

PLUMBING LEGEND

	SANITARY SEWER PIPING		FIXTURE TAG
	COLD WATER PIPING		LIMIT OF DEMOLITION
	HOT WATER PIPING		CONNECT TO EXISTING
	HOT WATER RECIRCULATION PIPING		KEYED NOTE
	VENT PIPING		PIPE SIZE AND SYSTEM TAG
	STORM PIPING		AREA OUT OF SCOPE
	HIDDEN / UNDERGROUND PIPING		AREA OF DEMOLITION
	VENT THROUGH ROOF		
	CLEAN OUT, EXPOSED		
	CLEAN OUT		
	DOUBLE YARD CLEANOUT		
	FLOOR DRAIN		
	TRAP PRIMER LINE		
	HOSE BIBB W/INTEGRAL VACUUM BREAKER (INTERIOR SURFACE)		
	WALL HYDRANT W/INTEGRAL VACUUM BREAKER (EXTERIOR SURFACE)		
	PIPE CAP		
	PIPE CONNECTION, BOTTOM		
	PIPE CONNECTION, TOP		
	PIPE ELBOW, TURNED UP		
	PIPE ELBOW, TURNED DOWN		
	PIPE TEE		
	ANCHOR, INTERMEDIATE		
	BUTTERFLY VALVE		
	GATE VALVE		
	BALL VALVE		
	CHECK VALVE		
	STRAINER VALVE		
	STRAINER (BLOW-OFF)		
	GAS COCK/GAS STOP		
	THERMOMETER		
	BALANCING VALVE		
	THERMOSTATIC MIXING VALVE		
	SOLENOID VALVE		
	RELIEF VALVE		
	WATER HAMMER ARRESTER/SHOCK ABSORBER		
	UNION		
	PUMP (SCHEMATIC)		
	WATER METER		
	BACK FLOW PREVENTER		
	GAS METER		
	DIAMETER		

NOTES:

1. THIS LEGEND IS FOR REFERENCE ONLY.
2. ALL SYMBOLS WITHIN THIS LEGEND MAY NOT APPLY TO THIS PROJECT.

PLUMBING ABBREVIATIONS

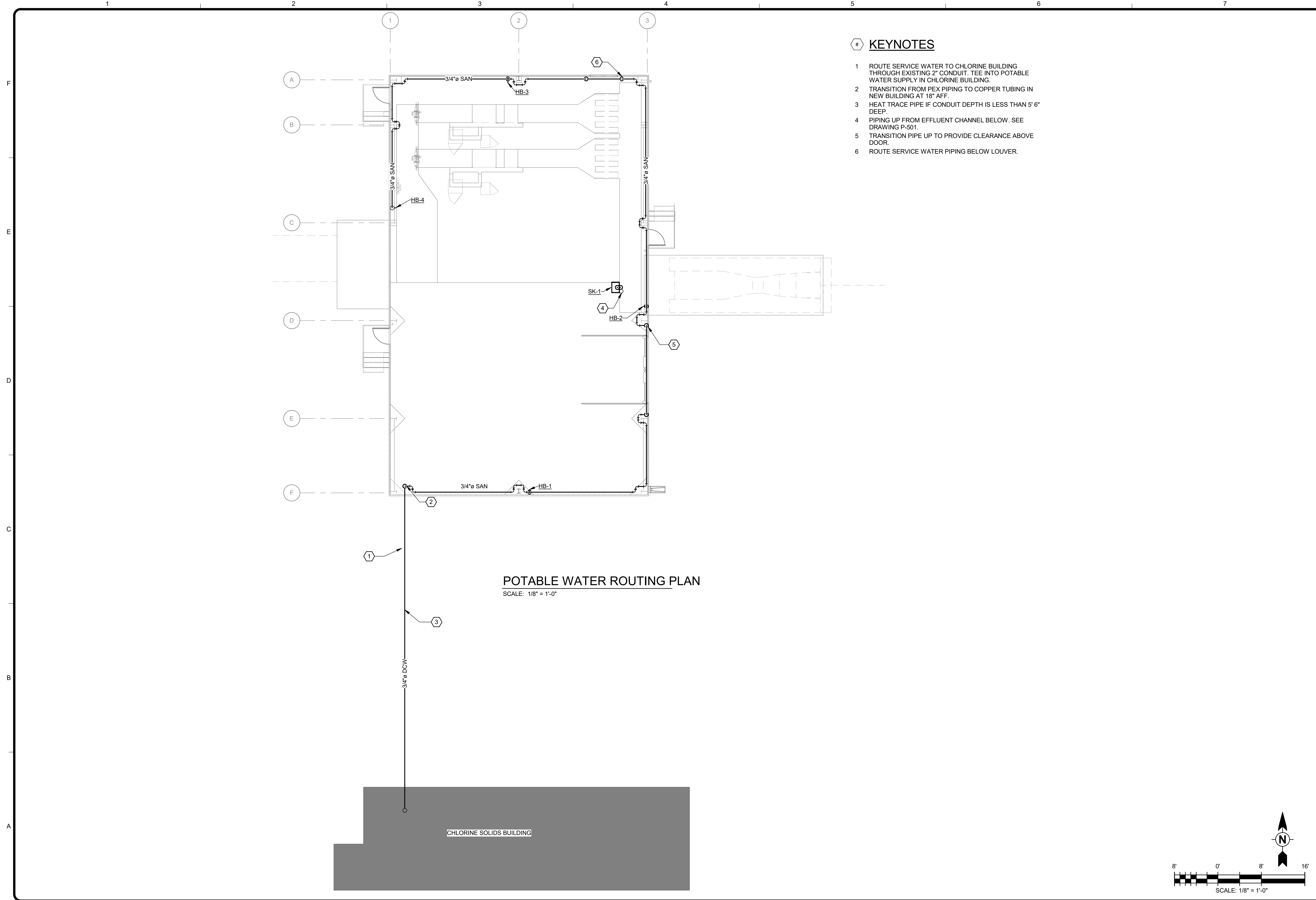
(D)	DEMOLITION	PRV	PRESSURE REDUCING VALVE
(E)	EXISTING	PSI	POUNDS PER SQUARE INCH
(R)	RELOCATED	PVC	POLYVINYL CHLORIDE
AFF	ABOVE FINISHED FLOOR	PW	POTABLE WATER
AFG	ABOVE FINISHED GRADE	R	RADIUS
APPROX	APPROXIMATE	RD	ROOF DRAIN
BFF	BELOW FINISHED FLOOR	RP	RECIRCULATION PUMP
BFP	BACKFLOW PREVENTER	RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
CA	COMPRESSED AIR	RPM	REVOLUTIONS PER MINUTE
CAP	CAPACITY	SAN	SANITARY SEWER PIPING
CO	CLEAN OUT	SK	SINK
COND	CONDENSATE	SP	SUMP PUMP
CONN	CONNECTION	SPEC	SPECIFICATION
CONT	CONTINUATION	STD	STANDARD
D	DRAIN	STO	STORM
DCW	DOMESTIC COLD WATER	SW	SERVICE WATER
DEG	DEGREES	TBD	TO BE DETERMINED
DEMO	DEMOLITION	TCV	TEMPERING VALVE
DIA	DIAMETER	TD	TRENCH DRAIN
DN	DOWN	TEMP	TEMPERATURE
DS	DOWNSPOUT	TMV	THERMOSTATIC MIXING VALVE
DWG	DRAWING	TP	TRAP PRIMER
EA	EACH	TW	TEPID WATER
EEW	EMERGENCY EYE/FACE WASH	TYP	TYPICAL
ENT	ENTERING	UR	URINAL
ESS	EMERGENCY SAFETY SHOWER	V	VENT
ET	EXPANSION TANK	VIF	VERIFY IN FIELD
F	FAHRENHEIT	VS	VENT STACK
FCO	FLOOR CLEAN OUT	VTR	VENT THRU ROOF
FD	FLOOR DRAIN	WB	WASHER BOX
FH	FIRE HYDRANT	WC	WATER CLOSET
FM	FLOW METER	WCO	WALL CLEAN OUT
FPH	FREEZE PROOF HYDRANT	WG	WATER GAUGE
FPM	FEET PER MINUTE	WPD	WATER PRESSURE DROP
GAL	GALLONS		
GD	GARBAGE DISPOSAL		
GM	GAS METER		
GPM	GALLONS PER MINUTE		
GWH	GAS WATER HEATER		
HB	HOSE BIBB		
HD	HEAD		
HO	HUB OUTLET		
HP	HORSEPOWER		
HW	HOT WATER		
HWR	HOT WATER RETURN		
ID	INSIDE DIAMETER/DIMENSION		
IE	INVERT ELEVATION		
IMVB	ICE MAKER VALVE BOX		
IN	INCH		
IW	INDUSTRIAL WASTE		
IWH	INSTANTANEOUS WATER HEATER		
LAV	LAVATORY		
M	METER		
MAX	MAXIMUM		
MEZZ	MEZZANINE		
MFR	MANUFACTURER		
MIN	MINIMUM		
MISC	MISCELLANEOUS		
N/A	NOT APPLICABLE		
NG	NATURAL GAS		
NPW	NON-POTABLE WATER		
NTS	NOT TO SCALE		
OD	OUTSIDE DIAMETER		
PCV	PRESSURE CONTROL VALVE		
PD	PRESSURE DROP		
PG	PRESSURE GAUGE		

PLUMBING GENERAL NOTES

GENERAL NOTES

1. THESE GENERAL NOTES APPLY TO ALL SHEETS. REFER TO INDIVIDUAL SHEETS FOR SHEET NOTES.
2. CONTRACT DOCUMENT DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY. DO NOT SCALE FOR MATERIAL QUANTITIES. ALL SCALING SHOULD BE REFERENCED TO ARCHITECTURAL PLANS ONLY.
3. ALL EQUIPMENT AND PIPING SHALL BE INSTALLED IN COMPLIANCE WITH THE LATEST APPLICABLE EDITION OF THE MICHIGAN PLUMBING CODE, LOCAL UTILITIES, AND UFC'S.
4. WATER LINES SHALL NOT BE ROUTED ABOVE ANY ELECTRICAL ROOMS, ELECTRICAL PANELS, OR TELEPHONE ROOMS.
5. CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH OTHER TRADES TO MINIMIZE SPATIAL CONFLICTS.
6. INSTALL BOTTOM OF ALL EXTERIOR AND INTERIOR WALL HYDRANTS AT 24" ABOVE FINISH GRADE.
7. CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS AND DIMENSIONS BEFORE CONSTRUCTION BEGINS.
8. PROVIDE ISOLATION VALVES AT ALL PIPE CONNECTIONS TO EQUIPMENT.
9. PROVIDE WALL PIPE PENETRATIONS AS REQUIRED WHERE PIPE ENTERS BUILDING. SLEEVE AND SEAL OPENING WITH CAULKING AND ESCUTCHEON FOR A WATER-TIGHT INSTALLATION.

