

These drawings are property of Owens and Associates, Inc. Consulting Engineers and may not be used in whole or in part without written consent of the engineer and any infringement is subject to legal action

# MECHANICAL RENOVATIONS TO RIVERSIDE ELEMENTARY SCHOOL

## HORRY COUNTY SCHOOL DISTRICT

1283 State Hwy 57S  
LITTLE RIVER, SC 29566

Owens and Associates, Incorporated \* Consulting Engineers \* 1007 Lake Hunter Circle \* Mt. Pleasant, South Carolina 29464 \* Telephone: (843) 849 - 6457 \* Facsimile: (843) 849 - 6551.

COVER

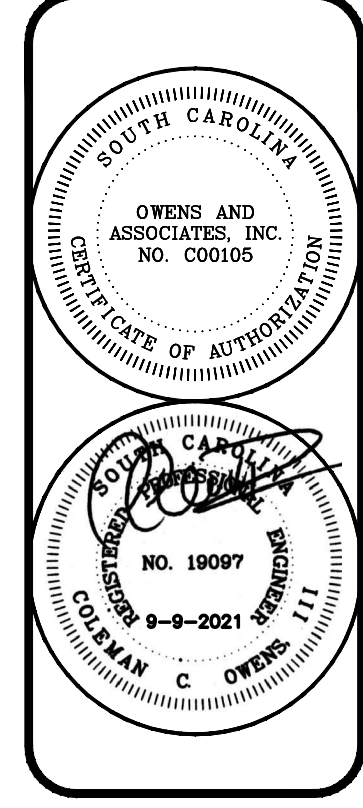
project: 2109  
date: 9-9-2021

REVISIONS

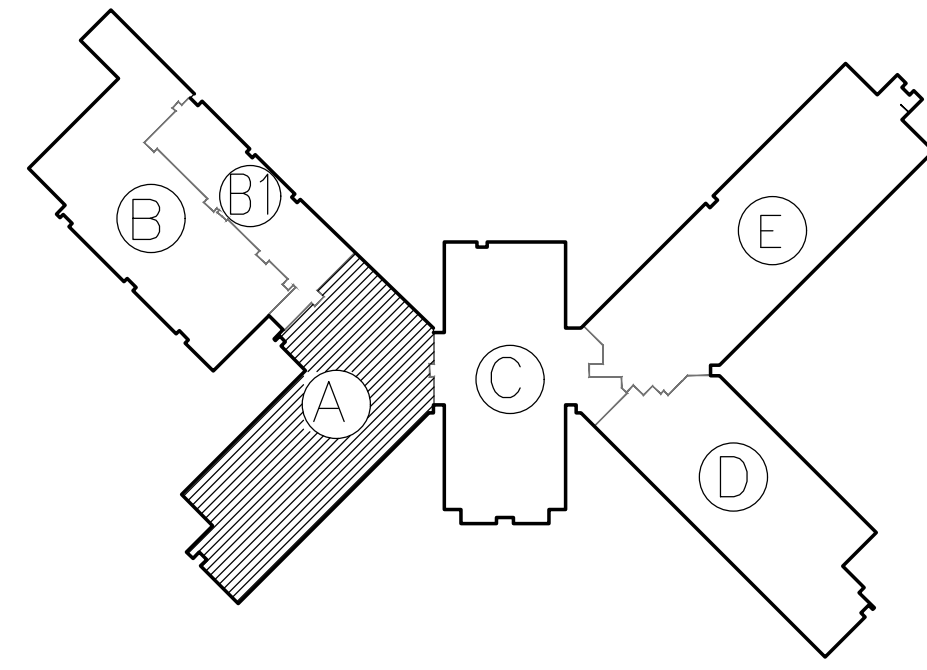
project:  
MECHANICAL  
RENOVATIONS TO  
RIVERSIDE  
ELEMENTARY SCHOOL

Owens and Associates Inc.,  
inc. consulting engineers  
Mt. Pleasant, South Carolina

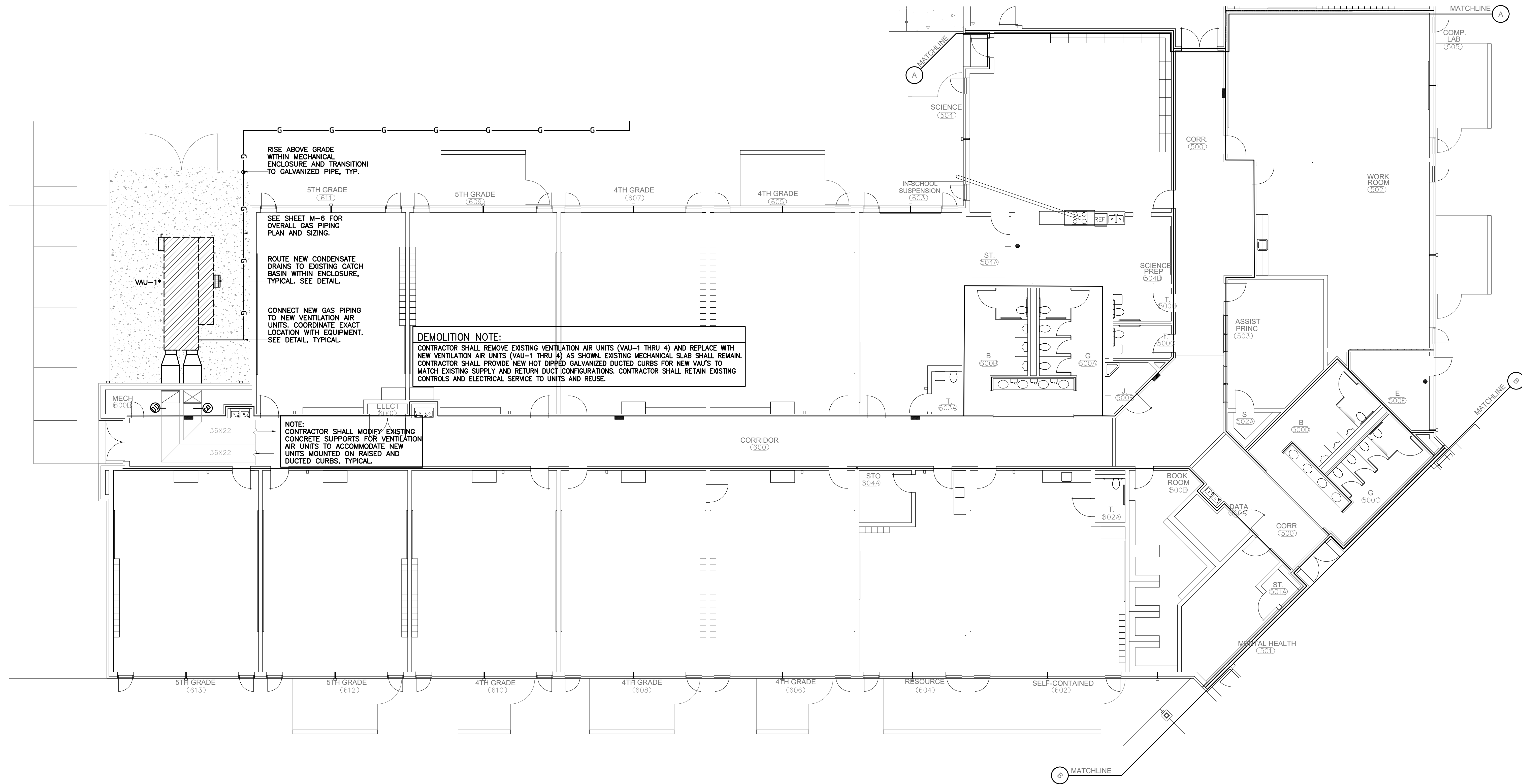
OWENS AND ASSOCIATES, INC.  
CONSULTING ENGINEERS



These drawings are property of Owens and Associates, Inc. Consulting Engineers and may not be used in whole or in part without written consent of the engineer and any infringement is subject to legal action



KEY PLAN



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

RISE ABOVE GRADE WITHIN MECHANICAL ENCLOSURE AND TRANSITION TO GALVANIZED PIPE, TYP.

SEE SHEET M-6 FOR OVERALL GAS PIPING PLAN AND SIZING.

ROUTE NEW CONDENSATE DRAINS TO EXISTING CATCH BASIN WITHIN ENCLOSURE, TYPICAL. SEE DETAIL.

CONNECT NEW GAS PIPING TO NEW VENTILATION AIR UNITS. COORDINATE EXACT LOCATION WITH EQUIPMENT. SEE DETAIL, TYPICAL.

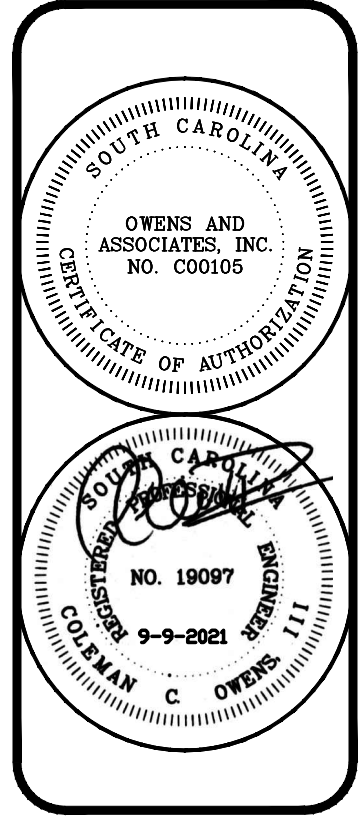
NOTE: CONTRACTOR SHALL MODIFY EXISTING CONCRETE SUPPORTS FOR VENTILATION AIR UNITS TO ACCOMMODATE NEW UNITS MOUNTED ON RAISED AND DUCTED CURBS, TYPICAL.

