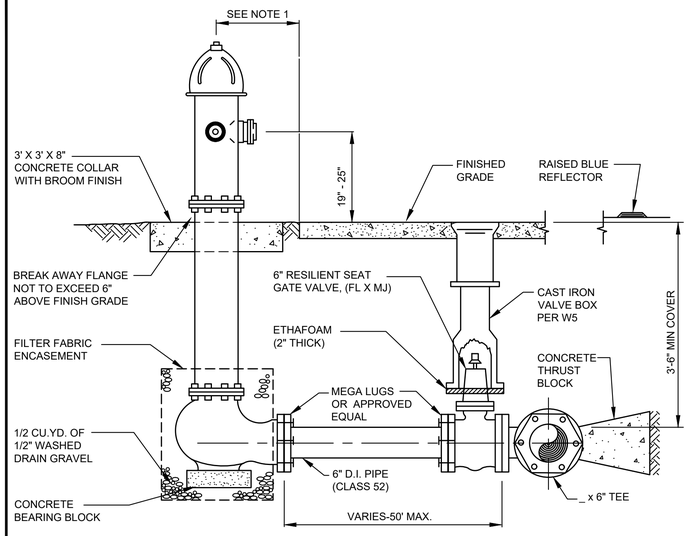
0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

GENERAL DETAILS

DRAWING: **GD-4** OF: **9**

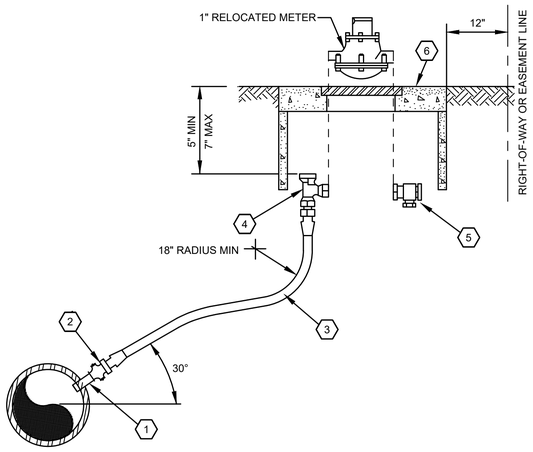
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NOTES:

1. 1'-6" FROM BACK OF SIDEWALK OR 3' FROM BACK OF CURB OR EDGE OF PAVEMENT.
2. PROVIDE MIN. 3'-0" CLEARANCE AND LEVEL AREA AROUND HYDRANT.
3. PAINT FIRE HYDRANT WITH TWO COATS YELLOW PAINT, COLOR FORMULA TO BE PROVIDED BY DISTRICT AND TOP OF HYDRANT COLOR DETERMINED BY SERVICE LEVEL GPM IN ACCORDANCE WITH FIRE MARSHALL REQUIREMENTS.
4. PAINT FOOTAGE TO VALVE WITH 2" HIGH BLACK LETTERS ON HYDRANT UNDER PORT FACING GV.
5. INSTALL BLUE FIRE HYDRANT REFLECTOR. OFFSET 1 FOOT FROM ROAD CENTERLINE ON FIRE HYDRANT SIDE OF THE CENTERLINE.

1 TYP **FIRE HYDRANT ASSEMBLY**
NOT TO SCALE

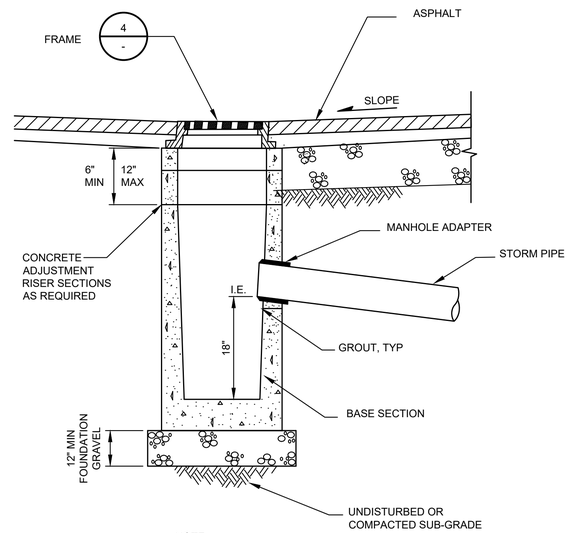


1. 1" DIRECT TAP
2. 1" BALL TYPE CORPORATION STOP:
   A. MUELLER B-25008-N.
   B. FORD FB1000-Q4-NL.
   C. A.Y. MCDONALD 74701BQ.
3. 1" TYPE K COPPER SERVICE TUBING - LENGTH AS REQUIRED.
4. 1"X1" WITH A 1" ANGLE METER BALL VALVE:
   A. MUELLER B-24258-N.
   B. FORD BA43-342-NL W2.
   C. A.Y. MCDONALD 74642BQ.
5. 1" ANGLE DUAL CHECK VALVE.
6. OLDCASTLE CARSON 1527-12 BCF HEAVYWALL METER BOX WITH COMPOSITE AMR LID OR DISTRICT APPROVED ALTERNATIVE.
7. AFTER TAPPING A DRY WATER MAIN, USE A MAGNET TO REMOVE SHAVINGS BEFORE INSTALLING THE CORPORATION STOP.

NOTES:

1. NO SPLICES IN 1" COPPER TUBING ALLOWED.

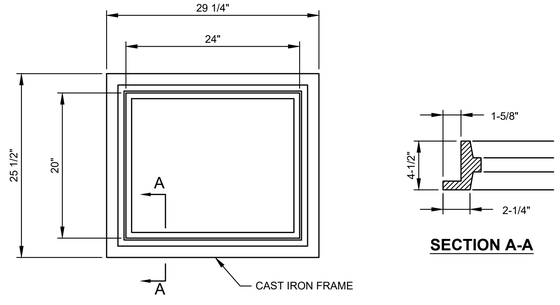
2 TYP **NEW WATER MAIN CONNECTION**
NOT TO SCALE



NOTE:

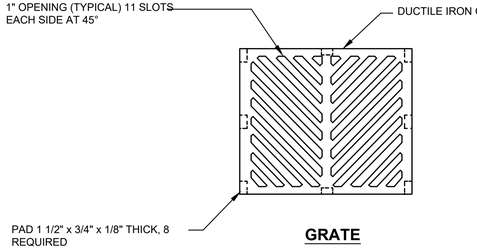
CATCH BASIN SHALL CONFORM TO WSDOT STD. SPEC 9-12.5

3 TYP **CATCH BASIN TYPE 1**
NOT TO SCALE



SECTION A-A

FRAME

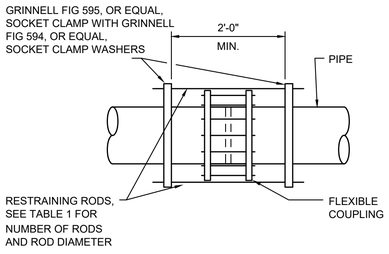


GRATE

NOTE:

MATERIAL SHALL CONFORM TO THE "2010 STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION" PREPARED BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION AND AMERICAN PUBLIC WORKS ASSOCIATION, WASHINGTON STATE CHAPTER.

4 - **CATCH BASIN FRAME AND GRATE**
NOT TO SCALE



DUCTILE IRON PIPE, 24" DIA OR LESS

TABLE 1

PIPE DIAMETER	NUMBER OF RODS	ROD DIAMETER
3"	2	5/8"
4"	2	5/8"
6"	2	5/8"
8"	2	5/8"
10"	2	5/8"
12"	2	5/8"
14"	2	5/8"
16"	2	5/8"
18"	2	5/8"
20"	2	5/8"
24'	2	3/4"

NOTES:

1. MINIMUM REQUIRED NUMBER OF RESTRAINING RODS, AND MINIMUM RESTRAINING ROD DIAMETER ARE SHOWN ON TABLE I, THIS SHEET, FOR VARIOUS PIPE SIZES.
2. THIS DETAIL IS DEVELOPED FOR A PIPE DESIGN PRESSURE OF 50 PSI AND A RESTRAINING ROD ALLOWABLE STRESS OF 40,000 PSI

5 TYP **FLEXIBLE COUPLING RESTRAINT DETAIL**
NOT TO SCALE

PRIVATE IMPROVEMENTS

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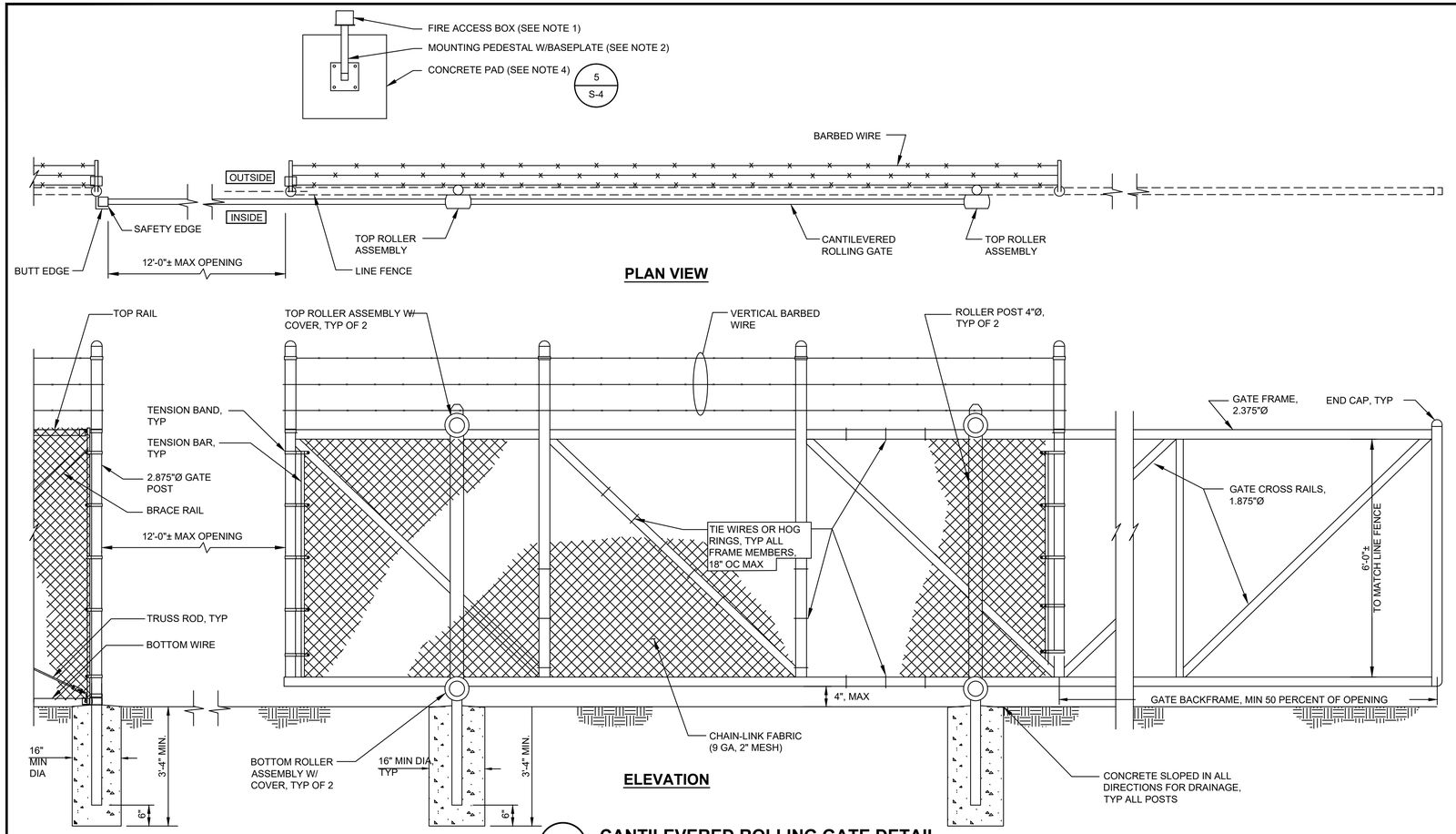
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0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

GENERAL DETAILS

DRAWING: **GD-5** OF: **9**

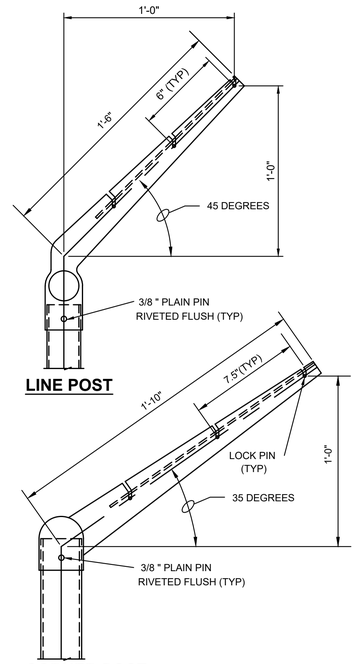
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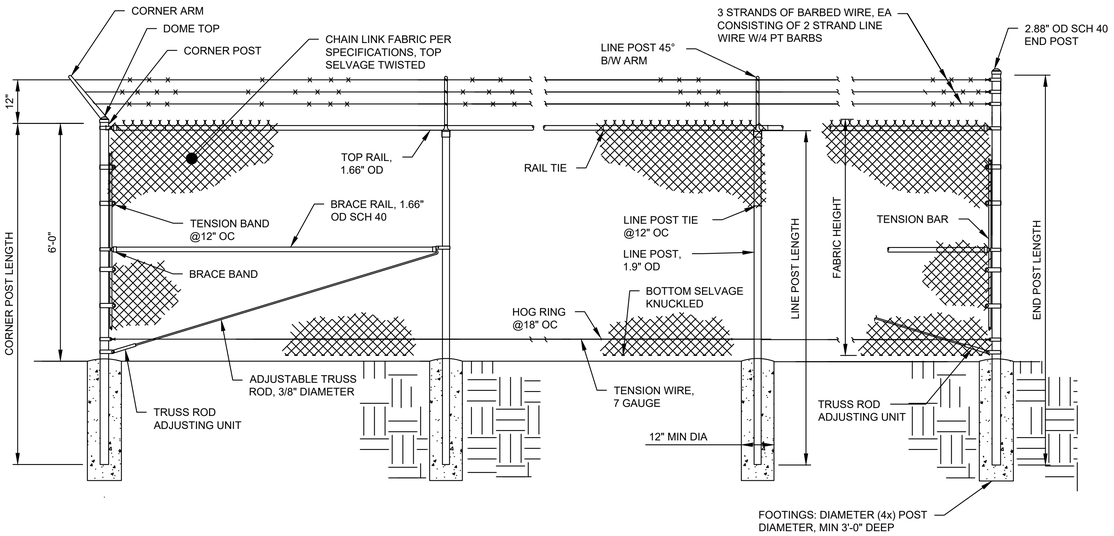
1 TYP **CANTILEVERED ROLLING GATE DETAIL**
NOT TO SCALE

NOTES:

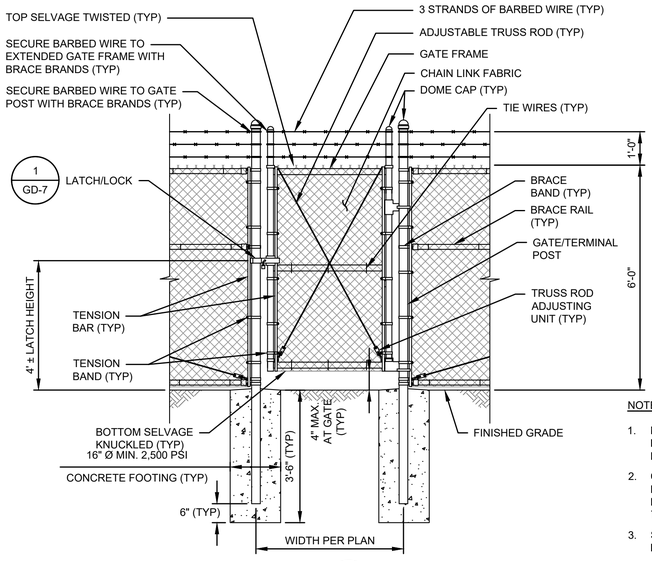
1. KNOXBOX 3200 OR EQUAL. UNIT SHALL BE BLACK AND SURFACE MOUNT. CONTRACTOR SHALL COORDINATE WITH PIERCE COUNTY FIRE PROTECTION DISTRICT NO. 16 KEY PENINSULA FOR ORDERING AND KEYING. INSTALL UNIT 48" ABOVE FINISHED GRADE.
2. PEDESTAL POST AND ARM SHALL BE MINIMUM 11-GAUGE COLD ROLLED STEEL WITH 10-GAUGE MOUNTING PLATES. BACKPLATE SHALL BE COMPATIBLE WITH DEVICE MOUNTED. PEDESTAL SHALL BE PROVIDED WITH POWDER COAT FINISH. PEDESTAL COLOR SHALL BE BLACK OR AS SELECTED BY OWNER.
3. MOUNT PEDESTAL ON PAD WITH 4 CAST IN PLACE ANCHOR BOLTS. BOLTS, WASHERS, AND NUTS SHALL BE 316 SS, MINIMUM 1/2-INCH DIAMETER, 3-INCH EMBED.
4. MINIMUM PAD DIMENSIONS SHALL BE 6 INCHES BEYOND EDGES OF THE MOUNTING PEDESTAL BASE PLATE.



2 TYP **EXTENSION ARM DETAILS**
NOT TO SCALE



3 TYP **CHAIN-LINK SECURITY FENCE DETAIL**
NOT TO SCALE



NOTES:

1. MANUAL SWING GATE SHALL BE FURNISHED WITH GATE HOLDBACK USED TO HOLD THE GATE IN AN OPEN POSITION. LOCATE AS DIRECTED BY OWNER.
2. CONCRETE FOOTINGS SHALL BE SLOPED AWAY FROM POSTS IN ALL DIRECTIONS FOR DRAINAGE, TYP IN PAVED AREAS, PROVIDE PAVEMENT SURFACING OVER TOP OF FOOTINGS.
3. SEE SPECIFICATIONS FOR TYPICAL MATERIAL AND INSTALLATION REQUIREMENTS.

4 TYP **PERSONNEL GATE - MANUAL SWING GATE**
NOT TO SCALE

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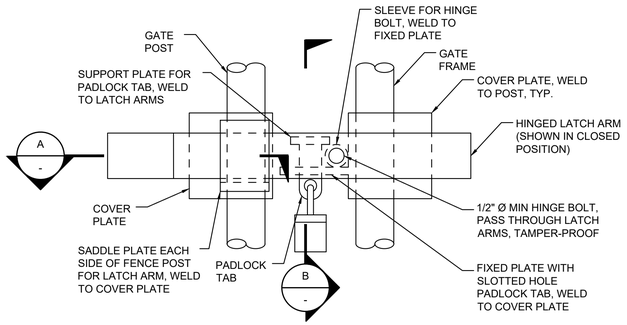
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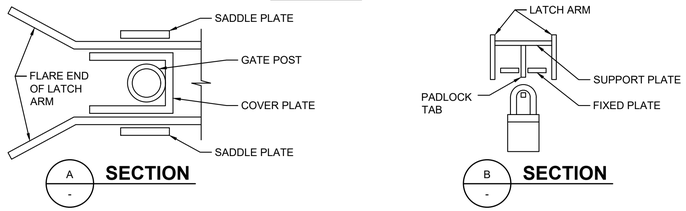
GENERAL DETAILS

DRAWING: **GD-6** OF: **9**

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PROFILE



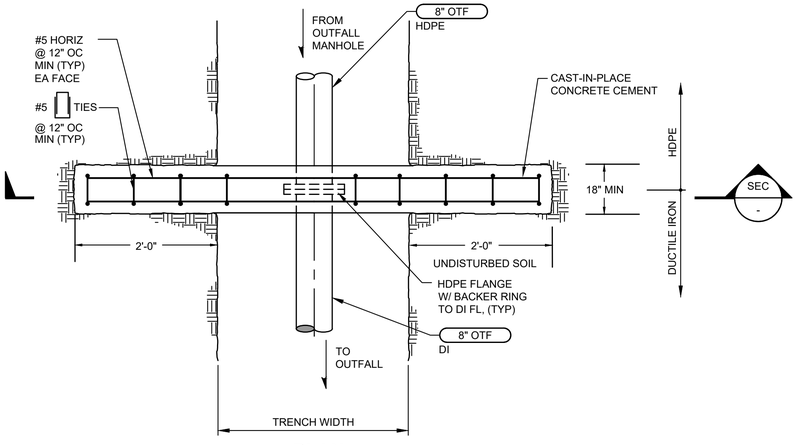
SECTION

SECTION

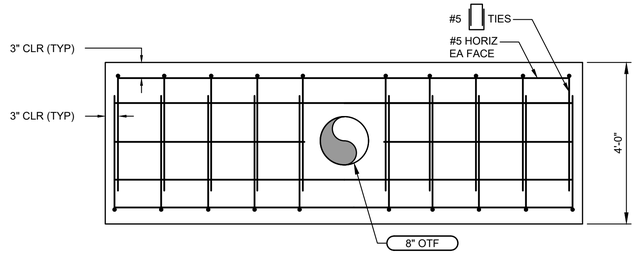
NOTES:

1. USE 1/4" THICK PLATE, MIN, TYP.
2. SWING GATE LATCH SHALL BE STRONG ARM STYLE SUITABLE FOR DOUBLE SWING GATE OR SINGLE SWING GATE AS APPLICABLE.
3. WELDED JOINTS SHALL BE PROTECTED BY APPLYING ZINC-RICH PAINT IN ACCORDANCE WITH ASTM PRACTICE A780.
4. ALL COMPONENTS SHALL BE HOT DIPPED GALVANIZED GALVANIZED AND THEN RECEIVE A MINIMUM OF 3 MILS BLACK TGIC POLYESTER POWDER COAT AS APPLIED BY POWDER COAT NORTHWEST, OR APPROVED EQUAL. COLOR OF THE POWDER COAT SHALL MATCH FENCING MATERIALS. FIELD TOUCHUP COATINGS AS REQUIRED.

1 TYP **SWING GATE STRONG ARM LATCH/LOCK**
NOT TO SCALE



PLAN



SECTION

2 TYP **TRENCH PIPE ANCHOR DETAIL**
NOT TO SCALE

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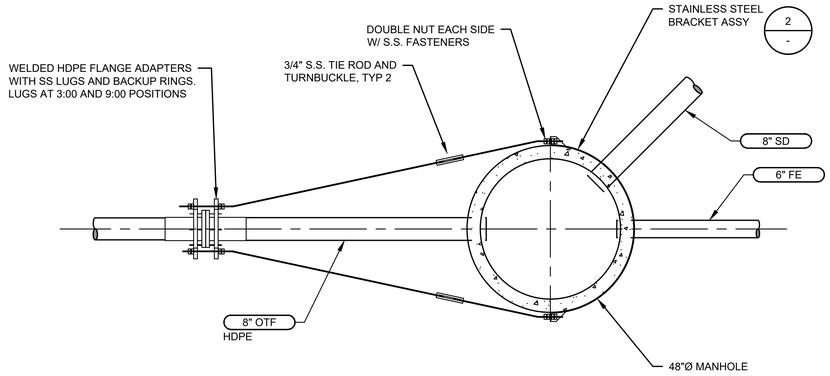
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0 1" 2"
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DRAWING: **GD-7** OF: **9**

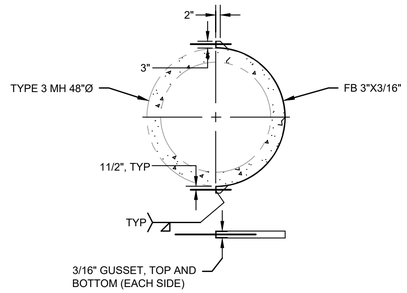
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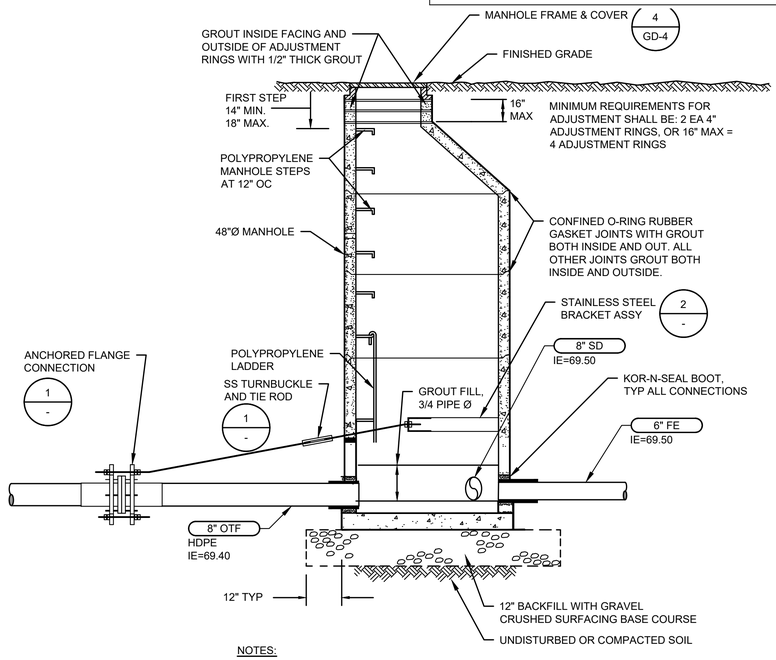
NOTE:

1. ALL STAINLESS STEEL SHALL 316.

1 / TYP — **OUTFALL MANHOLE, PLAN VIEW**
NOT TO SCALE



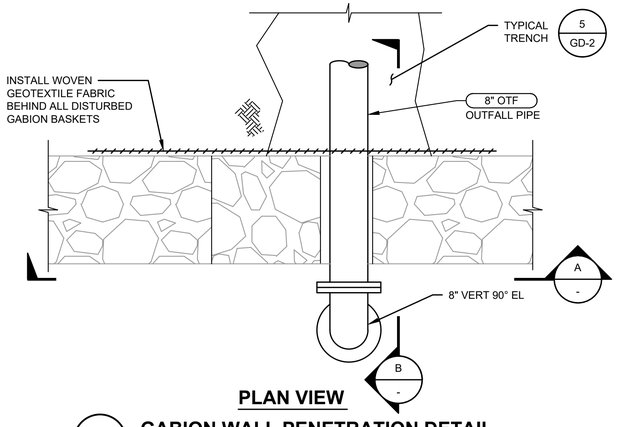
2 / - — **STAINLESS STEEL BRACKET ASSY**
NOT TO SCALE



NOTES:

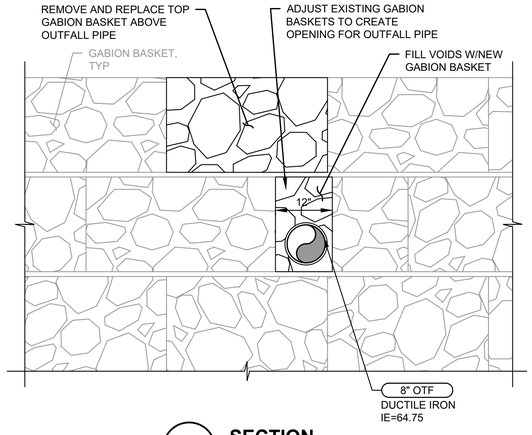
1. DROP OF GRADE THRU MANHOLE SHALL BE 0.10', UNLESS OTHERWISE NOTED.
2. IF THE NATIVE SOIL IS NOT IN A FIRM CONDITION OR CANNOT BE COMPACTED TO A FIRM CONDITION, THE CONTRACTOR SHALL OVEREXCAVATE 12" AND FILL BACKFILL WITH APPROVED STRUCTURAL FILL.
3. PROVIDE HDPE MAKE-UP PIECE WITH ROMAC ALPHA COUPLING FOR CONNECTION TO NEW OR EXISTING MANHOLES AS NEEDED.

3 / - — **OUTFALL MANHOLE WITH PIPING ANCHORING SECTION**
NOT TO SCALE

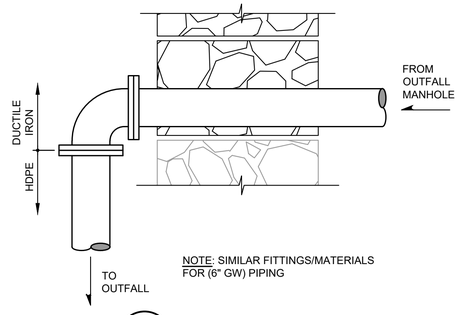


PLAN VIEW

4 / TYP — **GABION WALL PENETRATION DETAIL**
NOT TO SCALE

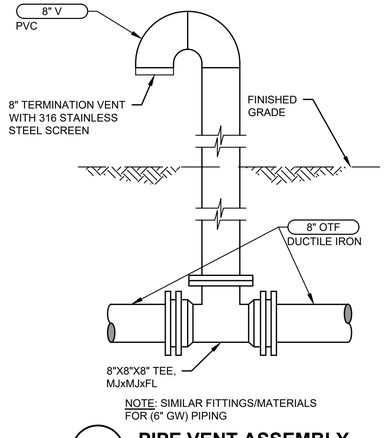


A / - — **SECTION**



NOTE: SIMILAR FITTINGS/MATERIALS FOR (6" GW) PIPING

B / - — **SECTION**



NOTE: SIMILAR FITTINGS/MATERIALS FOR (6" GW) PIPING

5 / TYP — **PIPE VENT ASSEMBLY**
NOT TO SCALE

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DATE

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1. A PRE-CONSTRUCTION MEETING SHALL BE REQUESTED AT LEAST 48-HOURS IN ADVANCE OF THE START OF CONSTRUCTION. CONTACT Sam Knox, THE AREA INSPECTOR, AT 253-798- 3709 .
2. APPOINT A CERTIFIED EROSION AND SEDIMENT CONTROL LEAD WHO SHALL BE PROVIDED A COPY OF THE SWPPP, EROSION CONTROL PLAN & INSPECTION SCHEDULE.
3. FAILURE TO OBTAIN REQUIRED INSPECTIONS MAY ENDANGER OR DELAY PROJECT APPROVAL.
4. ALL WORK IN THE PUBLIC RIGHT-OF-WAY REQUIRES A GENERAL RIGHT-OF-WAY PERMIT FROM PIERCE COUNTY PLANNING AND PUBLIC WORKS.

Gray & Osborne, Inc.
CONSULTING ENGINEERS
1130 RAINIER AVENUE SOUTH, SUITE 300
SEATTLE, WASHINGTON 98144
(206) 284-0860

ERIC F. NUTTING
STATE OF WASHINGTON
33900
REGISTERED PROFESSIONAL ENGINEER

7/31/2026

TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

8220 178TH AVENUE COURT SW,
LONGBRANCH, WA 98351

No.	DATE	REVISION

ISSUED FOR:

PIERCE COUNTY BUILDING PERMIT

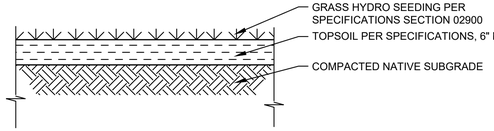
ISSUE DATE:	MAY 2026
APPROVED BY:	EFN
CHECKED BY:	EFN
DRAWN BY:	CRR
DESIGNER:	JESP
G & O JOB NO.:	22848.01
FILE:	GEN_DET.DWG

0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

GENERAL DETAILS

DRAWING: **GD-8** OF: **9**

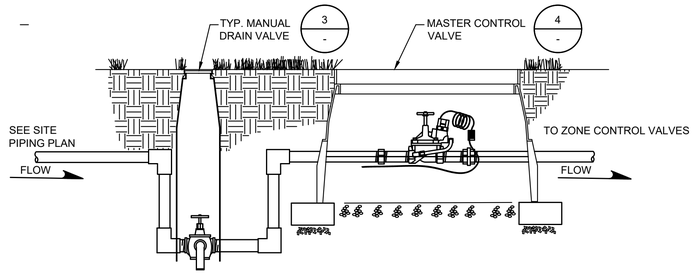
M:\taylor bay beach club hoa\22848.01 construction plans, spec, & permitting wa doh grant\01 design\wwtf upgrade\Plans\General\GEN_DET.DWG, 7/30/2026 2:18 PM, CHARLEY REID



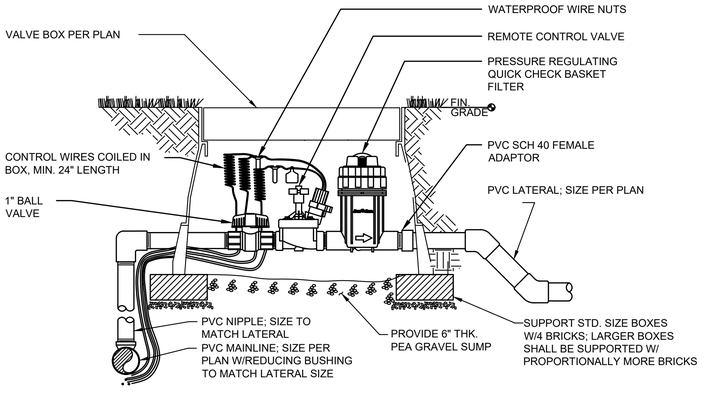
NOTE:

LEVEL DISTURBED AREAS PRIOR TO HYDROSEEDING AND ADD IMPORTED TOPSOIL RAKED IN WITH EXISTING SOIL.

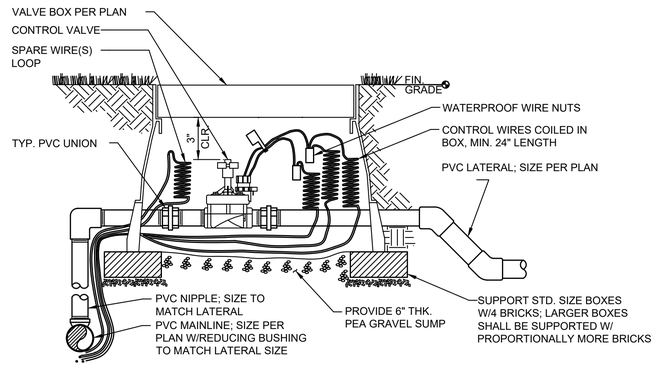
1 TYP **GRASS SURFACING DETAIL**
NOT TO SCALE



2 TYP **POINT OF CONNECTION**
NOT TO SCALE



4 TYP **MASTER VALVE**
NOT TO SCALE



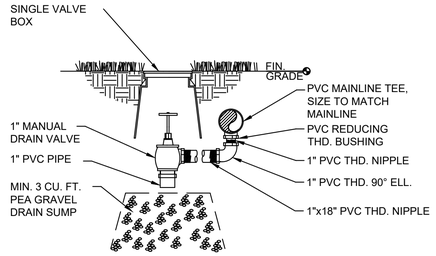
5 TYP **TYPICAL CONTROL VALVE**
NOT TO SCALE

PRIVATE IMPROVEMENTS — PERMIT # 1068155

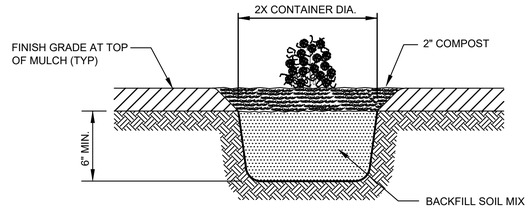
DEVELOPMENT ENGINEER — DATE 08/20/2026

PIERCE COUNTY ORDINANCE NOs: STORM 2026-530s ROAD 2022-7s

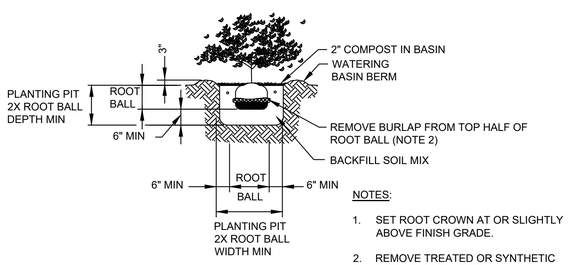
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3 TYP **MANUAL DRAIN VALVE**
NOT TO SCALE



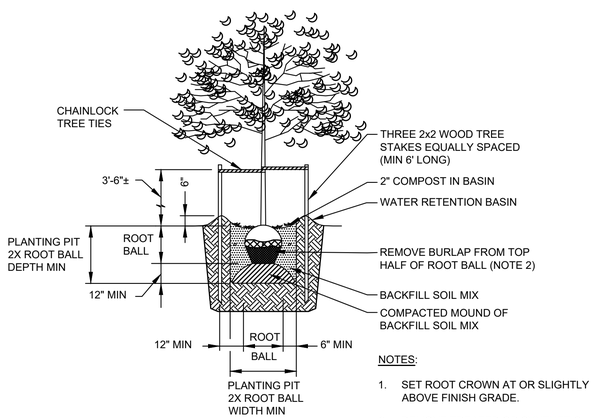
6 TYP **GROUNDCOVER PLANTING DETAIL**
NOT TO SCALE



NOTES:

1. SET ROOT CROWN AT OR SLIGHTLY ABOVE FINISH GRADE.
2. REMOVE TREATED OR SYNTHETIC BURLAP COMPLETELY.
3. SCARIFY BOTTOM AND SIDES OF PLANTING PIT.

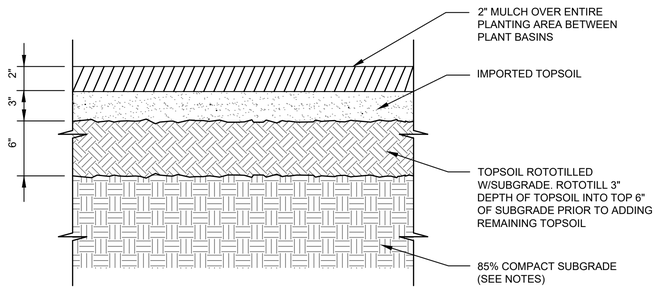
7 TYP **SHRUB PLANTING DETAIL**
NOT TO SCALE



NOTES:

1. SET ROOT CROWN AT OR SLIGHTLY ABOVE FINISH GRADE.
2. REMOVE TREATED OR SYNTHETIC BURLAP COMPLETELY.
3. SCARIFY BOTTOM AND SIDES OF PLANTING PIT.

8 TYP **TREE PLANTING AND STAKING DETAIL**
NOT TO SCALE



NOTES:

1. OBTAIN OWNER APPROVAL OF FINISH SUBGRADE PRIOR TO PLACING ANY SOIL.
2. COMPACT SUBGRADE AND TOPSOIL TO 85% DENSITY IN ALL PLANTED AREAS. IF SUBGRADE DENSITY IS GREATER THAN 85% IN PLANTED AREAS CINTRACTOR SHALL ROTOTILL SUBGRADE TO A 12-INCH DEPTH.
3. PRIOR TO INSTALLATION OF TOPSOIL, REMOVE ALL DEBRIS INCLUDING CEMENT; CONSTRUCTION DEBRIS; QUARRY SPALLS; AND OTHER MATERIALS DELETERIOUS TO PLANT GROWTH. OBTAIN APPROVAL OF FINISH SUBGRADE PRIOR TO PLACING TOPSOIL.
4. FINISH SUBGRADE SHALL BE SMOOTH, UNIFORM, AND FREE OF RUTS OR TRACKS.

9 TYP **TOPSOIL INSTALLATION SECTION**
NOT TO SCALE

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7/31/2026

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G & O JOB NO.:	22848.01
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0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

LANDSCAPING DETAILS

DRAWING: **GD-9** OF: **9**

m:\taylor bay beach club hoa\22848.01 construction plans, spec, & permitting wa doh grant\01 design\wwtf upgrade\Planset\General\GEN_DET.DWG, 7/30/2026 12:48 PM, CHARLEY REID

PIPING SYMBOLS

DOUBLE LINE	SINGLE LINE	
		EXISTING PIPE
		NEW PIPE
		WELDED
		FLANGED
		MECHANICAL JOINT
		FLANGED COUPLING ADAPTER
		FLEXIBLE COUPLING
		ADAPTOR FLANGE
		SOLID SLEEVE (MECHANICAL JOINT)
		RESTRAINED FLEXIBLE COUPLING
		RUBBER EXPANSION JOINT
		RESTRAINED RUBBER EXPANSION JOINT
		BLIND FLANGE
		CHECK VALVE
		GATE VALVE
		PLUG VALVE
		BUTTERFLY VALVE
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER
		ELBOW, 45°
		ELBOW, 90°
		ELBOW UP
		ELBOW DOWN
		TEE
		TEE UP
		TEE DOWN
		CROSS
		WYE

DOUBLE LINE	SINGLE LINE	
		SCREWED JOINT
		GROOVED COUPLING
		FLANGED COUPLING ADAPTER W/ THRUST TIES TO NEXT FLANGED JOINT
		UNION
		BELL UP
		FLEXIBLE HOSE OR TUBING
		BALL VALVE
M	M	VALVE WITH MOTOR ACTUATOR
		VALVE WITH PNEUMATIC ACTIVATOR
		DENOTES ITEMS TO BE ABANDONED BY CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATIONS
	S	SOLENOID VALVE
		EXISTING PIPE TO BE DEMOLISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS
		EXISTING PIPE TO BE ABANDONED BY CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATIONS
	F	FLUSHING/SAMPLING CONNECTION SEE DETAIL 1/M-3
		PIPE SUPPORT.
EXISTING	NEW	BLDG WALLS FOOTINGS, CMU, ETC

NOTE:

FOR ADDITIONAL ABBREVIATIONS & SYMBOLS SEE SHEET G-3, P-1, S-2, A-1, H-1 AND I-1.

PROCESS PIPING / EQUIPMENT IDENTIFICATIONS

PROCESS PIPING

LINE SIZE — 24" SC — PROCESS TYPE SEE LIST BELOW

PROCESS PIPING

ALP	AIR LOW PRESSURE
CCS	CHEMICAL CLEANING SOLUTION
D	DRAIN
EQ	EQUALIZATION
FE	FINAL EFFLUENT
FM	FORCE MAIN
ML	MIXED LIQUOR
NPW	NON-POT WATER
OCD	ODOR CONTROL DUCT
OTF	OUTFALL
OF	OVERFLOW
PER	PERMEATE
W	POTABLE WATER
RS	RAW SEWAGE
RAS	RETURN ACTIVATED SLUDGE
SAM	SAMPLE
SS	SANITARY SEWER
SD	STORM DRAIN
SPD	SUMP PUMP DISCHARGE
V	VENT
WAS	WASTE ACTIVATED SLUDGE
WS	WASTE SLUDGE

VALVES

AV	AIR/VACUUM RELEASE VALVE
BG	BUTTERFLY GATE
BV	BUTTERFLY VALVE
CV	CHECK VALVE
DV	THREE WAY DIVERTER VALVE
FG	FLAP GATE
GV	GATE VALVE
MOV	MOTOR OPERATED VALVE
MV	MIXING VALVE
PV	PLUG VALVE
SG	SLIDE GATE/ SLUICE GATE STOP
STG	GATE
SV	SOLENOID VALVE
TPV	3- PORT PLUG VALVE
XV	MOTOR OPERATED VALVE

EQUIPMENT

EQUIPMENT TYPE (SEE LIST BELOW) — 99 POL 99 — EQUIPMENT NUMBER (SEQUENTIAL LISTING)

AREA NO.

EQUIPMENT

AB	AERATION BLOWER
AFM	AIR FLOW METER
BLP	BLUFF LIFT STATION PUMP
CLS	CONDUCTIVITY LEVEL SWITCH
DO	DISSOLVED OXYGEN METER
ESA	EFFLUENT SAMPLER
GEN	GENERATOR
IP	INFLUENT PUMP
IS	INFLUENT SAMPLER
LS	LEVEL FLOAT SWITCH
MBR	MEMBRANE BIOREACTOR
MFM	MAGNETIC FLOW METER
MSB	MEMBRANE SCOUR BLOWER
MXR	SUBMERSIBLE MIXER
NPP	NON-POTABLE WATER PUMP
OCU	ODOR CONTROL UNIT
PMP	PERMEATE PUMP
PTR	PRESSURE TRANSMITTER
RDS	ROTARY DRUM SCREEN
RLS	RADAR LEVEL SENSOR
RP	RETURN ACTIVATED SLUDGE PUMP
STG	STOP GATE
SLS	SUBMERSIBLE LEVEL SENSOR
SP	SUMP PUMP
TM	TURBIDITY METER
UV	ULTRAVIOLET DISINFECTION BANK
WB	WASTE ACTIVATED SLUDGE BLOWER
WC	SCREENINGS WASHER/COMPACTOR
WP	WASTE ACTIVATED SLUDGE PUMP

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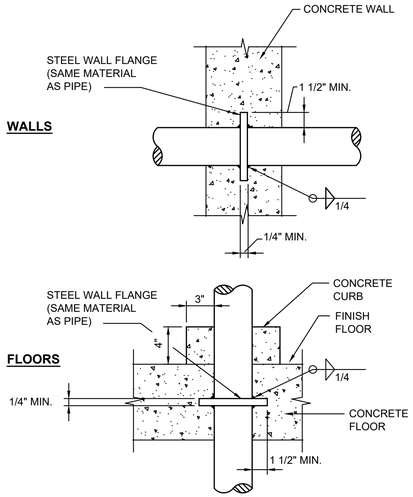
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IF NOT, SCALE ACCORDINGLY

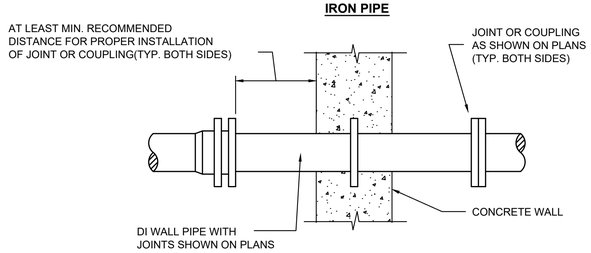
MECHANICAL

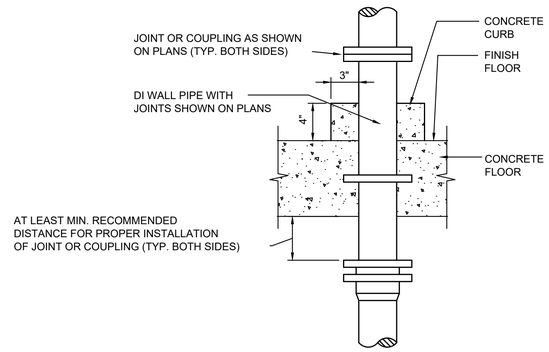
GENERAL MECHANICAL DETAILS

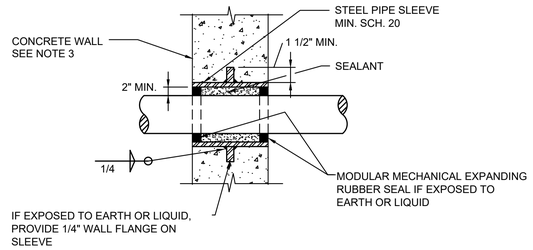
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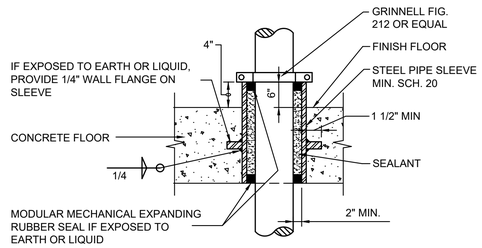
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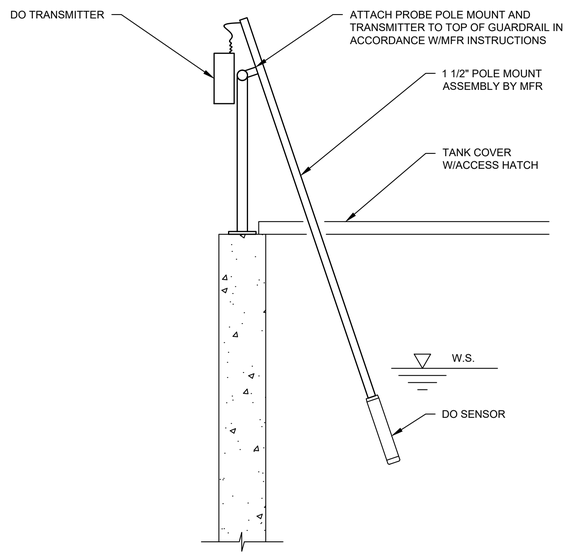


NOTES:

1. FOR EXISTING CONCRETE OR PRECAST CONCRETE, AN OPENING SHALL BE PROVIDED OF ADEQUATE SIZE TO ALLOW FOR INSTALLATION OF PENETRATION SHOWN ON THIS DETAIL. THE OPENING SHALL BE FILLED WITH NON-SHRINK GROUT AFTER PIPE INSTALLATION. IF OPENING IS PROVIDED BY CORE DRILLING, RESULTING SMOOTH CONCRETE SURFACES SHALL BE ROUGHENED BEFORE FILLING WITH GROUT.
2. FOR ADDITIONAL REINFORCEMENT AROUND PIPE PENETRATIONS SEE DETAIL 3 / S-3
3. FOR CMU WALLS, CORE DRILL HOLE. PROVIDE MIN. 8' THICK NON-SHRINK GROUT ENCASEMENT ALL AROUND PIPE SLEEVE IN WALL. FILL ANNULAR OPENING WITH SEALANT.
4. USE OF LINK-SEALS WITH CENTURY LINE WALL SLEEVES ACCEPTABLE FOR WALL PENETRATIONS. SEE RFI #11, MODEL S-316 OR LS-316 MODULAR SEAL.

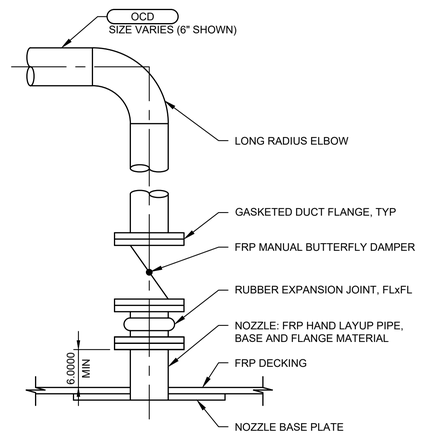
1 TYP — PIPE PENETRATIONS THROUGH CONCRETE WALLS AND FLOORS DETAILS

NOT TO SCALE



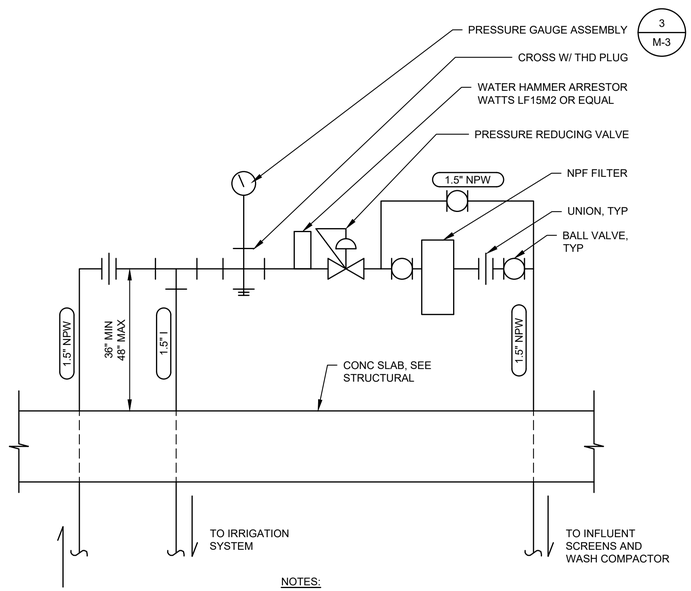
2 TYP — DO SENSOR MOUNT DETAIL

NOT TO SCALE



3 TYP — DUCT CONNECTION DETAIL

SCALE: 1"=1'-0"



NOTES:

1. SEE SPECIFICATIONS FOR MATERIALS.

4 TYP — NPW FILTER ASSEMBLY DETAIL

NOT TO SCALE

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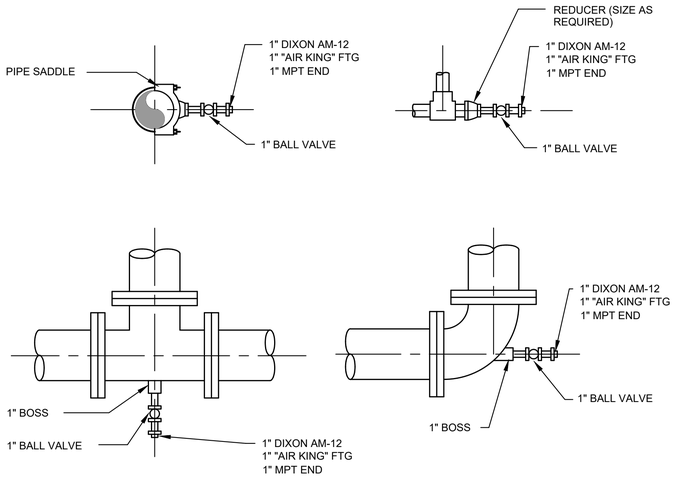
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MECHANICAL

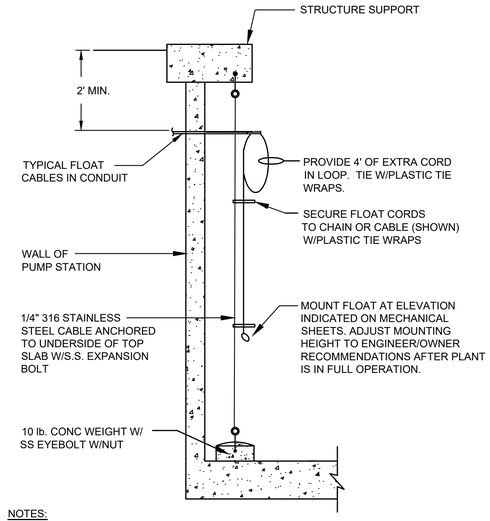
GENERAL MECHANICAL DETAILS

DRAWING: **M-2** OF: **4**

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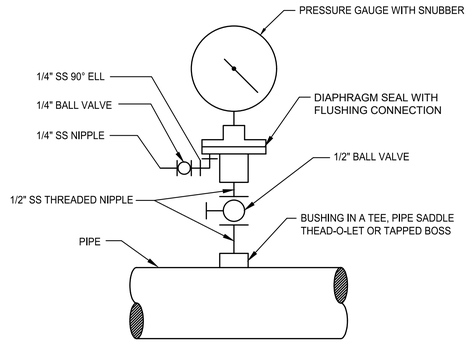
1 TYP **TYPICAL FLUSHING/SAMPLING CONNECTION DETAILS**
NOT TO SCALE



NOTES:

1. DETAIL SHOWN IS FOR AN INSTALLATION WITH A SINGLE FLOAT, IN INSTALLATIONS WITH MULTIPLE FLOATS, ALL FLOATS SHALL BE CONNECTED TO THE SAME S.S. CABLE USING PLASTIC TIE WRAPS. SEE MECHANICAL AND ELECTRICAL SHEETS FOR LOCATION AND NUMBER OF FLOATS AT EACH LOCATION.
2. SEE ELECTRICAL SHEETS FOR LOCATION OF SEAL-OFFS IF REQUIRED.
3. IN PROCESS TANK, USE SST UNISTRUT MOUNTED TO CONCRETE WALL W/SST EYEBOLT ATTACHED.

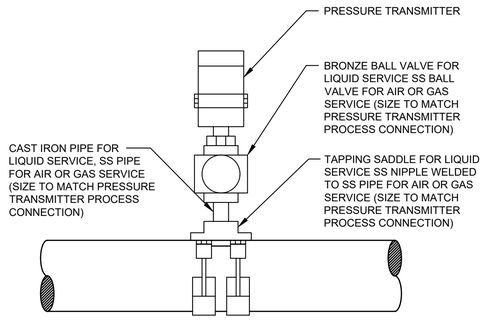
2 TYP **FLOAT MOUNTING DETAIL**
NOT TO SCALE



NOTES:

1. PRESSURE GAUGE FOR AIR OR POTABLE WATER SERVICE WILL NOT REQUIRE DIAPHRAGM SEAL. PROVIDE THESE GAUGES WITH SNUBBERS.
2. ALL STAINLESS STEEL SHALL BE 316.

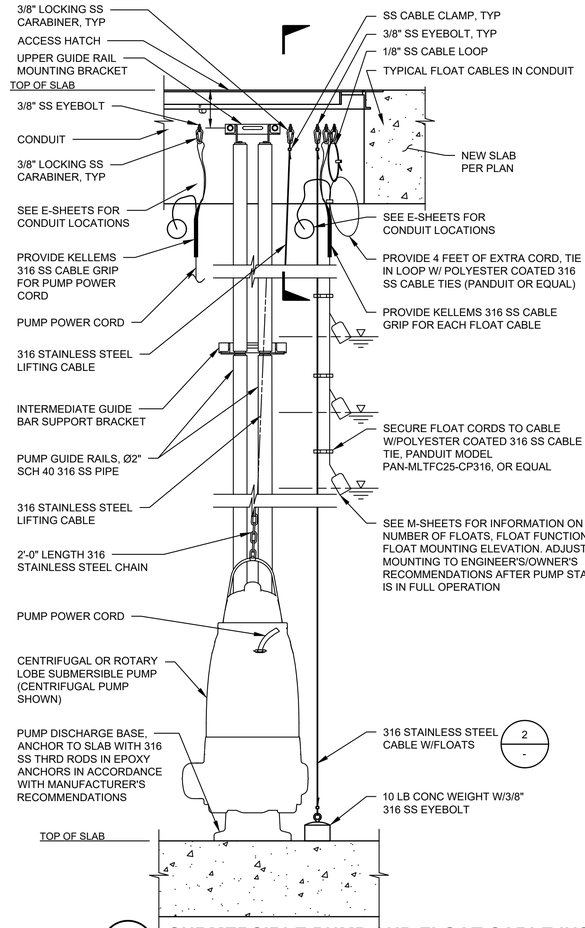
3 TYP **PRESSURE GAUGE (LIQUID SERVICE) DETAIL**
NOT TO SCALE

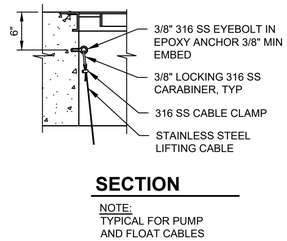


NOTES:

1. ALL STAINLESS STEEL SHALL BE 316.

4 TYP **PRESSURE TRANSMITTER PIPE INSTALLATION DETAIL**
NOT TO SCALE





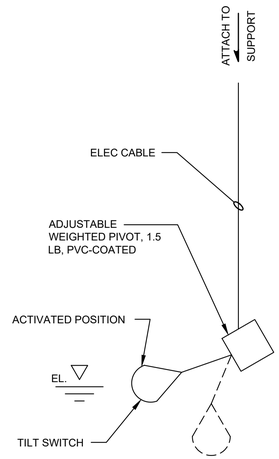
SECTION

NOTE:
TYPICAL FOR PUMP AND FLOAT CABLES

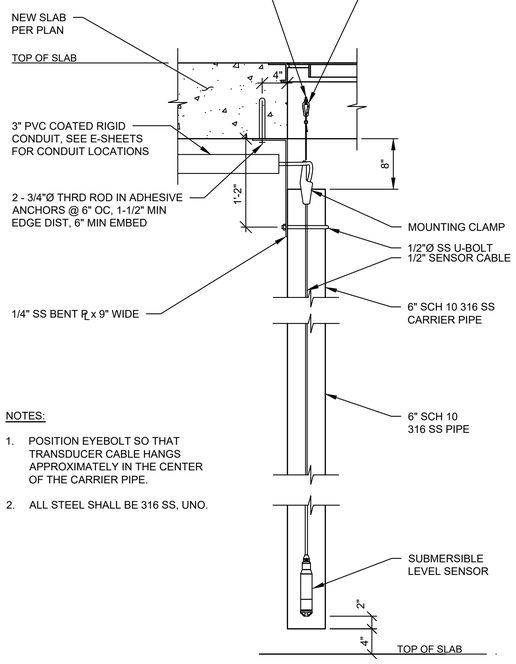
NOTES:

1. SEE ELECTRICAL SHEETS FOR LOCATION OF SEAL-OFFS IF REQUIRED.
2. PROVIDE KELLEMS 316 SS CABLE GRIP FOR EACH PUMP POWER CORD.
3. ALL STEEL SHALL BE 316 SS, UNO.

7 TYP **SUBMERSIBLE PUMP AND FLOAT CABLE INSTALLATION DETAIL**
SCALE: 1"=1'-0"



5 TYP **HIGH LEVEL FLOAT DETAIL**
NOT TO SCALE



NOTES:

1. POSITION EYEBOLT SO THAT TRANSDUCER CABLE HANGS APPROXIMATELY IN THE CENTER OF THE CARRIER PIPE.
2. ALL STEEL SHALL BE 316 SS, UNO.

6 TYP **SUBMERSIBLE LEVEL SENSOR DETAIL**
SCALE: 1"=1'-0"

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(206) 284-0860

ERIC F. NUTTING
STATE OF WASHINGTON
33900
REGISTERED
PROFESSIONAL ENGINEER

9/4/2026

TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

8220 178TH AVENUE COURT SW, LONGBRANCH, WA 98351

No.	DATE	REVISION

ISSUED FOR:

BID SET

ISSUE DATE:	SEPTEMBER 2026
APPROVED BY:	EFN
CHECKED BY:	EFN
DRAWN BY:	CRR
DESIGNER:	JESP
G & O JOB NO.:	22848.01
FILE:	M-DET.DWG

0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

MECHANICAL

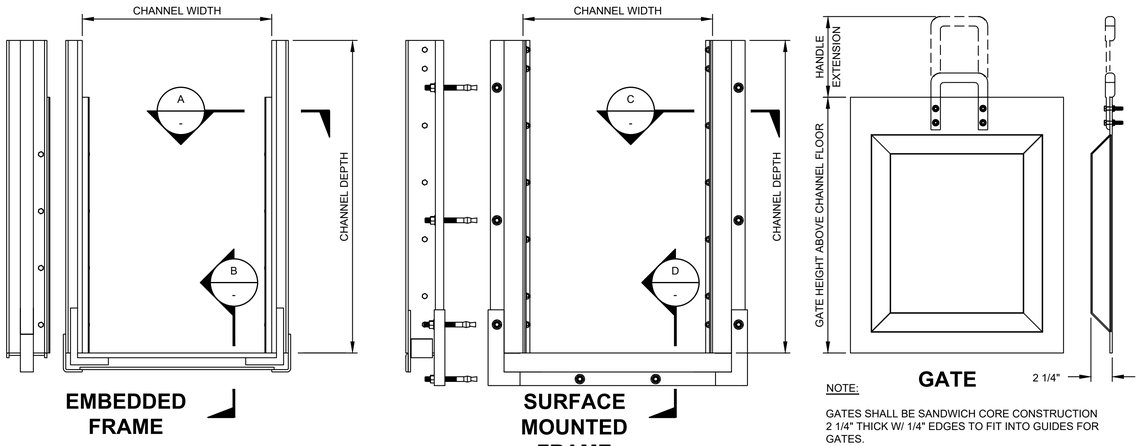
GENERAL MECHANICAL DETAILS

DRAWING: **M-3** OF: **4**

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STOP GATE SCHEDULE

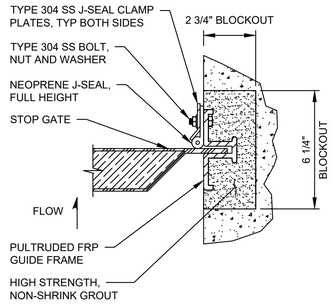
STOP GATE ID	LOCATION	INVERT ELEVATION	TOP OF WALL ELEVATION	CHANNEL WIDTH / PIPE DIAMETER	GATE HEIGHT	HANDLE EXTENTION	GATE FRAME TYPE
02 SG 01	ANOXIC BASIN	79.00	83.50	10" / 6"	2'-0"	1'-6"	SURFACE MOUNT
02 SG 02	ANOXIC BASIN	79.00	83.50	10" / 6"	2'-0"	1'-6"	SURFACE MOUNT
02 SG 03	ANOXIC BASIN	79.00	83.50	10" / 6"	2'-0"	1'-6"	SURFACE MOUNT
02 SG 04	AERATION BASIN	75.00	80.50	1'-0"	3'-0"	2'-6"	EMBEDDED
02 SG 05	AERATION BASIN	75.00	80.50	1'-0"	3'-0"	2'-6"	EMBEDDED
02 SG 06	MEMBRANE BASIN NO. 1	75.00	80.50	10" / 6"	2'-0"	3'-6"	SURFACE MOUNT
02 SG 07	MEMBRANE BASIN NO. 2	75.00	80.50	10" / 6"	2'-0"	3'-6"	SURFACE MOUNT



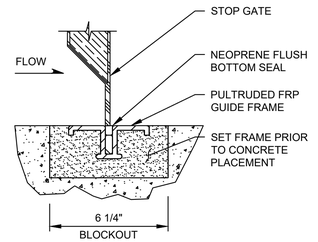
NOTE:

GATES SHALL BE SANDWICH CORE CONSTRUCTION 2 1/4" THICK W/ 1/4" EDGES TO FIT INTO GUIDES FOR GATES.

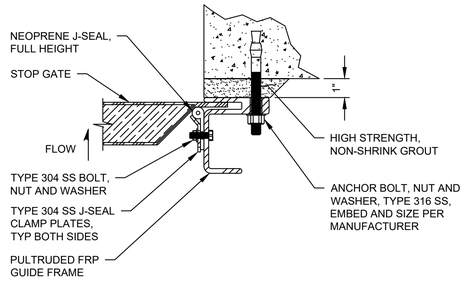
1 TYP **STOP GATE DETAIL**
NOT TO SCALE



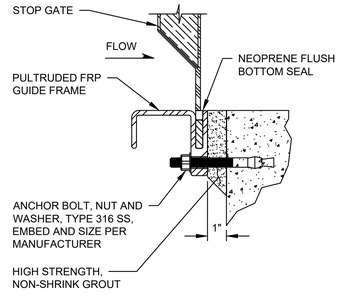
A TYP **EMBEDDED STOP GATE FRAME GUIDE SECTION (SIDE)**
NOT TO SCALE



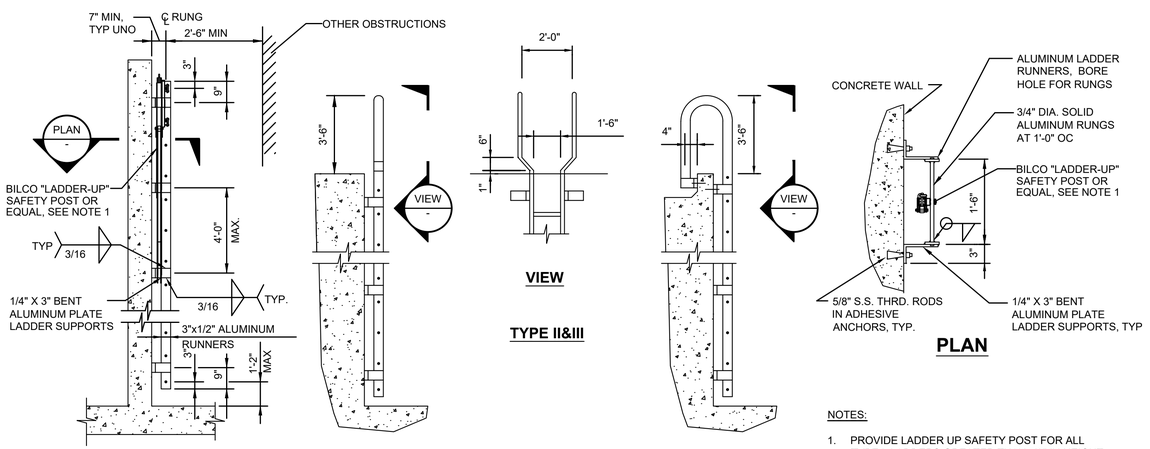
B TYP **EMBEDDED STOP GATE FRAME GUIDE SECTION (BOTTOM)**
NOT TO SCALE



C TYP **SURFACE MOUNTED STOP GATE FRAME GUIDE SECTION (SIDE)**
NOT TO SCALE



D TYP **SURFACE MOUNTED STOP GATE FRAME GUIDE SECTION (BOTTOM)**
NOT TO SCALE



NOTES:

1. PROVIDE LADDER UP SAFETY POST FOR ALL TYPE I LADDERS GREATER THAN 5'0" IN HEIGHT.

2 TYP **TYPICAL LADDER DETAIL**
NOT TO SCALE

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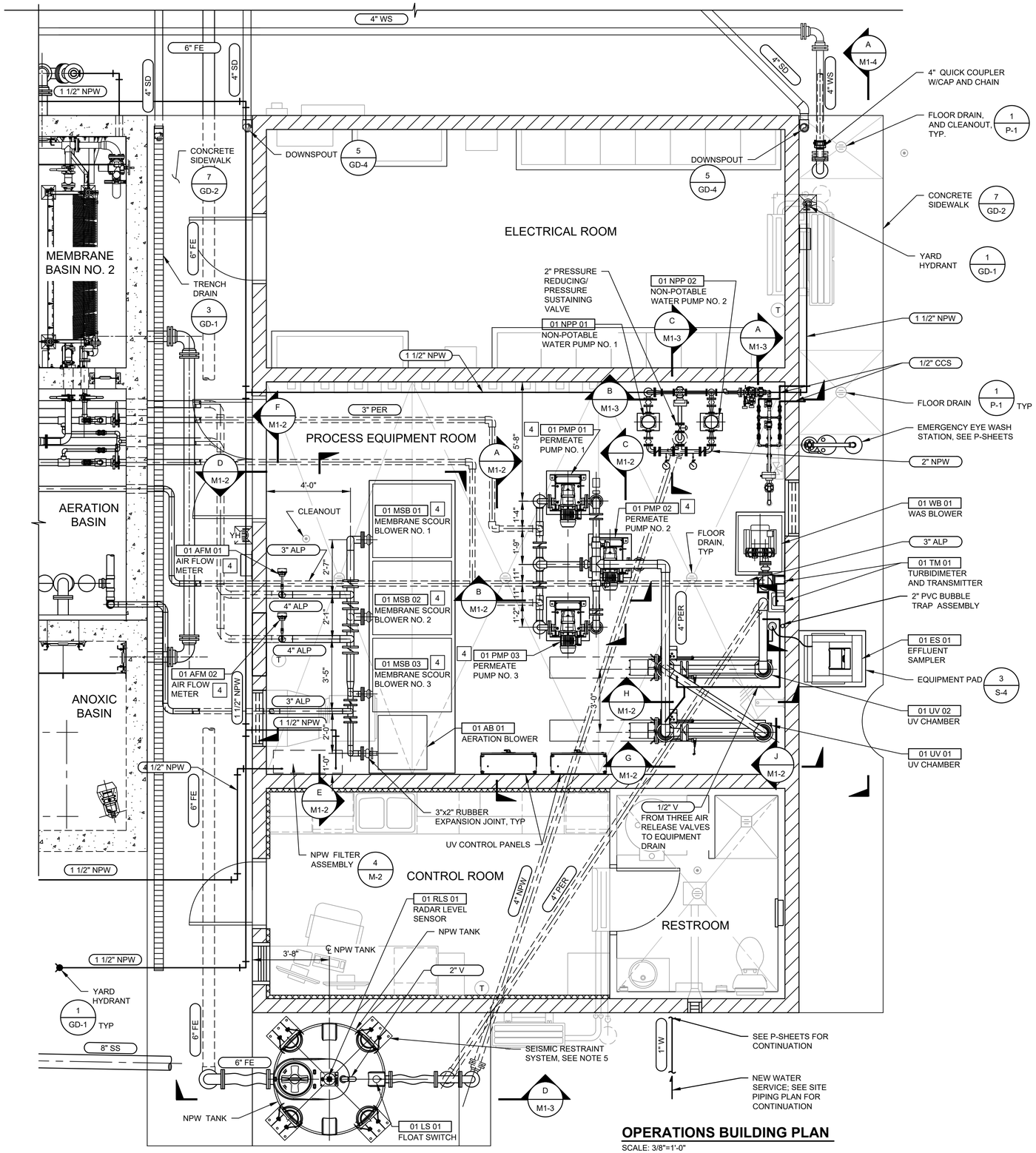
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TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

MECHANICAL

GENERAL MECHANICAL DETAILS

DRAWING: **M-4** OF: **4**

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OPERATIONS BUILDING PLAN

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

NOTES:

1. FOR PIPE SUPPORTS, SEE SPECIFICATIONS.
2. FOR PIPE PENETRATIONS, SEE DETAIL (1/M-2).
3. FOR PLUMBING PLAN, SEE SHEET P1-1.
4. FOR HVAC PLAN, SEE SHEET H1-1.
5. SEISMIC RESTRAINT SYSTEM BY TANK MANUFACTURER. CONTRACTOR SHALL COORDINATE SIZE, LOCATION AND EMBEDMENT LENGTH OF ANCHOR BOLTS AND TANK NOZZLES WITH TANK MANUFACTURER.
6. EQUIPMENT TAGS WITH [4] DENOTE ITEMS SUPPLIED BY MEMBRANE SYSTEM MANUFACTURER FOR INSTALLATION BY CONTRACTOR. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

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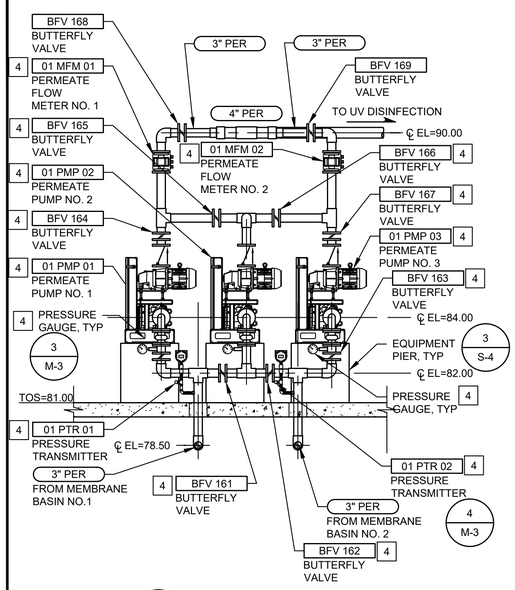
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MECHANICAL

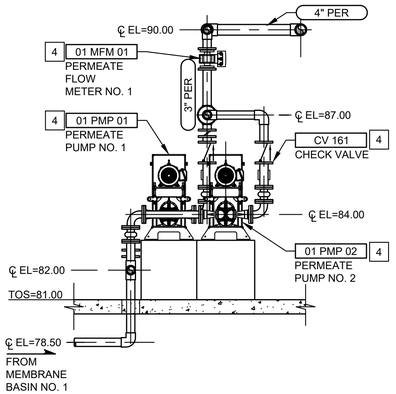
OPERATIONS BUILDING PLAN

DRAWING: **M1-1** OF: **4**

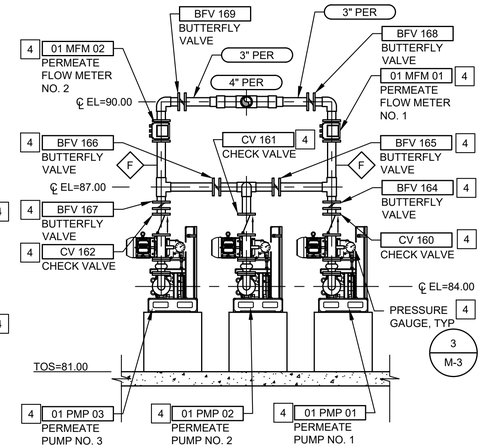
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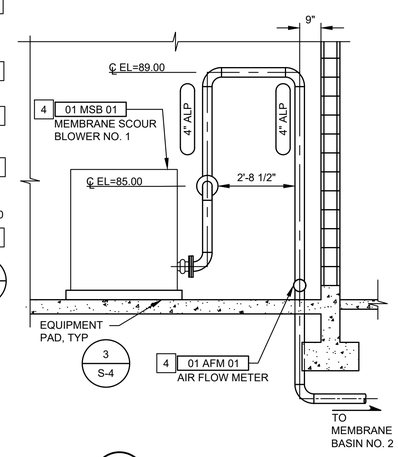
A M1-1 **SECTION**
SCALE: 3/8"=1'-0"



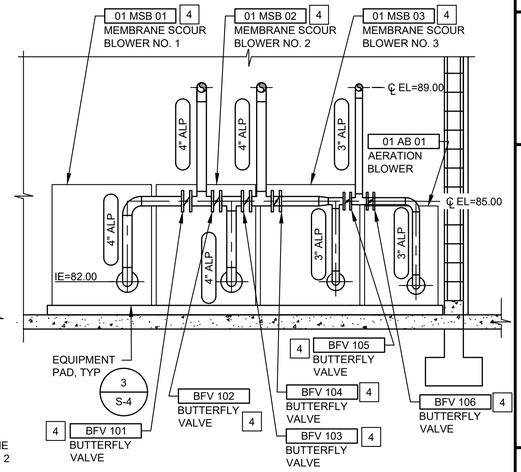
B M1-1 **SECTION**
SCALE: 3/8"=1'-0"



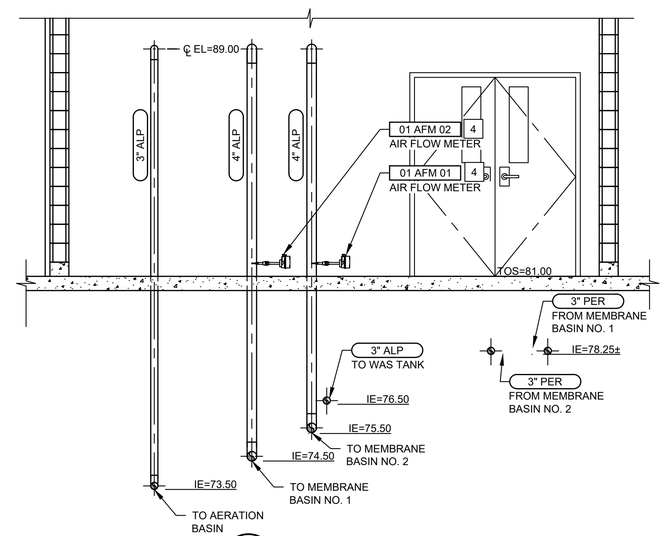
C M1-1 **SECTION**
SCALE: 3/8"=1'-0"



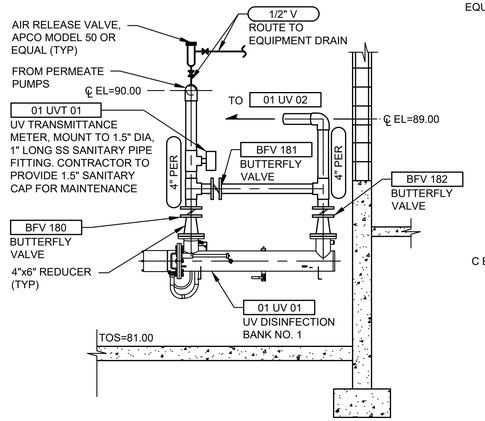
D M1-1 **SECTION**
SCALE: 3/8"=1'-0"



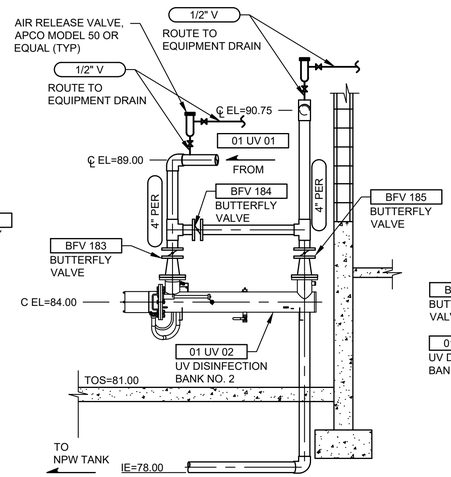
E M1-1 **SECTION**
SCALE: 3/8"=1'-0"



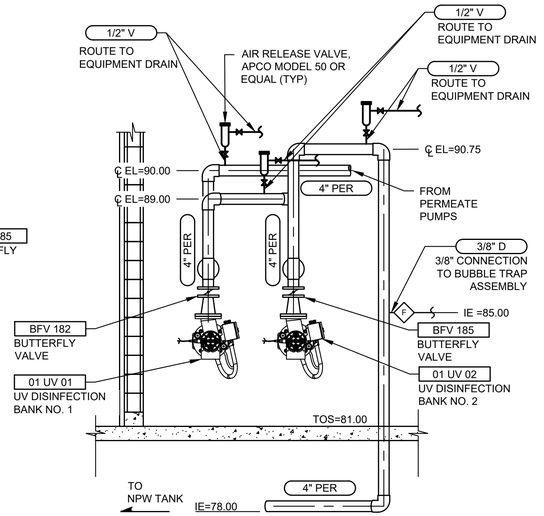
F M1-1 **SECTION**
SCALE: 3/8"=1'-0"



G M1-1 **SECTION**
SCALE: 3/8"=1'-0"



H M1-1 **SECTION**
SCALE: 3/8"=1'-0"



J M1-1 **SECTION**
SCALE: 3/8"=1'-0"

NOTES:

1. EQUIPMENT TAGS WITH [4] DENOTE ITEMS SUPPLIED BY MEMBRANE SYSTEM MANUFACTURER FOR INSTALLATION BY CONTRACTOR. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

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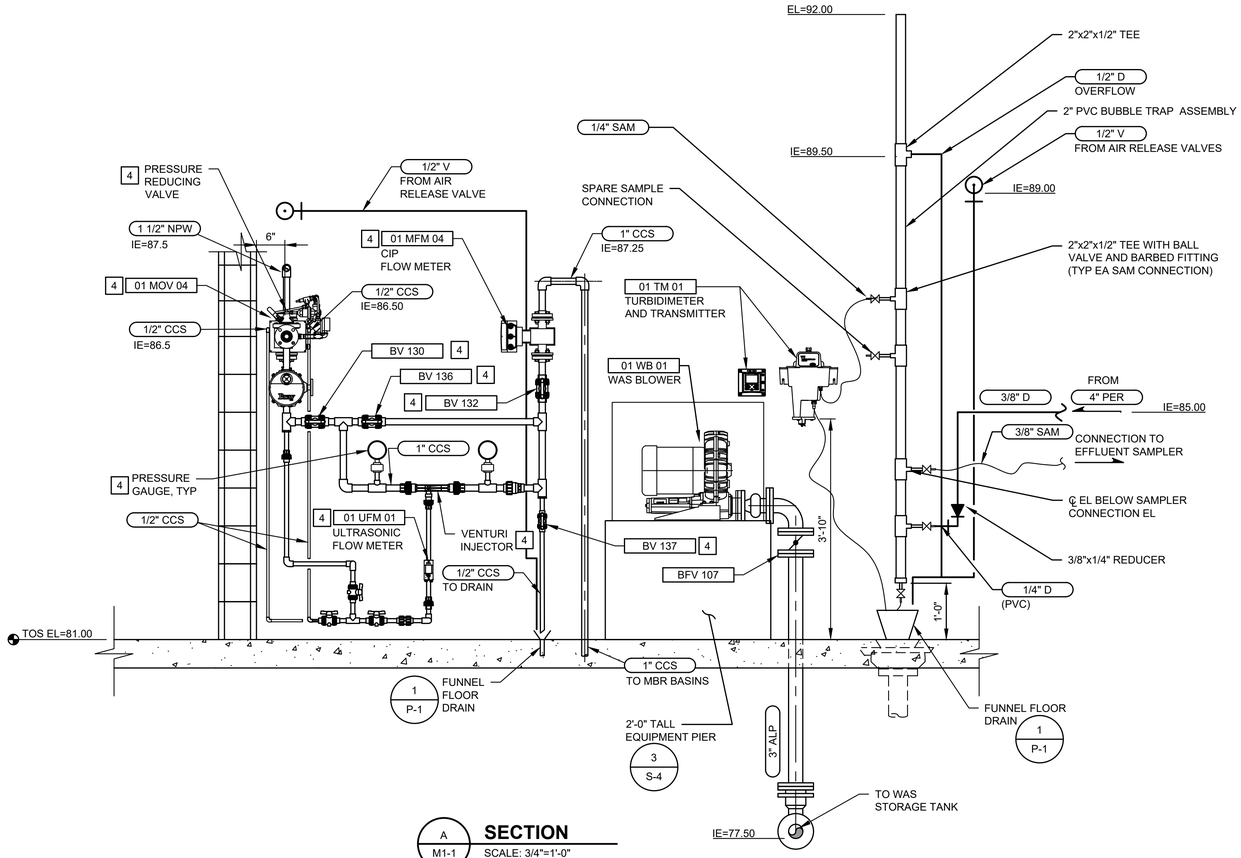
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TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

MECHANICAL

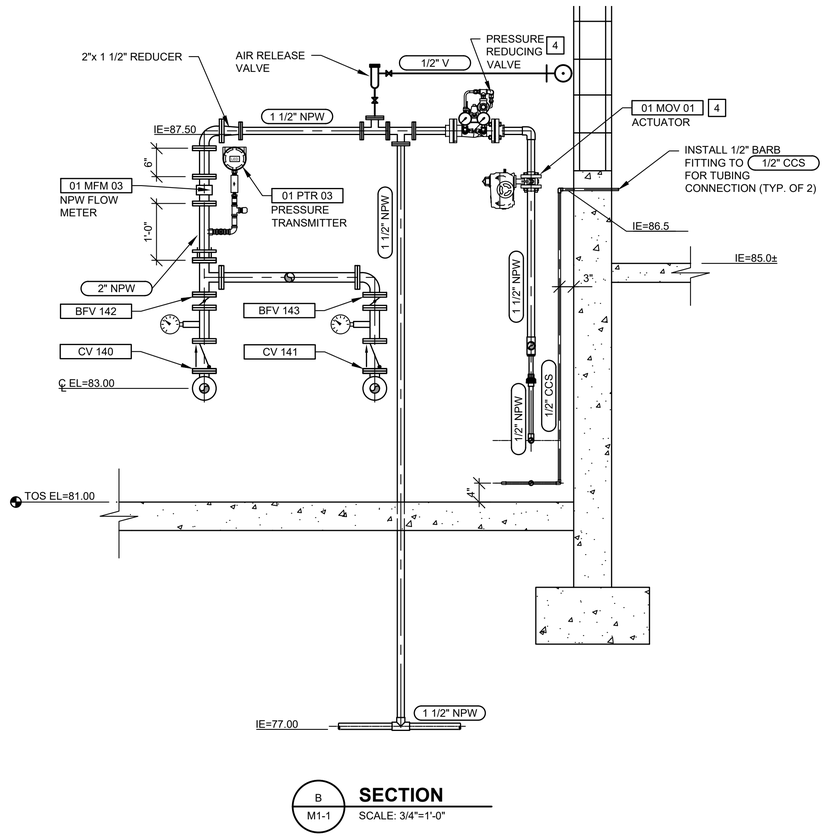
OPERATIONS BUILDING SECTIONS

DRAWING: **M1-2** OF: **4**

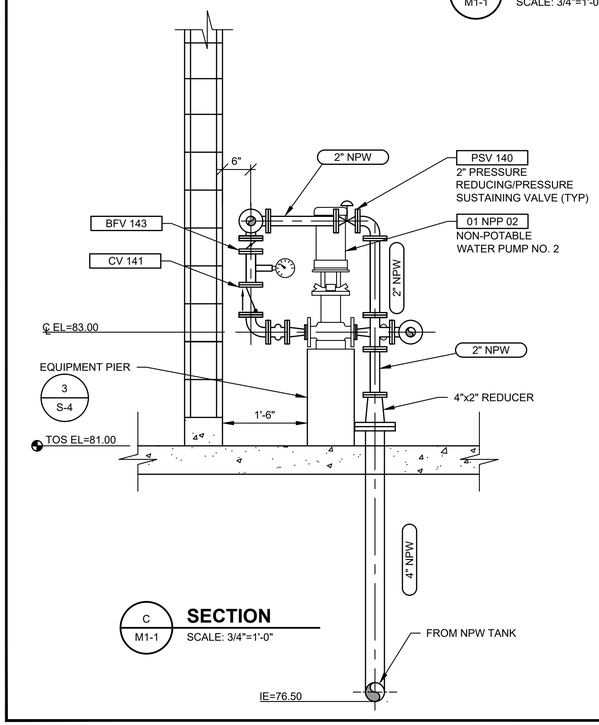
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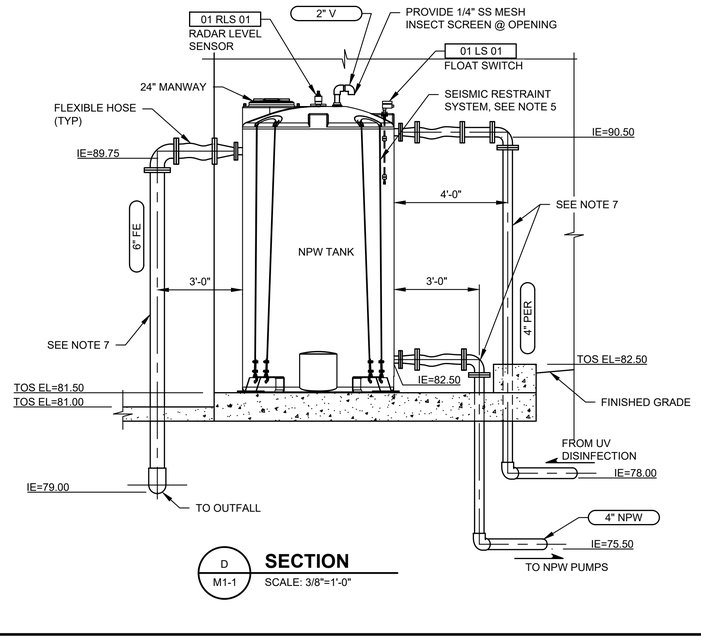
A M1-1 **SECTION**
SCALE: 3/4"=1'-0"



B M1-1 **SECTION**
SCALE: 3/4"=1'-0"



C M1-1 **SECTION**
SCALE: 3/4"=1'-0"



D M1-1 **SECTION**
SCALE: 3/8"=1'-0"

NOTES:

1. FOR PIPE SUPPORTS, SEE SPECIFICATIONS.
2. FOR PIPE PENETRATIONS, SEE DETAIL (1/M-2).
3. FOR PLUMBING PLAN, SEE SHEET P1-1.
4. FOR HVAC PLAN, SEE SHEET H1-1.
5. SEISMIC RESTRAINT SYSTEM BY TANK MANUFACTURER. CONTRACTOR SHALL COORDINATE SIZE, LOCATION AND EMBEDMENT LENGTH OF ANCHOR BOLTS AND TANK NOZZLES WITH TANK MANUFACTURER.
6. EQUIPMENT TAGS WITH 4 DENOTE ITEMS SUPPLIED BY MEMBRANE SYSTEM MANUFACTURER FOR INSTALLATION BY CONTRACTOR. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
7. HEAT TRACE AND INSULATE ALL ABOVE GRADE, EXTERIOR FE, PER, AND NPW PIPING.

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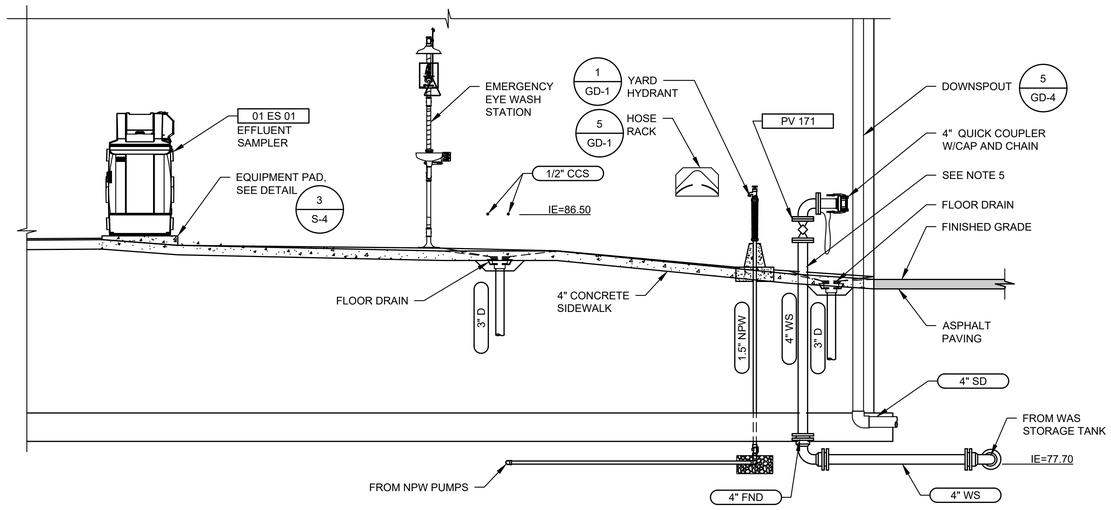
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IF NOT, SCALE ACCORDINGLY

MECHANICAL

OPERATIONS BUILDING SECTIONS

DRAWING: **M1-3** OF: **4**

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A
M1-1
SECTION
SCALE: 3/8"=1'-0"

NOTES:

1. FOR PIPE SUPPORTS, SEE SPECIFICATIONS.
2. FOR PIPE PENETRATIONS, SEE DETAIL (1/M-2).
3. FOR PLUMBING PLAN, SEE SHEET P1-1.
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5. HEAT TRACE AND INSULATE ALL ABOVE GRADE WS PIPING.

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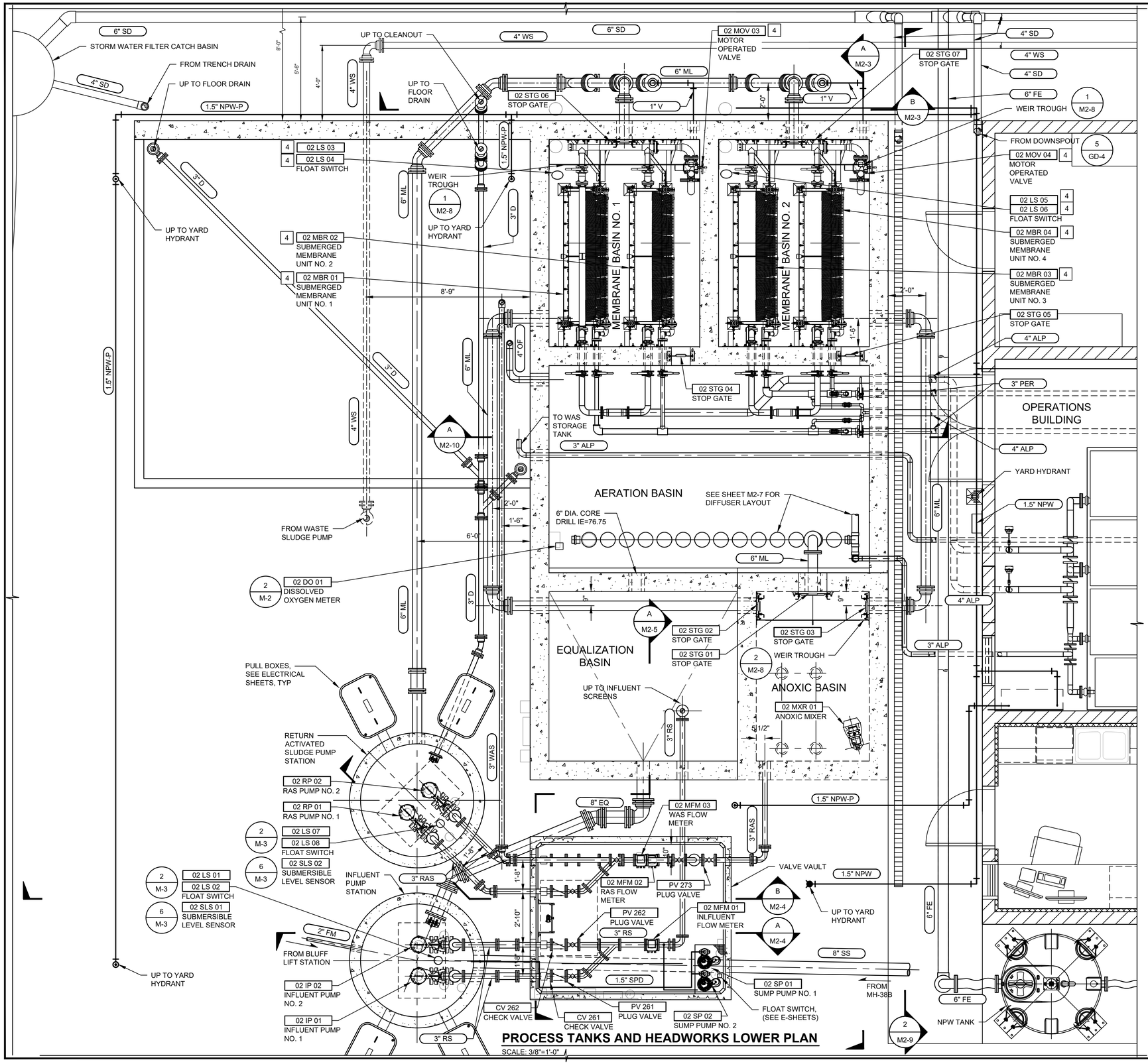
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IF NOT, SCALE ACCORDINGLY

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DRAWING: **M1-4** OF: **4**

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PROCESS TANKS AND HEADWORKS LOWER PLAN

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

NOTES:

1. SEE M2-10 FOR ADDITIONAL INFORMATION ON EQUIPMENT AND PIPING IN MEMBRANE BASINS.
2. FOR STOP GATE SCHEDULE SEE SHEET M-4.
3. FOR PIPE PENETRATIONS SEE DETAIL (1/M-2).
4. FOR PIPE SUPPORTS SEE SPECIFICATIONS.
5. EQUIPMENT TAGS WITH [4] DENOTE ITEMS SUPPLIED BY MEMBRANE SYSTEM FOR INSTALLATION BY CONTRACTOR. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
6. CONTRACTOR SHALL SUPPLY 316 SS PERMEATE PIPING FROM FLANGE CONNECTION TO PERMEATE PUMPS. MEMBRANE MANUFACTURER SHALL SUPPLY PVC AND FLEXIBLE HOSE PERMEATE PIPING FROM VALVE FLANGE CONNECTION TO SMU CONNECTION FOR INSTALLATION BY CONTRACTOR. CONTRACTOR SHALL INSTALL PERMEATE PIPING WITH CONSTANT SLOPE AND NO HIGH POINTS BETWEEN FLANGE CONNECTION AT MBR BASINS TO THE BURIED 90 DEGREE ELBOW AT PERMEATE PUMP SUCTION CONNECTION.
7. SEE SHEET M2-10 FOR ENLARGED MEMBRANE BASINS PLAN AND PIPING SECTION.
8. SEE S2-1 FOR WALL HYDROSTATIC PRESSURE RELIEF VALVES AND ASSOCIATED PIPING.
9. SEE SHEET I-3 FOR SUMP PUMP DISCHARGE PIPING REQUIREMENTS.

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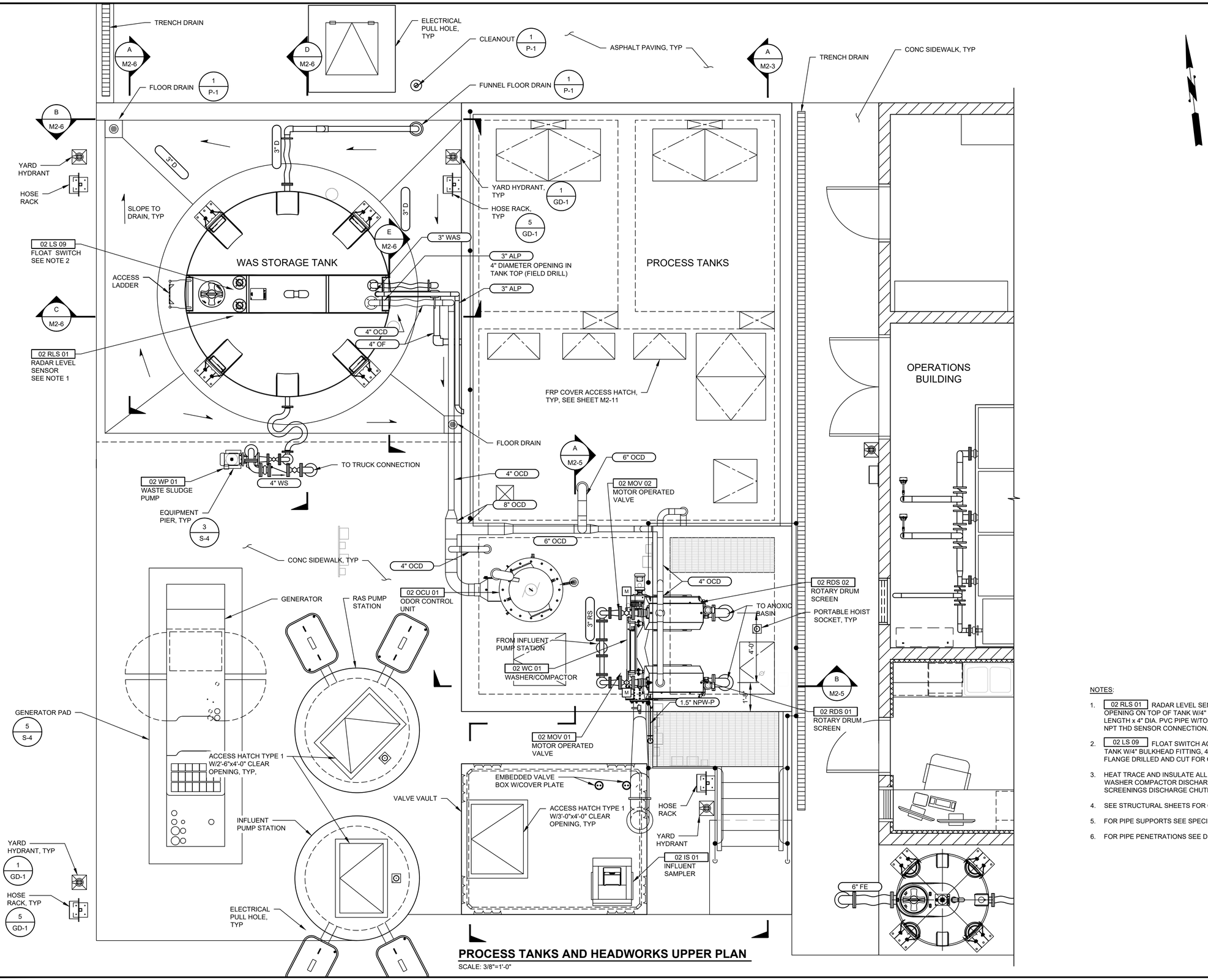
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TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

MECHANICAL

PROCESS TANKS AND HEADWORKS LOWER PLAN

DRAWING: **M2-1** OF: **11**

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PROCESS TANKS AND HEADWORKS UPPER PLAN

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

NOTES:

1. 02 RLS 01 RADAR LEVEL SENSOR, MOUNT DIRECTLY TO 4" OPENING ON TOP OF TANK W/4" BULKHEAD FITTING, W/10.5" LENGTH x 4" DIA. PVC PIPE W/TOP BLIND FLANGE TAPPED FOR 1" NPT THD SENSOR CONNECTION.
2. 02 LS 09 FLOAT SWITCH ACCESS VIA 4" OPENING ON TOP OF TANK W/4" BULKHEAD FITTING, 4" DIA PVC PIPE W/TOP BLIND FLANGE DRILLED AND CUT FOR CABLE ENTRY.
3. HEAT TRACE AND INSULATE ALL ABOVE GROUND NPW PIPING, WASHER COMPACTOR DISCHARGE TRANSPORT TUBE AND SCREENINGS DISCHARGE CHUTE AS SPECIFIED IN SECTION 11330.
4. SEE STRUCTURAL SHEETS FOR GUARDRAIL.
5. FOR PIPE SUPPORTS SEE SPECIFICATIONS.
6. FOR PIPE PENETRATIONS SEE DETAIL 1/M-2.

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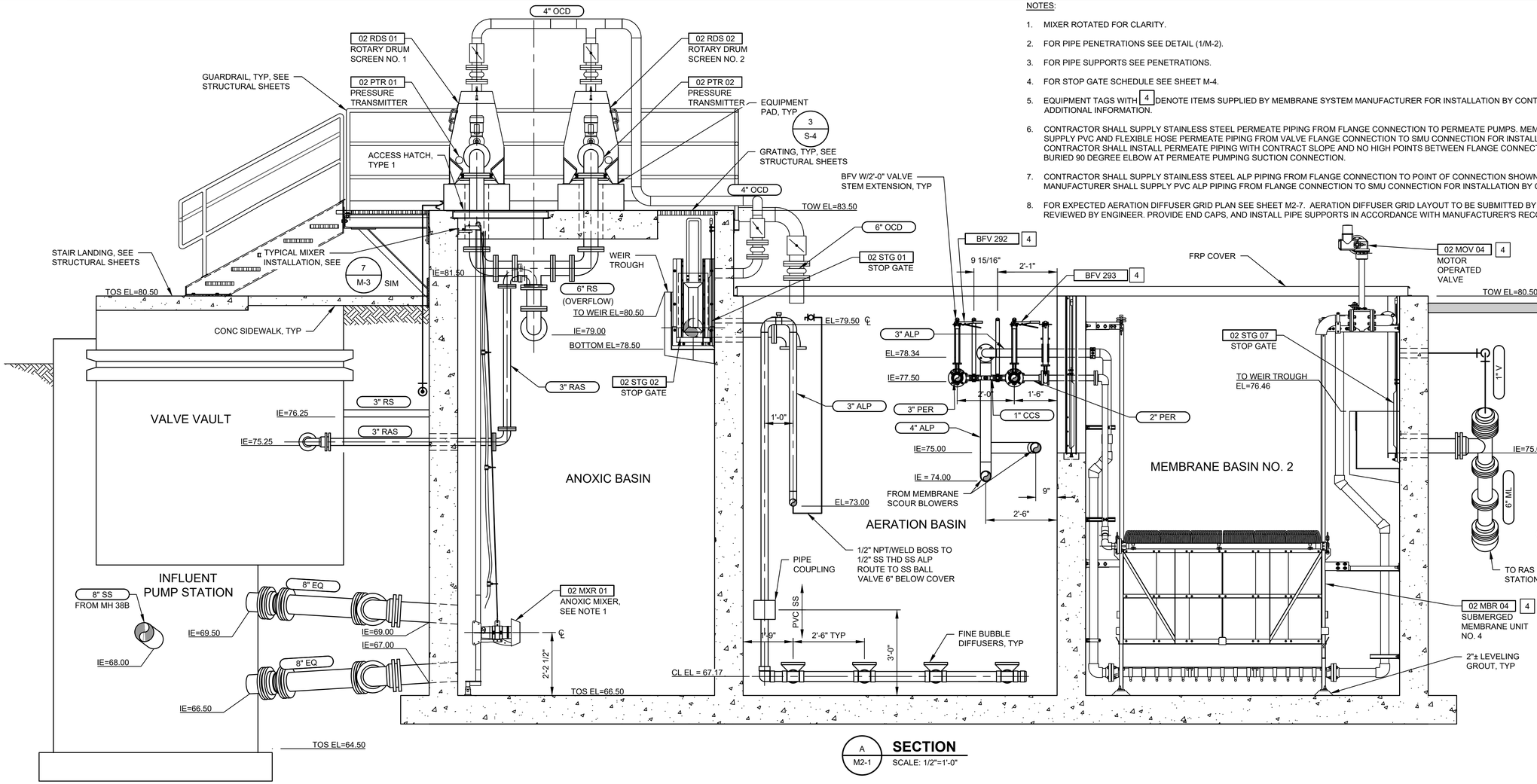
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TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

MECHANICAL

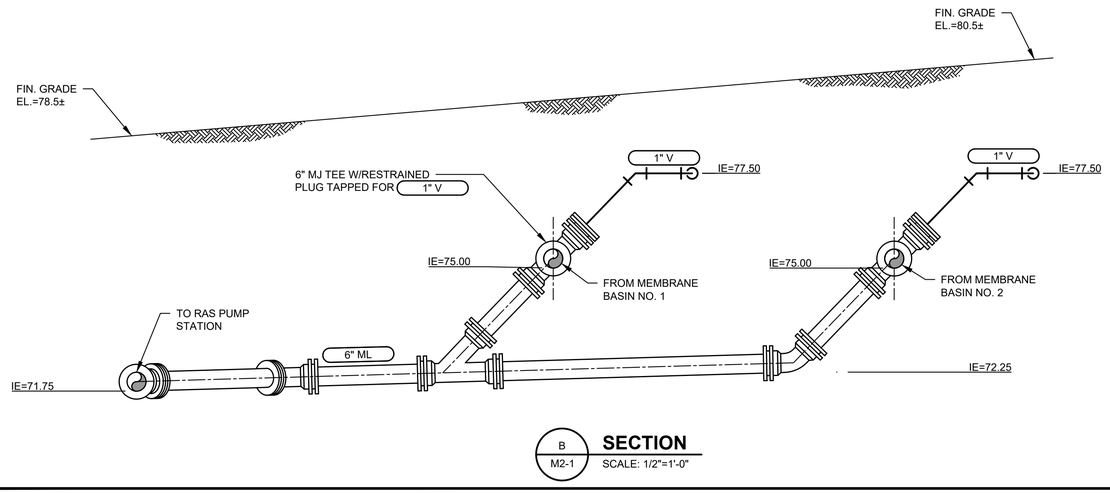
PROCESS TANKS, UPPER PLAN

DRAWING: **M2-2** OF: **11**

m:\taylor bay beach club hoa\22848.01 construction plans, spec, & permitting wa doh grant\01 design\wwtf upgrade\Planset\Mechanical\M2_PTANK.dwg, 9/4/2026 10:17 AM, CHARLEY REID



A M2-1 **SECTION**
SCALE: 1/2"=1'-0"



B M2-1 **SECTION**
SCALE: 1/2"=1'-0"

NOTES:

1. MIXER ROTATED FOR CLARITY.
2. FOR PIPE PENETRATIONS SEE DETAIL (1/M-2).
3. FOR PIPE SUPPORTS SEE PENETRATIONS.
4. FOR STOP GATE SCHEDULE SEE SHEET M-4.
5. EQUIPMENT TAGS WITH 4 DENOTE ITEMS SUPPLIED BY MEMBRANE SYSTEM MANUFACTURER FOR INSTALLATION BY CONTRACTOR. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
6. CONTRACTOR SHALL SUPPLY STAINLESS STEEL PERMEATE PIPING FROM FLANGE CONNECTION TO PERMEATE PUMPS. MEMBRANE MANUFACTURER SHALL SUPPLY PVC AND FLEXIBLE HOSE PERMEATE PIPING FROM VALVE FLANGE CONNECTION TO SMU CONNECTION FOR INSTALLATION BY CONTRACTOR. CONTRACTOR SHALL INSTALL PERMEATE PIPING WITH CONTRACT SLOPE AND NO HIGH POINTS BETWEEN FLANGE CONNECTION AT MEMBRANE BASINS TO THE BURIED 90 DEGREE ELBOW AT PERMEATE PUMPING SUCTION CONNECTION.
7. CONTRACTOR SHALL SUPPLY STAINLESS STEEL ALP PIPING FROM FLANGE CONNECTION TO POINT OF CONNECTION SHOWN FROM BLOWERS. MEMBRANE MANUFACTURER SHALL SUPPLY PVC ALP PIPING FROM FLANGE CONNECTION TO SMU CONNECTION FOR INSTALLATION BY CONTRACTOR.
8. FOR EXPECTED AERATION DIFFUSER GRID PLAN SEE SHEET M2-7. AERATION DIFFUSER GRID LAYOUT TO BE SUBMITTED BY DIFFUSER SUPPLIER AND REVIEWED BY ENGINEER. PROVIDE END CAPS, AND INSTALL PIPE SUPPORTS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

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9/4/2026

TAYLOR BAY
BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

8220 178TH AVENUE COURT SW,
LONGBRANCH, WA 98351

No.	DATE	REVISION

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DRAWN BY:	CRR
DESIGNER:	JESP
G & O JOB NO.:	22848.01
FILE:	M2_PTANK.DWG

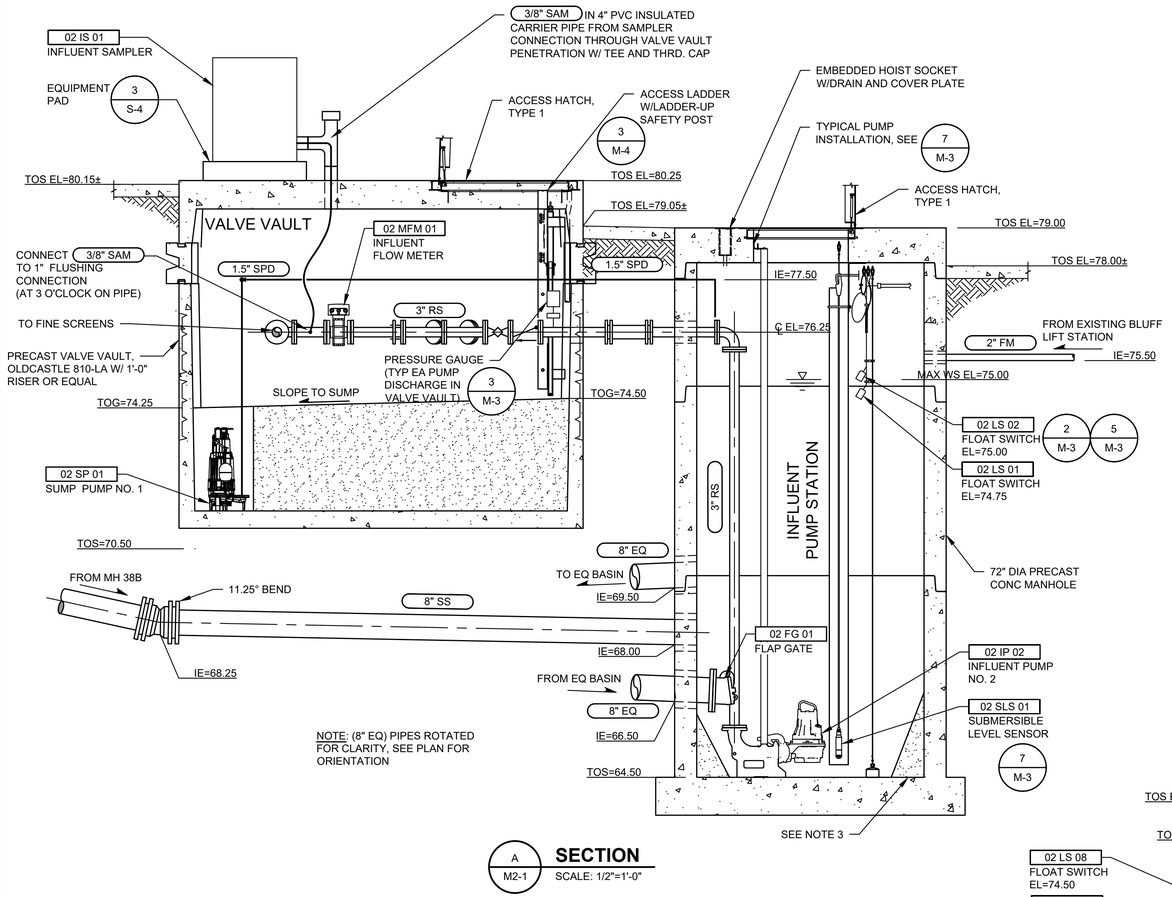
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TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

MECHANICAL

PROCESS TANKS AND HEADWORKS SECTIONS

DRAWING: **M2-3** OF: **11**

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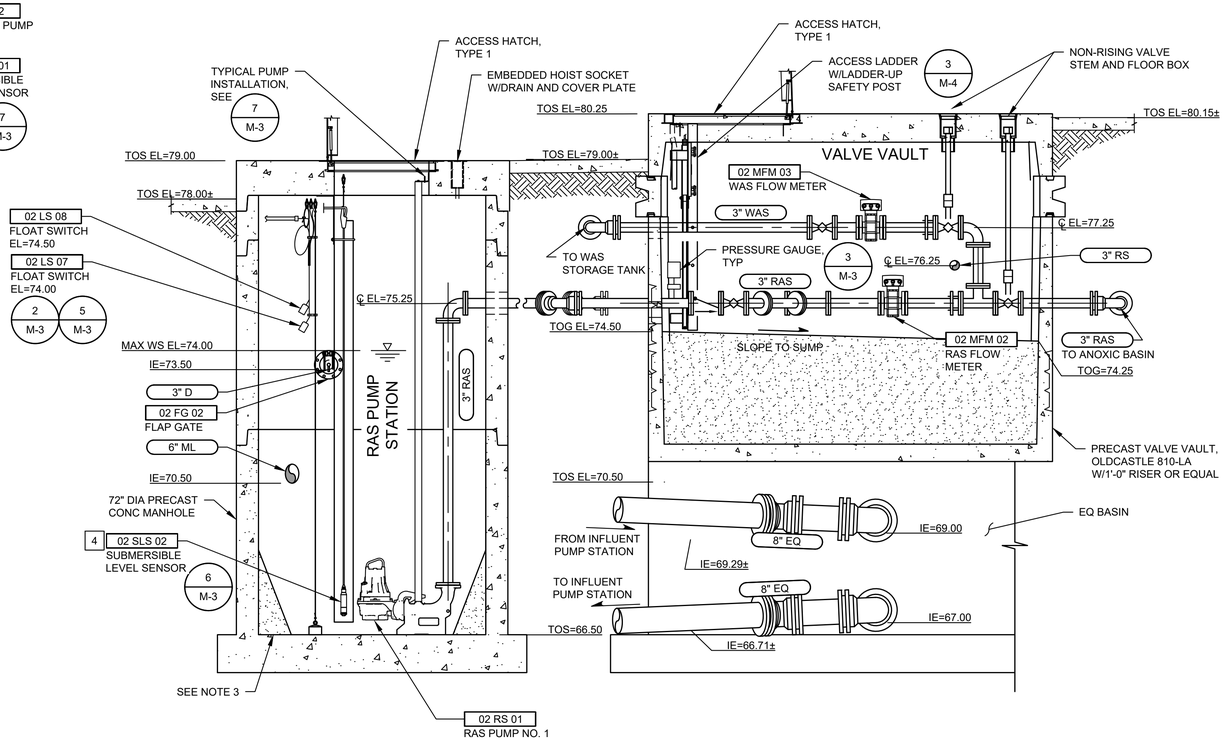


NOTE: (8" EQ) PIPES ROTATED FOR CLARITY, SEE PLAN FOR ORIENTATION

A
M2-1
SECTION
SCALE: 1/2"=1'-0"

NOTES:

1. FOR PUMP CONTROLS SEE ELECTRICAL SHEETS.
2. FOR PIPE PENETRATIONS SEE DETAIL (1/M-2).
3. GROUT WET WELL PER PUMP MANUFACTURER RECOMMENDATIONS.



B
M2-1
SECTION
SCALE: 1/2"=1'-0"

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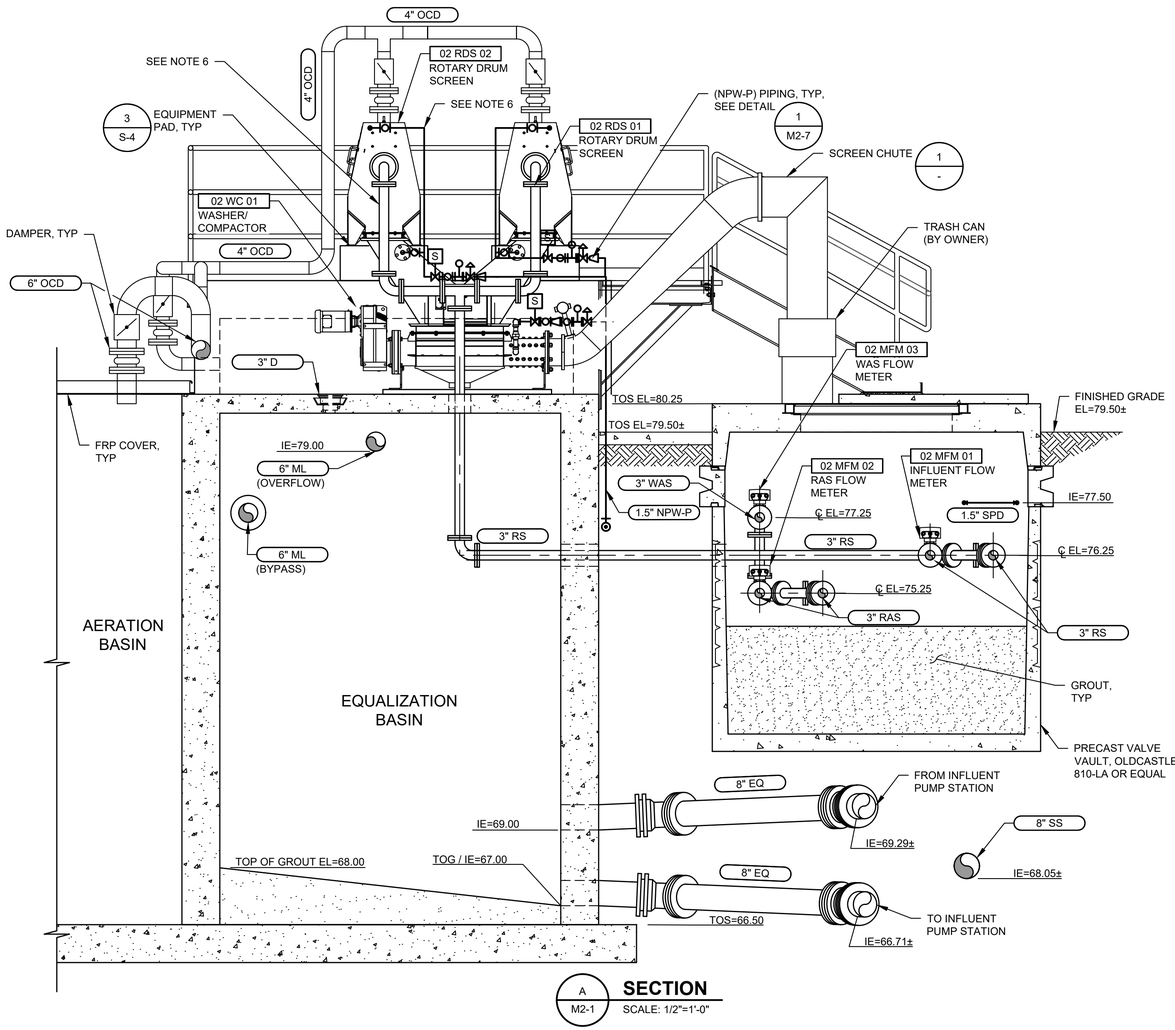
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IF NOT, SCALE ACCORDINGLY

MECHANICAL

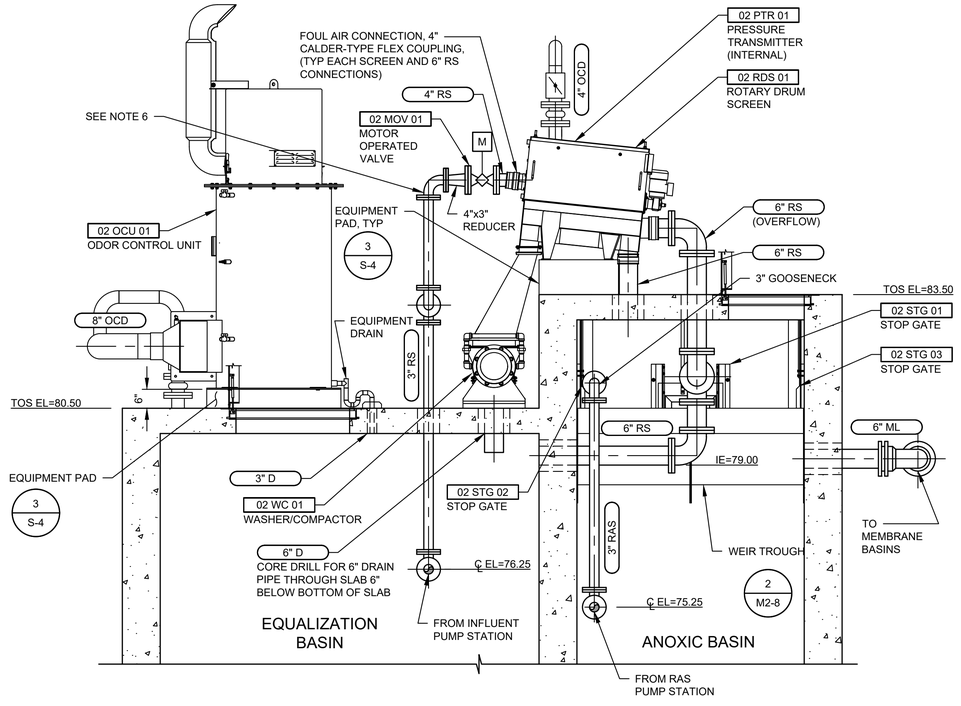
PUMP STATION AND HEADWORKS SECTIONS

DRAWING: **M2-4** OF: **11**

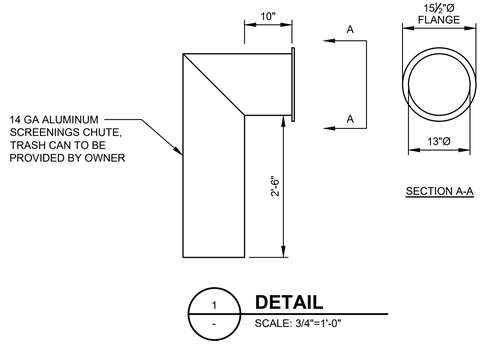
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A M2-1 **SECTION**
SCALE: 1/2"=1'-0"



B M2-2 **SECTION**
SCALE: 1/2"=1'-0"



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

NOTES:

1. HEAT TRACE AND INSULATE ALL ABOVE GRADE NPW PIPING, WASHER COMPACTOR DISCHARGE TRANSPORT TUBE AND SCREENING DISCHARGE CHUTE AS SPECIFIED IN SPECIFICATION SECTION 11330.
2. SEE STRUCTURAL SHEETS FOR GUARDRAIL.
3. FOR PIPE SUPPORTS SEE SPECIFICATIONS.
4. FOR PIPE PENETRATIONS SEE DETAIL (1/M-2).
5. NPW PIPING SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. CONTRACTOR SHALL INSTALL IN FIELD AS SPECIFIED. SEE SECTION 11330 FOR ADDITIONAL PIPING REQUIREMENTS FOR ROTARY DRUM SCREENS.
6. HEAT TRACE AND INSULATE ALL ABOVE GRADE NPW AND RS PIPING.

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0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

MECHANICAL

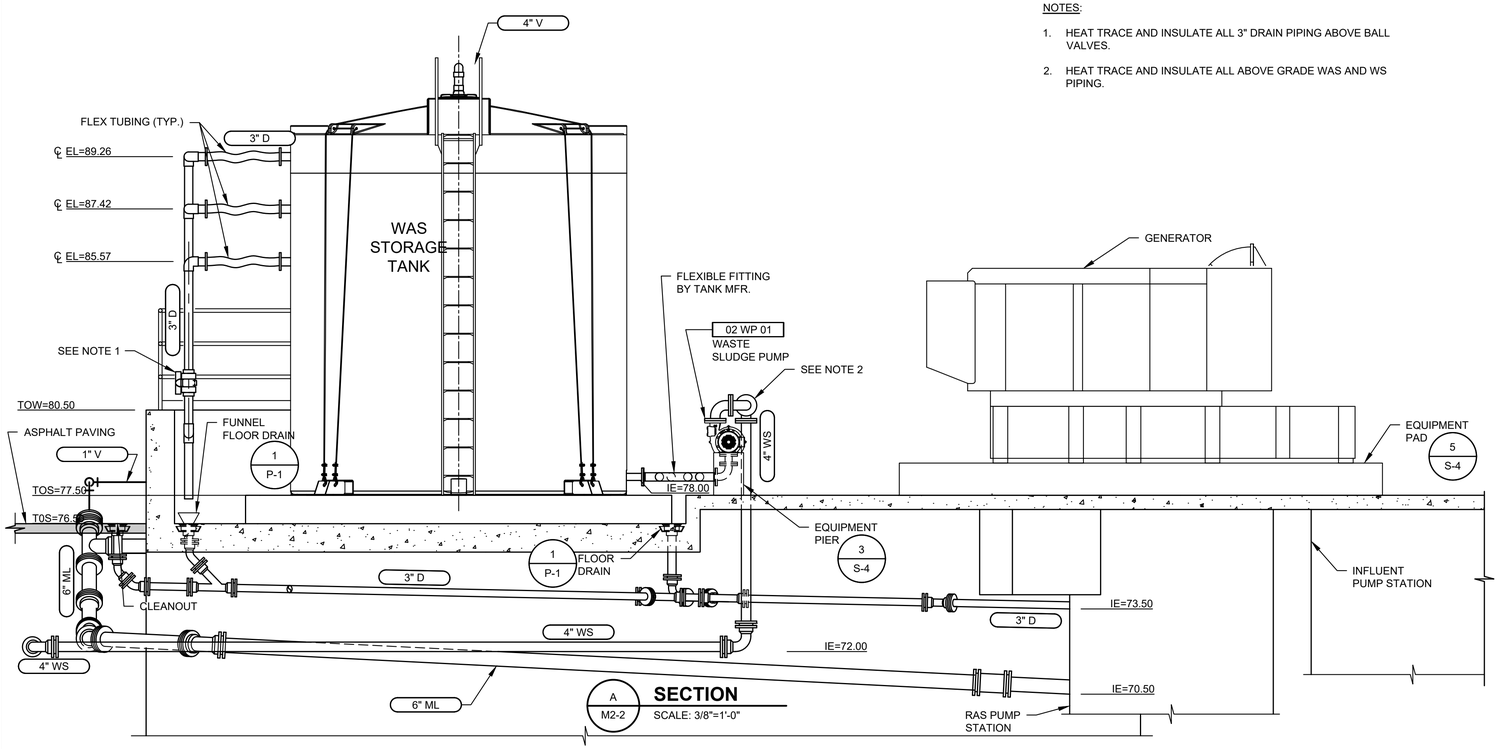
PUMP STATION AND HEADWORKS SECTIONS

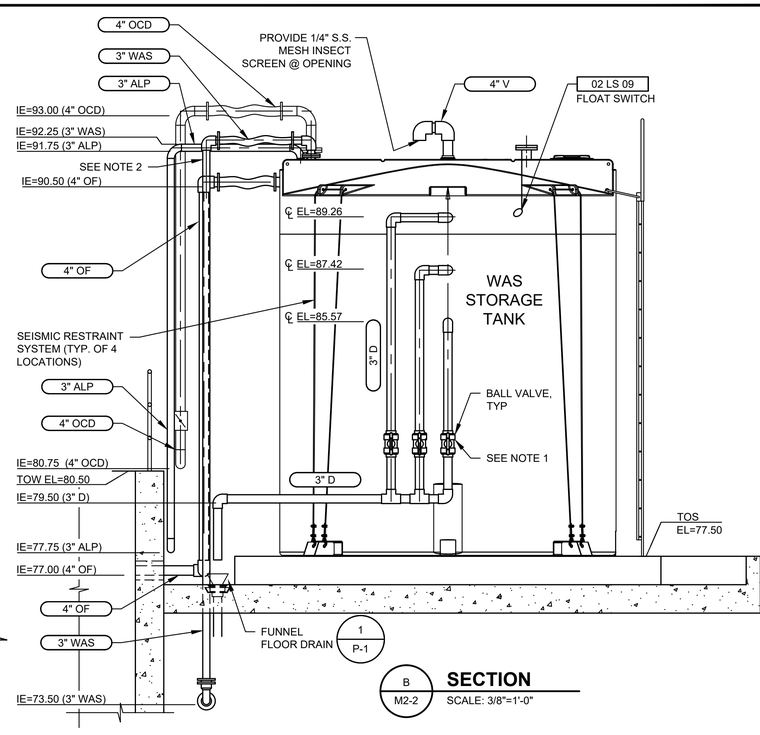
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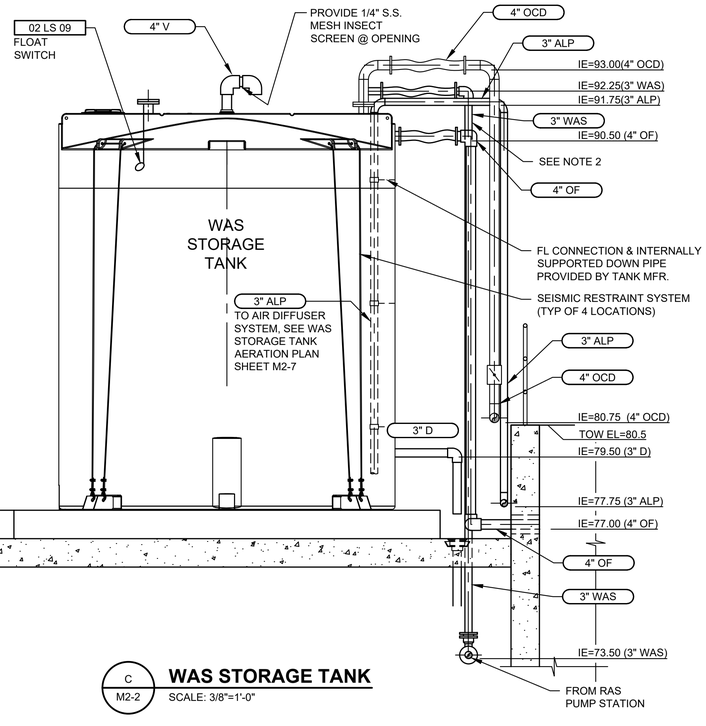
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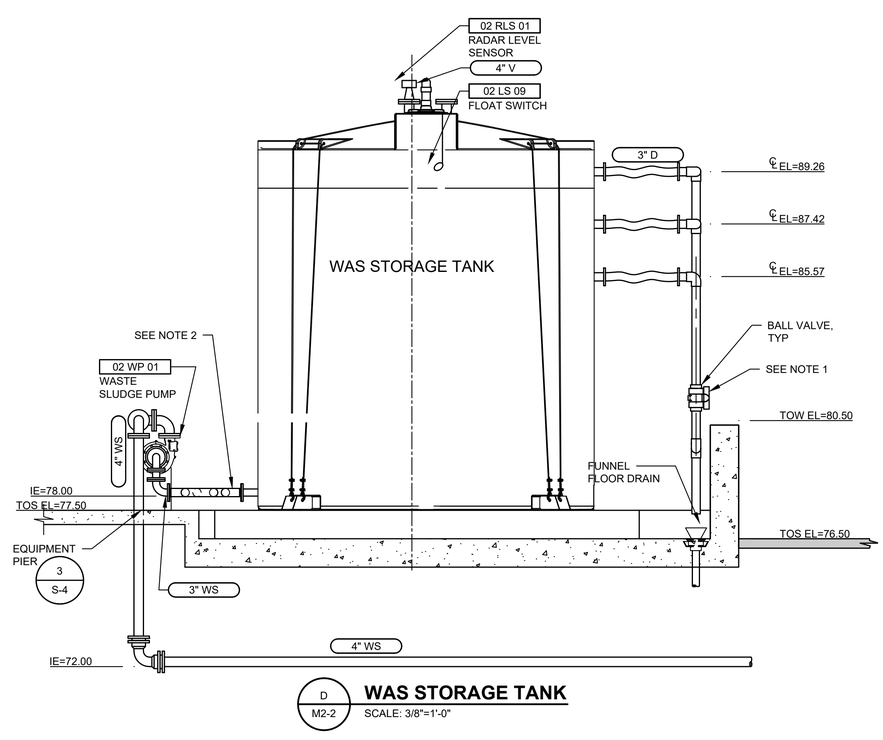
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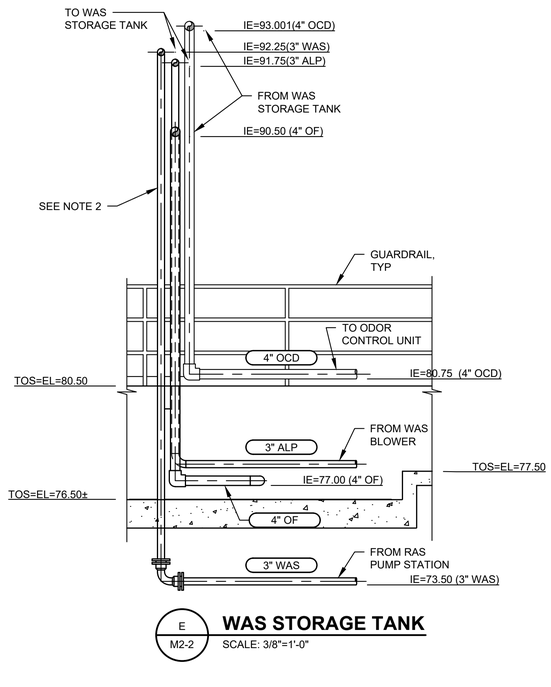
1. HEAT TRACE AND INSULATE ALL 3" DRAIN PIPING ABOVE BALL VALVES.
2. HEAT TRACE AND INSULATE ALL ABOVE GRADE WAS AND WS PIPING.











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TAYLOR BAY BEACH CLUB

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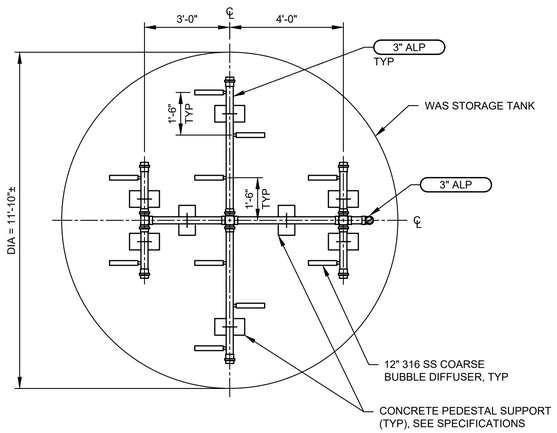
0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

MECHANICAL

PUMP STATION AND HEADWORKS SECTIONS

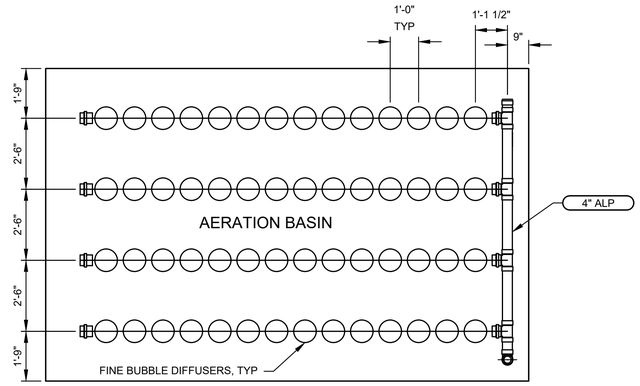
DRAWING: **M2-6** OF: **11**

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WAS STORAGE TANK AERATION PLAN

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

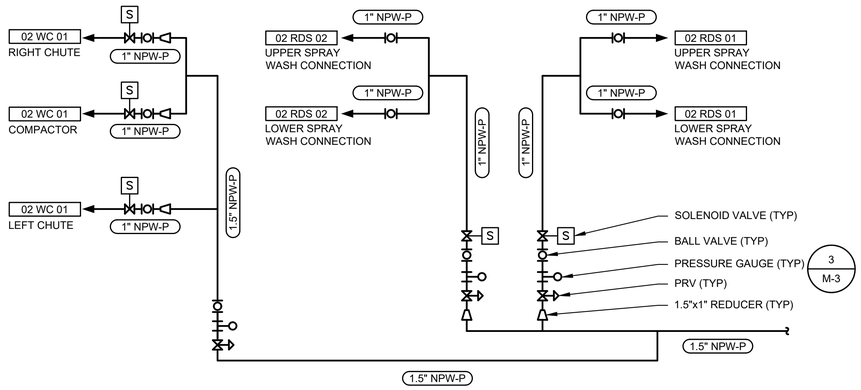


AERATION BASIN AERATION PLAN

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

NOTE:

1. AERATION DIFFUSER GRID LAYOUT TO BE SUBMITTED AND CONFIRMED BY DIFFUSER SUPPLIER, AND REVIEWED BY ENGINEER. PROVIDE END CAPS. INSTALL PIPE SUPPORTS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.



