

**OSF FORM F3**

CODE ANALYSIS	
PROJECT ADDRESS:	215 N HIGHWAY 21 BYP, FORT MILL, SC, 29715
OCCUPANCY CLASSIFICATION:	GYM-A4 AUDITORIUM-A1
TYPE OF CONSTRUCTION:	1A
DESIGN OCCUPANCY LOAD:	N/A
AUTOMATIC SPRINKLER SYSTEM PROVIDED?	NO
AUTOMATIC SPRINKLER SYSTEM PROVIDED?	NO
APPLICABLE ICC CODE AND EDITION:	IMC 2018
APPLICABLE ICC A117.1:	2017
APPLICABLE SC FACILITIES PLANNING AND CONSTRUCTION GUIDE EDITION:	2020

MECHANICAL INFORMATION		
<b>GENERAL INFORMATION</b>		
BUILDING LOCATION	FORT MILL, SOUTH CAROLINA	
CLIMATE ZONE	3A	
OUTDOOR DESIGN TEMPERATURE	SUMMER	95 DEG. F DF 74 DEG. F WB
	WINTER	19 DEG. F DF - DEG. F WB
INDOOR DESIGN TEMPERATURE	SUMMER	75 DEG. F DF 63 DEG. F WB
	WINTER	70 DEG. F DF - DEG. F WB
<b>OUTSIDE AIR</b>		
OCCUPIED MINIMUM OUTSIDE AIR	3.2 CFM PER PERSON	
CO2 DEMAND MANAGEMENT	<input type="checkbox"/> NO <input checked="" type="checkbox"/> YES	
SUPERVISED CONTROL SYSTEM	<input type="checkbox"/> NO <input checked="" type="checkbox"/> YES	
<b>MECHANICAL SYSTEMS, SERVICE SYSTEMS &amp; EQUIPMENT</b>		
THE EXISTING PACKAGED UNITS SERVING THE GYM ARE BEING REPLACED AND A NEW UNIT IS BEING ADDED TO SERVE THE WRESTLING ROOM. AUDITORIUM UNITS LOCATED ON THE ROOF OF THE STAGE ARE BEING REPLACED. DHS-1 SERVING THE GYM TO REMAIN. OUTSIDE AIR FOR THE AUDITORIUM IS BEING INCREASED AND BROUGHT DIRECTLY INTO THE PACKAGED UNITS SERVING THE AUDITORIUM.		

ELECTRICAL INFORMATION N/A, EXISTING SERVICES		
SERVICE TRANSFORMER	<input type="checkbox"/> BY UTILITY	N/A KVA PRIMARY
	<input type="checkbox"/> BY DISTRICT	N/A VOLTAGE/PHASE
<b>ELECTRICAL SERVICE INFORMATION</b>		
SERVICE VOLTAGE/PHASE	N/A AMPERES	
SERVICE ENTRANCE CONDUCTOR SIZE	N/A QTY PER PHASE	
TOTAL CONNECTED LOAD	N/A KVA	
ESTIMATED MAXIMUM DEMAND	N/A KVA	
AVAILABLE FAULT CURRENT IN SYMMETRICAL AMPERES	N/A	
INTERRUPTING CAPACITY OF SERVICE OVERCURRENT DEVICE	N/A	
<b>GROUNDING ELECTRODE SYSTEM COMPONENTS (NEC 250)</b>		
<b>EMERGENCY SERVICE INFORMATION N/A</b>		
EMERGENCY GENERATOR	<input type="checkbox"/> NO <input type="checkbox"/> YES	N/A KVA
	FUEL	N/A VOLTAGE/PHASE
EXIT/EMERGENCY LIGHTS BACKUP POWER	<input type="checkbox"/> INTEGRAL BATTERY	
	<input type="checkbox"/> GENERATOR	
FIRE ALARM SYSTEM	<input type="checkbox"/> MANUAL	<input type="checkbox"/> ADDRESSABLE
	<input type="checkbox"/> AUTOMATIC	<input type="checkbox"/> CLASS A
		<input type="checkbox"/> CLASS B
LIGHTNING PROTECTION PROVIDED	<input type="checkbox"/> NO <input type="checkbox"/> YES	

# FORT MILL SCHOOL DISTRICT FORT MILL HIGH SCHOOL 215 N HIGHWAY 21 BYP, FORT MILL, SC, 29715 HVAC RENOVATIONS CONSTRUCTION DOCUMENTS 2020-12-14

Project Engineer:	JEB
Drawn By:	JEB
Revisions:	
No. _____	Date _____

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**SITE MAP**



**CONSULTANTS**

**GENERAL CONSTRUCTION - MECHANICAL - ELECTRICAL**  
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1331 ELMWOOD AVENUE, SUITE 200  
COLUMBIA, SOUTH CAROLINA 29201  
TEL: (803) 254-6302  
FAX: (803) 771-6142

**CODE ANALYSIS**

- INTERNATIONAL BUILDING CODE (IBC): 2018
- INTERNATIONAL FIRE CODE (IFC): 2018
- INTERNATIONAL FUEL GAS CODE (IFGC): 2018
- INTERNATIONAL MECHANICAL CODE (IMC): 2018
- INTERNATIONAL PLUMBING CODE (IPC): 2018
- NATIONAL ELECTRIC CODE (NEC): 2017
- INTERNATIONAL ENERGY CONSERVATION CODE (IECC): 2009
- SEISMIC & WIND DESIGN CRITERIA: CATEGORY C, RISK CATEGORY III, WIND SPEED 119 MPH

**DRAWING INDEX**

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- GC-102 AUDITORIUM GENERAL CONSTRUCTION PLAN
- GC-103 GENERAL CONSTRUCTION DETAILS
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- M-101A ENLARGED GYM RENOVATION PLAN
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- E-101 GYM RENOVATION PLAN, SCHEDULES & DETAILS - ELECTRICAL
- E-102 AUDITORIUM RENOVATION PLAN - ELECTRICAL

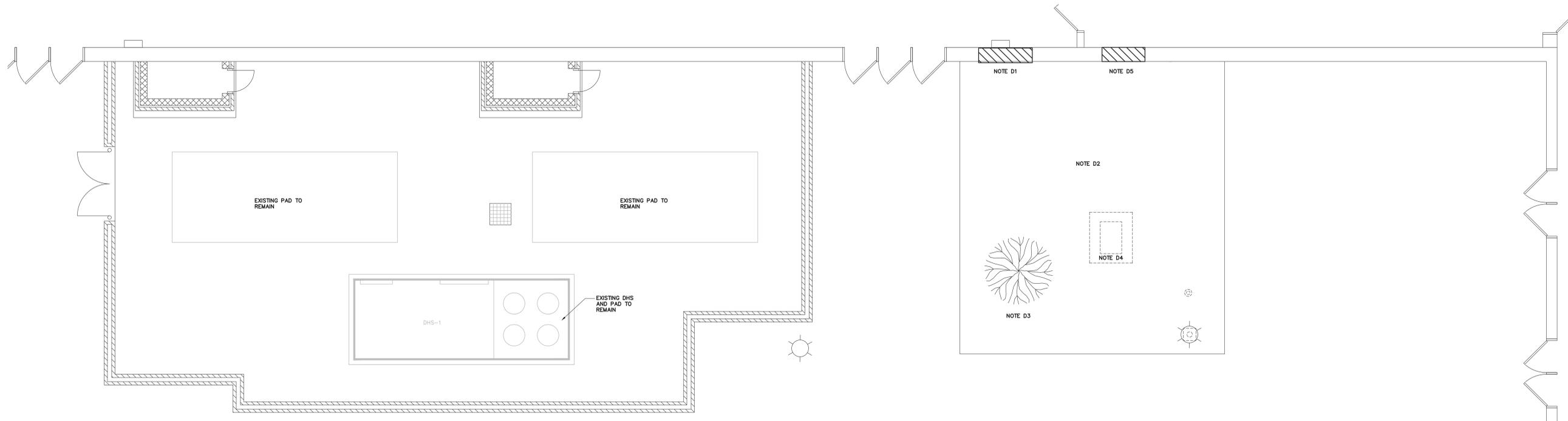
FORT MILL SCHOOL DISTRICT  
 FORT MILL HIGH SCHOOL HVAC RENOVATIONS  
 COVER SHEET



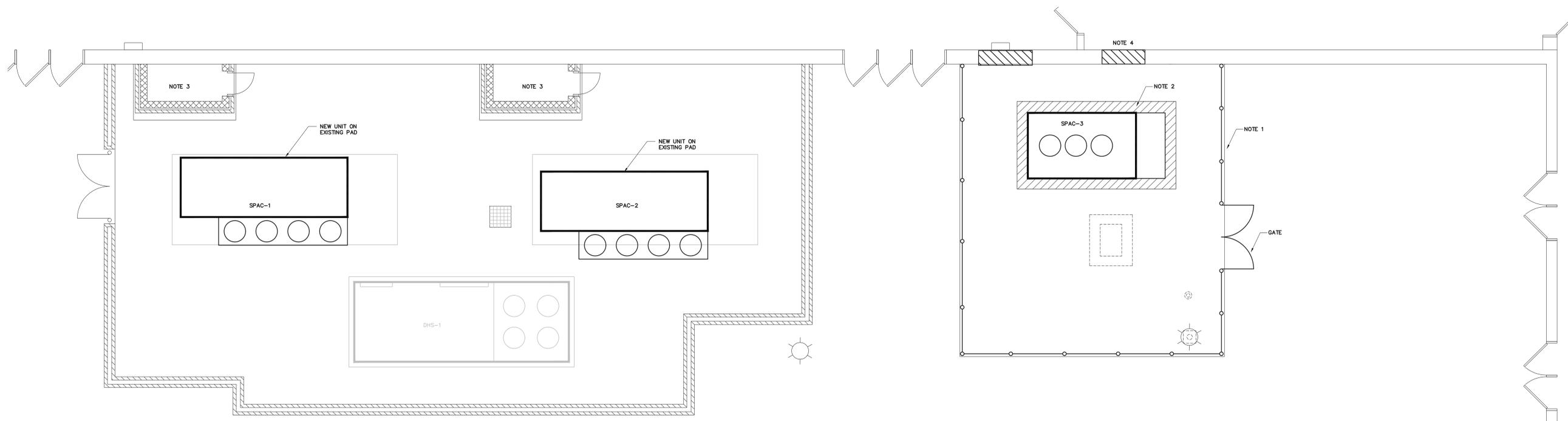
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Sheet Number:

**CS**



1 GYM GENERAL CONSTRUCTION DEMOLITION PLAN  
SCALE: 1/4"=1'-0"



2 GYM GENERAL CONSTRUCTION PLAN  
SCALE: 1/4"=1'-0"

DEMOLITION KEY NOTES	GENERAL CONSTRUCTION KEY NOTES	KEYPLAN
<p>D1. REMOVE EXISTING 60x48 LOUVER. FRAME OPENING AS REQUIRED FOR DUCTWORK.</p> <p>D2. REMOVE TOP LAYER OF SOIL (MIN 4") AND PROVIDE #7 GRAVEL BASE IN ENCLOSURE. MAINTAIN SLOPE TO EXISTING AREA DRAIN.</p> <p>D3. REMOVE EXISTING TREE IN MECHANICAL YARD.</p> <p>D4. CAMERA EXISTING STORM LINES TO VERIFY PIPE CONDITION. MINIMUM OF 10 FEET IN EACH DIRECTION.</p> <p>D5. CUT OPENING IN EXISTING WALL. PROVIDE TEMPORARY SHORING UNTIL LINTEL IS INSTALLED.</p>	<p>1. INSTALL NEW 6' TALL CHAIN LENGTH FENCE AROUND UNITS. SEE DETAIL.</p> <p>2. NEW EQUIPMENT PAD FOR SPAC-3. PAD SHALL EXTEND A MIN OF 6" BEYOND THE EQUIPMENT IN EACH DIRECTION.</p> <p>3. THOROUGHLY CLEAN RETURN AIR PLENUM ROOM, WPE DOWN EXISTING RETURN GRILLE AND CHECK DOOR SEALS. PROVIDE NEW DOOR SEALS AND WEATHERSTRIPPING AROUND THE DOOR TO PROVIDE A TIGHT PLENUM.</p> <p>4. FRAME NEW RETURN DUCT OPENING. SEE DETAIL FOR LINTEL.</p>	

Project Engineer: JEB  
 Drawn By: LAM

Revisions:

No.	Date

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FORT MILL SCHOOL DISTRICT  
 FORT MILL HIGH SCHOOL HVAC RENOVATIONS  
 GYM GENERAL CONSTRUCTION PLAN

Project: Fort Mill High School HVAC Renovations  
 Sheet Title: GYM GENERAL CONSTRUCTION PLAN

**Buford Goff & Associates, Inc.**  
 Engineers & Planners  
 1331 Elmwood Ave.  
 Suite 200  
 Columbia, SC 29201  
 Phone: (803) 254-6302

Sheet Number: **GC101**

Date: DECEMBER 14, 2020  
 Scale: As Noted  
 BGA PROJECT NUMBER: 20051  
 CONSTRUCTION DOCUMENTS

GENERAL CONSTRUCTION KEY NOTES

- COORDINATE LOCATION OF NEW ROOFTOP EQUIPMENT WITH MECHANICAL PLANS.
- INSTALL NEW LADDER SAFETY POST ON EXISTING ROOF ACCESS.
- ROOF SHALL BE PROTECTED DURING INSTALL OF NEW EQUIPMENT. ANY DAMAGE TO THE ROOF SHALL BE REPAIRED BY A CONTRACTOR LICENSED TO INSTALL THE TYPE OF ROOF ON THIS BUILDING. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION THAT THE ROOF BOND IS INTACT AFTER THIS WORK IS COMPLETED.
- PROVIDE TEMPORARY SAFETY RAILS AS REQUIRED FOR INSTALLATION OF NEW ROOFTOP UNITS. ALL WORK SHALL BE DONE IN ACCORDANCE WITH OSHA AND DISTRICT GUIDELINES. CONTRACTOR SHALL PROVIDE ALL BARRICADES AND SAFETY EQUIPMENT REQUIRED. CONTRACTOR SHALL COORDINATE ALL CRANE LOCATIONS WITH THE SCHOOL DISTRICT.

Project Engineer: JEB  
 Drawn By: LAM

Revisions:

No.	Date	

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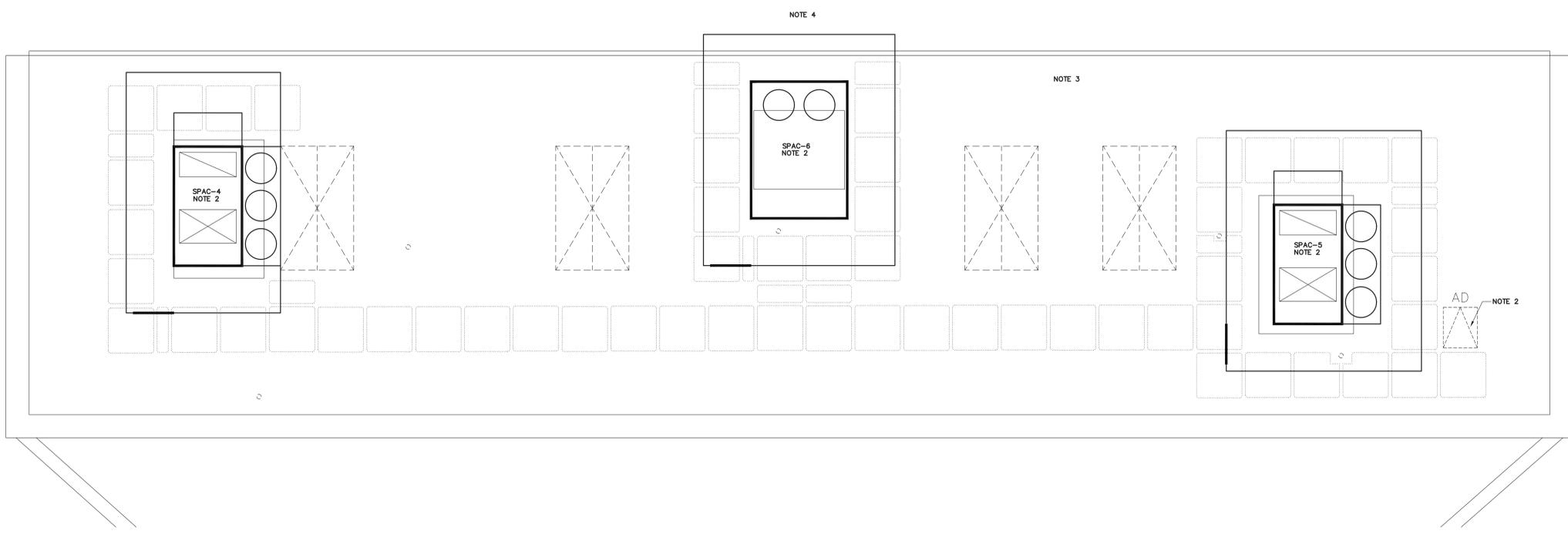
FORT MILL SCHOOL DISTRICT  
 FORT MILL HIGH SCHOOL HVAC RENOVATIONS  
 AUDITORIUM GENERAL CONSTRUCTION PLAN

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 Engineers & Planners

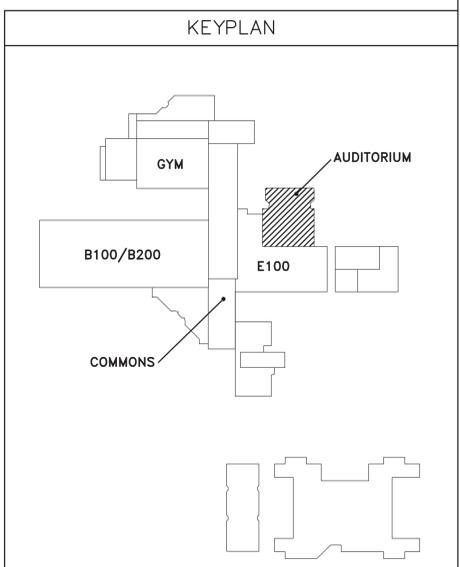
1331 Elmwood Ave.  
 Suite 200  
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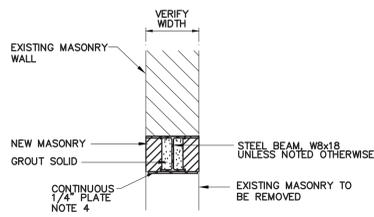
Sheet Number:  
**GC102**

Date: DECEMBER 14, 2020  
 Scale: As Noted  
 BGA PROJECT NUMBER: 20051  
 CONSTRUCTION DOCUMENTS



**1**  
 GC102  
 AUDITORIUM GENERAL CONSTRUCTION PLAN  
 SCALE: 1/4"=1'-0"

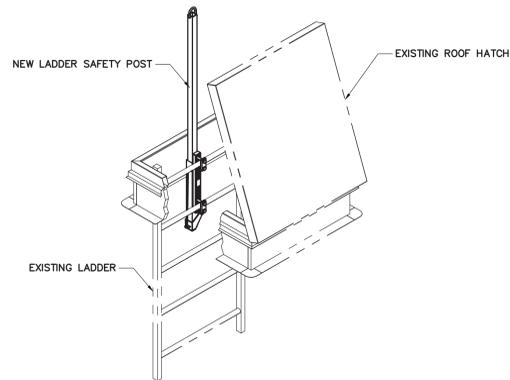




**NOTES:**

1. PROVIDE BEARING PLATES @ EACH END OF NEW LINTEL. 7"x1/4"x8" WITH (2) 1/2" ANCHORS. REMOVE PORTION OF MASONRY, TO SET PLATE, AND FILL SOLID UNDER PLATE W/ NON-SHRINK GROUT. REPAIR MASONRY AFTER PLACEMENT.
2. COORDINATE LOCATION, SIZE AND QUANTITY OF OPENINGS WITH MECHANICAL DRAWINGS.
3. SHORE EXISTING WALL AND ROOF UNTIL NEW STEEL LINTEL IS IN PLACE.
4. OFFSET PLATE ACCORDING TO THE EXISTING WALL CONFIGURATION.
5. CONTRACTOR TO FIELD VERIFY EXISTING WALL CONSTRUCTION AND DIMENSIONS.

