



# HGTC - GT BLDG. 500 ELECTRICAL AND FIRE ALARM SYSTEMS

STATE PROJECT NUMBER: H59-N300-CB  
4003 SOUTH FRASER STREET  
GEORGETOWN, SC 29440



## LOCATION MAP

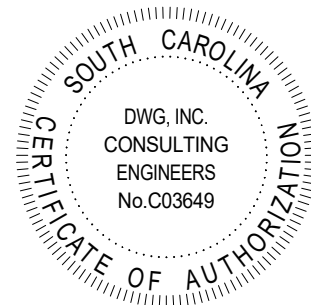


## SCOPE OF WORK

THE SCOPE OF WORK FOR THIS PROJECT INCLUDES THE INSTALLATION OF A NEW FIRE ALARM SYSTEM, ALL ASSOCIATED NOTIFICATION AND INITIATION DEVICES, AND PROVIDING POWER FOR THE NEW SYSTEM FROM AN EXISTING PANELBOARD.

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E001	ELECTRICAL LEGENDS
E002	ELECTRICAL NOTES
E010	ELECTRICAL ONE-LINE DIAGRAM
E101	FIRST FLOOR POWER & SYSTEMS PLAN

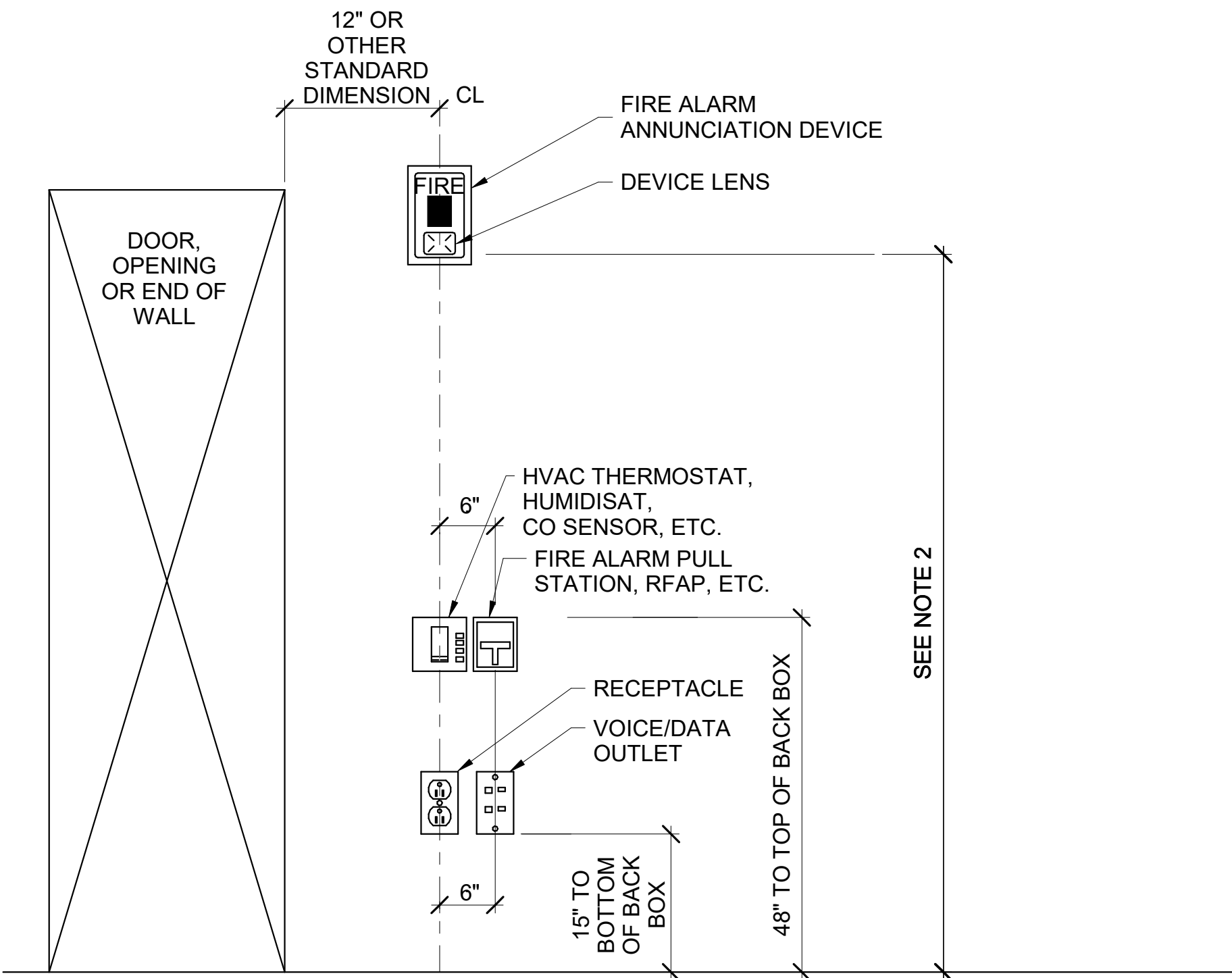


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TITLE SHEET

REV	
JOB. No.	H59-N300-CB
DATE:	01/15/25
DRAWN BY:	BJJ
CHECK BY:	MHS
SHEET	NUMBER

T000