**DEMOLITION NOTE:**  
CONTRACTOR SHALL REMOVE EXISTING VENTILATION AIR UNITS (VAU-1 THRU 4) AND REPLACE WITH NEW VENTILATION AIR UNITS (VAU-1 THRU 4) AS SHOWN. EXISTING MECHANICAL SLAB SHALL REMAIN. CONTRACTOR SHALL PROVIDE NEW HOT DIPPED GALVANIZED DUCTED CURBS FOR NEW VAU'S TO MATCH EXISTING SUPPLY AND RETURN DUCT CONFIGURATIONS. CONTRACTOR SHALL RETAIN EXISTING CONTROLS AND ELECTRICAL SERVICE TO UNITS AND REUSE.

FIRE WALL LEGEND

4 HOUR TO ROOF	=====
2 HOUR	=====
1 HOUR TO ROOF	=====
1 HOUR TO CEILING	=====
SECURITY WALL	=====

Owens and Associates, Incorporated \* Consulting Engineers \* 1007 Lake Hunter Circle \* Mt. Pleasant, South Carolina 29464 \* Telephone: (843) 849 - 6457 \* Facsimile: (843) 849 - 6551.



**OWENS AND ASSOCIATES, INC.**  
CONSULTING ENGINEERS

Owens and Associates Inc., Inc., consulting engineers  
Mt. Pleasant, South Carolina

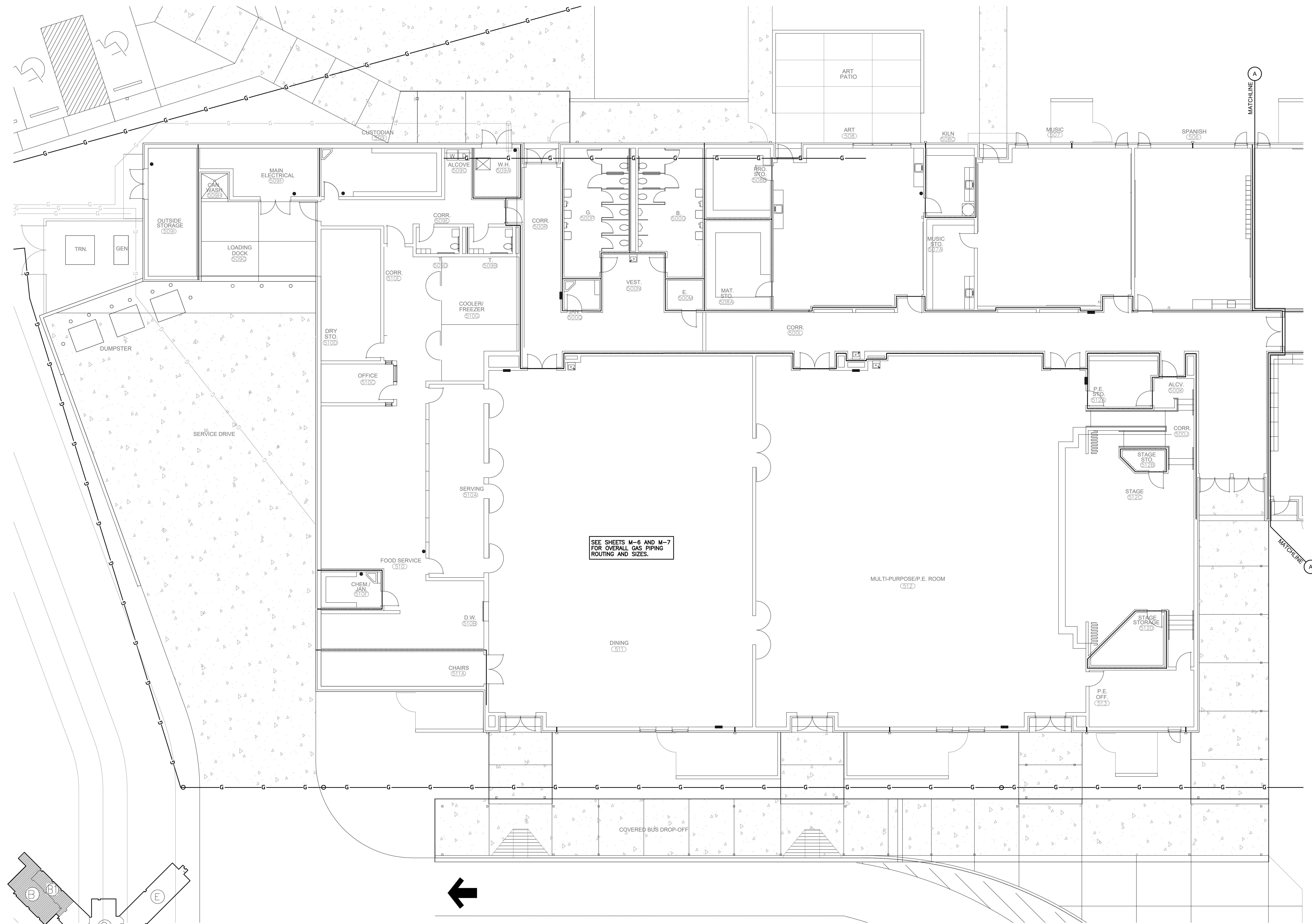
project:  
**MECHANICAL TO RENOVATIONS TO RIVERSIDE ELEMENTARY SCHOOL**

REVISIONS

project: 2109  
date: 9-9-2021

**M-1**

These drawings are property of Owens and Associates, Inc. Consulting Engineers and may not be used in whole or in part without written consent of the engineer and any infringement is subject to legal action

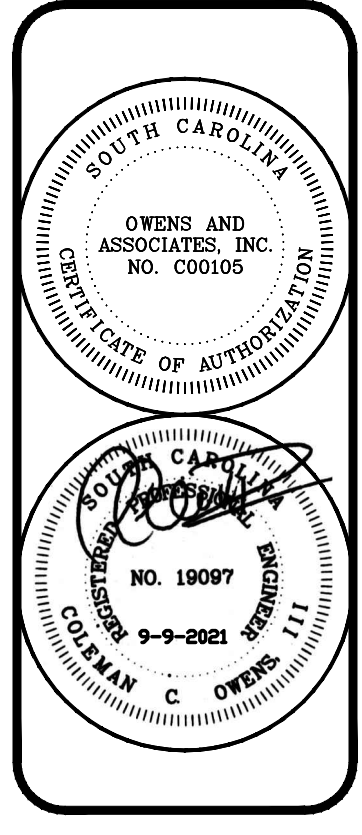


SEE SHEETS M-6 AND M-7 FOR OVERALL GAS PIPING ROUTING AND SIZES.

PARTIAL MECHANICAL FLOOR PLAN "B"  
SCALE: 1/8"=1'-0"

FIRE WALL LEGEND

4 HOUR TO ROOF	=====
2 HOUR	=====
1 HOUR TO ROOF	=====
1 HOUR TO CEILING	=====
SECURITY WALL	=====



**OWENS AND ASSOCIATES, INC.**  
CONSULTING ENGINEERS

Owens and Associates Inc., Inc., consulting engineers  
Mt. Pleasant, South Carolina

