FORSTBROOK MIDDLE SCHOOL
HVAC RENOVATIONS
HORRY COUNTY SCHOOLS
MYRTLE BEACH SOUTH CAROLINA

SITE PLAN
N.T.S.

N

SHEET LIST

CS-1	COVER SHEET

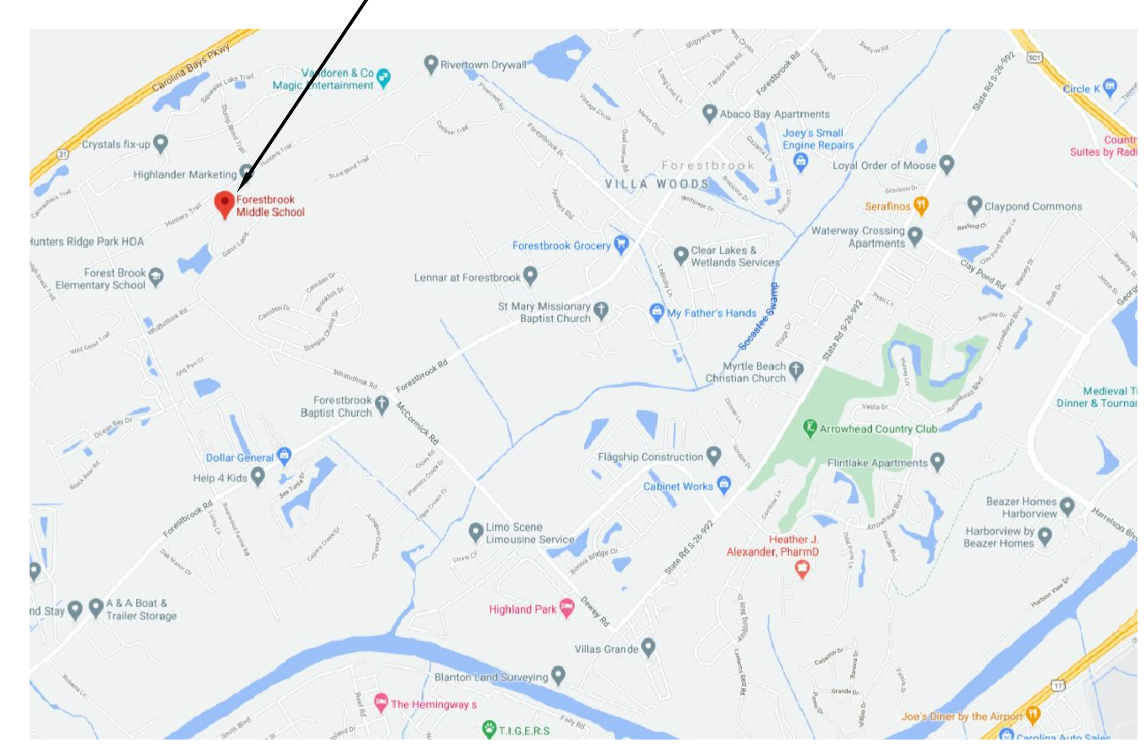
MECHANICAL/ELECTRICAL DEMOLITION

ME-D1	SECTION 'A' DEMOLITION PLAN
ME-D2	SECTION 'B' DEMOLITION PLAN
ME-D3	SECTION 'E' DEMOLITION PLAN
ME-D4	SECTION 'G', 'J', & 'K' DEMOLITION PLANS
ME-D5	SECTION 'H' DEMOLITION PLAN
ME-D6	SECTION 'A1' DEMOLITION PLAN
ME-D7	BUILDING PHOTOS
ME-D8	BUILDING PHOTOS

MECHANICAL/ELECTRICAL

ME-1	SECTION 'A' FLOOR PLAN
ME-2	SECTION 'B' FLOOR PLAN
ME-3	SECTION 'E' FLOOR PLAN
ME-4	SECTION 'G', 'J', & 'K' FLOOR PLANS
ME-5	SECTION 'H' FLOOR PLAN
ME-6	SECTION 'A1' FLOOR PLAN
ME-7	SCHEDULES
ME-8	DETAILS
ME-9	GAS PIPING PLANS
ME-10	GAS PIPING PLANS

FORESTBROOK MIDDLE SCHOOL



VICINITY MAP
N.T.S.

N

McKNIGHT·SMITH
WARD · GRIFFIN
ENGINEERS, INCORPORATED
Charlotte, NC 28209
704/527-2112

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 18963 MARK P. ARRINGTON 02-22-21

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 20133 J. CRAIG CHAMBLISS 02-22-2021

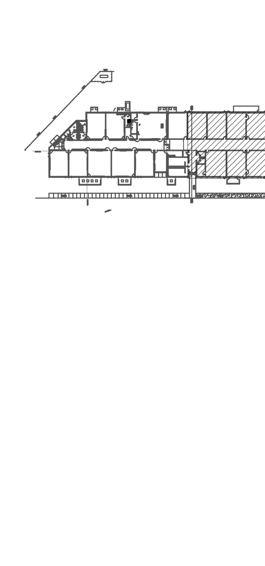
SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION McKNIGHT · SMITH WARD · GRIFFIN ENGINEERS, INC. No. C00926

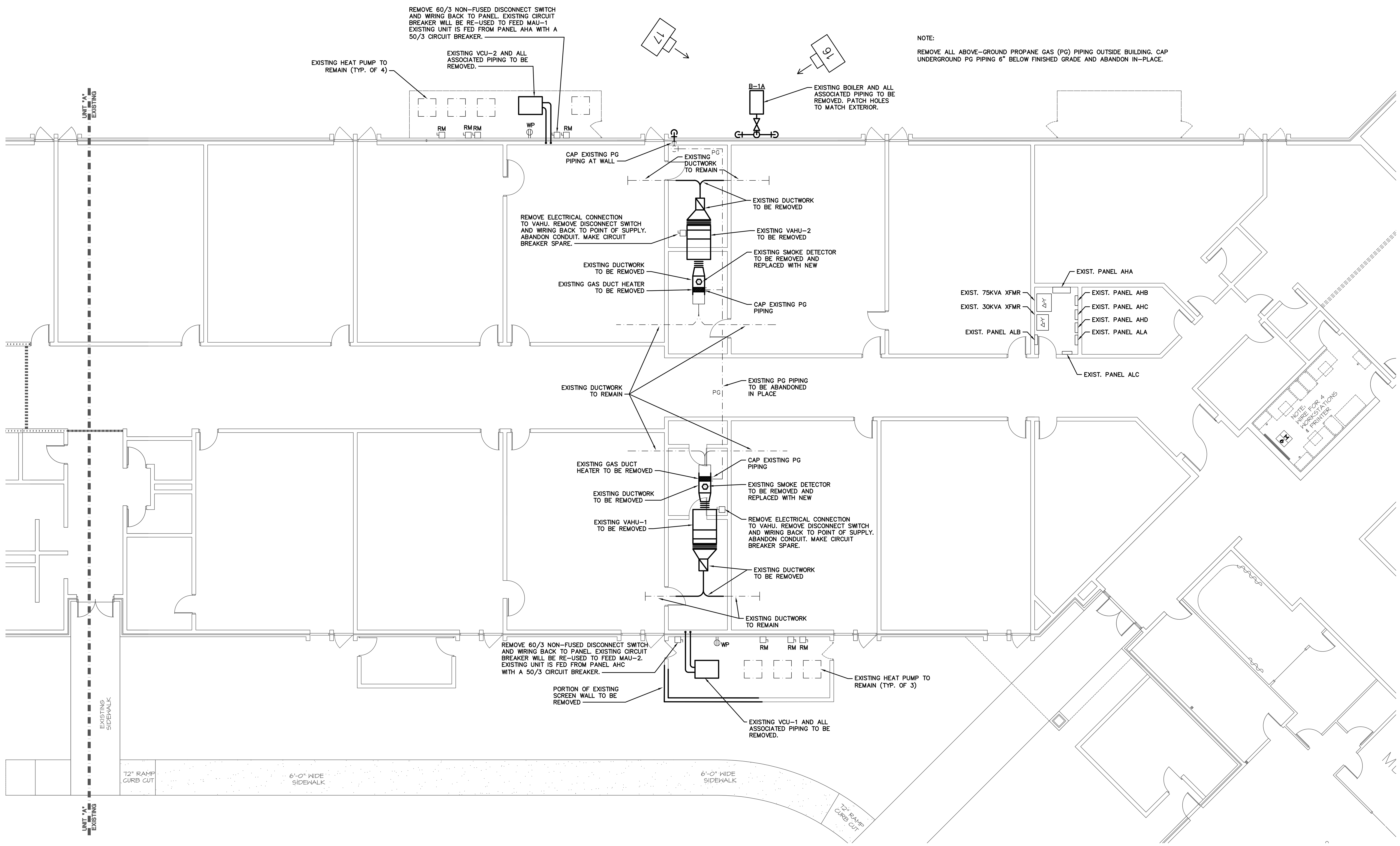
JOB NUMBER	20-147	REVISION DATES
DRAWN BY	MSB/MDK	
CHECKED BY	JCC/MPA	
DATE	02-22-2021	

JOB TITLE
FORESTBROOK
MIDDLE SCHOOL
HVAC RENOVATIONS
MYRTLE BEACH SOUTH CAROLINA

SHEET TITLE
COVER SHEET
—

SHEET
CS-1
OF 1





NOTE:
REMOVE ALL ABOVE-GROUND PROPANE GAS (PG) PIPING OUTSIDE BUILDING. CAP UNDERGROUND PG PIPING 6" BELOW FINISHED GRADE AND ABANDON IN-PLACE.

1 SECTION 'A' DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

SEE ME-D7 AND ME-D8 FOR BUILDING PHOTOS

DEMOLITION LEGEND
EXISTING TO REMAIN IN USE OR BE ABANDONED
EXISTING TO BE REMOVED
EXISTING TO BE RELOCATED
CAP DUCT

GRAPHIC SCALE

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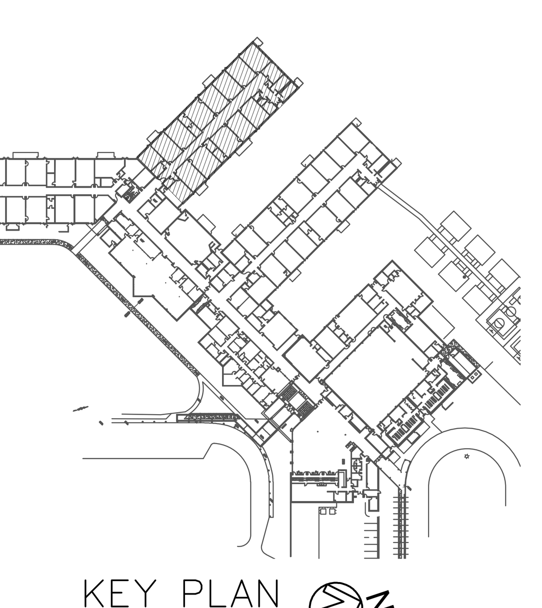
MYRTLE BEACH SOUTH CAROLINA

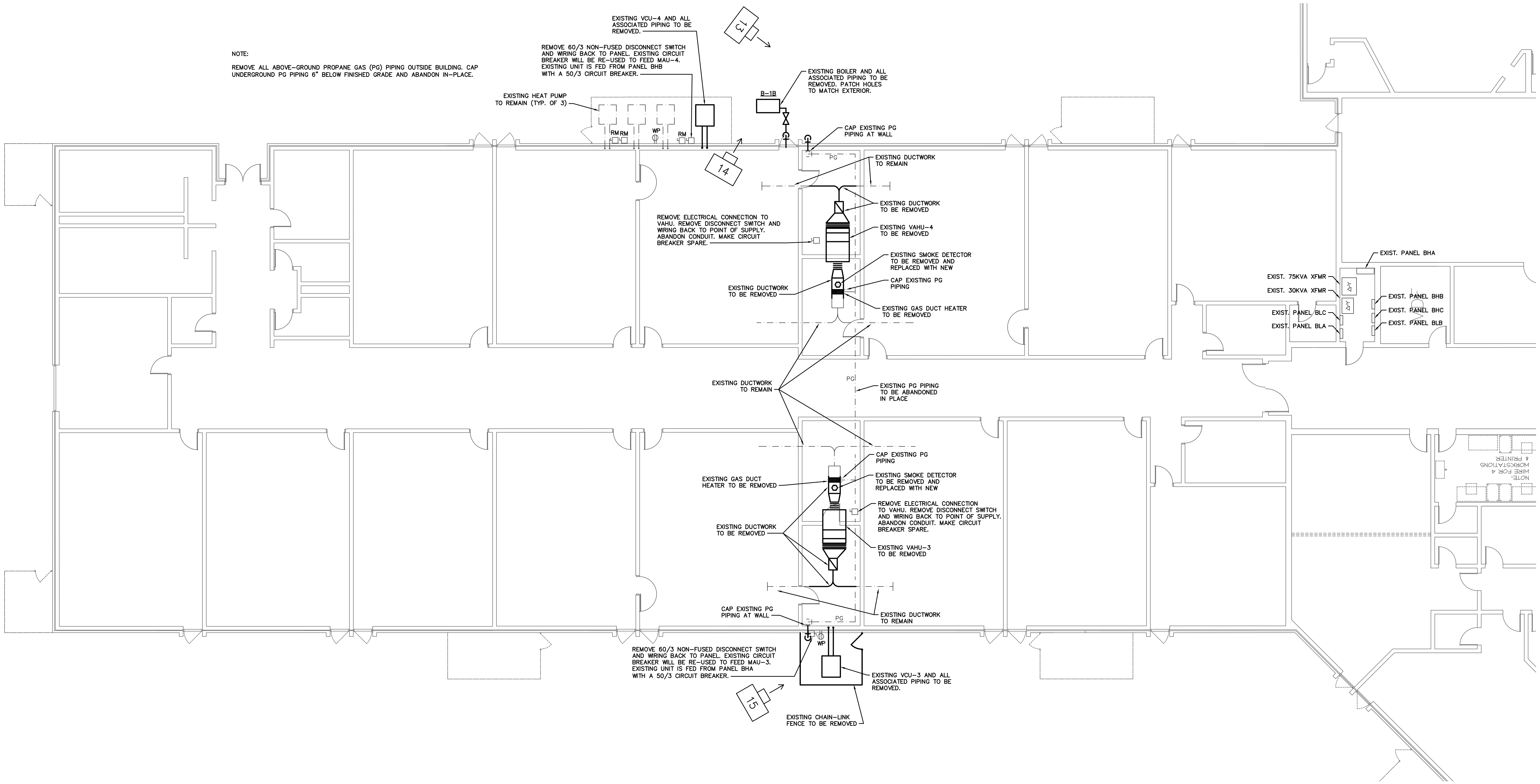
SHEET TITLE
SECTION 'A' DEMOLITION PLAN

SHEET
ME-D1
OF 18



NOTE:

REMOVE ALL ABOVE-GROUND PROPANE GAS (PG) PIPING OUTSIDE BUILDING. CAP UNDERGROUND PG PIPING 6" BELOW FINISHED GRADE AND ABANDON IN-PLACE.



1 SECTION 'B' DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

VIEW ROTATED 135 DEGS. COUNTER CLOCKWISE FROM KEY PLAN VIEW

SEE ME-D7 AND ME-D8 FOR BUILDING PHOTOS #

DEMOLITION LEGEND	
	EXISTING TO REMAIN IN USE OR BE ABANDONED
	EXISTING TO BE REMOVED
	EXISTING TO BE RELOCATED
	CAP DUCT

GRAPHIC SCALE
Scale: 1/8"=1'-0"

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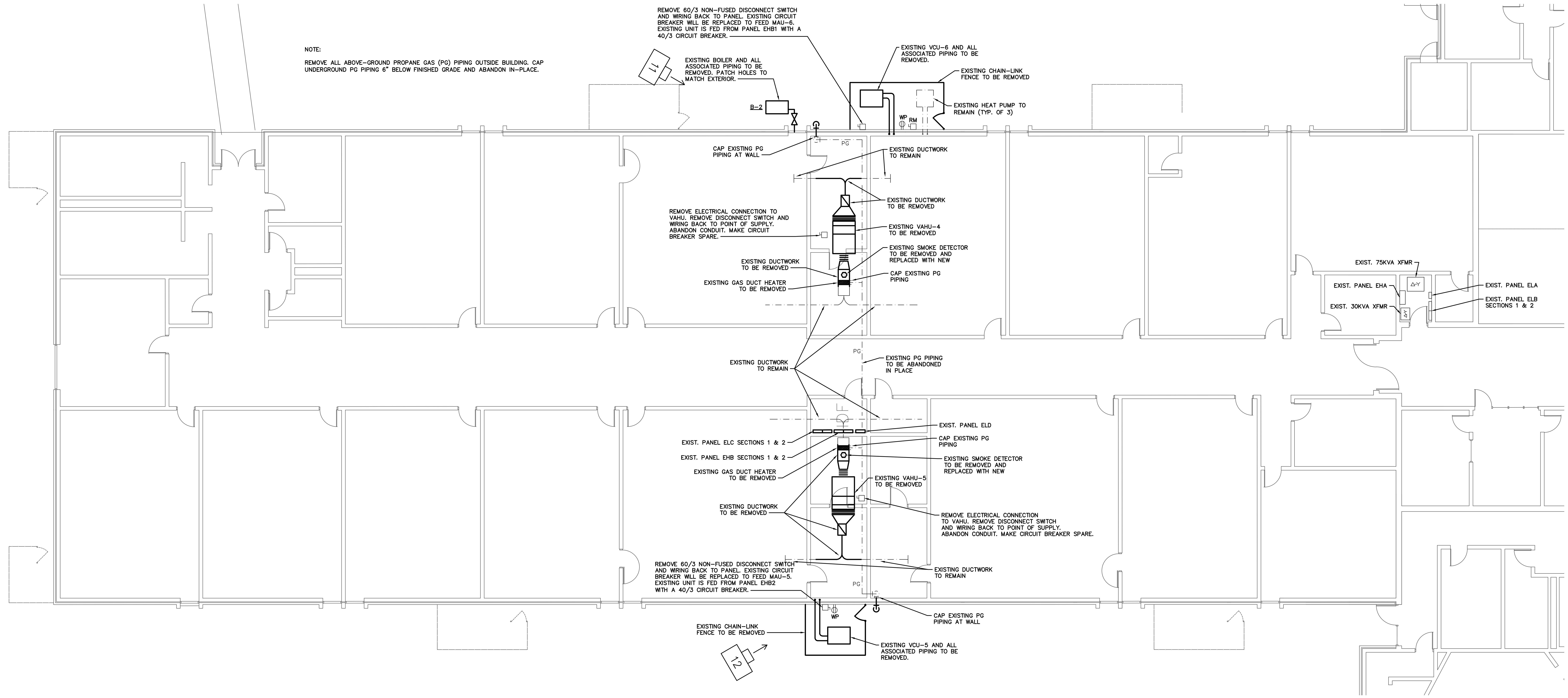
FORESTBROOK MIDDLE SCHOOL HVAC RENOVATIONS
MYRTLE BEACH SOUTH CAROLINA

SHEET TITLE
SECTION 'B' DEMOLITION PLAN

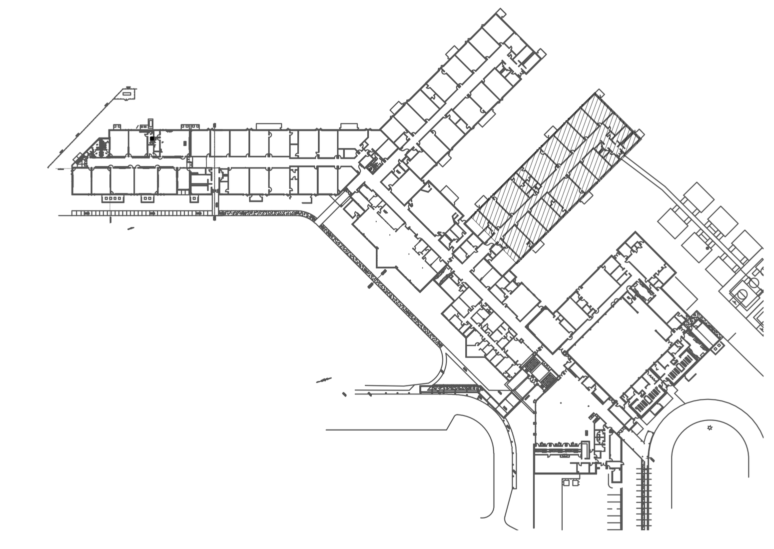
SHEET
ME-D2
OF 18

NOTE:
REMOVE ALL ABOVE-GROUND PROPANE GAS (PG) PIPING OUTSIDE BUILDING. CAP UNDERGROUND PG PIPING 6" BELOW FINISHED GRADE AND ABANDON IN-PLACE.



