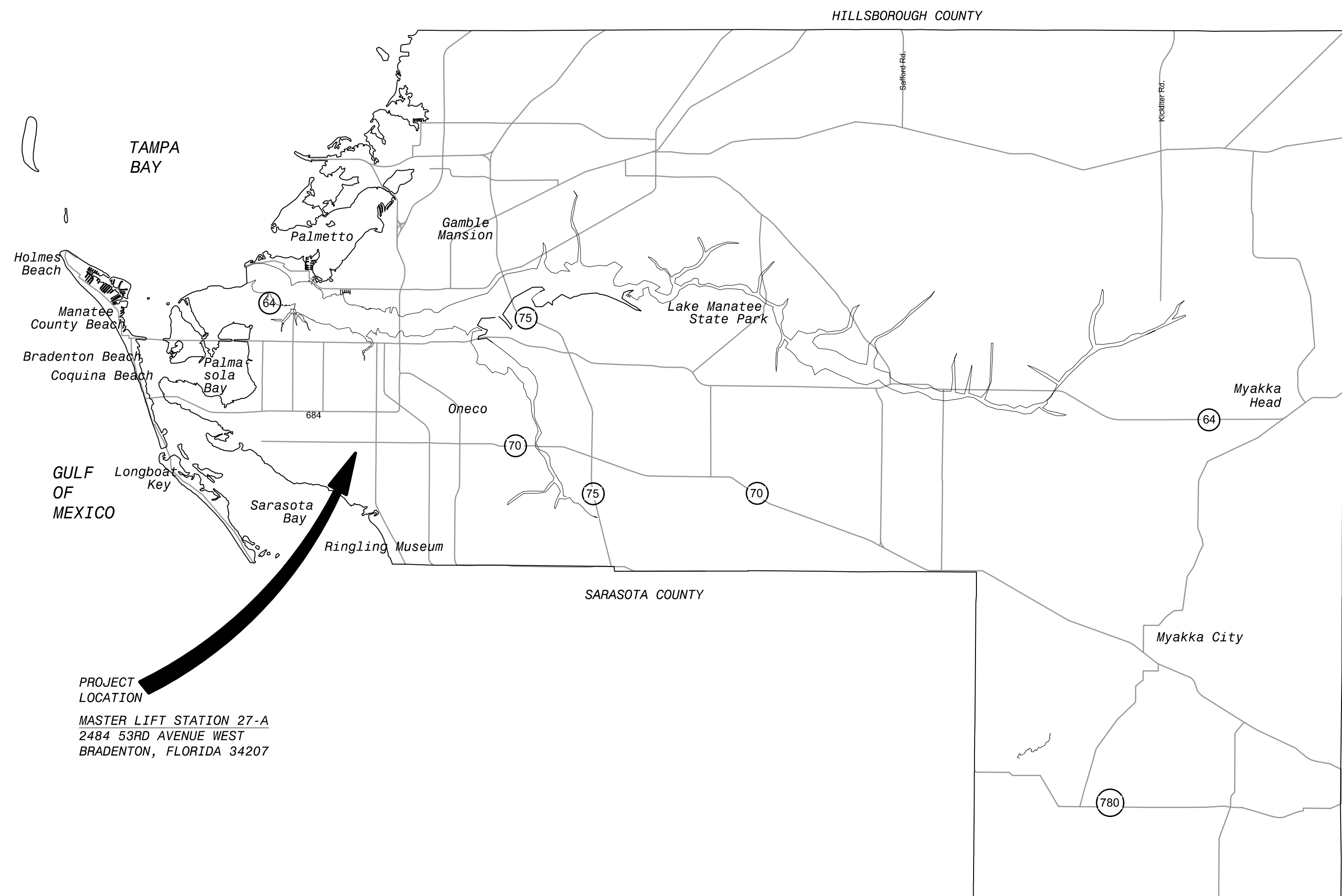


# MANATEE COUNTY IMPROVEMENTS AT MASTER LIFT STATION 27-A



LOCATION MAP  
NOT TO SCALE



VICINITY MAP  
NOT TO SCALE

**48 HOURS BEFORE YOU DIG  
CALL SUNSHINE  
1-800-432-4770 or 811**



**IT'S THE LAW IN FLORIDA**  
FLORIDA LAW REQUIRES  
EXCAVATORS TO NOTIFY  
OWNERS OF UNDERGROUND  
FACILITIES NO LESS THAN TWO  
(2) DAYS PRIOR TO EXCAVATION

THIS DRAWING WAS  
ORIGINALLY APPROVED  
FOR CONSTRUCTION BY  
MICHAEL N. TACHE, ON  
09/16/2022 AND SEALED  
BY MICHAEL N. TACHE, A  
LICENSED PROFESSIONAL  
ENGINEER IN THE STATE  
OF FLORIDA, NO. 83893

GENERAL, DEMOLITION,  
CIVIL & MECHANICAL

THIS DRAWING WAS  
ORIGINALLY APPROVED  
FOR CONSTRUCTION BY  
PHILIP D RISHEL, ON  
09/16/2022 AND SEALED  
BY PHILIP D RISHEL, A  
REGISTERED ARCHITECT  
IN THE STATE OF  
FLORIDA, NO. AR101040

ARCHITECTURAL

**100% SUBMITTAL  
SEPTEMBER 2022  
PROJECT #402142**

**MANATEE COUNTY CIP 6097480 & 6097481**



**BLACK & VEATCH**

**Black & Veatch Corporation**  
3405 W. Dr. M. L. King Jr. Blvd, Suite 125  
Tampa, Florida Certificate No. 8132

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MICHELE ROTH, ON  
09/16/2022 AND SEALED  
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LICENSED PROFESSIONAL  
ENGINEER IN THE STATE  
OF FLORIDA, NO. 82002

HVAC

THIS DRAWING WAS  
ORIGINALLY APPROVED  
FOR CONSTRUCTION BY  
JULIE GLOSS, ON  
09/16/2022 AND SEALED  
BY JULIE GLOSS, A  
LICENSED PROFESSIONAL  
ENGINEER IN THE STATE  
OF FLORIDA, NO. 86822

STRUCTURAL

THIS DRAWING WAS  
ORIGINALLY APPROVED  
FOR CONSTRUCTION BY  
RYAN BINKLEY, ON  
09/16/2022 AND SEALED  
BY RYAN BINKLEY, A  
LICENSED PROFESSIONAL  
ENGINEER IN THE STATE  
OF FLORIDA, NO. 89014

ELECTRICAL

THIS DRAWING WAS  
ORIGINALLY APPROVED  
FOR CONSTRUCTION BY  
LARRY BROUILLETTE, ON  
09/16/2022 AND SEALED  
BY LARRY BROUILLETTE, A  
LICENSED PROFESSIONAL  
ENGINEER IN THE STATE  
OF FLORIDA, NO. 57973

INSTRUMENTATION

**ISSUED FOR CONSTRUCTION**

<u>DISCIPLINE</u>	<u>DRAWING NO.</u>	<u>DRAWING TITLE</u>
<b>GENERAL</b>		
1	-	COVER SHEET AND VICINITY MAP
2	G-01	GENERAL - INDEX OF DRAWINGS
3	G-02	GENERAL - NOTES, LEGEND AND ABBREVIATIONS
<b>DEMOLITION</b>		
4	D-01	DEMOLITION - PUMP BUILDING PLAN
5	D-02	DEMOLITION - PUMP AND PIPING, STORM SHELTER PLAN AND ELEVATION
6	D-03	DEMOLITION - PUMP BUILDING PHOTOS
<b>SITework</b>		
7	C-01	CIVIL - SITE PLAN
8	C-02	CIVIL - TYPICAL DETAILS
<b>ARCHITECTURAL</b>		
9	A-01	ARCHITECTURAL - FLOOR PLAN, LIFE SAFETY PLAN AND CODE ANALYSIS
10	A-02	ARCHITECTURAL - BUILDING ELEVATIONS
11	A-03	ARCHITECTURAL - SCHEDULES AND DETAILS
<b>STRUCTURAL</b>		
12	S-01	STRUCTURAL - GENERAL NOTES
13	S-02	STRUCTURAL - LOADING CRITERIA
14	S-03	STRUCTURAL - MASTER LIFT STATION PLAN AND DETAILS
15	S-04	STRUCTURAL - STANDARD CONCRETE REINFORCEMENT AND CMU DETAIL
<b>MECHANICAL</b>		
16	M-01	MECHANICAL - PLAN AND SECTION
<b>HVAC</b>		
17	H-01	HVAC - LEGEND, ABBREVIATIONS AND GENERAL NOTES
18	H-02	HVAC - PLAN
19	H-03	HVAC - SCHEDULES AND DETAILS
<b>ELECTRICAL</b>		
20	E-01	ELECTRICAL - LEGENDS
21	E-02	ELECTRICAL - ABBREVIATIONS AND NOTES
22	E-03	ELECTRICAL - SITE AND POWER PLAN
23	E-04	ELECTRICAL - EXISTING MCC DEMO ONE-LINE DIAGRAMS
24	E-05	ELECTRICAL - BOTTOM LEVEL POWER PLAN
25	E-06	ELECTRICAL - ENLARGED PLAN - ELECTRICAL ROOM - POWER AND GROUNDING PLAN
26	E-07	ELECTRICAL - SWBD-1 ONE-LINE DIAGRAMS
27	E-08	ELECTRICAL - MISCELLANEOUS ONE-LINE DIAGRAMS
28	E-09	ELECTRICAL - OPERATING LEVEL LIGHTING PLAN
29	E-10	ELECTRICAL - DRYWELL LIGHTING PLAN
30	E-11	ELECTRICAL - SCHEMATICS
31	E-12	ELECTRICAL - SCHEDULES
32	E-13	ELECTRICAL - STANDARD DETAILS 1
33	E-14	ELECTRICAL - STANDARD DETAILS 2
<b>INSTRUMENTATION</b>		
34	I-01	INSTRUMENTATION - LEGEND & ABBREVIATIONS SHEET 1 OF 3
35	I-02	INSTRUMENTATION - LEGEND & ABBREVIATIONS SHEET 2 OF 3
36	I-03	INSTRUMENTATION - LEGEND & ABBREVIATIONS SHEET 3 OF 3
37	I-04	INSTRUMENTATION - P&ID MASTER LIFT STATION PUMPS
38	I-05	INSTRUMENTATION - P&ID ENGINE GENERATOR AND FUEL STORAGE TANK
39	I-06	INSTRUMENTATION - INSTALLATION DETAILS
40	I-07	INSTRUMENTATION - NETWORK BLOCK DIAGRAM

SEPT 2022	100% SUBMITTAL	C	AD	AW	MNT
MAY 2022	90% SUBMITTAL	B	AD	AW	MNT
OCT 2019	50% SUBMITTAL	A	AD	NE	MNT
DATE	REVISED AND RECORD OF ISSUE	NO.	BY	CHK	APP
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PLOTTED: DUT48884, 9/15/2022 12:28:42 PM XREF2:					
USER: DUT48884 XREF3:					
DWG VER: 1007 XREF4:					

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MICHAEL N. TACHE,  
ON 09/16/2022 AND  
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MICHAEL N. TACHE,  
A LICENSED  
PROFESSIONAL  
ENGINEER IN THE  
STATE OF FLORIDA,  
NO. 83893

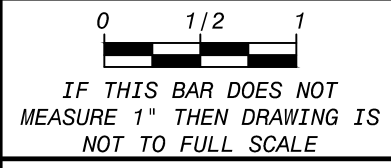


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**MANATEE COUNTY FLORIDA  
IMPROVEMENTS AT  
MASTER LIFT STATION 27-A**

**GENERAL  
INDEX OF DRAWINGS**

DESIGNED: AZ  
DETAILED: HT/AD  
CHECKED: AW  
APPROVED: MNT  
DATE: SEPT 2022

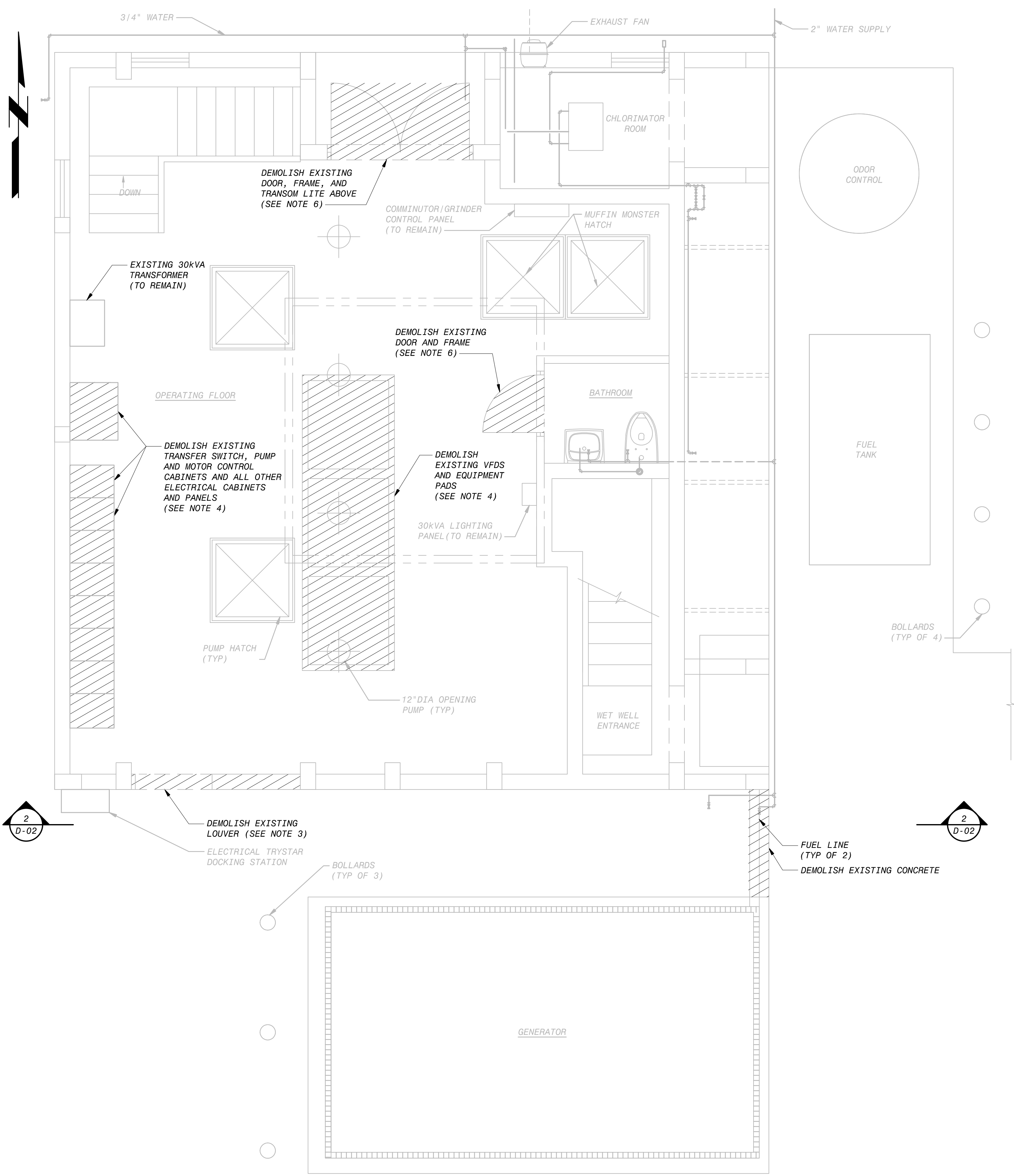


PROJECT NO.  
402142

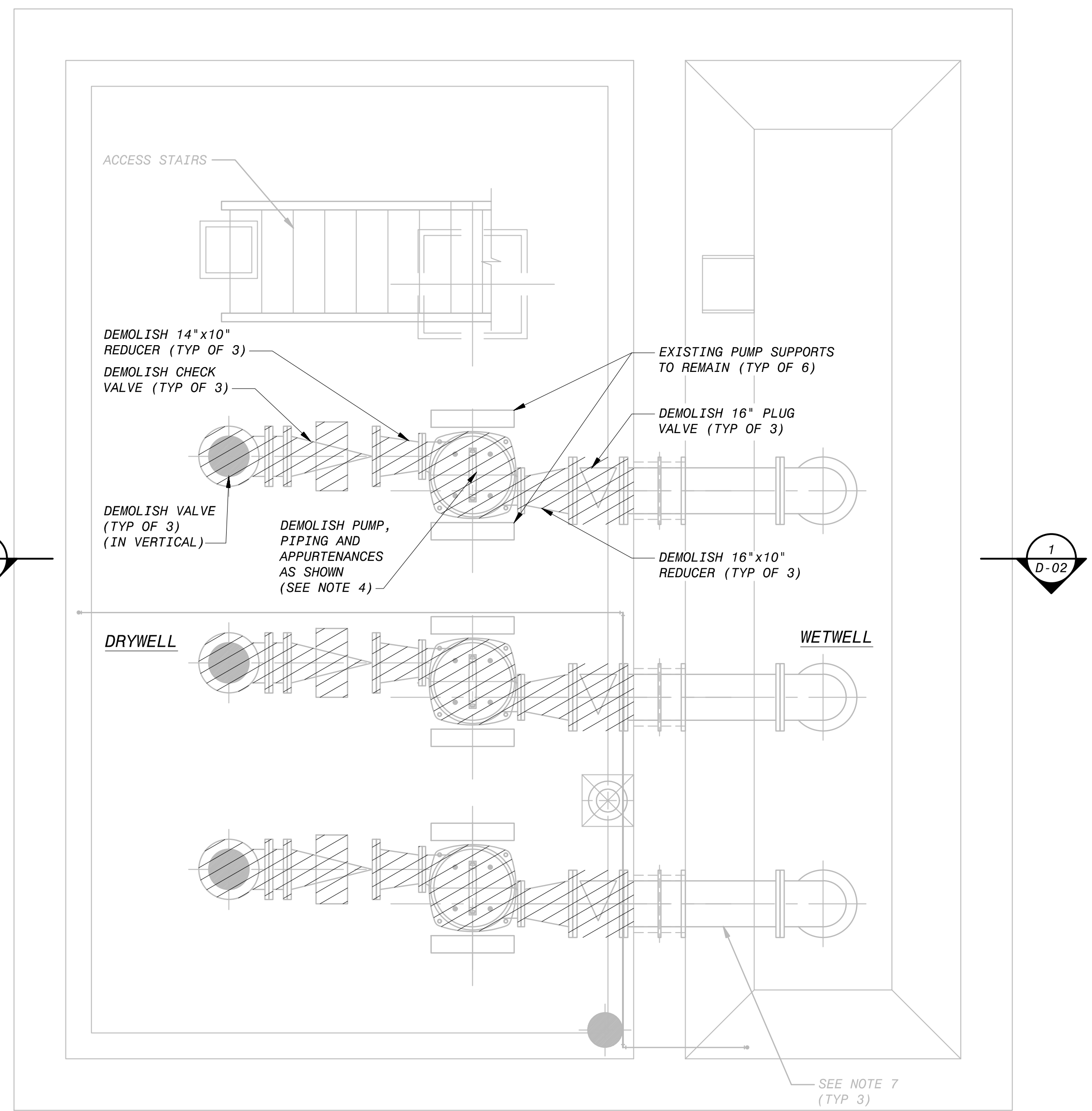
**G-01**  
SHEET  
2 OF 40

**ISSUED FOR CONSTRUCTION**





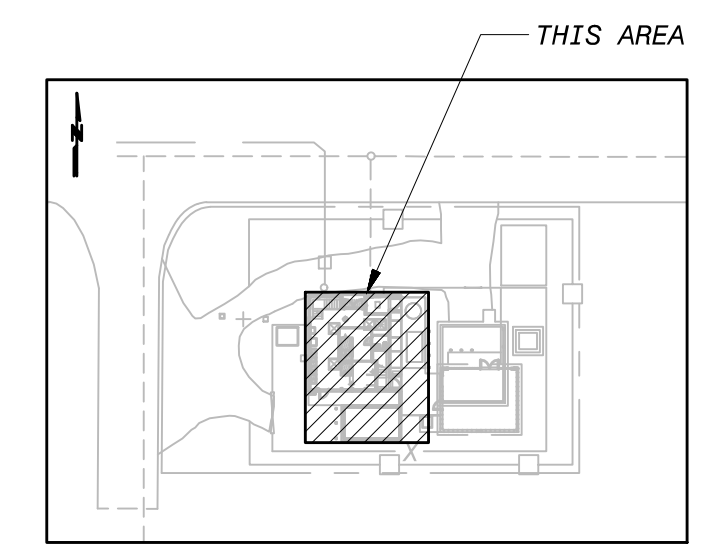
**EXISTING PUMP BUILDING OPERATING LEVEL - PLAN**  
3/8" = 1'-0"



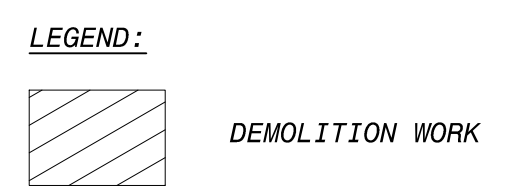
**EXISTING PUMP BUILDING BOTTOM LEVEL - PLAN**  
3/8" = 1'-0"

**DEMO NOTES:**

1. ALL LIGHTING AND CONDUIT TO BE REMOVED, FIRST FLOOR AND DRY WELL AREAS.
2. NEW TRANSFORMER BY UTILITY, TRANSFORMER SHALL BE AT LEAST 5 FEET AWAY FROM BUILDING'S WALLS. EXISTING ELECTRICAL EQUIPMENT AS SHOWN SHALL BE DEMOLISHED ALONG WITH THE CONDUITS AND CIRCUITS NOTED TO BE DEMOLISHED ON THE ELECTRICAL DRAWINGS.
3. EXISTING LOUVERS WITHIN THE EXISTING PUMP BUILDING TO BE REMOVED AND WALL SEALED UP USING CMU BLOCK AND FINISH TO MATCH EXISTING.
4. REFER TO DRAWING D-03 FOR ADDITIONAL DEMOLITION REQUIREMENTS, INCLUDING PHOTOS OF THE EQUIPMENT / APPURTENANCES THAT ARE BEING DEMOLISHED.
5. DEMOLITION WORK SHALL BE COMPLETED SUCH THAT PUMP STATION REMAINS IN CONTINUOUS OPERATION FOR THE DURATION OF CONSTRUCTION ACTIVITIES. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. THIS INCLUDES CONSTRAINTS / REQUIREMENTS FOR SWITCHING POWER TO THE NEW FPL FEED AND NEW ELECTRICAL GEAR INSIDE THE NEW ELECTRICAL ROOM.
6. REFER TO ARCHITECTURAL DRAWINGS FOR SIZE OF DOORS TO BE DEMOLISHED.
7. CONTRACTOR TO INSPECT AND REPAIR THE PIPE PENETRATIONS THROUGH THE WALL FROM THE WETWELL TO THE DRYWELL, IF REQUIRED. ANY MODIFICATIONS OR REPLACEMENT OF WALL SLEEVES WOULD BE A CHANGE TO THE CONTRACT.

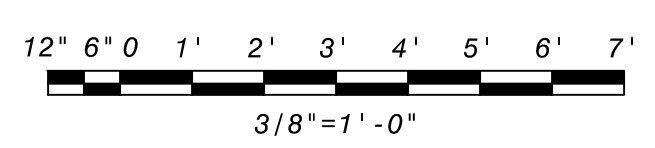


**KEY PLAN**



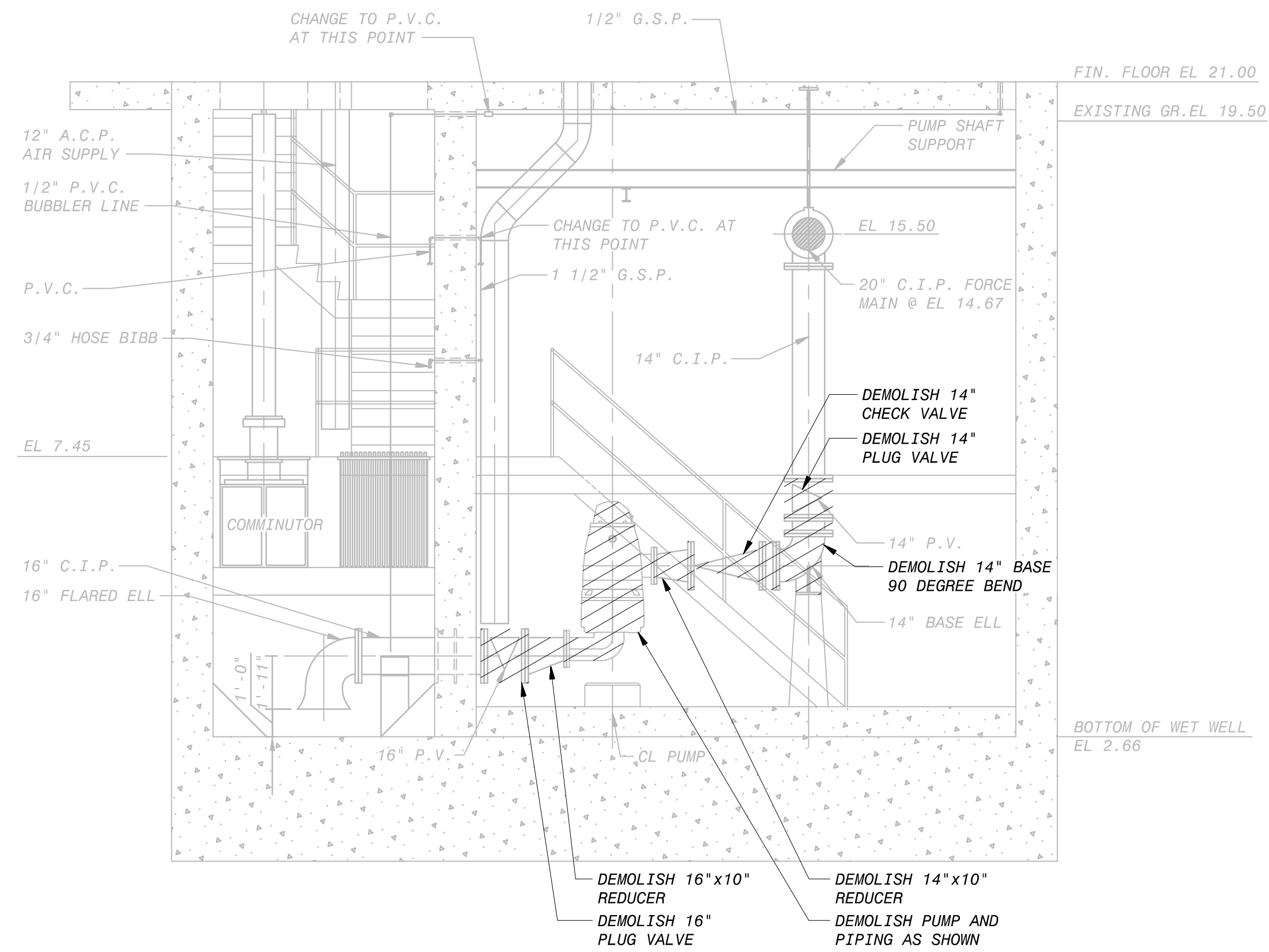
**LEGEND:**

DEMOLITION WORK

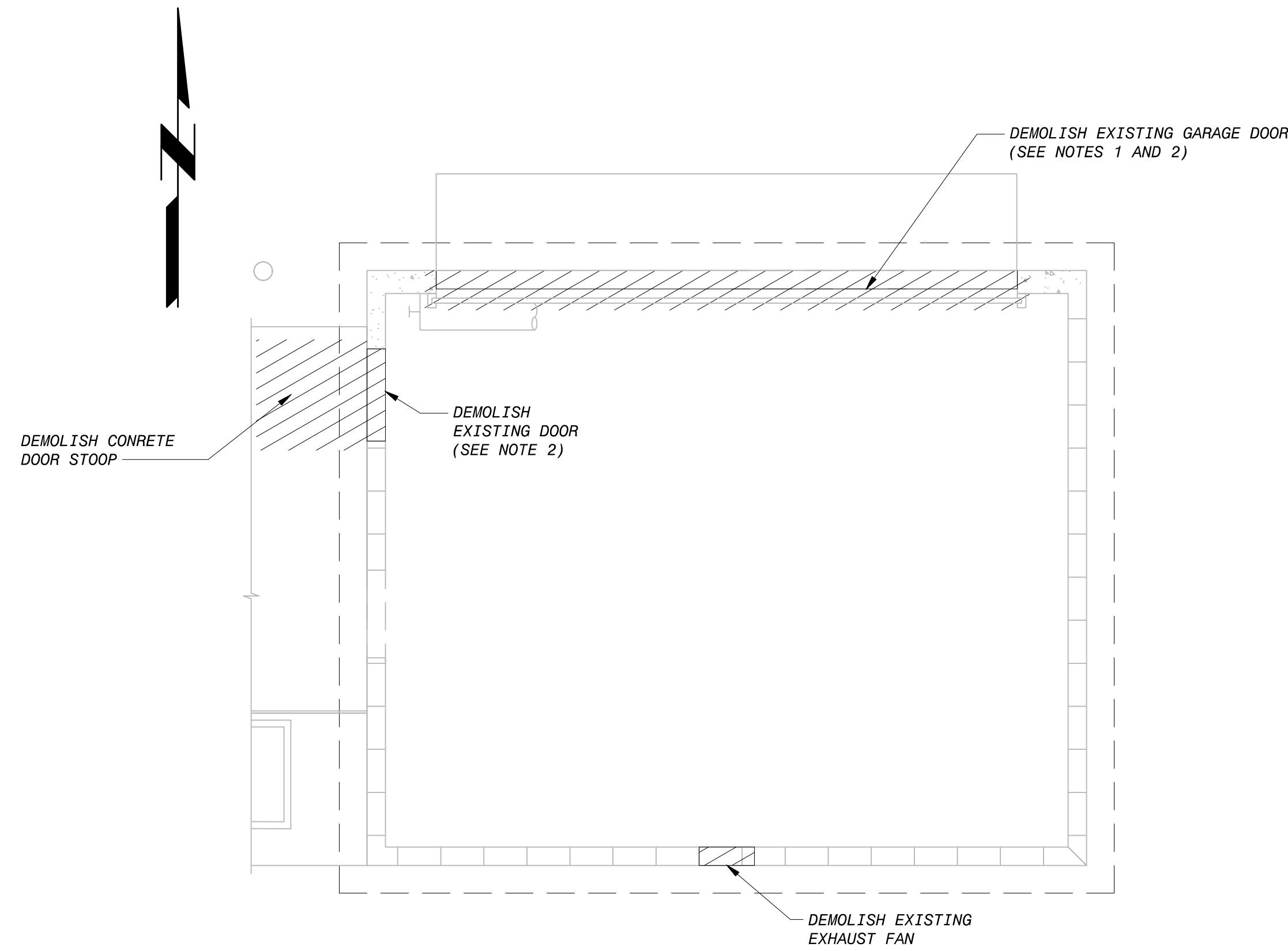


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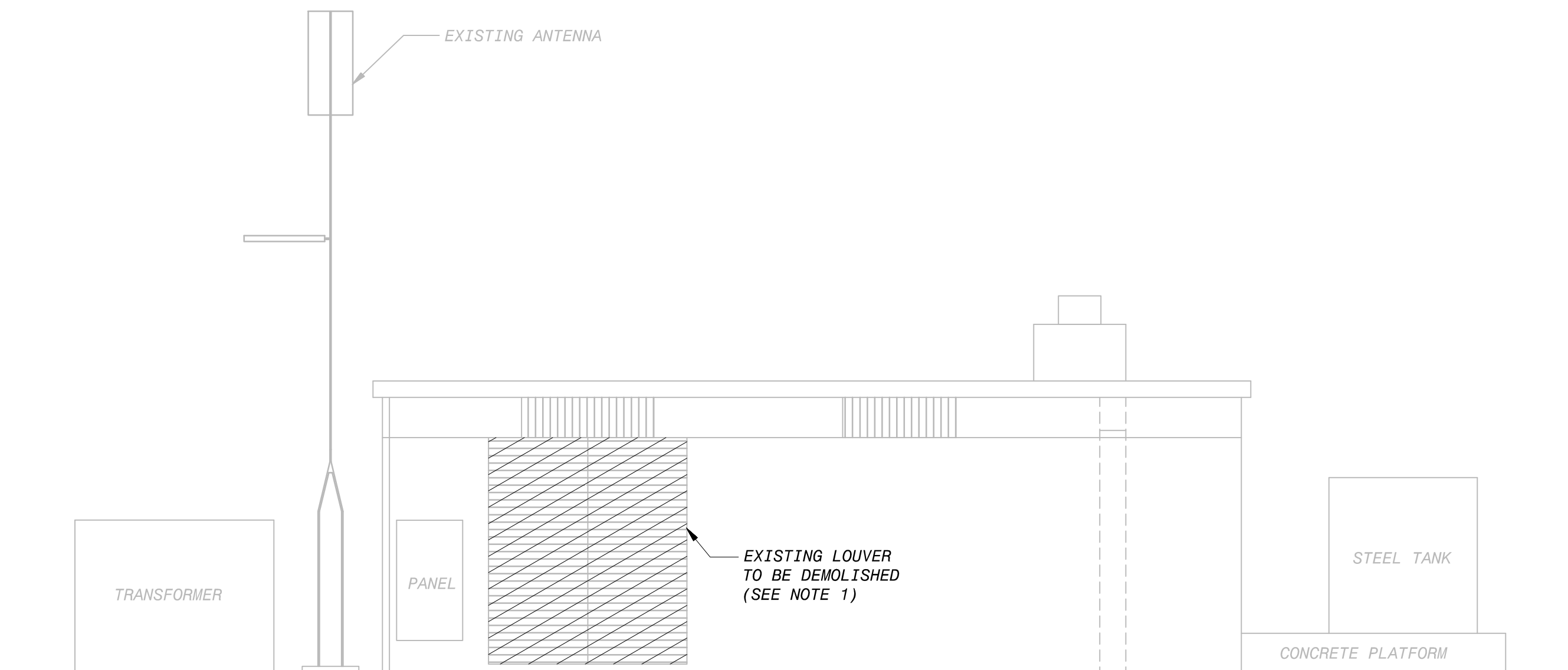
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MAY 2022	90% SUBMITTAL	B	AD	AW	MNT
MAR 2021	50% SUBMITTAL	A	AD	NE	MT
DATE	REVISED AND RECORD OF ISSUE	NO.	BY	CHK	APP
50.3041	M.S. 27-A				
D-01.dwg					
SAVED: DUT48884, 9/15/2022 12:26:57 PM					
PLOTTED: DUT48884, 9/15/2022 12:31:36 PM					
USER: DUT48884					
DWG. VER: 1007					
THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION BY MICHAEL N. TACHE, ON 09/16/2022 AND SEALED BY MICHAEL N. TACHE, A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF FLORIDA, NO. 83893					
<b>BLACK &amp; VEATCH</b> Black & Veatch Corporation 3405 W. Dr. M. L. King Jr. Blvd, Suite 125 Tampa, Florida Certificate No. 8132					
<b>MANATEE COUNTY FLORIDA</b> <b>IMPROVEMENTS AT</b> <b>MASTER LIFT STATION 27-A</b> <b>DEMOLITION</b> <b>PUMP BUILDING PLAN</b>					
DESIGNED: AZ/IK					
DETAILED: HT/AD					
CHECKED: AW					
APPROVED: MNT					
DATE: SEPT 2022					
PROJECT NO. <b>402142</b> <b>D-01</b> SHEET 4 OF 40					



**SECTION 1**  
D-01 1/4" = 1'-0"  
(TYP OF 3 PUMPS)



**EXISTING STORM SHELTER BUILDING PLAN**  
1/4" = 1'-0"

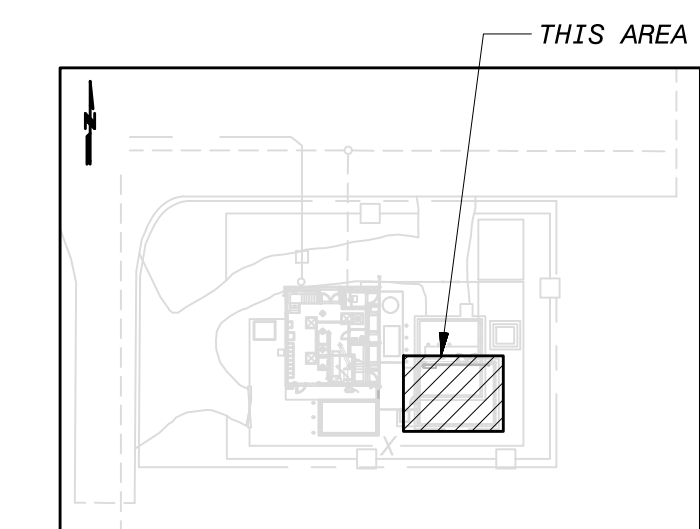


**SECTION 2**  
D-01 1/4" = 1'-0"

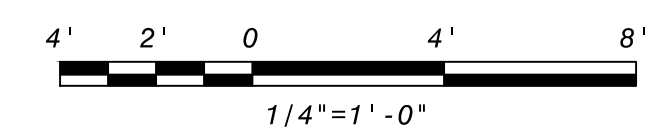
**GENERAL NOTES:**

1. WALL SEALED UP USING CMU BLOCK AND FINISHED TO MATCH EXISTING.
2. REFER TO ARCHITECTURAL DRAWINGS FOR SIZE OF DOORS TO BE DEMOLISHED.

**LEGEND:**



**KEY PLAN**



SEPT 2022	100% SUBMITTAL	C	AD	AW	MNT
MAY 2022	90% SUBMITTAL	B	AD	AW	MNT
MAR 2021	50% SUBMITTAL	A	AD	NE	MT
DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK	APP
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USER: DUT48884					
DWG. VER: 1005					

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FOR CONSTRUCTION BY  
MICHAEL N. TACHE,  
ON 09/16/2022 AND  
SEALED BY  
MICHAEL N. TACHE,  
A LICENSED  
PROFESSIONAL  
ENGINEER IN THE  
STATE OF FLORIDA,  
NO. 83893

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Certificate No. 8132

**MANATEE COUNTY FLORIDA  
IMPROVEMENTS AT  
MASTER LIFT STATION 27-A**

**DEMOLITION  
PUMP AND PIPING, STORM SHELTER  
PLAN AND ELEVATION**

DESIGNED: AZ/IK  
DETAILED: HT/AD  
CHECKED: AW  
APPROVED: MNT  
DATE: SEPT 2022

IF THIS BAR DOES NOT  
MEASURE 1" THEN DRAWING IS  
NOT TO FULL SCALE

PROJECT NO.  
402142

**D-02**  
SHEET  
5 OF 40

**ISSUED FOR CONSTRUCTION**



EXISTING 30kVA TRANSFORMER  
(TO REMAIN)  
TRANSFORMER SHOULD BE  
RE-ENERGIZED FROM NEW  
SWITCHBOARD

MCC, ATS, AND RTU DEMOLITION  
NO SCALE



EXISTING PUMPS  
(SEE NOTE 1)

PUMP DEMOLITION  
NO SCALE



DEMOLISH EXISTING VFDS  
AND EQUIPMENT PAD  
(SEE NOTE 2)

EXISTING AFD DEMOLITION  
NO SCALE

LEGEND:

DEMOLITION WORK

GENERAL NOTES:

1. CONTRACTOR SHALL REUSE EXISTING EQUIPMENT PADS FOR THE THREE NEW PUMPS.
2. HOUSEKEEPING PADS FOR ELECTRICAL GEAR SHALL BE DEMOLISHED AS SHOWN. CONCRETE FLOOR SHALL HAVE A SMOOTH FINISH TO MATCH EXISTING.

SEPT 2022	100% SUBMITTAL	B	AD	DG	MNT
MAY 2022	90% SUBMITTAL	A	AD	DG	MNT
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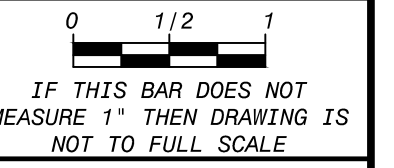
THIS DRAWING WAS  
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FOR CONSTRUCTION BY  
MICHAEL N. TACHE,  
ON 09/16/2022 AND  
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MICHAEL N. TACHE,  
A LICENSED  
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ENGINEER IN THE  
STATE OF FLORIDA,  
NO. 83893

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**MANATEE COUNTY FLORIDA  
IMPROVEMENTS AT  
MASTER LIFT STATION 27-A**

**DEMOLITION  
BUILDING PHOTOS**

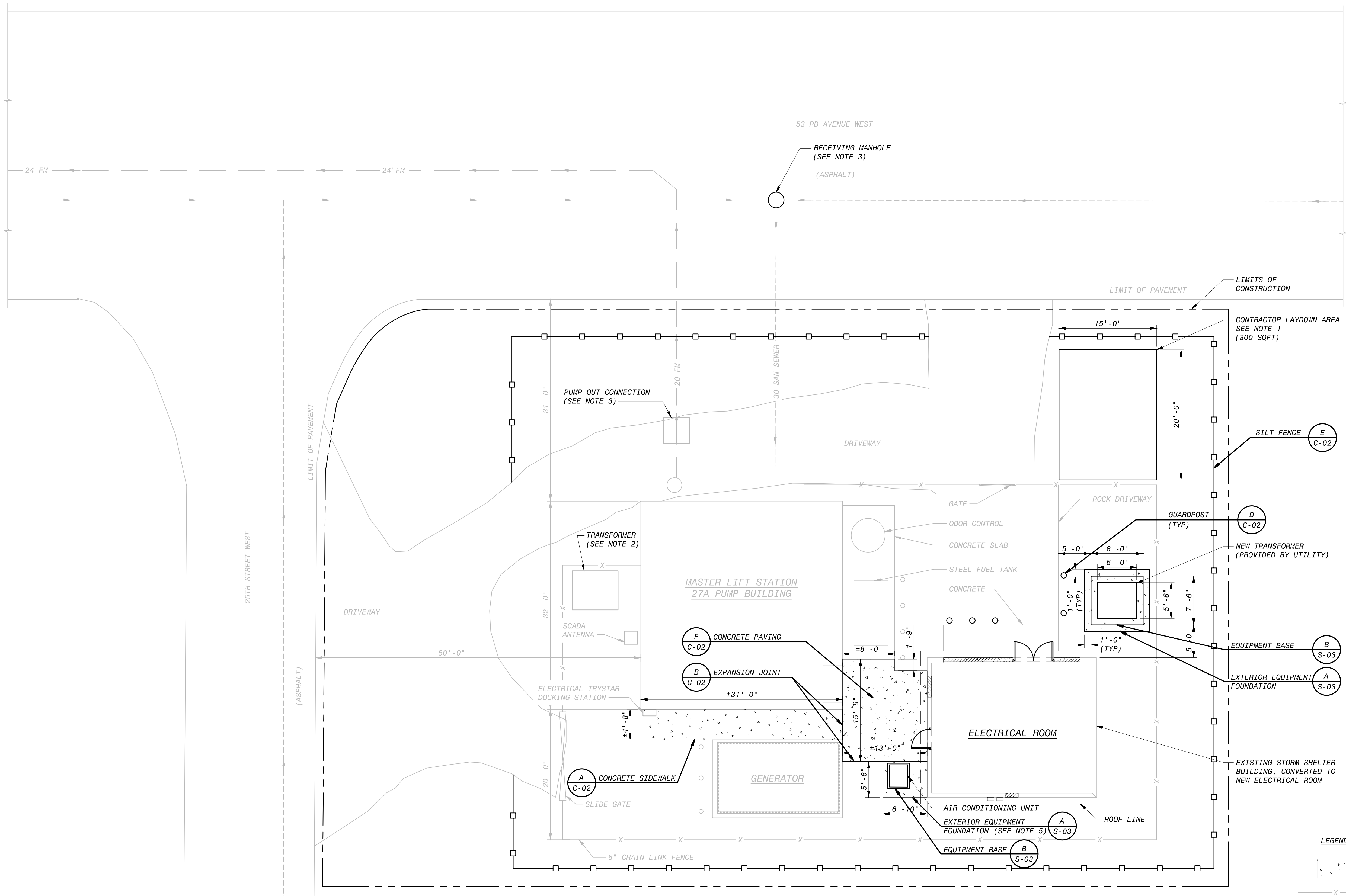
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DATE: SEPT 2022



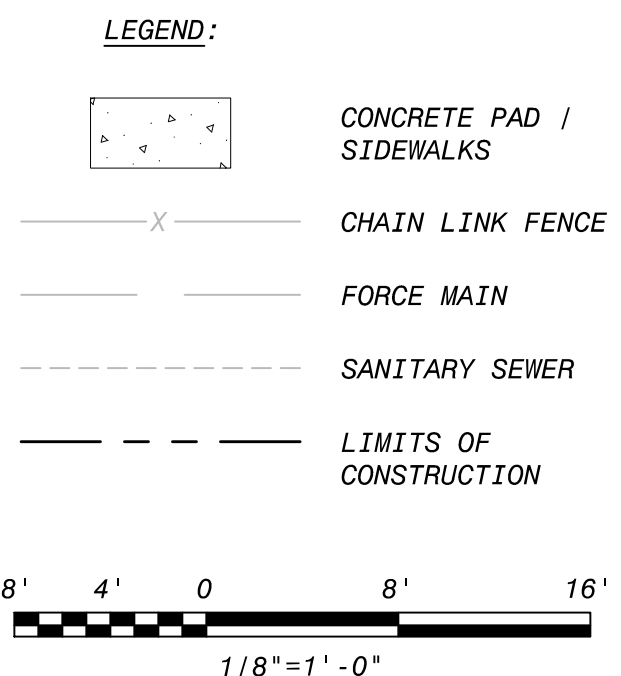
PROJECT NO.  
402142

**D-03**  
SHEET  
6 OF 40

**ISSUED FOR CONSTRUCTION**



- NOTES:**
1. CONTRACTOR SHALL MAINTAIN THE SITE AND ACCESS TO THE PUMP STATION, GENERATOR AND FUEL TANK AT ALL TIMES. ONSITE LAYDOWN AREA IS LIMITED TO THE AREA SHOWN. CONTRACTOR RESPONSIBLE FOR ADDITIONAL OFFSITE LAYDOWN AREAS AS NEEDED FOR THE WORK.
  2. EXISTING TRANSFORMER TO REMAIN IN USE WHILE THE NEW WORK IS COMPLETED. ONCE THE NEW ELECTRICAL EQUIPMENT IS ONLINE AND THE PUMPS ARE SWITCHED OVER, THE EXISTING TRANSFORMER SHALL BE REMOVED.
  3. TEMPORARY STATION BYPASSING AS NEEDED FOR ANY INTERMITTENT SHUTDOWNS SHALL TO BE PROVIDED BY THE CONTRACTOR. EXISTING RECEIVING MANHOLE LOCATED IN THE STREET AND THE EXISTING PUMP OUT CONNECTION SHALL BE USED FOR STATION BYPASSING. CONTRACTOR SHALL PROVIDE 24 HOUR BYPASS MONITORING WHILE STATION IS BEING BYPASSED REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS, INCLUDING THE SANITARY SEWER BYPASS PUMPING SECTION (02720) AND THE CONSTRUCTION SCHEDULE & PROJECT RESTRAINS SECTION (01310). CONTRACTOR SHALL COORDINATE OPERATION OF EXISTING PUMPS, VALVES AND ELECTRICAL GEAR WITH THE OWNER.
  4. THE BACKGROUND OF THIS DRAWING IS BASED ON RECORD DRAWINGS AND ENGINEER'S FIELD OBSERVATIONS, THE BACKGROUND IS NOT A SURVEY. THE CONTRACTOR SHALL VERIFY LOCATIONS AND DISTANCES. DIMENSIONS PROVIDED THIS SHEET ARE APPROXIMATE AND THE CONTRACTOR SHALL BASE QUANTITIES APPROPRIATELY.
  5. CONCRETE PAD TO SLOPE SOUTH TO ALLOW FOR PROPER DRAINAGE.