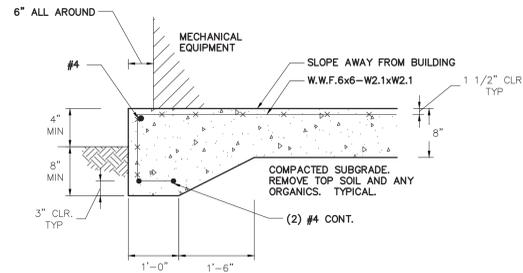
**NEW LINTEL IN EXISTING WALL**  
NOT TO SCALE



**NOTES:**

1. FIELD VERIFY EXISTING LADDER RUNG DIMENSIONS AND SPACING PRIOR TO ORDERING SAFETY POST. PROVIDE ALL HARDWARE TO ATTACH SAFETY POST TO LADDER.
2. POST SHALL EXTEND A MINIMUM OF 42" ABOVE THE ROOF HATCH.

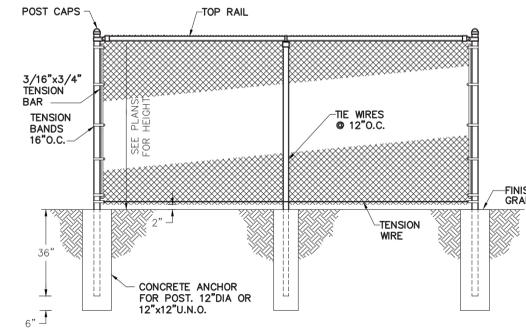
**LADDER SAFETY POST DETAIL**  
NOT TO SCALE



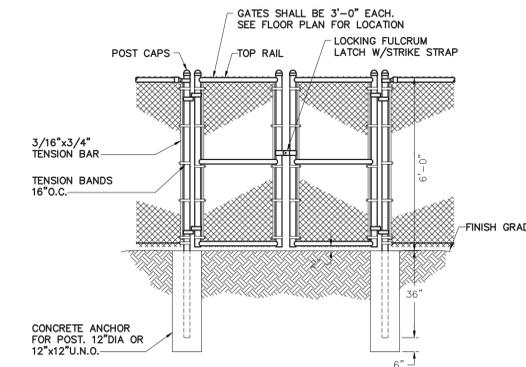
**NOTES:**

1. EXTEND THE TOE FOOTING DEPTH TO ENSURE LEVEL PAD AND EQUIPMENT AND ADJUST FOR GRADES.

**EQUIPMENT PAD DETAIL**  
NOT TO SCALE



**CHAIN LINK FENCE**

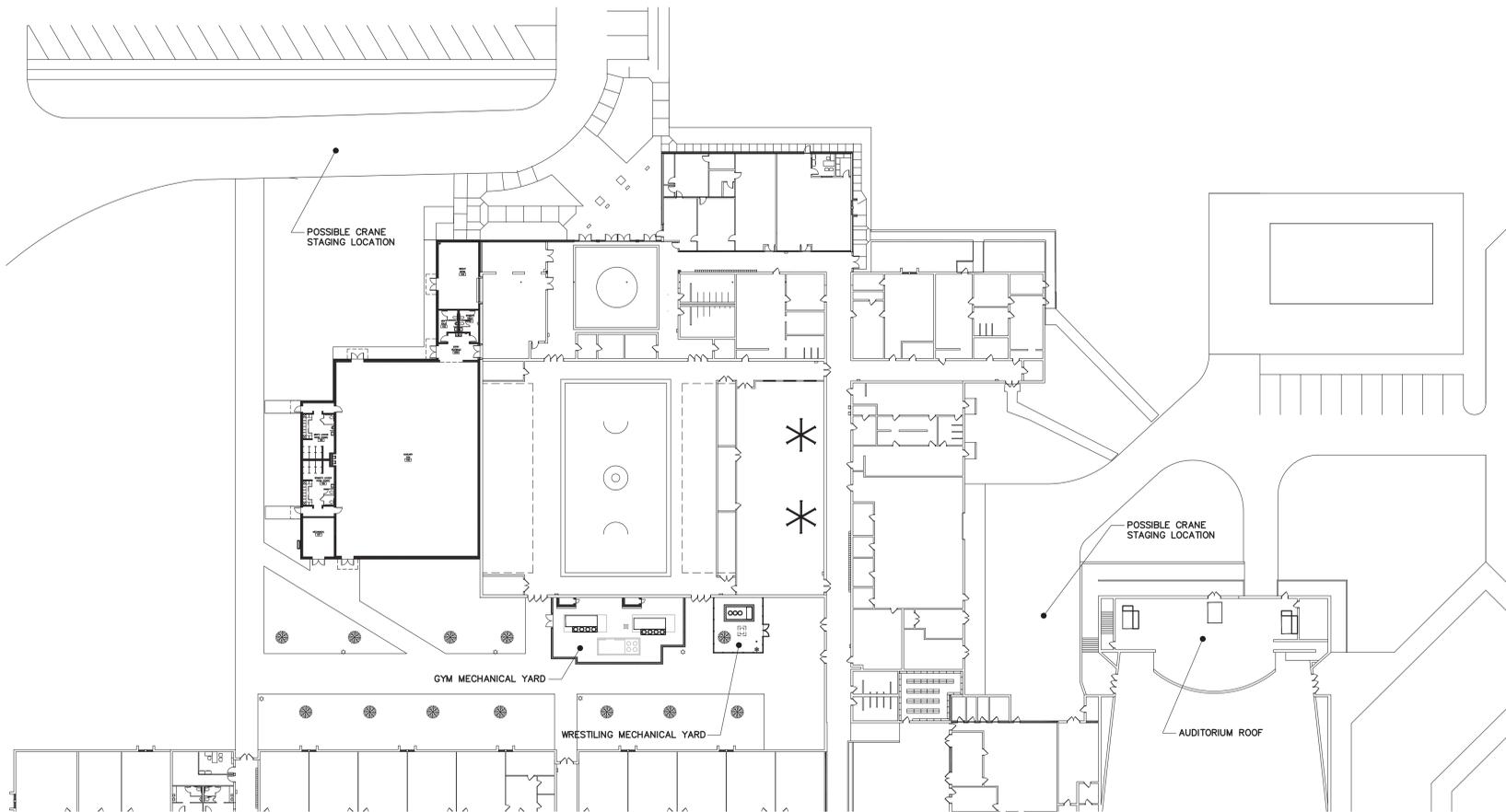


**DOUBLE GATE**

**NOTES:**

1. HEIGHT SHALL BE 6'-0".
2. THE FOLLOWING SHALL COMPLY WITH AASHTO M181:
  - a. TENSION WIRE
  - b. CHAIN LINK FENCE
  - c. STEEL POSTS, VAILS AND GATE FRAMES (TYPICAL, GRADE 1 OR 2)
3. THE FOLLOWING SHALL COMPLY WITH ASTM F 626:
  - a. WIRE FASTENERS
  - b. TIE CLIPS
  - c. 9 GA. TIE WIRE
  - d. HOG RINGS
4. FABRIC SHALL BE:
  - a. 9 GA. GALVANIZED
  - b. 2" MESH
5. SELVAGES:
  - a. 5 FEET AND LESS: KNUCKLED
  - b. OVER 5 FEET: TWISTED AND BARBED ON THE TOP SELVAGE AND KNUCKLED ON THE BOTTOM SELVAGE
  - c. GATES: KNUCKLED
  - d. EXTEND 1" ABOVE TOP RAIL
  - e. COAT THE ENDS BEFORE THE WEAVING PROCESS WITH STANDARD CLEAN PROTECTIVE COATING
6. POSTS, RAILS, GATE AND FRAME (SCH. 40 STEEL):
  - a. CORNER POST: 3" GALVANIZED
  - b. STRAIN POST: 3" GALVANIZED
  - c. LINE POST: 2" GALVANIZED
  - d. END POST: 3" GALVANIZED
  - e. RAIL: 1.67" GALVANIZED
  - f. GATE FRAMES: 1.90" GALVANIZED
7. PROVIDE TIE WIRES 24" O.C. U.N.O.
8. SPACE THE POSTS A MAXIMUM OF 10 FT O.C.
9. POLYMER FINISH
  - a. PROVIDE ON ALL FENCE COMPONENTS
  - b. COMPLY WITH ASTM F1664 (WIRE), ASTM F1043 (FRAMING), AND ASTM F626 (FITTINGS)
  - c. COATING SHALL BE A MINIMUM OF 10 MIL THICK PVC
  - d. COLOR SHALL BE BLACK
10. SCREEN:
  - a. UV STABILIZED, 8 OZ/Y<sup>2</sup> VINYL COATED POLY TO MATCH FENCE HEIGHT.
  - b. 2" POLYPROPYLENE EDGE WITH 3/8" BRASS GROMMETS AT 24" ON CENTER. ATTACH WITH GALVANIZED HOG RINGS.
  - c. 80% SHADING, COLOR - BLACK
11. APPROVED FENCE CONTRACTOR:
  - a. LEWIS FENCE COMPANY, ROCK HILL, SC

**CHAIN LINK FENCE DETAIL**  
NOT TO SCALE



**SITE STAGING PLAN**  
1/32"=1'-0"

**NOTES:**

1. COORDINATE CRANE STAGING WITH SITE CONDITIONS AND OWNER REQUIREMENTS. LOCATIONS SHOWN FOR REFERENCE ONLY.
2. SEE PLANS FOR EQUIPMENT LOCATIONS.
3. PROTECT PAVED SURFACES AND PROVIDE BARRICADES. SEE SPECIFICATIONS.

Project Engineer: JEB  
 Drawn By: LAM  
 Revisions:  
 No. Date  
 No. Date

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FORT MILL SCHOOL DISTRICT  
 FORT MILL HIGH SCHOOL HVAC RENOVATIONS  
 GENERAL CONSTRUCTION DETAILS

Project: \_\_\_\_\_  
 Sheet Title: \_\_\_\_\_

**Buford Goff & Associates, Inc.**  
 Engineers & Planners

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 Phone: (803) 254-6302

Sheet Number: **GC103**

Date: DECEMBER 14, 2020  
 Scale: As Noted  
 BGA PROJECT NUMBER: 20051  
 CONSTRUCTION DOCUMENTS

**GENERAL CONSTRUCTION KEY NOTES**

- INSTALL NEW LADDER IN APPROXIMATE LOCATION OF EXISTING LADDER. COORDINATE LOCATION OF LADDER WITH EXISTING CONDITIONS AND ROOF ACCESS LOCATIONS. PROVIDE OFFSETS AS REQUIRED.
- FIELD VERIFY ALL DIMENSIONS AND LADDER LENGTHS PRIOR TO ORDERING.

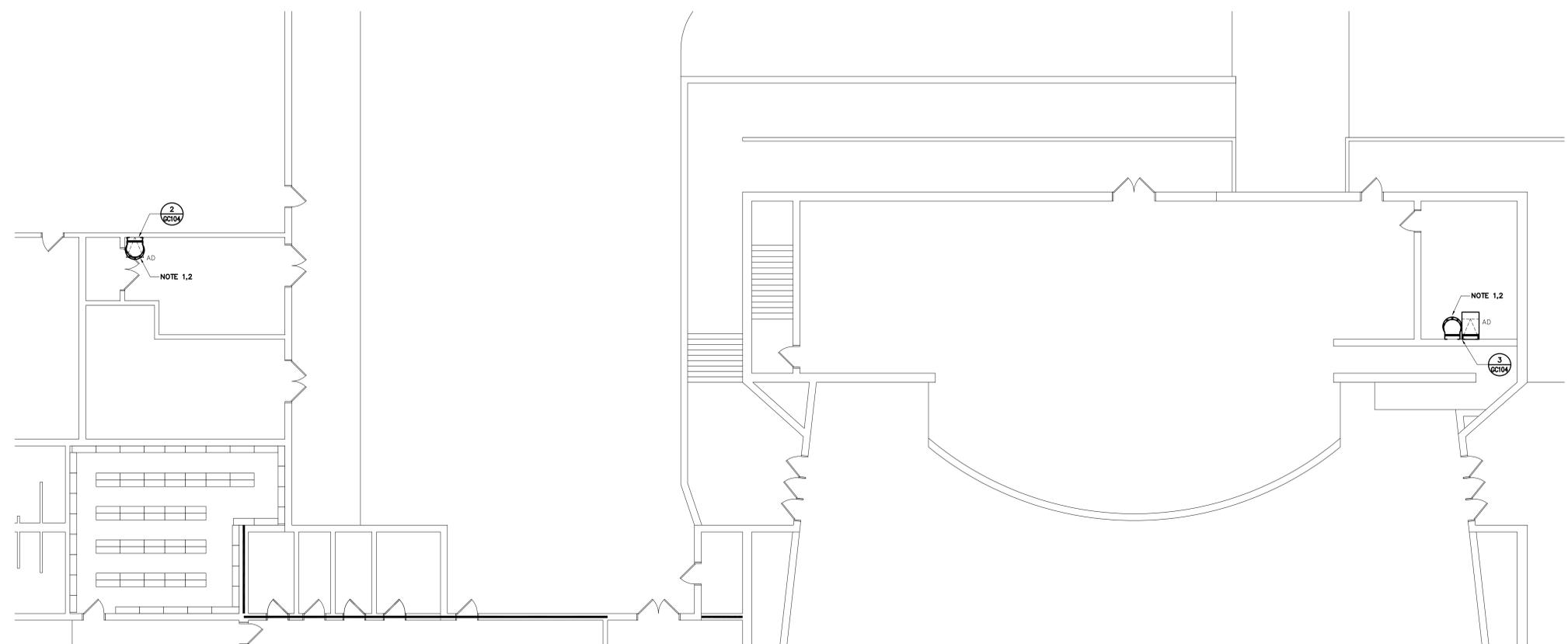
Project Engineer:  
JEB

Drawn By:  
LAM

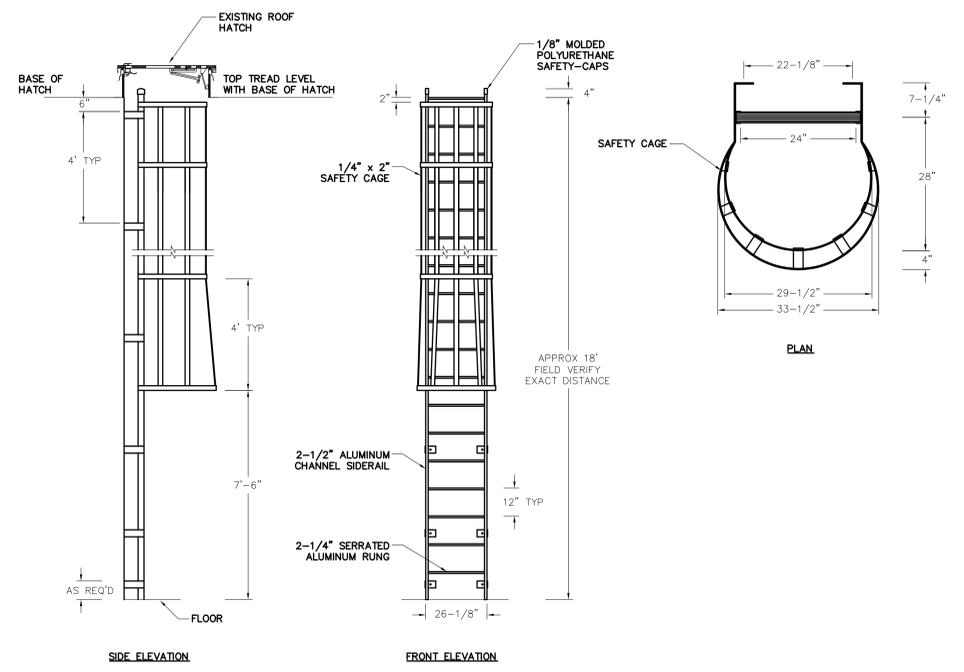
Revisions:

