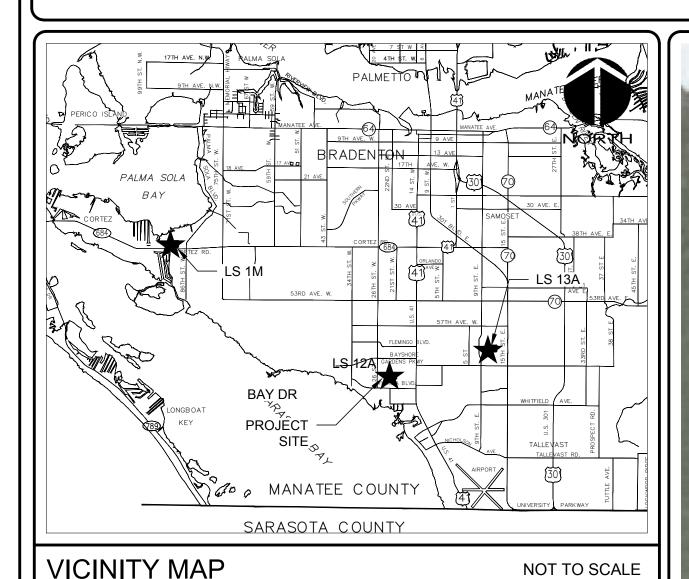
# LIFT STATION 12A ELECTRICAL PUMP & VFD REHABILITATION MANATEE COUNTY

PROJ. NO. 01024-0181 DECEMBER 13, 2021 ISSUED FOR BID



PROJECT NAME: LIFT STATION 12A ELECTRICAL PUMP & VFD

OWNER/DEVELOPER: 2007 BAY DRIVE BRADENTON, FLORIDA 34207 **EMAIL** 

REHABILITATION





Clearwater, Florida 33756 Phone: (727) 442-7196, Fax: (727) 461-3827

CA Lic. No. 29588 www.mckimcreed.com

PROJECT INFORMATION



MITCHEL A. CHIAVAROLI. STATE OF FLORIDA, PROFESSIONAL ENGINEER, LICENSE NO. 56335 THIS ITEM HAS BEEN DIGITALLY A. CHIAVAROLI THE DATE INDICATED HERE. DECEMBER 13, PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

CIVIL-MECHANICAL- LEAD SHEET G0.02 DEMOLITION DEMOLITION OF EQUIPMENT I D0.00 D0.01 MECHANICAL PROPOSED PUMPS AND PIPING I M0.00

PROPOSED PUMPS AND PIPING II

SHEET NUMBER

SITE MAP

SHEET NUMBER

S1.00

S1.01

S1.02

10.00

10.01

11.00

11.01

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LIFT STA. MODS ADD'L SECTIONS & DETAILS

WILLIAM F. BAND, STATE OF

MICHAEL FADINI, STATE OF

ENGINEER, LICENSE NO. 87173

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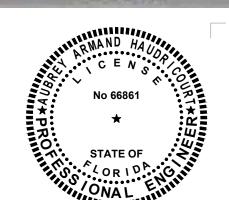
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FLORIDA, PROFESSIONAL

FLORIDA, PROFESSIONAL ENGINEER, LICENSE NO. 67838

SHEET NUMBER

INSTRUMENTATION INSTRUMENTATION SYMBOL SHEET 1 INSTRUMENTATION SYMBOL SHEET 2 PROCESS AND INSTRUMENT DIAGRAM CONTROL PANEL



SHEET NUMBER **GENERAL NOTES** G0.01 CIVIL-MECHANICAL- LEAD SHEET CIVIL: CIVIL SITE C0.00 ELECTRICAL

E0.00 SYMBOLS, ABBREVIATIONS AND NOTES E0.02 SYMBOLS **DEMOLITION PLAN** SINGLE LINE DIAGRAM ELECTRICAL SITE PLAN ELECTRICAL PARTIAL SITE PLAN ELECTRICAL BUILDING POWER PLAN ELECTRICAL BUILDING LAYOUT E1.05 GROUNDING AND LIGHTNING PROTECTION PLAN E1.06 E1.07 MCB, ATS AND MCC ELEVATIONS LIGHTING PLAN ELECTRICAL INTERCONNECTION DIAGRAM PANELBOARD SCHEDULES ELECTRICAL CONTROLS SCHEMATICS

Sheet Number G0.00 **COVER SHEET GENERAL NOTES** G0.02 CIVIL-MECHANICAL- LEAD SHEET CIVIL: CIVIL SITE C0.00 SITE PLAN DEMOLITION DEMOLITION OF EQUIPMENT DEMOLITION OF EQUIPMENT II MECHANICAL M0.00 PROPOSED PUMPS AND PIPING I PROPOSED PUMPS AND PIPING II STRUCTURAL STRUCTURAL GENERAL NOTES, DESIGN LOADS, CRITERIA & LEGEND S1.00 LIFT STA. MODS & ELECTR. BLDG. FDN. PLAN, SECTIONS & DETAILS S1.01 LIFT STA. MODS & ELECTR. BLDG. FRMG. PLAN, SECTIONS & DETAILS S1.02 LIFT STA. MODS ADD'L SECTIONS & DETAILS ELECTRICAL SYMBOLS, ABBREVIATIONS AND NOTES E0.01 E0.02 SYMBOLS E1.00 **DEMOLITION PLAN** SINGLE LINE DIAGRAM ELECTRICAL SITE PLAN ELECTRICAL PARTIAL SITE PLAN E1.04 **ELECTRICAL BUILDING POWER PLAI** ELECTRICAL BUILDING LAYOUT GROUNDING AND LIGHTNING PROTECTION PLAN MCB, ATS AND MCC ELEVATIONS LIGHTING PLAN E1.09 **ELECTRICAL INTERCONNECTION DIAGRAM** PANELBOARD SCHEDULES E1.11 DETAILS ELECTRICAL CONTROLS SCHEMATICS INSTRUMENTATION 10.00 **INSTRUMENTATION SYMBOL SHEET 1** INSTRUMENTATION SYMBOL SHEET 2 11.00 PROCESS AND INSTRUMENT DIAGRAM

**SHEET INDEX TABLE** 



SCALE: 1" = 200'

AUBREY A. HAUDRICOURT, STATE

OF FLORIDA, PROFESSIONAL

ENGINEER, LICENSE NO. 66861

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HAUDRICOURT THE DATE

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SHEET INDEX

CONTROL PANEL

#### **GENERAL NOTES** THE CONTRACTOR SHALL REVIEW AND VERIFY ALL LAYOUTS, DIMENSIONS AND ELEVATIONS ON THE PLANS WITH FINAL APPROVED EQUIPMENT DRAWINGS AS WELL AS ALL TECHNICAL SPECIFICATIONS PRIOR TO STARTING CONSTRUCTION AND SHOULD DISCREPANCIES OCCUR. THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO OBTAIN THE ENGINEERS CLARIFICATION BEFORE COMMENCING WITH CONSTRUCTION. 2. THE CONTRACTOR SHALL COORDINATE ALL RELATED DISCIPLINE DRAWINGS TO ENSURE ACCURATE INSTALLATION OCCURS. THESE PLANS ARE SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF THE EXISTING CONDITIONS WHICH MAY BE ENCOUNTERED DURING THE COURSE OF THE WORK. CONTRACTORS ARE DIRECTED TO CONDUCT WHATEVER INVESTIGATION THEY DEEM NECESSARY. PRIOR TO BIDDING, TO DETERMINE THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED. 4. LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. THE CONTRACTOR SHALL VERIFY, PRIOR TO CONSTRUCTION, THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES (WHETHER OR NOT SHOWN ON THE PLANS) AFFECTING HIS WORK. 5. THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS ON THE PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT CONSTRUCTION. SHOULD DISCREPANCIES OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO OBTAIN WRITTEN CLARIFICATION BEFORE COMMENCING WITH CONSTRUCTION. 6. THE CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES, STORM DRAINS, SEWERS, UTILITIES, AND OTHER FACILITIES IN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL REPAIR ANY DAMAGES DUE TO HIS CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST TO THE OWNER. 7. THE CONTRACTOR SHALL PROVIDE CERTIFIED RECORD DRAWINGS AS OUTLINED IN THE SPECIFICATIONS. RED-LINE DRAWINGS SHALL BE CURRENT WITH EACH PAY APPLICATION SUBMITTED AND WILL BE CHECKED AS PART OF THE PAY APPLICATION REVIEW PROCESS. PAYMENT WILL NOT BE MADE TO CONTRACTOR WITHOUT APPROVED RED-LINE DRAWINGS. 8. ALL PROPOSED WORK SHALL BE COORDINATED WITH MANATEE COUNTY UTILITIES DEPARTMENT AT LEAST TWO WEEKS IN ADVANCE OF PROPOSED CONSTRUCTION. 9. UNLESS OTHERWISE INDICATED OR APPROVED, ALL BELOW GROUND DUCTILE IRON AND PVC PIPE SHALL HAVE PUSH-ON OR MECHANICAL JOINTS, AND ALL ABOVE GROUND DUCTILE IRON PIPE SHALL HAVE FLANGED JOINTS. ALL JOINTS SHALL BE FULLY RESTRAINED. 10. WATER SHALL NOT BE PERMITTED IN EXCAVATIONS AND TRENCHES DURING CONSTRUCTION. DEWATERING IS REQUIRED TO A MINIMUM OF 18" BELOW BOTTOM OF EXCAVATION. 11. THE CONTRACTOR SHALL NOT ALLOW ANY DISCHARGE OF WASTEWATER TO LANDS AND/OR ADJACENT WATER BODIES OR STORM DRAINS. ANY LEAKAGE MUST BE CONTAINED AND TRANSFERRED BY THE CONTRACTOR TO THE PLANT DRAIN PUMP STATION AT THE WASTEWATER TREATMENT PLANT. 12. ALL EXPOSED NEW PIPING SHALL BE PAINTED WITH DESIGNATED COLORS ASSOCIATED WITH THEIR USAGE AS PROVIDED IN THE SPECIFICATIONS. 13. ALL NEW PIPELINES SHALL BE FLUSHED, PRESSURE TESTED, AND APPROVED PRIOR TO TIE-INS TO EXISTING FACILITIES. THE CONTRACTOR WILL BE ALLOWED TO USE TEMPORARY PLUGS FOR PRESSURE TESTING. 14. ALL CONCRETE THRUST BLOCKS INSTALLED FOR TESTING PURPOSES AND NOT REQUIRED FOR THE PIPELINE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR PRIOR TO FINAL ACCEPTANCE. 15. CONTRACTOR SHALL PROVIDE PROTECTIVE MATTING, FUEL CONTAINMENT AND ALL OTHER MATERIALS, EQUIPMENT AND LABOR TO PROTECT THE STAGING AREA DURING CONSTRUCTION. 16. CONTRACTOR SHALL, PRIOR TO BEGINNING CONSTRUCTION, SUBMIT A "FUELING SPILL PREVENTION PLAN" THAT SHALL CLEARLY INDICATED HOW FUEL SPILLS WILL BE PREVENTED WHEN FUELING BOTH WITHIN AND OUTSIDE OF THE STAGING AREA. 17. CONTRACTOR SHALL EMPLOY A PROFESSIONAL SURVEYOR, LICENSED IN THE STATE OF FLORIDA TO PERFORM CONSTRUCTION STAKING IN ACCORDANCE WITH RULE 61G17-6.004 (3) OF THE FLORIDA ADMINISTRATIVE CODE. 18. JOINT RESTRAINT SHALL BE INSTALLED AS NECESSARY TO PREVENT MOVEMENT OF EXISTING UNRESTRAINT PRESSURE PIPE AT ALL TIE-IN LOCATIONS WHETHER SPECIALLY IDENTIFIED ON THE PLANS OR NOT. 19. ALL WORK, EQUIPMENT AND MATERIALS SHALL MEET OR EXCEED CURRENT MANATEE COUNTY STANDARDS, UNLESS OTHERWISE STATED IN CONTRACT DOCUMENTS. **RESTORATION AND MISCELLANEOUS NOTES:** THE CONTRACTOR SHALL PROVIDE AN ASPHALT PATCH FOR TRENCH AREAS CONSTRUCTED IN EXISTING ROADWAYS UNLESS INDICATED OTHERWISE ON THE DRAWINGS. ADJUST ALL CASTINGS TO MATCH NEW PAVEMENT SURFACE. 2. WHERE SURFACE IMPROVEMENTS ARE TO BE REPLACED IN KIND, AS INDICATED ON THE DRAWINGS, THE LANDSCAPING AND OTHER IMPROVEMENTS WITH THE SAME OR BETTER TYPE OF MATERIAL THAT WAS REMOVED DURING CONSTRUCTION OR AS DIRECTED BY THE ENGINEER. ALL RESTORATION WORK PERFORMED THROUGHOUT THE PROJECT SHALL CONFORM TO EXISTING LINES AND GRADES UNLESS OTHERWISE NOTED. 4. ALL EXISTING FENCES DISTURBED DURING CONSTRUCTION SHALL BE REPLACED AND REINSTALLED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER UNLESS SHOWN TO BE REMOVED ON CONSTRUCTION 5. CONTRACTOR SHALL RESTORE GRADE PRECONSTRUCTION ELEVATIONS UNLESS OTHERWISE NOTED.

6. SOIL EROSION & SEDIMENTATION CONTROL NOTES:

4. INLET PROTECTION SHALL BE PLACED AT ALL INLETS IN OR ADJACENT TO THE PROJECT AREA.

REVISIONS

CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL WORK IS COMPLETE.

SEDIMENT TRANSPORT PRIOR TO THE COMMENCEMENT OF WORK.

FOR REVIEW AND APPROVAL PRIOR TO ANY EARTHWORK ACTIVITIES.

MULCHED TO PREVENT EROSION.

NOT TO COUNTY.

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SPECIFICATIONS WITHOUT PRIOR APPROVAL.

### 4. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PIPE SUPPORTS WHETHER SHOWN ON THE CONTRACT DOCUMENTS OR NOT. PIPE SUPPORTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS FOR SPACING AND SUPPORT. ADDITIONALLY, PROVIDE SUPPORT WHERE ABOVE GRADE PIPING CHANGES DIRECTION, IS ADJACENT TO FLANGED VALVES OR OTHER APPURTENANCES OR AT EQUIPMENT CONNECTIONS AND HEAVY FITTINGS. 5. NOTE: ALL NON-POTABLE/PLANT WATER USERS MUST BE CLEARLY LABELED AS "NON-POTABLE", NOT FOR HUMAN CONSUMPTION. 5. PLANT TRAFFIC FLOW SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. IF TRAFFIC FLOW IS TO BE RE-DIRECTED, CONTRACTOR SHALL COORDINATE TEMPORARY TRAFFIC FLOW PATTERNS WITH OWNER AND 7. CONTRACTOR SHALL RESTRAIN ALL UNDERGROUND PRESSURE PIPING AT ALL FITTINGS AND PIPE JOINTS. ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO THE START OF ANY CONSTRUCTION, DEMOLITION, DEWATERING, OR MOBILIZATION ACTIVITIES, MAINTAINED THROUGHOUT 2. CONTRACTOR SHALL FOLLOW BEST MANAGEMENT PRACTICES THROUGHOUT DEMOLITION AND CONSTRUCTION. 3. HAY BALES AND/OR SILT SCREENS SHALL BE INSTALLED ADJACENT TO THE WORK AREAS TO PREVENT AS SOON AS PRACTICAL, ALL DRESSED SLOPES AND DISTURBED AREAS SHALL BE SODDED OR SEEDED AND 6. NO EXCAVATION SHALL EXTEND BELOW THE DEPTHS/ELEVATIONS SHOWN ON THE DRAWINGS OR IN THE CONTRACTOR SHALL PREPARE AND SUBMIT A STORM WATER POLLUTION PLAN (SWPPP) FOR REVIEW AND APPROVAL PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES AND PROVIDE APPROVED FDEP CONTRACTOR SHALL PREPARE AND SUBMIT A DISPOSAL PLAN FOR EXCAVATION MATERIAL INCLUDING THE LOCATION OF DISPOSAL SITE(S) AND DISPOSAL PLANS SHOWING APPLICABLE BEST MANAGEMENT PRACTICES

AUBREY A. HAUDRICOURT, F

**PLANT WORK NOTES** 

THE "CONFINED SPACE ENTRY" CONDITION.

NOTED OR DIRECTED.

DRAINAGE STRUCTURES AND DITCHES DURING CONSTRUCTION.

CONTRACTOR SHALL MAINTAIN A CLEAR PATH FOR ALL SURFACE WATER

2. ALL PIPE LINES SHALL HAVE A MINIMUM COVER OF 36" UNLESS OTHERWISE

AS SUCH BY MEANS OF STAMPING MANHOLE COVERS AND PLACING

3. NOTE; ALL VAULTS, MANHOLES, INLET STRUCTURES, BASINS, WET WELLS ETC.

SHALL BE CONSIDERED "CONFINED SPACE ENTRY" AND SHALL BE MARKED

PERMANENT SIGNAGE ON THE VAULTS, BASINS OR STRUCTURES WARNING OF

# 1365 Hamlet Avenue Clearwater, Florida 33756 Phone: (727) 442-7196, Fax: (727) 461-3827 CA Lic. No. 29588 www.mckimcreed.com



**EXISTING UTILITY NOTES** 

UNDERGROUND UTILITIES SHOWN ON THE PLANS HAVE BEEN MADE AVAILABLE

OTHERS. THIS INFORMATION MAY NOT ALL-INCLUSIVE AND THE CONTRACTOR

INVESTIGATION MAY BE NECESSARY PRIOR TO STARTING CONSTRUCTION. THE

CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY OF ALL

FROM VARIOUS ENTITIES THAT MAY INCLUDE UTILITY OWNERS, SURVEY

SUBSURFACE UTILITY INVESTIGATIONS (SUE), RECORD DRAWINGS AND

IS ADVISED THAT ADDITIONAL UNDERGROUND UTILITIES AND CABLES

. THE CONTRACTOR SHALL FIELD VERIFY SIZE, DEPTH, LOCATION AND

MATERIAL OF ALL UNDERGROUND UTILITIES PRIOR TO THE START OF

PROTECT EXISTING UTILITIES DURING CONSTRUCTION . ANY DAMAGE

THE CONTRACTOR OR UTILITY OWNER (WHERE REQUIRED) TO THE

3. THE CONTRACTOR SHALL CAREFULLY SUPPORT AND PROTECT ANY UTILITIES,

STRUCTURES, POWER POLES, PIPE LINES AND CONDUITS WHICH MAY BE

ENCOUNTERED DURING COMPLETION OF THE WORK AT NO ADDITIONAL COST

RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED BY

SATISFACTION OF THE ENGINEER AND UTILITY OWNER AT THE CONTRACTOR'S

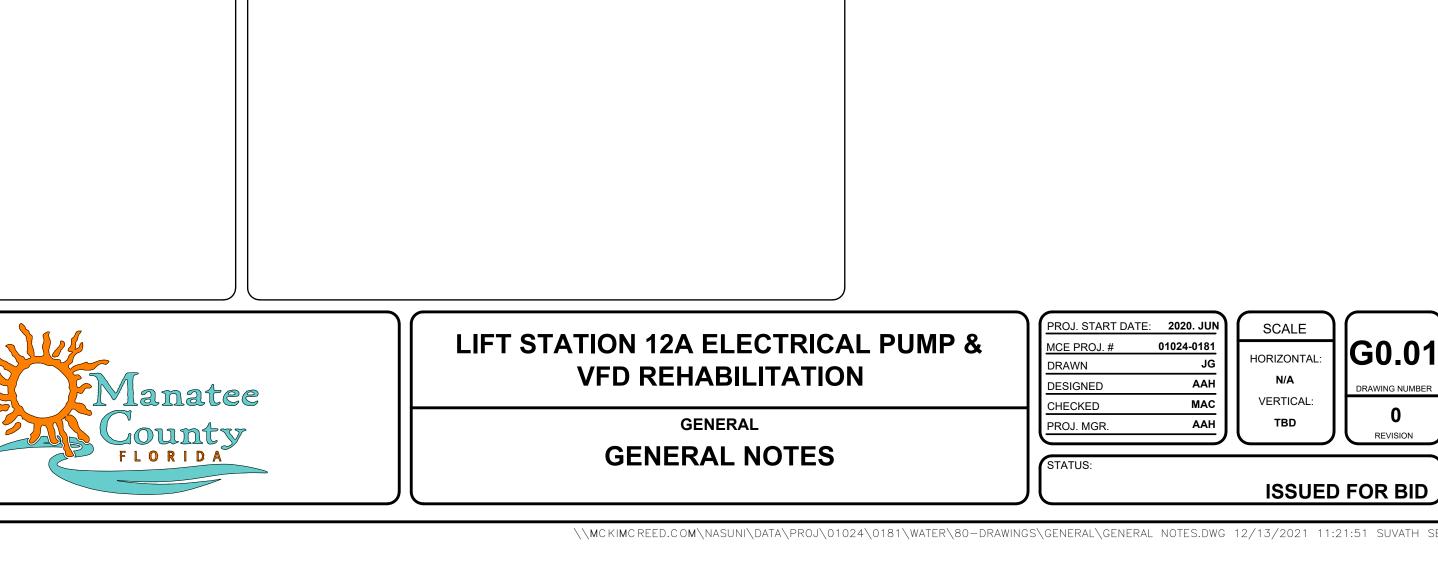
TO THE OWNER. THE CONTRACTOR SHALL APPLY NECESSARY MEANS TO

POTENTIAL CONFLICTS.

CONSTRUCTION.

AS NEEDED NOTES

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#### **ABBREVIATIONS** 1 STORY FRAMED DWELLING 1 STORY BRICK BUSINESS 1SBKBUS ASBESTOS CEMENT AL OR ALUM IALUMINUM AIR RELEASE VALVE ASPHALT BACK OF CURB BUTTERFLY VALVE BRICK BLIND BOLLARD BLOW OFF VALVE BALL VALVE CATV CABLE TELEVISION CATCH BASIN CURB AND GUTTER CURB INLET CENTERLINE CORRUGATED METAL PIPE CONCRETE MASONRY UNIT CLEAN OUT CONCENTRIC CONC CONCRETE COUPLING CORRUGATED PLASTIC PIPE COMPOST SOCK COMBO SILT / TREE PROTECTION FENCE CHECK VALVE CLEAN WATER TEMPORARY DIVERSION DROP INLET / DUCTILE IRON DUCTILE IRON PIPE DUCT BANK DRIVE WAY DRAWING ELEVATION EDGE OF GRAVEL END OF INFORMATION EDGE OF PAVEMENT EYEWASH EXISTING EXPANSION LIGHT POLE FLANGE COUPLING ADAPTER FLOOR DRAIN FIRE DEPARTMENT CONNECTOR FINISHED FLOOR ELEVATION FIRE HYDRANT FIRE HYDRANT ASSEMBLY FINISHED FLANGE FLEXIBLE LOOR FORCE MAIN FIBERGLASS REINFORCED PIPE FIBER OPTIC FLAT ON TOP GUTTER LINE IGAS METER GRAV GRAVEL GAS TEST STATION GAS VALVE GATE VALVE GUY WIRE HOSE BIB нот вох HIGH-DENSITY POLYETHYLENE HIGH WATER LEVEL INVERT ELEVATION IRON POST FOUND JUNCTION BOX LINEAR FEET LIMITS OF DISTURBANCE LONG RADIUS LANDSC APE AREA LOW WATER LEVEL MANHOLE MINIMUM MECHANICAL JOINT MOTOR OPERATED VALVE NORMALLY CLOSED NORMALLY OPEN NOT IN CONTRACT NORMAL WATER LEVEL OVER HEAD ELECTRIC OVERFLOW OVER HEAD UTILITIES PLAIN END POST INDICATOR VALVE PRESSURE REDUCING VALVE POLYTETRAFLUOROETHYLENE PLUG VALVE POLY VINYL CHLORIDE POTABLE WATER REINFORCED CONCRETE PIPE PER RECORD REDUCER

1	ABBREVIATIONS CONTINUED
RFC A	RESTRAINED FLANGE COUPLING ADAPTER
RJ	RESTRAINED JOINT
RK	ROCK
R/W, RO	W RIGHT OF WAY
S	SIGN
SDMH	STORM DRAIN MANHOLE
SF	SILT FENCE
SS	SANITARY SEWER
S.S.	STAINLESS STEEL
SSF	SUPER / HIGH HAZARD SILT FENCE
SSMH	SANITARY SEWER MANHOLE
STA	STATION
SUE	SUBSURFACE UTILITY ENGINEERING
S/W	SIDE WALK
SVC	SERVICE
ТВМ	TEMPORARY BENCH MARK
TC	TERRA COTTA
TLP	TRAFFIC LIGHT POLE
TOB	TOP OF BANK
TOC	TOP OF CONCRETE
TOG	TOP OF GRATING
TOS	TOP OF SLAB
TOW	TOP OF WALL
TH	TEST HOLE
TPF	TREE PROTECTION FENCE
TSBOX	TRAFFIC SIGNAL BOX
TYP	TYPIC AL
UNO	UNLESS NOTED OTHERWISE
UNK	UNKNOWN
VAR	VARIABLE
VCP	VITRIFIED CLAY PIPE
WD	WOOD
WL	WATER LINE
WM	WATER METER
WV	WATER VALVE
XP	CROSS LIGHT POLE
WWF	WELDED WIRE FABRIC
YI	YARD INLET

DESCRIPTION	LINETYPE
UNDERGROUND CABLE TV	TV
UNDERGROUND PER RECORD CABLE TV	TV(R) $$
UNDERGROUND ELECTRIC	1
PER RECORD UNDERGROUND ELECTRIC	E(R) $$
UDERGROUND FIBER OPTIC	FO
PER RECORD UNDERGROUND FIBER OPTIC	FO(R)
SANITARY SEWER FORCEMAIN	FM
PER RECORD SANITARY SEWER FORCE MAIN	— — FM(R)— —
UNDERGROUND GAS	
UNDERGROUND PER RECORD GAS	G(R)
OVER HEAD UTILITIES	OU
RECLAIMED WATER LINE	— — R— — -
PER RECORD RECLAIMED WATER LINE	R(R) $$
GRAVITY SANITARY SEWER	ss
PER RECORD GRAVITY SANITARY SEWER	SS(R) $$
STORM DRAINAGE	]=====
UNDERGROUND TELEPHONE	
UNDERGROUND PER RECORD TELEPHONE	T(R) $$
UNDERGROUND UNKNOWN	] — — U— — -
WATER LINE	] — — w— — -
PER RECORD WATER LINE	$\left  W(R) \right $
FENCE	x
GUARD RAIL	
BACK OF CURB	
EASEMENT	
EDGE OF GRAVEL	
EDGE OF PAVEMENT	
PROPERTY LINE	
RIGHT OF WAY	
ROAD CENTER LINE	ļ
100 YEAR FLOODPLAIN	· · · · —100FP— · · · · —
DITCH &	ļ · · -
MAJOR CONTOUR	
MINOR CONTOUR	
RIPARIAN BUFFER ZONE 1	
RIPARIAN BUFFER ZONE 2	
TOP OF BANK	
TREELINE	
WATERCOURSE &	
WETLAND BOUNDARY	MTR—
4 PROPOSED SYMBO	'L LEGEN

EXISTING LINE LEGEND

TAND INLL!		
EXISTING SYMBOL	LEGEND	4
DESCRIPTION	SYMBOL	
11.25° HORIZONTAL BEND	Н	
22.50° HORIZONTAL BEND	4	
45° HORIZONTAL BEND	4	
90° HORIZONTAL BEND	4	
AC UNIT	DA	
BENCH MARK	<b>\Phi</b>	
TEMP. BENCH MARK	<b>+</b>	
BLOW OFF VALVE	⋈o	
BOLLARD	0B0	
TEST BORE HOLE LOCATION	<b>⊕</b> B−#	
CABLE TV PEDISTAL	C	
CATCH BASIN		
CLEAN OUT	<i>CO</i> <b>O</b>	
CONCRETE MONUMENT FOUND	□ C MF	
CONTROL POINT	Δ	
CROSS	$\Box$	
CURB INLET	<u> </u>	P(
ELECTRIC BOX	E	RE(
ELEC TRIC MANHOLE	E	EXISTIN
END OF INFORMATION	•	CONC
FLAG POLE	O FP	ECCE
GAS METER	GM()	FLAT
GUY POLE	-•	
GUY WIRE	<u> </u>	
HANDHOLE		
HYDRANT	Ş	
IRON POST FOUND	o IPF	
IRON ROD FOUND	o IPF	
LIGHT POLE	0 LP	
MAIL BOX	MB 🗆	
MONITOR WELL	×	
POWER POLE	O PP	
WATER MANHOLE	(W)	
PK FOUND  RAIL ROAD SPIKE	O PKF o rrspike	
SANITARY SEWER MANHOLE	O RRSPIKE	
SHRUB	9	
SIGN		
STORM DRAIN MANHOLE	0	
TAPPING SLEEVE AND VALVE	*	
TEE		
TELEPHONE MANHOLE	$\Box$	
TELEPHONE PEDESTAL		
TRAFFIC SIGNAL BOX		LIMITS
TRANSFORMER		COMBIN
DECIDUOUS TREE	E	
PINE TREE	(4/Ca)	TEMF
UTILITY POLE		
VALVE	$\bowtie$	
WATER METER	М	

DESCRIPTION	SYMBOL
11.25° HORIZONTAL BEND	Н
22.50° HORIZONTAL BEND	4
45° HORIZONTAL BEND	4
90° HORIZONTAL BEND	4
VERTIC AL BEND	II
AIR RELEASE VALVE	(A)
VALVE	H
BLOWOFF VALVE	H•
HYDRANT	Ŷ
YARD HYDRANT	೮
CROSS	中
TEE	凸
TAPPING SLEEVE AND VALVE	<u> </u> <b>₹</b>
REDUCER	<b>•</b>
C AP/PLUG	
POTABLE WATER SERVICE METER	M
RECLAIMED WATER SERVICE METER	R
EXISTING UTILITY SERVICE RECONNECTION	<b>—</b>
CONCENTRIC SANITARY SEWER MANHOLE	
ECCENTRIC SANITARY SEWER MANHOLE	0
FLAT TOP SANITARY SEWER MANHOLE	<u> </u>
CLEAN OUT	<b>(+)</b>
ARC FILTER	<i>8</i> <sup>20</sup> 8
CHECK DAM	
INLET PROTECTION	
PIPE INLET PROTECTION	<u> </u>
SILT FENCE OUTLET	
WATTLE	θ

#### | PROPOSED LINE LEGEND

DESC RIPTION	LINETYPE
PERMANENT EASEMENT	
TEMPORARY EASEMENT	
SANITARY SEWER FORCE MAIN	FM
RECLAIMED WATER LINE	—— R ——
GRAVITY SANITARY SEWER	<b></b> SS <b></b>
WATER LINE	—— W —
TO BE ABANDONED	. /. /. /. /. /. /. /. /. /. /.
DIVERSION DITCH	$\longrightarrow$
LIMITS OF DISTURBANCE/CLEARING LIMITS	LOD
COMBINATION SILT FENCE/TREE PROTECTION	
TEMPORARY SILT FENCE	
TEMPORARY SUPER SILT FENCE	
TEMPORARY TREE PROTECTION FENCE	
COMPOST SOCK	
PERMANENT FENCE	
GUARD RAIL	<del>- 0 0</del>

