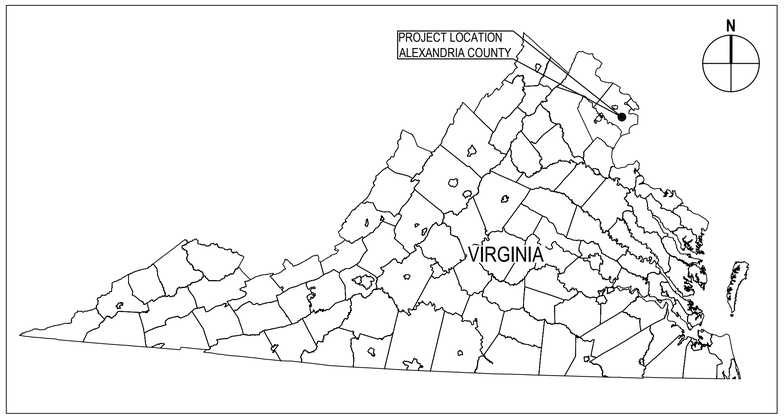
ALEXANDRIA RENEW ENTERPRISES
PRIMARY SETTLING TANK REHABILITATION
CONTRACT NO. 22-024



VICINITY MAP

NOT TO SCALE

PROJECT INFORMATION

SITE ADDRESS: 1500 EISENHOWER AVE, ALEXANDRIA, VA 22314

SITE LOCATION: 1800 LIMERICK STREET, ALEXANDRIA, VA 22314

PROJECT OWNER: ALEXANDRIA RENEW ENTERPRISES

ACTIVITY OR FUNCTION(S) TO BE PERFORMED IN THE FACILITY: REHABILITATION OF PRIMARY SETTLING TANKS 1, 2, 3, 4, 5, AND 7

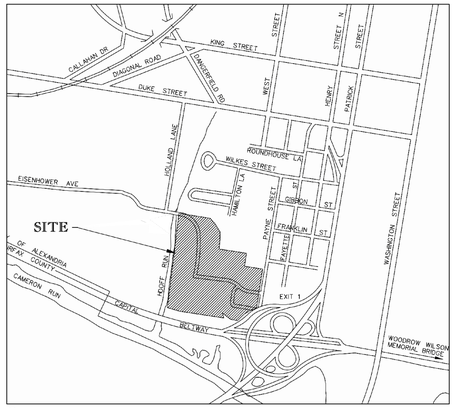
APPLICABLE ACCESSIBILITY STANDARDS: N/A

VUSBC CONSTRUCTION TYPE: IB

USE GROUP PER VUSBC: F-2 LOW HAZARD FACTORY/ INDUSTRIAL

DESIGN CODES: 2015 VIRGINIA EXISTING BUILDING CODE

BUILDING PURPOSE/VUSBC OCCUPANCY: WASTE WATER TREATMENT PLANT



LOCATION MAP

1" = 2500'-0"

No.	Issue	Drawn	Approved	Date
0	FOR BID	KML	VMM	03/2023

0 2500' 5000'

SCALE 1"=2500' AT ORIGINAL SIZE

Bar is one inch on original size sheet

0 1"

COMMONWEALTH OF VIRGINIA
VINCENT MICHAEL MAILLARD
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Drawn	K. LARSON	Designer	-
Drafting Check	-	Design Check	V. MAILLARD
Project Manager	V. MAILLARD	Date	03/2023
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Client ALEXANDRIA RENEW ENTERPRISES
Project PRIMARY SETTLING TANKS REHABILITATION
Title COVER SHEET
Project No. 12578147
Original Size ANSI D
Sheet No. G001
Sheet 1 of 12

Plot Date: 27 March 2023 - 8:03 AM Plotted By: Kristopher Larson Filename: G:\565\12578147\Digital_Design\ACAD\Sheets\Gen\125-78147-G001.dwg

GENERAL DEMOLITION NOTES:

1. THE DEMOLITION PLANS WERE DEVELOPED FROM AVAILABLE RECORD DRAWINGS OBTAINED FROM ALEXRENEW AND ARE INTENDED ONLY TO SHOW BASIC SYSTEM CONFIGURATION. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE ACTUAL SITE CONDITIONS. PRIOR TO THE DEMOLITION, THE CONTRACTOR SHALL CONFIRM WITH THE ENGINEER AND ALEXRENEW THE EXACT EXTENT OF DEMOLITION.
2. DEMOLITION TO BE PERFORMED IN ACCORDANCE WITH CONSTRUCTION CONSTRAINTS OUTLINED IN CONTRACT DOCUMENTS.
3. ALL WALL SECTIONS MUST BE FULLY SUPPORTED DURING DEMOLITION AGAINST VERTICAL, HORIZONTAL AND OVERTURNING FORCES AND MOVEMENT.
4. HATCHED AREAS ARE TO BE DEMOLISHED. SEE LEGEND.
5. ADDITIONAL ITEMS TO BE DEMOLISHED INCLUDE, BUT ARE NOT LIMITED TO, ELECTRICAL, PIPING, VALVES, FITTINGS, SUPPORTS, WALKWAYS, HANDRAILS/ GUARDRAILS, GRATING, AND PAVEMENT AS SHOWN IN THE DEMOLITION PLAN OR ELSEWHERE IN THE CONTRACT DOCUMENTS.
6. CONTRACTOR SHALL FILL IN VOIDS CREATED BY REMOVING PIPE, BOLTS, REBAR, CONDUIT AND OTHER SIMILAR ITEMS WITH NON-SHRINK GROUT AND MAKE FLUSH WITH SURROUNDING SURFACE. ALL ITEMS REMAINING ARE TO BE CUT AND GROUND FLUSH WITH SURROUNDING SURFACE.
7. FOR ADDITIONAL DESCRIPTIONS OF DEMOLITION REQUIREMENTS, REFER TO SECTION 02 41 00.
8. CONTRACTOR SHALL ONLY PERFORM CONSTRUCTION ON ONE PST AT A TIME. ONLY ONE PST SHALL BE REMOVED FROM SERVICE AT A TIME.

GENERAL NOTES (APPLY TO ALL DRAWINGS):

A. EXISTING FACILITIES AND PIPING SHOWN LIGHT. NEW FACILITIES AND PIPING SHOWN DARK.

B. EXISTING CONDITIONS SHOWN ON THESE DRAWINGS ARE BASED ON RECORD DRAWINGS OBTAINED FROM ALEX RENEW. THEREFORE, LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
BASEFILES USED: ADVANCED WASTEWATER TREATMENT FACILITY UPGRADE
ENGINEER: CH2MHILL
DATE: DECEMBER 2004

C. CONTRACTOR SHALL FIELD VERIFY AND COORDINATE ALL EXISTING EQUIPMENT ELEVATIONS, LOCATIONS, SIZE AND TYPE OF MATERIAL PRIOR TO CONSTRUCTION. CONTRACTOR SHALL FIELD VERIFY AND COORDINATE ALL EXISTING EQUIPMENT DIMENSIONS AND ELEVATIONS PRIOR TO ORDERING NEW EQUIPMENT.

D. CONTRACTOR LAY DOWN AREA IS LIMITED TO THE AREA SHOWN ON THE SITE PLAN. ANY CHANGES SHALL BE COORDINATED AND APPROVED BY ALEXRENEW AND ENGINEER.

E. CONSTRUCTION SHALL BE IN ACCORDANCE WITH PLAN AND SPECIFICATIONS.

F. CONTRACTOR TO REPAIR AND RESTORE ANY ADJACENT ROADWAYS, DRIVEWAYS, CURB, SIDEWALKS, UTILITIES, STORM DRAINS, CULVERTS, SWALES, CLEANOUTS, STRUCTURES, EQUIPMENT, AND/OR SUBGRADE THAT IS EXPOSED, DISTURBED, OR OTHERWISE DAMAGED BY THE CONTRACTOR'S ACTIVITIES.

G. EXISTING PAVEMENT SHALL BE PROTECTED FROM DAMAGE WHERE POSSIBLE. ANY DEMOLISHED OR DAMAGED PAVEMENT TO BE REPAIRED.

H. CONTRACTOR SHALL CONFORM WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES.

I. ALL EXISTING PIPING, EQUIPMENT, AND STRUCTURES MUST BE FULLY SUPPORTED DURING CONSTRUCTION AGAINST VERTICAL, HORIZONTAL, AND OVERTURNING FORCES AND MOVEMENT.

J. CONTRACTOR SHALL REPLACE ALL PAVEMENT AND ROADWAYS THAT IS 1) SHOWN AS REPLACED ON THE CONTRACT DRAWINGS, 2) IMPACTED BY NEW CONSTRUCTION, AND 3) IMPACTED BY CONTRACTOR'S OPERATIONS.

K. THE STRUCTURE HAS BEEN DESIGNED FOR THE IN-SERVICE LOADS. THE METHODS, PROCEDURES AND SEQUENCES OF CONSTRUCTION ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID OVERLOADS, AND MAINTAIN AND ENSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.

L. MATERIALS SPECIFIED ON THE DRAWINGS AND/OR IN THE SPECIFICATIONS SHALL BE USED UNLESS THE CONTRACTOR OBTAINS WRITTEN APPROVAL FROM THE ENGINEER TO USE ALTERNATIVE MATERIALS. WHEN REQUESTING SUCH APPROVAL, THE CONTRACTOR SHALL PROVIDE ADEQUATE AND DETAILED MANUFACTURERS LITERATURE AND TECHNICAL DATA FOR EACH MATERIAL PRIOR TO ITS POTENTIAL USE.

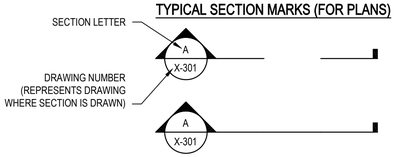
M. CONTRACTOR SHALL NOT DERIVE SUPPORTS FROM EXISTING STRUCTURE TO FACILITATE NEW CONSTRUCTION. IF SUCH SUPPORT IS SPECIFICALLY ALLOWED BY THE ENGINEER, CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND APPROVAL, DETAILED DESIGN, CALCULATIONS AND DRAWINGS SEALED BY LICENSED PROFESSIONAL ENGINEER VERIFYING ADEQUACY-SAFETY OF EXISTING STRUCTURE. IF DAMAGE TO EXISTING STRUCTURE OCCURS, CONTRACTOR AT HIS OWN COST SHALL REPAIR THE DAMAGE AND RESTORE DAMAGED AREA TO ORIGINAL CONDITION AND SATISFACTION OF THE ENGINEER.

GENERAL LEGEND

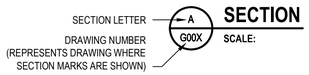
NEW GRAPHICS; EQUIPMENT, STRUCTURES, ETC., ARE SHOWN AS BOLD LINEWORK AND IN THIS TEXT FORMAT.

EXISTING GRAPHICS; EQUIPMENT, CONDITIONS STRUCTURES, ETC. ARE SHOWN AS LIGHT LINEWORK AND IN THIS TEXT FORMAT.

