



**CITY OF TAMPA**  
 CONTRACT ADMINISTRATION  
 DEPARTMENT  
 PLANNING AND DESIGN DIVISION  
 305 E. JACKSON STREET 4 NORTH  
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 Supervisor, Architectural Drafting  
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**FIRE STATION 19**  
 790 INTERBAY BLVD.  
 TAMPA, FLORIDA

**DPW FILE NUMBER**

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**FD0116**

**ISSUE DATE**  
**JANUARY 2012**

**DRAWN BY**  
**KINSEY TILLMAN**

**REVISIONS**

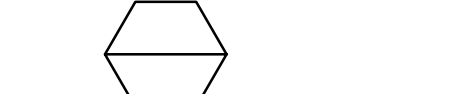

**SEAL**

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

**SHEET NUMBER**

**A-7.1**

**X OF X**



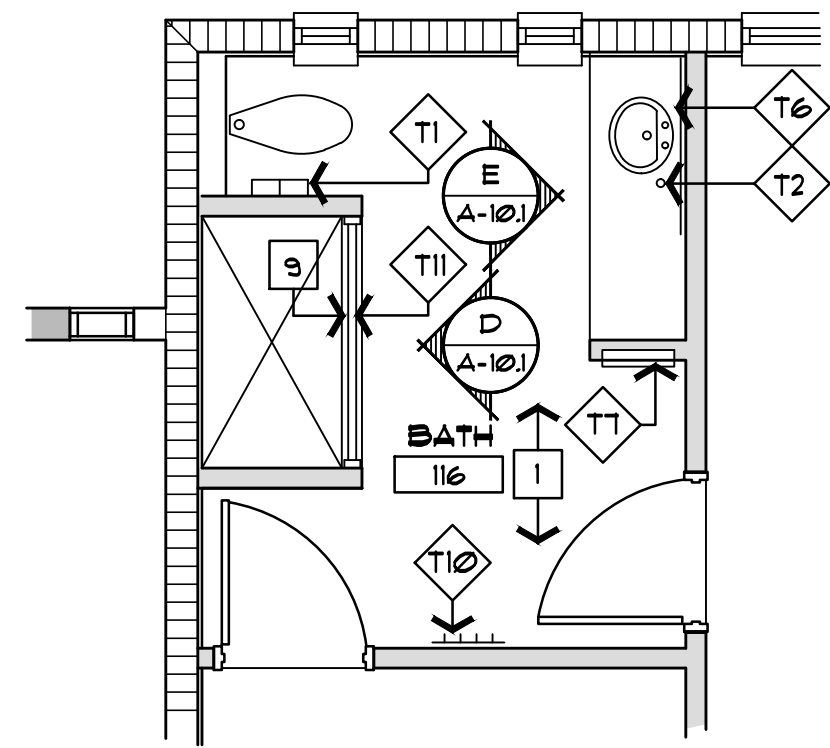
**GENERAL NOTES**

**KEY NOTES**

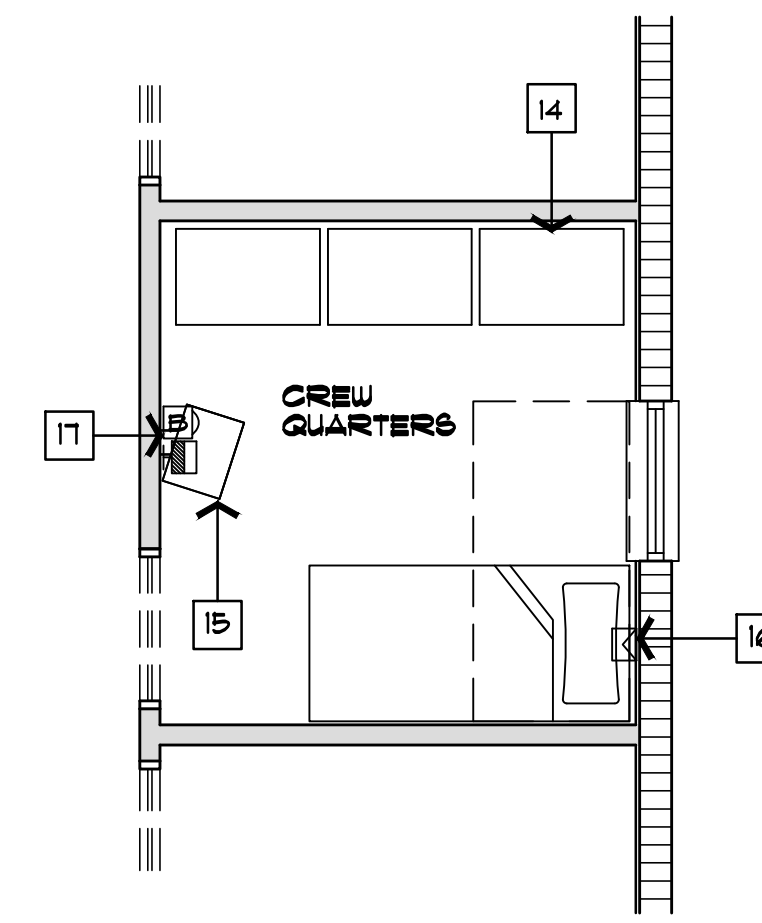
- 1 2" x 2" MOSAIC FLOOR TILE.
- 2 12" x 12" VCT ACCENT COLOR TILE.
- 3 6" x 6" QUARRY TILE
- 4 FLOOR DRAIN - SLOPE FLOOR TO DRAIN.
- 5 COMMERCIAL HEAVY DUTY WASHING MACHINE
- 6 HEAVY DUTY DRYER
- 7 FIBERGLASS SINK WITH HANDS FREE CONTROLS
- 8 HAND HELD SHOWER
- 9 4" CURB
- 10 ICE MACHINE
- 11 1-1/2" THICK x 60" LONG SOLID SURFACE BENCH
- 12 18"wx21"Dx12"H SOLID WOOD LAMINATE WITH BOTTOM FOOT LOCKER AND TOP LOCK BOX SIMILAR TO THE 30000 SERIES OPEN ACCESS DESIGNER WOOD LOCKER BY SALSBURG INDUSTRIES COLOR SELECTED FROM STANDARD RANGE. WWW.LOCKERS.COM 1 800 562-5311 EXTENSION 128, MIKE
- 13 PROVIDE 6 HEAVY DUTY WIRE SHELVES ON HEAVY DUTY BRACKETS FOR EACH CLOSET AND PANTRY TYP.
- 14 FOR EACH CREW ROOM AND CHIEF AND CAPTAIN QUARTERS PROVIDE SOLID 24" x 24" x 12" WOOD LOCKER WITH BOTTOM FOOT LOCKER, TOP TRAY LOCKER AND LOCKER DOOR, ALL DOORS WITH STANDARD HASP LOCK, SIMILAR TO 30014 DESIGNER GREAT LOCKER BY SALSBURG INDUSTRIES. WWW.LOCKERS.COM 1 800 562-5311 EXTENSION 128 MIKE
- 15 WALL MOUNTED TV BRACKETS - 65" AFF. FIELD VERIFY ) NOT IN CONTRACT - TO BE INSTALLED BY CITY OF TAMPA
- 16 RELOCATE STROBE FIXTURE TO EXTERIOR WALL TYP. ALL SLEEPING ROOMS REFER TO ELEC. DUGS. FOR MOUNTING HEIGHTS
- 17 911 BELL AND INTERCOM REMOTE STATION AT 58" AFF. ( FIELD VERIFY )
- 18 1/2" CEM. BD. - SIM. TO DUROROCK
- 19 1/2" x 5" WIDE TRAVERTINE / MARLE
- 20 P.T. 2x4 CONTINUOUS

**TOILET ACCESSORIES**

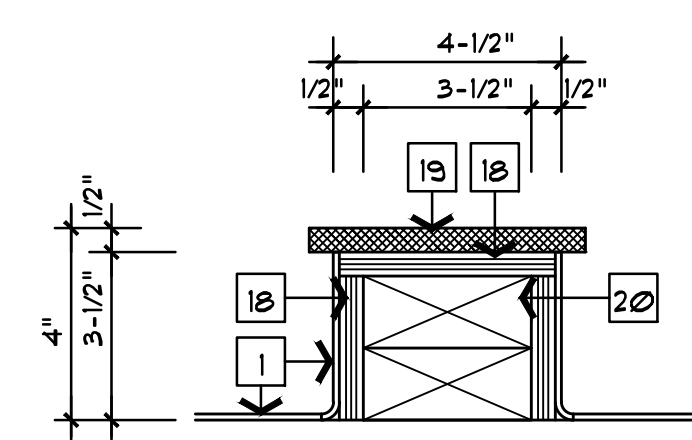
- T1 DOUBLE ROLL SURFACE MOUNTED TOILET TISSUE DISPENSER SIMILAR TO BRADLEY #5234.
- T2 SOAP DISPENSER SIMILAR TO BRADLEY #6324.
- T3 2' x 3' CHANNEL FRAMED MIRROR SIMILAR TO BRADLEY #181.
- T4 2' x 3' FIXED TILT FRAMED MIRROR SIMILAR TO BRADLEY #140.
- T5 SURFACE MOUNTED SOAP DISPENSER SIMILAR TO BRADLEY #6542.
- T6 4' x 3' CHANNEL FRAMED MIRROR SIMILAR TO BRADLEY #181.
- T7 PAPER TOWEL DISPENSER / RECEPTACLE SIM. TO BOBRICK MODEL #B-3942
- T8 GRAB BARS - SIMILAR TO BRADLEY 800-001 SERIES WITH 42" BAR AT SIDE OF WATER CLOSET.
- T9 GRAB BAR SIMILAR TO BRADLEY 800-001 SERIES 36" IN LENGHT.
- T10 CLOTHES HOOK STRIP SIMILAR TO BOBRICK B-985
- T11 EXTRA HEAVY DUTY SHOWER CURTAIN ROD SIM. TO BOBRICK B-6041 WITH VINYL SHOWER CURTAIN SIM. TO BOBRICK 204-2 AND SHOWER CURTAIN HOOKS SIM. TO BOBRICK 204-1



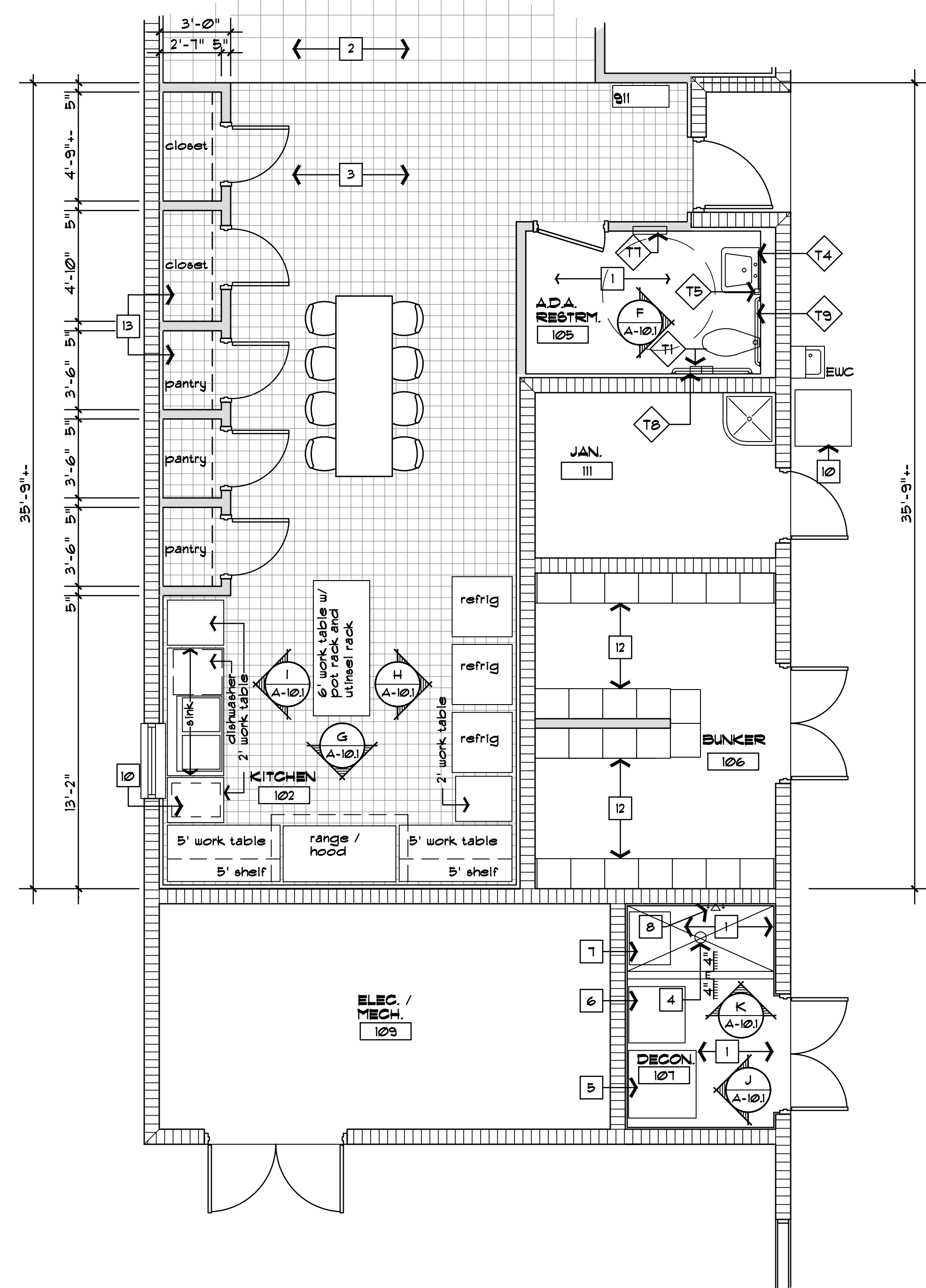
**C A-7.1 ENLARGED FLOOR PLAN**  
 SCALE 1/4" = 1'-0"



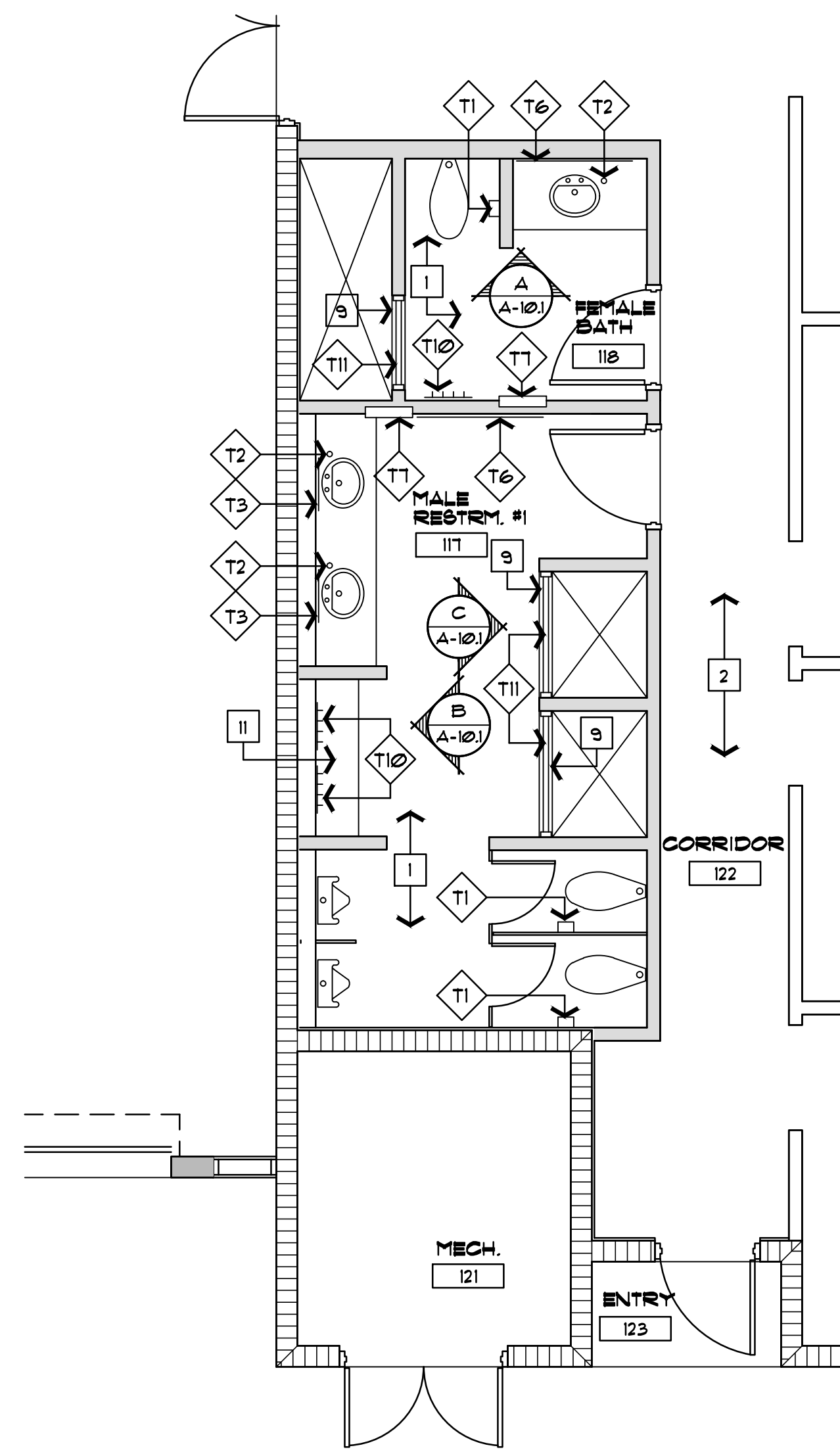
**D A-7.1 PARTIAL ENLARGED FLOOR PLAN**  
 SCALE 1/4" = 1'-0"



**TYPICAL CURB DETAIL**  
 SCALE 3" = 1'-0"



**A A-7.1 ENLARGED FLOOR PLAN**  
 SCALE 1/4" = 1'-0"



**B A-7.1 ENLARGED FLOOR PLAN**  
 SCALE 1/4" = 1'-0"

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### DOOR SCHEDULE

NO.	EL.	DOOR			MATERIAL	FRAME		DETAILS			FIRE RATED	REMARKS
		W	H	T		TYP.	MAT'L	HEAD	JAMB	SILL		
100	C	2'-3"-0"	7'-0"	1-3/4"	ALUM.	-	ALUM.	-	-	4	-	
101	F	3'-0"	7'-0"	1-3/4"	H.M.	1	H.M.	5	5	-	-	
102	F	3'-0"	7'-0"	1-3/4"	H.M.	1	H.M.	5	5	-	-	
103	A	3'-0"	7'-0"	1-3/4"	H.M.	1	H.M.	5	5	-	-	
104	F	3'-0"	7'-0"	1-3/4"	H.M.	1	H.M.	1	1	3	3/4 c	SELF CLOSING DEVICE, PANIC BAR
105	A	3'-0"	7'-0"	1-3/4"	H.M.	1	H.M.	1	1	3	3/4 c	SELF CLOSING DEVICE
106	B	2'-3"-0"	7'-0"	1-3/4"	H.M.	2	H.M.	1	1	3	3/4 c	SELF CLOSING DEVICE
107	B	2'-3"-0"	7'-0"	1-3/4"	H.M.	2	H.M.	1	1	3	3/4 c	SELF CLOSING DEVICE
108	B	2'-3"-0"	7'-0"	1-3/4"	H.M.	2	H.M.	1	1	3	-	SELF CLOSING DEVICE
NOT USED												
110	A	2'-6"	7'-0"	1-3/4"	H.M.	1	H.M.	5	5	-	-	SELF CLOSING DEVICE
111	A	2'-6"	7'-0"	1-3/4"	H.M.	1	H.M.	5	5	-	-	SELF CLOSING DEVICE
112	A	2'-6"	7'-0"	1-3/4"	H.M.	1	H.M.	5	5	-	-	SELF CLOSING DEVICE
113	A	2'-6"	7'-0"	1-3/4"	H.M.	1	H.M.	5	5	-	-	SELF CLOSING DEVICE
114	A	2'-6"	7'-0"	1-3/4"	H.M.	1	H.M.	5	5	-	-	SELF CLOSING DEVICE
115	F	3'-0"	7'-0"	1-3/4"	H.M.	1	H.M.	1	1	3	-	SELF CLOSING DEVICE
116	G	2'-3"-0"	7'-0"	1-3/4"	H.M.	2	H.M.	1	1	3	3/4 c	SELF CLOSING DEVICE, PANIC BAR
117	B	2'-3"-0"	7'-0"	1-3/4"	H.M.	2	H.M.	1	1	3	3/4 c	SELF CLOSING DEVICE
118	A	3'-0"	7'-0"	1-3/4"	WD. SOLID CORE	1	H.M.	5	5	-	-	
119	A	3'-0"	7'-0"	1-3/4"	WD. SOLID CORE	1	H.M.	5	5	-	-	
120	A	3'-0"	7'-0"	1-3/4"	WD. SOLID CORE	1	H.M.	5	5	-	-	
121	A	3'-0"	7'-0"	1-3/4"	WD. SOLID CORE	1	H.M.	5	5	-	-	
122	A	3'-0"	7'-0"	1-3/4"	WD. SOLID CORE	1	H.M.	5	5	-	-	
123	A	3'-0"	7'-0"	1-3/4"	WD. SOLID CORE	1	H.M.	5	5	-	-	
124	F	3'-0"	7'-0"	1-3/4"	H.M.	1	H.M.	1	1	3	-	
125	B	2'-3"-0"	7'-0"	1-3/4"	H.M.	2	H.M.	1	1	3	-	
126	-	3'-0"	7'-0"	-	CURTAIN	1	WOOD	-	-	-	-	
127	-	3'-0"	7'-0"	-	CURTAIN	1	WOOD	-	-	-	-	
128	-	3'-0"	7'-0"	-	CURTAIN	1	WOOD	-	-	-	-	
129	-	3'-0"	7'-0"	-	CURTAIN	1	WOOD	-	-	-	-	
130	-	3'-0"	7'-0"	-	CURTAIN	1	WOOD	-	-	-	-	
131	-	3'-0"	7'-0"	-	CURTAIN	1	WOOD	-	-	-	-	
132	NOT USED											
133	E	14'-0"	16'-0"	-	O/H SERVICE	-	STL.	-	-	-	-	ELECTRIC MOTOR OPERATED
134	E	14'-0"	16'-0"	-	O/H SERVICE	-	STL.	-	-	-	-	ELECTRIC MOTOR OPERATED
135	E	14'-0"	16'-0"	-	O/H SERVICE	-	STL.	-	-	-	-	ELECTRIC MOTOR OPERATED
136	E	14'-0"	16'-0"	-	O/H SERVICE	-	STL.	-	-	-	-	ELECTRIC MOTOR OPERATED
137	E	14'-0"	16'-0"	-	O/H SERVICE	-	STL.	-	-	-	-	ELECTRIC MOTOR OPERATED
138	E	14'-0"	16'-0"	-	O/H SERVICE	-	STL.	-	-	-	-	ELECTRIC MOTOR OPERATED

### FINISH SCHEDULE

NO.	ROOM NAME	FLOOR	BASE	WALLS				CLG.	CLG. HT.	REMARKS
				N	E	S	W			
100	ACTIVITY AREA	F1	B1	W1	W1	W1	W1	C1	9'-0"	
101	FOOD CLOSETS	F5	B1	W1	W1	W1	W1	C2	9'-0"	
102	KITCHEN	F5	B3	W3	W3	W3	W3	C1	9'-0"	
103	OFFICE	F1	B1	W1	W1	W1	W1	C1	9'-0"	
104	NITE ROOM	F1	B1	W1	W1	W1	W1	C1	9'-0"	
105	A. D. A. RESTROOM	F3	B2	W3	W3	W3	W3	C2	9'-0"	
106	BUNKER	F4	B1	W3	W3	W3	W3	C2	9'-0"	
107	HAZZARDOUS DE-CON	F3	B2	W2	W2	W2	W2	C2	9'-0"	
108	NOT USED									NOT USED
109	ELEC. / MECH. ROOM	F4	B1	W3	W3	W3	W3	C2	9'-0"	
110	GENERATOR ROOM	F4	B1	W3	W3	W3	W3	C2	9'-0"	
111	JANITOR CLOSET	F4	B1	W3	W3	W3	W3	C2	9'-0"	
112	COVERED PATIO	F4	B1	W1	W1	W1	W1	-	10'-0"	CEMENT PLASTER CEILING
113	APPARATUS BAY	F4	B1	W3	W3	W3	W3	C2	17'-4"	
114	CHIEF'S QUARTERS	F1	B1	W1	W1	W1	W1	C1	9'-0"	
115	CAPTAIN'S QUARTERS	F1	B1	W1	W1	W1	W1	C1	9'-0"	
116	BATH	F3	B2	W3	W3	W3	W3	C2	9'-0"	CERAMIC TILE FULL HGT. IN SHOWERS
117	MALE RR #1	F3	B2	W3	W3	W3	W3	C2	9'-0"	CERAMIC TILE FULL HGT. IN SHOWERS
118	FEMALE BATH	F3	B2	W3	W3	W3	W3	C2	9'-0"	CERAMIC TILE FULL HGT. IN SHOWERS
119	JANITOR	F4	B1	W1	W1	W1	W1	C2	9'-0"	
120	CREW QUARTERS (A-F)	F1	B1	W1	W1	W1	W1	C1	9'-0"	VINYL COMPOSITION TILE IN HALL
121	MECH.	F4	B1	W1	W1	W1	W1	C2	9'-0"	
122	HALL	F1	B1	W1	W1	W1	W1	C1	9'-0"	

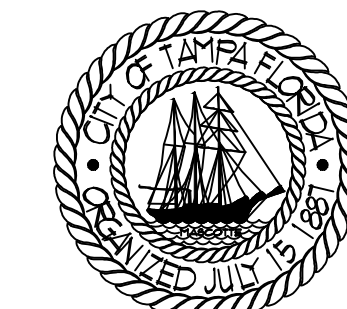
### FINISH LEGEND

W1	PAINTED	F1	VINYL COMPOSITION TILE (VCT)	C1	SUSPENDED ACOUSTICAL CEILING	B1	VINYL BASE
W2	CERAMIC TILE	F2	CARPET	C2	SUSPENDED GYPSUM CEILING	B2	CERAMIC TILE BASE
W3	EPOXY PAINT	F3	2 x 2 CERAMIC TILE	C3	CEMENT PLASTER CEILING	B3	QUARRY TILE BASE
		F4	SEALED CONCRETE				
		F5	6 x 6 QUARRY TILE				

### GENERAL NOTES

### KEY NOTES

- DOOR SEE SCHEDULE.
- 2 - 2 x 4 HEADER W/PLYWOOD INFILL.
- CASING.
- CORNER BEAD.
- SEALANT.
- HOLLOW METAL FRAME PROVIDE G30 GALV. AT ALL EXTERIOR FRAMES.
- PROVIDE 1 x 2 FT AT ALL CORNERS TYPICAL.
- BI-FOLD TRACK.
- FLOOR - SEE SCHEDULE.
- MARBLE THRESHOLD.
- CERAMIC TILE.
- ALUMINUM SADDLE.
- CONTINUOUS BED OF SEALANT.
- VINYL INSERT.
- SEE FLOOR PLAN FOR OTHER WALL TYPES FOR VARIOUS LOCATIONS.
- 1/4" TEMPERED WIRE GLASS.
- ASTRAGAL.
- TWO PANEL HIGH DEEP RIBBED 2" THICK ROLL FORMED 20 GA. PANEL PRE-FINISHED COLOR SELECTED FROM MANUFACTURE STANDARD COLORS.
- FOUR PANEL HIGH 1/2" THICK INSULATED GLASS.



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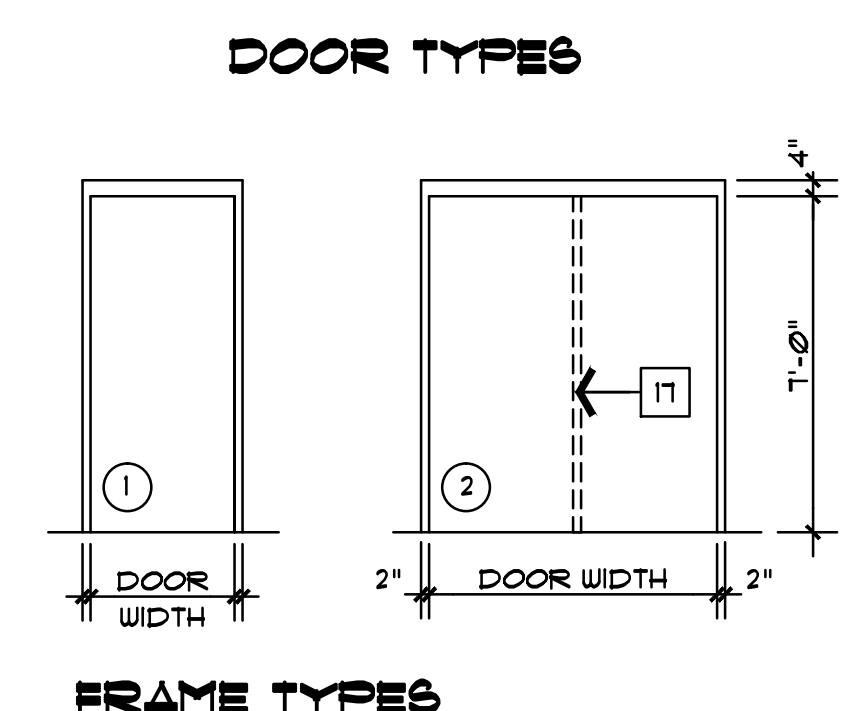
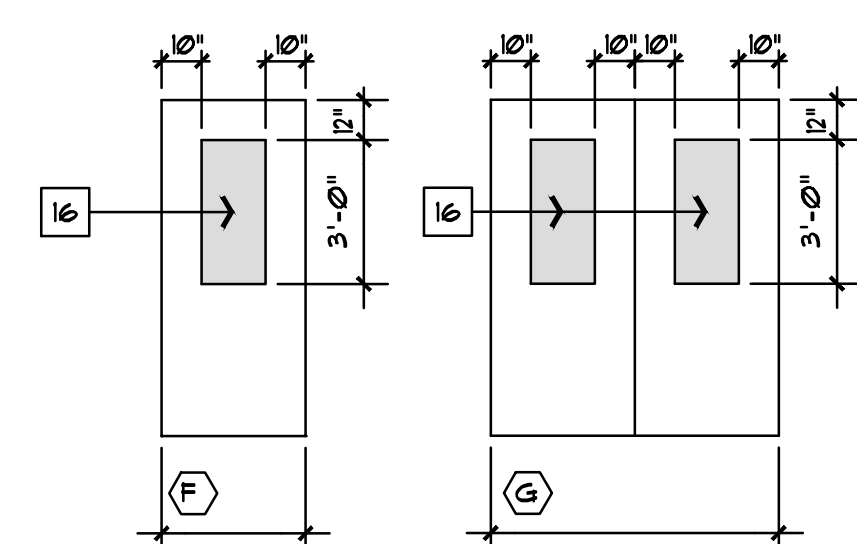
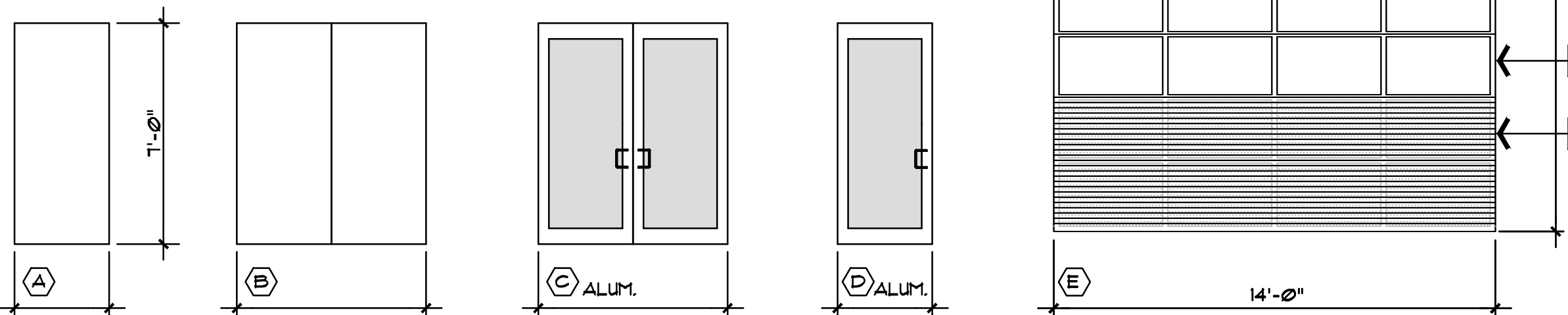
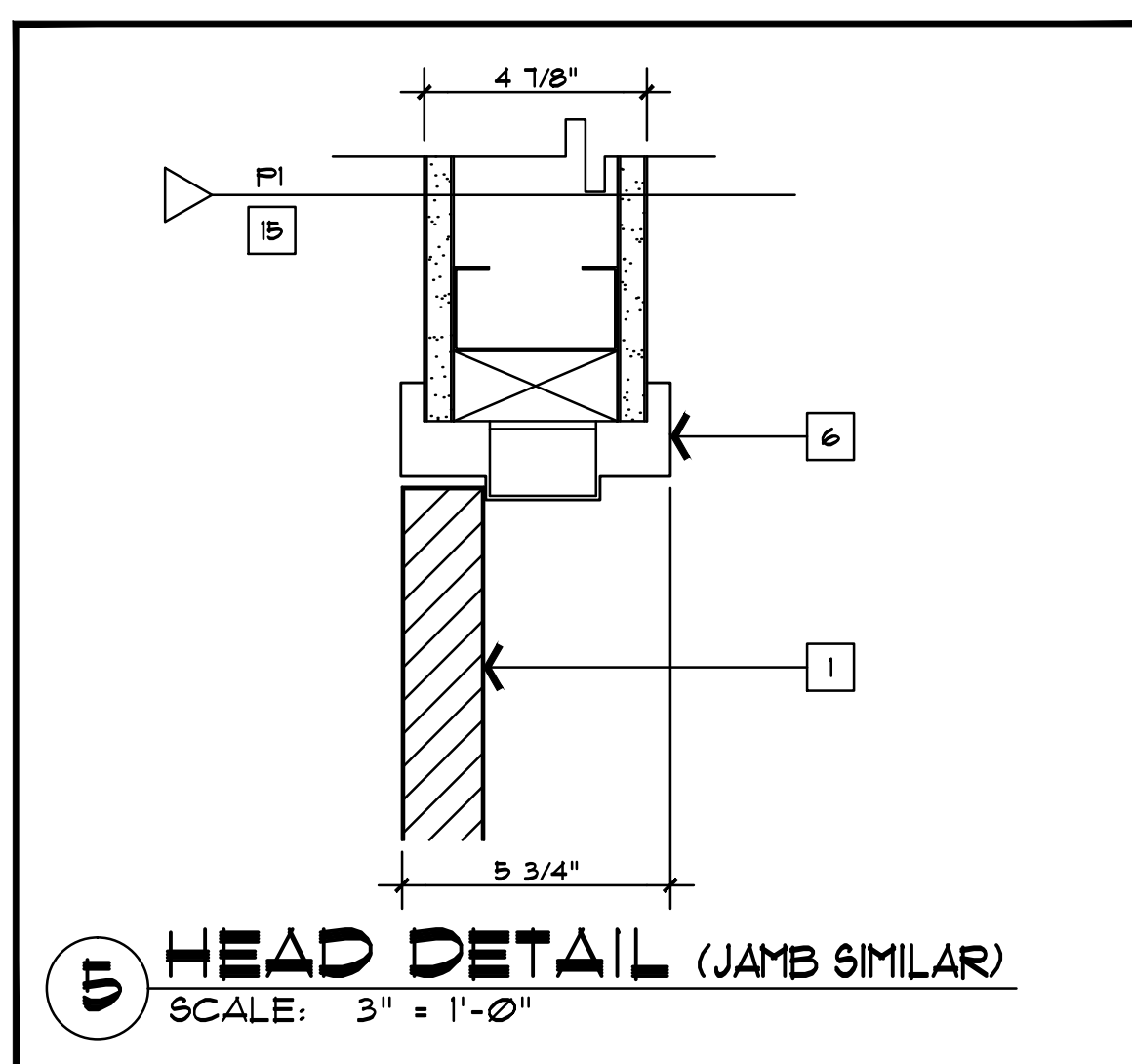
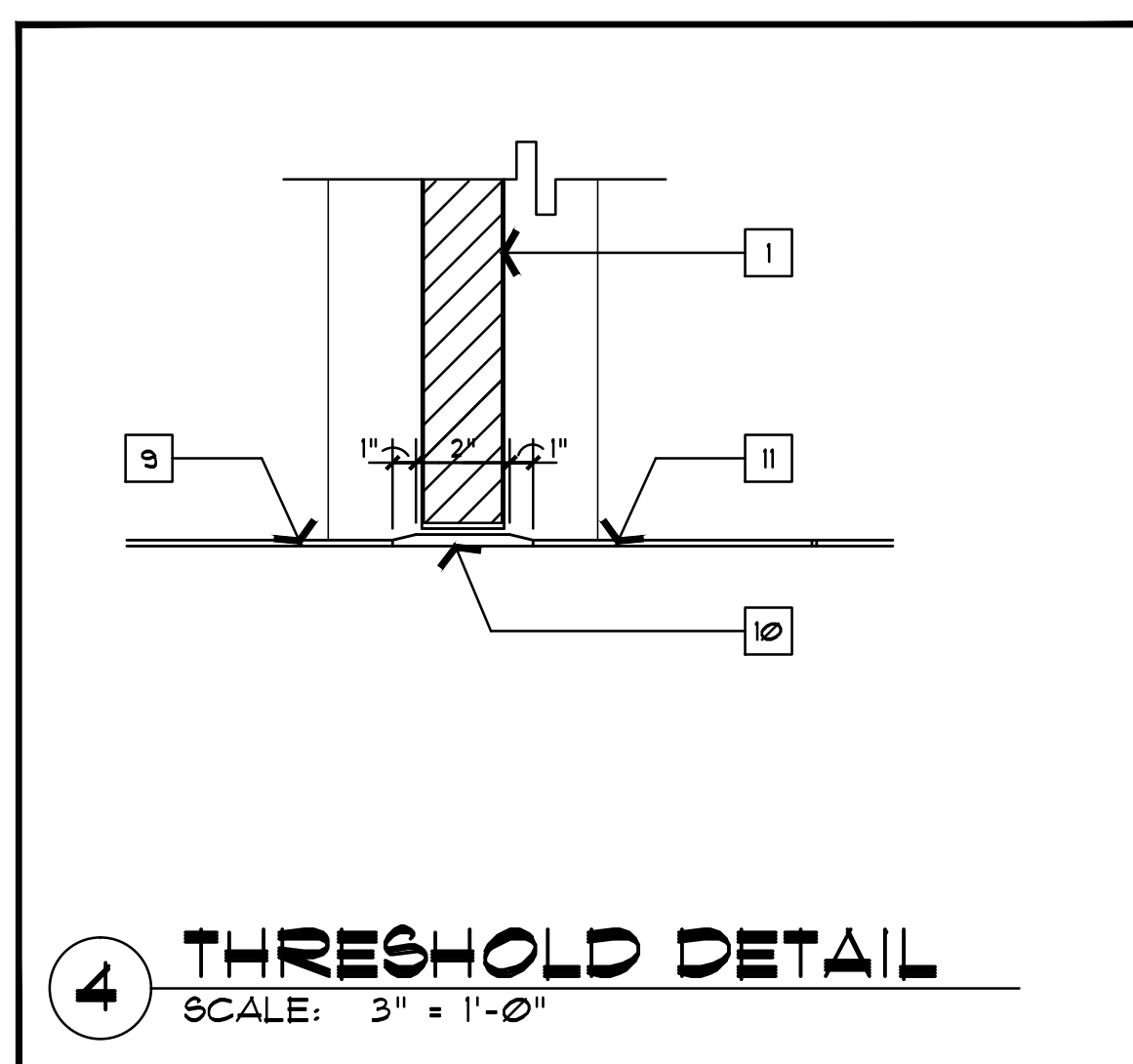
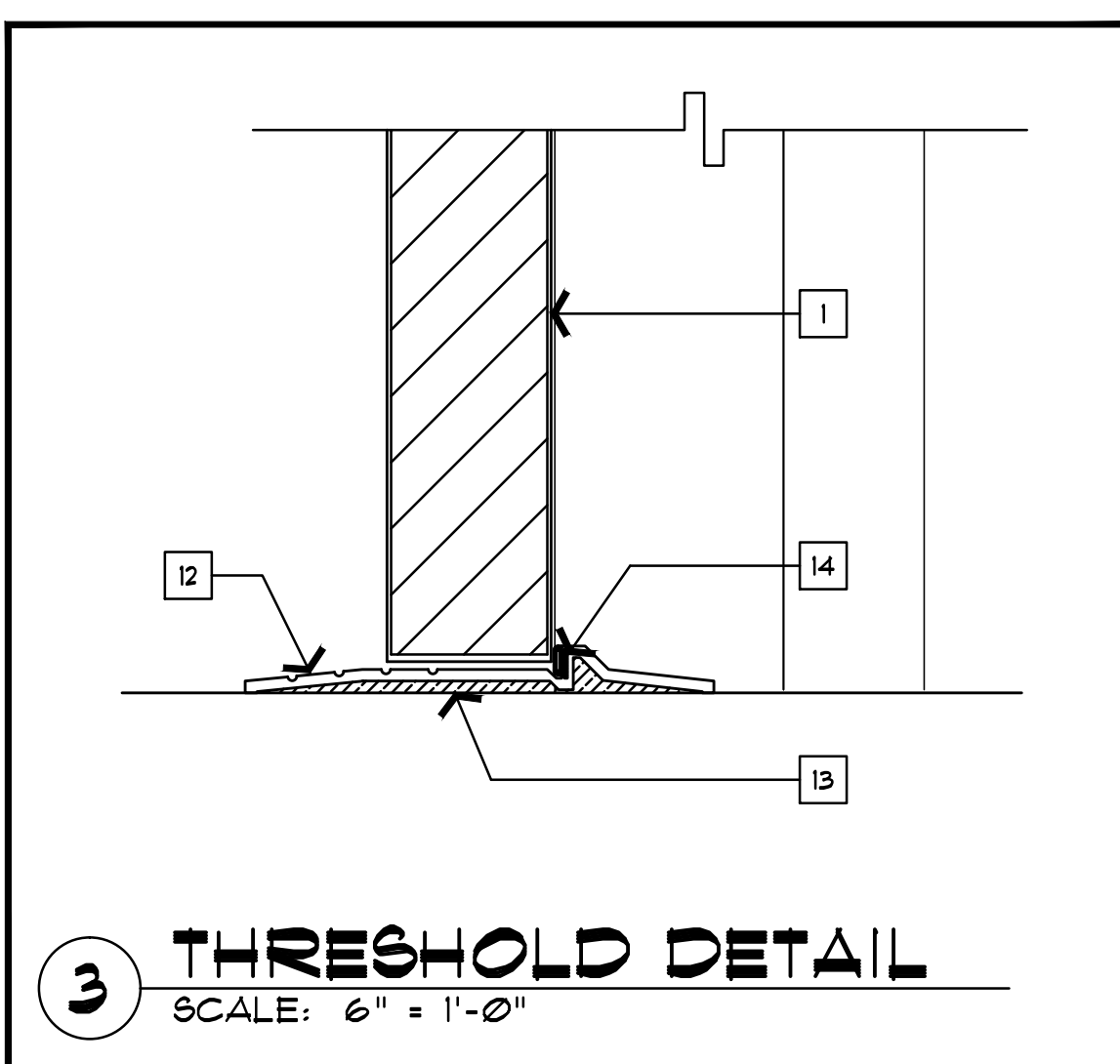
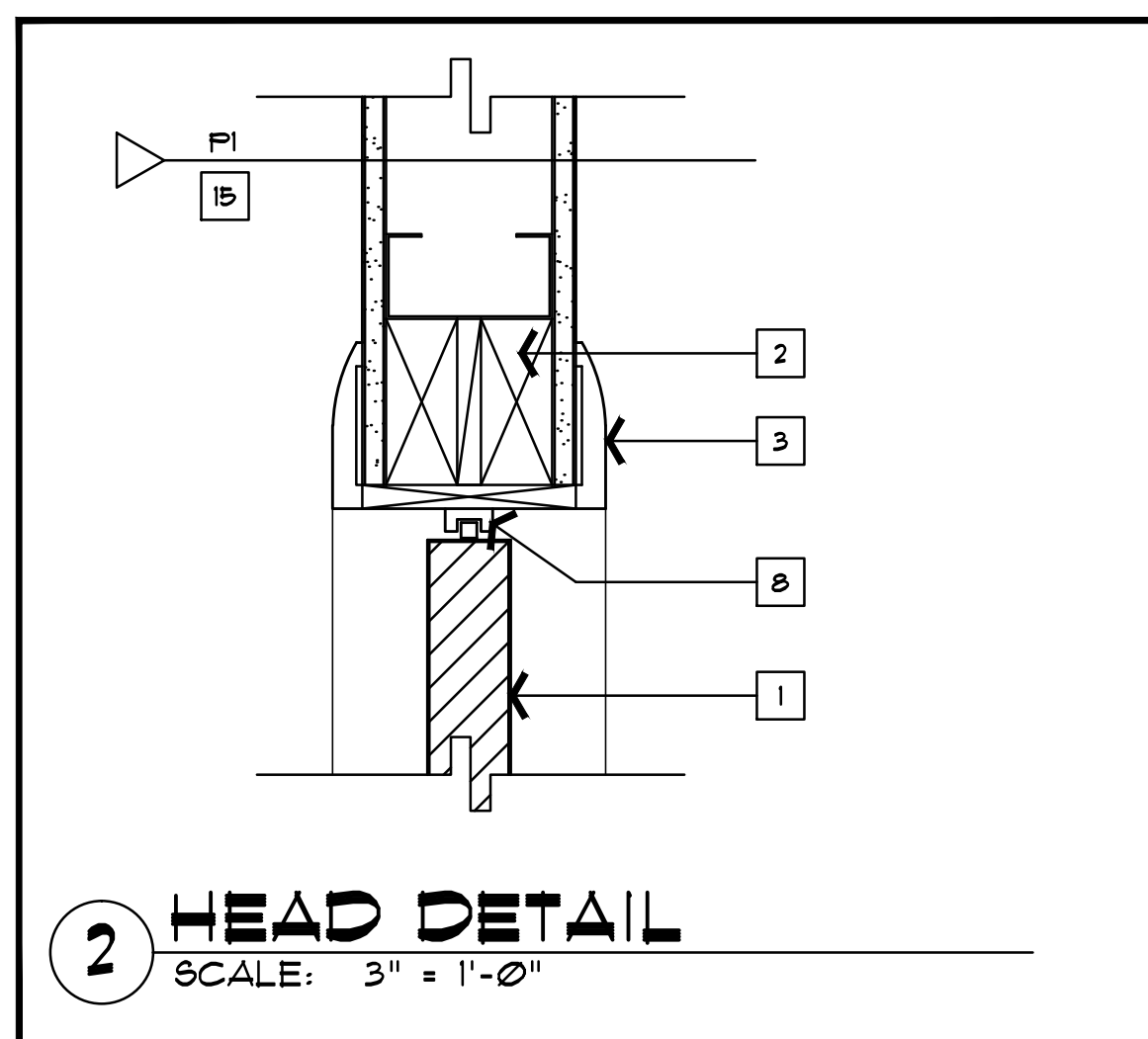
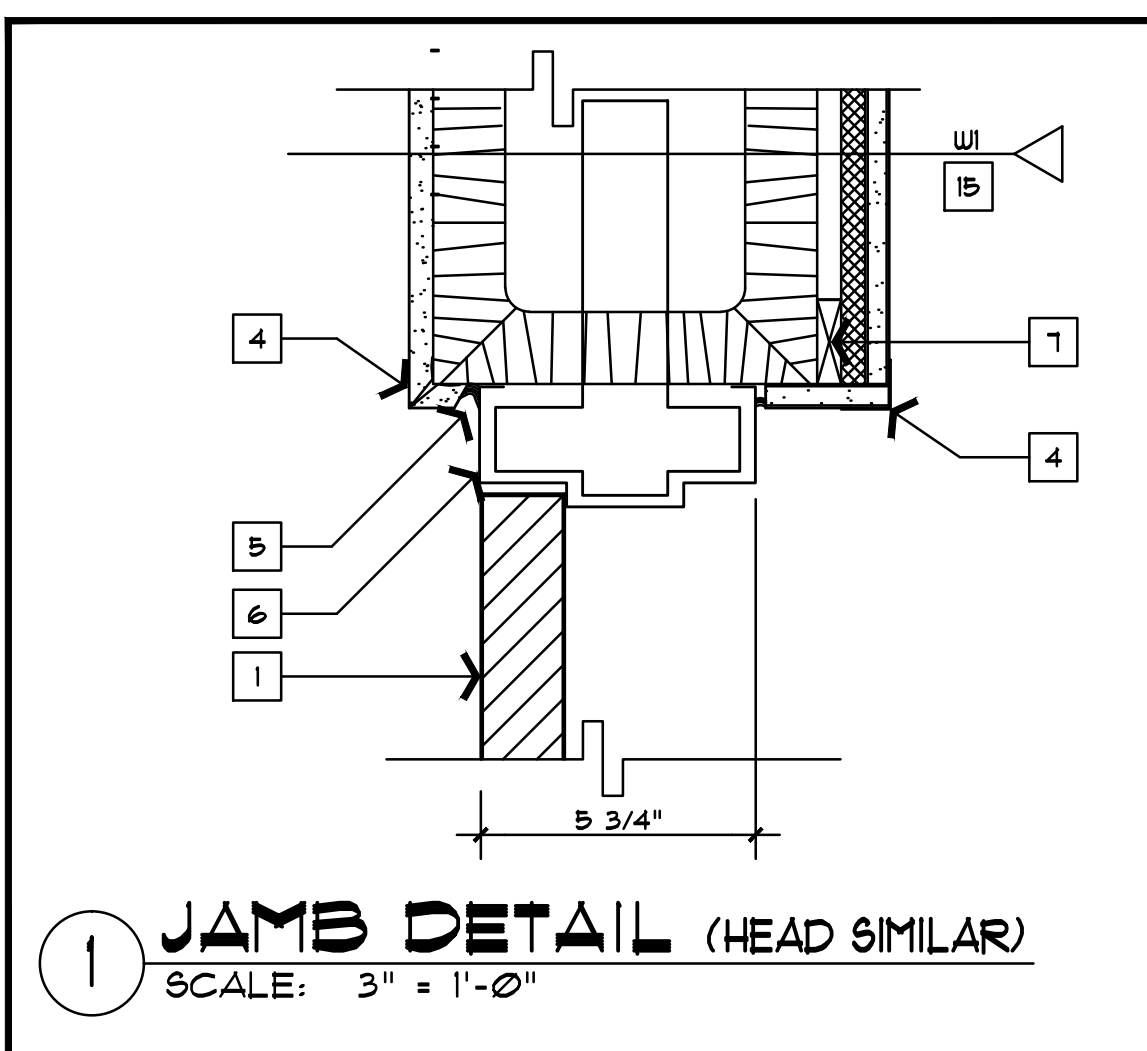
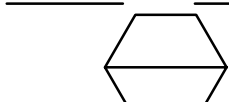
**SCALE**

