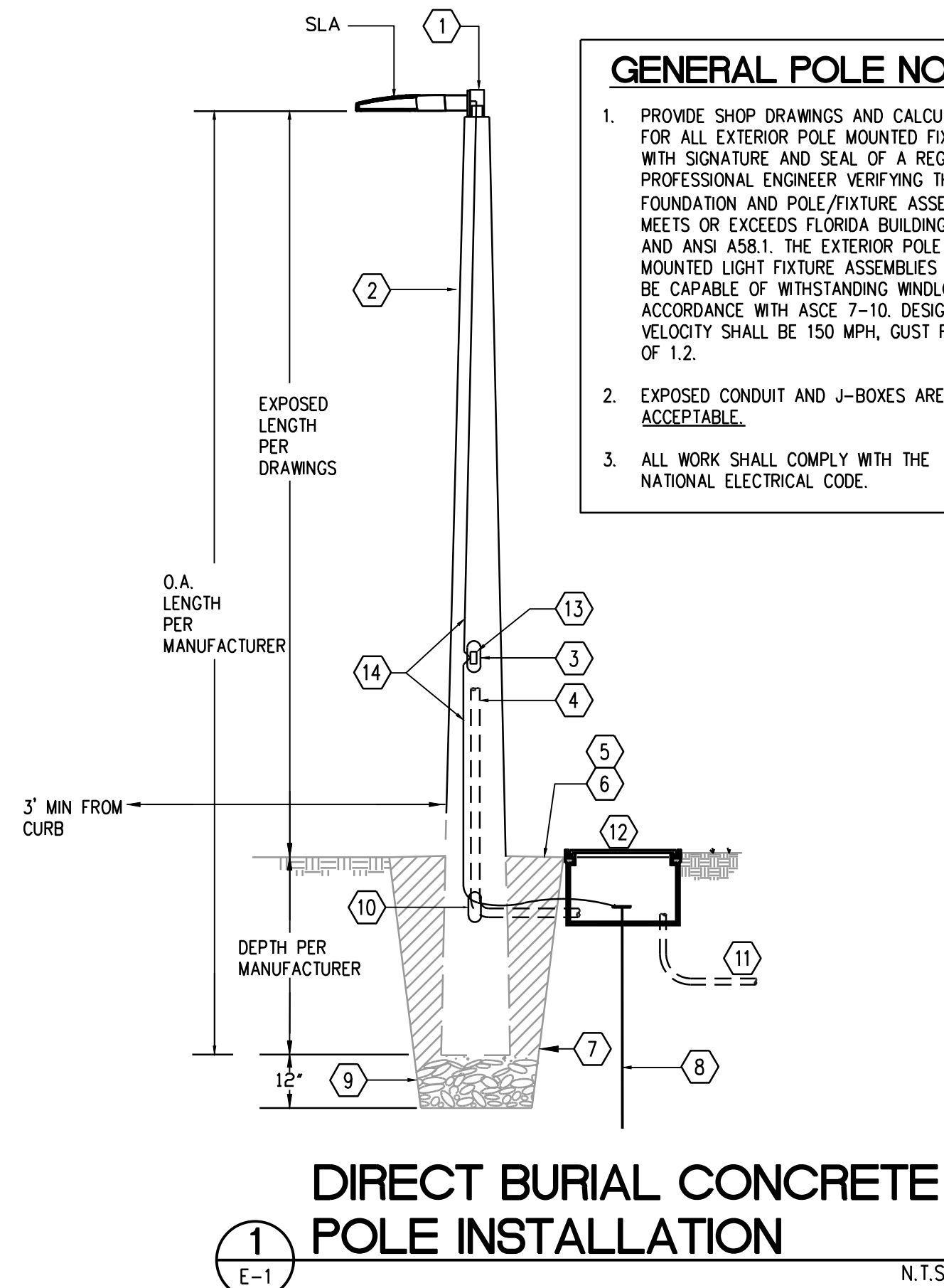


CONCRETE POLE NOTES:

- 1 2-3/8" TENON (VERIFY) WITH PROVISION FOR WIRING, COORDINATE WITH POLE AND LUMINAIRE MANUFACTURER.
- 2 SQUARE TAPERED CONCRETE POLE; RISK CATEGORY II.
- 3 WRING HANDHOLE - MINIMUM 3" x 5" WITH ALUMINUM COVER AND STAINLESS STEEL SCREWS.
- 4 TERMINATE CONDUIT INTERNALLY ADJACENT TO HANDHOLE.
- 5 SLOPE TO SURROUNDING FINISHED GRADE.
- 6 COMPACTED BACKFIELD EQUAL TO EXISTING SURROUNDING AREA.
- 7 CONTRACTOR SHALL AUGER HOLE AT POLE LOCATION AS NOT TO DISTURB THE SURROUNDING EARTH. AUGER HOLE TO POLE MANUFACTURER RECOMMENDED DEPTH. FILL IN HOLE WITH EARTH AND COMPACT.
- 8 5/8" x 10" COPPERWELD GROUND ROD AND #6 BARE CU. TO FIXTURE AND SURGE SUPPRESSER.
- 9 12" COARSE GRAVEL SETTING BED AT BOTTOM OF AUGERED HOLE.
- 10 MINIMUM 3" x 5" CONDUIT ENTRANCE.
- 11 CONDUIT AND WIRE FROM/TWO NEXT FIXTURE OR HOMERUN TO PANELBOARD.
- 12 CONCRETE(QUAZITE) HANDHOLE/PULLBOX, REQUIRED AT EACH POLE WITH GROUND ROD WITHIN.
- 13 PROVIDE SURGE SUPPRESSER IN EACH POLE HANDHOLE; PHASE TO GROUND; JOSLYN "SHA" SERIES WITH INDICATOR. COORDINATE VOLTAGE. ALSO PROVIDE FUSING.
- 14 #6 BARE CU. TO FIXTURE AND SURGE SUPPRESSER.

GENERAL POLE NOTES:

- 1. PROVIDE SHOP DRAWINGS AND CALCULATIONS FOR ALL EXTERIOR POLE MOUNTED FIXTURES WITH SIGNATURE AND SEAL OF A REGISTERED PROFESSIONAL ENGINEER VERIFYING THAT THE FOUNDATION AND POLE/FIXTURE ASSEMBLY MEETS OR EXCEEDS FLORIDA BUILDING CODE AND ANSI A58.1. THE EXTERIOR POLE MOUNTED LIGHT FIXTURE ASSEMBLY SHALL BE CAPABLE OF WITHSTANDING WINDLOADS IN ACCORDANCE WITH ASCE 7-10. DESIGN WIND VELOCITY SHALL BE 150 MPH, GUST FACTOR OF 1.2.
- 2. EXPOSED CONDUIT AND J-BOXES ARE NOT ACCEPTABLE.
- 3. ALL WORK SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE.

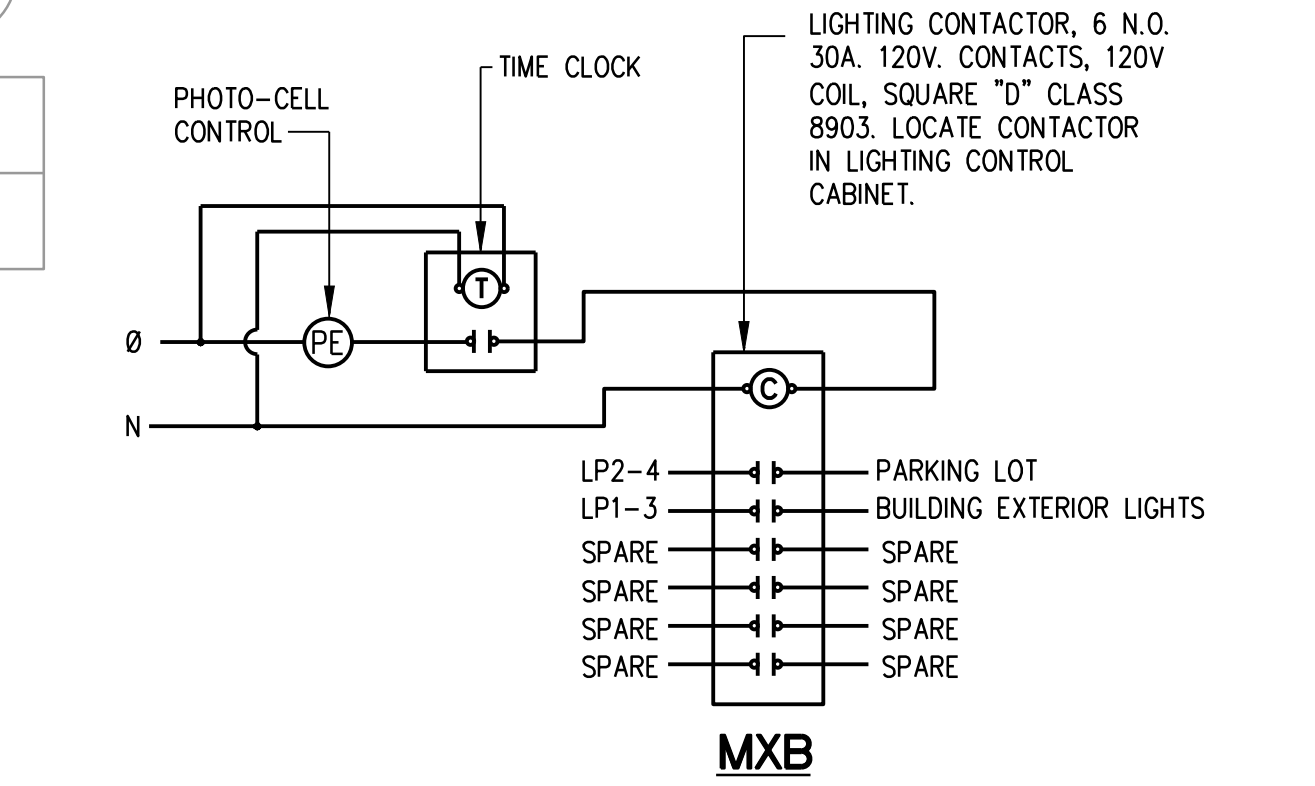
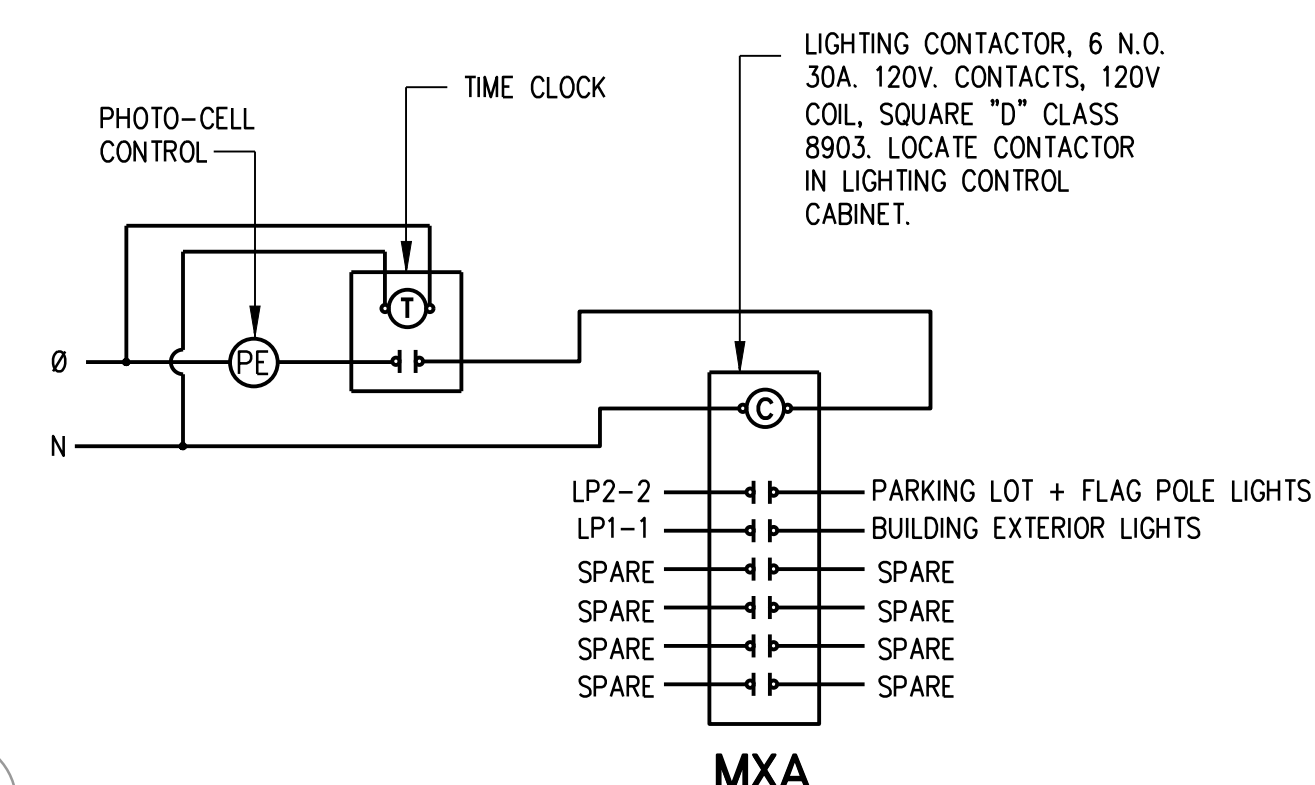
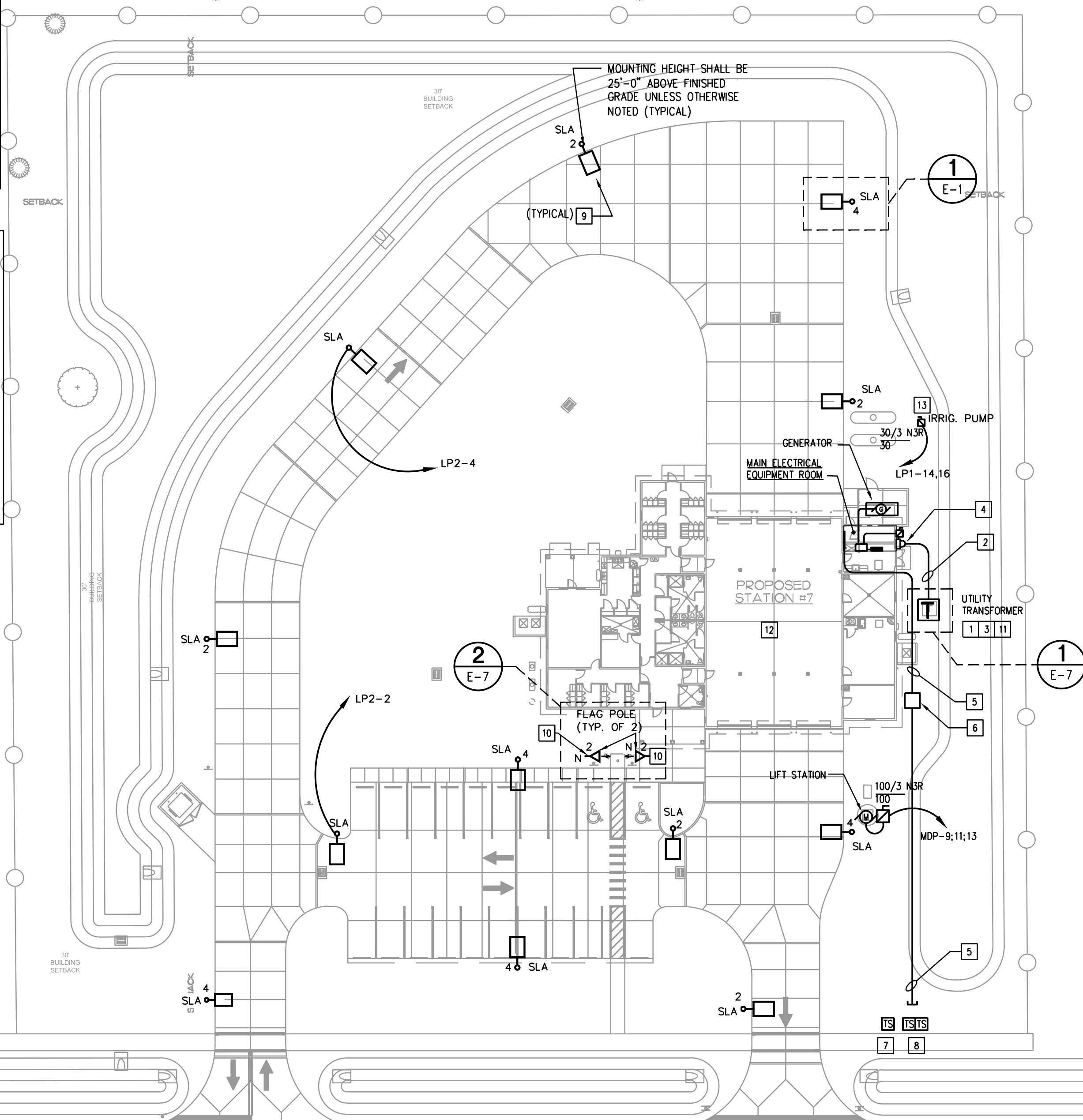