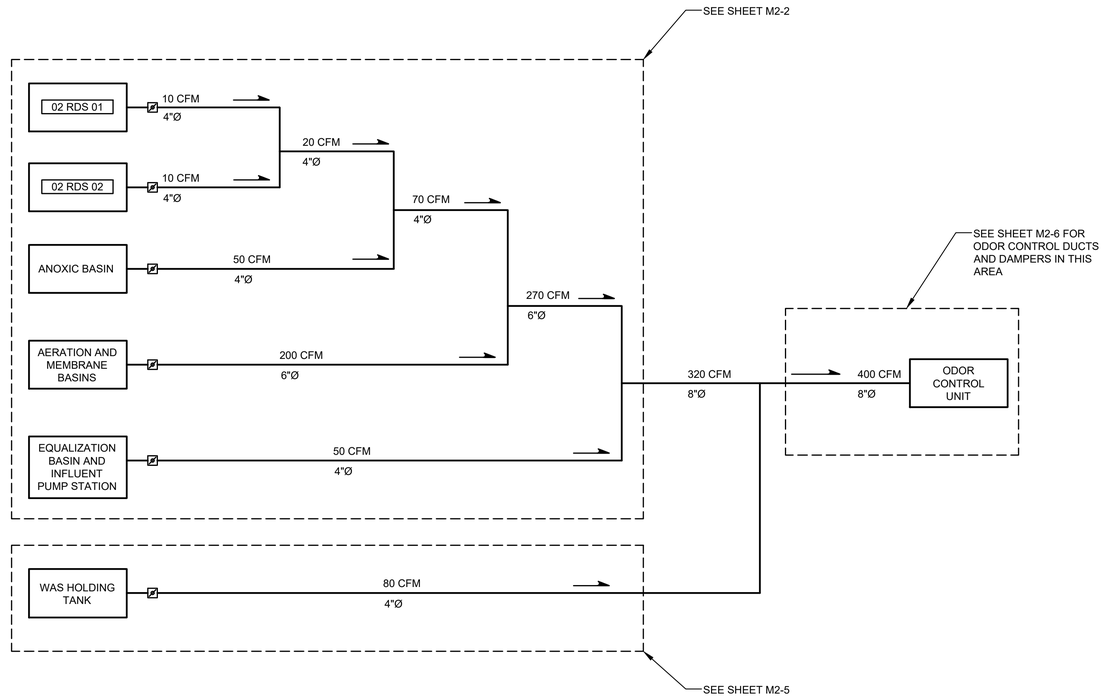
NOTE:

1. HEAT TRACE AND INSULATE ALL ABOVE GRADE NPW PIPING.

1
M2-2

ROTARY DRUM SCREEN SYSTEM SPRAY WASH PIPING DETAIL

NOT TO SCALE



ODOR CONTROL SYSTEM SCHEMATIC

NTS

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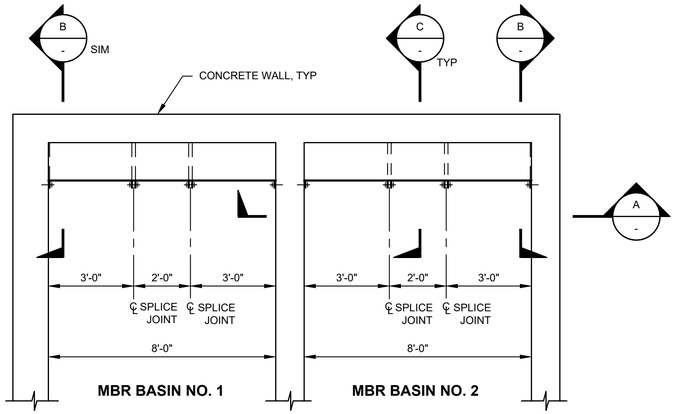
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TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

MECHANICAL

MEMBRANE BASIN ENLARGED PLAN AND PIPING SECTION

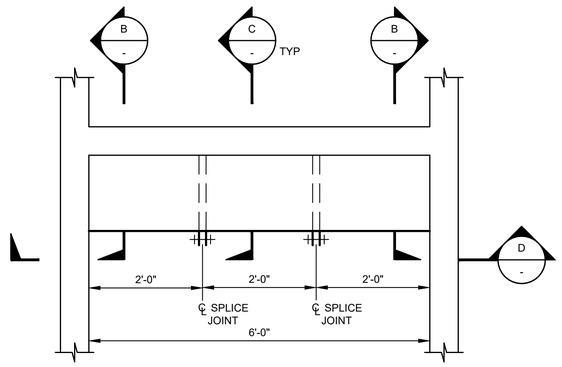
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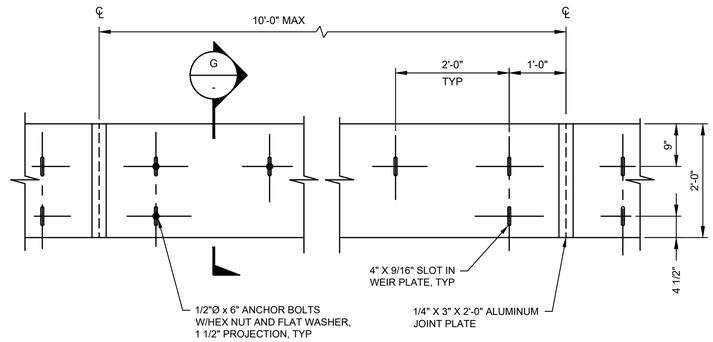
1 / M2-1 **MBR BASINS WEIR TROUGH DETAIL - PLAN**

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



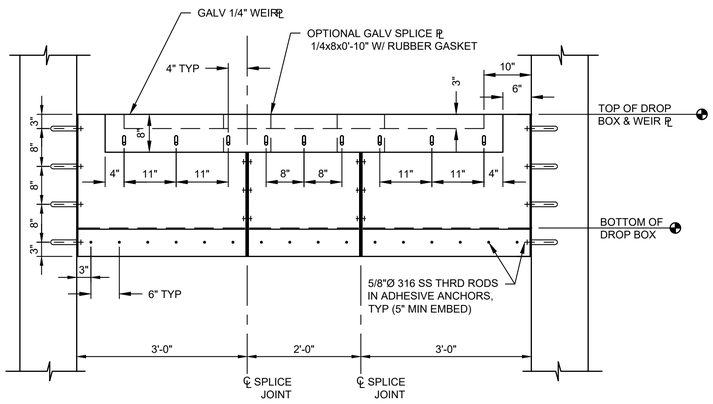
2 / M2-1 **ANOXIC BASIN WEIR TROUGH DETAIL - PLAN**

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



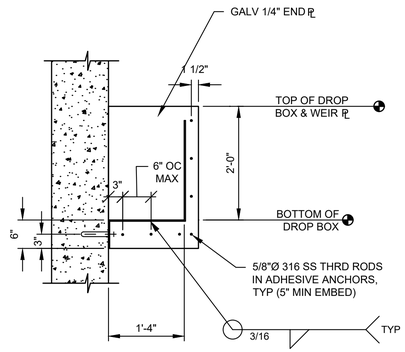
3 / TYP **WEIR PLATE DETAIL**

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



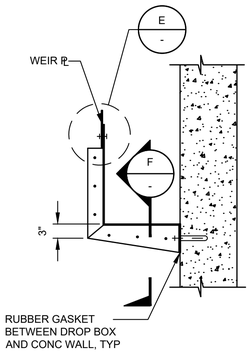
A / - **SECTION**

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



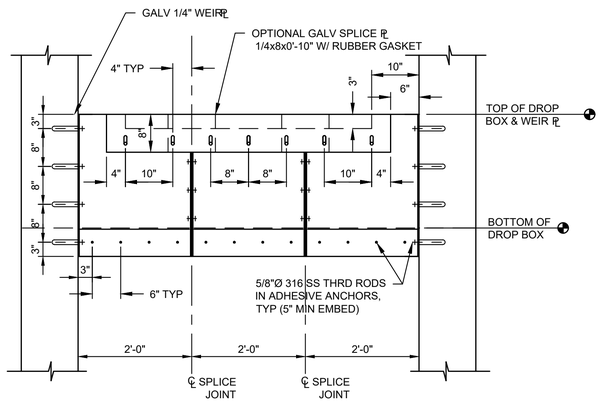
B / - **SECTION**

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



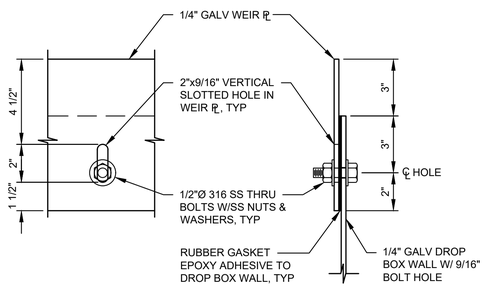
C / - **SECTION**

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



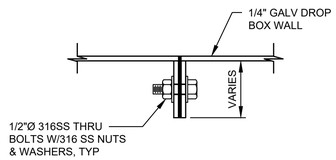
D / - **SECTION**

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



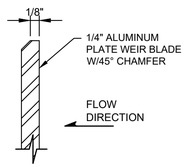
E / - **SECTION**

SCALE: 3"=1'-0"



F / - **SECTION**

SCALE: 3"=1'-0"



NOTES:

1. ATTACH TO WALL USING 1/2"ØX5" LONG 316 SS THREADED ROD IN EPOXY ANCHOR W/316 SS BOLT AND WASHER, MIN EMBED 4-INCHES.
2. WEIR BLADE SHALL BE SHARP CORNERED AND FREE OF NICKS, RUST, ROUGHNESS AND OTHER NON-CONFORMITIES RELATED TO FINELY TOOLED, PLATED EDGES
3. INSTALL NEOPRENE GASKET OR BACKING MATERIAL BETWEEN WEIR BLADE AND CONCRETE. CAULK TOP AND BOTTOM JOINTS W/ ELASTOMERIC SEALANT AFTER INSTALLATION.

G / - **SECTION**

NOT TO SCALE

NOTE:

1. ALL STAINLESS STEEL SHALL BE 316.

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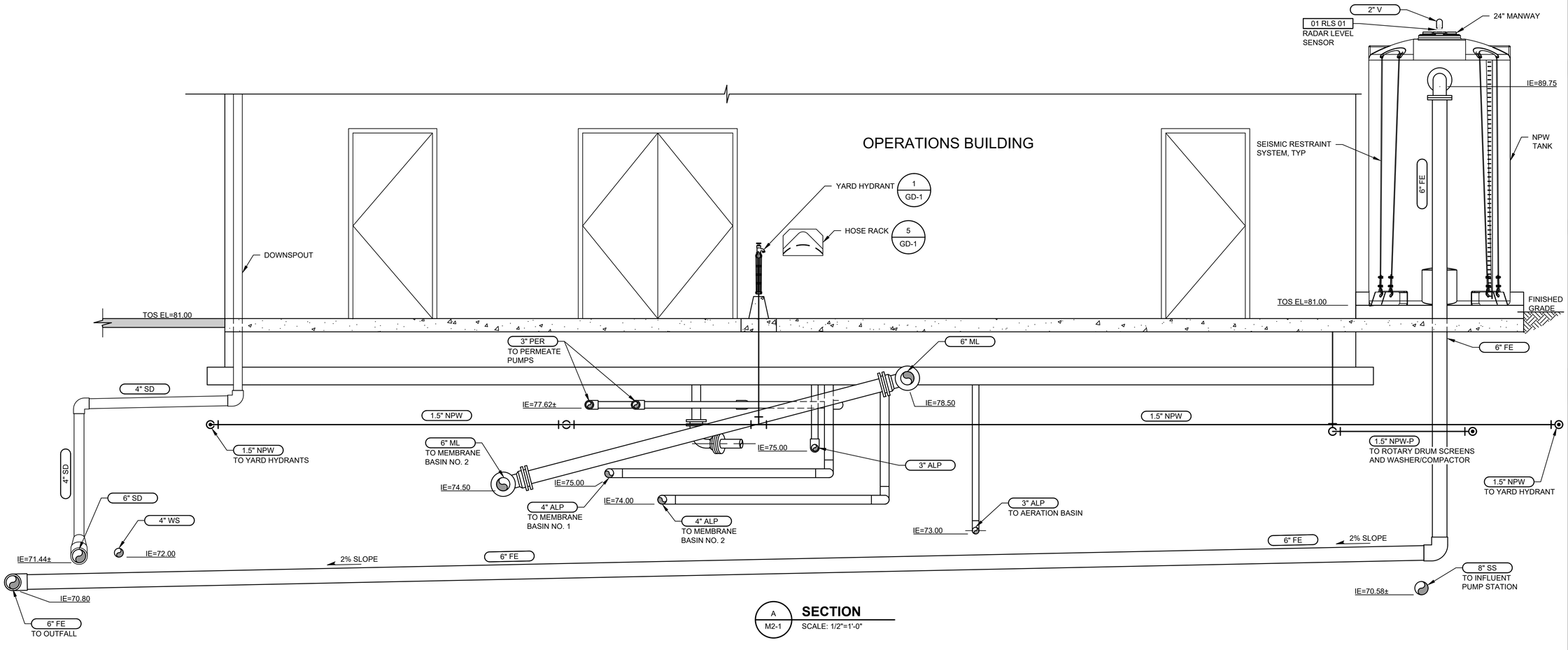
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TWO INCHES AT FULL SCALE.
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MECHANICAL

WEIR TROUGH PLAN AND DETAILS

DRAWING: **M2-8** OF: **11**

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A / M2-1 **SECTION**
SCALE: 1/2"=1'-0"

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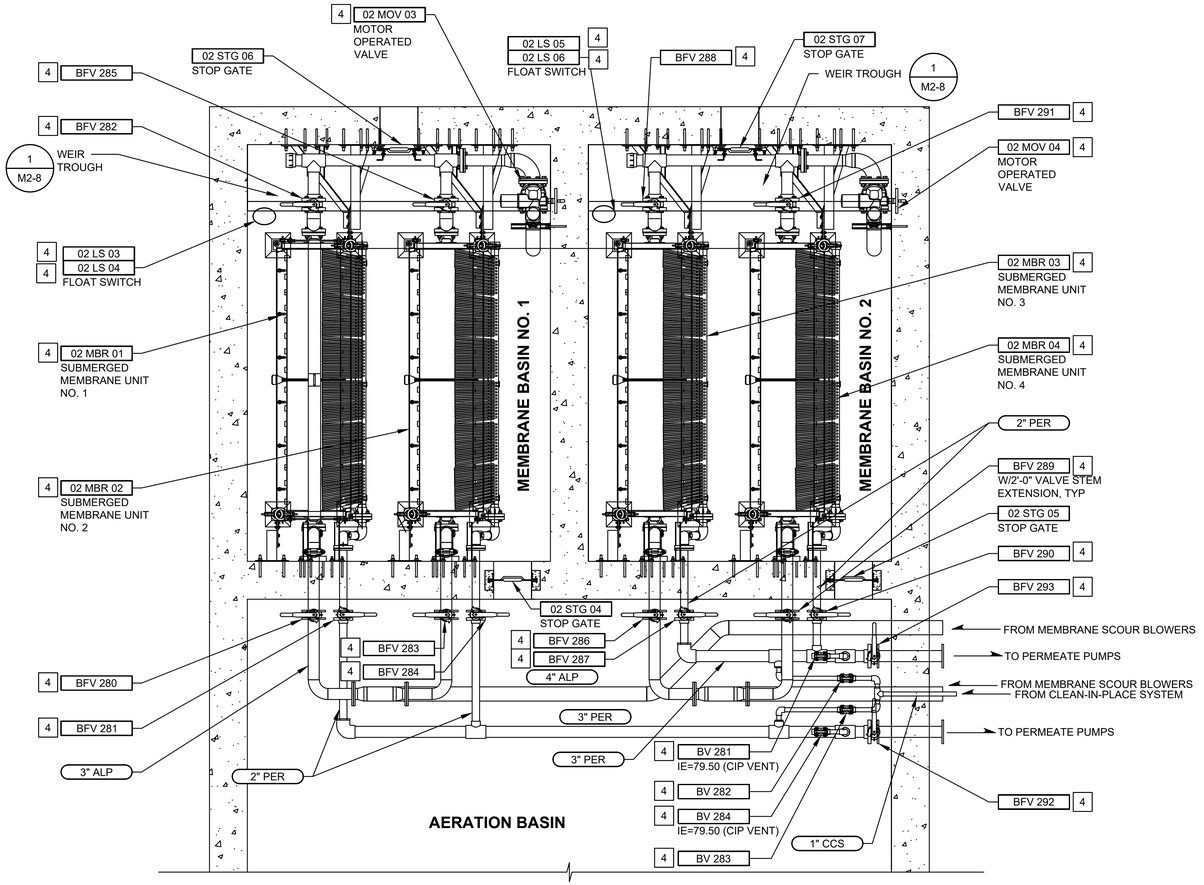
0 1" 2"
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MECHANICAL

SECTIONS

DRAWING: **M2-9** OF: **11**

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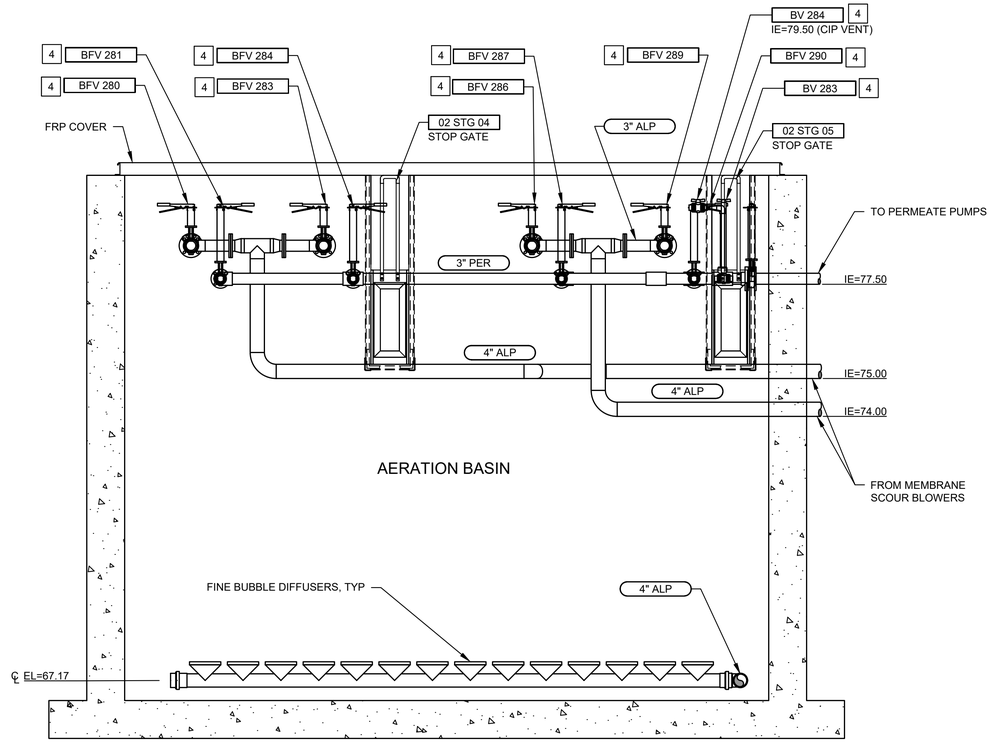


PLAN

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

NOTES:

1. FOR STOP GATE SCHEDULE SEE SHEET M-4.
2. FOR PIPE PENETRATIONS SEE DETAIL 1/M-2.
3. FOR PIPE SUPPORTS SEE SPECIFICATIONS.
4. EQUIPMENT TAGS WITH 4 DENOTE ITEMS SUPPLIED BY MEMBRANE SYSTEM MFR FOR INSTALLATION BY CONTRACTOR. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. CONTRACTOR SHALL SUPPLY 316 SS PERMEATE PIPING FROM FLANGE CONNECTION TO PERMEATE PUMPS. MEMBRANE MFR SHALL SUPPLY PVC AND FLEXIBLE HOSE PERMEATE PIPING FROM VALVE FLANGE CONNECTION TO SMU CONNECTION FOR INSTALLATION BY CONTRACTOR. CONTRACTOR SHALL INSTALL PERMEATE PIPING WITH CONSTANT SLOPE AND NO HIGH POINTS BETWEEN FLANGE CONNECTION AT MBR BASINS TO THE BURIED 90 DEGREE ELBOW AT PERMEATE PUMP SUCTION CONNECTION.
6. CONTRACTOR SHALL SUPPLY 316 SS ALP PIPING FROM FLANGE CONNECTION TO POINT OF CONNECTION SHOWN FROM BLOWERS. MEMBRANE MFR SHALL SUPPLY PVC ALP PIPING FROM FLANGE CONNECTION TO SMU CONNECTION FOR INSTALLATION BY CONTRACTOR.
7. SEE M2-1 FOR ADDITIONAL INFORMATION.
8. SEE M-4 FOR STOP GATE SCHEDULE.
9. SEE M2-8 FOR WEIR TROUGH DETAILS.



A / M2-1 **SECTION**

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

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REGISTERED PROFESSIONAL ENGINEER

9/4/2026

TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

8220 178TH AVENUE COURT SW, LONGBRANCH, WA 98351

No.	DATE	REVISION

ISSUED FOR:

BID SET

ISSUE DATE:	SEPTEMBER 2026
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CHECKED BY:	EFN
DRAWN BY:	CRR
DESIGNER:	JESP
G & O JOB NO.:	22848.01
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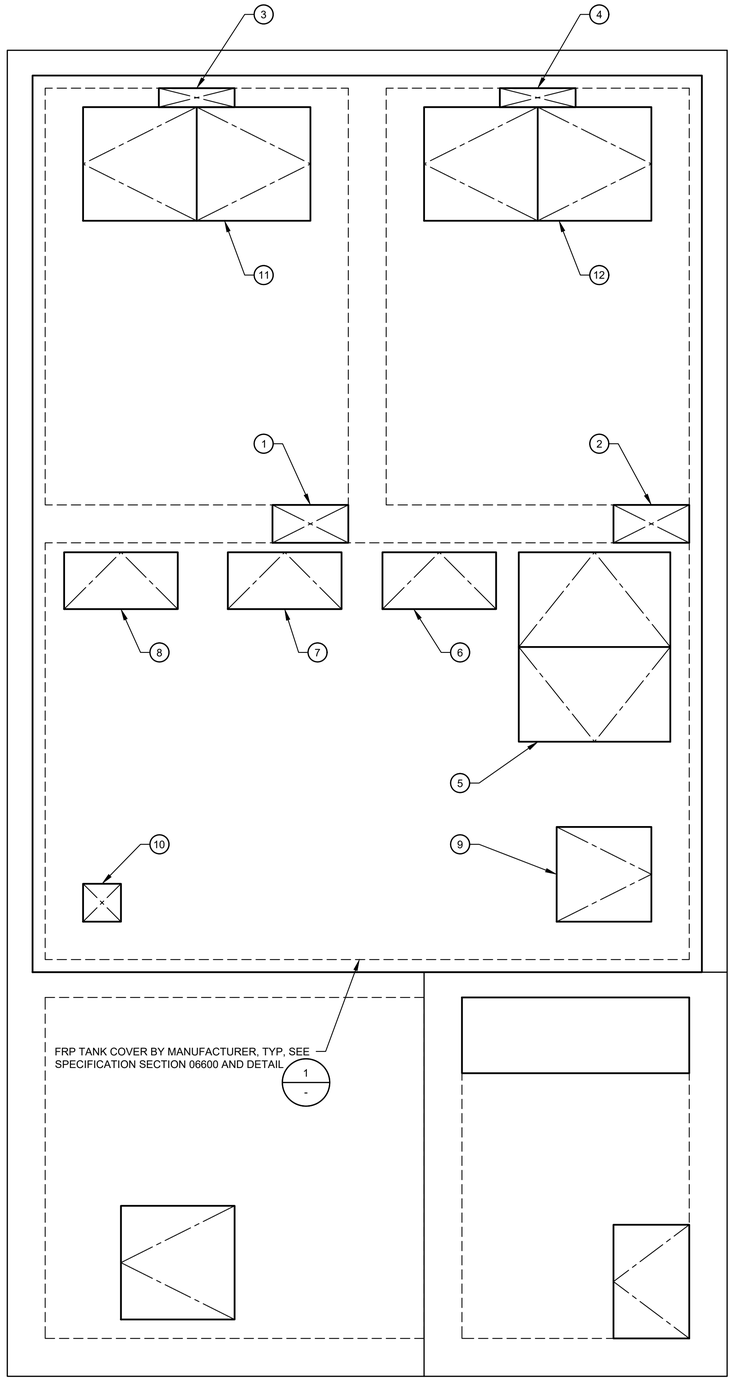
0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

MECHANICAL

MEMBRANE BASIN ENLARGED PLAN AND PIPING SECTION

DRAWING: **M2-10** OF: **11**

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WWTF PROCESS TANK COVER PLAN

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

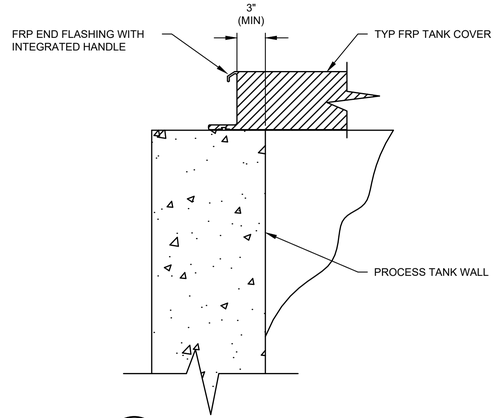
NOTES:

1. ALL HATCH HARDWARE SHALL BE STAINLESS STEEL.
2. CONTRACTOR SHALL VERIFY MECHANICAL EQUIPMENT LOCATIONS PRIOR TO INSTALLATION OF ACCESS HATCHES.
3. ADJUST COVER TO ALLOW RECESSED PORTABLE HOIST SOCKET INSTALLATION. SEE SHEET M2-1 FOR SOCKET LOCATION.
4. (X) INDICATES ACCESS HATCH, SEE TABLE THIS SHEET.

PROCESS TANK COVER ACCESS HATCH SCHEDULE

(X)	SIZE *	OPENING	MATERIAL	SERVICE
1	24"X12"	HAND HOLE	FRP	02 STG 04
2	24"X12"	HAND HOLE	FRP	02 STG 05
3	24"X6"	HAND HOLE	FRP	02 STG 06
4	24"X6"	HAND HOLE	FRP	02 STG 07
5	60"X48"	DOUBLE LEAF	FRP	PERMEATE, ALP, CIP VALVES
6	36"X18"	SINGLE LEAF	FRP	PERMEATE, ALP, CIP VALVES
7	36"X18"	SINGLE LEAF	FRP	PERMEATE, ALP, CIP VALVES
8	36"X18"	SINGLE LEAF	FRP	PERMEATE, ALP, CIP VALVES
9	30"X30"	SINGLE LEAF	FRP	TANK ACCESS, HEADER VACUUM VALVE
10	12"X12"	HAND HOLE	FRP	02 DO 01 (PROVIDE 2-PIECE SLOTTED COVER FOR CONDUIT/SUPPORT PENETRATION)
11	72"X36"	DOUBLE LEAF	FRP	PERMEATE, ALP, CIP VALVES, 02 LS 03, 02 LS 04
12	72"X36"	DOUBLE LEAF	FRP	PERMEATE, ALP, CIP VALVES, 02 LS 05, 02 LS 06

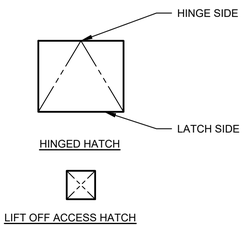
* CLEAR OPENING SIZE



1 / - TYPICAL COVER DETAIL

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

HATCH LEGEND:



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0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

MECHANICAL

PROCESS TANK COVER PLAN

DRAWING: **M2-11** OF: **11**

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INSTRUMENT IDENTIFICATION LEGEND

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE,	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER FLAME		NOT USED	NOT USED	NOT USED
C	CONDUCTIVITY (ELECTRICAL)			CONTROL	CLOSED
D	DENSITY (MASS) OR SPECIFIC GRAVITY	DIFFERENTIAL			
E	VOLTAGE (EMF)		PRIMARY ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G	INTRUSION		GLASS GAGE (UNCALIBRATED)		
H	HAND (MANUALLY INITIATED)				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME OR TIME SCHEDULE			CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOISTURE OR HUMIDITY				MIDDLE OR INTER-MEDIATE
N	SEQUENCE, STRATEGY		NOT USED	NOT USED	NOT USED
O	NOT USED		ORIFICE (RESTRICTION)		OPEN
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)	PULSE	
Q	QUANTITY	INTEGRATE OR TOTALIZE			
R	RADIOACTIVITY		RECORD OR PRINT		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION			VALVE, DAMPER OR LOUVER	
W	WEIGHT OR FORCE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT STATUS	Y AXIS		RELAY OR COMPUTE	
Z	POSITION			DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT	

INSTRUMENT TAGGING SYSTEM

XX / # — INSTRUMENT TYPE (SEE INSTRUMENT IDENTIFICATION LEGEND)

LOOP NUMBER (3 DIGITS BEGINNING WITH AREA NUMBER, SEE AREA DESIGNATIONS)

BASE INSTRUMENTATION SYMBOLS

X / #	INSTRUMENT FIELD MOUNTED. SEE THIS SHEET FOR DETAILS OF INSTRUMENT TAGGING SYSTEM. FULL TAG NUMBER SHOULD BE INCLUDED ON INSTRUMENT INDEX. POWER SUPPLY REQUIRED LOCALLY WHERE SHOWN.
X / #	INSTRUMENT PANEL FACE MOUNTED
YL / #	INSTRUMENT PANEL FACE MOUNTED INDICATOR LIGHT
FY / # (Y)	INSTRUMENT RELAY MOUNTED IN REAR OF PANEL (BROKEN LINE). ACTIVATES AND DEACTIVATES CONTROL AND/OR ALARM SWITCHES AT PRESET VALUE. EQUIPMENT NUMBER (Y) ONLY WHEN NECESSARY. SEE BELOW FOR FUNCTIONS (X).
△	DIFFERENCE
>	HIGH SELECTOR
<	LOW SELECTOR
P/I	PNEUMATIC/CURRENT CONVERTER
I/I	CURRENT/CURRENT CONVERTER (REPEATER)
Σ	SUMMATION
AV	AVERAGE
%	RATIO
FR / # AR / #	FR & AR ARE TWO FUNCTIONS AS PART OF ONE UNIT. (CIRCLES TOUCH)
	SYMBOLS FOR ANALYTICAL DEVICES: CH_4 – METHANE Cl_2 – CHL/O/RINE DO – DISSOLVED OXYGEN H_2S – HYDROGEN SULFIDE H_3PO_4 – PHOSPHORIC ACID H_2SO_4 – SULFURIC ACID MeOH – METHANOL NaHOCL – SODIUM HYPOCHL/O/RITE $No_2S_2O_5$ –SODIUM METHA–BISULFITE O2 – OXYGEN ORP – OXYDATION REDUCTION POTENTIAL pH – HYDROGEN ION CONCENTRATION
△▽	DISCRETE INPUT/OUTPUT
▲▼	ANALOG INPUT/OUTPUT
▲▼	DIGITAL COMMUNICATION INPUT/OUTPUT– ETHERNET (E), MODBUS (M), HART (H) OR DEVICENET (D)

X / #	PROGRAMMABLE LOGIC FUNCTION
X / #	MULTIFUNCTION
X / #	MULTIFUNCTION (BACK)
X / #	FRONT OF FIELD PANEL
X / #	BACK OF FIELD PANEL
X / #	COMPUTER FUNCTION
X / #	CONTROL FUNCTION
X / #	FIELD MOUNTED (ILLUMINATED)
X / #	MULTIFUNCTION (FACE)
X / #	FRONT FIELD PANEL (ILLUMINATED)
X / #	FRONT MAIN PANEL (ILLUMINATED)
FE / #	ROTAMETER
X / #	ULTRASONIC ELEMENT
LE / #	RADAR ELEMENT
HSS / #	SAFETY PULL CORD
ZS / #	BELT ALIGNMENT SWITCH

PIPE IDENTIFICATION

PROCESS PIPING

24" SC — PROCESS TYPE (SEE LIST BELOW); PIPE SIZE

ABBREVIATION	PROCESS TYPE
ALP	AIR LOW PRESSURE
CCS	CHEMICAL CLEANING SOLUTION
CW	COLD WATER
D	DRAIN
EFF	FINAL EFFLUENT
EQ	EQUALIZATION
FE	FINAL EFFLUENT
FM	FORCE MAIN
FND	FOUNDATION DRAIN
G	NATURAL GAS
GW	GROUNDWATER
INF	INFLUENT
ML	MIXED LIQUOR
NPW	NON POTABLE WATER
OCD	ODOR CONTROL DUCT
OF	OVERFLOW
OTF	OUTFALL
PD	PROCESS DRAIN
PER	PERMEATE
RAS	RETURN ACTIVATED SLUDGE
RS	RAW SEWAGE
SAM	SAMPLE
SC	SCUM
SD	STORM DRAIN
SPD	SUMP PUMP DISCHARGE
SS	SANITARY SEWER
V	VENT
W	POTABLE WATER
WAS	WASTE ACTIVATED SLUDGE
WS	WASTE SLUDGE

EQUIPMENT , VALVE AND GATE DESIGNATIONS

EQUIPMENT

POL 999 — EQUIPMENT NUMBER (SEQUENTIAL LISTING); EQUIPMENT TYPE (SEE LIST BELOW)

ABBREVIATION	EQUIPMENT TYPE
AE/AIT	UV TRANSMITTANCE OR pH ELEMENT/TRANSMITTER
C	AIR COMPRESSOR
FE	FLOW ELEMENT
FIT	FLOW INDICATION TRANSMITTER
FS	FLOW OR FLOOD SWITCH
LCP	LOCAL CONTROL PANEL
LE/LT	LEVEL/ELEMENT TRANSMITTER
LSL	LEVEL SWITCH LOW
LSH	LEVEL SWITCH HIGH
MX	SUBMERSIBLE MIXER
P	PUMP
PCP	PLANT CONTROL PANEL
PG	PRESSURE GAUGE
PT	PRESSURE TRANSMITTER
SAM	SAMPLER
SC	SECONDARY CLARIFIER
SHX	STATIC MIXER
T	TANK
TH	TROLLEY HOIST
TT	TEMPERATURE TRANSMITTER
UV	ULTRAVIOLET DISINFECTION REACTOR
WE	TORQUE SWITCH

VALVES AND GATES

BV 999 — VALVE/GATE NUMBER (SEQUENTIAL LISTING); VALVE/GATE TYPE (SEE LIST BELOW)

ABBREVIATION	VALVE TYPE
AV	AIR RELEASE VALVE
BFV	BUTTERFLY VALVE
BLV	BALL VALVE
CV	CHECK VALVE
FCV	FLOW CONTROL VALVE
GV	GATE VALVE
HV	HAND VALVE
HY	SOLENOID VALVE
PSL	PRESSURE SWITCH LOW
PSV	PRESSURE SAFETY VALVE
PV	PLUG VALVE
ZSH	VALVE LIMIT SWITCH HIGH
ZSL	VALVE LIMIT SWITCH LOW

NOTE:

1. EQUIPMENT TAGS WITH [4] DENOTE ITEMS SUPPLIED BY MEMBRANE SYSTEM MANUFACTURER FOR INSTALLATION BY CONTRACTOR. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

VALVE SYMBOLS

- AIR RELEASE VALVE (ARV)
- AIR/VACUUM VALVE (AV)
- COMBINATION AIR VALVE (CA)
- AIR GAP
- BALL VALVE
- PLUG VALVE
- BUTTERFLY VALVE (BV)
- CHECK VALVE (CV)
- BALL CHECK VALVE
- TELESCOPING VALVE (TV)
- DIAPHRAGM VALVE (DV)
- SUCTION FOOT VALVE (FV)
- THREE-WAY PLUG VALVE (TW)
- FOUR-WAY VALVE (FW)
- GLOBE VALVE (GL)
- GATE VALVE (GV) METAL SEATED GATE VALVES - SOLID WEDGE AND DOUBLE DISC TYPE (GM)
  RESILIENT-SEATED GATE VALVES (GR) KNIFE GATE VALVE (KV) ELLIPTICAL DIAPHRAGM VALVE (ED)
- MUD VALVE (MD)
- NEEDLE VALVE (NV)
- PINCH VALVE (PI)
- AUTOMATIC PRESSURE REDUCING VALVES (PR)
- AUTOMATIC PRESSURE SUSTAINING VALVES (PS)
- ECCENTRIC PLUG VALVE (PV)
- RELIEF VALVE (RV)
- FC / S — SOLENOID VALVE (SV); FO=FAIL OPEN; FC=FAIL CLOSED
- FE / # — ROTAMETER
- SLIDE GATE (SG); SLIDE PLATE (SP)
- SLUICE GATE (SL); WEIR GATE (WG)
- INJECTION RING / ANNULAR PRESSURE RING
- MIXING VALVE
- FLOAT VALVE

ACTUATOR TYPE

- M — ELECTRIC MOTOR ACTUATOR (E)
- PNEUMATIC ACTUATOR (P)
- HYDRAULIC ACTUATOR (H)

PIPING SYMBOLS

- Y STRAINER
- QUICK-CONNECT
- UNION
- DRAIN
- REDUCER
- BLIND FLANGE/CAP
- HOSE BIB
- FLOW SWITCH
- RUBBER EXPANSION JOINT
- DAMPER
- FLAP GATE
- PI — PRESSURE GAUGE
- PULSATION DAMPENER
- VENT
- FLEXIBLE HOSE
- CALIBRATION COLUMN
- MANUAL DISC FILTER
- FILTER OR SEPARATOR

EQUIPMENT SYMBOLS

- SUBMERSIBLE PUMP
- PROGRESSING CAVITY PUMP
- ROTARY LOBE PUMP/BLOWER
- SUBMERGED MEMBRANE UNIT
- AIR COMPRESSOR
- WASHER/COMPACTOR
- FINE SCREEN
- REGENERATIVE BLOWER
- CENTRIFUGAL FAN
- SILENCER
- DUMPSTER
- AIR RECIEVER TANK
- MIXER
- CHEMICAL ADDITION PUMP
- FILTER
- SUBMERSIBLE MIXER
- STOP GATE/ SLIDE GATE
- SUBMERSIBLE PUMP
- ALARM BEACON
- CENTRIFUGAL PUMP
- WEIR
- FLOAT
- M — MOTOR

PANEL DEVICE SYMBOLS

L/O/R — HS 411 — FUNCTION SUBSCRIPT (LOCATION MAY VARY); LOOP NUMBER

FUNCTION SUPERSCRIPTS FOR HAND SWITCH AND PUSHBUTTON CONTROLS:

ES	E-STOP
F/O/R	FORWARD-OFF-REVERSE
F/O/JR	FORWARD-OFF-JOG REVERSE
H/O/A	HAND-OFF-AUTO
H/O/R	HAND-OFF-REMOTE
H/O/SBY	HAND-OFF-STANDBY
L/O/R	LOCAL-OFF-REMOTE
M/A	MANUAL-AUTO
M/O/A	MANUAL-OFF-AUTO
O/C	OPEN-CLOSE
O/C/A	OPEN-CLOSE-AUTO
O/O	ON-OFF
O/S/C	OPEN-STOP-CLOSE
RS	RESET
R/L	REMOTE-LOCAL
R/O	RUN-OFF
SC	SPEED CONTROL POTENTIOMETER

GENERAL NOTES

1. COORDINATE WORK WITH OTHER DRAWINGS AND DISCIPLINES.
2. THE SYMBOLS SHOWN ON THIS SHEET ARE STANDARD DESIGNATIONS. NOT ALL SYMBOLS ARE APPLICABLE TO THE INCLUDED DIAGRAMS AND INSTRUMENT TAGGING SYSTEM.
3. NOT ALL PIPING, FITTINGS, AND TANK DETAILS ARE SHOWN. REFER TO PROCESS DRAWINGS FOR ACTUAL DETAILS.
4. INSTRUMENT IDENTIFICATION AND LOOP NUMBERS APPEAR WITH INSTRUMENT SYMBOL.
5. TAG NUMBER DOES NOT CHANGE IF SIGNAL IS BROUGHT TO ANOTHER CONTRACT AREA.
6. FINAL ALPHA CHARACTER IN TAG (E.G. FI-101A) INDICATES DUPLICATE DEVICE EXISTS. FI-101B MAY BE IN A A PANEL.

LINE TYPES

- SOFTWARE LINK, ETHERNET, SYSTEM FUNCTION CONNECTION OR COMMUNICATION LINK
- MODBUS COMMUNICATION
- DEVICENET COMMUNICATION
- MAIN PROCESS LINE
- AUXILIARY SYSTEMS
- EQUIPMENT CABINET
- ANALOG SIGNAL
- DISCRETE SIGNAL
- PNEUMATIC SIGNAL
- CAPILLARY LINE
- HYDRAULIC SIGNAL
- SONIC SIGNAL
- HEAT TRACED AND INSULATED
- TELEPHONE LINK
- FUTURE
- EXISTING
- EQUIPMENT PACKAGE LIMIT
- ETHERNET COMMUNICATION

DRAWING CONTINUATION LEGEND

PROCESS LINES (ON/OFF PAGE):

CONN — AREA OR EQUIPMENT DRAWING I-XXX

(CONN = CONNECTION NUMBER REFERENCE)

AREA DESIGNATION NUMBERS

AREA ID	DESCRIPTION
1	OPERATIONS BUILDING
2	HEADWORKS AND PROCESS TANKS
3	WAS TANK

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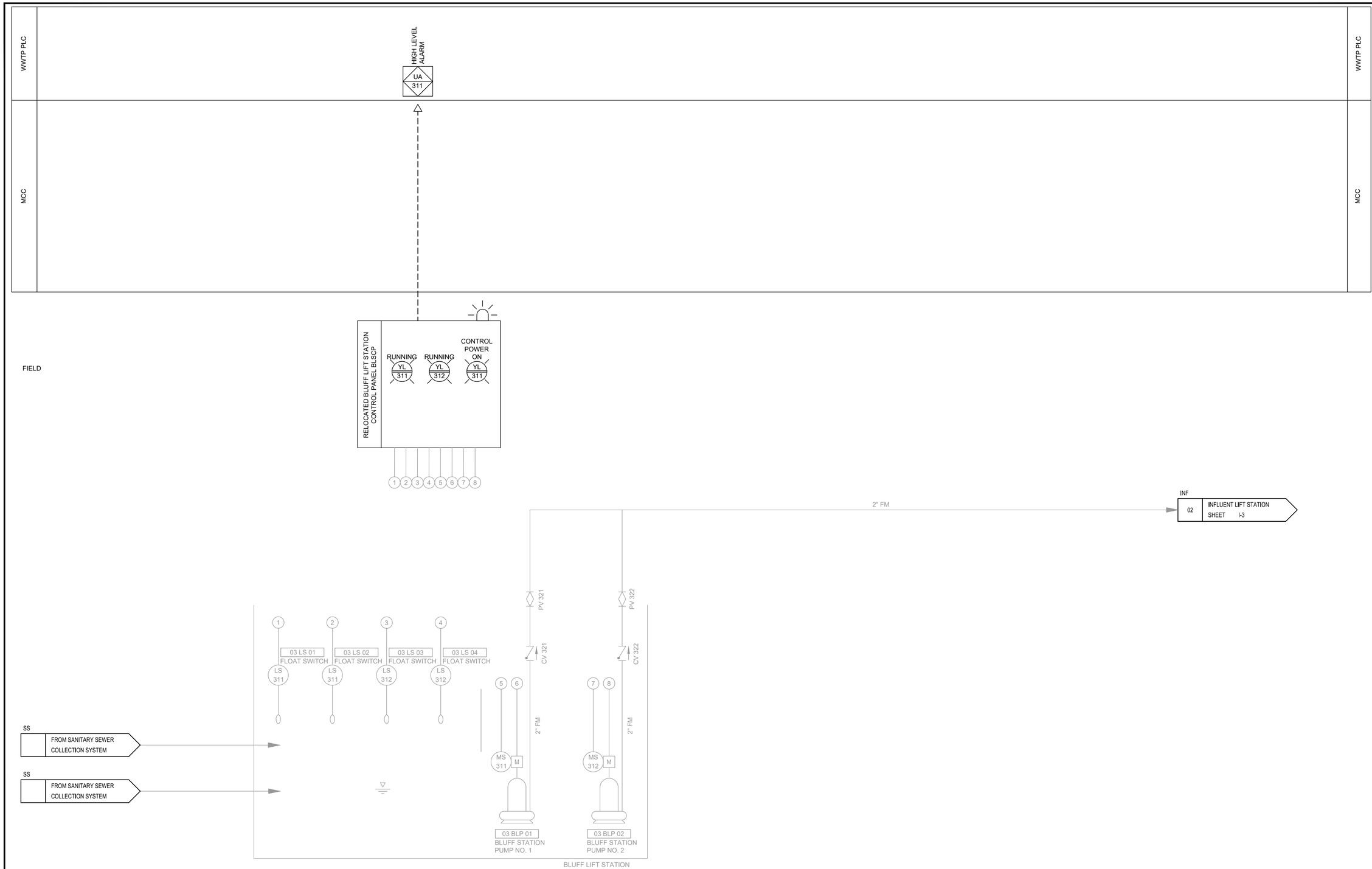
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PROCESS AND INSTRUMENTATION DIAGRAM

SYMBOLS, LEGENDS, AND ABBREVIATIONS

DRAWING: **I-1** OF: **14**

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NOTE:
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PROCESS AND INSTRUMENTATION DIAGRAM

BLUFF LIFT STATION

DRAWING: **I-2** OF: **14**

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02 IP 01 SHOWN, TYPICAL FOR 02 IP 02

WWTP PLC | MCC

MOTOR LEAK ALARM MS 261 | MOTOR HIGH TEMP TSH 261 | IN AUTO YI 261 | DATA ACQUISITION DA 261 | RUNNING YL 261 | FAULT UA 261 | IN AUTO YL 261 | SPEED REFERENCE SC 261 | START COMMAND YC 261 | LEVEL HIGH LSH 261 | LEVEL LIT 261

ETHERNET

02 IP 01 VFD
HIM OIT 210
RESET PB 261

LEVEL HIGH LSH 263 | SAMPLER PULSE FQS 201 | FLOW FI 201 | FLOW TOTAL FQI 201

FLOW | PULSE

FIELD

INFLUENT CONTROL PANEL 02 ICP 01

FAULT YL 261 | FAULT YL 262 | TEST FLOAT YB 261 | TEST FLOAT YB 262 | WET WELL LEVEL LI 261

RUNNING YL 261 | HIGH ALARM / BACKUP CALL (FLOAT) YA 261 | RUNNING YL 262 | HIGH ALARM / BACKUP CALL (FLOAT) YA 262

HOA HS 261 | SC HS 261 | HOA HS 262 | SC HS 262

YS 201 — 02 IS 01 INFLUENT SAMPLER

3/8" SAM

PI 261 0-60 PSI | PI 262 0-60 PSI

3" RS | CV 261 PV 261 | CV 262 PV 262

FIT 201 — 24 VDC — 02 MFM 01 INFLUENT FLOW METER

FE 201 — 0-300 GPM

1.5" SPD

BV 261 CV 263 | BV 262 CV 264

120 VAC | HARD WIRED, NO PLC CONTACT

TSH 264 — 02 SP 01 SUMP PUMP NO. 1

02 SP 02 SUMP PUMP NO. 2 — TSH 265

FS 263 — FLOAT SWITCH

VALVE VAULT

RS 05 — ROTARY DRUM SCREENS NO. 1 AND 2 SHEET I-3

INF 01 — INFLUENT MANHOLE SHEET I-2 — 8" SS

INF 02 — BLUFF LIFT STATION SHEET I-2 — 2" FM

DRAIN — PLANT DRAINS — 6" D

24 VDC — LT 261 — LE 261 — 02 SLS 01 SUBMERSIBLE LEVEL SENSOR

02 LS 01 FLOAT SWITCH — LS 261

02 LS 02 FLOAT SWITCH — LS 262

TSH 261 | MS 261 | M — 02 IP 01 INFLUENT PUMP

TSH 262 | MS 262 | M — 02 IP 02 INFLUENT PUMP

3" RS

02 FG 01 FLAP GATE

INFLUENT PUMP STATION WET WELL

8" EQ — EQ — EQUALIZATION BASIN SHEET I-5 — 32

8" EQ — EQ — EQUALIZATION BASIN SHEET I-5 — 04

NOTE:
ETHERNET SWITCHING NOT SHOWN

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PROCESS AND INSTRUMENTATION DIAGRAM

INFLUENT PUMP STATION AND VALVE VAULT

DRAWING: **I-3** OF: **14**

02 RDS 01 SHOWN, TYPICAL FOR 02 RDS 02

WWTP PLC | MCC

SCREEN LEVEL LI 211 | RUNNING YL 211 | SCREEN OVERLOAD YA 211 | LEVEL HIGH LSH 211 | IN AUTO YL 211 | OVER-TORQUE YL 211

WASH SPRAY OPEN ZC 211 | WASH SPRAY CLOSE ZC 211 | OPENED YIO 209 | IN REMOTE YIR 209 | CLOSED YIC 209 | OPEN ZC 209 | CLOSE ZC 209

OPENED YIO 210 | IN REMOTE YIR 210 | CLOSED YIC 210 | OPEN ZC 210 | CLOSE ZC 210

IN AUTO YL 213 | RUNNING YL 213 | FAULT YA 213 | OVER-TORQUE LOW YL 213 | OVER-TORQUE HIGH YL 213 | WASH SPRAY OPEN (TYP 3) ZC 211 | WASH SPRAY CLOSE (TYP 3) ZC 211

ETHERNET

ETHERNET

02 FS 01 VFD: HIGH TEMP YL 211 | RUNNING YL 211 | RESET PB 211 | FAIL YL 211

ETHERNET

02 WCCP 01 VFD: FAULT YL 213 | RUNNING YL 213 | RESET PB 213 | HIGH TEMP YL 213

FIELD

120 VAC

INFLUENT SCREEN PANEL 02 RDSCP 01: SCREEN HOA HS 211 | WASH OCA HS 211 | SC HS 211

120 VAC

WASHER COMPACTOR PANEL 02 WC 01: COMPACTOR HOA HS 213 | COMPACTOR FOR HS 213 | COMPACTOR CHUTE WASH OCA HS 213 | COMPACTOR CHUTE WASH OCA HS 213 | COMPACTOR EXIT WASH OCA HS 213

1 2 3 4 5 6 7 8 9 10 11 12

NPW
29 NON-POTABLE WATER PUMP STATION SHEET I-12

1.5" NPW-P

1.5" NPW-P

PRV 210

PI 210

BV 210

INF
05 FROM INFLUENT PUMP STATION SHEET I-3

3" RS

PI 211

120 VAC FC S

BV 211A

1" NPW-P

1.5" x1" REDUCER

PRV 211

SV 211

4" OCD

4" OCD

OCD
10 ODOR CONTROL SYSTEM SHEET I-5

BV 211B

1" NPW-P

480 VAC

02 MOV 01 M

3" RS

4"x3" REDUCER

LE 211 | LIT 211

02 PTR 01 PRESSURE TRANSMITTER

24 VDC

6" RS (OVERFLOW)

RS
06 EQUALIZATION BASIN SHEET I-5

SCREENINGS

6" RS

RS
07 ANOXIC BASIN SHEET I-5

02 RDS 01 ROTARY DRUM SCREEN NO. 1

PI 212

120 VAC FC S

BV 212A

1" NPW-P

1.5" x1" REDUCER

PRV 212

SV 212

4" OCD

BV 212B

1" NPW-P

3" RS

480 VAC

02 MOV 02 M

4"x3" REDUCER

LE 212 | LIT 212

02 PTR 02 PRESSURE TRANSMITTER

24 VDC

6" RS (OVERFLOW)

RS
08 EQUALIZATION BASIN SHEET I-5

SCREENINGS

6" RS

RS
09 ANOXIC BASIN SHEET I-5

02 RDS 02 ROTARY DRUM SCREEN NO. 2

1.5" NPW-P

120 VAC FC S

1.5" x1" REDUCER

BV 213A

SV 213A

SCREENINGS DUMPSTER

02 WC 01 SCREENINGS WASHER COMPACTOR

120 VAC FC S

BV 213B

SV 213B

1.5" x1" REDUCER

120 VAC FC S

BV 213C

SV 213C

1.5" x1" REDUCER

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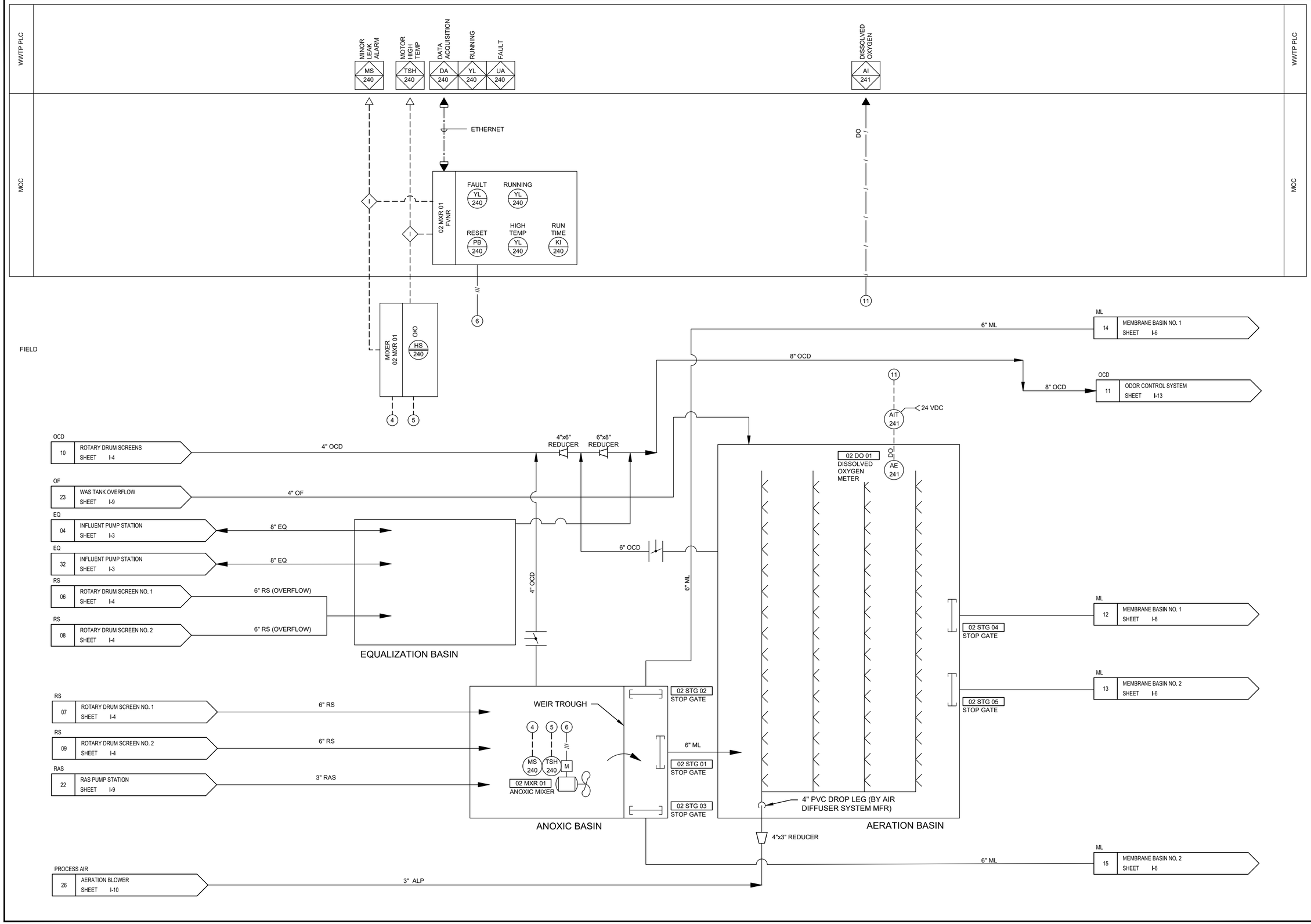
PROCESS AND INSTRUMENTATION DIAGRAM

HEADWORKS

DRAWING: **I-4** OF: **14**

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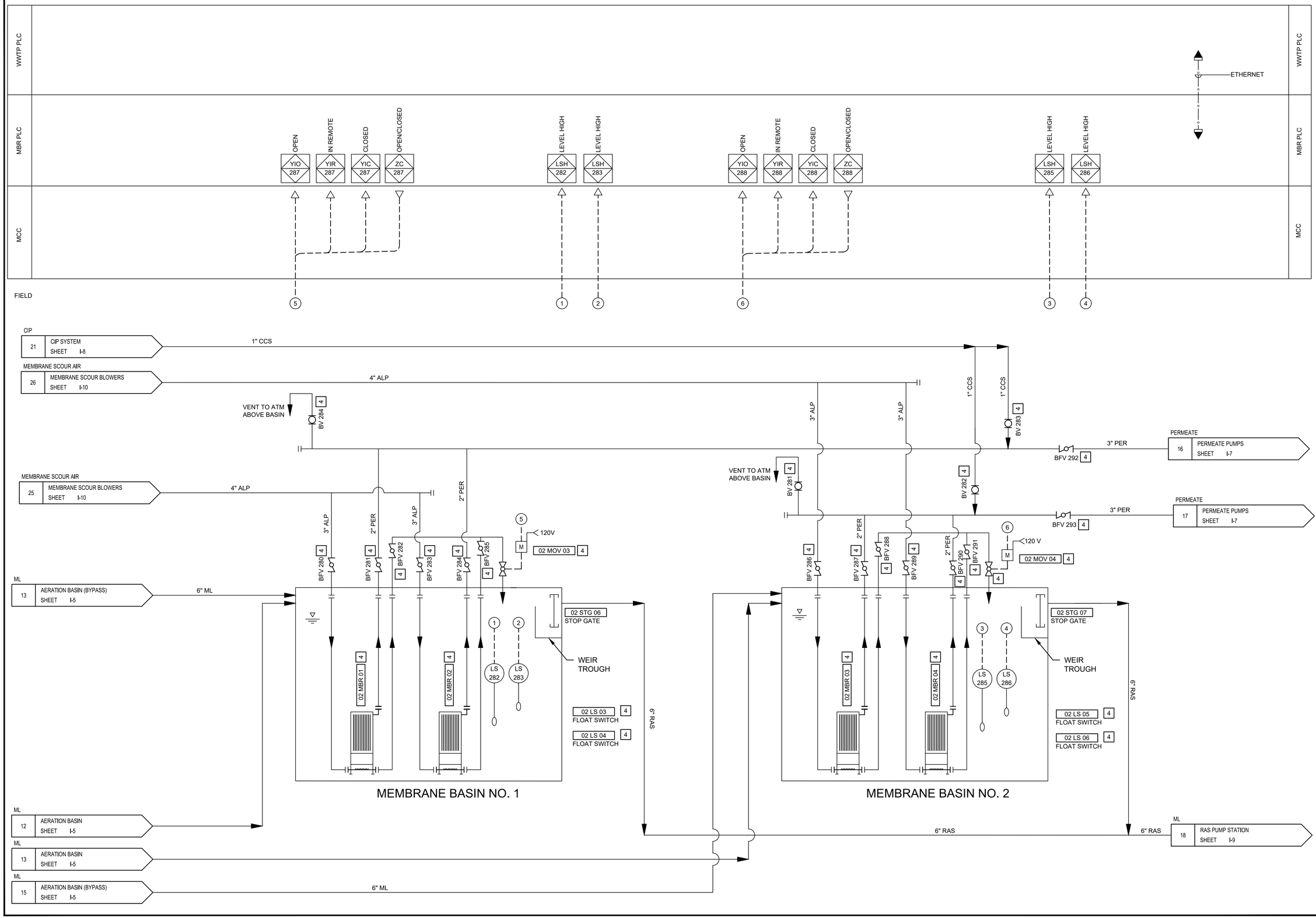
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PROCESS TANKS

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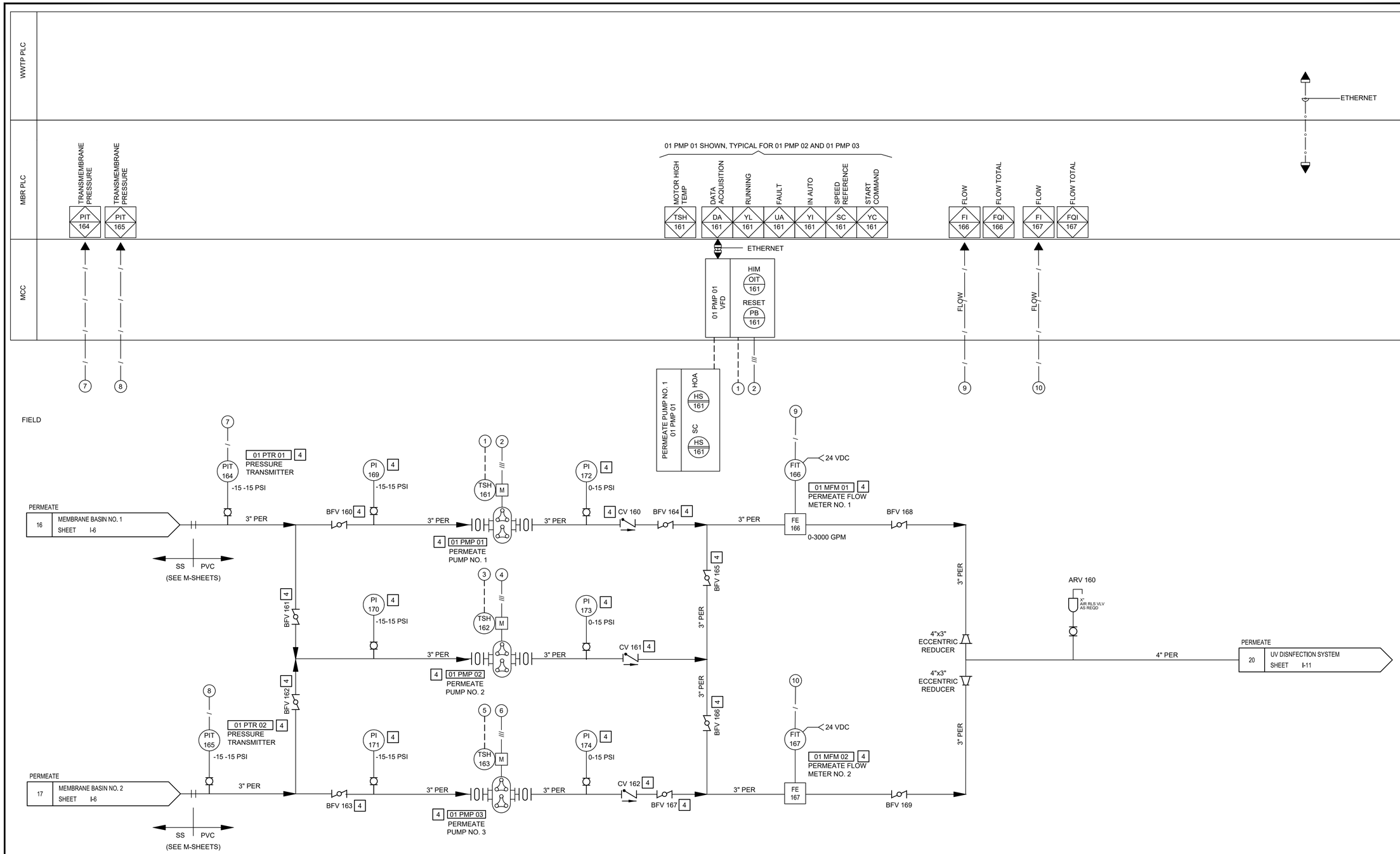
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MEMBRANES

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FIELD

PERMEATE
16 MEMBRANE BASIN NO. 1
SHEET I-6
SS PVC
(SEE M-SHEETS)

PERMEATE
17 MEMBRANE BASIN NO. 2
SHEET I-6
SS PVC
(SEE M-SHEETS)

7 → PIT 164 — 01 PTR 01 [4] PRESSURE TRANSMITTER — -15 -15 PSI

8 → PIT 165 — 01 PTR 02 [4] PRESSURE TRANSMITTER — -15 -15 PSI

3" PER

BFV 160 [4]

PI 169 [4] -15-15 PSI

1, 2 → TSH 161 M

3" PER

[4] 01 PMP 01 PERMEATE PUMP NO. 1

3" PER

PI 172 [4] 0-15 PSI

[4] CV 160

BFV 164 [4]

3" PER

9 → FIT 166 — 24 VDC — 01 MFM 01 [4] PERMEATE FLOW METER NO. 1

FE 166 — 0-3000 GPM

BFV 168

3" PER

BFV 165 [4]

BFV 161 [4]

PI 170 [4] -15-15 PSI

3, 4 → TSH 162 M

3" PER

[4] 01 PMP 02 PERMEATE PUMP NO. 2

3" PER

PI 173 [4] 0-15 PSI

CV 161 [4]

3" PER

BFV 162 [4]

PI 171 [4] -15-15 PSI

5, 6 → TSH 163 M

3" PER

[4] 01 PMP 03 PERMEATE PUMP NO. 3

3" PER

PI 174 [4] 0-15 PSI

CV 162 [4]

BFV 166 [4]

10 → FIT 167 — 24 VDC — 01 MFM 02 [4] PERMEATE FLOW METER NO. 2

FE 167

BFV 167 [4]

3" PER

BFV 163 [4]

BFV 169

3" PER

4"x3" ECCENTRIC REDUCER

4"x3" ECCENTRIC REDUCER

3" PER

ARV 160
AIR RLS VLV AS REQD

4" PER

PERMEATE
20 UV DISNFECTION SYSTEM
SHEET I-11

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MEMBRANES

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WWTP PLC

MBR PLC

MCC

OPENED
YIO 130

IN REMOTE
YIR 130

CLOSED
YIC 130

OPEN
ZC 130

CLOSE
ZC 130

FLOW
FCQ 131

FLOW
FICQ 132

ETHERNET

FLOW

FLOW

FE
31 NON-POTABLE WATER SYSTEM
SHEET I-12

1 1/2" NPW

PRV 130 4
PRESSURE REDUCING VALVE

1" CCS

120 VAC
M
01 MOV 01 4
MOTOR OPERATED VALVE

BV 130 4

BV 136 4

1" CCS

1" CCS

PI 133 4
PSI

1" CCS

VENTURI INJECTOR 4

PI 134 4
PSI

CV 132 4

BV 138 4

1" CCS

M
1"

1"

CIP
21 MEMBRANES
SHEET I-6

24 VDC
01 MFM 04 4
CIP FLOW METER
FIT 132
FE 132

1"X1/2" REDUCING BUSHING 4

BV 137 4

1" CCS

D

1/2" CCS

BV 132 4

BV 133 4

4 01 UFM 01
ULTRASONIC FLOW METER
FE 131

3/8"X1/2" REDUCER 4

3/8"X1/2" INCREASER 4

1/2" CCS

CHEMICAL FROM STORAGE

BV 130 4

1/2" CCS

BV 134 4

CV 130 4

CHEMICAL FROM STORAGE

BV 131 4

1/2" CCS

BV 135 4

CV 131 4

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PROCESS AND INSTRUMENTATION DIAGRAM

CLEAN-IN PLACE SYSTEM

DRAWING: **I-8** OF: **14**

02 RP 01 SHOWN, TYPICAL FOR 02 RP 02

WWTP PLC | MBR PLC | MCC

FLOW FI 202 | FLOW TOTAL FQI 202 | FLOW FI 203 | FLOW TOTAL FQI 203 | LEVEL HIGH LSH 271 | MOTOR LEAK ALARM MS 271 | MOTOR HIGH TEMP TSH 271 | DATA ACQUISITION DA 271 | RUNNING YL 271 | FAULT UA 271 | IN AUTO YI 271 | SPEED REFERENCE SC 271 | START COMMAND YC 271 | LEVEL LIT 231 | LEVEL HIGH LSH 231 | DATA ACQUISITION DA 233 | RUNNING YL 233 | FAULT UA 233

FLOW / PULSE | FLOW / PULSE | ETHERNET | ETHERNET

02 RP 01 VFD: HIM OIT 271 | FAULT YL 271 | RUNNING YL 271 | RESET PB 271 | HIGH TEMP YL 271 | RUN TIME KI 271

02 WP 01 FVNR: RESET PB 233

35 | 36 | 6 | 9 | 11 | 12 | 14

FIELD

RAS PUMP NO. 1 02 RPCP 01: HOA HS 271 | SC HS 271

1 | 2 | 4 | 5 | 7 | 8 | 10

TRUCK LOADOUT STA PANEL: E-STOP HS 233 — 13

WAS PUMP 02 WP 01: HOA HS 233 — 13

VALVE VAULT

PI 271, 0-60 PSI | PI 272, 0-60 PSI

CV 271 | PV 271 | CV 272 | PV 272

3" RAS | 3" RAS | 3" RAS | 3" RAS

FIT 202, 24 VDC — 02 MFM 02 RAS MAGNETIC FLOW METER — FE 202

PV 273 | 3" RAS | RAS 22 ANOXIC BASIN SHEET I-5

3" WAS | PV 274

FIT 203, 24 VDC — 02 MFM 03 WAS MAGNETIC FLOW METER — FE 203

(SEE M-SHEETS) DI PVC | PV 275

3" FLANGE CONNECTION BY CONTRACTOR | 4" OCD | OCD 24 ODOR CONTROL SYSTEM SHEET I-13

3" WAS | 3" PVC DOWN PIPE BY FRP TANK MFR (FL UPPER, PE LOWER) | 4" OF | OF 23 AERATION BASIN SHEET I-5

02 LS 09 FLOAT SWITCH

3" D | 3" D | 3" D | 3" D

BV 273 | BV 272 | BV 271 | 3" ALP

02 RLS 01 RADAR LEVEL SENSOR: 24 VDC, LT 231, LE 231, LS 231

BY DIFFUSER MFR

WAS STORAGE TANK

PG 233 | 3" WS | 4"x3" REDUCER | PV 276

02 WP 01 WAS PUMP: M, TSH 233

PG 233 | CV 273 | 4" WS | PV 277 | PV 170

02 LS 07 FLOAT SWITCH: LS 271 | 02 LS 08 FLOAT SWITCH: LS 272

24 VDC: LT 271, LE 271

02 SLS 02 SUBMERSIBLE LEVEL SENSOR — 4

RAS 18 MEMBRANE BASINS SHEET I-6 — 6" RAS

7 | 5 | 6: TSH 271, MS 271, M — 02 RP 01 RAS PUMP

10 | 8 | 9: TSH 272, MS 272, M — 02 RP 02 RAS PUMP

3" D — 02 FG 02 FLAP GATE

RAS PUMP STATION

PROCESS AIR 28 WAS BLOWER SHEET I-10 — 3" ALP



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PROCESS AND INSTRUMENTATION DIAGRAM

RAS/WAS PUMP STATION

DRAWING: **I-9** OF: **14**

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WWTP PLC | MBR PLC | MCC

DATA ACQUISITION DA 104 | RUNNING YL 104 | FAULT UA 104 | IN AUTO YL 104 | SPEED REFERENCE SC 104 | START COMMAND YC 104 | MOTOR HIGH TEMP TSH 104A | DISCHARGE HIGH TEMP ISH 104B

SMOKE ALARM YA 120

HIGH TEMP EXTERNAL FAULT TSH 105 | DATA ACQUISITION DA 105 | RUNNING YL 105 | FAULT UA 105 | IN AUTO YL 105 | SPEED REFERENCE SC 105 | START COMMAND YC 105

01 MSB 01 SHOWN, TYPICAL FOR 01 MSB 02, AND 01 MSB 03

MOTOR HIGH TEMP TSH 101A | DATA ACQUISITION DA 101 | RUNNING YL 101 | FAULT UA 101 | IN AUTO YL 101 | SPEED REFERENCE SC 101 | START COMMAND YC 101 | DISCHARGE HIGH TEMP ISH 101B

ETHERNET

01 MSB 01 VFD — HIM OIT 101 — RESET PB 101

01 AB 01 VFD — HIM OIT 104 — RESET PB 104

01 WBCP 01 VFD — HIM OIT 105 — RESET PB 105

FLOW FI 108 | FLOW TOTAL FQI 108

FLOW FI 109 | FLOW TOTAL FQI 109

2 3 5 6 7 9 10 11 | 1 4 8 | 13 15 | 12 | 20 | 17 | 16

FIELD

BLOWER 01 MSBCP 01 — HOA HS 101 — SC HS 101 (2)

BLOWER 01 MSBCP 02 — HOA HS 102 — SC HS 102 (6)

BLOWER 01 MSBCP 03 — HOA HS 103 — SC HS 103 (10)

BLOWER 01 ABCP 01 — HOA HS 104 — SC HS 104 (14)

BLOWER 01 WB 01 — HOA HS 105 — SC HS 105 (19)

OPERATIONS BUILDING EQUIPMENT ROOM SMOKE DETECTORS

FIT 108 — 24 VDC

01 AFM 01 [4] AIR FLOW METER

FE 108 — 0-114 SCFM — 4" ALP

MEMBRANE SCOUR AIR → 25 MEMBRANE BASIN NO. 1, SHEET I-6

[4] 01 MSB 01 MEMBRANE SCOUR BLOWER NO. 1

PI 101 | TSH 101A (1) | M | PI 101 | TI 101 | TSH 101B (3) | FILTER | 3" ALP | 4"x3" REDUCER | BFV 101 | 4" ALP

[4] 01 MSB 02 MEMBRANE SCOUR BLOWER NO. 2

PI 102 | TSH 102A (5) (4) | M | PI 102 | TI 102 | TSH 102B (7) | FILTER | 3" ALP | 4"x3" REDUCER | BFV 102 | BFV 103 | 4" ALP

[4] 01 MSB 03 MEMBRANE SCOUR BLOWER NO. 3

PI 103 | TSH 103A (9) (8) | M | PI 103 | TI 103 | TSH 103B (11) | FILTER | 3" ALP | 4"x3" REDUCER | BFV 104 | BFV 105 | 4" ALP

FIT 109 — 24 VDC

01 AFM 02 [4] AIR FLOW METER

FE 109 — 0-114 SCFM — 4" ALP

MEMBRANE SCOUR AIR → 26 MEMBRANE BASIN NO. 2, SHEET I-6

01 AB 01 AERATION BLOWER NO. 1

PI 104 | TSH 104 (13) (12) | M | PI 104 | TI 104 | TSH 104 (15) | FILTER | 2" ALP | 3"x2" REDUCER | BFV 106 | 3" ALP | 3" ALP

PROCESS AIR → 27 AERATION BASIN, SHEET I-5

01 WB 01 WAS BLOWER

PI 105 | TSH 105 (17) (16) | M | PI 105 | TI 104 | TSH 104 (19) | FILTER | 2" ALP | 3"x2" REDUCER | BFV 107 | 3" ALP

PROCESS AIR → 28 WAS STORAGE TANK, SHEET I-9

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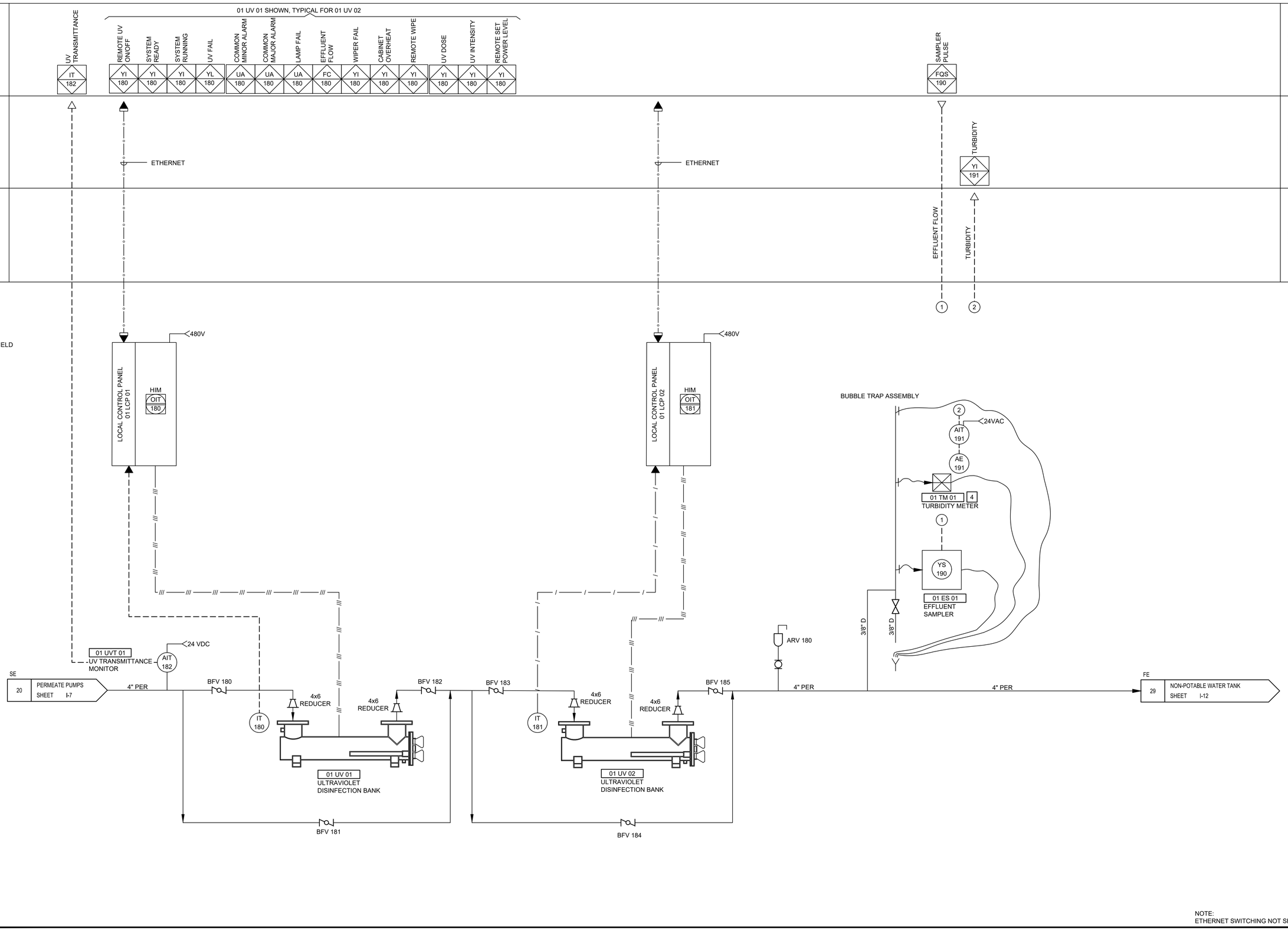
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BLOWERS

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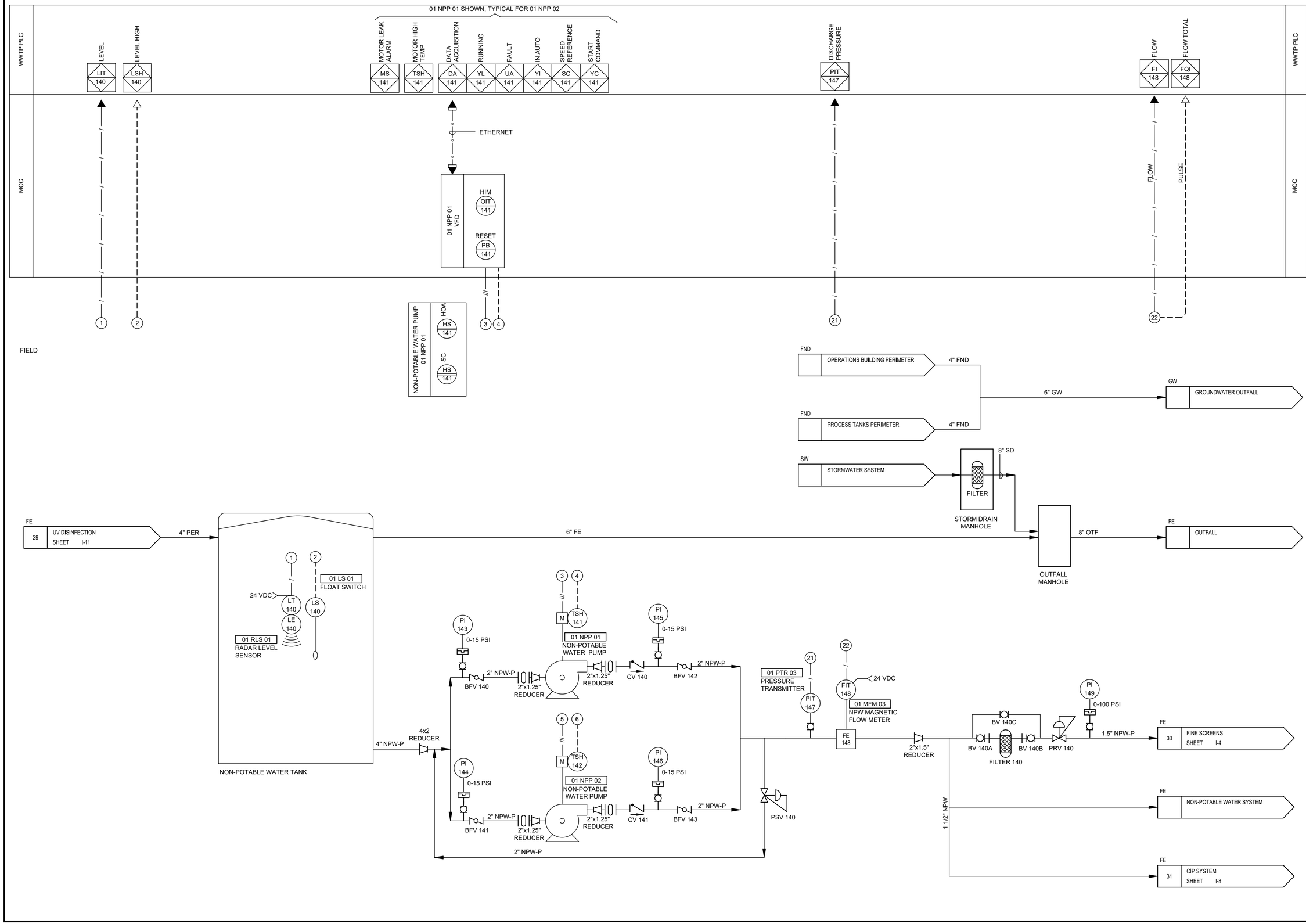
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UV DISINFECTION SYSTEM

DRAWING: **I-11** OF: **14**

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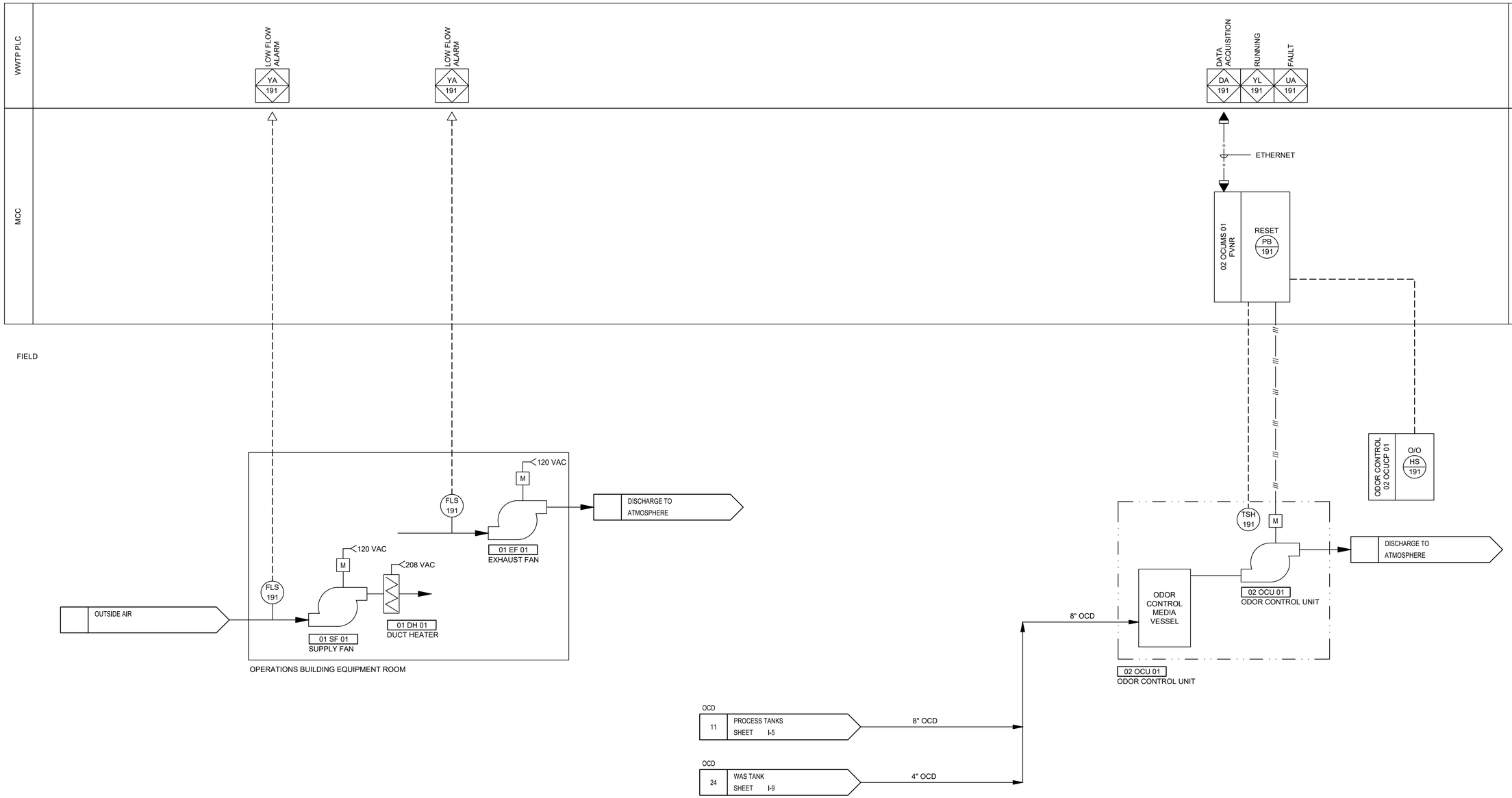
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NON-POTABLE WATER SYSTEM

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ERIC F. NUTTING
STATE OF WASHINGTON
33900
REGISTERED
PROFESSIONAL ENGINEER

9/4/2026

TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

8220 178TH AVENUE COURT SW,
LONGBRANCH, WA 98351

No.	DATE	REVISION

ISSUED FOR:

BID SET

ISSUE DATE:	SEPTEMBER 2026
APPROVED BY:	EFN
CHECKED BY:	EFN
DRAWN BY:	CRR
DESIGNER:	JESP
G & O JOB NO.:	22848.01
FILE:	P&IDS.DWG

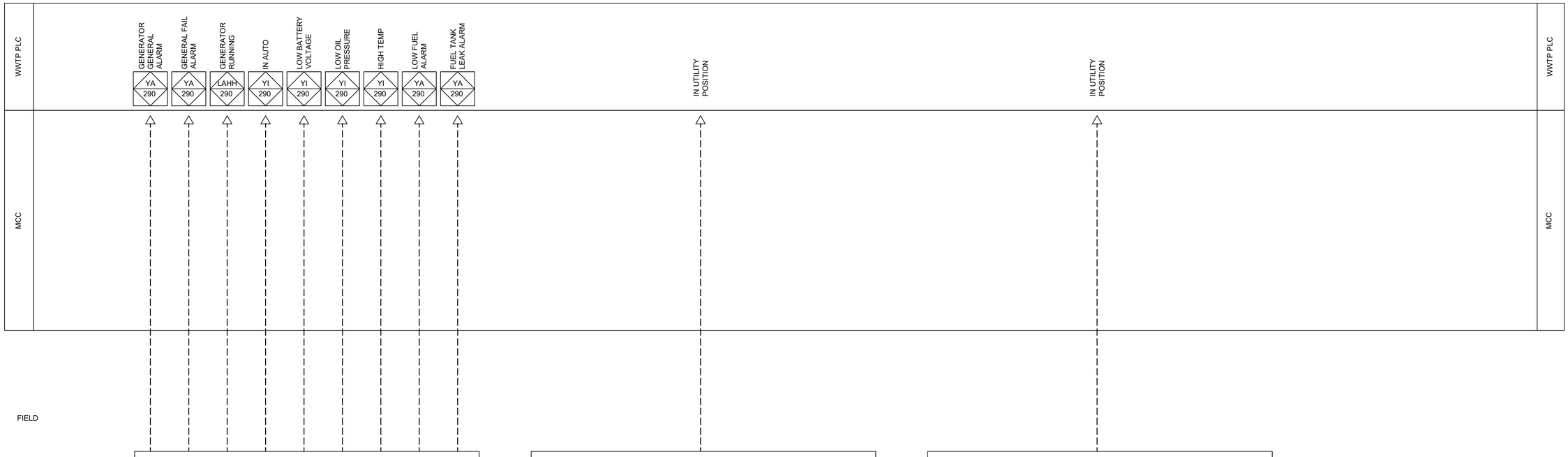
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TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

PROCESS AND INSTRUMENTATION DIAGRAM

ODOR CONTROL

DRAWING: **I-13** OF: **14**

m:\tay\or bay beach club hoa\22848.01 construction plans, spec, & permitting wa doh grant\01 design\wwtf upgrade\Planset\P&ID\P&IDs.dwg, 9/4/2026 10:28 AM, CHARLEY REID



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CONSULTING ENGINEERS
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GENERATOR

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BUILDING DATA

CODES:

IBC	2021	INTERNATIONAL BUILDING CODE
IMC	2021	INTERNATIONAL MECHANICAL CODE
IFC	2021	INTERNATIONAL FIRE CODE
UPC	2021	UNIFORM PLUMBING CODE
WSEC	2021	WASHINGTON STATE ENERGY CODE

BUILDING DESCRIPTION:

A SINGLE STORY CMU BUILDING WITH A METAL ROOF CONTAINING A CONTROL ROOM, PROCESS EQUIPMENT ROOM, ELECTRICAL ROOM AND RESTROOM.

GROSS BUILDING AREA:

GROUND FLOOR: 865 SF

IBC OCCUPANCY:

F-1: CONTROL ROOM, PROCESS ROOM, MECHANICAL ROOM, ELECTRICAL ROOM

IBC TYPE OF CONSTRUCTION:

TYPE: V.B.

FIRE RESISTIVE BUILDING ELEMENTS REQUIREMENTS (IBC 601):

PRIMARY STRUCTURAL FRAME:	0 HOURS
BEARING WALLS:	0 HOURS
NONBEARING WALLS:	0 HOURS
FLOOR ASSEMBLIES:	0 HOURS
ROOF ASSEMBLIES:	0 HOURS

FIRE RESISTIVE EXTERIOR WALL REQUIREMENTS (IBC 602)

ALL SEPARATION DISTANCES ≥ 30 FT: 0 HOURS

GENERAL NOTES:

1. ALL DIMENSIONS ARE TO FACE OF FRAMING, TO FACE OF MASONRY, OR TO FACE OF CONCRETE UNLESS NOTED OTHERWISE.

ROOM MATERIAL AND FINISH SCHEDULE

ROOM NAME	FLOOR		WALLS								CEILING	
			NORTH		SOUTH		EAST		WEST			
	MATL	FINISH	MATL	FINISH	MATL	FINISH	MATL	FINISH	MATL	FINISH	MATL	FINISH
CONTROL ROOM	CONC	CSH	GWB	PTS	GWB	PTS	GWB	PTS	GWB	PTS	GWB	PTS
RESTROOM	CONC	CSH	GWB	PTS	GWB	PTS	GWB	PTS	GWB	PTS	GWB	PTS
PROCESS EQUIPMENT ROOM	CONC	CSH	CMU	PTS	CMU	PTS	CMU	PTS	CMU	PTS	GWB	PTS
ELECTRICAL ROOM	CONC	CSH	CMU	PTS	CMU	PTS	CMU	PTS	CMU	PTS	GWB	PTS

CMU -CONCRETE MASONRY UNIT
CONC -CONCRETE
CSH -CONCRETE SURFACE HARDENER
GWB -GYPSUM WALL BOARD

N/A -NOT APPLICABLE
PTS -PAINT TO SPECIFICATIONS

LAB/OFFICE ELECTRICAL EQUIPMENT SCHEDULE

#	TYPE	VOLTAGE, PHASE, POWER
1	PH METER	120 V, 1 Ø
2	BALANCE W/ DAMPENING MOUNT	120 V, 1 Ø
3	DRYING OVEN	120 V, 1 Ø, 1,100 W

DOOR SCHEDULE

NO.	MATERIAL & TYPE	DOOR SIZE: WIDTH x HEIGHT x THICKNESS	DOOR TYPE	FRAME TYPE	FRAME GAUGE	U-FACTOR	FINISH	HARDWARE GROUP
1	HOLLOW METAL INSULATED	3'-0" x 8'-4" x 1 3/4"	A	A	16	0.35	PAINT	1
2	HOLLOW METAL INSULATED	5'-8" x 7'-0" x 1 3/4"	B	B	16	0.35	PAINT	2
3	HOLLOW METAL INSULATED	3'-0" x 7'-0" x 1 3/4"	C	A	16	0.35	PAINT	1
4	HOLLOW METAL INSULATED	3'-0" x 7'-0" x 1 3/4"	C	A	16	0.35	PAINT	3

NOTE: ALL JAMB DEPTHS SHALL BE FIELD COORDINATED BY THE CONTRACTOR

WINDOW SCHEDULE

NO.	TYPE	WINDOW SIZE: WIDTH x HEIGHT = AREA	QUANTITY	TOTAL VGA	U-FACTOR NFRC CERTIFIED
A	VINYL VERTICAL AWNING	2'-0" x 4'-0" = 8 SQ. FT.	1	6.53 SF	0.31

NOTES:

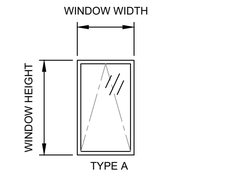
1. ALL NEW EXTERIOR WINDOW GLAZING SHALL BE INSULATED LOW-E WITH ARGON DOUBLE GLAZING.
2. PROVIDE METAL SCREENS ON OPERABLE WINDOW OPENINGS.
3. PERCENTAGE OF GLAZING AREA TO EXTERIOR WALL: 8 SF / 512 SF = 2%.

ACCESSIBLE FIXTURE MOUNTING SCHEDULE

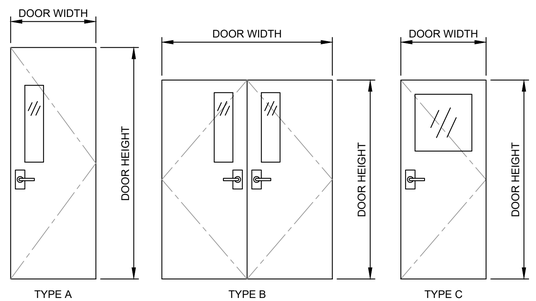
FIXTURE OR ACCESSORY	MOUNTING HEIGHT FROM FINISHED FLOOR
WATER CLOSET (TOILET)	17" MAXIMUM TO TOP OF RIM
GRAB BARS	33" MINIMUM TO 36" MAXIMUM TO TOP OF BAR
VERTICAL GAB BARS	39" MINIMUM TO 41" MAXIMUM TO BOTTOM OF BAR
LAVATORY	34" MAXIMUM TO TOP OF RIM
MIRROR	40" MAXIMUM TO BOTTOM OF REFLECTIVE SURFACE
PAPER TOWEL DISPENSER	40" MAXIMUM
TOILET SEAT COVER DISPENSER	40" MAXIMUM

WALL TYPES & LEGEND

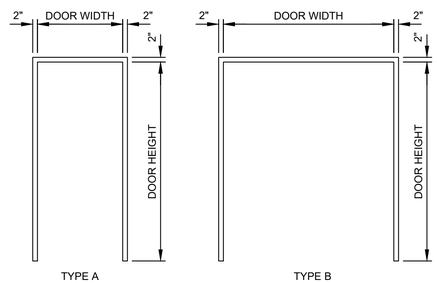
- # — DOOR NUMBER, SEE DOOR SCHEDULE THIS SHEET
- (#) — WINDOW NUMBER, SEE WINDOW SCHEDULE THIS SHEET
- 8" CMU WALL
- 8" CMU WALL W/ ONE SIDE R-9 INSULATED 2x2 FURRED WALL W/ 5/8" GWB
- 4" INSULATED WALL W/ 2x4 STUDS @ 12" O.C.
- FE — FIRE EXTINGUISHER



WINDOW FRAME TYPE
SCALE: NTS



DOOR TYPE
SCALE: NTS



DOOR FRAME TYPE
SCALE: NTS

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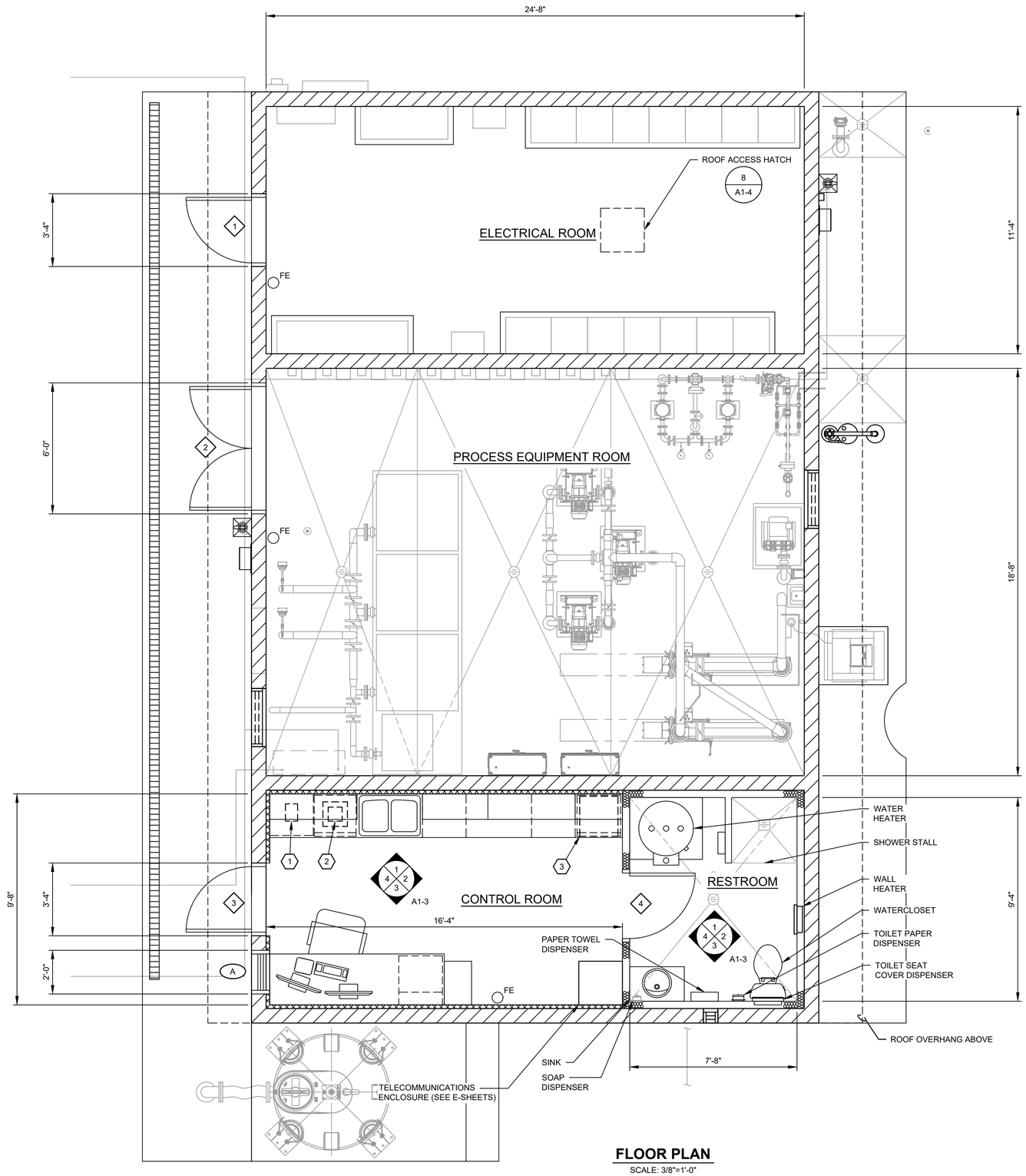
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IF NOT, SCALE ACCORDINGLY

ARCHITECTURAL

BUILDING DATA, NOTES, AND SCHEDULES

DRAWING: **A-1** OF: **1**

M:\Taylor Bay Beach Club HOA\22848.01 Construction Plans, Spec, & Permitting WA DOH grant\01 Design\WWTF Upgrade\Planset\Architectural\A_OPS_BLDG_PLN.dwg, 10/9/2026 1:24 PM, WILLIAM GILLARD



FLOOR PLAN

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

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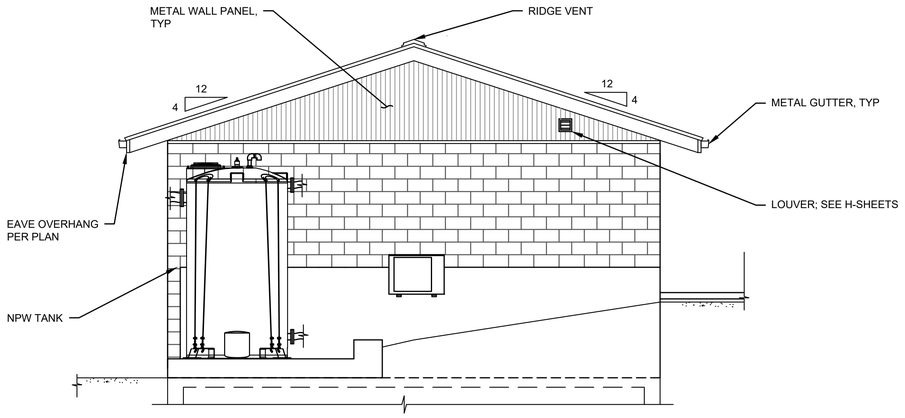
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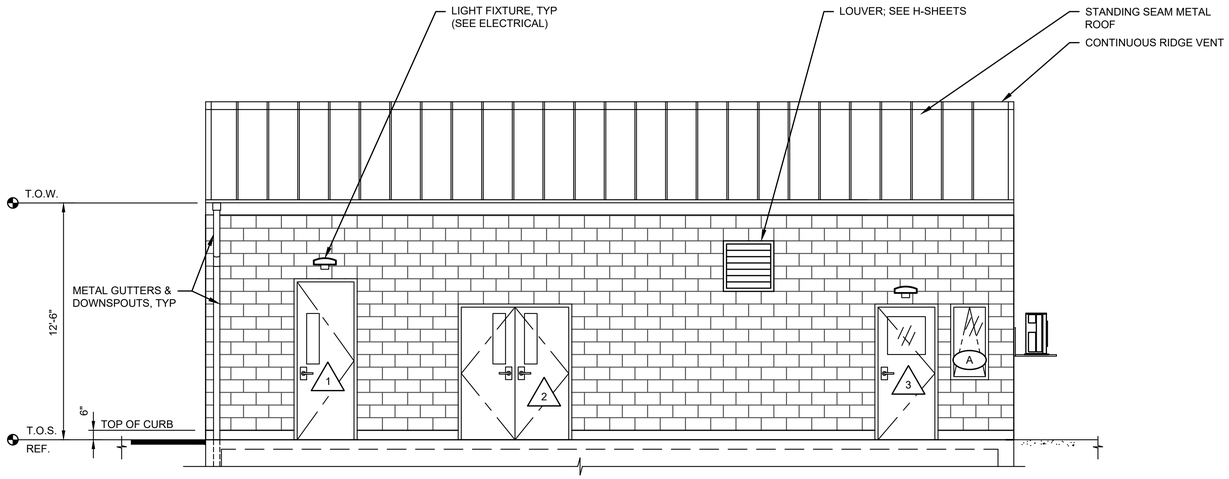
FLOOR PLAN

DRAWING: **A1-1** OF: **4**

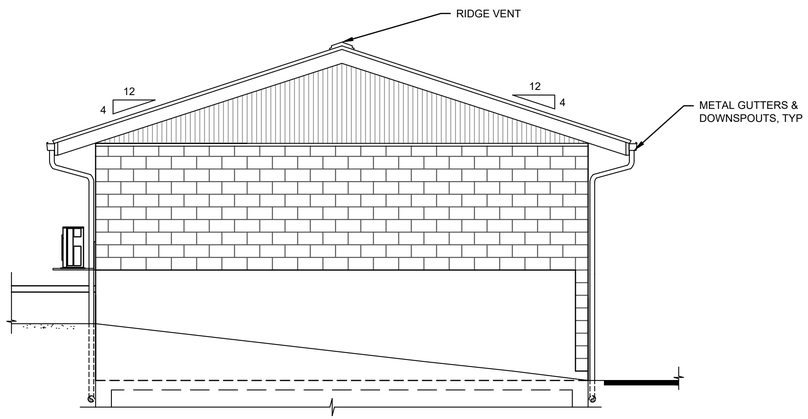
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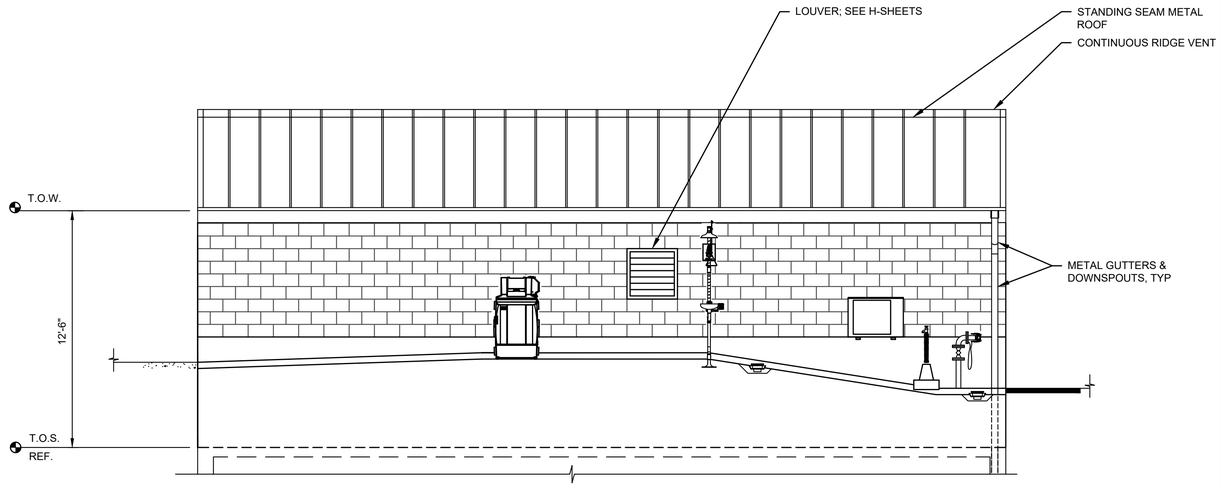
SOUTH ELEVATION
SCALE: 1/4"=1'-0"



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



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



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

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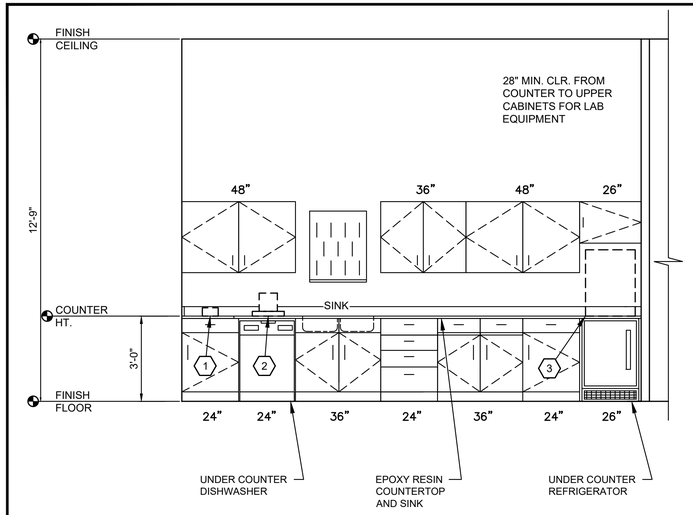
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ARCHITECTURAL

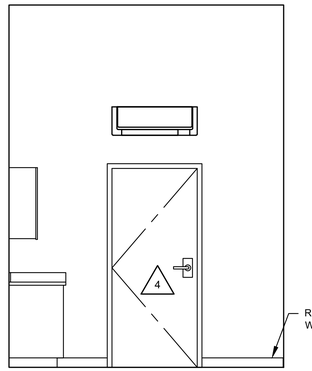
ELEVATIONS

DRAWING: **A1-2** OF: **4**

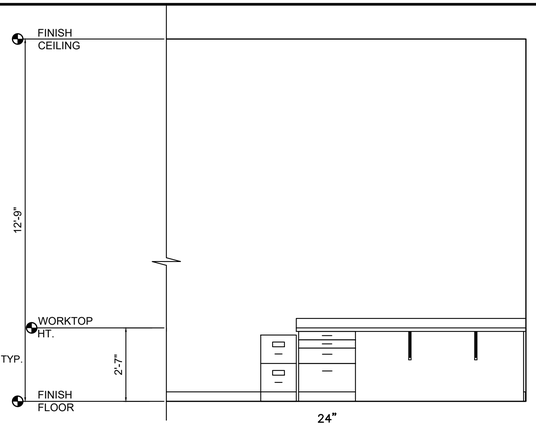
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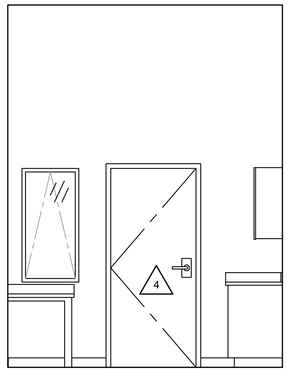
1 / A1-1 **LAB ELEVATIONS**
SCALE: 3/8"=1'-0"



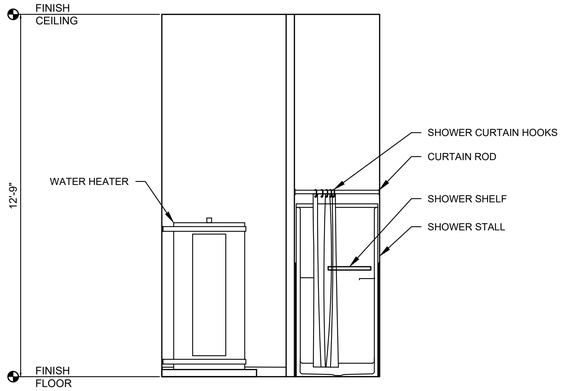
2 / A1-1 **OFFICE ELEVATIONS**
SCALE: 3/8"=1'-0"



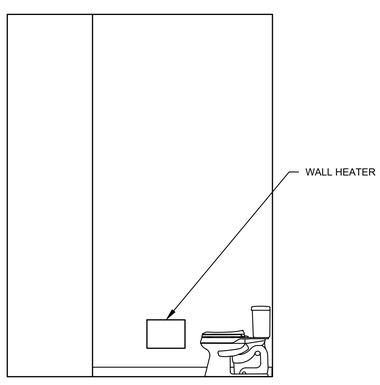
3 / A1-1 **OFFICE ELEVATIONS**
SCALE: 3/8"=1'-0"



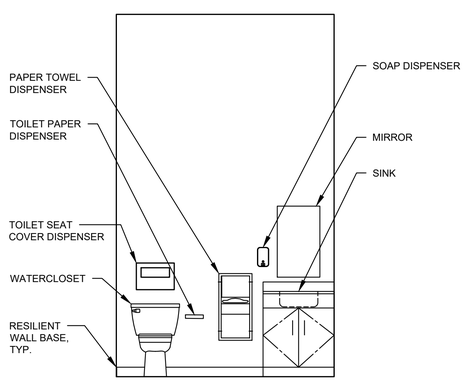
4 / A1-1 **OFFICE ELEVATIONS**
SCALE: 3/8"=1'-0"



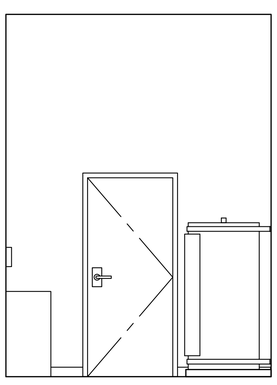
1 / A1-1 **RESTROOM ELEVATION**
SCALE: 3/8"=1'-0"



2 / A1-1 **RESTROOM ELEVATION**
SCALE: 3/8"=1'-0"



3 / A1-1 **RESTROOM ELEVATION**
SCALE: 3/8"=1'-0"



4 / A1-1 **RESTROOM ELEVATION**
SCALE: 3/8"=1'-0"

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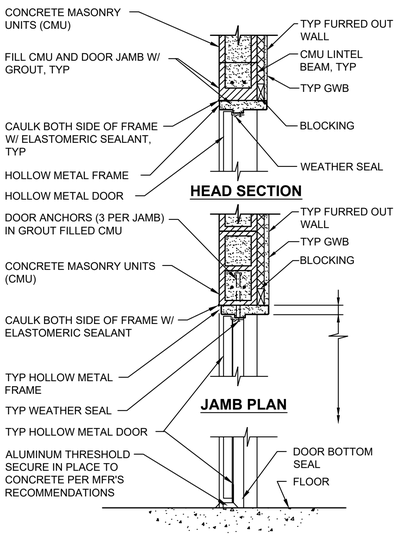
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ARCHITECTURAL

INTERIOR ELEVATIONS

DRAWING: **A1-3** OF: **4**

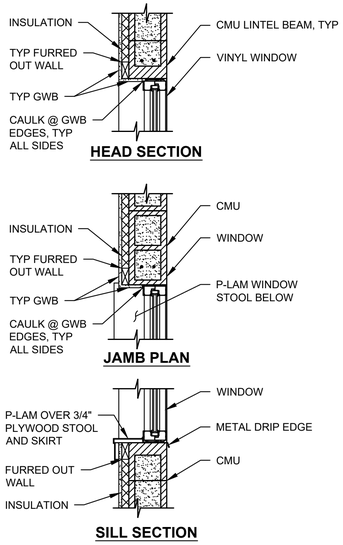
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HEAD SECTION

JAMB PLAN

SILL SECTION



HEAD SECTION

JAMB PLAN

SILL SECTION

NOTE:

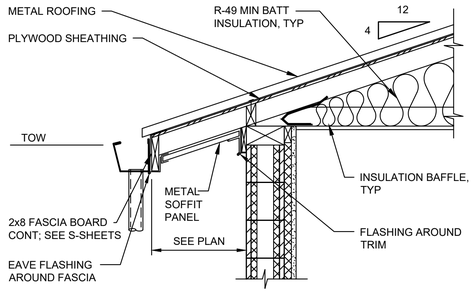
WALL FURRING OMITTED AT PLAIN CMU WALLS PER PLAN.

1 TYP **METAL DOOR FOR CMU WALL W/ FURRING DETAIL**

NOT TO SCALE

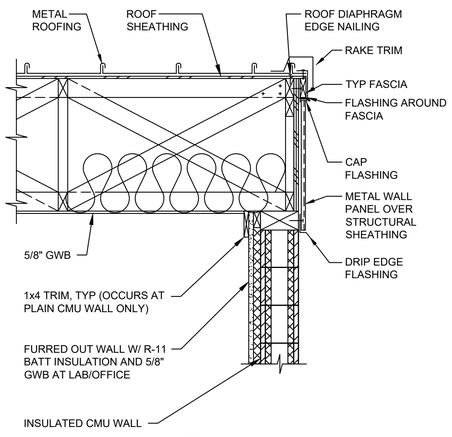
2 TYP **WINDOW SECTION**

NOT TO SCALE



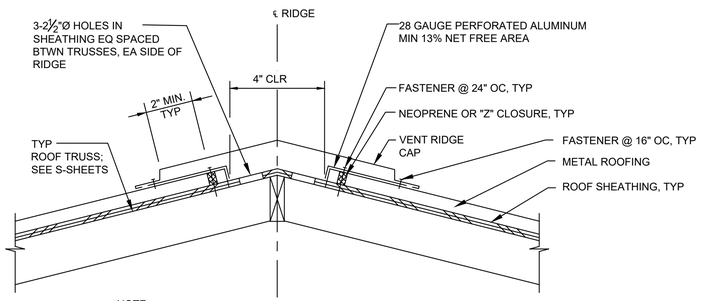
3 TYP **EAVE DETAIL**

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



4 TYP **RAKE DETAIL**

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

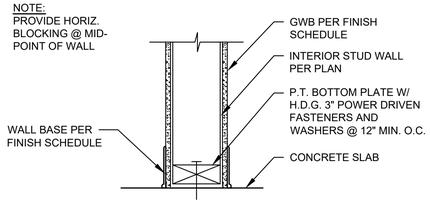


NOTE:

RIDGE CAP SHALL PROVIDE AT LEAST 6.0 SQUARE INCHES OF FREE AIR PER FOOT OF LENGTH.

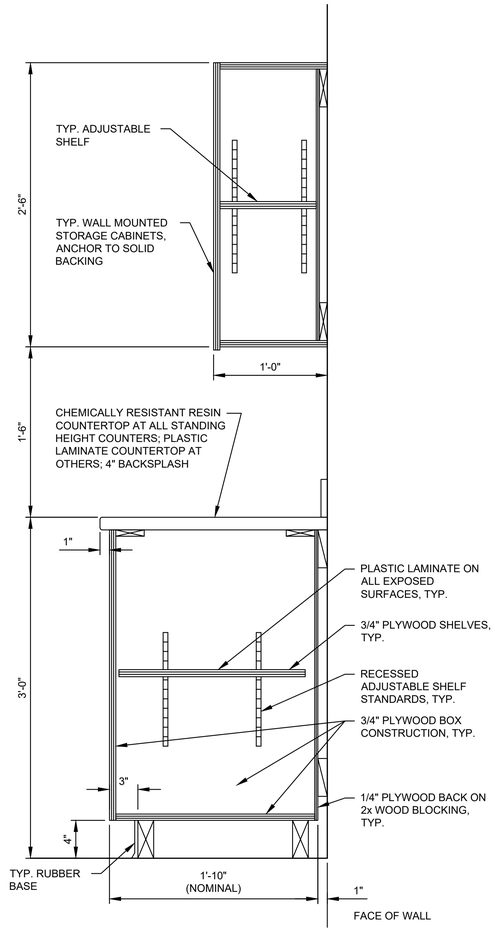
5 TYP **RIDGE DETAIL**

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



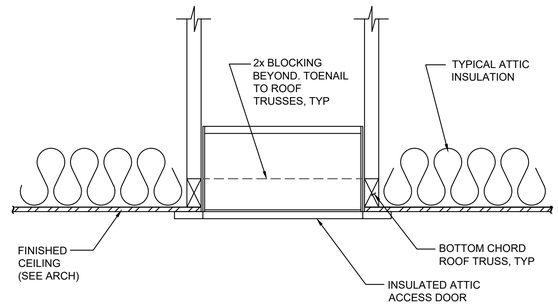
6 TYP **TYPICAL PARTITION WALL SECTION**

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



7 TYP **TYP. LAMINATE FACE CASEWORK DETAIL**

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



8 A1-1 **TYPICAL ATTIC ACCESS DETAIL**

NOT TO SCALE

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DETAILS

DRAWING: **A1-4** OF: **4**

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HVAC DESIGN CRITERIA

OA VENTILATION

OPERATIONS BUILDING:

THE ELECTRICAL ROOM AND CONTROL ROOM WILL BE NATURALLY VENTILATED BY OPENABLE DOORS AND WINDOWS PER IMC. THE PROCESS EQUIPMENT ROOM AND RESTROOM WILL BE MECHANICALLY VENTILATED WITH EXHAUST FANS PER IMC.

HEATING/COOLING:

WINTER DESIGN DB TEMP: 28°F
SUMMER DESIGN DB TEMP: 84°F

ELECTRICAL ROOM:

DESIGN HEATING SETPOINT: 60°F
TOTAL REQ'D HEATING LOAD: 6,155 BTU/HR
TYPE: SPLIT SYSTEM HEAT PUMP AND FAN COIL

DESIGN COOLING SETPOINT: 90°F
TOTAL REQ'D COOLING LOAD: 13,886 BTU/HR
TYPE: SPLIT SYSTEM HEAT PUMP AND FAN COIL

DESIGN CAPACITY: 18,000 BTU/HR

PROCESS EQUIPMENT ROOM:

DESIGN HEATING SETPOINT: 65°F
TOTAL REQ'D HEATING LOAD: 10,441 BTU/HR
TYPE: ELECTRIC RESISTANCE

DESIGN COOLING SETPOINT: 90°F
TOTAL REQ'D COOLING LOAD: 10,438 BTU/HR
TYPE: VENTILATION
REQ'D AIRFLOW: 2,800 CFM

CONTROL ROOM:

DESIGN HEATING SETPOINT: 70°F
TOTAL REQ'D HEATING LOAD: 6,429 BTU/HR
TYPE: SPLIT SYSTEM HEAT PUMP AND FAN COIL

DESIGN COOLING SETPOINT: 75°F
TOTAL REQ'D COOLING LOAD: 3,621 BTU/HR
TYPE: SPLIT SYSTEM HEAT PUMP AND FAN COIL

DESIGN CAPACITY: 12,000 BTU/HR

RESTROOM:

DESIGN HEATING SETPOINT: 70°F
TOTAL REQ'D HEATING LOAD: 1,631 BTU/HR (0.48 kW)
TYPE: ELECTRIC RESISTANCE

CONTROL DESCRIPTION:

THE HEAT PUMP [01 HP 01] AND WALL MOUNTED FAN COIL [01 FC 01] PROVIDE HEATING AND COOLING TO THE ELECTRICAL ROOM AND IS CONTROLLED BY THERMOSTAT [01 T 01].

THE HEAT PUMP [01 HP 02] AND WALL MOUNTED FAN COIL [01 FC 02] PROVIDE HEATING AND COOLING TO THE CONTROL ROOM AND IS CONTROLLED BY THERMOSTAT [01 T 03].

THE INLINE EXHAUST FAN [01 EF 01] WILL PROVIDE VENTILATION IN THE PROCESS EQUIPMENT ROOM AND WILL BE CONTROLLED BY THERMOSTAT [01 T 02].

THE CEILING EXHAUST FAN [01 EF 02] WILL PROVIDE VENTILATION IN THE RESTROOM AND WILL BE CONTROLLED BY A LIGHT SWITCH.

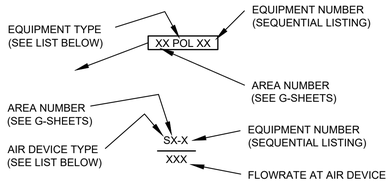
UNIT HEATER [01 HT 01] WILL PROVIDE HEATING IN THE PROCESS EQUIPMENT ROOM AND IS CONTROLLED BY AN INTERNAL THERMOSTAT.

THE WALL HEATER [01 HT 02] WILL PROVIDE HEATING IN THE RESTROOM AND WILL BE CONTROLLED BY AN INTERNAL THERMOSTAT.

GENERAL NOTES:

1. MATERIALS, METHODS AND INSTALLATION SHALL COMPLY WITH THE CONTRACT SPECIFICATIONS AND WITH THE PROVISIONS OF THE 2021 INTERNATIONAL MECHANICAL CODE, 2021 INTERNATIONAL BUILDING CODE, 2021 INTERNATIONAL FIRE CODE AS AMENDED BY THE STATE OF WASHINGTON AND THE LOCAL AUTHORITY HAVING JURISDICTION.
2. THESE PLANS ARE SCHEMATIC AND DO NOT SHOW EXACT ROUTING OR EVERY OFFSET, WHICH MAY BE REQUIRED. THE HVAC CONTRACTOR IS TO COORDINATE WITH ALL OTHER TRADES AND IS TO VERIFY ALL CLEARANCES BEFORE COMMENCING WORK.
3. CONTRACTOR SHALL VERIFY THE DIMENSIONS WITH THE EQUIPMENT MANUFACTURER TO PROVIDE DUCT TRANSITIONS TO HVAC VENTILATORS, FANS, LOUVERS, OR SUPPLY/EXHAUST GRILLES TO MATCH THE INLET/OUTLET DIMENSIONS OF THE EQUIPMENT.
4. PROVIDE EARTHQUAKE RESTRAINT FOR HVAC EQUIPMENT IN ACCORDANCE WITH SMACNA RESTRAINT MANUAL AS REQUIRED BY 2021 INTERNATIONAL BUILDING CODE REQUIREMENTS.
5. CONSTRUCTION, SUPPORTS AND INSTALLATION SHALL BE INSTALLED AND COMPLY WITH THE 2021 INTERNATIONAL MECHANICAL CODE (IMC) AND WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE.
6. ALL DUCTWORK IS CLASSIFIED AS LOW PRESSURE.
7. BALANCING: ALL HVAC SYSTEMS SHALL BE BALANCED BY A LICENSED CONTRACTOR IN ACCORDANCE WITH ACCEPTED ENGINEERING STANDARDS AND SPECIFICATION. AN AIR BARRIER TEST SHALL BE PERFORMED IN ACCORDANCE WITH THE WASHINGTON STATE ENERGY CODE AND ASTM E779.
8. PROVIDE FLEXIBLE DUCT CONNECTIONS ON ALL DUCTWORK CONNECTING TO EQUIPMENT.
9. CONTRACTOR SHALL COORDINATE CEILING EQUIPMENT LOCATIONS WITH ELECTRICAL LIGHTING LAYOUT.
10. BUILDING HVAC DOCUMENTS SUCH AS RECORDS, CALCULATIONS, COMPLIANCE FORMS, AND EQUIPMENT MANUALS SHALL BE SUPPLIED TO THE BUILDING OWNER.

HVAC EQUIPMENT & AIR DEVICE IDENTIFICATIONS



EQUIPMENT

AC	AIR CONDITIONER
BC	BRANCH CONTROLLER
C	CONTROLLER
CU	CONDENSING UNIT
DS	DUCT STAT
EF	EXHAUST FAN
FC	FAN COIL
FS	FLOW SWITCH
HP	HEAT PUMP
HT	HEATER
MD	MOTORIZED DAMPER
SF	SUPPLY FAN
T	THERMOSTAT
VD	VOLUME DAMPER

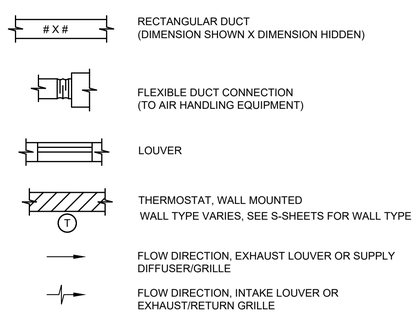
AIR DEVICE

E	EXHAUST GRILLE
LVR	LOUVER
R	RETURN GRILLE
S	SUPPLY DIFFUSER/GRILLE

HVAC ABBREVIATIONS

SYMBOL	DESCRIPTION
AFG	ABOVE FINISHED GRADE
AFF	ABOVE FINISHED FLOOR
BTU	BRITISH TERMAL UNIT
CFM	CUBIC FEET PER MINUTE
CU	CONDENSING UNIT
DH	DEHUMIDIFIER
DN	DOWN
EF	EXHAUST FAN
HT	HEATER
LVR	LOUVER
MCA	MINIMUM CIRCUIT AMPS
OA	OUTISDE AIR
PPD	PINTS PER DAY
SF	SUPPLY FAN
SP	STATIC PRESSURE
SS	STAINLESS STEEL
T	THERMOSTAT
TYP	TYPICAL
WC	WATER COLUMN
WP	WALL PENETRATION

HVAC SYMBOLS



RECTANGULAR DUCT
(DIMENSION SHOWN X DIMENSION HIDDEN)

FLEXIBLE DUCT CONNECTION
(TO AIR HANDLING EQUIPMENT)

LOUVER

THERMOSTAT, WALL MOUNTED
WALL TYPE VARIES, SEE S-SHEETS FOR WALL TYPE

FLOW DIRECTION, EXHAUST LOUVER OR SUPPLY DIFFUSER/GRILLE

FLOW DIRECTION, INTAKE LOUVER OR EXHAUST/RETURN GRILLE

CONTROL SCHEDULE

BUILDING	ROOM NAME	UNIT NO.	TYPE	CONTROLLED EQUIPMENT	MANUFACTURER & MODEL NO.	HEAT SET POINT	COOL SET POINT	VOLTAGE AND PHASE	REMARKS
OPERATIONS BUILDING	ELECTRICAL ROOM	01 T 01	PROGRAMMABLE THERMOSTAT	01 FC 01	MITSUBISHI PAR-40MAAU OR EQUAL	60 °F	90 °F	12 VDC	MOUNT @ 5'-0" AFF.
	PROCESS EQUIPMENT ROOM	01 T 02	PROGRAMMABLE THERMOSTAT	01 EF 01	GREENHECK TEMP/HUMID CONTROLLER OR EQUAL	-	90 °F	12 VDC	MOUNT @ 5'-0" AFF.
	CONTROL ROOM	01 T 03	PROGRAMMABLE THERMOSTAT	01 FC 02	MITSUBISHI PAR-40MAAU OR EQUAL	70 °F	75 °F	12 VDC	MOUNT @ 5'-0" AFF.

FAN SCHEDULE

BUILDING	ROOM NAME	UNIT NO.	TYPE	MANUFACTURER & MODEL NO.	HP, VOLTAGE, AND PHASE	CONTROLS	CFM AND STATIC PRESSURE	REMARKS
OPERATIONS BUILDING	PROCESS EQUIPMENT ROOM	01 EF 01	INLINE EXHAUST FAN	GREENHECK SQ-160-VG OR EQUAL	3/4 HP 115 V 1 Ø	01 T 02	2,800 CFM @ 0.2" WC	PROVIDE THERMAL OVERLOAD, NEMA 4X DISCONNECT, ALUMINUM HOUSING, S.S. FASTENERS, S.S SHAFT, HI-PRO POLYESTER FINISH, & INLET FAN GAURD.
	BATHROOM	01 EF 02	CEILING EXHAUST FAN	PANASONIC FV-0511VKSL2 OR EQUAL	1/15 HP 120 V 1 Ø	ON W/ LIGHT SWITCH PER E-SHEETS	50 CFM @ 0.1" WC	PROVIDE MULTI-SPEED/TIME DELAY PLUG-IN MODULE.

LOUVER SCHEDULE

BUILDING	ROOM NAME	LOUVER NO.	TYPE	MANUFACTURER & MODEL NO.	ROUGH OPENING SIZE (WxH)	MOUNTING HEIGHT	REMARKS
OPERATIONS BUILDING	PROCESS EQUIPMENT ROOM	LVR 1-1	INTAKE LOUVER	GREENHECK ESD-635 OR EQUAL	32" X 32"	BOTTOM 94" AFF	PROVIDE EXTENDED SILL, HYLAR/KYNAR FINISH, INSECT SCREEN, CLIP ANGLES, AND A GRAVITY BACKDRAFT DAMPER.
		LVR 1-2	EXHAUST LOUVER	GREENHECK ESD-635 OR EQUAL	32" X 32"	BOTTOM 94" AFF	PROVIDE EXTENDED SILL, HYLAR/KYNAR FINISH, INSECT SCREEN, CLIP ANGLES, AND A GRAVITY BACKDRAFT DAMPER.
OPERATIONS BUILDING	RESTROOM	LVR 1-3	EXHAUST LOUVER	GREENHECK BVE OR EQUAL	8" X 8"	BOTTOM 156" AFF	

HEATER SCHEDULE

BUILDING	ROOM NAME	UNIT NO.	TYPE	MANUFACTURER & MODEL NO.	KW OUTPUT	CONTROLS	VOLTAGE AND PHASE	MOUTING TYPE	REMARKS
OPERATIONS BUILDING	PROCESS EQUIPMENT ROOM	01 HT 01	UNIT HEATER	QMARK MUH OR EQUAL	3 KW	INTERNAL THERMOSTAT	208 V 1 Ø	WALL BRACKET	PROVIDE INTERNAL THERMOSTAT, INTEGRAL DISCONNECT, MOUNT 9'-0" ABOVE FINISH FLOOR.
	RESTROOM	01 HT 02	WALL HEATER	QMARK AWH OR EQUAL	1.5 KW	INTERNAL THERMOSTAT	120 V 1 Ø	SEMI-RECESSED	

HEAT PUMP SCHEDULE

BUILDING	ROOM NAME	UNIT NO.	TYPE	MANUFACTURER & MODEL NO.	VOLTAGE, PHASE AND MCA	CONTROLS	STANDARD AIRFLOW	HEATING CAPACITY	COOLING CAPACITY	AHRI LISTED EFFICIENCY	REMARKS
OPERATIONS BUILDING	ELECTRICAL ROOM	01 HP 01	OUTDOOR HEAT PUMP	MITSUBISHI PUZ-A18NKA7 OR EQUAL	208 V 1Ø 11 A	01 FC 01	~1,590 CFM	13.6 MBH @ 17 °F OAT	18.0 MBH @ 95 °F OAT	20.2 SEER 9.2 HSPF	PROVIDE R454B REFRIGERANT, WIND BAFFLES, INSULATED LINE SET, INSULATED DRAIN PIPE, LINE HIDE SET, AND 11-GAUGE STAINLESS STEEL WALL BRACKET.
		01 FC 01	WALL MOUNTED FAN COIL	MITSUBISHI PKA-A18LA1 OR EQUAL	208 V 1Ø 1 A	01 T 01	265-455 CFM			20.2 SEER 9.2 HSPF	PROVIDE CONDENSATE PUMP.
	CONTROL ROOM	01 HP 02	OUTDOOR HEAT PUMP	MITSUBISHI PUZ-A12NKA7 OR EQUAL	208 V 1Ø 11 A	01 FC 02	~1,590 CFM	10.6 MBH @ 17 °F OAT	12.0 MBH @ 95 °F OAT	21.3 SEER 10.2 HSPF	PROVIDE R454B REFRIGERANT, WIND BAFFLES, INSULATED LINE SET, INSULATED DRAIN PIPE, LINE HIDE SET, AND 11-GAUGE STAINLESS STEEL WALL BRACKET.
		01 FC 02	WALL MOUNTED FAN COIL	MITSUBISHI PKA-A12LA1 OR EQUAL	208 V 1Ø 1 A	01 T 03	215-385 CFM			21.3 SEER 10.2 HSPF	PROVIDE CONDENSATE PUMP.

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AARON M. PEARSON
STATE OF WASHINGTON
40276
REGISTERED
PROFESSIONAL ENGINEER
10/12/2026

TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

8220 178TH AVENUE COURT SW, LONGBRANCH, WA 98351

No.	DATE	REVISION

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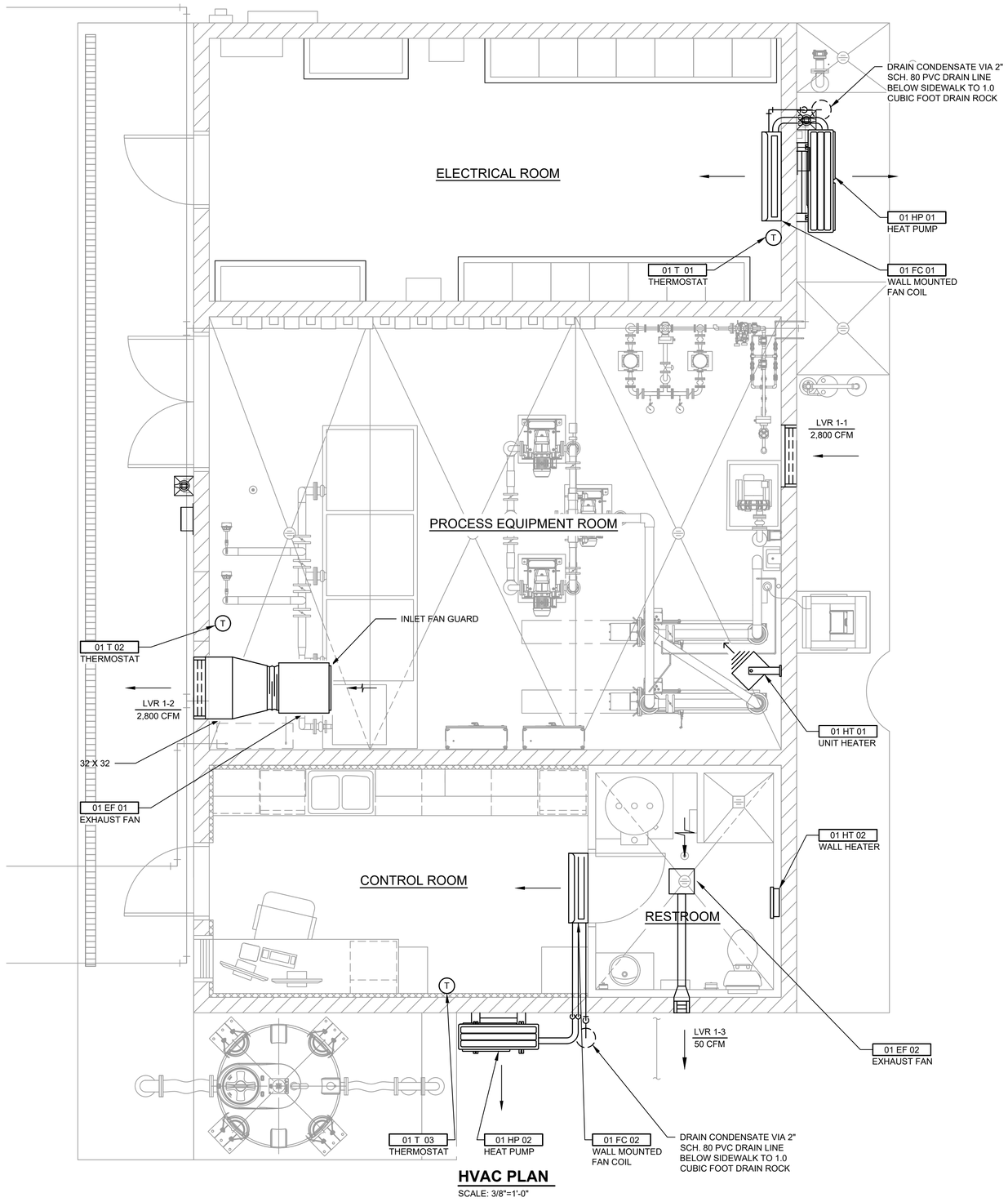
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IF NOT, SCALE ACCORDINGLY

HVAC

HVAC NOTES

DRAWING: **H-1** OF: **1**

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HVAC PLAN

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

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HVAC PLAN & SCHEDULES

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WATER PIPING NOTES

1. ALL PLUMBING WORK SHALL CONFORM WITH THE SPECIFICATIONS AND WITH THE CURRENT EDITION PLUMBING CODE OR SHALL BE APPROVED BY THE LOCAL BUILDING OFFICIAL.
2. INSTALL EXPOSED SHUT OFF VALVE TO ISOLATE ALL PLUMBING FIXTURES.
3. PROVIDE WATER HAMMER ARRESTORS (MINIMUM 12" AIR CHAMBER) AT ALL SINKS AND ALL INSTANT SHUT-OFF VALVES.
4. USE WALL AND CEILING FLANGES AT ALL PENETRATIONS.
5. ALL EXPOSED NON-POTABLE AND PROCESS WATER PIPING INCLUDING HOSE BIBS, SHALL BE LABELED EVERY 3 TO 5 FEET - "DANGER - NON POTABLE WATER - DO NOT DRINK".
6. SEE ADDITIONAL PLUMBING ON MECHANICAL AND GENERAL SHEETS.