**NOTE 1:**  
DEVICES SHOWN WITHIN 48" OF EACH OTHER ON ALL ELECTRICAL PLANS SHALL BE ALIGNED PER THIS DETAIL. IF DEVICES ARE SHOWN IN MIDDLE OF WALL, THEN CENTER DEVICES ON WALL.

**NOTE 2:**  
MOUNT 80" ABOVE FINISHED FLOOR WHERE POSSIBLE. WHERE CEILING HEIGHTS DO NOT ALLOW THIS HEIGHT, MOUNT 6" BELOW CEILING. WHERE OBSTRUCTIONS DO NOT ALLOW THIS HEIGHT, MOUNT 80" TO 96" ABOVE FINISHED FLOOR. ALL MOUNTING HEIGHTS FOR NOTIFICATION DEVICES SHALL BE MEASURED TO THE BOTTOM OF THE LENS.

1

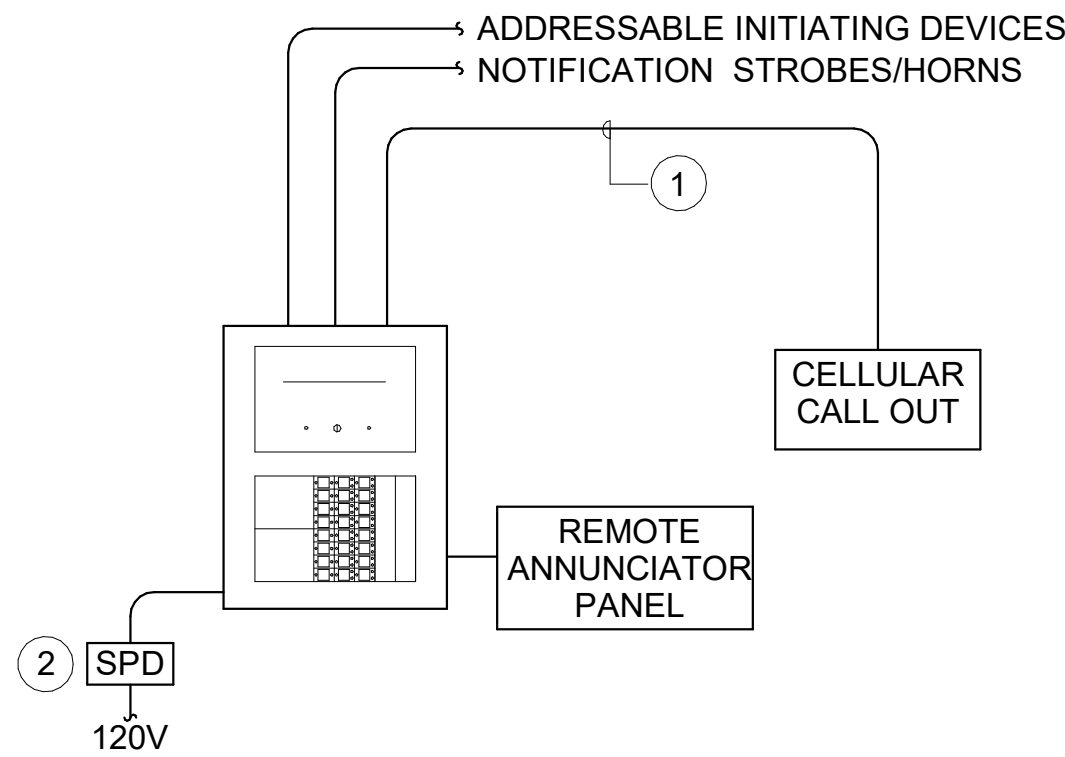
E001

DEVICE ALIGNMENT DETAIL

NOT TO SCALE

FIRE ALARM SINGLE-LINE NOTES

- 1 PROVIDE TWO LINES OF CELLULAR CALL OUT FOR FACP. PROVIDE A REMOTE BUILDING MOUNTED ANTENNA WITH SURGE PROTECTION IF NEEDED.
- 2 PROVIDE SURGE PROTECTIVE DEVICES FOR ALL INCOMING POWER CONNECTIONS TO FIRE ALARM CONTROL PANELS, POWER SUPPLIES, AND BATTERY SYSTEMS.