9/8/2023 9:27:07 AM BIM 360://200-325577-22001 BCDWS UV DESIGN\M-325577-22001-21.rvt



A B C D E F

1 2 3 4 5 6 7

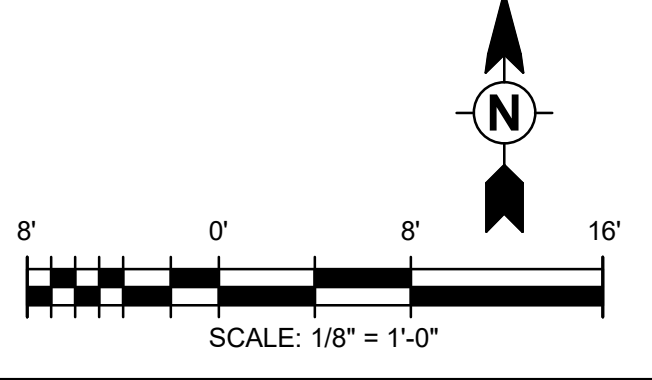
TETRA TECH
www.tetratech.com
1136 OAK VALLEY DRIVE, SUITE 100
ANN ARBOR, MI 48108
TEL: 734.666.6000, FAX: 734.213.9003

MARK	DATE	DESCRIPTION	BY
1	9/15/23	ISSUED FOR BIDS	

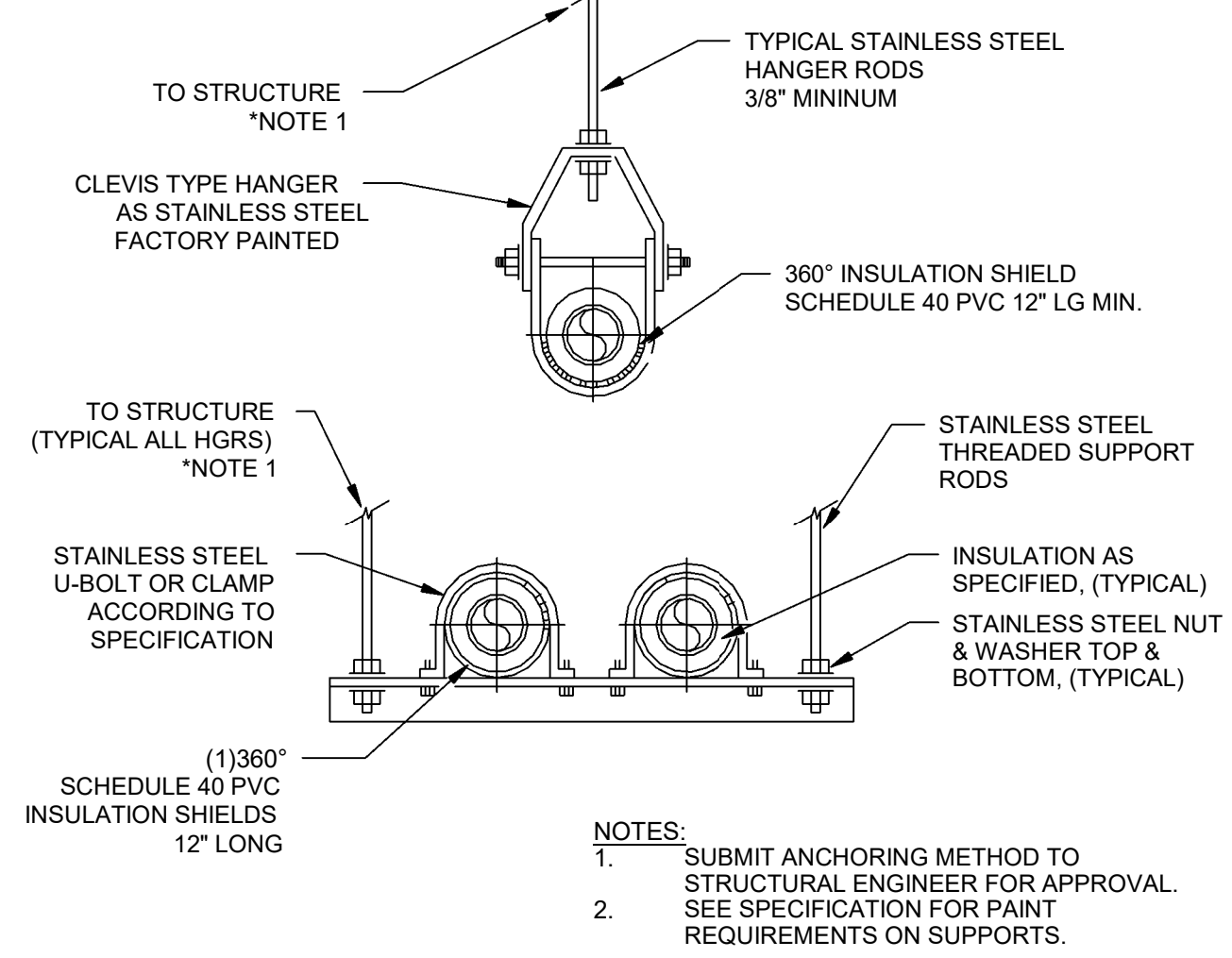
BAY COUNTY, MICHIGAN
WEST BAY COUNTY REGIONAL WWTP
ULTRAVIOLET DISINFECTION
UV BUILDING PLAN