SITE GENERAL NOTES:

- 1. FIELD VERIFY EXISTING SITE CONDITIONS. EXISTING UNDERGROUND UTILITIES MUST BE LOCATED AND MARKED USING ALL AVAILABLE RESOURCES PRIOR TO COMMENCEMENT OF ANY UNDERGROUND SITE WORK.
- 2. COORDINATE ALL UNDERGROUND WORK WITH ALL OTHER TRADES AND ACTUAL FIELD CONDITIONS FOR PROPER CLEARANCES.
- 3. CONTRACTOR SHALL VERIFY EXACT LOCATION OF EACH PANELBOARD WITHIN BUILDING ON POWER FLOOR PLANS. FIELD ADJUST ANY CONDUITS IN FIELD TO ACCOMMODATE LOCATION OF PANELBOARD.
- 4. EXTERIOR LIGHT FIXTURES ARE CONTROLLED BY A PHOTOCELL CONNECTED TO THE LOW VOLTAGE LIGHTING CONTROL PANEL. MOUNT PHOTOCELL ON EXTERIOR WALL 8' AFG WITH UNOBSTRUCTED VIEW FACING NORTH.
- 5. COORDINATE EXTERIOR FIRE ALARM CONNECTIONS TO FLOW/TAMPER SWITCHES, POST INDICATOR VALVES, AND BACKFLOW PREVENTORS WITH FIRE PROTECTION AND CIVIL DRAWINGS.

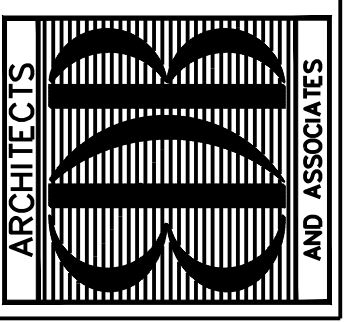
SITE KEYNOTES:

- 1 UNDERGROUND PRIMARY SERVICE PROVIDED BY THIS CONTRACTOR AS COORDINATED WITH UTILITY COMPANY PRIOR TO BID.
- 2 UNDERGROUND SERVICE ENTRANCE LATERAL REFER TO ONE-LINE DIAGRAM ON SHEET E5 FOR CONDUIT AND WIRE SIZES.
- 3 APPROXIMATE LOCATION OF NEW 120V/208V, 3Ø PAD MOUNTED UTILITY COMPANY TRANSFORMER. THIS CONTRACTOR SHALL COORDINATE EXACT LOCATION AND CONNECTION DETAILS WITH UTILITY COMPANY FIELD ENGINEER PRIOR TO ROUGH-IN OF SERVICE ENTRANCE CONDUITS. THIS CONTRACTOR SHALL PROVIDE CONCRETE PAD FOR TRANSFORMER TO SIT ON. COORDINATE EXACT CONCRETE PAD REQUIREMENTS WITH UTILITY COMPANY FIELD ENGINEER.
- 4 UTILITY METER ENCLOSURE PER UTILITY COMPANY REQUIREMENTS. FURNISH AND INSTALL WALL MOUNTED UTILITY METER AS PER UTILITY COMPANY REQUIREMENTS.
- 5 PROVIDE (2) 3" SCHEDULE 40 PVC CONDUITS WITH PULLSTRINGS FOR DATA/COMM SERVICE TO TELEPHONE/CATV COMPANY DEMARK POINT AS COORDINATED PRIOR TO BID.
- 6 PROVIDE 24" x 36" HANDHOLE WITH LABELED COVER FOR COMM CONDUITS.
- 7 PROVIDE FIRE ALARM CONNECTION TO TAMPER SWITCHES AND FLOW SWITCHES. VERIFY EXACT LOCATIONS AND QUANTITIES WITH CIVIL DRAWINGS PRIOR TO BID.
- 8 PROVIDE FIRE ALARM CONNECTION AT THE POST INDICATOR VALVE AND BACKFLOW PREVENTER. VERIFY EXACT LOCATION WITH CIVIL DRAWINGS PRIOR TO BID.
- 9 LIGHT POLE TO BE WIRED VIA LIGHTING CONTRACTOR CONTROL. REFER TO DETAIL THIS DRAWING.
- 10 COORDINATE WITH ARCHITECTURAL SITE PLAN FOR EXACT LOCATION OF FLAG POLE.
- 11 REFER TO ELECTRICAL ONE LINE DIAGRAM, DWG. E5
- 12 SEE SHEET E-3 FOR CIRCUITING INFORMATION.
- 13 PROVIDE UNISTRUT RACK WITH STAINLESS STEEL HARDWARE AT IRRIGATION PUMP. MOUNT 3Ø AMP, 208 VOLT SINGLE PHASE FUSED DISC AND CONNECT PUMP COMPLETE. VERIFY EXACT REQUIREMENTS WITH LANDSCAPE CONTRACTOR UPON AWARD OF CONTRACT.



EXTERIOR LIGHTING CONTROL DIAGRAM
N.T.S.

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PROJECT: STATION #7
FOR: INDIAN RIVER COUNTY FIRE DISTRICT
1840 25TH STREET
VERO BEACH, FL. 32960

NO.	DATE	REVISIONS

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COMM. NO: C50299/B
DATE: 16 MAY 2022
BY: XXX
CHKD: KGL
SHEET NO. E-1
OF

SITE PLAN - ELECTRICAL
SCALE: 1" = 30'-0"

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ARCEOS™ ARA SERIES AREA/SITE	Cat.#		HUBBELL Outdoor Lighting
	Job	Type	

PRODUCT IMAGE(S)

Specifications:

Intended Use: Pole-mounted applications from tennis to high school applications including parking areas adjacent to Home Centers, Big Box Retailers, Retail Centers, Shopping Centers, and applications for campus parking areas, Auto Dealerships, and transportation hubs.

Construction:

- Innovative product design delivers exceptional thermal management in an highly compact luminaire.
- Manufactured with die-cast aluminum housing coated with a Leachcoat® polyester finish ensures excellent exterior durability.
- Two directional air flow maintains heat dissipation to protect electrical components life and luminaire performance.
- Performance is further optimized with thermal separation between LED light engines and LED drivers.

LED Options:

- 32L configuration - 26,000 lumens, 250w
- 48L configuration - 40,000 lumens, 435w
- 64L configuration - 51,000 lumens, 530w
- Initial beam spread: E2 Type III, 8.1 & V
- Specific optical distributions for Automobile applications are available.
- Stack light control is available for applications sensitive to light trespass; zero uplight ensures full approach, full roadway escape.
- Color temperature options: 3000K (70 CRI), 4000K (71 CRI), 5000K (70 CRI)

Electrical:

- Inverter input voltage 120-277VAC, 50/60 Hz and 347-480VAC
- Ambient operating temperature range -40C to 40C
- Surge protection - 20KA, 1000A, 1000A at end of life

Controls/Options:

- 0-10V dimming technology (optional system for smart and 0-10VDC full range dimming control, programmable automatic operation)
- 0-10V dimming leads available for external control, provided by others
- IEEE802.15.4 based protocols for On/Off control
- Occupancy sensors with On/Off and dimming control
- In addition, ARCEOS can be specified with ZigBee™ wireless control system for reduction in energy and maintenance cost while supporting light quality 24/7. See ordering information or visit www.hubbell.com/lighting for more details.

Installation:

- Universal arm mounting and Mast arm options allow for installation flexibility for new construction and retrofit projects.
- Modular design allows for 1 person installation.

Finish:

- TSC thermoseal polyester paint finish applied at nominal 2.5 mil thickness

Listings:

- UL Listed to UL1598 Wet Locations
- UL approved
- IP65
- Suitable for 35 applications prescribed by ANSI C136.31

Warranty:

Five year limited warranty (for more information visit www.hubbell.com/lighting)

Dimensions:

Model	Height	Width	Depth	Weight
ARA-32L	32"	12"	12"	15.0 lbs
ARA-48L	48"	18"	18"	22.5 lbs
ARA-64L	64"	24"	24"	33.0 lbs

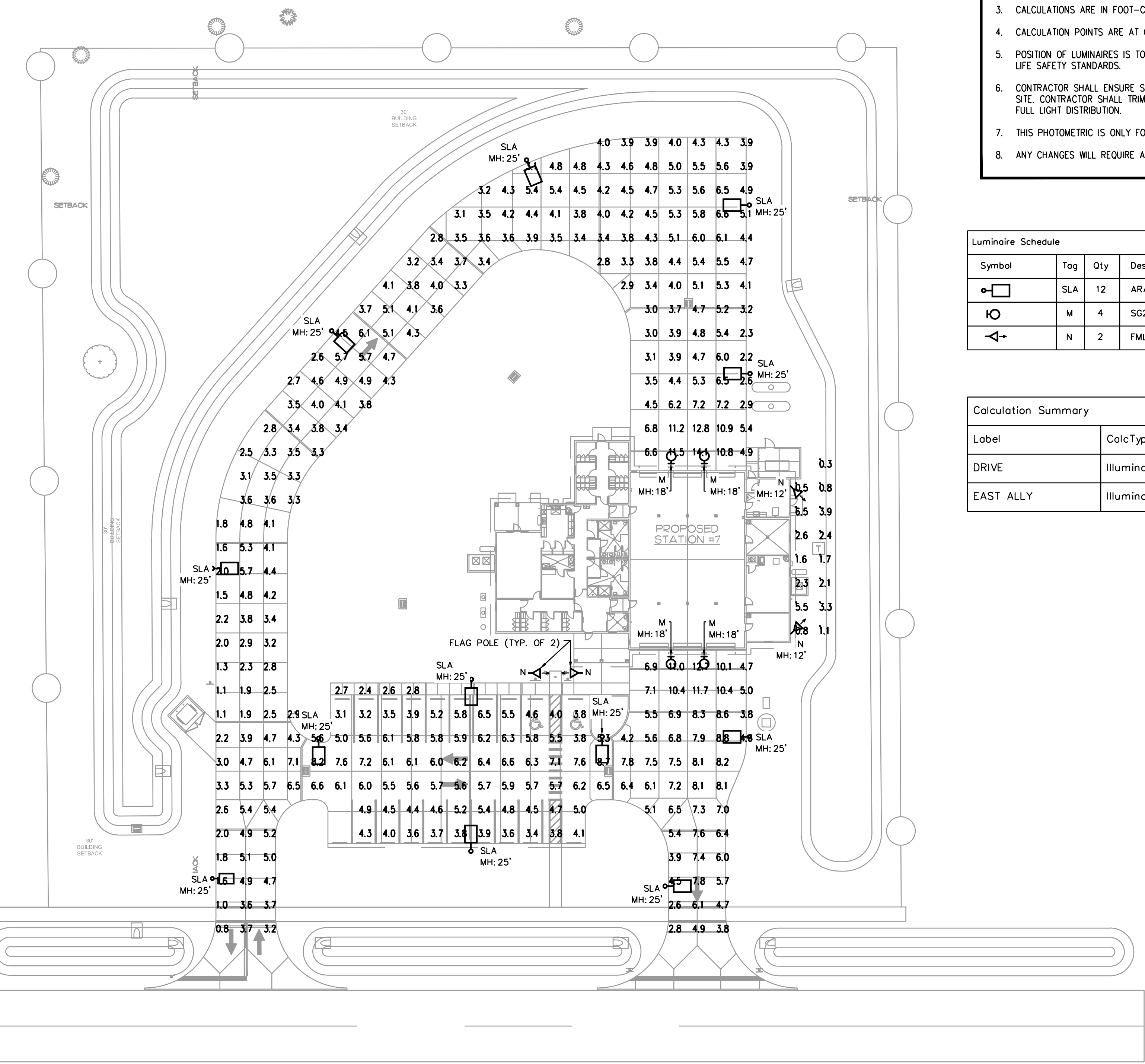
CERTIFICATIONS/LISTINGS

IP65

ORDERING INFORMATION SEE NEXT PAGE

HUBBELL Outdoor Lighting • 701 Millstream Boulevard • Greenville, SC 29607 • Phone: (864) 678-1000
Due to our continued efforts to improve our products, product specifications are subject to change without notice.
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1 POLE LIGHTING SPECIFICATION
E-1A
TYPE 'SLA'
NTS



- GENERAL NOTES:**
- POLE MANUFACTURER IS REQUIRED TO PROVIDE SIGNED AND SEALED DRAWINGS STATING THAT THE POLES MEET THE REQUIRED WIND LOADING AND SEISMIC CRITERIA BEFORE SHIPPING THE POLES.
 - LUMINAIRE MOUNTING HEIGHT IS NOT TO EXCEED 30' AFG.
 - CALCULATIONS ARE IN FOOT-CANDELS.
 - CALCULATION POINTS ARE AT GRADE.
 - POSITION OF LUMINAIRES IS TO GIVE OPTIMAL LIGHT LEVEL IN AREAS ACCORDING TO IES RECOMMENDATIONS AND LIFE SAFETY STANDARDS.
 - CONTRACTOR SHALL ENSURE SITE LIGHTING LOCATIONS DO NOT CONFLICT WITH ANY EXISTING TREE LOCATIONS ON SITE. CONTRACTOR SHALL TRIM TREE BRANCHES THAT BLOCK SITE LIGHT FIXTURES AS NECESSARY TO ACHIEVE FULL LIGHT DISTRIBUTION.
 - THIS PHOTOMETRIC IS ONLY FOR THE FIXTURES SPECIFIED AND INDICATED IN LIGHTING FIXTURE SCHEDULE.
 - ANY CHANGES WILL REQUIRE A NEW PHOTOMETRIC STUDY.