1 SECTION 'E' DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

VIEW ROTATED 135 DEGS. COUNTER CLOCKWISE FROM KEY PLAN VIEW



KEY PLAN
N.T.S.

SEE ME-D7 AND ME-D8 FOR BUILDING PHOTOS

DEMOLITION LEGEND	
— — —	EXISTING TO REMAIN IN USE OR BE ABANDONED
———	EXISTING TO BE REMOVED
- - -	EXISTING TO BE RELOCATED
E— — —	CAP DUCT

GRAPHIC SCALE

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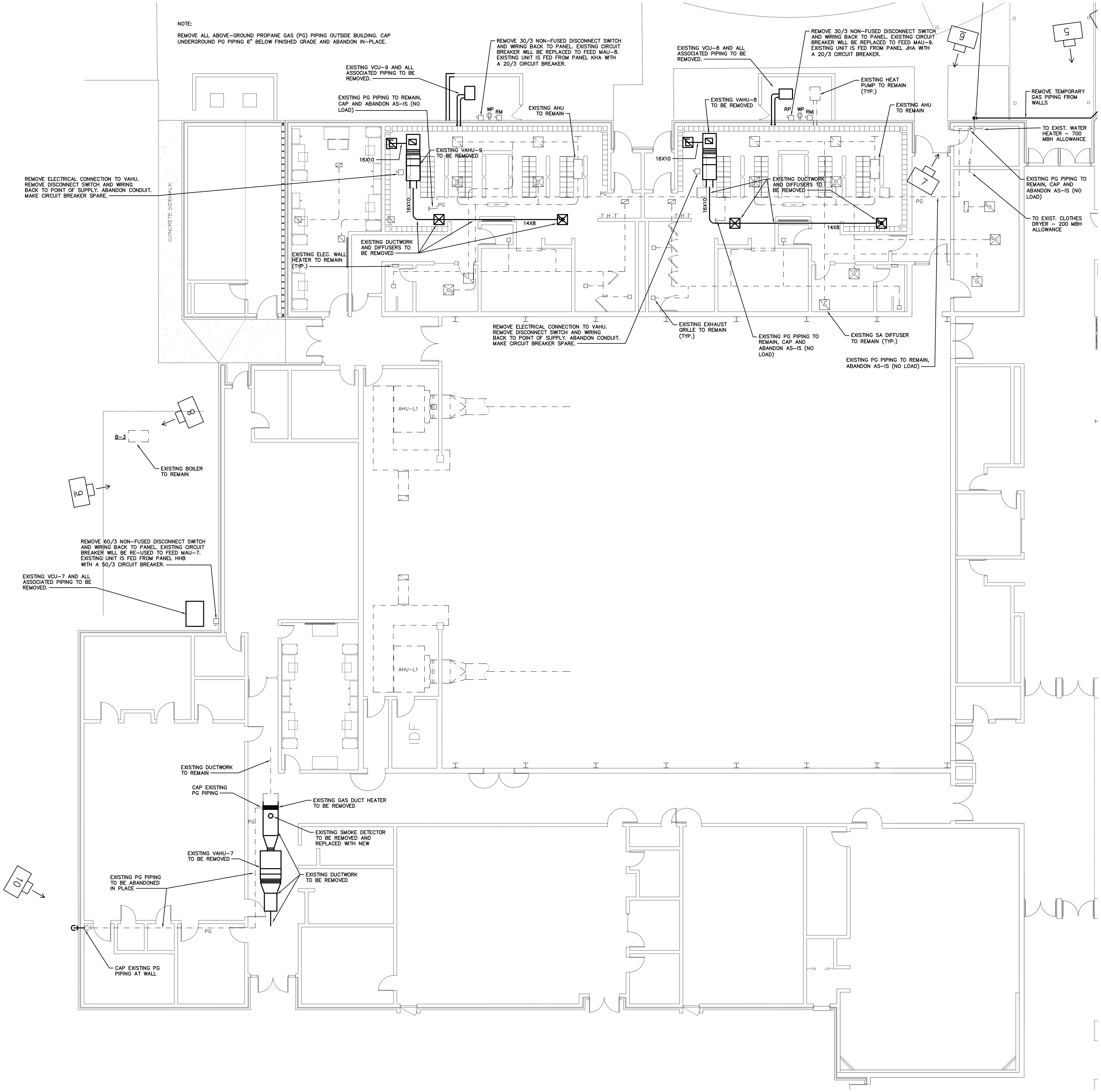
MYRTLE BEACH SOUTH CAROLINA

SHEET TITLE
SECTION 'E' DEMOLITION PLAN

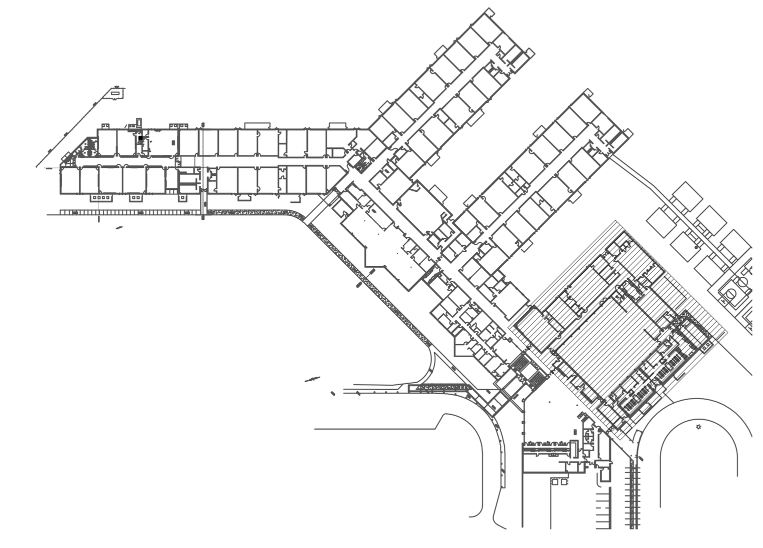
SHEET
ME-D3
OF 18



1 SECTION 'G', 'J', 'K' DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

VIEW ROTATED 135 DEGS. COUNTER CLOCKWISE FROM KEY PLAN VIEW

SEE ME-D7 AND ME-D8 FOR BUILDING PHOTOS



KEY PLAN
N.T.S.

DEMOLITION LEGEND

— — —	EXISTING TO REMAIN IN USE OR BE ABANDONED
———	EXISTING TO BE REMOVED
- - -	EXISTING TO BE RELOCATED
E— — —	CAP DUCT

GRAPHIC SCALE
Scale: 1/8"=1'-0"

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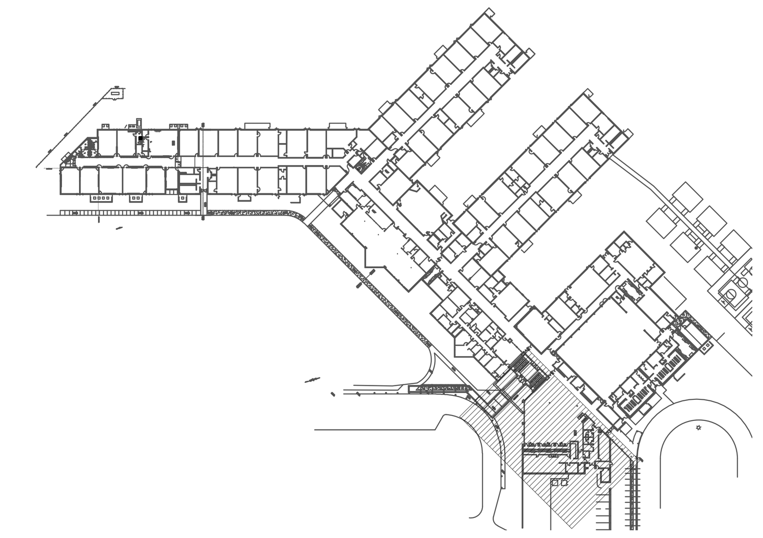
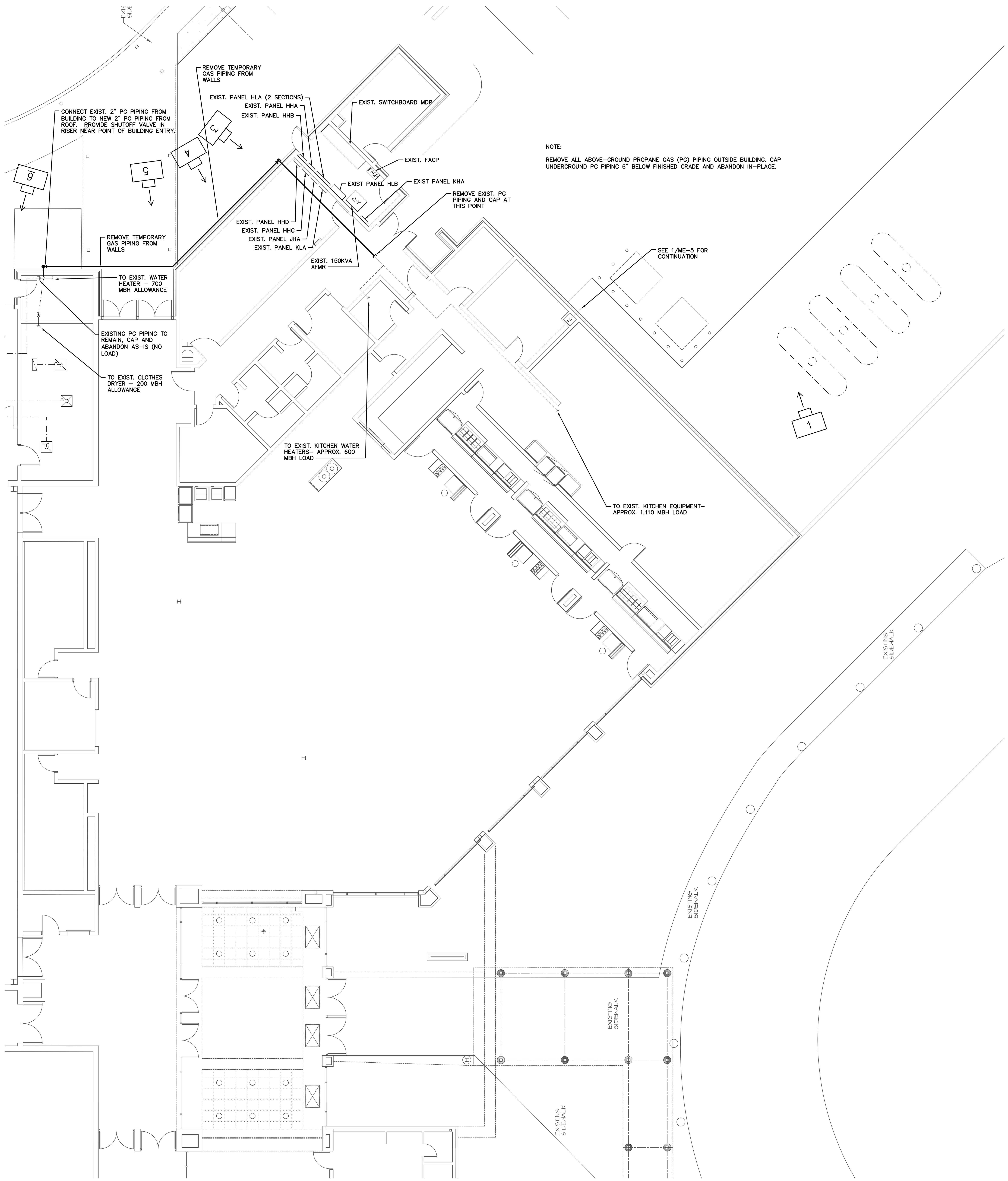
MYRTLE BEACH SOUTH CAROLINA

SHEET TITLE
SECTION 'G', 'J', 'K' DEMOLITION PLAN

SHEET
ME-D4
OF 18





NOTE:

REMOVE ALL ABOVE–GROUND PROPANE GAS (PG) PIPING OUTSIDE BUILDING. CAP UNDERGROUND PG PIPING 6" BELOW FINISHED GRADE AND ABANDON IN–PLACE.

DEMOLITION LEGEND	
— - — - —	EXISTING TO REMAIN IN USE OR BE ABANDONED
————	EXISTING TO BE REMOVED
- - - - -	EXISTING TO BE RELOCATED
E— - — -	CAP DUCT

1 SECTION 'H' DEMOLITION PLAN
SCALE: 1/8" = 1'–0"

VIEW ROTATED 135 DEGS. COUNTER CLOCKWISE FROM KEY PLAN VIEW

SEE ME–D7 AND ME–D8 FOR BUILDING PHOTOS

GRAPHIC SCALE

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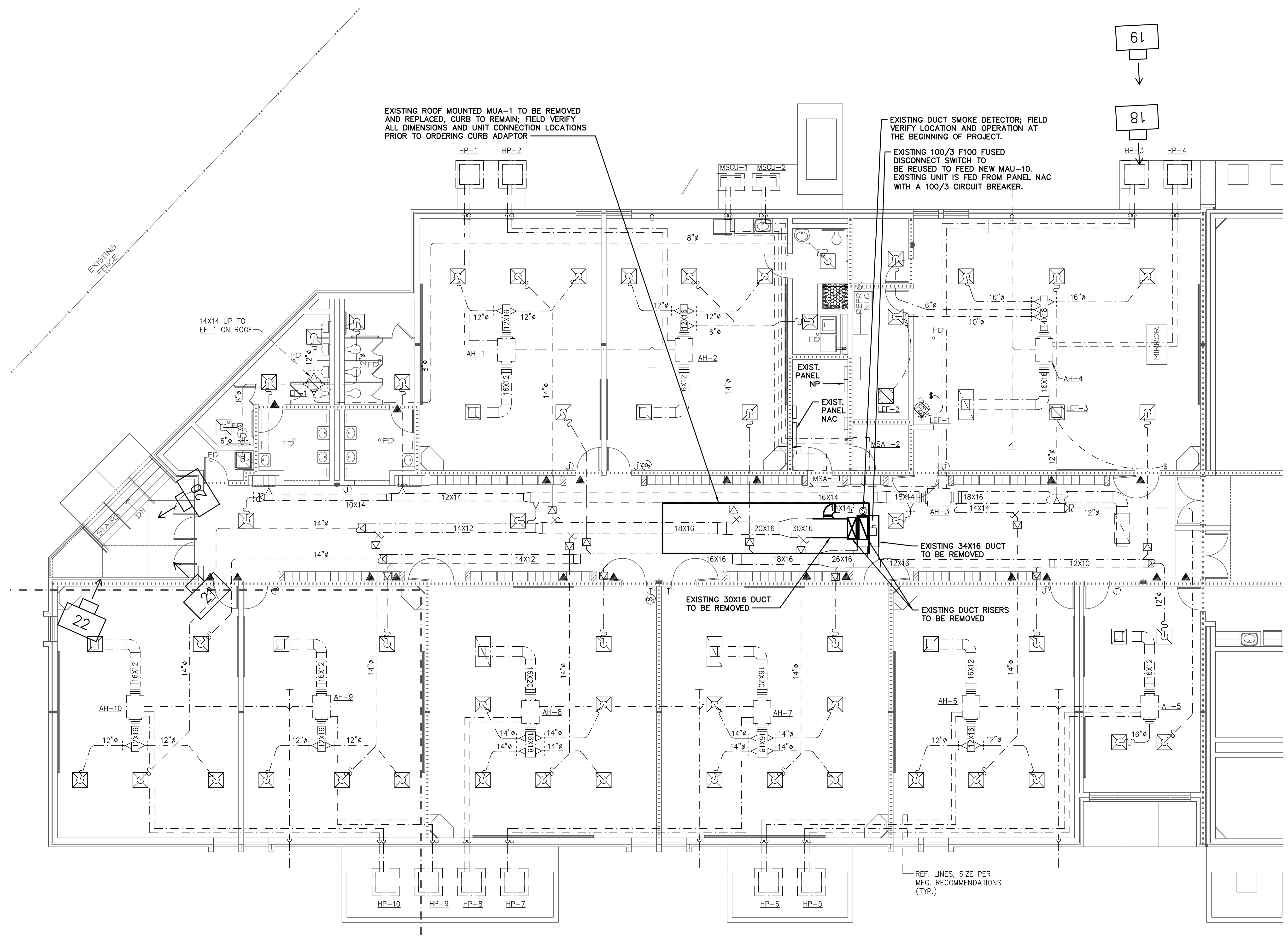
FORESTBROOK MIDDLE SCHOOL HVAC RENOVATIONS
MYRTLE BEACH SOUTH CAROLINA

SHEET TITLE
SECTION 'H' DEMOLITION PLAN

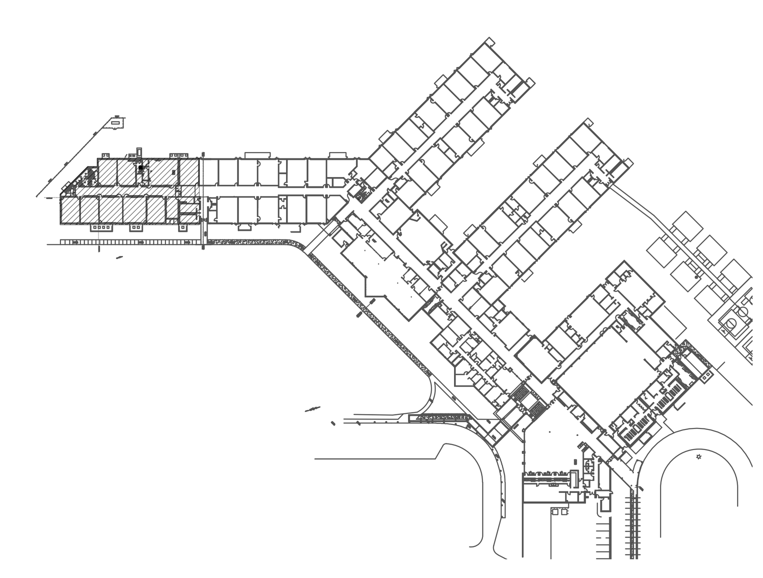
SHEET
ME–D5
OF 18



1 SECTION 'A1' DEMOLITION PLAN

SCALE: 1/8" = 1'-0"

SEE ME-D7 AND ME-D8 FOR BUILDING PHOTOS



KEY PLAN

N.T.S.