**ISSUED FOR CONSTRUCTION**

SEPT 2022	100% SUBMITTAL	C	AD	AW	INT
MAY 2022	90% SUBMITTAL	B	AD	AW	INT
MAR 2021	50% SUBMITTAL	A	AD	NE	MT
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USER: DUT48884					
DWG. VER: 1000					

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**Manatee County**

**BLACK & VEATCH**

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 Certificate No. 8132

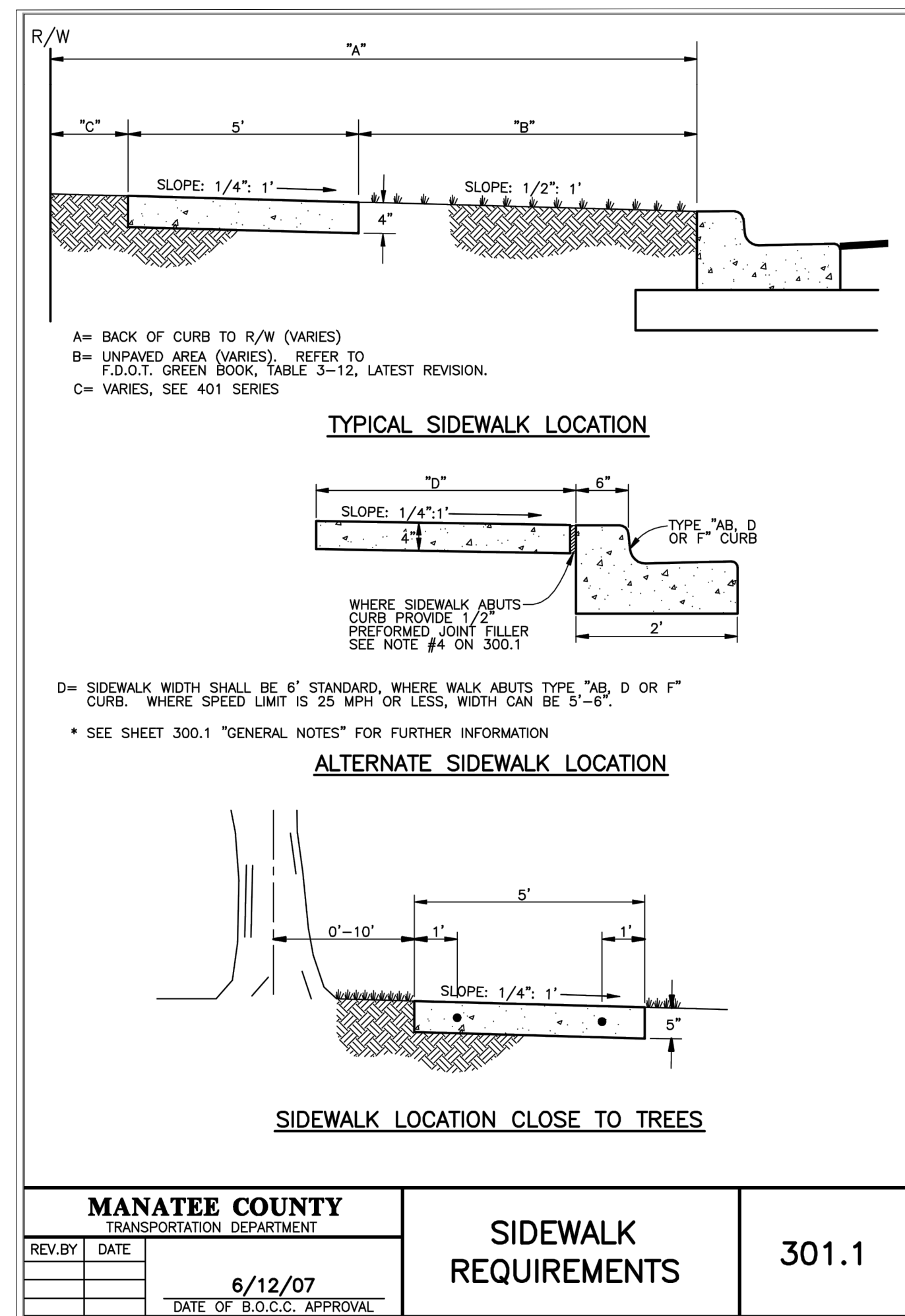
**MANATEE COUNTY FLORIDA**  
**IMPROVEMENTS AT**  
**MASTER LIFT STATION 27-A**

**CIVIL**  
**SITE PLAN**

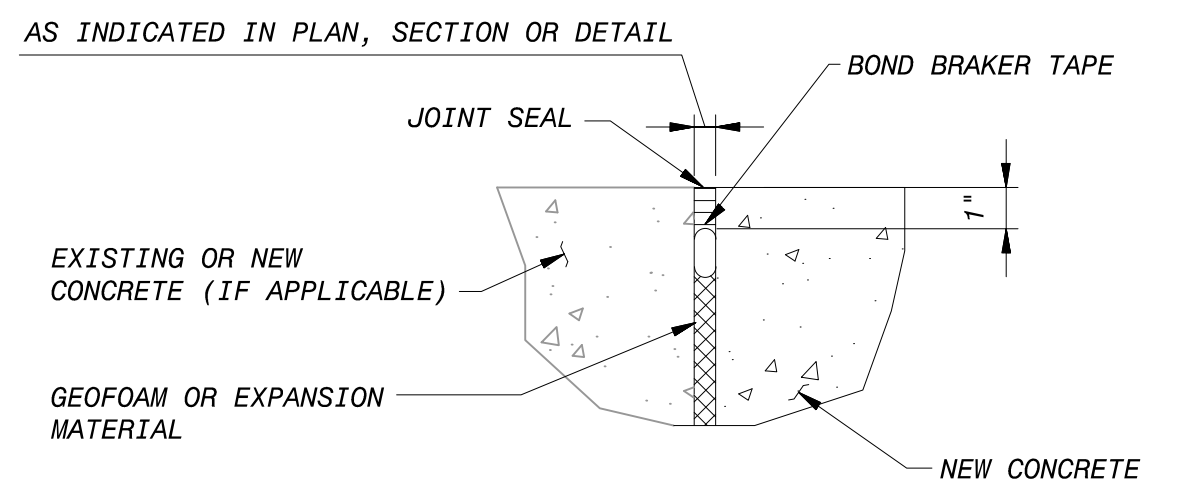
DESIGNED: AZ/IKK  
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 APPROVED: MINT  
 DATE: SEPT 2022

PROJECT NO.  
 402142

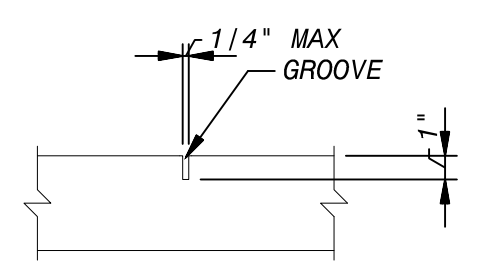
C-01  
 SHEET  
 7 OF 40



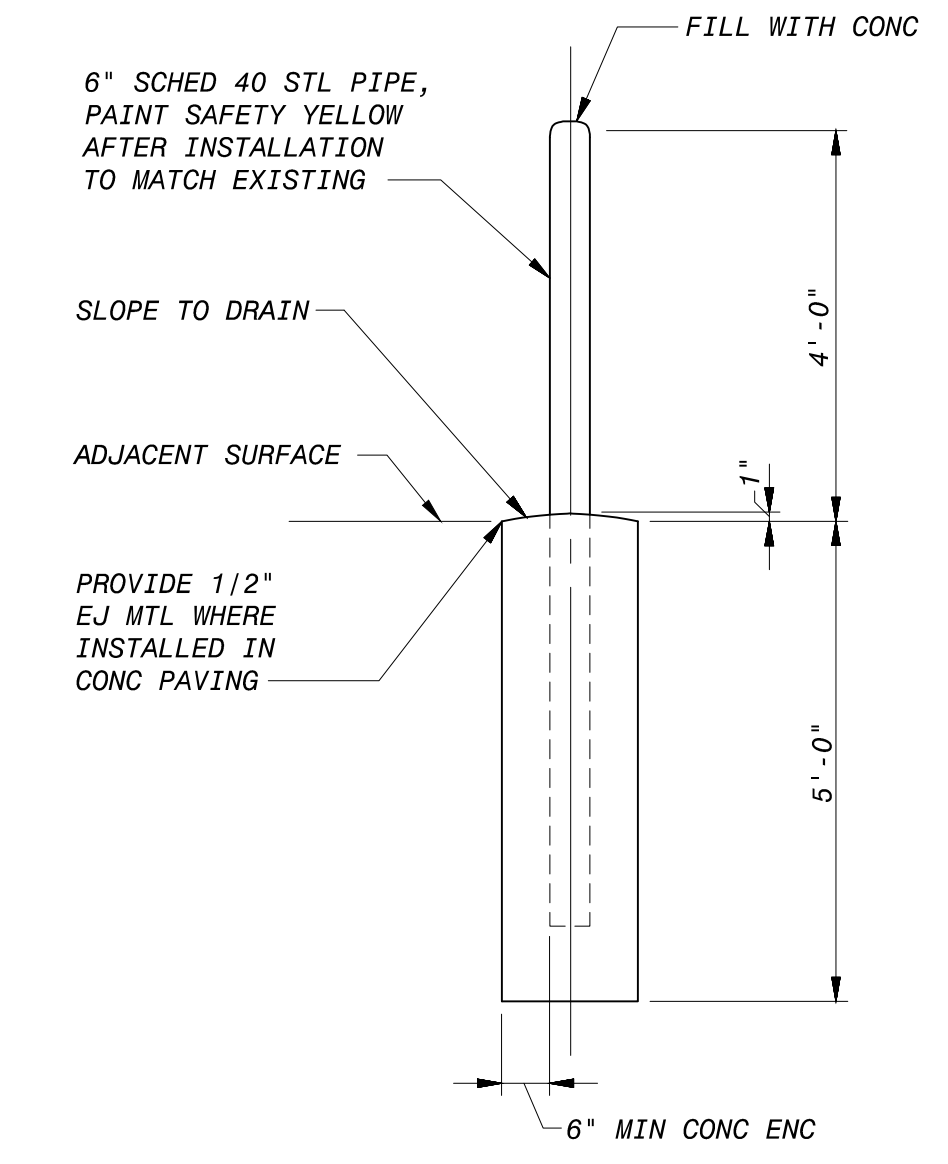
**A TYPICAL SIDEWALK DETAIL**  
C-01 NO SCALE



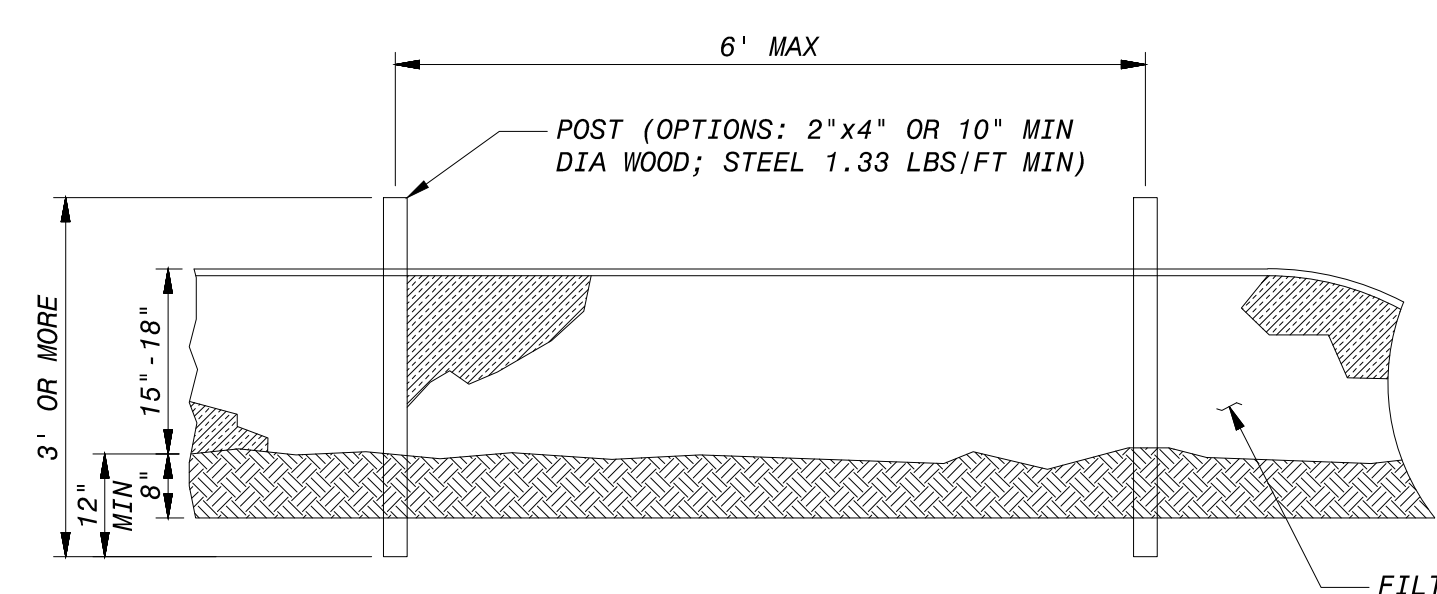
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NO SCALE



**C TOOLED CONTRACTION JOINT**  
NO SCALE

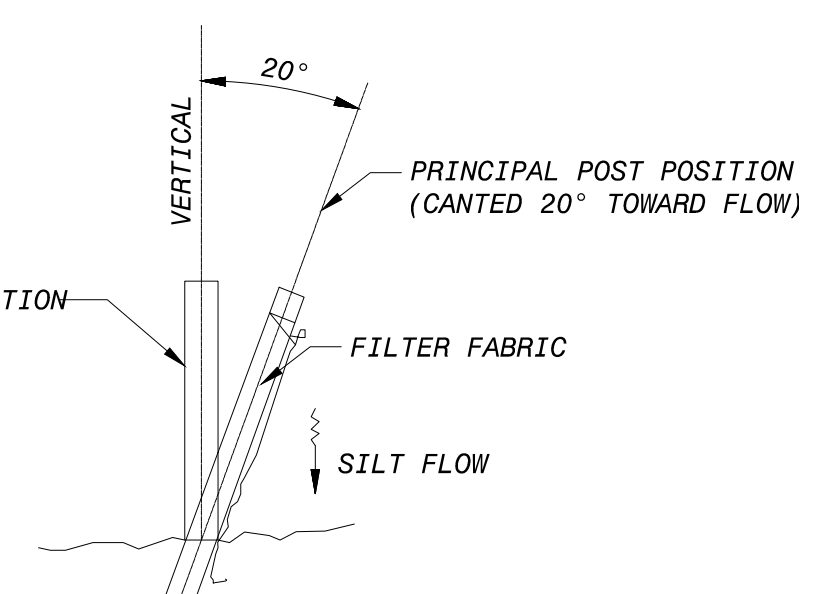


**D GUARDPOST**  
C-01 NO SCALE



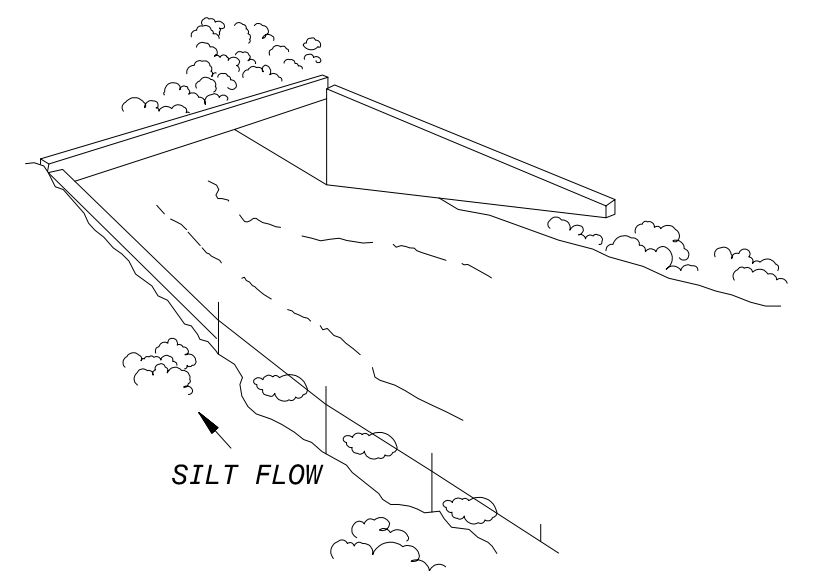
**ELEVATION**

**TYPE 3 SILT FENCE**



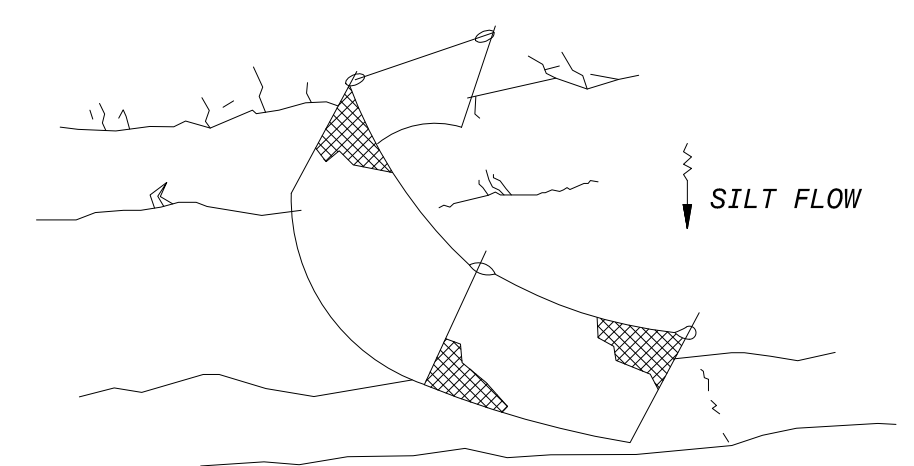
**SECTION**

**TYPE 3 SILT FENCE**

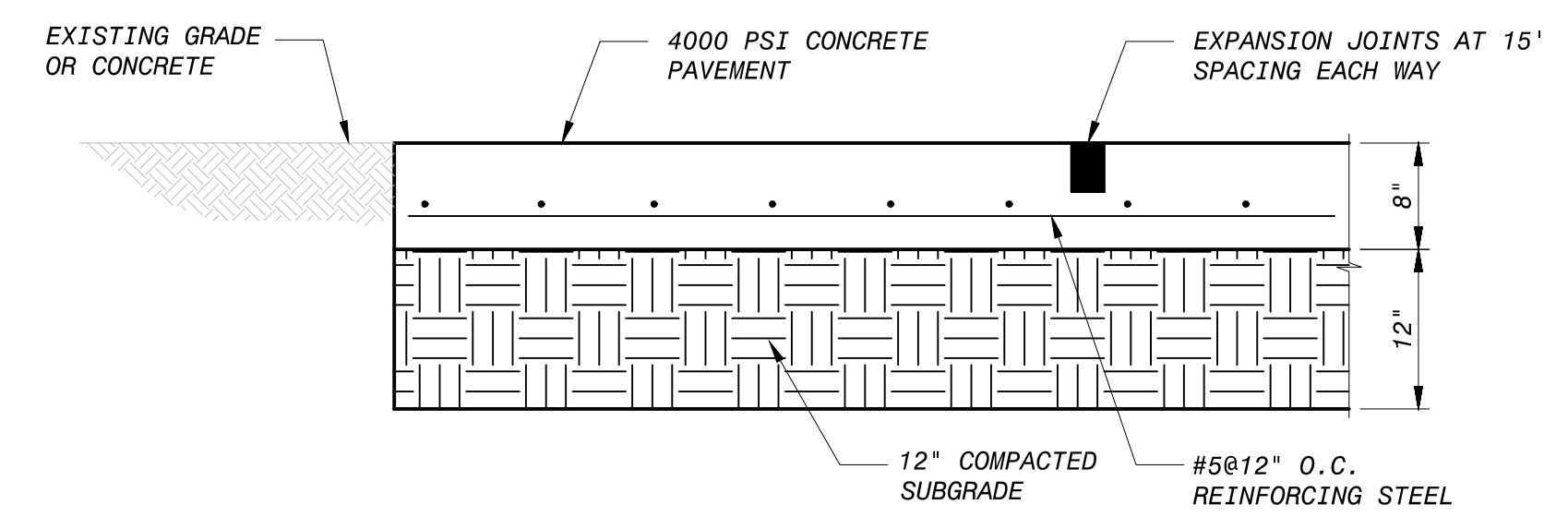


**TYPE 3 SILT FENCE**

**E TYPE 3 SILT FENCE APPLICATIONS SILT FENCE**  
C-01 NO SCALE



**TYPE 3 SILT FENCE**



**SECTION**

**F CONCRETE PAVING**  
NO SCALE

**NOTES:**

- DO NOT DEPLOY IN A MANNER THAT SILT FENCES WILL ACT AS A DAM ACROSS PERMANENT FLOWING WATERCOURSES. SILT FENCES ARE TO BE USED AT UPLAND LOCATIONS AND TURBIDITY BARRIERS USED AT PERMANENT BODIES OF WATER.
- SILT FENCING SHALL BE PROVIDED AS SHOWN ON DRAWINGS. ADDITIONAL EROSION CONTROL MEASURES SHALL BE PROVIDED AS NEEDED TO MEET REQUIREMENTS IN SPECIFICATION 02276.

REV	NO.	DATE	BY	CHK	APP
C	AD	AW	MNT		
B	AD	AW	MNT		
A	AD	AW	MNT		

100% SUBMITTAL  
90% SUBMITTAL  
50% SUBMITTAL

DATE: 9/16/2022  
NO. 50.3071 - M.S. 27-A  
C-02.dwg  
SAVED: D:\D\4884 - 9/16/2022 5:37:30 PM  
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USER: D:\D\4884 - 83893  
NO. 83893

THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION BY MICHAEL N. TACHE, ON 09/16/2022 AND SEALED BY MICHAEL N. TACHE, A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF FLORIDA, NO. 83893

**Manatee County** FLORIDA

**BLACK & VEATCH**

Black & Veatch Corporation  
3405 W. Dr. M. L. King Jr. Blvd, Suite 125  
Tampa, Florida  
Certificate No. 8152

**MANATEE COUNTY FLORIDA**  
IMPROVEMENTS AT  
MASTER LIFT STATION 27-A

CIVIL  
TYPICAL DETAILS

DESIGNED: AZ/VK
DETAILED: HT/AD
CHECKED: AW
APPROVED: MNT
DATE: SEPT 2022

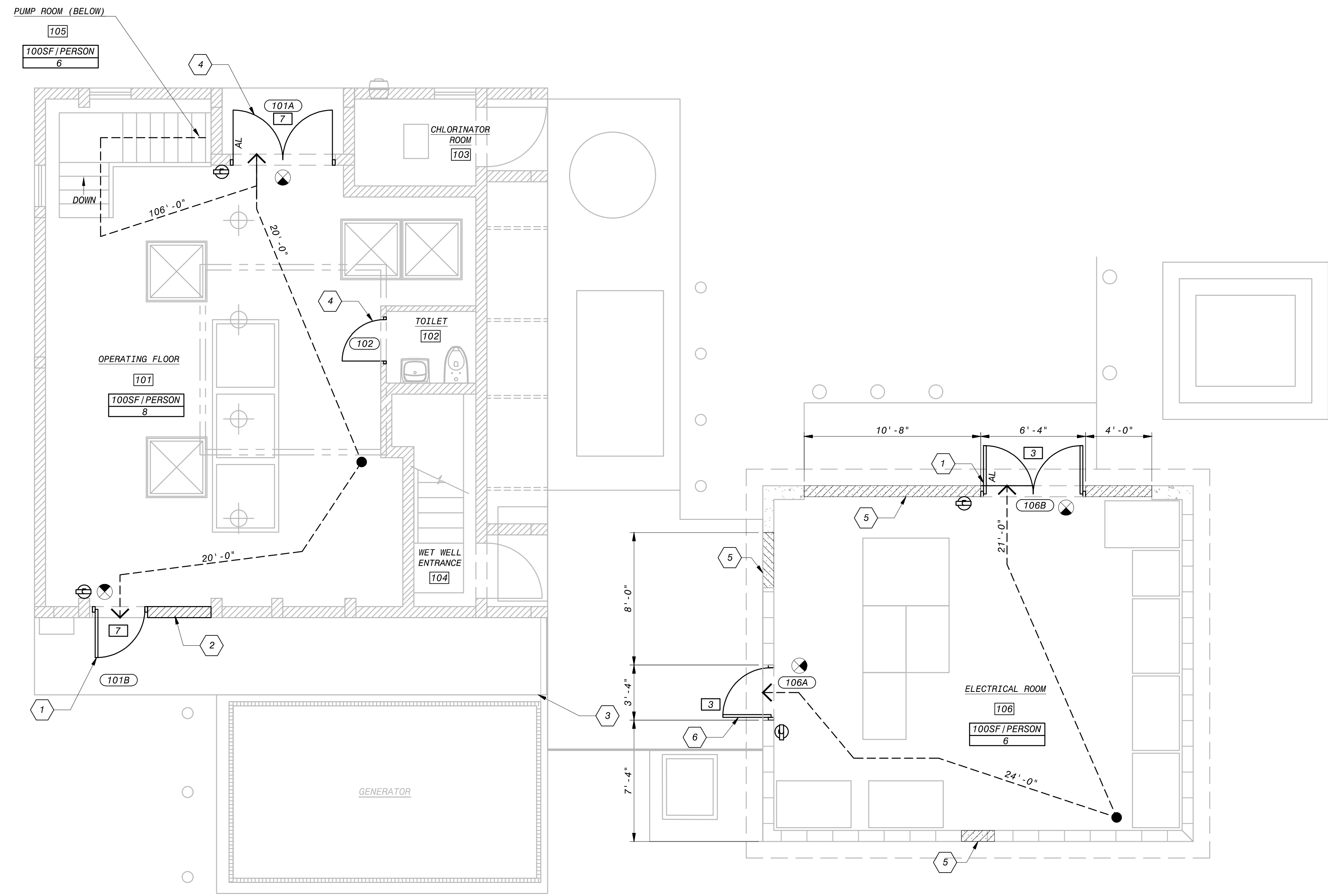
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PROJECT NO.  
402142

C-02  
SHEET  
8 OF 40

**ISSUED FOR CONSTRUCTION**





MLS 27-A - FLOOR PLAN AND LIFE SAFETY PLAN  
1/4" = 1'-0"

- GENERAL SHEET NOTES**
- EXISTING FUNCTION AND OCCUPANCY CLASSIFICATION FOR LIFT STATION IS REMAINING SAME AS IT'S CURRENT USE. MODIFICATIONS TO THE BUILDING ARE MAINTAINING THE CURRENT LEVEL OF SAFETY FOR EGRESS.
  - SEE DRAWING A-03 FOR ARCHITECTURAL ABBREVIATION LEGEND.
  - ALL INTERIOR PAINTED SURFACES TO BE REPAINTED, SEE ROOM FINISH SCHEDULE ON DRAWING A-03.

- SHEET KEYNOTES**
- NEW DOOR AND FRAME IN EXISTING OPENING ADJACENT TO NEW WALL INFILL. SEE DOOR SCHEDULE ON DRAWING A-03.
  - NEW CMU INFILL WITH EXTERIOR STUCCO FINISH TO MATCH EXISTING. SEE STRUCTURAL FOR CMU REINFORCING.
  - NEW SIDEWALK WALKWAY, SEE CIVIL DRAWINGS.
  - NEW DOOR AND FRAME IN EXISTING WALL OPENING, SIZE TO MATCH EXISTING, NO CHANGE TO WALL OPENING. SEE DOOR SCHEDULE ON DRAWING A-03.
  - NEW 8" CMU INFILL, SEE STRUCTURAL DRAWINGS FOR REINFORCING AND LINTEL INFORMATION. PAINT CMU TO MATCH EXISTING.
  - NEW DOOR AND FRAME IN NEW WALL OPENING. SEE DOOR SCHEDULE ON DRAWING A-03. SEE STRUCTURAL DRAWINGS FOR CMU OPENING MODIFICATIONS.

**ARCHITECTURAL SYMBOL LEGEND**

(101A)	DOOR
ROOM NAME (101)	ROOM NAME & NUMBER

**LIFE SAFETY LEGEND**

(Fire Extinguisher Symbol)	FIRE EXTINGUISHER
(Travel Distance Symbol)	TRAVEL DISTANCE
(Occupant Load Symbol)	OCCUPANTS PER SF OCCUPANT LOAD
(Cumulative Occupant Load Symbol)	CUMULATIVE OCCUPANT LOAD
(Exit Symbol)	EXIT

**BUILDING CODE ANALYSIS**

APPLICABLE BUILDING CODES: 2020 FLORIDA BUILDING CODE - EXISTING BUILDING 2020 FLORIDA BUILDING CODE	
BUILDING NAME	MASTER LIFT STATION 27-A
OCCUPANCY CLASSIFICATION	F-2 (EXISTING)
TYPE OF CONSTRUCTION	I1-B
AREA ALLOWED	23,000 SF
AREA ACTUAL	1,924 SF TOTAL (EXISTING) 440 SF LIFT STATION @ LOWER LEVEL 924 SF LIFT STATION @ GRADE LEVEL 560 SF ELECTRICAL ROOM @ GRADE LEVEL
BUILDING HEIGHT ALLOWED	3 STORIES, 55 SFT
BUILDING HEIGHT ACTUAL	1 STORY, 14 FT
DESIGN OCCUPANT LOAD	100 SF/PERSON (INDUSTRIAL) 20 TOTAL OCCUPANTS
TRAVEL DISTANCE	EXISTING BUILDING, SEE NOTE 1
EXITS REQUIRED	2
FIRE SEPARATION	NONE EXISTING
FIRE SPRINKLERS	NONE EXISTING

SEPT 2022	100% SUBMITTAL	PR	MNT
MAY 2022	90% SUBMITTAL	B	MNT
MAR 2021	50% SUBMITTAL	A	MNT
DATE	REVISED	NO.	BY
50-3071	MLS 27-A		
A-01.00g			
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USER: DUT48884			
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**Manatee County**  
Florida Registered  
**Black & Veatch Architects, PLLC**  
License Number: AA2600279  
8400 Ward Parkway  
Kansas City, Missouri

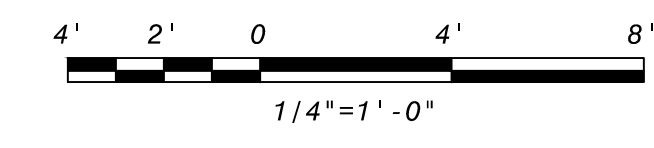
**MANATEE COUNTY FLORIDA**  
**IMPROVEMENTS AT**  
**MASTER LIFT STATION 27-A**  
**ARCHITECTURAL**  
**FLOOR PLAN, LIFE SAFETY PLAN AND CODE ANALYSIS**

DESIGNED: PR  
DETAILED: MVS/AD  
CHECKED: RB  
APPROVED: MNT  
DATE: SEPT 2022

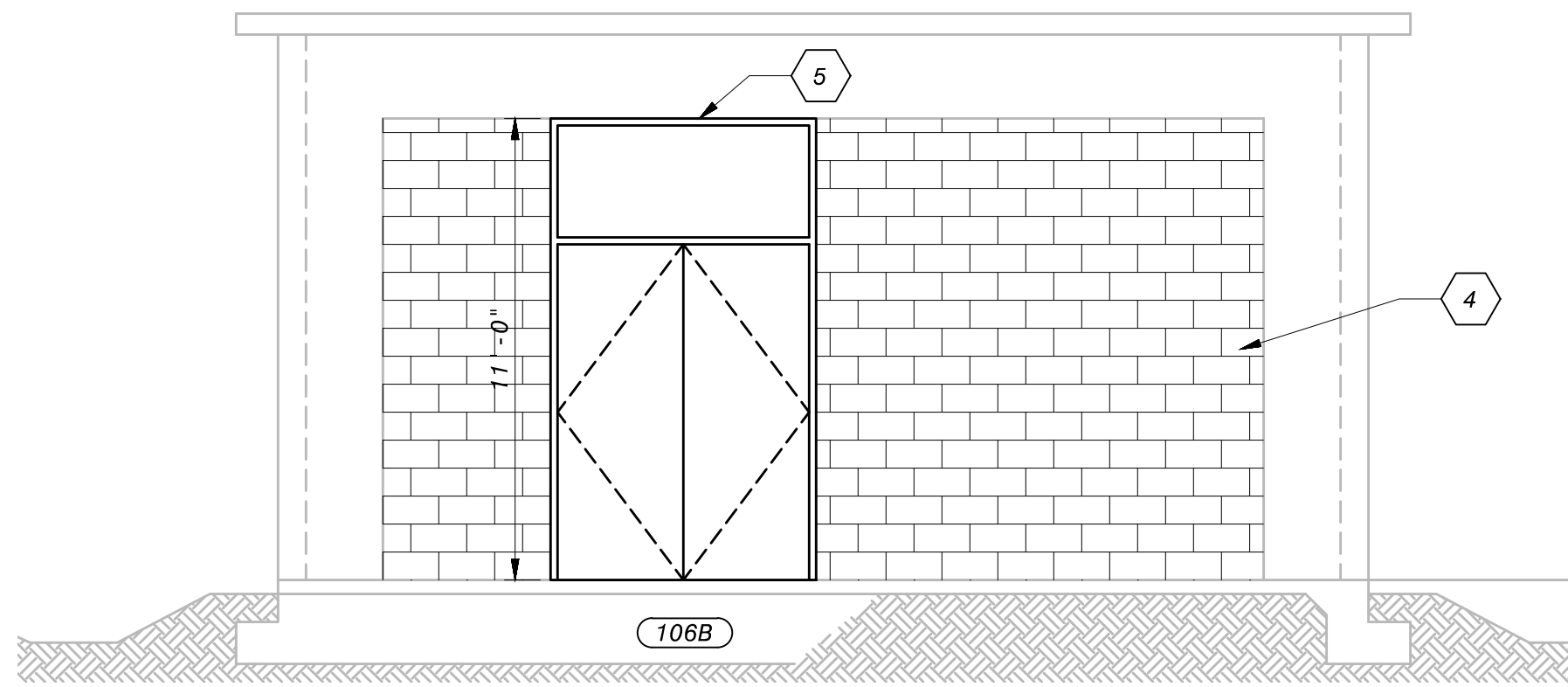
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PROJECT NO.  
402142

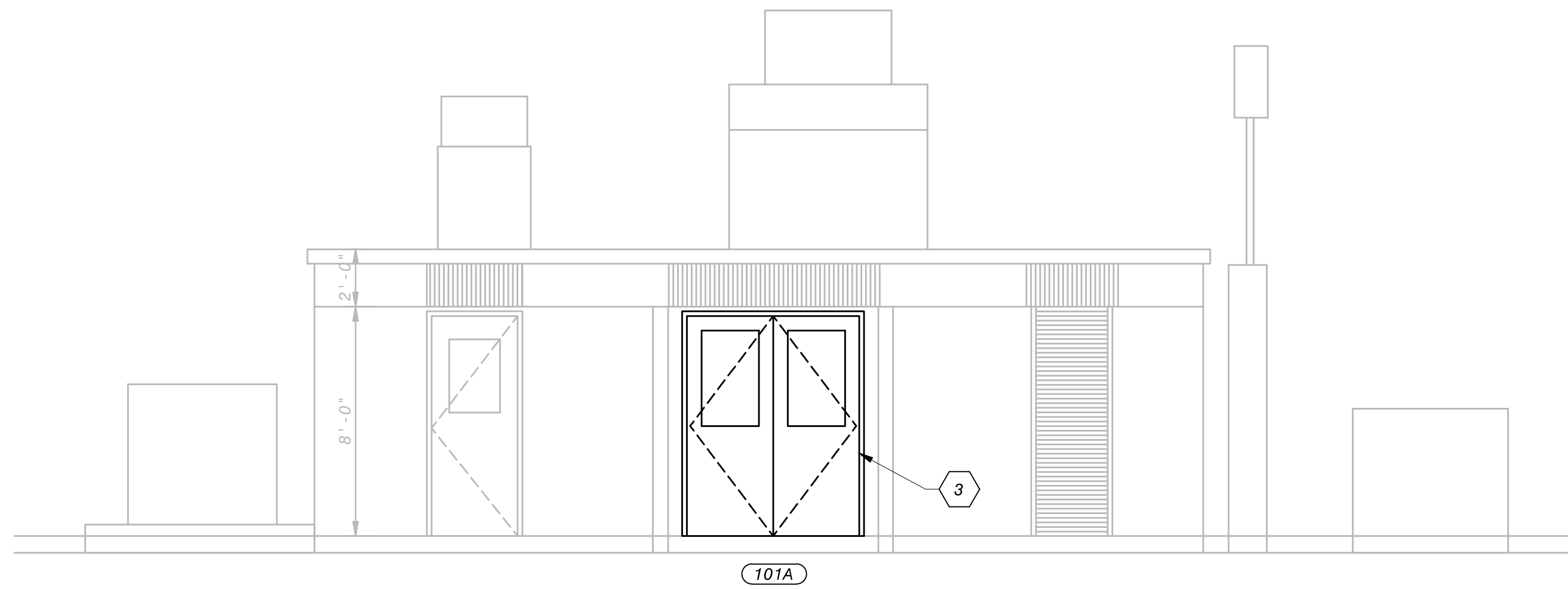
**A-01**  
SHEET  
9 OF 40



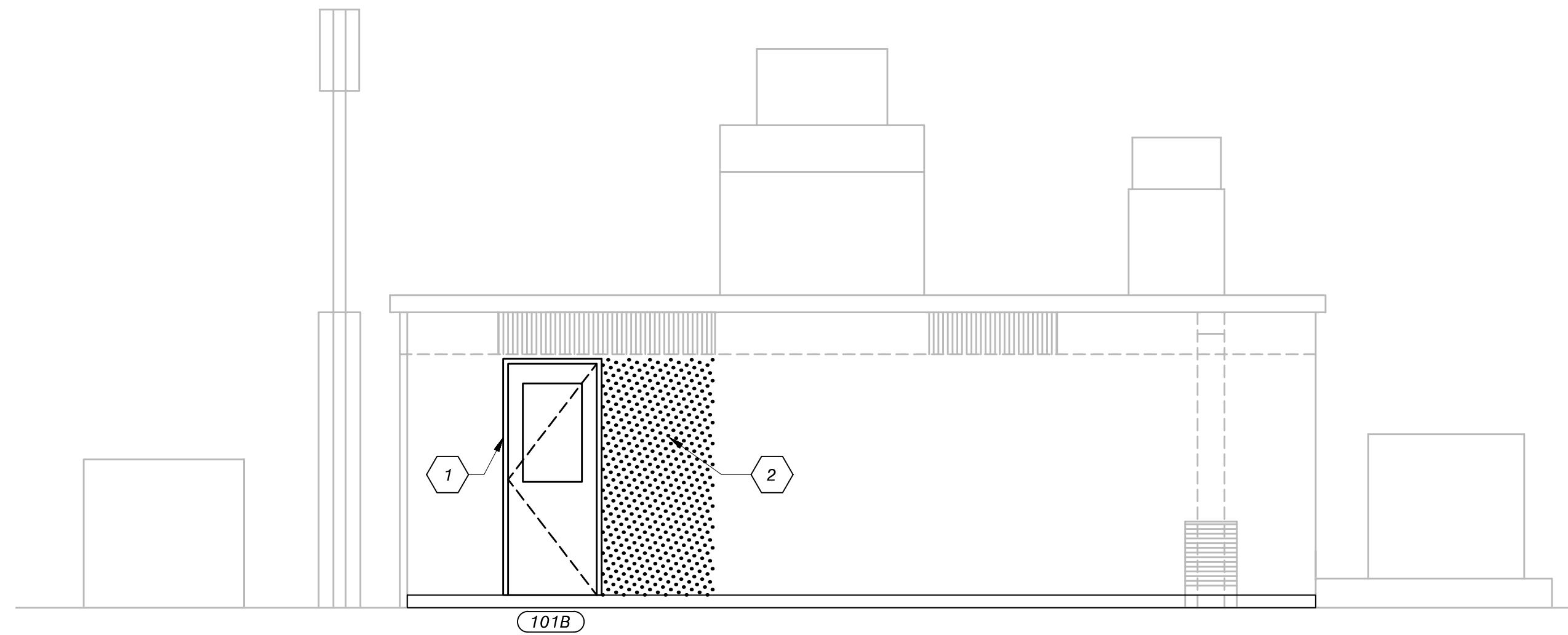
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**NORTH ELEVATION-EXISTING STORM SHELTER BUILDING (ELECTRICAL ROOM)**  
1/4" = 1'-0"



**NORTH ELEVATION - EXISTING PUMP STATION BUILDING**  
1/4" = 1'-0"



**SOUTH ELEVATION - EXISTING PUMP STATION BUILDING**  
1/4" = 1'-0"

**GENERAL SHEET NOTES**

- SEE DRAWING A-03 FOR ARCHITECTURAL ABBREVIATION LEGEND.

**SHEET KEYNOTES**

- NEW DOOR AND FRAME IN EXISTING OPENING ADJACENT TO NEW WALL INFILL. SEE DOOR SCHEDULE ON DRAWING A-03.
- NEW CMU INFILL WITH EXTERIOR STUCCO FINISH TO MATCH EXISTING. SEE STRUCTURAL FOR CMU REINFORCING.
- NEW DOOR AND FRAME IN EXISTING WALL OPENING SIZE TO MATCH EXISTING. NO CHANGE TO WALL OPENING. SEE DOOR SCHEDULES ON DRAWING A-03.
- NEW 8" CMU INFILL, SEE STRUCTURAL DRAWINGS FOR REINFORCING AND LINTEL INFORMATION. PAINT CMU TO MATCH EXISTING.
- NEW DOUBLE DOOR WITH REMOVABLE TRANSOM FULL HEIGHT IN EXISTING OPENING, CONTRACTOR SHALL FIELD VERIFY EXISTING OPENING HEIGHT.

SEPT 2022	100% SUBMITTAL	C	AD	PR	MNT
MAY 2022	90% SUBMITTAL	B	AD	PR	MNT
MAR 2021	50% SUBMITTAL	A	AD	PR	MT
DATE	REVISED AND RECORD OF ISSUE	NO.	BY	CHK	APP
50-3071	M.S. 27-A	A-02.00g			
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XREF1: A-02.00g XREF2: SAVED:DUT48884, 9/17/2022 4:21:41 PM XREF3: PLOTTED:DUT48884, 9/15/2022 7:47:18 PM XREF4: USER:DUT48884 [DWG VER: 1000]					

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**Manatee County**  
FLORIDA

**Black & Veatch Architects, PLLC**  
Florida Registered  
License Number: AAZ6002Z79  
8400 Ward Parkway  
Kansas City, Missouri

**MANATEE COUNTY, FLORIDA**  
**IMPROVEMENT AT**  
**MASTER LIFT STATION 27-A**  
**ARCHITECTURAL**  
**BUILDING ELEVATIONS**

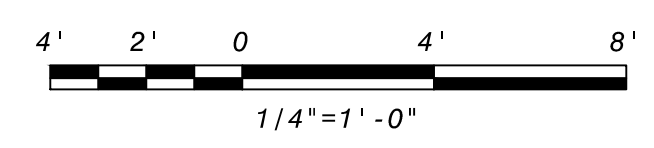
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 CHECKED: RB  
 APPROVED: MNT  
 DATE: SEPT 2022

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PROJECT NO.  
402142

**A-02**  
SHEET  
10 OF 40

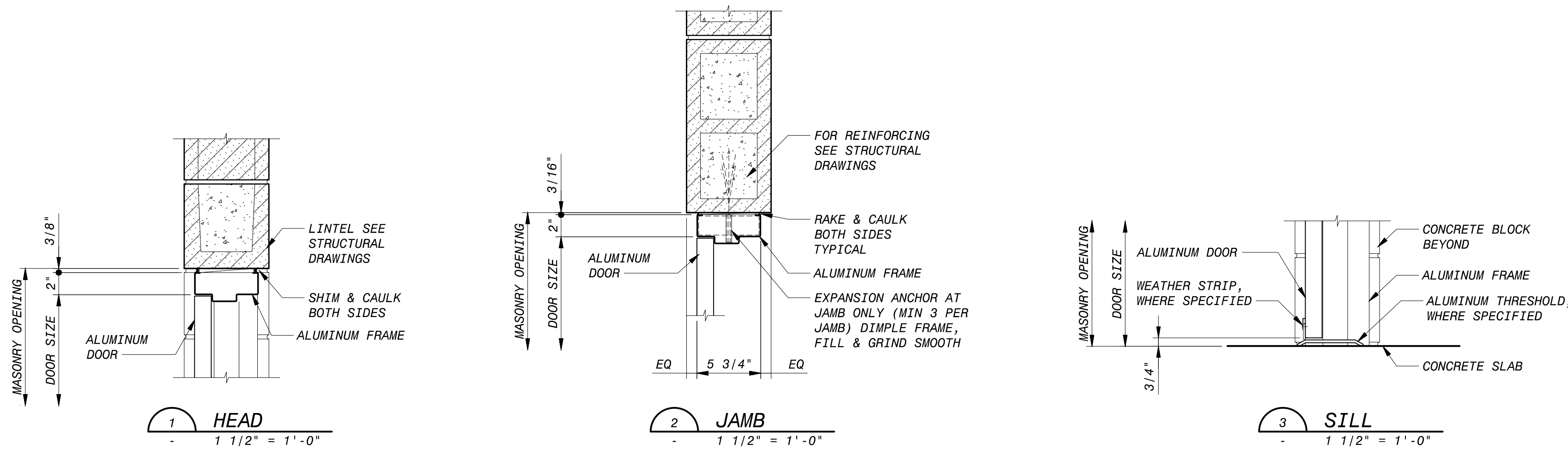
**LEGEND:**  
 NEW CMU INFILL WITH STUCCO FINISH



**ISSUED FOR CONSTRUCTION**

ROOM FINISH SCHEDULE																			
ROOM NO.	ROOM NAME	FLOOR		WALLS												CEILING			REMARKS
		MATERIAL	FINISH	NORTH			EAST			SOUTH			WEST			MATERIAL	FINISH	HEIGHT	
				MATERIAL	FINISH	BASE	MATERIAL	FINISH	BASE	MATERIAL	FINISH	BASE	MATERIAL	FINISH	BASE				
101	OPERATING FLOOR	CO	EX	CB/CO	PT	NO	CB/CO	PT	NO	CB/CO	PT	NO	CB/CO	PT	NO	CO	PT	11'-6"	
102	TOILET	CO	EX	CB	PT	NO	CB/CO	PT	NO	CB/CO	PT	NO	CB	PT	NO	CO	PT	11'-6"	
103	CHLORINATION ROOM	CO	EX	CB/CO	PT	NO	CB/CO	PT	NO	CB/CO	PT	NO	CB	PT	NO	CO	PT	11'-6"	
104	WET WELL ENTRANCE	CO	EX	CB	PT	NO	CB/CO	PT	NO	CB/CO	PT	NO	CB	PT	NO	CO	PT	11'-6"	
105	PUMP ROOM	CO	EX	CO	PT	NO	CO	PT	NO	CO	PT	NO	CO	PT	NO	CO	PT	21'-6"	
106	ELECTRICAL ROOM	CO	EX	CB/CO	PT	NO	CB/CO	PT	NO	CB/CO	PT	NO	CB/CO	PT	NO	CO	PT	VARIES	

DOOR SCHEDULE																
LEVEL	DOOR ID	DOOR SIZE			DOOR							FRAME				REMARKS
	NO. (D)	WIDTH	HEIGHT	MATERIAL	HEAD	JAMB	SILL	TYPE (D)	HARDWARE	RATING	MATERIAL	HEAD	JAMB	DEPTH		
OPERATING LEVEL	101A	PR	3'-0"	7'-10"	ALUM	1 SIM	2 SIM	3 SIM	B	1	-	ALUM	2"	2"	6"	CONTRACTOR SHALL FIELD VERIFY EXISTING OPENING DIMENSIONS
OPERATING LEVEL	101B		3'-0"	7'-10"	ALUM	1 SIM	2 SIM	3 SIM	B	2	-	ALUM	2"	2"	6"	CONTRACTOR SHALL FIELD VERIFY EXISTING OPENING DIMENSIONS
OPERATING LEVEL	102		2'-4"	6'-8"	ALUM	1 SIM	2 SIM	3 SIM	C	3	-	ALUM	2"	2"	6"	CONTRACTOR SHALL FIELD VERIFY EXISTING OPENING DIMENSIONS
OPERATING LEVEL	106A		3'-0"	7'-2"	ALUM	1	2	3	A	4	-	ALUM	2"	2"	6"	
OPERATING LEVEL	106B	PR	3'-0"	8'-0"	ALUM	1 SIM	2	3	A	1	-	ALUM	2"	2"	6"	WITH 2'-8" REMOVABLE TRANSOM



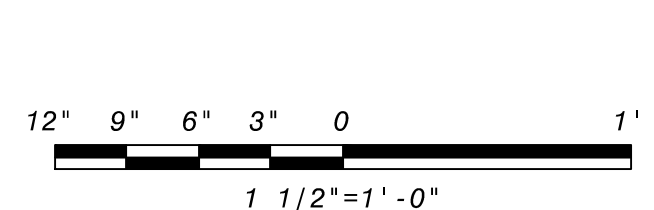
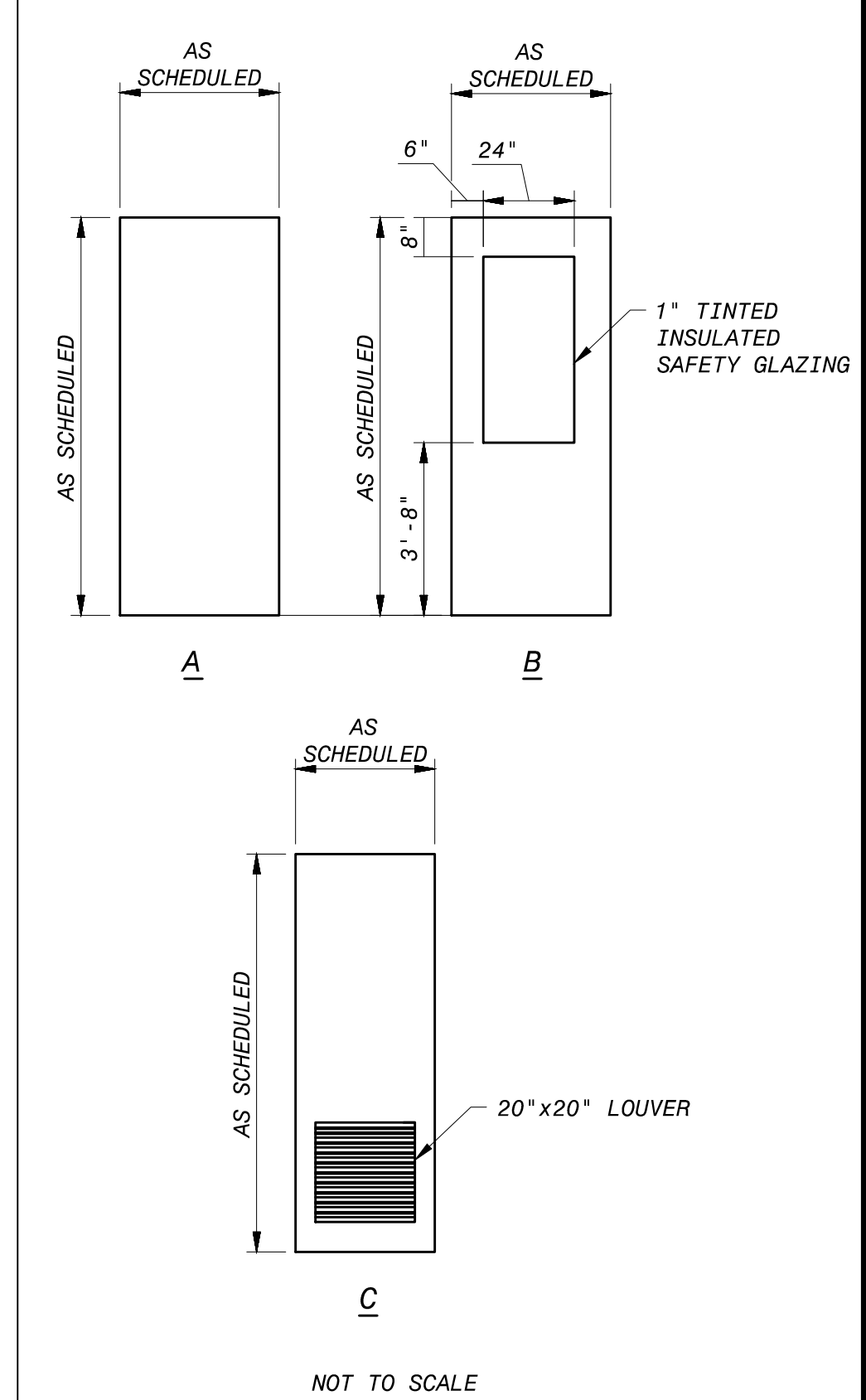
GENERAL SHEET NOTES

- ALL EXISTING PAINTED SURFACES AND UNPAINTED WALL INFILL SURFACES SHALL BE REPAINTED. CLEAN AND PREP ALL EXISTING PAINTED SURFACES PER MANUFACTURER RECOMMENDATIONS PRIOR TO PAINTING.

ARCHITECTURAL ABBREVIATION LEGEND

AL	ACTIVE LEAF
ALUM	ALUMINUM
CB	CONCRETE BLOCK
CO	CONCRETE
DN	DOWN
EX	EXISTING
FE	FIRE EXTINGUISHER
NO	NONE
PR	PAIR
PT	PAINT

DOOR TYPES



SEPT 2022	100% SUBMITTAL	C	AD	PR	MNT
MAY 2022	90% SUBMITTAL	B	AD	PR	MNT
MAR 2021	50% SUBMITTAL	A	AD	PR	MNT
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 Florida Registered  
 License Number: AA2600279  
 8400 Ward Parkway  
 Kansas City, Missouri

**MANATEE COUNTY, FLORIDA**  
**IMPROVEMENT AT MASTER LIFT STATION 27-A**  
**2484, 53RD AVENUE WEST, BRADENTON, FLORIDA**

ARCHITECTURAL SCHEDULES AND DETAILS

DESIGNED: PR
DETAILED: MVS/AD
CHECKED: RB
APPROVED: MNT
DATE: SEPT 2022

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO. 402142

A-03 SHEET 11 OF 40

ISSUED FOR CONSTRUCTION

**STRUCTURAL NOTES**

**GENERAL**

1. THE APPLICABLE BUILDING CODE IS THE 2020 FLORIDA BUILDING CODE (FBC) BASED ON IBC 2018.
2. THE REQUIREMENTS INDICATED ON THIS SHEET ARE INTENDED AS A BASIC SUMMARY OF THE MATERIAL AND CONSTRUCTION REQUIREMENTS FOR THE PROJECT. ADDITIONAL, MORE STRINGENT REQUIREMENTS ARE GIVEN IN THE PROJECT DETAIL DRAWINGS AND SPECIFICATIONS.
3. ALL STRUCTURAL RELATED SHOP DRAWINGS SHALL BE REVIEWED BY THE ENGINEER PRIOR TO CONSTRUCTION.
4. STRUCTURES MAY BE BUOYANT WHEN EMPTY DURING CONSTRUCTION. CONTRACTOR SHALL PROTECT STRUCTURES AGAINST FLOTATION UNTIL CONSTRUCTION IS COMPLETE.
5. STRUCTURES MAY BE UNSTABLE UNTIL THEY ARE CONSTRUCTED IN THEIR ENTIRETY. CONTRACTOR IS RESPONSIBLE FOR DESIGNING TEMPORARY STRUCTURAL SUPPORTS TO RESIST WIND LOADS, CONSTRUCTION LOADS, AND ANY OTHER TEMPORARY CONDITIONS THAT MAY OCCUR DURING CONSTRUCTION, IN ORDER TO MAINTAIN STABILITY OF THE CONSTRUCTION WORK. ANCHORS FOR CONTRACTOR'S TEMPORARY SUPPORT SYSTEMS THAT ATTACH TO CONCRETE OR MASONRY SHALL BE LOCATED TO AVOID DAMAGING EMBEDDED REINFORCEMENT OR UTILITIES.

**CAST-IN-PLACE CONCRETE**

1. A MINIMUM 28 DAY COMPRESSIVE STRENGTH (F'C) OF 4,000 PSI WAS UTILIZED IN THE DESIGN OF STRUCTURAL REINFORCED CONCRETE. SEE SPECIFICATIONS FOR CONSTRUCTION STRENGTH REQUIREMENTS.
2. THE LOCATION OF ALL CONSTRUCTION JOINTS AND OTHER TYPES OF JOINTS, OTHER THAN THOSE SPECIFIED OR SHOWN ON THE PLANS, SHALL BE ACCEPTABLE TO THE ENGINEER PRIOR TO PLACING CONCRETE.

**REINFORCING STEEL**

1. ALL REINFORCING BAR SHALL BE GRADE 60, DEFORMED, ASTM A615, UNLESS NOTED OTHERWISE.
2. DIMENSIONS TO REINFORCING BARS ARE TO BAR CENTERLINES, UNLESS NOTED OTHERWISE. BAR COVER IS THE CLEAR DISTANCE BETWEEN THE BAR AND THE CONCRETE SURFACE.
3. NO WELDING OF REINFORCING BARS SHALL BE PERMITTED UNLESS APPROVAL IS OBTAINED FROM THE ENGINEER PRIOR TO CONSTRUCTION.
4. FOR CONCRETE SLABS THAT HAVE A SLOPING TOP FACE, THE TOP LAYERS OF REINFORCEMENT SHALL BE PLACED ON A SIMILAR SLOPE SO THAT SPECIFIED COVER IS MAINTAINED.