TYPICAL SECTION MARKS (FOR PLANS)

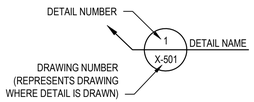


TYPICAL SECTION SUB-TITLE (FOR SECTIONS)



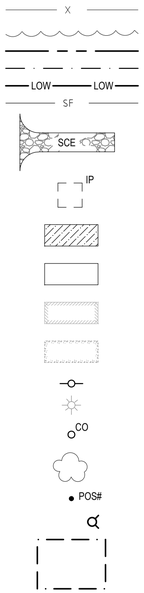
TYPICAL DETAIL MARKS

TYPICAL DETAILING



NORTH ARROW

CIVIL LEGEND



LIST OF DRAWINGS

No.	Issue	Drawn	Approved	Date
0	FOR BID	KML	VMM	03/2023

Bar is one inch on original size sheet
0 1"

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Drawn	K. LARSON	Designer	-
Drafting Check	-	Design Check	V. MAILLARD
Project Manager	V. MAILLARD	Date	03/2023
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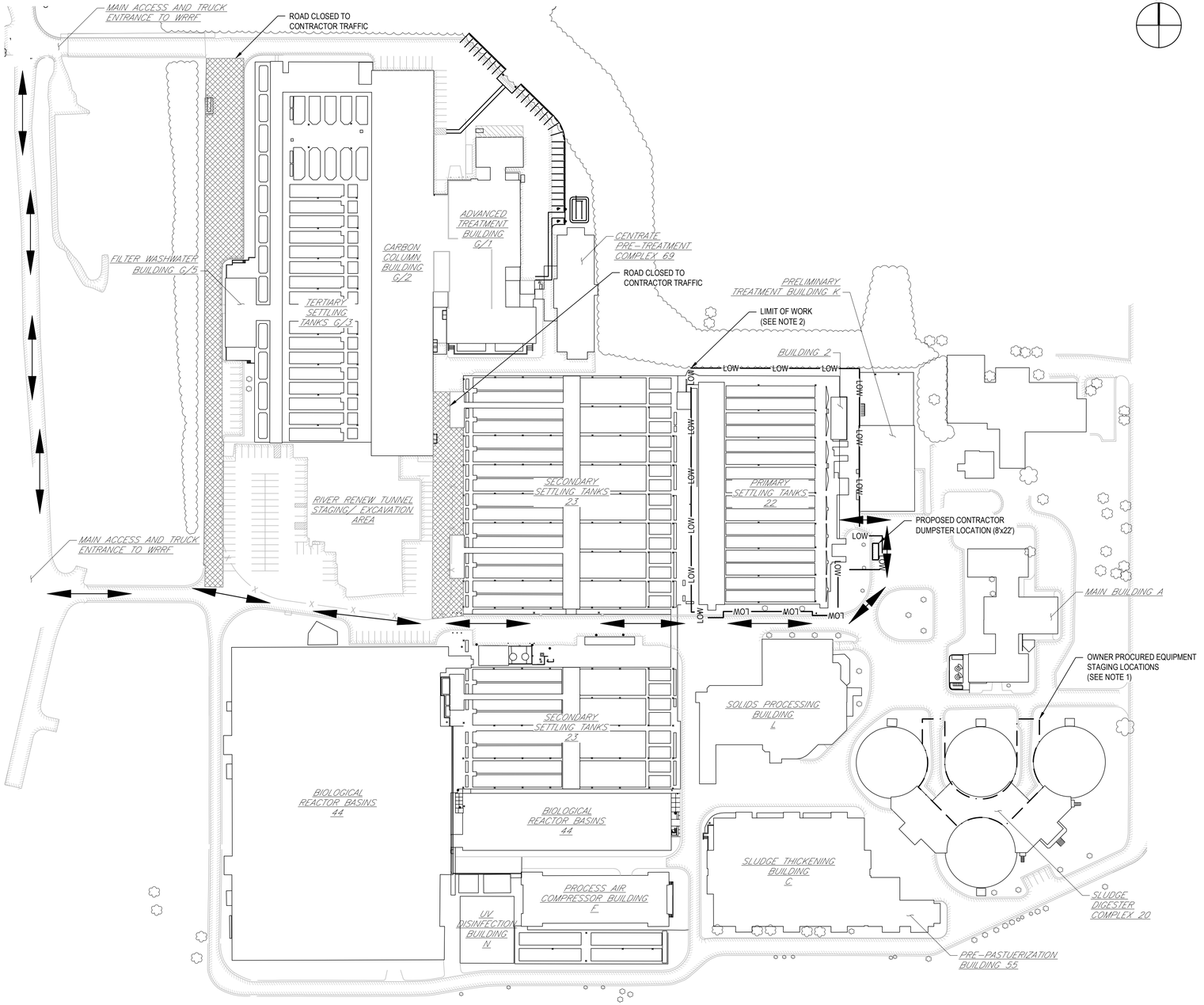
Client ALEXANDRIA RENEW ENTERPRISES
Project PRIMARY SETTLING TANKS REHABILITATION
Title LIST OF DRAWINGS, GENERAL NOTES AND ABBREVIATIONS
Project No. 12578147
Original Size ANSI D
Sheet No. G002
Sheet 2 of 12

Plot Date: 27 March 2023 - 8:12 AM Plotted By: Kristopher Larson Filename: G:\565\12578147\Digital_Design\ACAD\Sheets\Gen\125-78147-G002.dwg



1 **SITE PLAN**
SCALE: 1" = 80'-0"

LEGEND:

- OWNER PROCURED EQUIPMENT STORAGE LOCATIONS
- LOW / LOW — LIMIT OF WORK
- CONTRACTOR HAUL AND CONSTRUCTION ROUTE
- ROAD CLOSED TO CONTRACTOR TRAFFIC

NOTES:

1. THE OWNER PROCURED EQUIPMENT IS STORED IN ALEXRENEW'S WAREHOUSE AND WILL BE STAGED AT THE LOCATION INDICATED ON THIS PLAN. CONTRACTOR SHALL COORDINATE WITH ALEXRENEW TO STAGE EQUIPMENT FOR THE NEXT TANK AT LEAST 1 WEEK PRIOR TO STARTING WORK ON THAT TANK.
2. ALEXRENEW TO TRANSPORT EQUIPMENT FROM CARBON COLUMN BUILDING G/2 BASEMENT TO OWNER PROCURED EQUIPMENT STORAGE LOCATION. THE CONTRACTOR SHALL COORDINATE WITH ALEXRENEW MAINTENANCE FOR WHEN THE EQUIPMENT NEEDS TO BE AVAILABLE.
3. CONTRACTOR STAGING AREA, BREAK AREA, AND RESTROOMS TO BE LOCATED WITHIN THE LIMIT OF WORK AREA AS INDICATED.
4. DUE TO ADVERSE IMPACTS TO SOUTH PAYNE STREET NEIGHBORHOODS, ALEXANDRIA RENEW HAS RESTRICTED TRUCK TRAFFIC TO ENTER THE ONLY FROM THE EISENHOWER AVENUE ENTRANCE FOUND AT THE NORTHWEST CORNER OF THE PLANT SITE.
5. THE PRINCIPLE TRUCK HAUL ROUTE FOR SOLIDS AND GRIT REMOVAL AND CHEMICAL DELIVERIES WILL OCCUR ALONG THE 24-FOOT WIDE MAIN ROAD, THE MAIN TRUCK DESTINATION IS THE SOLIDS PROCESSING BUILDING.
6. TRAFFIC FROM PASSENGER CARS WILL REMAIN UNCHANGED.
7. ROADS AND PLANT FACILITIES MUST BE KEPT OPEN FOR FULL OPERATION AND EMERGENCY SERVICE.
8. THE LOCATIONS OF THE BREAK AREA, RESTROOMS, AND DUMPSTERS WILL BE FINALIZED ON SITE AS AN AGREEMENT BETWEEN ALEXANDRIA RENEW AND THE CONTRACTOR.
9. REQUEST FOR USE OF TEMPORARY STAGING AREAS, INCLUDING PROPOSED SIZE MUST BE SUBMITTED AND APPROVED BY ALEXANDRIA RENEW BEFORE USE.
10. ANY ADDITIONAL LAYDOWN/ STORAGE AREA MUST BE PROVIDED BY THE CONTRACTOR AT NO COST TO THE OWNER. NO ADDITIONAL LAYDOWN/ STORAGE SHALL BE PROVIDED BY THE OWNER OTHER THAN WHAT IS SHOWN HEREIN.
11. THE TRUCK ACCESS ROUTE SHOWN ON THIS PLAN IS SUBJECT TO CHANGE DUE TO ON GOING CONSTRUCTION ELSEWHERE ON THE PLANT.

No.	Issue	Drawn	Approved	Date
0	FOR BID	KML	VMM	03/2023

0 40 80 120 160
SCALE 1"=80' AT ORIGINAL SIZE

Bar is one inch on original size sheet
0 1"

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Drawn K. LARSON	Designer -	Client	ALEXANDRIA RENEW ENTERPRISES
Drafting Check -	Design Check V. MAILLARD	Project	PRIMARY SETTLING TANKS REHABILITATION
Project Manager V. MAILLARD	Date 03/2023	Title	SITE PLAN
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		Original Size ANSI D	Sheet No. C001

Sheet 3 of 12

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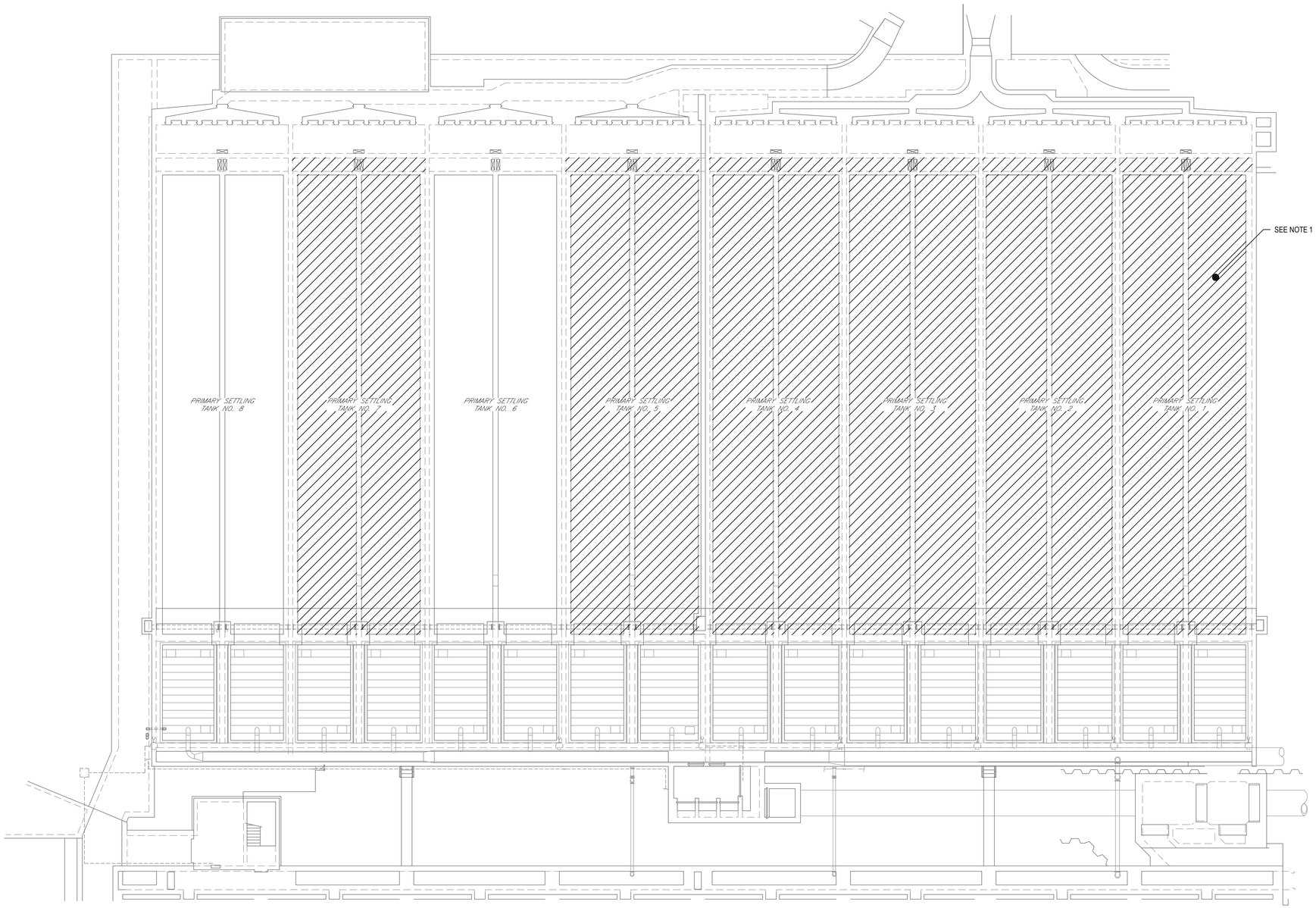

1 PRIMARY SETTLING TANKS - DEMOLITION PLAN

SCALE: 1/16" = 1'-0"

LEGEND:

DEMOLITION

NOTES:

1. EXTENT OF DEMOLITION SHALL BE COORDINATED WITH DEMONITION SPECIFICATION (02 41 00), DIVISION 11 SPECIFICATION (11 33 60), APPENDIX 1 OWNER PROCURED PRIMARY CLARIFIER EQUIPMENT INSTALLATION, APPENDIX 2 CONTRACTOR INSTALLATION DRAWINGS, AND APPENDIX 3 ITEMS TO REMAIN IN PST 1-5 AND 7.
2. A PRE-DEMOLITION MEETING SHALL BE HELD PRIOR TO ANY DEMOLITION WORK IS PERFORMED IN ACCORDANCE WITH SPEC 02 41 00.
3. CONTRACTOR SHALL REFER TO SECTION 11 33 60 FOR INSTALLATION REQUIREMENTS OF REPLACEMENT PRIMARY SETTLING TANK EQUIPMENT.
4. OPENINGS FOR NEW DRIVES SHALL BE COVERED WITH COVER PLATE PROVIDED BY SUPPLIER.