Luminaire Schedule

Symbol	Tag	Qty	Description	LLF	Total Watts	Lum. Lumens
SLA	12	ARA3-32L-4K-070-3	0.850	3520.8	26,473	
M	4	SG2-80-4K7-FT	0.850	323.2	8182	
N	2	FML-14L	0.950	99.8	4771	

Calculation Summary

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
DRIVE	Illuminance	Fc	4.88	14.1	0.8	6.10	17.63
EAST ALLY	Illuminance	Fc	2.36	6.5	0.3	7.87	21.67

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DATE: 16 MAY 2022
BY: ADM
CHK'D: KGL

SHEET NO. E-1A

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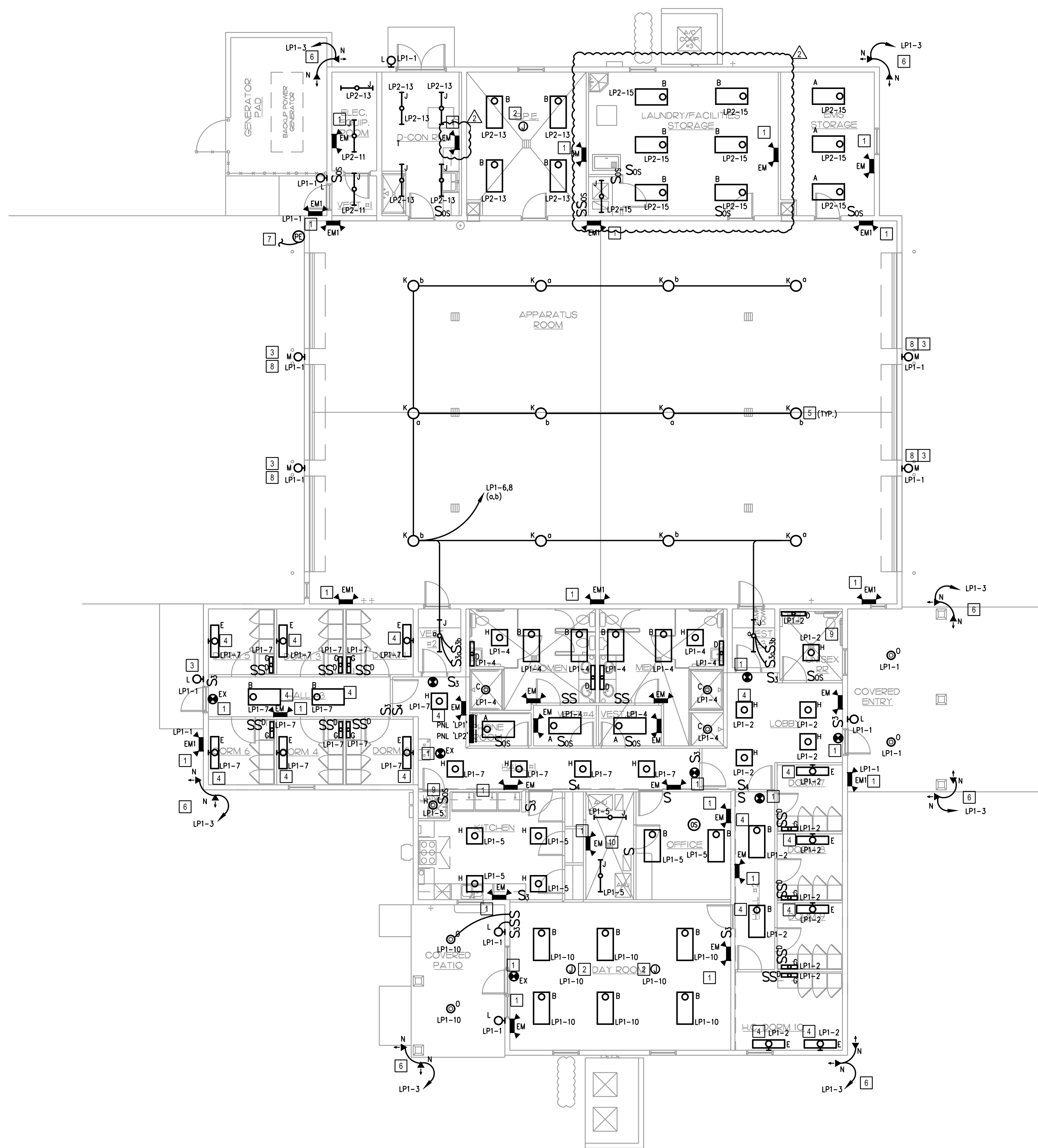
SITE PLAN - PHOTOMETRICS
SCALE: 1" = 30'-0"

LIGHTING GENERAL NOTES :

- ALL LIGHT SWITCHES SHALL BE 120V RATED UNLESS OTHERWISE NOTED.
- COORDINATE EXACT LOCATION OF EACH LIGHT FIXTURE WITH MECHANICAL PIPING, CONDUIT, HVAC GILLES, ETC. FIELD ADJUST ANY LIGHT TO AVOID CONFLICT.
- REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT TYPE AND HEIGHT OF CEILING IN EACH ROOM. COORDINATE WITH ARCHITECT/ENGINEER PRIOR TO ROUGH-IN OF ANY FIXTURES. COORDINATE ALL CONTROL JOINT LOCATIONS WITH LIGHT FIXTURES PRIOR TO ANY ROUGH-IN OF FIXTURES.
- EMERGENCY EGRESS LIGHTS AND EXIT SIGNS SHALL BE CONNECTED TO THE LOCAL LIGHTING CIRCUIT SERVING THE SPACE AND WIRED AHEAD OF ANY LOCAL SWITCHES OR EMS SYSTEM.
- EXIT LIGHTS SHALL BE MOUNTED WITH BOTTOM OF FIXTURE AT 6" ABOVE DOOR HEADER IN ALL AREAS THAT PERMIT THIS PLACEMENT. ALL OTHERS MAY BE CEILING MOUNTED.
- MULTIPLE LIGHT SWITCHES, AT THE SAME LOCATION, SHALL BE GANGED TOGETHER UNDER ONE COVER PLATE. DIMMER SWITCHES SHALL BE INSTALLED IMMEDIATELY BELOW SWITCH LOCATIONS.
- COORDINATE LOCATION OF ALL LIGHT FIXTURES WITH ARCHITECTURAL INTERIOR AND EXTERIOR ELEVATIONS PRIOR TO ROUGH-IN.
- POWER PACK FOR OCCUPANCY SENSORS ARE NOT INDICATED ON PLANS. ELECTRICAL CONTRACTOR SHALL PROVIDE POWER PACKS PER OCCUPANCY SENSOR MANUFACTURER'S RECOMMENDATIONS.

LIGHTING KEYNOTES [X]

- EXTEND BRANCH CIRCUIT WIRING FOR EXIT LUMINAIRE AND EMERGENCY LIGHTS AHEAD OF ALL SWITCHING.
- PROVIDE JUNCTION BOX FOR CEILING FAN. SUPPORT FROM STRUCTURE ABOVE.
- ALL EXTERIOR LIGHTING SHALL BE CONTROLLED BY PHOTO-ELECTRIC CELL VIA CONTACTOR.
- THESE LIGHTING FIXTURES IN HALLWAYS AND DORM ROOMS SHALL COME ON WHEN ALARM CALL GOES OFF. WIRE RELAY TO BYPASS LOCAL SWITCHING.
- INSTALL LED LIGHTS IN APPARATUS BAY TO SURFACE OF CEILING.
- EACH FLOODLIGHT FIXTURE IS MOUNTED TO AN INDIVIDUAL JUNCTION BOX. PROVIDE BACKING FOR BOXES TO SUPPORT WEIGHT. COORDINATE LOCATIONS AT APPROX. 12 FEET AFG WITH DOWNSPOUTS PRIOR TO ROUGH-IN. TYPICAL FOR ALL "N" FIXTURES.
- PHOTO-ELECTRIC CELL FOR LIGHTING CONTROL MOUNT 1" DOWN FROM ROOF OVER HANG.
- FIXTURE TO BE MOUNTED JUST ABOVE THE DOOR HEIGHTS, REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION.
- OCCUPANCY SENSOR SHALL BE CONNECTED TO EXHAUST FAN CONTROL. COORDINATE WITH POWER AND MECHANICAL SHEETS. VERIFY WITH MECHANICAL CONTRACTOR AS REQUIRED.
- FIXTURE LOCATION IN THIS ROOM SHALL BE COORDINATED WITH FINAL HVAC AIR HANDLER LOCATIONS, DIMENSIONS, DUCTWORK, ETC. VERIFY EXACT LOCATIONS WITH MECHANICAL SHEETS AND HVAC CONTRACTOR PRIOR TO START OF WORK.

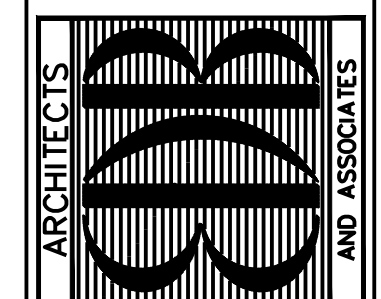


BUILDING PLAN - LIGHTING
SCALE: 1/8" = 1'-0"

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NO.	DATE	REVISIONS
1	9/15/23	OWNER CHANGES

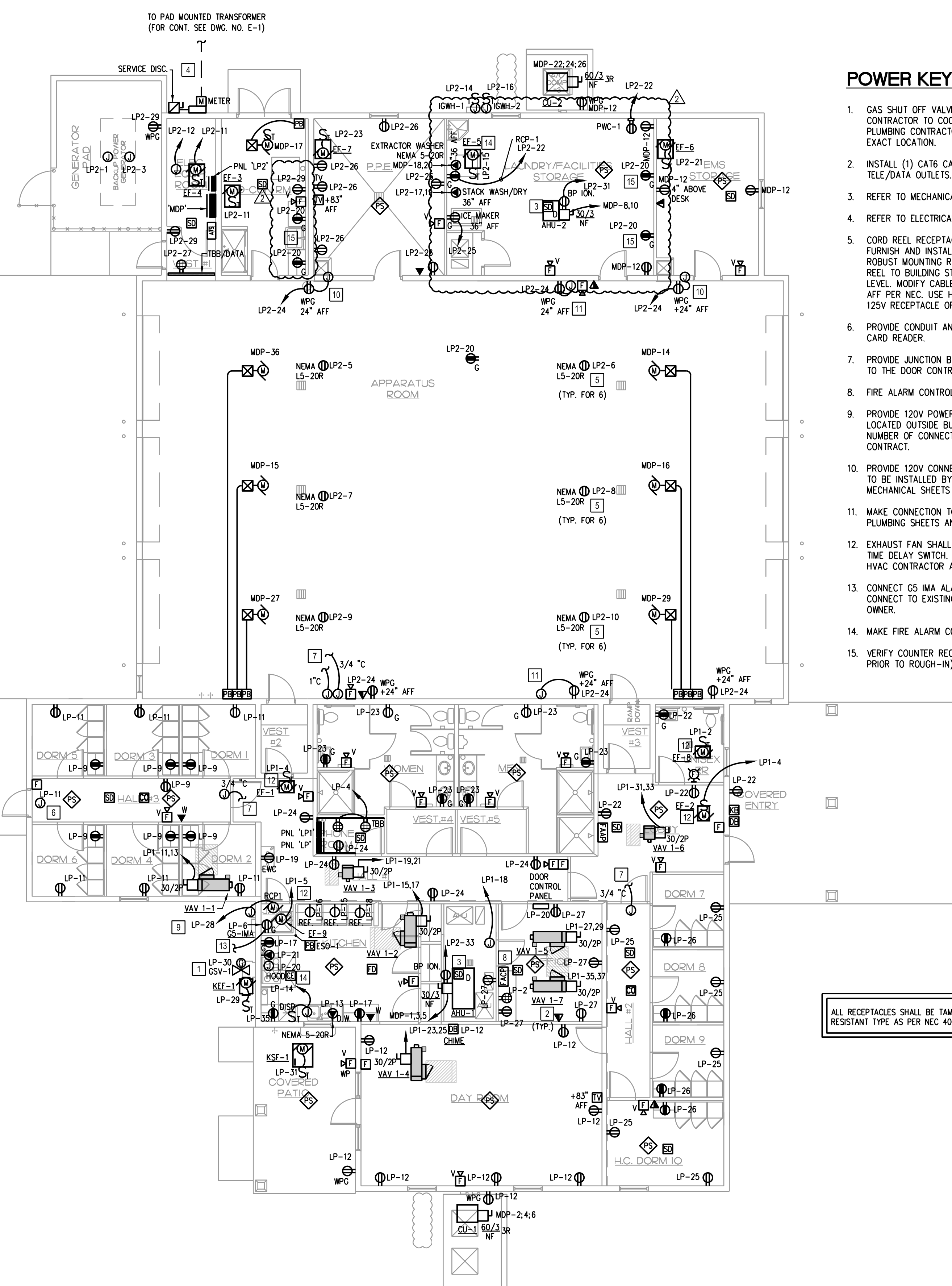
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OF

POWER GENERAL NOTES:

- COORDINATE EXACT INSTALLATION REQUIREMENTS OF OUTLETS IN MILLWORK WITH ARCHITECTURAL DRAWINGS AND ACCEPTED MILLWORK SHOP DRAWINGS.
- LOCATION OF ALL DEVICES ON DRAWINGS ARE APPROXIMATE ONLY. VERIFY EXACT LOCATION WITH OWNERS REPRESENTATIVE, ARCHITECT, AND/OR ENGINEER PRIOR TO ROUGH-IN.
- COORDINATE THE LOCATION OF VOICE/DATA OUTLETS WITH POWER RECEPTACLES ESPECIALLY WHERE COMPUTERS ARE TO BE LOCATED. COORDINATE WITH TECHNOLOGY DRAWINGS.
- ALL RACEWAYS AND CABLE SHALL BE CONCEALED UNLESS NOTED OR APPROVED IN WRITING BY OWNER AND/OR ENGINEER.
- MOUNT ALL DISCONNECT SWITCHES FOR MECHANICAL EQUIPMENT WITHIN 6 FT. OF EQUIPMENT CONNECTION POINT. VERIFY LOCATION OF POINT OF CONNECTION WITH EQUIPMENT INSTALLER PRIOR TO ELECTRICAL ROUGH-IN. (DRAWINGS ONLY SHOW DIAGRAMMATIC LOCATION OF CONNECTION).
- VFD/STARTERS ON MECHANICAL EQUIPMENT ARE SHOWN FOR WIRING PURPOSES ONLY. VFD/STARTERS SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
- ALL CONTROL WIRING FOR MECHANICAL EQUIPMENT AND SYSTEMS SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR.