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E001

PARTIAL FIRE ALARM RISER DIAGRAM

NOT TO SCALE

LINE LEGEND	
SYMBOL	DESCRIPTION
	EXISTING TO REMAIN
	NEW CONSTRUCTION

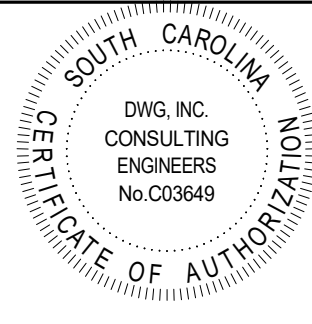
ELECTRICAL ABBREVIATIONS	
ABBR	DESCRIPTION
(E)	EXISTING
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BFC	BELOW FINISHED CEILING
BOD	BOTTOM OF DEVICE
cd	CANDELA
CLG	CEILING
EF	EXHAUST FAN
FACP	FIRE ALARM CONTROL PANEL
GBB	GROUND BUSBAR
GFCI	GROUND-FAULT CIRCUIT-INTERRUPTING
GP	GENERAL PURPOSE
J-BOX	JUNCTION BOX
KW	KILOWATTS
MCGB	MAIN COMMUNICATIONS GROUNDING BUSBAR
NEC	NATIONAL ELECTRICAL CODE
OC	ON CENTER
SPD	SURGE PROTECTION DEVICE
UNO	UNLESS NOTED OTHERWISE
UTP	UNSHIELDED TWISTED PAIR
W/	WITH
CONTROL PANELS	DESCRIPTION
FACP	FIRE ALARM CONTROL PANEL

POWER AND TELECOMMUNICATIONS SYMBOL LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	DUPLEX RECEPTACLE "X" INDICATES RECEPTACLE TYPE		PANELBOARD - BRANCH, SURFACE MOUNTED
	PANELBOARD - DISTRIBUTION, SURFACE MOUNTED		
SYSTEMS SYMBOL LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SMOKE DETECTOR (CEILING MOUNTED)		FIRE ALARM STROBE NOTIFICATION APPLIANCE (WALL MOUNTED)
	CONTROL PANEL, "X" INDICATES TYPE		FIRE ALARM HORN/STROBE NOTIFICATION APPLIANCE (WALL MOUNTED)
	REMOTE FIRE ALARM ANNUNCIATOR		FIRE ALARM STROBE NOTIFICATION APPLIANCE (CEILING MOUNTED)
	ADDRESSABLE INPUT MODULE		FIRE ALARM HORN/STROBE NOTIFICATION APPLIANCE (CEILING MOUNTED)
	FIRE ALARM PULL STATION		

ELECTRICAL CODES AND STANDARDS (WITH ALL SOUTH CAROLINA MODIFICATIONS)	
CODE	DESCRIPTION
IBC (2021)	INTERNATIONAL BUILDING CODE
NFPA 70 (2020)	NATIONAL ELECTRICAL CODE
NFPA 72 (2019)	NATIONAL FIRE ALARM AND SIGNALING CODE

PLOT DATE: 01/15/25

**DWG**  
CONSULTING ENGINEERS  
EMPLOYEE OWNED  
1009 Anna Knapp Blvd., Suite 200  
Mt. Pleasant, SC 29464  
843-849-1141



HGTC - GT BLDG. 500 ELECTRICAL AND FIRE  
ALARM SYSTEMS  
4003 SOUTH FRASER STREET  
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ELECTRICAL LEGENDS