No.	Date

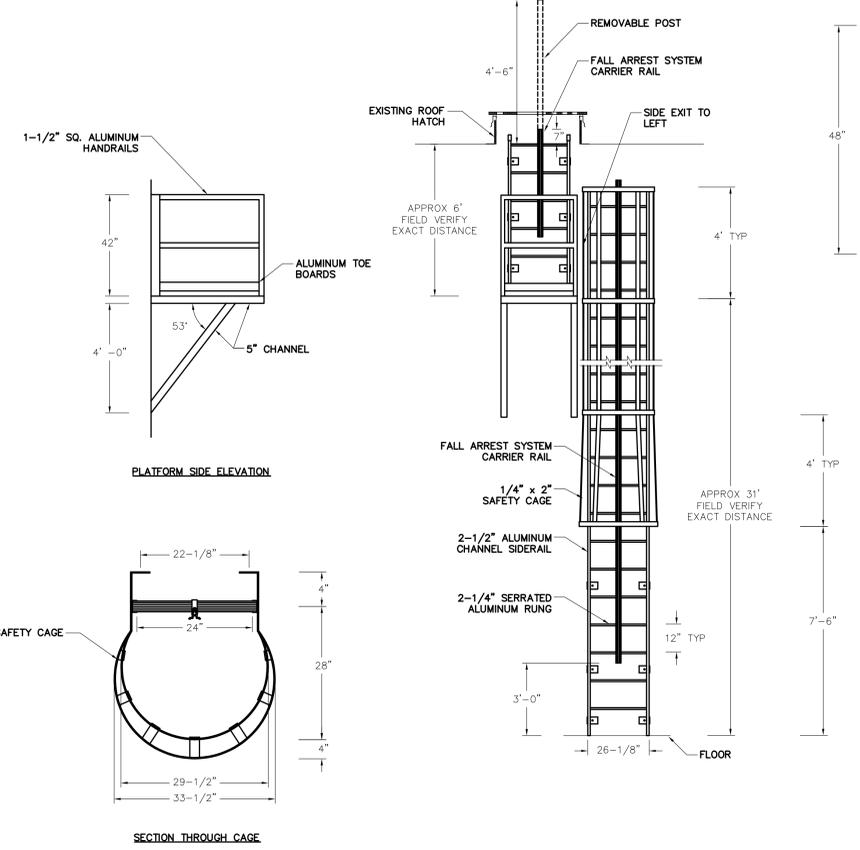
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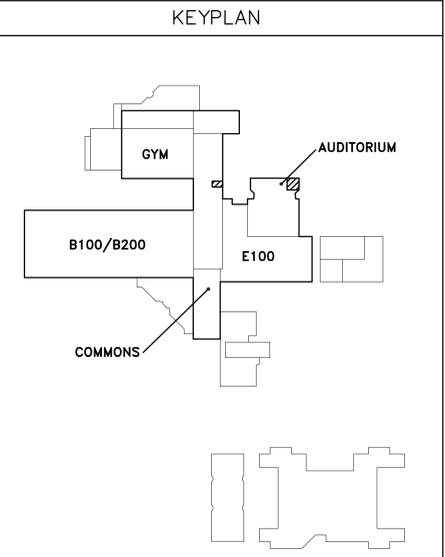
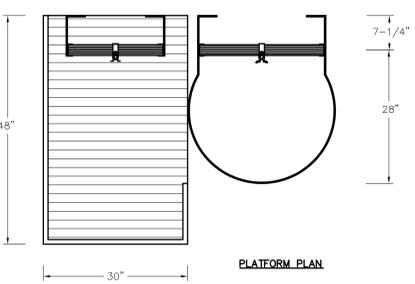
**1 LADDER REPLACEMENT PLAN**  
SCALE: 1/8"=1'-0"



**2 LADDER #1 DETAIL**  
SCALE: NTS



**3 LADDER #2 DETAIL**  
SCALE: NTS



**FORT MILL SCHOOL DISTRICT**  
**FORT MILL HIGH SCHOOL HVAC RENOVATIONS**  
 LADDER REPLACEMENT PLAN AND DETAILS

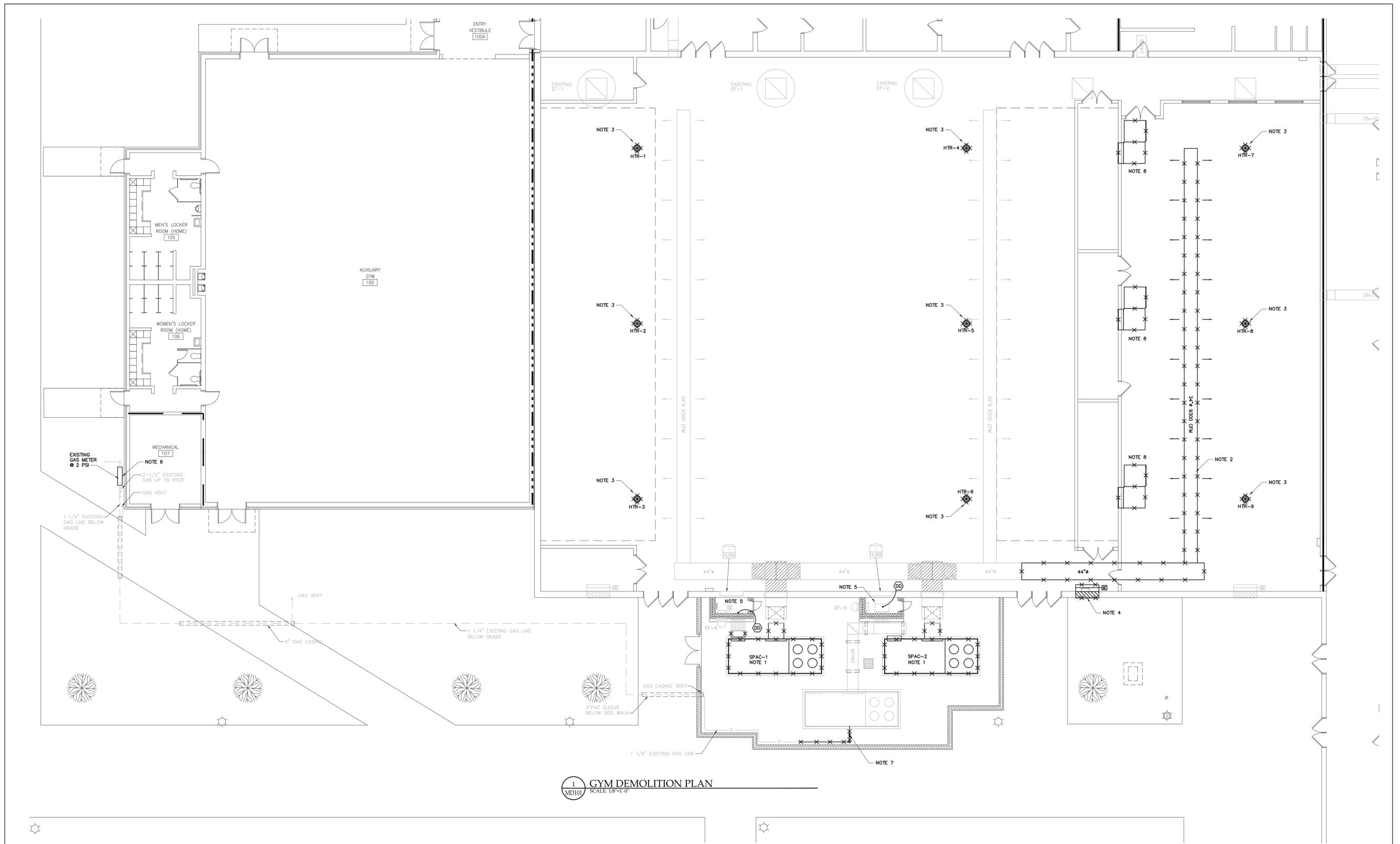
Project: Fort Mill High School HVAC Renovations  
Sheet Title: Ladder Replacement Plan and Details

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Sheet Number:  
**GC104**

Date: DECEMBER 14, 2020  
Scale: As Noted  
BGA PROJECT NUMBER: 20051  
CONSTRUCTION DOCUMENTS



1 GYM DEMOLITION PLAN  
MD101 SCALE: 1/8"=1'-0"

TEST AND BALANCE	HVAC DEMOLITION KEY NOTES	KEYPLAN
<ol style="list-style-type: none"> <li>PRIOR TO DEMOLITION MEASURE SPAC-1 AND SPAC-2 SUPPLY AND RETURN AIR AIRFLOW.</li> <li>SUBMIT PREDEMOLITION TEST AND BALANCE REPORT TO ENGINEER FOR REVIEW.</li> </ol>	<ol style="list-style-type: none"> <li>DEMOLISH EXISTING SPAC-1 AND SPAC-2. DEMOLISH DUCTWORK, SUPPORTS AND ACCESSORIES AS REQUIRED TO INSTALL THE NEW UNITS. EXISTING PADS TO REMAIN.</li> <li>DEMOLISH EXISTING FABRIC DUCTWORK, SUPPORTS AND ACCESSORIES AS SHOWN.</li> <li>DEMOLISH EXISTING ELECTRIC UNIT HEATERS, SUPPORTS, CONTROLS AND ACCESSORIES.</li> <li>DEMOLISH EXISTING 60x48 LOUVER, MOTORIZED DAMPER AND DUCT ATTACHED TO LOUVER.</li> <li>DEMOLISH EXISTING CONTROLS ASSOCIATED WITH SPAC-1 AND SPAC-2 IN RETURN AIR PLENUM. REMOVE EXISTING DUCT DETECTOR.</li> <li>EXISTING GAS METER TO BE REPLACED BY UTILITY.</li> <li>DEMOLISH GAS PIPING TO DHS-1 AS SHOWN. SHUT OFF GAS. THOROUGHLY EVACUATE LINE. DEMO AND CAP.</li> <li>DEMOLISH EXISTING TRANSFER DUCTWORK AND WIRE GRILLE.</li> </ol>	

Project Engineer:  
JER  
Drawn By:  
LAM  
Revisions:  
No. \_\_\_\_\_ Date \_\_\_\_\_  
No. \_\_\_\_\_ Date \_\_\_\_\_

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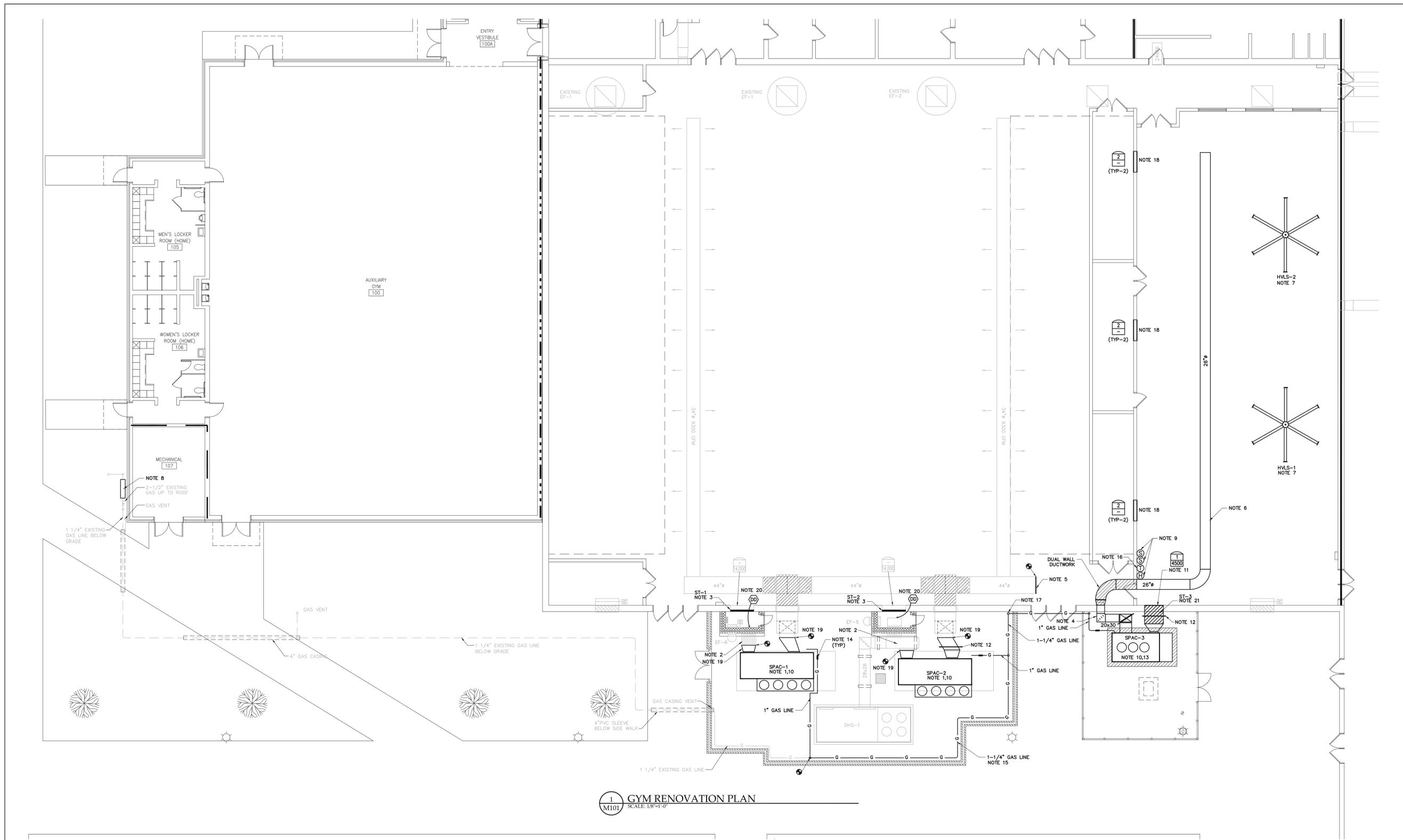
FORT MILL SCHOOL DISTRICT  
 FORT MILL HIGH SCHOOL HVAC RENOVATIONS  
 GYM DEMOLITION PLAN

Project  
Sheet Title

**Buford Goff**  
& Associates, Inc.  
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Sheet Number:  
**MD101**  
Date: DECEMBER 14, 2020  
Scale: As Noted  
BGA PROJECT NUMBER: 20051  
CONSTRUCTION DOCUMENTS



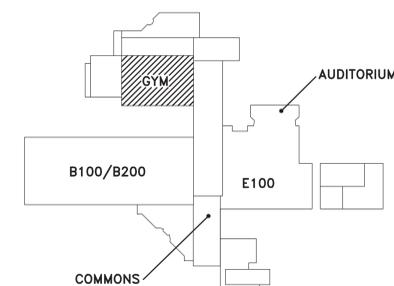


1 GYM RENOVATION PLAN  
SCALE: 1/8"=1'-0"

HVAC RENOVATION KEY NOTES

1. INSTALL NEW SPAC-1 AND SPAC-2 ON EXISTING PAD
2. CLEAN EXISTING RETURN DUCTWORK TO REMAIN AND EXISTING SILENCER. DUCT CLEANING SHALL BE IN ACCORDANCE WITH THE NADCA ACR STANDARD - 2013.
3. INSTALL NEW GRILLE SILENCER IN EXISTING GRILLE OPENING. FIELD VERIFY EXISTING OPENING SIZE.
4. ROUTE DUAL WALL SUPPLY DUCT UP THE SIDE OF THE BUILDING AND THROUGH EXISTING LOUVER OPENING. SEAL OFF UNUSED AREA WITH SHEET METAL AND INSULATE WITH ELASTOMERIC INSULATION. SEE DETAIL.
5. PROVIDE FABRIC CAP FOR EXISTING FABRIC SUPPLY DUCTWORK.
6. ROUTE NEW DUAL WALL DUCT OVER TO WRESTLING ROOM THROUGH EXISTING OPENING AND TRANSITION TO FABRIC DUCT. ROUTE FABRIC DUCT DOWN LENGTH OF ROOM. PROVIDE SHEET METAL PANEL TO CLOSE THE GAP. PROVIDE PAINT GRIP FINISH ON DUCT AND PANEL AND PAINT TO MATCH EXISTING. SEE DETAIL.
7. INSTALL NEW HVS FANS ON 2' EXTENSION ROD. LOCATE FANS CENTERED BETWEEN THE EXISTING LIGHTS. INSTALL FANS PER MANUFACTURER'S RECOMMENDATIONS.
8. COORDINATE WITH UTILITY FOR REPLACEMENT OF EXISTING GAS METER. NEW MAX CONNECTED LOAD 1800 CFH AT 2 PSI.
9. PROVIDE HEAVY DUTY LOCKING CONTROL GUARD OVER FAN CONTROLS AND HUMIDITY SENSOR. SEE SPECIFICATIONS FOR MORE INFORMATION.
10. PROVIDE DEEP SEAL P-TRAP AND ROUTE CONDENSATE TO STORM DRAIN.
11. HEAVY DUTY GYM GRILLE. LOCATE BOTTOM OF GRILLE MIN 6" AFF. COORDINATE LOCATION WITH EXISTING BLOCK.
12. PROVIDE DUCT SUPPORTS ON GRADE. SEE DETAIL FOR ADDITIONAL INFORMATION.
13. INSTALL NEW SPAC-3 ON NEW PAD.
14. GAS PRESSURE REGULATOR STATION. SEE DETAIL.
15. SUPPORT GAS LINE FROM WALL WITH STAINLESS STEEL PIPE CLAMPS.
16. FLAT PLATE TEMPERATURE SENSOR.
17. ROUTE 1-1/4" GAS LINE UP OVER DOOR AND DOWN TO SPAC-3.
18. INSTALL NEW 54x54 GRILLES IN EXISTING TRANSFER OPENING IN WALL. SEE DETAIL.
19. WRAP NEW DUCTWORK WITH ELASTOMERIC INSULATION AND FINISH WITH ALUMINUM JACKET. EXTEND ALUMINUM JACKET TO OVERLAP EXISTING DUCT A MINIMUM OF 12".
20. NEW SMOKE AND CO DETECTOR. SEE ELECTRICAL DRAWINGS.
21. INSTALL NEW ATTENUATOR IN DUCTWORK. WRAP ATTENUATOR AND ATTACHED DUCTWORK WITH ELASTOMERIC INSULATION AND FINISH WITH ALUMINUM JACKET.

