

ST. JAMES HIGH SCHOOL HVAC RENOVATIONS HORRY COUNTY SCHOOLS MURRELLS INLET SOUTH CAROLINA



SITE PLAN
N.T.S.

① EXISTING ROOF TOP UNIT TO BE REMOVED AND REPLACED WITH NEW. (TOTAL OF 10)

SHEET LIST

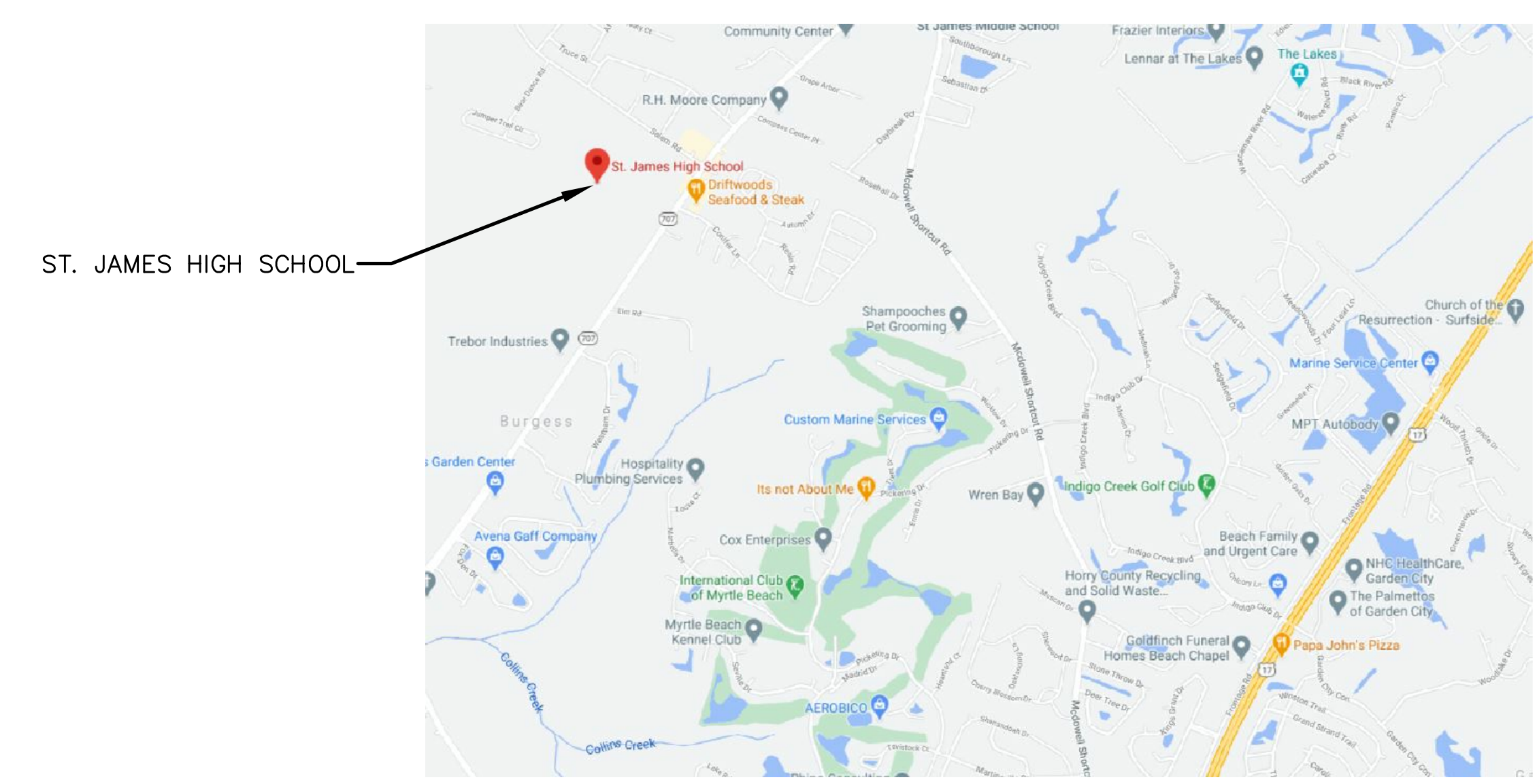
CS100 COVER SHEET

MECHANICAL

- M101 FLOOR PLAN AREA 'A'
- M102 FLOOR PLAN AREA 'B'
- M103 FLOOR PLAN AREA 'A'
- M104 FLOOR PLAN AREA 'C'
- M105 FLOOR PLAN AREA 'E'
- M106 FLOOR PLAN AREA 'F'
- M107 FLOOR PLANS AREA 'E' AND 'F'
- M201 SCHEDULES
- M301 DETAILS

ELECTRICAL

- E101 FLOOR PLAN AREA 'A'
- E102 FLOOR PLAN AREA 'B'
- E103 FLOOR PLAN AREA 'A'
- E104 FLOOR PLAN AREA 'C'
- E105 FLOOR PLAN AREA 'E'
- E106 FLOOR PLAN AREA 'F'
- E107 FLOOR PLANS AREA 'E' AND 'F'



VICINITY MAP
N.T.S.

**ST. JAMES HIGH SCHOOL
HVAC RENOVATIONS**
HORRY COUNTY SCHOOLS
Murrells Inlet, South Carolina

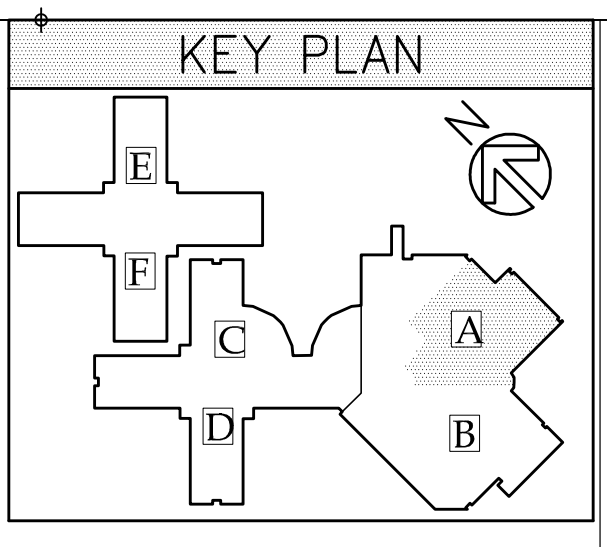
PROJECT NO.: 20-148
PHASE OF WORK: CD
DATE: 2/17/2021
CONSTRUCTION DOCUMENTS

REVISIONS:

| NO. | DATE | DESCRIPTION |
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TITLE:
COVER SHEET

SHEET:
CS100



Owner:
HCS
Horry County Schools
Horry County School District
Facilities
1160 East Highway 501
Conway, South Carolina 29526

**ST JAMES HIGH SCHOOL
HVAC RENOVATIONS**
Horry County Schools
Murrells Inlet, South Carolina

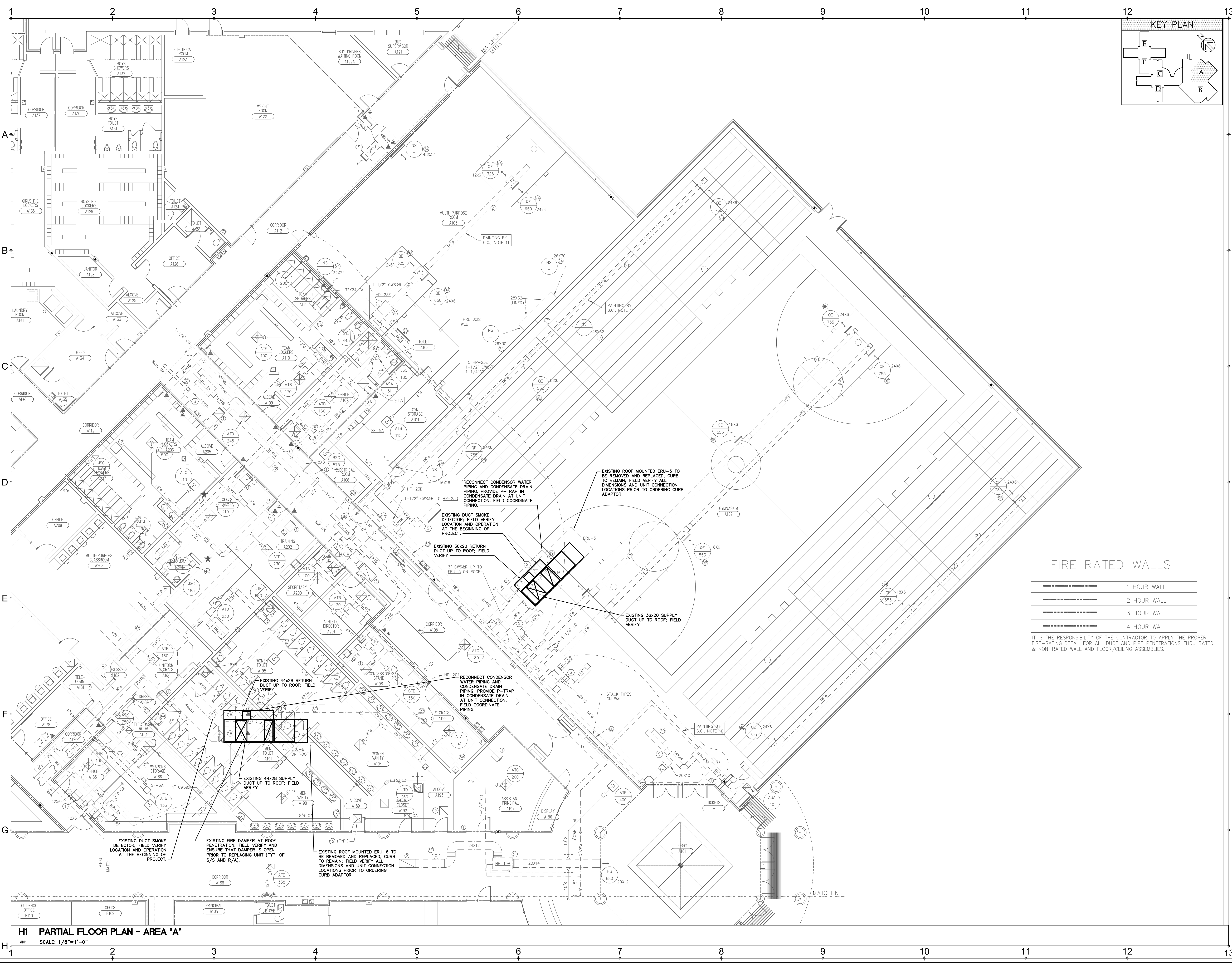
PROJECT NO.: 20-148
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DATE: 2/17/2021
CONSTRUCTION DOCUMENTS

REVISIONS:

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TITLE:
PARTIAL FLOOR PLAN - AREA A
RENOVATION

SHEET:
M101

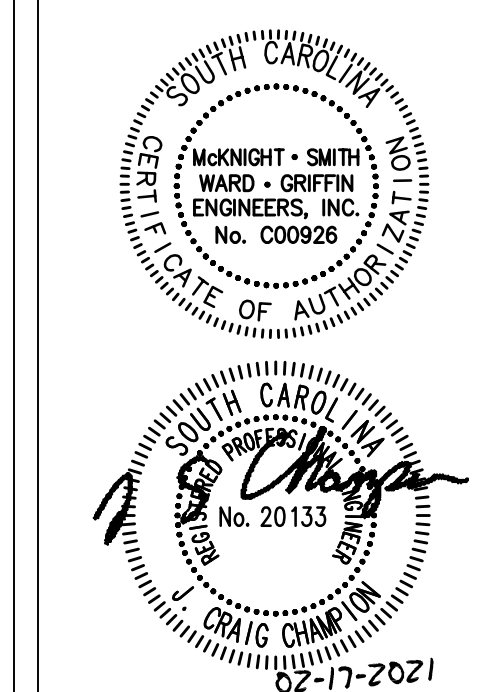


FIRE RATED WALLS

| | |
|-----|-------------|
| --- | 1 HOUR WALL |
| --- | 2 HOUR WALL |
| --- | 3 HOUR WALL |
| --- | 4 HOUR WALL |

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO APPLY THE PROPER FIRE-SAFING DETAIL FOR ALL DUCT AND PIPE PENETRATIONS THRU RATED & NON-RATED WALL AND FLOOR/CEILING ASSEMBLIES.

HI PARTIAL FLOOR PLAN - AREA 'A'
SCALE: 1/8"=1'-0"



Owner:
HCS
Horry County Schools
Horry County School District
1160 East Highway 501
Conway, South Carolina 29526

**ST JAMES HIGH SCHOOL
HVAC RENOVATIONS**
HORRY COUNTY SCHOOLS
Murrells Inlet, South Carolina

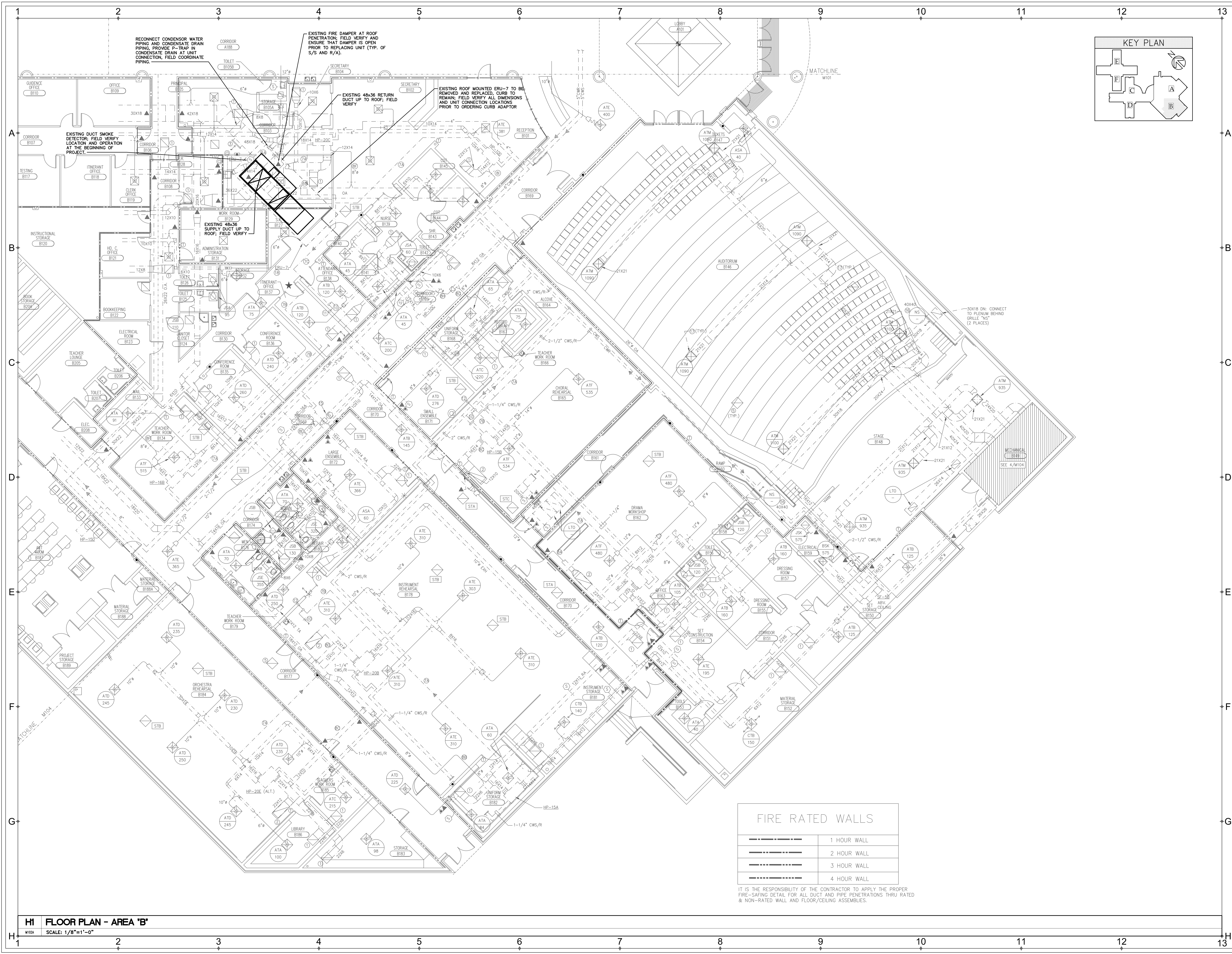
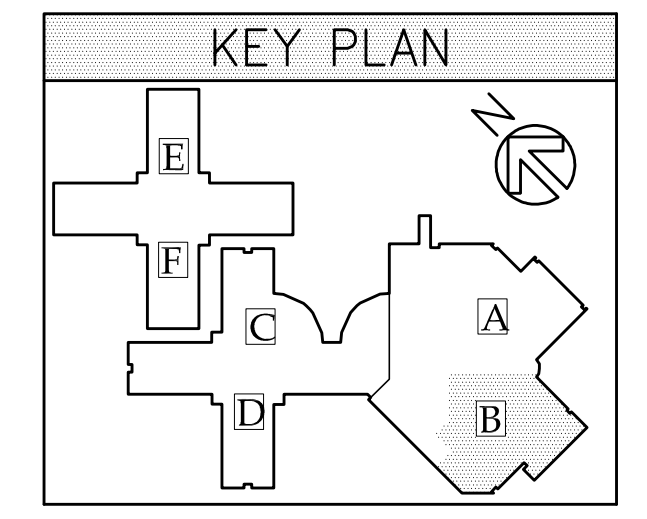
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CONSTRUCTION DOCUMENTS

REVISIONS:

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TITLE:
**PARTIAL FLOOR PLAN - AREA B
RENOVATION**

SHEET:
M102



RECONNECT CONDENSOR WATER PIPING AND CONDENSATE DRAIN PIPING, PROVIDE P-TRAP IN CONDENSATE DRAIN AT UNIT CONNECTION, FIELD COORDINATE PIPING.

EXISTING FIRE DAMPER AT ROOF PENETRATION: FIELD VERIFY AND ENSURE THAT DAMPER IS OPEN PRIOR TO REPLACING UNIT (TYP. OF 5/5 AND R/A).

EXISTING 48x36 RETURN DUCT UP TO ROOF: FIELD VERIFY

EXISTING ROOF MOUNTED ERU-7 TO BE REMOVED AND REPLACED, CURB TO REMAIN: FIELD VERIFY ALL DIMENSIONS AND UNIT CONNECTION LOCATIONS PRIOR TO ORDERING CURB ADAPTOR

EXISTING 48x36 SUPPLY DUCT UP TO ROOF: FIELD VERIFY

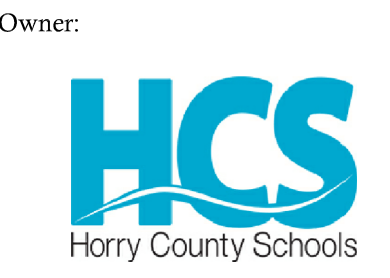
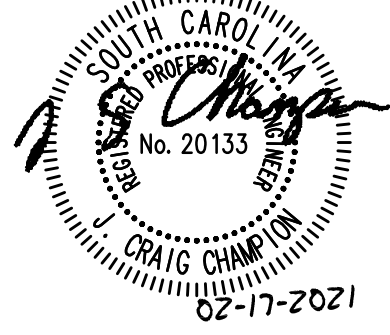
EXISTING DUCT SMOKE DETECTOR: FIELD VERIFY LOCATION AND OPERATION AT THE BEGINNING OF PROJECT.

30x18 DN: CONNECT TO PLENUM BEHIND GRILLE 'NS' (2 PLACES)

FIRE RATED WALLS

| | |
|-------|-------------|
| ----- | 1 HOUR WALL |
| ————— | 2 HOUR WALL |
| ————— | 3 HOUR WALL |
| ----- | 4 HOUR WALL |

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO APPLY THE PROPER FIRE-SAVING DETAIL FOR ALL DUCT AND PIPE PENETRATIONS THRU RATED & NON-RATED WALL AND FLOOR/CEILING ASSEMBLIES.