FIRE ALARM GENERAL NOTES:

- DETECTORS SHALL NOT BE INSTALLED UNTIL AFTER THE CONSTRUCTION CLEAN-UP OF ALL TRADES IS COMPLETE AND FINAL. DETECTORS THAT HAVE BEEN INSTALLED PRIOR TO FINAL CLEAN-UP BY ALL TRADES SHALL BE CLEANED OR REPLACED. CLEANING OR REPLACEMENT OF DEVICES THAT WERE MOUNTED AT THE REQUEST OF THE CONTRACTOR WILL NOT BE PERFORMED WITHOUT WRITTEN AUTHORIZATION THAT ASSUMES FINANCIAL RESPONSIBILITY FOR COSTS INCURRED.
- ALL DEVICES IN THE ALARM SYSTEM SHALL BE COMPATIBLE AND INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
- ALL EQUIPMENT SHALL BE U.L. LISTED.
- ALL JUNCTION BOXES SHALL BE SIZED IN ACCORDANCE WITH THE N.E.C. AND SHALL HAVE THEIR COVERS PAINTED RED WHERE BOX IS INSTALLED BEHIND BUILDING FINISHES OR IN UNFINISHED SPACES.
- ELECTRICAL CONTRACTOR SHALL FURNISH ACCESS PANELS TO AREAS AND DEVICES THAT REQUIRE SERVICING, TROUBLE SHOOTING, ETC.
- DO NOT DEVIATE FROM CONDUIT RUNS AS SHOWN ON SHOP DRAWINGS WITHOUT PRIOR APPROVAL FROM SYSTEM SUPPLIER. FACTORS SUCH AS EXCESSIVE VOLTAGE DROP, ADDITIONAL PARTS, ENGINEERING, ETC., THAT ARE A RESULT OF CONDUIT RUN DEVIATIONS SHALL BE THE SOLE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
- AREA DETECTORS SHALL NOT BE LOCATED IN A DIRECT AIR-FLOW, NOT CLOSER THAN 5 FEET FROM AN AIR SUPPLY DIFFUSER.
- ALL FAN SHUTDOWN FUNCTIONS, DAMPER CLOSURES AND ASSOCIATED MECHANICAL SYSTEM FIRE ALARM INTERFACE SHALL BE BY MECHANICAL CONTRACTOR. FIRE ALARM CONTRACTOR WILL PROVIDE OPEN CONTACT ON ALARM WITHIN THREE FEET OF THE STARTER.
- ALL CONDUITS ARE 3/4" UNLESS OTHERWISE NOTED.
- THE ALARM SYSTEM SHALL HAVE AN AUDIBILITY OF NOT LESS THAN 15dB ABOVE AMBIENT NOISE LEVELS, BUT NOT LESS THAN 75dBA THROUGHOUT AREA OF ALARM. TESTING SHALL BE ACCOMPLISHED WITH A dB METER, WHERE APPLICABLE.
- PROVIDE 3/4" CONDUIT FROM FIRE ALARM CONTROL PANEL TO TELEPHONE BACKBOARD FOR OWNER PROVIDED CENTRAL STATION MONITORING.
- FIRE ALARM SIGNAL SHALL MEET ANSI S3.41, AUDIBILITY EMERGENCY EVACUATION SIGNAL (TEMPORAL PATTERN).
- COORDINATE EXACT LOCATION AND QUANTITY OF FLOW AND TAMPER SWITCHES WITH FIRE PROTECTION SHOP DRAWINGS PRIOR TO ROUGH-IN.
- FA NOTIFICATION DEVICE SPACING IS SHOWN ONLY FOR DESIGN PURPOSES. FIRE ALARM CONTRACTOR SHALL LOCATE DEVICES BASED ON THE LISTED COVERAGE OF THE SELECTED DEVICE AND FIRE ALARM SHOP DRAWINGS AND ADJUST QUANTITY AS NEEDED.

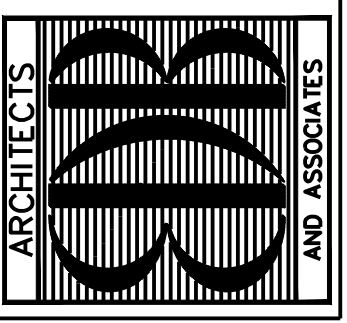


POWER KEYNOTES:

- GAS SHUT OFF VALVE POWER FROM FIRE ALARM SYSTEM. FIRE ALARM CONTRACTOR TO COORDINATE FIRE ALARM CONNECTIONS WITH PLUMBING CONTRACTOR. REFER TO PLUMBING DRAWINGS SHEET FOR EXACT LOCATION.
- INSTALL (1) CAT6 CABLE AND (1) PULL STRING IN CONDUIT FOR ALL TELE/DATA OUTLETS.
- REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION.
- REFER TO ELECTRICAL ONE LINE DIAGRAM.
- CORD REEL RECEPTACLE: PROVIDE COMPATIBLE PLUG IF REQUIRED. FURNISH AND INSTALL CEILING MOUNTED CORD REEL COMPLETE WITH ROBUST MOUNTING RAIL AND ALL STIFFENING HARDWARE TO SECURE REEL TO BUILDING STRUCTURE WITH REEL MOUNTING AT CEILING LEVEL. WOOLY CABLE LENGTH FOR MAXIMUM EXTENSION TO BE 18" AFF PER NEC. USE HUBBELL HBL45123C WITH 12/3 CORD, 15A, 125V RECEPTACLE OR APPROVED EQUIVALENT.
- PROVIDE CONDUIT AND JUNCTION BOX ABOVE CEILING FOR FUTURE CARD READER.
- PROVIDE JUNCTION BOX AND CONDUIT STUBBED ABOVE CEILING UP TO THE DOOR CONTROL PANEL.
- FIRE ALARM CONTROL PANEL TO BE FED FROM PANEL LP1 #12.
- PROVIDE 120V POWER CONNECTIONS TO GAS WATER HEATERS LOCATED OUTSIDE BUILDING. COORDINATE EXACT LOCATION AND NUMBER OF CONNECTIONS WITH PLUMBING PLANS AND PLUMBING CONTRACT.
- PROVIDE 120V CONNECTION TO CARBON MONOXIDE DETECTION SYSTEM TO BE INSTALLED BY MECHANICAL CONTRACTOR. COORDINATE WITH MECHANICAL SHEETS PRIOR TO ROUGH-IN.
- MAKE CONNECTION TO TRAP PRIMER SYSTEM, COORDINATE WITH PLUMBING SHEETS AND PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.
- EXHAUST FAN SHALL BE CONTROLLED VIA OCCUPANCY SENSOR AND TIME DELAY SWITCH. COORDINATE EXACT FAN REQUIREMENTS WITH HVAC CONTRACTOR AND FAN MECHANICAL SCHEDULE.
- CONNECT GS IMA ALARM PANEL PROVIDE 120V CONNECTION AND CONNECT TO EXISTING ALARM/SPEAKER SYSTEMS AS REQUIRED BY OWNER.
- MAKE FIRE ALARM CONNECTION TO HOOD SYSTEM.
- VERIFY COUNTER RECEPTACLE HEIGHT AND LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.

ALL RECEPTACLES SHALL BE TAMPER RESISTANT TYPE AS PER NEC 406-12

EDLUND · DRITENBAS · BINKLEY
ARCHITECTS AND ASSOCIATES, P.A.
AR-AA 000088
65 ROYAL PALM POINTE, SUITE "D"
VERO BEACH, FLORIDA 32960
PHONE: (772) 569-4320



SEAL:
KIRILLOS L. LANTOS, P.E.
1840 25TH STREET
VERO BEACH, FLORIDA 32960

PROJECT: STATION #7
FOR: INDIAN RIVER COUNTY FIRE DISTRICT
1840 25TH STREET
VERO BEACH, FL 32960

NO.	DATE	OWNER CHANGES	REVISIONS
1	9/15/23		

This item has been electronically signed and sealed by Kirillos Lantos, PE on 10/16/2023 using a Digital Signature.
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COMM. NO: C50299/B
DATE: 16 MAY 2022
BY: XXX
CHKD: KGL
SHEET NO.
E-3
OF

PANEL	MDP	RATING: 400 A										TYPE: MCB	LOCATION: ELECTRICAL ROOM								
		SERVICE: 208/120V, 3PH, 4W																			
		MOUNTING: SURFACE					AIC: 22000														
Code	Ckt No.	EQUIPMENT SERVED	KVA	POLE	TRIP	φ	N	GND	C	Phase	Ckt	EQUIPMENT SERVED	KVA	POLE	TRIP	φ	N	GND	C	Code	
3	1	AHU-1	1.00	3	15	12	12	12	3/4	A	2	CU-1	4.88	3	60	6	6	10	1	C	
3	-	-	1.00	-	-	12	-	-	-	B	4	-	4.88	-	-	6	-	-	-	C	
5	-	-	1.00	-	-	12	-	-	-	C	6	-	4.88	-	-	6	-	-	-	C	
7	-	SPARE	1	20	-	-	-	-	-	A	8	AHU-2	2.00	2	30	10	10	10	1	H	
9	-	LIFT STATION	4.74	3	100	3	3	8	1-1/4	B	10	-	2.00	-	-	10	-	-	-	H	
11	-	-	4.74	-	-	3	-	-	-	C	12	EMS STORAGE	1.08	1	20	12	12	12	3/4	R	
13	-	-	4.74	-	-	3	-	-	-	A	14	O.H. DOOR APP. ROOM	1.44	1	20	12	12	12	3/4	E	
15	-	O.H. DOOR APP ROOM	1.44	1	20	12	12	12	3/4	B	16	O.H. DOOR APP. ROOM	1.44	1	20	12	12	12	3/4	E	
17	-	LAWN BAY DOOR	1.20	1	20	12	12	12	3/4	C	18	EXTRACTOR WASHER	1.40	2	20	12	12	12	3/4	E	
19	-	SPARE	1	20	-	-	-	-	-	A	20	-	1.40	-	-	12	-	-	-	E	
21	-	SPARE	1	20	-	-	-	-	-	B	22	CU-2	1.57	3	25	12	12	12	3/4	C	
23	-	SPARE	1	20	-	-	-	-	-	C	24	-	1.57	-	-	12	-	-	-	C	
25	-	SPARE	1	20	-	-	-	-	-	A	26	-	1.57	-	-	12	-	-	-	C	
27	-	O.H. DOOR APP ROOM	1.44	1	20	12	12	12	3/4	B	28	SPARE	1	20	-	-	-	-	-	-	
29	-	O.H. DOOR APP ROOM	1.44	1	20	12	12	12	3/4	C	30	SPARE	1	20	-	-	-	-	-	-	
31	-	PANEL 'LP2'	11.40	3	150	10	10	6	2	A	32	SPARE	1	20	-	-	-	-	-	-	
33	-	-	10.10	-	-	10	-	-	-	B	34	SPARE	1	20	-	-	-	-	-	-	
35	-	-	10.10	-	-	10	-	-	-	C	36	O.H. DOOR APP. ROOM	1.44	1	20	12	12	12	3/4	E	
37	-	PANEL 'LP'	16.50	3	225	40	40	4	2-1/2	A	38	SPD	3	60	6	6	10	10	E		
39	-	-	18.10	-	-	40	-	-	-	B	40	-	-	-	-	6	-	-	-	E	
41	-	-	16.20	-	-	40	-	-	-	C	42	-	-	-	-	6	-	-	-	E	

CONNECTED LOAD SUMMARY

PHASE A: 44.9 KVA
PHASE B: 46.7 KVA
PHASE C: 45.1 KVA
PANEL TOTAL LOAD: 136.7 KVA

Code	EQUIPMENT SERVED	CONN. LOAD	DF	DESIGN LOAD	REMARKS:
M/3/2	Motors	0.00	100%	0.00	- PROVIDE GROUND BUS & NEUTRAL BUS.
L	Largest Motor	2.99	125%	3.74	- PROVIDE TYPE WRITTEN DIRECTORY.
L	Lighting	0.00	125%	0.00	- PROVIDE TYPE WRITTEN DIRECTORY.
R	Receptacles (1st 10 kVA)	1.08	100%	1.08	
R	Receptacles (Remaining)	-	50%	-	
H	Heating	4.00	0%	0.00	
C	Cooling	19.36	100%	19.36	
E	Equipment	26.86	75%	20.15	
A	Appliances	0.00	100%	0.00	
O	Other	82.40	85%	70.04	
	20% Spare	22.87	100%	22.87	
	TOTAL KVA			137	
	TOTAL AMPS			381	