PROJ: 200-325577-22001
DESN: MJB
DRWN: MJB
CHKD: MJB

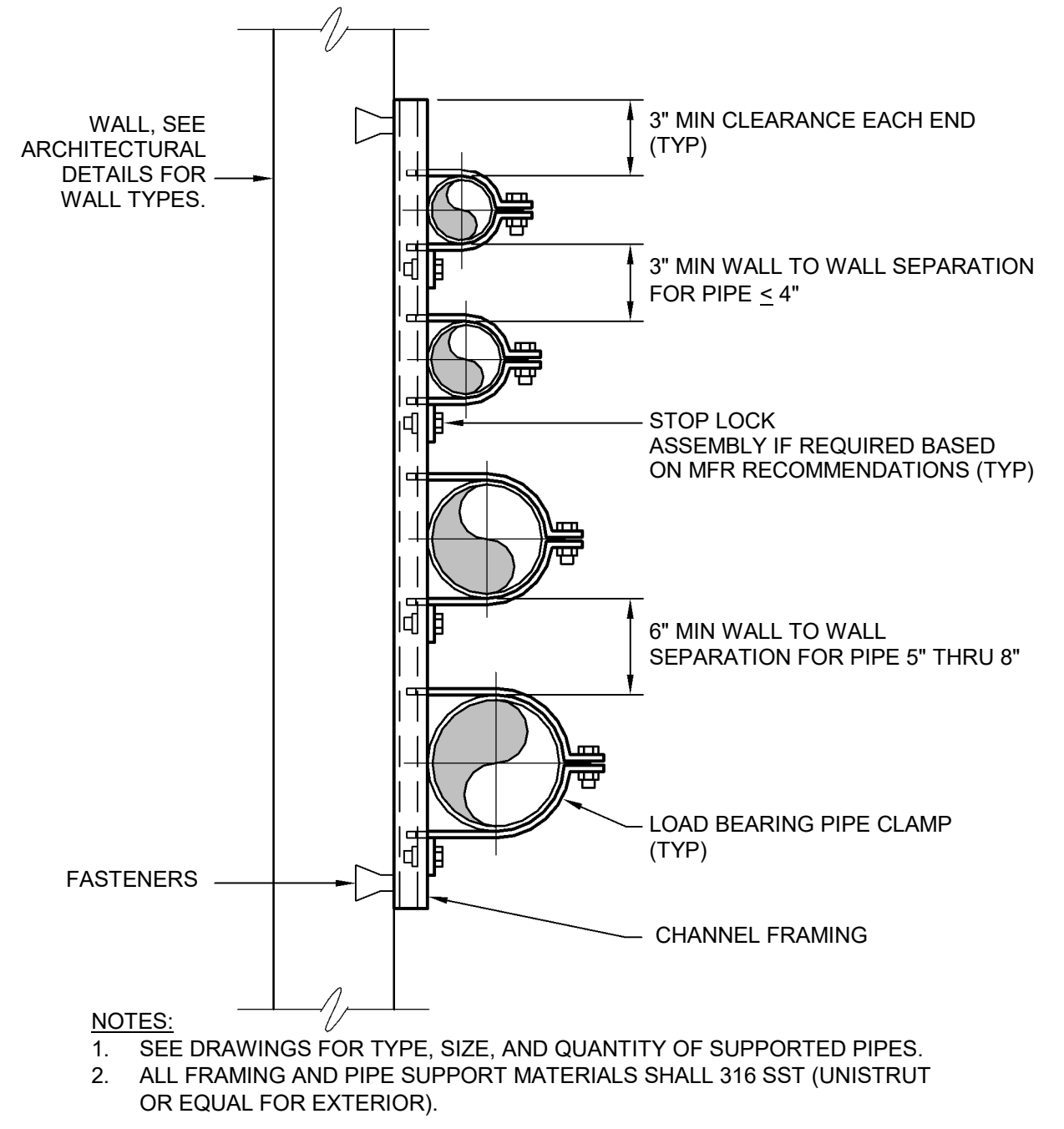
P-101



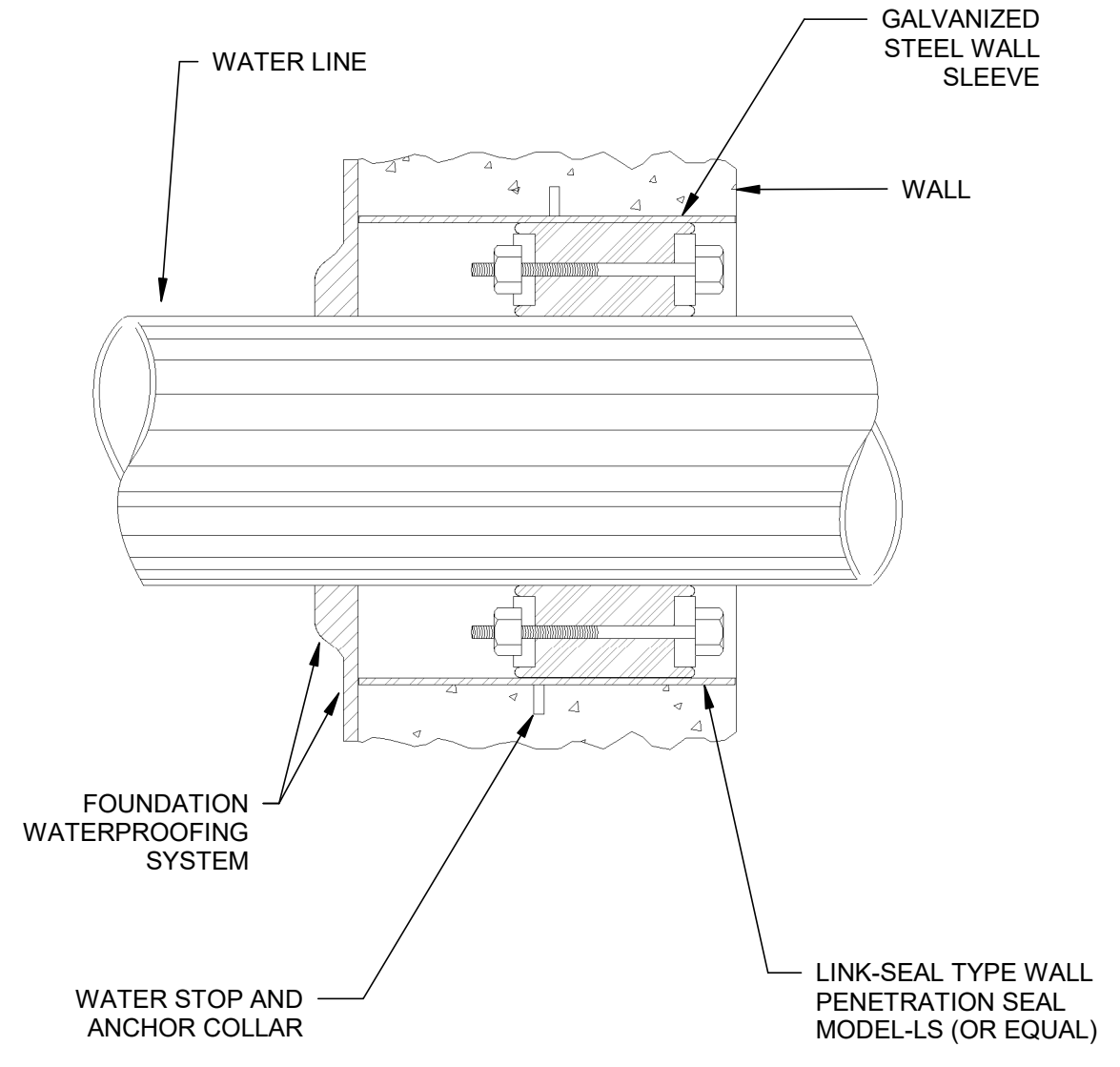
Copyright: Tetra Tech



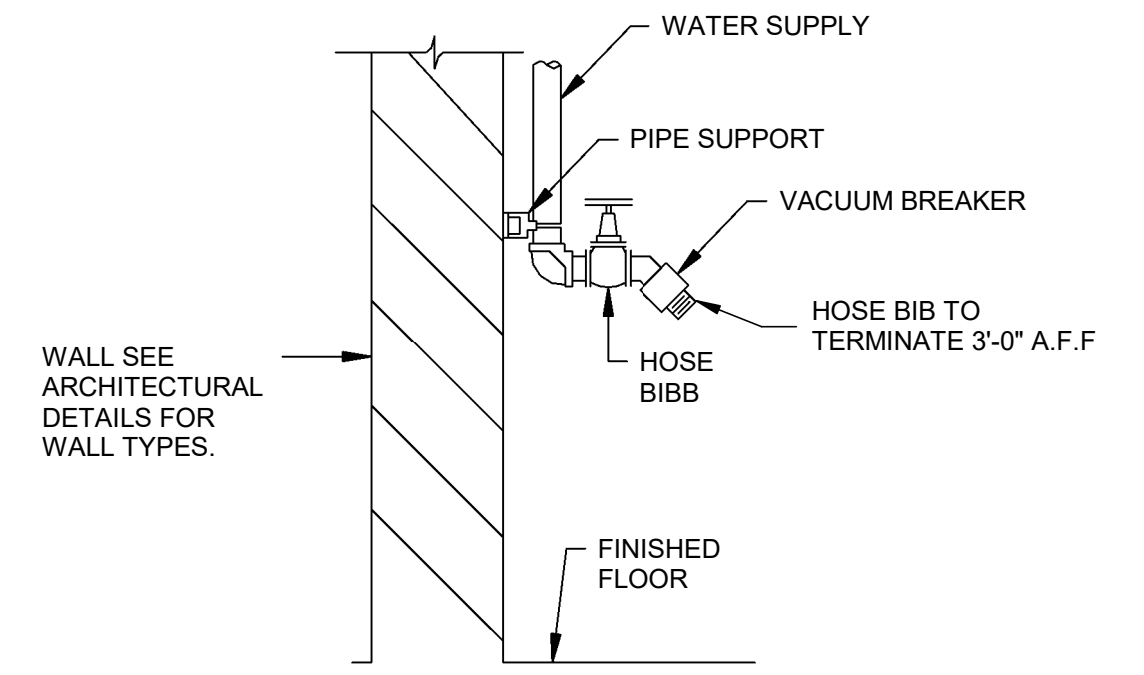
1 PIPE HANGER DETAIL
P-501 SCALE: NTS



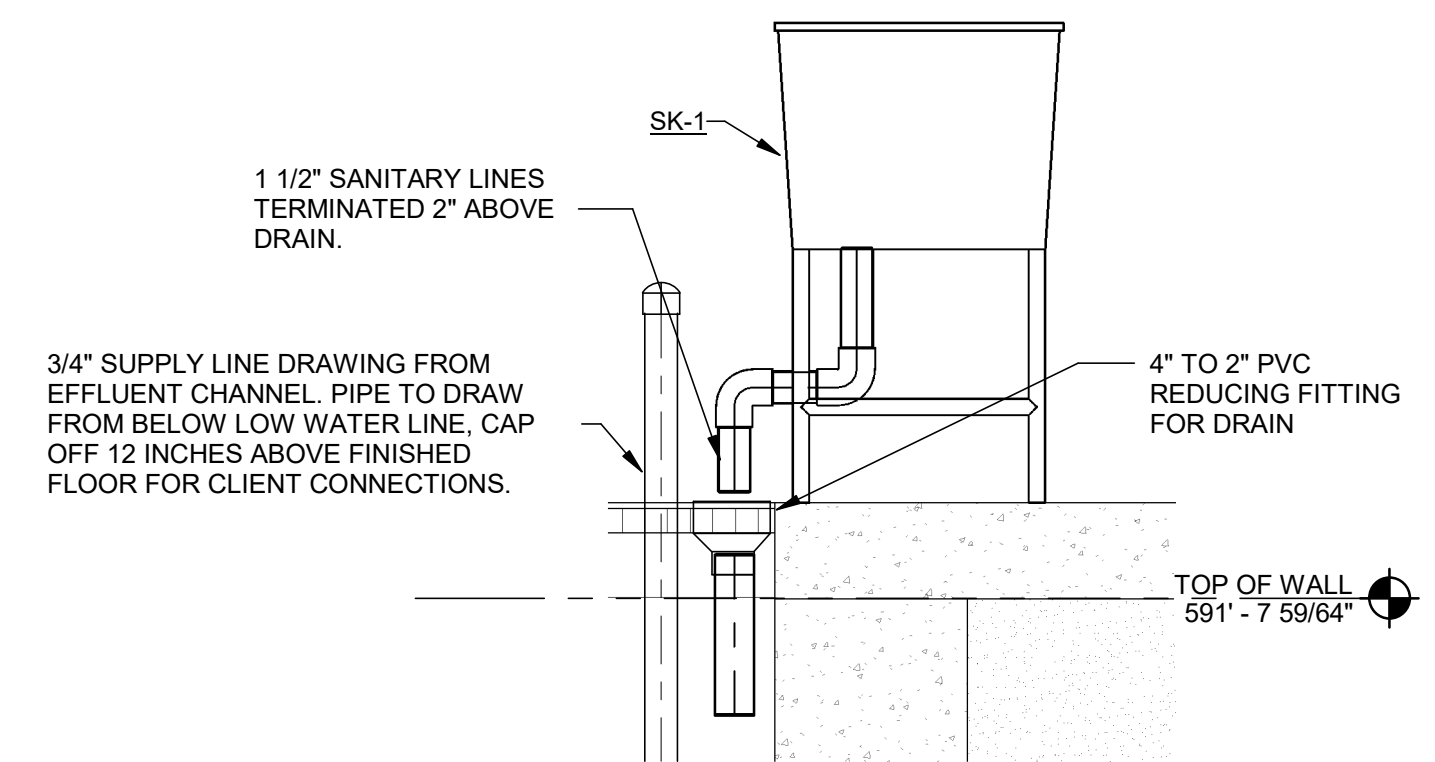
2 PIPE SUPPORT DETAIL
P-501 SCALE: NTS



3 FOUNDATION WALL PIPE PENETRATION
P-501 SCALE: N.T.S.



4 INTERIOR HOSE BIBB DETAIL
P-501 SCALE: NTS



5 SINK DETAIL
P-501 SCALE: 1" = 1'-0"

PLUMBING FIXTURE SCHEDULE						
MARK	DESCRIPTION	MANUFACTURER	MODEL	CONNECTION SIZE (IN)		NOTES
				CW	WASTE	
HB-1	HOSE BIBB	ZURN	Z1341XL	3/4"	-	
SK-1	SERVICE SINK	JUST MANUFACTURING	NSFB-124	3/4"	1 1/2"	

HB-# REPRESENTS THE NUMBER OF HOSEBIBS SERVED.

