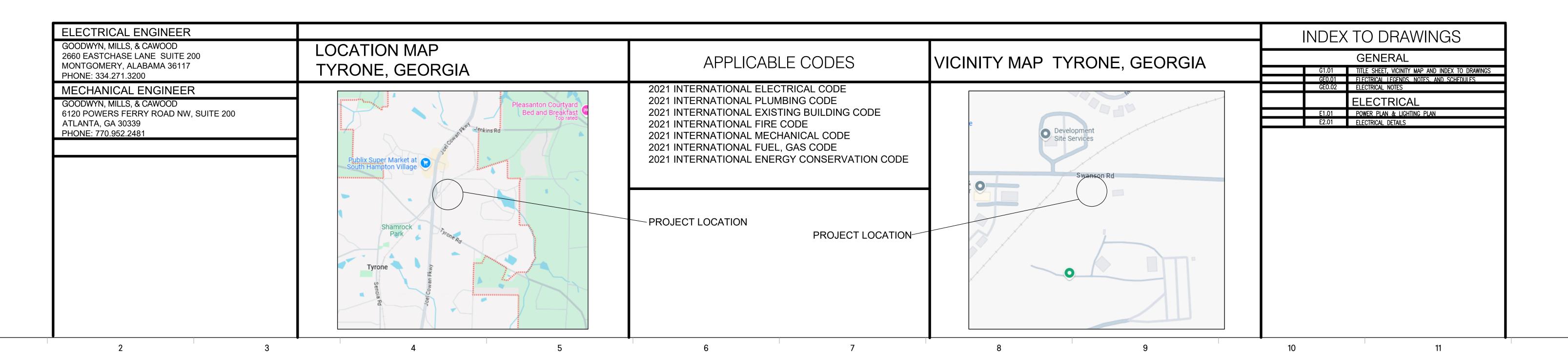


'LE SHEET, INDEX

HANDLEY PARK PUBLIC WORKS BUILDING

TYRONE, GEORGIA



	LIGHTING LEGEND
\bigotimes_{X}	EXIT SIGN WITH BATTERY BACKUP CEILING/WALL MOUNTED - FILLED IN SECTION INDICATES NUMBER OF FACES. ARROWS AS INDICATED ON PLANS - PROVIDE UNSWITCHED CONDUCTOR FOR 24 HOUR OPERATION. LETTER "X" INDICATES FIXTURE TYPE, SEE LUMINAIRE SCHEDULE.
X	EMERGENCY LIGHT WITH BATTERY POWER, CONNECTED TO UNSWITCHED HOTLEG. LETTER "X" INDICATES FIXTURE TYPE, SEE LUMINAIRE SCHEDULE.
	CEILING FAN, FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR, ELECTRICAL CONNECTIONS (POWER, FIRE ALARM, ETC.) BY ELECTRICAL CONTRACTOR.
<u>^</u> x	FLOOD LIGHT. LETTER "X" INDICATES FIXTURE TYPE, SEE LUMINAIRE SCHEDULE.
OC L	CEILING MOUNTED LINE VOLTAGE OCCUPANCY SENSOR. LOCATE ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
OC	CEILING MOUNTED LOW VOLTAGE OCCUPANCY SENSOR. LOCATE ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
\bigcirc_{X}	PENDANT FIXTURE. LETTER "X" INDICATES FIXTURE TYPE, SEE LUMINAIRE SCHEDULE.

		SECURITY LEGEND
-	C	VIDEO SURVEILLANCE CAMERA PROVIDED AND INSTALLED BY SECURITY CONTRACTOR. PROVIDE 2-GANG BOX WITH WITH 3/4"CAS REQUIRE FOR ACCESS (MIN.6"). TERMINATE WITH INSULATING BUSHING. COORDINATE WITH SECURITY CONTRACTOR. "WP4" INDICATES WEATHERPROOF EQUIPMENT. INTERIOR CAMERAS TO BE VERKADA#CD41, EXTERIOR CAMERAS TO BE VERKADA#CD41E. COORDINATE WITH OWNER.
	C	VIDEO SURVEILLANCE CAMERA (2 IMAGER) PROVIDED AND INSTALLED BY SECURITY CONTRACTOR. PROVIDE 2-GANG BOX WITH WITH 3/4"CAS REQUIRE FOR ACCESS (MIN.6"). TERMINATE WITH INSULATING BUSHING. COORDINATE WITH SECURITY CONTRACTOR. "WP4" INDICATES WEATHERPROOF EQUIPMENT INTERIOR CAMERAS TO BE VERKADA#CD41, EXTERIOR CAMERAS TO BE VERKADA#CD41E. COORDINATE WITH OWNER.
	KP	SECURITY ALARM CONTROL KEYPAD. KEYPAD PROVIDED AND INSTALLED BY SECURITY CONTRACTOR.
	MD	CEILING MOUNTED 360 DEGREE MOTION DETECTOR. PROVIDED AND INSTALLE BY SECURITY CONTRACTOR. ROUTE SIGNAL CABLE TO SECURITY ALARM CONTROL PANEL.
	SCP	SECURITY ALARM CONTROL PANEL. PROVIDED AND INSTALLED BY SECURITY CONTRACTOR.
	S	SECURITY SYSTEM SIREN, CEILING MOUNTED. PROVIDED AND INSTALLED BY SECURITY CONTRACTOR. COORDINATE EXACT LOCATION AND QUANTITIES WITH OWNER.

	BRANCH CIRCUIT LEGEND
	CONDUIT OR RACEWAY EXPOSED TO VIEW. RUN PARALLEL OR PERPENDICULAR TO STRUCTURE CONCEAL FROM VIEW AS MUCH AS POSSIBLE.
	CONDUIT OR RACEWAY EXPOSED TO VIEW. RUN PARALLEL OR PERPENDICULAR TO STRUCTURE CONCEAL FROM VIEW AS MUCH AS POSSIBLE.
	CONDUIT OR RACEWAY CONCEALED IN CEILING CAVITY OR WALL.
	CONDUIT OR RACEWAY UNDERGROUND OR CONCEALED IN FLOOR SLAB.
	PHASE CONDUCTOR, NEUTRAL CONDUCTOR AND ISOLATED GROUND CONDUCTOR.
##	HOMERUN. TICKS INDICATES NUMBER OF CONDUCTORS NO TICKS INDICATES 1 PHASE, 1 NEUTRAL, 1 GROUND CONDUCTOR.
	UNDERGROUND HOMERUN. ARROW INDICATES NUMBER OF CIRCUITS. TICKS INDICATES NUMBER OF CONDUCTORS NO TICKS INDICATES 1 PHASE, 1 NEUTRAL, 1 GROUND CONDUCTOR.

	SWITCH LEGEND
\$3	WALL SWITCH 3 WAY SPDT 42" AFF TO CENTER UNO 20A 120/277V.

		FIRE ALARM LEGEND
;	ANN	REMOTE ANNUNCIATOR, FLUSH MOUNTED LOCATION MUST BE COORDINATED WITH LOCAL AHJ & ARCHITECTURAL ELEVATIONS.
	FACP	FIRE ALARM CONTROL PANEL.
	F	PULL STATION. DOUBLE ACTION TYPE. MOUNT AT 48" A.F.F. (OR AS REQUIRED TO MEET ADA HANDLE ACCESS REQUIREMENTS) "WG" DESIGNATES PROTECTIVE COVER.
	F	FIRE ALARM AUDIO/VISUAL DEVICE MOUNTED 80" A.F.F. OR 6" BELOW CEILING UNO. "WG" DESIGNATES PROTECTIVE COVER. "WP" INDICATES DEVICE TO BE SUITABLE FOR "DAMP LOCATION" INSTALLATION.
	L	FIRE ALARM VISUAL NOTIFICATION DEVICE MOUNTED 80" A.F.F. OR 6" BELOW CEILING UNO. "WG" DESIGNATES PROTECTIVE COVER.
	H	FIRE ALARM 135° RATE-OF-RISE HEAT DETECTOR - CEILING/WALL MOUNTED. AS SHOWN ON DRAWINGS.
	HF	FIRE ALARM FIXED TEMPERATURE HEAT DETECTOR. AS SHOWN ON DRAWINGS.
	⟨D⟩ _X	FIRE ALARM DUCT SMOKE DETECTOR. PROVIDE WITH REMOTE ALARM INDICATOR AND RELAY AS REQUIRED FOR UNIT SHUTDOWN "S" INDICATES "SUPPLY", "R" INDICATES "RETURN".
	КВ	FIRE ALARM SYSTEM KNOX BOX (COORDINATE WITH LOCAL AHJ) WITH 3/4"C TO FIRE ALARM SYSTEM CONTROL PANEL.
	DOC	FIRE ALARM DOCUMENT BOX.

	RECEPTACLE LEGEND
Ф	DUPLEX RECEPTACLE WALL MOUNTED 18" A.F.F. TO CENTER UNO.
⇔ _{CR}	DUPLEX RECEPTACLE CEILING MOUNTED. SEE DETAIL 6/E2.01
+	DUPLEX RECEPTACLE WALL MOUNTED 6" ACT TO CENTER OR 48" A.F.F. UNO.
+	QUADRAPLEX RECEPTACLE WALL MOUNTED 18" A.F.F. TO CENTER UNO.
₩ _P	DUPLEX GROUND FAULT CIRCUIT INTERRUPTER (5mA) RECEPTACLE WALL MOUNTED 18" A.F.F. TO CENTER UNO. "WP" INDICATES WEATHERPROOF "IN-USE" EXTRA DUTY METAL COVER, DEVICE "WEATHER-RESISTANT" RATED.
(DUPLEX GROUND FAULT CIRCUIT INTERRUPTER (5mA) RECEPTACLE WALL MOUNTED 18" A.F.F. TO CENTER UNO.
	DUPLEX GROUND FAULT CIRCUIT INTERRUPTER (5mA) RECEPTACLE WALL MOUNTED 6" ACT OR 48" A.F.F. TO CENTER UNO.
	QUADRAPLEX RECEPTACLE WALL MOUNTED 24" A.F.F. TO CENTER UNO. GROUND FAULT CIRCUIT INTERRUPTER (5mA)

MECHANICAL GENERAL NOTES/SPECIFICATIONS

1. ALL MECHANICAL EQUIPMENT AND INSTALLATIONS SHALL CONFORM WITH THE REQUIREMENTS OF THE APPLICABLE INTERNATIONAL MECHANICAL CODE, INTERNATIONAL BUILDING CODE, THE STATE ENERGY CODE, NFPA 90A, 101, AND ALL APPLICABLE CODES AND LOCAL ORDINANCES. 2. PRIOR TO PURCHASING ANY MATERIALS OR STARTING ANY WORK, CONTRACTOR SHALL FIELD VERIFY AND COORDINATE ALL CONDITIONS, DUCTWORK SIZES AND LOCATIONS, EQUIPMENT, ETC. SHOWN ON THE DRAWINGS OR AFFECTING THIS WORK AND SHALL REPORT ANY DEVIATIONS TO THE ARCHITECT. WHEN SUBMITTING A BID, THIS CONTRACTOR VERIFIES THAT EXISTING CONDITIONS HAVE BEEN VERIFIED.