PANEL	LP	RATING: 225 A										TYPE: MLO	LOCATION: STORAGE RM (NEAR KITCHEN)								
		SERVICE: 208/120V, 3PH, 4W																			
		MOUNTING: SURFACE					AIC: 22000														
Code	Ckt No.	EQUIPMENT SERVED	KVA	POLE	TRIP	φ	N	GND	C	Phase	Ckt	EQUIPMENT SERVED	KVA	POLE	TRIP	φ	N	GND	C	Code	
R	1	SPARE	1	20	-	-	-	-	-	A	2	CONTROL ROOM QUAD	1.23	1	20	12	12	12	3/4	R	
R	3	SPARE	1	20	-	-	-	-	-	B	4	TVW QUADS	0.54	1	20	12	12	12	3/4	R	
R	5	SPARE	1	20	-	-	-	-	-	C	6	GS IMA ALARM PANEL	0.50	1	20	12	12	12	3/4	E	
R	7	SPARE	1	20	-	-	-	-	-	A	8	SPARE	1	20	-	-	-	-	-	-	
R	9	DORM 1-6**	1.08	1	20	12	12	12	3/4	B	10	SPARE	1	20	-	-	-	-	-	-	
R	11	DORM 1-6**	1.08	1	20	12	12	12	3/4	C	12	DAYROOM, PATIO	1.44	1	20	12	12	12	3/4	R	
A	13	KITCHEN D.W.	1.20	1	20	12	12	12	3/4	A	14	KITCHEN DISPOSAL	0.83	1	20	12	12	12	3/4	R	
A	15	REFRIG.	1.50	1	20	12	12	12	3/4	B	16	REFRIG.	1.50	1	20	12	12	12	3/4	A	
R	17	KITCHEN	0.54	1	20	12	12	12	3/4	C	18	REFRIG.	1.50	1	20	12	12	12	3/4	A	
E	19	EWV-1	0.50	1	20	12	12	12	3/4	A	20	KITCHEN HOOD	0.15	1	20	12	12	12	3/4	A	
A	21	GAS RANGE	0.60	1	20	12	12	12	3/4	B	22	LOBBY, R.R., COVE ENTRAN.	0.72	1	20	12	12	12	3/4	R	
R	23	R.R. MEN/WOMEN.	1.08	1	20	12	12	12	3/4	C	24	HALL	0.90	1	20	12	12	12	3/4	R	
R	25	DORM 7-10**	1.08	1	20	12	12	12	3/4	A	26	DORM 7-10**	0.72	1	20	12	12	12	3/4	R	
R	27	OFFICE	0.90	1	20	12	12	12	3/4	B	28	HW CIRC. PUMP	0.15	1	15	12	12	12	3/4	M	
M	29	KEF-1	0.70	1	20	12	12	12	3/4	C	30	GSV-1	0.30	1	20	12	12	12	3/4	E	
M	31	KSF-1	1.87	1	25	10	10	10	3/4	A	32	-	1	20	12	12	12	3/4	A		
R	33	SPARE	1	20	-	-	-	-	-	B	34	PANEL 'LP1'	11.10	3	225	40	40	4	2-1/2	O	
R	35	KITCHEN	0.54	1	20	12	12	12	3/5	C	36	-	7.60	-	-	4/0	-	-	-	O	
37	-	SPD	3	30	-	-	-	-	-	A	38	-	8.90	-	-	4/0	-	-	-	O	
39	-	-	-	-	-	-	-	-	-	B	40	SPARE	1	20	-	-	-	-	-	-	
41	-	-	-	-	-	-	-	-	-	C	42	SPARE	1	20	-	-	-	-	-	-	

CONNECTED LOAD SUMMARY

PHASE A: 16.5 KVA
PHASE B: 18.1 KVA
PHASE C: 16.2 KVA
PANEL TOTAL LOAD: 60.8 KVA

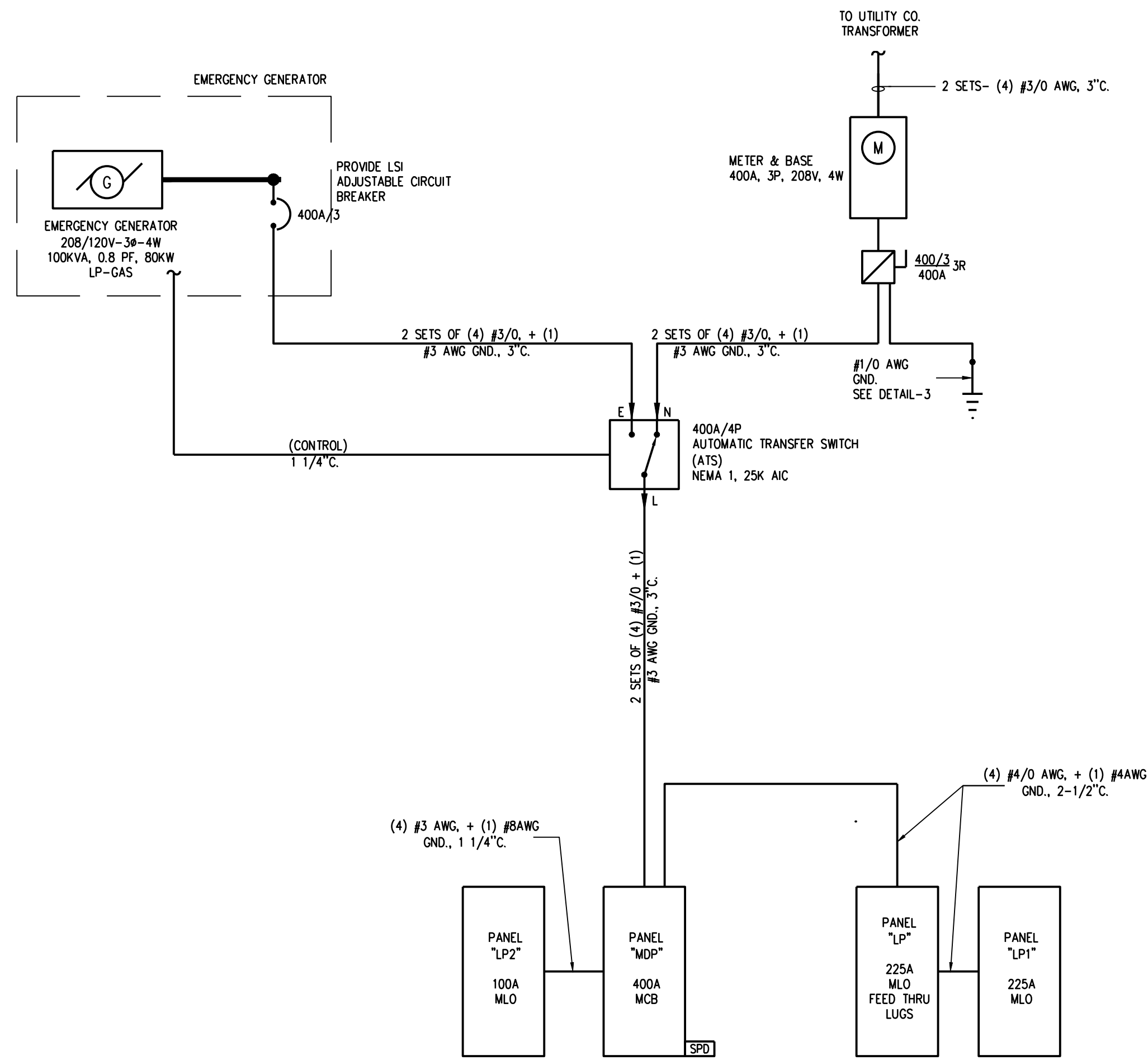
Code	EQUIPMENT SERVED	CONN. LOAD	DF	DESIGN LOAD	REMARKS:
M/3/2	Motors	0.85	100%	0.85	- PROVIDE GROUND BUS & NEUTRAL BUS.
L	Largest Motor	1.87	125%	2.34	- PROVIDE TYPE WRITTEN DIRECTORY.
L	Lighting	0.00	125%	0.00	* EXTERIOR LTG CONTROLLED THROUGH PHOTOCELL: 120V RELAY TYPE
R	Receptacles (1st 10 kVA)	10.00	100%	10.00	WITH INTEGRAL SURGE ARRESTOR AND ADJUSTABLE STEM MOUNT.
R	Receptacles (Remaining)	1.85	50%	0.93	
H	Heating	0.00	100%	0.00	** PROVIDE ARC FAULT BREAKER
C	Cooling	0.00	100%	0.00	(L) PROVIDE LOCK-ON DEVICE
E	Equipment	1.30	100%	1.30	
A	Appliances	7.28	100%	7.28	
O	Other	27.60	100%	27.60	
	20% Spare	10.06	100%	10.06	
	TOTAL KVA			60	
	TOTAL AMPS			168	

PANEL	LP2	RATING: 110 A										TYPE: MLO	LOCATION: ELECTRICAL ROOM								
		SERVICE: 208/120V, 3PH, 4W																			
		MOUNTING: SURFACE					AIC: 22000														
Code	Ckt No.	EQUIPMENT SERVED	KVA	POLE	TRIP	φ	N	GND	C	Phase	Ckt	EQUIPMENT SERVED	KVA	POLE	TRIP	φ	N	GND	C	Code	
R	1	GEN BATTERY CHARGER*	1.00	1	20	12	12	12	3/4	A	2	SITE LIGHTING*	1.17	1	20	6	6	8	1	L	
R	3	GEN BLOCK HEATER*	1.00	1	20	12	12	12	3/4	B	4	SITE LIGHTING*	0.88	1	20	6	6	8	1	L	
R	5	APP BAY CEILING (SPCU)	1.40	1	20	12	12	12	3/4	C	6	APP BAY CEILING (SPCU)	1.40	1	20	12	12	12	3/4	R	
R	7	APP BAY CEILING (SPCU)	1.40	1	20	12	12	12	3/4	A	8	APP BAY CEILING (SPCU)	1.40	1	20	12	12	12	3/4	R	
R	9	APP BAY CEILING (SPCU)	1.40	1	20	12	12	12	3/4	B	10	APP BAY CEILING (SPCU)	1.40	1	20	12	12	12	3/4	R	
L	11	LAWN EQ, EF-3.4	1.60	1	20	12	12	12	3/4	C	12	BMS CONTROLS	0.54	1	20	12	12	12	3/4	R	
L	13	FACIL. LAWN EQ	0.70	1	20	12	12	12	3/4	A	14	IWGH-1	1.00	1	20	12	12	12	3/4	E	
L	15	STOR. MECH EF-5	1.50	1	20	12	12	12	3/4	B	16	IWGH-2	1.00	1	20	12	12	12	3/4	E	
E	17	STACK WASH/DRY	2.50	2	30	8	8	10	3/4	C	18	RCP-2	0.30	1	20	12	12	12	3/4	E	
E	19	-	2.50	-	-	8	-	-	-	A	20	LAUNDRY COUNTER	0.72	1	20	12	12	12	3/4	R	
E	21	EF-6	1.00	1	20	12	12	12	3/4	B	22	PRV-1	0.30	1	20	12	12	12	3/4	E	
E	23	EF-7	1.00	1	20	12	12	12	3/4	C	24	APPARATUS BAY	1.08	1	20	12	12	12	3/4	R	
A	25	ICE MAKER	0.60	1	20	12	12	12	3/4	A	26	FACILITIES STORAGE	1.08	1	20	12	12	12	3/4	R	
R	27	TTB/DATA	0.36	1	20	12	12	12	3/4	B	28	EMS STORAGE	1.08	1	20	12	12	12	3/4	R	
R	29	EQ. STOR. ELEC. RM	0.54	1	20	12	12	12	3/4	C	30	SPACE	-	-	-	-	-	-	-		
E	31	AHU-2 BP IONIZATION	0.20	1	20	12	12	12	3/4	A	32	SPACE	-	-	-	-	-	-	-		
E	33	AHU-1 BP IONIZATION	0.20	1	20	12	12	12	3/4	B	34	SPACE	-	-	-	-	-	-	-		
	35	SPACE	-	-	-	-	-	-	-	C	36	SPACE	-	-	-	-	-	-	-		
	37	SPACE	-	-	-	-	-	-	-	A	38	SPD	3	30	-	-	-	-	-		
	39	SPACE	-	-	-	-	-	-	-	B	40	-	-	-	-	-	-	-	-		
	41	SPACE	-	-	-	-	-	-	-	C	42	-	-	-	-	-	-	-	-		