**SCALE: VARIES**

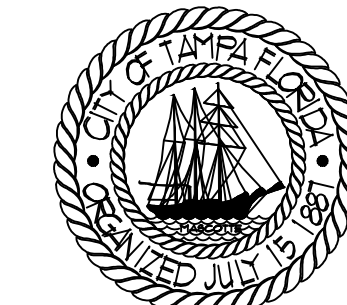
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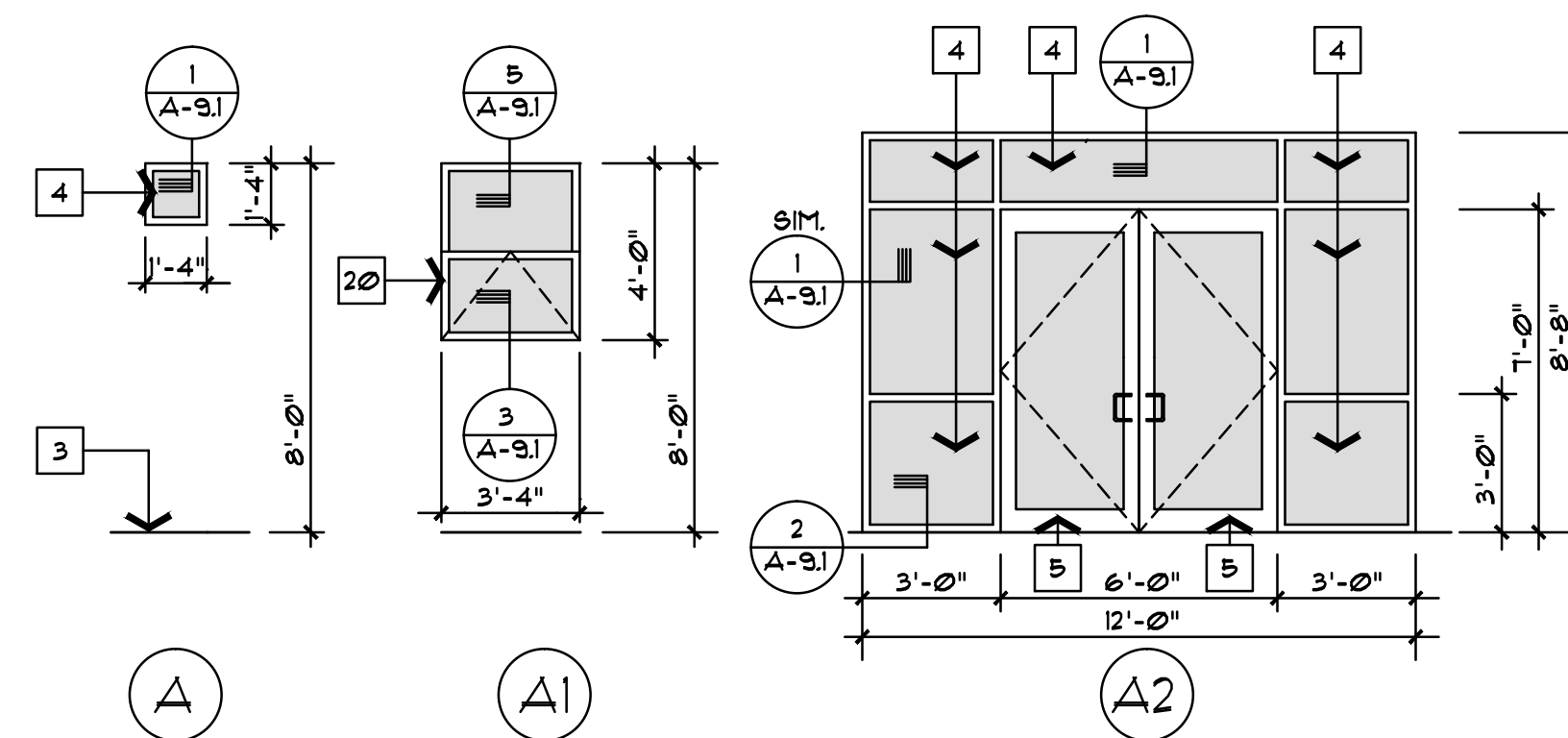
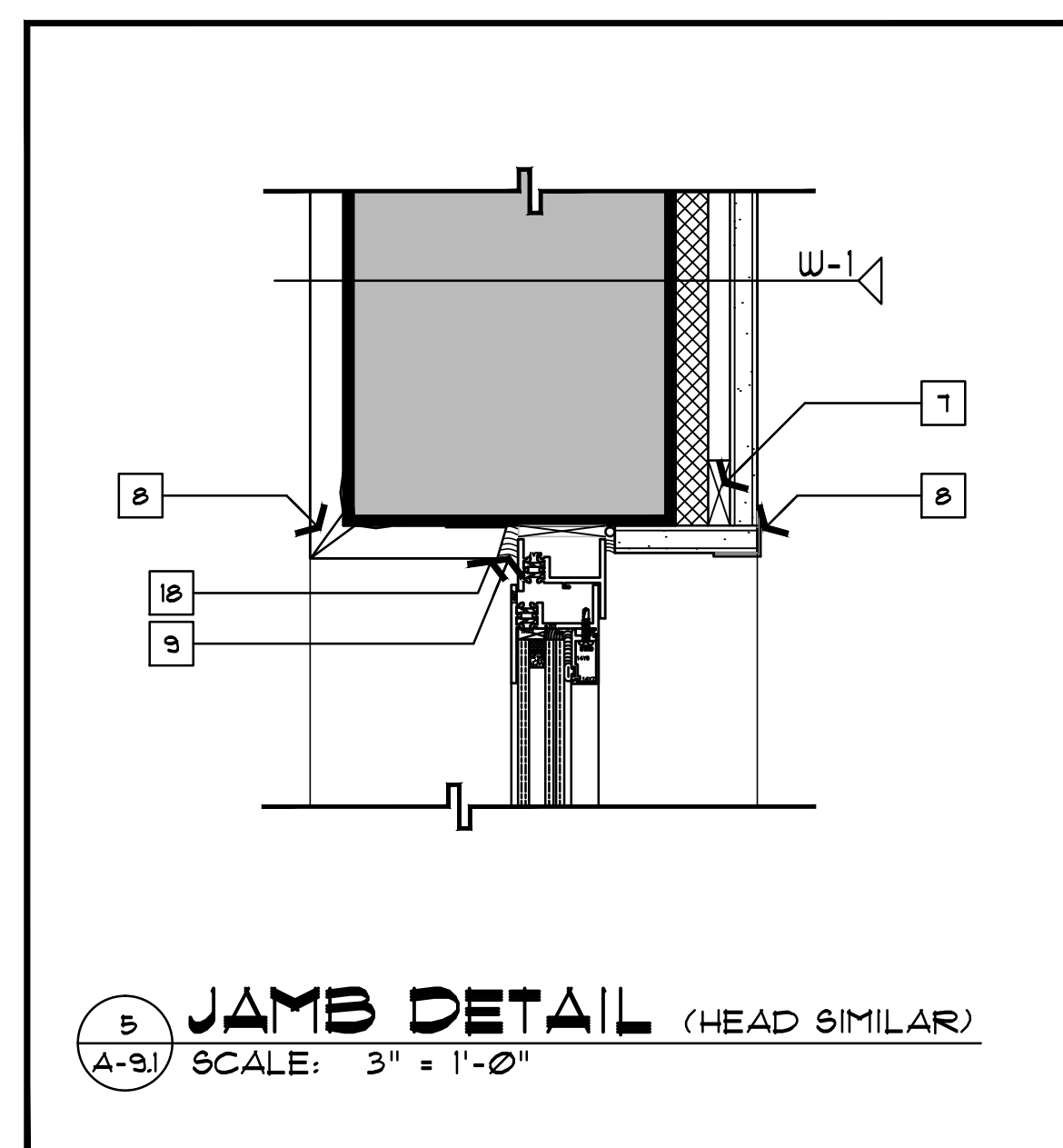
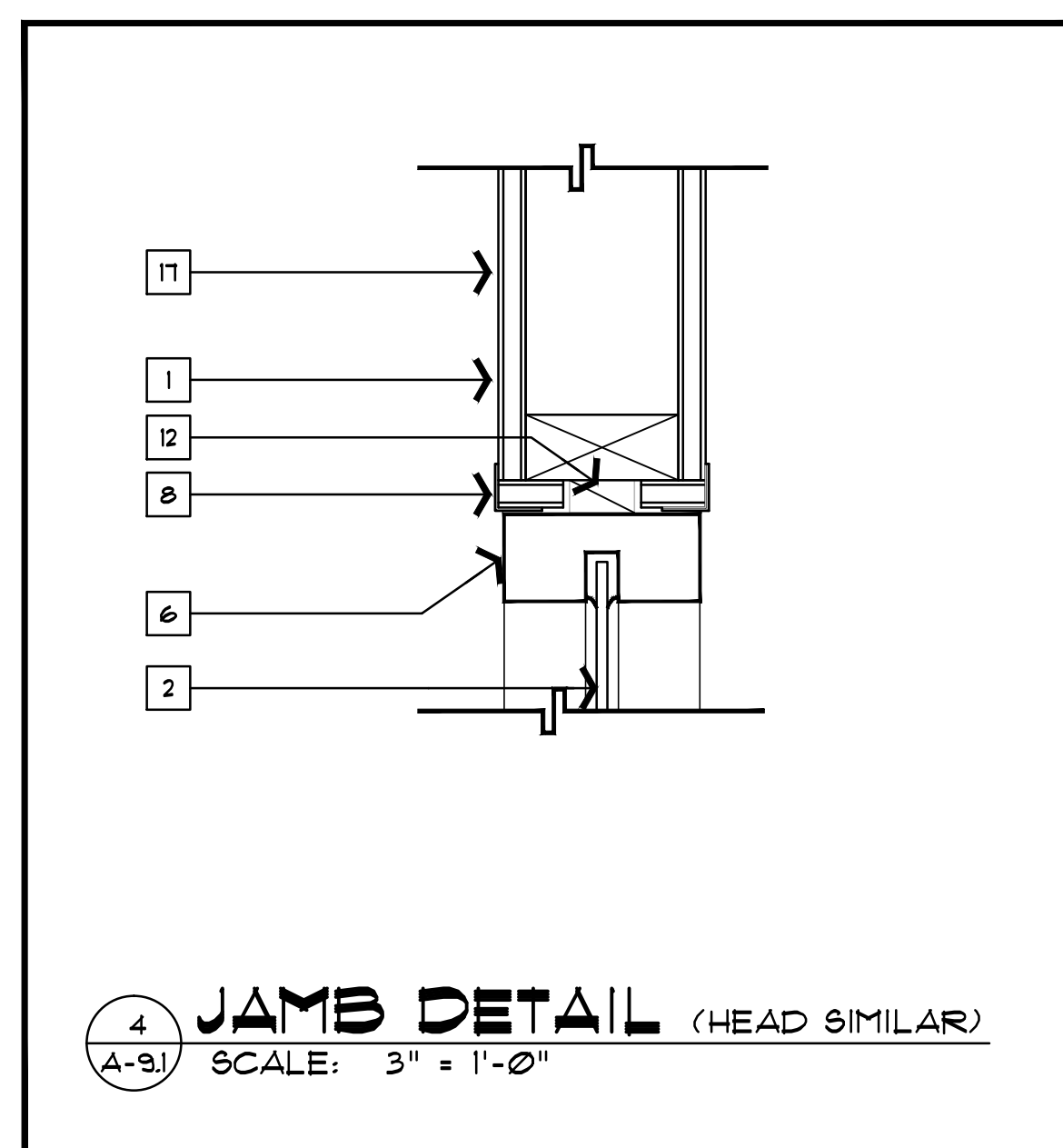
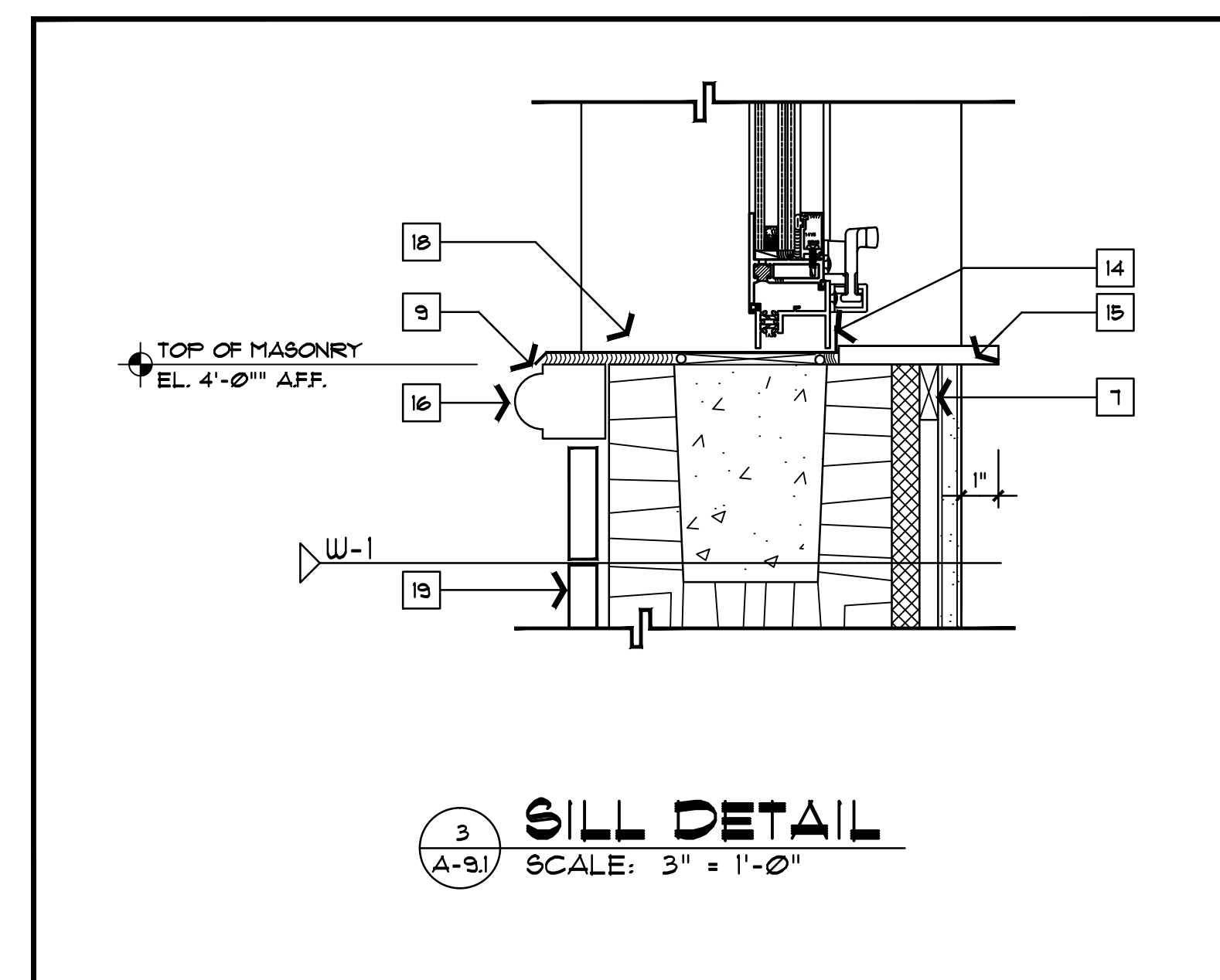
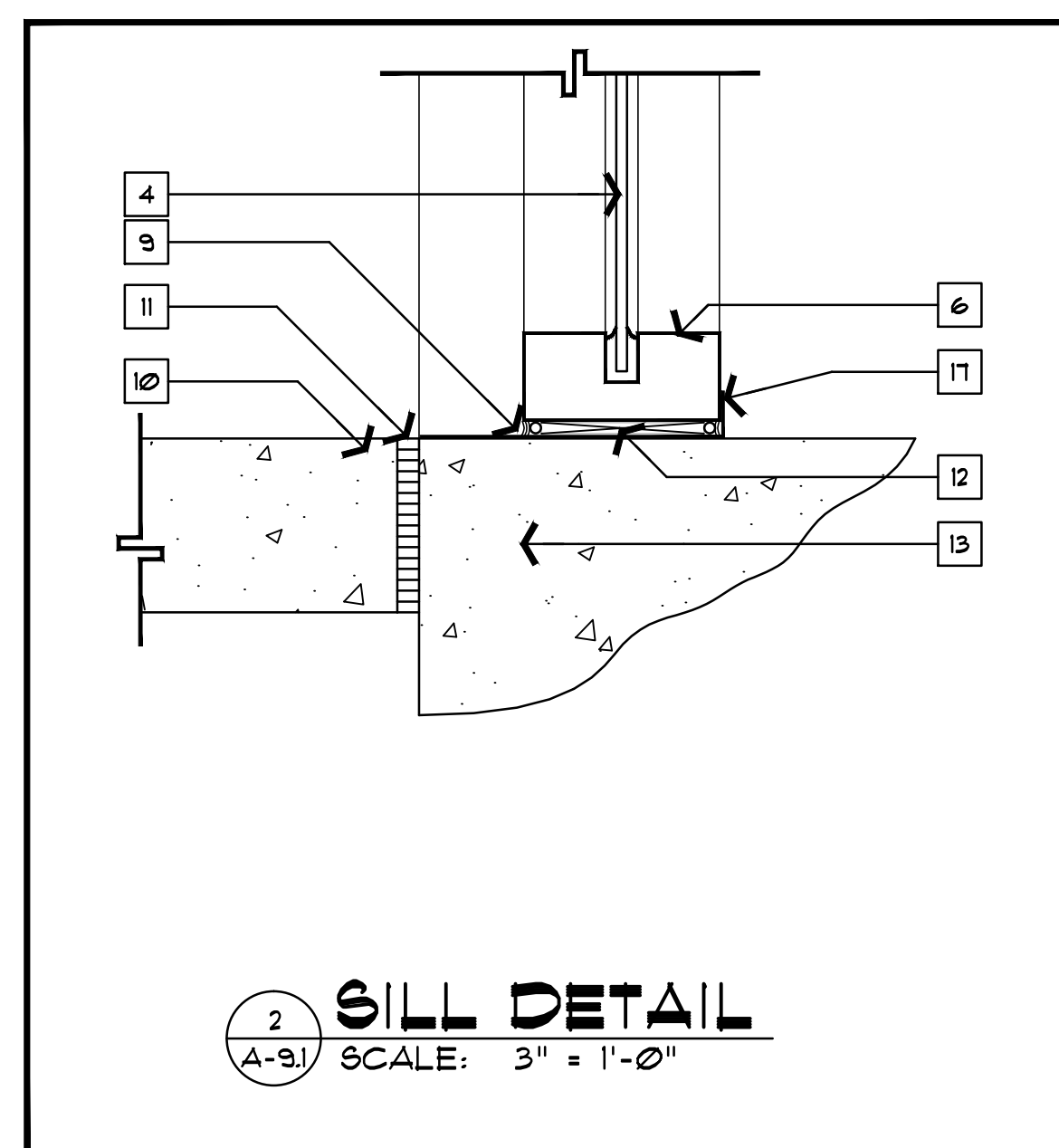
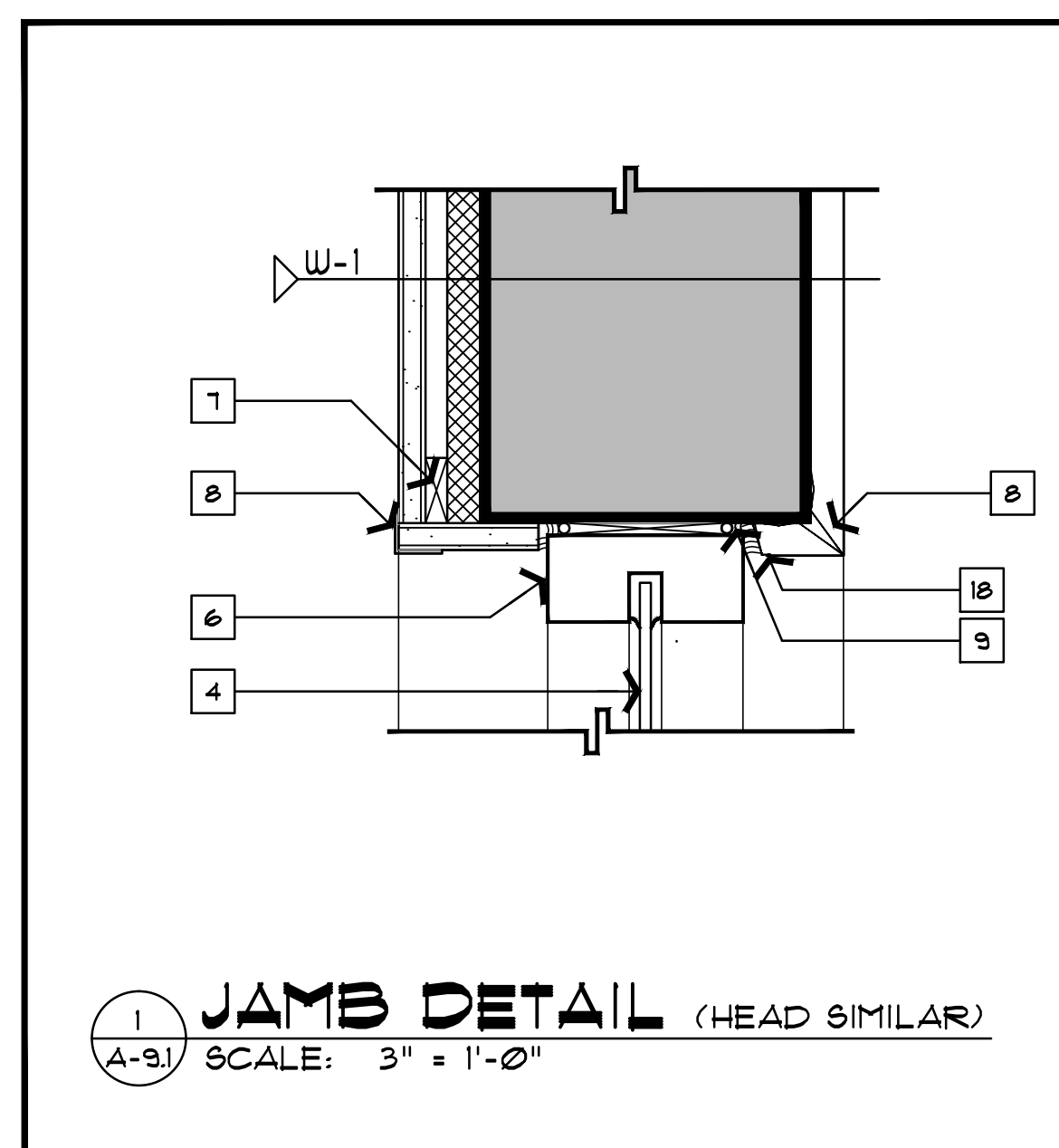
**A-9.1**

**X OF X**

**GENERAL NOTES**

**KEY NOTES**

- 1 5/8" GUB ON 3-5/8" METAL STUDS
- 2 1/4" CLEAR TEMPERED GLASS
- 3 FINISH FLOOR
- 4 9/16" TINTED TEMPERED GLASS
- 5 MEDIUM STYLE STOREFRONT DOOR WITH 9/16" TEMPERED GLASS
- 6 ALUMINUM STOREFRONT
- 7 P. T. 1 x 2 BLOCKING AT ALL CORNERS. TYP.
- 8 CORNER BEAD
- 9 CAULK CONTINUOUS
- 10 CONC. SIDEWALK - SEE PLAN FOR LOCATION AND PATTERN
- 11 EXPANSION JOINT, FILL WITH EXPANSION JOINT MATERIAL
- 12 SHIM ( AS REQUIRED )
- 13 NOT USED
- 14 ALUMINUM BREAKMETAL FLASHING TO MATCH STOREFRONT
- 15 MARBLE STOOL
- 16 2" x 2" PRECAST WAINSCOT W/ BULLNOSE FACE SET IN FULL BED OF MORTAR
- 17 SEE PLAN FOR PARTITION TYPE
- 18 "J" STOP
- 19 THIN SET STONE VENEER
- 20 FIXED TOP PROJECTED BOTTOM ALUM. WINDOW WITH 9/16" GLASS



**STOREFRONT / WINDOW TYPES**

**STOREFRONT**

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**DPW FILE NUMBER**

**DPW NUMBER**  
**FD0116**

**ISSUE DATE**  
**JANUARY 2012**

**DRAWN BY**  
**KINSEY TILLMAN**

**REVISIONS**

- △
- △
- △

**SEAL**

**SCALE: VARIES**

**SHEET NUMBER**

**A-10.1**

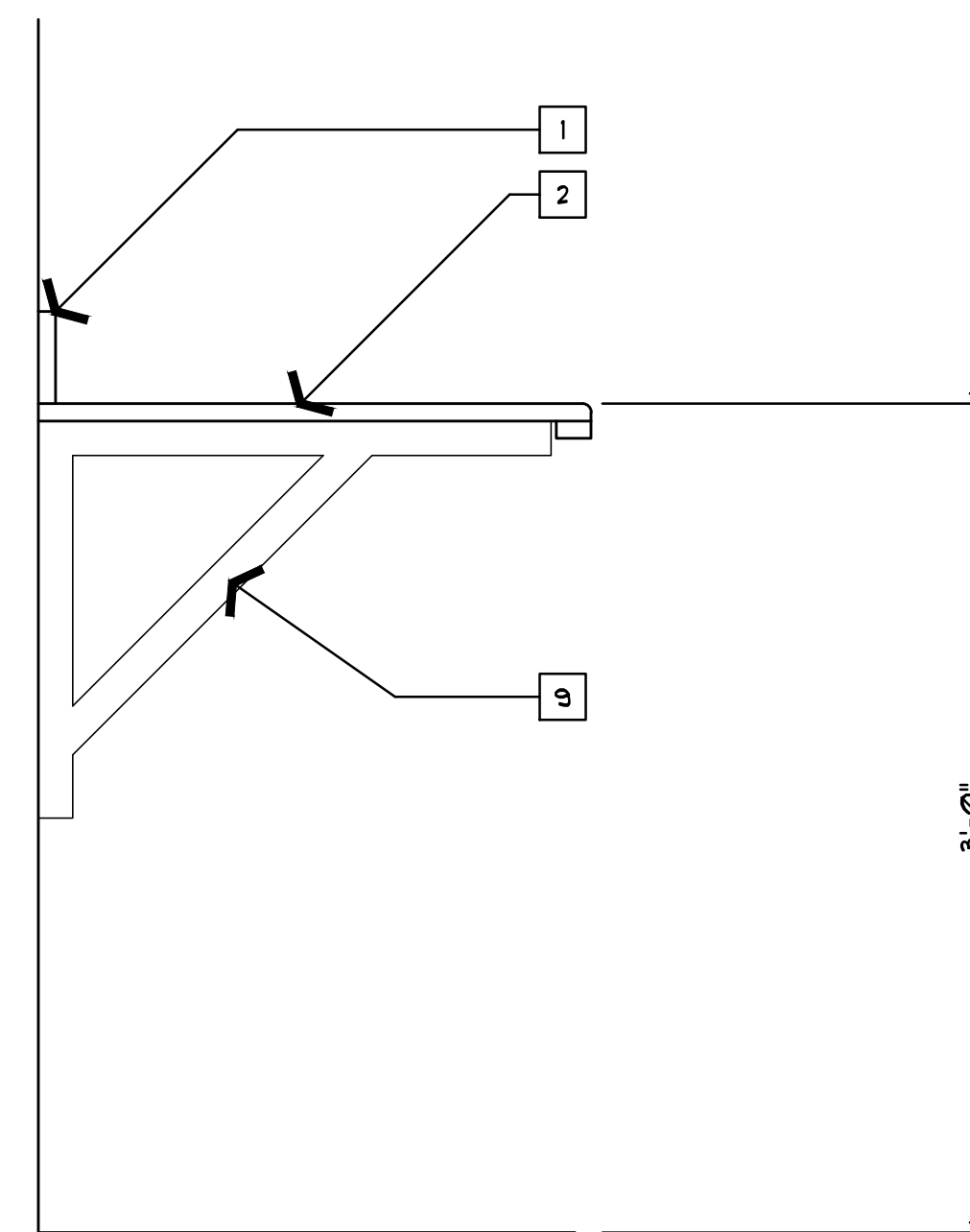
**X OF X**

**GENERAL NOTES**

1. SEE ENLARGED FLOOR PLAN SHEET A-11 FOR TOILET ACCESSORIES

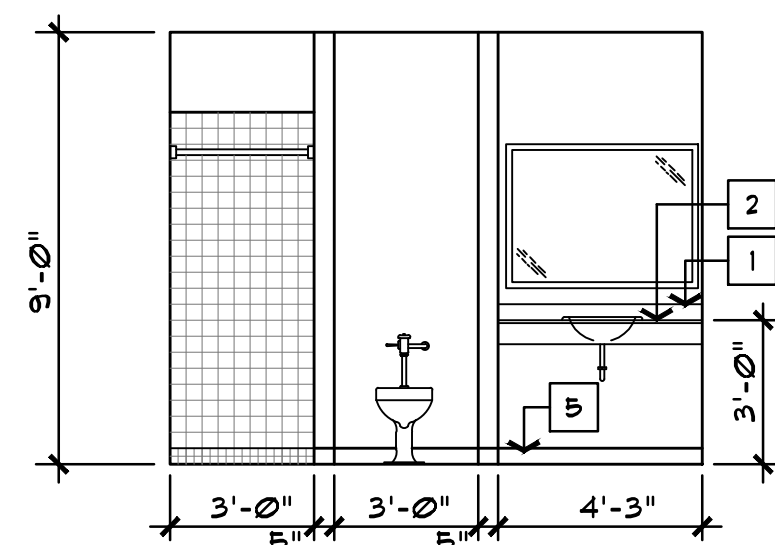
**KEY NOTES**

- 1 4" x 3/4" SOLID SURFACE BACKSPLASH.
- 2 3/4" SOLID SURFACE COUNTERTOP.
- 3 4 x 4 CERAMIC WALL TILE, FLOOR TO CEILING
- 4 TOILET PARTITIONS DASHED FOR CLARITY
- 5 CERAMIC TILE BASE
- 6 6' WIDE EXHAUST HOOD, SEE MECHANICAL
- 7 RANGE / OVEN WITH GRIDDLE
- 8 REFRIGERATORS
- 9 HEAVY DUTY SUPPORT BRACKETS EQUALLY SPACED. PROVIDE 2 x 4 ON END OF COUNTERS FOR SUPPORT.
- 10 COMMERCIAL HEAVY DUTY WASHING MACHINE
- 11 HEAVY DUTY DRYER
- 12 STAINLESS STEEL THREE SIDED COVER FOR DISHWASHER (GE FDU1500PSS) PROVIDE STEEL ANGLES AND BRACKETS FOR ANCHORING TO FLOOR. COORDINATE FLOOR MOUNTING REQUIREMENTS OF DISHWASHER AND REQUIRED PLUMBING ACCESS POINTS.
- 13 6' 00" 2 COMPARTMENT SINK
- 14 5' 00" WORK TABLE
- 15 5' 00" SHELF
- 16 2' 00" WORK TABLE, COORDINATE LEGS WITH ICE MACHINE AND DISHWASHER
- 17 FIBERGLASS SINK WITH HANDS FREE CONTROLS
- 18 HAND HELD SHOWER
- 19 PROVIDE 6 HEAVY DUTY SHELVES ON HEAVY DUTY BRACKETS EACH CLOSET AND PANTRY TYPICAL. SHELVES ARE VENTILATED, 12" DEEP WIRE SHELVES SIMILAR TO CLOSETMAID SYSTEM. FOR 3 SMALL PANTRIES, PROVIDE 3 STANDARDS AND 3 BRACKETS EACH SHELF. FOR 2 LARGER CLOSETS, PROVIDE 4 STANDARDS AND 4 BRACKETS EACH SHELF. ALL COMPONENTS SHALL BE PROVIDED BY SAME MANUFACTURER.
- 20 QUARRY TILE BASE
- 21 0.5. DRAWER
- 22 STAINLESS STEEL THREE SIDED COVER FOR ICE MACHINE 15" W x 23-5/8" D x 29" H. PROVIDE STEEL ANGLES AND BRACKETS FOR ANCHORING TO FLOOR. COORDINATE FLOOR MOUNTING REQUIREMENTS OF ICE MACHINE AND REQUIRED PLUMBING ACCESS POINTS.
- 23 1-1/2" THICK x 60" LONG SOLID SURFACE BENCH

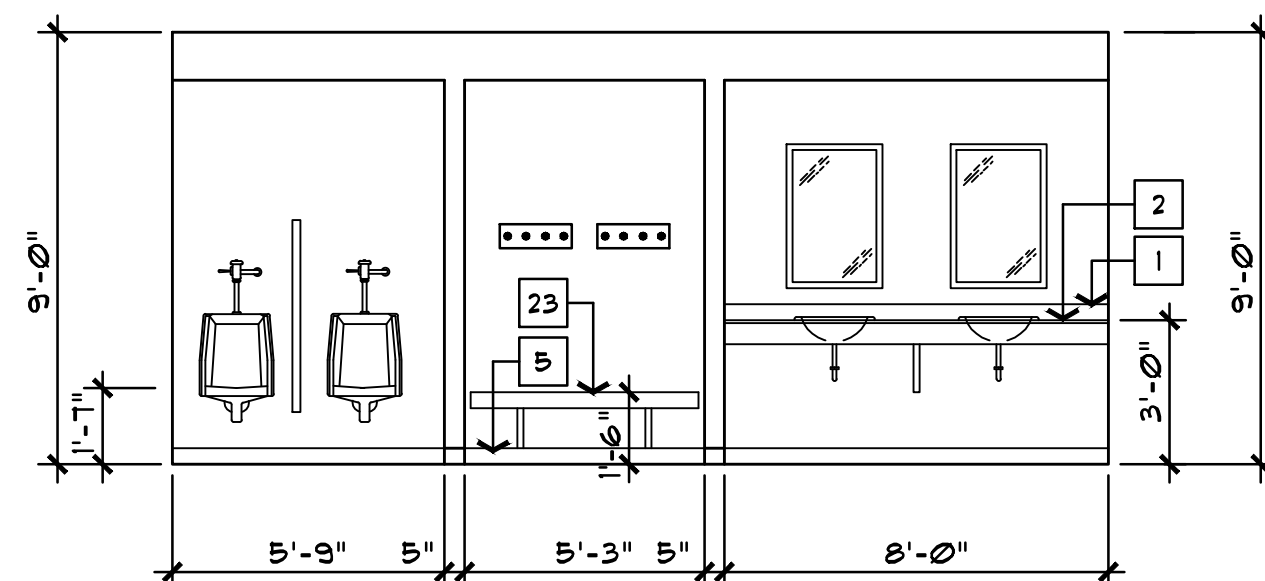


AA  
 A-10.1  
**COUNTER DETAIL**  
 SCALE: 1 1/2" = 1'-0"

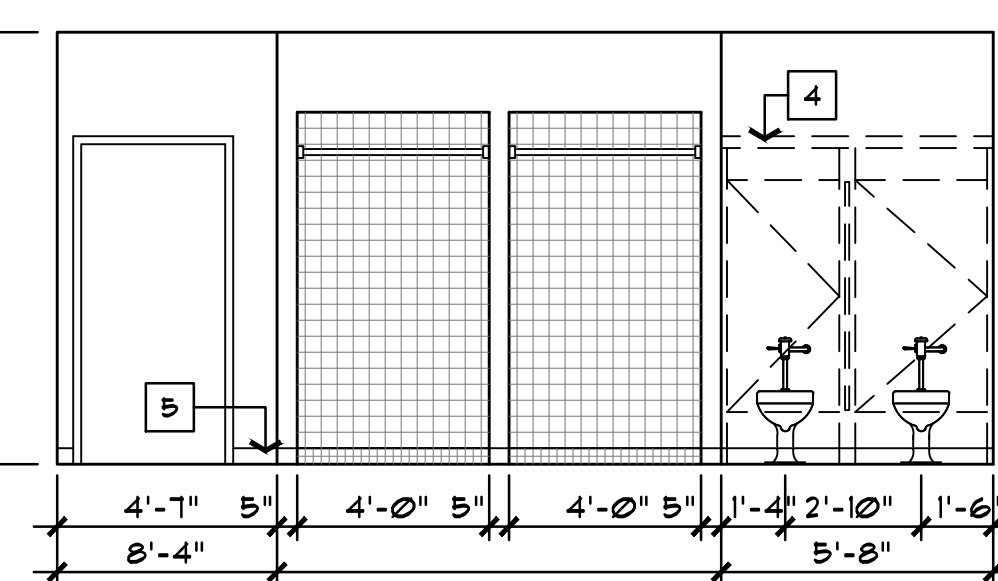
**INTERIOR ELEVATIONS**



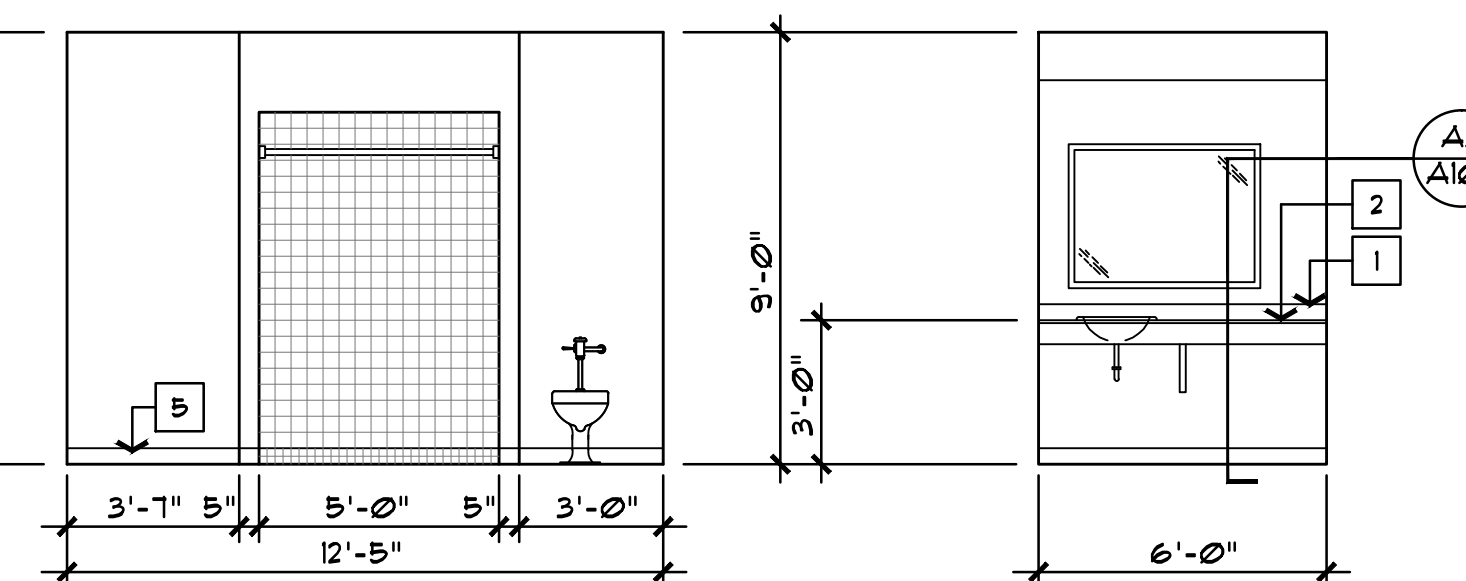
**BATH #18 ELEVATION**  
 SCALE 1/4" = 1'-0"  
 A  
 A-10.1



**RESTROOM #1 ELEVATION**  
 SCALE 1/4" = 1'-0"  
 B  
 A-10.1

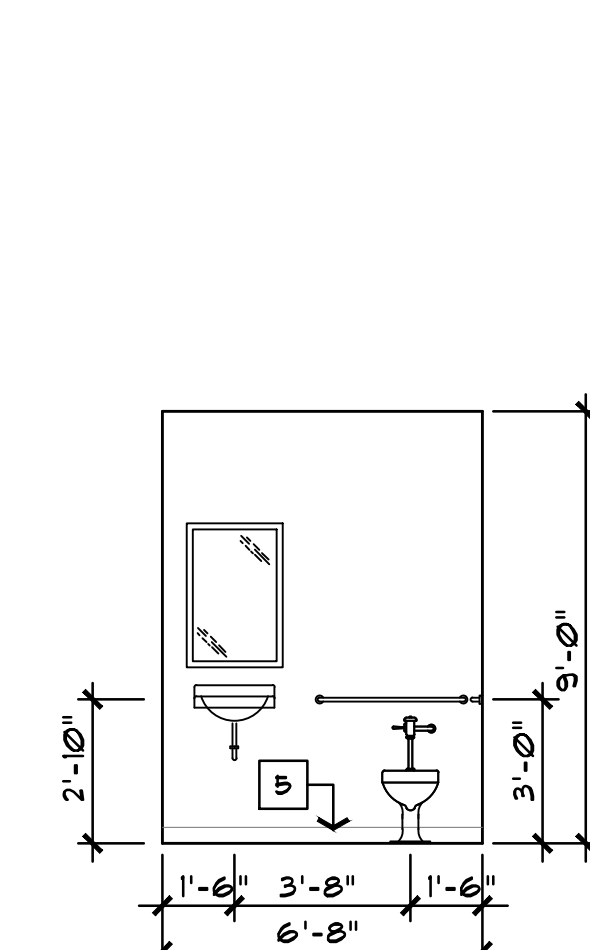


**RESTROOM #1 ELEVATION**  
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 A-10.1

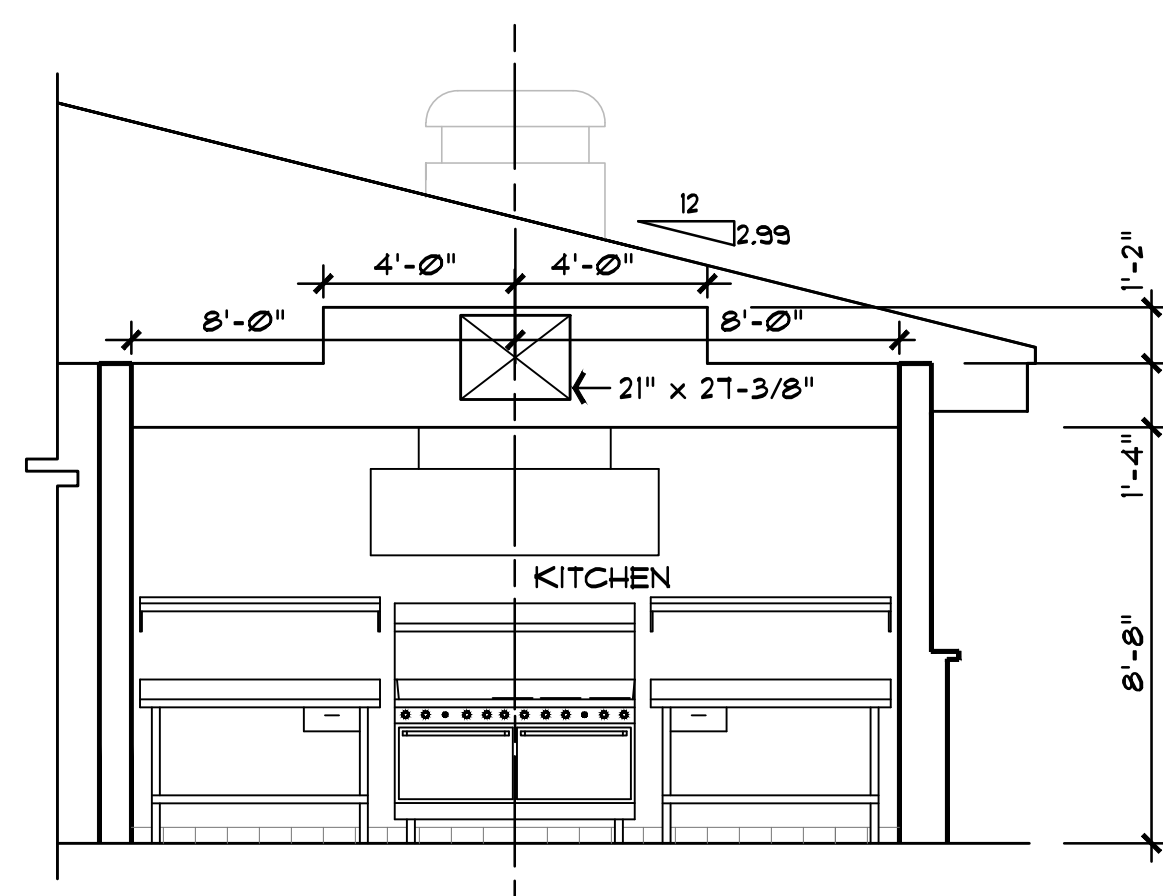


**BATH #16 ELEVATION**  
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 D  
 A-10.1

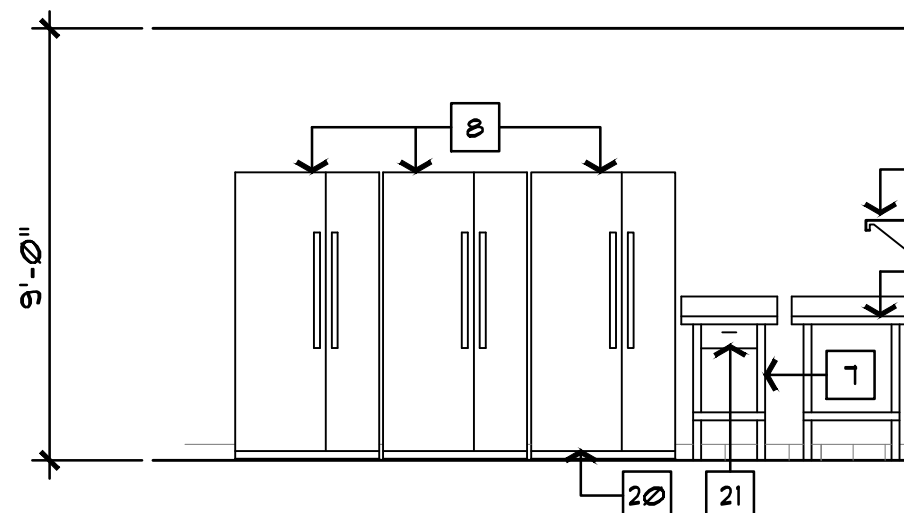
**BATH #16 ELEVATION**  
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 A-10.1



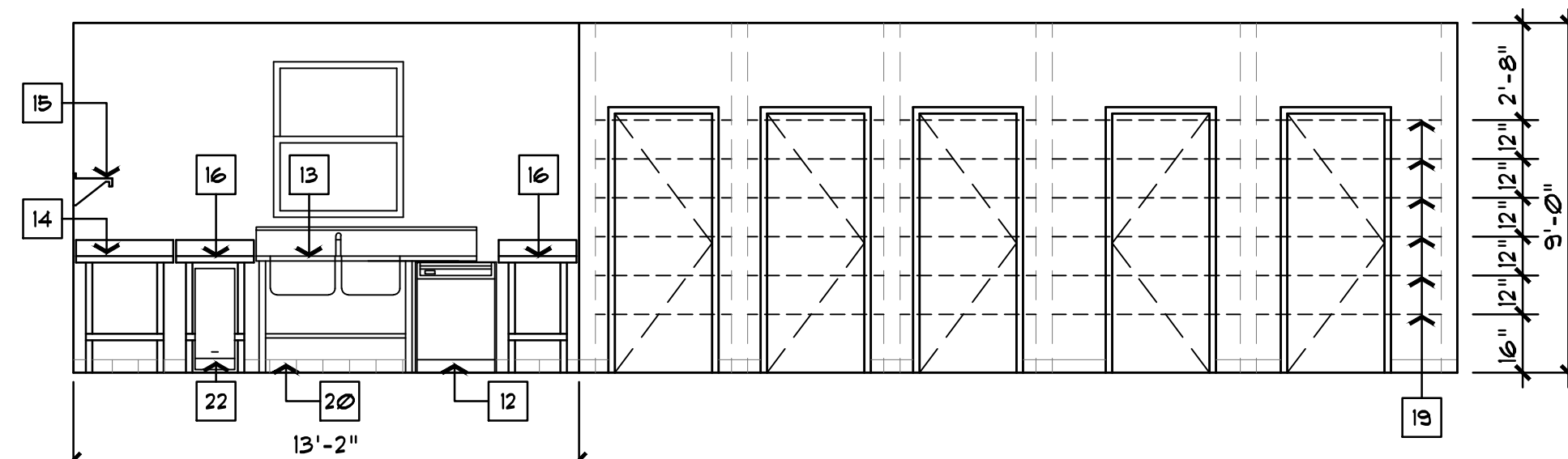
**ADA RESTROOM ELEVATION**  
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 F  
 A-10.1



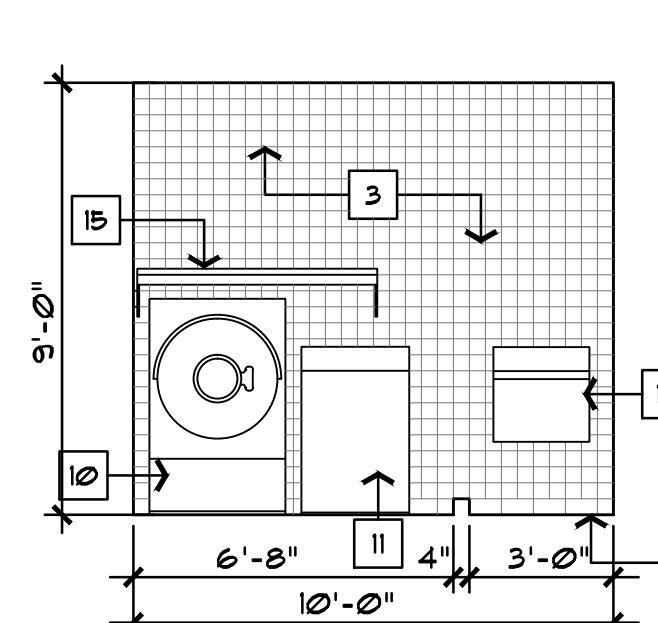
**KITCHEN ELEVATION**  
 SCALE 1/4" = 1'-0"  
 G  
 A-10.1



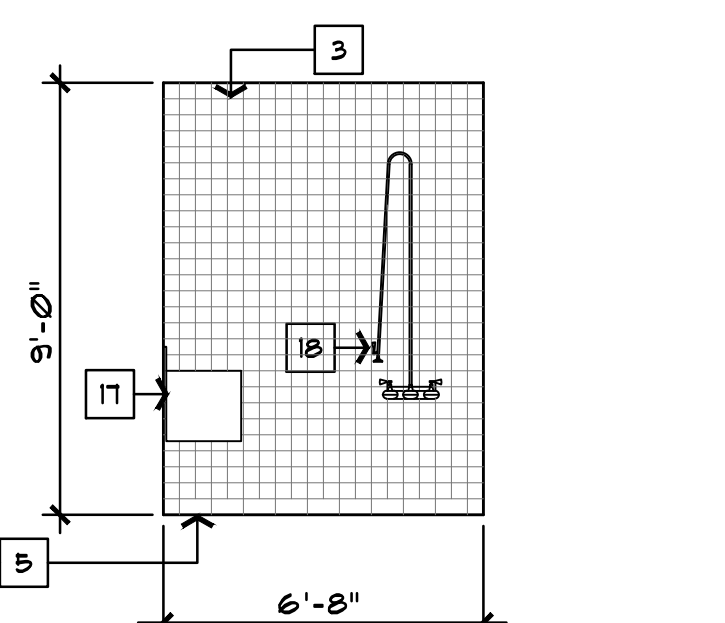
**KITCHEN ELEVATION**  
 SCALE 1/4" = 1'-0"  
 H  
 A-10.1



**KITCHEN ELEVATION**  
 SCALE 1/4" = 1'-0"  
 I  
 A-10.1



**DECON. ELEVATION**  
 SCALE 1/4" = 1'-0"  
 J  
 A-10.1



**DECON. ELEVATION**  
 SCALE 1/4" = 1'-0"  
 K  
 A-10.1



ELECTRICAL SYMBOL LEGEND		
SYMBOL	DESCRIPTION	MOUNTING
	1 X 4 FLUORESCENT FIXTURE LETTER INDICATES TYPE	SEE FIXTURE SCHEDULE
	TRACK AND TRACK HEADS LETTER INDICATES TYPE	SEE FIXTURE SCHEDULE
	2 X 4 FLUORESCENT FIXTURE LETTER INDICATES TYPE	SEE FIXTURE SCHEDULE
	SHADING DENOTES FIXTURE WITH EM BATTERY PACK. "N" DENOTES FIXTURE UNSWITCHED FOR NIGHT LIGHT	SEE FIXTURE SCHEDULE
	FLUORESCENT STRIP FIXTURE LETTER INDICATES TYPE	SEE FIXTURE SCHEDULE
	FLUORESCENT WALL BRACKET FIXTURE LETTER INDICATES TYPE	SEE FIXTURE SCHEDULE
	FLUORESCENT DOWNLIGHT LETTER INDICATES TYPE	SEE FIXTURE SCHEDULE
	EXIT-SHADING DENOTES FACEPLATE LOCATION. LETTER INDICATES TYPE. PROVIDE ARROWS AS REQUIRED.	SEE FIXTURE SCHEDULE
	SINGLE POLE SWITCH (20A-120/277) '3' DENOTES 3-WAY 'D' DENOTES DIMMER	48" AFF OR AS NOTED
	DUPLEX RECEPTACLE, 125V, 20A 'G' DENOTES ISOLATED GROUND	18" AFF OR AS NOTED
	DUPLEX RECEPTACLE, 125V, 20A	18" AFF OR AS NOTED
	DUPLEX RECEPTACLE, 125V, 20A	18" AFF OR AS NOTED
	QUADRUPLEX RECEPTACLE, 125V, 20A	18" AFF OR AS NOTED
	POWER/TELEPHONE POLE	SEE DETAIL OR AS NOTED
	OUTLET BOX OR J-BOX FOR POWER AND DATA SUPPLY TO FURNITURE SYSTEMS	18" AFF OR AS NOTED
	COMBINATION VOICE/DATA OUTLET	18" AFF OR AS NOTED
	DATA OUTLET	18" AFF OR AS NOTED
	T.V. OUTLET	18" AFF OR AS NOTED
	CARD READER	COORDANATE WITH SECURITY INSTALLER
	INTERCOMME CONSOLE	DESK MOUNTED
	INTERCOMME REMOTE STATION	46" AFF WALL MOUNTED
	INTERCOM HORN	96" AFF WALL MOUNTED
	GENERAL CALL BELL	80" AFF
	SURVEILLANCE CAMERA	COORDANATE WITH SECURITY INSTALLER
	PANELBOARD 277/480V	SEE PANEL SCHEDULE
	PANELBOARD 120/208V	SEE PANEL SCHEDULE
	DRY TYPE TRANSFORMER	SIZE AS NOTED
	RACEWAY CONCEALED IN WALL OR ABOVE CEILING	SEE SPECIFICATIONS
	RACEWAY CONCEALED UNDER FLOOR OR BELOW GRADE	SEE SPECIFICATIONS
	HOMERUN TO PANEL. LETTERS INDICATE PANEL, NUMBERS INDICATE CIRCUIT. NOTE: HASH MARKS INDICATES THE NUMBER OF WIRES EXCLUDING THE REQUIRED EQUIPMENT GROUND.	SEE SPECIFICATIONS
	MOTOR, NUMERAL INDICATES HORSEPOWER	AS NOTED
	MOTOR RATED SWITCH WITH OVERLOAD RELAYS AS REQUIRED.	MOUNTED ADJACENT TO EQUIPMENT
	NON-FUSIBLE SAFETY SWITCH-SIZE AS NOTED	SEE SPECIFICATIONS
	FUSIBLE SAFETY SWITCH-SIZE AS NOTED	SEE SPECIFICATIONS
	FIRE ALARM DUCT DETECTOR ('RA' DENOTES RETURN AIR 'SA' DENOTES SUPPLY AIR)	MOUNTED IN HVAC DUCTWORK
	FIRE ALARM OR AIR HANDLER SHUTDOWN RELAY	MOUNTED ADJACENT TO EQUIPMENT
	FIRE ALARM VISUAL SIGNAL	80" AFF OR AS NOTED
	FIRE ALARM MANUAL PULLSTATION	48" AFF OR AS NOTED
	FIRE ALARM AUDIBLE/VISUAL SIGNAL. ADA COMPATIBLE	80" AFF OR AS NOTED
	FIRE ALARM SMOKE DETECTOR	ON CEILING OR AS NOTED
	FIRE ALARM PANEL ('FACP' DENOTES FIRE ALARM CONTROL PANEL, 'FAA' DENOTES ANNUNCIATOR)	60" AFF OR AS NOTED
	FIRE ALARM TAMPER AND FLOW SWITCH	
	FIRE ALARM HEAT DETECTOR	
	REFER TO LIKE NUMBERED NOTES	

**NOTE:**

- ALL MOUNTING HEIGHTS SHOWN ARE TO THE TOP OF THE DEVICE UNLESS NOTED OTHERWISE.
- NOT ALL SYMBOLS APPEAR ON PLANS.

ELECTRICAL GENERAL NOTES:	
1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE FLORIDA BUILDING CODE, NATIONAL ELECTRIC CODE, CITY OF TAMPA STANDARDS, NFPA CODES, AND ALL LOCAL ORDINANCES LATEST EDITIONS.	AS DESIGNED AND REQUIRED AND SHALL REVIEW THEIR OPERATION WITH THE OWNER AND PROVIDE TRAINING OF THE MAINTENANCE PERSONNEL.
2. THE WORK, APPARATUS AND MATERIALS WHICH SHALL BE FURNISHED UNDER THE SPECIFICATIONS AND ACCOMPANYING DRAWINGS SHALL INCLUDE ALL ITEMS SPECIFIED HEREINAFTER AND SHOWN ON THE DRAWINGS. ALL OTHER MATERIALS NECESSARY FOR THE COMPLETE INSTALLATION SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR TO PROVIDE COMPLETE ELECTRICAL SYSTEMS AS INDICATED ON THE DRAWINGS AND AS SPECIFIED HEREIN.	29. THE CONTRACTOR SHALL STRICTLY CONFORM TO THE NEC REQUIREMENTS FOR DE-RATING FOR CONDUCTOR CAPACITY AND CONDUIT FILL.
3. THE CONTRACTOR SHALL EXTEND THE SERVICE FROM THE POINT OF SERVICE ATTACHMENT FURNISHING ALL PROTECTIVE DEVICES, CONDUCTORS, SUPPORTS, RACEWAYS, ETC. TO PROVIDE COMPLETE INTERIOR ELECTRICAL SYSTEMS TO SERVE MOTOR LOADS, LIGHTING LOADS AND MISCELLANEOUS ELECTRICAL LOADS, AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREINAFTER. THE WORK SHALL INCLUDE COMPLETE TESTING OF ALL EQUIPMENT AND WIRING AT THE COMPLETION OF THE WORK AND MAKING ANY MINOR CONNECTION CHANGES OR ADJUSTMENTS NECESSARY FOR THE PROPER FUNCTIONING OF THE SYSTEM AND EQUIPMENT. ALL WORKMANSHIP SHALL BE OF THE HIGHEST QUALITY AND NO SUBSTANDARD WORK WILL BE ACCEPTED.	30. MINIMUM CONDUIT SIZE SHALL BE 3/4" C.
4. CONTRACTOR SHALL PAY FOR ALL FEES FOR INSPECTIONS AND TESTING.	31. THIS CONTRACTOR SHALL PROVIDE AUTOCAD AS-BUILT DRAWINGS (PLOTTED VELLUMS) AND COPIES OF EACH AUTOCAD FILE ON COMPACT DISC (CD) TO OWNER.
5. ALL REQUIRED INSURANCE TO BE PROVIDED FOR PROTECTION AGAINST PUBLIC LIABILITY OF PROPERTY DAMAGE FOR DURATION OF THE WORK.	32. PROVIDE FIRE ALARM SYSTEM IN ACCORDANCE WITH DRAWINGS AND APPLICABLE CODES. PROVIDE CONDUIT AND WIRING IN ACCORDANCE WITH MANUFACTURER'S APPROVED SHOP DRAWINGS, PROVIDE WRITTEN CERTIFICATION FROM MANUFACTURER'S REPRESENTATIVE THAT THE SYSTEM IS FULLY OPERATIONAL AND HAS BEEN CHECKED OUT THOROUGHLY BY A FACTORY TRAINED REPRESENTATIVE. THE CHECK-OUT PROCEDURES SHALL BE AS RECOMMENDED BY THE MANUFACTURER. FORMAL TRAINING OF THE OWNER OR OWNER'S REPRESENTATIVE SHALL BE PERFORMED AND A LETTER CERTIFYING THAT THIS WAS PERFORMED SHALL BE SUBMITTED WITH THE AS-BUILT DRAWINGS. REFER TO FIRE ALARM NOTES ON ELECTRICAL SYSTEM PLAN.
6. ELECTRICAL INSTALLATION TO MEET ALL STANDARD REQUIREMENTS OF THE LOCAL POWER AND TELEPHONE COMPANIES. ELECTRICAL CONTRACTOR SHALL CONTACT LOCAL POWER AND TELEPHONE COMPANY PRIOR TO BID AND START OF CONSTRUCTION.	
7. THE CONTRACTOR SHALL MEET AND COORDINATE WITH THE LOCAL POWER COMPANY AT THE SITE PRIOR TO CONSTRUCTION. AT THAT TIME, THE CONTRACTOR SHALL COORDINATE ALL RELATED WORK WITH THE UTILITY COMPANY'S RESPONSIBILITIES TO MEET THE OWNER'S SCHEDULE.	
8. IN GENERAL, MATERIALS AND APPARATUS SHALL COMPLY WITH ALL APPLICABLE TESTS, RATINGS, SPECIFICATIONS, AND REQUIREMENTS OF THE IEEE AND NEMA AND SHALL BEAR THE APPROVED DEVICE LABEL OF THE UNDERWRITERS' LABORATORIES, INC. OR OTHER TESTING LABORATORY APPROVED BY THE LOCAL AUTHORITY HAVING JURISDICTION.	
9. CONTRACTOR SHALL GUARANTEE ALL WORK FOR A PERIOD OF ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION. CONTRACTOR SHALL RECTIFY ANY DEFECTS DUE TO FAULTY MATERIALS OR WORKMANSHIP AND PAY FOR ANY DAMAGE TO OTHER WORK RESULTING THEREFROM WITHIN SAID PERIOD. THE OWNER WILL GIVE NOTICE OF DEFECTS WITH REASONABLE PROMPTNESS.	
10. BIDDERS ARE TO VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING SITE CONDITIONS AND SATISFY THEMSELVES AS TO THE NATURE AND SCOPE OF WORK. THE SUBMISSION OF A BID WILL BE EVIDENCED THAT SUCH AN EXAMINATION HAS BEEN MADE. LATER CLAIMS FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED, OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD AN EXAMINATION BEEN MADE, WILL NOT BE ALLOWED.	
11. ELECTRICAL CONTRACTOR SHALL BE EXPERIENCED IN PERFORMING AND INSTALLATION OF WORK SIMILAR TO THAT REQUIRED FOR THIS PROJECT.	
12. THE CONTRACTOR SHALL INCLUDE WITHIN THE BID ALL REQUIRED OFF HOUR, OVERTIME, AND NON-BUSINESS HOUR WORK AS REQUIRED TO PERFORM THE WORK.	
13. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES FOR ITEMS IN THEIR SCOPE OF WORK WHICH WOULD REQUIRE ELECTRICAL WORK (DISCONNECTION/RECONNECTION ETC.) AND ARE NOT INDICATED ON THE ELECTRICAL PLANS. ALL SUBCONTRACTORS ARE REQUIRED TO COORDINATE THEIR WORK WITH OTHER TRADES. LACK OF THIS COORDINATION RESULTING IN ADDED COST TO THE CONTRACT WILL BE BORNE BY THE SUBCONTRACTOR.	
14. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS AND SUBMITTALS FOR ELECTRICAL EQUIPMENT SHOWN ON THE PLANS AND SPECIFICATIONS FOR THE ENGINEER'S APPROVAL. THE ENGINEER MAY REQUIRE THE CONTRACTOR TO REDO ANY WORK, WHICH WAS NOT APPROVED, OR THE ENGINEER MAY REQUIRE A CREDIT TO THE OWNER, PROVIDE A SET OF AS BUILTS AFTER THE JOB IS COMPLETED. THIS SET SHALL BE CONTINUOUSLY UPDATED DURING CONSTRUCTION.	
15. PROVIDE IDENTIFICATION FOR ALL LIGHT FIXTURES AND ALL ELECTRICAL COVER PLATES WITH PERMANENT MARKER ON A SELF-ADHERING TAG INDICATING PANEL AND CIRCUIT NUMBER. TYPICAL FOR ALL LIGHTING AND POWER DEVICES.	
16. ALL WIRING IN CEILING SPACE OR IN AIR HANDLING PLENUMS NOT IN CONDUIT SHALL BE UL LISTED AS SUITABLE FOR PLENUM USE.	
17. REFER TO RISER DIAGRAM FOR FEEDER SIZES FOR PANELBOARDS.	
18. OVER CURRENT PROTECTION, WIRE SIZE, AND NUMBER OF CONNECTION POINTS FOR MECHANICAL HVAC EQUIPMENT IS FOR ITEMS AS SPECIFIED. COORDINATE WITH MECHANICAL CONTRACTOR AND MAKE NECESSARY CHANGES PRIOR TO INSTALLATION FOR ACTUAL EQUIPMENT FURNISHED AT NO COST TO OWNER. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF MECHANICAL EQUIPMENT. REFER TO HVAC/ELECTRICAL SCHEDULE FOR WIRING INFORMATION.	
19. PROVIDE ARC FLASH LABELING FOR ALL ELECTRICAL EQUIPMENT (SWITCHBOARD, PANELBOARDS, DISCONNECT SWITCHES, METER SOCKET ENCLOSURES, AND MOTOR CONTROL CENTER) PER NFPA 70E.	
20. ALL JUNCTION BOXES AND COVER PLATES SHALL BE PAINTED AND LABELED.	
21. ALL RECEPTACLES WITHIN (6) FEET OF PLUMBING FIXTURES SHALL BE PROVIDED WITH 5 MILLIAMP GROUND FAULT INTERRUPTERS.	
22. EDGE OF LIGHT SWITCH WALL PLATE SHALL BE NOT MORE THAN 4" AWAY FROM METAL/WOOD DOOR FRAME. TYPICAL FOR SINGLE OR MULTIPLE WALL SWITCHES.	
23. CONFIRM MOUNTING HEIGHTS AND COORDINATE LOCATION OF ALL OUTLETS, SWITCHES, AND OTHER DEVICES WITH OWNER PRIOR TO ROUGH-IN.	
24. PROVIDE SEAL FOR PENETRATION OF FIRE RATED WALLS/CEILINGS BY CONDUIT.	
25. BACK TO BACK RECEPTACLES IN ALL ONE HOUR FIRE RATED WALLS SHALL BE LOCATED A MINIMUM OF 24" ON CENTER.	
26. BRANCH CIRCUIT CONDUCTORS SHALL NOT BE SMALLER THAN NO. 12 AND WHERE BRANCH CIRCUIT CONDUCTOR RUNS FROM SOURCE (PANEL) TO THE LAST DEVICE ON THE CIRCUIT EXCEEDS 75 FT. IN LENGTH, THE CONDUCTORS SHALL BE NO. 10 MINIMUM AND FOR THE ENTIRE LENGTH OF THE CIRCUIT. FOR RUNS OVER 150 FT. IN LENGTH THE CONDUCTOR SHALL BE NO. 8 MINIMUM AND FOR THE ENTIRE LENGTH OF THE CIRCUIT. THE ABOVE APPLIES TO 120 VOLT CIRCUITS ONLY.	
27. REFER TO ELECTRICAL SPECIFICATIONS PROVIDED IN BOOK FORMAT - SECTION 16.	
28. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL INSURE THAT ALL SYSTEMS OPERATE	

ABBREVIATIONS:	
AFF - ABOVE FINISHED FLOOR	HVAC - HEATING, VENTILATING, AIR CONDITIONING
AHU - AIR HANDLING UNIT	JB - JUNCTION BOX
BFG - BELOW FINISHED GRADE	LRA - LOCKED ROTOR AMPERES
C - CONDUIT	MCB - MAIN CIRCUIT BREAKER
CW - COOL WHITE	MLO - MAIN LUGS ONLY
DACP - DOOR ALARM CONTROL PANEL	N - NEUTRAL
DN - DOWN	NL - NIGHT LIGHT
EF - EXHAUST FAN	OB - OUTLET BOX
EG - EQUIPMENT GROUND	PB - PULL BOX, PUSH-BUTTON
ENCL - ENCLOSURE	PS - PAY STATION
EWC - ELECTRIC WATER COOLER	SF - SUPPLY FAN
EWH - ELECTRIC WATER HEATER	SPEC - SPECIFICATIONS
WX - EXPLOSION PROOF	TL - TWISTLOCK
FCU - FAN COIL UNIT	TTB - TELEPHONE TERMINAL BOARD
FHP - FRACTIONAL HORSE POWER	TVTB - TELEVISION TERMINAL BOARD
FLA - FULL LOAD AMPERES	UNO - UNLESS NOTED OTHERWISE
G - GROUND	VERT - VERTICAL
GFI - GROUND FAULT INTERRUPTER	WM - WATT MISER
HID - HIGH INTENSITY DISCHARGE	WP - WEATHERPROOF
HORIZ - HORIZONTAL	WW - WARM WHITE
IG - ISOLATED GROUND	XFMR - TRANSFORMER
LW - LIGHT WHITE	
HP - HORSEPOWER, HEAT PUMP	

**NATIONAL ELECTRIC CODE NOTES:**

ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF NFPA 70 - 2008 NATIONAL ELECTRIC CODE

**FIRE ALARM GENERAL NOTES:**

- FIRE ALARM WORK SHALL BE AWARDED TO ELECTRICAL/FIRE ALARM CONTRACTOR.
- THE FIRE ALARM SYSTEM SHALL COMPLY WITH NFPA-101; NFPA-72 AND NFPA-70.
- ALL FIRE ALARM WORK SHALL BE DONE BY A LICENSED FIRE ALARM CONTRACTOR WITH SEPARATE PLANS.