Horry County School District
Facilities
1160 East Highway 501
Conway, South Carolina 29526

ST JAMES HIGH SCHOOL HVAC RENOVATIONS

HORRY COUNTY SCHOOLS
Murrells Inlet, South Carolina

PROJECT NO.: 20-148

PHASE OF WORK: CD

DATE: 2/17/2021

CONSTRUCTION DOCUMENTS

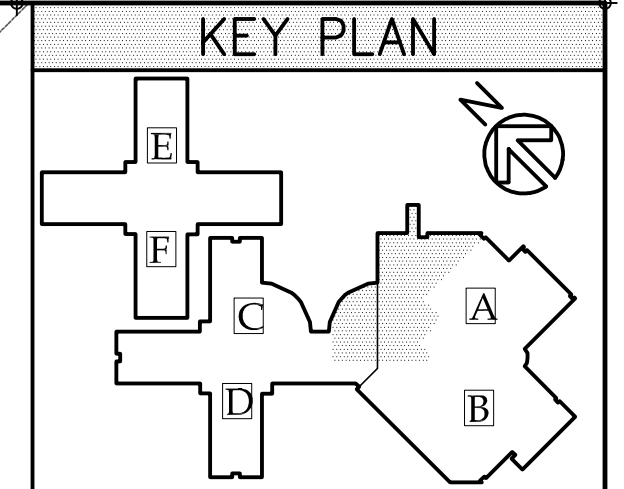
REVISIONS:

TITLE:

PARTIAL FLOOR PLAN - AREA A
RENOVATION

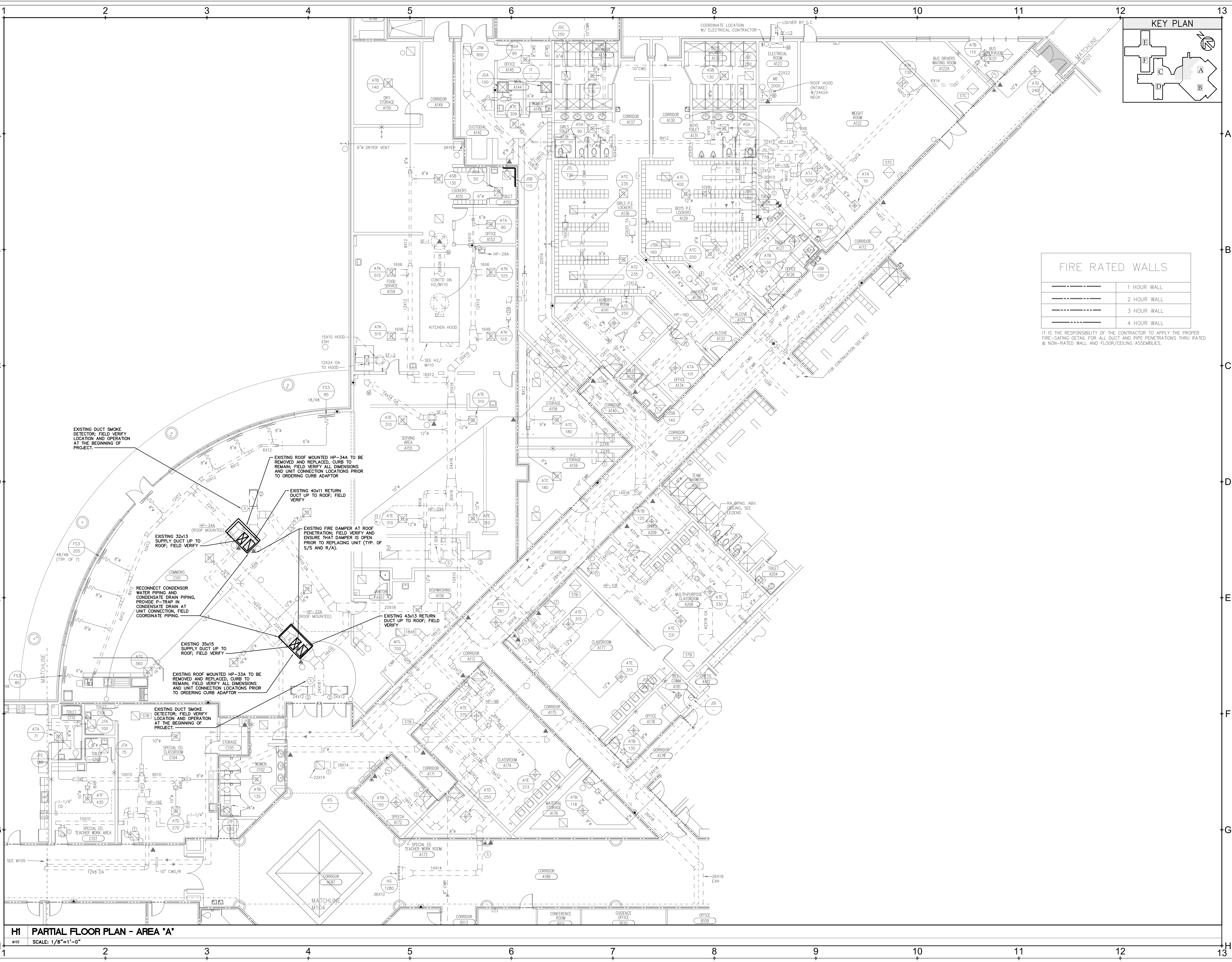
SHEET:

M103

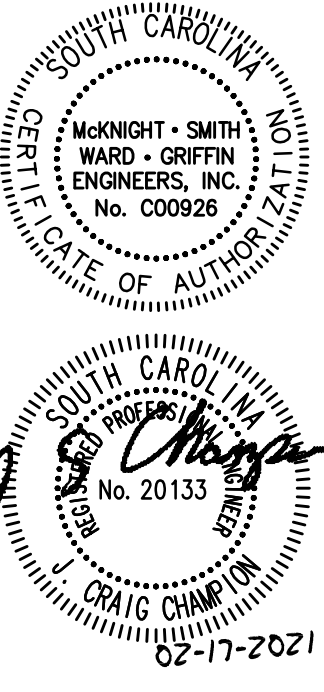


| FIRE RATED WALLS | |
|---------------------|-------------|
| — | 1 HOUR WALL |
| — — — — | 2 HOUR WALL |
| — · — · — · | 3 HOUR WALL |
| — · — · — · — · — · | 4 HOUR WALL |

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO APPLY THE PROPER FIRE-RATING DETAIL FOR ALL DUCT AND PIPE PENETRATIONS THRU RATED & NON-RATED WALL AND FLOOR/CEILING ASSEMBLIES.



H1 PARTIAL FLOOR PLAN - AREA 'A'
SCALE: 1/8"=1'-0"



**ST JAMES HIGH SCHOOL
HVAC RENOVATIONS**
HORRY COUNTY SCHOOLS
Murrells Inlet, South Carolina

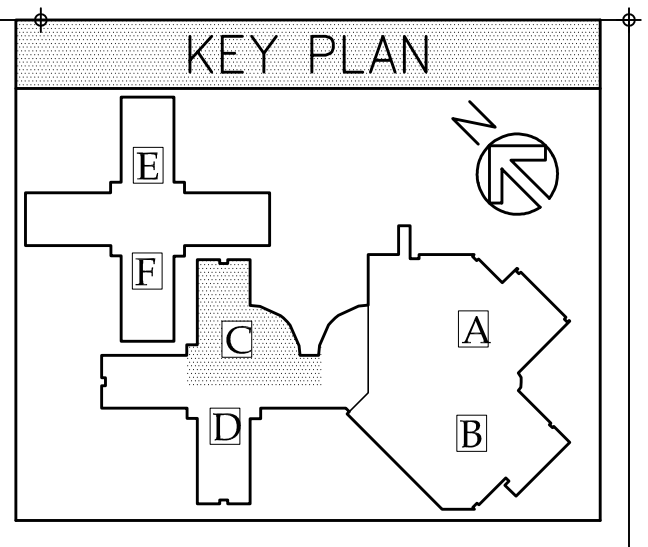
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PHASE OF WORK: CD
DATE: 2/17/2021
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TITLE:
PARTIAL FLOOR PLAN - AREA C RENOVATION

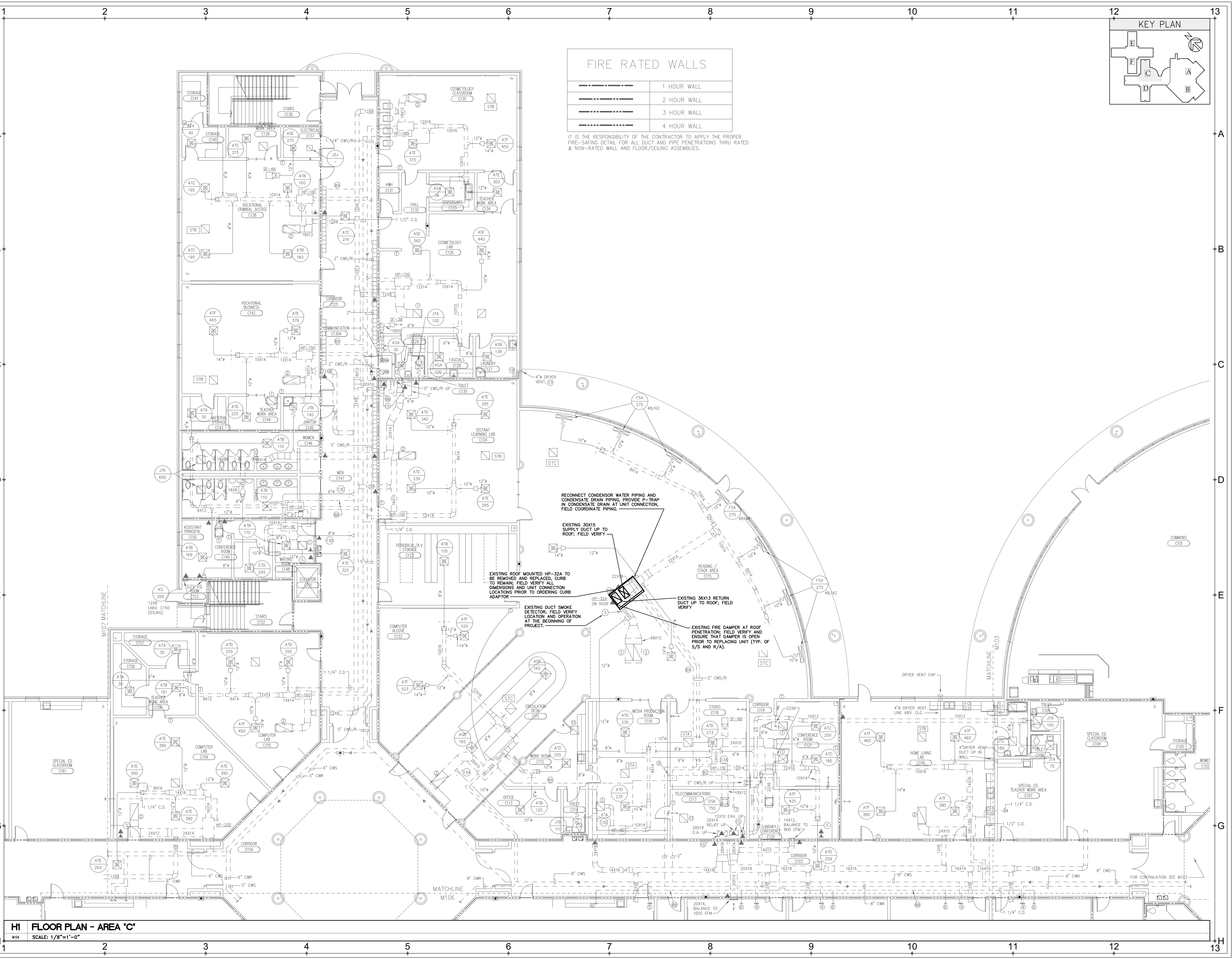
SHEET:
M104



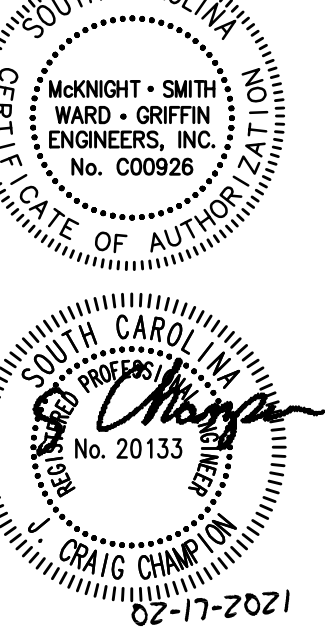
FIRE RATED WALLS

| | |
|-------|-------------|
| ----- | 1 HOUR WALL |
| ----- | 2 HOUR WALL |
| ----- | 3 HOUR WALL |
| ----- | 4 HOUR WALL |

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO APPLY THE PROPER FIRE-SAFING DETAIL FOR ALL DUCT AND PIPE PENETRATIONS THRU RATED & NON-RATED WALL AND FLOOR/CEILING ASSEMBLIES.



HI FLOOR PLAN - AREA C
SCALE: 1/8"=1'-0"



Horry County School District
Facilities
1160 East Highway 501
Conway, South Carolina 29526

**ST JAMES HIGH SCHOOL
HVAC RENOVATIONS**
HORRY COUNTY SCHOOLS
Murrells Inlet, South Carolina

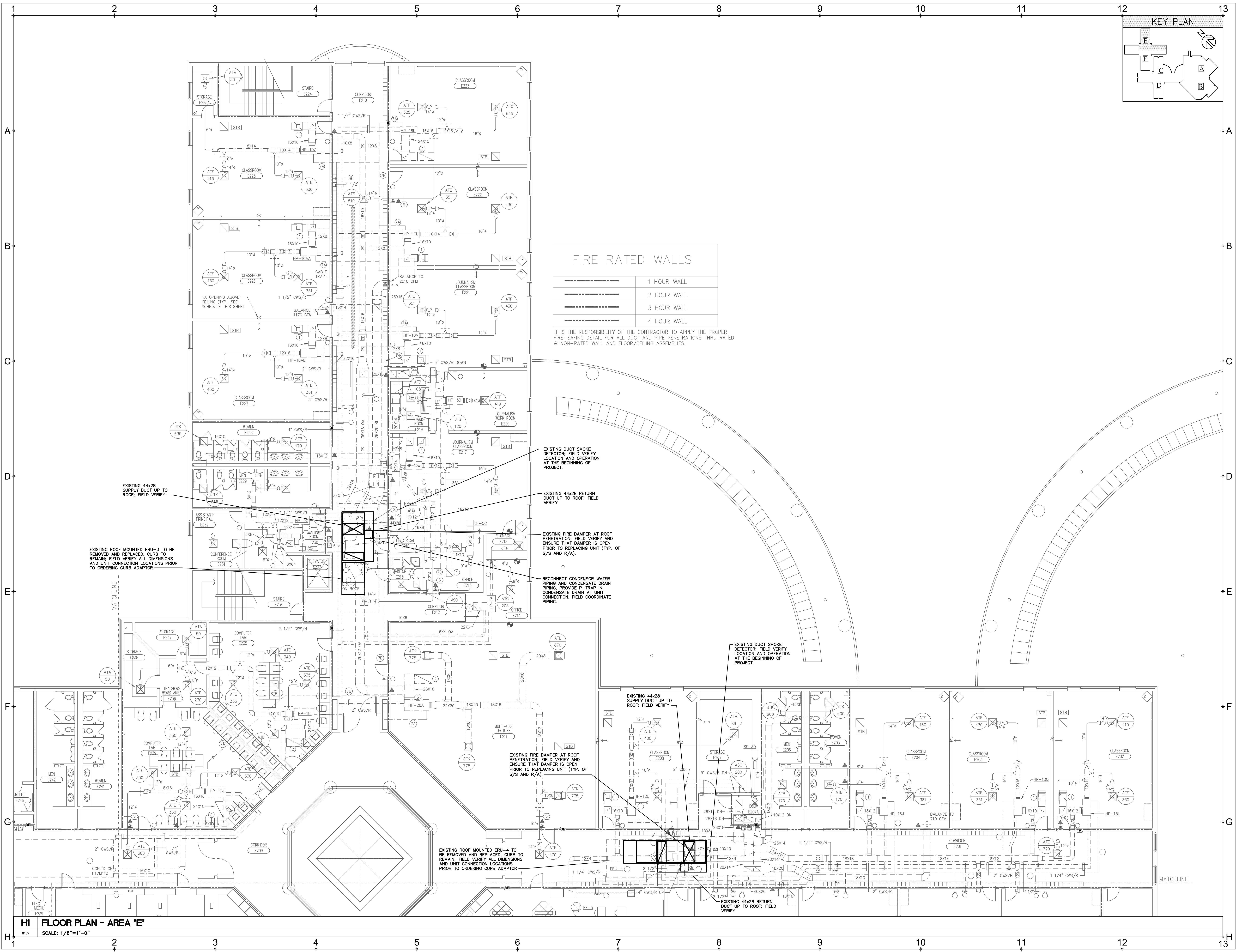
PROJECT NO.: 20-148
PHASE OF WORK: CD
DATE: 2/17/2021
CONSTRUCTION DOCUMENTS

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TITLE:
PARTIAL FLOOR PLAN - AREA E (2ND FLOOR) RENOVATION
SHEET:

M105

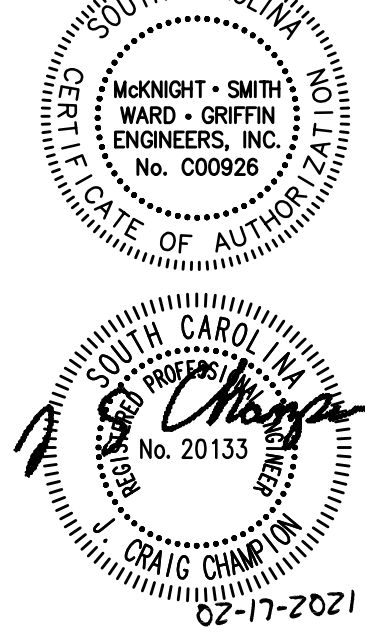


FIRE RATED WALLS

| | |
|-----------|-------------|
| --- | 1 HOUR WALL |
| — | 2 HOUR WALL |
| - · - | 3 HOUR WALL |
| — (thick) | 4 HOUR WALL |

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO APPLY THE PROPER FIRE-SAFING DETAIL FOR ALL DUCT AND PIPE PENETRATIONS THRU RATED & NON-RATED WALL AND FLOOR/CEILING ASSEMBLIES.

HI FLOOR PLAN - AREA 'E'
SCALE: 1/8"=1'-0"



Horry County School District
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HORRY COUNTY SCHOOLS
Murrells Inlet, South Carolina

PROJECT NO.: 20-148

PHASE OF WORK: CD

DATE: 2/17/2021
CONSTRUCTION DOCUMENTS

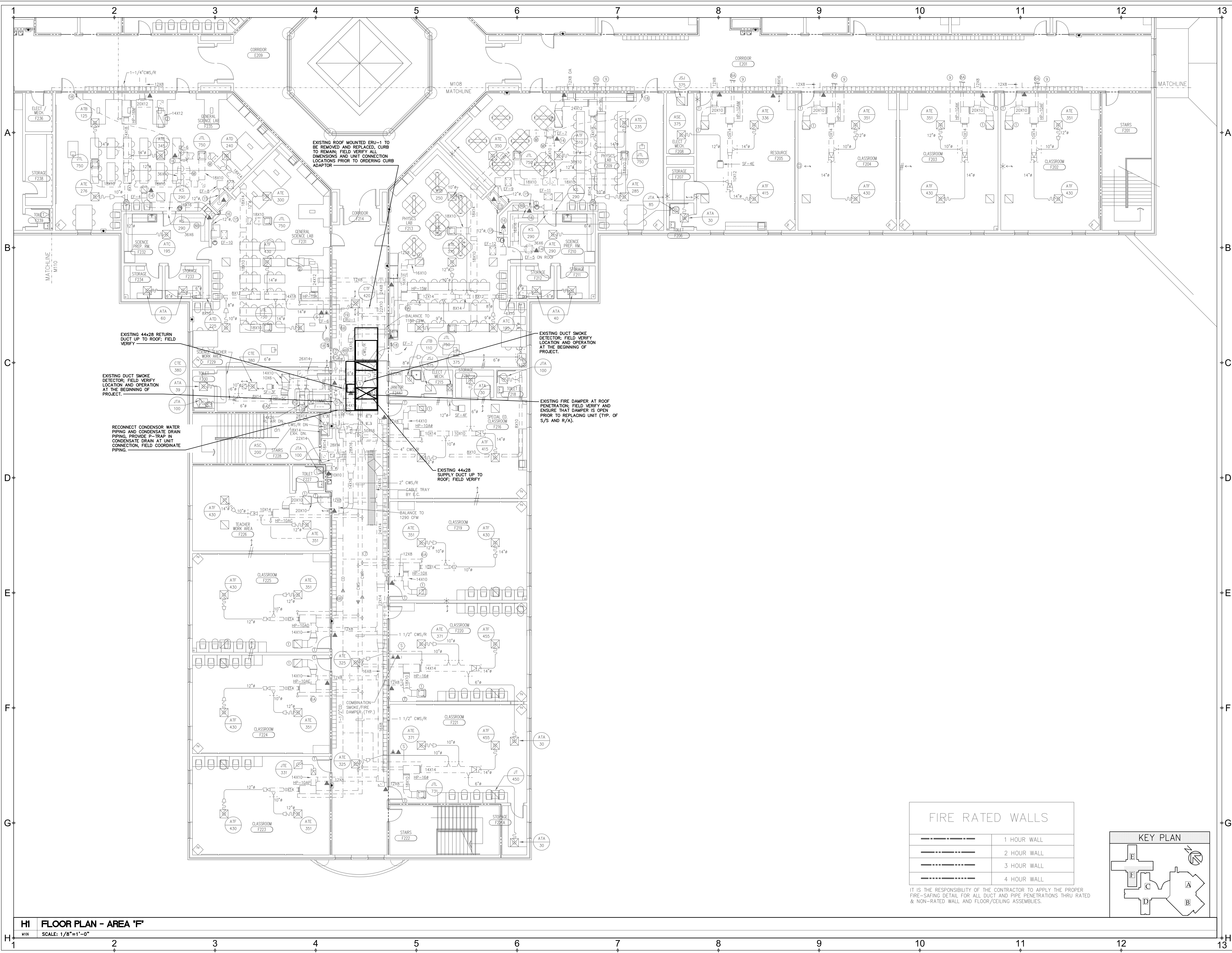
REVISIONS:

TITLE:

PARTIAL FLOOR PLAN - AREA F (2ND FLOOR) RENOVATION

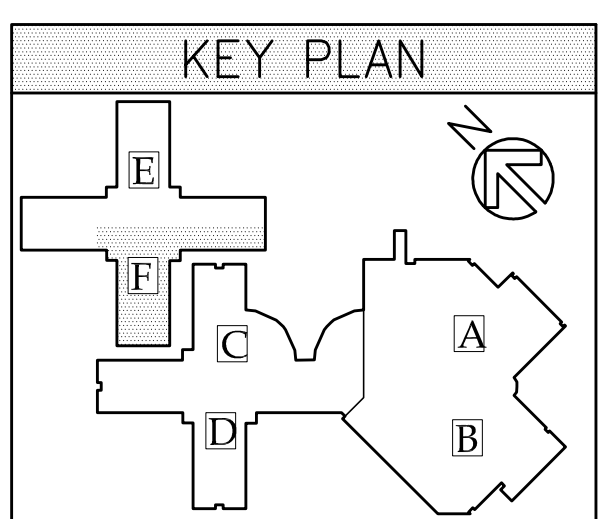
SHEET:

M106



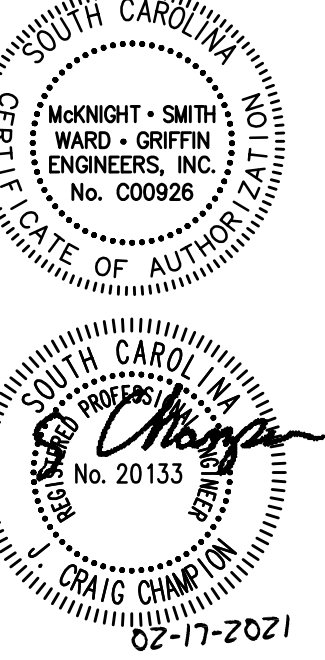
FIRE RATED WALLS

| | |
|--|-------------|
| | 1 HOUR WALL |
| | 2 HOUR WALL |
| | 3 HOUR WALL |
| | 4 HOUR WALL |



IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO APPLY THE PROPER FIRE-SAFING DETAIL FOR ALL DUCT AND PIPE PENETRATIONS THRU RATED & NON-RATED WALL AND FLOOR/CEILING ASSEMBLIES.