3. SHOP DRAWINGS SHALL BE SUBMITTED TO AND APPROVED BY THE ARCHITECT PRIOR TO ORDERING, PURCHASING, OR FABRICATING ANY MECHANICAL EQUIPMENT. EQUIPMENT SHALL BE AS SCHEDULED PER MODEL NUMBER GIVEN OR AN APPROVED EQUAL. SHOP DRAWINGS SHALL INCLUDE: ALL NEW EQUIPMENT SCHEDULED OR SPECIFIED ON THE DRAWINGS. SHOP DRAWINGS SHALL HAVE THE EQUIPMENT LABELED TO MATCH THE UNIT DESIGNATION SHOWN ON THE DRAWINGS. PROVIDE ALL INFORMATION INDICATED IN THE SCHEDULES OR ON THE DRAWINGS. SUBMIT ALL EQUIPMENT AT THE SAME TIME IN ELECTRONIC FORMAT OR OTHERWISE PAY THE

HOURLY ADD-SERVICE FEE TO HAVE THE ENGINEER SCAN THEM. 4. CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH ELECTRICAL DRAWINGS PRIOR TO ORDERING EQUIPMENT OR SUBMITTING SHOP DRAWINGS, AND SHALL FURNISH EQUIPMENT WIRED FOR THE VOLTAGES SHOWN THEREIN.

5. ALL MECHANICAL EQUIPMENT REQUIRING ELECTRICAL POWER SHALL BE INSTALLED WITH DISCONNECT SWITCHES AT EACH PIECE OF EQUIPMENT. COORDINATE SWITCH TYPE (FUSED OR NON-FUSED) WITH EQUIPMENT CHARACTERISTICS, MANUFACTURER'S RECOMMENDATIONS AND ELECTRICAL DRAWINGS.

6. ALL REQUIRED CONTROL WIRING NOT SHOWN ON THE ELECTRICAL DRAWINGS SHALL BE INCLUDED AS PART OF THE MECHANICAL WORK. 7. UNLESS NOTED OTHERWISE, DISCONNECTS, SMOKE DETECTORS, TRANSFORMERS, CONTROLS AND CONTROL WIRING REQUIRED FOR ALL MECHANICAL SYSTEMS SHALL

BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.

8. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. 9. ALL MECHANICAL EQUIPMENT AND SYSTEMS SHALL BE GUARANTEED FOR A PERIOD EQUAL TO MFR'S STANDARD WARRANTIES AFTER ACCEPTANCE BY OWNER.

10. ALL PERMITS SHALL BE OBTAINED AND PAID FOR BY THE MECHANICAL CONTRACTOR. 11. ALL WORK SHALL BE COORDINATED AND PERFORMED WITH PRIOR APPROVAL FROM THE OWNER TO SUIT THEIR OPERATING CONDITIONS.

12. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL MECHANICAL EQUIPMENT, CONTROLS, APPURTENANCES, ETC. TO FIT WITHIN THE SPACE ALLOWED BY THE ARCHITECTURAL AND STRUCTURAL CONDITIONS. CUTTING OR OTHERWISE ALTERING ANY STRUCTURAL MEMBERS SHALL NOT BE PERMITTED WITHOUT WRITTEN

PERMISSION FROM THE ENGINEER/ARCHITECT. 13. THERMOSTATS SHALL NOT HAVE MERCURY. MOUNT THERMOSTATS 46" AFF UNLESS NOTED OTHERWISE.

14. ALL EQUIPMENT SHALL BE LABELED WITH BAKELITE PLASTIC ENGRAVED NAMEPLATES WITH MINIMUM 1" LETTERING.

15. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND DO NOT NECESSARILY REFLECT ALL EXISTING CONDITIONS OR ACTUAL ROUTING. CONTRACTOR SHALL HAVE LATITUDE TO ADJUST ROUTING AS REQUIRED WHILE REMAINING CODE COMPLIANT. ENGINEER SHALL REVIEW ANY MAJOR DEVIATIONS FROM PLAN IF REQUIRED BY AHJ. 16. CONTROLS:

A. EF-1: IN NORMAL VENTILATION MODE, FAN SHALL RUN SUBJECT TO SPACE THERMOSTAT (SEE PLANS). DURING PURGE MODE, UNIT HEATER IN SPACE SHALL STOP (IF RUNNING). ONCE REMOTE SWITCH IS FLIPPED "OFF", FAN SHALL REVERT BACK TO THERMOSTATIC CONTROL. COORDINATE ALL INTERLOCKS & SEQUENCES WITH \mid ELECTRICAL TRADE. VENTILATION FANS SHALL OPERATE SUBJECT TO THEIR RESPECTIVE SPACE-MOUNTED T-STATS.

ELECTRIC	AL ABBREVIATIONS	GRS	GALVANIZED RIGID STEEL	ST	SHUNT TRIP
A, AMP	AMPERE	HD	HAND DRYER	SWBD	SWITCHBOARD
ACSR	ALUMINUM CONDUCTOR STEEL-REINFORCED	HP	HORSEPOWER	TEL	TELEPHONE
AF	AMPS FRAME	KV	KILOVOLT	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
AFF	ABOVE FINISHED FLOOR	KVA	KILOVOLT AMPERES	TYP	TYPICAL
AIC	AMPS INTERRUPTING CAPACITY (SYM RMS)	KW	KILOWATT	UG	UNDERGROUND
	AMPS TRIP	MIN	MINIMUM	UNO	UNLESS NOTED OTHERWISE
AWG	AMERICAN WIRE GAUGE	N12	NEMA 12 RATED FOR DUST ENCLOSURE	V	VOLT
	FIXTURE DESIGNATION (#) INDICATES #OF FIXTURES TOTAL	N3R	NEMA 3R RATED FOR EXTERIOR USE	VA	VOLT AMPERE
	CONDUIT	NIC	NOT IN THIS CONTRACT	W	WATT
CKT	CIRCUIT	NL	NIGHT LIGHT	WP	WEATHERPROOF
	COPPER	NEC	NATIONAL ELECTRIC CODE	UNO	UNLESS NOTED OTHERWISE
DETD	DUAL ELEMENT TIME DELAY	PNL	PANEL	UP	UNDERGROUND PRIMARY
EC	EMPTY CONDUIT	Р	POLE	US	UNDERGROUND SECONDARY
ELEC	ELECTRIC OR ELECTRICAL	PH	PHASE	XFMR	TRANSFORMER
EPR	ETHYLENE-PROPYLENE RUBBER INSULATION	PSI	POUNDS PER SQUARE INCH	#	NUMBER
ER	EXISTING ITEM TO BE REMOVED	PVC	POLYVINYL CHLORIDE		
	EXISTING TO REMAIN	RECPT	RECEPTACLE		
EXIST	EXISTING	REQD	REQUIRED		
FACP	FIRE ALARM CONTROL PANEL	RL	EXISTING ITEM TO BE RELOCATED		
GFI	GROUND FAULT INTERRUPTER	RU	RACK UNIT		
	GROUND	SPD	SURGE PROTECTIVE DEVICE		
GFE	GOVERNMENT FURNISHED EQUIPMENT	SPEC	SPECIFICATIONS		

1. 120/240V, SINGLE PHASE, 3W OVERHEAD SERVICE BY UTILITY COMPANY.

2. UTILITY COMPANY FURNISHED BY SAME INSTALLED BY ELECTRICAL CONTRACTOR.

3. GROUND AS PER NEC

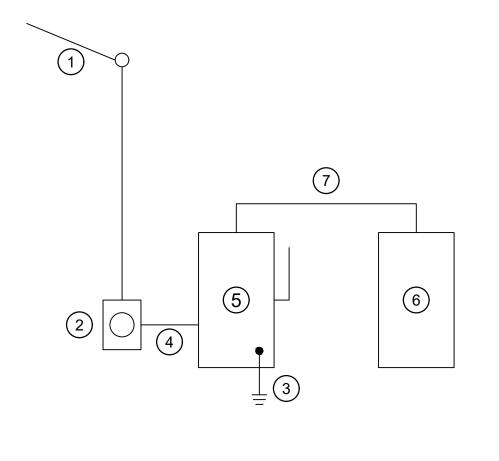
4. 3# 3/0 - 2"C

5. 200 AMP, 2 POLE NEMA 3R SE LABEL DISCONNECT SWITCH FUSED AT 200 A DETD.

6. PANEL 'LA' SEE SCHEDULE FOR REQUIREMENTS.

7. 3#3/0 & 1#6(G) - 2"C

POWER 1 RISER DIAGRAM



						LUMI	NAIRE SCHEDULE	
FIXTURE	V() \(\Delta () =		MAKE	MOUNTING TYPE	MODEL	DESCRIPTION		
MARK	NO	WATTS	TYPE					
Α	1	82	LED	UNV	DAY BRITE	PENDANT	RHG1020L8CST-UN3-DIM - RHGSM16CLTC	ROUNDFIELD-SELECTABLE LUMEN HIGHBAY, INCLUDES 16" DIAMETER CLEAR TUFTED COARSE REFLECTOR
В	1	25	LED	UNV	STONCO	PENDANT	LPGC-A02-840-5SQ-PEN-UNV	CANOPY LIGHT, TYPE-5 DISTRIBUTION, BRONZE FINISH
EM	2	0.6	LED	120	BEGHELLI	WALL	EPE-AT	2 LED HEAD EMERGENCY BATTERY UNIT WITH WHITE FINISH, AUTO-TEST
FL	1	60	LED	120	STONCO	WALL	SF60-SCT-U-G2-10-BZ	TWIN FLOODLIGHT, BRONZE FINISH.
Х	1	10	LED	120	CHLORIDE	UNV	VE SERIES	EXIT SIGN, WHITE POLYCARBONATE HOUSING WITH RED LETTERS AND BATTERY

LUMINAIRE SCHEDULE NOTES:

1. EQUIVALENT PRODUCTS WILL BE REVIEWED PROVIDED THE REQUIREMENTS FOR PRIOR APPROVAL OUTLINED IN THE SPECIFICATIONS ARE MET.

2. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL FIXTURE MOUNTING PROVISIONS WITH THE ASSOCIATED CEILING TYPE(S) BEFORE ORDERING FIXTURES 3. IN ORDER TO ENSURE PROPER COORDINATION AND LONG TERM SUPPORT FOR THE OWNER, ALL LIGHTING FIXTURES WILL BE PURCHASED THROUGH A MANUFACTURER'S REPRESENTATIVE AND DISTRIBUTORS LOCATED WITHIN ONE HUNDRED AND FIFTY (150)MILES OF THE PROJECT SITE. SUBMITTALS RECEIVED THAT DO NOT COMPLY WITH THIS

4. ALL EMERGENCY AND EXIT LIGHTS WILL BE CONNECTED TO UNSWITCHED HOT LEG SO THAT BATTERY OPERATES UPON POWER FAILURE.

REQUIREMENT WILL BE REJECTED WITHOUT REVIEW. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY DELAYS CAUSED B

5. PRODUCTS PROPOSED MUST MEET OR EXCEED QUALITY, FUNCTIONALITY, SHAPE, LUMEN OUTPUT, ETC OF PRODUCT LISTED BY CATALOG NUMBER.

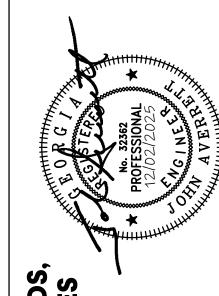
6. SOME LISTED CATALOG NUMBERS MAY INCLUDE MODIFICATIONS OF A MANUFACTURER'S STANDARD PRODUCT.

ANY AND ALL DIMENSIONAL DIFFERENCES MUST BE COORDINATED PRIOR TO RELEASE OF ORDER.

	PAN	EL	.BC	AF	RD	LA	5	CH	E	DULE	
LOCAT	ION SHOP		200A ML	.0							
VOLTA	GE 120/240		SYSTEM	/I: 1Ø, 3	WIRE						
TRIM	SURFACE		INTERR	UPTING	RATIN	G: 10K	AIC				
CKT	LOAD	BR	REAKER	PHAS	E (KW)	PHASI	E (KW)	BREAK	ER	LOAD	CKT
#	DESCRIPTION	Р	TRIP	Α	В	Α	В	TRIP	Р	DESCRIPTION	#
1	RECEPTACLES	1	20	0.50		1.20		20	1	LIGHTING	2
3	RECEPTACLES		20		0.50		1.20	20	1	EXT. LIGHTS	4
5	RECEPTACLES	1	20	0.50		0.60		20	1	FLOOD LIGHTS	6
7	RECEPTACLES	1	20		0.50		0.50	20	1	MTR LOUVER	8
9	RECEPTACLES	1	20	0.50		1.00		20	1	CAMERA RECEPTACLES	10
11	RECEPTACLES	1	20		0.50		1.00	20	1	CAMERA RECEPTACLES	12
13	RECEPTACLES	1	20	0.50		0.80		20	1	RECEPTACLES	14
15	RECEPTACLES	1	20		0.50					BUSSED SPACE	16
17	RECEPTACLES	1	20	0.50						BUSSED SPACE	18
19	RECEPTACLES	1	20		0.50					BUSSED SPACE	20
21	RECEPTACLES	1	20	0.50						BUSSED SPACE	22
23	RECEPTACLES	1	20		0.50		1.00	20	1	EXFIFAN	24
25	ELECTRIC HEATER	1	20	0.30		1.00		20 1		EAFIFAIN	26
27	SPARE	1	20				1.00	20	1	DAE	28
29	SPARE	1	20			1.00		20	1	BAF	30

PANELBOARD NOTES

- 1. PANELBOARDS SHALL BE INSTALLED IN SUCH A MANNER TO MAINTAIN ALL CLEARANCES IN ACCORDANCE WITH THE NEC.
- 2. ALL PANELBOARDS SHALL BE UL LISTED AND INSTALLED IN ACCORDANCE WITH THAT LISTING.
- 3. PANELBOARDS SHALL BE FURNISHED COMPLETE WITH THE PROPERLY SIZED CAN, INTERNAL HARDWARE, COMPONENTS,
- SUPPORTING STRUCTURES, ETC., FOR A COMPLETE INSTALLATION.
- 4. FURNISH EACH PANELBOARD WITH A GROUND BAR BONDED TO THE PANEL ENCLOSURE.
- 5. EACH PANELBOARD SHALL HAVE A NAMEPLATE AS SHOWN IN DETAIL. ENGINEER WILL NOT ACCEPT JOB UNTIL THESE NAMEPLATES ARE PROVIDED.
- 6. ALL PANELBOARDS SHALL BE CLEARLY MARKED TO COMPLY WITH NEC 110.16 & NEC110.24 REGARDING POTENTIAL HAZARDS OF ARC FLASH.
- 7. PROVIDE TYPED CIRCUIT DIRECTORY THAT INDICATES WHAT EACH CIRCUIT IS SERVING. LIGHTING AND RECEPTACLE
- CIRCUITS WILL INCLUDE THE ROOM NUMBERS THAT CIRCUIT IS SERVING. 8. PROVIDE THE PROPERLY SIZED CONDUCTOR TERMINATION POINTS OR LUGS (MULTIPLE LUGS WHEN PARALLEL FEEDERS
- ARE USED) FOR THE NUMBER AND SIZE CIRCUITS INDICATED.
- 9. THE TERMINATION POINT OF THE FEEDER SERVING EACH ASSEMBLY SHALL BE AT THE NEAREST POINT OF FEEDER ENTRY TO MINIMIZE CONDUCTOR FILL IN THE CAN. COORDINATE TOP/BOTTOM FED PANELBOARD PROVISIONS WITH EACH FEED INSTALLATION.



INSPECTION FEES.

THE PLANS. B. ALL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, NFPA, STATE BUILDING CODE, AND ANY OTHER LOCAL REQUIREMENTS THAT MAY

INSPECTIONS, ETC. C. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL ELECTRICAL PERMITS AND

APPLY. CONTRACTOR SHALL PAY FOR ALL REQUIRED PERMITS, FEES,

D. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BE LISTED BY THE UNDERWRITER'S LABORATORIES, INC. OR BY A STATE APPROVED THIRD PARTY TESTING AGENCY FOR THE USE INTENDED WHERE A STANDARD FOR SUCH MATERIALS AND USE EXISTS. ALL ITEMS OF THE SAME TYPE AND RATING SHALL BE IDENTICAL AND OF THE SAME MANUFACTURER.

E. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND CATALOG DATA IN ELECTRONIC FORMAT (PDF) FOR ALL ELECTRICAL ITEMS IN THE SCOPE OF WORK, INCLUDING, BUT NOT LIMITED TO, RACEWAYS, BOXES, FITTINGS, CONDUCTORS, LUMINAIRES, LAMPS, BALLASTS, WIRING DEVICES, SAFETY SWITCHES, DISCONNECTS, TRANSFORMERS. PANELBOARDS. SWITCHBOARDS. SWITCHGEARS. MOTOR CONTROL CENTERS (MCC), BUSWAYS, GENERATORS, AUTOMATIC TRANSFER SWITCHES (ATS), UNINTERRUPTIBLE POWER SUPPLY (UPS), POWER DISTRIBUTION UNITS (PDU), FLOOR/REMOTE DISTRIBUTION CABINETS (FDC/RDC), STATIC TRANSFER SWITCHES (STS), FIRE ALARM, TELECOMMUNICATIONS, ETC. FOR APPROVAL AS APPLICABLE FOR THE PROJECT. ONE COMPLETE SET OF APPROVED SUBMITTALS SHALL BE MAINTAINED AT THE JOB SITE.

ALL COST ASSOCIATED WITH SUBSTITUTED EQUIPMENT TO COMPLY WITH THE BASIS OF DESIGN, INCLUDING PROVIDING MAINTENANCE ACCESS, CLEARANCE CONDUIT, WIRING, REPLACEMENT OF OTHER SYSTEM COMPONENTS, BUILDING ALTERATIONS, METHODS, ETC., SHALL BE INCLUDED IN THE ORIGINAL BASE BID. NO ADDITIONAL COSTS ASSOCIATED WITH SUBSTITUTED EQUIPMENT WILL BE APPROVED AFTER BIDS HAVE BEEN ACCEPTED AND ALL COSTS WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. CREDITS SHALL BE GIVEN TO THE OWNER WHERE SUCH EQUIPMENT AND METHODS RESULT IN LESS EXPENSE TO THE CONTRACTOR.

ONE COMPLETE SET OF THE LATEST CONSTRUCTION PLANS OF ALL TRADES SHALL BE MAINTAINED AT THE JOB SITE. IN ADDITION, ALL ADDENDUMS, BULLETINS. AND/OR SKETCHES SHALL BE INCORPORATED INTO THE ON-SITE CONSTRUCTION PLANS AS THE JOB PROGRESSES.

H. COMPLETELY ADEQUATE HOUSING SHALL BE PROVIDED FOR ALL MATERIALS STORED ON JOB SITE. ONLY CONDUIT MAY BE STORED OUTSIDE, BUT NOT IN CONTACT WITH THE GROUND.

THE CONDUIT AND NEUTRAL SYSTEM SHALL BE GROUNDED AT THE MAIN SERVICE EQUIPMENT. GROUNDING ELECTRODE SYSTEM SHALL BE INSTALLED PER NEC 250. J. PROVIDE AN INTERSYSTEM BONDING TERMINATION DEVICE AT THE MAIN ELECTRICAL SERVICE PER NEC 250.94.

K. WIRING SHALL BE TESTED FOR CONTINUITY AND GROUNDS BEFORE BEING ENERGIZED. FAULTY WIRING SHALL BE REPLACED AT NO ADDITIONAL EXPENSE TO THE OWNER.

PROVIDE ALL CUTTING AND PATCHING FOR INSTALLATION OF WORK AND REPAIR ANY DAMAGE DONE.

M. THE ELECTRICAL CONTRACTOR SHALL CONNECT ALL EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS (UNLESS OTHERWISE NOTED), EXCEPT FOR CONTROL WIRING FOR EQUIPMENT NOT PROVIDED BY THE ELECTRICAL CONTRACTOR. CONTROL WIRING FOR SUCH EQUIPMENT SHALL BE PROVIDED BY THE RESPECTIVE DISCIPLINE.

N. ALL ELECTRICAL JUNCTION BOXES, SWITCHGEAR, CABLING, VOICE/DATA OUTLETS, LOW VOLTAGE CABINETS, EMERGENCY RECEPTACLES, ETC. SHALL BE LABELED ACCORDING TO PANEL/RACK AND CIRCUIT NUMBER.