#	Description	01/01/0
1		
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SHEET NUMBER		

E001

# ELECTRICAL SYSTEMS SEISMIC REQUIREMENTS PER IBC-2021/ASCE 7-16

- A. PER THE 2021 INTERNATIONAL BUILDING CODE, MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT AND COMPONENTS, INCLUDING THEIR SUPPORTS AND ATTACHMENTS, SHALL BE DESIGNED FOR SEISMIC FORCES IN ACCORDANCE WITH CHAPTER 13 OF ASCE 7.
- B. USE THE TABLE BELOW TO DETERMINE SEISMIC RESTRAINT REQUIREMENTS FOR EACH COMPONENT.
- C. FOR ALL COMPONENTS REQUIRING SEISMIC RESTRAINT, THE COMPONENT SUPPORTS AND ATTACHMENTS SHALL BE DESIGNED BY A REGISTERED DESIGN PROFESSIONAL REGISTERED IN THE STATE THE JOB IS LOCATED. SUBMITTALS MUST INCLUDE STAMPED AND SIGNED DRAWINGS AND CALCULATIONS.

## ELECTRICAL COMPONENT IMPORTANCE FACTOR (Ip) DESIGNATION

lp = 1.0

lp = 1.5

- |   |              |
|---|--------------|
| • ALL ASSOCIATED ELECTRICAL WORK UNLESS NOTED OTHERWISE | • FIRE ALARM |
|---|--------------|

SEISMIC DESIGN CATEGORIES D,E,F	
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	COMPONENT IMPORTANCE FACTOR (Ip)			
	1.0		1.5	
COMPONENT IDENTIFICATION	SEISMIC RESTRAINT REQUIREMENT	NOTES	SEISMIC RESTRAINT REQUIREMENT	NOTES
WALL MOUNTED	RESTRAIN ALL	1,2	RESTRAIN ALL	-
COMPONENT SUPPORTS	RESTRAIN ALL	1	RESTRAIN ALL	-
SUSPENDED EQUIPMENT	RESTRAIN ALL	1	RESTRAIN ALL	-
SINGLE CONDUIT	RESTRAIN IF $\geq 2.5"$	3	RESTRAIN IF $\geq 2.5"$	3
COMPONENT CERTIFICATION	NOT REQUIRED	-	REQUIRED	5

NOTES:

1. EQUIPMENT 20 LBS. OR LESS IS EXEMPT IF THE COMPONENT IS POSITIVELY ATTACHED TO THE STRUCTURE AND FLEXIBLE CONNECTIONS ARE PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING AND CONDUIT.
2. RESTRAINTS ARE NOT REQUIRED IF THE COMPONENT WEIGHS 400 LBS. OR LESS, IS MOUNTED WITH THE CENTER MASS AT 4' OR LESS ABOVE A FLOOR, IS POSITIVELY ATTACHED TO THE STRUCTURE, AND HAS FLEXIBLE CONNECTIONS BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING AND CONDUIT.
3. RESTRAINT IS NOT REQUIRED IF THE CONDUIT IS SUPPORTED BY HANGERS AND EACH HANGER IN THE RUN IS 12" IN. OR LESS IN LENGTH FROM THE TOP OF THE PIPE TO THE SUPPORTING STRUCTURE. WHERE PIPES ARE SUPPORTED ON A TRAPEZE, THE TRAPEZE SHALL BE SUPPORTED BY HANGERS HAVING A LENGTH OF 12" IN. OR LESS. WHERE ROD HANGERS ARE USED, THEY SHALL BE EQUIPPED WITH SWIVELS, EYE NUTS OR OTHER DEVICES TO PREVENT BENDING IN THE ROD.
4. THE RESTRAINT OF PENDANT, LAY-IN AND CAN LIGHTS IS ADDRESSED IN ASTM C636 AND E580.
5. COMPONENT CERTIFICATION MUST BE SUPPLIED BY THE EQUIPMENT MANUFACTURER AT TIME OF SUBMITTAL FOR REVIEW BY ENGINEER OF RECORD.