DEMOLITION LEGEND	
	EXISTING TO REMAIN IN USE OR BE ABANDONED
	EXISTING TO BE REMOVED
	EXISTING TO BE RELOCATED
E	CAP DUCT

GRAPHIC SCALE

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JOB TITLE

FORESTBROOK MIDDLE SCHOOL HVAC RENOVATIONS

MYRTLE BEACH SOUTH CAROLINA

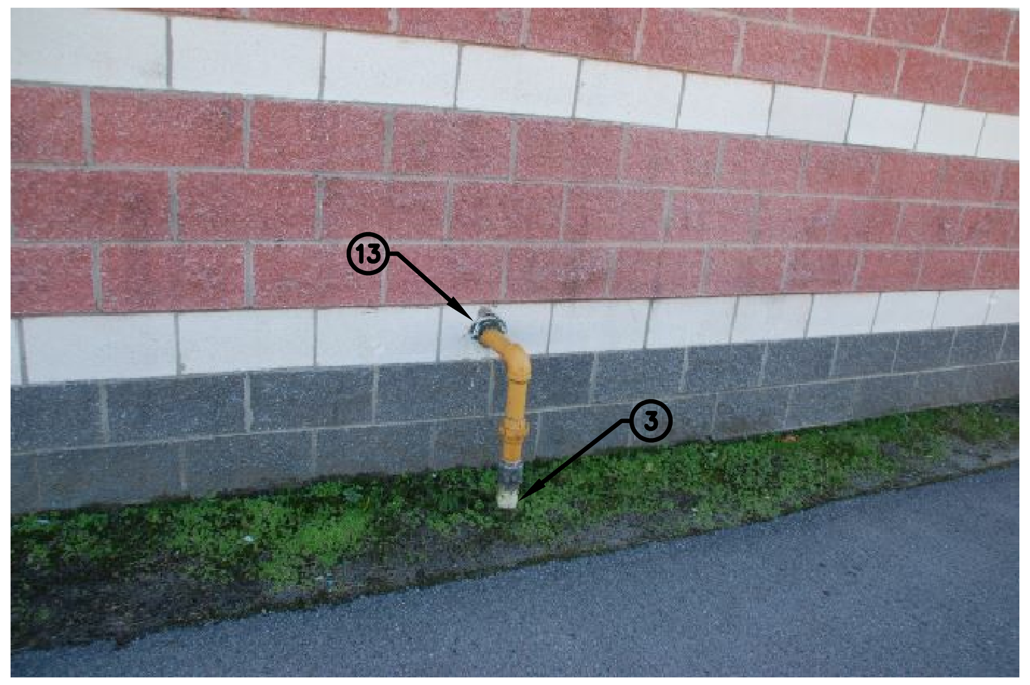
SHEET TITLE

SECTION 'A1' DEMOLITION PLAN

SHEET

ME-D6

OF 18



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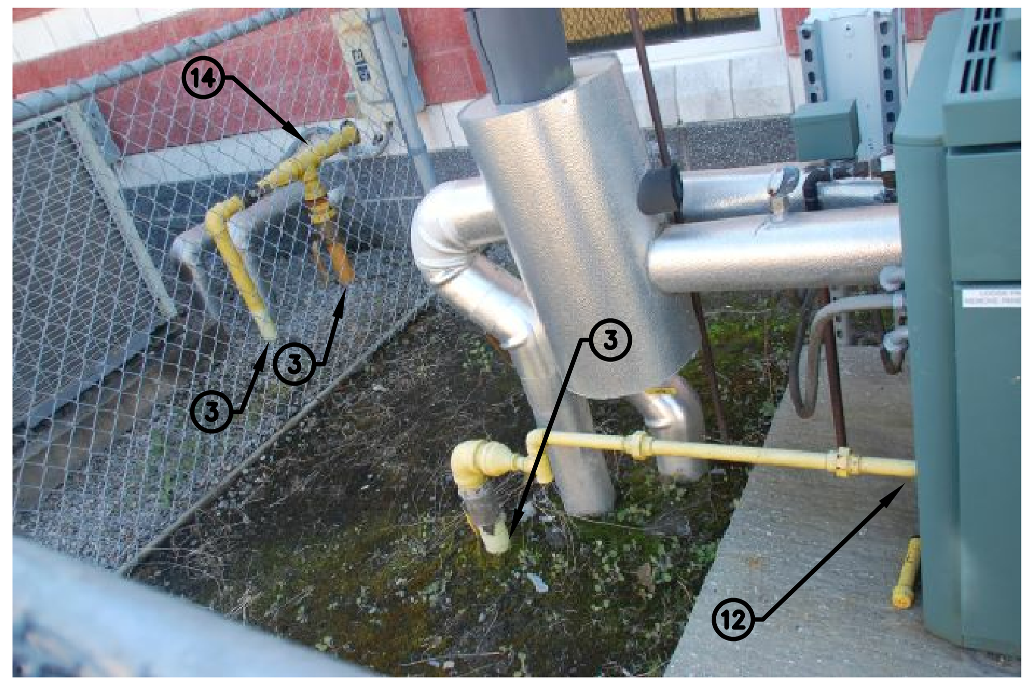

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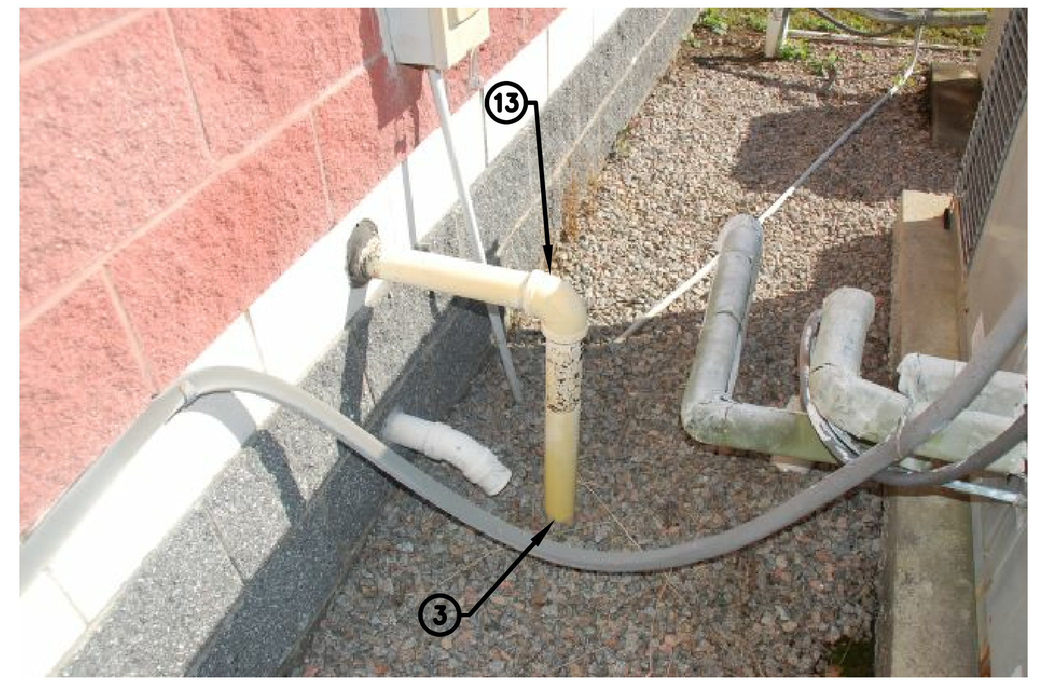

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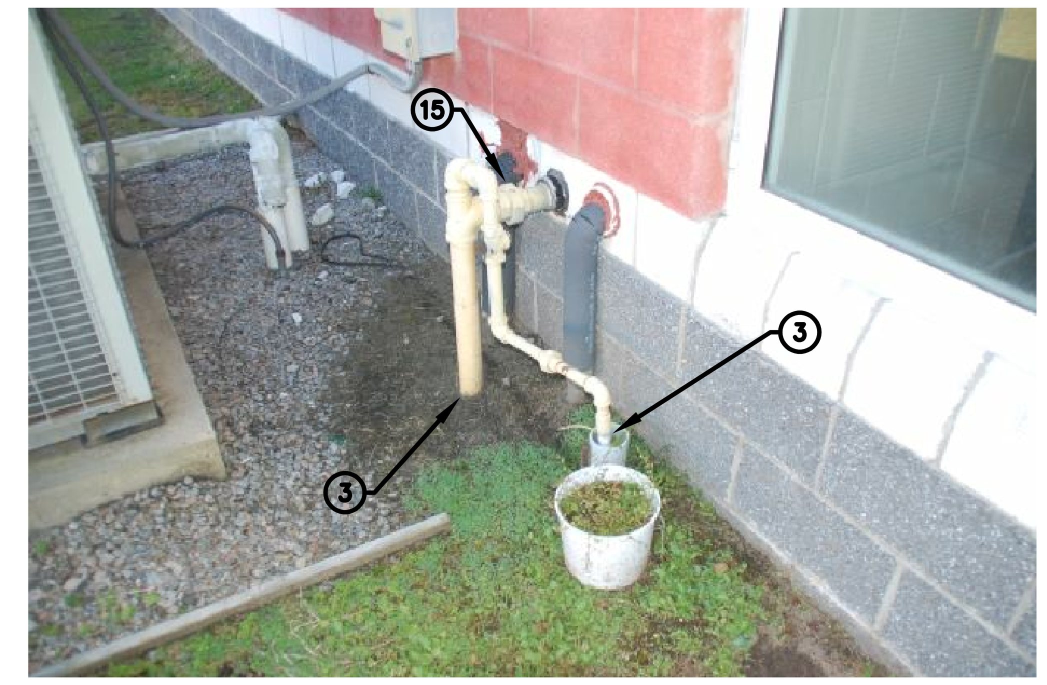

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PHOTO 5

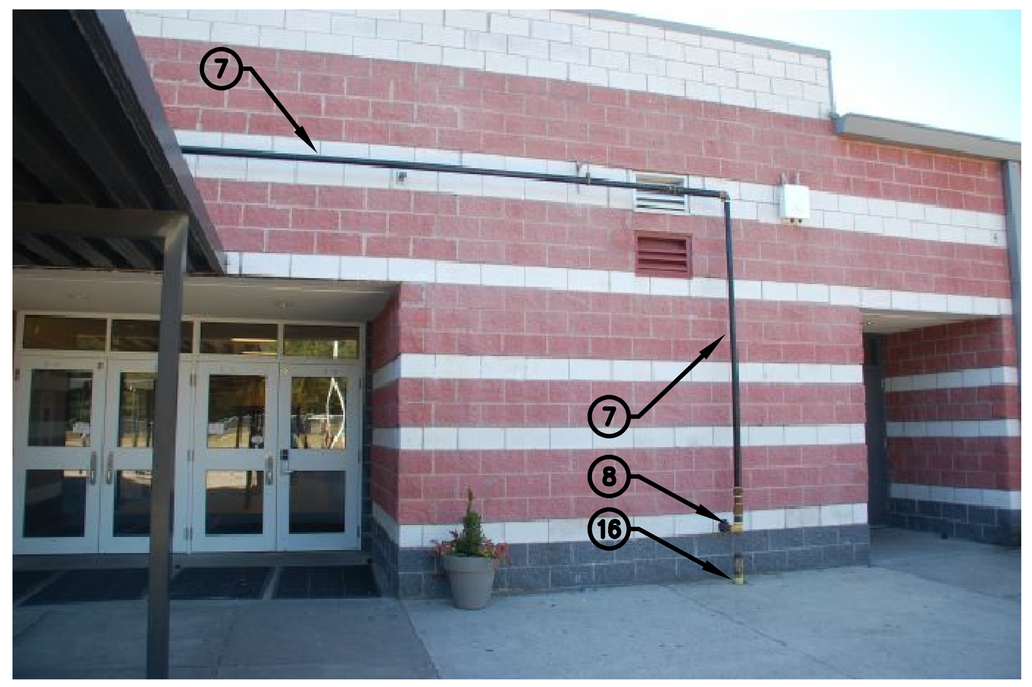
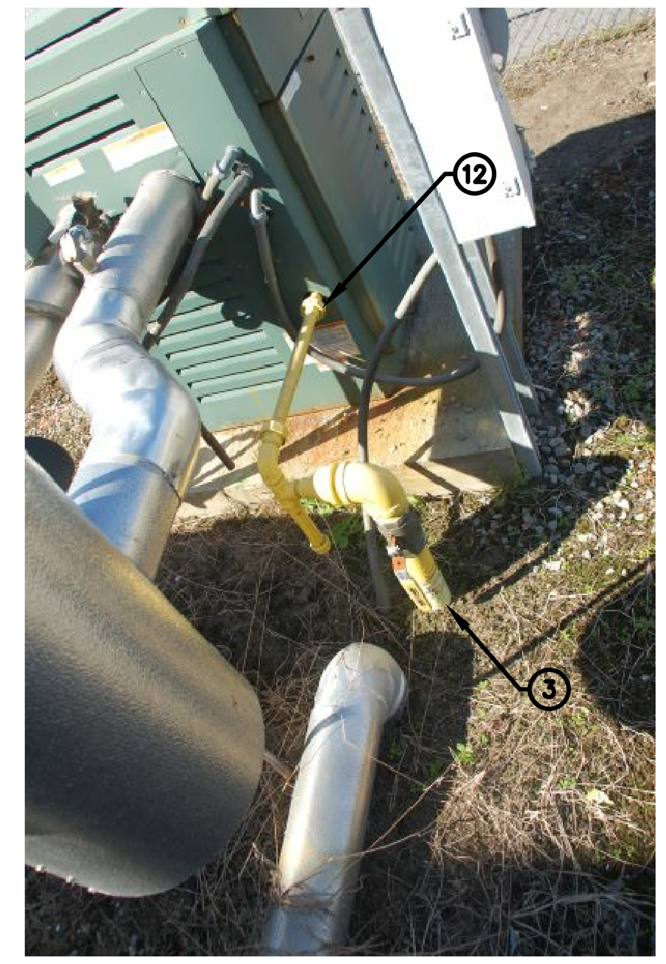


PHOTO 6

PHOTO 7



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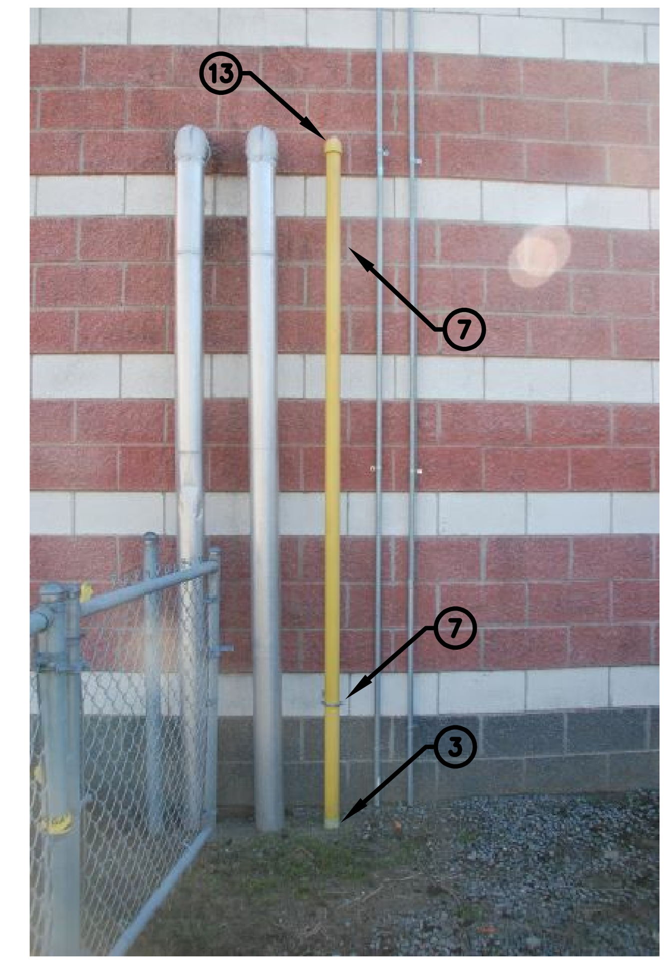
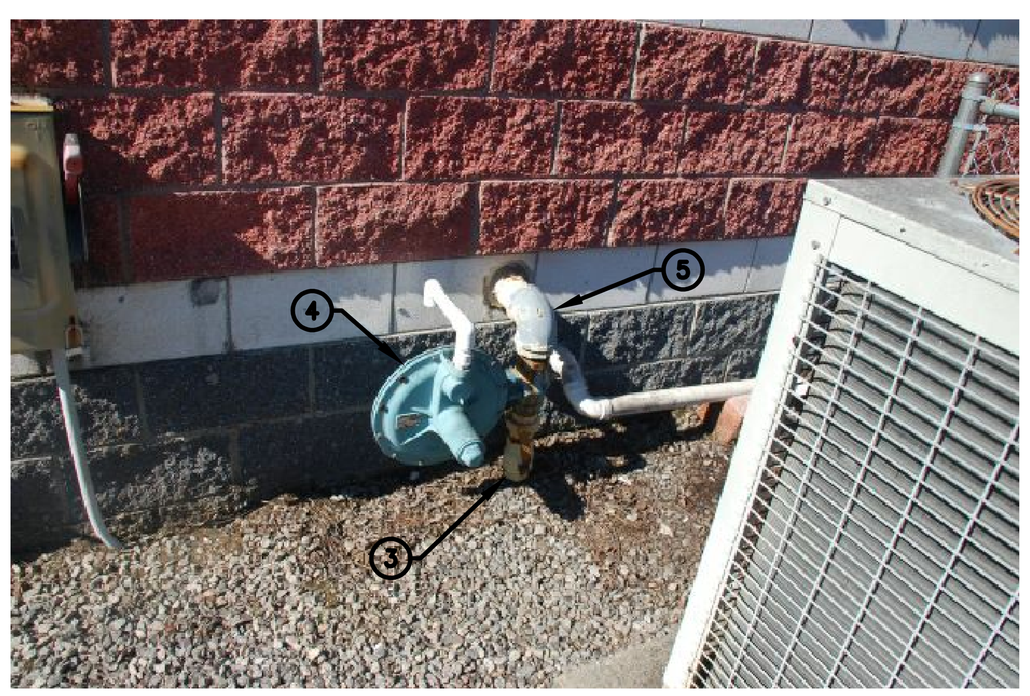


PHOTO 9

PHOTO 1



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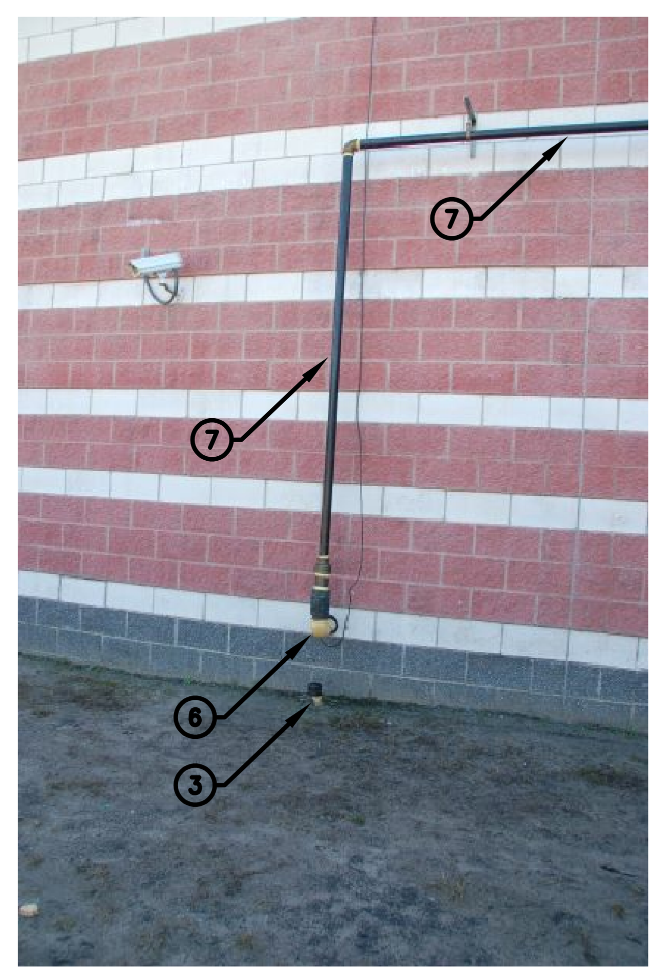

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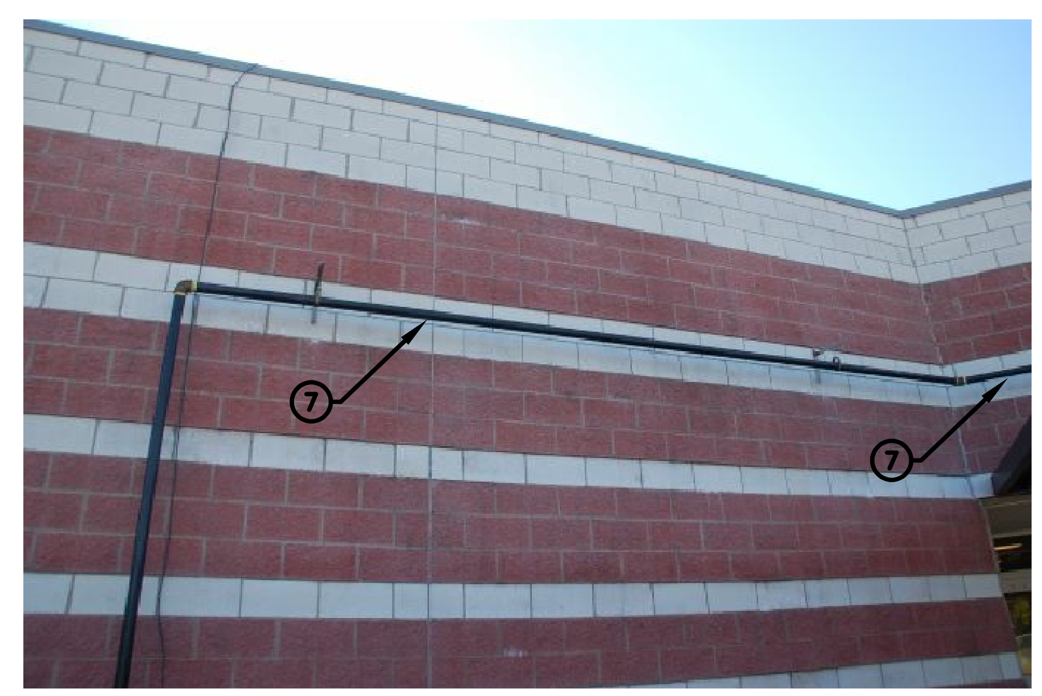

PHOTO 4

KEYED NOTES:

1. EXISTING TANK MANIFOLD PIPING TO REMAIN
2. REMOVE EXISTING REGULATOR AND GAUGE, PROVIDE NEW VALVE, REGULATOR, AND GAUGE.
3. CAP EXISTING LP PIPING 6" BELOW GRADE.
4. REMOVE EXISTING REGULATOR. PROVIDE NEW VALVE, REGULATOR, AND GAUGE.
5. REMOVE EXISTING ELL, PROVIDE NEW ELL AND CONNECT EXISTING INDOOR LP PIPING TO NEW REGULATOR / LP SUPPLY PIPING SYSTEM.
6. REMOVE EXISTING PIPING THROUGH WALL, CAP INSIDE BUILDING, PATCH WALL TO MATCH SURROUNDING SURFACES.
7. REMOVE EXISTING LP PIPING FROM WALL, PATCH HOLES TO MATCH SURROUNDING SURFACES.
8. REMOVE EXISTING ELL, PROVIDE NEW ELL AND CONNECT EXISTING INDOOR LP PIPING TO NEW LP SUPPLY PIPING SYSTEM FROM ROOF.
9. EXISTING LP PIPING TO CLOTHES DRYER TO REMAIN IN SERVICE.
10. EXISTING ABANDONED LP PIPING TO REMAIN AS-IS.
11. EXISTING LP PIPING TO WATER HEATER TO REMAIN IN SERVICE.
12. REMOVE EXISTING LP PIPING AT BOILER AND PROVIDE NEW VALVE AND REGULATOR, CONNECT TO NEW ABOVE-GRADE LP SUPPLY PIPING SYSTEM.
13. REMOVE EXISTING ELL AND CAP PIPE OUTSIDE BUILDING.
14. REMOVE EXISTING TEE AND CAP PIPE OUTSIDE BUILDING.
15. REMOVE EXISTING UNION AND CAP PIPE OUTSIDE BUILDING.
16. CUT EXISTING LP PIPING FLUSH WITH CONCRETE, FILL END OF PIPE WITH CONCRETE TO MATCH SURROUNDING SURFACE.