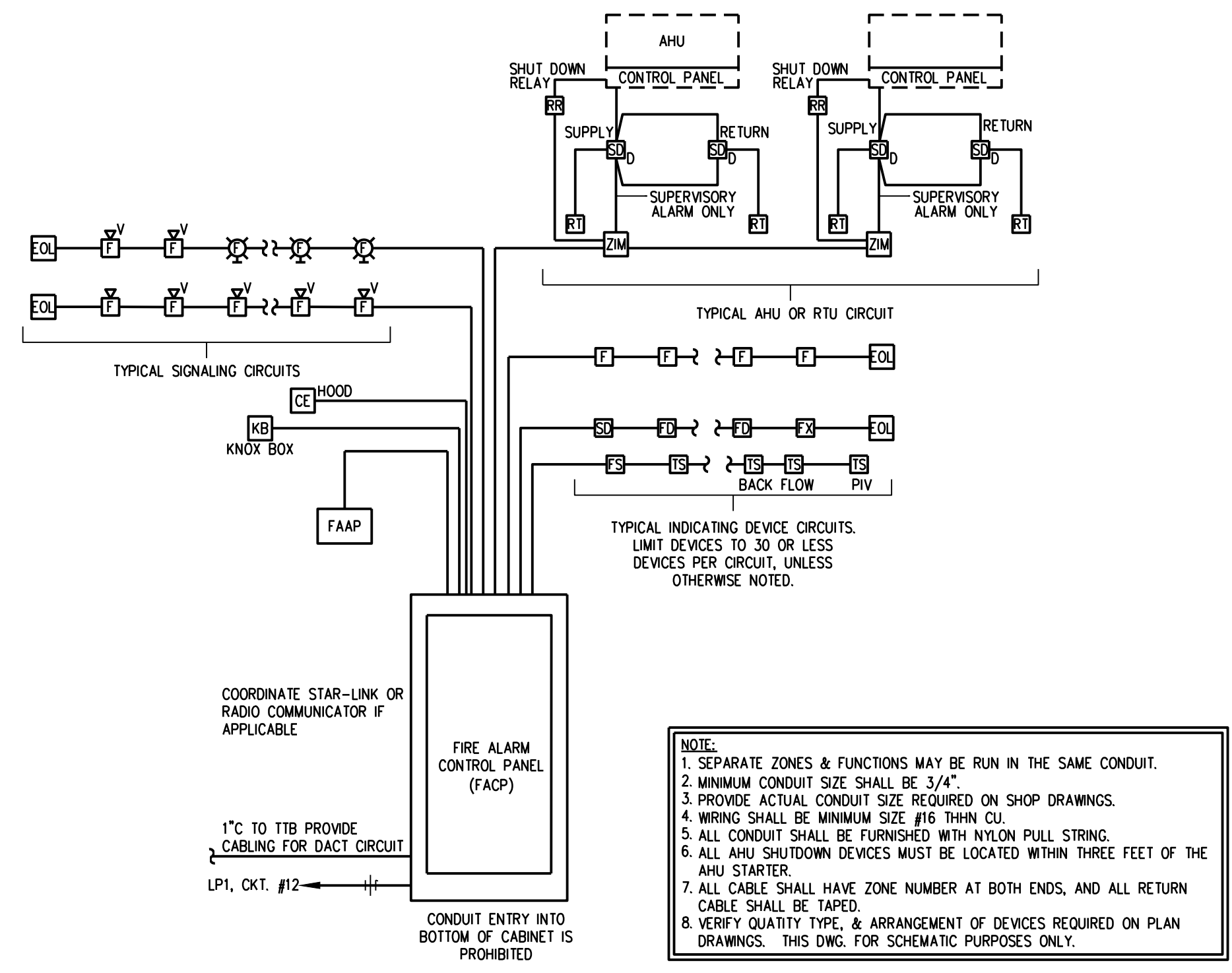
CONNECTED LOAD SUMMARY

PHASE A: 11.8 KVA
PHASE B: 10.1 KVA
PHASE C: 10.4 KVA
PANEL TOTAL LOAD: 32.3 KVA

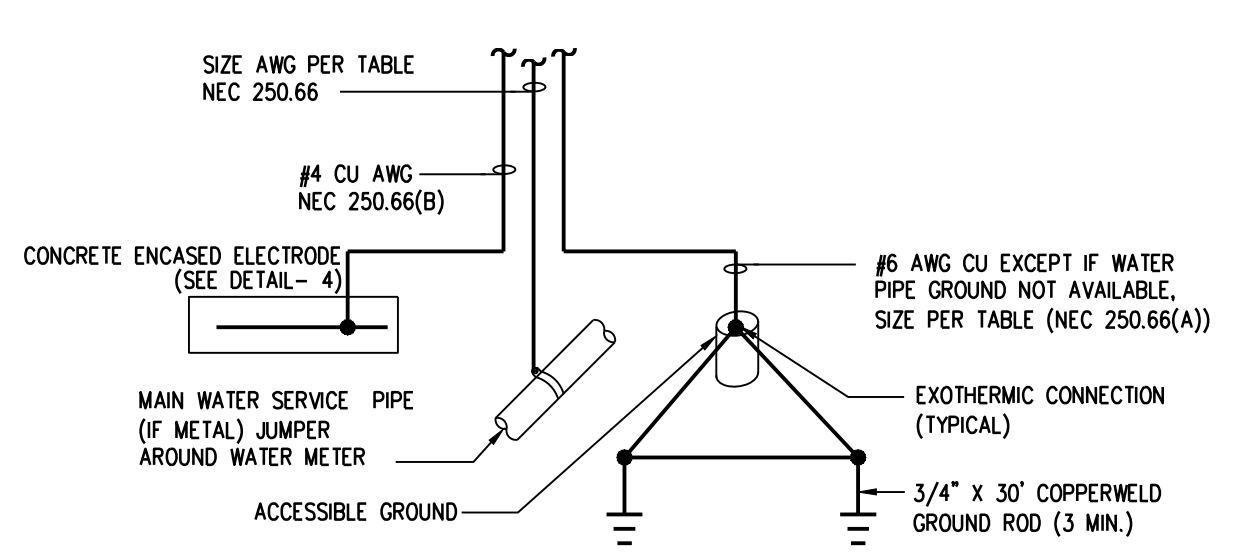
Code	EQUIPMENT SERVED	CONN. LOAD	DF	DESIGN LOAD	REMARKS:
M/3/2	Motors	0.00	100%	0.00	- PROVIDE GROUND BUS & NEUTRAL BUS.
L	Largest Motor	0.00	125%	0.00	- PROVIDE TYPE WRITTEN DIRECTORY.
L	Lighting	5.85	125%	7.31	* EXTERIOR LTG CONTROLLED THROUGH PHOTOCELL: 120V RELAY TYPE
R	Receptacles (1st 10 kVA)	10.00	100%	10.00	WITH INTEGRAL SURGE ARRESTOR AND ADJUSTABLE STEM MOUNT.
R	Receptacles (Remaining)	5.80	50%	2.90	
H	Heating	0.00	100%	0.00	** PROVIDE ARC FAULT BREAKER



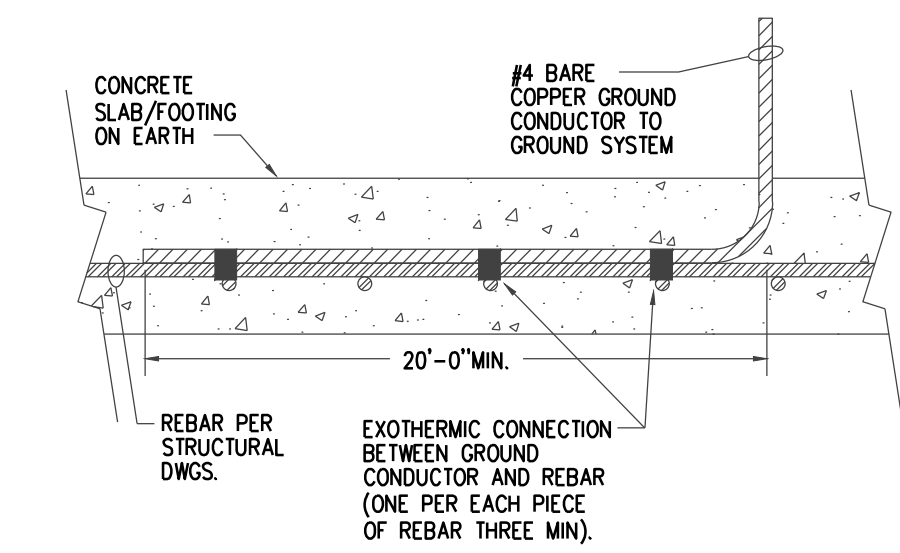
1 ELECTRICAL ONE-LINE DIAGRAM
SCALE: N.T.S.



2 FIRE ALARM RISER DIAGRAM
N.T.S.



3 SERVICE GROUNDING DETAIL
N.T.S.



4 TYPICAL CONCRETE ENCASED ELECTRODE
N.T.S.

This item has been electronically signed and sealed by Kyriakos Latsos, PE on 10/18/2023 using a Digital Signature.
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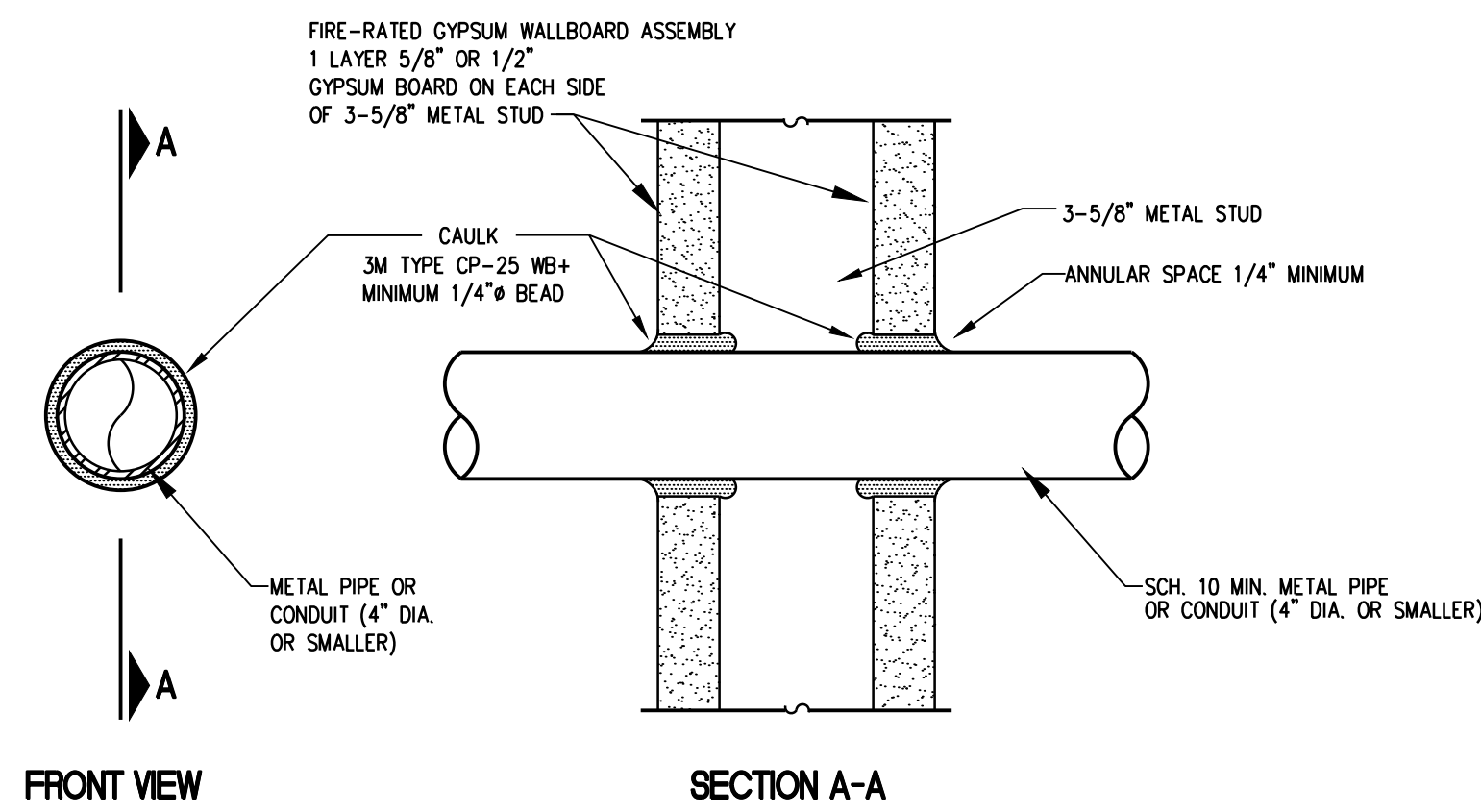
SEAL:
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1840 25TH STREET
VERO BEACH, FL 32960
FL REG. NO.: 126642

PROJECT: STATION #7
FOR: INDIAN RIVER COUNTY FIRE DISTRICT
1840 25TH STREET
VERO BEACH, FL 32960

NO.	DATE	REVISIONS

© MAY '22
COMM. NO: C5029/B
DATE: 16 MAY 2022
BY: ADM
CHKD: KGL
SHEET NO.
E-5
OF

PRINT DATE: 10/18/2023 5:06 PM SAVE DATE: 6/24/2022 4:22 PM FILE LOCATION: J:\22_0085\2022 - IRC FS NO 7\DWGS\2022E-5.DWG

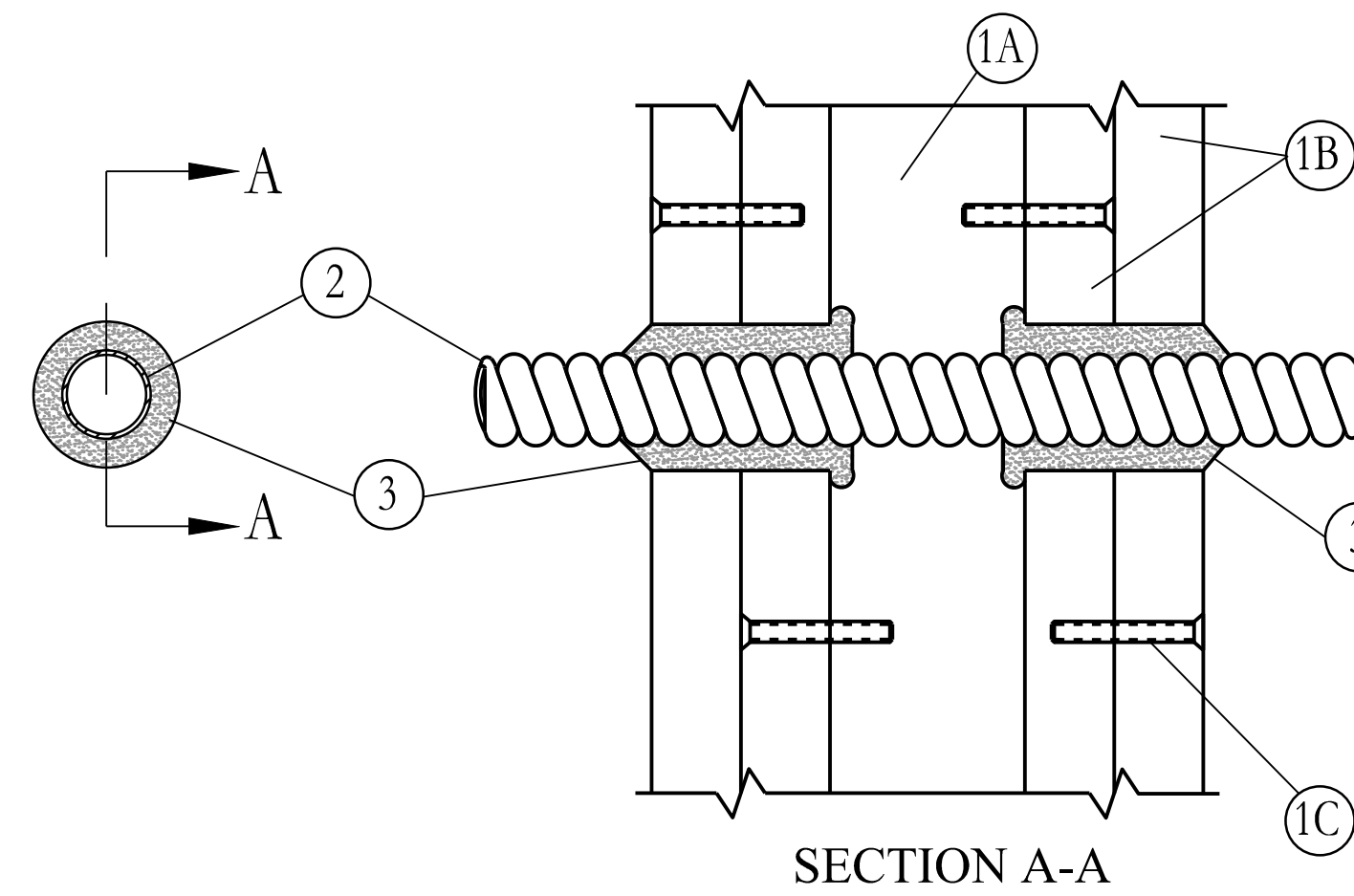


ALL SURFACES SHOULD BE CLEAN, SOUND AND DRY PRIOR TO APPLICATION OF FIRESTOPPING MATERIALS. IF THE OPENING IS NOT SLEEVED, INSTALL A GALVANIZED STEEL SLEEVE AROUND THE PIPE AND ANCHOR IT IN PLACE.

