



LEE COUNTY
SOUTHWEST FLORIDA
DEPARTMENT OF PUBLIC WORKS
UTILITIES DIVISION

FORT MYERS BEACH WATER RECLAMATION FACILITY
MAIN SWITCHGEAR REPLACEMENT

MAY 2023

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 CECIL PENDERGRASS DISTRICT 2
 RAY SANDELLI DISTRICT 3
 BRIAN HAMMAN DISTRICT 4
 MIKE GREENWELL DISTRICT 5

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 HENRY BARROSO UTILITIES OPERATIONS MANAGER
 DOUGLAS MEYER ELECTRICAL SYSTEMS MANAGER
 IGOR GUTIN LEAD OPERATOR
 LYSSA LOTT PROJECT MANAGER

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 DISCIPLINE: HVAC ENGINEERING

ROBERT TAYLOR, AIA-NCARB, LEED AP BD+C, AR0012668
 DISCIPLINE: ARCHITECTURAL

TRACY MARIE PROKOPETZ, P.E. #62427
 DISCIPLINE: GENERAL, ELECTRICAL AND I&C ENGINEERING

RICHARD E. BRYLANSKI, P.E. #42339
 DISCIPLINE: SITE CIVIL ENGINEERING

SHAWN ANDERSON, P.E. #63515
 DISCIPLINE: STRUCTURAL ENGINEERING



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IT IS THE CONTRACTOR'S RESPONSIBILITIES TO USE NON-DESTRUCTIVE IMAGING METHODS (RADAR, XRAY) TO LOCATE UNDERGROUND PIPING, UNDERGROUND CONDUIT, CONCRETE ENCASED DUCTBANKS, EMBEDDED CONDUIT IN CONCRETE PRIOR TO DEMOLITION, SAW CUTTING AND CORE DRILLING. RELOCATE AS REQUIRED TO FACILITATE CONSTRUCTION , RECONSTRUCT DAMAGED PIPING, CONDUIT AND WIRE PER ELECTRICAL SPECIFICATIONS AND TO LCU SATISFACTION.

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TRACY MARIE PROKOPETZ, P.E. #62427



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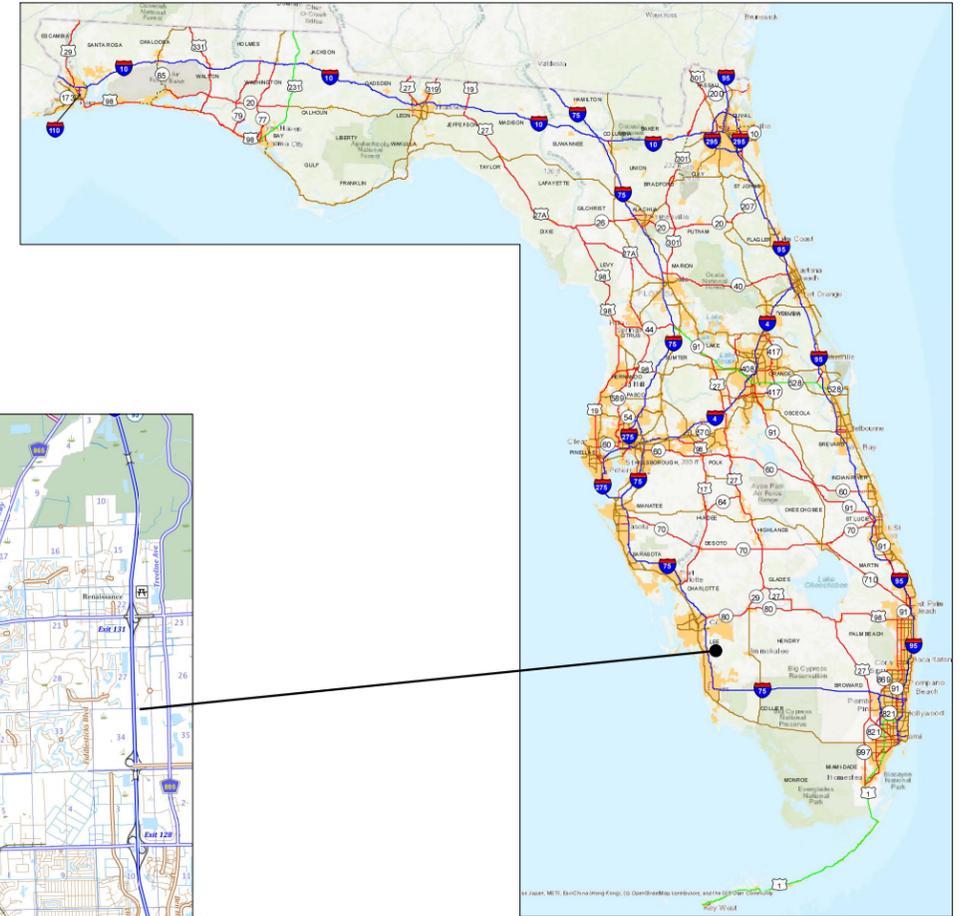


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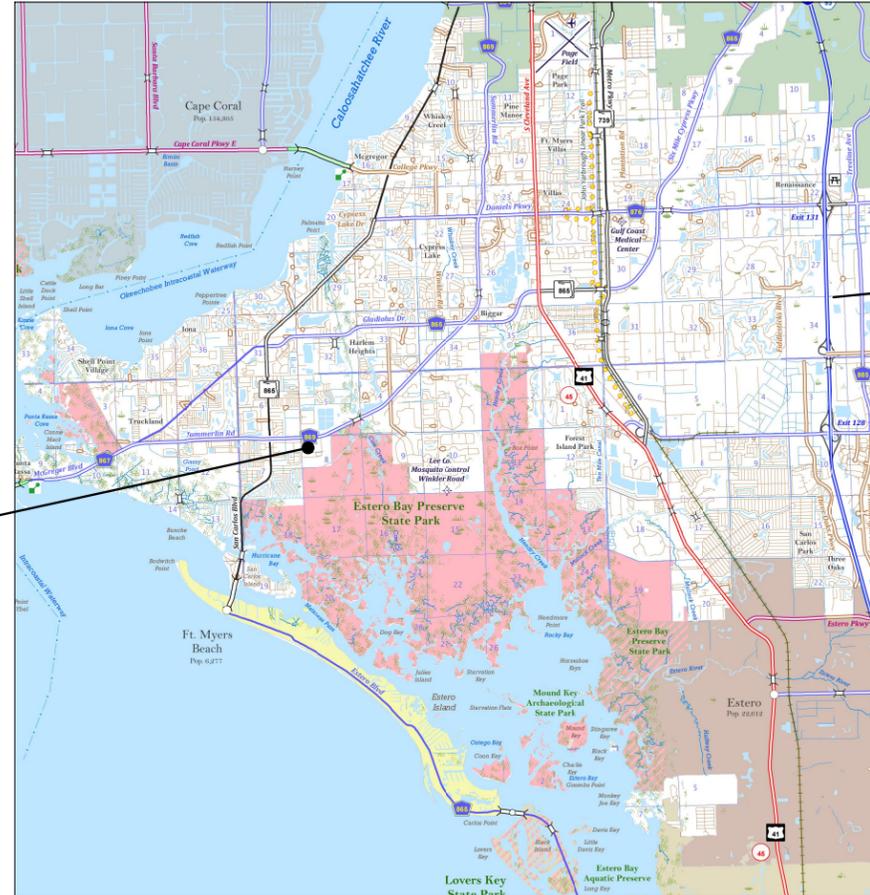
FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT

DRAWING INDEX

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DATE :	05/2023
SHEET NO. :	G001



STATE OF FLORIDA
MAP COURTESY OF FDOT



LEE COUNTY
MAP COURTESY OF FDOT



PROJECT SITE

MAP COURTESY OF GOOGLE EARTH 11/03/2022
FORT MYERS BEACH WATER RECLAMATION FACILITY
 17155 PINE RIDGE RD
 FORT MYERS BEACH, FL 33931

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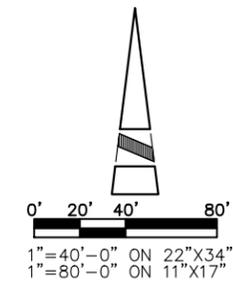
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FORT MYERS BEACH WATER RECLAMATION FACILITY
 SWITCHGEAR REPLACEMENT

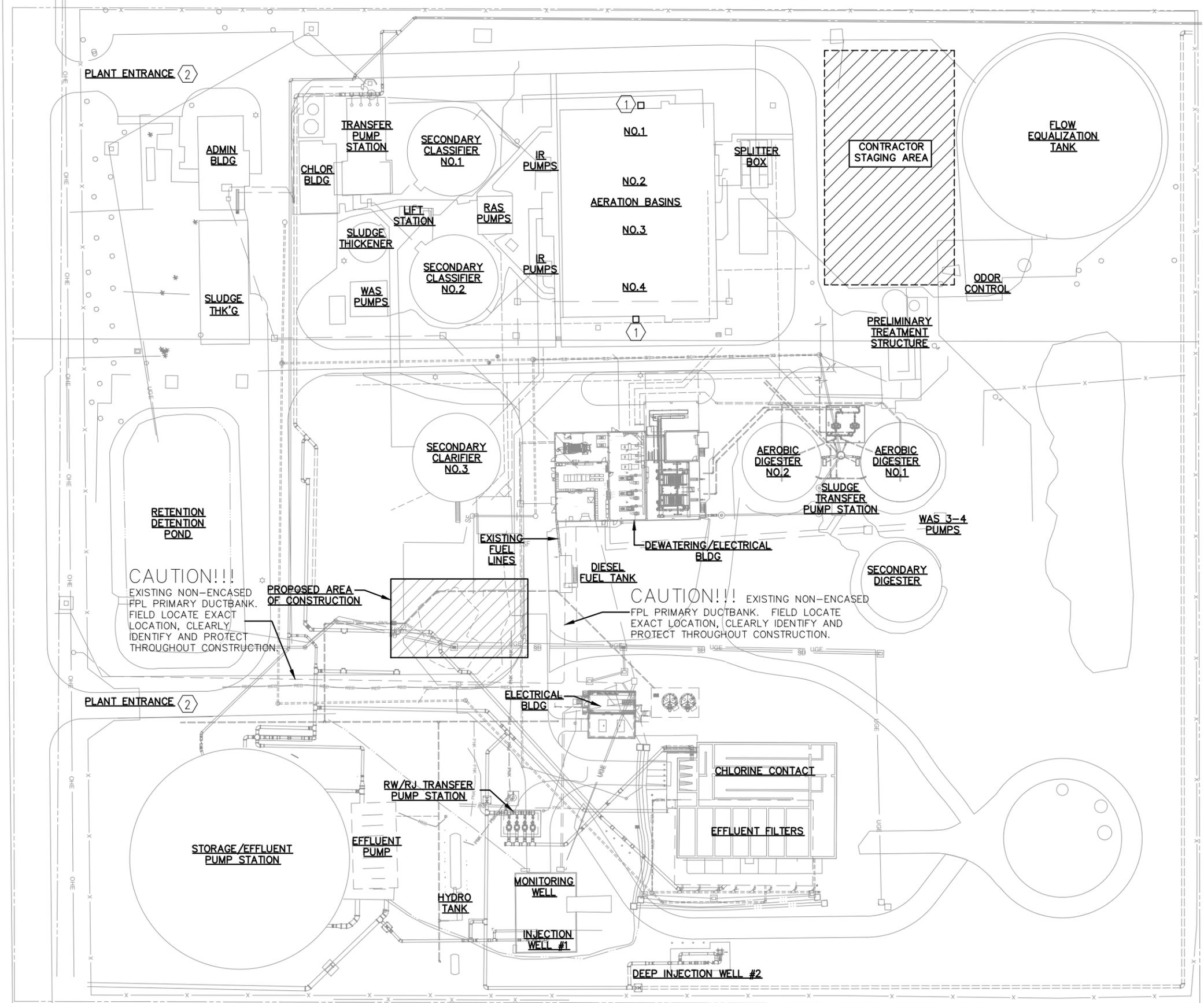
SITE LOCATION MAP

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- # KEYNOTES:
- 60A UNUSED FLOATING AERATOR ELECTRICAL CIRCUIT AVAILABLE FOR TEMPORARY POWER.
 - PLANT ENTRANCE MAY BE USED AS A CONSTRUCTION ENTRANCE.



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TRACY MARIE PROKOPETZ, P.E. #62427

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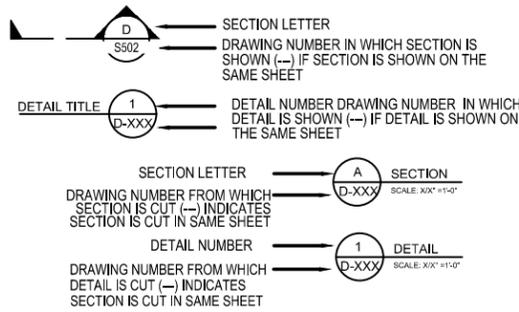
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FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT
OVERALL EXISTING SITE PLAN

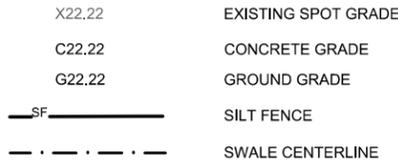
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GENERAL DRAFTING LEGEND



SYMBOLS LEGEND



MATERIALS LEGEND



ABBREVIATIONS

C/L	CENTERLINE
C	CONCRETE
EL.	ELEVATION
EP	EDGE OF PAVEMENT
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
INV	INVERT
MAX.	MAXIMUM
P	PAVEMENT
PVC	POLYVINYL CHLORIDE
SF	SQUARE FOOT
SY	SQUARE YARD
TYP.	TYPICAL

CIVIL INDEX OF SHEETS

C001	GENERAL NOTES, STANDARD SYMBOLS AND ABBREVIATIONS AND CIVIL INDEX OF SHEETS
C100	AERIAL WITH WORK ZONE
C101	EXISTING CONDITIONS, EROSION CONTROL AND DEMOLITION PLAN
C102	SITE PLAN
C102A	EXISTING WATER MAIN EXHIBIT
C501	DETAILS

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RICHARD EDMUND BRYLANSKI, P.E. - P.E. NO. 42339

GENERAL NOTES

- ALL CONSTRUCTION OPERATIONS ARE TO BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE STATE STATUTES AND OSHA REGULATIONS.
- ALL WORK SHALL COMPLY WITH THE CURRENT LEE COUNTY STANDARDS MANUAL CONSTRUCTION AND DEVELOPMENT REQUIREMENTS.
- CONTRACTOR IS RESPONSIBLE FOR CONDUCTING A COMPLETE GEOTECHNICAL INVESTIGATION TO DETERMINE ALL SUBSURFACE CHARACTERISTICS REQUIRED TO COMPLETE THE WORK.
- THE CONTRACTOR SHALL SCHEDULE WORK IN SUCH A MANNER AS TO AVOID UNNECESSARY INCONVENIENCE TO THE OWNER OR THE PUBLIC.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL SURVEY MONUMENTS AND CORNER MARKERS. SURVEY MONUMENTS AND PROPERTY CORNER MARKERS DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE REESTABLISHED BY A REGISTERED PROFESSIONAL SURVEYOR LICENSED IN THE STATE IN WHICH THE WORK IS BEING PERFORMED.
- CONTRACTOR SHALL MAINTAIN THE JOB SITE IN A SAFE, NEAT, AND WORKMANLIKE MANNER AT ALL TIMES. JOB SITE SAFETY SHALL NOT BE COMPROMISED.
- DIMENSIONS TO STRUCTURES, REFERENCED PIPING, PAVING, AND OTHER IMPROVEMENTS ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND CONDITIONS 14 DAYS IN ADVANCE OF THE CONSTRUCTION PROGRESS.
- STRUCTURES SUCH AS CURBS AND GUTTERS, CONCRETE AND ASPHALT DRIVES AND WALKWAYS, PAVING BRICKS, FENCING, RETAINING WALLS, SIGNS, POSTS, MARKERS, ETC., CROSSED BY A UTILITY THAT ARE NOT INDICATED IN THE PLANS SHALL BE RESTORED BY THE CONTRACTOR TO PRECONSTRUCTION CONDITIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING ROADS, BUILDINGS, OR OTHER STRUCTURES RESULTING FROM THE CONTRACTOR'S CONSTRUCTION ACTIVITIES. REPAIRS SHALL BE MADE TO PRECONSTRUCTION CONDITIONS.
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL APPLICABLE PERMITS REQUIRED TO PERFORM THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING STAGING AREAS REQUIRED TO PERFORM THE WORK.
- THE CONTRACTOR SHALL MAINTAIN DRIVEWAY ACCESS TO ALL ADJOINING PROPERTIES ACCESSIBLE TO THE PUBLIC AND EMERGENCY VEHICLES. DESIGNS FOR MAINTAINING ACCESS WILL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE CONTROLLING AGENCY FOR THE REVIEW AND APPROVAL.
- CONTRACTOR SHALL COMPLY WITH THE TRENCH PLATE REQUIREMENTS OF THE GOVERNING JURISDICTION. IF TRENCH PLATE REQUIREMENTS ARE NOT SPECIFIED, THE CONTRACTOR SHALL APPLY SKID RESISTANT COATING ON THE TRENCH PLATES AND COLD MIX ASPHALT CONCRETE TO THE EDGES. THE TRENCH PLATES SHALL BE NOTCHED INTO THE ASPHALT CONCRETE OR TRAVELED SURFACE TO PREVENT SLIPPAGE AND ROCKING UNDER TRAFFIC.
- THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE, COUNTY, AND LOCAL LAWS AND ORDINANCES RELATING TO THE SAFETY AND CHARACTER OF WORK, EQUIPMENT, AND PERSONNEL. THIS INCLUDES, BUT IS NOT LIMITED TO SHEETING, SHORING, BRACING, VENTILATION, CONFORMANCE WITH TRAFFIC CONTROL AND MAINTENANCE OF BARRICADES AND WARNING DEVICES.
- CONTRACTOR SHALL KEEP COMPLETE AND ACCURATE RECORD DRAWINGS OF THE WORK, UTILITY POT HOLE DATA, AND EXISTING CONDITIONS THAT HAVE CHANGED OR ARE DIFFERENT THAN SHOWN ON THE PLANS. UPON COMPLETION OF THE WORK, THE CONTRACTORS RECORD DRAWINGS SHALL BE SUBMITTED TO THE OWNER.
- CONTRACTOR IS RESPONSIBLE FOR PROTECTING AND MAINTAINING ALL STORM DRAIN PIPES, STORM WATER FEATURES, OR DRAINAGE FACILITIES FROM DAMAGE DURING ALL STAGES OF CONSTRUCTION.
- ALL EXISTING PAVEMENT MARKINGS AND SIGNAGE DISTURBED DURING CONSTRUCTION SHALL BE REPLACED BY CONTRACTOR AT NO EXPENSE TO OWNER.
- CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING THE WATER FOR ALL PROJECT-RELATED ACTIVITIES INCLUDING BUT NOT LIMITED TO CONSTRUCTION, DUST CONTROL, TESTING, AND DISINFECTION. THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING WITH OWNER TO TAP EXISTING MAINS AND BRINGING WATER TO THE SITE.
- CONTRACTOR WILL BE RESPONSIBLE FOR DEVELOPMENT OF A CONSTRUCTION STORMWATER POLLUTION PREVENTION PROGRAM. CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE CONSTRUCTION PERMIT AND COMPLYING WITH ALL ASPECTS OF THE PERMIT.
- THE CONTRACTOR SHALL RESTORE THE SITE GRADING AND DRAINAGE TO PRECONSTRUCTION CONDITIONS.

GENERAL PIPELINE NOTES:

- ALL OPEN TRENCHES, WORK AREA, AND SHAFTS SHALL BE SLOPED OR HAVE A SHORING SYSTEM IN ACCORDANCE WITH OSHA, STATE, AND LOCAL REQUIREMENTS.
- SCHEDULE TIE-INS IN ACCORDANCE WITH THE SEQUENCING REQUIREMENTS OF THE CONTRACT. SCHEDULE AND COORDINATE TIE-INS AROUND THE OWNER'S OPERATIONAL REQUIREMENT AND LIMITATION.
- THE CONTRACTOR IS RESPONSIBLE FOR ARRANGING FOR REQUIRED INSPECTION. THE PRESENCE OR ABSENCE OF THE INSPECTOR WILL NOT RELIEVE THE CONTRACTOR OF FULL RESPONSIBILITY FOR THE PROPER PERFORMANCE OF THE WORK.

EXISTING UTILITY NOTES:

- UTILITY LOCATIONS SHOWN ON PLANS ARE CONSIDERED APPROXIMATE ONLY. NO ELEVATIONS ARE SHOWN, AND NO INFORMATION WAS AVAILABLE DURING THE DESIGN PERIOD.
- THE CONTRACTOR SHALL VERIFY LOCATION AND DEPTHS OF EXISTING UTILITIES BY CONTACTING ALL UTILITIES, AGENCIES, AND SUBSURFACE UTILITY LOCATING SERVICES (811). IN ADVANCE OF EXCAVATION, CONTRACTOR SHALL USE ALL EXISTING UTILITIES AND STRUCTURES ADJACENT TO THE WORK AREA, WHETHER INDICATED ON THE DRAWINGS OR NOT. SURVEY AND ACCURATELY RECORD.
- SUPPORT ALL EXISTING UTILITIES AT CROSSING LOCATIONS. PROTECT EXISTING UTILITIES RUNNING PARALLEL TO CONSTRUCTED TRENCHES FROM DAMAGE CAUSED BY THE REMOVAL OF ADJACENT MATERIALS.
- SOME UTILITY SERVICES MAY NOT BE SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL TAKE NECESSARY MEASURES TO LOCATE AND PROTECT SERVICE DURING CONSTRUCTION.
- PRIOR TO CONSTRUCTION OF ANY NEW PIPELINE THAT TIES INTO AN EXISTING UTILITY, EXPOSE AND VERIFY LOCATION AND ELEVATION OF THE TIE-IN POINT. CONFIRM THE EXISTING PIPE MATERIAL AND ANY OTHER INFORMATION REQUIRED BY THE DRAWINGS. SURVEY AND ACCURATELY RECORD THE LOCATION AND ELEVATION OF THE TIE-IN POINT ON THE RECORD DRAWINGS.
- BEFORE CONSTRUCTION IS STARTED, CONTRACTOR SHALL COORDINATE WITH THE OWNER OF EACH UTILITY AND DEFINE THE REQUIREMENTS AND METHODS TO ACCOMMODATE THE PROTECTION, TEMPORARY SUPPORT, ADJUSTMENT, OR RELOCATION OF ANY UTILITIES AFFECTED BY THE PROPOSED WORK.
- CONTRACTOR IS RESPONSIBLE FOR COSTS INCURRED AS A RESULT OF UTILITY RELOCATIONS PERFORMED FOR THE CONTRACTOR'S CONVENIENCE.

SPECIFICATIONS

- DRAINAGE STRUCTURES: EXISTING DRAINAGE STRUCTURES SHALL BE REUSED AND PLACED IN THE PROPOSED VERTICAL AND HORIZONTAL LOCATION AS SHOWN IN THE CONSTRUCTION PLANS. SHOULD THERE BE AN ISSUE RELOCATING THE EXISTING STRUCTURES TO THEIR PROPOSED LOCATION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER/OWNER. PENETRATIONS IN THE STRUCTURE SHALL BE GROUTED AND SEALED TO PREVENT ANY LOOSE SEDIMENT FROM ENTERING THE DRAINAGE SYSTEM. DRAINS SHALL BE NYOPLAST INLINE DRAIN WITH STANDARD DUCTILE IRON GRATE, OR AN APPROVED EQUAL. PROPOSED DRAINAGE SYSTEM SHALL REMAIN CLEAN AND FREE OF ANY LOOSE DEBRIS OR SEDIMENT UNTIL FINAL COMPLETION OF THE PROJECT.
- HDPE DRAINAGE PIPE: DRAIN PIPE SHALL BE ADVANCED DRAINAGE SYSTEMS (ADS) SINGLE WALL PIPE, WITH SOIL TIGHT (ST) CONNECTIONS, OR APPROVED EQUAL.
- EMBANKMENT: WHERE EMBANKMENTS ARE TO BE CONSTRUCTED, MATERIAL SHALL BE PLACED IN SUCCESSIVE LAYERS NOT MORE THAN 12 INCHES OF COMPACTED THICKNESS. WHEN CONSTRUCTING AN EMBANKMENT ON A HILLSIDE SLOPING MORE THAN 20 DEGREES FROM THE HORIZONTAL, BEFORE STARTING THE FILL, DEEPLY PLOW OR CUT INTO STEPS, THE SURFACE OF THE ORIGINAL GROUND ON WHICH THE EMBANKMENT IS TO BE PLACED. UNIFORMLY COMPACT EACH LAYER, USING EQUIPMENT THAT WILL ACHIEVE THE REQUIRED DENSITY, AND AS COMPACTION OPERATIONS PROGRESS, SHAPE AND MANIPULATE EACH LAYER AS NECESSARY TO ENSURE UNIFORM DENSITY THROUGHOUT THE EMBANKMENT.
- PREPARATION OF SIDEWALK SECTION: AREAS WHERE PROPOSED SIDEWALK IS TO BE CONSTRUCTED SHALL BE STRIPPED OF GRASS AND OTHER ORGANIC MATERIAL DOWN TO SUITABLE SUBGRADE MATERIAL. SUBGRADE SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AND TESTED EVERY 300 SY. COMPACTED SUBGRADE SHALL EXTEND 1 FOOT BEYOND THE EDGE OF SIDEWALK. BASE LAYER SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AND TESTED EVERY 300 SY. COMPACTED BASE LAYER SHALL EXTEND 6 INCHES BEYOND THE EDGE OF SIDEWALK.
- CONCRETE: CONCRETE USED FOR SIDEWALK CONSTRUCTION SHALL BE 3,000 PSI. CONCRETE SIDEWALK SHALL BE CONSTRUCTED IN ACCORDANCE WITH LEE COUNTY AND/OR FDOT STANDARDS. REFER TO FDOT INDEX 522 FOR SAWED CONTROL JOINTS AND EXPANSION JOINT SPACING. FINISHED CONCRETE SHALL RECEIVE A BROOM FINISH.

GENERAL NOTES

- THE CONTRACTOR SHALL NOTIFY SUNSHINE STATE ONE CALL (1-800-282-8881) PRIOR TO CONSTRUCTION OPERATIONS. IT IS CONTRACTORS RESPONSIBILITY TO PROTECT EXISTING UTILITIES FROM DAMAGE. EXPLORATORY EXCAVATION MAY BE REQUIRED PRIOR TO CONNECTION TO EXISTING UTILITIES. IF EXISTING VALVES OR FITTINGS ARE NOT RESTRAINED, THEN THE CONTRACTOR IS RESPONSIBLE TO RESTRAIN EXISTING UTILITIES IN ACCORDANCE WITH UTILITY REQUIREMENTS.
- PRIOR TO THE START OF CONSTRUCTION ACTIVITIES, PRESERVE AREAS WITHIN AND ADJOINING THE AREA OF CONSTRUCTION ACTIVITY SHALL BE PROTECTED BY ERECTION OF TREE PROTECTION BARRICADES AND/OR SILT BARRIERS. SILT BARRICADES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE BEST MANAGEMENT PRACTICES DETAIL DRAWING. THE ENGINEER SHALL DETERMINE THE EXTENT AND TYPE OF PROTECTIVE MEASURES TO BE CONSTRUCTED FOR THE PROTECTION OF PRESERVE AREAS SUBJECT TO THE APPROVAL OF SFWMD AND LEE COUNTY. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND LEE COUNTY WHEN PRESERVE AREA BARRICADES AND BARRIERS ARE IN PLACE. THE CONTRACTOR IS RESPONSIBLE TO OBTAIN ANY REQUIRED TREE REMOVAL PERMIT FROM LEE COUNTY.
- THE REQUIREMENTS OF LEE COUNTY STANDARD SPECIFICATIONS AND STANDARD DETAILS SHALL GOVERN ALL UTILITY WORK. WHERE A CONFLICT EXISTS IN THE REQUIREMENTS OF A REFERENCED MATERIAL OR INSTALLATION STANDARD, THE REQUIREMENTS OF LEE COUNTY SHALL PREVAIL. WHERE THE REQUIREMENTS OF A STATE OR LOCAL AGENCY HAVING JURISDICTION ARE MORE STRINGENT, THOSE REQUIREMENTS SHALL PREVAIL.
- THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE, AT ALL TIMES, ONE COPY OF THE CONTRACT DOCUMENTS INCLUDING PLANS, SPECIFICATIONS AND SPECIAL PROVISIONS, AND COPIES OF ANY REQUIRED CONSTRUCTION PERMITS.
- CONTRACTOR IS RESPONSIBLE FOR CHECKING ACTUAL SITE AND STATE PERMITS BEFORE COMMENCING WORK.
- ANY DISCREPANCIES ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE COMMENCING WORK.
- CONTRACTOR SHALL OBTAIN LEE COUNTY RIGHT OF WAY (ROW) PERMIT BEFORE COMMENCING WORK WITHIN THE LEE COUNTY ROW. LEE COUNTY PERMITS HAVE BEEN OBTAINED AND COPIES OF THESE PERMITS MUST BE KEPT ON SITE AT ALL TIMES.
- NO FIELD CHANGES OR DEVIATION FROM DESIGN TO BE MADE WITHOUT PRIOR WRITTEN APPROVAL BY ENGINEER.
- CONTRACTOR MUST ADHERE TO FEDERAL REGISTER VOL. 58, NO. 9, RULES AND REGULATIONS, PAGE 4552 AND THE 10. O.S.H.A. TRENCH SAFETY ACT.
- CONTRACTOR SHALL SPRINKLE OR OTHERWISE APPLY WATER TO AFFECTED CONSTRUCTION AREAS TO CONTROL BOTH SIGNIFICANT WIND EROSION AND FUGITIVE DUST.
- THE CONTRACTOR SHALL PROVIDE AS BUILT DRAWINGS TO THE ENGINEER, FOR THE PURPOSE OF CREATING RECORD DRAWINGS.
- THE CONTRACTOR SHALL PROVIDE VEHICLE AND PEDESTRIAN TRAFFIC CONTROL DURING CONSTRUCTION IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION DESIGN STANDARDS, LATEST EDITION. TRAFFIC CONTROL THROUGH WORK ZONES, SERIES 600 INDICES.
- LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS, BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT (SUBSURFACE UTILITIES ENGINEERING (S.U.E.) HAVE BEEN PERFORMED, AND COPIES OF THIS WILL BE PROVIDED BY THE ENGINEER). PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY AND BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES AFFECTING HIS WORK. ANYTHING NOT SHOWN ON THESE DRAWINGS SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND SHALL NOT CONSTITUTE AN EXTRA, UNLESS APPROVED BY THE ENGINEER.
- TRAFFIC MUST BE MAINTAINED AT ALL TIMES AS PER FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
- THE CONTRACTOR SHALL VERIFY ALL UTILITIES AND PROVIDE AT LEAST 48 HOURS NOTICE TO THE INDIVIDUAL UTILITY COMPANIES AND FDOT AND THE LEE COUNTY PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL REPLACE ALL PAVEMENT, CURBS, DRIVEWAYS, SIDEWALKS, FENCES, STORM DRAINS, ETC., WITH THE SAME TYPE OF MATERIAL THAT WAS REMOVED DURING CONSTRUCTION OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL RESTORE ALL AREAS AFFECTED BY THE CONSTRUCTION TO ITS ORIGINAL CONDITION, OR BETTER.
- THE INFORMATION PROVIDED IN THESE PLANS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF CONDITIONS WHICH MAY BE ENCOUNTERED DURING THE COURSE OF WORK. ALL CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATIONS THEY MAY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSION REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED, AND UPON WHICH THEIR BIDS WILL BE BASED.
- COORDINATE VALUES ARE BASED ON THE STATE PLANE COORDINATE SYSTEM, FLORIDA WEST ZONE, NORTH AMERICAN DATUM OF 1983 (NSRS). ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

RK CONSULTING ENGINEERS
ELECTRICAL * INSTRUMENTATION * CONTROL
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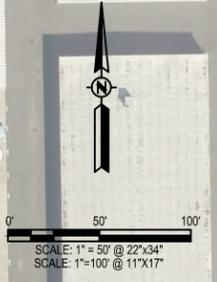
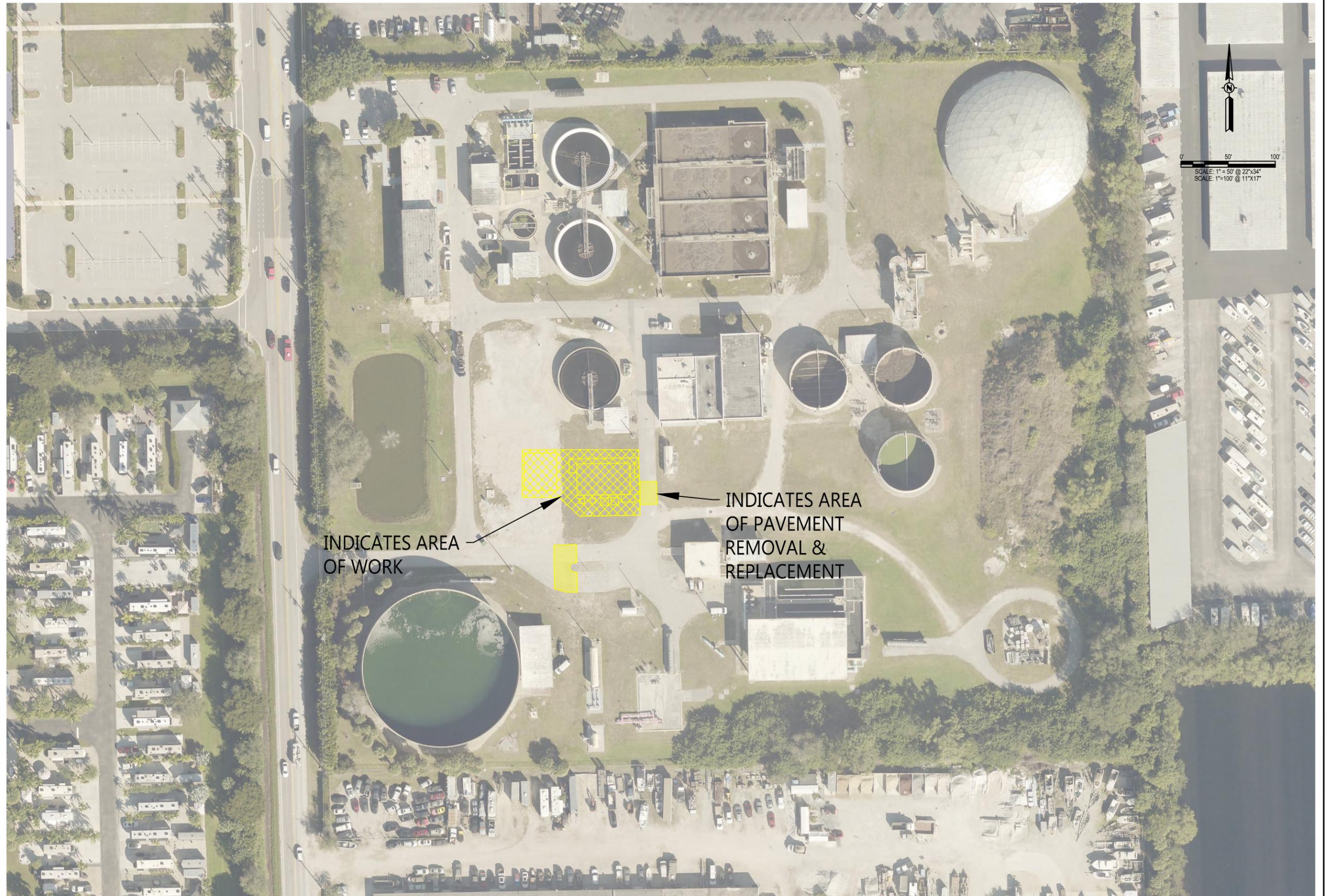
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DRAWN BY:	K.L.P.
CHECKED BY:	R.M.B.
CAD FILE:	C001



LEE COUNTY
SOUTHWEST FLORIDA
DEPARTMENT OF PUBLIC WORKS
UTILITIES DIVISION

FORT MYERS BEACH WATER RECLAMATION FACILITY SWITCHGEAR REPLACEMENT		ISSUED FOR: BIDDING
GENERAL NOTES, STANDARD SYMBOLS AND ABBREVIATIONS AND CIVIL INDEX OF SHEETS		DATE: 05/2023
		SHEET NO.: C001



INDICATES AREA OF WORK

INDICATES AREA OF PAVEMENT REMOVAL & REPLACEMENT

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RICHARD EDMUND BRYLANSKI, P.E. - P.E. NO. 42339

RK CONSULTING ENGINEERS
 ELECTRICAL * INSTRUMENTATION * CONTROL
 12651 McGregor Blvd. Ste 4-402 | Fort Myers, FL 33919
 239.481.6775 | Certificate of Authorization #8212

HMI
 HOLE MONTES
 HOLE MONTES, INC.
 6200 WHISKEY CREEK DRIVE
 FORT MYERS, FL. 33919
 CERTIFICATE OF AUTHORIZATION NO.1772

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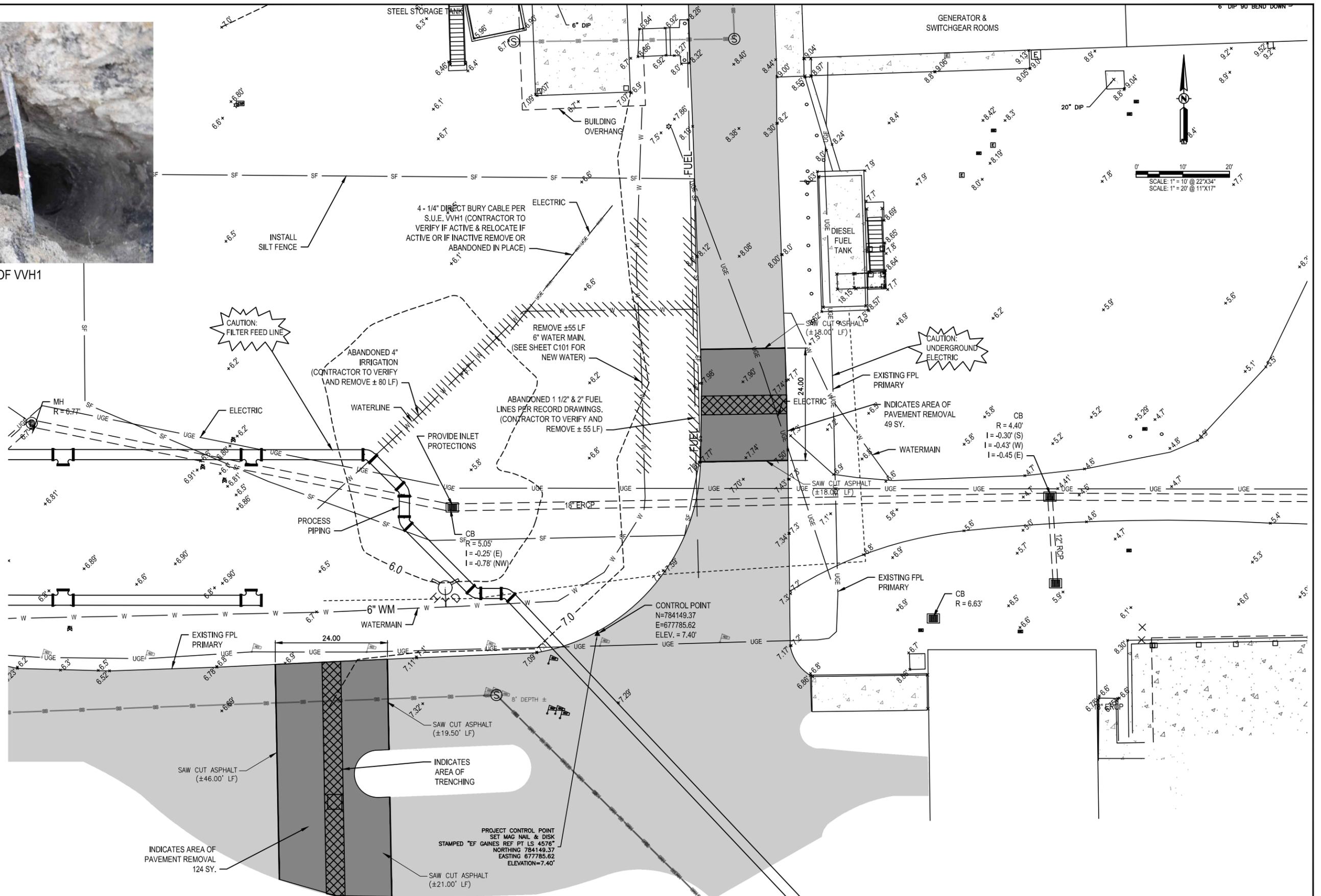
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FORT MYERS BEACH WATER RECLAMATION FACILITY
 SWITCHGEAR REPLACEMENT
 AERIAL WITH WORK ZONE

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DATE:	05/2023
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PHOTO OF VVH1



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CAD FILE:	C101



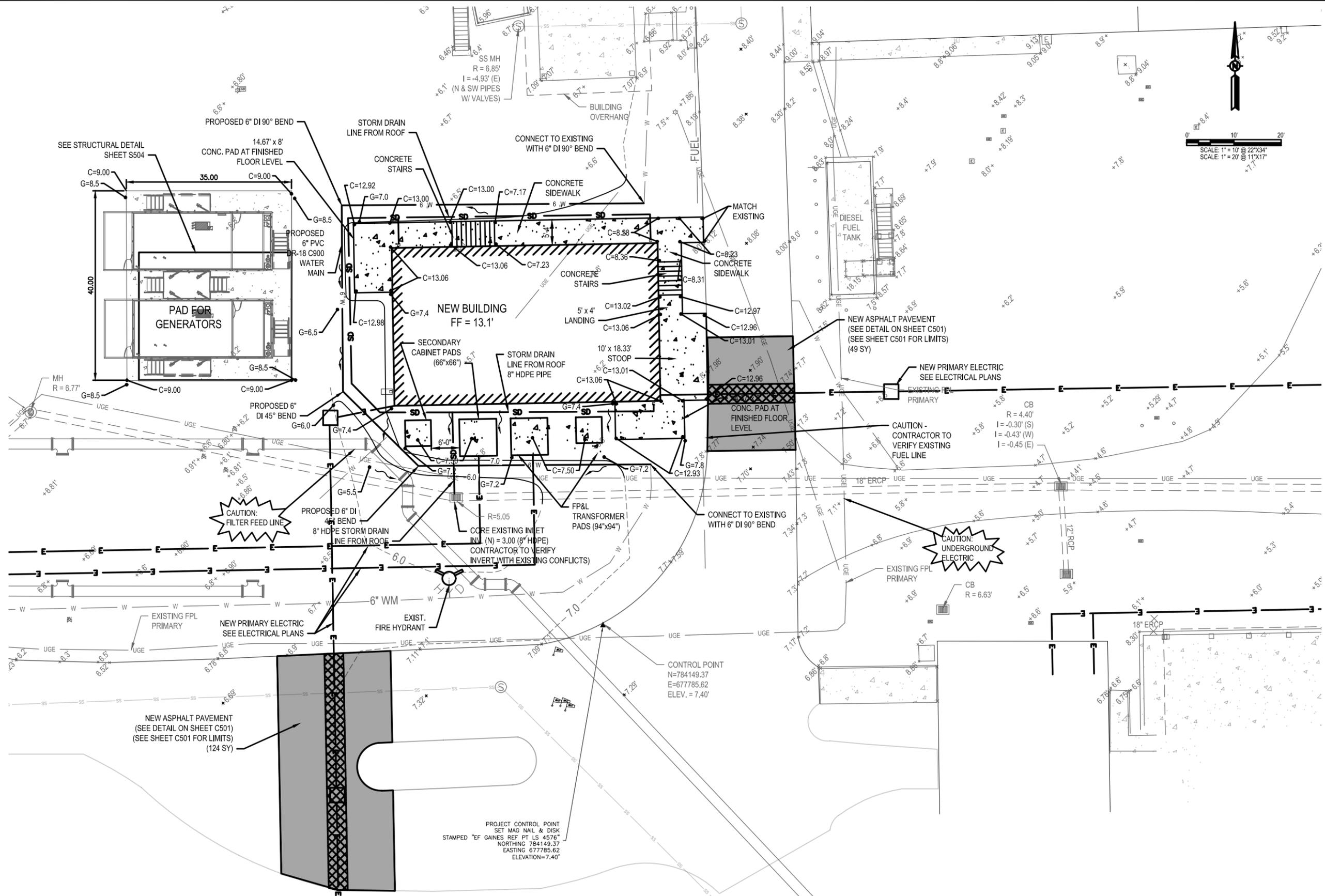
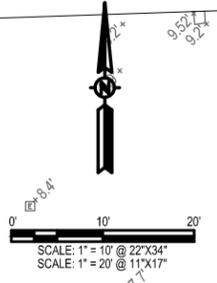
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 DEPARTMENT OF PUBLIC WORKS
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FORT MYERS BEACH WATER RECLAMATION FACILITY
 SWITCHGEAR REPLACEMENT

EXISTING CONDITIONS
 EROSION CONTROL AND
 DEMOLITION PLAN

ISSUED FOR:	BIDDING
DATE:	05/2023
SHEET NO.:	C101

H:\2023\2023061\DW\C101.dwg Plotted: Sep 11, 2023 - 1:25pm by Kevin Payne



CAUTION: FILTER FEED LINE

CAUTION: UNDERGROUND ELECTRIC

PROJECT CONTROL POINT
SET MAG NAIL & DISK
STAMPED "EF GAINES REF PT LS 4576"
NORTHING 784149.37
EASTING 677785.62
ELEVATION=7.40'

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6200 WHISKEY CREEK DRIVE
FORT MYERS, FL. 33919
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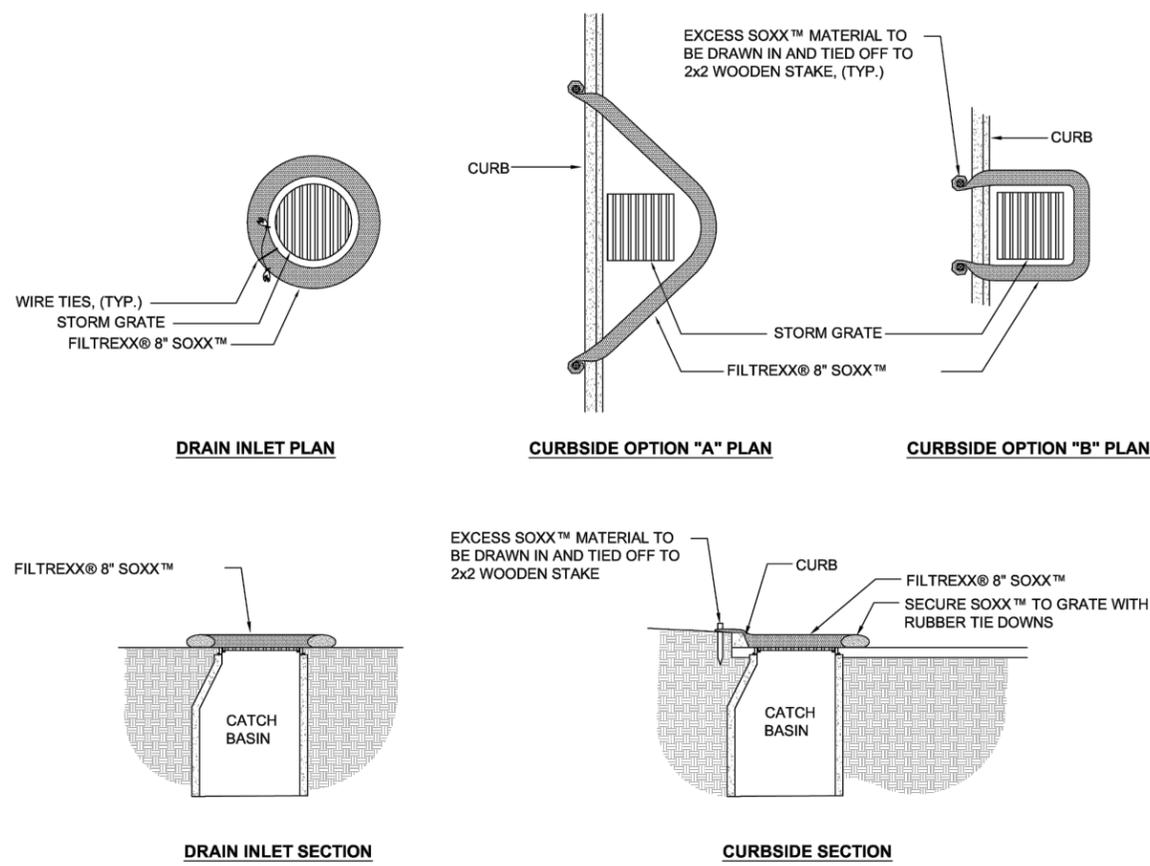
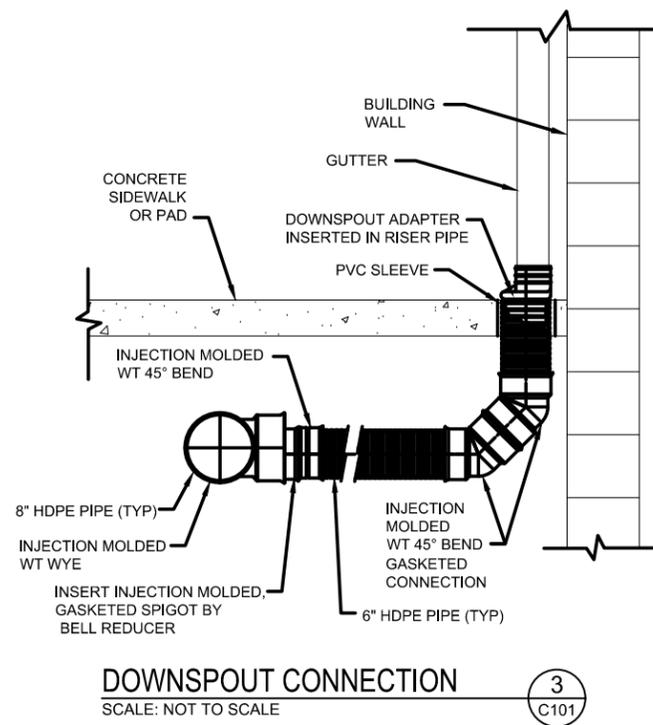
LEE COUNTY
SOUTHWEST FLORIDA
DEPARTMENT OF PUBLIC WORKS
UTILITIES DIVISION

FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT

SITE PLAN

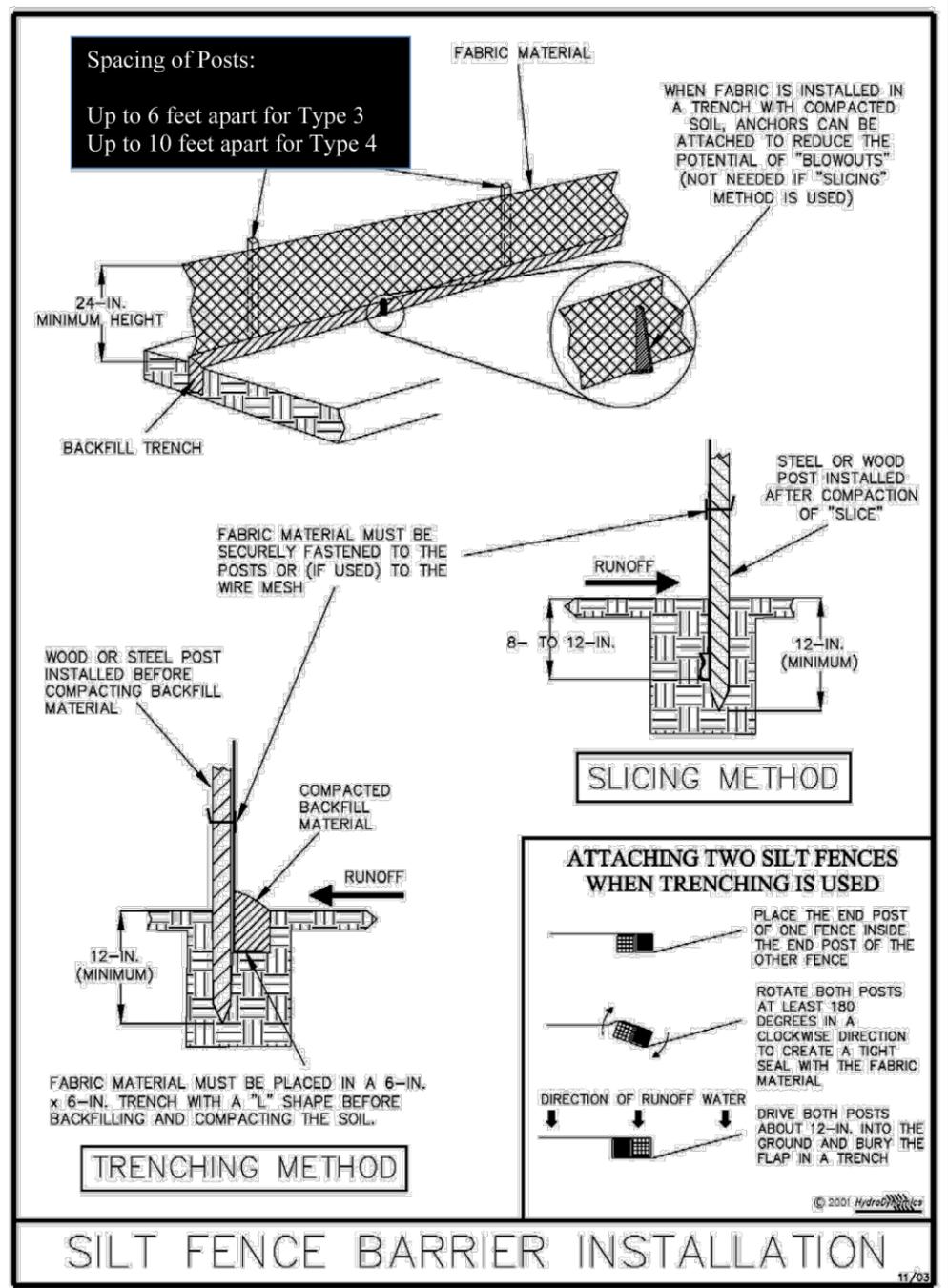
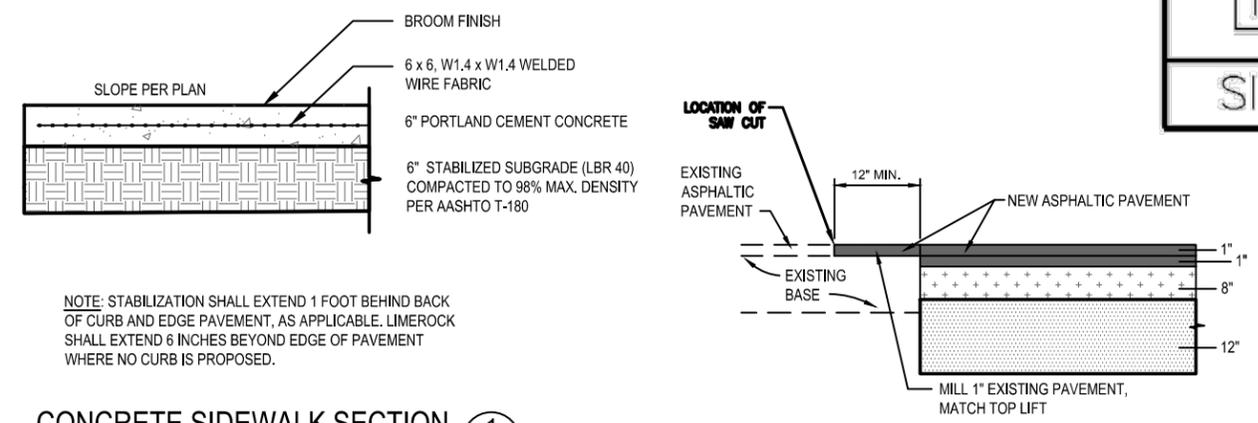
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DATE:	05/2023
SHEET NO.:	C102

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- NOTES:**
1. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS.
 2. FILTER MEDIA™ FILL TO MEET APPLICATION REQUIREMENTS.
 3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.
 4. FILTER SOCK BY FILTREXX, OR APPROVED EQUAL

INLET PROTECTION DETAIL
SCALE: NOT TO SCALE



SILT FENCE DETAIL
SCALE: NOT TO SCALE

NOTE:
SEE THE STATE OF FLORIDA EROSION AND SEDIMENT CONTROL MANUAL FOR GUIDANCE OF BEST MANAGEMENT PRACTICES.

H:\2023\2023061\DW\C501.dwg Plotted: Sep 11, 2023 - 1:28pm by Kevin Payne

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LEE COUNTY
SOUTHWEST FLORIDA
DEPARTMENT OF PUBLIC WORKS
UTILITIES DIVISION

FORT MYERS BEACH WATER RECLAMATION FACILITY SWITCHGEAR REPLACEMENT	ISSUED FOR: BIDDING
	DATE: 05/2023
	SHEET NO.: C501

DETAILS

GENERAL STRUCTURAL NOTES

GENERAL: DETAILS AND SECTIONS SHOWN ON THE DRAWINGS ARE TYPICAL AND APPLY TO SIMILAR SITUATIONS ELSEWHERE, EXCEPT AS OTHERWISE INDICATED. ADAPT REQUIREMENTS OF DETAILS, SECTIONS, PLANS, AND NOTES AT LOCATIONS WHERE CONDITIONS ARE SIMILAR.

STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH JOB SPECIFICATIONS AND ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND SITE DRAWINGS. CONSULT THESE DRAWINGS FOR SLEEVES, DEPRESSIONS, AND OTHER DETAILS NOT SHOWN ON STRUCTURAL DRAWINGS.

CONTRACTOR SHALL LOCATE ALL CONCEALED UTILITIES PRIOR TO EXCAVATION OR SELECTIVE DEMOLITION WORK. THE STRUCTURAL ENGINEER SHALL BE NOTIFIED OF POTENTIAL CONFLICTS BETWEEN FOUNDATIONS AND BURIED UTILITIES.

CODE REQUIREMENTS: THE BUILDING STRUCTURE IS DESIGNED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE 7TH EDITION (2020). FOLLOW ALL APPLICABLE PROVISIONS FOR ALL PHASES OF CONSTRUCTION.

SPECIAL INSPECTIONS: THIS BUILDING IS NOT CLASSIFIED AS A "THRESHOLD BUILDING". SPECIAL INSPECTIONS MAY BE REQUIRED BY THE OWNER.

TEMPORARY CONDITIONS: THE STRUCTURAL INTEGRITY OF THE COMPLETED STRUCTURE DEPENDS ON INTERACTION OF VARIOUS CONNECTED COMPONENTS. PROVIDE ADEQUATE BRACING, SHORING, AND OTHER TEMPORARY SUPPORTS AS REQUIRED TO SAFELY COMPLETE THE WORK. THE STRUCTURE SHOWN ON THE DRAWINGS HAS BEEN DESIGNED FOR STABILITY UNDER FINAL CONFIGURATION ONLY.

RETAINING WALLS WHICH TIE TO UPPER SLABS SHALL NOT BE BACKFILLED UNTIL THE UPPER SLAB REACHES FULL STRENGTH, UNLESS ADEQUATE BRACING IS PROVIDED AT THE TOP OF THE WALL.

EXISTING CONDITIONS: ALL EXISTING CONDITIONS, DIMENSIONS AND ELEVATIONS SHALL BE FIELD VERIFIED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY SIGNIFICANT DISCREPANCIES FROM CONDITIONS SHOWN ON THE DRAWINGS.

EXERCISE EXTREME CARE AND CAUTION WHEN EXCAVATING AND FILLING ADJACENT TO EXISTING STRUCTURES. UNDER NO CIRCUMSTANCES SHALL THE STRUCTURAL INTEGRITY OF THE EXISTING STRUCTURES BE IMPAIRED IN ANY WAY BY CONSTRUCTION OPERATIONS AND PROCEDURES. DO NOT EXCAVATE OR DISTURB SOIL ADJACENT TO OR BENEATH EXISTING FOOTINGS.

ASSUMED FUTURE CONSTRUCTION: NONE

DESIGN CRITERIA: DESIGN WAS BASED ON STRENGTH AND DEFLECTION CRITERIA OF THE FLORIDA BUILDING CODE. IN ADDITION TO THE DEAD LOADS, THE FOLLOWING LOADS AND ALLOWABLES WERE USED FOR DESIGN:

ROOFS: 20 PSF LL 30 PSF SDL
FLOORS: 150 PSF LL
NOTE: ROOF LOADS INCLUDE 5 PSF FOR SPRINKLER PIPING.

WIND:	
RISK CATEGORY	IV
ULTIMATE DESIGN WIND SPEED	180 MPH
NOMINAL DESIGN WIND SPEED	139 MPH
WIND DIRECTIONALITY FACTOR	0.85
EXPOSURE CATEGORY	C
TOPOGRAPHIC FACTOR	1.0
GUST EFFECT FACTOR	0.85
ENCLOSURE CLASSIFICATION	ENCLOSED
INTERNAL PRESSURE COEFFICIENT	+/- 0.18

SOIL BEARING PRESSURE: 2,500 PSF ALLOWABLE PER SOILS REPORT BY ARDAMAN & ASSOCIATES, DATED AUGUST 5, 2022.

FOUNDATIONS: FOUNDATIONS ARE DESIGNED FOR AN ALLOWABLE SOIL BEARING PRESSURE OF 2,500 PSF ON COMPACTED FILL. BEFORE CONSTRUCTION COMMENCES, SOIL BEARING CAPACITY SHALL BE VERIFIED BY A SUBSURFACE INVESTIGATION, AS WELL AS FIELD AND LABORATORY TESTS PERFORMED BY A CERTIFIED TESTING LABORATORY, WHO'S REPORT SHALL INCLUDE ANALYSIS AND RECOMMENDATIONS FOR SITE PREPARATION IN ORDER TO BEAR THE FOUNDATION LOADS. THE REPORT SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW BEFORE FOUNDATION CONSTRUCTION BEGINS.

SUBMITTALS: SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO FABRICATION AND CONSTRUCTION REGARDING ALL STRUCTURAL ITEMS INCLUDING: CONCRETE MIX DESIGNS, CONCRETE AND MASONRY REINFORCING, EMBEDDED STEEL ITEMS, STRUCTURAL STEEL, AND STEEL DECK. IF THE SHOP DRAWINGS DIFFER FROM OR ADD TO THE DESIGN OF THE STRUCTURAL DRAWINGS, THEY SHALL BEAR THE SEAL AND SIGNATURE OF A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF FLORIDA. ANY CHANGES TO THE STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT AND ARE SUBJECT TO REVIEW AND ACCEPTANCE BY THE ENGINEER.

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SHAWN ANDERSON, PE, SE FL. REG. #53515

DESIGN DRAWINGS, SHOP DRAWINGS, AND CALCULATIONS FOR THE DESIGN AND FABRICATION OF ITEMS THAT ARE DESIGNED BY OTHERS, INCLUDING: PRECAST OR PRESTRESSED CONCRETE MEMBERS, STRUCTURAL STEEL CONNECTIONS, COLD FORMED METAL STUDS, AND PRE-MANUFACTURED METAL TRUSSES SHALL BEAR THE SEAL AND SIGNATURE OF A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF FLORIDA AND SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO FABRICATION. CALCULATIONS SHALL BE INCLUDED FOR ALL CONNECTIONS TO THE STRUCTURE, CONSIDERING LOCALIZED EFFECTS ON THE STRUCTURAL ELEMENTS INDUCED BY THE CONNECTION LOADS. DESIGN SHALL BE BASED ON THE REQUIREMENTS OF THE FBC.

SHOP DRAWINGS WILL BE REVIEWED FOR GENERAL COMPLIANCE WITH THE DESIGN INTENT OF THE CONTRACT DOCUMENTS ONLY. THE CONTRACTOR SHALL VERIFY COMPLIANCE WITH THE CONTRACT DOCUMENTS AS TO QUANTITY, LENGTH, ELEVATIONS, DIMENSIONS, ETC. CONTRACTOR SHALL NOT BE RELIEVED FROM RESPONSIBILITY FOR ERRORS OR OMISSIONS IN SHOP DRAWINGS OR MIX DESIGNS BY THE ENGINEER'S REVIEW.

CONCRETE: REINFORCED CONCRETE CONSTRUCTION SHALL CONFORM TO THE FBC AND ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE". CONCRETE STRENGTHS SHALL BE VERIFIED BY STANDARD 28-DAY CYLINDER TESTS PER ASTM C39, AND SHALL BE AS FOLLOWS:

f _c	ABS W/C	MIN CEMENT	SLUMP	USE
3000 PSI	0.58	470 LBS	5" +/-1"	FOUNDATIONS
4000 PSI	0.44	550 LBS	4" +/-1"	ALL USES, U.N.O.

CEMENT SHALL CONFORM TO ASTM C150, TYPE 1. FLY ASH CONFORMING TO ASTM C618, TYPE F OR TYPE C, MAY BE USED TO REPLACE UP TO 20% OF THE CEMENT CONTENT, PROVIDED THAT THE MIX STRENGTH IS SUBSTANTIATED BY TEST DATA. COARSE AGGREGATE SHALL CONFORM TO ASTM C33 WITH A MAXIMUM SIZE OF ¾". FINE AGGREGATE SHALL BE CLEAN, DURABLE, NATURAL SAND CONFORMING TO ASTM C33.