1 BUILDING PHOTOS
SCALE: NTS

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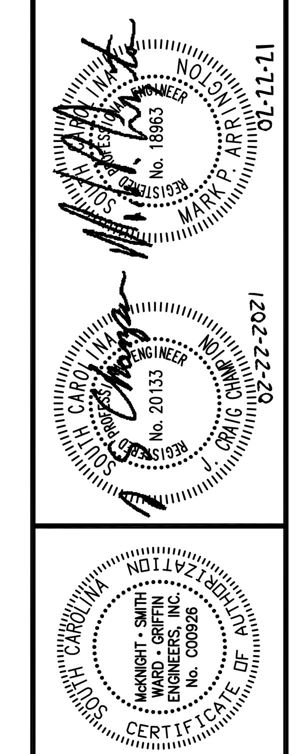

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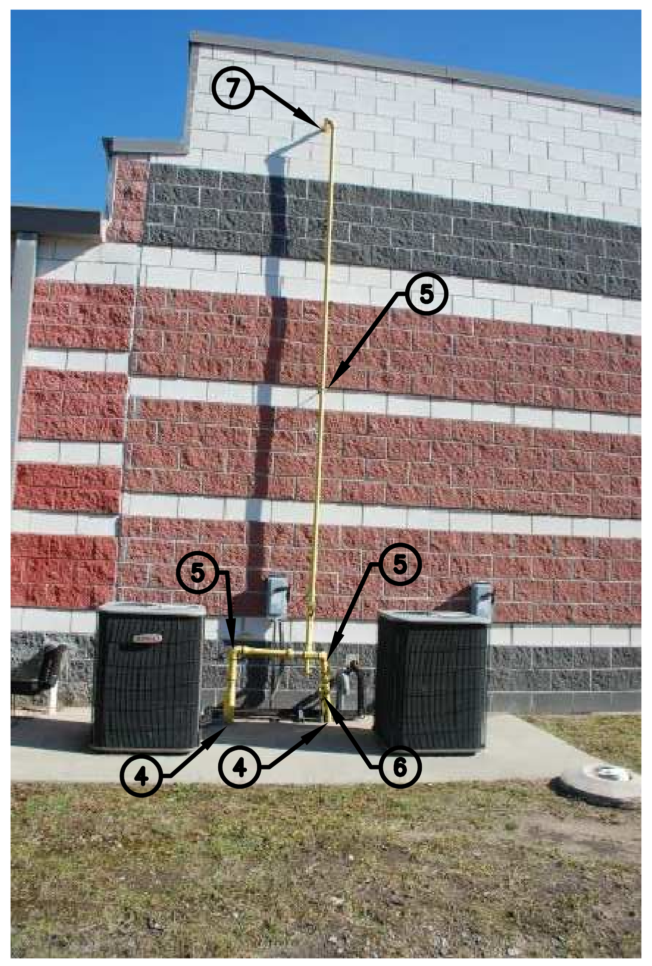
MIDDLE SCHOOL
HVAC RENOVATIONS
MYRTLE BEACH SOUTH CAROLINA

SHEET TITLE
BUILDING PHOTOS
—

SHEET
ME-D7
OF 18

PHOTO 22



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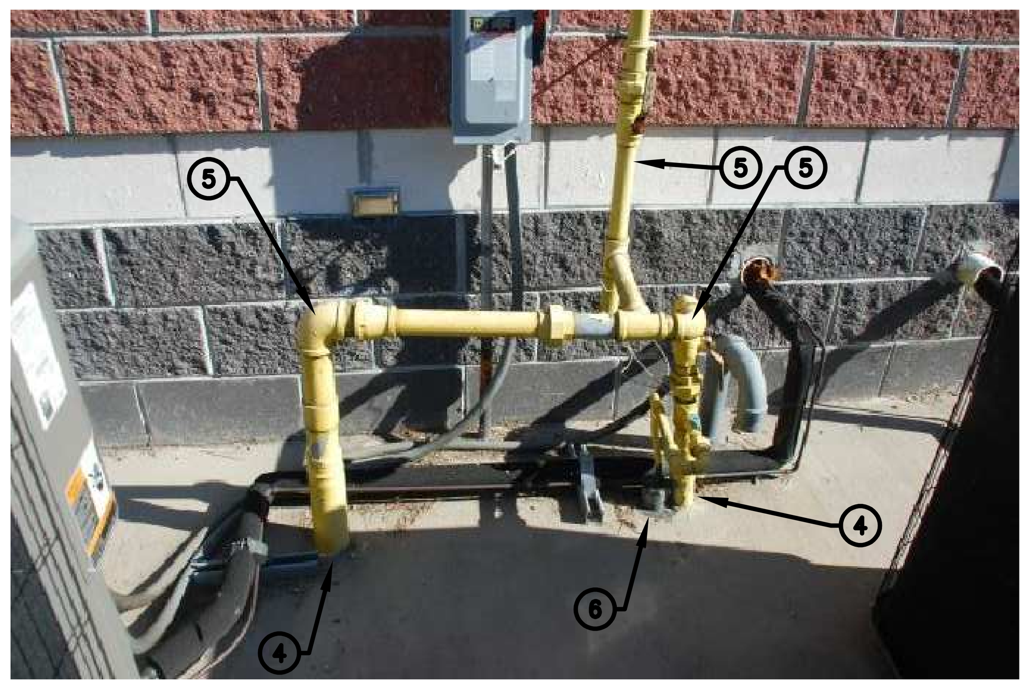
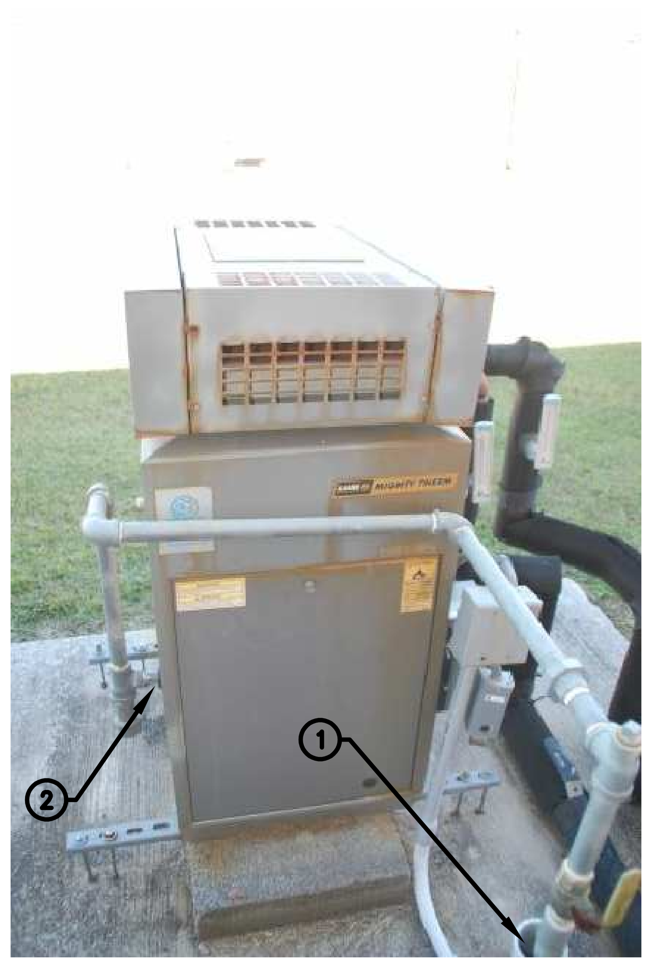


PHOTO 19

PHOTO 20

PHOTO 21



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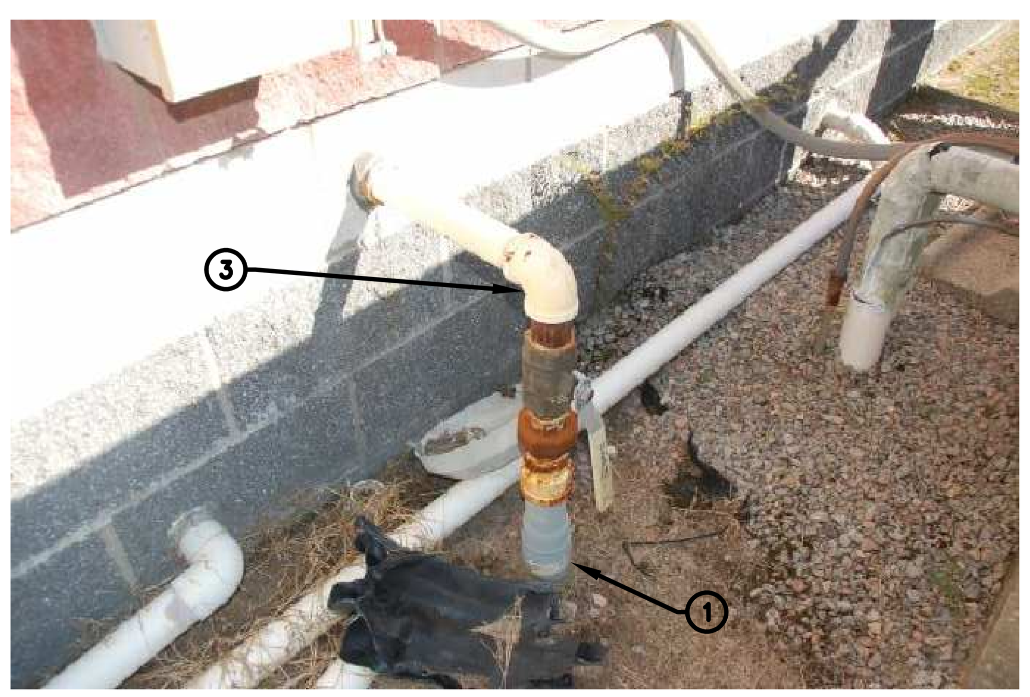

PHOTO 15

PHOTO 16

PHOTO 17

KEYED NOTES:

1. CAP EXISTING LP PIPING 6" BELOW GRADE.
2. REMOVE EXISTING LP PIPING AT BOILER AND PROVIDE NEW VALVE AND REGULATOR, CONNECT TO NEW ABOVE–GRADE LP SUPPLY PIPING SYSTEM.
3. REMOVE EXISTING ELL AND CAP PIPE OUTSIDE BUILDING.
4. CUT EXISTING LP PIPING FLUSH WITH CONCRETE, FILL END OF PIPE WITH CONCRETE TO MATCH SURROUNDING SURFACE.
5. REMOVE EXISTING ABOVE–GRADE LP PIPING. PATCH HOLES IN WALL THAT WILL NOT BE RE–USED TO MATCH SURROUNDING SURFACES.
6. EXISTING LP PIPING UNDERGROUND TO SCIENCE LAB SHALL REMAIN. DISCONNECT FROM EXISING LP SUPPLY PIPING SYSTEM, PROTECT, AND RECONNECT TO NEW LP SUPPLY PIPING SYSTEM FROM ROOF. PROVIDE VALVE NEAR GRADE LEVEL, SECURE NEW PIPING TO WALL.
7. REMOVE EXISTING LP PIPING SERVING EXISTING ENERGY RECOVERY VENTILATOR ON ROOF TO POINT OF CONNECTION TO ERV UNIT. RE–USE EXISTING HOLE IN PARAPET WALL TO RUN NEW LP PIPING FROM ROOF TO SERVE EXISTING UNDERGROUND LP PIPE TO SCIENCE LAB.
8. EXISTING WATER HEATER TO BE RE–CONNECTED TO NEW ABOVE–GRADE LP PIPING SYSTEM.
9. DISCONNECT EXISTING LP PIPING AT COUPLING NEAR FLOOR LEVEL, CAP PIPE FROM UNDERGROUND AT EXISTING COUPLING LOCATION.
10. REMOVE EXISTING ABOVE–GRADE LP PIPING.
11. DISCONNECT EXISTING LP PIPING AT UNION, PROVIDE NEW VALVE AND RE–CONNECT EXISTING WATER HEATER TO NEW ABOVE–GRADE LP SUPPLY PIPING SYSTEM AT UNION.

1 BUILDING PHOTOS
SCALE: NTS

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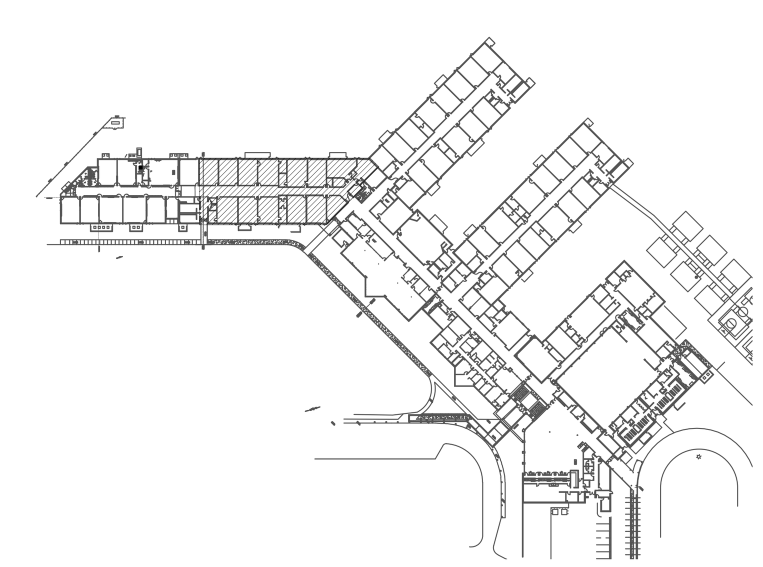
HVAC RENOVATIONS
MYRTLE BEACH SOUTH CAROLINA

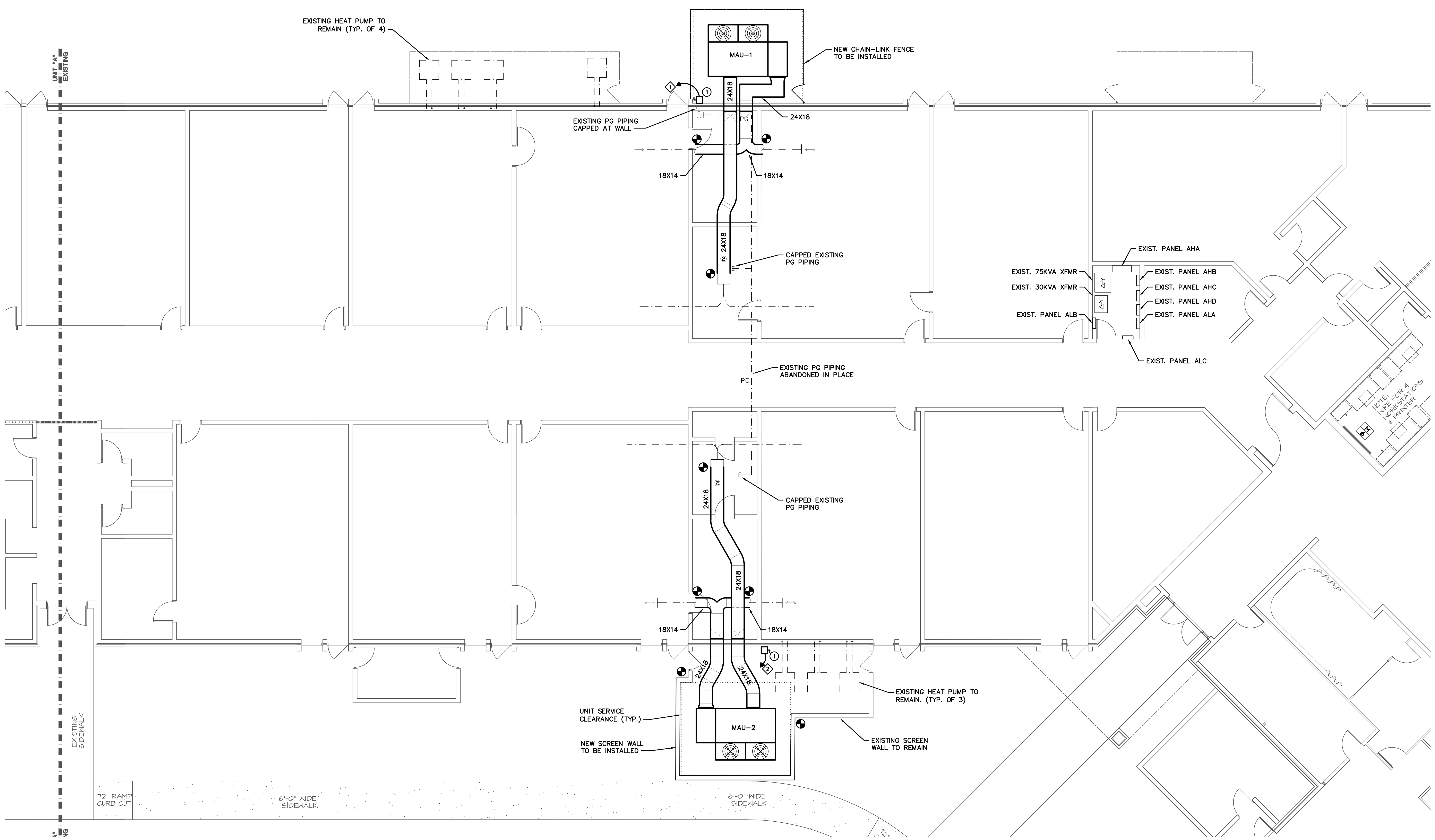
SHEET TITLE
BUILDING PHOTOS
—

SHEET
ME–D8
OF 18

ELECTRICAL 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.
◇1	SPECIAL NOTE, NUMERALS IDENTIFY, SEE SCHEDULE.
①	SPECIAL CONNECTION TO A SPECIFIC ITEM OF EQUIPMENT. SEE CONNECTION SCHEDULE.
Ⓢ----	FIRE ALARM SYSTEM DUCT MOUNTED PHOTOELECTRIC TYPE SMOKE DETECTOR.
☒	DISCONNECT SWITCH, FUSIBLE.



KEY PLAN
N.T.S.



1 SECTION 'A' FLOOR PLAN

SCALE: 1/8" = 1'-0"

NOTES:

1. CONNECT TO EXISTING 50/3 CIRCUIT BREAKER IN EXISTING PANEL AHA CURRENTLY SERVING VCU-2 WITH 3#8,1#10G,3/4"C.
2. CONNECT TO EXISTING 50/3 CIRCUIT BREAKER IN EXISTING PANEL AHC CURRENTLY SERVING VCU-1 WITH 3#8,1#10G,3/4"C.

ELECTRICAL SPECIFICATIONS

1. PROVIDE ALL WORK AND MATERIALS REQUIRED FOR A COMPLETE AND WORKMANLIKE INSTALLATION AS SHOWN BY THE THE DRAWINGS AND SPECIFIED HEREIN.

2. 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 ICEA STANDARDS.

3. PERFORM ALL CUTTING AND PATCHING NECESSARY FOR THE PROPER INSTALLATION OF THIS WORK AND REPAIR ANY DAMAGE DONE AS A RESULT OF THIS WORK.