project:  
**MECHANICAL TO RENOVATIONS TO RIVERSIDE ELEMENTARY SCHOOL**

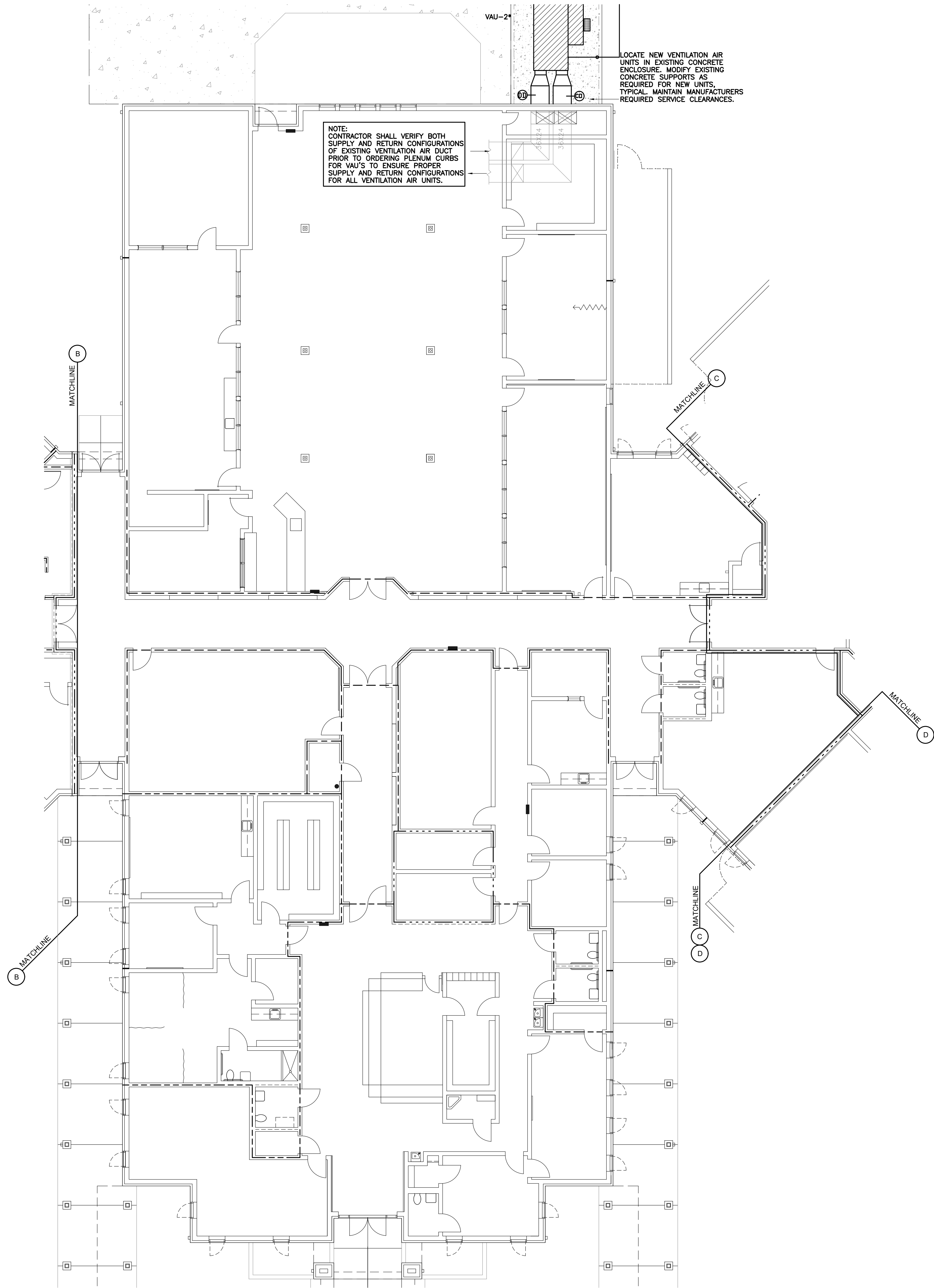
REVISIONS

project: 2109  
date: 9-9-2021

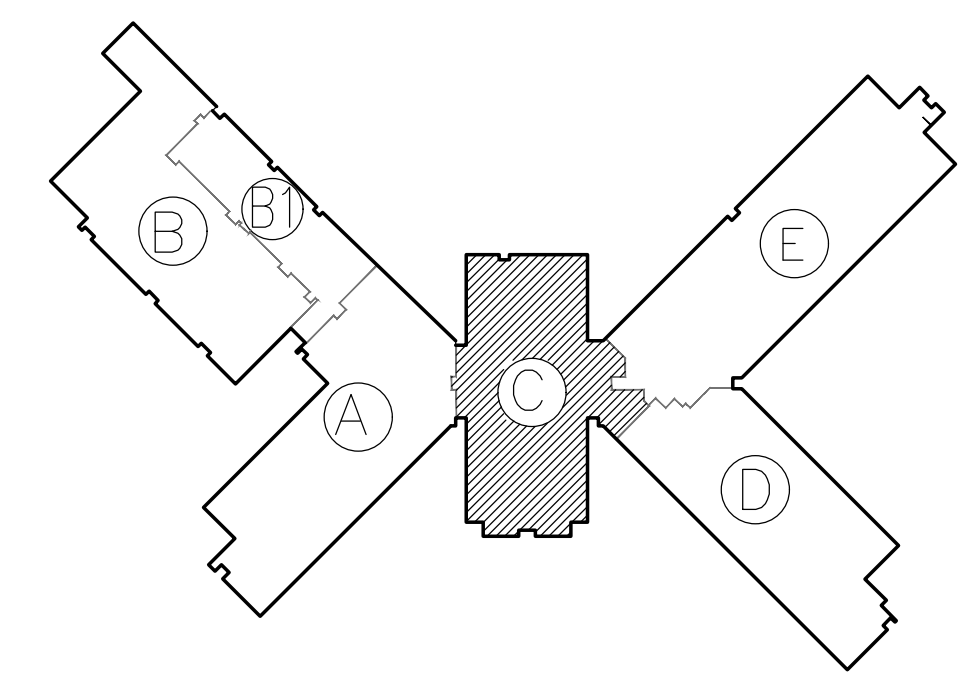
**M-2**

Owens and Associates, Incorporated \* Consulting Engineers \* 1007 Lake Hunter Circle \* Mt. Pleasant, South Carolina 29464 \* Telephone: (843) 849 - 6457 \* Facsimile: (843) 849 - 6551.

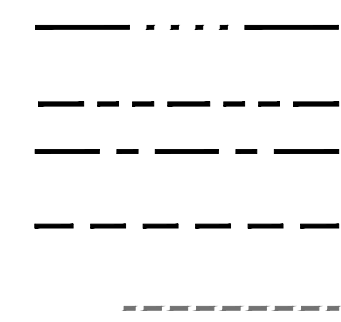
These drawings are property of Owens and Associates, Inc. Consulting Engineers and may not be used in whole or in part without written consent of the engineer and any infringement is subject to legal action



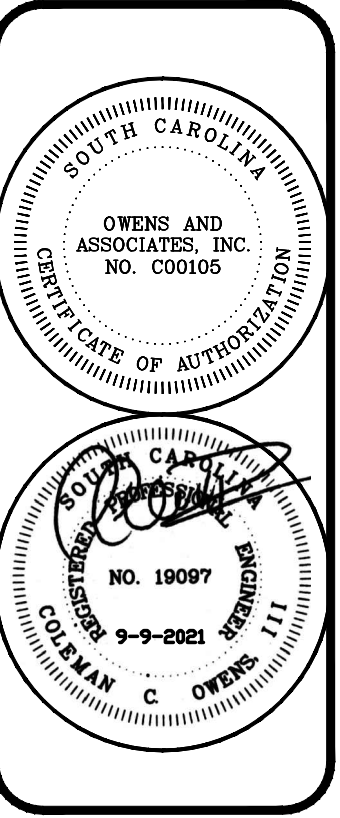
PARTIAL MECHANICAL FLOOR PLAN "C"



KEY PLAN



Owens and Associates, Incorporated \* Consulting Engineers \* 1007 Lake Hunter Circle \* Mt. Pleasant, South Carolina 29464 \* Telephone: (843) 849 - 6457 \* Facsimile: (843) 849 - 6551.

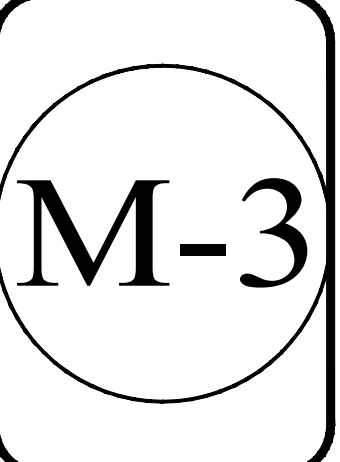


Owens and Associates Inc., Inc., consulting engineers Mt. Pleasant, South Carolina

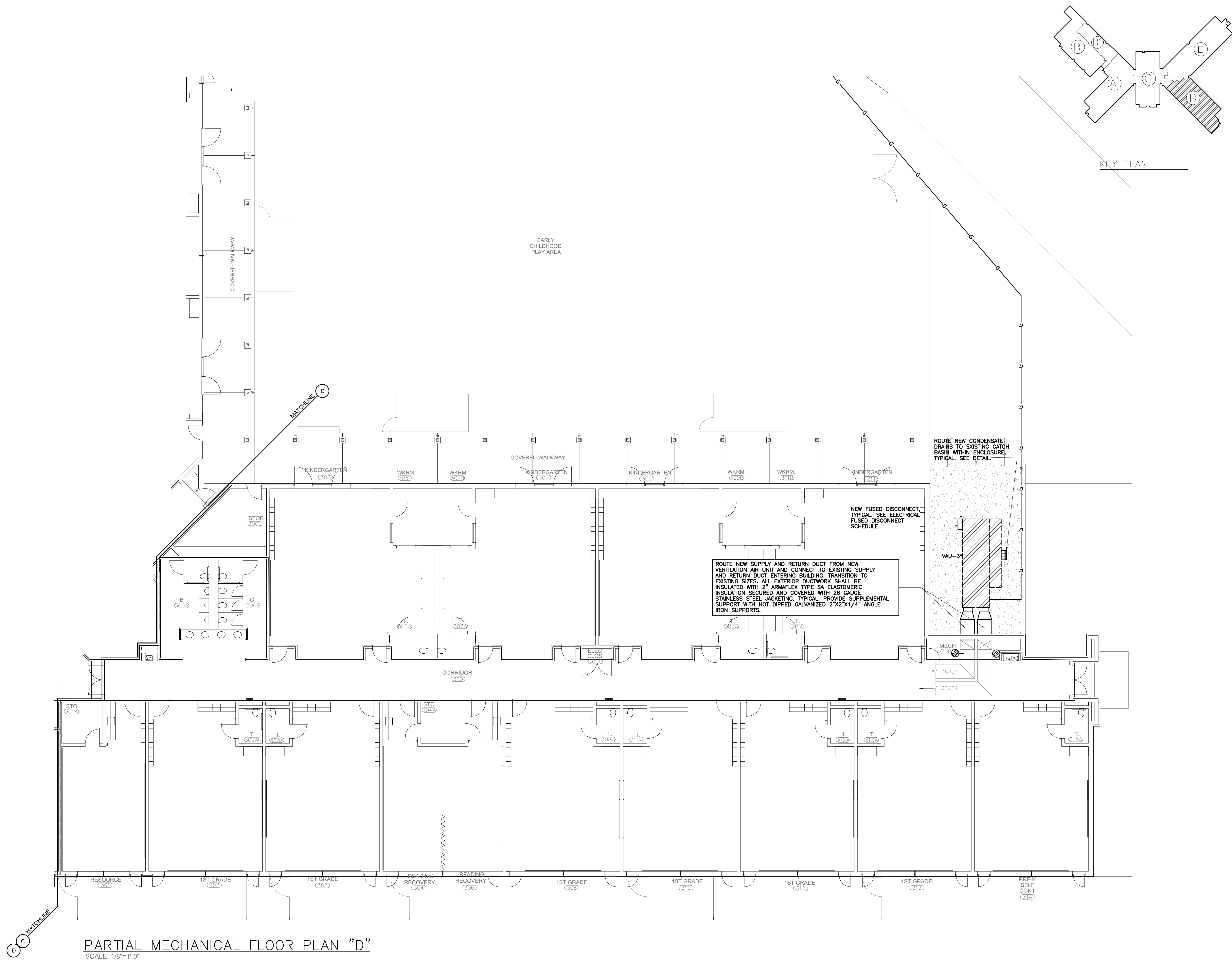
project: MECHANICAL TO RENOVATIONS TO RIVERSIDE ELEMENTARY SCHOOL