KEYPLAN



Project Engineer:  
JEB

Drawn By:  
LAM

Revisions:

No.	Date

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Project: FORT MILL SCHOOL DISTRICT  
FORT MILL HIGH SCHOOL HVAC RENOVATIONS

Sheet Title: GYM RENOVATION PLAN

Project: FORT MILL SCHOOL DISTRICT  
FORT MILL HIGH SCHOOL HVAC RENOVATIONS

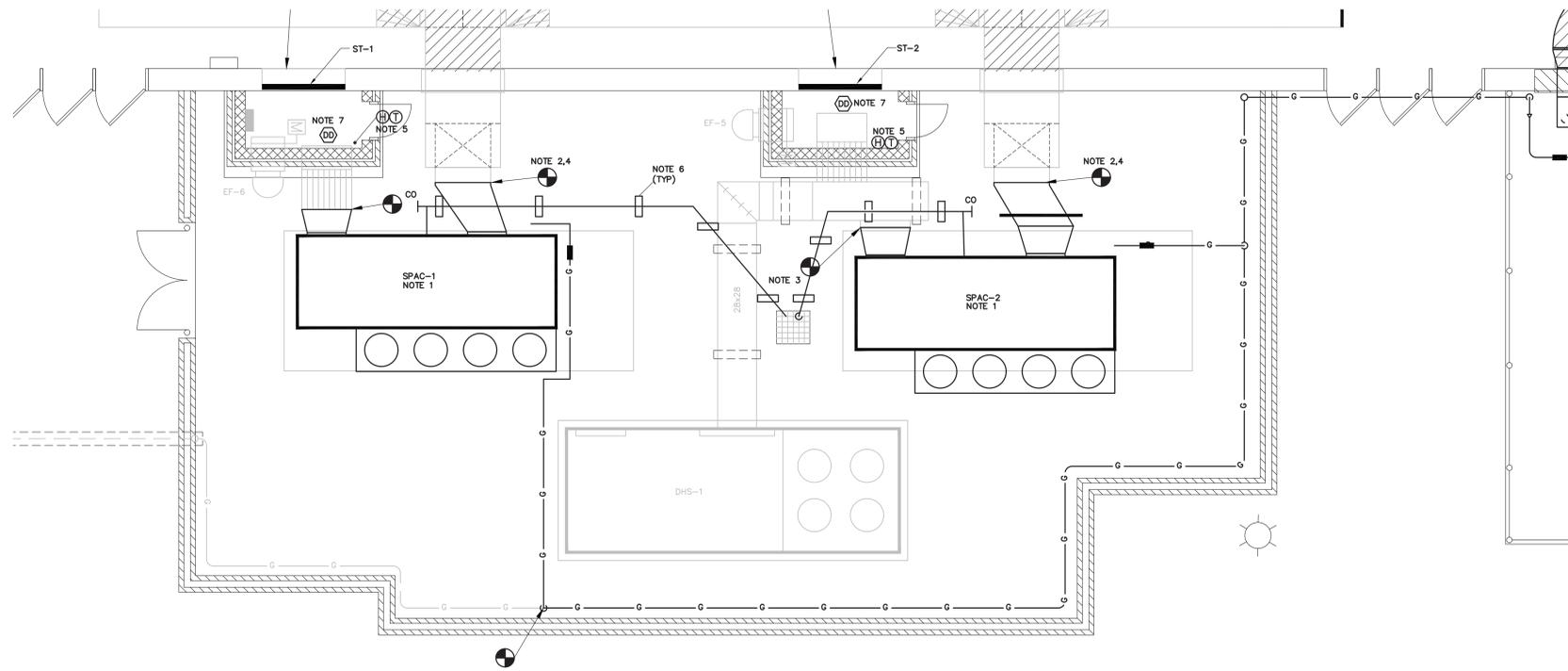
Sheet Title: GYM RENOVATION PLAN

Project Engineer:  
Buford Goff & Associates, Inc.  
Engineers & Planners

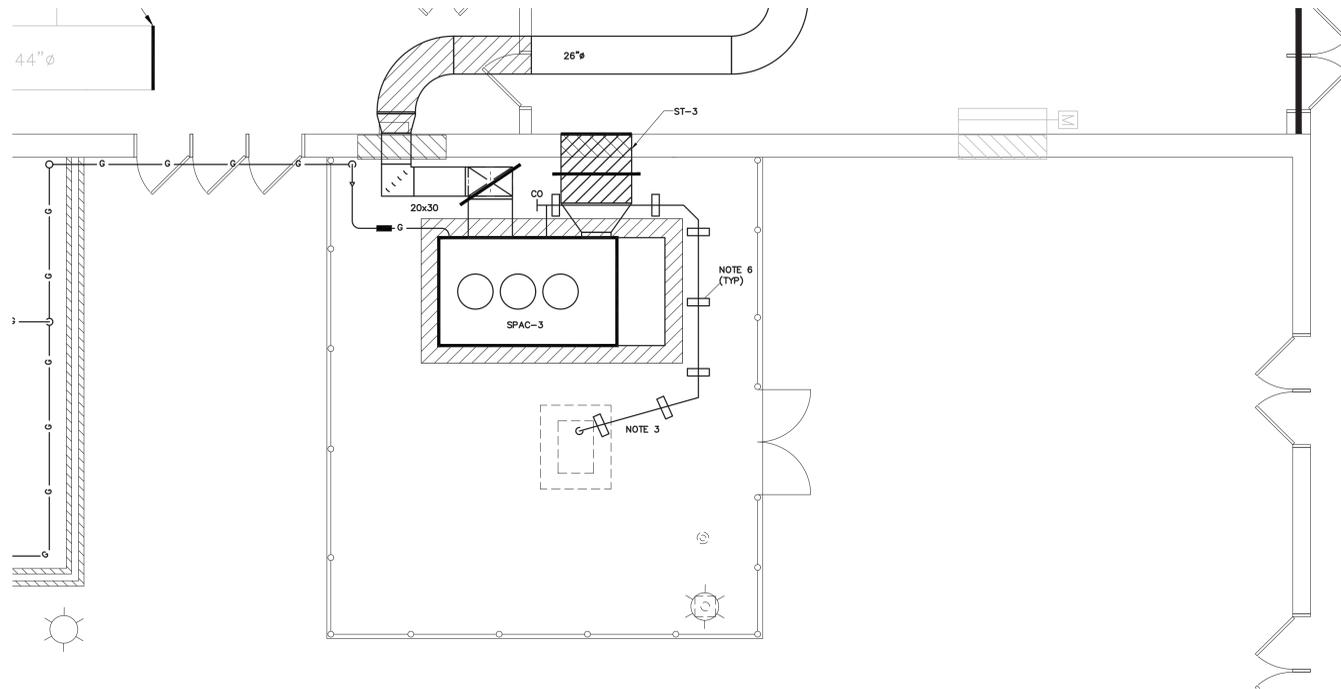
1331 Elmwood Ave.  
Suite 200  
Columbia, SC 29201  
Phone: (803) 254-6302

Sheet Number:  
**M101**

Date: DECEMBER 14, 2020  
Scale: As Noted  
BCA PROJECT NUMBER: 20051  
CONSTRUCTION DOCUMENTS



1 ENLARGED GYM MECHANICAL YARD RENOVATION PLAN  
SCALE: 1/4"=1'-0"



2 ENLARGED WRESTLING MECHANICAL YARD RENOVATION PLAN  
SCALE: 1/8"=1'-0"

HVAC RENOVATION KEY NOTES

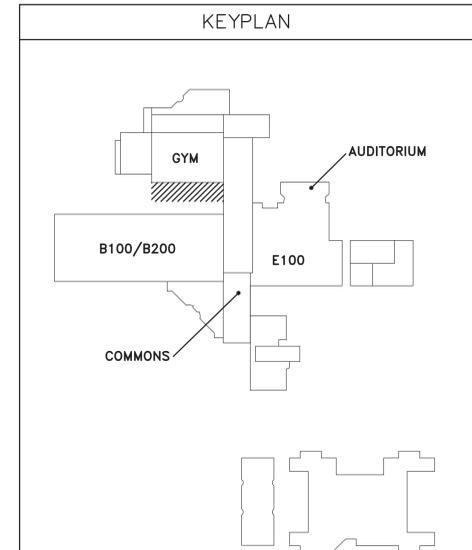
1. INSTALL NEW SPAC-1 AND SPAC-2 ON EXISTING PAD
2. CONNECT NEW DUAL WALL DUCTWORK TO EXISTING DUCTWORK.
3. ROUTE CONDENSATE PIPING TO STORM DRAIN. COORDINATE ROUTING WITH UNIT CONDENSATE DRAIN LOCATION.
4. TRANSITION TO EXISTING DUCT.
5. INSTALL NEW TEMPERATURE AND HUMIDITY SENSORS IN RETURN PLENUM.
6. PIPE SUPPORT.
7. SEE ELECTRICAL DRAWINGS FOR NEW LOCATION OF DUCT DETECTORS.

Project Engineer: JEB  
 Drawn By: LAM

Revisions:

No.	Date	Description

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FORT MILL SCHOOL DISTRICT  
 FORT MILL HIGH SCHOOL HVAC RENOVATIONS  
 ENLARGED GYM RENOVATION PLAN

**Buford Goff**  
 & Associates, Inc.  
 Engineers & Planners

1331 Elmwood Ave.  
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Sheet Number:  
**M101A**

Date: DECEMBER 14, 2020  
 Scale: As Noted  
 BGA PROJECT NUMBER: 20051  
 CONSTRUCTION DOCUMENTS

HVAC RENOVATION KEY NOTES

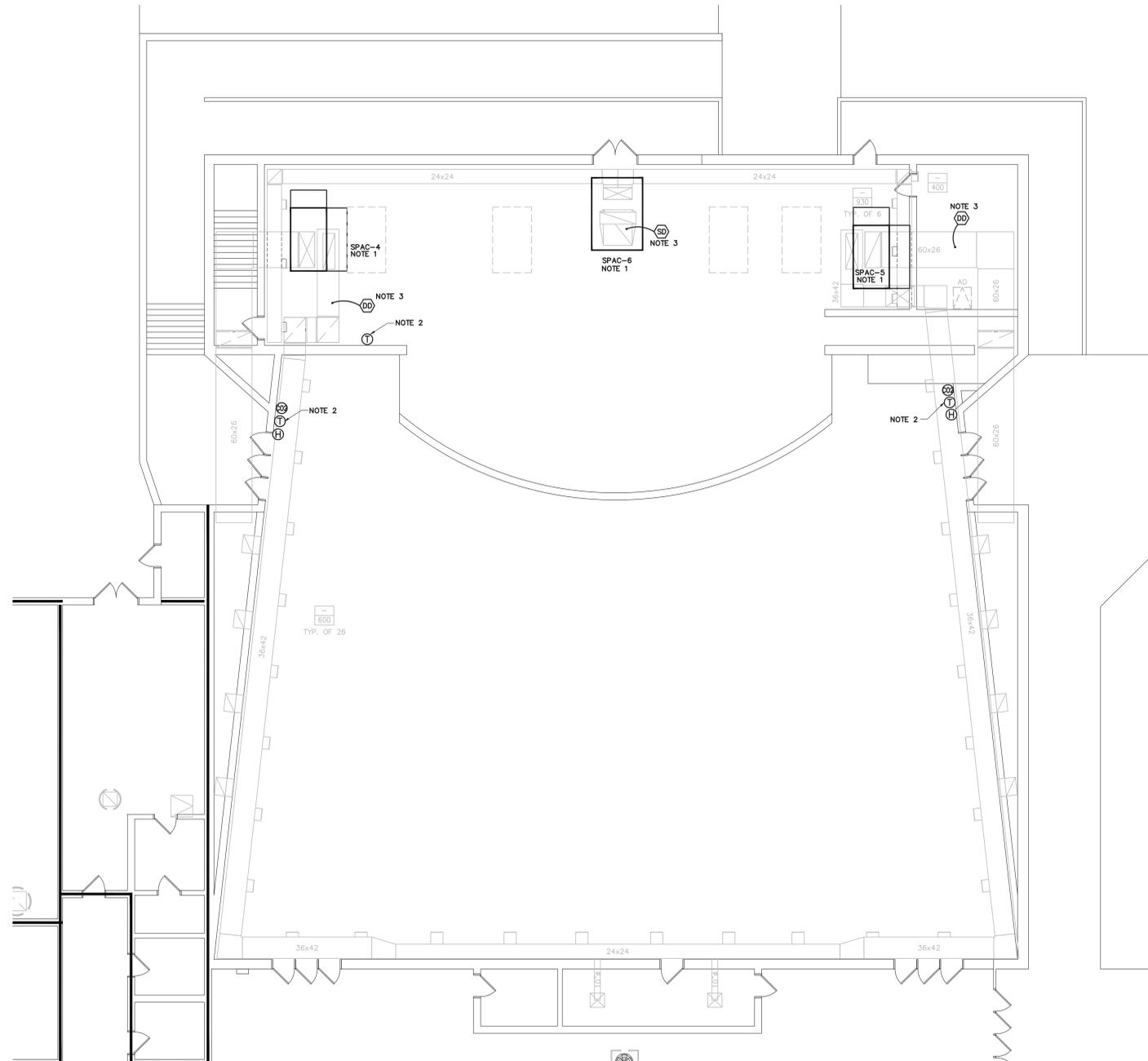
1. INSTALL NEW UNIT ON NEW ADAPTER CURB. CONNECT TO EXISTING DUCTWORK.
2. INSTALL NEW T-STATS, HUMIDITY SENSORS AND CO<sub>2</sub> SENSORS IN SAME GENERAL LOCATION AS EXISTING T-STAT. SEE DETAIL FOR MOUNTING HEIGHTS.
3. NEW DUCT DETECTORS OR SMOKE DETECTORS. SEE ELECTRICAL DRAWINGS FOR LOCATION.

Project Engineer: JEB  
 Drawn By: LAM

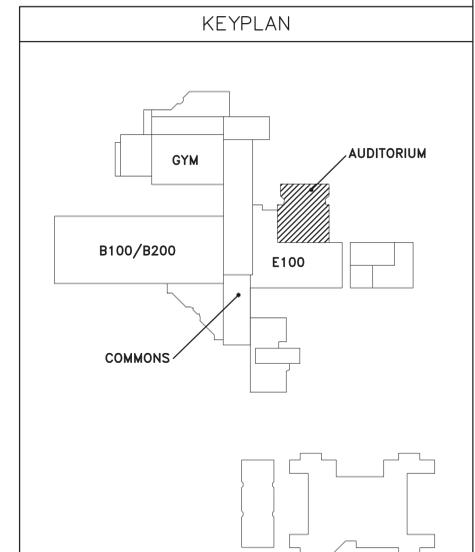
Revisions:

No.	Date	

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**1** AUDITORIUM RENOVATION PLAN  
 M102 SCALE: 1/8"=1'-0"



FORT MILL SCHOOL DISTRICT  
 FORT MILL HIGH SCHOOL HVAC RENOVATIONS  
 AUDITORIUM RENOVATION PLAN

**Buford Goff**  
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Sheet Number:  
**M102**  
 Date: DECEMBER 14, 2020  
 Scale: As Noted  
 BGA PROJECT NUMBER: 20051  
 CONSTRUCTION DOCUMENTS

HVAC RENOVATION KEY NOTES

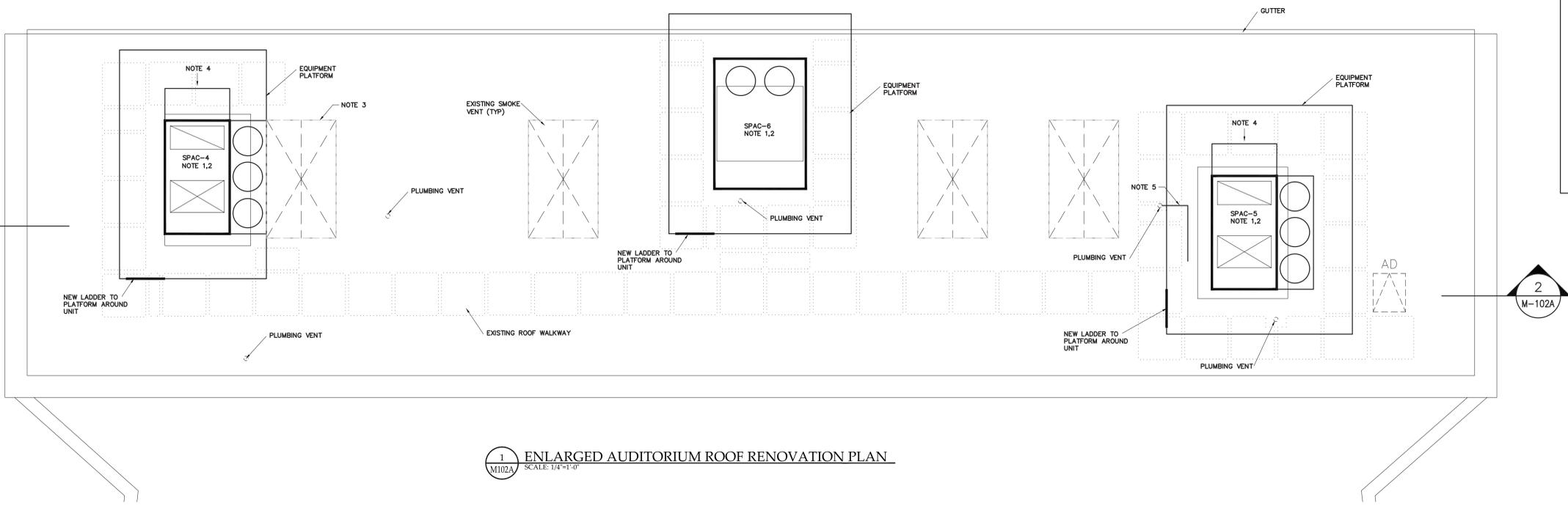
1. INSTALL NEW SPAC UNITS ON EXISTING CURB. COORDINATE SIZE OF NEW CURB WITH EXISTING CURB DIMENSIONS. ATTACH NEW CURB TO EXISTING CURB.
2. PROVIDE DEEP SEAL P-TRAP AND ROUTE CONDENSATE TO GUTTER.
3. INSTALL UNITS AND PLATFORMS SO THAT EXISTING SMOKE VENTS HAVE THEIR REQUIRED CLEARANCE FOR PROPER OPERATION. PROVIDE DIMENSIONED DRAWING SHOWING PLATFORM LAYOUT AND SMOKE VENT CLEARANCE.
4. OUTSIDE AIR INTAKE. NO PLUMBING VENTS SHALL BE WITHIN 10 FEET OF THE INTAKE.
5. EXTEND EXISTING PVC PLUMBING VENT TO GET 10 FEET AWAY FROM OUTSIDE AIR INTAKE. ATTACH PLUMBING VENT TO BOTTOM OF PLATFORM.