**POST-INSTALLED ANCHORS**

1. POST-INSTALLED ANCHORS SHALL INCLUDE ADHESIVE ANCHORS (THREADED RODS, BOLTS OR REINFORCING BARS), EXPANSION ANCHORS, AND UNDERCUT ANCHORS INSTALLED INTO HARDENED CONCRETE OR MASONRY. SEE THE ANCHORAGE IN CONCRETE AND MASONRY SPECIFICATION SECTION FOR ADDITIONAL REQUIREMENTS.
2. POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE INDICATED ON THE DRAWINGS. CONTRACTOR SHALL OBTAIN APPROVAL FROM ENGINEER PRIOR TO USING POST-INSTALLED ANCHORS FOR MISSING OR MISPLACED CAST-IN-PLACE ANCHORS.
3. CARE SHALL BE TAKEN TO AVOID CONFLICTS WITH EXISTING REINFORCING STEEL AND OTHER EMBEDDED ITEMS WHEN DRILLING HOLES. REINFORCING BARS SHALL NOT BE DAMAGED DURING DRILLING OR ANCHOR INSTALLATION. HOLES SHALL BE DRILLED AND CLEANED PER THE PRODUCT MANUFACTURER'S INSTRUCTIONS. ANCHORS SHALL BE INSTALLED PER THE PRODUCT MANUFACTURER'S INSTRUCTIONS AT NOT LESS THAN MINIMUM EDGE DISTANCES AND/OR SPACING INDICATED IN THE MANUFACTURER'S LITERATURE.
4. SUBSTITUTION REQUESTS FOR PRODUCTS OTHER THAN THOSE LISTED IN THE SPECIFICATION OR INDICATED ON THE DRAWINGS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW AND APPROVAL. PRODUCT ICC-ESR EVALUATION REPORTS SHALL BE INCLUDED WITH THE SUBMITTAL PACKAGE. IF REQUESTED, CALCULATIONS PREPARED BY A REGISTERED PROFESSIONAL ENGINEER USING METHODS AND PROCEDURES REQUIRED BY THE BUILDING CODE MAY BE REQUIRED AS PART OF THE SUBMITTAL PACKAGE.
5. UNLESS NOTED OTHERWISE, THE MINIMUM EMBEDMENT PROVIDED FOR ADHESIVE ANCHORED REINFORCING BARS SHALL DEVELOP THE FULL TENSILE STRENGTH OF THE BAR.
6. SPECIAL INSPECTION WILL BE PROVIDED FOR ALL POST-INSTALLED ANCHORS.

**STAINLESS STEEL**

1. STAINLESS STEEL BOLTS SHALL CONFORM TO ASTM F593, ALLOY GROUP 1 OR 2, UNLESS NOTED OTHERWISE. MINIMUM YIELD STRENGTH SHALL BE 45 KSI.
2. STAINLESS STEEL PLATES SHALL CONFORM TO ASTM A240, TYPE 316L.
3. STAINLESS STEEL STRUCTURAL SHAPES SHALL CONFORM TO ASTM A1069 OR ASTM A276, TYPE 316L.

**ALUMINUM**

1. UNLESS NOTED OTHERWISE, ALUMINUM ALLOY IN ALL ALUMINUM STRUCTURAL MATERIALS SHALL BE 6061-T6. PIPE AND TUBING FOR GUARDRAIL AND HANDRAIL SHALL BE ALLOY 6061-T6 OR 6005A-T61.
2. ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE OR DISSIMILAR METALS SHALL BE COATED OR COVERED WITH A HEAVY COAT OF BITUMINOUS PAINT TO PREVENT ALUMINUM-CONCRETE REACTION OR ELECTROLYTIC ACTION.

**MASONRY**

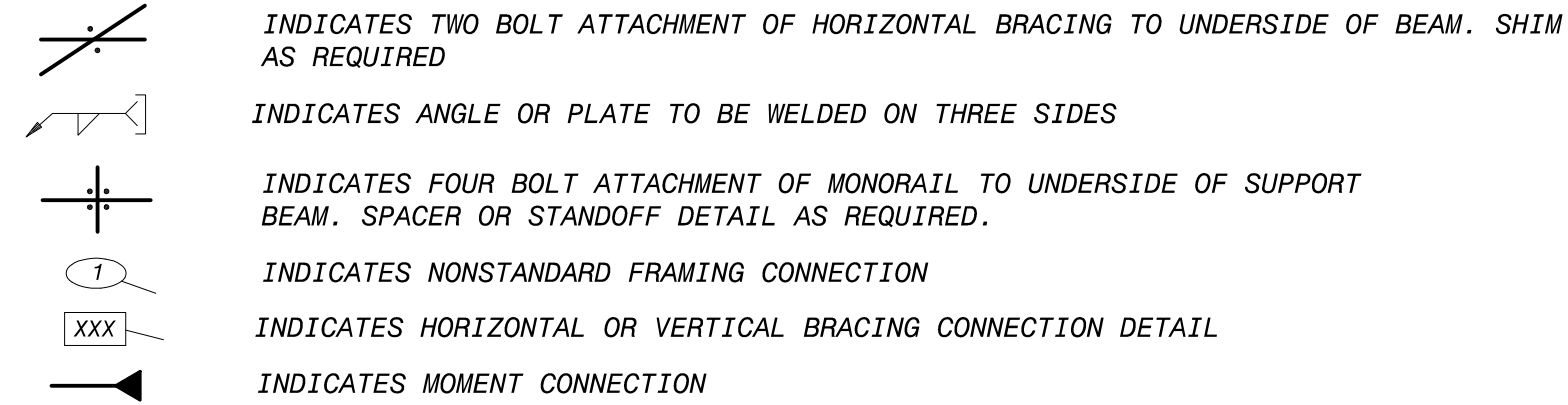
1. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90. THE TOTAL MASONRY ASSEMBLAGE SHALL HAVE A COMPRESSIVE STRENGTH EQUAL TO 2500 PSI AT 28 DAYS.
2. MASONRY MORTAR SHALL CONFORM TO ASTM C270, TYPE S.
3. ALL BOND BEAMS AND ANY BLOCK CELLS CONTAINING REINFORCING STEEL SHALL, ANCHORS OR OTHER EMBEDMENTS SHALL BE FILLED WITH GROUT MEETING THE REQUIREMENTS OF ASTM C476. WALLS SHALL BE FULLY GROUTED WHEN INDICATED ON THE DRAWINGS.
4. BOND BEAM REINF SHALL BE CONTINUOUS AT CORNERS, INTERSECTIONS AND CONTROL JOINTS.

**STRUCTURAL STEEL**

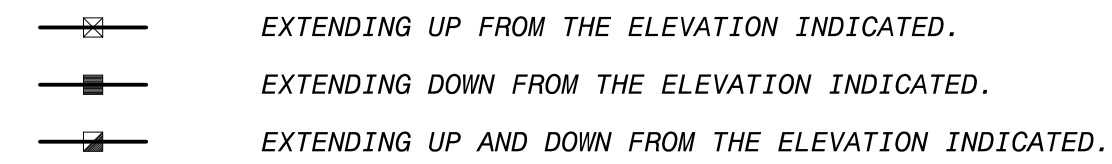
1. ROLLED WIDE FLANGE SHAPES SHALL HAVE A MINIMUM YIELD STRENGTH OF 50 KSI; CHANNELS, PLATES, AND ANGLES A MINIMUM OF 36 KSI; STRUCTURAL PIPES A MINIMUM OF 35 KSI; ROUND STRUCTURAL TUBES A MINIMUM OF 46 KSI; RECTANGULAR STRUCTURAL TUBES A MINIMUM OF 50 KSI.
2. WELDING SHALL BE DONE WITH A FILLER MATERIAL HAVING A MINIMUM TENSILE STRENGTH OF 70 KSI.
3. BOLTED CONNECTIONS SHALL USE 3/4" DIA ASTM F3125, GRADE A325 BOLTS OR GRADE F1852 TWIST-OFF BOLTS, WITH THE THREADS EXCLUDED FROM THE SHEAR PLANE, UNLESS NOTED OTHERWISE.
4. CARBON STEEL OR GALVANIZED STEEL ANCHOR RODS AND ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 GRADE 36.
5. HOLES FOR ANCHOR RODS AND ANCHOR BOLTS IN COLUMN BASE PLATES USING ASTM F844 OR F436 FLAT CIRCULAR WASHERS SHALL BE AS FOLLOWS:  
BOLTS/RODS 3/4" TO 1" - 5/16" OVERSIZE  
BOLTS/RODS 1" TO 2" - 1/2" OVERSIZE  
BOLTS/RODS OVER 2" - 1" OVERSIZE

AT THE CONTRACTORS OPTION, OVERSIZE HOLES LARGER THAN THOSE LISTED ABOVE MAY BE USED, PROVIDED THAT 3/8" PLATE WASHERS ARE USED WITH STANDARD HOLES AND FIELD WELDED WITH A 5/16" FILLET WELD TO THE BASE PLATE ALONG A MIN OF 3 SIDES.

**STEEL LEGEND**



VERTICAL BRACING IS SHOWN ON PLANS THUS:



**EXCAVATION, BACKFILL, AND FOUNDATIONS**

1. FOUNDATION CONSTRUCTION SHALL NOT BEGIN UNTIL ANY REQUIRED SPECIAL INSPECTION HAS BEEN COMPLETED AND THE CONTRACTOR NOTIFIED TO PROCEED.
2. TO FACILITATE SCHEDULING, AT LEAST 48 HOURS ADVANCE NOTICE SHALL BE GIVEN TO THE ENGINEER PRIOR TO THE REQUIRED INSPECTIONS.
3. UNLESS NOTED OTHERWISE, BACKFILL SHALL NOT BE PLACED AGAINST WALLS WHICH SUPPORT A CONCRETE SLAB OR WALKWAY UNTIL THE TOP SLAB OR WALKWAY HAS BEEN PLACED IN ITS ENTIRETY AND ALL CONCRETE HAS REACHED THE SPECIFIED DESIGN STRENGTH.
4. OVER-EXCAVATION OF SOIL, OR OVER-BREAKING OF ROCK, THAT WOULD RESULT IN A STRUCTURAL CONCRETE THICKNESS GREATER THAN INDICATED ON THE DRAWINGS SHALL BE CLASSIFIED AS UNAUTHORIZED EXCAVATION. CONTRACTOR SHALL SELECT ONE OF TWO METHODS TO ADDRESS UNAUTHORIZED EXCAVATION.  
- REPLACE UNAUTHORIZED EXCAVATION MATERIAL WITH LEAN CONCRETE THAT IS PLACED SEPARATELY FROM THE STRUCTURAL CONCRETE INDICATED ON THE DRAWINGS. CONTRACTOR WILL RECEIVE NO ADDITIONAL PAYMENT FOR THE LEAN CONCRETE.  
- REPLACE UNAUTHORIZED EXCAVATION MATERIAL WITH STRUCTURAL CONCRETE THAT IS PLACED MONOLITHICALLY WITH THE STRUCTURAL CONCRETE INDICATED ON THE DRAWINGS, CREATING AN ENLARGED SECTION. CONTRACTOR SHALL NOTIFY ENGINEER FOR DIRECTION PRIOR TO PERFORMING THIS WORK. THE INCREASED CONCRETE THICKNESS MAY REQUIRE ADDITIONAL REINFORCEMENT AND/OR OTHER DESIGN MODIFICATIONS. IF THE INCREASED CONCRETE THICKNESS EXCEEDS 36 INCHES, ENGINEER MAY REQUIRE CONTRACTOR TO IMPLEMENT MASS CONCRETE HEAT MITIGATION PROCEDURES. CONTRACTOR WILL RECEIVE NO ADDITIONAL PAYMENT FOR EXTRA STRUCTURAL CONCRETE, ADDITIONAL REINFORCEMENT, OTHER DESIGN MODIFICATIONS, OR MASS CONCRETING PROCEDURES.
5. THE FOLLOWING NET ALLOWABLE BEARING PRESSURES WERE UTILIZED IN THE DESIGN OF THE FOUNDATIONS.  
MAT FOUNDATIONS.....1000 PSF (ASSUMED)

**SPECIAL INSPECTIONS**

1. THRESHOLD INSPECTIONS ARE NOT REQUIRED FOR THIS PROJECT.

**EXISTING STRUCTURES**

1. THE DRAWINGS DEPICT WORK AT EXISTING STRUCTURES. ALL DIMENSIONS AND ALL DEPICTIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING MATERIALS, STARTING FABRICATION, OR STARTING CONSTRUCTION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE, REPAIRS OR STRUCTURAL MODIFICATIONS THAT ARE REQUIRED DUE TO DEMOLITION BEYOND THE LIMITS IDENTIFIED ON THE DRAWINGS.
3. REINFORCEMENT FOR ANY EXISTING CONCRETE OR MASONRY ELEMENT SHALL NOT BE DAMAGED UNLESS THE ELEMENT IS TO BE DEMOLISHED. WHEN LOCATING EXISTING REINFORCEMENT IS REQUIRED, IT SHALL BE LOCATED USING NON-DESTRUCTIVE METHODS. REINFORCING STRANDS IN EXISTING PRESTRESSED CONCRETE SHALL NOT BE CUT, UNLESS INDICATED ON THE DRAWINGS OR OTHERWISE AUTHORIZED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE, REPAIRS OR STRUCTURAL MODIFICATIONS THAT ARE REQUIRED DUE TO DAMAGE OF CONCRETE, MASONRY OR REINFORCEMENT THAT HAS BEEN IDENTIFIED ON THE DRAWINGS TO REQUIRE FIELD VERIFICATION.
4. CORE DRILLING AND SAW CUTTING SHALL NOT BE PERFORMED UNLESS INDICATED ON THE DRAWINGS OR APPROVED BY ENGINEER.
5. EXPOSED CONCRETE SURFACES THAT REMAIN AFTER DEMOLITION SHALL BE REPAIRED TO MATCH ADJACENT CONCRETE SURFACES.
6. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, EXPOSED CONCRETE SURFACES WITH REINFORCEMENT, ANCHOR BOLTS, HANGER RODS, OR OTHER EXPOSED METAL EMBEDMENTS SHALL BE REPAIRED BY CUTTING OFF THE METAL AT THE FACE OF THE CONCRETE, GRINDING SMOOTH, AND COATING. COATING SHALL EXTEND A MINIMUM OF 1" BEYOND THE EDGE OF ANY EXPOSED METAL.

**DELEGATED DESIGN**

1. THE FOLLOWING ITEMS ARE IDENTIFIED IN THE DRAWINGS AND SPECIFICATIONS AS BEING DESIGNED AND SEALED BY OTHERS. SUBMITTALS FOR THESE ITEMS SHALL BE PREPARED BY THE SUPPLIERS AND SUBMITTED TO ENGINEER AND CODE OFFICIAL FOR REVIEW.  
SECTION 05550 - EQUIPMENT ANCHORAGE

SEPT 2022	100% SUBMITTAL								
MAY 2022	90% SUBMITTAL								
MAR 2021	50% SUBMITTAL								
DATE	REV	REVISIONS AND RECORD OF ISSUE							
50.3071	-	MLS 27-A							
		S-01.dwg							
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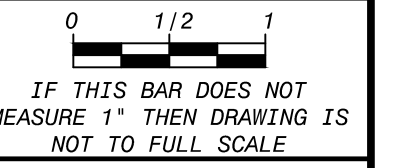
THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION BY JCG ON 09/16/2022 AND SEALED BY JULIE GLOSS A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF FLORIDA, NO. 86822

**BLACK & VEATCH**  
Black & Veatch Corporation  
3405 W. Dr. L. King Jr. Blvd, Suite 125  
Tampa, Florida  
Certificate No. 8132

**MANATEE COUNTY FLORIDA**  
IMPROVEMENT AT  
MASTER LIFT STATION 27-A

**STRUCTURAL GENERAL NOTES**

DESIGNED: JCG
DETAILED: BPT
CHECKED: JCG
APPROVED: MINT
DATE: SEPT 2022



PROJECT NO.  
402142

**S-01**  
SHEET  
12 OF 40

**ISSUED FOR CONSTRUCTION**

**LOADING CRITERIA**

BASIC LOADING CRITERIA THE APPLICABLE BUILDING CODE IS THE 2018 INTERNATIONAL BUILDING CODE (IBC).

- DEAD LOAD ..... CALCULATED
- LIVE LOADS:  
 OPERATING AND PROCESS FLOORS..... 150 PSF  
 STAIRS, SERVICE PLATFORMS & LANDINGS..... 100 PSF  
 ROOF..... 20 PSF (UNREDUCED)
- HYDROSTATIC FLUID PRESSURE..... 63 PSF/FT
- SNOW LOAD:  
 GROUND SNOW LOAD (Pg) ..... 0 PSF
- SEISMIC LOAD:  
 MAPPED MCE SHORT PERIOD SPECTRAL  
 RESPONSE ACCELERATION (S<sub>s</sub>)..... 0.048g  
 MAPPED MCE ONE SECOND PERIOD SPECTRAL  
 RESPONSE ACCELERATION (S<sub>1</sub>)..... 0.027g  
 DESIGN SPECTRAL RESPONSE ACCELERATION  
 AT SHORT PERIODS (S<sub>as</sub>)..... 0.051g  
 DESIGN SPECTRAL RESPONSE ACCELERATION  
 AT ONE SECOND PERIOD (S<sub>o1</sub>)..... 0.043g  
 SITE CLASS..... D
- WIND LOAD:  
 BASIC (ULTIMATE) DESIGN WIND SPEED..... 157 MPH  
 ALLOWABLE STRESS (NOMINAL) DESIGN WIND SPEED..... 122 MPH  
 GROUND ELEVATION FACTOR (K<sub>e</sub>)..... 1.0  
 EXPOSURE..... C
- FEMA FLOOD RISK..... OUTSIDE THE 100 YEAR FLOODPLAIN

**SPECIAL INSPECTIONS**

- THRESHOLD INSPECTIONS ARE NOT REQUIRED FOR THIS PROJECT.

**ELECTRICAL ROOM**

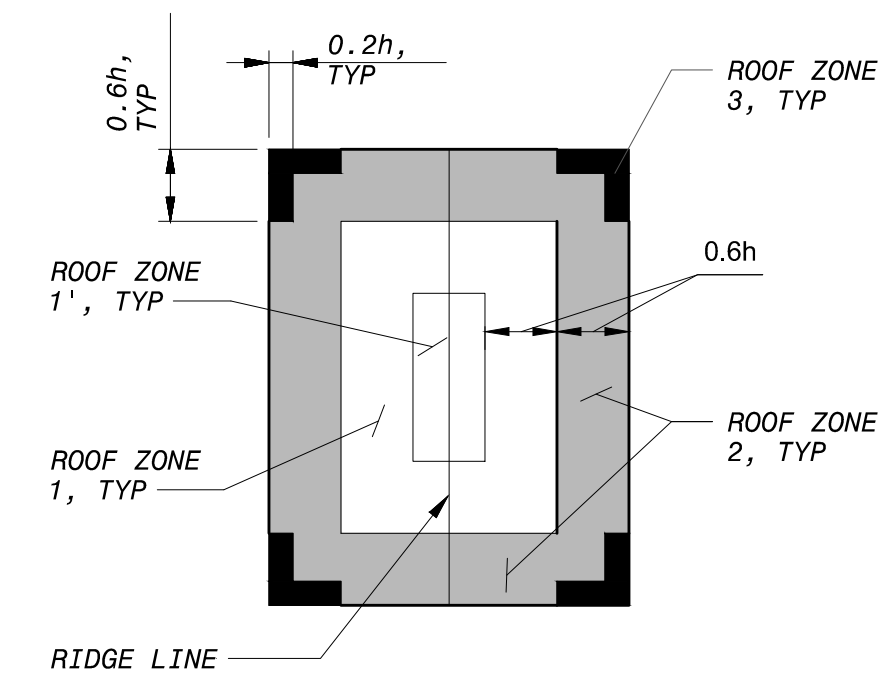
INTERNAL PRESSURE COEFFICIENT.....	±0.55
DIMENSION "a" FOR WALLS.....	3.00 FT
DIMENSION "h" FOR ROOF.....	13.00 FT
ROOF TYPE.....	1

**COMPONENT AND CLADDING WIND PRESSURES, PSF**

EFFECTIVE WIND AREA (SQ FT)	<=2	4	10	20	50	100	150	200	250	300	500	1000+
ROOF NEG PRESSURE, ZONE 1	-102.4	-102.4	-102.4	-96.8	-89.3	-83.7	-80.4	-78.0	-76.2	-74.7	-70.6	-70.6
ROOF NEG PRESSURE, ZONE 1'	-66.0	-66.0	-66.0	-66.0	-66.0	-66.0	-62.0	-59.2	-57.0	-55.2	-50.1	-43.3
ROOF NEG PRESSURE, ZONE 2	-129.8	-129.8	-129.8	-122.5	-112.9	-105.6	-101.4	-98.4	-96.0	-94.1	-88.8	-88.8
ROOF NEG PRESSURE, ZONE 3	-170.7	-170.7	-170.7	-156.2	-137.0	-122.5	-114.0	-108.0	-103.3	-99.5	-88.8	-88.8
ROOF POS PRESSURE, ZONES 1, 1'	38.7	38.7	38.7	37.3	35.5	34.1	34.1	34.1	34.1	34.1	34.1	34.1
ROOF POS PRESSURE, ZONES 2, 3	38.7	38.7	38.7	37.3	35.5	34.1	34.1	34.1	34.1	34.1	34.1	34.1
WALL ZONE 4	(+)	66.0	66.0	66.0	63.8	61.0	58.8	57.5	56.6	56.6	53.7	53.7
	(-)	-70.1	-70.1	-70.1	-67.9	-65.1	-62.9	-61.6	-60.7	-60.7	-57.8	-57.8
WALL ZONE 5	(+)	66.0	66.0	66.0	63.8	61.0	58.8	57.5	56.6	56.6	53.7	53.7
	(-)	-82.4	-82.4	-82.4	-78.1	-72.3	-67.9	-65.4	-63.6	-63.6	-57.8	-57.8

**NOTES:**

- POSITIVE PRESSURES ACT TOWARDS THE SURFACE. NEGATIVE PRESSURES ACT AWAY FROM THE SURFACE.
- LINEARLY INTERPOLATE PRESSURES FOR EFFECTIVE WIND AREAS BETWEEN THOSE SCHEDULED OR USE PRESSURES FOR THE SMALLER EFFECTIVE WIND AREA.
- ALL ROOF OVERHANG PRESSURES ACT UPWARD.
- SOFFITS BELOW ROOF OVERHANGS ARE DESIGNED FOR THE PRESSURE ON THE WALL BELOW THE SOFFIT.
- PARAPET PRESSURES ARE THE TOTAL OF THE WINDWARD AND LEEWARD PARAPET FACE VALUES.



**ROOF PLAN**  
 TYPE 1 ROOF  
 (FLAT OR GABLE ≤7°)

**WIND ZONE DIAGRAMS**

SEPT 2022	100% SUBMITTAL	C	JCG	INT
MAY 2022	90% SUBMITTAL	B	AD	JCG
MAR 2021	50% SUBMITTAL	A	JCG	BAZ
DATE	REVISED AND RECORD OF ISSUE	NO.	BY	CHK
50-3071 - M.L.S. 27-A				APP
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	USER: DUT48884			XREF3:
				XREF4:

THIS DRAWING WAS  
 ORIGINALLY APPROVED  
 FOR CONSTRUCTION BY  
 JULIE GLOSS AND  
 ON 09/16/2022 AND  
 SEALED BY  
 JULIE GLOSS  
 A LICENSED  
 PROFESSIONAL  
 ENGINEER IN THE  
 STATE OF FLORIDA,  
 NO. 86822

**Manatee County**  
**BLACK & VEATCH**  
 Black & Veatch Corporation  
 3405 W. Dr. M. L. King Jr. Blvd, Suite 125  
 Tampa, Florida  
 Certificate No. 8132

**MANATEE COUNTY FLORIDA**  
**IMPROVEMENT AT**  
**MASTER LIFT STATION 27-A**  
**STRUCTURAL**  
**LOADING CRITERIA**

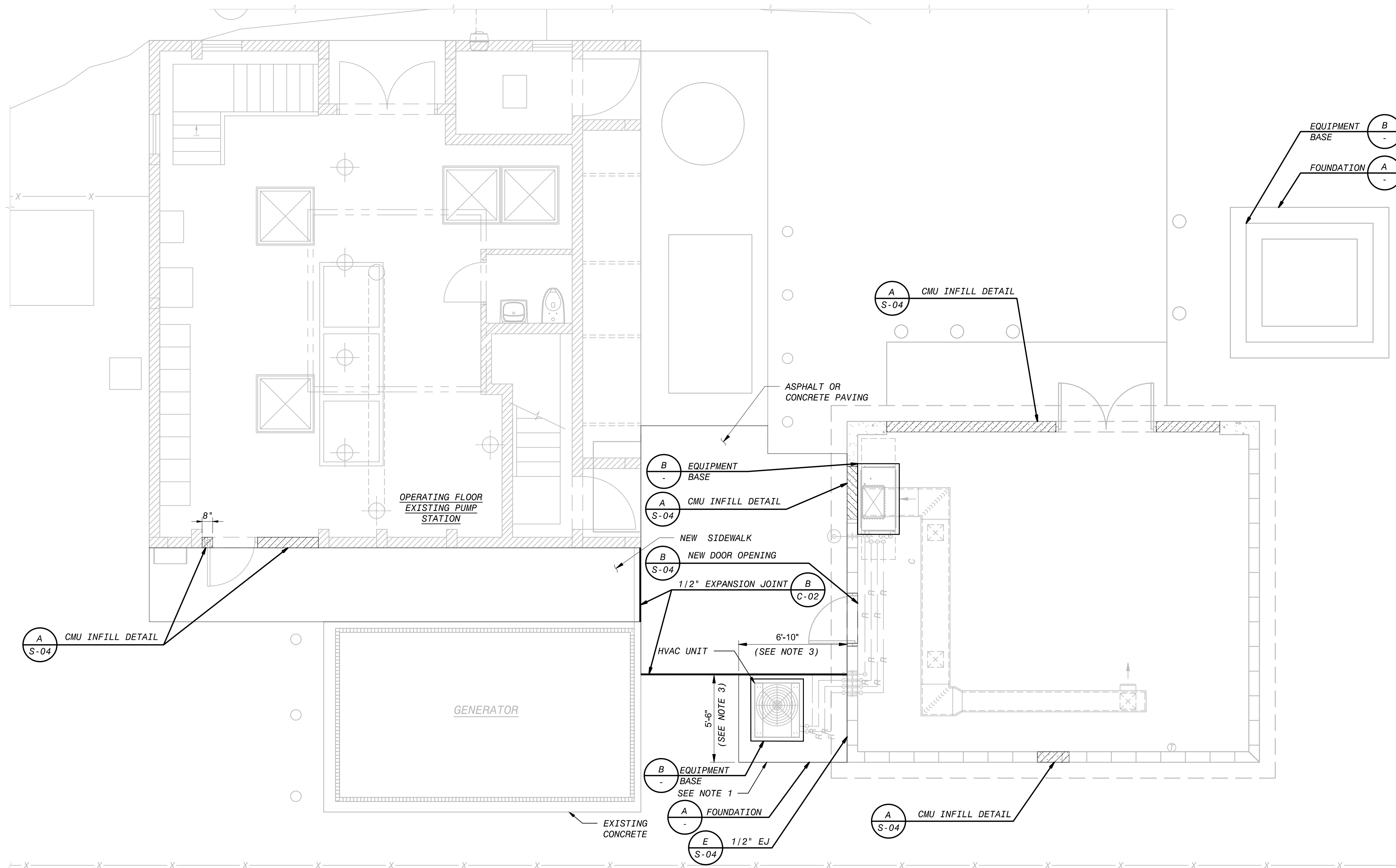
DESIGNED: JCG
DETAILED: BPT
CHECKED: JCG
APPROVED: MINT
DATE: SEPT 2022

0 1/2 1  
 IF THIS BAR DOES NOT  
 MEASURE 1" THEN DRAWING IS  
 NOT TO FULL SCALE

PROJECT NO.  
 402142

**S-02**  
 SHEET  
 13 OF 40

**ISSUED FOR CONSTRUCTION**



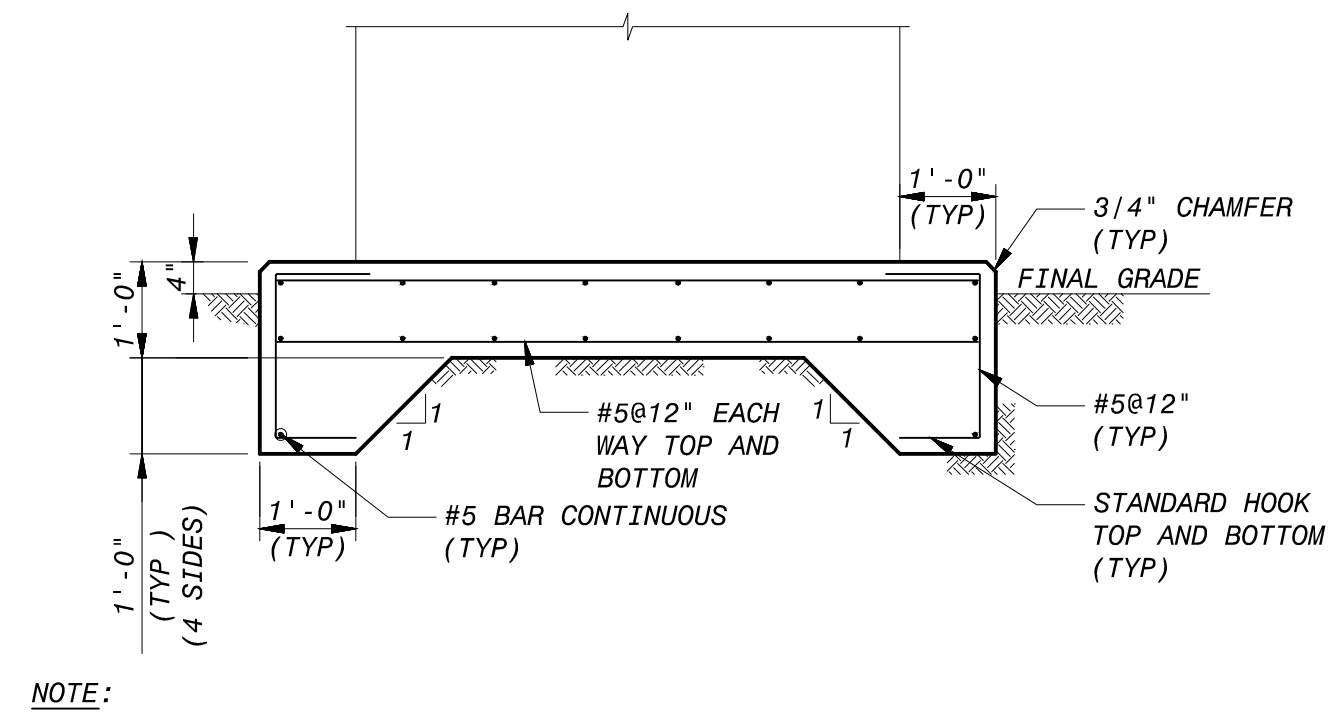
- NOTES:**
- SEE CIVIL SITE PLAN FOR PAD COORDINATES.
  - FOR GENERAL NOTES AND STANDARD DETAILS, SEE S-01, S-02 AND S-04.
  - CONTRACTOR SHALL COORDINATE SIZE AND LOCATION OF EQUIPMENT FOUNDATIONS WITH EQUIPMENT FURNISHED. CONTRACTOR SHALL MAINTAIN EDGE DISTANCE FOR EQUIPMENT ANCHORS PER EQUIPMENT SUPPLIER BUT NOT LESS THAN 12".
  - REMOVE UNSUITABLE SOIL AND REPLACE WITH SELECT FILL.
  - FOR NEW CONCRETE WALKWAY DETAILS SEE C-01 AND C-02.

SEPT 2022	100% SUBMITTAL	JCG INT
MAY 2022	90% SUBMITTAL	C AD
MAR 2021	50% SUBMITTAL	B AD
DATE	REVISED BY	A MS
50.3091 - MLS 27-A	REVISIONS AND RECORD OF ISSUE	NO. BY CK APP
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PLOTTED: DUT48884, 9/15/2022 6:38:17 PM		
USER: DUT48884		

THIS DRAWING WAS  
 ORIGINALLY APPROVED  
 FOR CONSTRUCTION BY  
 JULIE GROSS  
 ON 09/16/2023 AND  
 SEALED BY  
 JULIE GROSS  
 A LICENSED  
 PROFESSIONAL  
 ENGINEER IN THE  
 STATE OF FLORIDA,  
 NO. 86822

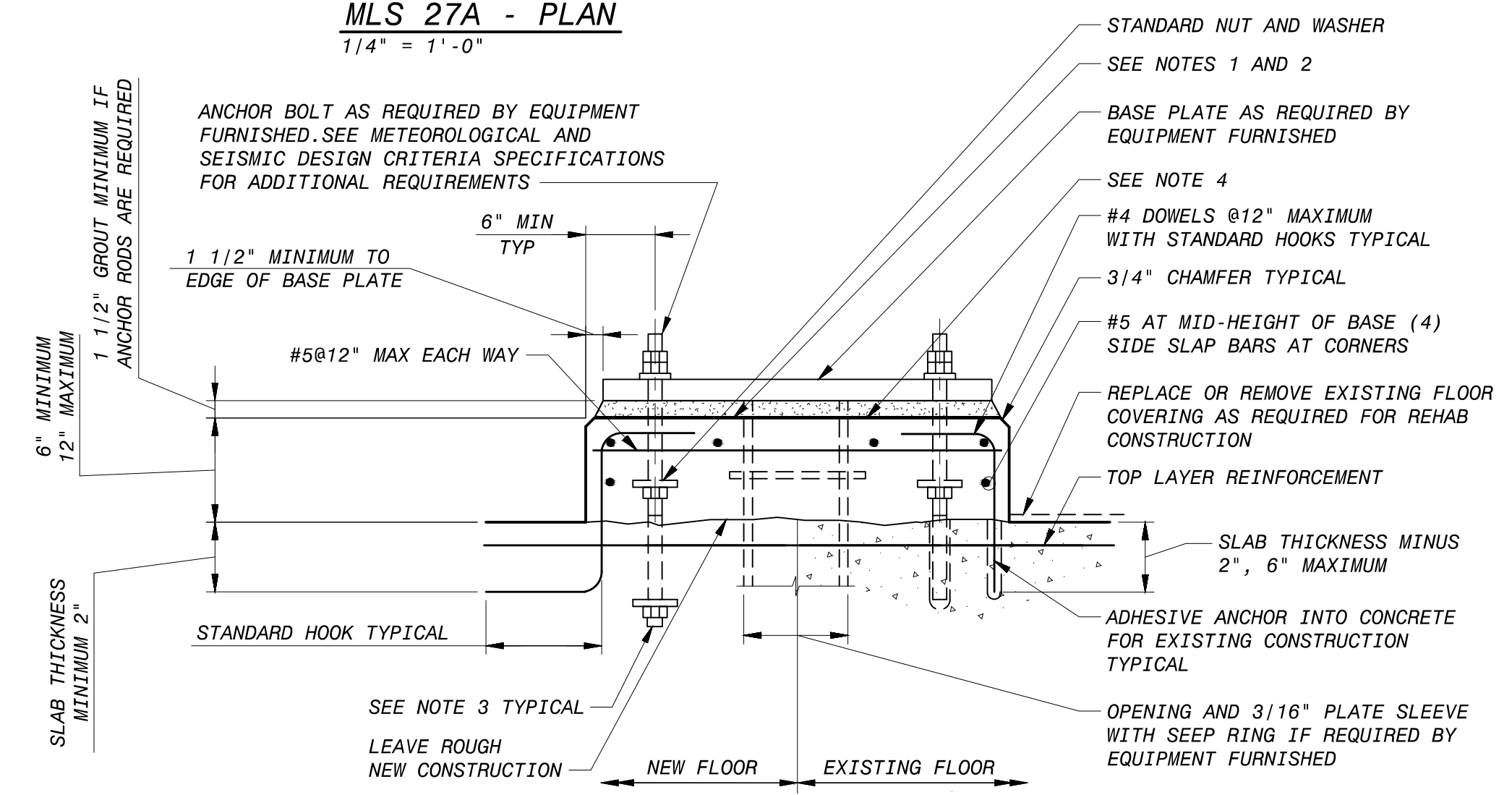
**Manatee County**  
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 Certificate No. 8132

**MLS 27A - PLAN**  
 1/4" = 1'-0"



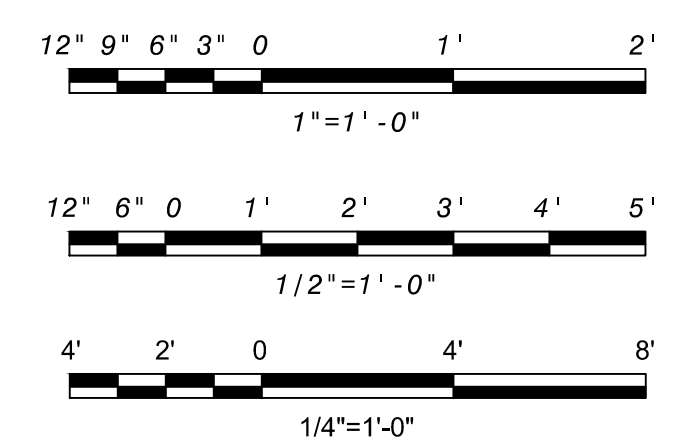
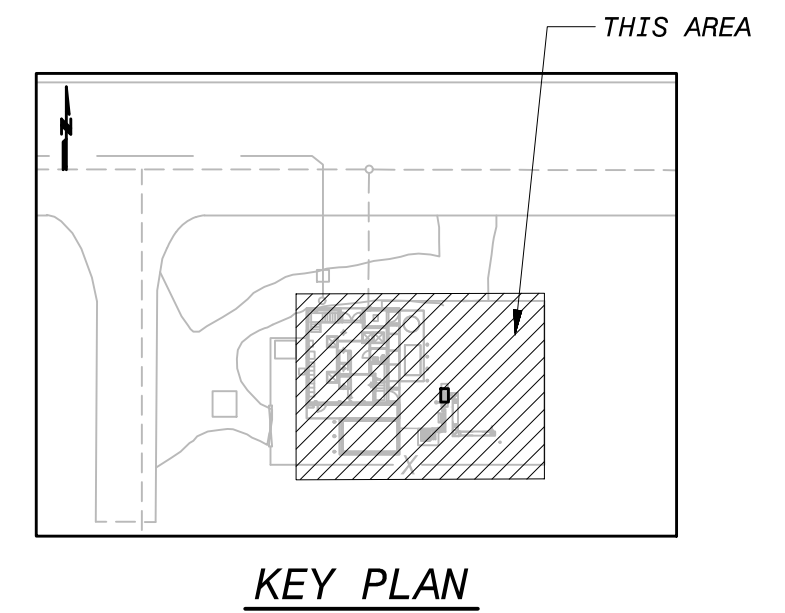
- NOTE:**
- FOUNDATION DIMENSIONS DETERMINED BY EQUIPMENT FURNISHED AND EQUIPMENT ANCHORAGE EDGE DISTANCE REQUIREMENTS.

**A EXTERIOR EQUIPMENT FOUNDATION DETAIL**  
 1/2" = 1'-0"



- NOTES:**
- EQUIPMENT MANUFACTURER TO INDICATE REQUIRED FLATNESS WHERE REQUIRED BY EQUIPMENT FURNISHED WITH ACI 117 - SPECIFICATION FOR TOLERANCES FOR CONCRETE CONSTRUCTION.
  - CONTRACTOR AND SUPPLIER SHALL COORDINATE FINAL LOCATION AND SIZE OF PADS WITH EQUIPMENT FURNISHED. COORDINATE ANCHOR BOLT REQUIREMENTS FOR REQUIRED EMBEDMENT DEPTHS AND CONCRETE EDGE DISTANCES.
  - WHERE THE DESIGN ANCHOR BOLT EMBEDMENT IS GREATER THAN THE CONCRETE EQUIPMENT BASE THICKNESS, THEN THE REQUIRED DEPTH OF EMBEDMENT SHALL BE MEASURED FROM THE TOP OF STRUCTURAL SLAB AND NOT THE TOP OF THE EQUIPMENT BASE.
  - EQUIPMENT BASE SHALL USE STRUCTURAL CONCRETE AS INDICATED IN THE CAST-IN-PLACE CONCRETE SPECIFICATION.
  - ANCHOR BOLTS AND REINFORCING WILL BE INSPECTED IN ACCORDANCE WITH THE CODE REQUIRED SPECIAL INSPECTIONS AND PROCEDURES SPECIFICATION.

**B EQUIPMENT BASE DETAIL**  
 1" = 1'-0"



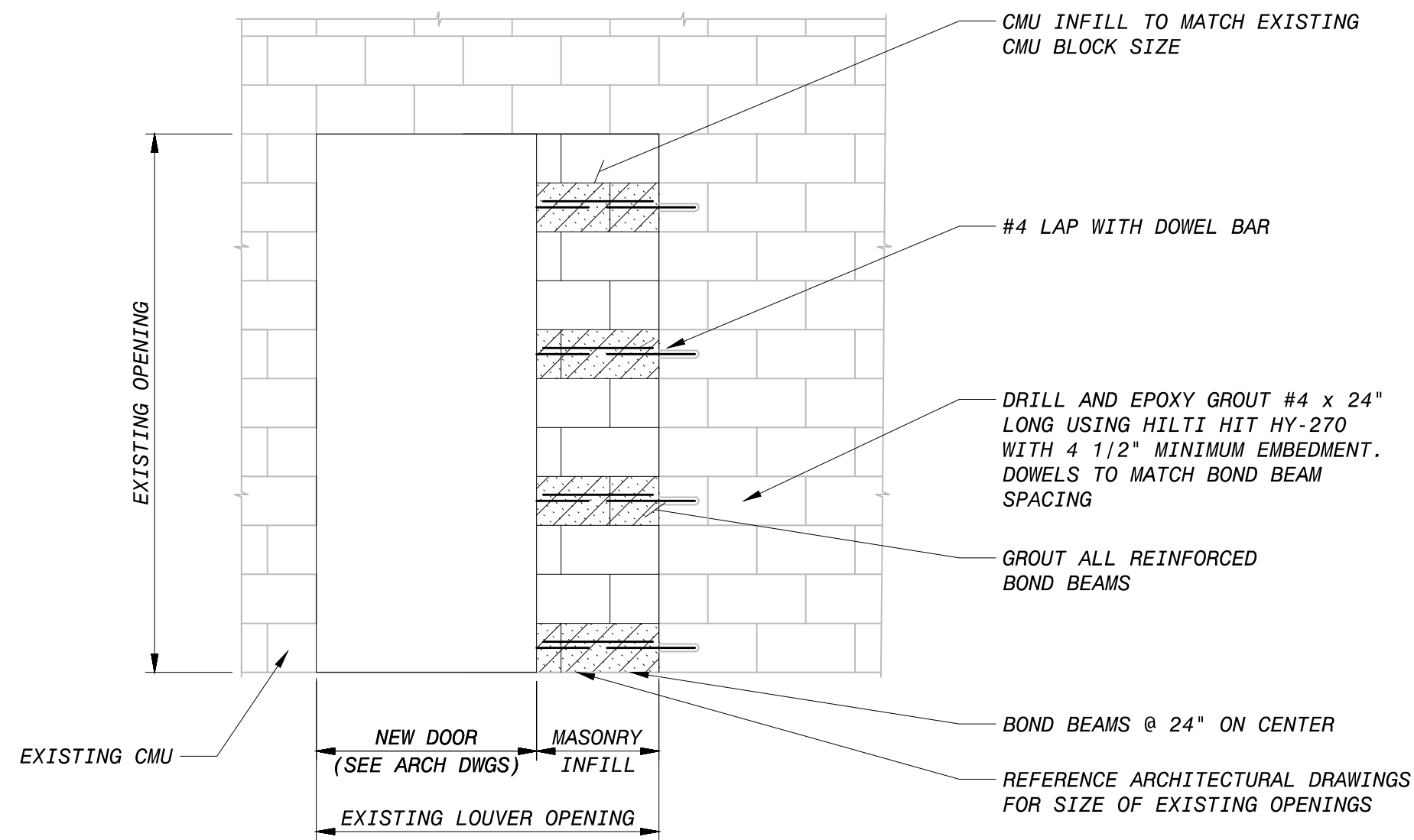
**ISSUED FOR CONSTRUCTION**

**MANATEE COUNTY FLORIDA**  
**IMPROVEMENT AT**  
**MASTER LIFT STATION 27-A**  
**STRUCTURAL**  
**MASTER LIFT STATION PLAN AND DETAILS**

DESIGNED: JCG
DETAILED: MS
CHECKED: JCG
APPROVED: MNT
DATE: SEPT 2022
PROJECT NO. 402142
<b>S-03</b>
SHEET 14 OF 40

**LINTEL AND JAMB SCHEDULE**

BUILDING	WALL	LINTEL			JAMB		
		CLEAR SPAN	DEPTH	REINFORCEMENT TOP BOTTOM	OPENING SIZE	WIDTH	REINFORCEMENT PER CELL
PUMP STATION	SOUTH	3'-4"	8"	1-#5	3'-4"	8"	1-#5
ELECTRICAL BUILDING	ALL	3'-4"	8"	1-#5	3'-4"	8"	1-#5
	NORTH	6'-4"	8"	1-#5	6'-4"	8"	1-#5



**CMU INFILL DETAIL**  
1/2" = 1'-0"

BAR SIZE	8" CONCRETE MASONRY UNIT		12" CONCRETE MASONRY UNIT	
	SINGLE REINFORCEMENT	DOUBLE REINFORCEMENT	SINGLE REINFORCEMENT	DOUBLE REINFORCEMENT
4	12	20	12	17
5	18	32	12	27
6	34	-	21	51
7	47	-	29	(71)
8	(71)	-	45	(110)

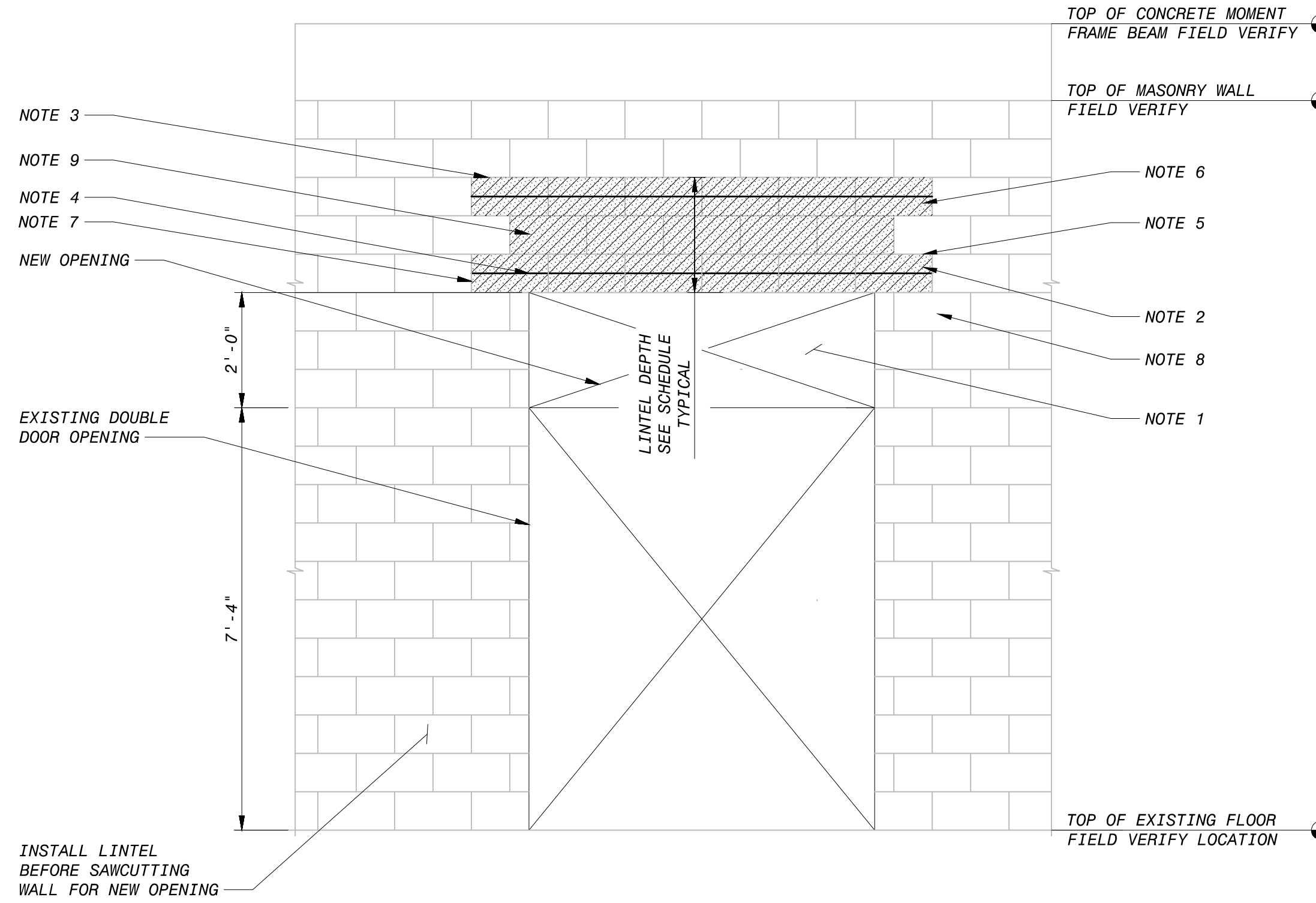
- NOTES:  
 1. NON-CONTACT LAP SPLICES SHALL NOT BE USED.  
 2. ( ) BRACKETED SPLICE LENGTHS NOT RECOMMENDED. USE MECHANICAL CONNECTORS OR A FULL HEIGHT REINFORCEMENT BAR.

LENGTH OF LAPPED SPLICES FOR REINFORCEMENT (INCHES) IN CONCRETE (f'c=4000 PSI) (UNLESS NOTED OTHERWISE ON THE DRAWINGS)					CONCRETE COVER FOR REINFORCEMENT	
BAR SIZE *	BEAMS & COLUMNS		WALLS & SLABS		LOCATION	MINIMUM COVER
	**TOP BARS	OTHERS	**TOP BARS	OTHERS		
3	16	16	16	16	UNFORMED SURFACES ADJACENT TO EXCAVATION	3"
4	19	16	19	16	SURFACES INSIDE OF OZONE CONTACTORS EXPOSED TO OZONE IN WATER OR AIR	3"
5	24	18	24	18	TOP SURFACES OF SLABS THAT ARE SUBMERGED	3"
6	33	26	29	22	FORMED SURFACES THAT ARE SUBMERGED, AND FORMED OR TOP SURFACES EXPOSED TO WEATHER, SATURATED AIR, OR EARTH.	2"
7	55	42	48	37	OTHER LOCATIONS:	
8	69	53	60	46	BEAMS OR GIRDERS	1 1/2"
9	84	65	74	57	SLABS, WALLS AND JOISTS	1 1/2"
10	103	79	91	70	#6 AND LARGER	1"
11	122	94	108	83	#5 AND SMALLER	

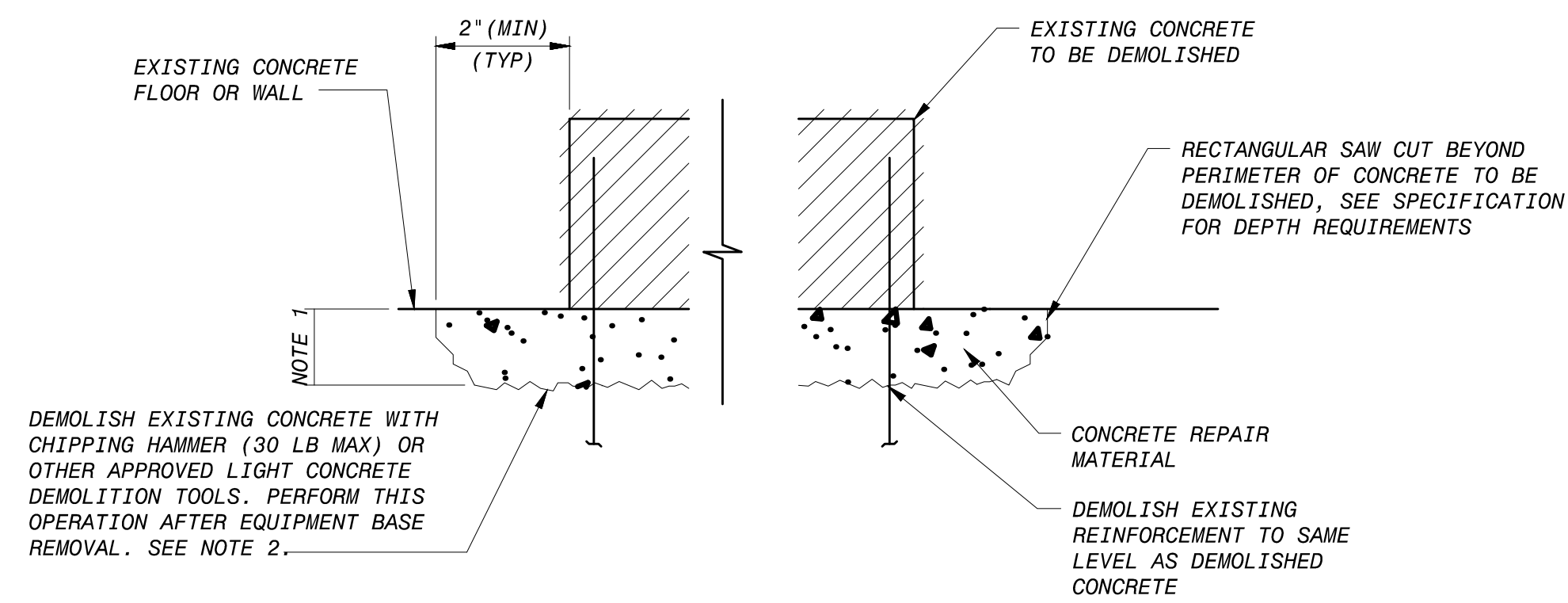
\* LAP SPLICE LENGTH FOR BARS OF DIFFERENT SIZES SHALL BE THE GREATER OF THE SMALL BAR LAP LENGTH OR 0.75x THE LARGER BAR LAP LENGTH.