 UPON COMPLETION OF WORK. CONTRACTOR SHALL PRESENT ENGINEER WITH CERTIFICATE OF APPROVAL FROM LOCAL INSPECTOR AND/OR AUTHORITY HAVING JURISDICTION BEFORE WORK WILL BE APPROVED FOR FINAL PAYMENT.

P. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS FOR A PERIOD OF ONE YEAR EFFECTIVE THE DATE THE PROJECT IS ACCEPTED BY THE OWNER. ANY IMPERFECT MATERIALS OR WORKMANSHIP SHALL BE REPLACED WITHOUT ADDED COST TO THE PROJECT.

Q. IT SHALL NOT BE THE INTENT OF ISSUED PLANS AND/OR SPECIFICATIONS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE ELECTRICAL CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL NECESSARY ITEMS FOR A COMPLETE AND OPERATING SYSTEM.

THE WORD "PROVIDE" MEANS THAT THIS CONTRACTOR SHALL FURNISH, FABRICATE, ERECT, CONNECT, AND COMPLETELY INSTALL SYSTEMS IN PROPER OPERATING CONDITION. ALL LABOR, PRODUCT OPTIONS, ACCESSORIES AND INCIDENTAL MATERIALS REQUIRED SHALL BE INCLUDED AS PART OF THIS WORK TO COMPLETE THE INSTALLATION.

THE WORD "CONNECT" MEANS THAT THIS CONTRACTOR SHALL PROVIDE (SEE DEFINITION ABOVE) ALL DISCONNECTING MEANS, OVERCURRENT PROTECTION AND WIRING REQUIRED TO PLACE THE EQUIPMENT AND SYSTEMS IN PROPER OPERATING CONDITION AND TO COMPLY WITH CODE REQUIREMENTS

CONTRACTOR SHALL COORDINATE THE ROUGH-IN OF ALL OUTLET LOCATIONS WITH ARCHITECTURAL FLOOR PLANS, ELEVATIONS, AND MILLWORK SHOP DRAWINGS PRIOR TO ROUGH-IN.

U. ELECTRICAL CONTRACTOR SHALL NOT SCALE PLANS. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF ALL EQUIPMENT, UNLESS OTHERWISE NOTED.

 V. IF DURING THE COURSE OF WORK, THE CONTRACTOR DISCOVERS A PROBLEM WITH THE PERFORMANCE OF THE INSTALLATION RELATIVE TO THE PLANS AND SPECIFICATIONS, THE NEC, OR OTHER CODES OR REQUIREMENTS, THE CONTRACTOR SHALL IMMEDIATELY BRING THE PROBLEM TO THE ATTENTION OF THE ARCHITECT AND/OR ENGINEER FOR RESOLUTION PRIOR TO THE EXECUTION OF THE WORK.

W. WHERE THERE ARE CONFLICTS BETWEEN THE PLANS AND SPECIFICATIONS, THE CONTRACTOR SHALL BRING THE ISSUE TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION PRIOR TO THE EXECUTION OF THE WORK OR ORDERING ANY MATERIALS. NO ADDITIONAL COSTS SHALL BE WARRANTED WITHOUT A CHANGE

TO THE PROJECT SCOPE. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PROVIDING TEMPORARY POWER AND LIGHTING FOR ALL TRADES. AT NO TIME SHALL EXISTING BUILDING POWER SYSTEMS BE UTILIZED WITHOUT WRITTEN PERMISSION FROM THE OWNER

Y. COORDINATE LOCATION AND REQUIREMENTS FOR ELECTRICAL SERVICE WITH THE POWER COMPANY. WHERE MORE THAN ONE SERVICE IS SUPPLIED TO A BUILDING, PROVIDE IDENTIFICATION AT EACH SERVICE PER NEC 230-2(E).

EACH BIDDER SHALL VISIT THE JOB SITE PRIOR TO BIDDING TO FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND TO ASCERTAIN THE EXTENT OF WORK REQUIRED. FAILURE TO VISIT SITE SHALL NOT EXCUSE CONTRACTOR FROM PERFORMING REQUIRED WORK NOR SHALL IT BE AN ACCEPTABLE REASON FOR REQUESTING ADDITIONS TO THE CONTRACT.

RACEWAY:

SECURED.

A. CONDUIT SHALL BE MANUFACTURED BY ALLIED, WHEATLAND, REPUBLIC CONDUIT,

WESTERN TUBE, OR APPROVED EQUIVALENT. B. FOR INTERIOR WORK, CONDUIT SHALL BE ZINC COATED EMT EXCEPT WHERE NOT PERMITTED BY CODE. USE SCHEDULE 40 PVC BELOW CONCRETE SLAB, IN DUCTBANKS, AND FOR EXTERIOR WORK WHERE NOT SUBJECT TO DAMAGE. USE IMC WHERE SUBJECT TO PHYSICAL DAMAGE.

C. EMT FITTINGS SHALL BE COMPRESSION GLAND TYPE, OF MALLEABLE STEEL. CONNECTORS SHALL HAVE INSULATED THROATS. CAST, SET SCREW, OR INDENTER TYPE FITTINGS ARE NOT ACCEPTABLE. ALL FITTINGS FOR EMT SHALL BE MADE OF STEEL.

D. ALL RACEWAY SHALL BE RUN CONCEALED, UNLESS OTHERWISE NOTED. FISH ALL NEW OUTLETS IN EXISTING WALLS. WHERE POSSIBLE. ALL RUNS SHALL BE NEAT AND SQUARE.

RACEWAY PENETRATIONS THROUGH FLOOR SLABS AND FIRE-RATED WALLS SHALL BE FILLED WITH IMPERVIOUS, NON-SHRINK GROUT SUFFICIENTLY TIGHT TO PREVENT THE TRANSFER OF SMOKE, WATER, AND DUST. ROOF PENETRATIONS SHALL BE WITHIN THE EQUIPMENT ROOF CURB.

WHETHER EXPOSED OR NOT AND SUPPORTED FROM STRUCTURE AND PROPERLY

SUPPORT ALL CONDUIT WITH STRAPS AND CLAMPS. ALL CONDUIT SHALL BE RUN PARALLEL OR PERPENDICULAR TO BUILDING LINES,

H. WHERE CONDUITS PASS THROUGH A BUILDING EXPANSION JOINT, PROVIDE

GALVANIZED EXPANSION FITTINGS WITH BONDING JUMPERS. MINIMUM CONDUIT SIZE SHALL BE 3/4" FOR INTERIOR WORK, 1" FOR EXTERIOR

WORK. PROVIDE MINIMUM 210# TEST NYLON PULL CORD AND NYLON BUSHINGS IN ALL

EMPTY RACEWAYS K. LIQUID-TIGHT METAL CONDUIT SHALL ONLY BE USED FOR FINAL CONNECTIONS TO

EQUIPMENT AND ALL OTHER ROTATING AND VIBRATING EQUIPMENT. MAXIMUM LENGTH OF 3'-0". L. FLEXIBLE METAL CONDUIT, MINIMUM SIZE 1/2", SHALL ONLY BE USED FOR FINAL

CONNECTION TO LIGHTING FIXTURES, MAXIMUM LENGTH OF 6'-0". M. PROVIDE PULL BOXES. SUCH THAT NO SINGLE CONDUIT RUN HAS BENDS IN EXCESS OF 360°. PULL BOXES SHALL BE SUITABLE AND APPROVED FOR THE INTENDED USE. WHERE CONDUITS PASS UNDER PAVED AREAS, THEY SHALL BE RGS.

OUTLET BOXES

 A. JUNCTION AND PULL BOXES SHALL BE CODE GAUGE GALVANIZED STEEL ACCEPTED MANUFACTURERS SHALL BE STEEL CITY (THOMAS & BETTS), RACO. CROUSE-HINDS, APPLETON (EMERSON), OR APPROVED EQUIVALENT B. OUTLET BOXES SHALL NOT BE MOUNTED BACK TO BACK IN COMMON WALLS.

 ATTACH EMT WITH CONNECTORS HAVING INSULATED THROAT. D. ATTACH BOXES TO STUD WORK USING CADDY BAR STRAPS THAT CONNECT TO

TWO ADJACENT STUDS TO PREVENT TWISTING OF BOX IN WALL.

E. ALL EXTERIOR BOXES SHALL BE WATER-TIGHT.

4. <u>CONDUCTORS:</u>

A. CONDUCTORS SHALL BE MANUFACTURED BY SOUTHWIRE (SIMPULL), ENCORE (SUPERSLICK), UNITED COPPER (SLK), CERRO (SLP), OR APPROVED EQUAL, "PRE-LUBRICATED" BY THE MANUFACTURER

B. ALL CONDUCTORS SHALL BE COPPER, RATED 75° C WET/DRY EXCEPT WHERE

OTHERWISE NOTED OR REQUIRED BY U.L. OR OTHER CODES. C. ALL CONDUCTORS SHALL BE SINGLE INSULATED CONDUCTOR, THHN/THWN-2. SIZES #10 AWG AND SMALLER SHALL BE SOLID, SIZES #8 AWG AND LARGER SHALL BE STRANDED.

D. BRANCH CIRCUITS SHALL NOT BE SMALLER THAN #12 AWG. CONTROL WIRING MAY BE #14 AWG.

E. CONDUCTORS SHALL BE COLOR CODED BLACK/RED/BLUE FOR 120/208 VOLT SYSTEMS AND BROWN/ORANGE/YELLOW FOR 277/480 VOLT SYSTEMS FOR A, B, AND C PHASES, RESPECTIVELY. NEUTRAL SHALL BE WHITE FOR 120/208 VOLT SYSTEMS AND NATURAL GRAY FOR 277/480 VOLT SYSTEMS. GROUND CONDUCTOR 9. SHALL BE GREEN ON ALL SYSTEMS. ALL CONDUCTOR SIZES SHALL HAVE COLOR-CODED INSULATION. THE USE OF COLORED TAPE ON LARGER WIRE SIZES

SHALL NOT BE ALLOWED. F. INSULATION SHALL BE DUAL RATED TYPE THHN/THWN-2 FOR FEEDERS AND BRANCH CIRCUITS. FIXTURE TAPS SHALL BE #12 THHN/THWN-2 IN FLEX WITH

GREEN #12 AWG GROUNDING CONDUCTOR. G. ALL CONDUCTORS SHALL BE IN CONDUIT.

NEUTRAL CONDUCTOR.