UL SYSTEM NO. WL1001

EMT THRU GYP BOARD PENETRATION DETAIL
N.T.S.

1
E-6



MC THRU GYP BOARD PENETRATION DETAIL
N.T.S.

2
E-6

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 (CA21) AND PRECAST CONCRETE UNITS (CFTV) CATEGORIES IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

1A. STEEL SLEEVE (OPTIONAL, NOT SHOWN) - MAX 15 IN. (381 MM) ID (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL SLEEVE CAST OR GROUDED 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. MAX 16 IN. (406 MM) ID (OR SMALLER) MIN 0.028 (0.71 MM) WALL THICKNESS (OR HEAVIER) GALVANIZED STEEL SLEEVE CAST OR GROUDED INTO FLOOR OR WALL ASSEMBLY. SLEEVE MAY EXTEND A MAX OF 1/2 IN. (13 MM) BEYOND EITHER SURFACE OF FLOOR OR WALL.

2. THROUGH PENETRANTS - ONE METALLIC PIPE, CONDUIT OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. MAX ANNUAL SPACE BETWEEN PIPE, CONDUIT OR TUBING AND EDGE OF THROUGH OPENING OR SLEEVE IS DEPENDENT ON THE PARAMETERS SHOWN IN ITEM 4. MIN ANNUAL SPACE BETWEEN PIPE OR CONDUIT AND EDGE OF THROUGH OPENING IS 0 IN. (0 MM) (POINT CONTACT). 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. STEEL PIPE - NOM 30 IN. (762 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
- B. IRON PIPE - NOM 30 IN. (762 MM) DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.
- C. CONDUIT - NOM 6 IN. (152 MM) DIAM (OR SMALLER) RIGID STEEL CONDUIT.
- D. CONDUIT - NOM 4 IN. (102 MM) DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING.
- E. COPPER - TUBING NOM 6 IN. (152 MM) DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBE.
- F. COPPER PIPE - NOM 6 IN. (152 MM) DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

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).

4. FILL VOID OR CAVITY MATERIAL* - CAULK OR SEALANT - APPLIED TO FILL THE ANNUAL 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 REQUIRED IN ANNUAL SPACE.
(B) MIN 1 IN. (25 MM) THICKNESS OF MINERAL WOOL BATT INSULATION REQUIRED IN ANNUAL 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.

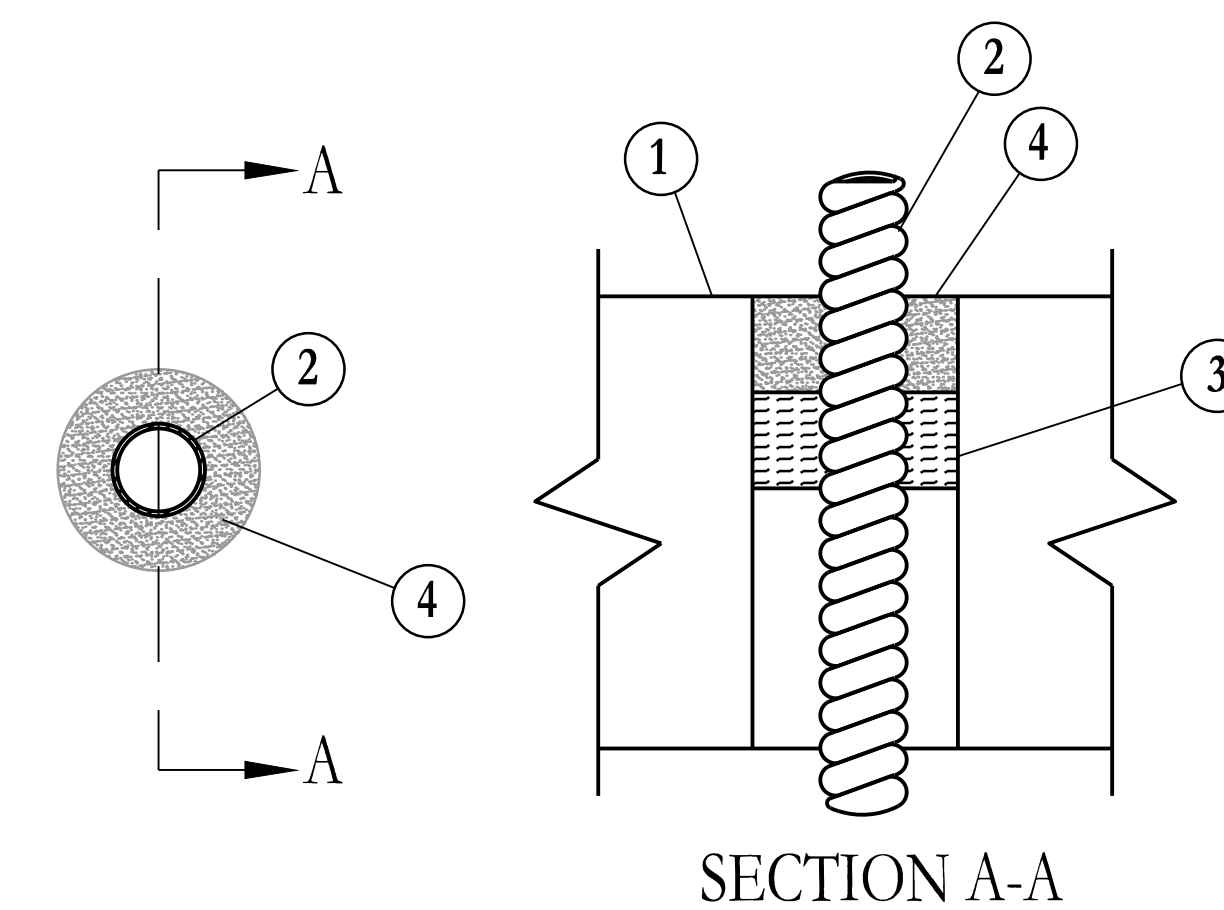
3M COMPANY - CP 25WB+ CAULK OR FB-3000 WT SEALANT. (NOTE: W RATING APPLIES ONLY WHEN FB-3000 WT SEALANT IS USED.)

*BEARING THE UL CLASSIFICATION MARKING

EMT THRU CONCRETE PENETRATION DETAIL
N.T.S.

3
E-6

SYSTEM NO C-AJ-1052
(FORMERLY SYSTEM NO. 337)
F RATING-2 HR
T RATING-0 HR



MC THRU CONCRETE PENETRATION DETAIL
N.T.S.

4
E-6

1. WALL ASSEMBLY - THE 1 OR 2 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 OR STEEL CHANNEL STUDS. WOOD STUDS TO BE NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC WITH NOM 2 BY 4 IN. LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MIN 3-5/8 IN. WIDE BY 1-3/8 IN. DEEP CHANNELS SPACED MAX 24 IN. OC.

B. GYPSUM BOARD* - NOM 5/8 IN. THICK, 4 FT. WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, NUMBER OF LAYERS AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. DIAM OF CIRCULAR THROUGH OPENING CUT THROUGH GYPSUM WALLBOARD ON EACH SIDE OF WALL ASSEMBLY TO BE MIN 0 IN. (POINT CONTACT) TO MAX 1 IN. LARGER THAN OUTSIDE DIAM OF FLEXIBLE METAL CONDUIT (ITEM 2) INSTALLED IN THROUGH OPENING. SIDE EDGE OF CIRCULAR OPENING TO BE MIN 3 IN. FROM NEAREST STUD IN WALL CAVITY.

C. FASTENERS - WHEN WOOD STUD FRAMING IS EMPLOYED, GYPSUM WALLBOARD ATTACHED TO STUDS WITH CEMENT COATED NAILS AS SPECIFIED IN THE INDIVIDUAL WALL OR PARTITION DESIGN. WHEN STEEL CHANNEL STUD FRAMING IS EMPLOYED, GYPSUM WALLBOARD ATTACHED TO STUDS WITH TYPE S SELF-DRILLING, SELF-SPRING BUCKLE-HEAD STEEL SCREWS AS SPECIFIED IN THE INDIVIDUAL WALL OR PARTITION DESIGN.

2. THROUGH PENETRATING PRODUCT* - FLEXIBLE METAL CONDUIT - NOM 4 IN. DIAM (OR SMALLER) ALUMINUM OR STEEL FLEXIBLE METAL CONDUIT*. MAX ONE FLEXIBLE METAL CONDUIT TO BE INSTALLED NEAR CENTER OF CIRCULAR OPENING IN GYPSUM WALLBOARD. FLEXIBLE METAL CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY.
AFC CABLE SYSTEMS INC

3. FILL VOID OR CAVITY MATERIAL* - CAULK - CAULK FILL MATERIAL FORCED INTO ANNUAL SPACE AROUND ENTIRE CIRCUMFERENCE OF THROUGH PENETRATING PRODUCT TO COMPLETELY FILL OPENING IN GYPSUM WALLBOARD LAYERS ON EACH SIDE OF THE WALL ASSEMBLY. A MIN 5/8 IN. THICKNESS OF CAULK IS REQUIRED FOR THE 1 HR F RATING. A MIN 1-1/4 IN. THICKNESS OF CAULK IS REQUIRED FOR THE 2 HR F RATING.
MINNESOTA MINING & MFG CO - CP 25WB+
*BEARING THE UL CLASSIFICATION MARKING

1. FLOOR OR WALL ASSEMBLY - MIN 4-1/2 IN. THICK LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. DIAM OF CIRCULAR THROUGH OPENING IN FLOOR OR WALL ASSEMBLY TO BE 3/4 IN. TO 1-1/2 IN. LARGER THAN DIAM OF FLEXIBLE METAL CONDUIT (ITEM 2) INSTALLED IN THROUGH OPENING. MAX DIAM OF OPENING IS 6 IN.
SEE CONCRETE BLOCKS(CA21) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

2. THROUGH PENETRATING PRODUCT* - NOM 4 IN. DIAM (OR SMALLER) ALUMINUM OR STEEL FLEXIBLE METAL CONDUIT*. MAX ONE FLEXIBLE METAL CONDUIT TO BE INSTALLED NEAR CENTER OF CIRCULAR THROUGH OPENING IN FLOOR OR WALL ASSEMBLY. FLEXIBLE METAL CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
AFC CABLE SYSTEMS INC

3. PACKING MATERIAL - NOM 1 IN. THICKNESS OF CERAMIC (ALUMINA SILICA) FIBER BLANKET OR MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED MIN 1 IN. FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL.

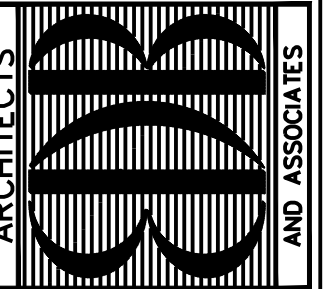
4. FILL VOID OR CAVITY MATERIAL* - CAULK - APPLIED TO FILL THE ANNUAL SPACE AROUND THE FLEXIBLE METAL CONDUIT. IN FLOORS, A MIN 1 IN. DEPTH OF FILL MATERIAL TO BE INSTALLED FLUSH WITH TOP SURFACE OF FLOOR. IN WALLS, A MIN 1 IN. DEPTH OF FILL MATERIAL TO BE INSTALLED FLUSH WITH WALL SURFACE ON BOTH SIDES OF WALL ASSEMBLY.

MINNESOTA MINING & MFG CO - CP 25WB+
*BEARING THE UL CLASSIFICATION MARKING
*PLEASE REFER TO THE LETTER FROM UL ON PAGE 11.