#### PROFILE LINE LEGEND

DESCRIPTION	LINETYPE
EXISTING GRADE PAVEMENT PROFILE	
EXISTING GRADE GROUND PROFILE	
PROPOSED GRADE PROFILE	
THEORETIC AL 1:1 SLOPE	
WETLAND CROSSING	

#### AREA LEGEND

A PROCESS AIR

ALUM WTP ALUM SLUDGE

AS ACTIVATED SLUDGE

WETLANDS	\(\psi\) \(\
RIP-RAP	
TEMP. SLOPE STABILIZATION	+ + + + + + + + + + + + + + + + + + + +
STRAW WITH NET LINER	

#### PROCESS ABBREVIATIONS

	AS	ACTIVATED SLODGE
	BW	BACKWASH
	B WD	BACKWASH DRAIN
	BWS	BACK WASH SUPPLY
	BWW	BACK WASH WASTE
	D	DRAIN
<b>リ</b> ト	EXP	EXPANSION
$\supset \Box$	FA	FOUL AIR
)	FE	FINAL EFFLUENT
_	FI	FILTER INFLUENT
]	FFM	FILTRATE FORCE MAIN
	FTD	FILTER DRAIN
	FTE	FILTER EFFLUENT
	GR	GRIT
	GV	GATE VALVE
	HWR	HOT WATER RETURN
	HWS	HOT WATER SUPPLY
1	IFM	INFLUENT FORCE MAIN
	ML	MIXED LIQUOR
	NAOCL	SODIUM HYPOCHLORITE
.	NAOH	SODIUM HYDROXIDE (CAUSTIC SODA)
	NG	NATURAL GAS
	NPW	NON-POTABLE WATER
	NRC Y	NITRIFIED RECYCLE
	PD	PROCESS DRAIN
1	PE	PRIMARY EFFLUENT
1	PS	PRIMARY SLUDGE
1	PTE	PRELIMINARY TREATMENT EFFLUENT
111	PTFE	POLYTETRAFLUOROETHYLENE
111	PW	POTABLE WATER
-	RAS	RETURN ACTIVATED SLUDGE
-	RW	RAW WASTEWATER
	SBR	SEQUENCING BATCH REACTOR
	SD	STORM DRAIN
	SPD	SUMP PUMP DISCHARGE
	SR	SCRUBBER RECIRCULATION
	SRD	SCRUBBER RECIRCULATION DISCHARGE
	SRP	SCRUBBER RECIRCULATION PUMP
-	SRS	SCRUBBER RECIRCULATION SUCTION
	SUP	DIGESTER SUPERNATANT
	SW	SEAL WATER
	UV	ULTRAVIOLET
	WAS	WASTE ACTIVATED SLUDGE
<b>〜</b>	WAS	WASTE ACTIVATED SECONDE

### MECHANICAL SYMBOLS

- -	VALVE SYMBOL	DESCRIPTION
-	<b>\</b>	BUTTERFLY VALVE
<del>-</del> /.		CHECK VALVE
-		GATE VALVE
-		PLUG VALVE
-		BALL VALVE
<u>-</u>		GLOBE VALVE

#### GENERAL NOTES

#### **GENERAL NOTES:**

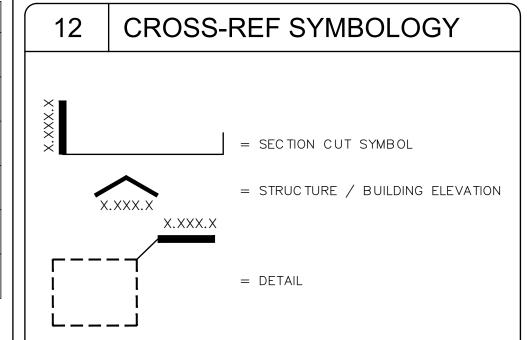
- 1. THE CONTRACTOR SHALL REVIEW AND VERIFY ALL LAYOUTS, DIMENSIONS AND ELEVATIONS ON THE PLANS WITH FINAL APPROVED EQUIPMENT DRAWINGS AS WELL AS ALL TECHNICAL SPECIFICATIONS PRIOR TO STARTING CONSTRUCTION AND SHOULD DISCREPANCIES OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO OBTAIN THE ENGINEERS CLARIFICATION BEFORE COMMENCING WITH CONSTRUCTION.
- 2. THE CONTRACTOR SHALL COORDINATE ALL RELATED DISCIPLINE DRAWINGS TO ENSURE ACCURATE INSTALLATION OCCURS, INCLUDING P&ID'S.
- 3. CONTRACTOR SHALL MAINTAIN A CLEAR PATH FOR ALL SURFACE WATER DRAINAGE STRUCTURES AND DITCHES DURING CONSTRUCTION.
- 4. ALL PIPE LINES SHALL HAVE A MINIMUM COVER OF 36" UNLESS OTHERWISE NOTED OR DIRECTED.
- 5. NOTE; ALL VAULTS, MANHOLES, INLET STRUCTURES, BASINS, WET WELLS ETC. SHALL BE CONSIDERED "CONFINED SPACE ENTRY" AND SHALL BE MARKED AS SUCH BY MEANS OF STAMPING MANHOLE COVERS AND PLACING PERMANENT SIGNAGE ON THE VAULTS, BASINS OR STRUCTURES WARNING OF THE "CONFINED SPACE ENTRY" CONDITION.
- 6. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PIPE SUPPORTS WHETHER SHOWN ON THE CONTRACT DOCUMENTS OR NOT. PIPE SUPPORTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS FOR SPACING AND SUPPORT. ADDITIONALLY, PROVIDE SUPPORT WHERE ABOVE GRADE PIPING CHANGES
- DIRECTION, IS ADJACENT TO FLANGED VALVES OR OTHER APPURTENANCES OR AT EQUIPMENT CONNECTIONS AND HEAVY FITTINGS.
- 7. NOTE: ALL NON-POTABLE/PLANT WATER USERS MUST BE CLEARLY LABELED AS "NON-POTABLE", NOT FOR HUMAN CONSUMPTION
- 8. PLANT TRAFFIC FLOW SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. IF TRAFFIC FLOW IS TO BE RE—DIRECTED, CONTRACTOR SHALL COORDINATE TEMPORARY TRAFFIC FLOW PATTERNS WITH OWNER AND ENGINEER.
- 9. CONTRACTOR SHALL RESTRAIN ALL UNDERGROUND PRESSURE PIPING AT ALL FITTINGS AND PIPE JOINTS.

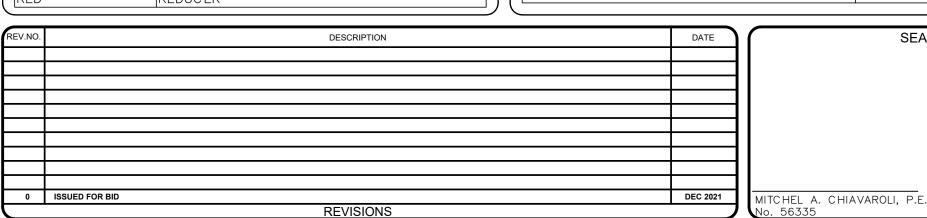
#### **EXISTING UTILITIES:**

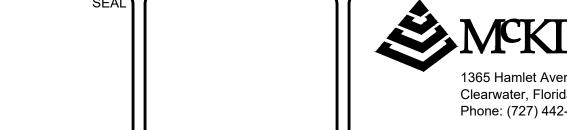
- UNDERGROUND UTILITIES SHOWN ON THE PLANS HAVE BEEN MADE AVAILABLE FROM VARIOUS ENTITIES THAT MAY INCLUDE UTILITY OWNERS, SURVEY SUBSURFACE UTILITY INVESTIGATIONS (SUE), RECORD DRAWINGS AND OTHERS. THIS INFORMATION MAY NOT ALL—INCLUSIVE AND THE CONTRACTOR IS ADVISED THAT ADDITIONAL UNDERGROUND UTILITIES AND CABLES INVESTIGATION MAY BE NECESSARY PRIOR TO STARTING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY OF ALL POTENTIAL CONFLICTS.
- 2. THE CONTRACTOR SHALL FIELD VERIFY SIZE, DEPTH, LOCATION AND MATERIAL OF ALL UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL CAREFULLY SUPPORT AND PROTECT ANY UTILITIES, STRUCTURES, POWER POLES, PIPE LINES AND CONDUITS WHICH MAY BE ENCOUNTERED DURING COMPLETION OF THE WORK AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL APPLY NECESSARY MEANS TO PROTECT EXISTING UTILITIES DURING CONSTRUCTION . ANY DAMAGE RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR OR UTILITY OWNER (WHERE REQUIRED) TO THE SATISFACTION OF THE ENGINEER AND UTILITY OWNER AT THE CONTRACTOR'S EXPENSE.

#### PIPING SCHEDULE

ABBREVIATION	DESIGNATION	PIPE MATERIAL	NOTES
INF	INFLUENT	RESTRAINED DUCTILE IRON	RESTRAIN ENTIRE NETWORK
EFF	EFFLUENT	RESTRAINED DUCTILE IRON	RESTRAIN ENTIRE NETWORK, PROVIDE PIPE WITH PROTECTIVE LINING — ENTIRE NETWORK
D or SS	DRAIN OR SANITARY SEWER	DUCTILE IRON / SCH. 80 PVC	>=4" DIP / <=3" SCH. 80 PVC SOLVENT WELD, RESTRAIN ALL FITTINGS
FM	FORCE MAIN	RESTRAINED DUCTILE IRON	RESTRAIN ENTIRE NETWORK
NPW	NON-POTABLE WATER	RESTRAINED DUCTILE IRON / SCH. 80 PVC	>=4" DIP / <=3" SCH. 80 PVC SOLVENT WELD, RESTRAIN ENTIRE NETWORK
А	PROCESS AIR	SCH. 10 304 STAINLESS STEEL	
SL	SLUDGE	RESTRAINED DUCTILE IRON	RESTRAIN ENTIRE NETWORK
SC	SCUM	RESTRAINED DUCTILE IRON	RESTRAIN ENTIRE NETWORK
PW	POTABLE WATER	RESTRAINED DUCTILE IRON / SCH. 80 PVC	>=4" DIP / <=3" SCH. 80 PVC SOLVENT WELD, RESTRAIN ENTIRE NETWORK
FA	FOUL AIR	SCH. 80 PVC / FRP	FRP ABOVE GRADE SCH. 80 PVC BELOW GRADE
ATAD	ATAD SUPPLY & DISCHARGE	RESTRAINED DUCTILE IRON	RESTRAIN ENTIRE NETWORK
PE	PLANT EFFLUENT	RESTRAINED DUCTILE IRON	RESTRAIN ENTIRE NETWORK, PROVIDE PIPE CONNECTING NEW EQ TANK W/ EXISTING EQ BASIN AND (NEW AND EXISTING) BIODENOPHO DITCHES WITH PROTECTIVE LINING
RAS/WAS	WASTE/RETURN ACTIVATED SLUDGE	RESTRAINED DUCTILE IRON	RESTRAIN ENTIRE NETWORK







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WATER WELL

YARD HYDRANT



www.mckimcreed.com



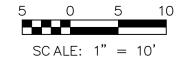
#### **LIFT STATION 12A ELECTRICAL PUMP & VFD REHABILITATION**

**GENERAL CIVIL-MECHANICAL-LEAD SHEET** 

PROJ. START DATE	: 2020. JUN	SCALE
MCE PROJ. #	01024-0181	
DRAWN	JG	HORIZONTAL
DESIGNED	AAH	N/A
CHECKED	MAC	VERTICAL:
PROJ. MGR.	ААН	TBD
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#### SITE CONTROL

DESIGNATION	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP #1	1121780.62	467360.95	5.20'	ND (LB 7203)
CP #2	1121742.13	467200.98	4.27'	IR (LB 7203)

#### LEGEND

- PID PARCEL
  CP CONTROL POINT

  CP CONTROL POINT

  CP CONTROL POINT

  WAY
  ND NAIL W/ DISC

  IR IRON ROD

  SR STATE ROAD

  CONTROL POINT

  CUTILITY POLE

  GUY WIRE

  MATERIAL SEWER VALVE

  MATERIAL WATER VALVE
- EL ELEVATION

  FFE FINISHED FLOOR ELEVATION

  S SANITARY MANHOLE

  LIGHT POLE
- - O UTILITY RISER
    - UTILITY BOX
    - OUTLET

      SPIGOT
    - ANTENNA
    - FIRE HYDRANT
    - GRATE INLET
    - MONITOR WELL



AUBREY A. HAUDRICOURT, P

0 ISSUED FOR BID

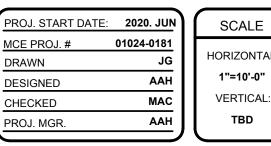
REVISIONS





CIVIL SITE

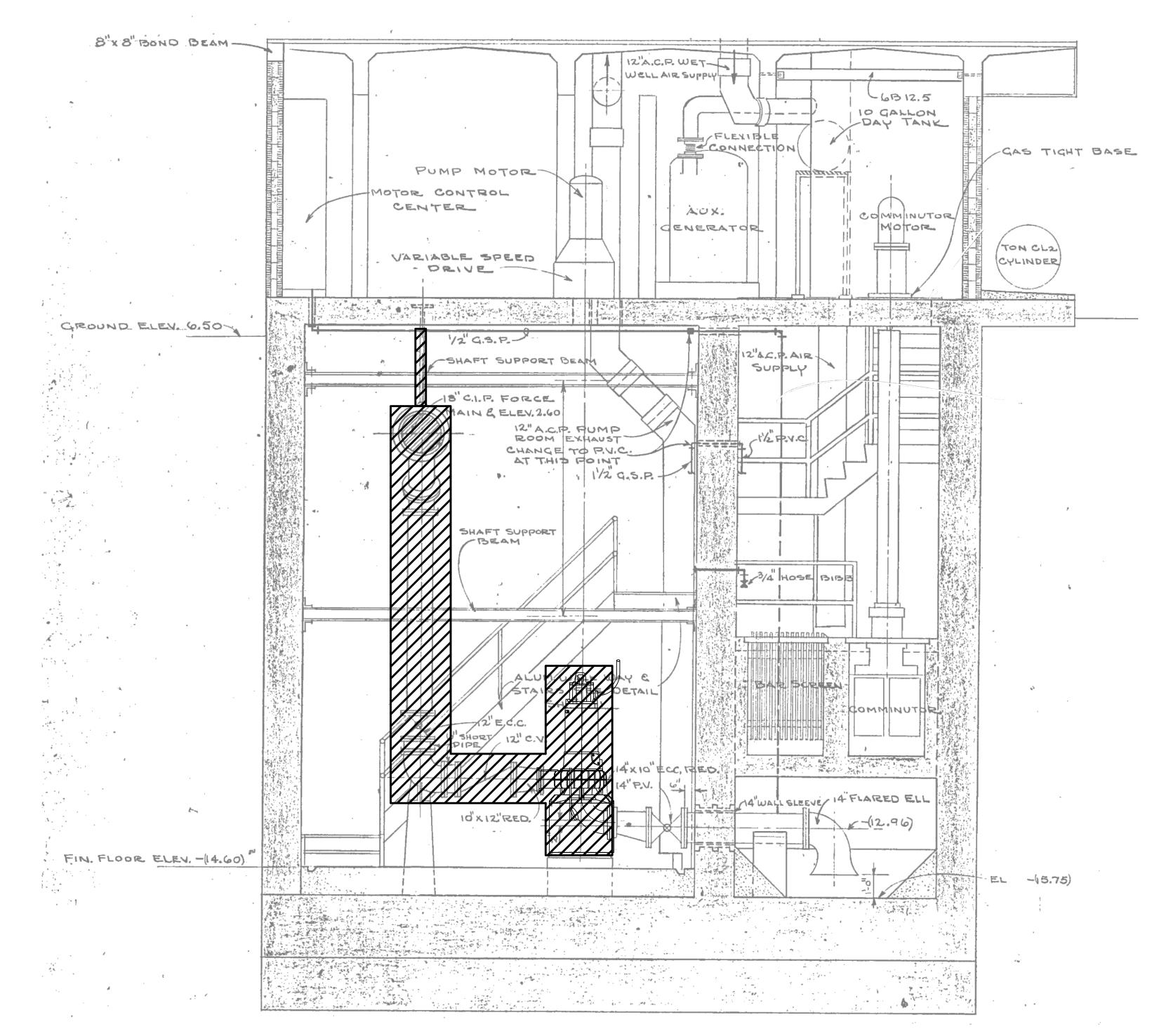
SITE PLAN

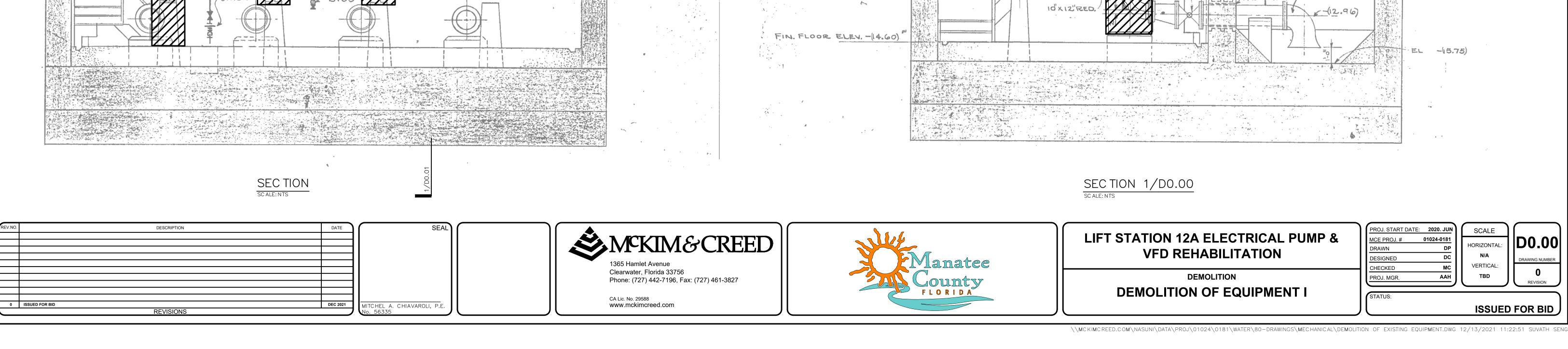


#### NOTES:

- 1. DRAWING OBTAINED FROM SANITARY SEWERAGE PROJECT, PART A, SECTION III—SEWAGE LIFT STATIONS DATED DECEMBER 1971. ACTUAL CONDITIONS MAY NOT MATCH EXISTING DRAWING. CONTRACTOR SHALL FIELD VERIFY AND NOTIFY OWNER OF ANY DIFFERENCES THAT MAY IMPACT THE WORK TO BE PERFORMED.
- 2. CONTRACTOR SHALL REMOVE ANY EXPOSED ANCHOR BOLTS.
- 3. CONTRACTOR SHALL APPLY PATCHWORK TO CONCRETE AND TOUCH—UP PAINT WHERE REQUIRED.







8 X Z4 BOND BEAM

18" P.V. & BOX+

48" WALL SLEEVE

CONTRACT

12" A.C.P. PUMP ROOM EXHAUST

12"BLIND FLANGE)

PUMP MOTOR -

CONSTANT

3PEED

- 12'A.C.P. WET WELL AIR SUPPLY

DAY

TANK

PUMP | MOTOR

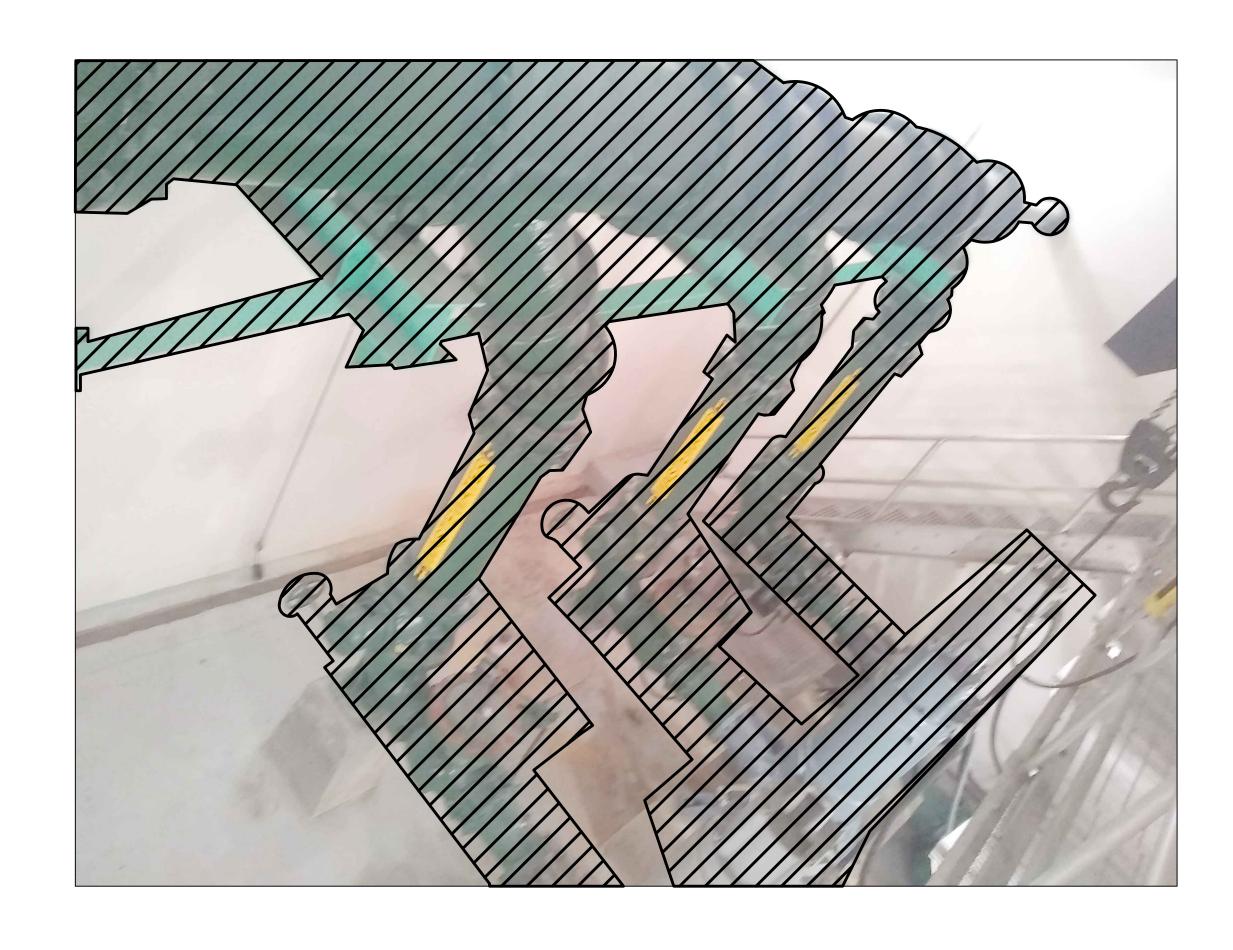
AUX.

GENERATOR

SEE DETAIL SHELL PUP SHAFT

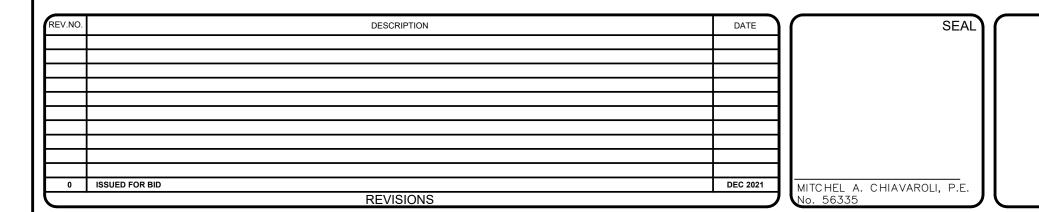
VARIABLE SPEED !





DEMOLITION PHOTO 1/D0.01
SCALE: NTS

DEMOLITION PHOTO 2/D0.01
SCALE: NTS







LIFT STATION 12A ELECTRICAL PUMP &	
VFD REHABILITATION	

DEMOLITION OF EQUIPMENT II

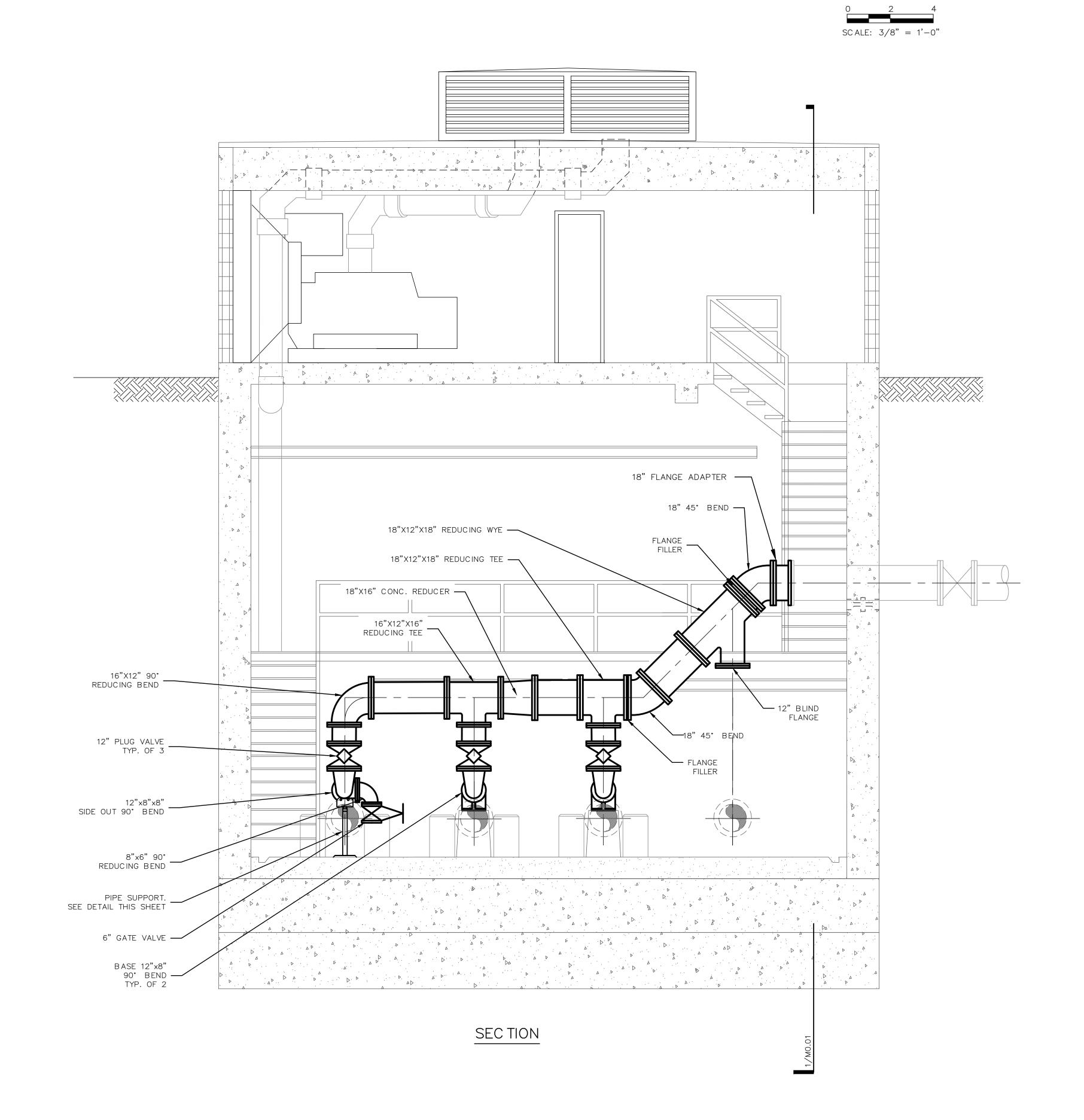
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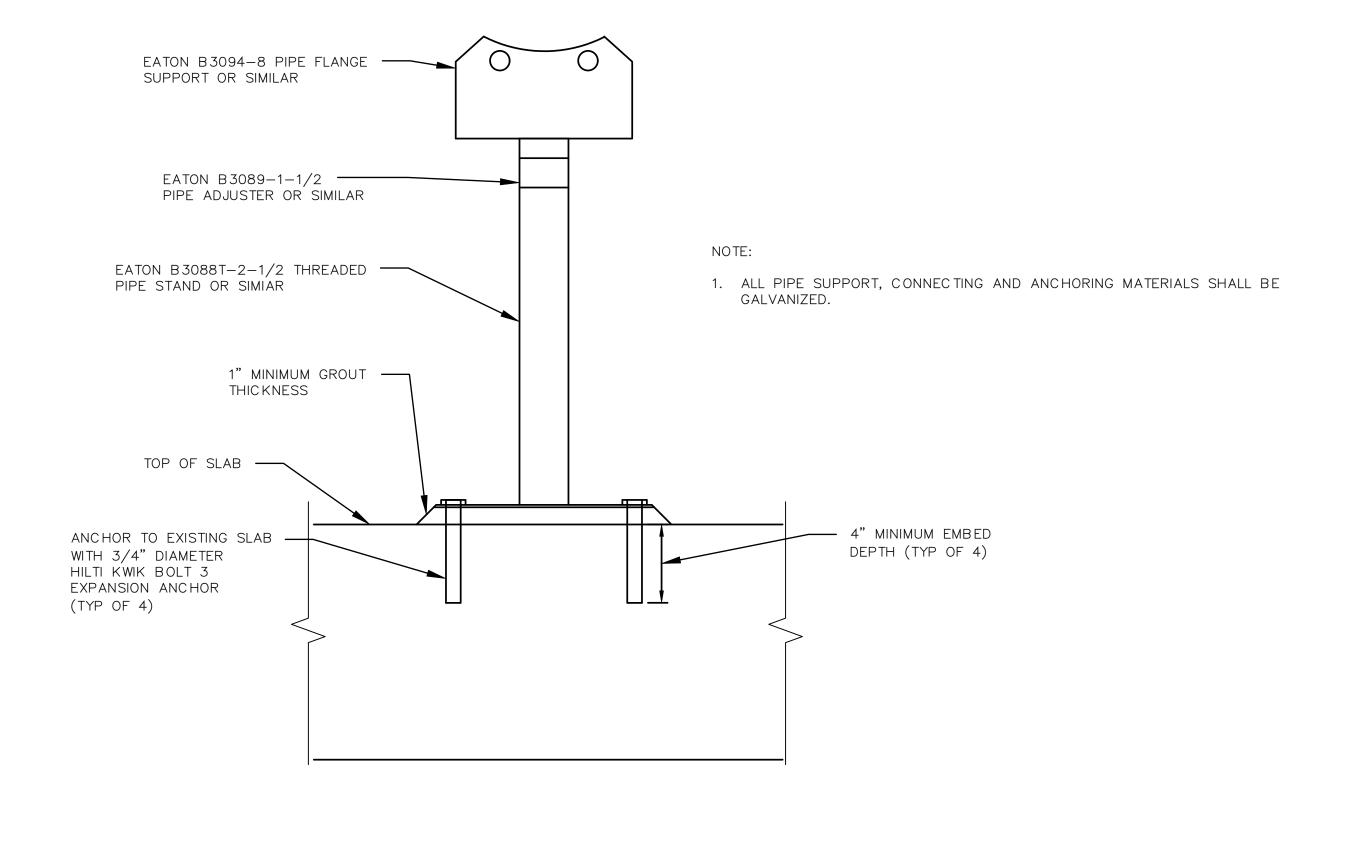
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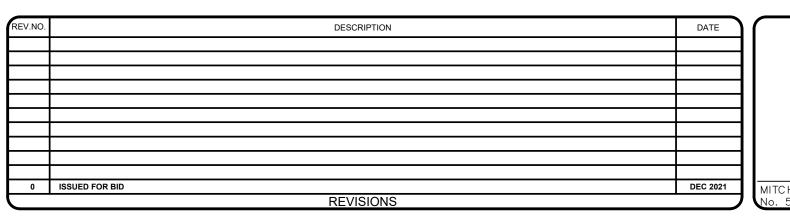
STATUS:



1. THERE ARE EXISTING FLOOR HATCHES THAT MAY BE USED BY THE CONTRACTOR TO REMOVE EXISTING AND INSTALL NEW PUMPS. REFER TO FLOOR PLAN ON SHEET E1.02.