H. WIRING TO LIGHTING FIXTURES SHALL BE AS REQUIRED BY UL LABEL. MULTI-WIRE BRANCH CIRCUITS SHALL NOT BE ALLOWED, UNLESS EXPLICITLY INDICATED ON THE DRAWINGS. WHERE EXPLICITLY INDICATED ON THE DRAWINGS: 1) ALL 20A MULTI-WIRE RECEPTACLE CIRCUITS SHALL UTILIZE A #10 AWG

2) ONLY WHERE PERMITTED UNDER "RACEWAYS", MC CABLE ASSEMBLIES CAN BE AFC "SUPER NEUTRAL" OR EQUAL, UNLESS OTHERWISE INDICATED ON THE DRAWINGS. WHERE MULTI-WIRE BRANCH CIRCUITS ARE EXPLICITLY INDICATED ON THE DRAWINGS, THEY SHALL BE INSTALLED PER NEC 210.4. MEANS SHALL BE PROVIDED TO SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE POINT WHERE THE BRANCH CIRCUIT

ORIGINATES IN ADDITION TO OTHER REQUIREMENTS PER NEC 210.4. J. JOINTS IN #10 AWG AND SMALLER SHALL BE MADE UP WITH CRIMPED CONNECTORS WITH INSULATING CAPS (NO TAPE) OR WIRENUTS (MAXIMUM OF 3 CONDUCTORS UNDER ANY CONNECTOR OR WIRENUT). LARGER WIRE SHALL USE SPLIT BOLTS OR BOLTED CLAMPS.

K. ALL WIRING LUGS THROUGHOUT THE PROJECT, INCLUDING, BUT NOT LIMITED TO. BREAKERS, PANELBOARD/SWITCHBOARD LUGS, SAFETY SWITCH LUGS, MOTOR STARTER LUGS, TRANSFORMERS LUGS, WIRING DEVICE TERMINALS, AND ALL EQUIPMENT LUGS/TERMINALS SHALL BE RATED FOR USE WITH 75 DEGREE INSULATED CONDUCTORS AT THEIR 75 DEGREE AMPACITY AND SHALL BE SIZED TO 11. MATCH THE CONDUCTOR SIZE.

CIRCUIT JOINTS SHALL NOT BE MADE ON DEVICE TERMINALS

M. WIRE WITHIN PANELBOARDS SHALL BE NEATLY TRAINED, SQUARED, BUNCHED, AND TAGGED.

N. GROUND ALL EQUIPMENT PER NEC ARTICLE 250. BOND WHERE CONDUITS ENTER ENCLOSURES THROUGH CONCENTRIC KNOCKOUTS. ALL FLEX, INCLUDING FIXTURE TAPS, SHALL INCLUDE GREEN GROUNDING CONDUCTOR, #12 AWG MINIMUM. PROVIDE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR IN EACH CONDUIT, SIZED PER NEC 250-127.

O. ALL CONDUCTORS INSTALLED IN VERTICAL RACEWAYS SHALL BE SUPPORTED AT INTERVALS AS REQUIRED PER NEC 300-19.

WIRING DEVICES:

A. WIRING DEVICES SHALL BE SPECIFICATION GRADE, MINIMUM, EQUAL TO COOPER QUALITY INDICATED BELOW OR AS MANUFACTURED BY HUBBELL, LEGRAND-PASS & SEYMOUR, LEVITON, OR APPROVED EQUAL, UNLESS OTHERWISE NOTED:

SWITCHES (120/277V) SHALL BE AS FOLLOWS:

SINGLE-POLE 20 AMP COOPER AH1221 DOUBLE-POLE 20 AMP COOPER AH1222 THREE-WAY 20 AMP COOPER AH1223 FOUR-WAY 20 AMP COOPER AH1224

DUPLEX RECEPTACLES SHALL HAVE A NYLON FACE AND SHALL BE AS FOLLOWS:

20 AMP DUPLEX 20 AMP DUPLEX GFCI

COOPER 5352 COOPER VGF20F

THE PART NUMBERS ABOVE ARE FOR WIRING DEVICE TYPE ONLY. SEE BELOW FOR WIRING DEVICE COLOR AND PLATE MATERIAL/COLOR.

B. SEE MOUNTING HEIGHT ELEVATION DETAIL FOR STANDARD MOUNTING HEIGHTS OF ALL DEVICES, UNLESS OTHERWISE NOTED.

C. ALL WIRING DEVICES (SWITCHES AND RECEPTACLES) SHALL BE GRAY, UNLESS OTHERWISE NOTED. ALL COVER PLATES SHALL BE 302 STAINLESS STEEL. COVER PLATES IN MASONRY WALLS SHALL BE OVERSIZE TYPE. OR ALL WIRING DEVICES (SWITCHES AND RECEPTACLES) AND PLATES SHALL MATCH EXISTING IN MATERIAL AND COLOR, UNLESS OTHERWISE NOTED. COVER PLATES IN MASONRY WALLS SHALL BE JUMBO SIZE. OR THE COLOR OF ALL WIRING DEVICES (SWITCHES AND RECEPTACLES) SHALL BE AS DIRECTED BY THE ARCHITECT, UNLESS OTHERWISE NOTED. ALL COVER PLATES SHALL BE 302 STAINLESS STEEL. COVER PLATES IN

MASONRY WALLS SHALL BE JUMBO SIZE. D. EACH DUPLEX RECEPTACLE INDICATED TO BE ON A DEDICATED CIRCUIT SHALL BE

20 AMP TYPE.

THE BREAKER SERVING THE DEVICE.

ADJACENT DEVICES SHALL HAVE A COMMON WALL PLATE. F. WEATHERPROOF COVERS SHALL BE "WHILE-IN-USE" SO PLUGS MAY BE INSTALLED WITHOUT COMPROMISING THE WP FUNCTION. COOPER #WIU-2 DOUBLE-GANG WITH CLEAR COVER OR APPROVED EQUAL.

G. A MAXIMUM OF 10 GENERAL PURPOSE RECEPTACLES SHALL BE ON EACH BRANCH CIRCUIT.

H. ALL WALL MOUNTED OCCUMPANCY/VACANCY SENSORS/SWITCHES SHALL BE INSTALLED WITH AN EQUIPMENT GROUNDING CONDUCTOR GROUND-FAULT CIRCUIT-INTERRUPTER (GFCI) PROTECTION FOR PERSONNEL SHALL BE PROVIDED IN ALL LOCATIONS PER NEC 210.8. WHERE A DEVICE

LOCATION IS NOT ACCESSIBLE, THE GFCI PROTECTION SHALL BE PROVIDED WITH

SUPPORTS:

A. ALL EQUIPMENT SHALL BE ADEQUATELY SUPPORTED FROM STRUCTURE. B. INSERTS IN MASONRY SHALL BE LEAD OR FIBER IN DRILLED HOLES, OR CAST IN

PLACE.

NAILS OR POWDER ACTUATED FASTENERS SHALL NOT BE USED. D. EMT/IMC/RGS SUPPORTS SHALL BE A MAXIMUM OF 8'-0" APART AND A MINIMUM OF 3'-0" FROM BOXES.

PAINTING

A. SUITABLE FINISH COAT SHALL BE PROVIDED FOR ALL EQUIPMENT. PANEL TUBS. COVERS, ETC. SHALL BE PRIMED AND ENAMELED TO BLEND WITH ADJACENT SURFACES, OR SHALL BE MANUFACTURER'S STANDARD COLOR BAKED ENAMEL

B. CONTRACTOR TO PAINT WHERE EXISTING EXPOSED PANELBOARDS, SURFACE RACEWAY, SURFACE BOXES, ETC. HAVE BEEN REMOVED DURING THE DEMOLITION PHASE, EITHER FOR TEMPORARY WORK OR PERMANENTLY.

FINISH, OR AS DIRECTED BY THE ARCHITECT.

LIGHTING FIXTURES:

H. TYPES AND MANUFACTURERS ARE SCHEDULED ON THE PLANS. EQUIVALENT FIXTURES BY OTHERS MAY BE SUBMITTED ONLY AS INDICATED ON THE PLANS AND ARE SUBJECT TO THE APPROVAL OF THE OWNER AND ENGINEER. ALL FIXTURES SHALL BE U.L. LISTED AND LABELED.

LAMPS SHALL BE GENERAL ELECTRIC, PHILIPS, OR OSRAM/SYLVANIA EXCEPT WHERE OTHERWISE NOTED IN THE LIGHTING FIXTURE SCHEDULE OR OTHERWISE NOTED. ALL FIXTURES SHALL BE EQUIPPED WITH LAMPS.

K. BALLASTS SHALL BE AS INDICATED IN THE LIGHTING FIXTURE SCHEDULE OR AS OTHERWISE NOTED.

L. ALL FIXTURES SHALL BE PROVIDED FOR PROPER VOLTAGE BASED ON THE CIRCUIT ASSIGNMENT INDICATED ON THE PLANS. M. CATALOG NUMBERS ARE FOR GENERAL IDENTIFICATION OF FIXTURES ONLY. ALL

RELATED PARTS, SUCH AS PLASTER RINGS, JUNCTION BOXES, LOUVERS, SHIELDS, MOUNTING STEMS, CANOPIES, CONNECTORS, STRAPS, NIPPLES, HARDWARE, ACCESSORIES, ETC., TO FIT THEM PROPERLY TO THE CONSTRUCTION, SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR. CONTRACTOR SHALL PROVIDE SUITABLE TRIM AND APPURTENANCES TO MOUNT FIXTURES IN TYPE OF CEILING OR WALL AS SPECIFIED IN ARCHITECTURAL FINISH SCHEDULES REGARDLESS OF CATALOG NUMBER GIVEN.

O. FIXTURES CONNECTED WITH FLEX TO THE RIGID RACEWAY PORTION OF THE

N. ALL FIXTURES SHALL BE GROUNDED PER THE NEC.

WIRING SYSTEM SHALL CARRY A GREEN BONDING JUMPER WITHIN THE FLEX. THE JUMPER SHALL BE FASTENED TO BOTH THE FIXTURE AND THE RACEWAY SYSTEM WITH A STEEL CITY "G" CLIP OR APPROVED EQUIVALENT. PHASE AND GROUND CONDUCTORS RUN IN FLEX SHALL BE #12 AWG MINIMUM. MAXIMUM FLEX LENGTH SHALL BE 6'-0".

IDENTIFICATION AND LABELING:

A. PROVIDE ENGRAVED PHENOLIC NAMEPLATES FOR ALL ELECTRICAL EQUIPMENT SUPPLIED FOR THE PROJECT, INCLUDING BUT NOT LIMITED TO, WIRING TROUGHS, SAFETY SWITCHES. DISCONNECTS. PANELBOARDS. NAMEPLATE SHALL INDICATE. THE DEVICE NAME, SYSTEM VOLTAGE (VOLTAGE/PHASE/WIRE), AND UPSTREAM DEVICE AND CIRCUIT. PROVIDE NAMEPLATES FOR CIRCUIT BREAKERS IN SWITCHGEARS, SWITCHBOARDS AND DISTRIBUTION PANELS.