DRAINAGE PIPING NOTES

1. ALL PLUMBING WORK SHALL CONFORM WITH THE SPECIFICATIONS AND WITH THE CURRENT EDITION PLUMBING CODE OR SHALL BE APPROVED BY THE LOCAL BUILDING OFFICIAL.
2. ALL BURIED PROCESS DRAINS UNDER SLAB SHALL BE MECHANICAL JOINT DUCTILE IRON PIPE. ALL BURIED DRAINS SERVING FLOOR DRAINS AND OTHER PLUMBING FIXTURES UNDER SLAB SHALL BE CAST IRON SOIL PIPE. MINIMUM SLOPE AT 1/4"/FT. FOR PIPES < 3", AND AT 1/8"/FT. FOR PIPES ≥ 3".
3. ALL BENDS UNDER FLOOR TO BE 45° FITTINGS MAXIMUM.

PLUMBING SYMBOLS & ABBREVIATIONS

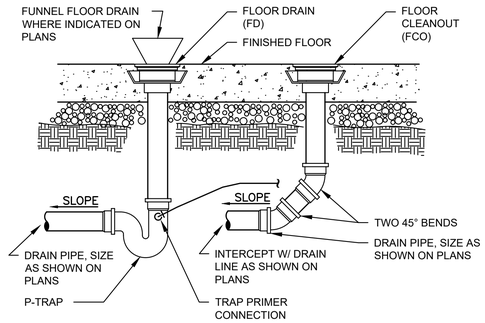
- SHUT OFF VALVE
- UTILITY STATION
- TEE UP
- TEE DOWN
- 90° BEND UP
- 90° BEND DOWN AND UP

DRAINAGE PIPING LEGEND

CI	SEWER, VENT, OR DRAIN PIPE
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
VSTR	VENT STACK THRU ROOF
ED	EQUIPMENT DRAIN

NOTE:

FOR ADDITIONAL ABBREVIATIONS & SYMBOLS SEE CORRESPONDING ELECTRICAL, STRUCTURAL, HVAC, ARCHITECTURAL, & MECHANICAL SHEETS.



1 TYP **FLOOR DRAIN AND CLEANOUT DETAIL**

NOT TO SCALE

DOMESTIC WATER HEATER SCHEDULE

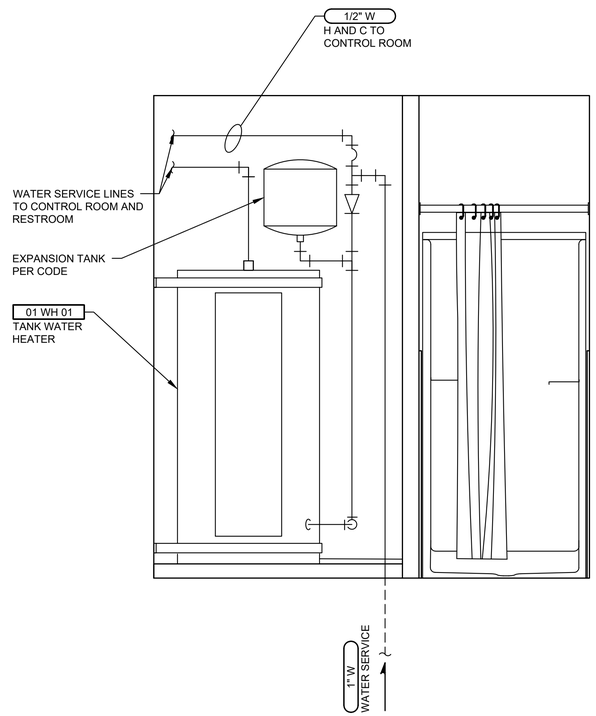
BUILDING	LOCATION	ID. NO.	TYPE	MFR & MODEL NO.	ELECTRICAL			MOUNTING	CAPACITY	REMARKS
					KW	VOLTS	PHASE			
OPERATIONS BUILDING	CONTROL ROOM	08 WH 01	TANK	A.O. SMITH DRE-120 OR EQUAL	9	480	3	FLOOR		PROVIDE SEISMIC WALL STRAPS, INSULATED BASE, 8 GAL EXPANSION TANK, AND T&P RELIEF VALVE

DRAINAGE FIXTURE COUNT (UPC 702.1)

FIXTURE TYPE	MIN. SIZE TRAP & SIZE TRAP ARM (INCHES)	TOTAL NUMBER OF EACH FIXTURES	WATER SUPPLY FIXTURE UNITS
DISHWASHER	1 1/2	1	1.5
FLOOR DRAIN	2	9	18.0
SHOWER	2	2	4.0
LAVATORY	1	1	1.0
WASHUP SINK	1 1/2	1	2.0
WATER CLOSET	3	1	3.0
		TOTAL:	**29.5**

WATER SUPPLY FIXTURE COUNT (UPC 610.3)

FIXTURE TYPE	MIN. FIXTURE BRANCH SIZE (INCHES)	TOTAL NUMBER OF EACH FIXTURES	WATER SUPPLY FIXTURE UNITS
DISHWASHER	1/2	1	1.5
LAVATORY	1/2	1	1.0
WASHUP SINK	1/2	1	1.5
SHOWER	1/2	2	4.0
WATER CLOSET	1/2	1	2.5
		TOTAL:	**10.5**



A P1-1 **PLUMBING ELEVATION**

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

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AARON M. PEARSON — STATE OF WASHINGTON — 40276 — REGISTERED PROFESSIONAL ENGINEER — 10/12/2026

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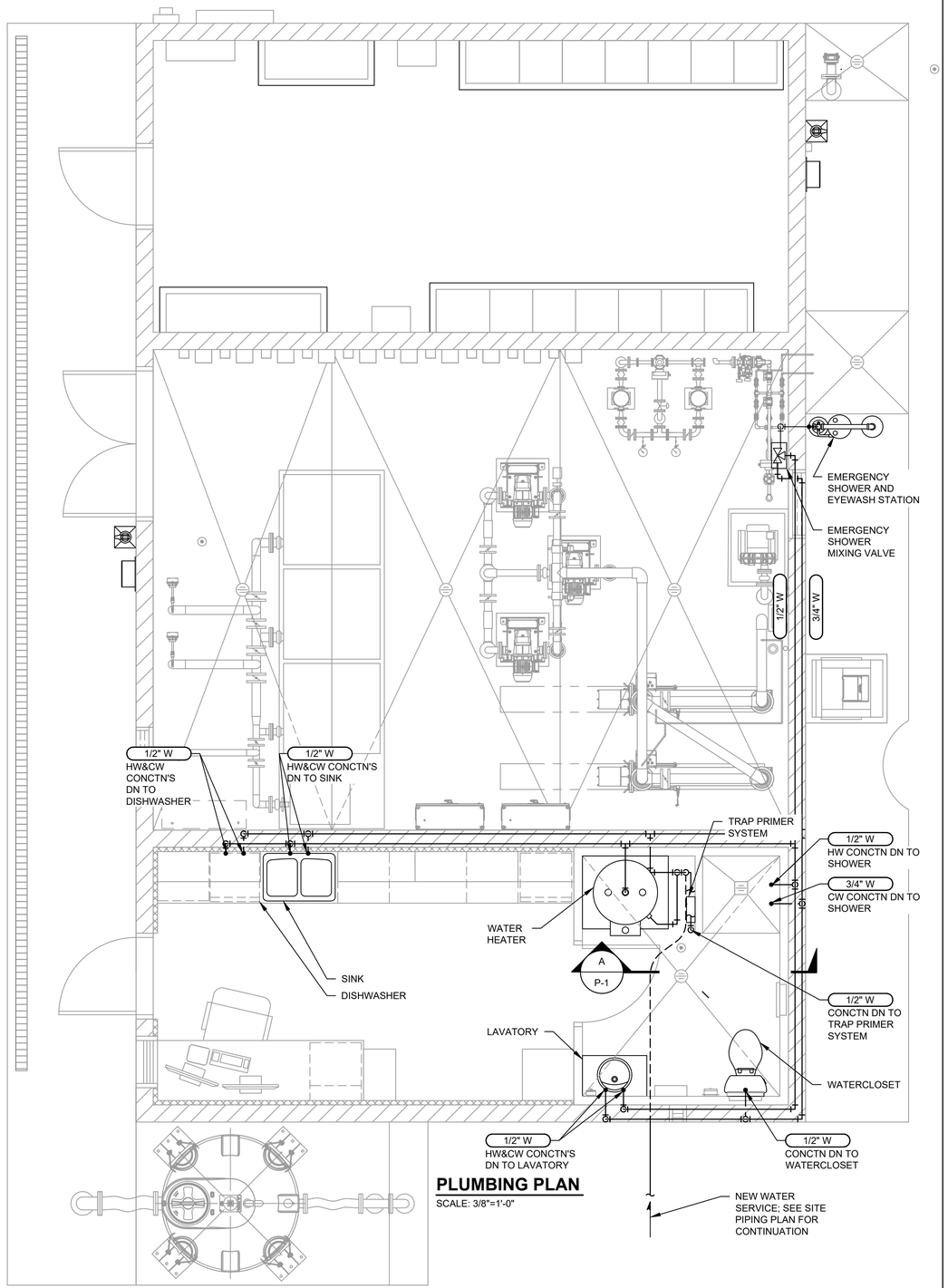
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PLUMBING

PLUMBING NOTES & DETAILS

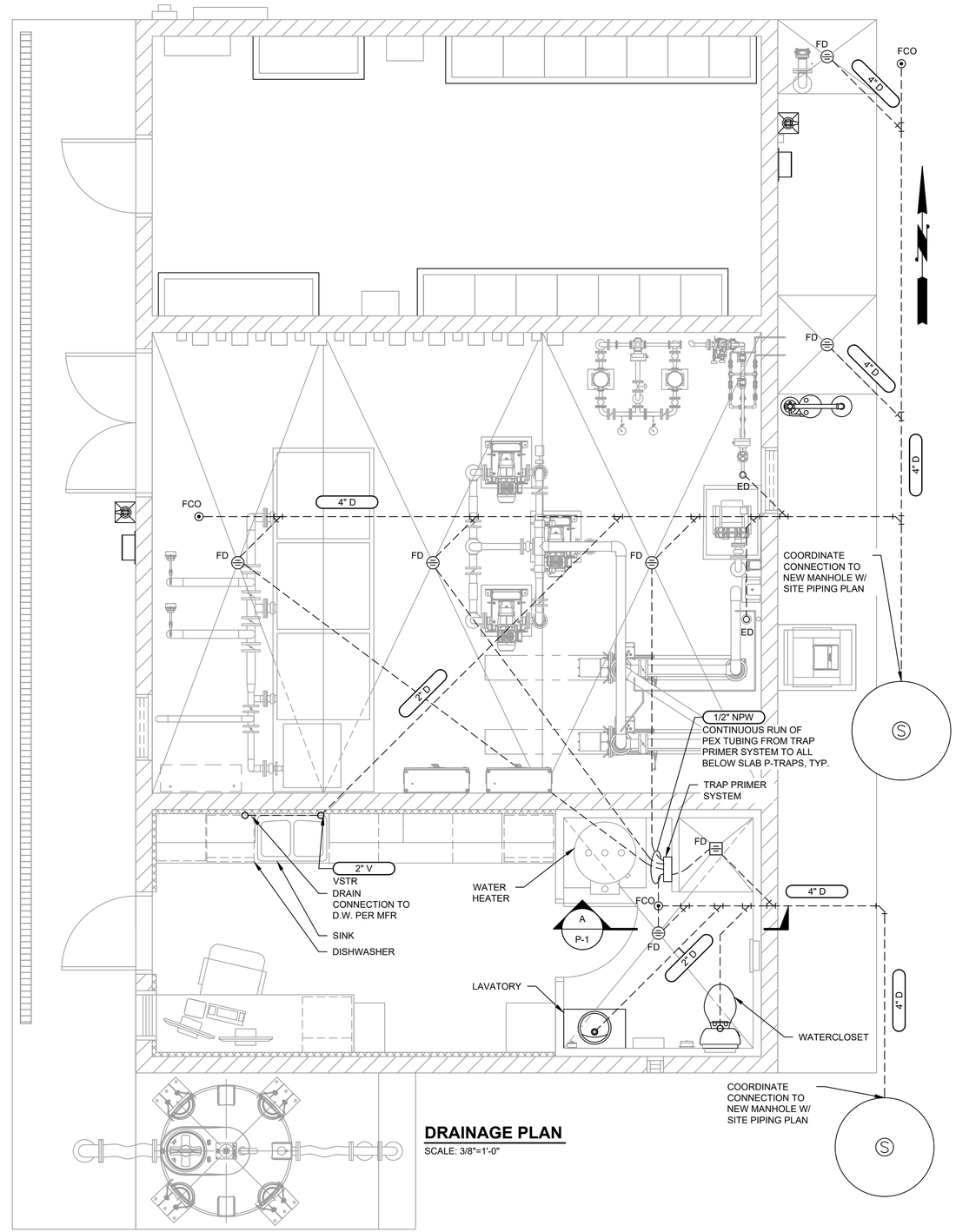
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PLUMBING PLAN

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



DRAINAGE PLAN

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

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PLUMBING

PLUMBING PLAN

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GENERAL STRUCTURAL NOTES

GENERAL
THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SITE CONDITIONS BEFORE STARTING WORK. THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCY. USE DETAIL MARKED "TYPICAL" WHEREVER APPLICABLE. CHANGES, OMISSIONS OR SUBSTITUTIONS ARE NOT PERMITTED WITHOUT WRITTEN APPROVAL OF THE ENGINEER. REFER TO THE SPECIFICATIONS FOR FURTHER REQUIREMENTS. DO NOT SCALE THE DRAWINGS.

ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE 2021 EDITION OF THE INTERNATIONAL BUILDING CODE.

THE DESIGN, ADEQUACY AND SAFETY OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, ETC., IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR, AND HAS NOT BEEN CONSIDERED BY THE ENGINEER OF RECORD. THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE PRIOR TO ITS COMPLETION. THE CONTRACTOR SHALL PROVIDE THE NECESSARY BRACING TO PROVIDE STABILITY PRIOR TO THE COMPLETION OF THE STRUCTURE.

THE GENERAL NOTES APPLY TO ALL STRUCTURES UNLESS NOTED OTHERWISE (U.N.O.). LOCATION AND SIZE OF ANCHOR BOLTS FOR SPECIFIC EQUIPMENT SHALL BE SPECIFIED BY THE VENDOR. CONTRACTOR SHALL COORDINATE LOCATIONS OF STRUCTURAL OPENINGS, PENETRATIONS AND EMBEDDED ITEMS WITH THE MECHANICAL, ARCHITECTURAL, ELECTRICAL, PLUMBING AND VENTILATION SECTIONS OF THE DRAWINGS AND WITH SUPPLIERS AND SUBCONTRACTORS AS MAY BE REQUIRED.

SPECIAL INSPECTION & TESTING
SPECIAL INSPECTIONS SHALL MEET THE REQUIREMENTS OF IBC CHAPTER 17.
OBSERVE THE WORK ASSIGNED FOR CONFORMANCE WITH APPROVED DRAWINGS AND SPECIFICATIONS.

FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL AND ENGINEER. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION; THEN, IF NOT CORRECTED, TO THE BUILDING OFFICIAL AND ENGINEER. SUBMIT A FINAL REPORT STATING THE WORK WAS IN CONFORMANCE WITH THE APPROVED DRAWINGS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF IBC.

SPECIAL INSPECTION REQUIRED:
STEEL: IN ACCORDANCE WITH SECTION 1705.2 AND TABLE 1705.2.3
CONCRETE: IN ACCORDANCE WITH SECTION 1705.3 AND TABLE 1705.3
MASONRY: IN ACCORDANCE WITH SECTION 1705.4
WOOD: IN ACCORDANCE WITH SECTION 1705.5
SOIL: IN ACCORDANCE WITH SECTION 1705.6 AND TABLE 1705.6

ALL WATER CONTAINMENT STRUCTURES SHALL BE TESTED FOR WATER TIGHTNESS. TESTING OF WATER CONTAINMENT STRUCTURES FOR WATER TIGHTNESS SHALL BE PERFORMED IN COMPLIANCE WITH ACI 350.1. THESE STRUCTURES INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:

HEADWORKS
PROCESS TANKS

SHOP DRAWINGS
SHOP DRAWINGS, WHERE REQUIRED, SHALL BE CHECKED AND APPROVED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTING FOR ENGINEER REVIEW. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW OF DESIGN INTENT, PRIOR TO FABRICATION. GENERAL CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND COORDINATION OF DIMENSIONS AND DETAILS FOR EACH SUBCONTRACTOR.

DESIGN LOADS
ROOF SNOW LOAD:
DESIGN SNOW LOAD,Ps..... 25 PSF
GROUND SNOW LOAD,Pg..... 25 PSF
SNOW LOAD IMPORTANCE FACTOR, Is..... III

ROOF LIVE LOAD:, Lr..... 20 PSF
FLOOR LIVE LOAD:, Lf..... 125 PSF

WIND DESIGN DATA:
ULTIMATE WIND SPEED (3-SECOND GUST), Vult..... 103 MPH
NOMINAL WIND SPEED, Vasd..... 79.8 MPH
RISK CATEGORY..... III
WIND EXPOSURE..... B

EARTHQUAKE DESIGN DATA
MAPPED SPECTRAL RESPONSE ACCELERATIONS
Ss..... 1.438 g
S1..... 0.514 g
SITE CLASS..... D
SPECTRAL RESPONSE COEFFICIENT
Sds..... 0.959 g
Sd1..... 0.617 g
SEISMIC IMPORTANCE FACTOR, Ie..... 1.0
RISK CATEGORY..... III
SEISMIC DESIGN CATEGORY..... D

FOUNDATION DATA PER GEOTECHNICAL REPORT BY ASSOCIATED EARTH SCIENCE, INC. DATED MAY 20, 2024.

ALLOWABLE BEARING PRESSURE:.....2500 PSF (OPERATIONS BUILDING)
4000 PSF (HEADWORKS AND PROCESS TANKS)

ABOVE ARE ASSUMED PER DATA PROVIDED,
CONTRACTOR MUST VERIFY IN FIELD.

NO FOOTING SHALL BEAR HIGHER THAN 1 VERTICAL TO 1.5 HORIZONTAL SLOPE ABOVE ANY EXCAVATION, EXISTING OR PLANNED. CONTRACTOR SHALL PROVIDE TEMPORARY SHORING TO PREVENT MOVEMENT OF WALLS IF BACKFILL IS PLACED BEFORE FLOOR SYSTEM IS IN PLACE. AFTER STRIPPING, PLANNED EXCAVATION, AND ANY REQUIRED OVEREXCAVATION HAVE BEEN PERFORMED TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER, THE UPPER 12 INCHES OF EXPOSED GROUND IN AREAS TO RECEIVE FILL SHALL BE RECOMPACTED TO A FIRM UNYIELDING CONDITION AS DETERMINED BY THE GEOTECHNICAL ENGINEER. IF THE SUBGRADE CONTAINS SILTY SOILS AND TOO MUCH MOISTURE, ADEQUATE RECOMPACTION MAY BE DIFFICULT OR IMPOSSIBLE TO OBTAIN AND SHOULD PROBABLY NOT BE ATTEMPTED. IN LIEU OF RECOMPACTION, THE AREA TO RECEIVE FILL SHALL BE BLANKETED WITH WASHED ROCK OR QUARRY SPALLS TO ACT AS A CAPILLARY BREAK BETWEEN THE NEW FILL AND THE WET SUBGRADE. WHERE THE EXPOSED GROUND REMAINS SOFT AND FURTHER OVEREXCAVATION IS IMPRACTICAL, PLACEMENT OF AN ENGINEERING STABILIZATION FABRIC WILL BE NECESSARY TO PREVENT CONTAMINATION OF THE FREE-DRAINING LAYER BY SILT MIGRATION FROM BELOW.

AFTER RECOMPACTION OF THE EXPOSED GROUND IS TESTED AND APPROVED, OR A FREE-DRAINING ROCK COURSE IS LAID, STRUCTURAL FILL SHALL BE PLACED TO ATTAIN DESIRED GRADES. STRUCTURAL FILL IS DEFINED AS NON-ORGANIC SOIL, ACCEPTABLE TO THE GEOTECHINCAL ENGINEER, PLACED IN MAXIMUM 8-INCH LOOSE LIFTS, WITH EACH LIFT BEING COMPACTED TO 95 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DENSITY USING ASTM D-1557 AS THE STANDARD. FOR ON-SITE UTILITY TRENCH BACKFILL, INCLUDING THE BACKFILL RESULTING FROM THE REMOVAL OF EXISTING UTILITY LINES, STRUCTURAL FILL STANDARD DESCRIBED ABOVE SHALL BE USED.

TANKS FOUNDATION ARE ALLOWED TO BE PLACED DIRECTLY UPON UNDISTURBED NATIVE DEPOSITS WHICH CONSIST OF DENSE TO VERY DENSE PRE-FRASER NON-GLACIAL DEPOSITS.

WALL BACKFILL SHALL CONSIST OF IMPORTED SAND AND GRAVEL COMPACTED TO 90 TO 95 PERCENT OF ASTM D-1557. HIGHER OR LOWER DEGREE OF COMPACTION IS NOT ACCEPTABLE AND COMPACTION LEVEL SHALL BE TESTED BY ASSOCIATED EARTH SCIENCE FIRM DURING PLACEMENT.

MASONRY
SPECIFIED COMPRESSIVE STRENGTH OF MASONRY ASSEMBLY: f'm=1900 PSI.
CONCRETE MASONRY UNITS: ASTM C90, GRADE N-TYPE I, MEDIUM WEIGHT RUNNING BOND.
MORTAR: ASTM C270, TYPE S, MIN. COMPRESSIVE STRENGTH OF 1800 PSI AT 28 DAYS. GROUT: ASTM C476 WITH A MIN. COMPRESSIVE STRENGTH OF 2000 PSI AT 28 DAYS. FILL ALL CELLS IN LIFTS NOT EXCEEDING 5'-4" IN HEIGHT. ALL REINFORCEMENT SHALL BE IN PLACE PRIOR TO GROUTING WITH VERTICAL BARS HELD AT TOP, BOTTOM AND 192 DIAMETERS MAXIMUM ON CENTERS.
CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR MASONRY WALLS, AS REQUIRED, UNTIL CONNECTIONS TO FLOOR AND/OR ROOF DIAPHRAGMS ARE COMPLETED.

CAST-IN-PLACE CONCRETE
CONCRETE SHALL HAVE THE FOLLOWING PROPERTIES:
28-DAY STRENGTH f'c=4,000 PSI
AIR ENTRAINMENT: 5%-7%
MAXIMUM SLUMP: 3" FOR SLABS FOOTINGS, 4" FOR WALLS, COLUMNS AND BEAMS. CONSTRUCTION TO BE IN ACCORDANCE WITH ACI 318.

SUBMIT MIX DESIGN FOR REVIEW AND PROVIDE NOT LESS THAN 6 SACKS OF CEMENT PER CUBIC YARD FOR ALL CONCRETE WITH MAXIMUM W/C=0.45.

REINFORCING STEEL
WELDED WIRE FABRIC (W.W.F.): ASTM A82 AND A185
DEFORMED BARS: ASTM A615, GRADE 60 (GRADE 40 FOR #3).
UNLESS OTHERWISE NOTED ON THESE DRAWINGS, MINIMUM CONCRETE COVER FOR REINFORCING BARS SHALL BE AS FOLLOWS:
CONCRETE CAST AGAINST SOIL=3".
FORMED CONCRETE AGAINST SOIL=2".
WALLS, COLUMNS AND BEAMS EXPOSED TO WATER, SEWAGE & WEATHER=2".
WALLS, COLUMNS AND BEAMS DRY CONDITION=1 1/2".

PROVIDE 2-#5 MIN. U.N.O. TRIM BARS AROUND ALL OPENINGS IN CONCRETE WALLS OR SLAB EXTENDING 2'-6" PAST CORNERS, TYP. AT TIME OF CONCRETE PLACEMENT, REINFORCING SHALL BE FREE OF MUD, OIL, OR OTHER NONMETALLIC COATINGS THAT MAY DECREASE BOND.

WELDING OF REINFORCING BARS SHALL CONFORM TO ANSI/AWS D1.4.
WHERE PERMITTED, LOW HYDROGEN WELDING RODS SHALL BE USED FOR ALL WELDING OF REINFORCING BARS. SPECIAL INSPECTION IS REQUIRED FOR ALL FIELD WELDING.

SUBMIT SHOP DRAWINGS OF REINFORCING STEEL FOR REVIEW BY THE ENGINEER PRIOR TO FABRICATION. REINFORCING SHALL BE DETAILED IN ACCORDANCE WITH ACI 315 AND 318 (LATEST EDITION).

STRUCTURAL STEEL AND MISCELLANEOUS METALS
"W" SHAPES: ASTM A992, Fy=50 KSI.
CHANNELS, ANGLES, PLATES, AND BARS: ASTM A36, Fy=36 KSI.
PIPE: ASTM A53 OR A501, Fy=35 KSI MINIMUM.
TUBING: ASTM A500, GRADE B, Fy=46 KSI.

ALL BOLTS FOR CONNECTIONS IN SUBMERGED CONDITION SHALL BE: ASTM F593C OR F593D STAINLESS STEEL (SS) BOLTS. ALL OTHERS SHALL BE GALVANIZED ASTM F3125 GRADE A325 BOLTS HIGH STRENGTH BOLTS (H.S.B.), U.N.O. AS ASTM A307 MACHINE BOLTS (M.B.). WHERE HIGH STRENGTH BOLTS ARE USED, THEY SHALL BE INSTALLED WITH LOAD INDICATOR DEVICES (LOAD INDICATOR WASHERS OR SNAP-OFF HEADS).

ADHESIVE ANCHORS: HILTI HIT-RE 500 V3 OR APPROVED EQUAL, U.N.O. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. ADHESIVE ANCHORS SHALL NOT BE INSTALLED IN FRESH CONCRETE UNTIL THE CONCRETE HAS REACHED A MINIMUM AGE OF 21 DAYS.

HEADED ANCHOR STUDS (H.A.S.): ASTM A108, Fy=50 KSI, END WELDED PER MANUFACTURER'S RECOMMENDATIONS.
ALL ANCHOR BOLTS AND THREADED RODS: ASTM F1554, U.N.O., ASTM A193 GRADE B8 WHERE STAINLESS STEEL IS NOTED. ALL ANCHOR BOLTS MUST BE ACCURATELY PLACED IN THEIR FINAL LOCATION PRIOR TO POURING CONCRETE, "WET STICKING" OF ANCHOR BOLTS IS NOT ALLOWED.

WELDING ELECTRODES OR WIRES: AWS A5.1 OR A5.5, E70XX; AWS A5.17, E70S-X; AWS A5.20, E7XT-X.
FOR ALL SHOP WELDS AND FIELD WELDS OF ALL LATERAL RESISTING ELEMENTS, ELECTRODES SHALL BE E7O WITH A MINIMUM SPECIFIED CVN OF 20 FT-LBS AT -20 DEGREES FAHRENHEIT. ALL WELDS SHALL BE 3/16" MINIMUM U.N.O.

ERECTION AND FABRICATION IN ACCORDANCE WITH AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS." WELDING SHALL CONFORM TO AWS "STRUCTURAL WELDING CODE - STEEL". ALL WELDING SHALL BE PERFORMED BY AWS/WABO CERTIFIED WELDERS.

ALL COLUMNS AND BEAMS TO BE FROM UNSPLICED LENGTHS U.N.O. ON THE DRAWINGS. SUBMIT SHOP DRAWINGS SHOWING SIZES, DIMENSIONS AND REQUIRED CONNECTION DETAILS FOR REVIEW BY THE ENGINEER PRIOR TO FABRICATION.

ALL STEEL SHALL BE HOT-DIP GALVANIZED.

WOOD
ROOF SHEATHING SHALL BE 5/8" (NOMINAL) MIN. U.N.O. APA RATED SHEATHING 24/0, EXPOSURE 1, SIZED FOR SPACING. INSTALL PANELS WITH 1/4" SPACING AT END JOINTS AND 1/8" SPACING AT EDGE JOINTS MIN. INSTALL PLYWOOD SHEATHING WITH FACE GRAIN PERPENDICULAR TO SUPPORTS.

SAWN LUMBER: HEM-FIR #1 OR BETTER, U.N.O. WWPA GRADING RULES. ALL DIMENSIONS NOTED ARE NOMINAL. WOOD BEARING ON OR WITHIN 1" OF CONCRETE OR CMU OR WITHIN 6" OF EARTH SHALL BE TREATED WITH AN APPROVED PRESERVATIVE. ALL NAILS ARE TO BE "COMMON." ALL NAILS IN TREATED TIMBER SHALL BE GALVANIZED. ALL FRAMING CONNECTORS NOTED ARE PER SIMPSON STRONG TIE COMPANY INC. OR ENGINEER APPROVED EQUAL. SEE MANUFACTURER'S REQUIREMENTS.

TREATED LUMBER SHALL BE BRANDED WITH A QUALITY CONTROL AGENCY MARK BY AMERICAN WOOD PROTECTION ASSOCIATION.

FRAMING ANCHORS AND CONNECTORS: SIMPSON OR APPROVED EQUAL AS INDICATED ON DRAWINGS. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. FOR NAILING NOT SHOWN ON DRAWINGS, USE IBC NAILING SCHEDULE, TABLE NO. 2304.10.1. ALL WOOD BEARING ON CONCRETE OR MASONRY, IF LESS THAN 4'-0" ABOVE GRADE, SHALL BE PRESSURE TREATED DOUGLAS FIR. STRUCTURAL MEMBERS SHALL NOT BE CUT FOR PIPES, ETC., UNLESS SPECIFICALLY NOTED OR DETAILED.

PREFABRICATED WOOD TRUSSES
ROOF TRUSSES SHALL BE DESIGNED BY THE CERTIFIED MANUFACTURER FOR THE SPANS AND CONDITIONS SHOWN ON THE DRAWINGS AND THE LOADS LISTED BELOW.
MAXIMUM TRUSS SPACING: 24" O.C.

TRUSS LOADING UNLESS NOTED OTHERWISE ON DRAWINGS:
TOP CHORD LIVE LOAD=25 PSF.
TOP CHORD DEAD LOAD=5 PSF.
TOP CHORD UPLIFT LOAD=16 PSF.
BOTTOM CHORD LIVE LOAD=10 PSF.
BOTTOM CHORD DEAD LOAD=10 PSF.
PER IBC, UNINHABITABLE ATTICS SHALL BE DESIGNED FOR A LIVE LOAD OF 10 PSF.
ADDITIONAL LIVE LOAD: SNOW LOAD DUE TO DRIFTING SHALL BE INCLUDED AS SPECIFIED ON THE DRAWINGS.

TRUSSES TO BE FABRICATED BY A CERTIFIED MEMBER OF THE TRUSS PLATE INSTITUTE. DESIGN, FABRICATION AND ERECTION TO CONFORM TO THE TRUSS PLATE INSTITUTE STANDARDS. CONNECTOR PLATES SHALL BE ICC APPROVED WITH A MINIMUM SIZE OF 3"x5". ALL CHORD MEMBERS SHALL HAVE LUMBER GRADE STAMPS; ALL WEB MEMBERS SHALL HAVE GRADE STAMPS OR ALL WEB MEMBERS, FOR A GIVEN TRUSS, SHALL BE MADE FORM THE SAME LUMBER GRADE WITH AT LEAST 50% OF THE WEB MEMBERS BEARING A GRADE STAMP. TRUSS DESIGNS AND ERECTION PLANS SHALL BE BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF WASHINGTON. ERECTION PLANS SHALL SHOW TRUSS SPACING, TRUSS MARK NUMBERS (CORRESPONDING TO THE DESIGN CALCULATIONS), CONCENTRATED LOADS, PERMANENT INDIVIDUAL TRUSS MEMBER RESTRAINT PER IBC SECTION 2303.4.1.2 AS REQUIRED BY THE TRUSS DESIGN AND ERECTION BRACING. SHOP DRAWING SHALL INCLUDE, FOR EACH TYPE OF TRUSS, DIMENSIONS AND CONFIGURATIONS, NOMINAL LUMBER SIZE AND GRADE, SPECIFICATIONS FOR CONNECTOR PLATE USED, SIZE AND LOCATION OF EACH CONNECTOR AT EACH JOINT AND AMOUNT OF CAMBER IF REQUIRED. DESIGN CALCULATIONS, SHOP DRAWINGS AND ERECTION PLANS SHALL BE SUBMITTED FOR REVIEW BY THE ENGINEER PRIOR TO FABRICATION.

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21019150
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER
09/04/2026

TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

8220 178TH AVENUE COURT SW,
LONGBRANCH, WA 98351

No.	DATE	REVISION

ISSUED FOR:

BID SET

ISSUE DATE:	SEPTEMBER 2026
APPROVED BY:	AQ
CHECKED BY:	ZK
DRAWN BY:	RAH
DESIGNER:	ZK
G & O JOB NO.:	22848.01
FILE:	S_STD.DWG

0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

STRUCTURAL

GENERAL STRUCTURAL NOTES

DRAWING: **S-1** OF: **4**

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SPECIAL INSPECTION SCHEDULE

VERIFICATION AND INSPECTION	CI	PI	REMARKS/REFERENCES
CONCRETE:			
REINFORCING STEEL INCLUDING PLACEMENT	-	X	ACI 318: CH 20, 25.2, 25.3, 26.6.1-26.6.3
ANCHOR RODS, EMBEDDED BOLTS AND INSERTS	X	-	PRIOR TO AND DURING PLACEMENT OF CONCRETE
USE OF REQUIRED DESIGN MIX	-	X	ACI 318: CH. 19, 26.4.3, 26.4.4
CONCRETE SLUMP, AIR CONTENT, TEMPERATURE AND TEST SPECIMENS	X	-	WHILE MAKING SPECIMENS FOR STRENGTH TESTS
CONCRETE AND SHOTCRETE PLACEMENT	X	-	ACI 318: 26.5
CONCRETE CURING	-	X	ACI 318: 26.5.3-26.5.5
CONCRETE FORMWORK FOR SHAPE, LOCATIONS AND DIMENSIONS	-	X	ACI 318: 26.11.1.2(6)
MASONRY:			
PROVISIONS OF CONSTRUCTION DOCUMENTS AND SUBMITTALS	-	X	
VERIFICATION OF F'm and F'aac	-	X	PRIOR TO CONSTRUCTION
SLUMP FLOW AND VSI	X	-	
SITE-PREPARED MORTAR AND MORTAR JOINTS	-	X	BEGINS & PRIOR CONSTRUCTION
LOCATION OF REINFORCEMENT, CONNECTORS, AND ANCHORAGES	-	X	AS MASONRY CONSTRUCTION BEGINS
SIZE AND LOCATION OF STRUCTURAL ELEMENTS	-	X	DURING CONSTRUCTION
ANCHOR TYPE, SIZE AND LOCATION	-	X	DURING CONSTRUCTION
SIZE, GRADE AND TYPE OF REINFORCEMENT, BOLTS AND ANCHORAGES	-	X	DURING/PRIOR CONSTRUCTION
HOT/COLD WEATHER CONSTRUCTION	-	X	DURING CONSTRUCTION
GROUT SPACE	-	X	PRIOR TO GROUTING
STEEL:			
MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS AND WASHERS:			
MANUFACTURER'S CERTIFICATE	-	X	
INSPECTION OF HIGH-STRENGTH BOLTING:	-	X	AISC 360, SECTION N5.6
MATERIAL VERIFICATION OF STRUCTURAL STEEL AND COLD-FORMED STEEL DECK:	-	X	
IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS	-	X	AISC 360, N5.7
INSPECTION OF WELDING:			SHOP AND FIELD
COMPLETE AND PARTIAL PENETRATION GROOVE WELDS	X	-	AWS D1.1
MULTIPASS, SINGLE-PASS FILLET WELDS > 5/16", PLUG AND SLOT WELDS	X	-	AWS D1.1
SINGLE-PASS FILLET WELDS < 5/16", FLOOR AND ROOF DECK WELDS	-	X	AWS D1.3
REINFORCING STEEL	X	-	AWS D1.4, ACI 318: SECTION 26.6.4
SOILS:			
VERIFY DESIGN BEARING CAPACITY	-	X	
VERIFY EXCAVATIONS	-	X	
CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	-	X	
USE OF MATERIALS, DENSITIES AND LIFT THICKNESSES	X	-	DURING PLACEMENT AND COMPACTION
OBSERVE SUBGRADE AND SITE PREPARED PROPERLY	-	X	PRIOR TO PLACEMENT OF COMPACTED FILL
WOOD:			
TYPE AND SPACING OF STRUCTURAL PANEL NAILING	-	X	IBC 1705.11.3
TYPE AND INSTALLATION OF TRUSS SEISMIC TIES	-	X	

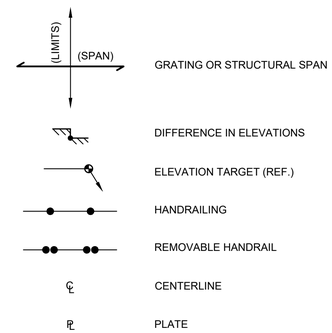
INSPECTION SCHEDULE NOTES

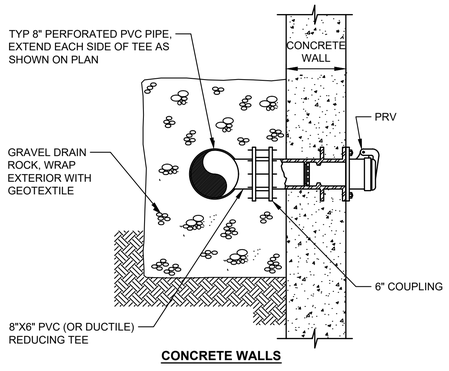
1. ITEMS MARKED WITH AN "X" REQUIRE INSPECTION BY A SPECIAL INSPECTOR APPROVED BY THE BUILDING OFFICIAL.
2. ITEMS MARKED "NA" ARE NOT APPLICABLE TO THIS PROJECT.
3. CI = CONTINUOUS INSPECTION DURING PROGRESS OF WORK BY SPECIAL INSPECTOR.
4. PI = PERIODIC INSPECTION BY SPECIAL INSPECTOR AS REQUIRED TO CONFIRM CONFORMANCE OF WORK.
5. TESTING AND INSPECTION REPORTS SHALL BE SUBMITTED TO THE ENGINEER, BUILDING OFFICIAL AND CONTRACTOR.
6. OWNER WILL CONTRACT FOR SPECIAL INSPECTION SERVICES.

SUPPLEMENTAL STRUCTURAL ABBREVIATIONS:

ABV	ABOVE	ES	EACH SIDE	PSL	PARALLEL STRAND LUMBER
AFF	ABOVE FINISH FLOOR	EXIST	EXISTING MEMBER	PT	PRESSURE TREAT(ED)
ADD'L	ADDITIONAL	EXT	EXTERIOR	P/T	POST TENSIONED
ADJ	ADJACENT	FFE	FINISHED FLOOR ELEVATION	QTY	QUANTITY
AL	ALUMINUM	FN	FACE NAIL	REF	REFERENCE
APPRX	APPROXIMATE	FND	FOUNDATION	REINF	REINFORCEMENT
ARCH	ARCHITECTURAL	FO	FACE OF	SHT	SHEET
@	AT	FRM'G	FRAMING	SHTG	SHEATHING
BEL	BELOW	FS	FAR SIDE	SIM	SIMILAR
BF	BRACED FRAME	FTG	FOOTING	SKW	SKEW(ED)
BM	BEAM	GA	GAUGE	SPC	SPACING
BN	BOUNDRY NAIL	GB	GRADE BEAM	SS	STAINLESS STEEL
BNDRY	BOUNDRY	GLB	GLUE-LAMINATED BEAM	STGR	STAGGER
BO	BOTTOM OF	HAS	HEADER ANCHOR STUDS	STIFF	STIFFENER
BOS	BOTTOM OF SLAB	HDR	HEADER	STIRR	STIRRUP
BOT	BOTTOM	HF	HEM-FIR	STRUC	STRUCTURE(AL)
BRDG	BRIDGE(ING)	HGR	HANGER	SYM	SYMMETRICAL
BRG	BEARING	HSB	HIGH STRENGTH BOLT (A325 UNO)	T	TOP
CAM	CAMBER(ED)	HSS	HOLLOW STRUCTURAL STEEL	T&G	TONGUE AND GROOVE
CANT	CANTILEVER(ED)	IBC	INTERNATIONAL BUILDING CODE	TMPRY	TEMPORARY
CDF	CONTROLLED DENSITY FILL	IF	INSIDE FACE	TN	TOE NAIL
CG	CENTER OF GRAVITY	INT	INTERIOR	TO	TOP OF
CIP	CAST IN PLACE	JST	JOIST	TOS	TOP OF SLAB
CJ	CONTROL JOINT	K	KIPS (1000 POUNDS)	TRANS	TRANSVERSE
CJP	COMPLETE JOINT PENETRATION	LAT	LATERAL	TYP	TYPICAL
COL	COLUMN	LDGR	LEDGER	UNO	UNLESS NOTED OTHERWISE
CONST	CONSTRUCTION	LLH	LONG LEG HORIZONTAL	VFY	VERIFY
CONT	CONTINUOUS	LLV	LONG LEG VERTICAL	WHS	WELDED HEADED STUD
CTSK	COUNTERSINK	LS	LAG SCREW	WP	WORK POINT
D	DEPTH	LSL	LAMINATED STRAND LUMBER	WS	WESTERN SPECIES
d	PENNY (NAILS)	LT WT	LIGHT WEIGHT	WTS	WELDED THREADED STUD
DBL	DOUBLE	LVL	LAMINATED VENEER LUMBER	X-STG	EXTRA STRONG
DF	DOUGLAS FIR	MAS	MASONRY	XX-STG	DOUBLE EXTRA STRONG
DIAG	DIAGONAL	MAT'L	MATERIAL		
DIAPH	DIAPHRAGM	MB	MACHINE BOLT (A307)		
do	DITTO (DO OVER)	MFR	MANUFACTURER		
DWG	DRAWING	MRF	MOMENT RESISTING FRAME		
DWL	DOWEL	MTL	METAL		
EA	EACH	(N)	NEW MEMBER		
EF	EACH FACE	NS	NEAR SIDE		
EJ	EXPANSION JOINT	OH	OVERHANG		
EMBD	EMBED(MENT)	ORNT	ORIENTATE (ION)		
EN	EDGE NAIL	PAR	PARALLEL		
ENG	ENGINEER	P/C	PRECAST CONCRETE		
EQ	EQUAL	PERP	PERPENDICULAR		

STRUCTURAL LEGEND

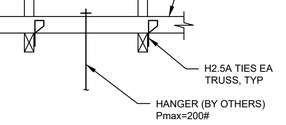




CONCRETE WALLS

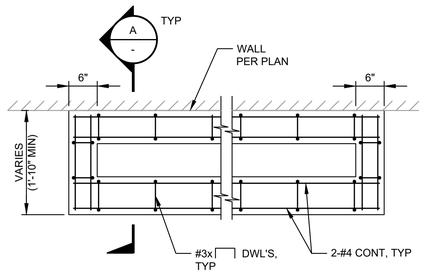
1 TYP — TYP HYDROSTATIC PRESSURE RELIEF VALVE (PRV) DETAIL

NOT TO SCALE



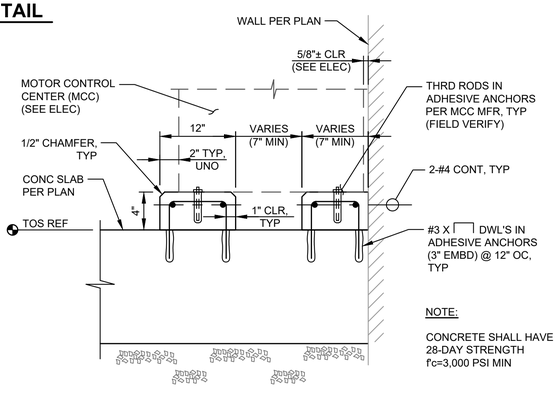
2 TYP — TYP MECHANICAL SUPPORT WOOD TRUSS

NOT TO SCALE



REINFORCEMENT PLACEMENT PLAN

NOT TO SCALE



A - SECTION

NOT TO SCALE

3 TYP — TYP MCC HOUSEKEEPING PAD DETAIL

NOT TO SCALE

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ALEX M.W QUINN — STATE OF WASHINGTON — 21019150 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

09/04/2026

TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

8220 178TH AVENUE COURT SW, LONGBRANCH, WA 98351

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DRAWN BY:	RAH
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0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

STRUCTURAL

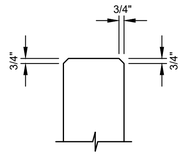
SPECIAL INSPECTION SCHEDULE, SUPPLEMENTAL STRUCTURAL ABBREVATIONS, AND STRUCTURAL LEGEND

DRAWING: **S-2** OF: **4**

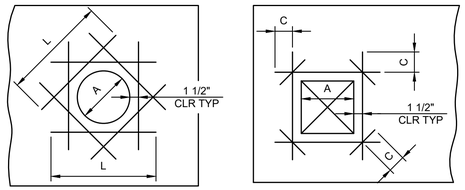
m:\taylor bay beach club hoa\22848.01 construction plans, spec, & permitting wa doh grant\01 design\wwtf upgrade\PlansetIStructuralS_STD.dwg, 9/4/2026 10:25 AM, CHARLEY REID

REINF	LAP
#4	2'-4"
#5	3'-0"
#6	3'-6"
#7	4'-3"
#8	4'-10"
#9	5'-3"
#10	6'-6"
#11	8'-0"

1 TYP — **TYP LAP SCHEDULE**
NOT TO SCALE



2 TYP — **TYP CHAMFER DETAIL**
NOT TO SCALE

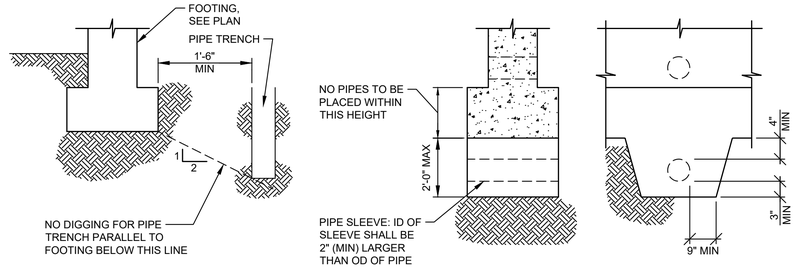


TYPE I **TYPE II**

	TYPE I		TYPE II	
OPENING SIZE (A)	MINIMUM BAR LENGTH (L)	BAR SIZE	(C)	BAR SIZE
0" - 12"	3' - 9"	#5	1' - 0"	MATCH VERTICAL BARS OR LARGEST BAR IN SLABS OR WALKWAYS
13" - 18"	4' - 9"	#6	1' - 3"	
19" - 24"	6' - 9"	MATCH VERTICAL BARS OR LARGEST BAR IN SLABS OR WALKWAYS	2' - 6"	
25" - 36"	7' - 9"		2' - 6"	
36" ⟶	8' - 9"		2' - 6"	

NOTE:
1. ALL BARS, EACH FACE. USE THESE BAR SIZES UNLESS OTHERWISE NOTED.

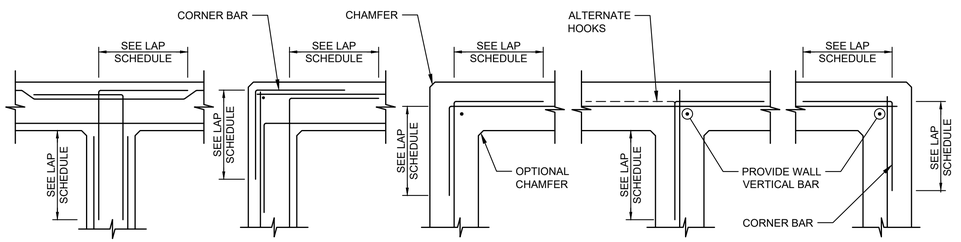
3 TYP — **TYP PENETRATION REINFORCING DETAIL**
NOT TO SCALE



NOTES:

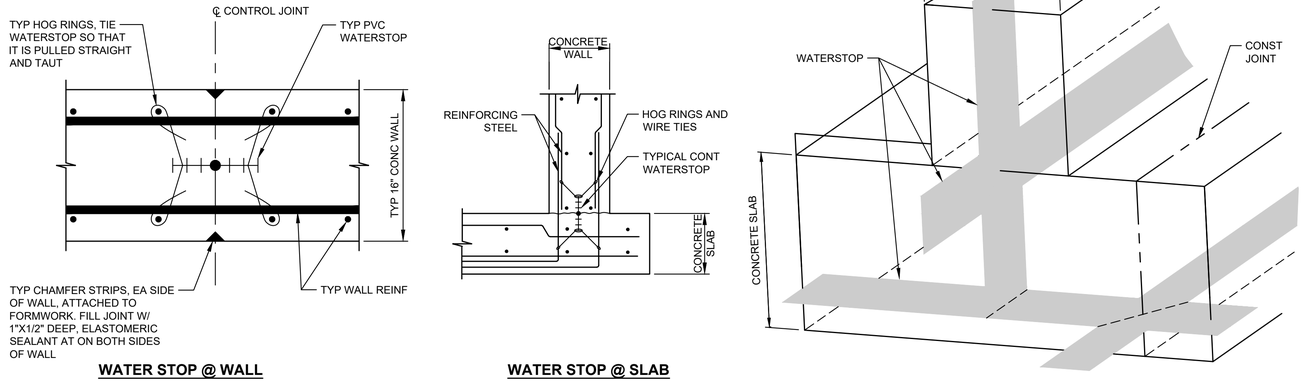
1. SEE NOTES ON FOUNDATION PLAN FOR ADDITIONAL INFORMATION.
2. PIPE & CONDUIT MUST RUN PERPENDICULAR THRU FOUNDATION WALL.

4 TYP — **TYP FTG @ PIPE OR CONDUIT DETAIL**
NOT TO SCALE



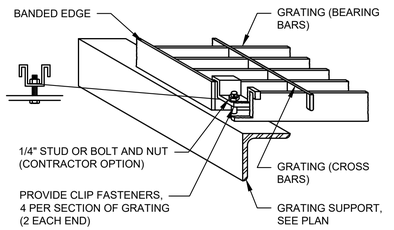
DOUBLE CURTAIN **SINGLE CURTAIN**

5 TYP — **TYP REINFORCING @ WALL INTERSECTION DETAIL**
NOT TO SCALE



WATER STOP @ WALL **WATER STOP @ SLAB** **TYP WATER STOP PLACEMENT**

6 TYP — **TYP WATERSTOP INSTALLATION DETAIL**
NOT TO SCALE



CLIP FASTENER
SCALE: 3"=1'-0"

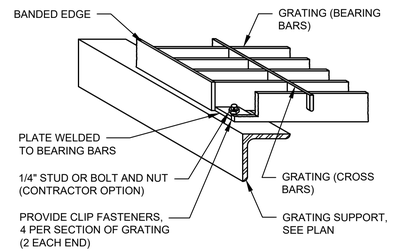
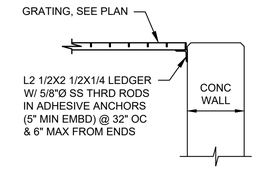
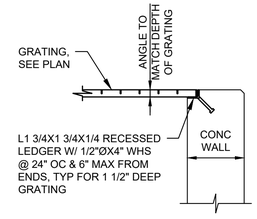


PLATE FASTENER (ALTERNATE OPTION)
SCALE: 3"=1'-0"



LEDGER CONDITION



RECESSED LEDGER CONDITION

NOTES:

1. NUMBER OF FASTENERS REQUIRED PER GRATING SECTION SHALL BE SPECIFIED BY THE GRATING MANUFACTURER, WITH A MINIMUM OF 2 FASTENERS EACH BEARING END PER SECTION.
2. "PLATE FASTENER" CONNECTION SHALL BE OPTIONAL UNLESS NOTED OTHERWISE ON THE PLANS.
3. MAX SPACING BETWEEN REMOVABLE SECTIONS SHALL BE 1".

7 TYP — **GRATING CONNECTION DETAIL**
SCALE: 3/4"=1'-0"

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ALEX M.W QUINN — STATE OF WASHINGTON — 21019150 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER
09/04/2026

TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

8220 178TH AVENUE COURT SW, LONGBRANCH, WA 98351

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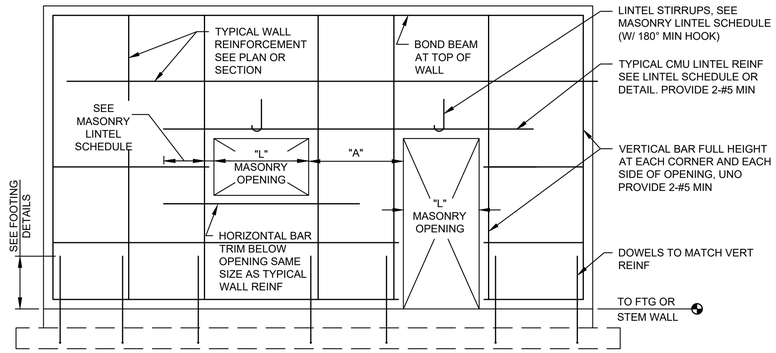
0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

STRUCTURAL

TYPICAL DETAILS

DRAWING: **S-3** OF: **4**

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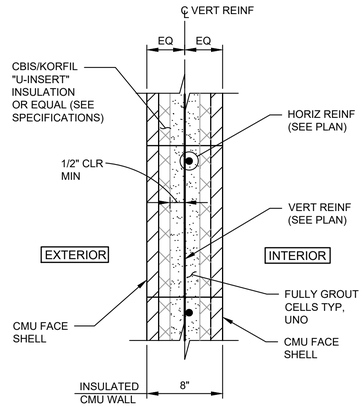


NOTES:

1. WHERE DISTANCE "A" LESS THAN 2'-0", PROVIDE #3 ⊂⊃ TIES AT ~~16"~~ OC FULL HEIGHT OF THE SMALLER OF THE TWO OPENINGS.
2. PROVIDE CONTINUOUS BOND BEAM W/2-#5 MIN AT ALL LEDGERS, UNO
3. SEE CMU WALL CONTROL JOINT DETAIL AND PLAN FOR LOCATION.

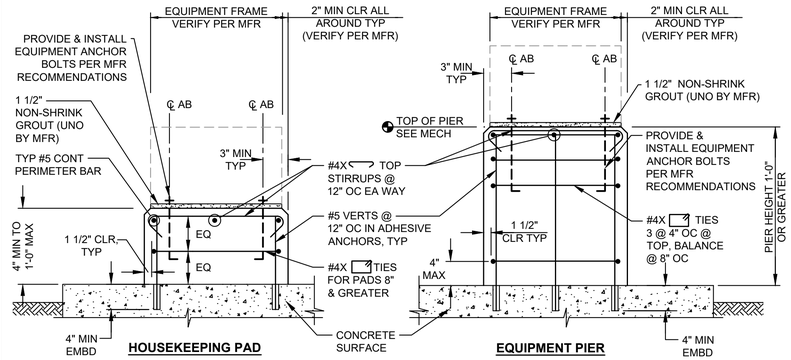
1 TYP — TYPICAL CMU WALL REINFORCEMENT PLACEMENT

NOT TO SCALE



2 TYP — TYPICAL 8" INSULATED CMU WALL DETAIL

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

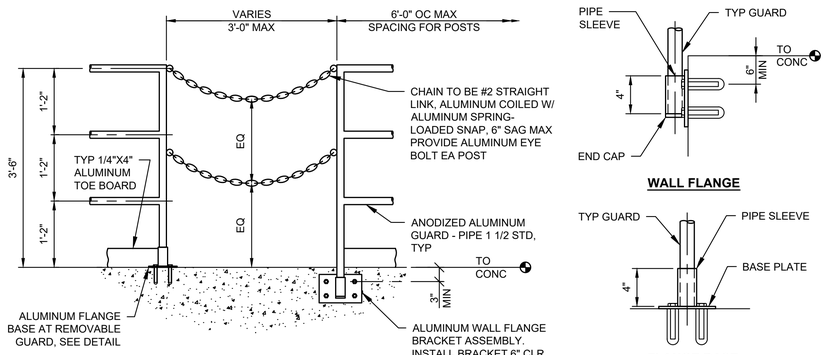


NOTES:

1. CHAMFER ALL EXPOSED CORNERS OF HOUSEKEEPING PADS AND EQUIPMENT PIERS.
2. FOR PIER HEIGHT LESS THAN 1'-0" SEE HOUSEKEEPING PAD DETAIL

3 TYP — TYP HOUSEKEEPING PAD & EQUIPMENT PIER DETAILS

NOT TO SCALE



NOTES:

1. CONTRACTOR SHALL PROVIDE GUARD CONNECTIONS CAPABLE OF RESISTING REACTIONS DUE TO LATERAL LOADS AS REQ'D BY IBC.

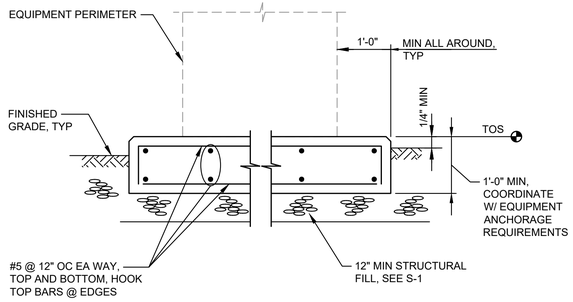
4 TYP — GUARD MOUNTING DETAIL

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

WALL FLANGE

FLANGE BASE

BASES AT REMOVABLE GUARDS

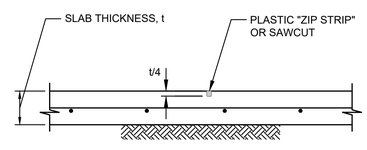


5 TYP — EXTERIOR EQUIPMENT CONCRETE PAD

NOT TO SCALE

NOTES:

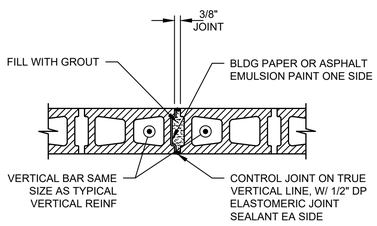
1. SPACING BETWEEN JOINTS SHALL BE 20'-0" MAX.
2. MAXIMUM ASPECT RATIO OF PANEL SHALL BE 1.0 TO 1.25.
3. ALIGN JOINTS WITH RE-ENTRANT CORNERS.
4. SAWCUTS SHALL BE PERFORMED AS SOON AS POSSIBLE AFTER CONCRETE PLACEMENT WITHOUT CAUSING DAMAGE TO CONCRETE EDGES.



CONTROL JOINT

6 TYP — TYP SLAB JOINT DETAIL

NOT TO SCALE



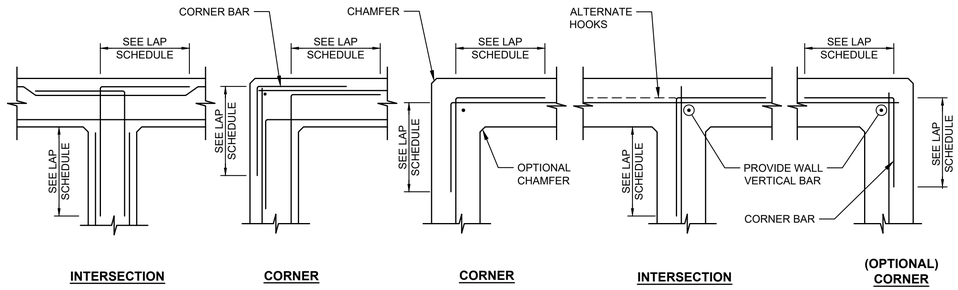
PLAN

NOTES:

1. BOND BEAM BARS TO BE CONTINUOUS THROUGH JOINT.
2. MAXIMUM SPACING: 30'-0" OC UNLESS NOTED OTHERWISE.
3. MASONRY CONTROL JOINT SHALL NOT BE LOCATED CLOSER THAN 5'-0" TO JAMB.

7 TYP — TYP CMU WALL CONTROL JOINT DETAIL

NOT TO SCALE



DOUBLE CURTAIN **SINGLE CURTAIN**

8 TYP — TYP REINFORCING @ WALL INTERSECTION DETAIL

NOT TO SCALE

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0 1" 2"

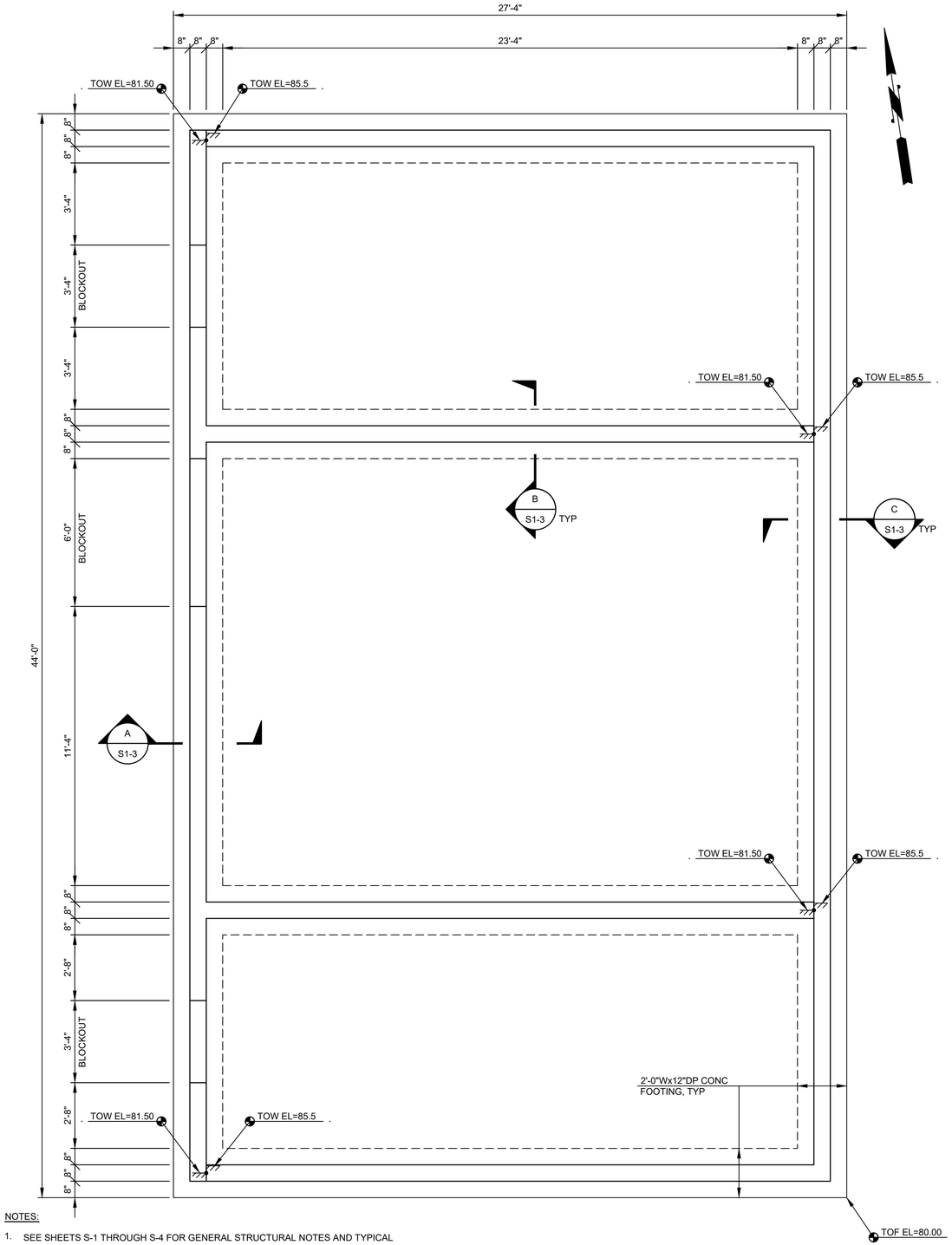
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

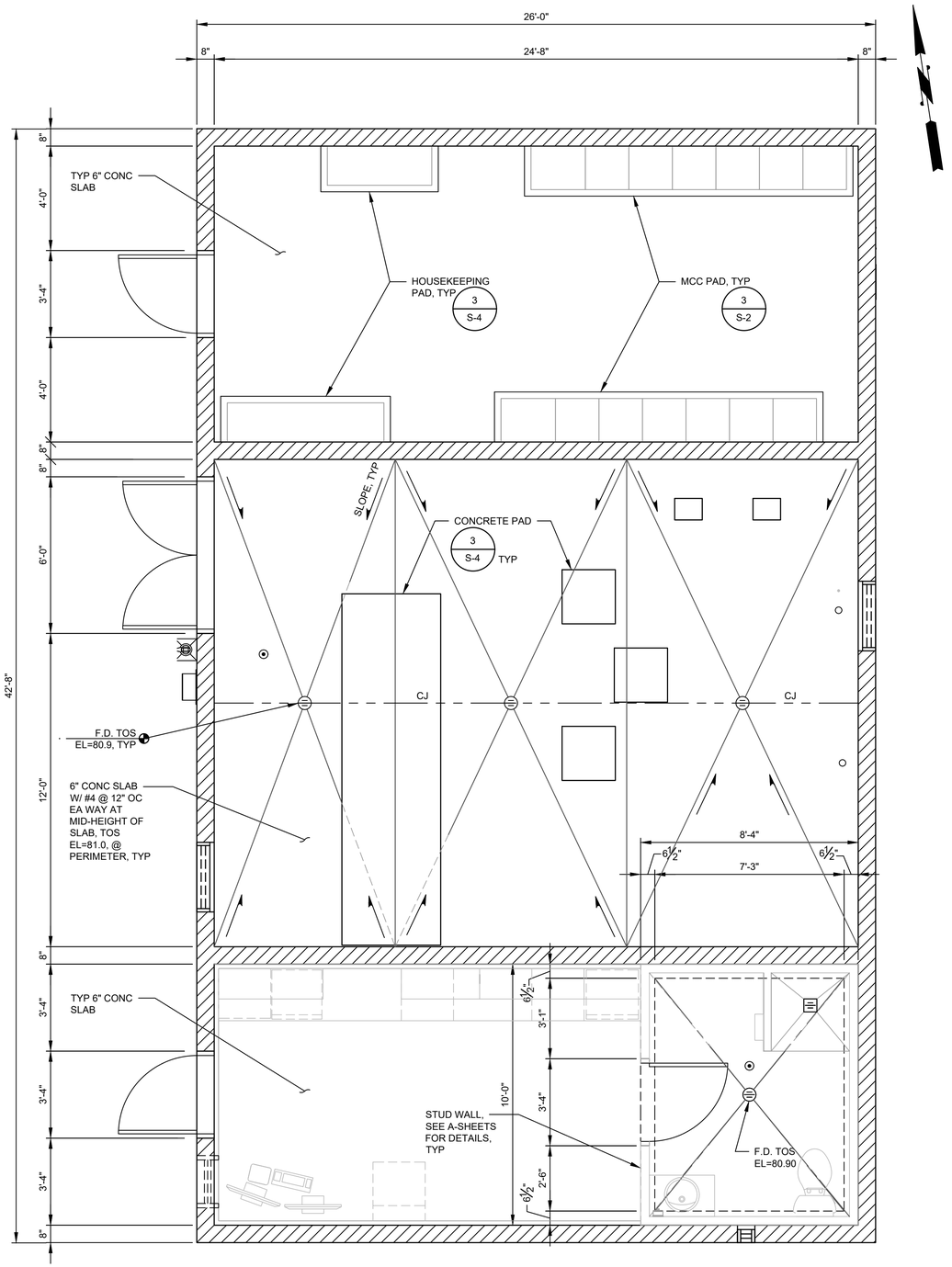
STRUCTURAL

TYPICAL DETAILS

DRAWING: **S-4** OF: **4**

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NOTES:

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2. DIMENSIONS SHOWN ON STRUCTURAL PLANS ARE FOR GENERAL INFORMATION ONLY AND MUST BE VERIFIED BY THE CONTRACTOR BEFORE START OF CONSTRUCTION. ANY DISCREPANCIES SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
3. NOT ALL PENETRATIONS MAY BE SHOWN. CONTRACTOR SHALL VERIFY NUMBER, SIZE, AND LOCATION OF ALL OPENINGS WITH MECHANICAL, ELECTRICAL, AND HVAC DRAWINGS.

OPERATIONS BUILDING FOUNDATION PLAN

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

OPERATIONS BUILDING FLOOR PLAN

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

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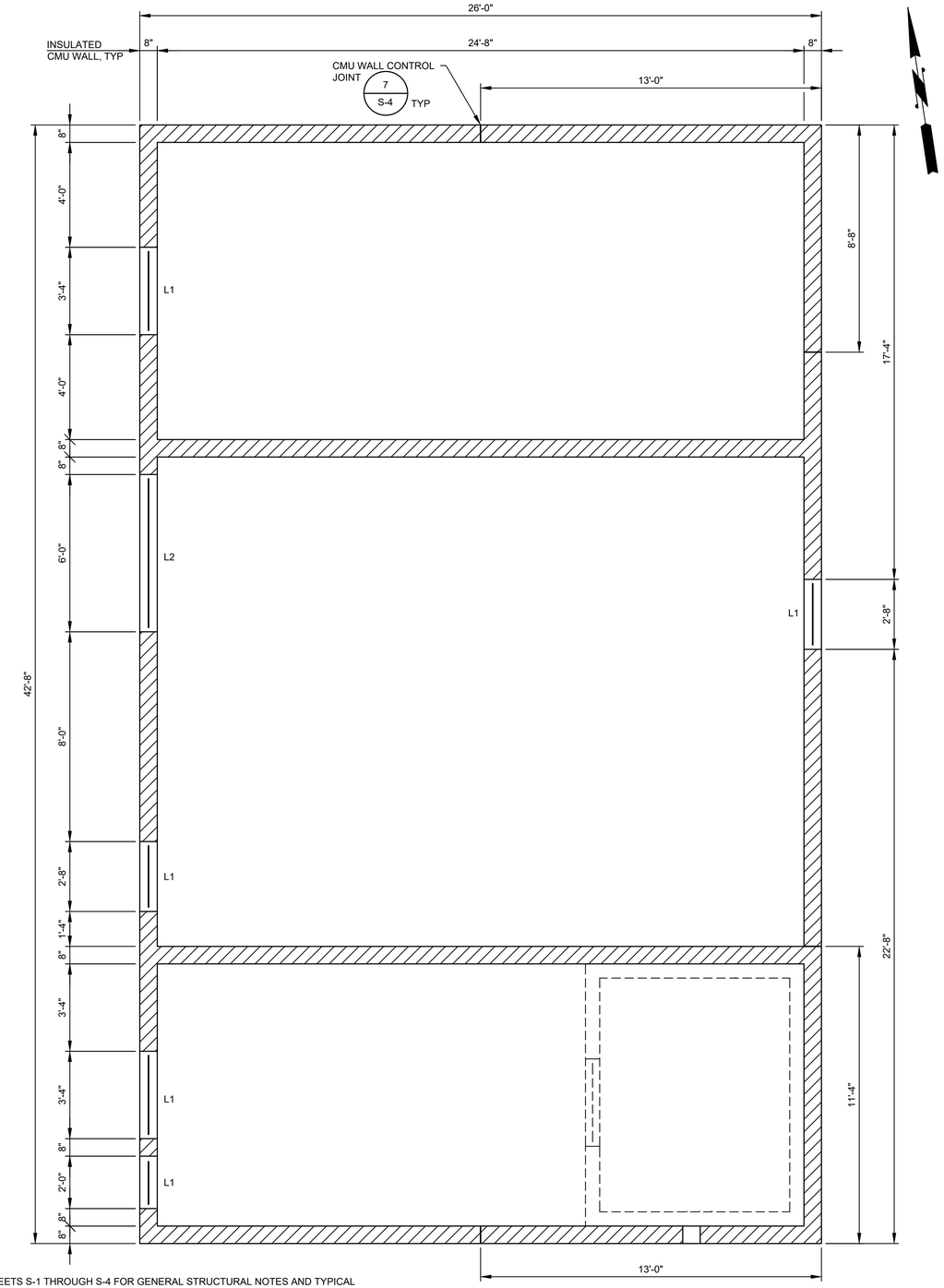
0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

STRUCTURAL

OPERATIONS BUILDING FOUNDATION PLAN AND FLOOR PLAN

DRAWING: **S1-1** OF: **3**

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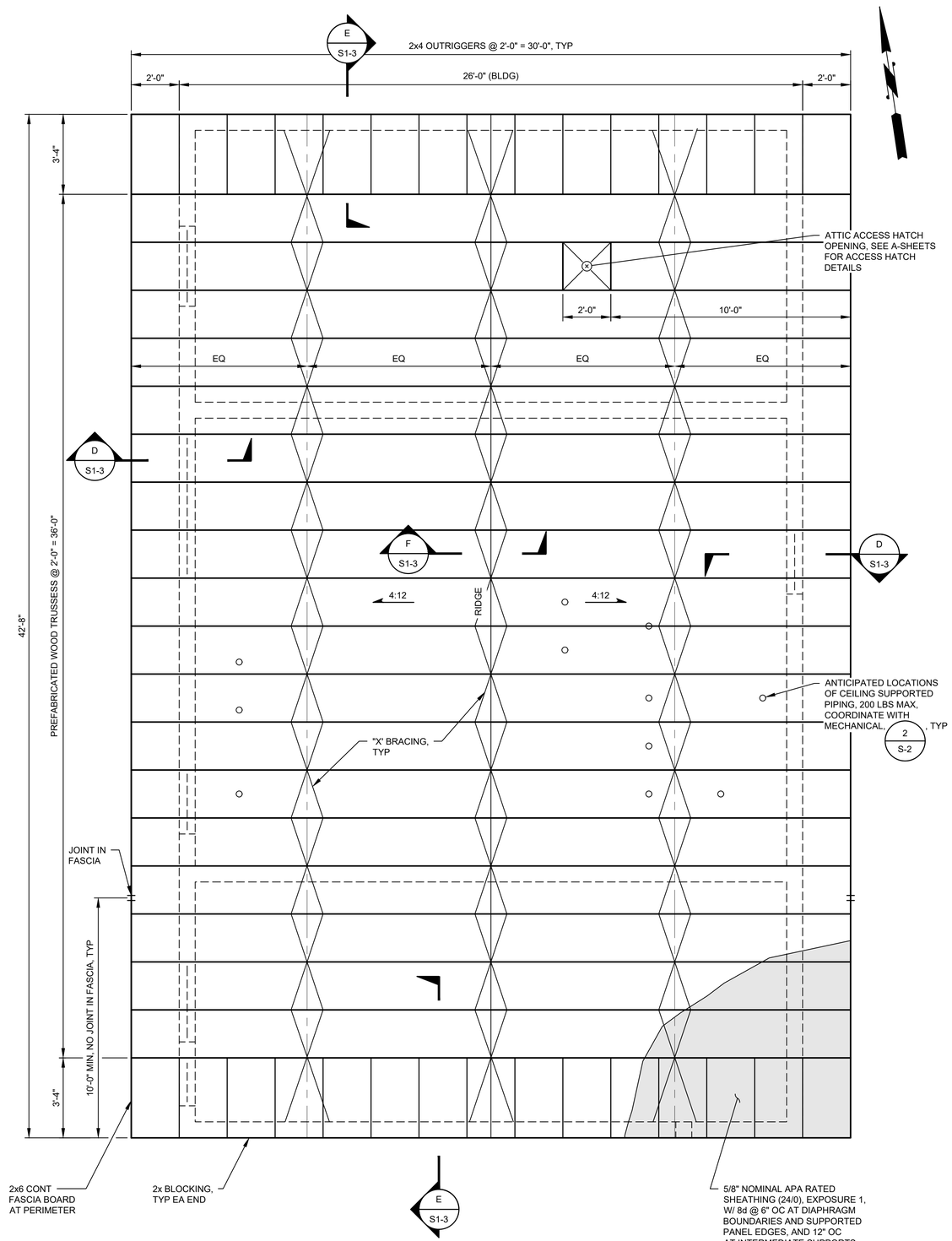


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3. NOT ALL PENETRATIONS MAY BE SHOWN. CONTRACTOR SHALL VERIFY NUMBER, SIZE, AND LOCATION OF ALL OPENINGS WITH MECHANICAL, ELECTRICAL, AND HVAC DRAWINGS.
4. LX DENOTES CMU LINTEL TYPE. SEE TYP CMU WALL LINTEL SCHEDULE & DETAIL ON SHEET S1-3.

OPERATIONS BUILDING CMU WALL PLAN

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



OPERATIONS BUILDING ROOF FRAMING PLAN

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

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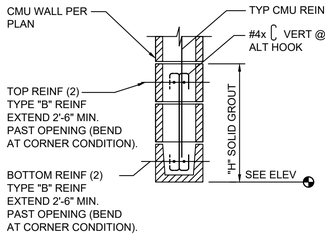
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TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

STRUCTURAL

OPERATIONS BUILDING CMU WALL PLAN AND ROOF FRAMING PLAN

DRAWING: **S1-2** OF: **3**

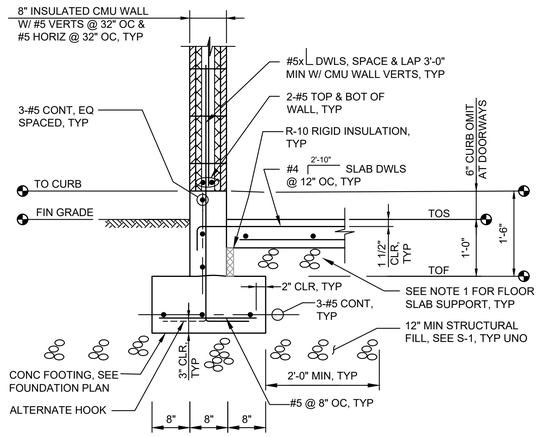
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LINTEL SCHEDULE

MARK	"H" (LINTEL HT)	"B" (REINF)	MASONRY OPENINGS
L1	24" HT	#5 TOP & BOT	6'-0"
L2	16" HT	#5 BOT ONLY	3'-4" AND LESS

1 TYP — **TYPICAL CMU WALL LINTEL SCHEDULE AND DETAIL**
NTS

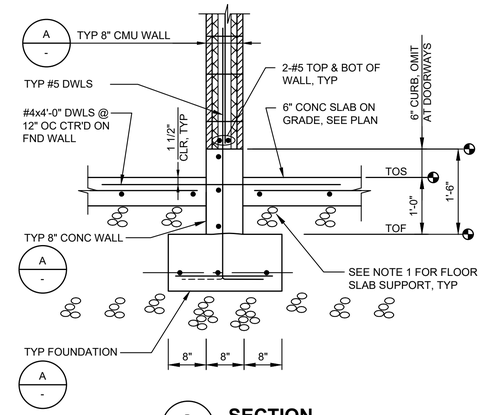


A S1-1 — **SECTION**
SCALE: 3/4"=1'-0"

NOTES:

1. SLAB-ON-GRADE FLOORS SHALL BE CONSTRUCTED EITHER DIRECTLY ON THE MEDIUM DENSE TO DENSE, PRE-FRASER NON-GLACIAL SEDIMENTS, DENSE MASS WASTING DEPOSITS, OR ON STRUCTURAL FILL PLACED OVER THESE MATERIALS. AREAS OF THE SLAB SUBGRADE THAT ARE DISTURBED (LOOSENED) DURING CONSTRUCTION SHALL BE RECOMPACTED TO AN UNYIELDING CONDITION PRIOR TO PLACING THE PEA GRAVEL, AS DESCRIBED BELOW.

   THE FLOOR SLAB SHALL BE CONSTRUCTED ATOP A CAPILLARY BREAK CONSISTING OF A MINIMUM THICKNESS OF 4-INCHES OF WASHED PEA GRAVEL. THE PEA GRAVEL SHALL BE OVERLAID BY A 10-MIL (MINIMUM THICKNESS) PLASTIC VAPOR RETARDER.



B S1-1 — **SECTION**
SCALE: 3/4"=1'-0"

D S1-2 — **SECTION**
SCALE: 3/4"=1'-0"

E S1-2 — **SECTION**
SCALE: 3/4"=1'-0"

F S1-2 — **SECTION**
SCALE: 3/4"=1'-0"

C S1-1 — **SECTION**
SCALE: 3/4"=1'-0"

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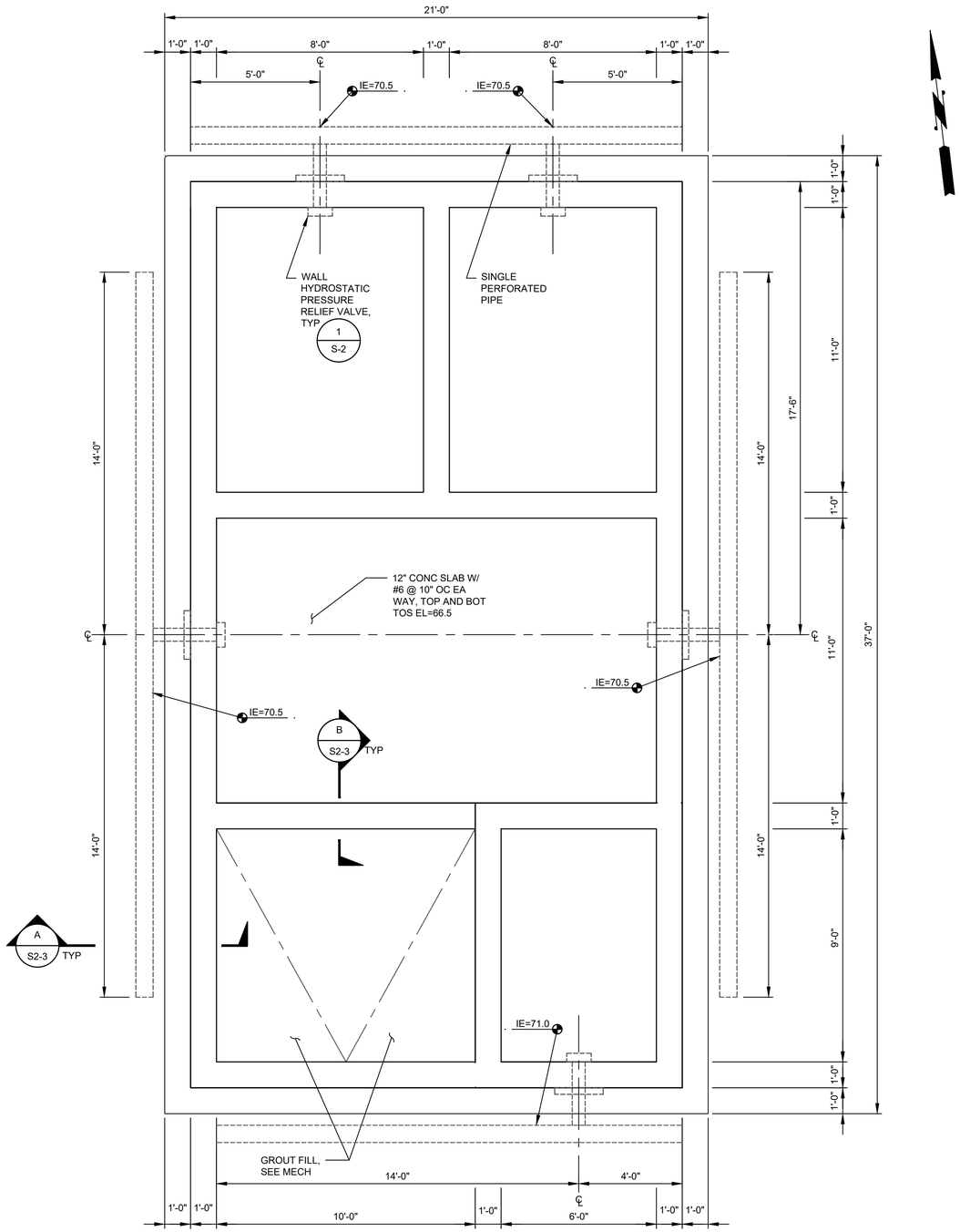
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STRUCTURAL

DETAILS

DRAWING: **S1-3** OF: **3**

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PROCESS TANKS AND HEADWORKS FOUNDATION PLAN

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

NOTES:

1. SEE SHEETS S-1 THROUGH S-4 FOR GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS.
2. DIMENSIONS SHOWN ON STRUCTURAL PLANS ARE FOR GENERAL INFORMATION ONLY AND MUST BE VERIFIED BY THE CONTRACTOR BEFORE START OF CONSTRUCTION. ANY DISCREPANCIES SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
3. NOT ALL PENETRATIONS MAY BE SHOWN. CONTRACTOR SHALL VERIFY NUMBER, SIZE AND LOCATIONS OF ALL OPENINGS WITH ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS.
4. PROVIDE PVC WATERSTOPS AT ALL CONSTRUCTION JOINTS. FABRICATE REINFORCING TO CLEAR WATERSTOP 1" MINIMUM, TYP (6 / S-3).

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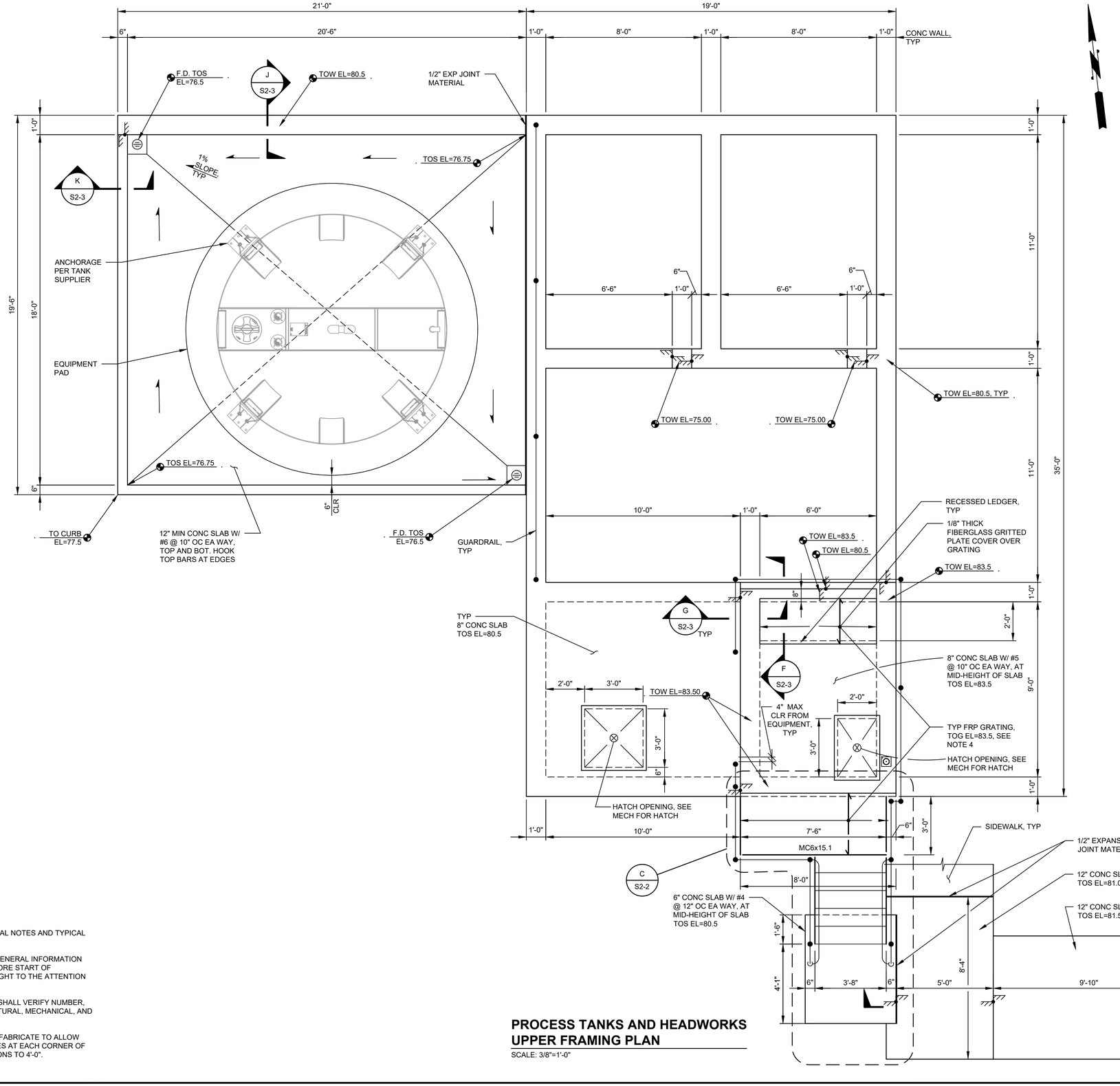
0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

STRUCTURAL

PROCESS TANKS AND HEADWORKS FOUNDATION PLAN

DRAWING: **S2-1** OF: **4**

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PROCESS TANKS AND HEADWORKS UPPER FRAMING PLAN

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

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3. NOT ALL PENETRATIONS MAY BE SHOWN. CONTRACTOR SHALL VERIFY NUMBER, SIZE AND LOCATIONS OF ALL OPENINGS WITH ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS.
4. 1½" MOLDED FIBERGRATE GRATING WITH 1½"x1½" MESH. FABRICATE TO ALLOW FOR REMOVABLE SECTIONS AND PROVIDE 1"Ø PICK HOLES AT EACH CORNER OF GRATING SECTIONS. LIMIT WIDTHS OF INDIVIDUAL SECTIONS TO 4'-0".

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G & O JOB NO.:	22848.01
FILE:	S2_PTANK.DWG

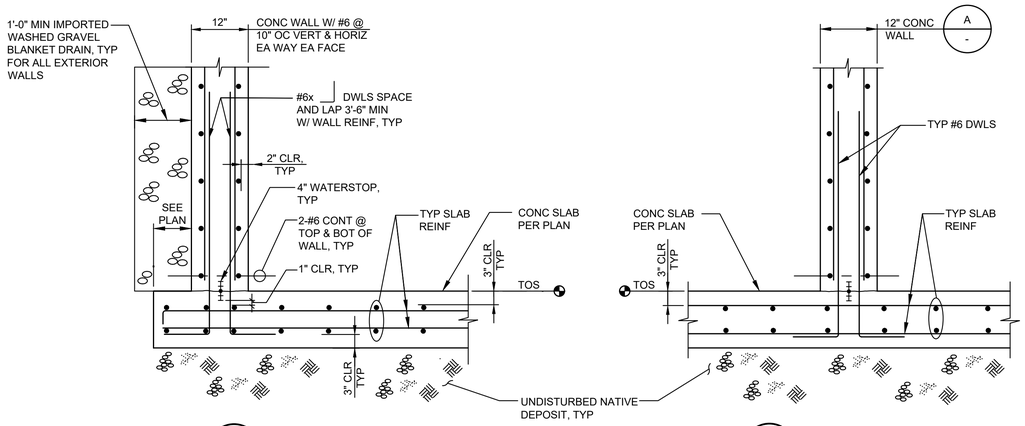
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STRUCTURAL

PROCESS TANKS AND HEADWORKS WALL FRAMING PLAN

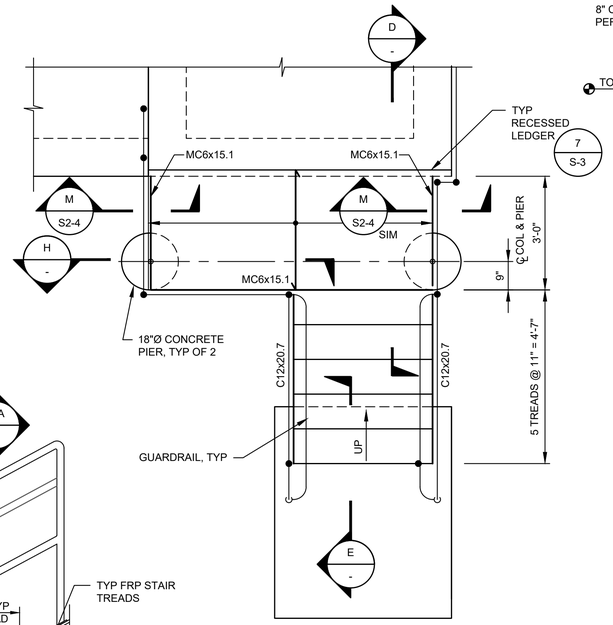
DRAWING: **S2-2** OF: **4**

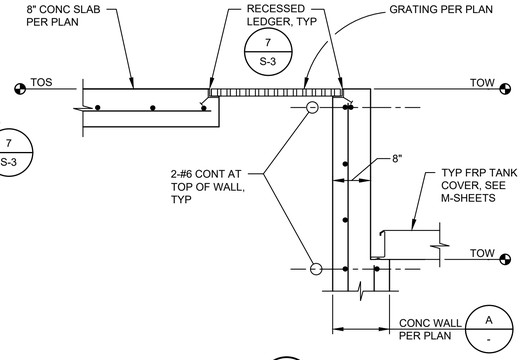
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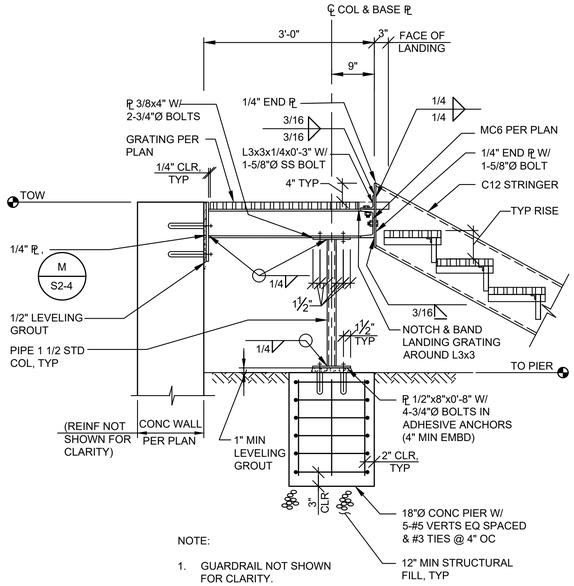
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B S2-1 **SECTION**
SCALE: 3/4"=1'-0"



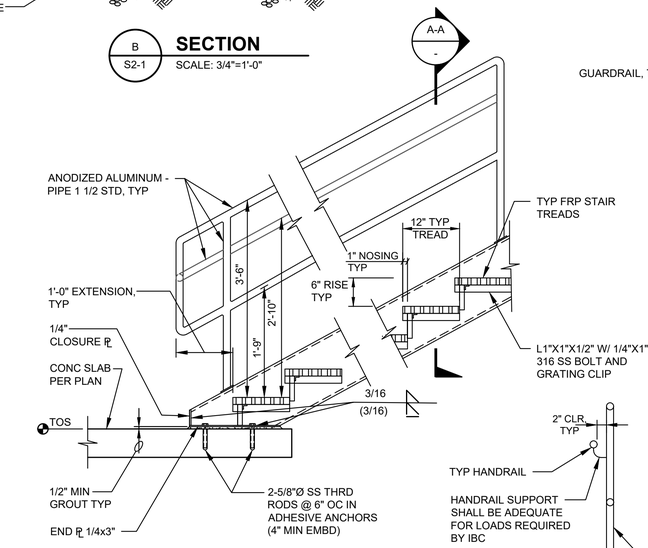


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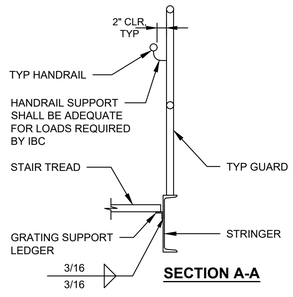


NOTE:
1. GUARDRAIL NOT SHOWN FOR CLARITY.

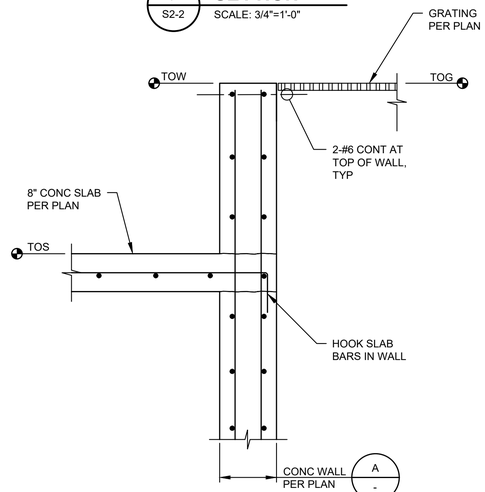
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E - **SECTION**
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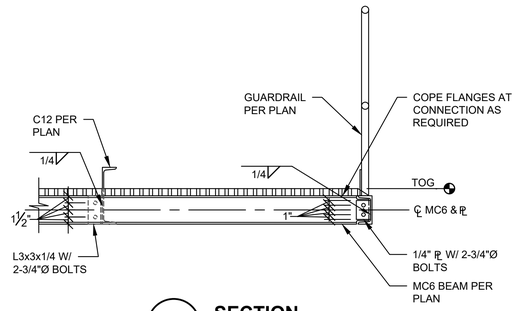


SECTION A-A

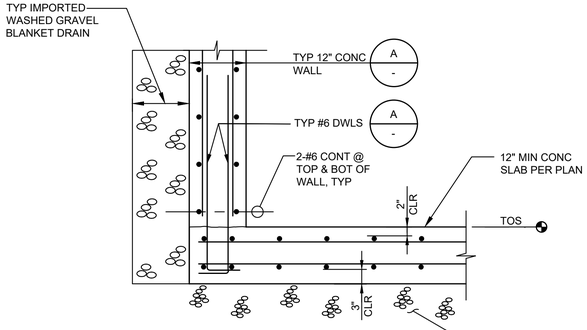


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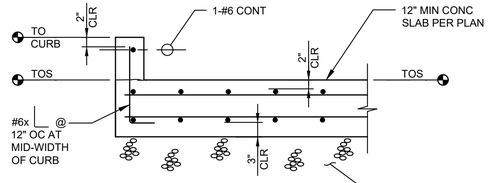
C S2-1 **PLAN DETAIL**
SCALE: 1/2"=1'-0"



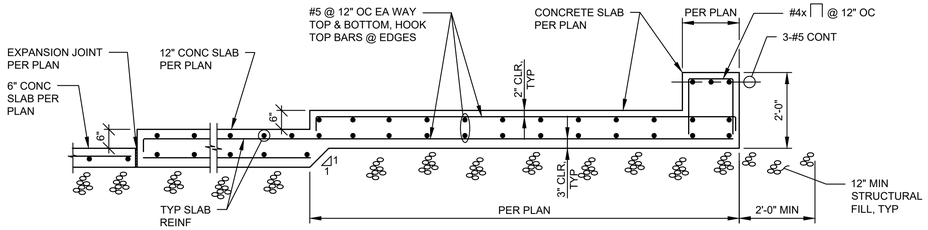
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SCALE: 3/4"=1'-0"



J S2-2 **SECTION**
SCALE: 3/4"=1'-0"



K S2-2 **SECTION**
SCALE: 3/4"=1'-0"



L S2-2 **SECTION**
SCALE: 1/2"=1'-0"

Gray & Osborne, Inc.
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(206) 284-0860

ALEX M.W. QUINN
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21019150
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PROFESSIONAL ENGINEER
09/04/2026

TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

8220 178TH AVENUE COURT SW, LONGBRANCH, WA 98351

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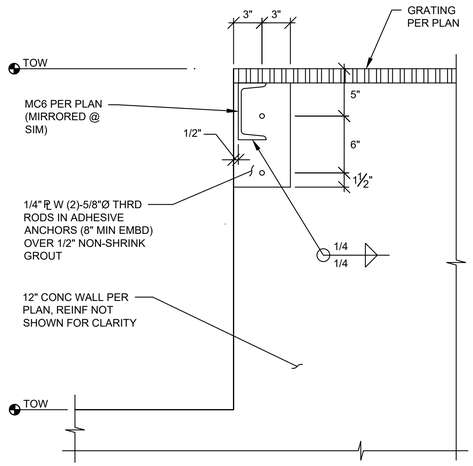
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TANK DETAILS

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M
S2-3

SECTION

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

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ABBREVIATIONS

A	AMPERE (AMP)
AC	ALTERNATING CURRENT
AF	BREAKER FRAME SIZE (IN AMPS)
AI	ANALOG INPUT
AIC	AMPERES-INTERRUPTING CAPACITY
AL	ALUMINUM
AM	AMMETER
AO	ANALOG OUTPUT
AT	BREAKER TRIP (SETTING IN AMPS)
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BATT	BATTERY
BKR	BREAKER
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CST	CONTROL STATION
CT	CURRENT TRANSFORMER
CU	COPPER
DC	DIRECT CURRENT
DI	DISCRETE INPUT
DIST	DISTRIBUTION
DO	DISCRETE OUTPUT
DTWV	DISCHARGE-TO-WASTE VALVE
EIOM	EXTENDED I/O MODULE
ETC	ELAPSED TIME/COUNTER METER
ETM	ELAPSED TIME METER
ENCL	ENCLOSURE
EXIST	EXISTING
FDR	FEEDER
FLA	FULL LOAD AMPS
FU	FUSE
FVNR	FULL VOLTAGE NON REVERSING
FVR	FULL VOLTAGE REVERSING
FY	FLOW COMPUTATION
G	GROUND CONDUCTOR
GEC	GROUNDING ELECTRODE CONDUCTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
H	HORN
HA	HAND-AUTO
HIM	HUMAN INTERFACE MODULE
HMI	HUMAN MACHINE INTERFACE
HOA	HAND-OFF-AUTO
HOR	HAND-OFF-REMOTE
HP	HORSEPOWER
JCXXX	JUNCTION BOX, CONTROL
JPXXX	JUNCTION BOX, POWER
JSXXX	JUNCTION BOX, SIGNAL
kA	KILOAMPERES
kAIC	KILOAMPERES-INTERRUPTING CAPACITY
KCM	THOUSAND CIRCULAR MILLS
kV	KILOVOLT
kVA	KILOVOLT-AMPERE
kVAh	KILOVOLT-AMPERE HOUR
kVAR	KILOVAR (REACTIVE KILOVOLT-AMPERE)
KVARh	KILOVAR-HOUR
kW	KILOWATT
kWh	KILOWATT-HOUR
LA	LIGHTNING ARRESTER
LAN	LOCAL AREA NETWORK
LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
LINE	POWER LINE/POWER BLOCK
LV	LOW VOLTAGE
M	MAGNETIC CONTACTOR
mA	MILLIAMPERES
MCC	MOTOR CONTROL CENTER
MCM	THOUSAND CIRCULAR MILLS
MCP	MOTOR CIRCUIT PROTECTOR
MOV	METAL OXIDE VARISTOR
MS	MOTOR STARTER
MSDS	MOTOR SAFETY DISCONNECT SWITCH
MTS	MANUAL TRANSFER SWITCH
MTU	MASTER TELEMETRY UNIT
mV	MILLIVOLT
MW	MEGAWATT
N	NEUTRAL CONDUCTOR
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRIC MANUFACTURERS ASSOC.
NESC	NATIONAL ELECTRICAL SAFETY CODE
NFPA	NATIONAL FIRE PROTECTION AGENCY
OCPD	OVERCURRENT PROTECTION DEVICE
OE	OVERHEAD ELECTRIC
OIU	OPERATOR INTERFACE UNIT
OL	OVERLOAD, THERMAL
OLR	OVERLOAD RELAY
P	POLE
PF	POWER FACTOR
PH	PHASE
PLC	PROGRAMMABLE LOGIC CONTROL
PMR	PHASE MONITOR RELAY
PMU	POWER MONITOR UNIT
POT	POTENTIOMETER
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE CONDUIT
PVC-RGS	PVC COATED RGS
RGS	RIGID GALVANIZED STEEL CONDUIT
RVSS	REDUCED-VOLTAGE SOFT START
RTU	REMOTE TELEMETRY UNIT
s	SECOND
SHD	SHIELDED
SPD	SURGE PROTECTION DEVICE
SS	STAINLESS STEEL
SUSE	SUITABLE FOR USE AS A SERVICE ENTRANCE
TB	TERMINAL BLOCK
TDAD	TIME DELAY AFTER DE-ENERGIZATION
TDAE	TIME DELAY AFTER ENERGIZATION
TQS	TORQUE SWITCH
TSP	TWISTED SHIELDED PAIR
TST	TWISTED SHIELDED TRIAD
T/M	THERMAL MAGNETIC
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLT
VA	VOLT-AMPERE
VFD	VARIABLE FREQUENCY DRIVE
VMR	VOLTAGE MONITORING RELAY
W	WATT
WAN	WIDE AREA NETWORK
Wh	WATT-HOUR
WP	WEATHER PROOF
XFMR	POWER TRANSFORMER

SYMBOL LEGEND

PLAN SYMBOLS

- CONDUIT DOWN
- CONDUIT UP
- CONDUIT STUB UP/END CAP
- DISCONNECT SWITCH
- FUSED DISCONNECT SWITCH
- COMMUNICATION OUTLET
- TELEPHONE OUTLET
- SPECIAL OUTLET
- SIMPLEX RECEPTACLE
- DUPLEX RECEPTACLE
- DUPLEX RECEPTACLE (HIDDEN)
- QUAD RECEPTACLE
- QUAD RECEPTACLE (HIDDEN)
- FLOOR MOUNTED RECEPTACLE
- SINGLE OR DUAL — LED LIGHT POLES
- #12 AWG GROUND CONDUCTOR
- #12 AWG NEUTRAL CONDUCTOR
- #12 AWG BRANCH CONDUCTOR
- CROSSMARKS INDICATE QUANTITY AND USE OF CONDUCTORS
- S x LIGHT SWITCH, X = 3 = 3-WAY K = KEY; 4 = 4-WAY M = MOTION
- SEAL OFF
- MOTOR X = HORSE POWER
- XX= CV CHECK VALVE; FE FLOW ELEMENT; FI FLOW INDICATOR; FIT FLOW INDICATOR/TRANSMITTER; FS FLOW SWITCH; FT FLOW TRANSMITTER; HD HEAT DETECTOR; IS INFLUENT SAMPLER; ISW INTRUSION SWITCH; J JUNCTION BOX; L LIMIT SWITCH; LE LEVEL ELEMENT; LI LEVEL INDICATOR; LIT LEVEL INDICATOR/TRANSMITTER; LS LEVEL SWITCH/FLOAT; LT LEVEL TRANSDUCER; MDT MOTION DETECTOR; MFM MAGNETIC FLOW METER; MOV MOTOR OPERATOR VALVE; PC PHOTO CELL; PE PRESSURE ELEMENT; PI PRESSURE INDICATOR; PIT PRESSURE INDICATOR TRANSMITTER; PS PRESSURE SWITCH; PT PRESSURE TRANSMITTER; SD SMOKE DETECTOR; SV SOLENOID VALVE; T THERMOSTAT

ELEMENTARY WIRING DIAGRAM SYMBOLS

- CONNECTION POINT
- TERMINAL POINT
- SCREW TERMINAL
- MOUNTED ON OUTER DOOR
- MOUNTED ON INNER DOOR
- LOCKABLE DEVICE
- NC CONTACT
- NC CONTACTOR
- NO CONTACT
- NO CONTACTOR
- SS SOLID STATE CONTACTOR
- ALT ALTERNATING RELAY
- CR CONTROL RELAY
- C CONTACTOR
- C BP "BYPASS" CONTACTOR
- C IC "ISOLATION" CONTACTOR
- C SS SOLID STATE CONTACT RELAY
- M MOTOR RELAY
- TR TIME DELAY RELAY (TDAE)
- TR TIME DELAY RELAY (TDAD)
- LIGHT EMITTING DIODE
- OR DIODE
- X LIGHT FIXTURE; X = REFERENCE LIGHTING SCHEDULE IF APPLICABLE
- L X "PUSH TO TEST" LED PILOT LIGHT; A = AMBER, B = BLUE, G = GREEN, R = RED, W = WHITE
- OFF ON XO / OX — OR — OFF ON XO / OX — SELECTOR SWITCHES
- OFF HAND AUTO XOO / OXO / OOX — OR — OFF HAND AUTO XOO / OOX — HAND-OFF-AUTO SWITCHES
- OFF ON RESET XOO / OOX — ON-OFF-RESET SWITCH

ELEMENTARY WIRING DIAGRAM SYMBOLS (cont.)

- GFCI DUPLEX OUTLET
- DUPLEX OUTLET
- FUSE
- FUSED SWITCH W/ LED
- N.O. TOGGLE SPST SWITCH
- N.C. TOGGLE SPST SWITCH
- N.O. TEMPERATURE SWITCH
- N.C. TEMPERATURE SWITCH
- N.O. PRESSURE SWITCH
- N.C. PRESSURE SWITCH
- N.O. LIMIT SWITCH
- N.C. LIMIT SWITCH
- N.O. FLOW SWITCH
- N.C. FLOW SWITCH
- N.O. FLOAT SWITCH
- N.C. FLOAT SWITCH
- N.O. DIFFERENTIAL PRESSURE SWITCH
- N.C. DIFFERENTIAL PRESSURE SWITCH
- N.O. PUSHBUTTON
- N.C. PUSHBUTTON
- N.O. MUSHROOM PUSHBUTTON
- N.C. MUSHROOM PUSHBUTTON
- TDAE, N.O., TIME DELAY CLOSE, INSTANTANEOUS RE-OPEN
- TDAE, N.C., TIME DELAY OPEN, INSTANTANEOUS RE-CLOSE
- TDAD, N.O., INSTANTANEOUS CLOSE, TIME DELAY RE-OPEN
- TDAD, N.C., INSTANTANEOUS OPEN, TIME DELAY RE-CLOSE
- GROUND EQUIPMENT/CHASSIS
- GROUND, ISOLATED
- RESISTOR
- POTENTIOMETER
- SOLENOID VALVE COIL
- METAL OXIDE VARISTOR (MOV)
- TRANSFORMER WINDING/ REACTOR/CHOKE

ONE LINE SYMBOLS

- CAPACITOR
- REACTOR/CHOKE
- M CIRCUIT BREAKER, MAGNETIC ONLY
- T/M CIRCUIT BREAKER, THERMAL-MAGNETIC
- CONNECTION POINT
- CONTACTOR
- CURRENT TRANSFORMER
- FUSE
- FUSIBLE DISCONNECT
- AM ANALOG AMMETER
- THERMAL OVERLOAD RELAY
- GROUND EQUIPMENT/CHASSIS
- S/N SOLID NEUTRAL
- TRANSFORMER

GENERAL SYMBOLS

- XXXXX CONDUIT
- XX XXXX XX TAG LABEL
- GFCI GFCI PANELBOARD CIRCUIT
- X AREA ID TAG
- DEMOLITION (DEMO)
- INTRINSICALLY SAFE AREA
- CLEARANCE AREA

LINETYPES

- EXPOSED CONDUIT
- HIDDEN OR UNDERGROUND CONDUIT
- GROUNDING ELECTRODE CONDUCTORS

NOTE: UNLESS NOTED OTHERWISE.

NOTE:
THIS IS A GENERAL LEDGER SHEET. ALL SYMBOLS MAY NOT APPLY.

GENERAL ELECTRICAL NOTES:

SITE AND BUILDING PLANS:

1. CONDUIT ROUTING IS SHOWN FOR CLARITY. ACTUAL ROUTING MAY BE MORE DIRECT AND IS LEFT TO THE CONTRACTOR FOLLOWING SPECIFICATIONS 16130. NON-ELECTRICAL BURIED PIPING HAS ROUTING PRIORITY OVER ELECTRICAL BURIALS.
2. ALL TRENCHING SHALL BE PER ELECTRICAL TRENCHING DETAIL, REFERENCE ED-SHEETS.
3. THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO PROTECT EXISTING UTILITIES.
4. THROUGHOUT THIS DOCUMENT, THE TERMS "DEMO" AND "DEMOLISH" MEAN TO REMOVE, THEN WASTEHAUL OR RETURN TO THE OWNER, PER THE OWNER'S DIRECTION.

GENERAL CONTROL PANEL NOTES:

1. UNLESS SPECIFICALLY NOTED OTHERWISE ON THE CONTROL PANEL DETAILS, THE FOLLOWING NOTES APPLY.
   - 1.1 ALL ENCLOSURES SHALL BE PROVIDED WITH AN ENGRAVED NAMEPLATE CORRESPONDING TO THE ASSOCIATED TAG ID NUMBER AND TAG DESCRIPTION.

     TAG DESCRIPTION (1/4" TEXT)
     [TAG NUMBER] (3/16" TEXT)

     NOTE: MOTOR STARTER NAMEPLATES SHALL BE BLACK WITH WHITE LETTERING, REFERENCE MCC PANEL DOOR NAMEPLATE SCHEDULE.
   - 1.2 WHERE PANELS CONTAIN POWER FROM MULTIPLE SOURCES, PROVIDE A YELLOW SAFETY STICKER, APPROXIMATELY 2" x 3", AS SHOWN BELOW.

     CAUTION
     THIS DEVICE IS POWERED FROM SEVERAL SOURCES
     THE DISCONNECT SWITCH WILL NOT SHUT OFF ALL SOURCES OF ELECTRICAL ENERGY

INDOOR INSTALLATIONS:

1. ALL EXPOSED PORTIONS OF CONDUITS FROM UNDERGROUND SHALL BE RGS. ALL OVERHEAD CONDUITS SHALL BE EMT.
2. EXCEPT FOR INSTRUMENTATION, NON LINEAR CIRCUITS, AND INTRINSICALLY SAFE CIRCUITS ALL PORTIONS OF CONDUITS IN THE ATTIC SHALL BE EMT.
3. PANELS MOUNTED ON INTERIOR WALLS SHALL BE SUPPORTED TO THE WALL WITH 1/2-INCH (MINIMUM) GALVANIZED UNISTRUT.

PULLBOX/VAULT/OUTDOOR INSTALLATIONS:

1. ALL MOUNTING FASTENERS (NUTS, BOLTS SCREWS, WASHERS, ETC.) SHALL BE 316 STAINLESS STEEL.
2. ALL MOUNTING BRACKETS AND BRACING SHALL BE 316L STAINLESS STEEL.
3. ALL EXPOSED PORTIONS OF CONDUITS SHALL BE PVC-COATED RGS UNLESS SPECIFICALLY NOTED OTHERWISE.
4. ALL CONNECTIONS INTO ENCLOSURES SHALL BE WATERTIGHT, MADE INTO THE BOTTOM OF THE PANELS, USING MYER-TYPE HUBS. REFERENCE SPECIFICATION 16130.
5. PANELS MOUNTED ON VERTICAL WALLS SHALL BE SUPPORTED TO THE WALL WITH 1/2-INCH (MINIMUM) 316L STAINLESS STEEL UNISTRUT.
6. ENCLOSURE SHALL INCLUDE WELDED MOUNTING TABS. HOLES SHALL NOT BE DRILLED THROUGH ENCLOSURE SURFACES FOR MOUNTING PURPOSE.

CABLE AND CONDUIT NOTES:

1. REFERENCE SPECIFICATION 16120 FOR CONDUCTORS, INSTRUMENTATION, COMMUNICATION, AND OTHER SPECIAL CABLES AND CONDUCTORS.
2. REFERENCE SPECIFICATION 16130 FOR RACEWAYS, BOXES, AND JUNCTION BOX TYPES, AND HANDHOLE, PULLBOX, AND VAULT CONDUIT INSTALLATION METHODS.
3. CONDUIT NUMBERS ARE FORMATTED AS:

   TAANN(S) WHERE: T = TYPE (P=POWER; C=CONTROL; S=SIGNAL/INSTRUMENTATION)
   AA= AREA NUMBER (01-99)
   NN= CONDUIT NUMBER WITHIN THE AREA (01-99)
   S = SPARE CONDUIT (~ "TILDE") (IF APPLICABLE)

   P0319~ = AREA 03 POWER CONDUIT NO. 19, SPARE
   C0112 = AREA 01 CONTROL CONDUIT NO. 12
   S0521~ = AREA 05 INSTRUMENTATION CONDUIT NO. 21, SPARE
4. CABLE AND CONDUIT SCHEDULES:
   - 4.1. THE CABLE AND CONDUIT SCHEDULE PROVIDES CONDUIT NUMBER, SOURCE, DESTINATION, AND SIZE AS WELL AS CONDUCTOR AND CABLE REQUIREMENTS. REFERENCE SPECIFICATION 16130 FOR CONDUIT COMPOSITION AND COATING.
   - 4.2. CONDUITS MARKED WITH "* n" (WHERE n = 1, 2, OR 3) SHALL BE 100% CONTINUOUS PER SPECIFICATION 16130.

     SPECIFICALLY, CONDUITS MARKED WITH:

     "* 1" DENOTE NON LINEAR POWER CIRCUITS. IF THESE CONDUITS ENTER A PULLBOX, THEN THEY MUST CONNECT TO A "TYPE 1" J-BOX INSIDE THE PULLBOX.

     "* 2" DENOTE INTRINSICALLY SAFE CIRCUITS, EITHER CONTROL OR INSTRUMENTATION. IF THESE CONDUITS ENTER A PULLBOX, THEN THEY MUST CONNECT TO A "TYPE 2" J-BOX INSIDE THE PULLBOX.

     "* 3" DENOTE INSTRUMENTATION CIRCUITS THAT ARE NOT INTRINSICALLY SAFE. IF THESE CONDUITS ENTER A PULLBOX, THEN THEY MUST CONNECT TO A "TYPE 3" J-BOX INSIDE THE PULLBOX.
5. REGARDLESS OF THE TYPE OF CONDUIT BEING ROUTED TO A MOTOR, THE LAST 18 INCHES OF THE CONDUIT CONNECTING TO THE MOTOR SHALL BE LFMC.

READING ELECTRICAL SHEETS:

ELEMENTARY DIAGRAMS:

1. ELEMENTARY DIAGRAMS ARE SHOWN IN LADDER LOGIC FORM WITH LINE NUMBERS FORMATTED AS:

   SS.LL WHERE SS = SHEET NUMBER AND LL = LINE NUMBER
2. RELAY COIL "TYPES" ARE INDICATED INSIDE THE COIL SYMBOL AS PER THE SYMBOL SCHEDULE ON THIS SHEET. THE COIL NUMBER IS OF THE FORMAT:

   TTSS.LL.AA WHERE TT = RELAY TYPE (PER SYMBOL SCHEDULE); SS.LL = AS DESCRIBED ABOVE; AA = ASSOCIATION WITH A DRIVE, CONTROLLER, CONTROL PANEL, ETC.
3. RELAY CONTACTS ARE NUMBERED IN ASSOCIATION WITH THEIR COILS FOLLOWED BY "-X" WHERE X IS THE CONTACT POLE NUMBER.

   EXAMPLE: RELAY CONTACTS FOR A DPDT RELAY

POLE NUMBER	N.O. CONTACT REFERENCE	N.C. CONTACT REFERENCE
1:	12.40	NA\
2:	13.04	13.05\

   LINE NUMBER / SHEET NUMBER

   N.O. = NORMALLY OPEN CONTACT
   N.C. = NORMALLY CLOSED CONTACT.
4. CONTACTS AND ANALOG SIGNALS CONNECTED TO PLC I/O ARE FORMATTED AS:

   *RR:SS:CC WHERE * DENOTES A PLC I/O CONNECTION; RR = PLC RACK NUMBER; SS = RACK SLOT NUMBER; CC = SLOT CHANNEL NUMBER

   *TT:CC WHERE * DENOTES A PLC I/O CONNECTION; TT = I/O TYPE: AI = ANALOG INPUT, AO = ANALOG OUTPUT, DI = DIGITAL INPUT, DO = DIGITAL OUTPUT; CC = EMBEDDED CHANNEL NUMBER

PANELBOARD CIRCUIT ASSIGNMENTS:

1. LIGHTING FIXTURES AND RECEPTACLES ARE SHOWN WITH THEIR PANELBOARD CIRCUIT BREAKER NUMBER FOLLOWING THE FORMAT BELOW:

   PANELBOARD TAG (EX: [01 PB 02])
   CKT 02-02, 04, 06
   3rd CIRCUIT BREAKER POSITION NUMBER (3 POLE)
   2nd CIRCUIT BREAKER POSITION NUMBER (2 POLE)
   1st CIRCUIT BREAKER POSITION NUMBER

PLCS:

1. REFERENCE CONTROL PANEL SPECIFICATION 16940.
2. WIRE ALL PLC ANALOG AND DIGITAL INPUTS AND OUTPUTS, WHETHER ASSIGNED OR SPARE, TO TERMINAL GROUPS PER SPECIFICATION.
3. ALL PLC DIGITAL OUTPUTS SHALL BE BUFFERED THROUGH INTERPOSING RELAYS. SPARE OUTPUTS, AND OUTPUTS ASSIGNED OUTSIDE THE PANEL, SHALL BE CONNECTED TO A FUSED TERMINAL PAIR.
4. N.O. OR N.C. CONTACTS FORMATTED AS *RR:SS:CC ARE DERIVED FROM PLC DIGITAL OUTPUT BUFFER RELAYS. THE RELAY CONTACT INDICATOR *RR:SS:CC INDICATES THE RELAY'S ASSOCIATED PLC DIGITAL OUTPUT RACK, SLOT, AND CHANNEL.

SEAL OFF FITTINGS:

1. DESIGN INTENT IS TO SHOW ALL LOCATIONS WHERE CONDUIT SEAL OFF FITTINGS ARE REQUIRED HOWEVER FIELD CHANGES AND THE ACTUAL FIELD ROUTING OF CONDUITS MAY ADD/SUBTRACT FROM THE NUMBER OF SEAL OFF FITTINGS SHOWN. IN ALL CASES SEAL OFF FITTINGS SHALL BE PROVIDED WHERE REQUIRED BY CODE.

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JASON R. NEWQUIST — STATE OF WASHINGTON — 45311 — REGISTERED PROFESSIONAL ENGINEER — 9/11/26

TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

8220 178TH AVENUE COURT SW, LONGBRANCH, WA 98351

No.	DATE	REVISION

ISSUED FOR:

BID SET

ISSUE DATE:	SEPTEMBER 2026
APPROVED BY:	JRN
CHECKED BY:	PAM
DRAWN BY:	DCK
DESIGNER:	CM
G & O JOB NO.:	22848.01
FILE:	E_SYM_ABBR.DWG

ELECTRICAL

ELECTRICAL SYMBOLS AND ABBREVIATIONS

DRAWING: **E-1** OF: **41**

m:\taylor bay beach club hoa\22848.01 construction plans, spec, & permitting wa doh grant\01 design\wwtf upgrade\Plansets\Electrical\E_SYM_ABBR.dwg, 9/4/2026 10:28 AM, CHARLEY REID

SHEET LIST

SHEET	SHEET DESCRIPTION
E-1	ELECTRICAL SYMBOLS AND ABBREVIATIONS
E-2	SHEET AND TAG LISTS
E-3	AREA 1 TAG LIST
E-4	AREAS 2 AND 3 TAG LISTS
E-5	ELECTRICAL SITE PLAN
E-6	ONE LINE DIAGRAM
E-7	MOTOR STARTERS ONE LINE DIAGRAMS
E-8	MOTOR STARTERS ONE LINE DIAGRAMS
E-9	MOTOR STARTERS ONE LINE DIAGRAMS
E-10	GROUNDING ONE LINE DIAGRAM
E-11	CONTROL PANEL SCHEDULE AND LOAD STUDY
E-12	[01 PB 01] PANELBOARD SCHEDULE, SPECIFICATION, AND LOAD DISTRIBUTION
E-13	[01 PB 02] PANELBOARD SCHEDULE, SPECIFICATION, AND LOAD DISTRIBUTION
E-14	[01 MCC 01] MOTOR CONTROL CENTER ELEVATION, SPECIFICATION, AND SCHEDULE
E-15	[01 MCC 02] MOTOR CONTROL CENTER ELEVATION, SPECIFICATION, AND SCHEDULE
E-16	MOTOR STARTER NOTES
E-17A	MOTOR STARTER ELEMENTARY WIRING DIAGRAM - MEMBRANE SCOUR BLOWERS
E-17B	MTR STARTER EWD - MSB
E-18A	MOTOR STARTER ELEMENTARY WIRING DIAGRAM - PERMEATE PUMPS
E-18B	MOTOR STARTER ELEMENTARY WIRING DIAGRAM - PERMEATE PUMPS
E-19A	MOTOR STARTER ELEMENTARY WIRING DIAGRAM - AERATION BLOWER
E-19B	MTR STARTER EWD - AB
E-20A	MOTOR STARTER ELEMENTARY WIRING DIAGRAM - WAS BLOWER
E-20B	MOTOR STARTER ELEMENTARY WIRING DIAGRAM - WAS BLOWER
E-21	MOTOR STARTER ELEMENTARY WIRING DIAGRAM - NONPOT WATER PUMPS
E-22A	MOTOR STARTER ELEMENTARY WIRING DIAGRAM - INFLUENT PUMPS
E-22B	MOTOR STARTER ELEMENTARY WIRING DIAGRAM - INFLUENT PUMPS
E-23A	MOTOR STARTER ELEMENTARY WIRING DIAGRAM - RAS PUMPS
E-23B	MOTOR STARTER ELEMENTARY WIRING DIAGRAM - RAS PUMPS
E-24	MOTOR STARTER ELEMENTARY WIRING DIAGRAM - ANOXIC BASIN MIXER
E-25	MOTOR STARTER ELEMENTARY WIRING DIAGRAM - ROTARY DRUM SCREENS
E-26	MOTOR STARTER ELEMENTARY WIRING DIAGRAM - SCREENINGS WASHER COMPACTOR
E-27	MOTOR STARTER ELEMENTARY WIRING DIAGRAM - WASTE SLUDGE PUMP
E-28	MOTOR STARTER ELEMENTARY WIRING DIAGRAM - ODOR CONTROL UNIT
E-29	PLANT CONTROL PANEL ELEVATIONS
E-30	PLANT CONTROL PANEL ELEMENTARY WIRING DIAGRAM
E-31	PLANT CONTROL PANEL ELEMENTARY WIRING DIAGRAM
E-32	PLANT CONTROL PANEL ELEMENTARY WIRING DIAGRAM
E-33	PLANT CONTROL PANEL ELEMENTARY WIRING DIAGRAM
E-34	PLC CONTROL PANEL [01 CP 01], WASHER COMPACTOR AND ROTARY DRUM SCREENS SOLENOID VALVES CONTROL POWER ELEMENTARY WIRING DIAGRAM
E-35	ANALOG LOOP DIAGRAMS
E-36	ANALOG LOOP DIAGRAMS
E-37	PLC IO MATRIX, NETWORKED MOTOR IO
E-38	NETWORKED I/O TABLES
E-39	[01 PLC 01] I/O TABLES
E-40	[01 PLC 02] I/O TABLES
E-41	NETWORK DIAGRAM
EC-1	AREA 1 POWER CABLE AND CONDUIT SCHEDULE
EC-2	AREA 1 CONTROL AND INSTRUMENTATION CABLE AND CONDUIT SCHEDULE
EC-3	AREA 2 POWER CABLE AND CONDUIT SCHEDULE
EC-4	AREA 2 CONTROL AND INSTRUMENTATION CABLE AND CONDUIT SCHEDULE
EC-5	AREA 3 CABLE AND CONDUIT SCHEDULE
ED-1	ELECTRICAL DETAILS
ED-2	ELECTRICAL DETAILS
ED-3	ELECTRICAL DETAILS
ED-4	ELECTRICAL DETAILS
E1-1	OPERATIONS BUILDING POWER, CONTROL, AND INSTRUMENTATION PLAN
E1-2	ELECTRICAL ROOM DETAIL AND NONPOT TANK SECTION DETAIL

SHEET LIST

SHEET	SHEET DESCRIPTION
E1-3	MOTOR STARTERS AND SAFETY DISCONNECT SWITCHES POWER, CONTROL, AND INSTRUMENTATION PLAN DETAIL
E1-4	OPERATIONS BUILDING LIGHTING AND RECEPTACLE PLAN
E1-5	OPERATIONS BUILDING HVAC AND FIRE PLANS
E1-6	OPERATIONS BUILDING COMMUNICATIONS PLAN AND [01 TELE 01] ELEVATION
E1-7	OPS BUILDING CONTROL PANEL AND SAFETY DISCONNECT SWITCH ELEVATIONS AND CONNECTION DIAGRAMS
E1-8	OPS BUILDING CONTROL PANEL AND SAFETY DISCONNECT SWITCH ELEVATIONS AND CONNECTION DIAGRAMS
E2-1	WAS TANK, ODOR CONTROL UNIT (UPPER) AND MEMBRANE BASINS (LOWER) POWER, CONTROL AND INSTRUMENTATION PLAN
E2-2	UPPER PROCESS TANKS POWER, CONTROL AND INSTRUMENTATION PLAN
E2-3	LOWER PUMP STATIONS AND VALVE VAULT POWER, CONTROL AND INSTRUMENTATION PLAN
E2-4	PROCESS TANKS SECTIONS
E2-5	CONTROL STATION - INFLUENT PUMPS
E2-6	CONNECTION DIAGRAM - INFLUENT PUMPS
E2-7	CONTROL STATION - RAS PUMPS
E2-8	CONNECTION DIAGRAM - RAS PUMPS
E2-9	CONTROL STATIONS AND CONNECTION DIAGRAMS - ROTARY DRUM SCREENS AND SCREENINGS WASHER COMPACTOR
E2-10	CONTROL STATIONS AND CONNECTION DIAGRAMS - ODOR CONTROL UNIT, ANOXIC BASIN MIXER
E2-11	CONTROL STATION AND CONNECTION DIAGRAM - WAS PUMP, AND MOV SAFETY DISCONNECT SWITCH ELEVATION
E3-1	BLUFF LIFT STATION
E3-2	EXISTING BLUFF LIFT STATION CONTROL PANEL ELECTRICAL WIRING DIAGRAM

SCHEDULE OF CLASSIFIED AREAS

AREA	LOCATION	CLASSIFICATION	EXTENT OF ENVELOPE
02	RAS AND INFLUENT PUMP STATIONS	CLASS I, DIV 1	ENTIRE ROOM OR SPACE PLUS ENVELOPE 3 FEET AROUND VENTS.
02	RAS AND INFLUENT PUMP STATION HATCHES	CLASS I, DIV 2	5 FEET BEYOND VENT PLUS ENVELOPE 18 INCHES EXTENDING 3 FEET AROUND OPENINGS (HATCHES OR DOORS).
02	ANOXIC BASIN	CLASS I, DIV 1	ENCLOSED SPACE PLUS ENVELOPE 3 FEET AROUND VENTS.
02	AERATION BASIN	CLASS I, DIV 2	5 FEET BEYOND DIVISION 1 VENTS PLUS ENVELOPE 18 INCHES EXTENDING 3 FEET AROUND OPENINGS (HATCHES OR DOORS).
02	EQUALIZATION BASIN	CLASS I, DIV 1	ENCLOSED - ENTIRE SPACE.
02	RAS PUMP STATION VALVE VAULT	CLASS I, DIV 2	ENCLOSED - ENTIRE SPACE.
02	INFLUENT PUMP STATION VALVE VAULT	CLASS I, DIV 2	ENTIRE ROOM OR SPACE PLUS ENVELOPE 3 FT AROUND VENTS.
02	ROTARY DRUM SCREENS	CLASS I, DIV 2	ENCLOSED - ENTIRE SPACE.
02	ODOR CONTROL UNIT AND SURROUNDING VENTILATION SYSTEMS	CLASS I, DIV 2	AREAS WITHIN 3 FEET OF LEAKAGE SOURCE SUCH AS VENTS, FANS, DAMPERS, FLEXIBLE CONNECTIONS, FLANGES, PRESSURIZED UNWELDED DUCTWORK, AND ODOR CONTROL VESSELS.
02	RAS AND INFLUENT PUMP TANKS	CLASS I, DIV 1	ENCLOSED - ENTIRE SPACE.
02	MEMBRANE BASIN	CLASS I, DIV 2	ENTIRE ENCLOSED SPACE OR TANK OF SYSTEM.
02	WAS STORAGE TANK	CLASS I, DIV 1	ENCLOSED - ENTIRE SPACE.
03	BLUFF LIFT STATION	UNCLASSIFIED	N/A

ELECTRICAL WORK SUMMARY:

THIS SUMMARY OF ELECTRICAL WORK IS INCLUDED AS A COURTESY AND IS INTENDED TO PROVIDE A GENERAL UNDERSTANDING OF ELECTRICAL DESIGN INTENT AND MAJOR ELECTRICAL CONSTRUCTION TASKS. IT IS NOT PROVIDED AS A COMPLETE LIST OF WORK AND SHALL NOT BE USED FOR BIDDING PURPOSES. REFER TO ALL PLANS AND SPECIFICATIONS.

1. THIS PROJECT REPLACES ALL THE ELECTRICAL EQUIPMENT AND ROUTING FOR THE ENTIRE TAYLOR BAY WASTEWATER TREATMENT FACILITY.
2. ALL CONDUIT ROUTING FROM THE NORTH SIDE OF AREA 1 ELECTRICAL ROOM WILL GO THROUGH PULL BOXES BEFORE BEING TERMINATED IN THEIR RESPECTIVE DESTINATION.
3. AREA 2 EQUIPMENT CONTROL PANELS AND MOTOR SAFETY DISCONNECT SWITCHES WILL BE MOUNTED AGAINST THE WALL OR CENTRALIZED CONTROL STANDS.
4. BLUFF LIFT STATION WILL CONSIST OF THE RETROFIT OF THE EXISTING CONTROL PANEL TO THE NEW LIFT STATION.
5. J-BOXES ARE PROVIDED NEAR EQUIPMENT FOR THE TRANSITION OF MANUFACTURER'S HEAT TRACE WIRING.
6. [01 CP 02] IS A MANUFACTURER SUPPLIED CONTROL PANEL WITH INSTALLATION AND CONNECTION BY THIS CONTRACT.