### GENERAL DEMOLITION NOTES

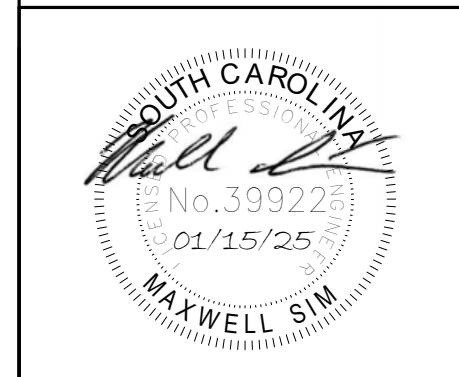
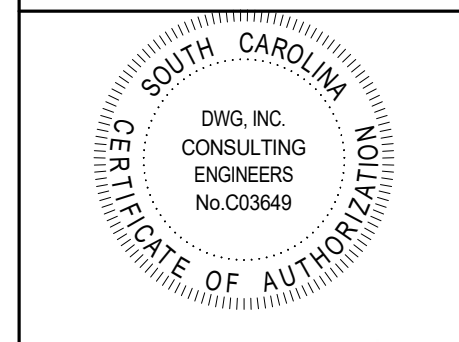
1. ALL ELECTRICAL EQUIPMENT TO BE REMOVED SHALL REMAIN THE PROPERTY OF THE OWNER. THE CONTRACTOR SHALL NOT DISPOSE OF ANY MATERIALS UNTIL RELEASED BY THE OWNER'S PROJECT MANAGER. MATERIALS THAT THE OWNER'S PROJECT MANAGER CHOOSES TO RETAIN SHALL BE DELIVERED BY THE CONTRACTOR TO A LOCATION DESIGNATED BY THE PROJECT MANAGER. ALL OTHER MATERIALS SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR.

### GENERAL EXISTING CONDITION NOTES

1. AREAS OF WORK EXIST FOR THIS PROJECT WHICH WERE NOT ACCESSIBLE OR HAD LIMITED ACCESS DURING DESIGN. ANY ELECTRICAL COMPONENTS NOT SHOWN SHALL BE IDENTIFIED AND THE ARCHITECT AND ENGINEER SHALL BE NOTIFIED AS SOON AS POSSIBLE. NO ELECTRICAL REWORK SHALL BE COMMENCED WITHOUT COORDINATION OF BOTH ARCHITECT AND ENGINEER. WHERE INFORMATION SHOWN ON THESE DRAWINGS CONFLICTS WITH VERIFIED FIELD CONDITIONS, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER.
2. IN AREAS WHERE THE EXISTING CEILINGS ARE NOT SLATED TO BE REPLACED, THE CONTRACTOR SHALL WORK THROUGH THE EXISTING CEILINGS (SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR AREA OF WORK). THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ANY DAMAGED TILE OR GRID THAT IS A RESULT OF THEIR WORK.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING A FIRESTOP SYSTEM IN ALL PENETRATIONS OF FIRE-RATED FLOORS AND WALLS CREATED BY THE REMOVAL OF EXISTING ELECTRICAL CONDUIT OR CABLES, AS WELL AS THOSE CREATED BY NEWLY INSTALLED CONDUITS AND SLEEVES.
4. SUPPORT ALL EXISTING CABLES ABOVE THE CEILING IN THE CONSTRUCTION AREA.

## GENERAL ELECTRICAL NOTES

1. BRANCH CIRCUIT WIRING FOR 20A CIRCUITS SHALL BE SIZED PER WIRE SIZING CHART. WHERE CONDUCTOR AND RACEWAY SIZE ARE SHOWN AT HOMERUN, SUCH SIZE SHALL BE USED FOR THE ENTIRE CIRCUIT. EXCEPTION: FINAL CONNECTION TO DEVICES IN OUTLET BOXES IS NOT REQUIRED TO BE LARGER THAN #12.
2. PRIOR TO ROUGH-IN, COORDINATE THE LOCATION AND MOUNTING HEIGHT OF ALL WALL MOUNTED DEVICES WITH THE ARCHITECTURAL INTERIOR ELEVATIONS AND MILLWORK SHOP DRAWINGS. IN THE EVENT OF A CONFLICT, NOTIFY THE ARCHITECT. MINOR ADJUSTMENTS IN DEVICE LOCATION, SUCH AS 5'-0" IN ANY DIRECTION, SHALL BE DONE AT NO ADDITIONAL COST TO THE OWNER. UNDERCABINET LIGHT FIXTURES, RECEPTACLES AND OTHER DEVICES TO BE MOUNTED INSIDE CABINETS SHALL BE REVIEWED WITH THE ARCHITECT PRIOR TO ROUGH-IN TO CONFIRM THE EXACT LOCATION OF FIXTURES AND DEVICES.
3. RACEWAYS SHALL BE INSTALLED CONCEALED IN NEW WALL CONSTRUCTION, ABOVE CEILINGS, BELOW FLOOR AND IN OTHER CAVITIES TO THE GREATEST EXTENT POSSIBLE. EXPOSED RACEWAYS MAY BE USED IN UNFINISHED SPACES, WHERE EXPLICITLY NOTED ON PLANS AND WHERE APPROVED BY THE ARCHITECT AND ENGINEER. LAY OUT EXPOSED RACEWAYS TO MINIMIZE THE NUMBER OF VERTICAL RUNS.
4. BRANCH CIRCUIT ROUTING SHALL COMPLY WITH DETAILS ON DRAWINGS AND SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES BEFORE AND DURING CONSTRUCTION.
5. A FIRESTOP SYSTEM SHALL BE USED TO SEAL ALL PENETRATIONS OF ELECTRICAL CONDUITS AND CABLES THROUGH FIRE-RATED PARTITIONS. THE FIRESTOP SYSTEM SHALL CONSIST OF A FIRE-RATED CAULK TYPE SUBSTANCE AND HIGH TEMPERATURE FIBER INSULATION BY STI OR APPROVED EQUAL. ONLY METAL CONDUIT SHALL BE USED TO PENETRATE FIRE-RATED PARTITIONS. SEE ARCHITECTURAL DRAWINGS FOR ALL LOCATIONS OF FIRE-RATED WALLS.
6. THE USE OF MC CABLE IS ALLOWED ABOVE ACCESSIBLE CEILINGS AND IN STUD CONSTRUCTION ONLY. HOMERUNS TO PANEL SHALL BE WIRE IN RACEWAY ONLY, MC CABLE IS NOT ACCEPTABLE FOR HOMERUNS. MC CABLE IS ONLY ACCEPTABLE FOR 20A BRANCH CIRCUITS.
7. WHEREVER THE WORD "PROVIDE" IS USED ON THE ELECTRICAL DRAWINGS, IT SHALL BE INFERRED TO MEAN "FURNISH AND INSTALL", UNLESS NOTED OTHERWISE.