B. NAMEPLATE COLORS SHALL BE AS FOLLOWS:

120/208V EQUIPMENT BLUE SURFACE WITH WHITE CORE C. NAMEPLATES UP TO 8 SQUARE INCHES SHALL NOT BE LESS THAN 1/16" THICK. NAMEPLATES LARGER THAN 8 SQUARE INCHES SHALL NOT LESS THAN 1/8" THICK. D. LETTERING HEIGHT SHALL BE 1/2" MINIMUM.

E. NAMEPLATES SHALL BE ATTACHED WITH SELF-DRILLING/SELF-TAPPING SCREWS EXCEPT RIVETS SHALL BE USED WHERE END OF SCREW IS NOT PROTECTED. **QUANTITY AS FOLLOWS:**

UP TO 5 SQUARE INCHES: 2 SCREWS. 5 TO 12 SQUARE INCHES: 4 SCREWS. ABOVE 12 SQUARE INCHES: 6 SCREWS.

A. DISCONNECT SWITCHES SHALL BE HEAVY-DUTY TYPE IN NEMA 1 ENCLOSURES UNLESS OTHERWISE NOTED, FUSED OR NON-FUSED AS INDICATED. SWITCHES SHALL HAVE REJECTION-TYPE FUSE CLIPS. SWITCHES SHALL BE BY EATON, SQUARE-D. GENERAL ELECTRIC. OR APPROVED EQUAL. FUSES SHALL BE CLASS RK5, DUAL-ELEMENT, TIME-DELAY WITH INDICATION. A SET OF 3 SPARE FUSES OF EACH SIZE AND TYPE SHALL BE FURNISHED TO THE OWNER.

PANELBOARDS:

A. PANELBOARDS SHALL BE PROVIDED AS MANUFACTURED BY EATON, SQUARE-D, GENERAL ELECTRIC, OR APPROVED EQUAL. ALL NEW EQUIPMENT FOR THE PROJECT SHALL BE BY THE SAME MANUFACTURER.

B. ALL BUSSING, INCLUDING NEUTRAL AND GROUND, SHALL BE COPPER. C. ALL BREAKERS SHALL BE AUTOMATIC THERMAL-MAGNETIC TYPE MOLDED CASE BOLT-ON TYPE, CALIBRATED FOR 40 DEGREE C, OR AMBIENT COMPENSATION,

UNLESS OTHERWISE NOTED. D. PANELS SHALL BE FULLY RATED (AIC). NO SERIES AIC RATINGS ARE ALLOWED. E. PANELS SHALL HAVE FULL SIZE EQUIPMENT GROUNDING BARS AND NEUTRAL BARS, EXCEPT WHERE INDICATED TO BE 200%.

ALL PANELBOARD AND BREAKER LUGS SHALL BE SIZED AND RATED PER THE

CONDUCTOR SIZE AND MATERIAL. G. LIGHTING AND APPLIANCE PANELS (100A-600A) SHALL HAVE FRONT ACCESSIBLE HINGED DOOR-IN-DOOR COVERS WITH DEAD FRONT, SHALL BE 20" WIDE MINIMUM WITH MINIMUM 4" WIDE WIRING GUTTERS. H. DISTRIBUTION PANELS (600A-1200A) SHALL HAVE FRONT ACCESSIBLE DEAD FRONT

COVERS. PROVIDE HANDLE LOCK-ON DEVICES FOR ALL CIRCUIT BREAKERS CONNECTED TO EMERGENCY, EXIT, NIGHT LIGHTING, FIRE ALARM, TELEPHONE BOARDS, AND

SECURITY SYSTEMS. BREAKERS USED FOR SWITCHING SHALL BE SWITCHING DUTY (SWD) RATED. K. BREAKERS USED FOR HEATING, AIR-CONDITIONING AND/OR REFRIGERATION SHALL BE HACR RATED

GROUND-FAULT CIRCUIT-INTERRUPTER (GFCI) PROTECTION FOR PERSONNEL SHALL BE PROVIDED IN ALL LOCATIONS PER NEC 210.8. WHERE A DEVICE LOCATION IS NOT ACCESSIBLE, THE GFCI PROTECTION SHALL BE PROVIDED WITH THE BREAKER SERVING THE DEVICE.

FIRE ALARM SYSTEM

N. SYSTEM SHALL BE A CENTRALIZED, ANALOG, ADDRESSABLE, FULLY ELECTRONICALLY SUPERVISED (INCLUDING AUXILIARY SYSTEMS INTERCONNECT WIRING) SYSTEM LISTED BY UL IN COMPLIANCE WITH ALL APPLICABLE NFPA 72 AND OTHER STANDARDS AS WELL AS THE AMERICAN'S WITH DISABILITIES ACT (ADA). ALL FINAL CONNECTIONS, TESTING AND ADJUSTMENTS SHALL BE PERFORMED BY OR UNDER DIRECT SUPERVISION OF AN AUTHORIZED FACTORY REPRESENTATIVE. SYSTEM SHALL BE SIMPLEX. NOTIFIER. SIEMENS. OR APPROVED EQUAL AS ACCEPTED BY THE ENGINEER. SYSTEM SHALL HAVE A 24HR MINIMUM BATTERY BACKUP. OR SYSTEM SHALL BE A 120 VAC, ZONED, NON-CODED, CLOSED CIRCUIT, FULLY ELECTRONICALLY SUPERVISED (INCLUDING AUXILIARY SYSTEMS INTERCONNECT WIRING) SYSTEM LISTED BY UL IN COMPLIANCE WITH ALL APPLICABLE NFPA 72 AND OTHER STANDARDS AS WELL AS THE AMERICAN'S WITH DISABILITIES ACT (ADA). ALL FINAL CONNECTIONS, TESTING AND ADJUSTMENTS SHALL BE PERFORMED BY OR UNDER DIRECT SUPERVISION OF AN AUTHORIZED FACTORY REPRESENTATIVE. SYSTEM SHALL BE SIMPLEX, NOTIFIER, SIEMENS, OR APPROVED EQUAL AS ACCEPTED BY THE ENGINEER. SYSTEM SHALL HAVE A 24HR MINIMUM BATTERY BACKUP. OR NEW DEVICES SHALL BE CONNECTED TO THE EXISTING FIRE ALARM SYSTEM IN COMPLIANCE WITH ALL APPLICABLE NFPA 72 AND OTHER STANDARDS AS WELL AS THE AMERICAN'S WITH DISABILITIES ACT (ADA) ALL FINAL CONNECTIONS, TESTING AND ADJUSTMENTS SHALL BE PERFORMED BY OR UNDER DIRECT SUPERVISION OF AN AUTHORIZED FACTORY REPRESENTATIVE. NEW DEVICES SHALL BE COMPATIBLE WITH THE EXISTING FIRE ALARM SYSTEM. THE CONTRACTOR SHALL FIELD VERIFY EXACT SYSTEM MANUFACTURER AND TYPE AND CAPABILITY TO MEET THE INTENT INDICATED ON THE DRAWINGS

O. INITIATING DEVICE ACTIVATION SHALL CAUSE OPERATION OF THE PROPER ALARM CIRCUIT IN THE CONTROL PANEL, AND OPERATE ALL AUDIBLE AND VISUAL

INDICATING ALARMS. MANUAL STATIONS SHALL BE NON-CODED, WITH PULL LEVER AND GLASS ROD, SEMI-FLUSH MOUNTED. COMBINATION LIGHT AND HORN SIGNALS SHALL BE FLUSH MOUNTED. WIRING SHALL BE IN CONDUIT AS PREVIOUSLY SPECIFIED, #14 AWG MINIMUM, THHN. ALL J-BOXES USED FOR THE FIRE ALARM SYSTEM SHALL BE PAINTED RED.

Q. CONDUCTORS SHALL BE PLENUM-RATED AND INSTALLED IN CONDUIT AND INSTALLED IN COMPLIANCE WITH NFPA 70, ARTICLE 760; IN ADDITION TO WIRING METHODS 300.4.

ALL FIRE ALARM WIRING SHALL BE CLASS A OR B. PROVIDE ALL REQUIRED MODULES, POWER EXTENDERS, PROGRAMMING, ETC. FOR A COMPLETE AND OPERATIONAL SYSTEM.

T. SUBMIT FIRE ALARM SHOP DRAWINGS CONSISTING OF PRODUCT DATA, TO THE

ENGINEER AND FOR APPROVAL

U. FILL OUT NFPA 72 CERTIFICATION REPORT AND SUBMIT TO ENGINEER AND AUTHORITY HAVING JURISDICTION.

V. WARRANTY - ALL WORK PERFORMED AND ALL MATERIALS AND EQUIPMENT FURNISHED UNDER THIS CONTRACT SHALL BE FREE FROM DEFECTS AND SHALL REMAIN SO FOR A PERIOD OF AT LEAST TWO (2) YEARS FROM THE DATE OF ACCEPTANCE BY THE PROFESSIONAL ENGINEER AND/OR OWNER. THE FULL COST OF MAINTENANCE, LABOR, AND MATERIALS REQUIRED TO CORRECT ANY DEFECT DURING THIS TWO YEAR PERIOD SHALL BE IMMEDIATELY CORRECTED AT NO ADDITIONAL COST TO THE OWNER. ANY DEFECTS THAT RENDER THE SYSTEM INOPERATIVE SHALL BE REPAIRED WITHIN 24 HOURS OF THE OWNER NOTIFYING THE CONTRACTOR. OTHER DEFECTS SHALL BE REPAIRED WITHIN 48 HOURS OF THE OWNER NOTIFYING THE CONTRACTOR.

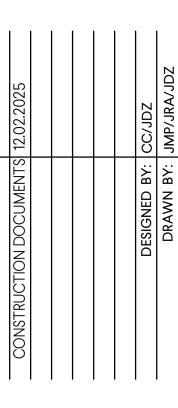
W. PROVIDE ALL REPROGRAMMING AND/OR REWORK AND/OR REPLACEMENT OF EXISTING FIRE ALARM PANEL AS REQUIRED.