HI FLOOR PLAN - AREA "F"
SCALE: 1/8"=1'-0"



Owner:



Harry County School District
Facilities
1160 East Highway 501
Conway, South Carolina 29526

**ST JAMES HIGH SCHOOL
HVAC RENOVATIONS**
Horry County Schools
Murrells Inlet, South Carolina

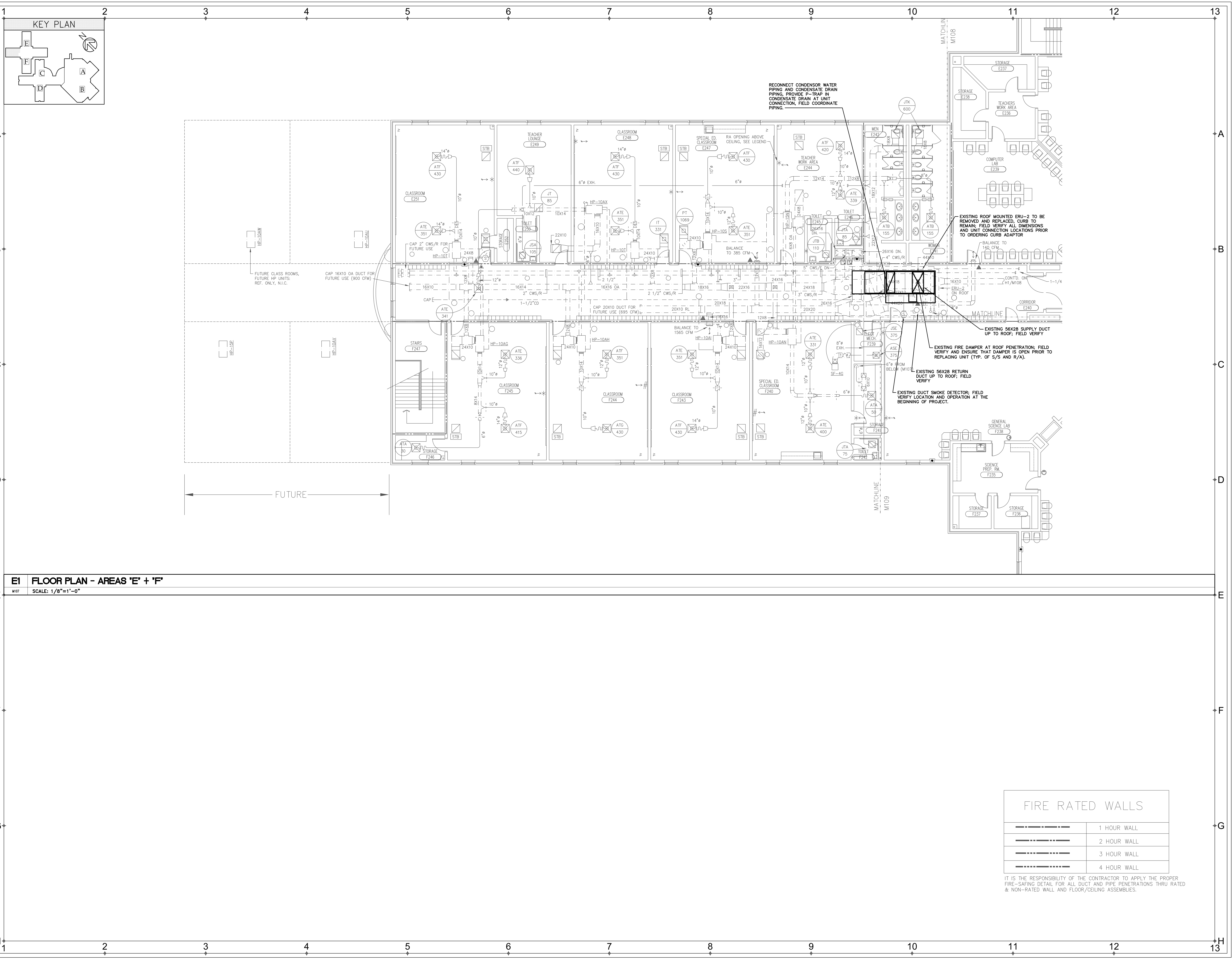
PROJECT NO.: 20-148
PHASE OF WORK: CD
DATE: 2/17/2021
CONSTRUCTION DOCUMENTS

REVISIONS:

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TITLE:
PARTIAL FLOOR PLAN - AREAS E + F
+ F FLOOR PLAN

SHEET:
M107

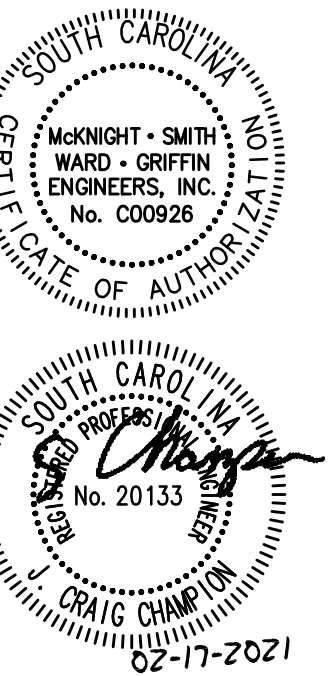


E1 FLOOR PLAN - AREAS 'E' + 'F'
SCALE: 1/8"=1'-0"

FIRE RATED WALLS

| | |
|-------|-------------|
| ----- | 1 HOUR WALL |
| ----- | 2 HOUR WALL |
| ----- | 3 HOUR WALL |
| ----- | 4 HOUR WALL |

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Horry County School District
Facilities
1160 East Highway 501
Conway, South Carolina 29526

**ST JAMES HIGH SCHOOL
HVAC RENOVATIONS**
HORRY COUNTY SCHOOLS
Murrells Inlet, South Carolina

PROJECT NO.: 20-148
PHASE OF WORK: CD
DATE: 2/17/2021
CONSTRUCTION DOCUMENTS

REVISIONS:

TITLE:

SCHEDULES

SHEET:

M201

| MECHANICAL EQUIPMENT LEGEND | | SYMBOL | DESCRIPTION |
|------------------------------|-------------|----------|---|
| SINGLE LINE | DOUBLE LINE | | |
| LOW PRESSURE DUCTWORK | | | |
| 10 X 12 | 10 X 12 | [Symbol] | DUCT SECTION-1ST FIGURE WIDTH AND DEPTH |
| [Symbol] | [Symbol] | [Symbol] | SQUARE TO ROUND TRANS. |
| [Symbol] | [Symbol] | [Symbol] | FLEX DUCTWORK |
| [Symbol] | [Symbol] | [Symbol] | ELBOW W/TURNING VANES |
| [Symbol] | [Symbol] | [Symbol] | LONG RADIUS ELBOW |
| EXH | [Symbol] | [Symbol] | EXHAUST DUCT SECTION |
| SA | [Symbol] | [Symbol] | SUPPLY DUCT SECTION |
| OA | [Symbol] | [Symbol] | OUTSIDE AIR DUCT SECTION |
| RA | [Symbol] | [Symbol] | RETURN/RELIEF AIR DUCT SECTION |
| TA | [Symbol] | [Symbol] | TRANSFER AIR DUCT SECTION |
| N/A | [Symbol] | [Symbol] | EXPOSED DUCT |
| [Symbol] | [Symbol] | [Symbol] | SHORT RADIUS VANED ELBOW |
| [Symbol] | [Symbol] | [Symbol] | CONICAL DUCT TAKE-OFF |
| [Symbol] | [Symbol] | [Symbol] | RECTANGULAR-TO-ROUND TAKE-OFF WITH DAMPER |
| [Symbol] | [Symbol] | [Symbol] | RECTANGULAR-TO-ROUND TAKE-OFF WITHOUT DAMPER |
| [Symbol] | [Symbol] | [Symbol] | RECTANGULAR TAKE-OFF |
| [Symbol] | [Symbol] | [Symbol] | LONG RADIUS TEE |
| [Symbol] | [Symbol] | [Symbol] | TEE W/TURNING VANES |
| [Symbol] | [Symbol] | [Symbol] | "Y" TAKE-OFF WITH SPLITTER DAMPER |
| [Symbol] | [Symbol] | [Symbol] | FIRE DAMPER "A" OR "B" |
| [Symbol] | [Symbol] | [Symbol] | COMBINATION FIRE/SMOKE DAMPER |
| [Symbol] | [Symbol] | [Symbol] | VOLUME EXTRACTOR |
| MISCELLANEOUS | | | |
| T | T | [Symbol] | THERMOSTAT |
| T/APC | T/APC | [Symbol] | THERMOSTAT W/ABUSE PROOF COVER, CAST ALUMINUM |
| H | H | [Symbol] | HUMIDISTAT |
| CO2 | CO2 | [Symbol] | CARBON DIOXIDE SENSOR |
| SD | SD | [Symbol] | SMOKE DAMPER |
| FD | FD | [Symbol] | FIRE DAMPER |
| FD/SD | FD/SD | [Symbol] | COMBINATION FIRE/SMOKE DAMPER |
| S | S | [Symbol] | SMOKE DETECTOR |
| CD | CD | [Symbol] | CONDENSATE DRAIN |
| B.D. | B.D. | [Symbol] | BACKDRAFT DAMPER |
| M | M | [Symbol] | MOTOR OPERATED DAMPER |
| --- | --- | [Symbol] | DAMPER |
| \$ | \$ | [Symbol] | MANUAL SWITCH |
| \$ S/W | \$ S/W | [Symbol] | SUMMER/WINTER SWITCH |
| A.F.F. | A.F.F. | [Symbol] | ABOVE FINISHED FLOOR |
| | | [Symbol] | TE INTO EXISTING AT THIS POINT |
| C.I. | C.I. | [Symbol] | CAST IRON |
| U.N.O. | U.N.O. | [Symbol] | UNLESS NOTED OTHERWISE |

| APPROVED MANUFACTURER LISTING | |
|--|---|
| THE FOLLOWING MANUFACTURER'S LISTING (ALPHABETICALLY ORDERED) IS PROVIDED FOR BIDDING PURPOSES AND DOES NOT IMPLY OR PROVIDE A GUARANTEE OF SUBMITTAL APPROVAL. ALL ITEMS SUBMITTED SHALL MEET OR EXCEED THE MINIMUM SPECIFIED DESIGN AND QUALITY CRITERIA IN THIS SET OF CONSTRUCTION DOCUMENTS. ANY BIDDER THAT INTENDS TO SUBMIT USING A MANUFACTURER NOT LISTED BELOW MAY REQUEST A PRIOR APPROVAL IN ACCORDANCE WITH THE ENTIRETY OF THE PROJECT BID DOCUMENTS, REFER TO THE ARCHITECT'S GENERAL CONDITIONS AND BIDDING REQUIREMENTS. | |
| THE BIDDER IS RESPONSIBLE FOR INCLUDING ALL COSTS ASSOCIATED WITH SUBSTITUTED EQUIPMENT, INCLUDING BUT NOT LIMITED TO, CODE AND MANUFACTURER'S REQUIRED MAINTENANCE AND ACCESS CLEARANCE, COORDINATION WITH ALL OTHER BUILDING TRADES, AND INSTALLATION OF DUCTWORK, PIPING, ETC. BIDDER SHALL BEAR RESPONSIBILITY FOR ALL ASSOCIATED COSTS AND ADDITIONAL COSTS RESULTING FROM SUBSTITUTED ITEMS SHALL NOT BE CONSIDERED FOR APPROVAL AFTER BIDS ARE AWARDED. | |
| ITEM | MANUFACTURER'S |
| FIRE DAMPERS | GREENHECK, NAILOR, RUSKIN, POTTORFF |
| WATER SOURCE HEAT PUMPS | CARRIER, DAIKIN-MCQUAY, JCI/YORK, TRANE |
| WATER SOURCE ENERGY RECOVERY UNITS | CARRIER, DAIKIN-MCQUAY, JCI/YORK, TRANE |

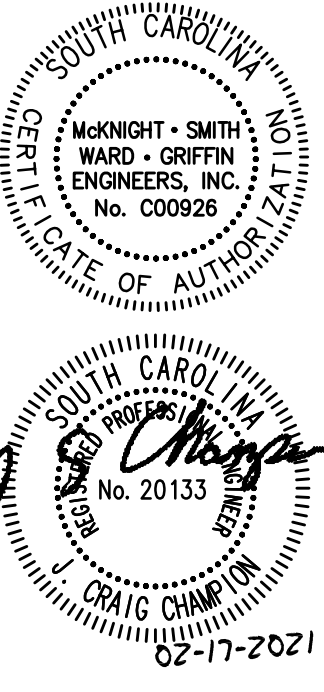
FOR THE WATER SOURCE HEAT PUMPS AND THE WATER SOURCE ENERGY RECOVERY UNITS, TRANE SHALL BE INCLUDED AS BASE BID. OTHER MANUFACTURES SHALL BE BID UNDER AN ALTERNATE. REFER TO SPECIFICATION SECTION 230007 FOR FURTHER CLARIFICATION.

| WATER SOURCE HEAT PUMP SCHEDULE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------|-----------|-------|------|------|----------|-----|-----------|-------|-----------|---------------------|---------------|---------|---------------------|-----|----------------|------------|----------|---------------|----------------|-------|---------|-----------------|----------------|-----|-----|-------|-----------------------|--------|---------|-----|-------|---------|-------|--------|------|
| Unit Tag | Nom. Tons | EER | COP | CFM | O.A. CFM | ESP | Fan Motor | | | Cooling Performance | | | Heating Performance | | | Water Coil | | | | | | Electrical Data | | | | Model | Approx. Weight (lbs.) | Detail | Remarks | | | | | | |
| | | | | | | | HP | Volts | EAT DB/WB | MBH Net Total | MBH Net Sens. | EAT MBH | Amb. Temp. | GPM | Piping Runouts | | PD (ft.) | Rejection EWT | Absorption EWT | MBH | Fan No. | FLA | Compressor No. | LRA | RLA | | | | | MCA | MOCOP | Volts | Phase | | |
| HP-32A | 7.5 | 14.3 | 4.7 | 3000 | 660 | 0.5 | 2.75 | 460 | 80/67 | 89.9 | 47.3 | 70 | 118.1 | 47 | 22 | 2" | 1-1/4" | 15 | 88 | 112.2 | 68 | 94.4 | 1 | - | 2 | 94 | 11.67 | 19 | 25 | 460 | 3 | GWSC092 | 900 | 4/M301 | 1-13 |
| HP-33A | 7.5 | 14.3 | 4.7 | 3000 | 660 | 0.5 | 2.75 | 460 | 80/67 | 89.9 | 47.3 | 70 | 118.1 | 47 | 22 | 2" | 1-1/4" | 15 | 88 | 112.2 | 68 | 94.4 | 1 | - | 2 | 94 | 11.67 | 19 | 25 | 460 | 3 | GWSC092 | 900 | 4/M301 | 1-13 |
| HP-34A | 5 | 14.83 | 4.86 | 1600 | 1020 | 0.5 | 1 | 460 | 80/67 | 59.6 | 41.90 | 70 | 73.3 | 47 | 11.5 | 1-1/2" | 1-1/4" | 15 | 88 | 74.0 | 68 | 57.8 | 1 | - | 1 | 52 | 7.9 | 14 | 20 | 460 | 3 | GWSC060 | 800 | 4/M301 | 1-13 |

- MODEL NUMBERS BASED ON TRANE. EQUALS BY CARRIER, DAIKIN-MCQUAY, JCI/YORK, TRANE.
- SINGLE POINT ELECTRICAL CONNECTION.
- PROVIDE TERMINAL STRIP FOR DIRECT CONTROL BY THE SIEMENS BUILDING AUTOMATION SYSTEM.
- ROOF CURB ADAPTOR AS REQUIRED; FIELD COORDINATE SIZE, ORIENTATION, AND DUCT CONNECTIONS PRIOR TO SUBMITTAL AND PURCHASE. RECONNECT CONDENSOR WATER PIPING AND CONDENSATE DRAIN PIPING TO EXISTING DROPS THROUGH ROOF. PROVIDE P-TRAP IN CONDENSATE DRAIN AT UNIT CONNECTION, FIELD COORDINATE PIPING.
- HOT GAS REHEAT AND UNITS 7.5 TONS AND LARGER SHALL BE DUAL COMPRESSOR.
- PROVIDE SEA COAST COATING FOR ALL UNITS.
- OUTSIDE AIR FOR THIS ZONE IS PROVIDED BY DEDICATED FRESH AIR UNIT DUCTED DIRECTLY TO RETURN DUCT.
- MANUFACTURER'S FAN DATA INCLUDES WET COIL, CLEAN FILTERS, AND UNIT CASING. ESP IS PRESSURE DROP EXTERNAL TO UNIT.
- FILTERS LOCATED IN CEILING MOUNTED FILTER GRILLES.
- REVERSE CYCLE HEATING BASED ON 70 (F) INDOORS.
- WATER COIL DETAIL 7/M301.
- EXISTING SMOKE DETECTOR IN RETURN AIR DROP. FIELD VERIFY LOCATION AND FUNCTIONALITY. REPLACE AS REQUIRED.
- EXISTING FIRE DAMPER AT S/A AND R/A ROOF PENETRATIONS. FIELD VERIFY FUNCTIONALITY AND SET DAMPER TO OPEN PRIOR TO INSTALLING NEW UNIT. REPLACE AS REQUIRED.