**ELECTRICAL SUBMITTAL NOTES:**

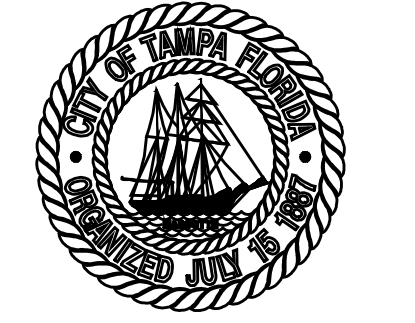
SUBMIT ALL ELECTRICAL AND FIRE ALARM SYSTEMS SUBMITTALS AT ONE (1) TIME IN ONE (1) INTEGRAL GROUP. PIECE-BY-PIECE SUBMISSION OF INDIVIDUAL ITEMS WILL NOT BE ACCEPTABLE. ENGINEER MAY CHECK CONTENTS OF EACH SUBMITTAL SET UPON INITIAL DELIVERY; IF NOT COMPLETE, AS SET FORTH HEREIN, SUBMITTAL SETS MAY BE RETURNED TO CONTRACTOR WITHOUT REVIEW AND APPROVAL AND WILL NOT BE ACCEPTED UNTIL MADE COMPLETE. SHOP DRAWINGS WILL BE REVIEWED MAXIMUM TWICE AS PART OF THIS CONTRACT. ADDITIONAL SHOP DRAWING REVIEWS SHALL BE INVOICED AT \$85.00 PER HOUR, BILLABLE TO THE SUB-CONTRACTOR.

**LIGHTNING PROTECTION GENERAL NOTES:**

PROVIDE COMPLETE MASTER LABEL UL LISTED, LPI CERTIFIED LIGHTNING PROTECTION SYSTEM IN FULL COMPLIANCE WITH THE LATEST EDITION OF NFPA 780. SUBMIT COMPLETE SHOP DRAWINGS TO SHOWING ROOF LAYOUT, DOWN LOCATIONS, GROUND ROD LOCATIONS, ETC. AND ALL CONNECTION DETAILS TO OWNER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. CONTRACTOR SHALL PERFORM ALL REQUIRED RESISTANCE AND CONTINUITY TESTING AFTER INSTALLATION IS COMPLETE.

ELECTRICAL DRAWING INDEX:	
# SHEET	DESCRIPTION
1	E0.1 ELECTRICAL COVER SHEET
2	E11 ELECTRICAL SITE PLAN
3	E12 ELECTRICAL SITE PHOTOMETRIC PLAN
4	E2.1 ELECTRICAL LIGHTING PLAN
5	E2.2 ELECTRICAL POWER PLAN
6	E2.3 ELECTRICAL SYSTEM PLAN
7	E2.4 ELECTRICAL HVAC PLAN
8	E2.5 ELECTRICAL ROOF PLAN
9	E3.1 ELECTRICAL RISER DIAGRAM
10	E3.2 ELECTRICAL PANEL SCHEDULES
11	E4.1 ELECTRICAL DETAILS
12	E4.2 ELECTRICAL DETAILS
13	E4.3 ELECTRICAL DETAILS
14	E4.4 ELECTRICAL DETAILS
15	E4.5 GENERATOR DETAILS
16	E5.1 ELECTRICAL LIGHTING FIXTURE SCHEDULE AND CONTROL PANEL DETAILS
17	E5.2 ELECTRICAL LIGHTING SYSTEM RISER AND DETAILS
18	E6.3 ELECTRICAL LIGHTING CONTROL SCHEDULE
19	E6.1 FIRE ALARM RISER DIAGRAM
20	E6.2 FIRE ALARM DETAILS

ALL MATERIAL, DEVICES, AND EQUIPMENT MUST COMPLY WITH BUY AMERICAN REQUIREMENTS OF AMERICAN RECOVERY & REINVESTMENT ACT.



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Supervisor, Architectural Drafting  
Kinsey C. Tillman  
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**FIRE STATION 19**  
7910 INTERBAY BLVD.  
TAMPA, FL

**DPW FILE NUMBER**

**DPW NUMBER**  
FD018

**ISSUE DATE**  
MAY 31, 2013

**DRAWN BY**

**REVISIONS**

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**SEAL**

Signature \_\_\_\_\_ Date \_\_\_\_\_  
IVAYLO I. TODOROV  
FLORIDA P.E.  
#73028

**SCALE: N.T.S.**

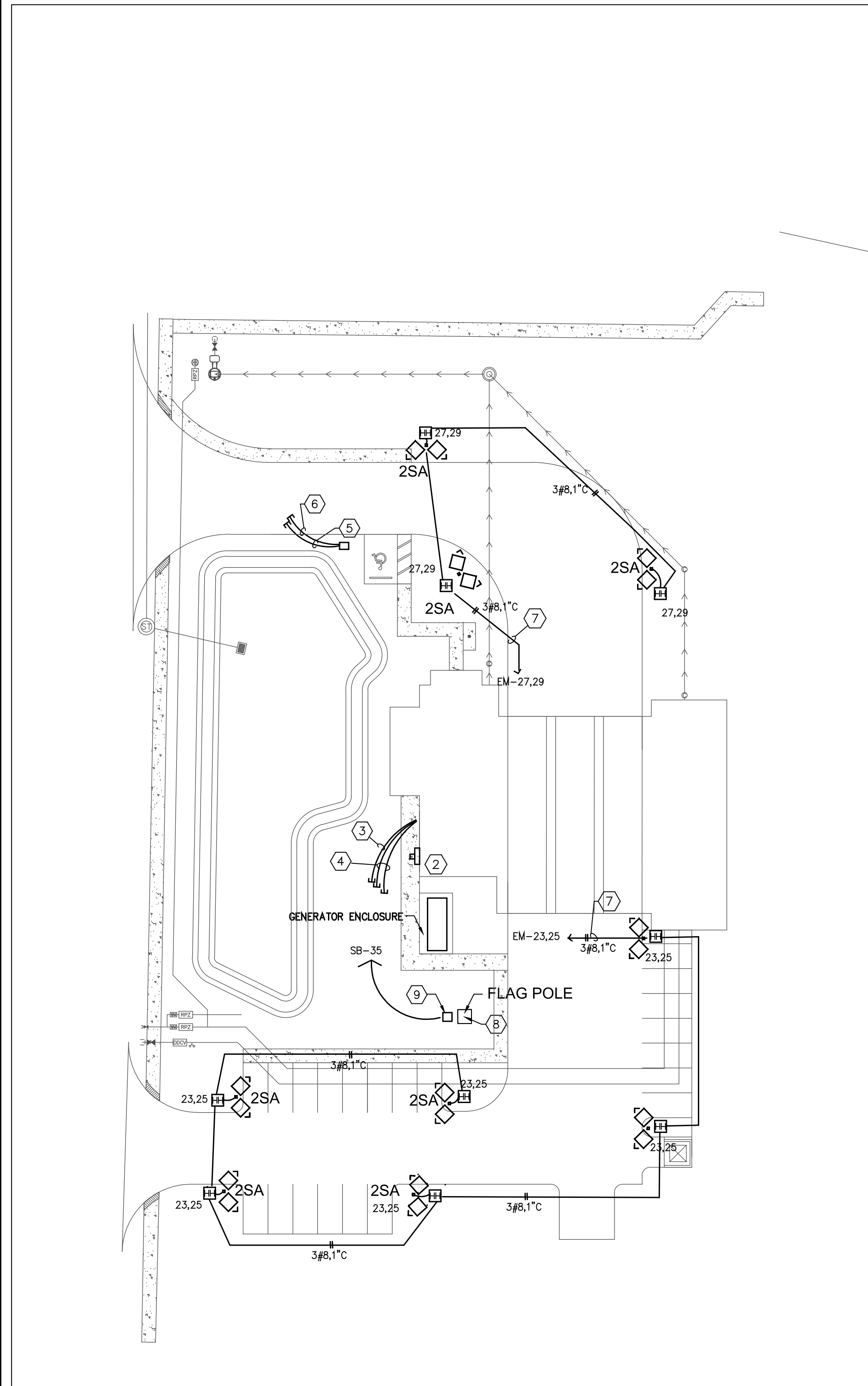
**ELECTRICAL COVER SHEET**

**SHEET NUMBER**

**E0.1**  
X OF X

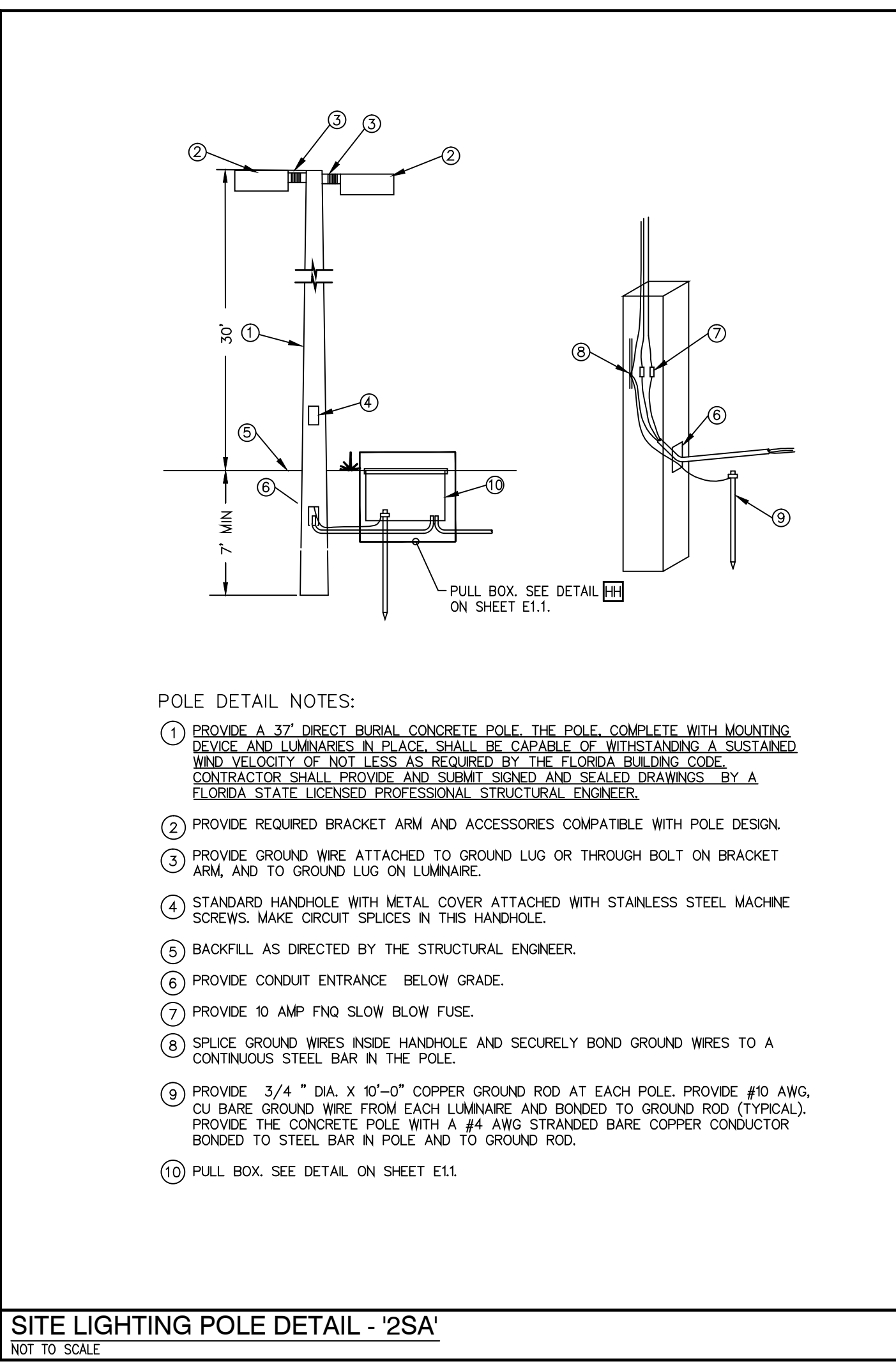
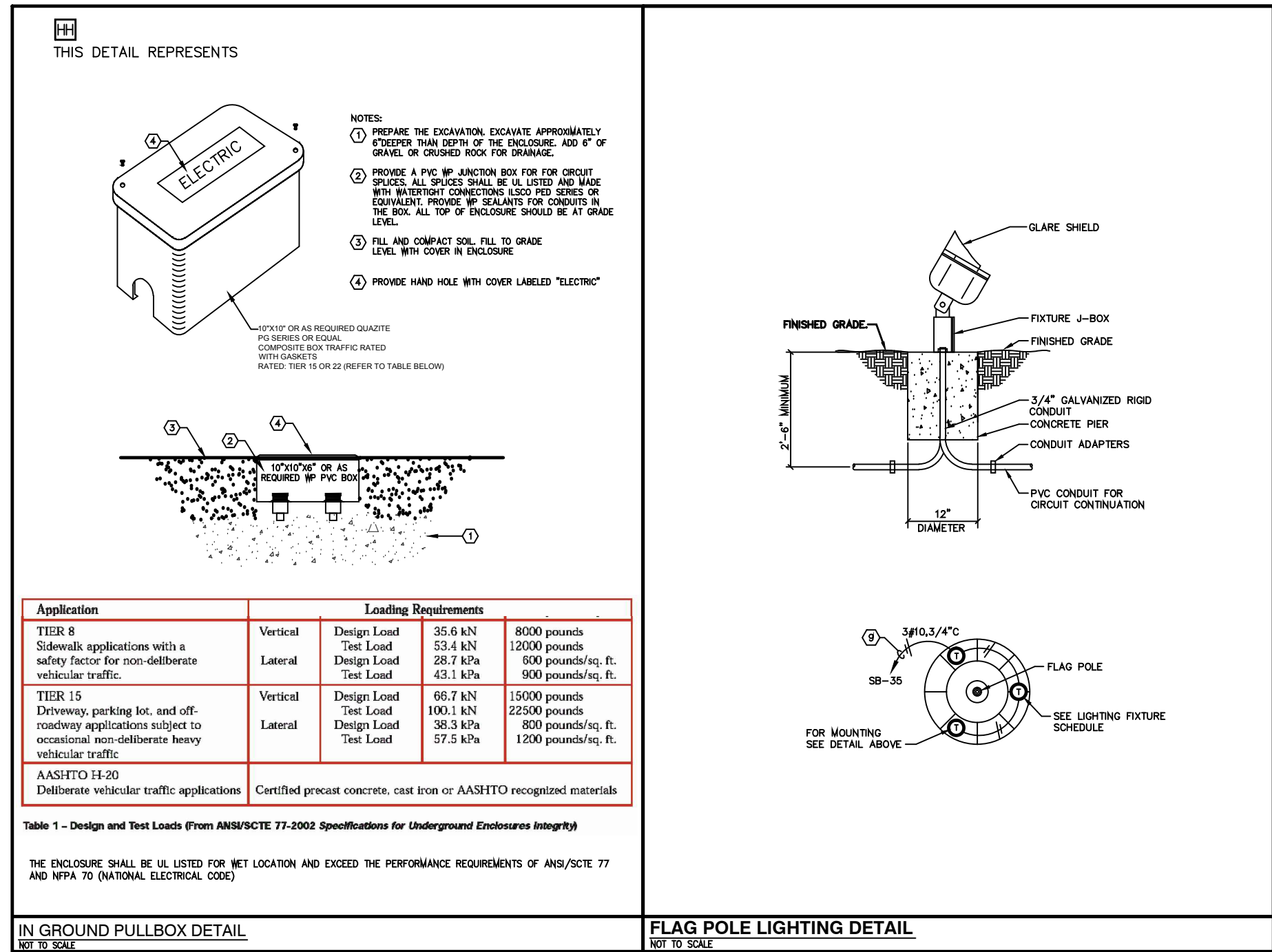
	GRINER ENGINEERING, INC.	Date	05/31/2013
	1628 First Avenue North	Drawn	HT
	St. Petersburg, Florida 33713	Designed	HT
	Phone: (727) 822-2335	FOR	JHG
	Fax: (727) 821-3361	Job no.	13052
	Certificate of Authorization #3173		





**ELECTRICAL SITE PLAN**  
 SCALE: 1/32" = 1'-0"

Symbol	Label	Qty	Catalog Number	Description	Lamp	File	Lumens	LLF	Watts
	2SA	7	POLE MOUNTED AT 30'-0"	AER-HR-III-165QL-208V AEROLUME BY U.S. ARCHITECTURAL LIGHTING	Induction 165W QL	AER-3-165QL.ies	12000	0.85	362



- ELECTRICAL SITE PLAN NOTES**
- UTILITY COMPANY HAND HOLE AT UTILITY POLE MOUNTED TRANSFORMER. SECONDARY VOLTAGE TO BE 120/208Y 3 PHASE, 4 WIRE WYE. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH POWER COMPANY PRIOR TO BID AND ROUGH-IN. CONTACT JUDY BUTTS, TECO AT 813-228-4709. SEE ELECTRICAL SHEETS FOR ADDITIONAL REQUIREMENTS.
  - UTILITY 3PH METER BASE PER UTILITY COMPANY SPEC, WALL MOUNTED.
  - PROVIDE (2)-2" EMPTY CONDUIT WITH PULL-WIRE TO 5' OUTSIDE PROPERTY LINE FOR INCOMING TELEPHONE SERVICE. COORDINATE FINAL LOCATIONS AND EXACT ROUTING OF CONDUIT WITH LOCAL TELEPHONE COMPANY PRIOR TO ROUGH-IN AND MAKE FIELD ADJUSTMENTS AS NECESSARY.
  - PROVIDE (1)-2" EMPTY CONDUIT WITH PULL-WIRE TO 5' OUTSIDE PROPERTY LINE FOR INCOMING CATV BROADBAND SERVICE. COORDINATE FINAL LOCATIONS AND EXACT ROUTING OF CONDUIT WITH LOCAL CATV COMPANY PRIOR TO ROUGH-IN AND MAKE FIELD ADJUSTMENTS AS NECESSARY.
  - PROVIDE (1)-2" EMPTY CONDUIT WITH PULL-WIRE FROM TRAFFIC CONTROL PANEL TO FIRE STATION BUILDING FOR TRAFFIC CONTROL OF THE SIGNAL. COORDINATE FINAL LOCATIONS AND EXACT ROUTING OF CONDUITS WITH OWNER, ARCHITECT AND SIGNAL CONTROL INSTALLER PRIOR TO ROUGH-IN AND MAKE FIELD ADJUSTMENTS AS NECESSARY.
  - PROVIDE (1)-2" FOR POWER CIRCUITS FROM TRAFFIC CONTROL PANEL TO FIRE STATION BUILDING FOR POWER OF THE SIGNAL (WIRES TO BE SIZED FOR MAXIMUM 2% VOLTAGE DROP). COORDINATE FINAL LOCATIONS, EXACT ROUTING OF CONDUITS AND POWER REQUIREMENTS WITH OWNER, ARCHITECT AND SIGNAL CONTROL INSTALLER PRIOR TO ROUGH-IN AND MAKE FIELD ADJUSTMENTS AS NECESSARY. CONTRACTOR SHALL SUBMIT TO ENGINEER AND OWNER IN WRITING THE REQUIRED INFORMATION FOR FINAL APPROVAL.
  - ROUTE HOMERUN VIA LIGHTING CONTROL PANEL. CONTROL FOR SITE LIGHTS TO BE PHOTOCELL ON AND PHOTOCELL OFF.
  - FLAG POLE LIGHTS. REFER TO FLAG POLE DETAIL ON THIS SHEET. COORDINATE EXACT FLAG POLE LOCATION WITH CIVIL ENGINEER, ARCHITECT AND OWNER. AM FIXTURE AT NIGHT AS DIRECTED BY THE OWNER.
  - CONTROL FOR FLAG POLE LIGHTS TO BE PHOTOCELL ON AND PHOTOCELL OFF.

- GENERAL SITE NOTES:**
- ELECTRICAL CONTRACTOR TO COORDINATE ALL ELECTRICAL WORKS WITH OWNER AND ARCHITECT PRIOR TO START ANY WORK. NO EXCEPTION.
  - COORDINATE ALL ELECTRICAL WORK AND REQUIREMENTS WITH POWER COMPANY (TECO) PRIOR TO BID AND ROUGH-IN. THE CONTRACTOR SHALL INCLUDE IN THE BID ALL ELECTRIC UTILITY FEES TO PROVIDE ELECTRICAL SERVICE TO THE PROJECT.
  - CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL UTILITY SERVICES TO THE BUILDING WITH THEIR RESPECTIVE PROVIDERS. FAILURE TO DO SO WILL NOT RESULT IN ANY EXTRA FINANCIAL COMPENSATION FROM THE OWNER. CONTRACTOR SHALL HAVE ALL UTILITY SERVICE REQUIREMENTS IN BID.
  - THE ELECTRICAL CONTRACTOR SHALL COORDINATE AS NECESSARY ALL UNDERGROUND LOCATIONS WITH OTHER TRADES PRIOR TO DIGGING BEING DONE.
  - EACH CONTRACTOR RESPONSIBLE FOR EXCAVATION WORK SHALL BE REQUIRED TO PROVIDE ALL NECESSARY BARRICADES, FENCING, BRACING, SHORING, SHEET PILING, WARNING SIGNS, PUMPING, ETC., FOR THE PROTECTION OF WORKERS, GENERAL PUBLIC AND PROPERTIES. EXCAVATION WORK SHALL COMPLY WITH ASA STANDARD A10.2 "SAFETY CODE FOR BUILDING CONSTRUCTION" AND AGC STANDARD, "MANUAL OF ACCIDENT PREVENTION IN CONSTRUCTION" AND THE DEPARTMENT OF LABOR OCCUPATIONAL SAFETY AND HEALTH STANDARDS.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER LAYOUT AND THE ESTABLISHMENT OF ALL LINES AND LEVELS REQUIRED FOR THE EXECUTION OF HIS WORK. COORDINATION OF TRADES TO AVOID INTERFERENCE, MEET CLEARANCES, ETC. IS THE CONTRACTOR'S RESPONSIBILITY.
  - PROVIDE ALL EXCAVATION AND BACKFILL REQUIRED FOR THE INSTALLATION OF ELECTRICAL WORK.
  - PROVIDE PROTECTION FOR TREES WITHIN 15 FEET OF UTILITY EXCAVATION.
  - DEBRIS, TRASH OR ROCK NOT USABLE FOR FILL SHALL BE REMOVED FROM THE SITE BY EACH CONTRACTOR.
  - EACH CONTRACTOR SHALL BE RESPONSIBLE FOR IMMEDIATE "CLEAN-UP" OF STREETS, ROADWAYS, AND PRIVATE PROPERTY DUE TO EXCAVATION.
  - ALL BACKFILL MATERIALS SHALL BE CLEAN AND FREE FROM TRASH, DEBRIS, ORGANIC MATERIAL AND ROCKS (OVER 4"). COMPACT IN 6" LFTS TO 95% OF COMPACTION PER THE PROCTOR TEST. HAND COMPACT ALL MATERIALS WITHIN 18" OF CONDUITS, PIPES, ETC.



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**FIRE STATION 19**  
 7910 INTERBAY BLVD.  
 TAMPA, FL

**DPW FILE NUMBER**

**DPW NUMBER**  
 FDO116

**ISSUE DATE**  
 MAY 31, 2013

**DRAWN BY**

**REVISIONS**


**SEAL**

Signature \_\_\_\_\_ Date \_\_\_\_\_  
 IVAYLO I. TODOROV  
 FLORIDA P.E.  
 #73028

**SCALE: 1/30" = 1'-0"**

**ELECTRICAL SITE PLAN**

**SHEET NUMBER**

**E11**  
 X OF X

**G** GRINER ENGINEERING, INC.  
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 Phone: (727) 822-2335  
 Fax: (727) 821-3361  
 Certificate of Authorization #3173

Date	05/31/2013
Drawn	HT
Designed	HT
ECR	JHG
Job no.	13052





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**FIRE STATION 19**  
 7910 INTERBAY BLVD.  
 TAMPA, FL

**DPW FILE NUMBER**

**DPW NUMBER**  
**FD016**

**ISSUE DATE**  
**MAY 31, 2018**

**DRAWN BY**

**REVISIONS**  
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Signature \_\_\_\_\_ Date \_\_\_\_\_  
 IVAYLO I. TODOROV  
 FLORIDA P.E.  
 #73028

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

**ELECTRICAL LIGHTING PLAN**

**SHEET NUMBER**

**E2.1**  
 X OF X

**GENERAL LIGHTING NOTES:**

- COORDINATE ALL ELECTRICAL WORK WITH ARCHITECT AND OWNER AND GENERAL CONTRACTOR PRIOR TO BID AND ROUGH-IN.
- COORDINATE EXACT LIGHTS AND EQUIPMENT LOCATION WITH ARCHITECT AND OWNER PRIOR TO BID AND ROUGH-IN.
- EVERY CIRCUIT AND CIRCUIT MODIFICATION SHALL BE LEGIBLY IDENTIFIED AS TO ITS CLEAR, EVIDENT, AND SPECIFIC PURPOSE OR USE, NOT LIMITED TO LIGHTS AND RECEPTACLES.
- WHEREVER THE WORD "PROVIDE" IS USED, IT SHALL MEAN "FURNISH AND INSTALL COMPLETE AND READY FOR USE."
- BRANCH CIRCUIT SHALL BE MINIMUM 2 #12 AND #12 E.G. IN 3/4" C UNLESS OTHERWISE NOTED.
- CONNECT ALL EMERGENCY LIGHTS, EXIT SIGNS AND NIGHT LIGHTS TO EMERGENCY PANEL 'EM'.
- ALL BRANCH CIRCUIT BREAKERS SERVING EMERGENCY, EXIT AND NIGHT LIGHT FIXTURES SHALL BE PROVIDED WITH PERMANENT LOCK ON DEVICES.
- ALL CONDUITS SHALL BE RUN PARALLELED ABOVE THE DROP CEILING IN CLEAN AND NEAT MANNER. ALL EXPOSED CONDUITS SHALL BE PAINTED. MATCH FINISH IN THE AREA. COORDINATE WITH ARCHITECT AND OWNER FOR FINAL DIRECTIONS.

**ELECTRICAL KEY NOTES:**

- PROPOSED LOCATION FOR LIGHTING CONTROL SYSTEM MASTER OVER-RIDE DIGITAL SWITCH AT CONTROL PANEL IN OFFICE. CONNECT PER MANUFACTURER'S INSTRUCTIONS. THE SWITCH SHALL TURN ON ALL LIGHTS WHICH ARE CONTROLLED BY LIGHTING CONTROL PANELS.
- PROVIDE DIGITAL LIGHTING SWITCHES AS MANUFACTURED BY LCD WITH CONTROL ZONES AS SHOWN ON DRAWINGS. CONTROL SWITCHES SHALL PROVIDE ON-OFF AND OVER-RIDE FUNCTIONS FOR THESE SPACES HOURS. REFER TO ELECTRICAL LIGHTING PLAN FOR DIGITAL SWITCHES LOCATIONS AND SWITCH LEGEND. COORDINATE PROGRAMMING OF THE LIGHTING CONTROL SYSTEM WITH THE OWNER.
- NOT USED.
- PROVIDE CEILING MOUNTED OCCUPANCY SENSOR. LOCATE AND CONNECT OCCUPANCY SENSOR PER MFR RECOMMENDATIONS. REFER TO OCCUPANCY SCHEDULE ON THIS SHEET AND ELECTRICAL DETAIL SHEET E4.1.
- ROUTE HOMERUN: VIA RELAY IN LIGHTING CONTROL SYSTEM PANEL. CONTROL TO BE PHOTOCELL-ON, PHOTOCELL-OFF.
- PROVIDE SLAVE LIGHTING CONTROL PANEL WITH 4 RELAYS MANUFACTURED BY LCD OR APPROVED EQUAL. MOUNT PANEL ABOVE LAY-IN CEILING (TOTAL OF 6). REFER TO ELECTRICAL SHEET E5.2 FOR ADDITIONAL REQUIREMENTS.
- MASTER LIGHTING CONTROL PANEL WITH 24 RELAYS MANUFACTURED BY LCD OR APPROVED EQUAL. REFER TO ELECTRICAL SHEET E5.2 FOR ADDITIONAL REQUIREMENTS.
- NIGHT LIGHT (NL) AND EXIT SIGN SHALL BE CONNECTED DIRECTED TO EMERGENCY PANEL "EM".
- COORDINATE FINAL FIXTURE LOCATION WITH MECHANICAL EQUIPMENT AND CONTRACTOR. IF REQUIRE MAKE FIELD ADJUSTMENT.
- PROVIDE LIGHTING FIXTURE. REFER TO LIGHTING FIXTURE SCHEDULE ON ELECTRICAL SHEET E5.1 FOR ADDITIONAL REQUIREMENTS.
- ROUTE HOMERUN: VIA RELAY IN LIGHTING CONTROL SYSTEM PANEL. CONTROL DURING NORMAL BUSINESS HOURS. COORDINATE WITH OWNER.
- TWO SWITCHING LEGS FROM SLAVE PANEL FOR STEP LIGHTING CONTROL (50% AND 100% LIGHT CONTROL). REFER TO PLAN FOR EXACT REQUIREMENTS.
- EXTERIOR WALL MOUNTED LIGHT FIXTURE. MOUNT FIXTURE AT 7'-8-1/4" (C.L. - AFF). FIELD VERIFY PRIOR TO INSTALLATION.
- ENTIRE BRANCH CIRCUIT SHALL BE 2#10 AND #10 E.G. IN 3/4"C.
- NITE, OFFICE, ADA RESTROOM, STORAGE, BUNKER, ELECTRICAL/MECHANICAL AND DECON ROOMS SHALL BE CONNECTED TO NORMAL BRANCH CIRCUIT SA-7 AND EMERGENCY BRANCH CIRCUIT EM-7 VIA GENERATOR TRANSFER DEVICE (GTD) BY BODINE OR APPROVED EQUAL. REFER TO DETAILS ON SHEET E.4.1 FOR REQUIREMENTS.
- MECHANICAL, BATHS AND STORAGE ROOMS SHALL BE CONNECTED TO NORMAL BRANCH CIRCUIT SA-11 AND EMERGENCY BRANCH CIRCUIT EM-11 VIA GENERATOR TRANSFER DEVICE (GTD) BY BODINE OR APPROVED EQUAL. REFER TO DETAILS ON SHEET E.4.1 FOR REQUIREMENTS.

**LIGHTING CONTROL PANELS**

- LM24** MASTER CONTROL PANEL  
24 RELAYS, UL924 LISTED FOR EMERGENCY LIGHTING  
MASTER PANEL WITH TIMELOCK
- LM4** SLAVE CONTROL PANEL  
4 RELAYS  
SLAVE PANEL (NO TIMELOCK)
- 1** 1-BUTTON DIGITAL SWITCH WITH OVERRIDE
- 2** 2-BUTTON DIGITAL SWITCH WITH OVERRIDE
- 4** 4-BUTTON DIGITAL SWITCH WITH OVERRIDE
- MS** MASTER OVER-RIDE BUTTONS

**LIGHTING CONTROL NOTES:**

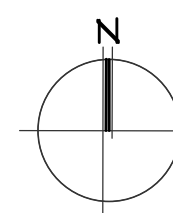
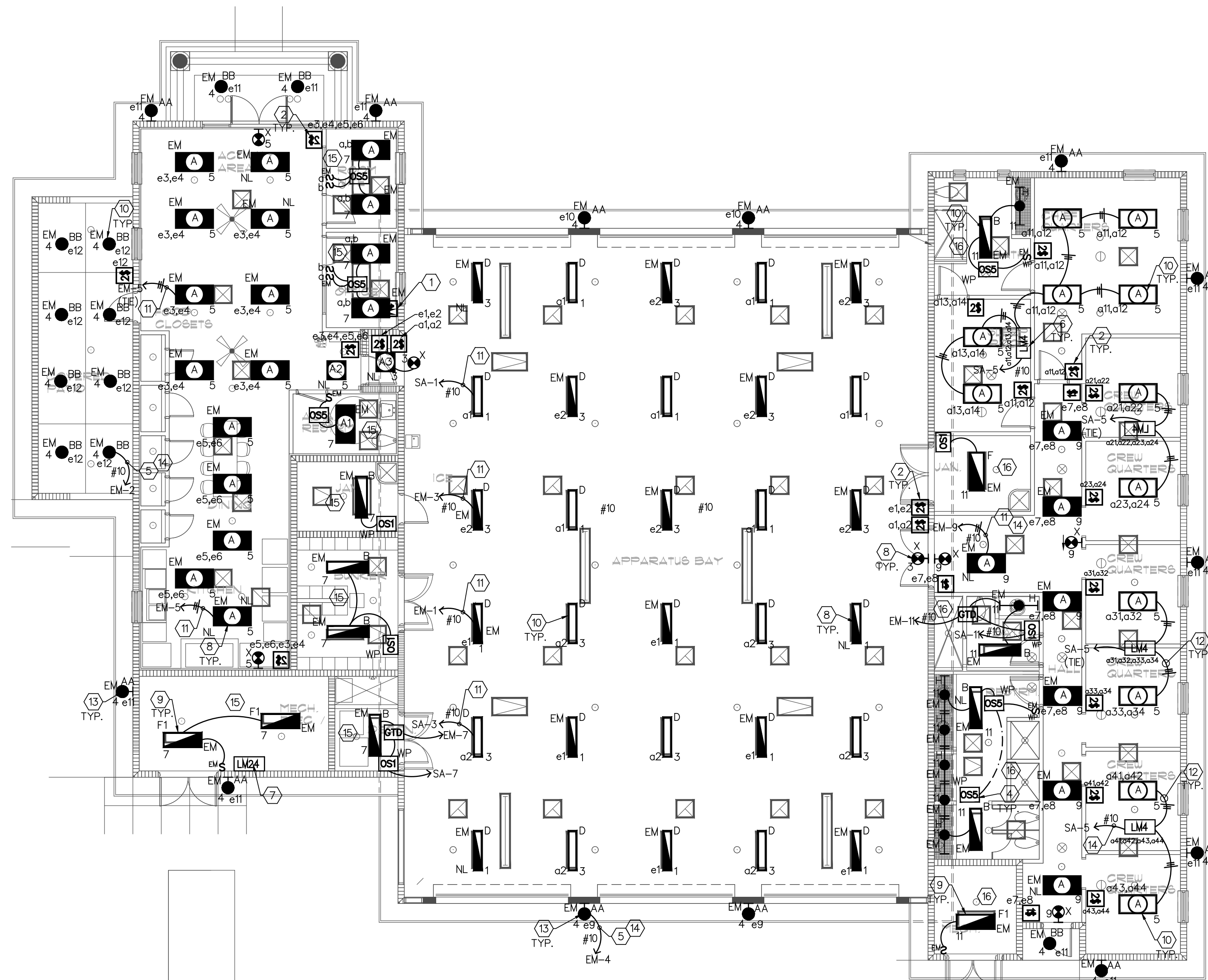
- PROVIDE LIGHTING CONTROL PANELS MANUFACTURED BY LIGHTING CONTROL DESIGN (LCD) OR APPROVED EQUAL.
- SINGLE GANG SWITCHES WILL BE LOCATED AT SPECIFIC LOCATIONS FOR LOCAL OVERRIDE OF LIGHTING (SEE PLANS).
- THE MASTER CONTRACTOR SHALL BE UL924 LISTED FOR EMERGENCY LIGHTING AND FAIL SAFE IN ON FUNCTION IN EVENT OF A DEVICE/ELECTRONICS FAILURE (EMERGENCY LIGHTS SHALL OPERATE).

**SENSOR LEGEND:**

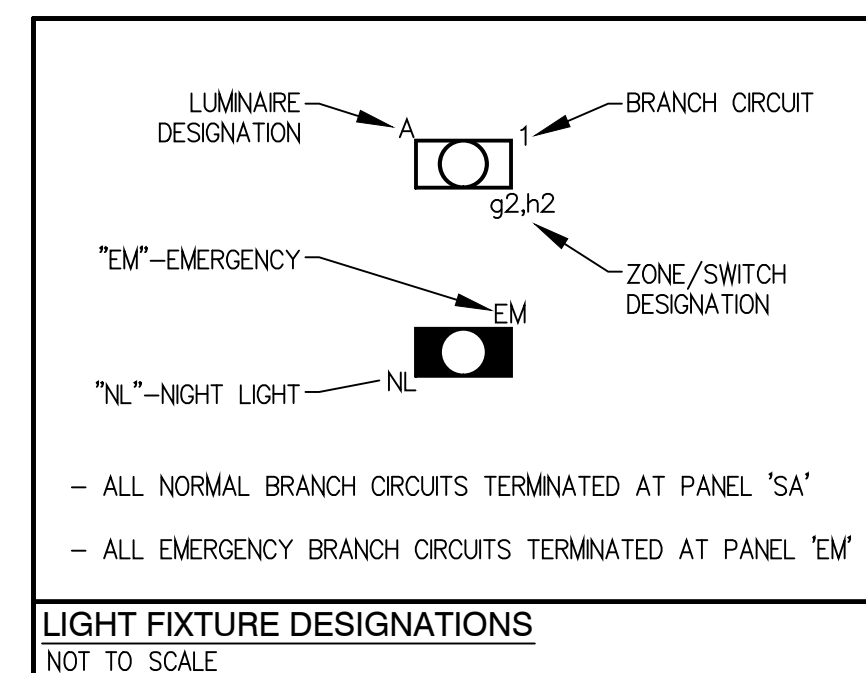
- OS1** WALL MOUNTED DUAL TECH WALL SWITCH OCCUPANCY SENSOR  
OCCUPANCY # WSD-PDT-WH BY SENSOR SWITCH.  
PROVIDE WITH MANUAL OVER RIDE SWITCH.
- OSS** CEILING MOUNTED DUAL TECH LOW VOLTAGE OCCUPANCY  
SENSOR WITH 2,000 SF COVERAGE #CM-PDT-10 BY SENSOR  
SWITCH, WITH POWER PACK (PP).

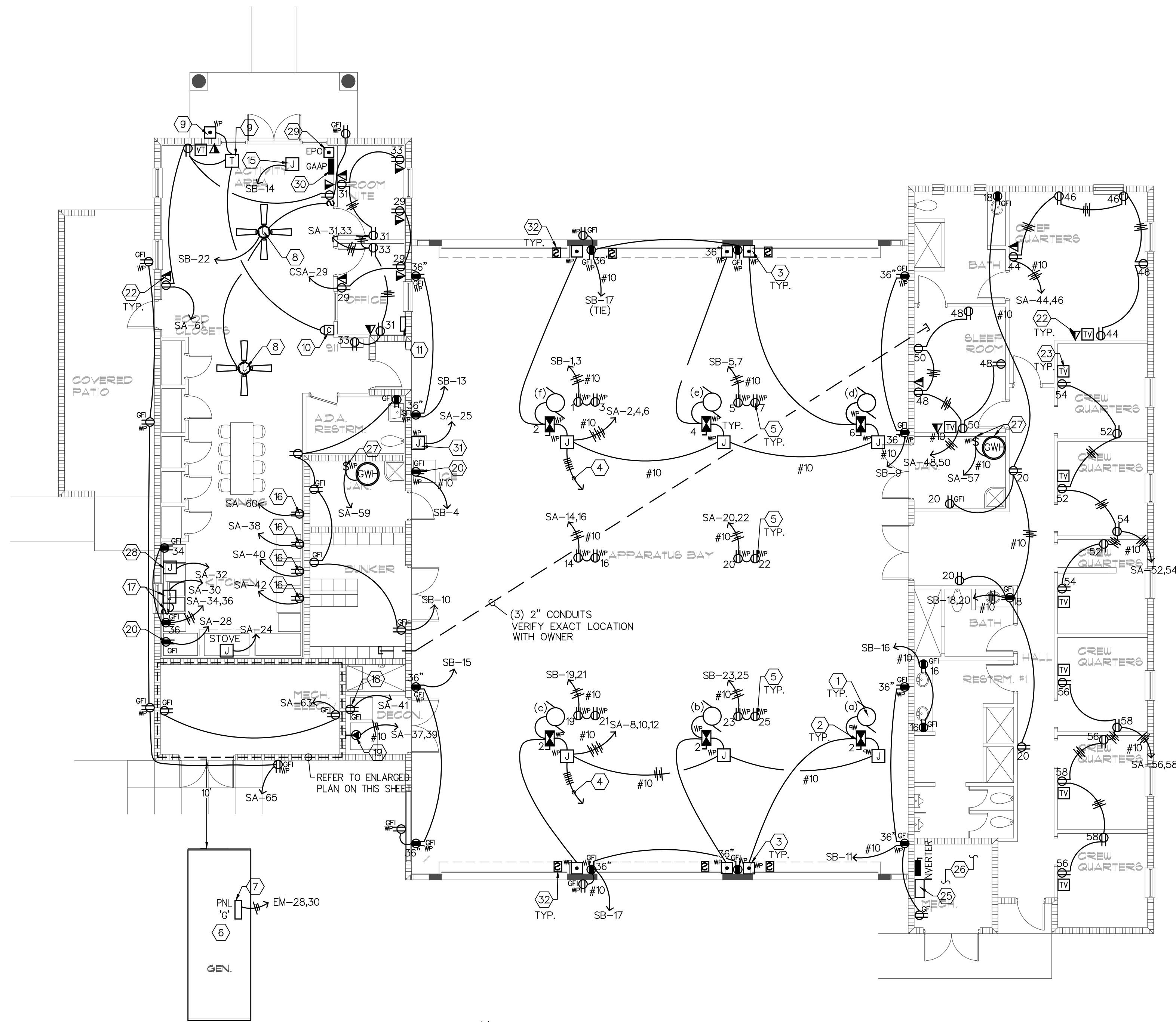
**SENSOR NOTES:**

- PROVIDE SENSORS MANUFACTURED BY SENSOR SWITCH OR APPROVED EQUAL.
- PROVIDE A POWER PACK IF NEEDED. POWER PACK IS CONTROLLED BY LOW VOLTAGE SENSOR. LOCATED PP AT ACCESSIBLE CEILING.
- ADDITIONAL SENSORS MAY BE REQUIRED TO PROVIDE COMPLETE COVERAGE DEPENDING ON PARTITION HEIGHT/PLACEMENT, FURNITURE PLACEMENT, EQUIPMENT HEIGHT/PLACEMENT AND SHELVING HEIGHT/PLACEMENT. CONSULT MFR REPRESENTATIVE PRIOR TO ROUGH-IN.
- SENSOR MASKING KITS MAY BE REQUIRED TO LIMIT COVERAGE DEPENDING ON YOUR REQUIREMENTS. CONSULT MFR REPRESENTATIVE PRIOR TO ROUGH-IN.
- ALL SENSORS AND EQUIPMENT SHALL FAIL SAFE IN ON FUNCTION IN EVENT OF A DEVICE/ELECTRONICS FAILURE
- ELECTRICAL CONTRACTOR SHALL SUBMIT TO ENGINEER FOR REVIEW AND APPROVAL A COMPLETE OCCUPANCY SENSOR PACKAGE WHICH INCLUDES SENSOR COVERAGE AND LAYOUTS IN FLOOR PLAN, RISER AND WIRING DIAGRAMS, MANUFACTURER CUT SHEETS AND INSTALLATION INSTRUCTIONS.

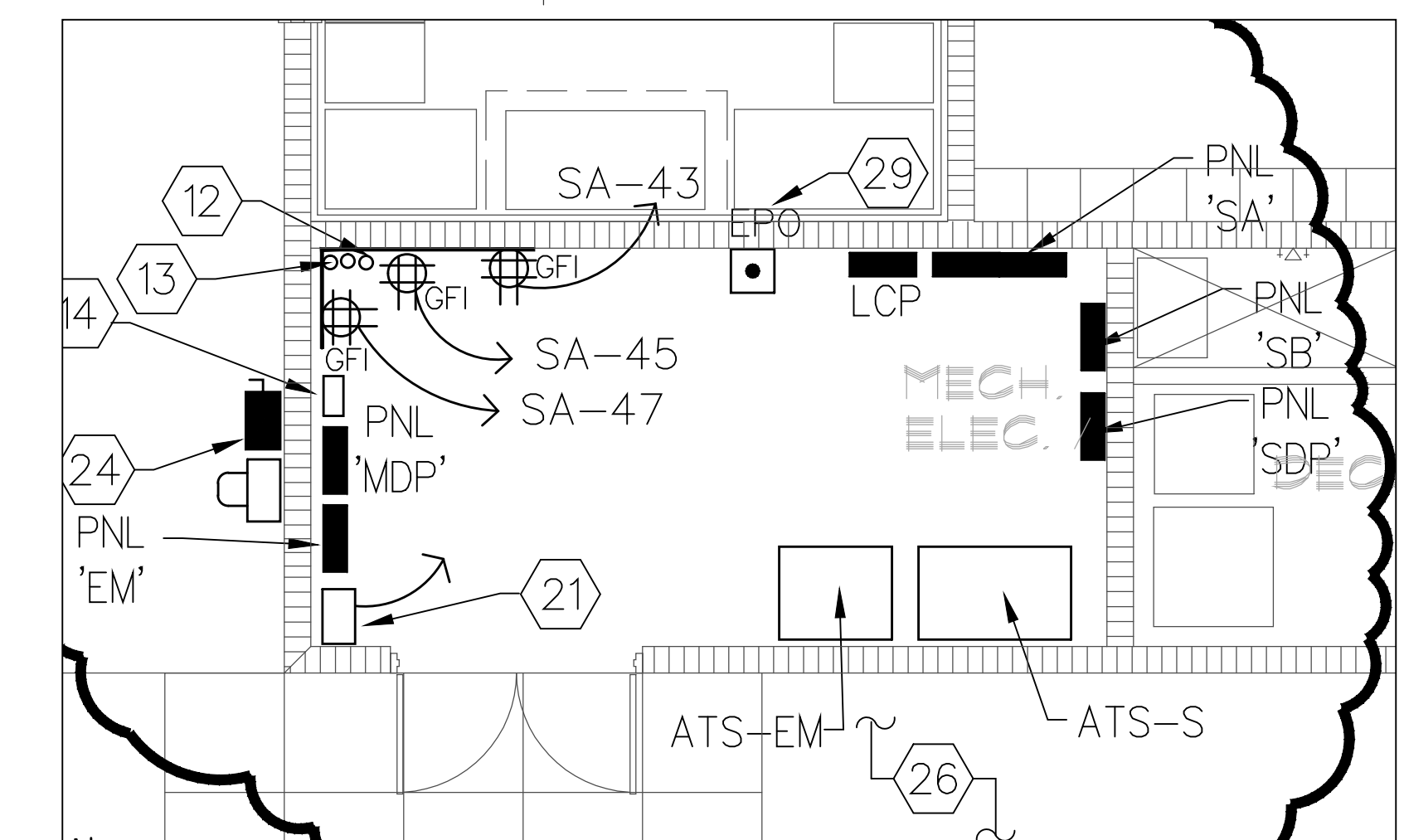


**ELECTRICAL LIGHTING PLAN**  
 SCALE: 1/8" = 1'-0"





**ELECTRICAL POWER PLAN**  
SCALE: 1/8" = 1'-0"



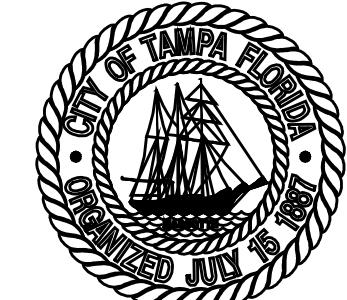
**ENLARGED MECH/ELECTRICAL ROOM**  
SCALE: 1/4" = 1'-0"

**GENERAL POWER NOTES:**

- COORDINATE ALL ELECTRICAL WORK WITH ARCHITECT AND OWNER PRIOR TO BID AND ROUGH-IN.
- COORDINATE EXACT DEVICE AND EQUIPMENT LOCATIONS, MOUNTING HEIGHTS AND POWER REQUIREMENTS WITH ARCHITECT/OWNER AND M.F.R. CUT SHEETS PRIOR TO ROUGH-IN.
- ALL POWER/LOW VOLTAGE OUTLETS SHALL BE LABELED WITH PANEL AND CIRCUIT NUMBER. COORDINATE WITH OWNER.
- EVERY CIRCUIT AND CIRCUIT MODIFICATION SHALL BE LEGIBLY IDENTIFIED AS TO ITS CLEAR, EVIDENT, AND SPECIFIC PURPOSE OR USE, NOT LIMITED TO LIGHTS AND RECEPTACLES.
- WHEREVER THE WORD "PROVIDE" IS USED, IT SHALL MEAN "FURNISH AND INSTALL COMPLETE AND READY FOR USE."
- BRANCH CIRCUIT SHALL BE MINIMUM 2 #12 AND #12 E.G IN 3/4" C UNLESS OTHERWISE NOTED.
- ALL CONVENIENCE OUTLETS IN KITCHEN AREA TO BE GFCI.
- REFER TO ELECTRICAL DRAWINGS AND PANEL SCHEDULES FOR WIRE SIZES REQUIREMENTS.

**ELECTRICAL KEY NOTES:**

- OVERHEAD DOOR MOTOR. COORDINATE FINAL LOCATION PRIOR TO ROUGH-IN.
- NEMA SIZE "0" REVERSING COMBINATION STARTER IN NEMA 3R ENCLOSURE. CEILING MOUNT ADJACENT TO OVERHEAD DOOR MOTOR. FUSE PER UNIT NAMEPLATE. (TYP. OF 6).
- OVERHEAD DOOR UP-DOWN PUSH-BUTTON CONTROL STATION MOMENTARY CONTACT. FACTORY PAINT RED (SQUARE D CLASS 90001 - TYPE B) NEMA 3R ENCLOSURE SURFACE MOUNT 46" AFF. (TYP. OF 6).
- ROUTE CONTROL CONDUCTORS IN 1/2" C TO MOMENTARY CONTACT PUSH BUTTONS IN CONTROL PANEL LOCATED AT OFFICE #113 CONNECT TO DOOR MOTOR STARTER "UP CONTACTS" ONLY. SEE CONTROL PANEL DETAIL.
- PROVIDE 20A DUPLEX WITH SWIVEL HOOK BY HUBBELL 6"-0" AFF SUSPEND FROM J-BOX MOUNTED AT CEILING WITH #10 "SO" DROP CORD WITH STRAIN RELIEF AT J-BOX AND OUTLET. COORDINATE FINAL LOCATION AND REQUIREMENTS WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN.
- PROVIDE EXTERIOR 150 KW GENERATOR, 208/120V, 3PH, DUAL FUEL SOURCE (GAS AND LP) WITH OVERSIZE ALTERNATOR. SEE ELECTRICAL RISER DIAGRAM ON SHEET E3.1 FOR REQUIREMENTS.
- PROVIDE FINAL CONNECTION TO GENERATOR PANEL. THE GENERATOR PANEL IS PROVIDED BY THE GENERATOR PANEL AND SERVES THE GENERATOR BATTERY CHARGER, HEATERS AND LIGHT/RECEPTACLES.
- PROVIDE 48" PADDLE FAN (HUNTER OR EQUIVALENT) WITH LISTED OUTLET BOX SECURELY MOUNTED TO STRUCTURE. COORDINATE EXACT LOCATION, COLOR AND STYLE WITH ARCHITECT PRIOR TO ROUGH-IN. PRE-WIRE SHALL INCLUDE SWITCH LEG FOR FAN.
- 120V - 10 VAC TRANSFORMER (EDWARDS #590) MOUNT ABOVE AND PUSH BUTTON (EDWARDS #603) MOUNTED FLUSH IN WALL 50" AFF.
- DOOR CHIME 10 VAC (EDWARDS C210W) MOUNTED AT 84" AFF. EXTEND 24V WIRING TO CHIME TRANSFORMER AND PUSH BUTTON. REFER TO NOTE 9.
- JUNCTION BOX MOUNT IN WALL FOR LIGHTS, BELLS AND OVERHEAD DOOR MOTORS. PROVIDE FLEXIBLE CONNECTIONS TO CONTROL PANEL IN DESKTOP. COORDINATE EXACT LOCATION PRIOR TO ROUGH-IN. SEE CONTROL PANEL DETAIL AND SCHEDULE ON SHEET E5.1.
- PROVIDE 8'W X 8'H X 3/4" THICK PLYWOOD BACKBOARD WITH BOTTOM AT 18" AFF, PAINT ALL SIDES AND EDGES WITH FIRE RETARDANT PAINT OR PROVIDE FIRE TREATED PLYWOOD. PROVIDE #1/0 CU GROUND TIED INTO BUILDING ELECTRODE GROUNDING SYSTEM.
- PROVIDE (2)-2" EMPTY CONDUIT WITH PULL-WIRE TO 5' OUTSIDE PROPERTY LINE FOR INCOMING TELEPHONE SERVICE AND CITY COMPUTER SYSTEM. COORDINATE EXACT ROUTING OF CONDUIT WITH LOCAL TELEPHONE COMPANY AND OWNER PRIOR TO ROUGH-IN AND MAKE FIELD ADJUSTMENTS AS NECESSARY.
- PROVIDE (1)-2" EMPTY CONDUIT WITH PULL-WIRE TO 5' OUTSIDE PROPERTY LINE FOR INCOMING BRIGHT HOUSE BROADBAND SERVICE. COORDINATE EXACT ROUTING OF CONDUIT WITH BRIGHT HOUSE COMPANY PRIOR TO ROUGH-IN AND MAKE FIELD ADJUSTMENTS AS NECESSARY.
- J-BOX FLUSH MOUNTED ABOVE DOOR HEADER. MAKE CONNECTION TO AUTOMATIC DOOR OPENER. COORDINATE WITH DOOR INSTALLER PRIOR TO ROUGH-IN.
- PROVIDE RECEPTACLE FOR REFRIGERATOR. COORDINATE EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN.
- PROVIDE FINAL CONNECTION TO GARBAGE DISPOSAL WITH 1/2" FLEXIBLE METAL CONDUIT. PROVIDE A SINGLE POLE SWITCH ADJACENT TO SINK ABOVE COUNTER FOR CONTROL. COORDINATE WITH PLUMBING CONTRACTOR AND DRAWINGS.
- PROVIDE 20 AMP, 120 VOLT WASHER RECEPTACLE WITH A SINGLE GANG STAINLESS STEEL COVER PLATE MOUNTED AT 48" AFF. EXTEND 3#12 IN 3/4" CONDUIT TO PANEL.
- PROVIDE 30 AMP, 230 VOLT DRYER RECEPTACLE WITH A SINGLE GANG STAINLESS STEEL COVER PLATE MOUNTED AT 48" AFF, EXTEND 4 #10 IN 3/4" CONDUIT TO PANEL.
- PROVIDE 20 AMP RECEPTACLE FOR ICE MACHINE. COORDINATE EXACT LOCATION AND EXTEND 3#12 IN 3/4" CONDUIT TO PANEL.
- NEW JUNCTION BOX FOR 911 CIRCUITS FROM 'EM' PANEL. RUN NO. 12, 1 NO. 12 EG -1/2 INCH AND EXTEND AS NEEDED.
- PROVIDE A SINGLE GANG BOX AT 18" AND EXTEND A 3/4" CONDUIT TO ACCESSIBLE CEILING SPACE AND TERMINATE WITH A PLASTIC BUSHING. FURNISH WITH PULLSTRING FOR TELCOMM CABLES.
- PROVIDE A SINGLE GANG BOX AT 70" AND EXTEND A 3/4" C FROM JUNCTION BOX TO ACCESSIBLE CEILING SPACE AND TERMINATE WITH A PLASTIC BUSHING. FURNISH WITH PULLSTRING FOR TV CABLE.
- NEW 60A, 4 POLE, NEMA 4X DISCONNECT SWITCH MOUNT ADJACENT TO ELECTRIC METER FOR PHOTOVOLTAIC SYSTEM. COORDINATE EXACT REQUIREMENTS WITH UTILITY COMPANY AND PHOTOVOLTAIC SYSTEM INSTALLER.
- PROVIDE INVENTOR/S FOR PHOTOVOLTAIC SYSTEM.
- COORDINATE ELECTRICAL EQUIPMENT IN ELECTRICAL/MECHANICAL ROOMS WITH MECHANICAL CONTRACTOR AND DRAWINGS PRIOR TO ROUGH-IN. CONTRACTOR SHALL FIELD VERIFY THE EXACT EQUIPMENT LAYOUTS PRIOR TO ORDERING OF THE EQUIPMENT AND PROVIDE CLEARANCE AS REQUIRED PER NEC.
- PROVIDE WP HP RATED DISCONNECT AND FINAL CONNECTION TO GAS WATER HEATER. COORDINATE FINAL REQUIREMENTS WITH PLUMBING CONTRACTOR AND DRAWINGS PRIOR TO ROUGH-IN.
- PROVIDE FINAL CONNECTION TO DISHWASHER WITH 1/2" FLEXIBLE METAL CONDUIT. EXTEND 3#12 IN 3/4" CONDUIT TO PANEL.
- GENERATOR EMERGENCY STOP SWITCH, LOCATE ADJACENT TO FIRE ALARM CONTROL PANEL IN NEMA 3R BOX, ENGRAVED PLATE WITH 1/4" WHITE ENGRAVED LETTERS ON RED LAMINATED PLASTIC UNDER STOP SWITCH TO READ "GENERATOR EMERGENCY STOP". SURFACE MOUNT SWITCH 4"-6". REFER TO SHEET E3.1 FOR ADDITIONAL REQUIREMENTS.
- GENERATOR ANNUNCIATOR PANEL. REFER TO SHEET E3.1 FOR ADDITIONAL REQUIREMENTS. COORDINATE FINAL LOCATION WITH AUTHORITY HAVING JURISDICTION PRIOR TO ROUGH-IN.
- PROVIDE FINAL CONNECTION TO ELECTRICAL WATER COOLER. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH PLUMBING CONTRACTOR. REFER TO PLUMBING SCHEDULE.
- PROVIDE WP JUNCTION BOX AT 12" AFF AND RACEWAY FOR GARAGE DOOR SWITCHES. COORDINATE FINAL LOCATION AND REQUIREMENTS WITH GARAGE DOOR INSTALLER AND OWNER.



