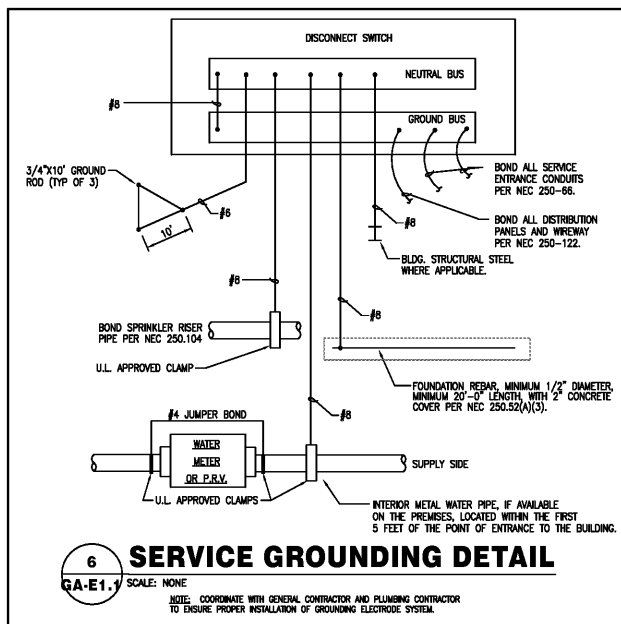


ELECTRICAL LEGEND

- FLUORESCENT TROFFER. SEE FIXTURE SCHEDULE.
- FLUORESCENT TROFFER WITH EMERGENCY BATTERY/CHARGER PACK.
- FLUORESCENT STRIP FIXTURE. SEE FIXTURE SCHEDULE.
- FLUORESCENT FIXTURE, SURFACE MOUNTED, OR PENDANT. SEE FIXTURE SCHEDULE.
- HD FIXTURE. SEE FIXTURE SCHEDULE.
- INCANDESCENT OR HD FIXTURE. SEE FIXTURE SCHEDULE.
- INDICATES WALL BRACKET TYPE MOUNTING.
- EXIT LIGHT WITH BATTERY BACKUP.
- COMBINATION EXIT LIGHT WITH BATTERY BACK UP AND EMERGENCY LIGHTING FEATURE USING TWO HEADS AND REMOTE CAPABILITY.
- EMERGENCY LIGHT WITH BATT./CHARGER, TWO HEADS WITH REMOTE HEAD CAPABILITY.
- REMOTE EMERG. LIGHT HEAD ON ONE GANG BOX AND CONNECTED TO EMERGENCY LIGHT OR COMBINATION EXIT LIGHT.
- WALL SWITCH, SINGLE POLE, 120/277V. QUIET TYPE 44" AFF ON CENTER OR AS NOTED.
- WALL SWITCHES: 2 POLE/3 WAY/MOTOR RATED/OCCUPANCY SENSOR
- CEILING MOUNTED OCCUPANCY SENSOR
- DIMMER SWITCH, 2000W @ 44" AFF ON CENTER OR AS NOTED.
- JUNCTION BOX WITH COVER PLATE.
- JUNCTION OR PULL BOX.
- MOTOR, FRACTIONAL HP TYPE OR EXHAUST FAN.
- MOTOR, SIZE AS NOTED.
- DISCONNECT SWITCH NON FUSED. RATING/POLES/NEVA ENCLOSURE.
- DISCONNECT SWITCH, FUSED. RATING/POLES/FUSE RATING/NEVA ENCLOSURE.
- PANELBOARD, 480V/277V OR 208V/120V OR 240V/120V, SURFACE OR RECESSED AS SHOWN.
- TELEPOWER POLE.
- DUPLEX RECEPTACLE, 18" AFF ON CENTER OR AS NOTED, 15A 125V.
- DUPLEX RECEPTACLE, DEDICATED, 18" AFF ON CENTER OR AS NOTED, 20A 125V.
- DUPLEX RECEPTACLE, ISOLATED GROUND TYPE, ORANGE MARKING, 18" AFF ON CENTER UNLESS NOTED.
- DUPLEX RECEPTACLE, ABOVE COUNTER HEIGHT OR AS NOTED, 20A/125V.
- DUPLEX RECEPTACLE, (GFCO), ABOVE COUNTER HEIGHT OR AS NOTED.
- DUPLEX RECEPTACLE, (GFI), WEATHERPROOF WITH GASKETED COVER, AT 18" AFF ON CENTER OR AS NOTED. MOUNT ON FERRULS OR ATTACH TO EQUIP. ENCL. ON ROOF.
- DUPLEX RECEPTACLE, (GFI), ABOVE COUNTER HEIGHT OR AS NOTED, 15A/125V.
- SPECIAL RECEPTACLE, COORDINATE NEW CONFIGURATION WITH EQUIPMENT.
- CONDUIT AND WIRE CONCEALED IN WALL OR ABOVE CEILING. "EC" MEANS EMPTY CONDUIT WITH PULL CORD.
- CONDUIT AND WIRE UNDERGROUND OR BELOW SLAB.
- HOMERUN TO PANEL.
- SLASH MARKS INDICATE NUMBER OF #12 WIRES IN CONDUIT. EXTENDED SLASH IS NEUTRAL. ABSENCE OF SLASHES IS 2#12. SIZE CONDUIT PER N.E.C. EQUIPMENT GROUND REQUIRED IN PVC CONDUIT BUT NOT SHOWN.
- INDICATES INCREASED WIRE SIZE FOR VOLTAGE DROP/CAPACITY.
- TELEPHONE HOMERUN TO TEL. CABINET. 1" PVC WITH PULL CORD. STUB UP 6" AFF ON CENTER IN SHOP AT TBB AND SEAL SEE ELECTRICAL SITE PLAN.
- TEL. BACKBOARD (OR TERMINAL BOARD) 2' x 4' x 3/4" MARINE GRADE PLYWOOD PAINTED LIGHT GRAY. PROVIDE RECEPTACLE AND POSITIVE GROUND CONDUCTOR. (#6 AWG COPPER)
- DATA OUTLET, WALL MOUNTED 18" AFF ON CENTER OR AS NOTED, WITH 3/4" CONDUIT STUBBED ABOVE CEILING.
- TELEPHONE OUTLET, WALL MOUNTED 18" AFF ON CENTER OR AS NOTED, WITH 3/4" CONDUIT STUBBED ABOVE CEILING.
- COMBINATION TELEPHONE/DATA OUTLET BOX, WALL MOUNTED 18" AFF ON CENTER OR AS NOTED, WITH 3/4" CONDUIT STUBBED ABOVE CEILING.
- THREE-GANG FLUSH FLOOR BOX WITH DUPLEX RECEPTACLE AND COMMUNICATIONS OUTLET WITH COVERS AND CARPET FLANGE.
- TWO-GANG FLUSH FLOOR BOX WITH DUPLEX RECEPTACLE, COMMUNICATIONS OUTLET, AND CRT OUTLET WITH COVERS AND CARPET FLANGE.
- SPEAKER ROUGH-IN LOCATION.
- RAIN TIGHT/WEATHERPROOF.
- NIGHT LIGHT. CONNECT TO UNSWITCHED CONDUCTORS OF LIGHTING CIRCUIT.
- ABOVE FINISHED FLOOR OR GRADE.
- NEAREST RECEPTACLE CIRCUIT.
- SMOKE DETECTOR
- COMBINATION SMOKE DETECTOR/CO DETECTOR.
- DUCT MOUNTED SMOKE DETECTOR.
- SPRINKLER RISER FLOW SWITCH.
- SPRINKLER RISER TAMPER SWITCH.
- NEW DEVICE.
- RELOCATED DEVICE.
- EXISTING DEVICE.
- CAMERA.
- BUTTON.
- TV OUTLET.
- PLUMB.