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WASTEWATER TREATMENT FACILITY UPGRADE

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ELECTRICAL

SHEET AND TAG LISTS

DRAWING: **E-2** OF: **41**

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AREA 01 DEVICE TAG LIST

TAG ID#	TAG DESCRIPTION	VINTAGE
01 AB 01	AERATION BLOWER	NEW
01 ABCP 01	CONTROL PANEL, AERATION BLOWER	NEW
01 ABMS 01	MOTOR STARTER, AERATION BLOWER	NEW
01 ABSDS 01	SAFETY DISCONNECT SWITCH, AERATION BLOWER	NEW
01 AD 01	AUTODIALER	NEW
01 AFM 01	AIR FLOW METER NO. 1, MEMBRANE BASIN NO. 1	NEW
01 AFM 02	AIR FLOW METER NO. 2, MEMBRANE BASIN NO. 2	NEW
01 ATS 01	AUTOMATIC TRANSFER SWITCH	NEW
01 ATS 02	AUTOMATIC TRANSFER SWITCH	NEW
01 BAT 01	BATTERY	NEW
01 BAT 02	BATTERY	NEW
01 BKR 01	BREAKER, MAIN POWER SWITCHBOARD/PANELBOARD	NEW
01 BKR 02	BREAKER IN [01 SWBD 01], MOTOR CONTROL CENTER NO. 1	NEW
01 BKR 03	BREAKER IN [01 SWBD 01], MOTOR CONTROL CENTER NO. 2	NEW
01 BKR 04	BREAKER, MOTOR CONTROL CENTER NO. 1 PANELBOARD 01 TRANSFORMER	NEW
01 BKR 05	BREAKER, MOTOR CONTROL CENTER NO. 2 PANELBOARD 02 TRANSFORMER	NEW
01 BKR 06	BREAKER, UV BANK DISINFECTION SYSTEM NO. 1 CONTROL PANEL	NEW
01 BKR 07	BREAKER, UV BANK DISINFECTION SYSTEM NO. 2 CONTROL PANEL	NEW
01 BKR 08	BREAKER, WATER HEATER	NEW
01 CP 01	CONTROL PANEL, MASTER	NEW
01 CP 02	CONTROL PANEL, MEMBRANE FILTER CONTROLS	NEW
01 CREC 01	CONVENIENCE RECEPTACLE, MASTER CONTROL PANEL, INTERIOR	NEW
01 CREC 02	CONVENIENCE RECEPTACLE, MASTER CONTROL PANEL, DOOR MOUNT	NEW
01 CT 01	CT ENCLOSURE	NEW
01 DCM 01	VDC DECOUPLING	NEW
01 DCM 02	VDC DECOUPLING	NEW
01 DCU 01	DC UPS CONTROLLER	NEW
01 DCU 02	DC UPS CONTROLLER	NEW
01 DH 01	DUCT HEATER	NEW
01 DREC 01	DEDICATED RECEPTACLE, EFFLUENT SAMPLER	NEW
01 DREC 02	DEDICATED RECEPTACLE, EM SHOWER	NEW
01 EF 01	EXHAUST FAN, PROCESS EQUIPMENT ROOM	NEW
01 EF 02	EXHAUST FAN, RESTROOM	NEW
01 ES 01	EFFLUENT SAMPLER	NEW
01 ESTOP 01	EMERGENCY STOP, WASTE SLUDGE PUMP	NEW
01 ESW 01	ETHERNET SWITCH, MOTOR CONTROL CENTER NO. 1	NEW
01 ESW 02	ETHERNET SWITCH, MOTOR CONTROL CENTER NO. 2	NEW
01 ESW 03	ETHERNET SWITCH, MASTER CONTROL PANEL	NEW
01 ESW 04	ETHERNET SWITCH, MEMBRANE FILTER CONTROLS CONTROL PANEL	NEW
01 FC 01	FAN COIL, ELECTRICAL ROOM	NEW
01 FC 02	FAN COIL, CONTROL ROOM	NEW
01 GEN 01	GENERATOR, STANDBY	NEW
01 HB 01	HOTBOX, RPBA	EXISTING
01 HH 01	HAND HOLE, TELECOM	NEW
01 HP 01	HEAT PUMP, ELECTRICAL ROOM	NEW
01 HP 02	HEAT PUMP, CONTROL ROOM	NEW
01 HT 01	UNIT HEATER, PROCESS EQUIPMENT ROOM	NEW
01 HT 02	WALL HEATER, RESTROOM	NEW
01 HTR 01	PANEL HEATER	NEW
01 LS 01	FLOAT SWITCH, NON-POT WATER TANK	NEW
01 MB 01	UTILITY METER BASE	NEW
01 MCC 01	MOTOR CONTROL CENTER NO. 1	NEW
01 MCC 02	MOTOR CONTROL CENTER NO. 2	NEW
01 MFM 01	PERMEATE FLOW METER NO. 1	NEW
01 MFM 02	PERMEATE FLOW METER NO. 2	NEW
01 MFM 03	MAGNETIC FLOW METER, NON-POT WATER	NEW
01 MFM 04	CIPP FLOW METER	NEW
01 MLG 01	MAIN LUGS, MOTOR CONTROL CENTER NO. 1	NEW
01 MLG 02	MAIN LUGS, MOTOR CONTROL CENTER NO. 2	NEW
01 MOV 01	MOTOR OPERATED VALVE, CIP	NEW

AREA 01 DEVICE TAG LIST

TAG ID#	TAG DESCRIPTION	VINTAGE
01 MSB 01	MEMBRANE SCOUR BLOWER NO. 1	NEW
01 MSB 02	MEMBRANE SCOUR BLOWER NO. 2	NEW
01 MSB 03	MEMBRANE SCOUR BLOWER NO. 3	NEW
01 MSBCP 01	CONTROL PANEL, MEMBRANE SCOUR BLOWER NO. 1	NEW
01 MSBCP 02	CONTROL PANEL, MEMBRANE SCOUR BLOWER NO. 2	NEW
01 MSBCP 03	CONTROL PANEL, MEMBRANE SCOUR BLOWER NO. 3	NEW
01 MSBMS 01	MOTOR STARTER, MEMBRANE SCOUR BLOWER NO. 1	NEW
01 MSBMS 02	MOTOR STARTER, MEMBRANE SCOUR BLOWER NO. 2	NEW
01 MSBMS 03	MOTOR STARTER, MEMBRANE SCOUR BLOWER NO. 3	NEW
01 MSBSDS 01	SAFETY DISCONNECT SWITCH, MEMBRANE SCOUR BLOWER NO. 1	NEW
01 MSBSDS 02	SAFETY DISCONNECT SWITCH, MEMBRANE SCOUR BLOWER NO. 2	NEW
01 MSBSDS 03	SAFETY DISCONNECT SWITCH, MEMBRANE SCOUR BLOWER NO. 3	NEW
01 NPP 01	NONPOT WATER PUMP NO. 1	NEW
01 NPP 02	NONPOT WATER PUMP NO. 2	NEW
01 NPPCP 01	CONTROL PANEL, NONPOT WATER PUMP NO. 1	NEW
01 NPPCP 02	CONTROL PANEL, NONPOT WATER PUMP NO. 2	NEW
01 NPPMS 01	MOTOR STARTER, NONPOT WATER PUMP NO. 1	NEW
01 NPPMS 02	MOTOR STARTER, NONPOT WATER PUMP NO. 2	NEW
01 NPPSDS 01	SAFETY DISCONNECT SWITCH, NONPOT WATER PUMP NO. 1	NEW
01 NPPSDS 02	SAFETY DISCONNECT SWITCH, NONPOT WATER PUMP NO. 2	NEW
01 NPT 01	NON-POT WATER TANK	NEW
01 PB 01	PANELBOARD 01, MOTOR CONTROL CENTER NO. 1	NEW
01 PB 02	PANELBOARD 02, MOTOR CONTROL CENTER NO. 2	NEW
01 PBX 01	PULL BOX, POWER	NEW
01 PBX 02	PULL BOX, CONTROL, SIGNAL	NEW
01 PLC 01	PROGRAMMABLE LOGIC CONTROLLER RACK 01	NEW
01 PLC 02	PROGRAMMABLE LOGIC CONTROLLER RACK 02	NEW
01 PMP 01	PERMEATE PUMP NO. 1	NEW
01 PMP 02	PERMEATE PUMP NO. 2	NEW
01 PMP 03	PERMEATE PUMP NO. 3	NEW
01 PMPCP 01	CONTROL PANEL, PERMEATE PUMP NO. 1	NEW
01 PMPCP 02	CONTROL PANEL, PERMEATE PUMP NO. 2	NEW
01 PMPCP 03	CONTROL PANEL, PERMEATE PUMP NO. 3	NEW
01 PMPMS 01	MOTOR STARTER, PERMEATE PUMP NO. 1	NEW
01 PMPMS 02	MOTOR STARTER, PERMEATE PUMP NO. 2	NEW
01 PMPMS 03	MOTOR STARTER, PERMEATE PUMP NO. 3	NEW
01 PMPSDS 01	SAFETY DISCONNECT SWITCH, PERMEATE PUMP NO. 1	NEW
01 PMPSDS 02	SAFETY DISCONNECT SWITCH, PERMEATE PUMP NO. 2	NEW
01 PMPSDS 03	SAFETY DISCONNECT SWITCH, PERMEATE PUMP NO. 3	NEW
01 PS 01	POWER SUPPLY - 24 VDC, PRIMARY CONTROL	NEW
01 PS 02	POWER SUPPLY - 24 VDC, SECONDARY CONTROL	NEW
01 PTR 01	PRESSURE TRANSMITTER, MEMBRANE BASIN NO. 1	NEW
01 PTR 02	PRESSURE TRANSMITTER, MEMBRANE BASIN NO. 2	NEW
01 PTR 03	PRESSURE TRANSMITTER, NPW	NEW
01 RLS 01	RADAR LEVEL SENSOR, NON-POT WATER TANK	NEW
01 SD 01	SMOKE DETECTOR, ELECTRICAL ROOM	NEW
01 SD 02	SMOKE DETECTOR, PROCESS EQUIPMENT ROOM	NEW
01 SD 03	SMOKE DETECTOR, PROCESS EQUIPMENT ROOM	NEW
01 SD 04	SMOKE DETECTOR, CONTROL ROOM	NEW
01 SDB 01	SERVICE DISCONNECT BREAKER (SUSE)	NEW
01 SF 01	SUPPLY FAN	NEW
01 SPD 01	SURGE PROTECTION DEVICE, MAIN POWER SWITCHBOARD/PANELBOARD	NEW
01 SPD 02	SURGE PROTECTIVE DEVICE, MOTOR CONTROL CENTER NO. 1	NEW
01 SPD 03	SURGE PROTECTIVE DEVICE, MOTOR CONTROL CENTER NO. 2	NEW
01 SPDC 01	SURGE PROTECTION DEVICE, PRIMARY CONTROL	NEW
01 SPDC 02	SURGE PROTECTION DEVICE, SECONDARY CONTROL	NEW
01 SPDC 03	SURGE PROTECTION DEVICE, ANCILLARY CONTROL	NEW
01 SPDC 04	SURGE PROTECTIVE DEVICE, MOV	NEW
01 SWBD 01	MAIN POWER SWITCHBOARD/PANELBOARD	NEW
01 T 01	THERMOSTAT, ELECTRICAL ROOM	NEW

AREA 01 DEVICE TAG LIST

TAG ID#	TAG DESCRIPTION	VINTAGE
01 T 02	THERMOSTAT, CONTROL ROOM	NEW
01 T 03	THERMOSTAT, PROCESS EQUIPMENT ROOM EXHAUST FAN	NEW
01 TELE 01	TELECOMMUNICATIONS ENCLOSURE, CONTROL ROOM	NEW
01 TM 01	TURBIDITY METER	NEW
01 UFM 01	ULTRASONIC FLOW METER, CIP SYSTEM	NEW
01 UT 01	UTILITY TRANSFORMER	NEW
01 UV 01	UV BANK DISINFECTION SYSTEM NO. 1	NEW
01 UV 02	UV BANK DISINFECTION SYSTEM NO. 2	NEW
01 UVCP 01	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 1	NEW
01 UVCP 02	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 2	NEW
01 UVT 01	UV TRANSMITTANCE METER	NEW
01 VDJ 01	VOICE/DATA JACK	NEW
01 VDJ 02	VOICE/DATA JACK	NEW
01 VDJ 03	VOICE/DATA JACK	NEW
01 WB 01	WAS BLOWER	NEW
01 WBCP 01	CONTROL PANEL, WAS BLOWER	NEW
01 WBMS 01	MOTOR STARTER, WAS BLOWER	NEW
01 WBSDS 01	SAFETY DISCONNECT SWITCH, WAS BLOWER	NEW
01 WH 01	WATER HEATER, RESTROOM	NEW
01 XFMR 01	TRANSFORMER, MOTOR CONTROL CENTER NO. 1 PANELBOARD 01	NEW
01 XFMR 02	TRANSFORMER, MOTOR CONTROL CENTER NO. 2 PANELBOARD 02	NEW

NOTES:

1. SOME OF THESE DEVICES ARE PART OF A PRE-PROCURED PACKAGE FROM THE MANUFACTURER OF THE TREATMENT MEMBRANES, BUT ALL ARE INSTALLED BY CONTRACTOR. REFERENCE THE APPENDICES OF THE SPECIFICATIONS FOR MANUFACTURER'S (KUBOTA) SCOPE OF SUPPLY.

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TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

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ELECTRICAL

AREA 1 TAG LIST

DRAWING: **E-3** OF: **41**

M:\Taylor Bay Beach Club HOA\22848.01 Construction Plans, Spec, & Permitting WA DOH grant\01 Design\WWTF Upgrade\Planset\Electrical\E_SYM_ABBR.dwg, 9/21/2026 10:58 AM, DAVID KLATT

AREA 02 DEVICE TAG LIST

TAG ID#	TAG DESCRIPTION	VINTAGE
02 CLS 01	CONDUCTIVITY LEVEL SENSOR	NEW
02 CST 01	CONTROL STAND, INFLUENT PUMPS	NEW
02 CST 02	CONTROL STAND, ROTARY DRUM SCREENS	NEW
02 CST 03	CONTROL STAND, MOV, MXR	NEW
02 CST 04	CONTROL STAND, WASHER COMPACTOR	NEW
02 CST 05	CONTROL STAND, WAS PUMP, OCU	NEW
02 DO 01	DISSOLVED OXYGEN SENSOR	NEW
02 DOT 01	DISSOLVED OXYGEN TRANSMITTER, AERATION BASIN	NEW
02 DREC 01	DEDICATED RECEPTACLE, SUMP PUMP NO. 1	NEW
02 DREC 02	DEDICATED RECEPTACLE, SUMP PUMP NO. 2	NEW
02 DREC 03	DEDICATED RECEPTACLE, INFLUENT SAMPLER	NEW
02 FIT 01	FLOW INDICATOR TRANSMITTER, INFLUENT PUMP STATION	NEW
02 FIT 02	FLOW INDICATOR TRANSMITTER, RAS FLOW METER	NEW
02 FIT 03	FLOW INDICATOR TRANSMITTER, WAS STORAGE TANK	NEW
02 GADP 01	GENERATOR AUXILIARY DEVICE PANEL	NEW
02 GCB 01	GENERATOR CIRCUIT BREAKER, PRIMARY	NEW
02 GCB 02	GENERATOR CIRCUIT BREAKER, SECONDARY	NEW
02 GCP 01	GENERATOR CONTROL PANEL	NEW
02 GEN 01	GENERATOR	NEW
02 HTR 01	PANEL HEATER, INFLUENT PUMPS	NEW
02 HTR 02	PANEL HEATER, RAS PUMPS	NEW
02 IP 01	INFLUENT PUMP NO. 1	NEW
02 IP 02	INFLUENT PUMP NO. 2	NEW
02 IPCP 01	CONTROL PANEL, INFLUENT PUMPS	NEW
02 IPMS 01	MOTOR STARTER, INFLUENT PUMP NO. 1	NEW
02 IPMS 02	MOTOR STARTER, INFLUENT PUMP NO. 2	NEW
02 IPSDS 01	SAFETY DISCONNECT SWITCH, INFLUENT PUMP NO. 1	NEW
02 IPSDS 02	SAFETY DISCONNECT SWITCH, INFLUENT PUMP NO. 2	NEW
02 IS 01	INFLUENT SAMPLER	NEW
02 ISBA 01	INTRINSICALLY SAFE BARRIER, ANALOG, INFLUENT PUMP STATION	NEW
02 ISBA 02	INTRINSICALLY SAFE BARRIER, ANALOG, RAS PUMP STATION	NEW
02 ISBA 03	INTRINSICALLY SAFE BARRIER, ANALOG, WAS TANK RADAR LEVEL SENSOR	NEW
02 ISBD 01	INTRINSICALLY SAFE BARRIER, DISCRETE, PUMP 1 HIGH, INFLUENT PUMP STATION FLOAT SWITCH	NEW
02 ISBD 02	INTRINSICALLY SAFE BARRIER, DISCRETE, PUMP 2 HIGH, INFLUENT PUMP STATION FLOAT SWITCH	NEW
02 ISBD 03	INTRINSICALLY SAFE BARRIER, DISCRETE, PUMP 1 HIGH, RAS PUMP STATION FLOAT SWITCH	NEW
02 ISBD 04	INTRINSICALLY SAFE BARRIER, DISCRETE, PUMP 2 HIGH, RAS PUMP STATION FLOAT SWITCH	NEW
02 ISBD 05	INTRINSICALLY SAFE BARRIER, DISCRETE, WAS STORAGE TANK FLOAT SWITCH	NEW
02 ISBD 06	INTRINSICALLY SAFE BARRIER, DISCRETE, CONDUCTIVITY LEVEL SENSOR	NEW
02 LIT 01	LEVEL INDICATOR TRANSMITTER, INFLUENT PUMP STATION SUBMERSIBLE LEVEL SENSOR	NEW
02 LIT 02	LEVEL INDICATOR TRANSMITTER, RAS PUMP STATION SUBMERSIBLE LEVEL SENSOR	NEW
02 LS 01	FLOAT SWITCH, PUMP 1 HIGH, INFLUENT PUMP STATION	NEW
02 LS 02	FLOAT SWITCH, PUMP 2 HIGH, INFLUENT PUMP STATION	NEW
02 LS 03	FLOAT SWITCH, MEMBRANE BASIN NO. 1	NEW
02 LS 04	FLOAT SWITCH, MEMBRANE BASIN NO. 1	NEW
02 LS 05	FLOAT SWITCH, MEMBRANE BASIN NO. 2	NEW
02 LS 06	FLOAT SWITCH, MEMBRANE BASIN NO. 2	NEW
02 LS 07	FLOAT SWITCH, PUMP 1 HIGH, RAS PUMP STATION	NEW
02 LS 08	FLOAT SWITCH, PUMP 2 HIGH, RAS PUMP STATION	NEW
02 LS 09	FLOAT SWITCH, WAS STORAGE TANK	NEW
02 MFM 01	MAGNETIC FLOW METER, INFLUENT PUMP STATION	NEW
02 MFM 02	MAGNETIC FLOW METER, RAS PUMP STATION	NEW
02 MFM 03	MAGNETIC FLOW METER, WAS STORAGE TANK	NEW
02 MOV 01	MOTOR OPERATED VALVE, DRUM SCREEN NO. 1	NEW
02 MOV 02	MOTOR OPERATED VALVE, DRUM SCREEN NO. 2	NEW
02 MOV 03	MOTOR OPERATED VALVE, MEMBRANE BASIN NO. 1	NEW
02 MOV 04	MOTOR OPERATED VALVE, MEMBRANE BASIN NO. 2	NEW
02 MOVSDS 01	MOTOR OPERATED VALVE SAFETY DISCONNECT SWITCH	NEW
02 MOVSDS 02	MOTOR OPERATED VALVE SAFETY DISCONNECT SWITCH	NEW
02 MOVSDS 03	MOTOR OPERATED VALVE SAFETY DISCONNECT SWITCH	NEW
02 MOVSDS 04	MOTOR OPERATED VALVE SAFETY DISCONNECT SWITCH	NEW

AREA 02 DEVICE TAG LIST

TAG ID#	TAG DESCRIPTION	VINTAGE
02 MXR 01	ANOXIC BASIN MIXER	NEW
02 MXRCP 01	ANOXIC BASIN MIXER, CONTROL PANEL	NEW
02 MXRMS 01	MOTOR STARTER, ANOXIC BASIN MIXER	NEW
02 MXRSDS 01	ANOXIC BASIN MIXER, SAFETY DISCONNECT SWITCH	NEW
02 OCU 01	ODOR CONTROL UNIT	NEW
02 OCUCP 01	ODOR CONTROL UNIT, CONTROL PANEL	NEW
02 OCUMS 01	MOTOR STARTER, ODOR CONTROL UNIT	NEW
02 OCUSDS 01	ODOR CONTROL UNIT, SAFETY DISCONNECT SWITCH	NEW
02 PTR 01	OVERFLOW PRESSURE TRANSMITTER, SCREEN NO. 1	NEW
02 PTR 02	OVERFLOW PRESSURE TRANSMITTER, SCREEN NO. 2	NEW
02 RDS 01	ROTARY DRUM SCREEN NO. 1	NEW
02 RDS 02	ROTARY DRUM SCREEN NO. 2	NEW
02 RDSCP 01	ROTARY DRUM SCREEN CONTROL PANEL	NEW
02 RDSCP 02	ROTARY DRUM SCREEN CONTROL PANEL	NEW
02 RDSMS 01	MOTOR STARTER, ROTARY DRUM SCREEN NO. 1	NEW
02 RDSMS 02	MOTOR STARTER, ROTARY DRUM SCREEN NO. 2	NEW
02 RDSSDS 01	ROTARY DRUM SCREEN SAFETY DISCONNECT SWITCH	NEW
02 RDSSDS 02	ROTARY DRUM SCREEN SAFETY DISCONNECT SWITCH	NEW
02 RLS 01	RADAR LEVEL SENSOR, WAS TANK	NEW
02 RP 01	RAS PUMP NO. 1	NEW
02 RP 02	RAS PUMP NO. 2	NEW
02 RPCP 01	RAS PUMP CONTROL PANEL	NEW
02 RPMS 01	MOTOR STARTER, RAS PUMP NO. 1	NEW
02 RPMS 02	MOTOR STARTER, RAS PUMP NO. 2	NEW
02 RPSDS 01	SAFETY DISCONNECT SWITCH, RAS PUMP NO. 1	NEW
02 RPSDS 02	SAFETY DISCONNECT SWITCH, RAS PUMP NO. 2	NEW
02 SLS 01	SUBMERSIBLE LEVEL SENSOR, INFLUENT PUMP STATION	NEW
02 SLS 02	SUBMERSIBLE LEVEL SENSOR, RAS PUMP STATION	NEW
02 SOV 01	SEAL-OFF VAULT, INFLUENT PUMPS	NEW
02 SOV 02	SEAL-OFF VAULT, INFLUENT CONTROLS	NEW
02 SOV 03	SEAL-OFF VAULT, RAS PUMPS	NEW
02 SOV 04	SEAL-OFF VAULT, RAS CONTROLS	NEW
02 WC 01	SCREENING WASHER COMPACTOR	NEW
02 WCCP 01	WASTE COMPACTOR CONTROL PANEL	NEW
02 WCMS 01	MOTOR STARTER, SCREENING WASHER COMPACTOR	NEW
02 WCSDS 01	WASTE COMPACTOR SAFETY DISCONNECT SWITCH	NEW
02 WP 01	WASTE SLUDGE PUMP	NEW
02 WPCP 01	WASTE SLUDGE PUMP CONTROL PANEL	NEW
02 WPMS 01	MOTOR STARTER, WASTE SLUDGE PUMP	NEW
02 WPSDS 01	WASTE SLUDGE PUMP SAFETY DISCONNECT SWITCH	NEW
02 WST 01	WAS STORAGE TANK	NEW

NOTES:

1. SOME OF THESE DEVICES ARE PART OF A PRE-PROCURED PACKAGE FROM THE MANUFACTURER OF THE TREATMENT MEMBRANES, BUT ALL ARE INSTALLED BY CONTRACTOR. REFERENCE THE APPENDICES OF THE SPECIFICATIONS FOR MANUFACTURER'S (KUBOTA) SCOPE OF SUPPLY.

AREA 03 DEVICE TAG LIST

TAG ID#	TAG DESCRIPTION	VINTAGE
03 BLP 01	BLUFF LIFT STATION PUMP NO. 1	EXISTING
03 BLP 02	BLUFF LIFT STATION PUMP NO. 2	EXISTING
03 CP 01	CONTROL PANEL, LIFT STATION	EXISTING
03 LS 01	FLOAT SWITCH, STOP	EXISTING
03 LS 02	FLOAT SWITCH, LEAD	EXISTING
03 LS 03	FLOAT SWITCH, LAG	EXISTING
03 LS 04	FLOAT SWITCH, ALARM	EXISTING
03 SDS 01	SAFETY DISCONNECT SWITCH, POWER	EXISTING
03 SDS 02	SAFETY DISCONNECT SWITCH, CONTROL	EXISTING

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TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

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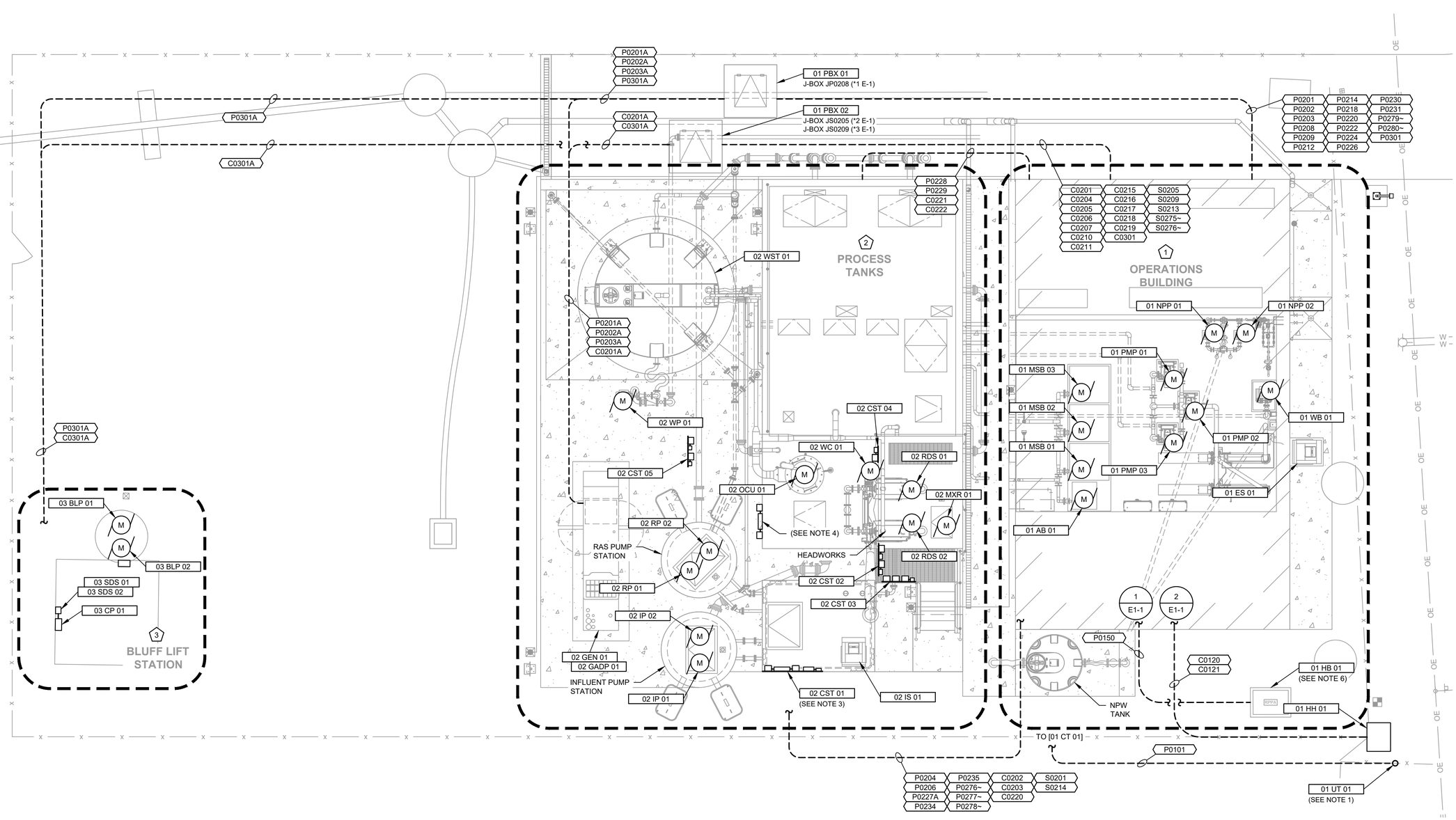
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AREAS 2 AND 3 TAG LISTS

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SITE ELECTRICAL PLAN

SCALE: 1" = 5'

AREA IDENTIFICATION	
X	AREA
1	OPERATIONS BUILDING
2	PROCESS TANKS AND HEADWORKS
3	BLUFF LIFT STATION

NOTES:

1. EXISTING UTILITY POLE WILL BE REPLACED AS PART OF THE UTILITY UPGRADE.
2. INSTRUMENTATION AND GROUNDING NOT SHOWN HERE.
3. [02 CST 01] LOCATED ON LOWER LEVEL.
4. RAS PUMP CONTROL STATION MOUNTED AGAINST WALL.
5. BARE COPPER GROUNDING AND GROUND ROD BOXES NOT SHOWN HERE. REFERENCE E-10.
6. EXISTING WATER METER AND HOTBOX SHOWN IN RELOCATED POSITION. REFERENCE G-SHEETS.

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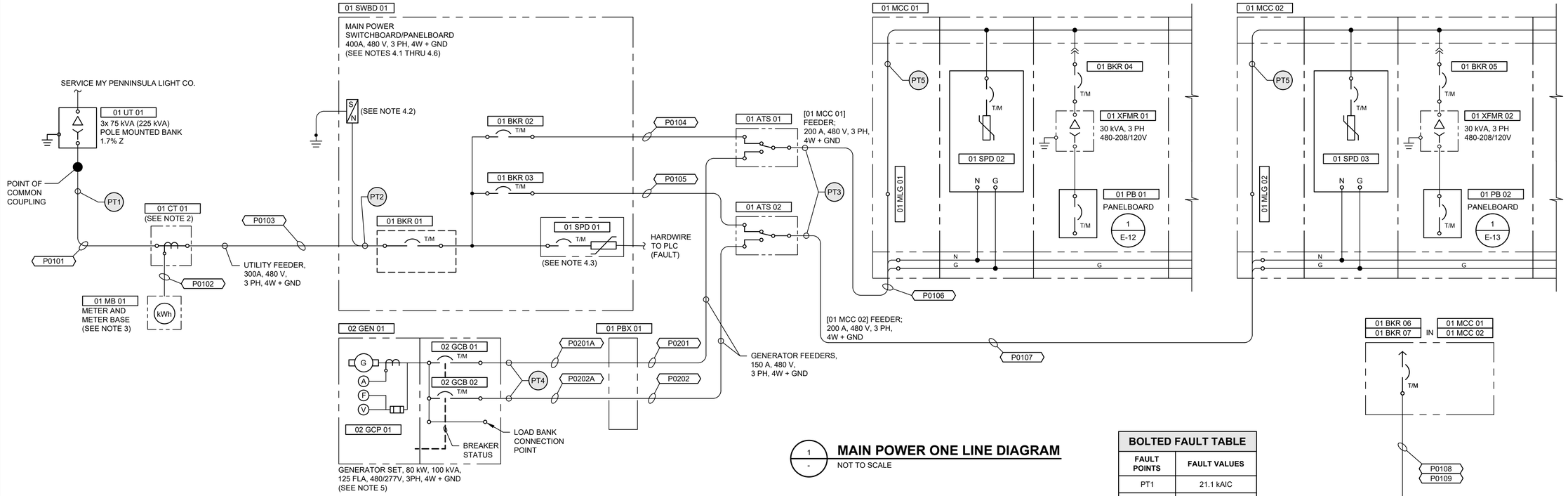
0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

ELECTRICAL

ELECTRICAL SITE PLAN

DRAWING: **E-5** OF: **41**

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1 - **MAIN POWER ONE LINE DIAGRAM**
NOT TO SCALE

BOLTED FAULT TABLE	
FAULT POINTS	**FAULT VALUES**
PT1	21.1 kAIC
PT2	17.6 kAIC
PT3	17.0 kAIC
PT4	2.0 kAIC
PT5	16.4 kAIC

(SEE NOTE 7)

2 - **ONE LINE DIAGRAM**
UV CONTROL PANEL POWER

3 - **ONE LINE DIAGRAM**
WATER HEATER POWER

ONE LINE DIAGRAM NOTES:

1. REFERENCE SPECIFICATION 16210 FOR WORK RESPONSIBILITIES.
2. CURRENT SENSING CTS ARE PROVIDED BY THE POWER UTILITY COMPANY. THE CT ENCLOSURE SHALL BE PROVIDED BY THE CONTRACTOR PER POWER UTILITY COMPANY'S SPECIFICATIONS. REFERENCE CONTROL PANEL SCHEDULE FOR SIZE AND MATERIAL.
3. THE REVENUE METER IS PROVIDED BY THE POWER UTILITY COMPANY. THE METER BASE SHALL BE PROVIDED BY THE CONTRACTOR PER POWER UTILITY COMPANY'S SPECIFICATIONS.
4. MAIN DISTRIBUTION PANEL [01 SWBD 01]:
   - 4.1 [01 SWBD 01] SHALL BE 400 A, 480/277 VAC, 3 PH, 4 WIRE, 22 kAIC, NEMA 1 GASKETED, SQUARE D I-LINE STRUCTURE AND SIZE, OR EQUAL.
   - 4.2 [01 SWBD 01] SHALL BE PROVIDED WITH A SUSE-RATED NEUTRAL-GROUND BONDING CONNECTION.
   - 4.3 [01 SWBD 01] SHALL INCLUDE INTERNALLY MOUNTED SURGE PROTECTIVE DEVICE [01 SPD 01]; 240 kA PER PHASE/120 kA PER MODE, FULL MODE, WITH NEUTRAL AND WITHOUT FILTER.
5. GENERATOR CIRCUIT BREAKERS [02 GCB 01] AND [02 GCB 02] SHALL BE PROVIDED WITH LOCKABLE HANDLES AND AUXILIARY CONTACTS THAT OPEN WHEN THE BREAKERS ARE IN THEIR OPEN/TRIPPED POSITIONS. THESE CIRCUITS SHALL BE PREWIRED BY THE GENERATOR MANUFACTURER TO THE GENERATOR CONTROL PANEL [02 GCP 01] IN LFMC CONDUIT PER SPECIFICATION 16230.
6. MOTOR CONTROL CENTERS [01 MCC 01] AND [01 MCC 02]:
   - 6.1 TRANSFORMERS [01 XFMR 01] AND [01 XFMR 02] ARE CONSIDERED SEPARATELY-DERIVED SOURCES. (1 / E-10)
   - 6.2 PROVIDE SURGE PROTECTIVE DEVICES [01 SPD 02] AND [01 SPD 03] INSIDE [01 MCC 01] AND [01 MCC 02] RESPECTIVELY. [01 SPD 02] AND [01 SPD 03] SHALL BE 160 kA PER PHASE/80 kA PER MODE, FULL MODE, WITH NEUTRAL AND WITH FILTER. UNITS SHALL INCLUDE INTERNAL DISCONNECTS WITH OVERCURRENT PROTECTION AND FORM C CONTACTS THAT OPEN WHEN THE UNITS ARE FAULTED.
   - 6.3 PROVIDE A NAMEPLATE AT THE POWER ENTRY POINT OF EACH MCC STATING... "TO SAFELY REMOVE POWER TO THIS MCC, LOCK OUT THE ASSOCIATED BREAKERS IN [01 SWBD 01] AND [02 GEN 01]." USE BLACK 1/4-INCH FONT ON WHITE BACKGROUND.
7. FAULT CALCULATIONS ARE BASED ON INFINITE UTILITY CONTRIBUTION, +10% VARIANCE IN UTILITY VOLTAGE, -10% VARIANCE IN TRANSFORMER IMPEDANCE, 225 KVA TRANSFORMER WITH 1.7% ASSUMED IMPEDANCE. FAULT CALCULATIONS ALSO INCLUDE 1,791 AIC MOTOR REGENERATIVE CONTRIBUTION FROM 29 MOTORS ADDED TO EACH FAULT POINT (INCLUDING 3 HEADWORK'S MOTORS). ALL CALCULATIONS ARE BASED ON 480 V.
8. MOTOR STARTER NOTES:
   - 10.1 REFERENCE MOTOR STARTER ELEMENTARY WIRING DIAGRAM NOTES. (- / E-16)

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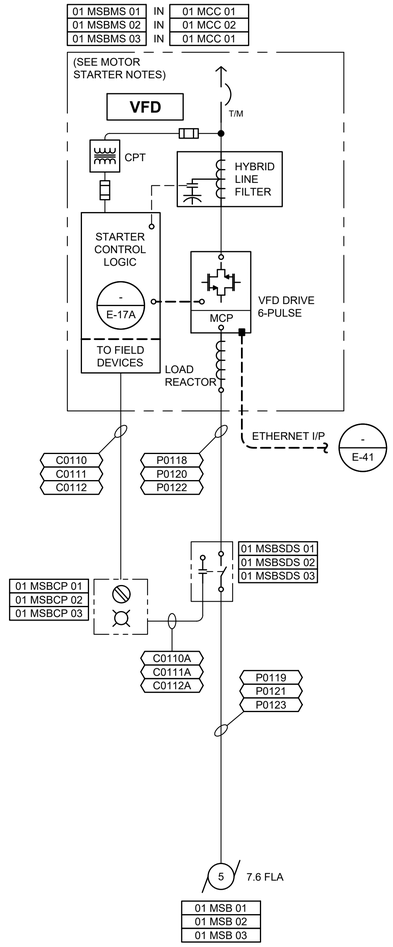
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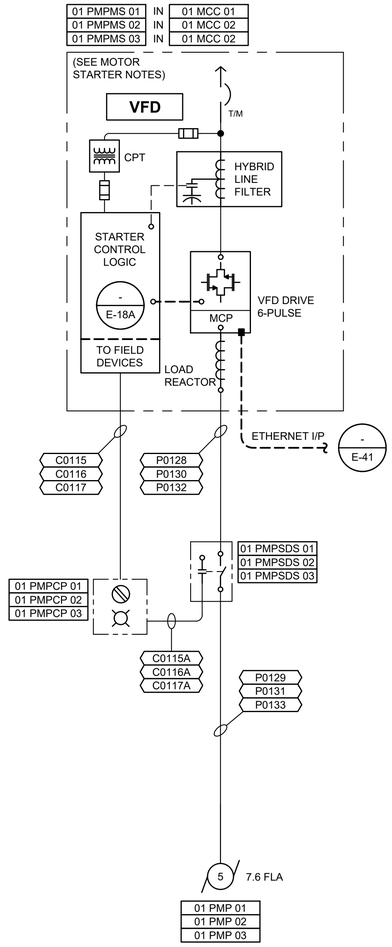
ONE LINE DIAGRAM

DRAWING: **E-6** OF: **41**

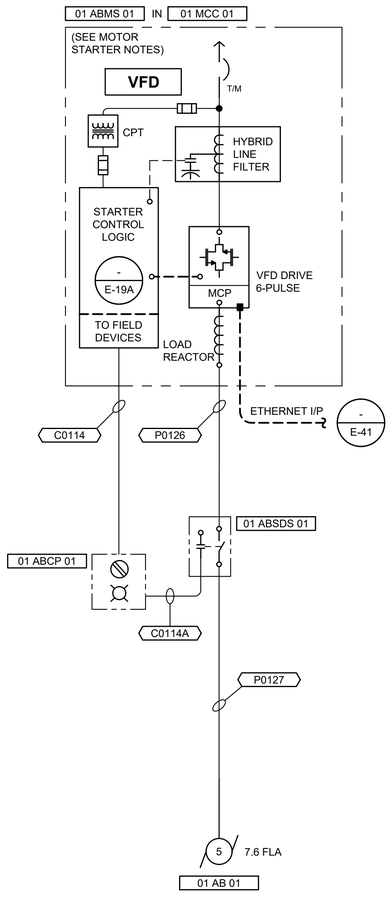
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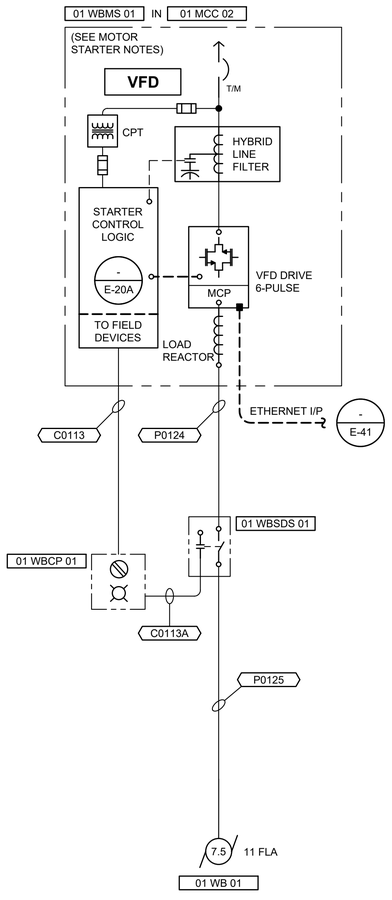
1 - **ONE LINE DIAGRAM**
MEMBRANE SCOUR BLOWERS



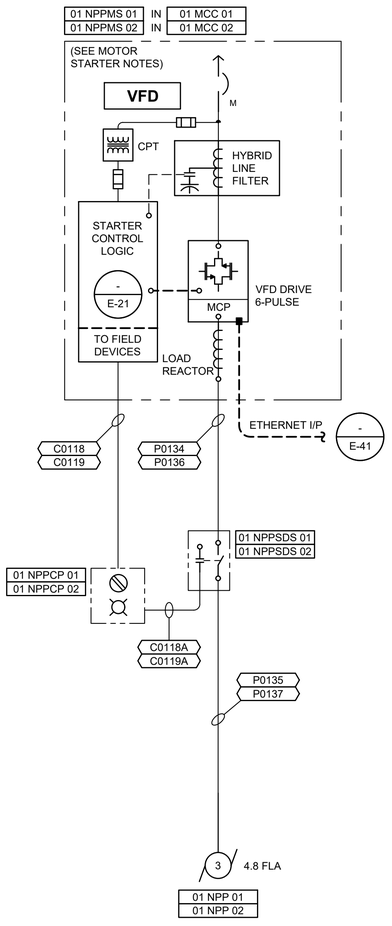
2 - **ONE LINE DIAGRAM**
PERMEATE PUMPS



3 - **ONE LINE DIAGRAM**
AERATION BLOWER



4 - **ONE LINE DIAGRAM**
WAS BLOWER



5 - **ONE LINE DIAGRAM**
NONPOT WATER PUMPS

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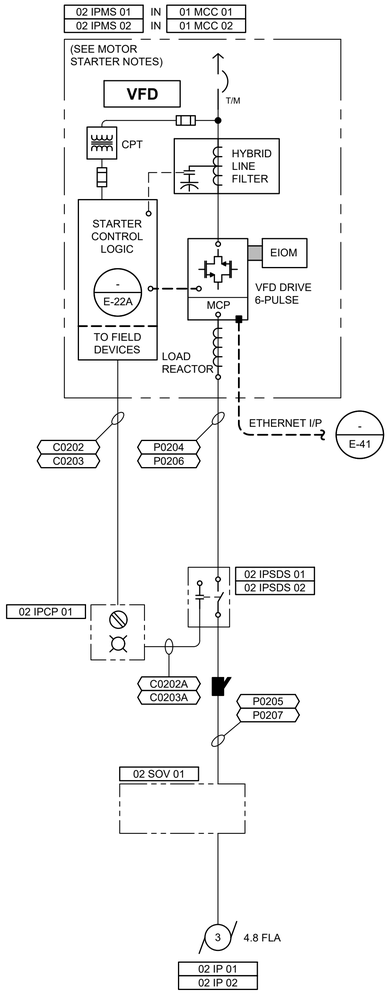
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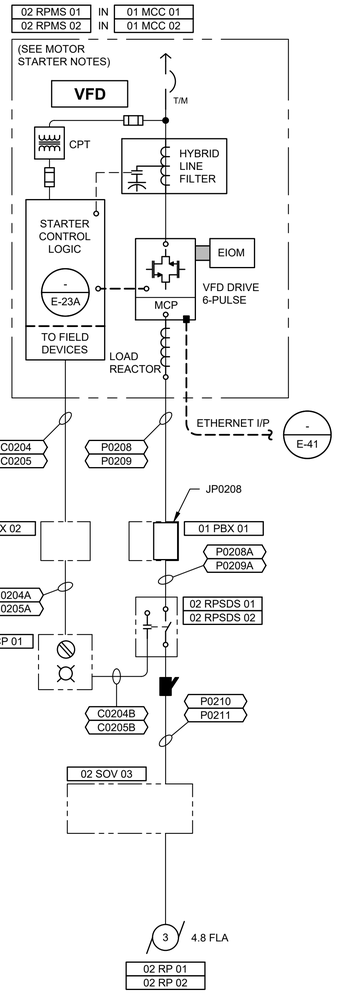
MOTOR STARTERS ONE LINE DIAGRAMS

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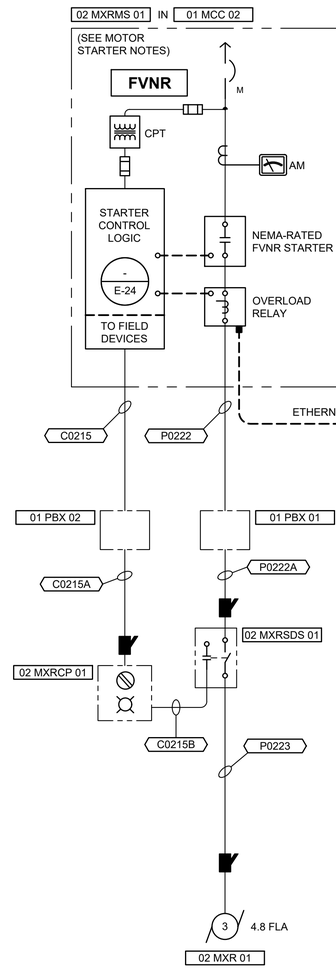
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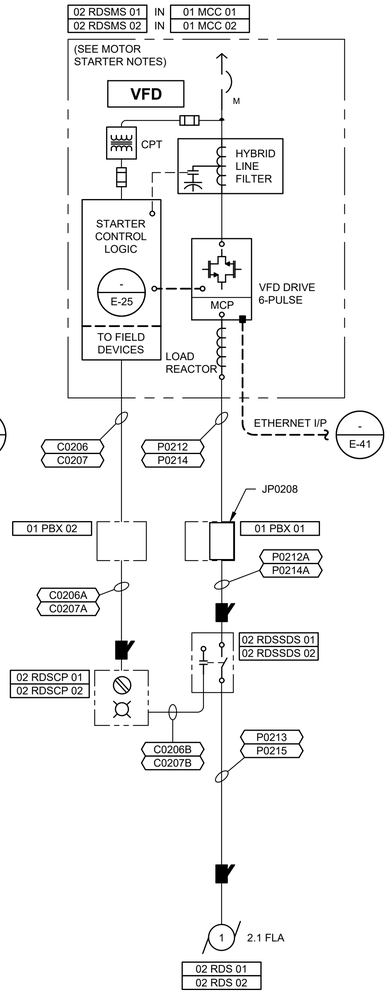
1 - **ONE LINE DIAGRAM**
INFLUENT PUMPS



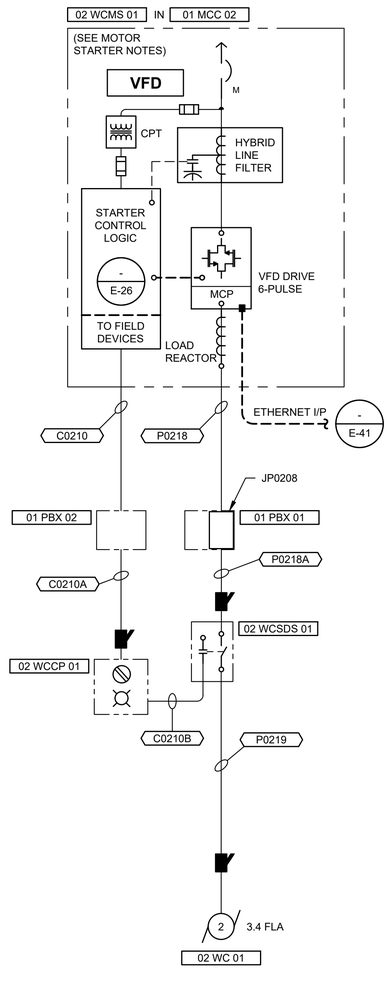
2 - **ONE LINE DIAGRAM**
RAS PUMPS



3 - **ONE LINE DIAGRAM**
ANOXIC BASIN MIXER



4 - **ONE LINE DIAGRAM**
ROTARY DRUM SCREENS



5 - **ONE LINE DIAGRAM**
SCREENINGS WASHER COMPACTOR

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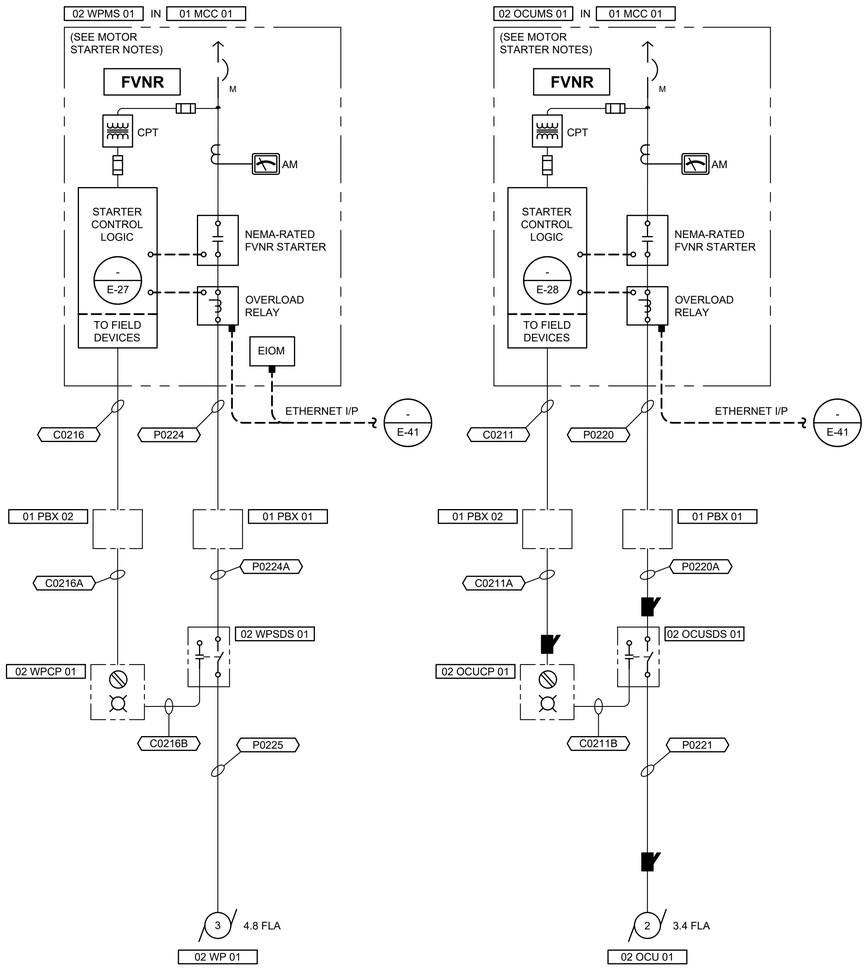
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MOTOR STARTERS ONE LINE DIAGRAMS

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1 - **ONE LINE DIAGRAM**
WASTE SLUDGE PUMP

2 - **ONE LINE DIAGRAM**
ODOR CONTROL UNIT

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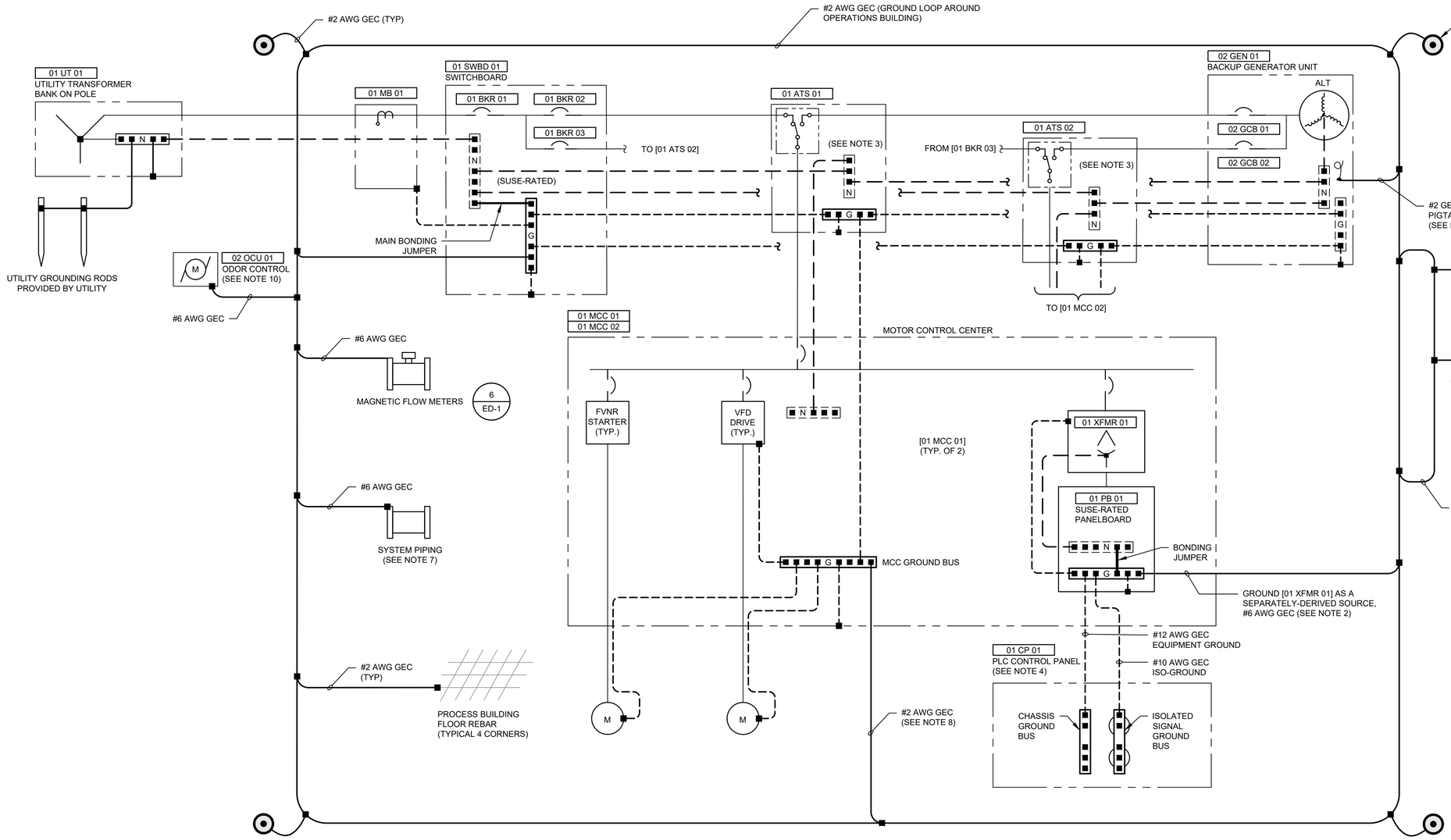
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MOTOR STARTERS ONE LINE DIAGRAMS

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NOTES:

1. REFERENCE GROUNDING SPECIFICATION.
2. ALL POWER TRANSFORMERS ARE CONSIDERED SEPARATELY DERIVED SOURCES AND SHALL BE GROUNDED APPROPRIATELY. SMALL CONTROL TRANSFORMERS DEDICATED TO DRIVES AND CONTROLS ARE NOT CONSIDERED SEPARATELY DERIVED. GROUND SEPARATELY-DERIVED SOURCES [01 XFMR 01] AND [01 XFMR 02] TO THE GROUND LOOP USING AN INSULATED, GREEN, #6 AWG GEC.
3. NEUTRALS ARE NOT SWITCHED IN THE ATS UNITS.
4. THE ISOLATED GROUND BUS IN [01 CP 01] IS NOT CONNECTED TO [01 CP 01] CHASSIS GROUND BUS, BUT THEY ARE AT THE SAME POTENTIAL.
5. DRIVE 10' X 3/4" GROUND RODS AT EACH CORNER OF OPERATIONS BUILDING. CONNECT TO GROUND LOOP WITH #2 BARE COPPER GECs BURIED AT A DEPTH OF 30" MINIMUM. GROUND ROD CONNECTIONS SHALL BE ACCESSIBLE FROM WITHIN GROUND BOXES. (3 / ED-1)
6. BARE GROUND WIRES EMERGING FROM CONCRETE SHALL BE PROTECTED WITH PVC SCHEDULE 40 CONDUIT SLEEVES PER (2 / ED-1).
7. RUN A #6 AWG BARE COPPER GEC TO ALL METAL PROCESS PIPING GREATER THAN 6-INCH DIAMETER PENETRATING THE CONCRETE FLOOR. CONNECT THE GROUND AT THE CLOSEST BOLT NEAREST THE FLOOR. ARRANGE THE WIRE TO PREVENT A TRIP HAZARD.
8. RUN ADDITIONAL BARE COPPER GECs BETWEEN THE GROUND LOOP AND EACH MCC AND EACH HANDHOLE, PULL BOX, AND VAULT.
9. PROVIDE A GROUND PIGTAIL FROM THE GROUND LOOP JUST UNDER GENERATOR CIRCUIT BREAKER [02 GCB 01]. CONNECT TO GENERATOR GROUND BUS IF REQUIRED BY L&I INSPECTOR.
10. REQUIREMENT FOR GEC CONNECTION TO ODOR CONTROL VESSEL VARIES PER MANUFACTURER.

GROUNDING LEGEND

———	POWER CONDUCTORS
— — —	NEUTRAL CONDUCTORS
- - - - -	EQUIPMENT GROUND CONDUCTORS
———	GROUNDING ELECTRODE CONDUCTORS (GEC)
	GROUNDING ELECTRODE TAP
N	NEUTRAL BUS
G	GROUND BUS
	GROUNDING ROD BOX W/ 10' X ¾" GROUNDING ROD

(1 / -) **GROUNDING ONE LINE DIAGRAM**
NOT TO SCALE

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ELECTRICAL

GROUNDING ONE LINE DIAGRAM

DRAWING: **E-10** OF: **41**

m:\taylor bay beach club hoa\22848.01 construction plans, spec, & permitting wa doh grant\01 design\wwtf upgrade\Planset\Electrical\E_OLD.dwg, 9/4/2026 10:29 AM, CHARLEY REID

CONTROL PANEL SCHEDULE

TAG NO.	DESCRIPTION	RATING	MATERIAL	FINISH	MINIMUM SIZE (INCHES) HEIGHT	WIDTH	DEPTH	TYPE A	TYPE B	HEATER	MOUNTING METHOD	REFERENCE SHEET	REFERENCE DETAIL	NOTES/COMMENTS
01 CP 01	CONTROL PANEL, MASTER	NEMA 1	CARBON STEEL	STANDARD FINISH	72	48	18	X			WALL MOUNTED	** NOTE	- - - - -	
02 IPCP 01	CONTROL PANEL, INFLUENT PUMPS	NEMA 4X	STAINLESS STEEL, 304	POWDER-COATED	32	24	12		X	X	MOUNTED TO FREE-STANDING BACKPLATE, MULTIPLE POST			
02 RPCP 01	RAS PUMP CONTROL PANEL	NEMA 4X	STAINLESS STEEL, 304	POWDER-COATED	32	24	12		X	X	WALL MOUNTED	** NOTE	- - - - -	

* PM IMPLIES THAT THE ENCLOSURE IS SIZED BY THE DEVICE MANUFACTURER. REFERENCE GENERAL NOTES.
**NOTE FOR WALL MOUNTED ENCLOSURES, REFERENCE GENERAL NOTE 3 AND TYPE A OR TYPE B REQUIREMENTS.

CONTROL PANEL AND MSDS SCHEDULE NOTES:

GENERAL CONTROL PANEL NOTES:

1. THE "CONTROL PANEL SCHEDULE" INCLUDES ELECTRICAL PANELS FABRICATED BY THE CONTRACTOR. REFERENCE SPECIFICATION 16130 FOR JUNCTION AND DEVICE BOXES.
2. IN GENERAL, "TYPE A" MOUNTING REQUIREMENTS APPLY TO INDOOR PANELS AND "TYPE B" APPLIES TO PANELS MOUNTED OUTDOORS. IF THE PLANS SHOW A PANEL NOT INCLUDED IN THIS LIST, AND NOT SPECIFICALLY CALLED OUT IN A DETAIL, THEN BID THE PANEL AS TYPE B.
3. UNLESS SPECIFICALLY NOTED OTHERWISE ON THE CONTROL PANEL DETAILS, THE FOLLOWING NOTES APPLY:
   a. FOR WALL MOUNTING METHODS, REFERENCE TYPE A OR TYPE B REQUIREMENTS.
   b. PANELS LISTED AS "TYPE A" SHALL FOLLOW THE "REQUIREMENTS FOR TYPE A PANELS" LISTED TO THE RIGHT. LIKEWISE, "TYPE B" PANELS SHALL FOLLOW THE "REQUIREMENTS FOR TYPE B PANELS".
   c. MOTOR SAFETY DISCONNECT SWITCHES SHALL BE PROVIDED AS A PACKAGED SWITCH IN AN ENCLOSURE AND ARE SIZED BY THE MANUFACTURER BASED ON NEMA TYPE AND MOTOR CURRENT RATING. FOR THIS REASON, THE SIZES ARE LISTED IN THE TABLE AS "*PM" (PER MANUFACTURER).
   d. ALL ENCLOSURES SHALL BE PROVIDED WITH AN ENGRAVED NAMEPLATE CORRESPONDING TO THE ASSOCIATED TAG ID NUMBER AND TAG DESCRIPTION (SEE DETAIL A). INCLUDE THE SQUARE BRACKETS [ ] AROUND THE TAG NUMBER.
   e. ALL PANELS MOUNTED TO VIBRATING EQUIPMENT SHALL BE CONNECTED WITH LFMC CONDUIT.
   f. WHERE PANELS CONTAIN POWER FROM MULTIPLE SOURCES, PROVIDE A YELLOW SAFETY STICKER, APPROXIMATELY 2" x 3" (SEE DETAIL B).

CONTROL PANELS WITH INNER DOORS:

1. INNER DOORS SHALL BE WHITE POWERED-COATED 10-GAUGE STEEL WITH A CONTINUOUS HINGE ON THE OPPOSITE SIDE OF THE ENCLOSURE DOOR (DOORS SHALL OPEN IN OPPOSITE DIRECTIONS). SUPPORT MECHANISMS SHALL BE OF SUFFICIENT STRENGTH TO ASSURE THAT THERE IS NO BENDING, SAGGING, OR SLIDING OF THE DOOR. THE DOOR SHALL BE FABRICATED TO STAY ALIGNED AT ALL TIMES. THE DOOR SHALL LATCH WITHOUT HAVING TO BE LIFTED.
2. THE INNER DOOR AND ENCLOSURE DOORS SHALL EACH BE CAPABLE OF 100 DEGREE FREE AND UNENCUMBERED MOVEMENT (MINIMUM).
3. INNER DOORS SHALL BE PROVIDED WITH A LATCHING CLASP THAT IS EASY TO LINE UP AND SAFE TO OPERATE. REMOVABLE OR LOOSE TYPES OF DOOR HARDWARE SHALL NOT BE ALLOWED.

REQUIREMENTS FOR TYPE A PANELS:

1. ALL MOUNTING HARDWARE SHALL BE GALVANIZED OR STAINLESS STEEL.
2. PANELS MOUNTED ON INTERIOR WALLS SHALL BE SUPPORTED TO THE WALL WITH 1/2-INCH (MINIMUM) GALVANIZED STEEL UNISTRUT.

REQUIREMENTS FOR TYPE B PANELS:

1. ALL MOUNTING FASTENERS (NUTS, BOLTS SCREWS, WASHERS, ETC.) SHALL BE 316 STAINLESS STEEL.
2. ALL MOUNTING BRACKETS AND BRACING SHALL BE 316L STAINLESS STEEL.
3. PANELS MOUNTED ON EXTERIOR WALLS SHALL BE SUPPORTED TO THE WALL WITH 1/2-INCH (MINIMUM) 316L STAINLESS STEEL UNISTRUT.
4. ALL EXPOSED PORTIONS OF CONDUITS ENTERING CONTROL PANELS SHALL BE PVC-COATED RGS.
5. ALL CONNECTIONS INTO ENCLOSURES SHALL BE WATERTIGHT, MADE ONLY FROM THE BOTTOM, USING MEYER-TYPE HUBS.
6. DEVICES MOUNTED ON THE CONTROL PANEL DOOR SHALL BE OUTDOOR RATED.
7. PANELS LARGER THAN 24"H x 24"W SHALL BE PROVIDED WITH PAD-LOCKABLE 3-POINT LATCH DOOR(S).
8. PANELS WITH DOUBLE DOORS SHALL BE A RIGHT-HAND, 3-POINT LATCHING DOOR OVER A LEFT-HAND UNLATCHED DOOR. FRONT CENTER POSTS ARE NOT ALLOWED.
9. PANELS SHALL BE PROVIDED WITH A DRIP SHIELD MATCHING THE METALLURGY AND FINISH OF THE ENCLOSURE.
10. DEVICES MOUNTED TO THE TOPS OF ENCLOSURES SUCH AS ANTENNAS, STROBE LIGHTS, AND ETC. SHALL BE PROVIDED WITH GASKETS AND SEALS THAT ARE IMMUNE TO ULTRAVIOLET LIGHT, FREEZING, WATER, AND BIOLOGICAL GROWTH.
11. PROVIDE A 120 VAC INTERIOR PANEL HEATER FOR CONTROL PANELS MARKED AS "HEATER".
12. PANELS SHALL BE PROVIDED WITH AN INTRUSION SWITCH THAT IS ELECTRICALLY "OPEN" WHEN THE DOOR IS OPEN.

TAG DESCRIPTION
"[" TAG NUMBER "]"

DETAIL A

CAUTION

THIS DEVICE IS POWERED FROM SEVERAL SOURCES

THE DISCONNECT SWITCH WILL NOT SHUT OFF ALL SOURCES OF ELECTRICAL ENERGY

DETAIL B

POWER DEVICE SIZING

TAG NUMBER	RATED VOLTAGE	OPERATING VOLTAGE	PHASES	AMPACITY	MIN. INTERRUPT AND WITHSTAND RATING	ENCLOSURE TYPE
01 ABSDS 01	600V	480V	3	30A	10 kAIC @ 480V	NEMA 12
01 ATS 01	480 V	480 V	3	200A	22 kAIC @ 480 V	NEMA 1 GASKETED
01 ATS 02	480 V	480 V	3	200A	22 kAIC @ 480 V	NEMA 1 GASKETED
01 BKR 01	600 V	480 V	3	300AT/ 400AF	42 kAIC @ 480 V	IN MCC
01 BKR 02	600 V	480 V	3	200AT/ 200AF	42 kAIC @ 480 V	IN MCC
01 BKR 03	600 V	480 V	3	200AT/ 200AF	42 kAIC @ 480 V	IN MCC
01 BKR 04	600 V	480 V	3	60AT/ 100AF	42 kAIC @ 480 V	IN MCC
01 BKR 05	600 V	480 V	3	60AT/ 100AF	42 kAIC @ 480 V	IN MCC
01 BKR 06	600 V	480 V	3	15AT/125AF	42 kAIC @ 480 V	IN MCC
01 BKR 07	600 V	480 V	3	15AT/125AF	42 kAIC @ 480 V	IN MCC
01 BKR 08	600 V	480 V	3	20A	42 kAIC @ 480 V	IN MCC
01 CT 01	600 V	480 V	3	400A	42 kAIC @ 480 V	NEMA 1 GASKETED
01 GCB 01	600 V	480 V	3	150AT/ 200AF	10 kAIC @ 480 V	NEMA 1 GASKETED
01 GCB 02	600 V	480 V	3	150AT/ 200AF	10 kAIC @ 480 V	NEMA 1 GASKETED
01 MCC 01	REFERENCE SPECIFICATIONS ON SHEET E-14					
01 MCC 02	REFERENCE SPECIFICATIONS ON SHEET E-15					
01 MSBSDS 01, 02, 03	600V	480V	3	30A	10 kAIC @ 480V	NEMA 12
01 NPPSDS 01, 02	600V	480V	3	30A	10 kAIC @ 480V	NEMA 4X
01 PMPSDS 01, 02, 03	600V	480V	3	30A	10 kAIC @ 480V	NEMA 12
01 WBSDS 01	600V	480V	3	30A	10 kAIC @ 480V	NEMA 12
02 IPSDS 01, 02	600V	480V	3	30A	10 kAIC @ 480V	NEMA 4X
02 MXRSDS 01	600V	480V	3	30A	10 kAIC @ 480V	NEMA 4X
02 OCUSDS 01	600V	480V	3	30A	10 kAIC @ 480V	NEMA 4X
02 RDSSDS 01, 02	600V	480V	3	30A	10 kAIC @ 480V	NEMA 4X
02 RPSDS 01, 02	600V	480V	3	30A	10 kAIC @ 480V	NEMA 4X
02 WCSDS 01	600V	480V	3	30A	10 kAIC @ 480V	NEMA 4X
02 WPSDS 01	600V	480V	3	30A	10 kAIC @ 480V	NEMA 4X

MCC [01 MCC 01] LOAD SUMMARY

LOAD DESCRIPTION	CONNECTED LOADS STARTER	HP	kVA	UTILITY DEMAND LOADS D.F.	kVA	GENERATOR LOADS D.F.	kVA
[01 AB 01], AERATION BLOWER	VFD	5.0	6.1	100%	6.1	100%	6.1
[01 MSB 01], MEMBRANE SCOUR BLOWER NO. 1	VFD	5.0	6.1	100%	6.1	100%	6.1
[01 MSB 03], MEMBRANE SCOUR BLOWER NO. 3	VFD	5.0	6.1	0%	0.0	0%	0.0
[01 NPP 01], NONPOT WATER PUMP NO. 1	VFD	3.0	3.8	100%	3.8	100%	3.8
[01 PMP 01], PERMEATE PUMP NO. 1	VFD	5.0	6.1	100%	6.1	100%	6.1
[02 IP 01], INFLUENT PUMP NO. 1	VFD	3.0	3.8	100%	3.8	100%	3.8
[02 OCU 01], ODOR CONTROL UNIT	FVNR	2.0	2.7	100%	2.7	100%	2.7
[02 RDS 01], ROTARY DRUM SCREEN NO. 1	VFD	1.0	1.7	100%	1.7	100%	1.7
[02 RP 01], RAS PUMP NO. 1	VFD	3.0	3.8	100%	3.8	100%	3.8
[02 WP 01], WASTE SLUDGE PUMP	FVNR	3.0	3.8	100%	3.8	100%	3.8
[01 BKR 08], BREAKER, WATER HEATER			9.0	100%	9.0	100%	9.0
[01 XFMR 01], TRANSFORMER, PANELBOARD 01			30.0	100%	30.0	100%	30.0
TOTAL kVA:			82.9		76.8		76.8
RESULTING AMPACITY AT 480 VAC, 3 PH:			99.7		92.4		92.4
SYSTEM SIZED AT: 200 A				SPARE MCC CAPACITY: 67.6 A / 160 A*, 42.2%			

* SYSTEM DERATED BY 25%

MCC [01 MCC 02] LOAD SUMMARY

LOAD DESCRIPTION	CONNECTED LOADS STARTER	HP	kVA	UTILITY DEMAND LOADS D.F.	kVA	GENERATOR LOADS D.F.	kVA
[01 MSB 02], MEMBRANE SCOUR BLOWER NO. 2	VFD	5.0	6.1	100%	6.1	100%	6.1
[01 NPP 02], NONPOT WATER PUMP NO. 2	VFD	3.0	3.8	0%	0.0	0%	0.0
[01 PMP 02], PERMEATE PUMP NO. 2	VFD	5.0	6.1	100%	6.1	100%	6.1
[01 PMP 03], PERMEATE PUMP NO. 3	VFD	5.0	6.1	0%	0.0	0%	0.0
[01 WB 01], WAS BLOWER	VFD	7.5	8.8	100%	8.8	100%	8.8
[02 IP 02], INFLUENT PUMP NO. 2	VFD	3.0	3.8	100%	3.8	100%	3.8
[02 MXR 01], ANOXIC BASIN MIXER	FVNR	3.0	3.8	100%	3.8	100%	3.8
[02 RDS 02], ROTARY DRUM SCREEN NO. 2	VFD	1.0	1.7	0%	0.0	0%	0.0
[02 RP 02], RAS PUMP NO. 2	VFD	3.0	3.8	100%	3.8	100%	3.8
[02 WC 01], SCREENING WASHER COMPACTOR	VFD	2.0	2.7	0%	0.0	0%	0.0
[01 XFMR 02], TRANSFORMER, PANELBOARD 02			30.0	100%	30.0	100%	30.0
TOTAL kVA:			76.6		62.3		62.3
RESULTING AMPACITY AT 480 VAC, 3 PH:			92.1		75.0		75.0
SYSTEM SIZED AT: 200 A				SPARE MCC CAPACITY: 85.0 A / 160 A*, 53.1%			

* SYSTEM DERATED BY 25%

SYSTEM TOTAL LOAD SUMMARY

(CALCULATIONS BASED ON 480 V) D.F. = DEMAND FACTOR

LOAD DESCRIPTION	CONNECTED LOADS STARTER	HP	kVA	UTILITY LOAD DEMAND D.F.	kVA	GENERATOR LOADS D.F	kVA
[01 MCC 01], MOTOR CONTROL CENTER NO. 1			71.7	85%	60.9	85%	60.9
[01 MCC 02], MOTOR CONTROL CENTER NO. 2			65.7	80%	52.6	80%	52.6
TOTAL kVA:			137.4		113.5		113.5
RESULTING AMPACITY AT 480 VAC, 3 PH:			165.3		136.5		136.5
SYSTEM SIZED AT: 600 V						SPARE CAPACITY:	23.5 A / 160 A*, 14.7%

* SYSTEM DERATED BY 25%

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TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

8220 178TH AVENUE COURT SW, LONGBRANCH, WA 98351

No.	DATE	REVISION

ISSUED FOR:

BID SET

ISSUE DATE:	SEPTEMBER 2026
APPROVED BY:	JRN
CHECKED BY:	PAM
DRAWN BY:	DCK
DESIGNER:	CM
G & O JOB NO.:	22848.01
FILE:	E_OLD.DWG

ELECTRICAL

CONTROL PANEL SCHEDULE AND LOAD STUDY

DRAWING: **E-11** OF: **41**

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PANELBOARD [01 PB 01] SCHEDULE

CKT. NO.	DIRECTORY	PHASE A VA	PHASE A A	PHASE B VA	PHASE B A	PHASE C VA	PHASE C A	LOAD TYPE	BKR AMPS	BUS	BKR AMPS	LOAD TYPE	PHASE A VA	PHASE A A	PHASE B VA	PHASE B A	PHASE C VA	PHASE C A	DIRECTORY	CKT. NO.
1	ELECTRICAL ROOM LIGHTING	121	1.0					L	1/20	A	1/20	Z	500	4.2					[01 CP 01], CONTROL PANEL, MASTER, PRIMARY POWER	2
3	PROCESS EQUIPMENT ROOM LIGHTING			144	1.2			L	1/20	B	1/20	Z			-	-			[01 CP 01], CONTROL PANEL, MASTER, SECONDARY POWER	4
5	CONTROL ROOM LIGHTING					93	0.8	L	1/20	C	1/20	Z					1,000	8.3	[01 CP 01], CONTROL PANEL, MASTER, ANCILLARY POWER	6
7	RESTROOM LIGHTING	36	0.3					L	1/20	A	1/20	Z	1,500	12.5					[01 CP 02], CONTROL PANEL, MEMBRANE FILTER CONTROLS	8
9	[01 HT 01], UNIT HEATER, PROCESS EQUIPMENT ROOM			1,500	14.4			H	2/20	B	1/30	Z			600	5.0			[02 MOV 01], MOTOR OPERATED VALVE, DRUM SCREEN NO. 1	10
11	[01 HT 01], UNIT HEATER, PROCESS EQUIPMENT ROOM					1,500	14.4	H	|	C	1/30	Z					600	5.0	[02 MOV 02], MOTOR OPERATED VALVE, DRUM SCREEN NO. 2	12
13	[01 HT 02], WALL HEATER, RESTROOM	1,500	12.5					H	1/20	A	2/30	Z	1,250	12.0					[01 GADP 01], GENERATOR AUXILIARY DEVICE PANEL	14
15	OUTDOOR LIGHTING			40	0.3			L	1/20	B	|	Z			1,250	12.0			[01 GADP 01], GENERATOR AUXILIARY DEVICE PANEL	16
17	[01 TELE 01], TELECOMMUNICATIONS ENCLOSURE, CONTROL ROOM					720	6.0	R	1/20	C	1/20	R					180	1.5	CONVENIENCE RECETPACLE AT WASTE PUMP CONTROL STATION [02 CST 05]	18 GFCI
19	SOLENOID VALVES, WASHER COMPACTOR	30	0.3					Z	1/20	A	1/20	R	180	1.5					CONVENIENCE RECEPTACLE AT INFLUENT PUMPS CONTROL STATION [02 CST 01]	20 GFCI
21	SOLENOID VALVES, ROTARY DRUM SCREEN NO.1			10	0.1			Z	1/20	B	1/20	Z			-	-			SPARE BREAKER	22
23	SOLENOID VALVES, ROTARY DRUM SCREEN NO. 2					10	0.1	Z	1/20	C	1/20	Z					-	-	SPARE BREAKER	24
25	SPARE BREAKER	-	-					Z	1/20	A	1/20	Z	-	-					SPARE BREAKER	26
27	SPARE BREAKER			-	-			Z	1/20	B	1/20	Z			-	-			SPARE BREAKER	28
29	SPARE BREAKER					-	-	Z	1/20	C	1/20	Z					-	-	SPARE BREAKER	30
31	SPARE BREAKER	-	-					Z	1/20	A	1/20	Z	-	-					SPARE BREAKER	32
33	SPARE BREAKER			-	-			Z	1/20	B	1/20	Z			-	-			SPARE BREAKER	34
35	SPARE BREAKER					-	-	Z	1/20	C	1/20	Z					-	-	SPARE BREAKER	36
	SUM OF PHASE LOADS	1,687	14.1	1,694	16.0	2,323	21.3						3,430	30.2	1,850	17.0	1,780	14.8	**SUM OF PHASE LOADS**	

PANELBOARD [01 PB 01] ELECTRICAL AND CONSTRUCTION SPECIFICATIONS:

CONFIGURATION:	208/120 VAC, 3 PH, 60 Hz
POWER BUS:	200 A, COPPER
NEUTRAL BUS:	200 A (100% OF POWER BUS), ISOLATED FROM GROUND, SOLDERLESS CONNECTIONS
GROUND BUS:	PROVIDE PER UL 67
BUS BRACING:	22 kAIC, MINIMUM
MAIN BREAKER:	150 AT, 200 AF, 3 PH, 3 P, 22 kAIC, MOLDED CASE, VERTICAL MOUNTING
DISTRIBUTION BREAKERS:	BOLT-ON, MOLDED CASE, 22 kAIC, MINIMUM (SEE NOTE 2)
GROUND BONDING:	SUITABLE FOR SERVICE ENTRY
ENCLOSURE:	NEMA 1 GASKETED
NUMBER OF CIRCUITS:	36
UNCOMMITTED CIRCUITS:	FILL WITH SPARE 22 kAIC BREAKERS AS SHOWN IN THE SCHEDULE
POWER DERIVED FROM:	[01 XFMR 01], TRANSFORMER, MOTOR CONTROL CENTER NO. 1 PANELBOARD 01
BUS BREAKERS:	2 POLE BREAKERS, 1x 30 A, 22 kAIC
	2 POLE BREAKERS, 1x 20 A, 22 kAIC
	1 POLE BREAKERS, 2x 30 A, 22 kAIC
	1 POLE BREAKERS, 30x 20 A, 22 kAIC

LEGEND:

GFCI DENOTES GFCI PANELBOARD CIRCUIT BREAKER.

NOTES:

1. THE CONTRACTOR SHALL PROVIDE A TYPED PANELBOARD SCHEDULE FOR ALL ACTUAL LOAD ASSIGNMENTS.
2. AIC RATING OF BRANCH CIRCUIT BREAKERS MAY BE REDUCED WHEN SUBMITTED TO ENGINEERING IF THEY ARE SHOWN TO BE A PART OF A TESTED AND LISTED COMBINATION WITH MAIN PANELBOARD BREAKER AND COMPLIANT TO NEC 240.86 AND MARKED PER NEC 110.22. BRANCH BREAKERS SHALL BE NO LESS THAN 10 kAIC.

LOAD DISTRIBUTION:	AMPS	VA	%
BY PHASE:			
TOTAL LOAD, PHASE A:	44.2 A	5,117 VA	39.0%
TOTAL LOAD, PHASE B:	33.1 A	3,544 VA	29.1%
TOTAL LOAD, PHASE C:	36.1 A	4,103 VA	31.8%
BY LOAD TYPE:			
TOTAL LIGHTING (L):		434 VA	3.4%
TOTAL MOTOR (M):		0 VA	0.0%
TOTAL HVAC (H):		4,500 VA	35.3%
TOTAL RECEPTACLE (R):		1,080 VA	8.5%
TOTAL OTHER (Z):		6,750 VA	52.9%
TOTAL CONNECTED LOAD:		12.76 kVA	100.0%
TOTAL CALCULATED (NEC) LOAD:		12.87 kVA	
XFMR LOADING (CONNECTED) =		12.8 kVA / 30 kVA =	42.5 %
XFMR LOADING (NEC) =		12.9 kVA / 30 kVA =	42.9 %

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DRAWN BY:	DCK
DESIGNER:	CM
G & O JOB NO.:	22848.01
FILE:	E_PB.DWG

ELECTRICAL

[01 PB 01] PANELBOARD SCHEDULE, SPECIFICATION, AND LOAD DISTRIBUTION

DRAWING: **E-12** OF: **41**

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PANELBOARD [01 PB 02] SCHEDULE

	CKT. NO.	DIRECTORY	PHASE A VA	PHASE A A	PHASE B VA	PHASE B A	PHASE C VA	PHASE C A	LOAD TYPE	BKR AMPS	BUS	BKR AMPS	LOAD TYPE	PHASE A VA	PHASE A A	PHASE B VA	PHASE B A	PHASE C VA	PHASE C A	DIRECTORY	CKT. NO.	
GFCI	1	RECEPTACLES, ELECTRICAL ROOM, NORTH	1,080	9.0					R	1/20	A	1/20	Z	500	4.2					[01 CP 01], CONTROL PANEL, MASTER, PRIMARY (BACKUP)	2	
GFCI	3	[01 DREC 01], DEDICATED RECEPTACLE, EFFLUENT SAMPLER			180	1.5			R	1/20	B	1/20	Z			-	-			[01 CP 01], CONTROL PANEL, MASTER, SECONDARY (BACKUP)	4	
GFCI	5	RECEPTACLES, PROCESS EQUIPMENT ROOM, NORTH					720	6.0	R	1/20	C	1/20	Z					-	-	[01 CP 02], CONTROL PANEL, MEMBRANE FILTER CONTROLS (BACKUP)	6	
GFCI	7	RECEPTACLES, PROCESS EQUIPMENT ROOM, SOUTH	720	6.0					R	1/20	A	2/25	H	1,300	12.5					[01 HP 01] AND [01 FC 01] HEAT PUMP AND FAN COIL, ELECTRICAL ROOM	8	
GFCI	9	RECEPTACLES, CONTROL ROOM, SOUTH			540	4.5			R	1/20	B	|	H			1,300	12.5			[01 HP 01] AND [01 FC 01] HEAT PUMP AND FAN COIL, ELECTRICAL ROOM	10	
GFCI	11	RECEPTACLES, RESTROOM					540	4.5	R	1/20	C	2/25	H					1,300	12.5	[01 HP 02] AND [01 FC 02] HEAT PUMP AND FAN COIL, CONTROL ROOM	12	
GFCI	13	[01 DREC 02], DEDICATED RECEPTACLE, EM SHOWER	180	1.5					R	1/20	A	|	H	1,300	12.5					[01 HP 02] AND [01 FC 02] HEAT PUMP AND FAN COIL, CONTROL ROOM	14	
GFCI	15	[02 DREC 01], DEDICATED RECEPTACLE, SUMP PUMP NO. 1			1,127	9.8			M	1/20	B	1/20	M			1,587	13.8			[01 EF 01], EXHAUST FAN, PROCESS EQUIPMENT ROOM	16	
GFCI	17	[02 DREC 02], DEDICATED RECEPTACLE, SUMP PUMP NO. 2					1,127	9.8	M	1/20	C	1/20	M					667	5.8	[01 EF 02], EXHAUST FAN, RESTROOM	18	
GFPE	19	HEAT TRACING, ELECTRICAL ROOM EXTERIOR WALL	120	1.0					H	1/20	A	2/25	M	1,373	13.2					[03 CP 01], CONTROL PANEL, LIFT STATION	20	
GFPE	21	HEAT TRACING, NPW TANK			532	4.4			H	1/20	B	|	M			1,373	13.2			[03 CP 01], CONTROL PANEL, LIFT STATION	22	
GFPE	23	HEAT TRACING, WAS TANK					442	3.7	H	1/20	C	2/25	M					1,373	13.2	[03 CP 01], CONTROL PANEL, LIFT STATION	24	
GFPE	25	HEAT TRACING, DRUM SCREEN AND COMPACTOR	438	3.7					H	1/20	A	|	M	1,373	13.2					[03 CP 01], CONTROL PANEL, LIFT STATION	26	
GFCI	27	[02 DREC 03], DEDICATED RECEPTACLE, INFLUENT SAMPLER			180	1.5			Z	1/20	B	1/20	Z			250	2.1			[03 CP 01], CONTROL PANEL, LIFT STATION	28	
	29	[01 TELE 01], TELECOMMUNICATIONS ENCLOSURE, CONTROL ROOM					1,440	12.0	Z	1/20	C	1/20	Z					750	6.3	[01 HB 01], HOTBOX, RPBA	30	GFPE
	31	SPARE BREAKER	-	-					Z	1/20	A	1/20	Z	-	-					SPARE BREAKER	32	
	33	SPARE BREAKER			-	-			Z	1/20	B	1/20	Z			-	-			SPARE BREAKER	34	
	35	SPARE BREAKER					-	-	Z	1/20	C	1/20	Z					-	-	SPARE BREAKER	36	
		SUM OF PHASE LOADS	2,538	21.2	2,559	21.7	4,269	36.0						5,846	55.6	4,510	41.6	4,090	37.8	**SUM OF PHASE LOADS**		

PANELBOARD [01 PB 02] ELECTRICAL AND CONSTRUCTION SPECIFICATIONS:

CONFIGURATION:	208/120 VAC, 3 PH, 60 Hz
POWER BUS:	200 A, COPPER
NEUTRAL BUS:	200 A (100% OF POWER BUS), ISOLATED FROM GROUND, SOLDERLESS CONNECTIONS
GROUND BUS:	PROVIDE PER UL 67
BUS BRACING:	22 kAIC, MINIMUM
MAIN BREAKER:	150 AT, 200 AF, 3 PH, 3 P, 22 kAIC, MOLDED CASE, VERTICAL MOUNTING
DISTRIBUTION BREAKERS:	BOLT-ON, MOLDED CASE, 22 kAIC, MINIMUM (SEE NOTE 2)
GROUND BONDING:	SUITABLE FOR SERVICE ENTRY
ENCLOSURE:	NEMA 1 GASKETED
NUMBER OF CIRCUITS:	36
UNCOMMITTED CIRCUITS:	FILL WITH SPARE 22 kAIC BREAKERS AS SHOWN IN THE SCHEDULE
POWER DERIVED FROM:	[01 XFMR 02], TRANSFORMER, MOTOR CONTROL CENTER NO. 2 PANELBOARD 02
BUS BREAKERS:	2 POLE BREAKERS, 4x 25 A, 22 kAIC
	1 POLE BREAKERS, 28x 20 A, 22 kAIC

LEGEND:

GFCI DENOTES GFCI PANELBOARD CIRCUIT BREAKER.

GFPE DENOTES GFPE PANELBOARD CIRCUIT BREAKER.

NOTES:

1. THE CONTRACTOR SHALL PROVIDE A TYPED PANELBOARD SCHEDULE FOR ALL ACTUAL LOAD ASSIGNMENTS.
2. AIC RATING OF BRANCH CIRCUIT BREAKERS MAY BE REDUCED WHEN SUBMITTED TO ENGINEERING IF THEY ARE SHOWN TO BE A PART OF A TESTED AND LISTED COMBINATION WITH MAIN PANELBOARD BREAKER AND COMPLIANT TO NEC 240.86 AND MARKED PER NEC 110.22. BRANCH BREAKERS SHALL BE NO LESS THAN 10 kAIC.

LOAD DISTRIBUTION:	AMPS	VA	%
BY PHASE:			
TOTAL LOAD, PHASE A:	76.7 A	8,384 VA	35.9%
TOTAL LOAD, PHASE B:	63.3 A	7,069 VA	29.6%
TOTAL LOAD, PHASE C:	73.7 A	8,359 VA	34.5%
BY LOAD TYPE:			
TOTAL LIGHTING (L):		0 VA	0.0%
TOTAL MOTOR (M):		10,000 VA	42.0%
TOTAL HVAC (H):		6,732 VA	28.3%
TOTAL RECEPTACLE (R):		3,960 VA	16.6%
TOTAL OTHER (Z):		3,120 VA	13.1%
TOTAL CONNECTED LOAD:		23.81 kVA	100.0%
TOTAL CALCULATED (NEC) LOAD:		24.50 kVA	
XFMR LOADING (CONNECTED) =		23.8 kVA / 30 kVA =	79.4 %
XFMR LOADING (NEC) =		24.5 kVA / 30 kVA =	81.7 %

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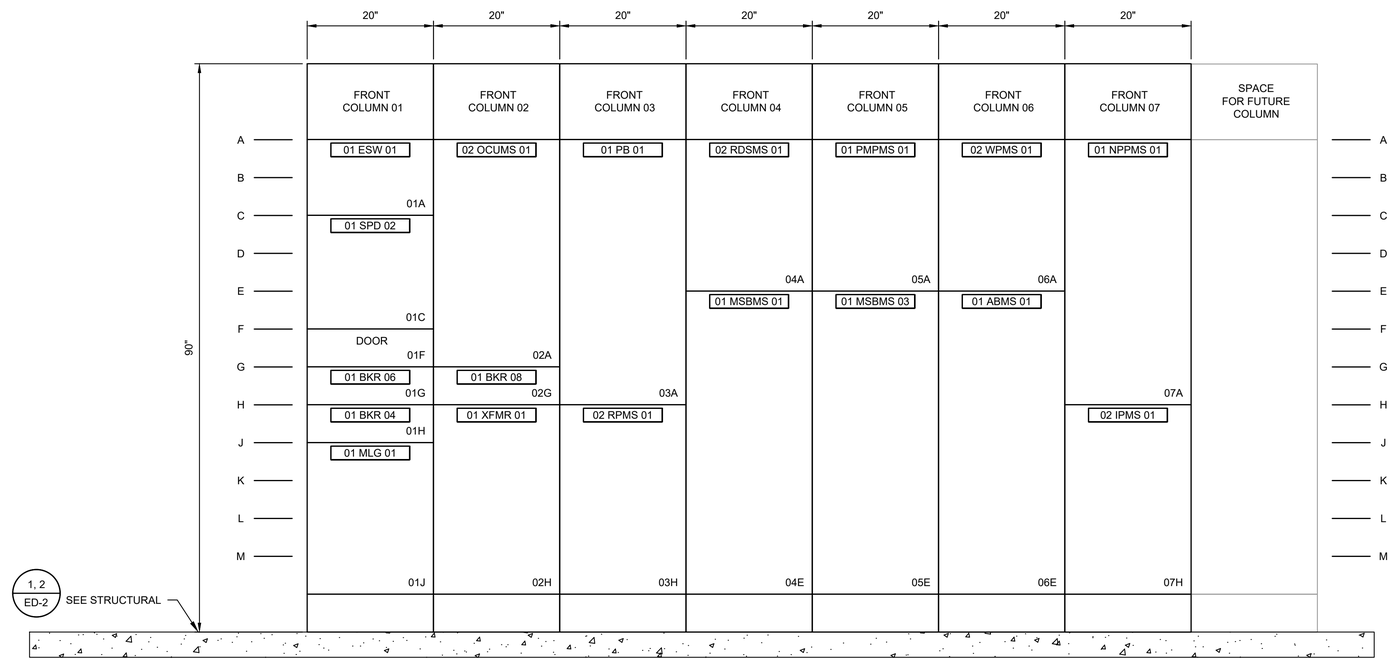
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ELECTRICAL

[01 PB 02] PANELBOARD SCHEDULE, SPECIFICATION, AND LOAD DISTRIBUTION

DRAWING: **E-13** OF: **41**

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1 [01 MCC 01] ELEVATION

SCALE: 1" = 1'-0"

MOTOR CONTROL CENTER [01 MCC 01]

ELECTRICAL AND CONSTRUCTION SPECIFICATION REQUIREMENTS

BUS MATERIAL:	COPPER, TIN-PLATED (ALL BUSES)
VOLTAGE RATING:	600 VAC
CONFIGURATION:	480 VAC, 3 PH, 60 Hz, 4 W + GROUND
MAIN BUS:	600 A, HORIZONTAL, SLEEVE-WRAP INSULATED
ENTRY COLUMN VERTICAL BUS:	600 A
OTHER VERTICAL BUS:	300 A (MINIMUM), SIZE FOR COLUMN LOAD
GROUND BUS:	300 A (50% OF MAIN BUS), HORIZONTAL
BUS BRACING:	42 kAIC
WIRING:	CLASS 2B
CONTROL WIRING:	#14 AWG, MTW

MCC PHYSICALS:

STRUCTURE:	SINGLE SIDED, NEMA 1 GASKETED
SERVICE ENTRY LOCATION:	BOTTOM, LEFT COLUMN

MCC OPTIONS:

NEUTRAL BUS:	YES; (BUS AND NEUTRAL SIZES ARE NOT BOTH LOADED)
SPD:	YES; 240 kA, 3 PH, WITH STATUS LIGHTS, OCPD, AND FORM A "FAULT" CONTACT
POWER MONITOR UNIT:	NO
MAIN DISCONNECT BREAKER:	NO; MAIN LUGS ONLY, 2 SCREW TERMINALS / PH
AUTOMATIC TRANSFER SWITCH:	NO

MOTOR CONTROL CENTER SCHEDULE

SECTION	UNIT	DESCRIPTION (NAMEPLATE)	TAG ID NO.	NOTES
01	A	ETHERNET SWITCH, MOTOR CONTROL CENTER NO. 1	01 ESW 01	
01	C	SURGE PROTECTIVE DEVICE, MOTOR CONTROL CENTER NO. 1	01 SPD 02	
01	F			DOOR (SPACE)
01	G	BREAKER, UV BANK DISINFECTION SYSTEM NO. 1 CONTROL PANEL	01 BKR 06	
01	H	BREAKER, PANELBOARD 01 TRANSFORMER	01 BKR 04	
01	J	MAIN LUGS, MOTOR CONTROL CENTER NO. 1	01 MLG 01	
02	A	MOTOR STARTER, ODOR CONTROL UNIT	02 OCUMS 01	
02	G	BREAKER, HOT WATER HEATER	01 BKR 08	
02	H	TRANSFORMER, PANELBOARD	01 XFMR 01	
03	A	PANELBOARD 01	01 PB 01	
03	H	MOTOR STARTER, RAS PUMP NO. 1	02 RPMS 01	
04	A	MOTOR STARTER, ROTARY DRUM SCREEN NO. 1	02 RDSMS 01	
04	E	MOTOR STARTER, MEMBRANE SCOUR BLOWER NO. 1	01 MSBMS 01	
05	A	MOTOR STARTER, PERMEATE PUMP NO. 1	01 PMPMS 01	
05	E	MOTOR STARTER, MEMBRANE SCOUR BLOWER NO. 3	01 MSBMS 03	
06	A	MOTOR STARTER, WASTE SLUDGE PUMP	02 WPMS 01	
06	E	MOTOR STARTER, AERATION BLOWER	01 ABMS 01	
07	A	MOTOR STARTER, NONPOT WATER PUMP NO. 1	01 NPPMS 01	
07	H	MOTOR STARTER, INFLUENT PUMP NO. 1	02 IPMS 01	

NOTES:

1. SECURE [01 MCC 01] TO THE WALL WITH A SPACING AS SHOWN ON 2 / ED-2.
2. [01 MCC 01] PANEL AND STARTER LAYOUTS ARE BASED ON ROCKWELL MCC DATA. IF ANOTHER MANUFACTURER IS SELECTED, THE CONTRACTOR SHALL BE RESPONSIBLE TO ASSURE THAT THE MCC OCCUPIES NO MORE THAN THE SPACE SHOWN ON THE PLANS WITHOUT APPROVAL PRIOR TO SUBMITTAL.

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TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

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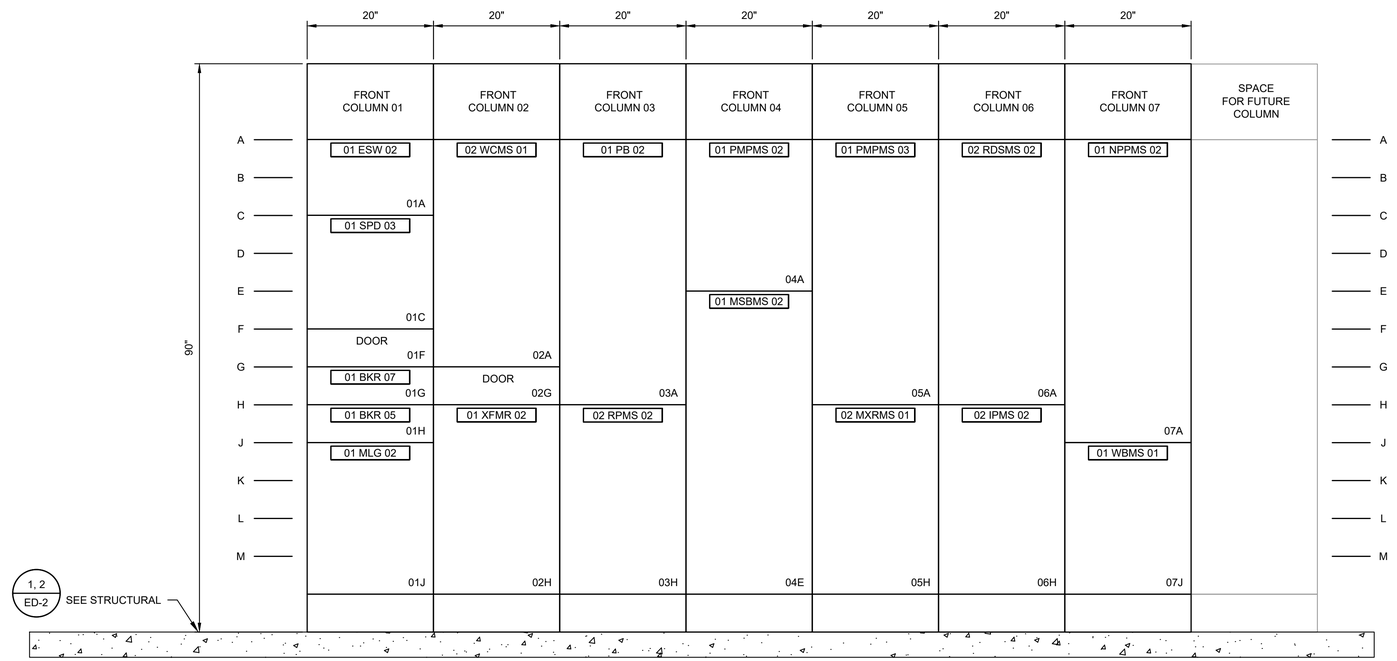
0 — 1" — 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

ELECTRICAL

[01 MCC 01] MOTOR CONTROL CENTER ELEVATION, SPECIFICATION, AND SCHEDULE

DRAWING: **E-14** OF: **41**

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1 / - **[01 MCC 02] ELEVATION**

SCALE: 1" = 1'-0"

MOTOR CONTROL CENTER [01 MCC 02]

ELECTRICAL AND CONSTRUCTION SPECIFICATION REQUIREMENTS

BUS MATERIAL:	COPPER, TIN-PLATED (ALL BUSES)
VOLTAGE RATING:	600 VAC
CONFIGURATION:	480 VAC, 3 PH, 60 Hz, 4 W + GROUND
MAIN BUS:	600 A, HORIZONTAL, SLEEVE-WRAP INSULATED
ENTRY COLUMN VERTICAL BUS:	600 A
OTHER VERTICAL BUS:	300 A (MINIMUM), SIZE FOR COLUMN LOAD
GROUND BUS:	300 A (50% OF MAIN BUS), HORIZONTAL
BUS BRACING:	42 kAIC
WIRING:	CLASS 2B
CONTROL WIRING:	#14 AWG, MTW

MCC PHYSICALS:

STRUCTURE:	SINGLE SIDED, NEMA 12
SERVICE ENTRY LOCATION:	BOTTOM, LEFT COLUMN

MCC OPTIONS:

NEUTRAL BUS:	YES; (BUS AND NEUTRAL SIZES ARE NOT BOTH LOADED)
SPD:	YES; 240 kA, 3 PH, WITH STATUS LIGHTS, OCPD, AND FORM A "FAULT" CONTACT
POWER MONITOR UNIT:	YES; 3 PH (SEE NOTE 1)
MAIN DISCONNECT BREAKER:	NO; MAIN LUGS ONLY, 2 SCREW TERMINALS / PH
AUTOMATIC TRANSFER SWITCH:	NO

MOTOR CONTROL CENTER SCHEDULE

SECTION	UNIT	DESCRIPTION (NAMEPLATE)	TAG ID NO.	NOTES
01	A	ETHERNET SWITCH, MOTOR CONTROL CENTER NO. 2	01 ESW 02	
01	C	SURGE PROTECTIVE DEVICE, MOTOR CONTROL CENTER NO. 2	01 SPD 03	
01	F			DOOR (SPACE)
01	G	BREAKER, UV BANK DISINFECTION SYSTEM NO. 2 CONTROL PANEL	01 BKR 07	
01	H	BREAKER, PANELBOARD 02 TRANSFORMER	01 BKR 05	
01	J	MAIN LUGS, MOTOR CONTROL CENTER NO. 2	01 MLG 02	
02	A	MOTOR STARTER, SCREENING WASHER COMPACTOR	02 WCMS 01	
02	G			DOOR (SPACE)
02	H	TRANSFORMER, PANELBOARD 02	01 XFMR 02	
03	A	PANELBOARD 02	01 PB 02	
03	H	MOTOR STARTER, RAS PUMP NO. 2	02 RPMS 02	
04	A	MOTOR STARTER, PERMEATE PUMP NO. 2	01 PMPMS 02	
04	E	MOTOR STARTER, MEMBRANE SCOUR BLOWER NO. 2	01 MSBMS 02	
05	A	MOTOR STARTER, PERMEATE PUMP NO. 3	01 PMPMS 03	
05	H	MOTOR STARTER, ANOXIC BASIN MIXER	02 MXRMS 01	
06	A	MOTOR STARTER, ROTARY DRUM SCREEN NO. 2	02 RDSMS 02	
06	H	MOTOR STARTER, INFLUENT PUMP NO. 2	02 IPMS 02	
07	A	MOTOR STARTER, NONPOT WATER PUMP NO. 2	01 NPPMS 02	
07	J	MOTOR STARTER, WAS BLOWER	01 WBMS 01	

NOTES:

1. SECURE [01 MCC 01] TO THE WALL WITH A SPACING AS SHOWN ON (2 / ED-2).
2. [01 MCC 01] PANEL AND STARTER LAYOUTS ARE BASED ON ROCKWELL MCC DATA. IF ANOTHER MANUFACTURER IS SELECTED, THE CONTRACTOR SHALL BE RESPONSIBLE TO ASSURE THAT THE MCC OCCUPIES NO MORE THAN THE SPACE SHOWN ON THE PLANS WITHOUT APPROVAL PRIOR TO SUBMITTAL.

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0 — 1" — 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

ELECTRICAL

[01 MCC 02] MOTOR CONTROL CENTER ELEVATION, SPECIFICATION, AND SCHEDULE

DRAWING: **E-15** OF: **41**

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MOTOR STARTER GENERAL NOTES:

G.1. REFERENCE MOTOR STARTER AND CONTROL PANEL SPECIFICATIONS.

G.2. METAL OXIDE VARISTORS SHALL PARALLEL EACH 120 VAC CONTROL RELAY, TIMER COIL, AND SOLENOID VALVE. REVERSE-BIASED DIODES SHALL PARALLEL EACH 24 VDC CONTROL RELAY.

G.3. ALL PILOT LIGHTS SHALL BE PUSH-TO-TEST LED STYLE. REFERENCE THE "PILOT LIGHT COLOR TABLE" ON THIS SHEET.

G.4. THE "POWER-UP DELAY" TIMER DISABLES THE DRIVE FOLLOWING A POWER UP TO ALLOW DRIVES TO CHARGE UP, REBOOT, AND STABILIZE BEFORE BEING PLACED INTO OPERATION. THESE DELAYS ARE OFFSET BETWEEN DRIVES TO ELIMINATE THE POSSIBILITY OF STARTING MULTIPLE MOTORS SIMULTANEOUSLY WHEN POWERED UP IN "HAND".

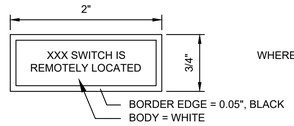
G.5. PROVIDE AN ELECTRO-MECHANICAL ELAPSED TIME METER AND MOTOR START COUNTER ON A SINGLE METER PER SPECIFICATION.

G.6. SIZE STARTER CONTROL TRANSFORMERS TO HANDLE ALL DRIVE/STARTER CONTROL DEVICES AS PER REFERENCED ELEMENTARY WIRING DIAGRAMS PLUS 25%. UPSIZE FOR REMOTE PANEL HEATERS, PILOT LIGHTS, SOLENOID VALVES, INTRINSICALLY SAFE BARRIERS, COOLING FANS, AND ETC. WHERE APPLICABLE.

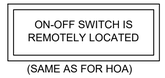
G.7. ALL MOTOR STARTER CONTROLLERS SHALL BE CONFIGURED TO RESET FROM A DOOR-MOUNTED STANDARD PUSHBUTTON - NOT FROM A MANUFACTURER'S CONTROL MODULE. PROVIDE A SEPARATE RESET PUSHBUTTON ON THE STARTER DOOR FOR THIS PURPOSE.

G.8. MCC MANUFACTURER SHALL SIZE AND SET MOTOR STARTER BREAKERS AND MOTOR OVERLOAD PROTECTION DEVICES BASED ON NEC AND MOTOR MANUFACTURER'S REQUIREMENTS.

G.9. PROVIDE A SELECTOR SWITCH LOCATION STICKER AS SHOWN BELOW ON THOSE MOTOR STARTER DOORS SO INDICATED IN THEIR MOTOR STARTER ELEMENTARY DIAGRAMS.



WHERE: XXX = HOA FOR HOA SWITCHES
XXX = ON-OFF FOR ON-OFF SWITCHES



(SAME AS FOR HOA)

PILOT LIGHT COLOR TABLE	
CONDITION / STATUS	**PILOT COLOR**
MOTOR RUNNING	GREEN
ANY FAULT OR ALARM	RED
SEAL LEAK	AMBER

SHADED DEVICES ON MOTOR STARTER ELEMENTARY WIRING DIAGRAMS ARE REMOTE FROM THE STARTER.

———— REFERS TO 120 VAC CONTROL WIRING
— — — REFERS TO 24 VDC CONTROL WIRING

VFD SPECIFIC NOTES, NETWORKED:

V.1. THE VFD SHALL PROVIDE THE FOLLOWING STATUS CONDITIONS TO THE NETWORK:

INTERNAL PROTECTION	MOTOR/DRIVE DATA	MOTOR DATA (CONT.)
THERMAL OVERLOAD	MOTOR SPEED (Hz)	REAL POWER (kW)
DRIVE FAULT	MOTOR AVERAGE CURRENT	MOTOR POWER FACTOR
UNDER-VOLTAGE (L-L)	MOTOR AVERAGE VOLTAGE	DC BUS VOLTAGE
OVER-VOLTAGE (L-L)		

V.2. THE DRIVE SHALL BE DISABLED, AND THE FAULT STATUS OUTPUT MADE TRUE, ON ANY COMBINATION OF "INTERNAL PROTECTION" CONDITIONS LISTED IN NOTE V.1.

V.3. VFD PROGRAMMING REQUIREMENTS:

V.3.1. PROGRAM FOR AUTO RESET
V.3.2. PROGRAM RAMP RATES AND MIN/MAX SPEED LIMITS PER SPECIFICATION.
V.3.3. PROGRAM TO NOT OPERATE BELOW MINIMUM OR ABOVE MAXIMUM SPEED LIMITS.
V.3.4. PROGRAM FOR BUMPLESS TRANSFER BETWEEN AUTO AND MANUAL MODES.
V.3.5. PROGRAM FORWARD SPEED ONLY.
V.3.6. PROGRAM RUN CONTROL, SPEED CONTROL, AND "STARTER READY" LOGIC PER THE "INTERNAL LOGIC DETAIL" DIAGRAMS ASSOCIATED WITH EACH STARTER.

V4. THE HIM SHALL BE MOUNTED ON THE STARTER DOOR. PROVIDE ALL CABLING, HARDWARE, AND CONNECTORS FOR DOOR MOUNT PER SPECIFICATION. HIM CABLES SHALL BE PHYSICALLY SEPARATED FROM 120 VAC CIRCUITS BY A MINIMUM OF 6 INCHES IN ALL PLACES.

V.5. THE PIN FUNCTIONS SHOWN IN THESE MOTOR ELEMENTARY WIRING DIAGRAMS ARE TYPICAL AND MAY NOT REPRESENT ALL APPROVED MANUFACTURERS. SELECTED MANUFACTURERS SHALL SUBMIT ELECTRICAL WIRING DIAGRAMS SHOWING DETAILED CONNECTIONS AND INTERNAL LOGIC THAT FOLLOW THE DESIGN INTENT AND OPERATION OF THOSE SHOWN HEREIN. MODIFICATIONS OR COMPROMISES TO THE DESIGN FUNCTION WILL NOT BE ALLOWED WITHOUT WRITTEN APPROVAL FROM THE ENGINEER.

V.6. THE DRIVE MANUFACTURER SHALL SIZE AND PROVIDE ENCLOSURE COOLING FANS, THERMOSTAT AND ASSOCIATED CONTROL LOGIC AS SHOWN. THE ENCLOSURE THERMOSTAT SHALL BE FACTORY SET BY THE MANUFACTURER.

V.7. PROVIDE A SEPARATE DRIVE RESET PUSHBUTTON ON THE STARTER DOOR PER SPECIFICATION (DRIVE RESET SHALL NOT BE INTEGRATED INTO THE HIM).

V.8. THE DRIVE MANUFACTURER SHALL SIZE LINE AND LOAD REACTORS FOR STABLE MOTOR OPERATION AND COMPLIANCE WITH IEEE 519-2014 FOR EACH SPECIFIC MOTOR APPLICATION. REFERENCE MOTOR STARTER SPECIFICATIONS.

V.9. SPEED POTS SHALL BE SINGLE-TURN, 10k OHMS.

V.10. IF REQUIRED, EXTENDED I/O MODULES SHALL PLUG DIRECTLY INTO THE VFD DRIVES. SEPARATE POWER AND ETHERNET CONNECTIONS SHALL NOT BE REQUIRED.

FVNR SPECIFIC NOTES:

F.1. STARTER MAIN CONTACTORS SHALL BE STANDARD NEMA CONTACTOR SIZES (NEMA SIZE 1 MINIMUM).

F.2. REFERENCE OVERLOAD RELAY NOTES, OL.n.

F.3. MOTOR STARTER BREAKERS SHALL BE MAGNETIC ONLY AND SHALL INCLUDE AN AUXILIARY CONTACT THAT OPENS WHEN THE BREAKER IS TRIPPED OR MANUALLY OPENED.

F.4. FRONT PANEL DIAL-TYPE AMMETERS SHALL BE PROVIDED FOR EACH FVNR STARTER.

FOR SUBMERSIBLE PUMPS WITH INTRINSICALLY SAFE HIGH-LEVEL FLOATS:

IN.1. WET WELL HIGH-LEVEL FLOAT SWITCHES ARE CONNECTED FROM THE WET WELL TO THEIR ASSOCIATED STARTERS THROUGH INTRINSICALLY SAFE BARRIERS. THESE BARRIERS ARE POWERED FROM THEIR SPECIFIC MOTOR STARTERS BUT MOUNTED IN A REMOTE CONTROL PANEL. NO INTRINSIC CIRCUITS SHALL EXIST INSIDE THE MOTOR STARTERS.

IN.2. THE HIGH-LEVEL FLOAT SWITCHES WILL FORCE THEIR ASSOCIATED MOTORS TO START IMMEDIATELY ON WATER RISING TO THE SWITCH TRIP LEVEL, AND WILL MAINTAIN PUMP OPERATION FOR A TIME-DELAYED PERIOD AFTER THE LEVEL HAS FALLEN BELOW THE FLOAT'S TRIP POINT.

FOR SUBMERSIBLE PUMPS WITH MINI-CAS CONTROLLERS:

S.1. MOTOR OVERTEMP AND LEAKAGE DETECTION IS DESIGNED USING A 120 VAC FLYGT MINI-CAS II.

S.2. THE MOTOR STARTER MANUFACTURER SHALL PROVIDE AND WIRE THE DETECTOR SOCKET. THE MOTOR MANUFACTURER SHALL PROVIDE THE DETECTOR. THE CONTRACTOR IS RESPONSIBLE FOR CHANGES IN DESIGN, INSTALLATION, AND DOCUMENTATION IF OTHER MANUFACTURER OR METHODS ARE USED. DESIGN CHANGES SHALL BE APPROVED BY ENGINEERING.

S.3. SET DETECTOR FOR AUTO RESET ON OVERTEMP AND SEAL LEAK. SET ASSOCIATED MOTOR STARTER LOGIC TO DISABLE THE PUMP ON MOTOR OVERTEMP AND/OR CONTROLLER ALARM AND/OR REMOVAL OF CONTROLLER.

MOTOR STARTER DESIGN SUMMARY

TAG	MOTOR STARTER FOR:	TYPE	HP	FLA	AMMETER *	SUBMER-SIBLE?	THERMAL PROTECTION	SEAL LEAK?	MSDS?	NET-WORKED?	BACK-UP LOGIC?	SELECTOR SWITCH TYPE **	AUTO CONTROL FROM...	NOTES
01 ABMS 01	AERATION BLOWER	VFD 6PLS	5.0	7.6	NA	NO	WINDING AND DISCHARGE	NO	YES	YES	NO	HOA, REMOTE FROM STARTER	WWTP PLC	LOCATED ON 01 MCC 01
01 MSBMS 01	MEMBRANE SCOUR BLOWER NO. 1	VFD 6PLS	5.0	7.6	NA	NO	WINDING AND DISCHARGE	NO	YES	YES	NO	HOA, REMOTE FROM STARTER	MBR PLC	LOCATED ON 01 MCC 01
01 MSBMS 02	MEMBRANE SCOUR BLOWER NO. 2	VFD 6PLS	5.0	7.6	NA	NO	WINDING AND DISCHARGE	NO	YES	YES	NO	HOA, REMOTE FROM STARTER	MBR PLC	LOCATED ON 01 MCC 02
01 MSBMS 03	MEMBRANE SCOUR BLOWER NO. 3	VFD 6PLS	5.0	7.6	NA	NO	WINDING AND DISCHARGE	NO	YES	YES	NO	HOA, REMOTE FROM STARTER	MBR PLC	LOCATED ON 01 MCC 01
01 NPPMS 01	NONPOT WATER PUMP NO. 1	VFD 6PLS	3.0	4.8	NA	NO	WINDING	NO	YES	YES	NO	HOA, REMOTE FROM STARTER	WWTP PLC	LOCATED ON 01 MCC 01
01 NPPMS 02	NONPOT WATER PUMP NO. 2	VFD 6PLS	3.0	4.8	NA	NO	WINDING	NO	YES	YES	NO	HOA, REMOTE FROM STARTER	WWTP PLC	LOCATED ON 01 MCC 02
01 PMPMS 01	PERMEATE PUMP NO. 1	VFD 6PLS	5.0	7.6	NA	NO	WINDING	NO	YES	YES	NO	HOA, REMOTE FROM STARTER	MBR PLC	LOCATED ON 01 MCC 01
01 PMPMS 02	PERMEATE PUMP NO. 2	VFD 6PLS	5.0	7.6	NA	NO	WINDING	NO	YES	YES	NO	HOA, REMOTE FROM STARTER	MBR PLC	LOCATED ON 01 MCC 02
01 PMPMS 03	PERMEATE PUMP NO. 3	VFD 6PLS	5.0	7.6	NA	NO	WINDING	NO	YES	YES	NO	HOA, REMOTE FROM STARTER	MBR PLC	LOCATED ON 01 MCC 02
01 WBMS 01	WAS BLOWER	VFD 6PLS	7.5	11.0	NA	NO	WINDING AND DISCHARGE	NO	YES	YES	NO	HOA, REMOTE FROM STARTER	WWTP PLC	LOCATED ON 01 MCC 02
02 IPMS 01	INFLUENT PUMP NO. 1	VFD 6PLS	3.0	4.8	NA	YES	WINDING	YES	YES	YES	NO	HOA, REMOTE FROM STARTER	WWTP PLC	LOCATED ON 01 MCC 01
02 IPMS 02	INFLUENT PUMP NO. 2	VFD 6PLS	3.0	4.8	NA	YES	WINDING	YES	YES	YES	NO	HOA, REMOTE FROM STARTER	WWTP PLC	LOCATED ON 01 MCC 02
02 MXRMS 01	ANOXIC BASIN MIXER	FVNR	3.0	4.8	0 - 10 A	NO	WINDING	NO	YES	YES	NO	HOA, REMOTE FROM STARTER	WWTP PLC	LOCATED ON 01 MCC 02
02 OCUMS 01	ODOR CONTROL UNIT	FVNR	2.0	3.4	0 - 10 A	NO	WINDING	NO	YES	YES	NO	HOA, REMOTE FROM STARTER	WWTP PLC	LOCATED ON 01 MCC 01
02 RDSMS 01	ROTARY DRUM SCREEN NO. 1	VFD 6PLS	1.0	2.1	NA	NO	WINDING	NO	YES	YES	NO	HOA, REMOTE FROM STARTER	WWTP PLC	LOCATED ON 01 MCC 01
02 RDSMS 02	ROTARY DRUM SCREEN NO. 2	VFD 6PLS	1.0	2.1	NA	NO	WINDING	NO	YES	YES	NO	HOA, REMOTE FROM STARTER	WWTP PLC	LOCATED ON 01 MCC 02
02 RPMS 01	RAS PUMP NO. 1	VFD 6PLS	3.0	4.8	NA	YES	WINDING	YES	YES	YES	NO	HOA, REMOTE FROM STARTER	WWTP PLC	LOCATED ON 01 MCC 01
02 RPMS 02	RAS PUMP NO. 2	VFD 6PLS	3.0	4.8	NA	YES	WINDING	YES	YES	YES	NO	HOA, REMOTE FROM STARTER	WWTP PLC	LOCATED ON 01 MCC 02
02 WCMS 01	SCREENING WASHER COMPACTOR	VFD 6PLS	2.0	3.4	NA	NO	WINDING	NO	YES	YES	NO	HOA, REMOTE FROM STARTER	WWTP PLC	LOCATED ON 01 MCC 02
02 WPMS 01	WASTE SLUDGE PUMP	FVNR	3.0	4.8	0 - 20 A	YES	WINDING	YES	YES	YES	NO	HOA, REMOTE FROM STARTER	WWTP PLC	LOCATED ON 01 MCC 01

TABLE NOTES:
* RANGE OF DOOR-MOUNTED AMMETER.
** LOCAL MEANS LOCAL TO MOTOR STARTER (ON STARTER DOOR). REMOTE MEANS REMOTE FROM THE STARTER, LOCAL TO THE MOTOR.

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TAYLOR BAY BEACH CLUB

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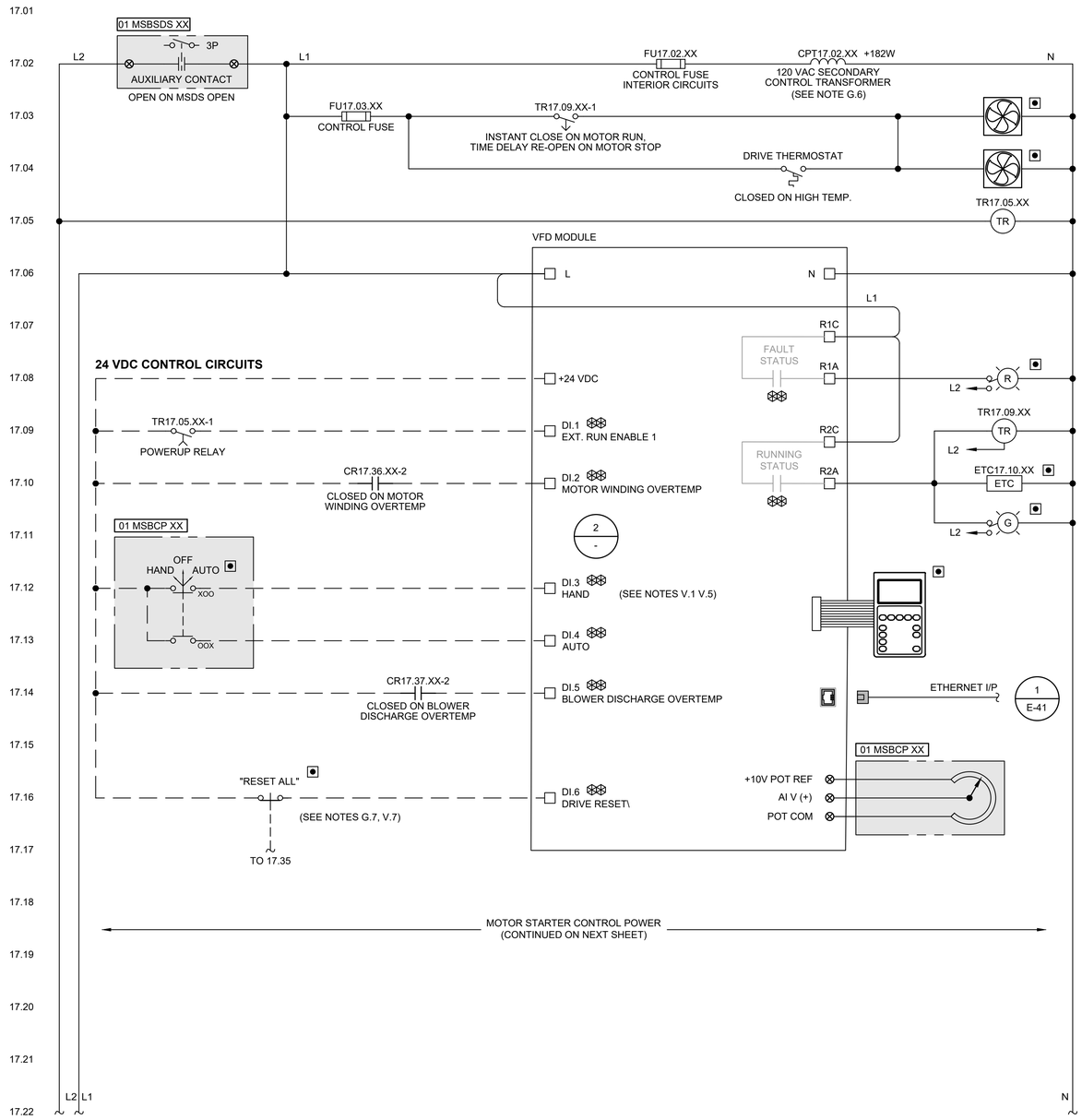
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ELECTRICAL

MOTOR STARTER NOTES

DRAWING: **E-16** OF: **41**

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STARTER ENCLOSURE COOLING FANS (TYP.)
(SEE NOTE V.6)

POWER-UP DELAY TIMER
DELAY STARTER OPERATION FOLLOWING A POWERUP
(SEE TIMER TABLE AND NOTE G.4)

"MOTOR FAULT" STATUS INDICATOR
ACTIVE ON DRIVE FAULT CONDITIONS
(SEE NOTE G.3)

ENCLOSURE FAN CONTROL TIMER
ENERGIZED ON MOTOR RUNNING
(SEE TIMER TABLE, SEE NOTE V.6)

ELAPSED TIME/COUNTER METER
(SEE NOTE G.5)

"MOTOR RUNNING" STATUS INDICATOR
ACTIVE ON MOTOR RUNNING CONDITIONS
(SEE NOTE G.3)

HUMAN INTERFACE MODULE (HIM)
(SEE NOTE V.4)

REMOTE SPEED POT
(SEE NOTE V.9)

1 - MOTOR STARTERS [01 MSBMS XX] ELEMENTARY WIRING DIAGRAM - PART A

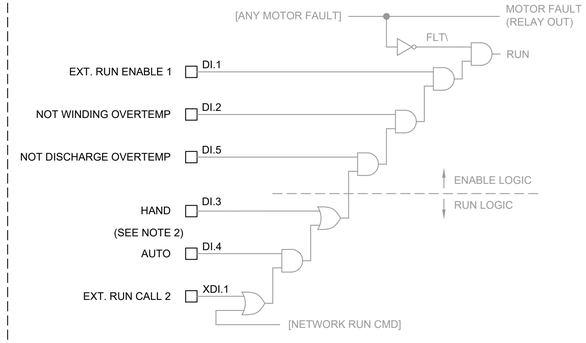
MEMBRANE SCOUR BLOWERS

XX = 01 FOR [01 MSBMS 01] MEMBRANE SCOUR BLOWER NO. 1
XX = 02 FOR [01 MSBMS 02] MEMBRANE SCOUR BLOWER NO. 2
XX = 03 FOR [01 MSBMS 03] MEMBRANE SCOUR BLOWER NO. 3

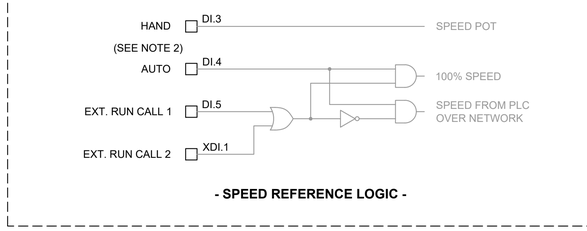
NOTES:

1. REFERENCE MOTOR STARTER SPECIFICATIONS.
2. REFERENCE MOTOR STARTER NOTES ON - / E-16 WHERE:
   G.n = GENERAL NOTES,
   V.n = VFD NOTES,
3. ISOLATION AND PASSIVE FILTER CAPACITOR-CONTROL CONTACTORS ARE NOT SHOWN. THESE CIRCUITS MAY VARY BETWEEN MANUFACTURERS. ALL OTHER PHYSICAL RELAYS AND TIMERS SHALL BE PROVIDED AS SHOWN.

⊛ = INPUTS AND OUTPUTS TO BE SENSED BY THE PLC OVER THE NETWORK.



- RUN COMMAND LOGIC -



- SPEED REFERENCE LOGIC -

NOTES:

1. CONFIGURE THE STARTER'S RUN COMMAND AND SPEED REFERENCE LOGIC AS SHOWN ABOVE. THIS FUNCTIONALITY MUST BE DEMONSTRATED DURING SHOP WITNESS TESTING.
2. "HAND" AND "AUTO" CONDITIONS ARE MUTUALLY EXCLUSIVE.

2 - VFD INTERNAL CONTROL LOGIC DETAIL

RUN COMMAND, SPEED REFERENCE, AND "READY" STATUS

TIMER TABLE

TIMER	FUNCTION	TYPE	AKA	MINIMUM RANGE	INITIAL SETTING
TR17.05.01	POWER-UP DELAY	TDAE	ON DELAY	0-100 SECONDS	1 SECONDS
TR17.05.02	POWER-UP DELAY	TDAE	ON DELAY	0-100 SECONDS	2 SECONDS
TR17.05.03	POWER-UP DELAY	TDAE	ON DELAY	0-100 SECONDS	3 SECONDS
TR17.09.XX	STARTER ENCLOSURE FAN DELAY	TDAD	OFF DELAY	0-100 MINUTES	10 MINUTES

VFD

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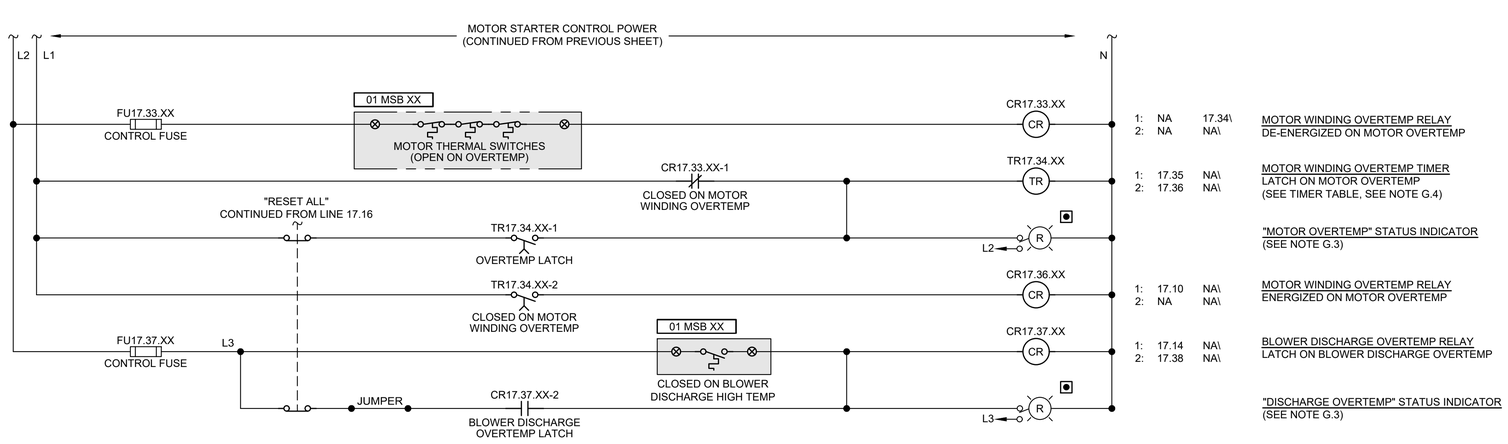
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ELECTRICAL

MOTOR STARTER ELEMENTARY WIRING DIAGRAM - MEMBRANE SCOUR BLOWERS

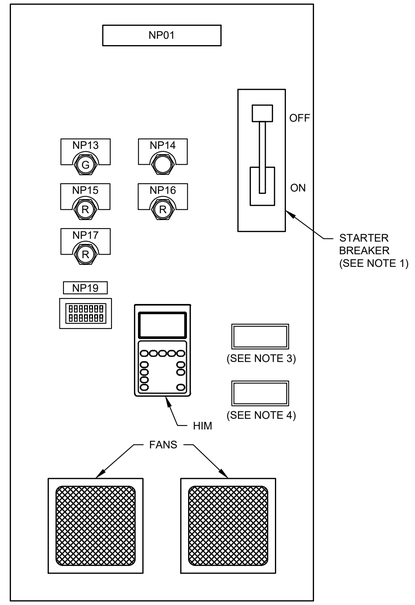
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1 / - **MOTOR STARTER [01 MSBMS XX] ELEMENTARY WIRING DIAGRAM - PART B**

MEMBRANE SCOUR BLOWERS



PANEL DOOR NAMEPLATE SCHEDULE	
ITEM NUMBER	**ITEM FUNCTION**
NP01	SEE LINES 1 AND 2 BELOW
NP13	MOTOR RUNNING (PILOT, GREEN)
NP14	RESET ALL (PUSHBUTTON, BLACK)
NP15	MOTOR FAULT (PILOT, RED)
NP16	MOTOR OVERTEMP (PILOT, RED)
NP17	DISCHARGE OVERTEMP (PILOT, RED)
NP19	ELAPSED TIME/COUNTER METER

LINE 1	LINE 2
MEMBRANE SCOUR BLOWER NO. 1	[01 MSBMS 01]
MEMBRANE SCOUR BLOWER NO. 2	[01 MSBMS 02]
MEMBRANE SCOUR BLOWER NO. 3	[01 MSBMS 03]

MOTOR STARTER REFERENCE TABLE			
XX	**YY**	**TAG**	**DESCRIPTION**
01	01	[01 MSBMS 01]	MOTOR STARTER, MEMBRANE SCOUR BLOWER NO. 1
02	01	[01 MSBMS 02]	MOTOR STARTER, MEMBRANE SCOUR BLOWER NO. 2
03	01	[01 MSBMS 03]	MOTOR STARTER, MEMBRANE SCOUR BLOWER NO. 3

NOTES:

1. STARTER BREAKERS SHALL BE LOCKABLE IN THE OPEN POSITION AND SHALL BE PROVIDED WITH A DOOR LATCHING MECHANISM THAT ALLOWS THE DOOR TO OPEN UNDER POWER WITH A SPECIAL TOOL.
2. THESE DETAILS ARE INTENDED TO SHOW A GENERAL LAYOUT OF DEVICES EXPECTED ON THE STARTER DOORS AND ARE NOT INTENDED TO REPRESENT ACTUAL STARTER OR STARTER DOOR SIZES.
3. PROVIDE AN ARC FLASH WARNING LABEL ON THE DOOR.
4. PROVIDE A SELECTOR SWITCH LOCATION PLACARD ON THE STARTER DOOR PER MOTOR STARTER GENERAL NOTE G.11.

2 / - **MOTOR STARTER DOOR DETAIL**

NOT TO SCALE

VFD

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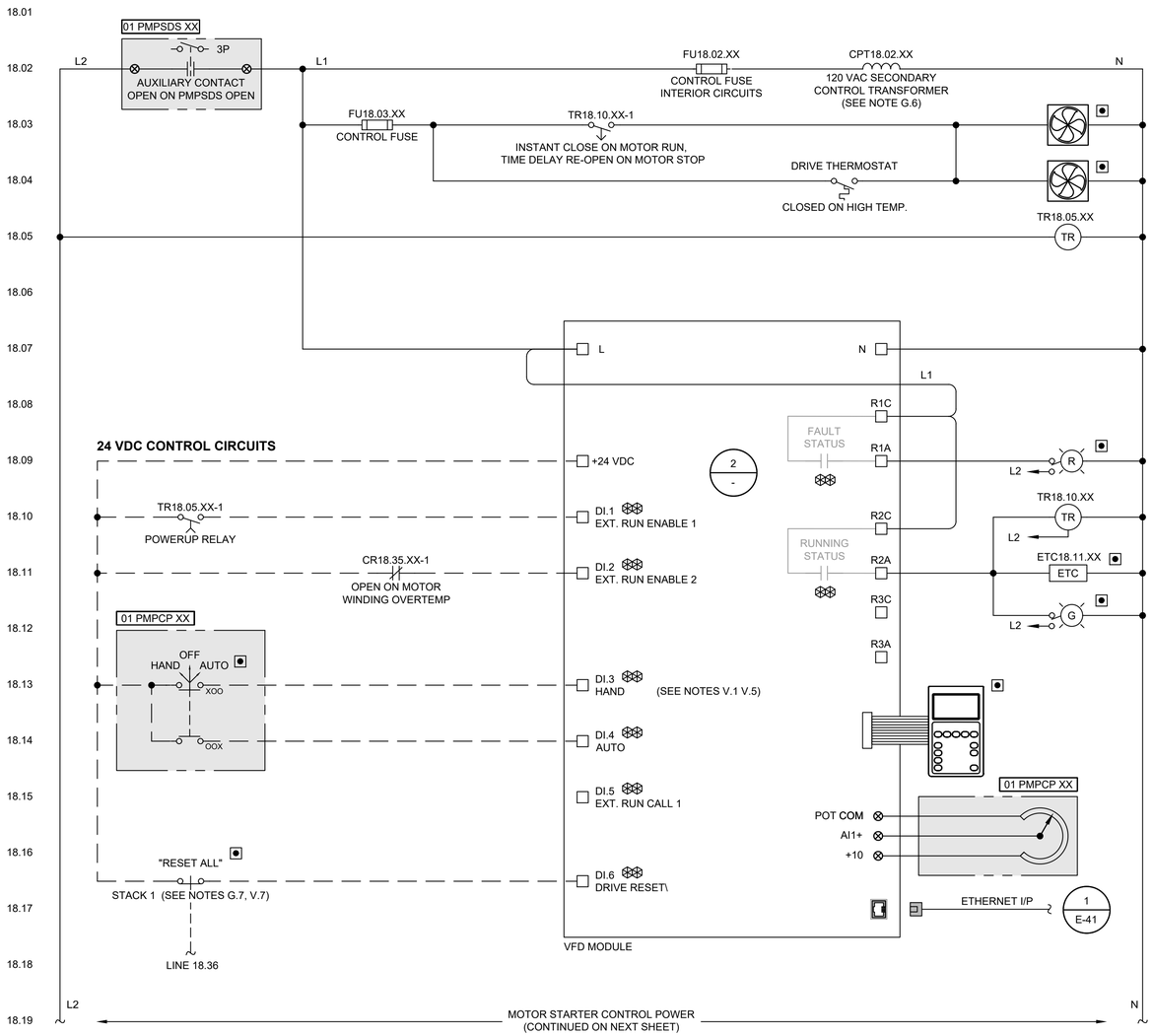
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MTR STARTER EWD - MSB

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STARTER ENCLOSURE COOLING FANS (TYP.)
(SEE NOTE V.6)

1: 18.10 NA\
2: 18.35 NA\
POWER-UP DELAY TIMER
DELAY STARTER OPERATION FOLLOWING A POWERUP
(SEE TIMER TABLE AND NOTE G.4)

"MOTOR FAULT" STATUS INDICATOR
ACTIVE ON DRIVE FAULT CONDITIONS
(SEE NOTE G.3)

1: 18.03 NA\
2: NA NA\
ENCLOSURE FAN CONTROL TIMER
ENERGIZED ON MOTOR RUNNING
(SEE TIMER TABLE, SEE NOTE V.6)

ELAPSED TIME/COUNTER METER
(SEE NOTE G.5)

"MOTOR RUNNING" STATUS INDICATOR
ACTIVE ON MOTOR RUNNING CONDITIONS
(SEE NOTE G.3)

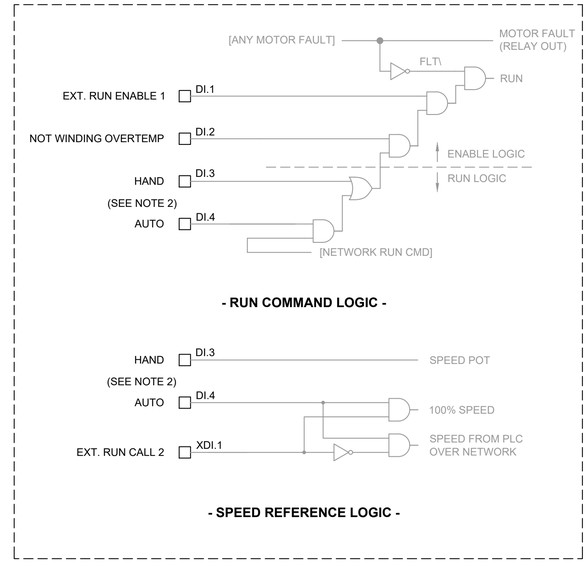
HUMAN INTERFACE MODULE (HIM)
(SEE NOTE V.4)

FRONT PANEL SPEED POT
(SEE NOTE V.9)

NOTES:

1. REFERENCE MOTOR STARTER SPECIFICATIONS.
2. REFERENCE MOTOR STARTER NOTES ON (- / E-16) WHERE:
   G.n = GENERAL NOTES,
   V.n = VFD NOTES,
   IN.n = INTRINSICALLY SAFE NOTES.
3. ISOLATION AND PASSIVE FILTER CAPACITOR-CONTROL CONTACTORS ARE NOT SHOWN. THESE CIRCUITS MAY VARY BETWEEN MANUFACTURERS. ALL OTHER PHYSICAL RELAYS AND TIMERS SHALL BE PROVIDED AS SHOWN.

= INPUTS AND OUTPUTS TO BE SENSED BY THE PLC OVER THE NETWORK.



NOTES:

1. CONFIGURE THE STARTER'S RUN COMMAND AND SPEED REFERENCE LOGIC AS SHOWN ABOVE. THIS FUNCTIONALITY MUST BE DEMONSTRATED DURING SHOP WITNESS TESTING.
2. "HAND" AND "AUTO" CONDITIONS ARE MUTUALLY EXCLUSIVE.

1 - MOTOR STARTERS [01 PMPMS XX] ELEMENTARY WIRING DIAGRAM - PART A

PERMEATE PUMPS

XX = 01 FOR [01 PMP 01], PERMEATE PUMP NO. 1
XX = 02 FOR [01 PMP 02], PERMEATE PUMP NO. 2
XX = 03 FOR [01 PMP 03], PERMEATE PUMP NO. 3

2 - VFD INTERNAL CONTROL LOGIC DETAIL

RUN COMMAND, SPEED REFERENCE, AND "READY" STATUS

VFD

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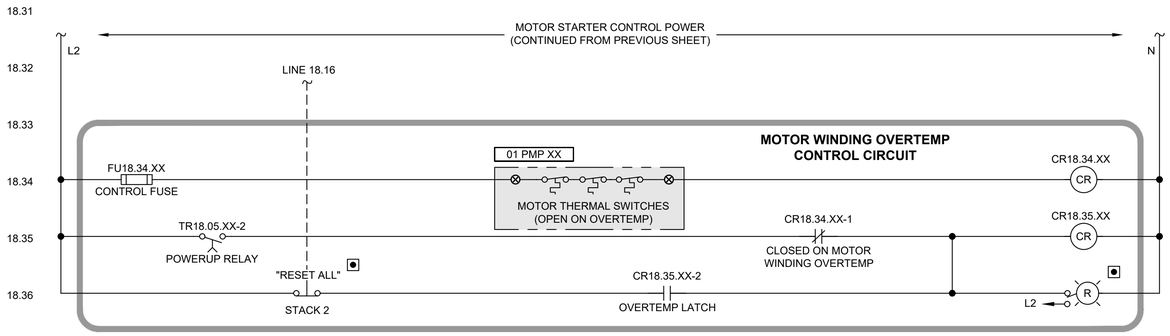
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MOTOR STARTER ELEMENTARY WIRING DIAGRAM - PERMEATE PUMPS

DRAWING: **E-18A** OF: **41**

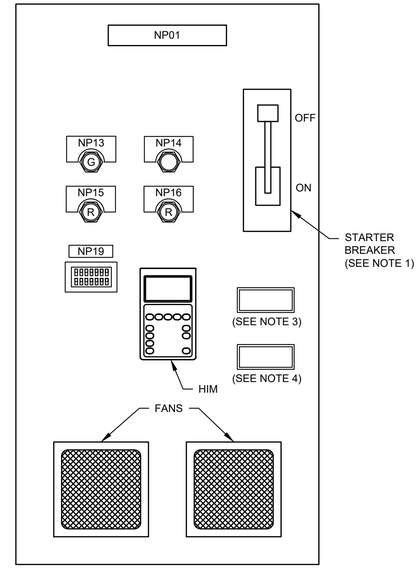
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1: NA 18.35\ MOTOR WINDING OVERTEMP SENSING RELAY
2: NA NA\ DE-ENERGIZED ON MOTOR OVERTEMP

1: NA 18.11\ MOTOR WINDING OVERTEMP RELAY
2: 18.36 NA\ LATCHED ON MOTOR OVERTEMP

"MOTOR OVERTEMP" STATUS INDICATOR
(SEE NOTE G.3)



PANEL DOOR NAMEPLATE SCHEDULE	
ITEM NUMBER	ITEM FUNCTION
NP13	MOTOR RUNNING (PILOT, GREEN)
NP14	RESET ALL (PUSHBUTTON, BLACK)
NP15	MOTOR FAULT (PILOT, RED)
NP16	MOTOR OVERTEMP (PILOT, RED)
NP19	ELAPSED TIME/COUNTER METER

LINE 1	LINE 2
PERMEATE PUMP NO. 1	[01 PMPMS 01]
PERMEATE PUMP NO. 2	[01 PMPMS 02]
PERMEATE PUMP NO. 3	[01 PMPMS 03]

NOTES:

1. STARTER BREAKERS SHALL BE LOCKABLE IN THE OPEN POSITION AND SHALL BE PROVIDED WITH A DOOR LATCHING MECHANISM THAT ALLOWS THE DOOR TO OPEN UNDER POWER WITH A SPECIAL TOOL. PROVIDE AN AUXILIARY CONTACT ON BREAKERS THAT IS OPEN WHEN THE BREAKER IS OPEN AND CLOSED WHEN THE BREAKER IS CLOSED.
2. THESE DETAILS ARE INTENDED TO SHOW A GENERAL LAYOUT OF DEVICES EXPECTED ON THE STARTER DOORS AND ARE NOT INTENDED TO REPRESENT ACTUAL STARTER OR STARTER DOOR SIZES.
3. PROVIDE AN ARC FLASH WARNING LABEL ON THE DOOR.