MARK	DATE	DESCRIPTION	BY
1	9/15/23	ISSUED FOR BIDS	

BAY COUNTY, MICHIGAN
WEST BAY COUNTY REGIONAL WWTP
ULTRAVIOLET DISINFECTION
DETAILS AND SCHEDULES

PROJ:	200-325577-22001
DESN:	MJB
DRWN:	MJB
CHKD:	LER

P-501

9/8/2023 11:37:45 AM - NIT.LOCALIERPROJECT\BAYCOUNTY\ARBORIER\23577-22001\CAD\FILES\ELE-001\ELECTRICAL-LEGEND-AND-NOTES.DWG - DOMARALPINHEIRO, EDGARD

BACKGROUND PLAN AND ONE LINE SYMBOLS

Table with 2 columns: SYMBOL and DESCRIPTION. Includes symbols for control switches, float switches, temperature-humidity switches, pressure/vacuum/torque switches, alternators, terminal boxes, solenoid valves, photocells, junction boxes, transformers, conduits, duct banks, alarm lights, selector switches, fuses, breakers, heaters, lights, and cameras.

GRAPHIC SYMBOL FOR INSTRUMENTATION ITEMS

Table with 2 columns: SYMBOL and DESCRIPTION. Includes symbols for panel-mounted devices, board-mounted devices, locally mounted devices, PLC input/output points, interlocking, motor starters, complex logic, float switches, process machinery motors, flow elements, pumps, blowers, time indicators, relays, indicating lights, transformers, circuit breakers, pushbuttons, solenoids, thermal overloads, terminal points, fuses, and receptacles.

I.S.A. STANDARD LETTER FUNCTIONS

Table with 3 columns: SYMBOL, FIRST LETTER, and SUCCEEDING LETTERS. Lists standard function codes such as ANALYSIS, BURNER, CONDUCTIVITY, DENSITY, VOLTAGE, FLOW RATE, GAGING, HAND, CURRENT, POWER, TIME SCHEDULE, LEVEL, MOISTURE, OVERLOAD, PRESSURE, QUANTITY, RADIOACTIVITY, SPEED, TEMPERATURE, MULTIVARIABLE, VIBRATION, WEIGHT, POSITION, ALARM, BATCH, CONTROL, PRIMARY ELEMENT, RATIO, GLASS, HIGH, INDICATE, SCAN, CONTROL, LOW, MIDDLE, ORIFICE POINT, TOTALIZE, RECORD, SWITCH, MULTIFUNCTION, VALVE, RELAY, DRIVE.

CONTROL CIRCUIT & PILOT DEVICE LEGEND

Table with 4 columns: SYMBOL, DESCRIPTION, SYMBOL, DESCRIPTION. Defines symbols for various electrical and pneumatic components like switches, actuators, relays, coils, and contactors.

INSTRUMENTATION LINE SYMBOLS

Table with 2 columns: SYMBOL and DESCRIPTION. Defines symbols for different types of signal lines: electrical, air/pneumatic, hydraulic, electromagnetic, software, Ethernet, and fiber optic.

GRAPHIC SYMBOLS FOR VALVES

Table with 2 columns: SYMBOL and DESCRIPTION. Defines symbols for various valve types: open-shut, throttling, diaphragm/positioner, ball, globe, knife gate, check, and plug valves.

WIRING DEVICE SCHEDULE

Table with 3 columns: SYMBOL, DESCRIPTION, and NEMA TYPE. Lists wiring devices such as duplex receptacles, simplex receptacles, quad receptacles, and switches.

NOTES:

- 1. FOR ITEMS INDICATED AS "FIELD LOCATE", CHECK THE DRAWINGS OF OTHER TRADES FOR INTERFERENCE AND FOR LOCATIONS OF MOUNTING FLANGES, CONNECTIONS POINTS, ETC.
2. INSTALL A SINGLE CONDUCTOR INSULATED (RHW, THHN, OR XHHW) COPPER GROUND WIRE IN EACH CONDUIT...
3. THE FOLLOWING EXAMPLE COMPONENT IDENTIFICATION SHALL BE USED AS APPROPRIATE:
(F) FIELD MOUNTED, NOT AT STARTER OR OTHER CONTROL PANELS
(S) STARTER PANEL MOUNTED (MCP) AT MAIN CONTROL PANEL
(1) AT CONTROL PANEL NO.1
(2) AT CONTROL PANEL NO.2
(TCP) AT TEMPERATURE CONTROL PANEL
4. NO WIRES SHALL BE TERMINATED TO TERMINAL STRIPS, OR OTHER EQUIPMENT WITHOUT FIRST VERIFYING SIGNAL TYPE...
5. CONDUIT ROUTINGS SHOWN ON BACKGROUND PLANS, AND SITE PLANS ARE INTENDED ROUTINGS ONLY...
6. ETHERNET AND FIBER OPTIC TERMINATIONS SHALL BE PERFORMED BY A QUALIFIED REPRESENTATIVE OF CABLE MANUFACTURER...
7. REFER TO THE CABLE MANUFACTURER'S RECOMMENDATIONS FOR MINIMUM BEND RADIUS...
8. RACEWAYS, PULLBOXES AND JUNCTION BOXES TO BE INSTALLED WITH CHANNEL STRUT...
9. WIRING FOR STARTERS SHALL BE IN ACCORDANCE WITH NEMA CLASS II B STANDARDS...
10. CONTROL PANELS SHALL BE MOUNTED OFF WALLS WITH STRUT...
11. CONDUIT ENTERING CONTROL PANELS AND ELECTRICAL EQUIPMENT ENCLOSURES SHALL BE FILLED WITH DUCT SEAL...
12. CABLES (INCLUDING FIBER, ETHERNET, CONTROL WIRE, ETC.) WHERE PASSING THROUGH A PULLBOX SHALL BE LABELED...
13. CONTROL WIRES SHALL BE TAGGED WITH THE PLC I/O ADDRESS...
14. FIELD CONTROL WIRING BETWEEN MOTOR CONTROL CENTERS, FIELD STARTERS, FIELD CONTACTORS, AND CONTROL PANELS SHALL BE YELLOW #14AWG.



www.tetra-tech.com
1136 OAK VALLEY DRIVE, SUITE 100
ANN ARBOR, MI 48108
PHONE: 734.665.6000, FAX: 734.213.3003

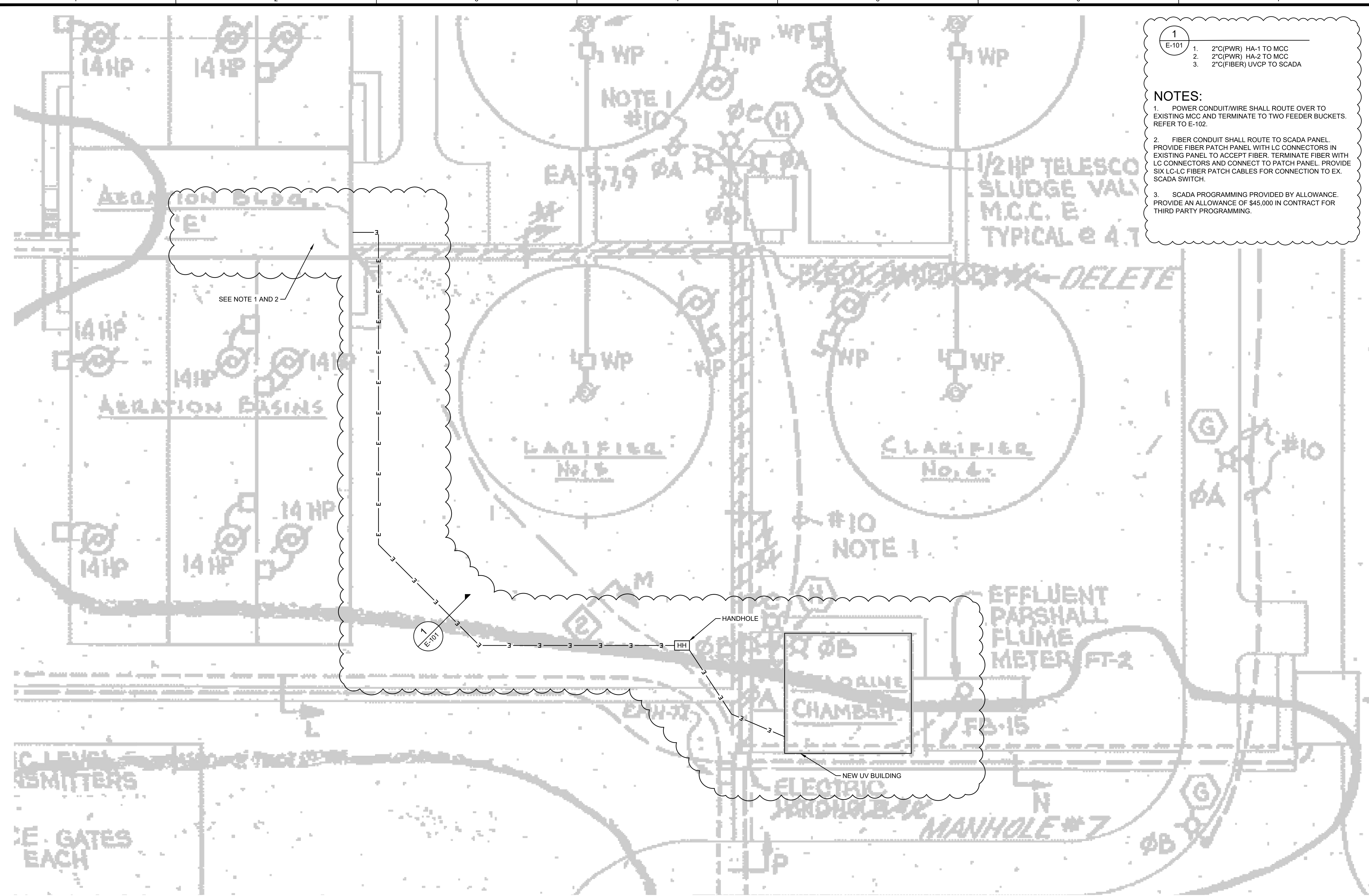
Table with 4 columns: MARK, DATE, DESCRIPTION, BY. Contains revision information for the drawing.