REVISIONS

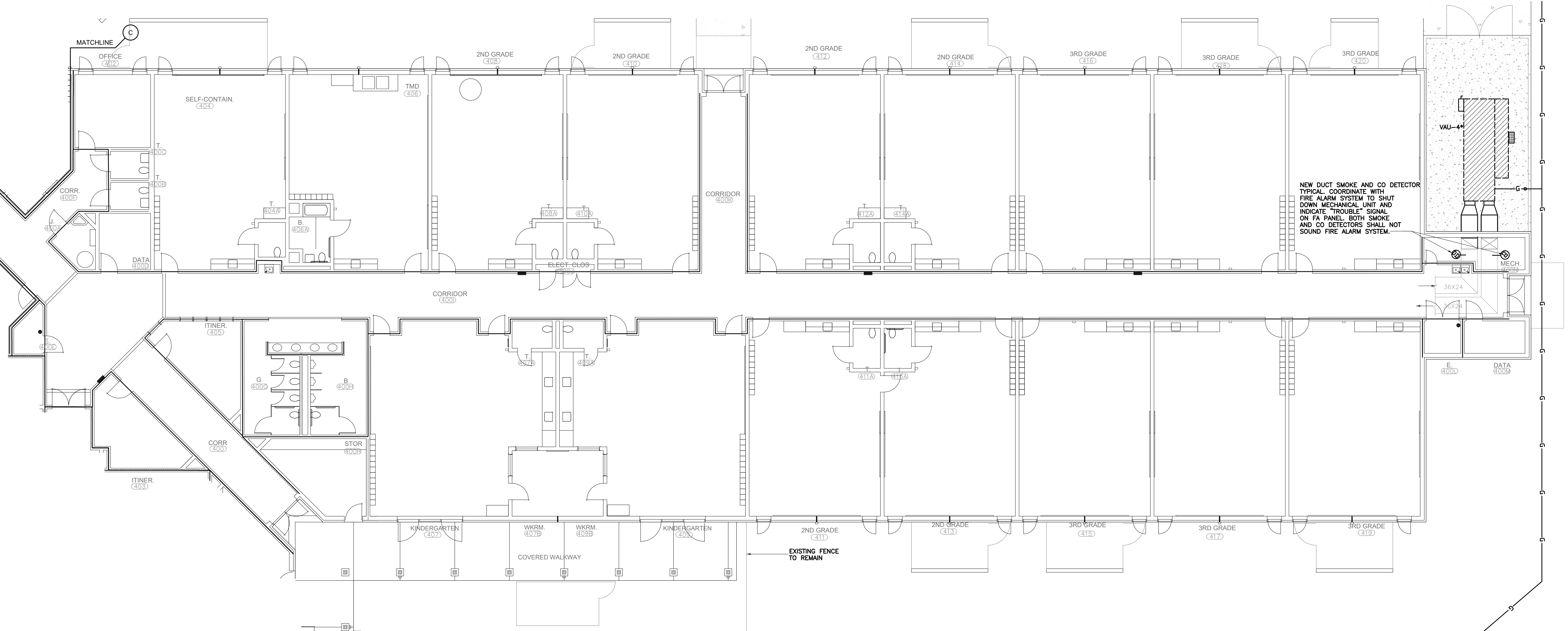
project: 2109 date: 9-9-2021



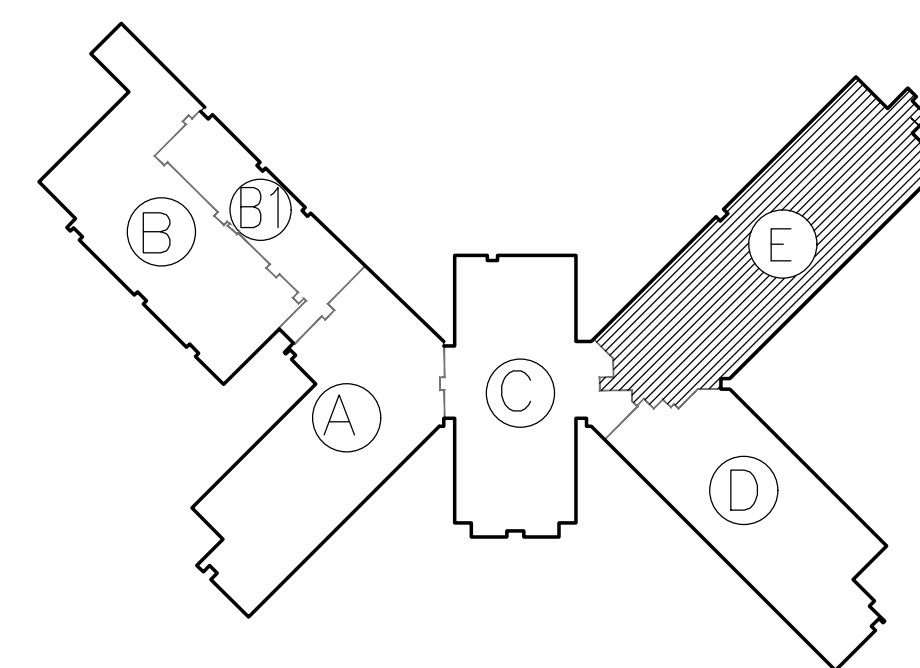
These drawings are property of Owens and Associates, Inc. Consulting Engineers and may not be used in whole or in part without written consent of the engineer and any infringement is subject to legal action



These drawings are property of Owens and Associates, Inc. Consulting Engineers and may not be used in whole or in part without written consent of the engineer and any infringement is subject to legal action

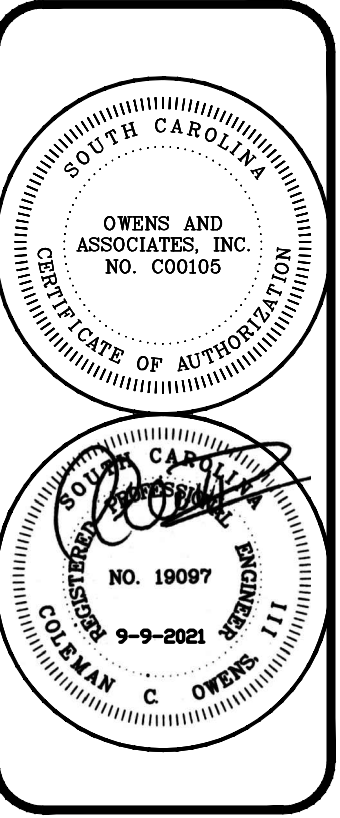


PARTIAL MECHANICAL FLOOR PLAN "E"  
SCALE: 1/8"=1'-0"



KEY PLAN

Owens and Associates, Incorporated \* Consulting Engineers \* 1007 Lake Hunter Circle \* Mt. Pleasant, South Carolina 29464 \* Telephone: (843) 849 - 6457 \* Facsimile: (843) 849 - 6551.



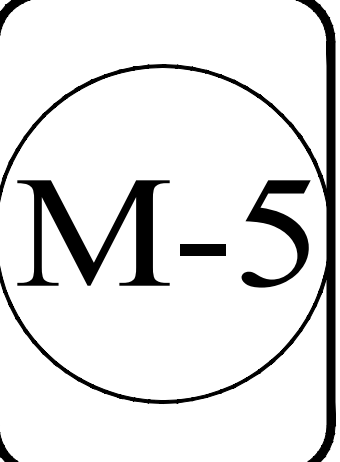
**OWENS AND ASSOCIATES, INC.**  
CONSULTING ENGINEERS

Owens and Associates Inc.,  
inc., consulting engineers  
Mt. Pleasant, South Carolina

project:  
**MECHANICAL TO  
RENOVATIONS TO  
RIVERSIDE  
ELEMENTARY SCHOOL**

REVISIONS

project: 2109  
date: 9-9-2021



These drawings are property of Owens and Associates, Inc. Consulting Engineers and may not be used in whole or in part without written consent of the engineer and any infringement is subject to legal action