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**FIRE STATION 19**  
7910 INTERBAY BLVD.  
TAMPA, FL

**DPW FILE NUMBER**

**DPW NUMBER**  
FD018

**ISSUE DATE**  
MAY 31, 2018

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IVAYLO I. TODOROV  
FLORIDA P.E.  
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**SCALE: 1/8" = 1'-0"**

**ELECTRICAL POWER PLAN**

**SHEET NUMBER**

**E2.2**  
X OF X

<b>G</b>	GRINER ENGINEERING, INC.	Date	05/31/2018
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	Certificate of Authorization #3173		





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**FIRE STATION 19**  
 7910 INTERBAY BLVD.  
 TAMPA, FL

**DPW FILE NUMBER**

**DPW NUMBER**  
 FDO118

**ISSUE DATE**  
 MAY 31, 2013

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

**ELECTRICAL  
 SYSTEM PLAN**

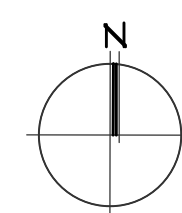
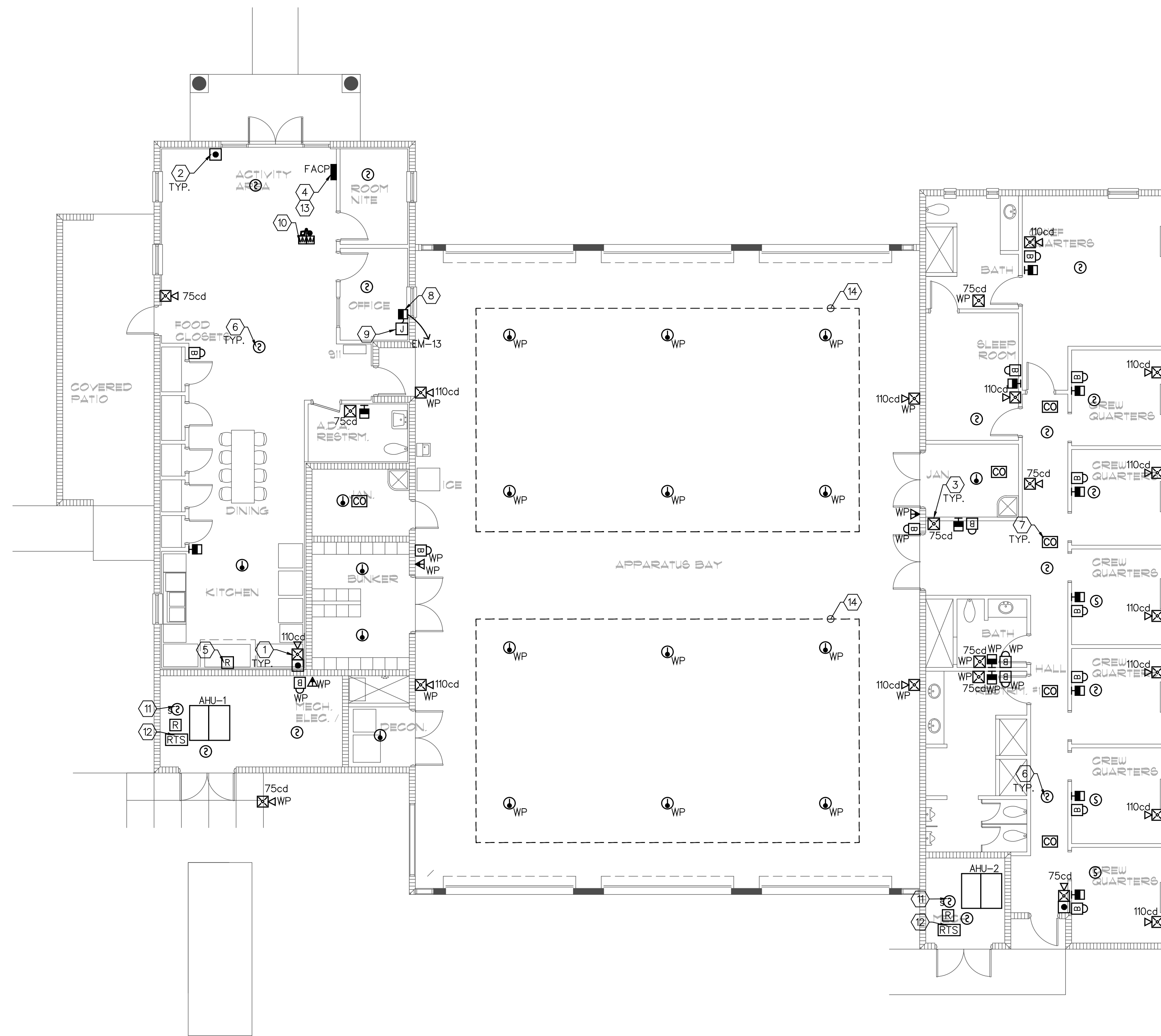
**SHEET NUMBER**

**E2.3**

**X OF X**

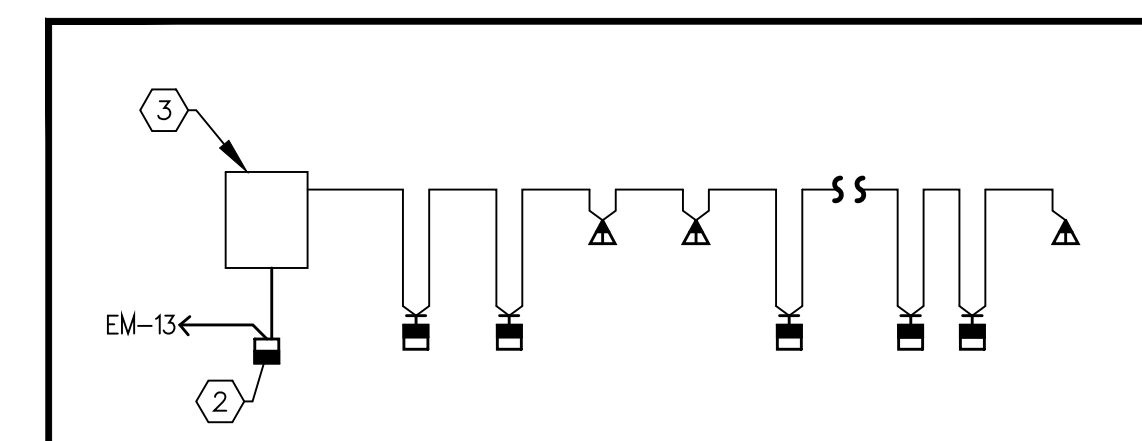
**SYSTEM KEY NOTES:** ☐

1. PROVIDE FIRE ALARM AUDIO (HORN)/VISUAL (STROBE) DEVICE MINIMUM 75cd UNLESS NOTE OTHERWISE.
2. PROVIDE FIRE ALARM PULL STATION. CONNECT TO FIRE ALARM CONTROL PANEL.
3. PROVIDE FIRE ALARM VISUAL (STROBE) DEVICE MINIMUM 75cd UNLESS NOTE OTHERWISE.
4. PROVIDE FIRE ALARM CONTROL PANEL. COORDINATE FINAL LOCATION REQUIREMENTS WITH AUTHORITY HAVING JURISDICTION (AHJ).
5. PROVIDE FIRE ALARM CONNECTION TO HOOD SUPPRESSION SYSTEM. COORDINATE WITH HOOD INSTALLER, MECHANICAL CONTRACTOR, ARCHITECT AND OWNER. REFER TO SHEET E2.4 FOR ADDITIONAL REQUIREMENTS.
6. PROVIDE FIRE ALARM SMOKE DETECTOR. CONNECT TO FIRE ALARM CONTROL PANEL.
7. PROVIDE CARBON MONOXIDE DETECTOR PER NFPA 720. THE CARBON MONOXIDE DETECTOR SHALL BE LOCATED OUTSIDE OF EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS.
8. INTERCOM CONSOLE, DESK MOUNTED BY APHONE OR APPROVED BY OWNER AND ENGINEER EQUAL. COORDINATE ALL ASSOCIATED WORK AND REQUIREMENTS WITH OWNER, INTERCOM VENDOR, MFR CUT SHEETS AND INSTRUCTIONS. REFER TO TYPICAL INTERCOM RISER DIAGRAM ON THIS SHEET.
9. PROVIDE JUNCTION BOX MOUNTED FLUSH IN WALL UNDER COUNTER. PROVIDE FLEXIBLE CONNECTION TO INTERCOM CONSOLE ON DESKTOP. REFER TO KEY NOTE #8.
10. PROVIDE FIRE ALARM CONNECTION TO FLOW AND TEMPER SWITCHES. COORDINATE EXACT LOCATION AND QUALITY WITH SPRINKLER CONTRACTOR AND SHOP DRAWINGS PRIOR TO ROUGH-IN.
11. PROVIDE DUCT SMOKE DETECTOR IN SUPPLY AIR DUCT WITH RELAY TO SHUT DOWN HVAC UNIT. DUCT MOUNTED SMOKE DETECTOR TO BE FURNISHED BY THE FIRE ALARM CONTRACTOR. INSTALLED IN THE DUCTWORK BY THE MECHANICAL CONTRACTOR AND CONNECTED TO THE FIRE ALARM SYSTEM BY THE FIRE ALARM ELECTRICAL CONTRACTOR.
12. PROVIDE AND LOCATE REMOTE TEST STATION (RTS) AT 48" AFF AT NEAREST COLUMN OR WALL. LABEL WITH ASSOCIATED HVAC UNIT NAME.
13. INTERLOCK SECURITY SYSTEM WITH FIRE ALARM. ELECTRICALLY LOCKED EGRESS DOOR TO RELEASE UPON FIRE ALARM ONLY TO EGRESS OUTSIDE (INGRESS TO THE BUILDING SHALL NOT BE ALLOWED).
14. PROVIDE HEAT DETECTORS WITH FIX TEMPERATURE IN APPARATUS BAY. THE HEAT DETECTORS SHALL BE CONNECTED TO FIRE ALARM MONITORING MODULE IN A ZONE.



**ELECTRICAL SYSTEM PLAN**

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



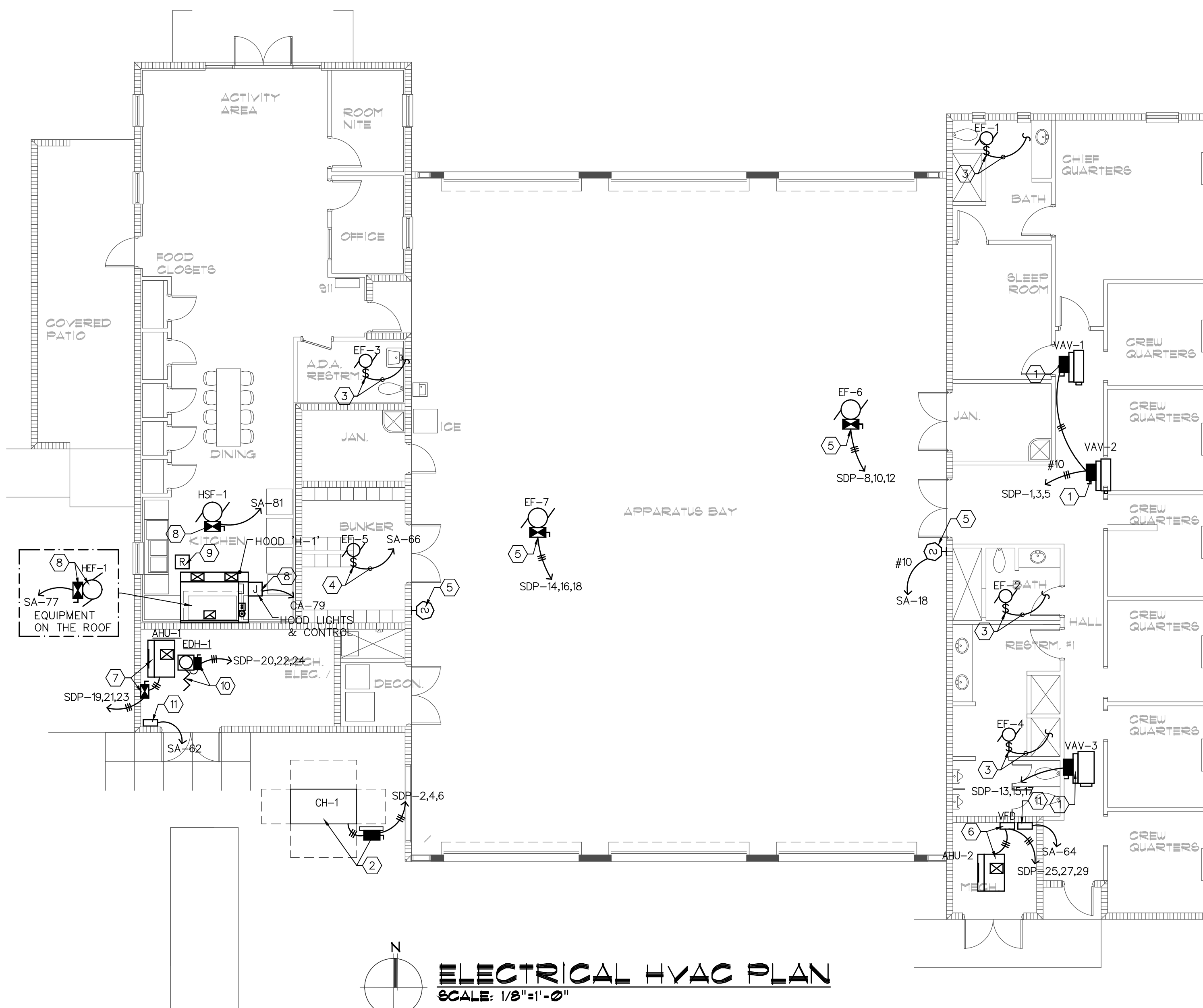
**TYPICAL INTERCOM RISER DIAGRAM**  
 NOT TO SCALE

**NOTES:**

1. REFER TO FLOOR PLANS FOR EXACT DEVICE QUANTITY AND LOCATIONS.
2. INTERCOM CONSOLE, DESK MOUNTED BY APHONE OR APPROVED BY OWNER AND ENGINEER EQUAL.
3. PROVIDE 6" X 8 X 3" JUNCTION BOX MOUNTED FLUSH IN WALL UNDER COUNTER OR AS DIRECTED BY ARCHITECT AND OWNER PROVIDE FLEXIBLE CONNECTION TO INTERCOM CONSOLE ON DESKTOP.
4. COORDINATE ELECTRICAL REQUIREMENTS WITH THE APPROVED BY OWNER INTERCOM VENDOR PRIOR TO ROUGH-IN.

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Certificate of Authorization #3173			





**ELECTRICAL HVAC PLAN**  
SCALE: 1/8"=1'-0"

HVAC SYSTEM UNITS - DISCONNECT AND FEEDER SCHEDULES														
UNIT ID #	DESCRIPTION	CIRCUIT #	HP	KVA	VOLT	PHASE	DISCONNECT/STARTER SIZE		WIRE SIZE	E.G WIRE	CONDUIT SIZE	CIR. BKR	PANEL	REMARKS
							DUAL ELEMENT FUSE	STARTER NEMA						
CH-1	AIR COOLED CHILLER	1		22.75	208	3	200/3/125/ NEMA 3R	BY DIV. 15	1/0	6	1-1/2	125	SDP	
AHU-1	AIR HANDLING UNIT	1	1.5	2.07	208	3	30/3/FUSED NEMA 1	0	12	12	3/4	15	SDP	
AHU-2	AIR HANDLING UNIT	1	3	3.82	208	3	VFD BY DIV.15	VFD BY DIV.15	10	10	3/4	30	SDP	
VAV-1	VARIABLE AIR VOLUME UNIT	1	3	3	208	3	FUSED DISCONNECT BY DIV. 15		12	12	3/4	20	SDP	
VAV-2	VARIABLE AIR VOLUME UNIT	1	1	1	208	3	FUSED DISCONNECT BY DIV. 15		10	10	3/4	40	SDP	
VAV-3	VARIABLE AIR VOLUME UNIT	1	11	11	208	3	FUSED DISCONNECT BY DIV. 15		8	10	3/4	40	SDP	
EDH-1	ELECTRIC DUCT HEATER	1	10	10	208	3	FUSED DISCONNECT BY DIV. 15		8	10	3/4	35	SDP	
HEF-1	EXHAUST FAN	1	0.5	1.13	120	1	30/2/NEMA 3R/NF	0	10	10	3/4	20	SA	INTERLOCKED WITH KITCHEN HOOD SYSTEM
HSF-1	INTAKE FAN	1	0.5	1.13	120	1	30/2/NEMA 3R/NF	0	10	10	3/4	20	SA	INTERLOCKED WITH KITCHEN HOOD SYSTEM
EF-1	EXHAUST FAN	1	0.06	0.06	120	1	BY DIV. 15	BY DIV. 15	12	12	3/4			INTERLOCKED WITH LIGHT IN THE ROOM
EF-2	EXHAUST FAN	1	0.06	0.06	120	1	BY DIV. 15	BY DIV. 15	12	12	3/4			INTERLOCKED WITH LIGHT IN THE ROOM
EF-3	EXHAUST FAN	1	0.06	0.06	120	1	BY DIV. 15	BY DIV. 15	12	12	3/4			INTERLOCKED WITH LIGHT IN THE ROOM
EF-4	EXHAUST FAN	1	0.06	0.06	120	1	BY DIV. 15	BY DIV. 15	12	12	3/4			INTERLOCKED WITH LIGHT IN THE ROOM
EF-5	EXHAUST FAN	1	0.13	0.13	120	1	BY DIV. 15	BY DIV. 15	12	12	3/4			RUN CONTINUOUSLY
EF-6	EXHAUST FAN	1	5	6.05	208	3	30/3/FUSED NEMA 3R	1	10	10	3/4	40	SDP	INTERLOCKED WITH CO SYSTEM IN APPARATUS BAY
EF-7	EXHAUST FAN	1	5	6.05	208	3	30/3/FUSED NEMA 3R	1	10	10	3/4	40	SDP	INTERLOCKED WITH CO SYSTEM IN APPARATUS BAY

**SCHEDULE NOTES:**  
1. COORDINATE ALL REQUIREMENTS WITH MECHANICAL CONTRACTOR AND DRAWINGS PRIOR TO BID AND ORDERING OF THE EQUIPMENT.

**ELECTRICAL HVAC KEY NOTES:**

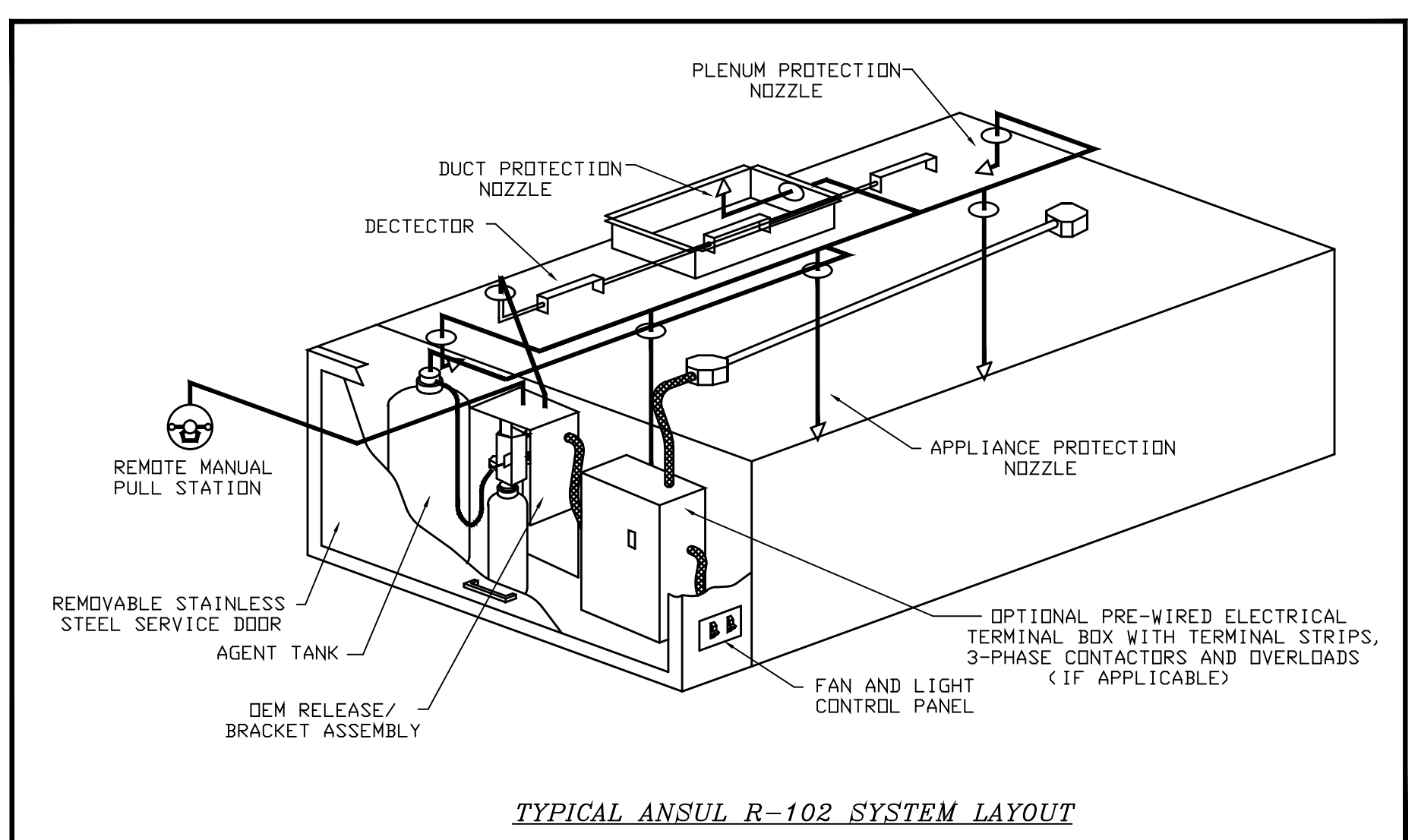
1. PROVIDE FINAL CONNECTION TO HVAC VARIABLE AIR VOLUME (VAV) AND FACTORY INSTALLED FUSED DISCONNECT. REFER TO ELECTRICAL HVAC SCHEDULE ON THIS SHEET. COORDINATE ALL REQUIREMENTS WITH MECHANICAL CONTRACTOR AND DRAWINGS.
2. PROVIDE FUSED DISCONNECT AND FINAL CONNECTION TO HVAC CHILLER UNIT (CH-1). PROVIDE UNISTRUT SUPPORT FOR DISCONNECT. REFER TO ELECTRICAL HVAC SCHEDULE ON THIS SHEET. COORDINATE ALL REQUIREMENTS WITH MECHANICAL CONTRACTOR AND DRAWINGS.
3. PROVIDE FINAL CONNECTION TO EXHAUST FAN. PROVIDE RELAY AND INTERLOCK EXHAUST FAN WITH LIGHT SWITCH SERVING THIS ROOM. REFER TO ELECTRICAL HVAC SCHEDULE ON THIS SHEET. COORDINATE ALL REQUIREMENTS WITH MECHANICAL CONTRACTOR AND DRAWINGS.
4. PROVIDE FINAL CONNECTION TO EXHAUST FAN. EXHAUST FAN SHALL RUN CONTINUOUSLY. REFER TO ELECTRICAL HVAC SCHEDULE ON THIS SHEET. COORDINATE ALL REQUIREMENTS WITH MECHANICAL CONTRACTOR AND DRAWINGS.
5. PROVIDE FINAL CONNECTION TO EXHAUST FAN EF-6 AND EF-7. PROVIDE RELAYS AND INTERLOCK EXHAUST FANS WITH CARBON MONOXIDE SENSORS IN APPARATUS BAY. REFER TO ELECTRICAL HVAC SCHEDULE ON THIS SHEET. COORDINATE ALL REQUIREMENTS WITH MECHANICAL CONTRACTOR AND DRAWINGS.
6. PROVIDE FINAL CONNECTION TO VFD AND AIR HANDLING UNIT. REFER TO ELECTRICAL HVAC SCHEDULE ON THIS SHEET. COORDINATE ALL REQUIREMENTS WITH MECHANICAL CONTRACTOR AND DRAWINGS.
7. PROVIDE DISCONNECT/STARTER AND FINAL CONNECTION TO AIR HANDLING UNIT. REFER TO ELECTRICAL HVAC SCHEDULE ON THIS SHEET. COORDINATE ALL REQUIREMENTS WITH MECHANICAL CONTRACTOR AND DRAWINGS.
8. PROVIDE FINAL CONNECTION TO KITCHEN HOOD CABINET, CONTROL SWITCH AND FAN. REFER TO CONTROL MFR PANEL DIAGRAM AND HOOD FAN AND DISC. SWITCHES SCHEDULE. INTERLOCK KITCHEN HOOD, FANS AND WITH FIRE ALARM SYSTEM. CONFIRM FINAL REQUIREMENTS WITH KITCHEN HOOD INSTALLER, AND MECHANICAL CONTRACTOR.
9. PROVIDE RELAY TO SHUT DOWN GAS SOLENOID. FIELD VERIFY EXACT GAS SOLENOID LOCATION. INTERLOCK WITH KITCHEN HOOD AND FIRE ALARM SYSTEM.
10. PROVIDE FINAL CONNECTION TO DISCONNECT AND ELECTRICAL DUCT HEATER. REFER TO ELECTRICAL HVAC SCHEDULE ON THIS SHEET. COORDINATE ALL REQUIREMENTS WITH MECHANICAL CONTRACTOR AND DRAWINGS.
11. PROVIDE FINAL CONNECTION TO HVAC CONTROL. PROVIDE CIRCUIT BREAKER ON THE PANEL WITH PERMANENT LOCK OFF DEVICE.

**HOOD GENERAL NOTES:**

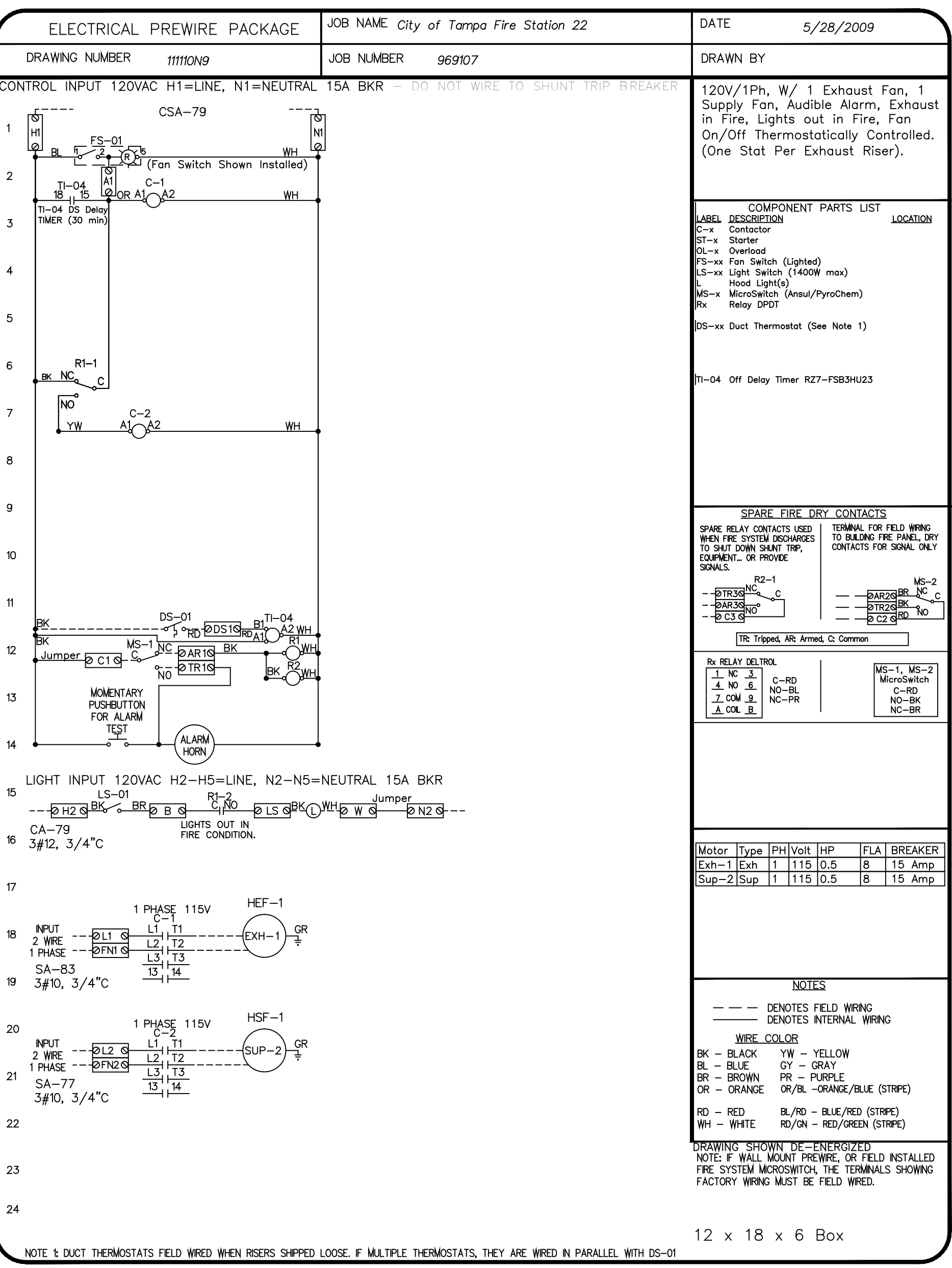
1. PROVIDE FINAL CONNECTION TO KITCHEN HOOD CABINET, CONTROL SWITCH AND FAN. REFER TO CONTROL MFR PANEL DIAGRAM AND HOOD FAN AND DISC. SWITCHES SCHEDULE. INTERLOCK KITCHEN HOOD WITH FIRE ALARM SYSTEM.
2. PROVIDE RELAY TO SHUT DOWN GAS SOLENOID. FIELD VERIFY EXACT GAS SOLENOID LOCATION. INTERLOCK WITH KITCHEN HOOD AND FIRE ALARM SYSTEM.
3. SHUNT TRIP NOTES : EXTEND 3 #12 TO SHUNT TRIP BREAKERS FROM DRY CONTACTS (NO.) UTILIZE CONTROL CIRCUIT FOR POWER SOURCE AND EXTEND 3 #12 TO SHUT DOWN GAS SOLENOID.
4. THIS DRAWING SHALL BE USED AS AN INSTRUMENT OF REFERENCE BY ALL TRADES AND CONTRACTORS. ALL TRADES SHALL VERIFY THE INFORMATION AS SHOWN ON THESE PLANS.
5. ALL NATIONAL, STATE, AND LOCAL CODES SHALL APPLY.
6. ALL NECESSARY ELECTRICAL DISCONNECTS, SHUNT TRIP BREAKERS, AND STARTERS TO BE FURNISHED AND INSTALLED BY EC, UNLESS PROVIDED AS A STANDARD COMPONENT OF THE EQUIPMENT BY THE MANUFACTURER.
7. ALL ELECTRICAL ITEMS SUPPLIED UNDER EXHAUST HOOD-- TO SHUT DOWN WITH SHUNT TRIP TIED IN TO HOOD SYSTEM.
8. KITCHEN HOOD SHALL BE WIRED IN STRICT CONFORMANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND/OR SHOP DRAWINGS.
9. STARTERS, RELAYS, HEATERS, AND SWITCHES REQUIRED FOR EXHAUST FAN ARE TO BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

**KITCHEN HOOD SEQUENCE OF OPERATION:**

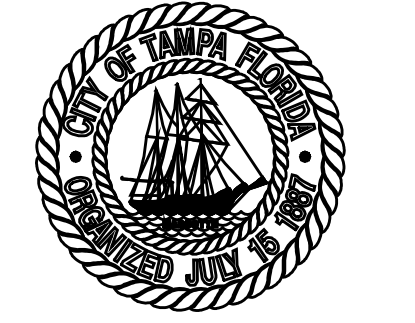
NORMAL: SUPPLY AND EXHAUST FANS ARE OPERATIONAL.  
FIRE ALARM: UPON ACTIVATION OF HOOD FIRE SUPPRESSION SYSTEM, THE SUPPLY FAN SHALL BE "OFF" AND THE EXHAUST FAN SHALL BE "OFF".



**TYPICAL ANSUL R-102 SYSTEM LAYOUT**



REFER TO HOOD SYSTEM SHOP DRAWINGS FOR EXACT SYSTEM AND ELECTRICAL REQUIREMENTS. COORDINATE WITH MECHANICAL CONTRACTOR PRIOR TO BID AND ROUGH-IN.



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**FIRE STATION 19**  
7910 INTERBAY BLVD.  
TAMPA, FL

**DPW FILE NUMBER**

**DPW NUMBER**  
FD016

**ISSUE DATE**  
MAY 31, 2013

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**SCALE**

Signature \_\_\_\_\_ Date \_\_\_\_\_  
IVAYLO I. TODOROV  
FLORIDA P.E.  
#73028

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

**ELECTRICAL HVAC PLAN**

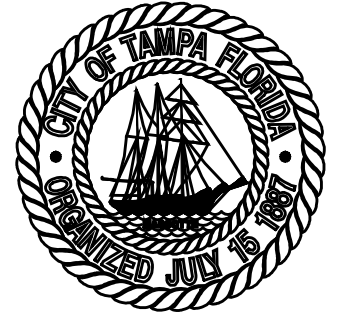
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Drawn: JFG  
Designed: JFG  
Check: JFG  
Job No.: 13052





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**DPW NUMBER**  
**FD0116**

**ISSUE DATE**  
**MAY 31, 2013**

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 #73028

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

**ELECTRICAL  
 ROOF PLAN**

**SHEET NUMBER**

**E2.5**  
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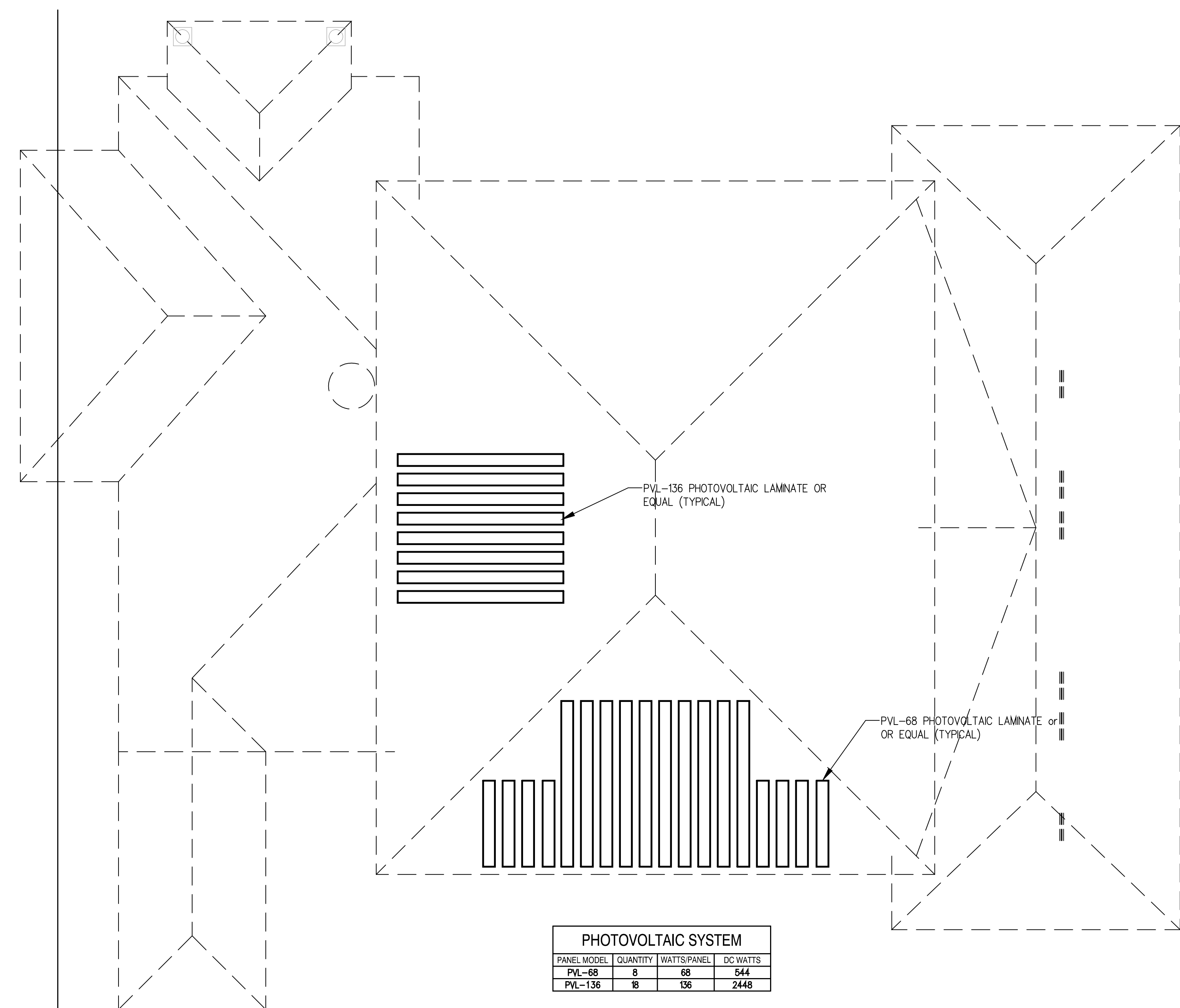
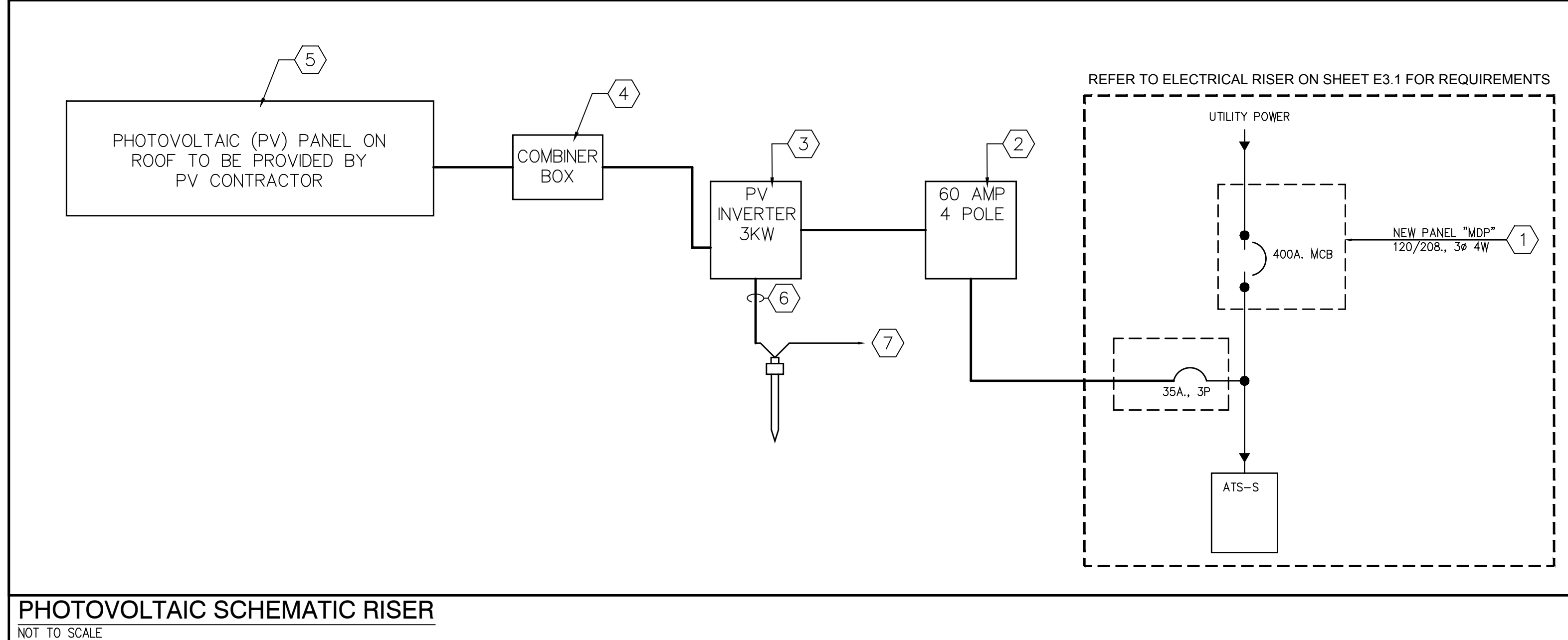
<b>G</b>	GRINER ENGINEERING, INC.	Date	05/31/2013
	1628 First Avenue North	Drawn	IT
	St. Petersburg, Florida 33713	Designed	IT
	Phone: (727)822-2335	EOR	JHG
	Fax: (727)821-0361	Certificate of Authorization #3173	Job no.

**PHOTOVOLTAIC SCHEMATIC NOTES:**

- SQUARE "D" TYPE PANEL BOARD. FURNISH AND INSTALL ON FRONT COVER A RED NAMEPLATE WITH WHITE ENGRAVED LETTERS STATING:  
 PROVIDE LABEL:  
 WARNING - ELECTRICAL SHOCK HAZARD-PANEL HAS THREE INPUT POWER SUPPLIES (UTILITY, GENERATOR AND PHOTOVOLTAIC). DISCONNECT ALL CIRCUITS BREAKERS FROM ALL POWER SOURCES BEFORE ANY WORK.
- NEW 60A, 4 POLE, NEMA 4X DISCONNECT SWITCH. MOUNT ADJACENT TO ELECTRIC METER. REFER TO ELECTRICAL SHEET E2.2 FOR EXACT LOCATION.  
**DO NOT BOND AC NEUTRAL TO GND. AT THIS LOCATION.**
- UL INVERTER RATED 3,000W DC/600VDC AND UL1741/IEEE1547 LABELED.  
 FURNISH "PV" INVERTER WITH INTEGRATED LOAD-BREAK RATED AC & DC DISCONNECT SWITCH.  
**DO NOT BOND AC NEUTRALS TO GND. AT THIS LOCATION**
- 60A, 2 POLE NEMA 3R-COMBI-SWITCH. PROVIDE WITH PERMANENT LOCK ON DEVICE. PROVIDE 10A, 600V DC MDGET FUSES (1 TOTAL) FURNISHED WITH COMBI-SWITCH.
- TYPICAL PHOTOVOLTAIC SOLAR LAMINATE PVL SERIES PVL-136 AND PVL-68 BY UNI-SOLAR OR APPROVED EQUAL. FURNISH WITH JUNCTION BOX AND MC TYPE 4 CONNECTION CABLES (TYPICAL). REFER TO ROOF LAYOUT FOR EXACT LOCATION AND LAYOUT. CONSULT MFR FOR REQUIREMENTS.
- 1 NO. 2 SOLID TINNED BARE COPPER CONDUCTOR. BOND TO 3/4 INCH X 20FT. COPPER CLAD GROUND ROD. BONDING CONNECTIONS TO GROUND ROD SHALL BE EXOTHERMIC TYPE WELDS (CADWELD).
- 1 NO. 2 SOLID TINNED BARE COPPER CONDUCTOR TO COMBINER BOXES.

**GENERAL PHOTOVOLTAIC NOTES:**

- ALL WORK SHALL COMPLY WITH FLORIDA BUILDING CODE, NATIONAL ELECTRICAL CODE, AND LOCAL ORDINANCE.
- CONTRACTOR TO SUBMIT ALL REQUIRED DOCUMENTS FOR PERMITTING AND FOR UTILITY COMPANY REVIEW.
- P.V. EQUIPMENTS, WIRES, ETC SHALL BE SIZED PER P.V. CONTRACTOR'S EQUIPMENT MANUFACTURERS RECOMMENDATIONS. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF THE P.V. SYSTEM WITH ALL CALCULATIONS, SIZING, EQUIPMENT, LOCATIONS FOR OWNER AND ENGINEER REVIEW AFTER APPROVING BY THE AUTHORITY HAVING JURISDICTION AND UTILITY COMPANY.
- CONTRACTOR SHALL COORDINATE WITH POWER COMPANY FOR FINAL AND EXACT WORK/MATERIALS INSTALLATION REQUIREMENTS FOR PHOTOVOLTAIC SYSTEM.
- CONTRACTOR SHALL PAY UTILITY FEE FOR ALL WORK PHOTOVOLTAIC WORK, AND ELECTRIC PHOTOVOLTAIC SYSTEM METERING.
- REFER TO PHOTOVOLTAIC MANUFACTURER INSTALLATION INSTRUCTIONS, CUT SHEETS, AND REQUIREMENTS FOR EXACT EQUIPMENT LAYOUTS, INSTALLATION AND COMMISSIONING.



**ELECTRICAL ROOF PLAN**  
 SCALE: 1/8" = 1'-0"



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DPW FILE NUMBER

DPW NUMBER  
**FD018**

ISSUE DATE  
**MAY 31, 2018**

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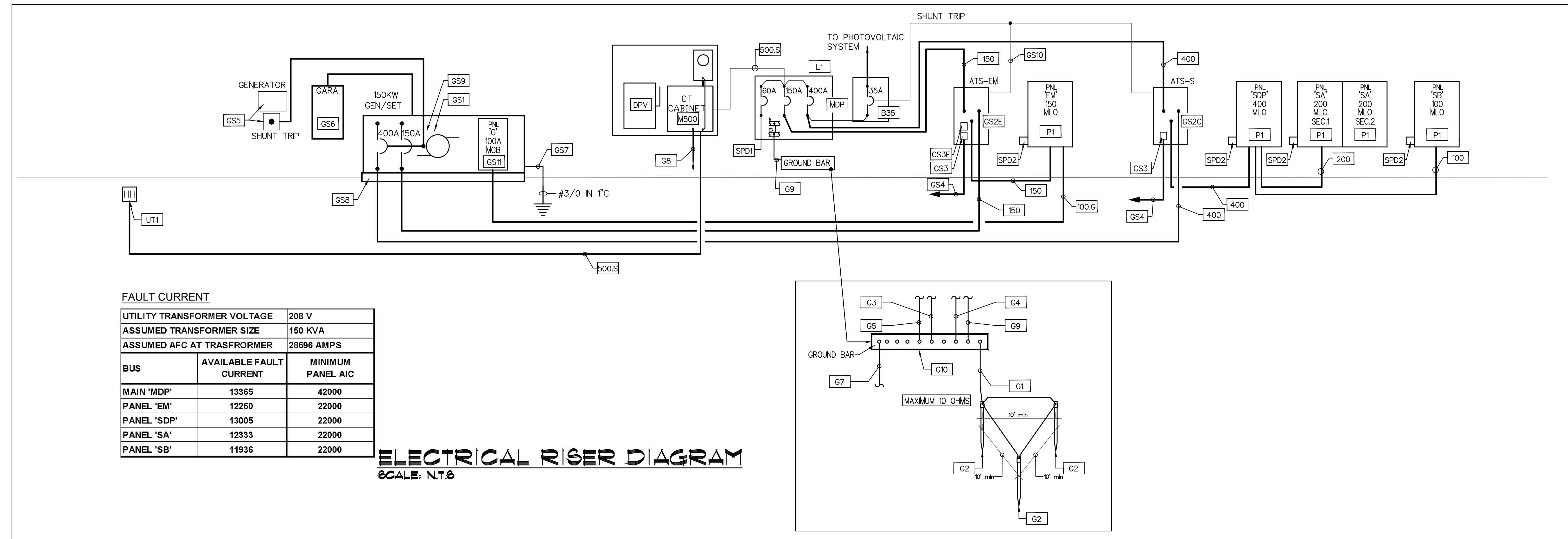
Signature Date  
 IVAYLO I. TODOROV  
 FLORIDA P.E.  
 #73028

SCALE: N.T.S.

ELECTRICAL RISER DIAGRAM

SHEET NUMBER

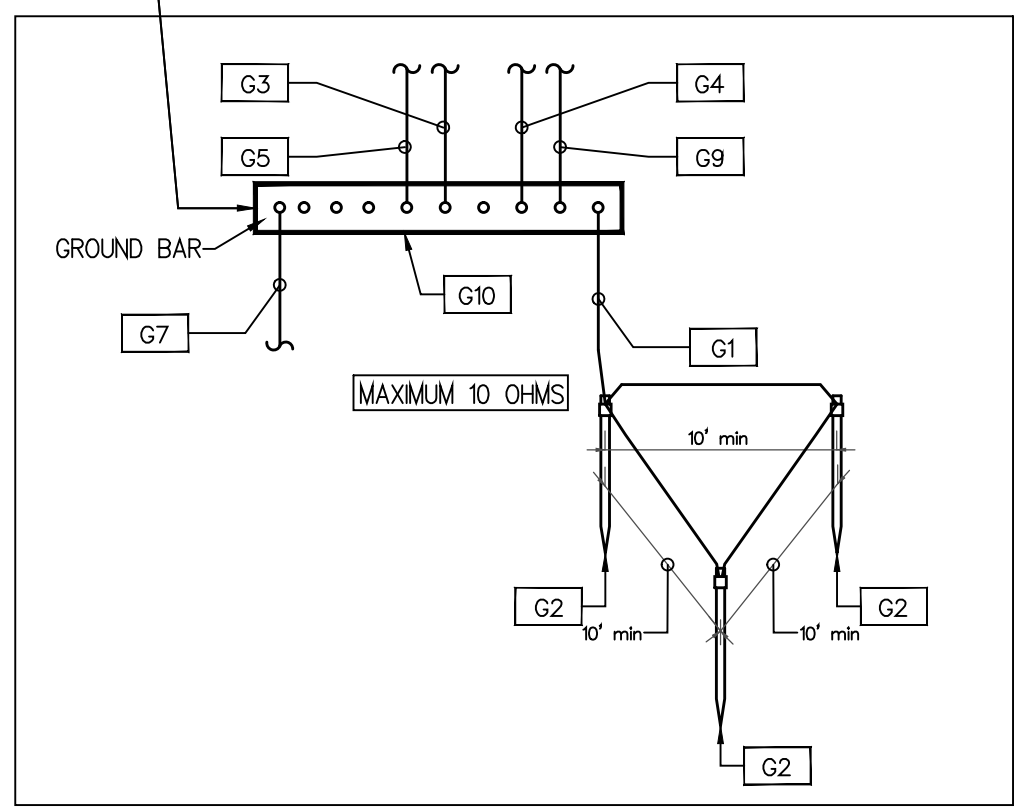
**E3.1**  
 X OF X



**FAULT CURRENT**

UTILITY TRANSFORMER VOLTAGE	208 V	
ASSUMED TRANSFORMER SIZE	150 KVA	
ASSUMED AFC AT TRANSFORMER	28596 AMPS	
BUS	AVAILABLE FAULT CURRENT	MINIMUM PANEL AIC
MAIN 'MDP'	13365	42000
PANEL 'EM'	12250	22000
PANEL 'SDP'	13005	22000
PANEL 'SA'	12333	22000
PANEL 'SB'	11936	22000

**ELECTRICAL RISER DIAGRAM**  
 SCALE: N.T.S.



**GENERAL FLORIDA BUILDING CODE NOTES:**

ALL ELECTRICAL WORK SHALL COMPLY WITH FLORIDA BUILDING CODE, COMMERCIAL ENERGY EFFICIENCY.

505.7.3 VOLTAGE DROP.  
 505.7.3.1 FEEDERS AND CUSTOMER OWNED SERVICE CONDUCTORS. FEEDER AND CUSTOMER OWNED SERVICE CONDUCTORS SHALL BE SIZED FOR A MAXIMUM VOLTAGE DROP OF 2 PERCENT AT DESIGN LOAD.  
 505.7.3.2 BRANCH CIRCUITS. BRANCH CIRCUIT CONDUCTORS SHALL BE SIZED FOR A MAXIMUM VOLTAGE DROP OF 3 PERCENT AT DESIGN LOAD.

505.7.4 COMPLETION REQUIREMENTS

505.7.4. DRAWINGS. CONSTRUCTION DOCUMENTS SHALL REQUIRE THAT WITHIN 30 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE, RECORD DRAWINGS OF THE ACTUAL INSTALLATION SHALL BE PROVIDED TO THE BUILDING OWNER INCLUDING:  
 1. A SINGLE-LINE DIAGRAM OF THE BUILDING ELECTRICAL DISTRIBUTION SYSTEM AND  
 2. FLOOR PLANS INDICATING LOCATION AND AREA SERVED FOR ALL DISTRIBUTION.

505.7.4.2 MANUALS. CONSTRUCTION DOCUMENTS SHALL REQUIRE THAT AN OPERATING MANUAL AND MAINTENANCE MANUAL BE PROVIDED TO THE BUILDING OWNER. THE MANUALS SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:  
 1. SUBMITTAL DATA STATING EQUIPMENT RATING AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE.  
 2. OPERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED.  
 3. NAMES AND ADDRESSES OF AT LEAST ONE QUALIFIED SERVICE AGENCY.

505.7.5 ELECTRICAL MOTORS. ELECTRICAL MOTORS SHALL COMPLY WITH THE REQUIREMENTS OF THE ENERGY POLICY ACT OF 1992.

**GENERAL ELECTRICAL RISER NOTES:**

1. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL ELECTRICAL WORK WITH ARCHITECT, OWNER AND GENERAL CONTRACTOR PRIOR TO BID AND START ANY WORK. NO EXCEPTION.

2. ELECTRICAL CONTRACTOR SHALL SUBMIT A PROPOSED CONSTRUCTION SCHEDULE WITH INFORMATION REGARDING ANY POSSIBLE ELECTRICAL OUTAGE TO BUILDING DURING CONSTRUCTION.

**POWER DOWN TIME NOTES:**

1. PROVIDE TEMPORARY BACK UP POWER AS REQUIRED OR/AND NEEDED DURING THE CONSTRUCTION.

**UTILITY COMPANY COORDINATION NOTES:**

1. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL ELECTRICAL WORK WITH TECO (POWER COMPANY). CONTACT MRS. JUDY BUTTS, TECO AT 813-228-4709 FOR ALL ELECTRICAL UTILITY SERVICE WORK AND REQUIREMENTS. CONTRACTOR SHALL INCLUDE ALL FEES TO PROVIDE POWER TO THE BUILDING IN HIS BID PROPOSAL. NO EXCEPTION.

**FAULT CURRENT AND SELECTIVE COORDINATION STUDIES NOTES:**

1. THE ELECTRICAL CONTRACTOR SHALL SUBMIT TO ENGINEER A LETTER FROM UTILITY COMPANY FOR THE AVAILABLE FAULT CURRENT AT THE SECONDARY TERMINALS AT THE INSTALLED UTILITY TRANSFORMER WITH PANEL SUBMITTALS. IF A LETTER IS NOT PROVIDED WITH THE PANEL SUBMITTALS, THE SUBMITTALS WILL BE REJECTED WITHOUT REVIEW. NO EXCEPTION.

2. CONTRACTOR SHALL PROVIDE FAULT CURRENT AND SELECTIVE COORDINATION STUDY FOR ENTIRE ELECTRICAL SYSTEM PER NFPA 70 AND IEEE. REFER TO ELECTRICAL SPECIFICATION FOR REQUIREMENTS.

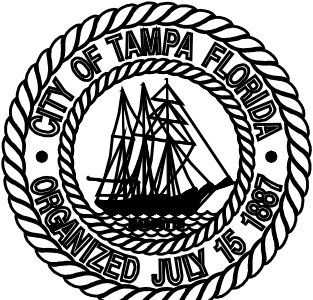
**ELECTRICAL RISER NOTES:**

MISCELLANEOUS NOTES:	GROUNDING/BOUNDING NOTES:	GENERATOR NOTES:	FEEDER SCHEDULES:
<p><b>UT1</b> UTILITY COMPANY PAD HANDHOLE AT THE POLE MOUNTED TRANSFORMER. SECONDARY VOLTAGE TO BE 120/208Y 3 PHASE, 4 WIRE WYE. FIELD VERIFY EXACT LOCATION. CONTACT AND COORDINATE ALL ELECTRICAL WORK WITH UTILITY COMPANY AND OWNER PRIOR TO BID AND START ANY WORK. NO EXCEPTION. REFER TO POWER COMPANY GENERAL NOTE ON THIS SHEET FOR ADDITIONAL REQUIREMENTS.</p> <p><b>M500</b> 3 PHASE METER AND CT CABINET PER UTILITY COMPANY SPEC.</p> <p><b>SPD1</b> SURGE PROTECTIVE DEVICE TYPE 1, UL 1449, 3RD EDITION, NEMA 3R, 100KA. EXTEND 5#4 IN 1-1/2" C AS STRAIGHT AS POSSIBLE (MAX 2'-0").</p> <p><b>SPD2</b> SURGE PROTECTIVE DEVICE TYPE 2, UL 1449, 3RD EDITION, NEMA 3R, 100KA, BY LEA. EXTEND 5#4 IN 1-1/2" C AS STRAIGHT AS POSSIBLE (MAX 2'-0").</p> <p><b>DPV</b> PROVIDE 60A, 4 POLE, NEMA 4X STAINLESS STEEL DISCONNECT SWITCH MOUNTED ADJACENT TO ELECTRIC METER FOR PHOTOVOLTAIC SYSTEM. REFER TO ELECTRICAL SHEET E2.5 FOR PHOTOVOLTAIC SYSTEM REQUIREMENTS. CONFIRM FINAL REQUIREMENTS WITH THE UTILITY COMPANY.</p> <p><b>MDP</b> MAIN DISTRIBUTION PANEL 3PH, 208/120V. REFER TO ELECTRICAL PANEL SCHEDULE FOR REQUIREMENTS.</p> <p><b>P1</b> ELECTRICAL PANEL, 3PH, 208/120V. REFER TO ELECTRICAL PANEL SCHEDULE FOR REQUIREMENTS.</p> <p><b>L1</b> PROVIDE LABEL: WARNING - ELECTRICAL SHOCK HAZARD-PANEL HAS THREE INPUT POWER SUPPLIES (UTILITY, GENERATOR AND PHOTOVOLTAIC). DISCONNECT ALL CIRCUITS BREAKERS FROM ALL POWER SOURCES BEFORE ANY WORK.</p> <p><b>B35</b> PROVIDE ENCLOSED CIRCUIT BREAKER 35 AMPS, 3P, 42KAIC RATED FOR PHOTOVOLTAIC SYSTEM WITH SHUNT TRIP MECHANISM. INTERLOCK SHUNT TRIP WITH ATS CONTACT. SHUNT TRIP TO BE ACTIVATED UPON TRANSFER TO GENERATOR POWER.</p>	<p><b>G1</b> 3/0 CU GROUND ELECTRODE CONDUCTOR IN 3/4" CONDUIT.</p> <p><b>G2</b> 3/4" X 20' LONG COPPER CLAD GROUND. CONNECT WITH EXOTHERMIC WELD.</p> <p><b>G3</b> EXTEND THE GROUND ELECTRODE SYSTEM TO A REBAR IN THE BUILDING FOUNDATION AND BUILDING STEEL. REBAR SHALL BE CONTINUOUS 20' LENGTH, #4 MINIMUM AND ENCASED IN A MINIMUM 2" OF CONCRETE PER NEC 250.52 (3).</p> <p><b>G4</b> BOND THE METALLIC COLD WATER PIPE TO THE GROUND ELECTRODE SYSTEM.</p> <p><b>G5</b> EXTEND A #1 GROUND ELECTRODE CONDUCTOR TO THE BUILDING TELEPHONE TERMINAL CABINET OR BOARD. PROVIDE A GROUND BAR AT THE TELEPHONE CABINET OR BOARD.</p> <p><b>G7</b> EXTEND A #3/0 IN 1" CONDUIT TO BUILDING LIGHTNING PROTECTION.</p> <p><b>G8</b> BOND METER TO GROUND ELECTRODE SYSTEM WITH A #1 CU GEC IN 1" CONDUIT.</p> <p><b>G9</b> 3/0 CU GROUND CONDUCTOR IN 1" CONDUIT.</p> <p><b>G10</b> PROVIDE COPPER GROUND BUSS 20" X 4" X 1/4" THICK ERICO MODEL #G8A14420MM COMPLETE WITH INSULATOR MOUNTED BRACKET. NO HOLES. PROVIDE CONNECTORS AND BOLT HOLES AS REQUIRED. MOUNT ADJACENT TO MAIN SWITCHBOARD OR AS SHOWN ON THE ELECTRICAL DRAWINGS.</p>	<p><b>GS1</b> PROVIDE EMERGENCY GENERATOR LEVEL 1, GAS/LP (DUAL SOURCES) FUELED, 150KW, 3PH, 120/208V, (WYE) 60HZ, WITH OVERSIZE ALTERNATOR, 150 AMPS AND 400 AMPS AMPS UNIT MOUNTED LSI CIRCUIT BREAKERS WITH SHUNT TRIP COIL, CERTIFIED BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA) WITH CRITICAL GRADE SOUND ALUMINUM ENCLOSURE, PF=0.8 BY KOHLER OR GENERAC, CAT AND ONAN EQUAL. VERIFY WITH GENERATOR MANUFACTURER FOR EXACT LAYOUT AND CLEARANCE AND SITE CONDITIONS PRIOR TO ORDERING.</p> <p><b>GS2E</b> 150 A, 4 POLE, NEMA 1 AUTOMATIC TRANSFER SWITCH WITH BYPASS ISOLATION, SURFACE MOUNTED, 50KA. THE TRANSFER SWITCH AND GENERATOR SHALL BE SUPPLIED AND SERVICED BY A SINGLE COMPANY. THE TRANSFER SWITCH SHALL BE PROVIDED WITH INTEGRAL SURGE PROTECTIVE DEVICE.</p> <p><b>GS2C</b> 400 A, 4 POLE, NEMA 1 AUTOMATIC TRANSFER SWITCH WITH BYPASS ISOLATION, SURFACE MOUNTED, 50KA. THE TRANSFER SWITCH AND GENERATOR SHALL BE SUPPLIED AND SERVICED BY A SINGLE COMPANY. THE TRANSFER SWITCH SHALL BE PROVIDED WITH INTEGRAL SURGE PROTECTIVE DEVICE.</p> <p><b>GS3</b> GENERATOR START RELAY. GENERATOR START RELAY. REFER TO SPECIFICATION AND GENERATOR MANUFACTURER RECOMMENDATION AND INSTRUCTION.</p> <p><b>GS3E</b> EMERGENCY LIGHTING CONTROL RELAY. COORDINATE WITH GENERATOR AND LIGHTING CONTROL MANUFACTURERS. EXTEND 3/4" C TO EMERGENCY LIGHTING CONTROL PANEL.</p> <p><b>GS4</b> 3 #12 IN 1/2" C TO GENERATOR CONTROL PANEL.</p> <p><b>GS5</b> GENERATOR EMERGENCY STOP SWITCHES (ONE IN ELECTRICAL ROOM AND ONE ADJACENT TO FACP IN NEMA 3R BOX. PROVIDE 1/4" WHITE ENGRAVED LETTERS ON RED LAMINATED PLASTIC UNDER STOP SWITCH TO READ "GENERATOR EMERGENCY STOP". SURFACE MOUNT SWITCH 4'-6".</p> <p><b>GS6</b> PROVIDE GENERATOR ALARM REMOTE ANNUNCIATOR (GARA) PANEL. COORDINATE FINAL LOCATION WITH OWNER AND AHJ AND EXTEND (1)-1" C WITH WIRING PER MANUFACTURER REQUIREMENTS.</p> <p><b>GS7</b> BOND NEUTRAL TO GROUND AT THE GENERATOR (SEPARATE DERIVE SYSTEM). PROVIDE COMPLETE GROUND/BOND FOR A SEPARATE DERIVE SYSTEM PER NFPA 70 - NATIONAL ELECTRIC CODE.</p> <p><b>GS8</b> PROVIDE CONCRETE PAD. DIMENSIONS TO BE 12" WIDER THAN GENERATOR FOOT PRINT.</p> <p><b>GS9</b> THE GENERATOR ENCLOSURE SHALL BE SOUND ATTENUATED (SOUND ATTENUATION LEVEL: 60 dBA REDUCTION AT 12'-0") (FREE FIELD) ALUMINUM CONSTRUCTION OUTDOOR WEATHER PROTECTIVE ENCLOSURE PACKAGE FOR STANDBY GENERATOR SET, LISTED AND CERTIFIED TO 150 MPH WIND, CAPACITY, MEETS ASCE 7-05, WIND RESISTANCE.</p> <p><b>GS10</b> EMERGENCY SHUNT TRIP FOR MAIN CIRCUIT BREAKER OF THE PHOTOVOLTAIC SYSTEM. COORDINATE WITH GENERATOR AND PV SYSTEM INSTALLER.</p> <p><b>GS11</b> GENERATOR PRE-WIRED PANEL 'G' 100 MCB, 120/208V, 1PH PROVIDED BY GENERATOR VENDOR.</p>	<p><b>100</b> (FEEDER - 100 AMPS)        4 #1 AND 1#6 E.G. IN 1-1/2" C</p> <p><b>200</b> (FEEDER - 200 AMPS)        4 #3/0, AND 1#6 E.G. IN 2" C</p> <p><b>400</b> (FEEDER - 400 AMPS)        (2) SETS OF 4 #3/0 AND 1#3 E.G. IN 2" C.</p> <p><b>500.S</b> (SERVICE - 500 AMPS)        (2) SETS OF 4 #250 KCMIL IN 2-1/2" C.</p> <p><b>100.G</b> (FEEDER - 100 AMPS, 1PH)        3 #1 AND 1#6 E.G. IN 1-1/2" C</p>

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Date	05/31/2018
Drawn	HT
Designed	HT
FOR	JHG
Job no.	13052





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ISSUE DATE **MAY 31, 2013**

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Signature \_\_\_\_\_ Date \_\_\_\_\_

IVAYLO I. TODOROV  
FLORIDA P.E.  
#73028

SCALE: N.T.S.