4. AN ELECTRICAL INSPECTION CERTIFICATE SHALL BE ISSUED BY THE AUTHORITIES HAVING JURISDICTION BEFORE WORK WILL BE APPROVED FOR FINAL PAYMENT.

5. 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.

6. 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.

7. 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), i-INCH TRADE SIZE MINIMUM. WHERE EMT IS USED, FITTINGS SHALL BE THREADLESS-COMPRESSION TYPE GALVANIZED STEEL. WHERE FLEXIBLE METAL CONDUIT IS USED, CONNECTORS SHALL BE T & B NYLON-INSULATED "TITE-BITE".

8. 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.

9. OUTLET AND JUNCTION BOXES SHALL BE CAST TYPE WITH THREADED HUBS. BOXES AND ENCLOSURES LARGER THAN 5 INCHES SQUARE SHALL BE NEMA 12.

10. ALL CONDUIT SHALL BE RUN AS HIGH AS POSSIBLE, PARALLEL WITH STRUCTURAL MEMBERS, SUPPORTED ON APPROVED TYPES OF GALVANIZED TRAPEZES, HANGERS, OR STRAPS.

11. LIQUID-TIGHT FLEXIBLE METAL CONDUIT SHALL BE USED FOR EQUIPMENT CONNECTIONS, BUT NOT AS A WIRING METHOD OTHERWISE.

12. DISCONNECT SWITCHES SHALL BE HEAVY-DUTY TYPE WITH REJECTION-TYPE FUSE CLIPS AND SUITABLE FOR 75°C CONDUCTOR TERMINATION.

13. A CONTINUOUS GREEN GROUND WIRE SHALL BE RUN WITH EACH CIRCUIT.

14. PROVIDE ENGRAVED PHENOLIC NAMEPLATES FOR PANELBOARDS.

15. UPDATE PANEL DIRECTORY TO REFLECT ALL CHANGES REQUIRED BY THIS WORK.

RENOVATION LEGEND	
———	NEW EQUIPMENT
— — —	EXISTING
- - - -	EXISTING RELOCATED
T_E	EXISTING THERMOSTAT
●	CONNECT TO EXISTING

GRAPHIC SCALE
0 16
Scale: 1/8"=1'-0"

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SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 18963 MARK P. ARRINGTON 02-22-21

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 20133 J. CRAIG CHAMBERS 02-22-2021

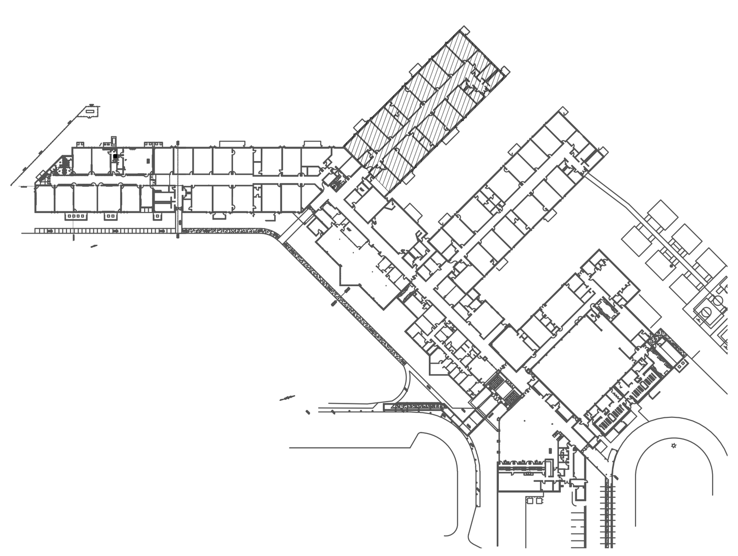
SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION McKNIGHT · SMITH WARD · GRIFFIN ENGINEERS, INC. No. C00926

JOB NUMBER	20-147
DRAWN BY	MSB/MDK
CHECKED BY	JCC/MPA
DATE	02-22-2021
REVISION DATES	

JOB TITLE
FORESTBROOK MIDDLE SCHOOL HVAC RENOVATIONS
MYRTLE BEACH SOUTH CAROLINA

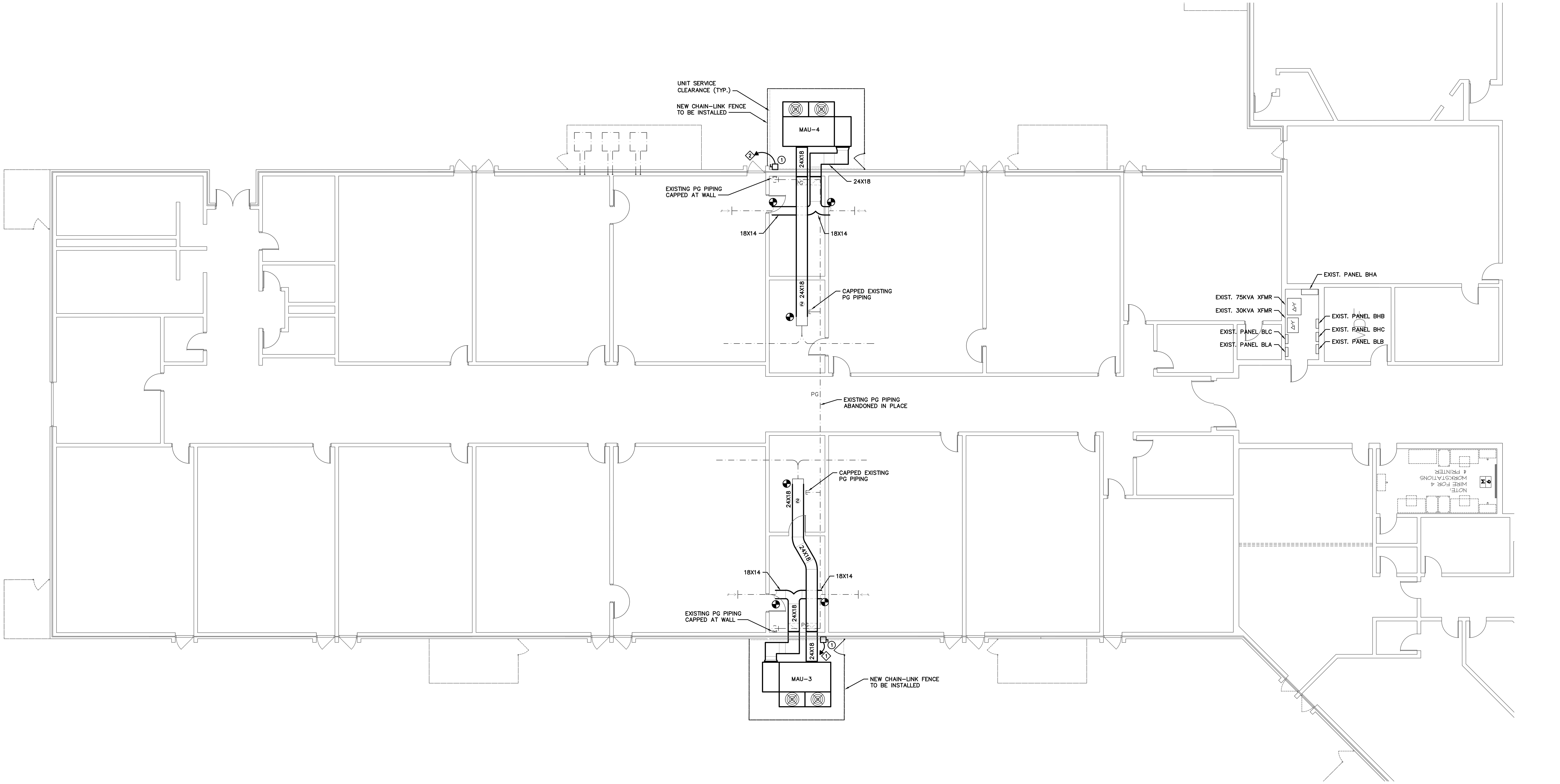
SHEET TITLE
SECTION 'A' FLOOR PLAN

SHEET
ME-1
OF 18



KEY PLAN

N.T.S.



1 SECTION 'B' FLOOR PLAN

SCALE: 1/8" = 1'-0"

VIEW ROTATED 135 DEGS. COUNTER CLOCKWISE FROM KEY PLAN VIEW

NOTES:

1. CONNECT TO EXISTING 50/3 CIRCUIT BREAKER IN EXISTING PANEL BHA CURRENTLY SERVING VCU-3 WITH 3#8,1#10G,3/4"C.

2. CONNECT TO EXISTING 50/3 CIRCUIT BREAKER IN EXISTING PANEL BHB CURRENTLY SERVING VCU-4 WITH 3#8,1#10G,3/4"C.

RENOVATION LEGEND	
(solid line)	NEW EQUIPMENT
(dashed line)	EXISTING
(light dashed line)	EXISTING RELOCATED
T E	EXISTING THERMOSTAT
(symbol)	CONNECT TO EXISTING

GRAPHIC SCALE

Scale: 1/8"=1'-0"

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SOUTH CAROLINA PROFESSIONAL ENGINEER REGISTERED No. 20133 J. CRAIG CHAMPION 02-22-2021

SOUTH CAROLINA PROFESSIONAL ENGINEER REGISTERED No. 18963 MARK P. ARRINGTON 02-22-21

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JOB TITLE

FORESTBROOK MIDDLE SCHOOL HVAC RENOVATIONS

MYRTLE BEACH SOUTH CAROLINA

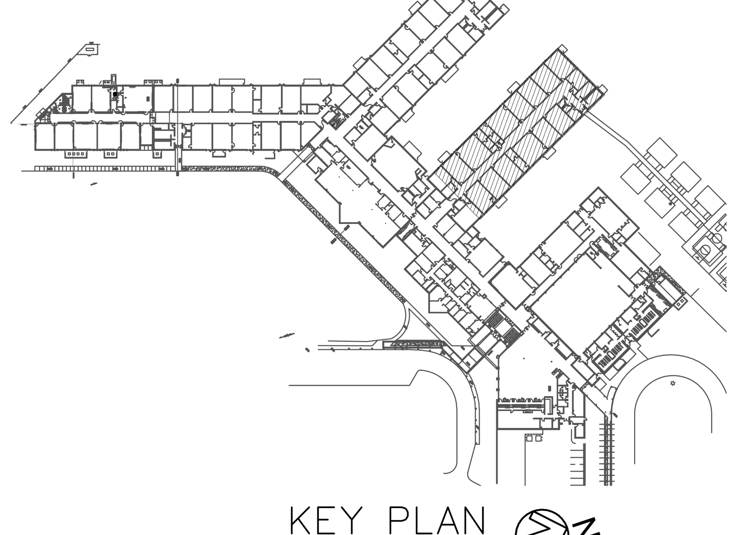
SHEET TITLE

SECTION 'B' FLOOR PLAN

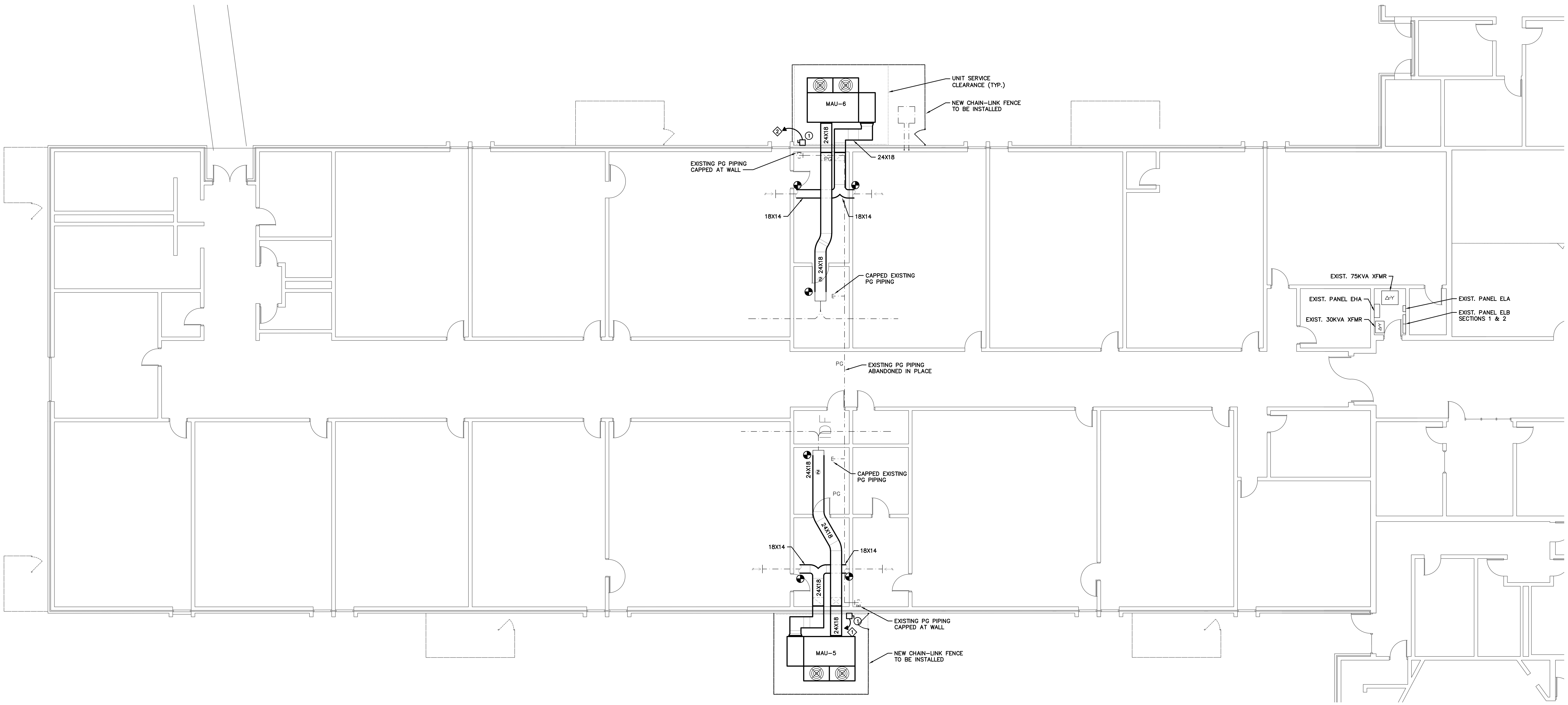
SHEET

ME-2

OF 18



KEY PLAN
N.T.S.



1 SECTION 'E' FLOOR PLAN

SCALE: 1/8" = 1'-0"

VIEW ROTATED 135 DEGS. COUNTER CLOCKWISE FROM KEY PLAN VIEW

NOTES:

1. REPLACE EXISTING 40/3 CIRCUIT BREAKER CURRENTLY SERVING VCU-5 IN EXISTING PANEL EHB2 WITH NEW 50/3 CIRCUIT BREAKER AND CONNECT WITH 3#8,1#10G,3/4"C.
2. REPLACE EXISTING 40/3 CIRCUIT BREAKER CURRENTLY SERVING VCU-6 IN EXISTING PANEL EHB1 WITH NEW 50/3 CIRCUIT BREAKER AND CONNECT WITH 3#8,1#10G,3/4"C.

RENOVATION LEGEND

- NEW EQUIPMENT
- EXISTING
- EXISTING RELOCATED
- EXISTING THERMOSTAT
- CONNECT TO EXISTING

GRAPHIC SCALE

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02-22-2021

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REVISION DATES

JOB TITLE

FORESTBROOK MIDDLE SCHOOL HVAC RENOVATIONS

MYRTLE BEACH SOUTH CAROLINA

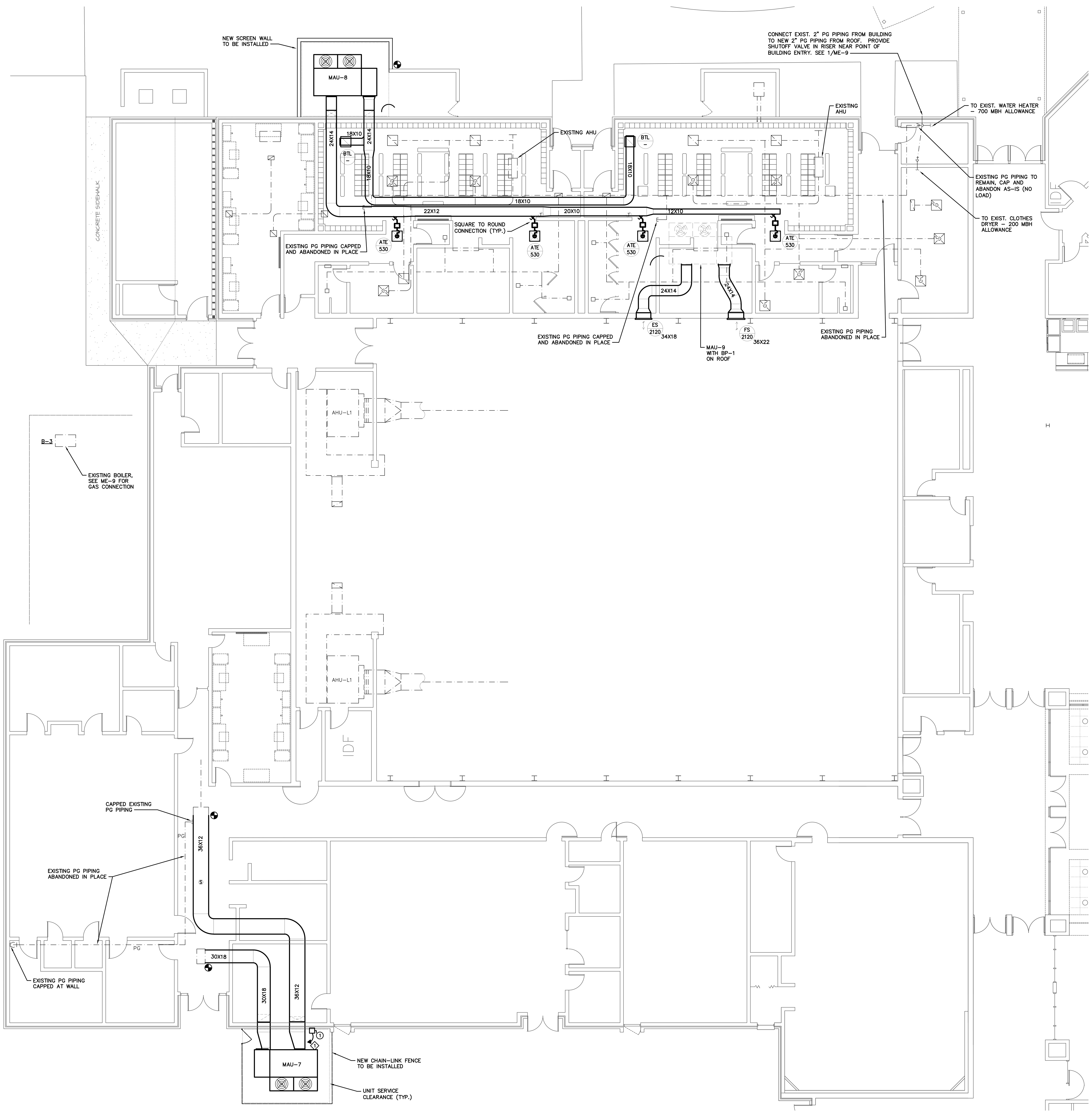
SHEET TITLE

SECTION 'E' FLOOR PLAN

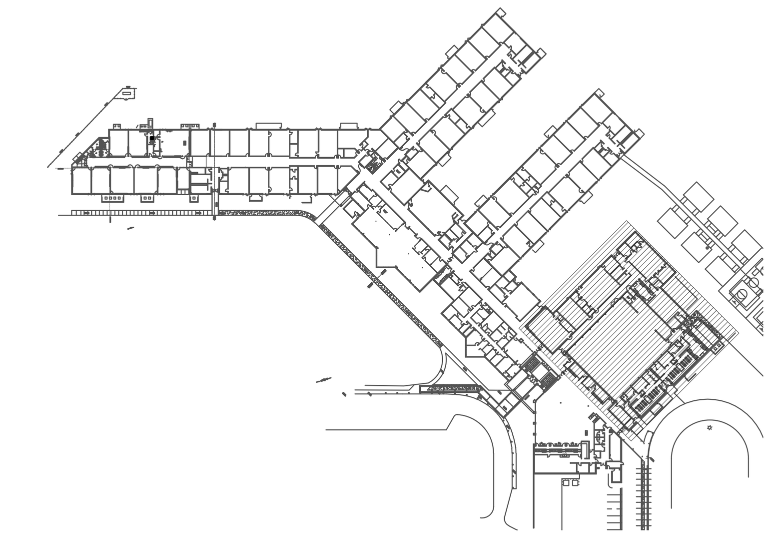
SHEET

ME-3

OF 18



1 SECTION 'G', 'J', 'K' FLOOR PLAN
SCALE: 1/8" = 1'-0"
VIEW ROTATED 135 DEGS. COUNTER CLOCKWISE FROM KEY PLAN VIEW



KEY PLAN
N.T.S.