A WATER-REDUCING ADMIXTURE CONFORMING TO ASTM C494 SHALL BE INCORPORATED IN CONCRETE DESIGN MIXES. A HIGH-RANGE WATER-REDUCING ADMIXTURE CONFORMING TO ASTM C494, TYPE F OR G, MAY BE USED IN CONCRETE MIXES, PROVIDED THAT THE SLUMP DOES NOT EXCEED 8".

SLEEVES, OPENINGS, CONDUIT, AND OTHER EMBEDDED ITEMS NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER BEFORE POURING. NO SLEEVE, OPENING, OR INSERT MAY BE PLACED IN BEAMS OR COLUMNS UNLESS APPROVED BY THE ENGINEER. CONDUITS EMBEDDED IN SLABS SHALL NOT BE LARGER IN OUTSIDE DIMENSION THAN ONE THIRD OF THE THICKNESS OF THE SLAB AND SHALL NOT BE SPACED CLOSER THAN THREE DIAMETERS ON CENTER.

PROVIDE ¾" CHAMFERS ON ALL EXPOSED CONCRETE EDGES, UNLESS NOTED OTHERWISE. WHERE INDICATED OR REQUIRED, SLOPE CONCRETE SLABS TO DRAINS SHOWN ON PLUMBING AND/OR ARCHITECTURAL DRAWINGS.

ALL CONCRETE SHALL BE CURED IMMEDIATELY AFTER FINISHING OPERATIONS.

WEATHER RESISTANCE: ALL CONCRETE EXPOSED TO CHLORIDES SHALL CONTAIN AN APPROVED CORROSION-INHIBITING ADMIXTURE. DOSAGE SHALL BE SPECIFIED BY THE SUPPLIER. THE WATER CONTAINED IN THE CORROSION-INHIBITING ADMIXTURE SHALL BE USED IN THE CALCULATION OF THE WATER-TO-CEMENTITIOUS RATIO OF THE CONCRETE.

CONCRETE FLAT SURFACES EXPOSED TO WEATHER THROUGHOUT THE LIFE OF THE BUILDING SHALL BE TREATED WITH A CLEAR NONFLAMMABLE PENETRATING SEALER OR OTHER APPROVED WEATHER RESISTANT SYSTEM. APPLICATION AND SURFACE PREPARATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

SHORING AND RESHORING: SHORING AND RESHORING SHALL CONFORM TO ACI 347. SHORING AND SUPPORTING FORMWORK SHALL NOT BE REMOVED FROM HORIZONTAL MEMBERS BEFORE CONCRETE STRENGTH IS AT LEAST 70 PERCENT OF DESIGN STRENGTH, AS DETERMINED BY FIELD CURE CYLINDERS. IN ADDITION, SHORING SHALL NOT BE REMOVED SOONER THAN RECOMMENDED BY ACI 347, MINIMUM TEN (10) DAYS.

REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, FOR DEFORMED BAR AND ASTM A185 FOR SMOOTH WELDED WIRE FABRIC (WWF), UNLESS NOTED OTHERWISE. REINFORCING STEEL TO BE WELDED SHALL CONFORM TO ASTM A706. REINFORCING STEEL SHALL BE SECURELY TIED IN PLACE WITH #16 ANNEALED IRON WIRE.

ALL DETAILING AND ACCESSORIES SHALL CONFORM TO ACI DETAILING MANUAL. PROVIDE CHAIRS, SPACERS, BOLSTERS, AND ITEMS IN CONTACT WITH FORMS WITH HOT-DIP GALVANIZED LEGS OR PLASTIC LEGS. ACCURATELY POSITION, SUPPORT, AND SECURE REINFORCEMENT AGAINST DISPLACEMENT BY FORMWORK CONSTRUCTION OR CONCRETE PLACEMENT OPERATIONS. "WET-STICKING" OF REINFORCING IS PROHIBITED.

REQUIRED CONCRETE COVER FOR REINFORCING STEEL, UNLESS NOTED OTHERWISE:	
FOOTINGS	3" BOTTOM AND SIDES, 2" TOP
SLABS	¾"
COLUMNS	1½" TO TIES, 2" TOP
BEAMS	1½" TO STIRRUPS
WALLS	1½"

LAP SPLICE CONTINUOUS VERTICAL OR HORIZONTAL BARS IN CONCRETE MEMBERS IN ACCORDANCE WITH ACI 318. DO NOT SPLICE CONTINUOUS TOP BARS IN BEAMS AT ENDS OF CLEAR SPANS. DO NOT SPLICE CONTINUOUS BOTTOM BARS IN BEAMS IN CLEAR SPANS BETWEEN SUPPORTS. SHOW ALL SPLICES ON SHOP DRAWINGS. SPLICE LOCATIONS AND METHODS SUBJECT TO APPROVAL BY THE STRUCTURAL ENGINEER.

AT SLAB AND WALL OPENINGS PROVIDE A MINIMUM OF TWO (2) #5 BARS ON ALL FOUR SIDES AND DIAGONALLY. EXTEND THESE BARS A LAP DISTANCE OR MINIMUM 24" PAST THE OPENING. HOOK BARS IF DISCONTINUOUS.

DOWEL ALL WALLS AND COLUMNS TO FOOTINGS WITH BAR SIZE AND SPACING TO MATCH VERTICAL REINFORCING UNLESS OTHERWISE SHOWN.

CONCRETE ACCESSORIES: HEADED SHEAR STUDS SHALL BE NELSON HEADED ANCHORS WITH FLUXED ENDS OR APPROVED EQUAL. DEFORMED BAR ANCHORS (DBA) SHALL BE NELSON, TYPE D2L, OR APPROVED EQUAL. STUDS AND DBA SHALL BE AUTOMATICALLY END WELDED WITH STANDARD EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. HAND WELDING IS NOT PERMITTED.

PERMANENTLY EXPOSED EMBEDDED PLATES AND ANGLES SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION. ACCURATELY POSITION, SUPPORT, AND SECURE EMBEDDED ITEMS AGAINST DISPLACEMENT BY FORMWORK CONSTRUCTION OR CONCRETE PLACEMENT OPERATIONS. SECURELY ATTACH EMBEDDED ITEMS TO FORMWORK PRIOR TO START OF CONCRETE PLACEMENT. "WET-STICKING" OF EMBEDDED ITEMS IS PROHIBITED. NO LOADS OR WELDS SHALL BE PLACED ON EMBEDDED PLATES OR ANGLES FOR A MINIMUM OF 7 DAYS AFTER CASTING.

WHERE NEW CONCRETE IS PLACED AGAINST EXISTING CONCRETE, THE EXISTING CONCRETE SURFACE SHALL BE CLEANED AND ROUGHENED TO A MINIMUM ¼" AMPLITUDE.

MECHANICAL ANCHORS: MECHANICAL ANCHORS SHALL HAVE A CURRENT ICC-ES OR IAPMO UES EVALUATION REPORT INDICATING CONFORMANCE WITH CURRENT APPLICABLE ICC-ES ACCEPTANCE CRITERIA. MECHANICAL ANCHORS SHALL BE SCREW-TYPE AS NOTED ON THE DRAWINGS. PROVIDE SPECIAL INSPECTION AS MANDATED BY THE APPLICABLE BUILDING CODE AND BUILDING OFFICIAL HAVING JURISDICTION. SCREW-TYPE ANCHORS SHALL BE ONE PIECE SCREW ANCHORS HEAD STAMPED WITH LENGTH, TYPE AND SIZE AS INDICATED ON THE DRAWINGS. ACCEPTABLE ANCHORS IN CONCRETE ARE SIMPSON TITEN HD, HILTI KWIK HUS-EZ AND POWERS WEDGE BOLT+; IN SOLID-GROUTED MASONRY ARE SIMPSON TITEN HD, HILTI KWIK HUS-EZ AND POWERS WEDGE BOLT+. UNLESS OTHERWISE NOTED, PROVIDE CARBON STEEL ANCHORS, ZINC PLATED IN ACCORDANCE WITH ASTM B633 OR MECHANICALLY GALVANIZED ACCORDING TO ASTM A153. PERMANENTLY EXPOSED ANCHORS SHALL BE 316 STAINLESS STEEL. USE 316 STAINLESS STEEL FOR SERVICING EQUIPMENT AND FOR ALUMINUM AND FIBERGLASS STRUCTURES AND ASSEMBLIES.

IDENTIFY POSITION OF REINFORCING STEEL AND OTHER EMBEDDED ITEMS PRIOR TO DRILLING HOLES FOR ANCHORS. EXERCISE CARE IN CORING OR DRILLING TO AVOID DAMAGING EXISTING REINFORCING OR EMBEDDED ITEMS. NOTIFY THE ENGINEER IF REINFORCING STEEL OR OTHER EMBEDDED ITEMS ARE ENCOUNTERED DURING DRILLING.

ADHESIVE ANCHORS: ADHESIVE ANCHORS SHALL HAVE A CURRENT ICC-ES EVALUATION REPORT INDICATING CONFORMANCE WITH CURRENT APPLICABLE ICC-ES ACCEPTANCE CRITERIA. ADHESIVE SHALL BE INSTALLED IN DRY HOLES AND HAVE PERFORMANCE DATA FOR INSTALLATIONS IN WATER-SATURATED HOLES. CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO INSTALLING ADHESIVE ANCHORS IN WATER-SATURATED (DAMP) HOLES. UNLESS NOTED OTHERWISE, CONCRETE SHALL BE MINIMUM 21 DAYS OLD AT TIME OF INSTALLATION PER ACI 318. ACCEPTABLE ADHESIVES IN CONCRETE ARE SIMPSON AT-XP, HILTI HIT-HY 200 AND POWERS AC100+ GOLD; IN SOLID-GROUTED MASONRY ARE SIMPSON AT-XP AND HILTI HIT-HY 270.

THREADED STUDS SHALL CONFORM TO ASTM A36, UNLESS NOTED OTHERWISE. PERMANENTLY EXPOSED STUDS SHALL BE STAINLESS STEEL. NUTS AND WASHERS SHALL CONFORM TO SAME SPECIFICATION AS THE SUPPLIED ANCHOR RODS.

INSTALLATION SHALL BE IN CONFORMANCE WITH MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS. INSTALLATION SHALL ALSO INCLUDE BRUSHING AND CLEANING OF DRILLED HOLES WITH COMPRESSED AIR AS REQUIRED BY THE APPLICABLE EVALUATION REPORT. INSTALLERS SHALL BE TRAINED BY THE MANUFACTURER'S REPRESENTATIVE. EMBEDMENT SHALL BE AS INDICATED ON THE STRUCTURAL DRAWINGS.

IDENTIFY POSITION OF REINFORCING STEEL AND OTHER EMBEDDED ITEMS PRIOR TO DRILLING HOLES FOR ANCHORS. EXERCISE CARE IN CORING OR DRILLING TO AVOID DAMAGING EXISTING REINFORCING OR EMBEDDED ITEMS. NOTIFY THE ENGINEER IF REINFORCING STEEL OR OTHER EMBEDDED ITEMS ARE ENCOUNTERED DURING DRILLING.

MASONRY WALLS: MASONRY UNITS SHALL MEET ASTM C90, TYPE 2. ASSEMBLIES SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF f_m= 1500. MORTAR SHALL BE TYPE "M" OR "S" AND MEET ASTM C270. GROUT SHALL BE 2000 PSI MINIMUM COMPRESSIVE STRENGTH AND MEET ASTM C476. GROUT SHALL CONSIST OF A MIXTURE OF CEMENTITIOUS MATERIALS AND AGGREGATE TO WHICH SUFFICIENT WATER HAS BEEN ADDED TO CAUSE THE MIXTURE TO FLOW WITHOUT SEGREGATION OF THE CONSTITUENTS. ALL CELLS CONTAINING VERTICAL BARS, BOND BEAMS, AND ALL CELLS BELOW GRADE SHALL BE FILLED WITH GROUT. MAXIMUM HEIGHT OF GROUT POUR ALLOWED IS 4'-0" UNLESS CLEAN-OUT OPENINGS ARE PROVIDED AT BOTTOM OF CELLS TO BE FILLED. LOCATE CLEAN-OUT OPENINGS IN AREAS NOT EXPOSED TO VIEW.

UNLESS NOTED OTHERWISE, 8-INCH MASONRY WALLS SHALL BE REINFORCED WITH #7 AT 24 INCHES O.C. IN GROUT FILLED CELLS. ADD (1) #7 REINFORCING BAR EACH SIDE OF OPENINGS EXCEEDING 3 FEET.

PROVIDE REINFORCING BARS AT CORNERS, INTERSECTIONS, AND EACH SIDE OF OPENINGS. PROVIDE TWO (2) REINFORCING BARS EACH SIDE OF OPENINGS OVER 4 FEET WIDE, AND AS SHOWN ON THE PLANS. PROVIDE HOOKED DOWELS INTO FOOTINGS AND STRUCTURE ABOVE AND/OR BELOW TO PROVIDE CONTINUITY. PROVIDE 9-GAGE GALVANIZED HORIZONTAL JOINT REINFORCING, DUR-O-WAL OR APPROVED EQUAL, AT 16" O.C.

DO NOT PLACE CONDUITS, PIPES, ETC., IN CELLS WITH VERTICAL REINFORCING. DO NOT RUN CONDUITS, PIPES, ETC., HORIZONTALLY IN CMU WALLS PARALLEL TO LENGTH OF WALL.

CONTROL JOINTS SHALL BE PROVIDED IN ALL CONCRETE MASONRY CONSTRUCTION AT LOCATIONS INDICATED ON THE ARCHITECTURAL DRAWINGS. HORIZONTAL WALL REINFORCING SHALL BE STOPPED EACH SIDE OF CONTROL JOINTS. SEE ARCHITECTURAL DRAWINGS FOR SEALANT REQUIREMENTS AT CONTROL JOINTS.

USE METAL LATH OR WIRE SCREEN FOR CAVITY CAPS. SHEET METAL, FELT, BUILDING PAPER, OR LIKE MATERIALS ARE PROHIBITED.

TIE BEAMS: TIE BEAMS SHALL BE CONCRETE, POURED AFTER THE BLOCK WALLS BELOW ARE IN PLACE. REINFORCING SHALL BE CONTINUOUS THROUGH TIE BEAMS WITH MINIMUM LAP SPLICES OF 48 BAR DIAMETERS AND BENT BARS AT CORNERS. USE METAL LATH, MORTAR, OR SPECIAL UNITS TO CONFINE CONCRETE TO AREA REQUIRED. IN ACCORDANCE WITH ACI 530. SOLID METAL OR FELT CAVITY CAPS ARE PROHIBITED.

PRECAST CONCRETE LINTELS: UNLESS INDICATED OTHERWISE, ALL LINTELS SHALL BE "U" TYPE PRECAST CONCRETE UNITS EQUAL TO UNITS MANUFACTURED BY CAST-CRETE, PRESTRESSED OR ADDITIONALLY REINFORCED AS REQUIRED, IN ACCORDANCE WITH CAST-CRETE "DESIGN MANUAL", LATEST EDITION, FOR THE SPAN AND LOADING CONDITION RELATIVE TO LINTEL LOCATION.

LINTEL SIZE, IF NOT SHOWN ON THE PLANS, SHALL BE 8F8-18 FOR OPENINGS LESS THAN 10 FEET AND 8F16-18/1T FOR OPENINGS 10 FEET TO 20 FEET. PROVIDE 8" MINIMUM BEARING FOR LINTELS UNLESS NOTED OTHERWISE.

STRUCTURAL STEEL: STRUCTURAL STEEL W-SHAPES SHALL CONFORM TO ASTM A992, GRADE 50. CHANNELS SHALL CONFORM TO ASTM A36. PLATES AND ANGLES SHALL CONFORM TO ASTM A36. RECTANGULAR AND SQUARE TUBES SHALL CONFORM TO ASTM A500 GRADE B (F_y= 46KSI) OR ASTM A1085. ROUND HSS SHALL CONFORM TO ASTM A500 GRADE B (F_y=42KSI) OR ASTM A1085. PIPES SHALL CONFORM TO ASTM A53 GRADE B (F_y=35KSI). DESIGN, FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH THE "AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS". BOLTS SHALL CONFORM TO THE ASTM SPECIFICATION FOR A325 OR A490, HIGH STRENGTH BOLTS. WELDING SHALL CONFORM TO THE AWS CODES FOR ARC AND GAS WELDING IN BUILDING CONSTRUCTION. WELDS SHALL BE MADE USING E70XX ELECTRODES AND SHALL BE 3/16" MINIMUM UNLESS OTHERWISE NOTED. WELDING SHALL BE BY AWS CERTIFIED WELDERS. PREQUALIFIED WELDING PROCEDURES ARE TO BE USED, UNLESS AWS QUALIFICATIONS ARE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION. ALL STEEL SHALL RECEIVE ONE SHOP COAT AND ONE FIELD TOUCH UP COAT OF APPROVED PAINT, EXCEPT WHERE GALVANIZING IS INDICATED.

ALL BOLTED CONNECTIONS SHALL CONSIST OF MINIMUM ¾"-DIAMETER ASTM A325 HIGH-STRENGTH BOLTS. BEAM CONNECTIONS SHALL BE DESIGNED BY THE FABRICATOR FOR THE REACTIONS SHOWN ON THE PLANS. IF NOT SHOWN, THE FABRICATOR SHALL DESIGN THE BEAM CONNECTIONS TO SUPPORT AN END REACTION OF 1/2 THE ALLOWABLE UNIFORM LOAD CAPACITY WITH A MINIMUM OF 2 BOLTS.

SHEAR STUD CONNECTORS: SHEAR STUD CONNECTORS SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH AWS D1.1 "STRUCTURAL WELDING CODE", SECTION 7 STUD WELDING. STUDS SHALL BE TYPE 'B', HEADED STUDS HAVING A MINIMUM TENSILE STRENGTH OF 60,000 PSI AND SHALL BE OF LENGTH AND DIAMETER SHOWN ON STRUCTURAL DRAWINGS.

ANCHOR RODS: UNLESS INDICATED OTHERWISE, ANCHOR RODS SHALL BE ASTM F1554 GRADE 36, ¾" DIAMETER EMBEDDED INTO THE CONCRETE FOUNDATION A DISTANCE OF 1'-0" WITH A HEAVY HEX NUT AT THE EMBEDDED END.

STEEL ROOF DECK: STEEL ROOF DECK SHALL BE GALVANIZED AND CONFORM TO ASTM A653, STRUCTURAL QUALITY. THE GALVANIZED COATING SHALL CONFORM TO ASTM A653 G60, OR G90 WHERE LEFT PERMANENTLY EXPOSED TO WEATHER. ATTACHMENTS, CLOSURES ETC. SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

DECK WELDING SHALL BE 5/8" EFFECTIVE DIAMETER PUDDLE WELDS AT 12" O.C. AT TRANSVERSE AND PERIMETER SUPPORTS, 16" O.C. AT LONGITUDINAL SUPPORTS, AND MECHANICALLY FASTEN SIDE LAP CONNECTIONS USING #10 SELF TAPPING SCREW AT 12" O.C. UNLESS NOTED OTHERWISE ON THE DRAWINGS.

LIGHT-GAGE STEEL STUDS: STEEL STUDS SHALL BE C-STUDS WITH A MINIMUM YIELD OF 33,000 PSI FOR 18 AND 20 GAGE, AND 50,000 PSI FOR 14 AND 16 GAGE. STUDS SHALL BE OF THE SIZE, GAGE, AND SPACING SHOWN ON THE DRAWINGS. PROVIDE BRIDGING IN CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS ADEQUATE FOR DEVELOPMENT OF THE FULL MOMENT CAPACITY OF THE STUDS. FOR LOAD-BEARING STUDS, TRACK SHALL BE OVERSIZE TO PROVIDE FULL STUD BEARING. SCREWS SHALL BE ELCO DRIL-FLEX, HILTI KWIK-FLEX, OR APPROVED EQUAL.

PREFABRICATED LIGHT-GAGE METAL TRUSSES: DESIGN AND MANUFACTURE PREFABRICATED LIGHT-GAGE METAL TRUSSES, INCLUDING ALL CONNECTIONS, UPLIFT ANCHORAGE HARDWARE AND FASTENERS IN ACCORDANCE WITH THE REQUIREMENTS OF AISI SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS (LATEST EDITION) OR THE AISI LOAD AND RESISTANCE FACTOR DESIGN SPECIFICATION FOR COLD-FORMED STEEL STRUCTURAL MEMBERS (LATEST EDITION) AND THE RECOMMENDATIONS OF THE PREFABRICATED METAL LIGHT-GAGE TRUSS MANUFACTURER.

LIGHT-GAGE METAL TRUSSES SHALL BE DESIGNED TO SUPPORT THE INDICATED WIND UPLIFT, SUPERIMPOSED DEAD AND LIVE LOADS, AND ADDITIONAL UNIFORM AND CONCENTRATED LOADS ON THE DRAWINGS. USE 5 PSF (MAX) DEAD LOAD FOR UPLIFT DESIGN.

PROVIDE TRUSS MEMBER TEMPORARY AND PERMANENT BRACING CONSISTENT WITH TRUSS MANUFACTURER'S DESIGN CALCULATIONS. ALL TRUSS ANCHORAGES SHALL BE INSTALLED USING TRUSS ANCHORAGE MANUFACTURER'S RECOMMENDED FASTENERS FOR MAXIMUM PUBLISHED CAPACITY. ALL METAL CONNECTION HARDWARE TO BE GALVANIZED.

TRUSS DIAGRAMS, IF SHOWN, ARE DIAGRAMMATIC ONLY. TRUSS DESIGNER SHALL DETERMINE AND ESTABLISH EXACT HEIGHT, LENGTH, LOCATION, SPACING, AND WEB MEMBER LAYOUT FOR EACH TRUSS.

SUBMIT COMPLETE SHOP DRAWINGS AND DESIGN CALCULATIONS, PREPARED, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF FLORIDA SUBSTANTIATING ALL STRENGTH AND SERVICEABILITY CRITERIA.

LIGHT-GAGE EXTERIOR METAL FRAMING: DESIGN AND MANUFACTURE LIGHT-GAGE METAL FRAMING, INCLUDING ALL CONNECTIONS, ANCHORAGE HARDWARE, AND FASTENERS IN ACCORDANCE WITH REQUIREMENTS OF AISI SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS (LATEST EDITION) OR THE AISI LOAD AND RESISTANCE FACTOR DESIGN SPECIFICATION FOR COLD-FORMED STEEL STRUCTURAL MEMBERS (LATEST EDITION) AND THE RECOMMENDATIONS OF THE LIGHT-GAGE METAL WALL FRAMING MANUFACTURER.

STEEL STUDS AND RUNNER TRACK MEMBERS SHALL CONFORM TO ASTM A1003 GRADE 50 (MINIMUM YIELD POINT 50,000 PSI) WITH HOT-DIP GALVANIZED COATING CONFORMING TO ASTM A525 (CLASS G90).

ALL FRAMING MEMBERS SHALL BE CUT SQUARELY. MEMBERS SHALL BE HELD FIRMLY IN PLACE UNTIL PROPERLY JOINED. JOINING OF MEMBERS SHALL BE MADE WITH SELF-DRILLING SCREWS OR WELDING. WIRE TYING OF FRAMING MEMBERS SHALL NOT BE PERMITTED. ATTACHMENT OF MATERIALS TO FRAMING MEMBERS SHALL BE MADE WITH SELF DRILLING SCREWS.

STUDS SHALL SIT SQUARELY IN THE TOP AND BOTTOM RUNNER TRACKS WITH FIRM ABUTMENT AGAINST TRACK WELDS. STUDS SHALL BE PLUMB AND SECURELY FASTENED TO THE FLANGES OF BOTH TOP AND BOTTOM RUNNER TRACKS.

SUBMIT COMPLETE SHOP DRAWINGS AND DESIGN CALCULATIONS, PREPARED, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF FLORIDA, SUBSTANTIATING ALL STRENGTH AND SERVICEABILITY CRITERIA.

STEEL STAIRS: STEEL STAIR SYSTEM AND ALL CONNECTIONS SHALL BE DESIGNED FOR ALL APPLICABLE LOADS AS INDICATED ON THE PLANS AND IN THE BUILDING CODE. THE CONFIGURATION OF THE STEEL STAIR SYSTEM SHALL BE AS SHOWN ON THE ARCHITECTURAL DRAWINGS.

PRIOR TO CONSTRUCTION, SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS, SIGNED AND SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF FLORIDA, SUBSTANTIATING ALL STRENGTH AND SERVICEABILITY CRITERIA. THE LOADS SHALL BE CLEARLY INDICATED ON ALL SHOP DRAWINGS, AND SHALL SHOW AND SPECIFY ALL CONNECTIONS UTILIZED WITHIN THE STEEL RAILING SYSTEM AS WELL AS CONNECTIONS TO AND LOADS IMPOSED UPON THE STRUCTURAL SYSTEM SHOWN ON THESE PLANS.

RAILINGS: RAILING SYSTEMS AND ALL CONNECTIONS SHALL BE DESIGNED FOR ALL APPLICABLE LOADS AS INDICATED ON THE PLANS AND IN THE BUILDING CODE. THE CONFIGURATION OF THE RAILING SYSTEM SHALL BE AS SHOWN ON THE ARCHITECTURAL DRAWINGS.

PRIOR TO CONSTRUCTION, SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS, SIGNED AND SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF FLORIDA, SUBSTANTIATING ALL STRENGTH AND SERVICEABILITY CRITERIA. THE LOADS SHALL BE CLEARLY INDICATED ON ALL SHOP DRAWINGS, AND SHALL SHOW AND SPECIFY ALL CONNECTIONS UTILIZED WITHIN THE STEEL RAILING SYSTEM AS WELL AS CONNECTIONS TO AND LOADS IMPOSED UPON THE STRUCTURAL SYSTEM SHOWN ON THESE PLANS.

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SELECT STRUCTURAL
12573 New Brittany Blvd
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Phone: (239) 210-5090
Project No.: 23226
Certification Auth. 28357

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DRAWN BY:	D.M.
CHECKED BY:	S.A.
CAD FILE:	



LEE COUNTY
SOUTHWEST FLORIDA
DEPARTMENT OF PUBLIC WORKS
UTILITIES DIVISION

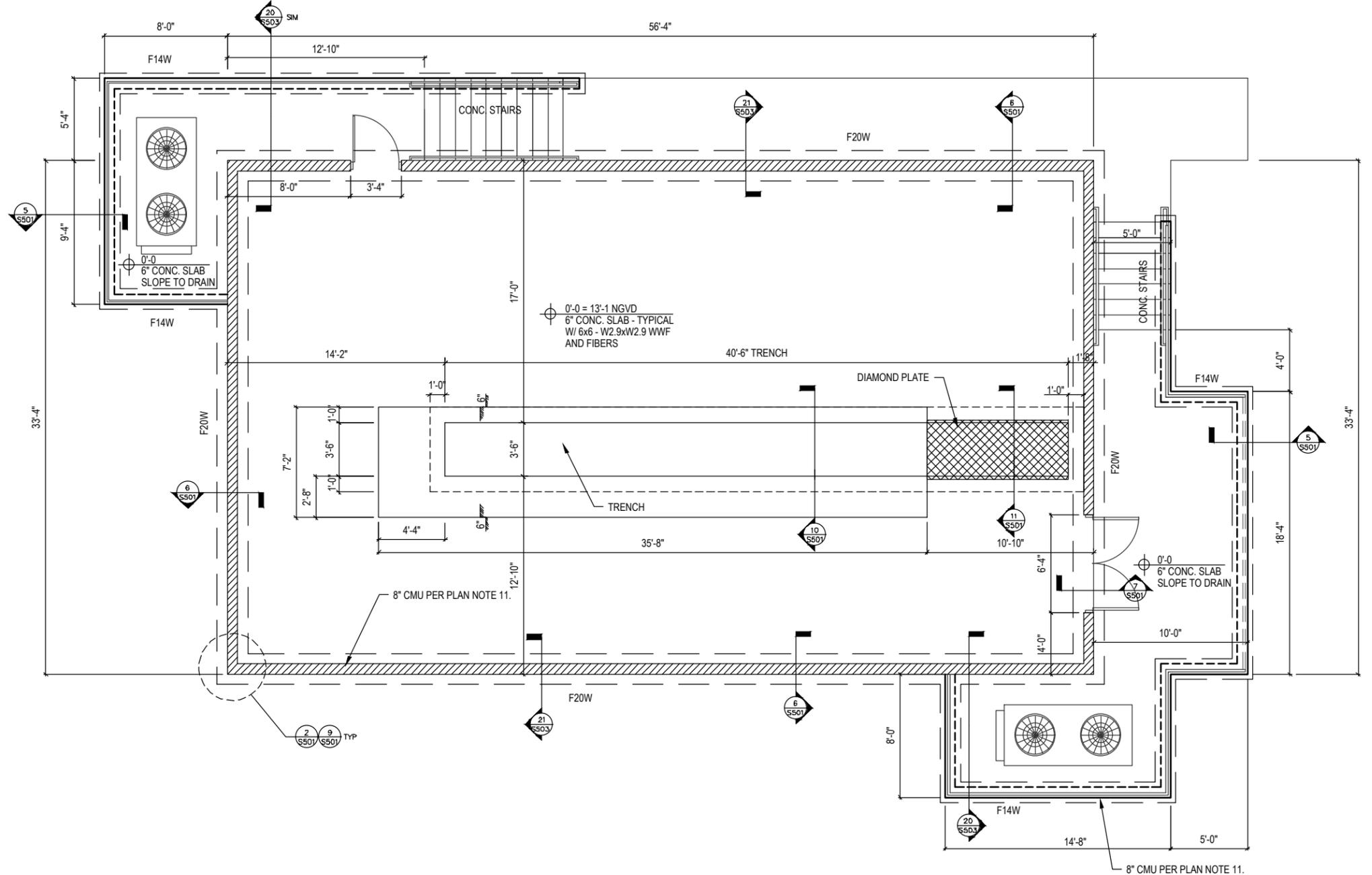
FORT MYERS BEACH WATER RECLAMATION FACILITY SWITCHGEAR REPLACEMENT	
ISSUED FOR:	BIDDING
DATE :	05/2023
SHEET NO. :	S001

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FOUNDATION PLAN NOTES

- SEE SHEET S001 FOR GENERAL STRUCTURAL NOTES
- \oplus X-X INDICATES TOP OF SLAB ELEVATION. COORDINATE WITH ARCHITECTURAL DRAWINGS.
- FXX INDICATES CONCRETE FOOTING. SEE SCHEDULE THIS SHEET FOR FOOTING DIMENSIONS AND REINFORCING.
- (X-X) INDICATES TOP OF FOOTING ELEVATION. TOP OF FOOTING -(7'-0"), UNO.
- VERIFY / COORDINATE LOCATION OF UNDERGROUND ELECTRICAL AND PIPING FOR WALL AND FLOOR PENETRATIONS.
- VERIFY / COORDINATE DIMENSIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS BEFORE COMMENCING CONSTRUCTION.
- VERIFY / COORDINATE EDGE OF SLAB DETAILS AT EXTERIOR DOORS WITH ARCHITECTURAL DRAWINGS.
- VERIFY / COORDINATE HEIGHTS AND DETAILS OF WALL OPENINGS WITH ARCHITECTURAL DRAWINGS.
- SEE ARCHITECTURAL DRAWINGS FOR SLOPES, DROPS AND DRAIN LOCATIONS IN FLOOR SLABS.
- FOR TYPICAL FOUNDATION DETAILS, SEE SHEET S501.
- INDICATES 8" CMU WALL WITH #7 @ 24" O.C.
- C.J. = CONTROL JOINT. SEE DETAIL 1/S501

FOOTING SCHEDULE				
MARK	SIZE	T	REINFORCING	REMARKS
F20W	2'-0" x CONT	1'-0"	(3) #5 B. CONT	#5 AT 24 TRANSVERSE
F14W	1'-4" x CONT	1'-0"	(2) #5 B. CONT	



FOUNDATION PLAN

SEE 1 / S501 FOR SLAB-ON-GROUND CONTROL JOINT. CONTRACTOR TO PROVIDE CONTROL JOINT LAYOUT.

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



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DRAWN BY:	D.M.
CHECKED BY:	S.A.
CAD FILE:	



LEE COUNTY
SOUTHWEST FLORIDA
DEPARTMENT OF PUBLIC WORKS
UTILITIES DIVISION

FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT

FOUNDATION PLAN

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DATE:	05/2023
SHEET NO.:	S101

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ROOF PLAN NOTES

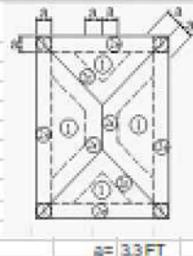
1. $\leftarrow D1 \rightarrow$ INDICATES SPAN DIRECTION OF 1 1/2" x 20 GA. (Fy=33 ksi MIN.) GALVANIZED ROOF DECK. ATTACH TO STEEL FRAMING WITH 5/8" DIA. PUDDLE WELDS IN A 36/7 PATTERN. SIDE LAP FASTENERS #10 TEK SCREWS @ 8" O.C. INSTALL DECK WITH 2 SPANS CONTINUOUS (MIN).
2. TB-X INDICATES CONCRETE TIE BEAMS. SEE SCHEDULE THIS SHEET FOR SIZE AND REINFORCING.
3. SEE COMPONENTS AND CLADDING WIND PRESSURES ON THIS SHEET FOR TRUSS DESIGN. TRUSS MANUFACTURER SHALL PROVIDE ADEQUATE BOTTOM CHORD BRACING TO RESIST UPLIFT FORCES.

BEAM SCHEDULE

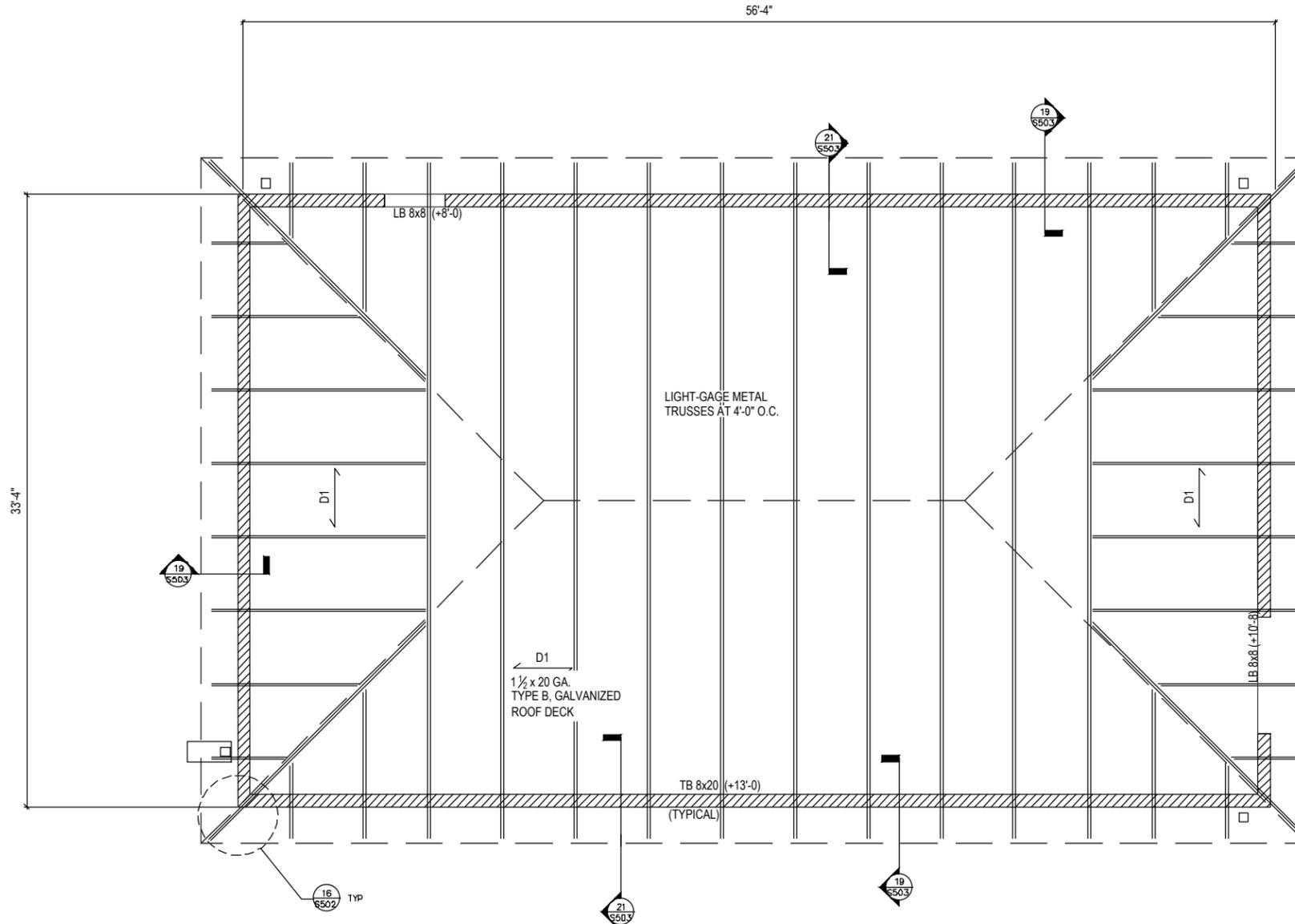
MARK	SIZE WxD	REINFORCING			STIRRUP SPACING	REMARKS
		TOP	MID	BOT		
TB8x16	8 x 16	(2) #5	-	(2) #5	#3 CL @ 24"	
LB8x8	8 x 8	-	-	(1) #5	-	8F8-1B, PRECAST, FILLED, SEE 15/S502

FORT MYERS BEACH WRF SWITCHGEAR REPLACEMENT

COMPONENT & CLADDING WIND PRESSURES (PSF)					
ALLOWABLE STRESS DESIGN					
ZONE	T	TRIBUTARY AREA			R
		10 SF	50 SF	100 SF	
ROOF	INTERIOR	1	35 / -39	24 / -52	19 / -47
	EDGE	2a	35 / -78	24 / -64	19 / -57
	OVERHANG	2b	35 / -91	24 / -87	19 / -85
	RIDGE	2c	35 / -102	24 / -79	19 / -69
	CORNER	3	35 / -102	24 / -79	19 / -69
WALL	OVERHANG	3	35 / -138	24 / -103	19 / -87
	INTERIOR	4	47 / -51	42 / -46	38 / -42
	CORNER	5	47 / -63	42 / -53	38 / -44



NOTE: FOR ULTIMATE STRENGTH DESIGN DIVIDE PRESSURES BY 0.6



ROOF FRAMING PLAN

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



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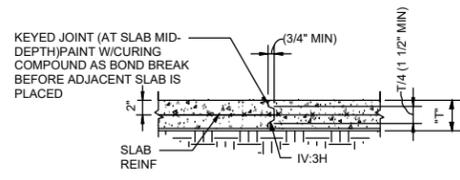
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FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT
ROOF FRAMING PLAN

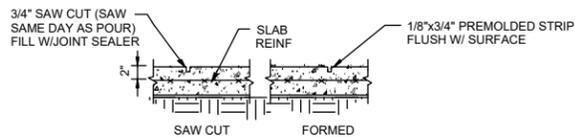
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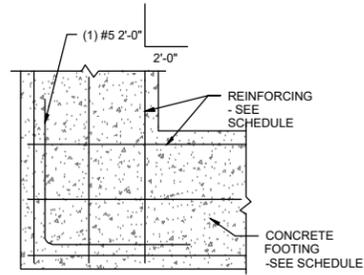


CONSTRUCTION JOINT

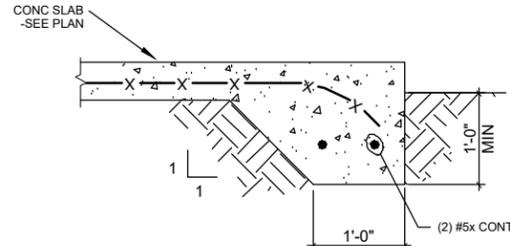


NOTE: CONTROL JOINTS TO BE 12'-0" OC MAX

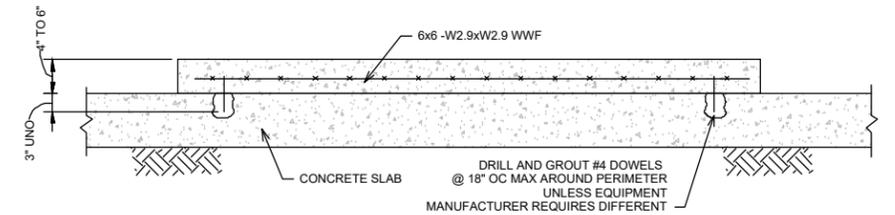
CONTROL JOINT



2 TYP. FOOTING CORNER
SCALE: 3/4" = 1'-0"



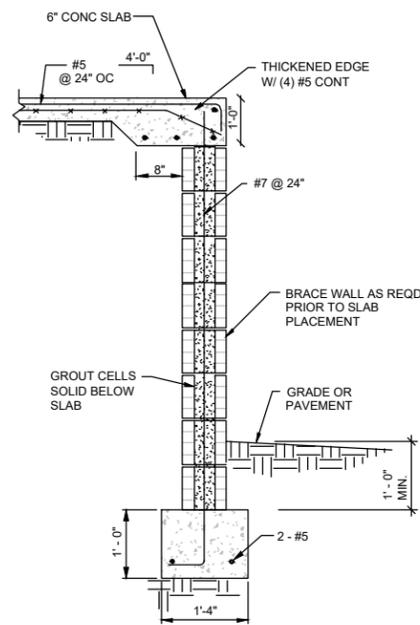
3 TYPICAL THICKENED EDGE
SCALE: 1" = 1'-0"



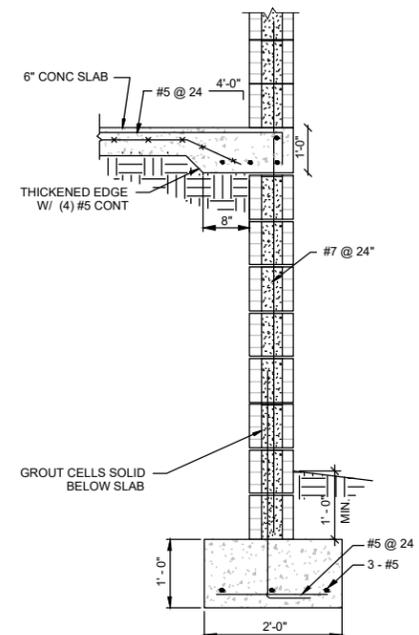
NOTE:
1. SURFACE OF EXISTING SLAB SHALL BE ROUGHENED AND CLEANED OF ALL DIRT, GREASE, ETC BEFORE PLACING CONCRETE.
2. COORDINATE SIZE, QUANTITY AND LOCATION OF EQUIPMENT BOLTS AND PAD WITH EQUIPMENT SUPPLIER'S CERTIFIED DRAWINGS. SEE ARCH, MECH AND ELECT DRAWINGS FOR LOCATION AND SIZE OF EQUIPMENT PADS.

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

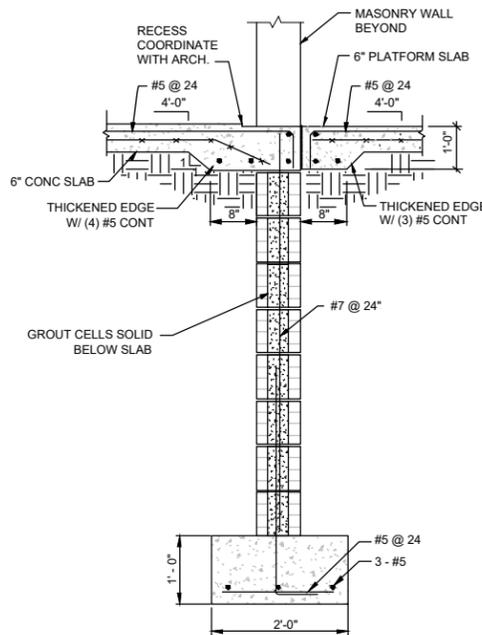
1 SLAB-ON-GROUND CONTROL JOINT
SCALE: 3/4" = 1'-0"



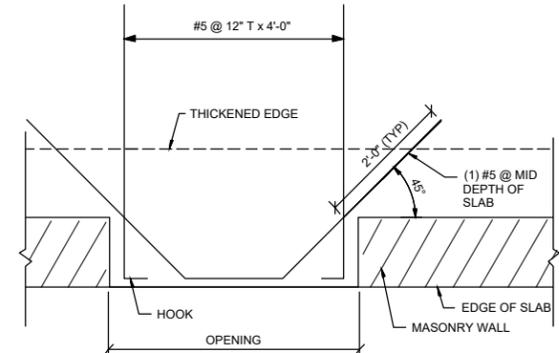
5 PLATFORM STEMWALL
SCALE: NTS



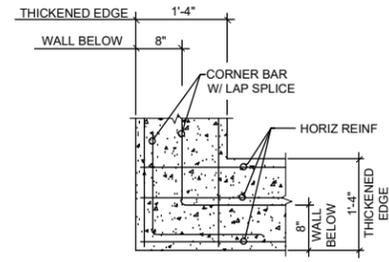
6 BUILDING STEMWALL
SCALE: NTS



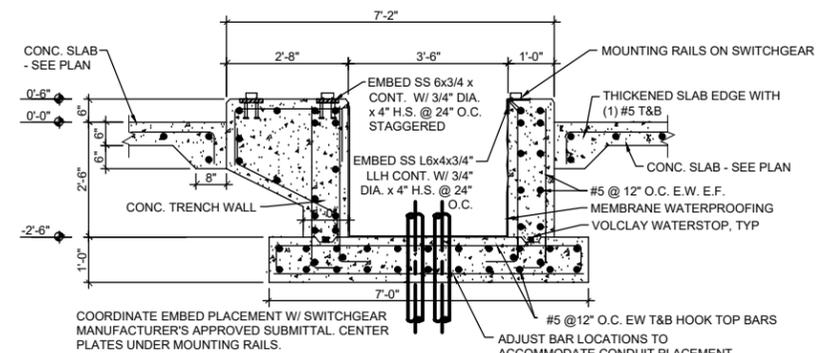
7 BUILDING STEMWALL AT PLATFORM
SCALE: NTS



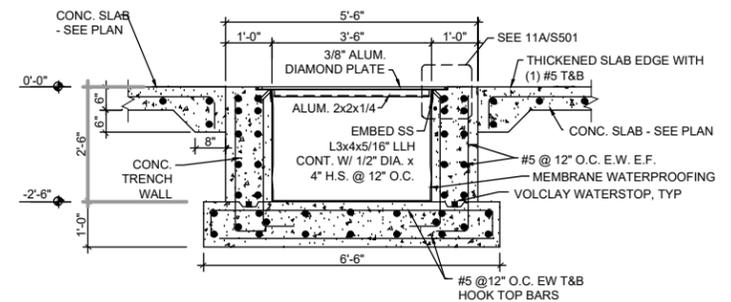
8 ADDITIONAL REINF AT OPENING
SCALE: 3/4" = 1'-0"



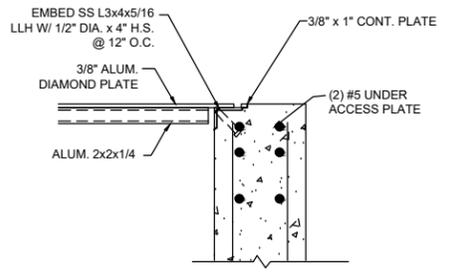
9 SLAB-ON-GROUND CORNER BAR DETAIL
SCALE: 3/4" = 1'-0"



10 TRENCH SECTION
SCALE: 1/2" = 1'-0"



11 TRENCH SECTION
SCALE: 1/2" = 1'-0"



11A EMBED DETAIL
SCALE: 1" = 1'-0"

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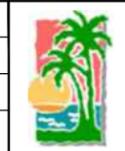
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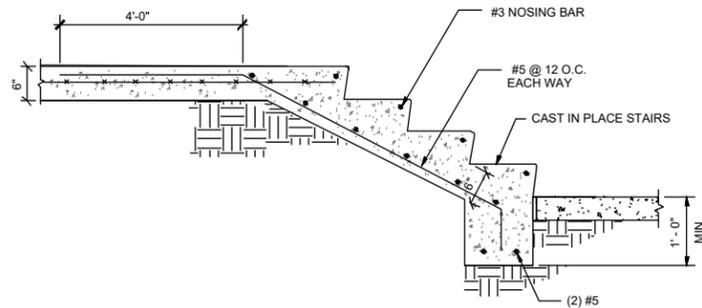
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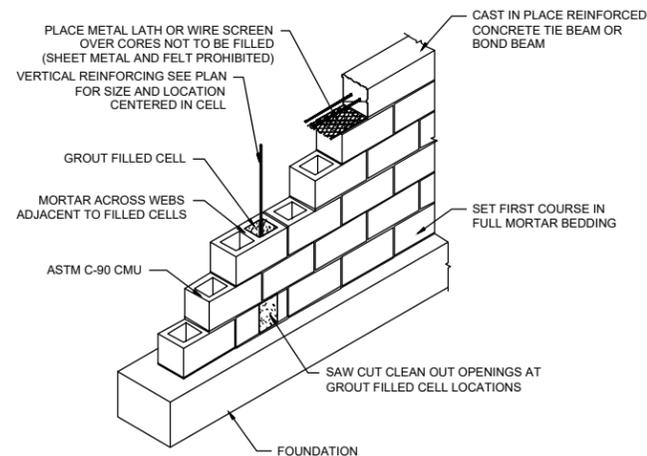
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SWITCHGEAR REPLACEMENT
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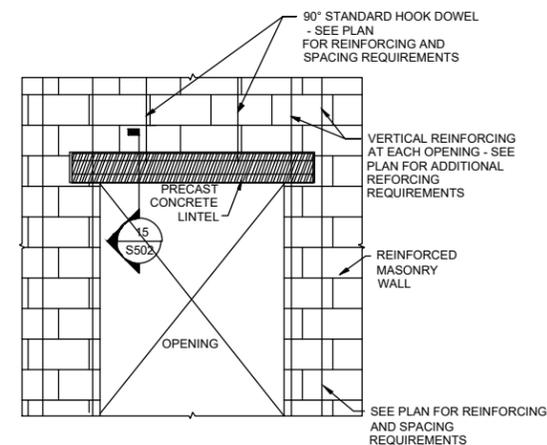
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12 CONCRETE STAIRS
SCALE: 3/4" = 1'-0"



13 MASONRY CONSTRUCTION DETAIL
SCALE: NONE

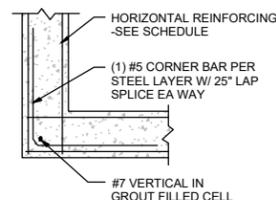


14 TYPICAL WALL OPENING DETAIL
SCALE: 1/2" = 1'-0"



- NOTES:**
1. CONTRACTOR TO VERIFY ALL LINTEL ELEVATIONS W/ ARCH. DWGS.
 2. UNLESS INDICATED OTHERWISE, PRECAST LINTELS SHALL BE USED AT ALL WINDOW AND DOOR OPENINGS IN ACCORDANCE WITH THE GENERAL STRUCTURAL NOTES AND PLAN NOTES.
 3. STEM WALL LINTEL SHALL HAVE (2) #5 BARS TOP & BOT.
 4. COORDINATE OPENING SIZE AND LOCATION WITH MECHANICAL DWGS. PRECAST LINTELS SHALL BE CAST-CRETE OR APPROVED EQUAL.

15 TYPICAL PRECAST LINTEL
SCALE: 1/2" = 1'-0"



- NOTE:**
USE SAME CORNER REINFORCING AT OTHER ANGLED CORNERS OR INTERSECTING WALL FOOTINGS.

16 TYPICAL TIE BEAM CORNER DETAIL
SCALE: 3/4" = 1'-0"

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SHAWN ANDERSON, PE, SE FL. REG. #53515

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ELECTRICAL*INSTRUMENTATION*CONTROL
12651 McGregor Blvd. Ste 4-402 Fort Myers, FL 33919
239.481.6775 | Certificate of Authorization #8212

SELECT STRUCTURAL
12573 New Brittany Blvd
Fort Myers, Florida 33907
Phone: (239) 210-5090
Project No.: 23226
Certification Auth. 28357

REV	DATE	DESCRIPTION	BY

DESIGN BY:	D.M.
DRAWN BY:	D.M.
CHECKED BY:	S.A.
CAD FILE:	



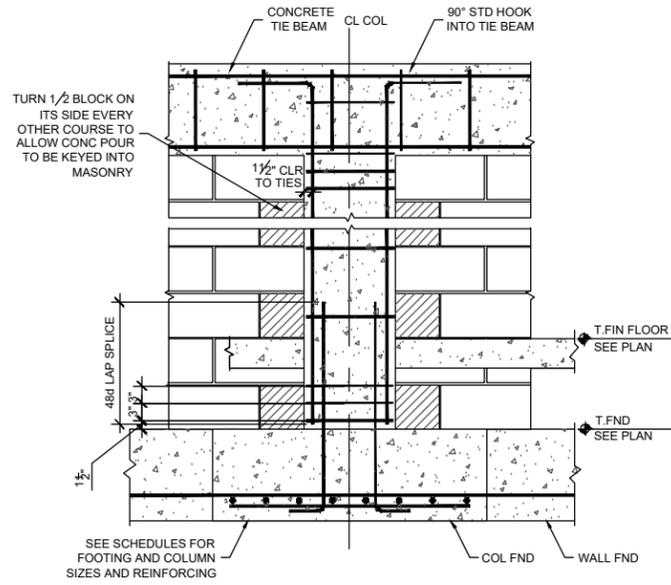
LEE COUNTY
SOUTHWEST FLORIDA
DEPARTMENT OF PUBLIC WORKS
UTILITIES DIVISION

FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT

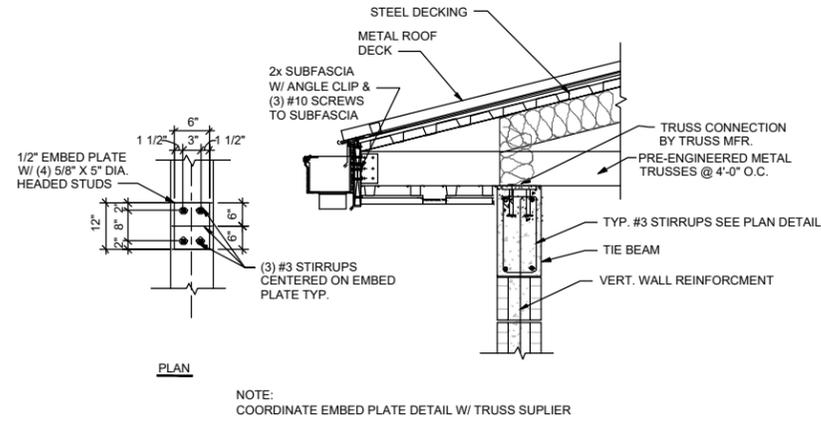
SECTIONS AND DETAILS

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DATE:	05/2023
SHEET NO.:	S502

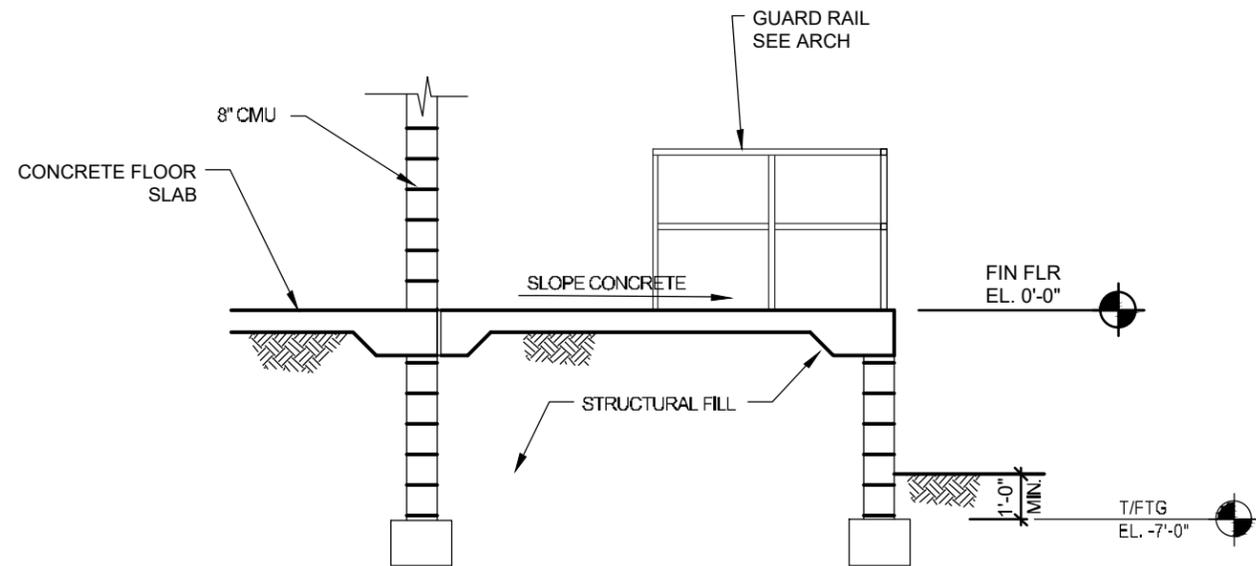
C:\Users\Dylan M\Structural Dropbox\01 Projects\2023 Projects\23226 LCU FMB Switchgear Replacement\Drawings\Working Drawings\W210463 S503.dwg Plotted: Sep 06, 2023 - 2:28pm by Dylan M



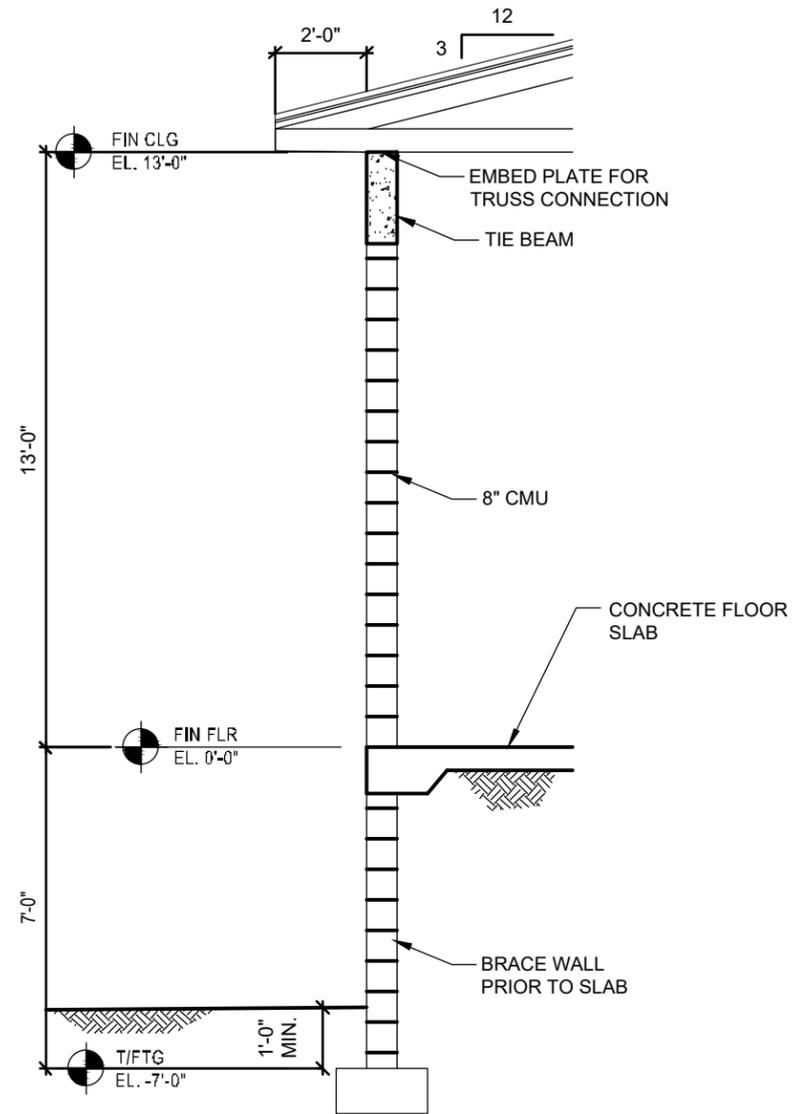
18 TYPICAL CONCRETE COLUMN IN MASONRY WALL (CONTRACTOR OPTION)
SCALE: 3/4" = 1'-0"



19 TYPICAL TRUSS EMBED
SCALE: 3/4" = 1'-0"



20 TYPICAL PLATFORM SECTION
SCALE: 3/4" = 1'-0"



21 TYPICAL WALL SECTION
SCALE: 3/4" = 1'-0"

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Fort Myers, Florida 33907
Phone: (239) 210-5090
Project No.: 23226
Certification Auth. 28357

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DRAWN BY:	D.M.
CHECKED BY:	S.A.
CAD FILE:	

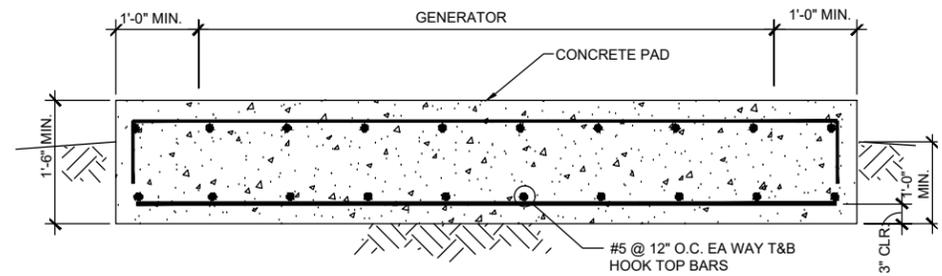


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FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT

SECTIONS AND DETAILS

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NOTE:
 1. COORDINATE LOCATION WITH CIVIL, MECHANICAL, ELECTRICAL & ARCHITECTURAL
 2. CONTRACTOR TO PROVIDE GENERATOR OPERATING WEIGHT FOR CONFIRMATION.