BAY COUNTY, MICHIGAN
WEST BAY COUNTY REGIONAL WWTP
ULTRAVIOLET DISINFECTION
LEGEND AND NOTES

PROJ: 200-325577-22001
DESIGN: MTS
DRAWN: MTS
CHKD:

E-001

9/8/2023 11:38:26 AM - \\TTL\LOCAL\PROJECTS\ANN ARBOR\RIER\25577\2001\CAD\SHETS\FILE\E-101 SITE PLAN.DWG - DOAMARAL PINHEIRO, EDGARD



- 1**
E-101
- 2"(PWR) HA-1 TO MCC
 - 2"(PWR) HA-2 TO MCC
 - 2"(FIBER) UVCP TO SCADA
- NOTES:**
- POWER CONDUIT/WIRE SHALL ROUTE OVER TO EXISTING MCC AND TERMINATE TO TWO FEEDER BUCKETS. REFER TO E-102.
 - FIBER CONDUIT SHALL ROUTE TO SCADA PANEL. PROVIDE FIBER PATCH PANEL WITH LC CONNECTORS IN EXISTING PANEL TO ACCEPT FIBER. TERMINATE FIBER WITH LC CONNECTORS AND CONNECT TO PATCH PANEL. PROVIDE SIX LC-LC FIBER PATCH CABLES FOR CONNECTION TO EX. SCADA SWITCH.
 - SCADA PROGRAMMING PROVIDED BY ALLOWANCE. PROVIDE AN ALLOWANCE OF \$45,000 IN CONTRACT FOR THIRD PARTY PROGRAMMING.

EXISTING DRAWING FROM PREVIOUS PROJECT. PROPOSED WORK SHOWN BOLD, CROSSHATCHED, AND/OR CLOUDED

SITE PLAN
SCALE: 1" = 8'-0"

TETRA TECH
www.tetra-tech.com
1136 OAK VALLEY DRIVE, SUITE 100
ANN ARBOR, MI 48108
PHONE: 734.665.6000, FAX: 734.213.9003

MARK	DATE	DESCRIPTION	ISSUED FOR	BY
1	9/15/23	ISSUED FOR BIDS		

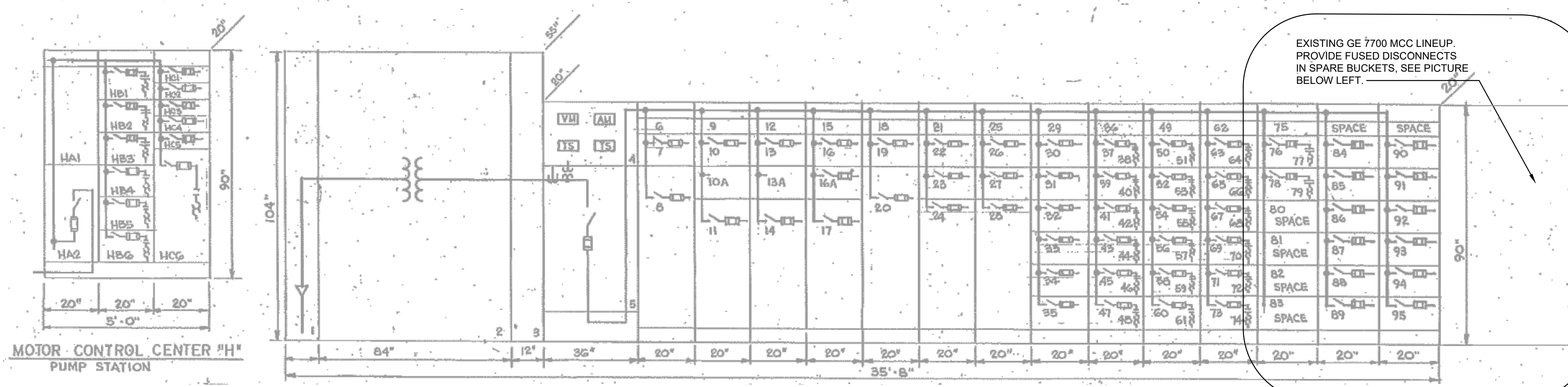
BAY COUNTY, MICHIGAN
WEST BAY COUNTY REGIONAL WWTP
ULTRAVIOLET DISINFECTION
SITE PLAN

PROJ: 200-325577-22001
 DESN: MTS
 DRWN: MTS
 CHKD: ####

E-101

Copyright: Tetra Tech

9/8/2023 9:51:37 AM - I:\LOCAL\PROJECTS\ANN ARBOR\IER325577200-325577-2200\CAD\SHSHEETFILES\E-102 MCC ONE-LINE DIAGRAMS.DWG - DOAMARALPINHEIRO.EDGARD



EXISTING GE 7700 MCC LINEUP. PROVIDE FUSED DISCONNECTS IN SPARE BUCKETS, SEE PICTURE BELOW LEFT.



ITEM	DESCRIPTION	FUSE SIZE	CIRCUIT
1	INCOMING LINE SECTION		
2	2000 KVA 2880/4800V 3Ø WYE TO 480/277V 3Ø WYE TRANSFORMER		
3	TRANSITION SECTION		
4	VOLTMETER, AMMETER, TEST SWITCHES		
5	2500 AMP BOLT LOC FUSED SWITCH	2500	MOTOR CONTROL CENTER MAIN SWITCH
6	SPACE		
7	30 AMP FUSED SWITCH	30	LIGHTING PANEL 5A
8	600 AMP FUSED SWITCH	600	VARIABLE SPEED CONTROLS FOR 125 HP SEWAGE PUMPS
9	SPACE		
10	30 AMP FUSED SWITCH	30	15 KVA TRANSFORMER & LIGHTING PANEL 5B
10A	SPACE		
11	400 AMP FUSED SWITCH	350	200 HP BLOWER MOTOR
12	SPACE		
13	20 AMP FUSED SWITCH	15	5 KW UH. E-1
13A	SPACE		
14	400 AMP FUSED SWITCH	350	200 HP BLOWER MOTOR
15	SPACE		
16	30 AMP FUSED SWITCH	15	5 KW UH. E-2
16A	100 AMP FUSED SWITCH	100	CHLORINE BLDG. HEAT
17	400 AMP FUSED SWITCH	350	200 HP BLOWER MOTOR
18	SPACE		
19	30 AMP FUSED SWITCH	15	5 KW UH. E-3
20	600 AMP FUSED SWITCH	600	PRIMARY BLDG.
21	SPACE		
22	30 AMP FUSED SWITCH	15	5 KW UH. E-4
23	30 AMP FUSED SWITCH	15	5 KW UH. E-5
24	400 AMP FUSED SWITCH	350	200 HP BLOWER MOTOR
25	SPACE		
26	30 AMP FUSED SWITCH	15	5 KW UH. E-6
27	30 AMP FUSED SWITCH	15	5 KW UH. E-7
28	400 AMP FUSED SWITCH	350	PUMP STATION
29	SPACE		
30	30 AMP FUSED SWITCH	15	5 KW UH. E-8
31	30 AMP FUSED SWITCH	15	4 KW UH. E-9
32	30 AMP FUSED SWITCH	15	4 KW UH. E-10
33	30 AMP FUSED SWITCH		SPARE
34	30 AMP FUSED SWITCH		SPARE
35	30 AMP FUSED SWITCH		SPARE
36	SPACE		
37	30 AMP FUSED SWITCH	15	STARTER
38	SIZE 1 STARTER		1/2 HP EF. E-2
39	30 AMP FUSED SWITCH	15	STARTER
40	SIZE 1 STARTER		3/4 H.P. EF. E-3
41	30 AMP FUSED SWITCH	15	STARTER
42	SIZE 1 STARTER		3/4 HR EF. E-4
43	30 AMP FUSED SWITCH	15	STARTER
44	SIZE 1 STARTER		3/4 H.P. EF. E-5
45	30 AMP FUSED SWITCH		STARTER
46	SIZE 1 STARTER		SPARE
47	30 AMP FUSED SWITCH		STARTER
48	SIZE 1 STARTER		SPARE
49	SPACE		
50	30 AMP FUSED SWITCH	30	STARTER
51	SIZE 2 STARTER		15HR WASTE ACTIVATED SLUDGE PUMP
52	30 AMP FUSED SWITCH	30	STARTER
53	SIZE 2 STARTER		15HR WASTE ACTIVATED SLUDGE PUMP
54	30 AMP FUSED SWITCH	15	STARTER
55	SIZE 1 STARTER		3/4 H.R. CLARIFIER
56	30 AMP FUSED SWITCH	15	STARTER
57	SIZE 1 STARTER		3/4 H.R. CLARIFIER
58	30 AMP FUSED SWITCH	15	STARTER
59	SIZE 1 STARTER		3/4 H.R. CLARIFIER
60	30 AMP FUSED SWITCH	15	STARTER
61	SIZE 1 STARTER		3/4 H.P. CLARIFIER
62	SPACE		
63	30 AMP FUSED SWITCH	15	STARTER

ITEM	DESCRIPTION	FUSE SIZE	CIRCUIT
64	SIZE 1 STARTER		1/2 HP BUTTERFLY VALVE
65	30 AMP FUSED SWITCH	15	STARTER
66	SIZE 1 STARTER		1/2 HP BUTTERFLY VALVE
67	30 AMP FUSED SWITCH	15	STARTER
68	SIZE 1 STARTER		1/2 HP BUTTERFLY VALVE
69	30 AMP FUSED SWITCH	15	STARTER
70	SIZE 1 STARTER		1/2 HP BUTTERFLY VALVE
71	30 AMP FUSED SWITCH	15	STARTER
72	SIZE 1 STARTER		1/2 HP TELESCOPING VALVE
73	30 AMP FUSED SWITCH	15	STARTER
74	SIZE 1 STARTER		1/2 HP TELESCOPING
75	SPACE		
76	30 AMP FUSED SWITCH	15	STARTER

ITEM	DESCRIPTION	FUSE SIZE	CIRCUIT
77	SIZE 1 STARTER		1/2 HP TELESCOPING VALVE
78	30A. FUSED SWITCH	15	STARTER
79	SIZE 1 STARTER		1/2 HP TELESCOPING VALVE
80	SPACE		
81	SPACE		
82	SPACE		
83	SPACE		
84	30A. FUSED SWITCH	30	14 HP PUMP AERATION BASIN
85	30A. FUSED SWITCH	30	14 HP PUMP
86	30A. FUSED SWITCH	30	14 HP PUMP
87	30A. FUSED SWITCH	30	14 HP PUMP
88	30A. FUSED SWITCH	30	14 HP PUMP
89	30A. FUSED SWITCH	30	14 HP PUMP
90	30A. FUSED SWITCH	30	14 HP PUMP
91	30A. FUSED SWITCH	30	14 HP PUMP
92	30A. FUSED SWITCH	30	14 HP PUMP
93	30A. FUSED SWITCH	30	14 HP PUMP
94	30A. FUSED SWITCH	30	14 HP PUMP
95	30A. FUSED SWITCH	30	14 HP PUMP

ITEM	DESCRIPTION	FUSE SIZE	CIRCUIT
HA1	SPACE		
HA2	400 AMP FUSED MAIN SWITCH	300	MOTOR CONTROL CENTER 'H'
HB1	100 AMP FUSED SWITCH		STARTER
HB2	SIZE 2 STARTER		SPARE
HB3	30 AMP FUSED SWITCH	40	STARTER
HB4	SIZE 1 STARTER		10 HP AIR COMPRESSOR
HB5	60 AMP FUSED SWITCH	50	STARTER
HCB	SIZE 2 STARTER		25 HP VERT. TURBINE PUMP
HCC	200 AMP FUSED SWITCH	175	STARTER
HCD	SIZE 4 STARTER		100 HP VERT. TURBINE PUMP
HB4	60 AMP FUSED SWITCH	50	STARTER
HB5	60 AMP FUSED SWITCH	50	STARTER
HC1	SIZE 2 STARTER		25 HP MIXED FLOW PUMP
HC2	30 AMP FUSED SWITCH	30	STARTER
HC3	30 AMP FUSED SWITCH	30	L.P. HA
HC4	30 AMP FUSED SWITCH	30	L.P. HB, 15KVA TRANSFORMER
HCA	20 AMP FUSED SWITCH		SPARE
HC4	30 AMP FUSED SWITCH	15	2.6 KW UH. H-1
HB4/HCS	SPACE		

EXISTING DRAWING FROM PREVIOUS PROJECT. PROPOSED WORK SHOWN BOLD, CROSSHATCHED, AND/OR CIRCLED.