ELECTRICAL PANEL  
SCHEDULES

SHEET NUMBER \_\_\_\_\_

**E3.2**

**X OF X**

	GRINER ENGINEERING, INC.	Date	05/31/2013
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	St. Petersburg, Florida 33713	Designed	HT
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	Fax: (727)821-3361	Certificate of Authorization #3173	Job no.

PANEL	SURFACE MOUNTED	LOCATED IN ELECTRICAL ROOM	200A MLO																
MDP	120/208 VOLT 3 PHASE 4 WIRE WITH GROUND	NEMA 1 (1) AC	(1) AC																
WIRE SIZE	COND. NO.	LOAD TYPE	CKT. NO.	BREAKER TRIP POLE/VOLT	A	B	C	BREAKER TRIP POLE/VOLT	DESCRIPTION	CKT. NO.	LOAD TYPE	COND. NO.	WIRE SIZE						
10 3/4	L	1	1	APPARATUS BAY EM LITS (2)	20	1	120	1200	550	120	1	20	COVERED PATIO LIGHT (2)	2	L	3/4	12		
10 3/4	L	3	3	APPARATUS BAY EM LITS (2)	20	1	120		1200	120	1	20	EXT. BULLDOZE (2)	4	L	3/4	10		
12 3/4	L	4	4	ACTIVITY RESTRICTION EM LITS (2)	20	1	120		840	1000	120	1	20	911 EMER. LIGHT (3)	6	L	3/4	10	
12 3/4	L	7	7	BL OFFICE RES RS EM LITS (2)	20	1	120	910	1000	120	1	20	911 EMER. LIGHT (3)	8	L	3/4	10		
10 3/4	L	9	9	SLEEPING CORR. EM LITS (2)	20	1	120		420	1000	120	1	20	911 EMER. LIGHT (3)	10	L	3/4	10	
10 3/4	L	11	11	MCH RESRLE REST RM EM LITS (2)	20	1	120		790	250	120	1	15	MASTER LCP (2)	12	M	3/4	12	
12 3/4	M	13	13	INTERCOM	20	1	120	1200	1000	120	1	20	FIRE ALARM CONTROL PANEL (2)	14	M	3/4	12		
				15	SPARE	20	1	120			120	1	20	SPARE	16				
				17	SPARE	20	1	120			120	1	20	SPARE	18				
				19	SPARE	20	1	120			120	1	20	SPARE	20				
				21	SPARE	20	1	120			120	1	20	SPARE	22				
8 1	L	23	23	SITE LIGHTING	20	2	208		724		1			SPACE	24				
8 1	L	25	25	SITE LIGHTING	20	2	208		724		1			SPACE	26				
8 1	L	27	27	SITE LIGHTING	20	2	208		150	3000	208	2	100	GENERATOR PHASER RED PNL 'G' (2)	28	M		REFER TO DRAWINGS	
8 1	L	29	29	SITE LIGHTING	20	2	208		550	3000	550	3000							
CONNECTED VA SYSTEM VOLTS PHASE AMPS										6584			7070			7154			NOTES (1)
LOAD TYPE										CONNECTED			NEC DEMAND			DEMAND LOAD			1. REFER TO FAULT CURRENT STATEMENT ON RISER DIAGRAM
L	LIGHTING									12358	125	15440	VA						
R	RECEPTACLES									0	1	0	VA						
AC	AIR CONDITIONING									0	0	0	VA						
H	HEATING									0	0	0	VA						
M	MISC. NON-CONTINUOUS									8450	1	8450	VA						
C	CONTINUOUS									0	1.25	0	VA						
K	KITCHEN									0	0.65	0	VA						
TOTAL										28882			66			AMPS			2. PROVIDE BREAKER WITH LOCK OFF DEVICE.
CONNECTED VA SYSTEM VOLTS PHASE AMPS										6584			7070			7154			3. ALL LIGHT SYSTEMS PROVIDED BY OTHERS.

PANEL	SURFACE MOUNTED	LOCATED IN ELECTRICAL ROOM	200A MLO																
SA	120/208 VOLT 3 PHASE 4 WIRE WITH GROUND	NEMA 1 (1) AC	(1) AC																
WIRE SIZE	COND. NO.	LOAD TYPE	CKT. NO.	BREAKER TRIP POLE/VOLT	A	B	C	BREAKER TRIP POLE/VOLT	DESCRIPTION	CKT. NO.	LOAD TYPE	COND. NO.	WIRE SIZE						
12 3/4	R	43	43	TELEPHONE RECEPTACLES-1	20	1	120	360	360	120	1	20	CHIEF QUARTER-1	44	R	3/4	10		
12 3/4	R	45	45	TELEPHONE RECEPTACLES-2	20	1	120		360	540	120	1	20	CHIEF QUARTER-2	46	R	3/4	10	
12 3/4	R	47	47	TELEPHONE RECEPTACLES-3	20	1	120		360	540	120	1	20	CAPTAIN QUARTERS-1	48	R	3/4	10	
12 3/4	M	49	49	SECURITY SYSTEM	20	1	120	500	540	120	1	20	CAPTAIN QUARTERS-2	50	R	3/4	10		
				51	SPARE	20	1	120			120	1	20	CREW QUARTERS-1	52	R	3/4	10	
				53	SPARE	20	1	120			540	120	1	20	CREW QUARTERS-2	54	R	3/4	10
				55	SPARE	20	1	120			540	120	1	20	CREW QUARTERS-3	56	R	3/4	10
10 3/4	M	57	57	EMT(6)	15	1	120		500	540	120	1	20	CREW QUARTERS-4	58	R	3/4	10	
12 3/4	M	59	59	EMT(6)	15	1	120		500	900	120	1	20	REFRIGERATOR-4	60	M	3/4	12	
12 3/4	R	61	61	ACTIVITY ROOM RECEPTACLES	20	1	120	900	750	120	1	20	AIR-1 CONTROL (6)	62	M	3/4	12		
12 3/4	R	63	63	ELECTRICAL ROOM RECEPTACLES	20	1	120		360	750	120	1	20	AIR-2 CONTROL (6)	64	M	3/4	12	
12 3/4	R	65	65	EXTRIOR RECEPTACLES	20	1	120		540	250	120	1	15	EXHAUST FAN D-5	66	M	3/4	12	
				67	SPARE	20	1	120			120	1	20	SPARE	68				
				69	SPARE	20	1	120			120	1	20	SPARE	70				
				71	SPARE	20	1	120			120	1	20	SPARE	72				
				73	SPARE	20	1	120			120	1	20	SPARE	74				
				75	SPARE	20	1	120			120	1	20	SPARE	76				
10 3/4	M	77	77	HOOD FAN HP-1 (2)	15	1	120				1			SPACE	78				
12 3/4	M	79	79	HOOD LIGHTS & CONTROL	15	1	120	600			1			SPACE	80				
10 3/4	M	81	81	HOOD FAN HP-1 (2) (3)	15	1	120		1200		1			SPACE	82				
12 3/4	M	83	83	(SHUNT TRIP)	1						1			SPACE	84				
CONNECTED VA SYSTEM VOLTS PHASE AMPS										14900			13660			13620			NOTE (1)
LOAD TYPE										CONNECTED			NEC DEMAND			DEMAND LOAD			1. REFER TO FAULT CURRENT STATEMENT ON RISER DIAGRAM
L	LIGHTING									4430	125	5575	VA						
R	RECEPTACLES									11750	1	10875	VA						
AC	AIR CONDITIONING									0	0	0	VA						
H	HEATING									0	0	0	VA						
M	MISC. NON-CONTINUOUS									26000	1	24000	VA						
C	CONTINUOUS									0	1.25	0	VA						
K	KITCHEN									0	0.65	0	VA						
TOTAL										42413			118			AMPS			2. COORDINATE BREAKER SIZE WITH DOOR INSTALLER AND NAME PLATE.
CONNECTED VA SYSTEM VOLTS PHASE AMPS										14900			13660			13620			3. PROVIDE WITH SHUNT RIP MECHANISM INTERLOCKED WITH KITCHEN HOOD AND FIRE ALARM SYSTEM.
LOAD TYPE										CONNECTED			NEC DEMAND			DEMAND LOAD			4. CONFIRM FINAL REQUIREMENTS FOR TRAFFIC SIGNAL WITH OWNER.
L	LIGHTING									4430	125	5575	VA						
R	RECEPTACLES									11750	1	10875	VA						
AC	AIR CONDITIONING									0	0	0	VA						
H	HEATING									0	0	0	VA						
M	MISC. NON-CONTINUOUS									26000	1	24000	VA						
C	CONTINUOUS									0	1.25	0	VA						
K	KITCHEN									0	0.65	0	VA						
TOTAL										42413			118			AMPS			5. PROVIDE WITH BREAKER.
CONNECTED VA SYSTEM VOLTS PHASE AMPS										14900			13660			13620			6. PROVIDE BREAKER WITH LOCK OFF DEVICE.

**PANEL SCHEDULE 'SA'**  
NOT TO SCALE

PANEL	SURFACE MOUNTED	LOCATED IN ELECTRICAL ROOM	150A MLO															
EM	120/208 VOLT 3 PHASE 4 WIRE WITH GROUND	NEMA 1 (1) AC	(1) AC															
WIRE SIZE	COND. NO.	LOAD TYPE	CKT. NO.	BREAKER TRIP POLE/VOLT	A	B	C	BREAKER TRIP POLE/VOLT	DESCRIPTION	CKT. NO.	LOAD TYPE	COND. NO.	WIRE SIZE					
10 3/4	L	1	1	APPARATUS BAY EM LITS (2)	20	1	120	1200	550	120	1	20	COVERED PATIO LIGHT (2)	2	L	3/4	12	
10 3/4	L	3	3	APPARATUS BAY EM LITS (2)	20	1	120		1200	900	120	1	20	EXT. BULLDOZE (2)	4	L	3/4	10
12 3/4	L	4	4	ACTIVITY RESTRICTION EM LITS (2)	20	1	120		840	1000	120	1	20	911 EMER. LIGHT (3)	6	L	3/4	10
12 3/4	L	7	7	BL OFFICE RES RS EM LITS (2)	20	1	120	910	1000	120	1	20	911 EMER. LIGHT (3)	8	L	3/4	10	
10 3/4	L	9	9	SLEEPING CORR. EM LITS (2)	20	1												







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**FIRE STATION 19**  
 7910 INTERBAY BLVD.  
 TAMPA, FL

DPW FILE NUMBER

DPW NUMBER  
**FD0118**

ISSUE DATE  
**MAY 31, 2018**

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SEAL

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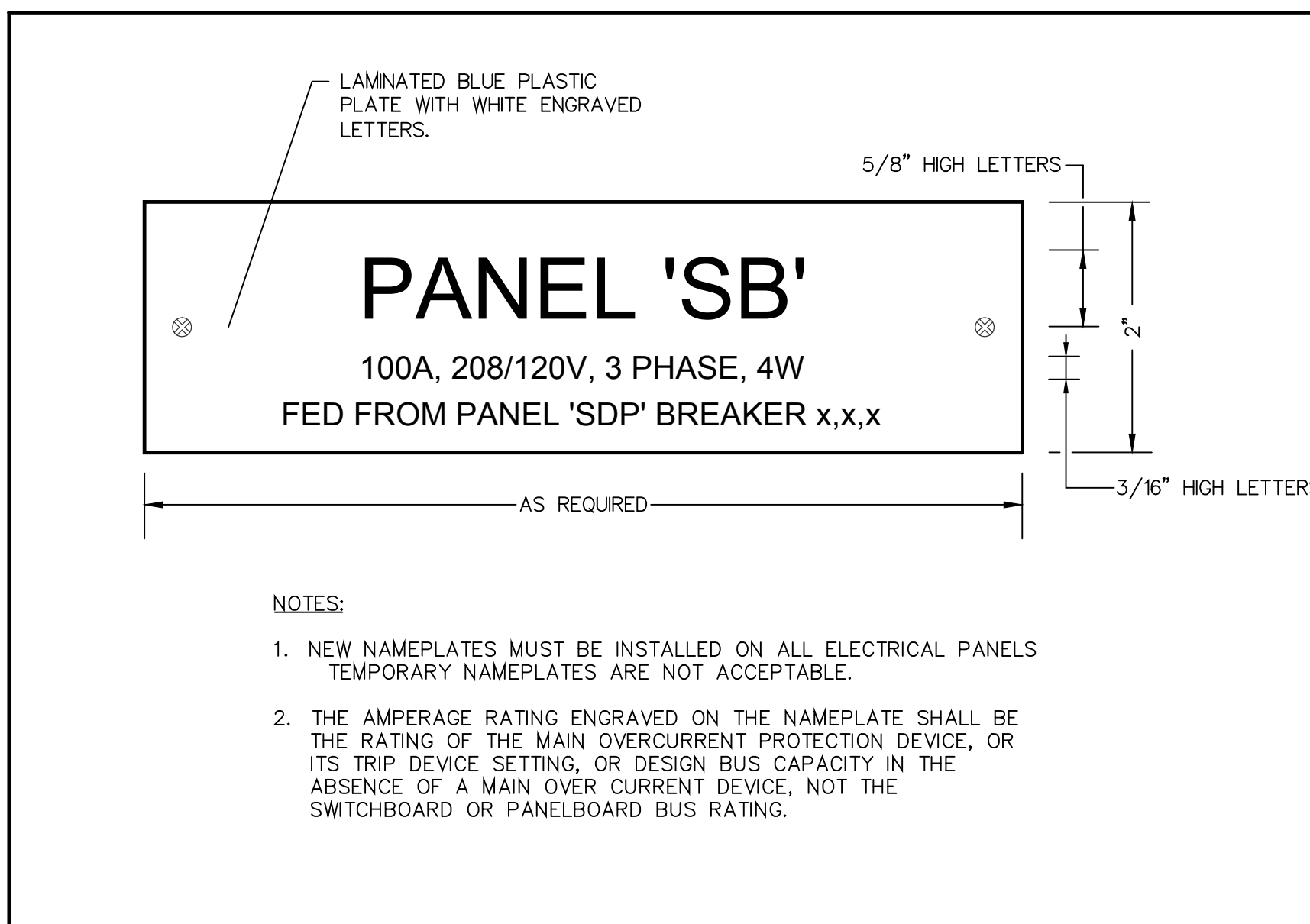
ELECTRICAL DETAILS

SHEET NUMBER

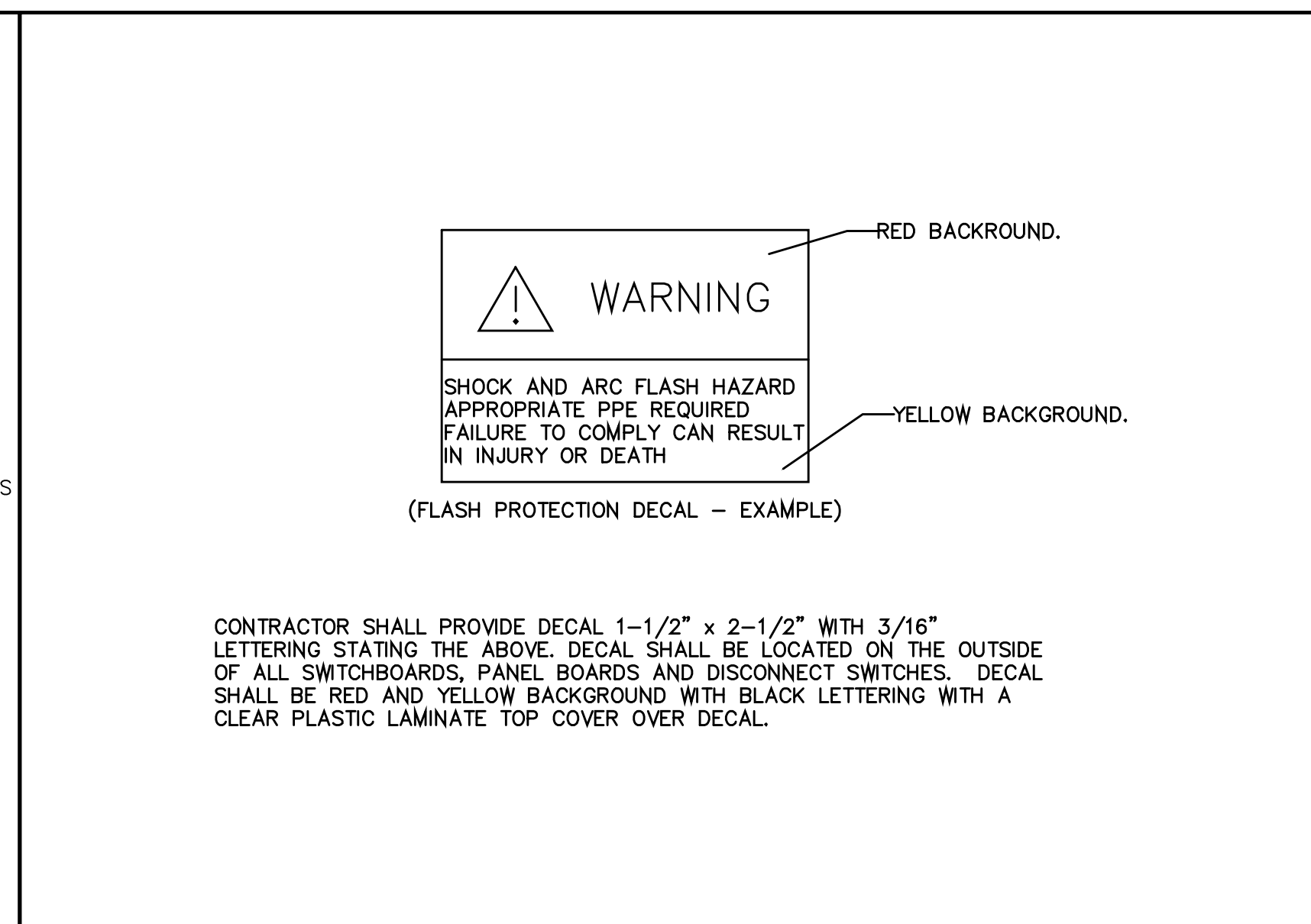
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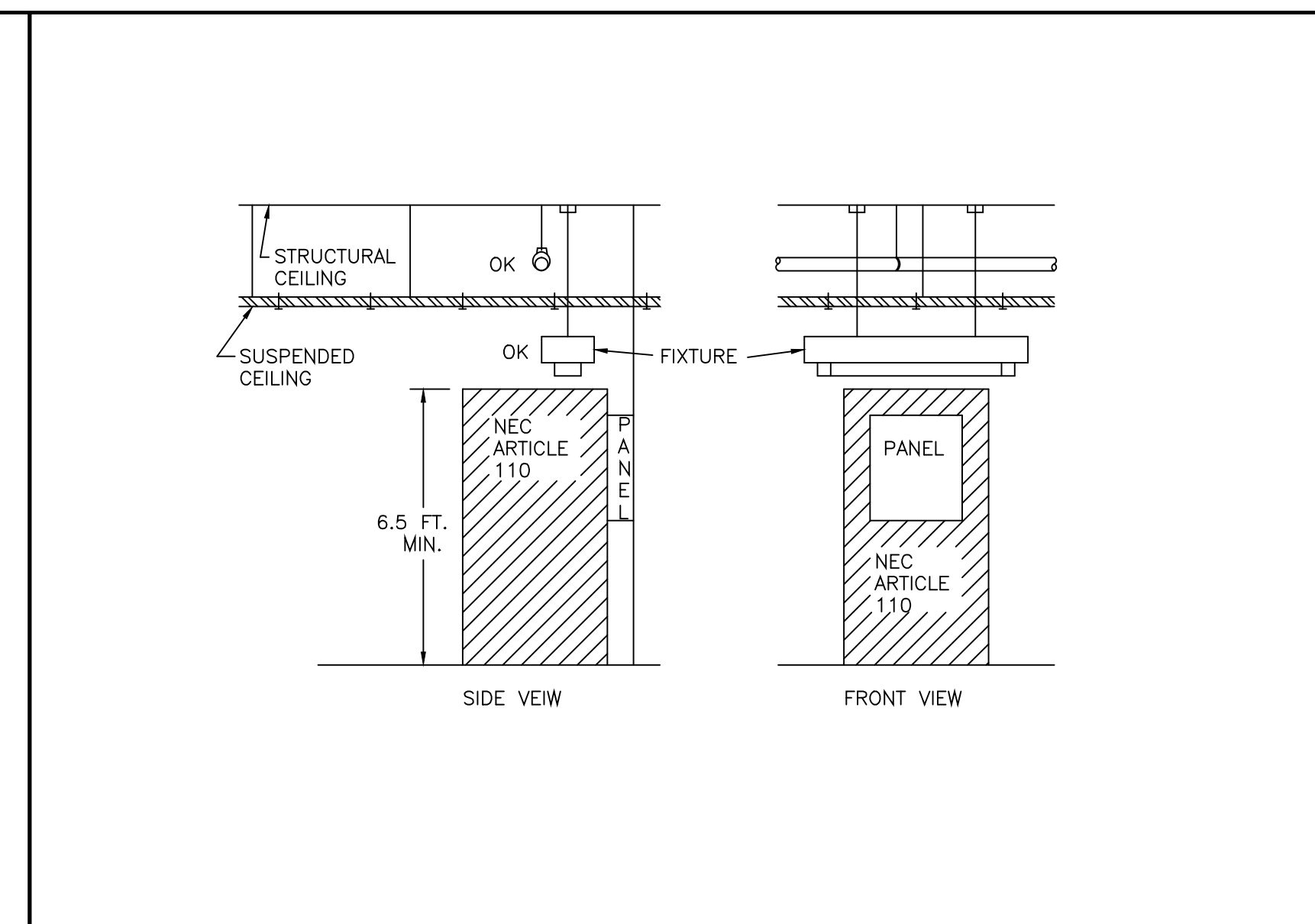
	GRINER ENGINEERING, INC.	Date	05/31/2018
	1628 First Avenue North	Drawn	HT
	St. Petersburg, Florida 33713	Designed	HT
	Phone: (727) 822-2335	EOR	JHG
	Fax: (727) 821-3361	Job no.	13052
Certificate of Authorization #3173			



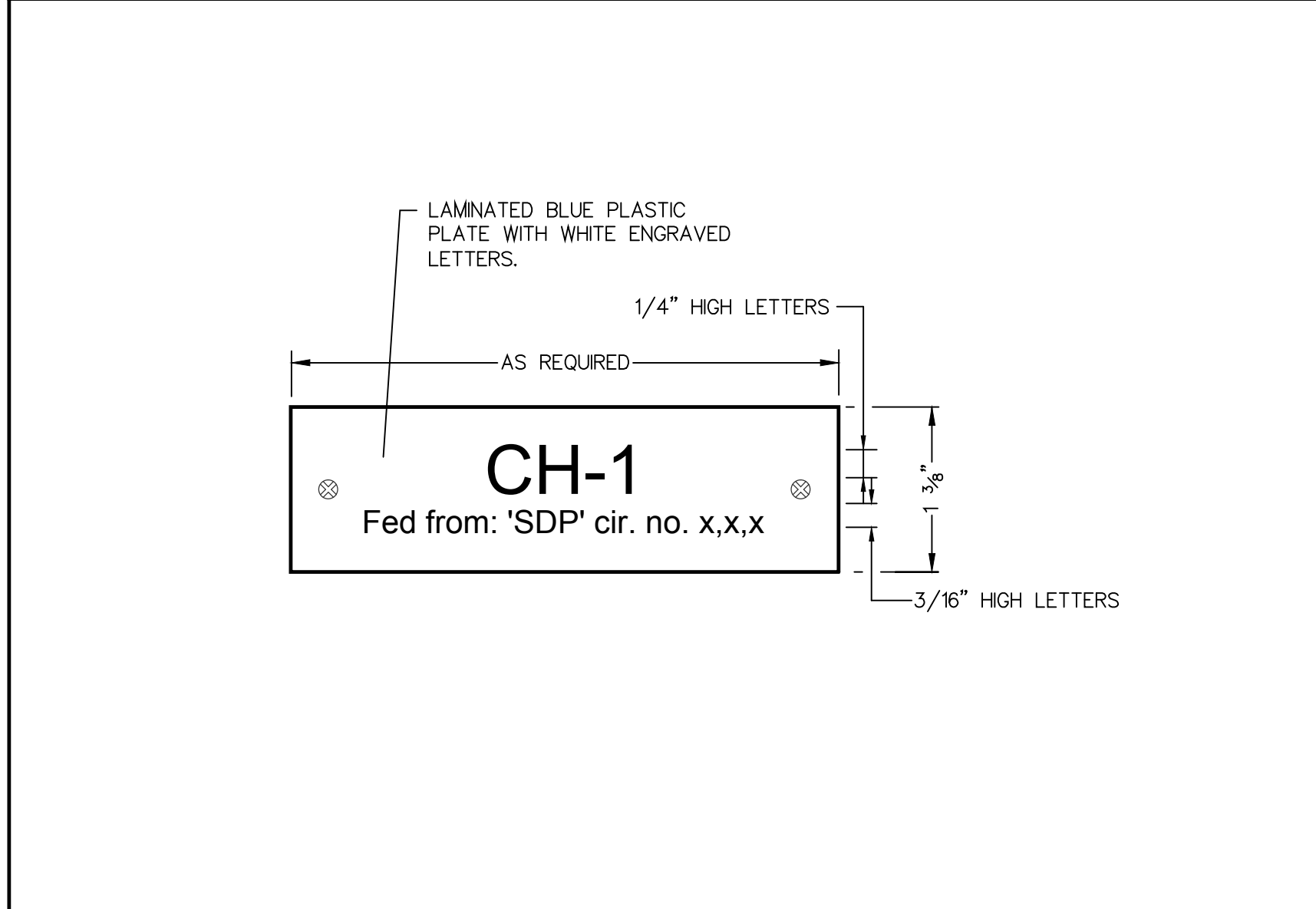
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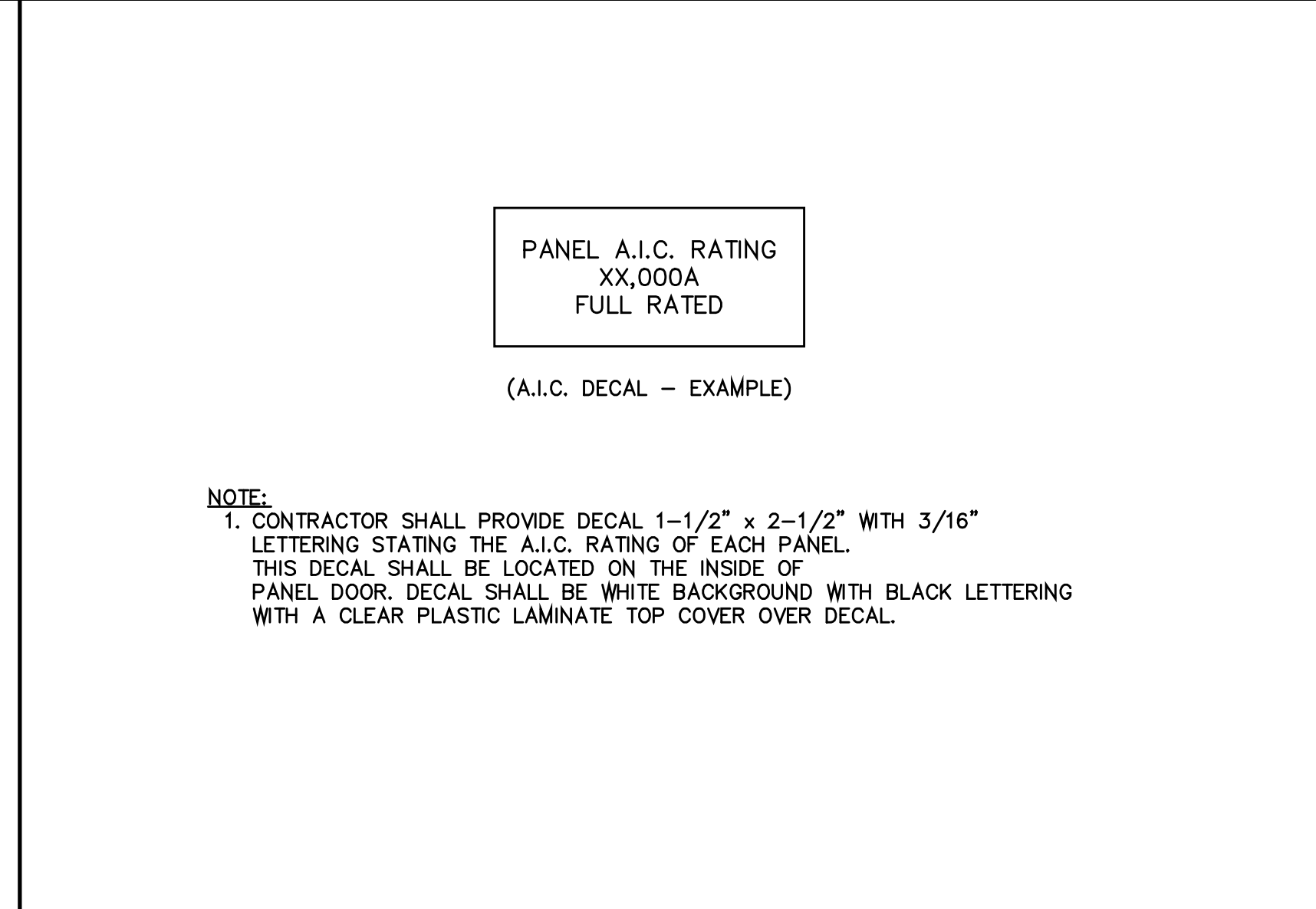
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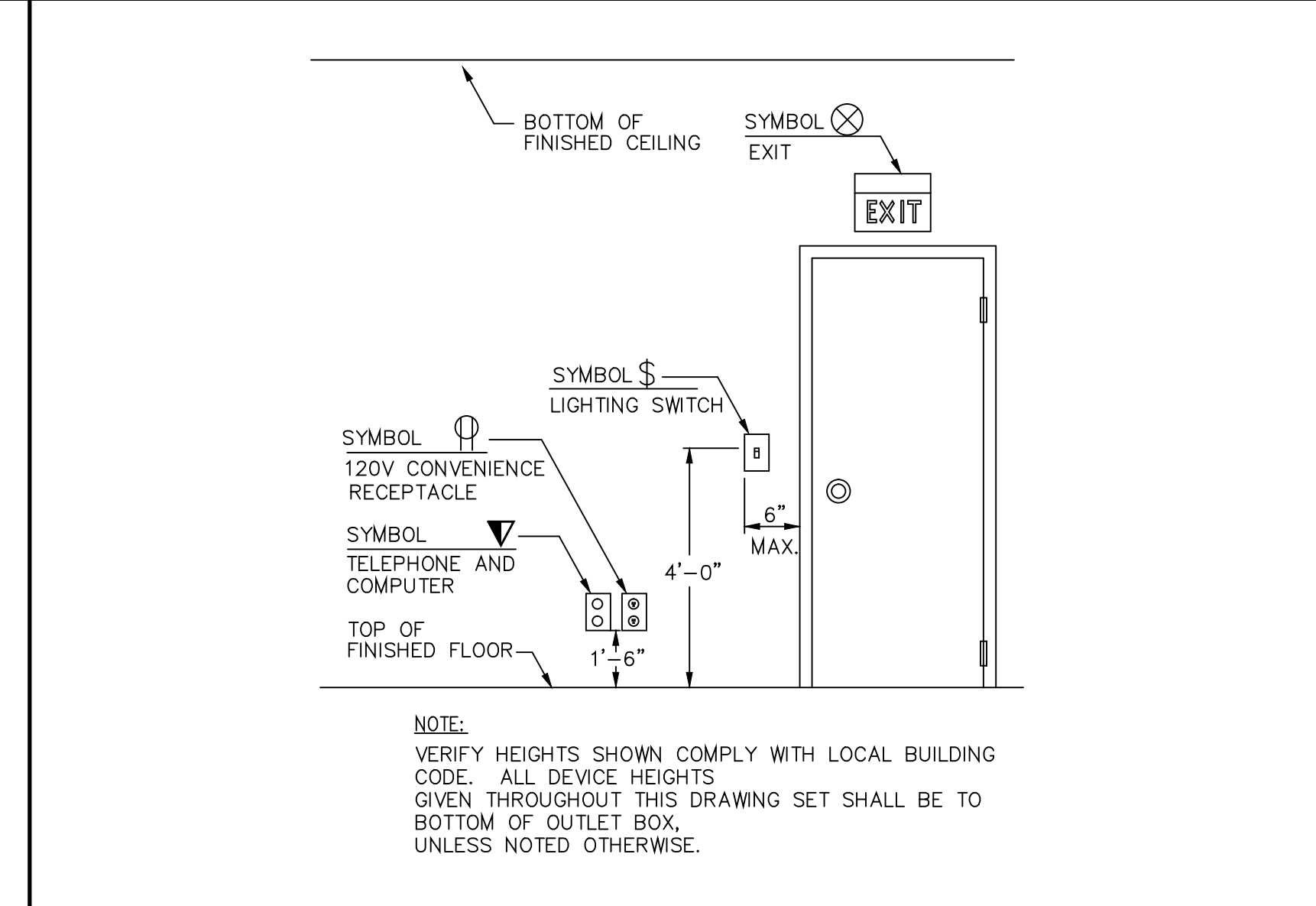
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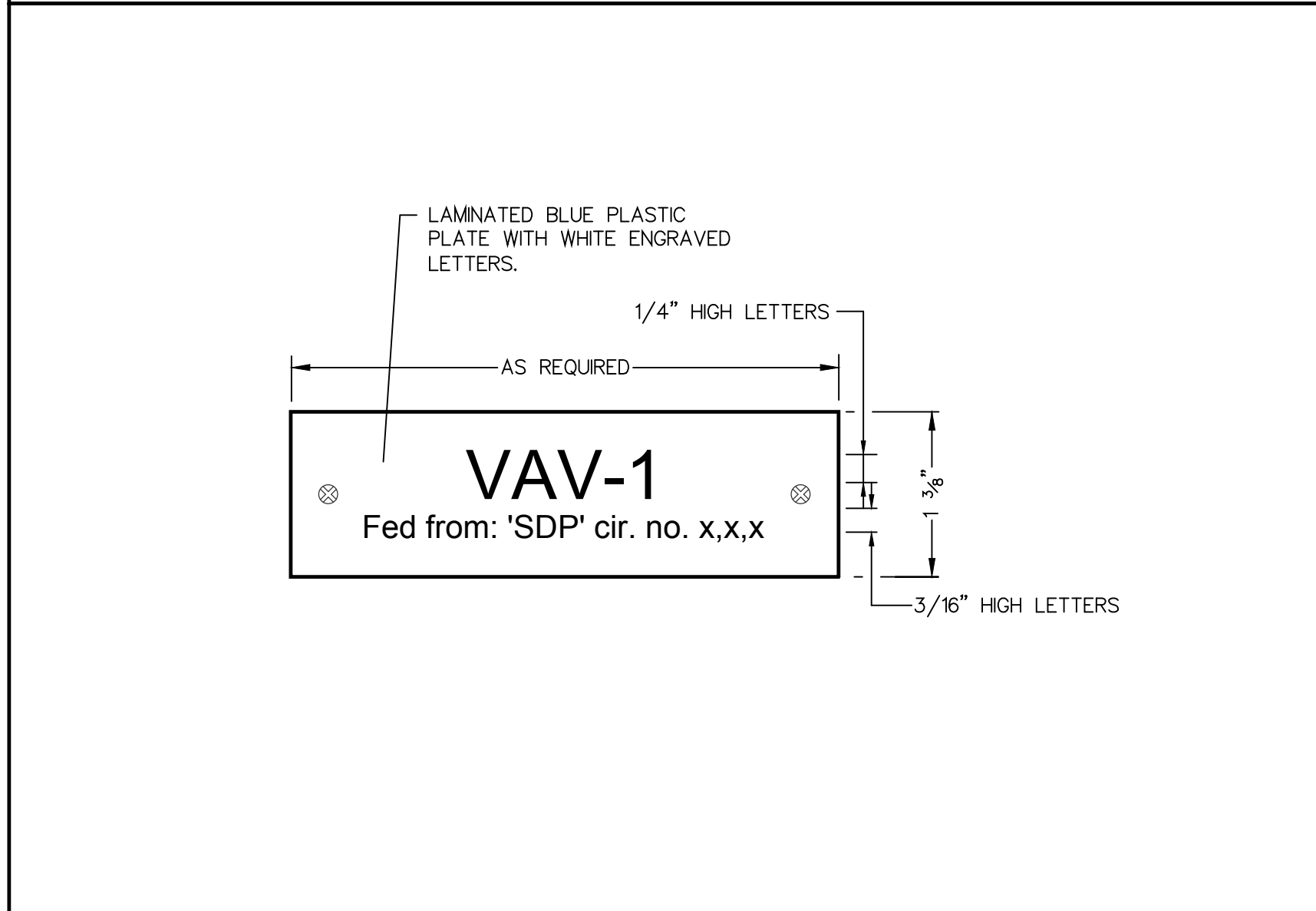
**TYPICAL HVAC CHILLER UNIT NAMEPLATE DETAIL**  
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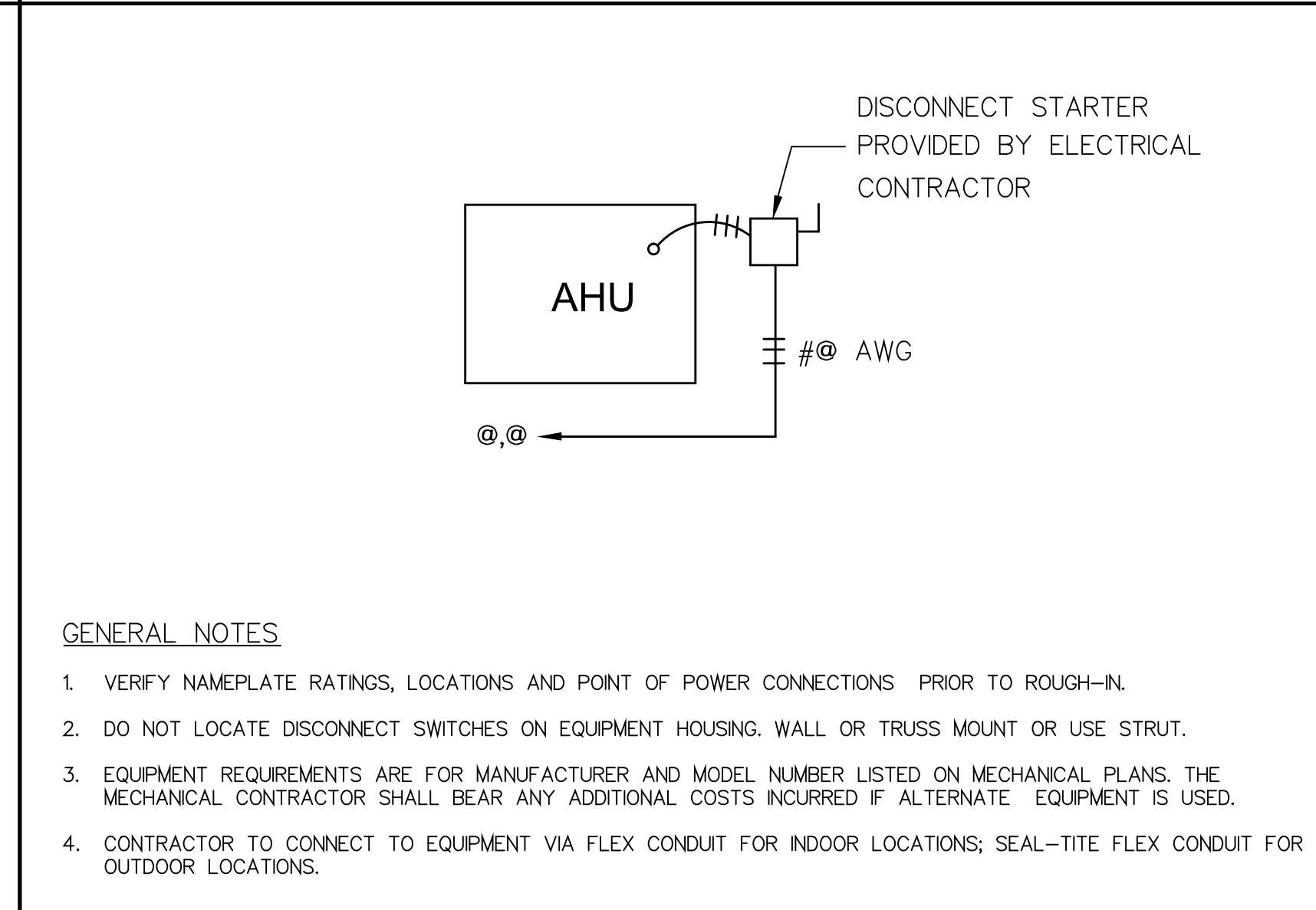
**A.I.C. IDENTIFICATION DECAL**  
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**TYPICAL DEVICE MOUNTING HEIGHT**  
 NOT TO SCALE



**TYPICAL HVAC UNIT NAMEPLATE DETAIL**  
 NOT TO SCALE



**TYPICAL HVAC AIR HANDLING UNIT CONNECTION DETAIL**  
 NOT TO SCALE



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**FIRE STATION 19**  
 7910 INTERBAY BLVD.  
 TAMPA, FL

DPW FILE NUMBER

DPW NUMBER  
**FD016**

ISSUE DATE  
**MAY 31, 2013**

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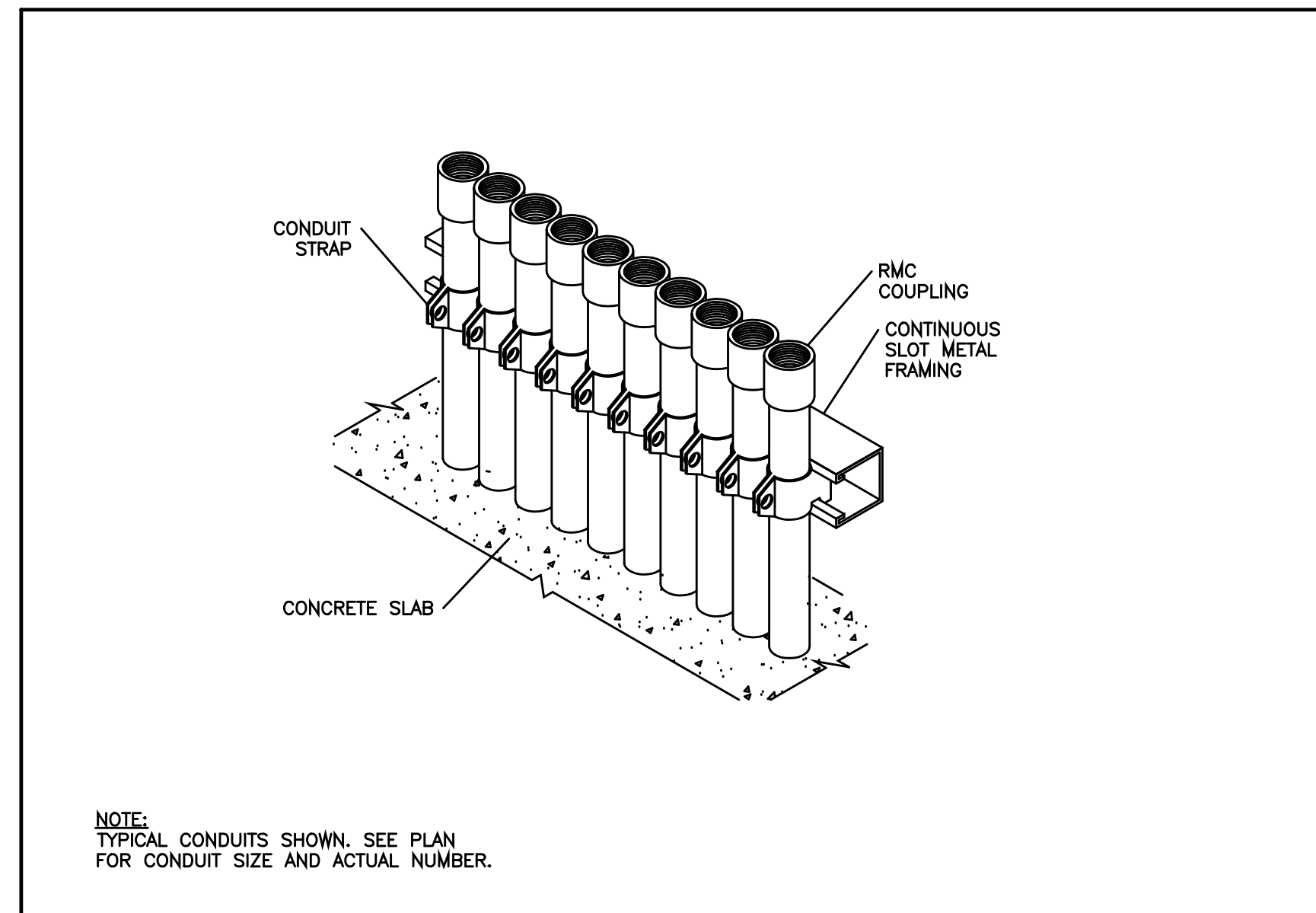
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ELECTRICAL DETAILS