21 GENERATOR PAD
 SCALE: 3/4" = 1'-0"

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SELECT STRUCTURAL
 12573 New Brittany Blvd
 Fort Myers, Florida 33907
 Phone: (239) 210-5090
 Project No.: 23226
 Certification Auth. 28357

REV	DATE	DESCRIPTION	BY

DESIGN BY:	D.M.
DRAWN BY:	D.M.
CHECKED BY:	S.A.
CAD FILE:	

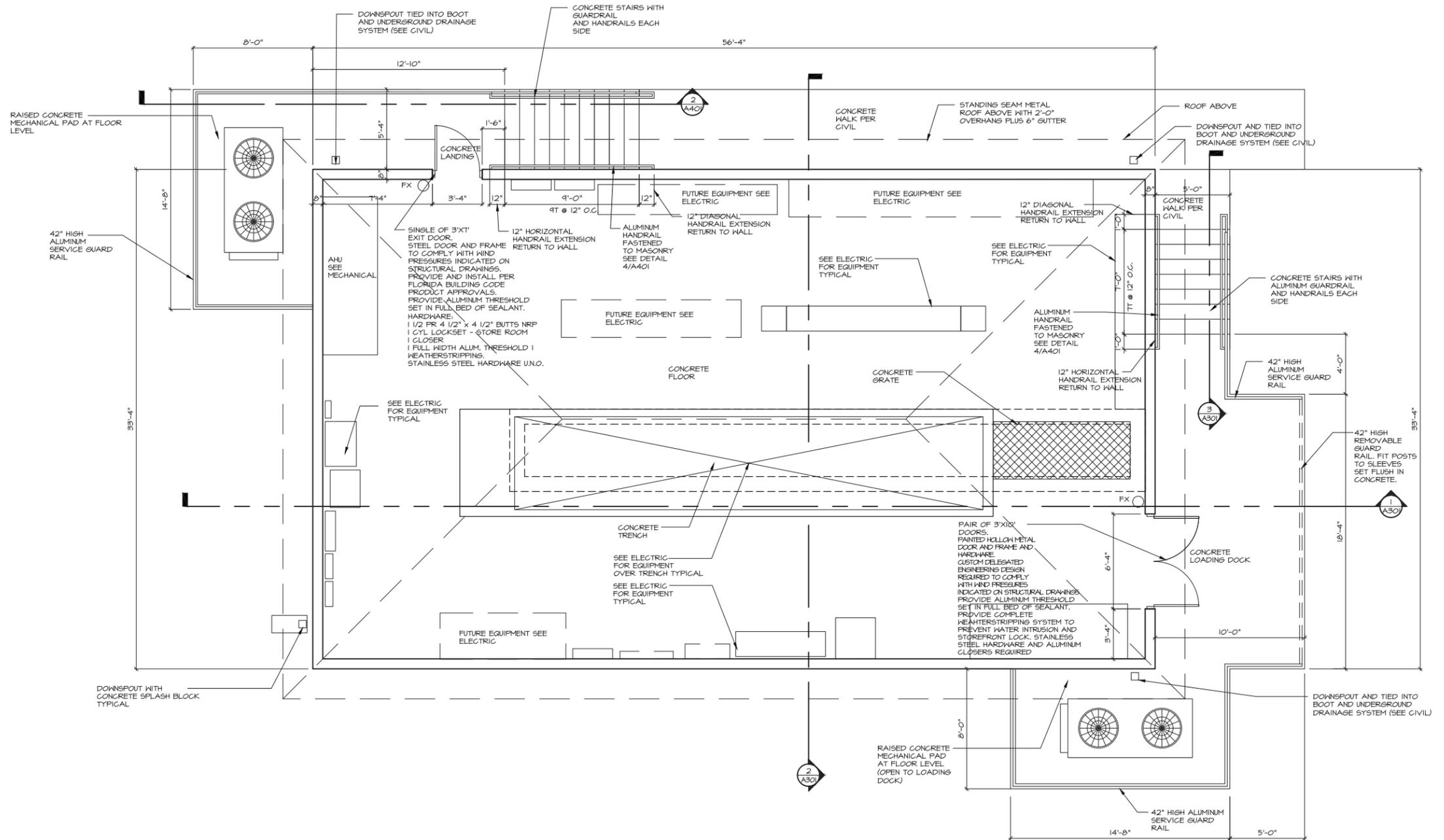


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FORT MYERS BEACH WATER RECLAMATION FACILITY
 SWITCHGEAR REPLACEMENT

SECTIONS AND DETAILS

ISSUED FOR:	BIDDING
DATE:	05/2023
SHEET NO.:	S504



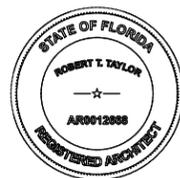
FLOOR PLAN

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



PLAN LEGEND :

- 8" CMU EXTERIOR WALL WITH STUCCO FINISH
- FX - WALL HUNG FIRE EXTINGUISHER



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3820 Colonial Blvd., #100
Fort Myers, Florida 33966
Ph: (239) 271-3554 Fax: (239) 271-0741
AA-26002422
www.adgarchitecture.com

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DESIGN BY:	
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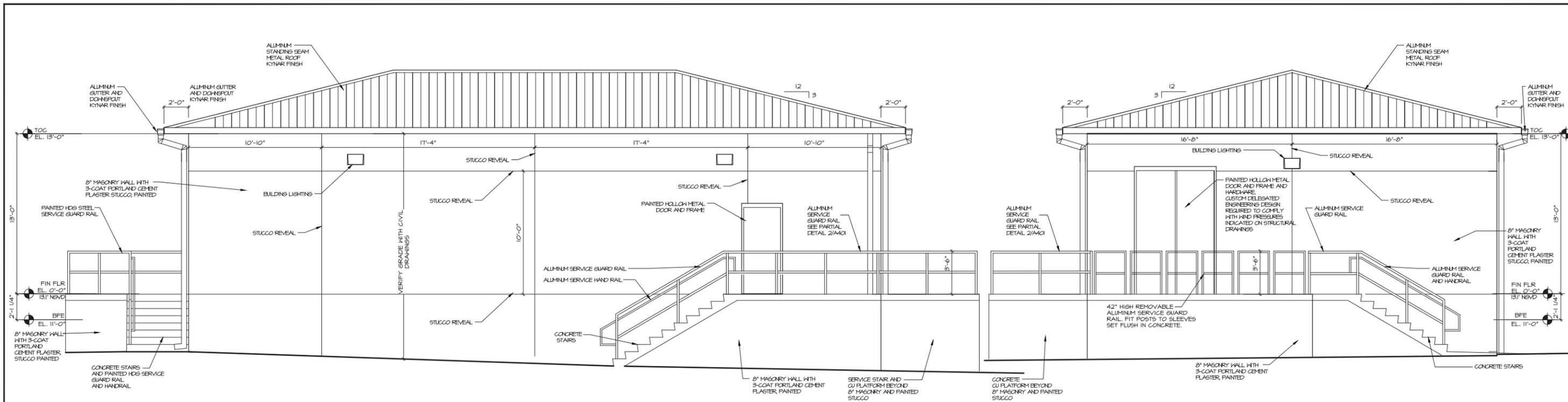


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FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT

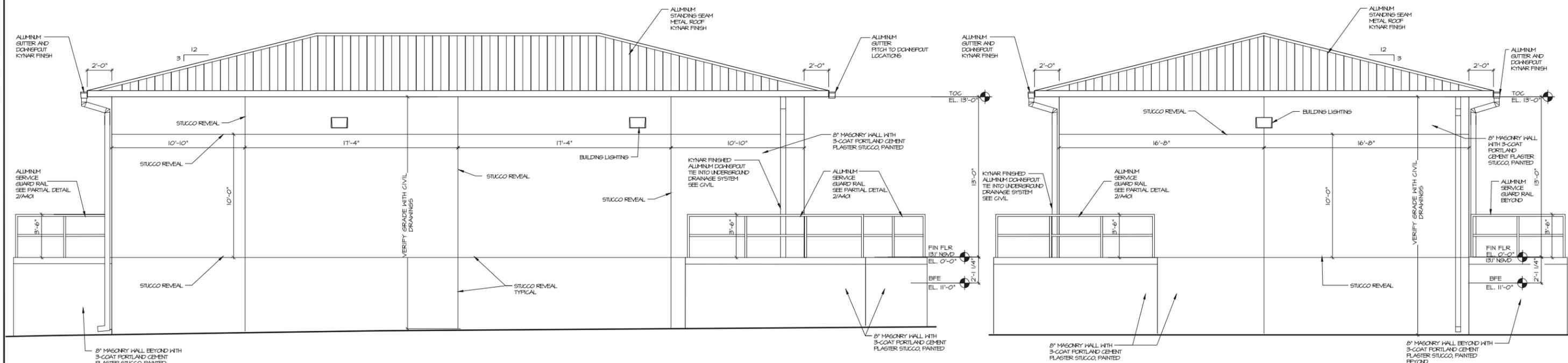
FLOOR PLAN

ISSUED FOR:	BIDDING
DATE:	05/2023
SHEET NO.:	A101



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

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



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

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



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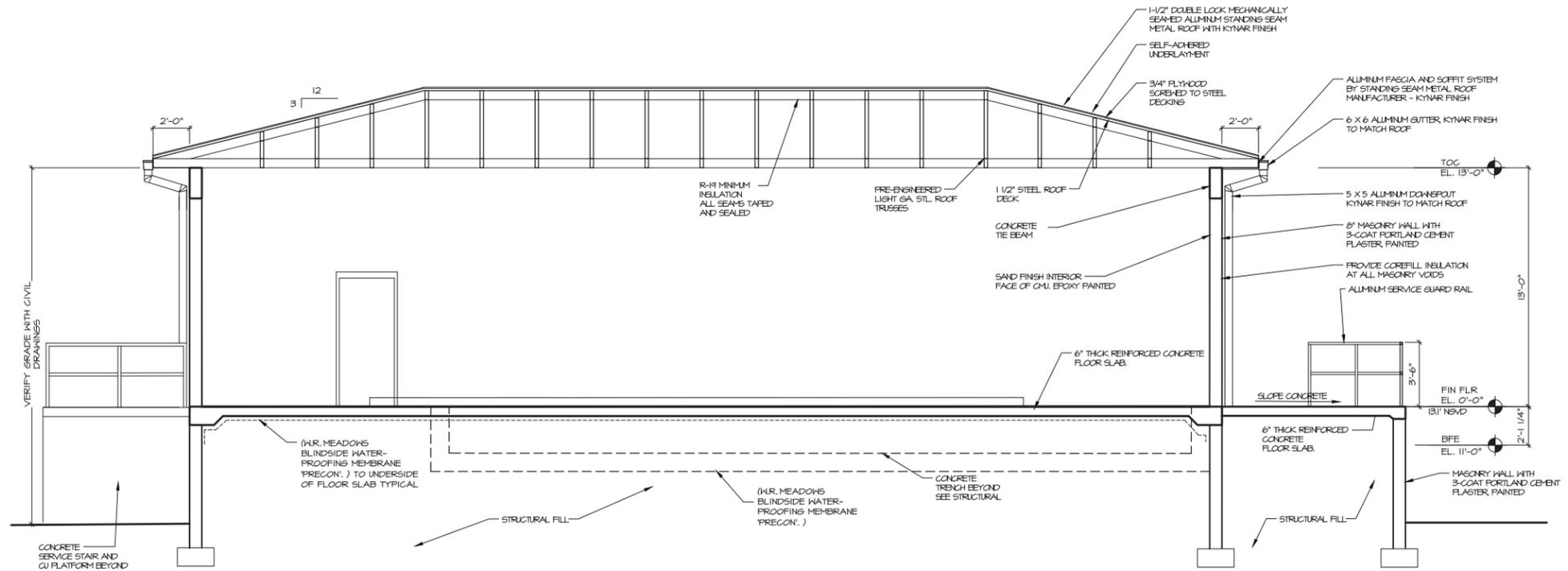
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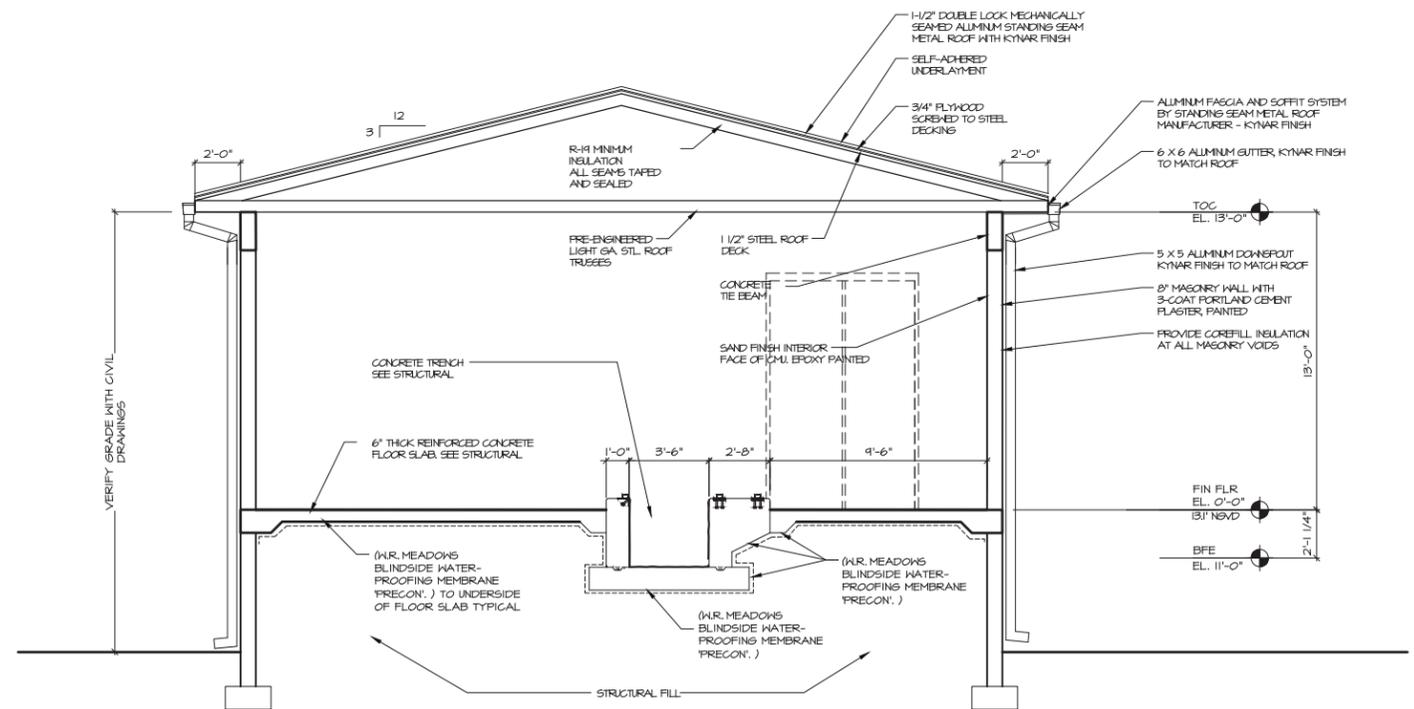
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FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT
EXTERIOR ELEVATIONS

ISSUED FOR:	BIDDING
DATE:	05/2023
SHEET NO.:	A201



1 EAST-WEST BUILDING SECTION SCALE: 1/4" = 1'-0"



2 NORTH-SOUTH BUILDING SECTION SCALE: 1/4" = 1'-0"



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UTILITIES DIVISION

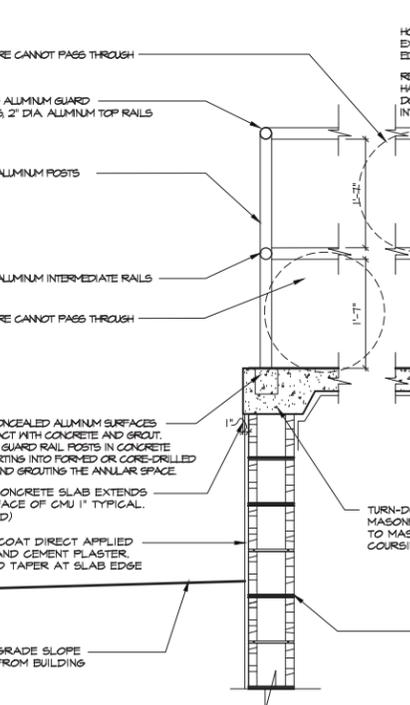
FORT MYERS BEACH WATER RECLAMATION FACILITY SWITCHGEAR REPLACEMENT

BUILDING SECTIONS

ISSUED FOR:	BIDDING
DATE:	05/2023
SHEET NO.:	A301

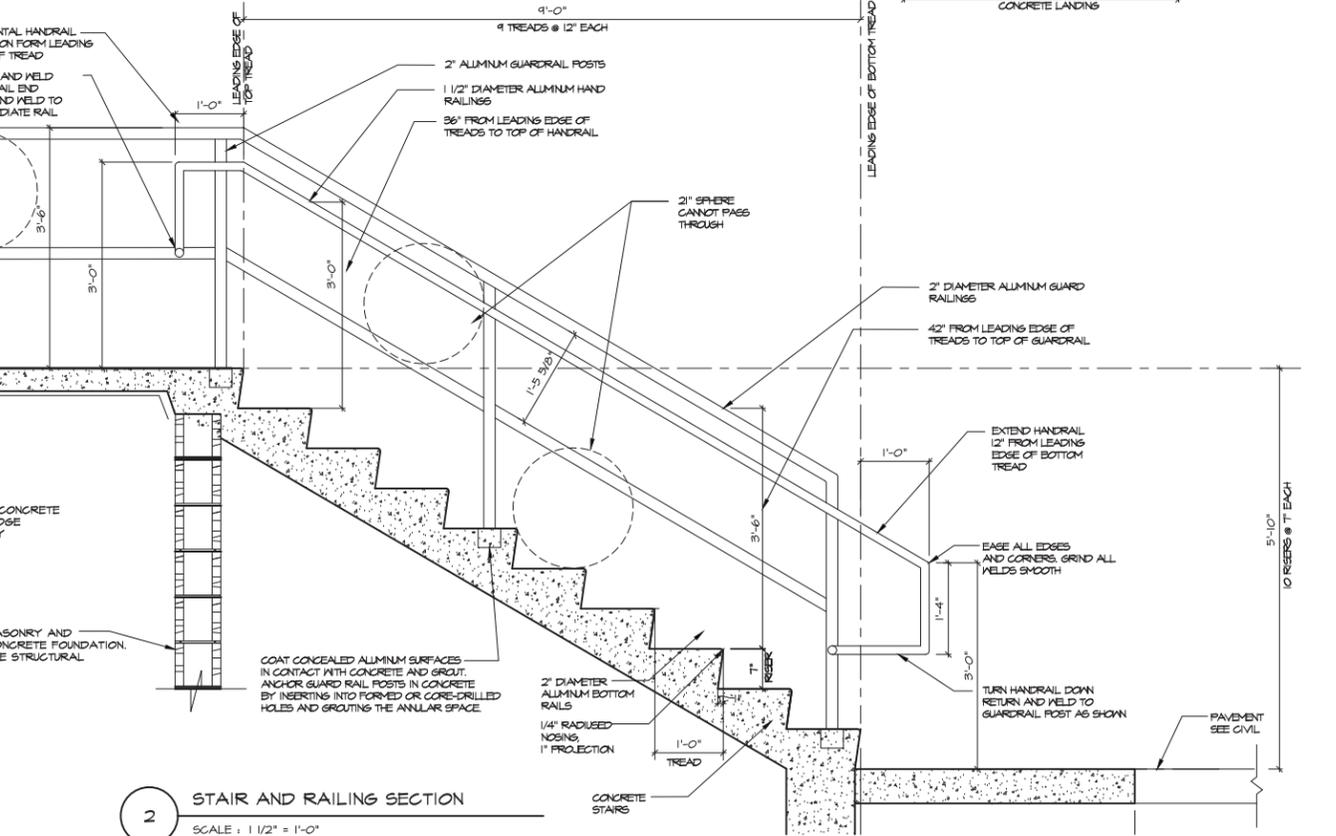
4 HANDRAIL TO WALL DETAIL

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



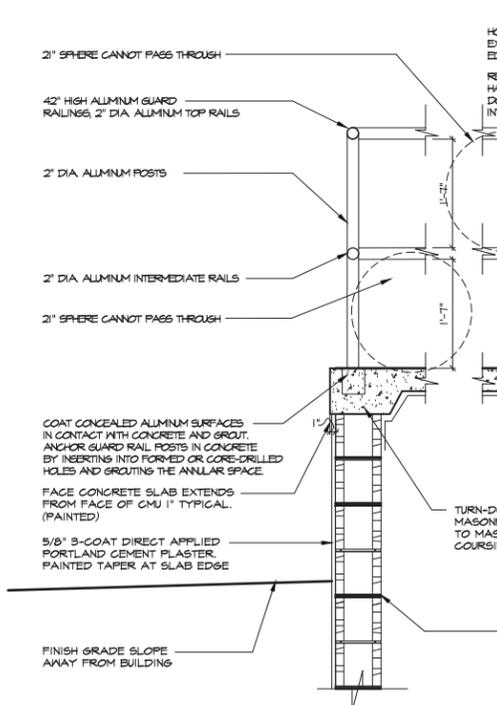
3 STAIR AND RAILING SECTION

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



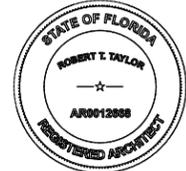
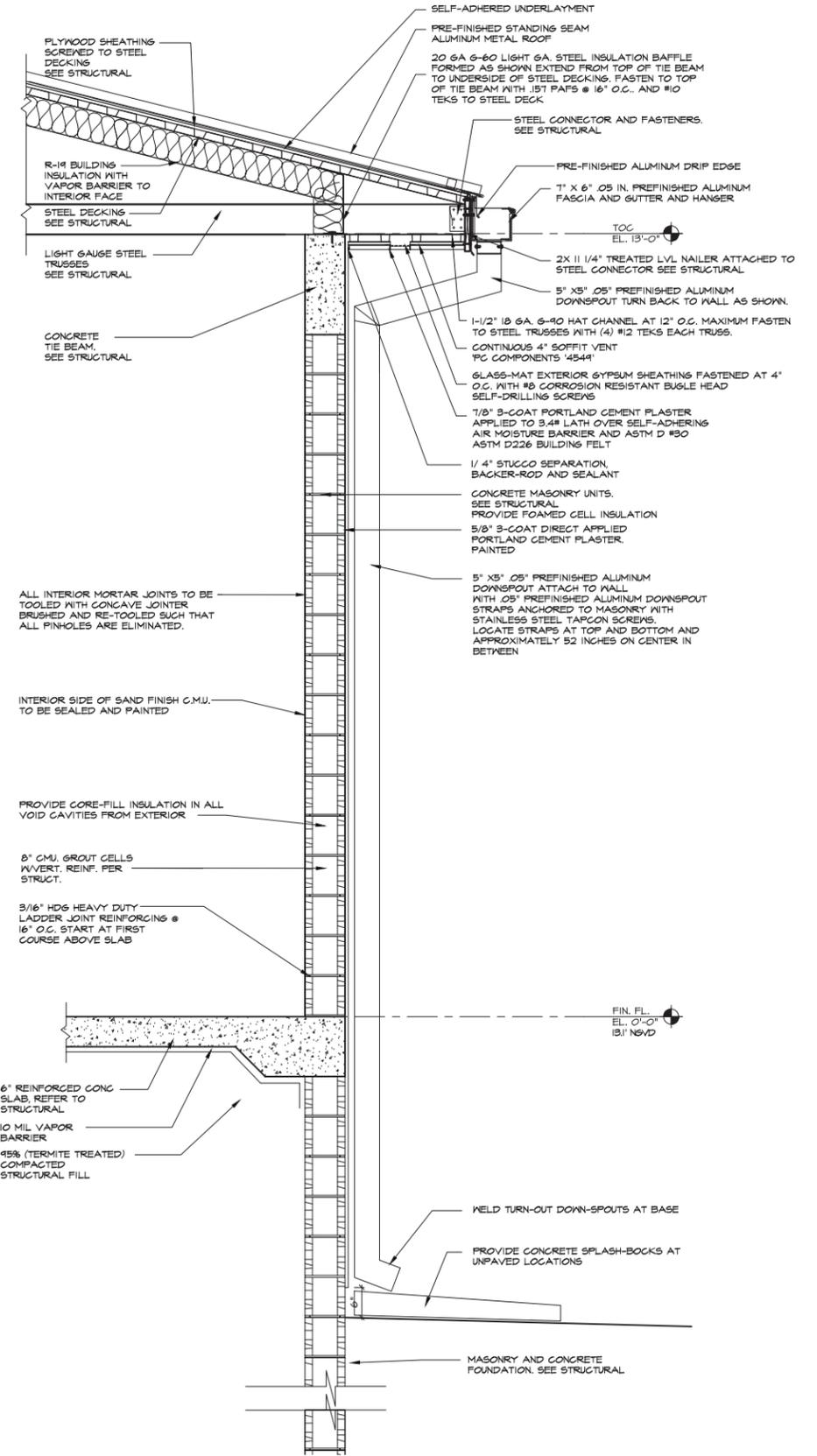
2 STAIR AND RAILING SECTION

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



1 TYPICAL WALL SECTION

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



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AA-28002422 www.adgarchitecture.com

REV	DATE	DESCRIPTION	BY

DESIGN BY:	
DRAWN BY:	
CHECKED BY:	
CAD FILE:	



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SOUTHWEST FLORIDA
DEPARTMENT OF PUBLIC WORKS
UTILITIES DIVISION

FORT MYERS BEACH WATER RECLAMATION FACILITY SWITCHGEAR REPLACEMENT
WALL SECTIONS AND DETAILS

ISSUED FOR:	BIDDING
DATE:	05/2023
SHEET NO.:	A401

Division 1: General Conditions

Section 011000 Summary

A. Scope of work: scope of work is indicated on drawings and specifications. Before submitting a proposal, the Contractor shall visit site, inspect, and make himself familiar with all existing conditions and site features to arrive at a clear understanding of the conditions under which the work is to be done.

- 1. Contractor shall thoroughly review construction drawings and documents prior to commencing work. The Contractor shall be responsible for coordinating all trades and shall be the ultimate responsible party for failure of any trade or sub-contractor to perform the work as shown herein.
2. The Contractor shall conform to all local and federal OSHA requirements during the course of the project.

Section 013300 Submittal Procedures (submittals required for all specified items)

A. Shop drawings, product data, samples, design data, field testing reporting shall be required and submitted to the Owner or Owner's project representative for specific products as indicated herein. Fabrication or delivery of un-approved material shall be done at the Contractor's risk. Approved shop drawings shall be kept at the site for referral.
B. Transmit each submittal with Contractor's transmittal form.
C. Identify Project, Contractor, subcontractor and supplier; pertinent drawing and detail number, and specification section number, appropriate to submittal.
D. Prior to submitting submittals for review, the Contractor shall review as 'Approved' all submittal documents for accuracy and coordination and Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with requirements of the Work and Contract Documents.
E. Submittals shall be delivered to the Owner or Owner's project representative office. Digital copies will not be accepted unless previous arrangements have been made.
F. For each submittal review, allow 15 days excluding delivery time to and from the Contractor.
G. Engineering Certification: Where indicated herein, submittals shall be certified by a Florida licensed professional engineer.
H. Schedule submittals to expedite the project, and deliver to Owner or Owner's project representative at business address. Coordinate submission of related items.
I. Identify variations from Contract Documents and product or system limitations which may be detrimental to successful performance of completed Work.
J. Allow space on submittals for Contractor and review stamps.
K. When revised for resubmission, identify changes made since previous submission.
L. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report inability to comply with requirements.
M. Submittals not requested will not be recognized or processed.
N. Product Data: Submit to Owner or Owner's project representative for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.
O. Shop Drawings: Submit to Owner or Owner's project representative for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.
P. Samples: Submit to Owner or Owner's project representative for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

Section 014000 Quality Requirements

A. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

Section 015000 Temporary Facilities

A. The Contractor shall be responsible for obtaining and paying the cost of all temporary facilities, including electrical power, telephone, water, and sanitary facilities until the project is substantially complete. Coordinate with the Owner with transfer of utility accounts.
B. The Contractor shall be responsible for obtaining and paying the cost of all temporary facilities as required by county or local ordinance.
C. Remove debris, rubbish and other materials resulting from demolition operations from building site. Transport and legally dispose of materials off site.
1. The Contractor shall, at his own expense, provide and maintain a dumpster at the site and shall remove all rubbish, debris and waste materials away from the project site on a weekly basis or as directed by the Architect.
2. Continuously and daily as the work progresses, each Contractor shall clean up and place in the dumpster provided all rubbish, debris and waste material resulting from the performance of his work.

Section 017000 Close Out Procedures:

A. Provide Contractor's warranty.
B. Provide floor elevation certificate documenting compliance of minimum floor elevation in flood plain from licensed Florida surveyor.
C. Demonstrate the operation of all equipment to the Owner or Owner's project representative.
D. Furnish original copies of all equipment instructions, manuals, etc. to the Owner.
E. Provide written warranty for roofing/waterproofing systems.
O. Provide list of paint manufacturers and paint color numbers to the Owner.
P. Substantial Completion: Provide copy of Certificate of Compliance or completion from permitting authority.

Division 5: Metals

Section 057300 Decorative Metal Railings and Handrails

A. All work to conform to Florida Building and Fire Prevention Code, latest edition.
B. Structural Performance: Railings shall withstand the effects of gravity loads, wind loads and loads as required by the Florida Building Code.
C. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.
D. Submittals:
1. Product Data: For the following:
2. Manufacturer's product lines of railings assembled from standard components.
3. Railing brackets.

- 4. Grout, anchoring cement, and paint products.
5. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

E. Materials:

- 1. Aluminum, General: Provide alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with strength and durability properties for each aluminum form required not less than that of alloy and temper designated below.
a. Extruded Bars and Shapes, Including Extruded Tubing to be 6063-T5 or T6, 6061-T6 or 6005-T5 alloy aluminum.
b. All fasteners to be stainless steel or aluminum.

F. Finishes:

- 1. Clear Anodic Finish: AAMA 611, AA-M12C22A41, Class I, .018 mm, AA-M12C22A31 Class II, .010 mm or thicker.

G. Railing System:

- 1. Railing system
a. Railing top rail: 2" outside diameter Extruded aluminum, 6063-T6 Alloy
b. Framing channel: Extruded aluminum, 6063-T6 Alloy
c. Posts: 2" outside diameter Extruded aluminum, 6063-T6 Alloy
d. Handrails: 2" outside diameter Extruded aluminum, 6063-T6 Alloy

F. Fabrication

- 1. Cut, drill, and punch metals cleanly and accurately. Remove burrs and edge edges to a radius of approximately 1/16 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
2. Form work true to line and level with accurate angles and surfaces.
3. Welded Connections: Copie components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals. Obtain fusion without undercut or overlap. Remove flux immediately. At exposed connections, finish exposed welds to comply with NCMMA's "Voluntary Joint Finish Standards" Finish #2 welds; good appearance, completely sanded joint, some undercutting and pinholes okay.
4. Close exposed ends of railings.
5. Provide wall returns at ends of wall-mounted handrails unless otherwise indicated. Close ends of returns unless clearance between end of rail and wall is 1/4 inch or less.
6. For railing posts set in concrete, provide stainless steel sleeves not less than 6 inches long with inside dimensions not less than 1/2 inch greater than outside dimensions of post, with metal plate forming bottom closure.
7. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, Flanges, miscellaneous fittings, and anchors to interconnect railing members to other work unless indicated otherwise.

I. Acceptable Manufacturers:

- 1. Moultrie Rail Systems
Thompson Fabricating LLC
Tri Tech Inc.
Superior Aluminum
ATR Technologies

J. Materials:

- 1. All extrusions to be 6063-T5 or T6, 6061-T6 or 6005-T5 alloy aluminum.
2. All fasteners to be Type 304 stainless steel.
3. Post-Installed Anchors: Anchors capable of sustaining, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.
4. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

K. Installation

- 1. Perform cutting, drilling, and fitting required for installing railings.
a. Fill exposed connections together to form tight, hairline joints.
b. Install railings level, plumb, square, true to line, without distortion, warp, or rack.
c. Set railings accurately in location, alignment, and elevation; measured from established lines and levels.
d. Do not weld, cut, or abrade surfaces of railing components that are coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.
e. Set posts plumb within a tolerance of 1/16 inch in 3 feet.
f. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.
2. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.
3. Anchoring Posts
a. Form or core-drill holes not less than 5 inches deep and 3/4 inch (20 mm) larger than OD of post for installing posts in concrete. Clean holes of loose material, insert posts, and fill annular space between post and concrete with nonshrink, nonmetallic grout or anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions.
b. Leave anchorage joint exposed with 1/8-inch buldup, sloped away from post.
4. Attaching Railings
a. Attach handrails to walls with wall brackets. Provide brackets with 2-1/4-inch clearance from inside face of handrail and finished wall surface.
b. Secure wall brackets to building construction as follows: For concrete and solid masonry anchorage, use drilled-in expansion shields and hanger or lag bolts. For hollow masonry anchorage, use toggle bolts.
5. Touchup Painting:
a. Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material used for shop painting to comply with SSPC-PA 1 for touchup up shop-painted surfaces.

Division 7: Thermal and Moisture Protection

Section 072116 Building Insulation

A. Insulation

- 1. Fibrous Glass Blanket Insulation: R-19 minimum, 6.3" Owens Corning EcoTouch Certified R Metal Building Insulation with Laminated Vapor Barrier for installation to underside of roof deck See plans for location.
a. Fire Testing: ASTM E 84: Flame spread Index < 25, Smoke Developed Index < 50
b. Combustion Characteristics: ASTM E 136: Non-combustible
c. Water Vapor Sorption: ASTM C 1104: < 0.2% by volume
d. Fungi Resistance: ASTM C 1338: Passes
e. Corrosiveness: ASTM 665: Passes
f. Manufacturing Compliance: ASTM C991
g. Laminated Vapor Barrier: LAMTEC Corporation 'WMP-UV HD' Coated Polypropylene/Scrim / Core / Metalized Polyester:
(1) Fire Testing: ASTM E84 Polypropylene exposed side.
(a) Flame spread 10
(b) Smoke Developed 15
h. Installation: Insulation is applied between the trusses with the vapor barrier exposed facing the room. Install galvanized steel support zees as required for insulation thickness.
(1) Attach zees with to support brackets with self-drilling fasteners.
(2) Tape Joints in Vapor Barrier

- 2. Foamed - in - place masonry wall insulation: Two component thermal insulation produced by combining a plastic resin and catalyst foaming agent surfactant which, when properly ratioed and mixed, together with compressed air produce a cold-setting foam insulation in the hollow cores of hollow unit masonry walls.

- a. Flame-Spread Index: Not more than 25 when tested in accordance with ASTM E84.
b. Fire Smoke-Developed Index: Not more than 200 when tested in accordance with ASTM E84.
c. Fire Classification: Class A.
d. Thermal Values: "R" Value of 4.91/inch @ 32 degrees F mean; ASTM C-177.
e. Sound Attenuation: Minimum Sound Transmission Class ("STC") rating of 53 and a minimum Outdoor Indoor Transmission Class ("OITC") rating of 44 for 8" wall assembly (ASTM E 90-90).

3. Accessories

- a. Adhesive for Bonding Insulation: Product compatible with insulation and air and water barrier materials, and with demonstrated capability to bond insulation securely to substrates without damaging insulation and substrate
b. Insulation Anchors, Spindles, and Standoffs: As recommended by manufacturer.
c. Eave Ventilation Troughs: Preferred, rigid fiberboard or plastic sheets designed and sized to fit between roof framing members and to provide ventilation between insulated attic spaces and vented eaves.

SECTION 07 27 13 SHEET AIR-VAPOR BARRIER

PART 1 - GENERAL

1.1 DESCRIPTION OF THE WORK

A. Extent of Work: The Extent of Work of this Section is indicated on the drawings, details and by the provisions of this Section.

B. Scope of Work: The Scope of Work of this Section is indicated in the Contract Documents and by the provisions of this Section and includes all labor, materials, incidentals, tools, both consumable or not, equipment, rentals, rolling stock, transportation, freight, taxes, permits, licenses, fees and administration required to do all sheet air barrier work called for, scheduled or reasonably implied by the Drawings and/or by these specifications, so that no leakage into the system occurs.

The scope is defined to include the removal of, and disposal of temporary storage of items to be reused and related materials in preparation for the Work of subsequent sections, but is not limited to the following which are listed here as a guide and are not intended to be all inclusive:
1. Air barrier membrane system for use behind exterior cladding systems.
2. Membrane flashings.
3. Tape, fasteners and accessory materials.
4. Provide all other work as indicated or required but not specifically specified herein.
5. Clean-up.

C. Related Work Specified Elsewhere: Related work is specified in other Sections of these Specifications. The Contractor shall consult and become familiar with all other Sections to determine that part of the work which will come into contact with his Work.

1.3 REFERENCES

A. The publications listed below form a part of this specification to the extent referenced.
B. Unless otherwise indicated, the date of the publication or standard is that in effect as of the date of the project documents.

C. Reference Documents:

- 1. Manufacturer's product literature and instructions.
2. AAMA 711-07 - Voluntary Specification for Self-Adhering Flashing Used for Installation of Exterior Wall Penetration Products;
3. AATCC Test Method 127 - Water Resistance: Hydrostatic Pressure Test;
4. ASTM D929 - Standard Specification for Elastomeric Joint Sealants;
5. ASTM C1193 - Standard Guide for Use of Joint Sealants;
6. ASTM D882 - Test Method for Tensile Properties of Thin Plastic Sheeting;
7. ASTM D1117 - Standard Guide for Evaluating Non-woven Fabrics;
8. ASTM D3330 - Standard Test Method for Peel Adhesion of Pressure-Sensitive Tapes;
9. ASTM D3652 - Standard Test Method for Thickness of Pressure-Sensitive Tapes;
10. ASTM E84 - Test Method for Surface Burning Characteristics of Building Materials;
11. ASTM E96 - Test Method for Water Vapor Transmission of Materials;
12. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference;
13. ASTM E1677 - Specification for Air Barrier Material or System for Framed Building Walls;
14. ASTM E2178 - Test Method for Air Permeance of Building Materials;
15. ASTM E2357 - Standard Test Method for Determining Air Leakage of Air Barrier Assemblies;
16. AATCC Test Method 127 Water Resistance: Hydrostatic Pressure Test;
17. TAPPI Test Method T-410; Grams of Paper and Paperboard (Weight per Unit Area);
18. TAPPI Test Method T-460; Air Resistance (Gurley Hill Method);

1.4 DEFINITIONS

A. Contractor: Refer to General Conditions.
B. Subcontractor: Shall mean the installer of the Work of this Section.

1.5 PERFORMANCE REQUIREMENTS

- A. Material Performance
1. Air permeance of membrane: ASTM E2178, less than 0.004 cfm/ft2 at 1.57 psf.
2. Water vapor permeance of membrane: ASTM E96, Desiccant method, not to exceed 1 US Perm.
3. Water resistance of membrane: AATCC Test Method 127, deviated, 2.16 inches of water for 5 hours; no leakage
4. Flammability
a. Surface burning characteristic of membrane: ASTM E 84, flame spread index less than 25, smoke developed value less than 450
b. Membrane in an assembly meets the performance requirements of NFPA 285
5. Self Sealability (Head of Water Test): ASTM D1970, Section 7.9, pass.
B. Assembly Performance
1. Air Leakage: ASTM E2357, less than 0.04 cfm/ft2 at 1.57 psf (0.2 L/s/m2 at 75 Pa)
2. Loads from imposed pressures: Withstands design wind, fan, and stack pressures, both positive and negative, without damage or displacement of the air barrier assembly or adjacent materials. Allows transfer of these loads to the structure.
3. Movement: Allows for thermal, creep, and anticipated seismic and building movement within the air barrier assembly, each air barrier detail, and transitions to adjacent systems without breaching the air barrier system or negating specified air leakage performance.
4. Continuity: Joins air barrier materials and adjacent compatible materials and systems preventing air leakage and maintaining specified air leakage performance at the following locations and as shown on the Drawings:
a. Transitions from roof or air barrier to wall
b. Transitions from window, curtain wall, storefront, louvers, and doors to wall
c. Transitions from foundation waterproofing to wall
d. Transitions from one type of exterior cladding to another
e. Across construction, control, expansion, and seismic joints
f. Penetrations of utilities, pipes, conduit, and ducts
g. Penetrations of ties, anchors, and channels for exterior finishes
h. Pathways for potential air leakage into the building envelope

1.6 SUBMITTAL

- A. Provide (1) hard copy and a digital copy of all submittals. Scan contents of each submittal at full scale in Adobe PDF format and save to CD-R disc for archive storage and distribution, minimum 300 dpi resolution (full color).
B. Submittals shall clearly show with dark circle, check mark or similar technique those selections that apply. Do not highlight. Itemize products submitted with reference to specification section and/or applicable drawing.
C. Submittals shall be approved in writing by the Architect prior to commencement of any work of this section. Approved submittals shall constitute and shall become part of the Contract Documents. A copy of the submittals shall be present at the job site during the Work.
D. The following submittals shall be presented to Architect for review:
1. Product Data: Provide the manufacturer's technical data sheet on the barrier assembly materials stating that each material meets the specified performance requirements.
2. Product Samples: Air barrier and flashing membranes, minimum 8-1/2" by 11".
3. Manufacturer Instructions: Provide manufacturer's written installation instructions.
4. Sample manufacturer's warranty.
5. MSDS: Provide the manufacturer's MSDS on the air barrier assembly materials.

- E. Shop drawings: Project specific details with actual product names on details of.
1. Typical conditions
2. Transitions to adjacent systems
3. Mock-up, including plans and elevations.
G. Manufacturer's Field Service Reports: Provide letter from manufacturer that an authorized field service representative will visit the site at the appropriate time(s) to observe the installation and report on the condition of work.
H. Manufacturer's compatibility letter: Submit signed letter stating project name, list of the specific air barrier materials, and adjacent system materials; that are compatible, both chemically and adhesively.

1.7 QUALITY ASSURANCE

- A. Qualifications:
1. Work of this Section shall be performed by a duly licensed contractor approved for the type of work involved and shall have been successfully engaged in this type of work for not less than five (5) years prior to bid date and shall be capable of showing successful installation similar to work required for this project.
2. Supervision: The Work of this Section shall be performed under the direction of a qualified supervisor or foreman with a minimum of five (5) years' experience in the type of work involved herein.

B. Source Limitations: Provide air barrier and accessory materials produced by single manufacturer.

C. Performance Criteria: Installation shall be in accordance with manufacturer's installation guidelines and recommendations, and in accordance with the best workmanship as recognized by standards of the industry.

D. Regulatory Agencies: Contractor shall comply with all applicable codes and regulations by authorities having jurisdiction.

E. Mock Up:

- 1. Demonstrate the proper installation sequence and workmanship required for the air barrier assembly installation at typical conditions, transitions, openings, and penetrations through the exterior building envelope.
2. Architect to designate a minimum of 8 feet tall by 8 feet wide area on the building at a window opening to install air barrier mock-up. Show all air barrier assembly materials and seals.
3. Do not install any barrier materials on the building until the mock-up is reviewed and approved by the air barrier manufacturer's field representative and Architect.
4. Approved mock-up represents the minimum quality for the Work for the air barrier assembly installation. Materials and installation procedures utilized in the mock-up become the standard of quality and construction for all subsequent similar conditions on the building.
5. Approved mock-up may remain as part of the work.

E. Manufacturer's Field Service: During air barrier mock-up installation and construction, submit field observation reports by manufacturer's field representative within 7 days of site visit.

1.8 DELIVERY, STORAGE AND HANDLING

- A. Deliver air barrier materials and components in manufacturer's original, unopened, undamaged containers with identification labels intact.
B. Owner will not provide closed storage facilities or be responsible for loss or damage of products and equipment.
C. Deliver materials in sufficient quantity to assure continuity of work. Select and utilize handling equipment so as to avoid damage to materials handled and damage to other construction.
D. Protect materials from damage by construction traffic or other work. Protect products from pilferage and vandalism. Remove damaged and unusable products from site and dispose of same legally.

1.9 PROJECT/SITE CONDITIONS

- A. Do not leave equipment on premises unattended or unlocked overnight without authority, and provide protection against theft, malicious mischief and acts of vandalism.
B. Existing Conditions: The Owner maintains that all existing conditions are in condition to comply with the contract terms. Before starting any Work required in this section, notify the Owner of any existing damage to building or grounds or conditions that would not allow performance of the contract.
C. Weather: Proceed with the work only when actual or predicted weather will not adversely affect installation or performance. Weather includes wind as well as precipitation.
D. Upon completion of work, remove trash and debris from the site caused by the work under this Section.
E. Report any latent damage or unforeseen adverse conditions to Architect immediately during the course of Work.

1.10 SCHEDULING

- A. Review requirements for sequencing of installation of barrier assembly with installation of windows, doors, louvers and flashings to provide a weather-tight barrier assembly.
B. Coordination/Cooperation: Coordinate and schedule work in cooperation with Owner and other trades. Comply with Owner's requirements related to security. Remove debris on a daily basis.

1.11 GUARANTEE

- A. The Guarantees contained under other provisions of these Contract Documents will be held to have been part of this Section. The Contractor shall do all of his work in conformance with the provisions of the Drawings and Specifications in such a manner that will allow all other trades to perform their work and submit their required guarantees.
B. Product Warranty: Provide manufacturer's product warranty for a minimum of five (5) years from date of Substantial Completion with installation completed by a certified 3M applicator.

1.12 SAFETY

- A. The Contractor shall be fully and solely responsible for all matters of safety of persons and property arising from this contract, including the liabilities and responsibilities of all subcontractors. Neither the Architect nor the Owner or any of their representatives or employees are to be assumed to have any role of responsibility of matters of safety except they (including the Architect) shall have the authority to order stopping of a portion of the Work which they notice may endanger occupants, employees of the Owner, or the public, or employees of the Contractor or subcontractors.

PART 2 - PRODUCTS

2.01 GENERAL

- A. The following products and manufacturers are approved subject to the provisions of these specifications and are not intended to exclude other manufacturers with equivalent materials, systems and warranties. Where approved substitutions is included, other acceptable manufacturers may be utilized, provided their systems and warranties are equivalent in all respects and submitted for approval in accordance with these Contract Documents.
B. It is intended that materials or products specified by name of manufacturer, brand, trade name or by catalog reference shall be the basis of the bid and furnished under the contract, unless changed by mutual agreement. Where two or more materials are named, the choice of these shall be optional with the Contractor.

2.02 MATERIALS - GENERAL

- A. Material Performance
1. Total thickness: ASTM D3652
a. Membrane: 10 mils
b. Flashing: 10 mils
2. Air permeance of membrane: ASTM E2178, <0.00005 cfm/ft2 at 1.57 psf
3. Air leakage of assembly: ASTM E2357
a. Opaque wall: <0.002 cfm/ft2 at 1.57 psf
b. Penetrated wall: <0.006 cfm/ft2 at 1.57 psf
4. Elongation at break: ASTM D862
a. Membrane: 700%
b. Sealant: > 600%
c. Flashing: 700%
5. Tensile strength: ASTM D882
a. Membrane: 1740 psi
b. Sealant (540): 300 psi
c. Sealant (525): 400 psi
d. Flashing: 1740 psi



ISSUED FOR BIDDING PURPOSES

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

ROBERT T. TAYLOR, AR0012666

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Revision table with columns: REV, DATE, DESCRIPTION, BY.

Design and drawing information table with rows: DESIGN BY:, DRAWN BY:, CHECKED BY:, CAD FILE:



LEE COUNTY SOUTHWEST FLORIDA DEPARTMENT OF PUBLIC WORKS UTILITIES DIVISION

FORT MYERS BEACH WATER RECLAMATION FACILITY SWITCHGEAR REPLACEMENT

SPECIFICATIONS

Issued for Bidding information table: ISSUED FOR: BIDDING, DATE: 05/2023, SHEET NO.: A501

6. Lap adhesion: ASTM D3330
a. Membrane: 40 oz./inch
b. Flashing: 40 oz./inch
7. Low temperature flexibility of membrane: ASTM D1970, Section 7.6, at -22 F; passes bend test and no leakage during water head test
8. Nail sealability of membrane:
a. ASTM D1970, Section 7.9, 5 inches of water head after 3 days; dry and passes
b. ASTM E331/547, as modified per AAMA-711-07, Annex 1; passes initial and after thermal cycling
- B. Basis of Design Manufacturer:
3M Industrial Adhesives and Tapes
3M Center Bldg. 225-3S-06
St. Paul, MN 55144-1000
Phone: 800-362-3550
Fax: 877-369-2923
Web: www.3M.com/industrial
- C. Materials:
1. Membrane: 3M Self-Adhered Air and Vapor Barrier Membrane 3015
a. Description: Tan colored, semi-transparent proprietary film with acrylic adhesive and silicone coated release liner
b. Weight: 13.4 oz./sq.
c. Total membrane thickness: ASTM D3652, 10 mils
2. Accessory Materials:
a. Sealant: 3M Polyurethane Sealant 540; a one component, moisture curing sealant
1) ASTM C920, Type 5, Grade NS, Class 25
2) Total membrane thickness: ASTM D3652, 10 mils
3) Tack free: 60-90 minutes at 73 F at 50% relative humidity
b. Sealant: Refer to Section 07 90.00
1) Provide STP-25 Sealant
c. Flashing: 3M Self-Adhered Air and Vapor Barrier Membrane 3015 in detail widths
1) Description: Tan colored, semi-transparent proprietary film with acrylic adhesive and silicone coated release liner
2) Total membrane thickness: ASTM D3652, 10 mils
3) Detail widths: 2.38-in., 4-in., 6-in., 9-in., and 12-in.
d. Primer for difficult substrates: Test adhesion before application. See Preparation in this Section. Select from the following products:
1) 3M Hi-Strength 90 Spray Adhesive
2) 3M Hi-Strength 94 ET Spray Adhesive
3) 3M Scotch-Weld™ Holdfast 70
4) 3M FastBond™ Contact Adhesive 30NF

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Substrate surfaces shall be free of grease, oil, unbonded paint, corrosion or other substances.
- B. Verify that substrate construction is complete, clean, dry, and ready to receive barrier system with no damaged or unsupported areas; or sharp protrusions or voids. Substrate must meet the following requirements:
1. Exterior gypsum sheathing: Moisture content below 19%; no open joints or cracks wider than 1/4 inch.
2. Plywood: Moisture content below 16%; no open joints or cracks wider than 1/4 inch.
3. Concrete surfaces: Cured minimum 7 days, fins and extrusions ground flush and void areas filled and cured.
4. Masonry: Mortar joints struck flush
5. Metal: Wipe down to remove any release agents or coatings.
- C. Start of air barrier material installation indicates Installing Contractor's acceptance of the substrate and installation conditions.

3.2 PREPARATION

- A. Connection to Difficult Substrates and Other Systems:
1. Test adhesion by installing a 6-inch square test patch of barrier product over the difficult substrate or other system. Removal of the test patch should not be possible without permanent damage to either the test patch or substrate material.
2. Consult the manufacturer for detailing connections that fail this test.
- B. Gaps or cracks in substrate exceeding 1/4-inch width: Fill gap or crack with sealant and tool surface flush and smooth.
- C. Penetrations of air barrier assembly: Fill gaps or cracks exceeding 1/4-inch width between the substrate and the penetration with sealant.

3.3 AIR BARRIER ASSEMBLY INSTALLATION

- A. Install air barrier assembly in accordance with manufacturer's instructions in locations shown on the Drawings to provide a continuous air barrier (air/water/vapor barrier).
1. Cut membrane to length and wind up into a roll. Fold the starting edge back over itself to create the paper release liner. Peel back the liner to expose the 2-3 inch starting strip of the membrane. Do not contaminate the starting strip with dust or debris before applying it to the intended surface.
2. Stagger all vertical joints if membrane installed in "weatherboard" or "shingle fashion." Stagger all horizontal joints if membrane installed in vertical strips.
3. Align and set the membrane in place, rolling the product back against the exposed adhesive. Simultaneously unwind the roll pulling the release liner, maintaining pressure against the substrate to tack the membrane in place. Wipe the membrane down with a feathering motion from the middle outward to obtain a smooth surface.
4. Lap a minimum of 2 inches on sides and ends. Roll the membrane with a rubber roller to ensure a tight seal against the wall and between overlapped edges.
5. Install 6-inch wide membrane at inside and outside vertical corners and construction joints, lapping a minimum of 2 inches on either side.
6. Carefully execute detail work to ensure a continuously sealed building envelope.
7. Through-wall flashings: Seal top edge of through-wall flashing with air barrier sealant. Lap membrane over sealed through-wall flashing top edge minimum 2 inches.
8. Transitions to adjacent systems: See the Drawings for project specific detailing of transitions to the roof, foundation waterproofing, and door systems.
9. Repair all wrinkles and fish mouths extending within 2 inches of the membrane edge with a repair membrane piece extending 6 inches beyond the defect.
- B. Door and Louver Openings:
1. Wrap rough openings as detailed in the Drawings with either flashing or membrane material in detail widths.
2. Install sealant at each inside corner of the window sill, jamb, and head.
3. Apply detail strips of membrane at each inside corner extending the full depth of the sill and a minimum 2 inches onto the face.
4. Install detail strips at the sill, jambs, and head in lengths beyond window opening extending the full depth of the sill.
5. Apply reinforcing piece cut into a football, bowtie, or butterfly shape at each corner.
6. Install membrane in "weatherboard" or "shingle fashion" with a minimum 2-inch overlap at all detail strips.
- C. Penetrations:
1. Seal all penetrations with sealant. Install flashing or membrane material cut to length to allow installation around the full circumference of penetration.
2. Masonry Ties or Anchors:
a. Post-applied: Install back plate of tie or anchor over the air barrier with self-tapping screws. Apply sealant over the screw heads.
b. Knife plate: Cut a one-piece membrane to overlap minimum 2 inches in each direction of the knife plate. Cut a slot for the knife plate and apply the membrane over. Apply sealant at the knife plate penetration perimeter.
3. Utilities, Pipes, Conduit, and Duct Penetrations:
a. Apply sealant between the penetration and the exterior wall.
b. Apply membrane to allow continuous 2-inch overlap onto vent/pipe penetration and cut "fingers" to transition to the exterior wall.
c. Install a narrow membrane collar strip around the circumference of the penetration perimeter, lapping onto the penetration and substrate.
d. Install one-piece membrane with penetration shape cut out on to the substrate. Apply over "fingers" on the substrate and extend a minimum of 2 inches beyond the penetration perimeter.
e. Apply sealant at the penetration perimeter and cut edge of the one-piece membrane.
- D. Substrate transitions and building joints: See Drawings for project specific detailing with backer rod, sealant, and membrane.
- E. Repairs: Apply membrane 6 inch larger than test or damage area. Seal leading cut edges of membrane with sealant.

3.4 PROTECTION

- A. Protect air barrier materials from damage during installation and the remainder of the construction period.
- B. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction and acceptable to the air barrier assembly manufacturer.

3.5 CLEANING

- A. Remove all equipment, debris and contamination to the satisfaction of Owner and Architect.
- B. Any soiling or damage caused by the Work of this Section shall be restored to original condition at no additional cost to the Owner.

Section 076100 Metal Roof Panels

A. Performance Requirements

1. This project is located in a 190 MPH Large Missile Impact Windborne Debris Zone. All exterior products to bear a Florida Product Approval (FL) number.
- B. Standing Seam Metal Roof Panels
1. Perform work in accordance with the following:
a. NRCA (National Roofing Contractors Association) - Roofing Manual.
b. SMACNA - Architectural Sheet Metal Manual.
c. Florida Building Code.
2. Roof panel description
a. .032 inch galvalume roof panel with 180 degree mechanical seam.
b. 2-coat fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in both color coat and clear top coat.
c. Panel size shall be sized to match existing.
d. Color to be selected by owner.
3. Manufacturers not to exclude others
a. Bermidge
b. Engle
4. Submittals - Provide the following
a. Provide Florida Product Approval documentation or Miami-Dade Notice of Acceptance.
b. Minimum of 2 coats of Kynar paint coating.
c. Product Data: For each type of product indicated.
d. Shop Drawings: Show fabrication and installation layouts of metal roof panels; scale details of edge conditions, side-seam and end lap joints, panel profiles, corners, anchorages, trim, flashings, closures, and accessories; and special details. Distinguish between factory- and field-assembled work. Details shall be drawn at a minimum scale of 3" = 1'-0"
e. Samples: For each type of exposed finish required.
f. Delegated-Design Submittal: For metal roof panel assembly indicated to comply with performance requirements and design criteria, including analysis data and calculations indicating method of attachment to structural roof deck, designed and sealed by the qualified Florida licensed professional engineer responsible for their preparation.
g. Portable Roll-Forming Equipment Certificate: Issued by UL for equipment manufacturer's portable roll-forming equipment capable of producing panels that comply with UL requirements.
h. Product test reports. Florida Building Code Product Approval - Miami Dade NOA using the submitted manufacturer with product highlighted and meeting the wind pressures as indicated on the structural drawings
i. Maintenance data.
j. Warranties: Samples special warranties.

- C. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer. Work of this Section shall be performed by a duly licensed contractor approved for the type of work involved and shall have been successfully engaged in this type of work for not less than five (5) years prior to bid date and shall be capable of showing successful installation similar to work required for this project.
- D. Manufacturer Qualifications: Company specializing in Architectural Sheet Metal Products.

5. Warranty
a. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace metal roof panel assemblies that fail in materials or workmanship within specified warranty period.
(1) Warranty Period: Twenty years from date of Substantial Completion.
b. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal roof panels that show evidence of deterioration of factory-applied finishes within specified warranty period.
(2) Finish Warranty Period: 20 years from date of Substantial Completion.
6. Accessories
a. Roof Panel Accessories: Provide components approved by roof panel manufacturer and as required for a complete metal roof panel assembly including trim, copings, fascia, corner units, ridge closures, clips, flashings, sealants, gaskets, fillers, closure strips, gutters and downspouts, and similar items. Match material and finish of metal roof panels unless otherwise indicated.
(1) Closures: Provide closures at eaves and ridges, fabricated of same metal as metal roof panels.
(2) Closure Strips: Closed-cell, expanded, cellular, rubber or cross linked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch- (25-mm)-thick, flexible closure strips; cut or pre-molded to match metal roof panel profile. Provide closure strips where indicated or necessary to ensure weather tight construction.
(3) Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
7. Flashing and Trim: Formed from same material as roof panels, pre-painted with coil coating, minimum .032 in core material thickness. Provide flashing and trim as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fascia, and fillers. Finish flashing and trim with same finish system as adjacent metal roof panels.
8. Gutters: Formed from .050 aluminum with finish to match roof panels. Complete with end pieces, outlet tubes, and other special pieces as required. Fabricate in minimum 96-inch- (2400-mm)-long sections, of size and metal according to SMACNA's "Architectural Sheet Metal Manual." Furnish gutter support brackets spaced a maximum of 30 inches o.c., fabricated from same metal as gutters. Furnish gutter straps spaced a maximum of 30 inches o.c. and offset from bracket 15", fabricated from same metal as gutters and secure with pop rivets. Provide wire ball strainers of compatible metal at outlets. Finish gutters to match metal roof panels.
9. Downspouts: Formed from .050 aluminum with finish to match roof panels. Fabricate in 10-foot- (3-m)-long sections, complete with formed elbows and offsets, according to "Architectural Sheet Metal Manual." Furnish downspout support brackets from same materials as downspouts, spaced a maximum of 60 inches o.c., with a strap at the top and bottom. Provide welded turn-out at base. Finish downspouts to match gutters.
10. Fabrication: Fabricate and finish metal roof panels and accessories at the factory to greatest extent possible, by manufacturer's standard procedures and processes and as necessary to fulfill indicated performance requirements. Comply with indicated profiles and with dimensional and structural requirements.
a. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.
b. Fabricate metal roof panel side laps with factory-installed captive gaskets or separator strips that provide a tight seal and prevent metal-to-metal contact, in a manner that will seal weathertight and minimize noise from movements within panel assembly.
c. Sheet Metal Accessories: Fabricate flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of item indicated.
11. Miscellaneous Materials
a. Fasteners: Self-tapping screws, bolts, nuts, self-locking stainless steel rivets and bolts, end welded studs, and other suitable fasteners designed to withstand design loads.
b. Underlayment: Self-Adhering, High-Temperature Sheet: 40 to 60 mils (0.76 to 1.0 mm) thick minimum, consisting of slip-resisting, polyethylene-film top surface laminated to layer of butyl or SBS-modified asphalt adhesive, with release-paper backing; cold applied. Provide primer when recommended by underlayment manufacturer.
(1) Thermal Stability: Stable after testing at 240 deg F (116 deg C); ASTM D 1970.
(2) Low-Temperature Flexibility: Passes after testing at minus 20 deg F (29 deg C); ASTM D 1970.

Section 079000 Joint Protection

A. Sealant

1. Exterior application: one or two-part non-sag low modulus urethane sealant for exterior applications. Use to seal curtain wall systems, window and door frames to wall surfaces, expansion and control joints, in conjunction with roofing - flashing systems, etc. Apply primer where recommended by manufacturer.
a. BASF "MasterSeal NP1" one part poly-urethane sealant
b. BASF "MasterSeal NP2" two part poly-urethane sealant
c. Pecora Corporation "Dynamol II" two part urethane sealant
d. Pecora Corporation "Dynamol I" one part urethane sealant
e. Sika "Sikaflex-1A" one part poly-urethane sealant
f. Sika "Sikaflex-2C, NS/NL" two part poly-urethane sealant
2. Interior application: one part acrylic non sag latex caulk in areas to be painted. Use to seal hollow metal or wood door frames, window frames to walls, etc.
a. Bostik Construction Products "Chem-Calk 600"
b. Pecora Corporation "60+ Unicrylic"
c. DAP "Dyanflex 230"
3. Mildew resistant silicone sealant in moist areas, toilet rooms, etc. Use to seal counters and back splash, lavatories to wall surfaces. Seal toilet fixtures to supporting walls or floors, sealing of piping assemblies to wall or floor surfaces, etc.
a. Pecora Corporation "898 Silicone"
b. GE "SCS 1700 Sanham"
c. DAP "Kwik Seal Plus"
4. Insulation foam sealant, use for folling large voids.
a. DAP Daplex
b. Dow Great Stuff

Section 081113 Commercial Hollow Metal Doors and Frames

A. Performance Requirements:

1. Exterior Doors, Frames and Hardware to be Windborne-debris-impact-resistant doors and frames and shall comply with the current Florida Building Code Product Approvals which exceed the wind pressures indicated on the structural drawings.
2. Provide delegated structural engineering for the pair of 3'0" x 10'-0" doors, f rames, and hardware signed and sealed by structural engineer registered in the state of Florida.

B. Hollow Metal Doors: Materials

1. Materials:
a. Steel.
(1) Cold-rolled steel conforming to ASTM A 1008/A 1008M, CS, Type B.
(2) Hot-rolled, pickled and oiled (HRPO) steel conforming to ASTM A 1011/A 1011M, CS, Type B.
(3) Zinc-coated steel conforming to ASTM A 653/A 653M, CS, Type B.
2. Construction:
a. Fabricate types, sizes, and construction, in accordance with the contract documents, and meeting the performance requirements of Section 1.05.
b. Door face sheet thickness and steel type.

C. Hollow Metal Doors: Materials

1. Materials:
a. Steel.
(1) Cold-rolled steel conforming to ASTM A 1008/A 1008M, CS, Type B.
(2) Hot-rolled, pickled and oiled (HRPO) steel conforming to ASTM A 1011/A 1011M, CS, Type B.
(3) Zinc-coated steel conforming to ASTM A 653/A 653M, CS, Type B.
2. Construction:
a. Fabricate types, sizes, and construction, in accordance with the contract documents, and meeting the performance requirements of Section 1.05.
b. Door face sheet thickness and steel type.

- (1) Exterior doors constructed of 0.053 in. (1.3 mm) minimum thickness zinc-coated steel conforming to ASTM A 653/A653M, CS, Type B, Coating Designation A60 (ZF180) or G60 (Z180).
c. Join face sheets at their vertical edges by a continuous weld extending the full height of the door, with no visible seams on their faces or vertical edges.
d. Fabricate doors with minimum nominal door thickness of 1.75 in. (44 mm). Fabricate doors neat in appearance and free from warpage or buckle. Bend edges true and straight, and of minimum radius for the thickness of metal used.
e. Hardware Reinforcements and Preparations.
(1) Weld all hardware reinforcements to door.
(2) Mortise, reinforce, drill and tap doors at the factory for templated hardware only, in accordance with the approved hardware schedule and templates provided by the hardware supplier.
(3) Mortise and reinforce doors for anchor hinges, thrust pivots, pivot reinforced hinges, or non-templated hardware. Drilling and tapping, by others.
(4) Reinforce doors for surface mounted hardware or continuous hinges. Drilling and tapping, by others.
(5) Steel thickness for hardware reinforcements to be the manufacturer's standard as required to adequately support the door and hardware, but not less than:
i. Full mortise hinges and pivots: 0.167 in. (4.24 mm) or 0.123 in. (3.12 mm) angle or channel shaped type.
ii. Lock fronts, mortised latching devices and strikes: 0.093 in. (2.3 mm) or 0.053 in. (1.34 mm) unitized reinforcement with extruded tapped holes that provide equivalent number of thread as 0.093 in. (2.3 mm).
iii. Concealed holders and surface mounted closers: 0.093 in. (2.3 mm).
iv. Internal reinforcements for other surface mounted hardware: 0.067 in. (1.7 mm).

D. Hollow Metal Frames:

1. Materials:
a. Steel.
(1) Cold-rolled steel conforming to ASTM A 1008/A 1008M, CS, Type B.
(2) Hot-rolled, pickled and oiled (HRPO) steel conforming to ASTM A 1011/A 1011M, CS, Type B.
(3) Zinc-coated steel conforming to ASTM A 653/A 653M, CS, Type B

2. Construction:

- a. Fabricate frame product as welded units of the sizes and types shown on the approved submittal drawings. Frame product shall be constructed in accordance with the contract documents and meet the performance criteria specified in Section 1.05. Knocked-down frames are not acceptable.
b. Profile thickness and steel type.
(1) Exterior Frame Product: Construct profiles from zinc coated steel conforming to ASTM A653/A 653M, CS, Type B, Coating Designation A60 (ZF180) or G60 (Z180), 0.053 in. (1.3 mm) minimum thickness. Fabricate frame product from 0.067 in. (1.7 mm) minimum thickness for single door openings exceeding 4 ft. (1219 mm) in width, pairs with either door exceeding 4 ft. (1219 mm) in width and for nominal door opening height exceeding 10 ft. (3048 mm).
c. Welding.
(1) Perimeter face joints (flush or indented): Continuously welded internally or externally with flush face joints finished smooth with seamless faces. Continuously weld internally the rabbets and soffits.
(2) Internal flush face joints: Continuously welded and finished smooth with seamless faces.
(3) Members at internal indented intersections: Securely welded to concealed reinforcements, and have hairline face seams.
(4) All other intersection elements: Hairline seams.
i. See NAAMM HMMMA 820, "Hollow Metal Frames", and NAAMM HMMMA 820-TN02-03, "Continuously Welded", and Figure 1 of this specification, for further details on frame welding.
d. Fabricate frame product with stop heights of 0.625 in. (15.8 mm) minimum.
e. Prepare each door opening for single stud, resilient door silencers, three (3) per strike jamb for single door openings, two (2) per head for pairs, except on gasketed or weather-stripped frame product. Silencers supplied and installed by others.
f. Hardware Reinforcements and Preparations.
(1) Weld all hardware reinforcements to frame product.
(2) Mortise, reinforce, drill and tap frame product at the factory for templated hardware only, in accordance with the approved hardware schedule and templates provided by the hardware supplier.
(3) Mortise and reinforce frame product for anchor hinges, thrust pivots or non-templated mortised hardware. Drilling and tapping, by others.
(4) Reinforce frame product for surface mounted hardware or continuous hinges. Drilling and tapping, by others.
i. See NAAMM HMMMA 830, "Hardware Selection for Hollow Metal Doors and Frames" for additional information.
(5) Minimum thickness of hardware reinforcements:
i. Full mortised hinges and pivots: 0.167 in. x 1.25 in. x 10 in. length (4.2 mm x 31.7 mm x 254 mm)
ii. Strikes: 0.093 in. (2.3 mm) or 0.053 in. (1.3 mm) unitized reinforcement with extruded tapped holes that provide equivalent number of threads as 0.093 in. (2.3 mm).
iii. Flush bolts, closers, hold open arms, and other surface applied hardware: 0.093 in. (2.3 mm).