NOTES:

1. CONNECT TO EXISTING 50/3 CIRCUIT BREAKER IN EXISTING PANEL HHB CURRENTLY SERVING VCU-7 WITH 3#8,1#10G,3/4"C.
2. REPLACE EXISTING 20/3 CIRCUIT BREAKER CURRENTLY SERVING VCU-9 IN EXISTING PANEL KHA WITH NEW 50/3 CIRCUIT BREAKER AND CONNECT WITH 3#8,1#10G,3/4"C.
3. REPLACE EXISTING 20/3 CIRCUIT BREAKER CURRENTLY SERVING VCU-8 IN EXISTING PANEL JHA WITH NEW 50/3 CIRCUIT BREAKER AND CONNECT WITH 3#8,1#10G,3/4"C.

RENOVATION LEGEND
NEW EQUIPMENT
EXISTING
EXISTING RELOCATED
EXISTING THERMOSTAT
CONNECT TO EXISTING

GRAPHIC SCALE

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JOB TITLE
FORESTBROOK MIDDLE SCHOOL HVAC RENOVATIONS
MYRTLE BEACH SOUTH CAROLINA

SHEET TITLE
SECTION 'G', 'J', 'K' FLOOR PLAN

SHEET
ME-4
OF 18

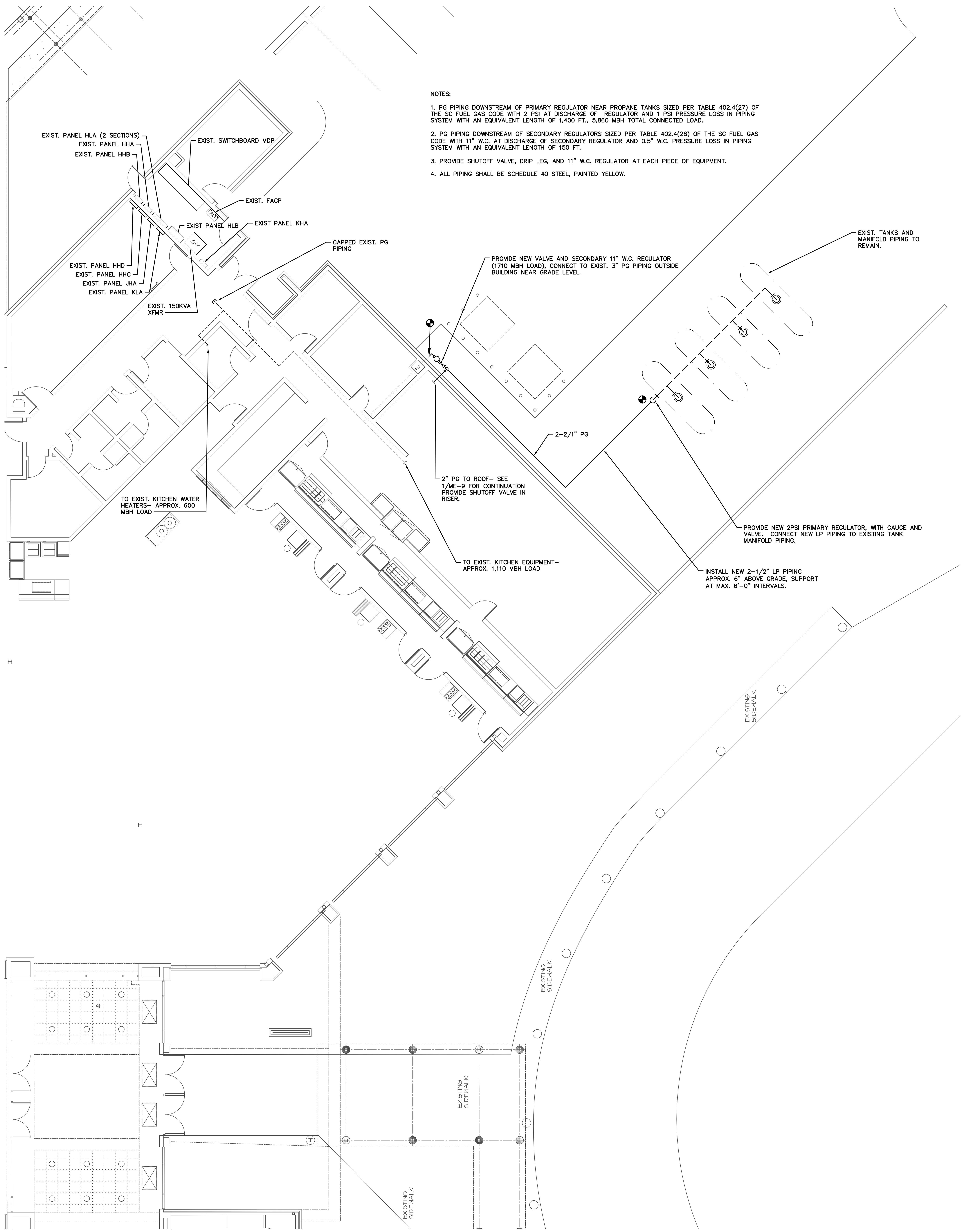
NOTES:

1. PG PIPING DOWNSTREAM OF PRIMARY REGULATOR NEAR PROPANE TANKS SIZED PER TABLE 402.4(27) OF THE SC FUEL GAS CODE WITH 2 PSI AT DISCHARGE OF REGULATOR AND 1 PSI PRESSURE LOSS IN PIPING SYSTEM WITH AN EQUIVALENT LENGTH OF 1,400 FT., 5,860 MBH TOTAL CONNECTED LOAD.

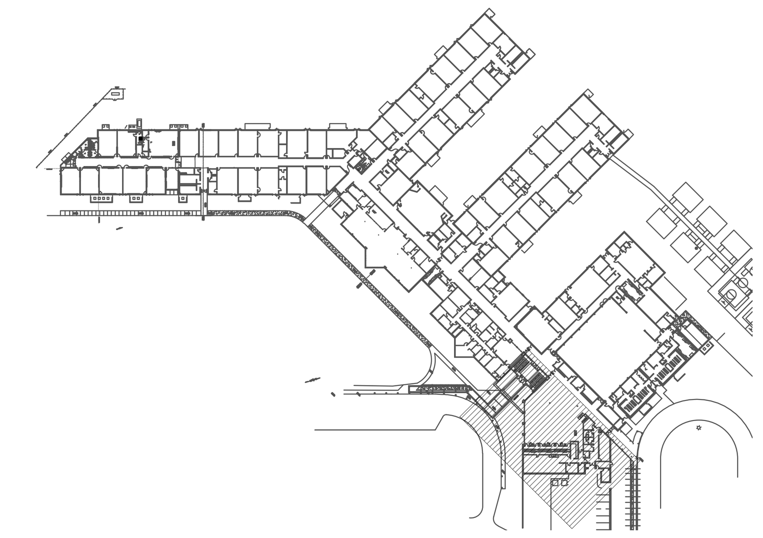
2. PG PIPING DOWNSTREAM OF SECONDARY REGULATORS SIZED PER TABLE 402.4(28) OF THE SC FUEL GAS CODE WITH 11" W.C. AT DISCHARGE OF SECONDARY REGULATOR AND 0.5" W.C. PRESSURE LOSS IN PIPING SYSTEM WITH AN EQUIVALENT LENGTH OF 150 FT.

3. PROVIDE SHUTOFF VALVE, DRIP LEG, AND 11" W.C. REGULATOR AT EACH PIECE OF EQUIPMENT.

4. ALL PIPING SHALL BE SCHEDULE 40 STEEL, PAINTED YELLOW.



1 SECTION 'H' FLOOR PLAN
SCALE: 1/8" = 1'-0"
VIEW ROTATED 135 DEGS. COUNTER CLOCKWISE FROM KEY PLAN VIEW



KEY PLAN
N.T.S.

RENOVATION LEGEND

———	NEW EQUIPMENT
— - — -	EXISTING
- - - -	EXISTING RELOCATED
T E	EXISTING THERMOSTAT
●	CONNECT TO EXISTING

GRAPHIC SCALE
Scale: 1/8"=1'-0"

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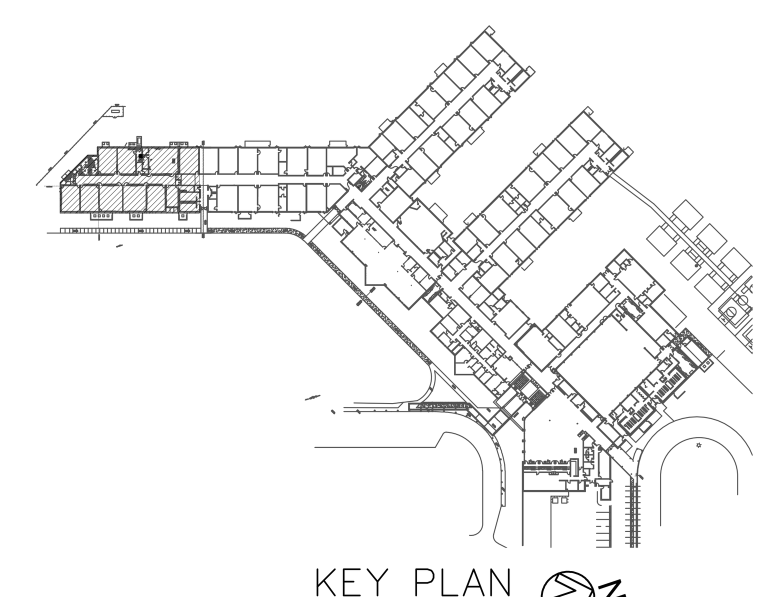
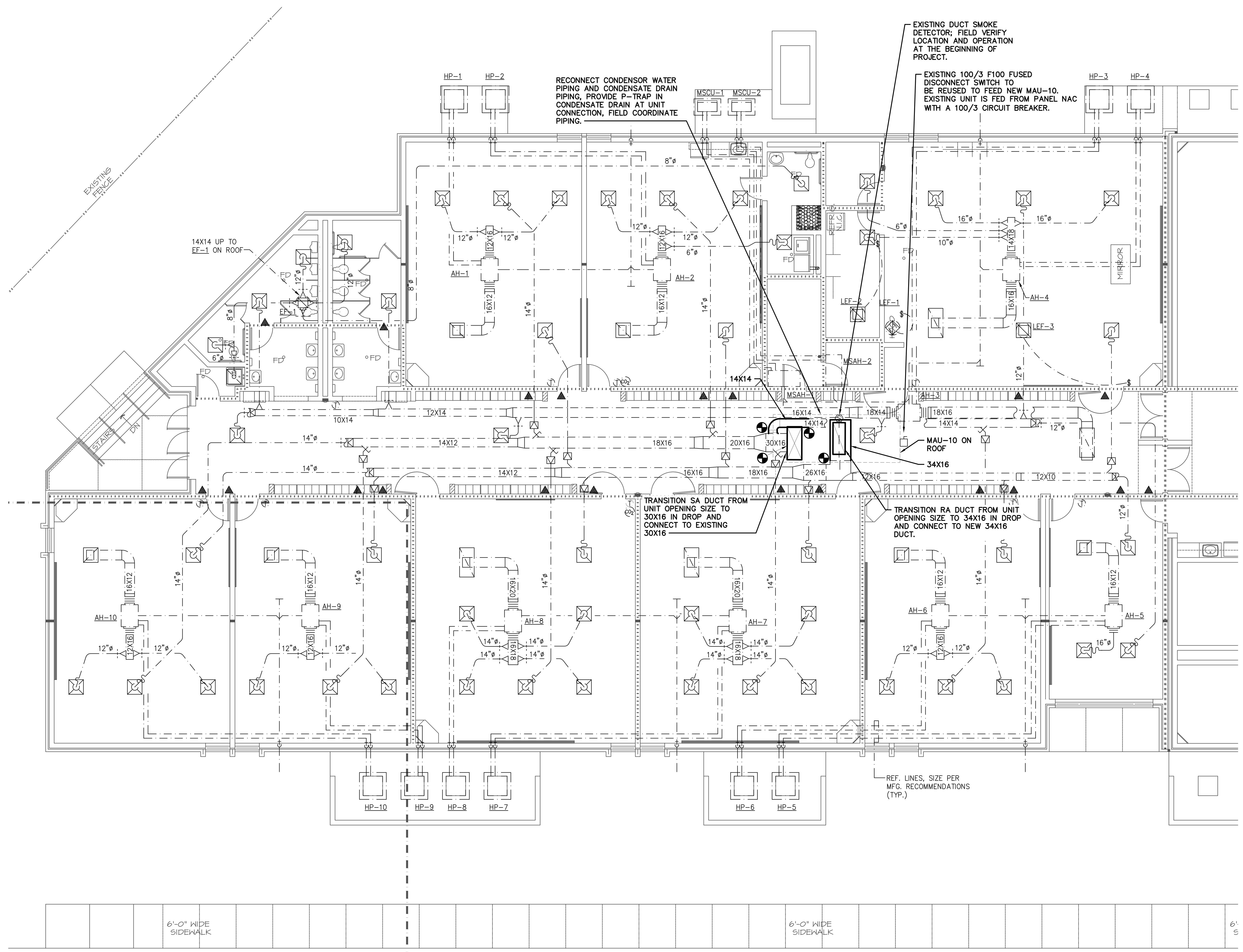
FORESTBROOK MIDDLE SCHOOL HVAC RENOVATIONS
MYRTLE BEACH SOUTH CAROLINA

SHEET TITLE
SECTION 'H' FLOOR PLAN

SHEET
ME-5
OF 18





1 SECTION 'A1' FLOOR PLAN
SCALE: 1/8" = 1'-0"

RENOVATION LEGEND
NEW EQUIPMENT
EXISTING
EXISTING RELOCATED
EXISTING THERMOSTAT
CONNECT TO EXISTING

GRAPHIC SCALE
Scale: 1/8"=1'-0"

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MYRTLE BEACH SOUTH CAROLINA

SHEET TITLE
SECTION 'A1' FLOOR PLAN

SHEET
ME-6
OF 18

MECHANICAL EQUIPMENT LEGEND

SYMBOL SINGLE LINE	SYMBOL DOUBLE LINE	DESCRIPTION
LOW PRESSURE DUCTWORK		
10 X 12	10 X 12	DUCT SECTION–1ST FIGURE WIDTH, 2ND DEPTH
		SQUARE TO ROUND TRANS.
		FLEX DUCTWORK
		ELBOW W/TURNING VANES
		LONG RADIUS ELBOW
EXH		EXHAUST DUCT SECTION
SA		SUPPLY DUCT SECTION
OA		OUTSIDE AIR DUCT SECTION
RA		RETURN/RELIEF AIR DUCT SECTION
TA		TRANSFER AIR DUCT SECTION
N/A		EXPOSED DUCT
		SHORT RADIUS VANED ELBOW
		CONICAL DUCT TAKE–OFF
		RECTANGULAR–TO–ROUND TAKE–OFF WITH DAMPER
		RECTANGULAR–TO–ROUND TAKE–OFF WITHOUT DAMPER
		RECTANGULAR TAKE–OFF
		LONG RADIUS TEE
		TEE W/TURNING VANES
		"Y" TAKE–OFF WITH SPLITTER DAMPER
		FIRE DAMPER "A" OR "B"
		COMBINATION FIRE/ SMOKE DAMPER
		VOLUME EXTRACTOR
MISCELLANEOUS		
T	T	THERMOSTAT
T APC	T APC	THERMOSTAT W/ABUSE PROOF COVER, CAST ALUMIMUM
H	H	HUMIDISTAT
CO_2	CO_2	CARBON DIOXIDE SENSOR
S	S	SMOKE DAMPER
		FIRE DAMPER
		COMBINATION FIRE/SMOKE DAMPER
S	S	SMOKE DETECTOR
— CD —	— CD —	CONDENSATE DRAIN
B.D.	B.D.	BACKDRAFT DAMPER
M	M	MOTOR OPERATED DAMPER
– – –	– – –	DAMPER
$	$	MANUAL SWITCH
$ S/W	$ S/W	SUMMER/WINTER SWITCH
A.F.F.	A.F.F.	ABOVE FINISHED FLOOR
		TIE INTO EXISTING AT THIS POINT
C.I.	C.I.	CAST IRON
U.N.O.	U.N.O.	UNLESS NOTED OTHERWISE

ROOF TOP UNIT SCHEDULE

Unit Tag	Area Served	CFM SA	CFM OA	ESP	Supply Fan Motor HP	Supply Fan Motor Volts	Supply Fan Motor Phase	Exhaust Fan Motor HP	Exhaust Fan Motor Volts	Exhaust Fan Motor Phase	DX Coil EAT db/wb	DX Coil LAT db/wb	Net MBH Total	Net MBH Sens.	Propane Heating EAT	Input (MBH)	Output (MBH)	Fan No.	Fan FLA	Compressor No.	Compressor RLA	Compressor LRA	MCA	MOCP	Volts	Phase	EER	HORIZONTAL/ DOWNFLOW	Trane Model	Approx. Weight (Lbs.)	Remarks
MAU-1	SECTION A	2,120	2,120	1.0	1	460	3	1	460	3	95/78	50.0/49.5	202.6	104.8	22	200	160	2	2.1	2	12.8	100	37.2	50	460	3	13.6	H	OADG017F3-DAB10DF00-A1AEA1AE3-01D00002C-AE0C00A00-AA0B00000-00AE00000	3525	1-17
MAU-2	SECTION A	2,120	2,120	1.0	1	460	3	1	460	3	95/78	50.0/49.5	202.6	104.8	22	200	160	2	2.1	2	12.8	100	37.2	50	460	3	13.6	H	OADG017F3-DAB10DF00-A1AEA1AE3-01D00002C-AE0C00A00-AA0B00000-00AE00000	3525	1-17
MAU-3	SECTION B	2,120	2,120	1.0	1	460	3	1	460	3	95/78	50.0/49.5	202.6	104.8	22	200	160	2	2.1	2	12.8	100	37.2	50	460	3	13.6	H	OADG017F3-DAB10DF00-A1AEA1AE3-01D00002C-AE0C00A00-AA0B00000-00AE00000	3525	1-17
MAU-4	SECTION B	2,120	2,120	1.0	1	460	3	1	460	3	95/78	50.0/49.5	202.6	104.8	22	200	160	2	2.1	2	12.8	100	37.2	50	460	3	13.6	H	OADG017F3-DAB10DF00-A1AEA1AE3-01D00002C-AE0C00A00-AA0B00000-00AE00000	3525	1-17
MAU-5	SECTION E	2,120	2,120	1.0	1	460	3	1	460	3	95/78	50.0/49.5	202.6	104.8	22	200	160	2	2.1	2	12.8	100	37.2	50	460	3	13.6	H	OADG017F3-DAB10DF00-A1AEA1AE3-01D00002C-AE0C00A00-AA0B00000-00AE00000	3525	1-17
MAU-6	SECTION E	2,120	2,120	1.0	1	460	3	1	460	3	95/78	50.0/49.5	202.6	104.8	22	200	160	2	2.1	2	12.8	100	37.2	50	460	3	13.6	H	OADG017F3-DAB10DF00-A1AEA1AE3-01D00002C-AE0C00A00-AA0B00000-00AE00000	3525	1-17
MAU-7	SECTION G J K	2,650	2,650	1.0	1.5	460	3	1	460	3	95/78	52.0/51.3	240.6	124.8	22	200	160	2	2.1	2	14.7	130	42.3	50	460	3	13.4	H	OADG020F3-DAB10DF00-C1AEA1AE3-01D00002C-AE0C00A00-AA0B00000-00AE00000	3600	1-17
MAU-8	SECTION G J K	2,120	2,120	1.0	1	460	3	1	460	3	95/78	50.0/49.5	202.6	104.8	22	200	160	2	2.1	2	12.8	100	37.2	50	460	3	13.6	H	OADG017F3-DAB10DF00-A1AEA1AE3-01D00002C-AE0C00A00-AA0B00000-00AE00000	3525	1-17
MAU-9	SECTION G J K	2,120	2,120	1.0	1	460	3	1	460	3	95/78	50.0/49.5	202.6	104.8	22	200	160	2	2.1	2	12.8	100	37.2	50	460	3	13.6	H	OADG017F3-DAB10DF00-A1AEA1AE3-01D00002C-AE0C00A00-AA0B00000-00AE00000	3525	1-17, 20
MAU-10	SECTION A1	4,000	4,000	1.0	6	460	3	6	460	3	95/78	52.6/52.1	352.2	183.2	22	350	280	3	2.1	2	26.9	173	81.8	100	460	3	10.8	D	OAGD360A4-D1B400BD-A2J02008BD2002E0A4A0	4530	1-19

1. MODEL NUMBERS BASED ON TRANE. SEE APPROVED MANUFACTURERS LIST FOR APPROVED EQUALS.
2. SEA COAST PROTECTIVE COATING WITH STAINLESS STEEL INTERIOR.
3. PROPANE GAS WITH CONVERTIBILITY FOR FUTURE NATURAL GAS SERVICE.
4. PROPANE REGULATOR.
5. DISCONNECT BY E.C.
6. SINGLE POINT ELECTRICAL CONNECTION.
7. WEIGHT IS APPROXIMATE AND DOES NOT INCLUDE SAFETY FACTOR.
8. BUILDING AUTOMATION SYTEM REQUIRED.
9. HOT GAS REHEAT.
10. 439 STAINLESS STEEL FURNACE.
11. POWER EXHAUST.
12. AIF FLOW MONITORING: IFM PIEZO RING AND PE PIEZO RING/TAP.
13. MERV 8 & MERV 13 FILTERS.
14. CONDENSER HAIL GUARD.
15. SUPPLY DISCHARGE AIR SENSOR.
16. 2 INCH DOUBLE WALL CONSTRUCTION.
17. STAINLESS STEEL DRIP PAN.
18. ROOF CURB.
19. PROVIDE AND INSTALL MAU-10 UNDER ALTERNATE BID.
20. PROVIDE & INSTALL PHENOMENAL AIRE MODEL C-6 BIPOLAR IONIZATION MODULE, COORDINATE VOLTAGE TO RECEIVE POWER FROM MAU-9 CONTROL TRANSFORMER.