| WATER SOURCE HEAT PUMP ENERGY RECOVERY UNIT SCHEDULE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-------------|------------|-----|-----|-------------|-----|-----|---------------------|-------------------------|------------------------|--------------------------|--------------------------|---------------------|-------------------------|------------------------|---------------|-----------------------|-----------|--------------------|-----------|--------|-------|-----------|-----------|-----------|-----------|-----------------|--------|-----|---|-----------------------|-------|---------|-----------|------------|--|--|--|--|--|--|--|--|
| Unit Tag | Area Served | Supply Fan | | | Exhaust Fan | | | Cooling Performance | | | | | Heating Performance | | | | Energy Recovery Wheel | | | | | | | | | | Electrical Data | | | | Approx. Weight (lbs.) | Model | Remarks | | | | | | | | | | |
| | | CFM | ESP | HP | CFM | ESP | HP | Gross Total MBH | Entering Coil (F) DB/WB | Leaving Coil (F) DB/WB | Leaving Reheat (F) DB/WB | Leaving Unit (F) DB (T3) | Gross Total MBH | Entering Coil (F) DB/WB | Leaving Coil (F) DB/WB | COP at 34 (F) | Summer Performance | | Winter Performance | | | | | | Volts | Phase | MCA | MOCOP | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ERU-1 | CLASSES-S | 6600 | 1 | 10 | 6660 | 1 | 5 | 534 | 82.6/71.7 | 52.3/52.0 | 69.4/58.88 | 71.6/59.7 | 511 | 53.5 | 104.9 | 3.8 | 90.0/78.1 | 82.6/71.7 | 78.0/63.5 | 85.6/71.1 | 220.33 | 71.89 | 25.0/19.5 | 53.5/42.1 | 73.0/57.0 | 42.2/38.2 | 362.24 | 277.56 | 460 | 3 | 96.4 | 110 | 10362 | OANE540A4 | 1-8, 10-26 | | | | | | | | |
| ERU-2 | CLASSES-W | 7130 | 1 | 10 | 7130 | 1 | 7.5 | 599 | 82.6/71.9 | 51.2/51.1 | 69.9/58.7 | 72.3/59.6 | 720.5 | 53.4 | 121.5 | 4 | 90.0/78.1 | 82.6/71.2 | 78.0/63.5 | 85.6/70.9 | 227.52 | 76.57 | 25.0/19.5 | 53.4/41.8 | 73.0/57.0 | 42.3/38.6 | 381.99 | 295.38 | 460 | 3 | 104.1 | 110 | 10932 | OANE600A4 | 1-9, 11-26 | | | | | | | | |
| ERU-3 | CLASSES-N | 6405 | 1 | 7.5 | 6405 | 1 | 5 | 527.4 | 82.6/71.6 | 51.5/51.2 | 69.2/58.41 | 71.3/59.2 | 504.6 | 53.6 | 106.5 | 3.8 | 90.0/78.1 | 82.6/71.6 | 78.0/63.5 | 85.6/71.3 | 215.97 | 69.44 | 25.0/19.5 | 53.6/42.2 | 73.0/57.0 | 42.2/37.9 | 351.21 | 267.83 | 460 | 3 | 93.7 | 110 | 10351 | OANE540A4 | 1-8, 10-26 | | | | | | | | |
| ERU-4 | CLASSES-E | 6435 | 1 | 7.5 | 6435 | 1 | 5 | 528 | 82.6/71.6 | 51.6/51.3 | 69.3/58.5 | 71.4/59.3 | 503.7 | 53.6 | 106.2 | 3.8 | 90.0/78.1 | 82.6/71.6 | 78.0/63.5 | 85.6/71.3 | 216.49 | 69.72 | 25.0/19.5 | 53.6/42.2 | 73.0/57.0 | 42.2/38.0 | 352.49 | 268.91 | 460 | 3 | 93.7 | 110 | 10351 | OANE540A4 | 1-8, 10-26 | | | | | | | | |
| ERU-5 | GYMNASIUM | 3890 | 1 | 5 | 3890 | 1 | 3 | 323.3 | 82.6/71.6 | 51.0/51.0 | 69.5/58.54 | 71/59.1 | 392.4 | 53.5 | 122.2 | 3.9 | 90.0/78.1 | 82.6/71.6 | 78.0/63.5 | 85.7/71.4 | 130.97 | 42.43 | 25.0/19.5 | 53.5/42.1 | 73.0/57.0 | 41.8/37.8 | 314.14 | 163.63 | 460 | 3 | 63.6 | 80 | 4694 | OAKE360A4 | 1-8, 10-26 | | | | | | | | |
| ERU-6 | AREA "A" | 5600 | 1 | 7.5 | 5600 | 1 | 5 | 467.2 | 82.6/71.2 | 50.5/50.2 | 69.8/58.15 | 71.5/58.8 | 443.6 | 53.2 | 107.3 | 3.9 | 90.0/78.1 | 82.6/71.2 | 78.0/63.5 | 85.8/71.7 | 200.08 | 61.37 | 25.0/19.5 | 53.8/42.7 | 73.0/57.0 | 41.6/37.1 | 314.91 | 236.9 | 460 | 3 | 74.4 | 90 | 10327 | OANE480A4 | 1-8, 10-26 | | | | | | | | |
| ERU-7 | AREA "B" | 6805 | 1 | 5 | 8805 | 1 | 10 | 633.7 | 82.6/71.7 | 54.6/54.4 | 70.1/60.41 | 72.2/61.2 | 750 | 53.6 | 110.9 | 4.5 | 90.0/78.1 | 82.6/71.7 | 78.0/63.5 | 85.6/71.1 | 292.76 | 94.93 | 25.0/19.5 | 53.6/42.1 | 73.0/57.0 | 42.3/38.3 | 479.92 | 366.5 | 460 | 3 | 104.1 | 110 | 10932 | OANE600A4 | 1-8, 10-26 | | | | | | | | |

- MODEL NUMBERS BASED ON TRANE. EQUALS BY CARRIER, DAIKIN-MCQUAY, JCI/YORK, TRANE.
- SEE SCHEMATICS, SHEET M303. CFM'S LISTED ARE O.A. CFM TO UNIT, & EXH CFM FROM SPACE. PURGE CFM SHALL BE PROVIDED TO AVOID CROSS CONTAMINATION OF AIRSTREAMS.
- ALL INTERNAL PRESSURE DROPS (FILTER, CASING AND WHEEL) ARE INCLUDED IN MFR. FAN CURVE.
- COMPLETE PACKAGE WITH SINGLE POINT ELECTRICAL CONNECTION, NON-FUSED DISCONNECT, AND CONVENIENCE OUTLET.
- HIGH VELOCITY, ALUM. MESH FILTERS.
- OUTSIDE AIR INTAKE HOOD AND EXHAUST OUTLET COLLAR.
- BUILT-IN DISCONNECT SWITCH BY MFR.
- 120/1 LIGHT & RECEPTACLE BUILT-IN BY MFR.
- WATER COIL DETAIL 7/M301. (ERU-2)
- WATER COIL DETAIL 8/M301. (ALL OTHERS)
- ACTIVE (VFD) HEAD PRESSURE CONTROL.
- R410A, 4 ROW DX INTERFACED EVAPORATOR COIL.
- MODULATING HOT GAS REHEAT.
- DIGITAL SCROLL COMPRESSOR. BOTH CIRCUITS.
- CONDENSOR: WATER COOLED. (STD. CONDENSOR TUBES.)
- INDOOR BLOWER MOTORS ARE DIRECT DRIVE WITH VFD EACH FAN WITH PIEZO RINGS AND TAP.
- MERV-8 FILTERS.
- ENERGY RECOVERY WHEEL.
- ROOF CURB ADAPTOR IS REQUIRED; FIELD COORDINATE SIZE, ORIENTATION, AND DUCT CONNECTIONS PRIOR TO PURCHASE. RECONNECT CONDENSOR WATER PIPING AND CONDENSATE DRAIN PIPING TO EXISTING DROPS THROUGH ROOF. PROVIDE P-TRAP IN CONDENSATE DRAIN AT UNIT CONNECTION, FIELD COORDINATE PIPING.
- SEE DETAIL 4/M301.
- PROVIDE TERMINAL STRIP FOR DIRECT CONTROL BY SIEMENS BUILDING AUTOMATION SYSTEM.
- HAILGUARDS
- PROVIDE FROSTAT AND SUPPLY DISCHARGE AIR SENSOR
- PROVIDE SEA COAST COATINGS ON ALL ROOFTOP AND EXTERIOR EXPOSED EQUIPMENT.
- EXISTING SMOKE DETECTOR IN RETURN AIR DROP. FIELD VERIFY LOCATION AND FUNCTIONALITY. REPLACE AS REQUIRED.
- EXISTING FIRE DAMPER AT S/A AND R/A ROOF PENETRATIONS. FIELD VERIFY FUNCTIONALITY AND SET DAMPER TO OPEN PRIOR TO INSTALLING NEW UNIT. REPLACE AS REQUIRED.



Owner:
HCS
Horry County Schools
Horry County School District
Facilities
1160 East Highway 501
Conway, South Carolina 29526

**ST JAMES HIGH SCHOOL
HVAC RENOVATIONS**
HORRY COUNTY SCHOOLS
Murrells Inlet, South Carolina

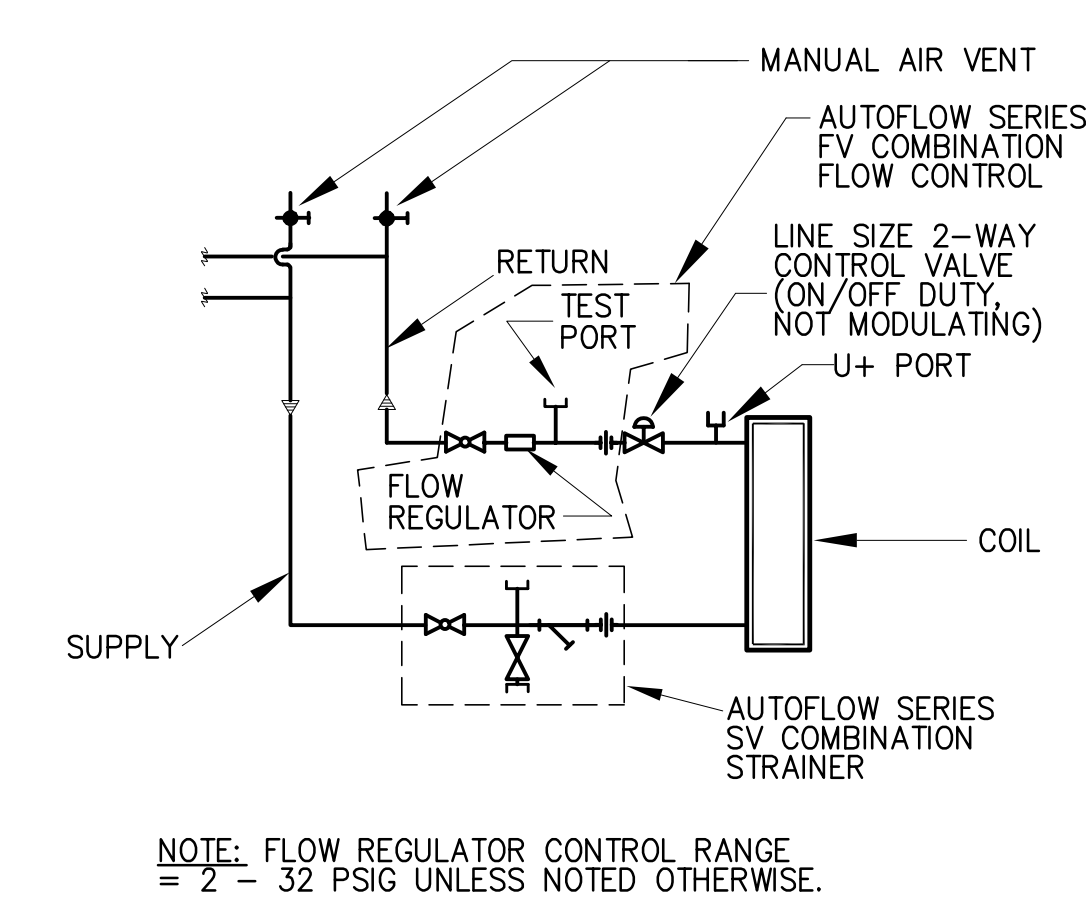
PROJECT NO.: 20-148
PHASE OF WORK: CD
DATE: 2/17/2021
CONSTRUCTION DOCUMENTS

REVISIONS:

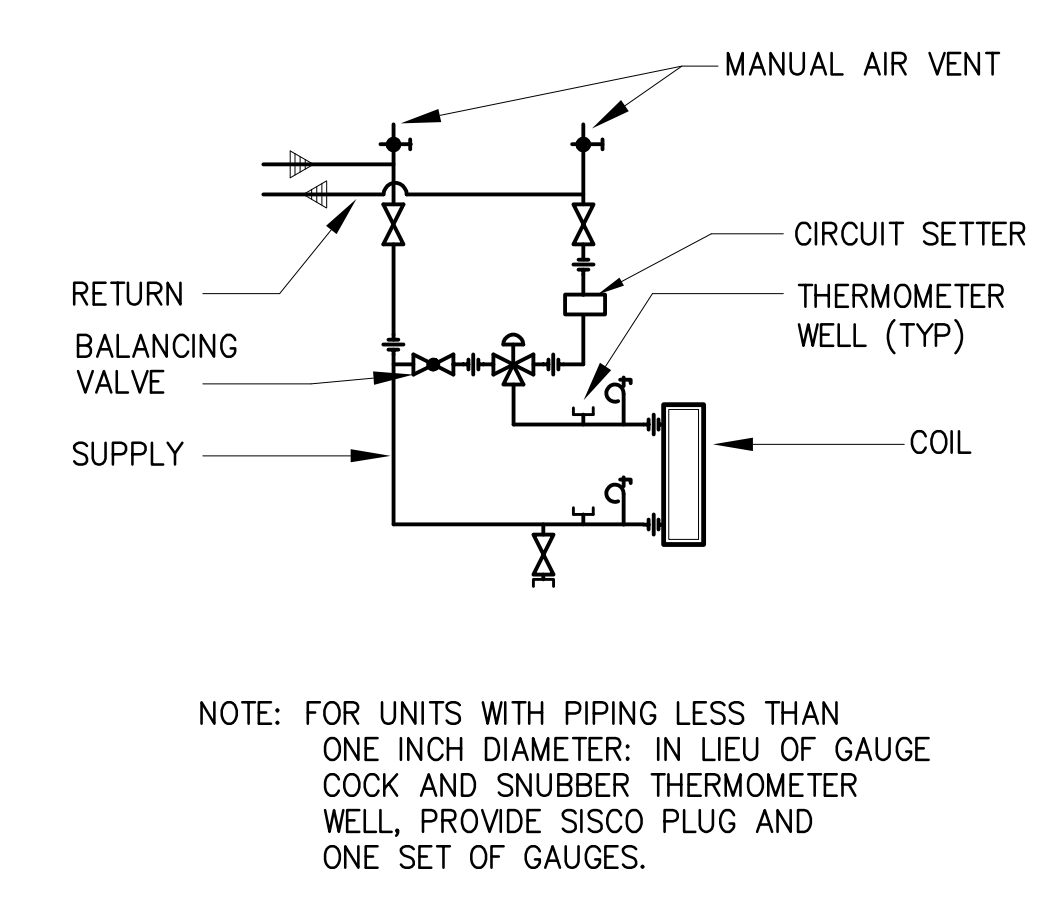
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TITLE:
DETAILS
SHEET:
M301

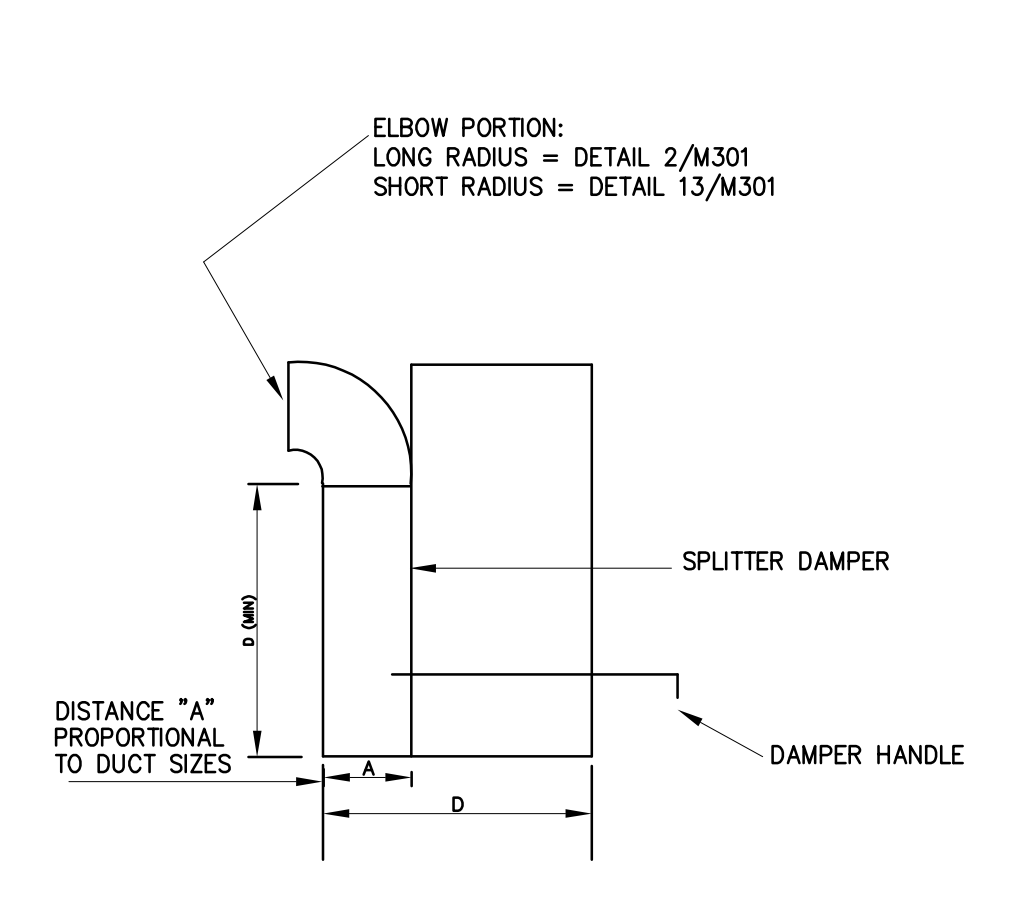
SEQUENCE OF OPERATION:
MAKE UP AIR UNIT SEQUENCE OF OPERATION:
THE MUA CONSISTS OF A SUPPLY FAN, EXHAUST FAN, WATER COOLED HEAT PUMP SECTION AND A HEAT RECOVERY WHEEL. PRETREATING OUTDOOR AIR.
THE SEQUENCE OF OPERATION SHALL BE INITIATED BY THE BAS TIME AND EVENTS PROGRAM. THE DDC UNIT CONTROLLER SHALL BE PROVIDED BY CONTROL MANAGEMENT TO THE MAKE UP AIR UNIT MANUFACTURER FOR FACTORY MOUNTING AND WIRING. THE MANUFACTURER SHALL PROVIDE CONTROL MANAGEMENT A WRITTEN SEQUENCE OF OPERATION AND REQUIRED POINTS LIST PRIOR TO BID FOR COORDINATION.
WHEN ENABLED FOR OPERATION, THE MEC WILL START THE SUPPLY AND EXHAUST FANS. AFTER FLOW HAS BEEN PROVEN BY THE FAN CURRENT SWITCHES, THE MEC WILL STAGE THE COOLING IF THE OUTDOOR TEMPERATURE IS ABOVE 55 DEGREES (ADD), AND ANY OF THE FOLLOWING CONDITIONS ARE PRESENT:
- AVERAGE ROOM TEMPERATURE IS GREATER THAN 75 DEGREES
- THE ROOM DEWPOINT IS GREATER THAN 58 DEGREES
- THE RETURN RELATIVE HUMIDITY IS GREATER THAN 55%RH
WHEN COOLING IS REQUIRED, THE COIL LEAVING AIR SETPOINT IS CALCULATED BY SUBTRACTING THE RETURN AIR RH FROM 98 (I.E.: CSP = 98 - XXRH). THE FOUR STAGES OF COOLING ARE STAGED ON BASED ON A 0 - 100% COOLING LOAD LOOP AS FOLLOWS:
- STAGE 1 ON AT 70% AND OFF AT 50%
- STAGE 2 ON AT 80% AND OFF AT 55%
- STAGE 3 ON AT 90% AND OFF AT 25%
- STAGE 4 ON AT 100% AND OFF AT 35%
UNIT SHALL OPERATE IN HEATING MODE (STAGE 1 HEAT PUMP, STAGE 2 ELECTRIC HEAT) WHENEVER OUTDOOR AIR TEMPERATURE IS BELOW 50F. UNIT SHALL MAINTAIN DISCHARGE AIR TEMPERATURE OF 70F IN HEATING OPERATION.
IN ADDITION, THERE IS AN ON DELAY FOR EACH STAGE OF 2 MINUTES. WHEN STAGE 1 IS ENERGIZED, CONDENSER WATER VALVE SHALL OPEN. WHEN THE VENTILATION AIR UNIT IS ENABLED IN THE OCCUPIED MODE, THE MEC WILL MODULATE THE OUTDOOR/RETURN/RELIEF AIR DAMPERS TO MAINTAIN THE CO2 LEVELS OF THE RETURN AIR TO AN ADJUSTABLE SETPOINT. THE MEC WILL ALSO MONITOR A ROOM CO2 SENSOR. WHEN THE VENTILATION AIR UNIT IS IN THE UNOCCUPIED MODE, THE DAMPERS WILL SPRING RETURN TO THE NORMAL (CLOSED) POSITION. IN THE UNOCCUPIED MODE, THE MAU WILL BE DISABLED UNLESS THE ROOM RH IS ABOVE AN ADJUSTABLE SETPOINT.
SAFETIES: UPON AN ALARM SIGNAL FROM THE SUPERVISORY BUILDING CONTROLLER (SBC) THE UNIT SHALL DE-ENERGIZE.
WHEN OPERATING STATUS OF UNIT IS NOT PROVEN THE CONTROLLER SHALL DE-ENERGIZE THE UNIT AND AN ALARM SHALL BE DISPLAYED AT THE OPERATOR'S WORKSTATION.
POINTS LIST
1. FAN START/STOP STATUS
2. HEAT WHEEL ROTATION STATUS
3. DISCHARGE AIR TEMPERATURE
4. ENTERING CONDENSER WATER TEMPERATURE
5. LEAVING CONDENSER WATER TEMPERATURE
6. CONTROL VALVE POSITION
7. REVERSING VALVE COMMAND
8. CONDENSATE PAN SAFETY SWITCH
9. COMPRESSOR COMMAND AND STATUS
10. ALARM STATUS WITH REMOTE RESET
11. OCCUPANCY OVERRIDE/STATUS
WATER SOURCE HEAT PUMP (HP) SEQUENCE OF OPERATION (TWO STAGE COOLING UNIT)
A PROGRAMMABLE CONTROLLER CAPABLE OF STANDALONE OPERATION SHALL CONTROL THE WATER SOURCE HEAT PUMP (HP), SUBJECT TO OCCUPANCY SCHEDULES AND OCCUPANCY OVERRIDES THROUGH THE BAS.
THE SEQUENCE OF OPERATION SHALL BE INITIATED BY THE BAS TIME AND EVENTS PROGRAM.
IN THE OCCUPIED MODE THE UNIT SHALL MAINTAIN 75F. IN COOLING MODE AND 70F IN HEATING MODE. SPACE TEMPERATURE SHALL BE CONTROLLED THROUGH A SPACE MOUNTED TEMPERATURE SENSOR.
EACH HP SHALL CONTINUALLY CIRCULATE AIR AT THE SPECIFIED MINIMUM CFM AND THE UNIT CONTROL VALVE SHALL BE FULLY CLOSED. UPON A CALL FOR HEATING OR COOLING, THE FAN SPEED SHALL BE INCREASED TO LOW SPEED, THE CONTROL VALVE SHALL OPEN TO MINIMUM POSITION AND THE UNIT SHALL BE FULLY OPERATIONAL PER THE UNIT'S INTERNAL CONTROLS. UPON A FURTHER INCREASE IN SPACE TEMPERATURE, THE UNIT FAN SHALL GO TO HIGH SPEED AND THE CONTROL VALVE SHALL FULLY OPEN. WHEN THE SPACE TEMPERATURE IS SATISFIED THE COMPRESSOR SHALL DE-ENERGIZE AND THE SPECIFIED MIN. CFMS SHALL BE MAINTAINED FOR CIRCULATION. AS SPACE TEMPERATURE RETURNS TO SET POINT, THE REVERSE SHALL OCCUR.
IN UNOCCUPIED MODE THE UNIT SHALL MAINTAIN 80F IN COOLING MODE AND 60F IN HEATING MODE.
SAFETIES: UPON AN ALARM SIGNAL FROM THE SUPERVISORY BUILDING CONTROLLER (SBC) THE UNIT SHALL DE-ENERGIZE.
WHEN OPERATING STATUS OF UNIT IS NOT PROVEN THE CONTROLLER SHALL DE-ENERGIZE THE UNIT AND AN ALARM SHALL BE DISPLAYED AT THE OPERATOR'S WORKSTATION.
ON UNITS WITH ECONOMIZER CYCLE, CYCLE SHALL BE FIRST STAGE OF COOLING WHEN THE OUTDOOR AIR DEW POINT IS BELOW 55F.
POINTS LIST
1. FAN START/STOP/STATUS/SPEED
2. DISCHARGE AIR TEMPERATURE
3. SPACE TEMPERATURE SENSOR
4. ENTERING CONDENSER WATER TEMPERATURE
5. LEAVING CONDENSER WATER TEMPERATURE
6. CONTROL VALVE POSITION
7. REVERSING VALVE COMMAND
8. CONDENSATE PAN SAFETY SWITCH
9. COMPRESSOR COMMAND AND STATUS
10. ALARM STATUS WITH REMOTE RESET
11. OCCUPANCY OVERRIDE/STATUS
WATER SOURCE HEAT PUMP (HP) SEQUENCE OF OPERATION (SINGLE STAGE COOLING UNIT)
A PROGRAMMABLE CONTROLLER CAPABLE OF STANDALONE OPERATION SHALL CONTROL THE WATER SOURCE HEAT PUMP (HP), SUBJECT TO OCCUPANCY SCHEDULES AND OCCUPANCY OVERRIDES THROUGH THE BAS.
THE SEQUENCE OF OPERATION SHALL BE INITIATED BY THE BAS TIME AND EVENTS PROGRAM.
IN THE OCCUPIED MODE THE UNIT SHALL MAINTAIN 75F. IN COOLING MODE AND 70F IN HEATING MODE. UNIT SHALL BE CONTROLLED THROUGH A SPACE MOUNTED TEMPERATURE SENSOR.
EACH HP SHALL CONTINUALLY CIRCULATE AIR AT THE SPECIFIED MINIMUM CFM AND THE UNIT CONTROL VALVE SHALL BE FULLY CLOSED. UPON A CALL FOR HEATING OR COOLING, THE FAN SPEED SHALL BE INCREASED TO HIGH SPEED AND THE CONTROL VALVE SHALL FULLY OPEN. WHEN THE SPACE TEMPERATURE IS SATISFIED THE COMPRESSOR SHALL DE-ENERGIZE AND THE SPECIFIED MIN. CFMS SHALL BE MAINTAINED FOR CIRCULATION.
IN UNOCCUPIED MODE THE UNIT SHALL MAINTAIN 80F IN COOLING MODE AND 60F IN HEATING MODE.
SAFETIES: UPON AN ALARM SIGNAL FROM THE SUPERVISORY BUILDING CONTROLLER (SBC) THE UNIT SHALL DE-ENERGIZE.
WHEN OPERATING STATUS OF UNIT IS NOT PROVEN THE CONTROLLER SHALL DE-ENERGIZE THE UNIT AND AN ALARM SHALL BE DISPLAYED AT THE OPERATOR'S WORKSTATION.
POINTS LIST
1. FAN START/STOP/STATUS/SPEED
2. DISCHARGE AIR TEMPERATURE
3. SPACE TEMPERATURE SENSOR
4. ENTERING CONDENSER WATER TEMPERATURE
5. LEAVING CONDENSER WATER TEMPERATURE
6. CONTROL VALVE POSITION
7. REVERSING VALVE COMMAND
8. CONDENSATE PAN SAFETY SWITCH
9. COMPRESSOR COMMAND AND STATUS
10. ALARM STATUS WITH REMOTE RESET
11. OCCUPANCY OVERRIDE/STATUS