MCC ONE-LINE DIAGRAMS
N.T.S

TETRA TECH

www.tetrattech.com

1136 OAK VALLEY DRIVE, SUITE 100
ANN ARBOR, MI 48108
PHONE: 734.665.6000, FAX: 734.213.3003

BY

--

DATE ISSUED FOR BIDS

--

MARK

--

BAY COUNTY, MICHIGAN

--

WEST BAY COUNTY REGIONAL WWTP

--

ULTRAVIOLET DISINFECTION

--

MCC ONE-LINE DIAGRAMS

--

PROJ:

200-325577-22001

DESIGN:

MTS

DRAWN:

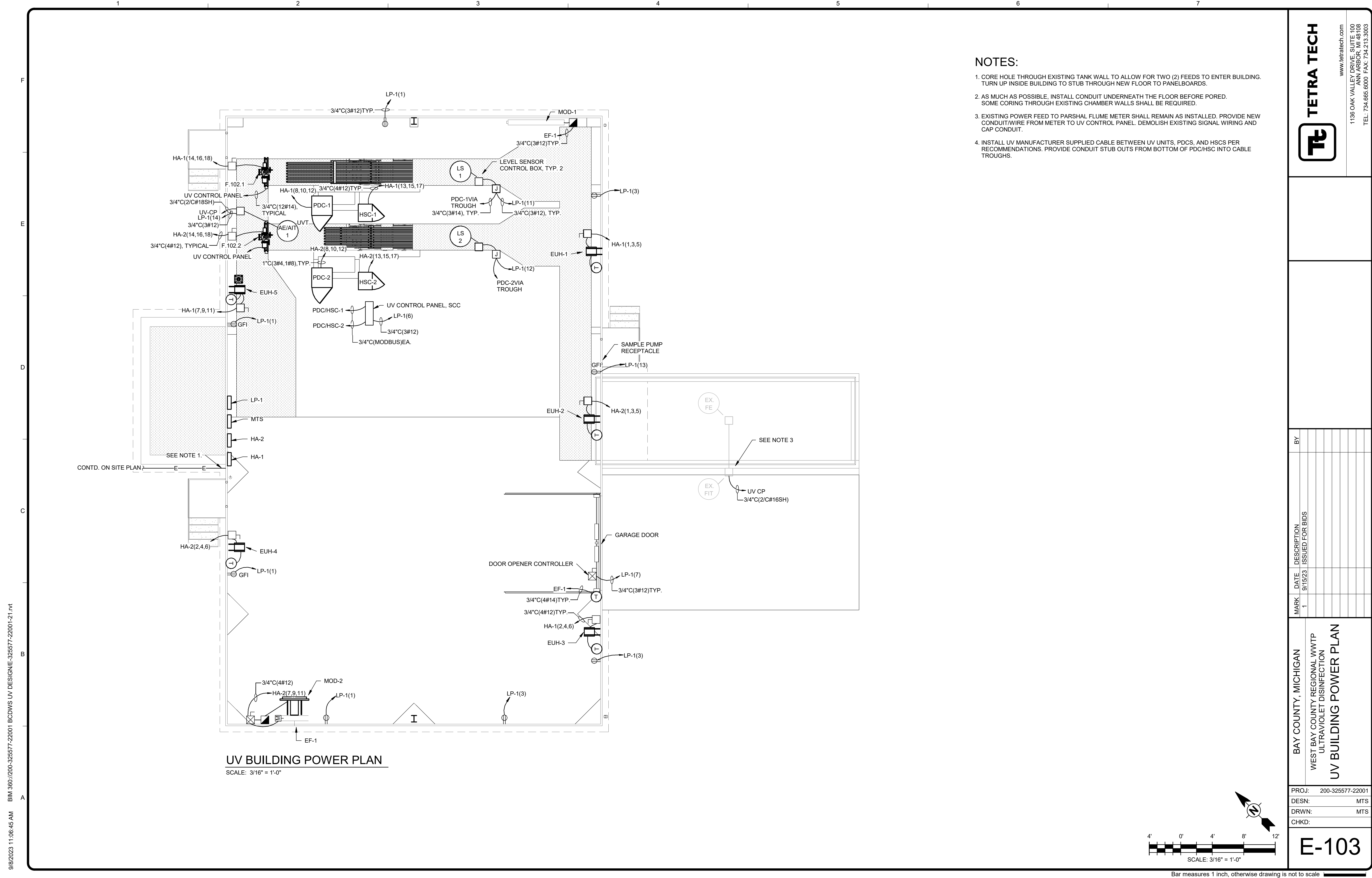
MTS

CHKD:

--

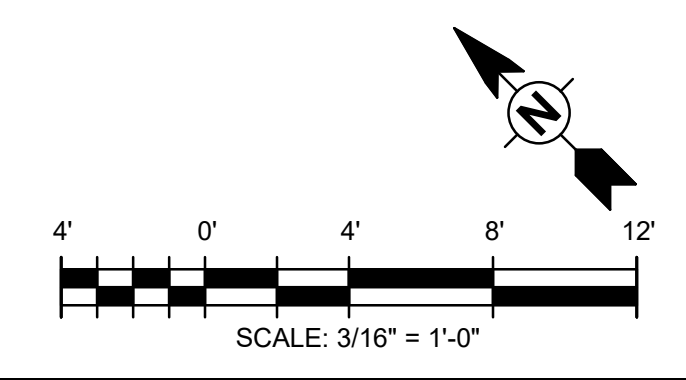
Copyright: Tetra Tech

--



- NOTES:**
1. CORE HOLE THROUGH EXISTING TANK WALL TO ALLOW FOR TWO (2) FEEDS TO ENTER BUILDING. TURN UP INSIDE BUILDING TO STUB THROUGH NEW FLOOR TO PANELBOARDS.
 2. AS MUCH AS POSSIBLE, INSTALL CONDUIT UNDERNEATH THE FLOOR BEFORE PORED. SOME CORING THROUGH EXISTING CHAMBER WALLS SHALL BE REQUIRED.
 3. EXISTING POWER FEED TO PARSHAL FLUME METER SHALL REMAIN AS INSTALLED. PROVIDE NEW CONDUIT/WIRE FROM METER TO UV CONTROL PANEL. DEMOLISH EXISTING SIGNAL WIRING AND CAP CONDUIT.
 4. INSTALL UV MANUFACTURER SUPPLIED CABLE BETWEEN UV UNITS, PDCS, AND HSCS PER RECOMMENDATIONS. PROVIDE CONDUIT STUB OUTS FROM BOTTOM OF PDC/HSC INTO CABLE TROUGHS.

UV BUILDING POWER PLAN
SCALE: 3/16" = 1'-0"



TETRA TECH
www.tetra.tech.com
1136 OAK VALLEY DRIVE, SUITE 100
ANN ARBOR, MI 48108
TEL: 734-665-6000 FAX: 734-213-3003

MARK	DATE	DESCRIPTION	BY
1	9/15/23	ISSUED FOR BIDS	

BAY COUNTY, MICHIGAN
WEST BAY COUNTY REGIONAL WWTP
ULTRAVIOLET DISINFECTION
UV BUILDING POWER PLAN

PROJ:	200-325577-22001
DESN:	MTS
DRWN:	MTS
CHKD:	