GRILLE & DIFFUSER SCHEDULE

SYM	TYPE	USE	CFM RANGE	NECK SIZE	OVER-ALL SIZE	FINISH	FRAME	PRICE MODEL NO	REMARKS
A--	LOUVER FACE	SUPPLY 4-WAY	SEE PLANS & RMK 5	RMK 5	RMK 4	OFF WHITE	RMK 3	SMDA	1-6
B--	PERF.	RETURN/ EXHAUST	SEE PLANS & RMK 7	RMK 7	RMK 4	OFF WHITE	RMK 3	PDDR	1-4, 7-10
ES	HEAVY SIDEWALL	SUPPLY	SEE PLANS	SEE PLANS	RMK 4	OFF WHITE	S	91	1-4, 11-13
FS	HEAVY SIDEWALL	RETURN	SEE PLANS	SEE PLANS	RMK 4	OFF WHITE	S	91	1-4, 11-13

REMARKS

1. MODEL NUMBERS BASED ON PRICE. SEE APPROVED MFG LIST FOR ACCEPTABLE MFG'S. SCHEDULE IS GENERAL, SOME MAY NOT BE USED. PAINT ALL INSIDE VISIBLE SURFACES FLAT BLACK.
2. SYMBOL EXPLANATION:
   XXX/CFM = SYMBOL, FRAME (RMK 3), NECK (RMK 5,7)/CFM
3. FRAME TYPES:
   S = FLUSH SURF. MTD.. PLASTER FRAME FOR CEILING MOUNTING.
   T = T-BAR
   E = DUCT MOUNTED: V-BEVELED DROP SURF. (TYPE "A" DIFFUSER)
   D = DROPPED FRAME
   NOTE: VERIFY FRAME/CEILING COMPATIBILITY.
4. OVERALL SIZE: LAY-IN = 2'x2', OTHER GRILLES = NECK + 2"+/-.
5. LOUVER FACE SUPPLY NECK SIZES

NO.	ROUND NK SIZE	CFM	NO.	SQUARE NK SIZE	CFM
A	6"	100	H	6x6	125
B	8"	175	I	9x9	280
C	10"	275	J	12x12	500
D	12"	400	K	15x15	780
E	14"	535	L	18x18	1125
F	16"	700	M	21x21	1530
G	18"	885	N	24x24	2000

NOTE: VERIFY CFM / NECK SIZE.

6. ADJUSTABLE: HORIZONTAL/VERTICAL - "PIANO HINGE" DEVICE.
7. "B" & "E" EXH/RETURN NECK SIZES ("E" = SQ. NK. ONLY)

NO.	ROUND NK SIZE	CFM	NO.	SQUARE NK SIZE	CFM
A	6"	100	G	8x8	220
B	8"	175	H	10x10	345
C	10"	275	I	12x12	500
D	12"	400	J	14x14	680
E	14"	535	K	16x16	885
F	16"	700	L	18x18	1125
NOTE: VERIFY			M	22x22	1680
CFM / NECK SIZE.			N	22x46	2600

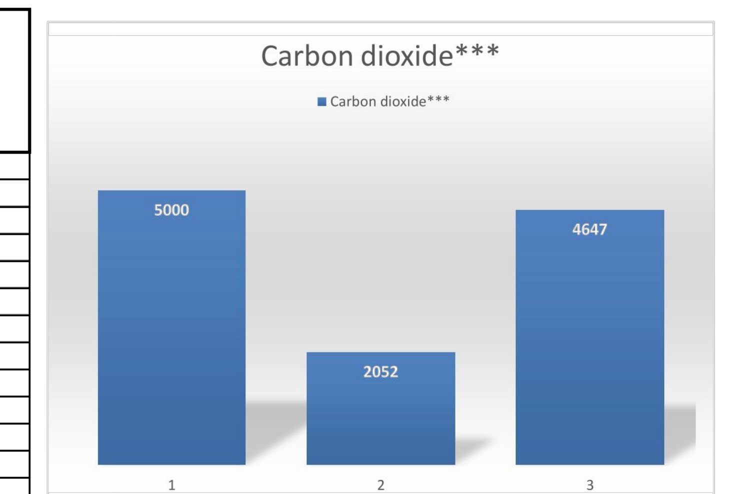
8. NO NECK SIZE INDICATES NON-DUCTED, LAY-IN PANEL.
9. OBD IF USED AS SUPPLY OR EXHAUST.
10. ALL ALUM. CONSTRUCTION (INCLUDING BACKPAN) IF SHOWN ON PLANS.
11. PAINT TO MATCH SURROUNDING SURFACE.
12. HORIZONTAL FRONT BLADES.
13. 16 GAGE FRAME, 14 GAGE BLADES, 38 DEGREE HORIZ. BLADE ANGLE. SUPPORT BARS 6" O.C. (MAX).

Zone Tag	Facility Type	Zone Use	Zone Floor Area (square ft) Az	Zone Max Occupancy Pz	Table 6.1 OA per Occupant Rp	Table 6.1 cfm/ft2 Ra	Pz * Rp	Az * Ra	Table 6.2 Ventilation Effectiveness Ez	Outdoor Air to Zone (CFM) with Ez correction (Vbz/Ez)
Gym	Educational Facilities	Multi-purpose Assembly	10,144.0	750.0	5.0	0.06	3750	459	0.8	5448 OA required per VRP

Zone Height (feet)	Desired Outside Air (Vo) IAQP	Supply Air Full Flow (Vs)	Supply Air Minimum Flow (Vs)	Return Air (Vr)	Recirc. Flow Factor (R)	Design Flow Reduction Factor (Fr)	Ventilation Effectiveness (Ez)	Level of Physical Activity	Filter Location	HVAC Flow Type	Outdoor Air Flow Type
27	2120	16000	16000	13880	0.87	1.000	0.8	Standing (desk work)	B	Constant	Constant

All yellow shaded boxes require user input or review

Indoor Contaminants Generated By People & Introduced in the Outside Air	Maximum Threshold Value (PPM)	Steady State Using the VRP* (Prescribed OA) Plasma Off	Steady State Using the IAQ Method (Reduced OA) Plasma On	Is Steady State Level Acceptable at Reduced OA Levels?	Contaminant Generation Rate (PPM)	Cognizant Authority**
Acetaldehyde	100.0	0.01117	0.00135	Yes	0.00048	OSHA
Acetone	250.0	0.00239	0.00082	Yes	0.00654	NIOSH
Ammonia	25.00	0.03865	0.02241	Yes	0.21460	NIOSH
Benzene	1.0000	0.00254	0.00032	Yes	0.00022	OSHA
2- Butanone (MEK)	200.0	0.00033	0.00015	Yes	0.00133	NIOSH
Carbon dioxide***	5000	2052	4647	Yes	441	NIOSH
Chloroform	2.0000	0.00011	0.00002	Yes	0.00004	NIOSH
Dioxane	100.0	0.00000	0.00000	Yes	0.00000	OSHA
Hydrogen Sulfide	10.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methane	NA	1.68094	1.68094	Yes	0.00000	NA
Methanol	200.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methylene Chloride	25.0	0.00090	0.00021	Yes	0.00121	OSHA
Propane	1000.0	0.00998	0.00998	Yes	0.00000	NIOSH
Tetrachloroethane	5.0000	0.00000	0.00000	Yes	0.00000	OSHA
Tetrachloroethylene	100.0000	0.00037	0.00004	Yes	0.00001	OSHA
Toluene	100.0000	0.00536	0.00065	Yes	0.00032	NIOSH
1,1,1 - Trichloroethane	350.0000	0.00083	0.00015	Yes	0.00058	NIOSH
Xylene	100.0000	0.00230	0.00027	Yes	0.00000	OSHA



1 = ASHRAE & NIOSH C02 Limit
2 = C02 Level at Ventilation Rate OA Flow Rate
3 = C02 Level at IAQ Procedure OA Flow Rate
*VRP = Ventilation Rate Procedure, OA = Outside Air
**OSHA, NIOSH & WHO most conservative values used
***Carbon dioxide has been provided for reference only for gathering demand control ventilation (DCV) setpoints. The National Research Council was commissioned by the US Navy to prove C02 is not a contaminant of concern when using air purification to control the other contaminants of concern, as found on submarines.

Building materials and furnishings assumed to have no VOCs and off-gassing is complete

Is IAQ acceptable at reduced outside air levels?	Yes

VERSION 1.5 running ASHRAE 62.1-2016
Exhaust flow rates may differ from Table 6.5 based on ASHRAE 62 IAQP via Section 6.5.2
IMC 2006, 2009, 2012, 2015, 2018 allows for ASHRAE 62 IAQP through the engineered exception found in Section 403.2

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Cleaning Air Naturally

Top Product Innovations
P.O. Box 3118
Indian Trail, NC 28079
Phone: (888) 505-2988 Fax: (704) 821-3413
Web: www.topproductinnovations.com

Date	-
Job Name	-
Representative	-
Engineer	-
Contractor	-

EQUIPMENT CONNECTION SCHEDULE

SYM.	EQUIPMENT	LOAD	VOLT/ PHASE	DISCONNECT TYPE	DISCONNECT RATING	DISCONNECT POLES	DISCONNECT TRIP/FUSE	DISCONNECT ENCLO.	CONDUCTORS	RACEWAY TYPE	RACEWAY SIZE	NOTES
1	MAU–1,–2,–3,–4,–5,–6,–7,–8,–9	2@12.8RLA+2@2.1FLA	480/3	NFDS	60	3	––	3R	3#8,1#10G	LFMC	3/4"	

LEGEND

DISCONNECT TYPES
ETCB = ELECTRONIC–TRIP CIRCUIT BREAKER
FDS = FUSIBLE DISCONNECT SWITCH
MCP = MOTOR CIRCUIT PROTECTOR
NFDS = NON–FUSIBLE DISCONNECT SWITCH
ST/DS = COMBINATION STARTER/DISCONNECT SWITCH
TMCB = THERMAL–MAGNETIC CIRCUIT BREAKER
TOG = HP RATED TOGGLE SWITCH

DISCONNECT ENCLOSURE TYPES
1 = NEMA 1 ENCLOSURE
3R = NEMA 3R ENCLOSURE
4 = NEMA 4 ENCLOSURE
4X = NEMA 4X ENCLOSURE

FPN = FUSE PER NAMEPLATE

RACEWAY TYPES
EMT = ELECTRIC METALLIC TUBING
FMC = FLEXIBLE METAL CONDUIT
IMC = INTERMEDIATE METAL CONDUIT
LFMC = LIQUID–TIGHT FLEXIBLE METAL CONDUIT
PVC = NON–METALLIC PVC CONDUIT
RMC = RIGID METAL CONDUIT

STARTER TYPES
CFVNR = COMBINATION FULL VOLTAGE, NONREVERSING

CONTROL DEVICES
HOA = HAND–OFF–AUTO
RPL = RED PILOT LIGHT
AUX = AUXILIARY CONTACTS (2 N.O., 1 N.C.)
CT50 = 50 VA CONTROL TRANSFORMER

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.

BIPOLAR IONIZATION MODULE SCHEDULE

Unit Tag	Equipment Served	CFM	Model	Remarks
BP-1	MAU-9	2120	C-6	1, 2

1. BASIS OF DESIGN IS PHENOMENAL AIRE. SEE APPROVED MFG LIST FOR ACCEPTABLE MFG'S
2. COORDINATE VOLTAGE, WIRE TO RECEIVE POWER FROM MAKEUP AIR UNIT CONTROL TRANSFORMER.

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 ENTIREY 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
AIR DISTRIBUTION	CARNES, METAL*AIRE, NAILOR, PRICE, TITUS, TUTTLE & BAILEY
BIPOLAR IONIZATION	PLASMA AIR, GLOBAL PLASMA SOLUTIONS
DDC CONTROLS	ALERTON, HONEYWELL, JCI, SEIMENS, TRANE
100% OUTSIDE AIR MAKE-UP UNITS	AAON, DAIKIN-MCQUAY, REZNOR, TRANE, VALENT

FOR THE MAKE-UP AIR UNITS, TRANE SHALL BE INCLUDED AS BASE BID. OTHER MANUFACTURES SHALL BE BID UNDER AN ALTERNATE. REFER TO SPECIFICATION SECTION 230007 FOR FURTHER CLARIFICATION.

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Charlotte, NC 28209
704/527-2112

02-11-21
02-22-2021

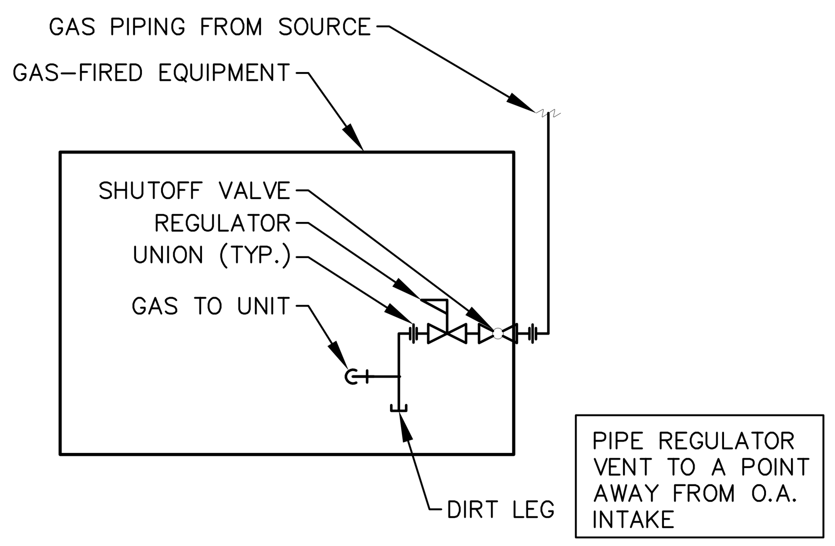
REVISION DATES

JOB NUMBER 20-147
DRAWN BY MSB/MDK
CHECKED BY JCC/MPA
DATE 02-22-2021

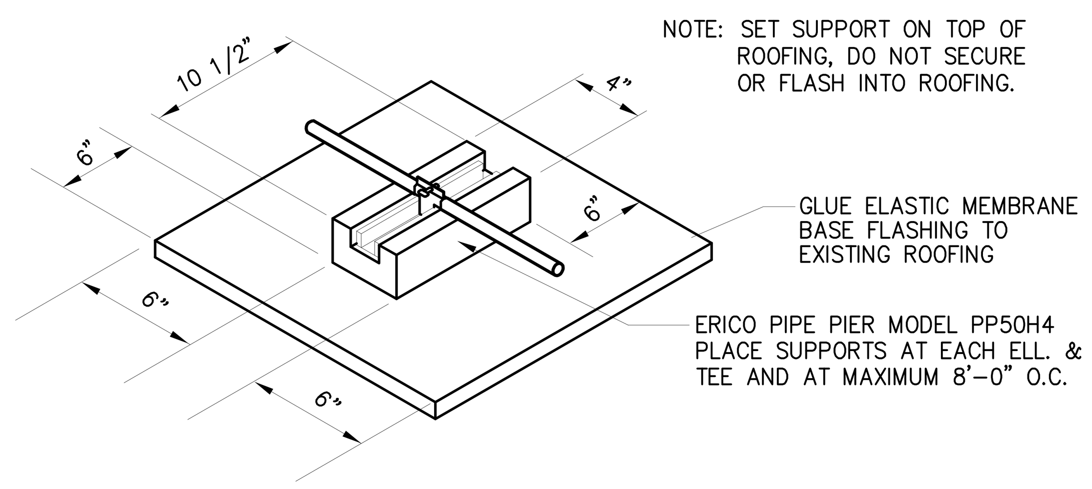
JOB TITLE
FORESTBROOK MIDDLE SCHOOL HVAC RENOVATIONS
MYRTLE BEACH SOUTH CAROLINA