\*\* TOP BARS ARE HORIZONTAL BARS SO PLACED THAT MORE THAN 12" OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR. HORIZONTAL BARS IN WALLS ARE TO BE PROVIDED WITH LAP LENGTHS AS REQUIRED FOR TOP BARS. VERTICAL BARS MAY BE CONSIDERED AS OTHER BARS.

- NOTES:  
 1. COVER IS MEASURED TO NEAREST BAR, STIRRUP, TIE, OR SPIRAL, AS APPLICABLE.  
 2. TOLERANCES FOR CONCRETE COVER AND THE FABRICATION AND PLACING OF REINFORCEMENT SHALL CONFORM TO ACI 117.



**INSTALLATION OF NEW OPENING IN EXISTING WALL**  
1/2" = 1'-0"



- NOTES:  
 1. DEPTH OF CONCRETE DEMOLITION SHALL BE THE LESSER OF 2" OR THE DEPTH OF CONCRETE COVER OVER THE EXISTING REINFORCEMENT. DO NOT DAMAGE EXISTING REINFORCEMENT PARALLEL TO REPAIRED SURFACE.  
 2. CARE SHALL BE TAKEN TO AVOID DAMAGING CONCRETE SUBSTRATE DURING CHIPPING OPERATION.

**CONCRETE FLOOR OR WALL REPAIR FOLLOWING DEMOLITION**  
NO SCALE

**NOTES:**

- AFTER INSTALLING NEW LINTEL, SAWCUT AND REMOVE EXISTING CMU WALL AS REQUIRED TO PROVIDE NEW OPENING.
- IN THE AREA OF THE REPAIR, SAWCUT AND REMOVE EXISTING FACE SHELLS AND CLEAN OUT ALL CELLS TO RECEIVE NEW REINFORCEMENT AND GROUT. REMOVE ALL DEBRIS, INSULATION, LOOSE MORTAR, AND MORTAR WHICH OBSTRUCTS THE FLOW OF GROUT PRIOR TO INSTALLATION OF REINFORCEMENT. REFERENCE LINTEL SCHEDULE FOR WIDTH AND REINFORCING. SPLICE BARS IN 6'-0" TO 8'-0" LENGTHS.
- IF EXISTING VERTICAL WALL REINFORCING IN GROUTED CELL IS PRESENT, INSTALL LINTEL DOWELS PER JAMB SCHEDULE TO MATCH SIZE AND QUANTITY OF NEW CMU LINTEL REINFORCING. EMBED HORIZONTAL DOWELS 8" INTO EXISTING REINFORCED CELL WITH HILTI HIT HY-270 ADHESIVE AND CONTACT LAP SPLICE DOWEL WITH NEW CMU LINTEL REINFORCEMENT.
- REPLACE LINTEL BLOCKS AND GROUT SOLID WITH FINE OR COARSE GROUT. SURFACE TREATMENT RESTORE THE FACE OF THE CMU BY INSTALLING SOAP BLOCKS AND NEW BLOCKS AS NECESSARY, SURFACE TREATMENT OF NEW BLOCK TO MATCH ORIGINAL (SPLIT FACE OR SMOOTH FACE).
- GROUT SOLID ALL CELLS CONTAINING REINFORCING WITH FINE OR COARSE GROUT USING THE LOW LIFT METHOD. GROUT TO BE CONSOLIDATED USING VIBRATORS.
- RE-POINT ALL AFFECTED MORTAR JOINTS.
- ELEVATION SHOWN IS FROM INSIDE OF BUILDING.
- HATCHED AREA INDICATES LOCATION OF REPAIR TO INSTALL REINFORCEMENT AND GROUT. ACTUAL AREA OF REPAIR MAY VARY BASED ON FIELD CONDITIONS. CONTRACTOR TO BRACE AND/OR SHORE WALL AS REQUIRED TO PERFORM THE WORK.

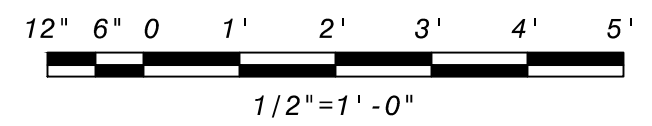
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SEPT 2022	100% SUBMITTAL	JCG	JCG	JCG
MAY 2022	90% SUBMITTAL	JCG	JCG	JCG
MAR 2021	50% SUBMITTAL	JCG	JCG	JCG
DATE	REVISED AND RECORD OF ISSUE	NO.	BY	CHK
50-3071	M.S. 27-A			

THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION BY JCG ON 09/16/2022 AND SEALED BY JULIE GLOSS A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF FLORIDA, NO. 86822

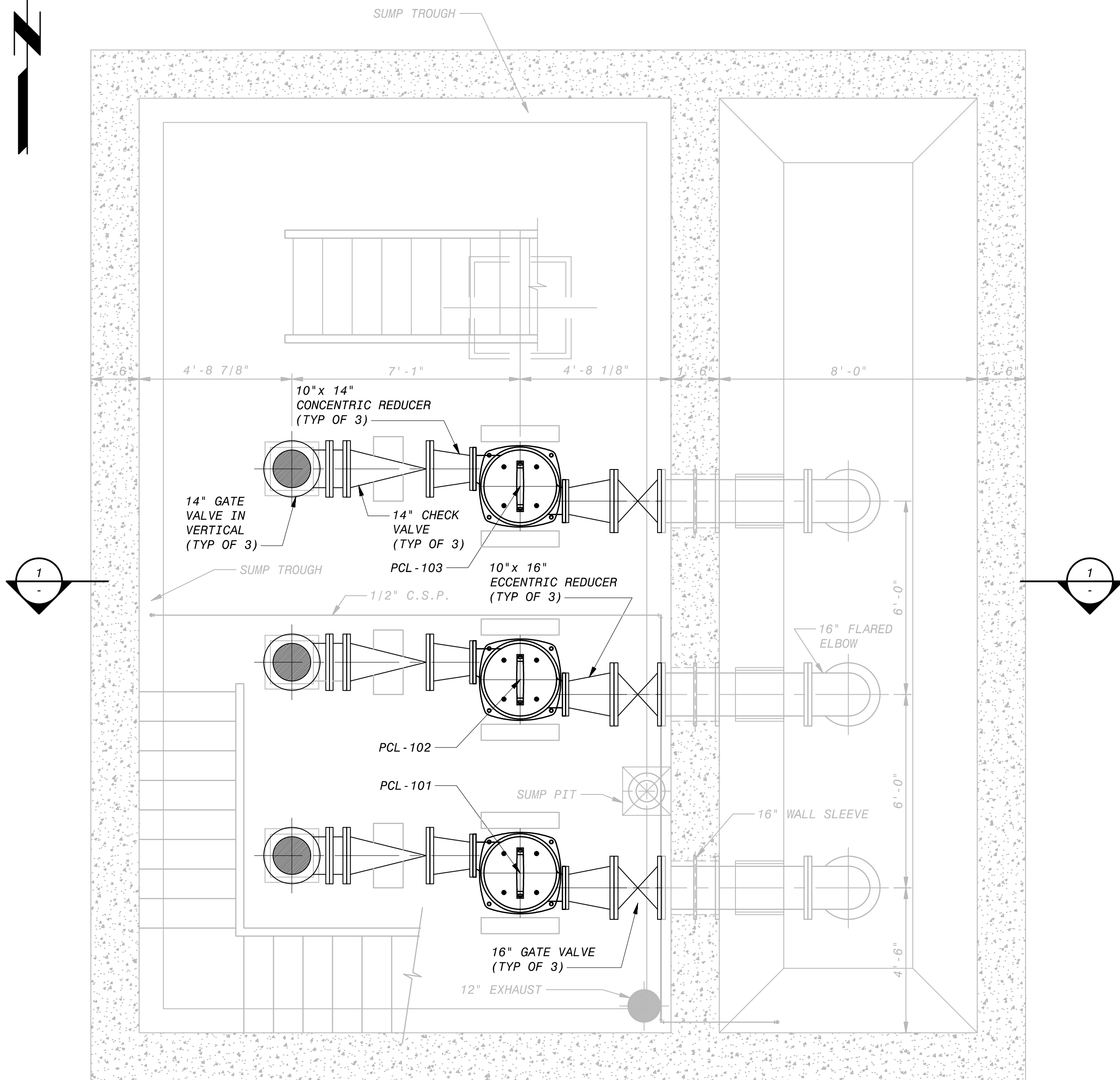
**Manatee County**  
**BLACK & VEATCH**  
 Black & Veatch Corporation  
 3405 W. Dr. M. L. King Jr. Blvd, Suite 125  
 Tampa, Florida  
 Certificate No. 8132

**MANATEE COUNTY FLORIDA**  
 IMPROVEMENT AT  
 MASTER LIFT STATION 27-A  
 STRUCTURAL  
 STANDARD CONCRETE REINFORCEMENT AND  
 CMU DETAIL

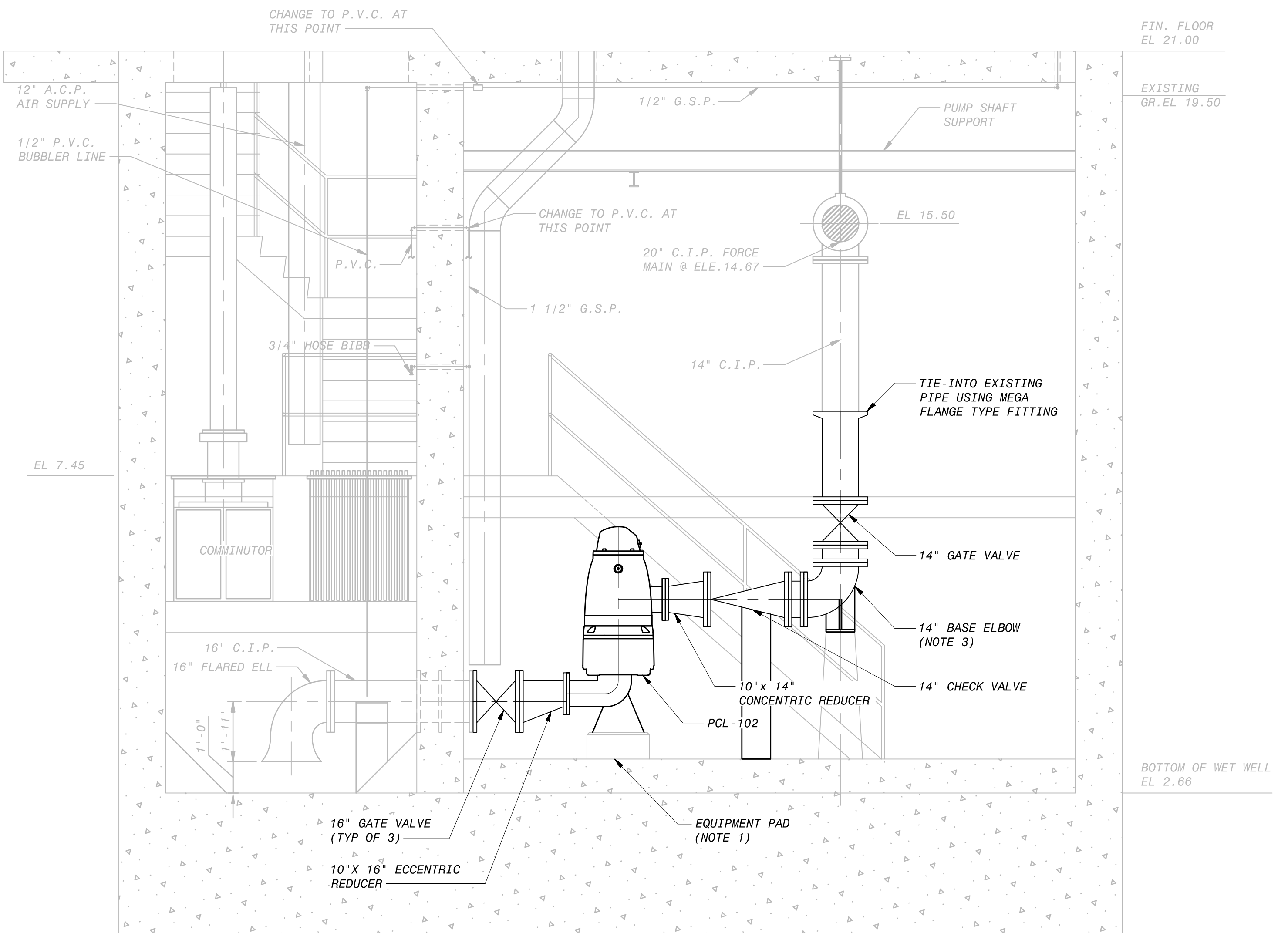
DESIGNED: JCG
DETAILED: MS
CHECKED: JCG
APPROVED: MNT
DATE: SEPT 2022
PROJECT NO. 402142
SHEET 15 OF 40



**ISSUED FOR CONSTRUCTION**



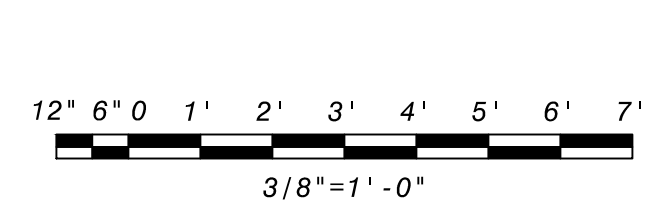
**PLAN**  
3/8" = 1'-0"



**SECTION**  
3/8" = 1'-0"

**NOTES:**

- CONTRACTOR SHALL REUSE EXISTING EQUIPMENT PAD FOR NEW PUMPS. CONTRACTOR SHALL MAKE MODIFICATIONS TO EXISTING EQUIPMENT PAD AS REQUIRED TO SUPPORT THE NEW PUMP.
- CONTRACTOR SHALL MAINTAIN CONTINUOUS OPERATION OF THE MASTER LIFT STATION FOR THE DURATION OF CONSTRUCTION. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS, INCLUDING THE SANITARY SEWER BYPASS PUMPING SECTION (02720) AND THE CONSTRUCTION SCHEDULE AND PROJECT RESTRAINS SECTION (01310).
- CONTRACTOR SHALL REUSE EXISTING CONCRETE SUPPORT THAT NEW BASE ELBOW IS CONNECTED TO.



NO.	BY	CHK	APP
C	AD	AW	MNT
B	AD	AW	MNT
A	AD	NE	MT

THIS DRAWING WAS  
ORIGINALLY APPROVED  
FOR CONSTRUCTION BY  
ON 09/16/2022 AND  
SEALED BY  
MICHAEL N. TACHE,  
A LICENSED  
PROFESSIONAL  
ENGINEER IN THE  
STATE OF FLORIDA,  
NO. 83893

**BLACK & VEATCH**  
Black & Veatch Corporation  
3405 W. Dr. M. L. King Jr. Blvd, Suite 125  
Tampa, Florida  
Certificate No. 8132

**MANATEE COUNTY FLORIDA  
IMPROVEMENTS AT  
MASTER LIFT STATION 27-A**  
  
MECHANICAL  
PLAN AND SECTION

DESIGNED: AZ
DETAILED: HT/AD
CHECKED: AW
APPROVED: MNT
DATE: SEPT 2022

IF THIS BAR DOES NOT  
MEASURE 1" THEN DRAWING IS  
NOT TO FULL SCALE

PROJECT NO.  
402142

**M-01**  
SHEET  
16 OF 40

**ISSUED FOR CONSTRUCTION**



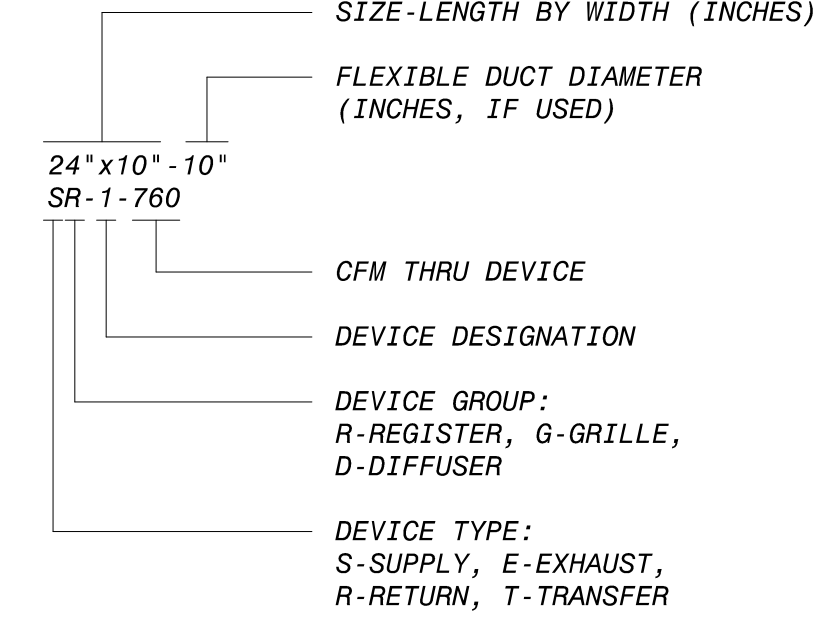
ABBREVIATIONS

Table with 4 columns of abbreviations and their corresponding full names, including categories like ALARM, AIR COMPRESSOR, CONVECTION HEATER, etc.

LEGEND

Legend table with 4 columns: GENERAL, HVAC/ODOR CONTROL, PIPING SPECIALTIES, and CONTROLS AND INSTRUMENTATION. Includes symbols for piping types, valves, and control devices.

AIR INLET AND OUTLET IDENTIFICATION



GENERAL MECHANICAL NOTES

- List of 20 general mechanical notes regarding HVAC work, materials, ductwork, and equipment specifications.

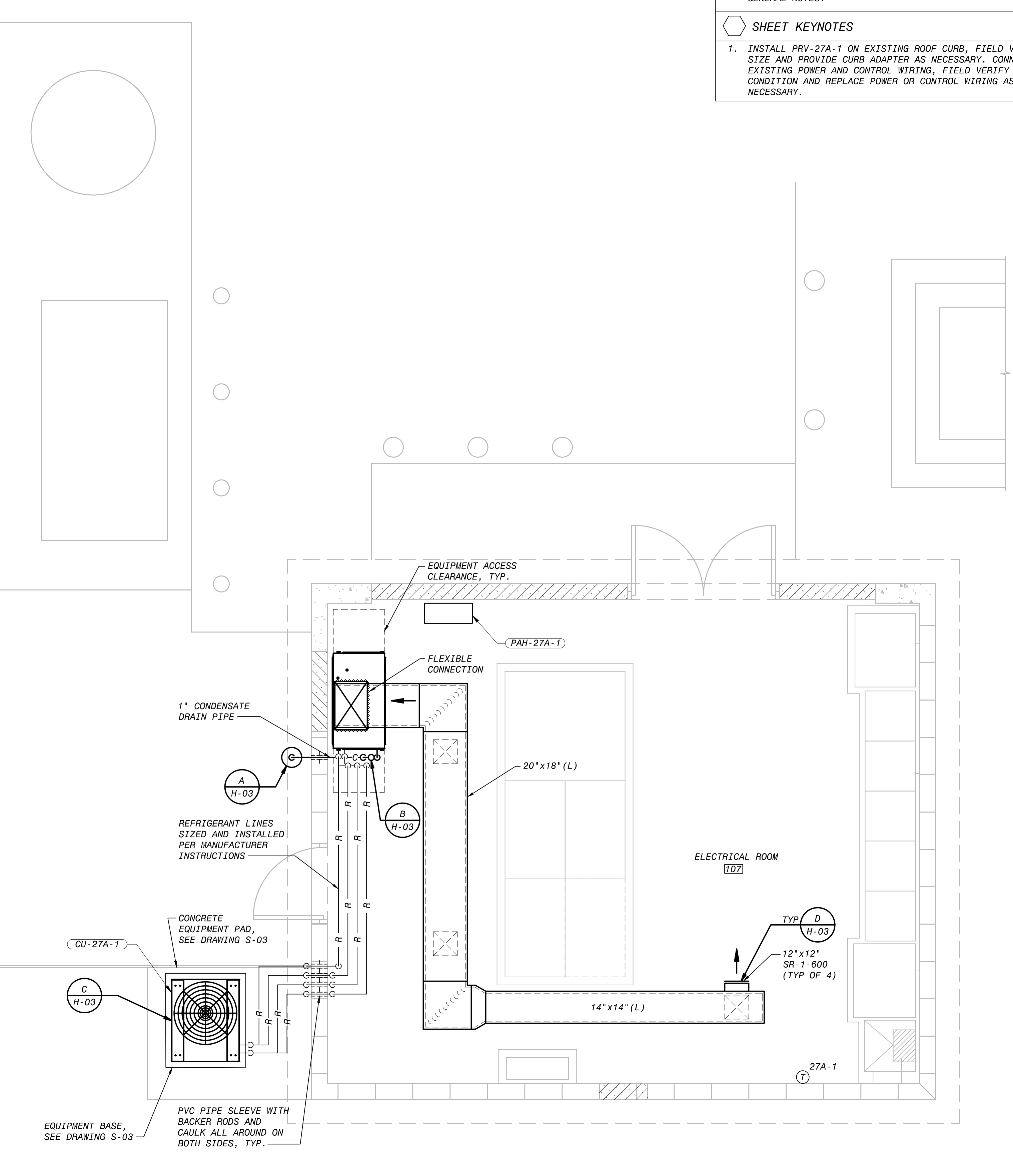
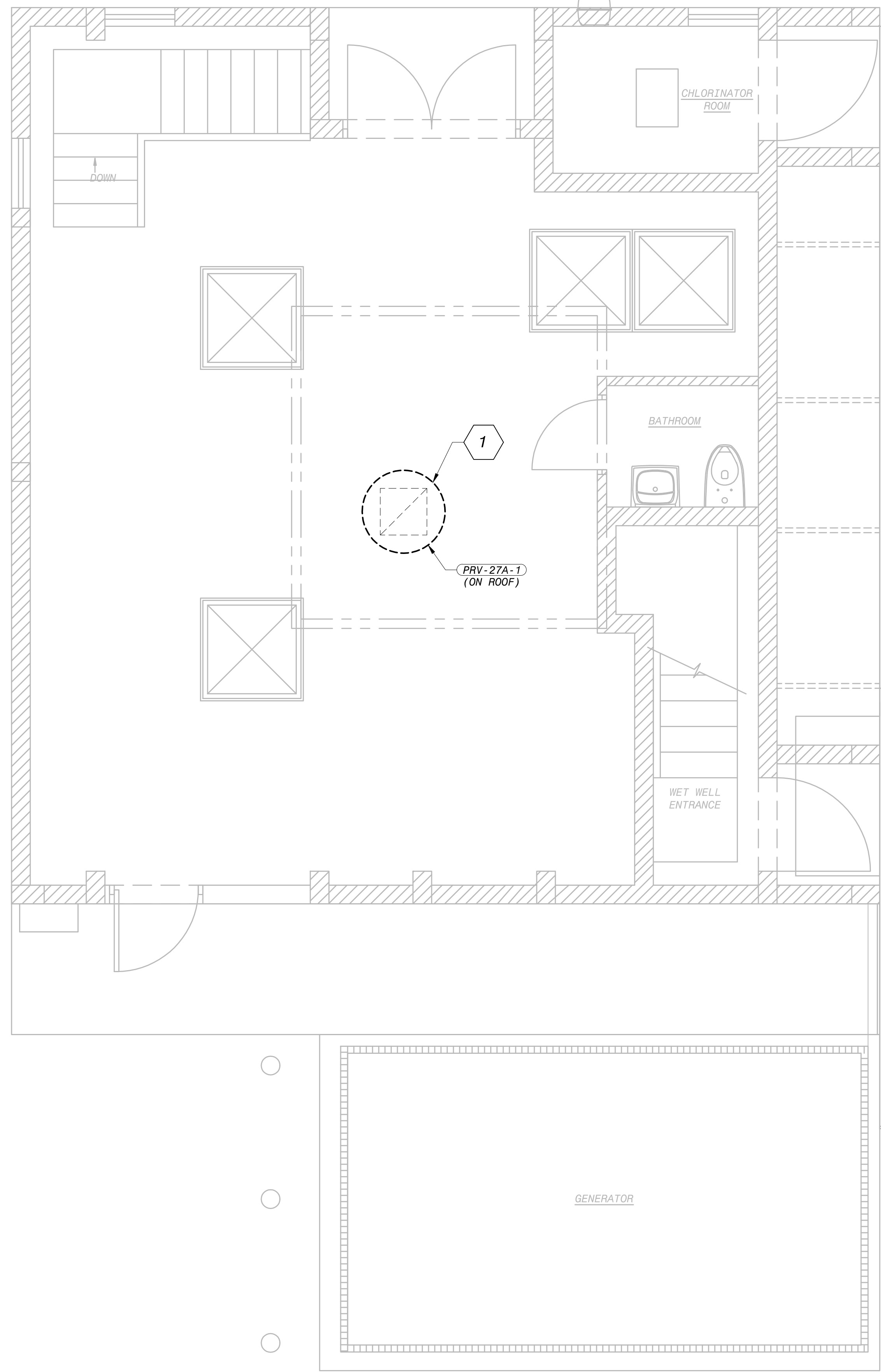
Revision table with columns for date, description, and initials. Includes entries for 100% SUBMITTAL and 50% SUBMITTAL.

THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION BY DATE 09/16/2022 AND SEALED BY MTCHELE BETH, A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF FLORIDA, NO. 82002.

MANATEE COUNTY FLORIDA IMPROVEMENTS AT MASTER LIFT STATION 27-A. Includes logos for Manatee County and Black & Veatch, and contact information for Black & Veatch Corporation.

Design and check table with columns for DESIGNED, DETAILED, CHECKED, APPROVED, and DATE. Includes a graphic scale and project number 402142.

ISSUED FOR CONSTRUCTION



**GENERAL SHEET NOTES**

1. SEE DRAWING H-01 FOR HVAC LEGEND, ABBREVIATIONS AND GENERAL NOTES.

**SHEET KEYNOTES**

1. INSTALL PRV-27A-1 ON EXISTING ROOF CURB, FIELD VERIFY SIZE AND PROVIDE CURB ADAPTER AS NECESSARY. CONNECT TO EXISTING POWER AND CONTROL WIRING, FIELD VERIFY WIRING CONDITION AND REPLACE POWER OR CONTROL WIRING AS NECESSARY.

DATE	DESCRIPTION	BY	APP
SEPT 2022	100% SUBMITTAL	C	MFR MNT
MAY 2022	90% SUBMITTAL	B	AD MFR MNT
MAR 2021	50% SUBMITTAL	A	AD NE MT
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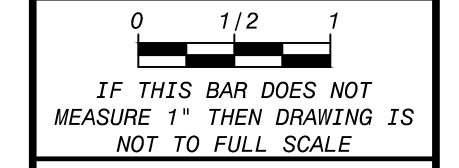
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 Black & Veatch Corporation  
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 Tampa, Florida  
 Certificate No. 8132

**MANATEE COUNTY FLORIDA  
 IMPROVEMENTS AT  
 MASTER LIFT STATION 27-A**

HVAC  
 PLAN

DESIGNED: DAV  
 DETAILED: DAV  
 CHECKED: MFR  
 APPROVED: MNT  
 DATE: SEPT 2022

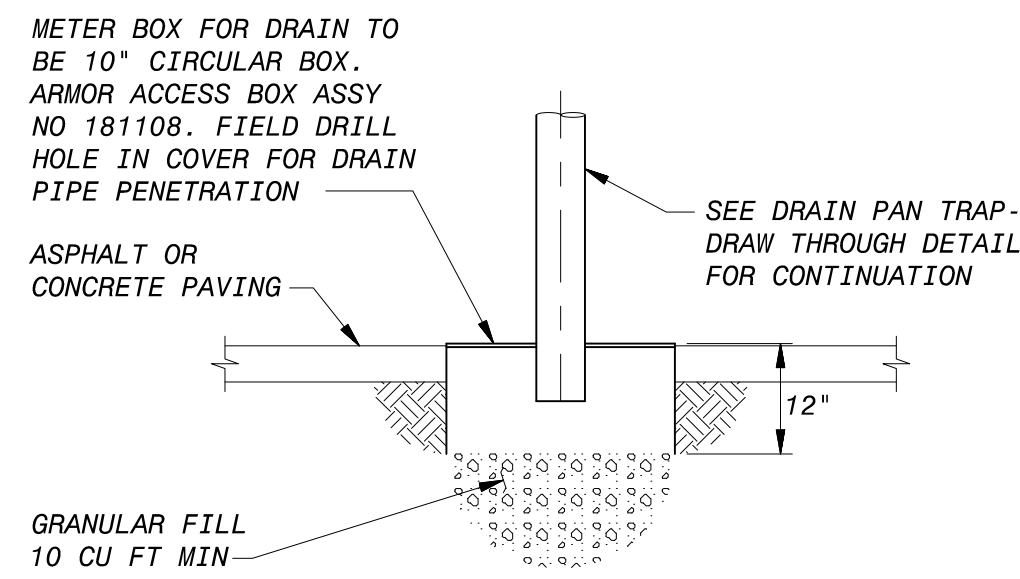


PROJECT NO.  
 402142

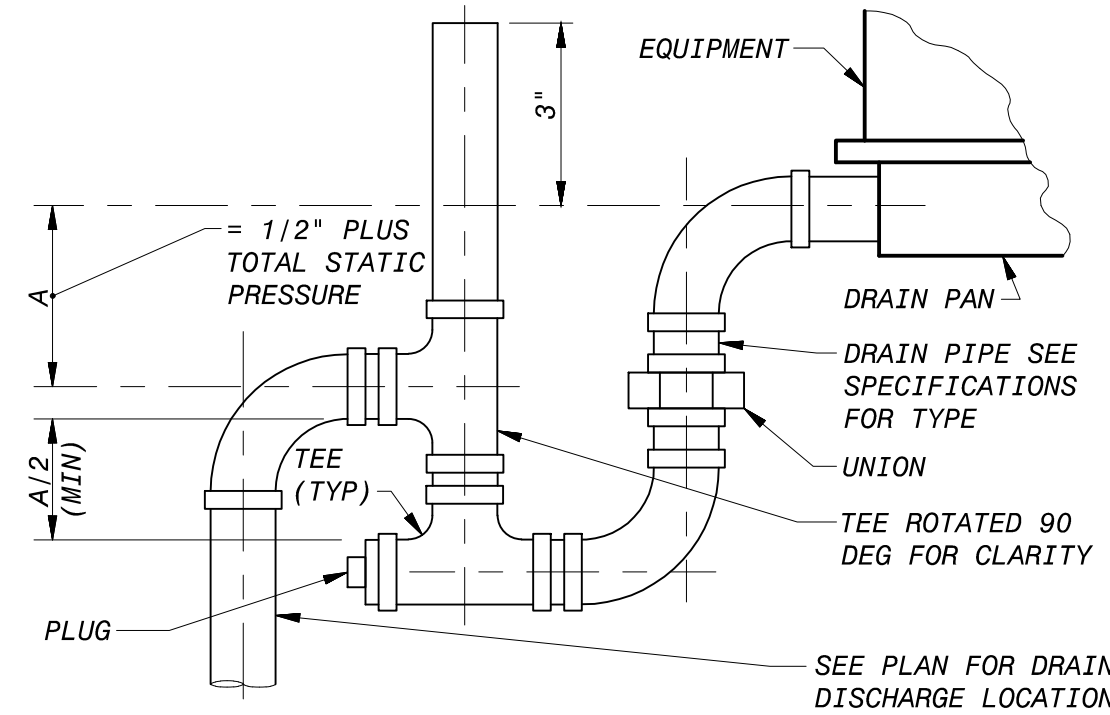
**H-02**  
 SHEET  
 18 OF 40

**MLS 27A - PLAN**  
 3/8" = 1'-0"

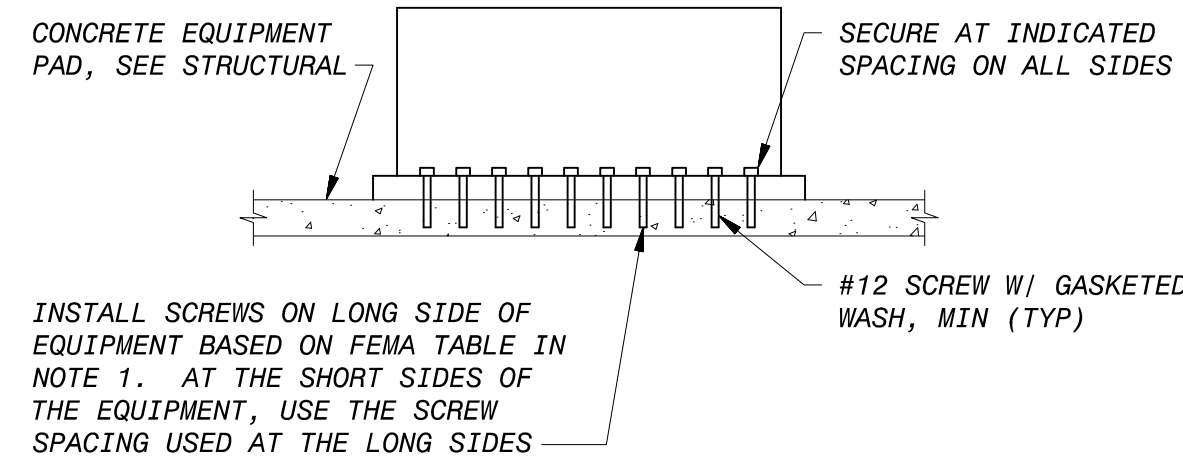
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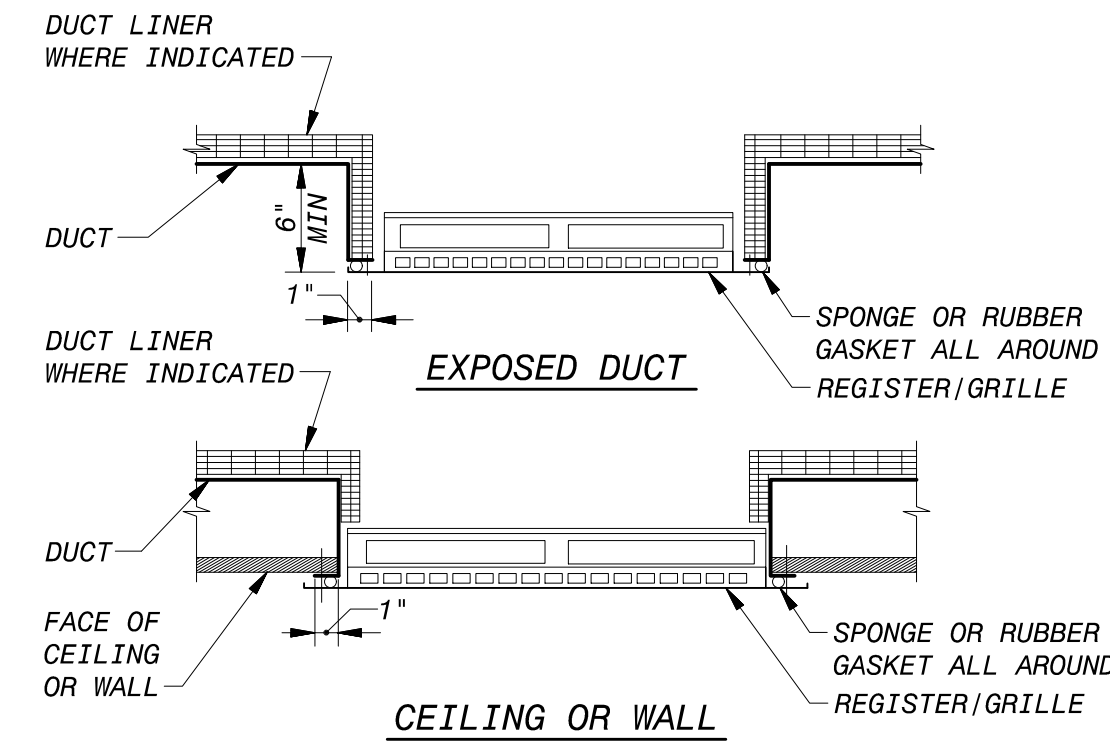
**A CONDENSATE DRAIN SUMP**  
NO SCALE



**B DRAIN PAN TRAP - DRAW THROUGH**  
NO SCALE



**C OUTDOOR MOUNTED EQUIPMENT SECUREMENT**  
NO SCALE



**D REGISTER / GRILLE**  
NO SCALE

**GENERAL SHEET NOTES**

1. SEE DRAWING H-01 FOR HVAC LEGEND, ABBREVIATIONS AND GENERAL NOTES.

**SCHEDULE NOTES**

**AIR DEVICE SCHEDULE:**

NOTES:  
1. SEE DRAWINGS FOR DEVICE LENGTH, WIDTH, AND SUPPLY PATTERN.

**AIR HANDLING UNIT (PACKAGED) SCHEDULE:**

NOTES:  
1. FILTER VELOCITY SHALL NOT EXCEED 350 FPM.  
2. PROVIDE SIDE INLET RETURN GRILLE.  
3. SINGLE ZONE VARIABLE AIR VOLUME UNIT.  
4. PROVIDE EQUIPMENT SUBBASE ACCESSORY.

**CONDENSING UNIT SCHEDULE:**

OUTDOOR COIL ENTERING AIR TEMPERATURE: 96.1 F (COOLING)

**NOTES:**

1. UNIT IS SUBJECT TO CORROSION FROM A HYDROGEN SULFIDE LADEN AND COASTAL ATMOSPHERE. ALL HOUSINGS, AIRSTREAM COMPONENTS AND EXPOSED HEAT TRANSFER COMPONENTS SHALL BE GIVEN A PROTECTIVE FACTORY COATING OF HERESITE OR SEACOAST PROTECTION OR APPROVED EQUALS. CONTROL PANELS, WIRING CONNECTIONS AND OTHER SENSITIVE ELECTRONICS SHALL HAVE A CONFORMAL COATING APPLIED.  
2. PROVIDE HAIL GUARDS.

**FAN SCHEDULE**

FAN TYPE ABBREVIATIONS:  
PRV - POWER ROOF VENTILATOR

WHEEL TYPE ABBREVIATIONS:  
C - CENTRIFUGAL

**NOTES:**

1. FAN REPLACING EXISTING UNIT IN-KIND. EXISTING ROOF CURB TO BE REUSED, PROVIDE CURB ADAPTER AS NECESSARY. CONNECT NEW FAN TO EXISTING FAN CONTROLS AND POWER WIRING.  
2. ALUMINUM CONSTRUCTION.  
3. UNIT IS SUBJECT TO CORROSION FROM A HYDROGEN SULFIDE LADEN AND COASTAL ATMOSPHERE. ALL HOUSINGS, AIRSTREAM COMPONENTS SHALL BE GIVEN A PROTECTIVE FACTORY COATING OF HERESITE OR SEACOAST PROTECTION OR APPROVED EQUALS. WIRING CONNECTIONS AND OTHER SENSITIVE ELECTRONICS SHALL HAVE A CONFORMAL COATING APPLIED.  
4. EXPLOSION PROOF MOTOR.

AIR DEVICE SCHEDULE								
SYMBOL	BASIS OF DESIGN MANUFACTURER	MODEL	FRAME/BORDER	MODULE SIZE	MATERIAL	FINISH	DAMPER TYPE	NOTES
SR-1	TITUS	272FS	SURFACE MOUNT	---	ALUMINUM	BAKED ALUM ENAMEL	OPPOSED BLADE	1

AIR HANDLING UNIT (PACKAGED) SCHEDULE																			
UNIT NUMBER	LOCATION	BASIS OF DESIGN MANUFACTURER	MODEL	AIRFLOW (CFM)	ESP (IN WC)	ORIENTATION	INDOOR FAN MOTOR HP	DRIVE	POWER SUPPLY		COOLING CAPACITY (BTUH)				FILTER DATA		VIBRATION ISOLATION	APPROX WEIGHT (LBS)	NOTES
									VOLTS	PHASE	EAT (FDB)	(FWB)	SENSIBLE	TOTAL	TYPE	THICKNESS (IN)			
PAH-27A-1	27-A ELECTRICAL ROOM	TRANE	TWE	2400	0.625	UPFLOW	2	BELT	480	3	85	65.7	70,000	73,000	PLEATED	2	INTERNAL	400	1, 2, 3, 4

CONDENSING UNIT SCHEDULE															
UNIT NUMBER	LOCATION	BASIS OF DESIGN MANUFACTURER	MODEL	COOLING				HEATING CAPACITY (BTUH)	POWER SUPPLY		MINIMUM CIRCUIT AMPACITY	ARI MINIMUM EFFICIENCY	MATCHED WITH INDOOR UNIT	APPROX WEIGHT (LBS)	NOTES
				CAPACITY (BTUH)	MINIMUM CAPACITY STEPS	SUCTION TEMPERATURE (F)			VOLTS	PHASE					
CU-27A-1	27-A ELECTRICAL ROOM	TRANE	TTA	73,000	2	38	48	---	480	3	14	12.0 EER	PAH-27A-1	350	1, 2

FAN SCHEDULE																
UNIT NUMBER	LOCATION	BASIS OF DESIGN MANUFACTURER	MODEL	FAN TYPE	AIRFLOW (CFM)	ESP (IN WC)	BRAKE HP	MOTOR HP	POWER SUPPLY		MINIMUM WHEEL DIA (IN)	WHEEL TYPE	DRIVE	VIBRATION ISOLATION	APPROX WEIGHT (LBS)	NOTES
									VOLTS	PHASE						
PRV-27A-1	27-A MLS ROOF	GREENHECK	GB	PRV	2200	1.0	0.62	3/4	120	1	18.5	C	BELT	INTERNAL	140	1, 2, 3, 4

**HVAC SEQUENCE OF OPERATION**

**1. AIR CONDITIONING SYSTEMS.**

1.1. SINGLE ZONE VARIABLE VOLUME SYSTEMS. COOLING ONLY SINGLE ZONE VARIABLE VOLUME SYSTEMS SHALL BE CONTROLLED BY THEIR RESPECTIVE PROGRAMMABLE THERMOSTAT. SYSTEM OPERATION SHALL BE CONTROLLED BY "OFF-AUTO-COOL" MODES AND "AUTO-ON" FAN MODES SELECTED FROM THE THERMOSTAT TOUCHSCREEN INTERFACE. WHEN THE "AUTO" FAN MODE IS SELECTED, THE RESPECTIVE EQUIPMENT FAN SHALL BE ENERGIZED UPON A CALL FOR COOLING AS REQUIRED TO MAINTAIN THE DESIRED ROOM TEMPERATURE. WHEN "ON" FAN MODE IS SELECTED, THE FAN SHALL BE ENERGIZED. WHEN THE INDOOR TEMPERATURE IS GREATER THAN THE INDOOR TEMPERATURE SETPOINT, THE FAN SHALL BE ENERGIZED AND HELD AT THE MINIMUM SPEED REQUIRED TO MEET THE COOLING DEMAND. THE FAN SPEED SHALL INCREASE AS THE COOLING DEMAND INCREASES AND THE COMPRESSORS SHALL BE STAGED AND ENERGIZED AS REQUIRED TO MAINTAIN THE DESIRED INDOOR TEMPERATURE. UPON ALARM SIGNAL FROM FIRE ALARM CONTROL PANEL (FACP), PAH-27A-1 AND CU-27A-1 SHALL BE DE-ENERGIZED.

EQUIPMENT THERMOSTAT  
PAH-27A-1, CU-27A-1 T-27A-1

**2. THERMOSTAT SETPOINTS**

2.1. THERMOSTAT SETPOINTS SHALL BE AS INDICATED BELOW, UNLESS THE SETPOINT HAS BEEN DESCRIBED PREVIOUSLY IN THIS SEQUENCE OF OPERATIONS.