Section 087100 Door Hardware:

- A. (All Door hardware is required to Comply with hardware indicated on Florida Building Code Product approvals or Miami Dade NOAs which meet or exceed the maximum design pressures indicated on the structural drawings). Provide delegated structural engineering for the pair of 3'0" x 10'-0" doors, frames, and hardware signed and sealed by structural engineer registered in the state of Florida.
1. All hardware shall be lever type, complying with ANSI A117.1-1986, so as to provide access to the physically handicapped.
2. Door lockset hardware shall be equivalent to Stanley "L Series Commercial" standard
3. Hinges shall be equivalent to Hager or Schlegel. Minimum of 1 1/2 PR of butts, 4 1/2" x 4 1/2". Finish shall be Stainless Steel.
4. Door closers shall be equivalent to LCN and Norton, surface mounted, aluminum finish.
5. Miscellaneous hardware, stops, weatherstripping shall be equivalent to Glynn-Johnson Corp., Pemko, Stanley, National Guard Products, and Reese.
7. Door hardware is scheduled on drawings.
8. Keys: provide two sets of keys for all locksets. Coordinate keying with owner's masterkey system. Cylinders to be FSIC style compatible to Owner's keying system.

Division 9: Finishes

Section 092400 Portland Cement Plastering (Stucco)

- A. Quality Assurance
1. Comply with the requirements of the Florida Building Code.
2. Mockups: Before plastering, install mockups of at least 100 sq. ft. (9.3 sq. m) in surface area to demonstrate aesthetic effects and set quality standards for materials and execution.
a. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
B. Project Conditions
1. Comply with ASTM C 926 requirements.
C. Products
1. Metal Lath (for use where stucco is provided at farned and sheathed substrates only)
a. 3/4 LB Expanded-Metal Lath: ASTM C 847 with ASTM A 653/A 653M, G60 (Z180), hot-dip galvanized zinc coating.
b. as indicated on drawings.
2. Accessories
a. General: Comply with ASTM C 1063 and coordinate depth of trim and accessories with thickness and number of plaster coats required.
b. Plastic Accessories: Fabricated from high-impact PVC.
(1) Cornerbeads: With perforated flanges.
i. Small-nose style; use unless otherwise indicated.
(2) Casing Beads: With perforated flanges in depth required to suit plaster bases indicated and flange length required to suit applications indicated.
i. Square-edge style; use unless otherwise indicated.
(3) Control Joints: One-piece-type, folded pair of unperforated screeds in M-shaped configuration; with perforated flanges and removable protective tape on plaster face of control joint.
(4) Expansion Joints: Formed by 2 - opposing vinyl casing beads separated by width indicated on drawings and filled with backer-rod and sealant.
3. Miscellaneous Materials
a. Water for Mixing: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.
b. Fiber for Base Coat: Alkaline-resistant glass or polypropylene fibers, 1/2 inch (13 mm) long, free of contaminants, manufactured for use in Portland cement plaster.
c. Bonding Compound: ASTM C 932.



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LEE COUNTY
SOUTHWEST FLORIDA
DEPARTMENT OF PUBLIC WORKS
UTILITIES DIVISION

FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT

SPECIFICATIONS

ISSUED FOR:
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DATE:
05/2023
SHEET NO. :
A502

3. Miscellaneous Materials
- Water for Mixing: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.
 - Fiber for Base Coat: Alkaline-resistant glass or polypropylene fibers, 1/2 inch (13 mm) long, free of contaminants, manufactured for use in Portland cement plaster.
 - Bonding Compound: ASTM C 932.
 - Steel Drill Screws: For metal-to-metal fastening, ASTM C 1002 or ASTM C 954, as required by thickness of metal being fastened; with pan head that is suitable for application; in lengths required to achieve penetration through joined materials of no fewer than three exposed threads.
 - Fasteners for Attaching Metal Lath to Substrates: Complying with ASTM C 1063.
 - Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, not less than 0.8475-inch (1.21-mm) diameter, unless otherwise indicated.
 - Sealant: As specified in Division 07 Section "Joint Sealants"
 - Provide sealants for suction accessories as recommended by the accessory manufacturer.
4. Plaster Materials
- Portland Cement: ASTM C 150, Type I
 - Masonry Cement: ASTM C 91, Type N
 - Plastic Cement: ASTM C 1328
 - Colorants for Job-Mixed Finish Coats: Colorfast mineral pigments that produce finish plaster color as selected by architect from manufacturer's full range.
 - Line: ASTM C 206, Type S; or ASTM C 207, Type S.
 - Sand Aggregate: ASTM C 897.
 - Color for Job-Mixed Finish Coats: As selected by Architect.
 - Perlite Aggregate: ASTM C 35.
 - Ready-Mixed Finish-Coat Plaster: Mill-mixed Portland cement, aggregates, coloring agents, and proprietary ingredients.
 - Color: As selected by Architect from manufacturer's full range.
5. Exterior Sheathing Board Material:
- Description: non-combustible, moisture- and mold-resistant panel designed for use under exterior claddings.
 - Thickness: 5/8-inch.
 - Compliance: ASTM C1177/C1177M, with fiberglass mat facing on both sides.
 - Separation: Install with 1/4-inch separation at abutments with dissimilar material and apply specific sealant.
 - Basic of Design: Tradename: National Gypsum Company, Goldbond EXP Sheathing
 - Manufacturer: National Gypsum Company, or approved substitution.
6. Exterior Sheathing Board Installation:
- Install sheathing horizontally, with edges butted tight and ends occurring over firm bearing per manufacturer recommendations and ASTM C1280/GA-263.
 - Use only approved fasteners for attachment of all gypsum board.
 - Secure sheathing to metal framing at 4 in. on center (maximum) in field and 4" o.c. maximum at edges. Tolerances shall not exceed deviations as required for the finish stucco: 1/8 in. in 10'
 - Water Resistive Barrier
 - 2 Layers, per ASTM C1063 (For use over at glass-mat sheathing at framed locations)
 - First Layer: installed over glass-mat exterior sheathing board: Self-adhering sheet air barrier, flashing, and sealant system based on design "3M Self-Adhered Air and Vapor Barrier Membrane 3015 per ASTM D5652, Reference Section 07 27 13 Sheet Air Barrier.
 - Second Layer: Asphalt-Saturated Felt, ASTM D226, Type (No. 30), non-perforated organic felt.
 - Paperback lath is not allowed.
 - Installation of Weather Resistive Barrier
 - Install new the specified sheet air barrier membrane per manufacturer's specifications using manufacturer's required strip in and sealant at all penetrations and openings (windows, doors, louvers.)
 - Install new weather resistive barrier felt over the specified sheet air barrier membrane.
 - Weather resistive barrier felt shall be installed with approved fasteners, spaced at approx. 1 per 2 square feet.
 - If two or more pieces are required to continue a course, lap the ends 4-in. End laps in a succeeding course should be at least 6-ft. from end laps in the preceding course.

Section 092216 Non-Structural Metal Framing (Exterior Lurring)

- A. Quality Assurance
- Comply with the requirements of the Florida Building Code.
 - Comply with requirements of the Florida Building Code.
 - Work of this Section shall be performed by a duly licensed contractor approved for the type of work involved and shall have been successfully engaged in this type of work for not less than five (5) years prior to bid date and shall be capable of showing successful installation similar to work required for this project.
- B. Submittals
- Product data for each type indicated showing compliance with the Contract Documents.
- C. Products
- Non-Load-Bearing Steel Framing, General
 - Framing Members, General: Comply with ASTM C 754 for conditions indicated.
 - Steel Sheet Components: Comply with ASTM C 645 requirements for metal, unless otherwise indicated.
 - Protective Coating: ASTM A 653/A 653M, G90 (Z275).
 - Hat-Shaped, Rigid Furring Channels: ASTM C 645, 7/8 inch (22.2 mm) deep.
 - Minimum Base Metal Thickness: 18 gauge.
- D. Installation
- Install only after self-adhering air vapor barrier and ASTM D226 #30 building felt has been installed.
 - Install per minimum spacing as indicated on drawings or Florida Building Code Product Approval Miami Dade NOA which ever is most restrictive.

Section 098113 Exterior Painting

- A. Delivery, Storage, and Handling
- Delivery and Handling: Deliver products to Project site in an undamaged condition in manufacturer's original sealed containers, complete with labels and instructions for handling, storing, unpacking, protecting, and installing. Packaging shall bear the manufacturer's label with the following information:
 - Product name and type (description).
 - Batch date.
 - Color number.
 - VOC content.
 - Environmental handling requirements.
 - Surface preparation requirements.
 - Application instructions.
 - Store materials not in use in lightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).
 - Maintain containers in clean condition, free of foreign materials and residue.
 - Remove rags and waste from storage areas daily.
- B. Field Conditions
- Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.
 - Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.
 - Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

3. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
- If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner.
4. Hazardous Materials: Hazardous materials including lead paint [are] [may be] present in buildings and structures to be painted. A report on the presence of known hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.
- Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified.
 - Perform preparation for painting of substrates known to include lead paint in accordance with EPA Renovation, Repair and Painting Rule and additional requirements of authorities having jurisdiction.
- C. Products
1. Manufacturers
- Basic-of-Design Product: Subject to compliance with requirements; products indicated or comparable product from one of the following:
 - Sherwin Williams
 - Florida Paints
 - PPG Paints
 - Source Limitations: Obtain paint materials from single source from single listed manufacturer.
 - Manufacturer's designations listed on a separate color schedule are for color reference only and do not indicate prior approval.
2. Paint, General
- Material Compatibility:
 - Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 - For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- D. Exterior Painting Schedule
- Concrete, Portland Cement Plaster (Stucco), Cementitious Siding, Nontraffic Surfaces
 - Latex System: Color to match existing.
 - Prime Coat: Primer sealer, latex,
 - S-W Loxon Concrete & Masonry Primer Sealer, A24W8300, at 8.0 mils (0.203 mm) wet, 3.2 mils (0.081 mm) dry.
 - Prime Coat: Latex, exterior, matching topcoat.
 - Intermediate Coat: Latex, exterior, matching topcoat.
 - Topcoat: Latex, exterior, matching sheen of existing.
 - S-W Solo Acrylic Series, at 4.0 mils (0.102 mm) wet, 1.5 mils (0.038 mm) dry, per coat.
 - Ferrous Metal, Galvanized-Metal, and Aluminum Substrates:
 - Water-Based Light Industrial Coating System
 - Prime Coat: Primer, water based.
 - S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series, 5.0 to 10.0 mils (0.127 to 0.254 mm) wet, 2.0 to 4.0 mils (0.051 to 0.102 mm) dry.
 - Intermediate Coat: Light industrial coating, exterior, water based, matching topcoat.
 - Topcoat: Light industrial coating, exterior, water based, sheen to match adjacent buildings.
 - S-W Pro Industrial Acrylic Gloss Coating, B66-600 Series, at 2.5 to 4.0 mils (0.064 to 0.102 mm) dry, per coat.

Section 099123 Interior Painting

- A. Section Includes
- Surface preparation and field painting of exposed interior items and surfaces.
- B. Submittals
- Product Data: For each paint system indicated, including:
 - Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
 - Verification Samples: For each finish product specified, two samples, minimum size 6 inches square, representing actual product, color, and patterns.
- C. Quality Assurance
- Installer Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for the Project for a period of no less than 5 years, whose work has resulted in applications with a record of successful in-service performance.
 - Obtain block fillers and primers for each coating system from the same manufacturer as the finish coats.
 - Paint exposed surfaces. If an item or a surface is not specifically mentioned, paint the item or surface the same as similar adjacent materials or surfaces. If a color of finish is not indicated, Owner will select from standard colors and finishes available.
 - Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.
 - The paint manufacturer shall designate in writing a representative who shall provide a written report for each testing date including locations and suitability of substrates to receive a primer or paint. Reports shall indicate substrate as appropriate to receive primer and paint prior to any application.
- D. Delivery, Storage, and Handling
- Delivery and Handling: Deliver products to Project site in an undamaged condition in manufacturer's original sealed containers, complete with labels and instructions for handling, storing, unpacking, protecting, and installing. Packaging shall bear the manufacturer's label with the following information:
 - Product name and type (description).
 - Batch date.
 - Color number.
 - VOC content.
 - Environmental handling requirements.
 - Surface preparation requirements.
 - Application instructions.
 - Store materials not in use in lightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).
 - Maintain containers in clean condition, free of foreign materials and residue.
 - Remove rags and waste from storage areas daily.
- E. Field Conditions
- Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).
 - Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

- E. Field Conditions
- Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).
 - Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.
- F. Products
1. Manufacturers
- Basic-of-Design Product: Subject to compliance with requirements; products indicated or comparable product from one of the following:
 - Sherwin Williams
 - Florida Paints
 - PPG Paints
 - Source Limitations: Obtain paint materials from single source from single listed manufacturer.
 - Manufacturer's designations listed on a separate color schedule are for color reference only and do not indicate prior approval.
- G. Interior Painting Schedule
- Topcoat: Latex, interior, gloss.
 - CMU Substrates
 - Water-Based Light Industrial Coating System:
 - Block Filler: Block filler, latex, interior/exterior.
 - S-W PrepRite Block Filler, B25W25, at 75-125 sq. ft. per gal. (1.84 to 3.07 sq. m per liter)
 - Intermediate Coat: Light industrial coating, interior, water based, matching topcoat. Topcoat: Light industrial coating, interior, water based semi-gloss.
 - S-W Pro Industrial Pre-Catalyzed Water-Based Epoxy, K46-151 Series, at 4.0 mils (0.102 mm) wet, 1.5 mils (0.038 mm) dry, per coat.
 - Metal Substrates (Aluminum, Steel, Galvanized Steel):
 - Water-Based Light Industrial Coating System:
 - Prime Coat: Primer, rust-inhibitive, water based:
 - S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series, at 5.0 to 10 mils (0.127 to 0.254 mm) wet, 2.0 to 4.0 mils (0.051 to 0.102 mm) dry.
 - Intermediate Coat: Light industrial coating, interior, water based, matching topcoat.
 - Topcoat: Light industrial coating, interior, water based semi-gloss.
 - S-W Pro Industrial Pre-Catalyzed Water-Based Epoxy, K46-151 Series, at 4.0 mils (0.102 mm) wet, 1.5 mils (0.038 mm) dry, per coat.

Section 104416 Fire Extinguishers

- A. Portable, hand-carried fire extinguishers, mounting brackets, and accessories for fire extinguishers
- NFPA Compliance: Fabricate and label fire extinguishers to comply with NFPA 10, "Portable Fire Extinguishers"
 - Listed and labeled (type, rating, and classification) by an independent testing agency acceptable to authorities having jurisdiction.
 - Coordinate type and capacity of fire extinguishers with fire protection cabinets to ensure fit and function. Refer to FFPC Design Guidelines for extinguisher requirements.
 - Warranty: Manufacturer's standard term in which manufacturer agrees to repair or replace fire extinguishers that fail in materials or workmanship within 5 year warranty period.
- B. Manufacturers:
- Amerex Corporation.
 - Ansol Incorporated; Tyco International Ltd.
 - J. L. Industries, Inc.; a division of Active Construction Products Group.
 - Kidde Residential and Commercial Division; Subsidiary of Kidde plc.
 - Larsen's Manufacturing Company.
- C. Instruction Labels: Include pictorial marking system complying with NFPA 10, Appendix B
- D. Multipurpose Dry-Chemical Type: UL-rated 4A80BC nominal capacity, with monoammonium phosphate-based dry chemical in manufacturer's standard anameled container.
- E. Mounting Brackets: Manufacturer's standard steel, designed to secure fire extinguisher to wall or structure, of sizes required for types and capacities of fire extinguishers indicated, with a finish to match extinguisher.
- F. Installation: Examine fire extinguishers for proper charging and tagging.
 - Remove and replace damaged, defective, or undercharged fire extinguishers.
 - Install fire extinguishers and mounting brackets in locations indicated and in compliance with requirements of authorities having jurisdiction.
 - Mounting Brackets: 48 inches above finished floor to top of fire extinguisher.
 - Mounting Brackets: Fasten mounting brackets to surfaces, square and plumb, at locations indicated. Provide light gauge steel blocking behind substrates for anchorage at framed locations.

Section 31316 Termite Control

- A. Termite treatment
- Use state licensed applicator, conform to federal, state and local laws, comply with E.P.A. guidelines
 - Soil poisoning shall be done by a contractor licensed and bonded to practice in Florida and having at least five years' experience in pest extermination business in Florida.
 - Contractor shall hold a current license and certification for chemical pest control by the state of Florida, provide a limited renewable five-year warranty against insect infestation.
 - Provide written evidence that all chemicals used carry EPA approval for type and quantity.



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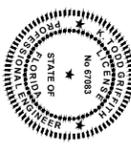
FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT

SPECIFICATIONS

ISSUED FOR:	BIDDING
DATE:	05/2023
SHEET NO.:	A503

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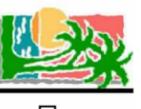
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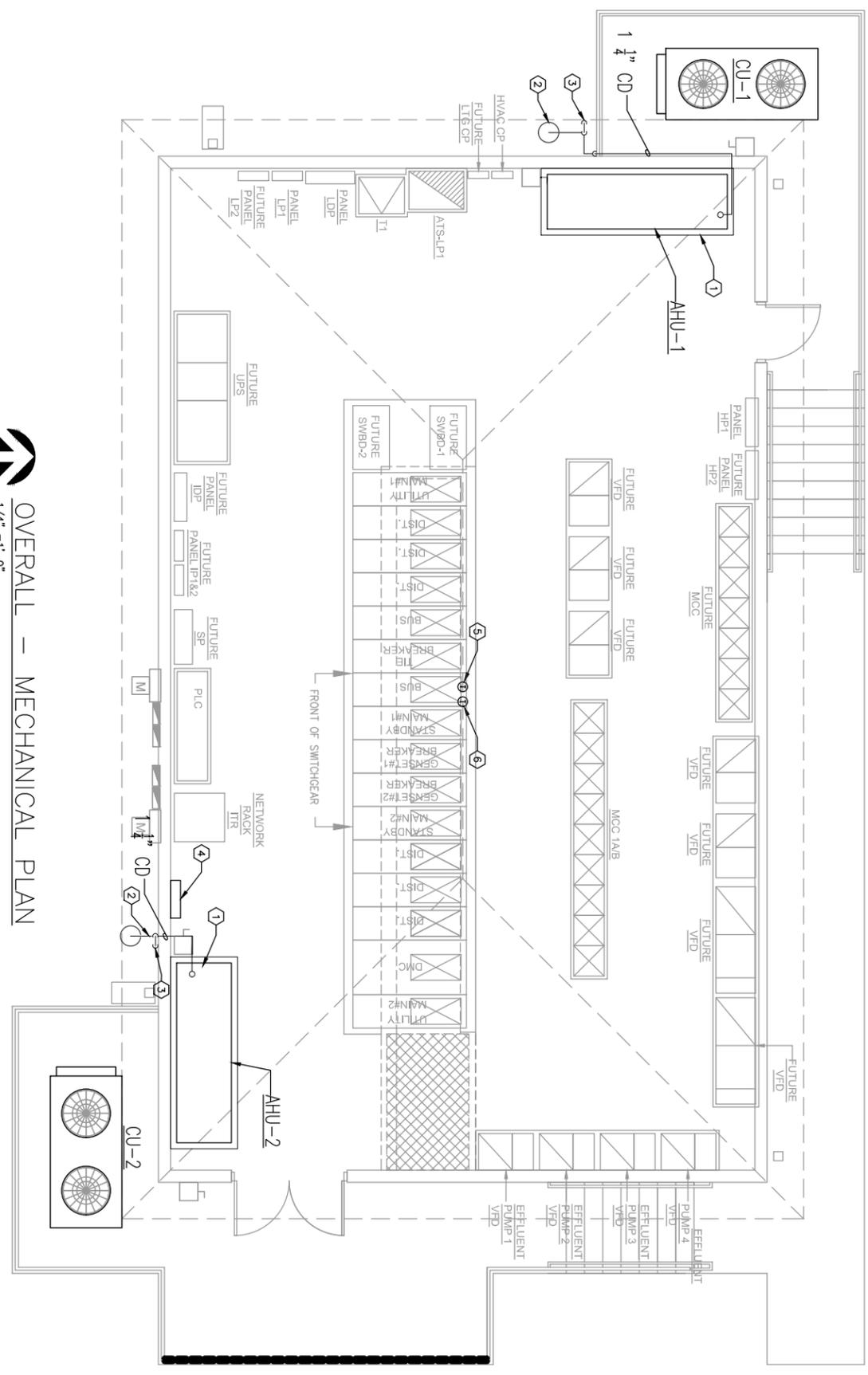
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LEE COUNTY
SOUTHWEST FLORIDA
DEPARTMENT OF PUBLIC WORKS
UTILITIES DIVISION

FORT MYERS BEACH WATER RECLAMATION FACILITY SWITCHGEAR REPLACEMENT	
ISSUED FOR:	BIDDING
DATE:	05/2023
SHEET NO.:	M101



OVERALL - MECHANICAL PLAN

- GENERAL NOTES**
- 1) REFER TO GENERAL NOTES FOR THIS DISCIPLINE.
 - 2) REFER TO SPECIFICATIONS.
 - 3) ALL HEX NOTES NOT NECESSARILY USED ON ALL SHEETS.
 - 4) SEE SPECIFICATION SECTION 23.61.23 FOR HMC SEA COAST COATING REQUIREMENTS.

- HEX NOTES**
- 1) CONCRETE EQUIPMENT HOUSEKEEPING PAD.
 - 2) 1 1/4" CONDENSATE PIPING TO DRAINWELL.
 - 3) CONTRACTOR TO PROVIDE POSITIVE CONDENSATE OUTLET.
 - 4) HMC CONTROL PANEL SERVING AHU-1 & AHU-2.
 - 5) REMOVE T-STAT SENSOR SERVING AHU-1 MOUNTED AT BOTTOM CHORD OF TRUSS.
 - 6) REMOVE T-STAT SENSOR SERVING AHU-2 MOUNTED AT BOTTOM CHORD OF TRUSS.

SPLIT SYSTEM AIR HANDLING UNIT SCHEDULE:

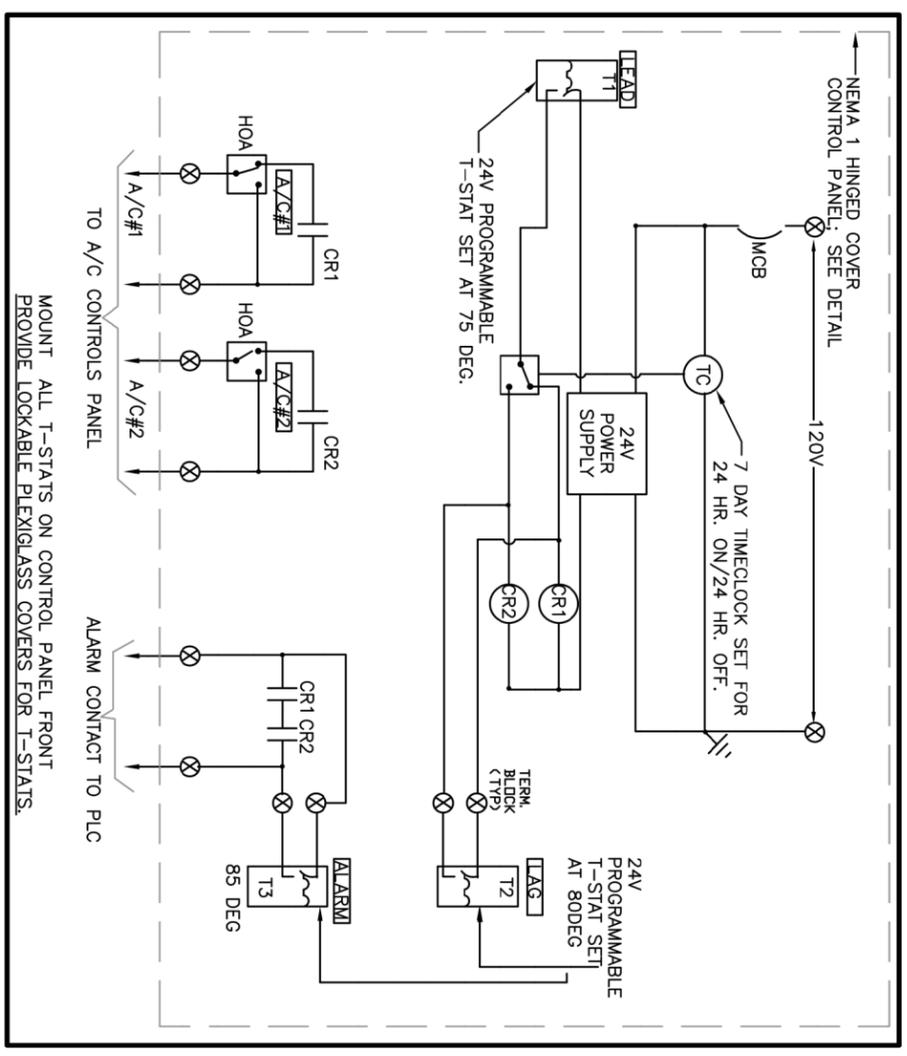
UNIT NO.	SERVING	TOTAL		EVAPOATOR BLOWER DATA		COMPRESSOR DATA		COOLING COIL DATA				UNIT ELECTRICAL DATA		SELECTION BASED ON		REMARKS					
		CFM	HP	CFM	HP	HP	HP	EA	EA	EA	EA	EA	EA	EA	EA		EA				
AHU-1	SWITCHGEAR ROOM	15750	0	15750	0	4.2	4.2	13.32	3	23.1	150	75	65.3	61.6	58.6	480	3	66.1	80	TR-CFUJ98R-92A-4-0	1.2
AHU-2	SWITCHGEAR ROOM	15750	0	15750	0	4.2	4.2	13.32	3	23.1	150	75	65.3	61.6	58.6	480	3	66.1	80	TR-CFUJ98R-92A-4-0	1.2

NOTES:
 1. UNIT SHALL HAVE SINGLE POINT POWER.
 2. PROVIDE 24V PROGRAMMABLE THERMOSTAT WITH REMOTE TEMPERATURE SENSOR.

SPLIT SYSTEM CONDENSER SCHEDULE:

UNIT NO.	SERVING	UNIT DATA		FAN MOTOR		UNIT ELECTRICAL DATA		SELECTION BASED ON		REMARKS			
		CAPACITY MBH	CONG. EAT F	HP (EACH)	FLA	VOLT	PH	MCA	MOCIP				
CU-1	AHU-1	302.67	95	3.85	3.7	480	3	480	3	9.3	15	TR-SCS-312-2BEG	1
CU-2	AHU-2	302.67	95	3.85	3.7	480	3	480	3	9.3	15	TR-SCS-312-2BEG	1

NOTES:
 1. LINE LENGTHS TO AHU SHALL NOT EXCEED MANUFACTURER'S MAXIMUM LENGTH.



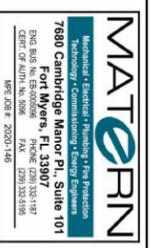
ELECTRICAL ROOM A/C CONTROL DIAGRAM

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 K. TODD GRIFFITH, 670683



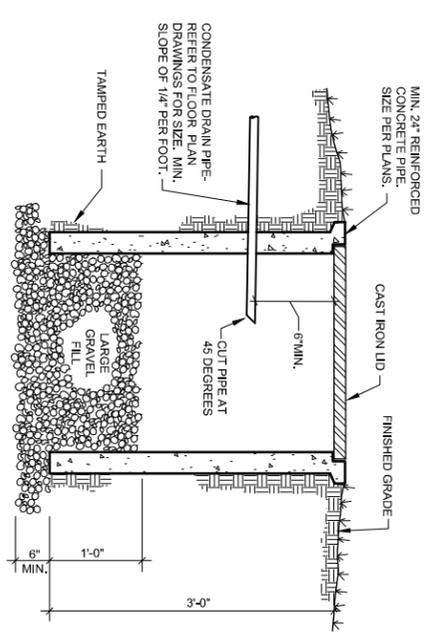
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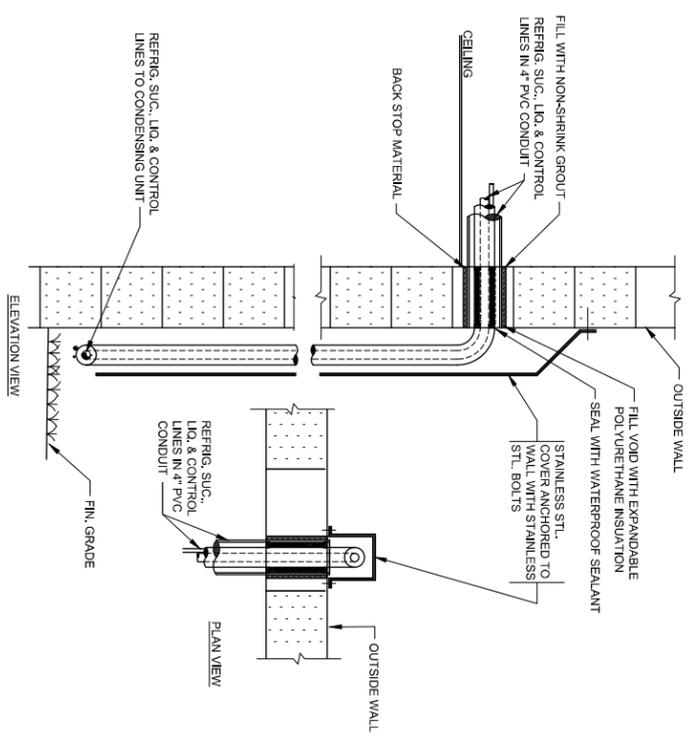
FORT MYERS BEACH WATER RECLAMATION FACILITY
 SWITCHGEAR REPLACEMENT
 SCHEDULES & DETAILS - MECHANICAL

ISSUED FOR:
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 DATE: 05/2023
 SHEET NO.: M601



CONCRETE CONDENSATE DRYWELL DETAIL

NOT TO SCALE



TYPICAL REFRIGERATION PIPE WALL PENETRATION DETAIL

NOT TO SCALE

CONTROL/ELEMENTARY SYMBOLS

	NORMALLY OPEN CONTACT		REMOTE TERMINAL BLOCK POINT
	NORMALLY CLOSED CONTACT		HAND OFF REMOTE CONTROL STATION
	LIMIT SWITCH, NORMALLY OPEN		HAND OFF AUTO CONTROL STATION
	LIMIT SWITCH, NORMALLY CLOSED		MOTOR STRIP HEATER
	PRESSURE SWITCH, NORMALLY OPEN		
	PRESSURE SWITCH, NORMALLY CLOSED		
	FLOAT SWITCH, NORMALLY OPEN		
	FLOAT SWITCH, NORMALLY CLOSED		
	FLOW SWITCH, NORMALLY OPEN		
	FLOW SWITCH, NORMALLY CLOSED		
	TEMPERATURE SWITCH, NORMALLY OPEN		
	TEMPERATURE SWITCH, NORMALLY CLOSED		
	NORMALLY OPEN, TIMED TO CLOSE CONTACT		
	NORMALLY CLOSED, TIMED TO OPEN CONTACT		
	NORMALLY CLOSED, TIMED TO CLOSE CONTACT		
	NORMALLY OPEN, TIMED TO OPEN CONTACT		
	ANALYZER INDICATOR TRANSMITTER		
	ALARM RELAY		
	ALARM TIMER		
	CONTROL RELAY		
	DIFFERENTIAL SPEED/PRESSURE TRANSMITTER		
	FLOW INDICATOR TRANSMITTER (TOTALIZER)		
	FLOW SWITCH HIGH/LOW		
	LIQUID LEVEL SWITCH HIGH/LOW		
	LEVEL INDICATOR TRANSMITTER		
	LIMIT SWITCH OR LEVEL SWITCH		
	MOTOR SWITCH MANUAL		
	MOTOR OFF/REMOTE SWITCH		
	PRESSURE GAUGE		
	PROCESS FLOW TIMER		
	PRESSURE TRANSMITTER (INDICATOR)		
	PRESSURE SWITCH HIGH/LOW		
	TEMPERATURE SWITCH HIGH/LOW		
	TIMING RELAY		
	TEMPERATURE TRANSMITTER		
	SURGE SUPPRESSION DEVICE		
	SPEED TRANSMITTER		
	SOLENOID VALVE		
	VIBRATION SWITCH		
	VIBRATION TRANSMITTER		
	TORQUE SWITCH		
	ZERO SPEED SWITCH		
	ALARM INDICATING LIGHT		
	RUN INDICATING LIGHT		
	MOMENTARY CONTACT PUSHBUTTON		
	MOMENTARY BREAK PUSHBUTTON OR RESET		
	KEYED SWITCH		
	MAINTAINED CONTACT ON-OFF SWITCH		
	START/STOP (S/S) CONTROL SWITCH		
	MAINTAINED CONTACT		
	FUSE		
	MOLDED CASE CIRCUIT BREAKER		
	CONTROL POWER TRANSFORMER		

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ELECTRICAL PLAN SYMBOLS

	WALL OUTLET BOX AND EXHAUST FAN SPEED CONTROLLER/SWITCH CONNECTIONS.
	MANUAL MOTOR STARTING SWITCH WITH OVERLOADS AND PILOT LIGHT. NEMA 4X TYPICAL
	WALL OUTLET BOX AND 20 AMP SWITCH WITH PILOT LIGHT.
	WALL OUTLET BOX AND 20 AMP SWITCH WITH WEATHERPROOF COVER OR ENCLOSURE.
	WALL OUTLET BOX AND 20 AMP DUPLEX RECEPTACLE 18" TO CENTERLINE
	WALL OUTLET BOX AND 20 AMP DUPLEX RECEPT MOUNTED 48" AFF OR AS NOTED.
	WALL OUTLET BOX AND 20 AMP GFCI DUPLEX RECEPTACLE AT 18" TO CENTERLINE. WP INDICATES WEATHERPROOF COVER PLATE.
	WALL OUTLET BOX AND 20 AMP GFCI RECEPTACLE MOUNTED 48" AFF OR AS NOTED.
	WALL OUTLET BOX AND DOUBLE 20 AMP DUPLEX RECEPTACLES 18" TO CENTERLINE
	WALL OUTLET BOX AND SPECIAL PURPOSE RECEPTACLE AS NOTED OR COORDINATE.
	PHOTOCELL ON ROOF
	FLUSH MOUNTED JUNCTION BOX (SURFACE IN MECH/ELEC SPACES OR ABOVE CEILINGS).
	BRANCH CIRCUIT CONDUIT AND WIRE GENERALLY SURFACE MOUNTED, CONCEALED ABOVE CEILINGS SLASH MARKS INDICATE NUMBER OF CONDUCTORS; (MARKS SHOWN TO AID CONTRACTOR IN BIDDING, THE CONTRACTOR SHALL PROVIDE THE REQUIRED CONDUCTORS UNDER THE CONTRACT SUM WHETHER OR NOT SHOWN). SHORT SLASHES INDICATE PHASE CONDUCTOR OR SWITCH LEG, LONG INDICATE NEUTRAL CONDUCTOR. GREEN GROUND CONDUCTOR NOT SHOWN; ALL CONDUITS REQUIRE COPPER GROUND CONDUCTOR. TWO CONDUCTORS PLUS GROUND REQUIRED, MINIMUM.
	CONDUIT AND WIRE CONCEALED IN FLOOR SLAB OR UNDERGROUND.
	BRANCH CIRCUIT PANELBOARD AS NOTED; SEE PANEL SCHEDULES
	TRANSFORMER, SIZE AS INDICATED
	DISCONNECT SWITCH SIZE PER EQUIPMENT NAME PLATE OR AS NOTED; FOR DISCONNECTS SERVING MOTOR LOADS OF 10HP OR GREATER AND FOR ALL MOTOR LOADS SERVED THROUGH VARIABLE FREQUENCY DRIVES; PROVIDE SURGE SUPPRESSION DEVICE EQUAL TO SQ.-D. SDSA4040 OR EQUAL AT DISCONNECT.
	COMBINATION MAGNETIC MOTOR STARTER PROVIDED BY ELECTRICAL U.N.O.
	MOTOR CONNECTION
	MOTOR OPERATED VALVE CONNECTION
	AIR HANDLING UNIT CONNECTION; PROVIDE FUSED DISCONNECT AS REQUIRED BY EQUIPMENT NAMEPLATE; MAKE CONNECTIONS.
	ELECTRIC DUCT HEATER CONNECTION; PROVIDE FUSED DISCONNECT AS REQUIRED BY EQUIPMENT NAMEPLATE; MAKE CONNECTIONS.
	MANUAL TRANSFER SWITCH OR REVERSING SWITCH

LIGHTING FIXTURES SYMBOLS

	LED STRIP FIXTURE AND CEILING OUTLET BOX
	LED TROFFER FIXTURE AND CEILING OUTLET BOX
	LED WALL MOUNTED FIXTURE AND OUTLET BOX
	LED TROFFER FIXTURE WITH INTEGRAL NICAD EMERGENCY BATTERY PACK.
	LED WALL MOUNTED FIXTURE WITH INTEGRAL NICAD EMERGENCY BATTERY PACK
	LED FIXTURE AND CEILING OUTLET BOX
	LED WALL MOUNTED FIXTURE AND OUTLET BOX
	EMERGENCY LIGHTING BATTERY PACK FIXTURE; PROVIDE UNSWITCHED CIRCUIT TO BATTERY CHARGER.
	EXIT LIGHT FIXTURE AND WALL OR CEILING OUTLET BOX (SHADED QUADRANT INDICATES FACE(S) OF FIXTURE)
	LED FIXTURE POLE MOUNTED SEE DETAIL
	WALL OUTLET BOX AND 20 AMP SINGLE POLE SWITCH ('s' INDICATES SWITCHES) 48" TO CENTERLINE
	WALL OUTLET BOX AND 20 AMP 3-WAY SWITCH ('o' INDICATES SWITCHES) 48" TO CTR LINE.
	CEILING MOUNT MOTOR SENSOR SWITCH.
	WALL OUTLET BOX AND 20 AMP SINGLE POLE MOTION SENSOR SWITCH 48" TO CENTERLINE.

SYSTEM SYMBOL LEGEND

	SYSTEMS BACKBOARD AS NOTED
	SYSTEMS CABINET AS NOTED OR MARKED.
	WALL OR CEILING MOUNTED VIDEO CAMERA
	POLE MOUNTED VIDEO CAMERA

SINGLE LINE DIAGRAM SYMBOLS

	VOLTMETER
	POWER FACTOR METER
	KILOWATT METER
	AMMETER
	THREE PHASE VOLT SWITCH
	THREE PHASE AMP SWITCH
	CURRENT TRANSMITTER
	KILOWATT TRANSMITTER
	POWER FACTOR TRANSMITTER
	LOCAL CONTROL PANEL
	GROUND FAULT INTERRUPTER
	WATT HOUR METER
	FUSE
	CAPACITOR
	DRAW-OUT CIRCUIT BREAKER
	MOLDED CASE CIRCUIT BREAKER
	TYPICAL STARTER CONTROL. SEE SWITCHGEAR CONTROL DIAGRAMS FOR EXACT TYPE.
	ELECTRIC A.C. MOTOR, NO. INDICATES HORSEPOWER.
	ELECTRIC D.C. MOTOR, NO. INDICATES HORSEPOWER.
	SERVICE OR EQUIPMENT GROUND.
	NON-FUSIBLE DISCONNECT SWITCH, 30A,3P UNLESS OTHERWISE INDICATED.
	NON-FUSIBLE DISCONNECT SWITCH, 30A,3P UNLESS OTHERWISE INDICATED, WITH REMOTE CONTROL STATION AS REQUIRED BY ELEMENTARY DIAGRAMS OR SPECS.
	LIGHTING PANELBOARD
	POWER PANELBOARD
	KIRK KEY INTERLOCK
	CURRENT TRANSFORMERS
	POTENTIAL TRANSFORMERS
	MANUAL OR AUTOMATIC TRANSFER SWITCH

LIGHTNING PROTECTION LEGEND

	MAIN ROOF/DOWN CONDUCTOR TYPICAL
	#2/0 TINNED BARE COPPER COUNTERPOISE LOOP GROUND.
#2 tinned solid copper or solid aluminum to equipment/cabinets etc. symbol"/>	#2 TINNED SOLID COPPER OR SOLID ALUMINUM TO EQUIPMENT/CABINETS ETC.
	LIGHTNING PROTECTION AIR TERMINAL STREAMER RETARDING TYPE.
	STREAMER RETARDING AIR TERMINAL MOUNTED TO LIGHT POLE.

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SOUTHWEST FLORIDA
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FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT

ELECTRICAL SYMBOLS LEGEND

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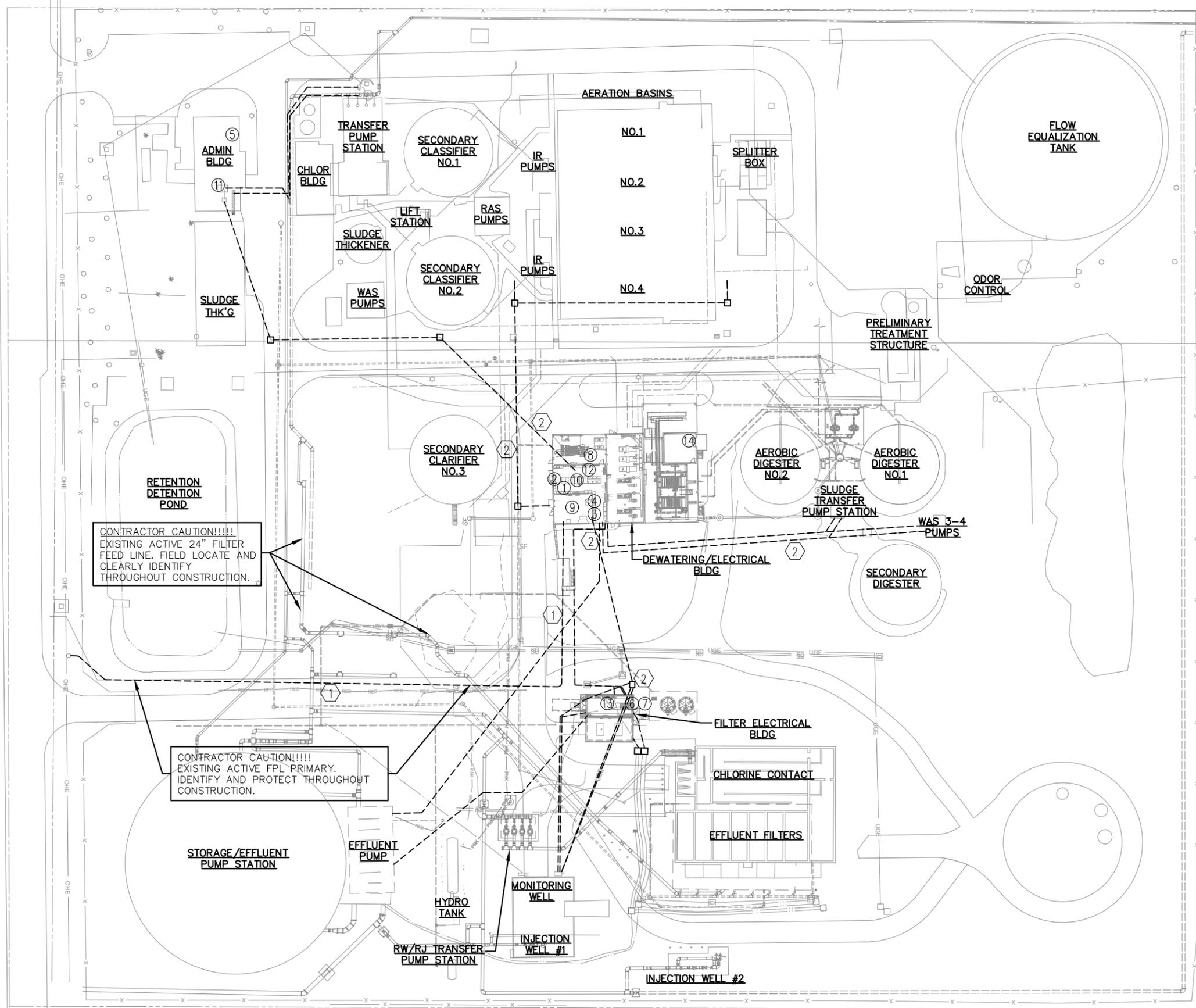
- EQUIPMENT LOCATION KEYNOTES:**
- 1 MCC1
 - 2 MCC2
 - 3 MCC3
 - 4 MCC4
 - 5 MCC5
 - 6 MCC6
 - 7 MCC7
 - 8 1750KW GENERATOR
 - 9 FPL VAULT
 - 10 MAIN SWITCHGEAR
 - 11 PLC1
 - 12 PLC2
 - 13 FILTER/CL2 PLC
 - 14 MDP-BPA&B

LEGEND

- U/G DUCT BANK (EXISTING)
- EXISTING POWER/I&C PULL-BOX/MANHOLE

KEYNOTES:

- 1. APPROXIMATE LOCATION EXISTING FPL PRIMARY DUCTBANK. FIELD LOCATE, CLEARLY MARK AND PROTECT THROUGHOUT CONSTRUCTION.
- 2. EXISTING CONCRETE ENCASED & NON-ENCASED DUCTBANKS. FIELD VERIFY EXACT ROUTE & DEPTHS.



CONTRACTOR CAUTION!!!!
EXISTING ACTIVE 24" FILTER FEED LINE. FIELD LOCATE AND CLEARLY IDENTIFY THROUGHOUT CONSTRUCTION.

CONTRACTOR CAUTION!!!!
EXISTING ACTIVE FPL PRIMARY. IDENTIFY AND PROTECT THROUGHOUT CONSTRUCTION.

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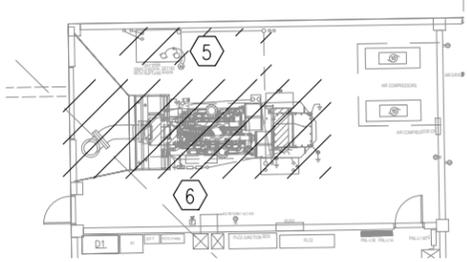
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FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT

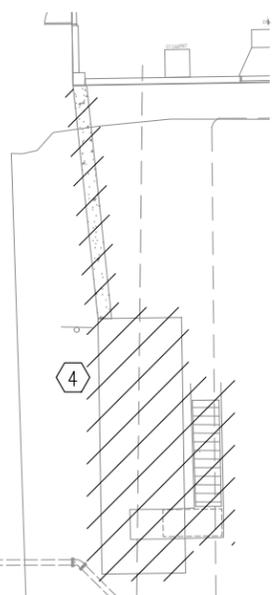
OVERALL EXISTING ELECTRICAL SITE PLAN

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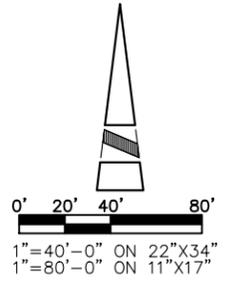
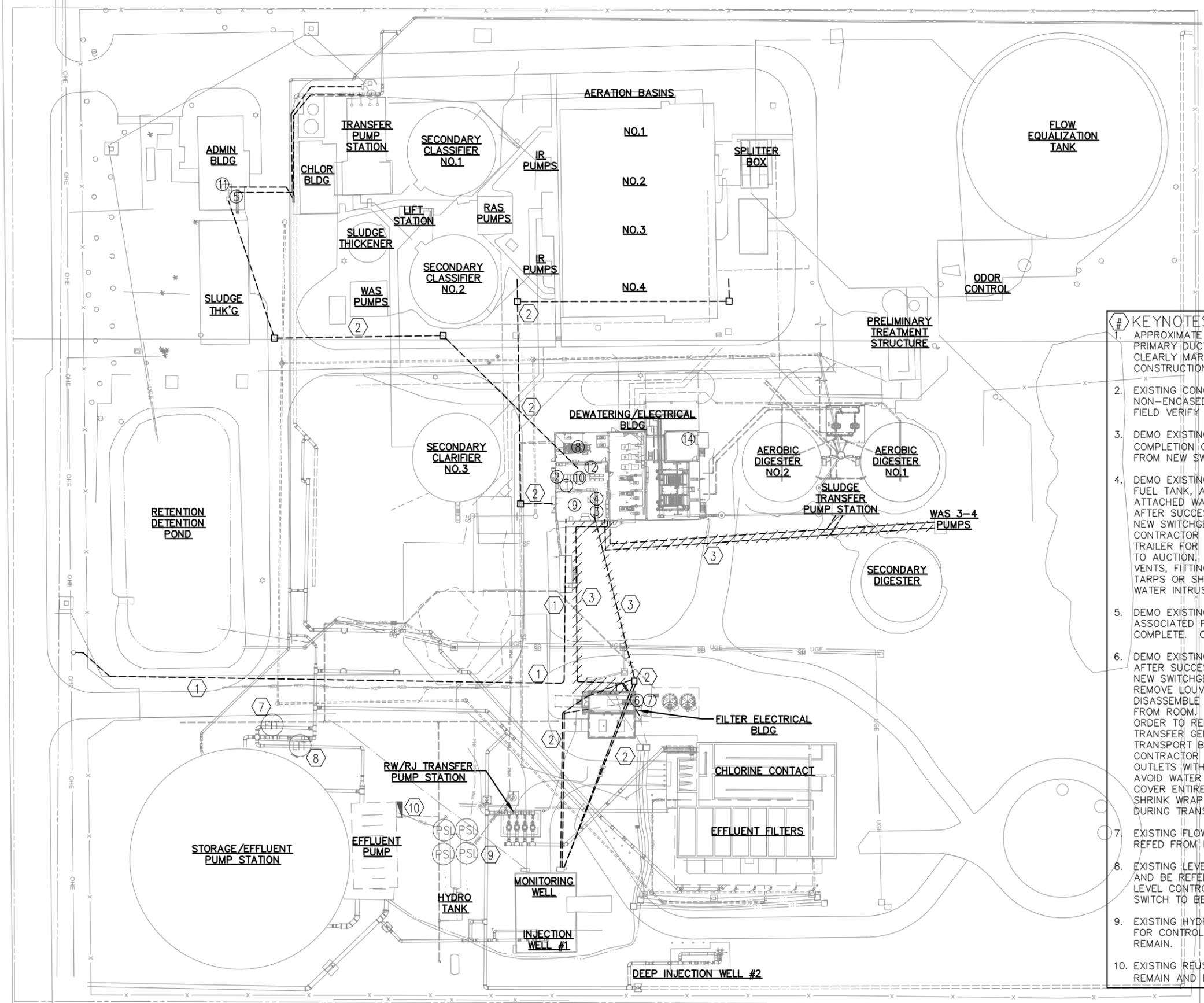
- # EQUIPMENT LOCATION KEYNOTES:
- MCC1
 - MCC2
 - MCC3
 - MCC4
 - MCC5
 - MCC6
 - MCC7
 - 1750KW GENERATOR
 - FPL VAULT
 - MAIN SWITCHGEAR
 - PLC1
 - PLC2
 - FILTER/CL2 PLC
 - MDP-BPA&B



PARTIAL GENERATOR & FUEL SYSTEM DEMOLITION PLAN
SCALE: 1"=10'-0"



PARTIAL FUEL TANK DEMOLITION PLAN
SCALE: 1"=10'-0"



LEGEND

---	U/G DUCT BANK (EXISTING)
□	EXISTING POWER/I&C PULL-BOX/MANHOLE

- # KEYNOTES:
- APPROXIMATE LOCATION EXISTING FPL PRIMARY DUCTBANK. FIELD LOCATE, CLEARLY MARK AND PROTECT THROUGHOUT CONSTRUCTION.
 - EXISTING CONCRETE ENCASED & NON-ENCASED DUCTBANKS TO REMAIN. FIELD VERIFY EXACT ROUTE & DEPTHS.
 - DEMO EXISTING DUCTBANK COMPLETE UPON COMPLETION OF MCC'S BEING ENERGIZED FROM NEW SWITCHGEAR.
 - DEMO EXISTING ABOVE GROUND CONVAULT FUEL TANK, ASSOCIATED PIPING AND ANY ATTACHED WALKWAYS, STAIRS & RAILINGS AFTER SUCCESSFUL COMMISSIONING OF NEW SWITCHGEAR AND GENERATOR. CONTRACTOR TO TRANSFER TANK TO TRAILER FOR TRANSPORT BY LCU OFFSITE TO AUCTION. CONTRACTOR TO SEAL ANY VENTS, FITTINGS OR OPEN PIPE WITH TARPS OR SHRINK WRAP TO AVOID ANY WATER INTRUSION.
 - DEMO EXISTING DAYTANK TANK, ASSOCIATED PIPING AND ANY ACCESSORIES COMPLETE. CONTRACTOR TO DISPOSE OF.
 - DEMO EXISTING GENERATOR COMPLETE AFTER SUCCESSFUL COMMISSIONING OF NEW SWITCHGEAR AND GENERATOR. REMOVE LOUVERS FROM WEST WALL. DISASSEMBLE GENERATOR TO REMOVE FROM ROOM. DRAIN COOLING SYSTEM IN ORDER TO REMOVE THE RADIATOR. TRANSFER GENERATOR TO TRAILER FOR TRANSPORT BY LCU OFFSITE TO AUCTION. CONTRACTOR TO SEAL ALL EXHAUST OUTLETS WITH SHRINK WRAP OR TARPS TO AVOID WATER INTRUSION INTO ENGINE. COVER ENTIRE UNIT WITH TARPS OR SHRINK WRAP TO PROVIDE PROTECTION DURING TRANSPORT.
 - EXISTING FLOWMETER TO REMAIN AND BE REFEED FROM PLC-3 AND PANEL LP1.
 - EXISTING LEVEL TRANSMITTER TO REMAIN AND BE REFEED FROM PLC-3. EXISTING LEVEL CONTROL PANEL AND PRESSURE SWITCH TO BE DEMOED COMPLETE.
 - EXISTING HYDRO TANK PRESSURE SWITCHES FOR CONTROL OF REUSE PUMPS TO REMAIN.
 - EXISTING REUSE PUMP CONTROL PANEL TO REMAIN AND BE REFEED TO MCC-1A/1B.

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LEE COUNTY
SOUTHWEST FLORIDA
DEPARTMENT OF PUBLIC WORKS
UTILITIES DIVISION

FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT
PARTIAL ELECTRICAL SITE DEMOLITION PLAN

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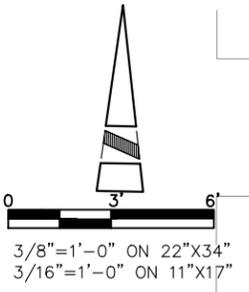
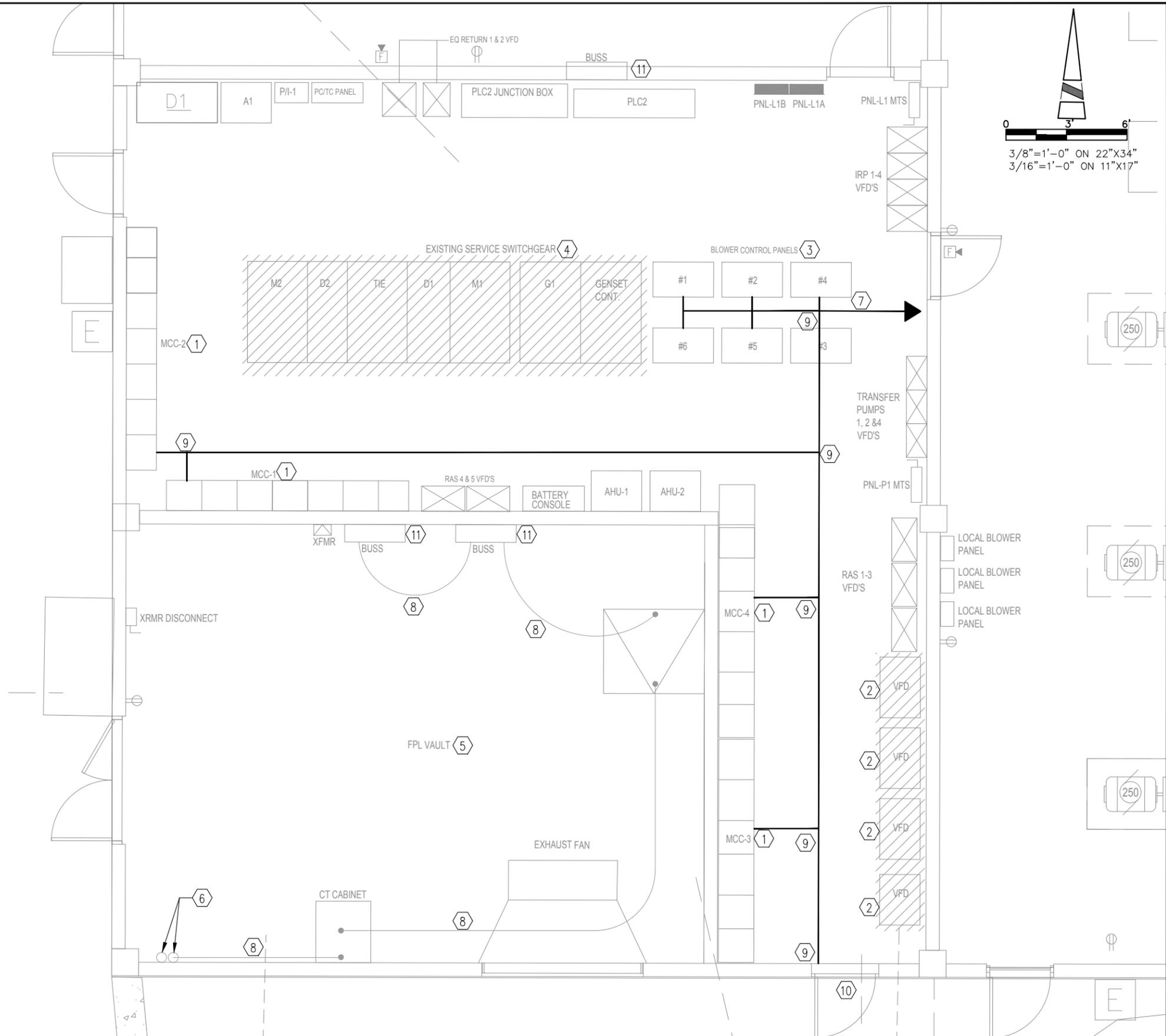
GENERAL NOTES:

1. THIS PLAN DOES NOT INDICATE ALL CONDUIT & WIRE REQUIRED; SEE ADDITIONAL REQUIREMENTS ON MCC & ELEMENTARY DRAWINGS.
2. ALL EQUIPMENT & DEVICE LOCATIONS ARE APPROXIMATE. COORDINATE WITH SHOP DRAWING FOR EXACT LOCATIONS.
3. ALL ROADWAYS, SIDEWALKS, DRIVEWAYS ETC. THAT REQUIRE CUTTING TO FACILITATE INSTALLATION SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER.
4. TURN OVER ALL DEMOED ELECTRICAL EQUIPMENT TO OWNER OR DISPOSE OF EQUIPMENT AS DIRECTED BY OWNER.
5. SEE DEMOLITION PHOTOS FOR MORE DETAIL.



KEYNOTES:

1. EXISTING MCC TO REMAIN. TEMPORARILY WIRE & MODIFY PER SINGLE LINE DRAWINGS.
2. DEMO EXISTING EFFLUENT PUMP VFD UPON SUCCESSFUL COMMISSIONING OF REPLACEMENT VFD. DEMO 1 VFD AT A TIME ALLOWING FOR FUNCTIONAL OPERATION PERIOD OF NEW VFD BETWEEN EACH REMOVAL.
3. EXISTING BLOWER CONTROL PANELS TO REMAIN. TEMPORARILY WIRE PER SINGLE LINE DRAWINGS.
4. EXISTING SWITCHGEAR TO BE DEMOED UPON SUCCESSFUL COMMISSIONING OF THE NEW SWITCHGEAR.
5. EXISTING FPL TRANSFORMER VAULT. FPL TO DEMO TRANSFORMER AND METER. CONTRACTOR TO DEMO CONDUIT, WIRE, SUPPORT RACK, AND METER CAN. EXISTING SERVICE TO REMAIN THROUGHOUT CONSTRUCTION UNTIL SWITCHGEAR DEMOLITION.
6. EXISTING FPL PRIMARY SERVICE LATERAL CONDUITS, (2) 5". ONE WITH PRIMARY CABLES, ONE SPARE. DEMO EXISTING PRIMARY CABLE COMPLETE UPON SWITCHGEAR AND VAULT DEMOLITION.
7. TEMPORARY CABLE TRAY CONNECTIONS FROM BLOWER CONTROL PANELS TO BLOWERS BY OTHERS.
8. DEMO ALL SURFACE MOUNTED COMPLETE UPON SWITCHGEAR AND VAULT DEMOLITION.
9. PROVIDE TEMPORARY CABLE TRAY FOR ALL TEMPORARY WIRING TO MCCS AND BLOWERS.
10. REMOVE EXISTING WINDOW AND REPLACE WITH TEMPORARY WOOD WALL WITH FOR TEMPORARY CONDUIT PENETRATIONS. TEMPORARY WALL MUST BE WATERTIGHT.
11. REMOVE BUSDUCT THROUGH WALL. PROVIDE TEMPORARY WOOD BARRIERS ON BOTH SIDES OF WALL WITH INSULATION IN BETWEEN.



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FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT
**EXISTING MAIN SWITCHGEAR ROOM ELECTRICAL
DEMOLITION PLAN**

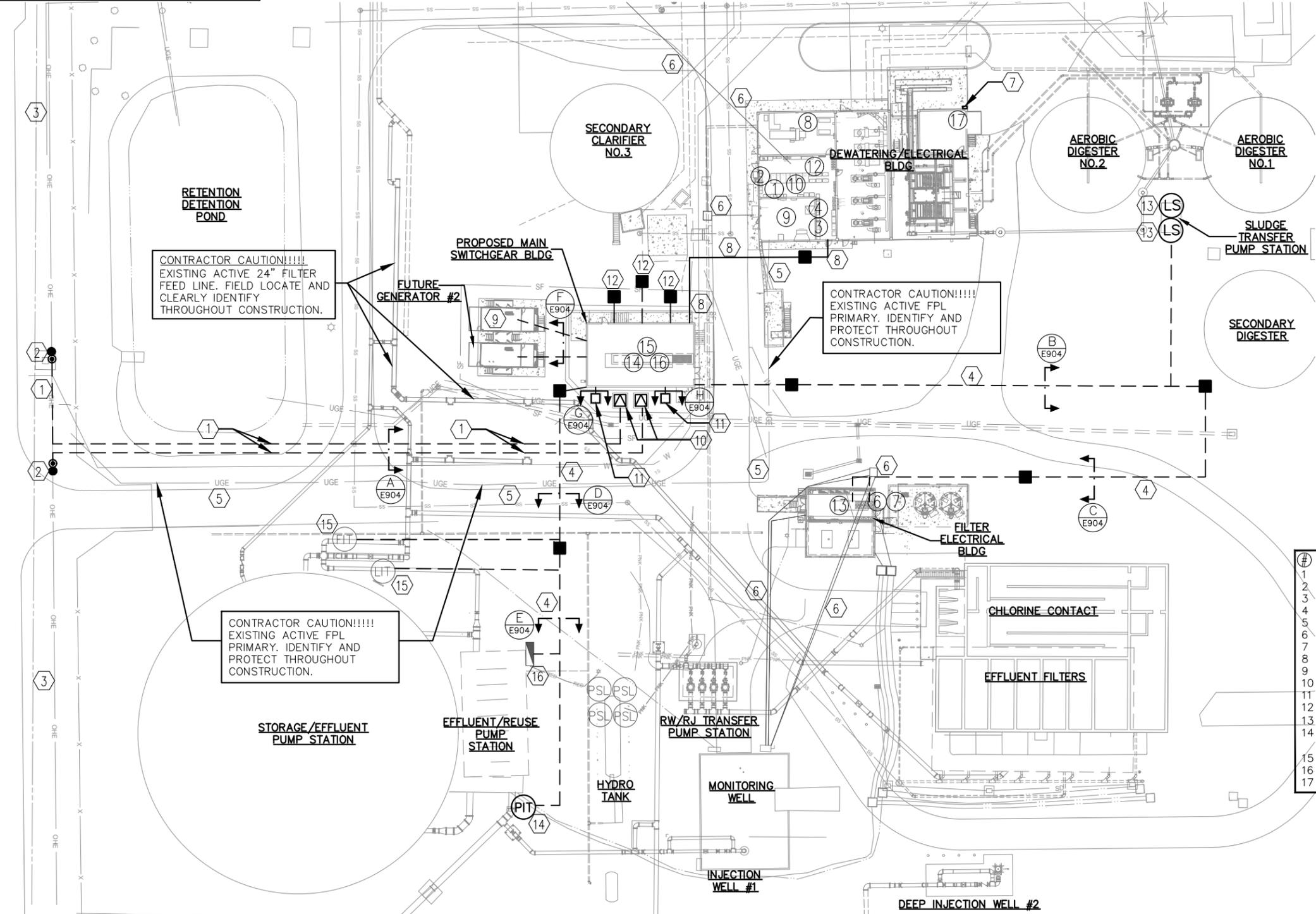
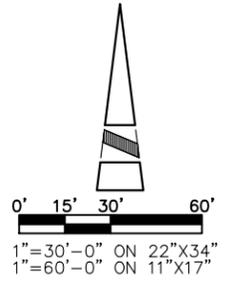
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KEYNOTES:

- PROPOSED ROUTING OF CONCRETE ENCASED FPL PRIMARY DUCTBANK.
- PROPOSED FPL RISER POLE WITH POLEBASE HANDHOLE.
- EXISTING FPL OVERHEAD PRIMARY TO REMAIN.
- NEW CONCRETE ENCASED DUCTBANK.
- APPROXIMATE LOCATION EXISTING FPL PRIMARY DUCTBANK. FIELD LOCATE, CLEARLY MARK AND PROTECT THROUGHOUT CONSTRUCTION.
- EXISTING CONCRETE ENCASED & NON-ENCASED DUCTBANKS. FIELD VERIFY EXACT ROUTE & DEPTHS.
- REFEED MOBILE DEWATERING UNIT DISCONNECT AND RECEPTACLE FROM MDP-BPA ONCE MDP HAS BEEN REFEED AND ENERGIZED FROM THE NEW SWITCHGEAR.
- SUGGESTED ROUTING OF TEMPORARY FEEDER DUCTBANKS TO DEWATERING BUILDING ELECTRICAL ROOM. CONSTRUCT TEMPORARY RAMP TO ALLOW HEAVY TRAFFIC OVER CONDUITS.
- OWNER PROVIDED CONTRACTOR INSTALLED STAND-BY GENERATOR WITH SUBBASE FUEL TANK.
- FPL 1500KVA PADMOUNT TRANSFORMER. CONTRACTOR INSTALLED.
- FPL SECONDARY SPLICE BOX CONTRACTOR INSTALLED.
- STUB CONDUITS FROM SWITCHGEAR, MCCS AND VFDs DESIGNATED FOR FUTURE USE TO MANHOLE.
- EXISTING PUMP CHECK VALVE LIMIT SWITCH. REFEED WITH (5) CONDUCTOR #14 CONTROL CABLE IN 1.25" C TO PLC-3.
- EXISTING COMMON HEADER PRESSURE TRANSMITTER PIT-5431. REFEED WITH (2) PAIR #16 TSP INSTRUMENT CABLE IN 1" C TO PLC-3. PROVIDE NEW ANALOG SPD.
- EXISTING FIELD INSTRUMENTS. NEW INSTRUMENT STAND WITH TERMINATION CABINET AND SURGE SUPPRESSION AS DETAILED. REFEED WITH (2) PAIR #16 TSP INSTRUMENT CABLE IN 1" C TO PLC-3 AND (3) #10 IN 0.75" C TO PANEL LP1.
- EXISTING REUSE PUMP CONTROL PANEL. REFEED WITH (9) CONDUCTOR #14 CONTROL CABLE TO MCC-1A AND 1B AND (3) #10 IN 0.75" C TO PANEL LP1.