2 / - **MOTOR STARTER DOOR DETAIL**
NOT TO SCALE

TIMER TABLE					
TIMER	FUNCTION	TYPE	AKA	MINIMUM RANGE	INITIAL SETTING
TR18.05.01	POWER-UP DELAY	TDAE	ON DELAY	0-100 SECONDS	2 SECONDS
TR18.05.02	POWER-UP DELAY	TDAE	ON DELAY	0-100 SECONDS	4 SECONDS
TR18.05.03	POWER-UP DELAY	TDAE	ON DELAY	0-100 SECONDS	4 SECONDS
TR18.10.XX	STARTER ENCLOSURE FAN DELAY	TDAD	OFF DELAY	0-100 MINUTES	5 MINUTES

* SET THIS TIMER WITH THE OWNER AND THE ENGINEER DURING COMMISSIONING.

MOTOR STARTER REFERENCE TABLE			
XX	YY	TAG	DESCRIPTION
01	01	[01 PMPMS 01]	MOTOR STARTER, PERMEATE PUMP NO. 1
02	01	[01 PMPMS 02]	MOTOR STARTER, PERMEATE PUMP NO. 2
03	01	[01 PMPMS 03]	MOTOR STARTER, PERMEATE PUMP NO. 3

NOTES:

1. SEE NOTES ON PREVIOUS SHEET.

1 / - **MOTOR STARTERS [01 PMPMS XX] ELEMENTARY WIRING DIAGRAM - PART B**
PERMEATE PUMPS

XX = 01 FOR [01 PMP 01], PERMEATE PUMP NO. 1
XX = 02 FOR [01 PMP 02], PERMEATE PUMP NO. 2
XX = 03 FOR [01 PMP 03], PERMEATE PUMP NO. 3

VFD

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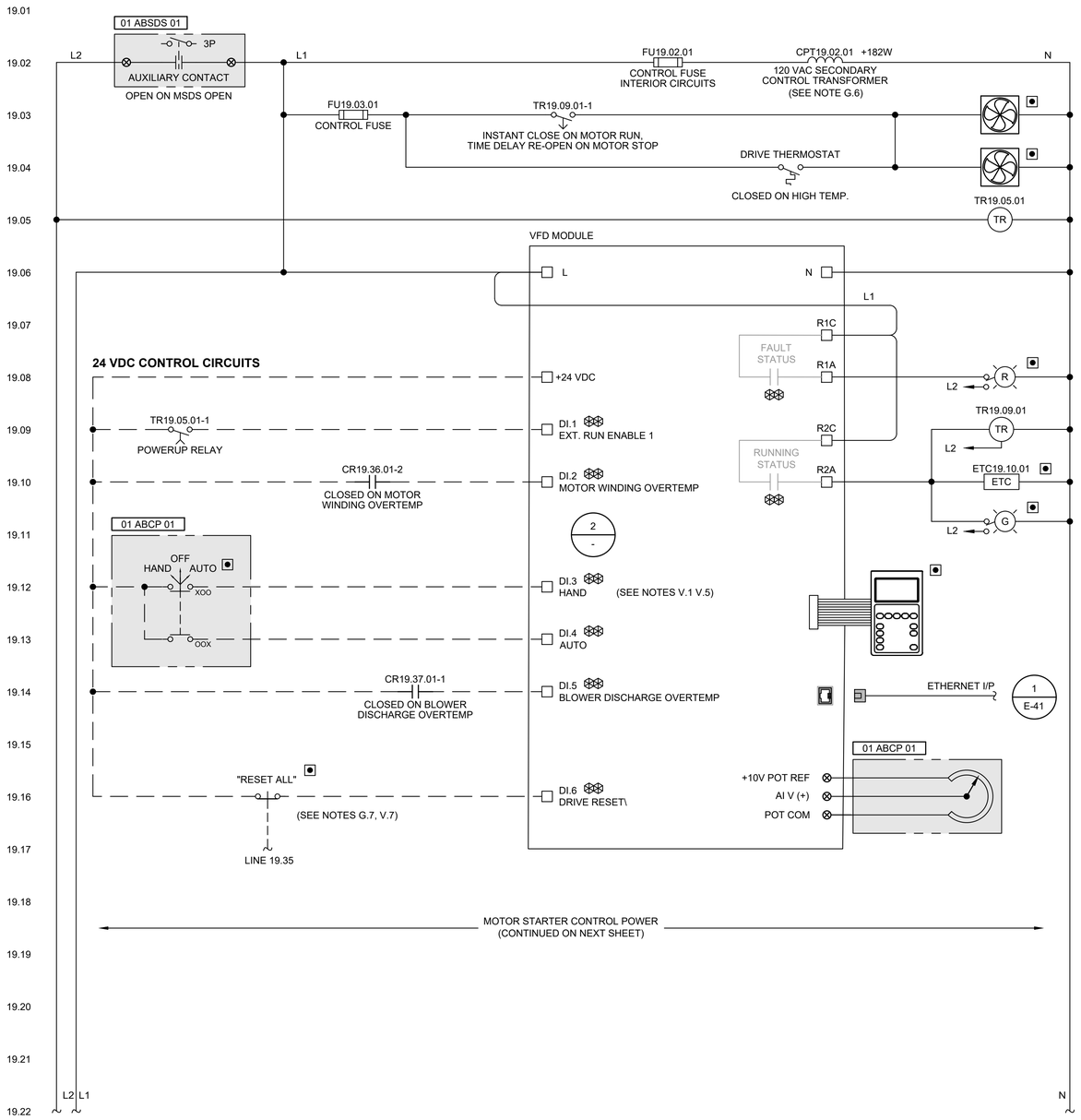
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MOTOR STARTER ELEMENTARY WIRING DIAGRAM - PERMEATE PUMPS

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1 - MOTOR STARTER [01 ABMS 01] ELEMENTARY WIRING DIAGRAM - PART A
AERATION BLOWER

STARTER ENCLOSURE COOLING FANS (TYP.)
(SEE NOTE V.6)

POWER-UP DELAY TIMER
DELAY STARTER OPERATION FOLLOWING A POWERUP
(SEE TIMER TABLE AND NOTE G.4)

"MOTOR FAULT" STATUS INDICATOR
ACTIVE ON DRIVE FAULT CONDITIONS
(SEE NOTE G.3)

ENCLOSURE FAN CONTROL TIMER
ENERGIZED ON MOTOR RUNNING
(SEE TIMER TABLE, SEE NOTE V.6)

ELAPSED TIME/COUNTER METER
(SEE NOTE G.5)

"MOTOR RUNNING" STATUS INDICATOR
ACTIVE ON MOTOR RUNNING CONDITIONS
(SEE NOTE G.3)

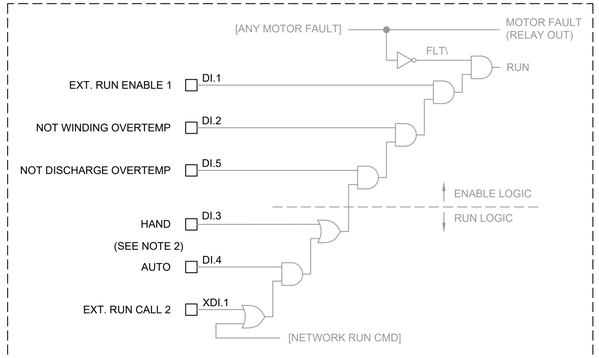
HUMAN INTERFACE MODULE (HIM)
(SEE NOTE V.4)

REMOTE SPEED POT
(SEE NOTE V.9)

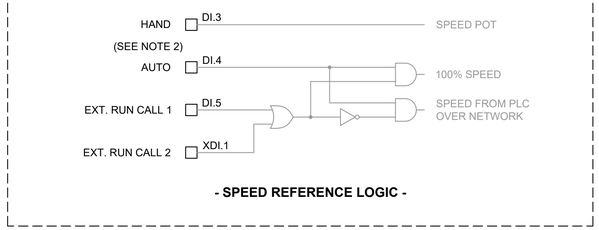
NOTES:

1. REFERENCE MOTOR STARTER SPECIFICATIONS.
2. REFERENCE MOTOR STARTER NOTES ON - / E-16 WHERE:
   G.n = GENERAL NOTES,
   V.n = VFD NOTES,
3. ISOLATION AND PASSIVE FILTER CAPACITOR-CONTROL CONTACTORS ARE NOT SHOWN. THESE CIRCUITS MAY VARY BETWEEN MANUFACTURERS. ALL OTHER PHYSICAL RELAYS AND TIMERS SHALL BE PROVIDED AS SHOWN.

⊛ = INPUTS AND OUTPUTS TO BE SENSED BY THE PLC OVER THE NETWORK.



- RUN COMMAND LOGIC -



- SPEED REFERENCE LOGIC -

NOTES:

1. CONFIGURE THE STARTER'S RUN COMMAND AND SPEED REFERENCE LOGIC AS SHOWN ABOVE. THIS FUNCTIONALITY MUST BE DEMONSTRATED DURING SHOP WITNESS TESTING.
2. "HAND" AND "AUTO" CONDITIONS ARE MUTUALLY EXCLUSIVE.

2 - **VFD INTERNAL CONTROL LOGIC DETAIL**
RUN COMMAND, SPEED REFERENCE, AND "READY" STATUS

TIMER TABLE

TIMER	FUNCTION	TYPE	AKA	MINIMUM RANGE	INITIAL SETTING
TR19.05.01	POWER-UP DELAY	TDAE	ON DELAY	0-100 SECONDS	1 SECONDS
TR19.09.01	STARTER ENCLOSURE FAN DELAY	TDAD	OFF DELAY	0-100 MINUTES	10 MINUTES

VFD

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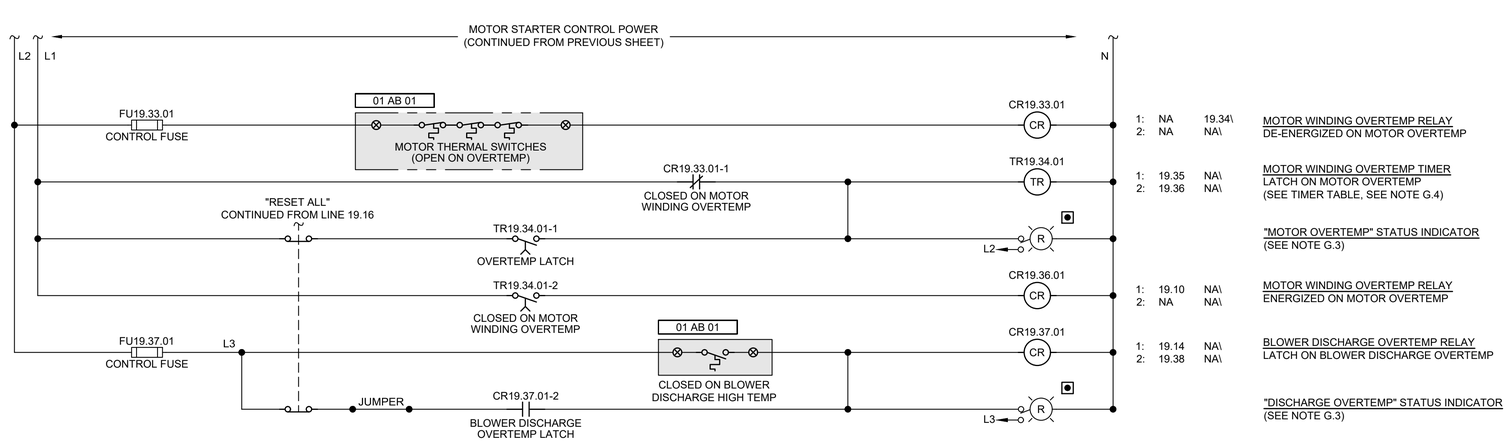
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ELECTRICAL

MOTOR STARTER ELEMENTARY WIRING DIAGRAM - AERATION BLOWER

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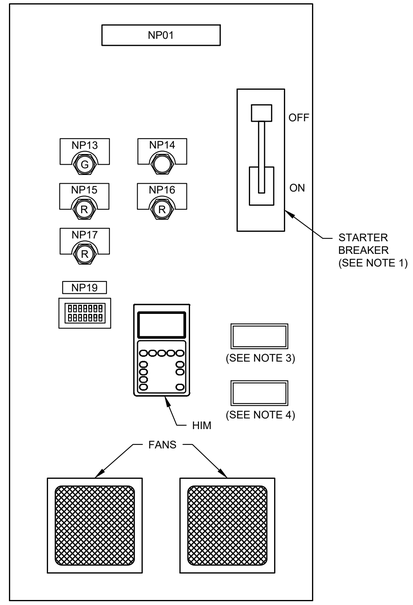
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1
-

MOTOR STARTER [01 ABMS 01] ELEMENTARY WIRING DIAGRAM - PART B

AERATION BLOWER



PANEL DOOR NAMEPLATE SCHEDULE	
ITEM NUMBER	**ITEM FUNCTION**
NP01	SEE LINES 1 AND 2 BELOW
NP13	MOTOR RUNNING (PILOT, GREEN)
NP14	RESET ALL (PUSHBUTTON, BLACK)
NP15	MOTOR FAULT (PILOT, RED)
NP16	MOTOR OVERTEMP (PILOT, RED)
NP17	DISCHARGE OVERTEMP (PILOT, RED)
NP19	ELAPSED TIME/COUNTER METER

LINE 1	LINE 2
AERATION BLOWER	[01 ABMS 01]

NOTES:

1. STARTER BREAKERS SHALL BE LOCKABLE IN THE OPEN POSITION AND SHALL BE PROVIDED WITH A DOOR LATCHING MECHANISM THAT ALLOWS THE DOOR TO OPEN UNDER POWER WITH A SPECIAL TOOL. PROVIDE AN AUXILIARY CONTACT ON BREAKERS THAT IS OPEN WHEN THE BREAKER IS OPEN AND CLOSED WHEN THE BREAKER IS CLOSED.
2. THESE DETAILS ARE INTENDED TO SHOW A GENERAL LAYOUT OF DEVICES EXPECTED ON THE STARTER DOORS AND ARE NOT INTENDED TO REPRESENT ACTUAL STARTER OR STARTER DOOR SIZES.
3. PROVIDE AN ARC FLASH WARNING LABEL ON THE DOOR.
4. PROVIDE A SELECTOR SWITCH LOCATION PLACARD ON THE STARTER DOOR PER MOTOR STARTER GENERAL NOTE G.11.

2
-

MOTOR STARTER DOOR DETAIL

NOT TO SCALE

VFD

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JASON R. NEWQUIST
STATE OF WASHINGTON
45311
REGISTERED
PROFESSIONAL ENGINEER
9/11/26

TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

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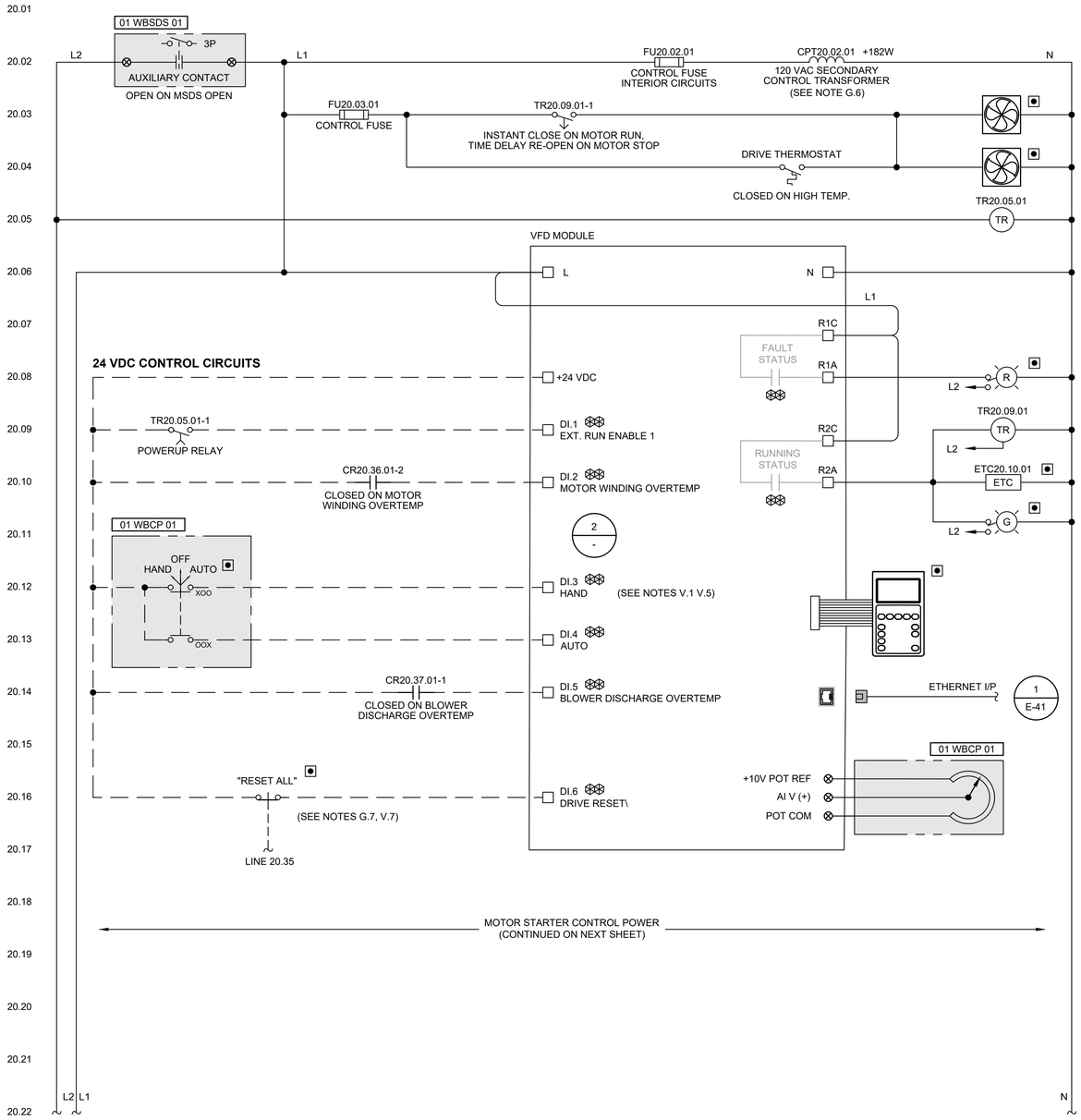
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ELECTRICAL

MTR STARTER EWD - AB

DRAWING: **E-19B** OF: **41**

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1 / - **MOTOR STARTER [01 WBMS 01] ELEMENTARY WIRING DIAGRAM - PART A**
WAS BLOWER

STARTER ENCLOSURE COOLING FANS (TYP.)
(SEE NOTE V.6)

POWER-UP DELAY TIMER
DELAY STARTER OPERATION FOLLOWING A POWERUP
(SEE TIMER TABLE AND NOTE G.4)

"MOTOR FAULT" STATUS INDICATOR
ACTIVE ON DRIVE FAULT CONDITIONS
(SEE NOTE G.3)

ENCLOSURE FAN CONTROL TIMER
ENERGIZED ON MOTOR RUNNING
(SEE TIMER TABLE, SEE NOTE V.6)

ELAPSED TIME/COUNTER METER
(SEE NOTE G.5)

"MOTOR RUNNING" STATUS INDICATOR
ACTIVE ON MOTOR RUNNING CONDITIONS
(SEE NOTE G.3)

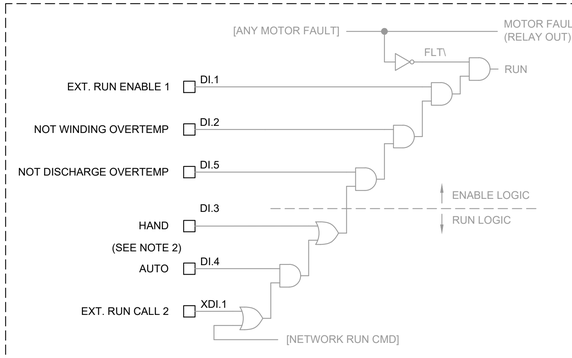
HUMAN INTERFACE MODULE (HIM)
(SEE NOTE V.4)

REMOTE SPEED POT
(SEE NOTE V.9)

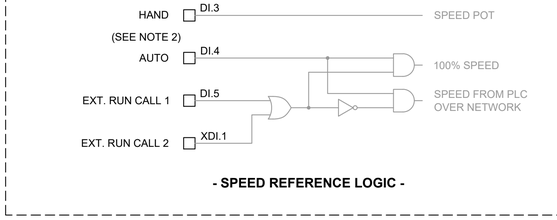
NOTES:

1. REFERENCE MOTOR STARTER SPECIFICATIONS.
2. REFERENCE MOTOR STARTER NOTES ON - / E-16 WHERE:
   G.n = GENERAL NOTES,
   V.n = VFD NOTES,
3. ISOLATION AND PASSIVE FILTER CAPACITOR-CONTROL CONTACTORS ARE NOT SHOWN. THESE CIRCUITS MAY VARY BETWEEN MANUFACTURERS. ALL OTHER PHYSICAL RELAYS AND TIMERS SHALL BE PROVIDED AS SHOWN.

❄ = INPUTS AND OUTPUTS TO BE SENSED BY THE PLC OVER THE NETWORK.



- RUN COMMAND LOGIC -



- SPEED REFERENCE LOGIC -

NOTES:

1. CONFIGURE THE STARTER'S RUN COMMAND AND SPEED REFERENCE LOGIC AS SHOWN ABOVE. THIS FUNCTIONALITY MUST BE DEMONSTRATED DURING SHOP WITNESS TESTING.
2. "HAND" AND "AUTO" CONDITIONS ARE MUTUALLY EXCLUSIVE.

2 / - **VFD INTERNAL CONTROL LOGIC DETAIL**
RUN COMMAND, SPEED REFERENCE, AND "READY" STATUS

TIMER TABLE

TIMER	FUNCTION	TYPE	AKA	MINIMUM RANGE	INITIAL SETTING
TR20.05.01	POWER-UP DELAY	TDAE	ON DELAY	0-100 SECONDS	3 SECONDS
TR20.09.01	STARTER ENCLOSURE FAN DELAY	TDAD	OFF DELAY	0-100 MINUTES	10 MINUTES

VFD

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TAYLOR BAY BEACH CLUB

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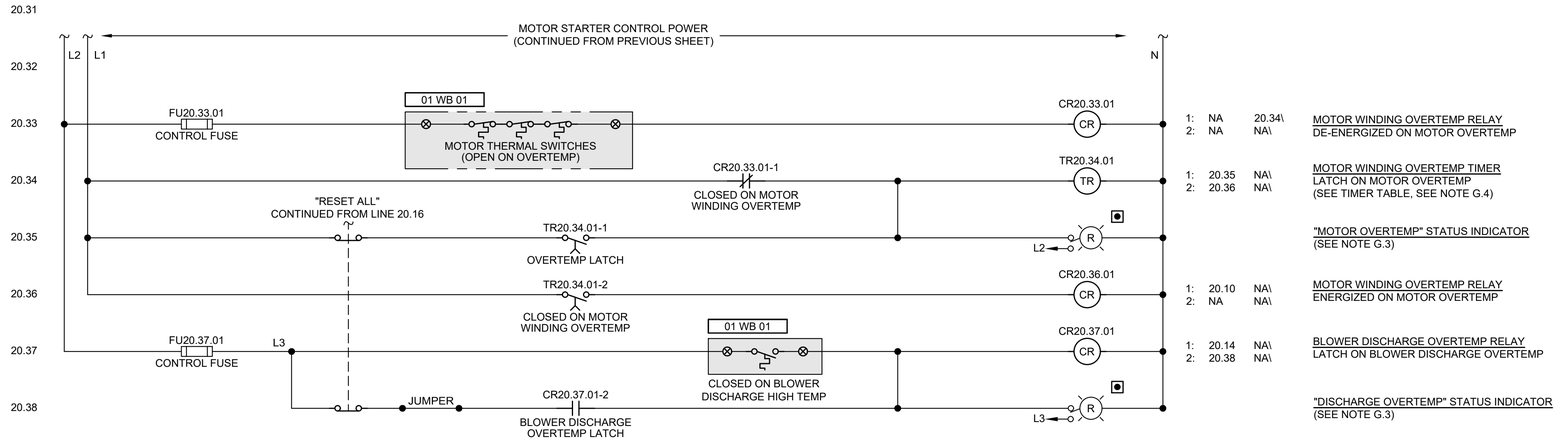
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ELECTRICAL

MOTOR STARTER ELEMENTARY WIRING DIAGRAM - WAS BLOWER

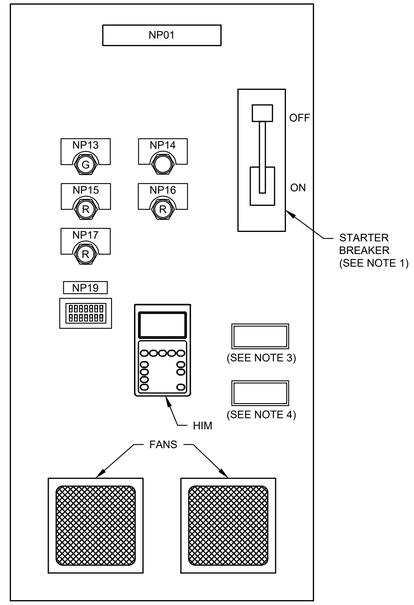
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1 / - **MOTOR STARTER [01 WBMS 01] ELEMENTARY WIRING DIAGRAM - PART B**

WAS BLOWER



PANEL DOOR NAMEPLATE SCHEDULE	
ITEM NUMBER	**ITEM FUNCTION**
NP01	SEE LINES 1 AND 2 BELOW
NP13	MOTOR RUNNING (PILOT, GREEN)
NP14	RESET ALL (PUSHBUTTON, BLACK)
NP15	MOTOR FAULT (PILOT, RED)
NP16	MOTOR OVERTEMP (PILOT, RED)
NP17	DISCHARGE OVERTEMP (PILOT, RED)
NP19	ELAPSED TIME/COUNTER METER

LINE 1	LINE 2
WAS BLOWER	[01 WBMS 01]

NOTES:

1. STARTER BREAKERS SHALL BE LOCKABLE IN THE OPEN POSITION AND SHALL BE PROVIDED WITH A DOOR LATCHING MECHANISM THAT ALLOWS THE DOOR TO OPEN UNDER POWER WITH A SPECIAL TOOL. PROVIDE AN AUXILIARY CONTACT ON BREAKERS THAT IS OPEN WHEN THE BREAKER IS OPEN AND CLOSED WHEN THE BREAKER IS CLOSED.
2. THESE DETAILS ARE INTENDED TO SHOW A GENERAL LAYOUT OF DEVICES EXPECTED ON THE STARTER DOORS AND ARE NOT INTENDED TO REPRESENT ACTUAL STARTER OR STARTER DOOR SIZES.
3. PROVIDE AN ARC FLASH WARNING LABEL ON THE DOOR.
4. PROVIDE A SELECTOR SWITCH LOCATION PLACARD ON THE STARTER DOOR PER MOTOR STARTER GENERAL NOTE G.11.

2 / - **MOTOR STARTER DOOR DETAIL**

NOT TO SCALE

VFD

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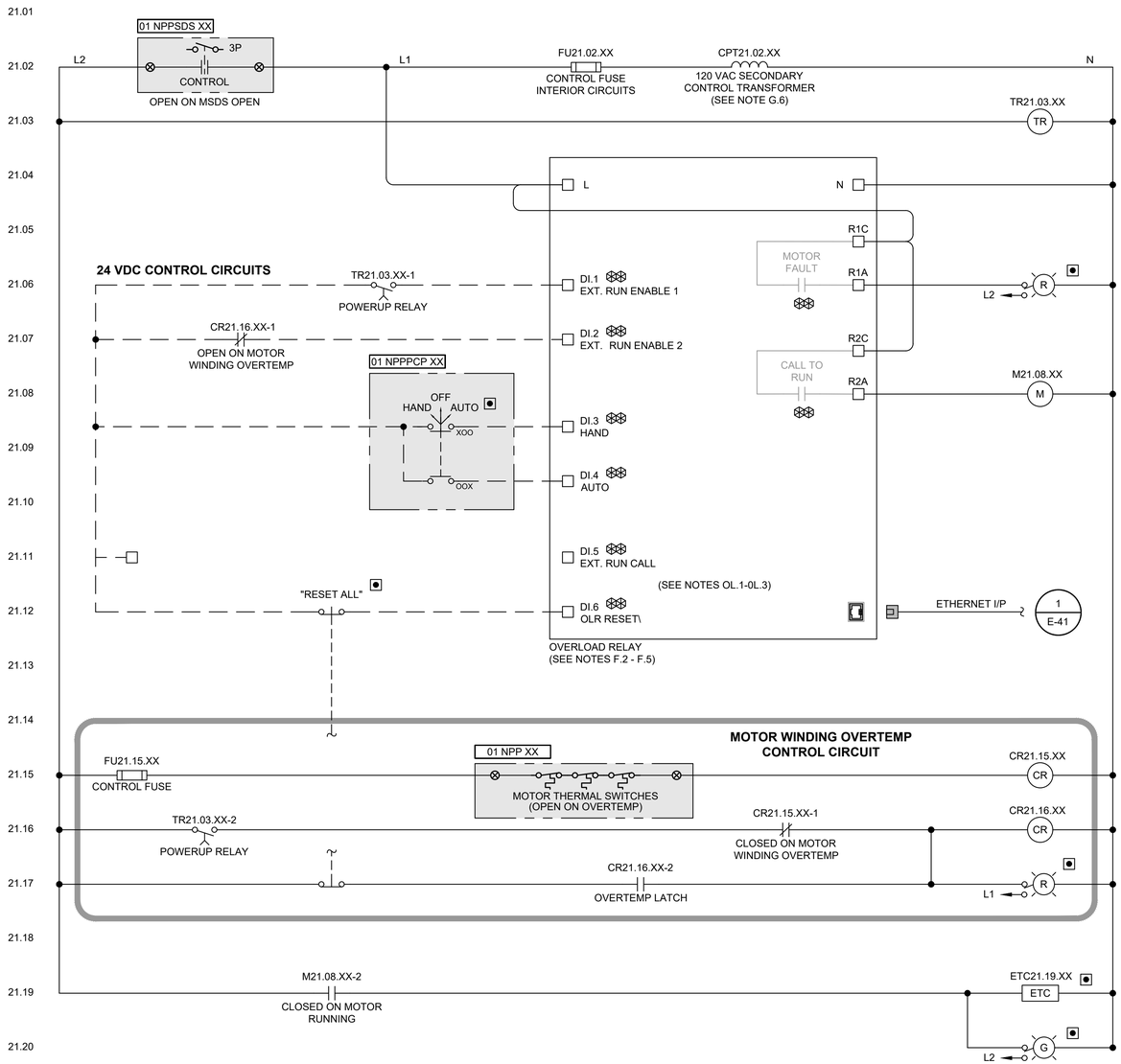
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CHECKED BY:	PAM
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ELECTRICAL

MOTOR STARTER ELEMENTARY WIRING DIAGRAM - WAS BLOWER

DRAWING: **E-20B** OF: **41**

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1: 21.06 NA\
2: 21.16 NA\

POWER-UP DELAY TIMER
DELAY STARTER OPERATION FOLLOWING A POWERUP
(SEE TIMER TABLE AND NOTE G.4)

"MOTOR FAULT" STATUS INDICATOR
ACTIVE ON MOTOR FAULT CONDITIONS
(SEE NOTE G.3)

1: 21.19 NA\
2: NA NA\

"MAIN CONTACTOR" POWER RELAY
ACTIVE ON MOTOR COMMANDED TO RUN
(SEE NOTE F.1)

1: NA 21.16\
2: NA NA\

MOTOR WINDING OVERTEMP SENSING RELAY
DE-ENERGIZED ON MOTOR OVERTEMP

1: NA 21.07\
2: 21.17 NA\

MOTOR WINDING OVERTEMP RELAY
LATCHED ON MOTOR OVERTEMP

"MOTOR OVERTEMP" STATUS INDICATOR
(SEE NOTE G.3)

ELAPSED TIME/COUNTER METER
(SEE NOTE G.5)

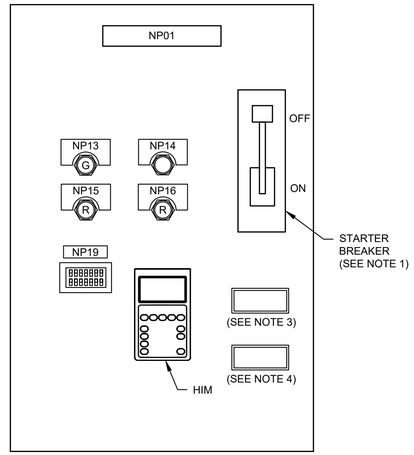
"MOTOR RUNNING" STATUS INDICATOR
ACTIVE ON MOTOR RUNNING CONDITIONS
(SEE NOTE G.3)

NOTES:

1. REFERENCE MOTOR STARTER SPECIFICATIONS.
2. REFERENCE MOTOR STARTER NOTES ON (-/E-16) WHERE:

   G.n = GENERAL NOTES,
   V.n = VFD NOTES,
3. ISOLATION AND PASSIVE FILTER CAPACITOR-CONTROL CONTACTORS ARE NOT SHOWN. THESE CIRCUITS MAY VARY BETWEEN MANUFACTURERS. ALL OTHER PHYSICAL RELAYS AND TIMERS SHALL BE PROVIDED AS SHOWN.

⊛ = INPUTS AND OUTPUTS TO BE SENSED BY THE PLC OVER THE NETWORK.



PANEL DOOR NAMEPLATE SCHEDULE	
ITEM NUMBER	ITEM FUNCTION
NP01	SEE LINES 1 AND 2 BELOW
NP13	MOTOR RUNNING (PILOT, GREEN)
NP14	RESET ALL (PUSHBUTTON, BLACK)
NP15	MOTOR FAULT (PILOT, RED)
NP16	MOTOR OVERTEMP (PILOT, RED)
NP19	ELAPSED TIME/COUNTER METER

LINE 1	LINE 2
NON-POT WATER PUMP NO.1	[01 NPPMS 01]
NON-POT WATER PUMP NO.2	[01 NPPMS 02]

NOTES:

1. STARTER BREAKERS SHALL BE LOCKABLE IN THE OPEN POSITION AND SHALL BE PROVIDED WITH A DOOR LATCHING MECHANISM THAT ALLOWS THE DOOR TO OPEN UNDER POWER WITH A SPECIAL TOOL. PROVIDE AN AUXILIARY CONTACT ON BREAKERS THAT IS OPEN WHEN THE BREAKER IS OPEN AND CLOSED WHEN THE BREAKER IS CLOSED.
2. THESE DETAILS ARE INTENDED TO SHOW A GENERAL LAYOUT OF DEVICES EXPECTED ON THE STARTER DOORS AND ARE NOT INTENDED TO REPRESENT ACTUAL STARTER OR STARTER DOOR SIZES.
3. PROVIDE AN ARC FLASH WARNING LABEL ON THE DOOR.
4. PROVIDE A SELECTOR SWITCH LOCATION PLACARD ON THE STARTER DOOR PER MOTOR STARTER GENERAL NOTE G.11.

MOTOR STARTER REFERENCE TABLE			
XX	YY	TAG	DESCRIPTION
01	01	[01 NPPMS 01]	MOTOR STARTER, NON-POT WATER PUMP NO. 1
02	01	[01 NPPMS 02]	MOTOR STARTER, NON-POT WATER PUMP NO. 2

TIMER TABLE					
TIMER	FUNCTION	TYPE	AKA	MINIMUM RANGE	INITIAL SETTING
TR21.03.01	POWER-UP DELAY	TDAE	ON DELAY	0-100 SECONDS	2 SECONDS
TR21.03.02	POWER-UP DELAY	TDAE	ON DELAY	0-100 SECONDS	5 SECONDS

* SET THIS TIMER WITH THE OWNER AND THE ENGINEER DURING COMMISSIONING.

1/- **MOTOR STARTERS [01 NPPMS XX] ELEMENTARY WIRING DIAGRAM**
NON-POT WATER PUMPS

2/- **MOTOR STARTER DOOR DETAIL**
NOT TO SCALE

VFD

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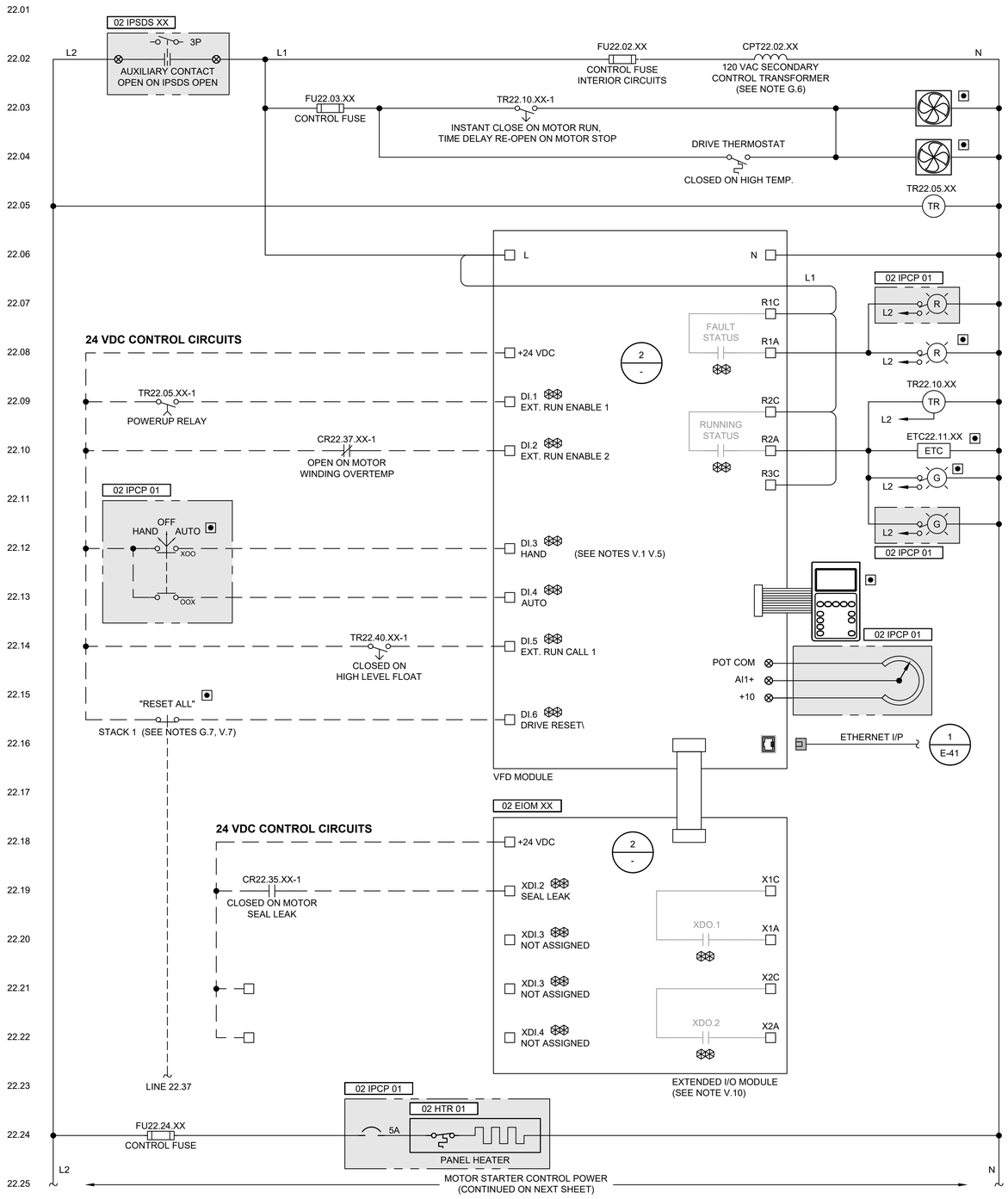
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ELECTRICAL

MOTOR STARTER ELEMENTARY WIRING DIAGRAM - NONPOT WATER PUMPS

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1 - **MOTOR STARTERS [02 IPMS XX] ELEMENTARY WIRING DIAGRAM - PART A**

INFLUENT PUMPS

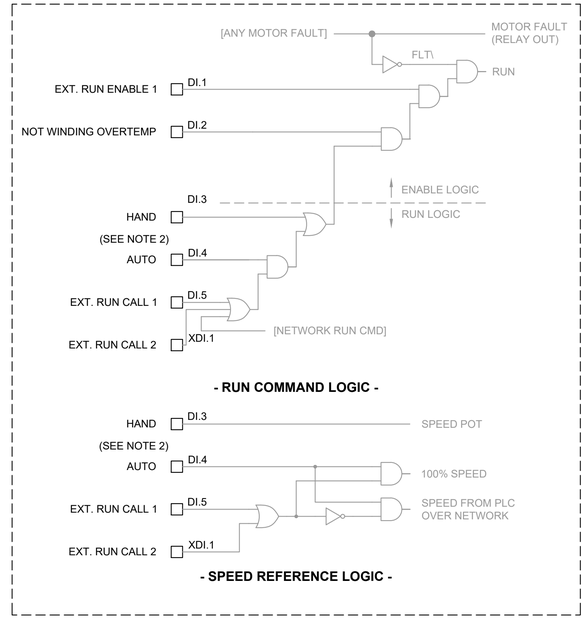
XX = 01 FOR [02 IP 01], INFLUENT PUMP NO. 1
XX = 02 FOR [02 IP 02], INFLUENT PUMP NO. 2

NOTES:

1. REFERENCE MOTOR STARTER SPECIFICATIONS.
2. REFERENCE MOTOR STARTER NOTES ON - E-16 WHERE:

   G.n = GENERAL NOTES,
   V.n = VFD NOTES,
   IN.n = INTRINSICALLY SAFE NOTES.
3. ISOLATION AND PASSIVE FILTER CAPACITOR-CONTROL CONTACTORS ARE NOT SHOWN. THESE CIRCUITS MAY VARY BETWEEN MANUFACTURERS. ALL OTHER PHYSICAL RELAYS AND TIMERS SHALL BE PROVIDED AS SHOWN.

⊛ = INPUTS AND OUTPUTS TO BE SENSED BY THE PLC OVER THE NETWORK.



NOTES:

1. CONFIGURE THE STARTER'S RUN COMMAND, SPEED REFERENCE AND "STARTER OK" LOGIC AS SHOWN ABOVE. THIS FUNCTIONALITY MUST BE DEMONSTRATED DURING SHOP WITNESS TESTING.
2. "HAND" AND "AUTO" CONDITIONS ARE MUTUALLY EXCLUSIVE.
3. PLC "VALID COMMUNICATION" STATUS IS DERIVED FROM WITHIN THE OVERLOAD RELAY.

2 - **VFD INTERNAL CONTROL LOGIC DETAIL**

RUN COMMAND, SPEED REFERENCE, AND "READY" STATUS

VFD

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JASON R. NEWQUIST — STATE OF WASHINGTON — 45311 — REGISTERED PROFESSIONAL ENGINEER — 9/11/26

TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

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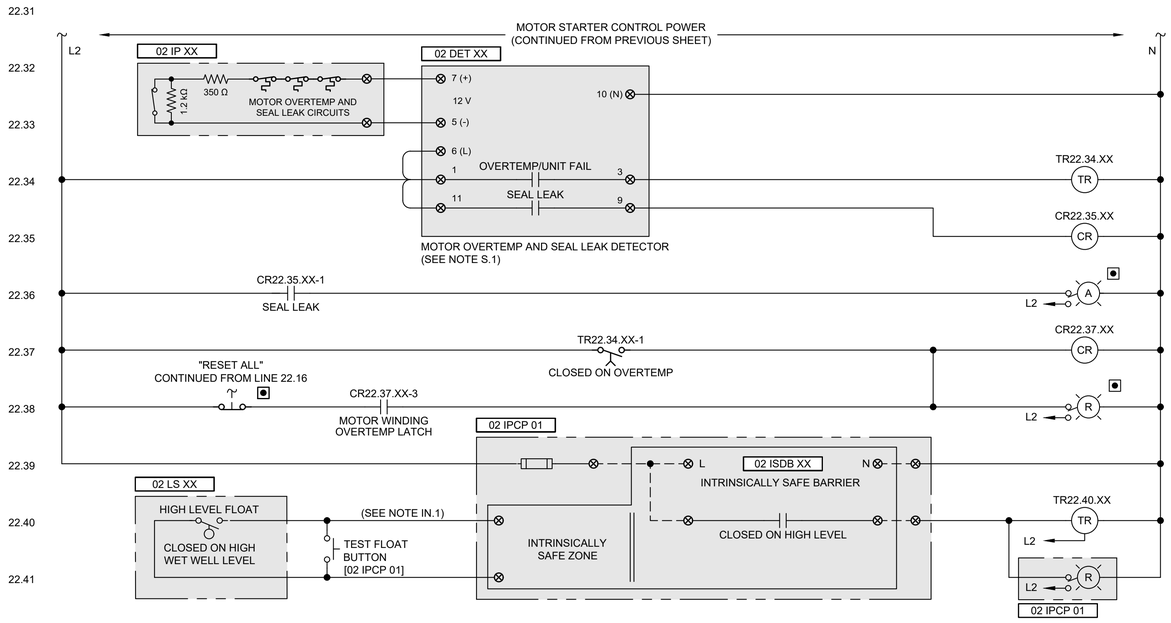
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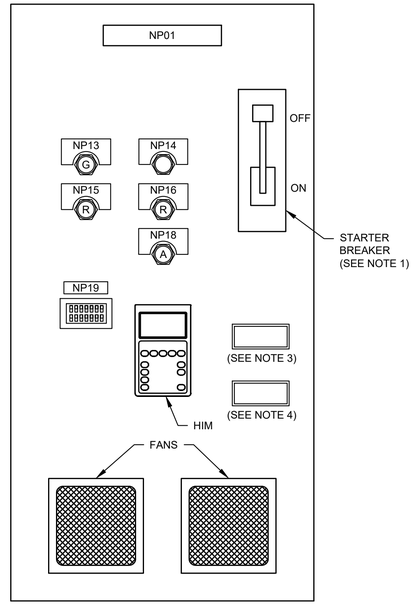
ELECTRICAL

MOTOR STARTER ELEMENTARY WIRING DIAGRAM - INFLUENT PUMPS

DRAWING: **E-22A** OF: **41**

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PANEL DOOR NAMEPLATE SCHEDULE	
ITEM NUMBER	**ITEM FUNCTION**
NP01	SEE LINES 1 AND 2 BELOW
NP13	MOTOR RUNNING (PILOT, GREEN)
NP14	RESET ALL (PUSHBUTTON, BLACK)
NP15	MOTOR FAULT (PILOT, RED)
NP16	MOTOR OVERTEMP (PILOT, RED)
NP18	SEAL LEAK (PILOT, AMBER)
NP19	ELAPSED TIME/COUNTER METER

LINE 1	LINE 2
INFLUENT PUMP NO. 1	[02 IPMS 01]
INFLUENT PUMP NO. 2	[02 IPMS 02]

NOTES:

1. STARTER BREAKERS SHALL BE LOCKABLE IN THE OPEN POSITION AND SHALL BE PROVIDED WITH A DOOR LATCHING MECHANISM THAT ALLOWS THE DOOR TO OPEN UNDER POWER WITH A SPECIAL TOOL. PROVIDE AN AUXILIARY CONTACT ON BREAKERS THAT IS OPEN WHEN THE BREAKER IS OPEN AND CLOSED WHEN THE BREAKER IS CLOSED.
2. THESE DETAILS ARE INTENDED TO SHOW A GENERAL LAYOUT OF DEVICES EXPECTED ON THE STARTER DOORS AND ARE NOT INTENDED TO REPRESENT ACTUAL STARTER OR STARTER DOOR SIZES.
3. PROVIDE AN ARC FLASH WARNING LABEL ON THE DOOR.
4. PROVIDE A SELECTOR SWITCH LOCATION PLACARD ON THE STARTER DOOR PER MOTOR STARTER GENERAL NOTE G.11.

2 / - **MOTOR STARTER DOOR DETAIL**
NOT TO SCALE

TIMER TABLE					
TIMER	**FUNCTION**	**TYPE**	**AKA**	**MINIMUM RANGE**	**INITIAL SETTING**
TR22.05.01	POWER-UP DELAY	TDAE	ON DELAY	0-100 SECONDS	10 SECOND
TR22.05.02	POWER-UP DELAY	TDAE	ON DELAY	0-100 SECONDS	15 SECONDS
TR22.10.XX	STARTER ENCLOSURE FAN DELAY	TDAD	OFF DELAY	0-100 MINUTES	
TR22.40.XX	EXTENDED DRAWDOWN DELAY	TDAD	OFF DELAY	0-100 MINUTES	5 MINUTES*

* SET THIS TIMER WITH THE OWNER AND THE ENGINEER DURING COMMISSIONING.

MOTOR STARTER REFERENCE TABLE			
XX	**YY**	**TAG**	**DESCRIPTION**
01	01	[02 IPMS 01]	MOTOR STARTER, INFLUENT PUMP NO. 1
02	01	[02 IPMS 02]	MOTOR STARTER, INFLUENT PUMP NO. 2

NOTES:

1. SEE NOTES ON PREVIOUS SHEET.

1 / - **MOTOR STARTERS [02 IPMS XX] ELEMENTARY WIRING DIAGRAM - PART B**
INFLUENT PUMPS

XX = 01 FOR [02 IP 01], INFLUENT PUMP NO. 1
XX = 02 FOR [02 IP 02], INFLUENT PUMP NO. 2

VFD

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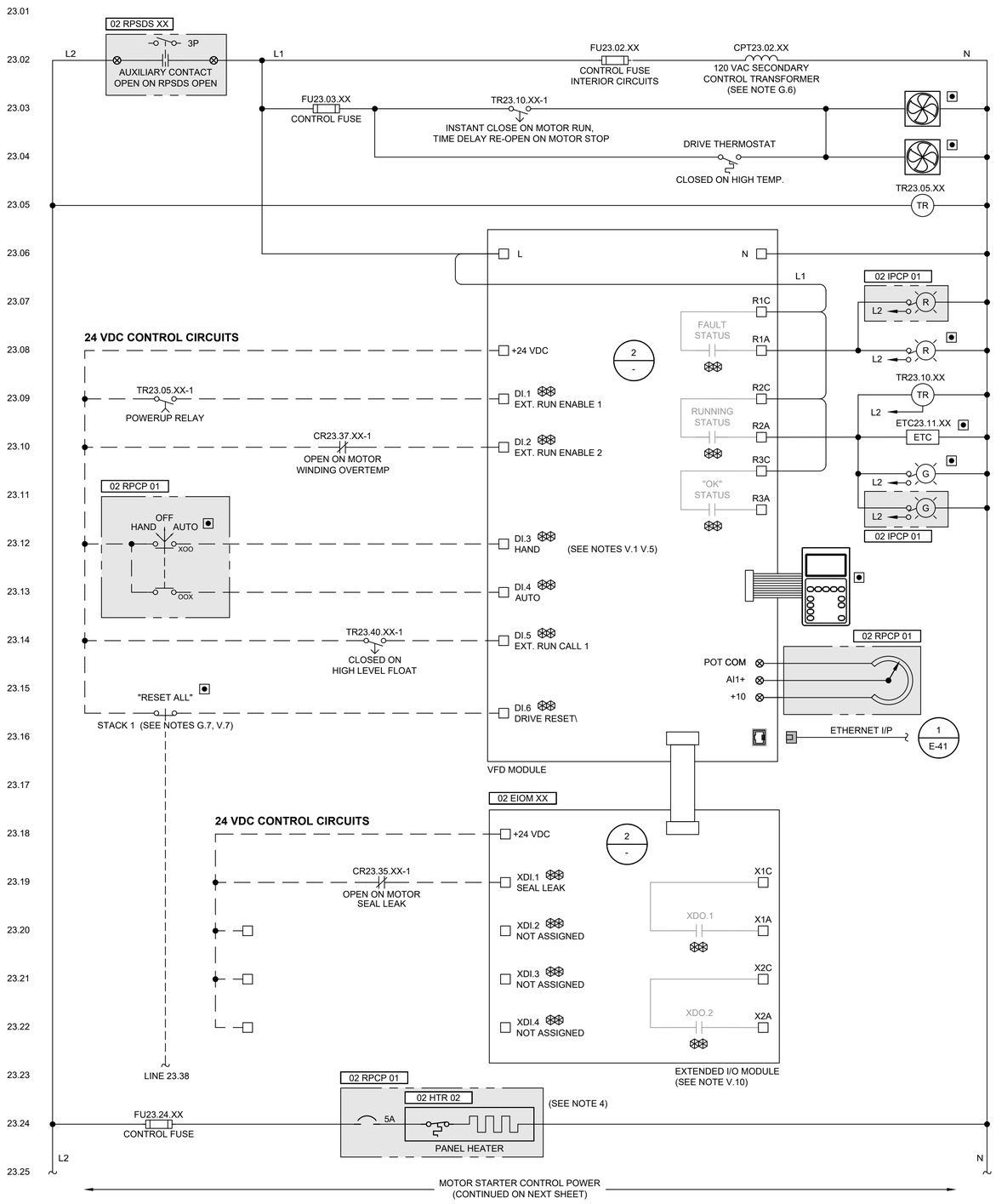
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ELECTRICAL

MOTOR STARTER ELEMENTARY WIRING DIAGRAM - INFLUENT PUMPS

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STARTER ENCLOSURE COOLING FANS (TYP.)
(SEE NOTE V.6)

POWER-UP DELAY TIMER
DELAY STARTER OPERATION FOLLOWING A POWERUP
(SEE TIMER TABLE AND NOTE G.4)

1: 23.09 NA\
2: NA NA\

"HIGH LEVEL" REMOTE STATUS

"MOTOR FAULT" STATUS INDICATOR
ACTIVE ON DRIVE FAULT CONDITIONS
(SEE NOTE G.3)

ENCLOSURE FAN CONTROL TIMER
ENERGIZED ON MOTOR RUNNING
(SEE TIMER TABLE, SEE NOTE V.6)

1: 23.03 NA\
2: NA NA\

ELAPSED TIME/COUNTER METER
(SEE NOTE G.5)

"MOTOR RUNNING" STATUS INDICATOR
ACTIVE ON MOTOR RUNNING CONDITIONS
(SEE NOTE G.3)

REMOTE RUNNING

HUMAN INTERFACE MODULE (HIM)
(SEE NOTE V.4)

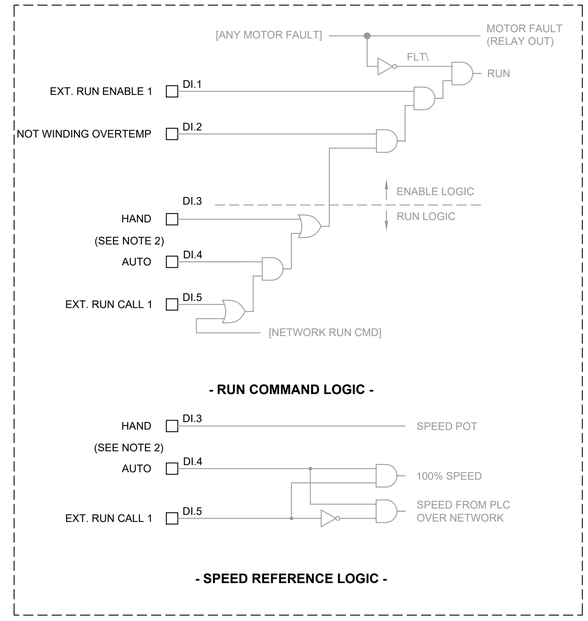
FRONT PANEL SPEED POT
(SEE NOTE V.9)

REMOTE PANEL HEATER

NOTES:

1. REFERENCE MOTOR STARTER SPECIFICATIONS.
2. REFERENCE MOTOR STARTER NOTES ON - E-16 WHERE:
   G.n = GENERAL NOTES,
   V.n = VFD NOTES,
   IN.n = INTRINSICALLY SAFE NOTES.
3. ISOLATION AND PASSIVE FILTER CAPACITOR-CONTROL CONTACTORS ARE NOT SHOWN. THESE CIRCUITS MAY VARY BETWEEN MANUFACTURERS. ALL OTHER PHYSICAL RELAYS AND TIMERS SHALL BE PROVIDED AS SHOWN.
4. PANEL HEATER SHALL BE POWERED FROM NO. 1 RAS PUMP STARTER. NO. 2 RAS PUMP STARTER WILL NOT HAVE THIS CONNECTION. UPSIXE CONTROL TRANSFORMER AS NEEDED.

= INPUTS AND OUTPUTS TO BE SENSED BY THE PLC OVER THE NETWORK.



NOTES:

1. CONFIGURE THE STARTER'S RUN COMMAND, SPEED REFERENCE AND "STARTER OK" LOGIC AS SHOWN ABOVE. THIS FUNCTIONALITY MUST BE DEMONSTRATED DURING SHOP WITNESS TESTING.
2. "HAND" AND "AUTO" CONDITIONS ARE MUTUALLY EXCLUSIVE.
3. PLC "VALID COMMUNICATION" STATUS IS DERIVED FROM WITHIN THE OVERLOAD RELAY.

2 - VFD INTERNAL CONTROL LOGIC DETAIL

RUN COMMAND, SPEED REFERENCE, AND "READY" STATUS

1 - MOTOR STARTERS [02 RPMS XX] ELEMENTARY WIRING DIAGRAM - PART A

RAS PUMPS

XX = 01 FOR [02 RP 01], RAS PUMP NO. 1
XX = 02 FOR [02 RP 02], RAS PUMP NO. 2

VFD

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JASON R. NEWQUIST
STATE OF WASHINGTON
45311
REGISTERED
PROFESSIONAL ENGINEER
9/11/26

TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

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LONGBRANCH, WA 98351

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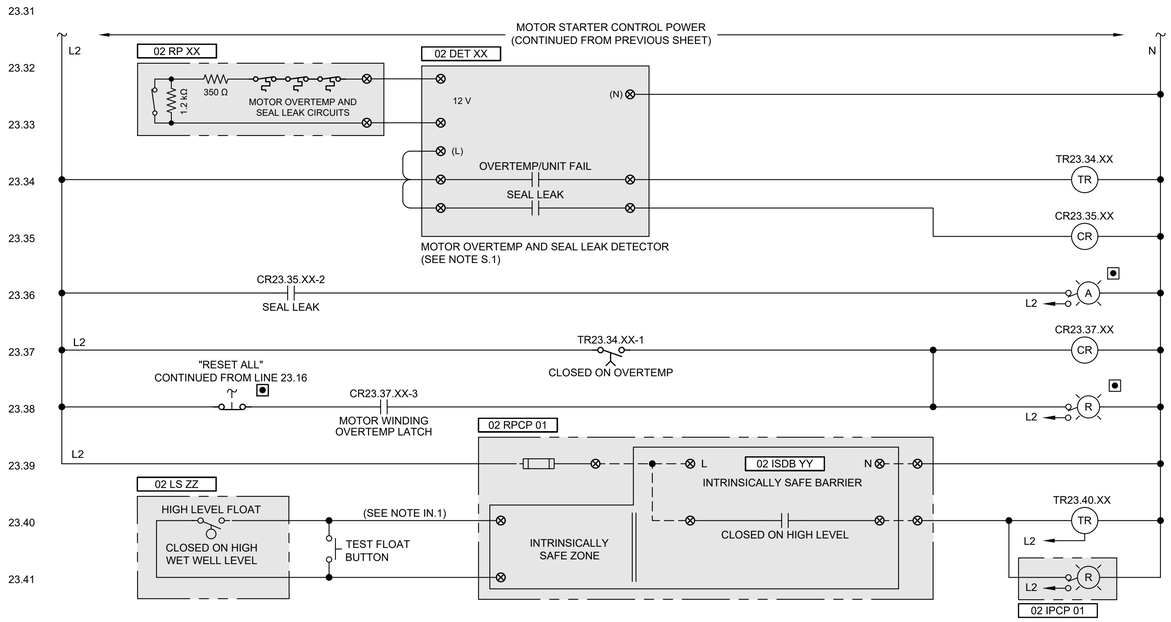
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CHECKED BY:	PAM
DRAWN BY:	DCK
DESIGNER:	CM
G & O JOB NO.:	22848.01
FILE:	E_MSEWD.DWG

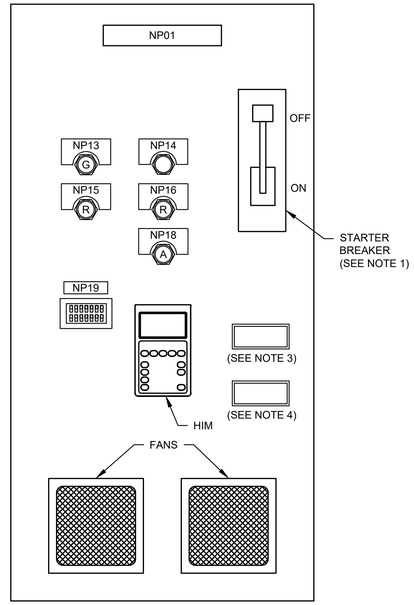
ELECTRICAL

MOTOR STARTER ELEMENTARY WIRING DIAGRAM - RAS PUMPS

DRAWING: **E-23A** OF: **41**

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PANEL DOOR NAMEPLATE SCHEDULE	
ITEM NUMBER	**ITEM FUNCTION**
NP01	SEE LINES 1 AND 2 BELOW
NP13	MOTOR RUNNING (PILOT, GREEN)
NP14	RESET ALL (PUSHBUTTON, BLACK)
NP15	MOTOR FAULT (PILOT, RED)
NP16	MOTOR OVERTEMP (PILOT, RED)
NP18	SEAL LEAK (PILOT, AMBER)
NP19	ELAPSED TIME/COUNTER METER

LINE 1	LINE 2
RAS PUMP NO. 1	[02 RPMS 01]
RAS PUMP NO. 2	[02 RPMS 02]

NOTES:

1. STARTER BREAKERS SHALL BE LOCKABLE IN THE OPEN POSITION AND SHALL BE PROVIDED WITH A DOOR LATCHING MECHANISM THAT ALLOWS THE DOOR TO OPEN UNDER POWER WITH A SPECIAL TOOL. PROVIDE AN AUXILIARY CONTACT ON BREAKERS THAT IS OPEN WHEN THE BREAKER IS OPEN AND CLOSED WHEN THE BREAKER IS CLOSED.
2. THESE DETAILS ARE INTENDED TO SHOW A GENERAL LAYOUT OF DEVICES EXPECTED ON THE STARTER DOORS AND ARE NOT INTENDED TO REPRESENT ACTUAL STARTER OR STARTER DOOR SIZES.
3. PROVIDE AN ARC FLASH WARNING LABEL ON THE DOOR.
4. PROVIDE A SELECTOR SWITCH LOCATION PLACARD ON THE STARTER DOOR PER MOTOR STARTER GENERAL NOTE G.11.

2 / - **MOTOR STARTER DOOR DETAIL**
NOT TO SCALE

TIMER TABLE					
TIMER	**FUNCTION**	**TYPE**	**AKA**	**MINIMUM RANGE**	**INITIAL SETTING**
TR22.05.01	POWER-UP DELAY	TDAE	ON DELAY	0-100 SECONDS	10 SECOND
TR22.05.02	POWER-UP DELAY	TDAE	ON DELAY	0-100 SECONDS	15 SECONDS
TR22.10.XX	STARTER ENCLOSURE FAN DELAY	TDAD	OFF DELAY	0-100 MINUTES	5 MINUTES
TR22.40.XX	EXTENDED DRAWDOWN DELAY	TDAD	OFF DELAY	0-100 MINUTES	5 MINUTES*

* SET THIS TIMER WITH THE OWNER AND THE ENGINEER DURING COMMISSIONING.

MOTOR STARTER REFERENCE TABLE			
XX	**YY**	**TAG**	**DESCRIPTION**
01	01	[02 RPMS 01]	MOTOR STARTER, RAS PUMP NO. 1
02	01	[02 RPMS 02]	MOTOR STARTER, RAS PUMP NO. 2

NOTES:

1. SEE NOTES ON PREVIOUS SHEET.

1 / - **MOTOR STARTERS [02 RPMS XX] ELEMENTARY WIRING DIAGRAM - PART B**
RAS PUMPS

XX = 01, YY = 03, ZZ = 07 FOR [02 RP 01], RAS PUMP NO. 1
XX = 02, YY = 04, ZZ = 08 FOR [02 RP 02], RAS PUMP NO. 2

VFD

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JASON R. NEWQUIST — STATE OF WASHINGTON — 45311 — REGISTERED PROFESSIONAL ENGINEER — 9/11/25

TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

8220 178TH AVENUE COURT SW, LONGBRANCH, WA 98351

No.	DATE	REVISION

ISSUED FOR:

BID SET

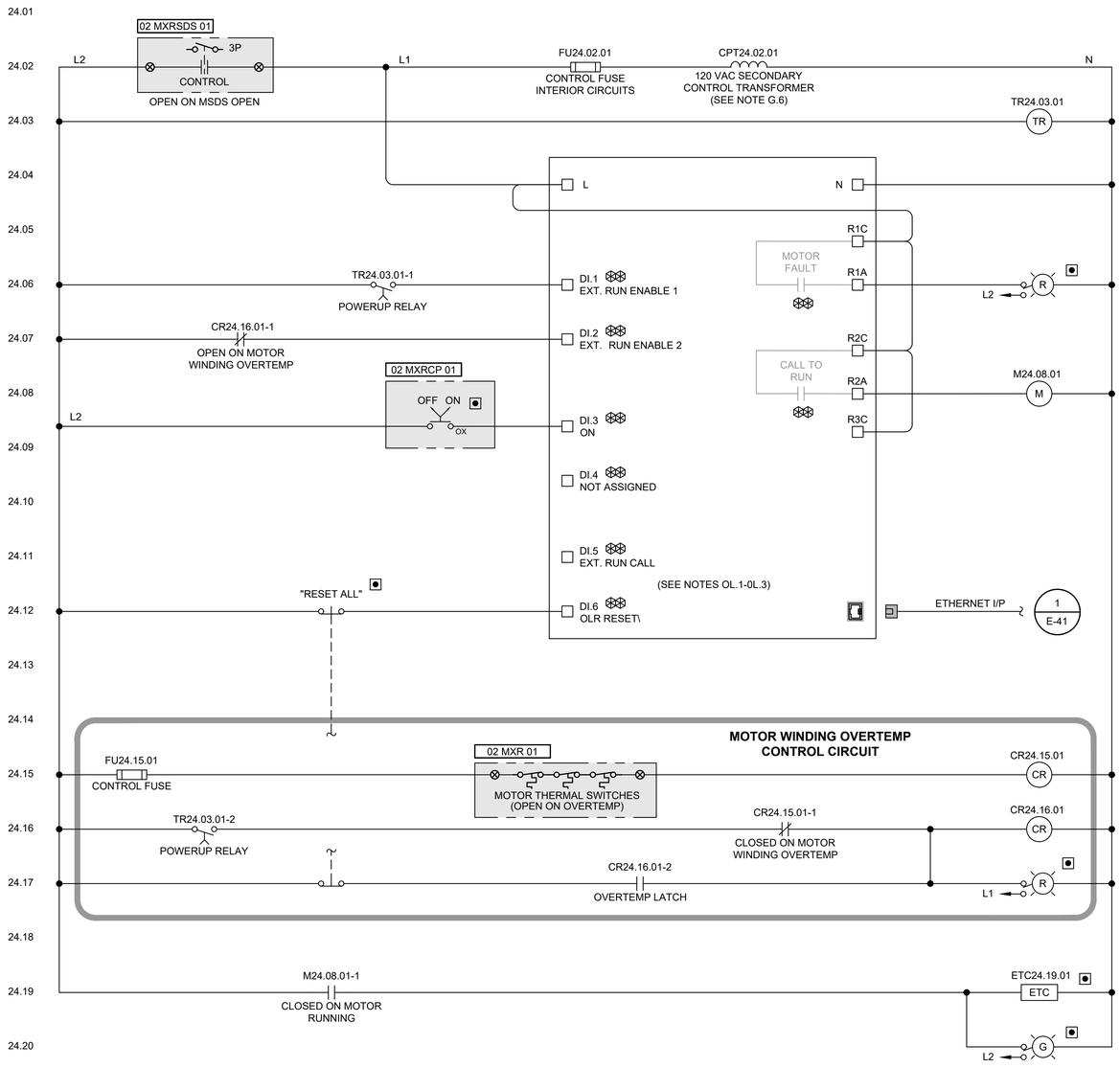
ISSUE DATE:	SEPTEMBER 2026
APPROVED BY:	JRN
CHECKED BY:	PAM
DRAWN BY:	DCK
DESIGNER:	CM
G & O JOB NO.:	22848.01
FILE:	E_MSEWD.DWG

ELECTRICAL

MOTOR STARTER ELEMENTARY WIRING DIAGRAM - RAS PUMPS

DRAWING: **E-23B** OF: **41**

m:\taylor bay beach club hoa\22848.01 construction plans, spec, & permitting wa doh grant\01 design\wwtf upgrade\Plansets\Electrical\E_MSEWD.dwg, 9/4/2026 10:30 AM, CHARLEY REID



1: 24.06 NA\
2: 24.16 NA\

POWER-UP DELAY TIMER
DELAY STARTER OPERATION FOLLOWING A POWERUP
(SEE TIMER TABLE AND NOTE G.4)

"MOTOR FAULT" STATUS INDICATOR
ACTIVE ON MOTOR FAULT CONDITIONS
(SEE NOTE G.3)

1: 24.19 NA\
2: NA NA\

"MAIN CONTACTOR" POWER RELAY
ACTIVE ON MOTOR COMMANDED TO RUN
(SEE NOTE F.1)

1: NA 24.16\
2: NA NA\

MOTOR WINDING OVERTEMP SENSING RELAY
DE-ENERGIZED ON MOTOR OVERTEMP

1: NA 24.07\
2: 24.17 NA\

MOTOR WINDING OVERTEMP RELAY
LATCHED ON MOTOR OVERTEMP

"MOTOR OVERTEMP" STATUS INDICATOR
(SEE NOTE G.3)

ELAPSED TIME/COUNTER METER
(SEE NOTE G.5)

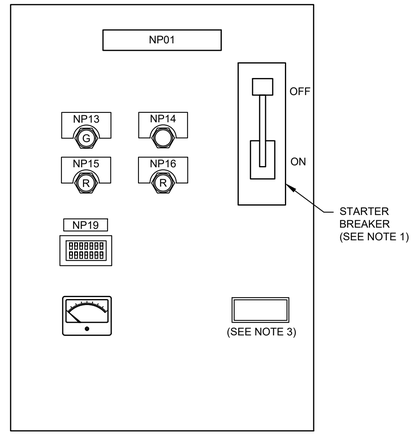
"MOTOR RUNNING" STATUS INDICATOR
ACTIVE ON MOTOR RUNNING CONDITIONS
(SEE NOTE G.3)

NOTES:

1. REFERENCE MOTOR STARTER SPECIFICATIONS.
2. REFERENCE MOTOR STARTER NOTES ON - / E-16 WHERE:

   F.n = FVNR NOTES,
   G.n = GENERAL NOTES,
   IN.n = INTRINSICALLY SAFE NOTES,
   OL.n = OVERLOAD RELAY NOTES.
3. ALL PHYSICAL RELAYS AND TIMERS SHALL BE PROVIDED AS SHOWN.

⬢ = INPUTS AND OUTPUTS TO BE SENSED BY THE PLC OVER THE NETWORK.



PANEL DOOR NAMEPLATE SCHEDULE	
ITEM NUMBER	ITEM FUNCTION
NP01	SEE LINES 1 AND 2 BELOW
NP13	MOTOR RUNNING (PILOT, GREEN)
NP14	RESET ALL (PUSHBUTTON, BLACK)
NP15	MOTOR FAULT (PILOT, RED)
NP16	MOTOR OVERTEMP (PILOT, RED)
NP19	ELAPSED TIME/COUNTER METER

LINE 1	LINE 2
ANOXIC BASIN MIXER NO.1	[02 MXRMS 01]

NOTES:

1. STARTER BREAKERS SHALL BE LOCKABLE IN THE OPEN POSITION AND SHALL BE PROVIDED WITH A DOOR LATCHING MECHANISM THAT ALLOWS THE DOOR TO OPEN UNDER POWER WITH A SPECIAL TOOL. PROVIDE AN AUXILIARY CONTACT ON BREAKERS THAT IS OPEN WHEN THE BREAKER IS OPEN AND CLOSED WHEN THE BREAKER IS CLOSED.
2. THESE DETAILS ARE INTENDED TO SHOW A GENERAL LAYOUT OF DEVICES EXPECTED ON THE STARTER DOORS AND ARE NOT INTENDED TO REPRESENT ACTUAL STARTER OR STARTER DOOR SIZES.
3. PROVIDE AN ARC FLASH WARNING LABEL ON THE DOOR.

2 / - **MOTOR STARTER DOOR DETAIL**
NOT TO SCALE

TIMER TABLE					
TIMER	FUNCTION	TYPE	AKA	MINIMUM RANGE	INITIAL SETTING
TR24.03.01	POWER-UP DELAY	TDAE	ON DELAY	0-100 SECONDS	1 SECOND
TR24.03.02	POWER-UP DELAY	TDAE	ON DELAY	0-100 SECONDS	10 SECONDS

* SET THIS TIMER WITH THE OWNER AND THE ENGINEER DURING COMMISSIONING.

1 / - **MOTOR STARTER [02 MXRMS 01] ELEMENTARY WIRING DIAGRAM**
ANOXIC BASIN MIXER

FVNR

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TAYLOR BAY BEACH CLUB

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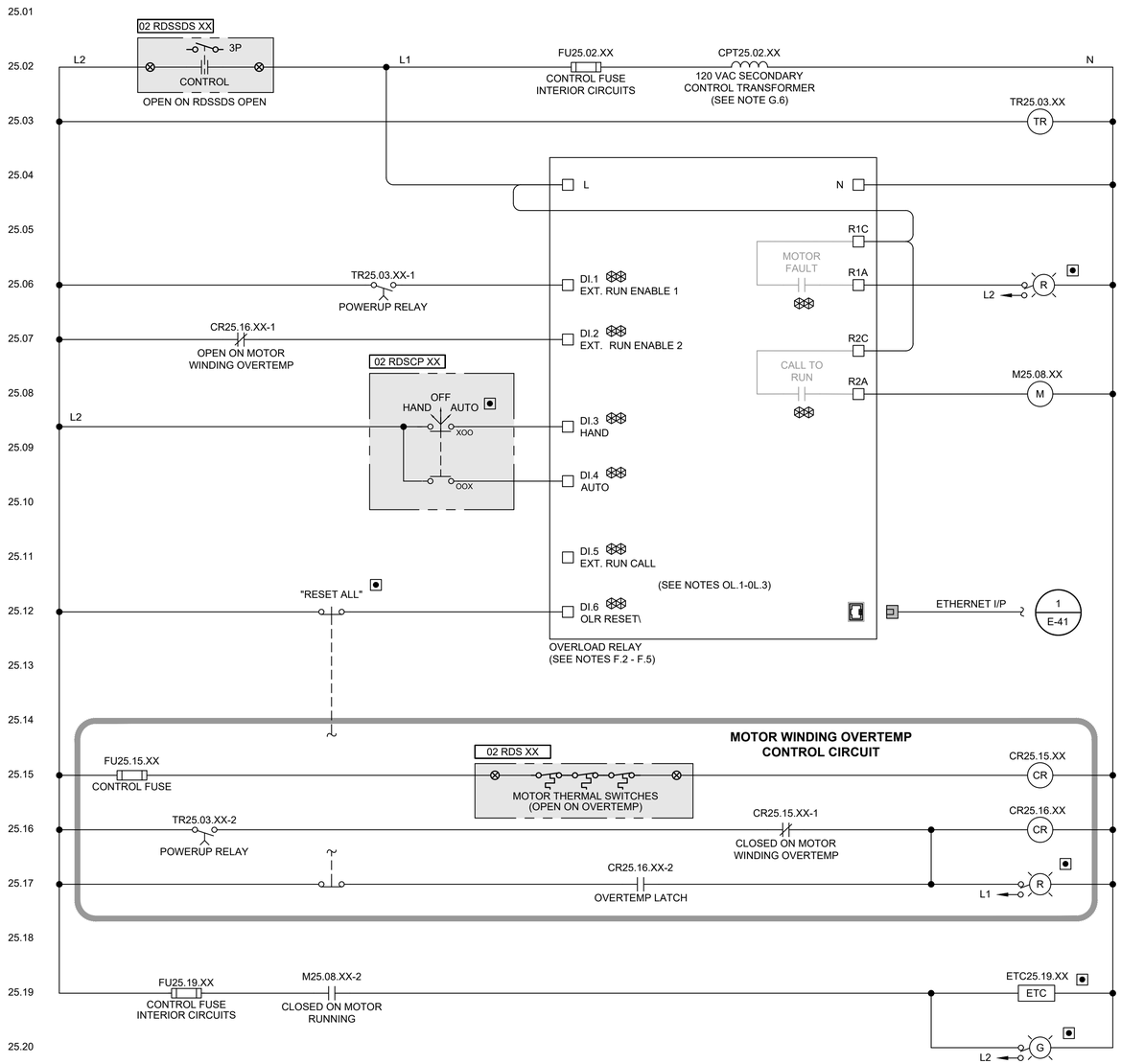
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G & O JOB NO.:	22848.01
FILE:	E_MSEWD.DWG

ELECTRICAL

MOTOR STARTER ELEMENTARY WIRING DIAGRAM - ANOXIC BASIN MIXER

DRAWING: **E-24** OF: **41**

m:\taylor bay beach club hoa\22848.01 construction plans, spec, & permitting wa doh grant\01 design\wwtf upgrade\Planset\Electrical\E_MSEWD.dwg, 9/4/2026 10:30 AM, CHARLEY REID



1: 25.06 NA\
2: 25.16 NA\

POWER-UP DELAY TIMER
DELAY STARTER OPERATION FOLLOWING A POWERUP
(SEE TIMER TABLE AND NOTE G.4)

"MOTOR FAULT" STATUS INDICATOR
ACTIVE ON MOTOR FAULT CONDITIONS
(SEE NOTE G.3)

1: 25.19 NA\
2: NA NA\

"MAIN CONTACTOR" POWER RELAY
ACTIVE ON MOTOR COMMANDED TO RUN
(SEE NOTE F.1)

1: NA 25.16\
2: NA NA\

MOTOR WINDING OVERTEMP SENSING RELAY
DE-ENERGIZED ON MOTOR OVERTEMP

1: NA 25.07\
2: 25.17 NA\

MOTOR WINDING OVERTEMP RELAY
LATCHED ON MOTOR OVERTEMP

"MOTOR OVERTEMP" STATUS INDICATOR
(SEE NOTE G.3)

ELAPSED TIME/COUNTER METER
(SEE NOTE G.5)

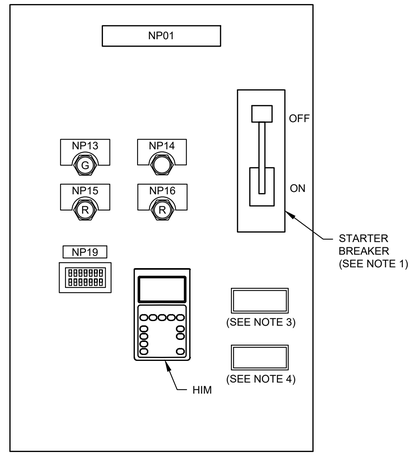
"MOTOR RUNNING" STATUS INDICATOR
ACTIVE ON MOTOR RUNNING CONDITIONS
(SEE NOTE G.3)

NOTES:

1. REFERENCE MOTOR STARTER SPECIFICATIONS.
2. REFERENCE MOTOR STARTER NOTES ON (- / E-16) WHERE:

   G.n = GENERAL NOTES,
   V.n = VFD NOTES,
3. ISOLATION AND PASSIVE FILTER CAPACITOR-CONTROL CONTACTORS ARE NOT SHOWN. THESE CIRCUITS MAY VARY BETWEEN MANUFACTURERS. ALL OTHER PHYSICAL RELAYS AND TIMERS SHALL BE PROVIDED AS SHOWN.

⟡ = INPUTS AND OUTPUTS TO BE SENSED BY THE PLC OVER THE NETWORK.



PANEL DOOR NAMEPLATE SCHEDULE	
ITEM NUMBER	**ITEM FUNCTION**
NP01	SEE LINES 1 AND 2 BELOW
NP13	MOTOR RUNNING (PILOT, GREEN)
NP14	RESET ALL (PUSHBUTTON, BLACK)
NP15	MOTOR FAULT (PILOT, RED)
NP16	MOTOR OVERTEMP (PILOT, RED)
NP19	ELAPSED TIME/COUNTER METER

LINE 1	LINE 2
ROTARY DRUM SCREEN NO.1	[02 RDSMS 01]
ROTARY DRUM SCREEN NO.2	[02 RDSMS 02]

NOTES:

1. STARTER BREAKERS SHALL BE LOCKABLE IN THE OPEN POSITION AND SHALL BE PROVIDED WITH A DOOR LATCHING MECHANISM THAT ALLOWS THE DOOR TO OPEN UNDER POWER WITH A SPECIAL TOOL. PROVIDE AN AUXILIARY CONTACT ON BREAKERS THAT IS OPEN WHEN THE BREAKER IS OPEN AND CLOSED WHEN THE BREAKER IS CLOSED.
2. THESE DETAILS ARE INTENDED TO SHOW A GENERAL LAYOUT OF DEVICES EXPECTED ON THE STARTER DOORS AND ARE NOT INTENDED TO REPRESENT ACTUAL STARTER OR STARTER DOOR SIZES.
3. PROVIDE AN ARC FLASH WARNING LABEL ON THE DOOR.
4. PROVIDE A SELECTOR SWITCH LOCATION PLACARD ON THE STARTER DOOR PER MOTOR STARTER GENERAL NOTE G.11.

(2 / -) **MOTOR STARTER DOOR DETAIL**
NOT TO SCALE

MOTOR STARTER REFERENCE TABLE			
XX	**YY**	**TAG**	**DESCRIPTION**
01	01	[02 RDSMS 01]	MOTOR STARTER, ROTARY DRUM SCREEN NO. 1
02	01	[02 RDSMS 02]	MOTOR STARTER, ROTARY DRUM SCREEN NO. 2

TIMER TABLE					
TIMER	**FUNCTION**	**TYPE**	**AKA**	**MINIMUM RANGE**	**INITIAL SETTING**
TR25.03.01	POWER-UP DELAY	TDAE	ON DELAY	0-100 SECONDS	2 SECONDS
TR25.03.02	POWER-UP DELAY	TDAE	ON DELAY	0-100 SECONDS	5 SECONDS

* SET THIS TIMER WITH THE OWNER AND THE ENGINEER DURING COMMISSIONING.

(1 / -) **MOTOR STARTERS [02 RDSMS XX] ELEMENTARY WIRING DIAGRAM**
ROTARY DRUM SCREENS

XX = 01 FOR [02 RDS 01], ROTARY DRUM SCREEN NO. 1
XX = 02 FOR [02 RDS 02], ROTARY DRUM SCREEN NO. 2

VFD

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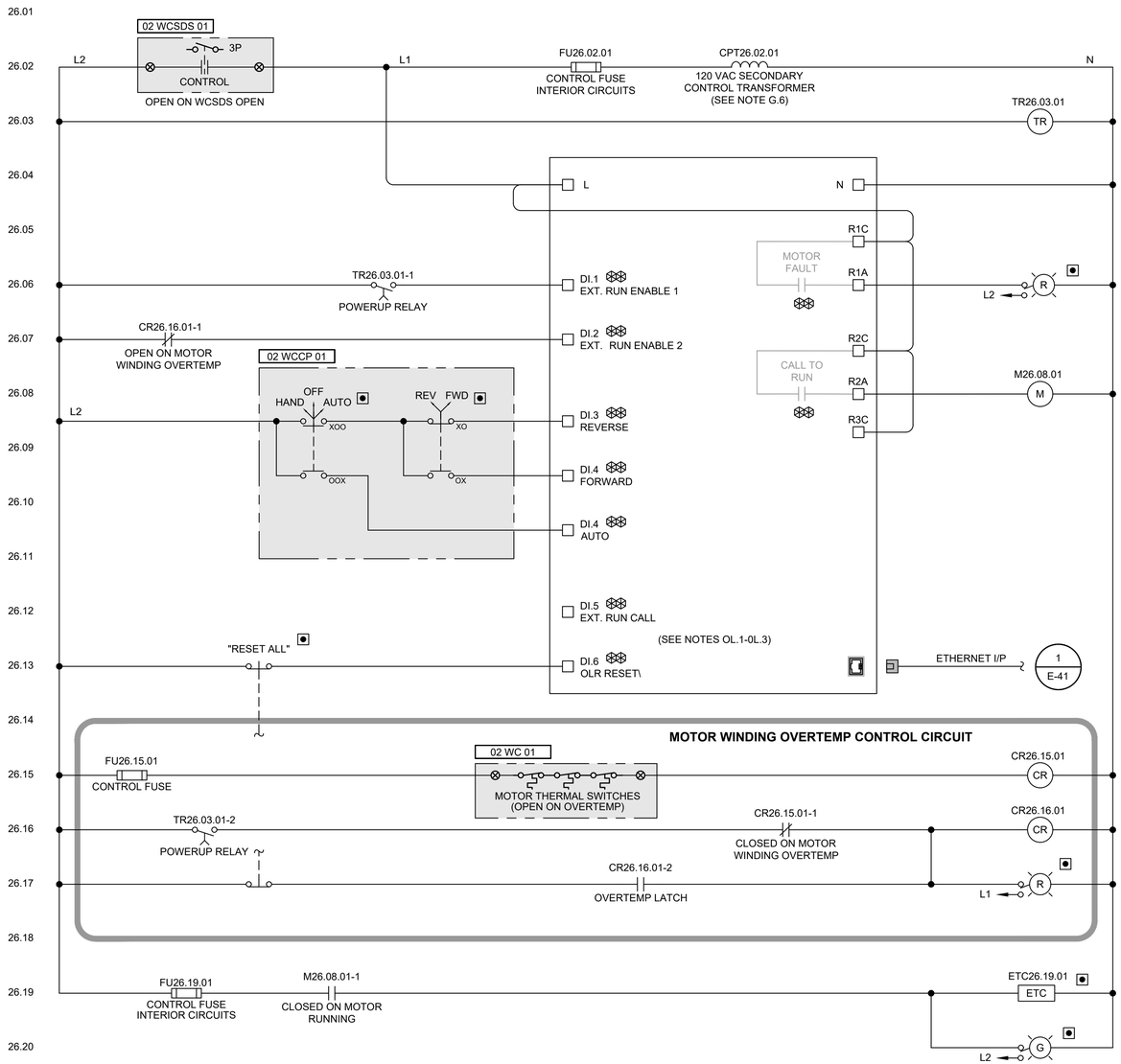
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MOTOR STARTER ELEMENTARY WIRING DIAGRAM - ROTARY DRUM SCREENS

DRAWING: **E-25** OF: **41**

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1: 26.06 NA\
2: 26.16 NA\

POWER-UP DELAY TIMER
DELAY STARTER OPERATION FOLLOWING A POWERUP
(SEE TIMER TABLE AND NOTE G.4)

"MOTOR FAULT" STATUS INDICATOR
ACTIVE ON MOTOR FAULT CONDITIONS
(SEE NOTE G.3)

1: 26.19 NA\
2: NA NA\

"MAIN CONTACTOR" POWER RELAY
ACTIVE ON MOTOR COMMANDED TO RUN
(SEE NOTE F.1)

1: NA 26.16\
2: NA NA\

MOTOR WINDING OVERTEMP SENSING RELAY
DE-ENERGIZED ON MOTOR OVERTEMP

1: NA 26.07\
2: 26.17 NA\

MOTOR WINDING OVERTEMP RELAY
LATCHED ON MOTOR OVERTEMP

"MOTOR OVERTEMP" STATUS INDICATOR
(SEE NOTE G.3)

ELAPSED TIME/COUNTER METER
(SEE NOTE G.5)

"MOTOR RUNNING" STATUS INDICATOR
ACTIVE ON MOTOR RUNNING CONDITIONS
(SEE NOTE G.3)

TIMER TABLE

TIMER	FUNCTION	TYPE	AKA	MINIMUM RANGE	INITIAL SETTING
TR26.03.01	POWER-UP DELAY	TDAE	ON DELAY	0-100 SECONDS	5 SECONDS
TR26.03.02	POWER-UP DELAY	TDAE	ON DELAY	0-100 SECONDS	10 SECONDS

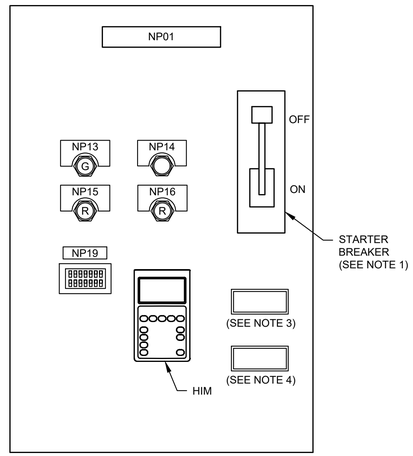
* SET THIS TIMER WITH THE OWNER AND THE ENGINEER DURING COMMISSIONING.

1 / - **MOTOR STARTER [02 WCMS 01] ELEMENTARY WIRING DIAGRAM**
SCREENING WASHER COMPACTOR

NOTES:

1. REFERENCE MOTOR STARTER SPECIFICATIONS.
2. REFERENCE MOTOR STARTER NOTES ON - / E-16 WHERE:
   G.n = GENERAL NOTES,
   V.n = VFD NOTES,
3. ISOLATION AND PASSIVE FILTER CAPACITOR-CONTROL CONTACTORS ARE NOT SHOWN. THESE CIRCUITS MAY VARY BETWEEN MANUFACTURERS. ALL OTHER PHYSICAL RELAYS AND TIMERS SHALL BE PROVIDED AS SHOWN.

= INPUTS AND OUTPUTS TO BE SENSED BY THE PLC OVER THE NETWORK.



PANEL DOOR NAMEPLATE SCHEDULE

ITEM NUMBER	ITEM FUNCTION
NP01	SEE LINES 1 AND 2 BELOW
NP13	MOTOR RUNNING (PILOT, GREEN)
NP14	RESET ALL (PUSHBUTTON, BLACK)
NP15	MOTOR FAULT (PILOT, RED)
NP16	MOTOR OVERTEMP (PILOT, RED)
NP19	ELAPSED TIME/COUNTER METER

LINE 1	LINE 2
SCREENING WASHER COMPACTOR	[02 WCMS 01]

NOTES:

1. STARTER BREAKERS SHALL BE LOCKABLE IN THE OPEN POSITION AND SHALL BE PROVIDED WITH A DOOR LATCHING MECHANISM THAT ALLOWS THE DOOR TO OPEN UNDER POWER WITH A SPECIAL TOOL. PROVIDE AN AUXILIARY CONTACT ON BREAKERS THAT IS OPEN WHEN THE BREAKER IS OPEN AND CLOSED WHEN THE BREAKER IS CLOSED.
2. THESE DETAILS ARE INTENDED TO SHOW A GENERAL LAYOUT OF DEVICES EXPECTED ON THE STARTER DOORS AND ARE NOT INTENDED TO REPRESENT ACTUAL STARTER OR STARTER DOOR SIZES.
3. PROVIDE AN ARC FLASH WARNING LABEL ON THE DOOR.
4. PROVIDE A SELECTOR SWITCH LOCATION PLACARD ON THE STARTER DOOR PER MOTOR STARTER GENERAL NOTE G.11.

2 / - **MOTOR STARTER DOOR DETAIL**
NOT TO SCALE

VFD

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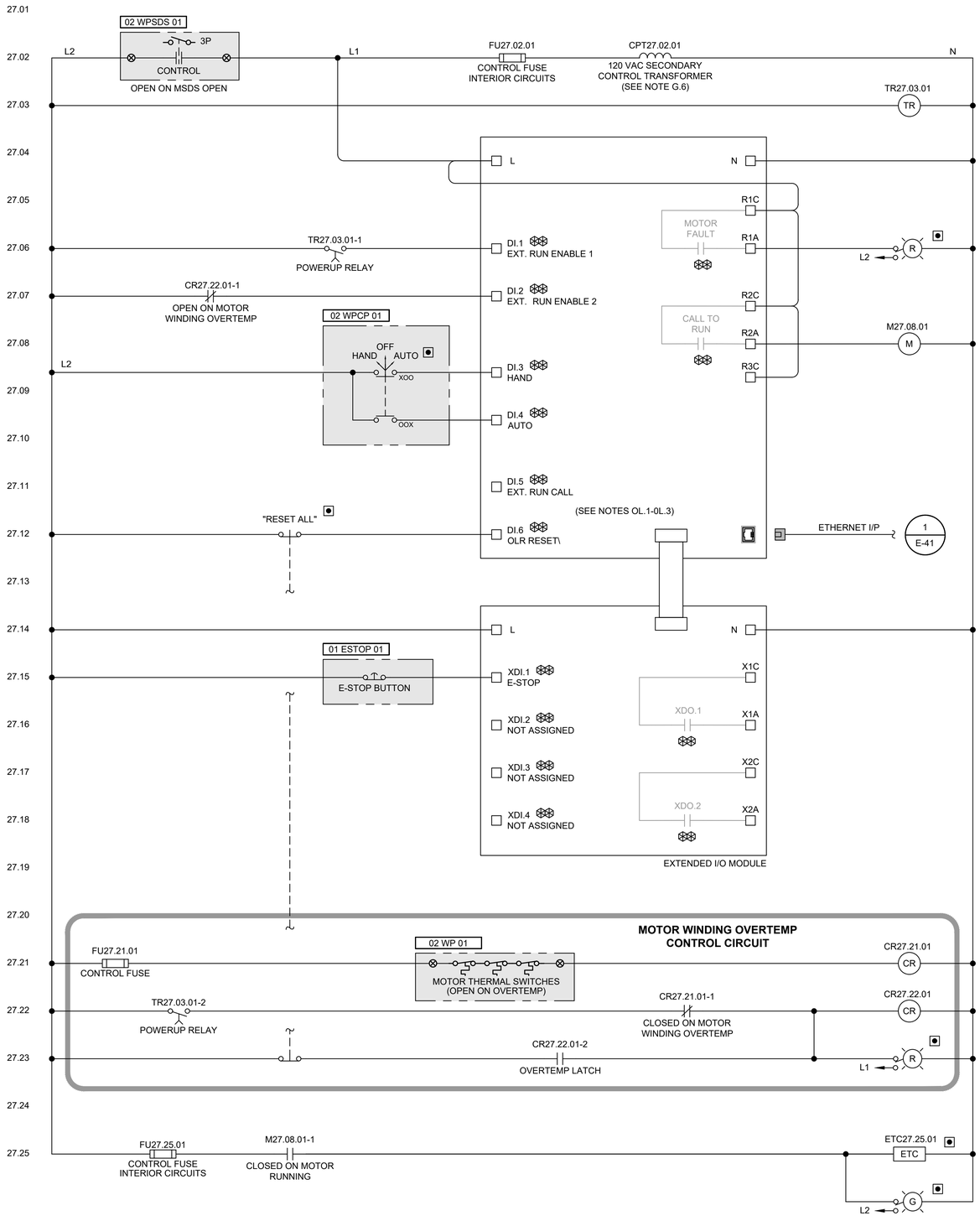
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ELECTRICAL

MOTOR STARTER ELEMENTARY WIRING DIAGRAM - SCREENINGS WASHER COMPACTOR

DRAWING: **E-26** OF: **41**

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1: 27.06 NA\
2: 27.22 NA\

POWER-UP DELAY TIMER
DELAY STARTER OPERATION FOLLOWING A POWERUP
(SEE TIMER TABLE AND NOTE G.4)

"MOTOR FAULT" STATUS INDICATOR
ACTIVE ON MOTOR FAULT CONDITIONS
(SEE NOTE G.3)

1: 27.25 NA\
2: NA NA\

"MAIN CONTACTOR" POWER RELAY
ACTIVE ON MOTOR COMMANDED TO RUN
(SEE NOTE F.1)

1: NA 27.22\
2: NA NA\

MOTOR WINDING OVERTEMP SENSING RELAY
DE-ENERGIZED ON MOTOR OVERTEMP

1: NA 27.07\
2: 27.23 NA\

MOTOR WINDING OVERTEMP RELAY
LATCHED ON MOTOR OVERTEMP

"MOTOR OVERTEMP" STATUS INDICATOR
(SEE NOTE G.3)

ELAPSED TIME/COUNTER METER
(SEE NOTE G.5)

"MOTOR RUNNING" STATUS INDICATOR
ACTIVE ON MOTOR RUNNING CONDITIONS
(SEE NOTE G.3)

1 - MOTOR STARTER [02 WPMS 01] ELEMENTARY WIRING DIAGRAM

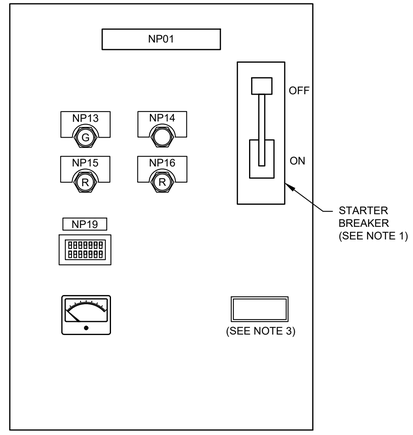
WASTE SLUDGE PUMP

NOTES:

1. REFERENCE MOTOR STARTER SPECIFICATIONS.
2. REFERENCE MOTOR STARTER NOTES ON - / E-16 WHERE:

   F.n = FVNR NOTES,
   G.n = GENERAL NOTES,
   IN.n = INTRINSICALLY SAFE NOTES,
   OL.n = OVERLOAD RELAY NOTES.
3. ALL PHYSICAL RELAYS AND TIMERS SHALL BE PROVIDED AS SHOWN.
4. POWER FACTOR CORRECTION CONTACTORS ARE NOT SHOWN. PROVIDE AS REQUIRED IF CALLED OUT IN THE SPECIFICATIONS OR IF SHOWN ON THE ONE LINE DIAGRAM.

⊛ = INPUTS AND OUTPUTS TO BE SENSED BY THE PLC OVER THE NETWORK.



PANEL DOOR NAMEPLATE SCHEDULE	
ITEM NUMBER	**ITEM FUNCTION**
NP01	SEE LINES 1 AND 2 BELOW
NP13	MOTOR RUNNING (PILOT, GREEN)
NP14	RESET ALL (PUSHBUTTON, BLACK)
NP15	MOTOR FAULT (PILOT, RED)
NP16	MOTOR OVERTEMP (PILOT, RED)
NP19	ELAPSED TIME/COUNTER METER

LINE 1	LINE 2
WASTE SLUDGE PUMP	[02 WPMS 01]

NOTES:

1. STARTER BREAKERS SHALL BE LOCKABLE IN THE OPEN POSITION AND SHALL BE PROVIDED WITH A DOOR LATCHING MECHANISM THAT ALLOWS THE DOOR TO OPEN UNDER POWER WITH A SPECIAL TOOL. PROVIDE AN AUXILIARY CONTACT ON BREAKERS THAT IS OPEN WHEN THE BREAKER IS OPEN AND CLOSED WHEN THE BREAKER IS CLOSED.
2. THESE DETAILS ARE INTENDED TO SHOW A GENERAL LAYOUT OF DEVICES EXPECTED ON THE STARTER DOORS AND ARE NOT INTENDED TO REPRESENT ACTUAL STARTER OR STARTER DOOR SIZES.
3. PROVIDE AN ARC FLASH WARNING LABEL ON THE DOOR.

2 - MOTOR STARTER DOOR DETAIL

NOT TO SCALE

TIMER TABLE					
TIMER	**FUNCTION**	**TYPE**	**AKA**	**MINIMUM RANGE**	**INITIAL SETTING**
TR27.03.01	POWER-UP DELAY	TDAE	ON DELAY	0-100 SECONDS	5 SECONDS
TR27.03.02	POWER-UP DELAY	TDAE	ON DELAY	0-100 SECONDS	10 SECONDS

* SET THIS TIMER WITH THE OWNER AND THE ENGINEER DURING COMMISSIONING.

FVNR

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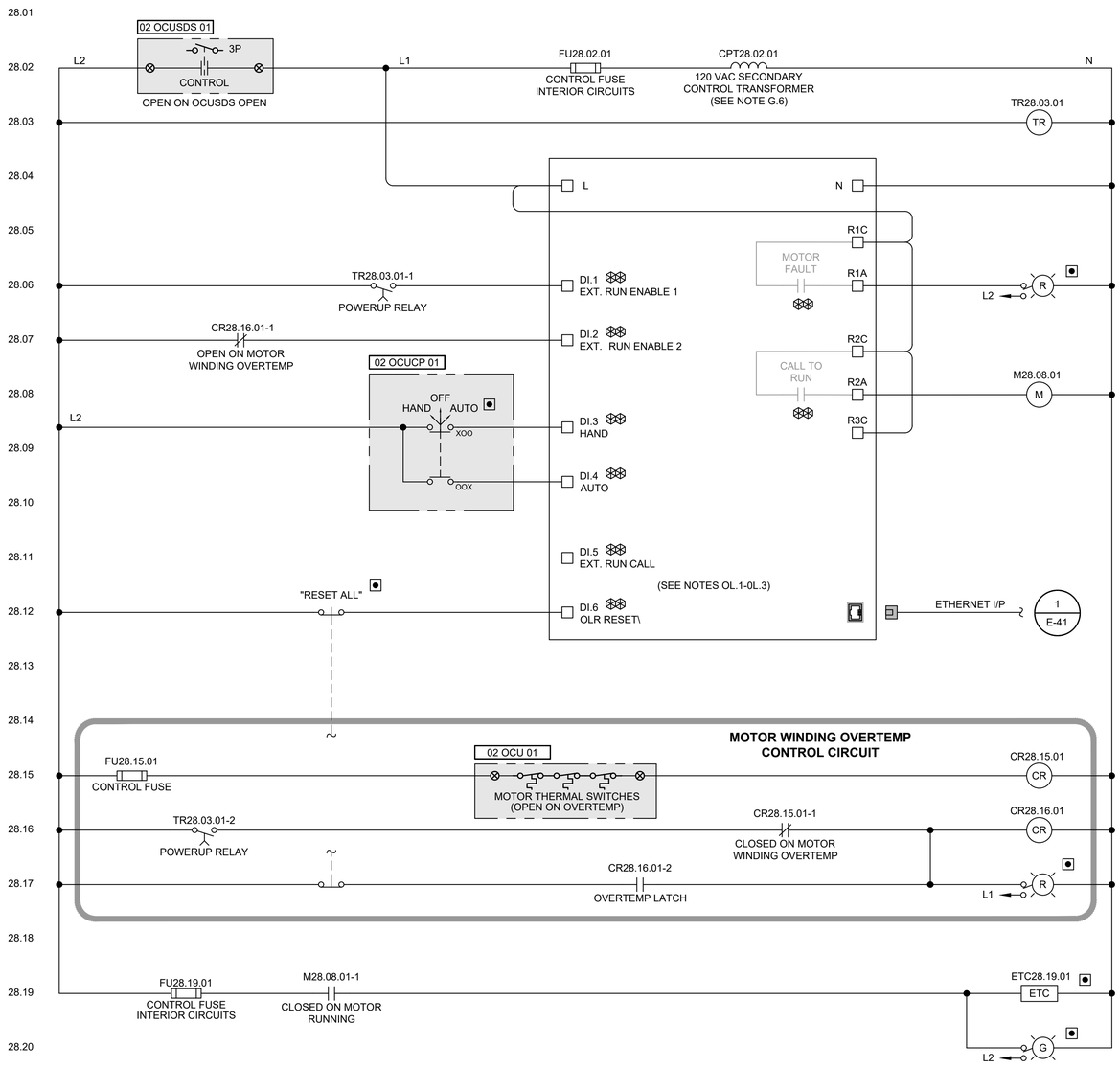
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ELECTRICAL

MOTOR STARTER ELEMENTARY WIRING DIAGRAM - WASTE SLUDGE PUMP

DRAWING: **E-27** OF: **41**

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1: 28.06 NA\
2: 28.16 NA\

POWER-UP DELAY TIMER
DELAY STARTER OPERATION FOLLOWING A POWERUP
(SEE TIMER TABLE AND NOTE G.4)

"MOTOR FAULT" STATUS INDICATOR
ACTIVE ON MOTOR FAULT CONDITIONS
(SEE NOTE G.3)

1: 28.19 NA\
2: NA NA\

"MAIN CONTACTOR" POWER RELAY
ACTIVE ON MOTOR COMMANDED TO RUN
(SEE NOTE F.1)

1: NA 28.16\
2: NA NA\

MOTOR WINDING OVERTEMP SENSING RELAY
DE-ENERGIZED ON MOTOR OVERTEMP

1: NA 28.07\
2: 28.17 NA\

MOTOR WINDING OVERTEMP RELAY
LATCHED ON MOTOR OVERTEMP

"MOTOR OVERTEMP" STATUS INDICATOR
(SEE NOTE G.3)

ELAPSED TIME/COUNTER METER
(SEE NOTE G.5)

"MOTOR RUNNING" STATUS INDICATOR
ACTIVE ON MOTOR RUNNING CONDITIONS
(SEE NOTE G.3)

TIMER TABLE					
TIMER	FUNCTION	TYPE	AKA	MINIMUM RANGE	INITIAL SETTING
TR28.03.01	POWER-UP DELAY	TDAE	ON DELAY	0-100 SECONDS	5 SECONDS
TR28.03.02	POWER-UP DELAY	TDAE	ON DELAY	0-100 SECONDS	10 SECONDS

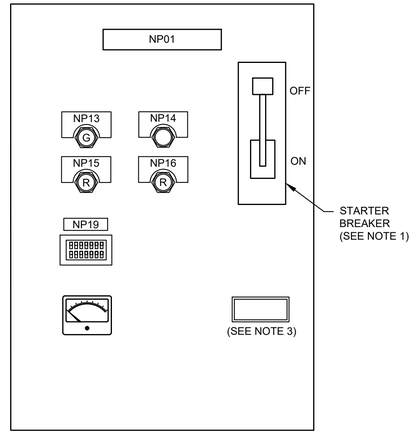
* SET THIS TIMER WITH THE OWNER AND THE ENGINEER DURING COMMISSIONING.

1 / - **MOTOR STARTER [02 OCUMS 01] ELEMENTARY WIRING DIAGRAM**
ODOR CONTROL UNIT

NOTES:

1. REFERENCE MOTOR STARTER SPECIFICATIONS.
2. REFERENCE MOTOR STARTER NOTES ON - / E-16 WHERE:
   F.n = FVNR NOTES,
   G.n = GENERAL NOTES,
   IN.n = INTRINSICALLY SAFE NOTES,
   OL.n = OVERLOAD RELAY NOTES.
3. ALL PHYSICAL RELAYS AND TIMERS SHALL BE PROVIDED AS SHOWN.
4. POWER FACTOR CORRECTION CONTACTORS ARE NOT SHOWN. PROVIDE AS REQUIRED IF CALLED OUT IN THE SPECIFICATIONS OR IF SHOWN ON THE ONE LINE DIAGRAM.

SOLENOIDS AND VALVES TO BE ENERGIZED BY THE PLC OVER THE NETWORK.



PANEL DOOR NAMEPLATE SCHEDULE	
ITEM NUMBER	ITEM FUNCTION
NP01	SEE LINES 1 AND 2 BELOW
NP13	MOTOR RUNNING (PILOT, GREEN)
NP14	RESET ALL (PUSHBUTTON, BLACK)
NP15	MOTOR FAULT (PILOT, RED)
NP16	MOTOR OVERTEMP (PILOT, RED)
NP19	ELAPSED TIME/COUNTER METER

LINE 1	LINE 2
ODOR CONTROL UNIT	[02 OCUMS 01]

NOTES:

1. STARTER BREAKERS SHALL BE LOCKABLE IN THE OPEN POSITION AND SHALL BE PROVIDED WITH A DOOR LATCHING MECHANISM THAT ALLOWS THE DOOR TO OPEN UNDER POWER WITH A SPECIAL TOOL. PROVIDE AN AUXILIARY CONTACT ON BREAKERS THAT IS OPEN WHEN THE BREAKER IS OPEN AND CLOSED WHEN THE BREAKER IS CLOSED.
2. THESE DETAILS ARE INTENDED TO SHOW A GENERAL LAYOUT OF DEVICES EXPECTED ON THE STARTER DOORS AND ARE NOT INTENDED TO REPRESENT ACTUAL STARTER OR STARTER DOOR SIZES.
3. PROVIDE AN ARC FLASH WARNING LABEL ON THE DOOR.

2 / - **MOTOR STARTER DOOR DETAIL**
NOT TO SCALE

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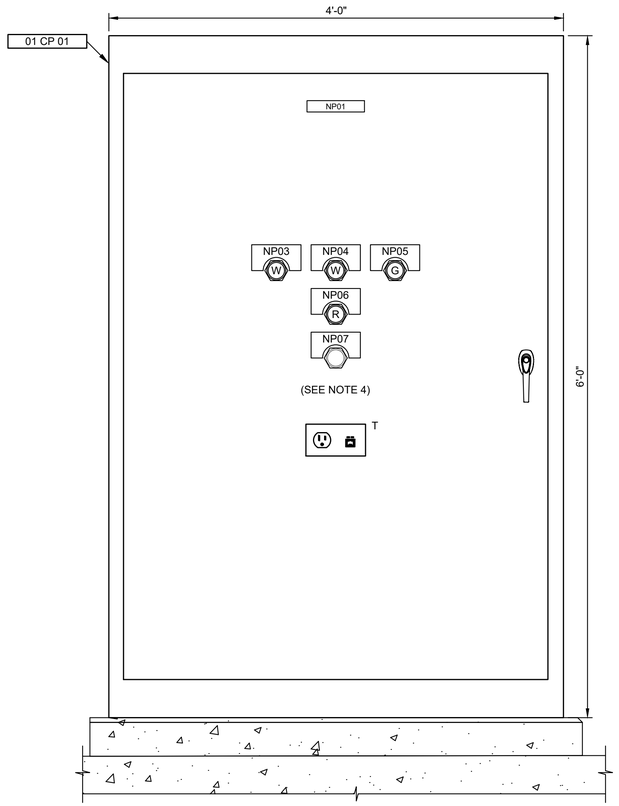
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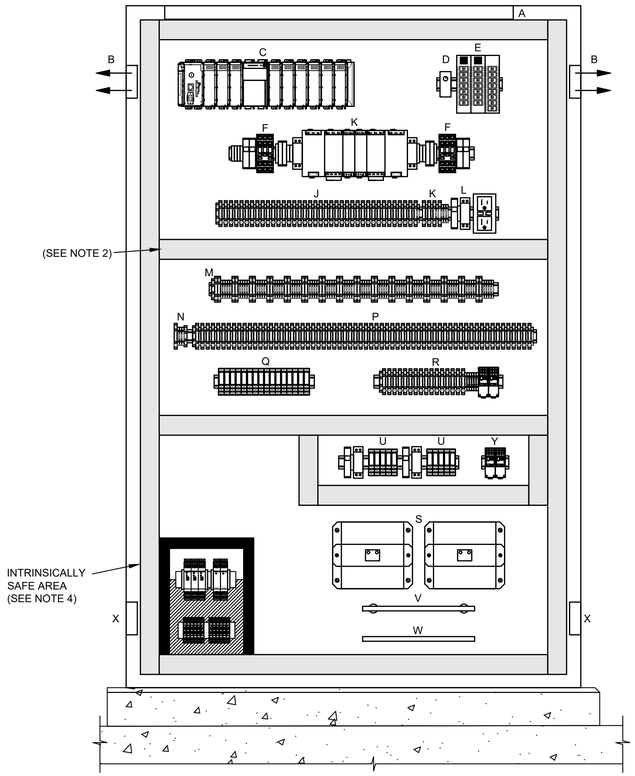
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MOTOR STARTER ELEMENTARY WIRING DIAGRAM - ODOR CONTROL UNIT

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PANEL DOOR NAMEPLATE SCHEDULE		
ITEM NUMBER	**TAG NUMBER**	**NAMEPLATE ENGRAVING**
NP01	01 CP 01	MASTER PLC CONTROL PANEL [01 CP 01]
NP03		PRIMARY CONTROL POWER VALID (PILOT, WHITE)
NP04		SECONDARY CONTROL POWER VALID (PILOT, WHITE)
NP05		24 VDC BUS VALID (PILOT, GREEN)
NP06		PLC FAILURE (PILOT, RED)
NP07		RESET SMOKE DETECTORS (PUSHBUTTON, BLACK)

NOTES:

1. REFERENCE CONTROL PANEL AND MSDS SCHEDULE AND NOTES ON SHEET E-11.
2. PLC CONTROL PANEL [01 CP 01] SHALL HAVE AN OPEN BOTTOM AND A RIGHT HAND LATCHING DOOR.
3. DEVICE LOCATIONS ON THIS SHEET SHOW A LAYOUT INTENT AND MAY BE PLACED OTHERWISE AS REQUIRED FOR BEST FIT AND ACCESS BY THE OPERATORS.
4. ALL PILOT LIGHTS SHALL BE PUSH-TO-TEST, LED TYPE.

1 / - **CONTROL PANEL [01 CP 01] EXTERIOR ELEVATION**

SCALE: NTS

CONTROL PANEL [01 CP 01] DEVICE SCHEDULE			
ITEM	**FUNCTION**	**ITEM**	**FUNCTION**
A	ENCLOSURE LIGHT	N	ANALOG OUTPUT FUSING AND TERMINALS
B	ENCLOSURE EXHAUST FANS	P	DIGITAL INPUT FUSING AND TERMINALS
C	PLC RACK 01 [01 PLC 01], ANALOG I/O, DIGITAL I/O	Q	DIGITAL OUTPUT BUFFER RELAYS
D	FAN THERMOSTAT	R	DIGITAL OUTPUT FUSING AND TERMINALS
E	ETHERNET SWITCHES, MANAGED, PROCESS LAN	S	BATTERIES (SEE NOTE 4)
F	PRIMARY AND SECONDARY POWER TRANSFER CONTACTORS	T	RECEPTACLE AND ETHERNET PORT [CREC 803]
H	24/12 VDC DUAL SUPPLY AND DCU SYSTEM	U	MOV SPDS, BREAKERS, INTERFACING RELAYS
J	24 VDC FUSED POWER DISTRIBUTION	V	ISOLATED SIGNAL GROUND BUS
K	12 VDC FUSED POWER DISTRIBUTION	W	CHASSIS GROUND BUS
L	ANCILLARY POWER AND GFCI RECEPTACLE	X	ENCLOSURE VENTS
M	ANALOG INPUT FUSING AND TERMINALS	Y	CONTACTORS FOR SUMP PUMPS

NOTES:

1. THE COMPONENT LAYOUT IS INTENDED TO INDICATE GENERAL GROUPING AND LOCATION, NOT EXACT COMPONENT TYPE, NUMBER, OR PLACEMENT.
2. SHADED AREAS REPRESENT WIREWAYS.
3. BATTERIES SHALL BE MOUNTED ON MANUFACTURER'S BRACKETS OR FABRICATED 316L STAINLESS STEEL SHELVES.
4. PROVIDE AN INTRINSICALLY SAFE AREA FOR FLOAT SWITCH, NONPOT TANK [01 LS 01]. ALLOW ONLY CONDUITS C0XXX AND S0XXX TO ENTER INTO THIS PORTION OF THE PANEL.

2 / - **CONTROL PANEL [01 CP 01] INTERIOR ELEVATION**

SCALE: NTS

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9/11/26

TAYLOR BAY
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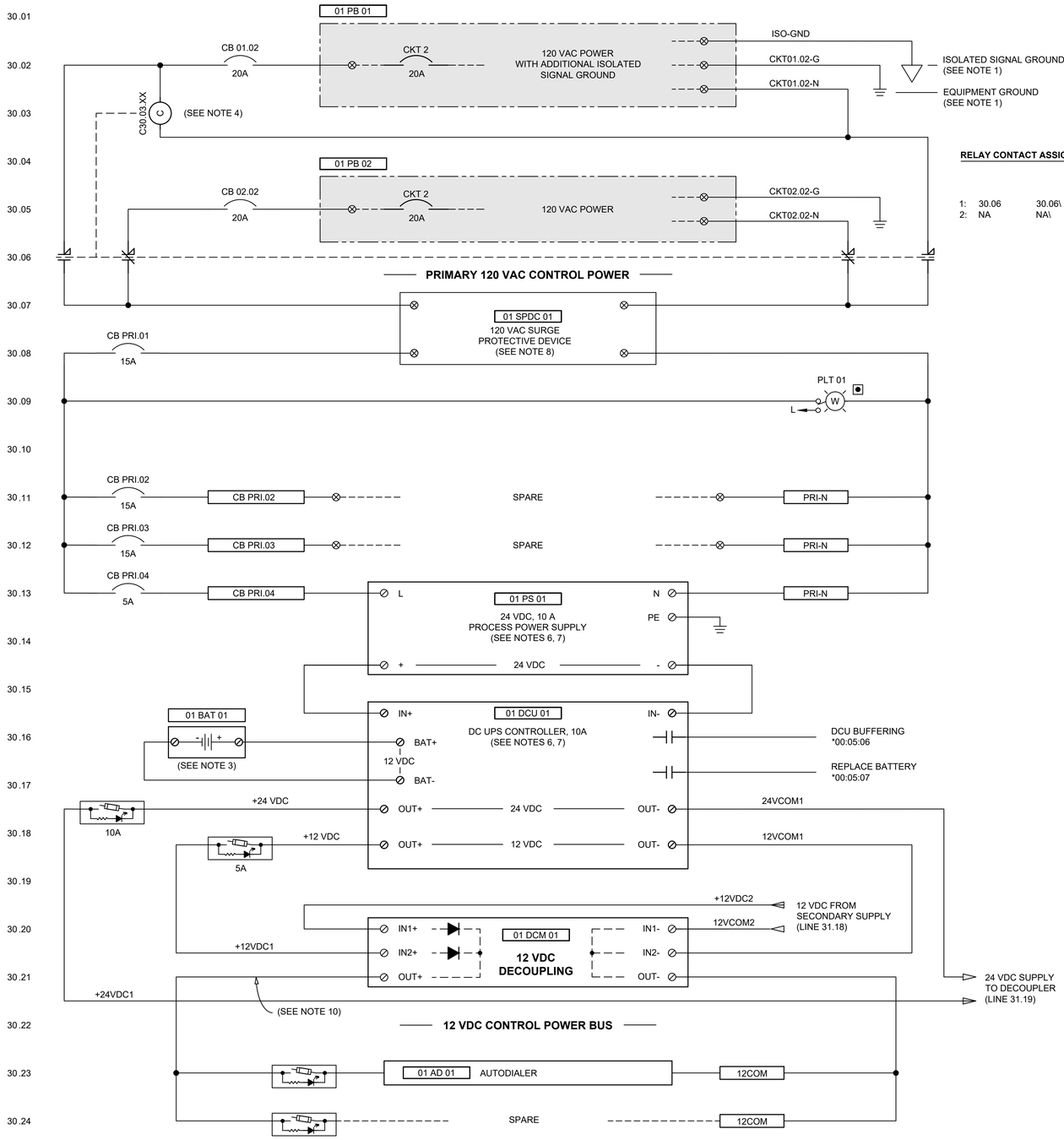
0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

ELECTRICAL

PLANT CONTROL PANEL ELEVATIONS

DRAWING: **E-29** OF: **41**

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RELAY CONTACT ASSIGNMENTS

1:	30.06	30.06\	BACKUP SUPPLY CONTACTOR, CR30.03.01 DE-ENERGIZED ON LOSS OF 120 V CONTROL POWER FROM [03 PB 01] (SEE NOTES 4, 5)
2:	NA	NA\	

"PRIMARY CONTROL POWER VALID" PILOT
(SEE NOTE 9)

NOTES:

1. PROVIDE A DEDICATED GROUND STRIP FOR ANALOG INPUT AND OUTPUT SHIELD TERMINATIONS. THIS GROUND IS DERIVED FROM THE GROUND BUS OF POWER PANELBOARD [01 PB 01] AND IS RUN SEPARATELY TO [01 CP 01] THROUGH A #10 AWG STRANDED COPPER CONDUCTOR WITH GREEN INSULATION. SIGNAL GROUNDS IN [01 CP 01] ARE ISOLATED FROM CHASSIS\EQUIPMENT GROUND BUT ARE AT THE SAME POTENTIAL.
2. THIS CIRCUIT IS ONE OF TWO REDUNDANT BATTERY-BACKED DC UPS SYSTEMS PARALLELED TOGETHER TO PROVIDE A 10 A 24 VDC CONTROL POWER BACKBONE FOR ALL PROCESS-RELATED DEVICES. REFERENCE THE NEXT SHEET FOR THE SECONDARY 24 VDC SUPPLY CIRCUIT AND CONTINUED DISTRIBUTION.
3. THE INTEGRATOR SHALL CALCULATE AND SIZE BACK-UP BATTERIES [01 BAT 01] AND [01 BAT 02] FOR 6 HOURS (MINIMUM) OF 24 VDC POWER, WITH ALL CONNECTED LOADS ACTIVE. THESE CALCULATIONS SHALL BE PRESENTED TO ENGINEERING DURING SUBMITTAL.
4. POWER CONTACTORS (NEXT SHEET) SHALL BE 120 V COIL WITH 30 A, 250 V RATED CONTACTS. THIS CONTACTOR SHALL SWITCH CONTROL POWER INPUT FROM [01 PB 01] TO [01 PB 02] ON LOSS OF POWER FROM [01 PB 01]. THESE CONTACTS SHALL BE "BREAK-BEFORE-MAKE". BOTH LINE AND NEUTRAL CIRCUITS ARE SWITCHED.
5. PROVIDE CAUTION LABEL ON THE INSIDE OF FRONT DOOR STATING THAT POWER MAY STILL BE AVAILABLE AFTER CB01.02 OR CB02.02 IS OPENED. BOTH BREAKERS MUST BE OPENED TO ASSURE DE-ENERGIZATION OF PRIMARY CONTROL POWER.
6. ALL POWER SUPPLIES, CONVERTERS, AND UPS DEVICES SHALL BE INDUSTRIAL, PACKAGED, UL-LISTED, DIN-RAIL DEVICES. CUSTOM-BUILT CIRCUIT BOARDS AND LOOSE ELECTRONIC DEVICES SHALL NOT BE ALLOWED.
7. THIS 24 VDC POWER SYSTEM IS DESIGNED AROUND THE FOLLOWING DEVICES:
   a. [01 PS 01], [01 PS 02], SINGLE PHASE, 120 VAC/24 VDC, 10A, POWER SUPPLY — PULS #QS10.241
   c. [01 DCU 01], [01 DCU 02], 24 VDC-24/12 VDC, 10A, DC-UPS CONTROLLER — PULS #UB10.245
   d. [01 DCM 01], [01 DCM 02], 2x 10A DIODE DECOUPLING MODULE — PULS #YR2.DIODE

   THESE UNITS MAY BE REPLACED WITH "OR EQUAL" DEVICES.
8. SURGE PROTECTIVE DEVICE IS 120 VAC, 40 kA; 1" WIDE, DIN-RAIL; COOPER BUSSMAN SERIES BSPMA1_S2GR OR EQUIVALENT.
9. ALL PILOT LIGHTS IN [01 CP 01] SHALL BE PUSH-TO-TEST, LED TYPE.
10. DO NOT PROVIDE A SINGLE 12 VDC BUS FUSE FROM THE OUTPUT OF [01 DCM 01].
11. REFERENCE CONTROL PANEL SPECIFICATION.

SHADED DEVICES ON THIS SHEET ARE REMOTE FROM [01 CP 01].

1 - PLC CONTROL PANEL [01 CP 01] ELEMENTARY WIRING DIAGRAM

POWER SUPPLY AND DISTRIBUTION (DUAL SUPPLY, DUAL POWER SOURCE)

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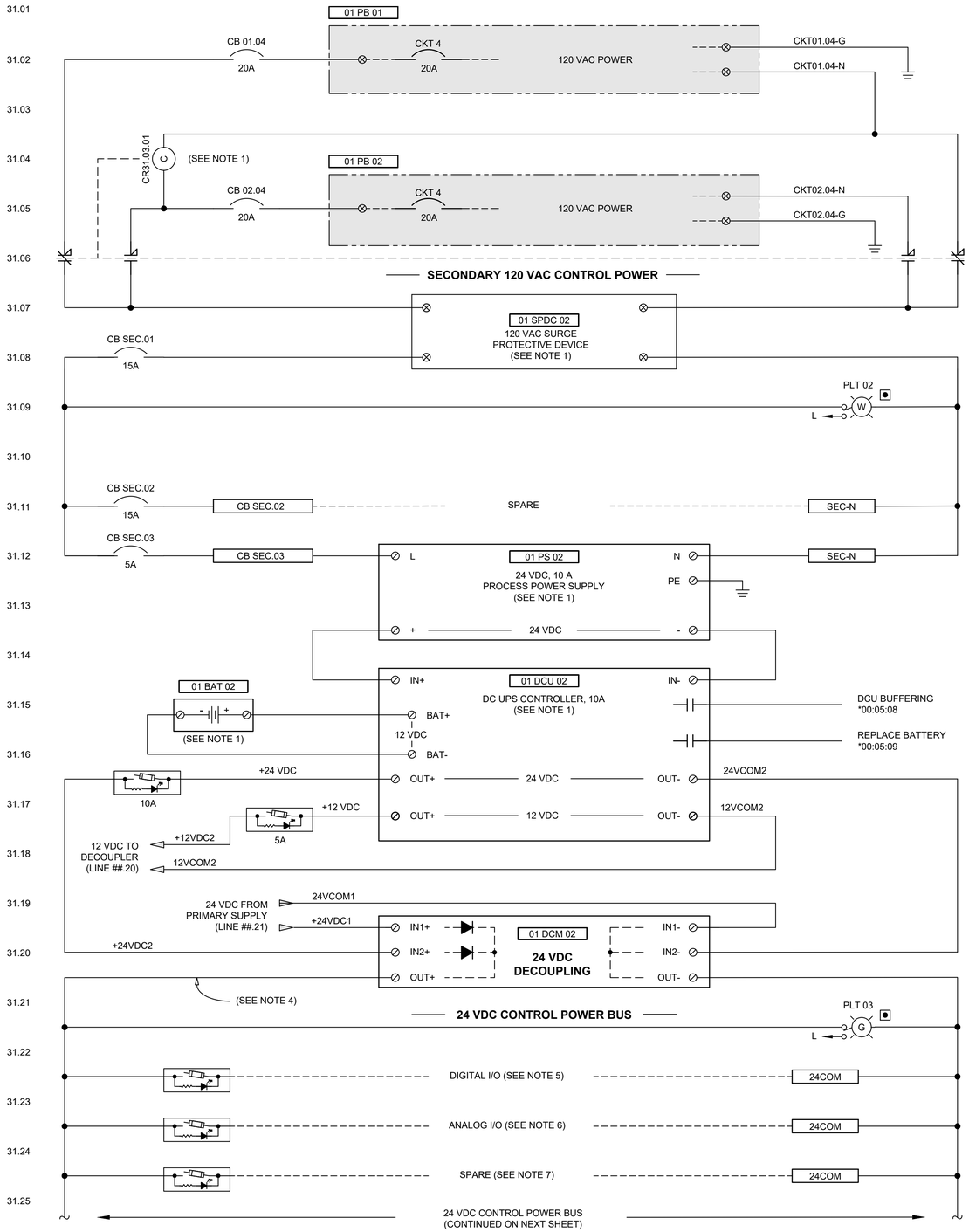
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PLANT CONTROL PANEL ELEMENTARY WIRING DIAGRAM

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RELAY CONTACT ASSIGNMENTS

1:	31.06	31.06\	BACKUP SUPPLY CONTACTOR, CR31.03.01 DE-ENERGIZED ON LOSS OF 120 V CONTROL POWER FROM [01 PB 01] (SEE NOTES 1, 3)
2:	NA	NA\	

"SECONDARY CONTROL POWER VALID" PILOT
(SEE NOTE 1)

"24 VDC BUS VALID" PILOT

NOTES:

1. REFERENCE NOTES ON PREVIOUS SHEET.
2. THIS CIRCUIT IS ONE OF TWO REDUNDANT BATTERY-BACKED DC UPS SYSTEMS PARALLELED TOGETHER TO PROVIDE A 10 A, 24 VDC CONTROL POWER BACKBONE FOR ALL PROCESS-RELATED DEVICES. REFERENCE THE PREVIOUS SHEET FOR THE PRIMARY 24 VDC SUPPLY CIRCUIT.
3. PROVIDE CAUTION LABEL ON THE INSIDE OF FRONT DOOR STATING THAT POWER MAY STILL BE AVAILABLE AFTER CB01.04 OR CB02.04 IS OPENED. BOTH BREAKERS MUST BE OPENED TO ASSURE DE-ENERGIZATION OF SECONDARY CONTROL POWER.
4. DO NOT PROVIDE A SINGLE 24 VDC BUS FUSE FROM THE OUTPUT OF [01 DCM 02].
5. FUSED DIGITAL I/O DISTRIBUTION SHOWN HERE REPRESENTS THE REQUIREMENT FOR GENERAL DIGITAL I/O POWER DISTRIBUTION. FUSE DIGITAL I/O PER SPECIFICATION 16940.
6. FUSED ANALOG I/O DISTRIBUTION SHOWN HERE REPRESENTS THE REQUIREMENT FOR GENERAL ANALOG I/O POWER DISTRIBUTION. FUSE ANALOG I/O PER SPECIFICATION 16940.
7. FUSED 24 VDC SPARE CONTROL POWER DISTRIBUTION SHOWN HERE REPRESENTS A GENERAL REQUIREMENT. PROVIDE 8 SPARE FUSED 24 VDC TERMINAL BLOCKS WITH AN ASSOCIATED 24VCOM TERMINAL MOUNTED ADJACENT TO EACH FUSE.

SHADED DEVICES ON THIS SHEET ARE REMOTE FROM [01 CP 01].

1 / - **PLC CONTROL PANEL [01 CP 01] ELEMENTARY WIRING DIAGRAM**
POWER SUPPLY AND DISTRIBUTION (DUAL SUPPLY, DUAL POWER SOURCE)

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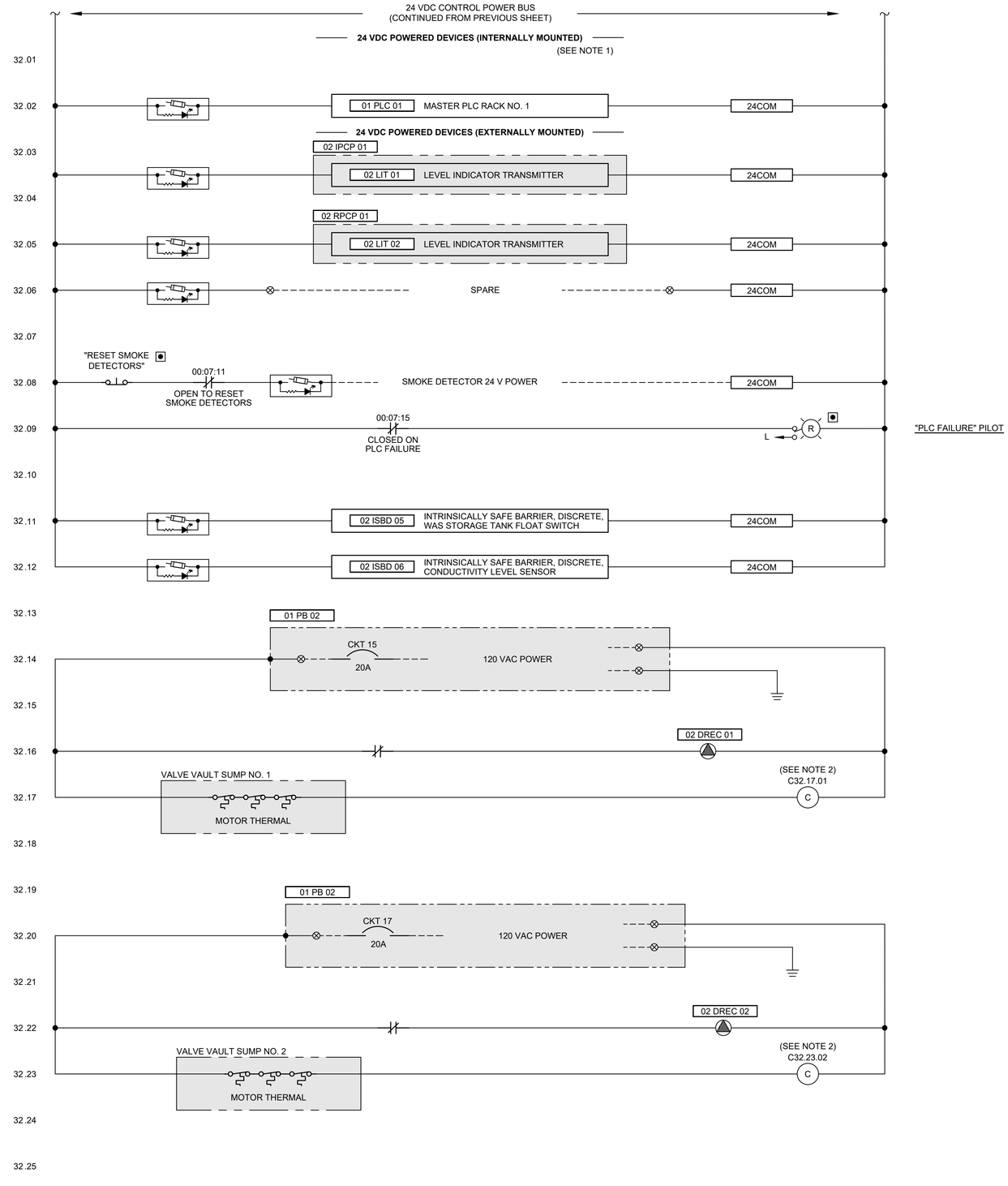
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PLANT CONTROL PANEL ELEMENTARY WIRING DIAGRAM

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NOTES:

1. INTERNALLY MOUNTED INTRINSICALLY SAFE BARRIERS FOR ANALOG ARE SHOWN IN THE ANALOG LOOP DIAGRAMS.
2. CONTACTORS SHALL BE 1 HP RATED. MOTOR THERMAL SWITCHES SHALL BREAK THE POWER TO THE RECEPTACLE ASSOCIATED WITH A SUMP PUMP IN THE VALVE VAULT.

1 / - **PLC CONTROL PANEL [01 CP 01] ELEMENTARY WIRING DIAGRAM**
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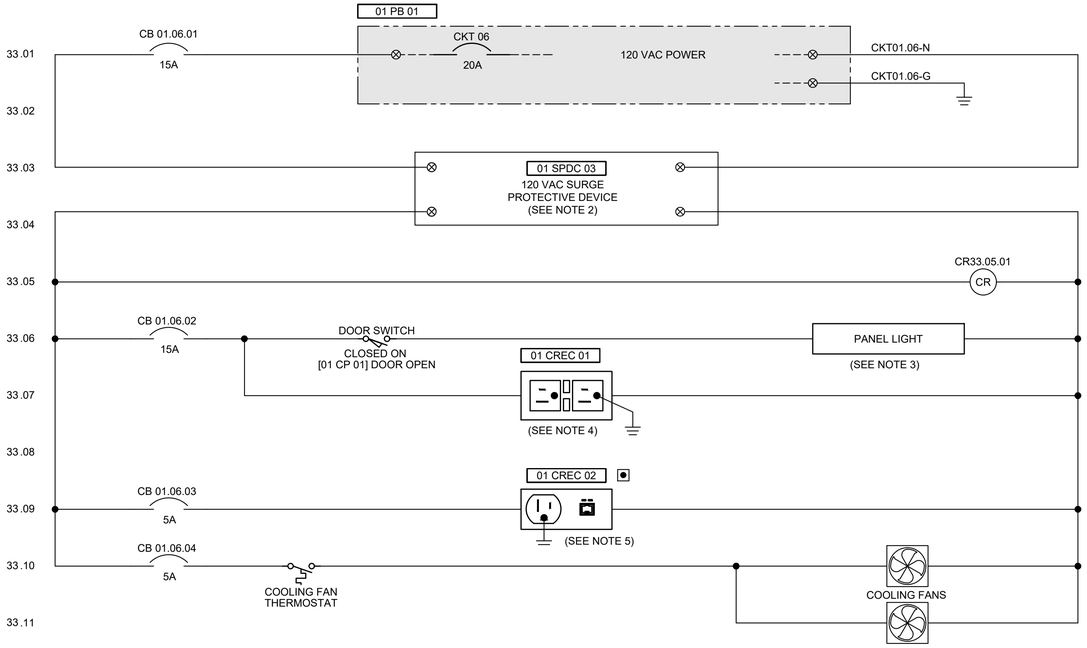
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PLANT CONTROL PANEL ELEMENTARY WIRING DIAGRAM

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RELAY CONTACT ASSIGNMENTS

1:	*02:02:10	NA\	ANCILLARY POWER SENSING RELAY ENERGIZED ON VALID 120 VAC ANCILLARY CONTROL POWER.
2:	NA	NA\	

DOOR-ACTIVATED PANEL LIGHT FOR [01 CP 01]

GFCI CONVENIENCE RECEPTACLE FOR [01 CP 01]

NON-GFCI CONVENIENCE RECEPTACLE AND ETHERNET PORT

COOLING FAN(S) FOR [01 CP 01]

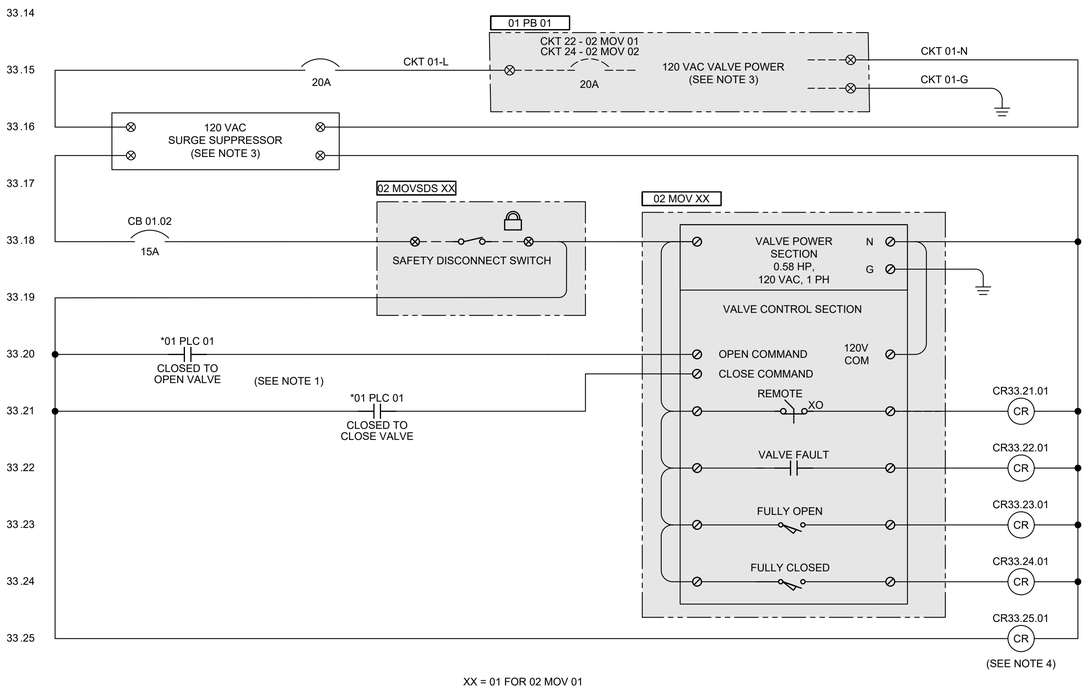
NOTES:

1. ANCILLARY CONTROL CIRCUITS ARE POWERED FROM A SEPARATE BREAKER THAN THOSE CONTROL CIRCUITS RELATED TO PROCESS CONTROL.
2. SURGE PROTECTIVE DEVICE IS 120 VAC, 40 kA, 1" WIDE, DIN-RAIL; COOPER BUSSMAN SERIES BSPMA1_S2GR OR EQUIVALENT.
3. PANEL LIGHTING SHALL BE LED, 120 VAC POWERED (REFERENCE CONTROL PANEL SPECIFICATION).
4. CONVENIENCE RECEPTACLE [01 CREC 01] SHALL BE 15A, GFCI, DIN-RAIL MOUNTED.
5. [01 CREC 02] SHALL INCLUDE 1x RJ45 ETHERNET PORT PLUS 1x SIMPLEX RECEPTACLE IN A UL TYPE 4 THRU-VIEW WINDOW (GRACEPORT #P-R2-F3R0 OR EQUAL) AND SHALL BE MOUNTED ON THE FRONT OF [01 CP 01], 36" ABOVE THE FLOOR.