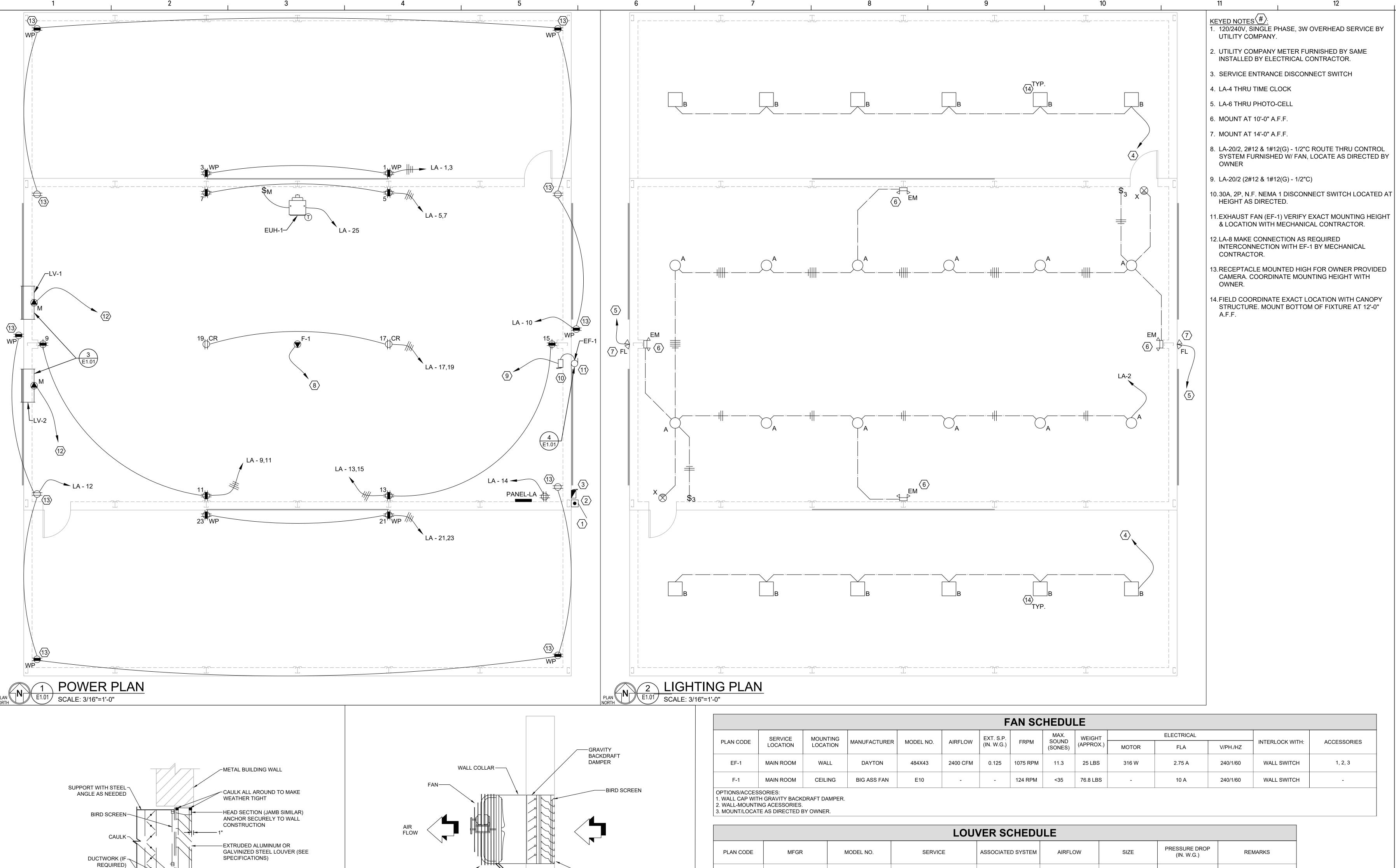
13. TESTING AND DOCUMENTATION:

Q. THE ELECTRICAL CONTRACTOR SHALL ENGAGE THE GEAR MANUFACTURER OR ANOTHER INDEPENDENT 3RD PARTY TO PROVIDE A COMPLETE FAULT CURRENT. COORDINATION, AND ARC-FLASH HAZARD ANALYSIS STUDY AND REPORT, COMPLETE WITH ARC-FLASH HAZARD LABELS FOR ALL EQUIPMENT.

TESTING AND DOCUMENTATION SHALL BE PROVIDED AS FOLLOWS: ALL CONDUCTORS SHALL BE MEGGERED BEFORE FINAL CONNECTIONS. 21) THE GROUND SYSTEM SHALL BE TESTED AND VERIFIED TO BE 25 OHMS OR

LESS RESISTANCE-TO-GROUND.





FINISH TO MATCH

NOTE: VENT FAN TO BE INTERLOCKED

WITH MOTORIZED DAMPERS

BUILDING

EXTERIOR

—SILL EXTENSION

TILT DUCT AND MOTORIZED

4 VENT FAN DETAIL

E1.01 NOT TO SCALE

DAMPER SLIGHTLY FOR

MOTORIZED DAMPER

WITH EF-1

2-POSITION INTERLOCK

3 LOUVER DETAIL

E1.01 NOT TO SCALE

ACCESSORIES 1, 2, 3

	LOUVER SCHEDULE										
PLAN CODE	MFGR	MODEL NO.	SERVICE	ASSOCIATED SYSTEM	AIRFLOW	SIZE	PRESSURE DROP (IN. W.G.)	REMARKS			
LV-1	RUSKIN	ELF6375DX	INTAKE WITH DAMPER	EF-1	2400 CFM	18" x 48"	0.14	1, 2, 3, 4, 5, 6, 7, 8, 9			
LV-2	RUSKIN	ELF6375DX	INTAKE WITH DAMPER	EF-1	2400 CFM	18" x 48"	0.14	1, 2, 3, 4, 5, 6, 7, 8, 9			
NOTES:) THE AMOA CEPTIFIED DA	TINGS DROCDAM SEAL FOR AIR	DEDECORMANICE WIND DD	IVENI DAINI AND MATER			NIDLICATION 544			

1. LOUVERS SHALL BE LICENSED TO BEAR THE AMCA CERTIFIED RATINGS PROGRAM SEAL FOR AIR PERFORMANCE, WIND-DRIVEN RAIN AND WATER PENETRATION IN ACCORDANCE WITH AMCA PUBLICATION 511. 2. FLAT EXPANDED ALUMINUM. BIRDSCREEN, INTERNAL, MILL FINISH.

B. PROVIDE FREE AREA CORRELATING TO 400 FPM VELOCITY. 4. PROVIDE ALL WALL-MOUNTING ACCESSORIES. 5. COLOR TO BE DETERMINED BY OWNER.

6. MOUNT AS LOW AS POSSIBLE OR AS DIRECTED BY OWNER. 7. IF SCHEDULED LOUVER DIMENSIONS ARE NOT AVAILABLE, SUBMIT NEXT INCREMENTAL INCH SIZE UP.

8. APPROVED EQUALS: GREENHECK 9. LOUVERS SHALL BE EQUIPPED WITH A 120V ACTUATOR THAT IS CONNECTED TO THE ASSOCIATED EF-1. 120V ACTUATOR WILL OPEN LOUVER WHEN EF-1 IS ACTIVATED.

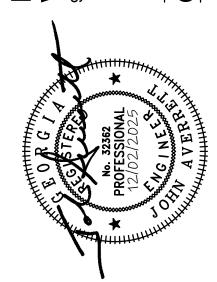
UNIT HEATER SCHEDULE											
PLAN CODE	SERVICE LOCATION	MFGR	MODEL NO.	AIRFLOW	OW HEATING CAPACITY	ELECTRICAL			MIN. INSTALL	WEIGHT	NOTES
FLAN CODE		ATION WIFGK WOL	MODEL NO. AINFLO	AIRFLOW		V/PH./HZ	MCA	MOCP	HEIGHT	(APPROX.)	NOTES
EUH-1	SUSPENDED FROM CEILING	MODINE	HD60	990 CFM	60000 BTU/HR	120/1/60	2.5 A	15 A	PER MANUFACTURER	60 LBS	1, 2, 3, 4, 5

1. PROVIDE INTEGRAL THERMOSTAT.

2. HORIZONTAL, CORROSION-RESISTANT ELECTRIC UNIT HEATER, TEM MOTOR. 3. PROVIDE WALL MOUNTING KIT.

4. PROVIDE INTEGRAL DISCONNECT SWITCH.

5. APPROVED EQUALS: BERKO, DAYTON, QMARK/MARLEY



PANELBOARD INSTALLATION & NAME PLATE DETAIL E2.01 DIAGRAMMATIC

VERIFY

FINISHED FLOOR

Ø XXX S SUPPLIED FROM XXX **EXAMPLE** TRANSFORMER LABEL

XX-XX xxxy xxxy

SUPPLIED FROM XXX

EXAMPLE MECHANICAL

EQUIPMENT DISCONNECT LABEL

PANEL XXX

208Y 120V

SUPPLIED FROM XXX **EXAMPLE PANELBOARD/** SWITCHBOARD LABEL

DISC. XXX SUPPLIED FROM XXX **EXAMPLE DISCONNECT** LABEL

PANEL XXX SUPPLIED FROM XXX **EXAMPLE PANELBOARD/**

DISC. XXX

Ø 480Y 277V

SUPPLIED FROM XXX **EXAMPLE DISCONNECT** LABEL

SWITCHBOARD LABEL -1/2" HIGH LETTERING FOR CAUTION
TWO SOURCES OF POWER

208V, 3PH
STANDBY POWER SOURCE
LOCATED AT GENERATOR EQUIPMENT NAME. TYP.

-1/4" HIGH LETTERING FOR EXAMPLE STANDBYPOWER EQUIPMENT NAME, TYP. **EQUIPMENT LABEL**

2 TYPICAL EQUIPMENT LABELING DETAIL E2.01 DIAGRAMMATIC

- NOTES:

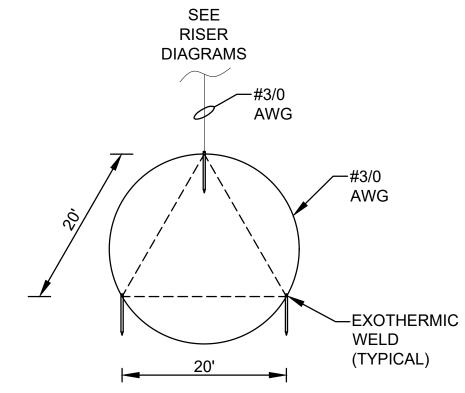
 1. ENGRAVED PLASTIC TAG WITH WHITE LETTERS ON BLACK BACKGROUND (RED BACKGROUND FOR EMERGENCY EQUIPMENT). TAG SHALL HAVE ALL EDGES BEVELED AND SMOOTH. SECURE TAG WITH 2 CHROME (STAINLESS STEEL FOR WET OR DAMP LOCATIONS) SCREWS.
- 2. MINIMUM EQUIPMENT LABEL SIZE MUST BE LARGE ENOUGH TO ACCOMMODATE ALL TEXT.