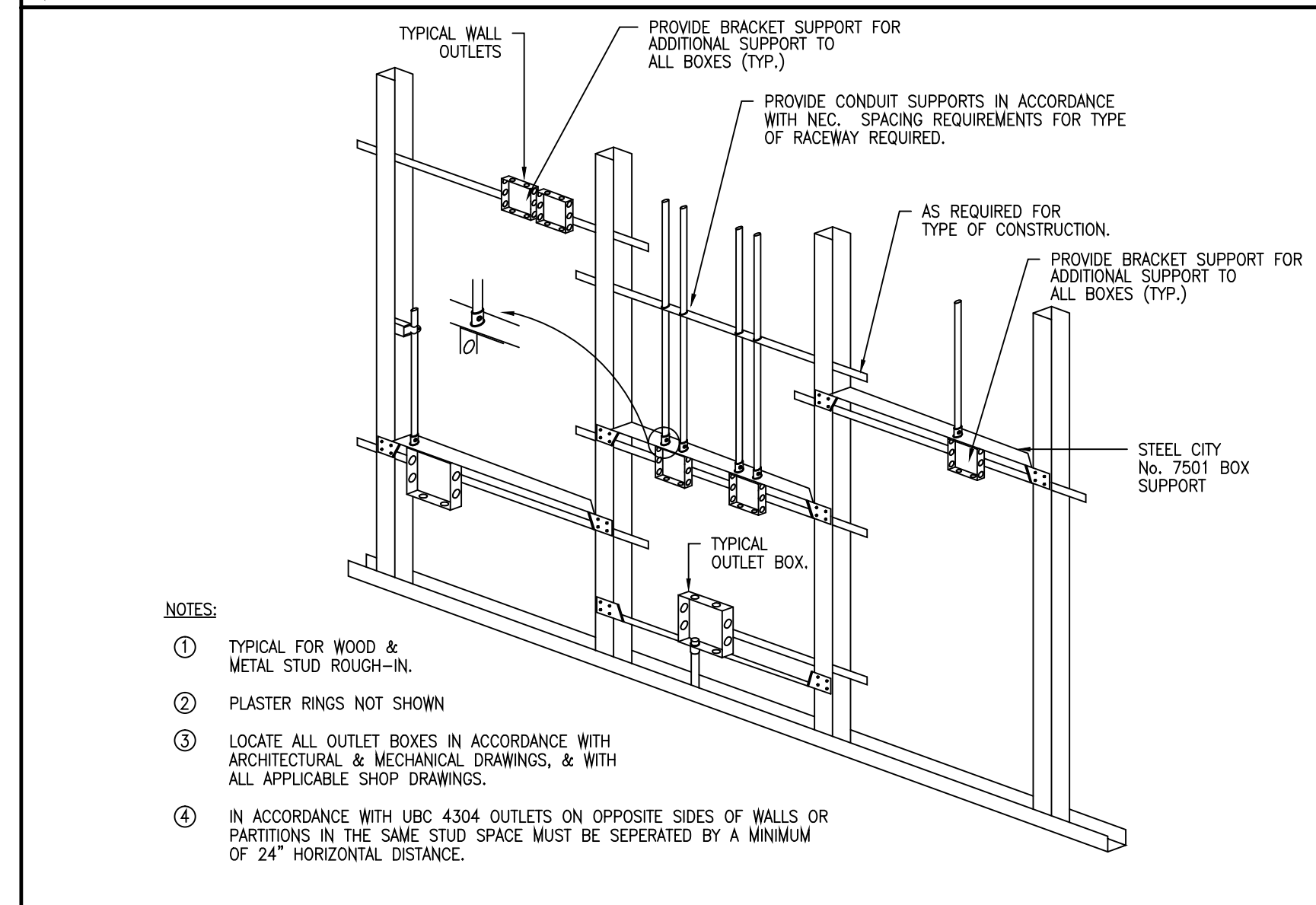
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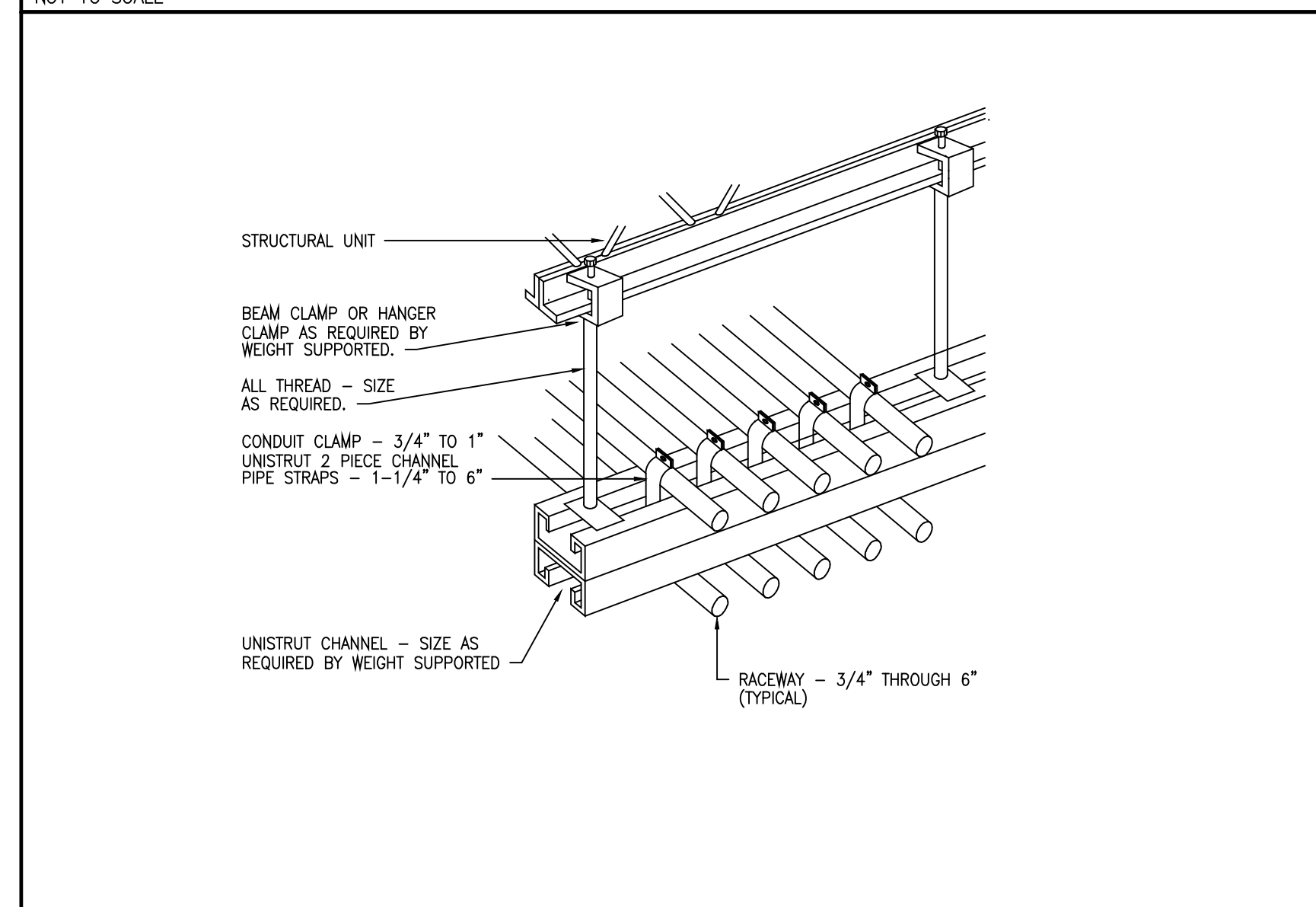
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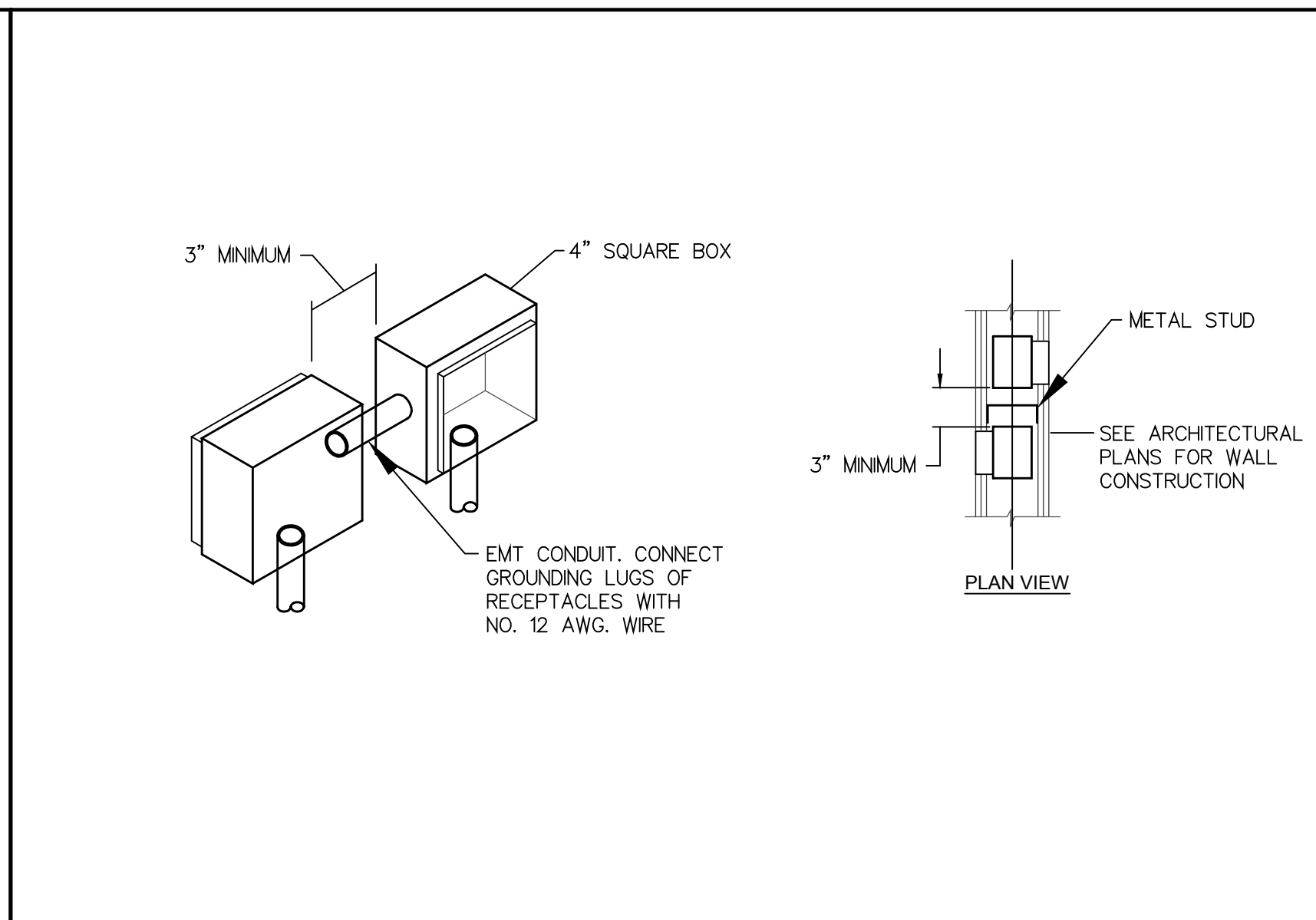
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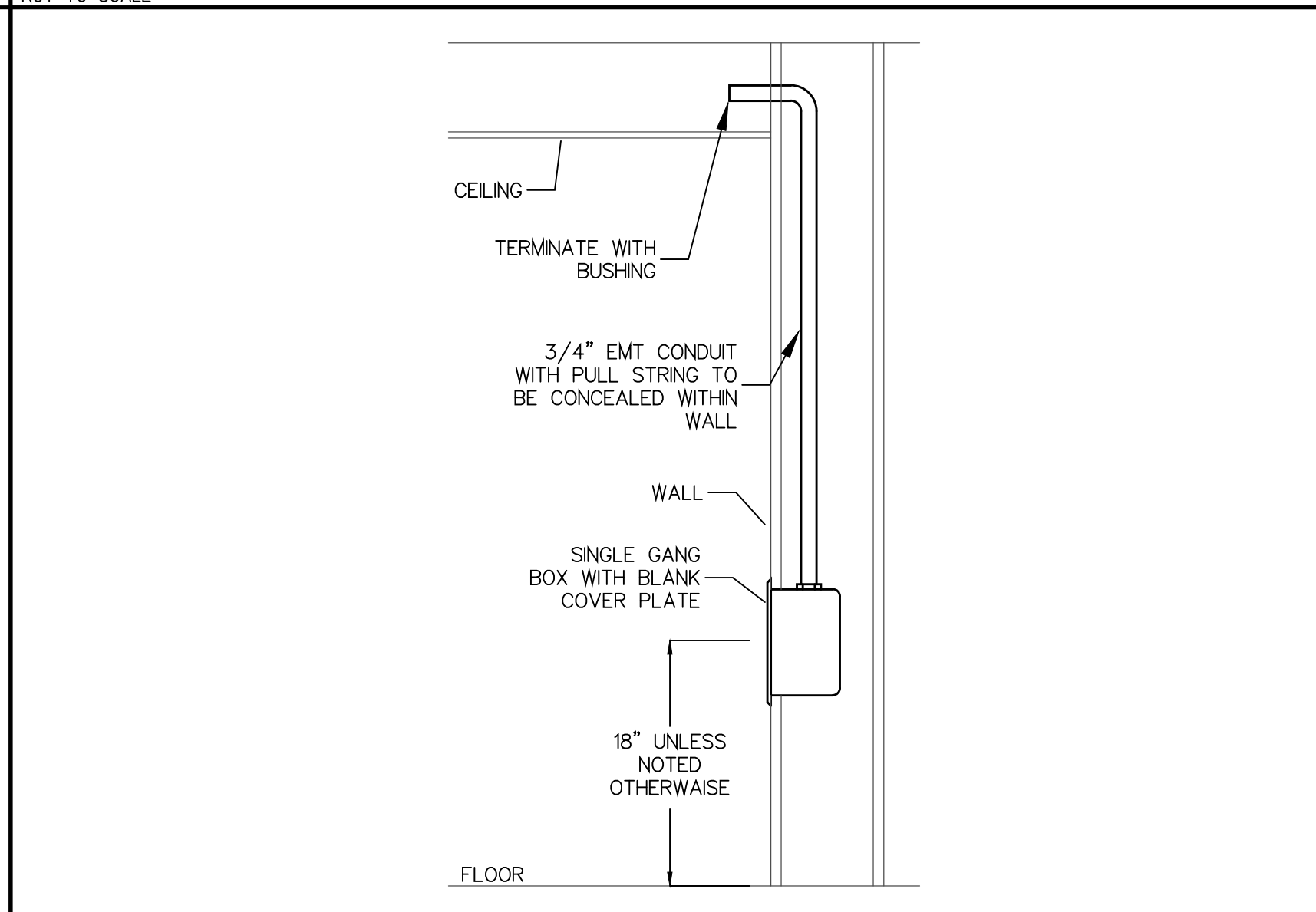
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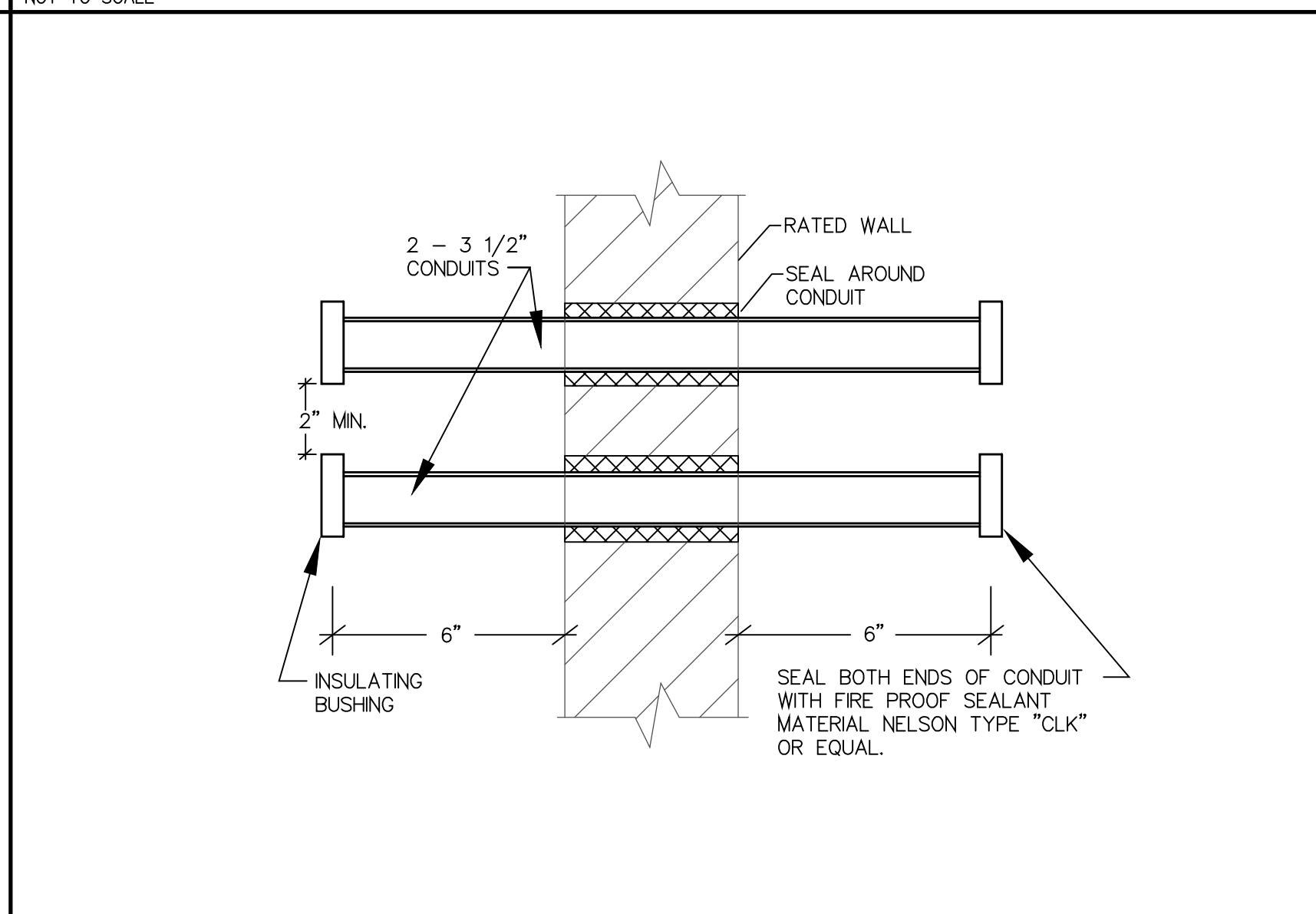
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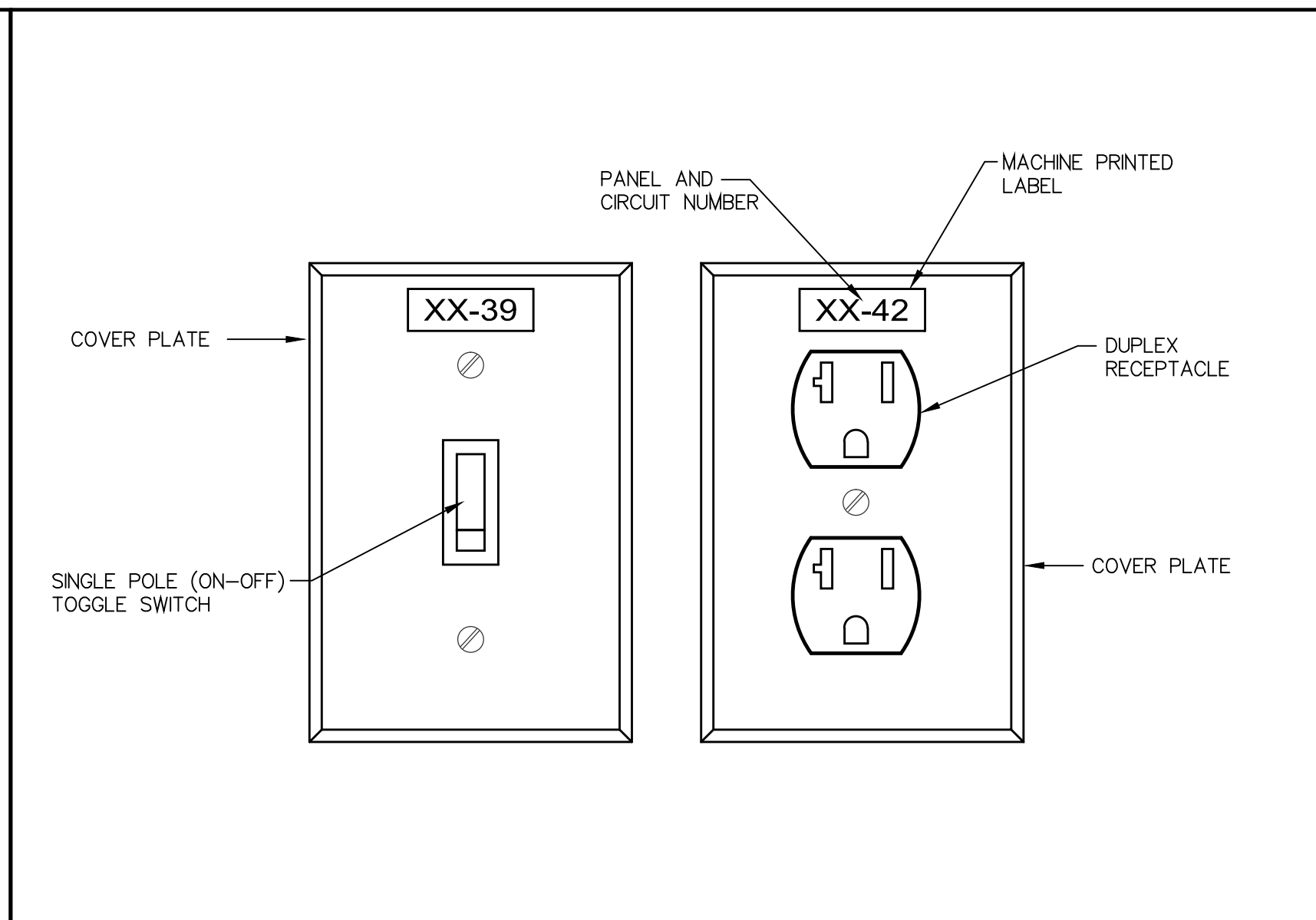
**BACK TO BACK ELECTRICAL OUTLETS DETAIL**  
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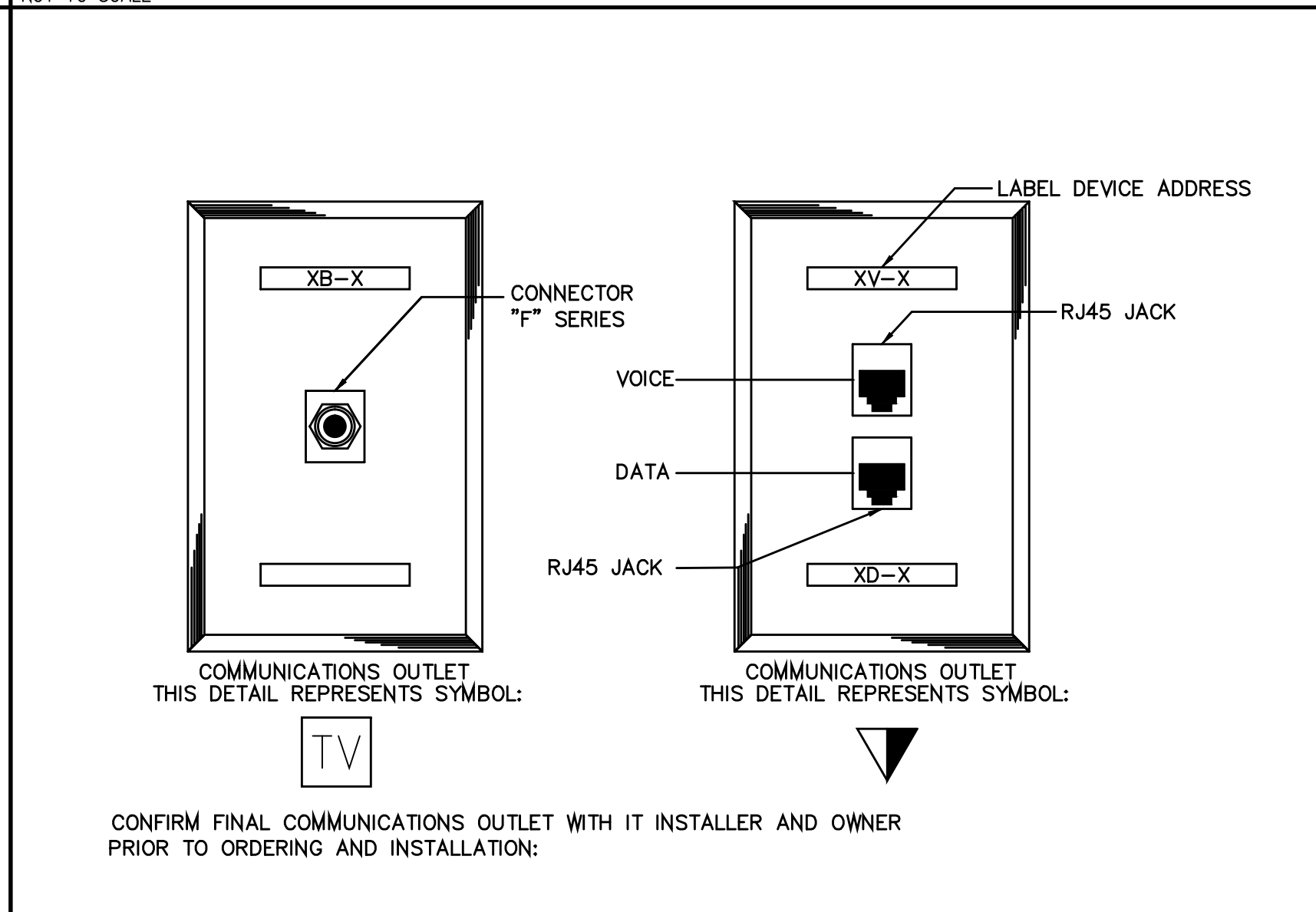
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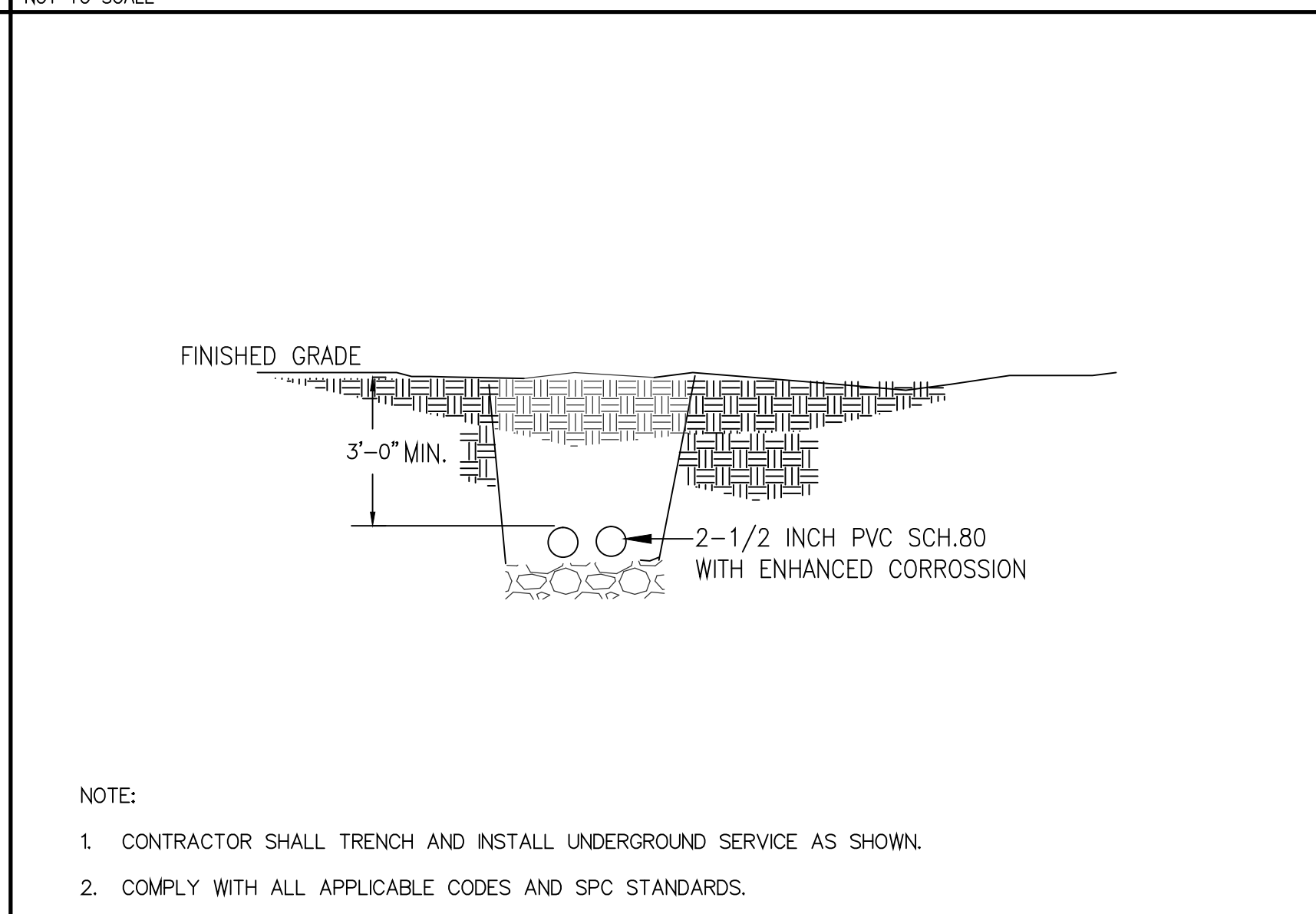
**DETAIL FOR CABLE BUNDLE CONDUIT PENETRATION OF RATED WALL**  
 NOT TO SCALE



**RECEPTACLE AND LIGHT SWITCH ID PLATE DETAIL**  
 NOT TO SCALE



**COMMUNICATION OUTLET DETAILS**  
 NOT TO SCALE



**TRENCHING DETAIL**  
 NOT TO SCALE

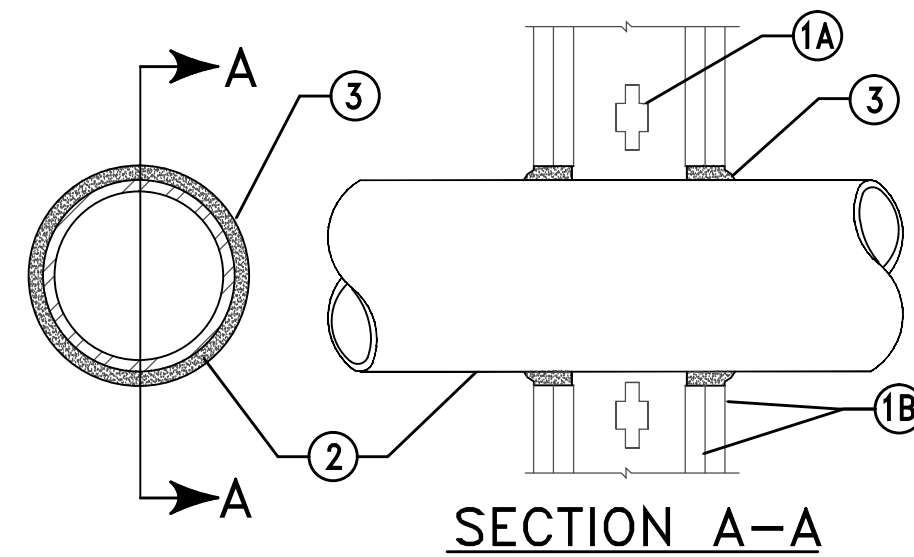
**ELECTRICAL DETAILS**  
 SCALE: N.T.S.

	GRINER ENGINEERING, INC.	Date	05/31/2013
	1628 First Avenue North	Drawn	HT
	St. Petersburg, Florida 33713	Designed	HT
	Phone: (727) 822-2335	EOR	JHG
	Fax: (727) 821-3361	Job no.	13052



**SYSTEM NO. W-L-1001**  
 UPDATED JUNE 15, 2005

F Ratings - 1, 2, 3 and 4 Hr (See Items 2 and 3)  
 T Ratings - 0, 1, 2, 3, and 4 Hr (See Item 3)  
 L Rating @ Ambient - less than 1 CFM/sq ft  
 L Rating @ 400° F - less than 1 CFM/sq ft



**1. Wall Assembly** - The 1, 2, 3 or 4 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

**A. Studs** - Wall framing may consist of either wood studs (max 2 hr fire rated assemblies) or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC with nom 2 by 4 in. (51 by 102 mm) lumber end plates and cross braces. Steel studs to be min 3-5/8 in. (92 mm) wide by 1-3/8 in. (35 mm) deep channels spaced max 24 in. (610 mm) OC.

**B. Gypsum Board\*** - Nom 1/2 or 5/8 in. (13 or 16 mm) thick, 4 ft. (122 cm) wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 26 in. (660 mm).

**2. Through Penetrant** - One metallic pipe, conduit or tubing installed either concentrically or eccentrically within the firestop system. The annular space between pipe, conduit or tubing and periphery of opening shall be min of 0 in. (0 mm) (point contact) to max 2 in. (51 mm). Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of conduits may be used:

**A. Conduit** - Nom 6 in. (152 mm) diam (or smaller) steel conduit or nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing

**3. Fill, Void or Cavity Material\* - Caulk or Sealant** - Min 5/8, 1-1/4, 1-7/8 and 2-1/2 in. (16, 32, 48 and 64 mm) thickness of caulk for 1, 2, 3 and 4 hr rated assemblies, respectively, applied within annulus, flush with both surfaces of wall. Min 1/4 in. (6 mm) diam bead of caulk applied to gypsum board/penetrant interface at point contact location on both sides of wall. The hourly F Rating of the firestop system is dependent upon the hourly fire rating of the wall assembly in which it is installed, as shown in the following table.

The hourly T Rating of the firestop system is dependent upon the type or size of the pipe or conduit and the hourly fire rating of the wall assembly in which it is installed, as tabulated below:

Max Pipe or Conduit Diam In	F Rating Hr	T Rating Hr
1 (25)	1 or 2	0+, 1 or 2
1 (25)	3 or 4	3 or 4
4 (102)	1 or 2	0
6 (152)	3 or 4	0
12 (305)	1 or 2	0

+When copper pipe is used, T Rating is 0 hr.

**3M COMPANY** - CP 25WB + or FB-3000 WT ,

\*Bearing the UL Classification Marking

**CONDUIT PENETRATION OF FIRE WALL (UL SYSTEM No W-L-1001)**

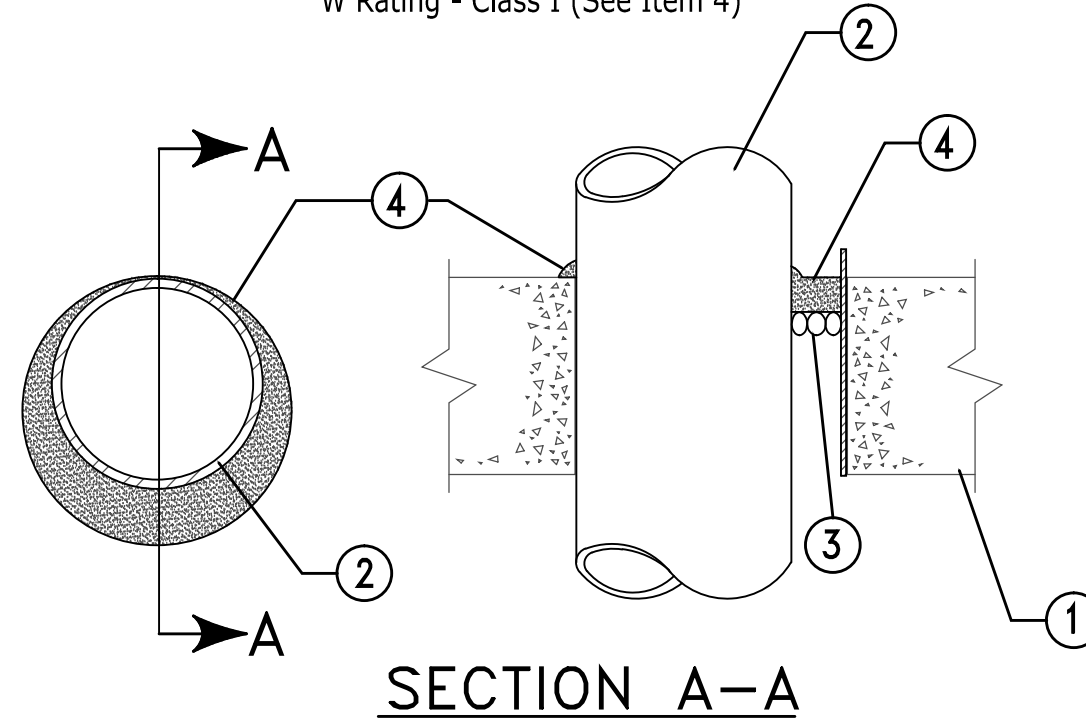
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**ELECTRICAL DETAILS**  
 SCALE: N.T.S.

**SYSTEM NO. C-AJ-1044**

UPDATED MARCH 15, 2007

F Ratings - 2, 3, and 4 Hr (See item 2A and 4)  
 T Rating - 0 Hr  
 L Rating @ Ambient - 2 CFM/sq ft  
 L Rating @ 400 F - less than 1 CFM/sq ft  
 W Rating - Class I (See Item 4)



**1. Floor or Wall Assembly** - Lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. Except as noted in table under Item 4, min thickness of solid concrete floor or wall assembly is 4-1/2 in. (114 mm). Floor may also be constructed of any min 6 in. (152 mm) thick UL Classified hollow core **Precast Concrete Units\***. When floor is constructed of hollow core precast concrete units, packing material (Item 3) and caulk fill material (Item 4) to be installed symmetrically on both sides of floor, flush with floor surface. Wall assembly may also be constructed of any UL Classified **Concrete Blocks\***. Max diam of opening is in solid lightweight or normal weight concrete. Floor is 32 in. (813 mm). Max diam of opening in floor constructed of hollow-core precast concrete units is 7 in. (178 mm).

See **Concrete Blocks (CAZT)** and **Precast Concrete Units (CFTV)** categories in the Fire Resistance Directory for names of manufacturers.

**1A. Steel Sleeve** (Optional, not shown) - Nom. 16 in. (406 mm) diam. (or smaller) Schedule 10 (or heavier) steel sleeve cast or grouted into floor or wall assembly. Sleeve may extend a max of 2 in. (51 mm) above top of floor or beyond either surface of wall. As an alternate, nom. 16 in. (406 mm) diam. (or smaller) min 0.028 (0.71 mm) thick galvanized sheet steel sleeve cast or grouted into floor or wall assembly flush with floor or wall surfaces.

**2. Through Penetrants** - One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. Max annular space between pipe, conduit or tubing and edge of through opening or sleeve is dependent on the parameters shown in Item 4. Min annular space between pipe or conduit and edge of through opening is 0 in. (point contact). Max. annular space to be as shown in the table in Item 4. Pipe, conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used.

**A. Conduit** - Nom 6 in. (152 mm) diam (or smaller) rigid steel conduit.  
**B. Conduit** - Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing.

**3. Packing Material** - Polyethylene backer rod or nom 1 in. (25 mm) thickness of tightly-packed mineral wool batt or glass fiber insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall as required to accommodate the required thickness of caulk fill material (Item 4).

**3A. Forming Material** - As an alternate to the packing material in Item 3, nom. 4 in. (102 mm) wide strips of min. 1/2 in. (13 mm) thick compressible mat to be stacked to a thickness greater than the width of the annular space and compression-fitted, edge-first, to fill the annular space to a min. 4 in. (102 mm) depth. As an option, the strips of min. 1/2 in. (13 mm) thick compressible mat may be folded in half, lengthwise, and stacked to a thickness greater than the width of the annular space and compression-fitted, edge-first, to fill the annular space to a min. 2 in. (51 mm) depth. Top of forming material to be recessed from top surface of floor or from both surfaces of wall as necessary to accommodate the required thickness of caulk fill material.

**3M COMPANY** - Fire Barrier Packing Material.

**4. Fill, Void or Cavity Material\* - Caulk, Sealant** - Applied to fill the annular space flush with top surface of floor. In wall assemblies, required caulk thickness to be installed symmetrically on both sides of wall, flush with wall surface. At point contact location between penetrant and sleeve or between penetrant and concrete, a min 1/4 in. (6 mm) diam bead of caulk shall be applied at top surface of floor and at both surfaces of wall. The hourly F Ratings and the min required caulk thicknesses are dependent upon a number of parameters, as shown in the following table:

Min Floor or Wall Thkns In. (mm)	Nom Pipe Tube or Conduit Diam in. (mm)	Max Annular Space in. (mm)	Min Caulk Thkns in. (mm)	F Rating Hr
2-1/2 (64)	1/2-12 (13-305)	1-3/8 (35)	1/2 (13)	2
2-1/2 (64)	1/2-12 (13-305)	3-1/4 (83)	1 (25)	2
4-1/2 (114)	1/2-6 (13-152)	1-3/8 (35)	1/4 (6) (a)	2
4-1/2 (114)	1/2-12 (13-305)	1-1/4 (32)	1/2 (13)	3
4-1/2 (114)	1/2-20 (13-508)	2 (51)	1 (25)	3
4-1/2 (114)	1/2-20 (13-508)	2 (51)	1 (25)	3
4-1/2 (114)	1/2-12 (13-305)	3-1/4 (83)	1 (25)	3
4-1/2 (114)	22-30 (558-762)	2 (51)	2 (51)	3
5-1/2 (140)	1/2-6 (13-152)	1-3/8 (35)	1 (25) (b)	4

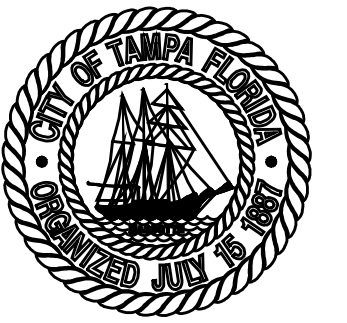
a. Min 2 in. (51 mm) thickness of mineral wool batt insulation or forming material (Item 3A) required in annular space.  
 b. Min 1 in. (25 mm) thickness of mineral wool batt insulation required in annular space on both sides of floor or wall assembly. Min 1 in. (25 mm) thickness of caulk to be installed flush with each surface of floor or wall assembly.

**3M COMPANY** - CP 25WB + or FB-3000 WT. (Note: W Rating applies only when FB-3000 WT sealant is used.)

\*Bearing the UL Classification Marking

**CONDUIT PENETRATION OF FIRE RATED FLOOR/WALL (UL SYSTEM No C-AJ-1044)**

NOT TO SCALE



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 TAMPA, FL 33606

**FIRE STATION 19**  
 7910 INTERBAY BLVD.  
 TAMPA, FL

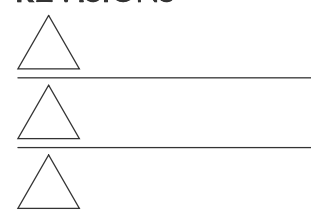
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ISSUE DATE  
**MAY 31, 2018**

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Signature \_\_\_\_\_ Date \_\_\_\_\_  
 IVAYLO I. TODOROV  
 FLORIDA P.E.  
 #73028

SCALE: N.T.S.

ELECTRICAL DETAILS

SHEET NUMBER

**E4.4**

X OF X

<b>G</b>	GRINER ENGINEERING, INC.	Date	05/31/2018
	1628 First Avenue North St. Petersburg, Florida 33713	Drawn	HT
	Phone: (727)822-2335	Designed	HT
	Fax: (727)821-3361	EOR	JHG
	Certificate of Authorization #3173	Job no.	13052



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**FIRE STATION 19**  
 7910 INTERBAY BLVD.  
 TAMPA, FL

DPW FILE NUMBER

DPW NUMBER  
**FD0118**

ISSUE DATE  
**MAY 31, 2018**

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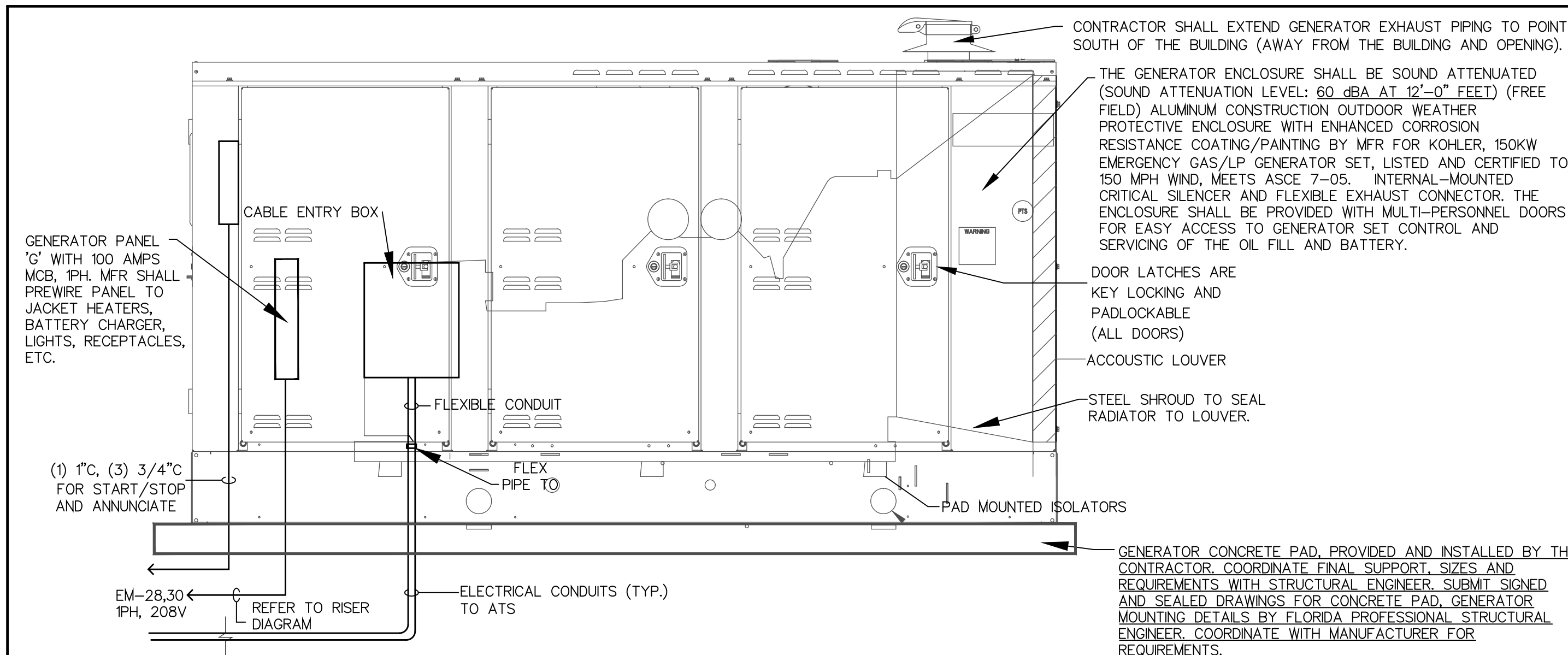
GENERATOR DETAILS

SHEET NUMBER

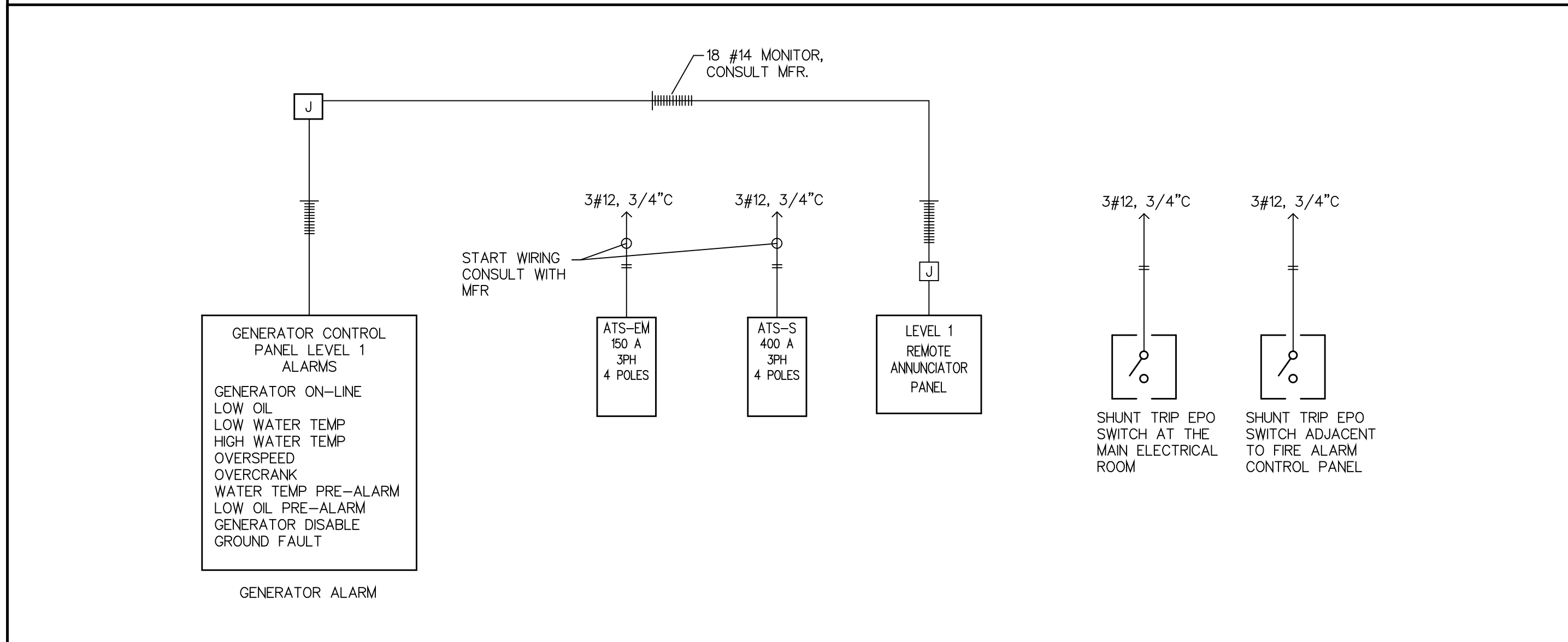
**E4.5**  
 X OF X

GENERATOR SCHEDULE	
MARK	G
SERVICE	EMERGENCY, LEVEL 1
MANUFACTURER	KOHLER
MODEL	150REZGC
ELECTRICAL	120/208V AC
PHASES	3PH, 4W
FREQUENCY	60Hz
CAPACITY - KW	150KW
CAPACITY - KVA	188 KVA AT NATURAL GAS
ALTERNATOR	4S13X OVERSIZED
POWER FACTOR	0.8
FUEL	NATURAL GAS/LP
MAIN BREAKER #1	400 AMPS, LSI
MAIN BREAKER #2	150 AMPS, LSI
GENERATOR ENCLOSURE	ALUMINUM
ENCLOSURE LIGHTS AND RECEPTACLES	YES (NORMAL AND EMERGENCY LIGHTING)
CRITICAL EXHAUST SILENCER	60dBA AT 12'-0"
COOLANT HEATER	120V, 1800W
BATTERY HEATER	120V
ANTI-CONDENSATION HEATER	120V
ALTERNATOR TROPICAL COATING	YES
RODENT GUARD	YES
SKID END CAPS	YES
REMOTE ANNUNCIATOR	NFPA 110 LEVEL REMOTE
REMOTE E-STOP	BREAK GLASS-TYPE
EPA CERTIFICATION	EPA-CERTIFIED (CURRENT TIER RATING)
WARRANTY	2 YEARS EXTENDED COMPREHENSIVE
COMMUNICATION	RS-232, RS-485
STANDARDS/CODE	UL2200, NFPA110 LEVEL 1, NFPA 70, FBC
NOTES:	1-3
1. PROVIDE GENERATOR WITH SOUND ENCLOSURE AND CRITICAL SILENCER RATED AT 150MPH	
2. REFER TO GENERATOR SPECIFICATION FOR ADDITIONAL REQUIREMENTS	
3. THE GENERATOR AND AUTOMATIC TRANSFER SWITCHES SHALL BE PRODUCTS OF THE SAME MANUFACTURER.	

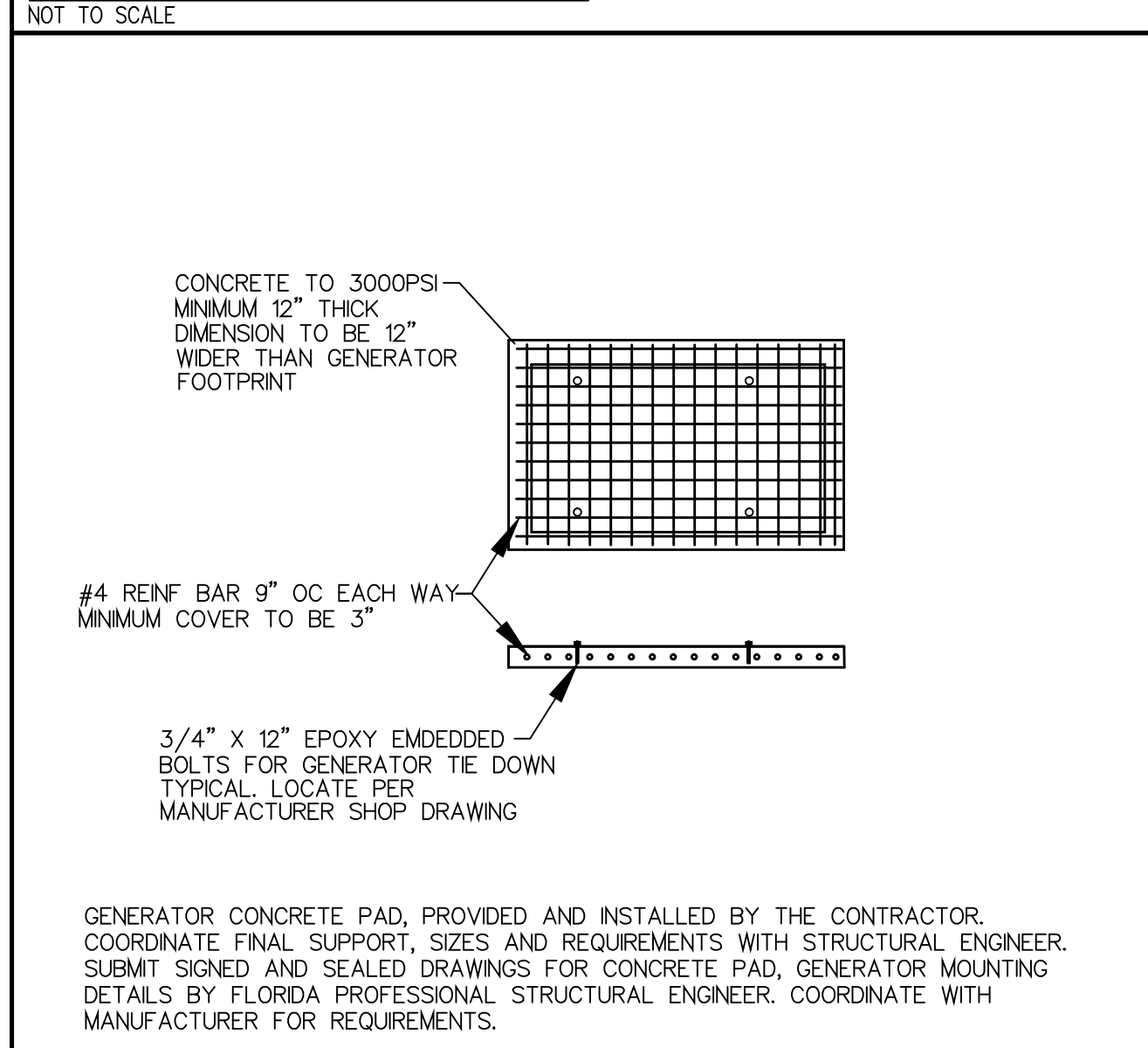
AUTOMATIC TRANSFER SWITCH SCHEDULE		
MARK	ATS-EM	ATS-S
MANUFACTURER	KOHLER	EATON
MODEL	KBP-C-V-0150	KBP-C-V-0400
ELECTRICAL	120/208V AC	120/208V AC
PHASES	3PH, 4W	3PH, 4W
FREQUENCY	60Hz	60Hz
WITHSTAND RATING, 3 CYCLE	50KA MIN	50KA MIN
POLES	4 POLES	4 POLES
NEUTRAL	SWITCHED	SWITCHED
AMPERAGE RATING	150 AMPS	400 AMPS
TRANSITION TYPE	STANDARD	STANDARD
BYPASS ISOLATION	YES	YES
ENCLOSURE TYPE	NEMA 1	NEMA 1
TVSS	INTEGRAL	INTEGRAL
WARRANTY	2 YEARS EXTENDED COMPREHENSIVE	
COMMUNICATION	RS-232, RS-485	
STANDARDS/CODE	UL1008, NFPA110 LEVEL 1, NFPA 70, FBC	
NOTES:	1-2	1-2
1. THE AUTOMATIC TRANSFER SWITCH AND THE GENERATOR SHALL BE PRODUCTS OF THE SAME MANUFACTURER.		
2. REFER TO AUTOMATIC TRANSFER SWITCH SPECIFICATION FOR ADDITIONAL REQUIREMENTS		



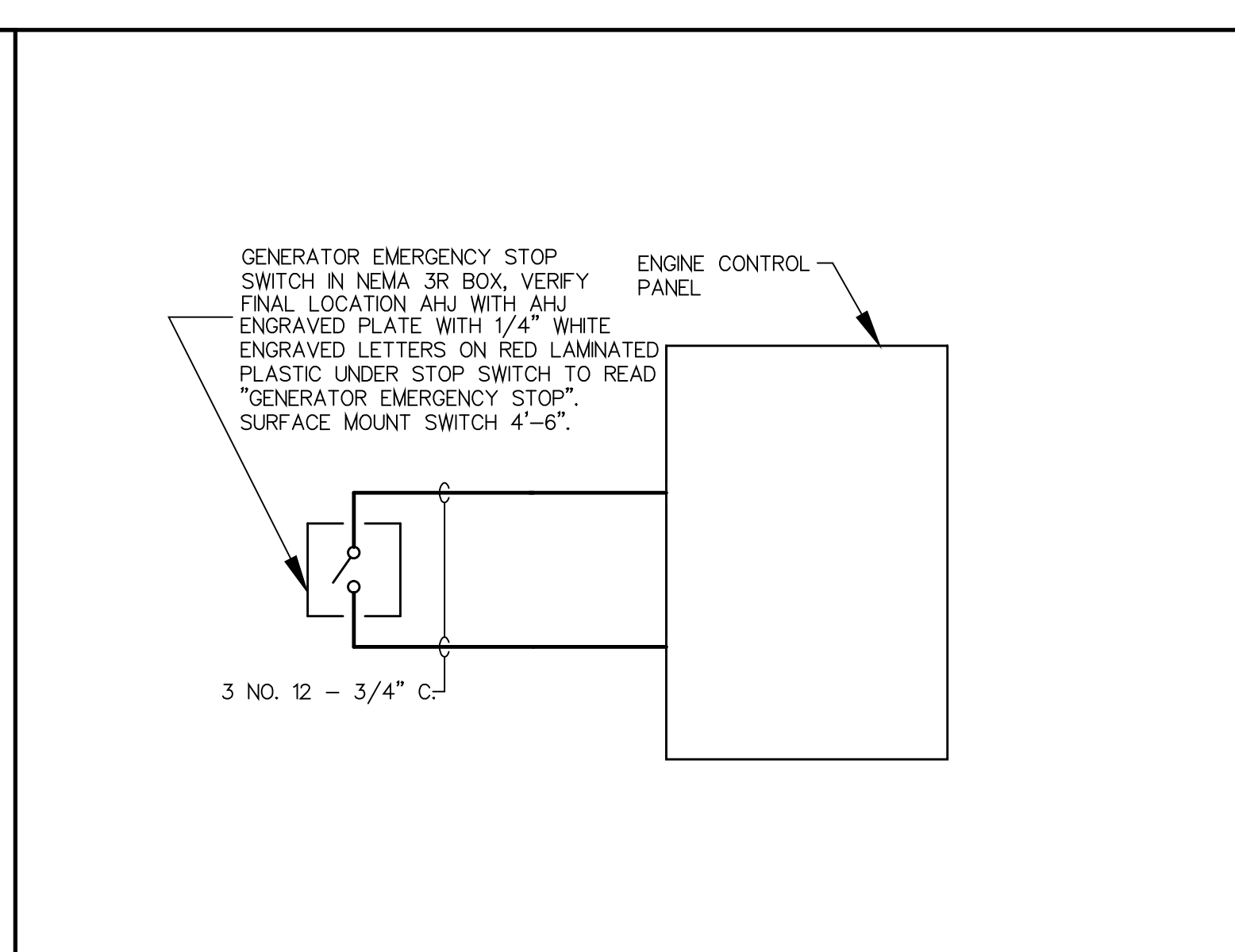
**TYPICAL GENERATOR CABLE ENTRY BOX AND ENCLOSURE**  
 NOT TO SCALE



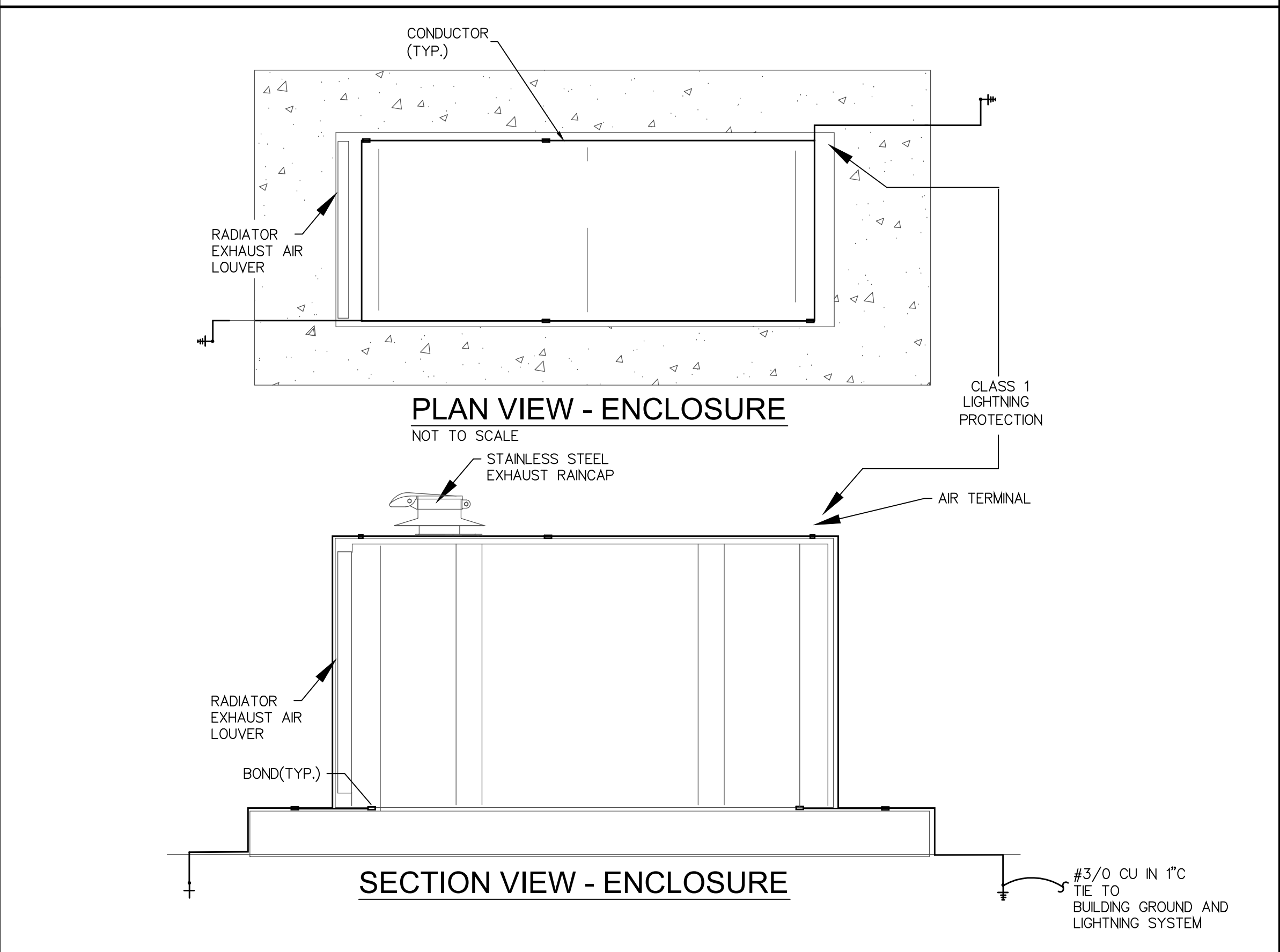
**GENERATOR ALARM RISER**  
 NOT TO SCALE



**GENERATOR CONCRETE PAD DETAIL**  
 NOT TO SCALE



**WIRING DIAGRAM FOR GENERATOR EMERGENCY STOP SWITCH**  
 NOT TO SCALE



**GENERATOR LIGHTNING PROTECTION DETAIL**  
 NOT TO SCALE

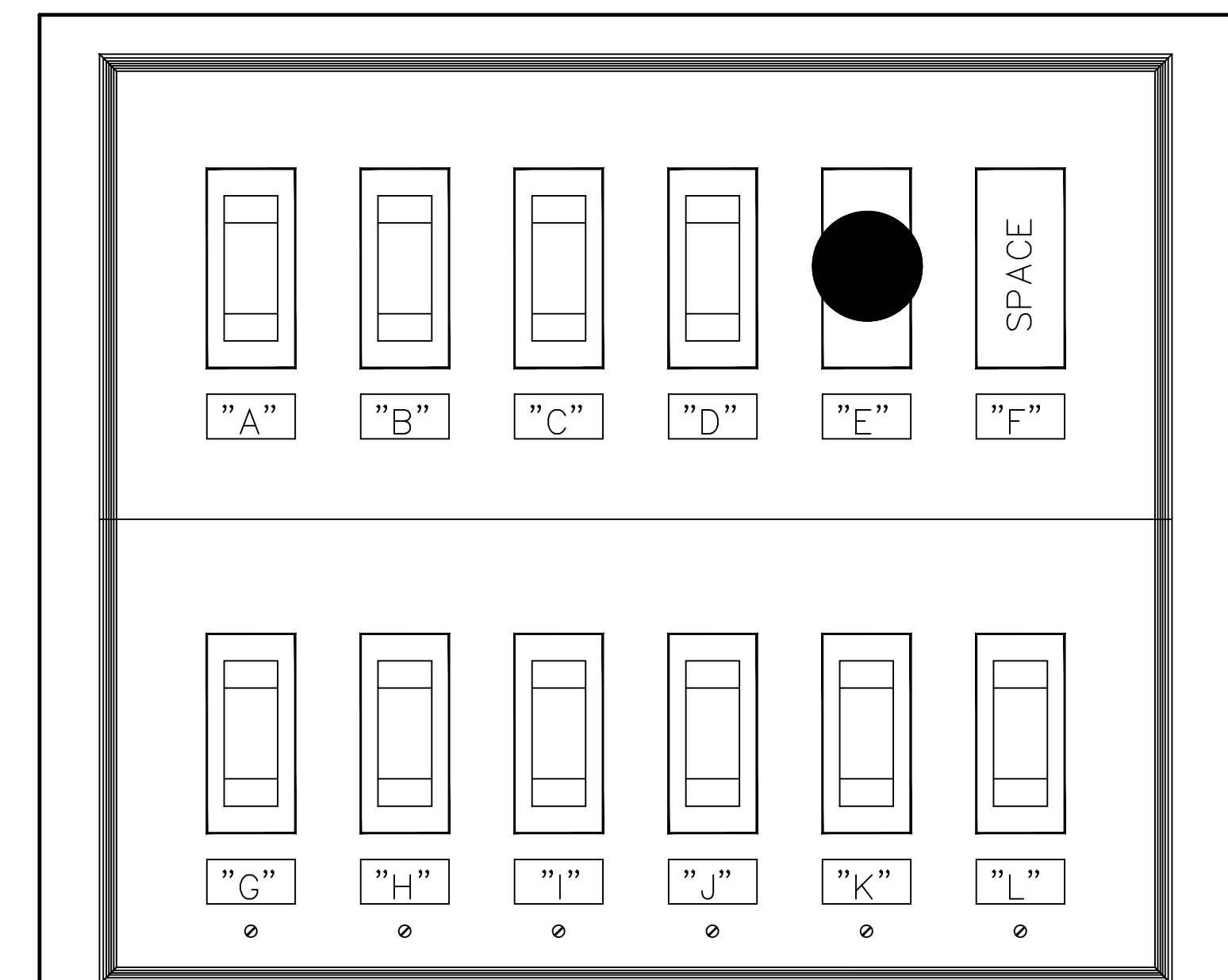
**GENERATOR DETAILS**  
 SCALE: N.T.S.

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	St. Petersburg, Florida 33713	Designed	HT
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	Fax: (727)821-0361	Certificate of Authorization #3173	Job no.