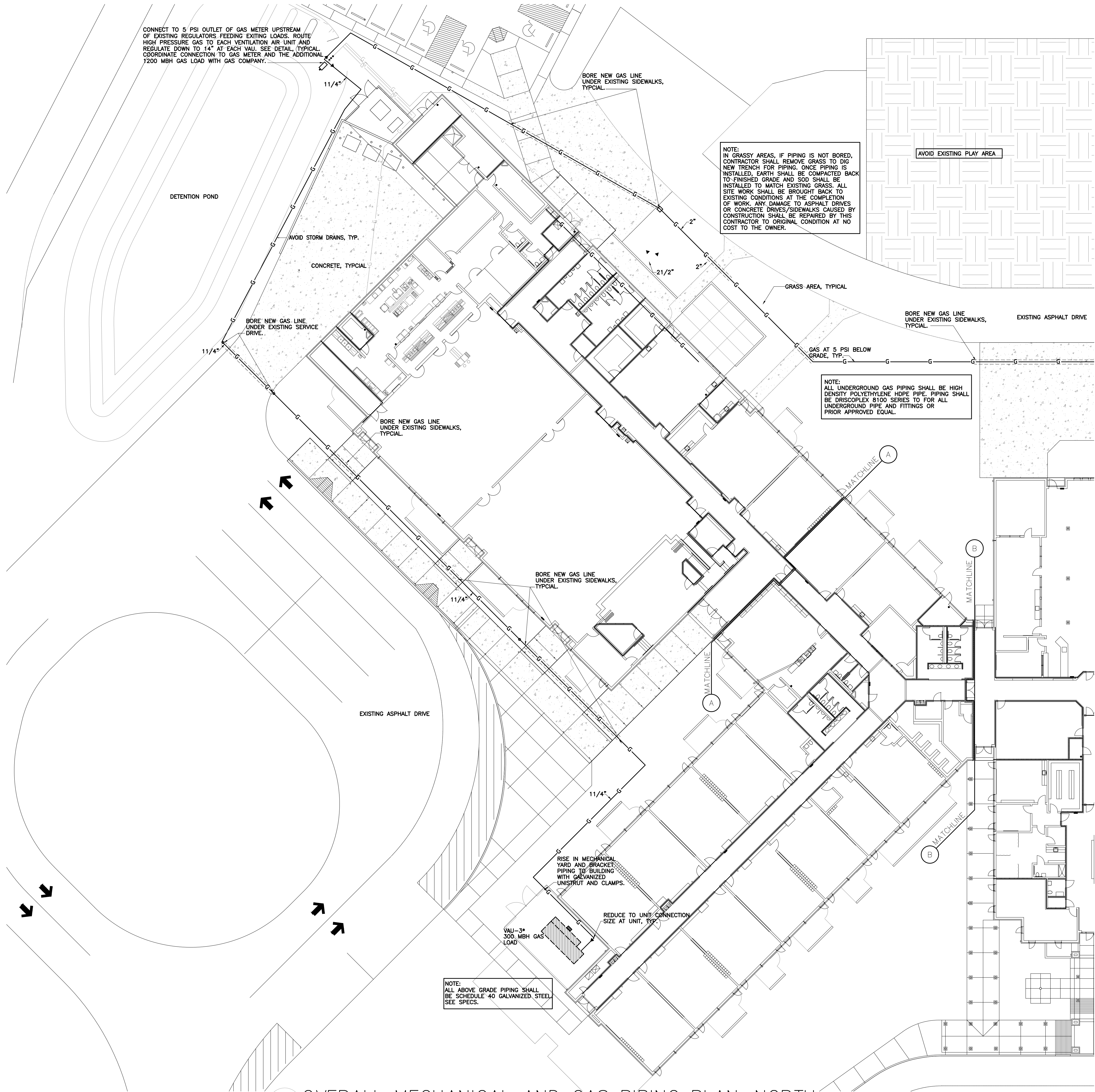
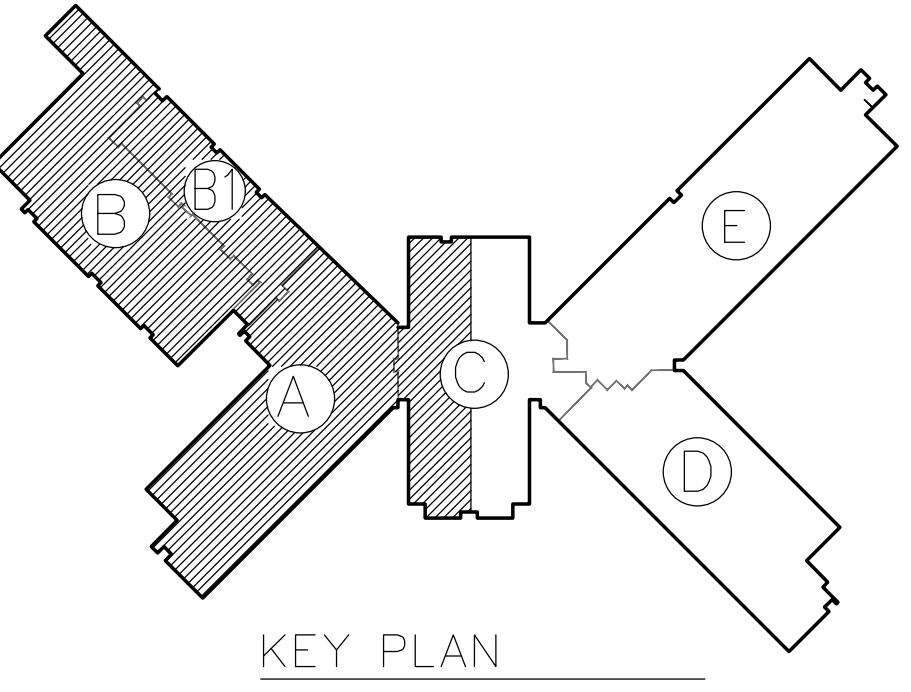
CONNECT TO 5 PSI OUTLET OF GAS METER UPSTREAM OF EXISTING REGULATORS FEEDING EXISTING LOADS. ROUTE HIGH PRESSURE GAS TO EACH VENTILATION AIR UNIT AND REGULATE DOWN TO 1/4" AT EACH VAL. SEE DETAIL, TYPICAL. COORDINATE CONNECTION TO GAS METER AND THE ADDITIONAL 1200 MBH GAS LOAD WITH GAS COMPANY.

BORE NEW GAS LINE UNDER EXISTING SIDEWALKS, TYPICAL.

NOTE: IN GRASSY AREAS, IF PIPING IS NOT BORED, CONTRACTOR SHALL REMOVE GRASS TO DIG NEW TRENCH FOR PIPING. ONCE PIPING IS INSTALLED, EARTH SHALL BE COMPACTED BACK TO FINISHED GRADE AND SOD SHALL BE INSTALLED TO MATCH EXISTING GRASS. ALL SITE WORK SHALL BE BROUGHT BACK TO EXISTING CONDITIONS AT THE COMPLETION OF WORK. ANY DAMAGE TO ASPHALT DRIVES OR CONCRETE DRIVES/SIDEWALKS CAUSED BY CONSTRUCTION SHALL BE REPAIRED BY THIS CONTRACTOR TO ORIGINAL CONDITION AT NO COST TO THE OWNER.

NOTE: ALL UNDERGROUND GAS PIPING SHALL BE HIGH DENSITY POLYETHYLENE HDPE PIPE. PIPING SHALL BE DRISCOPLEX 8100 SERIES TO FOR ALL UNDERGROUND PIPE AND FITTINGS OR PRIOR APPROVED EQUAL.

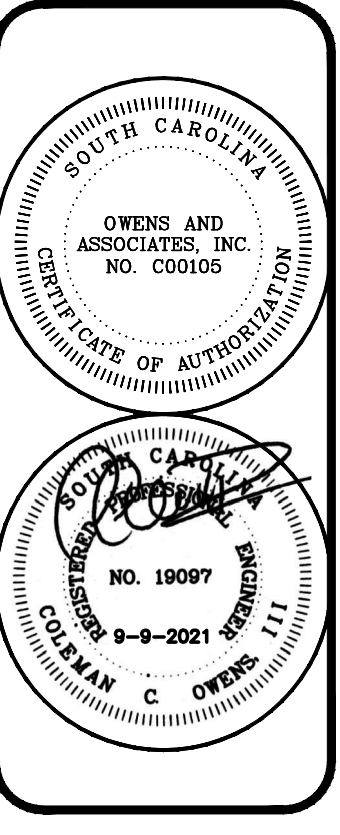
NOTE: ALL ABOVE GRADE PIPING SHALL BE SCHEDULE 40 GALVANIZED STEEL. SEE SPECS.



### OVERALL MECHANICAL AND GAS PIPING PLAN-NORTH

SCALE: 1/16"=1'

Owens and Associates, Incorporated \* Consulting Engineers \* 1007 Lake Hunter Circle \* Mt. Pleasant, South Carolina 29464 \* Telephone: (843) 849 - 6457 \* Facsimile: (843) 849 - 6551.



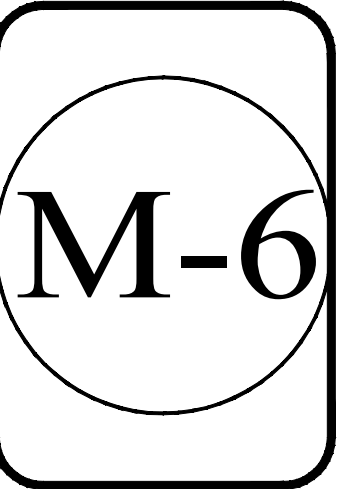
**OWENS AND ASSOCIATES, INC.**  
CONSULTING ENGINEERS

Owens and Associates Inc., Inc., consulting engineers  
Mt. Pleasant, South Carolina