SHADED DEVICES ON THIS SHEET ARE REMOTE FROM [01 CP 01].

1 - PLC CONTROL PANEL [01 CP 01] ANCILLARY CONTROL POWER ELEMENTARY WIRING DIAGRAM

ANCILLARY CIRCUIT



XX = 01 FOR 02 MOV 01
XX = 02 FOR 02 MOV 02

1:	*01 PLC 01	NA\	REMOTE CONTROL RELAY ENERGIZED WHEN VALVE IN REMOTE CONTROL
2:	NA	NA\	
1:	*01 PLC 01	NA\	VALVE FAULT RELAY ENERGIZED ON VALVE FAULT
2:	NA	NA\	
1:	*01 PLC 01	NA\	VALVE OPEN RELAY ENERGIZED ON VALVE FULLY OPEN
2:	NA	NA\	
1:	*01 PLC 01	NA\	VALVE CLOSED RELAY ENERGIZED ON VALVE FULLY CLOSED
2:	NA	NA\	
1:	*01 PLC 01	NA\	VALVE POWER RELAY ENERGIZED ON VALID VALVE POWER
2:	NA	NA\	

NOTES:

1. THIS SCHEMATIC PROVIDES INTERFACE AND CONTROL TO MOTOR OPERATED VALVES [02 MOV 01] AND [02 MOV 02]. THE CONTROLS ALLOW MODULATING CONTROL IN THE FUTURE AND ASSURE THAT THE VALVES MAINTAIN THEIR LAST POSITION ON PLC FAILURE. THE VALVES WILL AUTOMATICALLY STOP AT THE FULLY OPENED AND FULLY CLOSED POSITIONS BY INTERNAL LIMITS WITHIN THE VALVE. THESE LIMITS WILL OVERRIDE ANY EXTERNAL COMMAND THAT WOULD OVER-STROKE THE VALVE.
2. THESE VALVES CAN BE MANUALLY OPENED AND CLOSED IN THE FIELD AT THE VALVES.
3. FOR IMPROVED RELIABILITY, SEPARATE CIRCUIT BREAKERS POWER [02 MOV 01] AND [02 MOV 02], EACH WITH THEIR OWN SURGE SUPPRESSOR; 40 kA, 1" WIDE, DIN-RAIL MOUNTED; BUSSMAN SERIES BSPMA1_S2GR OR EQUIVALENT.
4. STATUS SIGNALS FROM THE VALVE ARE AT 120 VAC. THESE SIGNALS SHALL BE BUFFERED THROUGH INTERPOSING RELAYS FOR CONVERSION TO 24 VDC TO THE PLC.
5. * [01 PLC 01] IS AN I/O CONNECTION TYPICAL OF EACH VALVE.

2 - MOV ELEMENTARY WIRING DIAGRAM

DRUM SCREEN MOTOR OPERATED VALVES

Gray & Osborne, Inc.
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JASON R. NEWQUIST
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45311
REGISTERED
PROFESSIONAL ENGINEER
9/11/26

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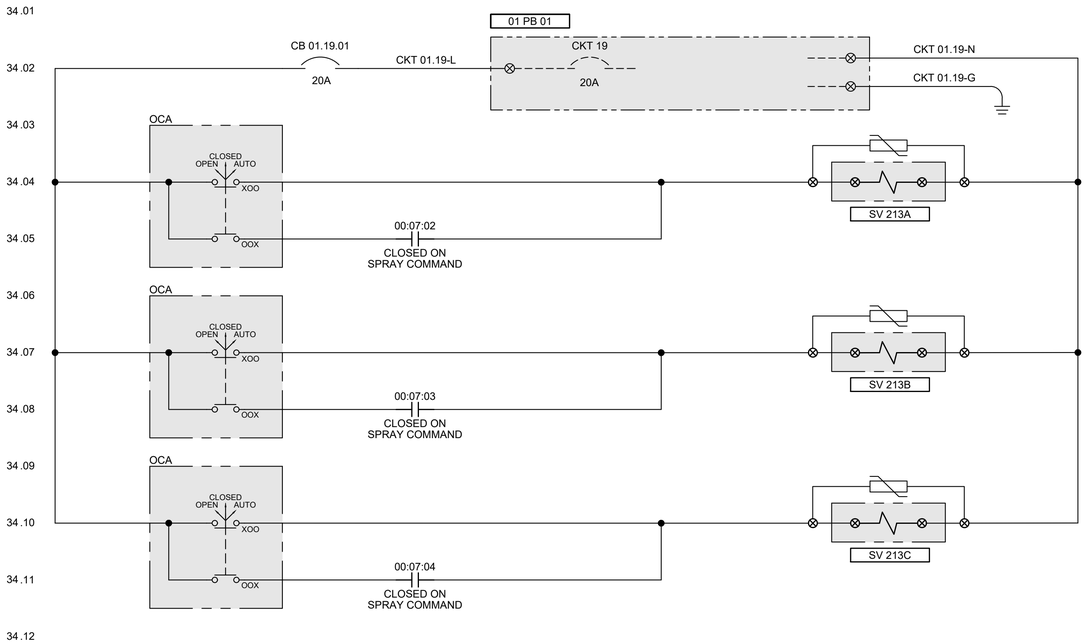
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ELECTRICAL

PLANT CONTROL PANEL ELEMENTARY WIRING DIAGRAM

DRAWING: **E-33** OF: **41**

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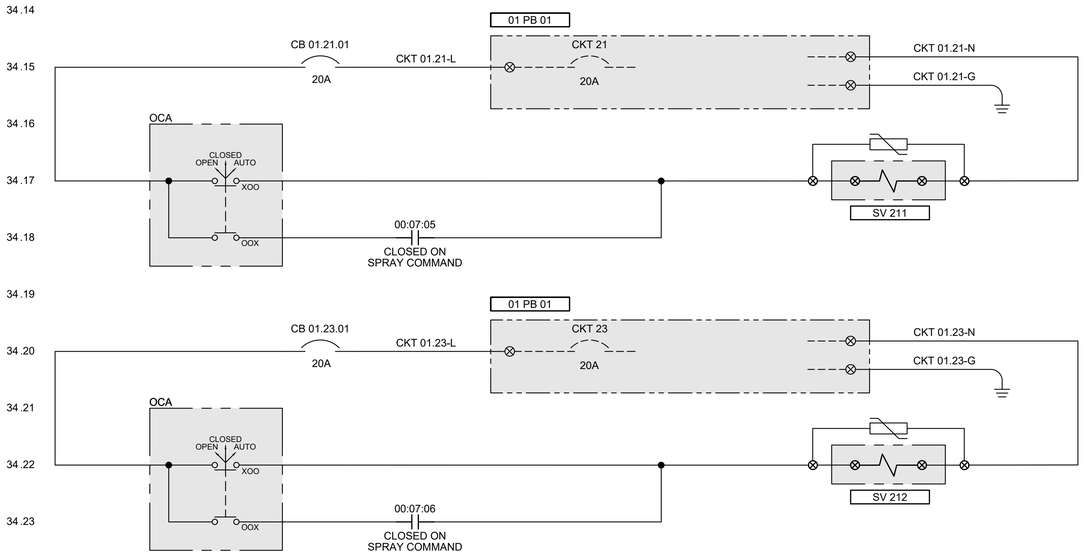
PLC CONTROL PANEL [01 CP 01] WASHER COMPACTOR SOLENOID VALVES CONTROL POWER ELEMENTARY WIRING DIAGRAM

1
-

NOT TO SCALE

NOTES:

1. POWER FOR SOLENOIDS SHALL BE ROUTED THROUGH THE CONTROL PANEL BEFORE LEAVING THE BUILDING.
2. SOLENOIDS ARE BASED ON 30VA MODEL.



PLC CONTROL PANEL [01 CP 01] ROTARY DRUM SCREENS SOLENOID VALVES CONTROL POWER ELEMENTARY WIRING DIAGRAM

2
-

NOT TO SCALE

NOTES:

1. POWER FOR SOLENOIDS SHALL BE ROUTED THROUGH THE CONTROL PANEL BEFORE LEAVING THE BUILDING.
2. SOLENOIDS ARE BASED ON 30VA MODEL.

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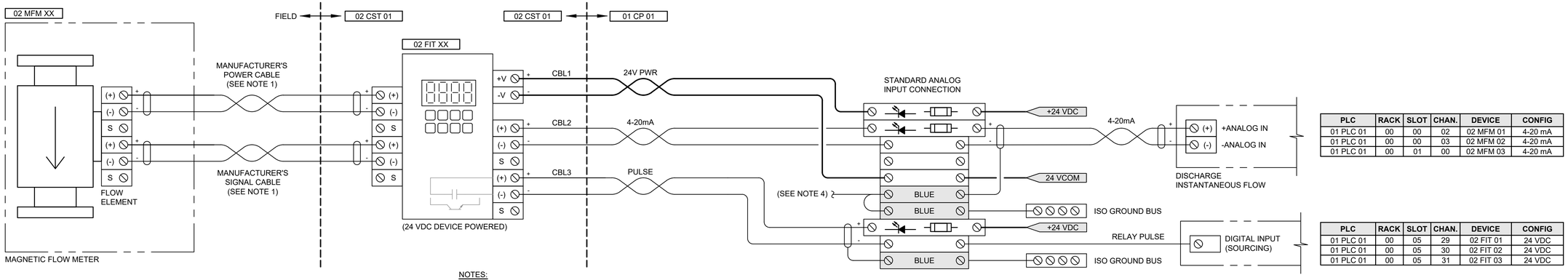
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ELECTRICAL PLC CONTROL PANEL [01 CP 01], WASHER COMPACTOR AND ROTARY DRUM SCREENS SOLENOID VALVES CONTROL POWER ELEMENTARY WIRING DIAGRAM

DRAWING: **E-34** OF: **41**

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PLC	RACK	SLOT	CHAN.	DEVICE	CONFIG
01 PLC 01	00	00	02	02 MFM 01	4-20 mA
01 PLC 01	00	00	03	02 MFM 02	4-20 mA
01 PLC 01	00	01	00	02 MFM 03	4-20 mA

PLC	RACK	SLOT	CHAN.	DEVICE	CONFIG
01 PLC 01	00	05	29	02 FIT 01	24 VDC
01 PLC 01	00	05	30	02 FIT 02	24 VDC
01 PLC 01	00	05	31	02 FIT 03	24 VDC

XX = 01 FOR [02 MFM 01] AND [02 FIT 01]
= 02 FOR [02 MFM 02] AND [02 FIT 02]
= 03 FOR [02 MFM 03] AND [02 FIT 03]

TERMINAL LEGEND:

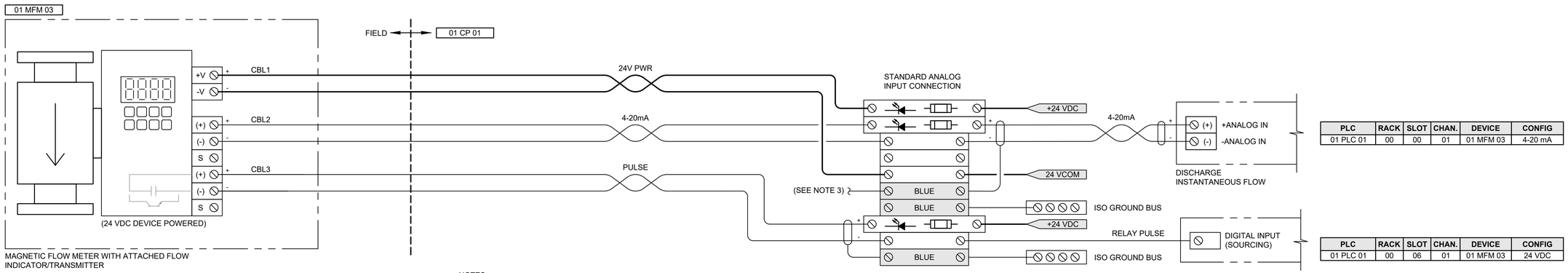
BLUE — SHADED TERMINALS ARE USED FOR SHIELD CONNECTIONS TO ISOLATED GROUND. THESE TERMINALS ARE BLUE AND ARE NOT TO BE CONNECTED TO CHASSIS GROUND.

NOTES:

1. MANUFACTURER'S RECOMMENDED CABLES FOR MAGNETIC COIL POWER AND FLOW SIGNAL SHALL BE CONNECTED WITHOUT BREAK OR SPLICE BETWEEN THE FLOW METER INDICATOR/TRANSMITTER AND THE FLOW ELEMENT IN THE METER VAULT.
2. 24 VDC POWER TO THE FLOW METER SHALL BE DERIVED FROM THE METER'S STANDARD 7-TERMINAL ANALOG GROUP.
3. PROVIDE A SEPARATE FUSED 24 VDC INPUT TERMINAL PAIR JUST BELOW THE STANDARD 7-TERMINAL ANALOG GROUP FOR FLOW TOTALIZING PULSE SIGNAL.
4. FOR CLARITY, SHIELDS ARE NOT SHOWN CONNECTED ON THE FIELD SIDE OF THE STANDARD 7-TERMINAL ANALOG GROUP. CONNECT ALL SHIELDS AT THE TERMINAL SHOWN.

1 - INSTANTANEOUS AND TOTALIZED FLOW INSTRUMENTATION CONNECTION DIAGRAM

24 VDC, DEVICE-POWERED



PLC	RACK	SLOT	CHAN.	DEVICE	CONFIG
01 PLC 01	00	00	01	01 MFM 03	4-20 mA

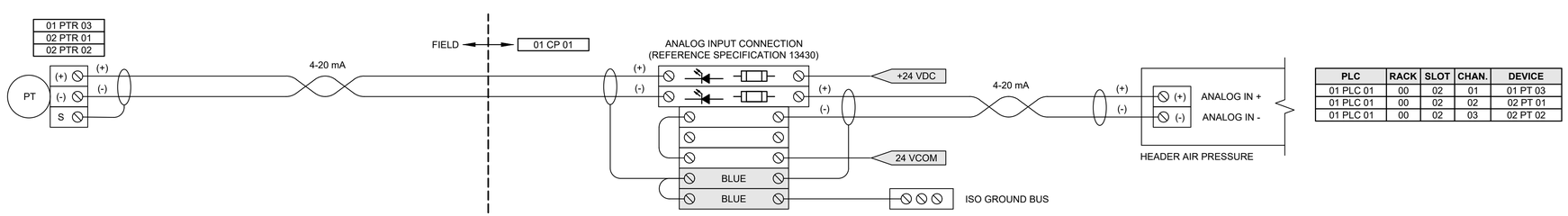
PLC	RACK	SLOT	CHAN.	DEVICE	CONFIG
01 PLC 01	00	06	01	01 MFM 03	24 VDC

NOTES:

1. 24 VDC POWER TO THE FLOW METER SHALL BE DERIVED FROM THE METER'S STANDARD 7-TERMINAL ANALOG GROUP.
2. PROVIDE A SEPARATE FUSED 24 VDC INPUT TERMINAL PAIR JUST BELOW THE STANDARD 7-TERMINAL ANALOG GROUP FOR FLOW TOTALIZING PULSE SIGNAL.
3. FOR CLARITY, SHIELDS ARE NOT SHOWN CONNECTED ON THE FIELD SIDE OF THE STANDARD 7-TERMINAL ANALOG GROUP. CONNECT ALL SHIELDS AT THE TERMINAL SHOWN.

2 - INSTANTANEOUS AND TOTALIZED FLOW INSTRUMENTATION CONNECTION DIAGRAM

24 VDC, DEVICE-POWERED



PLC	RACK	SLOT	CHAN.	DEVICE
01 PLC 01	00	02	01	01 PT 03
01 PLC 01	00	02	02	02 PT 01
01 PLC 01	00	02	03	02 PT 02

NOTES:

1. PRESSURE TRANSDUCERS ARE LOOP POWERED.

3 TYP - PRESSURE TRANSDUCER INSTRUMENTATION CONNECTION DIAGRAM

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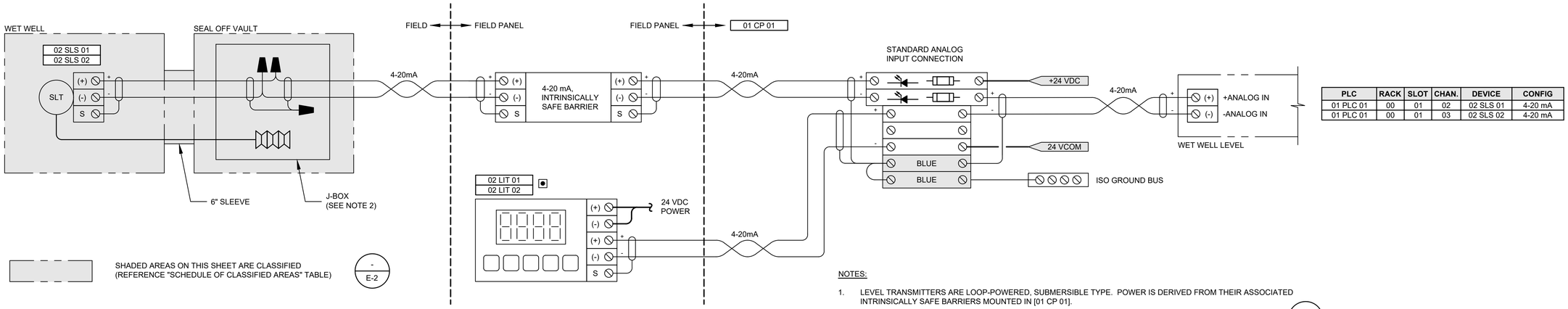
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ELECTRICAL

ANALOG LOOP DIAGRAMS

DRAWING: **E-35** OF: **41**

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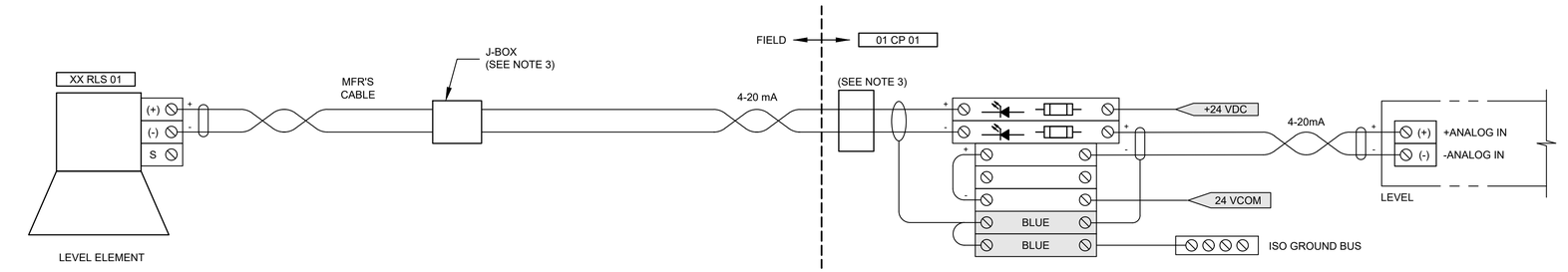
PLC	RACK	SLOT	CHAN.	DEVICE	CONFIG
01 PLC 01	00	01	02	02 SLS 01	4-20 mA
01 PLC 01	00	01	03	02 SLS 02	4-20 mA

NOTES:

1. LEVEL TRANSMITTERS ARE LOOP-POWERED, SUBMERSIBLE TYPE. POWER IS DERIVED FROM THEIR ASSOCIATED INTRINSICALLY SAFE BARRIERS MOUNTED IN [01 CP 01].
2. MANUFACTURER'S CABLES SHALL BE SPLICED TO ANALOG SHIELDED CABLE USING WATER TIGHT SPLICE KITS. (2 / ED-3)

1 / - LEVEL TRANSMITTER AND INDICATOR INSTRUMENTATION CONNECTION DIAGRAM

24 VDC, LOOP-POWERED



PLC	RACK	SLOT	CHAN.	DEVICE	CONFIG
01 PLC 01	00	03	00	01 RLS 01	4-20 mA
01 PLC 01	00	03	01	02 RLS 01	4-20 mA

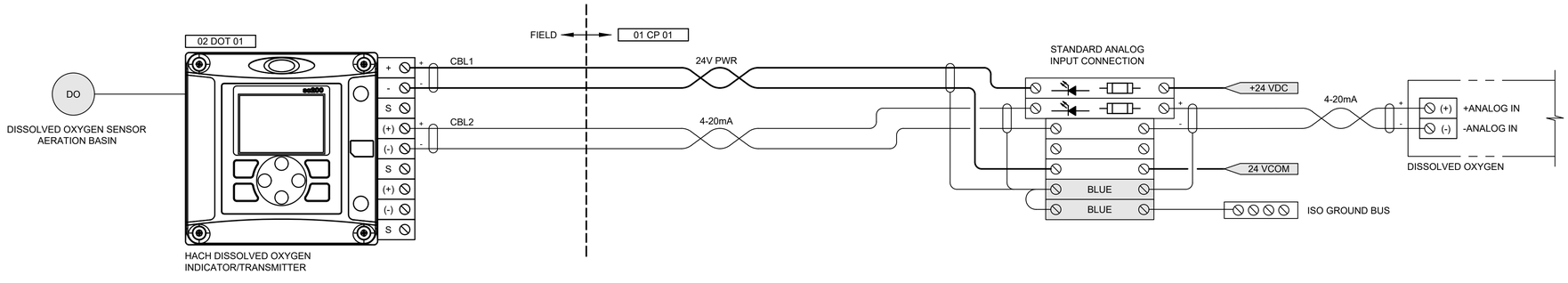
XX = 01 FOR [01 RLS 01]
= 02 FOR [02 RLS 01]

NOTES:

1. LEVEL SENSOR/TRANSMITTER IS LOOP-POWERED.
2. SPLICING PERMITTED IN J-BOX TO TRANSITION FROM MANUFACTURER'S CABLE TO FIELD WIRING.
3. WAS TANK RADAR LEVEL SENSOR [02 RLS 01] REQUIRES ANALOG BARRIER [02 ISBA 03].

2 / - LEVEL TRANSMITTER AND INDICATOR INSTRUMENTATION CONNECTION DIAGRAM

NOT TO SCALE



PLC	RACK	SLOT	CHAN.	DEVICE	CONFIG
01 PLC 01	00	03	02	02 DOT 01	4-20 mA

TERMINAL LEGEND:

BLUE

SHADED TERMINALS ARE USED FOR SHIELD CONNECTIONS TO ISOLATED GROUND. THESE TERMINALS ARE BLUE AND ARE NOT TO BE CONNECTED TO CHASSIS GROUND.

3 / - DISSOLVED OXYGEN INSTRUMENTATION CONNECTION DIAGRAM

24 VDC, DEVICE-POWERED, 2-CHANNEL

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ANALOG LOOP DIAGRAMS

DRAWING: **E-36** OF: **41**

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MOTOR STARTERS NETWORKED I/O

TYPE	FUNCTION	[01 AB 01] AERATION BLOWER	[01 MSB 01] MEMBRANE SCOUR BLOWER NO. 1	[01 MSB 02] MEMBRANE SCOUR BLOWER NO. 2	[01 MSB 03] MEMBRANE SCOUR BLOWER NO. 3	[01 PMP 01] PERMEATE PUMP NO. 1	[01 PMP 02] PERMEATE PUMP NO. 2	[01 PMP 03] PERMEATE PUMP NO. 3	[01 WB 01] WAS BLOWER	[02 IP 01] INFLUENT PUMP NO. 1	[02 IP 02] INFLUENT PUMP NO. 2	[02 RP 01] RAS PUMP NO.1	[02 RP 02] RAS PUMP NO. 2	[01 NPP 01] NONPOT WATER PUMP NO. 1	[01 NPP 02] NONPOT WATER PUMP NO. 2	[02 RDS 01] ROTARY DRUM SCREEN NO. 1	[02 RDS 02] ROTARY DRUM SCREEN NO. 2	[02 WC 01] SCREEN WASHING COMPACTOR	[02 MXR 01] ANOXIC BASIN MIXER	[02 ODU 01] ODOR CONTROL UNIT	[02 WP 01] WASTE SLUDGE PUMP
AI	MOTOR CURRENT	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
AI	MOTOR SPEED	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
AO	SPEED SETPOINT	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
DI	PHASE LOSS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DI	PHASE ROTATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DI	PHASE FAILURE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DI	VOLTAGE UNBALANCE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DI	CURRENT UNBALANCE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DI	DRIVE FAULT	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
DI	OL RELAY FAULT																		X	X	X
DI	HOA IN HAND (SEE NOTE 1)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DI	HOA IN AUTO (SEE NOTE 1)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DI	MANUAL STARTER RESET	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DI	MOTOR OVERTEMP	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X
DI	MOTOR SEAL LEAK					X	X	X		X	X	X	X								X
DI	MOTOR RUNNING	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DI	THERMAL OVERLOAD	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DI	OVERTORQUE (SEE NOTE 3)															X	X	X			
DI	FORWARD																	X			
DI	REVERSE																	X			
DO	RUN COMMAND	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DO	FORCE MANUAL SPEED	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
		VFD																	FVNR		

1 / - **PLC MOTOR I/O MATRIX**
24 VDC, DEVICE-POWERED

NOTES:

1. FOR MOTORS WITH NO "AUTO" CONTROL, HAND SHALL BE PROGRAMMED AS "SELECTOR SWITCH IN ON".
2. NETWORKED I/O THAT IS ASSOCIATED WITH OEM PACKAGED SYSTEMS, SUCH AS FINE SCREEN AND UV SYSTEMS, ARE NOT LISTED HERE. REFERENCE PLC AND HMI PROGRAMMING SPECIFICATIONS IN DIVISIONS 13 AND 16 AS WELL AS OEM EQUIPMENT SPECIFICATIONS IN DIVISION 11 FOR NON-MOTOR REQUIREMENTS.
3. OVERTORQUE CONDITION IS BASED ON MOTOR CURRENTS AND NOT ASSOCIATED WITH A DEDICATED MONITORING DEVICE.

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ELECTRICAL

PLC IO MATRIX, NETWORKED MOTOR IO

DRAWING: **E-37** OF: **41**

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NETWORKED ANALOG INPUT - UV SYSTEM				
CHANNEL		TAG NUMBER	TAG DESCRIPTION	I/O FUNCTION
NO.	ADDRESS			
0	AI:00	01 UVCP 01	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 1	UV TRANSMITTANCE
1	AI:01	01 UVCP 01	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 1	UV INTENSITY
2	AI:02	01 UVCP 02	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 2	UV TRANSMITTANCE
3	AI:03	01 UVCP 02	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 2	UV INTENSITY

NETWORKED DIGITAL INPUT - UV SYSTEM				
CHANNEL		TAG NUMBER	TAG DESCRIPTION	I/O FUNCTION
NO.	ADDRESS			
0	DI:00	01 UVCP 01	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 1	REMOTE UV ON/OFF
1	DI:01	01 UVCP 01	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 1	SYSTEM READY
2	DI:02	01 UVCP 01	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 1	UV FAIL
3	DI:03	01 UVCP 01	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 1	COMMON MINOR ALARM
4	DI:04	01 UVCP 01	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 1	COMMON MAJOR ALARM
5	DI:05	01 UVCP 01	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 1	LAMP FAIL
6	DI:06	01 UVCP 01	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 1	EFFLUENT FLOW
7	DI:07	01 UVCP 01	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 1	WIPER FAIL
8	DI:08	01 UVCP 01	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 1	CABINET OVERHEAT
9	DI:09	01 UVCP 01	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 1	REMOTE WIPE
10	DI:10	01 UVCP 02	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 2	REMOTE UV ON/OFF
11	DI:11	01 UVCP 02	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 2	SYSTEM READY
12	DI:12	01 UVCP 02	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 2	UV FAIL
13	DI:13	01 UVCP 02	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 2	COMMON MINOR ALARM
14	DI:14	01 UVCP 02	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 2	COMMON MAJOR ALARM
15	DI:15	01 UVCP 02	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 2	LAMP FAIL
16	DI:16	01 UVCP 02	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 2	EFFLUENT FLOW
17	DI:17	01 UVCP 02	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 2	WIPER FAIL
18	DI:18	01 UVCP 02	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 2	CABINET OVERHEAT
19	DI:19	01 UVCP 02	CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 2	REMOTE WIPE

UV SYSTEM NETWORKED I/O TO [01 CP 01], MASTER

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NETWORKED I/O TABLES

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SLOT 00		ANALOG INPUT CARD, 4 CHANNEL, ISOLATED, 16-BIT, 4-20 mA		
CHANNEL		TAG NUMBER	TAG DESCRIPTION	I/O FUNCTION
NO.	ADDRESS			
0	00:00	- - - -	HOT SPARE	
1	00:01	01 MFM 03	MAGNETIC FLOW METER, NON-POT WATER	FLOW
2	00:02	02 FIT 01	FLOW INDICATOR TRANSMITTER, INFLUENT PUMP STATION	FLOW
3	00:03	02 FIT 02	FLOW INDICATOR TRANSMITTER, RAS FLOW METER	FLOW

SLOT 01		ANALOG INPUT CARD, 4 CHANNEL, ISOLATED, 16-BIT, 4-20 mA		
CHANNEL		TAG NUMBER	TAG DESCRIPTION	I/O FUNCTION
NO.	ADDRESS			
0	01:00	02 FIT 03	FLOW INDICATOR TRANSMITTER, WAS STORAGE TANK	FLOW
1	01:01	- - - -	HOT SPARE	
2	01:02	02 SLS 01	SUBMERSIBLE LEVEL SENSOR, INFLUENT PUMP STATION	TANK LEVEL
3	01:03	02 SLS 02	SUBMERSIBLE LEVEL SENSOR, RAS PUMP STATION	TANK LEVEL

SLOT 02		ANALOG INPUT CARD, 4 CHANNEL, ISOLATED, 16-BIT, 4-20 mA		
CHANNEL		TAG NUMBER	TAG DESCRIPTION	I/O FUNCTION
NO.	ADDRESS			
0	02:00	02 DOT 01	DISSOLVED OXYGEN TRANSMITTER, AERATION BASIN	DISOLVED OXYGEN
1	02:01	01 PTR 03	PRESSURE TRANSMITTER, NPW	PRESSURE
2	02:02	02 PTR 01	OVERFLOW PRESSURE TRANSMITTER, SCREEN NO. 1	DRUM SCREEN NO. 1 PRESSURE
3	02:03	02 PTR 02	OVERFLOW PRESSURE TRANSMITTER, SCREEN NO. 2	DRUM SCREEN NO. 2 PRESSURE

SLOT 03		ANALOG INPUT CARD, 4 CHANNEL, ISOLATED, 16-BIT, 4-20 mA		
CHANNEL		TAG NUMBER	TAG DESCRIPTION	I/O FUNCTION
NO.	ADDRESS			
0	03:00	01 RLS 01	RADAR LEVEL SENSOR, NON-POT WATER TANK	TANK LEVEL
1	03:01	02 RLS 01	RADAR LEVEL SENSOR, WAS TANK	TANK LEVEL
2	03:02	02 DO 01	DISSOLVED OXYGEN SENSOR	DISSOLVED OXYGEN
3	03:03	- - - -	HOT SPARE	

SLOT 04		ANALOG OUTPUT CARD, 4 CHANNEL, ISOLATED, 16-BIT, 4-20 mA		
CHANNEL		TAG NUMBER	TAG DESCRIPTION	I/O FUNCTION
NO.	ADDRESS			
0	04:00	- - - -	HOT SPARE	
1	04:01	- - - -	HOT SPARE	
2	04:02	- - - -	HOT SPARE	
3	04:03	- - - -	HOT SPARE	

SLOT 05		DIGITAL INPUT CARD, 32 CHANNEL, 24 VDC		
CHANNEL		TAG NUMBER	TAG DESCRIPTION	I/O FUNCTION
NO.	ADDRESS			
0	05:00	01 ATS 01	AUTOMATIC TRANSFER SWITCH	TRUE = ATS IN UTILITY POSITION
1	05:01	01 ATS 02	AUTOMATIC TRANSFER SWITCH	TRUE = ATS IN UTILITY POSITION
2	05:02	- - - -	HOT SPARE	
3	05:03	01 SD 01	SMOKE DETECTOR	FALSE = ALARM (SEE NOTE 1)
4	05:04	- - - -	HOT SPARE	
5	05:05	- - - -	HOT SPARE	
6	05:06	01 DCU 01	DC UPS CONTROLLER	TRUE = DCU BUFFERING
7	05:07	01 DCU 01	DC UPS CONTROLLER	TRUE = REPLACE BATTERY ALARM
8	05:08	01 DCU 02	DC UPS CONTROLLER	TRUE = DCU BUFFERING
9	05:09	01 DCU 02	DC UPS CONTROLLER	TRUE = REPLACE BATTERY ALARM
10	05:10	- - - -	HOT SPARE	
11	05:11	- - - -	HOT SPARE	
12	05:12	01 GEN 01	GENERATOR, STANDBY	TRUE = GENERATOR ALARM
13	05:13	01 GEN 01	GENERATOR, STANDBY	TRUE = GENERATOR FAIL
14	05:14	01 GEN 01	GENERATOR, STANDBY	TRUE = GENERATOR IN AUTO MODE
15	05:15	01 GEN 01	GENERATOR, STANDBY	TRUE = LOW BATTERY VOLTAGE
16	05:16	01 GEN 01	GENERATOR, STANDBY	TRUE = LOW OIL PRESSURE
17	05:17	01 GEN 01	GENERATOR, STANDBY	TRUE = HIGH COOLANT TEMPERATURE
18	05:18	01 GEN 01	GENERATOR, STANDBY	TRUE = LOW FUEL ALARM
19	05:19	01 GEN 01	GENERATOR, STANDBY	TRUE = FUEL TANK LEAK
20	05:20	- - - -	HOT SPARE	
21	05:21	01 LS 01	FLOAT SWITCH, NON-POT WATER TANK	TRUE = LEVEL HIGH
22	05:22	02 LS 01	FLOAT SWITCH, PUMP 1 HIGH, INFLUENT PUMP STATION	TRUE = LEVEL HIGH
23	05:23	02 LS 02	FLOAT SWITCH, PUMP 2 HIGH, INFLUENT PUMP STATION	TRUE = LEVEL HIGH

SLOT 05		DIGITAL INPUT CARD, 32 CHANNEL, 24 VDC		
CHANNEL		TAG NUMBER	TAG DESCRIPTION	I/O FUNCTION
NO.	ADDRESS			
24	05:24	02 LS 07	FLOAT SWITCH, PUMP 1 HIGH, RAS PUMP STATION	TRUE = LEVEL HIGH
25	05:25	02 LS 08	FLOAT SWITCH, PUMP 2 HIGH, RAS PUMP STATION	TRUE = LEVEL HIGH
26	05:26	02 LS 09	FLOAT SWITCH, WAS STORAGE TANK	TRUE = LEVEL HIGH
27	05:27	02 CLS 01	CONDUCTIVITY LEVEL SENSOR	TRUE = HIGH WATER IN VALVE VAULT
28	05:28	- - - -	HOT SPARE	
29	05:29	02 FIT 01	FLOW INDICATOR TRANSMITTER, INFLUENT PUMP STATION	TOTALIZING PULSE
30	05:30	02 FIT 02	FLOW INDICATOR TRANSMITTER, RAS FLOW METER	TOTALIZING PULSE
31	05:31	02 FIT 03	FLOW INDICATOR TRANSMITTER, WAS STORAGE TANK	TOTALIZING PULSE

SLOT 06		DIGITAL INPUT CARD, 32 CHANNEL, 24 VDC		
CHANNEL		TAG NUMBER	TAG DESCRIPTION	I/O FUNCTION
NO.	ADDRESS			
0	06:00	03 CP 01	CONTROL PANEL, LIFT STATION	HIGH LEVEL ALARM
1	06:01	01 MFM 03	MAGNETIC FLOW METER, NON-POT WATER	TOTALIZING PULSE
2	06:02	- - - -	HOT SPARE	
3	06:03	02 MOV 01	MOTOR OPERATED VALVE, DRUM SCREEN NO. 1	TRUE = VALVE IN REMOTE
4	06:04	02 MOV 01	MOTOR OPERATED VALVE, DRUM SCREEN NO. 1	TRUE = VALVE FAULT
5	06:05	02 MOV 01	MOTOR OPERATED VALVE, DRUM SCREEN NO. 1	TRUE = VALVE FULLY OPEN
6	06:06	02 MOV 01	MOTOR OPERATED VALVE, DRUM SCREEN NO. 1	TRUE = VALVE FULLY CLOSED
7	06:07	02 MOV 01	MOTOR OPERATED VALVE, DRUM SCREEN NO. 1	TRUE = VALID POWER TO VALVE
8	06:08	02 MOV 02	MOTOR OPERATED VALVE, DRUM SCREEN NO. 2	TRUE = VALVE IN REMOTE
9	06:09	02 MOV 02	MOTOR OPERATED VALVE, DRUM SCREEN NO. 2	TRUE = VALVE FAULT
10	06:10	02 MOV 02	MOTOR OPERATED VALVE, DRUM SCREEN NO. 2	TRUE = VALVE FULLY OPEN
11	06:11	02 MOV 02	MOTOR OPERATED VALVE, DRUM SCREEN NO. 2	TRUE = VALVE FULLY CLOSED
12	06:12	02 MOV 02	MOTOR OPERATED VALVE, DRUM SCREEN NO. 2	TRUE = VALID POWER TO VALVE
13	06:13	- - - -	HOT SPARE	
14	06:14	- - - -	HOT SPARE	
15	06:15	- - - -	HOT SPARE	
16	06:16	- - - -	HOT SPARE	
17	06:17	- - - -	HOT SPARE	
18	06:18	- - - -	HOT SPARE	
19	06:19	- - - -	HOT SPARE	
20	06:20	- - - -	HOT SPARE	
21	06:21	- - - -	HOT SPARE	
22	06:22	- - - -	HOT SPARE	
23	06:23	- - - -	HOT SPARE	
24	06:24	- - - -	HOT SPARE	
25	06:25	- - - -	HOT SPARE	
26	06:26	- - - -	HOT SPARE	
27	06:27	- - - -	HOT SPARE	
28	06:28	- - - -	HOT SPARE	
29	06:29	- - - -	HOT SPARE	
30	06:30	- - - -	HOT SPARE	
31	06:31	- - - -	HOT SPARE	

SLOT 07		DIGITAL OUTPUT CARD, 16 CHANNEL, 24 VDC		
CHANNEL		TAG NUMBER	TAG DESCRIPTION	I/O FUNCTION
NO.	ADDRESS			
0	07:00	01 ES 01	EFFLUENT SAMPLER	SAMPLE COMMAND
1	07:01	02 IS 01	INFLUENT SAMPLER	SAMPLE COMMAND
2	07:02	SV 213A	SOLENOID VALVE EXIT WASH, WASTE COMPACTOR	TRUE=SPRAY WATER ON
3	07:03	SV 213B	SOLENOID VALVE CHUTE WASH, WASTE COMPACTOR	TRUE=SPRAY WATER ON
4	07:04	SV 213C	SOLENOID VALVE CHUTE WASH, WASTE COMPACTOR	TRUE=SPRAY WATER ON
5	07:05	SV 211	SOLENOID VALVE, SCREEN NO. 1	TRUE=SPRAY WATER ON
6	07:06	SV 212	SOLENOID VALVE, SCREEN NO. 2	TRUE=SPRAY WATER ON
7	07:07	02 MOV 01	MOTOR OPERATED VALVE, DRUM SCREEN NO. 1	TRUE = OPEN COMMAND
8	07:08	02 MOV 01	MOTOR OPERATED VALVE, DRUM SCREEN NO. 1	TRUE = CLOSE COMMAND
9	07:09	02 MOV 02	MOTOR OPERATED VALVE, DRUM SCREEN NO. 2	TRUE = OPEN COMMAND
10	07:10	02 MOV 02	MOTOR OPERATED VALVE, DRUM SCREEN NO. 2	TRUE = CLOSE COMMAND
11	07:11	01 SD 01	SMOKE DETECTOR	TRUE = RESET
12	07:12	- - - -	HOT SPARE	
13	07:13	- - - -	HOT SPARE	
14	07:14	- - - -	HOT SPARE	
15	07:15	01 PLC 01	PROGRAMMABLE LOGIC CONTROLLER RACK 01	FALSE = PLC FAIL

[01 PLC 01], MASTER, HARDWIRED I/O

NOTES:

1. EACH SMOKE DETECTOR ALARM SHALL BE BROUGHT TO THE PANEL BUT JUMPED INSIDE THE PANEL FOR A COMMON ALARM.

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TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

8220 178TH AVENUE COURT SW, LONGBRANCH, WA 98351

No.	DATE	REVISION

ISSUED FOR:

BID SET

ISSUE DATE:	SEPTEMBER 2026
APPROVED BY:	JRN
CHECKED BY:	PAM
DRAWN BY:	DCK
DESIGNER:	CM
G & O JOB NO.:	22848.01
FILE:	E_PLCIO.DWG

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[01 PLC 01] I/O TABLES

DRAWING: **E-39** OF: **41**

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SLOT 00		ANALOG INPUT CARD, 8 CHANNEL, ISOLATED, 16-BIT, 4-20 mA		
CHANNEL		TAG NUMBER	TAG DESCRIPTION	I/O FUNCTION
NO.	ADDRESS			
0	00:00	01 MFM 01	PERMEATE FLOW METER NO. 1	BASIN NO. 1 PERMEATE FLOW
1	00:01	01 MFM 02	PERMEATE FLOW METER NO. 2	BASIN NO. 2 PERMEATE FLOW
2	00:02	- - - -	HOT SPARE	
3	00:03	- - - -	HOT SPARE	
4	00:04	01 PTR 01	PRESSURE TRANSMITTER, MEMBRANE BASIN NO. 1	TRANSMEMBRANE PRESSURE, BASIN NO. 1
5	00:05	01 PTR 02	PRESSURE TRANSMITTER, MEMBRANE BASIN NO. 2	TRANSMEMBRANE PRESSURE, BASIN NO. 2
6	00:06	01 AFM 01	AIR FLOW METER NO. 1, MEMBRANE BASIN NO. 1	AIR FLOW TO BASIN NO. 1
7	00:07	01 AFM 02	AIR FLOW METER NO. 2, MEMBRANE BASIN NO. 2	AIR FLOW TO BASIN NO. 2

SLOT 01		ANALOG INPUT CARD, 8 CHANNEL, ISOLATED, 16-BIT, 4-20 mA		
CHANNEL		TAG NUMBER	TAG DESCRIPTION	I/O FUNCTION
NO.	ADDRESS			
0	01:00	01 TM 01	TURBIDITY METER	EFFLUENT TURBIDITY
1	01:01	01 UFM 01	ULTRASONIC FLOW METER, CIP SYSTEM	FLOW
2	01:02	01 MFM 04	CIPP FLOW METER	FLOW
3	01:03	- - - -	HOT SPARE	
4	01:04	- - - -	HOT SPARE	
5	01:05	- - - -	HOT SPARE	
6	01:06	- - - -	HOT SPARE	
7	01:07	- - - -	HOT SPARE	

SLOT 02		DIGITAL INPUT CARD, 16 CHANNEL, 24 VDC		
CHANNEL		TAG NUMBER	TAG DESCRIPTION	I/O FUNCTION
NO.	ADDRESS			
0	02:00	02 LS 03	FLOAT SWITCH, MEMBRANE BASIN NO. 1	HIGH LEVEL
1	02:01	02 LS 04	FLOAT SWITCH, MEMBRANE BASIN NO. 1	LOW LEVEL
2	02:02	02 LS 05	FLOAT SWITCH, MEMBRANE BASIN NO. 2	HIGH LEVEL
3	02:03	02 LS 06	FLOAT SWITCH, MEMBRANE BASIN NO. 2	LOW LEVEL
4	02:04	01 MOV 01	MOTOR OPERATED VALVE, CIP	TRUE = VALVE FAULT
5	02:05	01 MOV 01	MOTOR OPERATED VALVE, CIP	TRUE = FULLY OPEN
6	02:06	01 MOV 01	MOTOR OPERATED VALVE, CIP	TRUE = FULLY CLOSED
7	02:07	02 MOV 03	MOTOR OPERATED VALVE, MEMBRANE BASIN NO. 1	TRUE = VALVE IN REMOTE
8	02:08	02 MOV 03	MOTOR OPERATED VALVE, MEMBRANE BASIN NO. 1	TRUE = VALVE FAULT
9	02:09	02 MOV 03	MOTOR OPERATED VALVE, MEMBRANE BASIN NO. 1	TRUE = FULLY OPEN
10	02:10	02 MOV 03	MOTOR OPERATED VALVE, MEMBRANE BASIN NO. 1	TRUE = FULLY CLOSED
11	02:11	02 MOV 04	MOTOR OPERATED VALVE, MEMBRANE BASIN NO. 2	TRUE = VALVE IN REMOTE
12	02:12	02 MOV 04	MOTOR OPERATED VALVE, MEMBRANE BASIN NO. 2	TRUE = VALVE FAULT
13	02:13	02 MOV 04	MOTOR OPERATED VALVE, MEMBRANE BASIN NO. 2	TRUE = FULLY OPEN
14	02:14	02 MOV 04	MOTOR OPERATED VALVE, MEMBRANE BASIN NO. 2	TRUE = FULLY CLOSED
15	02:15	- - - -	HOT SPARE	

SLOT 03		DIGITAL INPUT CARD, 16 CHANNEL, 24 VDC		
CHANNEL		TAG NUMBER	TAG DESCRIPTION	I/O FUNCTION
NO.	ADDRESS			
0	03:00	01 UFM 01	ULTRASONIC FLOW METER, CIP SYSTEM	TOTALIZING PULSE
1	03:01	01 MFM 04	CIPP FLOW METER	TOTALIZING PULSE
2	03:02	- - - -	HOT SPARE	
3	03:03	- - - -	HOT SPARE	
4	03:04	- - - -	HOT SPARE	
5	03:05	- - - -	HOT SPARE	
6	03:06	- - - -	HOT SPARE	
7	03:07	- - - -	HOT SPARE	
8	03:08	- - - -	HOT SPARE	
9	03:09	- - - -	HOT SPARE	
10	03:10	- - - -	HOT SPARE	
11	03:11	- - - -	HOT SPARE	
12	03:12	- - - -	HOT SPARE	
13	03:13	- - - -	HOT SPARE	
14	03:14	- - - -	HOT SPARE	
15	03:15	- - - -	HOT SPARE	

SLOT 04		DIGITAL INPUT CARD, 16 CHANNEL, 24 VDC		
CHANNEL		TAG NUMBER	TAG DESCRIPTION	I/O FUNCTION
NO.	ADDRESS			
0	04:00	01 MOV 01	MOTOR OPERATED VALVE, CIP	TRUE = OPEN/CLOSE
1	04:01	02 MOV 03	MOTOR OPERATED VALVE, MEMBRANE BASIN NO. 1	TRUE = OPEN/CLOSE
2	04:02	02 MOV 04	MOTOR OPERATED VALVE, MEMBRANE BASIN NO. 2	TRUE = OPEN/CLOSE
3	04:03	- - - -	HOT SPARE	
4	04:04	- - - -	HOT SPARE	
5	04:05	- - - -	HOT SPARE	
6	04:06	- - - -	HOT SPARE	
7	04:07	- - - -	HOT SPARE	
8	04:08	- - - -	HOT SPARE	
9	04:09	- - - -	HOT SPARE	
10	04:10	- - - -	HOT SPARE	
11	04:11	- - - -	HOT SPARE	
12	04:12	- - - -	HOT SPARE	
13	04:13	- - - -	HOT SPARE	
14	04:14	- - - -	HOT SPARE	
15	04:15	- - - -	HOT SPARE	

NOTES:

1. I/O ON THIS PAGE IS FOR CONVENIENCE ONLY. REFER TO MANUFACTURER'S DOCUMENTATION FOR ACTUAL SLOT AND CHANNEL ASSIGNMENTS.

[01 PLC 02], MEMBRANE, HARDWIRED I/O

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TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

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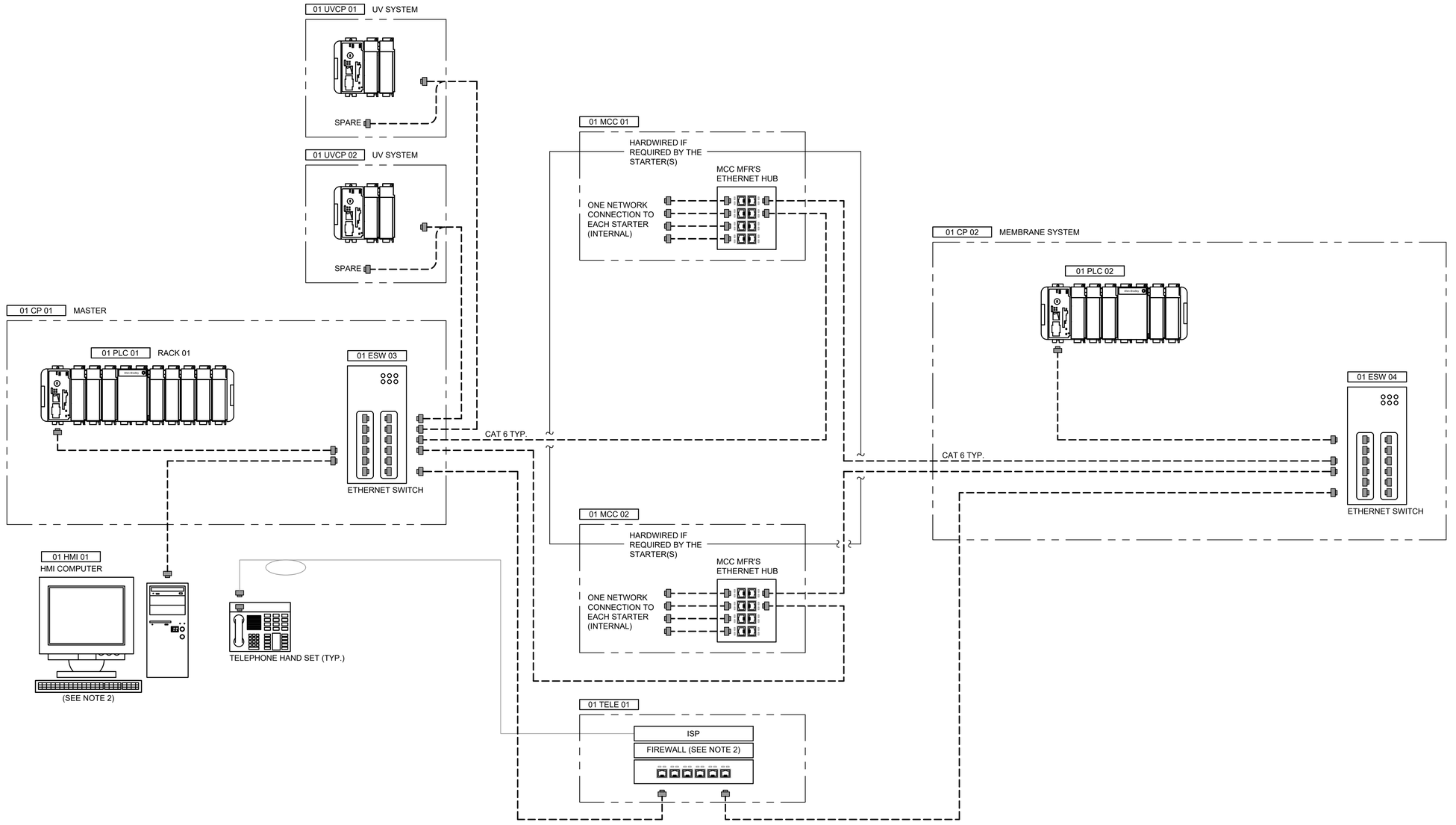
ISSUE DATE:	SEPTEMBER 2026
APPROVED BY:	JRN
CHECKED BY:	PAM
DRAWN BY:	DCK
DESIGNER:	CM
G & O JOB NO.:	22848.01
FILE:	E_PLCIO.DWG

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[01 PLC 02] I/O TABLES

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NOTES:

1. PLCS IN [01 CP 02] AND [01 UVCP 01, 02] ARE PROVIDED BY THE MANUFACTURER AS PART OF THEIR PACKAGE SYSTEMS.
2. PROVISION FIREWALL AND NETWORK TO ALLOW UV AND MEMBRANE SYSTEM SUPPLIERS ACCESS TO THEIR RESPECTIVE SYSTEMS REMOTELY.

1/- WWTF CONTROL SYSTEM NETWORKING, BLOCK DIAGRAM

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NETWORK DIAGRAM

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AREA 1 POWER CABLE AND CONDUIT SCHEDULE

NUMBER	SOURCE	DESTINATION	SIZE	CONDUCTORS	E-1	NOTES
P0101	[01 UT 01], UTILITY TRANSFORMER	[01 CT 01], CT ENCLOSURE	3"	3X 350 KCM XHHW-2; 1X #1 AWG XHHW-2 N		
P0102	[01 CT 01], CT ENCLOSURE	[01 MB 01], UTILITY METER BASE	1"	PROVIDED BY ELECTRICAL UTILITY		
P0103	[01 CT 01], CT ENCLOSURE	[01 SWBD 01], MAIN POWER SWITCHBOARD/PANELBOARD	3"	3X 350 KCM XHHW-2; 1X #1 AWG XHHW-2 N; 1X #4 AWG XHHW-2 G		
P0104	[01 SWBD 01], MAIN POWER SWITCHBOARD/PANELBOARD	[01 ATS 01], AUTOMATIC TRANSFER SWITCH	2"	3X #4/0 AWG XHHW-2; 1X #4 AWG XHHW-2 N; 1X #4 AWG XHHW-2 G		GROUND UPSIZED PER NEC
P0105	[01 SWBD 01], MAIN POWER SWITCHBOARD/PANELBOARD	[01 ATS 02], AUTOMATIC TRANSFER SWITCH	2"	3X #4/0 AWG XHHW-2; 1X #4 AWG XHHW-2 N; 1X #4 AWG XHHW-2 G		GROUND UPSIZED PER NEC
P0106	[01 ATS 01], AUTOMATIC TRANSFER SWITCH	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	2"	3X #4/0 AWG XHHW-2; 1X #4 AWG XHHW-2 N; 1X #4 AWG XHHW-2 G		GROUND UPSIZED PER NEC
P0107	[01 ATS 02], AUTOMATIC TRANSFER SWITCH	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	2"	3X #4/0 AWG XHHW-2; 1X #4 AWG XHHW-2 N; 1X #4 AWG XHHW-2 G		GROUND UPSIZED PER NEC
P0108	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	[01 UVCP 01], CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 1	3/4"	3X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G		
P0109	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	[01 UVCP 02], CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 2	3/4"	3X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G		
P0110	[01 PB 01], PANELBOARD 01, MOTOR CONTROL CENTER NO. 1	[01 CP 01], CONTROL PANEL, MASTER	3/4"	3X #12 AWG XHHW-2; 3X #12 AWG XHHW-2 N; 2X #12 AWG XHHW-2 G; 1X #10 AWG XHHW-2 G		PRIMARY, SECONDARY, ANCILLARY POWER. INCLUDES #10 ISO GROUND
P0111	[01 PB 02], PANELBOARD 02, MOTOR CONTROL CENTER NO. 2	[01 CP 01], CONTROL PANEL, MASTER	3/4"	2X #12 AWG XHHW-2; 2X #12 AWG XHHW-2 N; 1X #12 AWG XHHW-2 G		REDUNDANT PRIMARY AND SECONDARY CONTROL POWER
P0112	[01 PB 01], PANELBOARD 01, MOTOR CONTROL CENTER NO. 1	[01 CP 02], CONTROL PANEL, MEMBRANE FILTER CONTROLS	3/4"	2X #12 AWG XHHW-2; 2X #12 AWG XHHW-2 N; 1X #12 AWG XHHW-2 G		PRIMARY AND ANCILLARY POWER
P0113	[01 PB 02], PANELBOARD 02, MOTOR CONTROL CENTER NO. 2	[01 CP 02], CONTROL PANEL, MEMBRANE FILTER CONTROLS	3/4"	2X #12 AWG XHHW-2; 2X #12 AWG XHHW-2 N; 1X #12 AWG XHHW-2 G		BACKUP CIRCUIT AND SPARE
P0114	[01 PB 01], PANELBOARD 01, MOTOR CONTROL CENTER NO. 1	ELECTRICAL & PROCESS EQUIPMENT ROOM LIGHTING	3/4"	2X #12 AWG XHHW-2; 2X #12 AWG XHHW-2 N; 1X #12 AWG XHHW-2 G		
P0115	[01 PB 01], PANELBOARD 01, MOTOR CONTROL CENTER NO. 1	CONTROL & RESTROOM ROOM LIGHTING	3/4"	2X #12 AWG XHHW-2; 2X #12 AWG XHHW-2 N; 1X #12 AWG XHHW-2 G		
P0116	[01 PB 02], PANELBOARD 02, MOTOR CONTROL CENTER NO. 2	ELECTRICAL ROOM RECEPTACLES, EFFLUENT SAMPLER, AND EM SHOWER	3/4"	3X #12 AWG XHHW-2; 3X #12 AWG XHHW-2 N; 1X #12 AWG XHHW-2 G		INCLUDES [01 DREC 01], [01 DREC 02]
P0117	[01 PB 02], PANELBOARD 02, MOTOR CONTROL CENTER NO. 2	PROCESS EQUIPMENT, CONTROL & RESTROOM RECEPTACLES	3/4"	4X #12 AWG XHHW-2; 4X #12 AWG XHHW-2 N; 1X #12 AWG XHHW-2 G		
P0118	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	[01 MSBSDS 01], SAFETY DISCONNECT SWITCH, MEMBRANE SCOUR BLOWER NO. 1	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G	* 1	
P0119	[01 MSBSDS 01], SAFETY DISCONNECT SWITCH, MEMBRANE SCOUR BLOWER NO. 1	[01 MSB 01], MEMBRANE SCOUR BLOWER NO. 1	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G; 6X #14 AWG XHHW-2	* 1	INCLUDES 2 SPARES
P0120	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	[01 MSBSDS 02], SAFETY DISCONNECT SWITCH, MEMBRANE SCOUR BLOWER NO. 2	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G	* 1	
P0121	[01 MSBSDS 02], SAFETY DISCONNECT SWITCH, MEMBRANE SCOUR BLOWER NO. 2	[01 MSB 02], MEMBRANE SCOUR BLOWER NO. 2	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G; 6X #14 AWG XHHW-2	* 1	INCLUDES 2 SPARES
P0122	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	[01 MSBSDS 03], SAFETY DISCONNECT SWITCH, MEMBRANE SCOUR BLOWER NO. 3	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G	* 1	
P0123	[01 MSBSDS 03], SAFETY DISCONNECT SWITCH, MEMBRANE SCOUR BLOWER NO. 3	[01 MSB 03], MEMBRANE SCOUR BLOWER NO. 3	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G; 6X #14 AWG XHHW-2	* 1	INCLUDES 2 SPARES
P0124	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	[01 WBSDS 01], SAFETY DISCONNECT SWITCH, WAS BLOWER	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G	* 1	
P0125	[01 WBSDS 01], SAFETY DISCONNECT SWITCH, WAS BLOWER	[01 WB 01], WAS BLOWER	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G; 6X #14 AWG XHHW-2	* 1	INCLUDES 2 SPARES
P0126	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	[01 ABSDS 01], SAFETY DISCONNECT SWITCH, AERATION BLOWER	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G	* 1	
P0127	[01 ABSDS 01], SAFETY DISCONNECT SWITCH, AERATION BLOWER	[01 AB 01], AERATION BLOWER	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G; 6X #14 AWG XHHW-2	* 1	INCLUDES 2 SPARES

AREA 1 POWER CABLE AND CONDUIT SCHEDULE

NUMBER	SOURCE	DESTINATION	SIZE	CONDUCTORS	E-1	NOTES
P0128	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	[01 PMPSDS 01], SAFETY DISCONNECT SWITCH, PERMEATE PUMP NO. 1	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G	* 1	
P0129	[01 PMPSDS 01], SAFETY DISCONNECT SWITCH, PERMEATE PUMP NO. 1	[01 PMP 01], PERMEATE PUMP NO. 1	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G; 2X #14 AWG XHHW-2	* 1	
P0130	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	[01 PMPSDS 02], SAFETY DISCONNECT SWITCH, PERMEATE PUMP NO. 2	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G	* 1	
P0131	[01 PMPSDS 02], SAFETY DISCONNECT SWITCH, PERMEATE PUMP NO. 2	[01 PMP 02], PERMEATE PUMP NO. 2	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G; 2X #14 AWG XHHW-2	* 1	
P0132	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	[01 PMPSDS 03], SAFETY DISCONNECT SWITCH, PERMEATE PUMP NO. 3	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G	* 1	
P0133	[01 PMPSDS 03], SAFETY DISCONNECT SWITCH, PERMEATE PUMP NO. 3	[01 PMP 03], PERMEATE PUMP NO. 3	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G; 2X #14 AWG XHHW-2	* 1	
P0134	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	[01 NPPSDS 01], SAFETY DISCONNECT SWITCH, NONPOT WATER PUMP NO. 1	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G	* 1	
P0135	[01 NPPSDS 01], SAFETY DISCONNECT SWITCH, NONPOT WATER PUMP NO. 1	[01 NPP 01], NONPOT WATER PUMP NO. 1	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G; 2X #14 AWG XHHW-2	* 1	
P0136	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	[01 NPPSDS 02], SAFETY DISCONNECT SWITCH, NONPOT WATER PUMP NO. 2	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G	* 1	
P0137	[01 NPPSDS 02], SAFETY DISCONNECT SWITCH, NONPOT WATER PUMP NO. 2	[01 NPP 02], NONPOT WATER PUMP NO. 2	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G; 2X #14 AWG XHHW-2	* 1	
P0138	[01 PB 01], PANELBOARD 01, MOTOR CONTROL CENTER NO. 1	J-BOX JP0138	3/4"	1X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 N; 1X #12 AWG XHHW-2 G		
P0138A	[01 PB 02], PANELBOARD 02, MOTOR CONTROL CENTER NO. 2	J-BOX JP0138	3/4"	1X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 N; 1X #12 AWG XHHW-2 G		
P0138B	J-BOX JP0138	[01 TELE 01], TELECOMMUNICATIONS ENCLOSURE, CONTROL ROOM	3/4"	2X #12 AWG XHHW-2; 2X #12 AWG XHHW-2 N; 2X #12 AWG XHHW-2 G		
P0139	[01 PB 02], PANELBOARD 02, MOTOR CONTROL CENTER NO. 2	J-BOX JP0139	3/4"	1X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 N; 1X #12 AWG XHHW-2 G		HEAT TRACE
P0140	[01 PB 02], PANELBOARD 02, MOTOR CONTROL CENTER NO. 2	J-BOX JP0140	3/4"	1X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 N; 1X #12 AWG XHHW-2 G		HEAT TRACE
P0141	[01 UVCP 01], CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 1	[01 UV 01], UV BANK DISINFECTION SYSTEM NO. 1	3"	AS REQUIRED BY MANUFACTURER		
P0142	[01 UVCP 02], CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 2	[01 UV 02], UV BANK DISINFECTION SYSTEM NO. 2	3"	AS REQUIRED BY MANUFACTURER		
P0143	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	[01 WH 01], WATER HEATER, RESTROOM	1"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G		
P0144	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	[01 HP 01], HEAT PUMP, ELECTRICAL ROOM	3/4"	2X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G		
P0145	[01 HP 01], HEAT PUMP, ELECTRICAL ROOM	[01 FC 01], FAN COIL, ELECTRICAL ROOM	3/4"	2X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G		
P0146	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	[01 HP 02], HEAT PUMP, CONTROL ROOM	3/4"	2X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G		
P0147	[01 HP 02], HEAT PUMP, CONTROL ROOM	[01 FC 02], FAN COIL, CONTROL ROOM	3/4"	2X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G		
P0148	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	[01 EF 01], EXHAUST FAN, PROCESS EQUIPMENT ROOM	3/4"	1X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 N; 1X #12 AWG XHHW-2 G		
P0149	[01 CP 02], CONTROL PANEL, MEMBRANE FILTER CONTROLS	[01 MOV 01], MOTOR OPERATED VALVE, CIP	1"	1X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G; 8X #14 AWG XHHW-2		
P0150	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	[01 HB 01], HOTBOX, RPBA	3/4"	1X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 N; 1X #12 AWG XHHW-2 G		
P0175~	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	STUB OUT EAST AND CAP BELOW GRADE	1-1/2"	PULL WIRE		SPARE CONDUIT.
P0176~	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	STUB OUT EAST AND CAP BELOW GRADE	1-1/2"	PULL WIRE		SPARE CONDUIT.

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WASTEWATER TREATMENT FACILITY UPGRADE

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ISSUE DATE:	SEPTEMBER 2026
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DESIGNER:	CM
G & O JOB NO.:	22848.01
FILE:	E_CSS.DWG

ELECTRICAL

AREA 1 POWER CABLE AND CONDUIT SCHEDULE

DRAWING: **EC-1** OF: **5**

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AREA 1 CONTROL CABLE AND CONDUIT SCHEDULE

NUMBER	SOURCE	DESTINATION	SIZE	CONDUCTORS	E-1	NOTES
C0101	[01 CP 01], CONTROL PANEL, MASTER	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	1"	2X 8-C, 4-TP, #23 AWG, CAT6		INCLUDES SPARE CABLE
C0102	[01 CP 01], CONTROL PANEL, MASTER	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	1"	2X 8-C, 4-TP, #23 AWG, CAT6		INCLUDES SPARE CABLE
C0103	[01 CP 02], CONTROL PANEL, MEMBRANE FILTER CONTROLS	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	1"	2X 8-C, 4-TP, #23 AWG, CAT6		INCLUDES SPARE CABLE
C0104	[01 CP 02], CONTROL PANEL, MEMBRANE FILTER CONTROLS	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	1"	2X 8-C, 4-TP, #23 AWG, CAT6		INCLUDES SPARE CABLE
C0105	[01 CP 01], CONTROL PANEL, MASTER	[01 CP 02], CONTROL PANEL, MEMBRANE FILTER CONTROLS	1"	2X 8-C, 4-TP, #23 AWG, CAT6		INCLUDES SPARE CABLE
C0106	[01 CP 01], CONTROL PANEL, MASTER	[01 ATS 01], AUTOMATIC TRANSFER SWITCH	3/4"	4X #14 AWG XHHW-2		
C0107	[01 CP 01], CONTROL PANEL, MASTER	[01 ATS 02], AUTOMATIC TRANSFER SWITCH	3/4"	4X #14 AWG XHHW-2		
C0108	[01 CP 01], CONTROL PANEL, MASTER	[01 UVCP 01], CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 1	1"	2X 8-C, 4-TP, #23 AWG, CAT6		INCLUDES SPARE CABLE
C0109	[01 CP 01], CONTROL PANEL, MASTER	[01 UVCP 02], CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 2	1"	2X 8-C, 4-TP, #23 AWG, CAT6		INCLUDES SPARE CABLE
C0110	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	[01 MSBCP 01], CONTROL PANEL, MEMBRANE SCOUR BLOWER NO. 1	1"	11X #14 AWG XHHW-2; 1X 3-C, 1-TT, #18 AWG, OS		
C0110A	[01 MSBCP 01], CONTROL PANEL, MEMBRANE SCOUR BLOWER NO. 1	[01 MSBSDS 01], SAFETY DISCONNECT SWITCH, MEMBRANE SCOUR BLOWER NO. 1	1/2"	6X #14 AWG XHHW-2		
C0111	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	[01 MSBCP 02], CONTROL PANEL, MEMBRANE SCOUR BLOWER NO. 2	1"	11X #14 AWG XHHW-2; 1X 3-C, 1-TT, #18 AWG, OS		
C0111A	[01 MSBCP 02], CONTROL PANEL, MEMBRANE SCOUR BLOWER NO. 2	[01 MSBSDS 02], SAFETY DISCONNECT SWITCH, MEMBRANE SCOUR BLOWER NO. 2	1/2"	6X #14 AWG XHHW-2		
C0112	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	[01 MSBCP 03], CONTROL PANEL, MEMBRANE SCOUR BLOWER NO. 3	1"	11X #14 AWG XHHW-2; 1X 3-C, 1-TT, #18 AWG, OS		
C0112A	[01 MSBCP 03], CONTROL PANEL, MEMBRANE SCOUR BLOWER NO. 3	[01 MSBSDS 03], SAFETY DISCONNECT SWITCH, MEMBRANE SCOUR BLOWER NO. 3	1/2"	6X #14 AWG XHHW-2		
C0113	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	[01 WBCP 01], CONTROL PANEL, WAS BLOWER	1"	11X #14 AWG XHHW-2; 1X 3-C, 1-TT, #18 AWG, OS		
C0113A	[01 WBCP 01], CONTROL PANEL, WAS BLOWER	[01 WBSDS 01], SAFETY DISCONNECT SWITCH, WAS BLOWER	1/2"	6X #14 AWG XHHW-2		
C0114	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	[01 ABCP 01], CONTROL PANEL, AERATION BLOWER	1"	11X #14 AWG XHHW-2; 1X 3-C, 1-TT, #18 AWG, OS		
C0114A	[01 ABCP 01], CONTROL PANEL, AERATION BLOWER	[01 ABSDS 01], SAFETY DISCONNECT SWITCH, AERATION BLOWER	1/2"	6X #14 AWG XHHW-2		
C0115	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	[01 PMPCP 01], CONTROL PANEL, PERMEATE PUMP NO. 1	1"	9X #14 AWG XHHW-2; 1X 3-C, 1-TT, #18 AWG, OS		INCLUDES 2 SPARES
C0115A	[01 PMPCP 01], CONTROL PANEL, PERMEATE PUMP NO. 1	[01 PMPSDS 01], SAFETY DISCONNECT SWITCH, PERMEATE PUMP NO. 1	1/2"	4X #14 AWG XHHW-2		
C0116	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	[01 PMPCP 02], CONTROL PANEL, PERMEATE PUMP NO. 2	1"	9X #14 AWG XHHW-2; 1X 3-C, 1-TT, #18 AWG, OS		
C0116A	[01 PMPCP 02], CONTROL PANEL, PERMEATE PUMP NO. 2	[01 PMPSDS 02], SAFETY DISCONNECT SWITCH, PERMEATE PUMP NO. 2	1/2"	4X #14 AWG XHHW-2		
C0117	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	[01 PMPCP 03], CONTROL PANEL, PERMEATE PUMP NO. 3	1"	9X #14 AWG XHHW-2; 1X 3-C, 1-TT, #18 AWG, OS		
C0117A	[01 PMPCP 03], CONTROL PANEL, PERMEATE PUMP NO. 3	[01 PMPSDS 03], SAFETY DISCONNECT SWITCH, PERMEATE PUMP NO. 3	1/2"	4X #14 AWG XHHW-2		
C0118	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	[01 NPPCP 01], CONTROL PANEL, NONPOT WATER PUMP NO. 1	1"	9X #14 AWG XHHW-2; 1X 3-C, 1-TT, #18 AWG, OS		INCLUDES 2 SPARES
C0118A	[01 NPPCP 01], CONTROL PANEL, NONPOT WATER PUMP NO. 1	[01 NPPSDS 01], SAFETY DISCONNECT SWITCH, NONPOT WATER PUMP NO. 1	1/2"	4X #14 AWG XHHW-2		
C0119	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	[01 NPPCP 02], CONTROL PANEL, NONPOT WATER PUMP NO. 2	1"	9X #14 AWG XHHW-2; 1X 3-C, 1-TT, #18 AWG, OS		INCLUDES 2 SPARES
C0119A	[01 NPPCP 02], CONTROL PANEL, NONPOT WATER PUMP NO. 2	[01 NPPSDS 02], SAFETY DISCONNECT SWITCH, NONPOT WATER PUMP NO. 2	1/2"	4X #16 AWG XHHW-2		
C0120	[01 TELE 01], TELECOMMUNICATIONS ENCLOSURE, CONTROL ROOM	[01 HH 01], HAND HOLE, TELECOM	4"	PULL WIRE		
C0121	[01 TELE 01], TELECOMMUNICATIONS ENCLOSURE, CONTROL ROOM	[01 HH 01], HAND HOLE, TELECOM	4"	PULL WIRE		
C0122	[01 CP 01], CONTROL PANEL, MASTER	J-BOX JC0122	3/4"	AS REQUIRED BY INTEGRATOR		
C0122A	[01 CP 02], CONTROL PANEL, MEMBRANE FILTER CONTROLS	J-BOX JC0122	3/4"	AS REQUIRED BY INTEGRATOR		
C0122B	J-BOX JC0122	[01 TELE 01], TELECOMMUNICATIONS ENCLOSURE, CONTROL ROOM	1"	AS REQUIRED BY INTEGRATOR		
C0123	[01 TELE 01], TELECOMMUNICATIONS ENCLOSURE, CONTROL ROOM	[01 VDJ 01], VOICE/DATA JACK	1"	2X 8-C, 4-TP, #23 AWG, CAT6		
C0124	[01 TELE 01], TELECOMMUNICATIONS ENCLOSURE, CONTROL ROOM	[01 VDJ 02], VOICE/DATA JACK	1-1/4"	4X 8-C, 4-TP, #23 AWG, CAT6		
C0125	[01 TELE 01], TELECOMMUNICATIONS ENCLOSURE, CONTROL ROOM	[01 VDJ 03], VOICE/DATA JACK	1"	2X 8-C, 4-TP, #23 AWG, CAT6		
C0126	[01 CP 01], CONTROL PANEL, MASTER	[01 SD 01], SMOKE DETECTOR	1"	10X #14 AWG XHHW-2		
C0127	[01 SD 01], SMOKE DETECTOR	[01 SD 02], SMOKE DETECTOR, PROCESS EQUIPMENT ROOM	3/4"	8X #14 AWG XHHW-2		

AREA 1 CONTROL CABLE AND CONDUIT SCHEDULE

NUMBER	SOURCE	DESTINATION	SIZE	CONDUCTORS	E-1	NOTES
C0128	[01 SD 02], SMOKE DETECTOR, PROCESS EQUIPMENT ROOM	[01 SD 03], SMOKE DETECTOR, PROCESS EQUIPMENT ROOM	3/4"	6X #14 AWG XHHW-2		
C0129	[01 SD 03], SMOKE DETECTOR, PROCESS EQUIPMENT ROOM	[01 SD 04], SMOKE DETECTOR, CONTROL ROOM	3/4"	4X #14 AWG XHHW-2		
C0130~	[01 UVCP 01], CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 1	[01 UVCP 02], CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 2	3/4"	PULL WIRE		SPARE CONDUIT.
C0131	[01 UVCP 01], CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 1	[01 UV 01], UV BANK DISINFECTION SYSTEM NO. 1	1"	AS REQUIRED BY MANUFACTURER		
C0132	[01 UVCP 02], CONTROL PANEL, UV BANK DISINFECTION SYSTEM NO. 2	[01 UV 02], UV BANK DISINFECTION SYSTEM NO. 2	1"	AS REQUIRED BY MANUFACTURER		
C0133	[01 CP 01], CONTROL PANEL, MASTER	[01 ES 01], EFFLUENT SAMPLER	3/4"	4X #14 AWG XHHW-2		INCLUDES SPARES
C0134	[01 FC 01], FAN COIL, ELECTRICAL ROOM	[01 T 01], THERMOSTAT, ELECTRICAL ROOM	1/2"	MANUFACTURER'S RECOMMENDED CABLE		
C0135	[01 FC 01], FAN COIL, ELECTRICAL ROOM	[01 T 02], THERMOSTAT, CONTROL ROOM	1/2"	MANUFACTURER'S RECOMMENDED CABLE		
C0136	[01 EF 01], EXHAUST FAN, PROCESS EQUIPMENT ROOM	[01 T 03], THERMOSTAT, PROCESS EQUIPMENT ROOM EXHAUST FAN	1/2"	MANUFACTURER'S RECOMMENDED CABLE		
C0137	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	[01 ESTOP 01], EMERGENCY STOP, WASTE SLUDGE PUMP	1/2"	2X #14 AWG XHHW-2		WASTE SLUDGE PUMP EMERGENCY STOP

AREA 1 INSTRUMENTATION CABLE AND CONDUIT SCHEDULE

NUMBER	SOURCE	DESTINATION	SIZE	CONDUCTORS	E-1	NOTES
S0101	[01 CP 01], CONTROL PANEL, MASTER	J-BOX JS0101	1"	2X #14 AWG XHHW-2; 1X 2-C, 1-TP, #18 AWG, OS	* 3	
S0101A	J-BOX JS0101	[01 RLS 01], RADAR LEVEL SENSOR, NON-POT WATER TANK	3/4"	1X 2-C, 1-TP, #18 AWG, OS	* 3	4-20 MA
S0101B	J-BOX JS0101	[01 LS 01], FLOAT SWITCH, NON-POT WATER TANK	1/2"	2X #14 AWG XHHW-2	* 3	
S0102	[01 CP 01], CONTROL PANEL, MASTER	[01 UVT 01], UV TRANSMITTANCE METER	3/4"	2X 2-C, 1-TP, #18 AWG, OS	* 3	24 VDC POWER PLUS SIGNAL
S0103	[01 CP 02], CONTROL PANEL, MEMBRANE FILTER CONTROLS	[01 UFM 01], ULTRASONIC FLOW METER, CIP SYSTEM	3/4"	3X 2-C, 1-TP, #18 AWG, OS	* 3	
S0104	[01 CP 02], CONTROL PANEL, MEMBRANE FILTER CONTROLS	[01 MFM 04], CIPP FLOW METER	3/4"	3X 2-C, 1-TP, #18 AWG, OS	* 3	
S0105	[01 CP 02], CONTROL PANEL, MEMBRANE FILTER CONTROLS	[01 AFM 01], AIR FLOW METER NO. 1, MEMBRANE BASIN NO. 1	3/4"	2X 2-C, 1-TP, #18 AWG, OS	* 3	24 VDC POWER AND 4-20MA SIGNAL
S0106	[01 CP 02], CONTROL PANEL, MEMBRANE FILTER CONTROLS	[01 AFM 02], AIR FLOW METER NO. 2, MEMBRANE BASIN NO. 2	3/4"	2X 2-C, 1-TP, #18 AWG, OS	* 3	24 VDC POWER AND 4-20MA SIGNAL
S0107	[01 CP 02], CONTROL PANEL, MEMBRANE FILTER CONTROLS	J-BOX JS0107	1"	4X #14 AWG XHHW-2; 4X 2-C, 1-TP, #18 AWG, OS; 1X #14 AWG XHHW-2 G	* 3	
S0107A	J-BOX JS0107	[01 MFM 01], PERMEATE FLOW METER NO. 1	3/4"	2X #14 AWG XHHW-2; 2X 2-C, 1-TP, #18 AWG, OS; 1X #14 AWG XHHW-2 G	* 3	24VDC POWER, SIGNAL, TOTALIZE PULSE
S0107B	J-BOX JS0107	[01 MFM 02], PERMEATE FLOW METER NO. 2	3/4"	2X #14 AWG XHHW-2; 2X 2-C, 1-TP, #18 AWG, OS; 1X #14 AWG XHHW-2 G	* 3	24VDC POWER, SIGNAL, TOTALIZE PULSE
S0108	[01 CP 02], CONTROL PANEL, MEMBRANE FILTER CONTROLS	[01 PTR 01], PRESSURE TRANSMITTER, MEMBRANE BASIN NO. 1	3/4"	1X 2-C, 1-TP, #18 AWG, OS	* 3	
S0109	[01 CP 02], CONTROL PANEL, MEMBRANE FILTER CONTROLS	[01 PTR 02], PRESSURE TRANSMITTER, MEMBRANE BASIN NO. 2	3/4"	1X 2-C, 1-TP, #18 AWG, OS	* 3	
S0110	[01 CP 02], CONTROL PANEL, MEMBRANE FILTER CONTROLS	[01 TM 01], TURBIDITY METER	3/4"	2X #14 AWG XHHW-2; 1X 2-C, 1-TP, #18 AWG, OS; 1X #14 AWG XHHW-2 G	* 3	
S0111	[01 CP 01], CONTROL PANEL, MASTER	J-BOX JS0111	3/4"	2X #14 AWG XHHW-2; 3X 2-C, 1-TP, #18 AWG, OS	* 3	NON-POT PRESSURE AND FLOW
S0111A	J-BOX JS0111	[01 PTR 03], PRESSURE TRANSMITTER, NPW	1/2"	1X 2-C, 1-TP, #18 AWG, OS	* 3	
S0111B	J-BOX JS0111	[01 MFM 03], MAGNETIC FLOW METER, NON-POT WATER	3/4"	2X #14 AWG XHHW-2; 2X 2-C, 1-TP, #18 AWG, OS	* 3	24VDC POWER, FLOW, TOTALIZING PULSE
S0175~	[01 CP 01], CONTROL PANEL, MASTER	STUB OUT EAST AND CAP BELOW GRADE	1"	PULL WIRE	* 3	SPARE CONDUIT.
S0176~	[01 CP 02], CONTROL PANEL, MEMBRANE FILTER CONTROLS	STUB OUT EAST AND CAP BELOW GRADE	1"	PULL WIRE	* 3	SPARE CONDUIT.

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ELECTRICAL

AREA 1 CONTROL AND INSTRUMENTATION CABLE AND CONDUIT SCHEDULE

DRAWING: **EC-2** OF: **5**

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AREA 2 POWER CABLE AND CONDUIT SCHEDULE

NUMBER	SOURCE	DESTINATION	SIZE	CONDUCTORS	E-1	NOTES
P0201	[01 ATS 01], AUTOMATIC TRANSFER SWITCH	[01 PBX 01], PULL BOX, POWER	2"	3X #2/0 AWG XHHW-2; 1X #6 AWG XHHW-2 N; 1X #6 AWG XHHW-2 G; 4X #12 AWG XHHW-2		INCLUDES CALL TO RUN
P0201A	[01 PBX 01], PULL BOX, POWER	[02 GEN 01], GENERATOR	2"	3X #2/0 AWG XHHW-2; 1X #6 AWG XHHW-2 N; 1X #6 AWG XHHW-2 G; 4X #12 AWG XHHW-2		INCLUDES CALL TO RUN
P0202	[01 ATS 02], AUTOMATIC TRANSFER SWITCH	[01 PBX 01], PULL BOX, POWER	2"	3X #2/0 AWG XHHW-2; 1X #6 AWG XHHW-2 N; 1X #6 AWG XHHW-2 G; 4X #12 AWG XHHW-2		INCLUDES CALL TO RUN
P0202A	[01 PBX 01], PULL BOX, POWER	[02 GEN 01], GENERATOR	2"	3X #2/0 AWG XHHW-2; 1X #6 AWG XHHW-2 N; 1X #6 AWG XHHW-2 G; 4X #12 AWG XHHW-2		INCLUDES CALL TO RUN
P0203	[01 PB 01], PANELBOARD 01, MOTOR CONTROL CENTER NO. 1	[01 PBX 01], PULL BOX, POWER	1"	3X #8 AWG XHHW-2; 1X #8 AWG XHHW-2 N; 1X #8 AWG XHHW-2 G		UPSIZED FOR VOLTAGE DROP
P0203A	[01 PBX 01], PULL BOX, POWER	[02 GADP 01], GENERATOR AUXILIARY DEVICE PANEL	1"	3X #8 AWG XHHW-2; 1X #8 AWG XHHW-2 N; 1X #8 AWG XHHW-2 G		UPSIZED FOR VOLTAGE DROP
P0204	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	[02 IPSDS 01], SAFETY DISCONNECT SWITCH, INFLUENT PUMP NO. 1	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G	* 1	
P0205	[02 IPSDS 01], SAFETY DISCONNECT SWITCH, INFLUENT PUMP NO. 1	[02 SOV 01], SEAL-OFF VAULT, INFLUENT PUMPS	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G; 2X #14 AWG XHHW-2	* 1	
P0206	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	[02 IPSDS 02], SAFETY DISCONNECT SWITCH, INFLUENT PUMP NO. 2	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G	* 1	
P0207	[02 IPSDS 02], SAFETY DISCONNECT SWITCH, INFLUENT PUMP NO. 2	[02 SOV 01], SEAL-OFF VAULT, INFLUENT PUMPS	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G; 2X #14 AWG XHHW-2	* 1	
P0208	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	J-BOX JP0208 IN [01 PBX 01], PULL BOX, POWER	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G	* 1	
P0208A	J-BOX JP0208 IN [01 PBX 01], PULL BOX, POWER	[02 RPSDS 01], SAFETY DISCONNECT SWITCH, RAS PUMP NO. 1	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G	* 1	
P0209	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	J-BOX JP0208 IN [01 PBX 01], PULL BOX, POWER	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G	* 1	
P0209A	J-BOX JP0208 IN [01 PBX 01], PULL BOX, POWER	[02 RPSDS 02], SAFETY DISCONNECT SWITCH, RAS PUMP NO. 2	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G	* 1	
P0210	[02 RPSDS 01], SAFETY DISCONNECT SWITCH, RAS PUMP NO. 1	[02 SOV 03], SEAL-OFF VAULT, RAS PUMPS	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G; 2X #14 AWG XHHW-2	* 1	
P0211	[02 RPSDS 02], SAFETY DISCONNECT SWITCH, RAS PUMP NO. 2	[02 SOV 03], SEAL-OFF VAULT, RAS PUMPS	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G; 2X #14 AWG XHHW-2	* 1	
P0212	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	J-BOX JP0208 IN [01 PBX 01], PULL BOX, POWER	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G	* 1	
P0212A	J-BOX JP0208 IN [01 PBX 01], PULL BOX, POWER	[02 RDSSDS 01], ROTARY DRUM SCREEN SAFETY DISCONNECT SWITCH	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G	* 1	
P0213	[02 RDSSDS 01], ROTARY DRUM SCREEN SAFETY DISCONNECT SWITCH	[02 RDS 01], ROTARY DRUM SCREEN NO. 1	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G; 4X #14 AWG XHHW-2	* 1	
P0214	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	J-BOX JP0208 IN [01 PBX 01], PULL BOX, POWER	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G	* 1	
P0214A	J-BOX JP0208 IN [01 PBX 01], PULL BOX, POWER	[02 RDSSDS 02], ROTARY DRUM SCREEN SAFETY DISCONNECT SWITCH	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G	* 1	
P0215	[02 RDSSDS 02], ROTARY DRUM SCREEN SAFETY DISCONNECT SWITCH	[02 RDS 02], ROTARY DRUM SCREEN NO. 2	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G; 4X #14 AWG XHHW-2	* 1	
P0216	[02 MOVSDS 01], MOTOR OPERATED VALVE SAFETY DISCONNECT SWITCH	[02 MOV 01], MOTOR OPERATED VALVE, DRUM SCREEN NO. 1	3/4"	1X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G; 8X #14 AWG XHHW-2		INCLUDES 2 SPARES
P0217	[02 MOVSDS 02], MOTOR OPERATED VALVE SAFETY DISCONNECT SWITCH	[02 MOV 02], MOTOR OPERATED VALVE, DRUM SCREEN NO. 2	3/4"	1X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G; 8X #14 AWG XHHW-2		INCLUDES 2 SPARES
P0218	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	J-BOX JP0208 IN [01 PBX 01], PULL BOX, POWER	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G	* 1	
P0218A	J-BOX JP0208 IN [01 PBX 01], PULL BOX, POWER	[02 WCSDS 01], WASTE COMPACTOR SAFETY DISCONNECT SWITCH	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G	* 1	
P0219	[02 WCSDS 01], WASTE COMPACTOR SAFETY DISCONNECT SWITCH	[02 WC 01], SCREENING WASHER COMPACTOR	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G; 2X #14 AWG XHHW-2	* 1	
P0220	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	[01 PBX 01], PULL BOX, POWER	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G; 1X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G		#10S FOR CONVENIENCE RECEPTACLE AT [02 CST 05]
P0220A	[01 PBX 01], PULL BOX, POWER	[02 OCUSDS 01], ODOR CONTROL UNIT, SAFETY DISCONNECT SWITCH	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G; 1X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G		#10S FOR CONVENIENCE RECEPTACLE AT [02 CST 05]
P0221	[02 OCUSDS 01], ODOR CONTROL UNIT, SAFETY DISCONNECT SWITCH	[02 OCU 01], ODOR CONTROL UNIT	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G; 2X #14 AWG XHHW-2		
P0222	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	[01 PBX 01], PULL BOX, POWER	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G		
P0222A	[01 PBX 01], PULL BOX, POWER	[02 MXRSDS 01], ANOXIC BASIN MIXER, SAFETY DISCONNECT SWITCH	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G		
P0223	[02 MXRSDS 01], ANOXIC BASIN MIXER, SAFETY DISCONNECT SWITCH	[02 MXR 01], ANOXIC BASIN MIXER	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G; 2X #14 AWG XHHW-2		
P0224	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	[01 PBX 01], PULL BOX, POWER	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G		
P0224A	[01 PBX 01], PULL BOX, POWER	[02 WPSDS 01], WASTE SLUDGE PUMP SAFETY DISCONNECT SWITCH	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G		
P0225	[02 WPSDS 01], WASTE SLUDGE PUMP SAFETY DISCONNECT SWITCH	[02 WP 01], WASTE SLUDGE PUMP	3/4"	3X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 G; 2X #14 AWG XHHW-2		
P0226	[01 CP 01], CONTROL PANEL, MASTER	[01 PBX 01], PULL BOX, POWER	1-1/4"	2X #10 AWG XHHW-2; 2X #10 AWG XHHW-2 N; 2X #10 AWG XHHW-2 G; 16X #14 AWG XHHW-2		
P0226A	[01 PBX 01], PULL BOX, POWER	[02 MOVSDS 01], MOTOR OPERATED VALVE SAFETY DISCONNECT SWITCH	3/4"	1X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G; 8X #14 AWG XHHW-2		
P0226B	[01 PBX 01], PULL BOX, POWER	[02 MOVSDS 02], MOTOR OPERATED VALVE SAFETY DISCONNECT SWITCH	3/4"	1X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G; 8X #14 AWG XHHW-2		

AREA 2 POWER CABLE AND CONDUIT SCHEDULE

NUMBER	SOURCE	DESTINATION	SIZE	CONDUCTORS	E-1	NOTES
P0227	[01 PB 02], PANELBOARD 02, MOTOR CONTROL CENTER NO. 2	[01 CP 01], CONTROL PANEL, MASTER	3/4"	2X #12 AWG XHHW-2; 2X #12 AWG XHHW-2 N; 2X #12 AWG XHHW-2 G		02 DREC 01 AND 02 DREC 02
P0227A	[01 CP 01], CONTROL PANEL, MASTER	J-BOX JP0227	3/4"	2X #12 AWG XHHW-2; 2X #12 AWG XHHW-2 N; 2X #12 AWG XHHW-2 G; 4X #14 AWG XHHW-2		INCLUDES THERMAL SWITCHES FROM SUMPS
P0227B	J-BOX JP0227	[02 DREC 01], DEDICATED RECEPTACLE, SUMP PUMP NO. 1	3/4"	1X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 N; 1X #12 AWG XHHW-2 G; 2X #14 AWG XHHW-2		
P0227C	J-BOX JP0227	[02 DREC 02], DEDICATED RECEPTACLE, SUMP PUMP NO. 2	3/4"	1X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 N; 1X #12 AWG XHHW-2 G; 2X #14 AWG XHHW-2		
P0228	[01 CP 02], CONTROL PANEL, MEMBRANE FILTER CONTROLS	[02 MOVSDS 03], MOTOR OPERATED VALVE SAFETY DISCONNECT SWITCH	3/4"	1X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G; 8X #14 AWG XHHW-2		
P0229	[01 CP 02], CONTROL PANEL, MEMBRANE FILTER CONTROLS	[02 MOVSDS 04], MOTOR OPERATED VALVE SAFETY DISCONNECT SWITCH	3/4"	1X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G; 8X #14 AWG XHHW-2		
P0230	[01 PB 02], PANELBOARD 02, MOTOR CONTROL CENTER NO. 2	[01 PBX 01], PULL BOX, POWER	3/4"	1X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G		WAS TANK HEAT TRACE
P0230A	[01 PBX 01], PULL BOX, POWER	J-BOX JP0230A	3/4"	1X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G		
P0231	[01 PB 02], PANELBOARD 02, MOTOR CONTROL CENTER NO. 2	[01 PBX 01], PULL BOX, POWER	3/4"	1X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G		DRUM SCREEN HEAT TRACE
P0231A	[01 PBX 01], PULL BOX, POWER	J-BOX JP0231A	3/4"	1X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G		
P0232	[02 MOVSDS 04], MOTOR OPERATED VALVE SAFETY DISCONNECT SWITCH	[02 MOV 04], MOTOR OPERATED VALVE, MEMBRANE BASIN NO. 2	3/4"	1X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G; 8X #14 AWG XHHW-2		
P0233	[02 MOVSDS 03], MOTOR OPERATED VALVE SAFETY DISCONNECT SWITCH	[02 MOV 03], MOTOR OPERATED VALVE, MEMBRANE BASIN NO. 1	3/4"	1X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G; 8X #14 AWG XHHW-2		
P0234	[01 PB 02], PANELBOARD 02, MOTOR CONTROL CENTER NO. 2	[02 DREC 03], DEDICATED RECEPTACLE, INFLUENT SAMPLER	3/4"	1X #12 AWG XHHW-2; 1X #12 AWG XHHW-2 N; 1X #12 AWG XHHW-2 G		
P0235	[01 PB 01], PANELBOARD 01, MOTOR CONTROL CENTER NO. 1	CONVENIENCE RECEPTACLE AT INFLUENT PUMPS CONTROL STATION [02 CST 01]	3/4"	1X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G		
P0275~	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	SPARE CONDUIT STUB UP AT INFLUENT PUMPS CONTROL STATION [02 CST 01]	1"	PULL WIRE		SPARE CONDUIT.
P0276~	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	SPARE CONDUIT STUB UP AT INFLUENT PUMPS CONTROL STATION [02 CST 01]	1"	PULL WIRE		SPARE CONDUIT.
P0277~	[01 CP 01], CONTROL PANEL, MASTER	SPARE CONDUIT STUB UP AT INFLUENT PUMPS CONTROL STATION [02 CST 01]	1"	PULL WIRE		SPARE CONDUIT.
P0278~	[01 CP 01], CONTROL PANEL, MASTER	SPARE CONDUIT STUB UP AT INFLUENT PUMPS CONTROL STATION [02 CST 01]	1"	PULL WIRE		SPARE CONDUIT.
P0279~	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	[01 PBX 01], PULL BOX, POWER	2"	PULL WIRE		SPARE CONDUIT.
P0280~	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	[01 PBX 01], PULL BOX, POWER	2"	PULL WIRE		SPARE CONDUIT.

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WASTEWATER TREATMENT FACILITY UPGRADE

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No.	DATE	REVISION

ISSUED FOR:

BID SET

ISSUE DATE:	SEPTEMBER 2026
APPROVED BY:	JRN
CHECKED BY:	PAM
DRAWN BY:	DCK
DESIGNER:	CM
G & O JOB NO.:	22848.01
FILE:	E_CSS.DWG

ELECTRICAL

AREA 2 POWER CABLE AND CONDUIT SCHEDULE

DRAWING: **EC-3** OF: **5**

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AREA 2 CONTROL CABLE AND CONDUIT SCHEDULE

NUMBER	SOURCE	DESTINATION	SIZE	CONDUCTORS	E-1	NOTES
C0201	[01 CP 01], CONTROL PANEL, MASTER	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	3/4"	14X #14 AWG XHHW-2		
C0201A	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	[02 GCP 01], GENERATOR CONTROL PANEL	3/4"	14X #14 AWG XHHW-2		
C0202	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	[02 IPCP 01], CONTROL PANEL, INFLUENT PUMPS	1"	25X #14 AWG XHHW-2		INCLUDE 4 SPARES
C0202A	[02 IPCP 01], CONTROL PANEL, INFLUENT PUMPS	[02 IPSDS 01], SAFETY DISCONNECT SWITCH, INFLUENT PUMP NO. 1	1"	4X #14 AWG XHHW-2		
C0203	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	[02 IPCP 01], CONTROL PANEL, INFLUENT PUMPS	1"	21X #14 AWG XHHW-2		INCLUDES 4 SPARES
C0203A	[02 IPCP 01], CONTROL PANEL, INFLUENT PUMPS	[02 IPSDS 02], SAFETY DISCONNECT SWITCH, INFLUENT PUMP NO. 2	1"	4X #14 AWG XHHW-2		
C0204	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	1"	25X #14 AWG XHHW-2		INCLUDES 4 SPARES
C0204A	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	[02 RPCP 01], RAS PUMP CONTROL PANEL	1"	25X #14 AWG XHHW-2		
C0204B	[02 RPCP 01], RAS PUMP CONTROL PANEL	[02 RPSDS 01], SAFETY DISCONNECT SWITCH, RAS PUMP NO. 1	3/4"	4X #14 AWG XHHW-2		
C0205	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	1"	21X #14 AWG XHHW-2		
C0205A	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	[02 RPCP 01], RAS PUMP CONTROL PANEL	1"	21X #14 AWG XHHW-2		
C0205B	[02 RPCP 01], RAS PUMP CONTROL PANEL	[02 RPSDS 02], SAFETY DISCONNECT SWITCH, RAS PUMP NO. 2	3/4"	4X #14 AWG XHHW-2		
C0206	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	3/4"	12X #14 AWG XHHW-2		
C0206A	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	[02 RDSCP 01], ROTARY DRUM SCREEN CONTROL PANEL	3/4"	12X #14 AWG XHHW-2		INCLUDES 2 SPARES
C0206B	[02 RDSCP 01], ROTARY DRUM SCREEN CONTROL PANEL	[02 RDSSDS 01], ROTARY DRUM SCREEN SAFETY DISCONNECT SWITCH	3/4"	4X #14 AWG XHHW-2		
C0207	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	3/4"	12X #14 AWG XHHW-2		
C0207A	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	[02 RDSCP 02], ROTARY DRUM SCREEN CONTROL PANEL	3/4"	12X #14 AWG XHHW-2		INCLUDES 2 SPARES
C0207B	[02 RDSCP 02], ROTARY DRUM SCREEN CONTROL PANEL	[02 RDSSDS 02], ROTARY DRUM SCREEN SAFETY DISCONNECT SWITCH	3/4"	4X #14 AWG XHHW-2		
C0208	[02 RDSCP 01], ROTARY DRUM SCREEN CONTROL PANEL	[SV 211], SOLENOID VALVE, SCREEN NO. 1	3/4"	2X #14 AWG XHHW-2; 1X #14 AWG XHHW-2 G		
C0209	[02 RDSCP 02], ROTARY DRUM SCREEN CONTROL PANEL	[SV 212], SOLENOID VALVE, SCREEN NO. 2	3/4"	2X #14 AWG XHHW-2; 1X #14 AWG XHHW-2 G		
C0210	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	3/4"	12X #14 AWG XHHW-2		
C0210A	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	[02 WCCP 01], WASTE COMPACTOR CONTROL PANEL	3/4"	12X #14 AWG XHHW-2		INCLUDES 2 SPARES
C0210B	[02 WCCP 01], WASTE COMPACTOR CONTROL PANEL	[02 WCSDS 01], WASTE COMPACTOR SAFETY DISCONNECT SWITCH	3/4"	4X #14 AWG XHHW-2		
C0211	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	3/4"	9X #14 AWG XHHW-2		
C0211A	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	[02 OCUCP 01], ODOR CONTROL UNIT, CONTROL PANEL	3/4"	9X #14 AWG XHHW-2		INCLUDES 2 SPARES
C0211B	[02 OCUCP 01], ODOR CONTROL UNIT, CONTROL PANEL	[02 OCUSDS 01], ODOR CONTROL UNIT, SAFETY DISCONNECT SWITCH	3/4"	4X #14 AWG XHHW-2		
C0212	[02 WCCP 01], WASTE COMPACTOR CONTROL PANEL	[SV 213A], SOLENOID VALVE EXIT WASH, WASTE COMPACTOR	3/4"	2X #14 AWG XHHW-2		
C0213	[02 WCCP 01], WASTE COMPACTOR CONTROL PANEL	[SV 213B], SOLENOID VALVE CHUTE WASH, WASTE COMPACTOR	3/4"	2X #14 AWG XHHW-2		
C0214	[02 WCCP 01], WASTE COMPACTOR CONTROL PANEL	[SV 213C], SOLENOID VALVE CHUTE WASH, WASTE COMPACTOR	3/4"	2X #14 AWG XHHW-2		
C0215	[01 MCC 02], MOTOR CONTROL CENTER NO. 2	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	3/4"	8X #14 AWG XHHW-2		
C0215A	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	[02 MXRCP 01], ANOXIC BASIN MIXER, CONTROL PANEL	3/4"	8X #14 AWG XHHW-2		INCLUDES 2 SPARES
C0215B	[02 MXRCP 01], ANOXIC BASIN MIXER, CONTROL PANEL	[02 MXRSDS 01], ANOXIC BASIN MIXER, SAFETY DISCONNECT SWITCH	3/4"	4X #14 AWG XHHW-2		
C0216	[01 MCC 01], MOTOR CONTROL CENTER NO. 1	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	3/4"	9X #14 AWG XHHW-2		
C0216A	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	[02 WPCP 01], WASTE SLUDGE PUMP CONTROL PANEL	3/4"	9X #14 AWG XHHW-2		INCLUDES 2 SPARES
C0216B	[02 WPCP 01], WASTE SLUDGE PUMP CONTROL PANEL	[02 WPSDS 01], WASTE SLUDGE PUMP SAFETY DISCONNECT SWITCH	3/4"	4X #14 AWG XHHW-2		
C0217	[01 CP 01], CONTROL PANEL, MASTER	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	1"	15X #14 AWG XHHW-2		
C0217A	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	[02 WCCP 01], WASTE COMPACTOR CONTROL PANEL	1"	15X #14 AWG XHHW-2		
C0218	[01 CP 01], CONTROL PANEL, MASTER	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	3/4"	5X #14 AWG XHHW-2		
C0218A	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	[02 RDSCP 01], ROTARY DRUM SCREEN CONTROL PANEL	3/4"	5X #14 AWG XHHW-2		
C0219	[01 CP 01], CONTROL PANEL, MASTER	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	3/4"	5X #14 AWG XHHW-2		
C0219A	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	[02 RDSCP 02], ROTARY DRUM SCREEN CONTROL PANEL	3/4"	5X #14 AWG XHHW-2		

AREA 2 CONTROL CABLE AND CONDUIT SCHEDULE

NUMBER	SOURCE	DESTINATION	SIZE	CONDUCTORS	E-1	NOTES
C0220	[01 CP 01], CONTROL PANEL, MASTER	[02 IS 01], INFLUENT SAMPLER	3/4"	4X #14 AWG XHHW-2		INCLUDES 2 SPARES
C0221	[01 CP 02], CONTROL PANEL, MEMBRANE FILTER CONTROLS	J-BOX JC0221	3/4"	6X #14 AWG XHHW-2		INCLUDES 2 SPARES, SPLICE TO MFR CABLES IN XP J-BOX
C0221A	J-BOX JC0221	[02 LS 03], FLOAT SWITCH, MEMBRANE BASIN NO. 1	3/4"	MANUFACTURER'S CABLE		
C0221B	J-BOX JC0221	[02 LS 04], FLOAT SWITCH, MEMBRANE BASIN NO. 1	3/4"	MANUFACTURER'S CABLE		
C0222	[01 CP 02], CONTROL PANEL, MEMBRANE FILTER CONTROLS	J-BOX JC0222	3/4"	6X #14 AWG XHHW-2		INCLUDES 2 SPARES, SPLICE TO MFR CABLES IN XP J-BOX
C0222A	J-BOX JC0222	[02 LS 05], FLOAT SWITCH, MEMBRANE BASIN NO. 2	3/4"	MANUFACTURER'S CABLE		
C0222B	J-BOX JC0222	[02 LS 06], FLOAT SWITCH, MEMBRANE BASIN NO. 2	3/4"	MANUFACTURER'S CABLE		

AREA 2 INSTRUMENTATION CABLE AND CONDUIT SCHEDULE

NUMBER	SOURCE	DESTINATION	SIZE	CONDUCTORS	E-1	NOTES
S0201	[01 CP 01], CONTROL PANEL, MASTER	J-BOX JS0201	1-1/2"	9X 2-C, 1-TP, #18 AWG, OS	* 3	VALVE VAULT FLOW METERS
S0201A	J-BOX JS0201	[02 FIT 01], FLOW INDICATOR TRANSMITTER, INFLUENT PUMP STATION	3/4"	3X 2-C, 1-TP, #18 AWG, OS	* 3	
S0201B	J-BOX JS0201	[02 FIT 02], FLOW INDICATOR TRANSMITTER, RAS FLOW METER	3/4"	3X 2-C, 1-TP, #18 AWG, OS	* 3	
S0201C	J-BOX JS0201	[02 FIT 03], FLOW INDICATOR TRANSMITTER, WAS STORAGE TANK	3/4"	3X 2-C, 1-TP, #18 AWG, OS	* 3	
S0202A	[02 FIT 01], FLOW INDICATOR TRANSMITTER, INFLUENT PUMP STATION	[02 MFM 01], MAGNETIC FLOW METER, INFLUENT PUMP STATION	3/4"	MANUFACTURER'S RECOMMENDED CABLE	* 3	COIL POWER
S0202B	[02 FIT 01], FLOW INDICATOR TRANSMITTER, INFLUENT PUMP STATION	[02 MFM 01], MAGNETIC FLOW METER, INFLUENT PUMP STATION	3/4"	MANUFACTURER'S RECOMMENDED CABLE	* 3	COIL SIGNAL
S0203A	[02 FIT 02], FLOW INDICATOR TRANSMITTER, RAS FLOW METER	[02 MFM 02], MAGNETIC FLOW METER, RAS PUMP STATION	3/4"	MANUFACTURER'S RECOMMENDED CABLE	* 3	COIL POWER
S0203B	[02 FIT 02], FLOW INDICATOR TRANSMITTER, RAS FLOW METER	[02 MFM 02], MAGNETIC FLOW METER, RAS PUMP STATION	3/4"	MANUFACTURER'S RECOMMENDED CABLE	* 3	COIL SIGNAL
S0204A	[02 FIT 03], FLOW INDICATOR TRANSMITTER, WAS STORAGE TANK	[02 MFM 03], MAGNETIC FLOW METER, WAS STORAGE TANK	3/4"	MANUFACTURER'S RECOMMENDED CABLE	* 3	COIL POWER
S0204B	[02 FIT 03], FLOW INDICATOR TRANSMITTER, WAS STORAGE TANK	[02 MFM 03], MAGNETIC FLOW METER, WAS STORAGE TANK	3/4"	MANUFACTURER'S RECOMMENDED CABLE	* 3	COIL SIGNAL
S0205	[01 CP 01], CONTROL PANEL, MASTER	J-BOX JS0205 IN [01 PBX 02], PULL BOX, CONTROL, SIGNAL	3/4"	4X #14 AWG XHHW; 1X 2-C, 1-TP, #18 AWG, OS; 1X #14 AWG XHHW-2 G	* 2	
S0205A	J-BOX JS0205 IN [01 PBX 02], PULL BOX, CONTROL, SIGNAL	J-BOX JS0205A	3/4"	4X #14 AWG XHHW-2; 1X 2-C, 1-TP, #18 AWG, OS; 1X #14 AWG XHHW-2 G	* 2	INCLUDES 2 SPARES
S0205B	J-BOX JS0205A	[02 LS 09], FLOAT SWITCH, WAS STORAGE TANK	1/2"	4X #14 AWG XHHW-2; 1X #14 AWG XHHW-2 G	* 2	
S0205C	J-BOX JS0205A	[02 RLS 01], RADAR LEVEL SENSOR, WAS TANK	1/2"	1X 2-C, 1-TP, #18 AWG, OS	* 3	
S0206	[01 CP 01], CONTROL PANEL, MASTER	[02 IPCP 01], CONTROL PANEL, INFLUENT PUMPS	1"	2X #14 AWG XHHW-2; 3X 2-C, 1-TP, #18 AWG, OS	* 3	
S0207	[02 IPCP 01], CONTROL PANEL, INFLUENT PUMPS	[02 SOV 02], SEAL-OFF VAULT, INFLUENT CONTROLS	3/4"	4X #14 AWG XHHW-2	* 3	
S0208	[02 IPCP 01], CONTROL PANEL, INFLUENT PUMPS	[02 SOV 02], SEAL-OFF VAULT, INFLUENT CONTROLS	3/4"	1X 2-C, 1-TP, #18 AWG, OS	* 3	
S0209	[01 CP 01], CONTROL PANEL, MASTER	J-BOX JS0209 IN [01 PBX 02]	1"	2X #14 AWG XHHW-2; 3X 2-C, 1-TP, #18 AWG, OS	* 3	
S0209A	J-BOX JS0209 IN [01 PBX 02], PULL BOX, CONTROL, SIGNAL	[02 RPCP 01], RAS PUMP CONTROL PANEL	1"	2X #14 AWG XHHW-2; 3X 2-C, 1-TP, #18 AWG, OS	* 3	
S0210	[02 RPCP 01], RAS PUMP CONTROL PANEL	[02 SOV 04], SEAL-OFF VAULT, RAS CONTROLS	3/4"	4X #14 AWG XHHW-2	* 3	
S0211	[02 RPCP 01], RAS PUMP CONTROL PANEL	[02 SOV 04], SEAL-OFF VAULT, RAS CONTROLS	3/4"	1X 2-C, 1-TP, #18 AWG, OS	* 3	
S0212	[01 CP 01], CONTROL PANEL, MASTER	J-BOX JS0209 IN [01 PBX 02]	3/4"	2X 2-C, 1-TP, #18 AWG, OS	* 3	
S0212A	J-BOX JS0209 IN [01 PBX 02]	J-BOX JS0212 ON [02 CST 02]	3/4"	2X 2-C, 1-TP, #18 AWG, OS	* 3	
S0212B	J-BOX JS0212 ON [02 CST 02]	[02 PTR 01], OVERFLOW PRESSURE TRANSMITTER, SCREEN NO. 1	1/2"	1X 2-C, 1-TP, #18 AWG, OS	* 3	
S0212C	J-BOX JS0212 ON [02 CST 02]	[02 PTR 02], OVERFLOW PRESSURE TRANSMITTER, SCREEN NO. 2	1/2"	1X 2-C, 1-TP, #18 AWG, OS	* 3	
S0213	[01 CP 01], CONTROL PANEL, MASTER	J-BOX JS0209 IN [01 PBX 02]	3/4"	2X 2-C, 1-TP, #18 AWG, OS	* 3	24VDC POWER AND DO SIGNAL
S0213A	J-BOX JS0209 IN [01 PBX 02]	[02 DOT 01], DISSOLVED OXYGEN TRANSMITTER, AERATION BASIN	3/4"	2X 2-C, 1-TP, #18 AWG, OS	* 3	
S0214	[01 CP 01], CONTROL PANEL, MASTER	[02 CLS 01], CONDUCTIVITY LEVEL SENSOR	3/4"	2X #14 AWG XHHW-2	* 2	
S0275~	[01 CP 01], CONTROL PANEL, MASTER	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	2"	PULL WIRE	* 3	SPARE CONDUIT.
S0276~	[01 CP 02], CONTROL PANEL, MEMBRANE FILTER CONTROLS	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	2"	PULL WIRE	* 3	SPARE CONDUIT.

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TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

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DESIGNER:	CM
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FILE:	E_CSS.DWG

ELECTRICAL

AREA 2 CONTROL AND INSTRUMENTATION CABLE AND CONDUIT SCHEDULE

DRAWING: **EC-4** OF: **5**

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AREA 3 POWER CABLE AND CONDUIT SCHEDULE

NUMBER	SOURCE	DESTINATION	SIZE	CONDUCTORS	E-1	NOTES
P0301	[01 PB 02], PANELBOARD 02, MOTOR CONTROL CENTER NO. 2	[01 PBX 01], PULL BOX, POWER	1-1/2"	4X #8 AWG XHHW-2; 1X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G		UPSIZED FOR VOLTAGE DROP, #8 PUMPS, #10 CONTROL
P0301A	[01 PBX 01], PULL BOX, POWER	J-BOX JP0301A	1-1/2"	4X #8 AWG XHHW-2; 1X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G		UPSIZED FOR VOLTAGE DROP, #8 PUMPS, #10 CONTROL
P0301B	J-BOX JP0301A	[03 SDS 01], SAFETY DISCONNECT SWITCH, POWER	1"	4X #8 AWG XHHW-2; 1X #10 AWG XHHW-2 G		
P0301C	J-BOX JP0301A	[03 SDS 02], SAFETY DISCONNECT SWITCH, CONTROL	3/4"	1X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G		
P0302	[03 SDS 01], SAFETY DISCONNECT SWITCH, POWER	[03 CP 01], CONTROL PANEL	1"	4X #8 AWG XHHW-2; 1X #10 AWG XHHW-2 G		
P0303	[03 SDS 02], SAFETY DISCONNECT SWITCH, CONTROL	[03 CP 01], CONTROL PANEL	3/4"	1X #10 AWG XHHW-2; 1X #10 AWG XHHW-2 N; 1X #10 AWG XHHW-2 G		
P0304	[03 CP 01], CONTROL PANEL	EXISTING J-BOX - PUMPS	1"	4X #8 AWG XHHW-2; 1X #10 AWG XHHW-2 G		

AREA 3 CONTROL CABLE AND CONDUIT SCHEDULE

NUMBER	SOURCE	DESTINATION	SIZE	CONDUCTORS	E-1	NOTES
C0301	[01 CP 01], CONTROL PANEL, MASTER	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	3/4"	4X #14 AWG XHHW-2; 1X #12 AWG XHHW-2 G		INCLUDES 2 SPARES
C0301A	[01 PBX 02], PULL BOX, CONTROL, SIGNAL	[03 CP 01], CONTROL PANEL	3/4"	4X #14 AWG XHHW-2; 1X #12 AWG XHHW-2 G		INCLUDES 2 SPARES
C0302	[03 CP 01], CONTROL PANEL	EXISTING J-BOX FLOATS	3/4"	10X #14 AWG XHHW-2; 1X #12 AWG XHHW-2 G	* 2	INCLUDES SPARES

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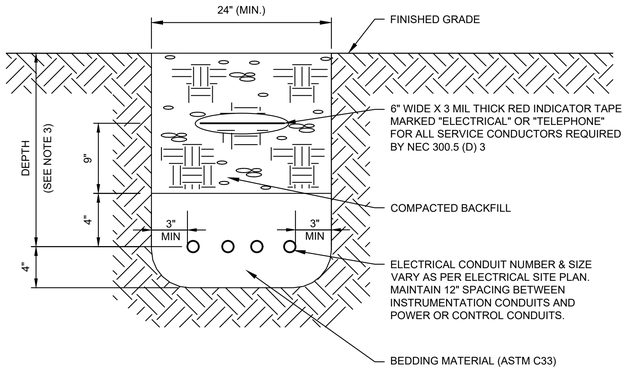
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AREA 3 CABLE AND CONDUIT SCHEDULE

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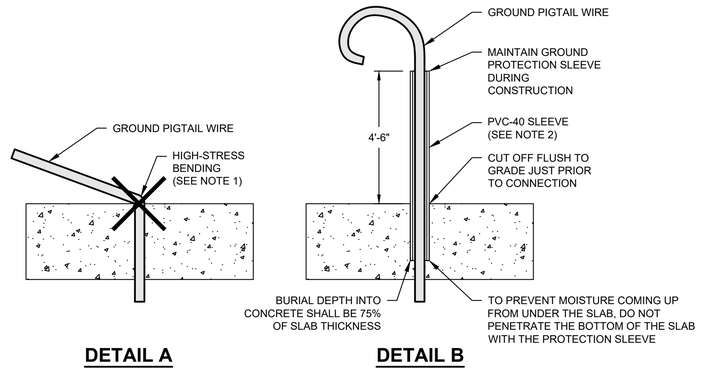
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NOTE:

1. SPACING BETWEEN CONDUITS AND OTHER UTILITIES SHALL BE IN COMPLIANCE WITH THE UTILITIES OR 24 INCHES MINIMUM, WHICHEVER IS THE GREATER.
2. SEE CIVIL SHEETS FOR SURFACING RESTORATION.
3. DEPTH IS 36 INCHES (MIN) FOR PUD UTILITY CONDUITS; 24 INCHES FOR ALL OTHER ELECTRICAL CONDUITS.

1 / TYP — **ELECTRICAL TRENCHING DETAIL**
NOT TO SCALE

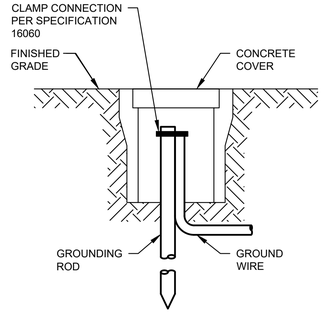


DETAIL A **DETAIL B**

NOTES:

1. BARE COPPER GROUND WIRES SHALL NOT PENETRATE DIRECTLY OUT OF CONCRETE FLOORS. CONSTRUCTION ACTIVITIES CAN CAUSE TIGHT WIRE BENDING AND POSSIBLE GROUND WIRE DEGRADATION. DETAIL "A" IS NOT ACCEPTABLE.
2. PROTECT THE GROUND PIGTAIL DURING CONSTRUCTION WITH A PVC-40 SLEEVE INSTALLED AS DESCRIBED IN DETAIL "B".
3. JUST PRIOR TO SETTING EQUIPMENT OVER, OR MAKING THE FINAL CONNECTION OF THE GROUND WIRE, CUT OFF THE SLEEVE FLUSH TO THE FLOOR TAKING CARE NOT TO CUT INTO THE GROUND WIRE.

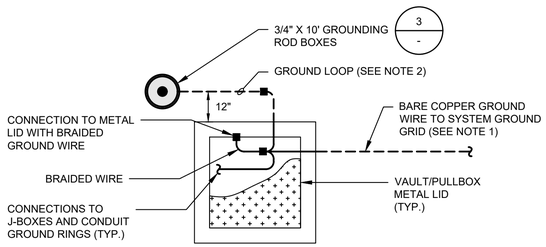
2 / TYP — **GROUND PIGTAIL CONSTRUCTION PROTECTION SLEEVE DETAIL**
NOT TO SCALE



NOTES:

1. GROUND ROD BOX SHALL BE FOGTITE GROUND ROD BOX WITH ROAD RATING EQUAL TO THE DEVICE OR STRUCTURE IT SUPPORTS (H20 MINIMUM).

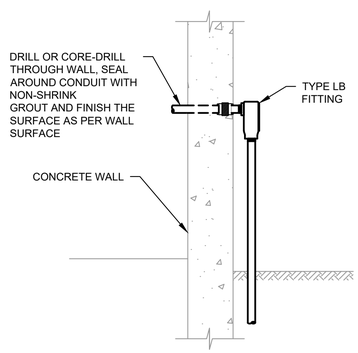
3 / TYP — **GROUND ROD BOX DETAIL**
NOT TO SCALE



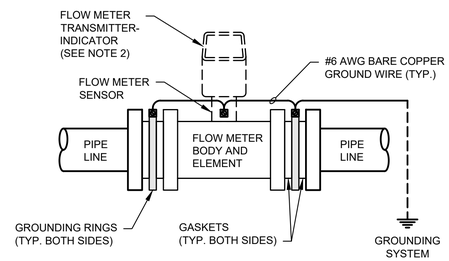
NOTES:

1. PROVIDE AND SIZE GROUND CONDUCTOR FROM SYSTEM GROUND DISTRIBUTION PER - / E-10.
2. PROVIDE BARE COPPER GROUND LOOP AROUND THE VAULT/PULLBOX 12-INCHES OUT AND 12-INCHES DEEP.
3. GROUND ALL METAL COMPONENTS AS PER "VAULT AND PULLBOX GROUNDING" IN SPECIFICATION 16060.
4. ALL GROUND CONDUCTORS SHALL BE STRANDED WITH THE EXCEPTION OF THE FLEXIBLE BRAIDED GROUND CONDUCTOR TO THE METAL HATCH LIDS.

4 / TYP — **VAULT AND PULL BOX EXTERIOR GROUNDING DETAIL**
NOT TO SCALE



5 / TYP — **INDOOR TO UNDERGROUND TRANSITION**
NOT TO SCALE



NOTES:

1. CONTRACTOR SHALL PROVIDE AND INSTALL INSULATING GASKETS AND MANUFACTURER'S GROUND RINGS TO EACH SIDE OF THE FLOW METER BODY. THE GROUND RINGS AND FLOW METER SENSOR SHALL BE TIED TO THE SYSTEM GROUND WITH A #6 AWG GROUNDING WIRE. CONNECT AS SHOWN OR PER MANUFACTURER'S REQUIREMENTS.
2. REFERENCE PLANS AND SPECIFICATIONS FOR WHICH METERS HAVE INTEGRAL OR REMOTE MOUNT DISPLAYS.

6 / TYP — **FLOW METER GROUNDING DETAIL**
NOT TO SCALE

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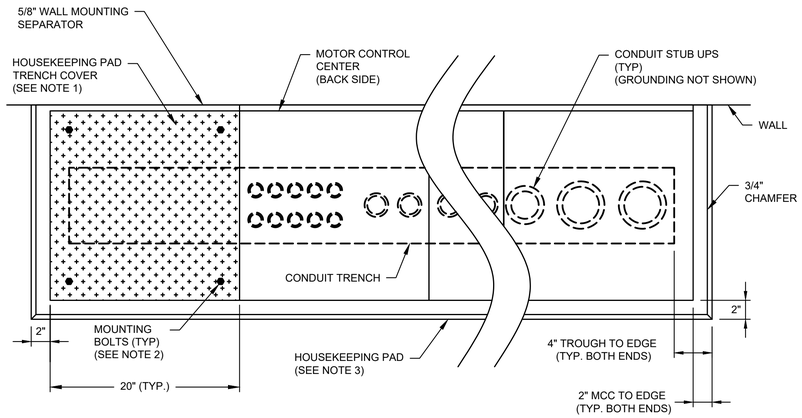
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ELECTRICAL DETAILS

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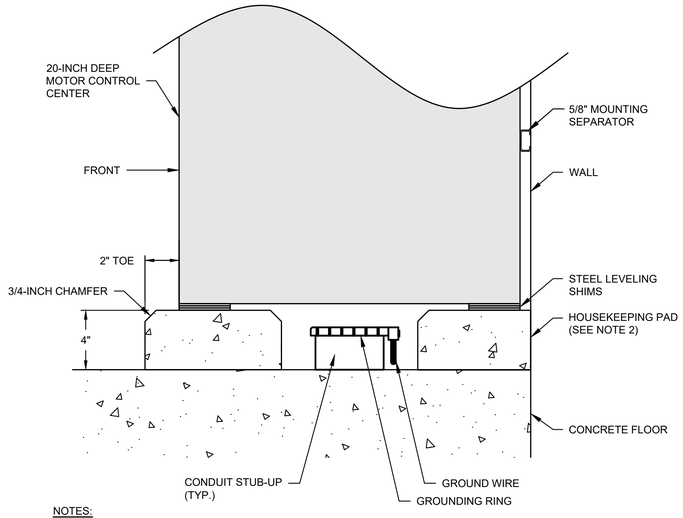
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NOTES:

1. ON HOUSEKEEPING PADS THAT ARE EXTENDED FOR FUTURE MCC COLUMNS, THE EXPOSED PORTION OF THE HOUSEKEEPING PAD SHALL BE COVERED WITH A 1/4" ALUMINUM OR GALVANIZED STEEL DIAMOND PLATE. IF STEEL IS USED, THEN THE CONTRACTOR SHALL PAINT THE STEEL PLATE TO MATCH THE COLOR OF THE MCC. GROUND THE DIAMOND PLATE COVER AS PER NEC.
2. BOLT THE PLATE TO THE HOUSEKEEPING PAD WITH 4 X 3/8-INCH STAINLESS STEEL LAG BOLTS MINIMUM.
3. FOR CONCRETE DIMENSIONS AND REINFORCEMENT DETAILS, REFERENCE STRUCTURAL.

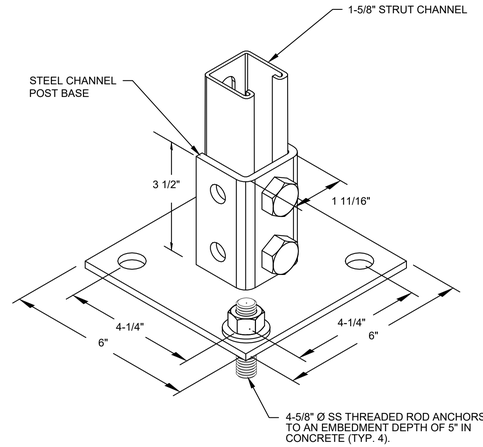
1 TYP **OVERHEAD VIEW MCC HOUSEKEEPING PAD PLAN**
NOT TO SCALE



NOTES:

1. FOR MCCS DEEPER THAN 20 INCHES, EXTEND THE WIDTH OF THE FRONT CURB SUCH THAT THE 2-INCH TOE IS MAINTAINED. ALIGN THE MOUNTING CHANNEL TO THE EDGE OF THE MCC AS SHOWN.
2. FOR CONCRETE DIMENSIONS AND REINFORCEMENT DETAILS, REFERENCE STRUCTURAL.

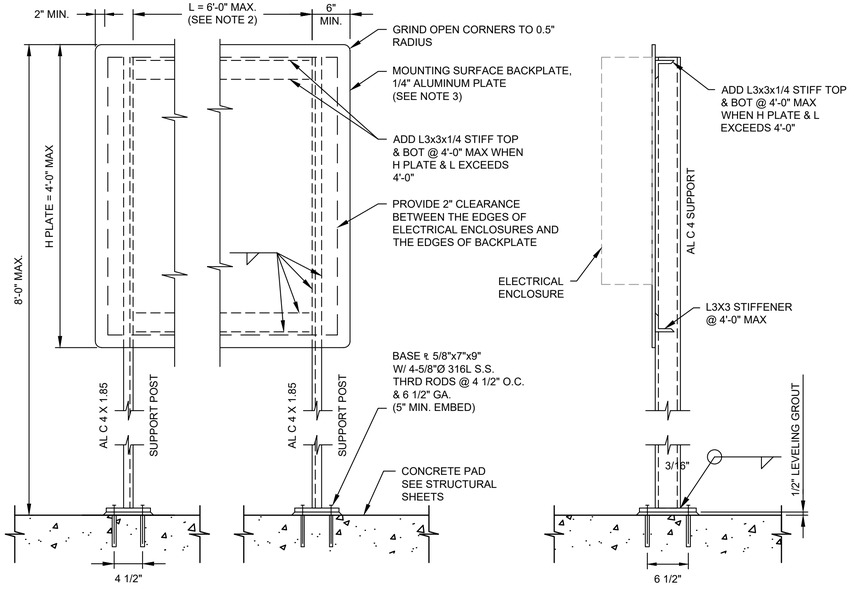
2 TYP **MCC HOUSEKEEPING PAD DETAIL**
NOT TO SCALE



NOTES:

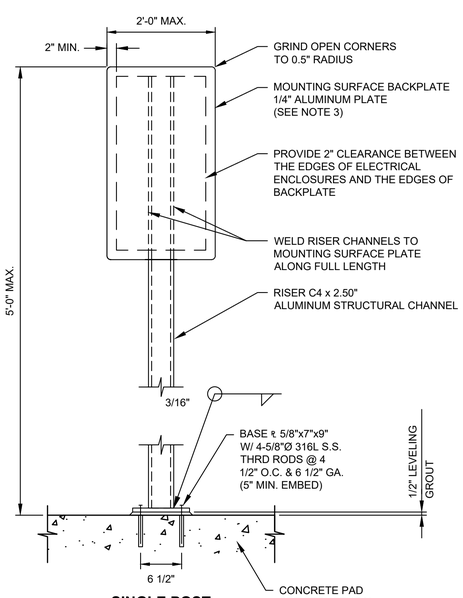
1. BASE, STRUT, THREADED ROD, WASHERS, AND NUTS SHALL BE 516L STAINLESS STEEL.

3 TYP **SINGLE DEVICE AND JUNCTION BOX POST BASE DETAIL**
NOT TO SCALE



MULTIPLE POST FRONT VIEW

MULTIPLE POST SIDE VIEW

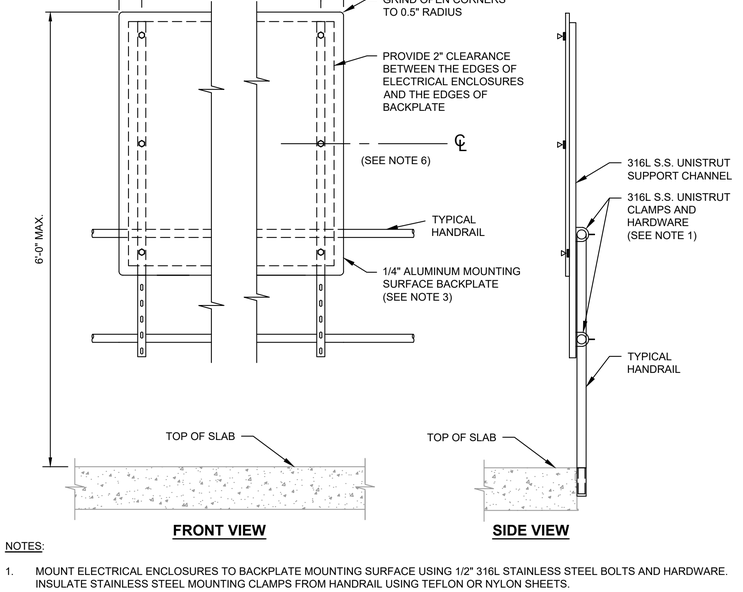


SINGLE POST FRONT VIEW

NOTES:

1. MOUNT ELECTRICAL ENCLOSURES TO BACKPLATE MOUNTING SURFACE USING 1/2" 316L STAINLESS STEEL BOLTS.
2. WIDTH AND HEIGHT OF THE BACKPLATE AND THE SPACING BETWEEN SUPPORT POSTS ARE DEPENDENT ON THE SPECIFIC APPLICATION. SPACING OF SUPPORT POSTS SHALL NOT EXCEED 6'-0". FOR WIDER BACKPLATES, PROVIDE ADDITIONAL EQUALLY SPACED SUPPORT POSTS.
3. ALUMINUM PLATES SHALL COMPLY WITH ASTM B209, ALLOY 5052. ALUMINUM BARS AND RODS SHALL COMPLY WITH ASTM B221, ALLOY 6061-6.
4. BOLTS SHALL COMPLY WITH ASTM F593C OR F593D STAINLESS STEEL. THREADED RODS SHALL COMPLY WITH ASTM A193 GRADE B8M, TYPE 316.

4 TYP **FREE-STANDING BACKPLATE MOUNTING DETAIL**
NOT TO SCALE



FRONT VIEW **SIDE VIEW**

NOTES:

1. MOUNT ELECTRICAL ENCLOSURES TO BACKPLATE MOUNTING SURFACE USING 1/2" 316L STAINLESS STEEL BOLTS AND HARDWARE. INSULATE STAINLESS STEEL MOUNTING CLAMPS FROM HANDRAIL USING TEFLON OR NYLON SHEETS.
2. WIDTH AND HEIGHT OF THE BACKPLATE AND THE SPACING BETWEEN SUPPORT POSTS ARE DEPENDENT ON THE SPECIFIC APPLICATION. MAXIMUM WIDTH SHALL NOT EXCEED 6'-0". DISTANCE BETWEEN SUPPORT CHANNELS SHALL NOT EXCEED 2'-0".
3. ALUMINUM PLATES SHALL COMPLY WITH ASTM B209, ALLOY 5052.
4. THE BACKPLATE STRUCTURES SHALL NOT BE ATTACHED TO REMOVABLE SECTIONS OF RAILING.
5. GROUND BACKPLATE TO HANDRAIL WITH GROUND CLAMP INSTALLED BEHIND THE BACKPLATE.
6. REFERENCE SPECIFIC DETAIL FOR CENTERLINE. IF NOT PROVIDED, THEN SET THE CENTERLINE AT 5'-0" ABOVE GRADE OR SLAB. LOWER AS REQUIRED TO COMPLY WITH 6'-0" MAXIMUM HEIGHT.

5 TYP **HANDRAIL BACKPLATE MOUNTING DETAIL**
NOT TO SCALE

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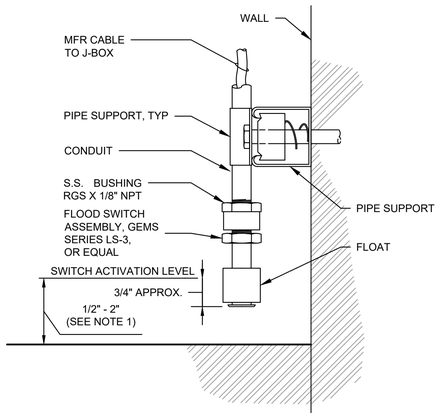
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ELECTRICAL

ELECTRICAL DETAILS

DRAWING: **ED-2** OF: **4**

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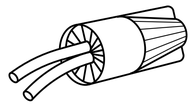


NOTES:

1. SET THE FLOOD TRIP LEVEL WITH THE OWNER.
2. FLOOD SWITCH MANUFACTURE'S CABLE SHALL BE SPLICED TO CONDUCTOR WIRES IN AN ADJACENT CONTROL J-BOX.
3. CIRCUIT IS INTRINSICALLY SAFE, BARRIER IN [01 CP 01]. ANY "OR EQUAL" SHALL BE SUITABLE FOR USE IN CLASS I, DIV 2 ENVIRONMENT.

1 / E2-3 FLOOD SWITCH DETAIL

NOT TO SCALE

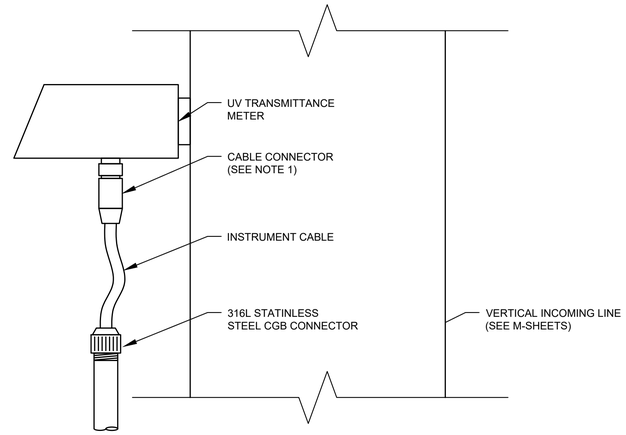


NOTES:

1. PROVIDE WATER-TIGHT CONNECTOR FOR CONTROL AND INSTRUMENTATION CONDUCTOR SPLICING. INCLUDE A STRAIN RELIEF ON CONDUCTOR SPLICE CONNECTORS. REFERENCE SPECIFICATION 16120 FOR SPECIFIC REQUIREMENTS.
2. SUBMERGE THE SPLICE AND TEST FOR WATER-TIGHT INTEGRITY.

2 / TYP INSTRUMENTATION AND CONTROL WATER-TIGHT SPLICE DETAIL

NOT TO SCALE

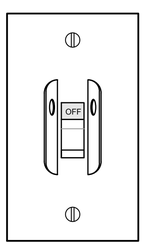


NOTES:

1. THE UV TRANSMITTNACE METER IS A LOOP-POWERED UNIT WITH PIN CONNECTOR. THE CABLE CONNECTOR SHALL BE ASSEMBLED AND TESTED BY THE INTEGRATOR.
2. THE EXPOSED PORTION OF THE INSTRUMENT CABLE SHALL NOT EXCEED 18 INCHES.

3 / TYP [01 UVT 01] CABLE AND CONDUIT DETAIL

NOT TO SCALE



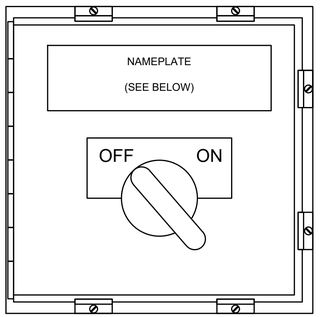
NOTES:

1. ALL HVAC POWER DEVICES SHALL BE CONNECTED THROUGH A SAFETY DISCONNECT SWITCH WITH A COVERPLATE THAT IS LOCKABLE IN THE OPEN POSITION.
2. SAFETY DISCONNECT SWITCHES THAT ARE WALL-MOUNTED SHALL BE RECESSED INTO THE WALL IN STANDARD DEVICE BOXES.
3. SAFETY DISCONNECT SWITCHES TO OUTDOOR EQUIPMENT OR EQUIPMENT MOUNTED ABOVE THE CEILING OR EQUIPMENT MOUNTED WITHIN SUSPENDED CEILINGS SHALL BE SURFACE MOUNTED IN CAST ALUMINUM DEVICE BOXES.
4. ALL HVAC SAFETY DISCONNECT SWITCHES SHALL BE TOGGLE-TYPE, 600 VAC, 3 POLE, INDUSTRIAL GRADE, NON-GROUNDING, SIDE WIRED;

   20A: LEVITON 1222-2E OR EQUIVALENT (2 POLE, 240 VAC)
   30A: LEVITON MS303-DS OR EXACT EQUIVALENT
   40A: LEVITON MS403-DS OR EXACT EQUIVALENT
5. PROVIDE WEATHERPROOF COVER FOR OUTDOOR SWITCHES.

4 / TYP LOCKABLE SAFETY DISCONNECT SWITCH DETAIL

NOT TO SCALE



NAMEPLATES:

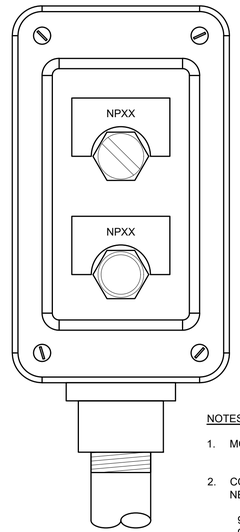
LINE 1	LINE 2	LINE 3
MOTOR OPERATED VALVE	[MATCH TO DEVICE BEING SERVED]	SAFETY DISCONNECT

NOTES:

1. SAFETY DISCONNECT SWITCHES SHALL BE NEMA 4X, LOCKABLE IN THE OPEN POSITION. REFERENCE SPECIFICATION 16940, DISCONNECT SWITCHES FOR POWER CIRCUITS < 30 AMPS.

5 / - MOV SAFETY DISCONNECTS DOOR DETAIL

NOT TO SCALE



NOTES:

1. MOUNT ON STAND OR HANDRAIL PER 4, 5 / ED-2 .
2. CONTROL STATION SHALL BE STAINLESS STEEL, NEMA 4X SQUARE D OR EQUAL:

   9001KYSS1 (ONE PUNCH OUT)
   9001KYSS2 (TWO PUNCH OUTS)
   9001KYSS3 (THREE PUNCH OUTS)
   9001KYSS6 (SIX PUNCH OUTS)
3. OPERATORS PER SPECIFICATION 16940.