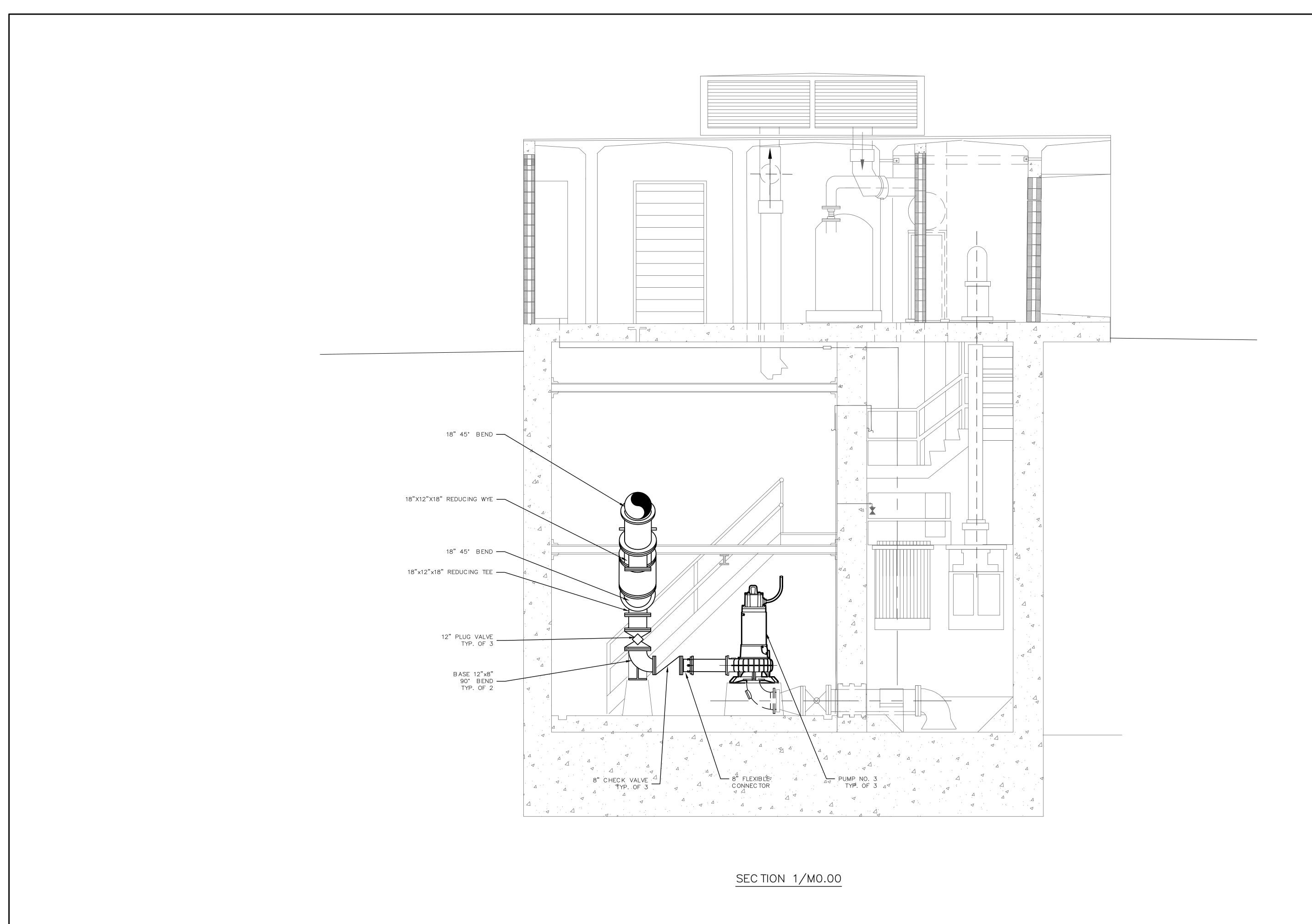


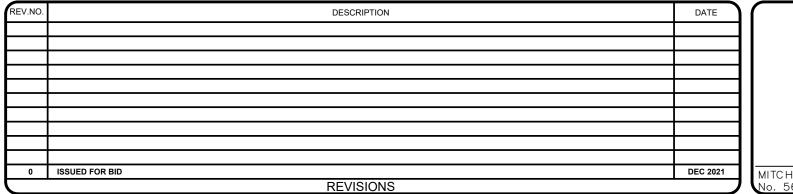
### LIFT STATION 12A ELECTRICAL PUMP & VFD REHABILITATION

PIPE SUPPORT DETAIL

MECHANICAL
PROPOSED PUMPS AND PIPING I

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LIFT STATION 12A ELECTRICAL PUMP &
VFD REHABILITATION

MECHANICAL
PROPOSED PUMPS AND PIPING II

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#### **GENERAL NOTES**

1.1 ALL WORK IS TO BE PERFORMED IN A GOOD, WORKMANLIKE AND PROFESSIONAL MANNER.

1.2 ALL CONSTRUCTION SHALL BE IN STRICT COMPLIANCE WITH THE REQUIREMENTS OF THE FLORIDA STATE BUILDING CODE (FBC), LATEST EDITION, OR LOCAL BUILDING CODE REQUIREMENTS IF MORE STRINGENT

1.3 THESE DRAWINGS DO NOT SHOW PROVISIONS FOR SAFETY DURING CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE THE REQUIRED BRACING, SHORING, AND SAFETY DEVICES THROUGHOUT THE CONSTRUCTION OF THIS PROJECT.

#### COORDINATION

2.1 STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH & COORDINATED WITH CIVIL AND ELECTRICAL DRAWINGS, INCLUDING VENDOR SUBMITTAL DRAWINGS AND OTHER CONTRACT DOCUMENTS.

2.2 COORDINATE THE EXACT SIZE AND LOCATION OF ALL SLEEVES AND OPENINGS THROUGH WALLS OR CONCRETE SLABS WITH CIVIL AND ELECTRICAL DRAWINGS, INCLUDING VENDOR SUBMITTAL DRAWINGS AND OTHER CONTRACT DOCUMENTS.

2.3 ANY DISCREPANCIES BETWEEN ACTUAL CONDITIONS AND THOSE SHOWN ON THESE DRAWINGS ARE TO BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER BEFORE WORK PROCEEDS, INCLUDING ORDERING AND FABRICATING MATERIALS.

2.4 INDEPENDENT TESTING/REVIEW OF MATERIALS SHALL BE PROVIDED AS DEFINED IN PROJECT SPECIFICATIONS IF APPLICABLE. IN GENERAL PROJECT INVOLVES THE FOLLOWING: A. SOIL/FILL COMPACTION & BEARING. B. C.I.P. CONCRETE.

2.5 IF COORDINATION OF INFORMATION PRESENTED CONFLICTS w/ THE PROJECT SPECIFICATIONS, THE DRAWINGS WILL TAKE PRECEDENCE.

2.6 IN GENERAL CALL-OUTS ARE FOR NEW CONSTRUCTION U.N.O.. EXISTING CONSTRUCTION CALL-OUTS, ELEVATIONS AND DIMENSIONS OF EXISTING STRUCTURES ARE BASED ON EXISTING RECORD DRAWINGS PROVIDED TO McKIM & CREED. THE (\*) SYMBOL ON INDIVIDUAL FACILITY "STRUCTURAL" DRAWINGS INDICATES EXISTING CONSTRUCTION CALL-OUTS, CONDITIONS, ELEVATIONS AND DIMENSIONS TO BE FIELD VERIFIED BY THE GENERAL CONTRACTOR U.N.O. PRIOR TO CONSTRUCTION, INCLUDING ORDERING AND FABRICATING MATERIALS. RECORD DRAWINGS PROVIDED BY MANATEE COUNTY UTILIZED INCLUDES:

A. "MANATEE COUNTY, FLA. SANITARY SEWERAGE PART A SECTION III - SEWAGE LIFT STATIONS" BY RUSSELL & AXON, CONSULTING ENGINEERS, INC. (DTD. DECEMBER 1971).

2.7 SPECIAL INSPECTIONS (IF APPLICABLE): ALL FOUNDATION SOILS, REINF. STEEL, C.I.P. CONCRETE, CONCRETE MASONRY, STRUCTURAL STEEL & PRE-CAST CONCRETE BUILDINGS/STRUCTURES WORK SHALL BE REVIEWED AS STATED IN CONJUNCTION w/ THEIR RESPECTIVE NOTES BELOW.

#### **FOUNDATIONS**

3.1 DESIGN ALLOWABLE SOIL BEARING PRESSURE - 2,500 PSF IN ACCORDANCE w/ THE PROJECT GEOTECHNICAL REPORT AS PREPARED BY DRIGGERS ENGINEERING SERVICES, INC. (PROJECT NO. DES 208566, DTD. OCTOBER 06, 2020). THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THIS VALUE PRIOR TO FOUNDATION CONSTRUCTION. IN AREAS WHERE THE SOIL DOES NOT YIELD THIS BEARING STRESS VALUE, ADJUSTMENT IN THE FOOTING DEPTHS AND FOUNDATION DIMENSION MAY BE MADE BY THE ENGINEER BEFORE WORK PROCEEDS. CONTRACTOR IS RESPONSIBLE FOR PERFORMING ANY SUCH ADJUSTMENTS.

3.2 PREPARE THE EXISTING SUBGRADE IN ACCORDANCE w/ THE PROJECT GEOTECHNICAL REPORT AS PREPARED BY DRIGGERS ENGINEERING SERVICES, INC. (PROJECT NO. DES 208566, DTD. OCTOBER 06, 2020). IN THE EVENT UNUSUAL SOIL CONDITIONS ARE UNCOVERED, NOTIFY THE OWNER AND ENGINEER PRIOR TO FOUNDATION CONSTRUCTION FOR INSTRUCTIONS HOW TO PROCEED. ADJUSTMENT IN THE FOOTING DEPTHS AND GENERAL FOUNDATION CONSTRUCTION MAY BE MADE BY THE ENGINEER BEFORE WORK PROCEEDS. CONTRACTOR IS RESPONSIBLE FOR PERFORMING ANY SUCH ADJUSTMENTS

3.3 FOOTING, PIER & SLAB EXCAVATIONS AND FORMS SHALL BE REVIEWED BY AN OWNER'S CONSTRUCTION REPRESENTATIVE PRIOR TO PLACEMENT OF CONCRETE.

3.4 FOOTING, PIER & SLAB ELEVATIONS SHALL NOT BE RAISED OR LOWERED WITHOUT APPROVAL OF THE STRUCTURAL

3.5 ALL EXCAVATIONS SHALL BE ADEQUATELY DEWATERED BEFORE PLACEMENT OF CONCRETE. NO CONCRETE OR CONCRETE FILL SHALL BE PLACED IN STANDING WATER. ACCUMULATION EXCEEDING 1 INCH SHALL BE PUMPED OUT.

3.6 ALL FILL MATERIAL, IF REQUIRED, INSIDE THE BUILDING's/STRUCTURE'S FOOTPRINT AND BELOW FOUNDATION'S SHALL BE SELECT MATERIAL FREE FROM ROOTS, TRASH WOOD SCRAPS, AND OTHER EXTRANEOUS MATERIALS. PLACE FILL IN LIFTS NOT EXCEEDING THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL REPORT AS PREPARED BY DRIGGERS ENGINEERING SERVICES, INC. (PROJECT NO. DES 208566. DTD. OCTOBER 06, 2020).

3.7 ALL FOOTINGS & PIERS SHALL BE CENTERED UNDER THE SUPPORTED WALL/COLUMN MEMBER UNLESS NOTED OTHERWISE.

3.8 CONSTRUCTION JOINTS IN FOUNDATION SLABS, WALLS & FOOTINGS SHALL BE MADE AT LOCATIONS SHOWN ON DRAWINGS.

3.9 ANCHOR BOLTS SHALL BE SET BY MEANS OF TEMPLATE. "FLOATING" ANCHOR BOLTS INTO PLACE IS PROHIBITED.

#### FOUNDATIONS CTD.

3.10 CONTRACTOR IS TO VERIFY THE ELEVATION AND LOCATION OF ALL EXISTING AND PROPOSED UTILITIES PRIOR TO CONSTRUCTION. ANY "KNOWN" UTILITY LINES DAMAGED WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE. IF ANY "UNKNOWN" UTILITY LINES ARE ENCOUNTERED WHEN EXCAVATING THE CONTRACTOR IS TO CEASE ALL EXCAVATION ACTIVITY UNTIL THE ENGINEER AND OWNER ARE NOTIFIED AND INSTRUCTIONS ARE PROVIDED ABOUT HOW TO PROCEED.

3.11 THE CONTRACTOR SHALL OBTAIN THE OWNER'S PERMISSION BEFORE ENCASING OR BACK FILLING AROUND ANY EXISTING UNDERGROUND STRUCTURE, PIPING, ELECTRICAL, OR OTHER UNDERGROUND WORK.

#### REINFORCING STEEL

4.1 BARS SHALL BE ROLLED FROM NEW BILLET-STEEL OF DOMESTIC MANUFACTURE CONFORMING TO "STANDARD SPECIFICATION FOR DEFORMED AND PLAIN BILLET STEEL BARS FOR CONCRETE REINFORCEMENT," ASTM A615, GRADE 60 AND SUPPLEMENTARY REQUIREMENT S-1.

4.2 DETAIL AND FABRICATE REINFORCING STEEL IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE "ACI DETAILING MANUAL," LATEST PUBLICATION.

4.3 REINFORCING STEEL IN PLACE SHALL BE REVIEWED BY THE OWNER'S CONSTRUCTION REPRESENTATIVE PRIOR TO PLACEMENT OF CONCRETE.

4.4 WELDED WIRE FABRIC SHALL CONFORM TO "STANDARD SPECIFICATION FOR WELDED STEEL WIRE FABRIC FOR CONCRETE REINFORCEMENT," ASTM A1064.

4.5 PLACE WELDED WIRE FABRIC AT CENTER OF SLABS-ON-GRADE AND ELEVATED SLAB TOPPINGS OVER METAL DECK, UNLESS NOTED OTHERWISE.

4.6 PROVIDE BARS AT CORNERS AND INTERSECTIONS OF WALLS & FOOTINGS OF THE SAME NUMBER AND SIZE AS LONGITUDINAL BARS, U.N.O. ON THE DRAWINGS.

4.7 FABRICATE CONTINUOUS BARS IN SLABS, WALLS AND FOOTINGS TO THE LONGEST PRACTICABLE LENGTHS.

4.8 REINFORCING STEEL SHALL NOT BE BENT AFTER BEING PARTIALLY EMBEDDED IN HARDENED CONCRETE.

4.9 BARS SHALL BE COLD BENT AND SHALL NOT BE HEATED FOR ANY REASON.

4.10 REINFORCING BARS SHALL NOT BE WELDED.

4.11 REFERENCE DRAWINGS FOR REQUIREMENTS FOR LAP SPLICING REINFORCING STEEL IN CONCRETE. ALL "LCS" SHALL CONFORM TO CLASS B SPLICE CRITERIA. IT IS ACCEPTABLE TO TO LAP SPLICE NON "LCS" A MINIMUM OF 50 BAR DIAMETERS UNLESS NOTED OTHERWISE.

4.12 LAP SPLICED BARS IN CONCRETE ARE TO BE WIRE TIED. 4.13 LAP SPLICED BARS IN MASONRY ARE TO BE NO FARTHER APART THAN 8".

#### CONCRETE

NOTED OTHERWISE.

5.1 IN GENERAL CONCRETE SHALL DEVELOP 4,000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS. IN ADDITION REFERENCE "DESIGN CRITERIA" THIS DWG. & PROJECT SPECIFICATIONS FOR APPLICATION & SPECIFIC CONCRETE MIX DESIGN REQUIREMENTS.

5.2 CONCRETE WORK SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI 318 & TO "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES", ACI 350 (LATEST EDITIONS).

5.3 PLACE 1/2 INCH EXPANSION JOINT MATERIAL BETWEEN EDGES OF CONCRETE AND VERTICAL SURFACES UNLESS NOTED OTHERWISE.

5.4 PROVIDE CONSTRUCTION OR CONTROL JOINTS IN SLABS &

WALLS AT LOCATIONS SHOWN ON DRAWINGS. 5.5 CHAMFER EXPOSED EDGES OF CONCRETE 3/4 INCH, UNLESS

5.6 CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER CURING OF ALL CONCRETE. CURING METHODS SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" ACI 318, "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES" ACI 350 AND "STANDARD

5.7 UNLESS NOTED OTHERWISE DOWELS SHALL BE THE SAME NUMBER AND SIZE AS THE LARGEST VERTICAL BAR TO WHICH THEY ARE SPLICED.

PRACTICE FOR CURING CONCRETE," ACI 308 (LATEST EDITIONS).

5.8 REFERENCE PROJECT SPECIFICATIONS FOR REQUIRED

5.9 CONTRACTOR SHALL SUBMIT REBAR SHOP DRAWINGS FOR APPROVAL TO OWNER PRIOR TO FABRICATION. DO NOT FABRICATE REINFORCING PRIOR TO RECEIPT OF APPROVED SHOP DRAWINGS.

5.10 CONCRETE MIXES TO BE REVIEWED BY THE OWNER'S CONSTRUCTION REPRESENTATIVE PRIOR TO PLACEMENT OF CONCRETE. COMPRESSIVE STRENGTH TEST CYLINDERS TO BE REVIEWED BY THE OWNER'S CONSTRUCTION REPRESENTATIVE THROUGHOUT CONCRETE CONSTRUCTION OF THE PROJECT.

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#### GROUT

6.1 GROUT WHERE REQUIRED SHALL BE NON-SHRINK GROUT IN CONFORMANCE TO ASTM C1107.

6.2 GROUT SHALL BE NON-METALLIC AND NON-STAINING AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI.

#### **MASONRY**

NOT APPLICABLE.

#### STRUCTURAL STEEL

8.1 STEEL SHALL CONFORM TO "STANDARD SPECIFICATION FOR STRUCTURAL STEEL," ASTM A36 (Fy=36 ksi) FOR ANGLES, PLATES & CHANNELS. WIDE FLANGE SECTIONS SHALL CONFORM TO ASTM A992 (Fy=50 ksi). HOLLOW STEEL SECTIONS (HSS) SHALL CONFORM TO ASTM A500, GRADE B (Fy=46 ksi). STEEL PIPE SHALL CONFORM TO ASTM A53, GRADE B, (Fy=35 ksi).

8.2 STEEL WORK SHALL CONFORM TO "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL BUILDINGS", OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, INC., (LATEST EDITION), INCLUDING ALL SUPPLEMENTS AND THE "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES", (LATEST EDITION).

8.3 CONNECTION BOLTS SHALL BE 3/4 INCH DIAMETER CONFORMING TO "STANDARD SPECIFICATION FOR HIGH-STRENGTH BOLTS FOR STRUCTURAL STEEL JOINTS", ASTM A325. UNLESS NOTED OTHERWISE CONNECTIONS ARE BEARING TYPE WITH THREADS EXCLUDED FROM SHEAR PLANES (A325x).

8.4 WELDING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY AWS D1.1 "STRUCTURAL WELDING CODE". WELDING SHALL BE PERFORMED BY CERTIFIED PERSONNEL WHO HAVE BEEN PREVIOUSLY QUALIFIED BY TEST PRESCRIBED IN THE AWS "STRUCTURAL WELDING CODE". ELECTRODES SHALL CONFORM TO AWS 5.5, E70XX.

8.5 LINTELS SHALL BEAR EIGHT (8) INCHES MINIMUM ON MASONRY UNLESS NOTED OTHERWISE.

8.6 THE CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY BRACING, SHORING, AND GUYING OF STEEL FRAMING AGAINST WIND, CONSTRUCTION LOADS, AND OTHER TEMPORARY FORCES UNTIL SUCH PROTECTION IS NO LONGER REQUIRED FOR THE SAFE SUPPORT OF THE FRAMING.

8.7 ALL COPES, BLOCKS, CUTS, CUT-OFFS AND OTHER CUTTING OF STRUCTURAL MEMBERS SHALL HAVE ALL RE-ENTRANT CORNERS SHAPED. AND NOTCH-FREE TO A RADIUS OF AT LEAST 1/2 INCH. THE FILLET AND ITS CONTIGUOUS CUTS SHALL MEET WITHOUT OFFSET OR CUTTING PAST THE POINT OF TANGENCY.

8.8 ANCHOR BOLTS SHALL BE ASTM F1554 OR ASTM A36 & SHALL BE EITHER HEADED w/ NUTS TACK WELDED TO BOLTS OR NON-HEADED w/ HOOKS AS REQUIRED BY THE DRAWINGS. PROVIDE (2) NUTS AND WASHERS WITH EACH ANCHOR BOLT AT COLUMNS UNLESS NOTED OTHERWISE. ANCHOR BOLTS FOR EQUIPMENT & OTHER ASSEMBLIES MAY BE POST APPLIED ANCHOR ASSEMBLIES AS INDICATED ON THE DRAWINGS.

8.9 OVERSIZED AND SLOTTED HOLES SHALL NOT BE USED FOR BOLTED CONNECTIONS ON THIS PROJECT EXCEPT AT LOCATIONS NOTED ON DRAWINGS.

8.10 SPLICING OF STRUCTURAL STEEL MEMBERS IS PROHIBITED WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER, AS TO LOCATION AND TYPE OF SPLICE. ANY MEMBER HAVING A SPLICE NOT SHOWN AND DETAILED ON THE SHOP DRAWINGS WILL BE

8.11 PRE-GROUTING BASE PLATES IS NOT PERMITTED.

8.12 ALL HOLES IN STRUCTURAL STEEL ARE TO BE PUNCHED OR DRILLED. FLAME CUTTING OF STEEL IS STRICTLY PROHIBITED.

8.13 ALL DESIGN, DETAILING, FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION.

8.14 IN GENERAL SHOP CONNECTIONS SHALL BE EITHER WELDED OR BOLTED AND FIELD CONNECTIONS SHALL BE BOLTED UNLESS NOTED OTHERWISE.

8.15 FABRICATOR/CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR OWNER/ENGINEER APPROVAL PRIOR TO FABRICATION. ALL SHOP DRAWINGS MAY BE EXPEDITED IF THE FABRICATOR ADHERES CLOSELY TO THE DETAILS, NOTES, AND INSTRUCTIONS, SHOWN ON THE DRAWINGS.

8.16 ALL GALVANIZED MATERIALS THAT ARE FIELD CUT, FIELD WELDED OR DAMAGED IN SURFACE FINISH SHALL BE CLEANED AND RE-COATED w/ A 98% ZINC RICH OXIDE AND IN CONFORMANCE w/ THE PROJECT SPECIFICATIONS.

8.17 STRUCTURAL STEEL FRAMING & DECKING ERECTION TO BE REVIEWED BY THE THE OWNER'S CONSTRUCTION REPRESENTATIVE THROUGHOUT CONCRETE & STEEL CONSTRUCTION OF THE PROJECT.

#### **ALUMINUM**

NOT APPLICABLE.

#### PRECAST CONCRETE

10.1 PRE-CAST CONCRETE FIELD ASSEMBLED STRUCTURES TO BE DESIGNED BY THE PRE-CAST MANUFACTURER UTILIZING "DESIGN LOADS" PROVIDED THIS DRAWING AND/OR THE RESPECTIVE FACILITY STRUCTURAL DRAWINGS AND IN ACCORDANCE w/ THE PROJECT SPECIFICATIONS. COORDINATE w/ THE CIVIL, ELECTRICAL, MECHANICAL AND VENDOR EQUIPMENT DRAWINGS FOR ADDITIONAL MATERIALS REQUIRED FOR CALCULATION OF THE DEAD LOADS, LIVE LOADS AND EQUIPMENT LOADS. THAT MAY BE SUSPENDED FROM THE SIDES OF WALL PANELS AND UNDERSIDE OF THE TOP SLAB PANELS AS APPLICABLE.

10.2. PRE-CAST CONCRETE FIELD ASSEMBLED STRUCTURES MANUFACTURER IS REQUIRED TO SUBMIT DRAWINGS AND CALCULATION PACKAGES SEALED, SIGNED AND DATED BY AN ENGINEER CURRENTLY LICENSED BY THE STATE OF FLORIDA. FABRICATION OF THE PRE-CAST FIELD ASSEMBLED STRUCTURES COMPONENTS SHOULD NOT OCCUR UNTIL "FINAL" ACCEPTANCE OF THE MANUFACTURER'S DRAWINGS AND CALCULATIONS SUBMITTALS.

10.3 REFERENCE MECHANICAL AND STRUCTURAL DRAWINGS FOR PRE-CAST CONCRETE FIELD ASSEMBLED STRUCTURES FOUNDATION SYSTEMS AND BEARING ELEVATIONS, DIMENSIONS, WALL AND TOP SLAB OPENINGS & TOP SLAB SLOPE REQUIREMENTS.

10.4 REFERENCE MECHANICAL DRAWINGS & PROJECT SPECIFICATIONS FOR ALL INTERIOR AND EXTERIOR WALL AND SLAB SECTIONS FINISH REQUIREMENTS.

10.5 PRE-CAST FIELD ASSEMBLED STRUCTURES WALL AND SLAB SECTIONS TO HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 5,000 PSI.

10.6 REFERENCE ALL PROJECT SPECIFICATIONS RELATED TO THE PRE-CAST CONCRETE FIELD ASSEMBLED STRUCTURES FOR ADDITIONAL REQUIREMENTS AND INFORMATION.

10.7 CONSTRUCTION ACTIVITIES RELATED TO THE PRE-CAST FIELD ASSEMBLED STRUCTURES TO BE REVIEWED BY THE THE OWNER'S CONSTRUCTION REPRESENTATIVE THROUGHOUT CONCRETE CONSTRUCTION OF THE PROJECT.

#### PRE-ENGR. TIMBER TRUSS

NOT APPLICABLE

#### PRE-ENGR. METAL BLDGS.

NOT APPLICABLE

#### MISC. BUILDING MATERIALS

13.1 ALL MISCELLANEOUS MATERIALS ARE TO BE DELIVERED TO SITE & STAGED ON SITE PRIOR TO INSTALLATION. STORE ON SITE AS REQUIRED BY THE MATERIAL MANUFACTURER TO AVOID DAMAGE PRIOR TO INSTALLATION.

13.2 CAULK & SEALANT MATERIAL SHALL BE MASTERSEAL "NP 1" ONE COMPONENT, MOISTURE CURING HIGH PERFORMANCE POLY-URETHANE SEALANT, OR AN APPROVED EQUAL.

#### **ABBREVIATIONS**

14.1 THE FOLLOWING LIST OF ABBREVIATIONS IS NOT INTENDED TO REPRESENT ALL THOSE USED ON THE DRAWINGS, BUT TO SUPPLEMENT THE MORE COMMON

ABBREVIATIONS USED. ADD'L = ADDITIONALAL = ALUMINUMALT. = ALTERNATE BLDG. = BUILDING

BLK. = BLOCKBM. = BEAMB.O. = BOTTOM OFBRG. = BEARING

C.I.P. = CAST-IN-PLACECLR. = CLEARCMU = CONC. MAS. UNIT C.O. = CLEAN OUT

COL. = COLUMNCONC. = CONCRETE CONN. = CONNECTION CONST. = CONSTRUCTION

CONT. = CONTINUOUS

COORD.= COORDINATE CTR. = CENTERCTR'D. = CENTEREDDBL. = DOUBLE DIR. = DIRECTION

> DWG. = DRAWING DWG.'s. = DRAWINGS EA. = EACH= ELEVATION

E.O. = EDGE OFEQ. = EQUALEQUIP. = EQUIPMEN EXIST. = EXISTING

EXP. = EXPANSION FLG. = FLANGEFDN. = FOUNDATION F.S. = FAR SIDEFT. = FEET

FTG. = FOOTINGGA. = GAGEGALV. = GALVANIZED GALV'D = GALVANIZEDHORZ. = HORIZONTAL

H.P. = HIGH POINTHRS. = HOURS I/F = INSIDE FACEINFO. = INFORMATION INTR. = INTERIOR

JST. = JOIST JT. = JOINTKB = KNEE BRACE

LCS = LIQUID CONTAINMENT STRUCTURES LLH = LONG LEG HORIZONTAL LLV = LONG LEG VERTICAL

L.P. = LOW POINTLSL = LONG SLOTTED MAS. = MASONRY MAT'L. = MATERIAL

MFG. = MANUFACTURER = MINIMUM MIN. MTL. = METALN/A = NOT APPLICABLE

NA = NOT APPLICABLENOM. = NOMINAL N.S. = NEAR SIDEN.T.S. = NOT TO SCALE

O.C. = ON CENTERO/F = OUTSIDE FACEO/H = OVERHANGOUT TO OUT

OPNG. = OPENING OPP. = OPPOSITE ORIENT.= ORIENTATION PLCS. = PLACES

P.P. = PUMP PADRAD. = RADIUSREF. = REFERENCE REINF. = REINFORCING REQ'D. = REQUIREDRET. = RETAINING

ROT. = ROTATE

SIM. = SIMILAR SPA. = SPACED SPECS. = SPECIFICATIONS S.S. = STAINLESS STEEL

SSL = SHORT SLOTTED STD. = STANDARD STL. = STEEL T&B = TOP & BOTTOMT/D = TURN DOWN

THK. = THICKTHK'D = THICKENEDT.O. = TOP OFT.O.S = TOP OF STEELTYP. = TYPICAL

U.N.O. = UNLESS NOTED OTHERWISE XB = CROSS OR "X"-BRACE VERT. = VERTICAL

W.P. = WORK POINT

#### **DESIGN LOADS**

DESIGN LOADS BASIS OF DESIGN FLORIDA BUILDING CODE (FBC) - 2020 EDITION

MINIMUM DESIGN LOADS FOR BUILDINGS & OTHER STRUCTURES - ASCE 7-16 EQUIP. LOAD: N/A 125 PSF (ELECTRICAL BLDG. FLOOR), 100 PSF (ACCESS STAIRS & PLATFORMS)

LIVE LOAD: ROOF LOAD: 65 PSF (ELECTRICAL BLDG. ROOF) SNOW LOAD: N/A

WIND LOAD: 160 mi/hr, EXPOSURE C, OCCUPANCY/RISK CATEGORY III

CALCULATED WIND BASE SHEARS:

Vx = 13.9 k & Vy = 4.9 k

COMPONENTS & CLADDING WIND PRESSURES: ZONE 1, ZONE 2 & ZONE 3 ROOF PRESSURES = BY ELECTRICAL BLDG. MFG. ZONE 4 & ZONE 5 WALL PRESSURES = BY ELECTRICAL BLDG. MFG.