No.	Issue	Drawn	Approved	Date
0	FOR BID	KML	VMM	03/2023

0 8'-0" 16'-0" 24'-0" 32'-0"

SCALE 1/16"=1'-0" AT ORIGINAL SIZE

Bar is one inch on original size sheet

0 1"

COMMONWEALTH OF VIRGINIA
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Drawn	K. LARSON	Designer	-
Drafting Check	-	Design Check	V. MAILLARD
Project Manager	V. MAILLARD	Date	03/2023
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Client **ALEXANDRIA RENEW ENTERPRISES**

Project **PRIMARY SETTLING TANKS REHABILITATION**

Title **PRIMARY SETTLING TANKS DEMOLITION PLAN**

Project No. **12578147**

Original Size **ANSI D**

Sheet No. **D001**

Sheet **4** of **12**

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ELECTRICAL LEGEND

ABBREVIATIONS

A or AMP	AMPERE, AMPS	mA	MILLIAMPS
AC	ALTERNATING CURRENT	MAG	MAGNETIC
AE	ANALYZER ELEMENT	MAX	MAXIMUM
AF	AMPERE FRAME SIZE	MCC-XX	MOTOR CONTROL CENTER (w/AREA DESIGNATION)
AFF	ABOVE FINISHED FLOOR	MCP	MOTOR CIRCUIT PROTECTOR
AFG	ABOVE FINISHED GRADE	MECH	MECHANICAL
AHF	ACTIVE HARMONIC FILTER	MFR	MANUFACTURER
AI	ANALOG INPUT	MH	MAN HOLE
AIC	AMPS INTERRUPTING CURRENT	MIN	MINIMUM
AIT	ANALYSIS INDICATING TRANSMITTER	MMS	MANUAL MOTOR STARTER
ANN	ANNUNCIATOR	MS	MOTOR STARTER
AO	ANALOG OUTPUT	MSCP	MOTOR STARTER CONTROL PANEL
AP	ANNUNCIATOR PANEL	MSH	MOTOR SPACE HEATER
APPROX	APPROXIMATELY	MSS	MOTOR STARTING SWITCH
ASSY	ASSEMBLY	MTG	MOUNTING
AT	AMPERE TRIP RATING	MTR	MOTOR TIMING RELAY
AUX	AUXILIARY	MWTS	MOTOR WINDING TEMPERATURE SWITCH
AWG	AMERICAN WIRE GAUGE	N	NEUTRAL
BC	BYPASS CONTACTOR	N/A	NOT AVAILABLE -OR- NOT APPLICABLE
BKR	BREAKER	NC	NORMALLY CLOSED
BLDG	BUILDING	NCTO	NORMALLY CLOSED TIMED OPEN
BLCP	BYPASS LEVEL CONTROL PANEL	NEC	NATIONAL ELECTRICAL CODE
C	CONDUIT	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
CB	CIRCUIT BREAKER	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
CC	CONTROL CIRCUIT	NFSS	NON-FUSED SAFETY SWITCH
CEP	CONCRETE EQUIPMENT PAD	NO	NORMALLY OPEN OR NUMBER
CKT	CIRCUIT	NOTC	NORMALLY OPEN TIMED CLOSED
CP	CONTROL PANEL	NTS	NOT TO SCALE
CRD	CONDUIT RISER DIAGRAM	OC	ON-CENTER
CS	CONTROL STATION	OD	OUTER DIAMETER
CPT	CONTROL POWER TRANSFORMER	OEM	ORIGINAL EQUIPMENT MANUFACTURER
CPU	CENTRAL PROCESSING UNIT	OIT	OPERATOR INTERFACE TERMINAL
CR-##	CONTROL RELAY (W/# DESIGNATION)	OL	OVERLOAD RELAY
CT	CURRENT TRANSFORMER	Φ	PHASE
DB	DUCT BANK	P	POLE
DC	DIRECT CURRENT	PB	PUSHBUTTON OR PULL BOX
DI	DIGITAL INPUT	PB-XXX-##	PULL BOX (w/ AREA AND # DESIGNATION)
DIA	DIAMETER	PC	POWER & CONTROL
DIV	DIVISION	PCS	PROCESS CONTROL SYSTEM
DO	DISCRETE OUTPUT/DISSOLVED OXYGEN	PF	PULLING FITTING OR POWER FEED
DPM	DIGITAL POWER MONITOR	PHTS	PUMP HOUSING TEMPERATURE SWITCH
DS	DISCONNECT SWITCH	PLC	PROGRAMMABLE LOGIC CONTROLLER
DWG	DRAWING	PNL	PANEL
EA	EACH	PPXXX-##	POWER PANELBOARD (w/ AREA AND # DESIGNATION)
EL	ELEVATION	PR	PAIR
ELEC	ELECTRICAL	PRIM	PRIMARY
EMR	EQUIPMENT MOUNTING RACK	PST	PRIMARY SETTLING TANK
ENET	ETHERNET MODULE	PT	POTENTIAL TRANSFORMER
ES	EMERGENCY SWITCH	PTC	POSITIVE TEMPERATURE COEFFICIENT THERMISTOR
ESTOP	EMERGENCY STOP	QTY	QUANTITY
EQ	EQUALIZATION	RECEPT	RECEPTACLE
EX	EXISTING	SA	SURGE ARRESTOR
FE	FLOW ELEMENT	SEAL	SEAL FAILURE
FEQ	FLOW EQUALIZATION	SEC	SECOND OR SECONDARY
FF	FINISHED FLOOR	SMM	SPROCKET MOTION MONITORING
FIT	FLOW INDICATING TRANSMITTER	SN	SOLID NEUTRAL
FLEX	FLEXIBLE	SEL OR SEL SW	SELECTOR SWITCH
FVNR	FULL VOLTAGE NON REVERSING	SP	SPEED
FVR	FULL VOLTAGE REVERSING	SS	STAINLESS STEEL
G OR GRD	GROUND	SSRV	SOLID STATE REDUCED VOLTAGE
GEC	GROUNDING ELECTRODE CONDUCTOR	S/S	STOP/START PUSH BUTTON
GEN	GENERATOR	SPD	SURGE PROTECTION DEVICE
GF	GROUND FAULT	SV-##	SOLENOID VALVE (w/ # DESIGNATION)
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	SW	SWITCH
GFI	GROUND FAULT INTERRUPTER	SWD	SWITCHING DUTY
HB	HAND BOX	TB	TERMINAL BOX OR TERMINAL BLOCK
HH	HAND HOLE	TDR	TIME DELAY RELAY
HOA	HAND-OFF-AUTO SELECTOR-SWITCH	TEL	TELEPHONE
HP	HORSEPOWER	TERM	TERMINAL
HZ	HERTZ	TR-##	TIMED RELAY (w/ # DESIGNATION)
I/O	INPUT/OUTPUT	TSP	TWISTED SHIELDED PAIR
ISC	INTRINSICALLY SAFE CIRCUIT	T-STAT	THERMOSTAT
ISR	INTRINSICALLY SAFE RELAY	TTC	TELEPHONE TERMINATION CABINET
J OR JB	JUNCTION BOX	TTP	TELEPHONE TERMINATION PANEL
KCMIL	THOUSANDS CIRCULAR MILS	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
KV	KILOVOLT	TYP	TYPICAL
KVA	KILOVOLT AMPERES	ULS	ULTRASONIC LEVEL SENSOR
KW	KILOWATT	UPS	UNINTERRUPTIBLE POWER SUPPLY
KWHR	KILOWATT HOUR	UT-##	UTILITY FEEDER (w/ # DESIGNATION)
LAN	LOCAL AREA NETWORK	V	VOLTS
LC	LIGHTING CIRCUIT	VAC	VOLTAGE ALTERNATING CURRENT
LE	LEVEL ELEMENT	VD	VOICE/DATA
LIT	LEVEL INDICATING TRANSMITTER	VFD	VARIABLE FREQUENCY DRIVE
LOC	LOCATION	VM	VOLTMETER
LO	LOCKOUT	VS	VOLTMETER SWITCH OR VACUUM SWITCH
LPXX	LIGHTING PANELBOARD (W/AREA DESIGNATION)	w/	WITH
LS	LIMIT SWITCH/ LEVEL SWITCH	WP	WEATHERPROOF, WATERPROOF
LSH	HIGH-LEVEL LEVEL SWITCH	WS	WORKSTATION
LSL	LOW-LEVEL LEVEL SWITCH	XP	EXPLOSION-PROOF
LTG	LIGHTING	XFMR	TRANSFORMER

PLANS AND SCHEMATICS

- DS — DISCONNECT SWITCH
- CP — CONTROL PANEL
- CS — CONTROL STATION
- ISR — INTRINSICALLY SAFE RELAY PANEL
- JB — JUNCTION BOX
- LS — LEVEL SWITCH
- M — MOTORIZED ACTUATOR
- PS — PRESSURE SWITCH
- SMM — SPROCKET MOTION MONITORING SENSOR
- TB — TERMINAL BOX
- ZS — LIMIT SWITCH
- FLEXIBLE CONDUIT w/ADAPTER
- G5 — EQUIPMENT MOUNTING RACK (EMR)
- XXX HP — MOTOR w/HP DESIGNATION
- CONDUIT TEE FITTING
- RECEPTACLE

SYMBOLS

ELEMENTARY

- START — MOMENTARY OPEN PUSH-BUTTON (NORMALLY OPEN)
- STOP — MOMENTARY CLOSED PUSH-BUTTON (NORMALLY CLOSED)
- H O A / XOO / OOX — THREE POSITION MAINTAINED CONTACT SELECTOR SWITCH
- NORMALLY OPEN / NORMALLY CLOSED — TIME DELAY AFTER COIL ENERGIZED
- NORMALLY OPEN / NORMALLY CLOSED — TIME DELAY AFTER COIL DE-ENERGIZED
- NORMALLY OPEN CONTACT
- NORMALLY CLOSED CONTACT
- TEMPERATURE SWITCH
- LIMIT SWITCH
- FLOAT SWITCH
- PRESSURE SWITCH
- TERMINAL BLOCK

GENERAL NOTES:

G1 ENCLOSURE DIMENSIONS SHOWN ON THE DRAWINGS ARE MINIMUM REQUIRED DIMENSIONS. ENCLOSURES SHALL BE SIZED TO ACCOMMODATE EQUIPMENT, CONTROLS AND COMPONENTS AS SHOWN, SPECIFIED AND REQUIRED FOR AN OPERABLE SYSTEM.

G2 EQUIPMENT, FEEDERS, AND BRANCH CIRCUITS ON THE DOWNSTREAM SIDE OF THE PANELBOARDS ARE NOT SHOWN ON THE ONE-LINE AND SCHEMATIC DIAGRAMS. REFER TO THE PANELBOARD SCHEDULES AND THE PLANS FOR RELATED INFORMATION.

G3 EVERY EFFORT HAS BEEN MADE TO IDENTIFY REMOTE ITEMS TO BE CONNECTED BY THE ELECTRICAL CONTRACTOR, EITHER IN THE ELEMENTARIES OR IN THE SCHEDULES. HOWEVER, NOT ALL OF THE REMOTE DEVICES MAY HAVE BEEN SHOWN ON THE ELECTRICAL PLAN DRAWINGS. REFER TO THE DRAWINGS OF RESPECTIVE TRADES TO LOCATE OR CONFIRM EQUIPMENT LOCATIONS.

G4 EXACT EQUIPMENT CONDUIT CONNECTIONS ARE TO BE DETERMINED BY THE ELECTRICAL INSTALLER BASED UPON THE ACTUAL FIELD LOCATION OF EQUIPMENT. INSTALL CONDUIT IN ACCORDANCE WITH SPECIFICATIONS.

G5 EQUIPMENT MOUNTING RACK (EMR): THE FINAL LOCATION OF THE EMR'S SHALL BE COORDINATED IN THE FIELD TO AVOID INTERFERENCE WITH ACCESS TO THE PROCESS EQUIPMENT. REFER TO DETAILS FOR INDIVIDUAL APPLICATIONS AND LOCATIONS.

G6 EQUIPMENT REMOVALS: DISCONNECT AND REMOVE POWER/CONTROL CIRCUITS AND CONDUITS FROM THE RESPECTIVE EQUIPMENT.

G7 CONDUIT REMOVALS: DISCONNECT AND REMOVE EXPOSED PORTIONS OF CONDUIT FOR EQUIPMENT TO BE REMOVED AND/OR RELOCATED. CUT, THREAD, COUPLE AND CAP EXISTING CONDUITS ADJACENT TO THE PENETRATION POINT WHERE THE CONDUITS ARE CONCEALED (IN WALLS, CONCRETE SLABS, BELOW GRADE). REPAIR WALL PENETRATIONS TO A WEATHER-TIGHT CONDITION MATCHING EXISTING WALL MATERIALS.

G8 EQUIPMENT TO REMAIN: PROVIDE NEW FEEDER OR BRANCH CIRCUIT CONDUIT AND WIRING TO EXISTING/RELOCATED EQUIPMENT REQUIRED TO REMAIN IN SERVICE. CUT AND REUSE EXISTING CONDUIT RUNS WHERE PRACTICAL. CIRCUIT CONDUCTORS SHALL BE REPLACED THE ENTIRE LENGTH OF THE CIRCUIT RUN.