LIGHT FIXTURE SCHEDULE			
TYPE	DESCRIPTION	LAMPS	WATTS/VOLTS
A	4' LED CEILING MOUNT	LED	65W 120V

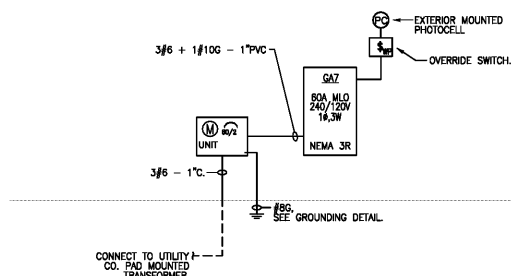
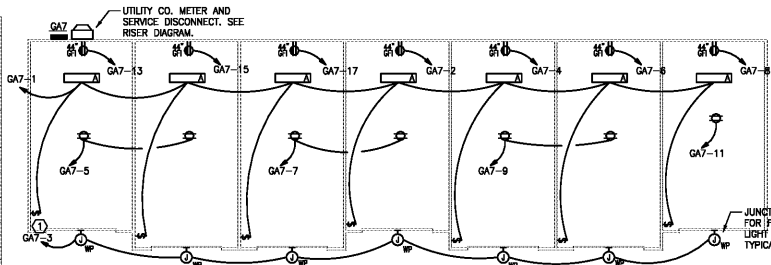
NOTES:
1. VERIFY CEILING TYPES AND PROVIDE MOUNTING HARDWARE/ACCESSORIES/FIXTURE OPTIONS NECESSARY FOR INSTALLATION.
2. EXTERIOR FIXTURES SHALL BE DAMP OR WET LOCATION LISTED AS REQUIRED.
3. LAMPS SHALL BE INCLUDED AND INSTALLED IN ALL FIXTURES UNLESS NOTED OTHERWISE.