SEISMIC:

SOIL BEARING: FIELD TEST PER PROJECT GEOTECH REPORT = 2,500 PSF REF. "FOUNDATIONS" NOTE 3.1 DWG. S0.00

#### **DESIGN CRITERIA**

CONCRETE 28 DAY COMPRESSIVE STRENGTH: f'c = 4,000 PSISLABS-ON-GRADE & NON LCS SLABS PIPE ENCASEMENTS f'c = 3,000 PSI (N/A)f'c = 4,500 PSI (N/A)SLABS & WALLS OF LCS: BEAMS & COLUMNS OF LCS: f'c = 4,500 PSI (N/A)NON-LCS FOOTINGS & PIERS f'c = 4,000 PSIBELOW GRADE & RETAINING WALLS: f'c = 4,000 PSI (N/A)f'c = 3,000 PSI (N/A)SIDEWALK, DRIVEWAY, CURB & GUTTER: REINFORCING STEEL: ASTM A615, GRADE 60 WELDED WIRE FABRIC: ASTM A1064 STRUCTURAL STEEL: REF. STRUCTURAL NOTE 8.1 REF. STRUCTURAL NOTE 9.2 (N/A) ALUMINUM: BOLTS SHALL BE 3/4"ø ASTM A325 OR TYPE 316 S.S.: REF. STRUCTURAL NOTE 8.3 ANCHOR BOLTS SHALL BE 3/4" Ø ASTM F-1554 OR ASTM A36 (STEEL); TYPE 316 S.S. (ALUMINUM): REF. STRUCTURAL NOTE 8.8 STEEL ELECTRODES SHALL CONFORM TO: AWS 5.5 E70XX ALUMINUM WELD FILLERS ALLOYS SHALL CONFORM TO: AWS A5.10 (N/A) REF. "DESIGN LOADS" TABLE SOIL BEARING CAPACITY:

#### LEGEND

ENLARGED PLAN AREA, DETAIL (EXISTING) CONC. MASONRY BLOCK (EXISTING) BRICK VENEER (EXISTING) CONC. WALL. SLAB. ETC. . ⊿ ⊿ ⊿ (EXISTING) (EXISTING) GRATING

X-SYY.Y

X'-X'' = DISTANCE TO/FROM FACILITY REFERENCE EL 0'-0"

PROJECT NORTH

DETAIL OR SECTION

NO./SHEET NO. REFERENCE

**ELEVATION DATUM** 

ELEVATION NO./SHEET NO. REFERENCE

Y.YY' = EQUIVALENT SITE EL VERTICAL DATUM STEP IN FOOTING ELEVATION

ELEVATIONS X'-X" (Y.YY')

STL. FRAMING COL./BM.

MOMENT CONNECTIÓN

DESCRIPTION MCKIM&CREED Clearwater, Florida 33756

> CA Lic. No. 29588 www.mckimcreed.com

Phone: (727) 442-7196, Fax: (727) 461-3827



#### **LIFT STATION 12A ELECTRICAL PUMP & VFD REHABILITATION**

**STRUCTURAL** 

STRUCTURAL GENERAL NOTES, DESIGN LOADS, CRITERIA & LEGEND

ROJ. START DATE: 2020. JUN 01024-0180 DAR / WFB WFB / AEA ROJ MGR

HORIZONTAL: **VERTICAL** 

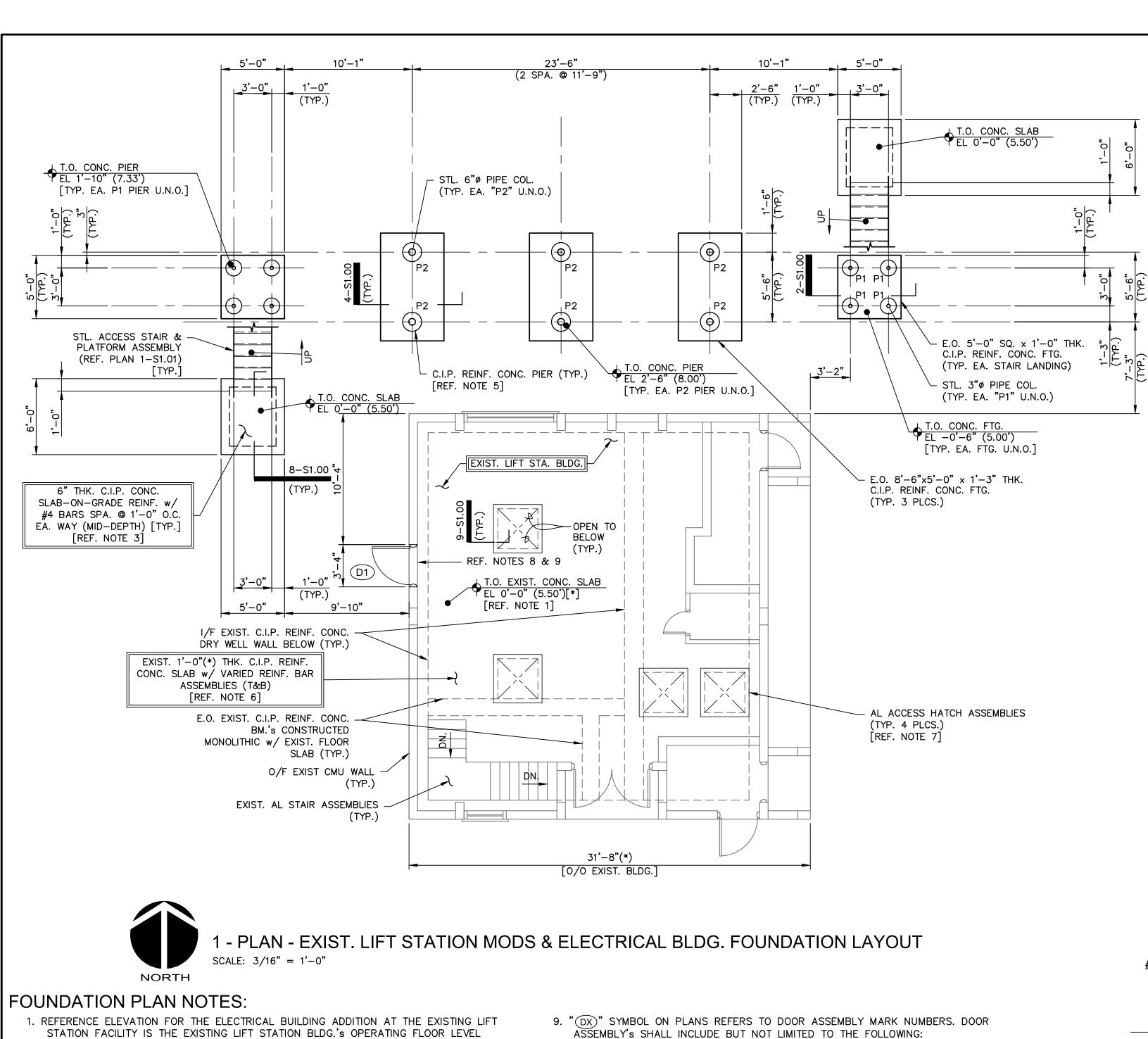
**ISSUED FOR BID** 

SCALE

I:\01024\0181\WATER\80-DRAWINGS\STRUCTURAL\S000-SG001-10240181.DWG 12/13/2021 15:20:23 BILL BAND

0 ISSUED FOR BID REVISIONS WILLIAM F. BAND, P.E.



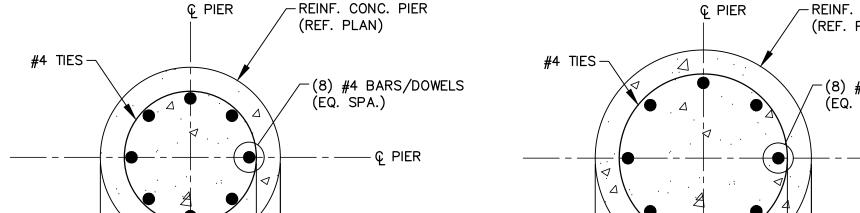


- TOP SLAB T.O. CONC. EL 0'-0" = EL 0'-0" (5.50'). CONTRACTOR SHALL VERIFY VERTICAL DATUM INDICATED EQUALS N.A.V.D.-88. REFERENCE ELECTRICAL SITE PLAN
- DRAWINGS FOR ADDITIONAL INFORMATION. 2. GRADE ELEVATION AROUND THIS STRUCTURE IS  $5.00'(\pm)[*]$ . REFERENCE ELECTRICAL SITE
- PLAN DRAWINGS FOR ADDITIONAL INFORMATION. 3. PREPARE SUBGRADE FOR THIS FACILITY PER "FOUNDATIONS" STRUCTURAL GENERAL
- NOTES 3.1, 3.2 & 3.6 ON DWG. S00.0. 4. EQUIPMENT LAYOUTS ARE SHOWN FOR GENERAL INFO ONLY. REFERENCE ELECTRICAL & EQUIPMENT VENDOR DRAWINGS FOR LOCATIONS & INFO REGARDING SLAB & WALL PENETRATIONS AND PIPING, CONDUIT & MISCELLANEOUS EQUIPMENT LAYOUTS EITHER SHOWN OR NOT SHOWN.
- 5. REGARDING C.I.P. REINFORCED CONCRETE PIER ASSEMBLY'S NOTE THE FOLLOWING: a.) P1 = 1'-3''ø CONCRETE SECTIONS.
- b.)  $P2 = 1'-6'' \phi$  CONCRETE SECTIONS.
- 6. RECORD DRAWING'S REVIEWED INDICATED VARIED REINFORCING ASSEMBLIES. NOTE THE FOLLOWING:
- a.) IN GENERAL BTM. REINF. = #6, #8 AND/OR #9 BARS SPA. @ 1'-0"(\*) O.C. DEPENDING UPON LOCATION & DIRECTION OF SPAN.
- b.) IN GENERAL TOP REINF. = #6, #7 AND/OR #8 BARS SPA. @ 1'-0"(\*) O.C. DEPENDING UPON LOCATION & DIRECTION OF SPAN.
- c.) ADDITIONAL #6 BARS AROUND PERIMETER OF DRY WELL HATCH OPENING's.
- d.) ADDITIONAL #8 BARS AROUND PERIMETER OF WET WELL HATCH OPENING's. 7. ACCÉSS HATCH MÖDIFICATIONS IN GENERAL INCLUDES REMOVAL OF THE EXISTING HATCH COVERS & INSTALLATION OF NEW ALUMINUM CHECKERED PLATE ACCESS HATCH
- ASSEMBLIES. REGARDING NEW HATCH ASSEMBLIES NOTE THE FOLLOWING:
- a.) COVERS SHALL BE FLUSH MOUNTED w/ THE EXISTING T.O. CONC. SLABS.
- b.) COVERS OVER WET WELL OPNG.'s SHALL BE HINGED ASSEMBLIES.
- c.) COVERS OVER DRY WELL OPNG.'s SHALL BE REMOVABLE ASSEMBLIES. 8. SAW-CUT EXIST. CMU WALL & EXISTING ELECTRICAL GEAR HOUSEKEEPING PAD FOR DOOR & FRAME AND LINTEL BEAM ASSEMBLY'S. REFERENCE SECTIONS & DETAILS FOR ADDITIONAL INFORMATION.

- a.) MATERIALS = STEEL HOLLOW CORE PANEL & STEEL FRAME ASSEMBLY w/

THRESHOLD.

- PAINTED FINISH. b.) ACCESSORIES FOR DOORS SHALL INCLUDE WINDOW PANES, DOOR LEVERS, CLOSER, CYLINDER & DEADBOLT LOCKS, PANIC HARDWARE, SILENCER, KICK PLATE &
- c.) COLOR TO MATCH EXISTING DOORS.
- d.) REFERENCE DOOR DWG. SCHEDULE & DETAILS AND PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- 10. REFERENCE DWG. S0.00 FOR ADDITIONAL GENERAL NOTES, MATERIAL SPECIFICATIONS & REQUIREMENTS, DESIGN CRITERIA AND LEGEND.



3"ø STL. PIPE COL. (TYP.) –

EXTR. GRADE  $\neg$  (TYP.)

#4 BARS SPA. @ 9" O.C.

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

EXTR. GRADE -

[TYP.]

#5 BARS SPA. @ 9" O.C.

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

EA. WAY (T&B)

(REF. ELECTR. SITE PLAN)

EA. WAY (T&B)

1'-0" (TYP.)

[REF. PLAN]

6"ø STL. PIPE COL. —

CONT. ¾ CHAMFER -

(REF. PLAN)

(4) #4 TIES →

SPA. @ 9" O.C.

T.O. CONC. PIER's EL 1'-10" (7.33')

T.O. CONC. FTG.

 $\Psi$  EL -0'-6'' (5.00')

T.O. CONC. PIER

FL 2'-6" (8.00')

[REF. PLAN]

T.O. CONC. FTG.

EL -0'-6" (5.00')

[REF. PLAN]

1'-3" (REF. 3" CI (T&B)

√[REF. PLAN]

(REF. ELECTR. SITE PLAN)

[REF. PLAN]

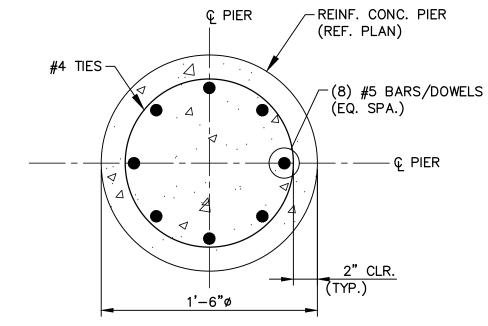
[REF. PLAN]

CONT. 3" CHAMFER (TYP.)

SPA. @ 9" O.C.

6 - SECTION - "P1" PIER REINF. SCALE:  $1 \frac{1}{2} = 1'-0"$ 

1'-3"ø



-3/4"ø GALV'D STL. ANCHOR BOLTS w/ A 3" PROJECTION, 2" HOOK &

1'-0" (MIN.) EMBED DEPTH (TYP.)

(3) #4 TIES SPA.

@ 3" O.C. (TYP.)

(EQ. SPA.)

-3/4"ø GALV'D STL. ANCHOR BOLTS

w/ A 3" PROJECTION, 3" HOOK &

13" THK. GROUT PAD

1'-3" (MIN.) EMBED DEPTH

>- (3) #4 TIES SPA.

@ 3" O.C.

— Ç PIER's & —↓

COL.'s

ABOVE

(REF. PLAN)

(REF. PLAN)

5'-0"

4 - SECTION - THRU ELECTR. BLDG. FTG.

2 - SECTION - THRU STAIR LANDING FTG.

1" THK. GROUT PAD (TYP.)

-#4 DWL.'s w/ STD. 90° HOOK

-6" THK. LAYER OF #57 STONE

OVER SUBGRADE (COMPACTED)

#5 DWL.'s w/ STD. 90° HOOK

- 6" THK. LAYER OF #57 STONE

OVER SUBGRADE (COMPACTED)

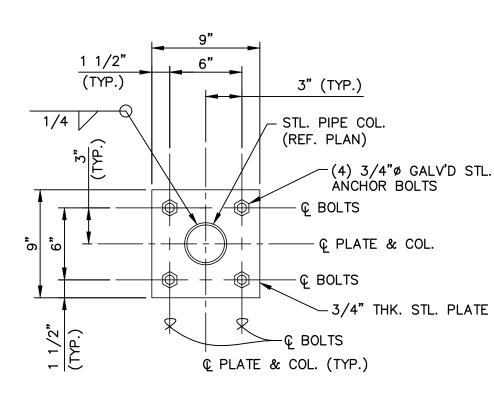
- Ç FTG., PIER & COL. ABOVE

[TIE HOOK TO FTG. BTM. REINF.]

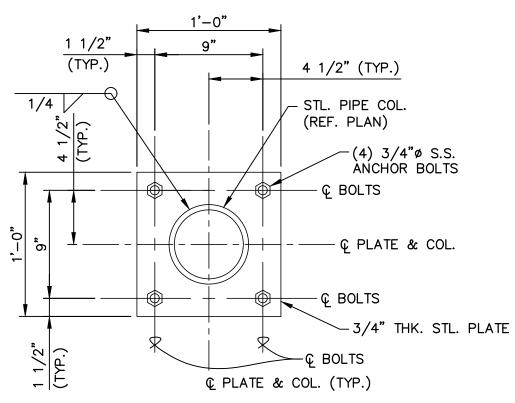
(EQ. SPA.)

[TIE HOOK TO FTG. BTM. REINF.]

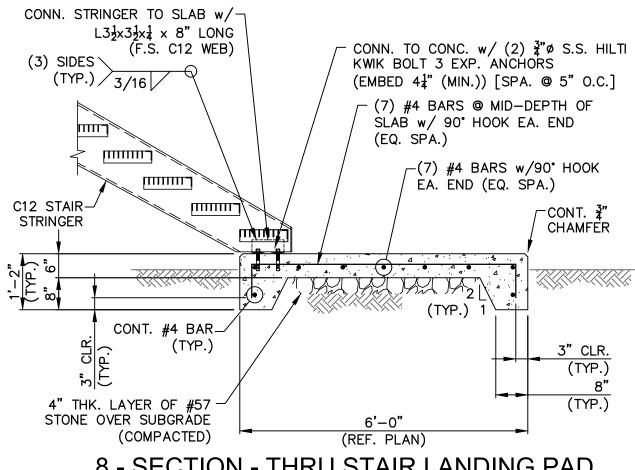
7 - SECTION - "P2" PIER REINF. SCALE:  $1 \frac{1}{2} = 1'-0"$ 



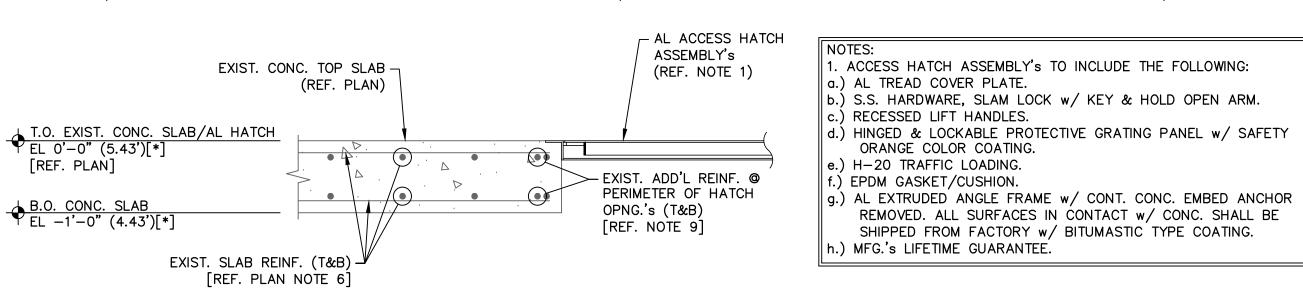
3 - SECTION - COL. BASE PLATE SCALE:  $1 \frac{1}{2} = 1'-0''$ 



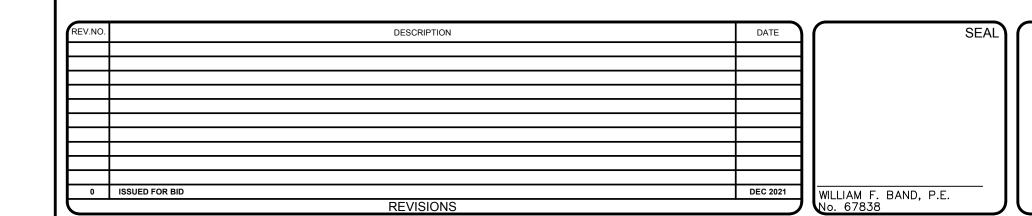
5 - SECTION - COL. BASE PLATE SCALE:  $1 \frac{1}{2} = 1'-0''$ 



8 - SECTION - THRU STAIR LANDING PAD SCALE: 1/2" = 1'-0"



9 - SECTION - THRU EXIST. ACCESS HATCH MODS SCALE: 3/4" = 1'-0"







#### **LIFT STATION 12A ELECTRICAL PUMP & VFD REHABILITATION**

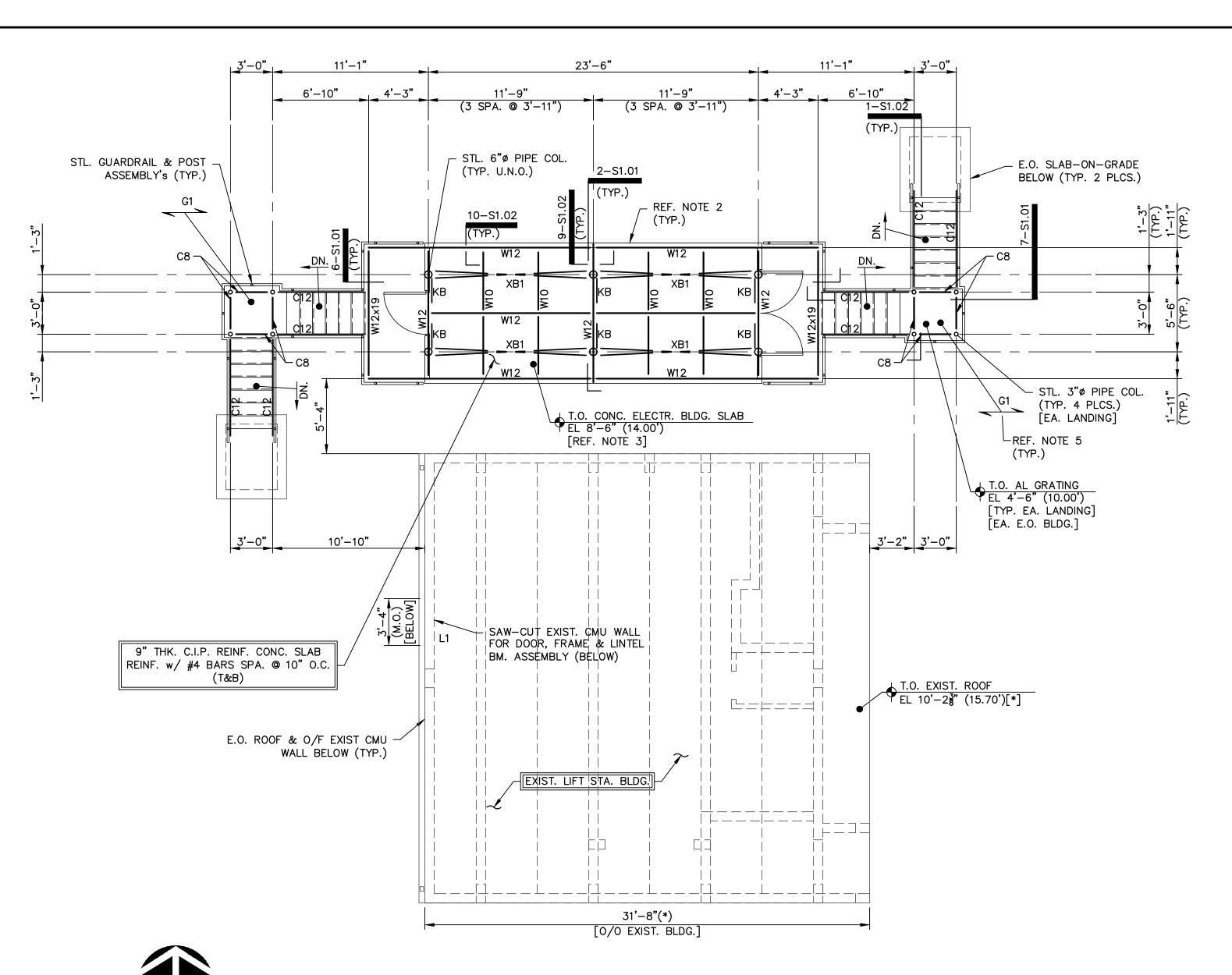
LIFT STA. MODS & ELECTR. BLDG. FDN.

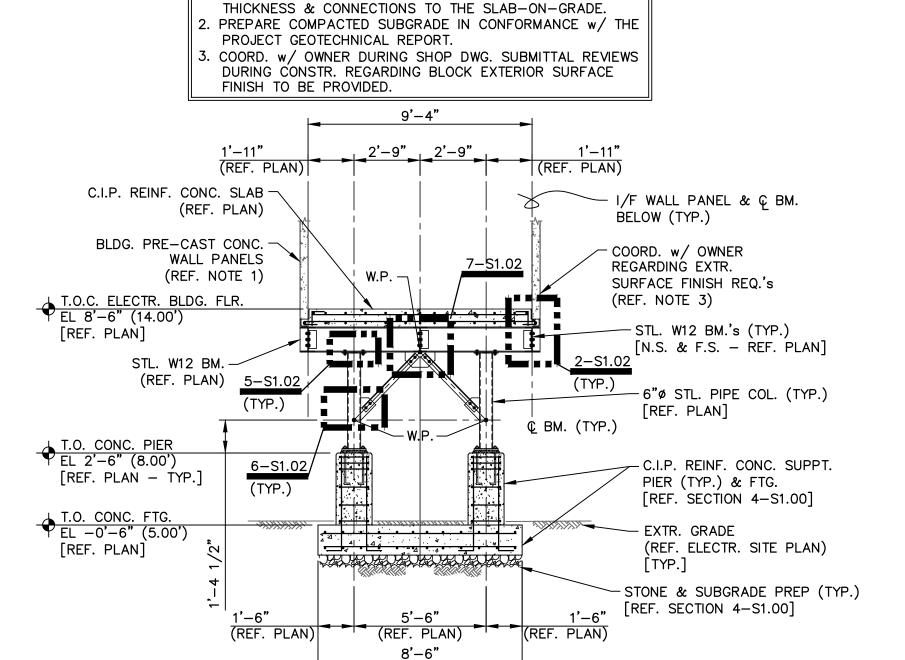
**PLAN, SECTIONS & DETAILS** 

STRUCTURAL

)	PROJ. START DATE:	2020. JUN
	MCE PROJ. #	01024-0180
	DRAWN	DAR / WFB
	DESIGNED	WFB
4	CHECKED	WFB / AEA
	PROJ. MGR.	AAH
1		

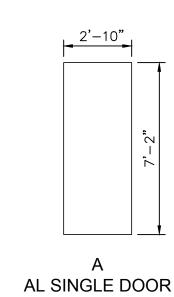
SCALE HORIZONTAL: **AS NOTED** VERTICAL



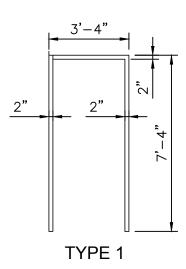


. REFERENCE BLDG. MFG.'s "APPROVED" SUBMITTAL FOR WALL

2 - SECTION - THRU ELECTR. BLDG. SUPPT. ASSEMBLY SCALE: 1/4" = 1'-0"



3 - DETAIL - EXIST. BLDG. MOD.'s DOOR TYPES SCALE: 1/4" = 1'-0"



4 - DETAIL - EXIST. BLDG. MOD's DOOR FRAME TYPES SCALE: 1/4" = 1'-0"

	DOOR & FRAME SCHEDULE													
DOOR	UL		SIZE	DOOR	NAAT?1	7.05	01.471110	14AT'	T) (DE	FRAME	DETAILS		HDW. SET	REMARKS
NO.	LABEL	WIDTH	HEIGHT	THK.	MAT'L	TYPE	GLAZING	MAT'L	TYPE	HEAD	JAMB	SILL	SEI	
(D1)	N/A	2'-10"	7'-2"	1¾"	AL	Α	N/A	AL	1	*1	*1	*1	*2	REF. 3-S1.01 & 4-S1.01
AL — A IAL —II SCW—S	SOLID CC		M STL F —	– FIBE – STEE FLUS [W] – FL	IL SH			PLASTIC	LAN	1 – LAM	OW META IINATE E LIGHT (		Ī F	REF. 12-S1.02 TO 14-S1.02 FOR HEAD, JAMB & SILL DETAILS. REF. PLAN NOTES & PROJECT SPECS.

5 - SCHEDULE - DOORS & FRAMES SCALE: N.T.S.