AIR CONDITIONED AREAS - 85 F

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**MANATEE COUNTY FLORIDA IMPROVEMENTS AT MASTER LIFT STATION 27-A**

HVAC SCHEDULES AND DETAILS

DESIGNED: DAV  
DETAILED: DAV  
CHECKED: MFR  
APPROVED: MNT  
DATE: SEPT 2022

0 1/2 1  
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

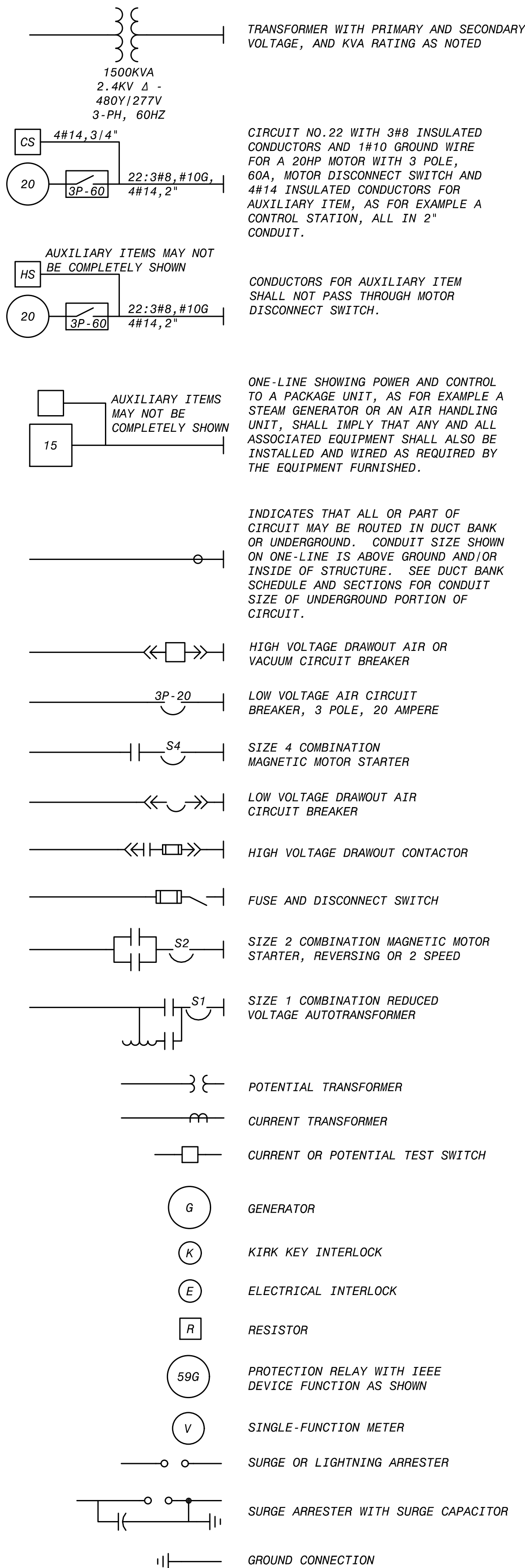
PROJECT NO.  
402142

**H-03**  
SHEET  
19 OF 40

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# ELECTRICAL LEGENDS

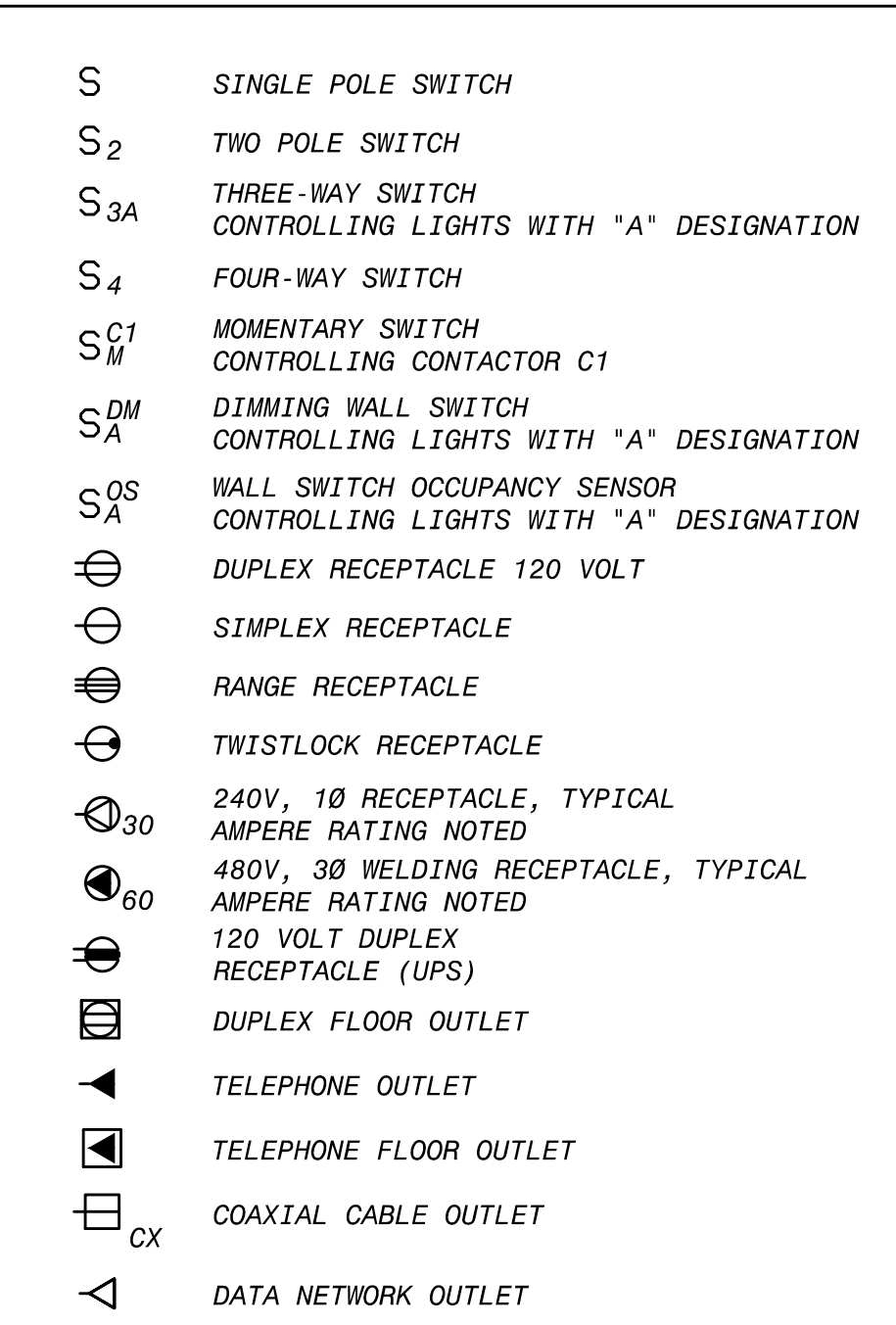
## ONE-LINE DIAGRAM LEGEND



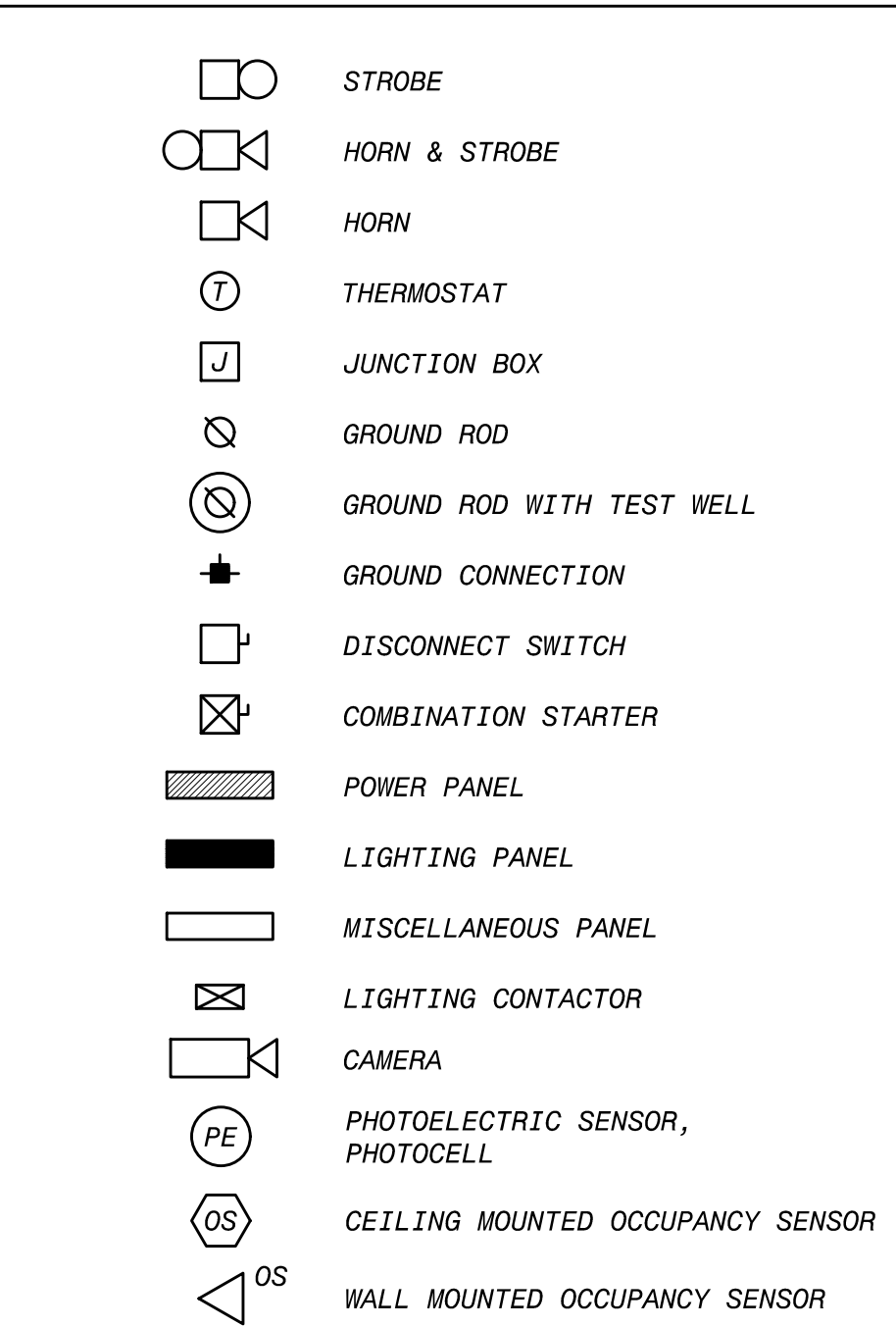
## SCHEMATIC SYMBOLS



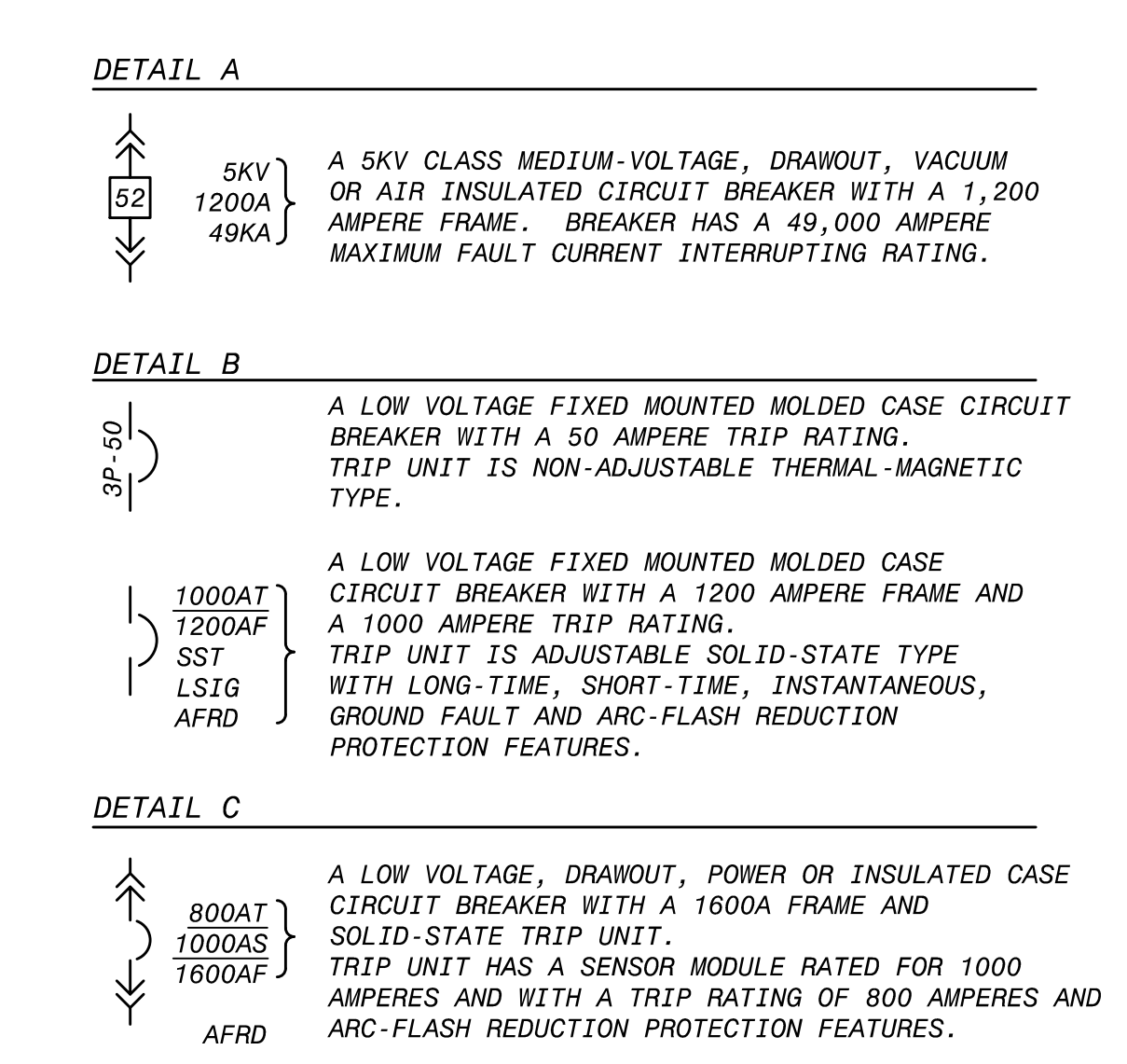
## SWITCH & OUTLET SYMBOLS



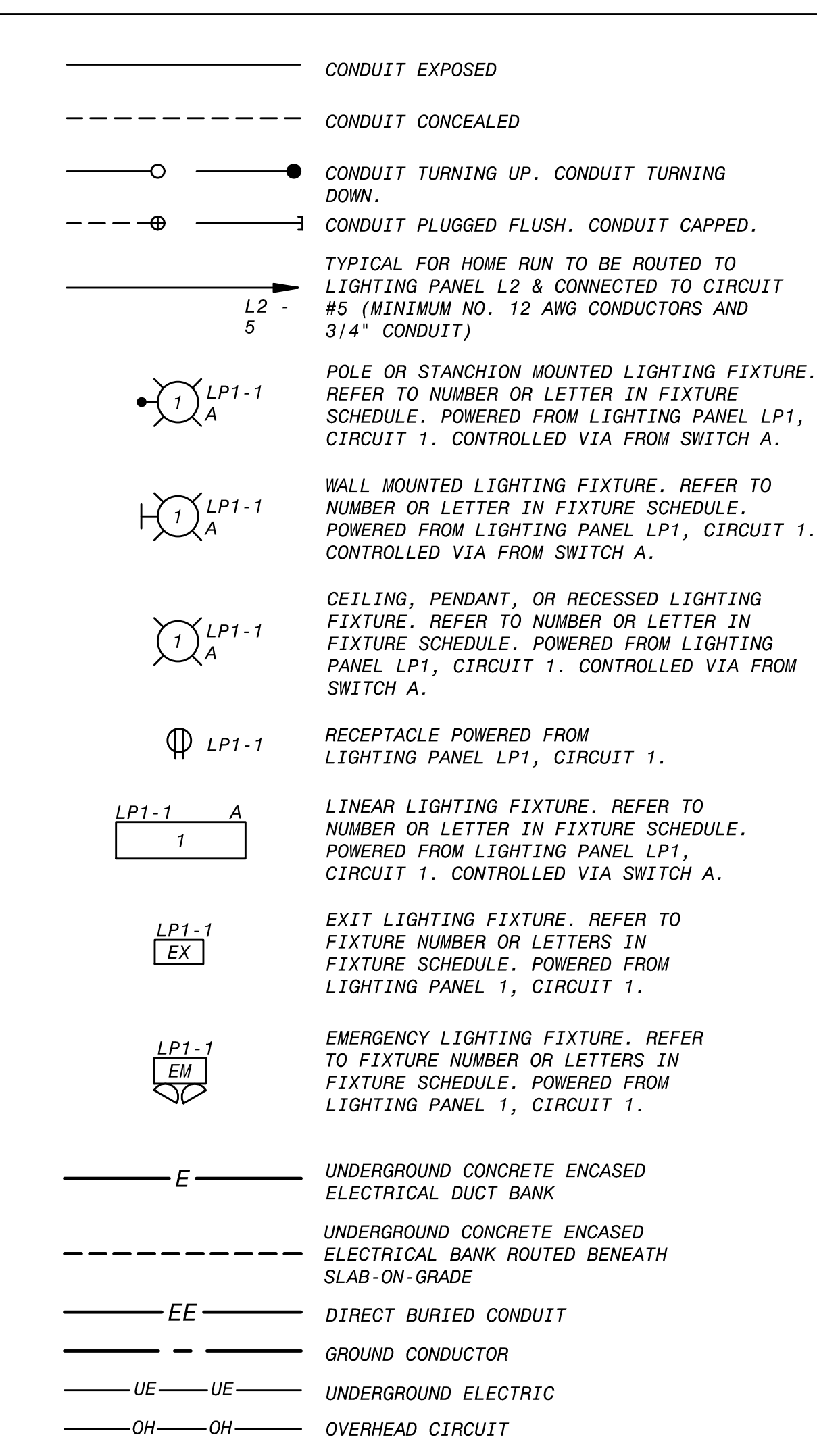
## MISCELLANEOUS SYMBOLS



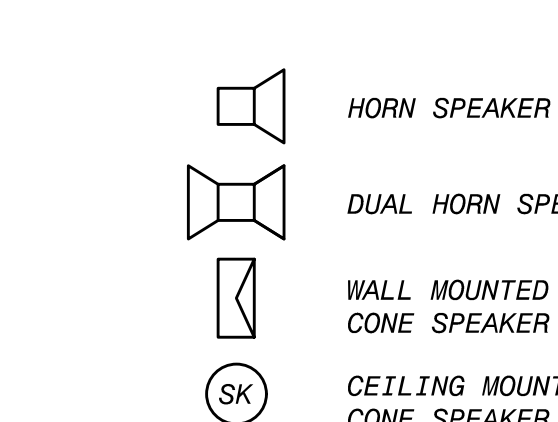
## BREAKER DETAILS



## CONDUIT & WIRING INSTALLATION LEGEND



## COMMUNICATION SYMBOLS



## PROTECTION/RELAY DEVICE NUMBERS

- 25 - SYNCHRONIZING OR SYNCHRONISM-CHECK DEVICE
- 27 - UNDERVOLTAGE RELAY
- 32 - DIRECTIONAL POWER RELAY
- 37 - UNDERCURRENT OR UNDERPOWER RELAY
- 46 - REV. PHASE OR PHASE-BAL. CURRENT RELAY
- 47 - PHASE SEQ. OR PHASE BAL. VOLTAGE RELAY
- 49 - MACHINE OR TRANSFORMER THERMAL RELAY
- 50 - INSTANTANEOUS OVERCURRENT
- 51 - AC TIME OVERCURRENT RELAY
- 52 - AC CIRCUIT BREAKER
- 59 - OVERVOLTAGE RELAY
- 63 - PRESSURE SWITCH
- 64 - GROUND DETECTOR RELAY
- 67 - AC DIRECTIONAL OVERCURRENT RELAY
- 71 - LIQUID OR GAS LEVEL RELAY
- 81 - FREQUENCY RELAY
- 83 - AUTOMATIC SELECTIVE CONTROL OR TRANSFER RELAY
- 86 - LOCKOUT RELAY
- 87 - DIFFERENTIAL PROTECTIVE RELAY

DESIGNED: DG  
 DETAILED: SS  
 CHECKED: ND  
 APPROVED: RB  
 DATE: SEPT 2022

0 1/2 1  
 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.  
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E-01  
 SHEET  
 20 OF 40

MANATEE COUNTY FLORIDA  
 IMPROVEMENTS AT  
 MASTER LIFT STATION 27-A

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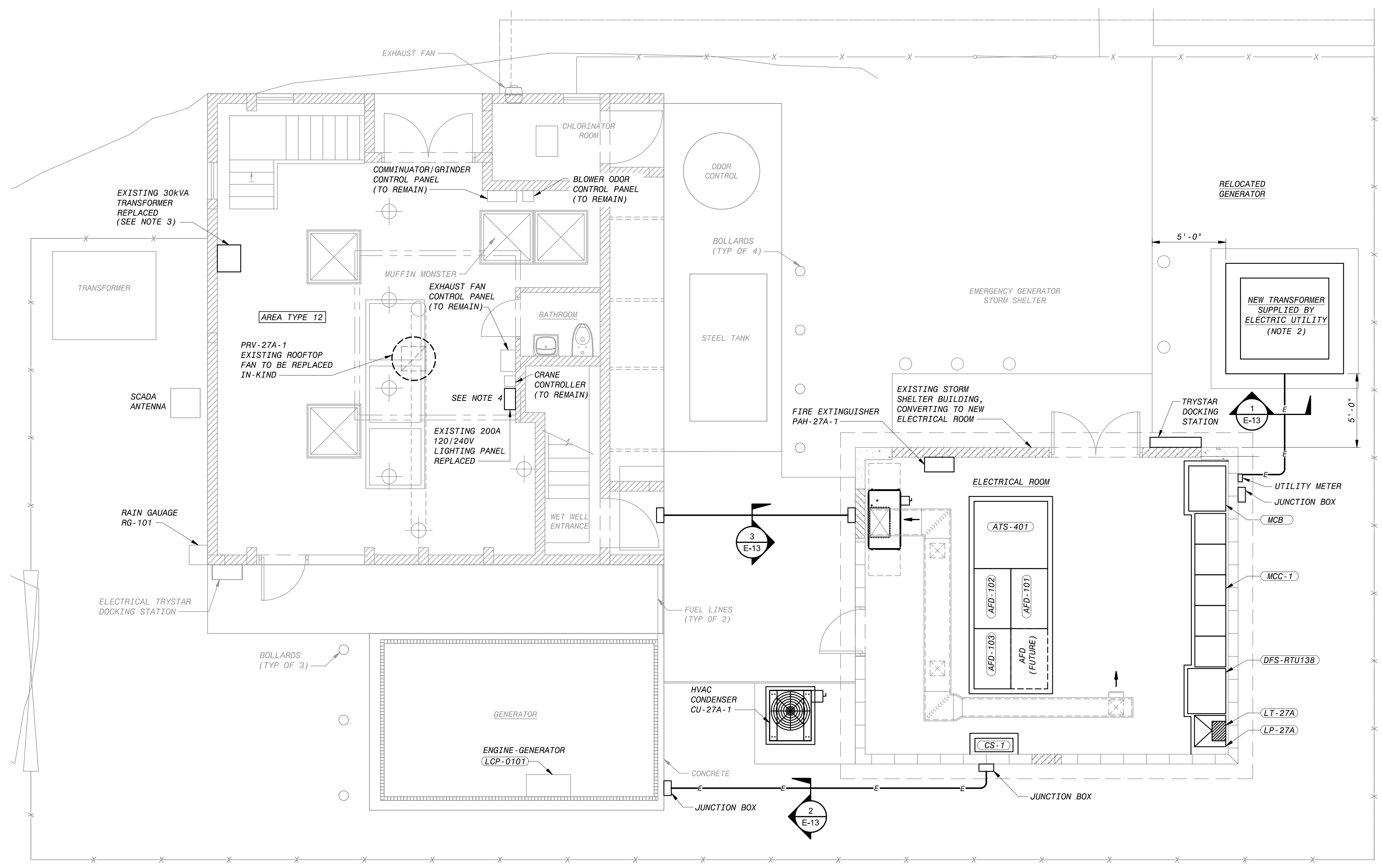
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4	RB	09/15/2022	GENERAL DRAWINGS
5	RB	09/15/2022	GENERAL DRAWINGS
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SEPT 2022 100% SUBMITTAL  
 MAY 2022 90% SUBMITTAL  
 MAR 2021 50% SUBMITTAL

DATE  
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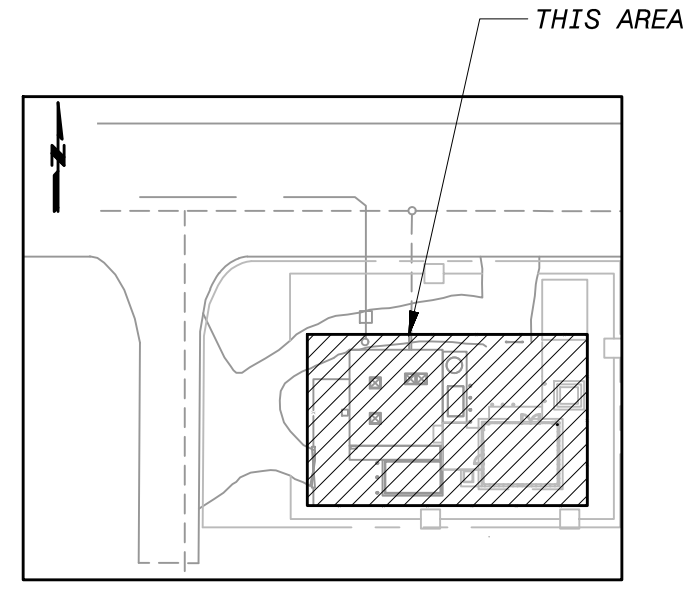
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**SITE AND POWER PLAN**  
1/4"=1'-0"

- NOTES:**
- SEE DRAWINGS E-01 AND E-02 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
  - NEW TRANSFORMER SUPPLIED BY ELECTRIC UTILITY, TRANSFORMER SHALL BE AT LEAST 5 FEET AWAY FROM BUILDING'S WALLS.
  - CONTRACTOR SHALL REPLACE THE EXISTING 30KVA TRANSFORMER. TRANSFORMER SHALL BE SALVAGED AND HANDED TO THE COUNTY. REPLACED TRANSFORMER SHOULD BE ENERGIZED FROM A NEW FEED FROM MCC-1, REFER TO E-07.
  - CONTRACTOR SHALL REPLACE EXISTING 200A 120/240V LIGHTING PANEL IN KIND. THE NEW LIGHTING PANEL SHOULD BE ENERGIZED FROM THE REPLACED 30KVA TRANSFORMER LOCATED IN THE SAME ROOM. ALL EXISTING 120/240V LOADS AT PUMP STATION SHOULD BE RE-ENERGIZED FROM NEW THE LIGHTING PANEL.



**KEY PLAN**  
1/4"=1'-0"

**ISSUED FOR CONSTRUCTION**

SEPT 2022	100% SUBMITTAL	C	AD	RE	INT
MAY 2022	90% SUBMITTAL	B	AD	RE	INT
MAR 2021	50% SUBMITTAL	A	AD	RT	MT
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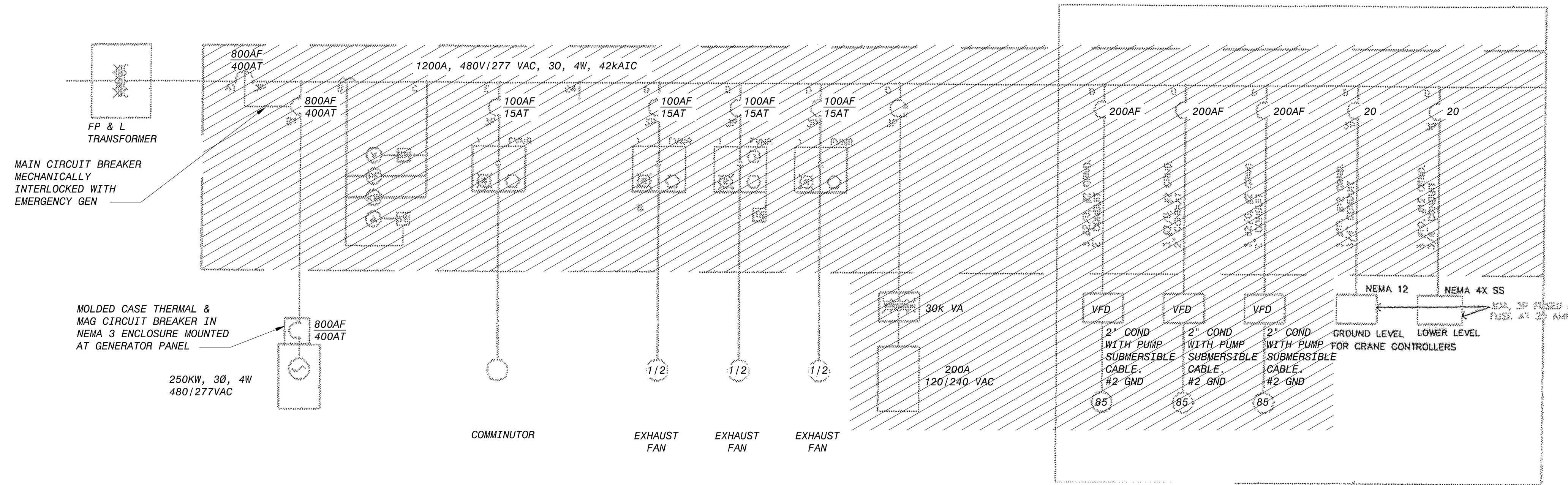
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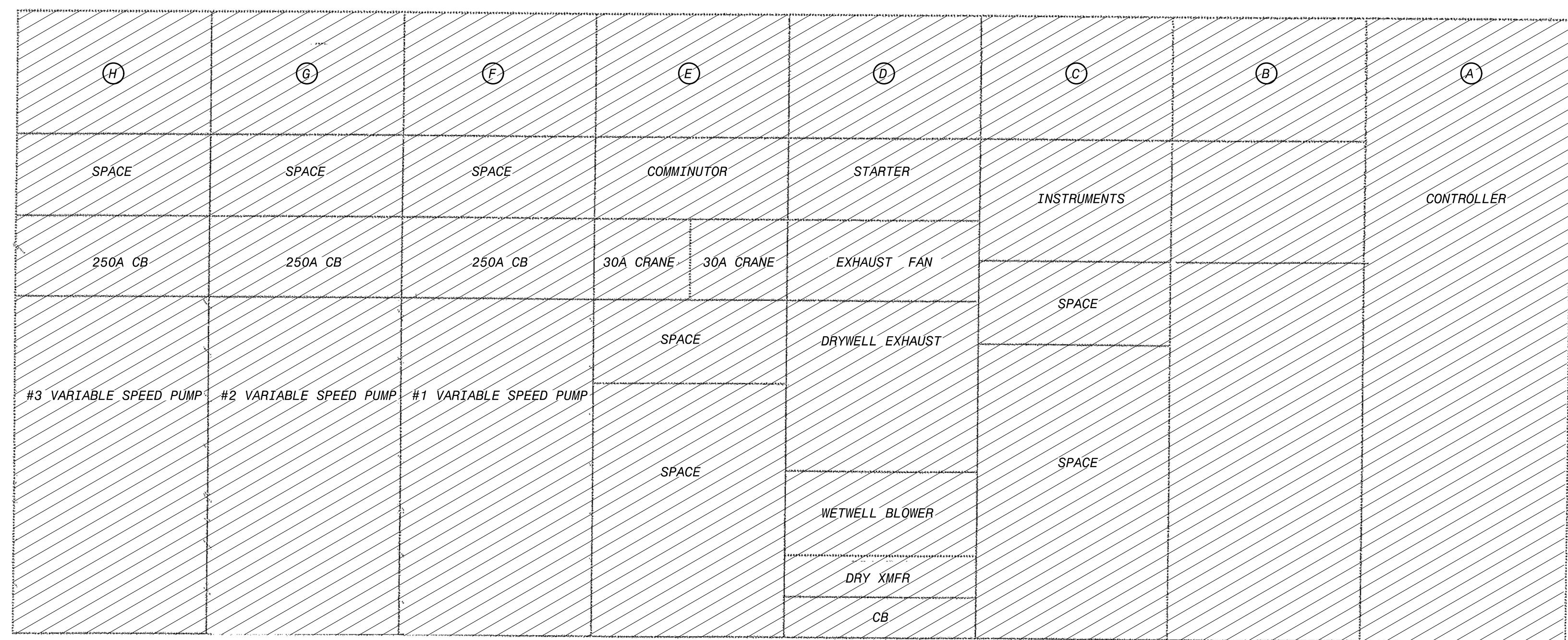
**MANATEE COUNTY, FLORIDA**  
**IMPROVEMENTS AT**  
**MASTER LIFT STATION 27-A**

**ELECTRICAL**  
**SITE AND POWER PLAN**

DESIGNED: DG
DETAILED: SS
CHECKED: ND
APPROVED: RB
DATE: SEPT 2022
PROJECT NO. 402142
<b>E-03</b>
SHEET 22 OF 40



**EXISTING MCC DEMOLITION ONE-LINE DIAGRAM**  
NO SCALE



**EXISTING LIFT STATION 27A MCC DEMOLITION**  
NO SCALE

NOTE:  
1. SEE DRAWINGS E-01 AND E-02 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.

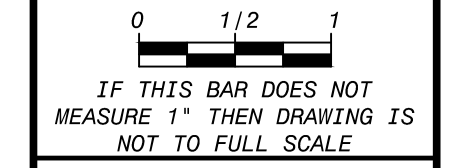
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MAR 2021	50% SUBMITTAL	A	AD	RT	MT
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USER: DUT48884					

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ON 09/16/2022 AND  
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RYAN BINKLEY,  
A LICENSED  
PROFESSIONAL  
ENGINEER IN THE  
STATE OF FLORIDA,  
NO. 89014

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**MANATEE COUNTY, FLORIDA**  
**IMPROVEMENTS AT**  
**MASTER LIFT STATION 27-A**  
**ELECTRICAL**  
**EXISTING MCC DEMO ONE-LINE DIAGRAM**

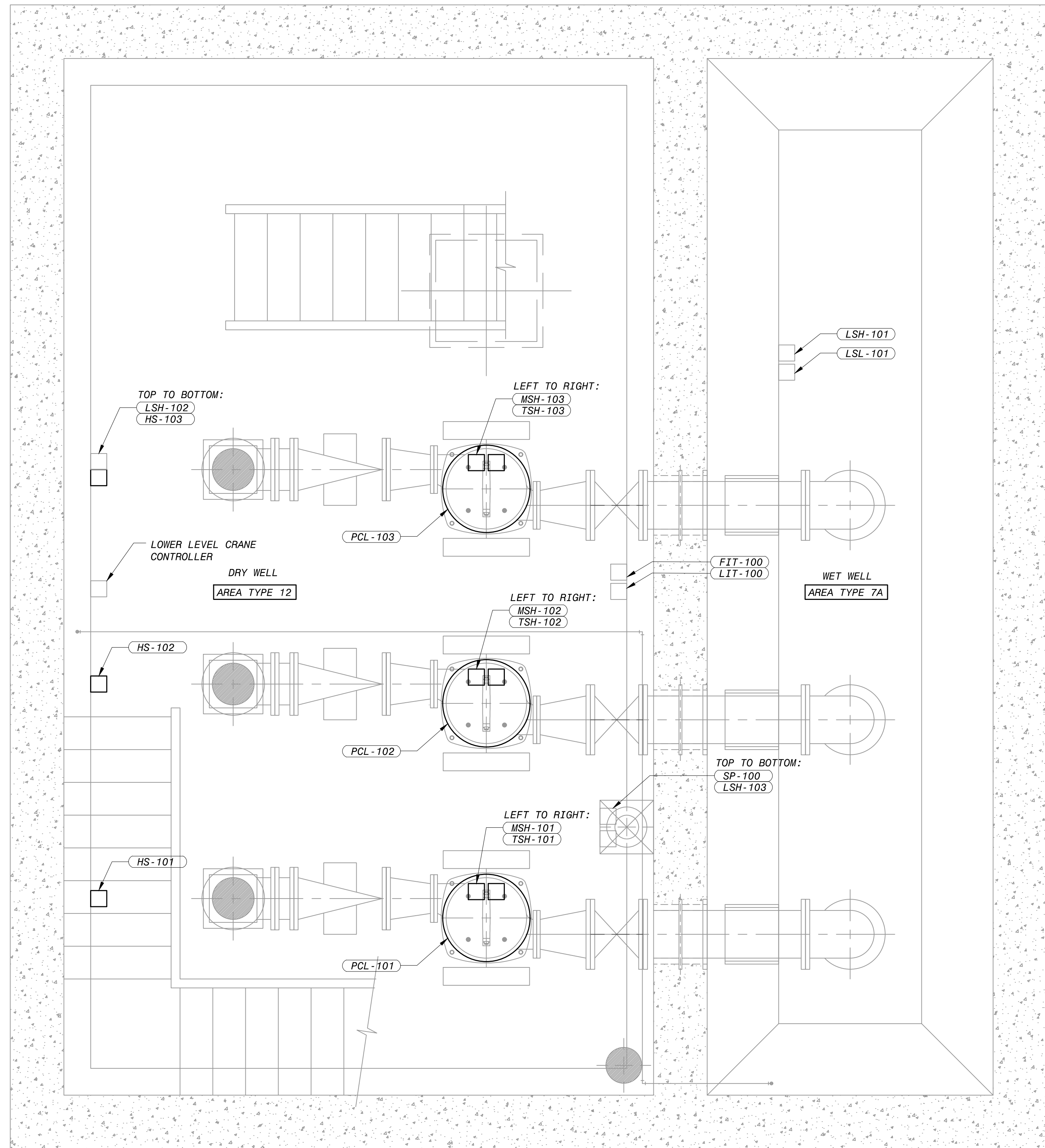
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PROJECT NO.  
402142

**E-04**  
SHEET  
23 OF 40

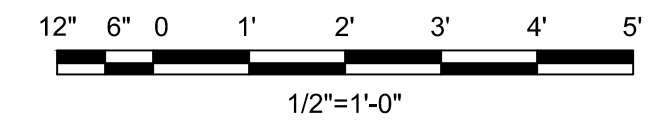
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**BOTTOM LEVEL POWER PLAN**  
1/2"=1'-0"

**NOTES:**

- SEE DRAWINGS E-01 AND E-02 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND NOTES.
- CONTRACTOR SHALL PROVIDE A NEW #6AWG GROUND CONNECTION FROM NEW MOTORS TO EXISTING GROUND RING.



SEPT 2022	100% SUBMITTAL	C	AD	RE	INT
MAY 2022	90% SUBMITTAL	B	AD	RE	INT
MAR 2021	50% SUBMITTAL	A	AD	RT	MT
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	XREF4:				

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RYAN BINKLEY, P.E.,  
ON 09/16/2022 AND  
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RYAN BINKLEY,  
A LICENSED  
PROFESSIONAL  
ENGINEER IN THE  
STATE OF FLORIDA,  
NO. 89014

**BLACK & VEATCH**  
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3405 W. Dr. M. L. King Jr. Blvd, Suite 125  
Tampa, Florida  
Certificate No. 8132

**MANATEE COUNTY, FLORIDA**  
**IMPROVEMENTS AT**  
**MASTER LIFT STATION 27-A**  
**ELECTRICAL**  
**BOTTOM LEVEL POWER PLAN**

DESIGNED: DG
DETAILED: SS
CHECKED: ND
APPROVED: RB
DATE: SEPT 2022

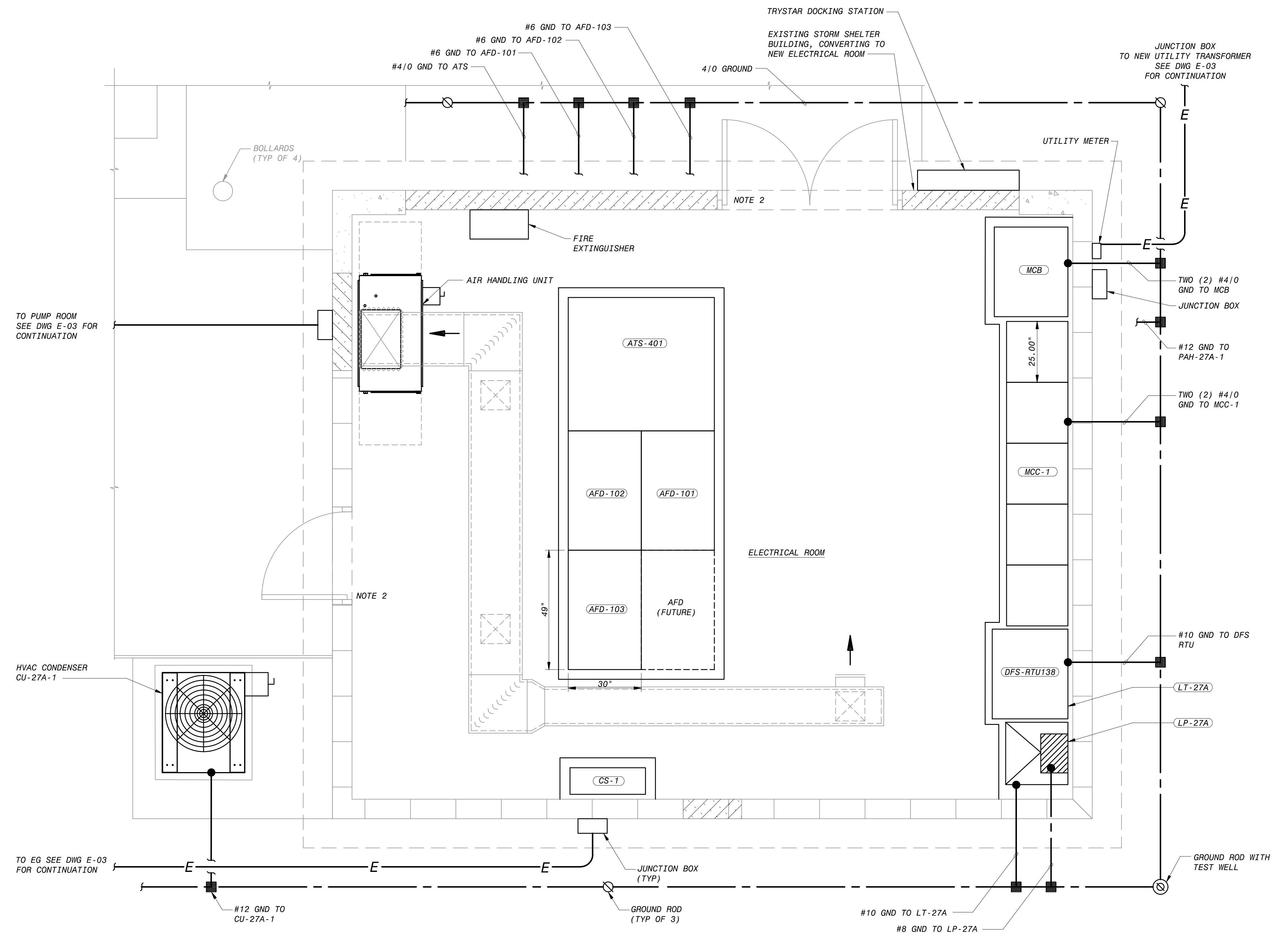
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MEASURE 1" THEN DRAWING IS  
NOT TO FULL SCALE

PROJECT NO.  
402142

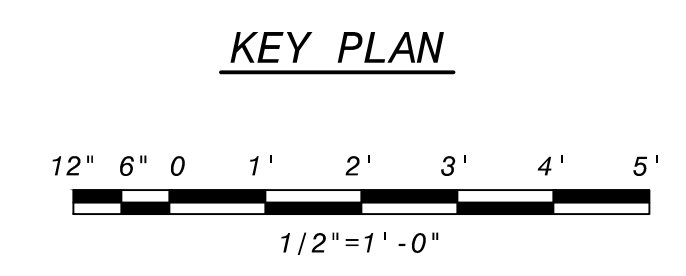
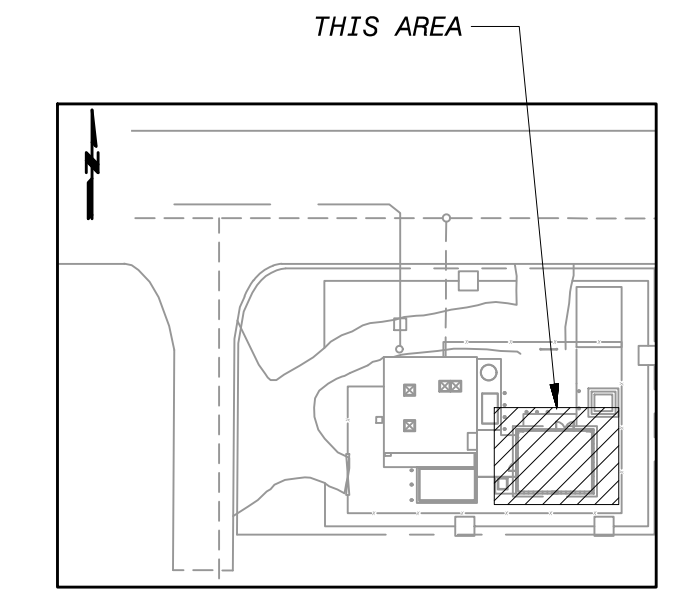
**E-05**  
SHEET  
24 OF 40

**ISSUED FOR CONSTRUCTION**





**ENLARGED - ELECTRICAL ROOM  
POWER AND GROUNDING PLAN**  
1/2"=1'-0"



- NOTES:**
- SEE DRAWINGS E-01 AND E-02 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
  - REFER TO ARCHITECTURAL DRAWINGS FOR NEW DOOR DETAILS.

NO.	BY	CHK	APP
C	AD	RE	INT
B	AD	RE	INT
A	AD	RT	INT
NO.	BY	CHK	APP

DATE	REVISIONS AND RECORD OF ISSUE
SEPT 2022	100% SUBMITTAL
MAY 2022	90% SUBMITTAL
MAR 2021	50% SUBMITTAL

THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION BY PROJECT NO. 15-11-11 ON 09/16/2021 AND SEALED BY RYAN BINKLEY, A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF FLORIDA, NO. 89014

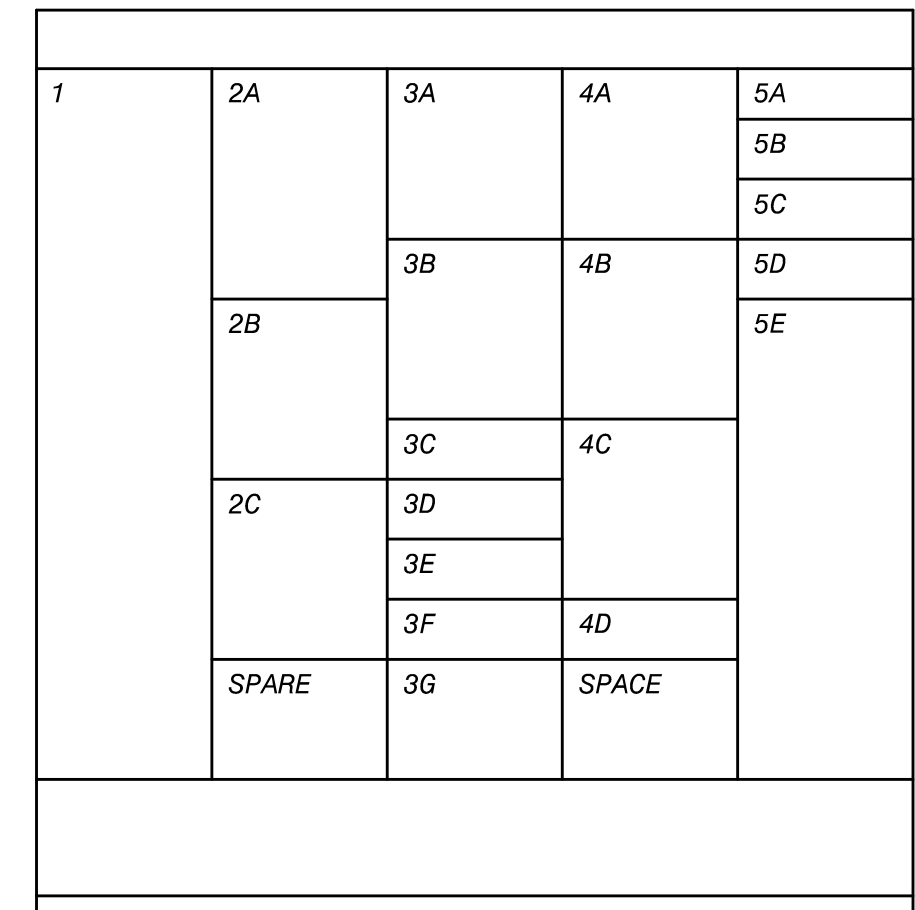
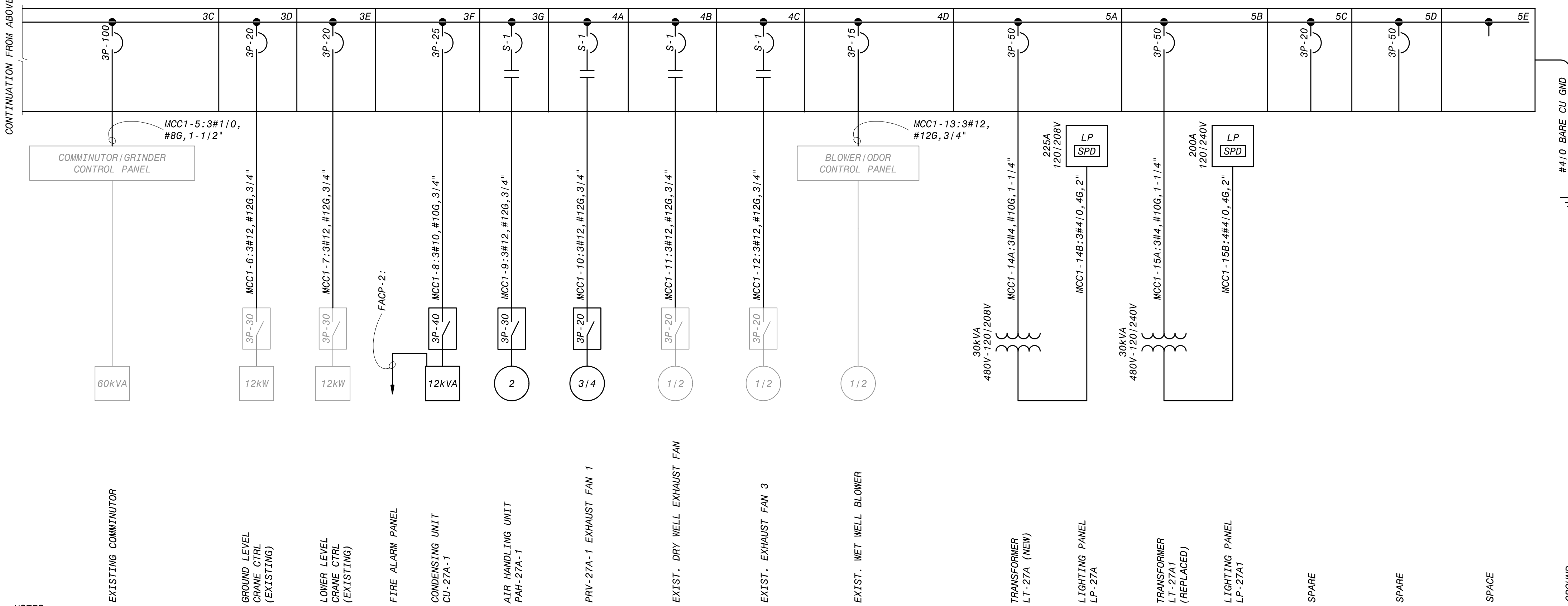
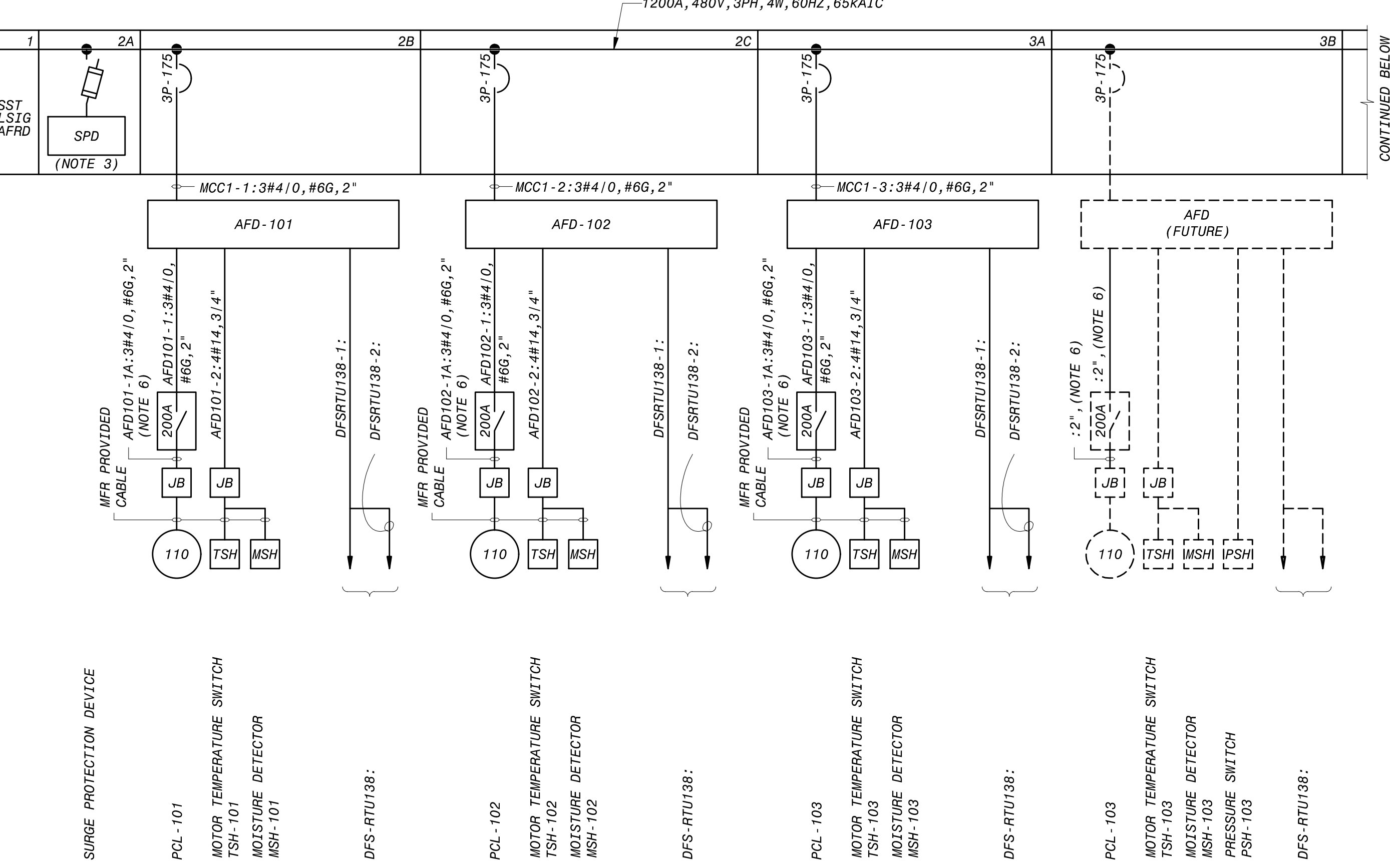
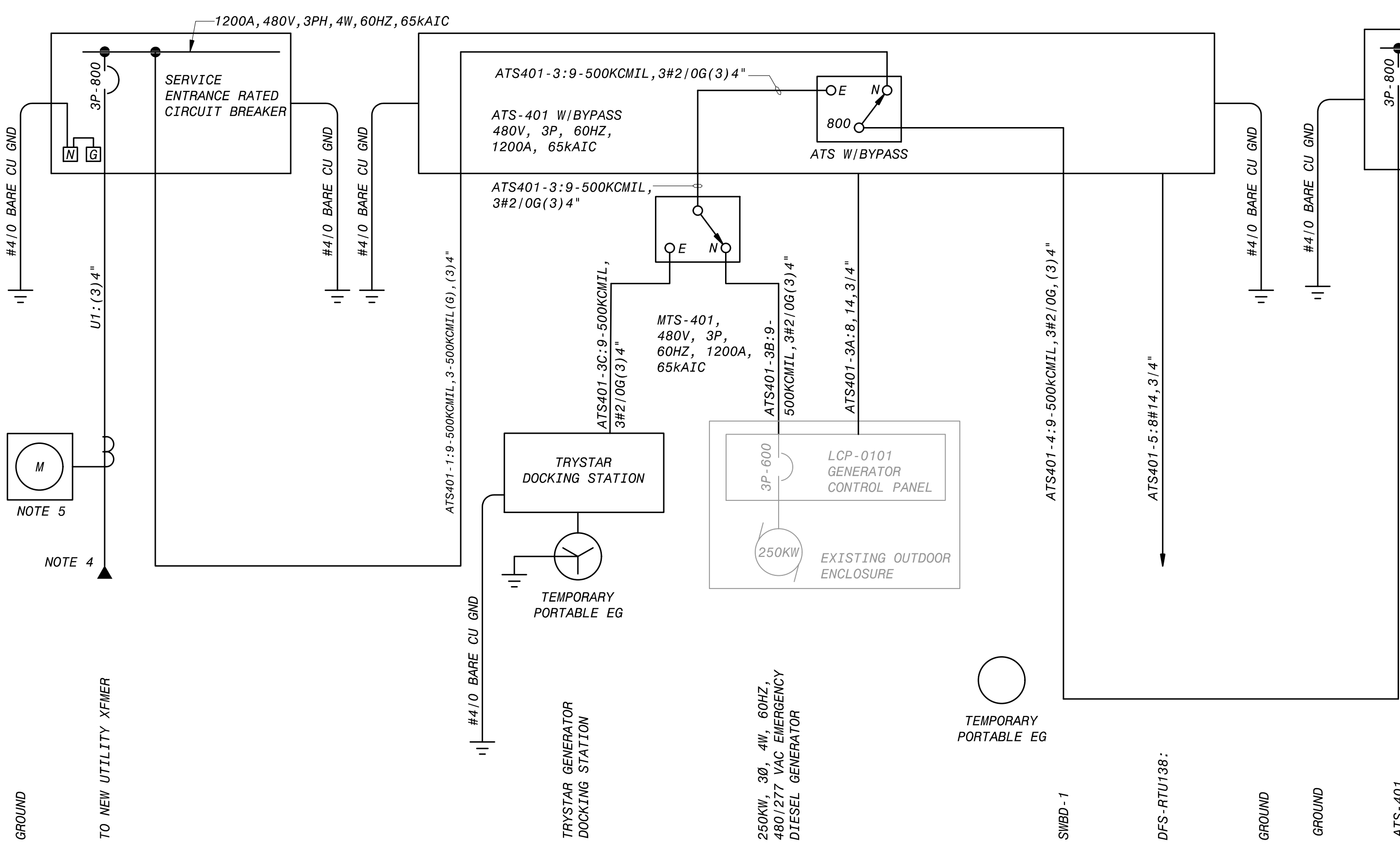
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Black & Veatch Corporation  
3405 W. Dr. M. L. King Jr. Blvd, Suite 125  
Tampa, Florida  
Certificate No. 8132

**MANATEE COUNTY, FLORIDA  
IMPROVEMENTS AT  
MASTER LIFT STATION 27-A**

**ELECTRICAL  
ENLARGED PLAN - ELECTRICAL ROOM  
POWER AND GROUNDING PLAN**

DESIGNED: DG
DETAILED: SS
CHECKED: ND
APPROVED: RB
DATE: SEPT 2022
PROJECT NO. 402142
<b>E-06</b> SHEET 25 OF 40

**ISSUED FOR CONSTRUCTION**



**NOTES:**

- SEE DRAWINGS E-01 AND E-02 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
- CONTRACTOR SHALL COORDINATE WITH ELECTRIC UTILITY TO CONNECT TO NEW TRANSFORMER.
- CONTRACTOR SHALL SIZE SURGE PROTECTIVE DEVICE PER MANUFACTURER RECOMMENDATION.
- CONTRACTOR SHALL SUPPLY CONDUITS BETWEEN UTILITY TRANSFORMER AND MCC. ELECTRIC UTILITY SHALL PROVIDE CONDUCTORS.
- CONTRACTOR SHALL FURNISH AND INSTALL METER ENCLOSURE THAT MEETS FPL SERVICES STANDARDS AND IS LISTED ON THE FPL APPROVED METERING ENCLOSURE LIST.
- CONTRACTOR SHALL USE STEEL CONDUITS TO ROUTE ALL POWER CONDUITS TO ALL AFDS, INCLUDING CONDUITS FOR FUTURE AFD. THE FOLLOWING CIRCUITS SHALL BE ROUTED IN STEEL CONDUITS: AFD101-1, AFD101-1A, AFD102-1, AFD102-1A, AFD103-1, AFD103-1A AND CONDUITS FOR FUTURE AFD.

**MCC-1 ONE-LINE DIAGRAM**  
NO SCALE

THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION BY [NAME] ON [DATE]. THIS DRAWING IS A REVISION OF THE ORIGINAL DRAWING. ALL REVISIONS AND RECORD OF ISSUE ARE LISTED BELOW.