NOTES AND SPECIFICATIONS:

1. CONTRACTOR SHALL VISIT THE SITE AND THOROUGHLY FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS. NO ALLOWANCE WILL BE SUBSEQUENTLY MADE IN HIS BEHALF BECAUSE OF ANY ERROR ON HIS PART RELATED TO ABSENCE OF KNOWLEDGE ABOUT THE WORK OR THE SITE.
 2. CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, AND EQUIPMENT, PAY ALL FEES AND COSTS, SHALL OBTAIN ALL PERMITS, APPROVALS, AND INSPECTIONS TO PROVIDE A COMPLETE ELECTRICAL INSTALLATION.
 3. CONTRACTOR SHALL COORDINATE WITH ALL UTILITIES. CONTRACTOR SHALL PAY ALL ASSOCIATED COSTS FOR TEMPORARY AND PERMANENT POWER.
 4. ALL ELECTRICAL INSTALLATIONS TO COMPLY WITH NATIONAL AND LOCAL CODES AND TO BE INSTALLED IN A FIRST CLASS WORKMANLIKE MANNER.
 5. ALL ITEMS INSTALLED PER THESE DRAWINGS SHALL BE NEW AND U.L. LABELED AND LISTED FOR THEIR SPECIFIC USE.
 6. WORK SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF OCCUPANCY (C.O.). ALL ELECTRICAL EQUIPMENT AND SYSTEMS SHALL BE TESTED AND ADJUSTED FOR PROPER OPERATION AND FAULT FREE UPON DELIVERY TO OWNER.
 7. LOCATIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE ACTUAL LOCATIONS WITH OTHER TRADES. THESE DRAWINGS ARE GENERALLY DIAGRAMMATIC IN NATURE.
 8. ANY RENOVATION WORK OF EXISTING INSTALLATIONS INCLUDED IN THESE DRAWINGS IS BASED ON INFORMATION PROVIDED TO THE ENGINEER AND/OR THE ENGINEER'S FIELD OBSERVATIONS. CONTRACTOR SHALL NOTIFY THE ENGINEER OF DISCREPANCIES FOUND IN THE EXISTING INSTALLATION AND THE WORK SHOWN IN THESE DRAWINGS THAT MAY ADVERSELY AFFECT THE COST OR SCOPE OF WORK.
 9. ALL ELECTRICAL EQUIPMENT SHALL BE IDENTIFIED WITH PERMANENT LABELS. EXTERIOR LABELS SHALL BE WEATHERPROOF.
 10. PANELBOARDS SHALL BE EQUAL TO SQUARE D TYPE NOOD, BOLT-ON BREAKERS, 20" MINIMUM WIDTH. SEE PANELBOARD SCHEDULES FOR MC RATINGS.
 11. ALL 15A/1P AND 20A/1P CIRCUIT BREAKERS SHALL BE SWITCH DUTY RATED. ALL BREAKERS SERVING HVAC EQUIPMENT SHALL BE HACR RATED. MULTI-POLE BREAKERS SHALL HAVE COMMON TRIP ELEMENT.
 12. PANELS SHALL BE DEADFRONT WITH NO OPEN SPACES OR KNOCK-OUTS. PANELS SHALL NOT HAVE CABINETS OR BUSING MOUNTED UPSIDE DOWN.
 13. PANELS SHALL HAVE NUMBERED POLE SPACES AND COMPLETED, CORRECT PANEL SCHEDULE.
 14. CONDUCTORS SHALL BE COPPER, TYPE THHN/THWN 90°C, 75°C. MINIMUM WIRE SIZE IS #12 AWG.
 15. WHEN PVC CONDUIT IS USED, PROVIDE AN ADDITIONAL EQUIPMENT GROUNDING CONDUCTOR.
 16. WHERE CONDUIT, WIRE OR EQUIPMENT SIZES AND TYPES ARE NOT SHOWN, THEY SHALL BE IN ACCORDANCE WITH NEC REQUIREMENTS.
 17. EQUIPMENT, CONDUIT, AND DEVICES ON UNFINISHED WALLS AND CEILING SHALL BE MOUNTED OTHERWISE. CONDUIT AND DEVICES ON STUD OR FURRED WALLS SHALL BE CONCEALED OR RECESSED.
 18. EXPOSED AND ABOVE CEILING BRANCH CIRCUITRY SHALL BE THIN WIRE INSTALLED IN EMT RACEWAY WITH STEEL SET SCREW FITTINGS.
 19. IN WALLS AND ABOVE CEILING BRANCH CIRCUITRY MAY BE FINISHED WITH A FLEXIBLE WIRING SYSTEM COMPLETE WITH ALL FITTINGS AND ACCESSORIES AS MANUFACTURED BY LITHONIA LIGHTING OR EQUAL LISTED IN UL PLenums.
 20. UTILIZE THE RACEWAY FOR BRANCH CIRCUITRY IN WALLS AND ABOVE CEILING.
 21. SIZE CONDUCTORS AS NECESSARY TO MEET VOLTAGE DROP REQUIREMENTS OF N.E.C.
 22. PROVIDE 1" COPPER GROUND CONDUCTOR AT TELEPHONE BACKBOARD. CONNECT TO BUILDING STEEL.
 23. CIRCUITS TO PANELS SHALL BE ROUTED WITHIN RTU CURB.
 24. METALLIC ELECTRICAL BOXES SHALL BE INSTALLED SO THERE IS A 24" MIN. HORIZONTAL SEPARATION WHEN BOXES ARE MOUNTED ON OPPOSITE SIDES OF A RATED WALL. THE OPENING BETWEEN THE BOX AND THE WALLBOARD SHALL NOT EXCEED 1/8".
- COORDINATE WITH ARCHITECT OR OWNER FOR COLOR AND FINISH OF DEVICES AND COVERPLATES.