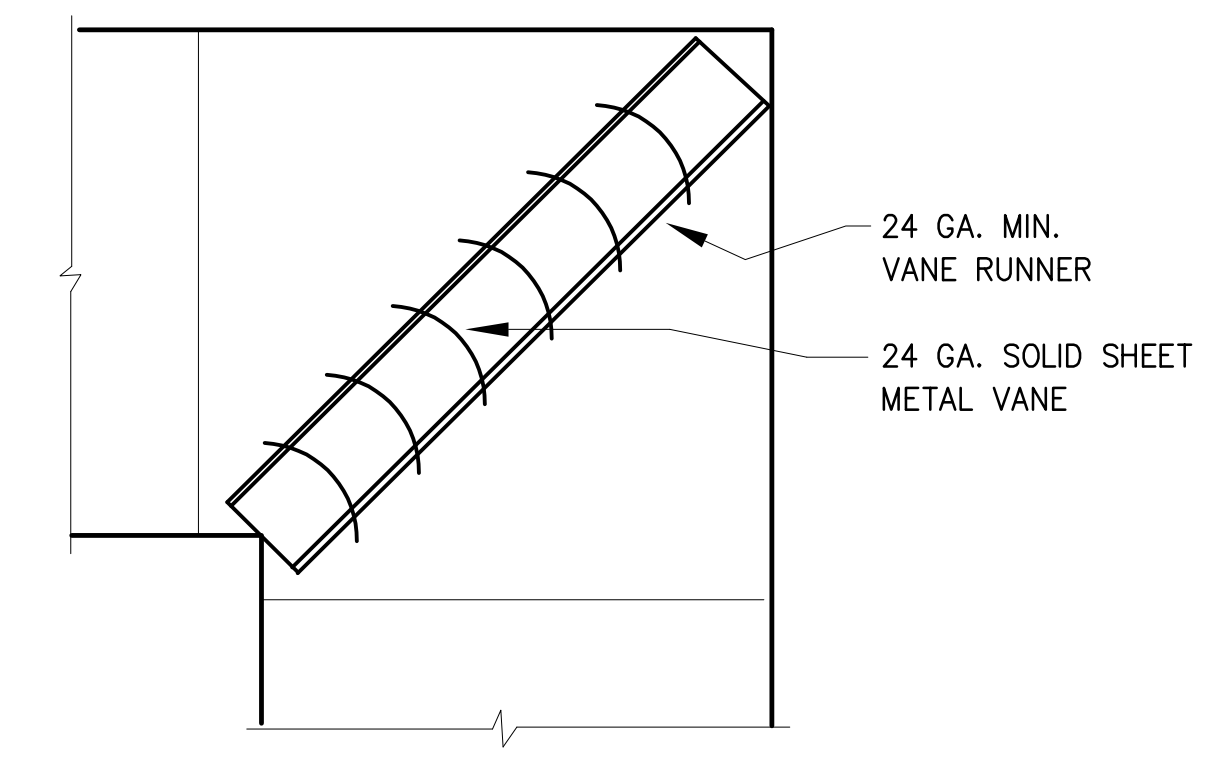
8 COIL PIPING DETAIL
2-WAY CONTROL VALVE
NTS



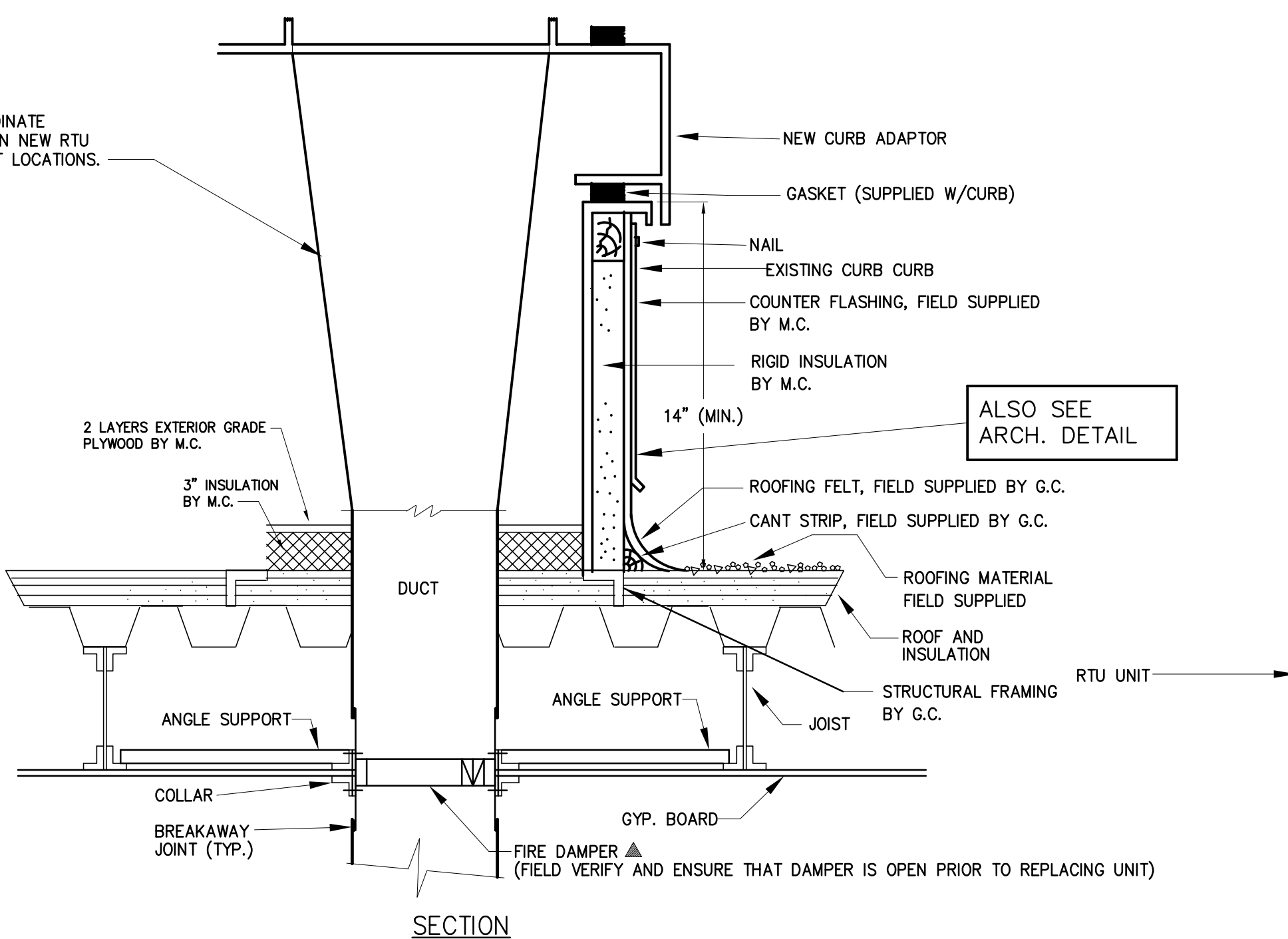
7 COIL PIPING DETAIL
3-WAY CONTROL VALVE
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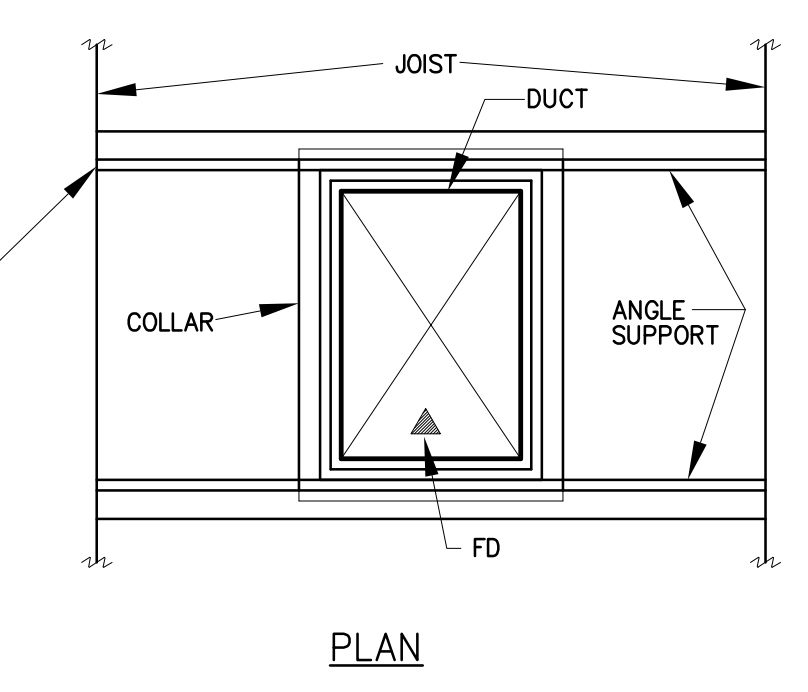
6 "Y" TAKEOFF WITH
SPLITTER DAMPER
NTS