NO.	BY	DATE	REVISIONS AND RECORD OF ISSUE
1	RB	SEPT 2022	100% SUBMITTAL
2	AD	MAY 2022	90% SUBMITTAL
3	AD	MAR 2021	50% SUBMITTAL
4	AD	09/16/2020	AND
5	AD	09/16/2020	SEALED BY
6	AD	09/16/2020	DATE
7	AD	09/16/2020	DATE
8	AD	09/16/2020	DATE
9	AD	09/16/2020	DATE
10	AD	09/16/2020	DATE
11	AD	09/16/2020	DATE
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99	AD	09/16/2020	DATE
100	AD	09/16/2020	DATE

**MANATEE COUNTY FLORIDA**  
IMPROVEMENTS AT  
MASTER LIFT STATION 27-A

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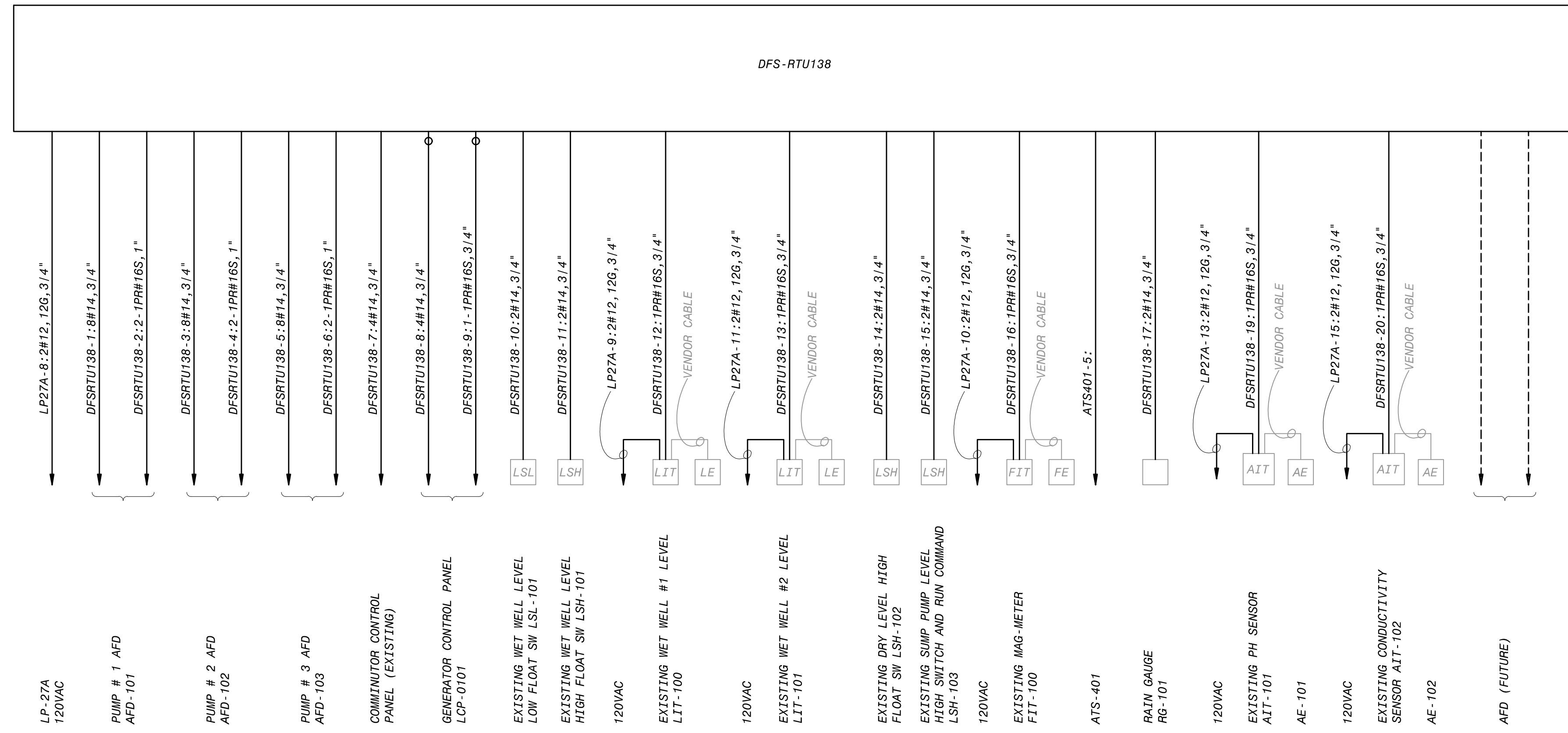
**DESIGNED:** DG  
**DETAILED:** SS  
**CHECKED:** ND  
**APPROVED:** RB  
**DATE:** SEPT 2022

0 1/2 1  
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

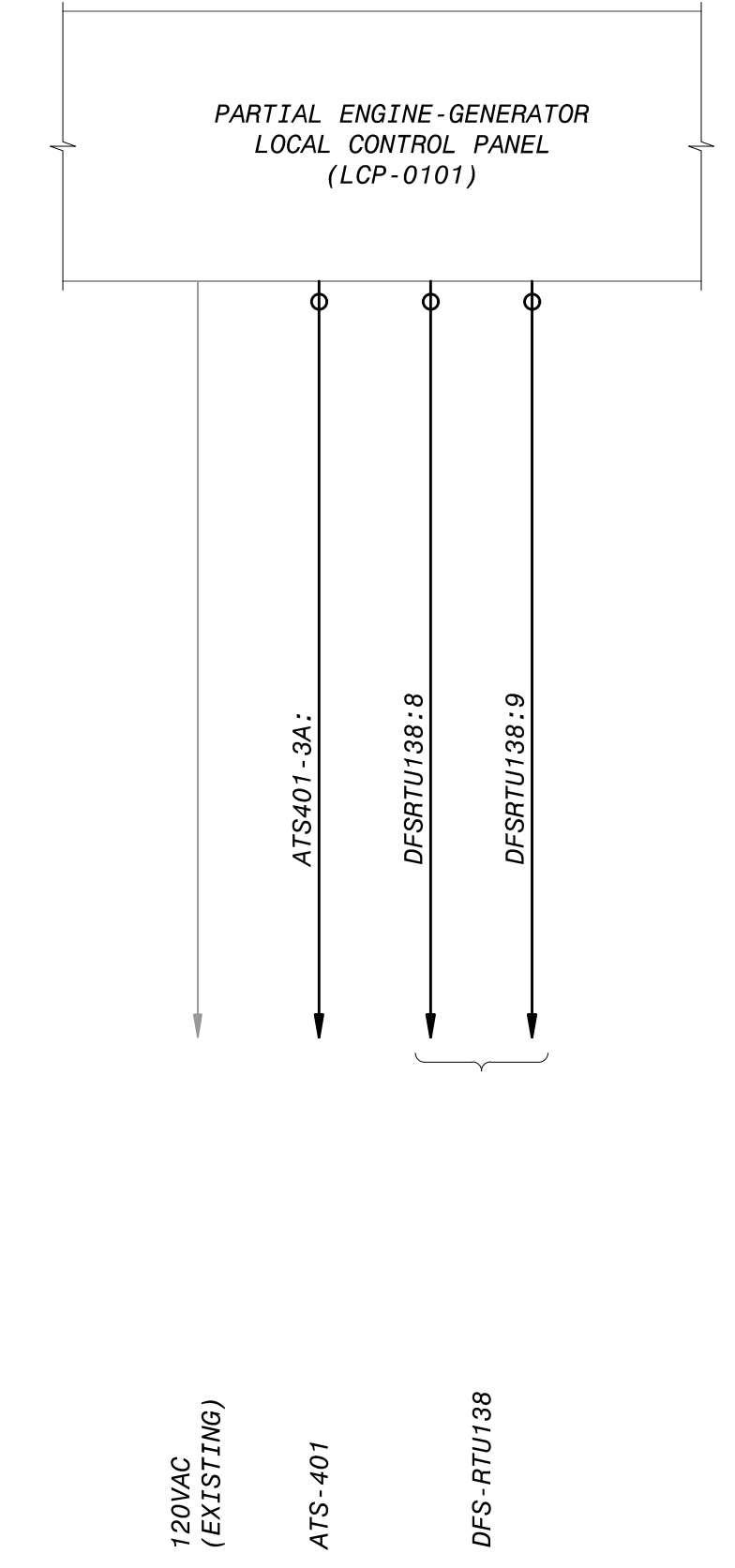
PROJECT NO.  
402142

**E-07**  
SHEET  
26 OF 40

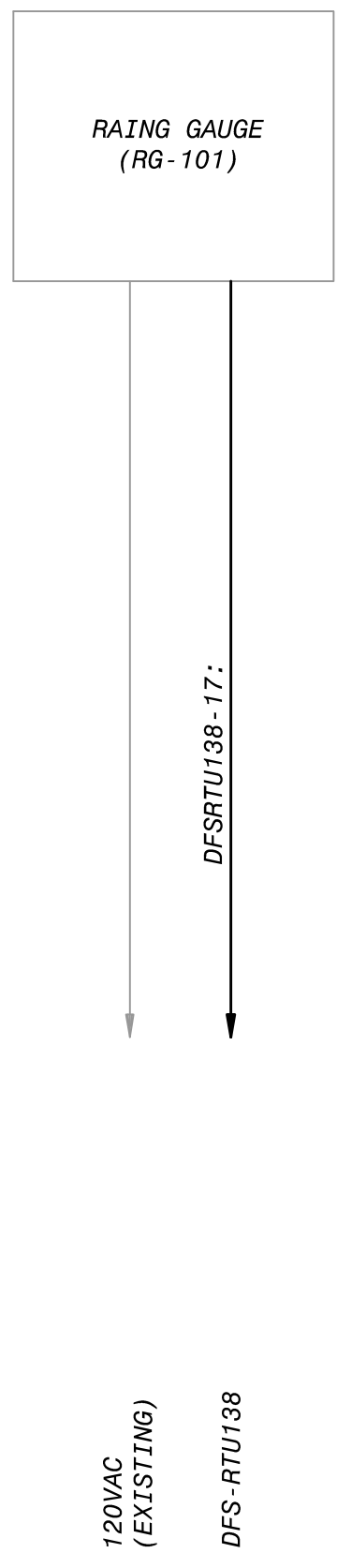
**ISSUED FOR CONSTRUCTION**



**EXISTING DFS-RTU138 ONE-LINE DIAGRAM**  
NO SCALE



**LCP-0101 PARTIAL ENGINE-GENERATOR LOCAL CONTROL PANEL**  
NO SCALE



**RG-101 RAINING GAUGE**  
NO SCALE

NOTE:  
1. SEE DRAWINGS E-01 AND E-02 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.

SEPT 2022	100% SUBMITTAL	C	AD	RE	INT
MAY 2022	90% SUBMITTAL	B	AD	RE	INT
MAR 2021	50% SUBMITTAL	A	AD	RT	INT
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	E-08.dwg				
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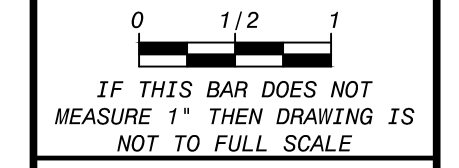
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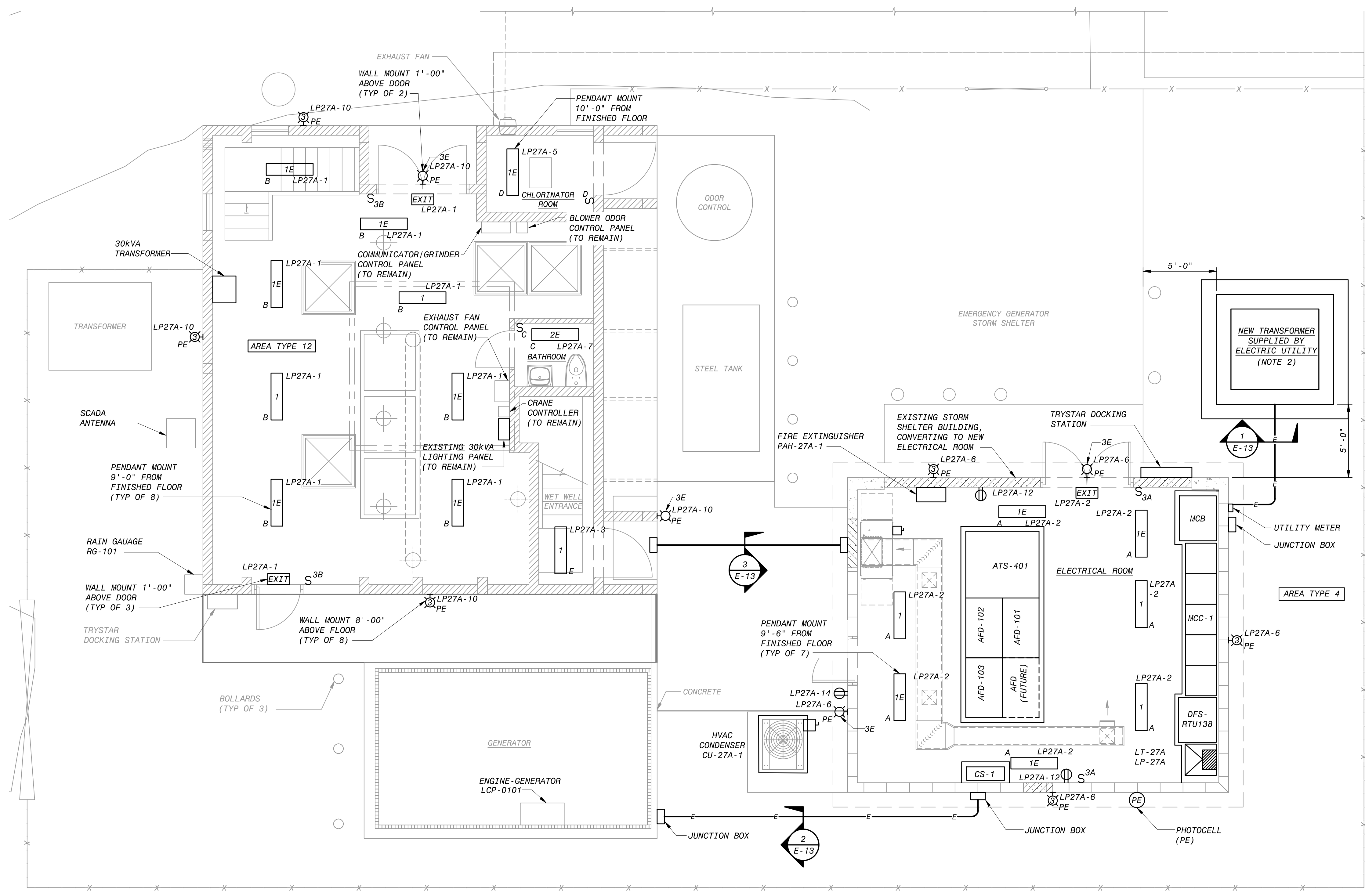
MANATEE COUNTY FLORIDA  
IMPROVEMENTS AT  
MASTER LIFT STATION 27-A

ELECTRICAL  
MISCELLANEOUS ONE-LINE DIAGRAMS

DESIGNED: DG
DETAILED: SS
CHECKED: ND
APPROVED: RB
DATE: SEPT 2022
PROJECT NO. 402142
E-08 SHEET 27 OF 40

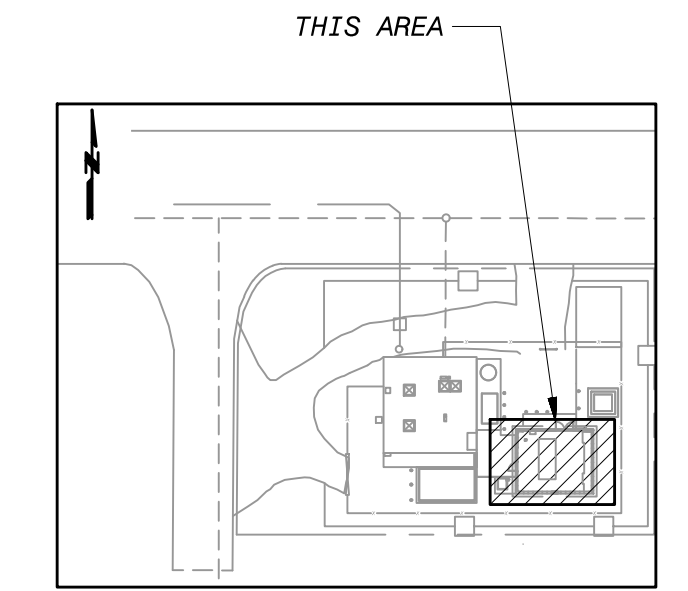


ISSUED FOR CONSTRUCTION



OPERATING LEVEL LIGHTING PLAN  
1/4"=1'-0"

- NOTES:
- SEE DRAWINGS E-01 AND E-02 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
  - NEW TRANSFORMER SUPPLIED BY ELECTRIC UTILITY, TRANSFORMER SHALL BE AT LEAST 5 FEET AWAY FROM BUILDING'S WALLS.
  - SEE DRAWING E-12 FOR LIGHTING AND PANEL BOARD SCHEDULES.
  - PHOTOELECTRIC CELL SHALL BE WALL MOUNTED CLOSE TO ROOFLINE. CABLE AND CONDUIT SHALL BE ROUTED TO LIGHTING CONTROL PANEL (CS-1) LOCATED IN THE ELECTRICAL ROOM.



KEY PLAN  
1/4"=1'-0"

SEPT 2022	100% SUBMITTAL	C	AD	RE	INT
MAY 2022	90% SUBMITTAL	B	AD	RE	INT
MAR 2021	50% SUBMITTAL	A	AD	RE	INT
DATE	REVISED AND RECORD OF ISSUE	NO.	BY	CHK	APP
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	PLOTTED: DUT48884, 9/15/2022 5:31:47 PM				
	USER: DUT48884				

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FOR CONSTRUCTION BY  
ON 09/16/2022 AND  
SEALED BY  
RYAN BINKLEY,  
A LICENSED  
PROFESSIONAL  
ENGINEER IN THE  
STATE OF FLORIDA,  
NO. 89014

**Manatee County**  
**BLACK & VEATCH**  
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MANATEE COUNTY FLORIDA  
IMPROVEMENTS AT  
MASTER LIFT STATION 27-A  
ELECTRICAL  
OPERATING LEVEL LIGHTING PLAN

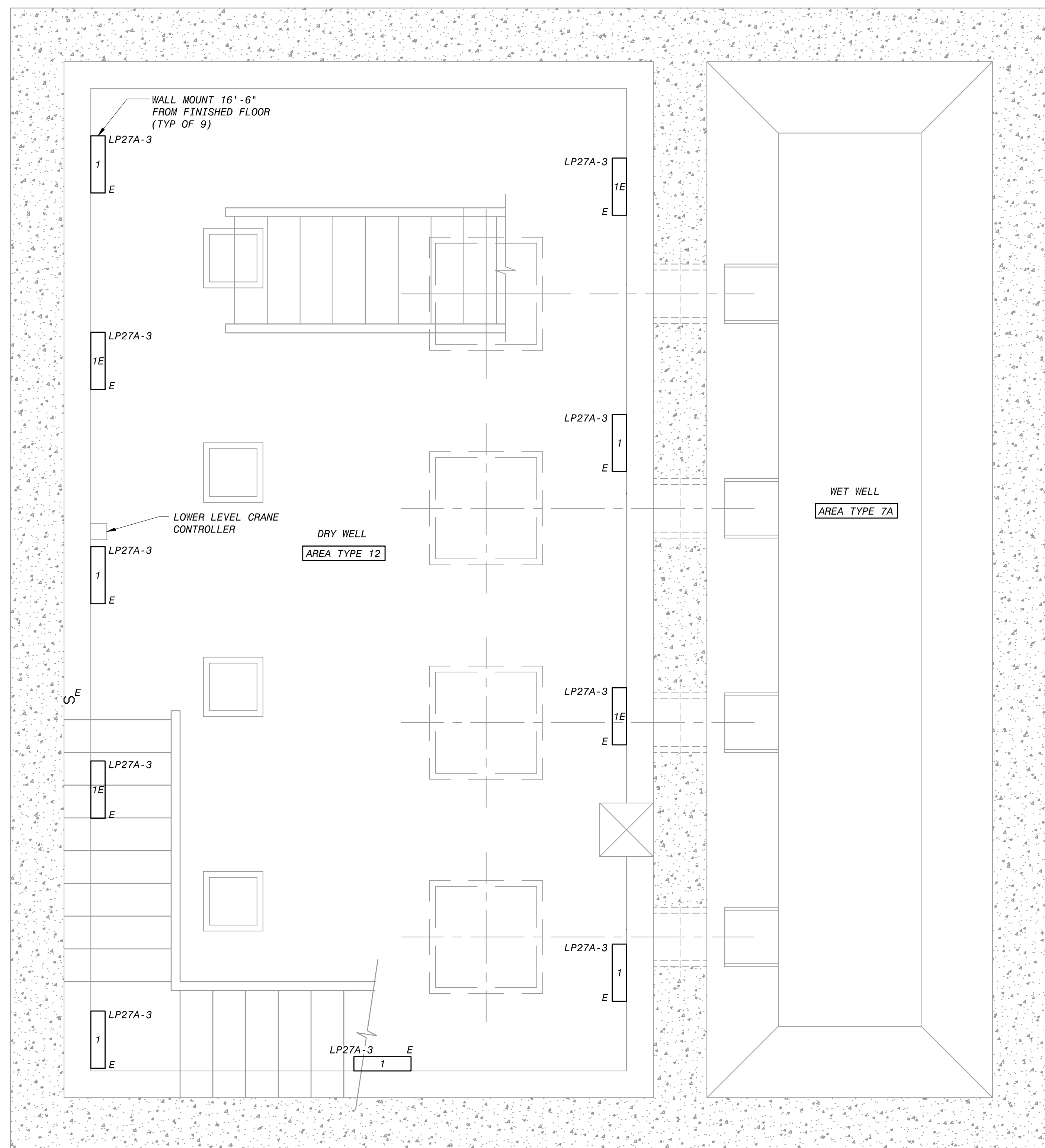
DESIGNED: DG
DETAILED: SS
CHECKED: ND
APPROVED: RB
DATE: SEPT 2022

IF THIS BAR DOES NOT  
MEASURE 1" THEN DRAWING IS  
NOT TO FULL SCALE

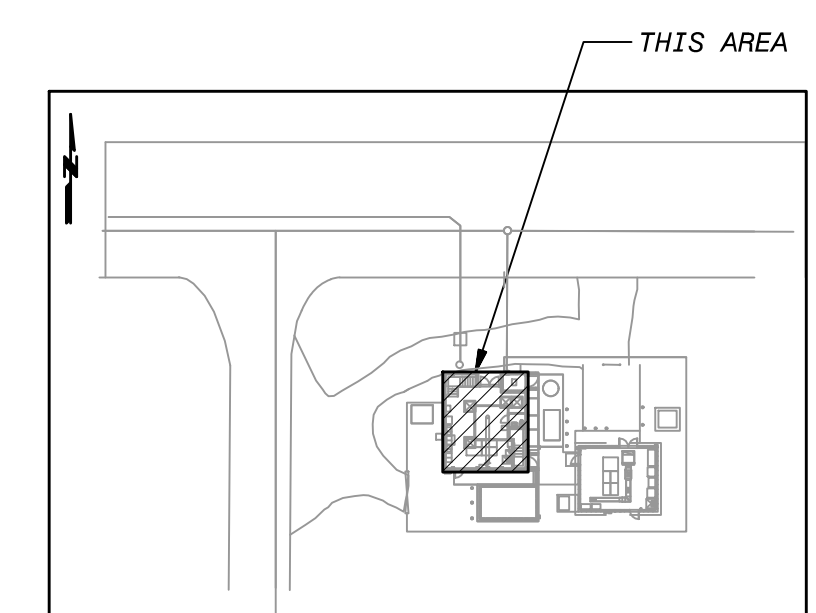
PROJECT NO.  
402142

E-09  
SHEET  
28 OF 40

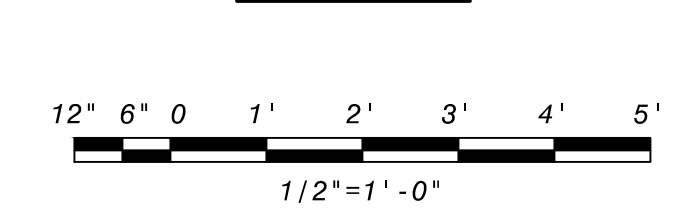
ISSUED FOR CONSTRUCTION



**DRYWELL LIGHTING PLAN**  
1/2" = 1'-0"



**KEY PLAN**



- NOTES:**
- SEE DRAWINGS E-01 AND E-02 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
  - SEE DRAWING E-12 FOR LIGHTING AND PANEL BOARD SCHEDULES.

SEPT 2022	100% SUBMITTAL	C	AD	RE	INT
MAY 2022	90% SUBMITTAL	B	AD	RE	INT
MAR 2021	50% SUBMITTAL	A	AD	RT	MT
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USER: DUT48884	XREF3:				
	XREF4:				

THIS DRAWING WAS  
ORIGINALLY APPROVED  
FOR CONSTRUCTION BY  
RYAN BINKLEY, P.E.,  
ON 09/16/2021, AND  
SEALED BY  
RYAN BINKLEY,  
A LICENSED,  
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ENGINEER IN THE  
STATE OF FLORIDA,  
NO. 89014

**Manatee County**

**BLACK & VEATCH**

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**MANATEE COUNTY FLORIDA**  
**IMPROVEMENTS AT**  
**MASTER LIFT STATION 27-A**

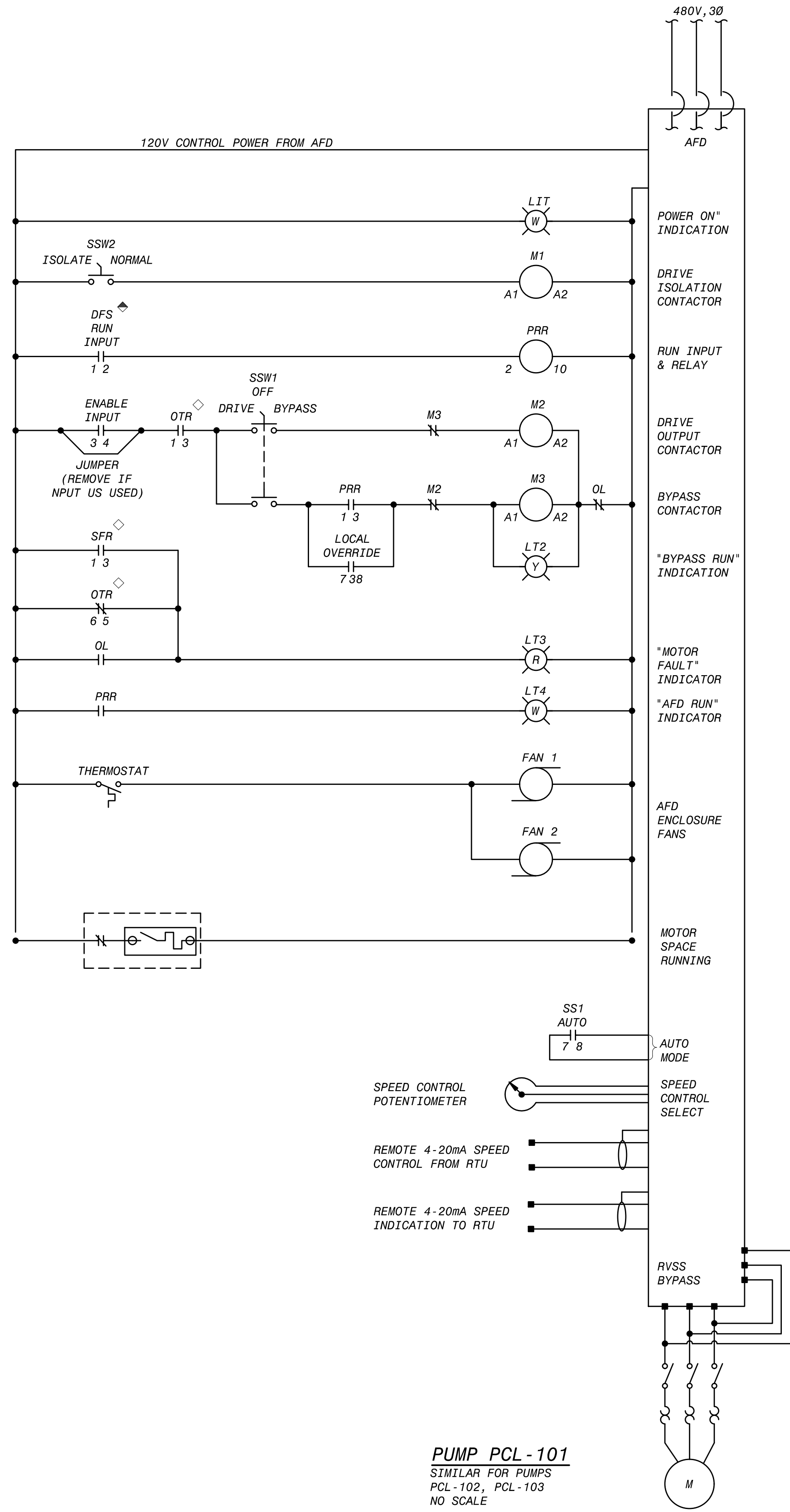
**ELECTRICAL**  
**DRYWELL LIGHTING PLAN**

DESIGNED: DG  
DETAILED: SS  
CHECKED: ND  
APPROVED: RB  
DATE: SEPT 2022

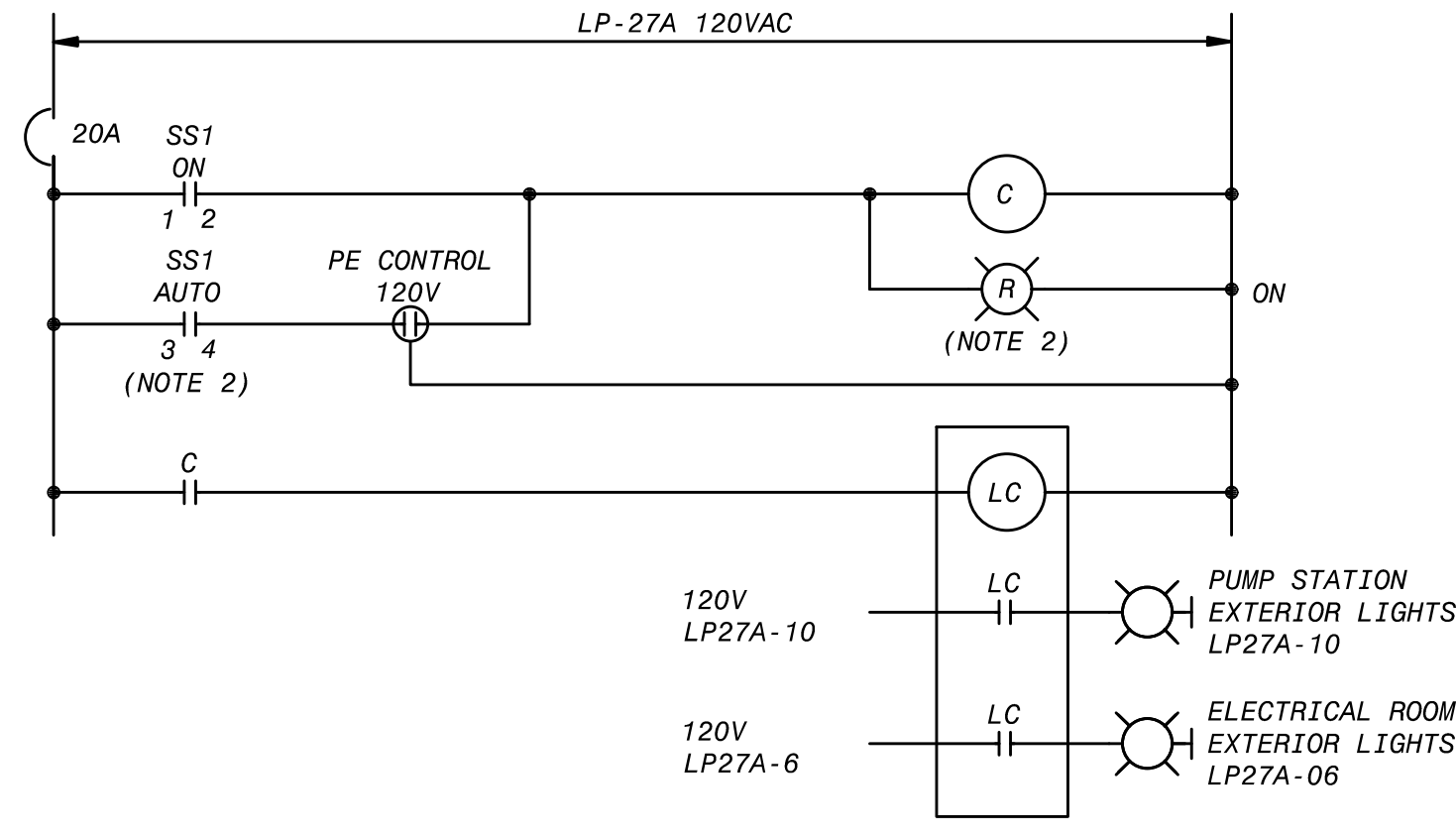
PROJECT NO.  
402142

**E-10**  
SHEET  
29 OF 40

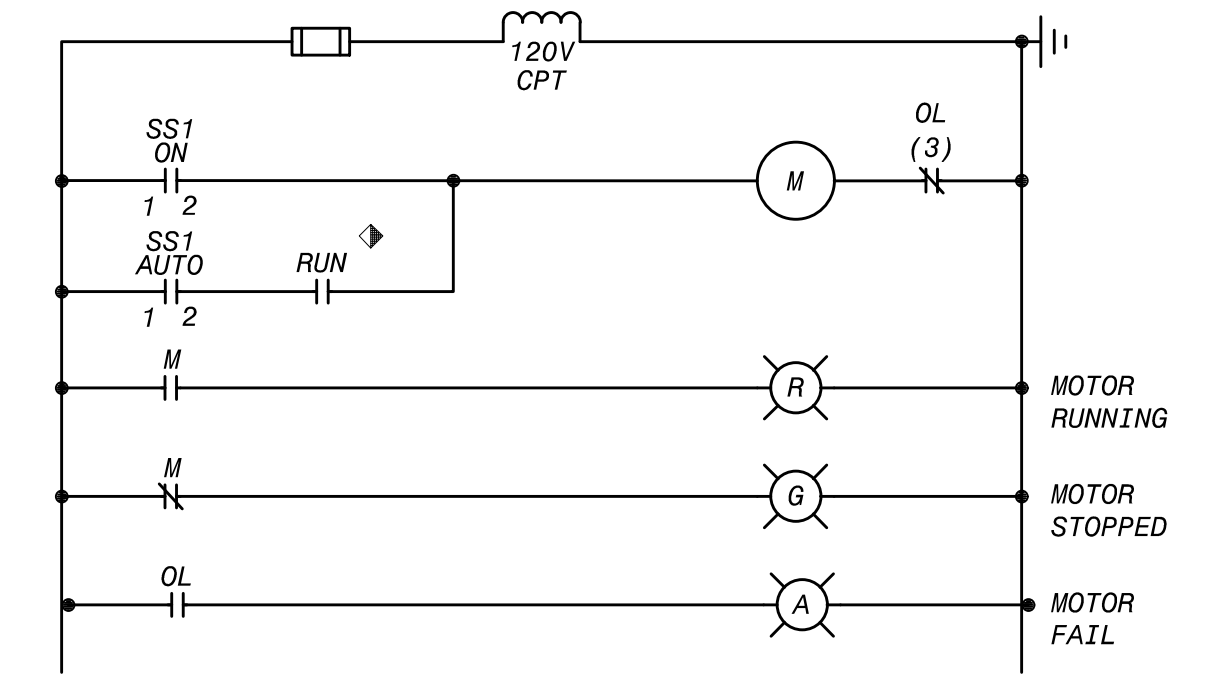
**ISSUED FOR CONSTRUCTION**



**PUMP PCL-101**  
SIMILAR FOR PUMPS  
PCL-102, PCL-103  
NO SCALE



**BUILDING EXTERIOR & SITE LIGHTING CONTROL PANEL CS-1**  
NO SCALE



**PRV-27A-1 EXHAUST FAN**  
NO SCALE

**SS1 SWITCH DEVELOPMENT**

CONTACTS	POSITION		
	HAND	OFF	AUTO
1-2	X		
3-4			X
5-6			X
7-8			X

- LEGEND:**
- ◇ AT DRIVEN EQUIPMENT
  - ◆ FROM DFS RTU
  - ◆ FROM THERMOSTAT T-1

- NOTES:**
- SEE DRAWINGS E-01 AND E-02 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
  - THE ON-OFF-AUTO SELECTOR SWITCH AND INDICATING LIGHT SHALL BE MOUNTED SEMI-FLUSH ON THE DOOR OF THE LIGHTING CONTROL PANEL (CS-1).
  - OFF-ON SWITCH MOUNTED ON FRONT OF DISCONNECT SWITCH.
  - TEMPERATURE AND MOISTURE RELAY SHALL BE ABLE TO WORK BOTH IN AFD AND BYPASS MODE.

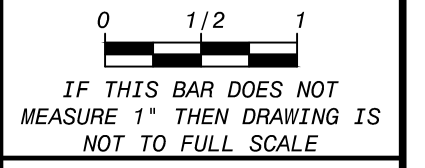
NO.	BY	CHK	APP
C	AD	RE	INT
B	AD	RE	INT
A	AD	RE	INT

THIS DRAWING WAS  
ORIGINALLY APPROVED  
FOR CONSTRUCTION BY  
RYAN BINKLEY, P.E.,  
ON 09/16/2021 AND  
SEALED BY  
RYAN BINKLEY,  
A LICENSED,  
PROFESSIONAL  
ENGINEER IN THE  
STATE OF FLORIDA,  
NO. 89014

**MANATEE COUNTY, FLORIDA IMPROVEMENTS AT MASTER LIFT STATION 27-A**

**ELECTRICAL SCHEMATICS**

DESIGNED: DG  
DETAILED: CP  
CHECKED: ND  
APPROVED: RB  
DATE: SEPT 2022



PROJECT NO.  
402142

**E-11**  
SHEET  
30 OF 40

**ISSUED FOR CONSTRUCTION**

PHASE			SERVICE: 120/208V, 3PH, 4W, S/N	RATING: 225A			LOCATION: ELECTRICAL ROOM			PHASE			
"A"	"B"	"C"	MOUNTING: SURFACE							"A"	"B"	"C"	
V.A.	V.A.	V.A.	LOAD	P	BKR	CKT #	BKR	P	LOAD	V.A.	V.A.	V.A.	
289			LIGHTS-PUMP STATION OPERATING	1	20	1	2	20	1	LIGHTS-ELECTRICAL ROOM	289		
	371		LIGHTS-DRY WELL AREA	1	20	3	4	20	1				
		41	LIGHT-CHLORINATOR ROOM	1	20	5	6	20	1	LIGHTS - ELECTRICAL ROOM EXTERIOR			172
25			LIGHT-TOILET	1	20	7	8	20	1	DFS-RTU138	1000		
	250		EXHAUST FAN CONTROL PANEL	1	20	9	10	20	1	LIGHTS - PUMP STATION EXTERIOR			172
		200	LIGHTING CONTROL PANEL	1	20	11	12	20	1	RECEP-ELECTRICAL ROOM			360
			SPARE	1	20	13	14	20	1	RECEP-OUTDOOR ELECTRICAL ROOM	180		
			SPARE	1	20	15	16	20	1	SPACE			
			SPARE	1	20	17	18	20	1	SPACE			
			SPARE	1	20	19	20	20	1	SPACE			
			SPACE	1	20	21	22	20	1	SPACE			
			SPACE	1	20	23	24	20	1	SPACE			
			SPACE	1	20	25	26	20	1	SPACE			
			SPACE	1	20	27	28	20	1	SPACE			
			SPACE	1	20	29	30	20	1	SPACE			
			SPACE	1	20	31	32	20	1	SPACE			
			SPACE	1	20	33	34	20	1	SPACE			
			SPACE	1	20	35	36	20	1	SPACE			
			SPACE	1	20	37	38	20	1	SPACE			
			SPACE	1		39	40		1	SPACE			
			SPACE	1		41	42		1	SPACE			
313.8			TOTAL "A"							TOTAL "A"	1469		
	621		TOTAL "B"							TOTAL "B"	172		
		241.3	TOTAL "C"							TOTAL "C"	532		
			TOTAL							TOTAL	3349		

**PANELBOARD SCHEDULE LP-27A**  
NO SCALE

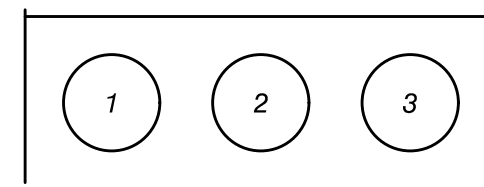
LIGHTING FIXTURE SCHEDULE						
FIXTURE	LAMP	MTG HGT	DESCRIPTION	MANUFACTURER	REMARK	
1	LED 30 WATT 4342 LUMENS	AS NOTED ON PLANS	EMS LED, LINEAR L48, PENDANT MOUNT, FIBERGLASS HOUSING WITH NEMA 4X GASKET, IP65, IP66 AND IP67 RATED, SUITABLE FOR DAMP LOCATIONS, DIFFUSER WITH ACRYLIC CLEAR DEEP LENS, MEDIUM DISTRIBUTION, GZ10 DRIVER, 4000K, 80CRI, MVOLT, 60HZ	HOLOPHANE #EMS L48 4000LM IMACD MD MVOLT GZ10 40K 80CRI	ELECTRICAL BUILDING, PUMP STATION LOWER AND UPPER LEVELS	
1E	LED 30 WATT 4342 LUMENS	AS NOTED ON PLANS	SAME AS FIXTURE NO.1, EXCEPT WITH BODINE EMERGENCY LED BATTERY PACK BSL520	HOLOPHANE #EMS L48 4000LM IMACD MD MVOLT GZ10 40K 80CRI BSL520	ELECTRICAL BUILDING, PUMP STATION LOWER AND UPPER LEVELS	
2E	LED 12 WATT 1659 LUMENS	AS NOTED ON PLANS	FEM LED, LINEAR L48, FIBERGLASS HOUSING WITH NEMA 4X GASKET, IP65 RATED, SUITABLE FOR WET LOCATION, DIFFUSER WITH ACRYLIC, CLEAR DEEP LENS, MEDIUM DISTRIBUTION, GZ10 DRIVER, 4000K, MVOLT, 60HZ, WITH LITHONIA EMERGENCY BATTERY PACK E10WCP.	LITHONIA #FEM L48 IMACD MD MVOLT GZ10 40K 80CRI E10WCP	RESTROOM	
3	LED 25 WATT 3511 LUMENS	AS NOTED ON PLANS	WST WALL MOUNT LED, DIE-CAST ALUMINUM HOUSING, IP65 RATED, POWDER COAT FINISH, WELL CRAFTED REFLECTOR OPTICS, SUPERIOR WIDE VISUAL COMFORT DISTRIBUTION, ZERO UPLIGHT AND QUALIFES AS A NIGHTTIME FRIENDLY PRODUCT, WITH PERFORMANCE PACKAGE 2, WITH DARK BRONZE FINISH, 4000K, MVOLT, 60HZ.	LITHONIA #WST LED P2 40K VW MVOLT DDBXD	ELECTRICAL BUILDING EXTERIOR, PUMP STATION EXTERIOR	
3E	LED 25 WATT 3511 LUMENS	AS NOTED ON PLANS	SAME AS FIXTURE NO.2, EXCEPT WITH LITHONIA EMERGENCY BATTERY PACK E7WH	LITHONIA #WST LED P2 40K VW MVOLT E7WH DDBXD	ELECTRICAL BUILDING EXTERIOR, PUMP STATION EXTERIOR	
EXIT	LED	WALL MOUNT 1'-0" ABOVE DOOR	INDUSTRIAL EMERGENCY EXIT SIGN, WHITE THERMOPLASTIC HOUSING, STENCIL FACE, RED LETTERS, UNIVERSAL MOUNTING CANOPY, NICKEL-CADMIUM BATTERY, TYPE WITH 3 NUMBER OF FACES, DUAL VOLTAGE INPUT CAPABILITY, 60HZ.	LITHONIA #LQM S W 3 R 120/277 ELN		

**LIGHTING FIXTURE SCHEDULE**  
NO SCALE

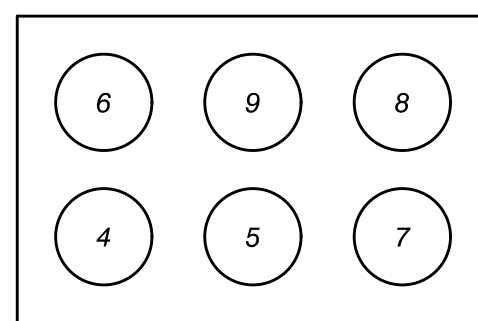
DUCT BANK SCHEDULE			
COND. NO.	SIZE	CIRCUIT NUMBER	REMARKS
1	4"	MCB-1	FROM UTILITY TRANSFORMER TO MCB, POWER
2	4"	MCB-1	FROM UTILITY TRANSFORMER TO MCB, POWER
3	4"	MCB-1	FROM UTILITY TRANSFORMER TO MCB, POWER

DUCT BANK SCHEDULE			
COND. NO.	SIZE	CIRCUIT NUMBER	REMARKS
4	4"	ATS401-3B	FROM GENERATOR TO MTS401, POWER
5	4"	ATS401-3B	FROM GENERATOR TO MTS401, POWER
6	4"	ATS401-3B	FROM GENERATOR TO MTS401, POWER
7	3"	ATS401-5, ATS401-3A, DFSRTU138-8:	FROM GENERATOR TO ATS401 AND DFSRTU138, COMMS DISCRETE
8	2"	DFSRTU138-9:	FROM GENERATOR TO DFSRTU138, COMMS ANALOG
9	3"	SPARE	SPARE

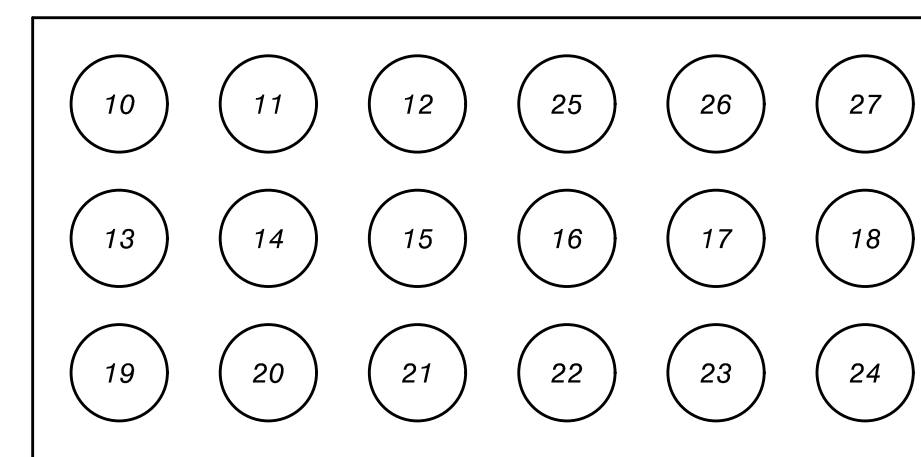
CONDUIT SCHEDULE			
COND. NO.	SIZE	CIRCUIT NUMBER	REMARKS
10	2"	AFD101-1	FROM AFD-101 TO PCL-101, POWER
11	2"	AFD102-1	FROM AFD-102 TO PCL-102, POWER
12	2"	AFD103-1	FROM AFD-102 TO PCL-102, POWER
13	2"	AFD, FUTURE	CONDUIT FOR FUTURE AFD
14	1"	AFD101-2, AFD101-3	FROM AFD-101 TO PCL-101, INSTRUMENTS
15	1"	AFD102-2, AFD102-3	FROM AFD-102 TO PCL-102, INSTRUMENTS
16	1"	AFD103-2, AFD103-3	FROM AFD-103 TO PCL-103, INSTRUMENTS
17	1-1/2"	MCC1-5	FROM MCC1 TO EXISTING COMMUNICATOR LCP
18	3/4"	MCC1-6	FROM MCC1 TO EXISTING OPERATING LEVEL CRANE
19	3/4"	MCC1-7	FROM MCC1 TO EXISTING BOTTOM LEVEL CRANE
20	1-1/2"	MCC1-10, MCC1-11	FROM MCC1 TO EXISTING EXHAUST FANS
21	1-1/2"	MCC1-12, MCC1-13	FROM MCC1 TO EXISTING EXHAUST FANS
22	1-1/2"	MCC1-15	FROM MCC1 TO EXISTING 30KVA TRANSFORMER
23	1-1/2"	DFSRTU138-7 10 11 14 15 17	FROM DFSRTU138 TO EXISTING INSTRUMENTS, DISCRETE
24	2"	DFSRTU138-12 16	FROM DFSRTU138 TO EXISTING INSTRUMENTS, ANALOG
25	2"	SPARE	SPARE
26	2"	SPARE	SPARE
27	2"	SPARE	SPARE



**1 SECTION**  
E-03 NO SCALE  
E-10



**2 SECTION**  
E-03 NO SCALE  
E-10



**3 SECTION**  
E-03 NO SCALE  
E-10

SEPT 2022	100% SUBMITTAL	C	AD	RE	INT
MAY 2022	90% SUBMITTAL	B	AD	RE	INT
MAR 2021	50% SUBMITTAL	A	AD	RE	INT
DATE	REVIEWS AND RECORD OF ISSUE	NO.	BY	CHK	APP
	60-3061 - M.L.S. 27-A				
	E-12.dwg				
	SAVED: DUT48884, 9/15/2022 5:22:32 PM				
	PLOTTED: DUT48884, 9/15/2022 5:34:31 PM				
	USER: DUT48884				
	DWG: VEG-1003				

**Manatee County**  
**BLACK & VEATCH**  
Black & Veatch Corporation  
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Tampa, Florida  
Certificate No. 8132

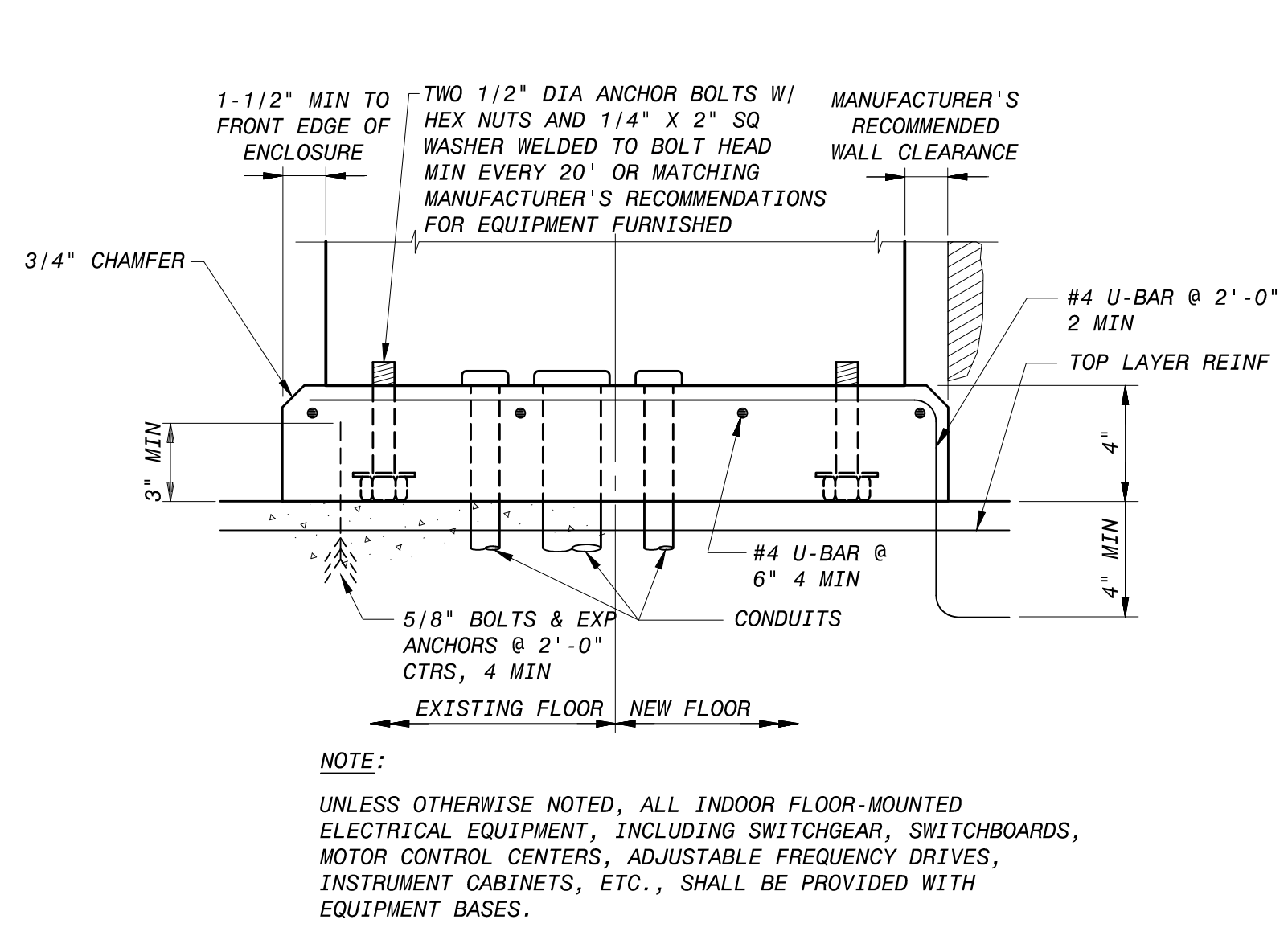
**MANATEE COUNTY FLORIDA**  
**IMPROVEMENTS AT**  
**MASTER LIFT STATION 27-A**  
**ELECTRICAL SCHEDULES**

DESIGNED: DG  
DETAILED: CP  
CHECKED: ND  
APPROVED: RB  
DATE: SEPT 2022

0 1/2 1  
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

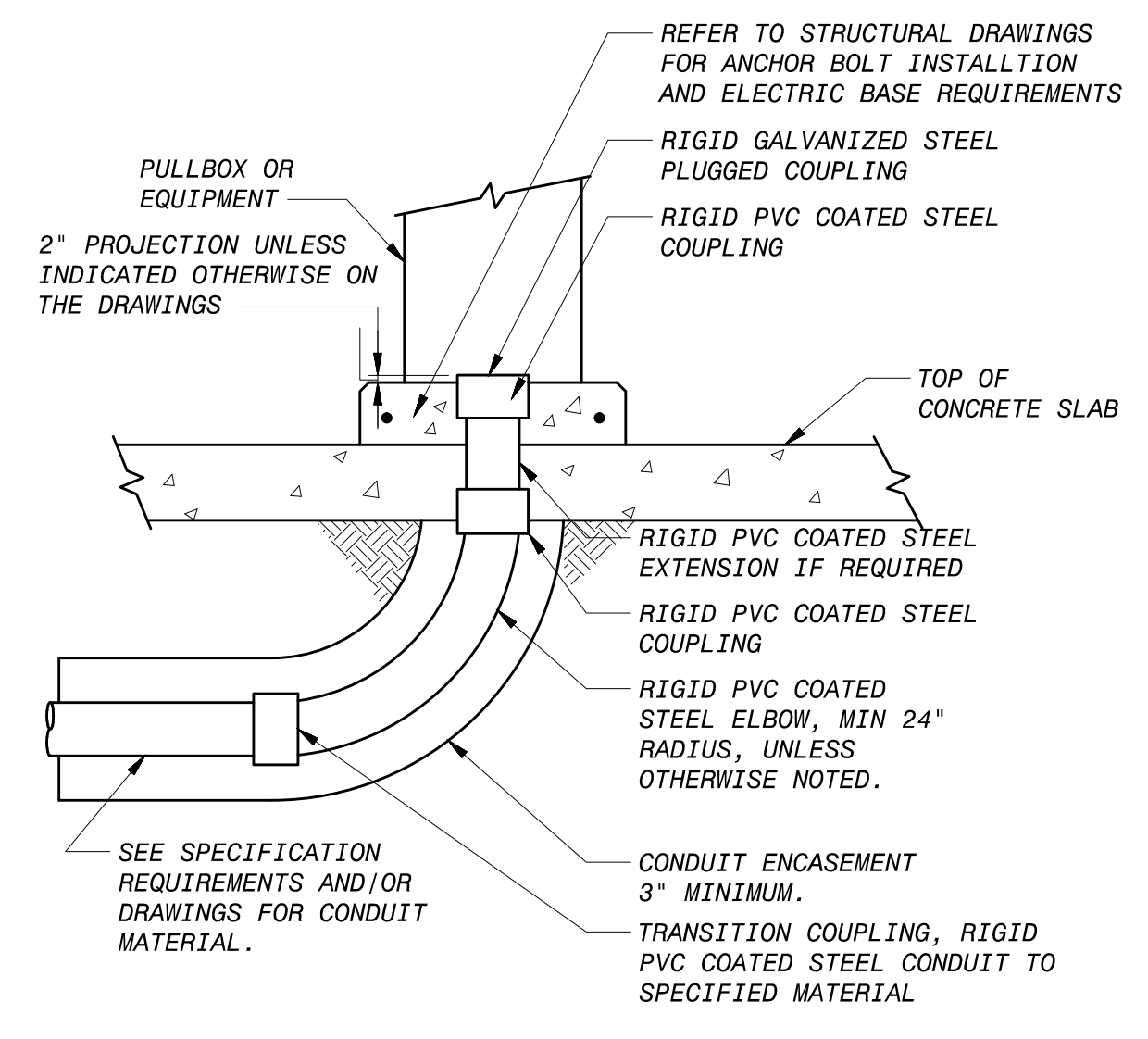
PROJECT NO.  
402142  
**E-12**  
SHEET  
31 OF 40

**ISSUED FOR CONSTRUCTION**

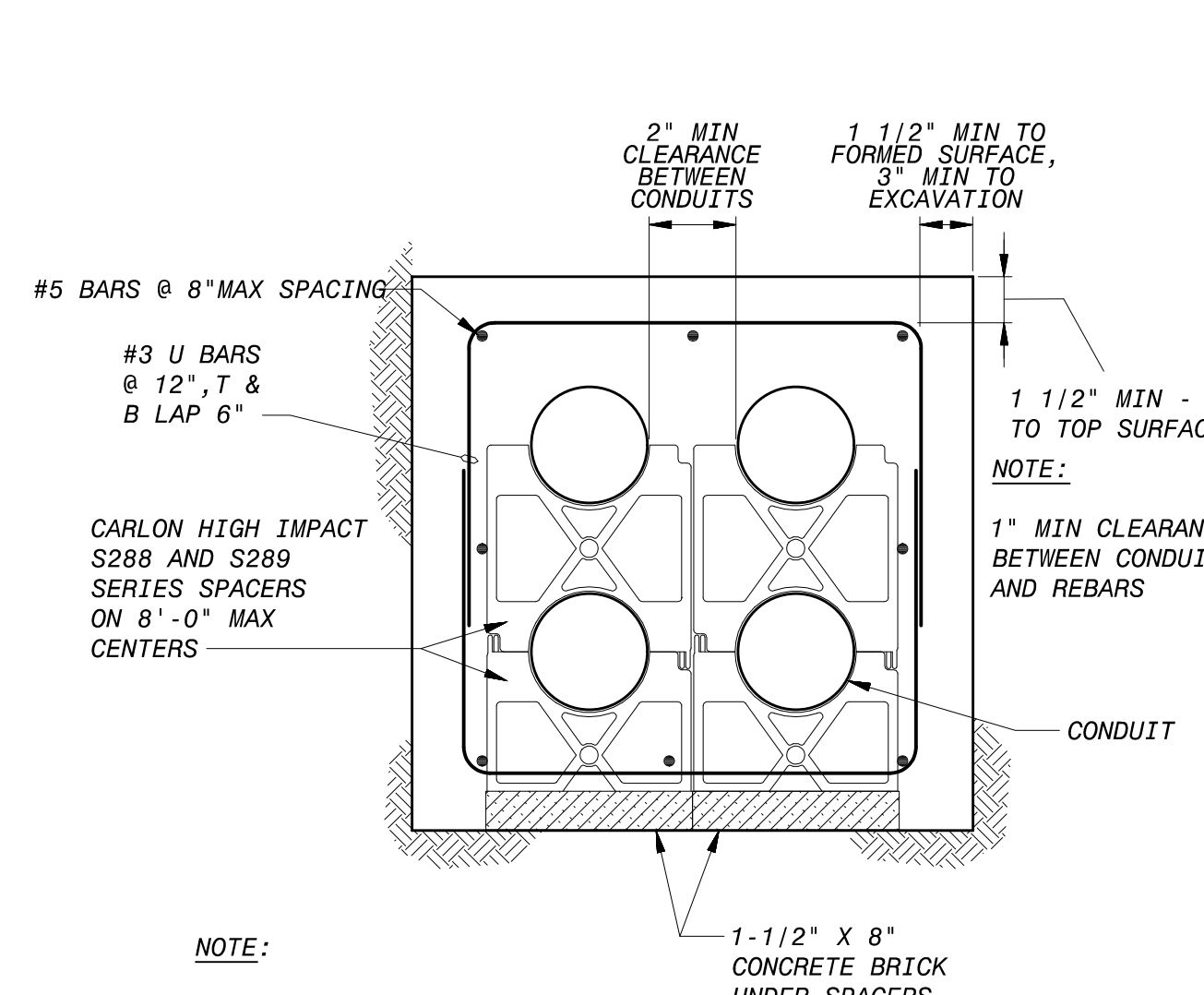


**NOTE:**  
 UNLESS OTHERWISE NOTED, ALL INDOOR FLOOR-MOUNTED ELECTRICAL EQUIPMENT, INCLUDING SWITCHGEAR, SWITCHBOARDS, MOTOR CONTROL CENTERS, ADJUSTABLE FREQUENCY DRIVES, INSTRUMENT CABINETS, ETC., SHALL BE PROVIDED WITH EQUIPMENT BASES.