GENERAL NOTES:

- THIS PLAN DOES NOT INDICATE ALL CONDUIT & WIRE REQUIRED; SEE ADDITIONAL REQUIREMENTS ON MCC & ELEMENTARY DRAWINGS.
- ALL EQUIPMENT & DEVICE LOCATIONS ARE APPROXIMATE. COORDINATE WITH SHOP DRAWING FOR EXACT LOCATIONS.
- ALL ROADWAYS, SIDEWALKS, DRIVEWAYS ETC. THAT REQUIRE CUTTING TO FACILITATE INSTALLATION SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER.
- TURN OVER ALL DEMOED ELECTRICAL EQUIPMENT TO OWNER OR DISPOSE OF EQUIPMENT AS DIRECTED BY OWNER.
- SEE DEMOLITION PHOTOS FOR MORE DETAIL.



- # EQUIPMENT LOCATION KEYNOTES:
- MCC1
 - MCC2
 - MCC3
 - MCC4
 - MCC5
 - MCC6
 - MCC7
 - 1750KW GENERATOR
 - FPL VAULT
 - EXISTING MAIN SWITCHGEAR
 - PLC-1
 - PLC-2
 - FILTER/CL2 PLC
 - NEW ELECTRICAL SERVICE / SWITCHGEAR
 - NEW MCC-1A/B
 - NEW PLC-3
 - MDP-BPA & B

LEGEND

---	U/G DUCT BANK (NEW)
---	U/G DUCT BANK (EXISTING)
■	PROPOSED POWER/I&C PULL-BOX/MANHOLE
□	EXISTING POWER/I&C PULL-BOX/MANHOLE

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TRACY MARIE PROKOPETZ, P.E. #62427

RIG CONSULTING ENGINEERS
ELECTRICAL * INSTRUMENTATION * CONTROL
12851 McGregor Blvd. Ste 4-402 Fort Myers, FL 33919
239.481.6775 | Certificate of Authorization #8212

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CAD FILE:	E201.dwg

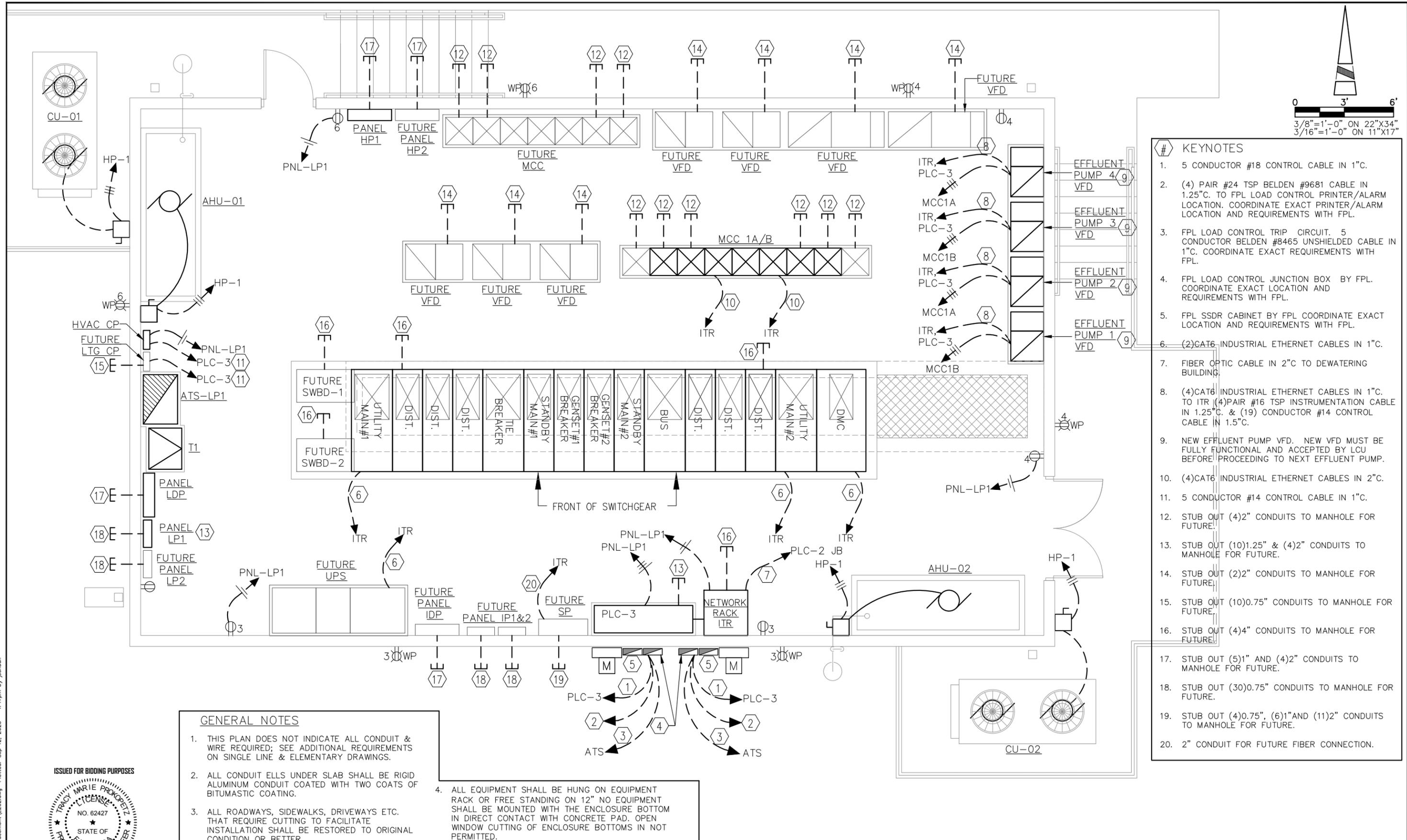
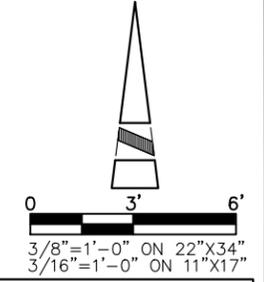


LEE COUNTY
SOUTHWEST FLORIDA
DEPARTMENT OF PUBLIC WORKS
UTILITIES DIVISION

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DATE: **05/2023**
SHEET NO.: **E201**

FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT

PARTIAL ELECTRICAL SITE PLAN



- # KEYNOTES**
- 5 CONDUCTOR #18 CONTROL CABLE IN 1" C.
 - (4) PAIR #24 TSP BELDEN #9681 CABLE IN 1.25" C. TO FPL LOAD CONTROL PRINTER/ALARM LOCATION. COORDINATE EXACT PRINTER/ALARM LOCATION AND REQUIREMENTS WITH FPL.
 - FPL LOAD CONTROL TRIP CIRCUIT. 5 CONDUCTOR BELDEN #8465 UNSHIELDED CABLE IN 1" C. COORDINATE EXACT REQUIREMENTS WITH FPL.
 - FPL LOAD CONTROL JUNCTION BOX BY FPL. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH FPL.
 - FPL SDR CABINET BY FPL COORDINATE EXACT LOCATION AND REQUIREMENTS WITH FPL.
 - (2) CAT6 INDUSTRIAL ETHERNET CABLES IN 1" C.
 - FIBER OPTIC CABLE IN 2" C TO DEWATERING BUILDING.
 - (4) CAT6 INDUSTRIAL ETHERNET CABLES IN 1" C. TO ITR (4) PAIR #16 TSP INSTRUMENTATION CABLE IN 1.25" C. & (19) CONDUCTOR #14 CONTROL CABLE IN 1.5" C.
 - NEW EFFLUENT PUMP VFD. NEW VFD MUST BE FULLY FUNCTIONAL AND ACCEPTED BY LCU BEFORE PROCEEDING TO NEXT EFFLUENT PUMP.
 - (4) CAT6 INDUSTRIAL ETHERNET CABLES IN 2" C.
 - 5 CONDUCTOR #14 CONTROL CABLE IN 1" C.
 - STUB OUT (4) 2" CONDUITS TO MANHOLE FOR FUTURE!
 - STUB OUT (10) 1.25" & (4) 2" CONDUITS TO MANHOLE FOR FUTURE!
 - STUB OUT (2) 2" CONDUITS TO MANHOLE FOR FUTURE!
 - STUB OUT (10) 0.75" CONDUITS TO MANHOLE FOR FUTURE!
 - STUB OUT (4) 4" CONDUITS TO MANHOLE FOR FUTURE!
 - STUB OUT (5) 1" AND (4) 2" CONDUITS TO MANHOLE FOR FUTURE!
 - STUB OUT (30) 0.75" CONDUITS TO MANHOLE FOR FUTURE!
 - STUB OUT (4) 0.75", (6) 1" AND (11) 2" CONDUITS TO MANHOLE FOR FUTURE!
 - 2" CONDUIT FOR FUTURE FIBER CONNECTION.

- GENERAL NOTES**
- THIS PLAN DOES NOT INDICATE ALL CONDUIT & WIRE REQUIRED; SEE ADDITIONAL REQUIREMENTS ON SINGLE LINE & ELEMENTARY DRAWINGS.
 - ALL CONDUIT ELLS UNDER SLAB SHALL BE RIGID ALUMINUM CONDUIT COATED WITH TWO COATS OF BITUMASTIC COATING.
 - ALL ROADWAYS, SIDEWALKS, DRIVEWAYS ETC. THAT REQUIRE CUTTING TO FACILITATE INSTALLATION SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER.
 - ALL EQUIPMENT SHALL BE HUNG ON EQUIPMENT RACK OR FREE STANDING ON 12" NO EQUIPMENT SHALL BE MOUNTED WITH THE ENCLOSURE BOTTOM IN DIRECT CONTACT WITH CONCRETE PAD. OPEN WINDOW CUTTING OF ENCLOSURE BOTTOMS IN NOT PERMITTED.

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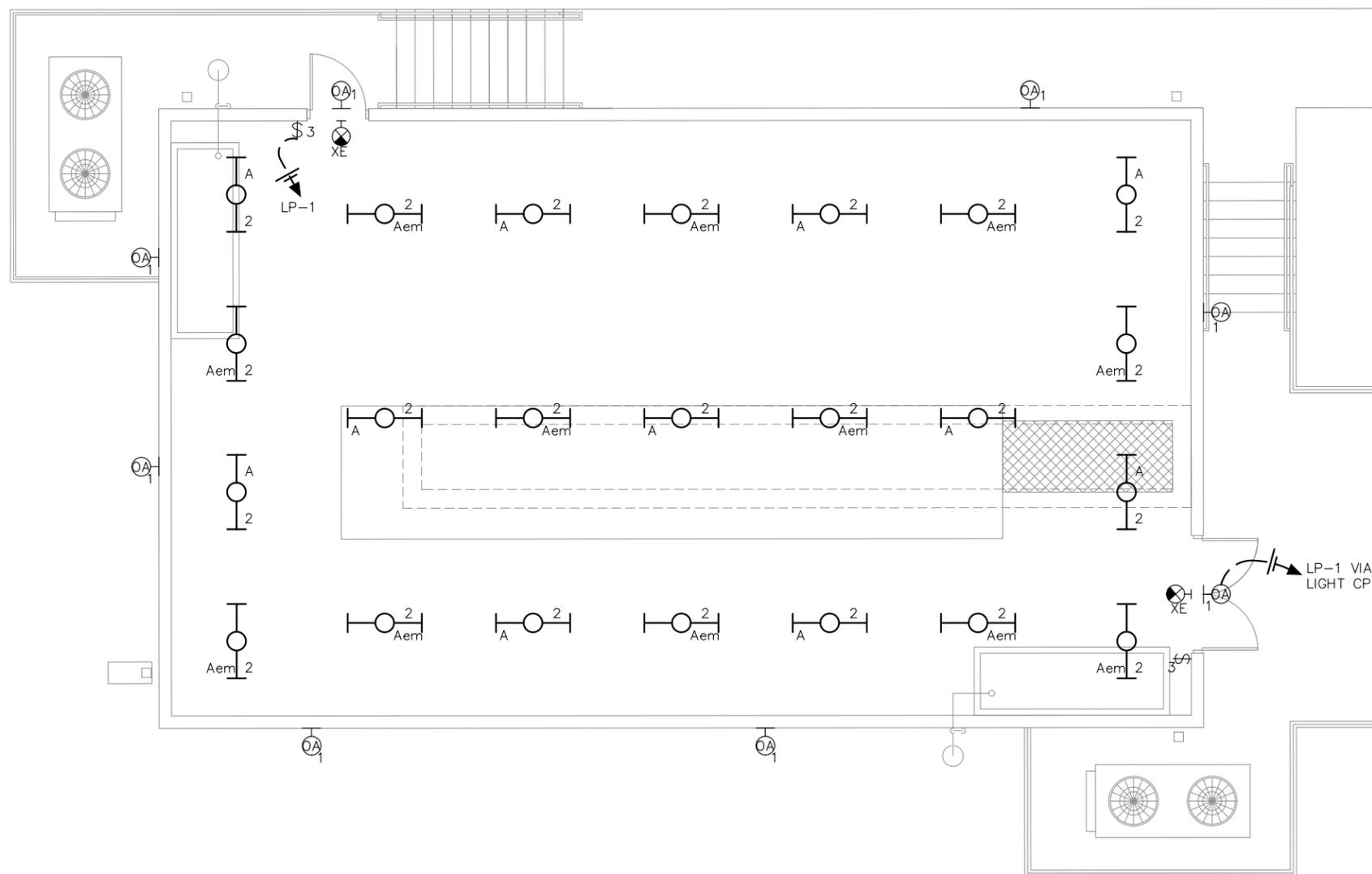
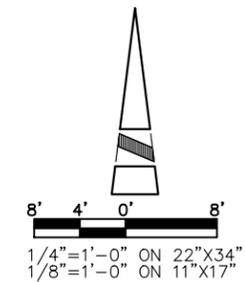
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E202

FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT

**MAIN SWITCHGEAR BUILDING
POWER PLAN**



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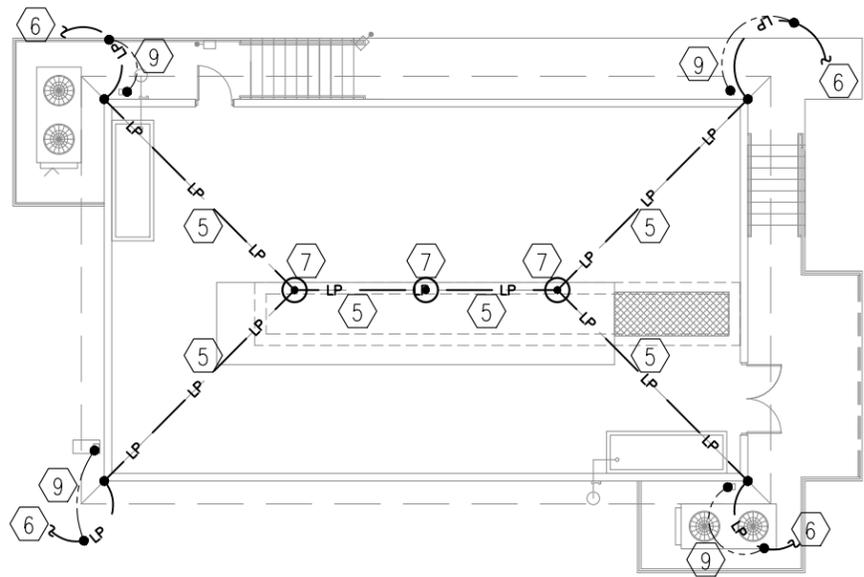
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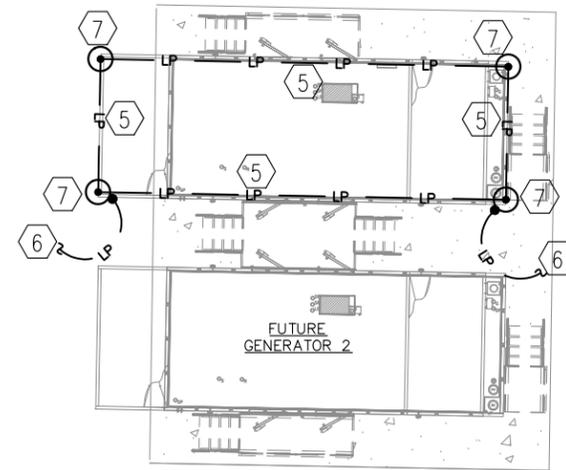
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FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT
**MAIN SWITCHGEAR BUILDING
LIGHTING PLAN**

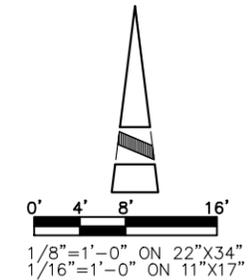
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SWITCHGEAR BUILDING
LIGHTNING PROTECTION



GENERATOR
LIGHTNING PROTECTION



GENERAL NOTES:

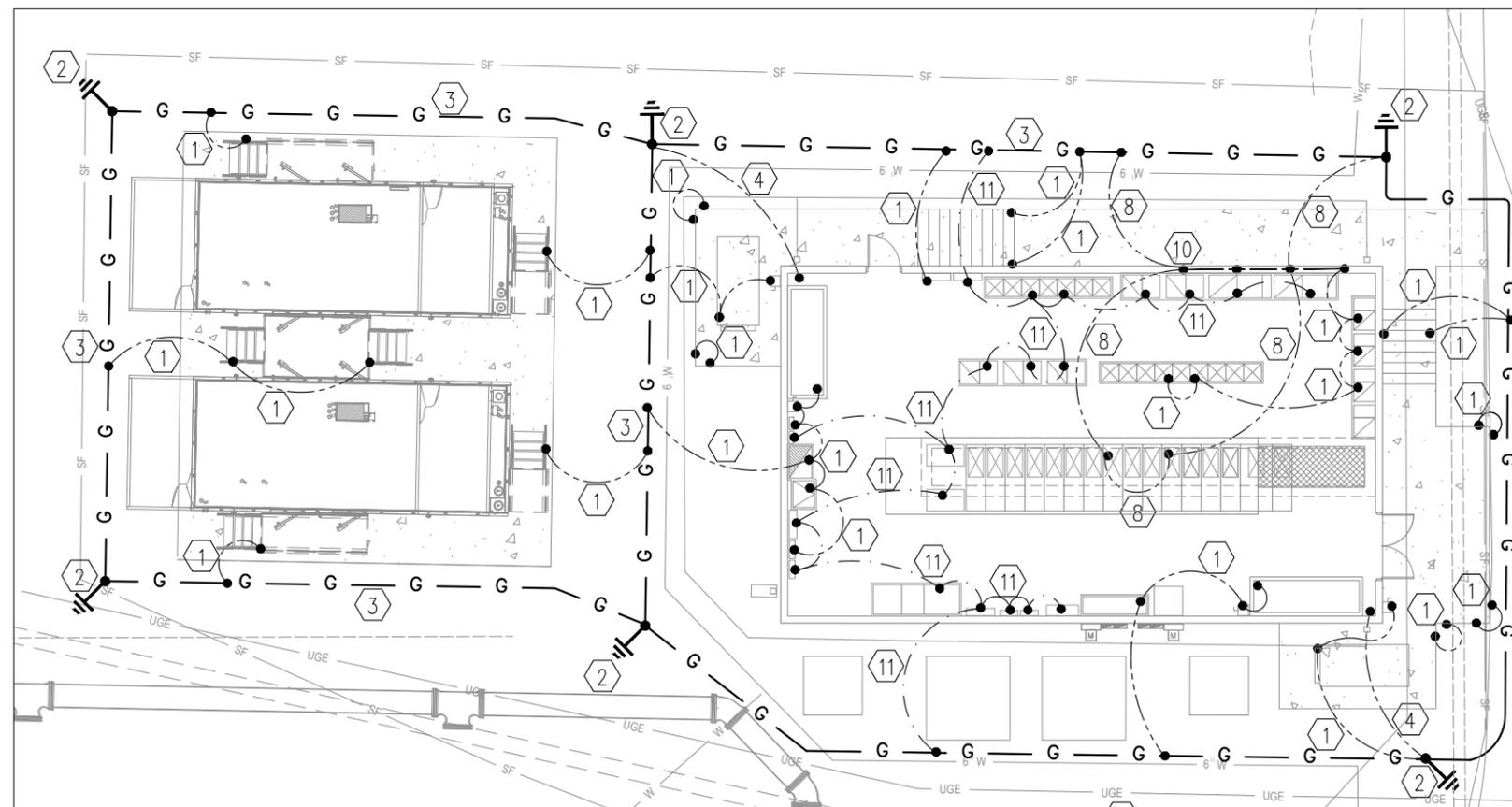
1. ALL U.G CONNECTIONS TO BE VIA EXOTHERMIC WELD (CADWELD) UNLESS INDICATED OTHERWISE.
2. ALL WORK INDICATED ON THIS DRAWING, IS TO BE PERFORMED IN COMPLIANCE WITH THE LIGHTNING PROTECTION DETAILS AND SPECIFICATIONS.
3. PROVIDE CONCEALED SLEEVES OR FLAT STRAP CONDUCTOR ON ALL WALKWAYS FOR LIGHTNING PROTECTION CONDUCTOR.
4. ALL REQUIRED BONDS MAY NOT BE SHOWN; PROVIDE ADDITIONAL BONDS TO ALL DEVICES, INSTRUMENTS, CABINETS, CONTROL VALVES, ETC. AS REQUIRED TO COMPLY WITH UL AND NEC.
5. BONDS DIRECTLY TO GROUNDING SYSTEM ARE TO BE #2 TINNED SOLID COPPER. BONDS TO ALUMINUM LIGHTNING PROTECTION SYSTEM ARE TO BE #2 SOLID ALUMINUM.

KEYNOTES

1. #2 TINNED SOLID COPPER BOND. TYPICAL.
2. 20' DRIVEN GROUND ROD WITH INSPECTION TEST WELL (SEE DETAIL). TYPICAL
3. #2/0 TINNED STRANDED COPPER COUNTERPOISE LOOP GROUND. TYPICAL
4. #2 TINNED SOLID BARE BOND TO FOUNDATION REBAR AND WIRE MESH IN FLOOR SLAB. BOND TO NEAREST GROUND ROD.
5. MAIN ROOF CONDUCTOR. TYPICAL.
6. ROOF DOWN CONDUCTOR TO GROUND GRID.
7. ROOF MOUNTED AIR TERMINAL. TYPICAL
8. #4/0 BARE TINNED COPPER GROUNDING ELECTRODE FROM ENCASED ELECTRODE AND GROUND RING TO MAIN GROUND BUS.
9. #2 SOLID ALUMINUM BOND. TYPICAL.
10. #4/0 BARE TINNED COPPER CONCRETE ENCASED ELECTRODE IN SLAB. CADWELL 5' O.C. SEE DETAIL.
11. STUB UP #2 TINNED SOLID COPPER BOND TO EACH PIECE OF FUTURE EQUIPMENT. THE FUTURE EQUIPMENT BOND LOOP SHALL BE SEPARATE FROM THE BOND TO EQUIPMENT BEING INSTALLED IN THIS CONTRACT.

LIGHTNING PROTECTION LEGEND:

- LP — LP — MAIN ROOF/DOWN CONDUCTOR TYPICAL
- G — G — #2/0 TINNED BARE COPPER COUNTERPOISE LOOP GROUND.
- — — #2 TINNED SOLID COPPER OR SOLID ALUMINUM TO EQUIPMENT/CABINETS ETC.



BONDING & GROUNDING PLAN

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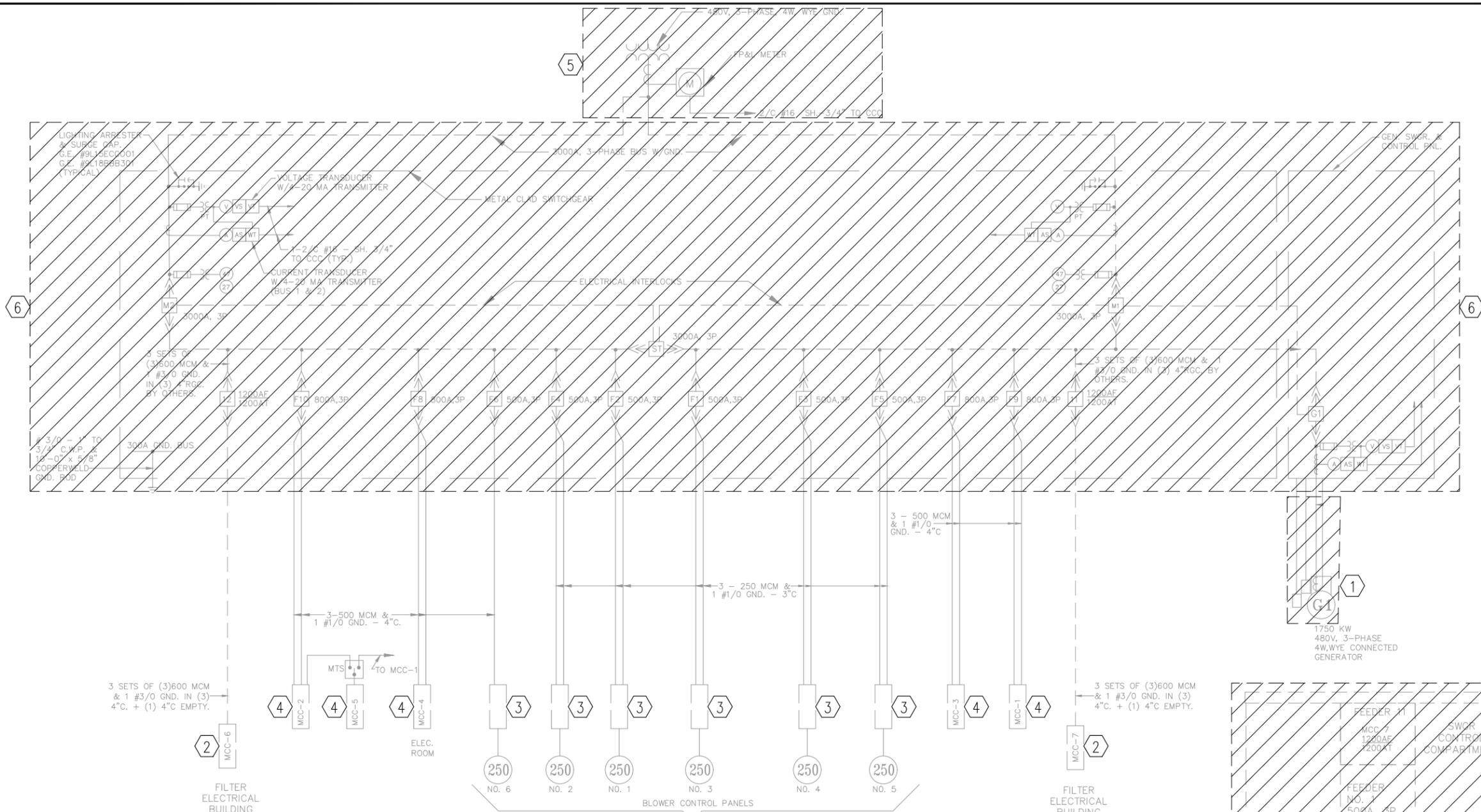
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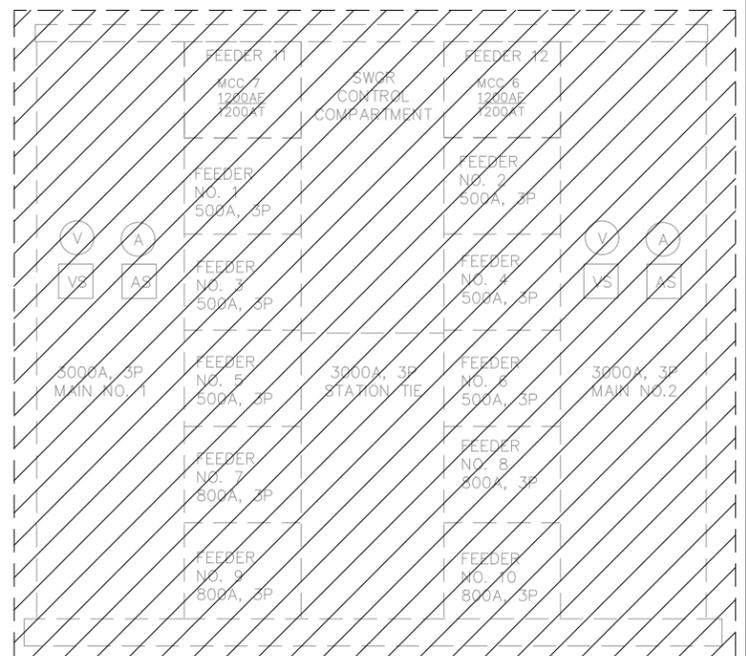
FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT
MAIN SWITCHGEAR BUILDING
LIGHTNING PROTECTION,
BONDING & GROUNDING PLAN

ISSUED FOR:	BIDDING
DATE:	05/2023
SHEET NO.:	E204

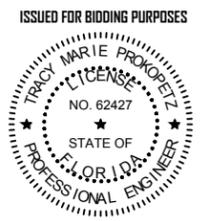


MODIFICATION TO EXISTING SINGLE LINE POWER DIAGRAM

- # KEYNOTES**
- EXISTING GENERATOR TO REMAIN & CONTINUE TO FEED EXISTING SWITCHGEAR. DEMO COMPLETE UPON DEMOLITION OF EXISTING SWITCHGEAR.
 - EXISTING MCC TO REMAIN & BE REFEED FROM NEW SWITCHGEAR.
 - EXISTING BLOWER CONTROL PANELS TO REMAIN. TEMPORARILY FEED FROM NEW SWITCHGEAR.
 - EXISTING MCC TO REMAIN. TEMPORARILY FEED FROM NEW SWITCHGEAR.
 - DEMO EXISTING FPL VAULT TRANSFORMER AND ALL ASSOCIATED EQUIPMENT COMPLETE UPON COMPLETION & COMMISSIONING OF NEW SWITCHGEAR & ELECTRICAL SERVICE.
 - DEMO EXISTING SWITCHGEAR COMPLETE UPON COMPLETION & FULL COMMISSIONING OF NEW SWITCHGEAR.



6 SWGR FRONT VIEW PROPOSED



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LEE COUNTY
SOUTHWEST FLORIDA
DEPARTMENT OF PUBLIC WORKS
UTILITIES DIVISION

FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT
MODIFICATIONS TO EXISTING MAIN SWITCHGEAR
SINGLE LINE & ELEVATION DRAWING

ISSUED FOR:
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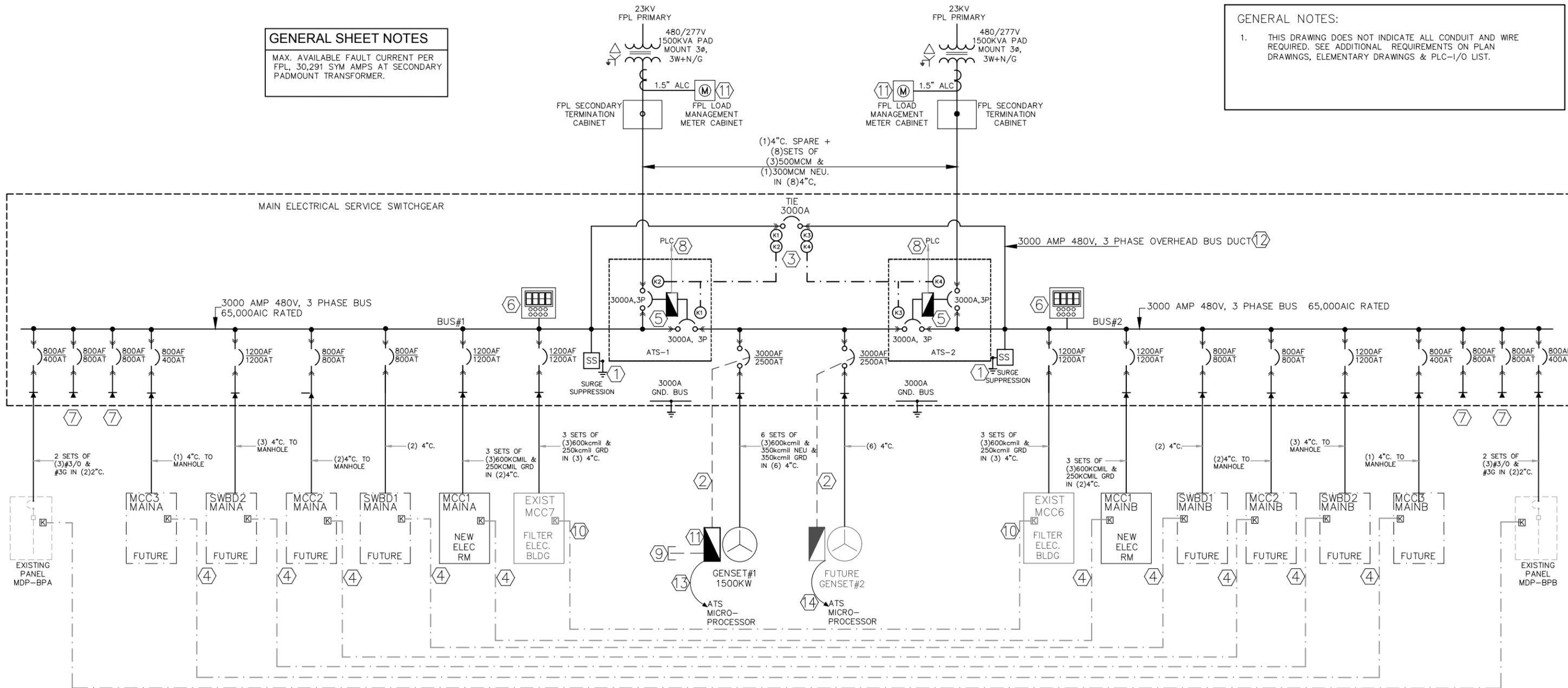
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GENERAL SHEET NOTES

MAX. AVAILABLE FAULT CURRENT PER FPL, 30,291 SYM AMPS AT SECONDARY PADMOUNT TRANSFORMER.

GENERAL NOTES:

1. THIS DRAWING DOES NOT INDICATE ALL CONDUIT AND WIRE REQUIRED. SEE ADDITIONAL REQUIREMENTS ON PLAN DRAWINGS, ELEMENTARY DRAWINGS & PLC-I/O LIST.



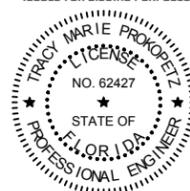
KEYNOTES:

- SURGE SUPPRESSION PANEL RATED 450KA; 225KA L-L, L-G) CATEGORY C3 HIGH EXPOSURE; UL1449 & 1283 LISTED 4-MODE PROTECTION, INDIVIDUAL MOV FUSING; CAPACITANCE FILTERING, BUS BAR INTERCONNECTION, BOLT-ON PHASE MODULES, INDICATOR LIGHT, SINE WAVE TRACKING, DIGITAL SURGE COUNTER, 10YEAR WARRANTY. SURGE SUPPRESSION TO BE INTEGRAL TO THE SWITCHGEAR. SURGE SUPPRESSION BY SWITCHGEAR MANUFACTURER.
- (2) 2" CONTROL CONDUITS FOR FUTURE PARALLELING BREAKER GENERATOR START/ATS CONTROLS.
- KIRKKEY INTERLOCKED TIE BREAKER, EITHER KEY PAIR K1 & K2 OR K3 & K4 ARE REQUIRED TO BE INSERTED IN THE BREAKER TO CLOSE BREAKER.
- KIRKKEY INTERLOCKED MOTOR CONTROL CENTER (OR SWITCHBOARD) MAIN TIE MAIN.
- SWITCHGEAR MICROPROCESSOR CLOSED TRANSITION AUTOMATIC TRANSFER SWITCH CONTROLS.
- SQUARE-D TYPE POWER LOGIC PM8000 POWER MONITOR WITH REMOTE DISPLAY AND ETHERNET CONNECTION TO SCADA SYSTEM; WAVEFORM CAPTURE, 12 CYCLE EVENT CAPTURE & SAG/SWELL DETECTION. PROVIDE 0.75" STEEL CONDUIT WITH CAT6 ETHERNET CABLE TO MASTER CONTROLLER E-NET SWITCH.
- STUB OUT (2) 4" C. FROM SWITCHGEAR TRENCH BENEATH SPARE BREAKER SECTION OUT TO MANHOLE FOR FUTURE.
- MODBUS TCP/IP COMMUNICATION NETWORK TO GENERATOR/SWITCHGEAR MASTER PLC CONTROL CABINET.
- 2" CONDUIT STUBBED OUT OF GENERATOR CONTROLLER SECTION AND CAPPED FOR FUTURE PARALLELING CONTROLS TO SECOND UNIT. PROVIDE FLUSH ON GRADE HANDHOLE ADJACENT TO GENERATOR SLAB.
- EXISTING KIRKKEY INTERLOCKED MOTOR CONTROL CENTER MAIN TIE MAIN. UTILIZE EXISTING MAIN TIE MAIN TO CONTINUE FEEDING POWER TO ENTIRE MCC 6/7 TO ALLOW FOR SAFE CONSTRUCTION. ONE FEEDER AT A TIME WILL BE REQUIRED TO BE LOCKED OUT AND TAGGED OUT AT THE EXISTING GEAR SWITCHGEAR.
- PROVIDE METERING WIRING PER CURRENT FPL LOAD MANAGEMENT METERING STANDARD.
- SUPPORT TIE BUS USING SWITCHGEAR STRUCTURE.
- MODBUS NETWORK CABLE IN 2" C, COORDINATE EXACT REQUIREMENTS WITH SUBMITTALS. 4 PAIR #16 UTP IN 1" CONDUIT FOR GENERATOR TEST.
- 2" C. AND 1" C STUBBED OUT FROM SWITCHGEAR TRENCH TO FUTURE GENERATOR.

LOAD SUMMARY

DESCRIPTION	HP	KVA
24 MONTH LCEC BILLING PEAK FACILITY DEMAND PER NEC ARTICLE 220.87		1330
125% PER NEC ARTICLE 220.87		333
LOAD DEMOED-THIS PROJECT	0	0
LOAD ADDED-THIS PROJECT	0	130
LOAD DEMOED-BFP PROJECT BY OTHERS	(36)	(47)
LOAD ADDED-BFP PROJECT BY OTHERS	1087	1112
NET LOAD CHANGE	1051	1195
TOTAL KVA		2858
TOTAL FLA		3438A
DEMAND LOADS	(490)	(507)
ADJUSTED KVA		2351
ADJUSTED FLA		2828A

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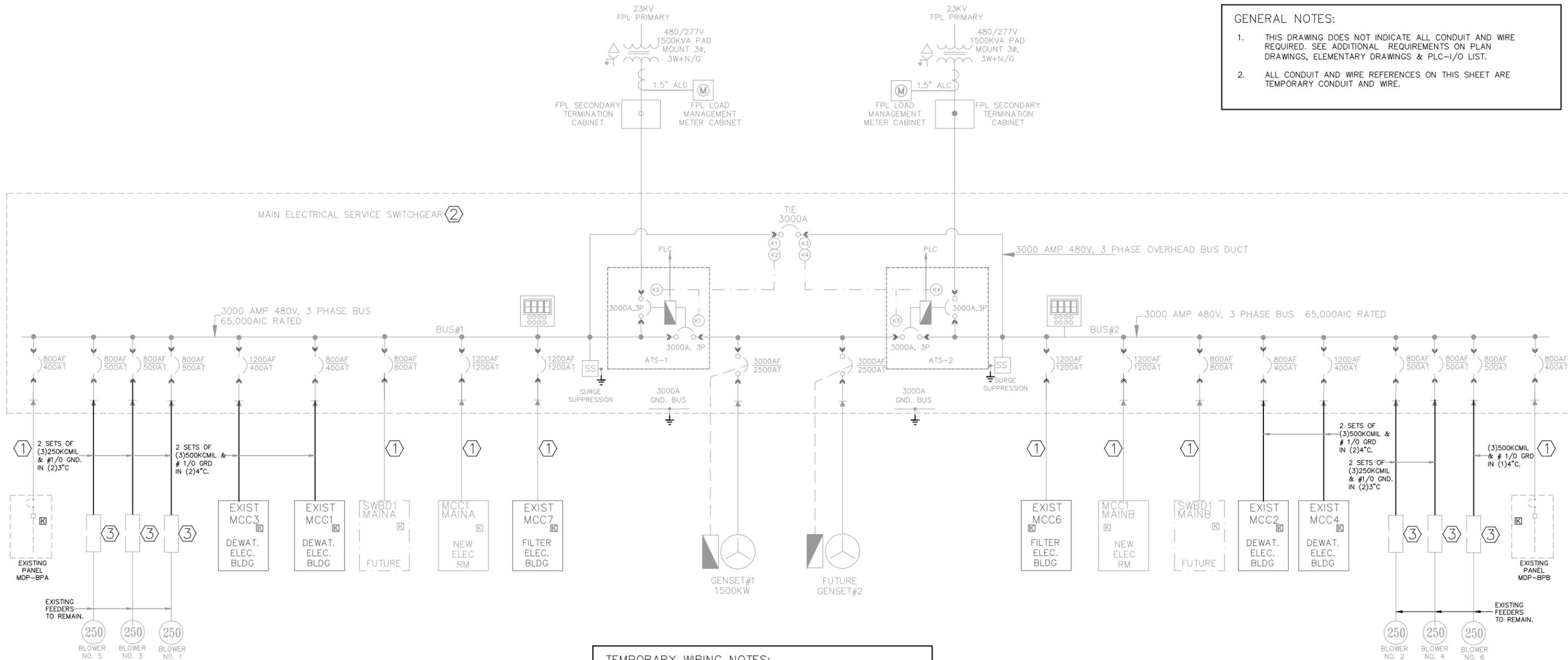
LEE COUNTY
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 DEPARTMENT OF PUBLIC WORKS
 UTILITIES DIVISION

FORT MYERS BEACH WATER RECLAMATION FACILITY
 SWITCHGEAR REPLACEMENT
 ELECTRICAL SERVICE MAIN SWITCHGEAR SINGLE
 LINE DRAWING

ISSUED FOR:
BIDDING
 DATE: **05/2023**
 SHEET NO.: **E402**

GENERAL NOTES:

- THIS DRAWING DOES NOT INDICATE ALL CONDUIT AND WIRE REQUIRED. SEE ADDITIONAL REQUIREMENTS ON PLAN DRAWINGS, ELEMENTARY DRAWINGS & PLC-I/O LIST.
- ALL CONDUIT AND WIRE REFERENCES ON THIS SHEET ARE TEMPORARY CONDUIT AND WIRE.



TEMPORARY WIRING NOTES:

- CONTRACTOR TO BUILD SURFACE MOUNTED TEMPORARY WIRE DUCTBANK BETWEEN THE NEW SWITCHGEAR BUILDING AND THE EXISTING DEWATERING BUILDING ELECTRICAL ROOM. CONDUITS MUST BE COMPLETELY PROTECTED THROUGHOUT CONSTRUCTION TO MAINTAIN PLANT OPERATIONS.
- CONTRACTOR TO PROVIDE DEWATERING BUILDING MODIFICATIONS REQUIRED FOR TEMPORARY FEEDER ACCESS TO EXISTING EQUIPMENT, INCLUDING USE OF TEMPORARY DOOR, CUTTING OF CONCRETE BLOCK WALLS FOR CONDUIT WINDOWS & THE LIKE. ANY MODIFICATIONS ARE REQUIRED TO BE RETURNED TO AS FOUND CONDITIONS INCLUDING ALL PATCHING & PAINTING REQUIRED.

KEYNOTES:

- PERMANENT FEEDER. SEE SINGLE LINE DRAWING E402 FOR SIZE.
- REFER TO SWITCHGEAR SINGLE DRAWING E402 FOR NEW SWITCHGEAR DETAILS.
- EXISTING BLOWER CONTROL PANEL.

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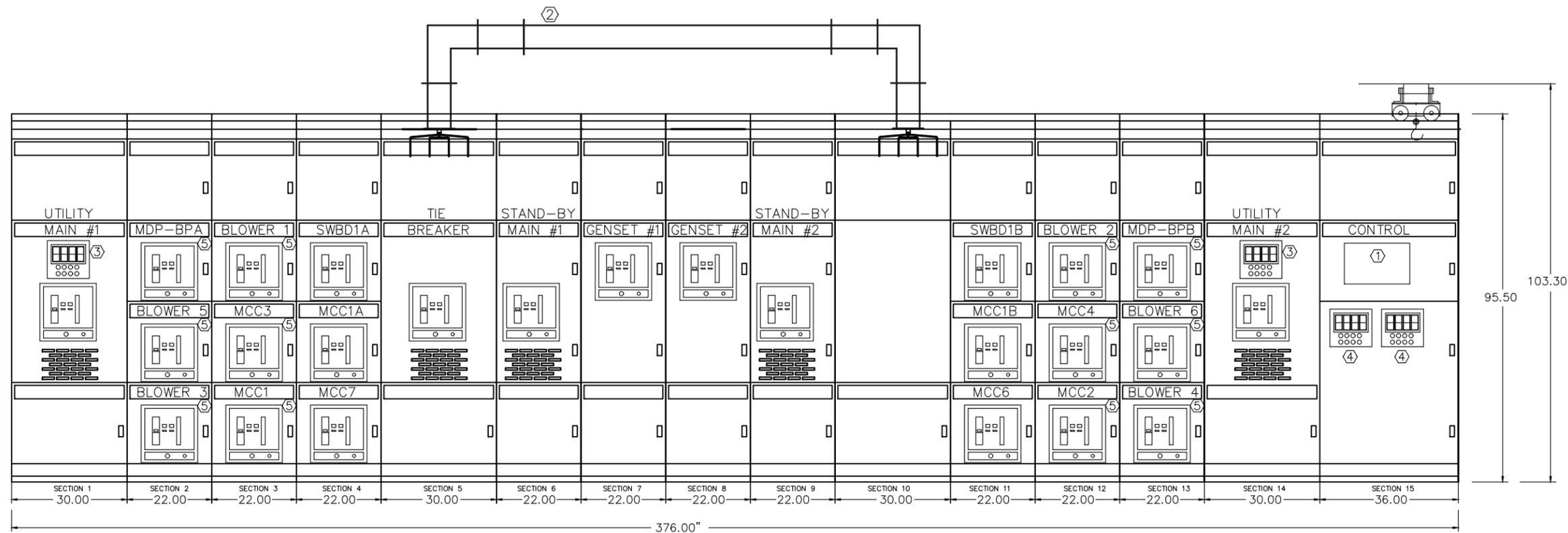
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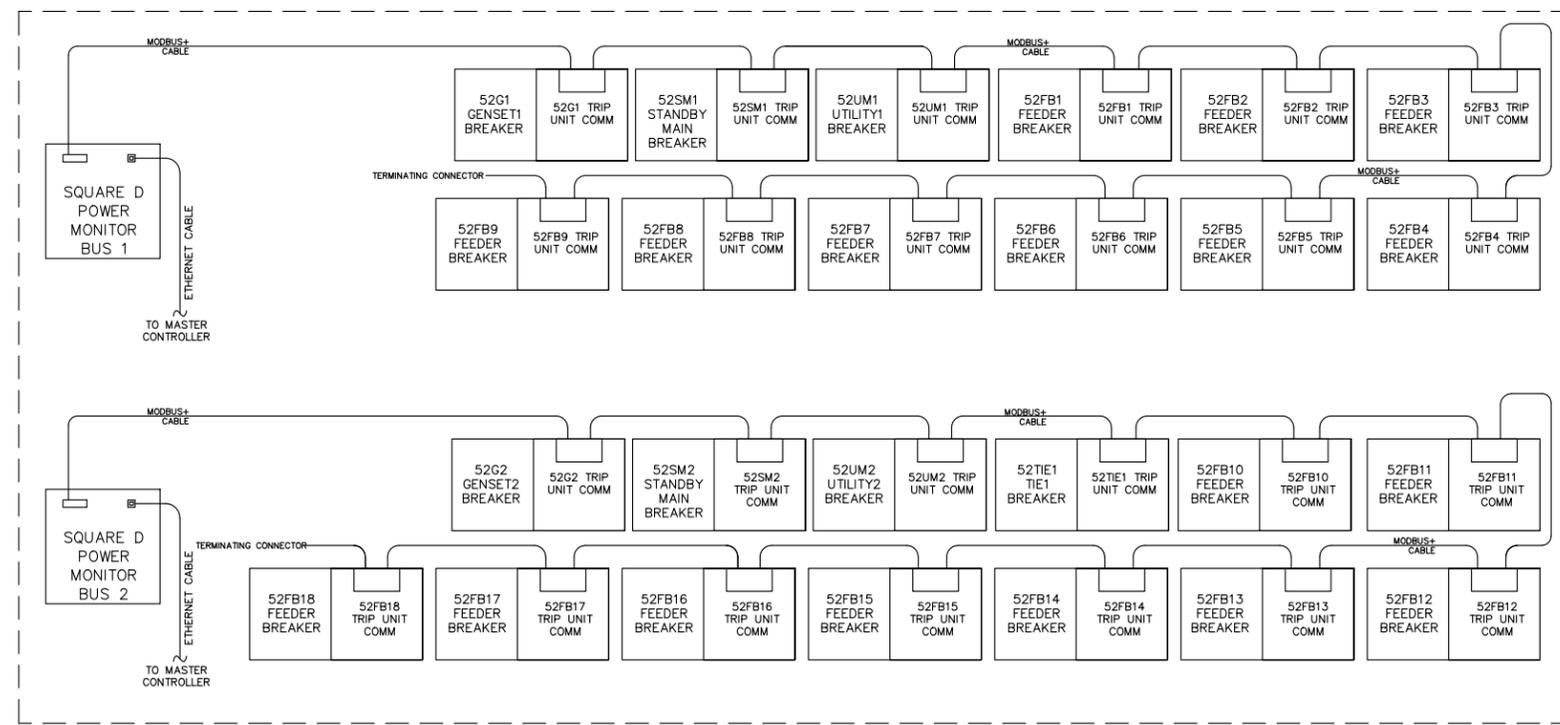
FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT
**ELECTRICAL SERVICE MAIN SWITCHGEAR
TEMPORARY WIRING SINGLE LINE DRAWING**

ISSUED FOR:	BIDDING
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SHEET NO.:	E402T



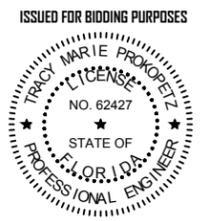
PROPOSED ELECTRICAL SERVICE MAIN SWITCHGEAR ELEVATION

- GENERAL NOTES:
- THIS DRAWING DOES NOT INDICATE ALL CONDUIT AND WIRE REQUIRED. SEE ADDITIONAL REQUIREMENTS ON PLAN DRAWINGS, ELEMENTARY DRAWINGS & PLC-I/O LIST.
- KEYNOTES:
- DIGITAL MASTER CONTROLLER HMI/GENERATOR ANNUNCIATOR.
 - SUPPORT TIE BUS USING SWITCHGEAR STRUCTURE.
 - SURGE SUPPRESSION ANNUNCIATOR.
 - POWER MONITOR ANNUNCIATOR.
 - PROVIDE BREAKER WITH TEMPORARY LABEL TO BE REPLACED WITH PERMANENT LABEL IN THE FUTURE.



SWITCHGEAR POWER MONITORING NETWORK

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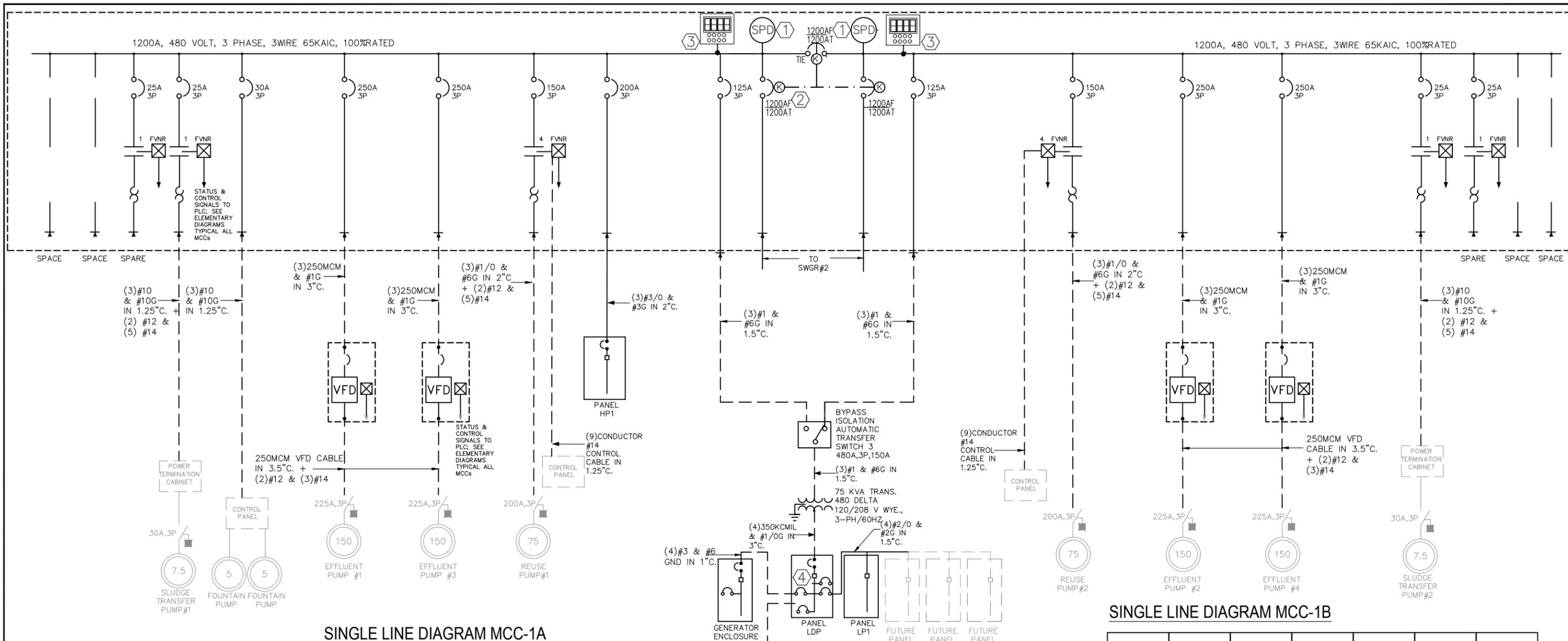
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FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT
ELECTRICAL SERVICE MAIN SWITCHGEAR
ELEVATION DRAWING

ISSUED FOR:
BIDDING
DATE: **05/2023**
SHEET NO.: **E403**



SINGLE LINE DIAGRAM MCC-1A

SINGLE LINE DIAGRAM MCC-1B

EFF. P1 250A, 3P	BLANK			BLANK	EFF. P2 250A, 3P
EFF. P3 250A, 3P					EFF. P4 250A, 3P
PANEL HP1 200A, 3P	SPD 1			SPD 1	
SPACE	EFF. REUSE P1 150A, 3P FVNR SIZE4	MAIN CIRCUIT BREAKER 1 1200AT, 3P	TIE CIRCUIT BREAKER 1200AT, 3P	MAIN CIRCUIT BREAKER 2 1200AT, 3P	SPACE
PANEL LDP 125A, 3P					PANEL LDP 125A, 3P
FOUNT CP 30A, 3P					SPACE
SPACE	SLUDGE XFR P1 25A, 3P FVNR SIZE1				SLUDGE XFR P2 25A, 3P FVNR SIZE1
	SPARE 25A, 3P FVNR SIZE1				SPARE 25A, 3P FVNR SIZE1

MCC-1A/B ELEVATION
N.T.S.

LOAD SUMMARY		
DESCRIPTION	HP	KVA
LOAD DEMOED	--	--
LOAD ADDED	775	783
NET LOAD CHANGE	775	783
TOTAL CONNECTED HP	775	783
NEW LOAD DEMAND (STAND-BY LOADS)	(150)	(152)
TOTAL HP DEMAND	625	631
ADJUSTED FLA	759A	759A
KVA LOAD ADDED	--	208
TOTAL FLA		1010A

- KEYNOTES:**
- SURGE SUPPRESSION PANEL RATED 240KA; PER PHASE CATEGORY c3 HIGH EXPOSURE; UL1449 REV5 & 1283 LISTED 4-MODE PROTECTION, INDIVIDUAL MOV FUSING; CAPACITANCE FILTERING, BUS BAR INTERCONNECTION, BOLT-ON PHASE MODULES, INDICATOR LIGHT, SINE WAVE TRACKING, DIGITAL SURGE COUNTER, 10YEAR WARRANTY. SURGE SUPPRESSION TO BE INTEGRAL TO MCC.
 - KIRKKEY INTERLOCKED MAIN-TIE-MAIN.
 - SQUARE-D TYPE POWER LOGIC PM8000 POWER MONITOR WITH REMOTE DISPLAY AND ETHERNET CONNECTION TO SCADA SYSTEM; WAVEFORM CAPTURE, 12 CYCLE EVENT CAPTURE & SAG/SWELL DETECTION. PROVIDE 0.75" STEEL CONDUIT WITH CAT6 ETHERNET CABLE TO MASTER CONTROLLER E-NET SWITCH.
 - LOW VOLTAGE PANELBOARD WITH INTEGRAL TVSS.

- GENERAL NOTES:**
- VERIFY EQUIPMENT NAMEPLATE LOADS WITH SHOP DRAWINGS & NOTIFY ENGINEER OF DISCREPANCIES.
 - THIS DRAWING DOES NOT INDICATE ALL CONDUIT AND WIRE REQUIRED. SEE ADDITIONAL REQUIREMENTS ON PLAN DRAWINGS, ELEMENTARY DRAWINGS & PLC-1/0 LIST.
 - FVNR MOTOR STARTER MINIMUM SIZE 1, UNLESS NOTED OTHERWISE.

K:\LCU FMB Switchgear Replacement\404.dwg Plotled: Sep 12, 2023 - 4:58pm by joshuah

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TRACY MARIE PROKOPETZ
NO. 62427
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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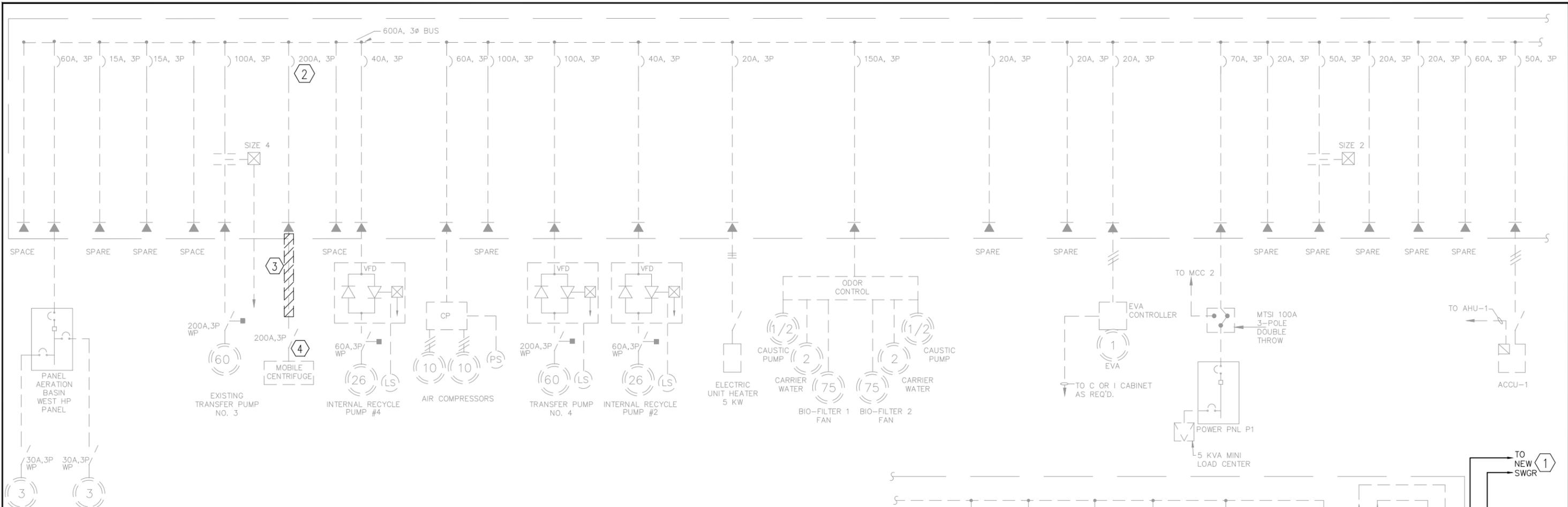
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CAD FILE:	E404.dwg

LEE COUNTY
SOUTHWEST FLORIDA
DEPARTMENT OF PUBLIC WORKS
UTILITIES DIVISION

FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT

MCC1A/B SINGLE LINE & ELEVATION DRAWING

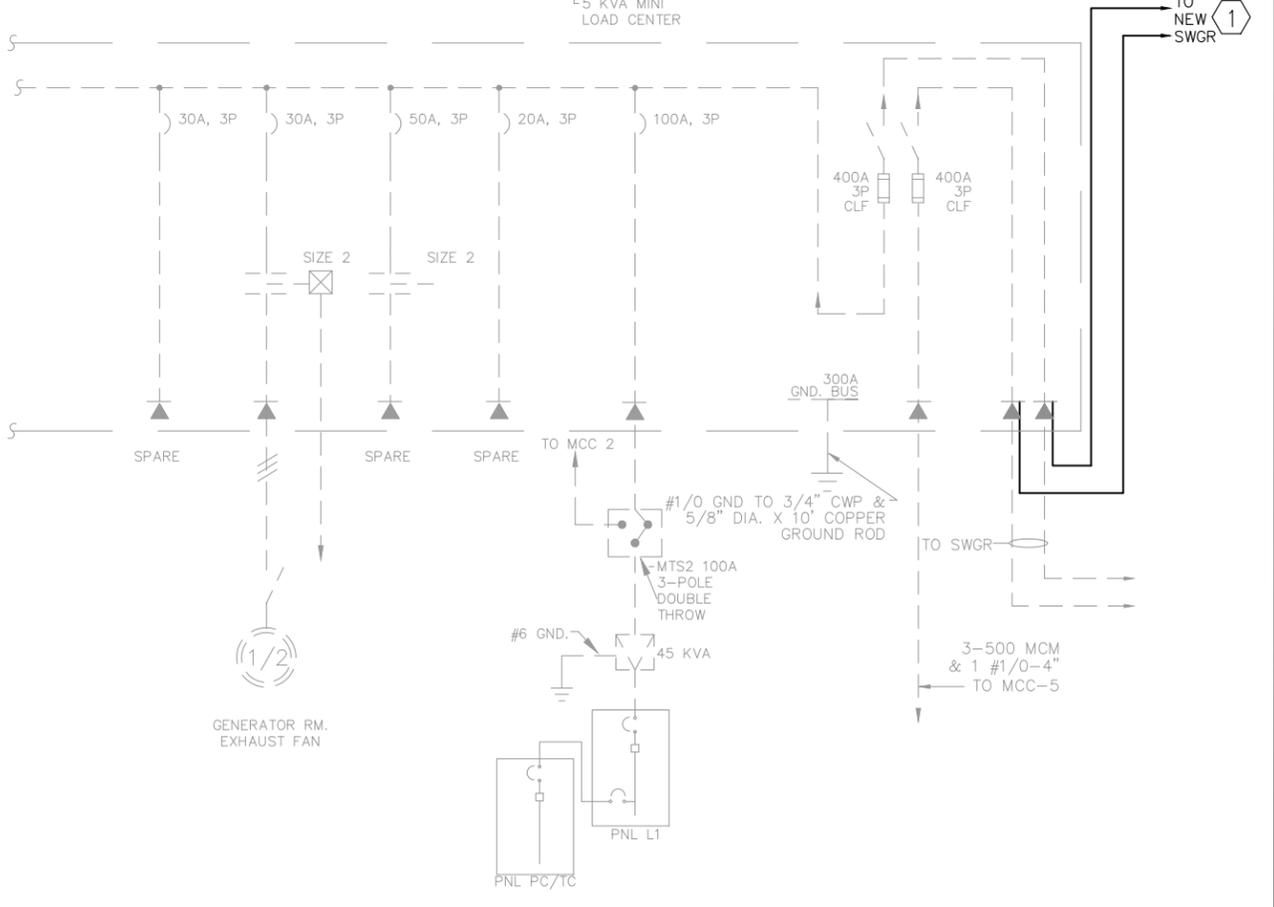
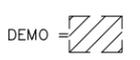
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LOAD SUMMARY		
DESCRIPTION	HP	KVA
EXISTING CONNECTED LOAD	354.5	616
LOAD DEMOED	(0)	(133)
LOAD ADDED	0	0
NET LOAD CHANGE	(0)	(133)
TOTAL CONNECTED HP	354.5	483
NEW LOAD DEMAND (STAND-BY LOADS)	(173.5)	(203)
TOTAL HP DEMAND	181	280
ADJUSTED FLA	337A	337A
KVA LOAD ADDED	--	--
TOTAL FLA		337A

- GENERAL NOTES:**
- VERIFY EQUIPMENT NAMEPLATE LOADS WITH SHOP DRAWINGS & NOTIFY ENGINEER OF DISCREPANCIES.
 - THIS DRAWING DOES NOT INDICATE ALL CONDUIT AND WIRE REQUIRED. SEE ADDITIONAL REQUIREMENTS ON PLAN DRAWINGS, ELEMENTARY DRAWINGS & PLC-I/O LIST.
 - FVNR MOTOR STARTER MINIMUM SIZE 1, UNLESS NOTED OTHERWISE.