Project Engineer: JEB  
 Drawn By: LAM

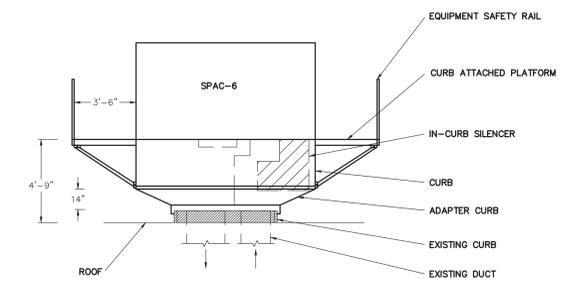
Revisions:

No.	Date	

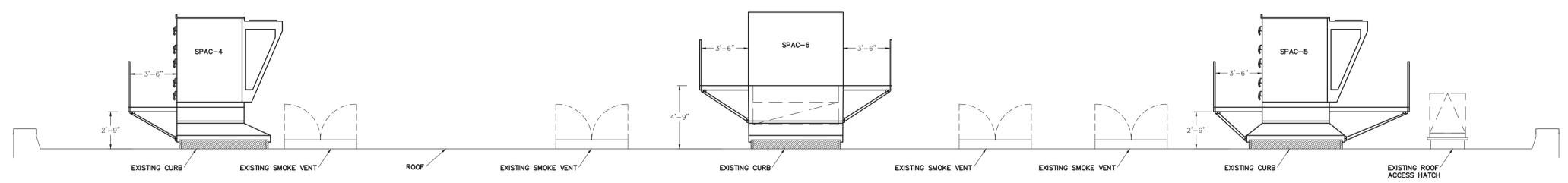
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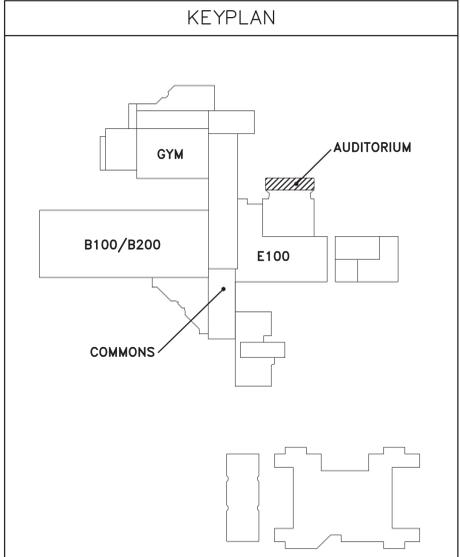
1 ENLARGED AUDITORIUM ROOF RENOVATION PLAN  
 SCALE: 1/4"=1'-0"



3 SPAC-6 ELEVATION  
 SCALE: 1/4"=1'-0"



2 AUDITORIUM ROOF SECTION  
 SCALE: 1/4"=1'-0"



FORT MILL SCHOOL DISTRICT  
 FORT MILL HIGH SCHOOL HVAC RENOVATIONS  
 ENLARGED AUDITORIUM RENOVATION PLAN

**Buford Goff**  
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Sheet Number:  
**M102A**  
 Date: DECEMBER 14, 2020  
 Scale: As Noted  
 BGA PROJECT NUMBER: 20051  
 CONSTRUCTION DOCUMENTS

Project Engineer:  
JEB  
Drawn By:  
LAM  
Revisions:  
No. \_\_\_\_\_ Date \_\_\_\_\_  
No. \_\_\_\_\_ Date \_\_\_\_\_

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FORT MILL SCHOOL DISTRICT  
 FORT MILL HIGH SCHOOL HVAC RENOVATIONS  
 HVAC LEGENDS, NOTES, AND SCHEDULES  
 Project \_\_\_\_\_  
 Sheet Title \_\_\_\_\_  
 Date: DECEMBER 14, 2020  
 Scale: As Noted  
 BGA PROJECT NUMBER: 20051  
 CONSTRUCTION DOCUMENTS

SIDEWALL SECURITY AIR DISTRIBUTION SCHEDULE (a)(b)						
SYMBOL	CFM	CON. SIZE (WxH)	RUNOUT	NC (c)	PD (f)	REMARKS
	4500	48x60	-	<15	<0.1	① ②
	-	54x54	-	<15	<0.1	① ② ③

(a) GRILLES SHALL BE 14 GAUGE, HEAVY STEEL CONSTRUCTION WITH 3/4" BLADE SPACING AND 45° DEFLECTION.  
 (b) GRILLES SHALL BE PRICE SERIES 96FH.  
 (c) CFM IS FOR GENERAL INFORMATION ONLY. SOME GRILLES MAY BE SIZED LARGER.  
 (d) DUCT RUNOUT SIZE IN INCHES IF NO RUNOUT INDICATED ON PLANS OR SCHEDULE. TRANSITION TO NECK SIZE REQUIRED.  
 (e) NC @ 10db ROOM ATTENUATION (RE: 10<sup>-12</sup> WATTS)  
 (f) TOTAL PRESSURE (N.W.G)  
 (g) VERIFY DIMENSIONS AND ORIENTATION (W vs. H) BEFORE ORDERING.  
 ① SINGLE PIECE GRILLE    ② FIELD VERIFY EXISTING WALL OPENING  
 ③ CUSTOM COLOR

DUCT PRESSURE CLASSIFICATION			
DUCT	SYSTEM	PRESSURE	STATIC PRESSURE CLASS (*WG)
RETURN DUCT	ALL SYSTEM RETURNS	NEG	-2"
SUPPLY DUCT	ALL SYSTEM SUPPLY	POS	+2"

SEISMIC AND WIND DESIGN CRITERIA	
SEISMIC DESIGN	
SEISMIC DESIGN CATEGORY (SDC): C	
RISK CATEGORY: III	
SPECTRAL RESPONSE COEFFICIENTS S <sub>ds</sub> *: 0.239; S <sub>d1</sub> *: 0.139	
WIND DESIGN	
BASIC WIND SPEED: 119 MPH	
EXPOSURE CATEGORY: B	
RISK CATEGORY: III	
*REFER TO STRUCTURAL SHEET	

MECHANICAL SYMBOL LEGEND	
	SUPPLY OR OUTSIDE AIR GRILLE
	RETURN AIR GRILLE
	EXHAUST AIR GRILLE
	DUCT TURNED TO
	DUCT TURNED AWAY
	DUCT CAPPED
	EQUIPMENT LOCATED ON ROOF
	INSIDE DUCT DIMENSION
	OPPOSED BLADE VOLUME DAMPER
	FIRE DAMPER (FUSIBLE LINK)
	120V POWER IN J-BOX
	MOTORIZED DAMPER
	CONCEALED REGULATOR
	POUNDS (OR NUMBER)
	FIRE ALARM CONTROL PANEL
	10" 10" ROUND DUCT (INSIDE DIM)
	BACS-1 BUILDING AUTOMATION CONTROL SYSTEM NO. 1
	SWITCH
	THERMOSTAT/SENSOR
	HUMIDISTAT/HUMIDITY SENSOR
	FLEX CONNECTION (DUCT)
	FILTER SECTION
	DUCT SMOKE DETECTORS
	CONTROL WIRING
	ACCESS DOOR
	CLEANOUT
	AIR DISTRIBUTION (OTHER SYMBOLS SIM.)
	LIGHT SWITCH
	CO <sub>2</sub> SENSOR

- ### MECHANICAL GENERAL NOTES
- DO NOT SCALE DRAWINGS. (SEE ARCHITECTURAL DRAWINGS AND REFLECTED CEILING PLANS FOR EXACT LOCATIONS) FIELD VERIFY EXISTING CONDITIONS OF DOORS, WINDOWS, CEILING DIFFUSERS, ETC.
  - EXTEND ALL DRAIN LINES TO NEAREST GUTTER ON ROOF OR AS INDICATED ON PLANS. CONDENSATE DRAINS SHALL BE TRAPPED. ROUTE TO MINIMIZE TRIPPING HAZARD. PROVIDE CLEANOUTS AT ALL CHANGES OF DIRECTION GREATER THAN 90 DEGREES.
  - ALL PIPING AND DUCTWORK INSULATION SHALL BE RUN CONTINUOUSLY THROUGH FLOORS, AND PARTITIONS EXCEPT WHERE PROHIBITED BY FIRE CODES.
  - LOCATE ALL THERMOSTATS, HUMIDISTATS AND SWITCHES 48"(TO TOP OF DEVICE) ABOVE FINISH FLOOR.
  - ALL PIPING SHALL BE SUPPORTED IN ACCORDANCE WITH THE SPECIFICATIONS. HANGERS SHALL BE ADJACENT TO ELBOWS AND AT EQUIPMENT TO PREVENT WEIGHT OF PIPING BEING PLACED ON THE EQUIPMENT. SUPPORT DETAILS SHALL BE SUBMITTED TO THE MECHANICAL ENGINEER.
  - ALL PIPING AND DUCTWORK LOCATIONS SHALL BE COORDINATED WITH THE WORK UNDER OTHER DIVISIONS OF THE SPECIFICATIONS TO AVOID INTERFERENCE.
  - AIR DISTRIBUTION SYSTEMS WITH MORE THAN ONE BRANCH, OR MULTIPLE OUTLETS ON A BRANCH, SHALL HAVE VOLUME DAMPERS TO BALANCE AIR FLOWS. SPIN IN FITTINGS ARE PERMITTED FOR CONNECTING FLEX DUCT TO BRANCH OR TRUNK DUCTS WHERE FLEX DUCTS ARE INDICATED. IF FLEX DUCT CANNOT BE CONNECTED WITH A SPIN IN, A HARD DUCTED TAKEOFF MUST BE PROVIDED.
  - 45 DEGREE TAKEOFFS SHALL BE USED ON ALL HARD DUCTED SUPPLY BRANCHES.
  - ALL PIPING, DUCTS, VENTS, ETC. EXTENDING THRU EXTERIOR WALLS AND ROOFS SHALL BE FLASHED AND COUNTERFLASHED.
  - PROVIDE ALL TRANSITIONS REQUIRED FOR INSTALLATION OF DUCT, DUCT HEATERS, AIR VOLUME CONTROLLERS, AIR HANDLING UNITS, FANS, AND ALL OTHER EQUIPMENT AND APPURTENANCES.
  - PROVIDE INSULATED BLANK-OFF PANEL FOR ALL UNUSED PORTION OF LOUVER (WHICH HAVE MECHANICAL DUCT CONNECTIONS).
  - ALL TRANSFER DUCTS SHALL BE LINED WITH ONE INCH ACOUSTICAL LINER.
  - ALL DUCTS SERVING THE THEATRE, STAGE, 2ND STAGE AND LOBBY SHALL BE LINED WITH 2 INCH ACOUSTICAL LINER.
  - ALL DUCT IS GALVANIZED SHEETMETAL EXCEPT AS NOTED.
  - DUCT SIZES ARE CLEAR INSIDE DIMENSIONS.
  - INTAKES FOR AIR HANDLING EQUIPMENT SHALL BE A MINIMUM OF FIFTEEN FEET AWAY FROM ANY EXHAUST OR VENT.
  - AIR DISTRIBUTION UNITS SHALL HAVE TRIM REQUIRED FOR FINISHED SERVICE.
  - ALL EQUIPMENT SHALL MEET THE PROJECT'S SEISMIC DESIGN AND WIND LOAD REQUIREMENTS.

MECHANICAL ABBREVIATIONS			
ABV	ABOVE	IN	INCHES
AFV	ABOVE FINISH FLOOR	MOD	MOTOR OPERATED DAMPER
AFMS-1	AIRFLOW MEASURING STATION NO.1	MPS	MEDIUM PRESSURE STEAM (16 PSI TO 30 PSI)
BACS	BUILDING AUTOMATION CONTROL SYSTEM	NO	NORMALLY OPEN
BHP	BRAKE HORSE POWER	NC	NORMALLY CLOSED
BOO	BOTTOM OF DUCT	OC	ON CENTER
BOP	BOTTOM OF PIPE	ODAC-1	OUTDOOR AIR CONDITIONING UNIT NO.1
CEF-1	CEILING EXHAUST FAN NO. 1	ODHP-1	OUTDOOR HEAT PUMP NO.1
CFM	CUBIC FEET PER MINUTE	ODP	OPEN DRIP PROOF
CLG	CEILING	PD	PRESSURE DROP
CO	CLEAN OUT	PFD	PIPE TO FLOOR DRAIN
D	DRAIN	PH	PHASE
EF-1	EXHAUST FAN NO.1	REF.	REFRIGERANT LINES
EFF	EFFICIENCY	SF	SQUARE FOOT
ELECT	ELECTRICAL	SP	STATIC PRESSURE SENSOR
ESP	EXTERNAL STATIC PRESSURE	SPAC-1	SINGLE PACKAGE AIR CONDITIONING UNIT NO.1
EUH-1	ELECTRIC UNIT HEATER NO.1	T-1	TERMINAL UNIT NO. 1
EW-1	ELECTRIC WALL HEATER NO.1	TA	THROW AWAY (FILTER)
EXT	EXTERNAL	TC	TIME CONTROL
FPS	FEET PER SECOND	TD	TRANSFER DUCT
FT	FEET	TEAO	TOTALLY ENCLOSED AIR OVER
FLR	FLOOR	TEFC	TOTALLY ENCLOSED FAN COOLED
HP	HORSE POWER	UNO	UNLESS NOTES OTHERWISE
IDAC-1	INDOOR AIR CONDITIONING UNIT NO.1	VFD	VARIABLE FREQUENCY DRIVE
IDHP-1	INDOOR HEAT PUMP NO.1	VEL	VELOCITY
		VOLT	VOLTAGE
		WHHP-1	WALL MOUNTED HEAT PUMP NO. 1
		ZPOS	TWO POSITION

SINGLE PACKAGE AIR CONDITIONING SCHEDULE																															
AIR CONDITIONER #	EST * SP(a)	CFM		FANS				COMPRESSOR 1		COMPRESSOR 2		ELEC HEAT			GAS HEAT			COOLING COIL CAPACITY						MAX. WEIGHT #	ELECTRIC			MANUFACTURER AND MODEL	REMARKS		
		TOT	OA	OUTDOOR		INDOOR		NO	RLA	NO	RLA	KW	EAT	LAT	CFH INPUT	MBH OUTPUT	IN WG	MBH (NET) TOT	SENS	OUTDOOR DB T	ENT AIR DB	WB	LVG AIR DB		WB	EER(b)	MCA			MOC	VOLT/PH
		FLA	NO	BHP	HP	NO	RLA	NO	RLA	NO	RLA	NO	RLA	NO	RLA	NO	RLA	NO	RLA	NO	RLA	NO	RLA		NO	RLA	NO			RLA	NO
SPAC-1,2	1.5	9300	⑤	2.1	4	8.2	10	2	18.6	1	18.6	-	-	-	300	240	7-14	424.5	238.6	95	78	67.9	52.7	52.3	10.2	7000	82.6	100	460/3	TRANE OAN480	②④⑤⑥⑦⑧⑨⑩⑪⑫⑬⑭⑮⑯
SPAC-3	1.0	4500	⑤	2.1	2	3.3	6	1	12.2	1	12.6	-	-	-	200	160	7-14	166.7	120.7	95	78	65	52.0	51.8	9.5	3500	40.1	50	460/3	TRANE OAG180	②④⑤⑥⑦⑧⑨⑩⑪⑫⑬⑭⑮⑯
SPAC-4,5	1.0	6640	1250	2.1	3	3.7	7.5	1	16.0	1	16.0	60	59.0	87.6	-	-	-	283.4	164.7	95	79.5	69	55.5	55.1	12.0	3600	107.9	110	460/3	TRANE OAK264	②③④⑤⑥⑦⑧⑨⑩⑪⑫⑬⑭⑮⑯⑰⑱⑲⑳
SPAC-6	1.0	6000	-	1.3	2	-	3	1	14.7	1	7.0	27	70.0	84.2	-	-	-	168.2	107.8	95	75	67	56.9	56.9	12.1	2400	48	50	460/3	TRANE THD180	②④⑪⑫⑬⑭⑮

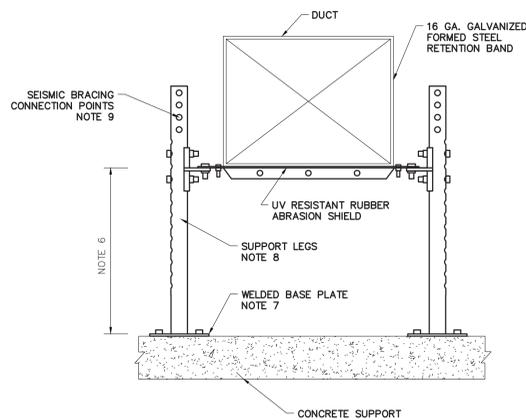
\* INCLUDES DUCT, GRILLES, AND LOADED FILTERS (a) INCHES WG (b) ARI CONDITIONS \*\* UNIT LEAVING AIR TEMP  
 ① PROVIDE START CAPACITOR FOR SINGLE PHASE UNITS    ③ PROVIDE MOTORIZED OA DAMPER    ⑤ HORIZONTAL DISCHARGE    ⑦ MODULATING HOT GAS REHEAT TO 72 DEG.    ⑨ DIGITAL SCROLL COMPRESSOR    ⑪ SINGLE ZONE VAV    ⑬ DIRECT DRIVE MOTOR    ⑮ PRECONDITIONED OUTSIDE AIR FROM DHS-1    ⑰ MAX SUPPLY FAN CFM 8000    ⑲ DCV WITH BAROMETRIC RELIEF  
 ② LOW AMBIENT CONTROL TO 30F    ④ SINGLE PT CONNECTION    ⑥ 10:1 TURNDOWN GAS BURNER    ⑧ DISCONNECT SWITCH    ⑩ NON-POWERED GFI RECEPTACLE    ⑫ SUPPLY FAN VFDS    ⑭ BIPOLAR IONIZATION    ⑯ ROW COIL    ⑰ SCR ELECTRIC HEATER    ⑲ DOWN DISCHARGE

HIGH VOLUME, LOW SPEED FAN SCHEDULE													
FAN #	LOCATION	SERVICE	DIA. (a)	MAX HP	MAX RPM	SOUND* dBA	MAX WEIGHT #	ELECT			CONTROL	MANUFACTURER AND MODEL	REMARKS
								MCA	MOC	VOLT/PH			
HVLS-1,2	WRESTLING RM	COMFORT	16	2.0	98	60	210	-	10	480/3	BMS	BAF BASIC 6	①②③④

\* SOUND LEVEL 5 FT ABOVE FLOOR, 20 FT FROM CENTER OF FAN MOUNTED 20 FT HEIGHT AT MAX. SPEED (a) FEET  
 ① FACTORY TOUCHSCREEN CONTROLLER WITH BMS INTEGRATION    ③ 2 FOOT EXTENSION TUBE  
 ② CUSTOM COLOR    ④ FIRE ALARM SHUTDOWN INTERFACE

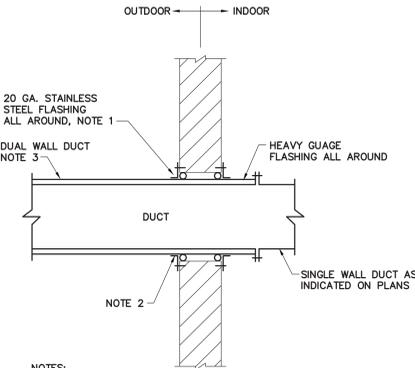
SOUND TRAP SCHEDULE																				
TRAP #	UNIT SERVED	FLOW DIR	CFM	SIZE(b)			VEL* FPM	AIR PD(c)	OCTAVE BAND CENTER FREQ	1	2	3	4	5	6	7	8	MAX. WEIGHT #	MANUFACTURER AND MODEL	REMARKS
				W	H	L				63	125	250	500	1000	2000	4000	8000			
ST-1	RTAC-1	RETURN	9300	60	84	-	266	0.12	DIL (c) SN (d) ③④	2	2	3	4	9	14	11	10	-	PRICE RAS	③④
ST-2	RTAC-2	RETURN	9300	60	80	-	266	0.12	DIL (c) SN (d) ③④	2	2	3	4	9	14	11	10	-	PRICE RAS	③④
ST-3	RTAC-3	RETURN	4500	48	60	48	225	0.06	DIL (c) SN (d) ③④	11	18	31	48	50	46	36	24	-	PRICE RL48/2G	
ST-4	RTAC-6	RETURN	6000	20	76	50	568	0.11	DIL (c) SN (d) ③④	37	20	21	32	31	25	13	10	-	PRICE ERM50/XE	①②

(a) INCHES WG (b) INCHES (c) DYNAMIC INSERTION LOSS, dB (d) SELF NOISE, dB \*VELOCITY AT WHICH DIL DATA IS INDICATED  
 ① ELBOW SILENCER    ② SILENCER LOCATED IN CURB    ④ GRILLE SILENCER  
 ③ FIELD VERIFY EXISTING RETURN GRILLE OPENING AND COORDINATE SIZE.