FIRE STATION #19, TAMPA FLORIDA									
LIGHTING FIXTURE SCHEDULE									
TYPE	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	LAMPS		VOLTS	MOUNTING	REMARKS/PROVIDE	BALLAST/ TRANSFORMER
				Qty	Type				
A	PINACLE	LU24A 2T8 XX UNV 1 C W SW	2X2 ENERGY SAVING GRID TROFFER, STEP DIMMING TO 50%, TOOLES ACCESS LAMP & BALLAST	2	32W T8	120	RECESSED	1. UL LISTED FOR DAMP LOCATION	ELECTRONIC
	DAYBRITE	2ST-G-232-D-120-1/2-EBHE-LPT835							
A2	PINACLE	LU22A 2T8 XX UNV 1C W SW	2X2 ENERGY SAVING GRID TROFFER, STEP DIMMING TO 50%, TOOLES ACCESS LAMP & BALLAST	2	17W T8	120	RECESSED	1. UL LISTED FOR DAMP LOCATION	ELECTRONIC
	DAYBRITE	2ST-G-217-D-120-1/2-EBHE-LPT835							
A3	PINACLE	LU22A 2T8 FL UNIV 1C W SW	2X2 ENERGY SAVING GRID TROFFER, STEP DIMMING TO 50%, TOOLES ACCESS LAMP & BALLAST	2	17W T8	120	RECESSED (FLANGE)	1. UL LISTED FOR DAMP LOCATION	ELECTRONIC
	DAYBRITE	2ST-F-217-D-120-1/2-EBHE-LPT835							
B	KENALL	MLRS12 48 F MW PIA 2 32 IS 1 DV WL	WET LOCATION, EXTRUDED ALUMINUM FLUORESCENT, UV STABLE OPAL POLYCARBONATE, WHITE HOUSING	2	32W T8	UNV	SURFACE	1. UL LISTED FOR WET LOCATION	ELECTRONIC
	LUMINAIRE	VPF 124 232 ELECT XX OP WHT WET							
D			UV STABILIZED, FLAME RESISTANT POLYCARBONATE VAPORTITE, 5' LENGTH, DUAL PARABOLIC REFLECTOR	2	80W T5HO	120	SURFACE	1. UL LISTED FOR DAMP LOCATION	ELECTRONIC
	BEGHELLI	BS105 T5HO 5HT 280 120/277							
F	LITHONIA	2LB 2 32 MVOLT GEB10PS LP835	FLUORESCENT WRAP	2	32W T8	120	SURFACE	1. UL LISTED FOR DAMP LOCATION	ELECTRONIC
	DAYBRITE	CAW 232 UNV 1/2							
F1	LITHONIA	2LB 3 32 MVOLT GEB10PS LP835	FLUORESCENT WRAP	3	32W T5	120	SURFACE	1. UL LISTED FOR DAMP LOCATION	ELECTRONIC
	DAYBRITE	CAW 332 UNV 1/2							
H			4' ALUMINIUM STRIP LIGHT FIXTURE	2	32W T8	120	SURFACE	1. UL LISTED FOR DAMP LOCATION	ELECTRONIC
	NULITE	AL-232EB8-DL							
T	HYDREL	7100-150M-120-SP-KM-ARJB-GS-LPI	FLAG FLOOD LIGHT	1	1-150/U	120	GRADE	1. UL LISTED FOR WET LOCATION, 2. WIDE DISTRIBUTION.	
X	LITHONIA	LQMS 3 R 120/277	THERMOPLASTIC EXIT SIGN, DAMP LOCATION		LED	120	SURFACE	1. UL LISTED FOR DAMP LOCATION	
	BEGHELLI	VA5 R HT							
AA			EXTERIOR WALL MOUNTED LIGHT FIXTURE	1	42W TRT	120	WALL	1. UL LISTED FOR WET LOCATION	
	GARDCO	104-MT-1-42TRF-120-WT							
BB			6" RECESSED DOWNLIGHT, DAMP LOCATION, SPECULAR REFLECTOR, VERTICAL LAMP WITH PRISMATIC LENS	1	42W TRT	120	RECESSED	1. UL LISTED FOR DAMP LOCATION	
	OMEGA	OM6 42PLT CSS 120/277-PL							

**LIGHTING NOTES:**

- EQUAL MANUFACTURER SHALL BE: LITHONIA LIGHTING, DAYBRITE LIGHTING, COOPER LIGHTING AND COLUMBIA LIGHTING.
- CONFIRM ALL CEILING TYPES, LOCATIONS AND MANUFACTURER MODEL NUMBERS PRIOR TO BID AND ORDERING.
- PROVIDE COMPLETE INDEPENDENT AND SECURE SUPPORT FROM THE BUILDING STRUCTURE FOR ALL LUMINAIRES. THE LUMINAIRES SHALL BE SUPPORTED FROM ALL CORNERS.
- ALL LAMPS SHALL BE 90+ CRI AND 3500K OR AS NOTED.
- ALL FLUORESCENT BALLASTS SHALL BE PROGRAMABLE/RAPID START "HIGH FREQ" ELECTRONIC WITH MAXIMUM 10% THD, FUSED AND UNIVERSAL VOLTAGE 120/277V BY OSRAM/SYLVANIA.
- ALL METAL COMPONENTS OF THE LUMINAIRES SHALL BE FACTORY PAINTED AFTER FABRICATION.
- CONTRACTOR SHALL VERIFY ALL "TYPE, TRIMS AND LIGHT FIXTURE COLORS" WITH ARCHITECT AND OWNER PRIOR TO ORDERING.
- PROVIDE MINIMUM SIX (6) SETS OF SHOP DRAWINGS FOR BALLAST, LAMPS AND FIXTURES.
- ALL LAMPS SHALL BE CERTIFIED AS PASSING EPA "TOXICITY CHARACTERISTIC LEACH PROCEDURE", LOW MERCURY TYPE AS MANUFACTURED BY SYLVANIA OR PHILLIPS.
- PROVIDE 6 YEARS BALLAST AND 4 YEARS LAMP REPLACEMENT FACTORY WARRANTY.
- NOT USED.
- THE ABOVE LUMINAIRE IS PREDICATED ON PERFORMANCE AND DESIGNED TO MEET CERTAIN AESTHETIC CRITERIA.
- PROVIDE BALLAST AND LUMINAIRES WITH RF FILTER.
- "SUBSTITUTE" OR "EQUAL" LUMINAIRES, LAMPS, AND LAYOUTS NOTES:
  - ALL OF THE CRITERIA BELOW FOR SUBSTITUTE LUMINAIRES MUST BE SATISFIED, OTHERWISE, THE ENGINEER WILL REJECT THE "SUBSTITUTE" OR "EQUAL" LIGHTING FIXTURES WITHOUT REVIEW.
  - ANY "SUBSTITUTE" OR "EQUAL" LUMINAIRES, LAMPS, LAYOUTS, LEVELS MUST NOT DEVIATE FROM PROVIDED.
  - ANY "SUBSTITUTE" OR "EQUAL" LUMINAIRES MUST BE SUBMITTED TO ENGINEER FOR APPROVAL AT LEAST TENS (10) DAYS PRIOR TO ACTUAL PROJECT BID DATE FOR PRELIMINARY APPROVAL.
- THE ENGINEER MAY REQUIRE FROM THE CONTRACTOR TO SUBMIT TO ENGINEER FOR REVIEW AND APPROVAL THE LIGHTING PHOTOMETRICS WITH THE "SUBSTITUTE" OR "EQUAL" LUMINAIRES FOR ANY SPECIFIC ROOMS OR/AND AREAS OR FOR THE WHOLE PROJECT FOR VERIFICATION OF PERFORMANCE AND LIGHTING LEVELS. THE SUBMITTED LIGHTING PHOTOMETRIC PACKAGE SHALL INCLUDE THE MINIMUM ITEMS:
  - HARDCOPY OF THE LIGHTING PHOTOMETRIC.
  - ELECTRONIC (AUTOCAD FILE) OF THE LIGHTING PHOTOMETRIC.
  - MANUFACTURER CUT SHEETS OF THE LIGHTING FIXTURES, SUPPORT, AND LAMPS.



**CONTROL PANEL DETAIL**

NOT TO SCALE

**CONTROL PANEL SCHEDULE**

SWITCH DESIGNATION	SWITCH TYPE	DESIGNATION	NOTE
A	LOW VOLTAGE	EXTERIOR WALL PACK NORTH LIGHTS	
B	LOW VOLTAGE	EXTERIOR WALL PACK SOUTH LIGHTS	
C	LOW VOLTAGE	EXTERIOR SITE LIGHTS	
D	LOW VOLTAGE	MASTER OVERRIDE NORMAL LIGHTING	
E	20A-1P MAINTAINED CONTACT PUSH BUTTON WITH RED MUSHROOM HEAD	RESPONSE CALL BELLS	
F	SPACE		
G	20A-1P MOMENTARY CONTACT PUSHBUTTON	PROVIDE 120V CONNECTION TO FRONT OVERHEAD DOOR MOTOR STARTER "UP" CONTACT ONLY	
H	20A-1P MOMENTARY CONTACT PUSHBUTTON	PROVIDE 120V CONNECTION TO FRONT OVERHEAD DOOR MOTOR STARTER "UP" CONTACT ONLY	
I	20A-1P MOMENTARY CONTACT PUSHBUTTON	PROVIDE 120V CONNECTION TO FRONT OVERHEAD DOOR MOTOR STARTER "UP" CONTACT ONLY	
J	20A-1P MOMENTARY CONTACT PUSHBUTTON	PROVIDE 120V CONNECTION TO FRONT OVERHEAD DOOR MOTOR STARTER "UP" CONTACT ONLY	
K	20A-1P MOMENTARY CONTACT PUSHBUTTON	PROVIDE 120V CONNECTION TO FRONT OVERHEAD DOOR MOTOR STARTER "UP" CONTACT ONLY	
L	20A-1P MOMENTARY CONTACT PUSHBUTTON	PROVIDE 120V CONNECTION TO FRONT OVERHEAD DOOR MOTOR STARTER "UP" CONTACT ONLY	

**CONTROL PANEL SCHEDULE**

NOT TO SCALE

- CONTRACTOR SHALL COORDINATE THE FINAL LAYOUT AND REQUIREMENTS WITH OWNER PRIOR TO ROUGH-IN AND INSTALLATION.
- CONTROL PANEL SHALL BE FLUSH MOUNTED IN COUNTER TOP. COORDINATE WITH ARCHITECTURAL DETAILS AND OWNER.



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**FD0118**

ISSUE DATE  
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**SCALE: N.T.S.**

**ELECTRICAL LIGHTING FIXTURE SCHEDULE AND CONTROL PANEL DETAILS**

SHEET NUMBER

**E5.1**

**X OF X**

<b>G</b>	GRINER ENGINEERING, INC.	Date	05/31/2013
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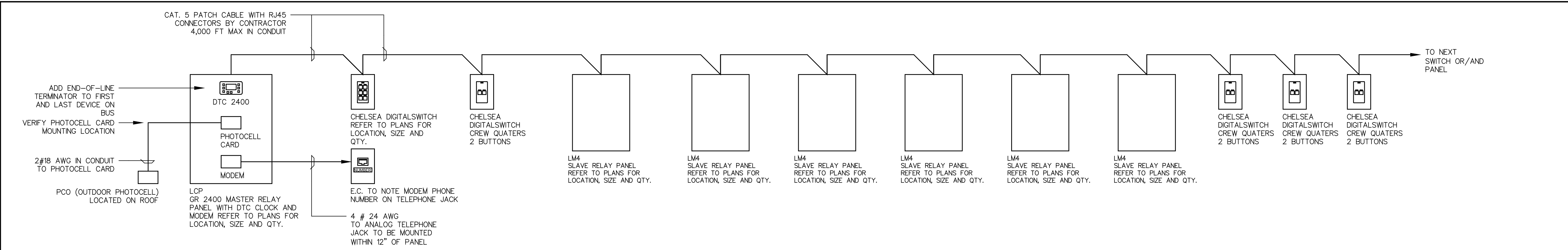
SCALE: N.T.S.

ELECTRICAL LIGHTING SYSTEM RISER AND DETAILS

SHEET NUMBER

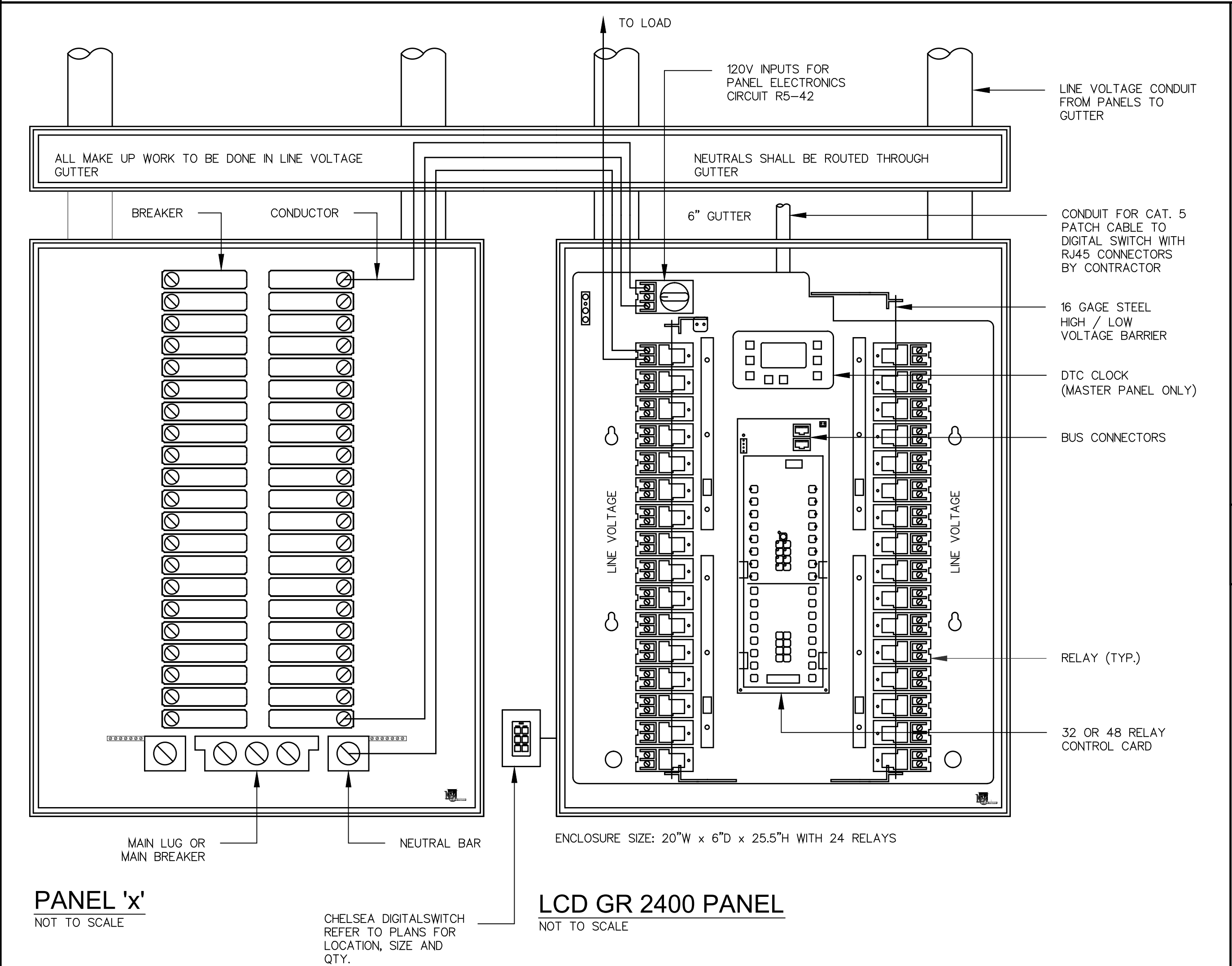
**E5.2**  
 X OF X

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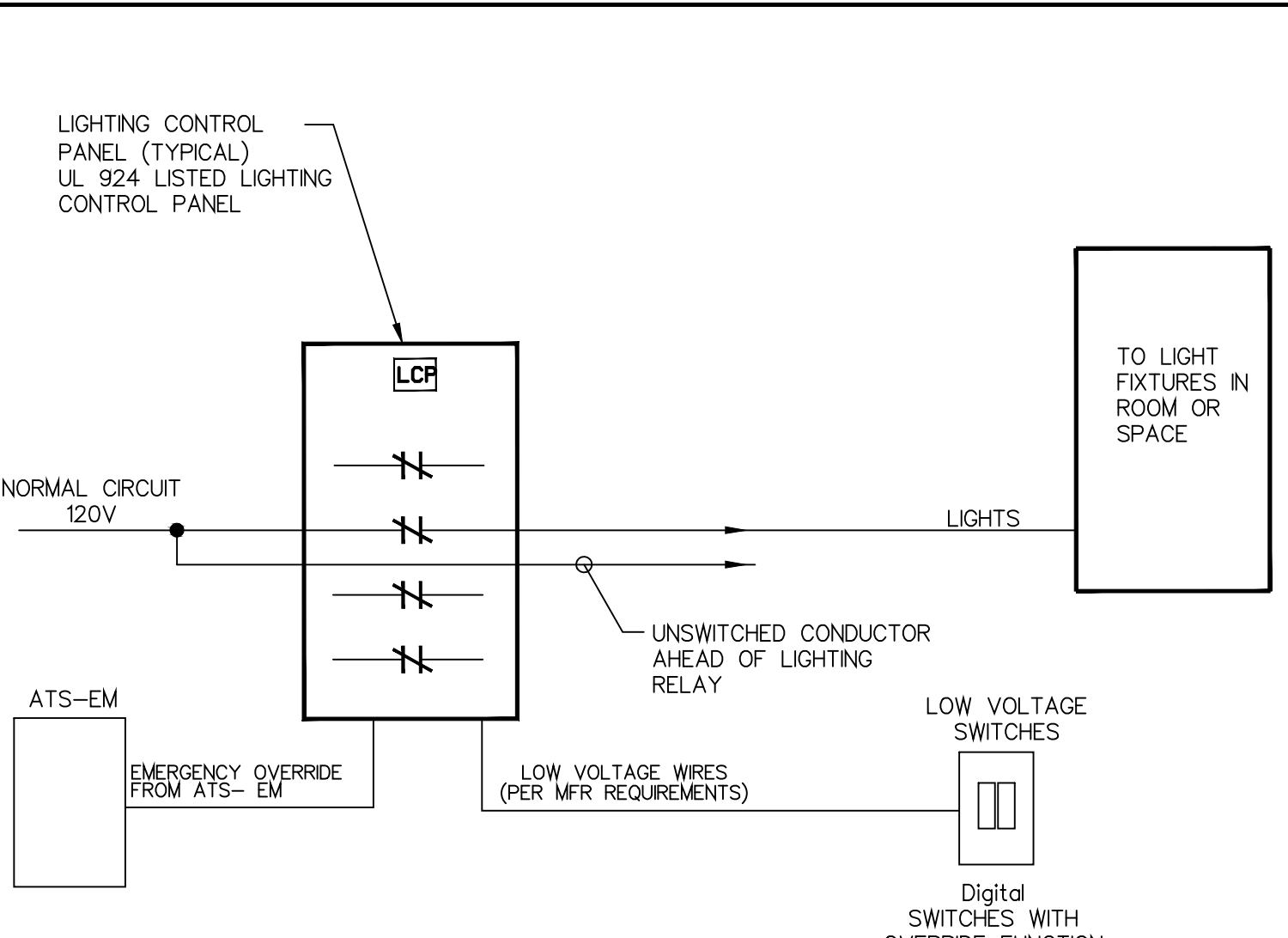
**LIGHTING CONTROL ONE-LINE DIAGRAM**

NOT TO SCALE



**LIGHTING CONTROL PANEL DETAIL**

NOT TO SCALE



**LIGHTING CONTROL DIAGRAM-LIGHTING CONTROL PANEL AND GENERATOR TRANSFER DEVICE (GTD)**

NOT TO SCALE

**SPECIFICATION**

- LIGHTING CONTROL SYSTEM**
- LIGHTING CONTROL SYSTEM SHALL BE DIGITAL AND CONSIST OF A MASTER LCP (LM24) WITH 24 INDIVIDUAL RELAYS, AND SLAVE LM4 (TOTAL OF 6) WITH 4 INDIVIDUAL RELAYS, DIGITAL SWITCHES AND DIGITAL INTERFACE CARDS. ALL SYSTEM COMPONENTS SHALL CONNECT IN A "DAISY CHAIN" STYLE CONFIGURATION AND BE CONTROLLED VIA CATEGORY 5 PATCH CABLE WITH RJ45 CONNECTORS, PROVIDING REAL-TIME TWO-WAY COMMUNICATION WITH EACH SYSTEM COMPONENT. ANALOG SYSTEMS ARE NOT ACCEPTABLE. ALL CABLES SUPPLIED BY CONTRACTOR; MASTER LIGHTING CONTROL PANEL SHALL HAVE SOFTWARE CARD FOR COMMUNICATION INTERFACE WITH HVAC CONTROLS PANEL.
  - MASTER LIGHTING CONTROL SHALL BE UL924 LISTED FOR EMERGENCY LIGHTING, PROVIDE CONTACT AND INTERCONNECT THE LIGHTING CONTROL PANEL AND EMERGENCY TRANSFER SWITCH (EM). WHEN THE POWER IS TRANSFERRED TO EMERGENCY GENERATOR, THE LIGHTING CONTROL SHALL OVER-RIDE ALL LIGHTING CONTROL AND TURN ON ALL EMERGENCY LIGHTING.
  - LIGHTING CONTROL SHALL BE FAIL SAFE IN ON FUNCTION IN EVENT OF A DEVICE/ELECTRONICS FAILURE (THE LIGHTING CONTROL SHALL TURN ON ALL EMERGENCY LIGHTING).
  - RELAY PANELS SHALL BE PRE-WIRED, PRE-ASSEMBLED, PREPROGRAMMED AND LISTED TO UL 916 (NORMAL) AND UL924 (EMERGENCY). PANELS SHALL BE PROVIDED WITH DUAL VOLTAGE POWER SUPPLY AND 16 GAGE BARRIERS TO SEPARATE HIGH AND LOW VOLTAGE, NORMAL AND EMERGENCY POWER.
  - STANDARD RELAYS SHALL HAVE NORMALLY CLOSED (NC) CONTACTS RATED FOR 120V 20A TUNGSTEN, BALLAST OR HD. STANDARD RELAYS SHALL BE ZERO-CROSS TYPE. NO EXCEPTIONS. OPTIONAL 600V, 2-POLE RELAY, NO OR NC.
  - ALL INCANDESCENT LIGHTING CIRCUITS SHALL BE CONTROLLED BY A NC/SOFTSTART RELAY. NO EXCEPTIONS.
  - RELAY PANEL ELECTRONICS SHALL PROVIDE CURRENT VISUAL STATUS AND CONTROL OF EACH RELAY OR ZONE. ALL SYSTEM CONTROL ELECTRONICS SHALL STORE PROGRAMMING IN A NON-VOLATILE MEMORY AND PROVIDE 10 YEAR BATTERY BACK UP FOR TIME OF DAY.
  - LIGHTING CONTROL SYSTEM SHALL CONSIST OF MASTER AND SLAVE PANEL(S) CONTROLLED BY A 32-CHANNEL DIGITAL TIME CLOCK (DTC) THAT CONTROLS AND PROGRAMS THE ENTIRE LIGHTING CONTROL SYSTEM. THE DTC SHALL SUPPLY ALL TIME FUNCTIONS AND ACCEPT OTHER INPUTS. THE DTC SHALL ACCEPT CONTROL LOCALLY USING BUILT IN BUTTON PROMPTS AND USE OF AN 8 LINE 21-LETTER DISPLAY, FROM A COMPUTER, MODEM, ETHERNET OR INTERNET. ALL COMMANDS SHALL BE IN PLAIN ENGLISH. HELP PAGES SHALL DISPLAY ON THE DTC SCREEN.
  - ALL SWITCHES SHALL COMMUNICATE VIA RS 485, CAT 5 PATCH CABLE WITH RJ45 CONNECTORS. CONTACT CLOSURE STYLE SWITCHES ARE NOT ACCEPTABLE. ANY SWITCH BUTTON FUNCTION SHALL BE ABLE TO BE CHANGED LOCALLY (AT THE DTC OR A PC) OR REMOTELY, VIA MODEM, ETHERNET OR INTERNET. REFER TO SINGLE LINE DIAGRAM FOR WIRING DETAILS. SWITCHES WHICH CANNOT BE PROGRAMMED REMOTELY SHALL NOT BE ACCEPTABLE.
  - PHOTOCELL, EXTERIOR (PCO) OR INTERIOR (PCI), SHALL PROVIDE READOUT ON THE DTC SCREEN IN NUMBER VALUES ANALOGOUS TO FOOT-CANDELES. EACH PHOTOCELL SHALL PROVIDE A MINIMUM OF 14 TRIGGER POINTS. EACH TRIGGER CAN BE PROGRAMMED TO CONTROL ANY RELAY OR ZONE. EACH TRIGGER SHALL BE SET THROUGH DTC, LOCALLY OR REMOTELY. PHOTOCELLS THAT REQUIRE THE USE OF SET SCREWS OR MANUAL ADJUSTMENTS AT THE PHOTOCELL CONTROL CARD SHALL NOT BE ACCEPTABLE.
  - LIGHTING CONTROL SYSTEM INTERFACES TO INCLUDE A DRY CONTACT INPUT INTERFACE, BMS INTERFACE, ETHERNET/INTERNET INTERFACE. VERIFY AND INSTALL ONLY THOSE INTERFACES INDICATED ON THE PLANS.
  - STANDARD LIGHTING CONTROL SYSTEM SOFTWARE, PRE-INSTALLED INTO THE DTC, SHALL CONSIST OF AND USE STANDARD GRAPHICAL MANAGEMENT SOFTWARE (GMS) PAGES. GMS SOFTWARE SHALL PROVIDE VIA LOCAL OR REMOTE PC A VISUAL REPRESENTATION OF EACH DEVICE ON THE BUS, SHOW REAL TIME STATUS AND THE ABILITY TO CHANGE THE STATUS OF ANY INDIVIDUAL DEVICE, RELAY OR ZONE. OPTIONAL SOFTWARE THAT ACCEPTS JOB SPECIFIC GRAPHICS SHALL BE AVAILABLE.
  - START UP: EC SHALL CONTACT LC&D AT LEAST 7 DAYS BEFORE TURNOVER OF PROJECT. LC&D WILL REMOTELY DIAL INTO THE LIGHTING CONTROL SYSTEM, RUN DIAGNOSTICS AND CONFIRM SYSTEM PROGRAMMING. EC SHALL BE AVAILABLE AT THE TIME OF DIAL IN TO PERFORM ANY CORRECTIONS REQUIRED BY LC&D. EC IS RESPONSIBLE FOR COORDINATING WITH GC AND THE OWNER, THE INSTALLATION OF A DEDICATED TELEPHONE LINE OR A SHARED PHONE LINE WITH A/B SWITCH. PHONE JACK TO BE MOUNTED WITHIN 12" OF MASTER LCP. LABEL JACK WITH PHONE NUMBER. EC SHALL CONNECT PHONE LINE FROM JACK TO MASTER LCP.
  - TELEPHONE FACTORY DIAL-UP SUPPORT SHALL BE AVAILABLE AT NO ADDITIONAL COST TO THE EC OR OWNER BOTH DURING AND AFTER THE 3 YEAR WARRANTY PERIOD. FACTORY TO PREPROGRAM THE LIGHTING CONTROL SYSTEM PER PLANS AND APPROVED SUBMITTAL. THE LIGHTING CONTROL MANUFACTURER, AT NO ADDED COST, SHALL PROVIDE ADDITIONAL PROGRAMMING VIA MODEM AS REQUIRED BY THE EC OR OWNER FOR THE OPERATIONAL LIFE OF THE SYSTEM. MANUFACTURER WARRANTIES THAT THE DTC SOFTWARE CAN BE UPGRADED AND MONITORED REMOTELY.
  - SHOP DRAWINGS: SUBMIT DIMENSIONED DRAWINGS OF LIGHTING CONTROL SYSTEM AND ACCESSORIES INCLUDING, BUT NOT NECESSARILY LIMITED TO, RELAY PANELS, SWITCHES, DTC, PHOTOCELLS AND OTHER INTERFACES. DRAWINGS SHALL INDICATE EXACT LOCATION AND PROGRAMMING OF EACH DEVICE. INDICATE ALL TIME SCHEDULES AND SWITCH BUTTON ENGRAVING.
  - LIGHTING CONTROL SYSTEM TO BE MANUFACTURED BY LIGHTING CONTROL & DESIGN, OR APPROVED EQUIVALENT.
  - CONTRACTOR SHALL INCLUDE MINIMUM (4) HOURS IN HIS BID PROPOSAL FOR OWNER'S TRAINING. THE TRAINING TO BE PERFORMED AFTER COMPLETION OF LIGHTING CONTROL SYSTEM.

**ELECTRICAL LIGHTING RISER AND DETAILS**  
 SCALE: N.T.S.





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FIRE STATION 19  
 7910 INTERBAY BLVD.  
 TAMPA, FL

DPW FILE NUMBER

DPW NUMBER  
**FD0116**

ISSUE DATE  
**MAY 31, 2013**

DRAWN BY

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SEAL

Signature \_\_\_\_\_ Date \_\_\_\_\_  
 IVAYLO I. TODOROV  
 FLORIDA P.E.  
 #73028

SCALE: N.T.S.

ELECTRICAL LIGHTING  
 CONTROL SCHEDULE

SHEET NUMBER

**E5.3**

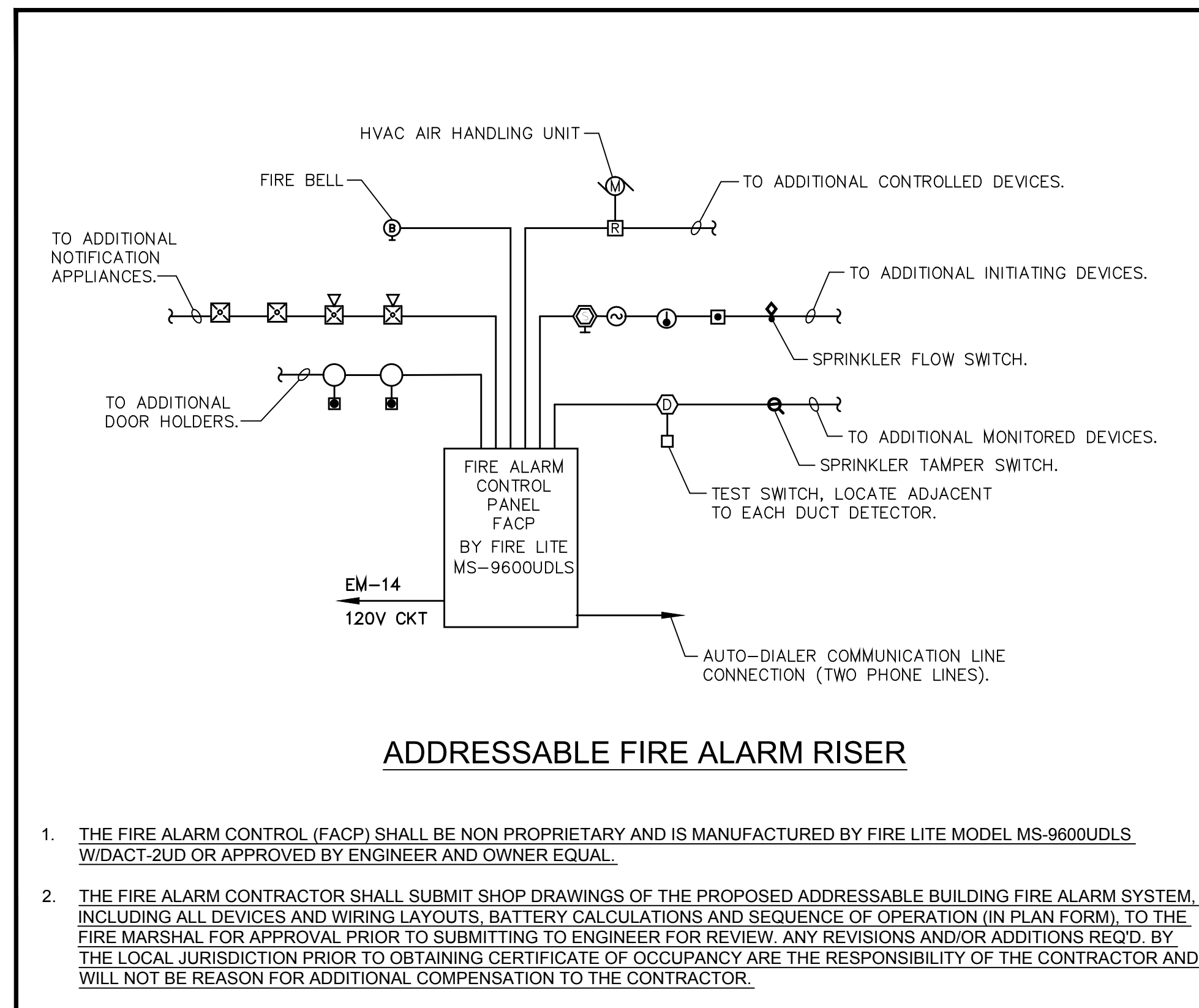
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FIRE STATION 19, TAMPA							
LIGHTING CONTROL SCHEDULES							
MASTER LIGHTING CONTROL PANEL (MLCP) BY LCD, LOCATED IN ELECTRICAL ROOM							
RELAY CONTROL		LOAD					
NO	N / EM	BRANCH CIRCUIT	VOLT AC	CIRCUIT DESIGNATION	FIXTURE TYPE	CONTROL DESCRIPTION	NOTE
1	EM	EM-1	120	APPARATUS BAY	FLUORESCENT		RELAY DESIGNATION "e1" - 100% LIGHTS
2	EM	EM-3	120	APPARATUS BAY	FLUORESCENT		RELAY DESIGNATION "e2" - 100% LIGHTS
3	EM	EM-5	120	ACTIVITY AREA	FLUORESCENT		RELAY DESIGNATION "e3" - 50% LIGHTS
4	EM			ACTIVITY AREA	FLUORESCENT		RELAY DESIGNATION "e4" - 100% LIGHTS
5	EM			KITCHEN	FLUORESCENT		RELAY DESIGNATION "e5" - 50% LIGHTS
6	EM			KITCHEN	FLUORESCENT		RELAY DESIGNATION "e6" - 100% LIGHTS
7	EM	EM-9	120	CORRIDOR QUARTERS	FLUORESCENT		RELAY DESIGNATION "e7" - 100% LIGHTS
8	EM			CORRIDOR QUARTERS	FLUORESCENT		RELAY DESIGNATION "e8" - 50% LIGHTS
9	EM	EM-4	120	APPARATUS BAY EXTERIOR S. WALL LIGHTING FIXTURES	FLUORESCENT	PHOTOCELL ON/TIMECLOCK OFF	RELAY DESIGNATION "e9" - 100% LIGHTS. PROVIDE WITH OVER-RIDE LOW VOLTAGE SWITCH AT CONTROL PANEL IN OFFICE
10	EM			APPARATUS BAY EXTERIOR N. WALL LIGHTING FIXTURES	FLUORESCENT	PHOTOCELL ON/TIMECLOCK OFF	RELAY DESIGNATION "e10" - 100% LIGHTS. PROVIDE WITH OVER-RIDE LOW VOLTAGE SWITCH AT CONTROL PANEL IN OFFICE
11	EM			EXTERIOR BUILDING WALL PACKS	FLUORESCENT	PHOTOCELL ON/TIMECLOCK OFF	RELAY DESIGNATION "e11" - 100% LIGHTS. PROVIDE WITH OVER-RIDE LOW VOLTAGE SWITCH AT CONTROL PANEL IN OFFICE
12	EM	EM-2	120	EXTERIOR BUILDING DOWNLIGHTS COVERED PATIO	FLUORESCENT	PHOTOCELL ON/TIMECLOCK OFF	RELAY DESIGNATION "e12" - 100% LIGHTS PROVIDE WITH OVER-RIDE LOW VOLTAGE SWITCH IN COVERED PATIO
13	EM	EM-23,25	208	SITE LIGHTING	FLUORESCENT	PHOTOCELL ON/TIMECLOCK OFF	RELAY DESIGNATION "e13,e14" - 100% PROVIDE WITH OVER-RIDE LOW VOLTAGE SWITCH PER OWNER'S DIRECTION
14							
15	EM	EM-27,29	208	SITE LIGHTING	FLUORESCENT	PHOTOCELL ON/TIMECLOCK OFF	RELAY DESIGNATION "e15,e16" - 100% PROVIDE WITH OVER-RIDE LOW VOLTAGE SWITCH PER OWNER'S DIRECTION
16							
17	EM			SPARE			
18	EM			SPARE			
19	N	SA-1	120	APPARATUS BAY	FLUORESCENT		RELAY DESIGNATION "a1" - 100% LIGHTS
20	N	SA-3	120	APPARATUS BAY	FLUORESCENT		RELAY DESIGNATION "a2" - 100% LIGHTS
21	N	SB-35	120	SPARE	METAL HALIDE	PHOTOCELL ON/TIMECLOCK OFF	RELAY DESIGNATION "a3" - 100% LIGHTS
22	N			SPARE			
23	N			SPARE			
24	N			SPARE			
SLAVE LIGHTING CONTROL PANEL (SLCP1) BY LCD, LOCATED ABOVE CEILING IN QUARTER							
1	N	SA-5	120	CREW QUARTER LIGHTING	FLUORESCENT		RELAY DESIGNATION "a11" - 50% LIGHTS
2	N	SA-5	120	CREW QUARTER LIGHTING	FLUORESCENT		RELAY DESIGNATION "a12" - 100% LIGHTS
3	N	SA-5	120	CREW QUARTER LIGHTING	FLUORESCENT		RELAY DESIGNATION "a13" - 50% LIGHTS
4	N	SA-5	120	CREW QUARTER LIGHTING	FLUORESCENT		RELAY DESIGNATION "a14" - 100% LIGHTS
SLAVE LIGHTING CONTROL PANEL (SLCP2) BY LCD, LOCATED ABOVE CEILING IN QUARTER							
1	N	SA-5	120	CREW QUARTER LIGHTING	FLUORESCENT		RELAY DESIGNATION "a21" - 50% LIGHTS
2	N	SA-5	120	CREW QUARTER LIGHTING	FLUORESCENT		RELAY DESIGNATION "a22" - 100% LIGHTS
3	N	SA-5	120	CREW QUARTER LIGHTING	FLUORESCENT		RELAY DESIGNATION "a23" - 50% LIGHTS
4	N	SA-5	120	CREW QUARTER LIGHTING	FLUORESCENT		RELAY DESIGNATION "a24" - 100% LIGHTS
SLAVE LIGHTING CONTROL PANEL (SLCP3) BY LCD, LOCATED ABOVE CEILING IN QUARTER							
1	N	SA-5	120	CREW QUARTER LIGHTING	FLUORESCENT		RELAY DESIGNATION "a31" - 50% LIGHTS
2	N	SA-5	120	CREW QUARTER LIGHTING	FLUORESCENT		RELAY DESIGNATION "a32" - 100% LIGHTS
3	N	SA-5	120	CREW QUARTER LIGHTING	FLUORESCENT		RELAY DESIGNATION "a33" - 50% LIGHTS
4	N	SA-5	120	CREW QUARTER LIGHTING	FLUORESCENT		RELAY DESIGNATION "a34" - 100% LIGHTS
SLAVE LIGHTING CONTROL PANEL (SLCP4) BY LCD, LOCATED ABOVE CEILING IN QUARTER							
1	N	SA-5	120	CREW QUARTER LIGHTING	FLUORESCENT		RELAY DESIGNATION "a41" - 50% LIGHTS
2	N	SA-5	120	CREW QUARTER LIGHTING	FLUORESCENT		RELAY DESIGNATION "a42" - 100% LIGHTS
3	N	SA-5	120	CREW QUARTER LIGHTING	FLUORESCENT		RELAY DESIGNATION "a43" - 50% LIGHTS
4	N	SA-5	120	CREW QUARTER LIGHTING	FLUORESCENT		RELAY DESIGNATION "a44" - 100% LIGHTS

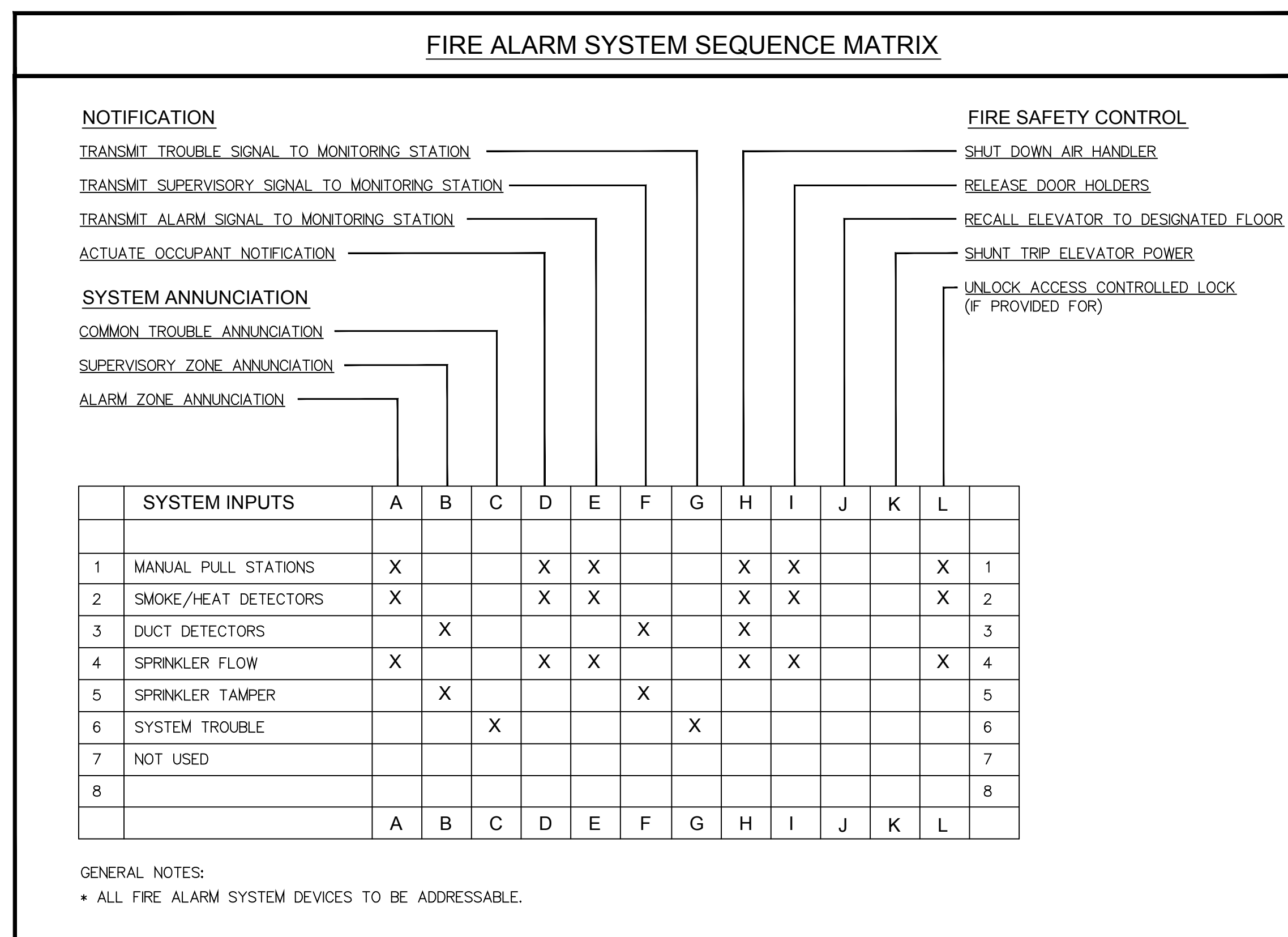
**ELECTRICAL LIGHTING CONTROL SCHEDULE**  
 SCALE: N.T.S.

<b>G</b>	GRINER ENGINEERING, INC.	Date	05/31/2013
	1623 First Avenue North	Drawn	HT
	St. Petersburg, Florida 33713	Designed	HT
	Phone: (727)822-2335	EOR	JHG
	Fax: (727)821-3361	Job no.	13052
Certificate of Authorization #3173			





FIRE ALARM CONDUCTOR SCHEDULE			
DESIG-NATION	CONDUCTOR	DEVICE TYPE	COLOR CODE
A	2 NO. 14 "THHN" - STRANDED	INITIATION DEVICES	TWISTED PAIR
C	2 NO. 12 "THHN" - STRANDED	AUDIO/VISUAL DEVICES	RED/BLACK
E	2 NO. 14 "THHN" - STRANDED	AUXILIARY RELAYS	BLUE/ORANGE
F	2 NO. 14 "THHN" - STRANDED	SUPERVISORY DEVICES	PURPLE/BROWN



- FIRE ALARM GENERAL NOTES:**
- THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF THE PROPOSED ADDRESSABLE FIRE ALARM SYSTEM, INCLUDING ALL DEVICES AND WIRING LAYOUTS, BATTERY CALCULATIONS AND FREQUENCY OF OPERATION TO THE FIRE MARSHAL FOR APPROVAL PRIOR TO SUBMITTING TO ENGINEER FOR REVIEW. ANY REVISIONS AND/OR ADDITIONS REQUIRED BY THE LOCAL JURISDICTION PRIOR TO OBTAINING CERTIFICATE OF OCCUPANCY ARE THE RESPONSIBILITY OF THE CONTRACTOR AND WILL NOT BE REASON FOR ADDITIONAL COMPENSATION TO THE CONTRACTOR.
  - THE FIRE ALARM SYSTEM SHALL BE INSTALL IN COMPLIANCE WITH NFPA 70, 72, FLORIDA BUILDING CODE, AND LOCAL ORDINANCE.
  - SYSTEM SUPPLIER SHALL SUPERVISE INSTALLATION, PROGRAM AND TEST SYSTEM, AND INSTRUCT OWNER.
  - ALL CONTROL CABINETS SHALL BE GROUNDED PER NEC AND MANUFACTURER SPECIFICATION.
  - SYSTEM INSPECTION, TEST RESULT, AND OPERATION SHEETS SHALL BE PROVIDED TO THE OWNER.
  - REFER TO FIRE ALARM DRAWINGS FOR ADDITIONAL REQUIREMENTS.
  - THE ELECTRICAL CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS SHOWING EXACT FIELD INSTALLATION TO THE OWNER AFTER COMPLETION OF THE PROJECT.
  - ALL FIELD CHANGES SHALL BE COORDINATED WITH OWNER'S REPRESENTATIVE.
  - FIRE ALARM SYSTEM SHALL BE ENERGIZED UNDER THE SUPERVISION OF THE MANUFACTURER.
  - SMOKE DETECTORS SHALL BE INSTALLED MINIMUM 3'-0" FROM HVAC SUPPLY AIR DIFFUSERS.
  - VERIFY LOCATION OF THE FIRE ALARM CONTROL PANEL WITH THE LOCAL AUTHORITY HAVING JURISDICTION.
  - PROVIDE INTERLOCKS TO THE BUILDING FIRE ALARM SYSTEM TO PROVIDE AUTOMATIC SIGNALING TO AN APPROVED LOCATION WITH ADEQUATE DIALING AND COMMUNICATION SYSTEM CAPABILITY. COORDINATE FINAL REQUIREMENTS WITH OWNER AND GENERAL CONTRACTOR.
  - ALL JUNCTION BOXES AND COVER PLATES TO EMERGENCY SYSTEM SHALL BE PAINTED RED FOR QUICK RECOGNITION.
  - ALL CONTROL AND ALARM CABLES SHALL BE INSTALLED IN CONDUIT.
  - CONTRACTOR SHALL VERIFY THAT THE QUANTITY AND LOCATIONS SHOWN ON THE DRAWINGS SHALL PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM TO THE OWNER.
  - CONTRACTOR SHALL COORDINATE LOCATIONS AND QUANTITIES OF ALL SPRINKLER TAMPER AND FLOW SWITCHES WITH SPRINKLER CONTRACTOR AND PROVIDE DEVICES AND WIRING AS REQUIRED.
  - WALL-MOUNTED AUDIBLE, VISUAL, AND AUDIBLE-VISUAL APPLIANCES SHALL HAVE THE BOTTOM OF THE FACE PLATE AT 80" AFF, OR 6" FROM THE TOP OF FACE PLATE TO CEILING, WHICHEVER IS LOWER.
  - WHEN CEILING MOUNTED, SMOKE AND/OR HEAT DETECTORS SHALL BE MOUNTED NO CLOSER THAN 4" TO A SIDE WALL.
  - CONTROL RELAYS MUST BE MOUNTED WITHIN 3'-0" OF THE EMERGENCY CONTROL DEVICE.
  - WIRING ENTERING OR LEAVING A BUILDING, AND 120VAC CONTROL PANEL CIRCUITS SHALL HAVE SURGE PROTECTION INSTALLED IN ACCORDANCE WITH NFPA 72 1-5, 5.3 AND N.E.C. ARTICLE 800-1, 800-13, 800-30(A), AND 800-33. MIN. 6X6X6 J-BOX.
  - ALL DEVICES SUCH AS FIRE ALARM PULLS, STROBES AND HORNS, AND ETC ARE TO BE RED IN COLOR.
  - PROGRAM DACT AND ESTABLISH PROPER REPORTING TO THE MONITORING SYSTEM.
  - CONTRACTOR SHALL INCLUDE MINIMUM (4) HOURS IN HIS BID PROPOSAL FOR OWNER'S TRAINING. THE TRAINING TO BE PERFORMED AFTER COMPLETION OF FIRE ALARM SYSTEM.



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**FIRE STATION 19**  
 7910 INTERBAY BLVD.  
 TAMPA, FL

DPW FILE NUMBER

DPW NUMBER  
**FD018**

ISSUE DATE  
**MAY 31, 2018**

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SEAL  
 Signature \_\_\_\_\_ Date \_\_\_\_\_  
 IVAYLO I. TODOROV  
 FLORIDA P.E.  
 #73028

SCALE: N.T.S.

FIRE ALARM RISER DIAGRAM

SHEET NUMBER

**E6.1**  
 X OF X





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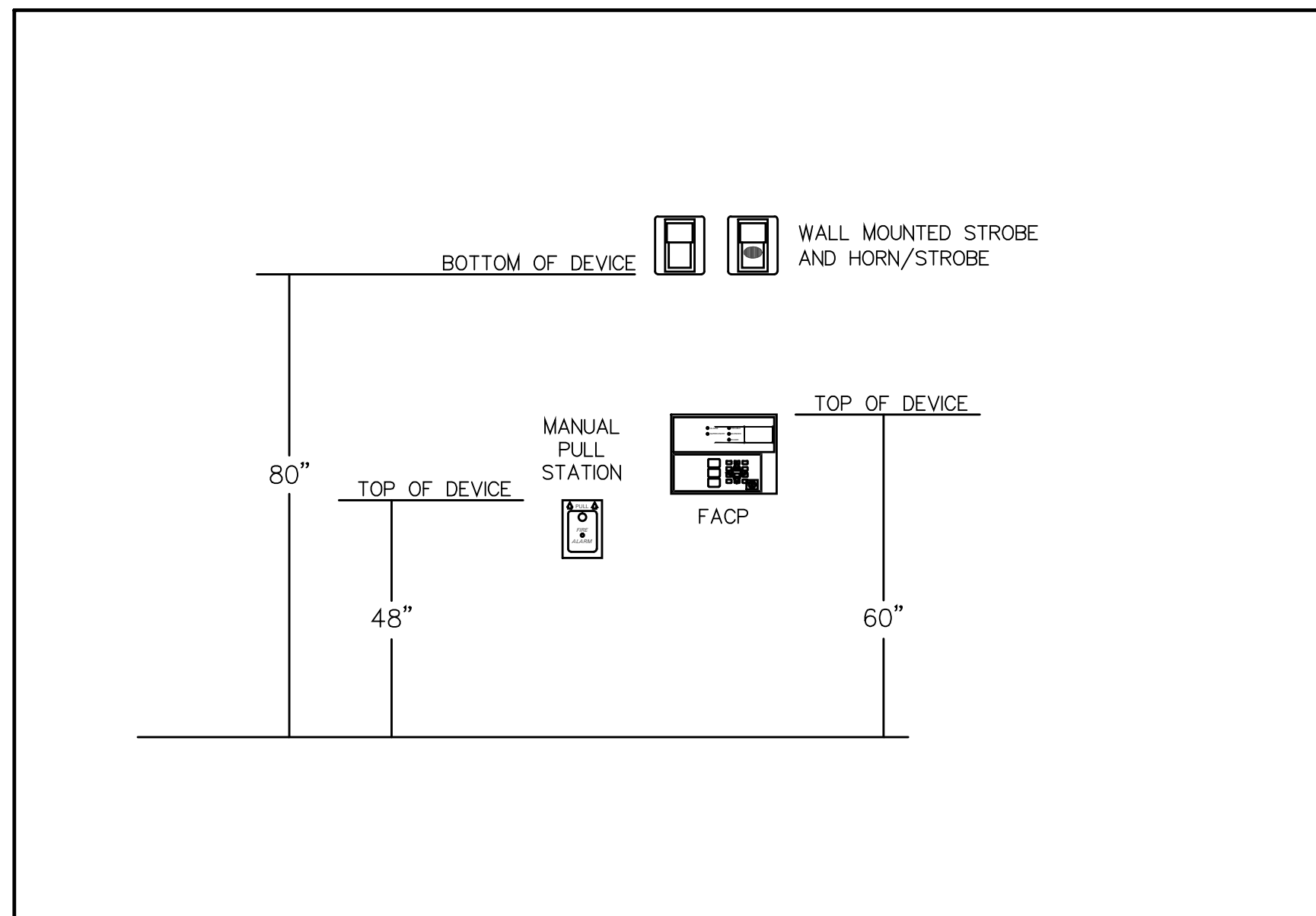
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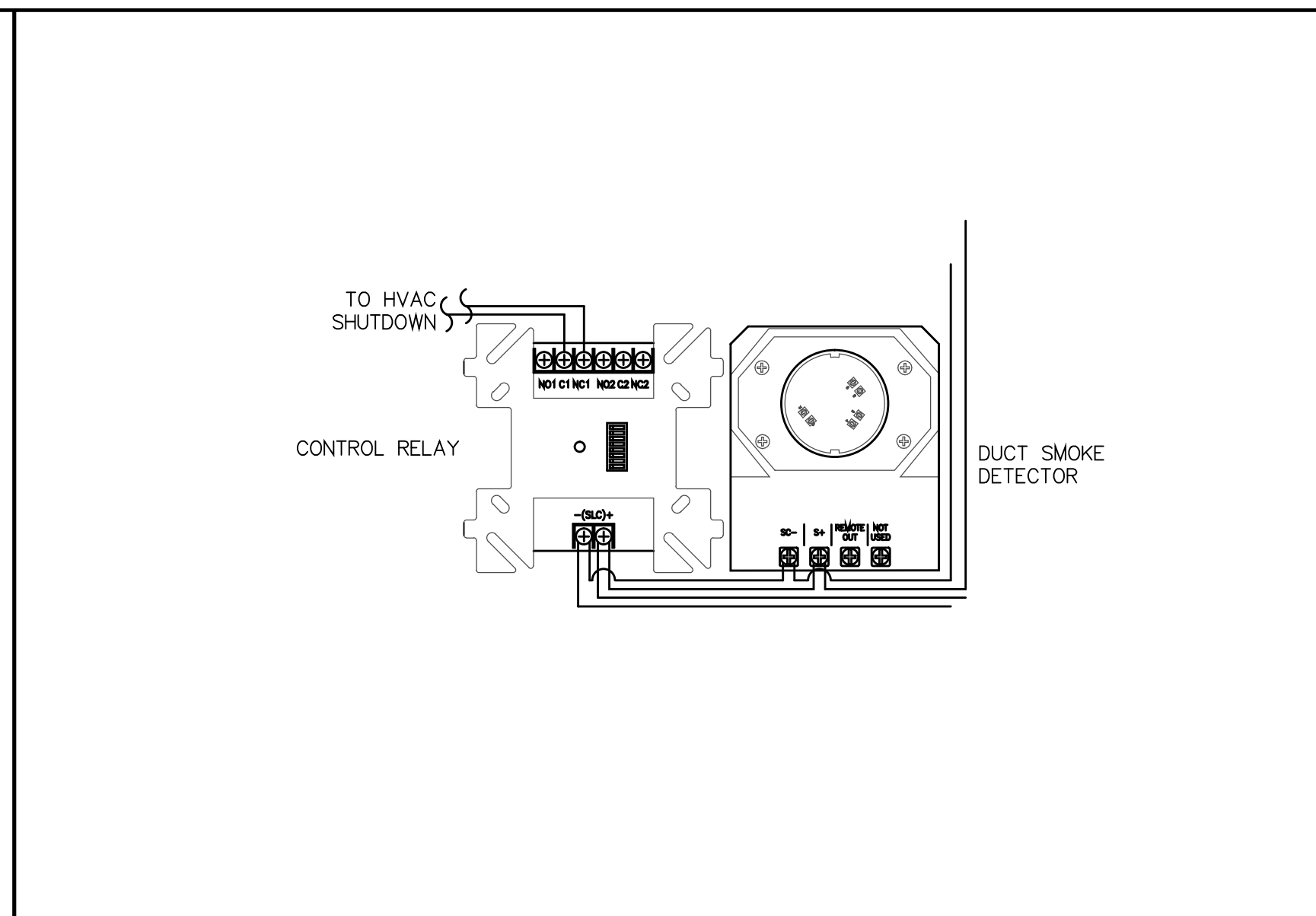
FIRE ALARM DETAILS