- KEYNOTES:**
- TEMPORARY CABLE FEED TO NEW SWITCHGEAR.
 - EXISTING BREAKER TO REMAIN. INSTALL NEW ENGRAVED LABEL MARKED "100A,3P SPARE" ACCORDINGLY.
 - DEMO EXISTING CONDUIT AND WIRE COMPLETE.
 - EXISTING MOBILE DEWATERING DISCONNECT AND RECEPTACLE TO REMAIN AND BE REFEED.



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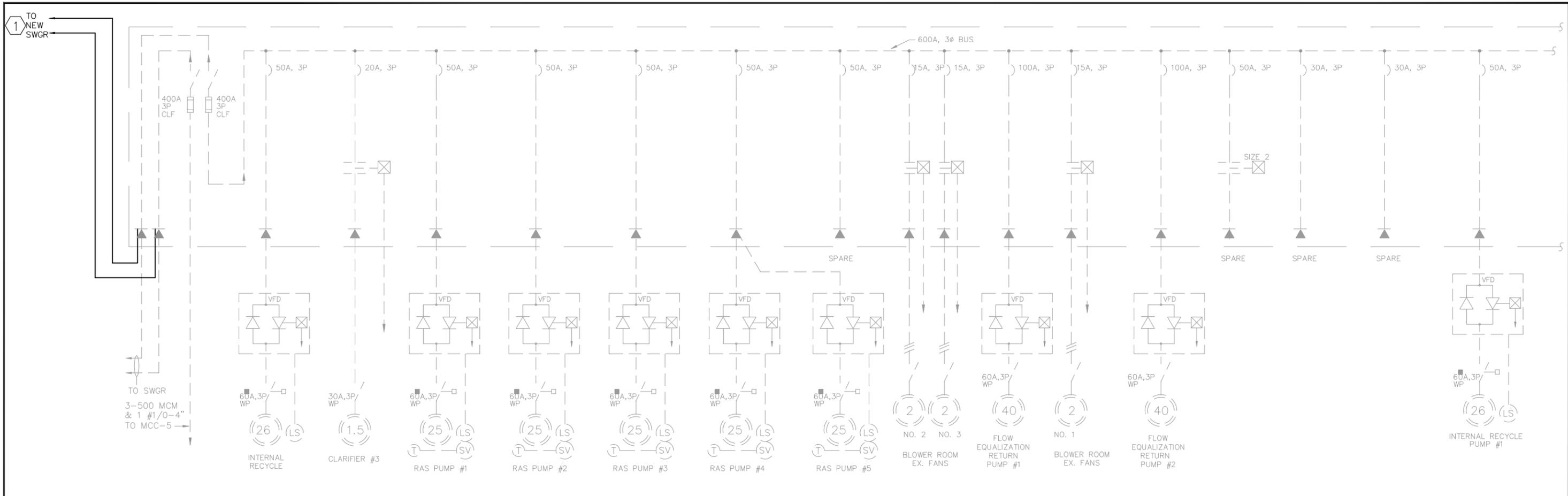
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FORT MYERS BEACH WATER RECLAMATION FACILITY SWITCHGEAR REPLACEMENT

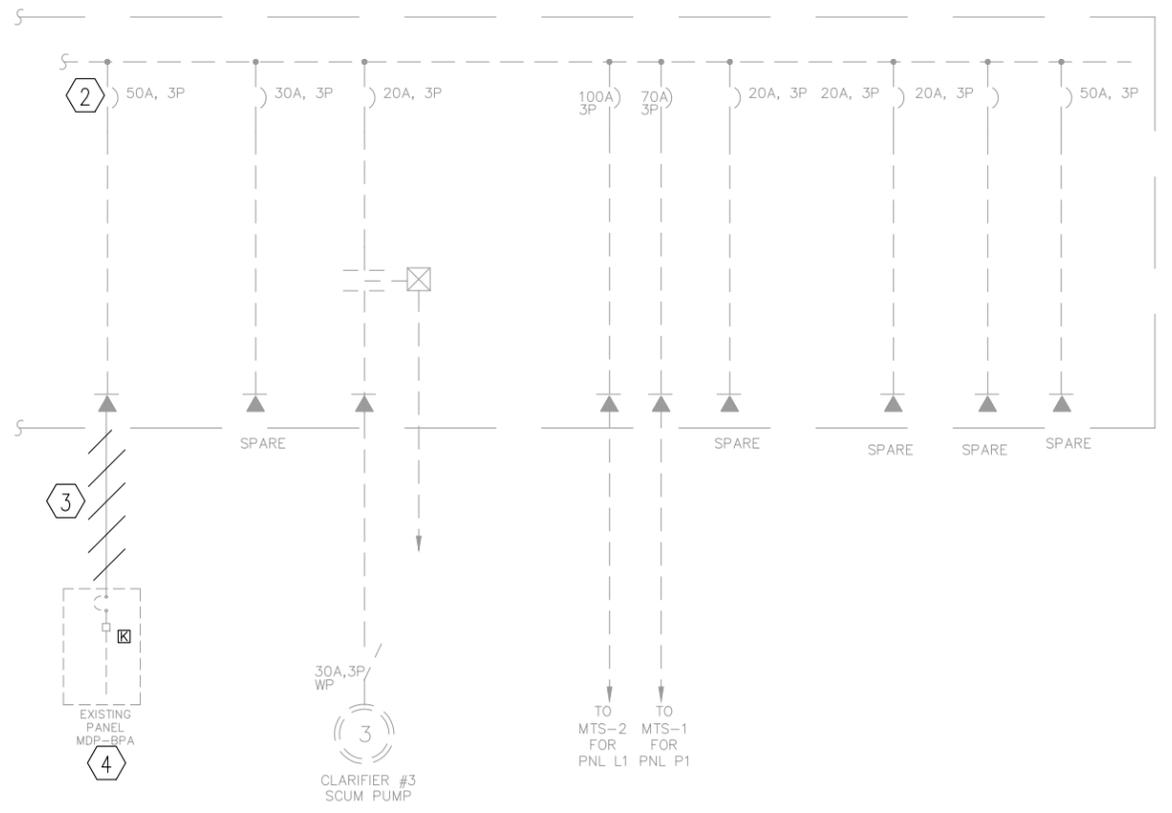
EXISTING MCC1 SINGLE LINE DRAWING

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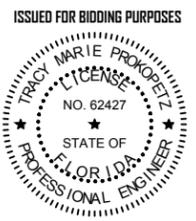


LOAD SUMMARY		
DESCRIPTION	HP	KVA
EXISTING CONNECTED LOAD	274	277
LOAD DEMOED	(49.5)	50
LOAD ADDED	0	0
NET LOAD CHANGE	(49.5)	50
TOTAL CONNECTED HP	225	320
NEW LOAD DEMAND (STAND-BY LOADS)	(90)	(91)
TOTAL HP DEMAND	135	229
ADJUSTED FLA	274A	274A
KVA LOAD ADDED	--	--
TOTAL FLA		274A



GENERAL NOTES:
 1. THIS DRAWING DOES NOT INDICATE ALL CONDUIT AND WIRE REQUIRED. SEE ADDITIONAL REQUIREMENTS ON PLAN DRAWINGS, ELEMENTARY DRAWINGS & PLC-I/O LIST.
 2. FVNR MOTOR STARTER MINIMUM SIZE 1, UNLESS NOTED OTHERWISE.

KEYNOTES:
 1. TEMPORARY CABLE FEED TO NEW SWITCHGEAR.
 2. EXISTING BREAKER TO REMAIN. INSTALL NEW ENGRAVED LABEL MARKED "150A, 250A, 3P SPARE" ACCORDINGLY.
 3. DEMO EXISTING CONDUIT AND WIRE COMPLETE UPON COMPLETION OF MDP REFEED FROM NEW SWITCHGEAR.
 4. EXISTING MDP TO REMAIN AND BE REF. UTILIZE MDP MAIN-TIE-MAIN IN ORDER TO MAINTAIN BELT PRESS OPERATION THROUGH OUT MDP REFEED.



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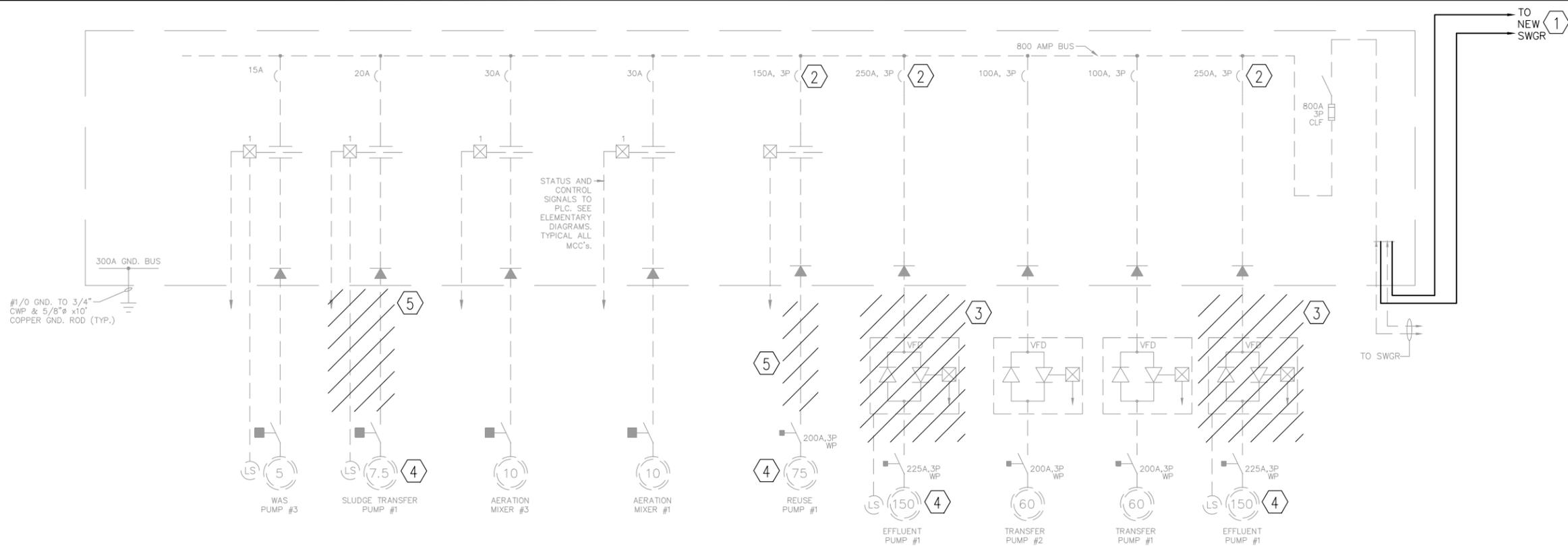


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FORT MYERS BEACH WATER RECLAMATION FACILITY SWITCHGEAR REPLACEMENT
 EXISTING MCC2 SINGLE LINE DRAWING

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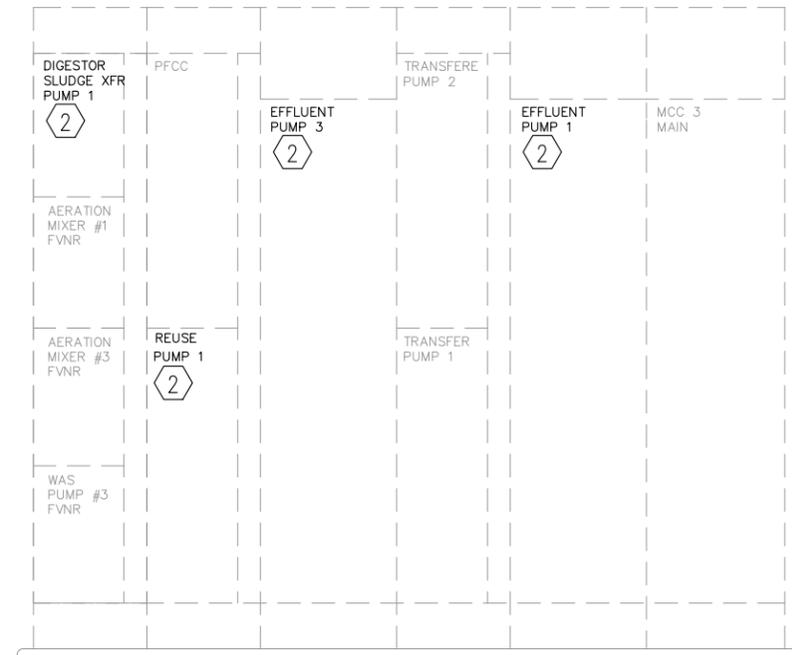
SINGLE LINE DIAGRAM MCC-3

DEMO

LOAD SUMMARY		
DESCRIPTION	HP	KVA
EXISTING CONNECTED LOAD	527.5	533
LOAD DEMOED	(382.5)	(387)
LOAD ADDED	0	0
NET LOAD CHANGE	(382.5)	(387)
TOTAL CONNECTED HP	145	146
NEW LOAD DEMAND (STAND-BY LOADS)	0	0
TOTAL HP DEMAND	145	146
ADJUSTED FLA	176A	176A
KVA LOAD ADDED	--	--
TOTAL FLA		176A

- KEYNOTES:**
- TEMPORARY CABLE FEED TO NEW SWITCHGEAR.
 - EXISTING BREAKER TO REMAIN. INSTALL NEW ENGRAVED LABEL MARKED "150A, 250A, 3P SPARE" ACCORDINGLY.
 - DEMO EXISTING VFD, CONDUIT, AND WIRE COMPLETE UPON FUNCTIONAL ACCEPTANCE OF REPLACEMENT VFDs. COMMISSION AND REMOVE (1) VFD AT A TIME.
 - EXISTING MOTOR AND DISCONNECT SWITCH TO REMAIN AND BE REFEED.
 - DEMO EXISTING CONDUIT AND WIRE COMPLETE UPON FUNCTIONAL ACCEPTANCE OF REPLACEMENT STARTERS. COMMISSION AND REMOVE (1) PUMP AT A TIME.

- GENERAL NOTES:**
- THIS DRAWING DOES NOT INDICATE ALL CONDUIT AND WIRE REQUIRED. SEE ADDITIONAL REQUIREMENTS ON PLAN DRAWINGS, ELEMENTARY DRAWINGS & PLC-I/O LIST.
 - FVNR MOTOR STARTER MINIMUM SIZE 1, UNLESS NOTED OTHERWISE.



MCC-3 ELEVATION
N.T.S.

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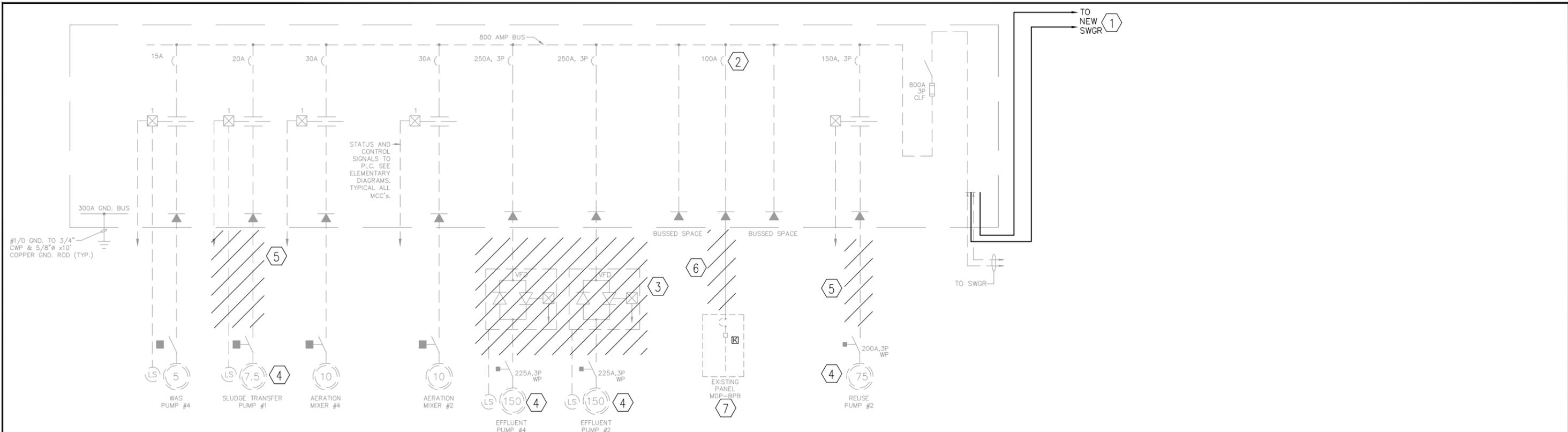


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FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT
MODIFICATIONS TO EXISTING MCC3
SINGLE LINE & ELEVATION DRAWING

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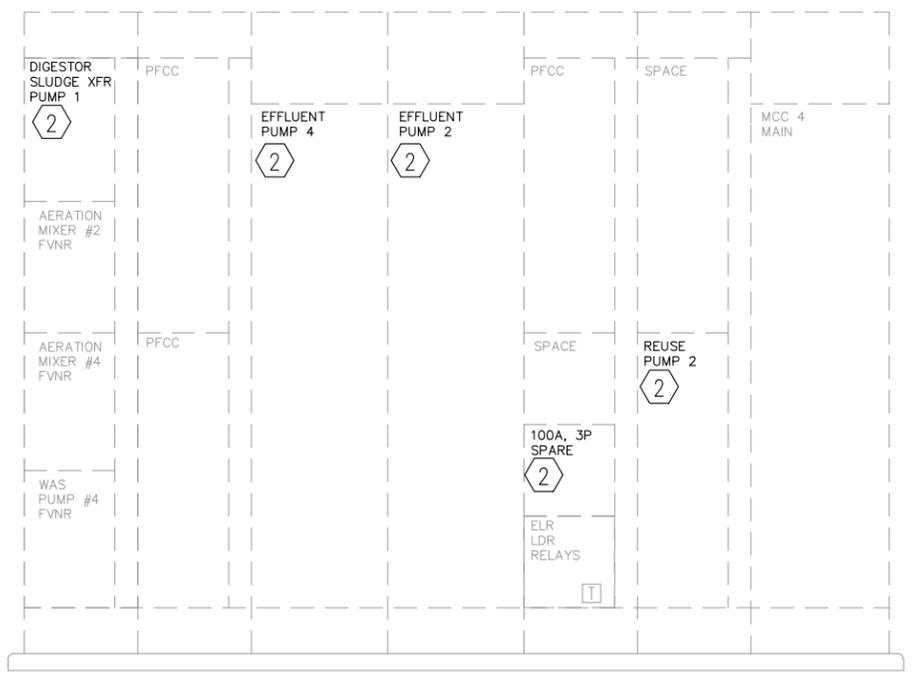
SINGLE LINE DIAGRAM MCC-4

DEMO

LOAD SUMMARY		
DESCRIPTION	HP	KVA
EXISTING CONNECTED LOAD	450	455
LOAD DEMOED	(425)	(429)
LOAD ADDED	0	0
NET LOAD CHANGE	(425)	(429)
TOTAL CONNECTED HP	25	26
NEW LOAD DEMAND (STAND-BY LOADS)	0	0
TOTAL HP DEMAND	25	26
ADJUSTED FLA	31A	31A
KVA LOAD ADDED	--	--
TOTAL FLA		31A

- # KEYNOTES:**
- TEMPORARY CABLE FEED TO NEW SWITCHGEAR.
 - EXISTING BREAKER TO REMAIN. INSTALL NEW ENGRAVED LABEL MARKED "150A, 250A, 3P SPARE" ACCORDINGLY.
 - DEMO EXISTING VFD, CONDUIT, AND WIRE COMPLETE UPON FUNCTIONAL ACCEPTANCE OF REPLACEMENT VFDs. COMMISSION AND REMOVE (1) VFD AT A TIME.
 - EXISTING MOTOR AND DISCONNECT SWITCH TO REMAIN AND BE REFEED.
 - DEMO EXISTING CONDUIT AND WIRE COMPLETE UPON FUNCTIONAL ACCEPTANCE OF REPLACEMENT STARTERS. COMMISSION AND REMOVE (1) PUMP AT A TIME.
 - DEMO EXISTING CONDUIT AND WIRE COMPLETE UPON COMPLETION OF MDP REFEED FROM NEW SWITCHGEAR.
 - EXISTING MDP TO REMAIN AND BE REF. UTILIZE MDP MAIN-TIE-MAIN IN ORDER TO MAINTAIN BELT PRESS OPERATION THROUGH OUT MDP REFEED.

- GENERAL NOTES:**
- THIS DRAWING DOES NOT INDICATE ALL CONDUIT AND WIRE REQUIRED. SEE ADDITIONAL REQUIREMENTS ON PLAN DRAWINGS, ELEMENTARY DRAWINGS & PLC-I/O LIST.
 - FVNR MOTOR STARTER MINIMUM SIZE 1, UNLESS NOTED OTHERWISE.



MCC-4 ELEVATION
N.T.S.

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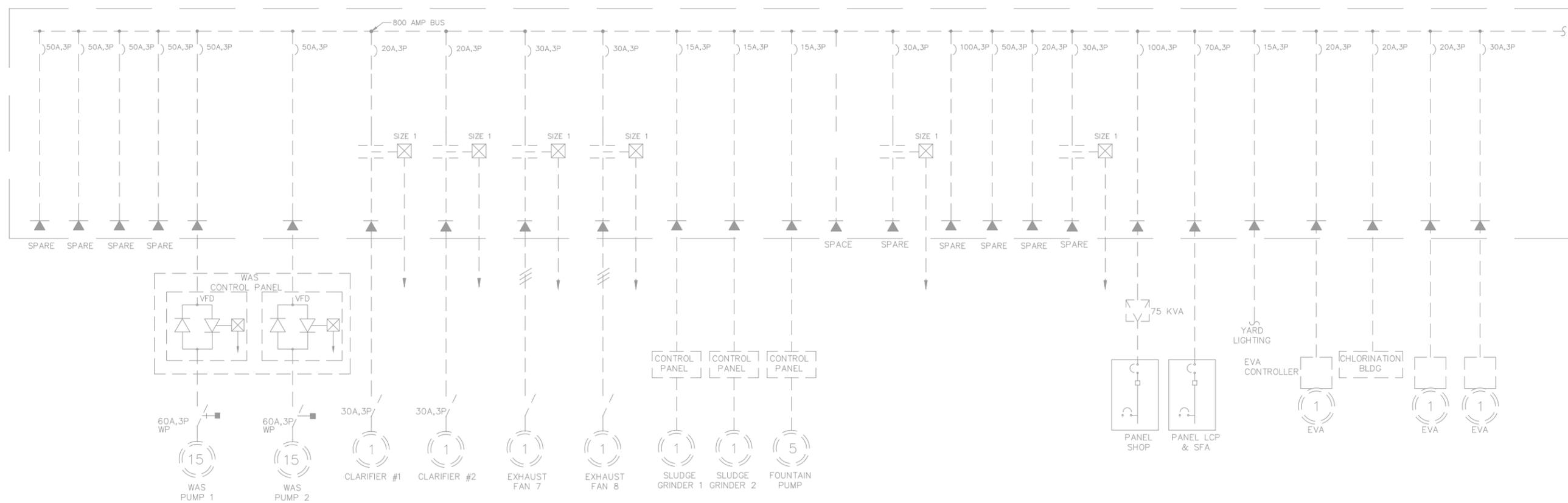


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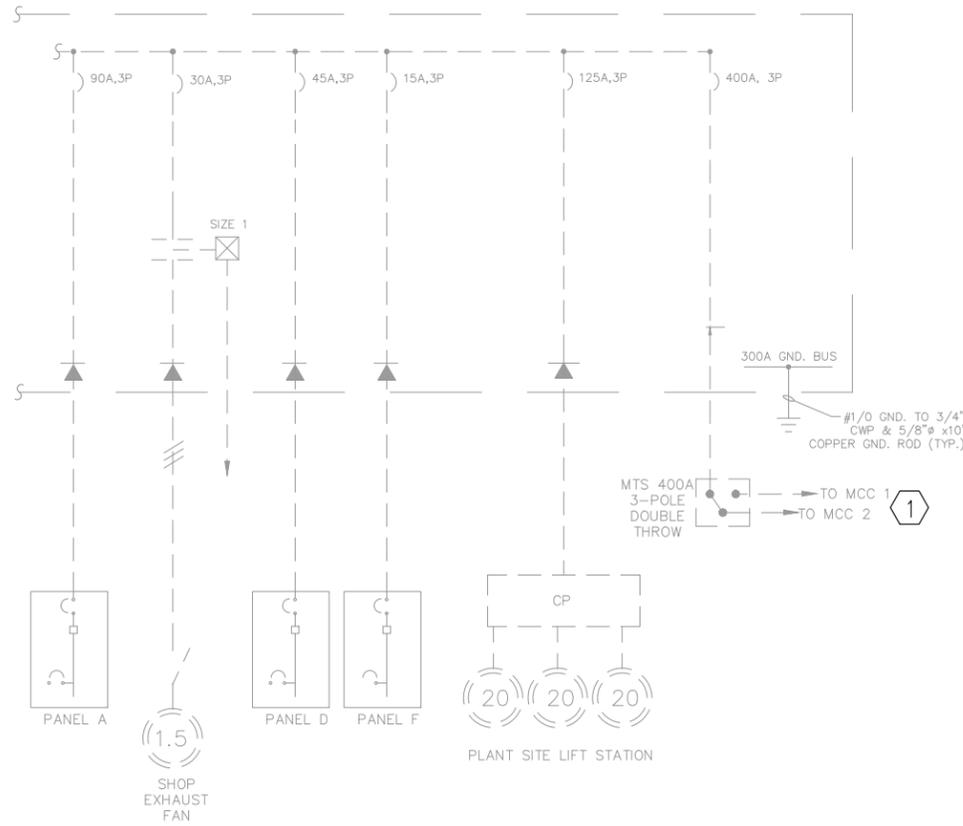
FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT
MODIFICATIONS TO EXISTING MCC4
SINGLE LINE DRAWING

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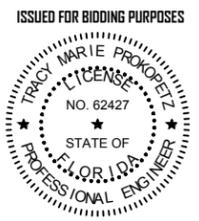


LOAD SUMMARY		
DESCRIPTION	HP	KVA
EXISTING CONNECTED LOAD	107	330
LOAD DEMOED	0	0
LOAD ADDED	0	0
NET LOAD CHANGE	0	0
TOTAL CONNECTED HP	107	330
NEW LOAD DEMAND (STAND-BY LOADS)	0	(56)
TOTAL HP DEMAND	107	274
ADJUSTED FLA	330A	330A
KVA LOAD ADDED	--	--
TOTAL FLA		330A



GENERAL NOTES:
 1. THIS DRAWING DOES NOT INDICATE ALL CONDUIT AND WIRE REQUIRED. SEE ADDITIONAL REQUIREMENTS ON PLAN DRAWINGS, ELEMENTARY DRAWINGS & PLC-I/O LIST.
 2. FVNR MOTOR STARTER MINIMUM SIZE 1, UNLESS NOTED OTHERWISE.

KEYNOTES:
 1. EXISTING FEEDERS FROM MCC1 & MCC2 TO REMAIN.

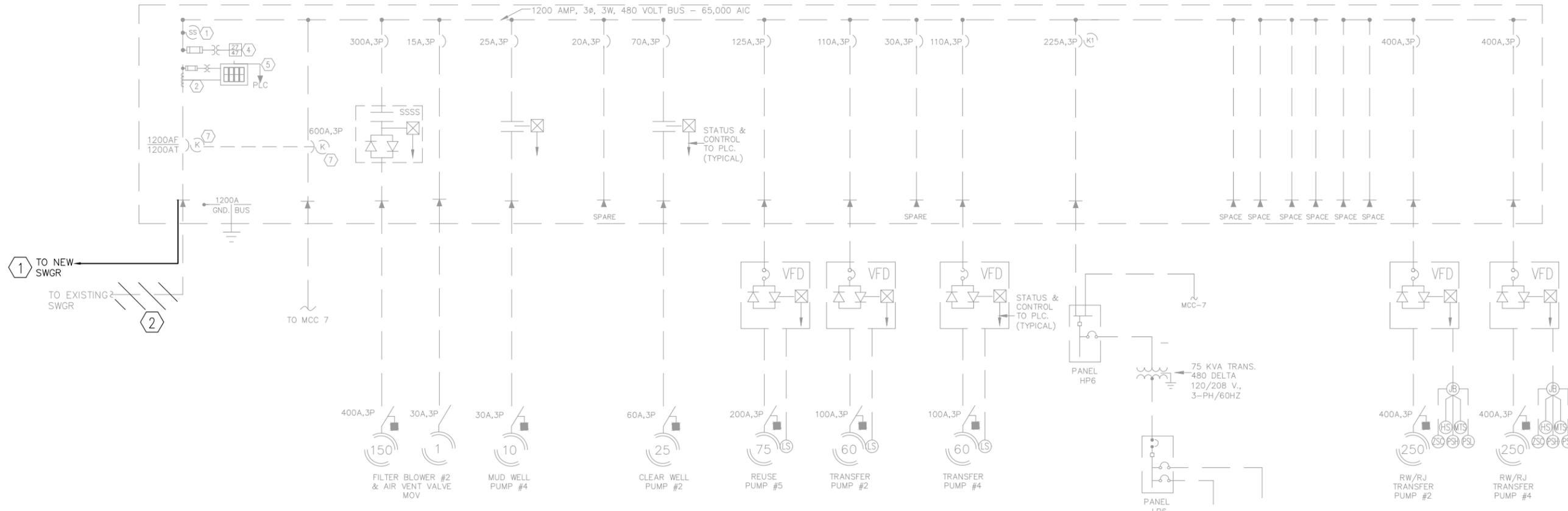


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LOAD SUMMARY		
DESCRIPTION	HP	KVA
EXISTING CONNECTED LOAD	806	909
LOAD DEMOED	0	0
LOAD ADDED	0	0
NET LOAD CHANGE	0	0
TOTAL CONNECTED HP	806	909
NEW LOAD DEMAND (STAND-BY LOADS)	(120)	(145)
TOTAL HP DEMAND	686	764
ADJUSTED FLA	919A	919A
KVA LOAD ADDED	--	--
TOTAL FLA		919A

GENERAL NOTES:

- THIS DRAWING DOES NOT INDICATE ALL CONDUIT AND WIRE REQUIRED. SEE ADDITIONAL REQUIREMENTS ON PLAN DRAWINGS, ELEMENTARY DRAWINGS & PLC-I/O LIST.
- FVNR MOTOR STARTER MINIMUM SIZE 1, UNLESS NOTED OTHERWISE.

KEYNOTES:

- REFEED MCC FROM NEW SWITCHGEAR WITH PERMANENT CONDUIT & WIRE.
- DEMO EXISTING WIRE BACK TO EXISTING SWITCHGEAR COMPLETE. EXISTING CONDUIT WITHIN CONCRETE ENCASED DUCTBANK TO REMAIN.

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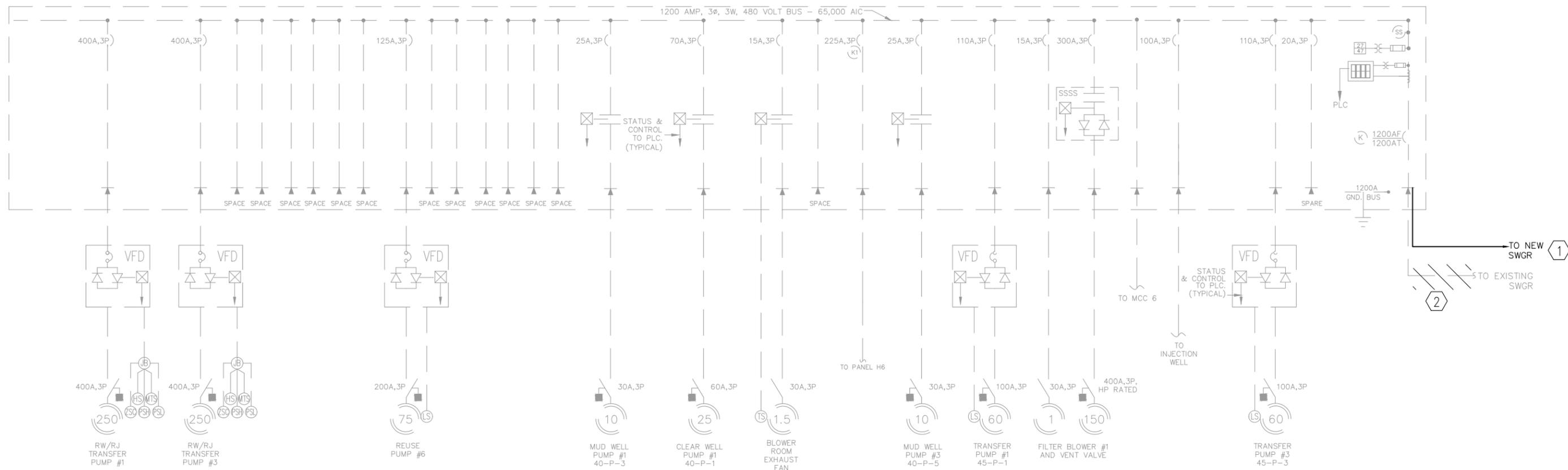


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FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT
MODIFICATIONS TO EXISTING MCC6
SINGLE LINE DRAWING

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LOAD SUMMARY		
DESCRIPTION	HP	KVA
EXISTING CONNECTED LOAD	818	941
LOAD DEMOED	0	0
LOAD ADDED	0	0
NET LOAD CHANGE	0	0
TOTAL CONNECTED HP	818	941
NEW LOAD DEMAND (STAND-BY LOADS)	(120)	(145)
TOTAL HP DEMAND	698	797
ADJUSTED FLA	958A	958A
KVA LOAD ADDED	--	--
TOTAL FLA		958A

GENERAL NOTES:

- THIS DRAWING DOES NOT INDICATE ALL CONDUIT AND WIRE REQUIRED. SEE ADDITIONAL REQUIREMENTS ON PLAN DRAWINGS, ELEMENTARY DRAWINGS & PLC-I/O LIST.
- FVNR MOTOR STARTER MINIMUM SIZE 1, UNLESS NOTED OTHERWISE.

KEYNOTES:

- REFEED MCC FROM NEW SWITCHGEAR WITH PERMANENT CONDUIT & WIRE.
- DEMO EXISTING WIRE BACK TO EXISTING SWITCHGEAR COMPLETE. EXISTING CONDUIT WITHIN CONCRETE ENCASED DUCTBANK TO REMAIN.

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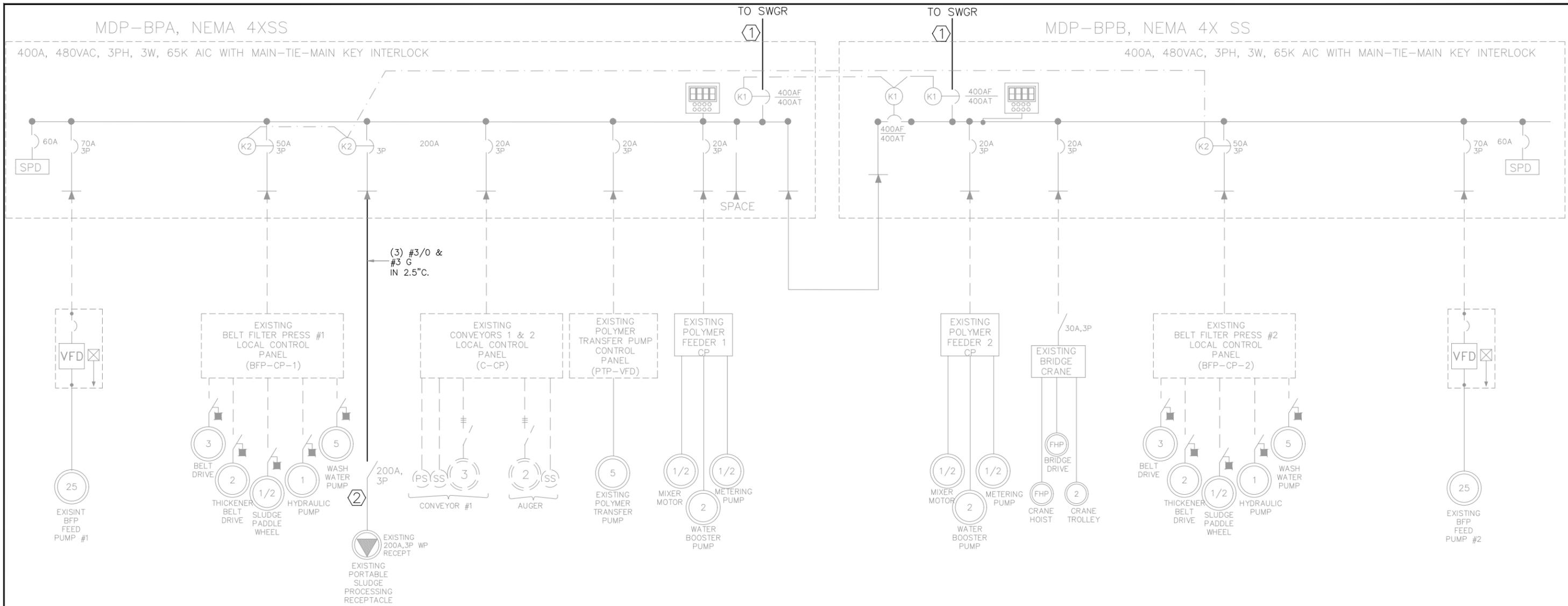


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FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT
EXISTING MCC7
SINGLE LINE DRAWING

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MAIN DISTRIBUTION PANEL MDP-BPA SINGLE LINE DIAGRAM

N.T.S.

MAIN DISTRIBUTION PANEL MDP-BPB SINGLE LINE DIAGRAM

N.T.S.

LOAD SUMMARY		
DESCRIPTION	HP	KVA
EXISTING CONNECTED LOAD	49.5	50
LOAD DEMOED	0	0
LOAD ADDED	0	133
NET LOAD CHANGE	0	133
TOTAL CONNECTED HP	49.5	183
NEW LOAD DEMAND (STAND-BY LOADS)	(11.5)	(11.6)
TOTAL HP DEMAND	38	171
ADJUSTED FLA	206A	206A
KVA LOAD ADDED	--	--
TOTAL FLA		206A

GENERAL NOTES:
 1. THIS DRAWING DOES NOT INDICATE ALL CONDUIT AND WIRE REQUIRED. SEE ADDITIONAL REQUIREMENTS ON PLAN DRAWINGS, ELEMENTARY DRAWINGS & PLC-I/O LIST.

KEYNOTES:
 1. REPLACE EXISTING TEMPORARY FEED WITH PERMANENT FEEDER FROM SWITCHGEAR. REFER TO SWITCHGEAR SINGLE DRAWING.
 2. REFEED EXISTING PORTABLE SLUDGE DISCONNECT AND RECEPTACLE.

LOAD SUMMARY		
DESCRIPTION	HP	KVA
EXISTING CONNECTED LOAD	42.5	43
LOAD DEMOED	0	0
LOAD ADDED	0	0
NET LOAD CHANGE	0	0
TOTAL CONNECTED HP	42.5	43
NEW LOAD DEMAND (STAND-BY LOADS)	(0)	(0)
TOTAL HP DEMAND	42.5	43
ADJUSTED FLA	52A	52A
KVA LOAD ADDED	--	--
TOTAL FLA		52A

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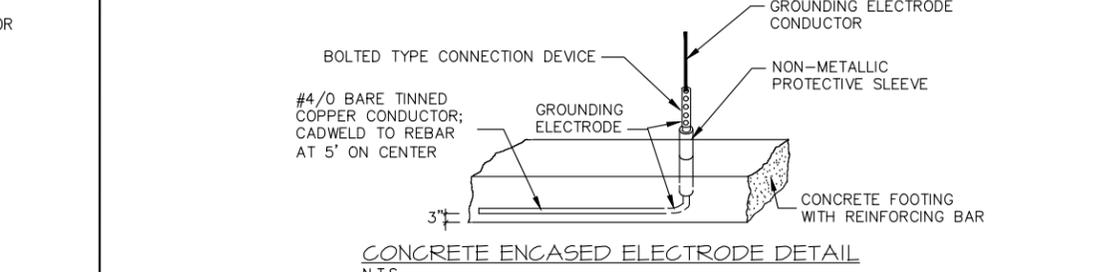
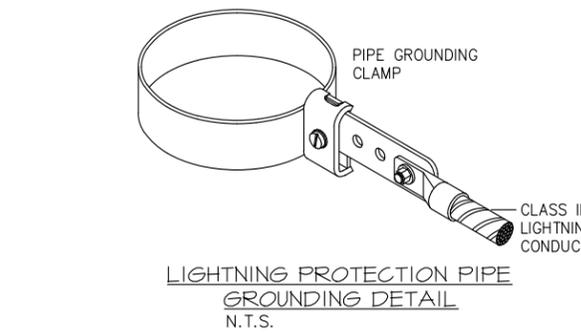
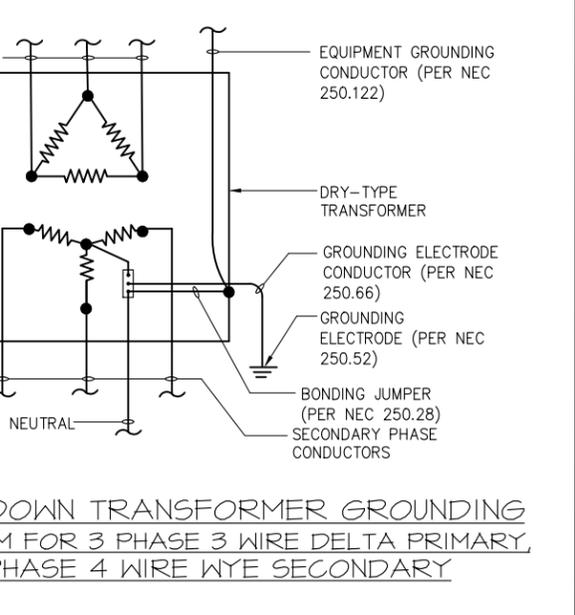
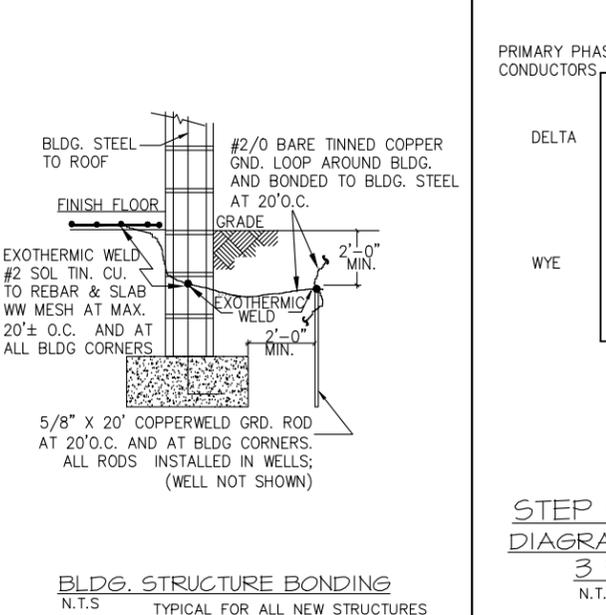
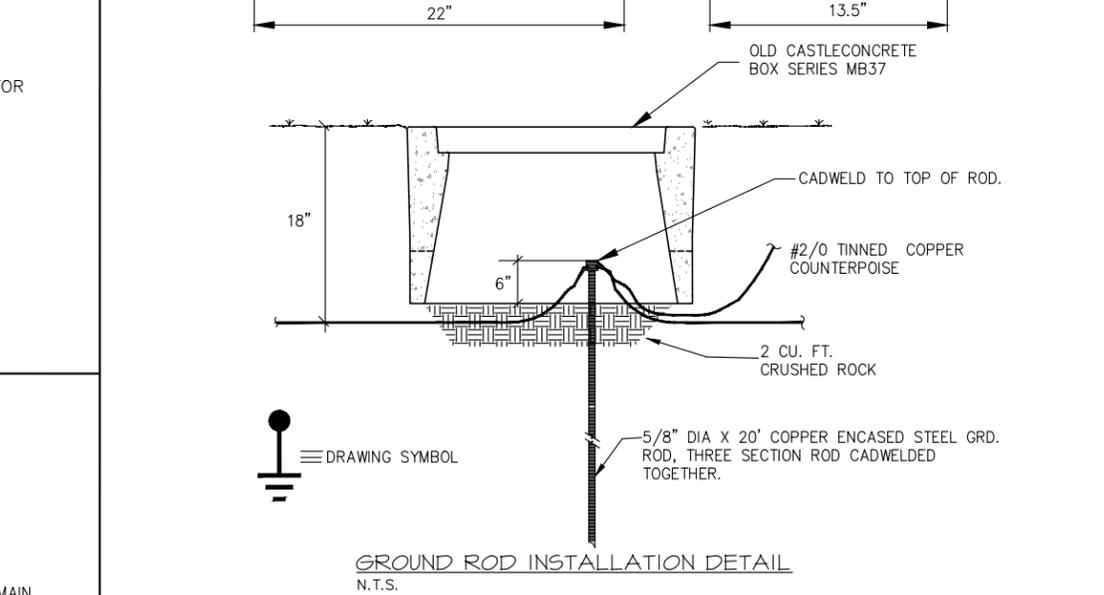
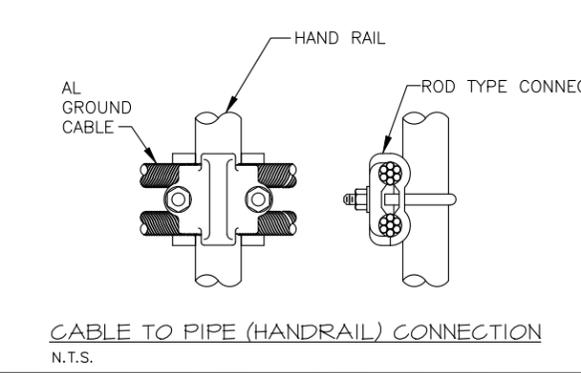
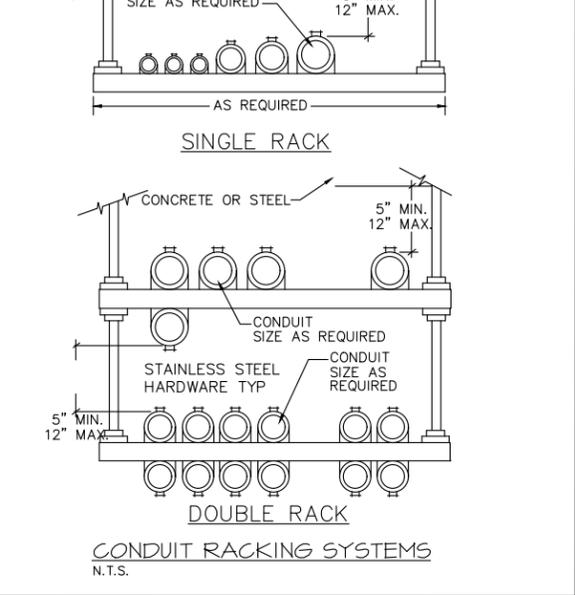
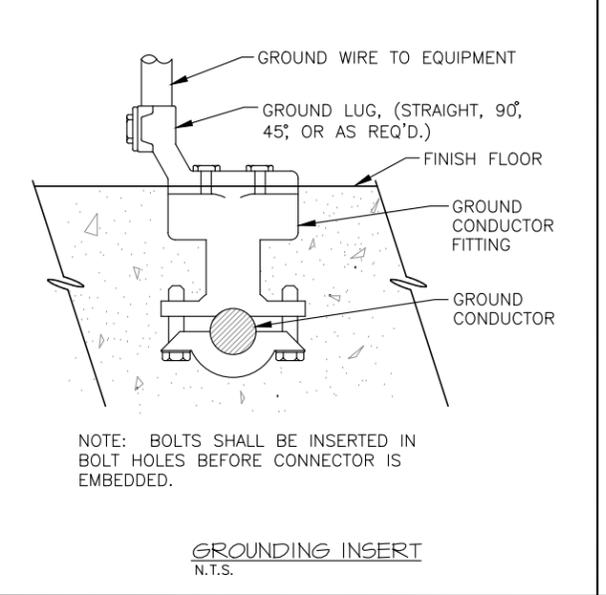
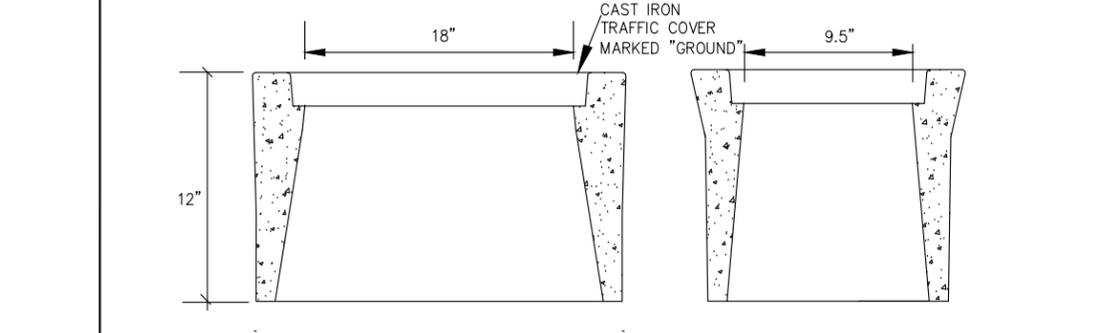
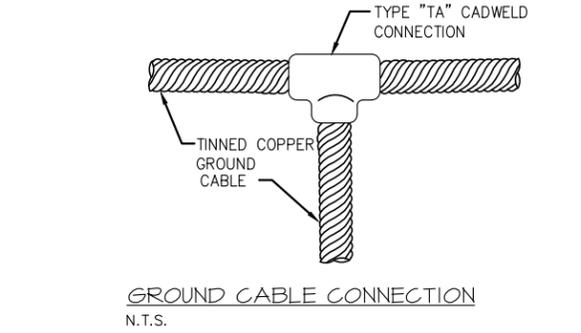
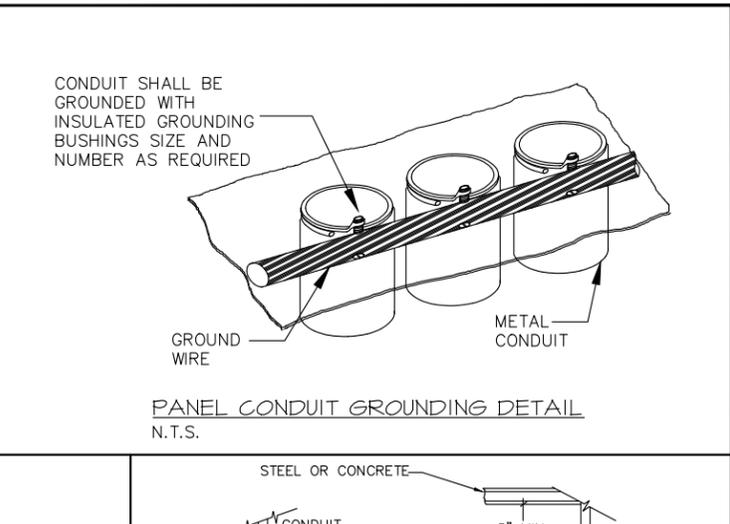
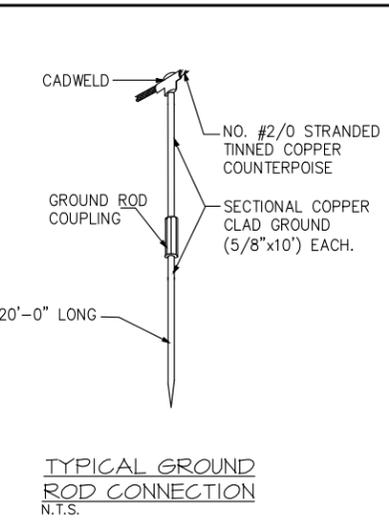
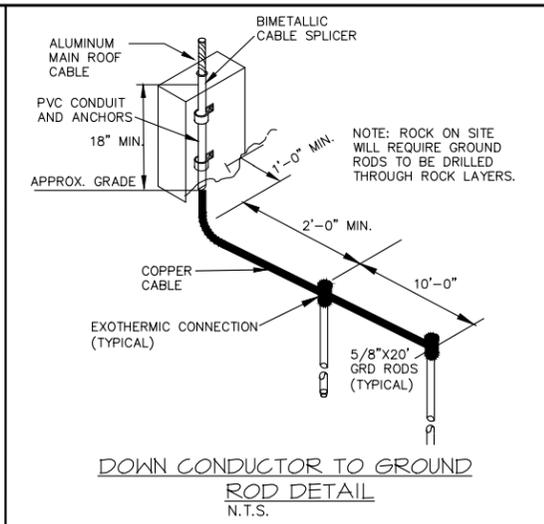
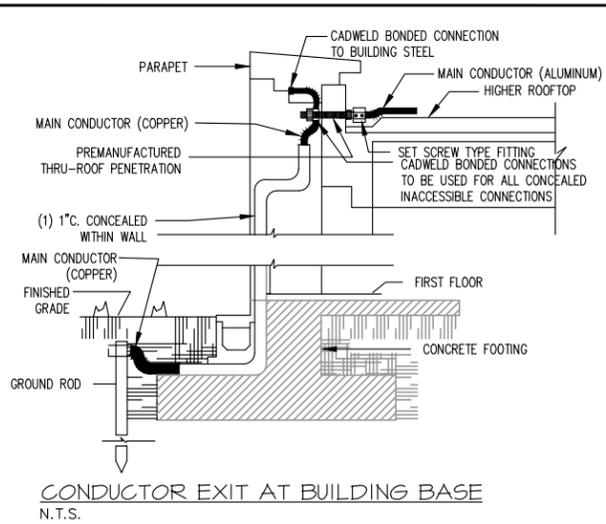
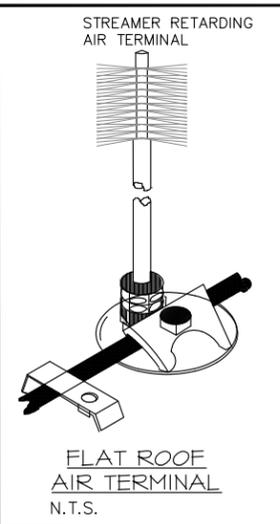
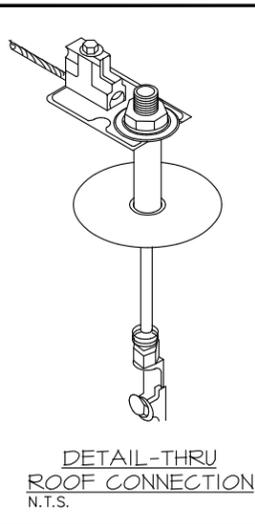
DESIGN BY:	T.M.P.
DRAWN BY:	T.M.P.
CHECKED BY:	T.M.P.
CAD FILE:	E412.dwg



LEE COUNTY
 SOUTHWEST FLORIDA
 DEPARTMENT OF PUBLIC WORKS
 UTILITIES DIVISION

FORT MYERS BEACH WATER RECLAMATION FACILITY
 SWITCHGEAR REPLACEMENT
 MODIFICATIONS TO EXISTING MDP-BPA & BPB
 SINGLE LINE DRAWING

ISSUED FOR:	BIDDING
DATE:	05/2023
SHEET NO.:	E412



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ELECTRICAL * INSTRUMENTATION * CONTROL

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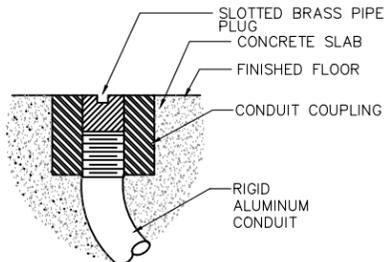
LEE COUNTY
SOUTHWEST FLORIDA
DEPARTMENT OF PUBLIC WORKS
UTILITIES DIVISION

FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT

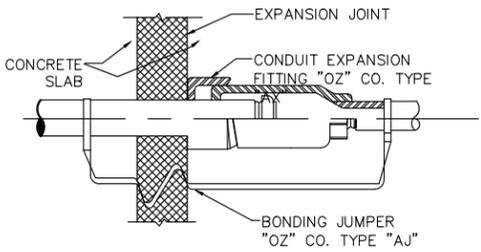
ELECTRICAL DETAILS

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SHEET NO.: **E901**

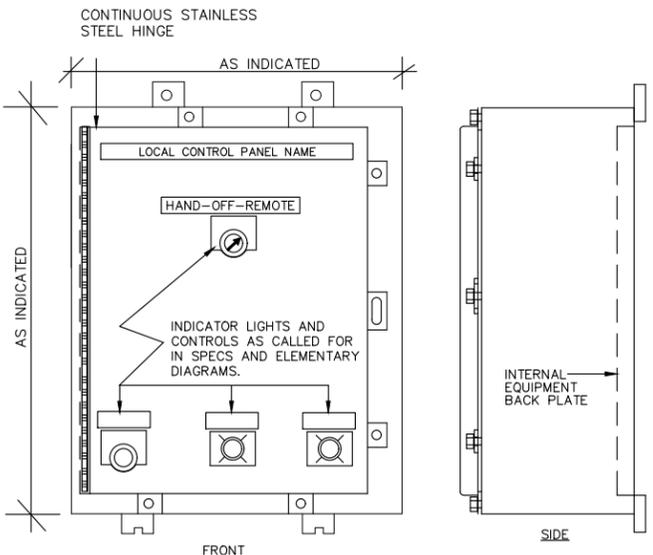
K:\LCU FMB Switchgear Replacement\901.dwg Plotter: Sep 12, 2023 - 5:03pm by joshuah



DETAIL OF CONDUIT TERMINATION STUB OUT
N.T.S.

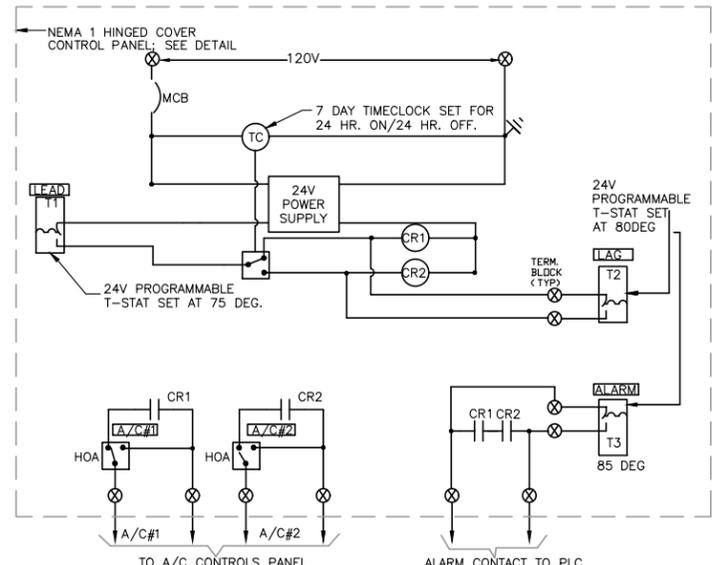


RIGID EXPANSION FITTING
N.T.S.



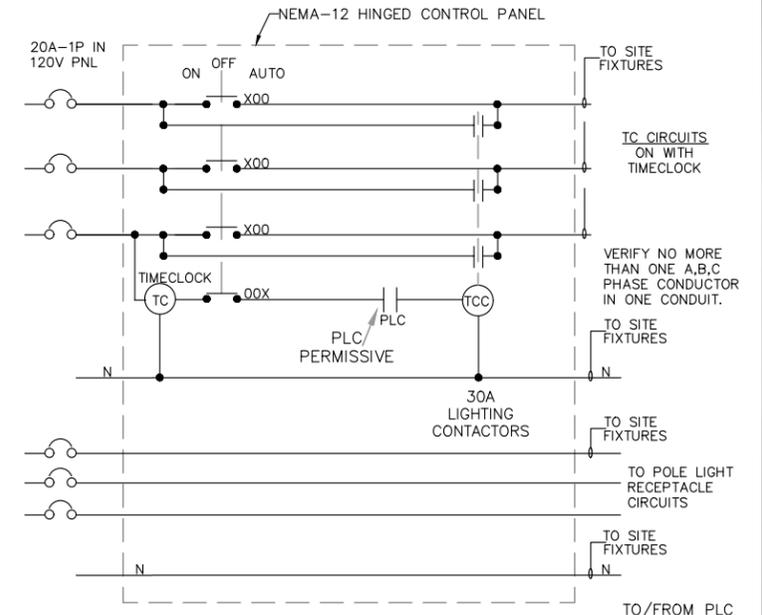
NEMA 4X ST. STEEL CABINET FOR EXTERIOR LOCATIONS.
NEMA 1 STEEL CABINET FOR INTERIOR LOCATIONS.

TYPICAL CONTROL PANEL ELEVATION
N.T.S.

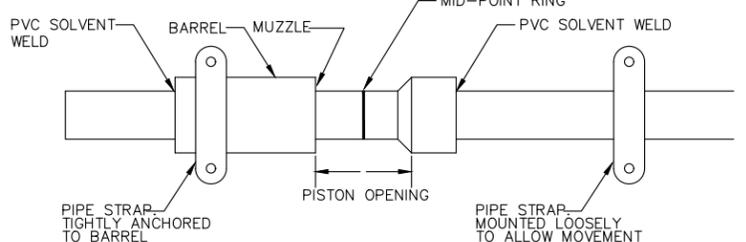


MOUNT ALL T-STATS ON CONTROL PANEL FRONT
PROVIDE LOCKABLE PLEXIGLASS COVERS FOR T-STATS.

ELECTRICAL ROOM A/C CONTROL
N.T.S.

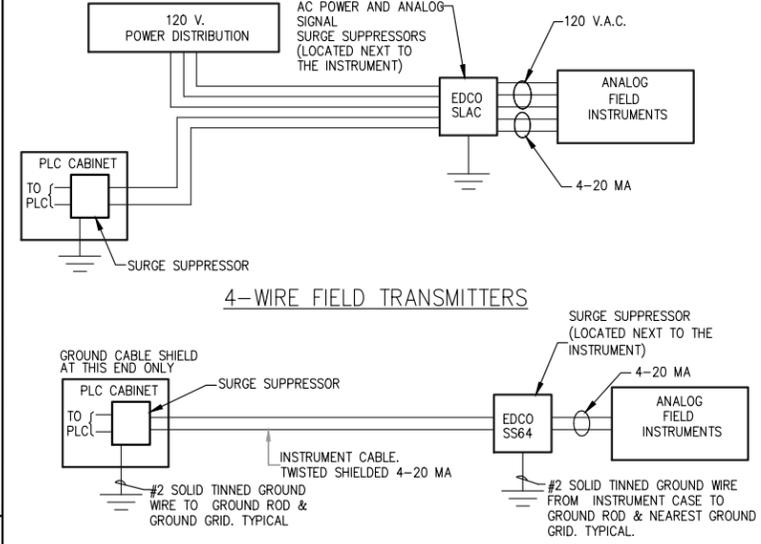


TYPICAL CONTACTOR CONTROLLED EXTERIOR LIGHTING CONTROL PANEL
N.T.S.