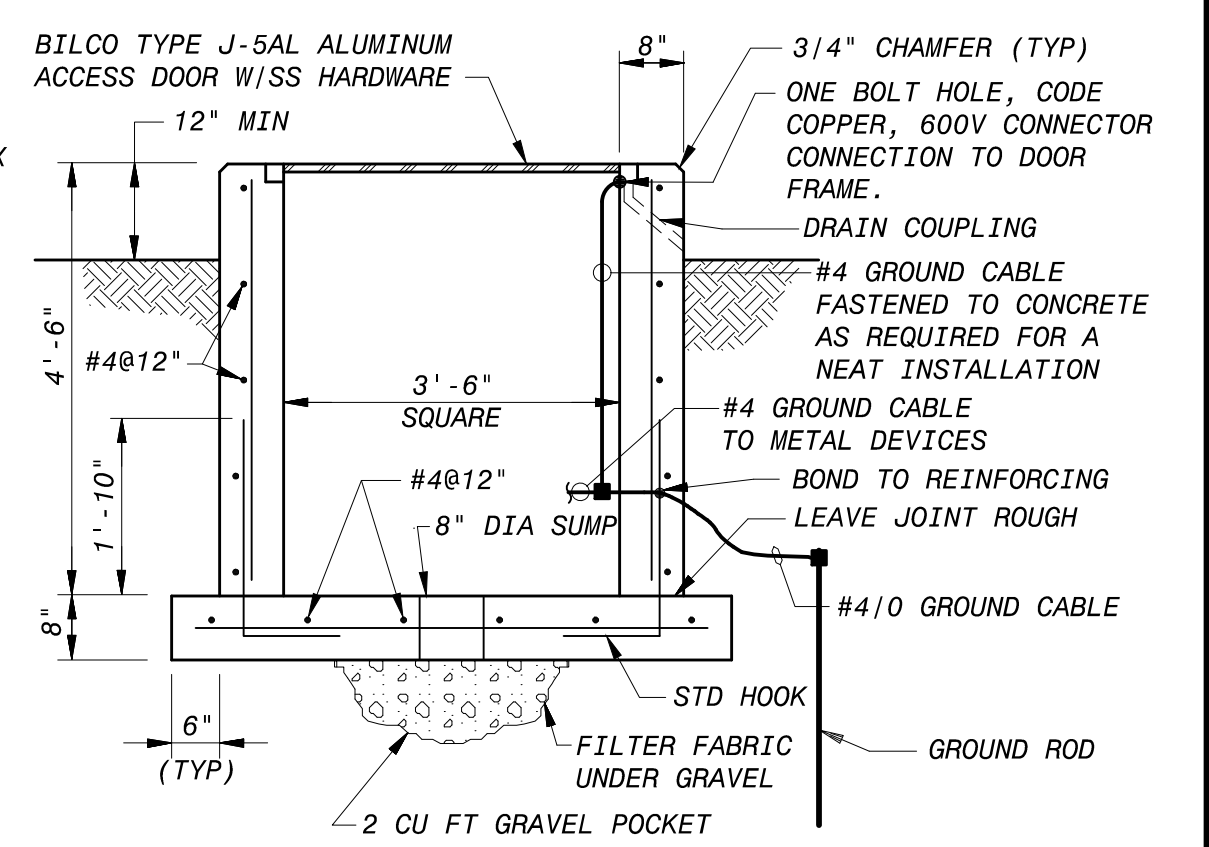
**A ELECTRICAL EQUIPMENT BASE**  
 NO SCALE



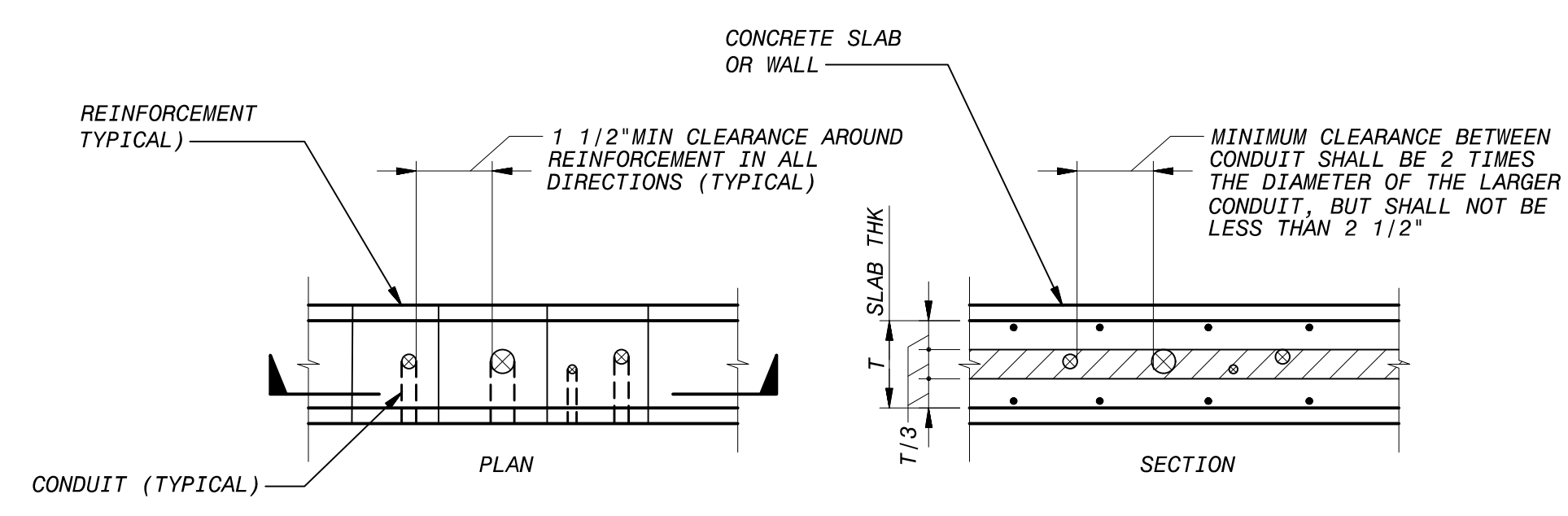
**B CONDUIT RISER TERMINATING IN CONCRETE SLAB WITH EQUIPMENT BASE**  
 NO SCALE



**C DUCT BANK SECTION**  
 NO SCALE

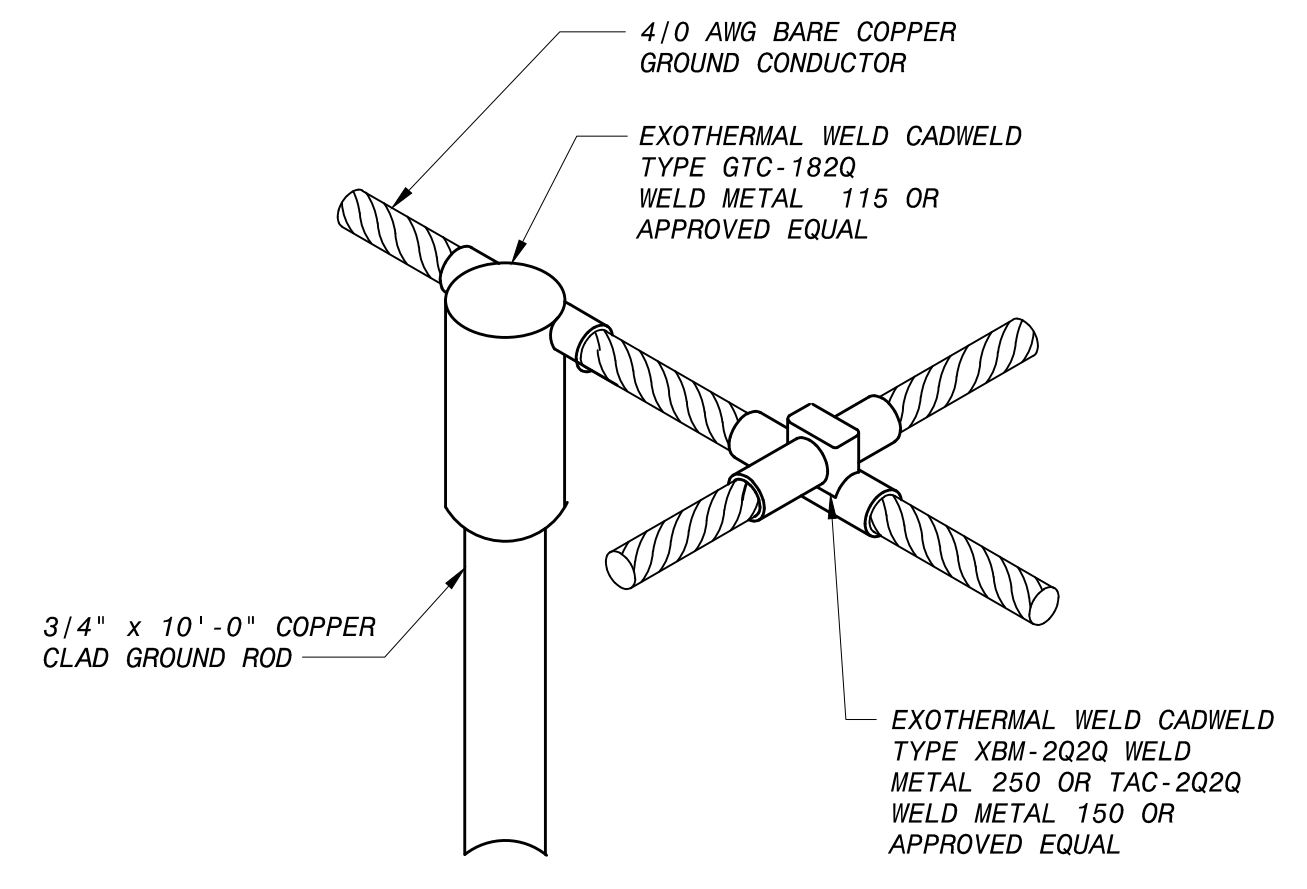


**D ELECTRICAL HANDHOLE DETAIL**  
 NO SCALE (NOT SUITABLE FOR ROADWAY LOCATIONS)

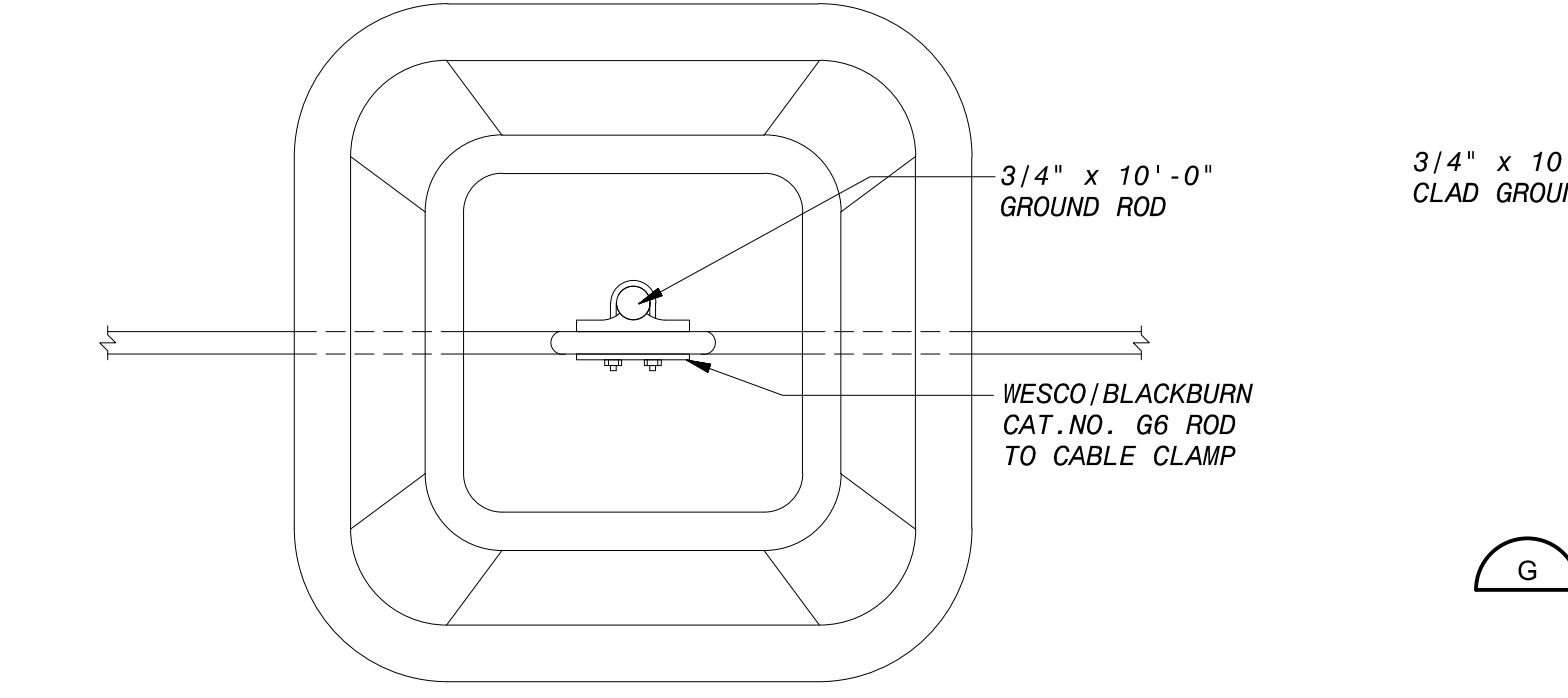


**NOTES:**  
 1. PLACE CONDUIT ONLY IN SHADED AREA  
 2. FOR CONDUIT REQUIREMENTS SEE THE ELECTRICAL DRAWINGS AND SPECIFICATIONS.  
 3. CONDUIT THAT IS TOO LARGE OR CONGESTED TO FIT WITHIN THE SLAB AND REINFORCEMENT AS INDICATED SHALL BE ROUTED BELOW THE SLAB AS INDICATED IN THE ELECTRICAL SPECIFICATION OR ON THE DRAWINGS.

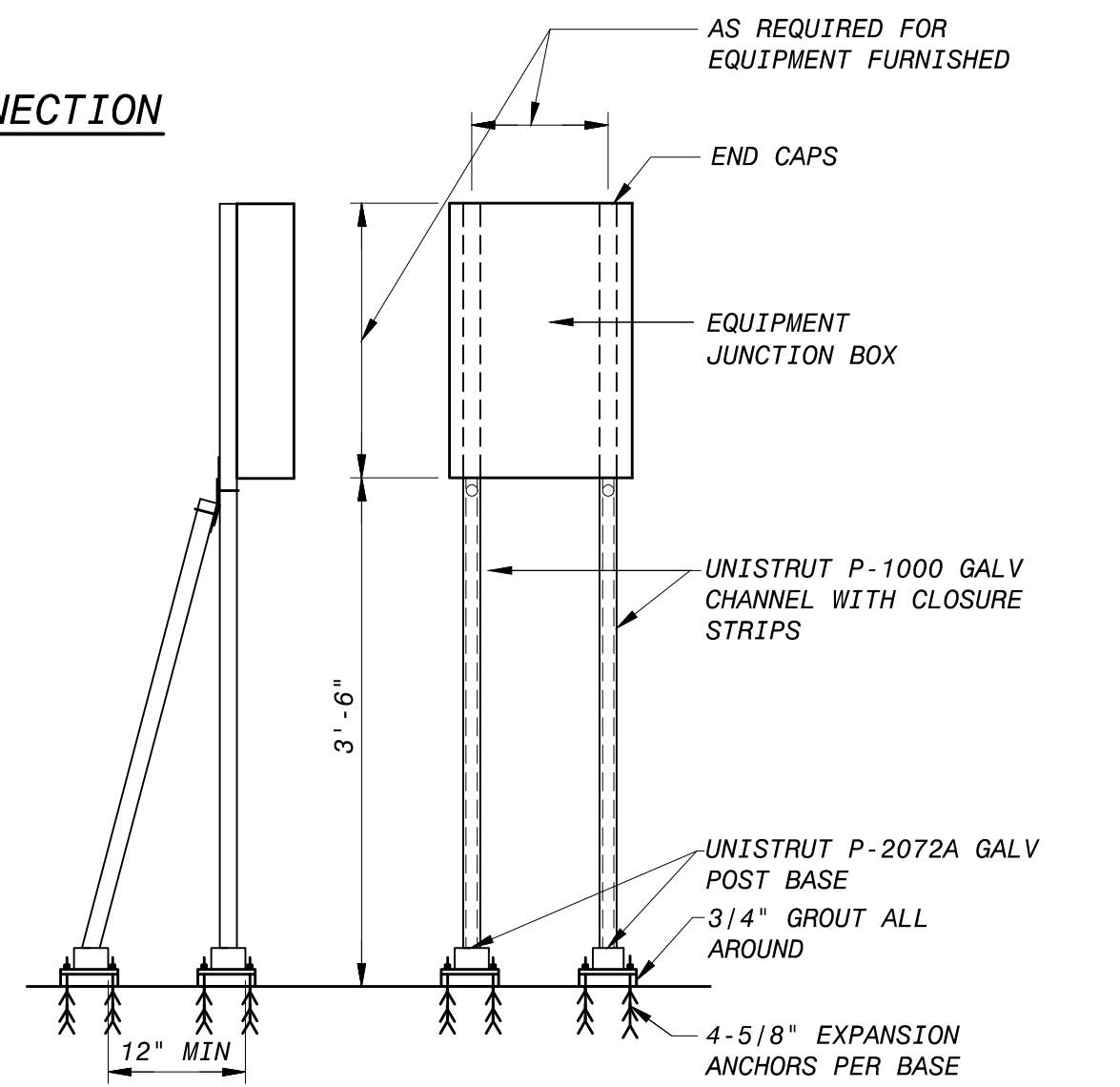
**E CONDUIT PLACING DETAIL**  
 NO SCALE



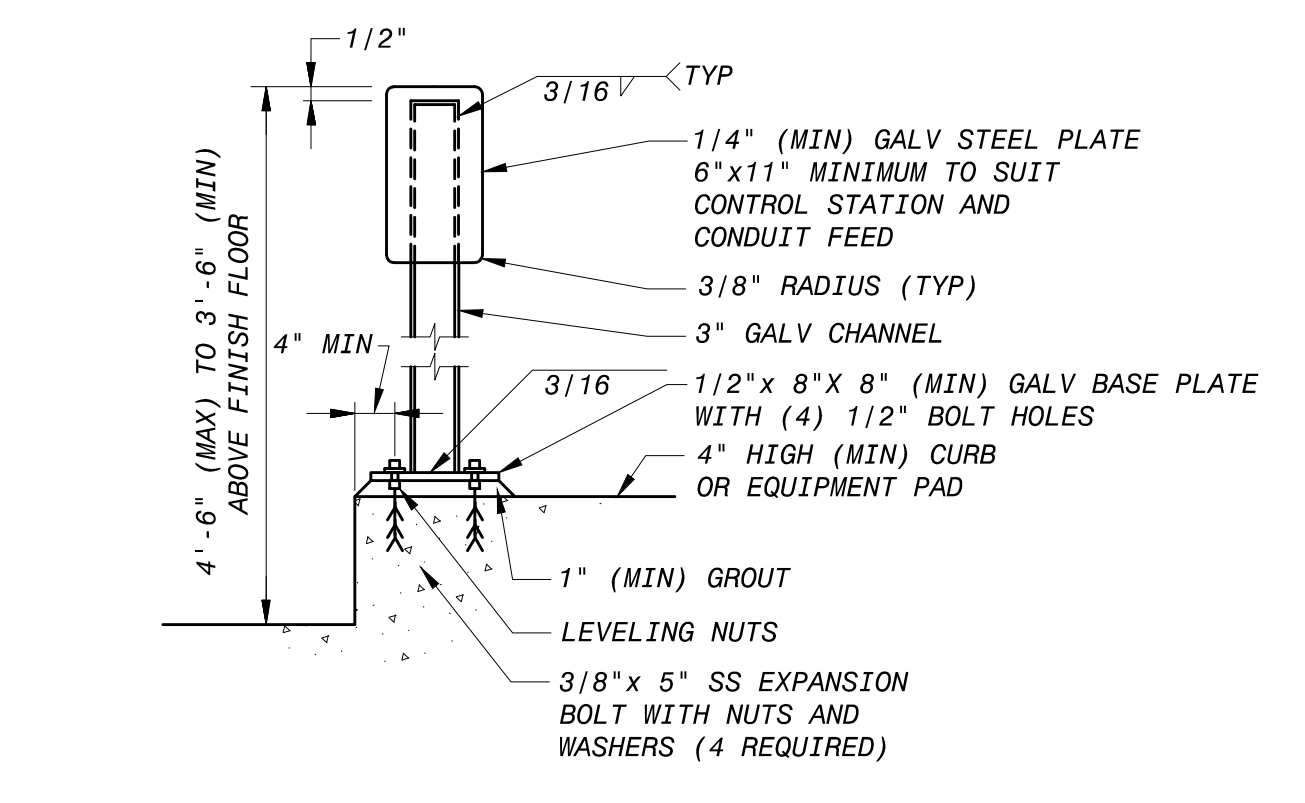
**G EXOTHERMAL WELD GROUND ROD AT CROSS OR TEE CONNECTION**  
 NO SCALE



**F GROUND TEST STATION**  
 NO SCALE



**J EQUIPMENT MOUNTING DETAIL**  
 NO SCALE



**H TYPICAL CONTROL STATION MOUNTING DETAIL**  
 NO SCALE

**NOTES:**  
 1. IN OUTDOOR LOCATIONS, USE STAINLESS STEEL BOLTS, NUTS, WASHERS, AND ANCHOR BOLTS.  
 2. PROVIDE PUMP DISTRIBUTION JUNCTION BOX AND POWER IN CONTROLS FOR EACH PUMP.

**NOTE:**  
 1. SEE DRAWINGS E-01 AND E-02 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.

SEPT 2022	100% SUBMITTAL	C	AD	REV	INT
MAY 2022	90% SUBMITTAL	B	AD	REV	INT
MAR 2021	50% SUBMITTAL	A	AD	REV	INT
	DATE	NO.	BY	CHK	APP
		60-3061	M.S.	27-A	
		REVISIONS AND RECORD OF ISSUE			
		E-13.dwg			
		XREF1: 9/15/2022 5:22:20 PM			
		XREF2: 9/15/2022 5:35:22 PM			
		XREF3: 9/15/2022 5:35:22 PM			
		USER: DUT48884			
		DWF: VER: 1001			

THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION BY RYAN BINKLEY, A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF FLORIDA, NO. 89014  
 ON 09/16/2022 AND SEALED BY RYAN BINKLEY, A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF FLORIDA, NO. 89014

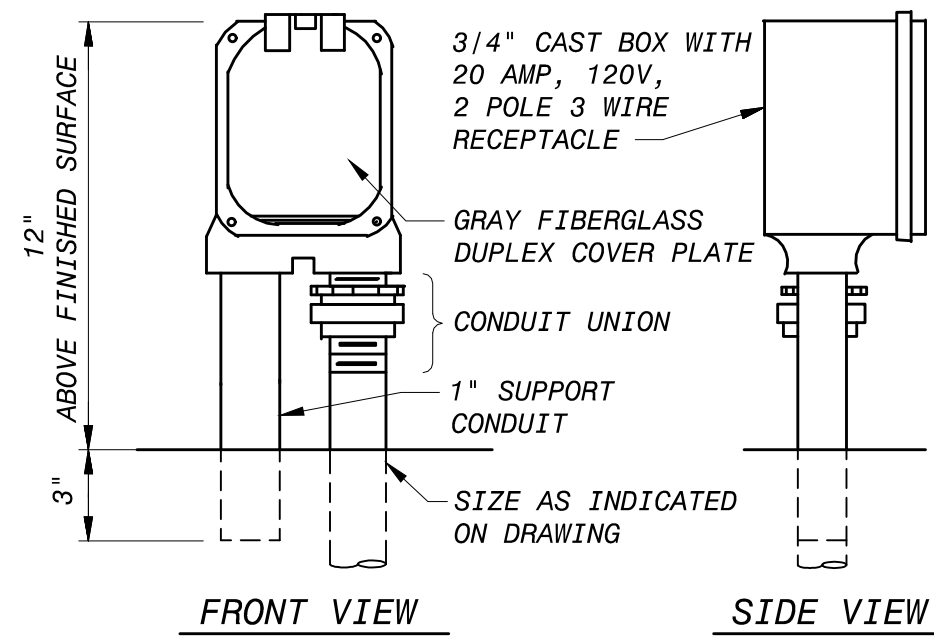
**Manatee County**  
**BLACK & VEATCH**  
 Black & Veatch Corporation  
 3405 W. Dr. M. L. King Jr. Blvd, Suite 125  
 Tampa, Florida  
 Certificate No. 8132

**MANATEE COUNTY FLORIDA**  
**IMPROVEMENTS AT**  
**MASTER LIFT STATION 27-A**  
**ELECTRICAL**  
**STANDARD DETAILS 1**

DESIGNED: DG
DETAILED: CP
CHECKED: ND
APPROVED: RB
DATE: SEPT 2022

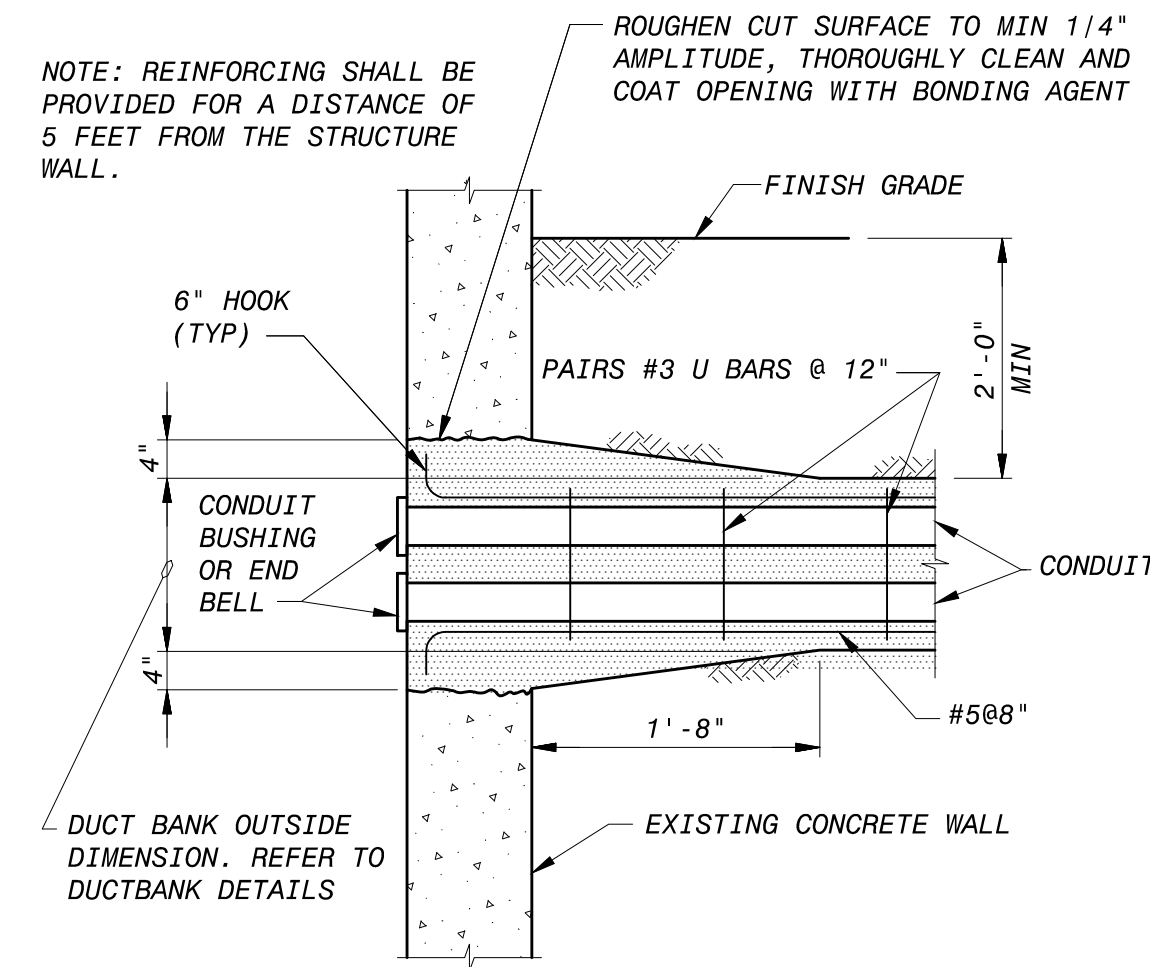
**ISSUED FOR CONSTRUCTION**



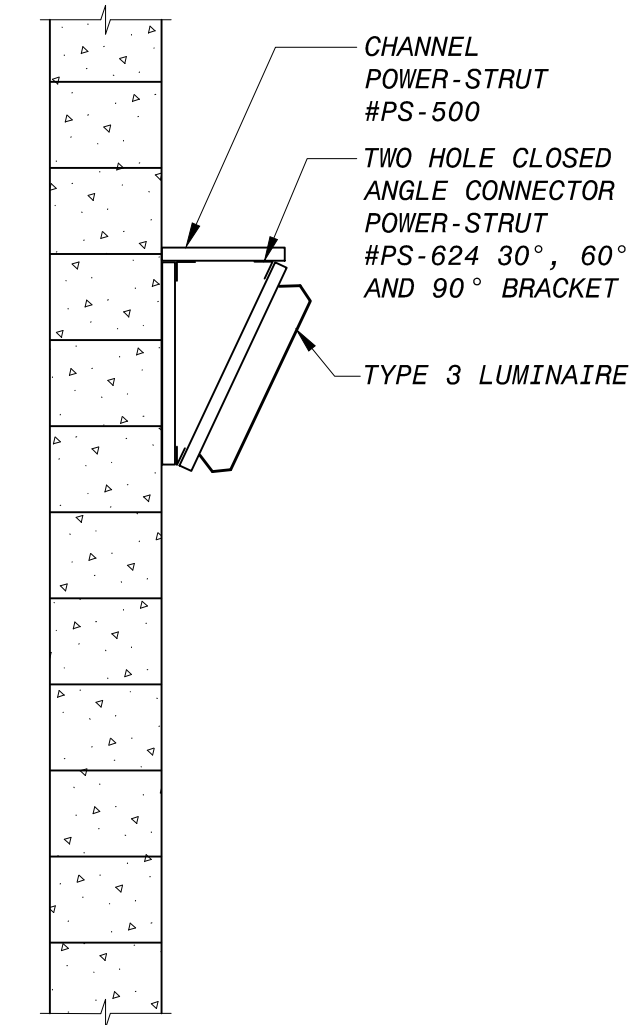


NOTE: ALL EXPOSED CONDUIT SHALL BE PVC SCHEDULE 80.

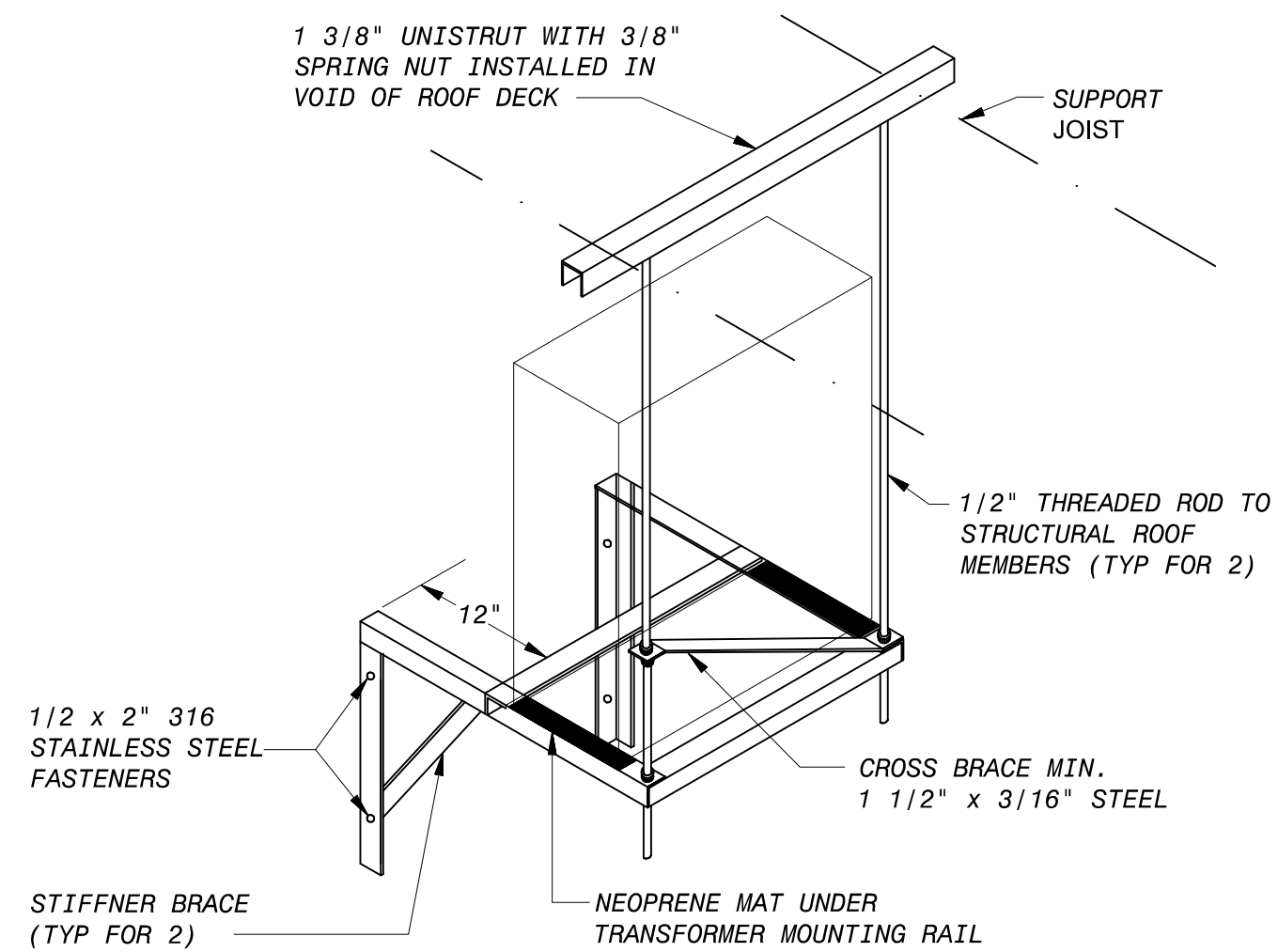
**K WEATHERPROOF RECEPTACLE MOUNTING DETAIL**  
NO SCALE



**L UNDERGROUND DUCT BANK ENTRANCE DETAIL**  
NO SCALE  
NOTE: FOR EXISTING WALL



**M TYPE 3 LUMINAIRE INSTALLATION DETAIL**  
NO SCALE



- NOTES:  
 1. FRAME TO BE MINIMUM 2" x 2" x 1/4".  
 2. FULL WELD AT ALL JOINTS.  
 3. EPOXY ENAMEL PAINT ASSEMBLY PRIOR TO INSTALLATION.

**N TYPICAL WALL MOUNTED TRANSFORMER SUPPORT FOR UP TO 50KVA UNITS**  
NO SCALE

NOTE:  
 1. SEE DRAWINGS E-01 AND E-02 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.

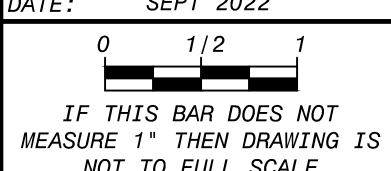
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MAY 2022	90% SUBMITTAL	B	AD	RE	INT
MAR 2021	50% SUBMITTAL	A	AD	RT	MT
DATE	REVISED AND RECORD OF ISSUE	NO.	BY	CHK	APP
60-3061 - M.L.S. 27-A					
E-14.dwg					
SAVED: DUT48884, 9/15/2022 5:21:59 PM					
PLOTTED: DUT48884, 9/15/2022 5:36:09 PM					
USER: DUT48884					

THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION BY RYAN BINKLEY, P.E., ON 09/16/2022 AND SEALED BY RYAN BINKLEY, A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF FLORIDA, NO. 89014

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**MANATEE COUNTY FLORIDA IMPROVEMENTS AT MASTER LIFT STATION 27-A**  
 ELECTRICAL STANDARD DETAILS 2