SHEET NUMBER

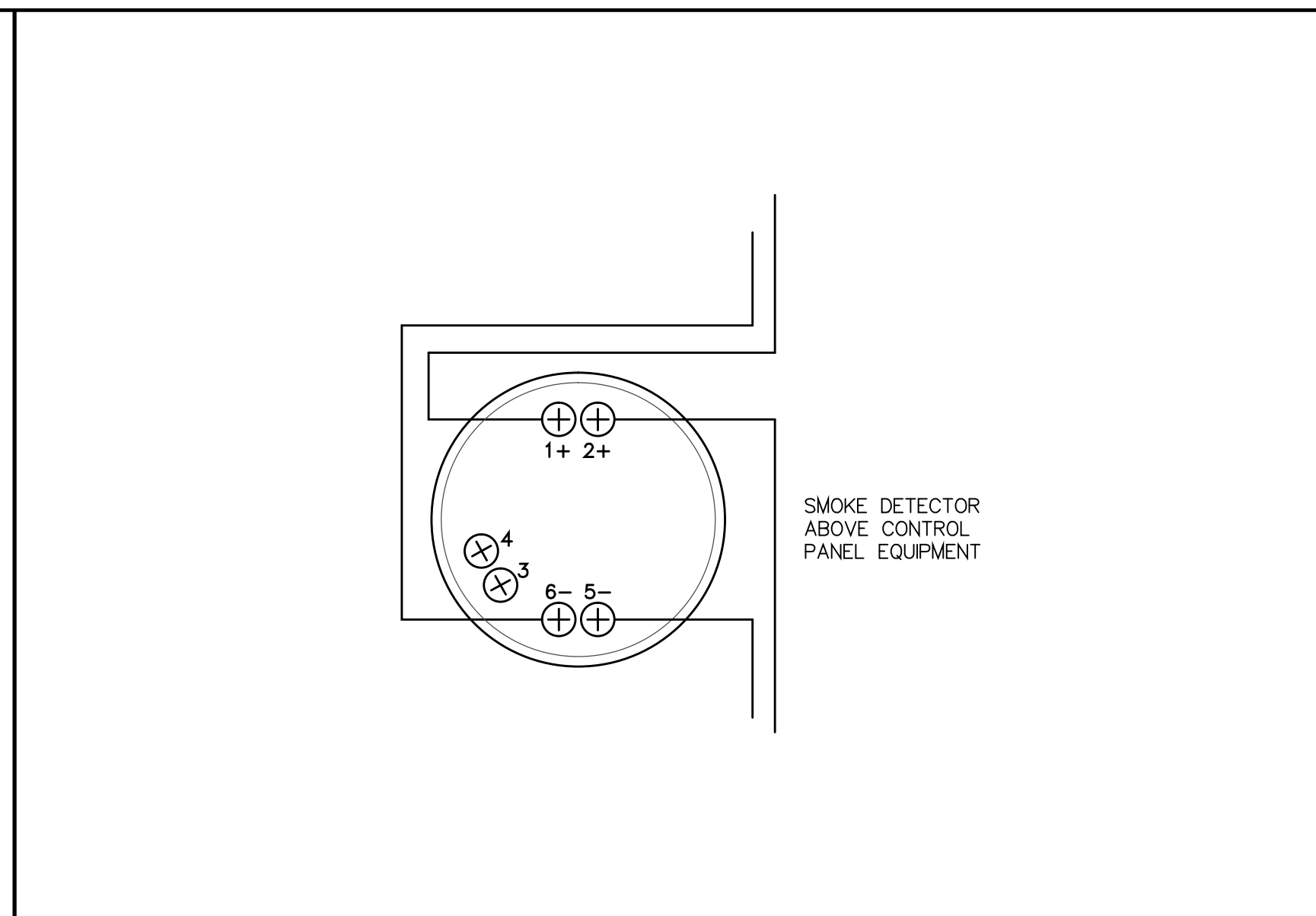
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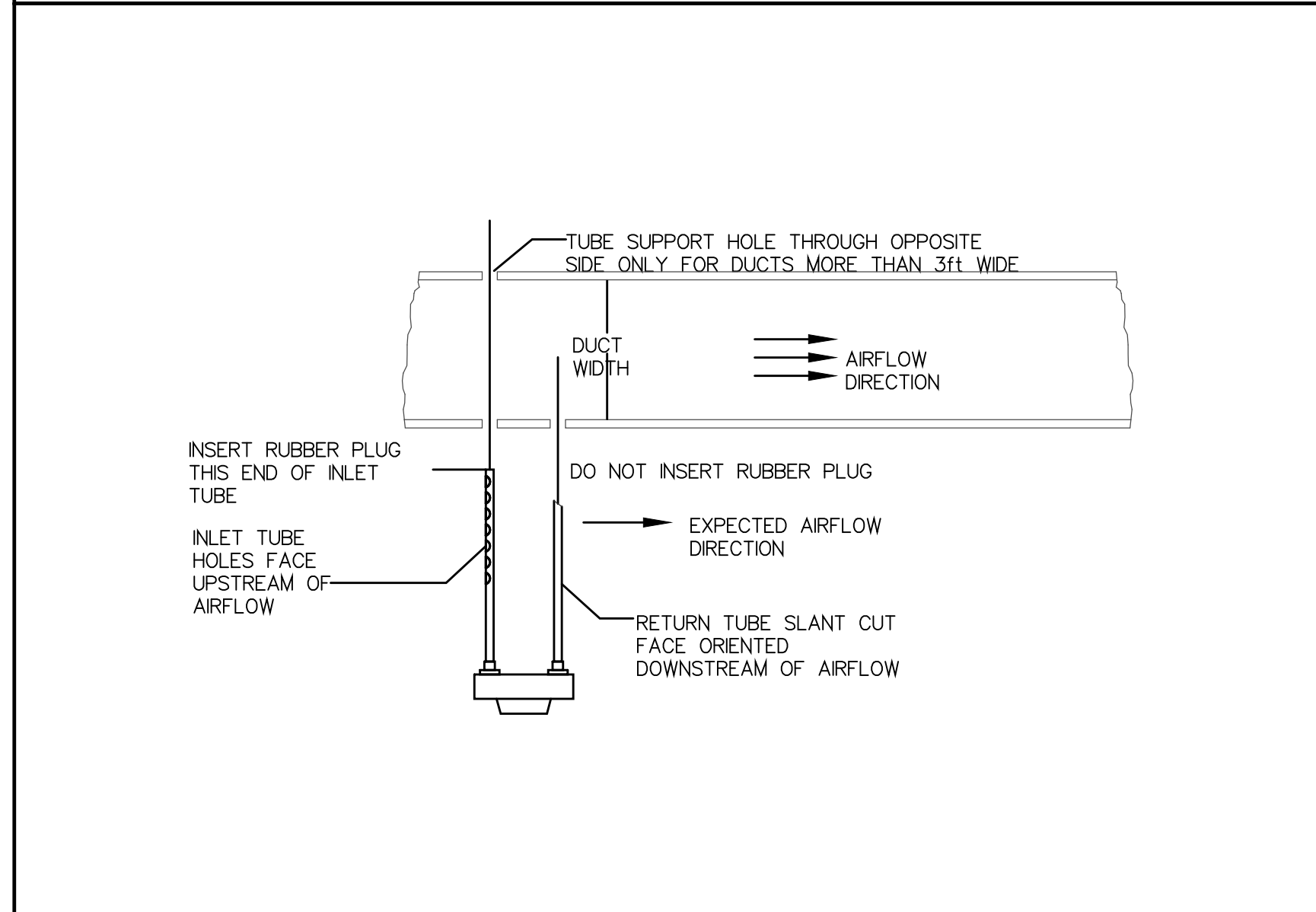
**TYPICAL DEVICE MOUNTING HEIGHT**  
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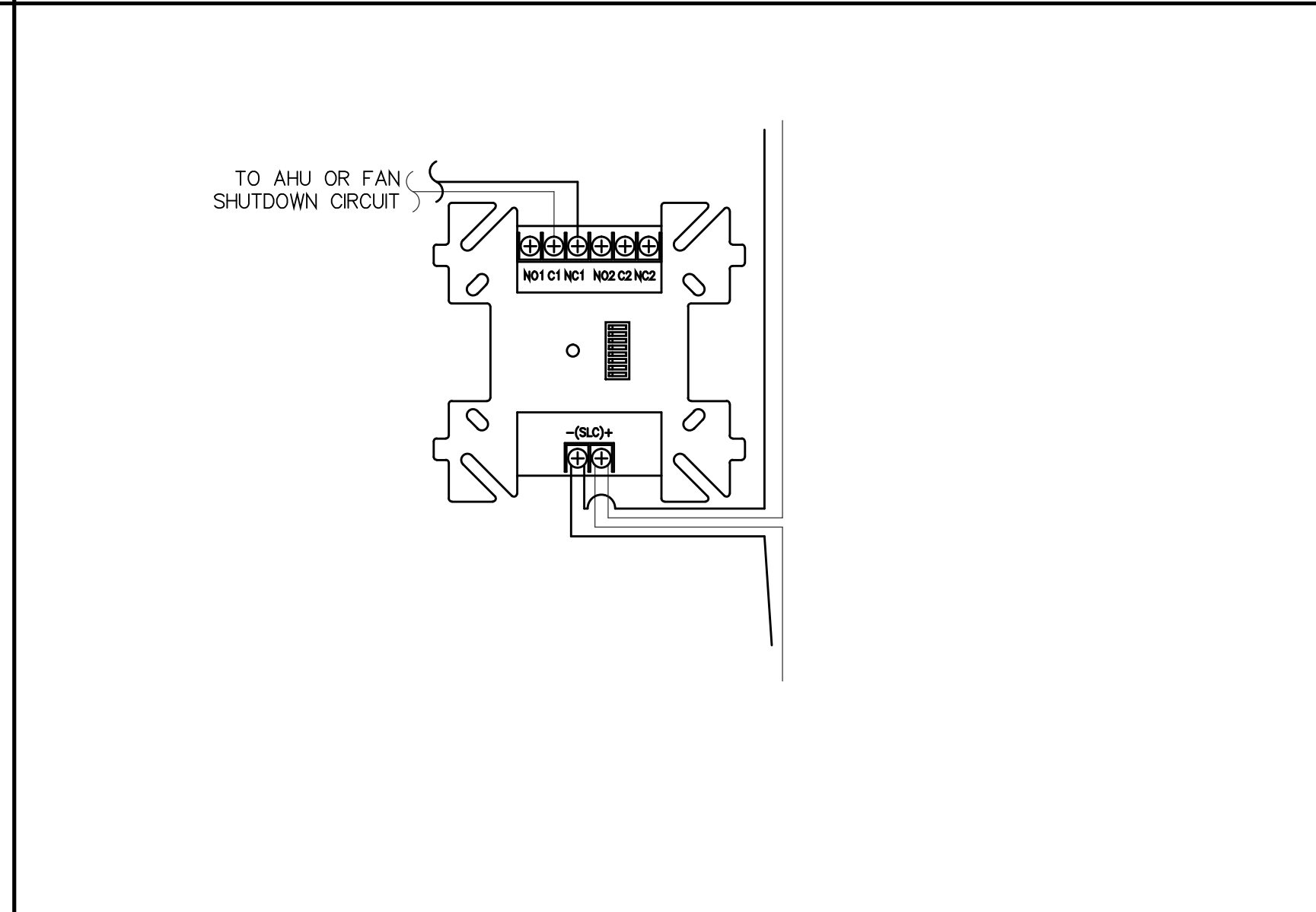
**TYPICAL DUCT SMOKE DETECTOR WIRING DETAIL**  
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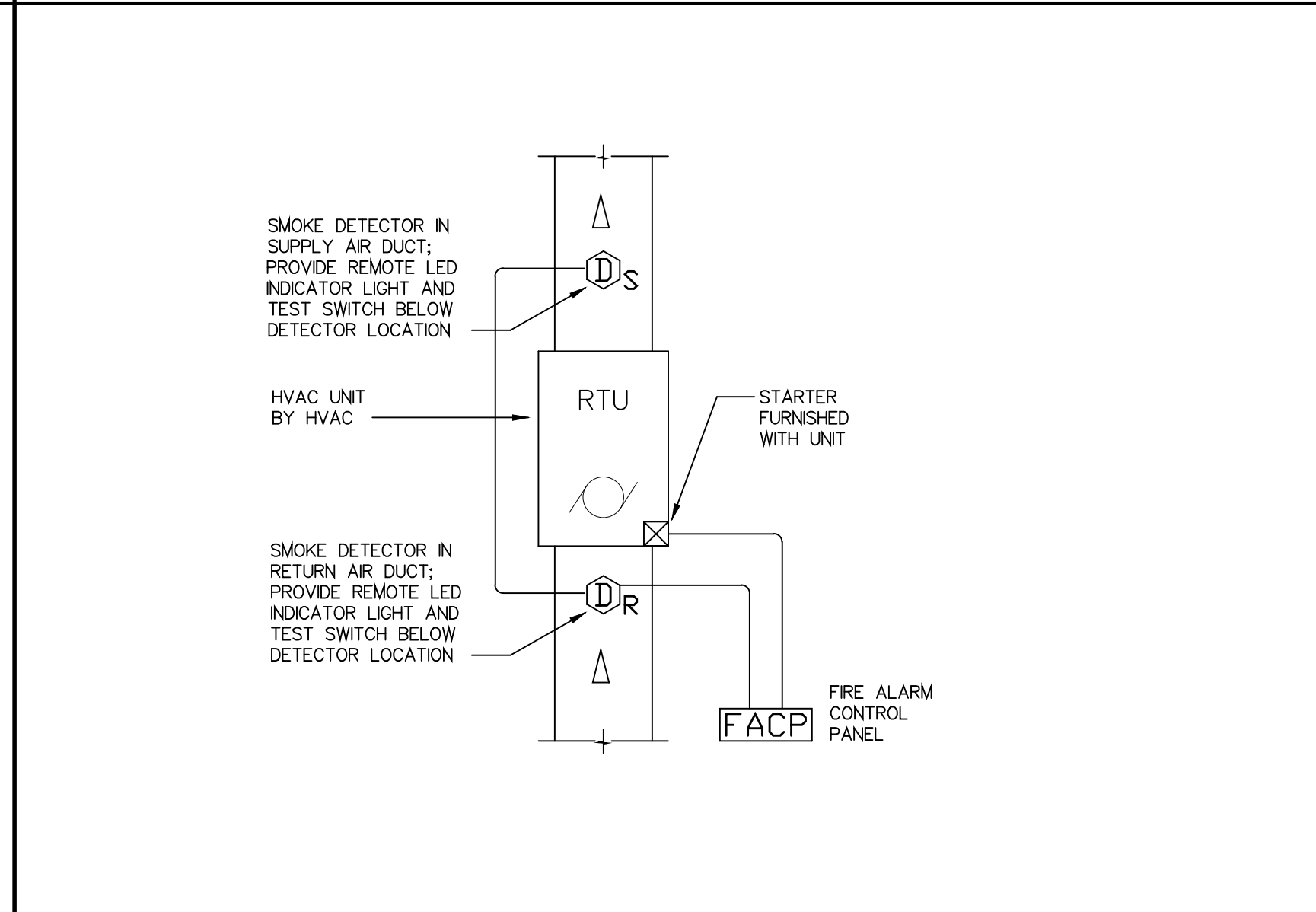
**TYPICAL SMOKE DETECTOR WIRING DETAIL**  
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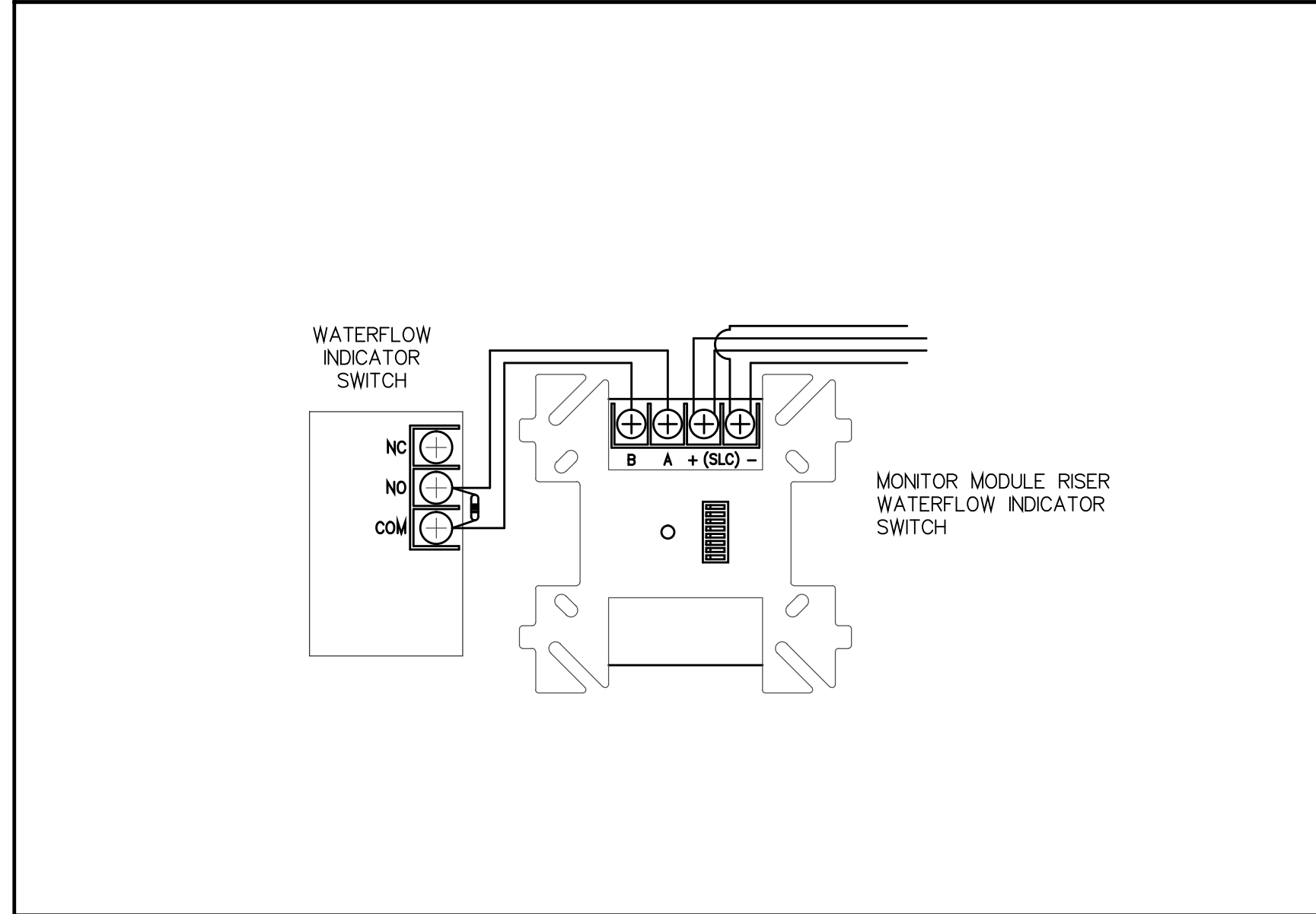
**TYPICAL DUCT SMOKE DETECTOR INSTALLATION DETAIL**  
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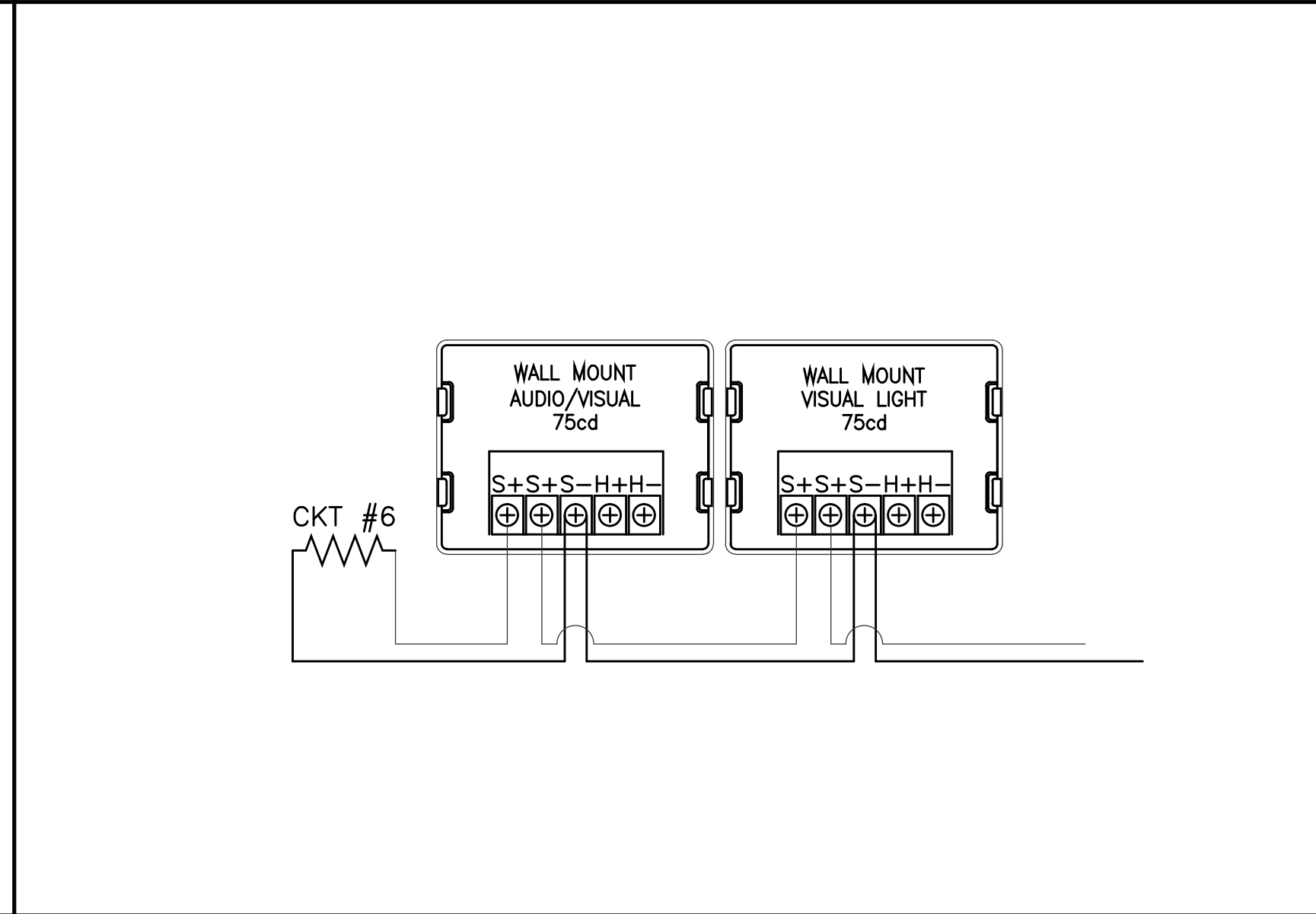
**TYPICAL CONTROL RELAY WIRING DETAIL**  
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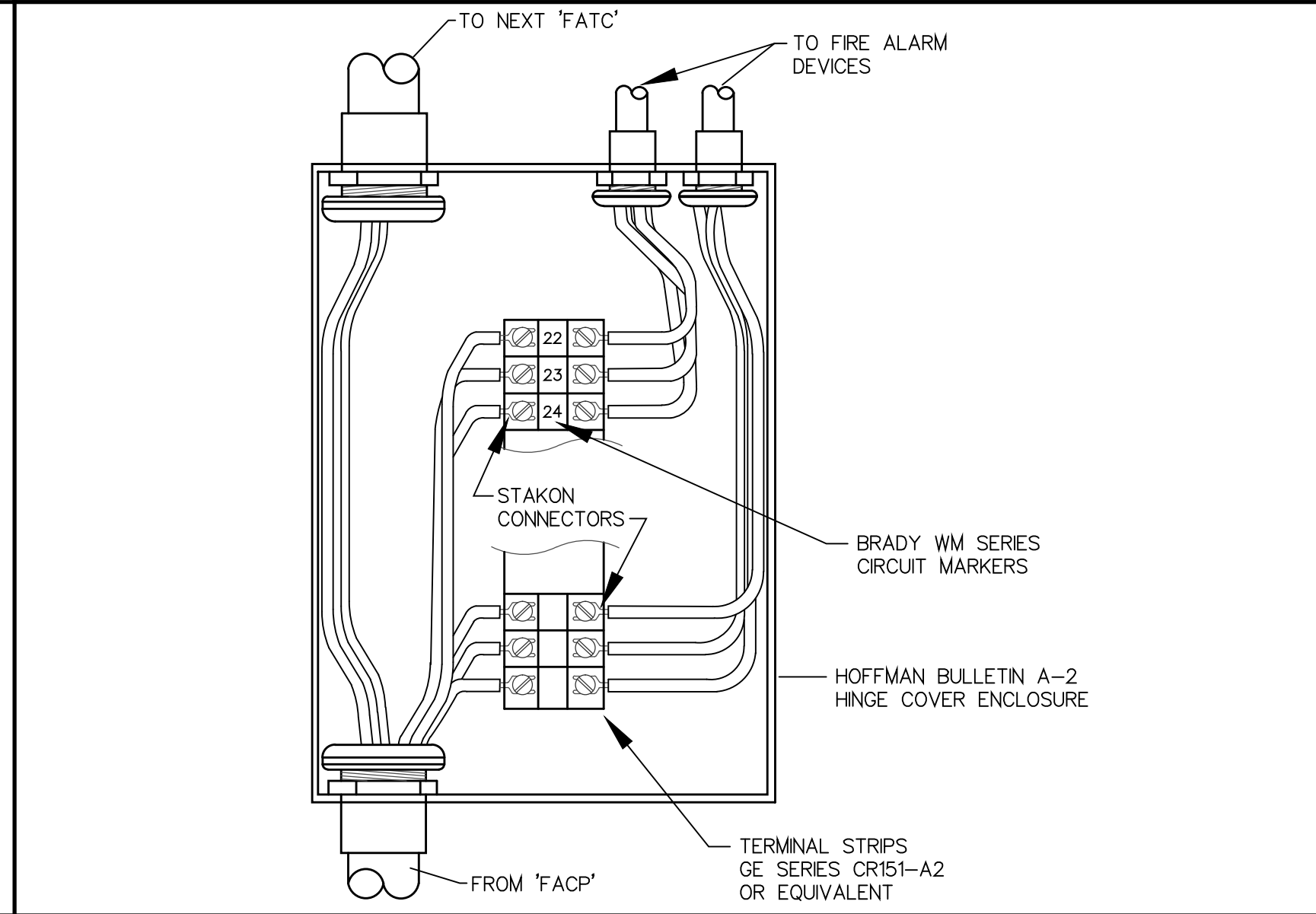
**TYPICAL WIRING DIAGRAM - HVAC DUCT SMOKE DETECTOR**  
 NOT TO SCALE



**TYPICAL MONITOR MODULE WIRING DETAIL**  
 NOT TO SCALE



**TYPICAL STROBE AND HORN/STROBE WIRING DETAIL**  
 NOT TO SCALE



**TYPICAL FIRE ALARM TERMINAL CABINET (FACT)**  
 NOT TO SCALE

GENERAL FIRE ALARM DETAILS:  
 FIRE ALARM DETAILS ARE FOR REFERENCE ONLY. REFER TO MANUFACTURER INSTALLATION INSTRUCTION AND REQUIREMENTS FOR EXACT CONNECTIONS AND LAYOUTS.

**FIRE ALARM DETAILS**  
 SCALE: N.T.S.

<b>G</b>	GRINER ENGINEERING, INC.	Date	05/31/2018
	1628 First Avenue North St. Petersburg, Florida 33713	Drawn	HT
	Phone: (727) 822-2335	Designed	HT
	Fax: (727) 821-3361	FOR	JHG
	Certificate of Authorization #3173	Job no.	13052

HVAC SYMBOL LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	EXISTING DUCTWORK TO REMAIN SIZE IN INCHES (PLAN DIM. FIRST)		ROUND DUCT DOWN
	EXISTING DUCTWORK/EQUIPMENT TO BE REMOVED		ROUND DUCT UP
	NEW DUCTWORK SIZE IN INCHES (PLAN DIM. FIRST)		GOOSENECK
	NEW FLEXIBLE DUCT		ROOF MOUNTED EXHAUST FAN
	NEW DUCTSOX DUCTWORK		DRYWELL
	NESTED SQUARE/RECTANGULAR BRANCH TAKE OFF		DUCT ACCESS DOOR
	SPIN-IN FITTING WITH VOLUME DAMPER		COMBINATION FIRE/SMOKE DAMPER (VERTICAL POSITION)
	SPIN-IN FITTING WITHOUT VOLUME DAMPER		FIRE DAMPER (VERTICAL POSITION)
	DUCT TRANSITION (RECTANGLE TO RECTANGLE)		FIRE DAMPER (HORIZONTAL POSITION)
	DUCT TRANSITION (RECTANGLE TO ROUND)		MOTORIZED VOLUME DAMPER IN DUCTWORK
	DUCT TEE WITH TURNING VANES		MANUAL VOLUME DAMPER IN DUCTWORK
	DUCT ELBOW UP		DUCT MOUNTED SMOKE DETECTOR
	DUCT ELBOW DOWN		SIDEWALL RETURN GRILLE
	90° ELBOW WITH TURNING VANES		SIDEWALL SUPPLY GRILLE
	90° RADIUS ELBOW (R=1.5W)		FLEXIBLE DUCT CONNECTOR
	45° BRANCH TAKE-OFF WITH VOLUME DAMPER		CEILING DIFFUSER (SUPPLY, RETURN, & EXHAUST)
	ELECTRIC DUCT HEATER		EXISTING CEILING DIFFUSER (SUPPLY, RETURN, & EXHAUST)
	UNDER CUT DOOR (INCHES GIVEN)		AIR DEVICE IDENTIFICATION AIRFLOW NECK SIZE
	SUPPLY AIRFLOW DIRECTION		EXHAUST/RETURN AIRFLOW DIRECTION
	NEW CONNECTION TO EXISTING THERMOSTAT (MTD. 4'-0" AFF)		KEYED NOTE
	SENSOR (MTD. 4'-0" AFF)		HUMIDISTAT
	HEAT DETECTOR		HVAC EQUIPMENT CONTROL
	CARBON MONOXIDE SENSOR		STATIC PRESSURE SENSOR
			CARBON DIOXIDE SENSOR

HVAC PIPING AND VALVES LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	ELBOW - TURNED UP		TRIPLE DUTY VALVE (SHUT-OFF, BALANCING & CHECK)
	ELBOW - TURNED DOWN		BALL VALVE
	PIPE RISER		AUTO CIRCUIT SETTER VALVE
	TEE - OUTLET UP		HORIZONTAL SWING CHECK VALVE
	TEE - OUTLET DOWN		Y-TYPE STRAINER WITH BLOW DOWN AND VALVE
	CAP		BASKET TYPE STRAINER
	UNION		
	CONCENTRIC INCREASER		COMPRESSED AIR PIPING
	ECCENTRIC REDUCER		CONDENSER WATER RETURN PIPING
	FLEXIBLE PIPE CONNECTOR		CONDENSER WATER SUPPLY PIPING
	THERMOMETER		CONDENSATE PIPING
	PRESSURE GAGE		CHILLED WATER RETURN PIPING
	PRESSURE/TEMPERATURE PLUG		CHILLED WATER SUPPLY PIPING
	AUTOMATIC AIR VENT		HOT WATER HEATING SYSTEM RETURN PIPING
	MANUAL AIR VENT		HOT WATER HEATING SYSTEM SUPPLY PIPING
	VENTURI FLOW MEASUREMENT DEVICE		FUEL GAS PIPING
	BUTTERFLY VALVE		REFRIGERATION SYSTEM DISCHARGE PIPING
	MOTORIZED CONTROL VALVE (BUTTERFLY VALVE)		REFRIGERATION SYSTEM RETURN PIPING (SUCTION)
			REFRIGERATION SYSTEM SUPPLY PIPING (LIQUID)

HVAC ABBREVIATIONS							
ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
ADA	AMERICAN WITH DISABILITIES ACT	EWB	ENTERING WET BULB TEMPERATURE	LRA	LOCKED ROTOR AMPS	SMACNA	SHEET METAL & AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
A.F.F.	ABOVE FINISHED FLOOR	EWT	ENTERING WATER TEMPERATURE	LWB	LEAVING WET BULB TEMPERATURE		
A.F.G.	ABOVE FINISHED GRADE	FBC	FLORIDA BUILDING CODE	LWT	LEAVING WATER TEMPERATURE	SP	STATIC PRESSURE
AFR	ABOVE FINISHED ROOF	FCU	FAN COIL UNIT	MBH	THOUSANDS OF BTU PER HOUR	SS	SANITARY SEWER STACK
AHU	AIR-HANDLING UNIT	FD	FIRE DAMPER	MC	MECHANICAL CONTRACTOR	TSP	TOTAL STATIC PRESSURE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	FD	FLOOR DRAIN	MCA	MINIMUM CIRCUIT AMPS	UBC	UNIFORM BUILDING CODE
AP	ACCESS PANEL	FLA	FULL LOAD AMPS	MOCP	MAXIMUM OVER CURRENT PROTECTION	UL	UNDERWRITERS LABORATORIES
		F.P.C.	FIRE PROTECTION CONTRACTOR	NC	NORMALLY CLOSED	UMC	UNIFORM MECHANICAL CODE
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION, & AIR CONDITIONING ENGINEERS	FPM	FEET PER MINUTE	NEC	NATIONAL ELECTRIC CODE	UON	UNLESS OTHERWISE NOTED
		FT	FEET	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION	UPC	UNIFORM PLUMBING CODE
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	GAL	GALLONS	NIC	NOT IN CONTRACT	V	VENT
		G.C.	GENERAL CONTRACTOR	NO	NORMALLY OPEN	V	VOLTS
ASPE	AMERICAN SOCIETY OF PLUMBING ENGINEERS	GPH	GALLONS PER HOUR	NTS	NOT TO SCALE	VAV	VARIABLE AIR VOLUME
		GPM	GALLONS PER MINUTE	OA	OUTSIDE AIR	VB	VACUUM BREAKER
BHP	BRAKE HORSE POWER	HP	HORSEPOWER	PC	PLUMBING CONTRACTOR	VFD	VARIABLE FREQUENCY DRIVE
BTU	BRITISH THERMAL UNIT	HR	HOUR	PSI	POUNDS PER SQUARE INCH	VIF	VERIFY IN FIELD
BTUH	BRITISH THERMAL UNITS PER HOUR	HSPF	HEATING SEASON PERFORMANCE FACTOR	PSIG	POUNDS PER SQUARE INCH-GAUGE	VRF	VARIABLE REFRIGERANT FLOW
CFM	CUBIC FEET PER MINUTE			PTAC	PACKAGED TERMINAL AIR CONDITIONER	VRV	VARIABLE REFRIGERANT VOLUME
CO	CLEAN OUT	HVAC	HEATING, VENTILATION, & AIR CONDITIONING	PVC	POLYVINYL CHLORIDE	VS	VENT STACK
COP	COEFFICIENT OF PERFORMANCE	Hz	HERTZ	RA	RETURN AIR	VTR	VENT THROUGH ROOF
CPVC	CHLORINATED POLYVINYL CHLORIDE	IBC	INTERNATIONAL BUILDING CODE	RD	ROOF DRAIN		
CU	CONDENSING UNIT	IECC	INTERNATIONAL ENERGY CONSERVATION CODE	RLA	RATED LOAD AMPS	%RH	PERCENT RELATIVE HUMIDITY
DDC	DIRECT DIGITAL CONTROLS			RO	ROOF OVERFLOW	ΔP	CHANGE IN PRESSURE
DIA.	DIAMETER	IMC	INTERNATIONAL MECHANICAL CODE			ΔT	CHANGE IN TEMPERATURE
EAT	ENTERING AIR TEMPERATURE	IPC	INTERNATIONAL PLUMBING CODE	RPBFP	REDUCED PRESSURE BACKFLOW PREVENTER	°C	DEGREES CELSIUS
EC	ELECTRICAL CONTRACTOR	IPLV	INTEGRATED PART-LOAD VALUE			°F	DEGREES FAHRENHEIT
EDB	ENTERING DRY BULB TEMPERATURE	KW	KILOWATTS	RPM	REVOLUTIONS PER MINUTE	°K	DEGREES KELVIN
EER	ENERGY EFFICIENCY RATIO	LAT	LEAVING AIR TEMPERATURE	RTU	ROOF TOP UNIT	°R	DEGREES RANKIN
ESP	EXTERNAL STATIC PRESSURE	LB	POUNDS FORCE	SA	SUPPLY AIR	"WC	INCHES WATER COLUMN
ETR	EXISTING TO REMAIN	LDB	LEAVING DRY BULB TEMPERATURE	SC	SITE CONTRACTOR	φ	DIAMETER
EUH	ELECTRIC UNIT HEATER			SEER	SEASONAL ENERGY EFFICIENCY RATIO	φ	ELECTRICAL PHASE
		LEED	LEADERSHIP IN ENERGY & ENVIRONMENTAL DESIGN				

HVAC GENERAL NOTES	
1.	ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE FLORIDA BUILDING CODE - MECHANICAL WITH REVISIONS, NATIONAL ELECTRIC CODE, NFPA AND ALL LOCAL ORDINANCES.
2.	ALL WORK SHALL BE COORDINATED WITH ARCHITECTURAL, CIVIL, STRUCTURAL AND ELECTRICAL DRAWINGS.
3.	REFER TO ARCHITECTURAL PLANS FOR EXACT CEILING GRID AND DIFFUSER LOCATIONS.
4.	PRIOR TO SUBMITTING A BID, THE CONTRACTOR SHALL HAVE STUDIED AND COMPARED THE CONTRACT DOCUMENTS WITH EXISTING/PROPOSED CONDITIONS AND NOT LATER THAN TEN (10) DAYS PRIOR TO THE BID OPENING SHALL REPORT TO THE ENGINEER ANY ERROR, INCONSISTENCY, OR OMISSION IN THE CONTRACT DOCUMENTS.
5.	ALL DUCTWORK SHALL BE SEALED WITH A NON-HARDENING, NON-MIGRATING MASTIC OR LIQUID ELASTIC SEALANT. PROVIDE HOT-DIPPED GALVANIZED STEEL FASTENERS, ANCHORS, RODS, STRAPS, TRM AND ANGLES FOR SUPPORT OF DUCTWORK.
6.	FABRICATE DUCT FITTINGS TO MATCH ADJOINING DUCTS AND TO COMPLY WITH DUCT REQUIREMENTS AS APPLICABLE TO FITTINGS. LIMIT ANGULAR TAPERS TO 30 DEGREES FOR CONTRACTING TAPERS AND 20 DEGREES FOR EXPANDING TAPERS.
7.	PROVIDE FLEXIBLE CONNECTION FROM EACH DUCTWORK CONNECTION AIR MOVING EQUIPMENT.
8.	ALL DUCTS SHOWN ARE INSIDE CLEAR DIMENSIONS.
9.	PROVIDE ACCESS PANELS IN CEILINGS FOR ACCESS TO VOLUME DAMPERS, FIRE DAMPERS, DUCT MOUNTED SMOKE DETECTORS, AND WHERE REQUIRED FOR MAINTENANCE OF ALL FANS AND MECHANICAL EQUIPMENT. PANELS SHALL HAVE A FIRE RATING EQUAL TO THE PENETRATED ASSEMBLY (MINIMUM 1 HOUR). PROVIDE FIRE DAMPERS AT ALL DUCT PENETRATIONS OF FIREWALLS.
10.	INSULATE OUTSIDE AIR, SUPPLY, AND RETURN DUCTWORK WITH INSULATION, WHICH HAS A MINIMUM R-VALUE OF 6. ALL DUCTWORK INSULATION, FITTINGS, COVERS AND FINISHES SHALL HAVE A MAXIMUM FLAME SPREAD RATING OF 25 AND A MAXIMUM SMOKE DEVELOPED RATING OF 50 AND ALL BE IN COMPLIANCE WITH NFPA 90A.
11.	LOCATE ALL THERMOSTATS 48" AFF UNLESS OTHERWISE NOTED. EXACT LOCATION OF ALL THERMOSTATS SHALL BE APPROVED BY THE ARCHITECT AND THE ENGINEER.
12.	CONTRACTOR SHALL CLEAN ALL COILS AND REPLACE ALL FILTERS AND BELTS AT SUBSTANTIAL COMPLETION.
13.	AIR CONDITIONING EQUIPMENT SHALL BE AS SPECIFIED. ARCHITECT AND ENGINEER WILL REVIEW ANY SUBSTITUTION FOR COMPATIBILITY.
14.	DUCT SIZES AND EQUIPMENT OPENINGS THRU ROOFS, SLABS AND WALL PARTITIONS SHALL SUIT EQUIPMENT FURNISHED. SEE SHOP DRAWINGS FOR EQUIPMENT DIMENSIONS.
15.	PROVIDE "P" TRAP AT AIR HANDLER UNITS.
16.	SLEEVE AND SEAL ALL PIPING PASSING THROUGH WALLS, FLOORS AND ROOF UNLESS NOTED OTHERWISE.
17.	ALL CUTTING, PATCHING AND REPAIR WORK SHALL BE THE RESPONSIBILITY OF THE TRADE INVOLVED.
18.	A COPY OF THE FINAL TEST AND BALANCE REPORT, REVIEWED AND ACCEPTED BY THE ENGINEER OF RECORD SHALL BE MADE AVAILABLE AT THE FINAL CONSTRUCTION SURVEY. NO FINAL INSPECTION OF HVAC CONSTRUCTION BY THE ENGINEER OF RECORD WILL BE CONDUCTED PRIOR TO RECEIPT AND ACCEPTANCE OF A FINAL TEST AND BALANCE REPORT.
19.	THE MAXIMUM ALLOWABLE LEAKAGE FOR THE DUCTWORK IS 2 %.
20.	THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS AND SUBMITTALS FOR HVAC EQUIPMENT AND DUCTWORK SHOWN ON THE PLANS AND SPECIFICATIONS FOR THE ENGINEERS APPROVAL. THE ENGINEER MAY REQUIRE THE CONTRACTOR TO REDO ANY WORK, WHICH WAS NOT APPROVED, OR THE ENGINEER MAY REQUIRE A CREDIT TO THE OWNER. PROVIDE A SET OF AS BUILTS AFTER THE JOB IS COMPLETED. THIS SET SHALL BE CONTINUOUSLY UPDATED DURING CONSTRUCTION.
21.	PROVIDE AIR TURNING VANES AT ALL 90-DEGREE ELBOWS. PROVIDE VOLUME DAMPERS AT EACH BRANCH TAKEOFF AS INDICATED IN THE SMACNA "HVAC DUCT CONSTRUCTION STANDARDS".
22.	PROVIDE FILTER RACKS WHICH ARE ACCESSIBLE FOR MAINTENANCE AND SEALED AIR TIGHT.
23.	CONTRACTOR SHALL INSTALL HVAC SYSTEMS AS REQUIRED BY THE MANUFACTURER AND ENGINEER TO INSURE QUIET OPERATION. NO UNDESIRED VIBRATION OR SOUND SHALL BE TRANSMITTED TO BUILDING STRUCTURE AND OCCUPIED AREAS. IF THE EQUIPMENT INSTALLED HAS A HIGHER SOUND PRESSURE LEVEL THAN THE EQUIPMENT SPECIFIED, THEN IT WILL BE THE CONTRACTORS AND THE MANUFACTURERS RESPONSIBILITY TO ELIMINATE ANY ADDITIONAL NOISE TRANSMISSION.

ALL MATERIAL, DEVICES, AND EQUIPMENT MUST COMPLY WITH BUY AMERICAN REQUIREMENTS OF AMERICAN RECOVERY & REINVESTMENT ACT.

MECHANICAL DRAWING INDEX	
SHEET	DESCRIPTION
M-1.0	MECHANICAL DRAWING INDEX, GENERAL NOTES, AND LEGENDS
M-2.0	OVERALL MECHANICAL PLAN
M-3.0	MECHANICAL ROOF PLAN
M-4.0	ENLARGED MECHANICAL PLAN- SLEEPING QUARTERS/ACTIVITY AREA
M-4.1	ENLARGED MECHANICAL PLAN- APPARATUS BAY
M-5.0	MECHANICAL SCHEDULES
M-5.1	MECHANICAL SCHEDULES
M-6.0	MECHANICAL DETAILS
M-6.1	MECHANICAL DETAILS
M-6.2	MECHANICAL DETAILS
M-6.3	MECHANICAL SCHEMATICS
M-6.4	MECHANICAL SCHEMATICS
M-7.0	MECHANICAL SPECIFICATIONS
M-7.1	MECHANICAL SPECIFICATIONS
M-7.2	MECHANICAL SPECIFICATIONS
M-7.3	MECHANICAL SPECIFICATIONS

NOTE:  
SOME SYMBOLS AND ABBREVIATIONS SHOWN MAY NOT PERTAIN TO THIS PROJECT.



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**FIRE STATION 19**  
7910 INTERBAY BLVD.  
TAMPA, FL

**DPW FILE NUMBER**

**DPW NUMBER**  
FD0118

**ISSUE DATE**  
MAY 31, 2018

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**MECHANICAL COVER SHEET**

**SHEET NUMBER**

**M-1.0**

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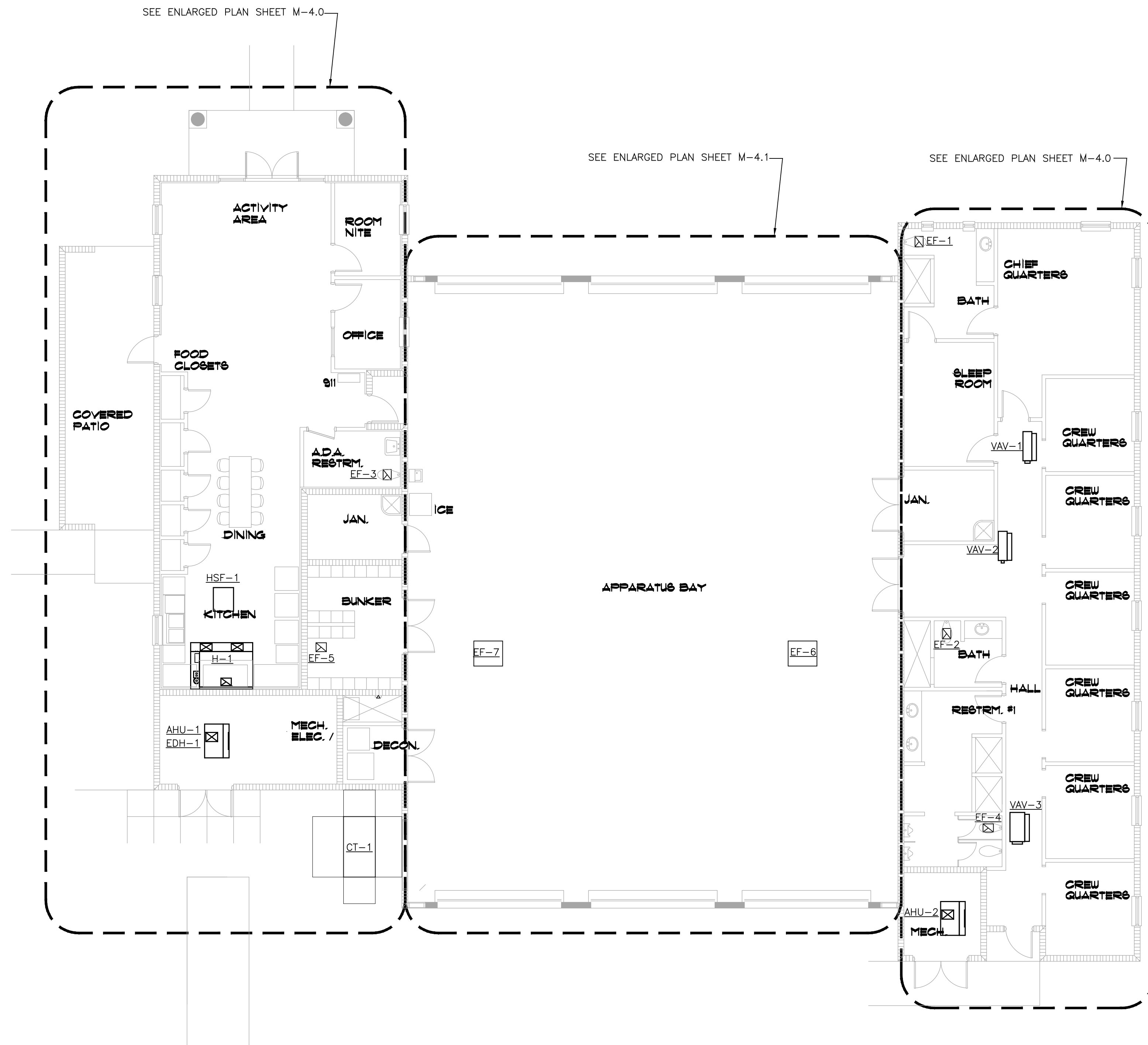
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**OVERALL MECHANICAL PLAN**

**SHEET NUMBER**

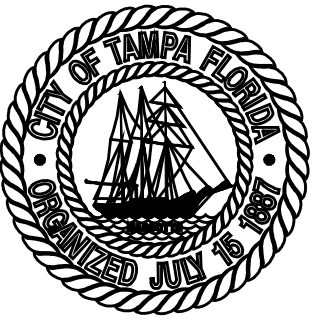
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**OVERALL MECHANICAL PLAN**  
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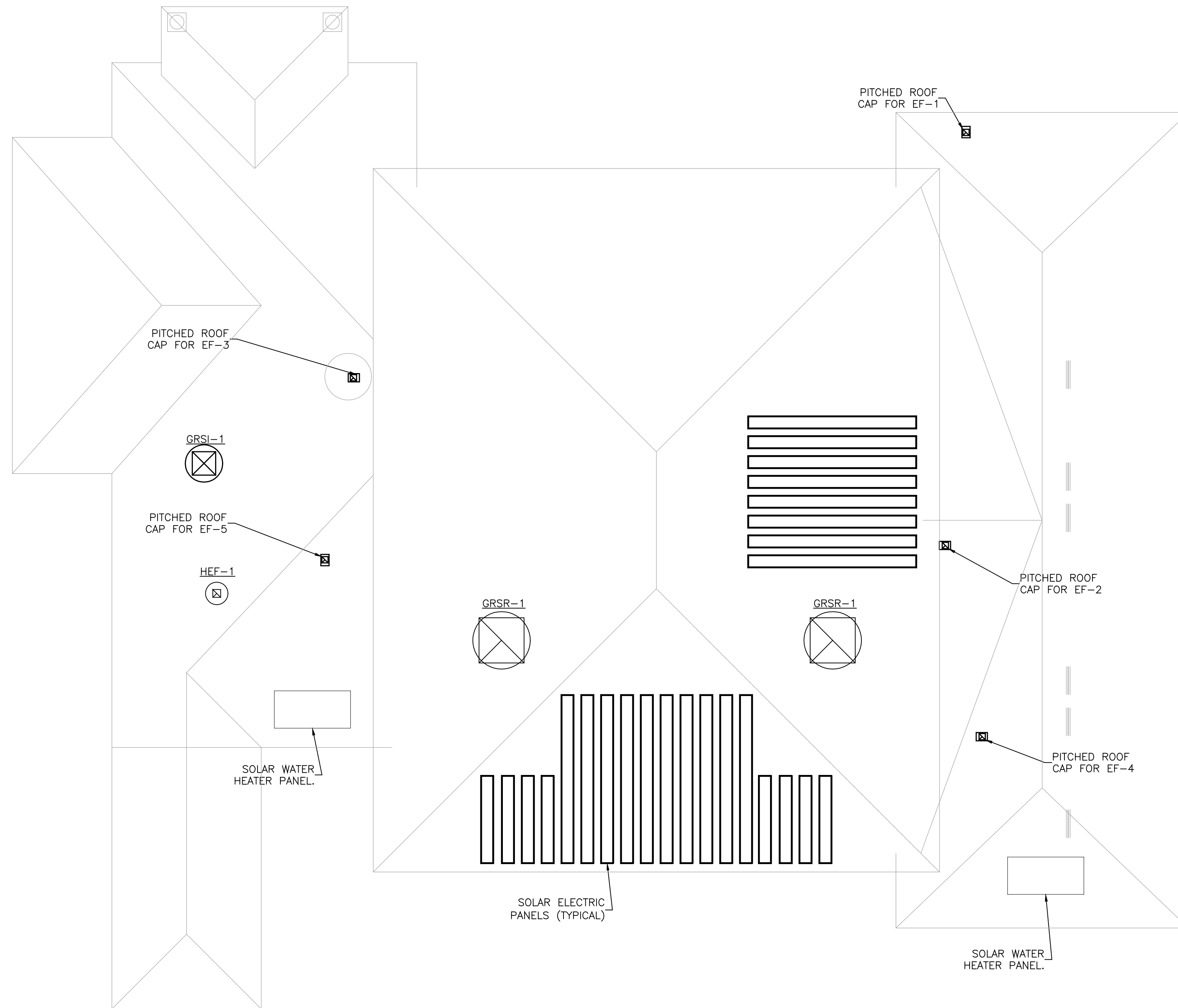
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**MECHANICAL ROOF PLAN**

**SHEET NUMBER**

**M-3.0**

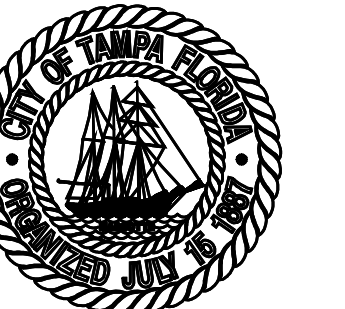
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**MECHANICAL ROOF PLAN**  
 SCALE: 1/8" = 1'-0"

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**ENLARGED MECHANICAL  
 PLAN - SLEEPING  
 QUARTERS**

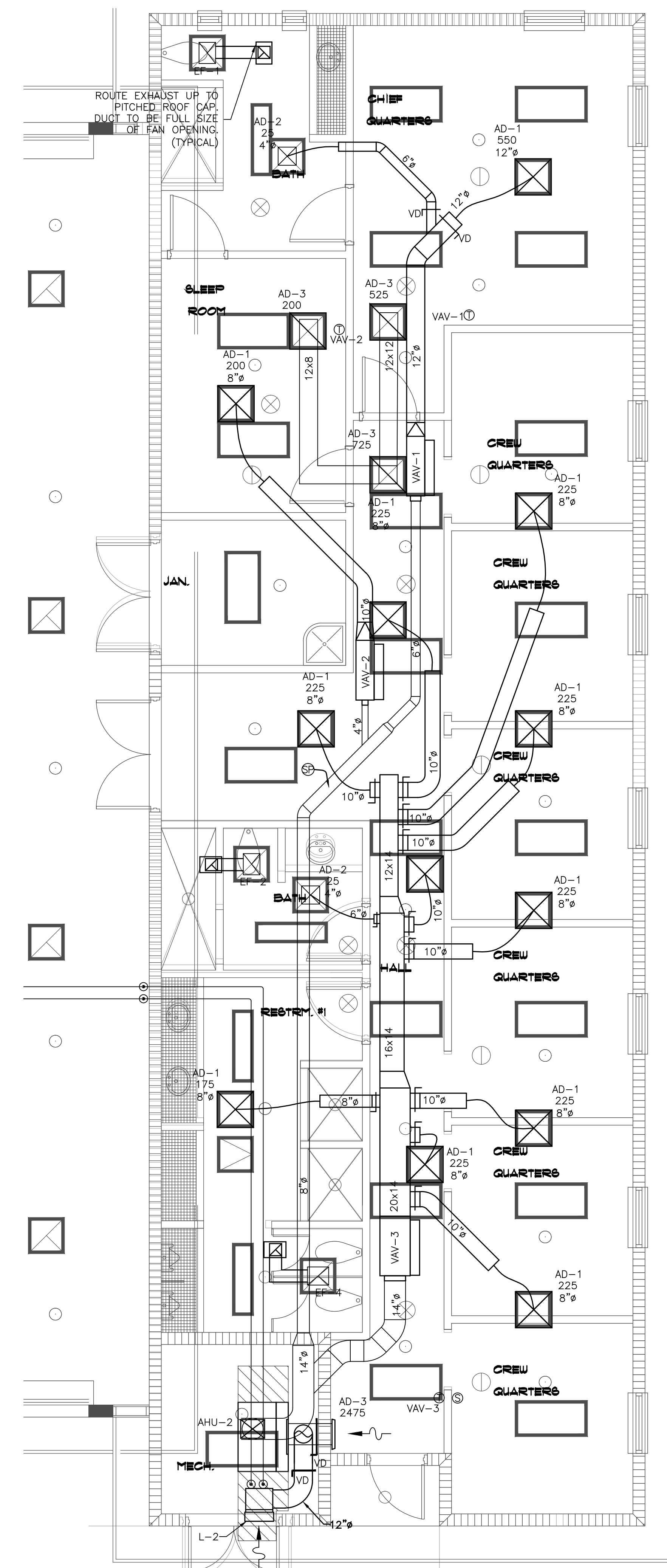
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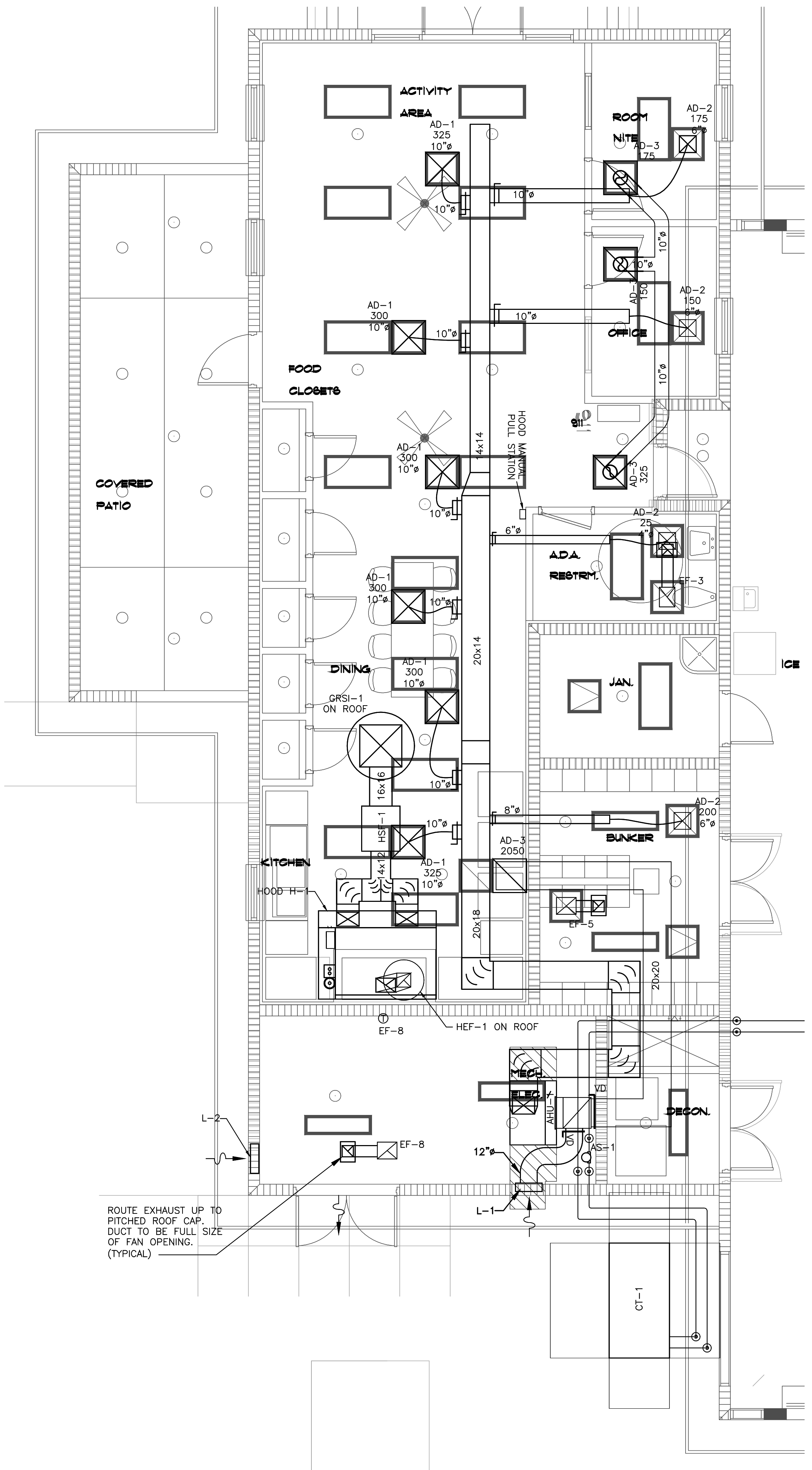
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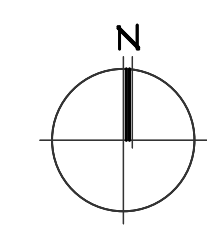
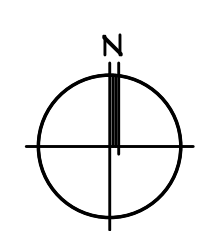
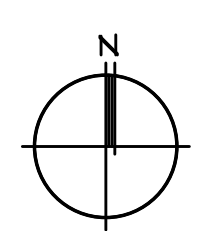
**ENLARGED MECHANICAL  
 CHILLER YARD**  
 SCALE: 1/4" = 1'-0"



**ENLARGED MECHANICAL PLAN-SLEEPING QUARTERS**  
 SCALE: 1/4" = 1'-0"



**ENLARGED MECHANICAL PLAN-ACTIVITY AREA**  
 SCALE: 1/4" = 1'-0"





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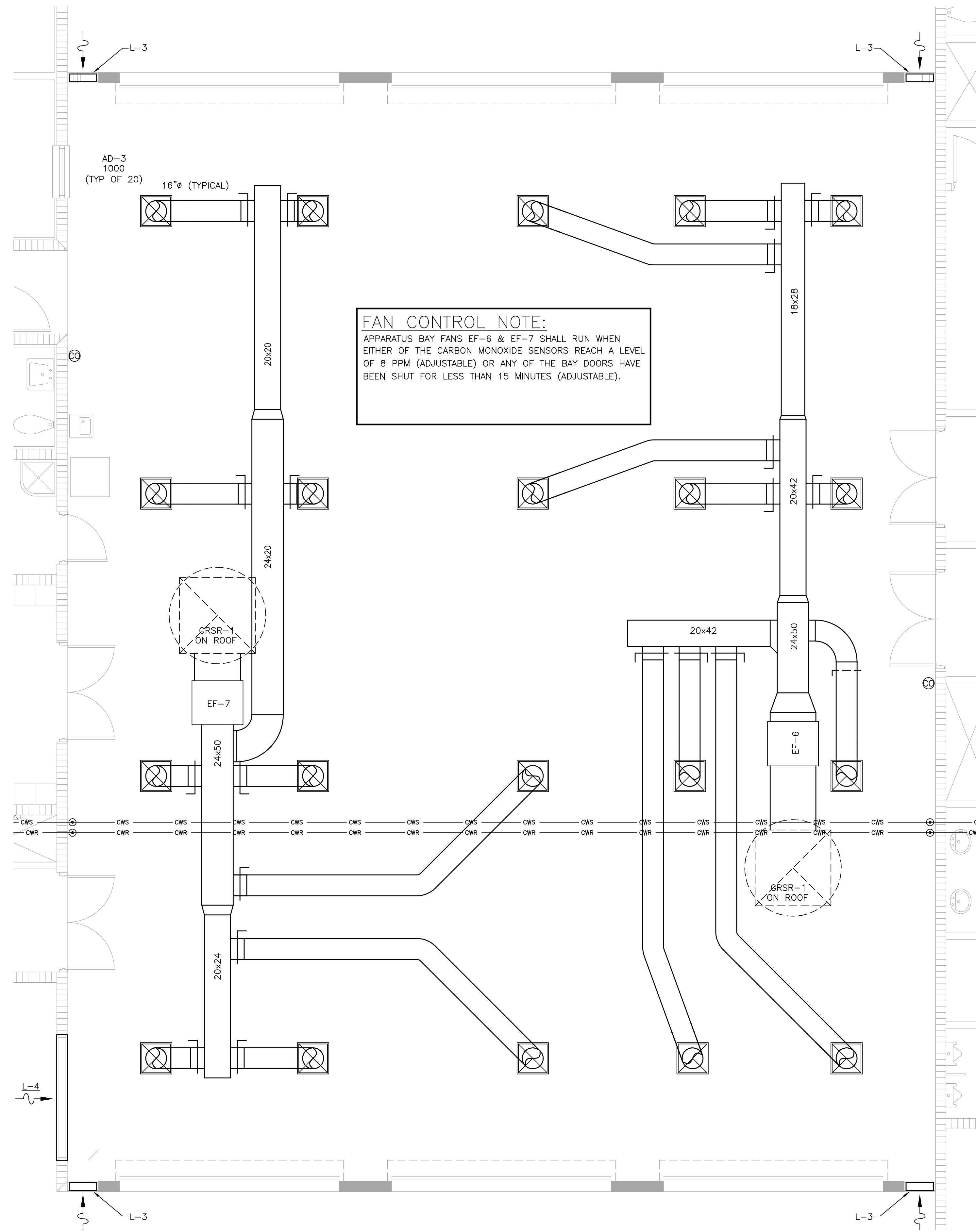
**SCALE: 1/4" = 1'-0"**

**ENLARGED MECHANICAL  
 PLAN - APPARATUS BAY**

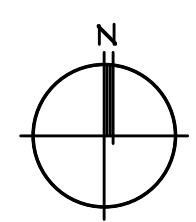
**SHEET NUMBER**

**M-4.1**

**XXX OF XXX**



**FAN CONTROL NOTE:**  
 APPARATUS BAY FANS EF-6 & EF-7 SHALL RUN WHEN EITHER OF THE CARBON MONOXIDE SENSORS REACH A LEVEL OF 8 PPM (ADJUSTABLE) OR ANY OF THE BAY DOORS HAVE BEEN SHUT FOR LESS THAN 15 MINUTES (ADJUSTABLE).



**ENLARGED MECHANICAL PLAN - APPARATUS BAY**  
 SCALE: 1/4" = 1'-0"

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	St. Petersburg, Florida 33713	Designed	ABC
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Certificate of Authorization #3173			