PANELBOARD SCHEDULE - GA7							
CIRCUIT	TYPE	VOLTAGE	PHASE	WIRE	MOUNTING SURFACE	ENCLOSURE	NEVA/3R
8	20A	240/120V	PHASE A	1.00 1.18	RECEPT	20" x 12"	2
9	20A	240/120V	PHASE B	0.70 0.18	RECEPT	20" x 12"	4
5	20A	240/120V	PHASE C	1.00 0.18	RECEPT	20" x 12"	6
7	20A	240/120V	PHASE A	1.00 0.18	RECEPT	20" x 12"	8
9	20A	240/120V	PHASE B	1.00	SPARE	20" x 12"	10
11	20A	240/120V	PHASE C	1.00	SPARE	20" x 12"	12
13	20A	240/120V	PHASE A	0.18	RECEPT	20" x 12"	14
15	20A	240/120V	PHASE B	0.18	RECEPT	20" x 12"	16
17	20A	240/120V	PHASE C	0.18	RECEPT	20" x 12"	18
			MIN. BREAKER A.I.C. 1000	3.11	3.24	TOTAL CONNECTED LOAD	8.95 kVA
			LIGHTING: 1.09	RECEPTACLES: 1.26	SINGLE Ø MOTORS: 4.00	OTHER NON-CONTINUOUS	
			HVAC:	WITH HEATERS:	OTHER CONTINUOUS:	OTHER NON-CONTINUOUS	
						TOTAL DEMAND LOAD	7.12 kVA
						TOTAL DEMAND AMP.S.	29.65 A

NOTES:
*PROVIDE GFI CIRCUIT BREAKER, CKT # 5,7,8,11



KEY NOTES:

- ① CONNECT HOMERUN VIA EXTERIOR MOUNTED PHOTOCELL

FAULT ANALYSIS	
POINT A:	UTL. CO. PAD TRANS. T
POINT B:	CIRCUIT BREAKER CBGA
DISTANCE (FT):	25
ISCA:	34192
ISCB-1M x 60CA:	14192
ISCB-12 x 6:	
ISCB-1 x 1.732 x 25 x 34192/(2430 x 1 x 240) = 2.683	
ISCB = 1.2(1+2.683) = 0.28	
ISCB = 0.28 x 34192 = 9790	

LOAD STUDY	
ITEM	LOAD (KVA)
LIGHTING	1.09
RECEPTACLES	1.98
1Ø MOTORS	12.00
3Ø MOTORS	0.00
HVAC	0.00
WATER HEATERS	0.00
OTHER CONTINUOUS	0.00
OTHER NON-CONTINUOUS	0.00
KITCHEN EQUIPMENT	0.00
TOTAL LOAD	13.37



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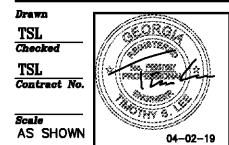
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Issue & Revisions:

No.	Date	Description
REV 1	040119	CLARIFICATION

ELECTRICAL PLAN



Scale AS SHOWN
04-02-19

GA-E1.1

03-05-19 of sheets

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