SHEET TITLE
SCHEDULES

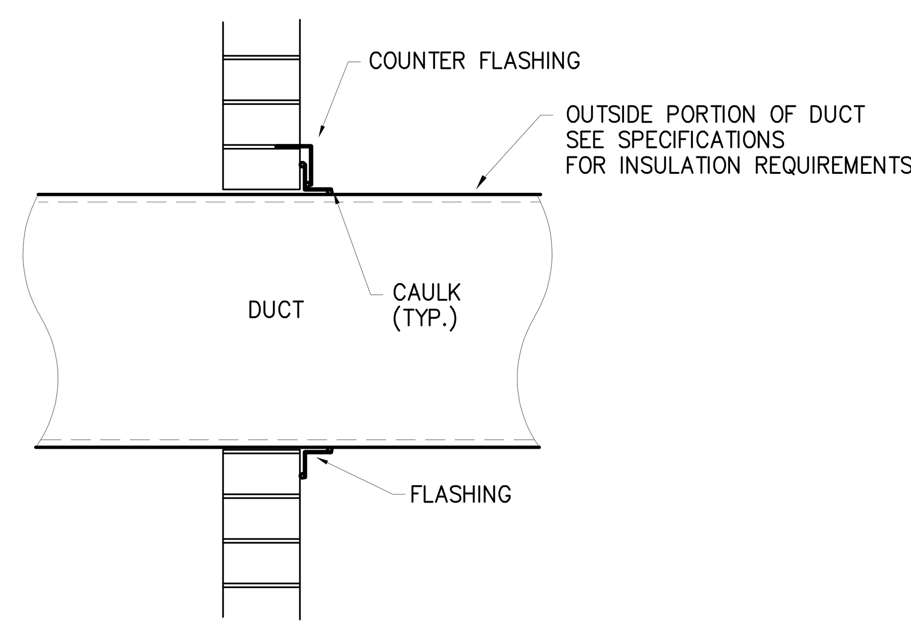
SHEET
ME–7
OF 18



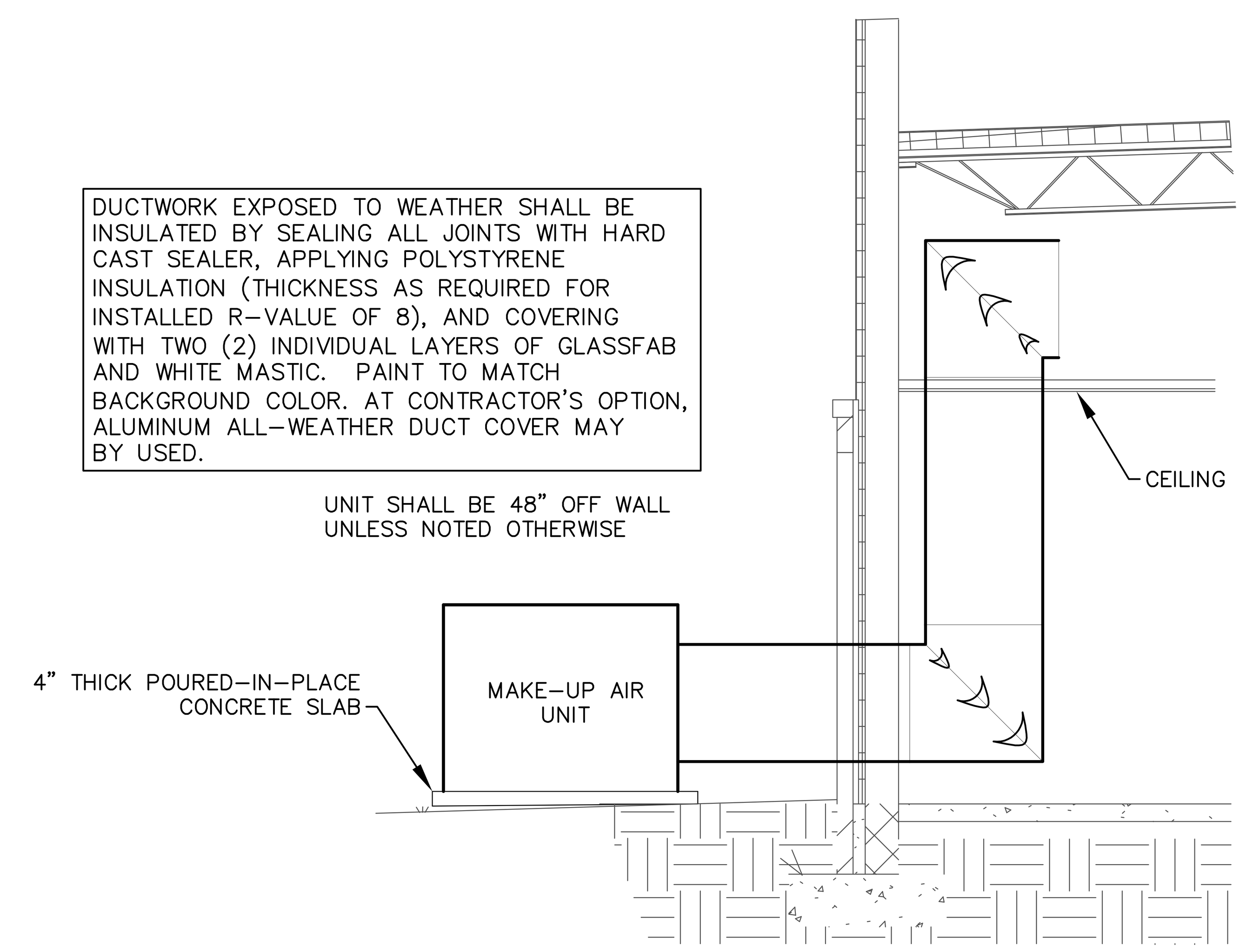
8 PROPANE PIPING DETAIL
SCALE: NTS



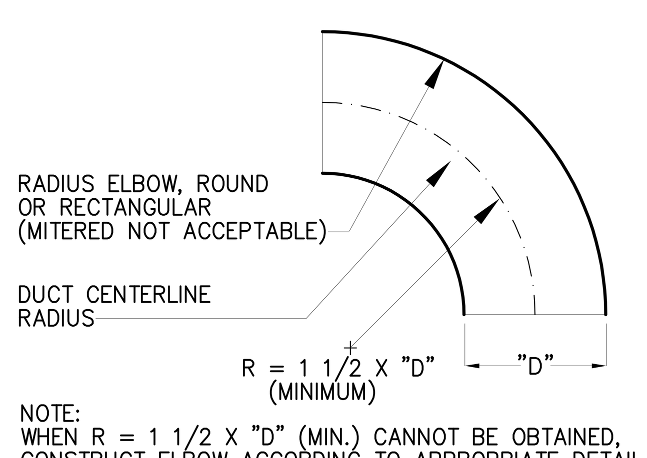
5 GAS PIPING ROOF SUPPORT DETAIL
SCALE: NTS



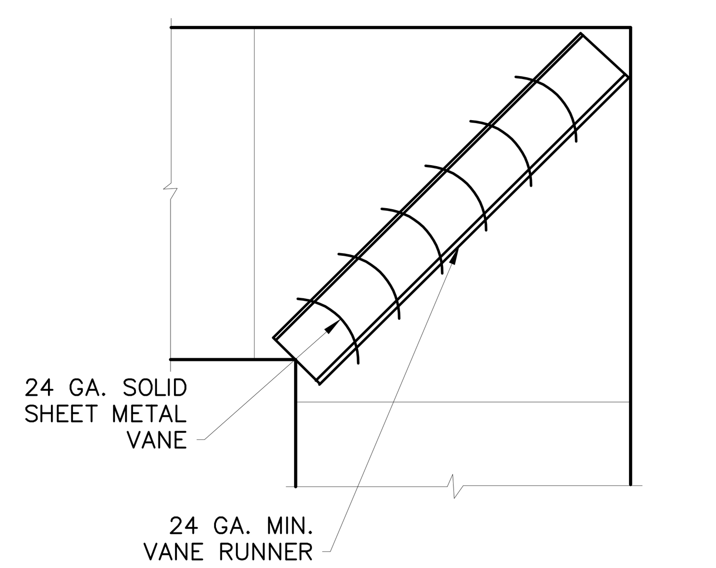
6 DUCT THROUGH OUTSIDE WALL
SCALE: NTS



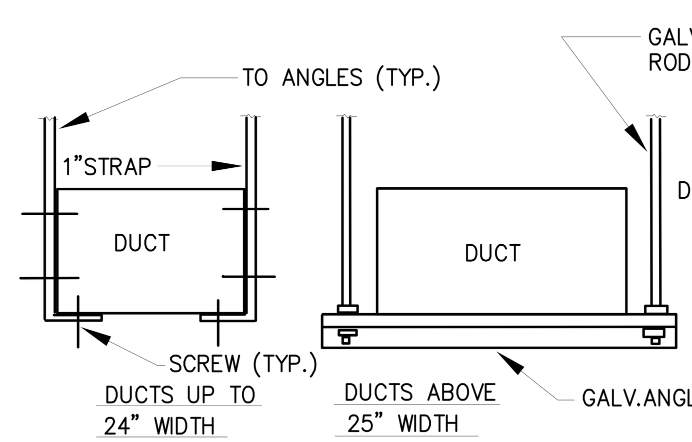
7 GRADE LEVEL MAKE-UP AIR UNIT DETAIL
SCALE: NTS



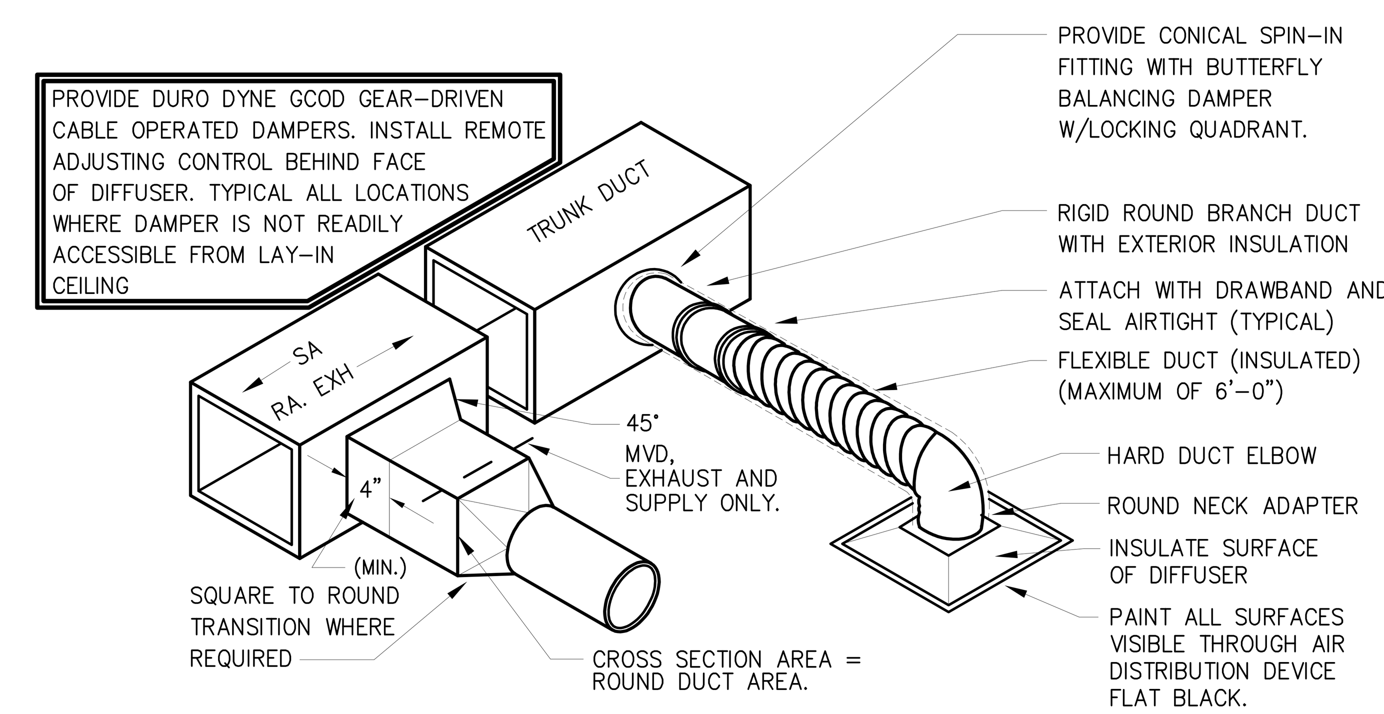
1 RADIUS ELBOW DETAIL
SCALE: NTS



2 TURNING VANE DETAIL
SCALE: NTS
PERMITTED ONLY WHERE RADIUS ELL WILL NOT FIT.



3 DUCTWORK HANGER DETAILS
SCALE: NTS



4 DUCT TAKE-OFF DETAIL
SCALE: NTS

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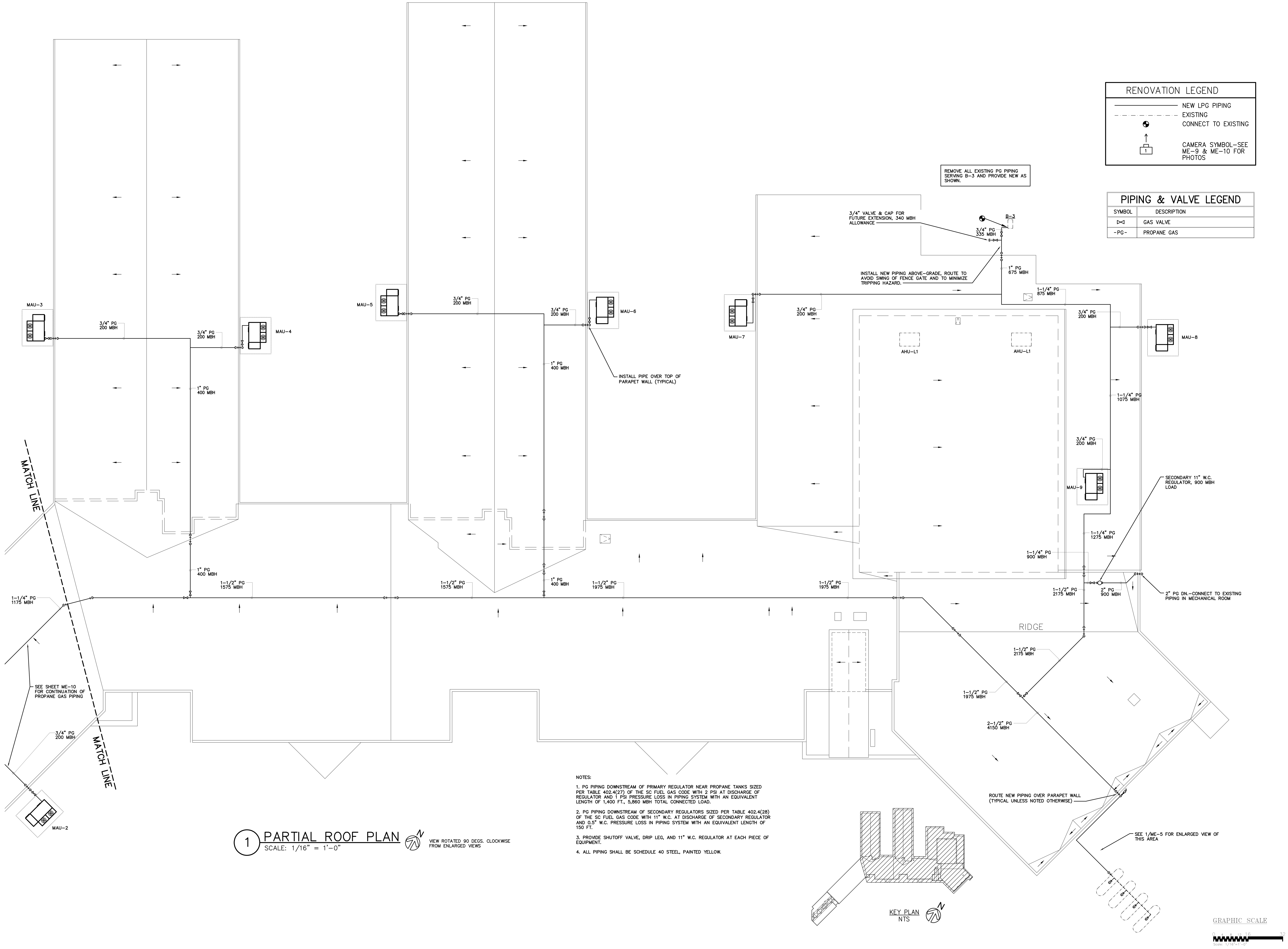
SHEET TITLE
DETAILS

SHEET
ME-8
OF 18



1 PARTIAL ROOF PLAN
SCALE: 1/16" = 1'-0"

VIEW ROTATED 90 DEGS. CLOCKWISE FROM ENLARGED VIEWS

RENOVATION LEGEND

- NEW LPG PIPING
- EXISTING
- CONNECT TO EXISTING
- CAMERA SYMBOL-SEE ME-9 & ME-10 FOR PHOTOS

PIPING & VALVE LEGEND

SYMBOL	DESCRIPTION
▷◁	GAS VALVE
-PG-	PROPANE GAS

NOTES:

1. PG PIPING DOWNSTREAM OF PRIMARY REGULATOR NEAR PROPANE TANKS SIZED PER TABLE 402.4(27) OF THE SC FUEL GAS CODE WITH 2 PSI AT DISCHARGE OF REGULATOR AND 1 PSI PRESSURE LOSS IN PIPING SYSTEM WITH AN EQUIVALENT LENGTH OF 1,400 FT., 5,860 MBH TOTAL CONNECTED LOAD.

2. PG PIPING DOWNSTREAM OF SECONDARY REGULATORS SIZED PER TABLE 402.4(28) OF THE SC FUEL GAS CODE WITH 11" W.C. AT DISCHARGE OF SECONDARY REGULATOR AND 0.5" W.C. PRESSURE LOSS IN PIPING SYSTEM WITH AN EQUIVALENT LENGTH OF 150 FT.

3. PROVIDE SHUTOFF VALVE, DRIP LEG, AND 11" W.C. REGULATOR AT EACH PIECE OF EQUIPMENT.

4. ALL PIPING SHALL BE SCHEDULE 40 STEEL, PAINTED YELLOW.

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SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 20133 J. CRAIG CHAMPION 02-22-2021

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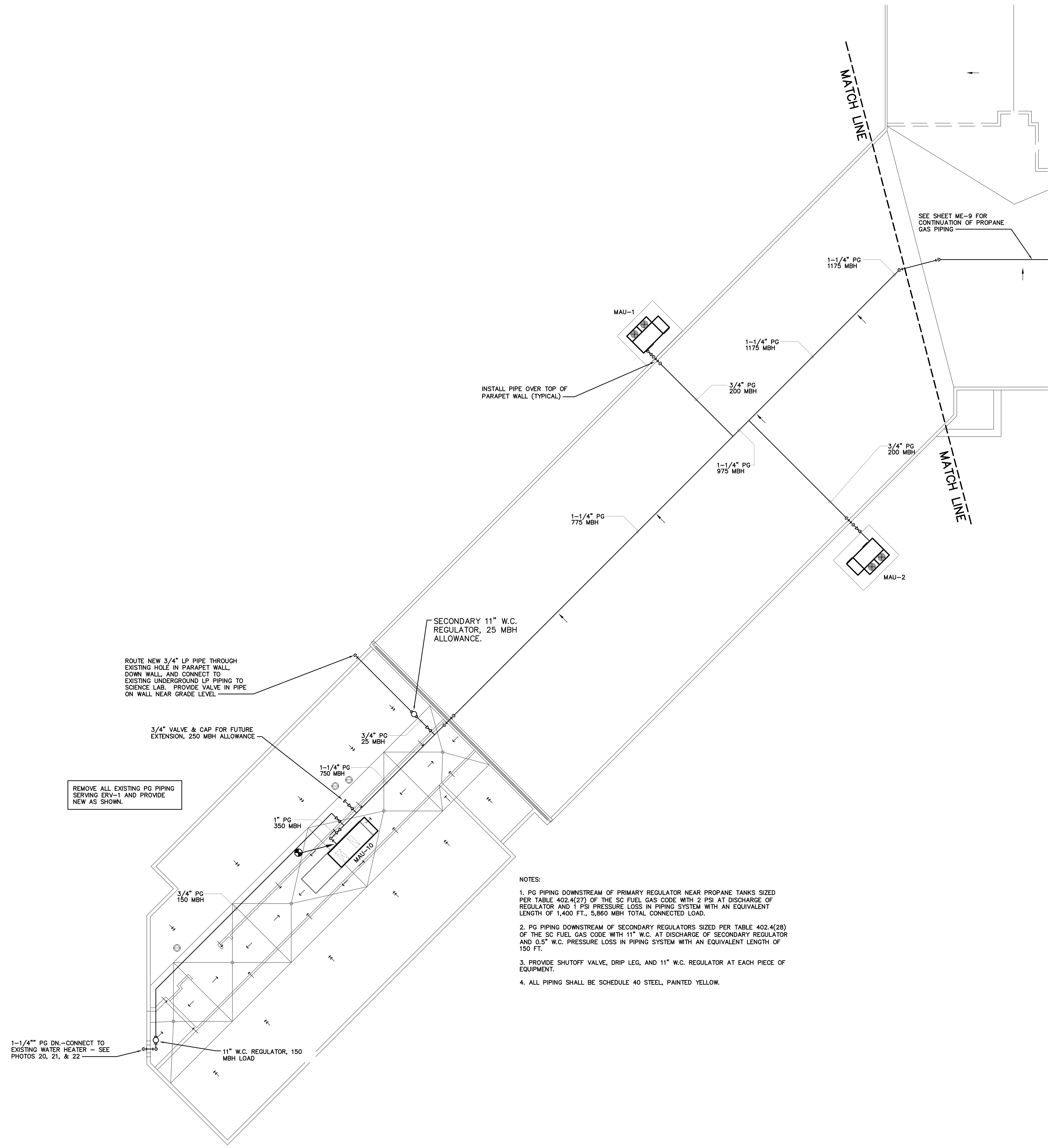
SHEET TITLE
PARTIAL ROOF PLAN GAS PIPING

SHEET
ME-9
OF 18



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1 PARTIAL ROOF PLAN
SCALE: 1/16" = 1'-0"

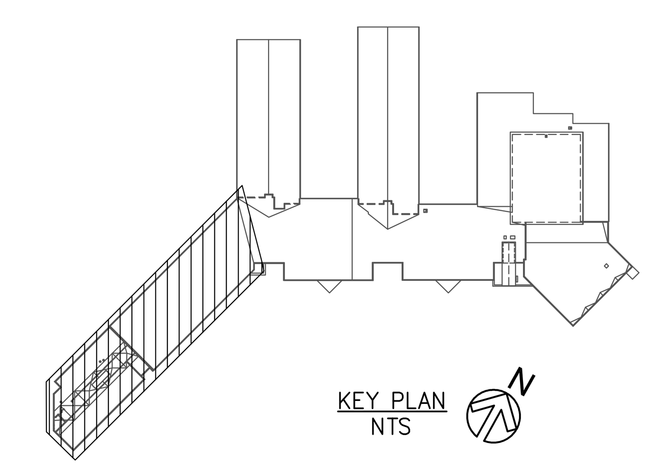
VIEW ROTATED 90 DEGS. CLOCKWISE FROM ENLARGED VIEWS

RENOVATION LEGEND

———	NEW LPG PIPING
- - -	EXISTING
●	CONNECT TO EXISTING
↑ 1	CAMERA SYMBOL-SEE ME-9 & ME-10 FOR PHOTOS

PIPING & VALVE LEGEND

SYMBOL	DESCRIPTION
⋈	GAS VALVE
-PG-	PROPANE GAS



KEY PLAN
NTS

GRAPHIC SCALE

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