E-103

9/8/2023 11:06:45 AM BIM 360://200-325577-22001 BCDWS UV DESIGN/325577-22001-21.rvt

Copyright: Tetra Tech

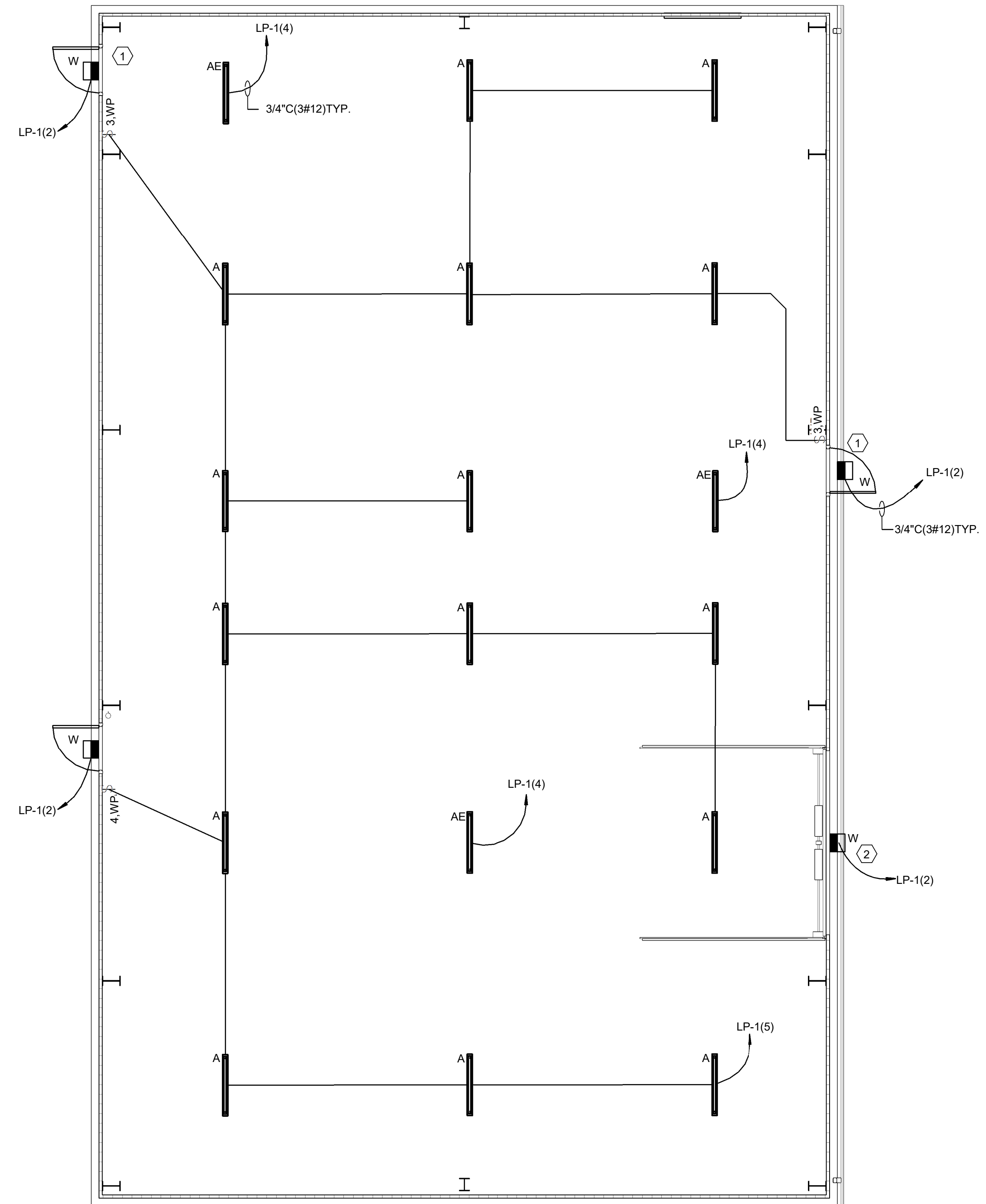
Bar measures 1 inch, otherwise drawing is not to scale

9/8/2023 10:31:54 AM BIM 360://200-325577-22001 BCDWS UV DESIGN\325577-22001-21.rvt

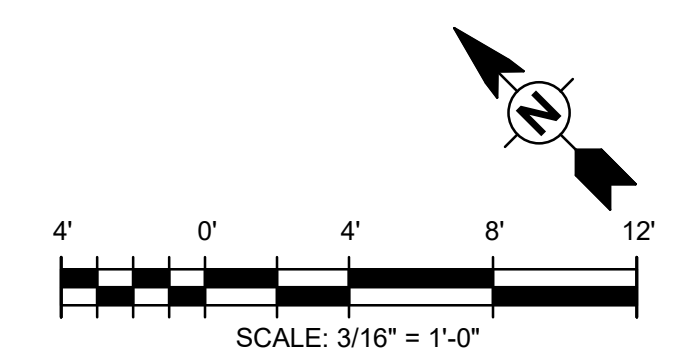
F
E
D
C
B
A

1 2 3 4 5 6 7

- KEYNOTES:**
1. LIGHTS SHALL BE MOUNTED 8'-0" ABOVE GRADE.
 2. LIGHTS SHALL BE MOUNTED 12'-0" ABOVE GRADE.



UV BUILDING LIGHTING PLAN
SCALE: 3/16" = 1'-0"



TETRA TECH
www.tetratech.com
1136 OAK VALLEY DRIVE, SUITE 100
ANN ARBOR, MI 48108
TEL: 734-665-6000 FAX: 734-213-9003

MARK	DATE	DESCRIPTION	BY
1	9/15/23	ISSUED FOR BIDS	

BAY COUNTY, MICHIGAN
WEST BAY COUNTY REGIONAL WWTP
ULTRAVIOLET DISINFECTION
UV BUILDING LIGHTING
PLAN

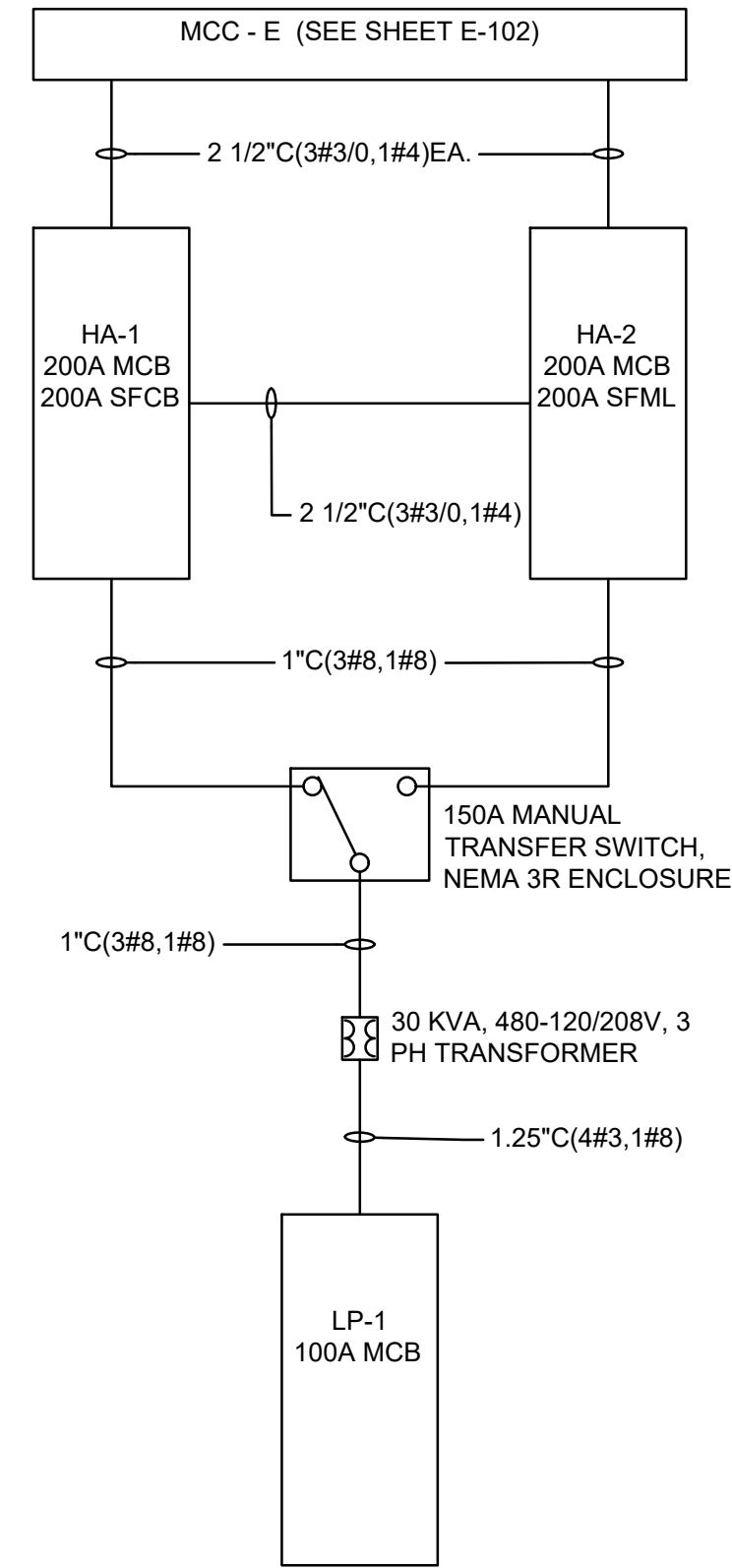
PROJ: 200-325577-22001
DESN: MTS
DRWN: MTS
CHKD:

E-104

Copyright: Tetra Tech

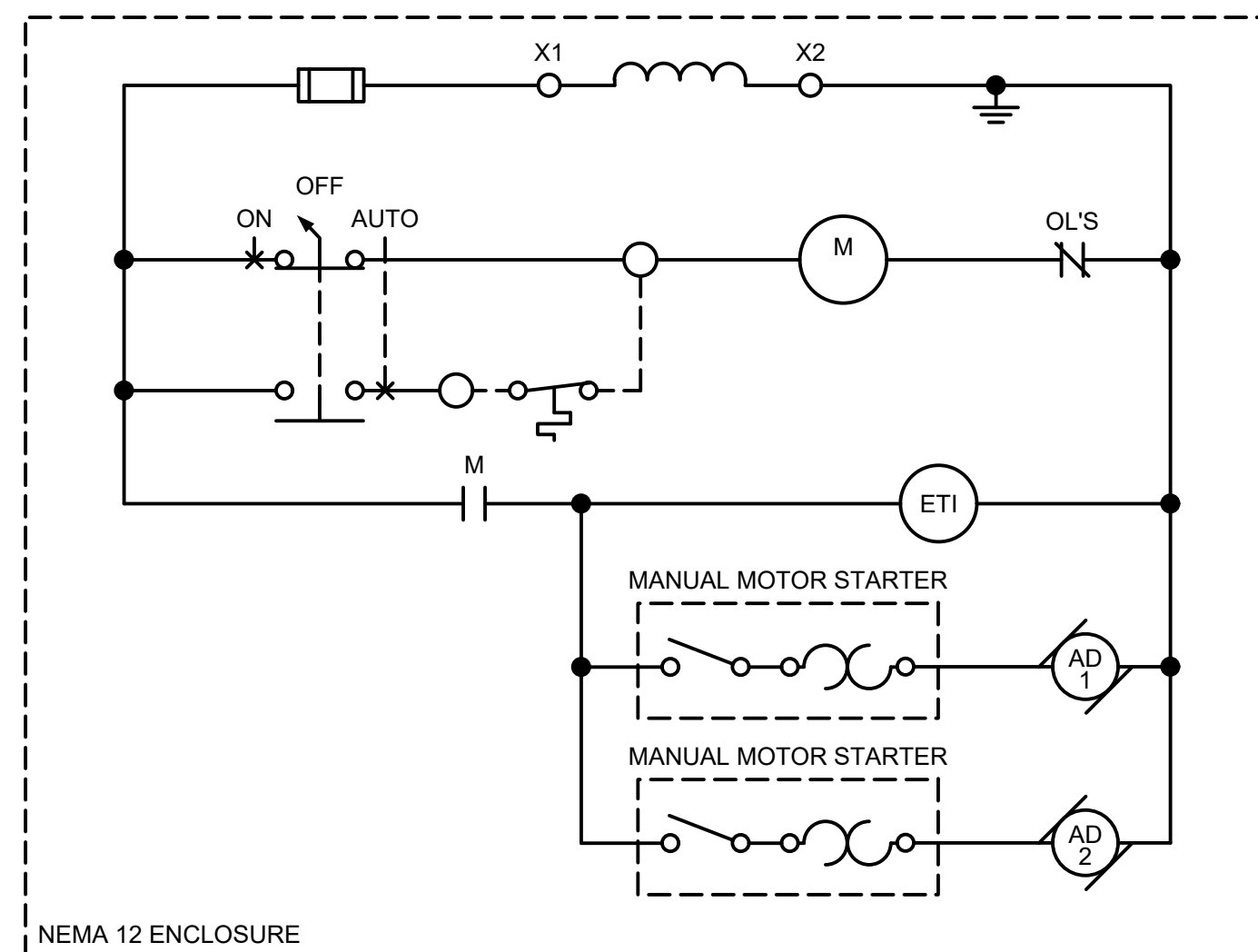
Bar measures 1 inch, otherwise drawing is not to scale