G9 HAZARDOUS LOCATIONS: AREAS DESIGNATED AS HAZARDOUS LOCATIONS ARE SPECIFIED AND/OR SHOWN ON THE CONTRACT DRAWINGS. WORK INSTALLED IN AREAS DESIGNATED AS CLASS I, GROUP D, DIVISION 1 OR CLASS I, GROUP D, DIVISION 2 HAZARDOUS LOCATIONS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF ARTICLES 500 AND 501 OF THE NATIONAL ELECTRIC CODE. THE LIMITS FOR ENCLOSED CLASS I, GROUP D, DIVISION 1 OR DIVISION 2 HAZARDOUS LOCATIONS SHALL EXTEND BEYOND THE ENCLOSED AREA FOR A 3' ENVELOPE. OUTSIDE EXTERIOR DOORS ACCESS HATCHES AND OTHER OPENINGS INTO THEHAZARDOUS LOCATION. THE LIMITS FOR DIVISION 2 HAZARDOUS LOCATIONS FOR OUTDOOR TANKS AND BASINS THAT ARE NOT COVERED AND ARE DESIGNATED DIVISION 2 INSIDE THE TANK OR BASIN SHALL EXTEND 18" ABOVE THE MAXIMUM WATER SURFACE ELEVATION AND ABOVE TANK WALLS AND SHALL INCLUDE AN 18" HIGH ENVELOPE AROUND A 10' PERIMETER OF THE TANK OR BASIN.

G10 CONDUIT PENETRATIONS: WHERE CONDUITS ARE TOO LARGE FOR TERMINATION INTO CABINETS, CONTROL PANELS, INSTRUMENT ENCLOSURES OR OTHER ENCLOSURES DUE TO STANDARD KNOCK OUT SIZE, THE CONTRACTOR SHALL PROVIDE AN INTERMEDIATE PULL BOX IN ORDER TO COORDINATE A TRANSITION IN CONDUIT SIZE. THIS SHALL BE COORDINATED WITH THE ENGINEER IN THE FIELD ON A CASE BY CASE BASIS.

G11 SPARE WIRING: WHERE SPARE POWER AND CONTROL WIRING IS REQUIRED PER THE DRAWINGS AND/OR SPECIFICATIONS, SPARE WIRE SHALL BE PROVIDED WITH SUFFICIENT LENGTH TO EXTEND TO THE FURTHEST TERMINAL BLOCK/BUCKET/AREA OF THE ENCLOSURE BEING SERVED.

NEW/EXISTING TEXT IDENTIFIER:

EXISTING EQUIPMENT, CONDITIONS, AND STRUCTURES ARE SHOWN IN THIS TEXT FORMAT

NEW WORK, EQUIPMENT, AND STRUCTURES ARE SHOWN IN THIS TEXT FORMAT.

NEW/EXISTING EQUIPMENT IDENTIFIER:

EXISTING EQUIPMENT, CONDITIONS, AND STRUCTURES ARE SHOWN IN THIS LINE TYPE: JB

NEW WORK, EQUIPMENT, AND STRUCTURES ARE SHOWN IN THIS LINE TYPE: JB

GENERAL CIRCUIT/CONDUIT TAG ID

TAG	CONDUIT SIZE	CONDUCTORS
P2	3/4"	2-#12, 1-#12G
P3	3/4"	3-#12, 1-#12G
Cx	3/4" (x=2 THRU 18) 1" (x=19 THRU 30) 2" (x=31 THRU 100) 3" (x=101 THRU 200)	x-#14, 1-#12G
TSP-x	3/4" (x=1,2) 1" (x=3,4) 1-1/2" (x=5 THRU 8) 2" (x=9 THRU 16)	x-#16 TWISTED SHIELDED PAIR

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Drafting Check		Design Check	T. REARDON
Project Manager	V. MAILLARD	Date	03/2023
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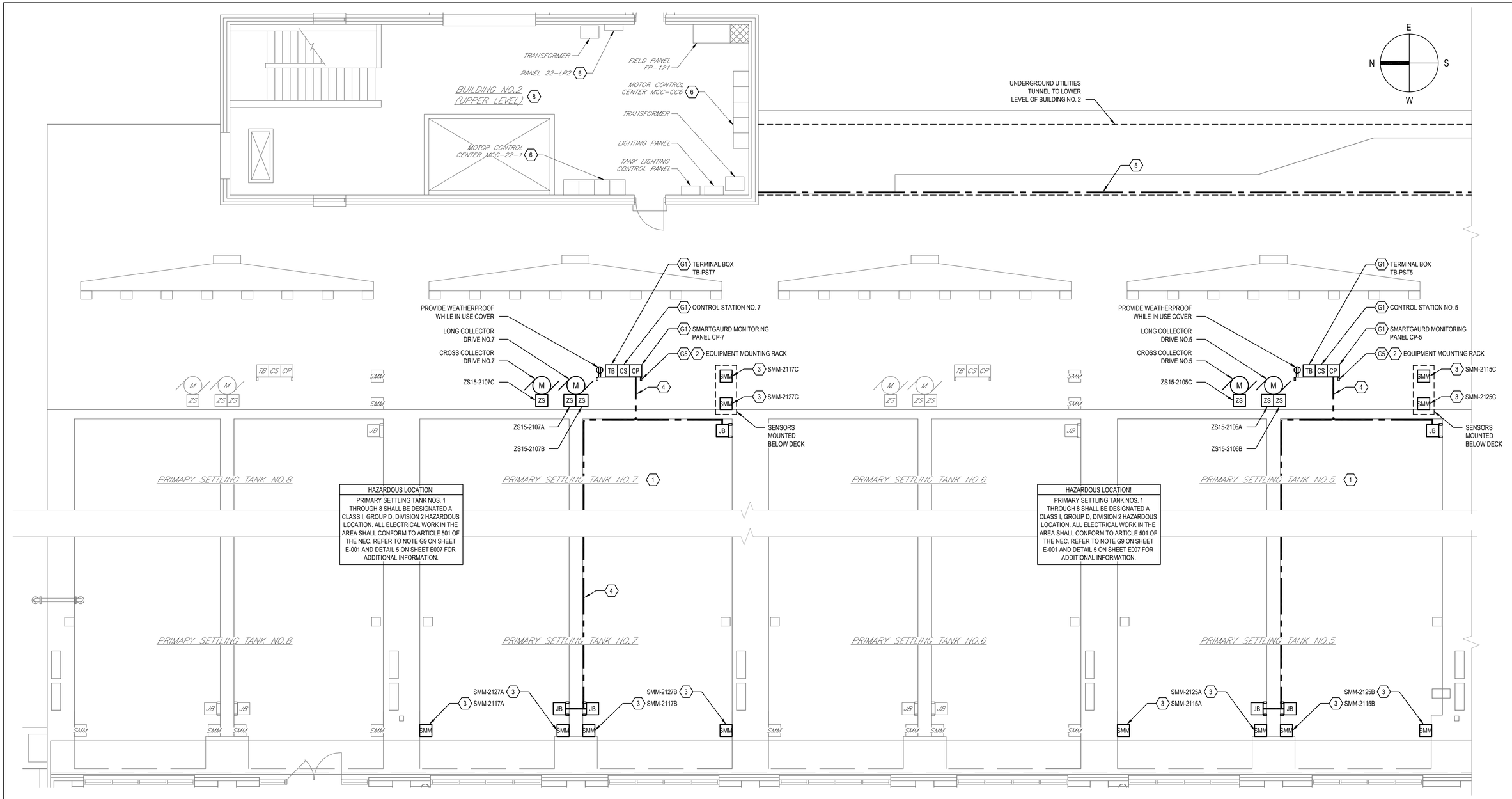
Client: ALEXANDRIA RENEW ENTERPRISES
Project: PRIMARY SETTLING TANKS REHABILITATION
Title: LEGEND, ABBREVIATIONS, & SYMBOLS
Project No. 12578147
Original Size: ANSI D
Sheet No. E001
Sheet 5 of 12

Plot Date: 27 March 2023 - 8:03 AM Plotted By: Kristopher Larson Filename: G:\565\12578147\Digital_Design\ACAD\Sheets\Elec - Tanks 1-5 & 7\E001.dwg



1 PRIMARY SETTLING TANKS AND BUILDING NO.2 - POWER AND CONTROL PLAN 7

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

DRAWING NOTES:

1. DEMOLISH EXISTING CONTROL STATION, JUNCTION BOX, AND EMR ADJACENT TO EXISTING DRIVES AT PRIMARY SETTLING TANK NOS. 5 AND 7.
2. CONSTRUCT EQUIPMENT MOUNTING RACK IN ACCORDANCE WITH FREE STANDING EQUIPMENT MOUNTING RACK DETAIL (SHEET E007, DETAIL 1).
3. MOUNT SMM SENSOR WITH BRACKET AND INSTALLATION HARDWARE KIT PROVIDED BY GIEGER.
4. GENERAL CONDUIT ROUTING: ROUTE CONDUIT TO SIDE OF TANK WALL FROM SMM SENSORS TO DRIVE END OF PST. PENETRATE WALKWAY FLOOR BELOW SMARTGUARD MONITORING PANEL.
5. GENERAL CONDUIT ROUTING: ROUTE CONDUIT THROUGH UNDERGROUND UTILITIES TUNNEL TO PULL BOX PB-B2 (NOT SHOWN) IN BUILDING NO. 2.
6. NEW WORK IS TO BE PERFORMED IN EXISTING MOTOR CONTROL CENTERS AND PANELBOARD AS SHOWN ON THE CONTRACT DRAWINGS. REMOVE REVERSE PUSHBUTTON FROM EACH DRIVE STARTER BUCKET.
7. REFER TO DRAWING D001 FOR OVERALL LENGTH OF PRIMARY SETTLING TANKS.
8. BUILDING NO.2 LOWER LEVEL IS BELOW UPPER LEVEL.

No.	Issue	Drawn	Approved	Date
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SCALE 3/16"=1'-0" AT ORIGINAL SIZE

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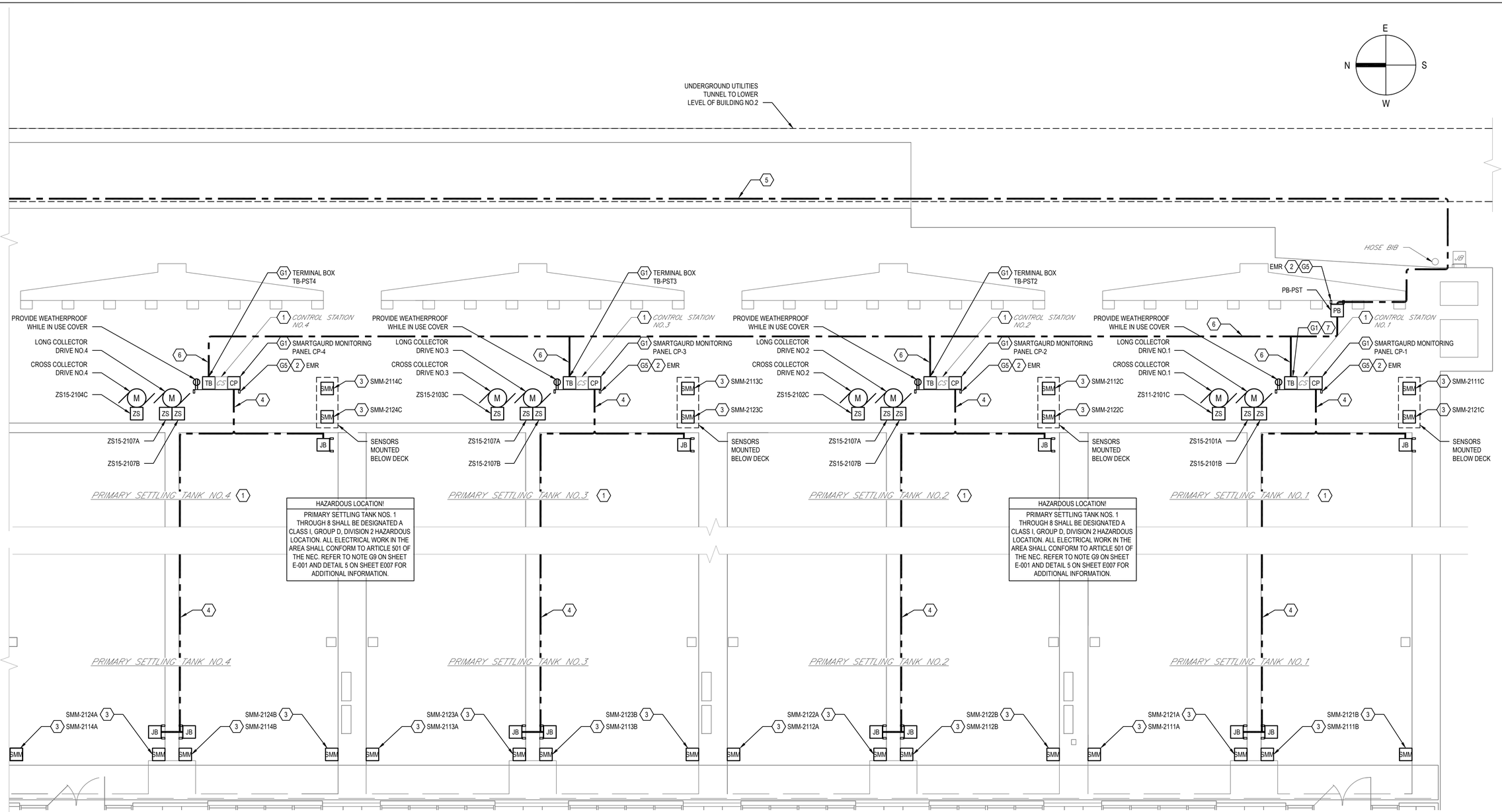
Drafting Check		Design Check	T. REARDON
Project Manager	V. MAILLARD	Date	03/2023
		Scale	3/16" = 1'-0"