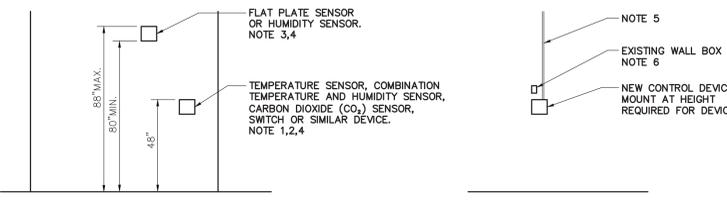
- NOTES:**
1. PROVIDE PRE-ENGINEERED GRADE MOUNTED DUCT SUPPORT SYSTEM. SYSTEM SHALL BE SIZED FOR THE PROPER DUCT DIMENSIONS, WEIGHTS, AND SEISMIC/WIND LOADS. MECHANICAL SUPPORT SYSTEMS, INC. NO. 101-G OR APPROVED EQUAL.
  2. RUN INSULATION AND JACKETING CONTINUOUSLY THROUGH SUPPORTS.
  3. ALL STRUCTURAL SUPPORTS AND ACCESSORIES SHALL BE HOT DIPPED GALVANIZED.
  4. SEE PLAN FOR SPACING OF SUPPORTS. WHERE SPACING IS NOT SHOWN PROVIDE SUPPORTS A MINIMUM EVERY 8 FEET.
  5. OPTIONAL UNDER PIPE RACK SUPPORT RACK MAY BE USED TO SUPPORT PIPING AS REQUIRED.
  6. ADJUST HEIGHT AS REQUIRED FOR INSTALLATION. MIN 12" AFG.
  7. ATTACH BASE PLATES TO CONCRETE SUPPORT PER THE SEISMIC/WIND SUBMITTAL.
  8. SCHEDULE 40 PIPE OR UNISTRUT SUPPORT LEGS. LEGS SHALL ALLOW ADJUSTMENT IN INCREMENTS OF 3/4".
  9. PROVIDE SEISMIC BRACING WHEN REQUIRED FOR THE SEISMIC OR WIND LOADING CONDITIONS.

**OUTDOOR DUCT SUPPORTS**  
NOT TO SCALE



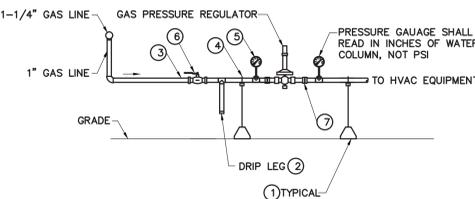
- NOTES:**
1. PROVIDE CAULKING BEHIND ANGLE.
  2. PROVIDE SEALANT BETWEEN DUCT AND WALL ALL AROUND.
  3. SEE SPECIFICATIONS.

**DUAL WALL DUCT THROUGH EXTERIOR WALL DETAIL**  
NOT TO SCALE



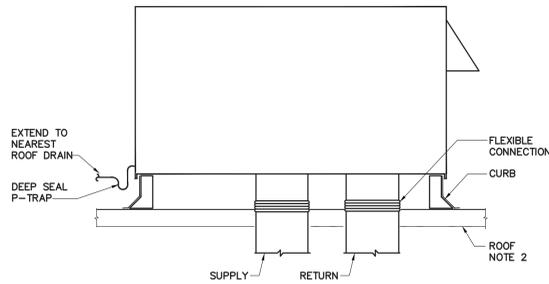
- NOTES:**
1. DEVICES THAT REQUIRE ACCESS BY BUILDING OCCUPANTS OTHER THAN MAINTENANCE PERSONNEL.
  2. 44" TO TOP OF DEVICE WHEN OBSTACLE (SHELVING, COUNTER, ETC.) IN FRONT OF DEVICE.
  3. DEVICES THAT DO NOT REQUIRE ACCESS BY BUILDING OCCUPANTS OTHER THAN MAINTENANCE PERSONNEL.
  4. HEIGHT SHALL BE AS INDICATED UNLESS A DEVICE IS SPECIFICALLY REQUIRED TO BE LOCATED AT ANOTHER HEIGHT TO PERFORM ITS INTENDED FUNCTION.
  5. PROVIDE WIRE MOLD WHERE PERMITTED ON EXISTING WALL WHERE CONTROLS CANNOT BE INSTALLED IN THE WALL.
  6. PROVIDE OVERSIZED STAINLESS STEEL COVER PLATE IF BOX IS NOT REUSED.

**DEVICE MOUNTING HEIGHT**  
3714 NOT TO SCALE 2/18



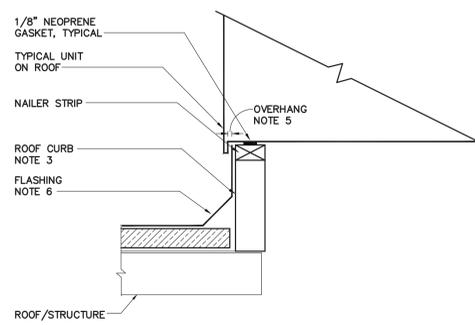
- NOTES:**
- (1) PIPE SUPPORT SHALL BE MIFAB (C-PORT) MODEL C10-8, EXTENSION SERIES OR APPROVED EQUAL. APPROVED MANUFACTURERS ARE MIRO, MAPA OR PIPE PEIR.
  - (2) DRIP LEG TO BE A MIN. OF 6".
  - (3) ALL PIPING SHALL BE PAINTED.
  - (4) ALL PIPE SUPPORTS SHALL BE GALVANIZED OR PAINTED.
  - (5) PRESSURE GAUGE SHALL READ IN PSI.
  - (6) BALL VALVE SHUT-OFF, TYPICAL.
  - (7) UNION, TYPICAL.

**GAS REGULATOR PIPING ON ROOF**  
NOT TO SCALE



- NOTES:**
1. TRANSITION DUCT AS REQUIRED TO MAIN SUPPLY AND RETURN.
  2. SEE ARCHITECTURAL AND STRUCTURAL PLANS FOR ROOF CONSTRUCTION.

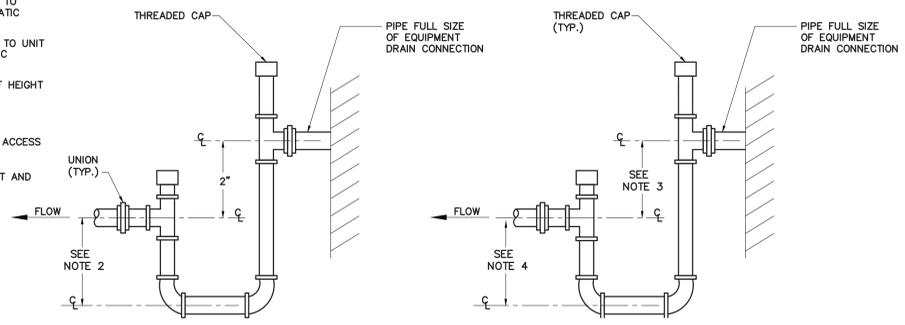
**ROOFTOP UNIT DETAIL - VERTICAL DISCHARGE**  
3017A NOT TO SCALE 12/05



- NOTES:**
1. PROVIDE ROOF CURB TO MATCH ROOF SLOPE.
  2. SEE ARCHITECTURAL AND STRUCTURAL PLANS FOR ROOF/STRUCTURE CONSTRUCTION.
  3. ATTACH CURB TO ROOF OR STRUCTURE AS REQUIRED BY SEISMIC REQUIREMENTS. IF NONE, SPOT WELD OR MECHANICALLY ANCHOR.
  4. ATTACH UNIT TO CURB 12" O.C. MINIMUM, 2 PER SIDE.
  5. PROVIDE OVERHANG RECOMMENDED BY EQUIPMENT MANUFACTURER BUT NO LESS THEN 3/4".
  6. FLASHING ON DETAIL IS DIAGRAMMATIC ONLY. SEE ARCHITECTURAL DETAILS AND/OR ROOFING INSTALLERS REQUIREMENTS FOR ACTUAL FLASHING AND COUNTER FLASHING REQUIRED.

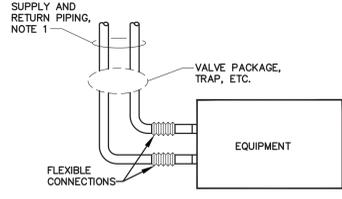
**ROOF CURB DETAIL**  
3325B NOT TO SCALE 04/12

- NOTES:**
1. LOCATE TRAPS SO AS TO BE ACCESSIBLE FOR CLEANING.
  2. HEIGHT SHALL BE EQUAL TO UNIT MAXIMUM TOTAL STATIC PRESSURE PLUS 1/2".
  3. HEIGHT SHALL BE EQUAL TO UNIT MAXIMUM NEGATIVE STATIC PRESSURE PLUS 1".
  4. HEIGHT SHALL BE 1/2 OF HEIGHT INSTALLED IN NOTE 3.
  5. PIPE TO NEAREST DRAIN.
  6. TRAP SHALL NOT BLOCK ACCESS TO EQUIPMENT.
  7. PROVIDE UNIONS AT INLET AND OUTLET OF TRAP.
  8. DRAIN LINE SHALL BE 3/4" MIN OR UNIT CONNECTION SIZE, WHICHEVER IS LARGER.



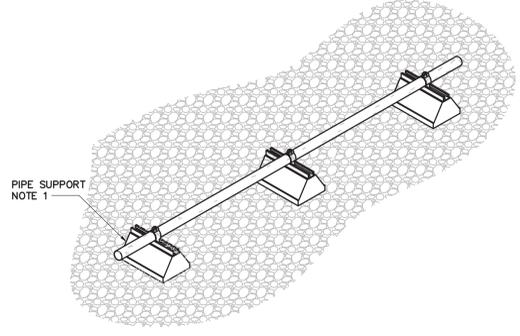
**BLOW THRU DRAIN**      **DRAW THRU DRAIN**

**EQUIPMENT CONDENSATE DRAIN DETAIL**  
3179B NOT TO SCALE 3/16



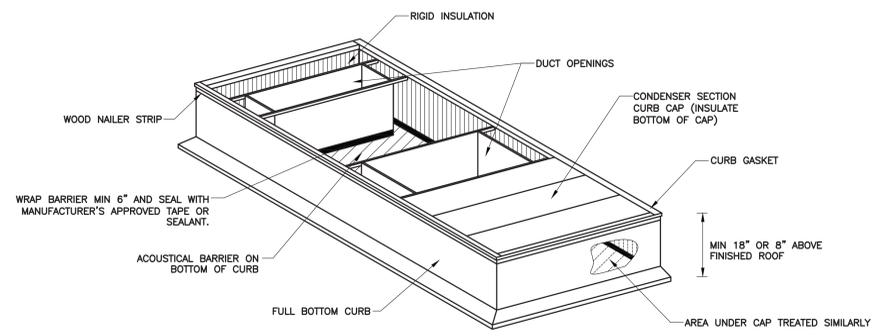
- NOTES:**
1. ALL GAS, CONDUIT AND UTILITY CONNECTIONS SIMILAR.

**PIPING AND CONDUIT CONNECTION TO EQUIPMENT**  
3855 NOT TO SCALE 12/12



- NOTES:**
1. PROVIDE SUPPORT 4 FT ON CENTER.
  2. SUPPORTS SHALL BE MIFAB CE OR APPROVED EQUAL. SUPPORT SHALL BE CONSTRUCTED OF UV RESISTANT RUBBER OR POLYCARBONATE WITH TWO STAINLESS STEEL TREADED RODS WITH A 14 GAUGE STAINLESS STEEL CHANNEL SUPPORT.
  3. PROVIDE A HEAVY BED OF ROOFING TAR OR MASTIC ACCEPTABLE TO ROOFING CONTRACTOR TO SET THE SUPPORTS ON.
  4. ADJUST PIPE SUPPORT FOR GRAVITY FLOW OF CONDENSATE DRAIN LINES.

**EQUIPMENT DRAIN PIPE SUPPORT ON ROOF DETAIL**  
3179C NOT TO SCALE 5/10



- NOTES:**
1. SEE SPECIFICATIONS FOR MORE INFORMATION.
  2. CURB SHALL BE WELDED AND GASKETED TO PROVIDE AN AIR AND WATER TIGHT SEAL. CURB SHALL HAVE A SOLID BOTTOM.
  3. CURB SHALL BE FLASHED IN PER ROOFING MANUFACTURER'S REQUIREMENTS.
  4. COORDINATE CURB HEIGHT WITH DUCT SIZE AND FLASHING REQUIREMENTS. SEE SPECIFICATION FOR MORE DETAIL.
  5. PROVIDE ACOUSTICAL BARRIER ON BOTTOM OF CURB. SEE SPECIFICATIONS.
  6. ATTACH UNIT TO CURB AND CURB TO STRUCTURE PER SEISMIC ENGINEER'S RECOMMENDATIONS.
  7. PROVIDE THROUGH CURB ELECTRICAL AND CONTROLS. COORDINATE LOCATION WITH EQUIPMENT MANUFACTURER. SEAL AROUND PENETRATION TO PREVENT SOUND TRANSFER.
  8. PROVIDE A SLOPED, STAINLESS STEEL, STANDING SEAM TYPE CONDENSER DRAIN PAN FOR UNITS WITHOUT AN INTEGRAL CONDENSER DRAIN PAN. INSULATE BOTTOM OF DRAIN PAN.
  9. COORDINATE CURB SIZE WITH THE EXACT UNIT PROVIDED ON THE JOB.
  10. CONNECT SUPPLY AND RETURN DUCT WITH FLEXIBLE CONNECTORS ON THE BOTTOM SIDE OF THE CURB.
  11. UNLESS SPECIFIED ELSEWHERE, PROVIDE FULL BOTTOM CURBS ON ALL ROOFTOP EQUIPMENT.
  12. ADAPTER CURBS SIMILAR. ATTACH ADAPTER CURB TO EXISTING CURB.

**FULL BOTTOM CURB DETAIL**  
NOT TO SCALE

Project Engineer: JEB  
Drawn By: LAM

Revisions:

No.	Date	

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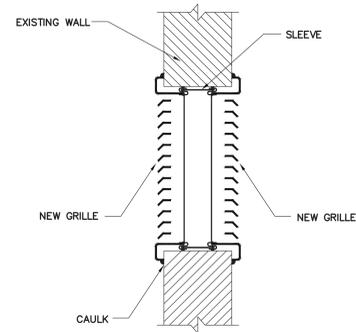
FORT MILL SCHOOL DISTRICT  
 FORT MILL HIGH SCHOOL HVAC RENOVATIONS  
 HVAC DETAILS

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Engineers & Planners

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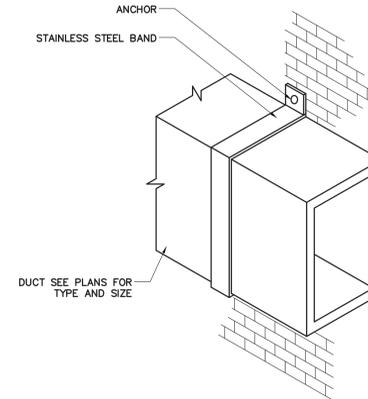
Sheet Number: **M401**

Date: DECEMBER 14, 2020  
Scale: As Noted  
BGA PROJECT NUMBER: 20051  
CONSTRUCTION DOCUMENTS

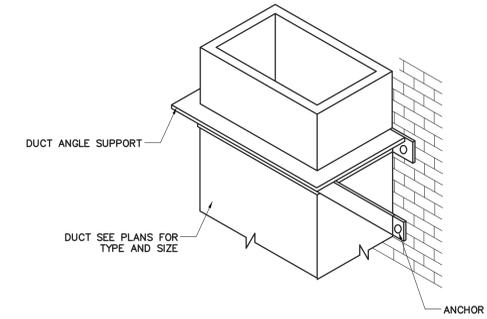


- NOTES:**
1. PROVIDE GRILLE ON EACH SIDE OF TRANSFER OPENING.
  2. MEASURE SIZE OF EXISTING OPENING PRIOR TO ORDERING DIFFUSER.
  3. PROVIDE A CONTINUOUS BEAD OF CAULK AROUND GRILLE.