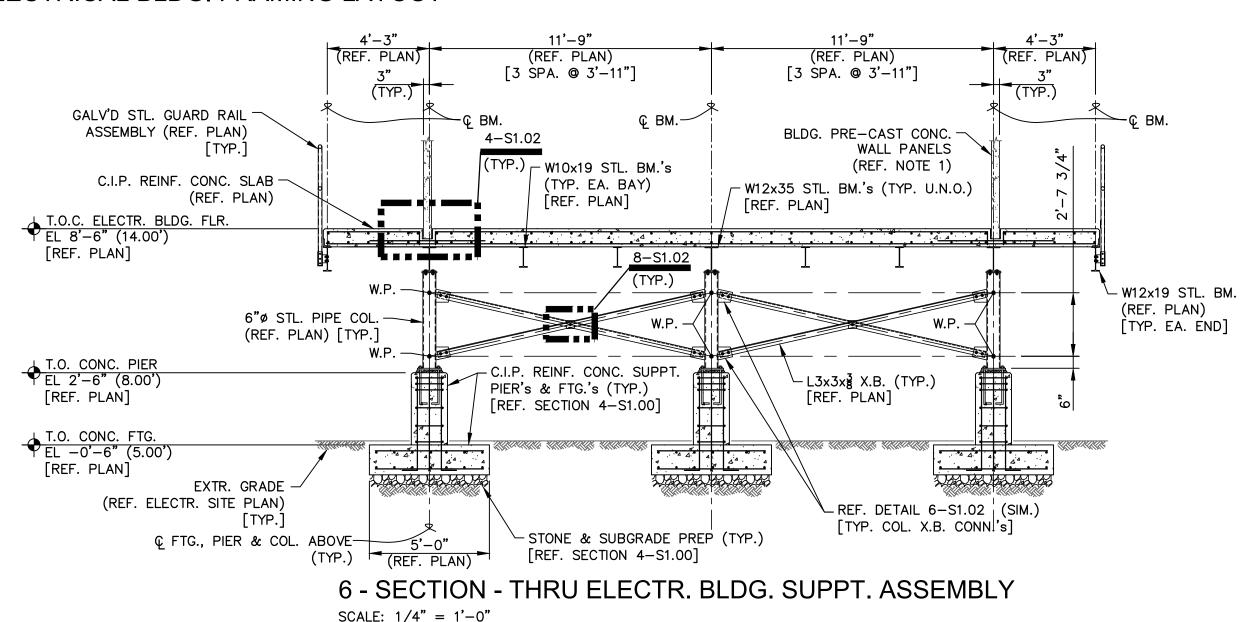


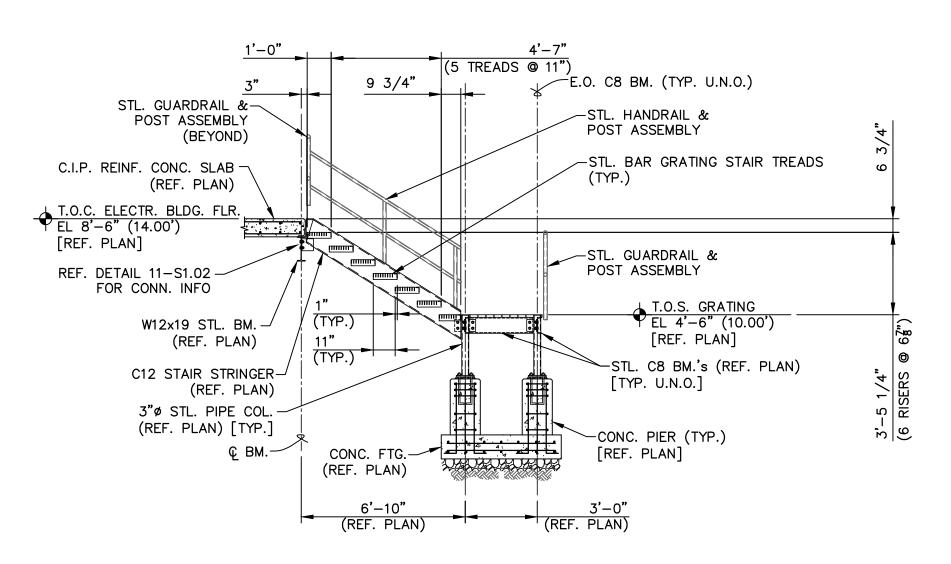
- PLAN - EXIST. LIFT STATION MODS & ELECTRICAL BLDG. FRAMING LAYOUT

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

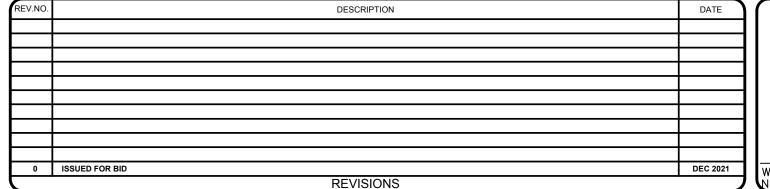
#### FRAMING PLAN NOTES:

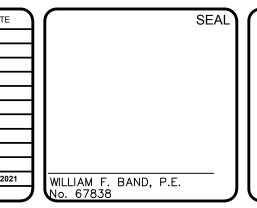
- 1. REFERENCE ELEVATION FOR THE ELECTRICAL BUILDING ADDITION AT THE EXISTING LIFT STATION FACILITY IS THE EXISTING LIFT STATION BLDG.'s OPERATING FLOOR LEVEL TOP SLAB T.O. CONC. EL 0'-0" = EL 0'-0" (5.50'). CONTRACTOR SHALL VERIFY VERTICAL DATUM INDICATED EQUALS N.A.V.D.-88. REFERENCE ELECTRICAL SITE PLAN DRAWINGS FOR ADDITIONAL INFORMATION.
- 2. APPROXIMATE OUTLINE OF 24'-0" LONG x 10'-0" WIDE PRE-CAST CONCRETE ELECTRICAL BUILDING ASSEMBLY. REFERENCE ELECTR. DWG.'s & PROJECT SPECIFICATIONS FOR ADD'L INFO.
- 3. EQUIPMENT LAYOUTS ARE SHOWN FOR GENERAL INFO ONLY. REFERENCE ELECTRICAL & EQUIPMENT VENDOR DRAWINGS FOR LOCATIONS & INFO REGARDING SLAB & WALL PENETRATIONS AND PIPING, CONDUIT & MISCELLANEOUS EQUIPMENT LAYOUTS EITHER SHOWN OR NOT SHOWN.
- 4. REGARDING STEEL FRAMING ASSEMBLIES NOTE THE FOLLOWING:
- W12 = W12x35 WIDE FLANGE SECTION.
- $C12 = C12 \times 20.7$  CHANNEL SECTION W10 = W10 $\times$ 19 WIDE FLANGE SECTION.
- C8 = C8x11.5 CHANNEL SECTION. 6" $\phi$  = SCHEDULE 80 PIPE SECTION.
- $3"\phi$  = SCHEDULE 40 PIPE SECTION.
- $KB = L3x3x\frac{3}{8}$  ANGLE SECTION.  $XB1 = L3x3x\frac{3}{8}$  ANGLE SECTION.
- 5. " " SYMBOL ON PLAN INDICATES SPAN DIRECTION OF THE STEEL BAR GRATING ASSEMBLIES MAIN BEARING BARS. IN GENERAL GRATING ASSEMBLIES ARE TO BE MANUFACTURED BY REPUTABLE VENDOR(S) EXPERIENCED IN MANUFACTURING THE ASSEMBLIES REQUIRED. GRATING ASSEMBLIES ARE TO INCLUDE RECTANGULAR MAIN BEARING BARS, RECTANGULAR CROSS BARS OR RODS AND RECTANGULAR BEARING BARS ALONG PERIMETERS OF PANELS AND OPENINGS. FABRICATE ASSEMBLIES w/ GALV'D STEEL FINISH & CONNECTED TO FORM STANDARD PANEL WIDTHS. REFERENCE PLANS, SECTIONS & DETAILS FOR ADDITIONAL INFORMATION & REQUIREMENTS. NOTE THE FOLLOWING:
  - a.) GRATING "G1" =  $1\frac{1}{4}$ " LIGHT DUTY WELDED STEEL IN ACCORDANCE w/ MFG.'s 19-4"W" SERIES SPACE PROFILE.
  - b.) GRATING PANELS SHALL BE ANCHORED TO STEEL FRMG. w/ GALV'D STL. FASTENERS & TYPE AS RECOMMENDED BY THE MANUFACTURER.
- c.) COORDINATE w/ THE OWNER REGARDING PANEL ASSEMBLIES INCLUDING SERRATED
- TOP SURFACE SKID FINISH FOR SLIP RESISTANCE. 6. REFERENCE DWG. SO.00 FOR ADDITIONAL GENERAL NOTES, MATERIAL SPECIFICATIONS & REQUIREMENTS, DESIGN CRITERIA AND LEGEND.





7 - SECTION - THRU "HI" EAST ACCESS STAIR ASSEMBLY SCALE: 1/4" = 1'-0"











#### **LIFT STATION 12A ELECTRICA VFD REHABILITATION**

STRUCTURAL

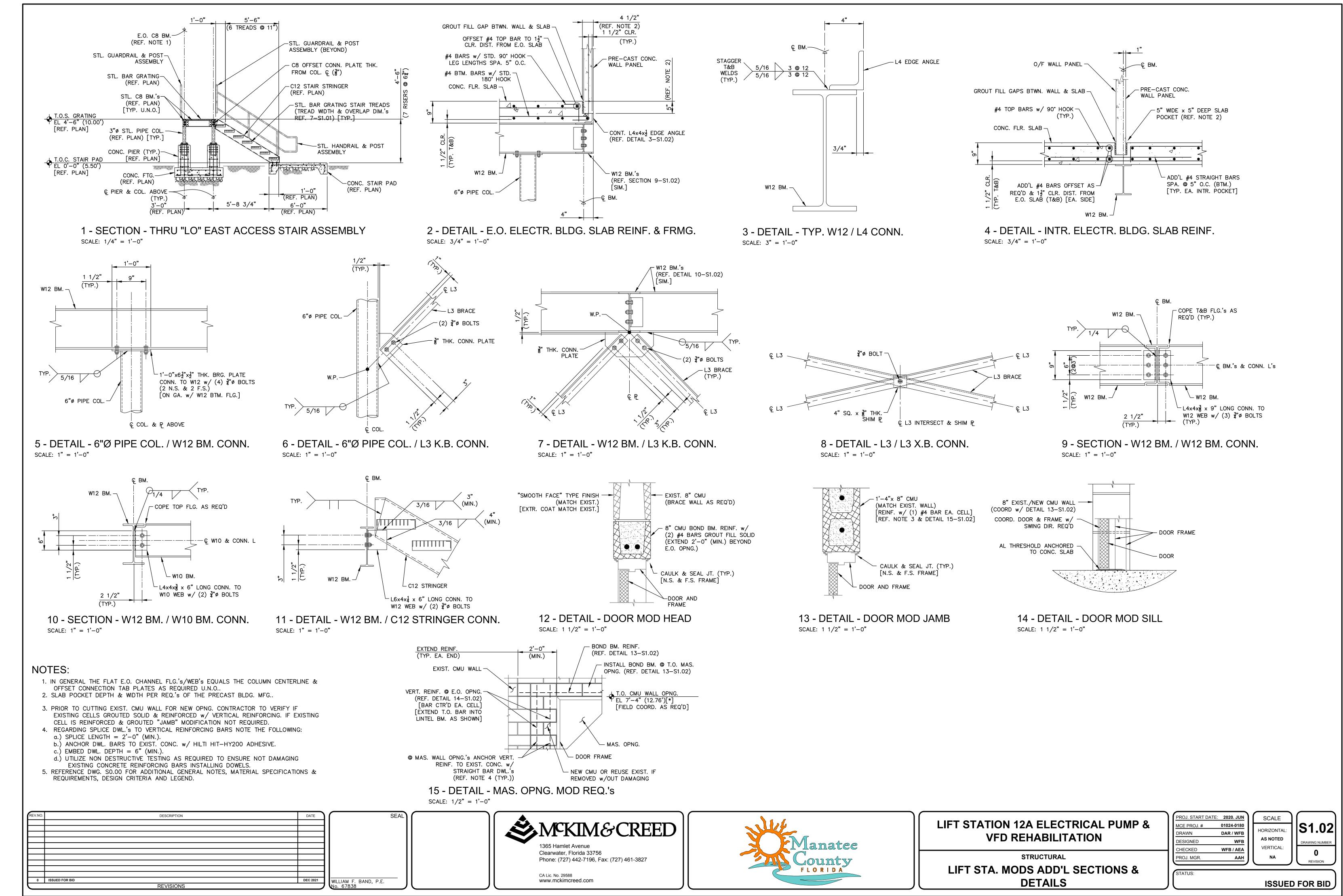
LIFT STA. MODS & ELECTR. BLDG. FRMG.

**PLAN, SECTIONS & DETAILS** 

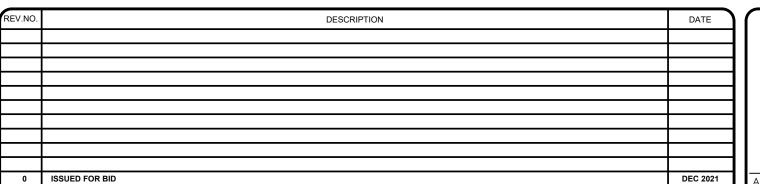
)	PROJ. START DATE	2020. JUN
AL PUMP &	MCE PROJ. #	01024-0180
NI	DRAWN	DAR / WFB
N	DESIGNED	WFB
	CHECKED	WFB / AEA
	PROJ. MGR.	AAH

01024-0100	WCL FROJ. #	
DAR / WFE	DRAWN	
WFE	DESIGNED	
WFB / AEA	CHECKED	_
AAH	PROJ. MGR.	

SCALE HORIZONTAL: **AS NOTED** VERTICAL

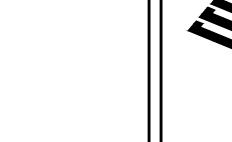


#### **ABBREVIATIONS GENERAL ELECTRICAL NOTES** FIRE ALARM SYSTEM NOTE: ALL ABBREVIATIONS MAY NOT BE UTILIZED FOR THIS CONTRACTOR RESPONSIBILITIES: PROJEC T AUDIO/VISUAL ALARM INDICATOR (HORN/STROBE) NUMBER INDICATES NON-AUTOMATIC A, AMP AMPERE STROBE CANDELLA RATING WHEN OTHER THAN 15 1.1. THE CONTRACTOR SHALL READ AND UNDERSTAND THE ENTIRE SET OF CONSTRUCTION DOCUMENTS. THIS INCLUDES BUT IS NOT LIMITED TO THE PLANS AND SPECIFICATIONS FOR ALL DISCIPLINES. THIS WILL ENSURE ADJUSTABLE FREQUENCY DRIVE NOT APPLICABLE AFD N/A THAT HE UNDERSTANDS THE FULL SCOPE OF WORK AND IS ABLE TO CONVEY THE REQUIRED MATERIALS AND METHODS OF INSTALLATION TO THE HIS ESTIMATORS, SUPPLIERS AND INSTALLERS. AFF ABOVE FINISHED FLOOR NORMALLY CLOSE 1.2. THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS. AFG ABOVE FINISHED GRADE NATIONAL ELECTRIC CODE HORN 1.3. PROVIDE MEANS TO FURNISH AND INSTALL. AHU AIR HANDLING UNIT NEUTRAL AIC AMPERE INTERRUPTING CAPACITY NORMALLY OPEN 1.4. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE. DO NOT SCALE FROM THESE DRAWINGS AIT ANALYTICAL INDICATION TRANSMITTER NOT IN CONTRACT MANUAL PULL STATION 1.5. WHERE JOB CONDITIONS REQUIRE CHANGES FROM THE CONTRACT DOCUMENTS THAT DO NOT CHANGE THE SCOPE OF INSTALLATION OR NATURE OF THE WORK REQUIRED, THE CONTRACTOR SHALL MAKE SUCH ALUMINUM NOT TO SCALE CHANGES WITHOUT ANY ADDITIONAL COST TO THE OWNER. NO OTHER CHANGES MAY BE MADE WITHOUT WRITTEN CONSENT FROM THE ENGINEER AND OWNER. ARMS ARC-FLASH REDUCTION SYSTEM OFCI OWNER FURNISHED, CONTRACTOR INSTALLED 1.6. MOUNTING HEIGHTS INDICATED ARE TO THE CENTER OF THE DEVICE U.O.N. ATS AUTOMATIC TRANSFER SWITCH OVERLOAD RELAY AUX AUXILIARY POLE 1.7. REFERENCE ALL SPECIFICATIONS, DRAWINGS AND CONTRACT DOCUMENTS FOR ADDITIONAL REQUIREMENTS AND CONTRACT RESPONSIBILITIES PRIOR TO COMMENCING WORK. FACP FIRE ALARM CONTROL PANEL AWG AMERICAN WIRE GAUGE PUBLIC ADDRESS 1.8. THE GENERAL NOTES STATED ON THIS DRAWING ARE APPLICABLE TO ALL DRAWINGS AND SCOPE OF WORK UNDER THIS CONTRACT UNLESS NOTED OTHERWISE. AQD ARC QUENCHING DEVICE PUSH BUTTON 1.9. ALL ELECTRICAL WORK SHALL COMPLY WITH THE CURRENT NFPA, NEC. NESC AND LOCAL CODES INCLUDING OWNERS STANDARDS AND REQUIREMENTS. BKR BREAKER PULL BOX BLDG BUILDING PUMP CONTROL PANEL 1.10. CONTRACTOR SHALL COORDINATE WITH THE LOCAL ELECTRICAL UTILITY TO ESTABLISH NEW ELECTRICAL SERVICE(S) AND FINAL CONNECTIONS TO PROVIDE UTILITY POWER AS REQUIRED TO INCLUDE ESTABLISHING BVBUTTERFLY VALVE POWER FACTOR BELL TEMPORARY UTILITY ACCOUNT TO PROVIDE ELECTRICAL POWER FOR START-UP AND COMMISSIONING. CONDUIT POWER FACTOR CORRECTION CAPACITORS 1.11. THE ELECTRICAL INSTALLATION SHALL EXCEED THE REQUIREMENTS OF ALL APPLICABLE NECA/NEIS STANDARDS. CAB CABINET PULL FUSE DISCONNECT СВ CIRCUIT BREAKER 1.12. CONTRACTOR SHALL PLAN AND COORDINATE ELECTRICAL CONSTRUCTION WITH ALL CRAFT/TRADE TO ACHIEVE AN EFFICIENT AND EFFECTIVE ELECTRICAL INSTALLATION. FAAS FIRE ALARM ANNUNCIATOR STATION CBV CABLE BY VENDOR, INSTALLED BY CONTRACTOR PRESSURE INDICATION TRANSMITTER 1.13. THE SCHEDULING AND DURATION OF ANY PROCESS OR FACILITY SHUTDOWN TO REMOVE AND/OR INSTALL EQUIPMENT SHALL BE COORDINATED IN ADVANCE WITH FACILITY MANAGEMENT, ENGINEER, OWNER OR OWNER CCTV CLOSED CIRCUIT TELEVISION PLC PROGRAMMABLE LOGIC CONTROLLER REPRESENTATIVE. CKT CIRCUIT FLOW SWITCH CLG CEILING POWER PANEL, POWER POLE CL2 CHLORINE 2. ELECTRICAL EQUIPMENT: СР CONTROL PANEL PRIMARY VALVE TAMPER SWITCH CPT CONTROL POWER TRANSFORMER PRESSURE SWITCH CR CONTROL RELAY, CORROSION RESISTANT 2.1. 600V RATED ELECTRICAL EQUIPMENT SHALL HAVE AN AMPERE INTERRUPTING CAPACITY (AIC) RATINGS AS SHOWN ON THE CONTRACT DRAWINGS POTENTIAL TRANSFORMER CS CONTROL STATION PAN-TILT-ZOOM 2.2. EQUIPMENT SHALL BE ARRANGED AND INSTALLED TO COMPLY WITH ALL CODE—REQUIRED, MANUFACTURER—RECOMMENDED AND HEAT—DISSIPATION CLEARANCES. CURRENT TRANSFORMER END OF LINE RESISTOR POLYVINYL CHLORIDE 2.3. EQUIPMENT INSTALLATIONS AND PLACEMENTS SHALL COMPLY WITH NEC ARTICLE 110 FOR ALL CLEARANCE REQUIREMENTS. C TRL CONTROL RECEPTACLE COPPER 2.4. EQUIPMENT SHALL FIT INTO THOSE SPACES AS SHOWN ON THE CONTRACT DRAWINGS. CONTRACTOR IS RESPONSIBLE TO PROVIDE EQUIPMENT WHICH MEETS THE SPACE REQUIREMENTS. REQUIRED CV CONTROL VALVE RIGID GALVANIZED STEEL FLAME DETECTOR 2.5. CONTRACTOR SHALL PROVIDE ALL NECESSARY COMPONENTS REQUIRED FOR MAKING FINAL CONNECTIONS FOR ALL EQUIPMENT INSTALLED AND/OR MODIFIED UNDER CONTRACT. DECIBEL RMC RIGIDREMOTE TELEMETRY UNIT DIRECT CURRENT R/S RUN/STOP HAND SWITCH DCS DISTRIBUTED CONTROL SYSTEM 3. POWER AND CONTROL SYSTEM RACEWAYS: **RVSS** REDUCED VOLTAGE SOFT STARTER DETD DUAL ELEMENT TIME DELAY SHORT CIRCUIT CURRENT RATING SCCR SMOKE DETECTOR, MULTISENSOR DISC DISCONNECT SC ADA SUPERVISORY CONTROL AND DATA ACQUISITION DN 3.1. EXPOSED CONDUIT SHALL BE RIGID ALUMINUM CONDUIT (RAC), GRS, IMC AND EMT ARE NOT ACCEPTABLE. SEC SECONDARY DPDT DOUBLE POLE DOUBLE THROW SPARE 3.2. CONCEALED CONDUIT EMBEDDED IN CONCRETE SHALL BE SCH-40 PVC DISCONNECT SWITCH SPEC SPECIFIC ATION SMOKE DETECTOR IONIZATION 3.4. DIRECT-BURIED CONDUIT SHALL BE DIRECT-BURIED SCH-80 PVC DRAWING SPD SURGE PROTECTION DEVICE EMPTY CONDUIT 3.5. TRANSITIONS THROUGH FINISHED GRADE AND/OR CONCRETE SHALL BE PVC-COATED RAC CONDUIT. SELECTOR SWITCH EXHAUST FAN SST STAINLESS STEEL 3.6. DRAWINGS DEPICT MAJOR DUCTBANK, CABLE-TRAY, BUS-DUCT, WIRE-WAY, TRENCH/FLOOR DUCTS, RACEWAY, CONDUIT, ETC., TO INCLUDE CABLE, CONDUCTOR AND WIRING IN SCHEMATIC AND/OR DIAGRAMMATIC EHH ELECTRIC AL HANDHOLE SOLENOID VALVE FORMATS. THE CONTRACTOR SHALL REFERENCE ALL EQUIPMENT SPECIFICATIONS AND MANUFACTURER INSTRUCTIONS FOR ADDITIONAL INSTALLATION REQUIREMENTS. ELEVATION SMOKE DETECTOR PHOTOELECTRIC SWITCH ELECTRONIC TRIP UNIT 3.7. RACEWAY INSTALLATION AND/OR ARRANGEMENT LAYOUTS ARE NOT TYPICALLY SHOWN ON THE DRAWINGS. CONTRACTOR SHALL DEVELOP LOGICAL GROUPINGS, ROUTING AND MARSHALLING OF DUCTBANK, CABLE—TRAY, ELTU SWBD SWITCHBOARD **EMER** BUS-DUCT, WIRE-WAY, TRENCH/FLOOR DUCT, RACEWAY, CONDUIT, ETC., THESE SHALL NOT BE ROUTED THROUGH OR INTERFERE WITH ANY STRUCTURAL ELEMENTS. CONTRACTOR SHALL SUBMIT THESE RACEWAY EMERGENC Y SWGR SWITCH GEAR EMH ELECTRICAL MANHOLE INSTALLATION AND/OR ARRANGEMENT LAYOUTS PER THE SPECIFICATIONS FOR ENGINEER REVIEW PRIOR TO INSTALLATION. TELEPHONE ELECTRICAL METALLIC TUBING **TEMP TEMPERATURE** DUCT MOUNTED SMOKE DETECTOR 3.8. RACEWAY ROUTINGS SHALL BE ORGANIZED AND GROUPED IN A PRACTICAL MANNER TO MINIMIZE CROSS-OVERS AND SADDLES. RACEWAY INSTALLATIONS SHALL BE ARRANGED TO ENTER EQUIPMENT FOR DIRECT ENCL ENCLOSURE TEW THERMOCOUPLE EXTENSION WIRE CONDUCTOR TERMINATIONS. **EPRF** EXPLOSION PROOF TMTU THERMAL-MAGNETIC TRIP UNIT 3.9. RACEWAYS SHALL BE INSTALLED CONCEALED UNLESS OTHERWISE NOTED OR SHOWN. THESE SHALL RUN PARALLEL TO LANDSCAPE AND STRUCTURAL FEATURES WHILE THE BENDS AND TURNS SHALL BE MADE BY **EQUIP FQUIPMENT** TEMPERATURE SWITCH MEANS OF LARGE RADII FITTINGS. THERMAL DETECTOR EWC ELECTRIC WATER COOLER TYPIC AL EWH ELECTRIC WATER HEATER (FIXED AND RATE OF RISE) 3.10. PROVIDE FLEXIBLE RACEWAY CONNECTIONS TO ALL EQUIPMENT SUBJECT TO MOVEMENT AND/OR VIBRATION. CONTRACTOR SHALL MAKE RACEWAY CONNECTIONS COMPLETE AND IN ACCORDANCE WITH THE **UNDERGROUND** EXIST H-HIGH TEMPERATURE EXISTING UNIT HEATER FΑ FIRF ALARM UON UNLESS OTHERWISE NOTED 3.11. CONTRACTOR SHALL PROVIDE ALL REQUIRED PULL BOXES, TERMINAL BOXES AND JUNCTION BOXES FOR INSTALLATION FOR THE WIRING SYSTEMS IN ACCORDANCE WITH THE SPECIFICATIONS THOUGH ALL BOXES MAY NOT FAAP FIRE ALARM ANNUNCIATOR PANEL UPS UNINTERRUPTIBLE POWER SUPPLY BE INDICATED ON THE DRAWINGS. FACP FIRE ALARM CONTROL PANEL СТ SIGNAL INPUT MODULE 3.12. SPARE CONDUITS SHALL BE CAPPED OR PLUGGED WITH A PVC FITTING AND INCLUDE 200# TEST POLYPROPYLENE PULL STRING. FDR FEEDER VAC VOLTS ALTERNATING CURRENT FIXT FIXTURE VARIABLE FREQUENCY DRIVE FLA FULL LOAD AMPS WATT-HOUR **FLOUR FLUORESCENT** SIGNAL MODULE WEATHERPROOF 4. CABLES/CONDUCTORS/WIRES: FLEXIBLE METALLIC CONDUIT TRANSFORMER FLOW SWITCH EXPLOSION PROOF FEET OR FOOT FUT **FVNR** 4.1.1. QUANTITY AND SIZING OF CONDUCTORS, CABLING, WIRING AND RESPECTIVE RACEWAYS DEPICTED ON THE DRAWINGS ARE BASED UPON SELECTED STANDARD ELECTRICAL COMPONENTS OR EQUIPMENT WITH DIRECT FULL VOLTAGE NON-REVERSING STARTER FWE FURNISHED WITH EQUIPMENT ROUTED CONNECTIONS. CONTRACTOR MAY SUBMIT FOR REVIEW BY ENGINEER AND PRIOR TO INSTALLATION, LOGICAL CONDUCTOR AND RACEWAY GROUPINGS IN COMPLIANCE WITH APPLICABLE CODES, STANDARDS AND SPECIFICATIONS WITHOUT ADDITIONAL COST TO OWNER. GALVANIZED 4.1.2. CONTRACTOR SHALL PROVIDE A CIRCUIT IDENTIFICATION LABEL AT EACH END OF EACH POWER, BRANCH, CONTROL AND INSTRUMENTATION CIRCUIT CABLE ASSEMBLY, CONDUCTOR OR WIRE. GEC GROUNDING ELECTRODE CONDUCTOR 4.2. POWER/FEEDER GENERATOR GROUND FAULT INTERRUPTER 4.2.1. CONTRACTOR SHALL NOT EXCEED CABLE MANUFACTURER SPECIFICATIONS FOR SIDE—WALL AND TENSION LIMITS WHEN DRAWING POWER CABLES INTO RACEWAYS. GFIC GROUND FAULT CIRCUIT INTERRUPTER 4.2.2. CONTRACTOR SHALL DRAW POWER CABLES AND CONDUCTORS WITHIN RACEWAYS UTILIZING POLYWATER LUBRICANT J OR APPROVED EQUAL. HOT DIPPED GALVANIZED 4.2.3. NO SPLICES TO POWER CONDUCTORS AND/OR CABLING SHALL BE MADE WITHOUT ENGINEER APPROVAL, NO JUNCTIONS SHALL BE MADE BELOW GRADE WITHOUT APPROVAL OF ENGINEER. НН HANDHOLE HOA HAND-OFF-AUTO HORSE POWER 4.3.1. RACEWAY AND WIRING FOR LIGHTING, RECEPTACLES AND BRANCH CIRCUITS ARE NOT TYPICALLY SHOWN ON THE CONTRACT DRAWINGS BUT SHALL BE PROVIDED AS REQUIRED UNDER THIS CONTRACT HIGH POWER FACTOR HIGH PRESSURE SODIUM HEATER 5. HARDWARE AND SUPPORTS: HIGH VOLTAGE HERTZ INTERIOR DIAMETER 5.1. ALL FASTENERS AND HARDWARE SHALL BE STAINLESS—STEEL 316L. INTERMEDIATE METALLIC CONDUIT (GALVANIZED) 5.2. STRUT—CHANNEL SHALL NOT BE BENT, DRILLED, CUT OR OTHERWISE MODIFIED TO PRODUCE FITTINGS, BRACES OR BRACKETS FOR CONDUIT AND EQUIPMENT SUPPORTS. INTERMEDIATE METALLIC 5.3. MANUFACTURED STRUT—CHANNEL BRACES, BRACKETS, FITTINGS OR POST BASES SHALL BE PROVIDED AND INSTALLED WITH ASSOCIATED HARDWARE AND FASTENERS FOR CONDUIT AND EQUIPMENT SUPPORTS. INCHES INSTRUMENT TERMINAL BOX 5.4. CONTRACTOR SHALL PROVIDE ALL SUPPORTS AND FASTENING HARDWARE FOR SWITCHBOARDS, PANELBOARDS, TRANSFORMERS, CONTROL PANELS, ETC., AS REQUIRED IN THE SPECIFICATIONS. JUNCTION BOX 5.5. CONTRACTOR SHALL PROVIDE AND INSTALL CONCRETE EMBEDDED LEVELING CHANNEL SUPPORTS FOR FLOOR MOUNTED EQUIPMENT SPANNING DISTANCES 48" AND GREATER IN LENGTH OR 36" AND GREATER IN DEPTH. THOUSAND 5.6. STRUCTURAL MEMBERS SHALL NOT BE DRILLED, CUT, WELDED TO, OR OTHERWISE MODIFIED WITHOUT PRIOR APPROVAL OF THE ENGINEER OF RECORD. KILOVOLT AMPERE KAIC THOUSAND AMPERES INTERRUPTING CURRENT KCMIL THOUSAND CIRCULAR MILLS 6. RECEPTACLES/SWITCHES: THOUSAND VOLT AMPERES ΚVA KWKILOWATTS KWH KILOWATT-HOURS 6.1. GENERAL LIGHTNING ARRESTOR 6.2.0.2. INDOORS OR NON PROCESS AREAS SHALL BE INSTALLED CONCEALED AND FLUSH WITH STAINLESS—STEEL DEVICE COVER PLATES. LOCAL CONTROL PANEL 6.2.0.3. OUTDOORS OR IN PROCESS AREAS SHALL BE INSTALLED WITHIN WEATHER-PROOF, CORROSION RESISTANT DEVICE BOXES WITH METALLIC IN-USE AND/OR WATER-TIGHT DEVICE COVER PLATES. LED LIGHT-EMITTING DIODE LIQUIDTIGHT FLEXIBLE METAL CONDUIT 6.3. RECEPTACLES/GROUND FAULT CURRENT INTERRUPTING (GFCI) LFNC LIQUIDTIGHT FLEXIBLE NONMETALLIC CONDUIT 6.3.1. SHALL BE INDIVIDUAL GFCI RECEPTACLE DEVICES RATED FOR 20A/120V WITH LED POWER INDICATOR. LEVEL INDICATION TRANSMITTER LIGHTING PANEL, LIGHT POLE 6.3.2. GFCI RECEPTACLE DEVICES SHALL NOT SHARE NEUTRAL CONDUCTORS ON THREE-PHASE SYSTEMS LEVEL SWITCH LIGHTING LOW VOLTAGE MOTOR MILLIAMPERE MCB MAIN CIRCUIT BREAKER MOTOR CONTROL CENTER MCP MOTOR CIRCUIT PROTECTOR MDP MAIN DISTRIBUTION PANEL MFR MANUFAC TURER MANHOLE MH MIN MINIMUM MAIN LUGS ONLY MSB MAIN SWITCHBOARD MTD MOUNTED/MOUNTING MTG MOUNTING MTS MANUAL TRANSFER SWITCH MVMEDIUM VOLTAGE



REVISIONS

AUBREY A. HAUDRICOURT, P.