Client: ALEXANDRIA RENEW ENTERPRISES
Project: PRIMARY SETTLING TANKS REHABILITATION
Title: PRIMARY SETTLING TANKS AND BUILDING NO.2 POWER AND CONTROL PLAN NO. 1
Project No. 12578147
Original Size: ANSI D
Sheet No. E002
Sheet 6 of 12

Plot Date: 27 March 2023 - 8:03 AM
Plotted By: Kristopher Larson
Filename: G:\565\12578147\Digital_Design\ACAD\Sheets\Elec - Tanks 1-5 & 7\E002.dwg



1 PRIMARY SETTLING TANKS AND BUILDING NO.2 - POWER AND CONTROL PLAN 8

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

DRAWING NOTES:

1. DEMOLISH EXISTING JUNCTION BOX, AND EMR ADJACENT TO EXISTING DRIVES AT EACH PRIMARY SETTLING TANK. MOUNT EXISTING CONTROL STATION ON NEW EMR.
2. CONSTRUCT EQUIPMENT MOUNTING RACK IN ACCORDANCE WITH FREE STANDING EQUIPMENT MOUNTING RACK DETAIL (SHEET E007, DETAIL 1).
3. MOUNT SMM SENSOR WITH BRACKET AND INSTALLATION HARDWARE KIT PROVIDED BY GIEGER.
4. GENERAL CONDUIT ROUTING: ROUTE CONDUIT TO SIDE OF TANK WALL FROM SMM SENSORS TO DRIVE END OF PST. PENETRATE WALKWAY FLOOR BELOW SMARTGUARD MONITORING PANEL.
5. GENERAL CONDUIT ROUTING: ROUTE CONDUIT ON CHANNEL STRUT SUPPORTS IN FRONT OF GUARD RAIL FROM PB-PST OFF SIDE OF TANK BETWEEN EXISTING JUNCTION BOX AND HOSE BIB. ROUTE CONDUIT UNDERGROUND AND PENETRATE UNDERGROUND UTILITY TUNNEL WALL. ROUTE CONDUIT THROUGH UNDERGROUND UTILITIES TUNNEL TO PULL BOX PB-B2 (NOT SHOWN) IN BUILDING NO. 2. PROVIDE PULL FITTINGS OR ADDITIONAL PULL BOXES AS REQUIRED TO LIMIT BENDS BETWEEN PULL POINTS TO 270 DEGREES AS SPECIFIED.
6. GENERAL CONDUIT ROUTING: ROUTE CONDUITS IN SAW CUT TRENCH IN DECK TO PB-PST AS SHOWN IN DETAILS ON SHEET NO. S001.
7. TERMINAL BOX TB-PST1.
8. REFER TO DRAWING DOO1 FOR OVERALL LENGTH OF PRIMARY SETTLING TANKS.

No.	Issue	Drawn	Approved	Date
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0 4'-0" 8'-0" 12'-0"
SCALE 3/16"=1'-0" AT ORIGINAL SIZE

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0 1"

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Drafting Check		Design Check	T. REARDON
Project Manager	V. MAILLARD	Date	03/2023
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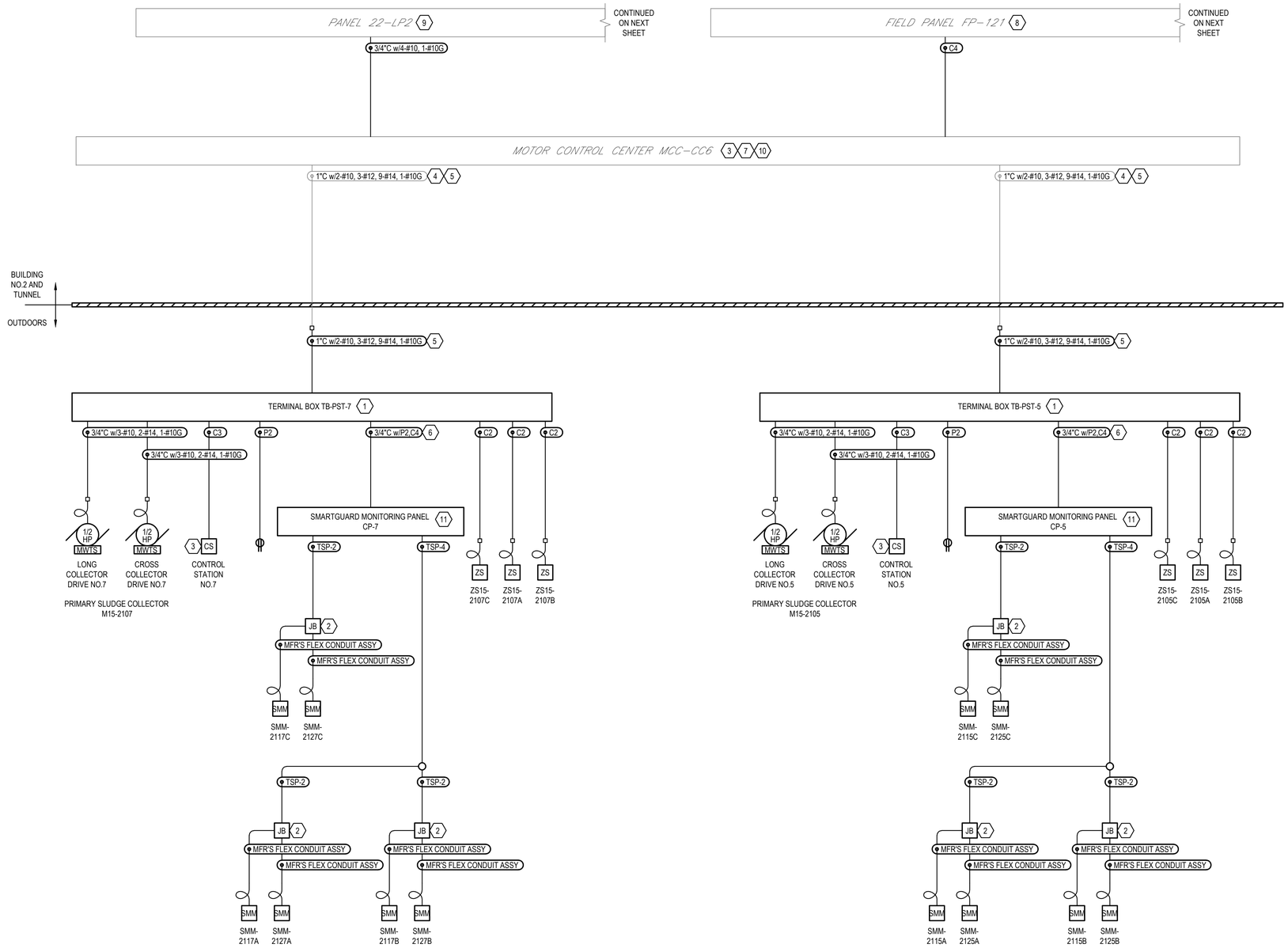
Client ALEXANDRIA RENEW ENTERPRISES
Project PRIMARY SETTLING TANKS REHABILITATION
Title PRIMARY SETTLING TANKS AND BUILDING NO.2 POWER AND CONTROL PLAN NO.2
Project No. 12578147
Original Size ANSI D
Sheet No. E003
Sheet 7 of 12

Plot Date: 27 March 2023 - 8:03 AM Plotted By: Kristopher Larson Filename: G:\565\12578147\Digital_Design\ACAD\Sheets\Elec - Tanks 1-5 & 7\E003.dwg



1 PRIMARY SETTLING TANKS 5, 7 AND BUILDING NO.2 - CONDUIT RISER DIAGRAM

SCALE: NTS

DRAWING NOTES:

1. PROVIDE NEMA 4X SS TERMINAL BOX WITH INSULATED TERMINAL BLOCKS. REFER TO TERMINAL BOX TB-PST1 - ELEMENTARY DIAGRAM ON SHEET NO. E007 FOR DETAILS.
2. PROVIDE NEMA 4X SS JUNCTION BOX WITH INSULATED TERMINAL BLOCKS TO TRANSITION FROM MANUFACTURER'S FLEX CONDUIT/CONDUCTORS TO RIGID CONDUIT/HARD-WIRED CONDUCTORS BACK TO SMARTGUARD MONITORING PANEL.
3. CONTROL STATION FURNISHED BY GEIGER AND INCLUDES FORWARD, REVERSE, AND STOP PUSHBUTTONS. REMOVE REVERSE PUSHBUTTON FROM EXISTING CONTROL STATION AND FROM EXISTING MCC AND PROVIDE BLANK COVERS OVER OPENINGS.
4. PROVIDE NEW CONDUCTORS IN EXISTING CONDUIT.
5. CONTROL CIRCUITS (9-#14 CONDUCTORS) INCLUDE 3-#14 TO CONTROL STATION, 2-#14 FOR COMMON ALARM FROM SMARTGUARD MONITORING PANEL, 2-#14 FOR MWTS AND LIMIT SWITCHES WIRED IN SERIES, AND 2-#14 FOR A PERMISSIVE SIGNAL FROM FORWARD AND REVERSE MOTOR STARTERS IN MCC-CC6 TO SMARTGUARD MONITORING PANEL.
6. CONTROL CIRCUITS (4-#14 CONDUCTORS) INCLUDE 2-#14 FOR COMMON ALARM FROM SMARTGUARD MONITORING PANEL AND 2-#14 FOR A PERMISSIVE SIGNAL FROM FORWARD AND REVERSE MOTOR STARTERS IN MCC-CC6 TO SMARTGUARD MONITORING PANEL. CONNECT PER SMARTGUARD PANEL MANUFACTURER'S RECOMMENDATIONS.
7. WIRE DRIVE MOTOR MWTS CIRCUITS AND LIMIT SWITCH CIRCUITS AS SHOWN ON TB-PST1 ELEMENTARY DIAGRAM IN SERIES TO EACH EXISTING MOTOR STARTER IN MCC-CC6 TO STOP RESPECTIVE MOTORS ON OVERTORQUE OR OVERTEMP. CONNECT IN PLACE OF CONTACTS FROM EXISTING TORQUE SWITCHES. EXISTING TORQUE SWITCHES ARE CURRENTLY WIRED TO RELAY CR1. VERIFY NORMALLY OPEN CR1 CONTACTS ARE CURRENTLY WIRED TO START/STOP CONTROL CIRCUIT AND REWIRE IF REQUIRED.
8. CONNECT COMMON ALARM FROM EACH TANK'S SMARTGUARD MONITORING PANEL TO SPARE PLC DISCRETE INPUTS. PLC PROGRAMMING IS BY OTHERS AS DIRECTED BY OWNER.
9. PROVIDE 10 kA, 20A/1P CIRCUIT BREAKER IN EMPTY SPACE IN EXISTING SQUARE-D NQOD PANELBOARD (ONE FOR EACH OF SIX PRIMARY SETTLING TANKS FOR POWER TO SMARTGUARD MONITORING PANEL AND RECEPTACLE). UPDATE PANELBOARD SCHEDULE.
10. PROVIDE RELAY(S) IN MCC-CC6 FOR EACH EXISTING MOTOR STARTER AS REQUIRED TO SEND RUN PERMISSIVE SIGNAL TO SMARTGUARD MONITORING PANEL WHEN MOTOR IS RUNNING IN FORWARD OR REVERSE.
11. INTRINSICALLY SAFE BARRIERS ARE PROVIDED IN SMARTGUARD MONITORING PANEL FOR SMM SENSOR CIRCUITS. DO NOT ROUTE ANY NON-INTRINSICALLY SAFE CIRCUITS IN SAME CONDUIT WITH SMM SENSOR CIRCUITS BETWEEN SENSORS AND SMARTGUARD MONITORING PANEL.