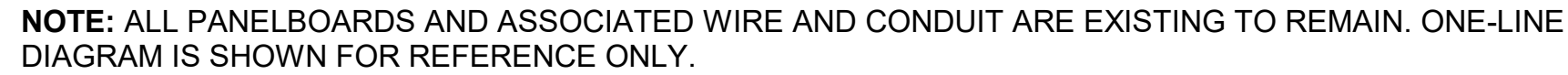
<p> <b>HGTC - GT BLDG. 500 ELECTRICAL AND FIRE ALARM SYSTEMS</b>  <b>4003 SOUTH FRASER STREET GEORGETOWN, SC 29440</b> </p>	<p><b>ELECTRICAL NOTES</b></p>
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		1
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E002

[illegible]

\* PROVIDE CIRCUIT BREAKER WITH A RED FIRE ALARM CIRCUIT BREAKER LOCKOUT KIT THAT PERMANENTLY IDENTIFIES CIRCUIT AS "FIRE ALARM".



GROUNDING LEGEND		
ABBR.	DESCRIPTION	SIZE
SBJ	SYSTEM BONDING JUMPER	*
GEC	GROUNDING ELECTRODE CONDUCTOR	***
EGC	EQUIPMENT GROUNDING CONDUCTOR	**
*	SIZE PER TABLE 250.102(C)(1) OF THE NEC OR 12.5% OF CONDUCTOR SIZE [250.28].	
**	SIZE PER TABLE 250.122.	
***	SIZE PER ONE-LINE DIAGRAM.	

1. NUMBERS IN BRACKETS REFER TO SPECIFIC SECTIONS OF THE NATIONAL ELECTRICAL CODE.
2. EARTH SHALL NOT BE USED AS THE SOLE GROUND RETURN PATH FOR ANY EQUIPMENT POWERED UNDER THIS PROJECT. OTHERWISE OVERCURRENT PROTECTION MIGHT NOT WORK, OR IT MIGHT CAUSE POWER QUALITY PROBLEMS.
3. NO ALUMINUM SHALL BE USED FOR GROUNDING WORK, WITHOUT THE SPECIFIC WRITTEN PERMISSION OF THE ENGINEER.
4. ALUMINUM TERMINALS, INCLUDING STRIP TERMINALS, SHALL BE BONDED WITH LISTED ALUMINUM EQUIPMENT WITH ALUMINUM TO COPPER CONNECTORS FOR ROUTING COPPER EGCS.
5. ALL METAL ENCLOSURES AND RACEWAYS SHALL BE BONDED TO GROUND [250.86]. FOR CIRCUITS OVER 250V PROVIDE BOND PER [250.97]. STANDARD LOCKNUTS ARE NOT ACCEPTABLE.
6. PROVIDE EGC CONNECTED TO ANY JUNCTION BOX WHERE SPLICE IS MADE [250.148].