LIGHTING FIXTURE SCHEDULE									
TYPE	MANUFACTURER	MODEL	VOLTAGE	WATTS	LAMP	MOUNTING	HEIGHT	DESCRIPTION	
A	LITHONIA LIGHTING	EMS L48 6000LM LPAFL MD 80CRI 40K	120 V	25 W	LED	PENDENT	1' BELOW CEILING	EMS LED 48", 6,000 LUMENS, ACRYLIC, LOW PROFILE FROSTED LENS, MEDIUM DISTRIBUTION, 80CRI, 4000K	
AE	LITHONIA LIGHTING	EMS L48 6000LM LPAFL MD 80CRI 40K E10WMCP	120 V	25 W	LED	PENDENT	1' BELOW CEILING	EMS LED 48", 6,000 LUMENS, ACRYLIC, LOW PROFILE FROSTED LENS, MEDIUM DISTRIBUTION, 80CRI, 4000K, INCLUDES EMERGENCY BATTERY PACK (E10WMCP)	
W	LITHONIA LIGHTING	WST LED P2 40K VV MVOLT E7WC PIR	120 V	38 W	LED	WALL	AS INDICATED	WST LED, PERFORMANCE PACKAGE 2, 4000K, VISUAL COMFORT WIDE, MVOLT, INCLUDES COLD RATED EMERGENCY BATTERY BACKUP (E7WC) AND MOTION/AMBIENT LIGHT SENSOR (PIR)	



PROJECT ONE-LINE

NOTE: PROVIDE KEY INTERLOCK SYSTEM FOR THE MAIN BREAKERS AND THE SUBFEED BREAKER IN HA-1/2. PROVIDE TWO KEYS AND THREE LOCKS.



EXHAUST FAN EF-1 AND DAMPERS AD-1/2

LP-1		PANEL SCHEDULE						PROJECT:		TT #200-325577-22001		
120/208V, 3Ph, 4W.		200A BUS		100A M.C.B.		SURFACE MOUNTED				8-Sep-23		
CKT NO	DESCRIPTION/ LOCATION	LOAD (VA)	LOAD TYPE	CB AMP	CB POLE	PHASE	CB AMP	CB POLE	LOAD (VA)	LOAD TYPE	DESCRIPTION/ LOCATION	CKT NO
1	WEST UV BUILDING RECEP	720	R	20	1	a	20	1	114	L	EXTERIOR LIGHTING	2
3	EAST UV BUILDING RECEP	720	R	20	1	b	20	1	50	L	UV BUILDING EMERGENCY LIGHTING	4
5	UV BUILDING LIGHTING	400	L	20	1	c	20	1	1,800	G	UV CONTROL PANEL, SCC	6
7	GARAGE DOOR	1,176	G	30	1	a	20	1			SPARE	8
9	SPARE			20	1	b	20	1			SPARE	10
11	LEVEL SENSOR CONTROL BOX LS-1	120	G	20	1	c	20	1	120	G	LEVEL SENSOR CONTROL BOX LS-2	12
13	SAMPLE PUMP RECEPTACLE	1,440	R	20	1	a	20	1	50	G	AE/AIT-1 (UVT)	14
15	SPARE			20	1	b	20	1			SPARE	16
17	SPARE			20	1	c	20	1			SPARE	18
19	SPARE			20	1	a	20	1			SPARE	20
21	SPARE			20	1	b	20	1			SPARE	22
23	SPARE			20	1	c	20	1			SPARE	24
25	SPARE			20	1	a	20	1			SPARE	26
27	SPARE			20	1	b	20	1			SPARE	28
29	SPARE			20	1	c	20	1			SPARE	30
31	SPARE			20	1	a	20	1			SPARE	32
33	SPARE			20	1	b	20	1			SPARE	34
35	SPARE			20	1	c	20	1			SPARE	36
37	SPACE					a					SPACE	38
39	SPACE					b					SPACE	40
41	SPACE					c					SPACE	42
TOT CONN LOAD: Ph A				3,500 VA		29 A						
TOT CONN LOAD: Ph B				770 VA		6 A					ACCESSORIES Provide Integral TVSS Unit	
TOT CONN LOAD: Ph C				2,440 VA		20 A						
"MAX" PHASE CONN LOAD:			Ph A	3,500 VA								
TOTAL CONNECTED LOAD (3 X MAX):				10.5 KVA		29.2 AMPS	TOTAL DEMAND LOAD:		6.9 KVA	19.0 AMPS		

HA-1		PANEL SCHEDULE						PROJECT:		TT #200-325577-22001		
277/480V, 3Ph, 4W.		225A BUS		200A M.C.B.		SURFACE MOUNTED				8-Sep-23		
CKT NO	DESCRIPTION/ LOCATION	LOAD (VA)	LOAD TYPE	CB AMP	CB POLE	PHASE	CB AMP	CB POLE	LOAD (VA)	LOAD TYPE	DESCRIPTION/ LOCATION	CKT NO
1	EUH-1	1,850	H			a			1,850	H	EUH-3	2
3		1,850	H	20	3	b	20	3	1,850	H		4
5		1,850	H			c			1,850	H		6
7		1,850	H			a			14,127	G		8
9	EUH-5	1,850	H	20	3	b	70	3	14,127	G	PDC-1	10
11		1,850	H			c			14,127	G		12
13		831	G			a			346	G		14
15	HSC-1	831	G	20	3	b	20	3	346	G	F.102.1	16
17		831	G			c			346	G		18
19		5,540	G			a						20
21	LP-1 & 30 kVA XFMR (PRIMARY)	5,540	G	100	3	b	20	3			SPARE	22
23		5,540	G			c						24
25		5,540	G			a						26
27	SPARE			20	3	b	20	3			SPARE	28
29						c						30
31						a						32
33	SPARE			20	3	b	200	3			ALT FEED TO HA-2	34
35						c						36
37						a						38
39	SPACE					b					SPACE	40
41						c						42
TOT CONN LOAD: Ph A				26,394 VA		95 A					ACCESSORIES Provide key interlocks for Main and Subfeed	
TOT CONN LOAD: Ph B				26,394 VA		95 A					Provide Integral TVSS Unit	
TOT CONN LOAD: Ph C				26,394 VA		95 A					Provide 200A Subfeed Breaker to Feed HA-2	
"MAX" PHASE CONN LOAD:			Ph A	26,394 VA								
TOTAL CONNECTED LOAD (3 X MAX):				79.2 KVA		95.2 AMPS	TOTAL DEMAND LOAD:		79.2 KVA	95.2 AMPS		

HA-2		PANEL SCHEDULE						PROJECT:		TT #200-325577-22001		
277/480V, 3Ph, 4W.		225A BUS		200A M.C.B.		SURFACE MOUNTED				8-Sep-23		
CKT NO	DESCRIPTION/ LOCATION	LOAD (VA)	LOAD TYPE	CB AMP	CB POLE	PHASE	CB AMP	CB POLE	LOAD (VA)	LOAD TYPE	DESCRIPTION/ LOCATION	CKT NO
1		1,850	H			a			1,850	H		2
3	EUH-2	1,850	H	20	3	b	20	3	1,850	H	EUH-4	4
5		1,850	H			c			1,850	H		6
7		259	M			a			14,127	G		8
9	EF-1	259	M	20	3	b	70	3	14,127	G	PDC-2	10
11		259	M			c			14,127	G		12
13		831	G			a			346	G		14
15	HSC-2	831	G	20	3	b	20	3	346	G	F.102.2	16
17		831	G			c			346	G		18
19		5,540	G			a						20
21	LP-1 & 30 kVA XFMR (SECONDARY)	5,540	G	20	3	b	20	3			SPARE	22
23		5,540	G			c						24
25						a						26
27	SPARE			20	3	b	20	3			SPARE	28
29						c						30
31						a						32
33	SPARE			20	3	b	20	3			SPARE	34
35						c						36
37						a						38
39	SPACE					b					SPACE	40
41						c						42
TOT CONN LOAD: Ph A				24,803 VA		90 A					ACCESSORIES Provide key interlock for Main	
TOT CONN LOAD: Ph B				24,803 VA		90 A					Provide Integral TVSS Unit	
TOT CONN LOAD: Ph C				24,803 VA		90 A					Provide Feed-Thru Lugs	
"MAX" PHASE CONN LOAD:			Ph A	24,803 VA								
TOTAL CONNECTED LOAD (3 X MAX):				74.4 KVA		89.5 AMPS	TOTAL DEMAND LOAD:		74.4 KVA	89.5 AMPS		

9/8/2023 11:36:36 AM - N:\LOCAL\PROJECTS\ANN ARBOR\PROJECTS\200-325577-22001\CAD\SHETS\E-105 ELECTRICAL DETAILS AND SCHEDULES DWG - DOAMARALPINHEIRO, EDGARD



www.tetra-tech.com
1136 OAK VALLEY DRIVE, SUITE 100
ANN ARBOR, MI 48108
PHONE: 734.665.6000, FAX: 734.213.3003

MARK	DATE	DESCRIPTION	BY
1	9/15/23	ISSUED FOR BIDS	

BAY COUNTY, MICHIGAN
WEST BAY COUNTY REGIONAL WWTP
ULTRAVIOLET DISINFECTION
ELECTRICAL
ONE-LINE, SCHEDULES
AND SCHEMATIC

PROJ: 200-325577-22001
DES: MTS
DRW: MTS
CHKD:

E-105