No.	Issue	Drawn	Approved	Date
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Drafting Check		Design Check	T. REARDON
Project Manager	V. MAILLARD	Date	03/2023
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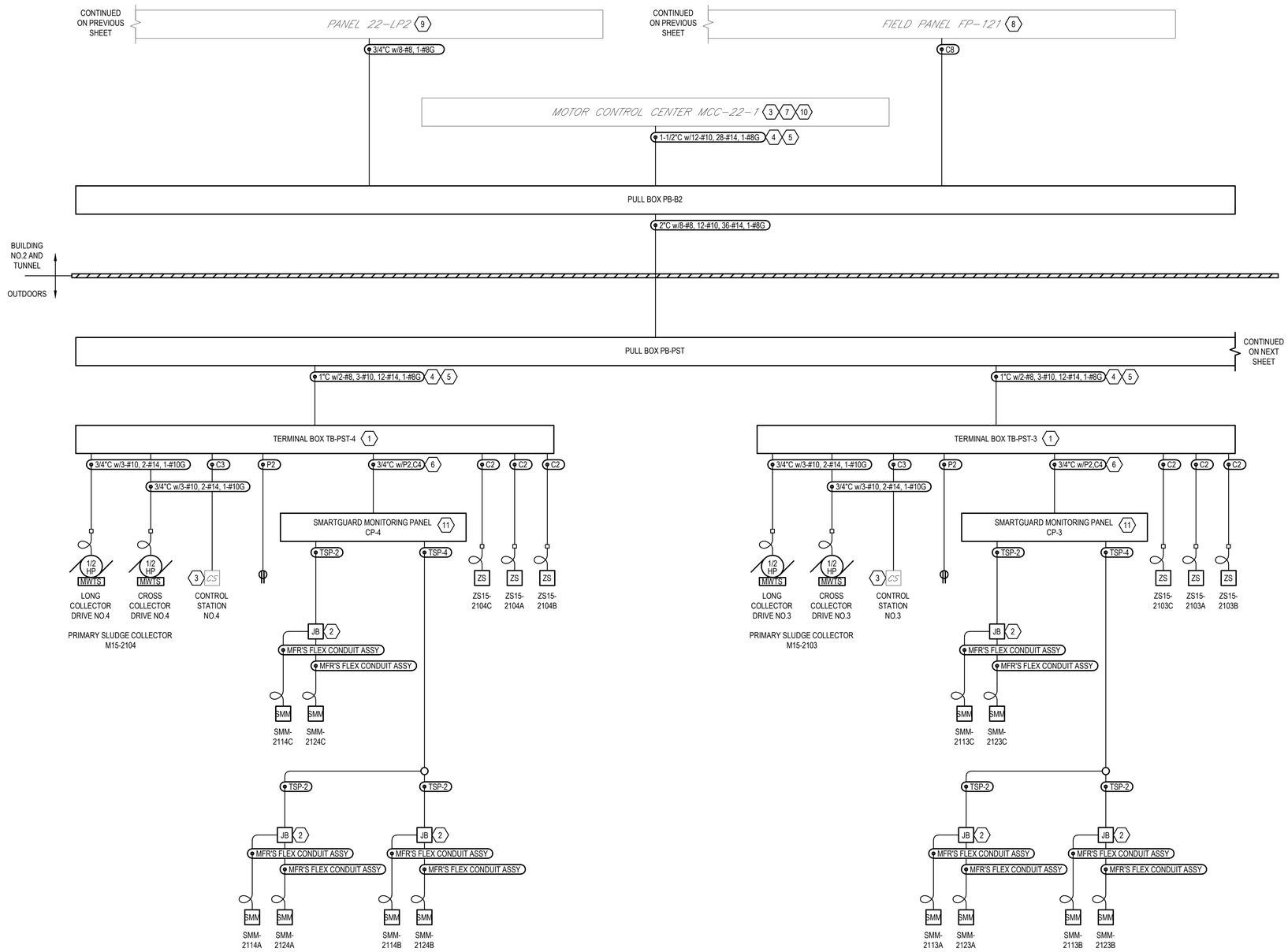
Client ALEXANDRIA RENEW ENTERPRISES
Project PRIMARY SETTLING TANKS REHABILITATION
Title PRIMARY SETTLING TANKS AND BUILDING NO. 2 CONDUIT RISER DIAGRAM NO.1
Project No. 12578147
Original Size ANSI D
Sheet No. E004
Sheet 8 of 12

Plot Date: 27 March 2023 - 8:03 AM Plotted By: Kristopher Larson Filename: G:\565\12578147\Digital_Design\ACAD\Sheets\Elec - Tanks 1-5 & 7\E004.dwg



1 PRIMARY SETTLING TANKS 3, 4 AND BUILDING NO.2 - CONDUIT RISER DIAGRAM

SCALE: NTS

DRAWING NOTES:

1. PROVIDE NEMA 4X SS TERMINAL BOX WITH INSULATED TERMINAL BLOCKS. REFER TO TERMINAL BOX TB-PST1 - ELEMENTARY DIAGRAM ON SHEET NO. E007 FOR DETAILS.
2. PROVIDE NEMA 4X SS JUNCTION BOX WITH INSULATED TERMINAL BLOCKS TO TRANSITION FROM MANUFACTURER'S FLEX CONDUIT/CONDUCTORS TO RIGID CONDUIT/HARD-WIRED CONDUCTORS BACK TO SMARTGUARD MONITORING PANEL.
3. EXISTING CONTROL STATION INCLUDES FORWARD, REVERSE, AND STOP PUSHBUTTONS. REMOVE REVERSE PUSHBUTTON FROM EXISTING CONTROL STATION AND FROM EXISTING MCC AND PROVIDE BLANK COVERS OVER OPENINGS.
4. CONDUITS AND CONDUCTORS TO BE INSTALLED IN SAW CUT TRENCH IN DECK.
5. CONTROL CIRCUITS (9-#14 CONDUCTORS) INCLUDE 3-#14 TO CONTROL STATION, 2-#14 FOR COMMON ALARM FROM SMARTGUARD MONITORING PANEL, 2-#14 FOR MWTS AND LIMIT SWITCHES WIRED IN SERIES, AND 2-#14 FOR A PERMISSIVE SIGNAL FROM FORWARD AND REVERSE MOTOR STARTERS IN MCC-22-1 TO SMARTGUARD MONITORING PANEL.
6. CONTROL CIRCUITS (4-#14 CONDUCTORS) INCLUDE 2-#14 FOR COMMON ALARM FROM SMARTGUARD MONITORING PANEL AND 2-#14 FOR A PERMISSIVE SIGNAL FROM FORWARD AND REVERSE MOTOR STARTERS IN MCC-22-1 TO SMARTGUARD MONITORING PANEL. CONNECT PER SMARTGUARD MONITORING PANEL MANUFACTURER'S RECOMMENDATIONS.
7. WIRE DRIVE MOTOR MWTS CIRCUITS AND LIMIT SWITCH CIRCUITS AS SHOWN ON TB-PST1 ELEMENTARY DIAGRAM IN SERIES TO EACH EXISTING MOTOR STARTER IN MCC-22-1 TO STOP RESPECTIVE MOTORS ON OVERTORQUE OR OVERTEMP. CONNECT IN PLACE OF CONTACTS FROM EXISTING TORQUE SWITCHES. EXISTING TORQUE SWITCHES ARE CURRENTLY WIRED TO RELAY CR1. VERIFY NORMALLY OPEN CR1 CONTACTS ARE CURRENTLY WIRED TO START/STOP CONTROL CIRCUIT AND REWIRE IF REQUIRED.
8. CONNECT COMMON ALARM FROM EACH TANK'S SMARTGUARD MONITORING PANEL TO SPARE PLC DISCRETE INPUTS. PLC PROGRAMMING IS BY OTHERS AS DIRECTED BY OWNER.
9. PROVIDE 10 kA, 20A/1P CIRCUIT BREAKER IN EMPTY SPACE IN EXISTING SQUARE-D NQOD PANELBOARD (ONE FOR EACH OF SIX PRIMARY SETTLING TANKS FOR POWER TO SMARTGUARD MONITORING PANEL AND RECEPTACLE). UPDATE PANELBOARD SCHEDULE.
10. PROVIDE RELAY(S) IN MCC-22-1 FOR EACH EXISTING MOTOR STARTER AS REQUIRED TO SEND RUN PERMISSIVE SIGNAL TO SMARTGUARD MONITORING PANEL WHEN MOTOR IS RUNNING IN FORWARD OR REVERSE.
11. INTRINSICALLY SAFE BARRIERS ARE PROVIDED IN SMARTGUARD MONITORING PANEL FOR SMM SENSOR CIRCUITS. DO NOT ROUTE ANY NON-INTRINSICALLY SAFE CIRCUITS IN SAME CONDUIT WITH SMM SENSOR CIRCUITS BETWEEN SENSORS AND SMARTGUARD MONITORING PANEL.

No.	Issue	Drawn	Approved	Date
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Drafting Check		Design Check	T. REARDON
Project Manager	V. MAILLARD	Date	03/2023
		Scale	NOT TO SCALE

Client ALEXANDRIA RENEW ENTERPRISES
Project PRIMARY SETTLING TANKS REHABILITATION
Title PRIMARY SETTLING TANKS AND BUILDING NO. 2 CONDUIT RISER DIAGRAM NO.2
Project No. 12578147
Original Size ANSI D
Sheet No. E005
Sheet 9 of 12

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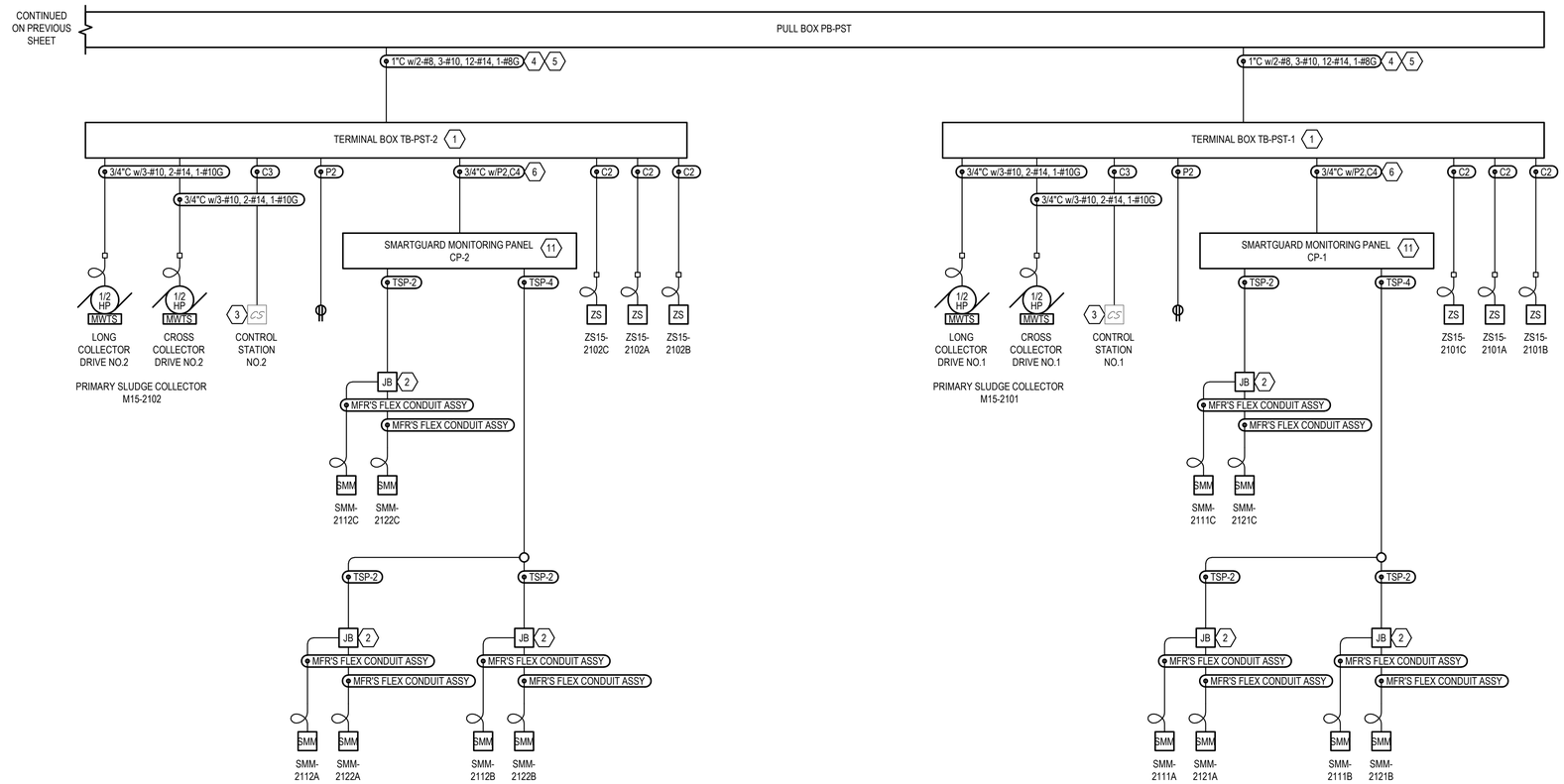