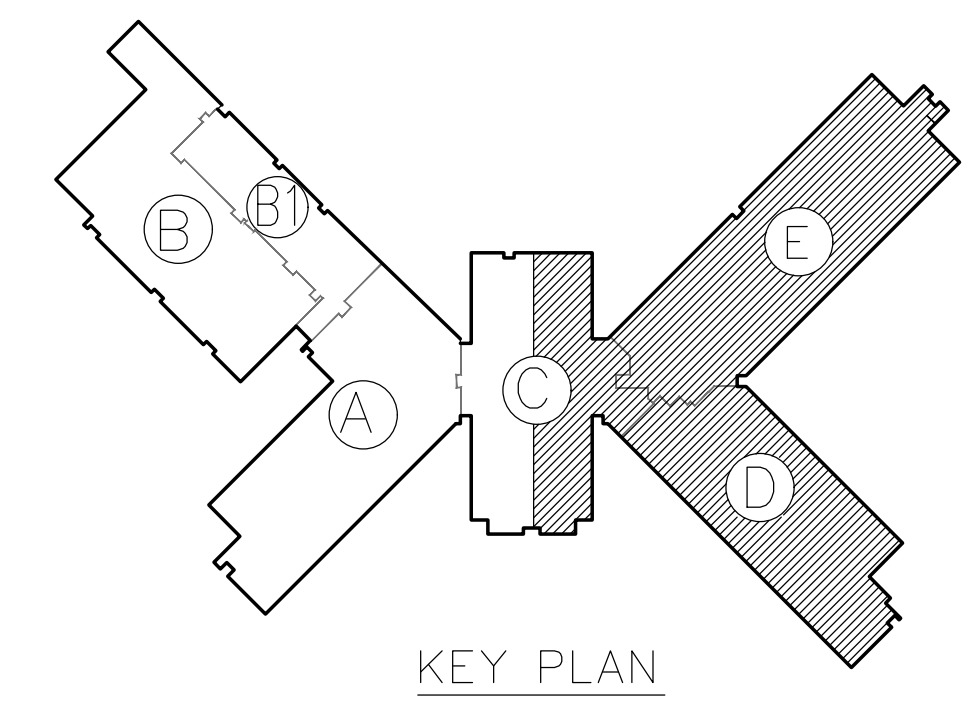
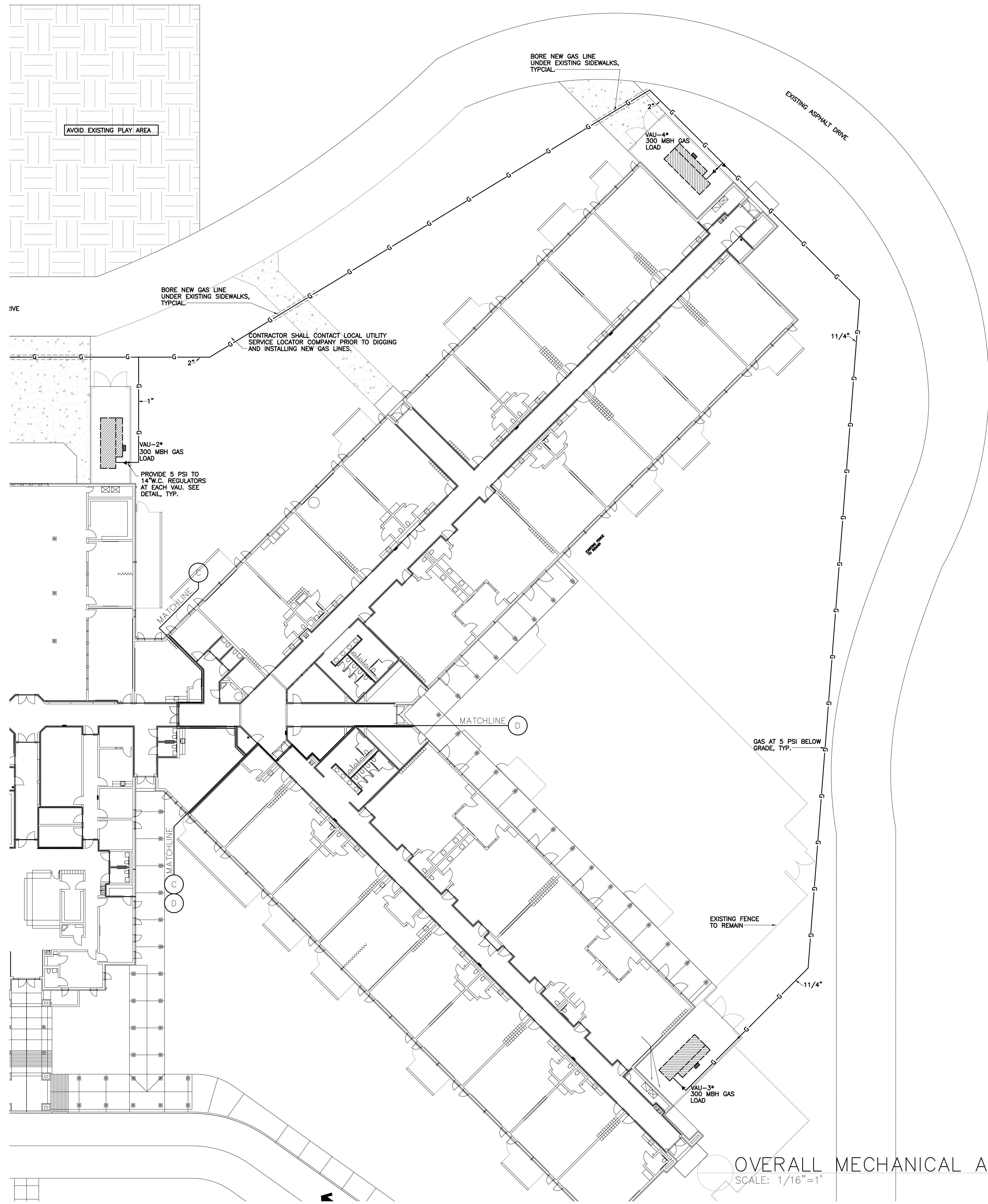
project:  
**MECHANICAL TO RENOVATIONS TO RIVERSIDE ELEMENTARY SCHOOL**

REVISIONS

project: 2109  
date: 9-9-2021

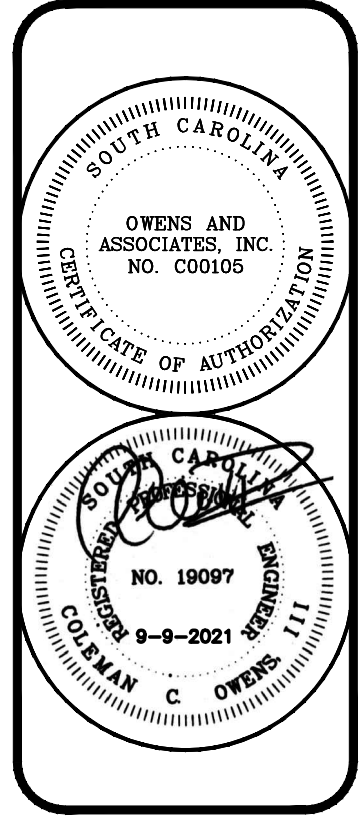


These drawings are property of Owens and Associates, Inc. Consulting Engineers and may not be used in whole or in part without written consent of the engineer and any infringement is subject to legal action



OVERALL MECHANICAL AND GAS PIPING PLAN-SOUTH  
SCALE: 1/16"=1'

Owens and Associates, Incorporated \* Consulting Engineers \* 1007 Lake Hunter Circle \* Mt. Pleasant, South Carolina 29464 \* Telephone: (843) 849 - 6457 \* Facsimile: (843) 849 - 6551.



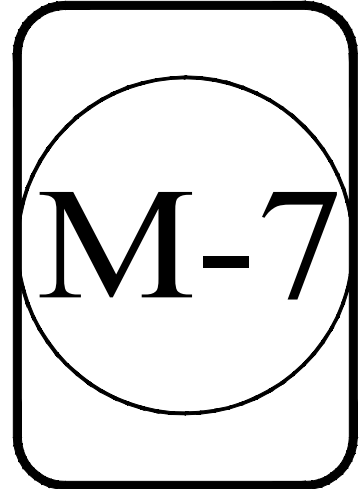
**OWENS AND ASSOCIATES, INC.**  
CONSULTING ENGINEERS

Owens and Associates Inc.,  
Inc., consulting engineers  
Mt. Pleasant, South Carolina

project:  
**MECHANICAL TO  
RENOVATIONS TO  
RIVERSIDE  
ELEMENTARY SCHOOL**

REVISIONS:

project: 2109  
date: 9-9-2021





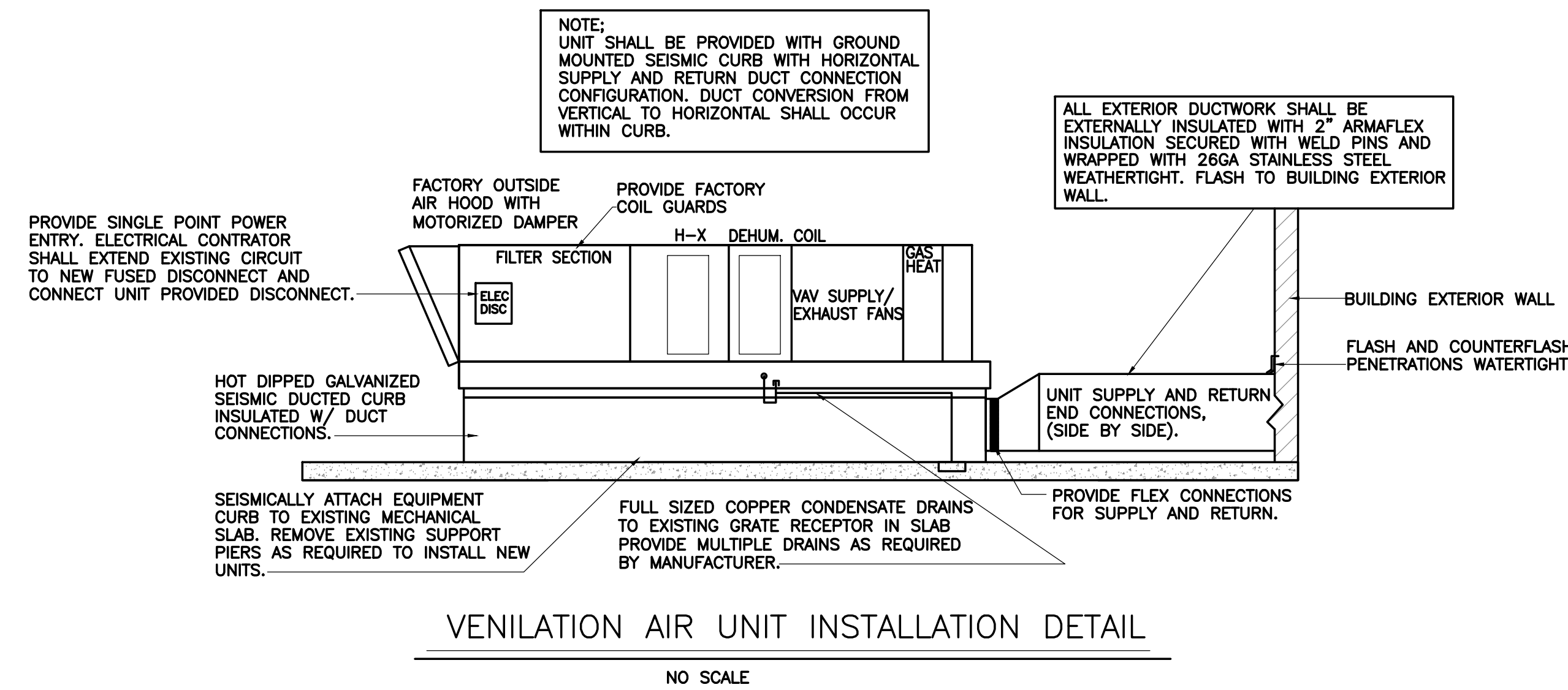
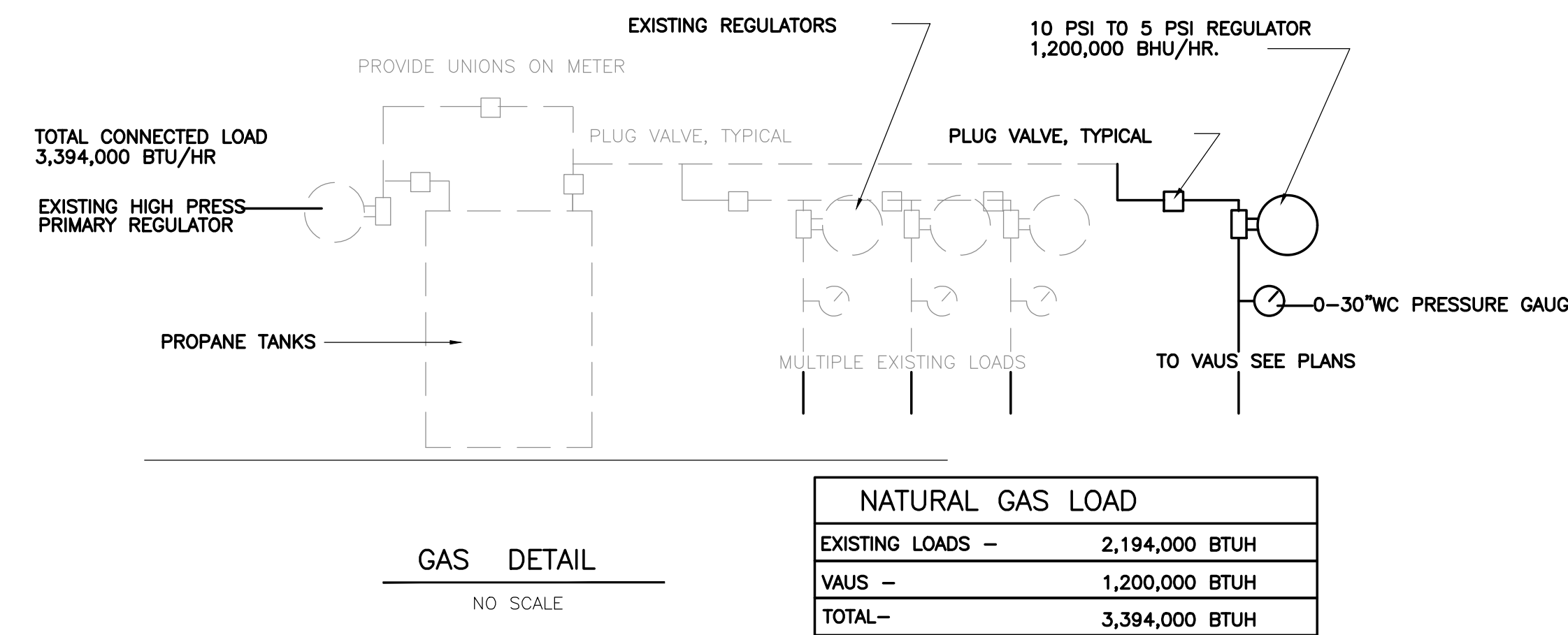
These drawings are property of Owens and Associates, Inc. Consulting Engineers and may not be used in whole or in part without written consent of the engineer and any infringement is subject to legal action