6 / - CONTROL STATION PANEL DETAIL

NOT TO SCALE

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9/11/26

TAYLOR BAY
BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

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LONGBRANCH, WA 98351

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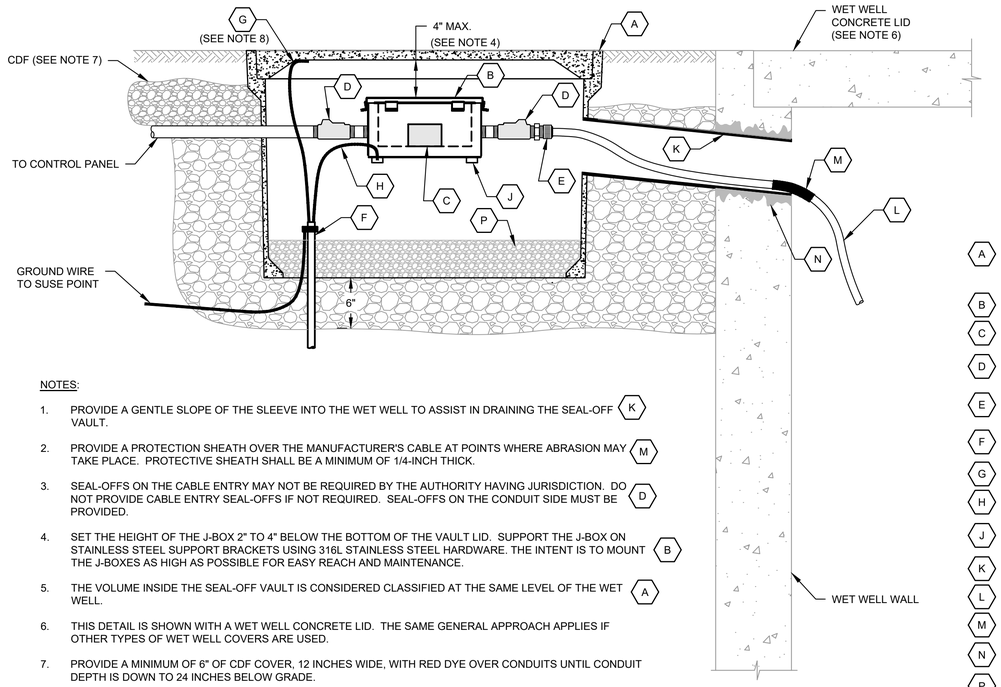
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CHECKED BY:	PAM
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DESIGNER:	CM
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ELECTRICAL DETAILS

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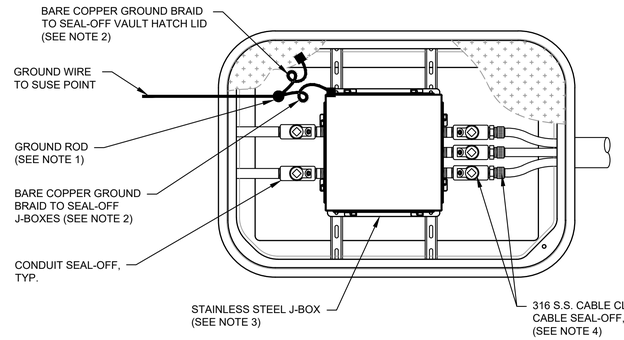


A	=	24"W X 36"L X 24"H PG STYLE POLYMER CONCRETE BOX AND NON-SLIP COVER (QUAZITE PG2436BA24 OR SIMILAR), SUITABLE FOR ANSI 77 TIER 22 WHEEL LOADING SUBJECT TO OCCASIONAL NON-DELIBERATE HEAVY VEHICULAR TRAFFIC.
B	=	JUNCTION BOX PER DETAIL 4 OF THIS SHEET
C	=	TERMINAL BLOCK, 600 V, 200A, DIN-RAIL.
D	=	CONDUIT SEALING FITTING, PVC-COATED RGS (SEE NOTE 3)
E	=	CABLE CLAMP; CROUSE HINDS - TYPE CGK, 316 STAINLESS (OR EQUIV.)
F	=	GROUND ROD, 3/4' X 10' COPPER CLAD STEEL ROD.
G	=	VAULT LID GROUND BRAID (#6 MIN.) (SEE NOTE 8)
H	=	J-BOX GROUND PIGTAIL. (#6 MIN.)
J	=	316L S.S. J-BOX SUPPORT BRACKETS AND HARDWARE (SEE NOTE 4).
K	=	6-INCH PVC-80 SLEEVE (SEE NOTE 1)
L	=	MANUFACTURER'S CABLE
M	=	CABLE PROTECTION SHEATH (SEE NOTE 2)
N	=	NON-SHRINK GROUT
P	=	GRAVEL

NOTES:

1. PROVIDE A GENTLE SLOPE OF THE SLEEVE INTO THE WET WELL TO ASSIST IN DRAINING THE SEAL-OFF VAULT. (K)
2. PROVIDE A PROTECTION SHEATH OVER THE MANUFACTURER'S CABLE AT POINTS WHERE ABRASION MAY TAKE PLACE. PROTECTIVE SHEATH SHALL BE A MINIMUM OF 1/4-INCH THICK. (M)
3. SEAL-OFFS ON THE CABLE ENTRY MAY NOT BE REQUIRED BY THE AUTHORITY HAVING JURISDICTION. DO NOT PROVIDE CABLE ENTRY SEAL-OFFS IF NOT REQUIRED. SEAL-OFFS ON THE CONDUIT SIDE MUST BE PROVIDED. (D)
4. SET THE HEIGHT OF THE J-BOX 2" TO 4" BELOW THE BOTTOM OF THE VAULT LID. SUPPORT THE J-BOX ON STAINLESS STEEL SUPPORT BRACKETS USING 316L STAINLESS STEEL HARDWARE. THE INTENT IS TO MOUNT THE J-BOXES AS HIGH AS POSSIBLE FOR EASY REACH AND MAINTENANCE. (B)
5. THE VOLUME INSIDE THE SEAL-OFF VAULT IS CONSIDERED CLASSIFIED AT THE SAME LEVEL OF THE WET WELL. (A)
6. THIS DETAIL IS SHOWN WITH A WET WELL CONCRETE LID. THE SAME GENERAL APPROACH APPLIES IF OTHER TYPES OF WET WELL COVERS ARE USED.
7. PROVIDE A MINIMUM OF 6" OF CDF COVER, 12 INCHES WIDE, WITH RED DYE OVER CONDUITS UNTIL CONDUIT DEPTH IS DOWN TO 24 INCHES BELOW GRADE.
8. VAULT LID GROUND BRAID IS NOT REQUIRED FOR CONCRETE POLYMER LID. (G)

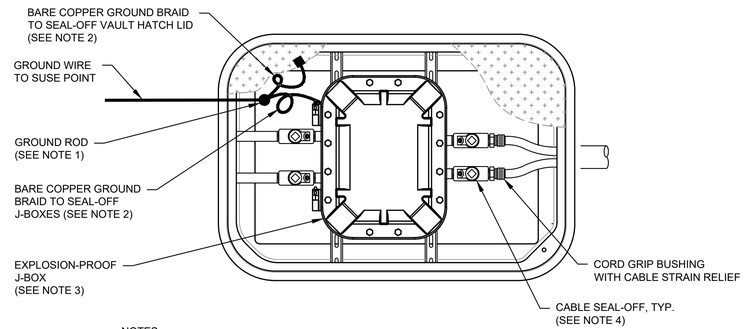
1 TYP **SEAL-OFF VAULT AND J-BOX PENETRATION INTO CLASSIFIED TANK**
NOT TO SCALE



NOTES:

1. GROUND SEAL-OFF VAULTS PER 16060 "MANHOLE AND HANDHOLE GROUNDING" METHODS.
2. GROUND CONDUCTOR AND BRAIDS SHALL BE SIZED PER NEC TABLE 250.122. MINIMUM GROUND CONDUCTOR AND BRAID SIZE SHALL BE #6 AWG. GROUND CONDUCTOR TO LID IS NOT REQUIRED FOR CONCRETE POLYMER LID.
3. J-BOX SHALL BE 12" X 12" X 6" NEMA 4X 316L STAINLESS STEEL. CIRCUITS INSIDE THE J-BOX ARE INTRINSICALLY SAFE.
4. SEAL-OFFS ON THE CABLE ENTRY MAY NOT BE REQUIRED BY THE AUTHORITY HAVING JURISDICTION. DO NOT PROVIDE CABLE ENTRY SEAL-OFFS IF NOT REQUIRED. SEAL-OFFS ON THE CONDUIT SIDE MUST BE PROVIDED.

2 TYP **INSTRUMENTATION AND CONTROL SEAL-OFF VAULT AND J-BOX DETAIL**
NOT TO SCALE



NOTES:

1. GROUND SEAL-OFF VAULTS PER 16060 "MANHOLE AND HANDHOLE GROUNDING" METHODS.
2. GROUND CONDUCTOR AND BRAIDS SHALL BE SIZED PER NEC TABLE 250.122. MINIMUM GROUND CONDUCTOR AND BRAID SIZE SHALL BE #6 AWG. GROUND CONDUCTOR TO LID IS NOT REQUIRED FOR POLYMER CONCRETE LID.
3. J-BOX SHOWN IS KILLARK #EXB-8126-N34 WITH CONTROL CONDUIT PENETRATING THE SIDE.
4. SEAL-OFFS ON THE CABLE ENTRY MAY NOT BE REQUIRED BY THE AUTHORITY HAVING JURISDICTION. DO NOT PROVIDE CABLE ENTRY SEAL-OFFS IF NOT REQUIRED. SEAL-OFFS ON THE CONDUIT SIDE MUST BE PROVIDED.

3 TYP **POWER SEAL-OFF VAULT AND J-BOX DETAIL**
NOT TO SCALE

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TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

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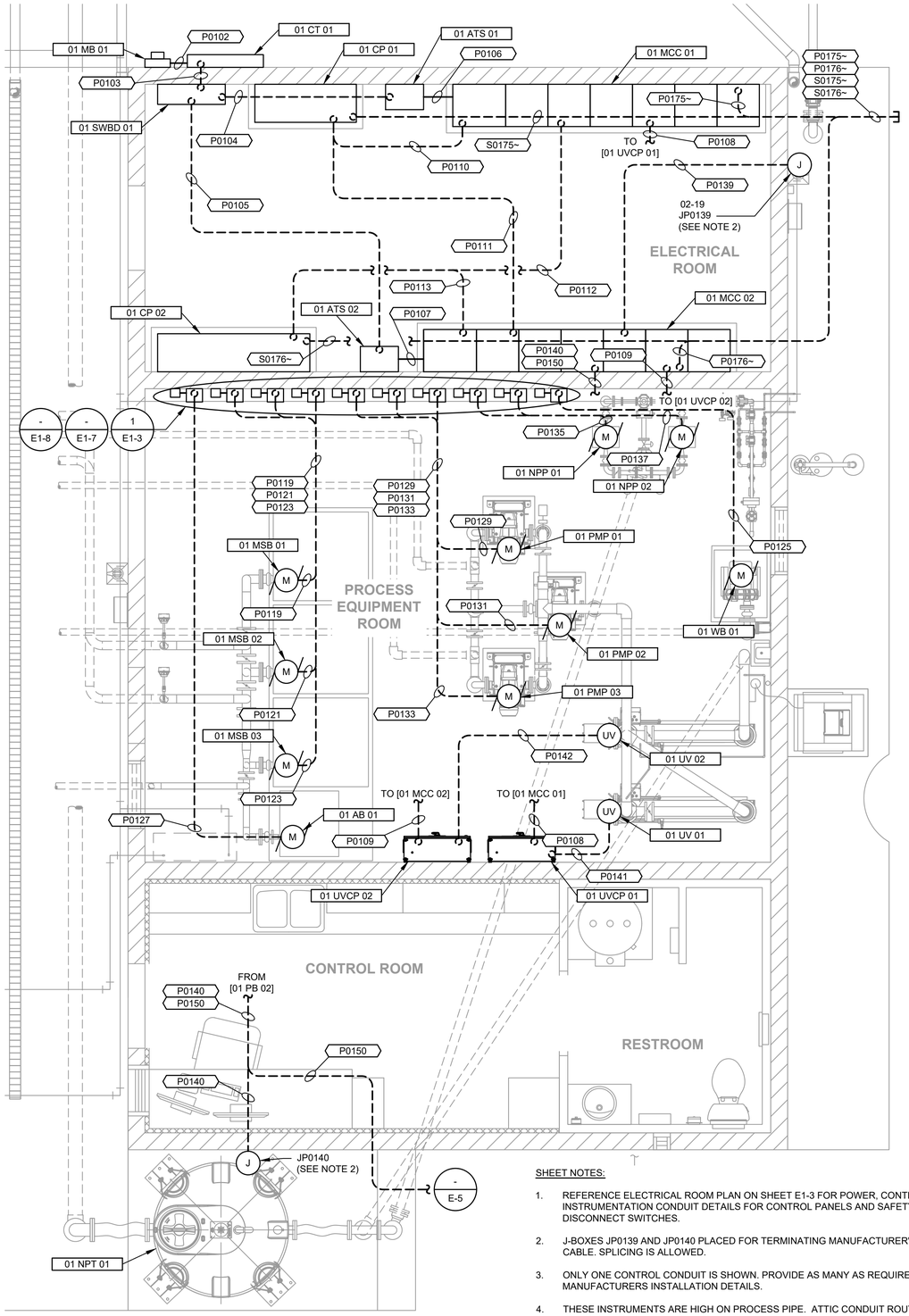
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ELECTRICAL DETAILS

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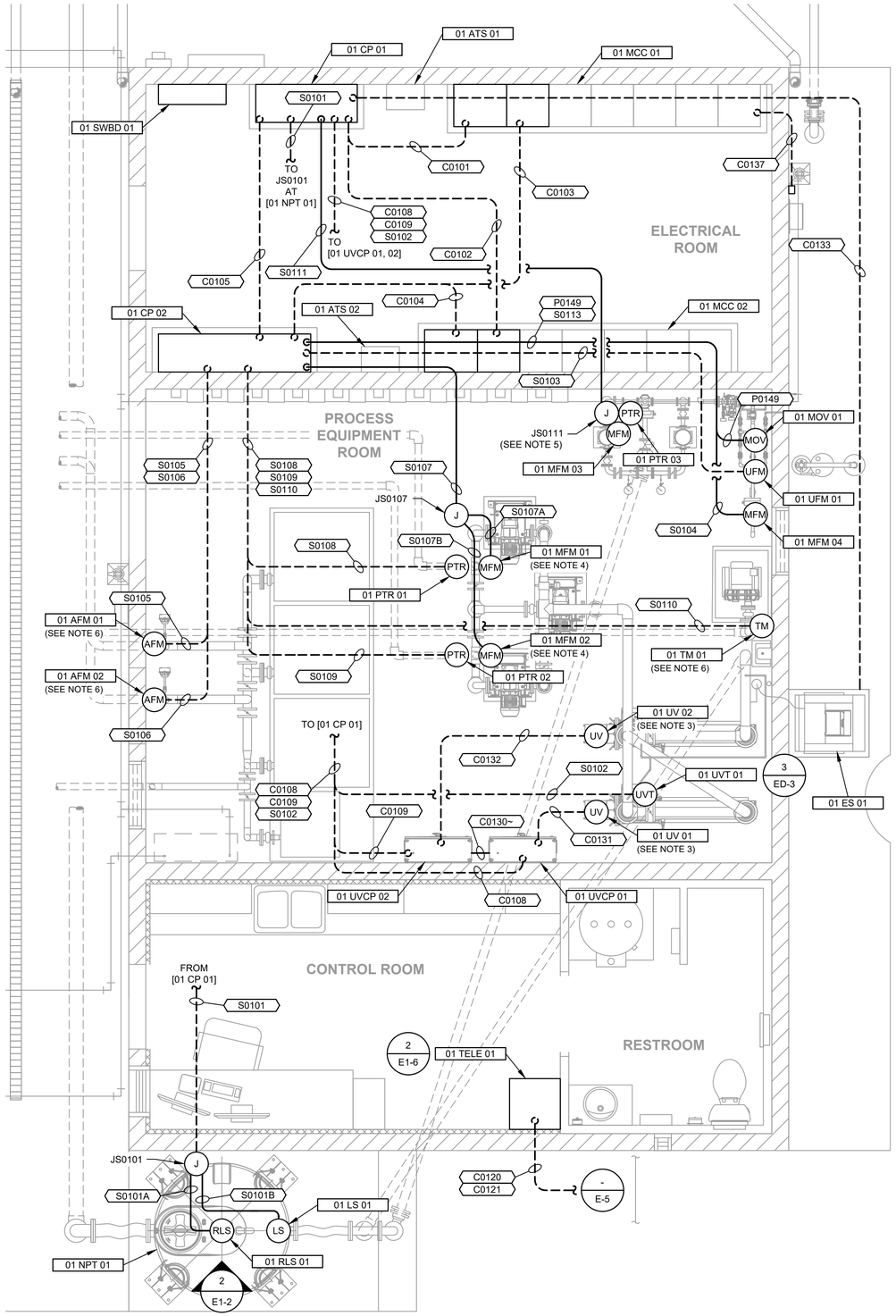


1 / - **OPERATIONS BUILDING POWER PLAN**

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

SHEET NOTES:

1. REFERENCE ELECTRICAL ROOM PLAN ON SHEET E1-3 FOR POWER, CONTROL, AND INSTRUMENTATION CONDUIT DETAILS FOR CONTROL PANELS AND SAFETY DISCONNECT SWITCHES.
2. J-BOXES JP0139 AND JP0140 PLACED FOR TERMINATING MANUFACTURER'S HEAT TRACE CABLE. SPLICING IS ALLOWED.
3. ONLY ONE CONTROL CONDUIT IS SHOWN. PROVIDE AS MANY AS REQUIRED PER MANUFACTURERS INSTALLATION DETAILS.
4. THESE INSTRUMENTS ARE HIGH ON PROCESS PIPE. ATTIC CONDUIT ROUTING IS ANTICIPATED, REFERENCE M-SHEETS.
5. CONDUITS LEAVING J-BOX NOT SHOWN HERE. REFERENCE CABLE AND CONDUIT SCHEDULE.
6. INSTRUMENT DISPLAY SHALL BE WALL MOUNTED AT EYE LEVEL ADJACENT TO THE ELEMENT. CONNECT PIPING PROBE ELEMENT TO THE DISPLAY PER MANUFACTURER'S REQUIREMENTS, THESE CONDUITS ARE NOT GIVEN A NUMBER.



2 / - **OPERATIONS BUILDING CONTROL AND INSTRUMENTATION PLAN**

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

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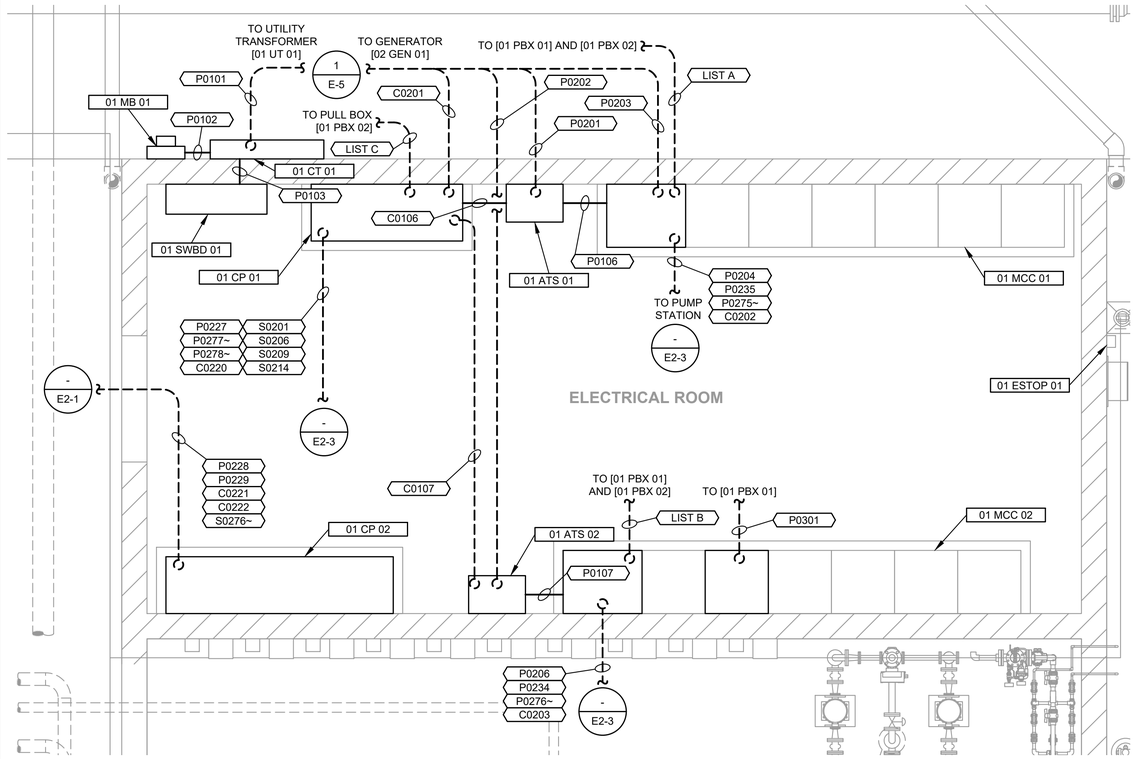
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IF NOT, SCALE ACCORDINGLY

ELECTRICAL

OPERATIONS BUILDING POWER, CONTROL, AND INSTRUMENTATION PLAN

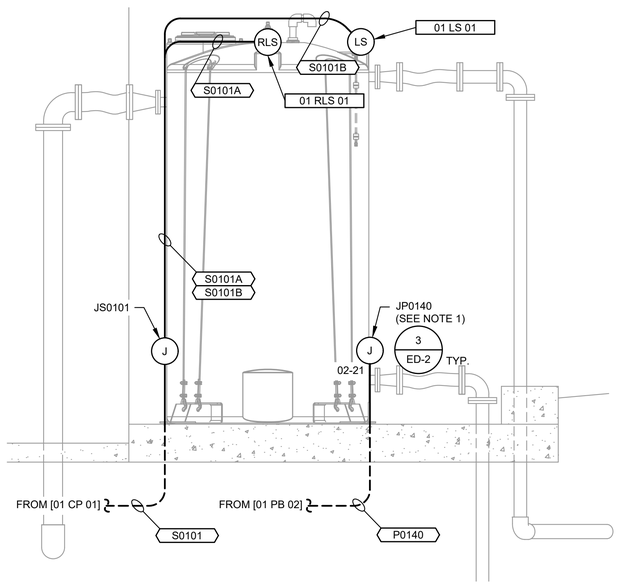
DRAWING: **E1-1** OF: **8**

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1 / - ELECTRICAL ROOM DETAIL - GENERATOR POWER, CONTROL AND INSTRUMENTATION PLAN

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



2 / - NONPOT TANK SECTION DETAIL

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

LIST A FROM [01 MCC 01]	
CONDUIT NO.	**DEST. DEVICE TAG**
P0208	02 RPSDS 01
C0204	02 RPCP 01
P0212	02 RDSSDS 01
C0206	02 RDSCP 01
P0220	02 OCUSDS 01
C0211	02 OCUCP 01
P0224	02 WPSDS 01
C0216	02 WPCP 01
P0279~	01 PBX 01 (SPARE)

LIST B FROM [01 MCC 02]	
CONDUIT NO.	**DEST. DEVICE TAG**
P0209	02 RPSDS 02
C0205	02 RPCP 02
P0214	02 RDSSDS 02
C0207	02 RDSCP 02
P0218	02 WCSDS 01
C0210	02 WCCP 01
P0222	02 MXRSDS 01
C0215	02 MXRCP 01
P0301	03 SDS 01, 02
P0230	WAS HEAT TRACE
P0231	DRUM SCREEN HEAT TRACE
P0280~	01 PB 01 (SPARE)

LIST C FROM [01 CP 01]	
CONDUIT NO.	**DEST. DEVICE TAG**
C0217	02 WCCP 01
C0218	02 RDSCP 01
C0219	02 RDSCP 02
C0301	03 CP 01
S0205	02 LS 09, 02 RLS 01
S0209	02 RPCP 01
S0213	02 DOT 01
S0275~	01 PBX 02 (SPARE)

NOTES:

1. J-BOX JP0140 PLACED FOR TERMINATING MANUFACTURER'S HEAT TRACE CABLE. SPLICING IS ALLOWED.

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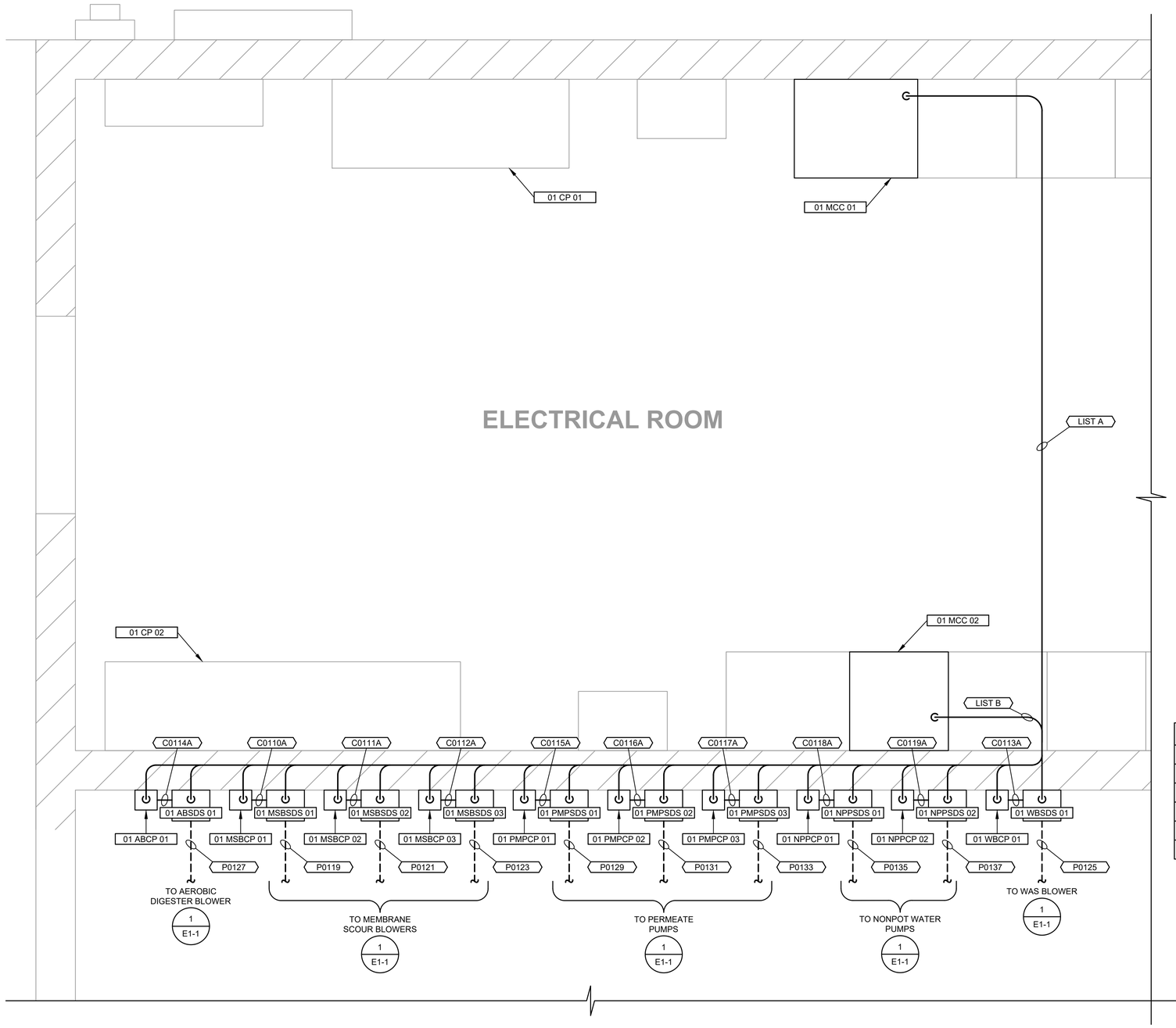
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

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ELECTRICAL ROOM DETAIL AND NONPOT TANK SECTION DETAIL

DRAWING: **E1-2** OF: **8**

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NOTES:

1. REFERENCE TYPICAL ELEVATIONS ON SHEET E1-7.

MOTOR STARTERS AND SAFETY DISCONNECT SWITCHES POWER, CONTROL, AND INSTRUMENTATION PLAN

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

CONDUIT LIST A FROM [01 MCC 01]	
CONDUIT NO.	**DEST. DEVICE TAG**
P0126, C0114	01 ABSDS 01, 01 ABCP 01
P0118,C0110	01 MSBSDS 01, 01 MSBCP 01
P0122, C0112	01 MSBSDS 03, 01 MSBCP 03
P0134, C0118	01 NPPSDS 01, 01 NPPCP 01
P0128, C0115	01 PMPSDS 01, 01 PMPCP 01

CONDUIT LIST B FROM [01 MCC 02]	
CONDUIT NO.	**DEST. DEVICE TAG**
P0120, C0111	01 MSBSDS 02, 01 MSBCP 02
P0136, C0119	01 NPPSDS 02, 01 NPPCP 02
P0130, C0116	01 PMPSDS 02, 01 PMPCP 02
P0132, C0117	01 PMPSDS 03, 01 PMPCP 03
P0124, C0113	01 WBSDS 01, 01 WBCP 02

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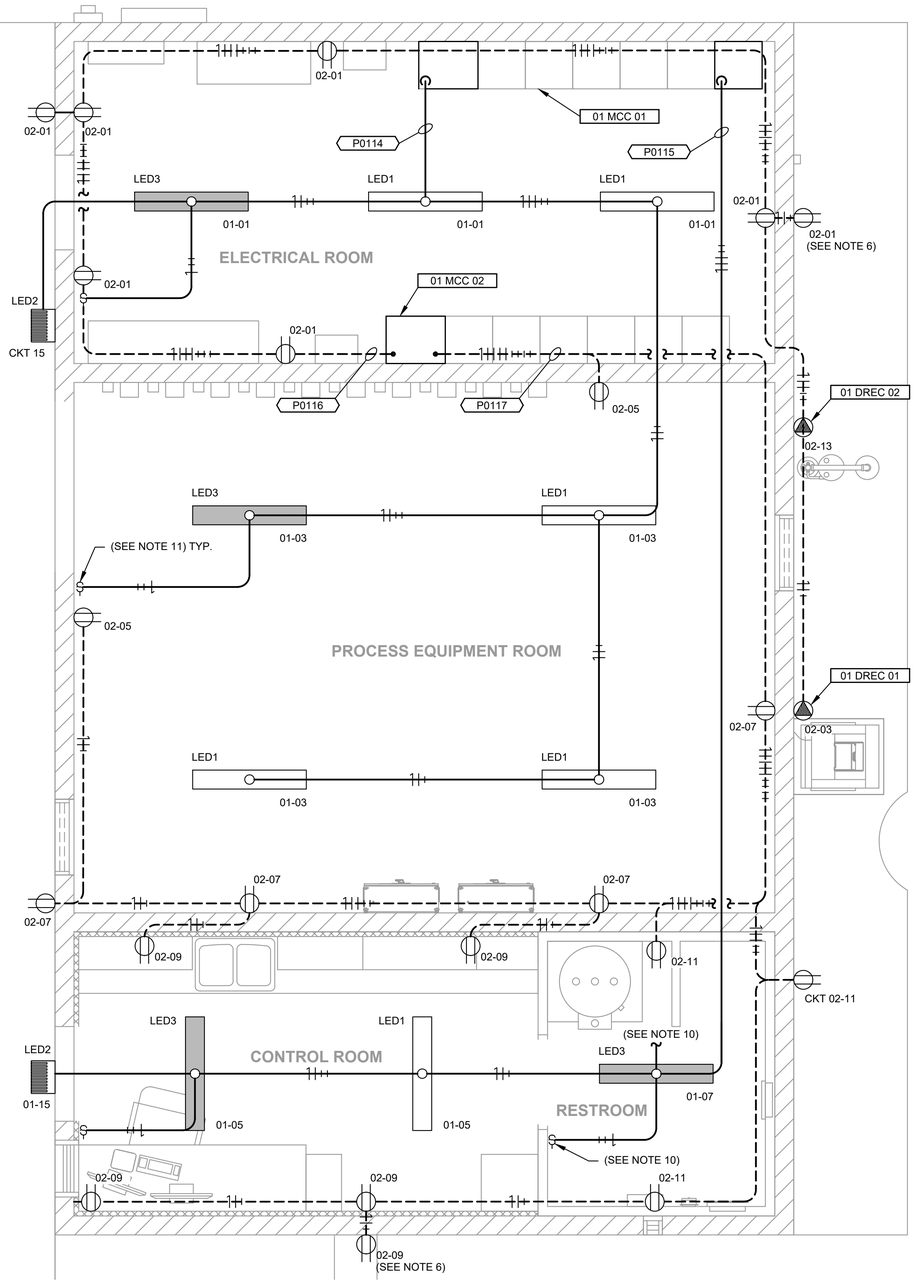
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TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

ELECTRICAL

MOTOR STARTERS AND SAFETY DISCONNECT SWITCHES POWER, CONTROL, AND INSTRUMENTATION PLAN DETAIL

DRAWING: **E1-3** OF: **8**

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1 / - **OPERATIONS BUILDING LIGHTING AND RECEPTACLE PLAN**

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

NOTES:

1. ALL EXPOSED CONDUITS SHALL BE RGS. CONDUIT IN ATTIC CAN BE SCHEDULE 40 PVC.
2. CONDUIT NUMBERS FOR CONVENIENCE RECEPTACLE AND LIGHTING CIRCUITS ARE ONLY APPLIED TO THE CONDUIT LEAVING THE POWER SOURCE. CONDUITS BETWEEN DEVICES ARE REQUIRED AND ARE NOT SHOWN IN THE CABLE AND CONDUIT SCHEDULE.
3. RECEPTACLES SHALL BE SURFACE MOUNTED TO THE INTERIOR AND EXTERIOR WALLS, EXCEPT THE CONTROL ROOM AND RESTROOM WHERE THEY SHALL BE FLUSH MOUNTED.
4. "PROCESS EQUIPMENT ROOM" CONVENIENCE RECEPTACLES SHALL BE 20A, WHITE, DUPLEX, IN CAST ALUMINUM BOXES WITH WEATHERPROOF COVERS. RECEPTACLES MOUNTED TO CONCRETE OR CMU WALLS SHALL BE SURFACE-MOUNTED.
5. WSEC FORMS FOR BUILDING PERMIT WERE SUBMITTED USING SPACE BY SPACE METHOD.
6. ALL EXTERIOR CONVENIENCE RECEPTACLES SHALL BE 20A, WHITE, DUPLEX, IN CAST ALUMINUM BOXES WITH FULL IN SERVICE COVERS, AND SURFACE-MOUNTED. MOUNT NEAR HEAT PUMPS SHOWN ON E-5.
7. THE ROUTING OF CONDUITS FOR LIGHTING AND RECEPTACLES ARE SHOWN FOR CLARITY ONLY. THE CONTRACTOR MAY USE MORE DIRECT ROUTING WHERE APPROPRIATE ROUTE CONDUITS IN THE ATTIC.
8. EXPOSED CONDUITS TO CONVENIENCE RECEPTACLES AND LIGHT SWITCHES MAY BE 1/2-INCH TRADE SIZE WHERE ALLOWED BY CODE.
9. THE POWER CONDUCTORS TO EMERGENCY LIGHTING CHARGING CIRCUITS SHALL NOT BE SWITCHED.
10. WIRE EXHAUST FAN TO BE ON WITH THE LIGHT SWITCH. USE TWO PART SWITCH WITH OCCUPANCY CONTROL. LEVITON DOD05 OR EQUAL.
11. ALL LIGHT SWITCHES SHALL BE OCCUPANCY SENSING WITH MANUAL ON/OFF AND ADJUSTABLE TIME DELAY (20 MIN INITIALLY). LEVITON ODS SERIES OR EQUAL.

LIGHTING SCHEDULE

MNEMONIC	TECHNOLOGY	APPLICATION	EM *	DESCRIPTION	MANUFACTURER		INPUT (VA)	VOLTAGE	COMMENTS
					NAME	SERIES NO.			
LED1	LED	WET, CEILING/OVERHEAD	NO	8" X 48", RECTANGULAR	HOLOPHANE	EMS L48 6000LM	36	120 VAC, 1 PH	6000 LUMENS, 40K 80CRI, MEDIUM DISTRIBUTION, 0-10V DIMMING
LED2	LED	WET, WALL-MOUNT, BUILDING	NO	EXTERIOR BUILDING LIGHT.	LITHONIA	DSXW1 P3	21	120 VAC	3200 LUMENS, 40K 80CRI, BACK LIGHT CONTROL TYPE 3 WITH INTEGRATED PHOTOCELL
LED3	LED	WET, CEILING/OVERHEAD	YES	8" X 48", RECTANGULAR	HOLOPHANE	EMS L48 6000LM	36	120 VAC, 1 PH	6000 LUMENS, 40K 80CRI, MEDIUM DISTRIBUTION, 0-10V DIMMING, EMERGENCY BATTERY BACKUP

* EM = EMERGENCY BACKUP BATTERY.
ALL LISTED MANUFACTURERS SHALL BE CONSIDERED "OR EQUAL".

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JASON R. NEWQUIST — STATE OF WASHINGTON — 45311 — REGISTERED PROFESSIONAL ENGINEER — 9/11/26

TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

8220 178TH AVENUE COURT SW, LONGBRANCH, WA 98351

No.	DATE	REVISION

ISSUED FOR:

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ISSUE DATE:	SEPTEMBER 2026
APPROVED BY:	JRN
CHECKED BY:	PAM
DRAWN BY:	DCK
DESIGNER:	CM
G & O JOB NO.:	22848.01
FILE:	E1_OPS-BLDG.DWG

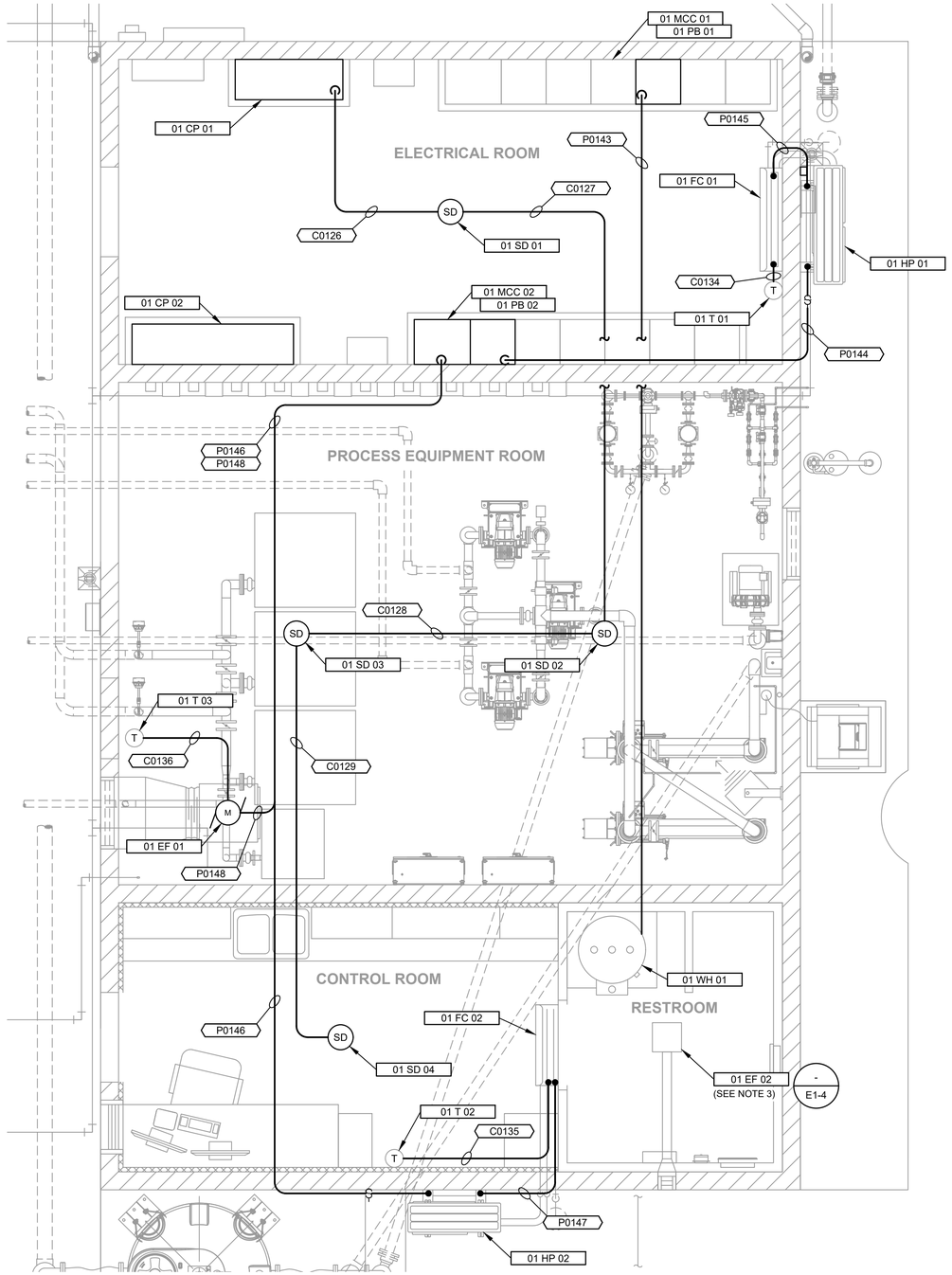
0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

ELECTRICAL

OPERATIONS BUILDING LIGHTING AND RECEPTACLE PLAN

DRAWING: **E1-4** OF: **8**

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1 / - **OPERATIONS BUILDING HVAC AND FIRE PLAN**

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

NOTES:

1. SMOKE DETECTORS SHALL BE 24 VDC POWERED WITH FORM C (DRY) CONTACTS. WIRE THE CONTACTS TO BE OPEN WHEN IN THE ALARM CONDITION, CLOSED UNDER NORMAL CONDITIONS. POWER IS SHARED, ALARMS ARE SEPARATELY WIRED TO [01 CP 01].
2. HEAT PUMPS, FAN COILS, AND EXHAUST FANS SHALL HAVE A DISCONNECT PER 4 / ED-3 WHERE NOT PROVIDED AS INTEGRAL, AND LESS THAN 240V.
3. EXHAUST FAN IS ON WITH THE LIGHT SWITCH.

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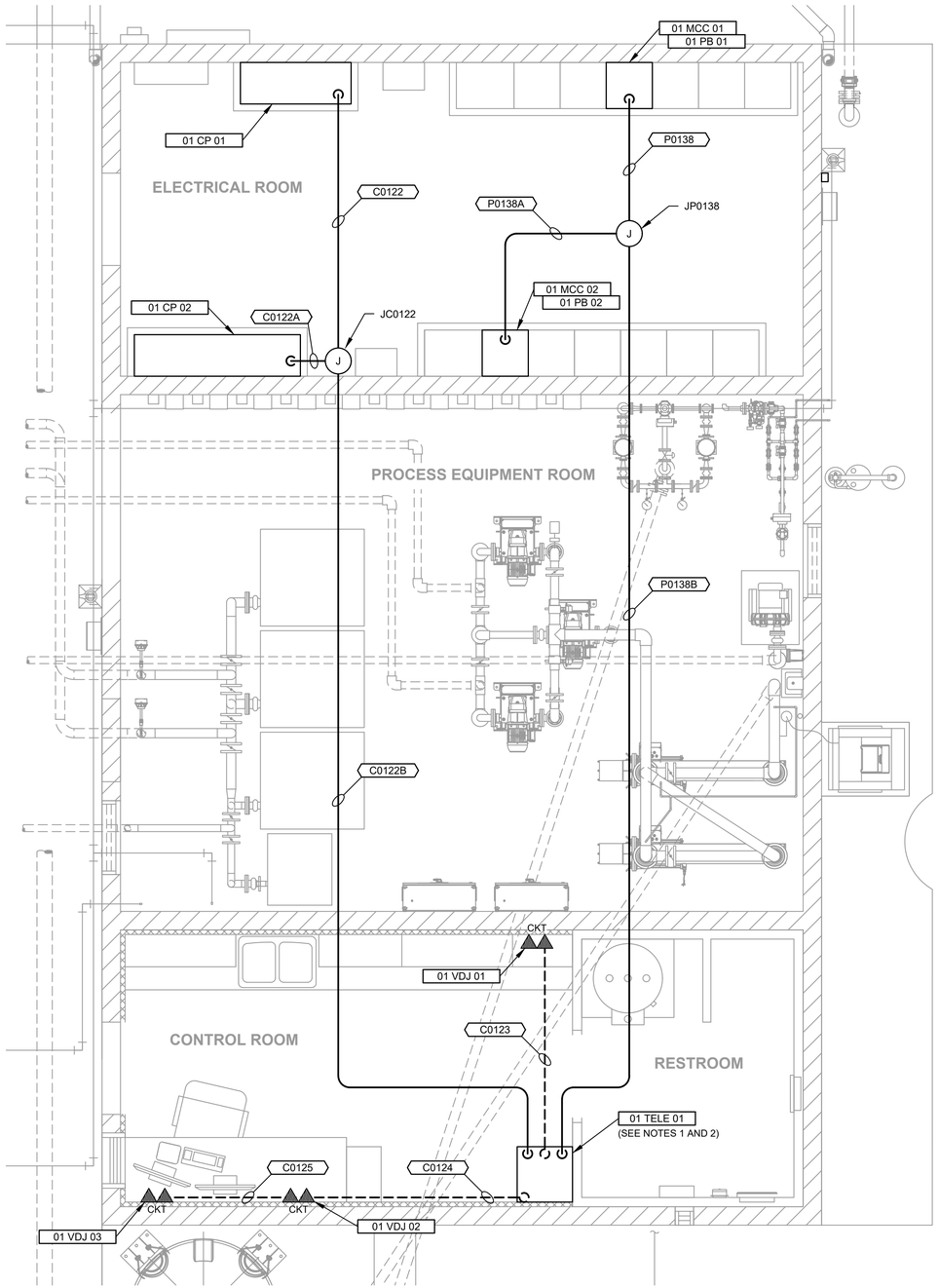
0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

ELECTRICAL

OPERATIONS BUILDING HVAC AND FIRE PLANS

DRAWING: **E1-5** OF: **8**

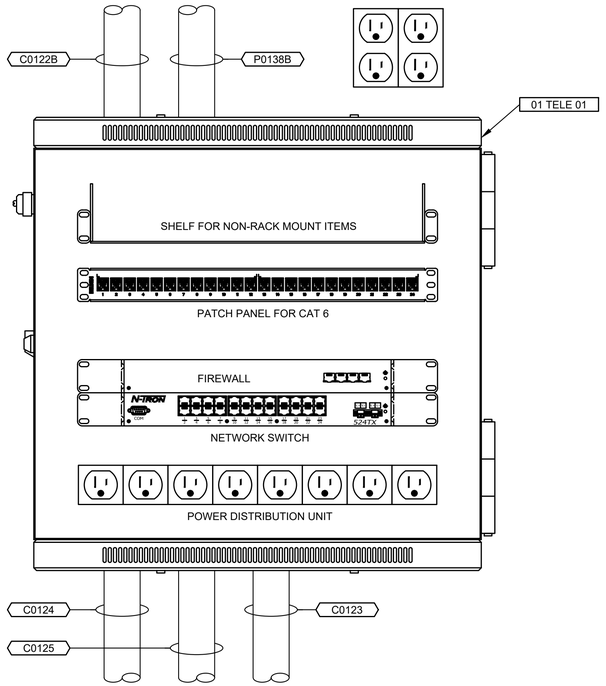
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NOTES:

1. MOUNT TELECOMMUNICATIONS ENCLOSURE [01 TELE 01] 3' ABOVE FLOOR.
2. THE TELECOMMUNICATIONS ENCLOSURE [01 TELE 01] WILL BE EQUIPPED WITH A FIREWALL, NETWORK SWITCH, CAT 6 PATCH PANEL, FOUR OUTLETS, AND POWER DISTRIBUTION UNIT.

1 / - **OPERATIONS BUILDING COMMUNICATIONS PLAN**
SCALE: 3/8" = 1'-0"



[01 TELE 01] :

ENCLOSURE SHOULD BE DOUBLE HINGED, NEMA 1. DESIGN INTENT IS TO CENTRALIZE OUTSIDE TELECOM SERVICES IN ONE LOCATION WITH FLEXIBILITY TO CROSS CONNECT AS NEEDED. THE FOLLOWING ITEMS ARE BASIS OF DESIGN. OR EQUAL MAY BE SUBMITTED.

1. ENCLOSURE: EATON SRW18USDP
2. PATCH PANEL: EATON N252-024
3. GENERIC SHELF: EATON SRSHELF2P1USHRT
4. POWER DISTRIBUTION UNIT: EATON RS-0615-F
5. FIREWALL(S) AND NETWORK SWITCH(ES) ARE SHOWN RACK MOUNTED BUT MAY BE IN LOCATED IN [01 CP 01] OR [01 CP 02] DEPENDANT UPON INTEGRATORS SPACE AND PREFERENCE.

2 / - **[01 TELE 01] TELECOMMUNICATIONS ENCLOSURE ELEVATION**
NOT TO SCALE

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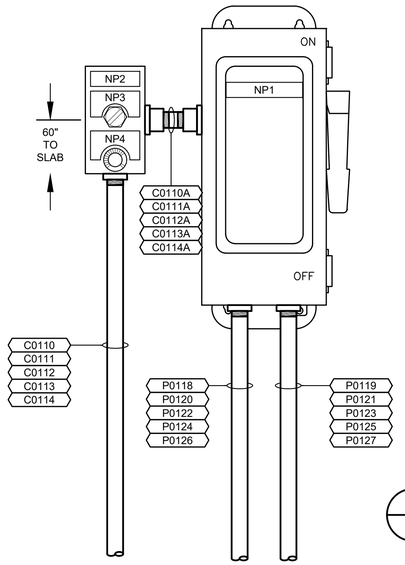
0 — 1" — 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

ELECTRICAL

OPERATIONS BUILDING COMMUNICATIONS PLAN AND [01 TELE 01] ELEVATION

DRAWING: **E1-6** OF: **8**

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DEVICE NAMEPLATE SCHEDULE	
DEVICE	**NAME PLATE ENGRAVING**
NP1	MOTOR SAFETY DISCONNECT SWITCH [01 YYYSDS XX]
NP2	MOTOR STARTER CONTROL PANEL [01 YYYCP XX]
NP3	HAND-OFF-AUTO
NP4	SPEED 0-100%

NOTES:

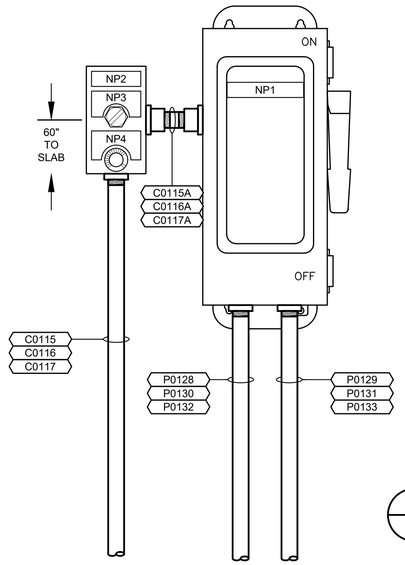
1. MOUNT NAMEPLATE "NP1" ON BACKPLATE.

1 / - **CONTROL PANEL AND SAFETY DISCONNECT SWITCH ELEVATION - BLOWERS**

NOT TO SCALE

XX = 01, AERATION BLOWER
XX = 01, WAS BLOWER
XX = 01, MEMBRANE SCOUR BLOWER NO. 1
XX = 02, MEMBRANE SCOUR BLOWER NO. 2
XX = 03, MEMBRANE SCOUR BLOWER NO. 3

YYY = AB, AERATION BLOWER
YYY = WB, WAS BLOWER
YYY = MSB, MEMBRANE SCOUR BLOWER



DEVICE NAMEPLATE SCHEDULE	
DEVICE	**NAME PLATE ENGRAVING**
NP1	MOTOR SAFETY DISCONNECT SWITCH [01 PMPSDS XX]
NP2	MOTOR STARTER CONTROL PANEL [01 PMPCP XX]
NP3	HAND-OFF-AUTO
NP4	SPEED 0-100%

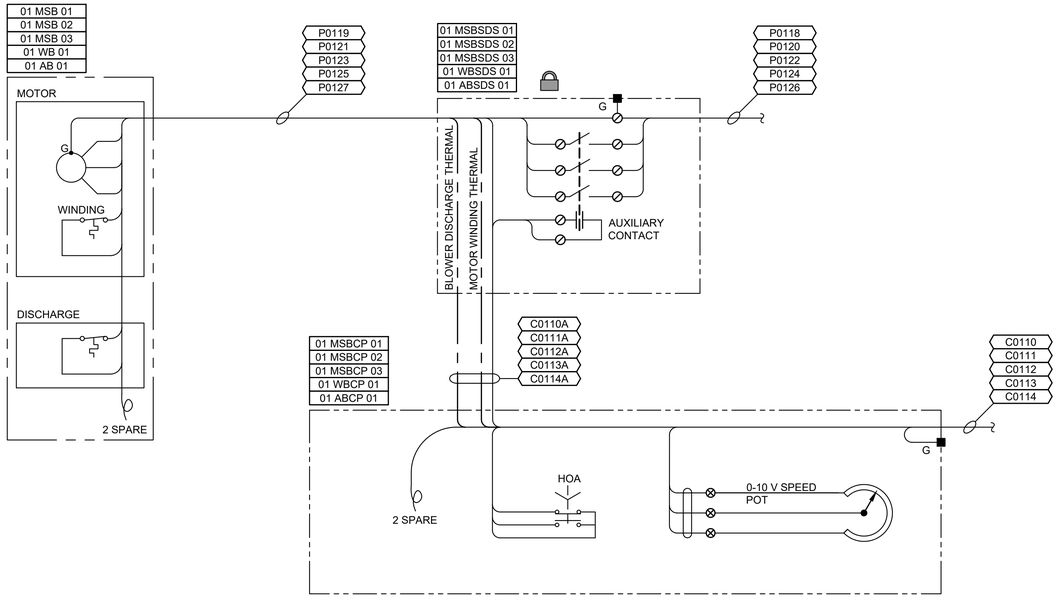
NOTES:

1. MOUNT NAMEPLATE "NP1" ON BACKPLATE.

3 / - **CONTROL PANEL AND SAFETY DISCONNECT SWITCH ELEVATION - PERMEATE PUMPS**

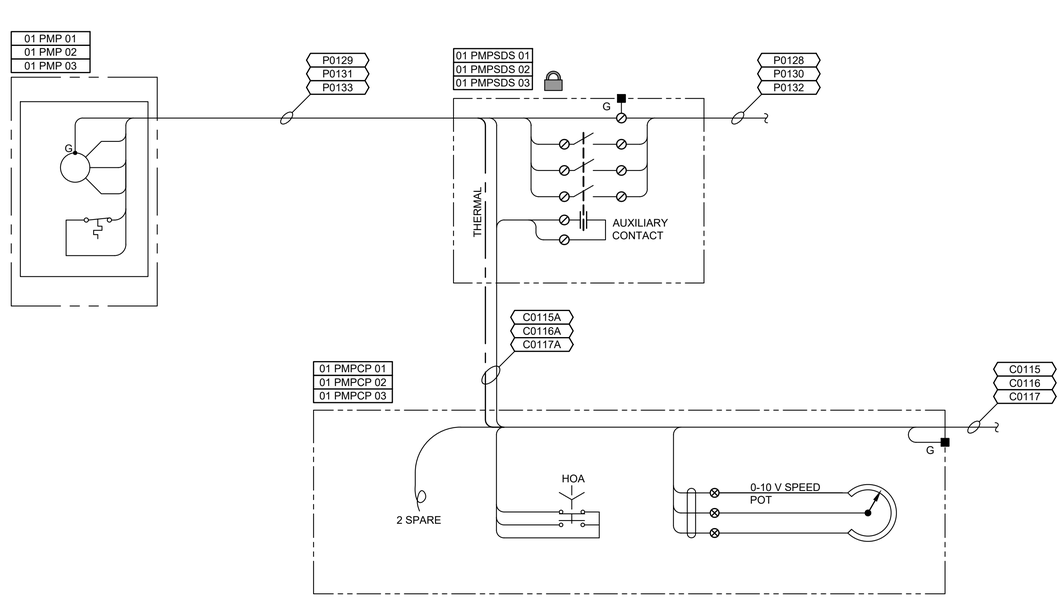
NOT TO SCALE

XX = 01, PERMEATE PUMP NO. 1
XX = 02, PERMEATE PUMP NO. 2
XX = 03, PERMEATE PUMP NO. 3



2 / - **CONNECTION DIAGRAM - BLOWERS**

NOT TO SCALE



4 / - **CONNECTION DIAGRAM - PERMEATE PUMPS**

NOT TO SCALE

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PROFESSIONAL ENGINEER
9/11/26

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WASTEWATER TREATMENT FACILITY UPGRADE

8220 178TH AVENUE COURT SW, LONGBRANCH, WA 98351

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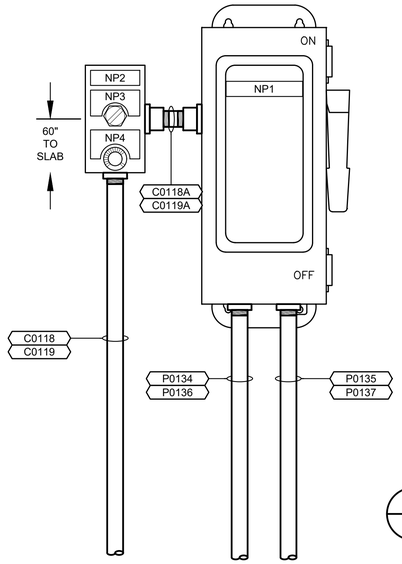
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DESIGNER:	CM
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FILE:	E1_FPCD.DWG

ELECTRICAL

OPS BUILDING CONTROL PANEL AND SAFETY DISCONNECT SWITCH ELEVATIONS AND CONNECTION DIAGRAMS

DRAWING: **E1-7** OF: **8**

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DEVICE NAMEPLATE SCHEDULE	
DEVICE	**NAME PLATE ENGRAVING**
NP1	MOTOR SAFETY DISCONNECT SWITCH [01 NPPSDS XX]
NP2	MOTOR STARTER CONTROL PANEL [01 NPPCP XX]
NP3	HAND-OFF-AUTO
NP4	SPEED 0-100%

NOTES:

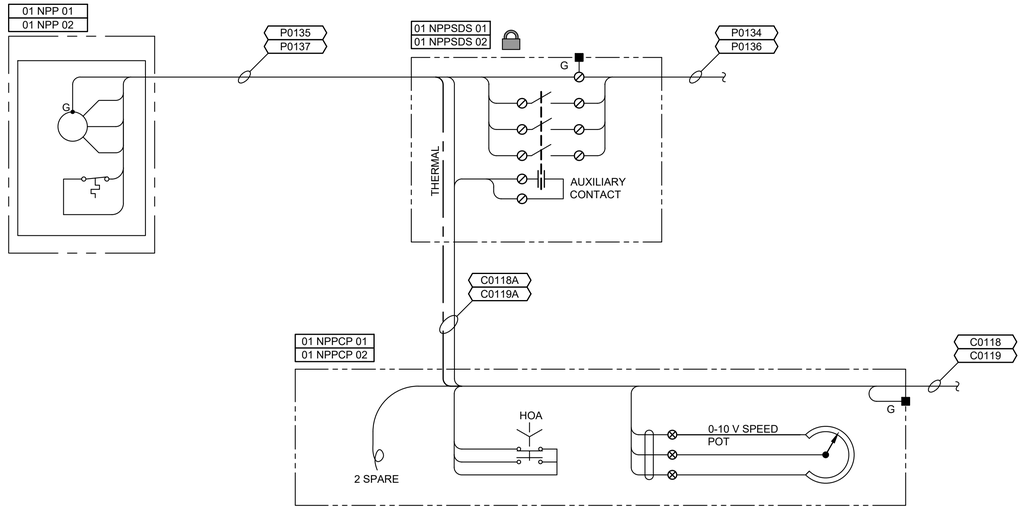
1. MOUNT NAMEPLATE "NP1" ON BACKPLATE.

1 / -

CONTROL PANEL AND SAFETY DISCONNECT SWITCH ELEVATION - NONPOT WATER PUMPS

NOT TO SCALE

XX = 01, NON-POT WATER PUMP NO. 1
XX = 02, NON-POT WATER PUMP NO. 2



2 / -

CONNECTION DIAGRAM - NONPOT WATER PUMPS

NOT TO SCALE

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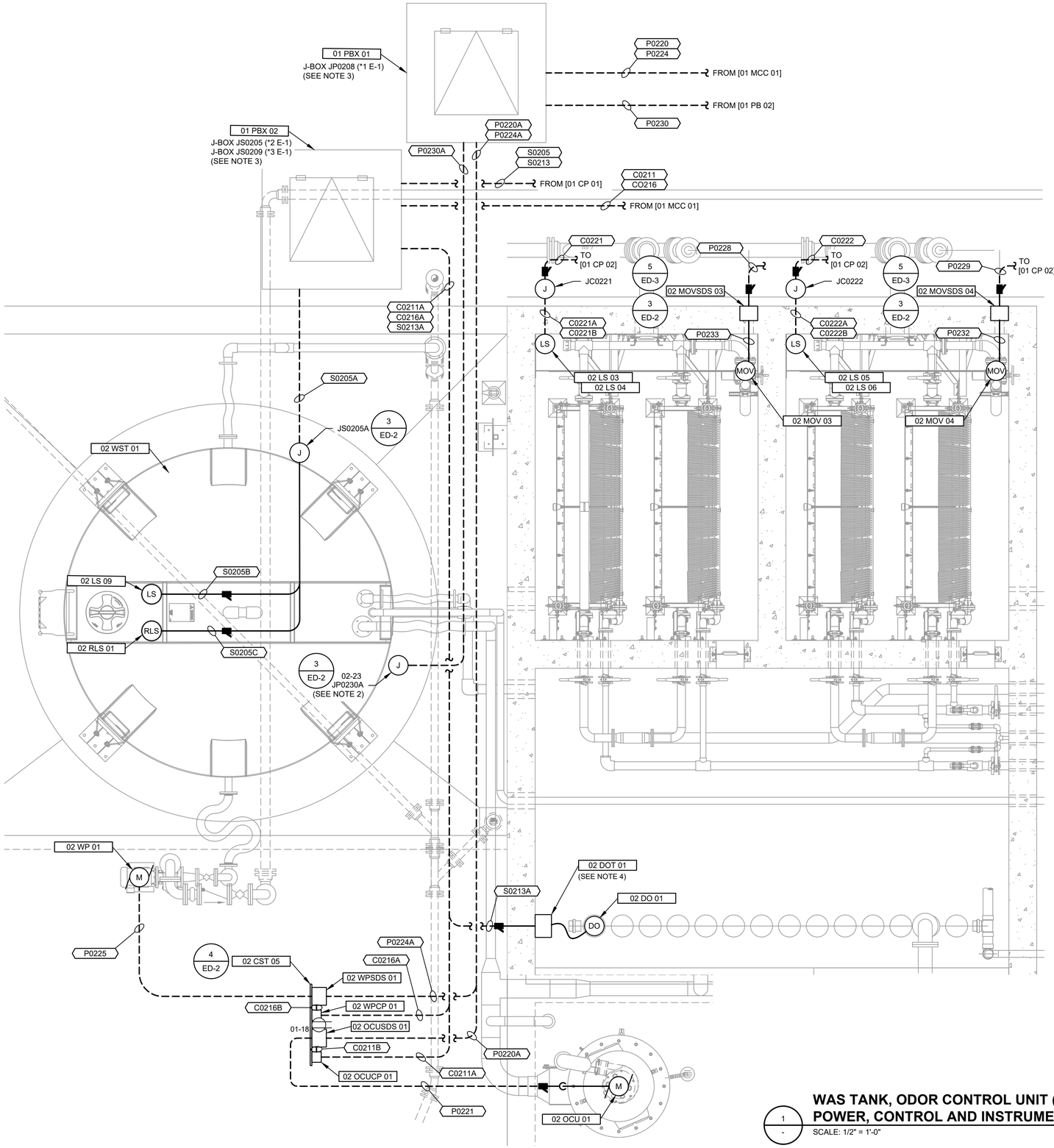
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ELECTRICAL

OPS BUILDING CONTROL PANEL AND SAFETY DISCONNECT SWITCH ELEVATIONS AND CONNECTION DIAGRAMS

DRAWING: **E1-8** OF: **8**

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NOTES:

1. NOT ALL SEAL-OFF FITTINGS SHOWN HERE.
2. J-BOX JP0230 PLACED FOR TERMINATING MANUFACTURER'S HEAT TRACE CABLE. SPLICING IS ALLOWED.
3. NOT ALL CONDUITS INTO THESE VAULTS ARE SHOWN HERE. REFERENCE E-5 AND E1-X SHEETS.
4. TRANSMITTER IS MOUNTED ON RAILING, CONNECT TO PROBE PER MECHANICAL DETAILS.

1 / - **WAS TANK, ODOR CONTROL UNIT (UPPER), AND MEMBRANE BASINS (LOWER) POWER, CONTROL AND INSTRUMENTATION LOWER PLAN**

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

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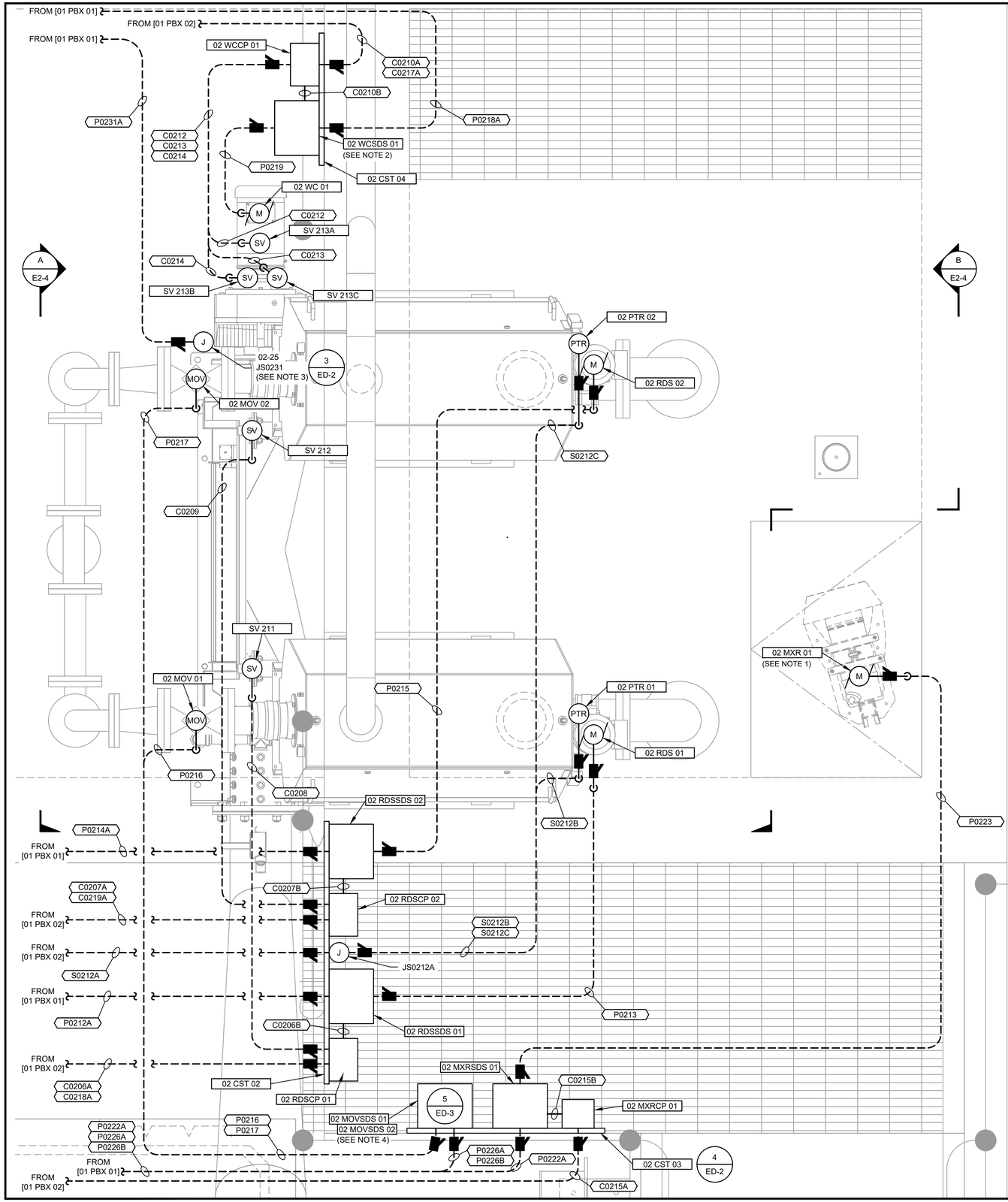
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DESIGNER:	CM
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FILE:	E2_PTANK.DWG

0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

ELECTRICAL WAS TANK, ODOR CONTROL UNIT (UPPER) AND MEMBRANE BASINS (LOWER) POWER, CONTROL AND INSTRUMENTATION PLAN

DRAWING: **E2-1** OF: **11**

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NOTES:

1. [02 MXR 01] IS LOCATED ON THE LOWER PLAN. AS SEEN ON (1 / E2-3)
2. MOUNT [02 WCSDS 01] AND [02 WCCP 01] 3' OFF GROUND, MINIMUM.
3. J-BOX JP0231 PLACED FOR TERMINATING MANUFACTURER'S HEAT TRACE CABLE. SPLICING IS ALLOWED.
4. [02 MOVSDS 02] IS MOUNTED BELOW [02 MOVSDS 01].

(1 / -) UPPER PROCESS TANKS POWER, CONTROL AND INSTRUMENTATION PLAN

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

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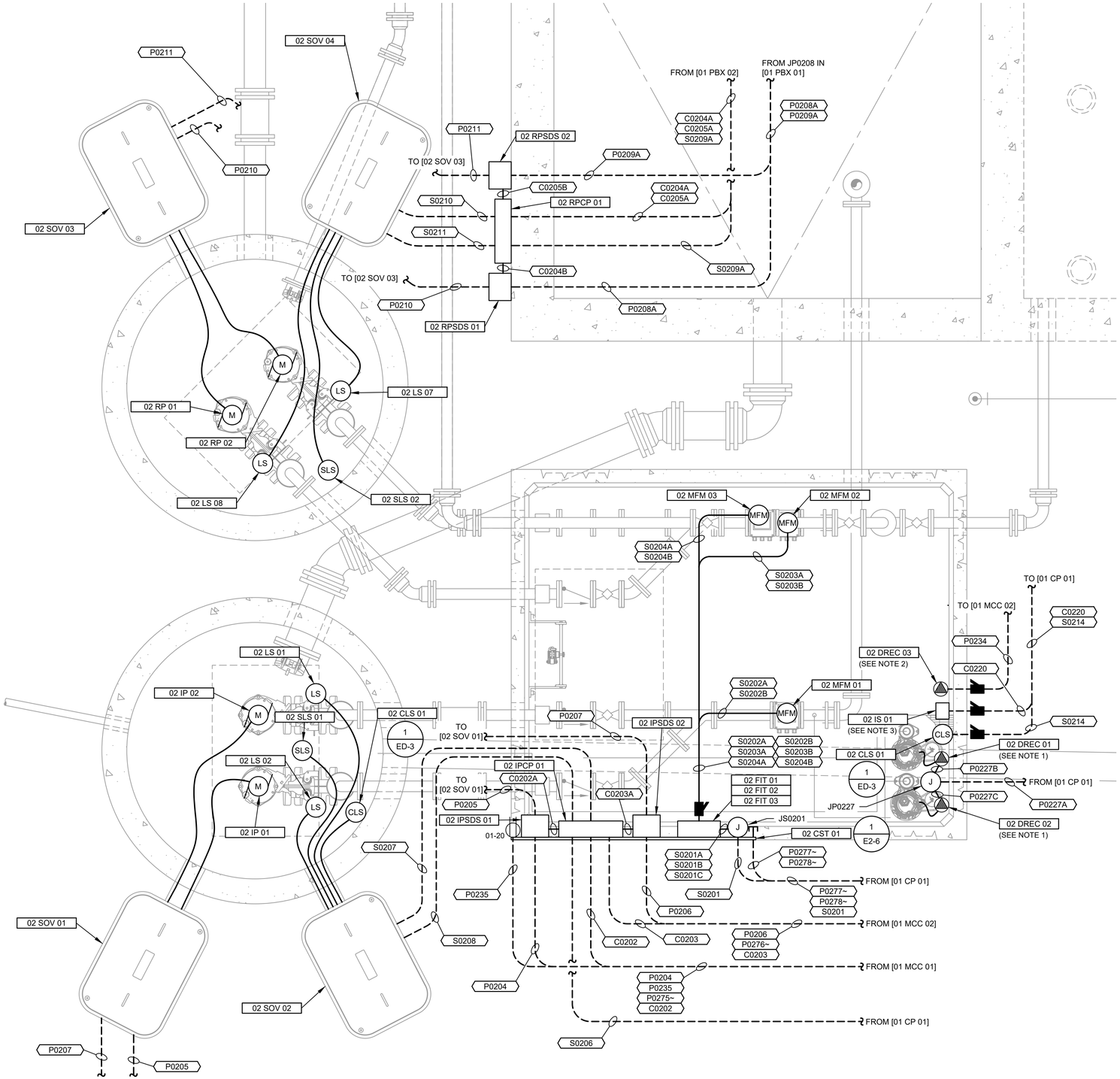
0 — 1" — 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

ELECTRICAL

UPPER PROCESS TANKS POWER, CONTROL AND INSTRUMENTATION PLAN

DRAWING: **E2-2** OF: **11**

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LOWER PUMP STATIONS AND VALVE VAULT POWER, CONTROL AND INSTRUMENTATION PLAN

1 / -

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

NOTES:

1. SUMP PUMP RECEPTACLES SHALL BE EXPLOSION PROOF PER 16140 OR MAYBE XP JUNCTION BOXES DEPENDING ON MANUFACTURER. MFR CABLE(S) INCLUDE 2-WIRE OT MOTOR SWITCHES.
2. DEDICATED RECEPTACLES SHALL BE 20A, GRAY, SIMPLEX, NON-GFCI, IN CAST ALUMINUM BOXES WITH WEATHERPROOF COVERS. THEY SHALL BE LABELED FOLLOWING SPECIFICATION 16140.
3. REFERENCE SHEET E-5 FOR EXACT LOCATION OF INFLUENT SAMPLER [02 IS 01].
4. SEAL OFFS IN VAULTS NOT SHOWN HERE. CONDUIT ROUTING DECISIONS IN THE FIELD MAY REQUIRE ADDITIONAL SEAL OFFS.

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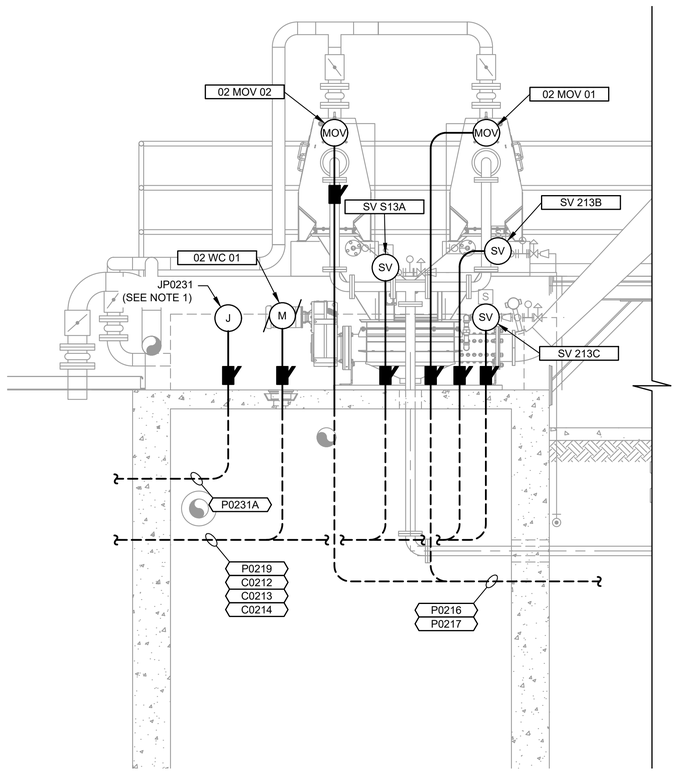
0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

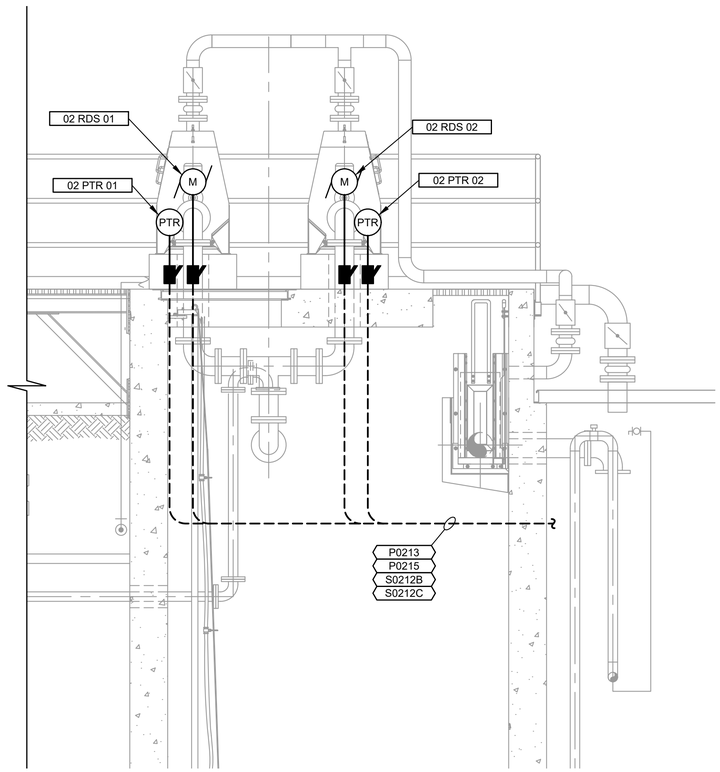
ELECTRICAL

LOWER PUMP STATIONS AND VALVE VAULT POWER, CONTROL AND INSTRUMENTATION PLAN

DRAWING: **E2-3** OF: **11**

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NOTES:

1. J-BOX JP0231 PLACED FOR TERMINATING MANUFACTURER'S HEAT TRACE CABLE. SPLICING IS ALLOWED.

A E2-2 **SCREENING SECTION A**
SCALE: 1/2" = 1'-0"

B E2-2 **SCREENING SECTION B**
SCALE: 1/2" = 1'-0"

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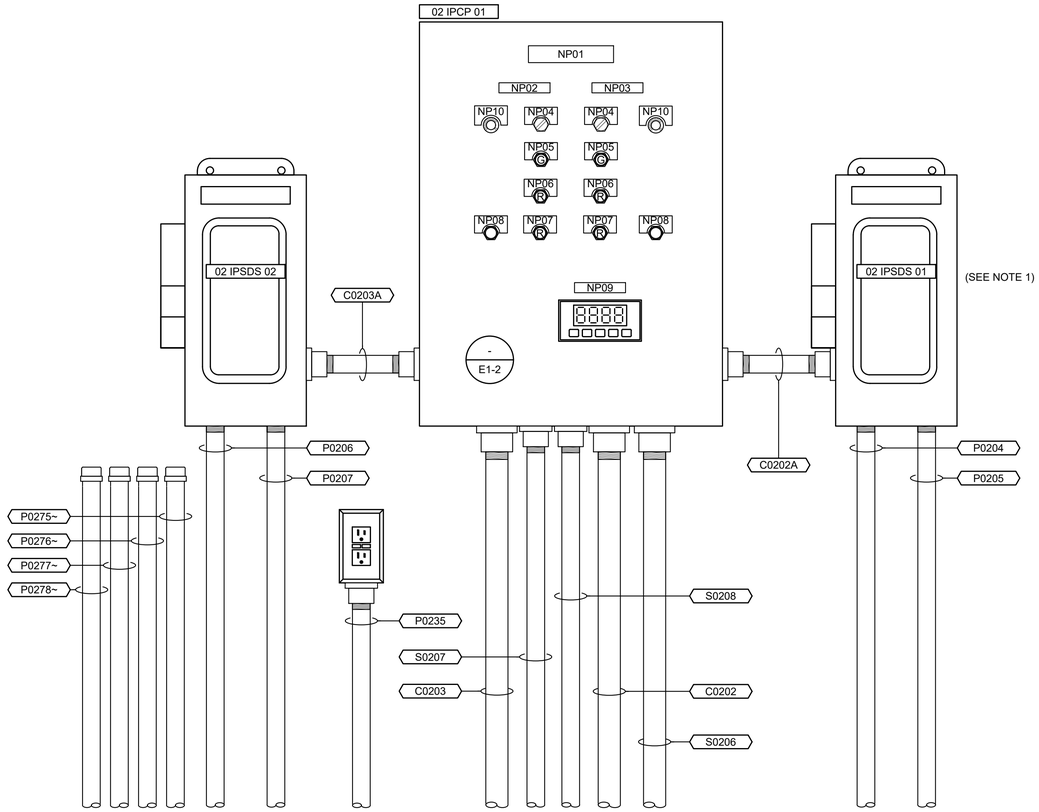
0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

ELECTRICAL

PROCESS TANKS SECTIONS

DRAWING: **E2-4** OF: **11**

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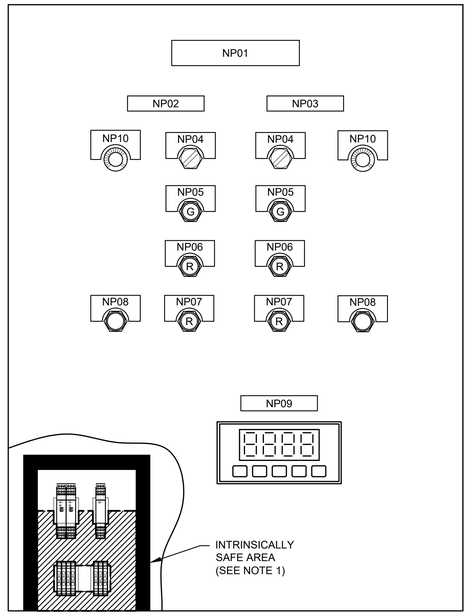


NOTES:

1. FLOW METER INDICATORS NOT SHOWN HERE (1 / E2-3).

INFLUENT PUMPS
CONTROL PANEL AND SAFETY DISCONNECTS ELEVATION

(1 / -) NOT TO SCALE



NOTES:

1. PROVIDE AN INTRINSICALLY SAFE AREA FOR FLOAT SWITCHES [02 LS 01], 02] AND [02 SLS 01]. ALLOW ONLY CONDUITS S0207 AND S0208 TO ENTER INTO THIS PORTION OF THE PANEL.

CONTROL PANEL DOOR SCHEDULE	
NAME PLATE	**NAME PLATE ENGRAVING**
NP01	INFLUENT PUMP STATION FIELD CONTROL PANEL
NP02	INFLUENT PUMP NO. 1
NP03	INFLUENT PUMP NO. 2
NP04	HAND-OFF-AUTO
NP05	MOTOR RUNNING
NP06	MOTOR FAULT
NP07	HIGH LEVEL ALARM
NP08	FLOAT TEST
NP09	WET WELL LEVEL
NP10	SPEED CONTROL

[02 IPCP 01] CONTROL PANEL DETAIL

(B / -) NOT TO SCALE

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9/11/26

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WASTEWATER TREATMENT FACILITY UPGRADE

8220 178TH AVENUE COURT SW, LONGBRANCH, WA 98351

No.	DATE	REVISION

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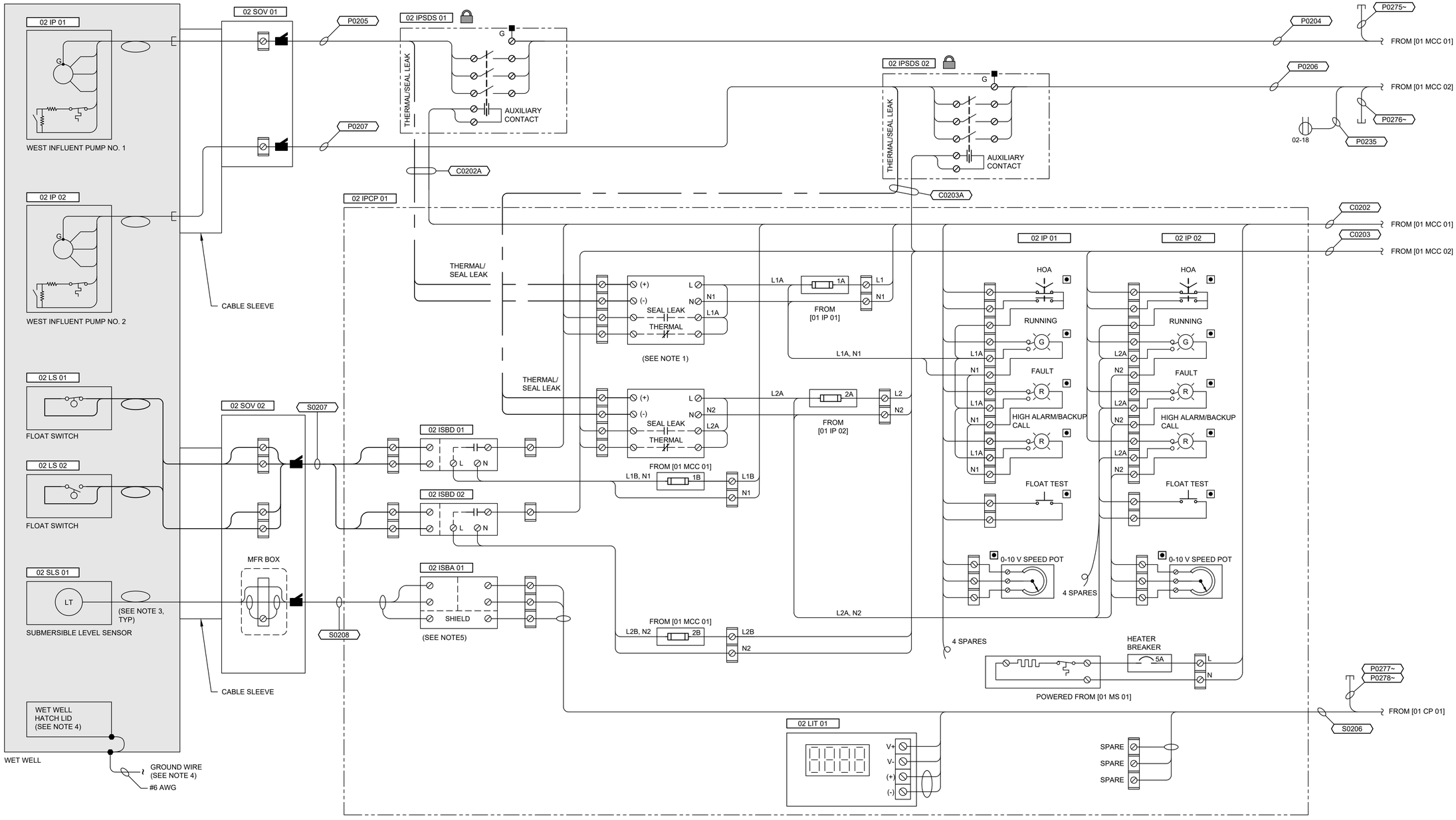
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ELECTRICAL

CONTROL STATION - INFLUENT PUMPS

DRAWING: **E2-5** OF: **11**

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SHADED AREAS ON THIS SHEET REPRESENT CLASSIFIED ZONES

INDICATES AN INTRINSICALLY SAFE CIRCUIT

NOTES:

1. BOTH THERMAL AND SEAL LEAK DETECTION ARE SENSED. THIS SYSTEM IS DESIGNED AROUND FLYGT PUMPS WITH 120 VAC MINI-CAS DETECTORS. PROVIDE AND WIRE FLYGT MINI-CAS SOCKETS INSIDE FIELD CONTROL PANEL FOR BOTH MOTORS. THE MINI-CAS DETECTORS SHALL BE PROVIDED BY THE PUMP MANUFACTURER. SET ASSOCIATED MOTOR STARTER LOGIC TO DISABLE THE PUMP ON MOTOR OVERTEMP AND/OR CONTROLLER ALARM AND/OR REMOVAL OF THE CONTROLLER. THE CONTRACTOR IS RESPONSIBLE FOR CHANGES IN DESIGN, INSTALLATION, AND DOCUMENTATION IF OTHER MANUFACTURER OR METHODS ARE USED. DESIGN CHANGES SHALL BE APPROVED BY ENGINEERING.
2. LAYOUT OF DEVICES SHOWN ON THIS DIAGRAM ARE SHOWN FOR CONNECTIVITY ONLY AND ARE NOT INTENDED TO REPRESENT ACTUAL PHYSICAL PLACEMENT OR ORIENTATION.
3. PROVIDE MANUFACTURER'S CABLES IN SUFFICIENT LENGTH TO REACH ENCLOSURE [02 IPCP 01] WITH 10' MINIMUM COILED LENGTH IN THE WET WELL.
4. PROVIDE INTRINSICALLY SAFE BARRIERS INSIDE [02 IPCP 01] FOR WET WELL LEVEL SWITCHES AND SUBMERSIBLE LEVEL TRANSDUCER. DISCRETE BARRIERS ARE POWERED FROM THEIR ASSOCIATED MOTOR STARTER. THE ANALOG BARRIER IS POWERED FROM PLC CONTROL PANEL [02 CP 01].
5. RUN #6 AWG BARE COPPER GEC TO WET WELL. GROUND THE HATCH LID WITH A #6 AWG EQUIVALENT GROUND BRAID.
6. PROVIDE TERMINAL BLOCKS AND TERMINAL STRIPS INSIDE [02 IPCP 01] FOR ALL EXTERNAL CONNECTIONS (ALL CONNECTIONS TO PANEL DEVICES SHALL BE INTERNAL, UL 508).
7. PROVIDE SEAL-OFF FITTINGS FOR CONDUITS ENTERING THE WET WELL.

1 / - **FIELD CONNECTION DIAGRAM - INFLUENT PUMPS**

NOT TO SCALE

Gray & Osborne, Inc.
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JASON R. NEWQUIST — STATE OF WASHINGTON — 45311 — REGISTERED PROFESSIONAL ENGINEER — 9/11/26

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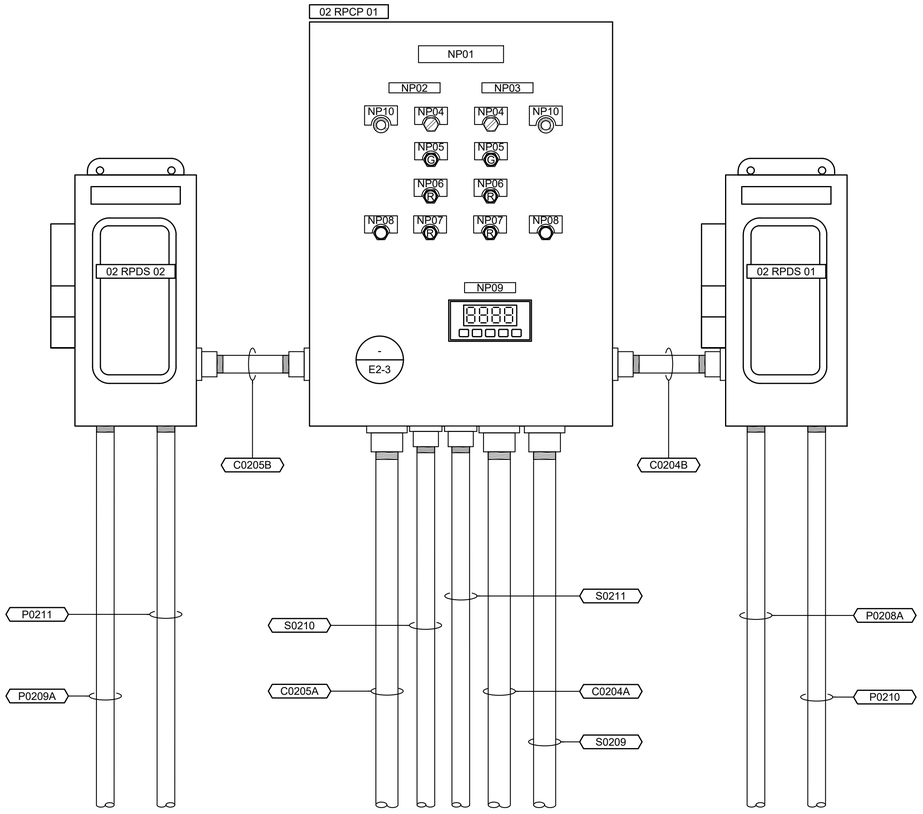
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ELECTRICAL

CONNECTION DIAGRAM - INFLUENT PUMPS

DRAWING: **E2-6** OF: **11**

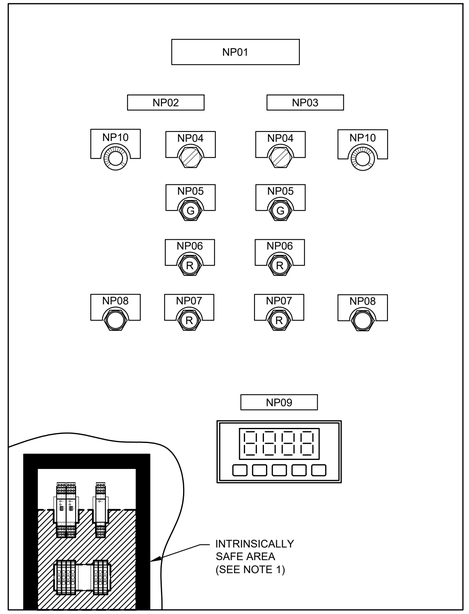
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RAS PUMPS
CONTROL PANEL AND SAFETY DISCONNECTS ELEVATION

1 / -

NOT TO SCALE



NOTES:

1. PROVIDE AN INTRINSICALLY SAFE AREA FOR FLOAT SWITCHES [02 LS 07], 08] AND [02 SLS 02]. ALLOW ONLY CONDUITS S0210 AND S0211 TO ENTER INTO THIS PORTION OF THE PANEL.

CONTROL PANEL DOOR SCHEDULE

NAME PLATE	NAME PLATE ENGRAVING
NP01	RAS PUMP STATION FIELD CONTROL PANEL
NP02	RAS PUMP NO. 1
NP03	RAS PUMP NO. 2
NP04	HAND-OFF-AUTO
NP05	MOTOR RUNNING
NP06	MOTOR FAULT
NP07	HIGH LEVEL ALARM
NP08	FLOAT TEST
NP09	WET WELL LEVEL
NP10	SPEED CONTROL

B / -

[02 RPCP 01] CONTROL PANEL DETAIL

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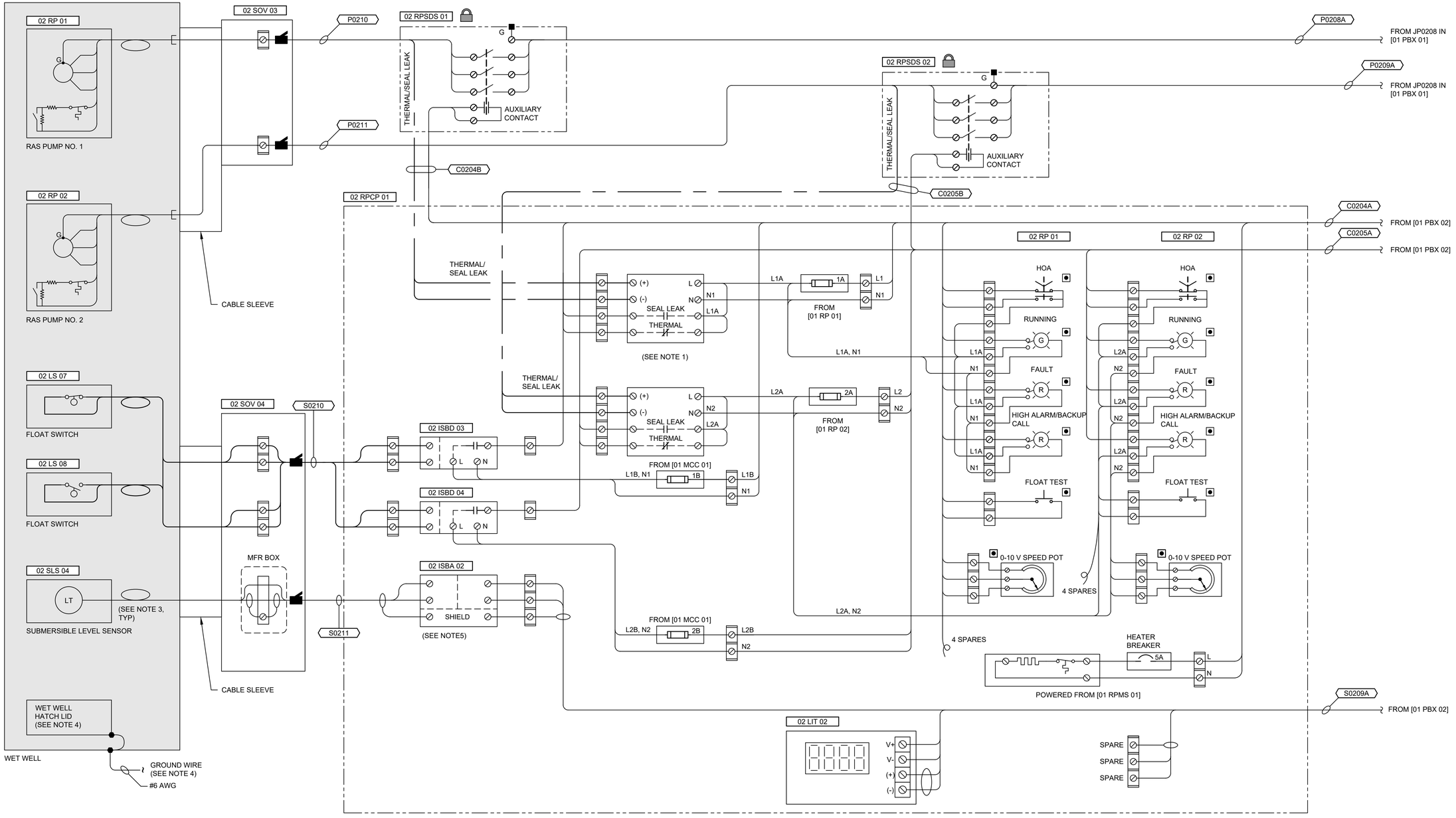
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ELECTRICAL

CONTROL STATION - RAS PUMPS

DRAWING: **E2-7** OF: **11**

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7. PROVIDE SEAL-OFF FITTINGS FOR CONDUITS ENTERING THE WET WELL.

1 / - **FIELD CONNECTION DIAGRAM - RAS PUMPS**

NOT TO SCALE

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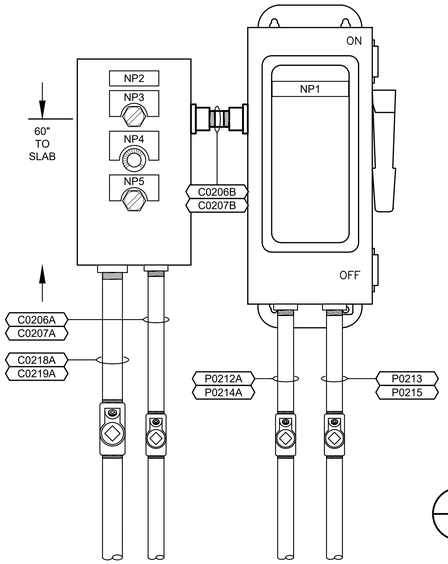
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ELECTRICAL

CONNECTION DIAGRAM - RAS PUMPS

DRAWING: **E2-8** OF: **11**

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DEVICE NAMEPLATE SCHEDULE	
DEVICE	**NAME PLATE ENGRAVING**
NP1	MOTOR SAFETY DISCONNECT SWITCH [02 RDSSDS XX]
NP2	MOTOR STARTER CONTROL PANEL [02 RDSCP XX]
NP3	HAND-OFF-AUTO
NP4	SPEED 0-100%
NP5	OPEN-CLOSED-AUTO

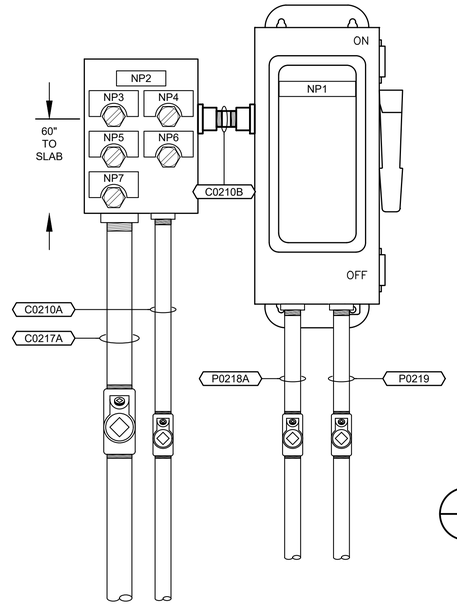
NOTES:

1. MOUNT NAMEPLATE "NP1" ON BACKPLATE.

1 - CONTROL PANEL AND SAFETY DISCONNECT SWITCH ELEVATION - ROTARY DRUM SCREENS

NOT TO SCALE

XX = 01, ROTARY DRUM SCREEN NO. 1
XX = 02, ROTARY DRUM SCREEN NO. 2



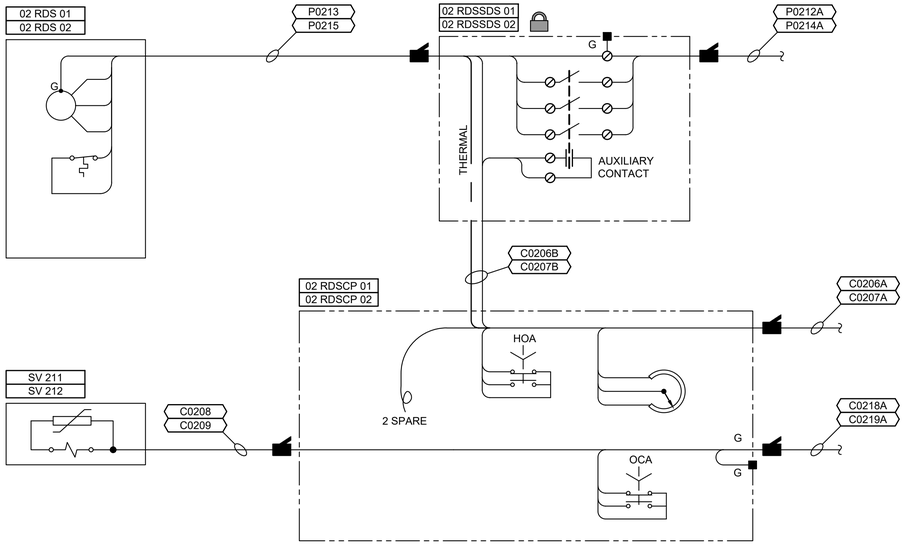
DEVICE NAMEPLATE SCHEDULE	
DEVICE	**NAME PLATE ENGRAVING**
NP1	MOTOR SAFETY DISCONNECT SWITCH [02 WCSDS 01]
NP2	MOTOR STARTER CONTROL PANEL [02 WCCP 01]
NP3	HAND-OFF-AUTO
NP4	[SV 213A] OPEN-CLOSED-AUTO
NP5	[SV 213B] OPEN-CLOSED-AUTO
NP6	[SV 213C] OPEN-CLOSED-AUTO
NP7	FORWARD-OFF-REVERSE

NOTES:

1. MOUNT NAMEPLATE "NP1" ON BACKPLATE.

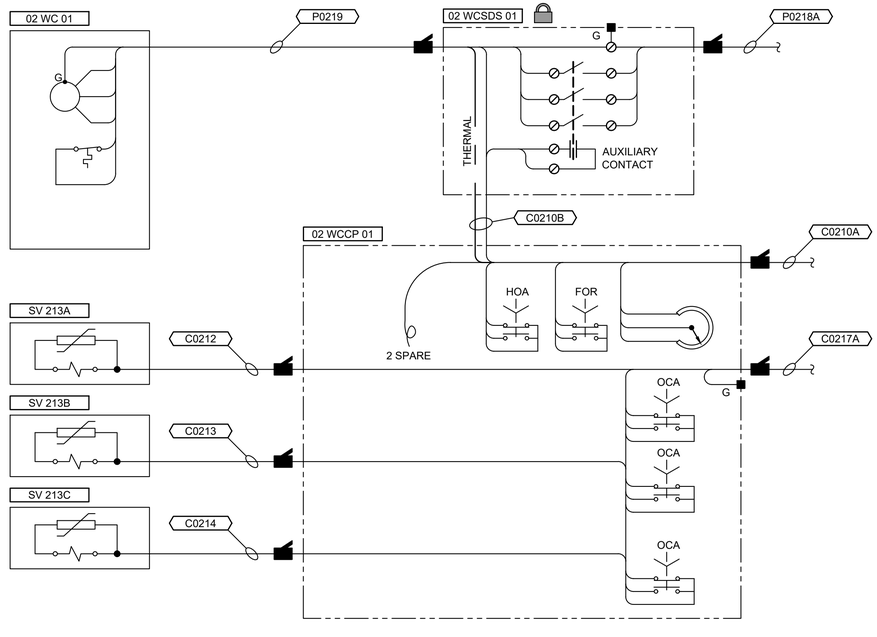
3 - CONTROL PANEL AND SAFETY DISCONNECT SWITCH ELEVATION - SCREENINGS WASHER COMPACTOR

NOT TO SCALE



2 - CONNECTION DIAGRAM - ROTARY DRUM SCREENS

NOT TO SCALE



4 - CONNECTION DIAGRAM - SCREENING WASHER COMPACTOR

NOT TO SCALE

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BEACH CLUB

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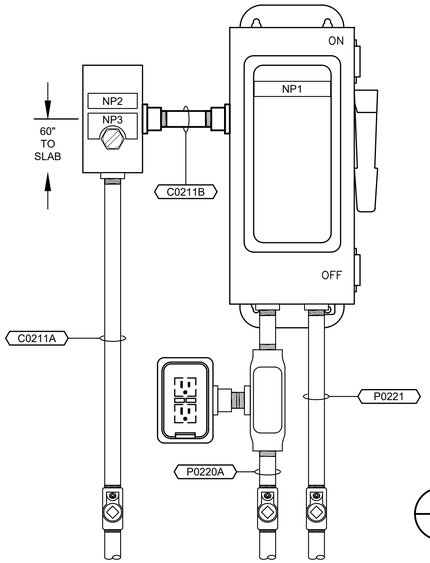
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ELECTRICAL

CONTROL STATIONS AND CONNECTION DIAGRAMS - ROTARY DRUM SCREENS AND SCREENINGS WASHER COMPACTOR

DRAWING: **E2-9** OF: **11**

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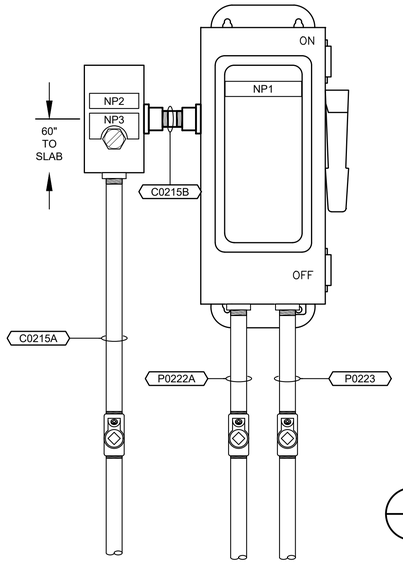
DEVICE NAMEPLATE SCHEDULE	
DEVICE	**NAME PLATE ENGRAVING**
NP1	MOTOR SAFETY DISCONNECT SWITCH [02 OCUSDS 01]
NP2	MOTOR STARTER CONTROL PANEL [02 OCUCP 01]
NP3	HAND-OFF-AUTO

NOTES:

1. MOUNT NAMEPLATE "NP1" ON BACKPLATE.
2. MOUNT ON SAME CONTROL STATION AS WAS PUMP FIELD CONTROLS.

1 / - **CONTROL PANEL AND SAFETY DISCONNECT SWITCH ELEVATION - ODOR CONTROL UNIT**

NOT TO SCALE



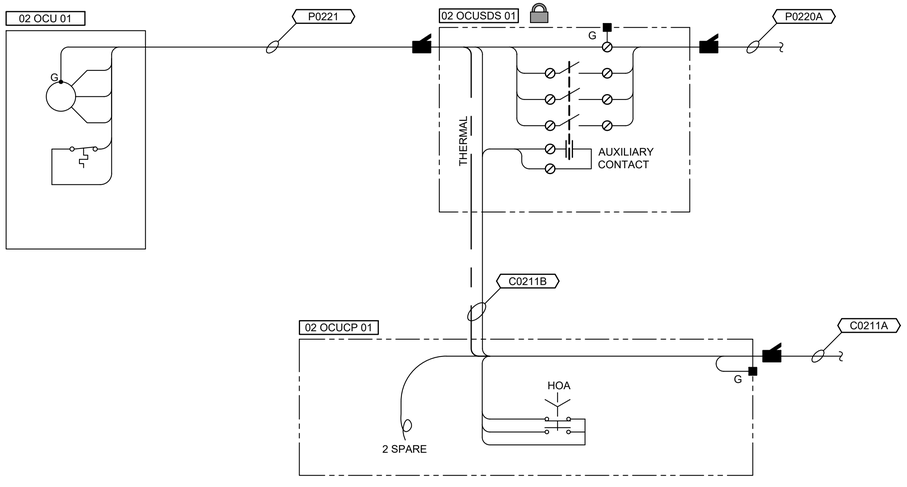
DEVICE NAMEPLATE SCHEDULE	
DEVICE	**NAME PLATE ENGRAVING**
NP1	MOTOR SAFETY DISCONNECT SWITCH [02 MXRSDS 01]
NP2	MOTOR STARTER CONTROL PANEL [02 MXRCP 01]
NP3	ON-OFF

NOTES:

1. MOUNT NAMEPLATE "NP1" ON BACKPLATE.

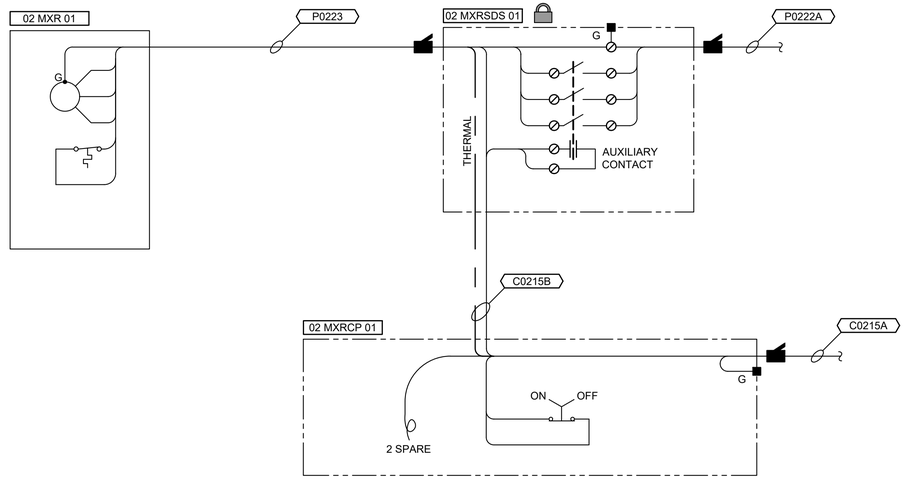
3 / - **CONTROL PANEL AND SAFETY DISCONNECT SWITCH ELEVATION - ANOXIC BASIN MIXER**

NOT TO SCALE



2 / - **CONNECTION DIAGRAM - ODOR CONTROL UNIT**

NOT TO SCALE



4 / - **CONNECTION DIAGRAM - ANOXIC BASIN MIXER**

NOT TO SCALE

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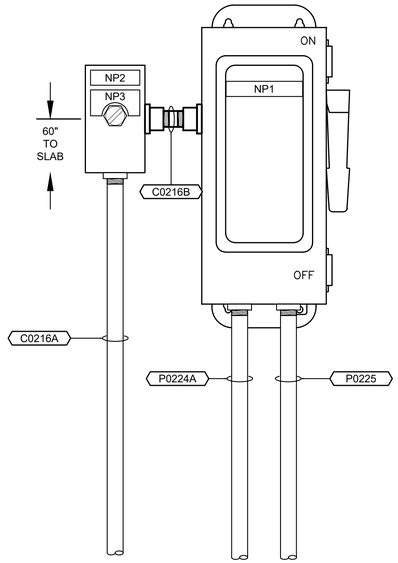
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CONTROL STATIONS AND CONNECTION DIAGRAMS - ODOR CONTROL UNIT, ANOXIC BASIN MIXER

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DEVICE NAMEPLATE SCHEDULE	
DEVICE	**NAME PLATE ENGRAVING**
NP1	MOTOR SAFETY DISCONNECT SWITCH [02 WPSDS 01]
NP2	MOTOR STARTER CONTROL PANEL [02 WPRCP 01]
NP3	HAND-OFF-AUTO

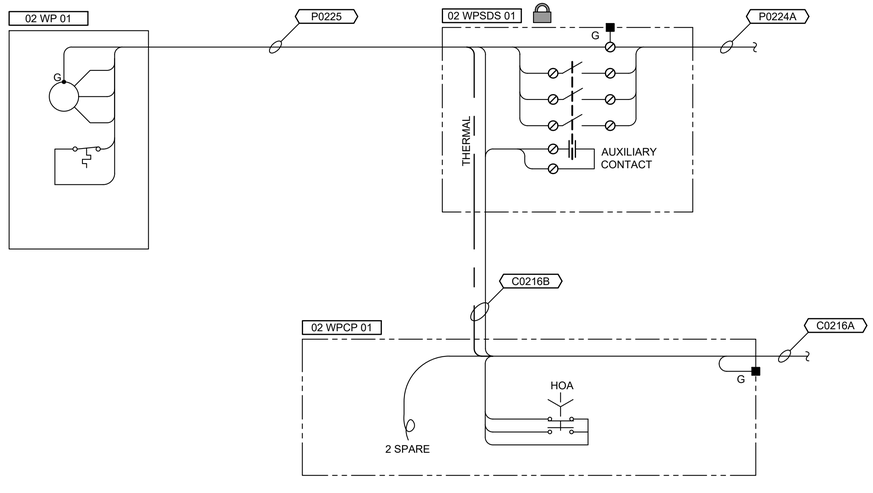
NOTES:

1. MOUNT NAMEPLATE "NP1" ON BACKPLATE.
2. MOUNT ON SAME CONTROL STATION AS ODOR CONTROL UNIT FIELD CONTROLS.

1 / -

CONTROL PANEL AND SAFETY DISCONNECT SWITCH ELEVATION - WAS PUMP

NOT TO SCALE



2 / -

CONNECTION DIAGRAM - WAS PUMP

NOT TO SCALE

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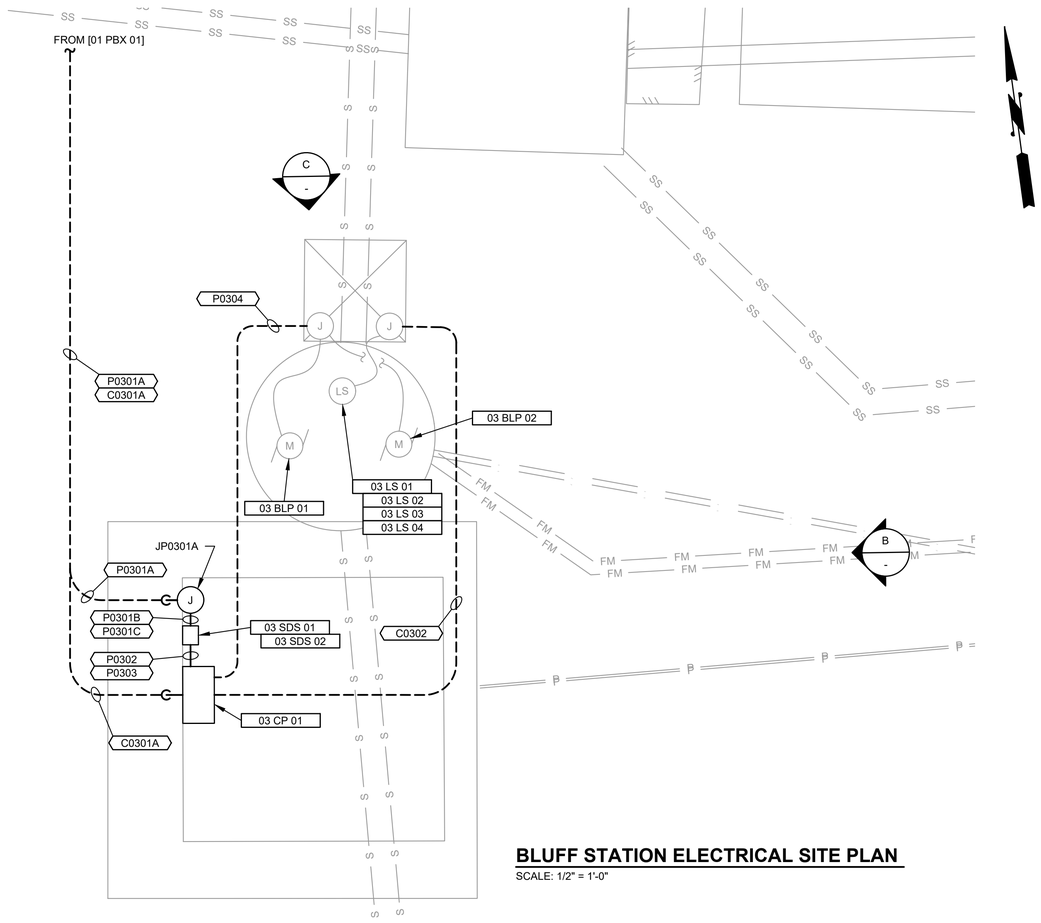
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ELECTRICAL

CONTROL STATION AND CONNECTION DIAGRAM - WAS PUMP, AND MOV SAFETY DISCONNECT SWITCH ELEVATION

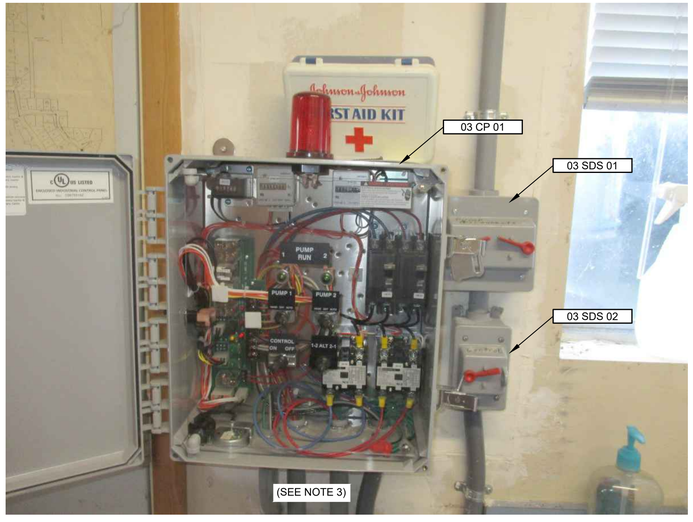
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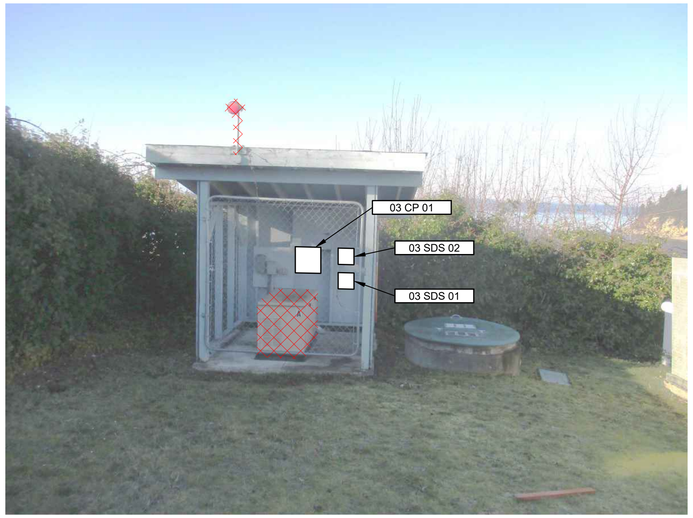
BLUFF STATION ELECTRICAL SITE PLAN

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



A
-
EXISTING BLUFF LIFT STATION PHOTO DETAIL A

NOT TO SCALE



NOTES:

1. DEMOLISH EXISTING GENERATOR AND ASSOCIATED CONNECTIONS.
2. LAYOUT OF RELOCATED EQUIPMENT FOR CLARITY ONLY FIELD ADJUST AS REQUIRED.

B
-
EXISTING BLUFF LIFT STATION PHOTO DETAIL B

NOT TO SCALE



C
-
EXISTING BLUFF LIFT STATION PHOTO DETAIL C

NOT TO SCALE

NOTES:

1. SALVAGE AND AUDIT EXISTING BLUFF STATION CONTROL PANEL AND DISCONNECT SWITCHES.
2. RELOCATE TAGGED EQUIPMENT TO BACK WALL OF BLUFF LIFT STATION (B / -).
3. EXISTING CONNECTIONS INCLUDE A REMOTE MOUNT EXTERNAL ALARM PANEL WHICH WILL NOT BE REPLACED. PLUG UNUSED PENETRATIONS.

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0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

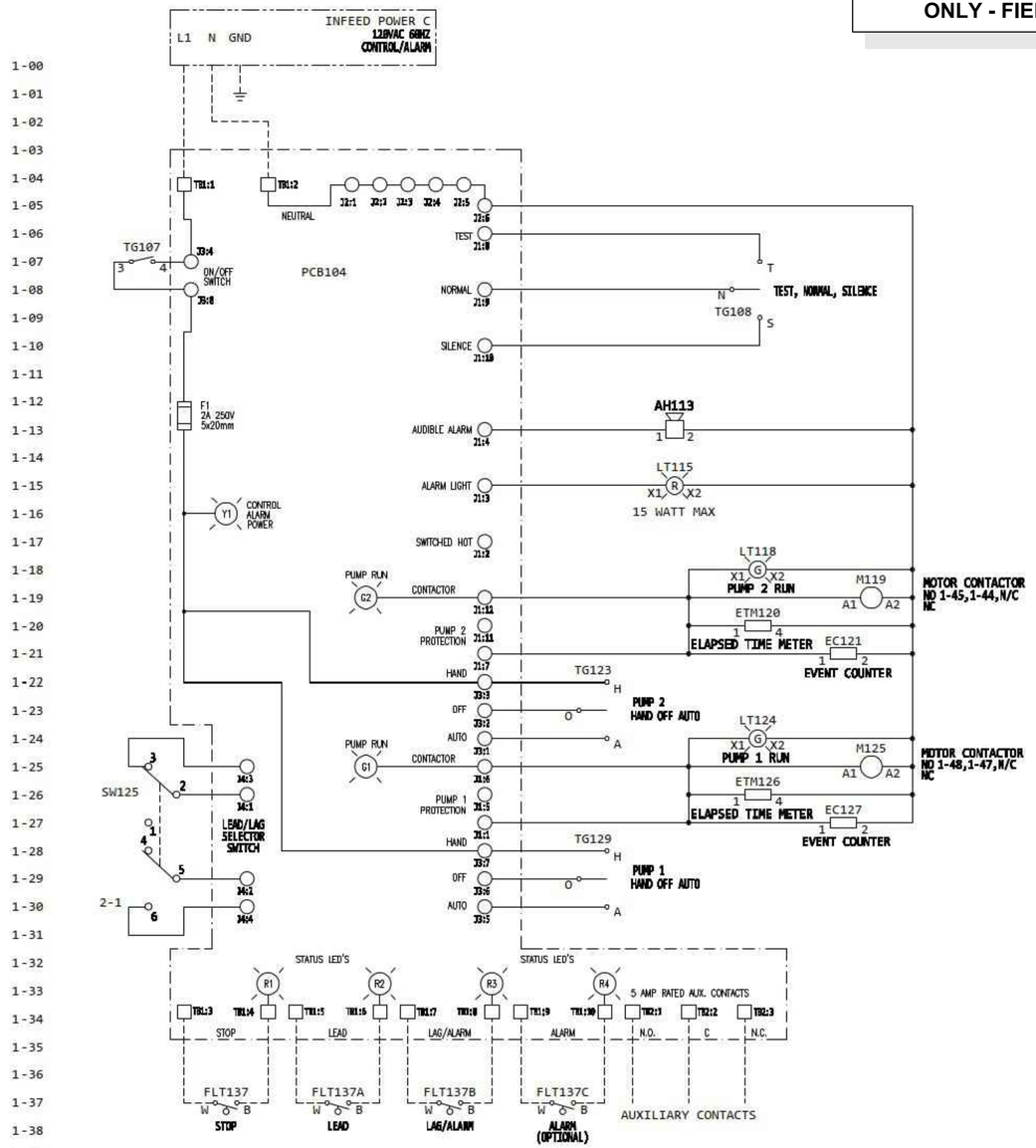
ELECTRICAL

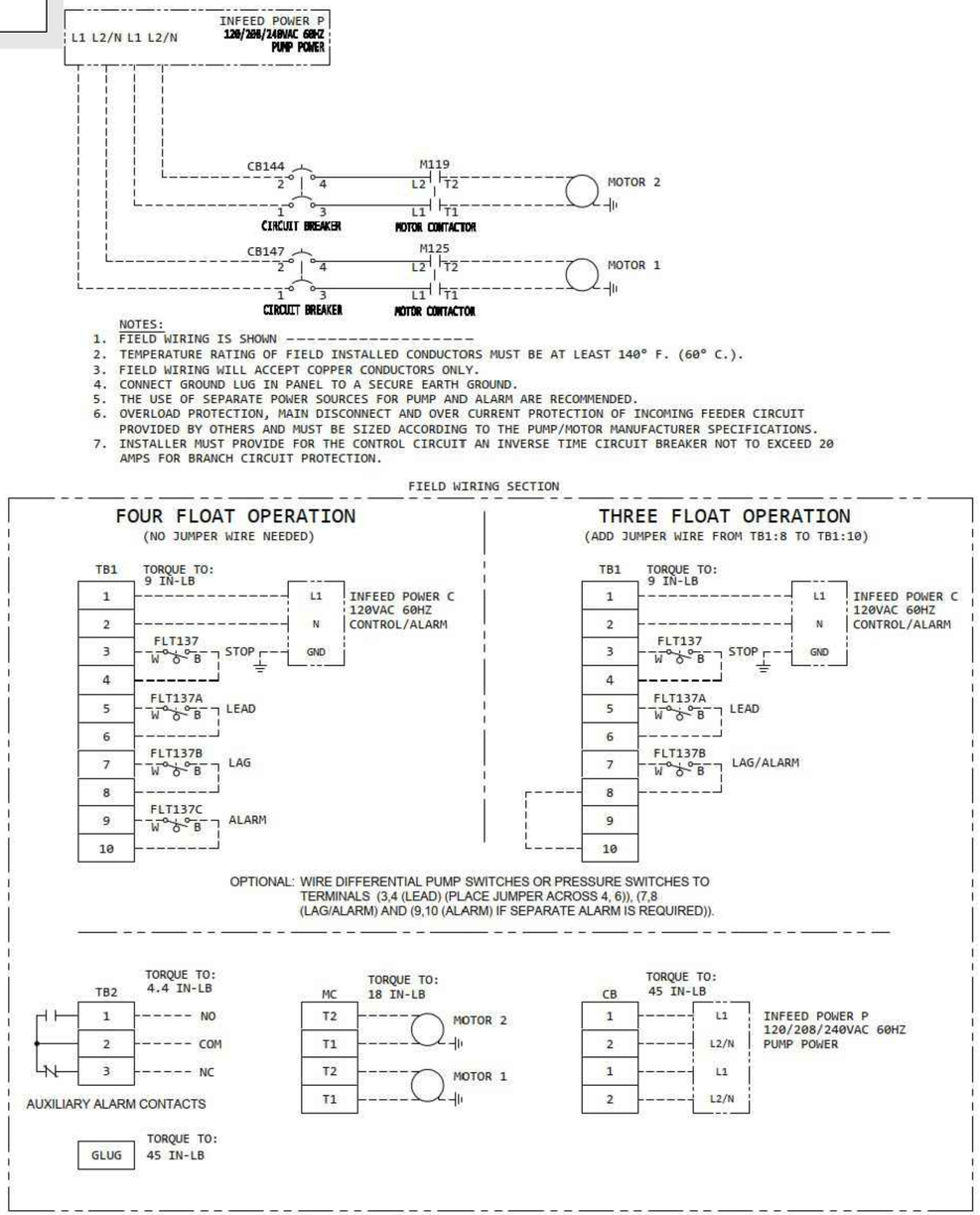
BLUFF LIFT STATION

DRAWING: **E3-1** OF: **2**

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APPROVED BY TS	DATE 10/10/18

IFS DESCRIPTION
1221W124E6A8AC10AE11D19B35H

PROJECT NUMBER	SHEET NUMBER	REV
P22448	1 OF 1	A

1 - EXISTING BLUFF LIFT STATION CONTROL PANEL MANUFACTURER'S DIAGRAM
NOT TO SCALE

INCLUDED FOR REFERENCE ONLY - FIELD VERIFY

Gray & Osborne, Inc.
CONSULTING ENGINEERS
1130 RAINIER AVENUE SOUTH, SUITE 300
SEATTLE, WASHINGTON 98144
(206) 284-0860

JASON R. NEWQUIST — STATE OF WASHINGTON — 45531 — REGISTERED PROFESSIONAL ENGINEER — 9/11/26

TAYLOR BAY BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

8220 178TH AVENUE COURT SW, LONGBRANCH, WA 98351

No.	DATE	REVISION

ISSUED FOR: **BID SET**

ISSUE DATE:	SEPTEMBER 2026
APPROVED BY:	JRN
CHECKED BY:	PAM
DRAWN BY:	DCK
DESIGNER:	CM
G & O JOB NO.:	22848.01
FILE:	E3_CPEWD.DWG

ELECTRICAL

EXISTING BLUFF LIFT STATION CONTROL PANEL ELECTRICAL WIRING DIAGRAM

DRAWING: **E3-2** OF: **2**

m:\taylor bay beach club hoa\22848.01 construction plans, spec, & permitting wa doh grant\01 design\wwtf upgrade\Planset\Electrical\E3_CPEWD.dwg, 9/4/2026 10:44 AM, CHARLEY REID

TAYLOR BAY BEACH CLUB HOA

PIERCE COUNTY **WASHINGTON**

TAYLOR BAY
BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

APPENDIX A

EXISTING WWTF DRAWINGS

Gray & Osborne, Inc.
CONSULTING ENGINEERS
1130 RAINIER AVENUE SOUTH, SUITE 300
SEATTLE, WASHINGTON 98144
(206) 284-0860

G&O #22848.01

M:\taylor bay beach club hoa\22848.01 construction plans, spec. & permitting wa doh grant\01 design\wwtf upgrade\Planset\General\GO COVER.dwg, 9/4/2026 11:35 AM, CHARLEY REID

of Sec. 35, T20N, R1W.

TAYLOR BAY COUNTY ROAD

COMMUNITY PARK

DRIFTWOOD LANE

TAYLOR BAY

COMMON USER BEACH

MALLARD LANE

BAY LANE

BEAR ROAD

HONEY

DEER LANE

RAVEN LANE

PHEASANT LN

FUTURE EXPANSION

FUTURE WELL SITE

EAGLE ROAD

LATERAL 3-A Dwg 2

OUTFALL Dwg. 6"

LATERAL 4-A Dwg 2

LAT 7-C Dwg 4

LATERAL 6-C Dwg 4

LATERAL 5-C Dwg 4

LAT 4-C Dwg 5

LATERAL 5-U Dwg 4

LATERAL 3-C Dwg 5

LAT 1-A Dwg 2

LAT 2-A Dwg 2

LATERAL 2-C Dwg 5

LAT 1-C Dwg 5

LAT 2-B Dwg 3

LAT 1-B Dwg 3

MAIN A Dwg 2

MAIN B Dwg 3

MAIN C Dwg 4

MAIN C Dwg 5

MAIN B Dwg 5

PLAT II

SECOND MAIN ADDITION

BLK 1

BLK 2

BLK 3

BLK 4

BLK 5

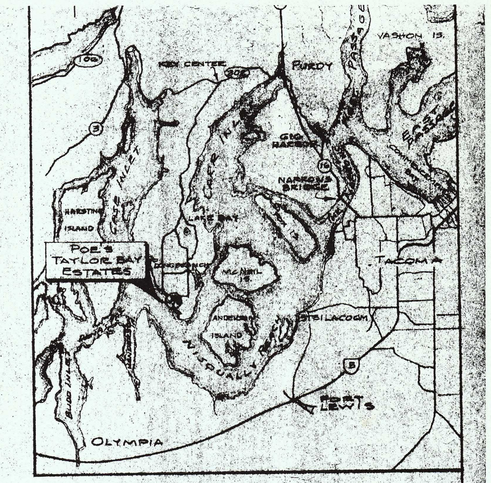
BLK 6

BLK 7

MH 1 through MH 44

C.O. 1 through C.O. 41

SCALE 1" = 100'



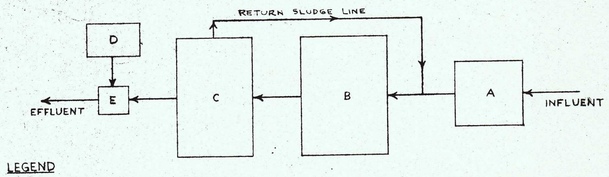
VICINITY MAP Scale: 1" = 4 Mi.

LEGAL DESCRIPTION OF PROJECT

RECORDED PLATS OF POE'S TAYLOR BAY ESTATES AND POE'S TAYLOR BAY ESTATES SECOND ADD'N., IN SEC. 35, TWP. 20 N., RG. 1 W. WM., PIERCE CO., WN.

LEGEND

- PROPOSED CONCRETE SEWER MAIN WITH MANHOLE OR CLEANOUT
- PROPERTY BOUNDARY
- ADDITION BOUNDARY



LEGEND

A SCREEN AND COMMINUTOR
B AERATION TANK
C SETTLING TANK
D CHLORINATOR
E CHLORINE CONTACT TANK

FLOW DIAGRAM

QUANTITIES

MANHOLES – 29
CLEANOUTS – 18

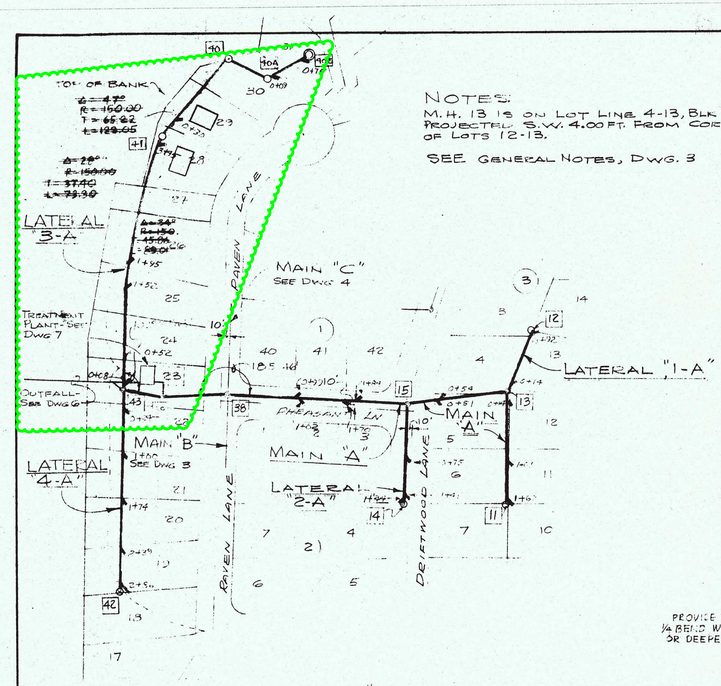
NOTE
THIS DRAWING INCLUDED FOR ORIENTATION ONLY. SEE PROFILES FOR DETAILED LOCATIONS.

AS-BUILT 12-23-70

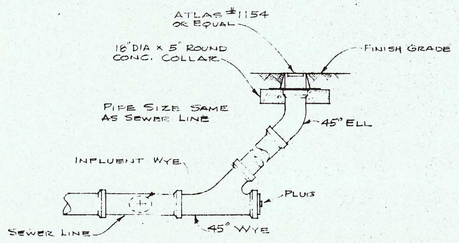
Poe's Taylor Bay Estates Sewage Works	General Layout Plan	Drawing 1 of 8 scale 1" = 100'
drawn R.D. checked LCC date 7-12-68	SEIFERT FORBES & BERRY ARCHITECTS & ENGINEERS TACOMA, WASHINGTON	job number J-2127

NOTES:
M.H. 13 IS ON LOT LINE 4-13, BLK 3, PROJECTED S.W. 4.00 FT. FROM CORNER OF LOTS 12-13.

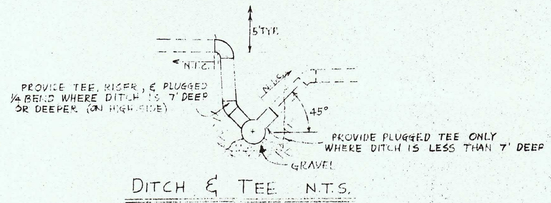
SEE GENERAL NOTES, DWG. 3



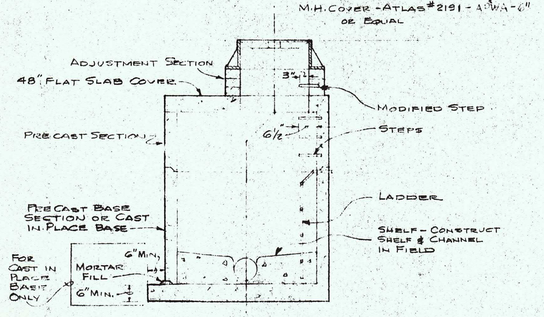
MAIN "A" & LATERALS
PLAN SCALE: 1" = 100'



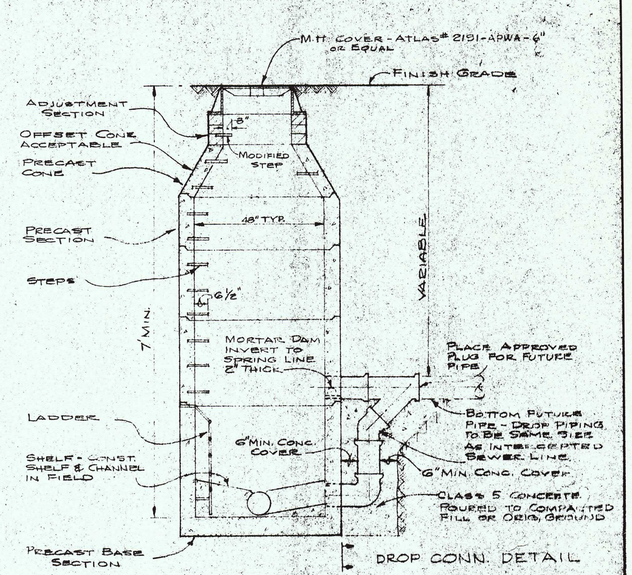
CLEANOUT N.T.S.



DITCH & TEE N.T.S.