1 PRIMARY SETTLING TANKS 1, 2 AND BUILDING NO.2 - CONDUIT RISER DIAGRAM

SCALE: NTS

DRAWING NOTES:

1. PROVIDE NEMA 4X SS TERMINAL BOX WITH INSULATED TERMINAL BLOCKS. REFER TO TERMINAL BOX TB-PST1 - ELEMENTARY DIAGRAM ON SHEET NO. E007 FOR DETAILS.
2. PROVIDE NEMA 4X SS JUNCTION BOX WITH INSULATED TERMINAL BLOCKS TO TRANSITION FROM MANUFACTURER'S FLEX CONDUIT/CONDUCTORS TO RIGID CONDUIT/HARD-WIRED CONDUCTORS BACK TO SMARTGUARD MONITORING PANEL.
3. EXISTING CONTROL STATION INCLUDES FORWARD, REVERSE, AND STOP PUSHBUTTONS. REMOVE REVERSE PUSHBUTTON FROM EXISTING CONTROL STATION AND FROM EXISTING MCC AND PROVIDE BLANK COVERS OVER OPENINGS.
4. CONDUITS AND CONDUCTORS TO BE INSTALLED IN SAW CUT TRENCH IN DECK.
5. CONTROL CIRCUITS (9-#14 CONDUCTORS) INCLUDE 3-#14 TO CONTROL STATION, 2-#14 FOR COMMON ALARM FROM SMARTGUARD MONITORING PANEL, 2-#14 FOR MWTS AND LIMIT SWITCHES WIRED IN SERIES, AND 2-#14 FOR A PERMISSIVE SIGNAL FROM FROM FORWARD AND REVERSE MOTOR STARTERS IN MCC-22-1 TO SMARTGUARD MONITORING PANEL. CONNECT PER SMARTGUARD MONITORING PANEL MANUFACTURER'S RECOMMENDATIONS.
6. CONTROL CIRCUITS (4-#14 CONDUCTORS) INCLUDE 2-#14 FOR COMMON ALARM FROM SMARTGUARD MONITORING PANEL AND 2-#14 FOR A PERMISSIVE SIGNAL FROM FORWARD AND REVERSE MOTOR STARTERS IN MCC-22-1 TO SMARTGUARD MONITORING PANEL.
7. WIRE DRIVE MOTOR MWTS CIRCUITS AND LIMIT SWITCH CIRCUITS AS SHOWN ON TB-PST1 ELEMENTARY DIAGRAM IN SERIES TO EACH EXISTING MOTOR STARTER IN MCC-22-1 TO STOP RESPECTIVE MOTORS ON OVERTORQUE OR OVERTEMP. CONNECT IN PLACE OF CONTACTS FROM EXISTING TORQUE SWITCHES. EXISTING TORQUE SWITCHES ARE CURRENTLY WIRED TO RELAY CR1. VERIFY NORMALLY OPEN CR1 CONTACTS ARE CURRENTLY WIRED TO START/STOP CONTROL CIRCUIT AND REWIRE IF REQUIRED.
8. INTRINSICALLY SAFE BARRIERS ARE PROVIDED IN SMARTGUARD MONITORING PANEL FOR SMM SENSOR CIRCUITS. DO NOT ROUTE ANY NON-INTRINSICALLY SAFE CIRCUITS IN SAME CONDUIT WITH SMM SENSOR CIRCUITS BETWEEN SENSORS AND SMARTGUARD MONITORING PANEL.

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Drafting Check		Design Check	T. REARDON
Project Manager	V. MAILLARD	Date	03/2023
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Client ALEXANDRIA RENEW ENTERPRISES
Project PRIMARY SETTLING TANKS REHABILITATION
Title PRIMARY SETTLING TANKS AND BUILDING NO. 2 CONDUIT RISER DIAGRAM NO.3
Project No. 12578147
Original Size ANSI D
Sheet No. E006
Sheet 10 of 12

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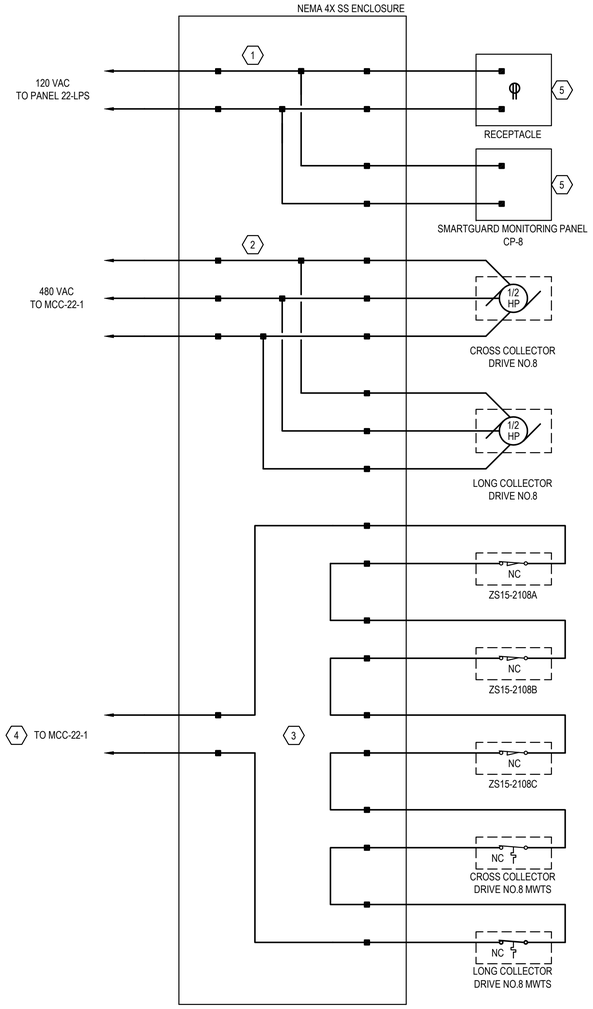
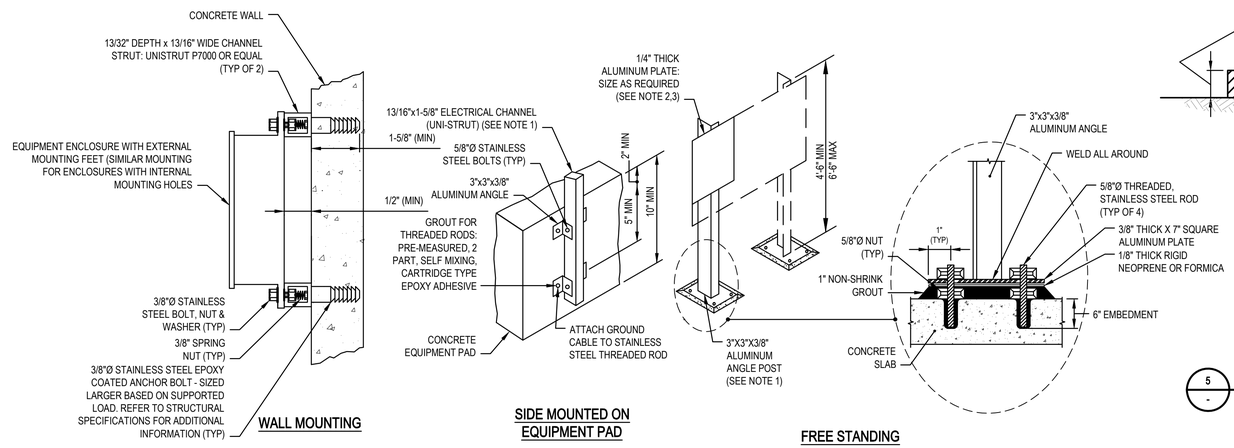


1 TERMINAL BOX TB-PST1 - ELEMENTARY DIAGRAM

SCALE: NTS

TYPICAL FOR:
-TERMINAL BOX TB-PST2
-TERMINAL BOX TB-PST3
-TERMINAL BOX TB-PST4
-TERMINAL BOX TB-PST5 (MCC-CC6)
-TERMINAL BOX TB-PST7 (MCC-CC6)

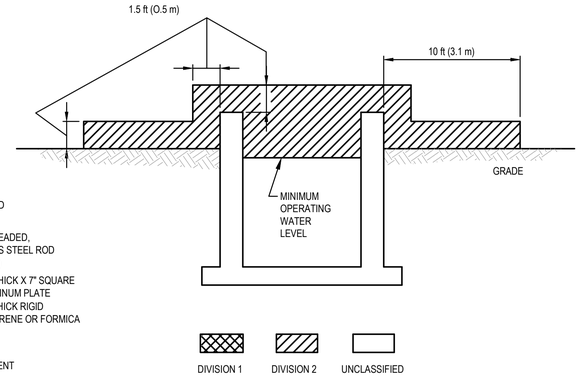


NOTES:

1. PROVIDE TWO SUPPORTS FOR ENCLOSURES/EQUIPMENT WIDER THAN 8".
2. ALUMINUM MOUNTING PLATES SHALL BE 2" GREATER ON EACH SIDE THAN DIMENSION OF THE ENCLOSURE(S)/EQUIPMENT. ROUND ALL CORNERS AND EDGES.
3. ANCHOR ALUMINUM PLATE TO ANGLE POST WITH 3/8"Ø STAINLESS STEEL FASTENERS.

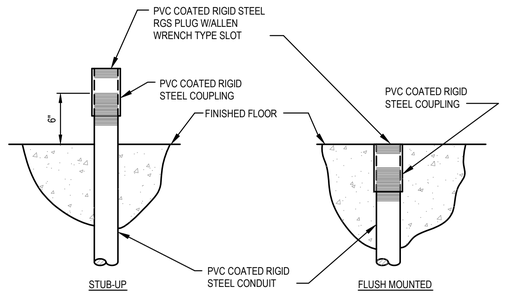
1 EQUIPMENT MOUNTING RACK DETAIL

SCALE: NTS



5 EXTERIOR HAZARDOUS LOCATION ENVELOPE DETAIL

SCALE: NTS



NOTES:

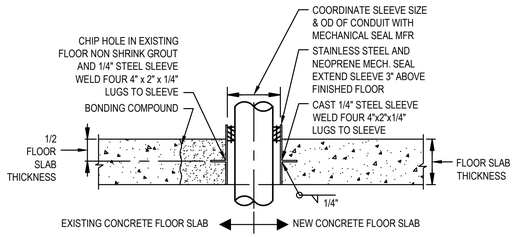
1. CONDUIT STUB-UPS IN HAZARDOUS LOCATIONS SHALL BE PROVIDED WITH CONDUIT SEALS IN ACCORDANCE WITH ARTICLE 501 OF THE NATIONAL ELECTRIC CODE.
2. CONDUITS ROUTED IN SLAB ARE SCHEDULE 40 PVC AS SPECIFIED. PROVIDE ADAPTER WITHIN 5' OF STUB-UP OR STUB-OUT TO CONVERT TO PVC-COATED RIGID STEEL CONDUIT.

2 CONDUIT STUB-UP DETAIL

SCALE: NTS

4 ELECTRICAL CONDUIT ENTRY INTO UTILITIES TUNNEL DETAIL

SCALE: NTS



NOTES:

1. INSTALL SEALS ON BOTH SIDES OF FLOOR WHEN FLOOR THICKNESS EXCEEDS 15".
2. GROUT/CAST STEEL FRAME WITH COMPRESSIBLE, ELASTOTHERMIC SECTIONS INTO FLOOR WHERE MORE THAN THREE CONDUITS PENETRATE THE FLOOR. CROUSE-HINDS "THRU-WALL BARRIER" OR EQUAL.