**GENERAL MECHANICAL NOTES:**

- SEE GENERAL SECTIONS OF SPECIFICATIONS FOR GENERAL JOB DESCRIPTIONS AND REQUIREMENTS.
- DUCTS CONNECTING EXISTING EQUIPMENT TO EXISTING DUCTWORK SHALL BE ROUTED FULL-SIZE OF EXISTING DUCTWORK. CONTRACTOR SHALL INVESTIGATE EXISTING SIZE AND ORIENTATION OF SUPPLY AND RETURN/EXHAUST DUCTS FOR VENTILATION AIR UNITS BEING REPLACED.
- REFER TO OVERALL GAS PIPING PLAN FOR ROUTING OF GAS PIPING AROUND THE EXISTING BUILDING AND CROSSING OF SIDEWALLS AND CONCRETE/ ASPHALT DRIVES.
- CONTRACTOR SHALL FURNISH TO OWNER AT COMPLETION OF PROJECT, A COMPLETE SET OF WRITTEN OPERATING INSTRUCTIONS FOR ALL SYSTEMS. COORDINATE ELECTRICAL REQUIREMENTS WITH EXISTING ELECTRICAL SERVICES.
- PROVIDE 2-1/2"x2-1/2"x1/4" GALVANIZED STEEL ANGLES, 3/8" THREADED HANGER ROD, AND OTHER SUPPLEMENTAL STEEL AS REQUIRED TO SUPPORT MECHANICAL EQUIPMENT FROM THE MECHANICAL SLABS.
- ALL RETURN DUCT CONNECTIONS TO AIR DEVICES SHALL BE RECTANGULAR UNLESS OTHERWISE INDICATED ON PLANS. USE OF FLEXIBLE DUCT FOR RETURN IS NOT PERMISSIBLE.
- REFER TO FLOOR PLANS FOR LOCATIONS OF FIRE-RATED ASSEMBLIES. CONTRACTOR SHALL COMPLETELY FILL AROUND ALL OPENINGS REQUIRED FOR HIS WORK IN ACCORDANCE WITH DETAILS WITH APPROVED FIRE-PROOF MATERIALS.
- CONTRACTOR SHALL SEAL ALL DUCTWORK WITH DUCT SEALANT PER SPECIFICATIONS. DUCT TAPE SHALL NOT BE USED TO SEAL DUCTWORK.
- THE CONTRACTOR IS INSTRUCTED TO VISIT THE SITE PRIOR TO SUBMITTING A BID TO FAMILIARIZE HIMSELF WITH ALL WORK TO BE ENCOUNTERED. NO EXTRA CHARGE WILL BE APPROVED AFTER START OF CONSTRUCTION FOR FAILURE TO FOLLOW THESE INSTRUCTIONS.
- CONTRACTOR SHALL SEISMICALLY ATTACH ALL NEW VENTILATION AIR UNITS TO EXISTING SLABS PER THE INTERNATIONAL BUILDING CODE.
- CONTRACTOR SHALL EMPLOY A LOCATOR SERVICE PRIOR TO PERFORMING ANY SITE EXCAVATION FOR INSTALLATION OF NEW EXTERIOR GAS LINES. CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER AND OWNER OF ANY CONFLICTS WITH REGARD TO UNDERGROUND GAS PIPING INSTALLATION. COORDINATE NEW GAS LOADS BEING ADDED TO EXISTING GAS METERS WITH GAS COMPANY AT THE START OF WORK. CONFIRM SUPPLY PRESSURE OF SP51 AT METER OUTLET.

DESIGN CONDITIONS		
	COOLING	HEATING
OUTSIDE	95F DB, 80F WB	27F DB
INSIDE	78F DB, 65F WB	72F DB

SYMBOL SCHEDULE	
SYMBOL	DESCRIPTION
(T)	THERMOSTAT WITH LOCK COVER
(H)	HUMIDISTAT WITH LOCK COVER
(CO)	CO2 SENSOR WITH LOCK COVER
(CO)	CARBON MONOXIDE SENSOR BY CONTROLS
(DS)	DUCT SMOKE DETECTOR BY FIRE ALARM CONTRACTOR
(E)	EXHAUST FAN
TR GR/EX GR	TRANSFER GRILLE / EXHAUST GRILLE
(AV)	AIR TURNING VANE
(S)	SPLITTER DAMPER
FD/-	FIRE DAMPER / HOUR RATING
SD	SMOKE DAMPER
FSD	COMBINATION FIRE/SMOKE DAMPER
(R)	INDICATION OF ROOF MOUNTED EQUIPMENT
(M)	MANUAL DAMPER (O.B.M.D.)