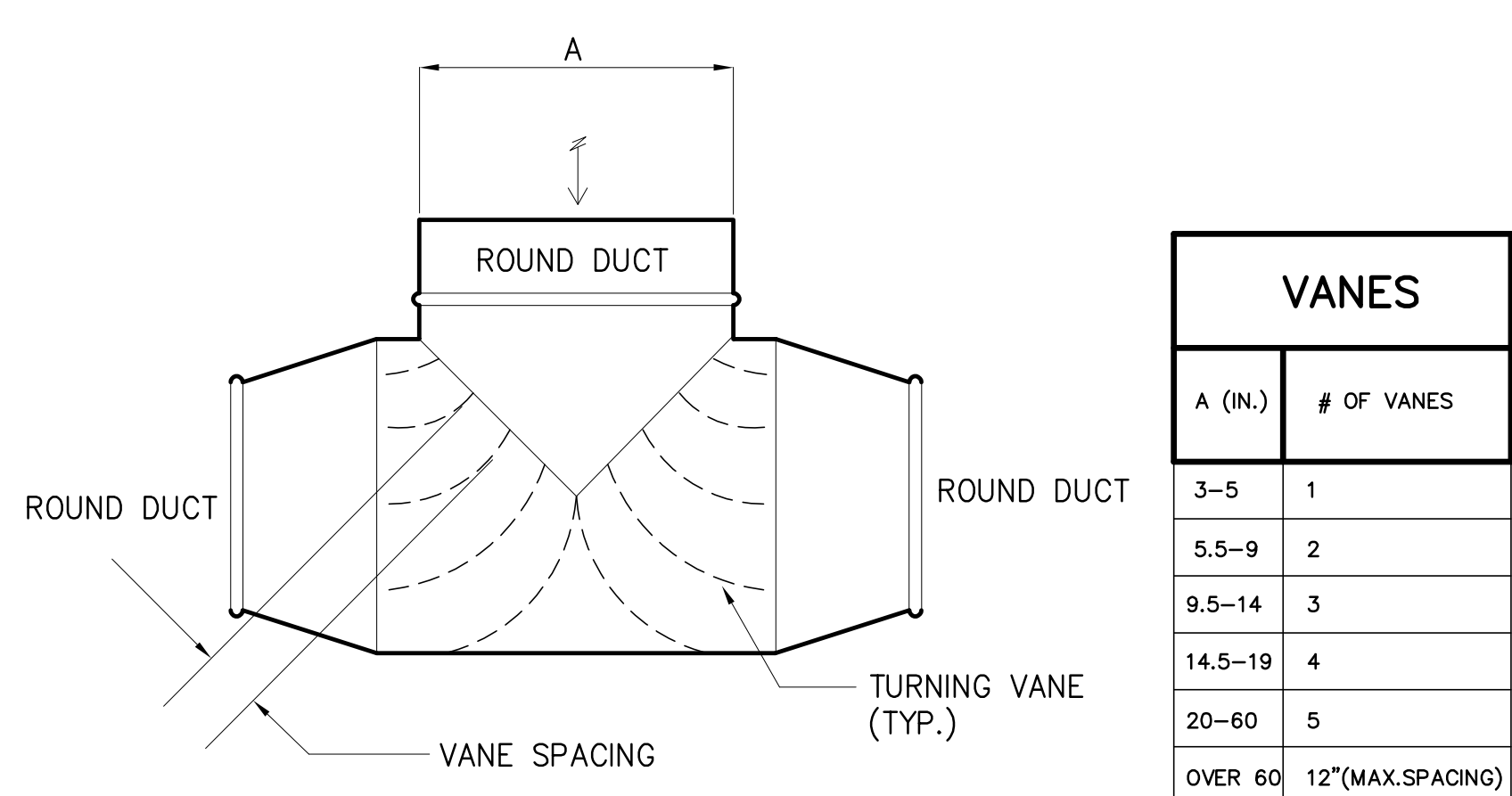
5 TURNING VANE DETAIL
NTS



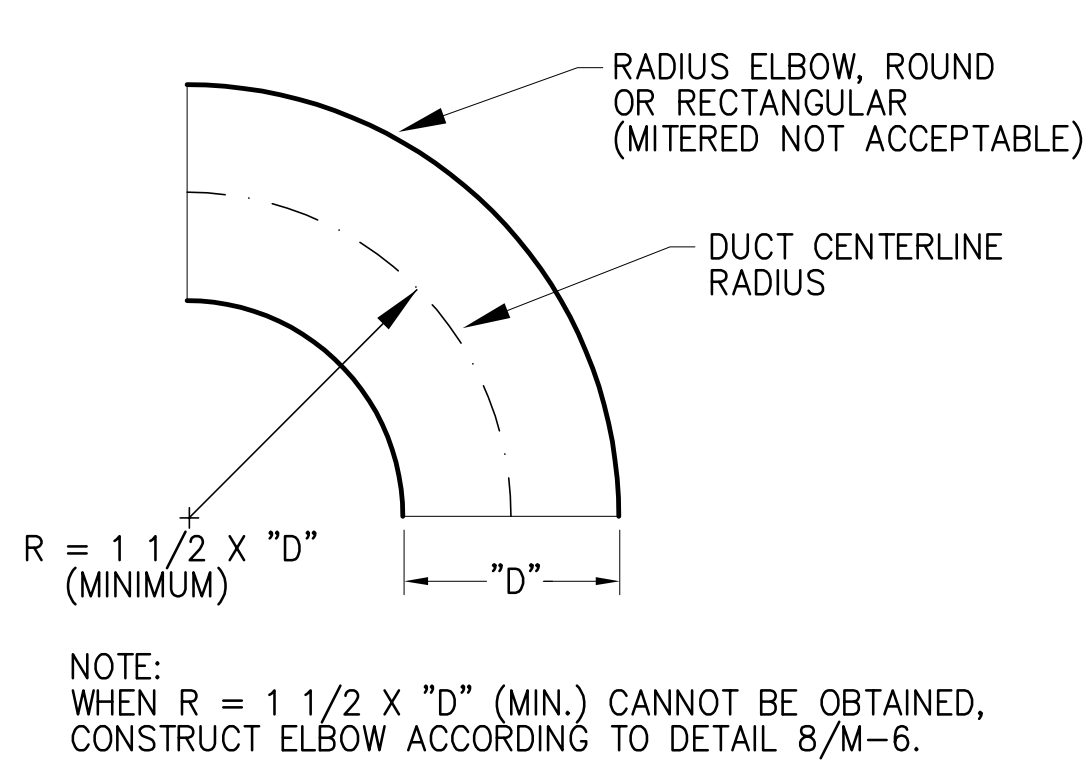
4 RTU MOUNTING & FIRE DAMPER DETAIL
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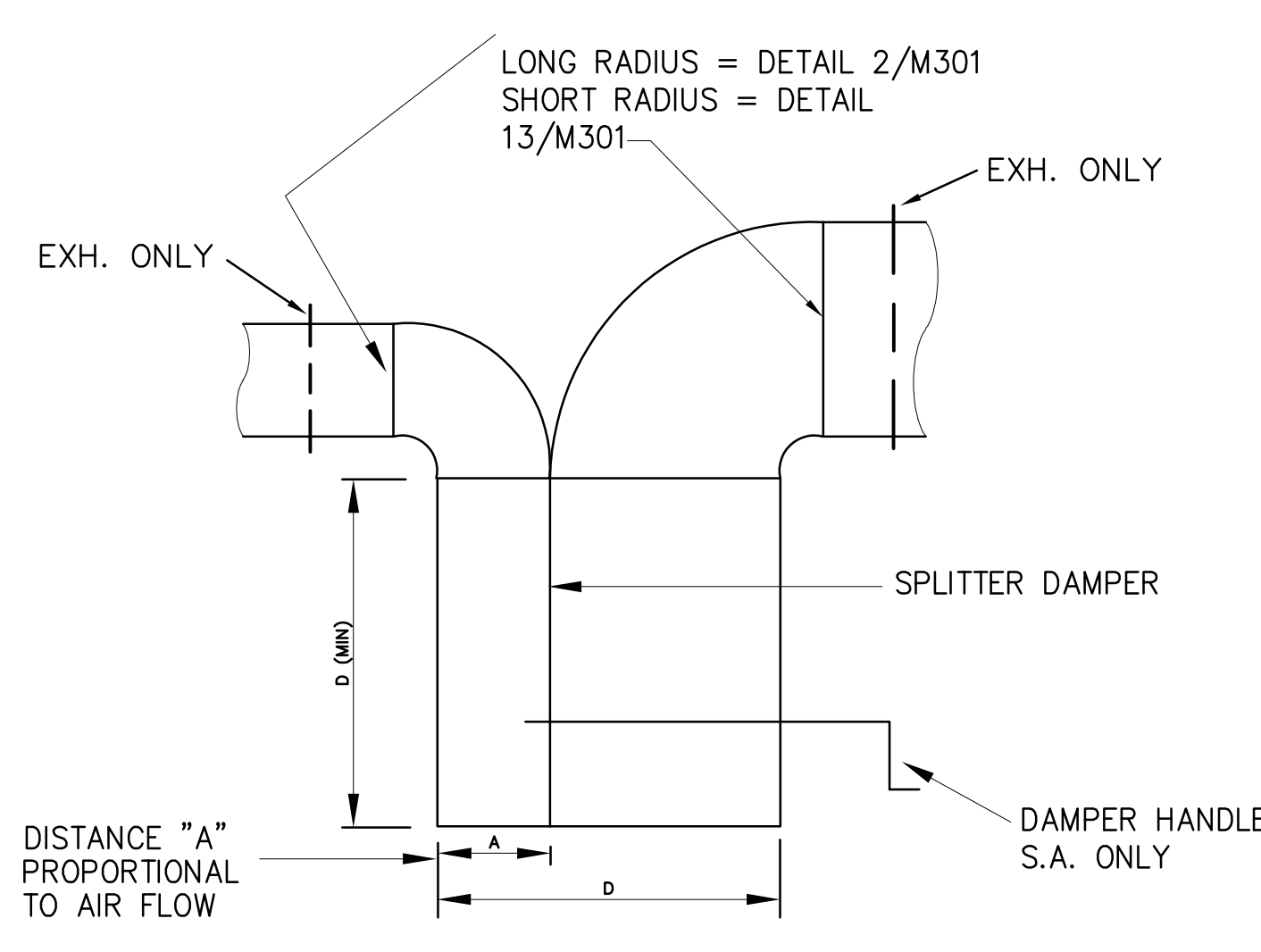
4 RTU MOUNTING & FIRE DAMPER DETAIL
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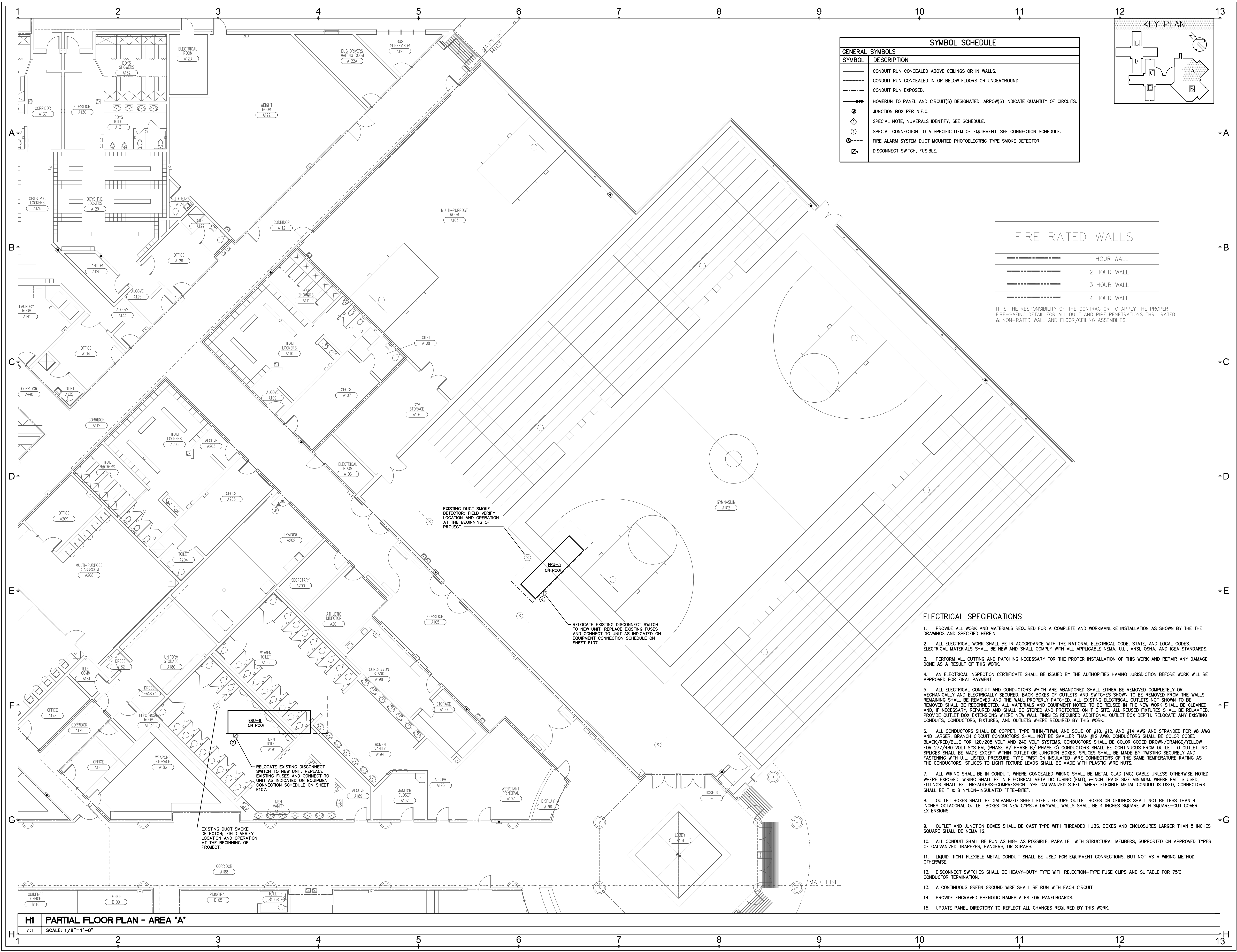
3 TEE DETAIL - ROUND DUCT
NTS



2 ELBOW DETAIL
NTS

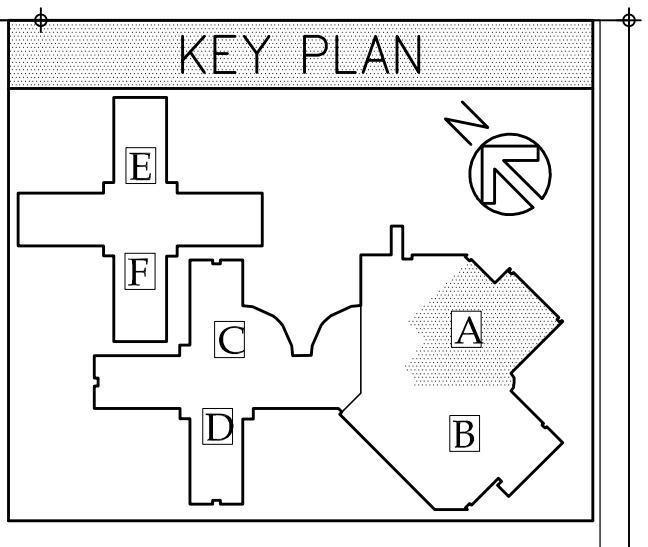


1 TEE DETAIL
NTS



SYMBOL SCHEDULE

| GENERAL SYMBOLS | |
|-----------------|--|
| SYMBOL | DESCRIPTION |
| — | CONDUIT RUN CONCEALED ABOVE CEILINGS OR IN WALLS. |
| - - - | CONDUIT RUN CONCEALED IN OR BELOW FLOORS OR UNDERGROUND. |
| - · - · - | CONDUIT RUN EXPOSED. |
| → | HOME RUN TO PANEL AND CIRCUIT(S) DESIGNATED. ARROW(S) INDICATE QUANTITY OF CIRCUITS. |
| ⊙ | JUNCTION BOX PER N.E.C. |
| ◇ | SPECIAL NOTE, NUMERALS IDENTIFY, SEE SCHEDULE. |
| ⊕ | SPECIAL CONNECTION TO A SPECIFIC ITEM OF EQUIPMENT. SEE CONNECTION SCHEDULE. |
| ⊞ | FIRE ALARM SYSTEM DUCT MOUNTED PHOTOELECTRIC TYPE SMOKE DETECTOR. |
| ⊞ | DISCONNECT SWITCH, FUSIBLE. |



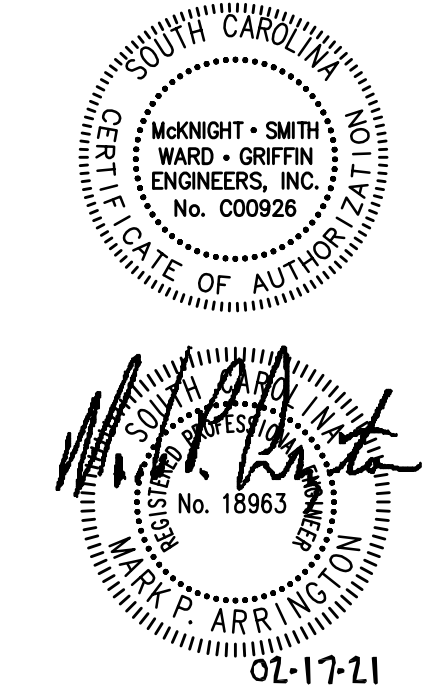
FIRE RATED WALLS

| | |
|-------------------------------|-------------|
| — · — · — | 1 HOUR WALL |
| — · — · — · — · — | 2 HOUR WALL |
| — · — · — · — · — · — | 3 HOUR WALL |
| — · — · — · — · — · — · — · — | 4 HOUR WALL |

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO APPLY THE PROPER FIRE-SAFING DETAIL FOR ALL DUCT AND PIPE PENETRATIONS THRU RATED & NON-RATED WALL AND FLOOR/CEILING ASSEMBLIES.

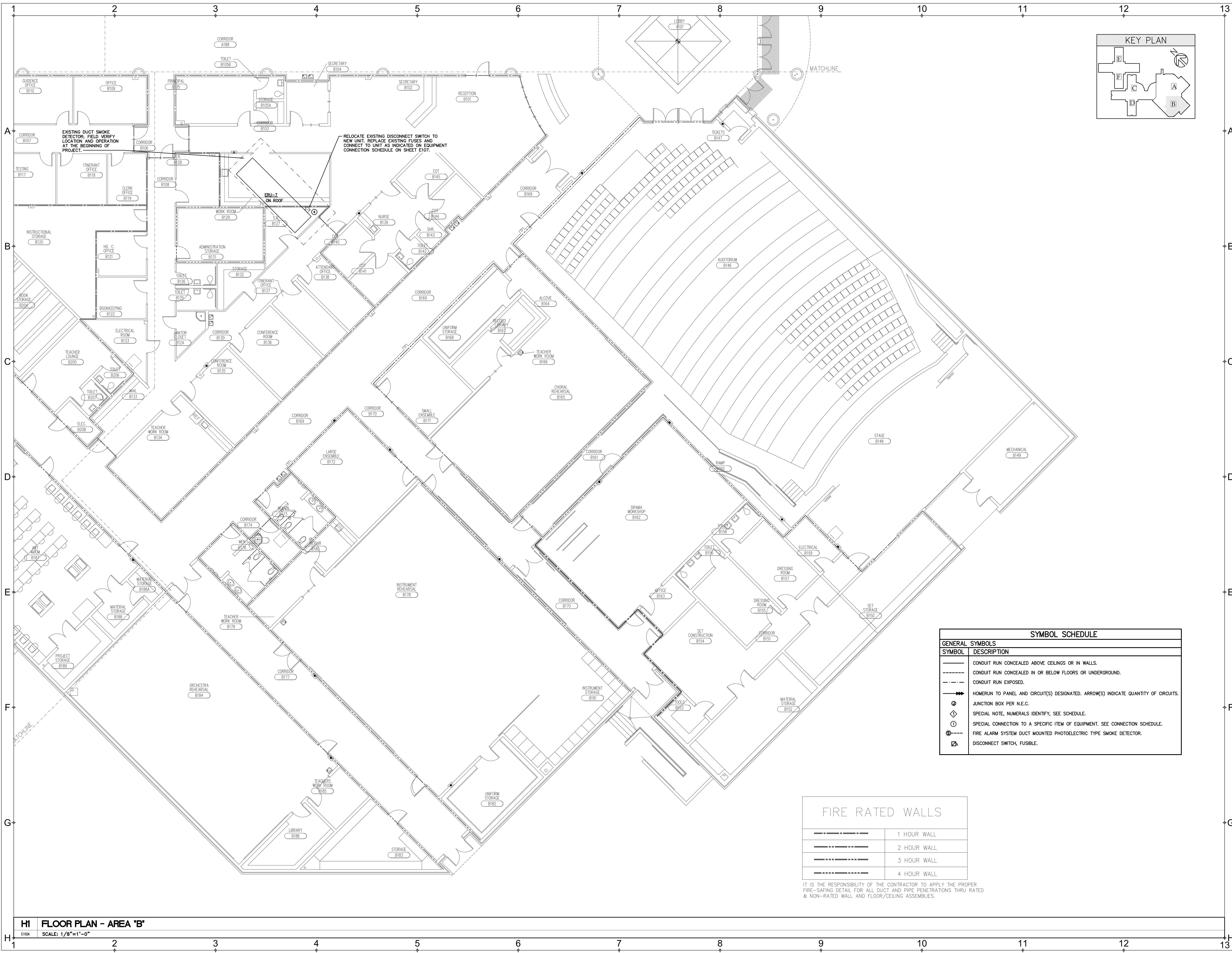
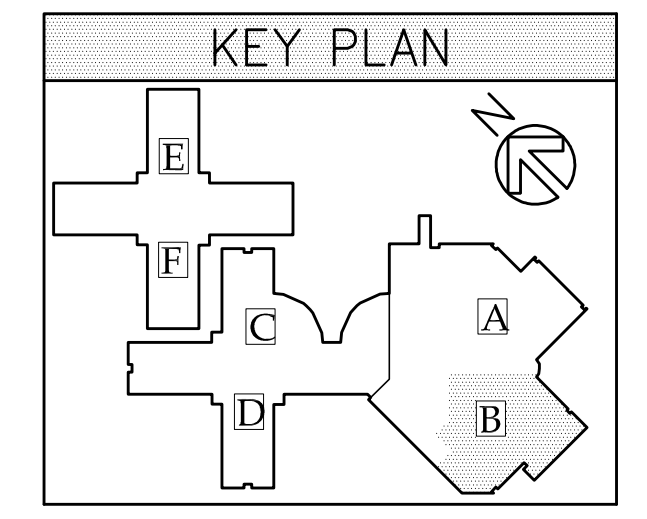
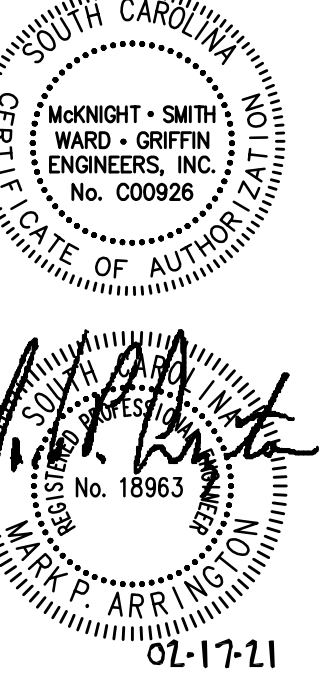
ELECTRICAL SPECIFICATIONS

- PROVIDE ALL WORK AND MATERIALS REQUIRED FOR A COMPLETE AND WORKMANLIKE INSTALLATION AS SHOWN BY THE THE DRAWINGS AND SPECIFIED HEREIN.
- ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, STATE, AND LOCAL CODES. ELECTRICAL MATERIALS SHALL BE NEW AND SHALL COMPLY WITH ALL APPLICABLE NEMA, U.L., ANSI, OSHA, AND ICED STANDARDS.
- PERFORM ALL CUTTING AND PATCHING NECESSARY FOR THE PROPER INSTALLATION OF THIS WORK AND REPAIR ANY DAMAGE DONE AS A RESULT OF THIS WORK.
- AN ELECTRICAL INSPECTION CERTIFICATE SHALL BE ISSUED BY THE AUTHORITIES HAVING JURISDICTION BEFORE WORK WILL BE APPROVED FOR FINAL PAYMENT.
- ALL ELECTRICAL CONDUIT AND CONDUCTORS WHICH ARE ABANDONED SHALL EITHER BE REMOVED COMPLETELY OR MECHANICALLY AND ELECTRICALLY SECURED. BACK BOXES OF OUTLETS AND SWITCHES SHOWN TO BE REMOVED FROM THE WALLS REMAINING SHALL BE REMOVED AND THE WALL PROPERLY PATCHED. ALL EXISTING ELECTRICAL OUTLETS NOT SHOWN TO BE REMOVED SHALL BE RECONNECTED. ALL MATERIALS AND EQUIPMENT NOTED TO BE REUSED IN THE NEW WORK SHALL BE CLEANED AND, IF NECESSARY, REPAIRED AND SHALL BE STORED AND PROTECTED ON THE SITE. ALL REUSED FIXTURES SHALL BE RELAMPED. PROVIDE OUTLET BOX EXTENSIONS WHERE NEW WALL FINISHES REQUIRED ADDITIONAL OUTLET BOX DEPTH. RELOCATE ANY EXISTING CONDUITS, CONDUCTORS, FIXTURES, AND OUTLETS WHERE REQUIRED BY THIS WORK.
- ALL CONDUCTORS SHALL BE COPPER, TYPE THHN/THWN, AND SOLID OF #10, #12, AND #14 AWG AND STRANDED FOR #8 AWG AND LARGER. BRANCH CIRCUIT CONDUCTORS SHALL NOT BE SMALLER THAN #12 AWG. CONDUCTORS SHALL BE COLOR CODED BLACK/RED/BLUE FOR 120/208 VOLT AND 240 VOLT SYSTEMS. CONDUCTORS SHALL BE COLOR CODED BROWN/ORANGE/YELLOW FOR 277/480 VOLT SYSTEM. (PHASE A/ PHASE B/ PHASE C) CONDUCTORS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET. NO SPLICES SHALL BE MADE EXCEPT WITHIN OUTLET OR JUNCTION BOXES. SPLICES SHALL BE MADE BY TWISTING SECURELY AND FASTENING WITH U.L. LISTED, PRESSURE-TYPE TWIST ON INSULATED-WIRE CONNECTORS OF THE SAME TEMPERATURE RATING AS THE CONDUCTORS. SPLICES TO LIGHT FIXTURE LEADS SHALL BE MADE WITH PLASTIC WIRE NUTS.
- ALL WIRING SHALL BE IN CONDUIT, WHERE CONCEALED WIRING SHALL BE METAL CLAD (MC) CABLE UNLESS OTHERWISE NOTED. WHERE EXPOSED, WIRING SHALL BE IN ELECTRICAL METALLIC TUBING (EMT), 1/2" INCH TRADE SIZE MINIMUM, WHERE EMT IS USED, FITTINGS SHALL BE THREADED-COMPRESSION TYPE GALVANIZED STEEL. WHERE FLEXIBLE METAL CONDUIT IS USED, CONNECTORS SHALL BE T & B NYLON-INSULATED "TITE-BITE".
- OUTLET BOXES SHALL BE GALVANIZED SHEET STEEL. FIXTURE OUTLET BOXES ON CEILINGS SHALL NOT BE LESS THAN 4 INCHES OCTAGONAL OUTLET BOXES ON NEW GYPSUM DRYWALL WALLS SHALL BE 4 INCHES SQUARE WITH SQUARE-CUT COVER EXTENSIONS.
- OUTLET AND JUNCTION BOXES SHALL BE CAST TYPE WITH THREADED HUBS. BOXES AND ENCLOSURES LARGER THAN 5 INCHES SQUARE SHALL BE NEMA 12.
- ALL CONDUIT SHALL BE RUN AS HIGH AS POSSIBLE, PARALLEL WITH STRUCTURAL MEMBERS, SUPPORTED ON APPROVED TYPES OF GALVANIZED TRAPEZES, HANGERS, OR STRAPS.
- LIQUID-TIGHT FLEXIBLE METAL CONDUIT SHALL BE USED FOR EQUIPMENT CONNECTIONS, BUT NOT AS A WIRING METHOD OTHERWISE.
- DISCONNECT SWITCHES SHALL BE HEAVY-DUTY TYPE WITH REJECTION-TYPE FUSE CLIPS AND SUITABLE FOR 75°C CONDUCTOR TERMINATION.
- A CONTINUOUS GREEN GROUND WIRE SHALL BE RUN WITH EACH CIRCUIT.
- PROVIDE ENGRAVED PHENOLIC NAMEPLATES FOR PANELBOARDS.
- UPDATE PANEL DIRECTORY TO REFLECT ALL CHANGES REQUIRED BY THIS WORK.