**TRANSFER GRILLE DETAIL**  
NOT TO SCALE



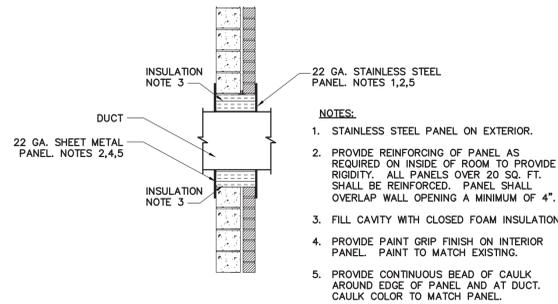
**HORIZONTAL DUCT SUPPORT**



**VERTICAL DUCT SUPPORT**

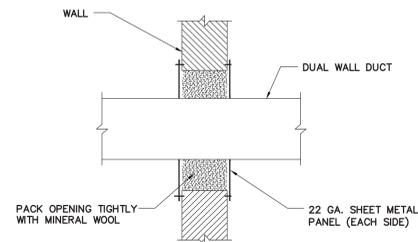
- NOTES:**
1. PROVIDE BRACKETS EVERY 10 FEET (MAX) AND WITHIN 12 INCHES OF AN ELBOW.
  2. LOCATE DUCT AGAINST WALL OR MAXIMUM OF 2 INCHES FROM THE WALL.
  3. ANCHORS AND DUCT SUPPORTS SHALL BE DESIGNED FOR WIND AND SEISMIC LOADS.
  4. ATTACH DUCT TO SUPPORT PER SMACNA.

**DUCT SUPPORT FROM WALL DETAIL**  
NOT TO SCALE



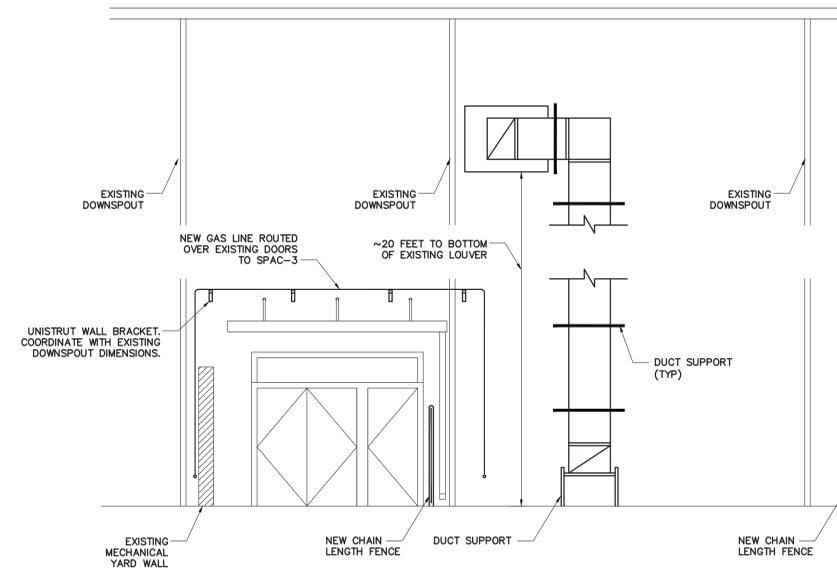
- NOTES:**
1. STAINLESS STEEL PANEL ON EXTERIOR.
  2. PROVIDE REINFORCING OF PANEL AS REQUIRED ON INSIDE OF ROOM TO PROVIDE RIGIDITY. ALL PANELS OVER 20 SQ. FT. SHALL BE REINFORCED. PANEL SHALL OVERLAP WALL OPENING A MINIMUM OF 4".
  3. FILL CAVITY WITH CLOSED FOAM INSULATION.
  4. PROVIDE PAINT GRIP FINISH ON INTERIOR PANEL. PAINT TO MATCH EXISTING.
  5. PROVIDE CONTINUOUS BEAD OF CAULK AROUND EDGE OF PANEL AND AT DUCT. CAULK COLOR TO MATCH PANEL.

**DUCT THRU EXISTING OPENING (EXTERIOR)**  
NOT TO SCALE



- NOTES:**
1. COORDINATE SIZE AND SHAPE OF PANEL WITH OPENING AND DUCTWORK. PROVIDE A CONTINUOUS BEAD OF CAULK BETWEEN DUCT AND PANEL.
  2. ATTACH TO WALL 12" O.C. (MIN. 2 PER SIDE) PANEL SHALL OVERLAP WALL A MINIMUM OF 1 1/2".
  3. PROVIDE PAINT GRIP FINISH ON PANEL. PAINT TO MATCH EXISTING.

**DUCT THRU EXISTING OPENING (INTERIOR)**  
NOT TO SCALE



- NOTES:**
1. COORDINATE DUCT ROUTING AND GAS PIPING ROUTING WITH EXISTING CONDITIONS.

**SPAC-3 SUPPLY DUCT DETAIL**  
NOT TO SCALE

Project Engineer: JEB  
 Drawn By: LAM

Revisions:

No.	Date

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FORT MILL SCHOOL DISTRICT  
 FORT MILL HIGH SCHOOL HVAC RENOVATIONS  
 HVAC DETAILS

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Sheet Number:  
**M402**

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 CONSTRUCTION DOCUMENTS

Project Engineer:  
ECW  
 Drawn By:  
MTHH  
 Revisions:  
 No. \_\_\_\_\_ Date \_\_\_\_\_  
 No. \_\_\_\_\_ Date \_\_\_\_\_

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 GYM DEMOLITION PLAN, SCHEDULES & DETAILS - ELECTRICAL

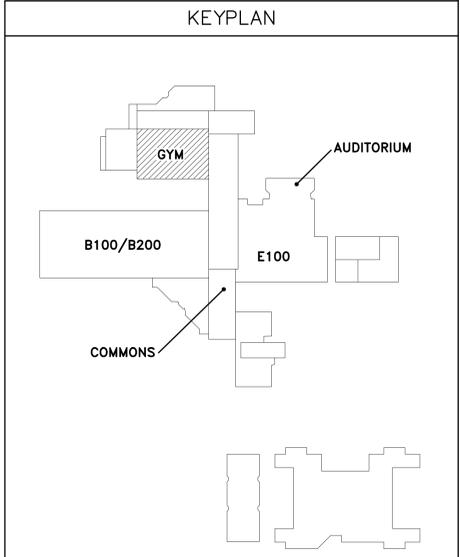
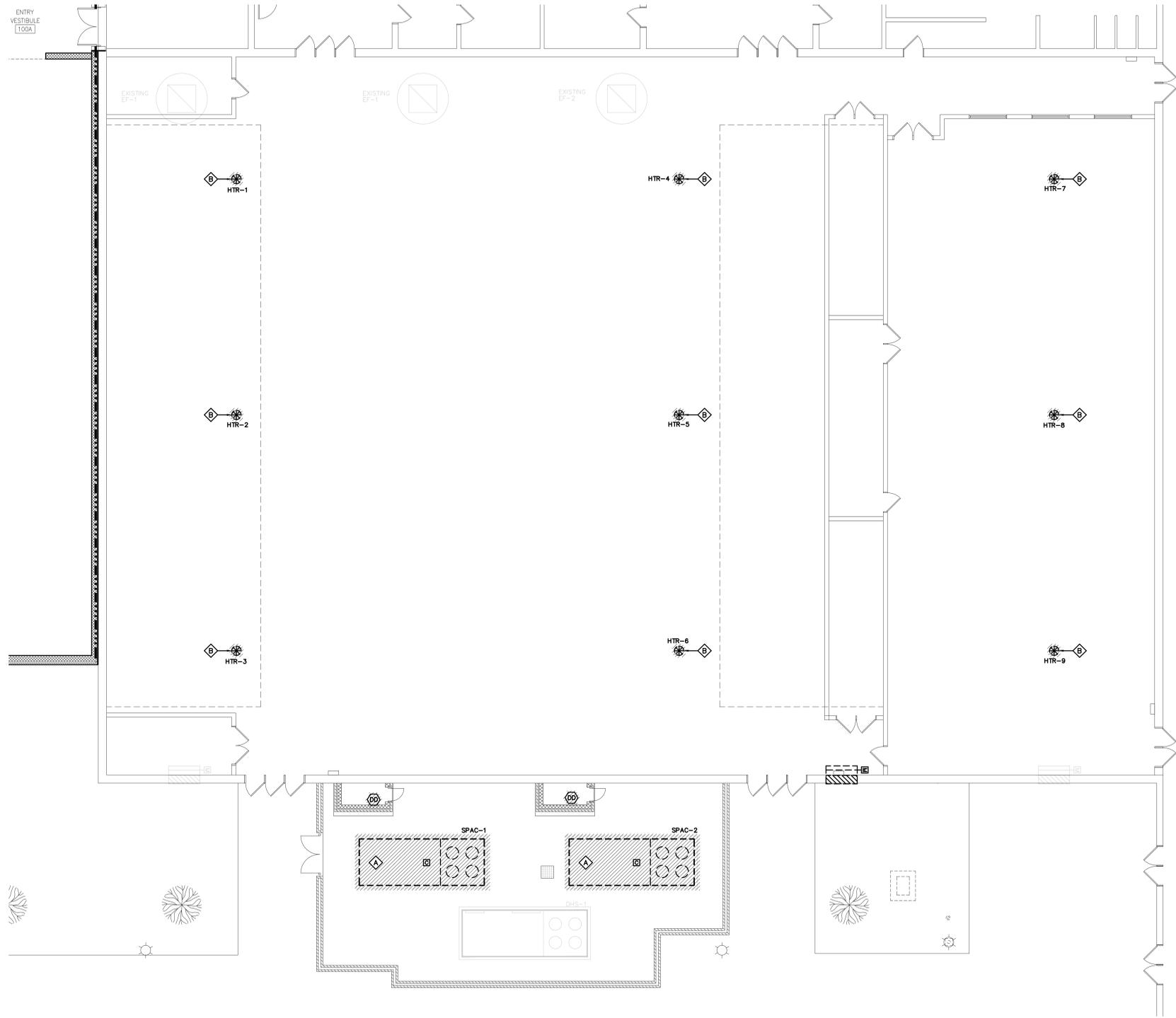
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 Sheet Title \_\_\_\_\_

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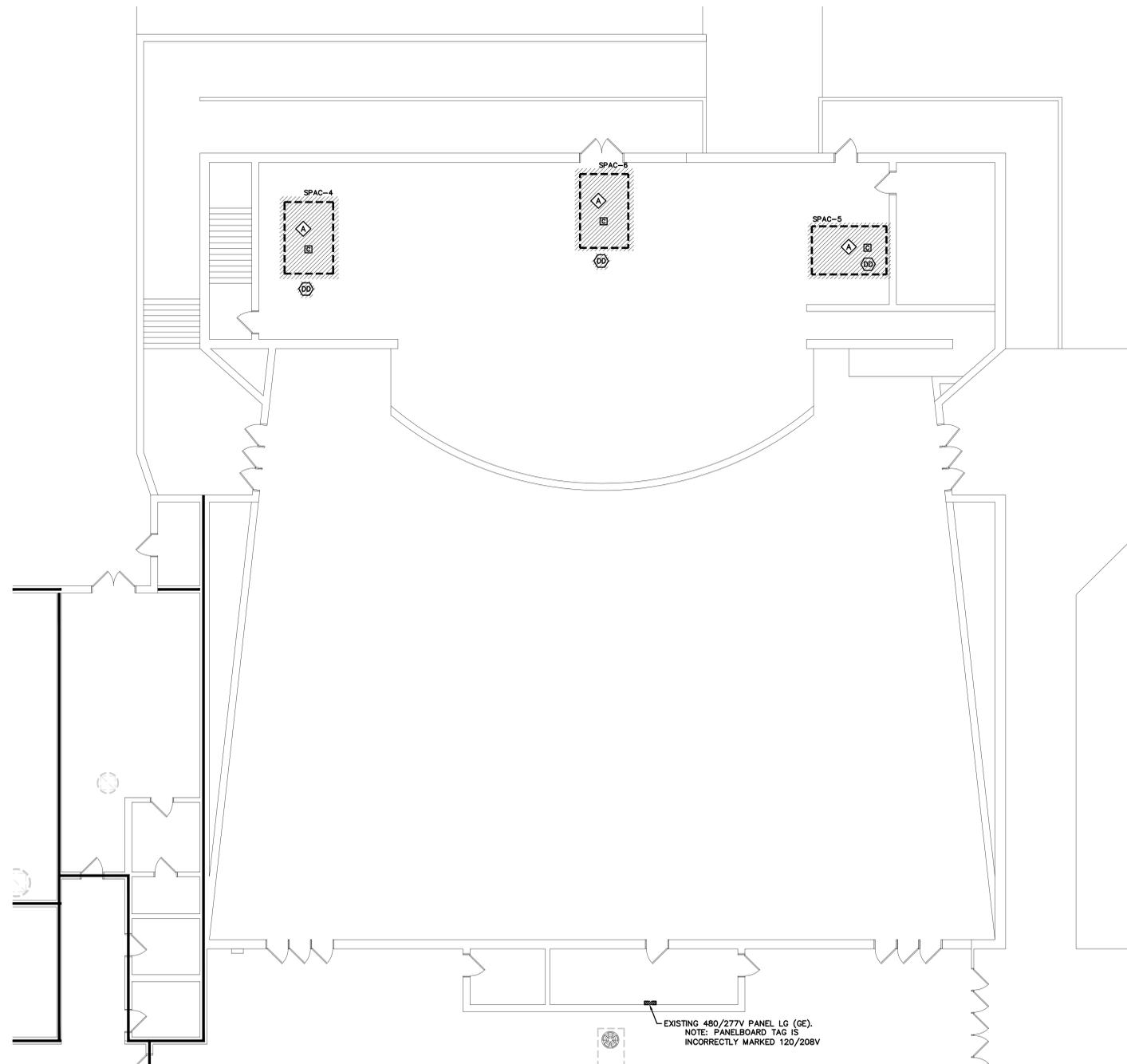
Sheet Number:  
**ED101**  
 Date: DECEMBER 14, 2020  
 Scale: As Noted  
 BGA PROJECT NUMBER: 20051  
 CONSTRUCTION DOCUMENTS

DEMOLITION SYMBOL SCHEDULE	
SYMBOL	DESCRIPTION
	DASHED SYMBOL INDICATES EXISTING EQUIPMENT OR CIRCUIT TO REMAIN
	CROSSHATCHED SYMBOL INDICATES EXISTING EQUIPMENT OR CIRCUIT TO BE REMOVED.

- DEMOLITION KEYNOTES:**
- ◊ REMOVE FEEDER WIRING BACK TO SOURCE PANELBOARD. REMOVE EXTERIOR DISCONNECT SWITCH AND RACEWAYS. REUSE EXISTING FEEDER CONDUIT FROM BELOW GRADE TO EXISTING SOURCE PANELBOARD FOR NEW FEEDER.
  - ◊ REMOVE FEEDER WIRING AND EXPOSED RACEWAYS BACK TO SOURCE PANELBOARD. REMOVE EXTERIOR DISCONNECT SWITCH. REPLACE THE EXISTING PANELBOARD INDEX AND UPDATE CIRCUITS WITH FORMER HEATER UNIT LABELED AS "SPARE".



1 ED101 GYM DEMOLITION PLAN - ELECTRICAL  
 SCALE: 1/8" = 1'-0"



1  
ED102

AUDITORIUM RENOVATION PLAN - ELECTRICAL  
SCALE: 1/8" = 1'-0"



**DEMOLITION KEYNOTES:**

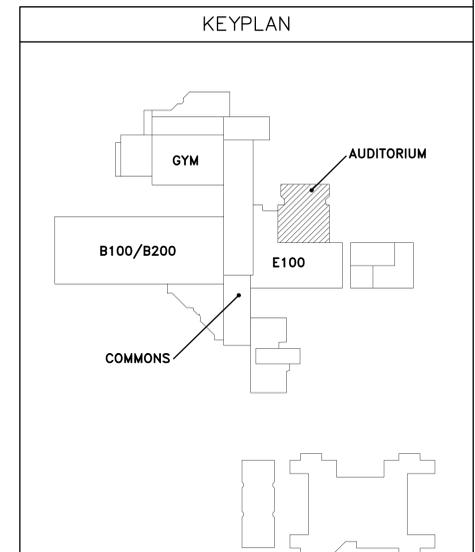
◊ REMOVE FEEDER WIRING BACK TO SOURCE PANELBOARD. REMOVE DISCONNECT SWITCH AND RACEWAYS ON ROOF. REUSE EXISTING FEEDER CONDUIT FROM BELOW ROOF TO EXISTING SOURCE PANELBOARD FOR NEW FEEDER.