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### LIFT STATION 12A ELECTRICAL PUMP & VFD REHABILITATION

**ELECTRICAL** 

SYMBOLS, ABBREVIATIONS AND NOTES

PROJ. START DATE: 2020. JUN

MCE PROJ. # 01024-0181

DRAWN JG

DESIGNED SS

CHECKED MAC

PROJ. MGR. AAH

SCALE

HORIZONTAL:

N/A

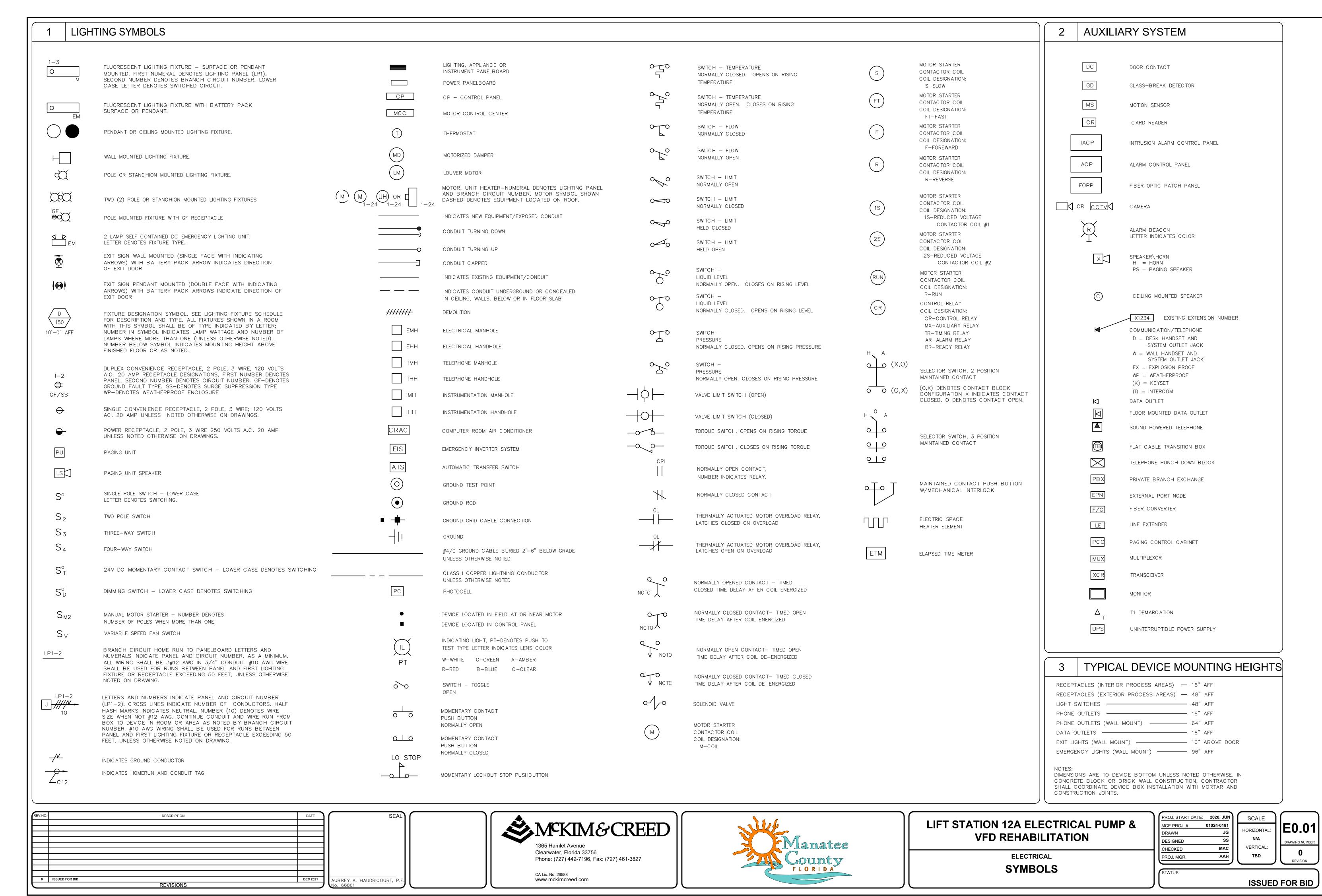
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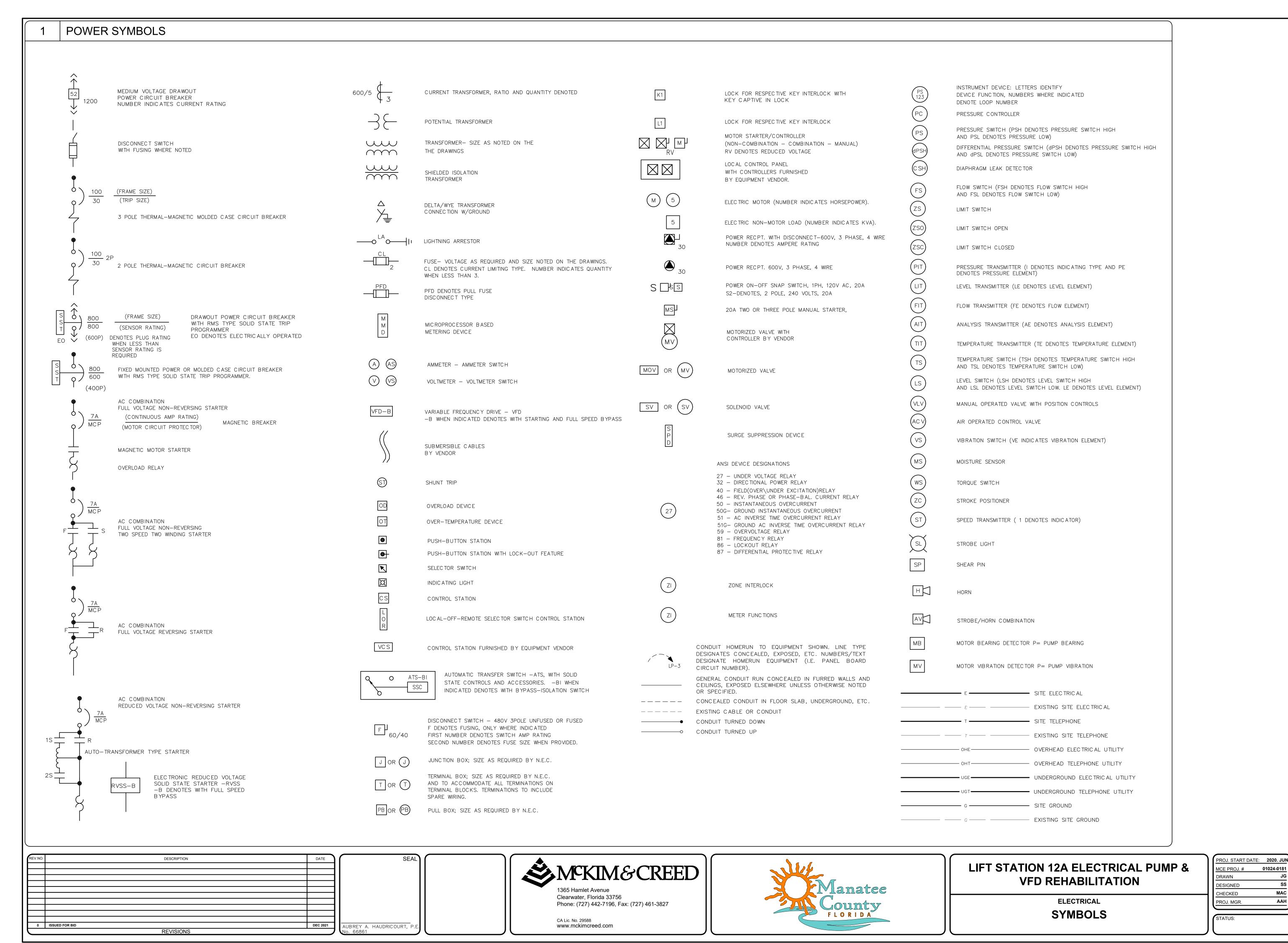
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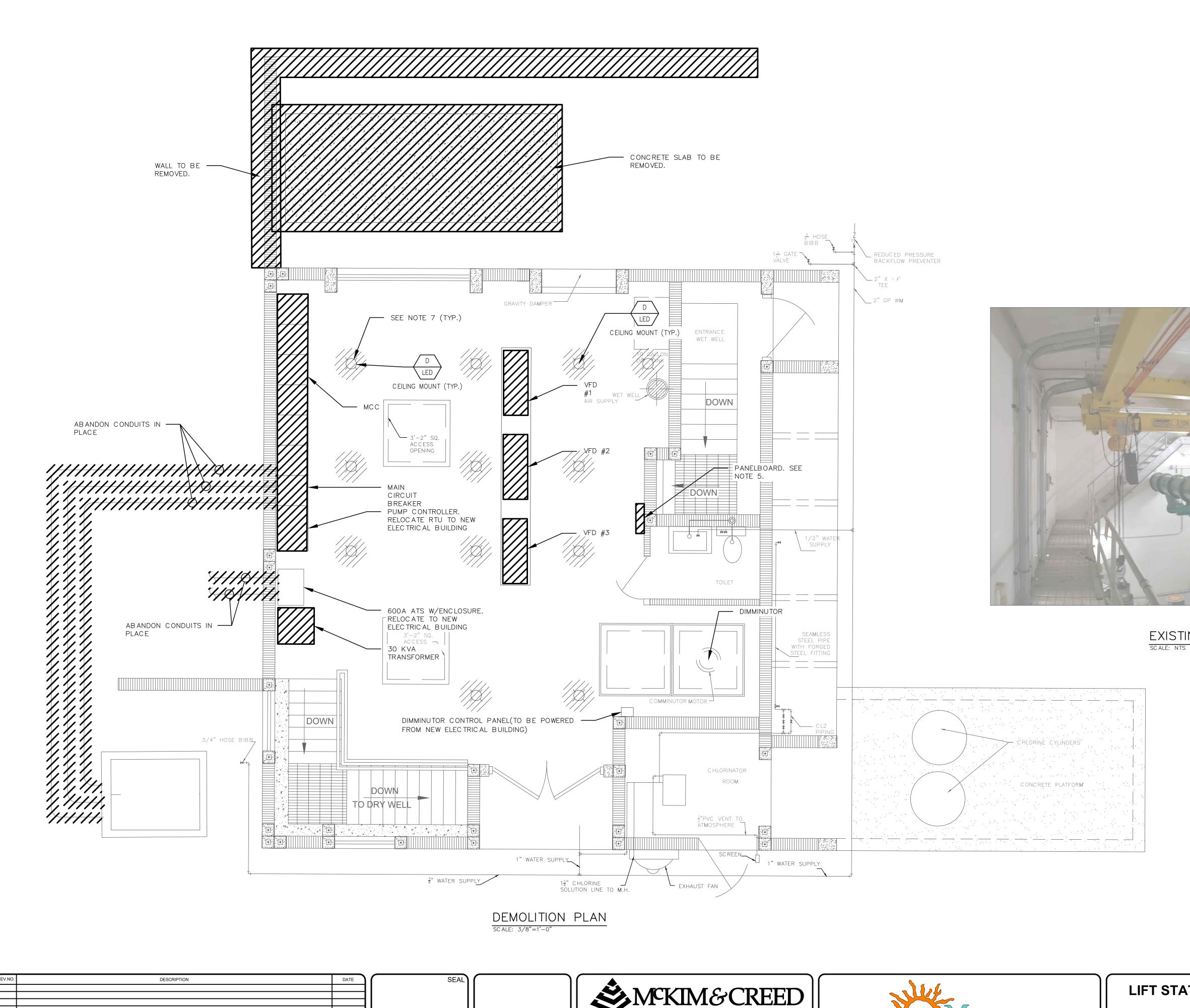




SS MAC

AAH

VERTICAL:



Clearwater, Florida 33756 Phone: (727) 442-7196, Fax: (727) 461-3827

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#### NOTES:

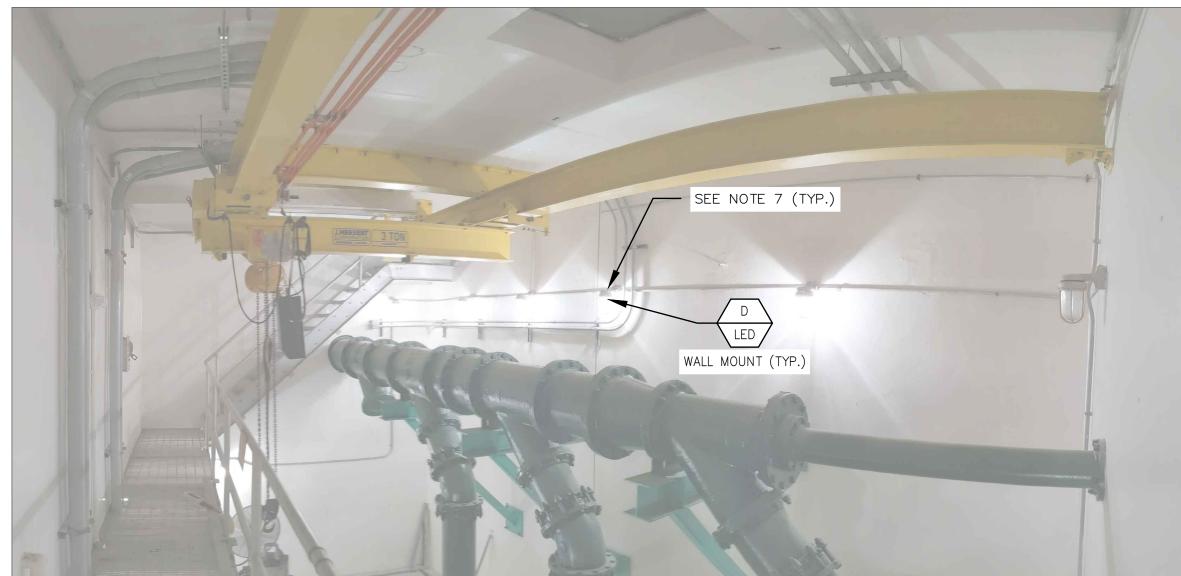
- PROVIDE TEMPORARY POWER FOR CONSTRUCTION. REFER TO BYPASS PUMP SPECIFICATIONS.
- 2. EXISTING ATS SHALL BE RELOCATED TO NEW ELECTRICAL BUILDING.
- 3. REMOVE ALL EXPOSED CONDUIT AND WIRE NOT USED PER EQUIPMENT DEMOLITION.
- 4. REMOVE ALL WIRING IN UNDERGROUND CONDUIT THAT IS TO BE ABANDONED. CAP ALL ABANDONED CONDUIT.
- 5. INTERCEPT EXISTING CONDUIT BY INSTALLING NEMA 4X SS 42 CKT PANELBOARD. REPULL ALL NEW WIRE.
- 6. REMOVE EQUIPMENT PADS UNDERNEATH EQUIPMENT BEING DEMOLISHED. INSTALL NEW PADS UNDER NEW EQUIPMENT, SUCH AS NEW VFD JUNCTION BOXES. REFER TO STRUCTURAL DRAWINGS.
- 7. REPLACE EXISTING FLUORESCENT BULBS WITH LED. IN THE EVENT THE GUARD AND GLOBE CAN NOT BE REMOVED, WITHOUT DAMAGE, A NEW REPLACEMENT LED FIXTURE SHALL BE INSTALLED.



EQUIPMENT TO BE DEMOLISHED OR RELOCATED.

NORTH

SC ALE: 3/8" = 1'-0"



EXISTING BUILDING DRY WELL LIGHTING
SCALE: NTS



ELECTRICAL

DEMOLITION PLAN

 PROJ. START DATE:
 2020. JUN

 MCE PROJ. #
 01024-0181

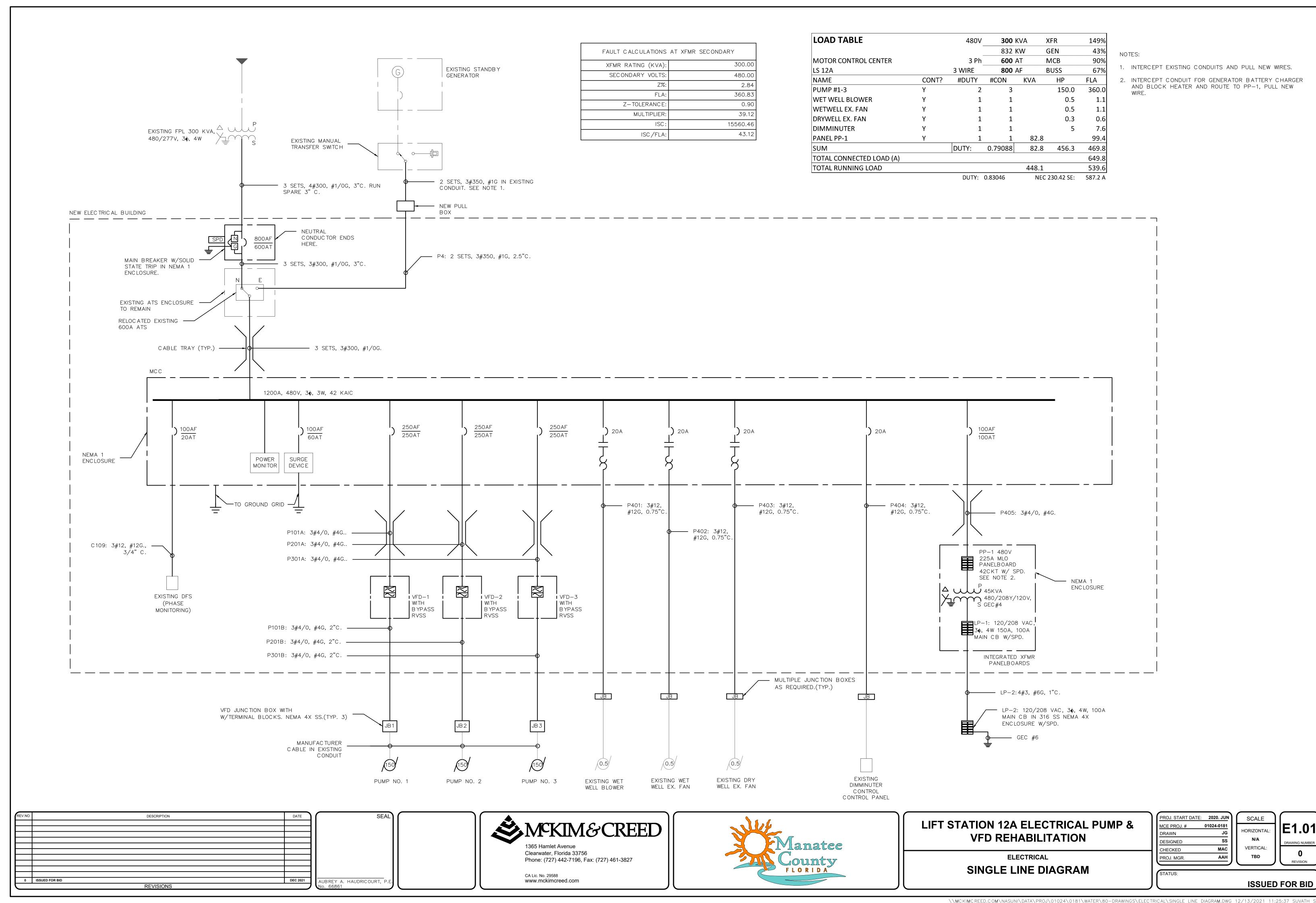
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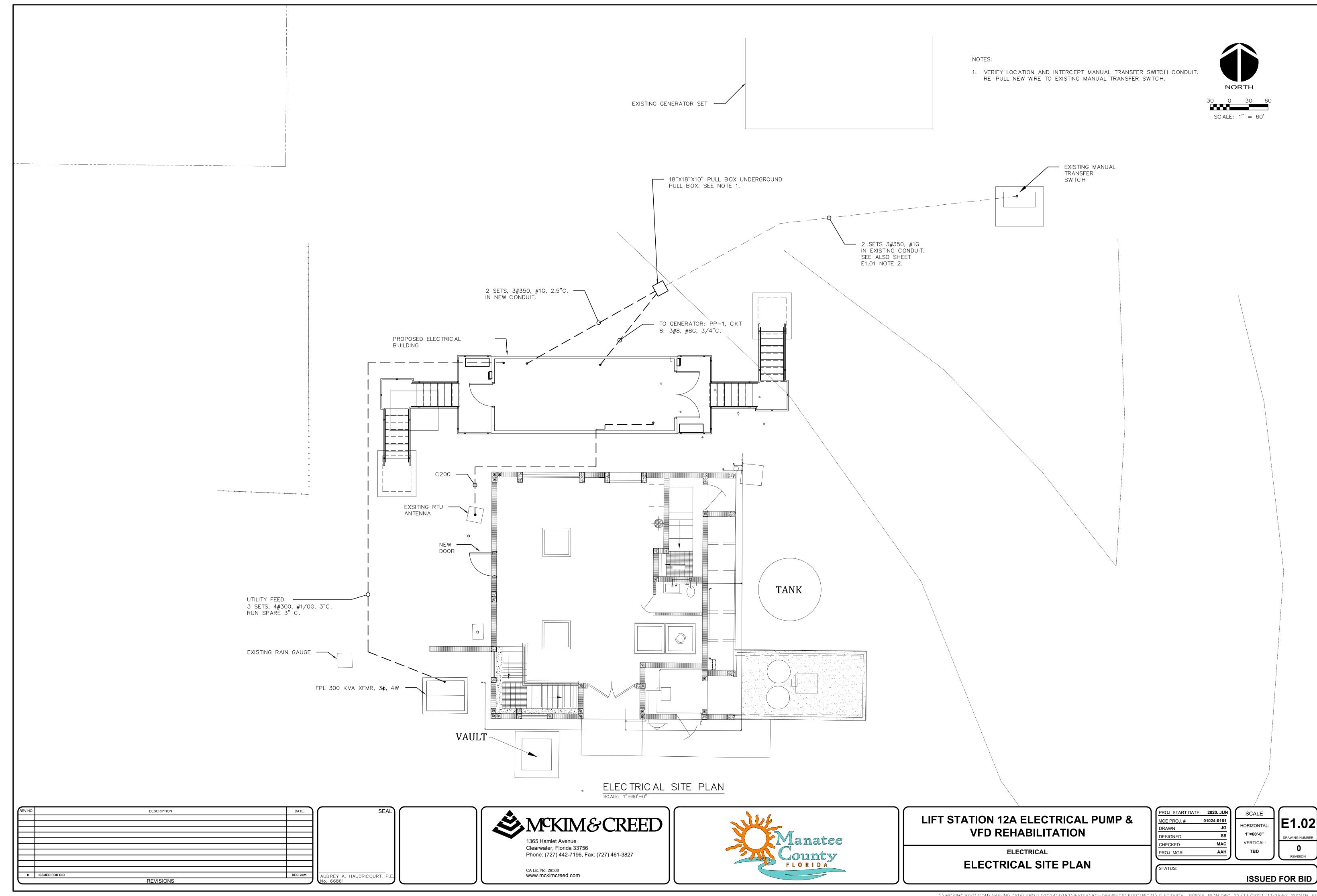
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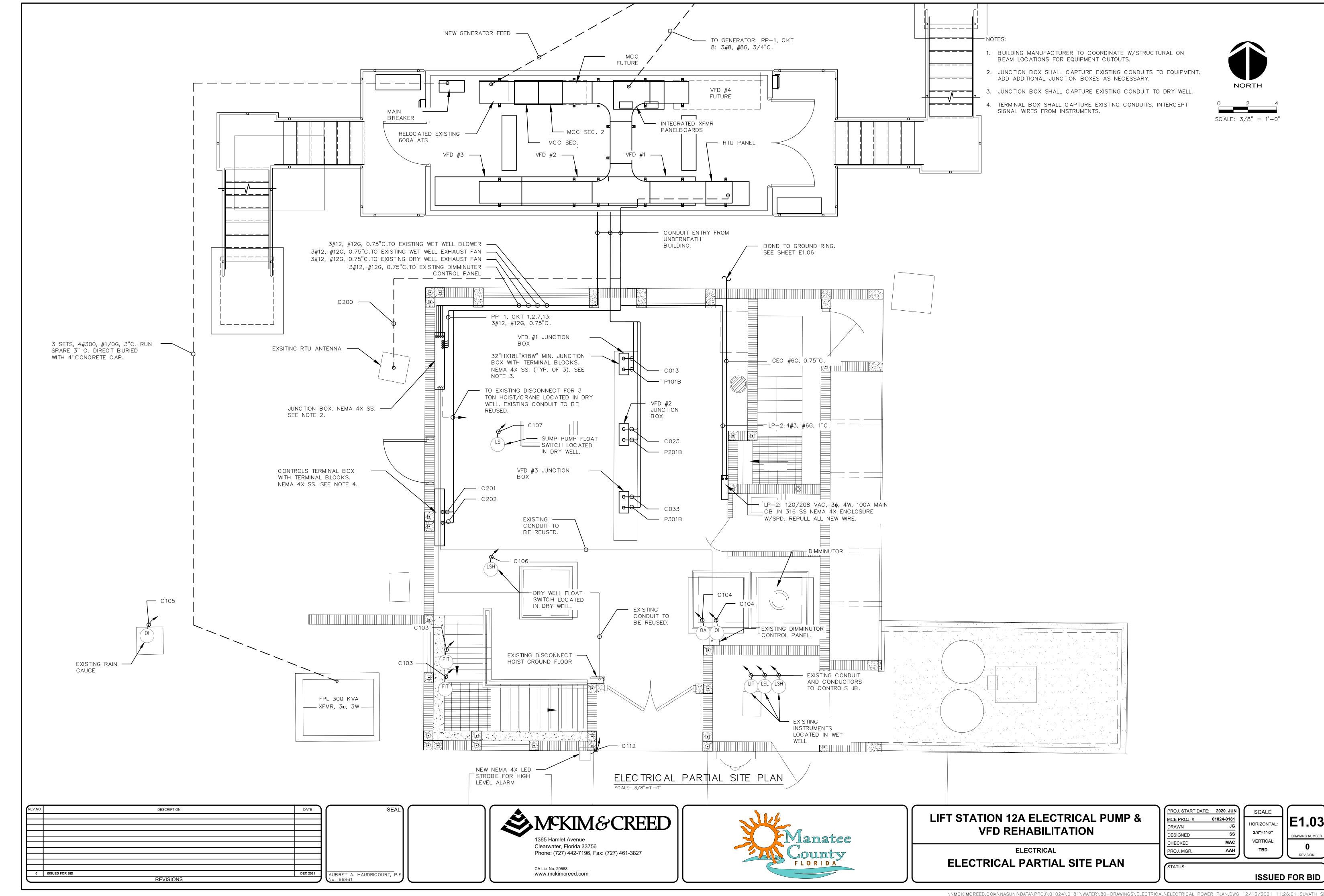
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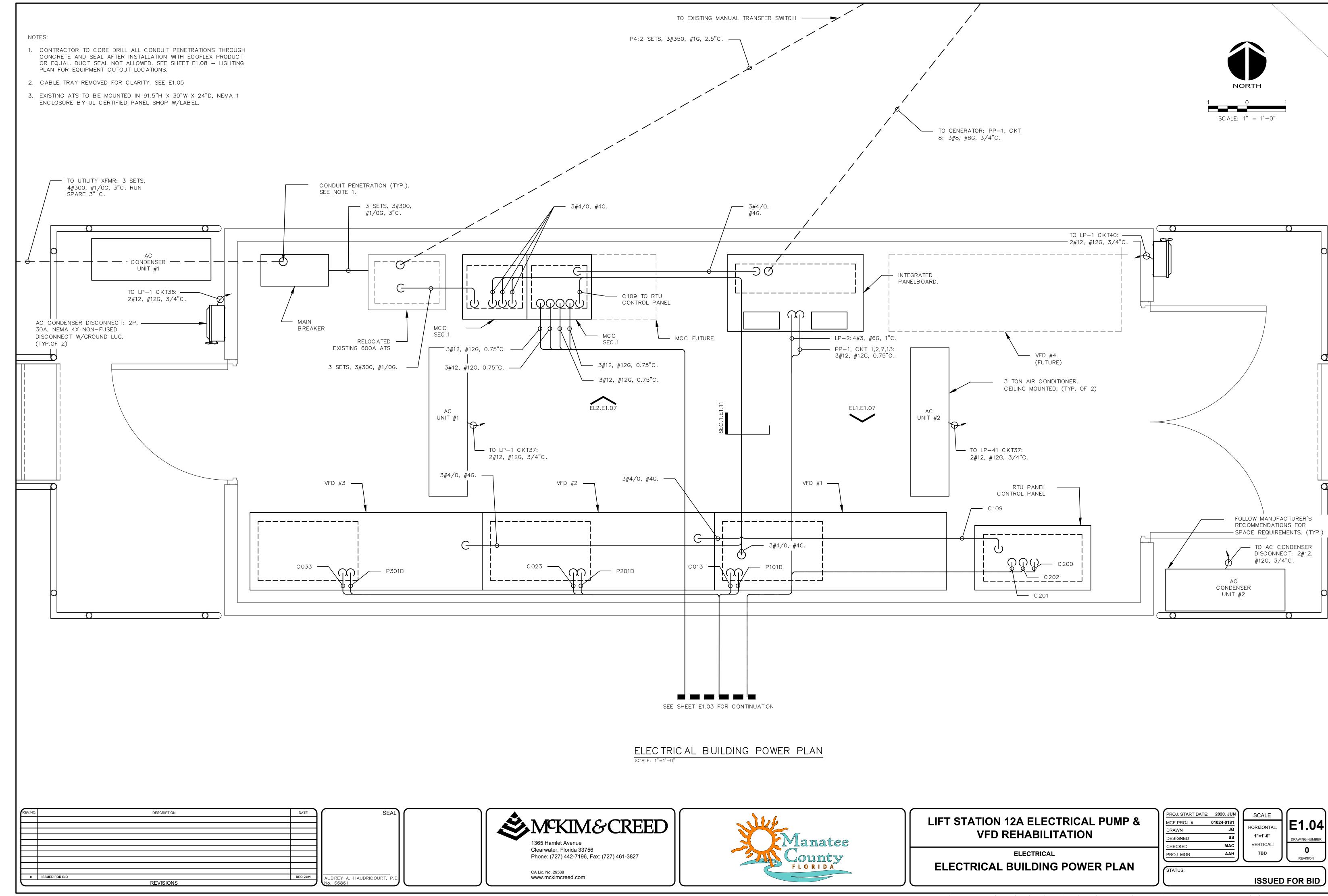
 PROJ. MGR.
 AAH