REVISIONS:

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RELOCATE EXISTING DISCONNECT SWITCH TO NEW UNIT. REPLACE EXISTING FUSES AND CONNECT TO UNIT AS INDICATED ON EQUIPMENT CONNECTION SCHEDULE ON SHEET E107.

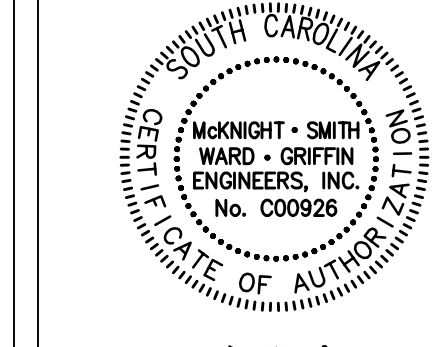
| SYMBOL SCHEDULE | |
|-------------------|---|
| GENERAL SYMBOLS | |
| SYMBOL | DESCRIPTION |
| (Solid line) | CONDUIT RUN CONCEALED ABOVE CEILING OR IN WALLS. |
| (Dashed line) | CONDUIT RUN CONCEALED IN OR BELOW FLOORS OR UNDERGROUND. |
| (Dash-dot line) | CONDUIT RUN EXPOSED. |
| (Arrow) | HOMERUN TO PANEL AND CIRCUIT(S) DESIGNATED. ARROW(S) INDICATE QUANTITY OF CIRCUITS. |
| (Circle with 'X') | JUNCTION BOX PER N.E.C. |
| (Diamond) | SPECIAL NOTE, NUMERALS IDENTIFY, SEE SCHEDULE. |
| (Circle with '1') | SPECIAL CONNECTION TO A SPECIFIC ITEM OF EQUIPMENT. SEE CONNECTION SCHEDULE. |
| (Circle with 'S') | FIRE ALARM SYSTEM DUCT MOUNTED PHOTOELECTRIC TYPE SMOKE DETECTOR. |
| (Square with 'Z') | DISCONNECT SWITCH, FUSIBLE. |

| FIRE RATED WALLS | |
|--------------------|-------------|
| (Dashed line) | 1 HOUR WALL |
| (Dash-dot line) | 2 HOUR WALL |
| (Solid line) | 3 HOUR WALL |
| (Thick solid line) | 4 HOUR WALL |

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO APPLY THE PROPER FIRE-SAFING DETAIL FOR ALL DUCT AND PIPE PENETRATIONS THRU RATED & NON-RATED WALL AND FLOOR/CEILING ASSEMBLIES.

REVISIONS:

| NO. | DATE | DESCRIPTION |
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Horry County School District
Facilities
1160 East Highway 501
Conway, South Carolina 29526

**ST JAMES HIGH SCHOOL
HVAC RENOVATIONS**
HORRY COUNTY SCHOOLS
Murrells Inlet, South Carolina

PROJECT NO.: 20-148

PHASE OF WORK: CD

DATE: 2/17/2021
CONSTRUCTION DOCUMENTS

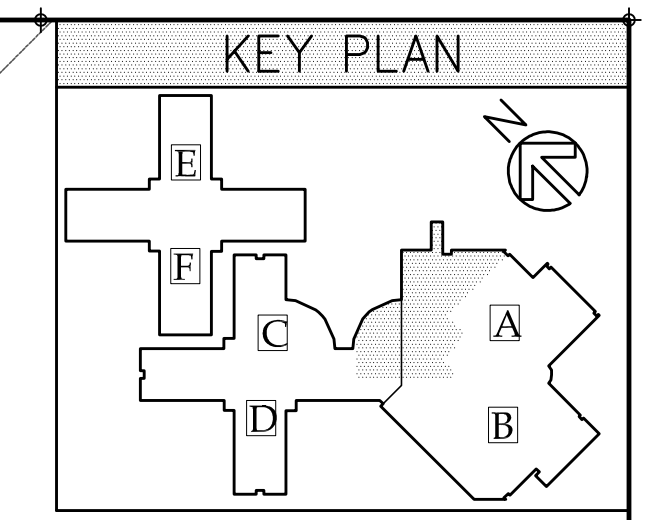
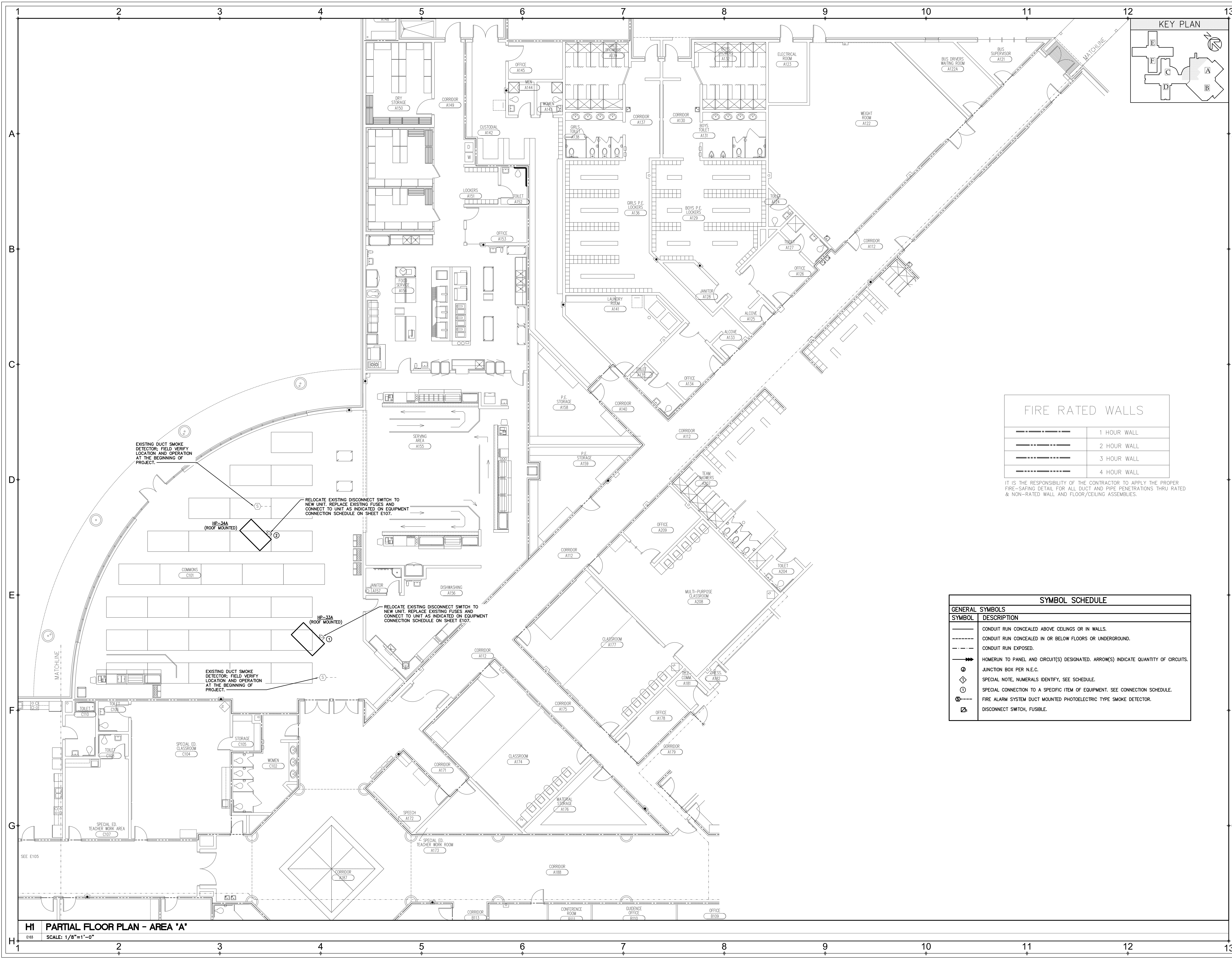
REVISIONS:

TITLE:

PARTIAL FLOOR PLAN - AREA A RENOVATION

SHEET:

E103



FIRE RATED WALLS

| | |
|--|-------------|
| | 1 HOUR WALL |
| | 2 HOUR WALL |
| | 3 HOUR WALL |
| | 4 HOUR WALL |

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO APPLY THE PROPER FIRE-SAFING DETAIL FOR ALL DUCT AND PIPE PENETRATIONS THRU RATED & NON-RATED WALL AND FLOOR/CEILING ASSEMBLIES.

SYMBOL SCHEDULE

| GENERAL SYMBOLS | |
|-----------------|---|
| SYMBOL | DESCRIPTION |
| | CONDUIT RUN CONCEALED ABOVE CEILINGS OR IN WALLS. |
| | CONDUIT RUN CONCEALED IN OR BELOW FLOORS OR UNDERGROUND. |
| | CONDUIT RUN EXPOSED. |
| | HOMERUN TO PANEL AND CIRCUIT(S) DESIGNATED. ARROW(S) INDICATE QUANTITY OF CIRCUITS. |
| | JUNCTION BOX PER N.E.C. |
| | SPECIAL NOTE, NUMERALS IDENTIFY. SEE SCHEDULE. |
| | SPECIAL CONNECTION TO A SPECIFIC ITEM OF EQUIPMENT. SEE CONNECTION SCHEDULE. |
| | FIRE ALARM SYSTEM DUCT MOUNTED PHOTOELECTRIC TYPE SMOKE DETECTOR. |
| | DISCONNECT SWITCH, FUSIBLE. |

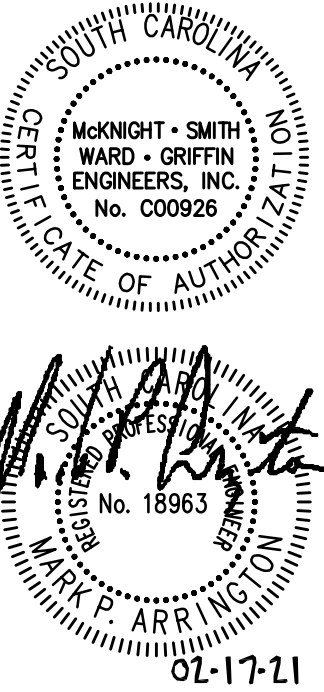
EXISTING DUCT SMOKE DETECTOR. FIELD VERIFY LOCATION AND OPERATION AT THE BEGINNING OF PROJECT.

RELOCATE EXISTING DISCONNECT SWITCH TO NEW UNIT. REPLACE EXISTING FUSES AND CONNECT TO UNIT AS INDICATED ON EQUIPMENT CONNECTION SCHEDULE ON SHEET E107.

RELOCATE EXISTING DISCONNECT SWITCH TO NEW UNIT. REPLACE EXISTING FUSES AND CONNECT TO UNIT AS INDICATED ON EQUIPMENT CONNECTION SCHEDULE ON SHEET E107.

EXISTING DUCT SMOKE DETECTOR. FIELD VERIFY LOCATION AND OPERATION AT THE BEGINNING OF PROJECT.

H1 PARTIAL FLOOR PLAN - AREA 'A'
SCALE: 1/8"=1'-0"



Horry County School District
Facilities
1160 East Highway 901
Conway, South Carolina 29526

**ST JAMES HIGH SCHOOL
HVAC RENOVATIONS**
HORRY COUNTY SCHOOLS
Murrells Inlet, South Carolina

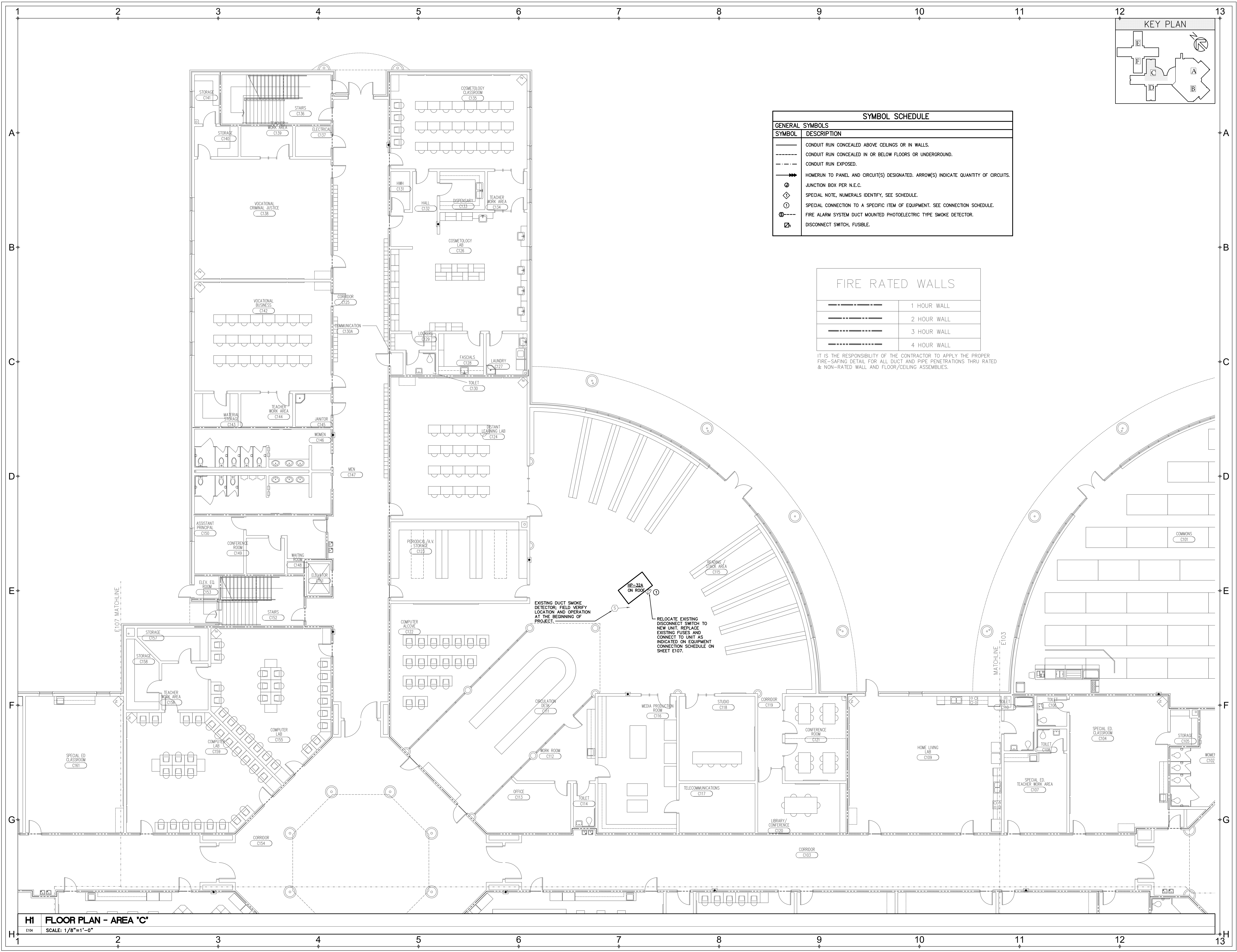
PROJECT NO.: 20-148
PHASE OF WORK: CD
DATE: 2/17/2021
CONSTRUCTION DOCUMENTS

REVISIONS:

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TITLE:
PARTIAL FLOOR PLAN - AREA C RENOVATION

SHEET:
E104

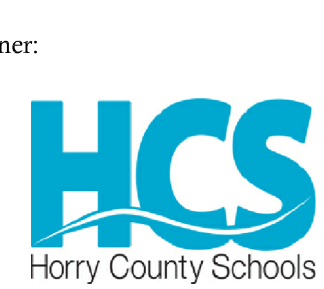
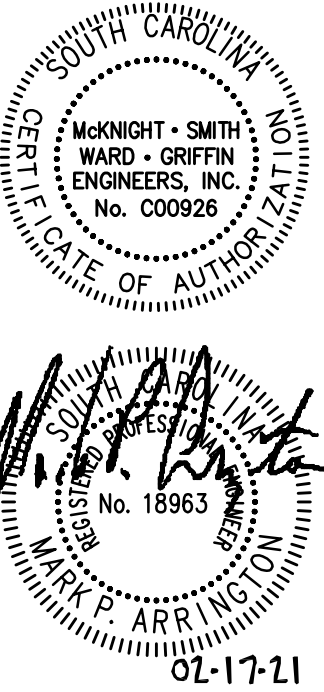


| SYMBOL SCHEDULE | |
|-----------------|---|
| GENERAL SYMBOLS | |
| SYMBOL | DESCRIPTION |
| --- | CONDUIT RUN CONCEALED ABOVE CEILINGS OR IN WALLS. |
| --- | CONDUIT RUN CONCEALED IN OR BELOW FLOORS OR UNDERGROUND. |
| --- | CONDUIT RUN EXPOSED. |
| → | HOMERUN TO PANEL AND CIRCUIT(S) DESIGNATED. ARROW(S) INDICATE QUANTITY OF CIRCUITS. |
| ⊙ | JUNCTION BOX PER N.E.C. |
| Ⓢ | SPECIAL NOTE, NUMERALS IDENTIFY, SEE SCHEDULE. |
| Ⓢ--- | SPECIAL CONNECTION TO A SPECIFIC ITEM OF EQUIPMENT. SEE CONNECTION SCHEDULE. |
| Ⓢ--- | FIRE ALARM SYSTEM DUCT MOUNTED PHOTOELECTRIC TYPE SMOKE DETECTOR. |
| Ⓢ | DISCONNECT SWITCH, FUSIBLE. |

| FIRE RATED WALLS | |
|------------------|-------------|
| --- | 1 HOUR WALL |
| --- | 2 HOUR WALL |
| --- | 3 HOUR WALL |
| --- | 4 HOUR WALL |

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO APPLY THE PROPER FIRE-SAFING DETAIL FOR ALL DUCT AND PIPE PENETRATIONS THRU RATED & NON-RATED WALL AND FLOOR/CEILING ASSEMBLIES.