Project Engineer:	ECW
Drawn By:	MTHH
Revisions:	
No.	Date

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FORT MILL SCHOOL DISTRICT  
 FORT MILL HIGH SCHOOL HVAC RENOVATIONS  
 AUDITORIUM DEMOLITION PLAN, SCHEDULES & DETAILS - ELECTRICAL

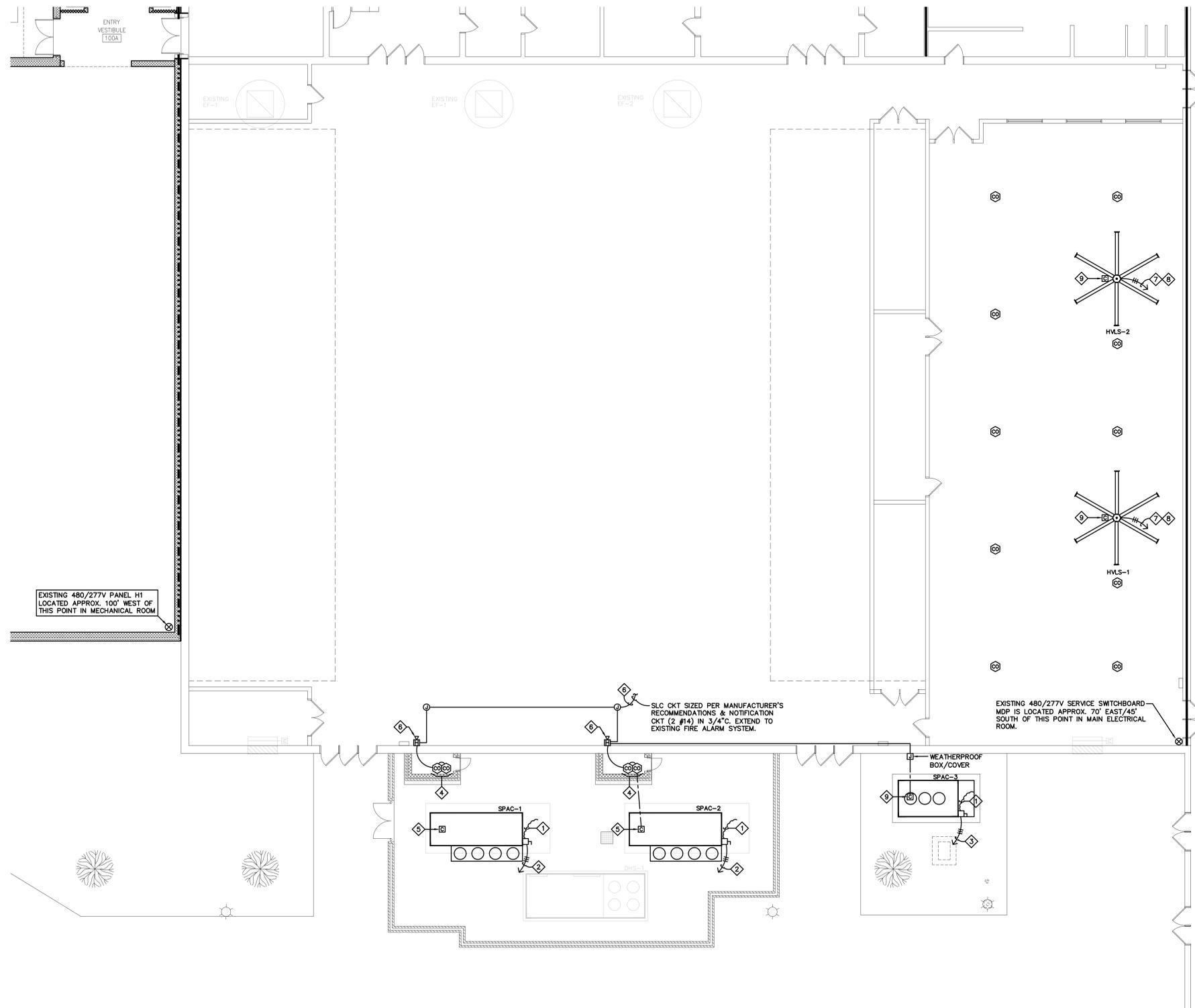


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Sheet Number:  
**ED102**

Date: DECEMBER 14, 2020  
Scale: As Noted  
BGA PROJECT NUMBER: 20051  
CONSTRUCTION DOCUMENTS



EXISTING 480/277V PANEL H1 LOCATED APPROX. 100' WEST OF THIS POINT IN MECHANICAL ROOM

SLC CKT SIZED PER MANUFACTURER'S RECOMMENDATIONS & NOTIFICATION CKT (2 #14) IN 3/4" C. EXTEND TO EXISTING FIRE ALARM SYSTEM.

EXISTING 480/277V SERVICE SWITCHBOARD MDP IS LOCATED APPROX. 70' EAST/45' SOUTH OF THIS POINT IN MAIN ELECTRICAL ROOM.

1 GYM RENOVATION PLAN - ELECTRICAL  
E101 SCALE: 1/8" = 1'-0"



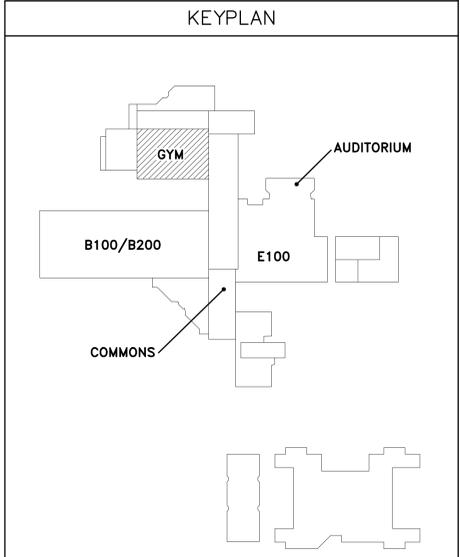
ELECTRICAL SYMBOL SCHEDULE	
SYMBOL	DESCRIPTION
	MOTOR LOAD
	JUNCTION BOX, SIZE PER NEC UNLESS SIZE NOTED
	DISCONNECT SWITCH
	WALL MOUNTED FIRE ALARM HORN WITH WHITE BAFFLE AND NO LETTERING, 96" TO TOP OF BOX
	CARBON MONOXIDE DETECTOR
	SMOKE DETECTOR
	ADDRESSABLE CONTROL MODULE
	CONDUIT RUN OVERHEAD
	CONDUIT RUN IN OR UNDER FLOOR SLAB OR UNDERGROUND
	ABOVE FINISHED FLOOR
	UNLESS NOTED OTHERWISE
	CONDUIT
	FAN UNIT
	ROOF-TOP AC UNIT
	GAS UNIT HEATER
	KEYNOTE LABEL
	CONDUIT RUN, VERTICAL
	SEALTIGHT FLEX CONNECTION TO MOTOR LOAD

**KEYNOTES:**

1. PROVIDE SEALTIGHT FLEX CONNECTION TO UNIT'S CONNECTION BOX.
2. PROVIDE NEW FEEDER FROM EXISTING PANEL H1 SIZED 3 #1, #6 GND. IN EXISTING 2" CONDUIT. REPLACE EXISTING 3P CB WITH NEW 100A, 3P CB (MATCH EXISTING AIC RATING).
3. PROVIDE NEW FEEDER FROM THE DISTRIBUTION SECTION OF SERVICE SWITCHBOARD MDP, SIZED 3 #6, #10 GND., 1" C. PROVIDE NEW 50A, 65,000AIC 3P CB (GE SPECTRA SERIES).
4. MOUNT CO/SMOKE DETECTORS DIRECTLY IN FRONT OF AND WITHIN 6" OF SPAC RETURN AIR ATTENUATOR OPENING. USE UNISTRUT SECURED TO BUILDING STRUCTURE. SPAC DETECTORS CENTERED IN RETURN AIR OPENING AND SPACE EVENLY IN VERTICAL COLUMN (1x2 ARRAY), 36" OC.
5. PROVIDE ADDRESSABLE CONTROL MODULE AND HVAC UNIT SHUTDOWN CIRCUIT IN 3/4" C. PROGRAM SHUTDOWN FUNCTIONS AS FOLLOWS:
  - A. SPAC-1: SMOKE DETECTION ALARM BY EITHER COMBO CO/SMOKE DETECTOR ASSOCIATED WITH SPAC-1 OR SPAC-2.
  - B. SPAC-2: SMOKE DETECTION ALARM BY EITHER COMBO CO/SMOKE DETECTOR ASSOCIATED WITH SPAC-2 OR SPAC-1.
6. PROVIDE 4-TEMPORAL HORN (WHITE PLAIN BAFFLE) WITH VANDAL GUARD MOUNTED 96" AFF TO BOTTOM. PROVIDE NEW DEDICATED 24 VDC FIRE ALARM POWER SUPPLY AND NOTIFICATION APPLIANCE CIRCUIT CONFIGURED TO ALARM WHEN EITHER CO DETECTOR IN GYM DETECTS CARBON MONOXIDE. EXISTING FIRE ALARM NOTIFICATION APPLIANCES SHALL NOT ALARM (CO DETECTORS SHALL BE PROGRAMMED AS SUPERVISORY EXCEPT FOR LOCAL HORNS). COORDINATE POWER SUPPLY LOCATION (MUST BE CONVENIENTLY ACCESSIBLE) WITH THE OWNER.
7. WIRE FAN CIRCUIT THROUGH VARIABLE FREQUENCY DRIVE (FURNISHED BY DIV 23). COORDINATE VFD LOCATION IN FIELD WITH HVAC CONTRACTOR.
8. PROVIDE NEW 15A, 480V, 3-PHASE FEEDER (3 #12, #12 GND., 3/4" C.) FROM NEAREST EXISTING 480V PANEL IN MAIN ELECTRICAL ROOM (NOT SHOWN BUT WITHIN 125' OF FANS) WITH SPACE AVAILABLE FOR TWO 15A, 3P CB'S. PROVIDE NEW 15A, 3P CB (MATCH PANEL AIC RATING) UPDATE PANELBOARD INDEX TO REFLECT NEW HVL'S UNIT LABEL.
9. PROVIDE ADDRESSABLE CONTROL MODULE AND SPAC OR HVL'S UNIT SHUTDOWN CIRCUIT IN 3/4" C. PROGRAM SHUTDOWN FUNCTION BASED ON SMOKE DETECTION ALARM BY ANY WEIGHT ROOM COMBO CO/SMOKE DETECTOR.

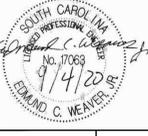
**GENERAL NOTES:**

1. FIRE ALARM SYSTEM SCOPE OF WORK:
  - A. PER INFORMATION OBTAINED FROM THE OWNER (FIELD VERIFY), THE EXISTING FIRE ALARM SYSTEM IS A NOTIFIER NFS-640 SYSTEM. ALL FIRE ALARM WORK SHALL BE PERFORMED BY AN AUTHORIZED NOTIFIER DISTRIBUTOR.
  - B. PROVIDE INSTALLATION LABOR, MATERIAL, PROGRAMMING, CHECKOUT TESTING, AND CERTIFICATION TESTING (WITNESSED BY AND COORDINATED WITH THE OWNER'S IBC CHAPTER 1 INSPECTOR) FOR THE NEW FIRE ALARM DEVICES SHOWN. PROVIDE ACCEPTANCE TESTING FOR NEW DEVICES AND A MINIMUM OF 10% OF THE EXISTING INITIATION DEVICES SERVED FROM THE EXISTING NFS-640 CONTROL PANEL.
2. NEW SPAC DISCONNECT SWITCHES SHALL BE HEAVY DUTY, FUSIBLE (DUAL ELEMENT TIME DELAY), NEMA 3R WITH GROUND LUG KIT. SIZE DISCONNECT SWITCHES AND FUSES BASED ON UNIT OCP SIZING DATA OBTAINED FROM THE HVAC CONTRACTOR'S REVIEWED SUBMITTALS.



Project Engineer: ECW  
 Drawn By: MTFH  
 Revisions:  
 No. Date  
 No. Date  
 No. Date  
 No. Date  
 No. Date  
 No. Date  
 No. Date

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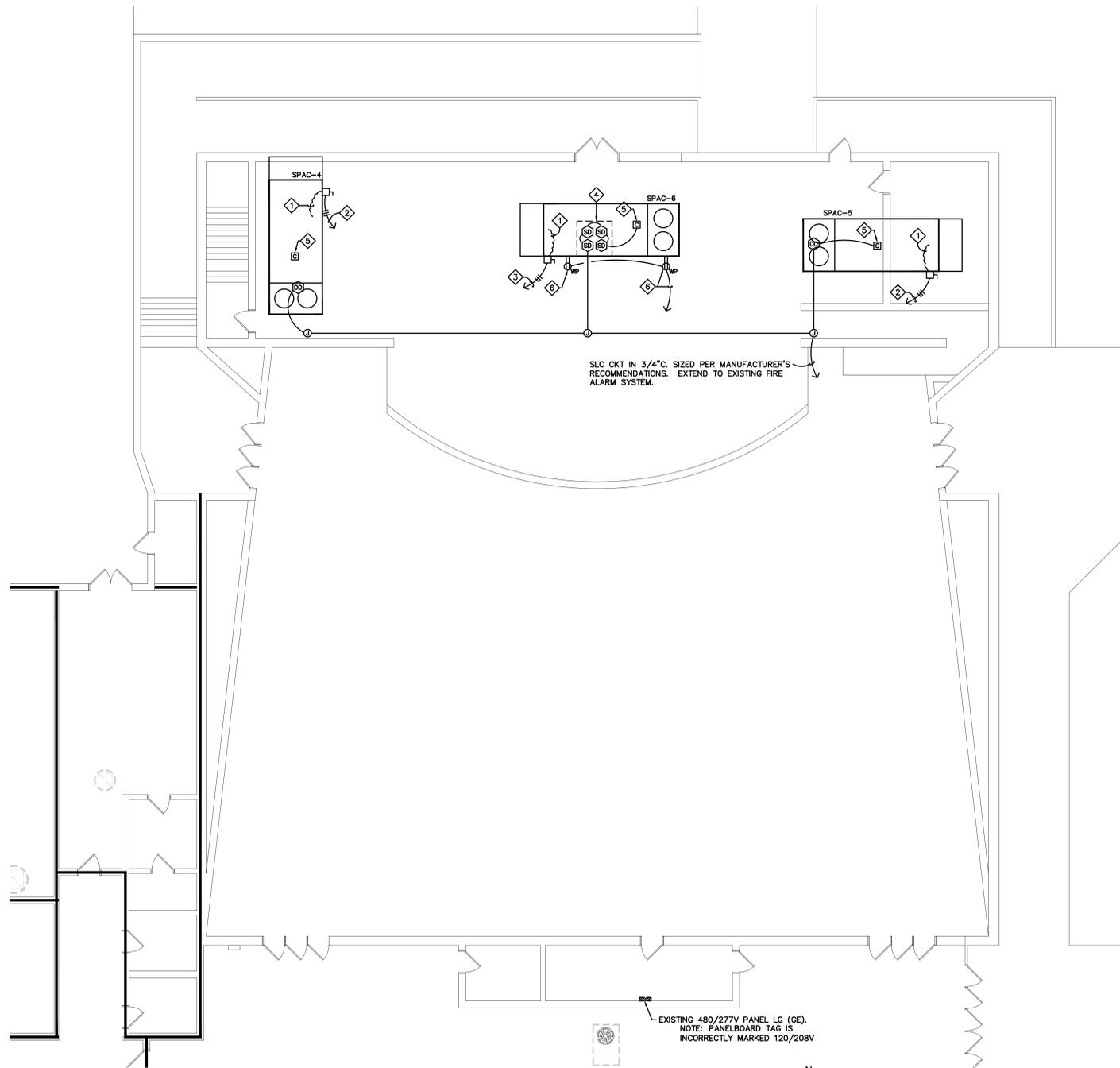
FORT MILL SCHOOL DISTRICT  
 FORT MILL HIGH SCHOOL HVAC RENOVATIONS  
 GYM RENOVATION PLAN, SCHEDULES & DETAILS - ELECTRICAL

Project Sheet Title

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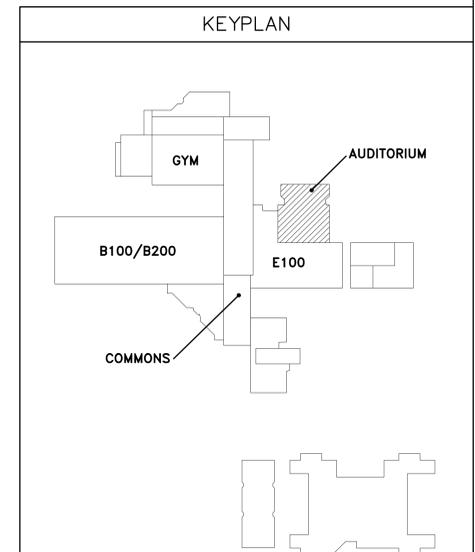
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Date: DECEMBER 14, 2020  
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 BGA PROJECT NUMBER: 20051  
 CONSTRUCTION DOCUMENTS



**KEYNOTES:**

- 1 PROVIDE SEALTIGHT FLEX CONNECTION TO UNITS' CONNECTION BOX.
- 2 PROVIDE NEW FEEDER FROM EXISTING PANEL LG SIZED 3 #1, #6 GND. IN EXISTING 1-1/4" CONDUIT. REPLACE EXISTING 3P CB WITH NEW 110A, 3P CB (MATCH EXISTING AIC RATING).
- 3 PROVIDE NEW FEEDER FROM EXISTING PANEL LG SIZED 3 #6, #10 GND. IN EXISTING 1-1/4" CONDUIT. REPLACE EXISTING 3P CB WITH NEW 50A, 3P CB (MATCH EXISTING AIC RATING).
- 4 MOUNT SMOKE DETECTORS DIRECTLY UNDER SPAC-6 RETURN AIR GRILLE WITHIN 6" OF BOTTOM OF GRILLE. USE UNISTRUT SECURED TO BUILDING STRUCTURE. SPACE DETECTORS CENTERED IN RETURN AIR OPENING AND SPACED EVENLY IN 2x2 ARRAY - 24"W x 32"L.
- 5 PROVIDE ADDRESSABLE CONTROL MODULE AND SPAC SHUTDOWN CIRCUIT IN 3/4"C.
- 6 INSTALL RECEPTACLE IN WEATHERPROOF SURFACE STYLE BOX. CONNECT TO NEAREST 20A, 120V RECEPTACLE CIRCUIT FROM STAGE AREA BELOW. CIRCUIT SHALL BE 2 #12, #12 GND., 3/4"C. PROGRAM SPAC-4, SPAC-5 & SPAC-6 SHUTDOWN BASED ON ANY SMOKE DETECTOR OR DUCT DETECTOR ALARM ASSOCIATED WITH ANY OF THE THREE SPAC UNITS.



1  
E102  
AUDITORIUM RENOVATION PLAN - ELECTRICAL  
SCALE: 1/8" = 1'-0"



Project Engineer:	ECW
Drawn By:	MTHH
Revisions:	
No.	Date

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FORT MILL SCHOOL DISTRICT  
 FORT MILL HIGH SCHOOL HVAC RENOVATIONS  
 AUDITORIUM RENOVATION PLAN - ELECTRICAL

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Sheet Number:  
**E102**

Date: DECEMBER 14, 2020  
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