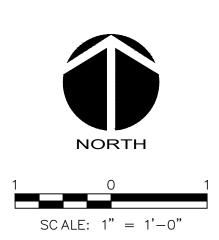
SCALE
HORIZONTAL:
3/8"=1'-0"
VERTICAL:
TBD

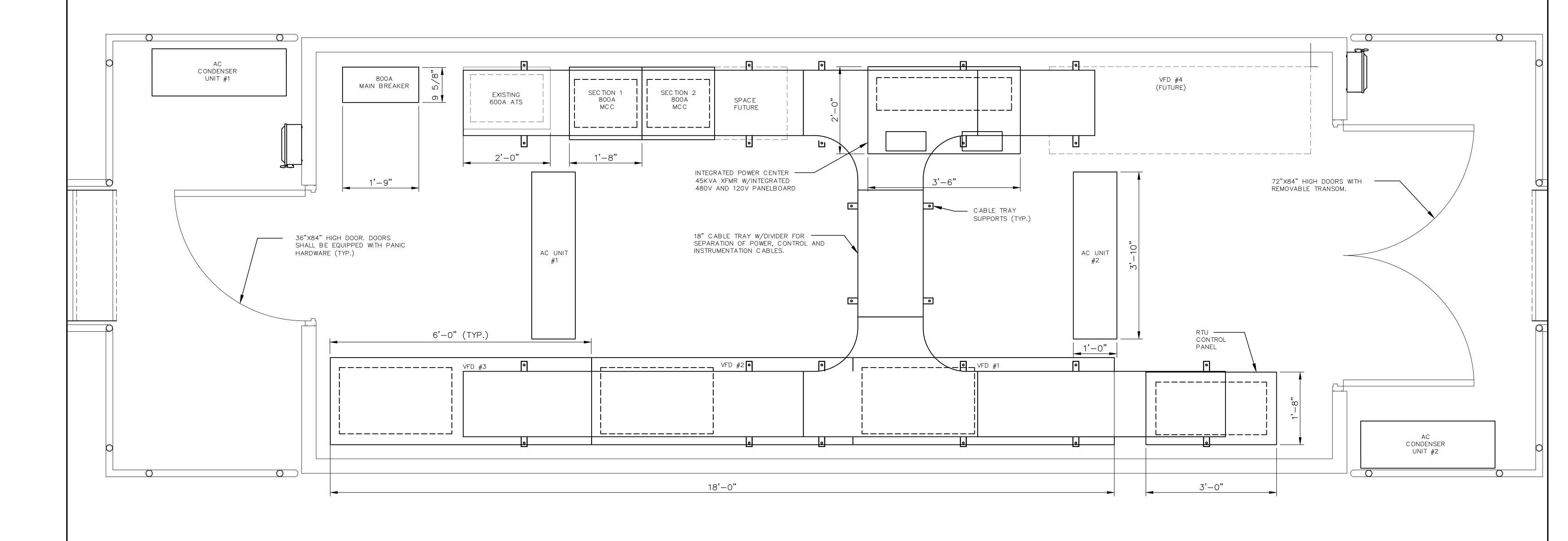


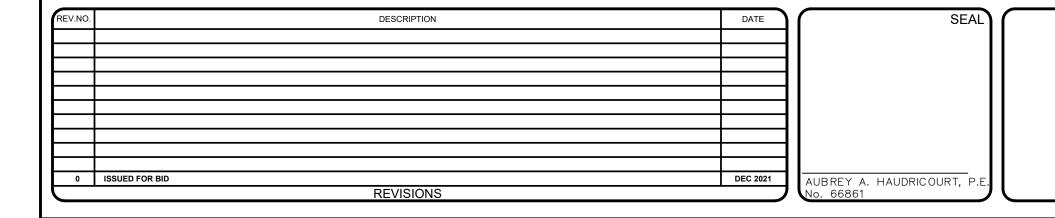
















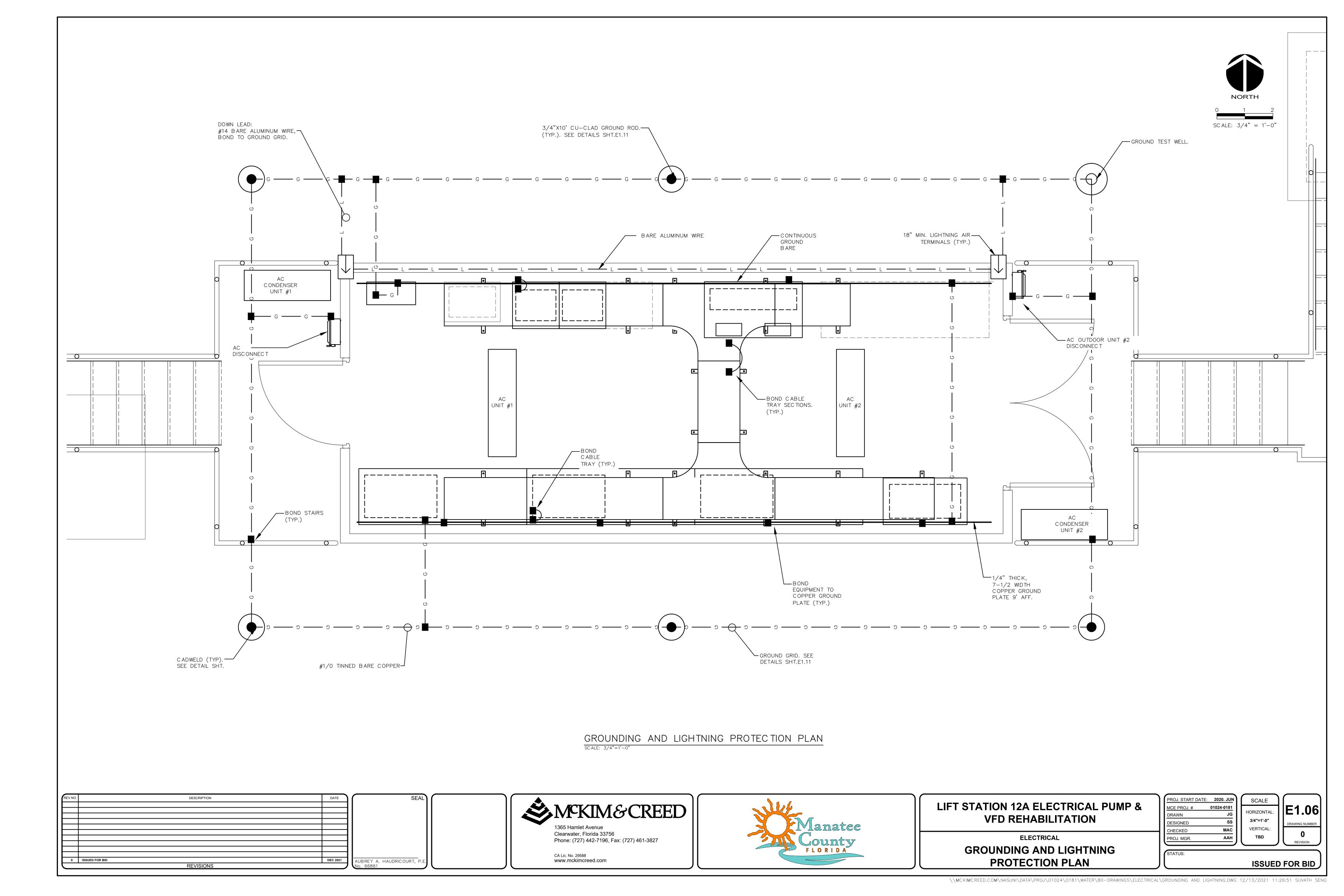
LIFT STATION 12A ELECTRICAL PUMP &	
VFD REHABILITATION	

ELECTRICAL BUILDING LAYOUT

PROJ. START DATE:	2020. JUN	SCALE	
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CHECKED	MAC	VERTICAL:	
PROJ. MGR.	AAH	TBD	0
			REVISION

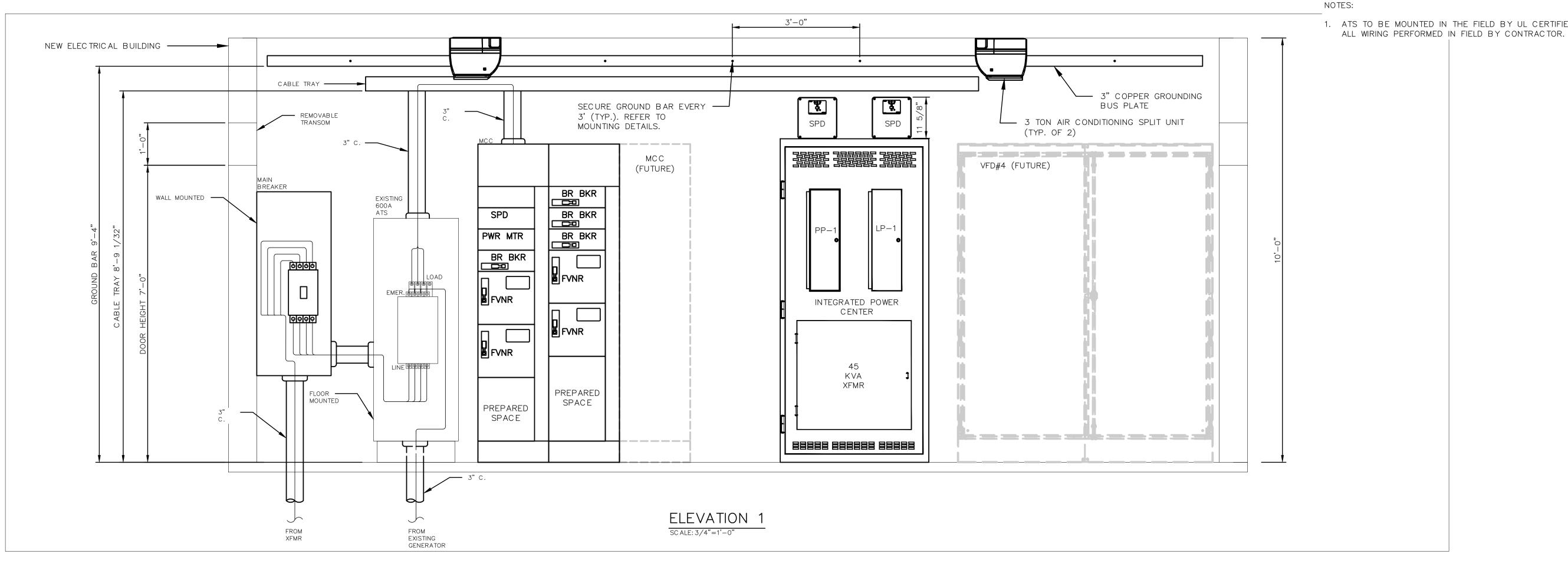
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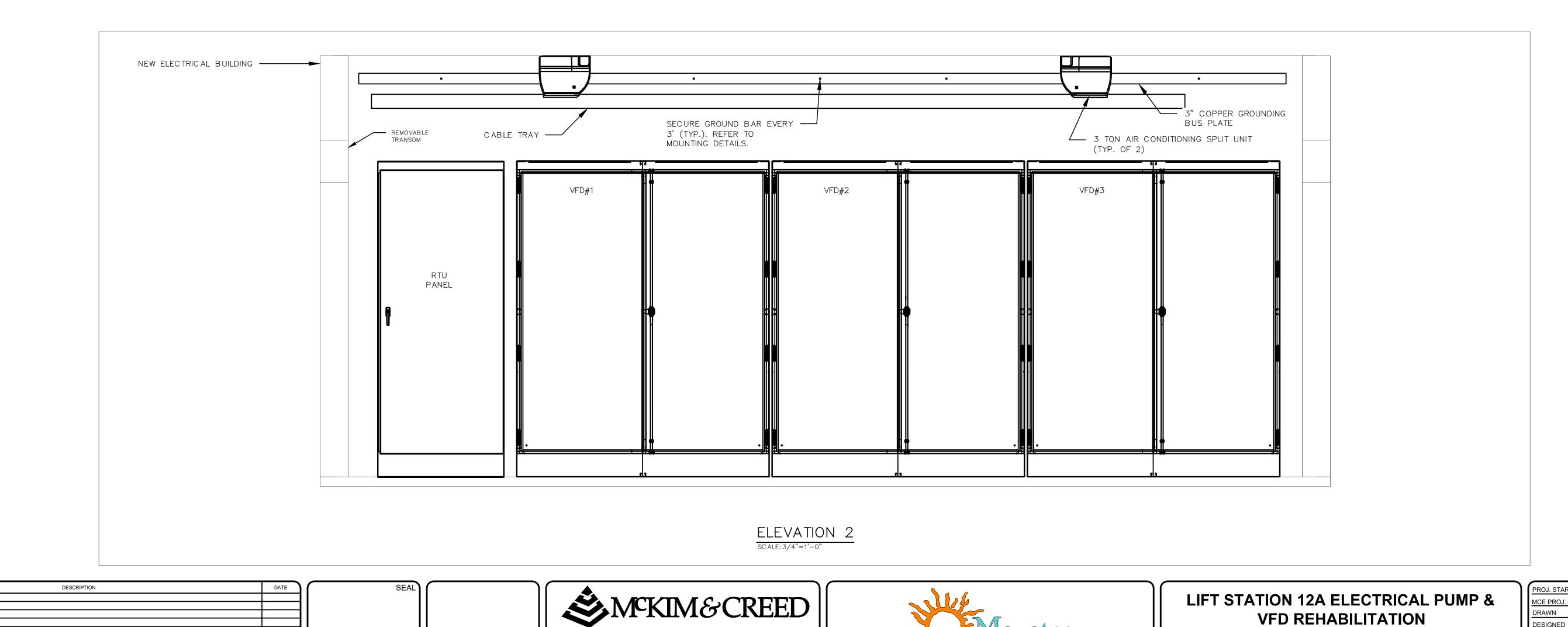
\MCKIMCREED.COM\NASUNI\DATA\PROJ\01024\0181\WATER\80-DRAWINGS\ELECTRICAL\ELEC BUILDING LAYOUT-12A.DWG 12/13/2021 11:26:27 SUVATH SENG





1. ATS TO BE MOUNTED IN THE FIELD BY UL CERTIFIED PANEL SHOP.





Clearwater, Florida 33756 Phone: (727) 442-7196, Fax: (727) 461-3827

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AUBREY A. HAUDRICOURT, P. No. 66861

REVISIONS

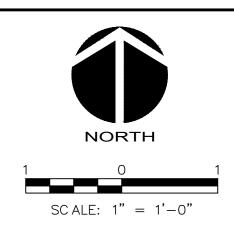
ELECTRICAL

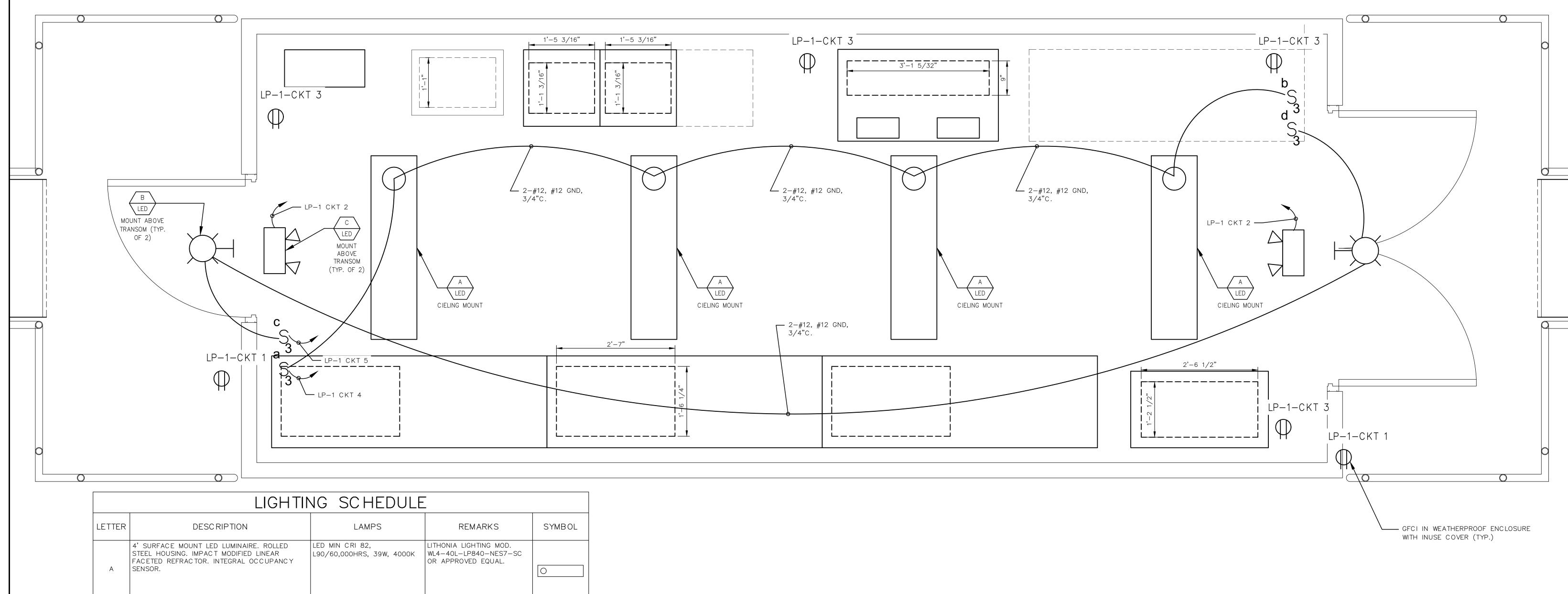
MCB, ATS AND MCC ELEVATIONS

01024-0181

ISSUED FOR BID

PROJ. MGR.





LED OUTDOOR RATED WALL PACK. TYPE II/WIDE 20 LED 73W 4000K LITHONIA LIGHTING DSXW2 LED, LSI INDUSTRIES DISTRIBUTION. INTEGRAL BALLAST & PHOTOCELL. +XGB WM3, OR APPROVED FULL CUTOFF. DARK BRONZE. ALTERNATE LITHONIA LIGHTING MOD. WALL MOUNT EMERGENCY EXIT LIGHT W/SIGN. LED, RED LENS <1W, 120V LHQM OR APPROVED EQUAL INJECTION-MOLDED, FLAME-RETARDANT, HIGH-IMPACT, THERMOPLASTIC HOUSING. BATTERY BACKUP. TEST SWITCH FOR MANUAL ACTIVATION OF 30-SECOND DIAGNOSTIC TESTING. SELF DIAGNOSTIC TESTING EVERY 30 KILLARK MODEL NO. EMLC-50-30 OR APPROVED LED, CLASS 1, DIV 2 RATED, EXPLOSION PROOF LED, 40W, 120V. FIXTURE WITH DOME REFLECTOR AND GLOBE GUARD. EQUAL. WALL MOUNT AND CEILING MOUNT AS NECESSARY.

LIGHTING PLAN

SCALE: 1"=1'-0"

REV.NO. DESCRIPTION DATE

SEAL

O ISSUED FOR BID

REVISIONS

DEC 2021

AUBREY A. HAUDRICOURT, P.E. No. 66861





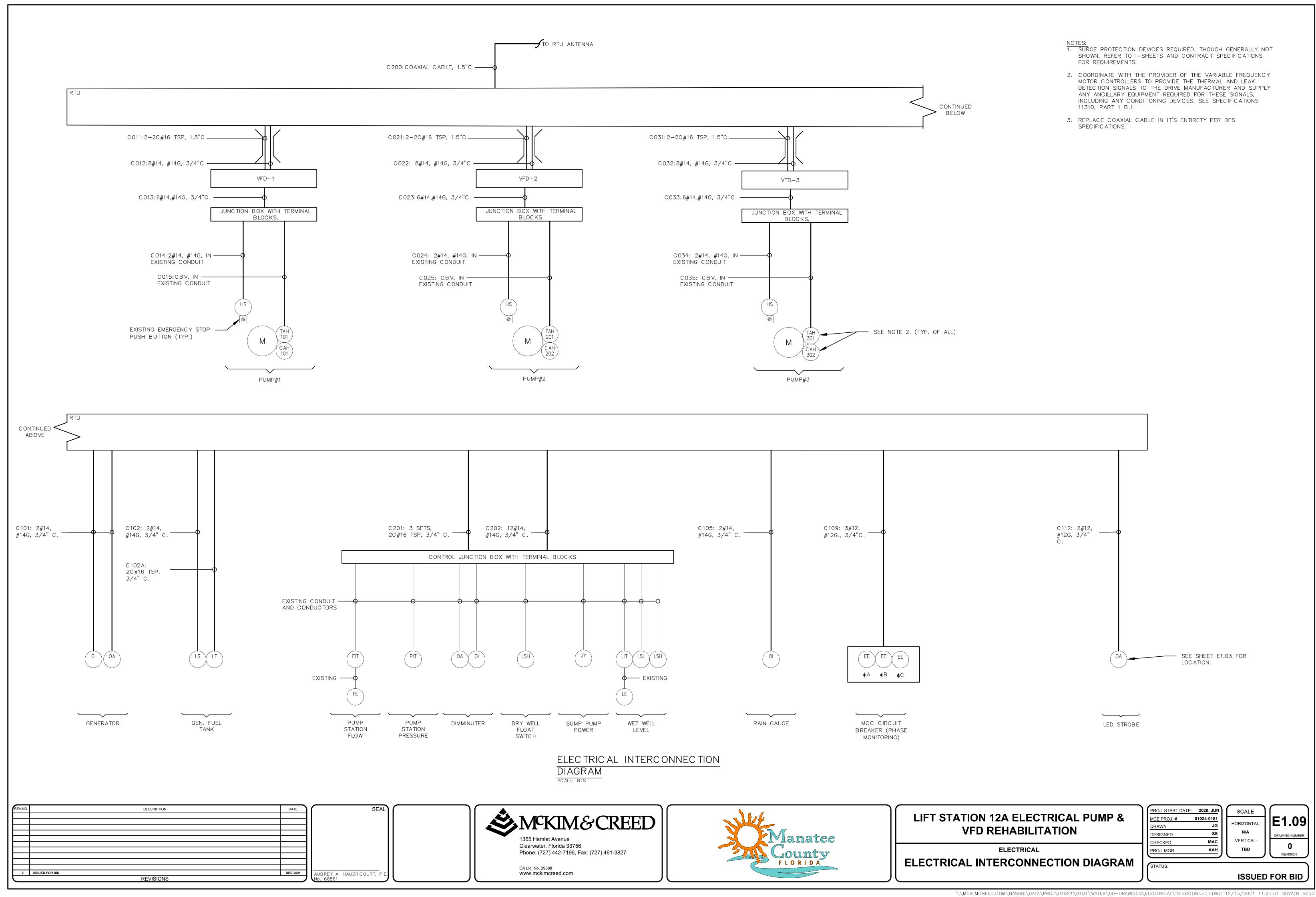
LIFT STATION 12A ELECTRICAL PUMP & VFD REHABILITATION

ELECTRICAL
LIGHTING PLAN

PROJ. START DATE	≣: 2020. JUN	SCALE	
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DESIGNED	ss	1"=1'-0"	DRAWING NU
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PROJ. MGR.	AAH	TBD	REVISIO

ISSUED FOR BID

\\MCKIMCREED.COM\NASUNI\DATA\PROJ\01024\0181\WATER\80-DRAWINGS\ELECTRICAL\GROUNDING AND LIGHTNING.DWG 12/13/2021 11:27:38 SUVATH SENG



CKT NO.	TRIP	DESCRIPTION OF LOAD	LOAD KVA	AMPS	POLES	А	KVA PER PHASE B	С	POLES	AMPS	LOAD KVA	DESCRIPTION OF LOAD	TRIP	CKT NO.
1	20	HOIST DRY WELL	0.27	1.0	3	2.1			3	6.5	1.8	ODOR CONTROL	20	2
			0.27				2.1				1.8			
			0.27					2.1			1.8			
7	20	HOIST GROUND FLOOR	0.27	1.0	3	10.3			3	36.1	10	30KVA EXISITNG GENERATOR	50	8
			0.27				10.3				10	TRANSFORMER		
			0.27					10.3			10			
13	20	HOIST OVER WET WELL	0.27	1.0	3	15.3			3	54.1	15	45KVA TRANSFORMER	70	14
			0.27				15.3				15			
			0.27					15.3			15			ļ
19	20	SPARE			3	0.0			3			SURGE PROTECTION DEVICE	20	20
							0.0							
								0.0						-
25	30	SPARE			3	0.0			3				20	26
							0.0							
								0.0						<u> </u>
31	30	SPARE			3	0.0			3			SPARE	30	32
							0.0							
								0.0					30	1
37		SPACE			3	0.0			3			SPACE		38
							0.0							
								0.0				CEDI/ICE CHARACTERISTICS		
PANEL PP-1		TC	OTAL KVA		27.6	27.6	27.6		VOLTS:	480	SERVICE CHARACTERISTICS	225	_ A MLO	
		MANATEE COUNTY LS12A ELECTRICAL BUILDING	GRAN	D CONNECT	TED TO	TAL KVA	82	.8		PHASE: WIRE:		- -	0	_ A MCB
	NOTES:	INTEGRATED PANELBOARD	-							10K	MIN AIC S	SYMM, FULLY RATED ASSEMBLY		

PANEL SCHEDULE PP-1

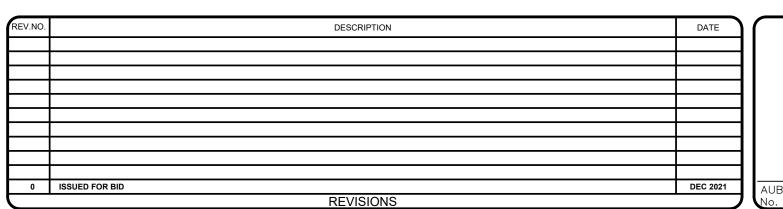
CKT NO.	TRIP	DESCRIPTION OF LOAD	LOAD KVA	AMPS	POLES	A	KVA PER PHAS	E C	POLES	AMPS	LOAD KVA	DESCRIPTION OF LOAD	TRIP	CKT NO.
1	20	ELEC. BUILDING RECEPTACLES OUTSIDE	0.36	3.0	1	0.5			1	1.5	0.18	ELEC. BUILDING EMERG. EXIT LIGHT	20	2
3	20	ELEC. BUILDING RECEPTACLES INSIDE	0.72	6.0	1		1.5		1	6.7	0.8	ELEC. BUILDING LIGHTING INSIDE	20	4
5	20	ELEC. BUILDING OUTSIDE WALL PACKS	0.5	4.2	1			2.1	2	15.4	1.6	ELEC. BUILDING AC OUTDOOR UNIT #1	25	6
7	15	ELEC. BUILDING AC INDOOR UNIT #1	0.1	1.0	2	1.7					1.6			
			0.1				1.7		2	15.4	1.6	ELEC. BUILDING AC OUTDOOR UNIT #2	25	10
11	15	ELEC. BUILDING AC INDOOR UNIT #2	0.1	1.0	2			1.7			1.6			
			0.1			7.5			3	61.7	7.4	PANEL LP-2	100	14
15	20	SURGE PROTECTION DEVICE			3		7.4				7.4			
								7.4			7.4			
						1.5			1	12.5	1.5	RTU CONTROL PANEL	20	20
21	20	SPARE			1		0.0		1			SPARE	20	22
23	20	SPARE			1			0.0	1			SPARE	20	24
25	20	SPARE			1	0.0			1			SPARE	20	26
27	20	SPARE			1		0.0		1			SPARE	20	28
29	20	SPARE			1			0.0	1			SPARE	20	30
31	20	SPARE			1	0.0			1			SPARE	20	32
33	20	SPARE			1		0.0		1			SPARE	20	34
35	20	SPARE			1			0.0	1			SPARE	20	36
37	20	SPARE			1	0.0			1			SPARE	20	38
39	20	SPARE			1		0.0		1			SPARE	20	40
41	20	SPARE			1			0.0	1					42
	PANEL	LP-1	тс	OTAL KVA		11.3	10.6	11.2		VOLTS:	208Y/120	SERVICE CHARACTERISTICS		A MLO
		MANATEE COUNTY LS12A NEW ELECTRICAL BUILDING	GRANI	D CONNECT	ED TO	OTAL KVA	3:	3.1		PHASE: WIRE:	3 4	- -	150	A MCB
	NOTES:	INTEGRATED PANELBOARD								10K	MIN AIC S	SYMM, FULLY RATED ASSEMBLY		

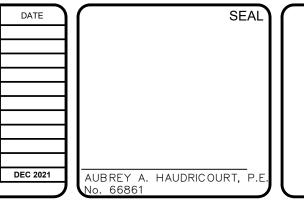
PANEL SCHEDULE LP-1
SCALE: NTS

T NO.	TRIP	DESCRIPTION OF LOAD	LOAD KVA	AMPS	POLES	А	KVA PER PHASE	С	POLES	AMPS	LOAD KVA	DESCRIPTION OF LOAD	TRIP	CKT NO
1	30	UNKNOWN	0.18	1.5	1	0.4			1	1.5	0.18	UNKNOWN	15	2
3	15	BATTERY CHARGER	0.06	0.5	1		1.2		1	9.2	1.1	#1 PUMP SPEED CONTROLLER	15	4
5	30	#2 PUMP SPEED CONTROLLER	1.1	9.2	1			2.2	1	9.2	1.1	#4 PUMP SPEED CONTROLLER	15	6
7	20	SUMP PUMP	0.07	0.6	1	1.6			1	12.5	1.5	WET WELL LIGHTS	20	8
9	20	OPER FLOOR LIGHTS	1.2	10.0	1		2.4		1	10.0	1.2	OPER FLOOR LIGHTS	20	10
11	20	OUTDOOR FLOODLIGHTS	1.2	10.0	1			2.2	1	8.3	1	OUTDOOR FLOODLIGHTS	20	12
13	20	CHLOR STORAGE LIGHTS			1	0.1			1	0.7	0.08	OPER FLOOR RECEPTACLES	20	14
15	20	OPER FLOOR RECEPTACLES	1	8.3	1		2.4		1	11.7	1.4	DRY WELL LIGHTS	20	16
17	20	DRY WELL LIGHTS	1.4	11.7	1			1.4	1	0.1	0.01	TOILET LIGHTS	20	18
19	20	CHLORINATOR HEATER	0.05	0.4	1	0.1			2			SPARE	20	20
21	20	SURGE PROTECTION DEVICE	0.1	0.8	3		0.1							
			0.1					0.1	3			SPARE	30	24
			0.1			0.1								
27					1		0.0							
29	20	SPARE			1			0.0	1			SPARE	20	30
31	20	SPARE			1	0.0			1			SPARE	20	32
33	20	SPARE			1		0.0		1			SPARE	20	34
35	20	SPARE			1			0.0	1			SPARE	25	36
37	20	SPARE			1	0.0			1			SPARE	20	38
39	20	SPARE			1		0.0		1			SPARE	20	40
41	20	SPARE			1			0.0	1			SPARE	20	42
PANEL LP-2		ТС	OTAL KVA		2.2	6.1	5.9	SERVICE CHARACTERISTICS VOLTS: 208Y/120		SERVICE CHARACTERISTICS		_ A MLC		
		MANATEE COUNTY OLD PUMP BUILDLING	GRANI	D CONNECT	ED TO	TAL KVA	14.	1		PHASE: WIRE:	4	: : : :YMM, FULLY RATED ASSEMBLY	100	A MCE