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1840 25TH STREET
VERO BEACH FL 32960

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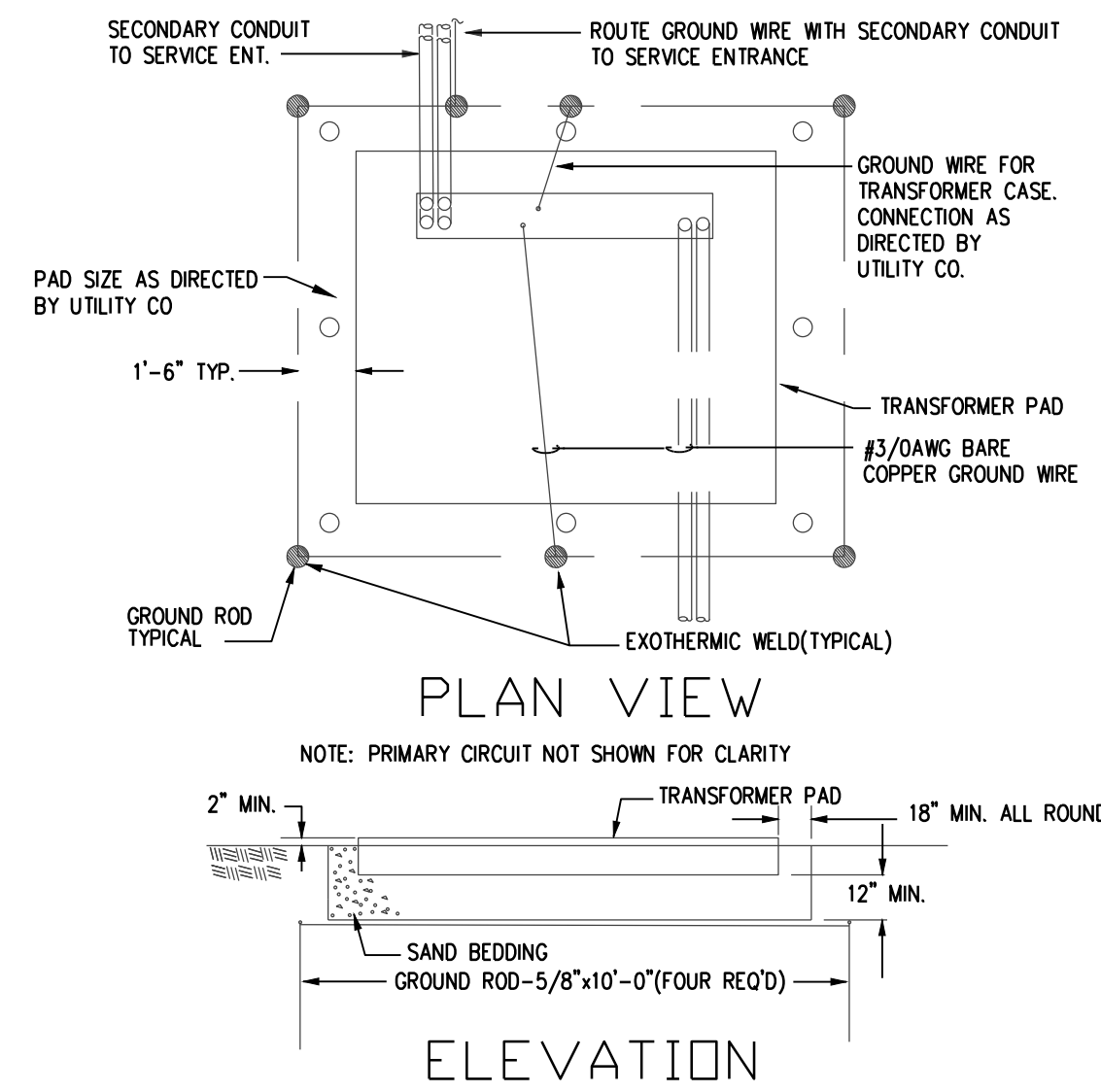
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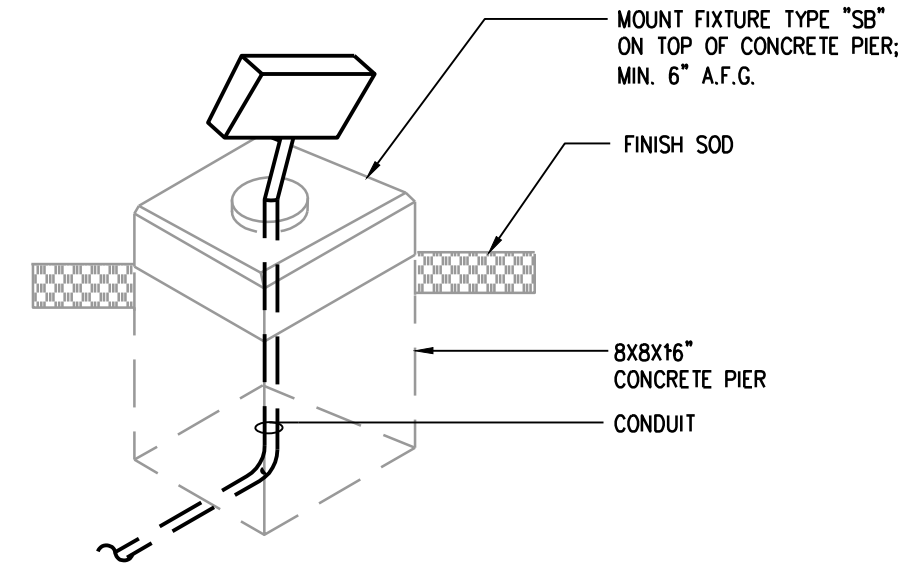
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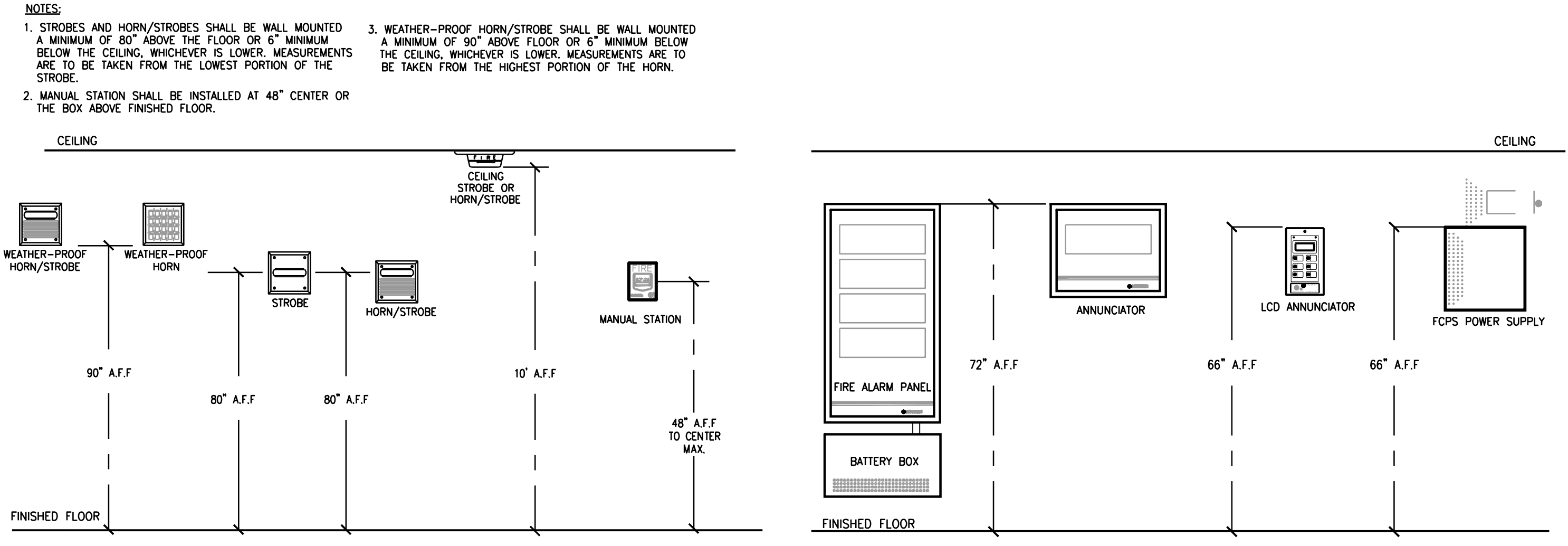
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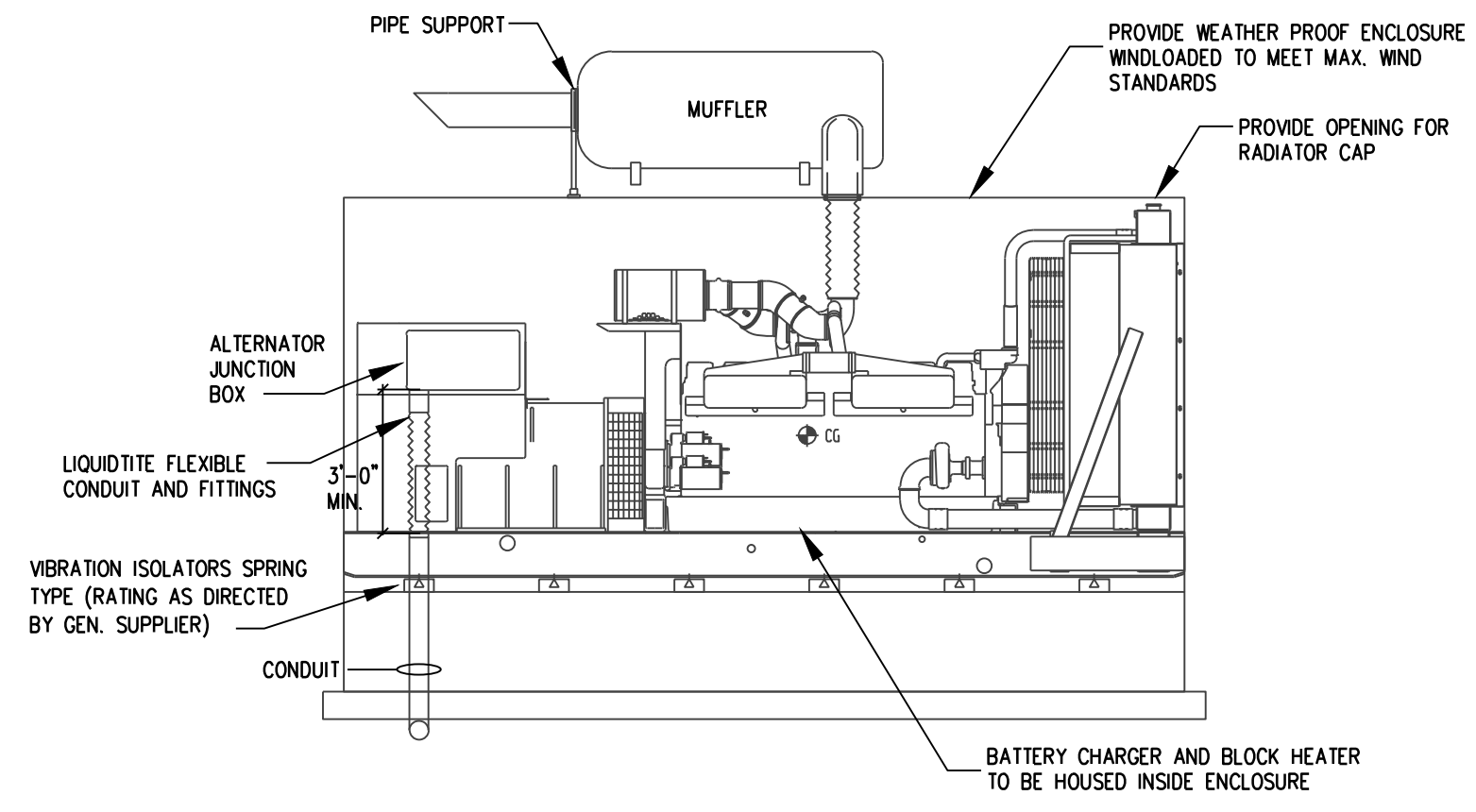
1
ENLARGED PLAN AT
UTILITY CO TRANSFORMER
N.T.S.



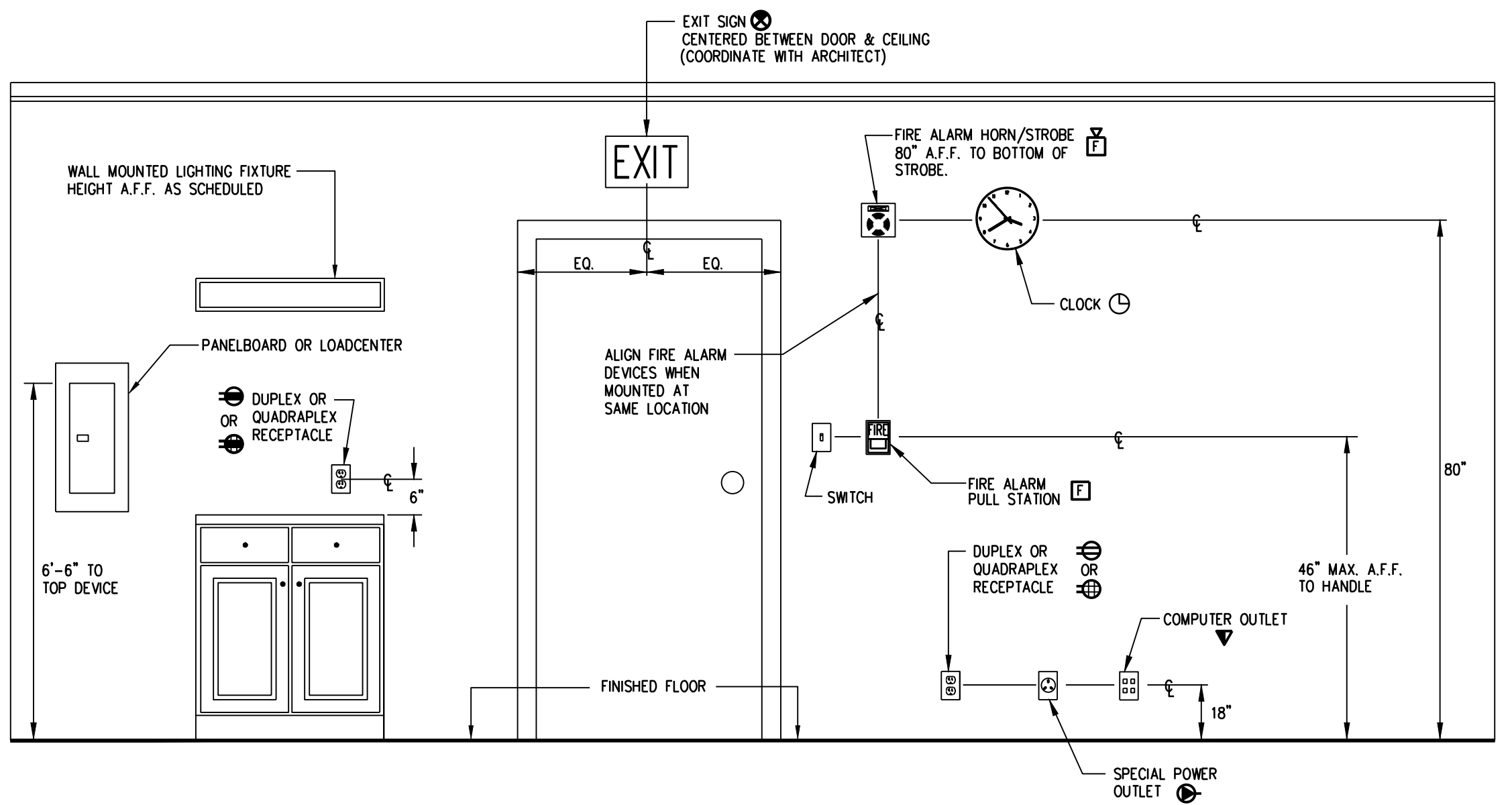
2
FLAG POLE LIGHTING
FIXTURE MOUNTING DETAIL
N.T.S.



3
FIRE ALARM DEVICE AND PANEL
MOUNTING ELEVATIONS
N.T.S.



5
GENERATOR ELEVATION
N.T.S.



6
TYPICAL SYSTEMS OUTLET
MOUNTING HEIGHTS DETAIL
N.T.S.

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