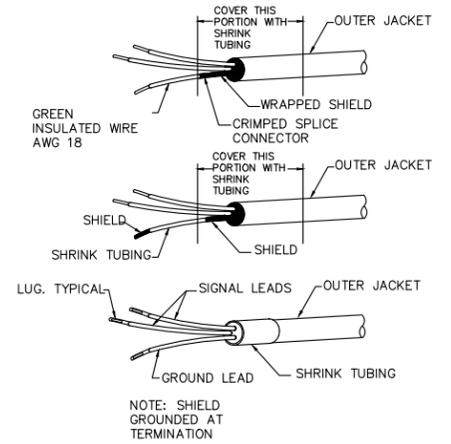


- GENERAL NOTES:
1. ALL EXPANSION COUPLINGS TO BE STANDARD LENGTH AND LISTED FOR WET LOCATIONS. SHORT EXPANSION COUPLINGS ARE NOT ACCEPTABLE.
 2. ALL EXPANSION COUPLINGS SHALL REQUIRE (2) "O" RINGS TO BE CONSIDERED "SUITABLE FOR WET LOCATIONS".
 3. A MINIMUM OF 6" OF EXPANSION PER 100'-0" RUN IS REQUIRED, BASED ON 100°F.

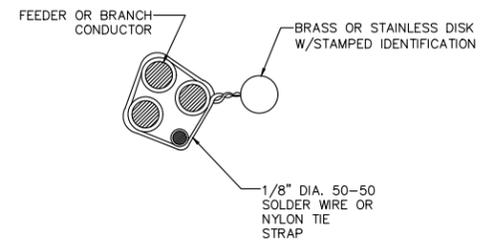
PVC EXPANSION FITTING
N.T.S.



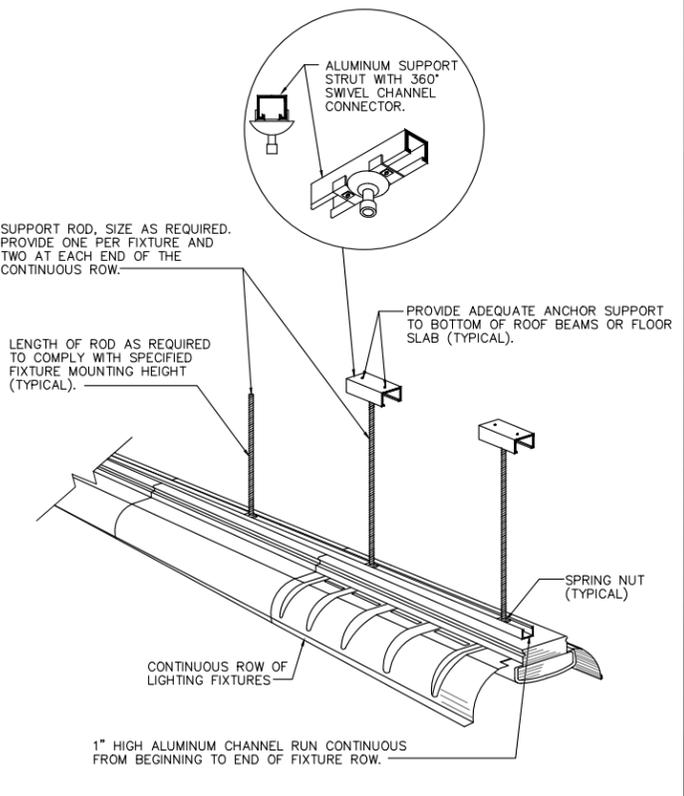
INSTRUMENTATION GROUNDING & SURGE PROTECTION
N.T.S.



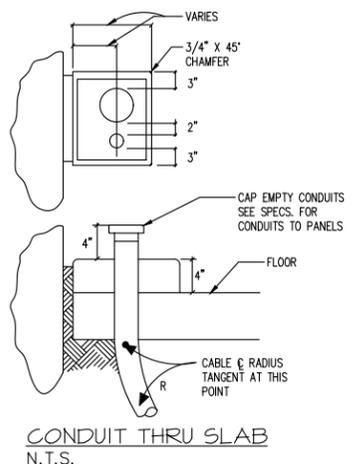
TERMINATION OF SHIELDED INSTRUMENT & CONTROL CABLE
N.T.S.



U.G. CABLE TAG DETAIL
N.T.S.



LIGHT FIXTURE PENDANT MOUNTING DETAIL
N.T.S.



CONDUIT THRU SLAB
N.T.S.

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CHECKED BY: T.M.P.
CAD FILE: E902.dwg



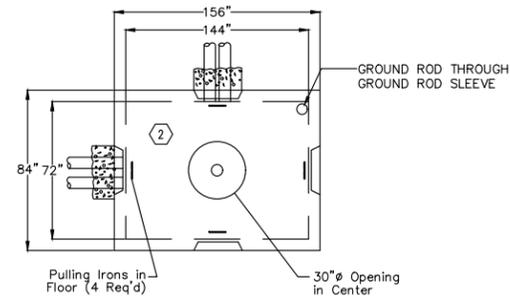
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SOUTHWEST FLORIDA
DEPARTMENT OF PUBLIC WORKS
UTILITIES DIVISION

FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT

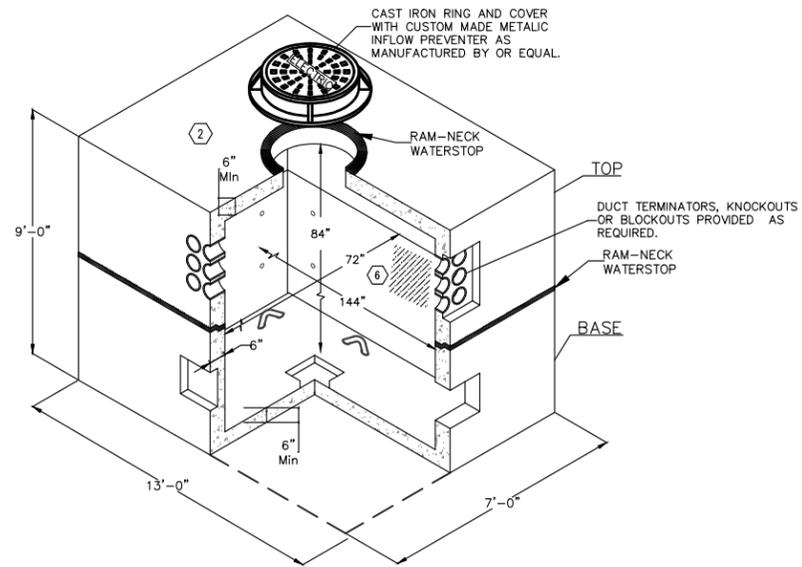
ELECTRICAL DETAILS

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DATE: **05/2023**
SHEET NO.: **E902**

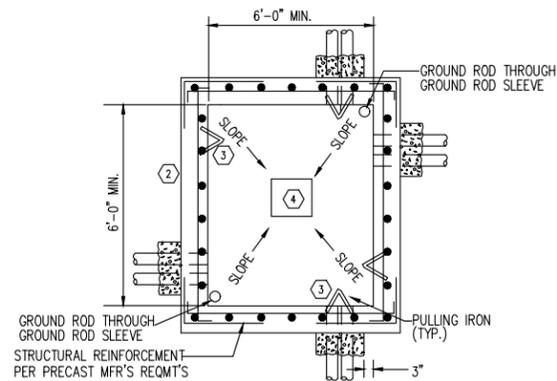
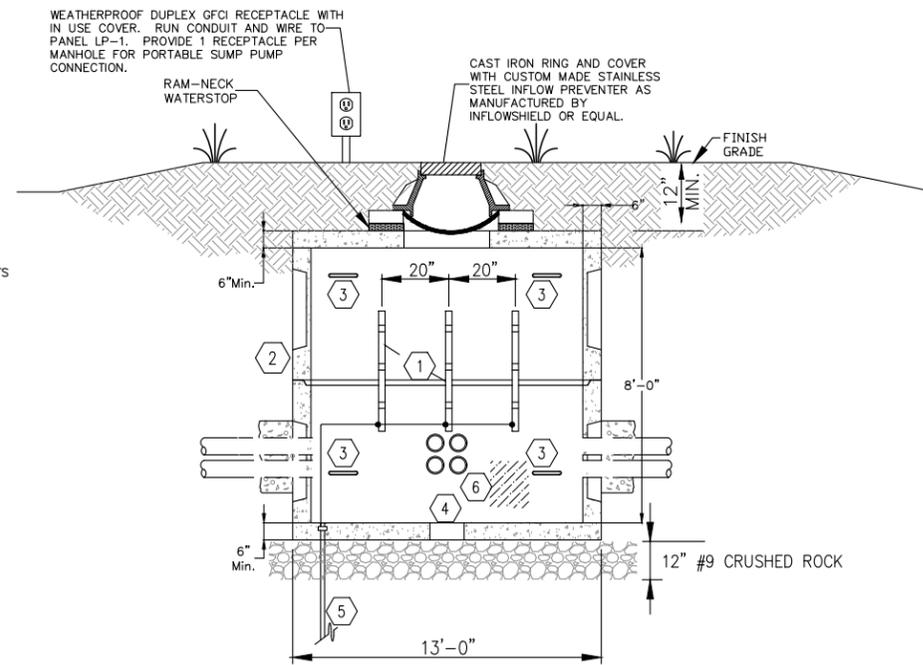
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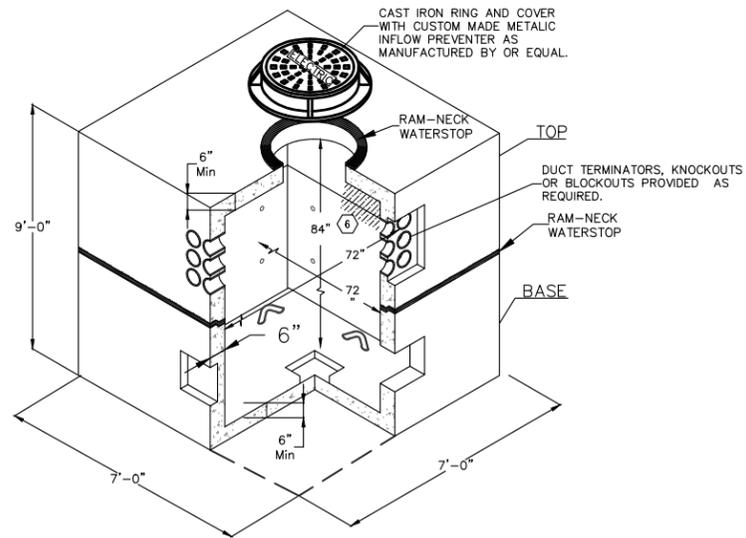
POWER MANHOLE A TOP PLAN VIEW
N.T.S.



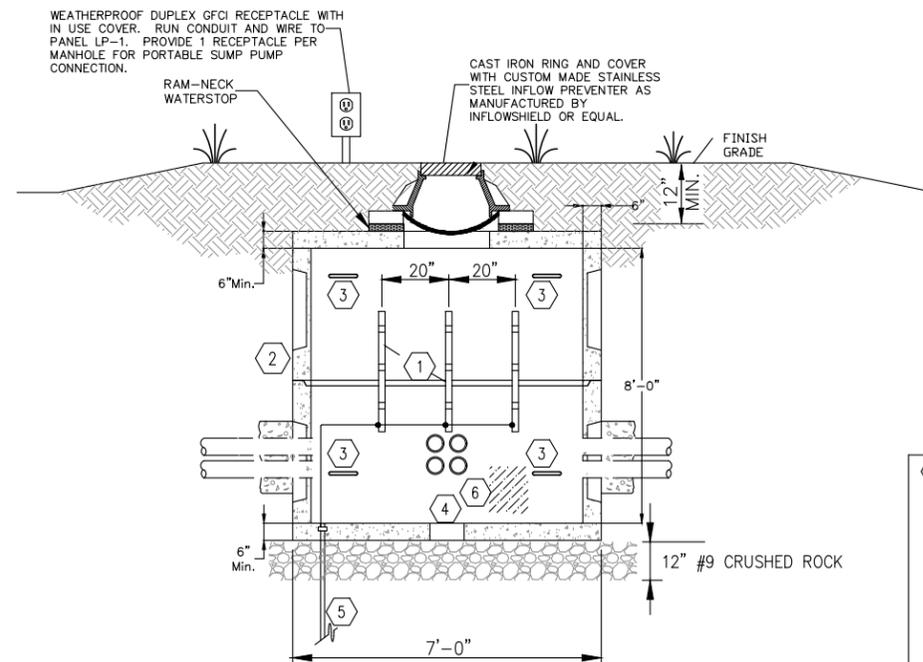
POWER MANHOLE A SECTION VIEWS
N.T.S.



POWER MANHOLE B PLAN VIEW
N.T.S.



POWER MANHOLE B SECTION VIEWS
N.T.S.



POWER, INSTRUMENTATION, & CONTROL MANHOLE DETAILS
N.T.S.

- MANHOLE KEYNOTES:**
1. CABLE RACKS, STAINLESS STEEL OR NON METALLIC WITH STAINLESS HARDWARE.
 2. PRECAST REINFORCED CONCRETE MANHOLE, MINIMUM 4000PSI, 28 DAY CONCRETE, WITH 30" DIAMETER CAST IRON LID. ALL STRUCTURES SHALL BE RATED H20 TRAFFIC BEARING.
 3. PULLING-IN-IRONS, INSTALL OPPOSITE CONDUIT ENTRANCE POSITION BELOW AND ABOVE LEVEL OF CONDUIT ENTRANCE.
 4. CATCH BASIN, 18"x18".
 5. GROUND ROD, 5/8"x10'-0", COPPER CLAD. GROUT AND SEAL GROUND ROD PENETRATION PRIOR TO APPLYING MANHOLE COATING SYSTEM.
 6. COAT ENTIRE INTERIOR OF MANHOLE, WALLS FLOORS, CEILING AND AROUND CONDUIT ENTRY WITH IET COATING SYSTEM. APPLY COATING SYSTEM AFTER COMPLETION OF CONDUIT ROUGH-IN.

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LEE COUNTY
SOUTHWEST FLORIDA
DEPARTMENT OF PUBLIC WORKS
UTILITIES DIVISION

FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT

ELECTRICAL DETAILS

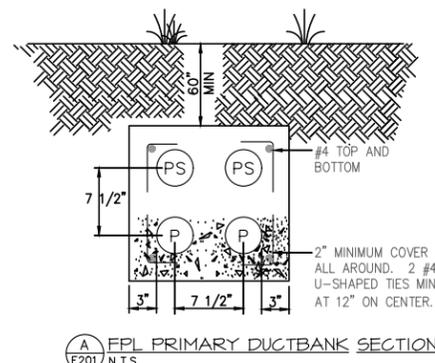
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E903

DUCTBANK DESIGNATIONS

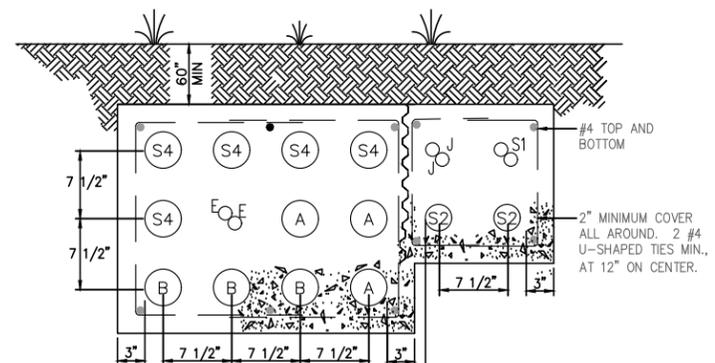
SM1	4" CONDUIT TO SWITCHGEAR SERVICE MAIN#1
SM2	4" CONDUIT TO SWITCHGEAR SERVICE MAIN#2
G	4" CONDUIT TO GENERATOR TERMINATION CABINET
P	5" FPL PROVIDED CONDUIT, FPL PRIMARY
PS	5" FPL PROVIDED CONDUIT, SPARE
A	4" MCC-6
B	4" MCC-7
C	2" REUSE PUMP
D	3.5" EFFLUENT PUMP VFD
E	1.25" SLUDGE TRANSFER PUMP
F	0.75" POWER CONDUIT
H	1" POWER CONDUIT
I	1" INSTRUMENT CONDUIT
J	1.25" INSTRUMENT CONDUIT
S1	1" CONDUIT SPARE
S2	2" CONDUIT SPARE
S3	3" CONDUIT SPARE
S4	4" CONDUIT SPARE
S5	1.25" CONDUIT SPARE

GENERAL NOTE:

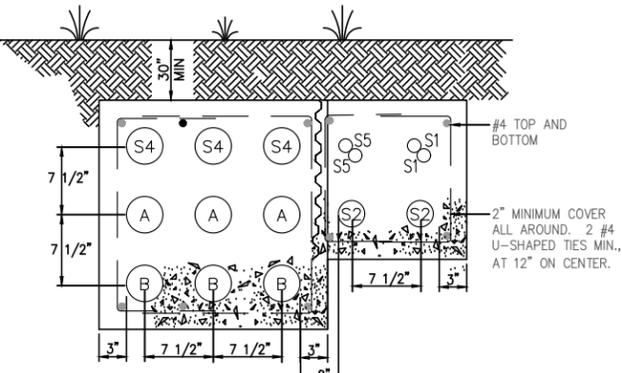
- SEE DETAILS & SPECS FOR TYPICAL DUCTBANK CONSTRUCTION. SPECIFIC CROSS SECTIONS DO NOT SHOW CONSTRUCTION DETAILS.
- ALL ELEVATIONS AND MINIMUM COVERAGE PROVIDED ARE BASED ON PROPOSED DESIGN YARD PIPING ELEVATION. CONTRACTOR TO FIELD VERIFY AND COORDINATE EXACT ELEVATIONS.
- SECTIONS SHOW MAJOR CONDUITS. THEY DO NOT SHOW ALL BRANCH CIRCUIT CONDUITS. SIZES SHOWN ARE MINIMUM REQUIRED.



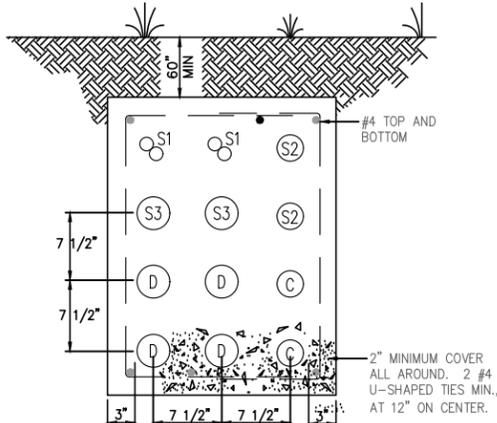
A FPL PRIMARY DUCTBANK SECTION
N.T.S.



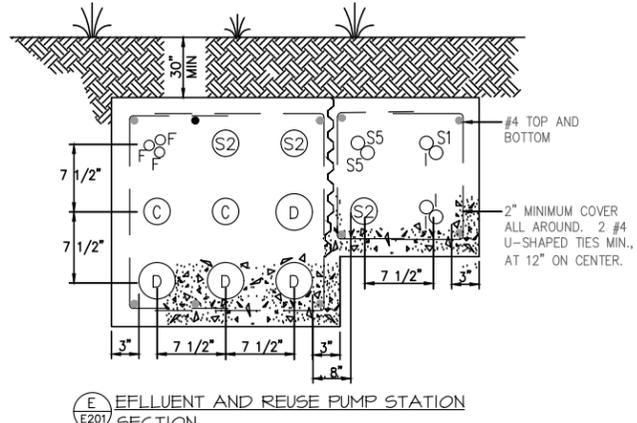
B FILTERS, CHLORINE CONTACT AND FUTURE SECTION
N.T.S.



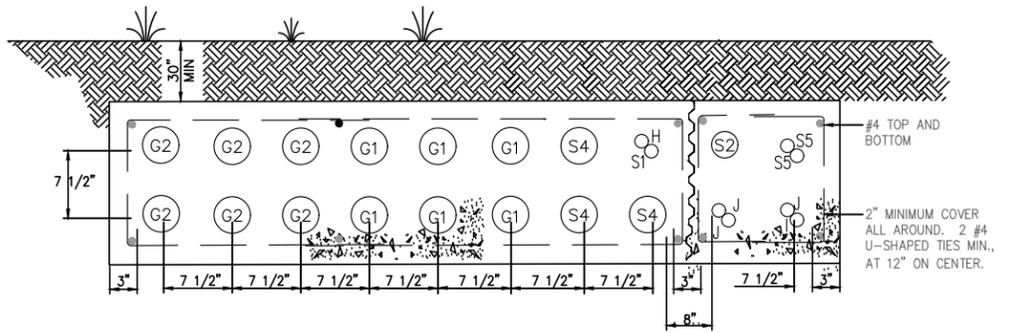
C FILTERS AND CHLORINE CONTACT SECTION
N.T.S.



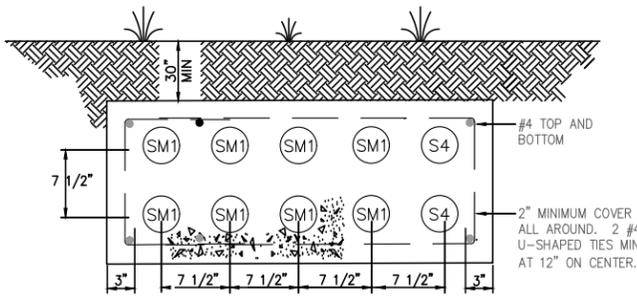
D EFFLUENT, REUSE PUMP STATION AND SPARES SECTION
N.T.S.



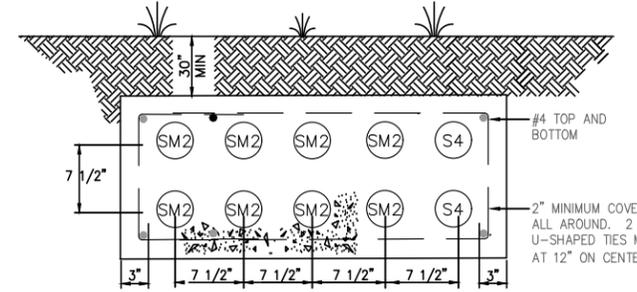
E EFFLUENT AND REUSE PUMP STATION SECTION
N.T.S.



F GENERATOR 1 AND 2 DUCTBANK SECTION
N.T.S.

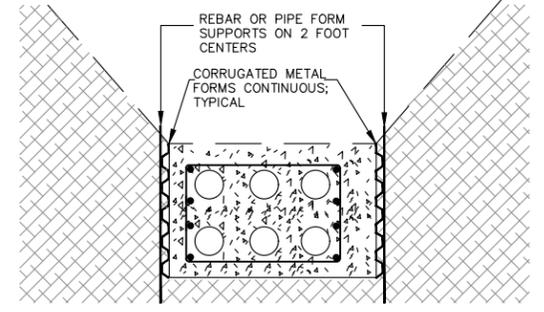


G ELECTRICAL SERVICE LATERAL DUCTBANK SECTION
N.T.S.



H ELECTRICAL SERVICE LATERAL DUCTBANK SECTION
N.T.S.

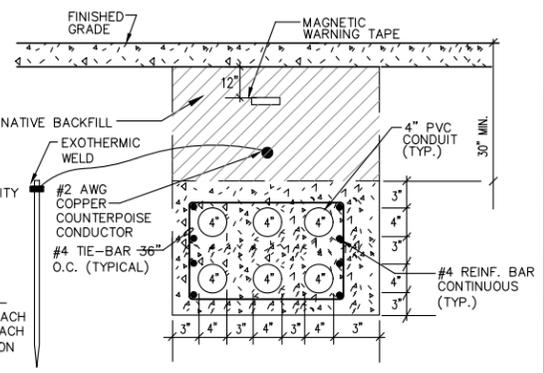
DUCTBANK CROSS SECTIONS
N.T.S.



DUCT BANKS WILL BE FORM AND POUR CONSTRUCTION. FORMS WILL BE BACKFILLED PRIOR TO POUR; FORMS WILL BE SUPPORTED WITH REBAR OR OTHER MEANS. OPEN TRENCH POURING OF DUCTBANKS WILL NOT BE PERMITTED.

TYPICAL DUCTBANK CONSTRUCTION
N.T.S.

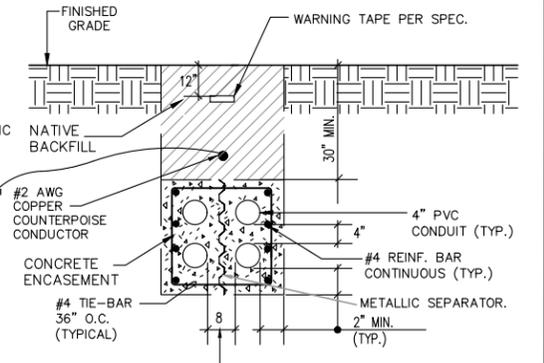
NOTE: COORDINATE DUCTBANK WITH OTHER SITE UTILITIES PRIOR TO TRENCHING



PROVIDE 24" MINIMUM SEPARATION BETWEEN POWER AND SIGNAL DUCTBANKS; COMBINATION DUCTBANKS NOT ACCEPTABLE.

TYPICAL FEEDER DUCTBANK SECTION
N.T.S.

TEST WELL NOT SHOWN FOR CLARITY



PROVIDE 24" MINIMUM SEPARATION BETWEEN POWER AND SIGNAL CONDUITS; THIS SPACING CAN BE REDUCED TO 8" WITH A CONTINUOUS METALLIC BARRIER SEPARATOR.

GENERAL NOTE:
DUCTBANK SECTIONS DO NOT SHOW REQUIRED BRANCH CIRCUIT AND I&C DEVICE CONDUITS AS INDICATED ON PLANS. TYPICAL.

TYPICAL BRANCH CIRCUIT DUCTBANK SECTION
N.T.S.

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CAD FILE:	E904.dwg



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FORT MYERS BEACH WATER RECLAMATION FACILITY SWITCHGEAR REPLACEMENT	ISSUED FOR:	BIDDING
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	SHEET NO.:	E904

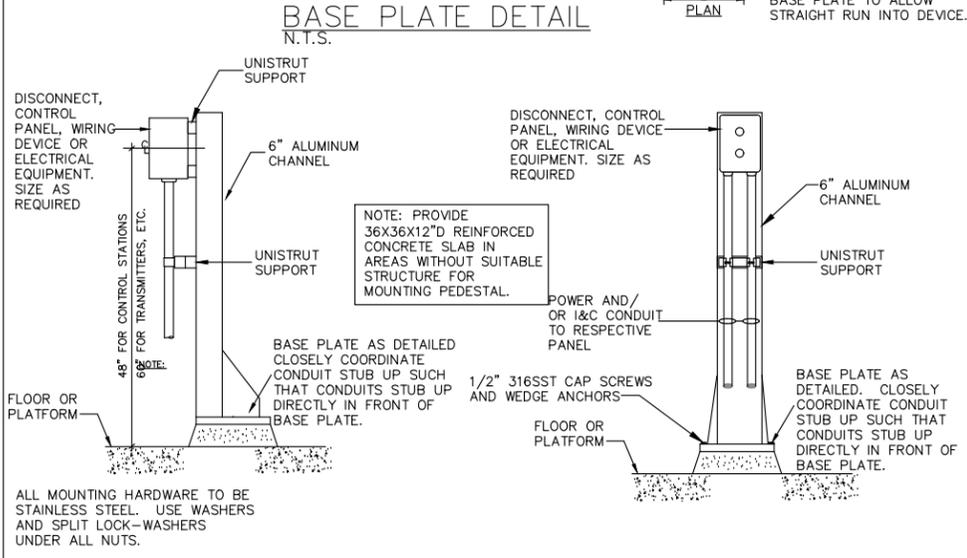
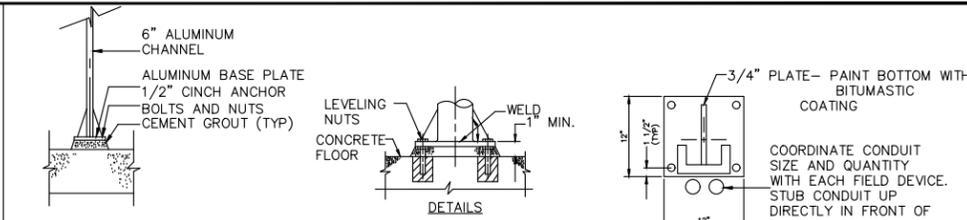
PANEL: LDP											
400 AMP BUS RATING			MCB: 300A			120/208 VOLTS 3 PHASE 4 WIRE 60 HZ			FED FROM: MCC-1A/B VIA XFMR		
SURFACE MOUNTED											
LOCATION: SWITCHGEAR BUILDING											
42 POLES											
ENCLOSURE TYPE: NEMA 1											
DESCRIPTION	NOTES	VA LOAD	AMP/ POLES	CKT #	CKT #	AMP/ POLES	VA LOAD	NOTES	DESCRIPTION	NOTES	VA LOAD
PANELBOARD LP1		9593	100/3	1	2	100/3			FUTURE PANELBOARD LP2		
				3	4						
				5	6						
				7	8						
PANELBOARD LVG		13594	60/3	9	10	150/3			FUTURE IDP VIA UPS		
				11	12						
				13	14						
				15	16						
				17	18						
				19	20						
				21	22						
				23	24						
				25	26						
				27	28						
				29	30						
				31	32						
				33	34						
				35	36						
				37	38						
				39	40						
				41	42						
TOTAL CONNECTED VA:		23187	TOTAL CONNECTED AMPS:		64.4	TOTAL CONNECTED VA:		23187	TOTAL DEMAND AMPS:		64.4
TOTAL DEMAND VA:		23187	TOTAL DEMAND AMPS:		64.4	TOTAL DEMAND VA:		23187	TOTAL DEMAND AMPS:		64.4

PANEL: LP-1											
250 AMP BUS RATING			MCB: 100A			120/208 VOLTS 3 PHASE 4 WIRE 60 HZ			FED FROM: LDP		
SURFACE MOUNTED											
LOCATION: SWITCHGEAR BUILDING											
42 POLES											
ENCLOSURE TYPE: NEMA 1											
DESCRIPTION	NOTES	VA LOAD	AMP/ POLES	CKT #	CKT #	AMP/ POLES	VA LOAD	NOTES	DESCRIPTION	NOTES	VA LOAD
SWITCHGEAR ROOM EXTERIOR LIGHTING		280	20/1	1	2	30/2	1150		SWITCHGEAR ROOM INTERIOR LIGHTING		
SWITCHGEAR ROOM RECEPTACLES		720	20/1	3	4	20/1	720		SWITCHGEAR ROOM RECEPTACLES		
MANHOLE SUMP PUMP RECEPTACLES		360	20/1	5	6	20/1	540		SWITCHGEAR ROOM RECEPTACLES		
MANHOLE SUMP PUMP RECEPTACLES		360	20/1	7	8	20/1	360		DISTRIBUTION FLOWMETER 5111		
MANHOLE SUMP PUMP RECEPTACLES		360	20/1	9	10	20/1	240		STORAGE TANK LEVEL TRANSMITTER 512		
SPARE			20/1	11	12	20/1	600		REUSE PUMP CONTROL PANEL		
SPARE			20/1	13	14	20/1			SPARE		
SPARE			20/1	15	16	20/1			SPARE		
SPARE			20/1	17	18	20/1			SPARE		
SPARE			20/1	19	20	20/1			SPARE		
SPARE			20/1	21	22	20/1			SPARE		
SPARE			20/1	23	24	20/1			SPARE		
SPARE			20/1	25	26	20/1			SPARE		
SPARE			20/1	27	28	20/1			SPARE		
SPARE			20/1	29	30	20/1			SPARE		
SPACE			-	31	32	20/1			SPACE		
SPACE			-	33	34	-			SPACE		
SPACE			-	35	36	-			SPACE		
SPACE			-	37	38	-			SPACE		
SPACE			-	39	40	-			SPACE		
SPACE			-	41	42	-			SPACE		
TOTAL CONNECTED VA:		5690	TOTAL CONNECTED AMPS:		15.8	TOTAL CONNECTED VA:		5690	TOTAL DEMAND AMPS:		15.8
TOTAL DEMAND VA:		5690	TOTAL DEMAND AMPS:		15.8	TOTAL DEMAND VA:		5690	TOTAL DEMAND AMPS:		15.8

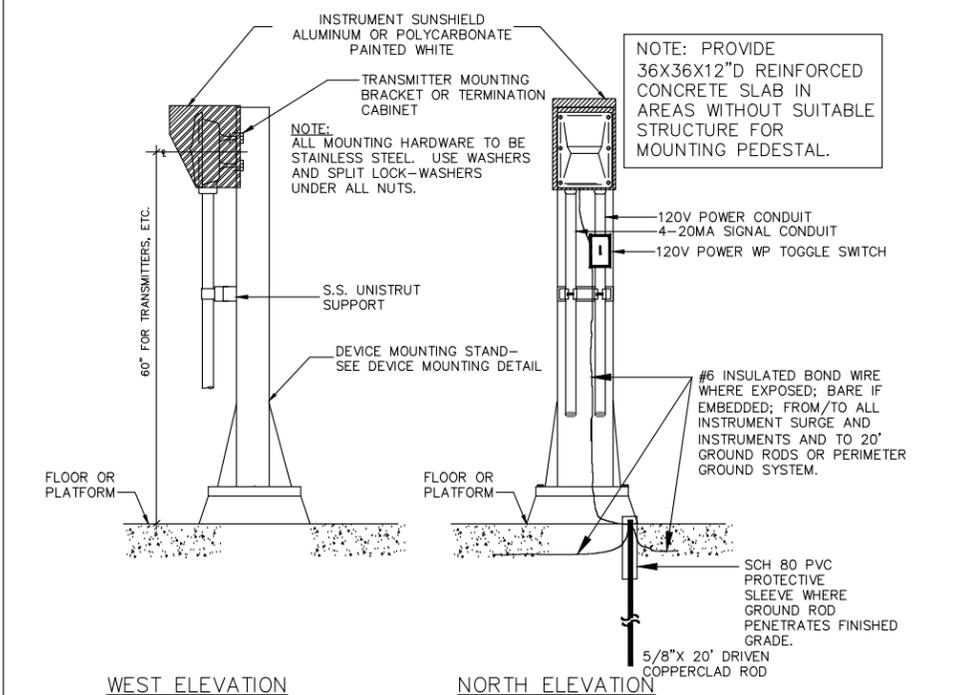
PANEL: LVG											
150 AMP BUS RATING			MCB: 60A			120/208 VOLTS 3 PHASE 4 WIRE 60 HZ			FED FROM: LDP		
SURFACE MOUNTED											
LOCATION: GENERATOR 1 ENCLOSURE											
18 POLES											
ENCLOSURE TYPE: NEMA 1											
DESCRIPTION	NOTES	VA LOAD	AMP/ POLES	CKT #	CKT #	AMP/ POLES	VA LOAD	NOTES	DESCRIPTION	NOTES	VA LOAD
GENERATOR ENCLOSURE LIGHTING		260	20/1	1	2	20/1	300		GENERATOR BATTERY CHARGER		
GENERATOR WATER HEATER		4992	20/1	3	4	20/1	1920		GENERATOR STRIP HEATER		
GENERATOR WATER HEATER		4992	20/1	5	6	20/1	50		GENERATOR EXTERIOR LIGHTS		
GENERATOR EXTERIOR RECEPTS		720	20/1	7	8	20/1	360		GENERATOR RECEPTS		
SPACE			20/1	9	10	20/1			SPACE		
SPACE			20/1	11	12	20/1			SPACE		
SPACE			20/1	13	14	20/1			SPACE		
SPACE			20/1	15	16	20/1			SPACE		
SPACE			20/1	17	18	20/1			SPACE		
TOTAL CONNECTED VA:		13594	TOTAL CONNECTED AMPS:		37.7	TOTAL CONNECTED VA:		13594	TOTAL DEMAND AMPS:		37.7
TOTAL DEMAND VA:		13594	TOTAL DEMAND AMPS:		37.7	TOTAL DEMAND VA:		13594	TOTAL DEMAND AMPS:		37.7

PANEL: HP-1											
250 AMP BUS RATING			MCB: 200A			277/480 VOLTS 3 PHASE 4 WIRE 60 HZ			FED FROM: MCC-1A		
SURFACE MOUNTED											
LOCATION: SWITCHGEAR BUILDING											
42 POLES											
ENCLOSURE TYPE: NEMA 1											
DESCRIPTION	NOTES	VA LOAD	AMP/ POLES	CKT #	CKT #	AMP/ POLES	VA LOAD	NOTES	DESCRIPTION	NOTES	VA LOAD
CU-1	1,2	26887	80/3	1	2	80/3	26887	1,2	CU-2		
				3	4						
				5	6						
				7	8						
				9	10						
				11	12						
				13	14						
				15	16						
				17	18						
				19	20						
				21	22						
				23	24						
				25	26						
				27	28						
				29	30						
				31	32						
				33	34						
				35	36						
				37	38						
				39	40						
				41	42						
TOTAL CONNECTED VA:		65678	TOTAL CONNECTED AMPS:		79.0	TOTAL CONNECTED VA:		65678	TOTAL DEMAND AMPS:		79.0
TOTAL DEMAND VA:		65678	TOTAL DEMAND AMPS:		79.0	TOTAL DEMAND VA:		65678	TOTAL DEMAND AMPS:		79.0

NOTE:
 1. VERIFY SIZE HACR RATED
 2. (3) #6 & #8G. in 1.25" C.



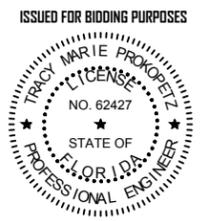
TYPICAL DEVICE MOUNTING DETAIL
N.T.S.



WEST ELEVATION NORTH ELEVATION
INSTRUMENT ELECTRICAL INSTALLATION DETAIL
N.T.S.

NOTE:
 PROVIDE FULLY ENCLOSED CABINET WHERE ORIENTATION OF INSTRUMENT IN SUNSHIELD IS NOT ACCEPTABLE TO ENGINEER.

K:\CU FMB Switchgear Replacement\905.dwg Plotter: Sep 12, 2023 - 5:05pm by joshuah



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 ELECTRICAL * INSTRUMENTATION * CONTROL
 12851 McGregor Blvd. Ste 4-402 Fort Myers, FL 33919
 239.481.6775 | Certificate of Authorization #8212

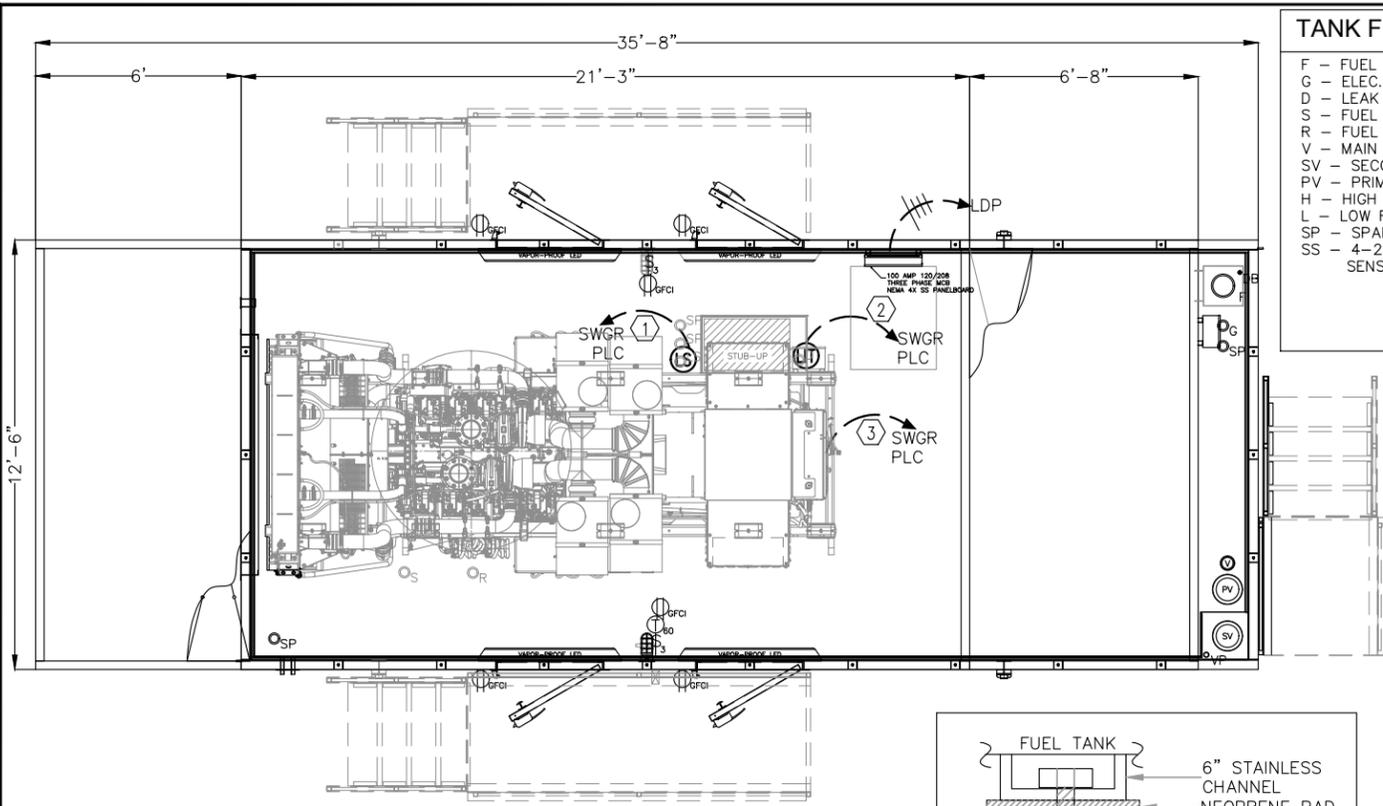
DESIGN BY:	T.M.P.		
DRAWN BY:	F.E.F.JR.		
CHECKED BY:	T.M.P.		
CAD FILE:	E905.dwg		
REV	DATE	DESCRIPTION	BY



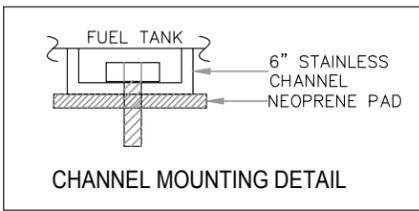
LEE COUNTY
 SOUTHWEST FLORIDA
 DEPARTMENT OF PUBLIC WORKS
 UTILITIES DIVISION

FORT MYERS BEACH WATER RECLAMATION FACILITY
 SWITCHGEAR REPLACEMENT
 PANELBOARD SCHEDULES &
 ELECTRICAL DETAILS

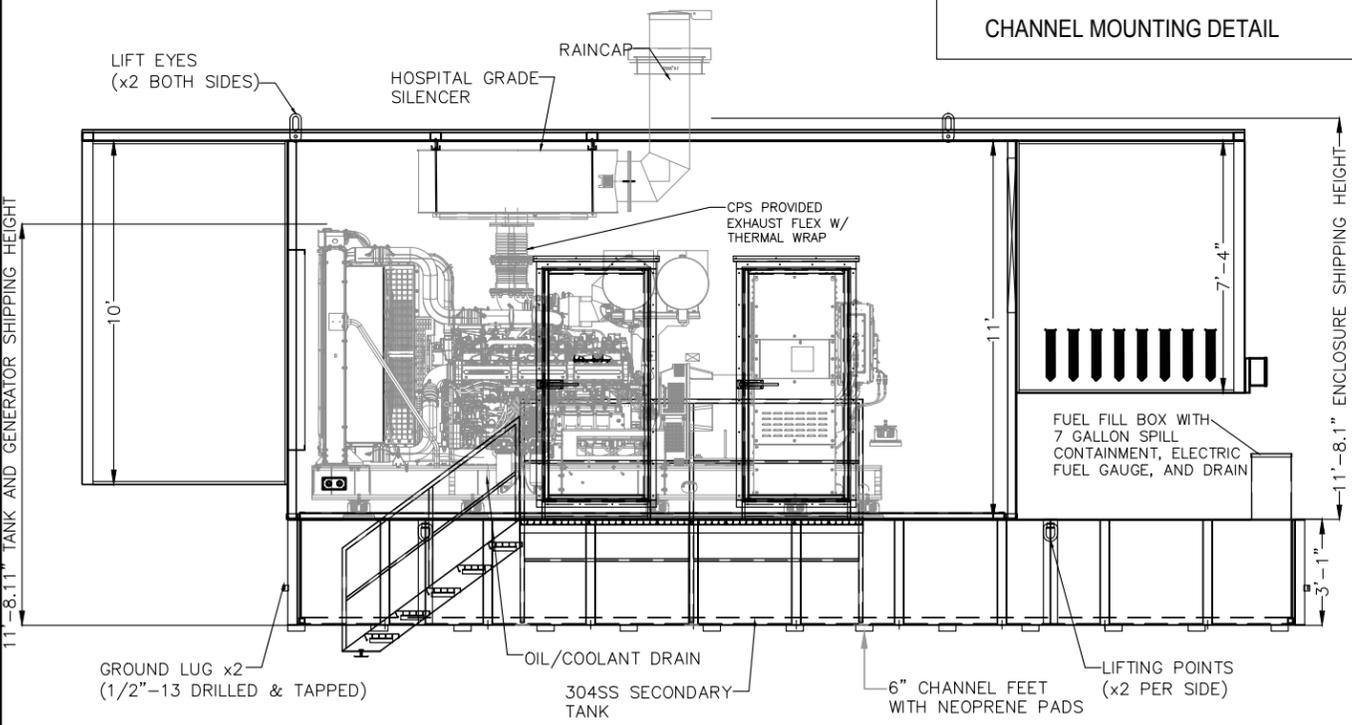
ISSUED FOR:
BIDDING
 DATE:
05/2023
 SHEET NO. :
E905



GENERATOR PLAN VIEW

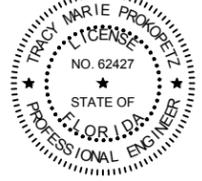


CHANNEL MOUNTING DETAIL



GENERATOR SIDE VIEW

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TANK FITTING LEGEND

- F - FUEL FILL
- G - ELEC. FUEL GAUGE
- D - LEAK DETECTOR
- S - FUEL SUPPLY
- R - FUEL RETURN
- V - MAIN VENT
- SV - SECONDARY EMERGENCY VENT
- PV - PRIMARY EMERGENCY VENT
- H - HIGH FUEL LEVEL SENSOR
- L - LOW FUEL LEVEL SENSOR
- SP - SPARE
- SS - 4-20ma VEGA ULTRASONIC SENSOR

GENERAL SHEET NOTES

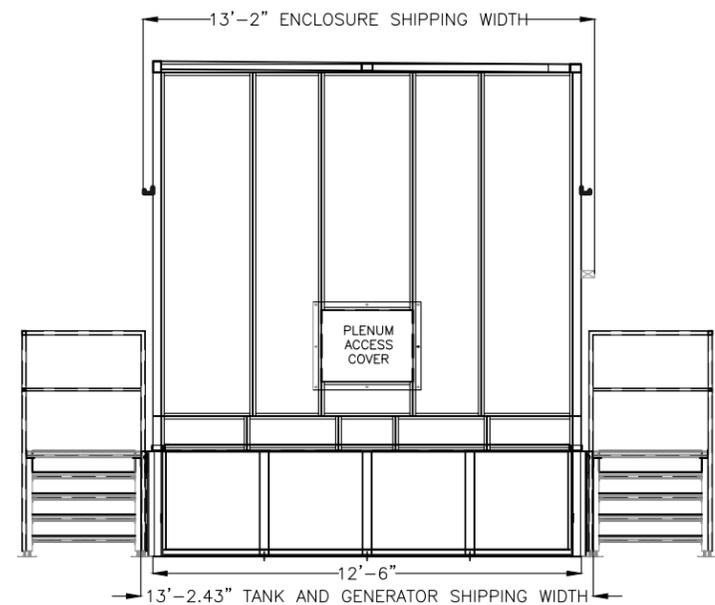
1. ALL FITTINGS TO BE S.S. THREADED PIPE. (UNLESS OTHERWISE NOTED)
2. EXTERIOR FINISH: COMM. WHITE METAL SANDBLAST, 12 TO 15 MIL INTERMEDIATE GLASS FLAKE EPOXY COAT & 2 TO 3 MIL POLYURETHANE TOP COAT
3. TANK SHALL BE PROVIDED WITH 6" WIDE X 3/8" THICK; FULL LENGTH NEOPRENE PADS FOR EACH TANK SUPPORT FOOT.
4. APPROXIMATE TANK VOLUME: 6,000 USABLE GALLONS
5. TANK CONSTRUCTION: STAINLESS STEEL OUTER SHELL; RATED UL-142 DOUBLE CONTAINMENT
6. ENCLOSURE SOUND ATTENUATION LEVEL: MINIMUM -35DBA

3' 1.5' 0 3'

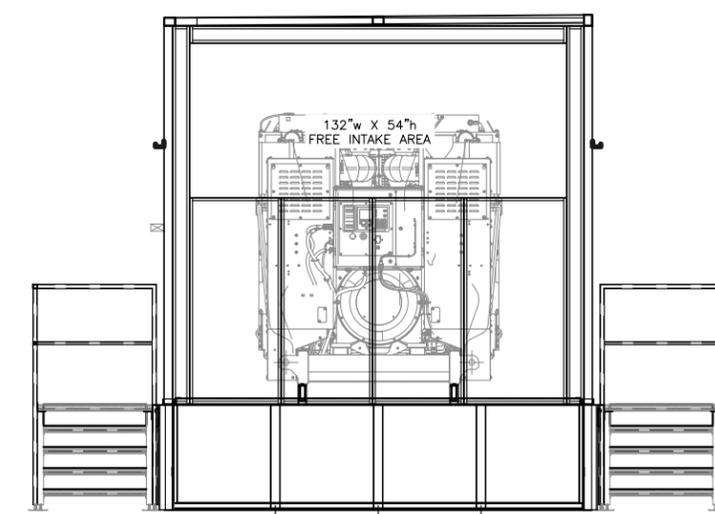
3/16"=1'-0" FOR 11"x17" SHEET
3/8"=1'-0" FOR 22"x34" SHEET

KEYNOTES

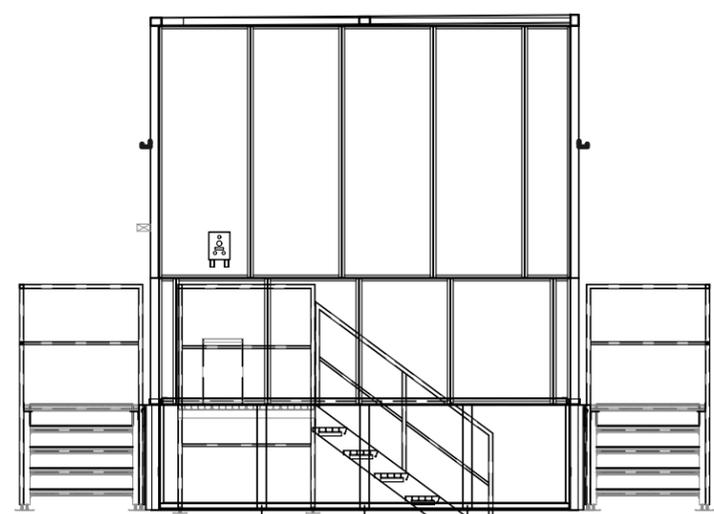
1. 5 CONDUCTOR #14 CONTROL CABLE IN 1" C.
2. 2 PAIR #16 TSP INSTRUMENT CABLE IN 1" C.
3. GENERATOR CONTROLLER NETWORK CABLE AND 2 WIRE UTP FOR START/STOP IN 2" C. COORDINATE EXACT WIRING REQUIREMENT WITH APPROVED GENERATOR PACKAGE SUBMITTALS.



GENERATOR EXHAUST END VIEW



INTAKE END W/O HOOD



INTAKE END W/ HOOD

GENERATOR INTAKE END VIEW

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CHECKED BY: T.M.P.
CAD FILE: E906.dwg

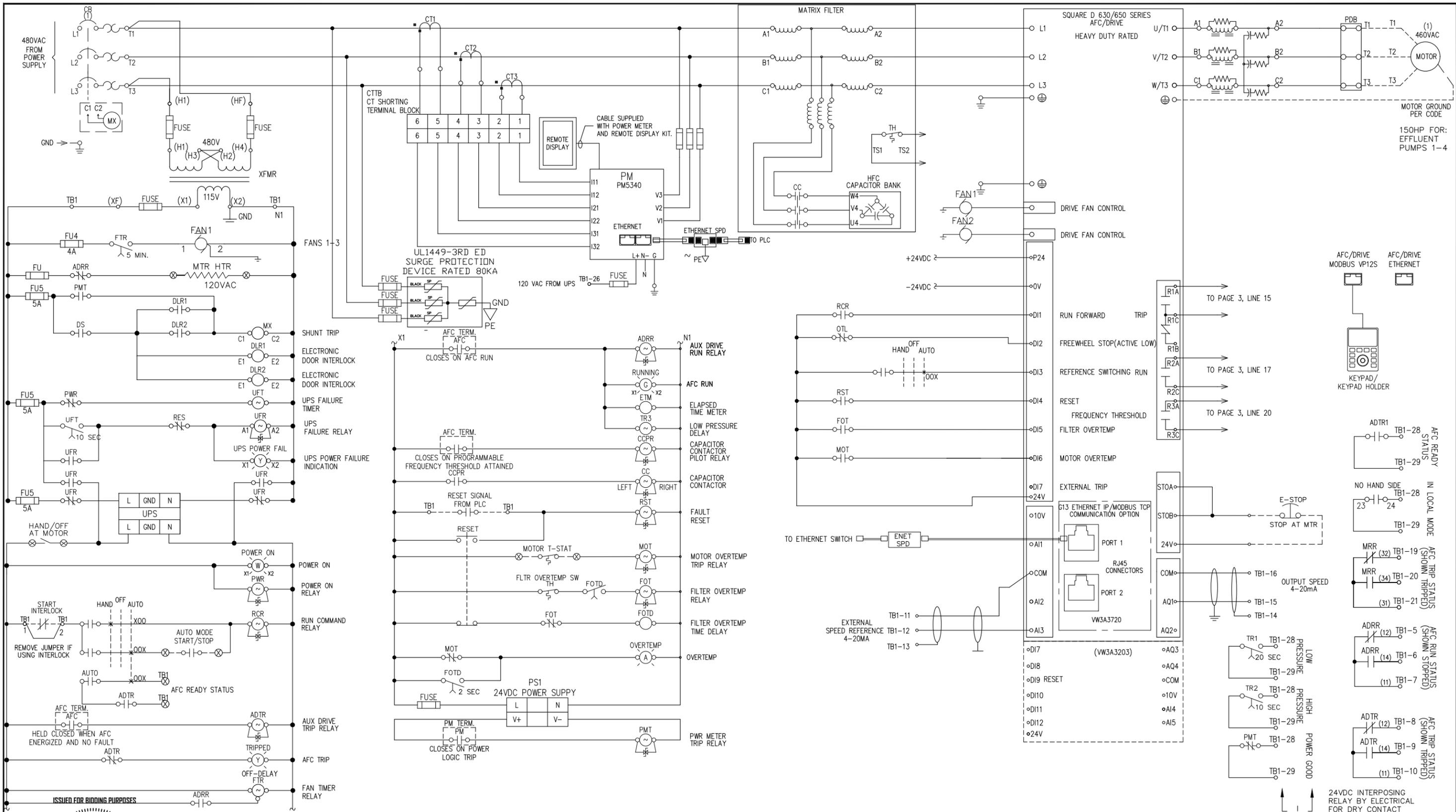
LEE COUNTY
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UTILITIES DIVISION

FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT

GENERATOR DETAILS

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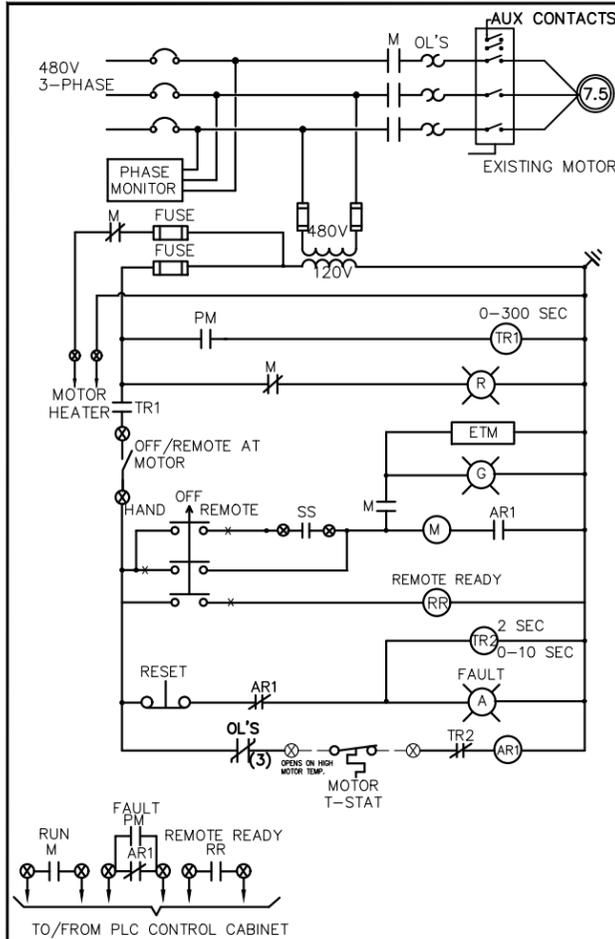
LEE COUNTY
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FORT MYERS BEACH WATER RECLAMATION FACILITY SWITCHGEAR REPLACEMENT
EFFLUENT PUMP VFD ELEMENTARY

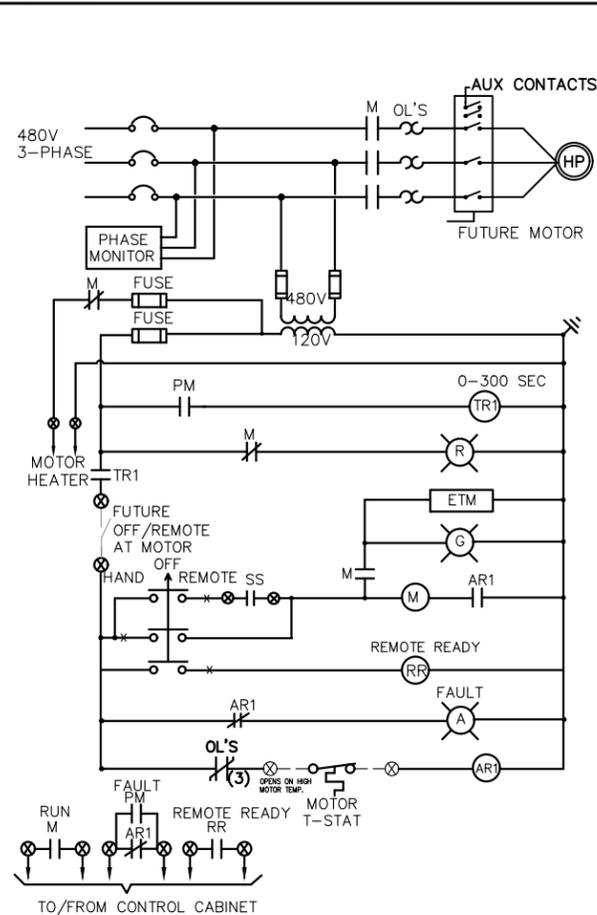
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BIDDING
 DATE: **05/2023**
 SHEET NO.: **E907**

24VDC INTERPOSING RELAY BY ELECTRICAL FOR DRY CONTACT START/STOP; TO RECEIVE 24VDC FROM PLC CABINET.
 24VDC START/STOP SIGNAL FROM PLC