3 CONDUIT PENETRATION THRU CONCRETE FLOOR SLAB

SCALE: NTS

DRAWING NOTES:

1. PROVIDE TERMINAL BLOCKS TO WIRE POWER FOR RECEPTACLE AND SMARTGUARD MONITORING PANEL IN PARALLEL BACK TO PANEL 22-LP2.
2. PROVIDE TERMINAL BLOCKS TO WIRE POWER FOR LONG COLLECTOR MOTOR AND CROSS COLLECTOR MOTOR IN PARALLEL BACK TO REVERSING MOTOR STARTER IN MCC .
3. PROVIDE TERMINAL BLOCKS TO WIRE MWTS FOR LONG COLLECTOR AND CROSS COLLECTOR MOTORS IN SERIES WITH LIMIT SWITCHES FOR LONG COLLECTOR AND CROSS COLLECTOR MECHANISMS BACK TO MCC.
4. WIRE DRIVE MOTOR MWTS CIRCUITS AND LIMIT SWITCH CIRCUITS IN SERIES TO EACH MOTOR STARTER IN MCC TO STOP RESPECTIVE MOTORS ON OVERTORQUE OR OVERTEMP. CONNECT IN PLACE OF CONTACTS FROM EXISTING TORQUE SWITCHES. EXISTING TORQUE SWITCHES ARE CURRENTLY WIRED TO RELAY CR1. VERIFY NORMALLY OPEN CR1 CONTACTS ARE CURRENTLY WIRED TO START/STOP CONTROL CIRCUIT AND REWIRE IF REQUIRED.
5. CONTROL CIRCUITS FROM CONTROL STATION AND SMARTGUARD MONITORING PANEL NOT SHOWN. ROUTE CIRCUITS STRAIGHT THROUGH TO MCC AND FIELD PANEL FP-121. TERMINAL BLOCKS IN TERMINAL BOX NOT REQUIRED FOR THESE CIRCUITS.

No.	Issue	Drawn	Approved	Date
0	FOR BID	DMM	VMM	03/2023

Bar is one inch on original size sheet
0 1"

COMMONWEALTH OF VIRGINIA
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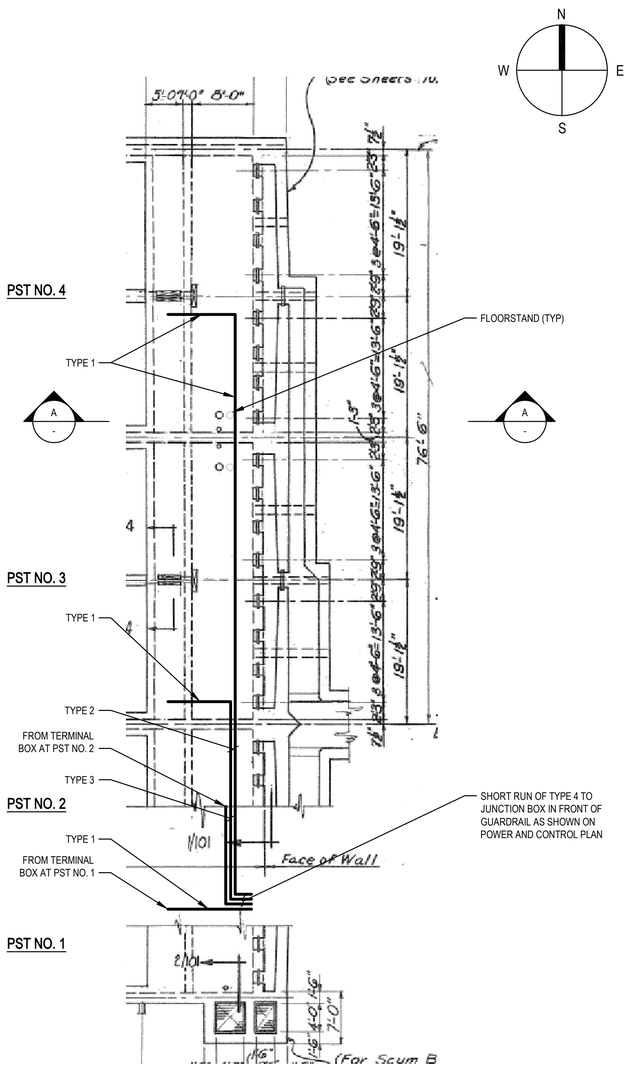
Drafting Check		Design Check	T. REARDON
Project Manager	V. MAILLARD	Date	03/2023
This document shall not be used for construction unless signed and sealed for construction.		Scale	NOT TO SCALE

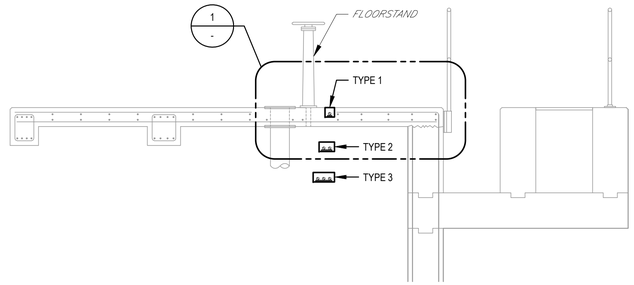
Client ALEXANDRIA RENEW ENTERPRISES
Project PRIMARY SETTLING TANKS REHABILITATION
Title ELECTRICAL DETAILS
Project No. 12578147
Original Size ANSI D
Sheet No. E007
Sheet 11 of 12

Plot Date: 27 March 2023 - 8:04 AM Plotted By: Kristopher Larson Filename: G:\565\12578147\Digital_Design\ACAD\Sheets\Elec - Tanks 1-5 & 7\E007.dwg



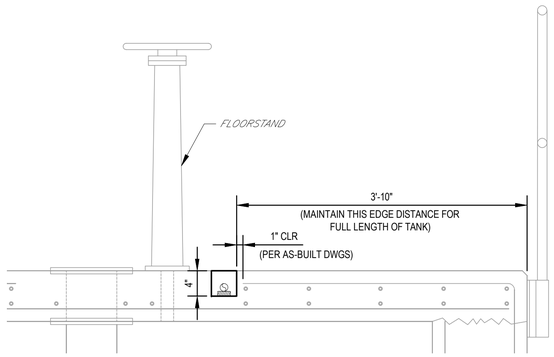
1 PST NOS. 1-4 UPPER PLAN AT EAST END

NOT TO SCALE



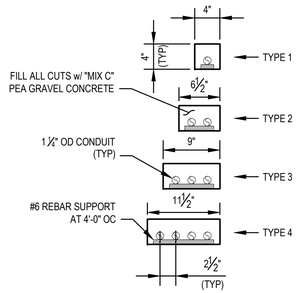
A SECTION AT FLOORSTAND - PST NO. 4

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



1 ENLARGED SECTION AT CONDUIT CUT-IN

SCALE: 1"=1'-0"



2 CONDUIT RUN DETAILS

SCALE: 1"=1'-0"

NOTES:

1. FIELD-COORDINATE CONDUIT RUNS WITH EQUIPMENT LOCATIONS TO AVOID CONFLICTS.
2. SAW-CUT SHALL BE STRAIGHT AND CLEAN. NO CUT SHALL EXCEED 4" DEPTH AS INDICATED.
3. CONDUIT SHALL BE PLACED IN CUT-OUT SECTIONS NOT TO EXCEED 10-FT. ADJACENT SECTION OF CUT-OUT SHALL NOT BE CREATED UNTIL THE PRIOR SECTION OF CONCRETE FILL HAS CURED FOR AT LEAST 24-HRS.
4. CENTER CONDUIT IN CUT-OUTS.
5. APPLY BONDING AGENT TO CUT-OUT SURFACE PRIOR TO INSTALLING CONDUIT OR CONCRETE FILL. USE EITHER "ARMATEC 110 EPOCEM" BYSIKA CORPORATION, "DURALPREP A.C." BY THE EUCLID COMPANY, OR EQUAL.
6. NOTIFY ENGINEER IMMEDIATELY IF FIELD CONDITIONS ARE DIFFERENT THAN SHOWN.
7. DUE TO THE LIMITED CONCRETE PLACEMENT QUANTITIES FOR THIS PROJECT, THE CONTRACTOR MAY CHOOSE TO USE A PRE-PACKAGED HIGH-STRENGTH, SITE-MIXED CONCRETE MIX SUCH AS "SAKRETE FAST-SETTING CONCRETE MIX" OR "QUIKRETE FAST-SETTING CONCRETE MIX". MIX SHALL CONFORM TO ASTM C387 AND SHALL BE SUBJECT TO SAME TESTING REQUIREMENTS AS READY-MIX CONCRETE.
8. CONCRETE FILL SHALL CONFORM TO THE FOLLOWING:
   - 8.1. MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI.
   - 8.2. COARSE AGGREGATE SIZE OF #7 PER ASTM C33. FINE AGGREGATE (SAND) SHALL ALSO BE IN ACCORDANCE WITH ASTM C33. SOURCE OF AGGREGATES SHALL NOT HAVE A HISTORY OF ALKALAI-AGGREGATE REACTIVITY.
   - 8.3. MINIMUM 550 LBS CEMENT CONTENT PER CUBIC YARD OF CONCRETE. FLY ASH OR SLAG MAY BE USED TO ACCOUNT FOR UP TO 25% OF THE TOTAL CEMENTITIOUS CONTENT. CEMENT SHALL BE PORTLAND CEMENT TYPE I OR II. FLY ASH SHALL CONFORM TO ASTM C618 CLASS F. SLAG SHALL CONFORM TO ASTM C989.
   - 8.4. MAXIMUM WATER/CEMENT RATIO (AGGREGATES AT SATURATED SURFACE DRY - SSD - CONDITION) SHALL BE 0.44.
   - 8.5. CONCRETE SHALL CONTAIN A WATER-REDUCING ADMIXTURE PER ASTM C494 TYPE A.
   - 8.6. CONCRETE SHALL HAVE AIR CONTENT OF 6% +/- 1.5% BY VOLUME USING AIR ENTRAINMENT ADMIXTURE PER ASTM C260.
   - 8.7. SLUMP SHALL GENERALLY BE 4-5 INCHES. AS NEEDED, CONTRACTOR MAY ADD A SUPERPLASTICIZER TO ACHIEVE UP TO 6-INCH SLUMP FOR FILLING CONGESTED AREAS.
   - 8.8. MIXING WATER SHALL BE CLEAR AND POTABLE.
9. FILL CONCRETE PLACEMENT
   - 9.1. PRIOR TO PLACING CONCRETE, CONTRACTOR SHALL ENSURE THAT CONDUIT IS PROPERLY PLACED AND BONDING AGENT HAS BEEN APPLIED TO CUT CONCRETE SURFACE.
   - 9.2. ENSURE THAT SLUMP IS ADEQUATE TO SOLIDLY FILL SPACE AROUND CONDUIT.
   - 9.3. USE PENCIL VIBRATOR AS NEEDED TO CONSOLIDATE CONCRETE AROUND CONDUITS.
   - 9.4. STRIKE OFF TOP OF FILL LEVEL WITH SURROUNDING SLAB SURFACE.
10. CONCRETE FINISHING AND CURING
    - 10.1. ONCE CONCRETE SURFACE NO LONGER EXHIBITS A WATER SHEEN, FLOAT THE SURFACE WITH A MAGNESIUM FLOAT TO ACHIEVE SMOOTH, LEVEL SURFACE.
    - 10.2. FINISH BY APPLYING A BROOM FINISH USING A STIFF-BRISTLED BROOM TO MATCH THE EXISTING BROOM FINISH ON THE SLAB.
    - 10.3. APPLY SEALANT TO FINISHED CONCRETE SURFACE NO LATER THAN 24-HOURS AFTER COMPLETING BROOM FINISH. SEALANT SHALL BE "MASTERKURE" BY BASF, "SUPER AQUA CURE VOX" BY EUCLID CHEMICAL COMPANY, OR EQUAL.
    - 10.4. CONCRETE SHALL BE CURED A MINIMUM OF 6 DAYS USING ONE OF THE FOLLOWING METHODS:
      - 10.4.1. COVER WITH WATERPROOF PAPER OR WHITE POLYETHYTLENE.
      - 10.4.2. COVER WITH BURLAP AND CONTINUOUSLY SPRINKLE WITH WATER.
      - 10.4.3. CONTINUOUSLY WATER WITH NO COVERING.
    - 10.5. IF AMBIENT TEMPERATURE IS ABOVE 80-DEG F OR BELOW 40-DEG F, FOLLOW ACI 305R AND 306R FOR ADDITIONAL REQUIREMENTS.
11. CONCRETE TESTING: NO CONCRETE TESTING SHALL BE REQUIRED FOR THIS PROJECT. HOWEVER, THE OWNER RESERVES THE RIGHT TO TEST FOR SLUMP, TEMPERATURE, AIR CONTENT AND COMPRESSIVE STRENGTH AT THE OWNER'S EXPENSE.

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Drafting Check		Design Check	V. MAILLARD
Project Manager	V. MAILLARD	Date	03/2023
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Plotted By: Kristopher Larson
Filename: G:\565\12578147\Digital_Design\ACAD\Sheets\Elec - Tanks 1-5 & 7\S001.dwg