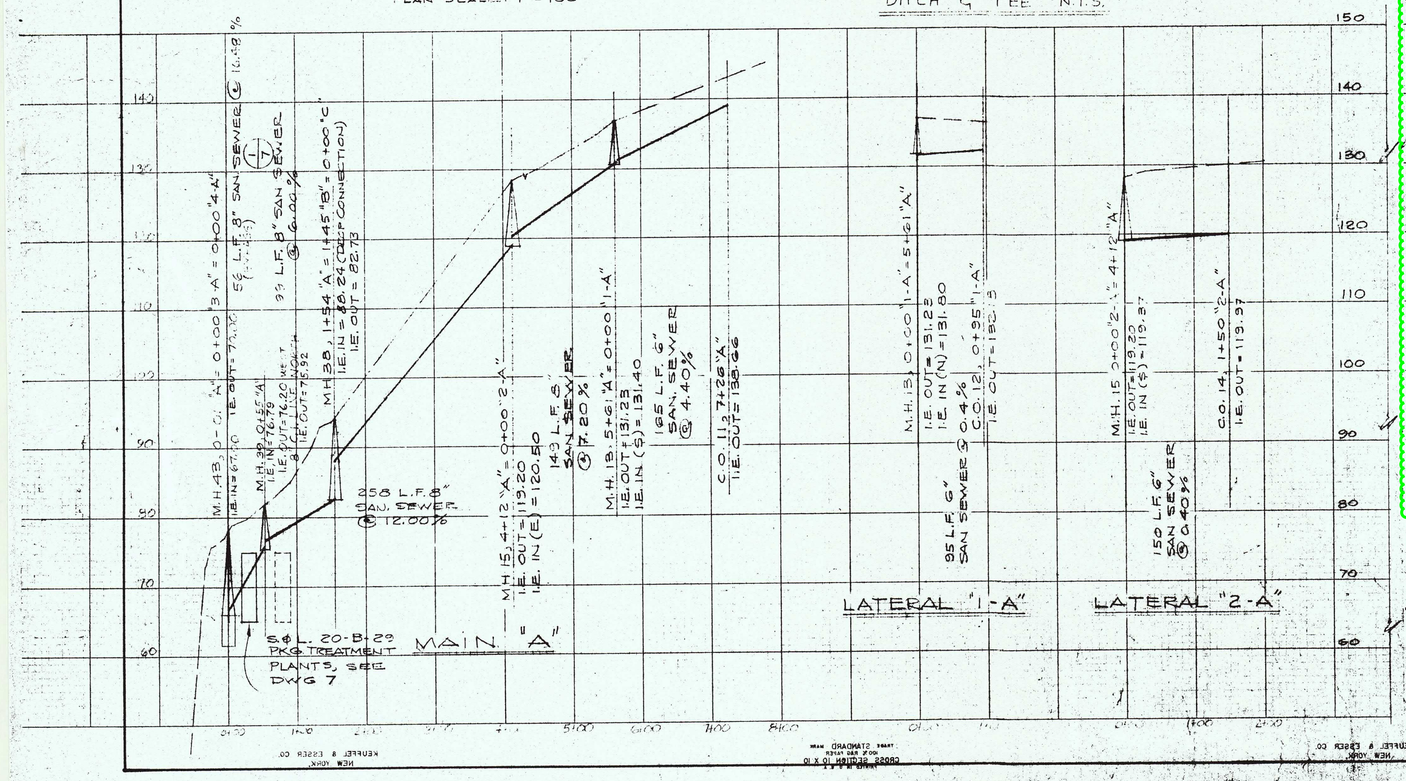


SHALLOW MANHOLE N.T.S.

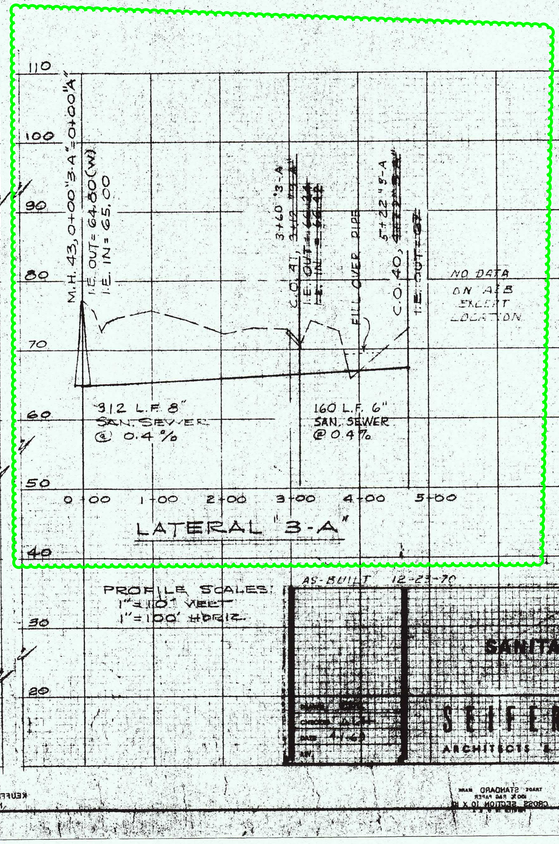


STANDARD MANHOLE N.T.S.

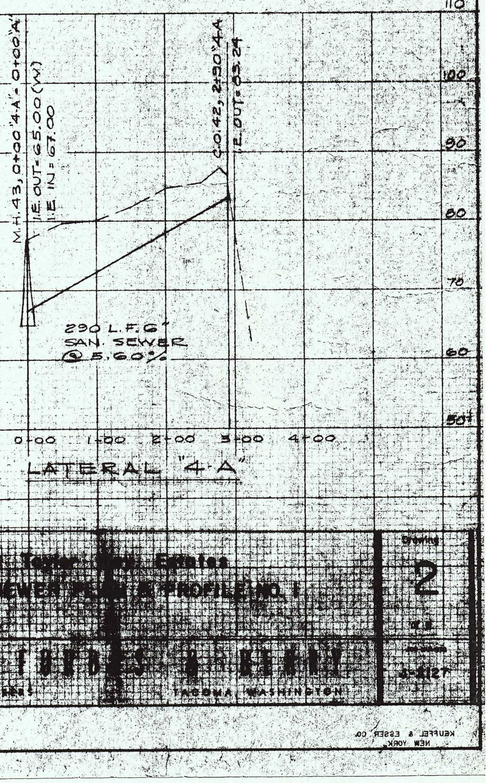
NOTE: A.P.W.A. TYPE IA SHOWN; TYPES IB, II, & III ARE ACCEPTABLE ALTERNATES.



LATERAL "1-A" LATERAL "2-A"



LATERAL "3-A"



LATERAL "4-A"

PROFILE SCALES:
1" = 100' VERT.
1" = 100' HORIZ.

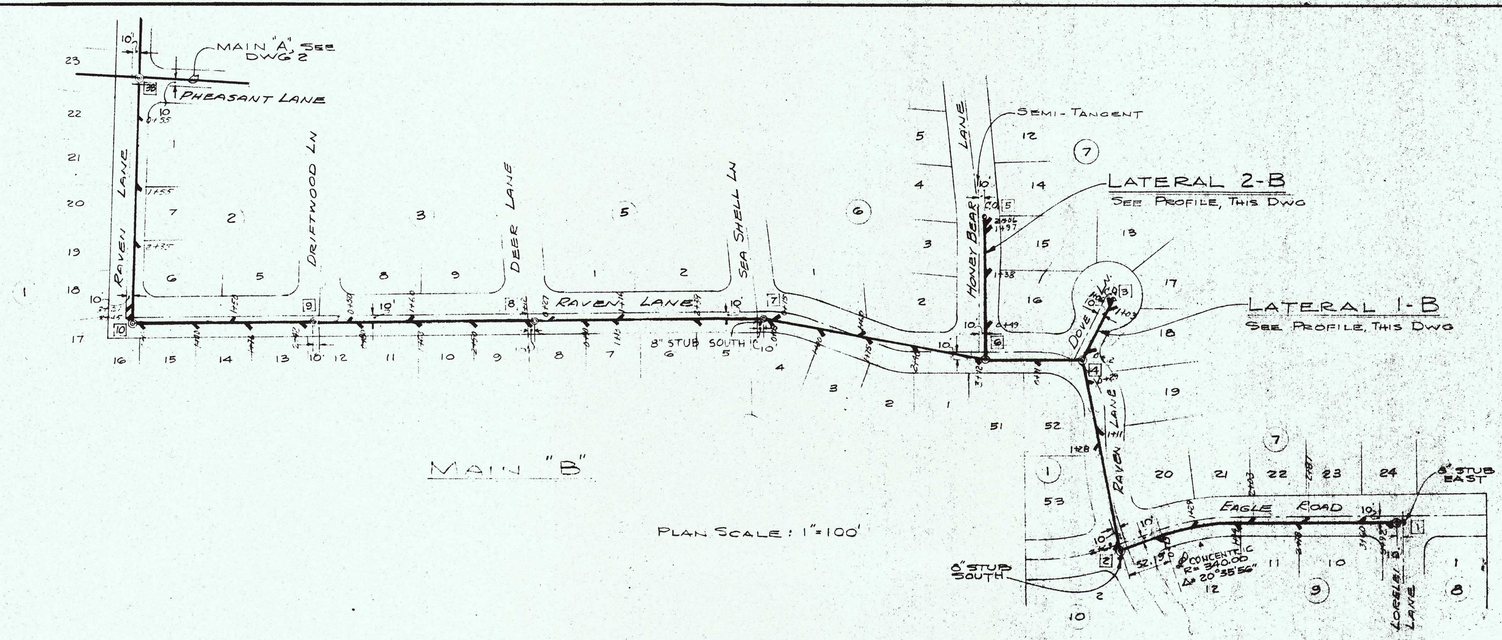
AS-BUILT 12-23-70

Drawing 2

Pine Tree Park Estates
SANITARY SEWER PLAN & PROFILE NO. 1

SEIFERT TODD & KRAUT
ARCHITECTS & ENGINEERS
TACOMA, WASHINGTON

S-4127



PLAN SCALE: 1"=100'

LEGEND

- CENTERLINE OF ROAD
- PROPERTY LINE
- SEWER LINE W/ MANHOLE
- SEWER LINE W/ CLEANOUT
- (8) BLOCK NUMBER
- [21] MANHOLE OR CLEANOUT NUMBER

NOTES

ALL STATIONINGS REFER TO SEWER LINE UNLESS NOTED AS ℄'s = CENTERLINE ROAD

ALL SEWER LINES TO BE TANGENT UNLESS CURVE DATA IS GIVEN

REFER TO PLATS OF POE'S TAYLOR BAY ESTATES, FIRST & SECOND ADDITIONS, FOR CENTERLINE DATA

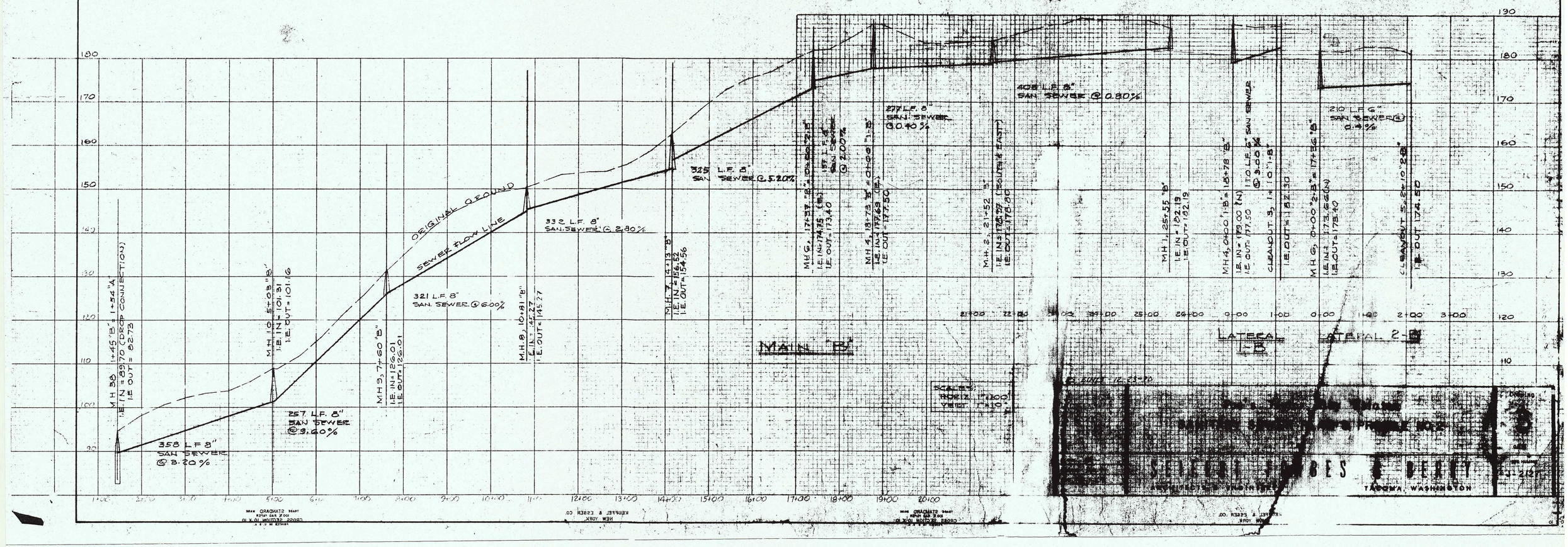
M.H. #4 IS 10' FROM ℄ OF DOVE LANE, 90° FROM S.W. END OF DOVE LANE.

I.E.'S TABULATED ARE FLOW LINE ELEVATIONS OF PIPES PROJECTED TO CENTER OF M.H.; I.E. AT M.H. WALL WILL DIFFER.

SEE DWG. 2 FOR MANHOLE, CLEANOUT, & TRENCH DETAILS

MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL PUBLIC WORKS CONSTRUCTION, PREPARED BY THE WASHINGTON STATE CHAPTER, A.P.W.A., 1963

GRATE EL. OF MANHOLE TO BE SET IN FIELD TO MATCH EXISTING GROUND



SCHEIER JONES & DERRY
ARCHITECTS & PLANNERS
TACOMA, WASHINGTON

SEWER CURVE DATA:

SEWER IS NOT CONCENTRIC WITH ROAD ℄

P.C. OF SEWER IS 17.77 FT. "SOUTH" & 10.00 FT. "EAST" OF ℄ P.C.

SEWER CURVE:
R = 150.00
Δ = 69°48'20"
L = 180.13
T = 102.72

M.H. LOCATION NOTES:

#20 IS ON LOT LINE 19-20, BLOCK 6, PROJECTED 40 FT.

#21 IS ON LOT LINE 16-17, BLOCK 6, PROJECTED 30 FT.

G&O MEASURED RIM = 149.69

PLAN SCALE: 1"=100'

PROFILE SCALE:
1"=10' VERT.
1"=100' HORIZ.

AS BUILT 12-23-70

Poe's Taylor Bay Estates

SANITARY SEWER PLAN & PROFILE NO. 8

SEIFERT FORBES & BERRY

ARCHITECTS & ENGINEERS

TACOMA, WASHINGTON

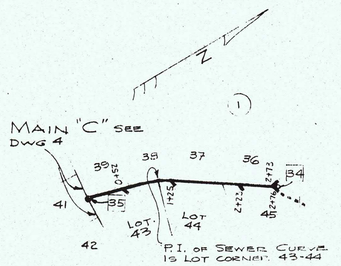
DRAWING 4

G&O Survey #1244/#37:
Rim = 84.61
IE = 77.31 6" CONC N
IE = 77.61 8" CONC E (SURVEY NOTES SHOW 6" BUT PROBABLY 8")

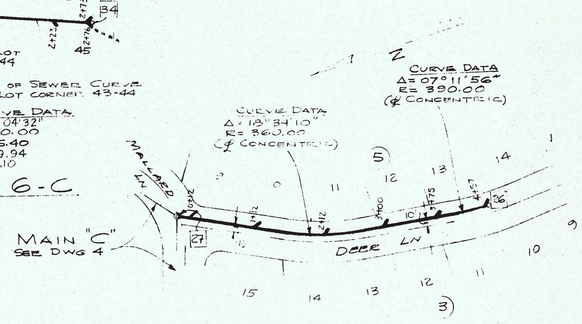
G&O Survey #1283/#38:
Rim = 88.89
IE = 77.04 8" CONC N
IE = 77.04 8" CONC E (POSSIBLE DROP?)
IE = 77.04 8" CONC S (POSSIBLE

G&O Survey #1057:
Rim = 144.50
IE = 134.25 8" CONC SE
IE = 132.75 8" CONC

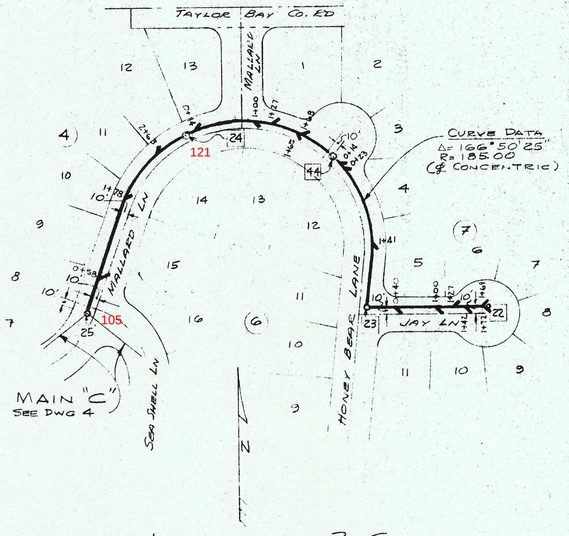
G&O Survey: #1236
Rim = 155.12
IE = 143.62 8" CONC W
IE = 143.62 8" CONC NI



LATERAL 6-C

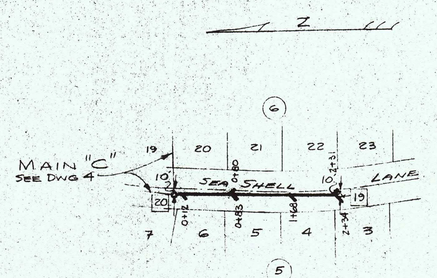


LATERAL 4-C



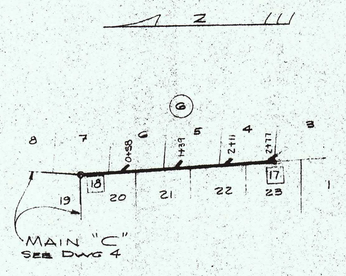
LATERAL 3-C

PLAN SCALE: 1"=100'



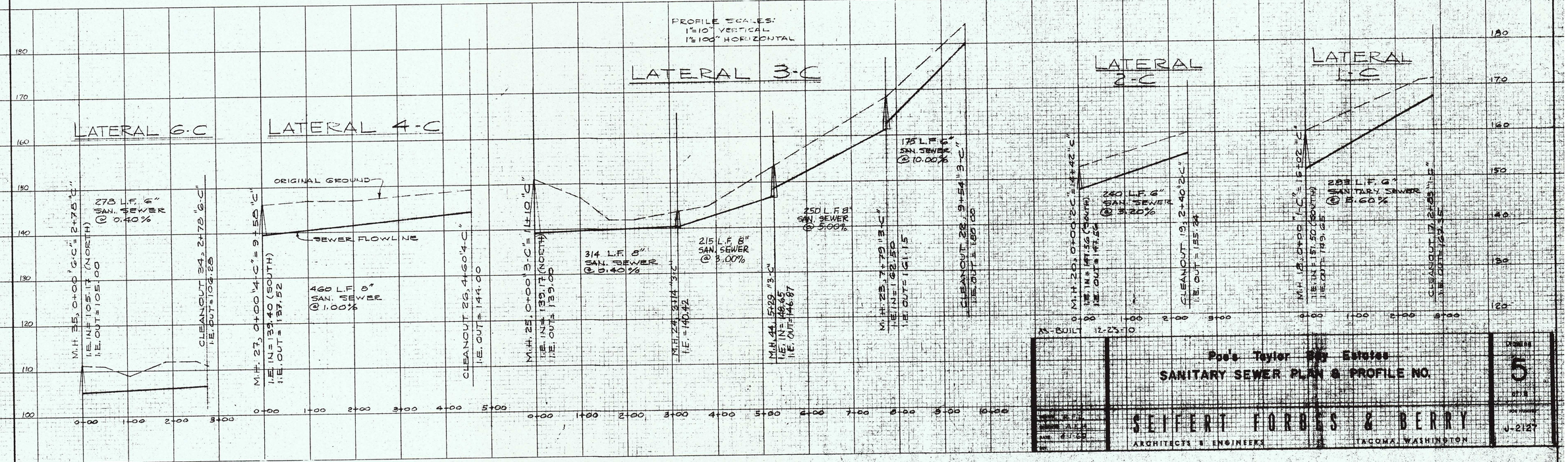
NOTE: SEWER IS STRAIGHT; ROAD IS CURVED.

LATERAL 2-C



LATERAL 1-C

PROFILE SCALES:
1"=10' VERTICAL
1"=100' HORIZONTAL



AS BUILT 12-23-70

Pod's Taylor Bay Estates
SANITARY SEWER PLAN & PROFILE NO.

SEIFERT FORBES & BERRY
ARCHITECTS & ENGINEERS
TACOMA, WASHINGTON

DRAWING 5
SHEET
JOB NUMBER J-2127

KEUFFEL & ESSER CO. NEW YORK.

TRADE STANDARD MARK 100% RAG PAPER CROSS SECTION 10 X 10 PRINTED IN U.S.A.

KEUFFEL & ESSER CO. NEW YORK.

TRADE STANDARD MARK 100% RAG PAPER CROSS SECTION 10 X 10 PRINTED IN U.S.A.

KEUFFEL & ESSER CO. NEW YORK.

2 L.F. 2" C.I. FLG PIPE (TYP.)
4 x 2 125# C.I. FLG. TAPER REDUCER (TYP.)
4" 125# C.I. FLG. 45° ELL. (TYP.)
4 x 4 x 6 125# C.I. FLG. REDUCING TEE ("BULLHEAD")
ONE LAYING LENGTH 6" C.I. FLG PIPE

Entire diffuser has fallen off (per DNR view)

LIFTING LOOPS
PRESSER CPLG.
M.J. PIPE
"K" = 3" TYP.
#5 RE-BAR LIFTING LOOP
PRECAST WITH PIPE 4' x 4' x 4' CONC. ANCHOR BLOCK, CLASS 5 (1 1/2) CONC.
DIFFUSER PORTS
SEA BOTTOM
GRANULAR BACKFILL
6" C.I. PIPE
GRANULAR BACK FILL
EXCAVATION FOR ANCHOR BLOCK

DIFFUSER ASSEMBLY 2
SCALE 1/2" = 1'-0" 6

DIFFUSER
OUTFALL LINE
LOW TIDE LINE
HIGH TIDE LINE
Cl2 CONTACT TANK # 1
LOT 24 BLK 1
LAT. 3-A
CLEANOUT
0+00
OUTFALL BASE LINE - PLANT #1
15.00
80°12'
MAIN "A" DWG. 7
PHEASANT LANE
RAVEN LANE
LOT 22 BLK 1

OUTFALL PLAN
1" = 50'

PLASTIC HYPOCHL. LINE, FURNISHED BY MFG.
PLASTIC OUTFALL LINE (DOWN @ 45°)
12" DIA. CONC. M.H.
24" DIA. CONC. M.H. (LID REMOVED)
LID
6" C.I. TH'D 'D' TEE
I.E. OUT = 78.50
HYPOCHL. LINE CONNECTION
1 L.F. 6" C.I. THD'D PIPE
STD. 1,000 GAL PRE-CAST SEPTIC TANK

Cl2 CONTACT TANK 1
SCALE 1/2" = 1'-0" 6

4' MIN.
GRANULAR BACKFILL

OUTFALL LINE X-SEC. 3
STA. 2+03 - 7+50 6

STD. BACKFILL
4' MIN.
CLASS C BEDDING

OUTFALL LINE X-SEC 4
STA. 0+55 - 3+00 6

2' MIN.
CONC. THRUST COLLAR POUR AGAINST UNDISTURBED EARTH @ EACH PIPE JOINT

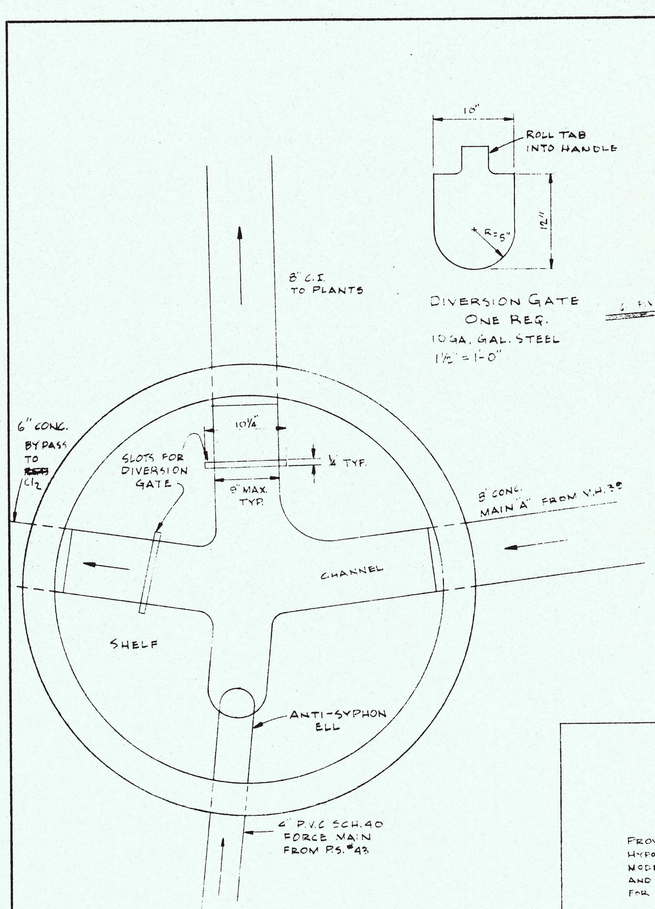
OUTFALL TRANSVERSE SEC. 5
N.T.S. 6

FROM Cl2 CONTACT TANK
CLEANOUT
OVERFLOW FROM #3

OUTFALL PROFILE
1"=50' HORIZ.
1"=10' VERT.

60
50
40
30
20
10
0
-10
-20
-30

RIPRAP BY OTHERS
ONE 6" 45° ELL @ 0+55±
200 LIN. FT. ± P.V.C. PIPE SCHED. 43 TYPE II @ VAR. SLOPE
1+60
600 L.F. C.I.M.U. CL. 22 MORTAR LINED OUTFALL PIPE (SEPERATE CONTRACT)
EL-25.0
APPROX. ORIG. GD.
7+60± = BLOCK DIFFUSER ASSY. (2) (6)
10+00
9+00
8+00
7+00
6+00
5+00
4+00
3+00
2+00
1+00
0+00
567'-3"



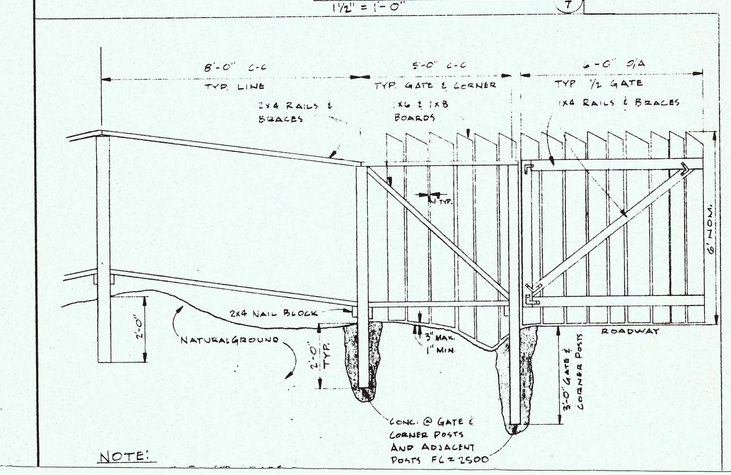
DIVERSION GATE
ONE REQ.
10 GA. GAL. STEEL
1½" = 1'-0"

TREATMENT PLANT
SITE PLAN

LOT 23 BLK. 1
SCALE: 1"=10'

NOTE: M.H. 39 IS ACTUALLY LOCATED 5' OR SO NORTH OF POSITION SHOWN

TEMP BENCH MARK
IRON PIPE EL. 100.36
FLAT DATUM.



MANHOLE 39 BASE
1½" = 1'-0"
1/7

NOTE:

FLOOR PLAN
SCALE: ½" = 1'-0"

CONC. SLAB DETAIL

PUMP STATION
CONTROL PNL. CONTAINING PACO DUPLEX CONTROL PNL. INCLUDING 2 MAGNETIC STARTERS, HOA, 1 HIGH WATER ALARM, 1 SILENCER, 1 BLO. ALTERNATOR
MAKE ALL PUMP STA. CONTROL PNL. CONNECTIONS PER MFG'S RECOMMENDATIONS

PANEL P1 NQO MAIN BREAKER 30 POLES 225 AMPS.

LOAD	CIRCUIT DIRECTORY	AIR NO	AIR BRKR	PHASE	CIRC BRKR	CIR NO	CIRCUIT DIRECTORY	LOAD
3910	BLOWER #2	1	30A		30A	2	BLOWER #1	3910
345	RECEPT.	3	20A		15A	4	COMMINUTOR	
1750	MOTOR #1	5	20A		20A	6	MOTOR #2	2750
50	HYPOCHLOR	7	15A		15A	8	LIGHTS	300W
1530	HEATER	9	20A		SPACE	10	FUTURE BLOWER	3910
3910	FUTURE BLOWER	11	SPACE		SPACE	12	FUTURE MOTOR	2750
3910	FUTURE BLOWER	13	SPACE		SPACE	14	FUTURE MOTOR	2750
16,195								16,195

TOTAL VA 32,565 ; CURRENT 141.5B

NOTES:

ALL WORK TO BE PERFORMED IN COMPLIANCE WITH BOTH A.P.W.A. AND TREATMENT PLANT MFGR'S SPECIFICATION & PLANS, AND IN ACCORDANCE WITH BUILDING, ZONING, ELEC., PLUMBING, AND OTHER APPLICABLE CODES.

LEGEND

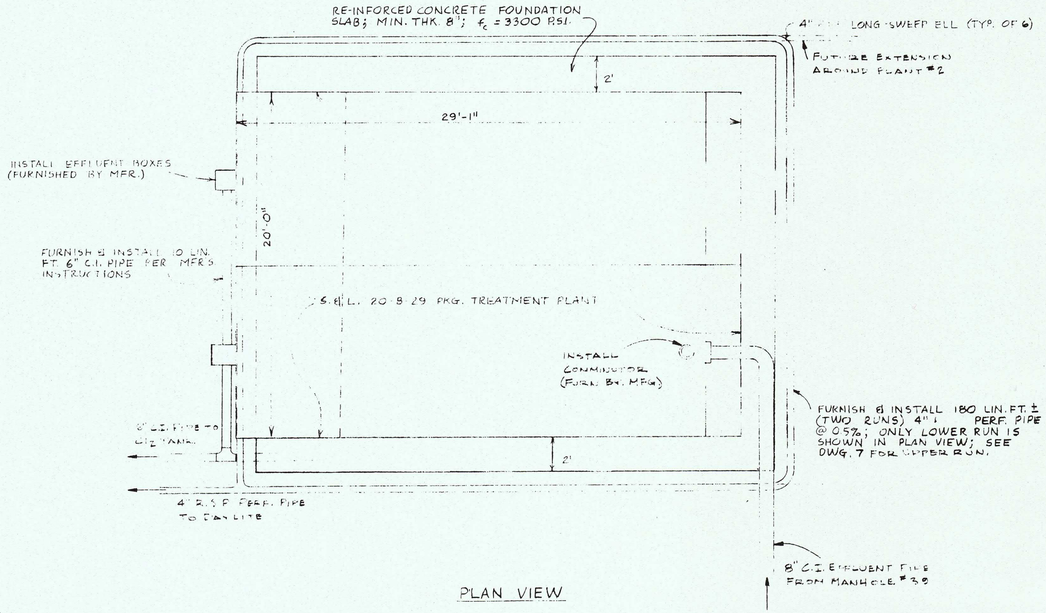
- SEWER PIPE & MANHOLE (39)
- TOP OF SLOPE
- TOE OF SLOPE
- PROPERTY LINE
- MON. LINE
- CONTURE LINE
- CONDUIT UNDER OR IN SLAB.

AS-BUILT 12-23-70

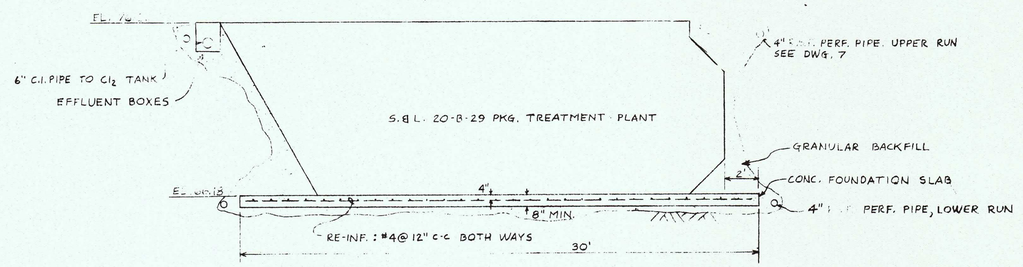
POE'S TAYLOR BAY ESTATES
SEWAGE TREATMENT PLANT
SITE PLAN, LOT 23, BLK 1, & DETAILS

7
of 8

INSTALL SMITH & LOVELESS 20-B-29 PACKAGE TREATMENT PLANT (FURNISHED BY MFR.) ACCORDING TO MANUFACTURER'S INSTRUCTIONS; CONNECT AIR PIPING. INSTALL AIR HEADER, WALK & RAIL, ETC. PERFORM ALL WORK NECESSARY TO PROVIDE A COMPLETE OPERATIONAL PLANT.

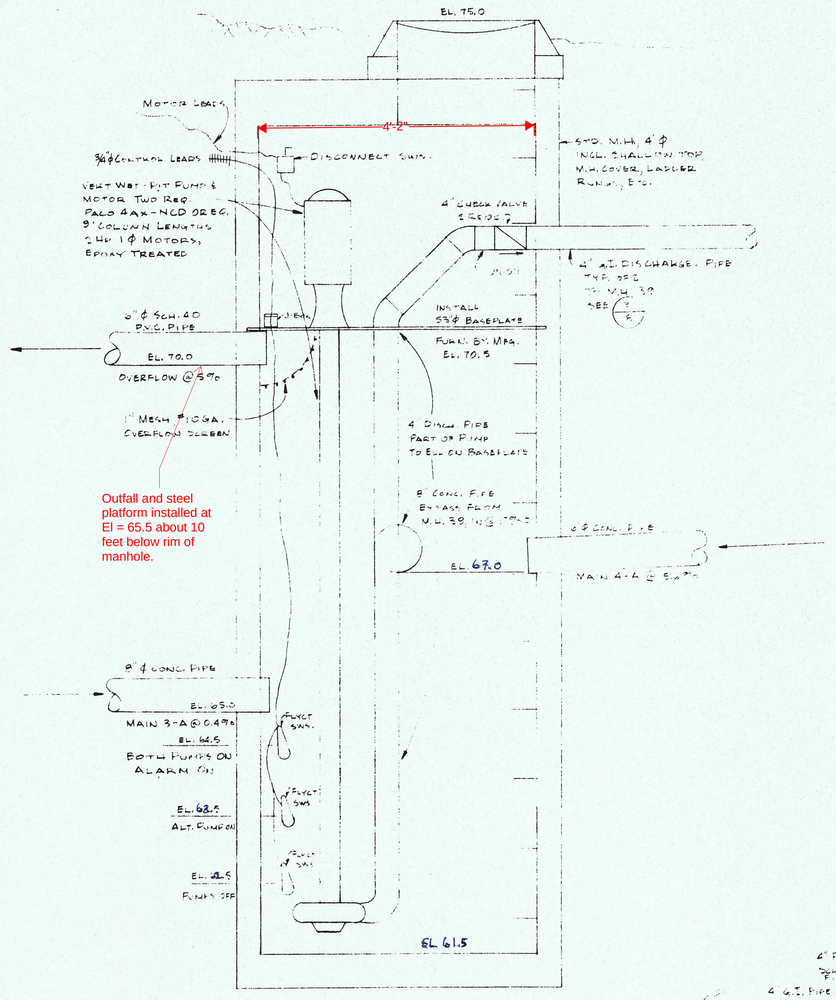


PLAN VIEW



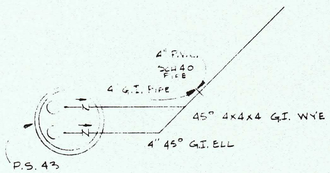
ELEVATION

TREATMENT PLANT #1 (1)



PUMP STATION #43 (2/8)

1" = 1'-0"



P.S. 43 PIPING (3/8)

Outfall and steel platform installed at El = 65.5 about 10 feet below rim of manhole.

	Poe's Taylor Bay Estates SEWERAGE WORKS TREATMENT PLANT DETAILS	Drawing 8

TAYLOR BAY BEACH CLUB HOA

PIERCE COUNTY **WASHINGTON**

TAYLOR BAY
BEACH CLUB

WASTEWATER TREATMENT FACILITY UPGRADE

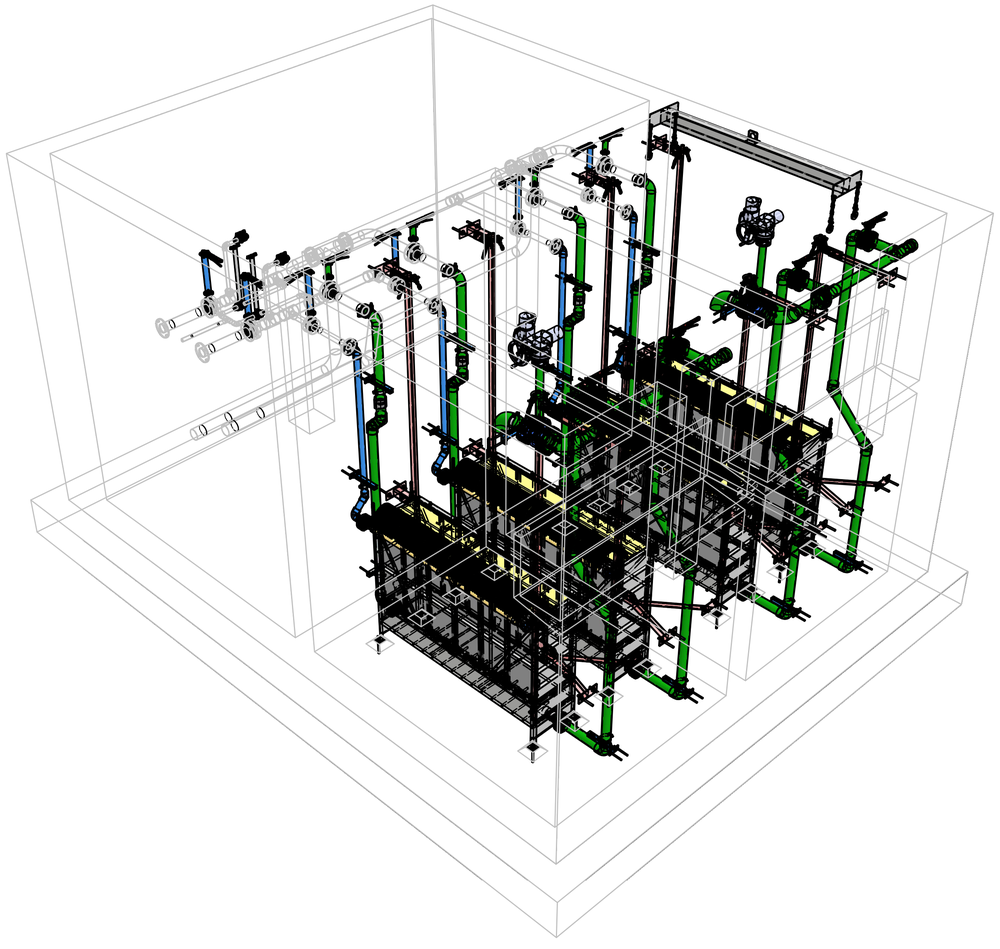
APPENDIX B

MEMBRANE EQUIPMENT SYSTEM DESIGN SUBMITTAL DRAWINGS

Gray & Osborne, Inc.
CONSULTING ENGINEERS
1130 RAINIER AVENUE SOUTH, SUITE 300
SEATTLE, WASHINGTON 98144
(206) 284-0860

G&O #22848.01

M:\taylor bay beach club hoa\22848.01 construction plans, spec. & permitting wa doh grant\01 design\wwtf upgrade\Planset\General\GO COVER.dwg, 9/4/2026 11:35 AM, CHARLEY REID



PERSPECTIVE VIEW

GENERAL NOTES:

1. ALL ITEMS SHOWN IN GRAY ON SHEETS ONE THROUGH EIGHT ARE NOT SUPPLIED BY KMU AND ARE SHOWN FOR REFERENCE ONLY.
2. ALL PIPING, SUPPORTS, FASTENERS, & GASKETS OUTSIDE OF MBR TANKS ARE BY OTHERS.
3. ALL ITEMS NOT IN KMU SCOPE ARE SHOWN FOR REFERENCE ONLY. FINAL DESIGN & LOCATION IS BY OTHERS. RESOLUTION OF ANY CONFLICTS WITH KMU SUPPLIED ITEMS IS NOT THE RESPONSIBILITY OF KMU UNLESS COORDINATED WITH KMU PRIOR TO FABRICATION OF KMU SUPPLIED ITEMS.
4. ALL FASTENERS & GASKETS AT TIE-IN POINTS TO KMU PIPING ARE BY OTHERS.
5. ALL PVC PIPING, FITTINGS, & VALVES SUPPLIED BY KMU WILL BE SHIPPED LOOSE TO PROJECT SITE (STANDARD SHIPPING LENGTHS). CONTRACTOR TO ASSEMBLE PER KMU DRAWINGS.
6. ALL PVC PRIMER, GLUE, AND THREAD COMPOUND IS TO BE SUPPLIED BY OTHERS.
7. DIFFUSER CASE OR GUIDE RAILS TO FLOOR & PIPE SUPPORTS TO WALL ANCHOR BOLTS ARE SUPPLIED BY KMU. EPOXY FOR ANCHOR BOLTS IS SUPPLIED BY OTHERS.
8. TO FACILITATE THE INSTALLATION OF THE MEMBRANE MODULES, ONE OF EACH MEMBRANE UNIT'S GUIDE RAIL & STABILIZER IS 3" LONGER THAN THE OTHER.

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Kubota
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DRAWN BY:	ART	6/24/2025	△				△			
DESIGNED BY:	ART		△				△			
CHECKED BY:	ART		△				△			
APPROVED BY:			△				△			

PROJECT NAME / NUMBER: TAYLOR BAY WA WWTP UPGRADE

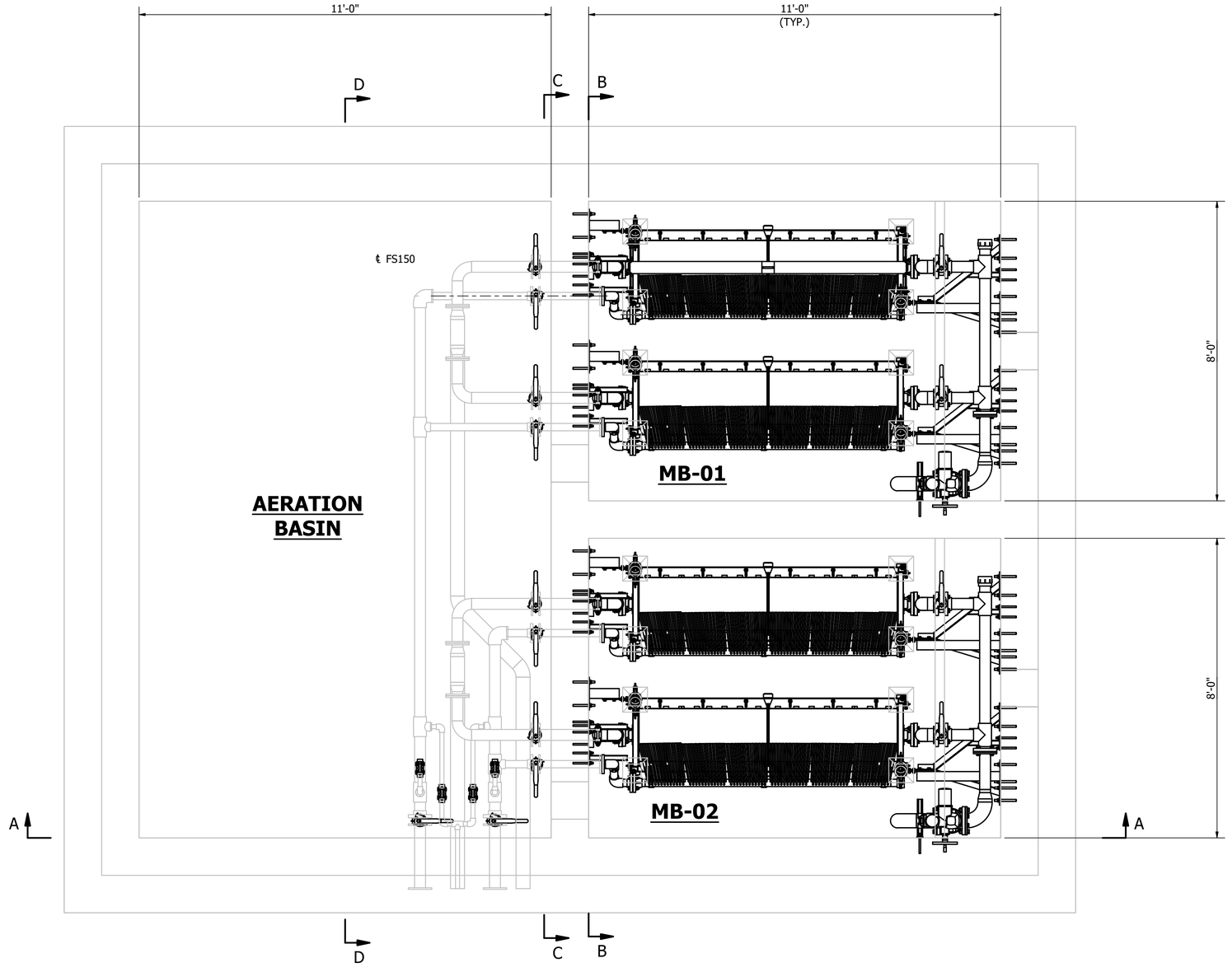
TITLE: ISOMETRIC VIEW

SCALE: 1 / 28

SHEET: 1 OF 20

DWG NO:

REV:



PLAN VIEW

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PROJECT NAME / NUMBER: TAYLOR BAY WA WWTP UPGRADE

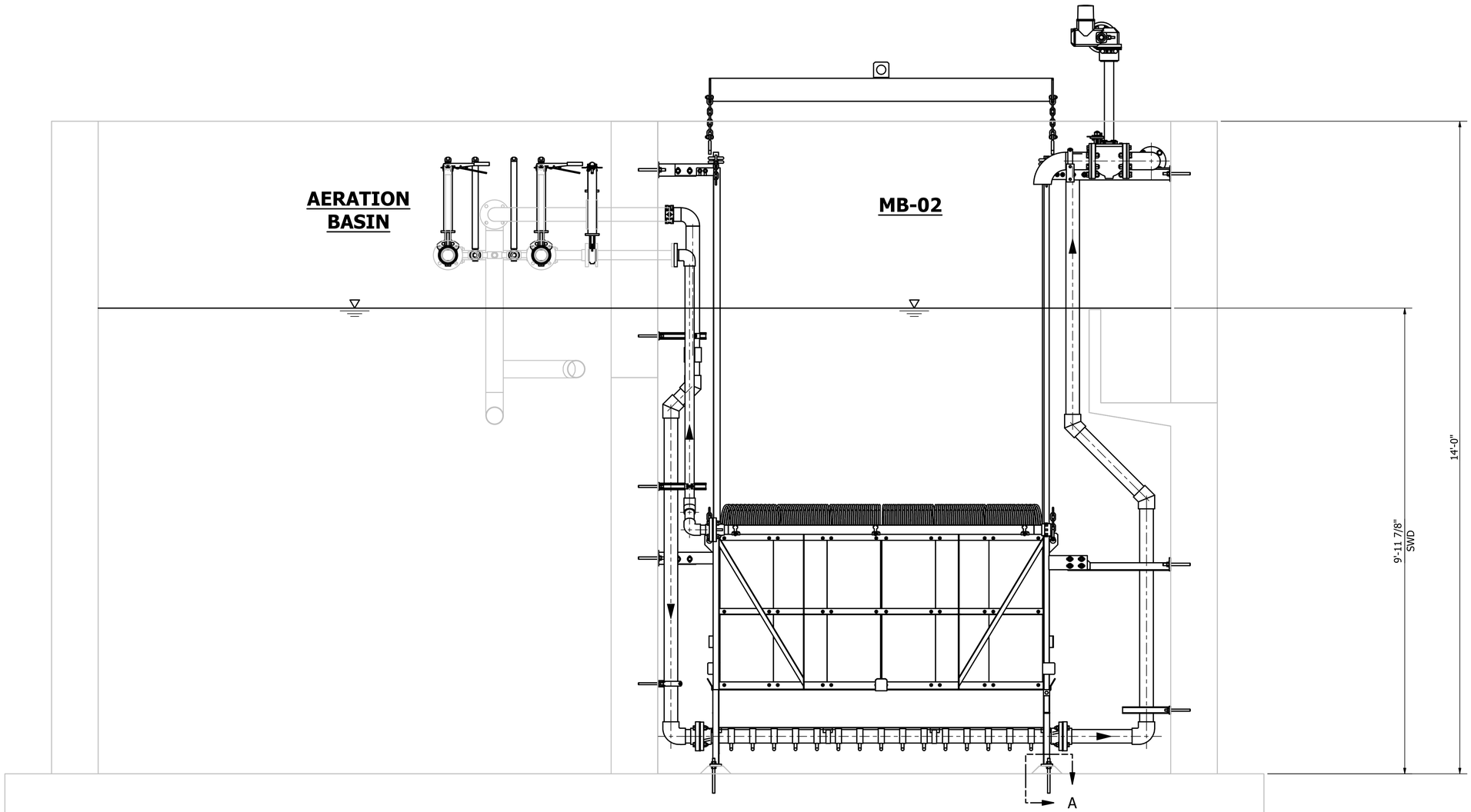
SCALE: 1 / 20

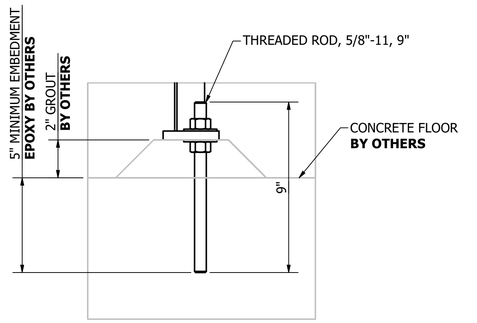
SHEET: 2 OF 20

DWG NO:

REV:

TITLE: PLAN VIEW





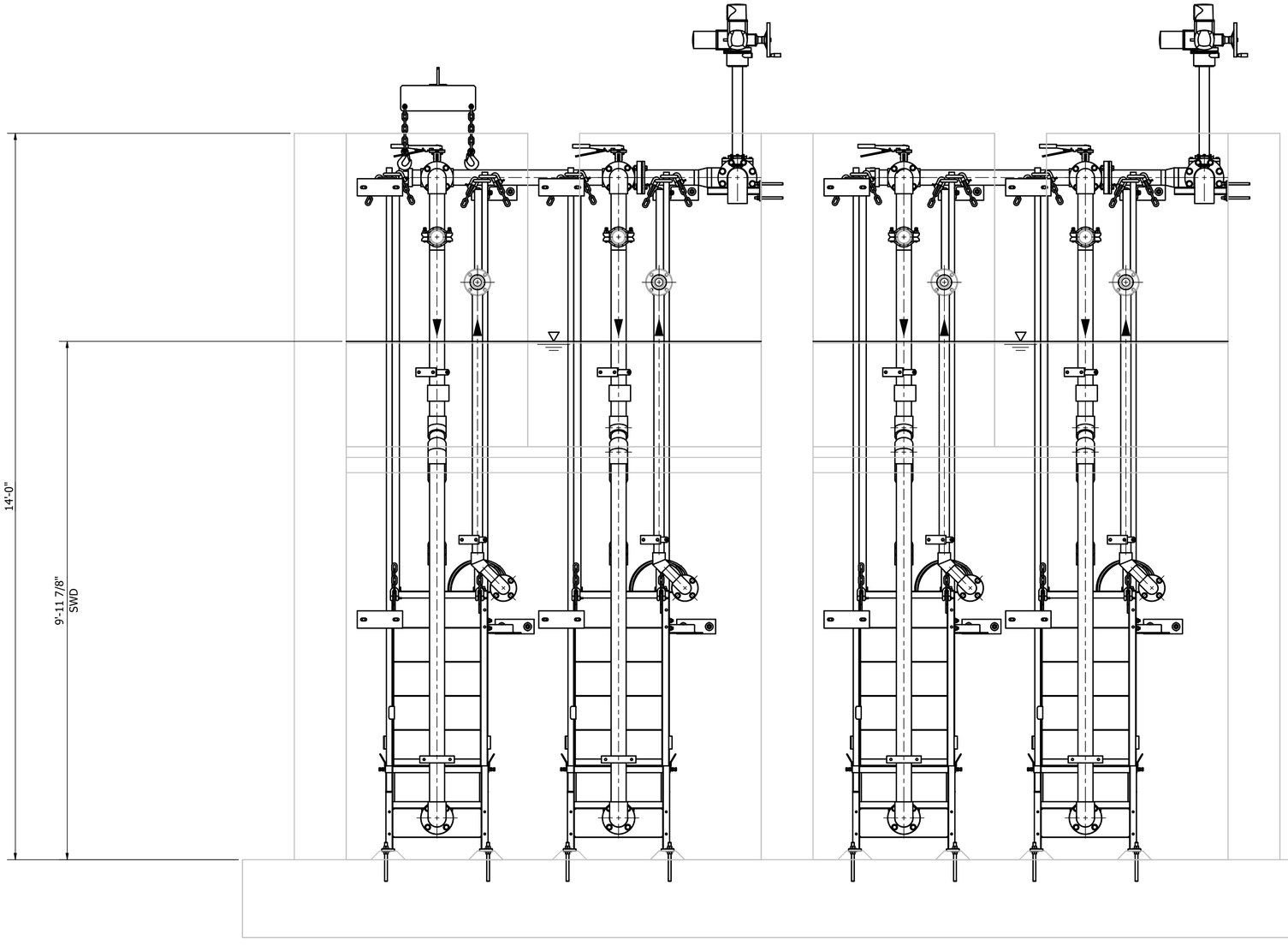
DETAIL 'A'

SECTION 'A'

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PROJECT NAME / NUMBER	TAYLOR BAY WA WWTP UPGRADE
SCALE	1 / 15
SHEET	3 OF 20
DWG NO	
REV	
TITLE	SECTION 'A'

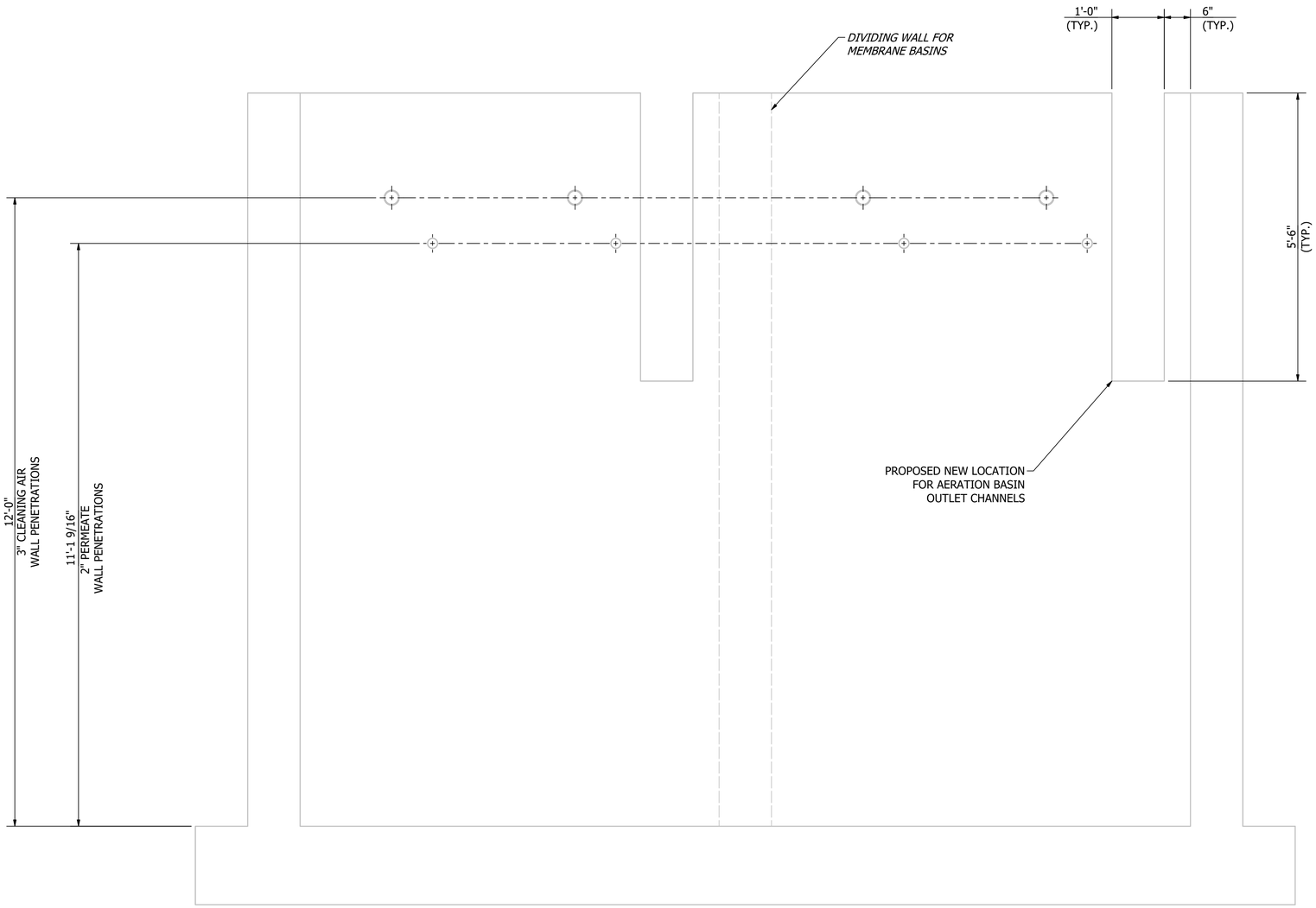


SECTION 'B'

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APPROVED BY:			△				△			

PROJECT NAME / NUMBER: TAYLOR BAY WA WWTP UPGRADE
SCALE: 1 / 15
SHEET: 4 OF 20
DWG NO:
REV:
TITLE: SECTION 'B'



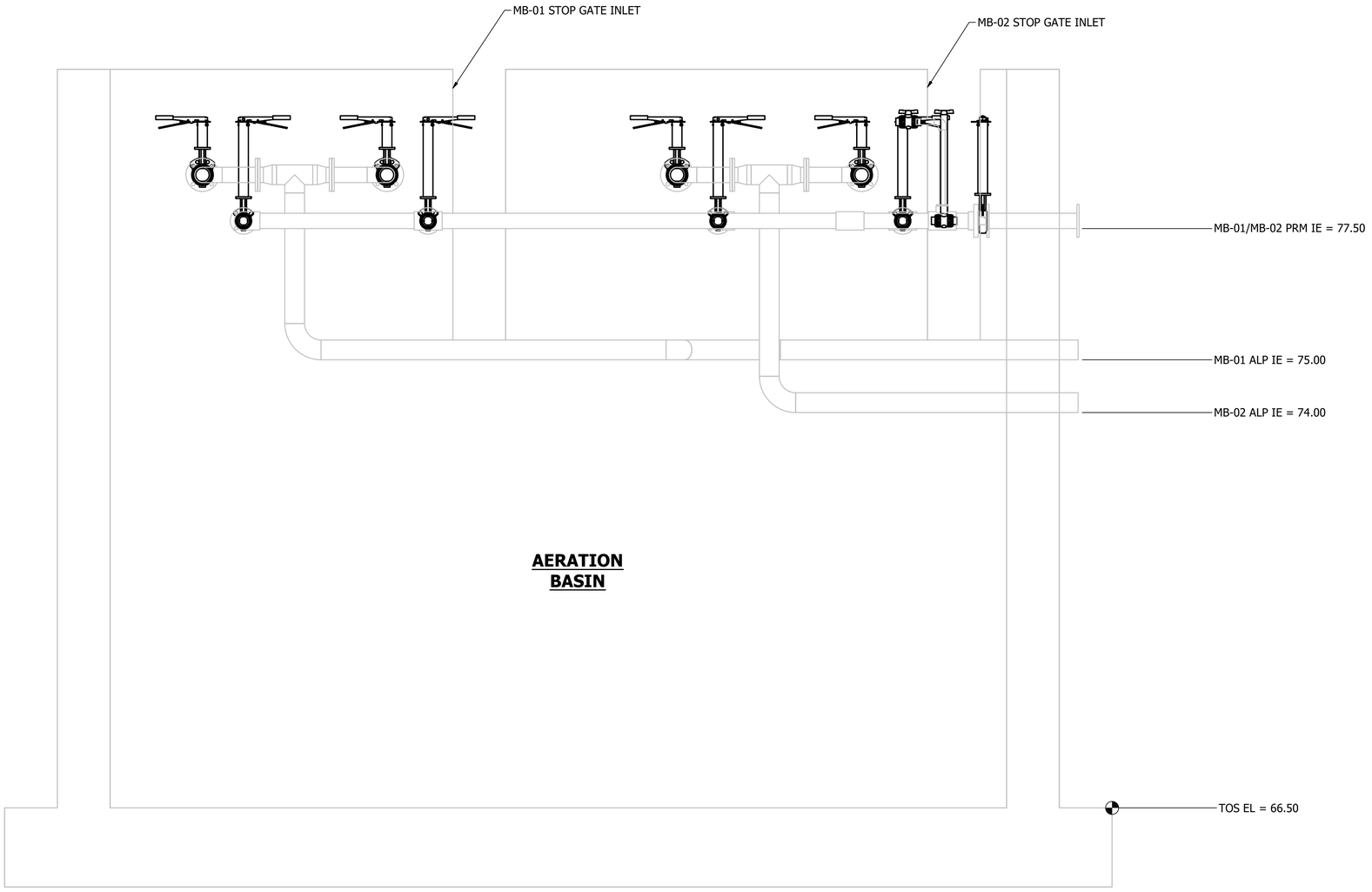
SECTION 'C'

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APPROVED BY:										

PROJECT NAME / NUMBER	TAYLOR BAY WA WWTP UPGRADE
SCALE	1 / 15
SHEET	5 OF 20
DWG NO	
REV	
TITLE	SECTION 'C'

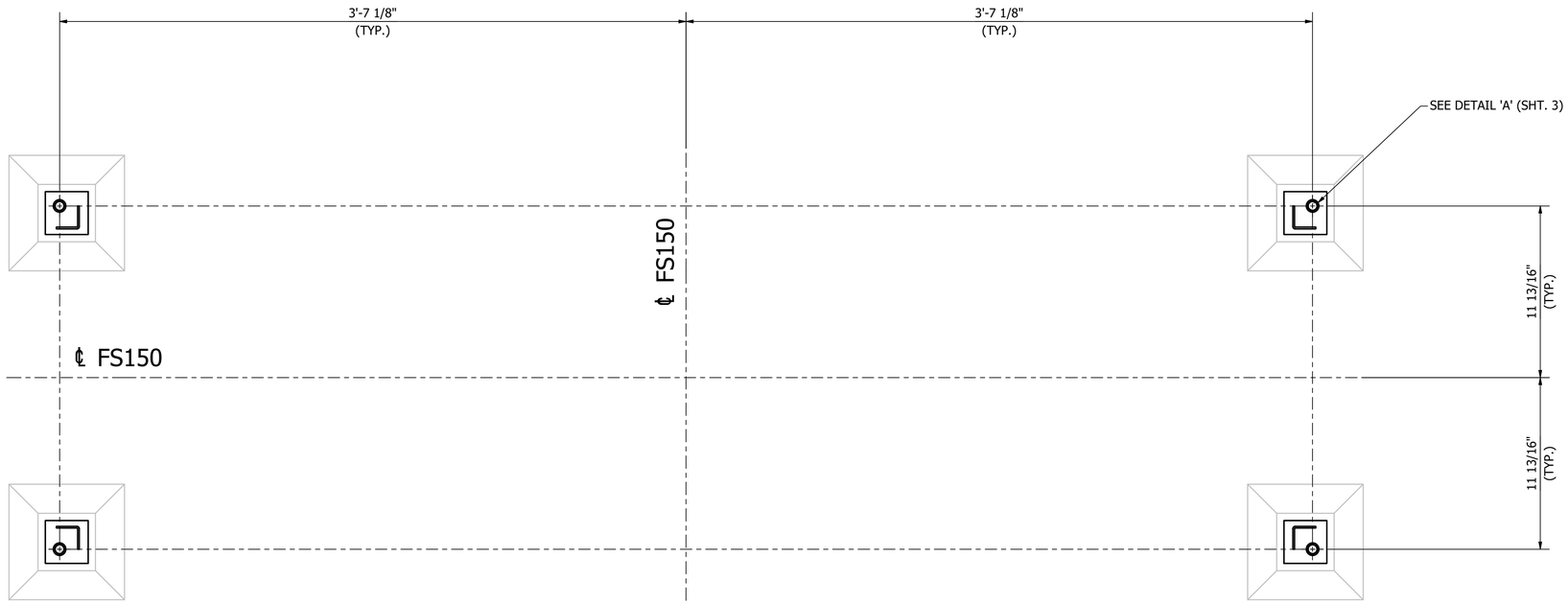


SECTION 'D'

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19910 North Creek Parkway S. Suite 100
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		DATE		REVISION	DATE	BY		REVISION	DATE	BY
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CHECKED BY:										
APPROVED BY:										

PROJECT NAME / NUMBER	TAYLOR BAY WA WWTP UPGRADE
TITLE	SECTION 'D'
SCALE	1 / 15
SHEET	6 OF 20
DWG NO	
REV	



SMU BOLT PATTERN

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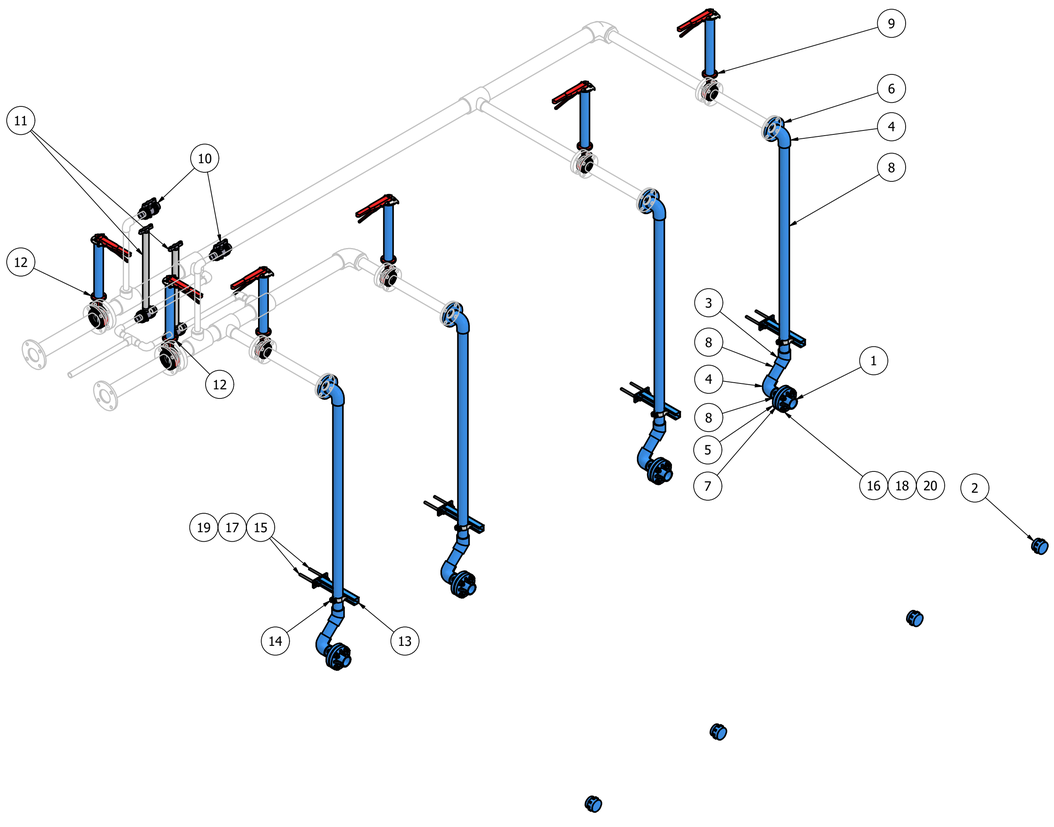
PROJECT NAME / NUMBER: TAYLOR BAY WA WWTP UPGRADE
SCALE: 1 / 5
SHEET: 7 OF 20
DWG NO:
REV:
TITLE: SMU BOLT PATTERN

PERMEATE SYSTEM PARTS LIST

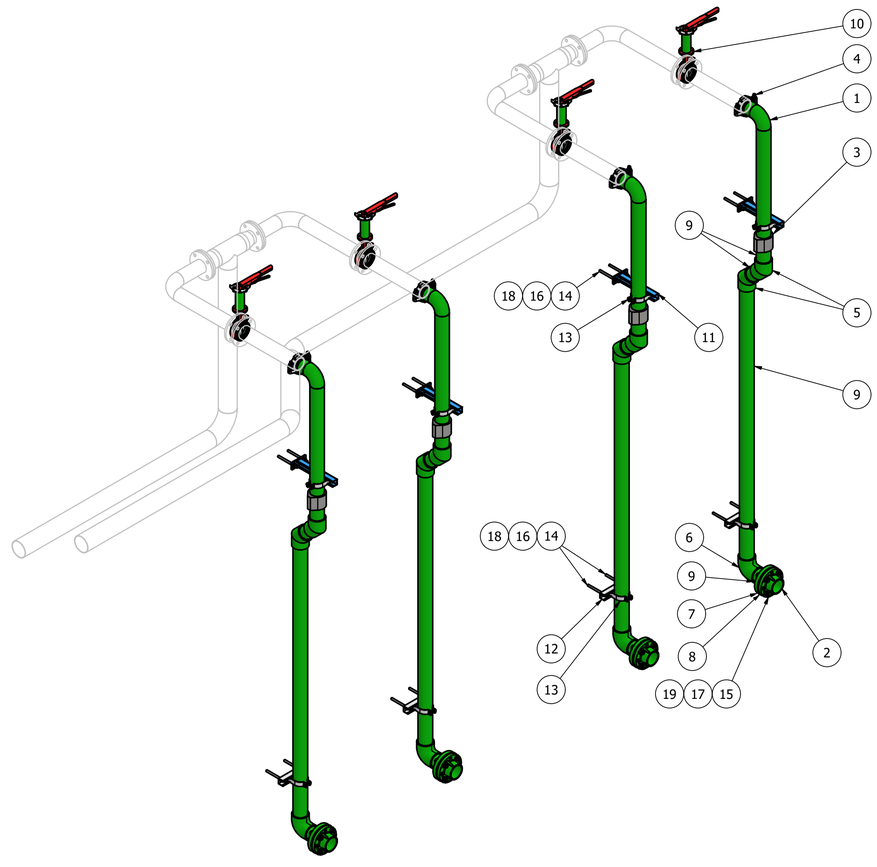
ITEM	QTY	MATERIAL	DESCRIPTION
1	4	PVC S80	FLANGE, JIS, 50mm, SOC.
2	4	PVC S80	CAP, 2", SOC.
3	4	PVC S80	ELBOW, 45 DEG., 2", S X S
4	8	PVC S80	ELBOW, 90 DEG., 2", S X S
5	4	PVC S80	FLANGE, VANSTONE, 2", SOC.
6	4	PVC S80	FLANGE, VANSTONE, 2", SPIGOT
7	4	EPDM	GASKET, 2", 150#, 1/8" THK.
8	40 L.F.	PVC S80	PIPE, 2"
9	4	DUCTILE IRON, EPDM SEAL	VALVE, 2", BUTTERFLY W/ HAND LEVER & EXT., FLG X FLG
10	2	PVC S80, EPDM SEAL	VALVE, 1", BALL, TRUE UNION, S X S
11	2	PVC S80, EPDM SEAL	VALVE, 1", BALL W/ EXTENSION, TRUE UNION, S X S
12	2	DUCTILE IRON, EPDM SEAL	VALVE, 3", BUTTERFLY, W/ HAND LEVER & EXT., FLG X FLG
13	4	304SS	PIPE SUPPORT, UNISTRUT (P2945), TRIM TO SIZE
14	4	304SS	PIPE STRAP, 2", (P1117)
15	8	304SS	THREADED ROD, 1/2"-13, 6 1/2" LG.
16	16	304SS	BOLT, HEX, 5/8"-11, 3" LG.
17	8	304SS	NUT, 1/2"-13
18	16	304SS	NUT, 5/8"-11
19	8	304SS	WASHER, 1/2"
20	32	304SS	WASHER, 5/8"

CLEANING AIR SYSTEM PARTS LIST

ITEM	QTY	MATERIAL	DESCRIPTION
1	4	304SS	CLEANING AIR SS DROP PIPE (SEE SHT. 10)
2	4	PVC S80	FLANGE, JIS, 80mm, SOC.
3	4	304SS	COUPLING, CLAMP-ON, 3"
4	4	DUCTILE IRON, EPDM SEAL	COUPLING, VICTAULIC, 3"
5	8	PVC S80	ELBOW, 45 DEG., 3", S X S
6	4	PVC S80	ELBOW, 90 DEG., 3", S X S
7	4	PVC S80	FLANGE, VANSTONE, 3", SOC.
8	4	EPDM	GASKET, 3", 150#, 1/8" THK.
9	40 L.F.	PVC S80	PIPE, 3"
10	4	DUCTILE IRON, EPDM SEAL	VALVE, 3", BUTTERFLY W/ HAND LEVER & EXT., FLG X FLG
11	4	304SS	PIPE SUPPORT, UNISTRUT (P2945), TRIM TO SIZE
12	4	304SS	PIPE SUPPORT, UNISTRUT (P1000HS), TRIM TO 8"
13	8	304SS	PIPE STRAP, 3", (P1119)
14	16	304SS	THREADED ROD, 1/2"-13, 6 1/2" LG.
15	16	304SS	BOLT, 5/8"-11. 3 1/4"
16	16	304SS	NUT, 1/2"-13
17	16	304SS	NUT, 5/8"-11
18	16	304SS	WASHER, 1/2"
19	32	304SS	WASHER, 5/8"



PERMEATE SYSTEM
(BY KUBOTA)



CLEANING AIR SYSTEM
(BY KUBOTA)

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PROJECT NAME / NUMBER
TAYLOR BAY WA WWTP UPGRADE

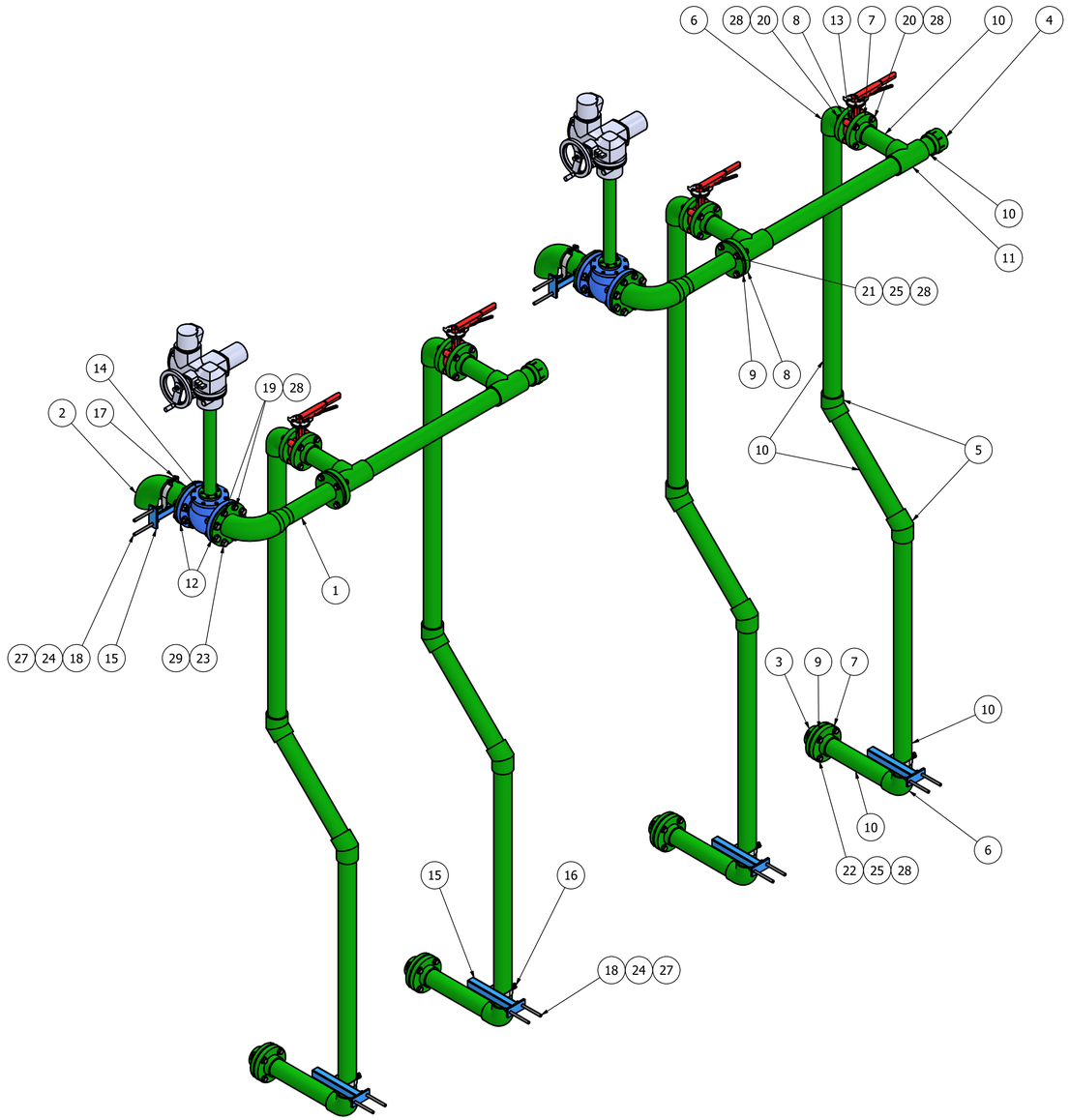
SCALE 1 / 18

SHEET 8 OF 20

DWG NO

REV

TITLE
PERMEATE & CLEANING AIR DETAILS



CLEANING AIR DIFFUSER DETAIL (BY KUBOTA)

CLEANING AIR DIFFUSER PARTS LIST

ITEM	QTY	MATERIAL	DESCRIPTION
1	2	304SS	DIFFUSER HEADER SS ASSEMBLY 01 (SEE SHT. 11)
2	2	304SS	DIFFUSER HEADER SS ASSEMBLY 02 (SEE SHT. 12)
3	4	PVC S80	FLANGE, JIS, 80mm, SOC.
4	2	PVC S80	CAP, 3", SOC.
5	8	PVC S80	ELBOW, 45 DEG., 3", S X S
6	8	PVC S80	ELBOW, 90 DEG., 3", S X S
7	8	PVC S80	FLANGE, VANSTONE, 3", SOC.
8	6	PVC S80	FLANGE, VANSTONE, 3", SPIGOT
9	6	EPDM	GASKET, 3", #150, 1/8" THK.
10	80 L.F.	PVC S80	PIPE, 3"
11	4	PVC S80	TEE, 3", S X S X S
12	4	EPDM	GASKET, 4", #150, 1/8" THK.
13	4	CAST IRON, EPDM SEAL	VALVE, BUTTERFLY, 3", LUGGED W/ HAND LEVER, FLG X FLG (BRAY S31 LUG)
14	2	CAST IRON, DUCTILE IRON,	VALVE, PLUG, 4", W/ ACTUATOR & EXT, FLG X FLG
15	6	304SS	PIPE SUPPORT, UNISTRUT (P2945), TRIM TO SIZE
16	4	304SS	PIPE STRAP, 3", (P1119)
17	2	304SS	PIPE STRAP, 4", (P1121)
18	12	304SS	THREADED ROD, 1/2"-13, 6 1/2" LG.
19	8	304SS	BOLT, HEX, 5/8"-11, 1 1/2" LG.
20	32	304SS	BOLT, HEX, 5/8"-11, 1 3/4" LG.
21	8	304SS	BOLT, HEX, 5/8"-11, 2 3/4" LG.
22	16	304S	BOLT, HEX, 5/8"-11, 3 1/4" LG.
23	24	304SS	BOLT, HEX, 3/4"-10, 2 3/4" LG.
24	12	304SS	NUT, 1/2"-13
25	24	304SS	NUT, 5/8"-11
26	24	304SS	NUT, 3/4"-10
27	12	304SS	WASHER, 1/2"
28	88	304SS	WASHER, 5/8"
29	48	304SS	WASHER, 3/4"

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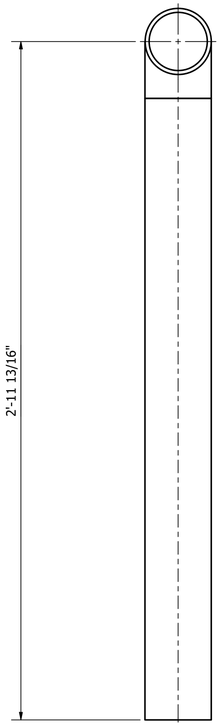
PROJECT NAME / NUMBER: TAYLOR BAY WA WWTP UPGRADE
SCALE: 1 / 14
SHEET: 9 OF 20
DWG NO:
REV:
TITLE: CLEANING AIR DIFFUSER DETAIL

SHOP NOTES:

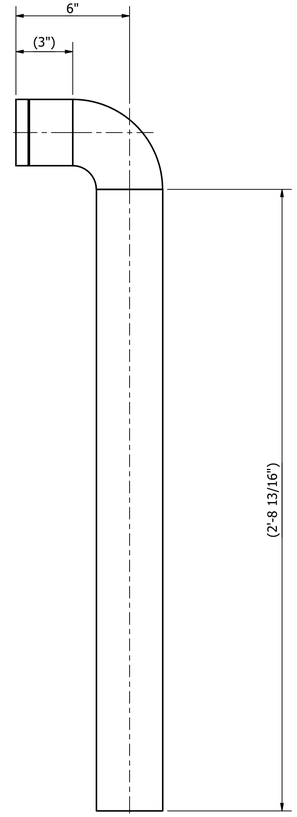
(UNLESS OTHERWISE SPECIFIED)

1. ALL MATERIAL TO BE 304SS.
2. ALL WELDING TO BE PASSIVATED.
3. ALL BURRS & SHARP EDGES TO BE REMOVED.
4. ALL DIMENSIONS & TOLERANCES IN ACCORDANCE WITH ASME Y14.5 UNLESS OTHERWISE SPECIFIED.
5. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES [MM].
6. TOLERANCES:
   - .X = ± .03
   - .XX = ± .01
   - .XXX = ± .005
   - ANGLES = ± .25°

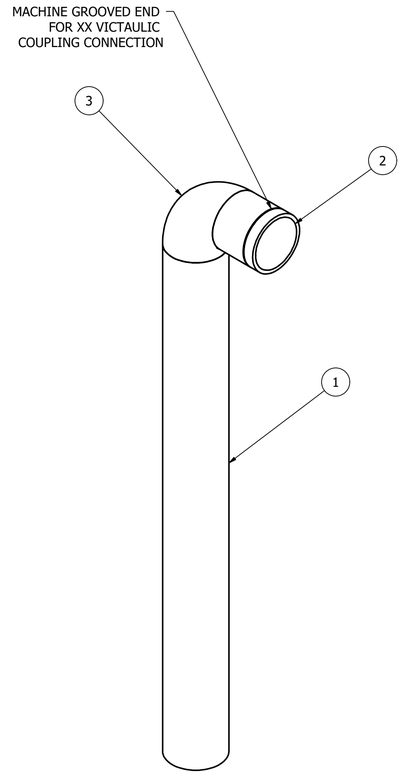
CLEANING AIR SS DROP PIPE PARTS LIST			
ITEM	QTY	MATERIAL	DESCRIPTION
1	1	304SS	PIPE, 3" NPS, SCH40 - 2'-8 13/16" LG.
2	1	304SS	PIPE, 3", NPS, SCH40 - 3" LG.
3	1	304SS	ELBOW, 3" NPS, 90 DEG, SR, SCH40



FRONT



RIGHT



ISOMETRIC

4 REQUIRED (BY KWU)

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DESIGNED BY:	ART									
CHECKED BY:	ART									
APPROVED BY:										

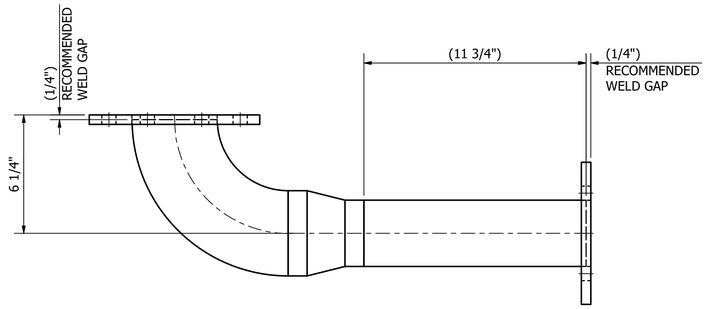
PROJECT NAME / NUMBER	TAYLOR BAY WA WWTP UPGRADE
SCALE	1 / 4
SHEET	10 OF 20
TITLE	CLEANING AIR SS DROP PIPE
DWG NO	
REV	

SHOP NOTES:
(UNLESS OTHERWISE SPECIFIED)

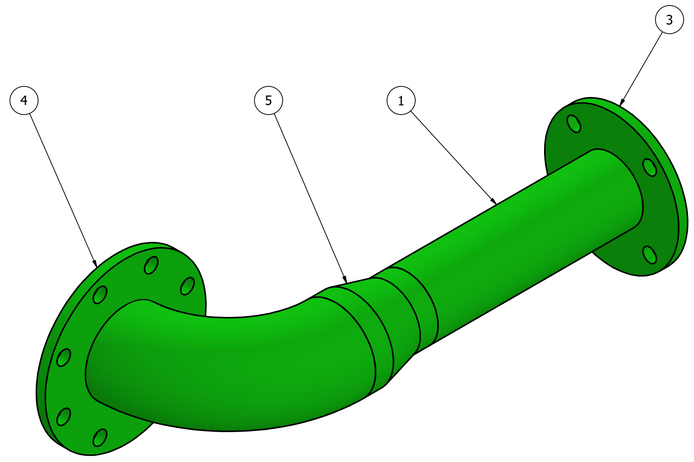
1. ALL MATERIAL TO BE 304SS.
2. ALL WELDING TO BE PASSIVATED.
3. ALL BURRS & SHARP EDGES TO BE REMOVED.
4. ALL DIMENSIONS & TOLERANCES IN ACCORDANCE WITH ASME Y14.5 UNLESS OTHERWISE SPECIFIED.
5. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES [MM].
6. TOLERANCES:
   - .X = ± .03
   - .XX = ± .01
   - .XXX = ± .005
   - ANGLES = ± .25°

DIFFUSER HEADER SS ASSEMBLY PARTS LIST

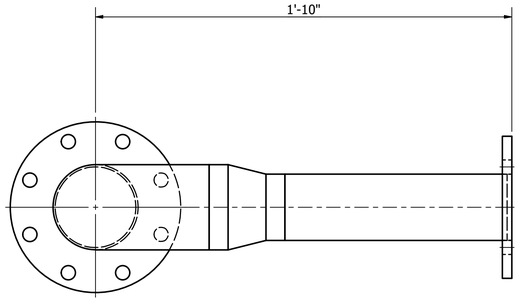
ITEM	QTY	MATERIAL	DESCRIPTION
1	1	304SS	PIPE, 3" NPS SCH10, - 11 3/4" LG.
2	1	304SS	ELBOW, 4" NPS, 90 DEG, LR, SCH10
3	1	304SS	FLANGE, PLATE, 3"-NPS-150#, 1/2" THK.
4	1	304SS	FLANGE, PLATE, 4"-NPS-150#, 1/2" THK.
5	1	304SS	REDUCER, 4" NPS X 3" NPS, SCH10



TOP



ISOMETRIC



FRONT

2 REQUIRED (BY KWU)

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PROJECT NAME / NUMBER: TAYLOR BAY WA WWTP UPGRADE
SCALE: 1 / 3
SHEET: 11 OF 20
DWG NO:
REV:
TITLE: DIFFUSER HEADER SS ASSEMBLY 01

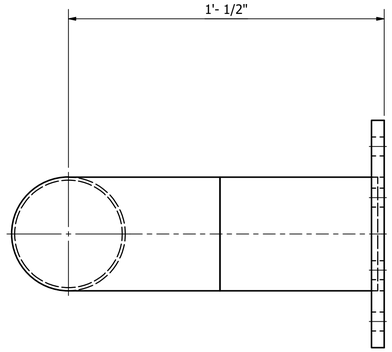
SHOP NOTES:

(UNLESS OTHERWISE SPECIFIED)

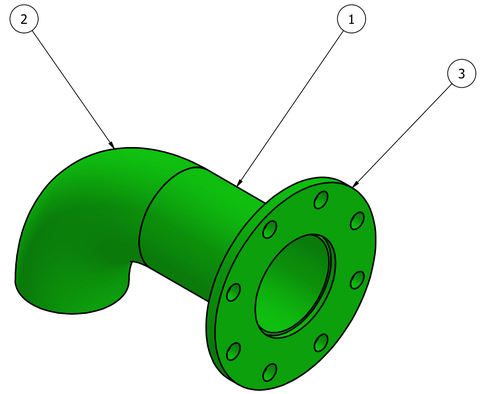
1. ALL MATERIAL TO BE 304SS.
2. ALL WELDING TO BE PASSIVATED.
3. ALL BURRS & SHARP EDGES TO BE REMOVED.
4. ALL DIMENSIONS & TOLERANCES IN ACCORDANCE WITH ASME Y14.5 UNLESS OTHERWISE SPECIFIED.
5. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES [MM].
6. TOLERANCES:
   - .X = ± .03
   - .XX = ± .01
   - .XXX = ± .005
   - ANGLES = ± .25°

DIFFUSER HEADER SS ASSEMBLY 02 PARTS LIST

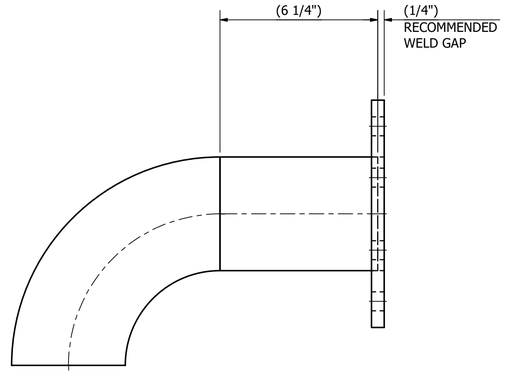
ITEM	QTY	MATERIAL	DESCRIPTION
1	1	304SS	PIPE, 4" NPS SCH10 - 6 1/4" LG.
2	1	304SS	ELBOW, 4" NPS, 90 DEG, LR, SCH10
3	1	304SS	FLANGE, PLATE, 4"-NPS-150#, 1/2" THK.



TOP



ISOMETRIC



FRONT

2 REQUIRED (BY KWU)

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DRAWN BY:	ART	6/24/2025						
DESIGNED BY:	ART							
CHECKED BY:	ART							
APPROVED BY:								

PROJECT NAME / NUMBER: TAYLOR BAY WA WWTP UPGRADE

SCALE: 1 / 3

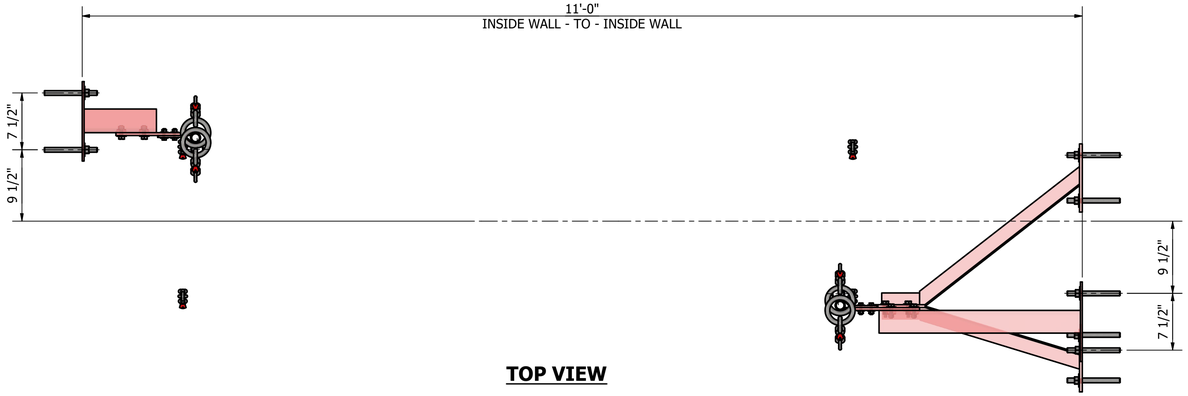
SHEET: 12 OF 20

DWG NO:

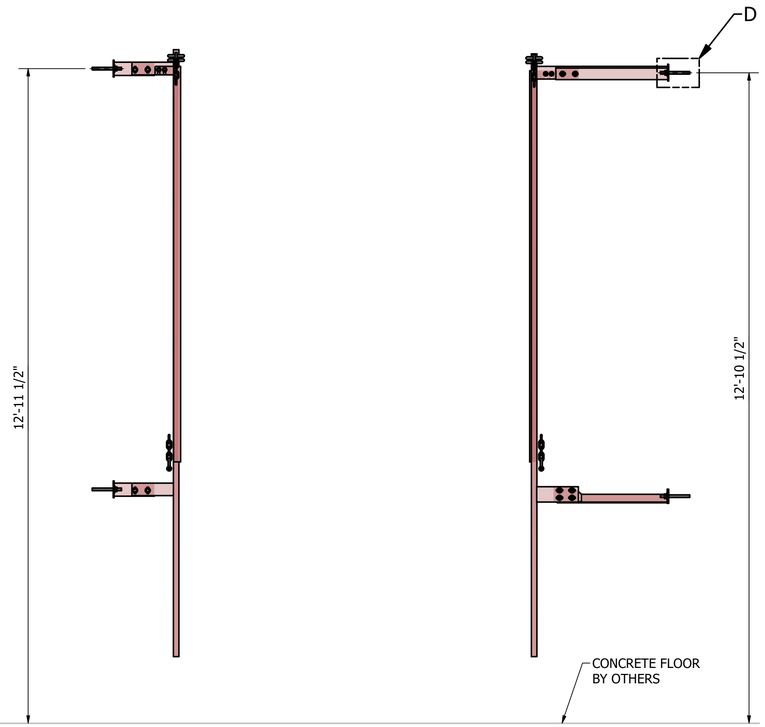
REV:

TITLE: DIFFUSER HEADER SS ASSEMBLY 02

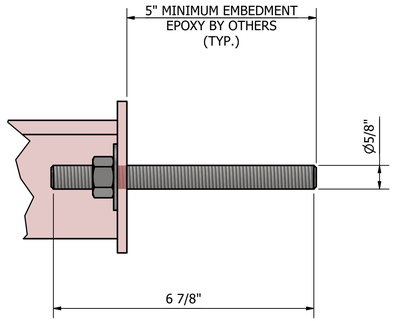
510 GUIDE RAIL SET PARTS LIST				
ITEM	QTY	MATERIAL	PART NUMBER	DESCRIPTION
1	1	304SS	TAYLOR BAY WA 510 GUIDE RAIL 01	SEE SHT. 14
2	1	304SS	TAYLOR BAY WA 510 GUIDE RAIL 02	SEE SHT. 15
3	1	304SS	TAYLOR BAY WA 510 STABILIZER 01	SEE SHT. 16
4	1	304SS	TAYLOR BAY WA 510 STABILIZER 02	SEE SHT. 17
5	2	304SS	TAYLOR BAY WA 510 WALL BRKT 01	SEE SHT. 18
6	1	304SS	TAYLOR BAY WA 510 WALL BRKT 02	SEE SHT. 19
7	1	304SS	TAYLOR BAY WA GR SEISMIC BRACE A	SEE SHT. 20
8	4	304SS	ANSI/ASME B18.2.1 - 3/8-16 UNC - 1.25, HBI	BOLT, HEX, 3/8"-16, 1 1/4"
9	6	304SS	ANSI/ASME B18.2.1 - 1/2-13 UNC - 1.5, HBI	BOLT, HEX, 1/2"-13, 1 1/2"
10	4	304SS	ANSI/ASME B18.2.1 - 1/2-13 UNC - 1.75, HBI	BOLT, HEX, 1/2" -13, 1 3/4"
11	10	304SS	ROD, THDD .625 UNC X 7 IN	THREADED ROD, 5/8"-11, 7"
12	4	304SS	ANSI B18.2.2 - 3/8 - 16, HNI	NUT, 3/8"-16
13	10	304SS	ANSI B18.2.2 - 1/2 - 13, HNI	NUT, 1/2"-13
14	10	304SS	ANSI B18.2.2 - 5/8 - 11, HNI	NUT, 5/8" -11
15	8	304SS	ANSI B18.22.1 - 3/8 - wide - Type A	WASHER, 3/8"
16	20	304SS	ANSI B18.22.1 - 1/2 - Regular - Type B	WASHER, 1/2"
17	10	304SS	ANSI B18.22.1 - 5/8 - Regular - Type B	WASHER, 5/8"
18	4	304SS	-	LIFTING CHAINS



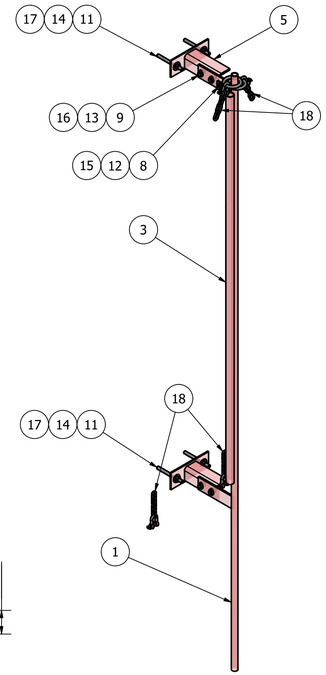
TOP VIEW

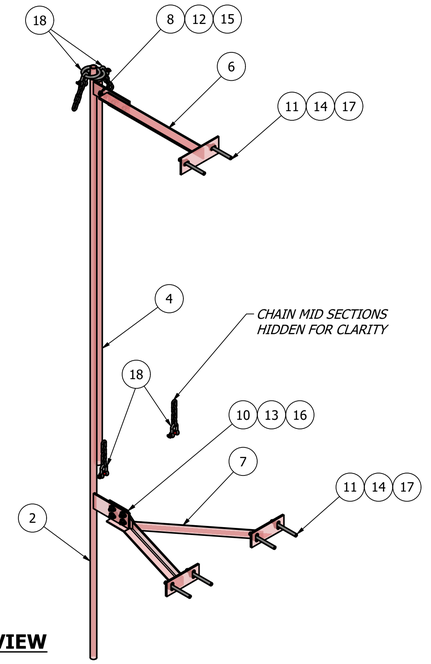


FRONT VIEW



DETAIL 'D'





ISOMETRIC VIEW

4 REQUIRED (BY KWU)

For Earth, For Life
Kubota

Kubota Membrane USA Corp., 11807 North Creek Parkway S, Suite B109
Bothell, WA 98011 USA Tel: +1 425 898 2853

		DATE	REVISION	DATE	BY	REVISION	DATE	BY
DRAWN BY:	ART	6/24/2025						
DESIGNED BY:	ART							
CHECKED BY:	ART							
APPROVED BY:								

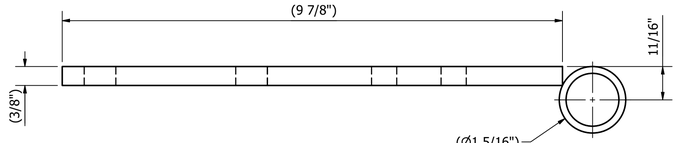
PROJECT NAME / NUMBER	TAYLOR BAY WA WWTP UPGRADE
SCALE	1 / 15
SHEET	13 OF 20
DWG NO	
REV	
TITLE	510 GUIDE RAIL SET

SHOP NOTES:

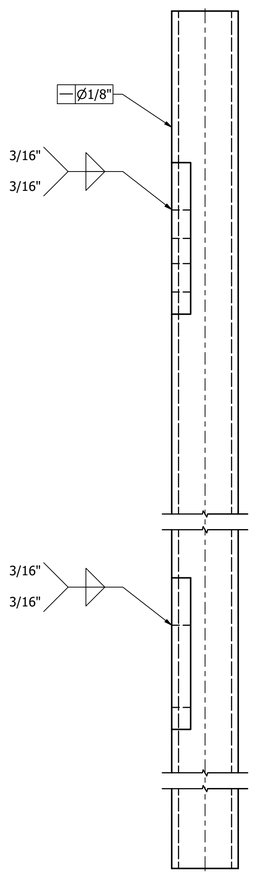
(UNLESS OTHERWISE SPECIFIED)

1. ALL MATERIAL TO BE 304SS.
2. ALL WELDING TO BE PASSIVATED.
3. ALL BURRS & SHARP EDGES TO BE REMOVED.
4. ALL DIMENSIONS & TOLERANCES IN ACCORDANCE WITH ASME Y14.5 UNLESS OTHERWISE SPECIFIED.
5. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES [MM].
6. TOLERANCES:
   - .X = ± .03
   - .XX = ± .01
   - .XXX = ± .005
   - ANGLES = ± .25°

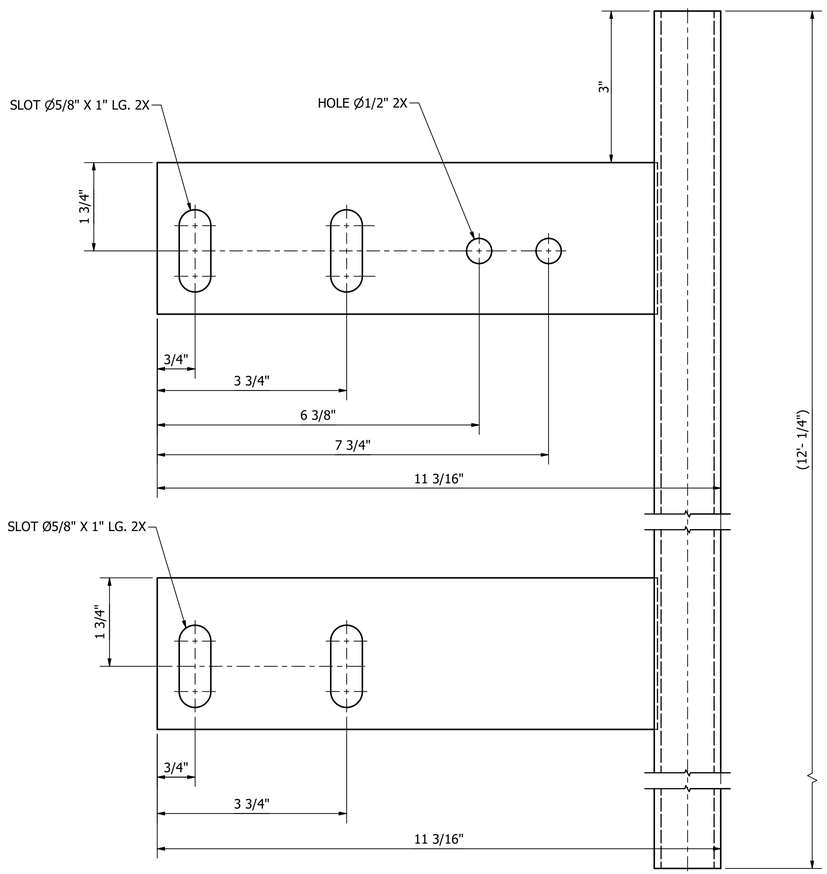
510 GUIDE RAIL 01 (LONG) PARTS LIST			
ITEM	QTY	MATERIAL	DESCRIPTION
1	1	304SS	PIPE, 1" NPS, SCH10, 12'- 1/4" LG.
2	1	304SS	PLATE, 3/8", 3" X 9 7/8"
3	1	304SS	PLATE, 3/8", 3" X 9 7/8"



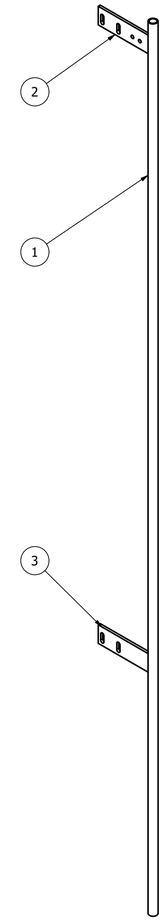
PLAN



END



FRONT



ISO

4 REQUIRED (BY KWU)

For Earth, For Life
Kubota

Kubota Membrane USA Corp., 11807 North Creek Parkway S. Suite B109
Bothell, WA 98011 USA Tel: +1 425 888 2853

		DATE		REVISION	DATE	BY		REVISION	DATE	BY
DRAWN BY:	ART	6/24/2025								
DESIGNED BY:	ART									
CHECKED BY:	ART									
APPROVED BY:										

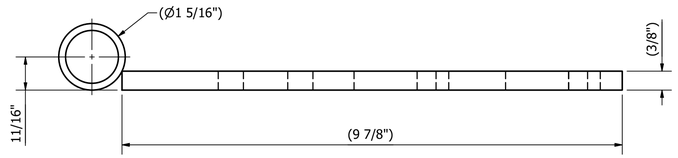
PROJECT NAME / NUMBER	TAYLOR BAY WA WWTP UPGRADE
SCALE	1 / 10
SHEET	14 OF 20
TITLE	510 GUIDE RAIL 01 (LONG)
DWG NO	
REV	

SHOP NOTES:

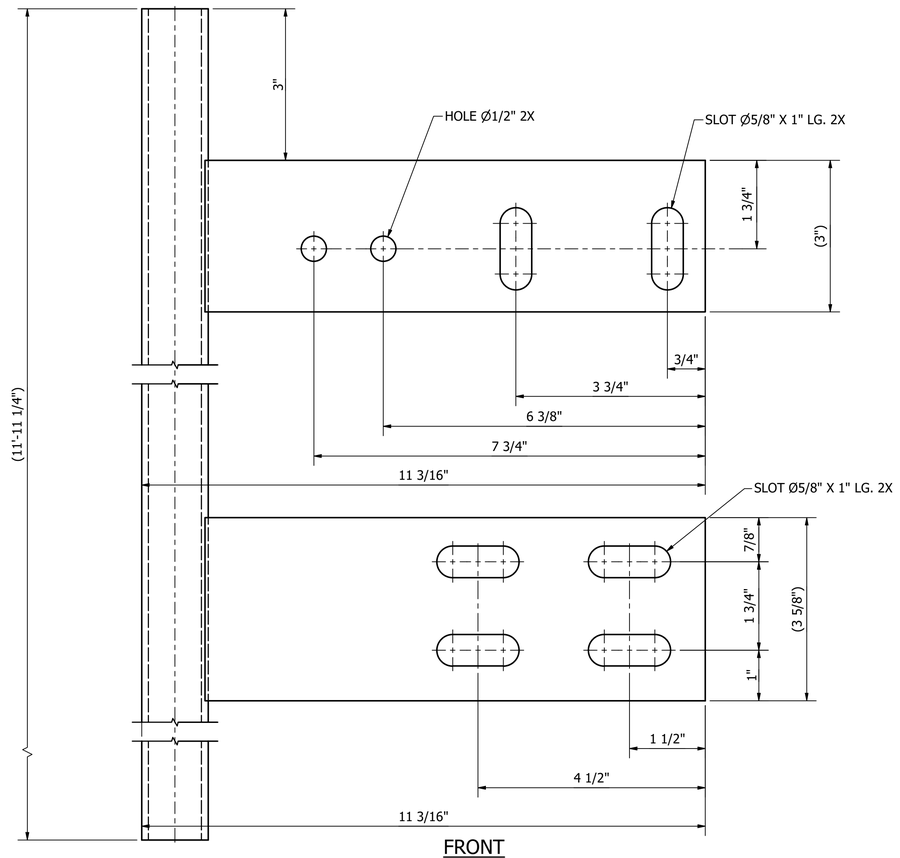
(UNLESS OTHERWISE SPECIFIED)

1. ALL MATERIAL TO BE 304SS.
2. ALL WELDING TO BE PASSIVATED.
3. ALL BURRS & SHARP EDGES TO BE REMOVED.
4. ALL DIMENSIONS & TOLERANCES IN ACCORDANCE WITH ASME Y14.5 UNLESS OTHERWISE SPECIFIED.
5. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES [MM].
6. TOLERANCES:
   - .X = ± .03
   - .XX = ± .01
   - .XXX = ± .005
   - ANGLES = ± .25°

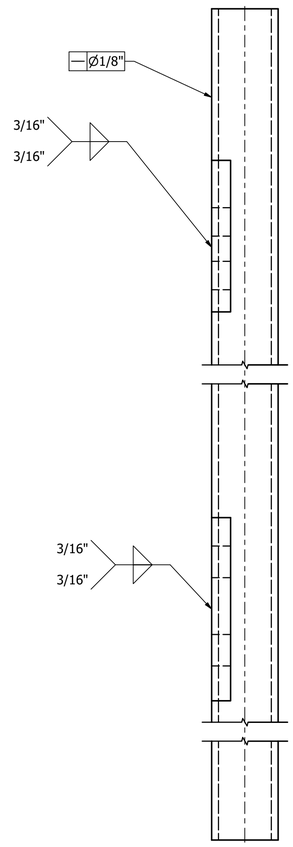
510 GUIDE RAIL 02 (SHORT) PARTS LIST			
ITEM	QTY	MATERIAL	DESCRIPTION
1	1	304SS	PIPE, 1" NPS, SCH10, 11'-11 1/4" LG.
2	1	304SS	PLATE, 3/8", 3" X 9 7/8"
3	1	304SS	PLATE, 3/8", 3 5/8" X 9 7/8"



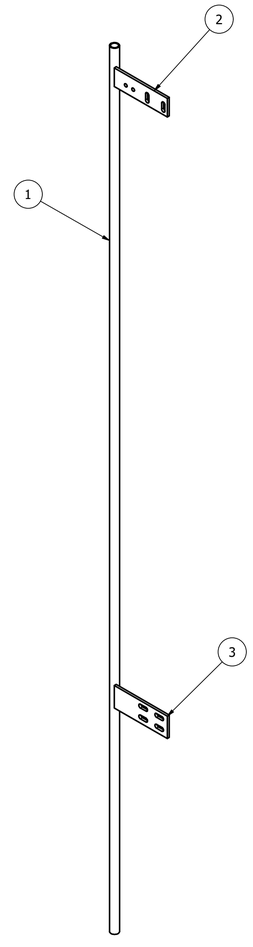
TOP



FRONT



END



ISO

4 REQUIRED (BY KWU)

For Earth, For Life
Kubota

Kubota Membrane USA Corp. 11807 North Creek Parkway S. Suite B109
Bothell, WA 98011 USA Tel: +1 425 636 2653

		DATE		REVISION	DATE	BY		REVISION	DATE	BY
DRAWN BY:	ART	6/24/2025								
DESIGNED BY:	ART									
CHECKED BY:	ART									
APPROVED BY:										

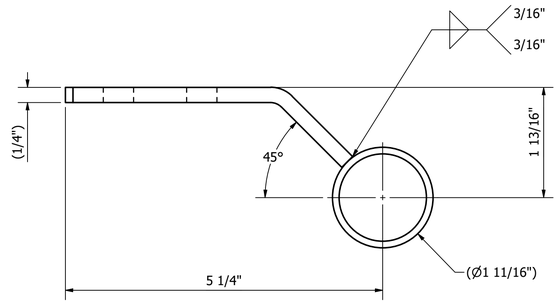
PROJECT NAME / NUMBER	TAYLOR BAY WA WWTP UPGRADE
SCALE	1 / 10
SHEET	15 OF 20
DWG NO	
REV	
TITLE	510 GUIDE RAIL 02 (SHORT)

SHOP NOTES:

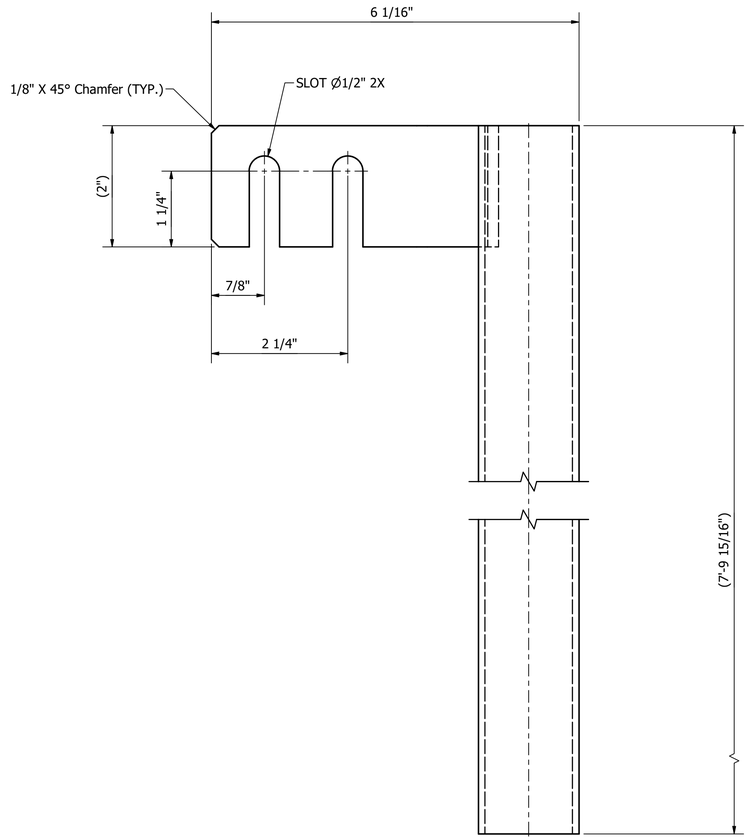
(UNLESS OTHERWISE SPECIFIED)

1. ALL MATERIAL TO BE 304SS.
2. ALL WELDING TO BE PASSIVATED.
3. ALL BURRS & SHARP EDGES TO BE REMOVED.
4. ALL DIMENSIONS & TOLERANCES IN ACCORDANCE WITH ASME Y14.5 UNLESS OTHERWISE SPECIFIED.
5. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES [MM].
6. TOLERANCES:
   - .X = ± .03
   - .XX = ± .01
   - .XXX = ± .005
   - ANGLES = ± .25°

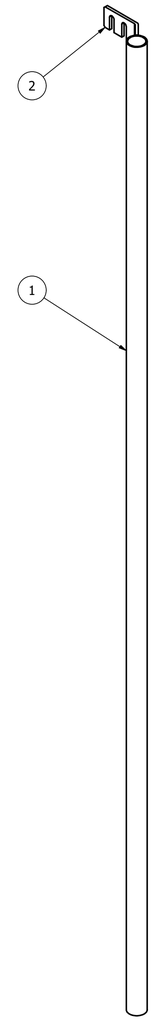
510 STABILIZER 01 (LONG) PARTS LIST			
ITEM	QTY	MATERIAL	DESCRIPTION
1	1	304SS	PIPE, 1" NPS, SCH10, 7'-9 15/16" LG.
2	1	304SS	PLATE 1/4", 2" X AS REQ'D LG.



TOP



FRONT



ISO

4 REQUIRED (BY KWU)

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Kubota

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Bothell, WA 98011 USA Tel: +1 425 898 2853

		DATE		REVISION	DATE	BY		REVISION	DATE	BY
DRAWN BY:	ART	6/24/2025								
DESIGNED BY:	ART									
CHECKED BY:	ART									
APPROVED BY:										

PROJECT NAME / NUMBER: TAYLOR BAY WA WWTP UPGRADE

SCALE: 1 / 6

SHEET: 16 OF 20

DWG NO:

REV:

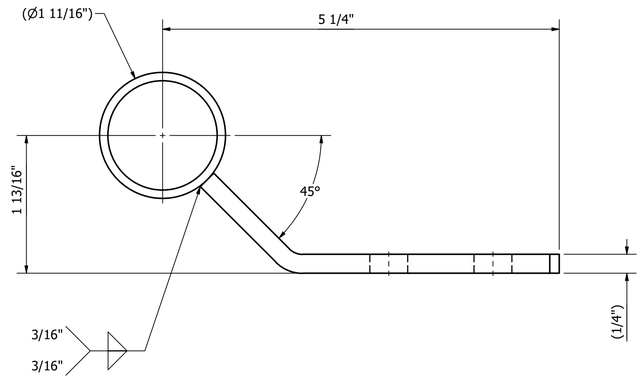
TITLE: 510 STABILIZER 01 (LONG)

SHOP NOTES:

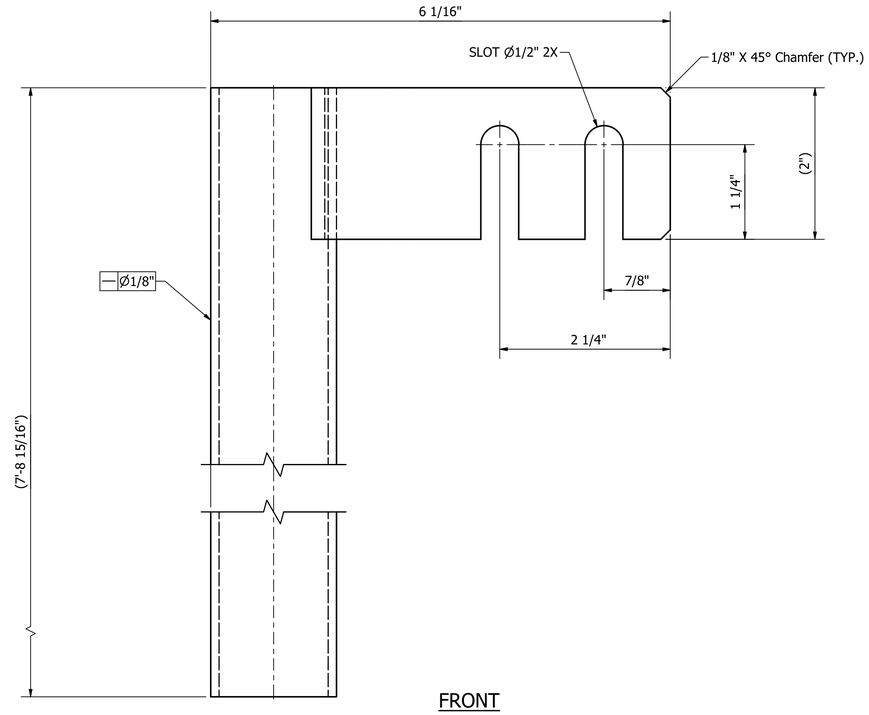
(UNLESS OTHERWISE SPECIFIED)

1. ALL MATERIAL TO BE 304SS.
2. ALL WELDING TO BE PASSIVATED.
3. ALL BURRS & SHARP EDGES TO BE REMOVED.
4. ALL DIMENSIONS & TOLERANCES IN ACCORDANCE WITH ASME Y14.5 UNLESS OTHERWISE SPECIFIED.
5. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES [MM].
6. TOLERANCES:
   - .X = ± .03
   - .XX = ± .01
   - .XXX = ± .005
   - ANGLES = ± .25°

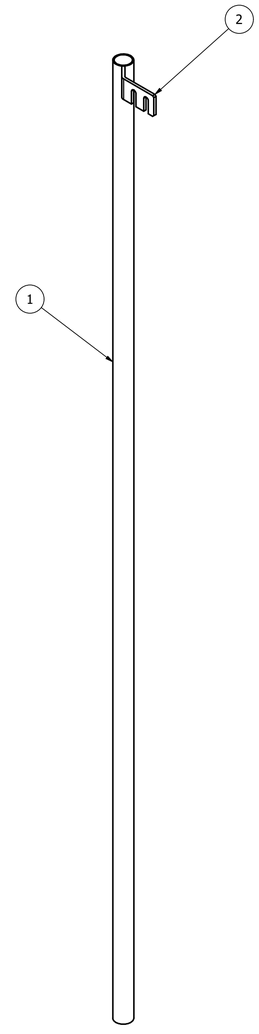
510 STABILIZER 02 (SHORT) PARTS LIST			
ITEM	QTY	MATERIAL	DESCRIPTION
1	1	304SS	PIPE, 1 1/4" NPS, SCH10, 7'-8 15/16" LG.
2	1	304SS	PLATE 1/4", 2" X AS REQ'D LG



PLAN



FRONT



ISO

4 REQUIRED (BY KWU)

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Bothell, WA 98011 USA Tel: +1 425 898 2853

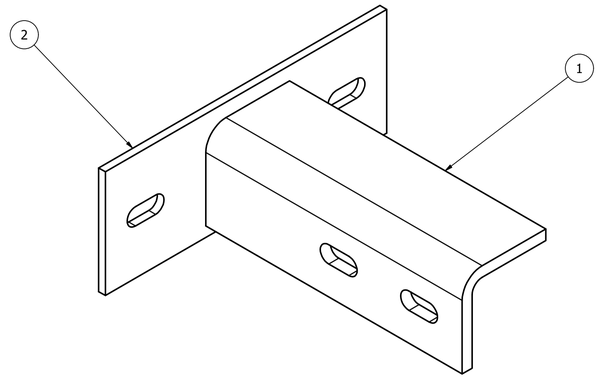
		DATE	REVISION	DATE	BY	REVISION	DATE	BY
DRAWN BY:	ART	6/24/2025						
DESIGNED BY:	ART							
CHECKED BY:	ART							
APPROVED BY:								

PROJECT NAME / NUMBER	TAYLOR BAY WA WWTP UPGRADE
SCALE	1 / 6
SHEET	17 OF 20
TITLE	510 STABILIZER 02 (SHORT)
DWG NO	
REV	

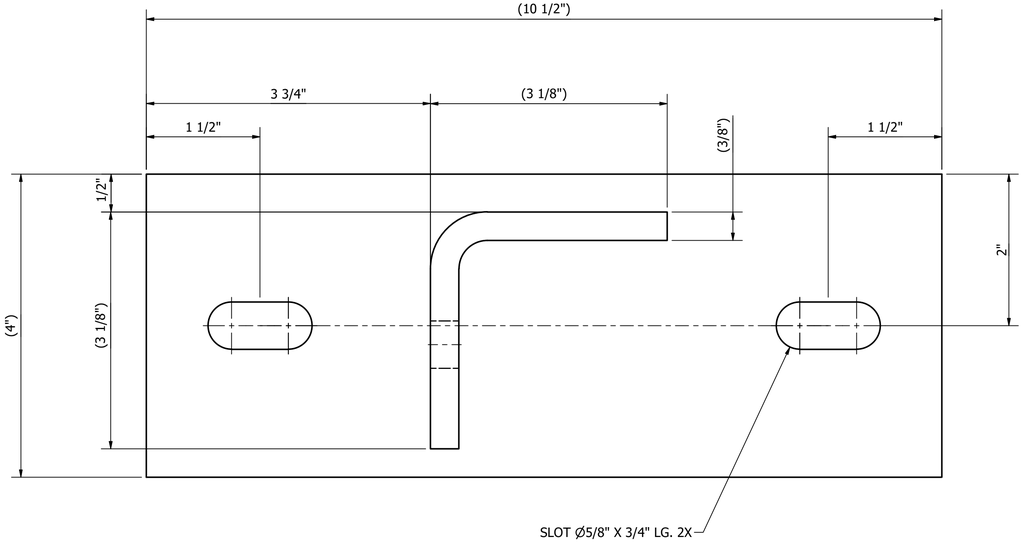
SHOP NOTES:
(UNLESS OTHERWISE SPECIFIED)

1. ALL MATERIAL TO BE 304SS.
2. ALL WELDING TO BE PASSIVATED.
3. ALL BURRS & SHARP EDGES TO BE REMOVED.
4. ALL DIMENSIONS & TOLERANCES IN ACCORDANCE WITH ASME Y14.5 UNLESS OTHERWISE SPECIFIED.
5. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES [MM].
6. TOLERANCES:
   - .X = ± .03
   - .XX = ± .01
   - .XXX = ± .005
   - ANGLES = ± .25°

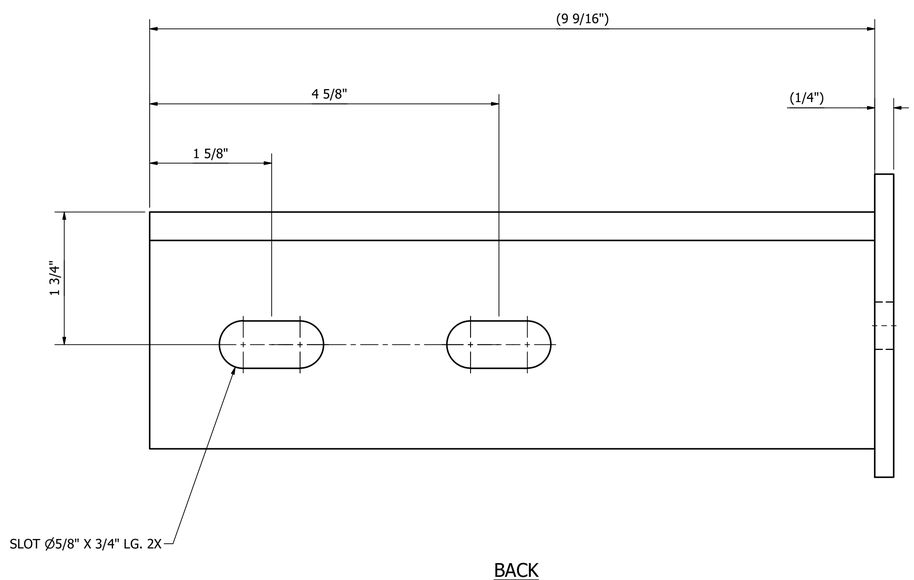
510 WALL BRACKET 01 PARTS LIST			
ITEM	QTY	MATERIAL	DESCRIPTION
1	1	304SS	L3 1/8"X3 1/8"X3/8", 9 9/16" LG.
2	1	304SS	PLATE 1/4", 4" X 10 1/2"



ISO



END



BACK

8 REQUIRED (BY KWU)

For Earth, For Life
Kubota

Kubota Membrane USA Corp., 11807 North Creek Parkway S. Suite B103
Bothell, WA 98011 USA Tel: +1 425 898 2853

		DATE		REVISION	DATE	BY		REVISION	DATE	BY
DRAWN BY:	ART	6/24/2025								
DESIGNED BY:	ART									
CHECKED BY:	ART									
APPROVED BY:										

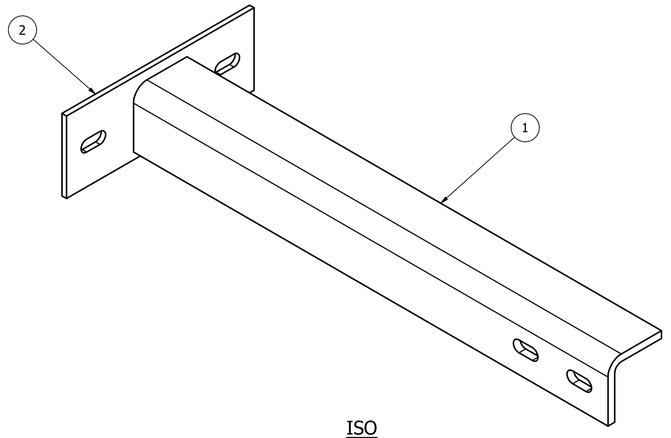
PROJECT NAME / NUMBER	TAYLOR BAY WA WWTP UPGRADE
SCALE	1 / 2
SHEET	18 OF 20
DWG NO	
REV	
TITLE	510 WALL BRACKET 01

SHOP NOTES:

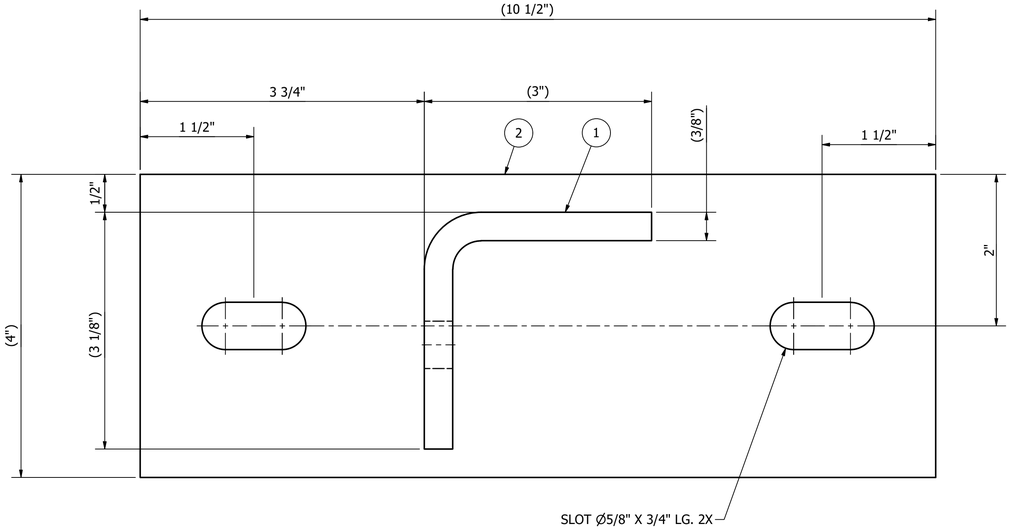
(UNLESS OTHERWISE SPECIFIED)

1. ALL MATERIAL TO BE 304SS.
2. ALL WELDING TO BE PASSIVATED.
3. ALL BURRS & SHARP EDGES TO BE REMOVED.
4. ALL DIMENSIONS & TOLERANCES IN ACCORDANCE WITH ASME Y14.5 UNLESS OTHERWISE SPECIFIED.
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6. TOLERANCES:
   - .X = ± .03
   - .XX = ± .01
   - .XXX = ± .005
   - ANGLES = ± .25°

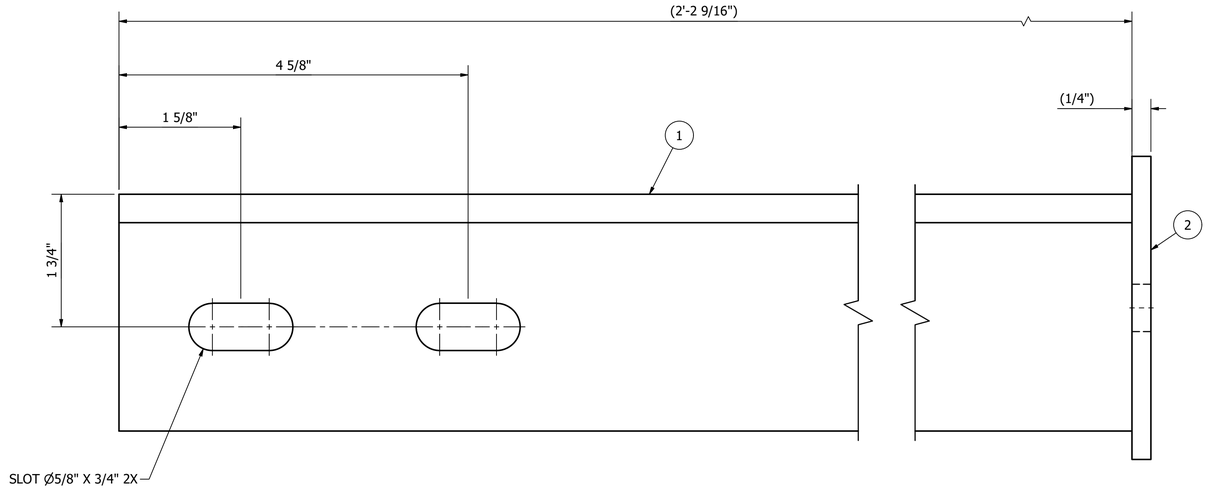
510 WALL BRACKET 02 PARTS LIST			
ITEM	QTY	MATERIAL	DESCRIPTION
1	1	304SS	L3"X3 1/8"X3/8", 2'-2 9/16" LG.
2	1	304SS	PLATE 1/4", 4" X 10 1/2"



ISO



END



BACK

4 REQUIRED (BY KWU)

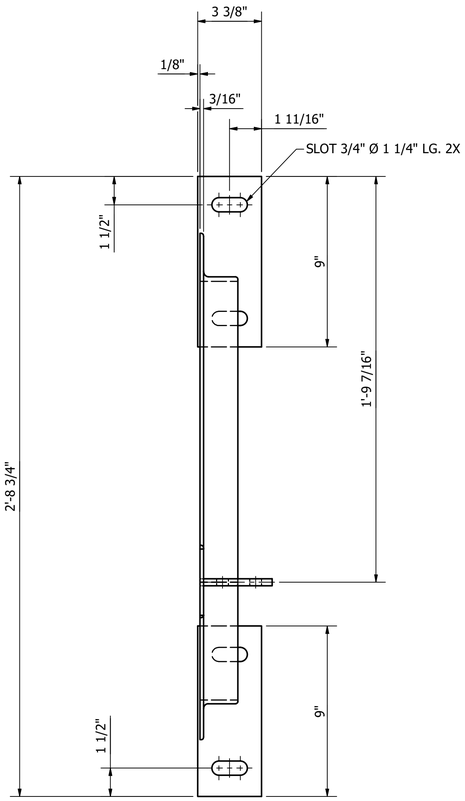
For Earth, For Life
Kubota

Kubota Membrane USA Corp. 11807 North Creek Parkway S. Suite B109
Bothell, WA 98011 USA Tel: +1 425 898 2853

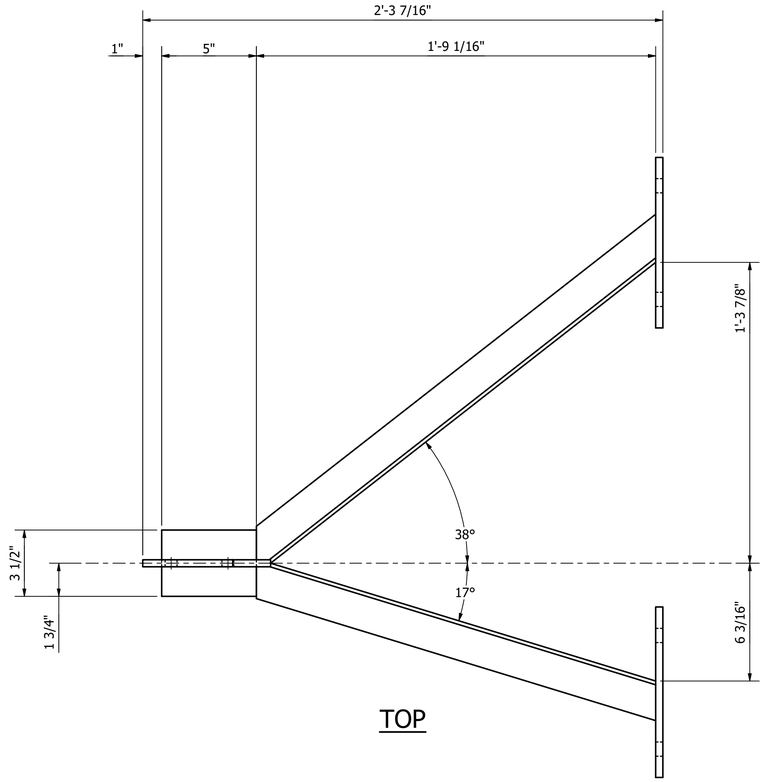
		DATE	REVISION	DATE	BY	REVISION	DATE	BY
DRAWN BY:	ART	6/24/2025						
DESIGNED BY:	ART							
CHECKED BY:	ART							
APPROVED BY:								

PROJECT NAME / NUMBER	TAYLOR BAY WA WWTP UPGRADE
SCALE	1 / 3
SHEET	19 OF 20
DWG NO	
REV	
TITLE	510 WALL BRACKET 02

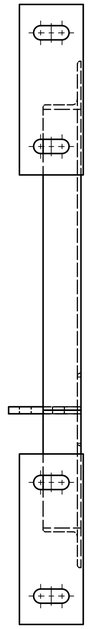
SEISMIC GUIDE RAIL WALL BRACKET A PARTS LIST			
ITEM	QTY	MATERIAL	DESCRIPTION
1	2	304SS	3 3/8" X 9" X 3/8" THK. WALL PLATE
2	1	304SS	2" X 2" X 1'-11" LG. X 3/16" THK. ANGLE 01
3	1	304SS	2" X 2" X 2'-3 1/2" LG. X 3/16" THK. ANGLE 02
4	1	304SS	3 5/8" X 6 3/4" X 3/8" THK. VERTICAL PLATE
5	1	304SS	3 1/2" X 5" X 3/16" THK. HORIZONTAL PLATE



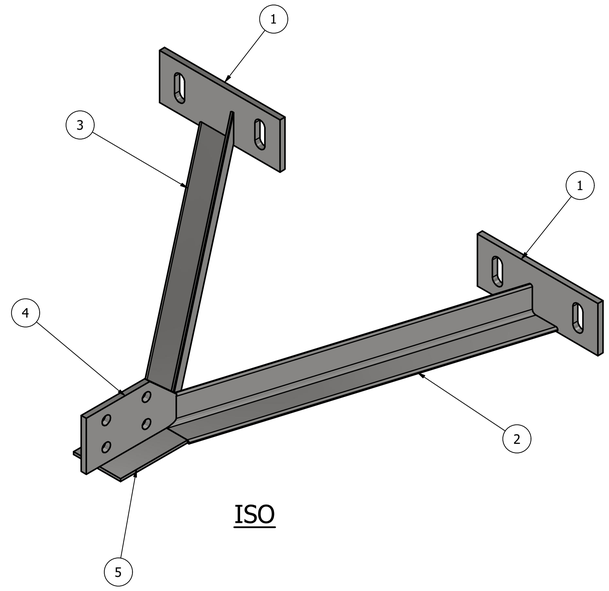
LEFT SIDE



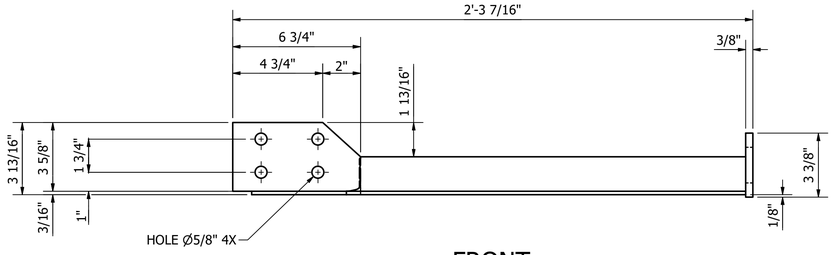
TOP



RIGHT SIDE



ISO



FRONT

4 REQUIRED (BY KWU)

For Earth, For Life
Kubota

Kubota Membrane USA Corp. 11807 North Creek Parkway S. Suite B109
Bothell, WA 98011 USA Tel: +1 425 898 2853

		DATE		REVISION	DATE	BY		REVISION	DATE	BY
DRAWN BY:	ART	6/24/2025								
DESIGNED BY:	ART									
CHECKED BY:	ART									
APPROVED BY:										

PROJECT NAME / NUMBER	TAYLOR BAY WA WWTP UPGRADE
SCALE	1 / 4
SHEET	20 OF 20
DWG NO	
REV	
TITLE	SEISMIC GUIDE RAIL WALL BRACKET A