H1 FLOOR PLAN - AREA C
SCALE: 1/8"=1'-0"



Harry County School District
Facilities
1160 East Highway 801
Conway, South Carolina 29526

**ST JAMES HIGH SCHOOL
HVAC RENOVATIONS**
Horry County Schools
Murrells Inlet, South Carolina

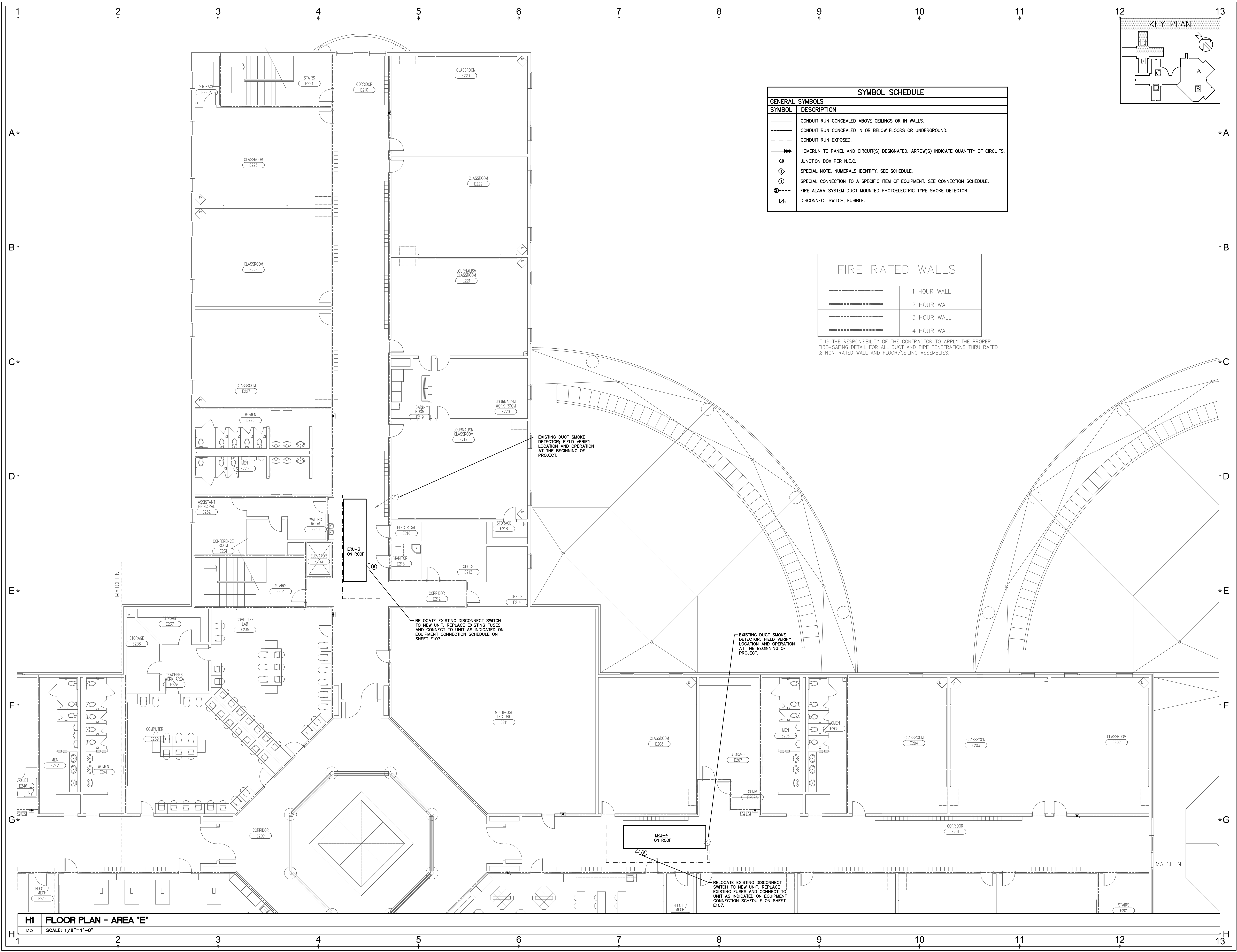
PROJECT NO.: 20-148
PHASE OF WORK: CD
DATE: 2/17/2021
CONSTRUCTION DOCUMENTS

REVISIONS:

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TITLE:
PARTIAL FLOOR PLAN - AREA E (2ND FLOOR) RENOVATION
SHEET:

E105



SYMBOL SCHEDULE

| GENERAL SYMBOLS | |
|-----------------|---|
| SYMBOL | DESCRIPTION |
| — | CONDUIT RUN CONCEALED ABOVE CEILINGS OR IN WALLS. |
| - - - - | CONDUIT RUN CONCEALED IN OR BELOW FLOORS OR UNDERGROUND. |
| - · - · - | CONDUIT RUN EXPOSED. |
| → | HOMERUN TO PANEL AND CIRCUIT(S) DESIGNATED. ARROW(S) INDICATE QUANTITY OF CIRCUITS. |
| ⊕ | JUNCTION BOX PER N.E.C. |
| ◇ | SPECIAL NOTE, NUMERALS IDENTIFY, SEE SCHEDULE. |
| Ⓢ | SPECIAL CONNECTION TO A SPECIFIC ITEM OF EQUIPMENT. SEE CONNECTION SCHEDULE. |
| Ⓢ - - - | FIRE ALARM SYSTEM DUCT MOUNTED PHOTOELECTRIC TYPE SMOKE DETECTOR. |
| Ⓢ | DISCONNECT SWITCH, FUSIBLE. |

FIRE RATED WALLS

| | |
|-----------------------------------|-------------|
| — · — · — · — · — · — · — · — · — | 1 HOUR WALL |
| — · — · — · — · — · — · — · — · — | 2 HOUR WALL |
| — · — · — · — · — · — · — · — · — | 3 HOUR WALL |
| — · — · — · — · — · — · — · — · — | 4 HOUR WALL |

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO APPLY THE PROPER FIRE-SAFING DETAIL FOR ALL DUCT AND PIPE PENETRATIONS THRU RATED & NON-RATED WALL AND FLOOR/CEILING ASSEMBLIES.

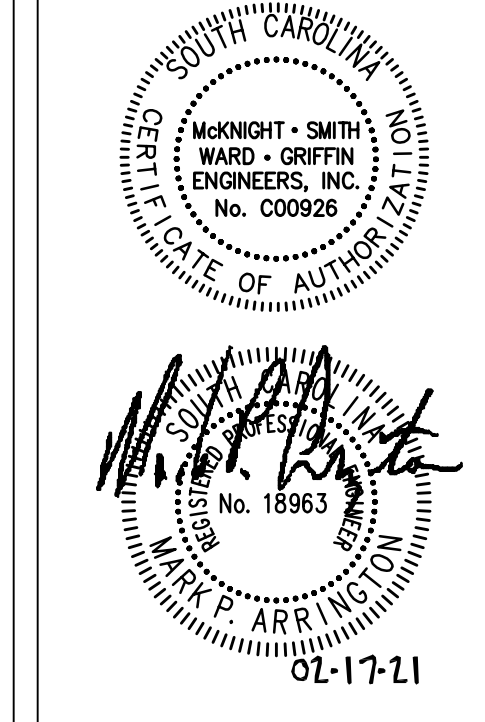
EXISTING DUCT SMOKE DETECTOR. FIELD VERIFY LOCATION AND OPERATION AT THE BEGINNING OF PROJECT.

RELOCATE EXISTING DISCONNECT SWITCH TO NEW UNIT. REPLACE EXISTING FUSES AND CONNECT TO UNIT AS INDICATED ON EQUIPMENT CONNECTION SCHEDULE ON SHEET E107.

EXISTING DUCT SMOKE DETECTOR. FIELD VERIFY LOCATION AND OPERATION AT THE BEGINNING OF PROJECT.

RELOCATE EXISTING DISCONNECT SWITCH TO NEW UNIT. REPLACE EXISTING FUSES AND CONNECT TO UNIT AS INDICATED ON EQUIPMENT CONNECTION SCHEDULE ON SHEET E107.

H1 FLOOR PLAN - AREA 'E'
SCALE: 1/8"=1'-0"



Owner:
HCS
Horry County Schools
Horry County School District
Facilities
1160 East Highway 801
Conway, South Carolina 29526

**ST JAMES HIGH SCHOOL
HVAC RENOVATIONS**
HORRY COUNTY SCHOOLS
Murrells Inlet, South Carolina

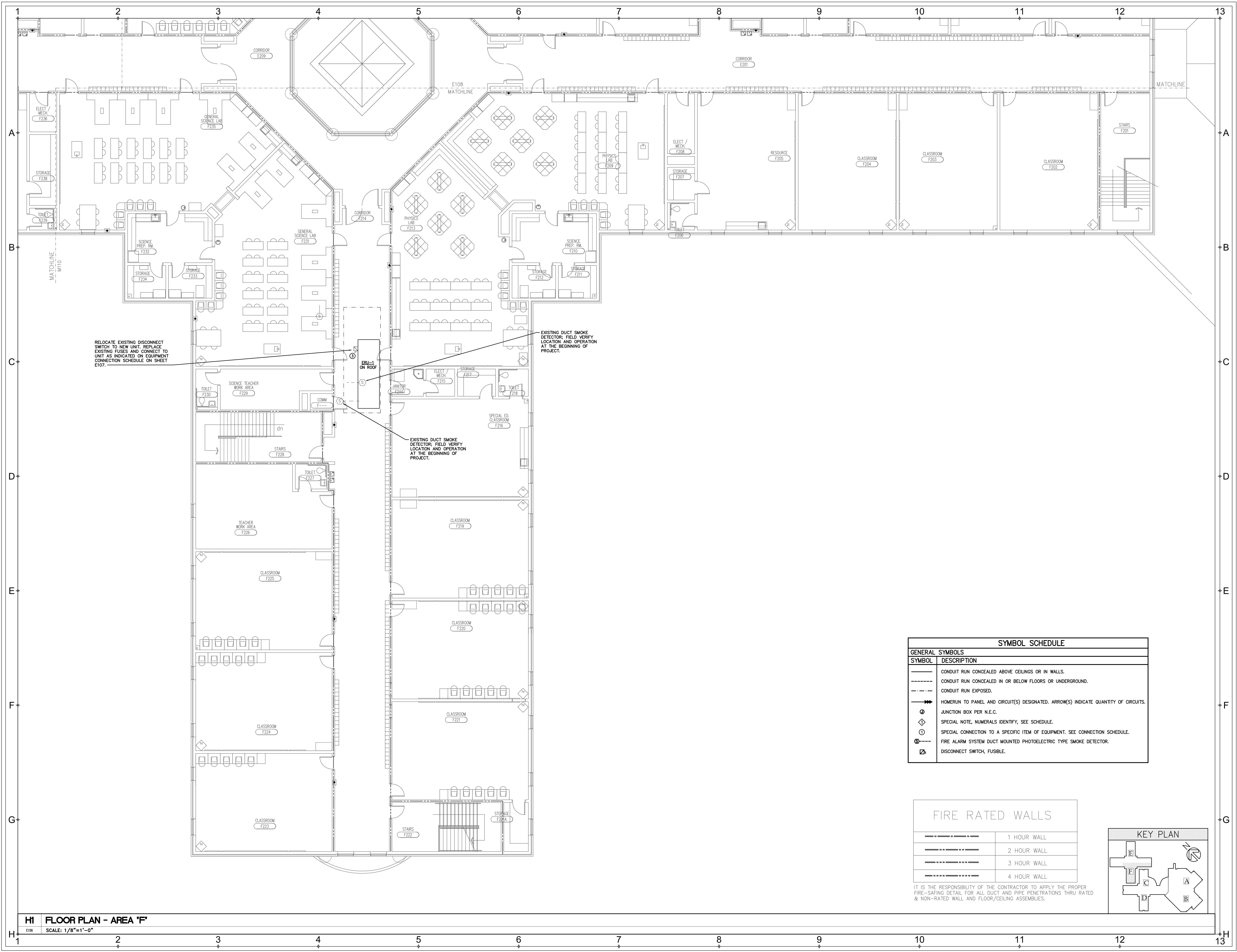
PROJECT NO.: 20-148
PHASE OF WORK: CD
DATE: 2/17/2021
CONSTRUCTION DOCUMENTS

REVISIONS:

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TITLE:
PARTIAL FLOOR PLAN - AREA F (2ND FLOOR) RENOVATION
SHEET:

E106



RELOCATE EXISTING DISCONNECT SWITCH TO NEW UNIT. REPLACE EXISTING FUSES AND CONNECT TO UNIT AS INDICATED ON EQUIPMENT CONNECTION SCHEDULE ON SHEET E107.

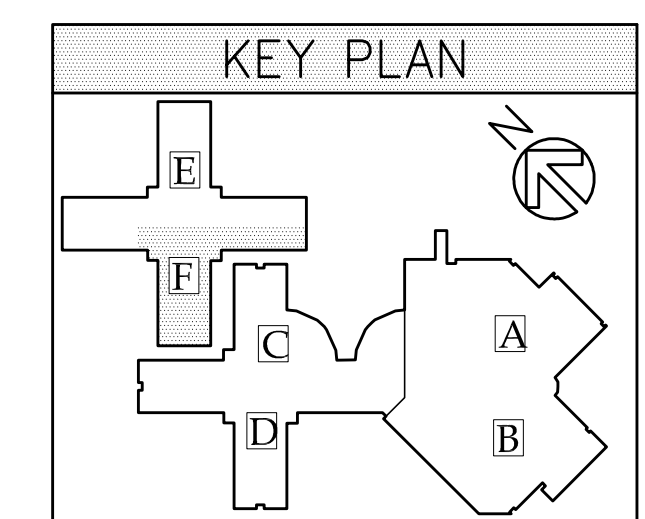
EXISTING DUCT SMOKE DETECTOR. FIELD VERIFY LOCATION AND OPERATION AT THE BEGINNING OF PROJECT.

EXISTING DUCT SMOKE DETECTOR. FIELD VERIFY LOCATION AND OPERATION AT THE BEGINNING OF PROJECT.

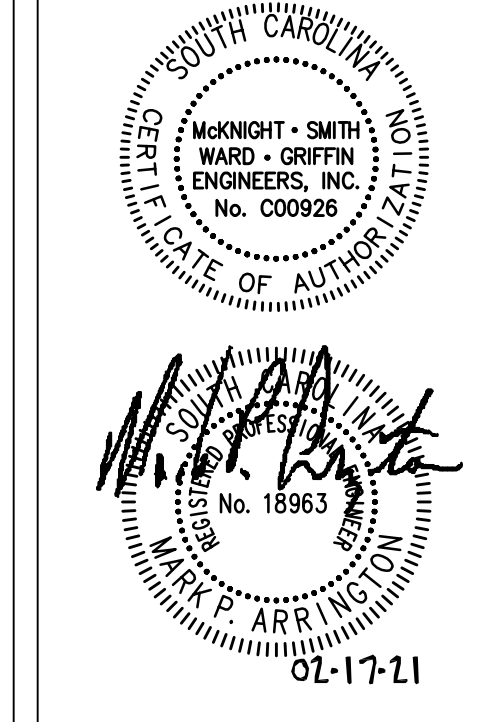
ERU-1 ON ROOF

| SYMBOL SCHEDULE | |
|-----------------|---|
| GENERAL SYMBOLS | |
| SYMBOL | DESCRIPTION |
| --- | CONDUIT RUN CONCEALED ABOVE CEILING OR IN WALLS. |
| ---- | CONDUIT RUN CONCEALED IN OR BELOW FLOORS OR UNDERGROUND. |
| - - - - | CONDUIT RUN EXPOSED. |
| → | HOMERUN TO PANEL AND CIRCUIT(S) DESIGNATED. ARROW(S) INDICATE QUANTITY OF CIRCUITS. |
| ⊕ | JUNCTION BOX PER N.E.C. |
| ① | SPECIAL NOTE, NUMERALS IDENTIFY, SEE SCHEDULE. |
| ⊕ | SPECIAL CONNECTION TO A SPECIFIC ITEM OF EQUIPMENT. SEE CONNECTION SCHEDULE. |
| Ⓢ | FIRE ALARM SYSTEM DUCT MOUNTED PHOTOELECTRIC TYPE SMOKE DETECTOR. |
| Ⓢ | DISCONNECT SWITCH, FUSIBLE. |

| FIRE RATED WALLS | |
|------------------|-------------|
| --- | 1 HOUR WALL |
| ---- | 2 HOUR WALL |
| - - - - | 3 HOUR WALL |
| ⋯ | 4 HOUR WALL |



IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO APPLY THE PROPER FIRE-RATING DETAIL FOR ALL DUCT AND PIPE PENETRATIONS THRU RATED & NON-RATED WALL AND FLOOR/CEILING ASSEMBLIES.



Owner:
HCS
Horry County Schools
Horry County School District
Facilities
1160 East Highway 501
Conway, South Carolina 29526

**ST JAMES HIGH SCHOOL
HVAC RENOVATIONS**
HORRY COUNTY SCHOOLS
Murrells Inlet, South Carolina

PROJECT NO.: 20-148
PHASE OF WORK: CD
DATE: 2/17/2021
CONSTRUCTION DOCUMENTS

REVISIONS:

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TITLE:
PARTIAL FLOOR PLAN - AREAS E + F RENOVATION

SHEET:
E107



E1 FLOOR PLAN - AREAS 'E' + 'F'
E107 SCALE: 1/8"=1'-0"

| SYM. | EQUIPMENT | LOAD | VOLT / PHASE | DISCONNECT | | | | CONDUCTORS | RACEWAY | | NOTES |
|------|--------------|----------------------------|--------------|------------|--------|-------|-----------|------------|---------|--------|-------|
| | | | | TYPE | RATING | POLES | TRIP/FUSE | | ENCL. | TYPE | |
| ① | HP32A, HP33A | 15.27FLA, 19MCA, 25MOCP | 480/3 | FDS | 30 | 3 | 25 | 3R | LFMC | 1/2" | ◇ |
| ② | HP34A | 11.9FLA, 14MCA, 20MOCP | 480/3 | FDS | 30 | 3 | 20 | 3R | LFMC | 1/2" | ◇ |
| ③ | ERU-1 | 90.6FLA, 96.4MCA, 110MOCP | 480/3 | FDS | 200 | 3 | 110 | 3R | LFMC | 1-1/4" | ◇ |
| ④ | ERU-2, ERU-7 | 99.4FLA, 104.1MCA, 110MOCP | 480/3 | FDS | 200 | 3 | 110 | 3R | LFMC | 1-1/4" | ◇ |
| ⑤ | ERU-3, ERU-4 | 87.9FLA, 93.7MCA, 110MOCP | 480/3 | FDS | 200 | 3 | 110 | 3R | LFMC | 1-1/4" | ◇ |
| ⑥ | ERU-5 | 57.8FLA, 63.6MCA, 80MOCP | 480/3 | FDS | 100 | 3 | 80 | 3R | LFMC | 1-1/4" | ◇ |
| ⑦ | ERU-6 | 74.4 FLA, 79.1MCA, 90MOCP | 480/3 | FDS | 100 | 3 | 90 | 3R | LFMC | 1-1/4" | ◇ |

| | | | |
|--|-----------------------------------|--|--|
| LEGEND | DISCONNECT ENCLOSURE TYPES | RACEWAY TYPES | STARTER TYPES |
| ETCB = ELECTRONIC-TRIP CIRCUIT BREAKER | 1 = NEMA 1 ENCLOSURE | EMT = ELECTRIC METALLIC TUBING | CFVNR = COMBINATION FULL VOLTAGE, NONREVERSING |
| FDS = FUSIBLE DISCONNECT SWITCH | 3R = NEMA 3R ENCLOSURE | FMC = FLEXIBLE METAL CONDUIT | CONTROL DEVICES |
| MCP = MOTOR CIRCUIT PROTECTOR | 4 = NEMA 4 ENCLOSURE | IMC = INTERMEDIATE METAL CONDUIT | HOA = HAND-OFF-AUTO |
| NFDS = NON-FUSIBLE DISCONNECT SWITCH | 4X = NEMA 4X ENCLOSURE | LFMC = LIQUID-TIGHT FLEXIBLE METAL CONDUIT | RPL = RED PILOT LIGHT |
| ST/DIS = COMBINATION STARTER/DISCONNECT SWITCH | FPN = FUSE PER NAMEPLATE | PVC = NON-METALLIC PVC CONDUIT | AUX = AUXILIARY CONTACTS (2 N.O., 1 N.C.) |
| TMCB = THERMAL-MAGNETIC CIRCUIT BREAKER | | RMC = RIGID METAL CONDUIT | CTS0 = 50 VA CONTROL TRANSFORMER |
| TOG = HP RATED TOGGLE SWITCH | | | |

NOTES

ALL ELECTRICAL CHARACTERISTICS SCHEDULED ABOVE ARE BASED ON INFORMATION AVAILABLE AT THE TIME OF DESIGN. ELECTRICAL CONTRACTOR SHALL VERIFY ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT WITH EQUIPMENT SUPPLIER(S) PRIOR TO ROUGHING, AND SHALL VERIFY EXACT LOCATION AND EXACT TYPE OF CONNECTION. ALL EQUIPMENT SHALL BE PROPERLY AND SECURELY GROUNDED. ANY SIGNIFICANT CHANGES IN LOCATION, ELECTRICAL REQUIREMENTS, OR TYPE OF CONNECTION REQUIRED FOR ANY EQUIPMENT SCHEDULED ABOVE SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING PRIOR TO PROCEEDING.

CONDUCTORS AND RACEWAY SPECIFIED IN THE ABOVE SCHEDULE ARE FOR FINAL CONNECTION TO UNIT AND SHALL BE EXTENDED FROM THE DISCONNECT SHOWN ON THE FLOOR PLANS TO THE EQUIPMENT TERMINATION BOX.

CONDUIT AND BOXES REQUIRED FOR EQUIPMENT CONNECTIONS SHALL BE INSTALLED IN SUCH A WAY AS TO NOT COVER UP EQUIPMENT NAMEPLATES, SERVICE AREAS, AIR FLOW AREAS, ETC.

◇ EXISTING DISCONNECT SWITCH TO BE RELOCATED TO REPLACEMENT UNIT. COORDINATE EXACT LOCATION OF UNIT IN FIELD. REPLACE EXISTING FUSES WITH NEW AS INDICATED AND CONNECT TO REPLACEMENT UNIT AS INDICATED.

| SYMBOL SCHEDULE | |
|-----------------|---|
| GENERAL SYMBOLS | DESCRIPTION |
| --- | CONDUIT RUN CONCEALED ABOVE CEILINGS OR IN WALLS. |
| ---- | CONDUIT RUN CONCEALED IN OR BELOW FLOORS OR UNDERGROUND. |
| - - - - | CONDUIT RUN EXPOSED. |
| → | HOMERUN TO PANEL AND CIRCUIT(S) DESIGNATED. ARROW(S) INDICATE QUANTITY OF CIRCUITS. |
| ⊕ | JUNCTION BOX PER N.E.C. |
| ① | SPECIAL NOTE, NUMERALS IDENTIFY, SEE SCHEDULE. |
| Ⓢ | SPECIAL CONNECTION TO A SPECIFIC ITEM OF EQUIPMENT. SEE CONNECTION SCHEDULE. |
| Ⓢ | FIRE ALARM SYSTEM DUCT MOUNTED PHOTOELECTRIC TYPE SMOKE DETECTOR. |
| Ⓢ | DISCONNECT SWITCH, FUSIBLE. |

| FIRE RATED WALLS | |
|------------------|-------------|
| --- | 1 HOUR WALL |
| ---- | 2 HOUR WALL |
| - - - - | 3 HOUR WALL |
| ⋯⋯⋯ | 4 HOUR WALL |

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO APPLY THE PROPER FIRE-SAFING DETAIL FOR ALL DUCT AND PIPE PENETRATIONS THRU RATED & NON-RATED WALL AND FLOOR/CEILING ASSEMBLIES.