WARNING

Arc Flash Hazard. Appropriate PPE Required. Failure To Comply Can Result in Death or Injury. Refer to NFPA 70 E.

3 ARC FLASH WARNING LABEL DIAGRAMMATIC

- 1. PROVIDE SELF-ADHESIVE VINYL LABEL TO AFFIX TO ELECTRICAL EQUIPMENT TO WARN OF ARC FLASH HAZARDS.
- 2. THE LABEL FORMAT, SIZE, AND TEXT SHALL BE IN ACCORDANCE WITH OSHA AND NFPA 72 REQUIREMENTS.
- 3. THE LABEL SHALL BE LOCATED ON THE EQUIPMENT TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF THE EQUIPMENT.

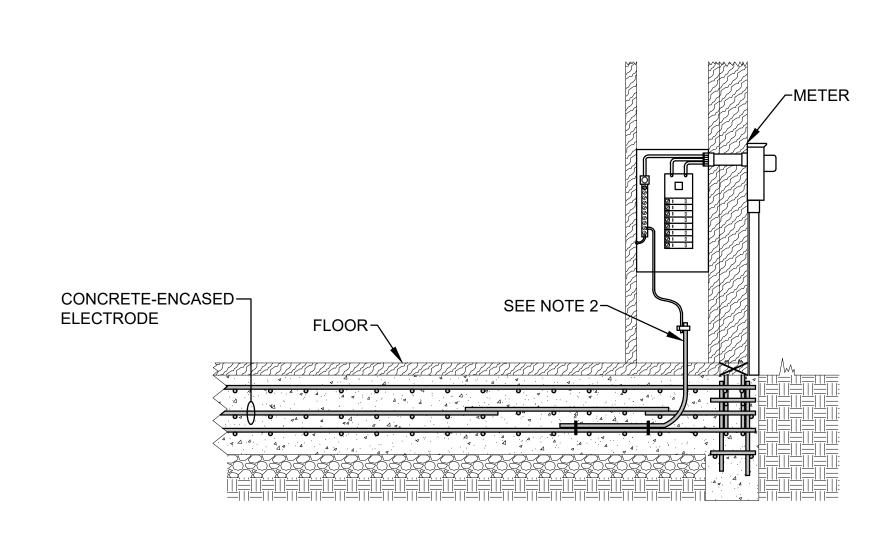


GROUND MAT DETAIL

E2.01 DIAGRAMMATIC

- NOTES:

 1. ALL WIRE FOR GROUND MAT SHALL BE #3/0 AWG UNO.
- 2. GROUND RODS SHALL BE 3/4" X 20' SECTIONAL COPPER GROUND RODS.
- 3. ALL CONNECTIONS BETWEEN GROUND RODS AND GROUND CONDUCTORS SHALL BE EXOTHERMIC WELD.
- 4. GROUND MAT SHALL BE INSTALLED 24" BELOW GRADE MINIMUM.
- 5. IN ADDITION TO THE GROUND MAT, THE CONTRACTOR SHALL PROVIDE A COMPLETE GROUNDING SYSTEM IAW N.E.C. ARTICLE 250.

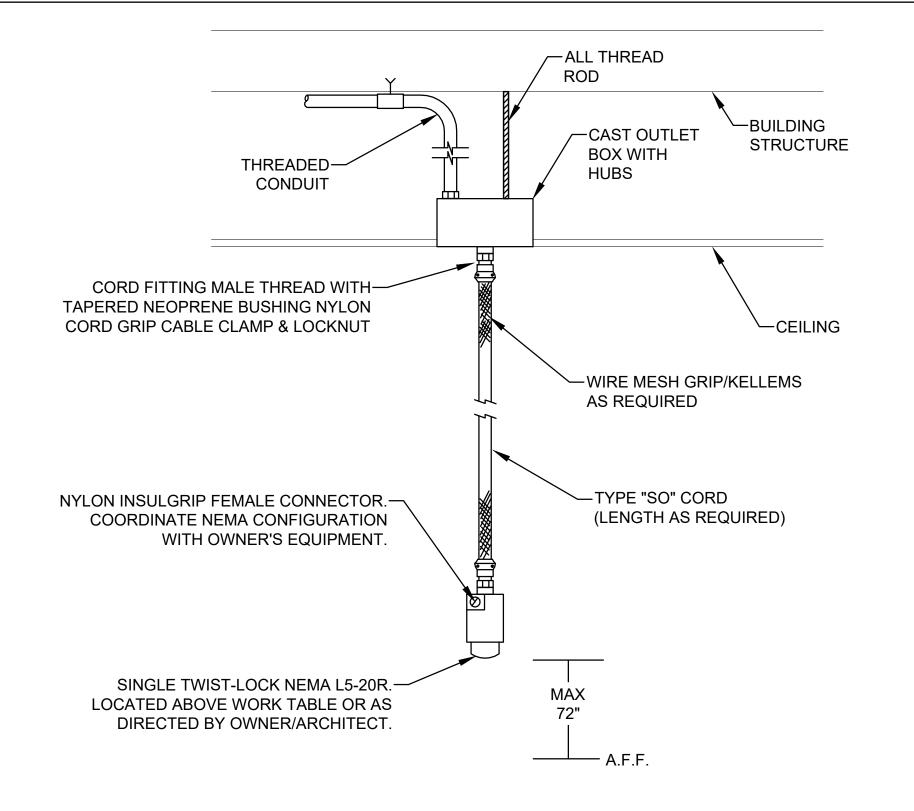


CONCRETE-ENCASED ELECTRODE EXTENSION

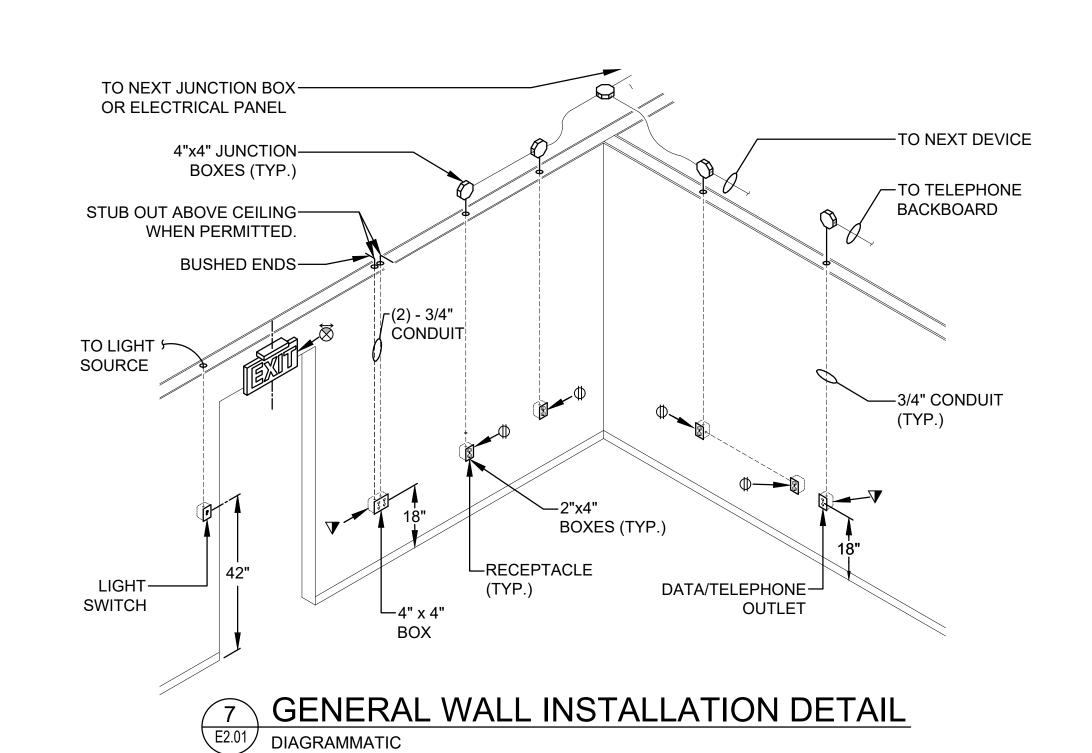
DIAGRAMMATIC

. AN EXTENSION FROM A CONCRETE-ENCASED ELECTRODE IS RECOGNIZED FOR CONNECTION OF GROUNDING ELECTRODE CONDUCTORS.

2. EXTENSION OR "STUB-UP" FROM A CONCRETE-ENCASED ELECTRODE.



6 SUSPENDED RECEPTACLE DETAIL E2.01 DIAGRAMMATIC



NOTES:

1. EXIT SIGN SHALL BE CEILING MOUNTED (E-203/4) ON CENTERLINE OF

DOOR REGARDLESS OF CEILING GRID.

FACE OF WALL -PHOTOCELL-SOCKET-LR CONDULET — -CONDUIT SHORT NIPPLE-OUTLET BOX (SPLICE) LOCKER-**WASHER** 1/2" PIPE FLANGE-

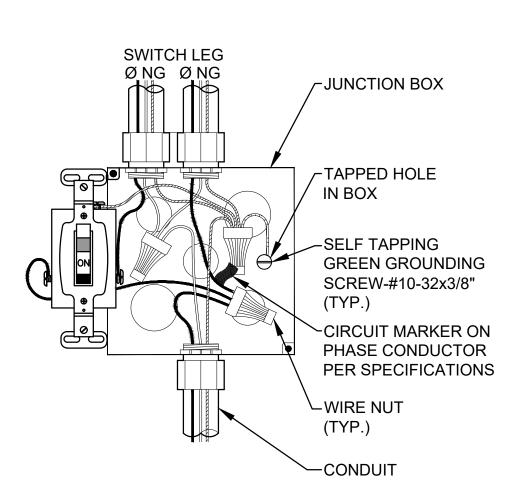
INSTALLATION OF PHOTO CELL

DIAGRAMMATIC

1. PAINT CONDUIT NIPPLE, SOCKET, AND PIPE FLANGE WITH TWO COATS OF

2. COMPLETE ASSEMBLY TO BE UL LISTED FOR WET LOCATIONS.

3. PHOTOCELL TO BE MOUNTED FACING NORTH FREE FROM ALL SHADOWS WHICH MIGHT CAUSE PHOTOCELL TO TURN LIGHTS ON EARLY. CONTRACTOR SHALL COORDINATE PROPER MOUNTING LOCATION PRIOR TO INSTALLATION.



TYPICAL SWITCH 9 WIRING DETAIL E2.01 DIAGRAMMATIC