DESIGNED: DG  
 DETAILED: SS  
 CHECKED: ND  
 APPROVED: RB  
 DATE: SEPT 2022

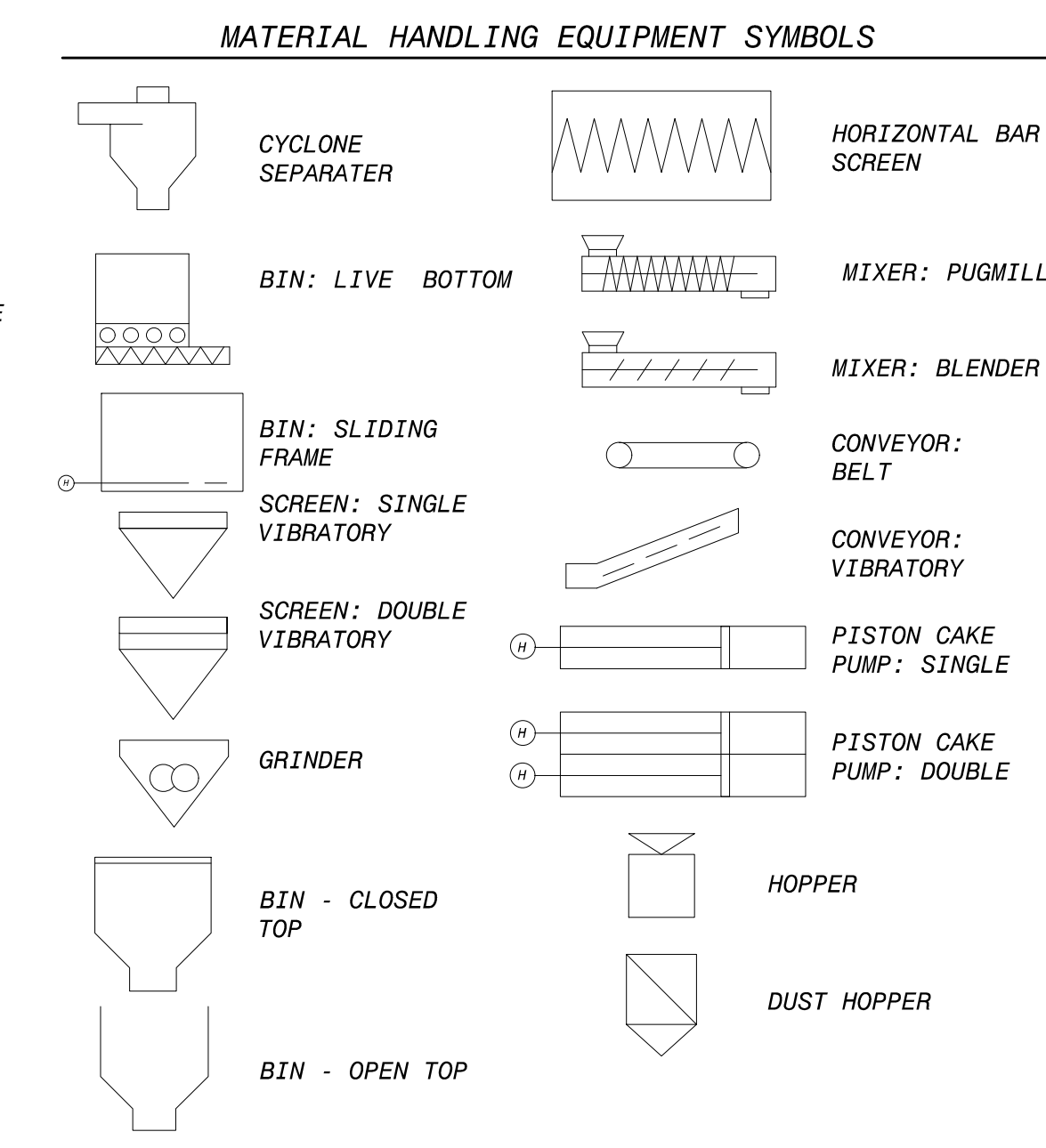
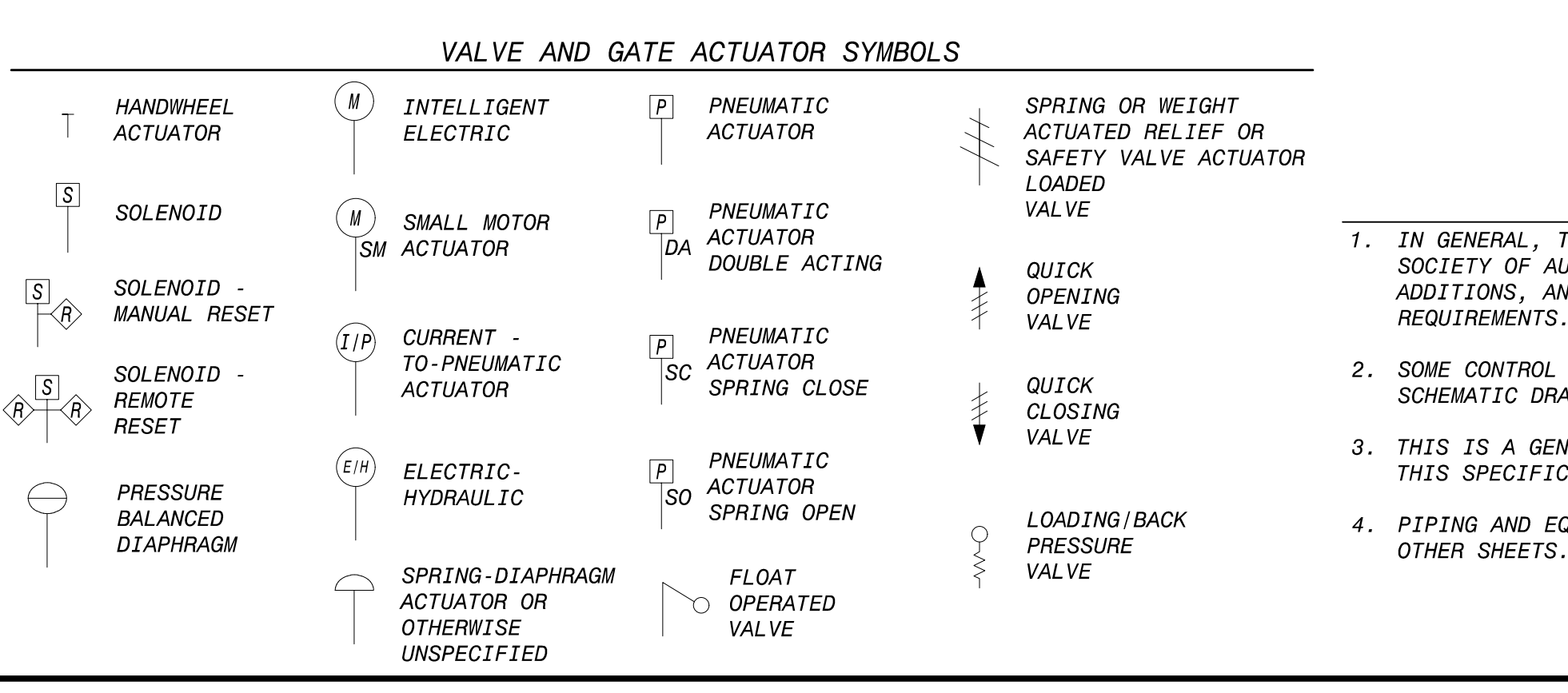
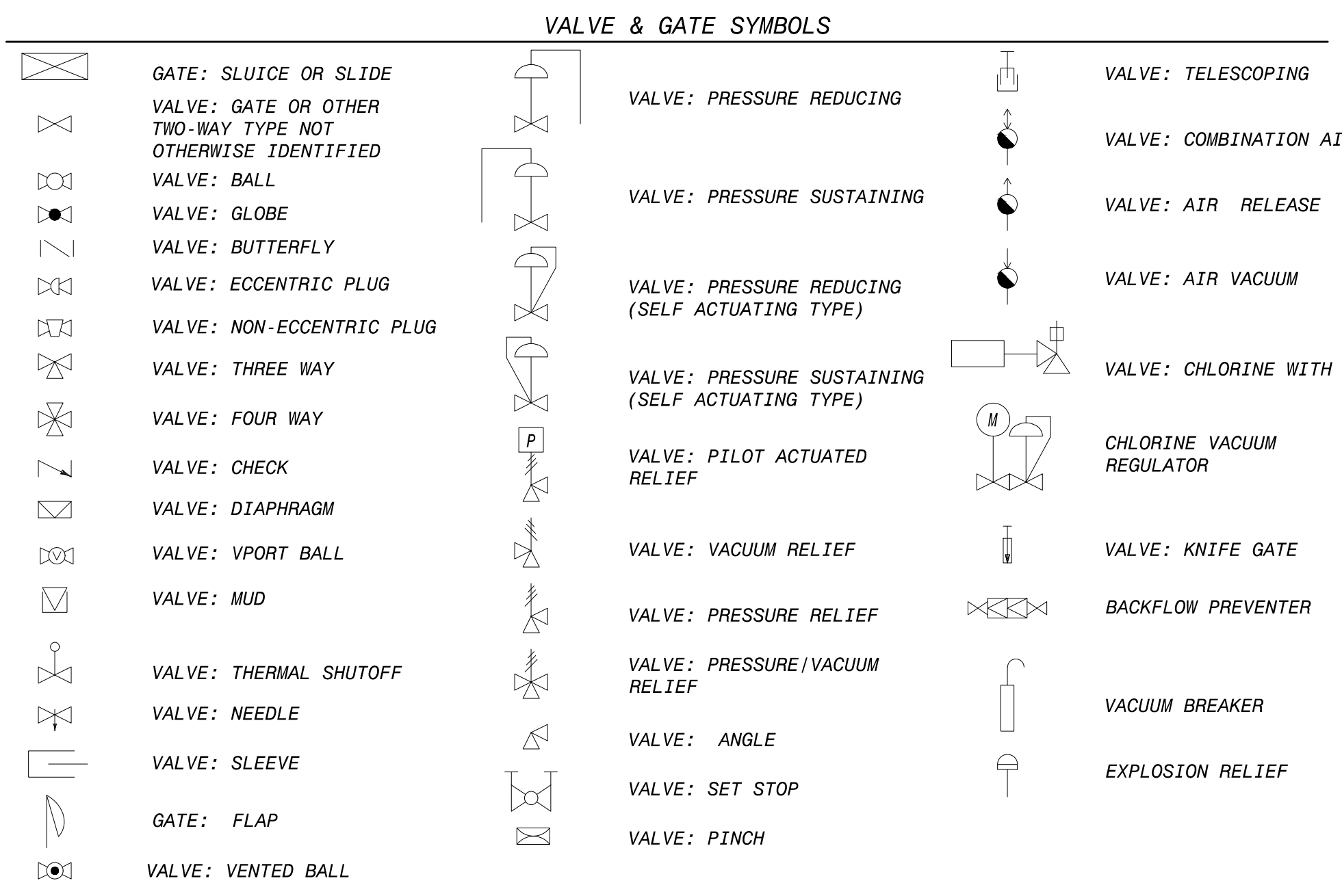
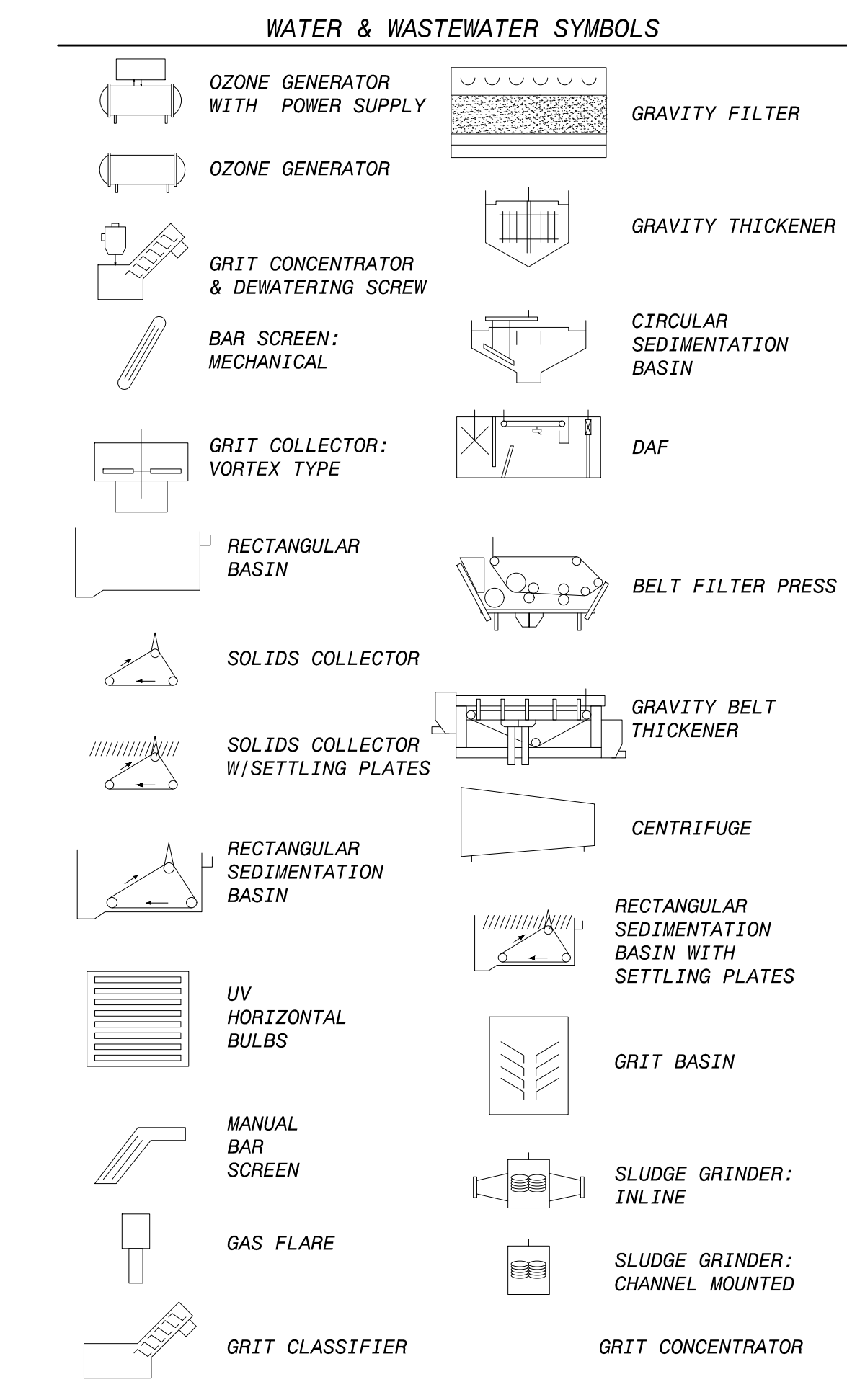
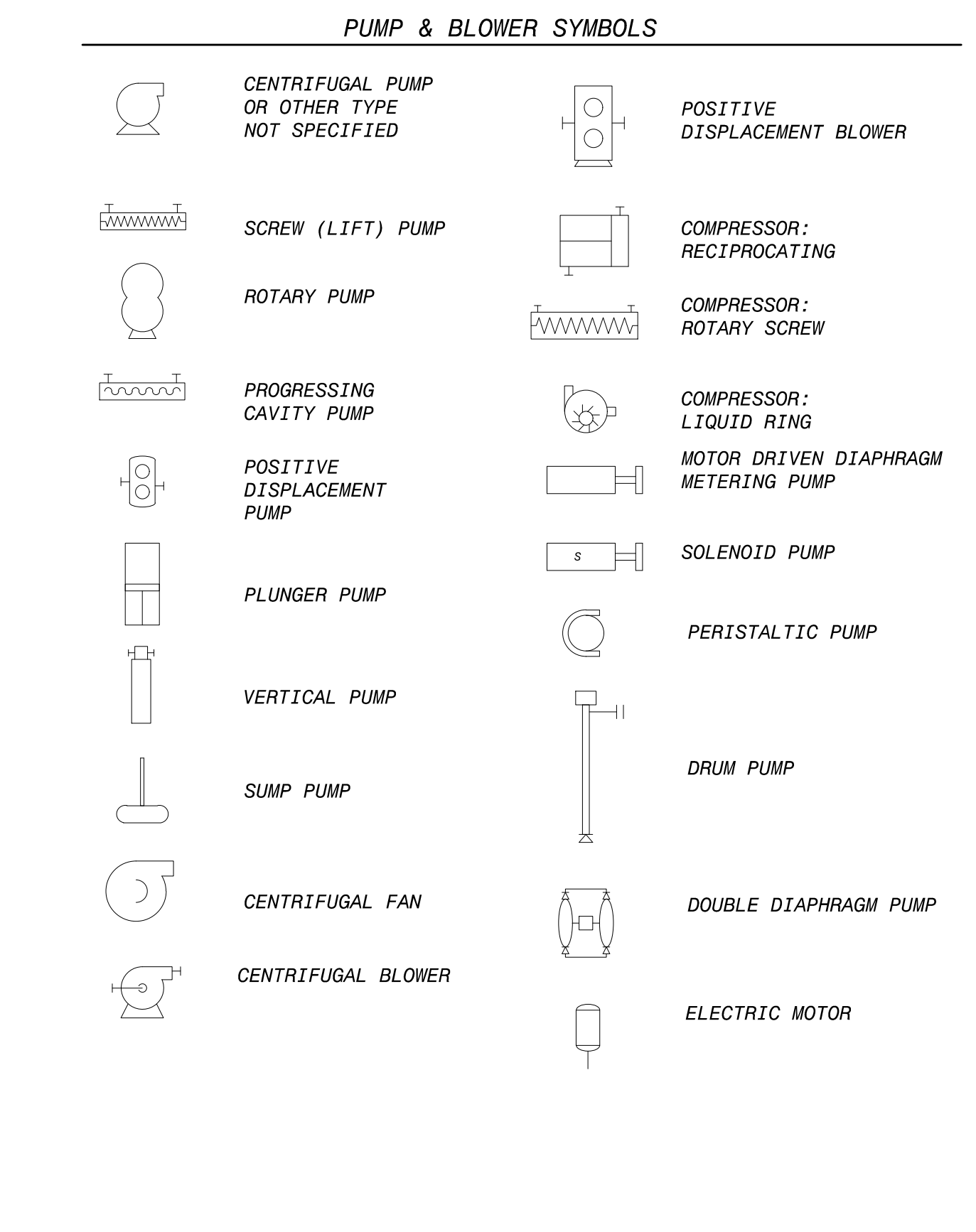
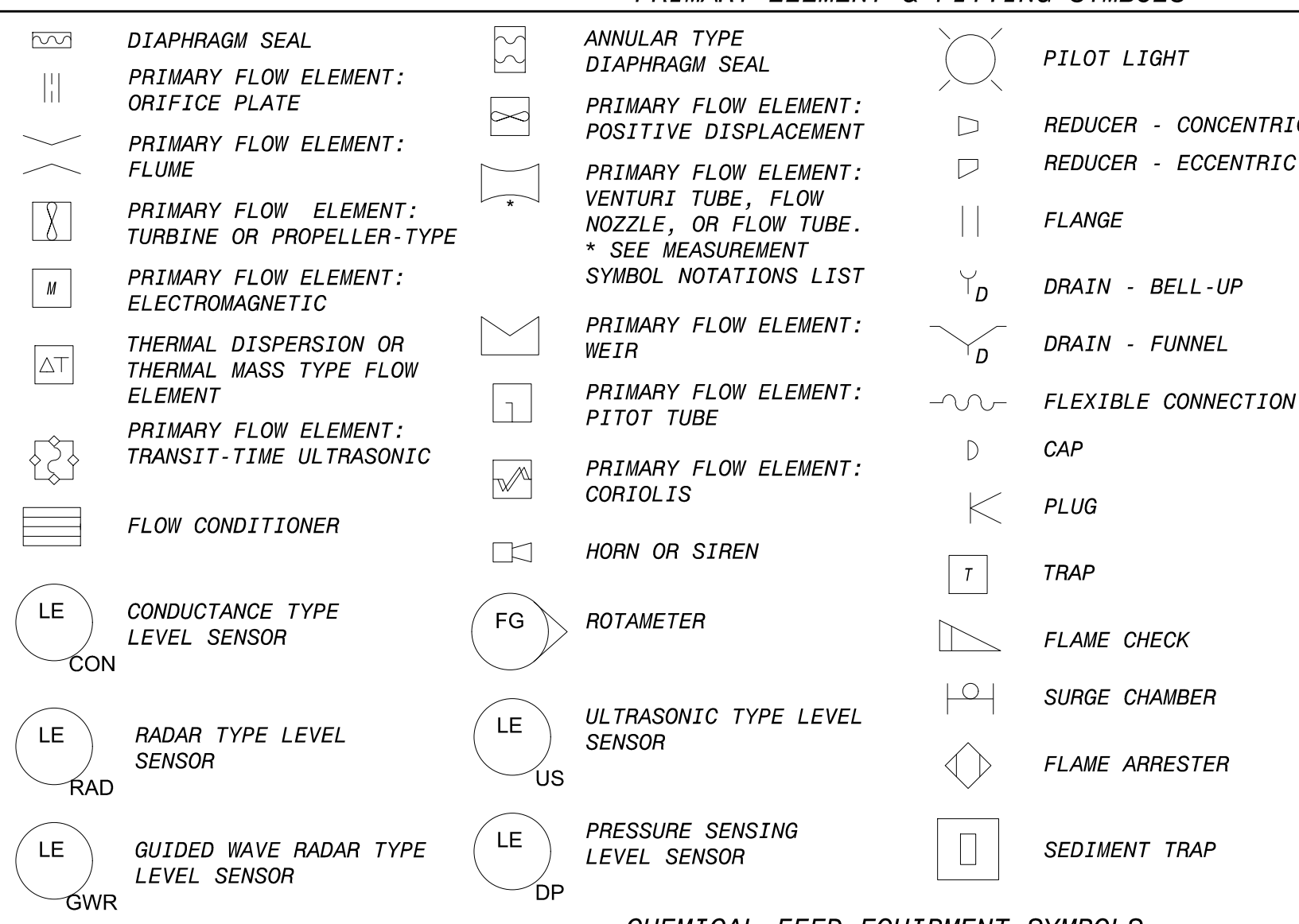
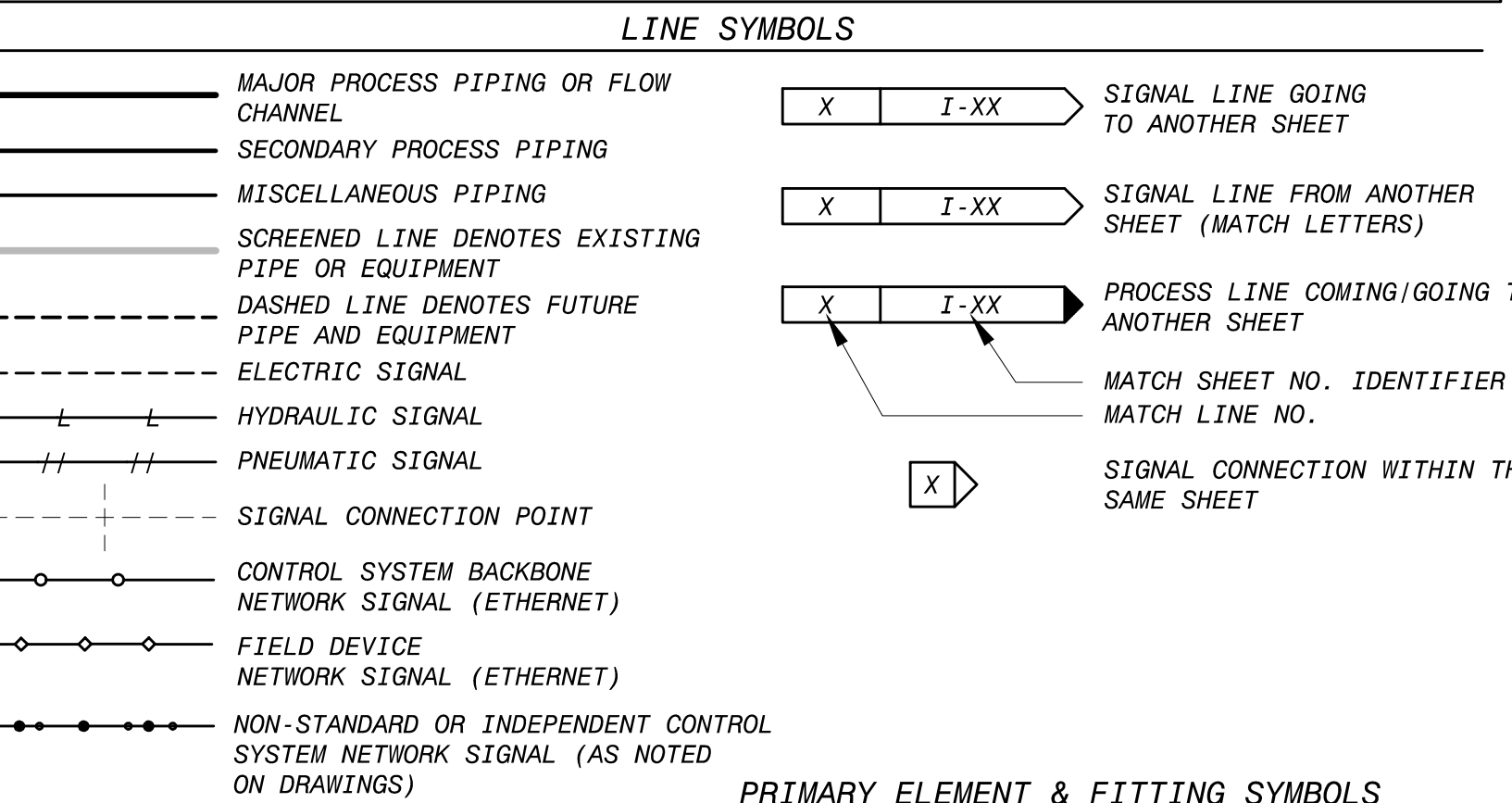
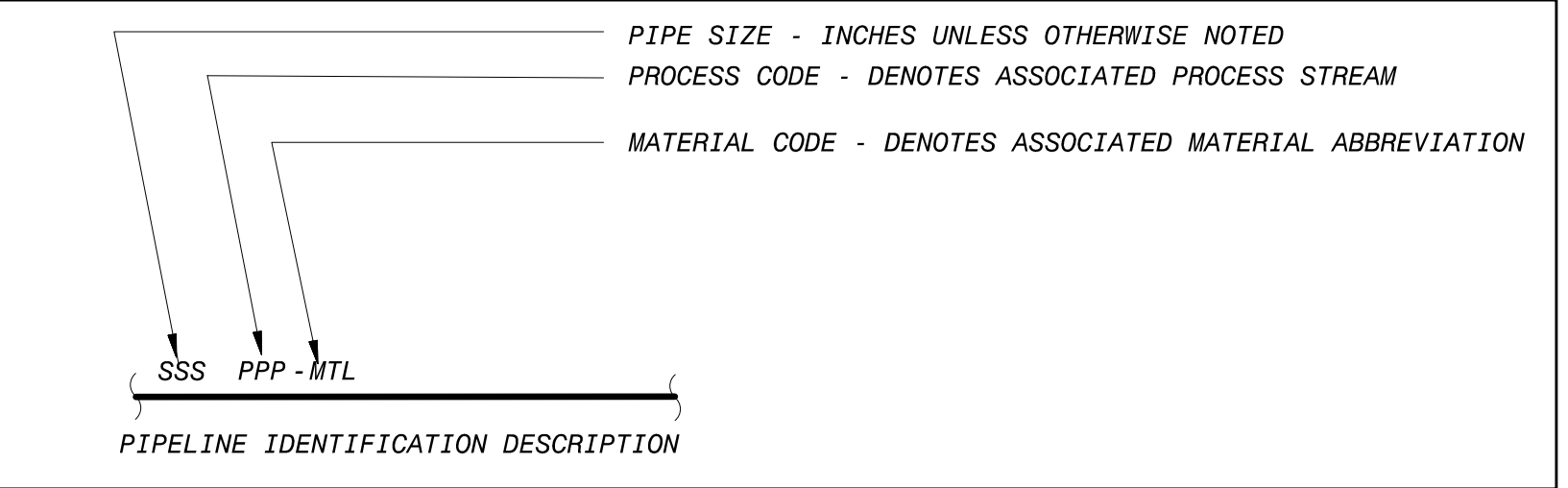
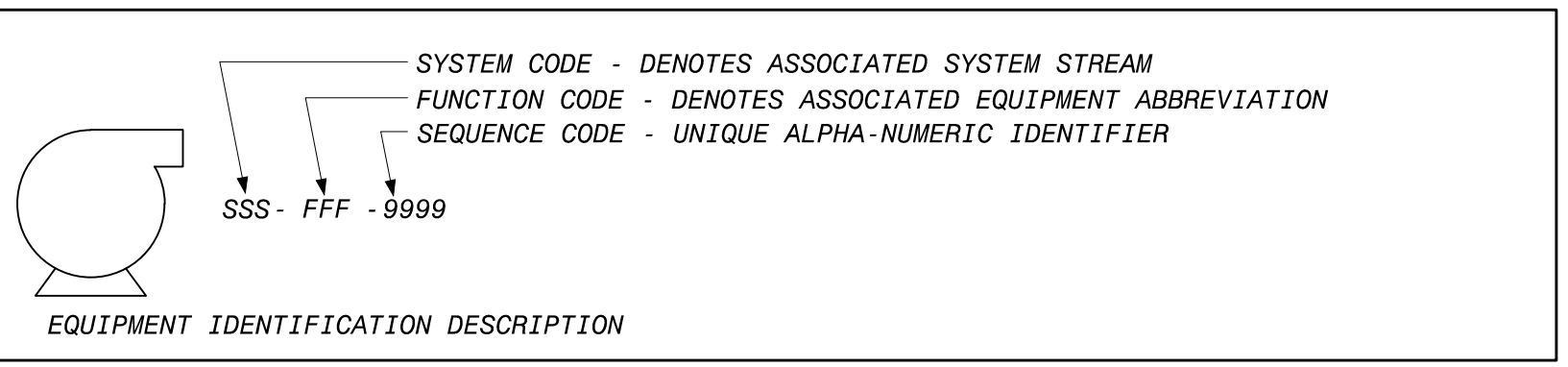


PROJECT NO.  
402142

**E-14**  
 SHEET  
 33 OF 40

**ISSUED FOR CONSTRUCTION**

E-14.dwg



**GENERAL NOTES**

- IN GENERAL, THE P&ID SYMBOLS AND DEVICE IDENTIFICATIONS ARE BASED ON INTERNATIONAL SOCIETY OF AUTOMATION, STANDARD PRACTICE ANSI/ISA-5.1 (2009). SOME MODIFICATIONS, ADDITIONS, AND ALTERATIONS HAVE BEEN MADE AS NEEDED TO ACCOMMODATE THE PROJECT REQUIREMENTS.
- SOME CONTROL AND INTERLOCK REQUIREMENTS WHICH CAN BE MORE CLEARLY ILLUSTRATED ON SCHEMATIC DRAWINGS HAVE BEEN OMITTED FROM THE P&ID DRAWINGS.
- THIS IS A GENERAL LEGEND SHEET. SOME SYMBOLS AND ABBREVIATIONS MAY NOT BE UTILIZED ON THIS SPECIFIC PROJECT.
- PIPING AND EQUIPMENT LEGEND APPLIES TO P&ID SHEETS ONLY AND MAY DIFFER FROM LEGENDS FOR OTHER SHEETS.

SEPT 2022	100% SUBMITTAL	C	AD	LE	INT
MAY 2022	90% SUBMITTAL	B	AD	LE	INT
MAR 2021	50% SUBMITTAL	A	AD	RT	MT
DATE	REVISED AND RECORD OF ISSUE	NO.	BY	CHK	APP
THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION BY LARRY BROUILLETTE, A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF FLORIDA, NO. 57973.					
I-01.dwg SAVED: DUT48884, 9/15/2022 5:37:39 PM PLOTTED: DUT48884, 9/15/2022 5:43:16 PM USER: DUT48884 [DWG VER: 1005]					
<b>BLACK &amp; VEATCH</b> Black & Veatch Corporation 3405 W. Dr. M. L. King Jr. Blvd, Suite 125 Tampa, Florida					
<b>MANATEE COUNTY, FLORIDA</b> <b>IMPROVEMENTS AT</b> <b>MASTER LIFT STATION 27-A</b> INSTRUMENTATION LEGEND & ABBREVIATIONS SHEET 1 OF 3					
DESIGNED: UB DETAILED: PRI/AD CHECKED: LB APPROVED: MNT DATE: SEPT 2022					
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE					
PROJECT NO. <b>402142</b> <b>I-01</b> SHEET 34 OF 40					

ISSUED FOR CONSTRUCTION



SYSTEM CODE ABBREVIATIONS

Table of system code abbreviations including ACE, ACT, GAC, AIR, AER, AW, ALS, NSO4, NH3, AS, NHOH, ARG, ASH, BWH, BAL, B10, BIT, BLS, BNR, BRN, CA, CATS, CO2, CAS, HCO3, CEN, CEB, CL2, CLO2, CA, CIP, COA, CAI, CMS, CUS, CI, DCL, DET, DWT, FUE, DGG, DGM, DGS, DGA, DIG, DDB, DCS, DAF, DRN, EFP, EG, EXH, EOB, FEC, FES, FRC, FRS, FLT.

PROCESS CODE ABBREVIATIONS

Table of process code abbreviations including ACE\_X, ACT\_X, GAC\_X, AIR\_X, AER\_X, AW\_X, ALS\_X, NSO4\_X, NH3\_X, AS\_X, NHOH\_X, ARG\_X, ASH\_X, BWH\_X, BAL\_X, B10\_X, BIT\_X, BLS\_X, BRN\_X, CA\_X, CATS\_X, CO2\_X, CAS\_X, HCO3\_X, CEN\_X, CEB\_X, CL2\_X, CLO2\_X, CA\_X, CIP\_X, COA\_X, CAI\_X, CMS\_X, CUS\_X, CI\_X, DCL\_X, DET\_X, DWT\_X, FUE\_X, DGG\_X, DGM\_X, DGS\_X, DGA\_X, DIG\_X, DDB\_X, DCS\_X, DAF\_X, DRN\_X, EFP\_X, EG\_X, EXH\_X, EOB\_X, FEC\_X, FES\_X, FRC\_X, FRS\_X, FLT\_X.

FUNCTION CODE ABBREVIATIONS

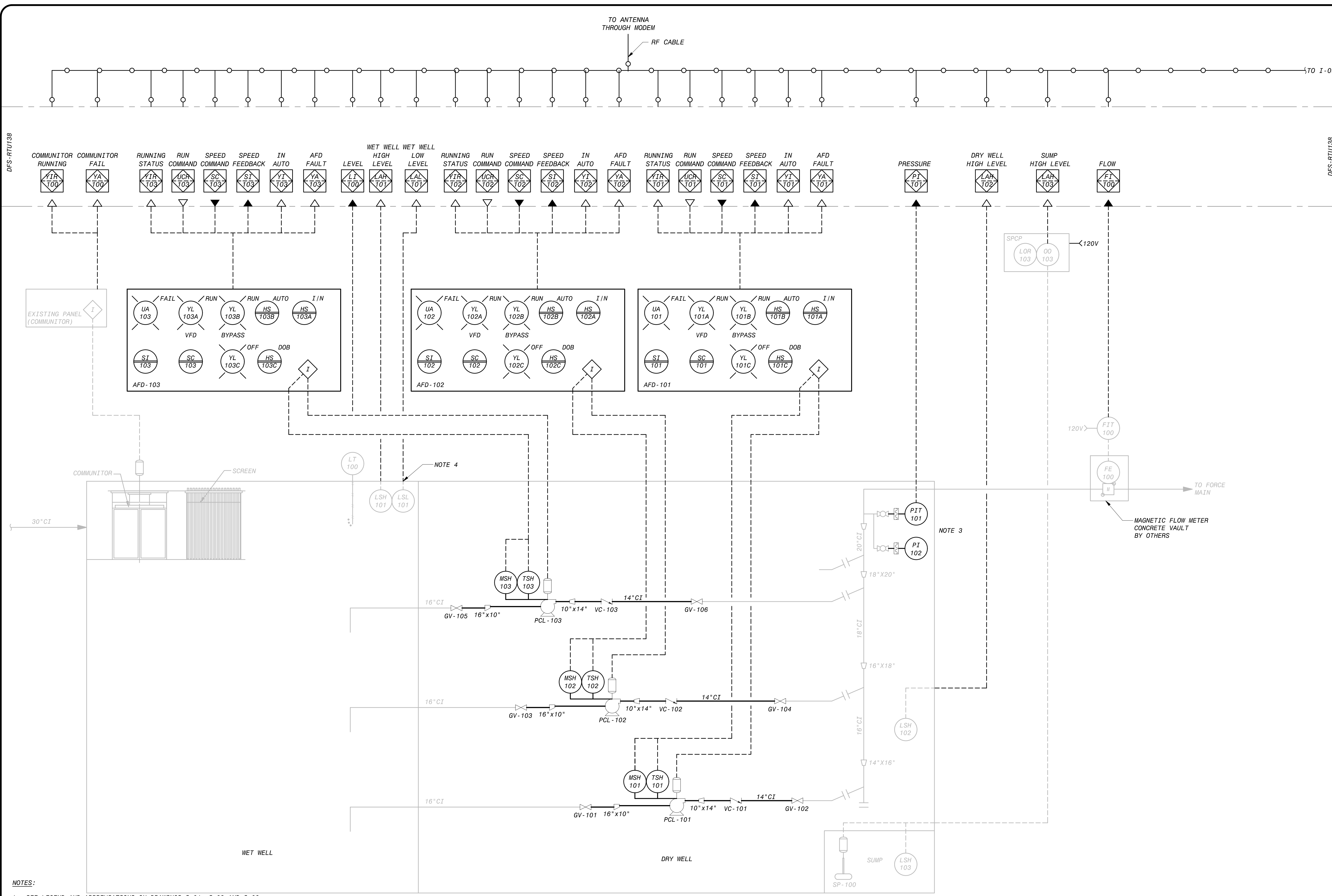
Table of function code abbreviations including ACMB, AFD, ACD, AFD, AFS, AES, AFC, AD, AF, AR, AS, AST, BFP, BSNA, BSX, BNR, BSNC, BSNO, RBSN, BFP, B, BA, BLC, BL, BLR, BDZ, CCLM, CFG, CHF, CGS, PCLR, SCLR, CGR, CW, CMP, CMB, CMR, CMRS, CTR, CDB, COS, CFA, CFD, CFL, DCG, DCM, CRN, CRG, CRJ, CRP, CRT, CYL, CYG.

Table of function code abbreviations including RSV, RCO, RM, RD, SAMP, SCL, SC, SCRHT, SCRI, SCRA, SCRS, SCT, SCR, SCU, SMC, SCW, SEF, SGT, SGL, SGG, SIL, SLC, GCLR, SFC, SCS, SSC, SLCS, GRD, SBL, STR, STRB, STRY, SRCH, PSE, INJ, PBC, PD, PAD, PCL, PDM, PHW, PHE, PSC, PPS, PPL, PPC, PSE, PSE, PCH, PSS, SP, P, PVD, PVE, PWW.

X = PROCESS CODE SUFFIX USED TO FURTHER SPECIFY A PROCESS STREAM (I.E. CL2\_G FOR CHLORINE GAS OR CL2\_S FOR CHLORINE SOLUTION)

Manatee County logo, Black & Veatch logo, project title 'MANATEE COUNTY, FLORIDA IMPROVEMENTS AT MASTER LIFT STATION 27-A', drawing title 'INSTRUMENTATION LEGEND & ABBREVIATIONS SHEET 3 OF 3', and various revision and approval stamps.

Project information including 'MANATEE COUNTY, FLORIDA IMPROVEMENTS AT MASTER LIFT STATION 27-A', drawing title 'INSTRUMENTATION LEGEND & ABBREVIATIONS SHEET 3 OF 3', project number '402142', sheet number 'I-03 SHEET 3 OF 40', and the text 'ISSUED FOR CONSTRUCTION'.



- NOTES:**
- SEE LEGEND AND ABBREVIATIONS ON DRAWINGS I-01, I-02 AND I-03.
  - SYSTEM CODE IS 'MLS' FOR ALL INSTRUMENTATION EQUIPMENT AND VALVES OTHERWISE NOTED.
  - ADD PRESSURE TRANSMITTER AND GAUGE TO EXISTING TAP OR PROVIDE NEW TAP AS NEEDED.
  - EXISTING WET WELL DEVICES TO BE TERMINATED NEAR THE WET WELL JUNCTION BOX.

SEPT 2022	100% SUBMITTAL	DATE	REVISED AND RECORD OF ISSUE
MAY 2022	90% SUBMITTAL	DATE	REVISED AND RECORD OF ISSUE
MAR 2021	50% SUBMITTAL	DATE	REVISED AND RECORD OF ISSUE
NO. BY CK APP		NO. BY CK APP	
C AD LB MNT		C AD LB MNT	
B AD LB MNT		B AD LB MNT	
A AD RT MT		A AD RT MT	

THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION BY LARRY BROUILLETTE, A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF FLORIDA, NO. 57973

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 Black & Veatch Corporation  
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 Tampa, Florida  
 Certificate No. 8132

**MANATEE COUNTY, FLORIDA**  
**IMPROVEMENTS AT**  
**MASTER LIFT STATION 27-A**  
 INSTRUMENTATION  
 P&ID  
 MASTER LIFT STATION PUMPS

DESIGNED: UB
DETAILED: PRI/AD
CHECKED: LB
APPROVED: MNT
DATE: SEPT 2022

**ISSUED FOR CONSTRUCTION**

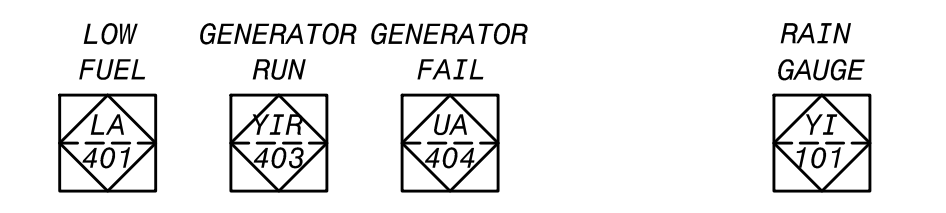
402142

FROM I-05

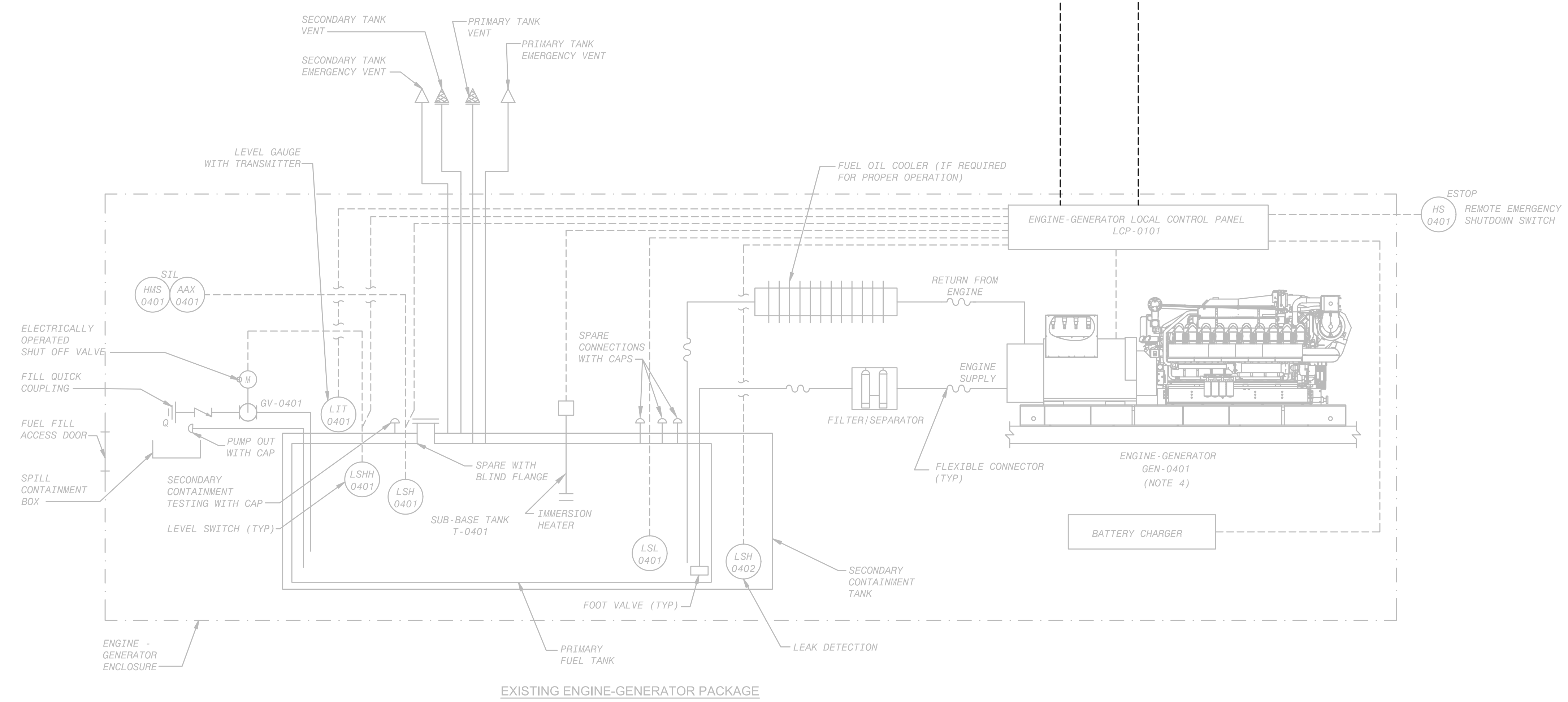
DFS-RTU138

DFS-RTU138

AUTOMATIC  
TRANSFER  
SWITCH  
ATS-401



RAIN GAUGE  
RG-101



EXISTING ENGINE-GENERATOR PACKAGE

- NOTES:
1. SEE LEGEND AND ABBREVIATIONS ON DRAWINGS I-01, I-02 AND I-03.
  2. SYSTEM CODE IS EG, UNLESS OTHERWISE NOTED.
  3. ALL ITEMS INSIDE DASHED LINE IS LOCATED WITHIN THE ENGINE-GENERATOR ENCLOSURE.
  4. LOCAL CONTROL DEVICES, SUCH AS LIGHTS AND SWITCHES LOCATED ON EQUIPMENT MAY NOT BE SHOWN ON THIS P&ID.

SEPT 2022	100% SUBMITTAL	C	AD	LE	MNT
MAY 2022	90% SUBMITTAL	B	AD	LE	MNT
MAR 2021	50% SUBMITTAL	A	AD	RT	MT
DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK	APP
50.3051	M.S. 27-A				
I-05.dwg					
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USER: DUT48884					
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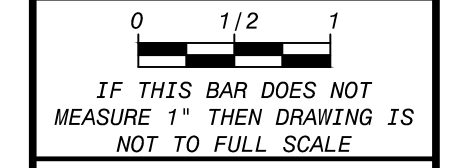
THIS DRAWING WAS  
ORIGINALLY APPROVED  
FOR CONSTRUCTION BY  
LARRY BROUILLETTE,  
ON 09/15/2022 AND  
SEALED BY  
LARRY BROUILLETTE,  
A LICENSED  
PROFESSIONAL  
ENGINEER IN THE  
STATE OF FLORIDA,  
NO. 57973

**BLACK & VEATCH**  
Black & Veatch Corporation  
3405 W. Dr. M. L. King Jr. Blvd, Suite 125  
Tampa, Florida  
Certificate No. 8132

**MANATEE COUNTY, FLORIDA**  
**IMPROVEMENTS AT**  
**MASTER LIFT STATION 27-A**

**INSTRUMENTATION**  
**P&ID**  
**ENGINE GENERATOR AND FUEL STORAGE TANK**

DESIGNED: UB  
DETAILED: PR/AD  
CHECKED: LB  
APPROVED: MNT  
DATE: SEPT 2022

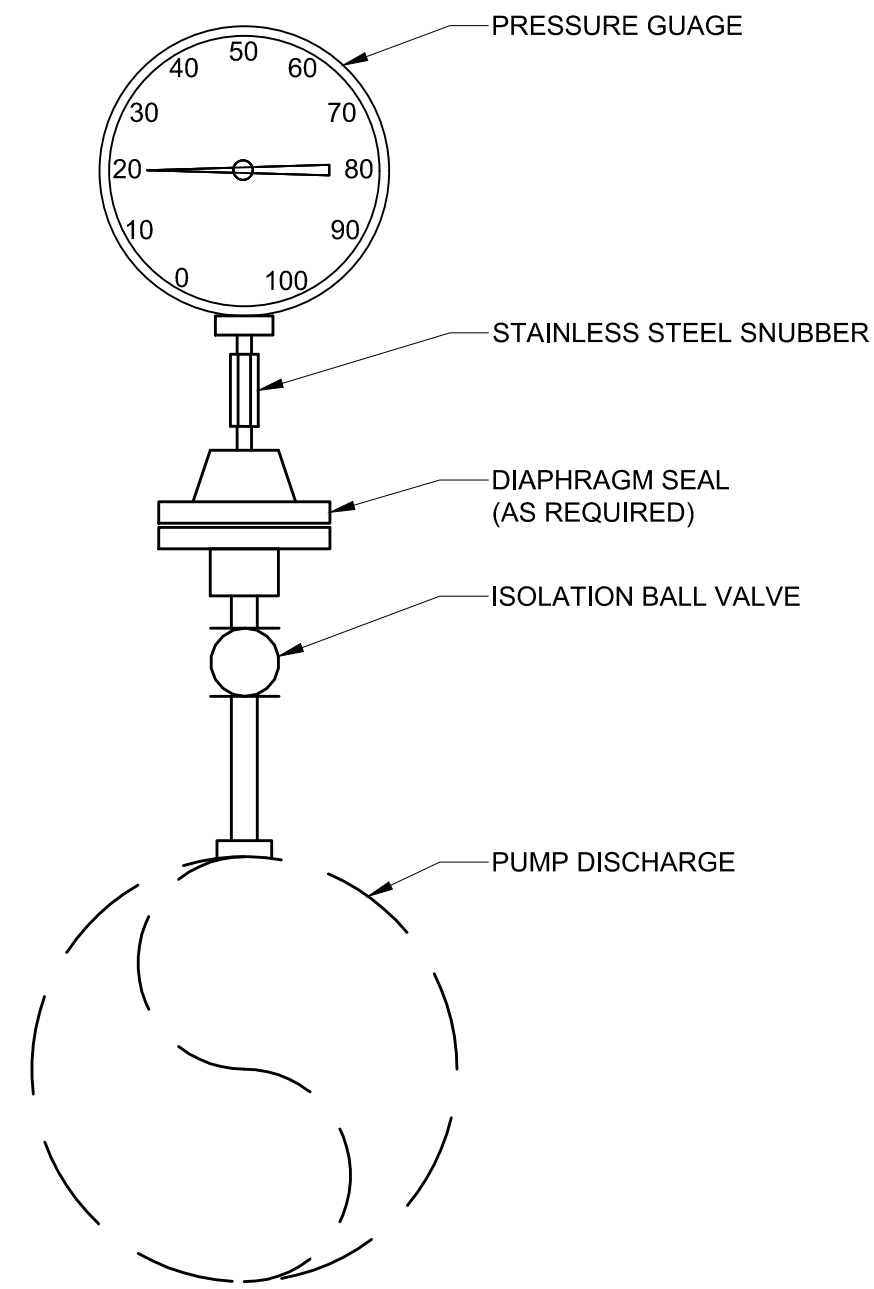


PROJECT NO.  
402142

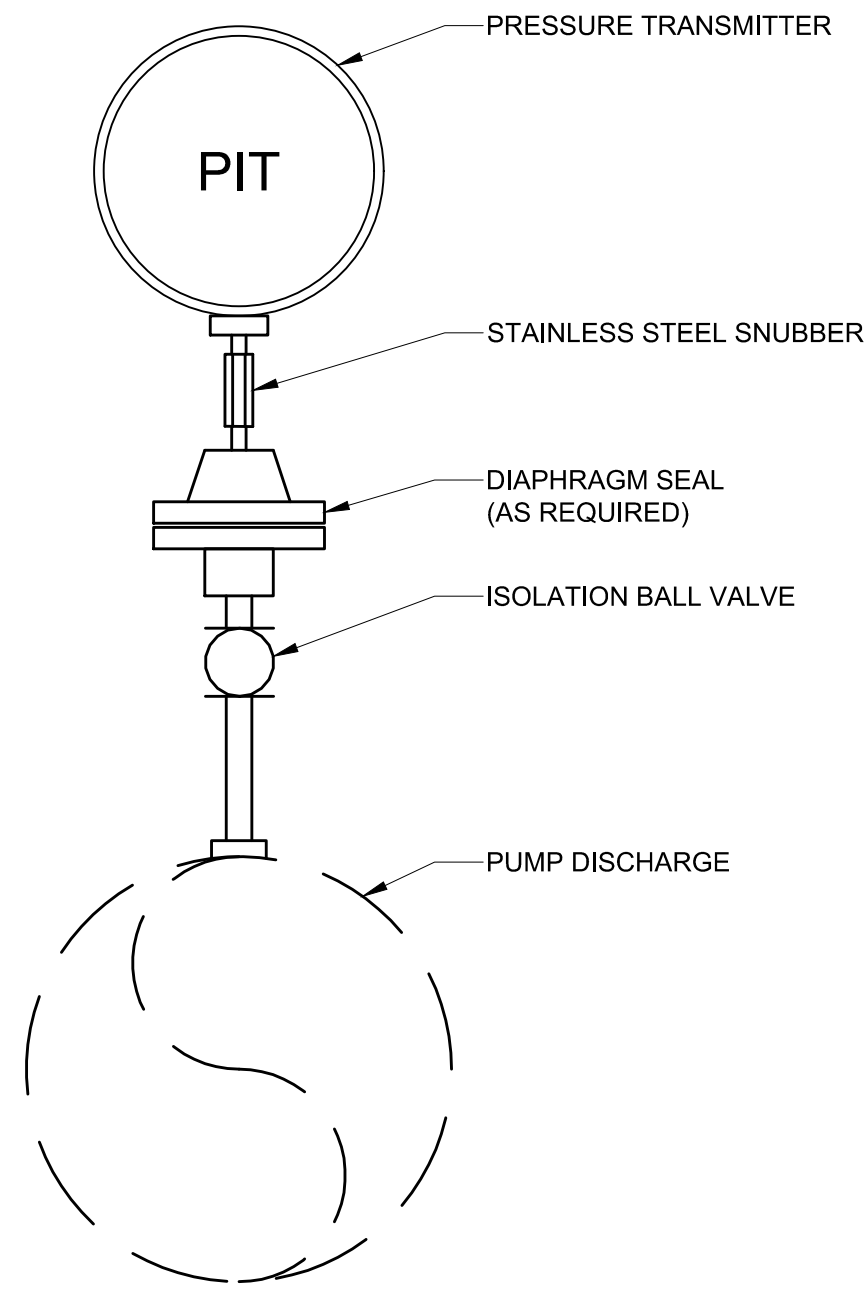
**I-05**  
SHEET  
38 OF 40

**ISSUED FOR CONSTRUCTION**

FB7000  
402142




**A** PRESSURE GAUGE  
INSTALLATION DETAIL  
NO SCALE



**B** PRESSURE TRANSMITTER  
INSTALLATION DETAIL  
NO SCALE

SEPT 2022	100% SUBMITTAL	C	AD	LB	MNT
MAY 2022	90% SUBMITTAL	B	AD	LB	MNT
MAR 2021	50% SUBMITTAL	A	AD	RT	MT
DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK	APP
50-3060	- Process-Instumentation Diagrams Drawings				
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	PLOTTED: DUT48884, 9/15/2022 5:39:30 PM				
	USER: DUT48884				
	DWG. VER: 1005				

THIS DRAWING WAS  
ORIGINALLY APPROVED  
FOR CONSTRUCTION BY  
LARRY BROUILLETTE,  
ON 09/15/2022 AND  
SEALED BY  
LARRY BROUILLETTE,  
A LICENSED  
PROFESSIONAL  
ENGINEER IN THE  
STATE OF FLORIDA,  
NO. 57973

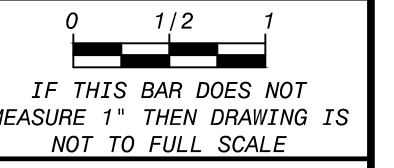


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Black & Veatch Corporation  
3405 W. Dr. L. King Jr. Blvd, Suite 125  
Tampa, Florida  
Certificate No. 8132

**MANATEE COUNTY, FLORIDA**  
**IMPROVEMENTS AT**  
**MASTER LIFT STATION 27-A**

**INSTRUMENTATION**  
**INSTALLATION DETAILS**

DESIGNED: UB  
DETAILED: PR/AD  
CHECKED: LB  
APPROVED: MNT  
DATE: SEPT 2022



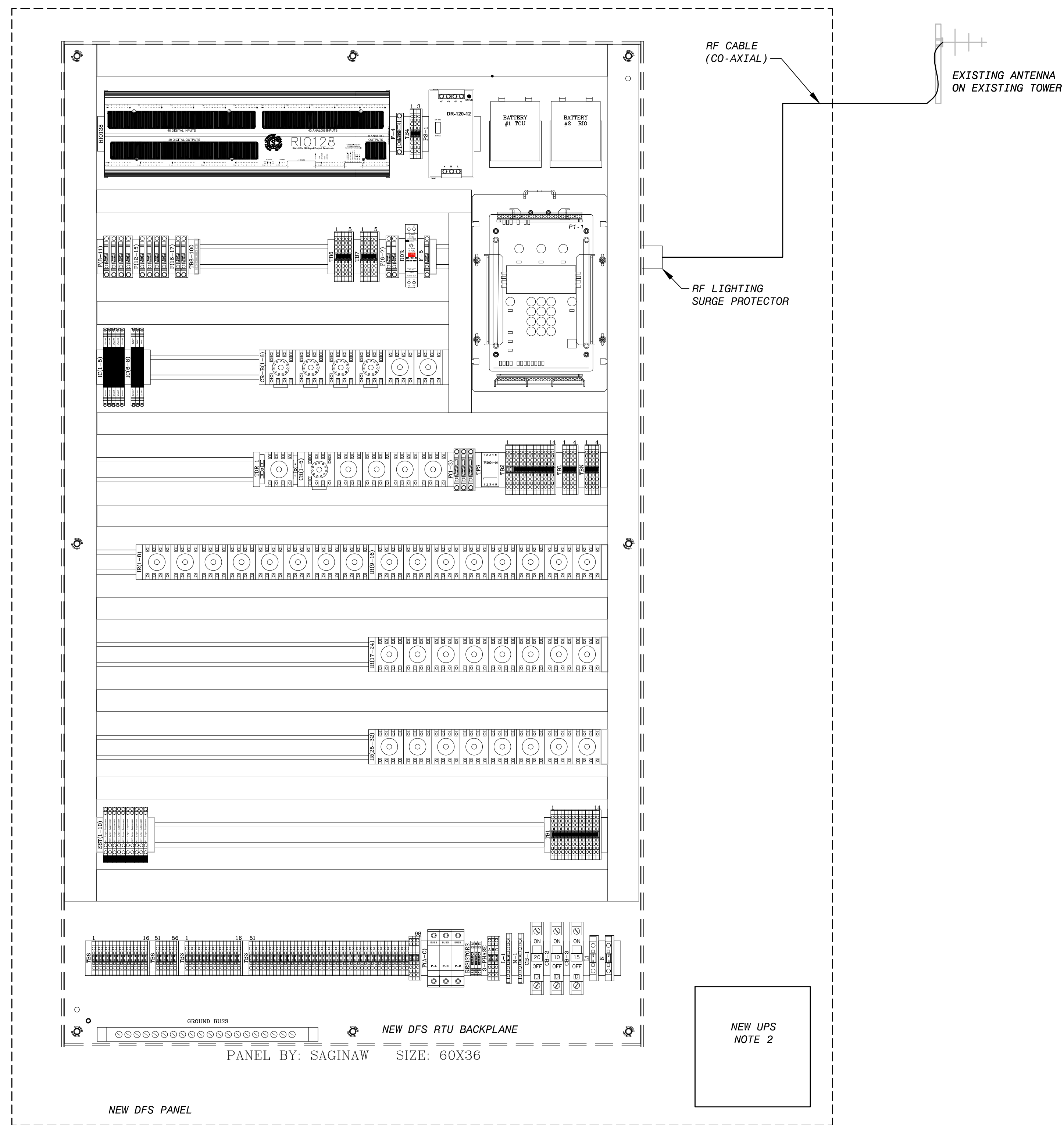
PROJECT NO.  
402142

**I-06**  
SHEET  
39 OF 40

**ISSUED FOR CONSTRUCTION**

NOTES:

1. PROVIDE NEW RTU BACKPLANE IN NEW PANEL.
2. PROVIDE NEW "NEWMAR AC UPS 48-2000 IN A CABINET MOUNTED CONFIGURATION.
3. PANEL IS TO BE MODELED ON THE SOUTHEAST MASTER LIFTSTATION 677E PANEL MODIFIED TO ACCOMMODATE THE UPS.



**MANATEE COUNTY, FLORIDA**  
**IMPROVEMENTS AT**  
**MASTER LIFT STATION 27-A**

INSTRUMENTATION  
 NETWORK BLOCK DIAGRAM

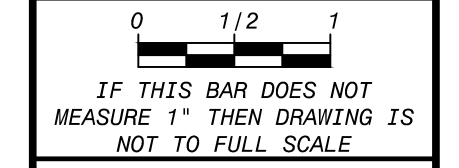
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DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK	APP
SEPT 2022	100% SUBMITTAL	C	AD	LE	MNT
MAY 2022	90% SUBMITTAL	B	AD	LE	MNT
MAR 2021	50% SUBMITTAL	A	AD	RT	MT

50.3061 - M.L.S. 27-A  
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 XREF1:  
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 XREF3:  
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 USER: DUT48884  
 DWG. VER: 1005

DESIGNED: UB  
 DETAILED: PR/AD  
 CHECKED: LB  
 APPROVED: MNT  
 DATE: SEPT 2022



PROJECT NO.  
 402142

**I-07**  
 SHEET  
 40 OF 40

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