PANEL SCHEDULE LP-2

SCALE: NTS









## LIFT STATION 12A ELECTRICAL PUMP & VFD REHABILITATION

ELECTRICAL
PANELBOARD SCHEDULES

PROJ. START DATE:	2020. JUN	SCALI	
ICE PROJ. #	01024-0181		-
RAWN	JG	HORIZON	T
DESIGNED	SS	N/A	
CHECKED	MAC	VERTICA	٩
ROJ. MGR.	AAH	TBD	

N/A
ERTICAL:

TBD

DRAWING NUMBER

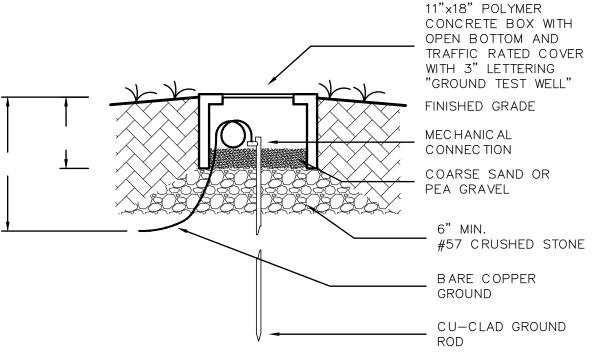
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REVISION

ISSUED FOR BID

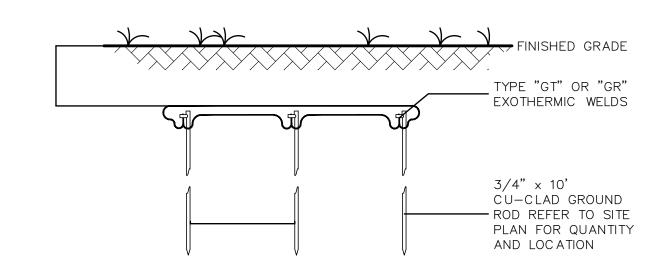
\\MCKIMCREED.COM\NASUNI\DATA\PROJ\01024\0181\WATER\80-DRAWINGS\ELECTRICAL\SCHEDULES AND TABLES.DWG 12/13/2021 11:28:02 SUVATH SENG

#### NOTES:

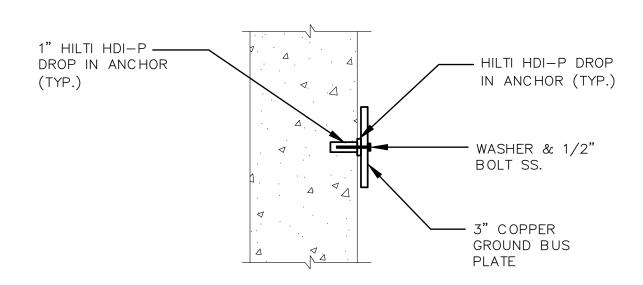
- 1. MINIMUM WIRE SIZE FOR ALL POWER CIRCUITS IS #12AWG CU UNLESS OTHERWISE NOTED.
- 2. MINIMUM CONDUIT SIZE IS 3/4" TRADE SIZE.
- 3. SWAB CLEAN EXISTING CONDUITS PRIOR TO PULLING NEW CIRCUITS.
- 4. FOR LOW VOLTAGE DUCTBANKS MINIMUM SEPARATION BETWEEN CONDUITS SHALL BE 2".



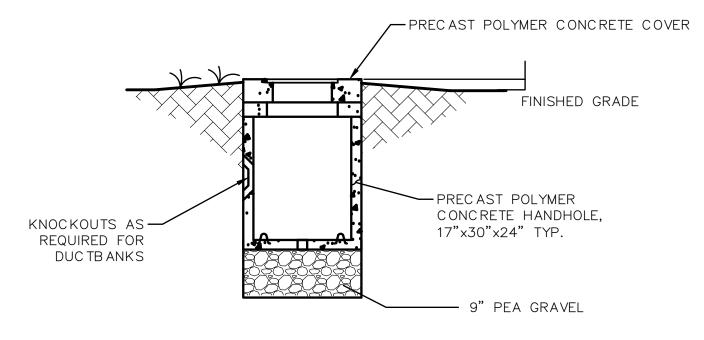
GROUND ROD TEST WELL



BELOW GRADE GROUND ROD/CABLE CONNECTION DETAIL

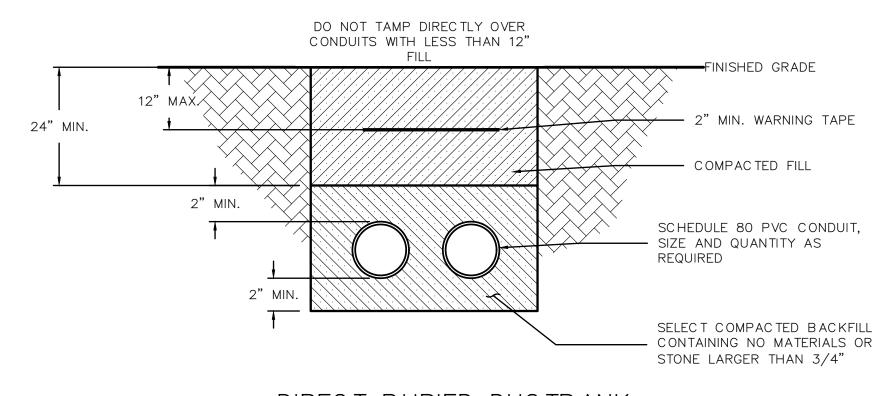


COPPER GROUND BUS PLATE MOUNTING DETAIL

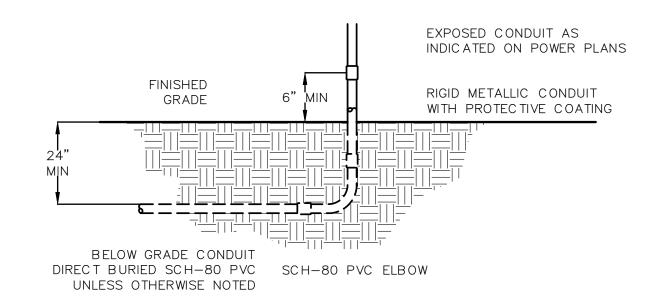


#### SMALL HANDHOLE NOTES:

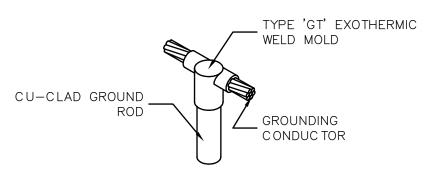
- 1. PROVIDE PRODUCTS OF ONE OF THE FOLLOWING:
- A. STRONGWELL QUAZITE
- B. OLD CASTLE C. OR APPROVED EQUAL
- 2. MATERIAL: PRECAST POLYMER CONCRETE. 3. DUCT ENTRANCES SIZED AND LOCATED TO SUIT
- 4. ENCLOSURES AND COVERS SHALL BE UL-LISTED. 5. ENCLOSURES, BOXES, AND COVERS SHALL COMPLY WITH TEST PROVISIONS OF ANSI/SCTE 77 FOR TIER 15 & 22 APPLIC ATIONS.
- 6. COVERS SHALL HAVE COEFFICIENT OF FRICTION OF NOT LESS THAN 0.50, IN ACCORDANCE WITH ASTM C1028.



DIRECT BURIED DUCTBANK

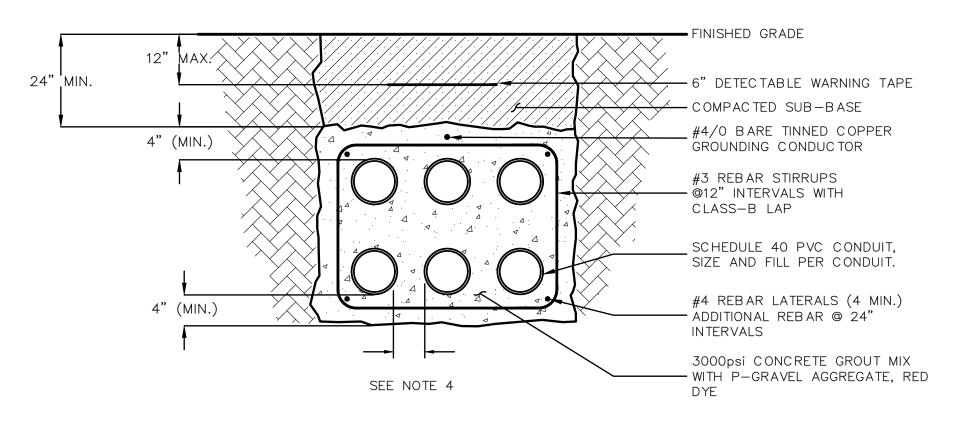


#### CONDUIT TRANSITION DETAIL

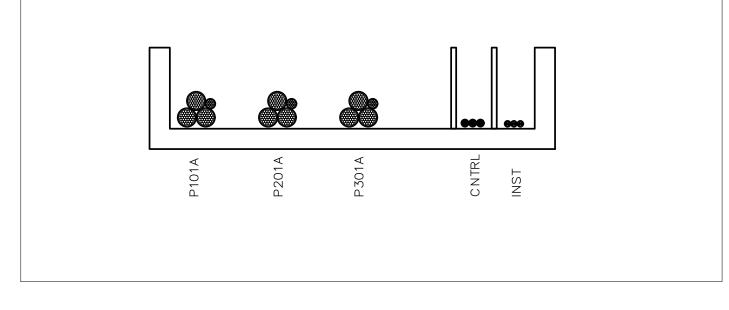


SMALL HANDHOLE DETAIL

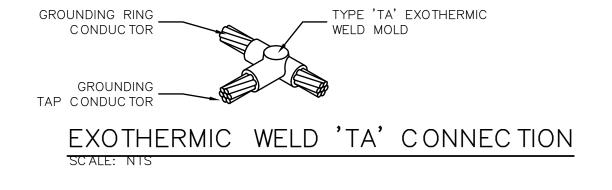


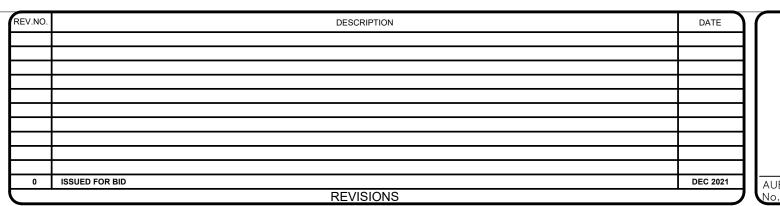


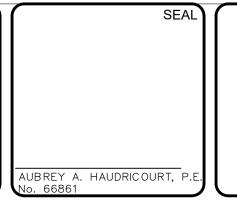
REINFORCED CONCRETE DUCTBANK















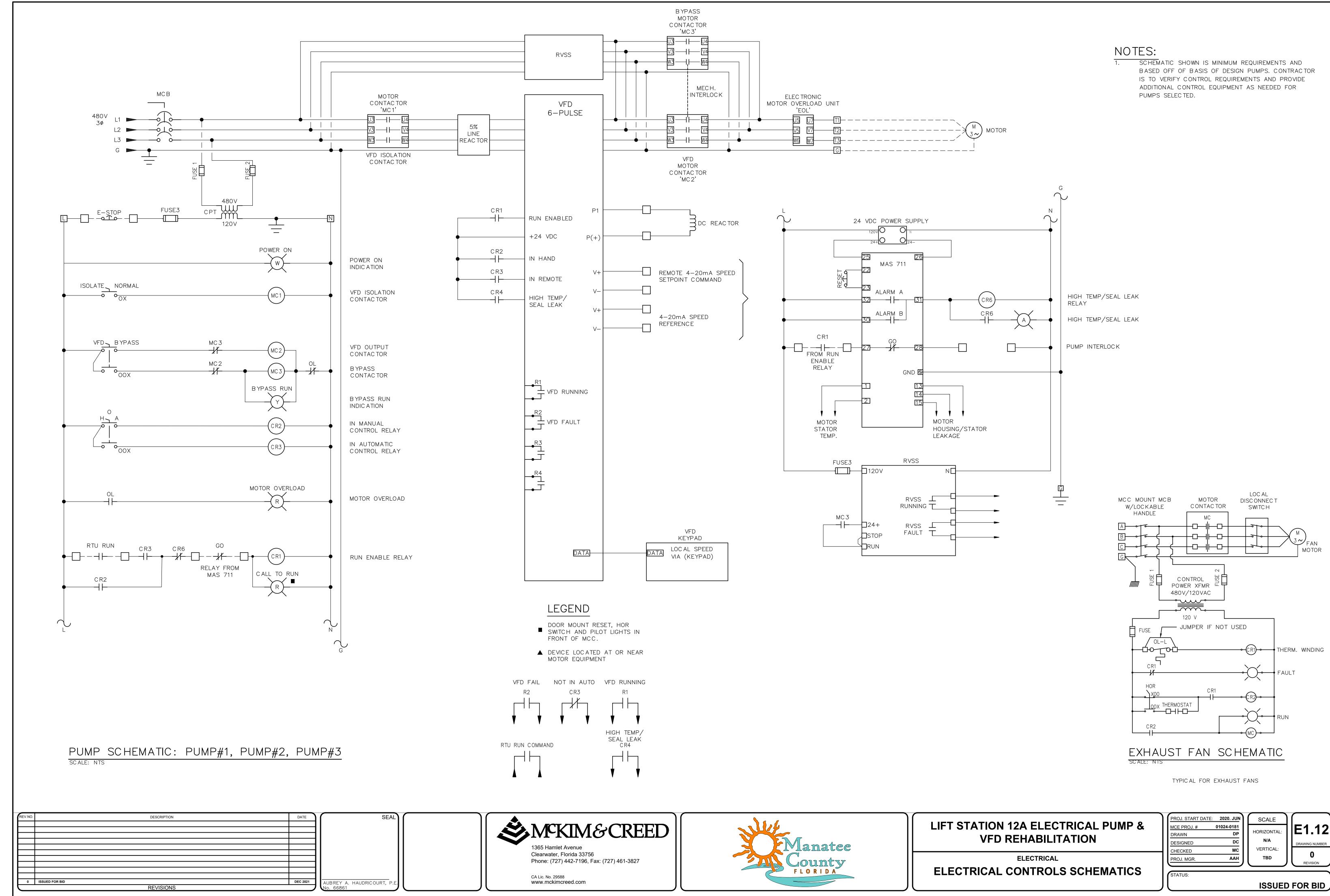
#### LIFT STATION 12A ELECTRICAL PUMP & **VFD REHABILITATION**

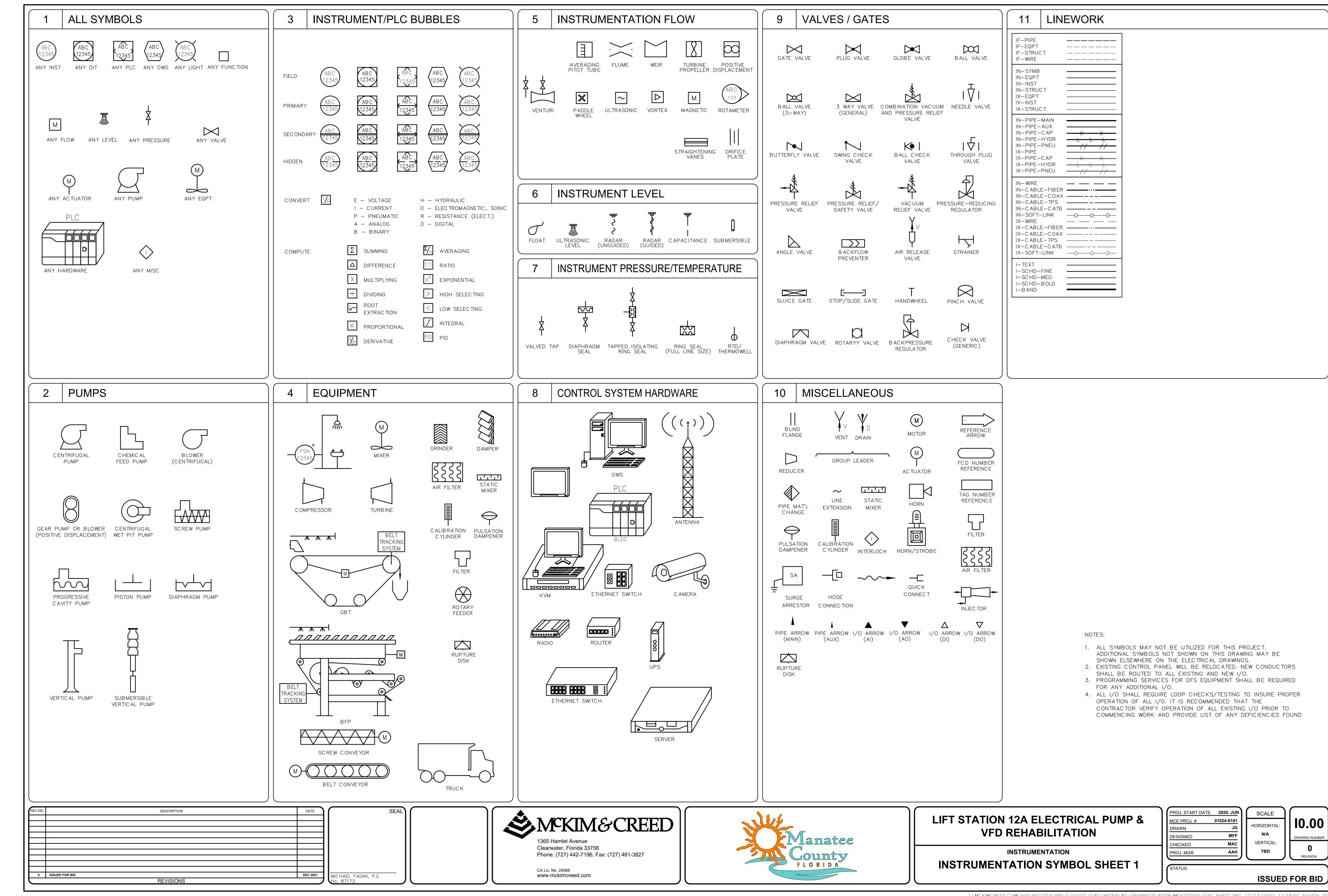
**ELECTRICAL DETAILS** 

)	PROJ. START DATE:	2020. JUN	SCALE	
	MCE PROJ. #	01024-0181		E1.1
	DRAWN	JG	HORIZONTAL:	🗠 । . ।
	DESIGNED	SS	N/A	DRAWING NUME
_	CHECKED	MAC	VERTICAL:	
	PROJ. MGR.	AAH	TBD	]
1				REVISION

ISSUED FOR BID

STATUS:





### 1 PID FUNCTION SYMBOLS

	FIRST LETT	ER		SUC C EEDING—LETTER	RS
	MEASURED OR		READOUT OR	OUTPUT	
	INITIATING VARIABLE	MODIFIER	PASSIVE FUNCTION	FUNCTION	MODIFIER
А	Analysis		Alarm		
В	Burner, Combustion		Programmer		
С	Conductivity			Control	Closed
	(Electrical)				
D	Density or	Differential			
	Specific Gravity				
E	Voltage		Sensor (Primary	Eduction	
			Element)		
F	Flow Rate	Ratio (Fraction)			
G	Gaging		Glass,		
			Viewing Device		
Н	Hand				High
I	Current (Electrical)		Indicate		
J	Power	Scan			
K	Time, Time Schedule			Control Station	
L	Level		Light (Pilot)		Low
М	Motor				Middle,
					Intermediate
N	Vibration				
0	Operation	Offset	Orifice, Restriction		Open
P	Pressure, Vacuum		Point (Test)		
			Connection		
Q	Quantity, Event	Integrate, Totalize	Integrate		
R	Radiation		Record, Print	Regulate	
S	Speed, Frequency	Safety		Switch	
Т	Temperature			Transmit	
U	Multivariable	Trend	Multifunction	Multifunction	Multifunction
V	Viscosity	Vacuum		Valve, Damper,	
				Louver, Gate	
W	Weight, Force,		Well		
	Torque				
X	Unclassified		Unclassified	Unclassified	Unclassified
Y				Relay, Compute,	
				Convert	
Z	Position			Final	Drive, Actuator,
				Control	Unclassified
				Element	Final Control
					Element

EV.NO.	DESCRIPTION	DATE
		<del></del>
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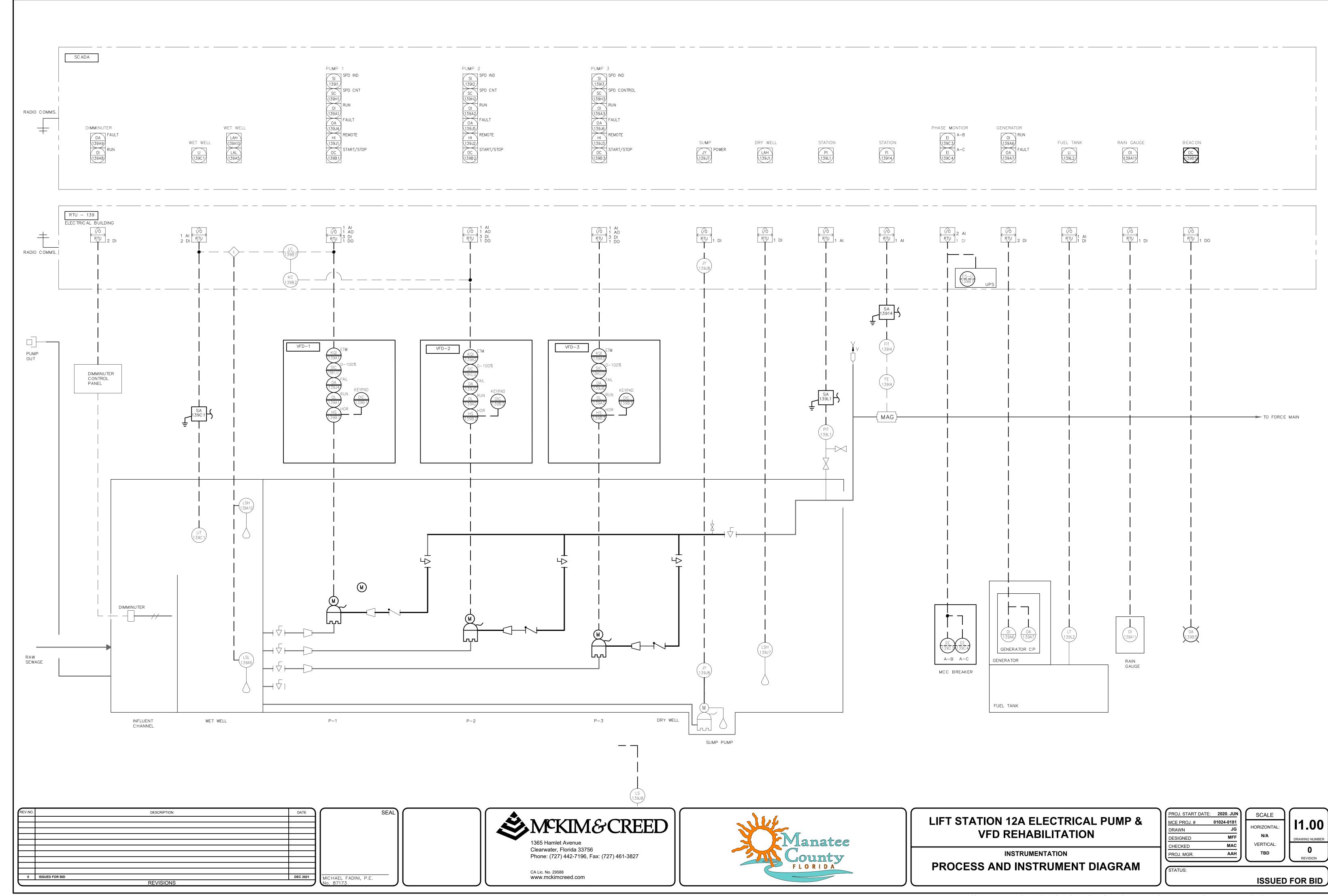




### LIFT STATION 12A ELECTRICAL PUMP & VFD REHABILITATION

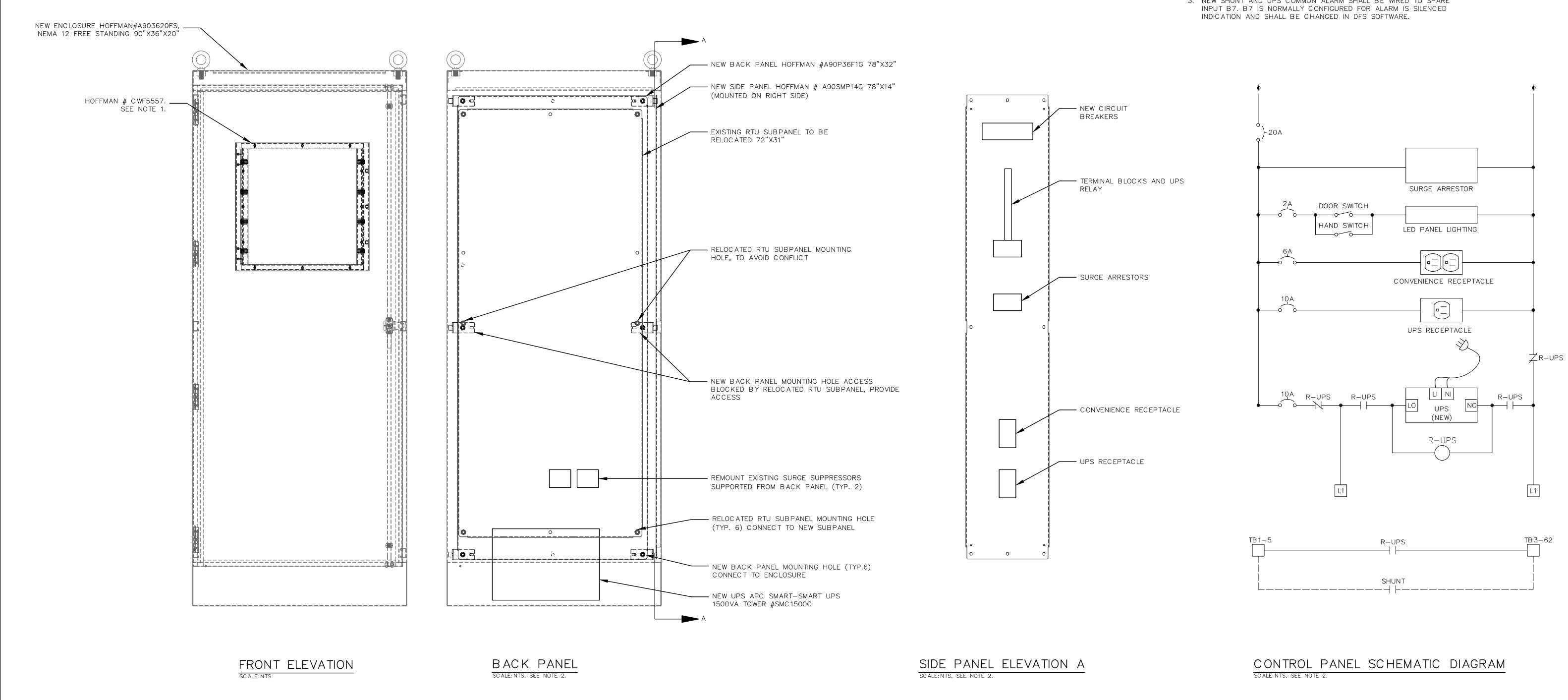
INSTRUMENTATION
INSTRUMENTATION SYMBOL SHEET 2

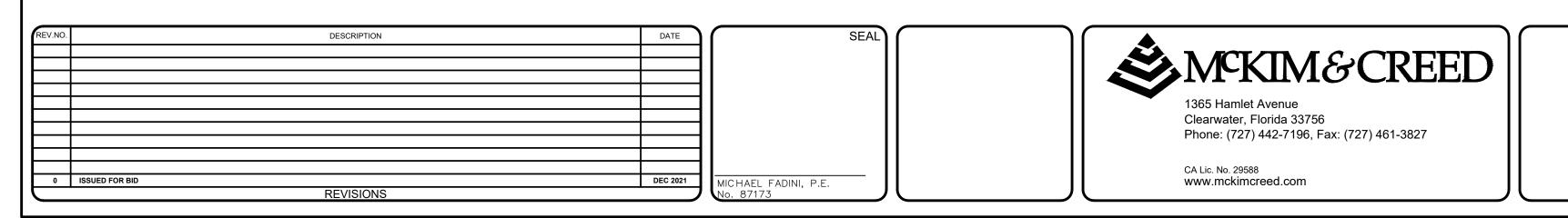
PROJ. START DA	TE: 2020. JUN	SCALE	
MCE PROJ. #	01024-0181		
DRAWN	JG	HORIZONTAL:	
DESIGNED	MFF	N/A	D
CHECKED	MAC	VERTICAL:	
PROJ. MGR.	AAH	TBD	



#### NOTES:

- 1. LOCATE WINDOW IN POSITION WHICH ALLOWS DFS-RTU TO BE VISIBLE WITHOUT OPENING THE PANEL DOOR
- 2. SUBPANEL LAYOUT AND SCHEMATIC ARE DIAGRAMATTIC TO CONVEY MINIMUM REQUIREMENTS FOR FABRICATION AND INSTALLATION.
- 3. NEW SHUNT AND UPS COMMON ALARM SHALL BE WIRED TO SPARE









INSTRUMENTATION **CONTROL PANEL** 