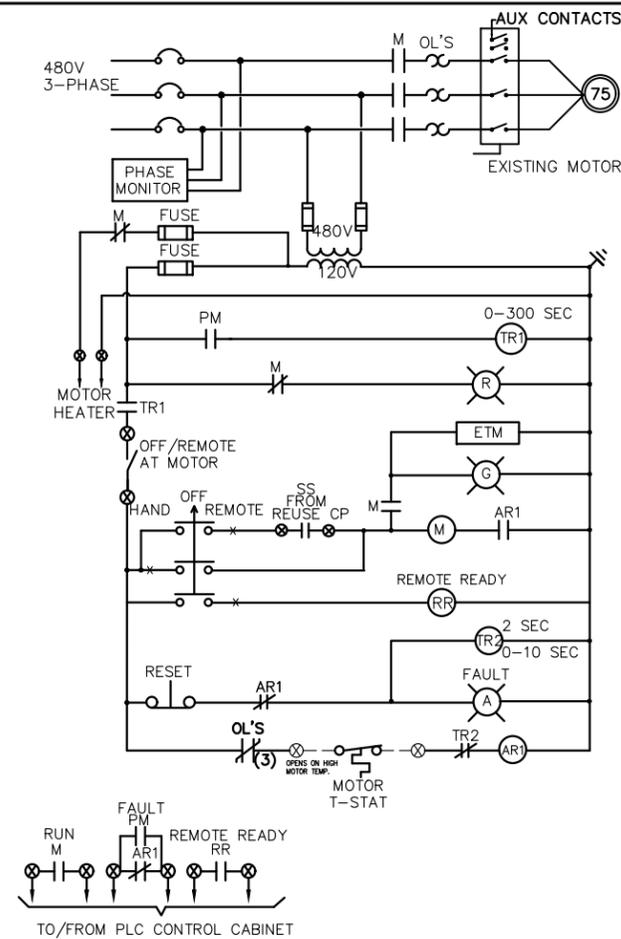
TO/FROM CONTROL CABINET



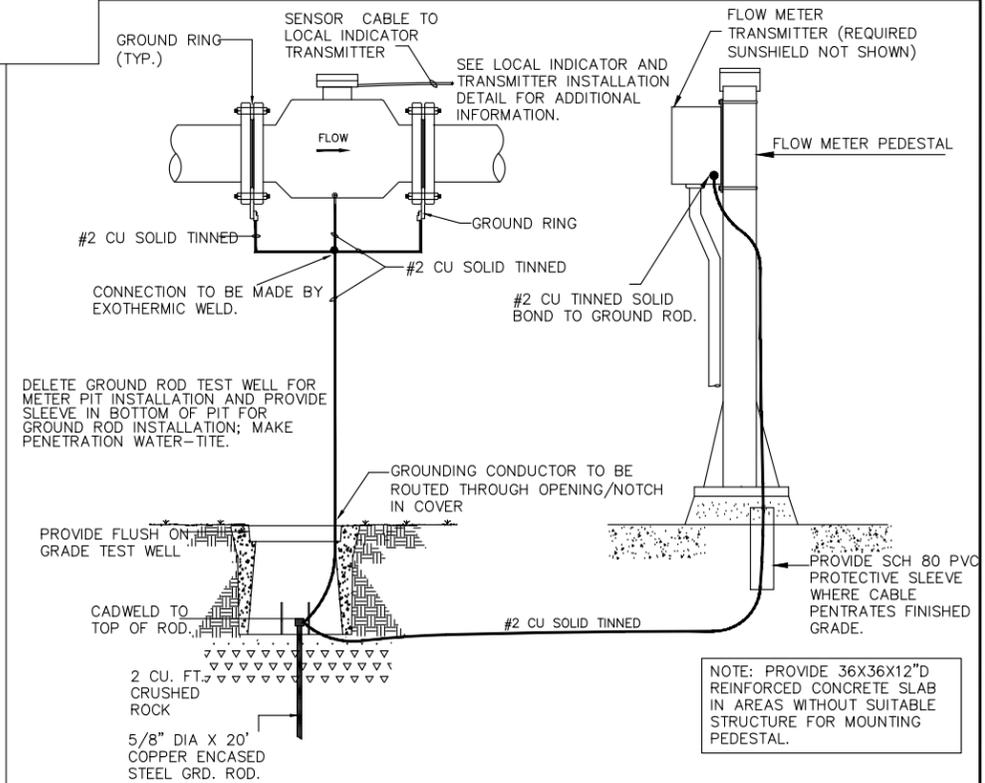
SLUDGE TRANSFER PUMPS



SIZE 1 SPARES



REUSE PUMPS



GROUNDING OF MAGNETIC FLOW METER

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DEPARTMENT OF PUBLIC WORKS
UTILITIES DIVISION

FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT

ELEMENTARY DRAWINGS &
ELECTRICAL DETAILS

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SHEET NO.: E908



PHOTO A – TEMPORARY FEEDER ROUTING

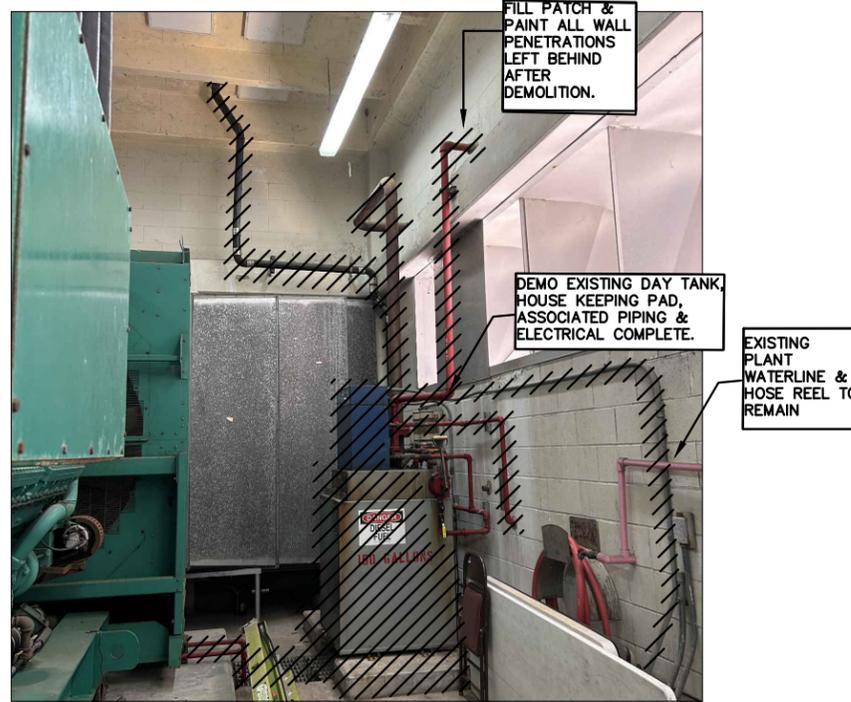


PHOTO B – DAY TANK DEMOLITION



PHOTO C – GENERATOR ROOM LOUVER MODIFICATIONS

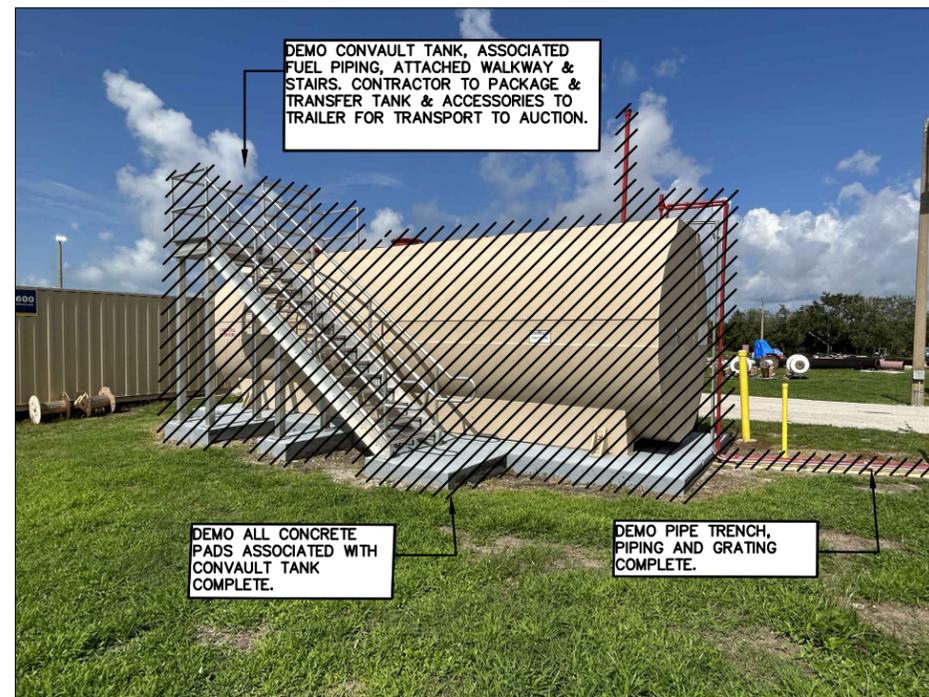


PHOTO D – CONVAULT TANK DEMOLITION

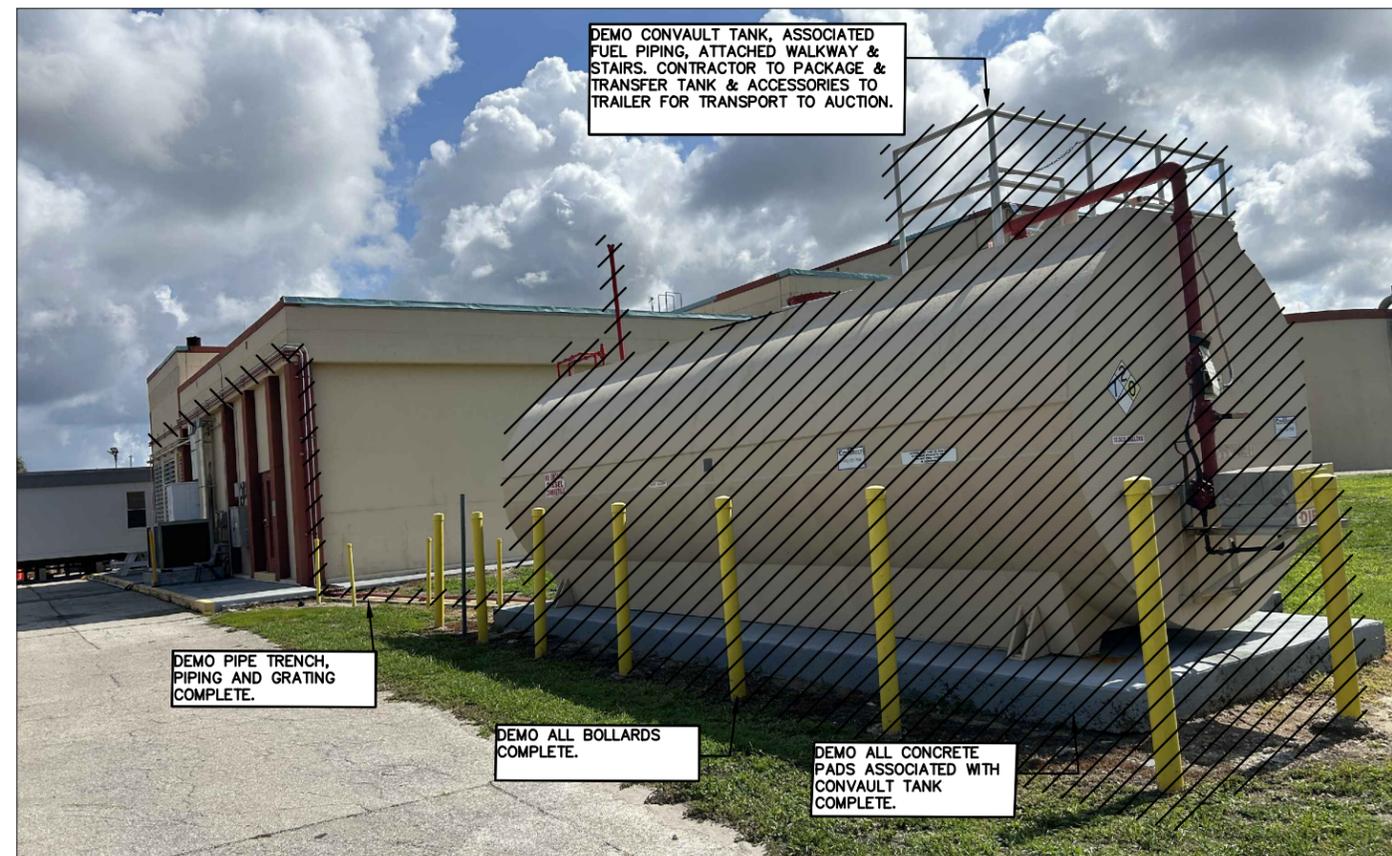


PHOTO E – CONVAULT TANK DEMOLITION

DEMO= [diagonal hatching symbol]

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UTILITIES DIVISION

FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT

DEMOLITION PHOTOS

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PHOTO A – ELECTRICAL ROOM BUSDUCT DEMOLITION



PHOTO B – ELECTRICAL ROOM BUSDUCT DEMOLITION

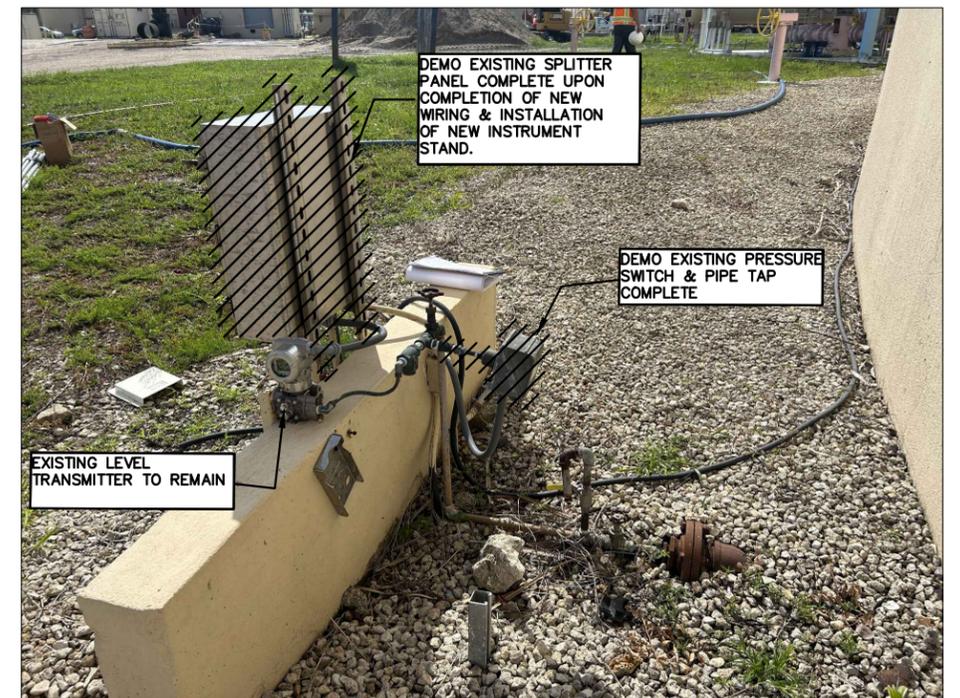


PHOTO C – GROUND STORAGE TANK LEVEL TRANSMITTER DEMOLITION

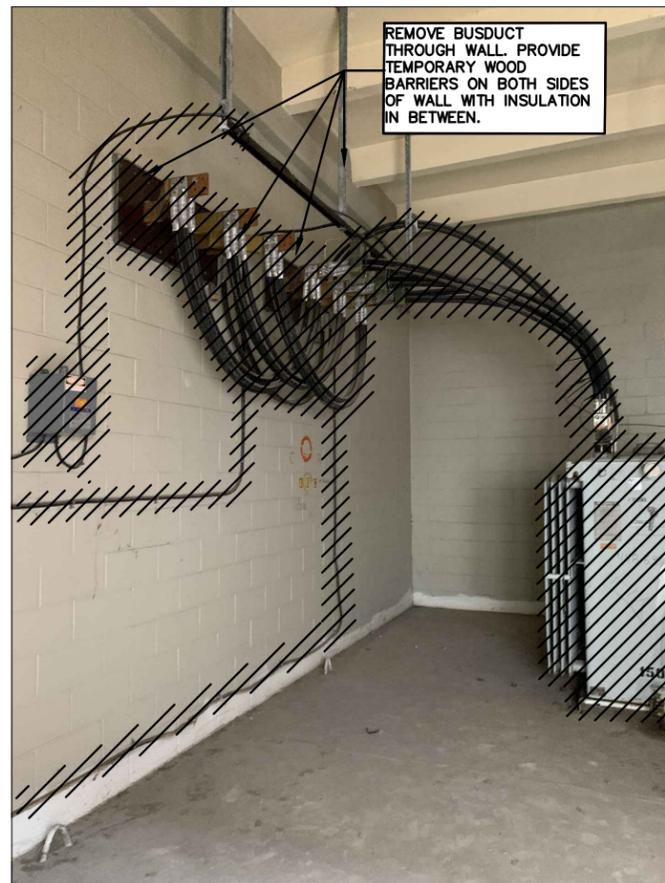


PHOTO D – FPL VAULT BUSDUCT DEMOLITION

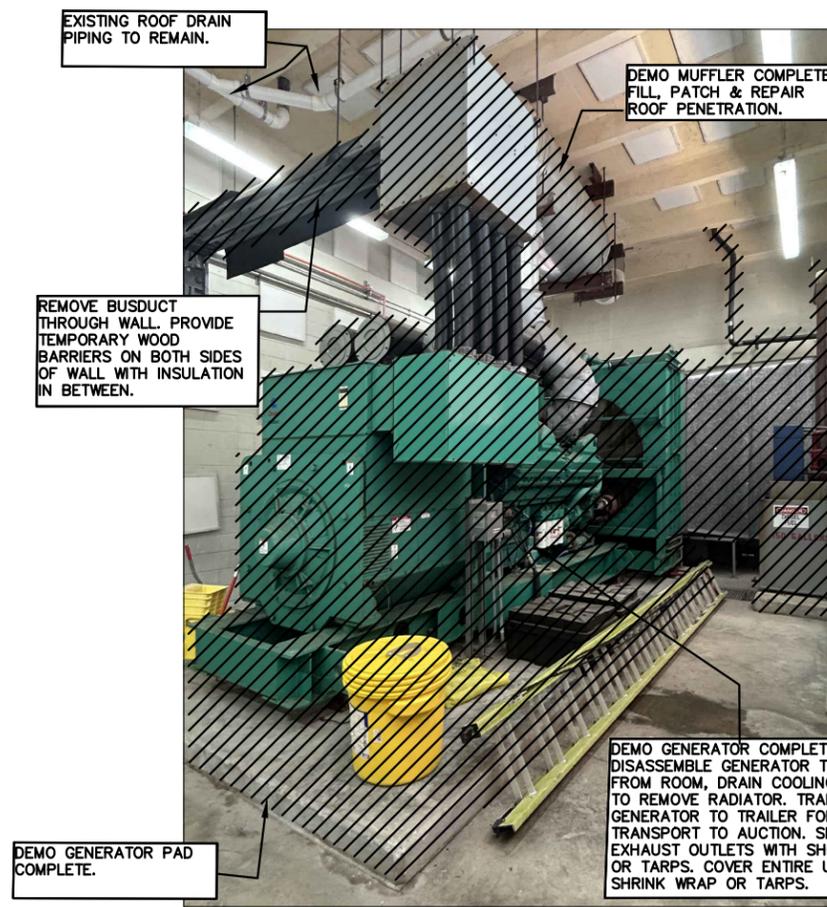


PHOTO E – GENERATOR-NORTHSIDE DEMOLITION

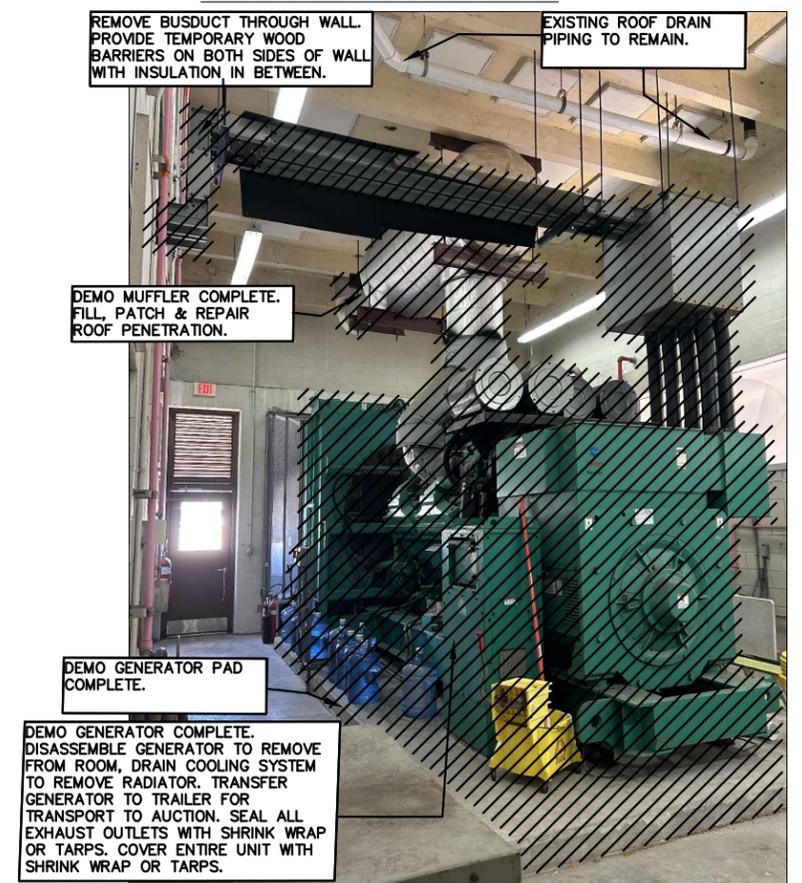


PHOTO F – GENERATOR-SOUTHSIDE DEMOLITION

DEMO= [diagonal hatching symbol]

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FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT

DEMOLITION PHOTOS

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DATE:	05/2023
SHEET NO.:	E910

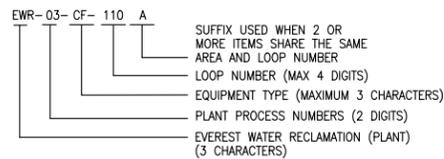
INSTRUMENT SOCIETY OF AMERICA IDENTIFICATION LETTERS

FIRST LETTER(S)		SUCCEEDING LETTERS																				
FIRST LETTER MEAS. VARI.	PROCESS OR INITIATING VARIABLE	MODIFIER	SWITCH (HI/LO) OPEN, CLOSE	PRIM. ELEM. (SENSOR)	INDICATOR	INDICATING CONTROLLER	CONTROL OR CONTR. (BUND) (INDICATING)	REORDER (INDICATING)	INTEGRATOR	COUNTER (INTEGRATOR)	TRANSMITTING (INDICATING)	TRANSMITTER	VALVE OR ACTUATOR	RELAY	SOURCE	ALARM (HIGH & OR LOW)	SIGHT GLASS	GATE	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER	
A	ANALYSIS		ASL	AE	AI			AR			AIT	AT		AY		AAL			ALARM			
B	BURNER FLAME			BE			BC							BY		BA			USERS CHOICE	USERS CHOICE	USERS CHOICE	
C	CONDUCTIVITY		CSH	CE	CI	CIC	CC	CR			CIT	CT		CY		CAH				CONTROL	CLOSE	
D	DENSITY	DIFFERENTIAL	DSH	DE	DI	DIC	DC	DR			DIT	DT		DY	DX	DAL						
E	VOLTAGE			EE	EI						EIT	ET		EY					PRIMARY ELEMENT			
F	FLOW RATE	RATIO	FSHL	FE	FI	FIC	FC	FR	FQ	FQI	FIT	FT	FV	FY		FAL		FG				
G	GAUGE																		USER CHOICE	USER CHOICE	USER CHOICE	
H	HAND (MANUAL)		HS			HIC							HV					HG			HIGH	
I	CURRENT		IS	IE	II	IIC	IC					IT	IY		IAH				INDICATE			
J	POWER	SCAN	JSH	JE	JI	JIC	JC	JR	JQ	JQI	JIT	JT	JY									
K	TIME/SCHEDULE				KI	KIC	KC	KQ	KQI				KY	KS						CONTROL STATION		
L	LEVEL		LSH	LE	LI	LIC	LC	LR			LIT	LT	LV	LY		LAL	LS		LIGHT (PILOT)		LOW	
M	MOTION			ME	MI	MIC	MC	MR			MIT	MT	MY								MIDDLE	
N	VEND. OPT.																		USERS CHOICE	USERS CHOICE	USERS CHOICE	
O	TORQUE																		ORIFICE		CLOSE	
P	PRES. VAC.		PSH	PE	PI	PIC	PC	PR			PIT	PT	PCV	PY		PAH			POINT (TEST CONNECTION)			
Q	QUANTITY/EVENT	INTEGRATE						QR											INTEGRATE			
R	UNCLASSIFIED																		RECORD/PRINTER			
S	SPEED/FREQ.	SAFETY	SS	SE	SI		SC	SR			SIT	ST	SY		SAL					SWITCH		
T	TEMPERATURE		TSL	TE	TI	TIC	TC	TR			TIT	TT	TV	TY		TAH				TRANSMIT		
U	MULTIVARIABLE				UI			UR					UY		UA				MULTIFUNCTION			
V	VISCOSITY																			VALVE		
W	WEIGHT		WS	WE	WI	WIC		WR			WT									WELL		
X	FAILURE/TROUBLE			XE	XI			XR					XY		XAH				UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	
Y	EVENT, STATE		YS	YE	YI						YT	YY		YA						RELAY OR COMPUTE		
Z	POSITION		ZSO	ZE	ZI			ZR		ZIT	ZT	ZY	ZAH						DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT			

USERS CHOICE OR UNCLASSIFIED WHEN USED; EXPLANATION IS SHOWN ADJACENT TO INSTRUMENT SYMBOL. SEE ABBREVIATIONS AND LETTER SYMBOLS.

EQUIPMENT TAG NUMBERS

ALL TAG NUMBERS ARE PREFIXED BY FACILITY NUMBER



EQUIPMENT TYPE

AIT	ANALYZER TRANSMITTER W/ DISPLAY
BLW	BLOWER
DG	DEGASIFIER
CF	CARTRIDGE FILTER
FT	FLOW TRANSMITTER W/ DISPLAY
FP	FEED PUMP
FS	FLOW SWITCH
HSP	HIGH SERVICE PUMP
LT	LEVEL TRANSMITTER W/O DISPLAY
ME	(STATIC) MIXER ELEMENT
MOV	MOTOR OPERATED VALVE
MP	METERING PUMP
O	ORIFICE PLATE
PIT	PRESSURE TRANSMITTER W/ DISPLAY
PS	PRESSURE SWITCH
PT	PRESSURE TRANSMITTER W/O DISPLAY
TK	TANK
TT	TEMPERATURE TRANSMITTER W/O TRANSMITTER
V	VALVE (MANUAL)

PLANT PROCESS NUMBERS

- AREA 01 - HEAD WORKS
- AREA 02 - ACTIVATED SLUDGE BASINS AND SPLITTER BOX
- AREA 03 - CLARIFIER AND RAS/WAS PUMPING
- AREA 04 - EFFLUENT FILTERS
- AREA 05 - CHLORINE CONTACT TANKS AND EFFLUENT PUMPING STATION/ INJECTION WELLS
- AREA 06 - RECLAIMED PUMPING AND STORAGE
- AREA 07 - REJECT PUMPING AND STORAGE
- AREA 08 - WAS STORAGE AND TRANSFER PUMPING
- AREA 09 - SLUDGE PROCESSING BUILDING
- AREA 10 - GENERAL SITE STRUCTURES
- AREA 11 - ELECTRICAL BUILDING, GENERATORS AND FUEL SYSTEMS
- AREA 12 - OFFICE, ADMINISTRATION AND MAINTENANCE BUILDING
- AREA 13 - BLOWER SYSTEMS
- AREA 14 - CHEMICAL STORAGE AND FEED SYSTEMS

NOTES

- SYMBOLS AND NOMENCLATURE ARE BASED ON ISA STANDARDS SS.1, SS.2, SS.4.
- SEE ASSOCIATED ELECTRICAL AND MECHANICAL SYMBOL SHEETS FOR ADDITIONAL SYMBOLS AND ABBREVIATIONS.
- POWER SUPPLIES FOR LOOPS OR SYSTEMS SHALL BE FURNISHED BY THE INSTRUMENTATION SUPPLIER TO MEET THE PARTICULAR CHARACTERISTICS (E.G. VOLTAGE AND CURRENT REQUIREMENTS) OF COMPONENTS IN EACH LOOP OR SYSTEM.
- UNDERSCORE(S) REQUIRED FOR ALL EQUIPMENT TYPES LESS THAN FOUR CHARACTERS.

DISCRETE I/O ABBREVIATIONS

STATUS INDICATOR:

RUN	RUNNING OR ENERGIZE
OP	OPEN POSITION
CL	CLOSE POSITION
FLT	FAULT OR ALARM
AL	FAULT OR ALARM
LOW	RUNNING LOW SPEED
HI	RUNNING HIGH SPEED
AUTO	HOA SWITCH AUTO POSITION

CONTROL INDICATOR:

S/S	START/STOP
O/C	OPEN/CLOSE
STOP	STOP MOMENTARY

INTERLOCKS

- GENERALIZED FOR UNDEFINED OR COMPLEX INTERLOCK LOGIC
- INTERLOCK IS EFFECTIVE ONLY IF ALL INPUT EXIST.
- INTERLOCK IS EFFECTIVE IF ANY ONE OR MORE INPUTS EXIST.

GENERAL NOTES

- THIS IS A STANDARD LEGEND. THEREFORE NOT ALL OF THE INFORMATION MAY BE USED ON THIS PROJECT.
- ALL EQUIPMENT AND PIPING SHOWN SCREENED IS EXISTING.

INSTRUMENT AND FUNCTION SYMBOLS

	PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	FIELD MOUNT	AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	NORMALLY INACCESSIBLE OR BEHIND THE PANEL DEVICES OR FUNCTIONS
DISCRETE INSTRUMENTS				
SHARED DISPLAY, SHARED CONTROL (LOCAL PANEL)				
PROGRAMMABLE LOGIC CONTROL				
SUPERVISORY COMPUTER FUNCTION (HMI/SERVER)				

SINGLE INSTRUMENT OR OTHER COMPONENT HAVING MULTIPLE FUNCTIONS OR SHARING A COMMON HOUSING

SOFTWARE LOGIC OR CONTROL MODULE (XXXX) AND SUB-MODULE (YYY) RESIDENT IN DISTRIBUTED CONTROL SYSTEM (DCS) OR PROGRAMMABLE LOGIC CONTROLLER (PLC) REFER TO CONTRACT DOCUMENTS FOR CONTROL AND MODULE DESCRIPTIONS.

DESIGNATIONS OF CONTROL FUNCTIONS (ZZZ) ASSOCIATED WITH INSTRUMENT OR OTHER COMPONENTS.

- AHC - AUTO/HOLD/CLOSE
- AM - AUTO/MANUAL
- DEV - DENATION
- MOA - MANUAL/OFF/AUTO
- HOR - HAND/OFF/REMOTE
- LOS - LOCKOUT STOP
- LR - LOCAL/REMOTE
- OO - ON / OFF
- OC - OPEN/CLOSE
- OSC - OPEN/STOP/CLOSED
- POT - POTENTIOMETER
- RL - RAISE/LOWER
- RSL - RAISE/STOP/LOWER
- SD - SHUTDOWN
- SEL - SELECT
- SP - SET POINT
- SR - START/RESET
- SS - STOP/START

INSTRUMENT PANEL MOUNTED WITH COMPUTING OR CONVERTING FUNCTION

CONVERT		E - VOLTAGE	H - HYDRAULIC
		I - CURRENT	O - ELECTROMAGNETIC, SONIC
		P - PNEUMATIC	R - RESISTANCE (ELECT.)
		A - ANALOG	D - DIGITAL
		B - BINARY	

COMPUTE			SUMMING		AVERAGING
			SUBTRACTOR		RATIO
			MULTIPLYING		DIFFERENCE
			DIVIDING		HIGH SELECTING
			ROOT EXTRACTION		LOW SELECTING
			PROPORTIONAL		INTEGRAL
			DERIVATIVE		PID

PANEL MOUNTED PILOT LIGHT WITH PANEL NUMBER DESIGNATION (i.e. XXX = 100, 200, ETC.).

SWITCH/INDICATOR LEGEND

LEGEND

AL/NUM	ALPHA-NUMERIC DISPLAY
ES	EMERGENCY STOP
FR	FORWARD/REVERSE
HA	HAND/AUTO
HLOA	HIGH SPEED/LOW SPEED/OFF/AUTO
HOA	HAND/OFF/AUTO
HOR	HAND/OFF/REMOTE
KP	KEYPAD MULTI-FUNCTION
LH	LOW/HIGH
LO	LOCKOUT
LR	LOCAL/REMOTE
OCA	OPEN/CLOSE/AUTO
OI	OPERATOR INTERFACE
OO	ON/OFF
O(S)C	OPEN/(STOP)/CLOSE
O(S)CA	OPEN/(STOP)/CLOSE/AUTO
POT	POTENTIOMETER
PWR	POWER
SEL	SELECTOR SWITCH
SET	SET POINT
SS	START/STOP
TOR	TEST/OFF/REMOTE
UD	UP/DOWN

LINE SYMBOLS AND LEGEND

- MAJOR PROCESS PIPES OR CHANNELS
- SECONDARY PROCESS OR MECHANICAL CONNECTION
- HEAT TRACE & INSULATED PROCESS LINE
- AIR SUPPLY OR SIGNAL
- ETHERNET FIBER OPTIC
- ELECTRICAL SIGNAL
- DEVICE NET
- ETHERNET CAT5 UTP
- INTERNAL SOFTWARE LINK

- DISCRETE ELECTRICAL SIGNAL WITH LIGHTNING SURGE ARRESTOR (INPUTS) INTERPOSING RELAYS (OUTPUTS)
- ANALOG ELECTRICAL SIGNAL WITH LIGHTNING SURGE ARRESTOR (INPUTS AND OUTPUTS)
- PROCESS/SIGNALS NOT CONNECTED (CROSSING)
- PROCESS/SIGNALS CONNECTED
- TERMINATION POINT(S) TO FUTURE EQUIPMENT TIE-IN CONTINUED ELSEWHERE AS INDICATED

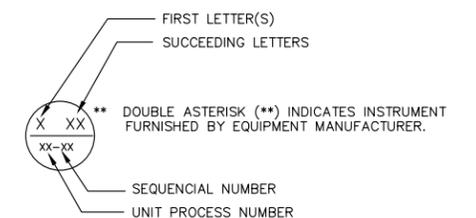
PLC INPUT/OUTPUT

- DIGITAL INPUT
- DIGITAL OUTPUT
- ANALOG INPUT
- ANALOG OUTPUT

EXAMPLE SYMBOLS

- FIELD MOUNTED INSTRUMENT
- REAR-OFF-PANEL MOUNTED INSTRUMENT
- PANEL MOUNTED INSTRUMENT
- MOTOR CONTROL CENTER MOUNTED INSTRUMENT
- SPECIAL CASES**
- ON AND OFF EVENT LIGHTS
- OPENED AND CLOSED POSITION LIGHTS
- OPENED AND CLOSED POSITION SWITCHES
- ON-OFF HAND SWITCH. MAINTAINED CONTACT SWITCH (CONTROLLED DEVICE WILL RESTART ON RETURN OF POWER AFTER POWER FAILURE.)
- STOP-START HAND SWITCH MOMENTARY CONTACT SWITCHES (CONTROLLED DEVICE WILL NOT RESTART ON RETURN OF POWER AFTER POWER FAILURE.)
- EXAMPLE:**
- CURRENT TO PNEUMATIC TRANSDUCER (BACK OF PANEL. IN A FLOW LOOP)

INSTRUMENT IDENTIFICATION



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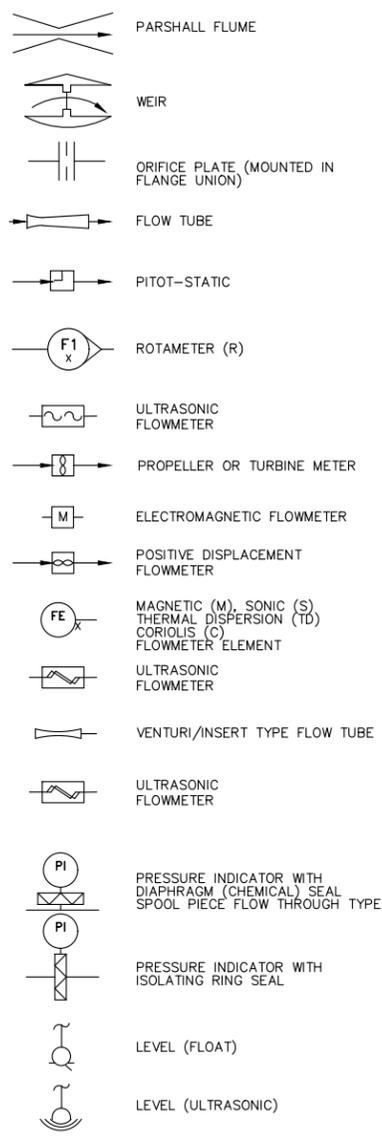
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FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT

ELECTRICAL SYMBOLS LEGEND

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PRIMARY ELEMENT SYMBOLS



ABBREVIATIONS

Δ	DIFFERENCE
+	SUM
x	MULTIPLY
÷	DIVIDE
1 (x)	CHARACTERIZED
X ⁿ	RAISE TO THE Nth POWER
√	SQUARE ROOT
AVG	AVERAGE
1:1	REPEAT. BOOST OR ISOLATE
>	SELECT HIGHEST SIGNAL
<	SELECT LOWEST SIGNAL

TRANSDUCERS

A	ANALOG
D	DIGITAL
E	VOLTAGE
F	FREQUENCY
I	CURRENT
P	PNEUMATIC
PF	PULSE-FREQUENCY
PD	PULSE DURATION
R	RESISTANCE

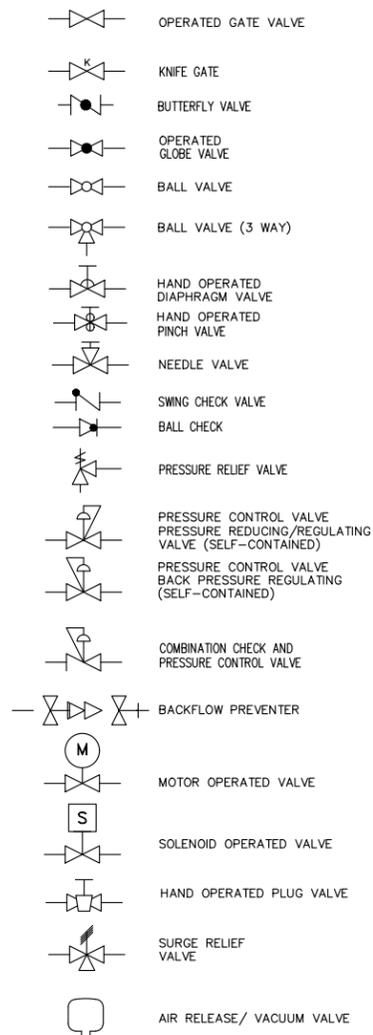
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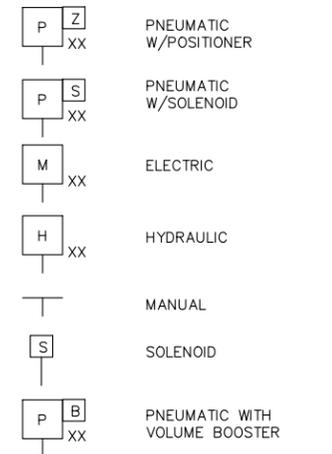
VALVE SYMBOLS



SELF CONTAINED VALVE AND EQUIPMENT

P	= PUMP
T	= TANK
M	= MECHANICAL EQUIPMENT
G	= GATE
E	= EJECTOR
RD	= RUPTURE DISK
ARV	= AIR RELEASE VALVE
AVRV	= AIR AND VACUUM RELEASE VALVE
PSV	= PRESSURE RELIEF VALVE
PCV	= PRESSURE CONTROL VALVE
LCV	= LEVEL CONTROL VALVE
TCV	= TEMPERATURE CONTROL VALVE
PRV	= PRESSURE REGULATING VALVE

ACTUATOR SYMBOLS

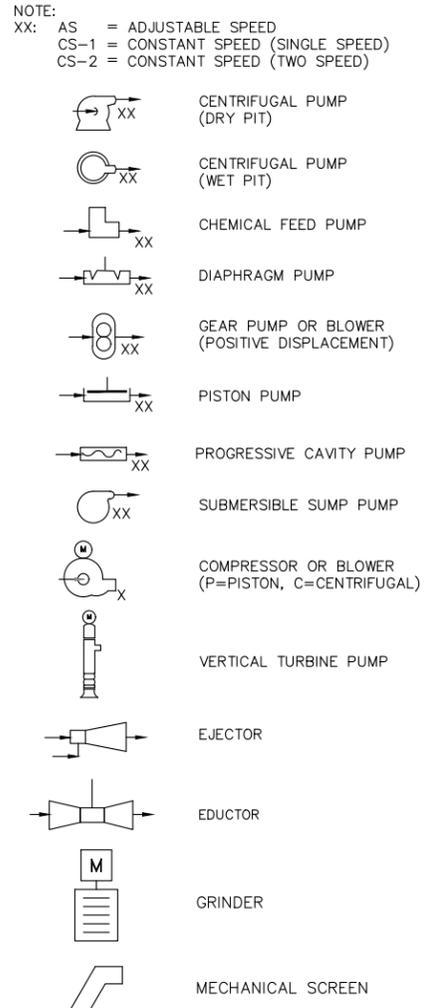


NOTE:
ON LOSS OF PRIMARY POWER (PNEUMATIC OR ELECTRICAL)
XX: FO = FAIL OPEN
FC = FAIL CLOSED
FLP = FAIL TO LAST POSITION

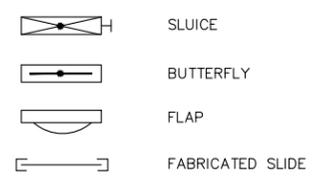
FLOW STREAM IDENTIFICATION

AHP	AIR HIGH PRESSURE
AI	AIR INSTRUMENT
ALP	AIR LOW PRESSURE
ARD	ACID RESISTANT DRAIN
ARV	ACID RESISTANT VENT
BWD	BACKWASH DRAIN
BWR	BACKWASH RETURN
BWS	BACKWASH SUPPLY
BYP	BYPASS
CD	CONDENSATE DRAIN
CHS	CHEMICAL SLUDGE
CHSR	CHEMICAL SLUDGE RETURN
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CG	CHLORINE GAS
CGV	CHLORINE GAS (VACUUM)
CS	CHLORINE SOLUTION
CWR	COOLING WATER RETURN
CWS	COOLING WATER SUPPLY
D	DRAIN (SANITARY)
DE	DIESEL EXHAUST
DFO	DIESEL FUEL OIL
DFR	DIESEL FUEL RETURN
DFS	DIESEL FUEL SUPPLY
DHMP	DRY HEXAMETAPHOSPHATE
DR	DRAIN
F	FILTRATE
FE	FILTER EFFLUENT
FI	FILTER INFLUENT
FF	FILTERED FEED WATER
FTW	FILTER TO WASTE
FW	FINISHED WATER
HMP	HEXAMETAPHOSPHATE
HSF	HYDROFLUOSILIC ACID SOLUTION
HW	DOMESTIC HOT WATER
LPG	LIQUID PETROLEUM GAS
LPO	LIQUID POLYMER
LS	LIME SLURRY
MF	MEMBRANE FEED WATER
OF	OVERFLOW
PO	POLYMER SOLUTION
PS	PRESSURE SEWER
QL	QUICK LIME
RCW	RECLAIMED WATER
RCY	RECYCLE
RD	ROOF DRAIN
RW	RAW WATER
SA	SAMPLE
SW	SURFACE WASH
TCS	THICKENED CHEMICAL SLUDGE
TW	TREATED WATER
UD	UNDERDRAIN
V	VENT
VAC	VACUUM
WO	WASTE OIL
W1	NO. 1 WATER POTABLE
W2	NO. 2 WATER (REUSE WATER)

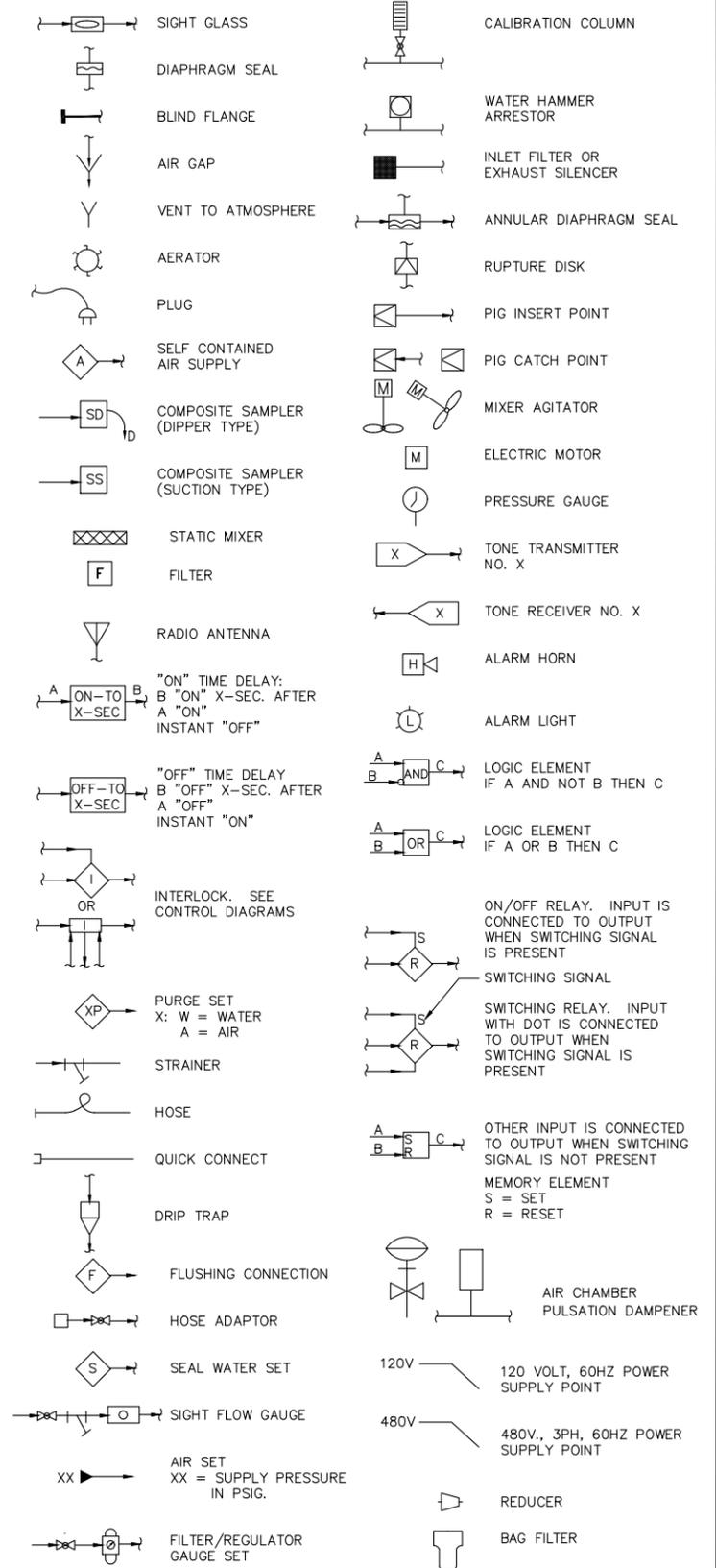
PUMP & COMPRESSOR SYMBOLS



GATE SYMBOLS



MISCELLANEOUS SYMBOLS



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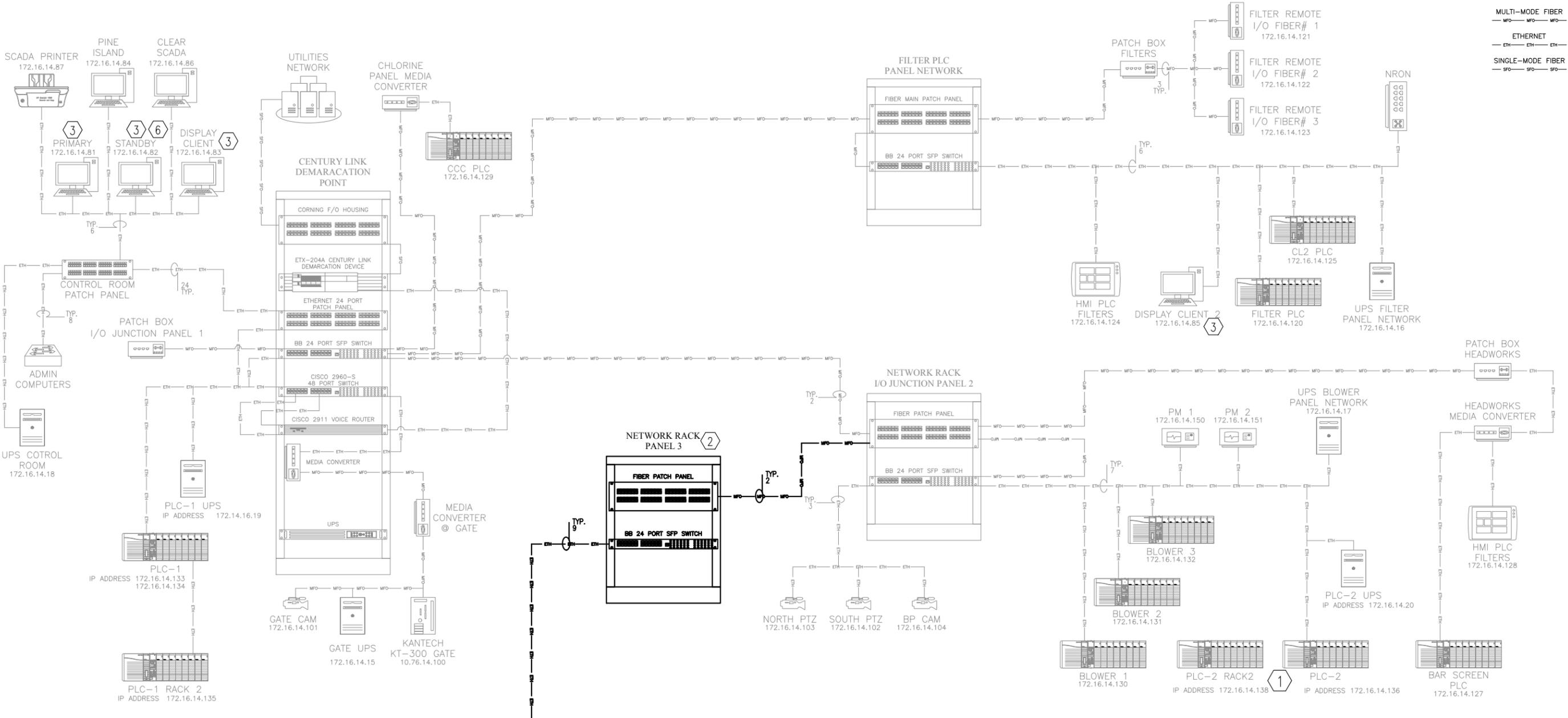
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FORT MYERS BEACH WATER RECLAMATION FACILITY SWITCHGEAR REPLACEMENT
INSTRUMENTATION & CONTROLS SYMBOLS

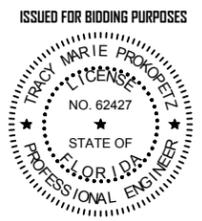
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MULTI-MODE FIBER
 MFO MFO MFO
 ETHERNET
 ETH ETH ETH
 SINGLE-MODE FIBER
 SFO SFO SFO

- KEYNOTES:**
- CONTROL SYSTEM INTEGRATOR TO VERIFY EXISTING I/O & CONTROL BEING TRANSFERRED TO PLC-3 IS NOT BEING USED IN THE PLC-2 LOGIC BY ANY OTHER PROCESS PRIOR TO TRANSFER AND REWIRING.
 - NEW NETWORK RACK BY CONTROL SYSTEM INTEGRATOR. SIZE TO ALLOW SPACE FOR FUTURE PLANT EXPANSION.
 - UPDATE EXISTING CITECT SERVERS AND DISPLAY CLIENTS WITH NEW SWITCHGEAR AND GENERATOR SCREENS. REPATH/RETAG EXISTING SCREENS FOR REUSE PUMPS, EFFLUENT PUMPS & SLUDGE TRANSFER PUMPS TO NEW PLC-3.
 - NEW PLC-3 BY CONTROL SYSTEM INTEGRATOR.
 - NEW SWITCHGEAR PLCs AND POWER MONITORS BY MANUFACTURER. INTEGRATED INTO PLC-3 AND EXISTING CITECT HMI BY CONTROL SYSTEM INTEGRATOR.
 - LOCATED AT LCU COLLEGE PARKWAY OFFICE, COORDINATE MODIFICATIONS WITH LCU.



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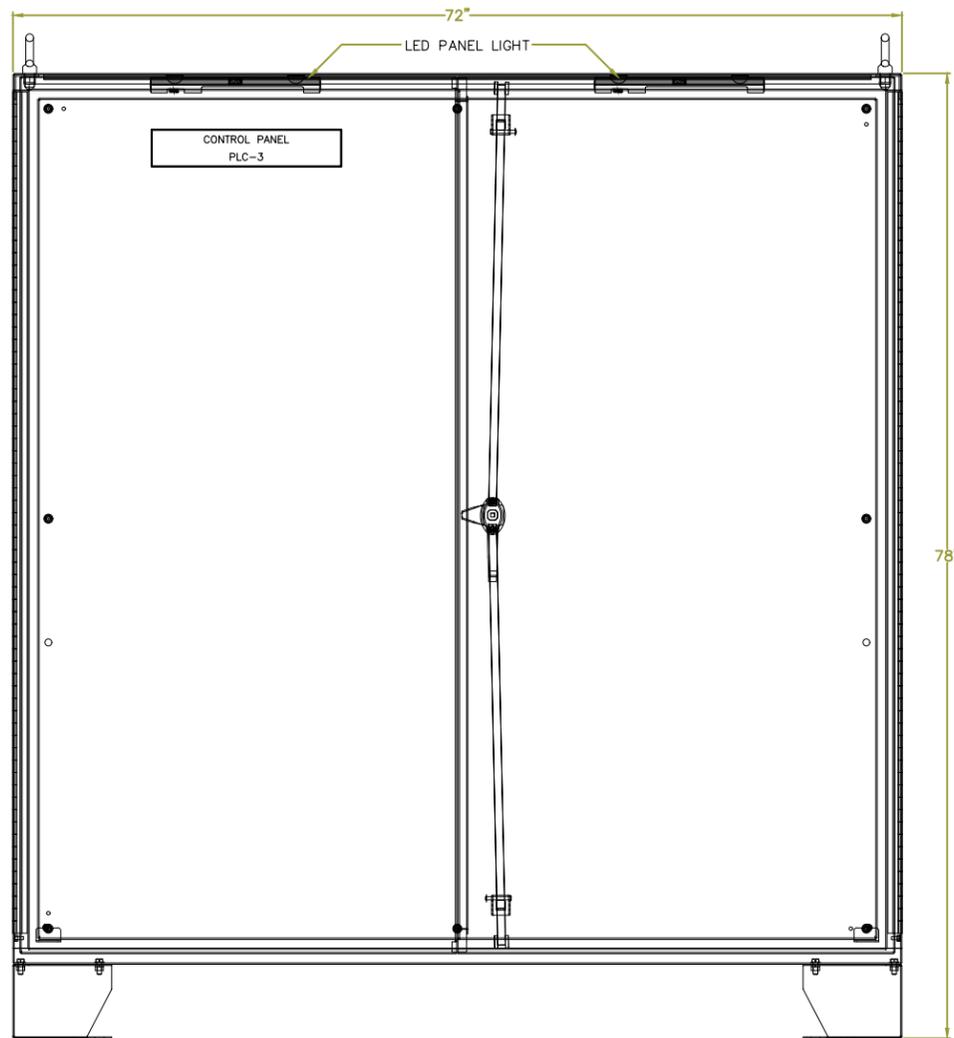


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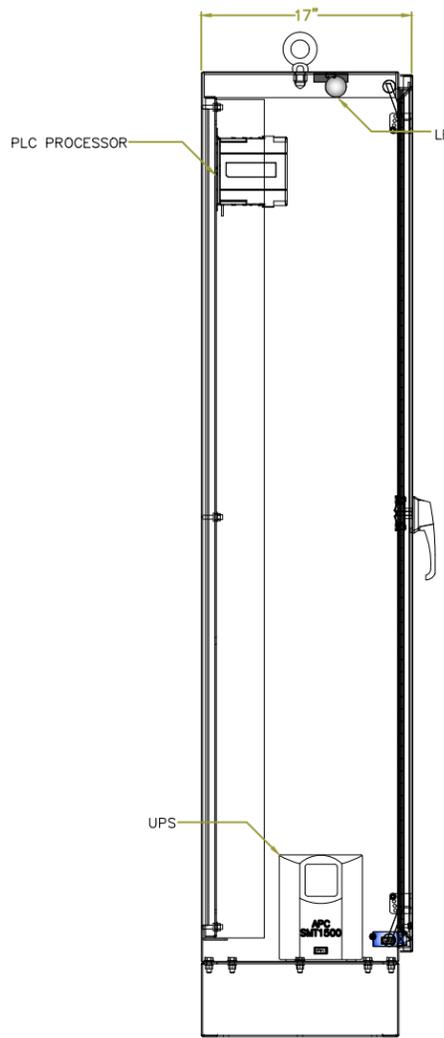
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PLANT CONTROL NETWORK
 ARCHITECTURE DRAWING

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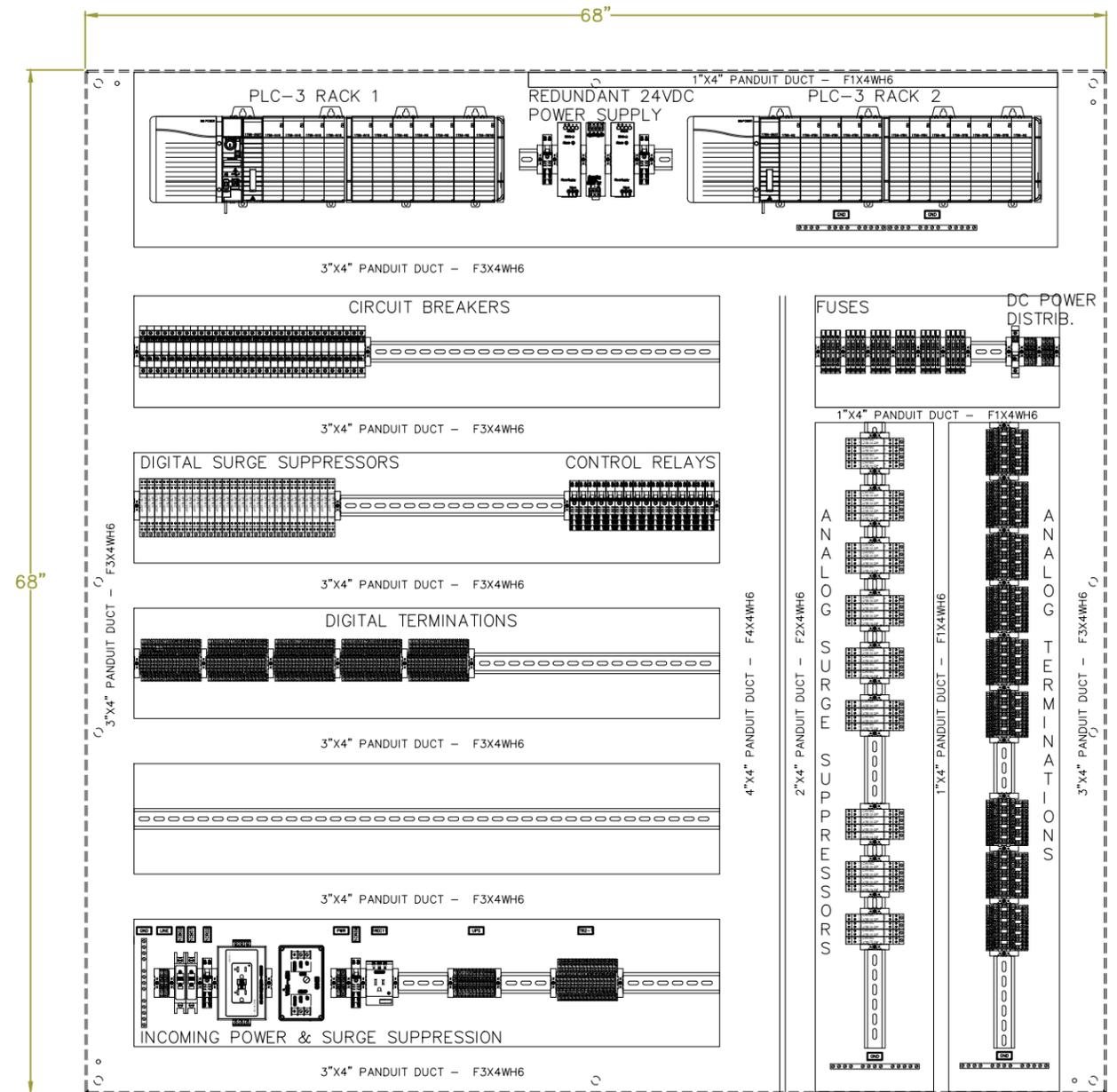
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PLC-3 ENCLOSURE FRONT ELEVATION
N.T.S.



PLC-3 ENCLOSURE LEFT ELEVATION
N.T.S.



PLC-3 ENCLOSURE LEFT ELEVATION
N.T.S.

- GENERAL NOTES:**
1. PLC-3 ENCLOSURE AND BACKPANEL ARE SHOWN OVERSIZED TO ACCOMMODATE UPCOMING PLANT EXPANSION. PROVIDE PANEL AS SHOWN.
 2. PROVIDE REDUNDANT PLCs WITH BUILD OUT RACK SPACE AS SHOWN. I/O AND TERMINATIONS MAY BE LIMITED TO CURRENT PROJECT I/O LIST PLUS SPARES.

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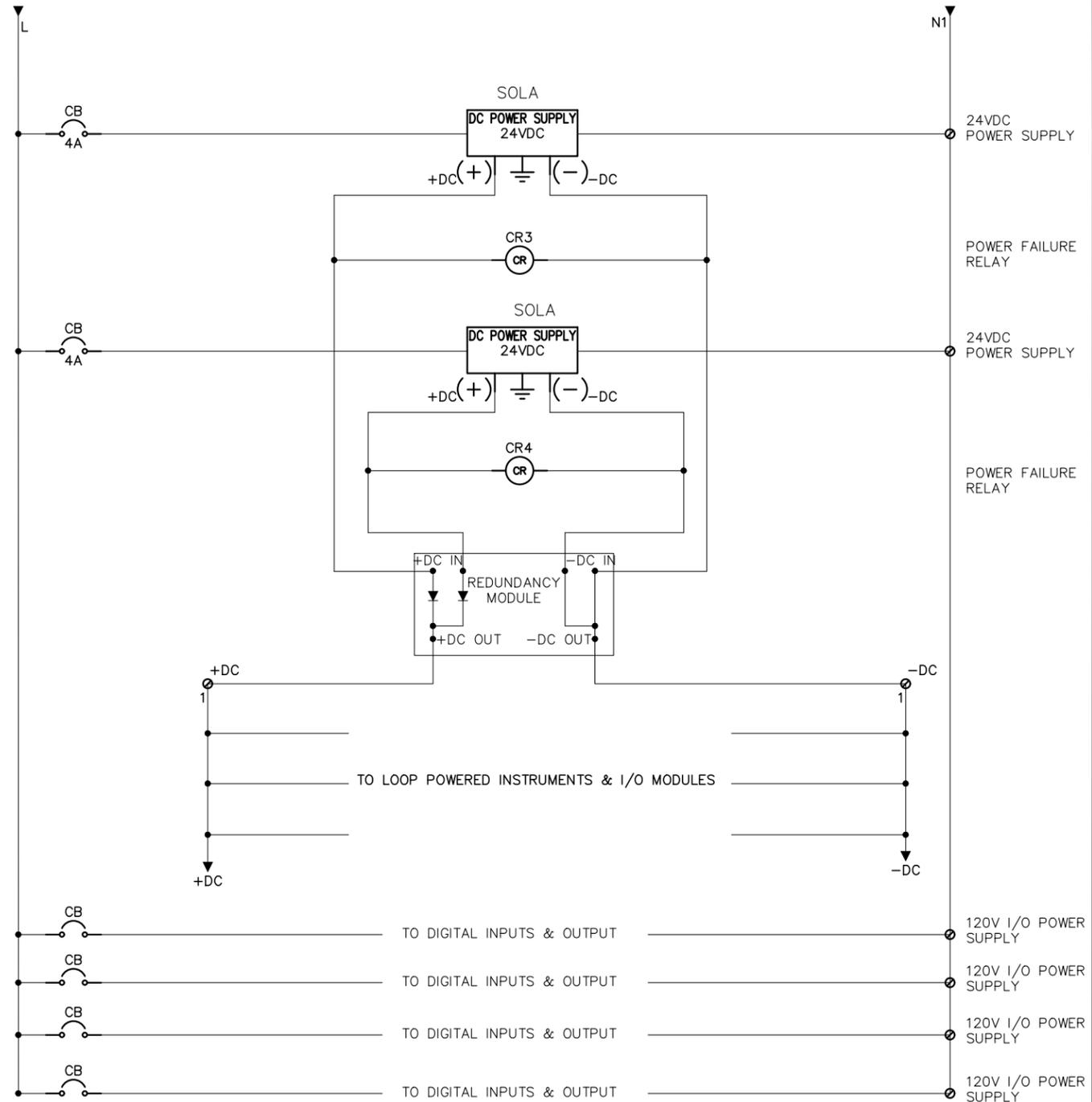
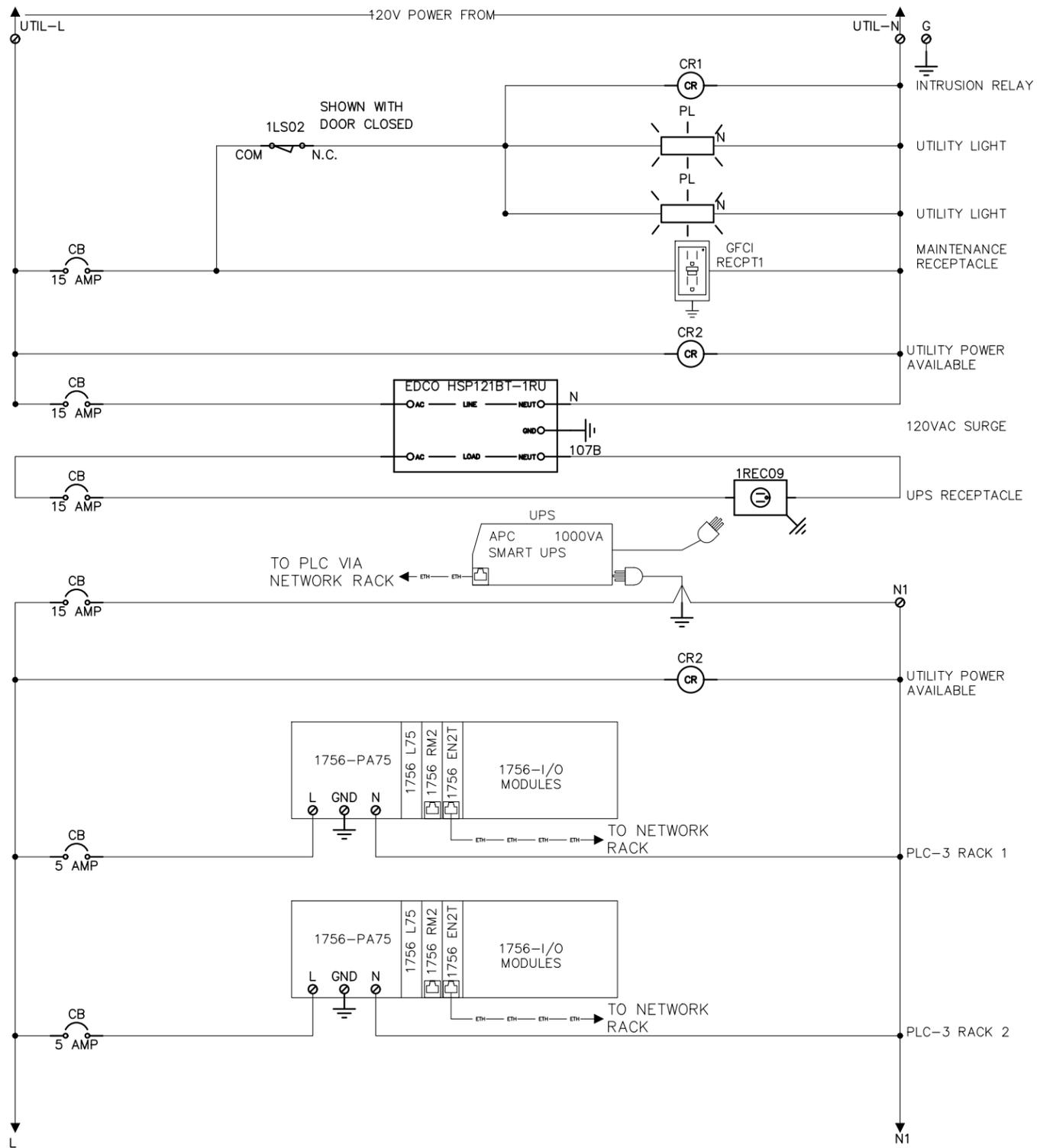


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FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT

PLC-3 ELEVATION

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FORT MYERS BEACH WATER RECLAMATION FACILITY
SWITCHGEAR REPLACEMENT

PARTIAL PLC-3 ELEMENTARY DRAWING

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