**GENERAL ELECTRICAL NOTES:**

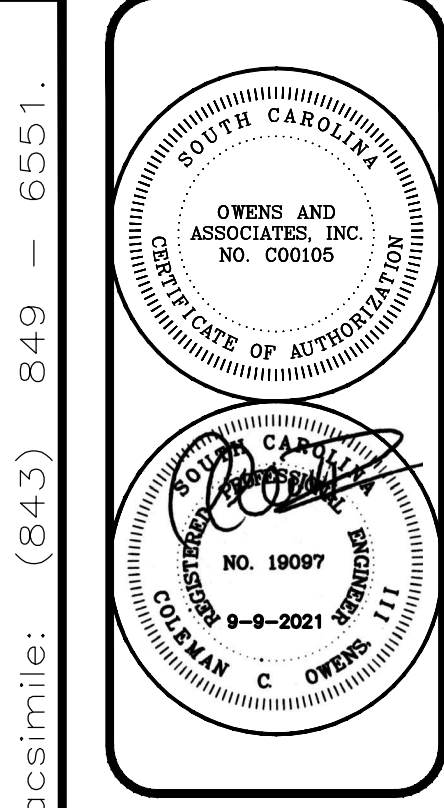
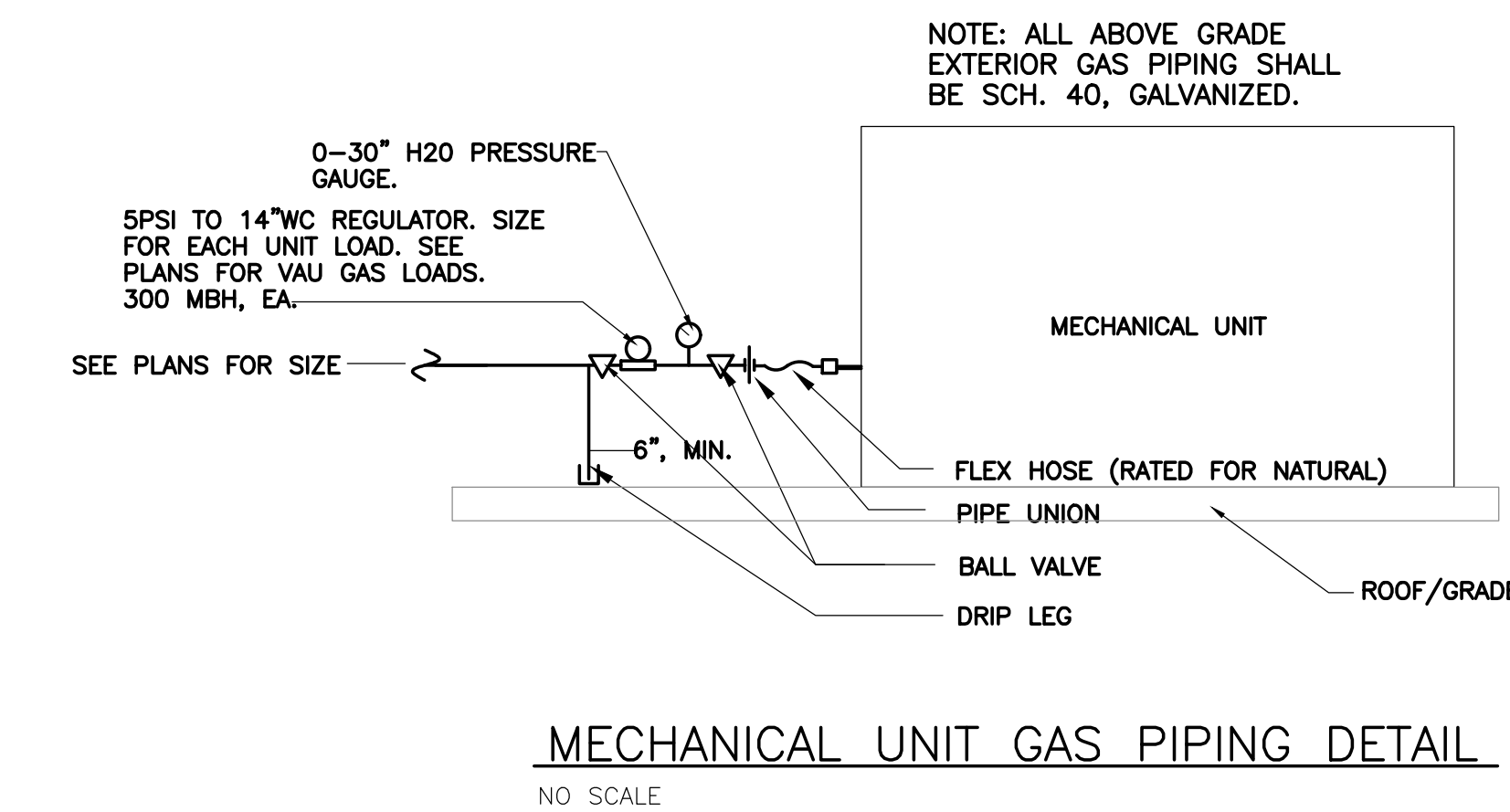
- DUE TO THE NATURE OF WORK COVERED UNDER THESE PLANS AND SPECIFICATIONS, ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING VISITED THE SITE TO FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS PRIOR TO SUBMITTING HIS BID.
- ALL CONDUIT PENETRATIONS OF FIRE RATED WALLS AND/OR CEILINGS SHALL BE FIRESTOPPED AS PER UL STANDARDS.
- ALL CONDUIT PENETRATIONS OF EXTERIOR WALLS SHALL BE SEALED AND MADE WEATHERPROOF.
- CONTRACTOR SHALL REMOVE AND REINSTALL EXISTING CEILING TILES AS NECESSARY FOR THE INSTALLATION OF NEW CONDUITS AND DEVICES. CONTRACTOR SHALL REPLACE ANY TILE DAMAGED BY THIS WORK. NEW CEILING TILES TO MATCH EXISTING.
- ALL CONDUIT RUNS SHOWN ON THESE DRAWINGS ARE APPROXIMATE. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY LENGTH AND LOCATION.
- ELECTRICAL CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS AND THE SPECIFICATIONS, FOR ALL BID ALTERNATES AND ALL PHASING INFORMATION, PRIOR TO SUBMITTING HIS BID.
- ALL BREAKERS FEEDING MECHANICAL EQUIPMENT SHALL BE HACR TYPE.
- THE MECHANICAL EQUIPMENT BASIS OF DESIGN IS AS INDICATED ON THE MECHANICAL DRAWINGS. THE ELECTRICAL CONTRACTOR SHALL VERIFY THE ELECTRICAL REQUIREMENTS OF THE MECHANICAL EQUIPMENT WITH THE MECHANICAL CONTRACTOR PRIOR TO ORDERING MATERIALS. MODIFICATIONS TO ANY ELECTRICAL SYSTEM REQUIRED FOR MECHANICAL EQUIPMENT WHICH DIFFERS FROM THE MECHANICAL BASIS OF DESIGN SHALL BE THE RESPONSIBILITY OF THE MECHANICAL AND ELECTRICAL CONTRACTORS. IN NO CASE SHALL SUBSTITUTION OF MECHANICAL EQUIPMENT RESULT IN ADDITIONAL COSTS TO THE OWNER.
- ELECTRICAL CONTRACTOR SHALL USE LOCATOR SERVICE TO IDENTIFY ALL UNDERGROUND UTILITIES. DAMAGE TO ANY EXISTING UTILITIES RESULTING FROM INSTALLATION OF NEW ELECTRICAL EQUIPMENT SHALL BE REPAIRED BY THE ELECTRICAL CONTRACTOR.
- ALL FEEDERS SHALL BE ROUTED CONCEALED. ELECTRICAL CONTRACTOR SHALL SAW CUT AND PATCH EXISTING CONCRETE AS NECESSARY TO ROUTE UNDERGROUND CONDUITS. ABOVE CEILING CONDUITS SHALL BE ROUTED CONCEALED.
- ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR BRINGING THE SITE BACK TO ORIGINAL CONDITIONS AFTER THE COMPLETION OF UNDERGROUND ELECTRICAL WORK. THIS IS INCLUSIVE OF SAW CUT ASPHALT AND CONCRETE SURFACES, EXISTING VEGETATION, GRASS, SITE GRADING ETC. THIS CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO THE SITE/FACILITY CAUSED BY ELECTRICAL CONSTRUCTION.
- ELECTRICAL CONTRACTOR SHALL SAW CUT EXISTING CONCRETE AND ASPHALT DRIVES AS REQUIRED TO INSTALL BELOW GRADE CONDUITS. AFTER INSTALLATION OF WORK, CONTRACTOR SHALL BACKFILL AND BRING SOIL TO INITIAL COMPACTION LEVELS AND REPAIR SAW CUT AREAS OF CONCRETE AND ASPHALT DRIVES. PATCHING SHALL MATCH EXISTING WITH REGARD TO REINFORCING AND THICKNESS. ALL SAW CUT TRENCHES SHALL BE MADE IN A WORKMANLIKE FASHION.
- ANY EXISTING ELECTRICAL EQUIPMENT NOT BEING REMOVED OR RELOCATED BUT ON THE SAME CIRCUIT AS ANY ELECTRICAL EQUIPMENT BEING REMOVED OR RELOCATED SHALL BE RECONNECTED TO ALLOW FOR NORMAL OPERATION UNLESS SHOWN OTHERWISE ON THE NEW WORK DRAWINGS. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY MATERIALS AND LABOR FOR THE RECONNECTION OF SAID DEVICES.
- ELECTRICAL CONTRACTOR SHALL RELOCATE ANY EXISTING ELECTRICAL EQUIPMENT, CIRCUITRY, OR CONDUIT THAT INTERFERES WITH DEMOLITION OR INSTALLATION WORK AND PROVIDE ALL NECESSARY MATERIALS AND LABOR NEEDED TO RETURN THE RELOCATED EQUIPMENT TO A SAFE AND OPERATING CONDITION THAT CONFORMS TO THE CURRENT EDITION OF THE N.E.C. AND ALL LOCAL REGULATIONS. COORDINATE ALL WORK WITH THE OWNER'S REPRESENTATIVE AND ALL OTHER TRADES.
- ANY DEVICE INTERFERING WITH DEMOLITION OR INSTALLATION, NOT BEING REMOVED OR RELOCATED, SHALL NOT BE MOVED WITHOUT WRITTEN CONSENT FROM THE OWNER'S REPRESENTATIVE.
- ALL WORK SHALL BE IN COMPLIANCE WITH THE CODES AND STANDARDS LISTED IN THE ARCHITECTURAL CODE ANALYSIS FOUND ELSEWHERE IN THESE CONTRACT DOCUMENTS.
- FIRE ALARM CONTRACTOR SHALL PROVIDE NEW RETURN DUCT SMOKE DETECTORS AND SUPPLY DUCT MOUNTED CARBON MONOXIDE SENSORS FOR EACH VENTILATION AIR UNIT AS INDICATED. DEVICES SHALL BE CONNECTED TO THE EXISTING BUILDING FIRE ALARM SYSTEM AND, UPON SENSING SMOKE OR PRODUCTS OF COMBUSTION RESPECTIVELY, SHUT DOWN ASSOCIATED UNIT AND REPORT A "TROUBLE" SIGNAL TO THE BUILDING FIRE ALARM PANEL. SMOKE AND CO DETECTORS SHALL NOT SOUND THE BUILDING FIRE ALARM SYSTEM. COORDINATE INSTALLATION OF DEVICES WITH MECHANICAL AND CONTROLS CONTRACTORS.

ROOFTOP UNIT ELECTRICAL FUSED DISCONNECT SCHEDULE					
SYM.	DISCONNECT (AMPS)	FUSE (AMPS)	VOLTAGE	PHASE	REQUIREMENTS
VAU-1	100	90	480	3	2" C.-3#1/0 AND 1#3 GROUND
VAU-2	100	90	480	3	2" C.-3#1/0 AND 1#3 GROUND
VAU-3	100	90	480	3	2" C.-3#1/0 AND 1#3 GROUND
VAU-4	100	90	480	3	2" C.-3#1/0 AND 1#3 GROUND

NOTES: FUSE NEW DISCONNECTS TO THE M.O.C.P. OF EQUIPMENT PROVIDED. DISCONNECTS SHALL BE NEMA 3R BY SQUARE-D OR APPROVED EQUAL. ELECTRICAL CONTRACTOR SHALL EXTEND EXISTING POWER CIRCUIT TO NEW FUSED DISCONNECT AND CONNECT TO UNIT PROVIDED SINGLE POINT POWER. FUSE AS REQUIRED BY UNIT MANUFACTURER'S INSTRUCTIONS.

VENTILATION AIR UNIT SCHEDULE																									
SYM.	VENTILATION AIR			EXHAUST AIR			T.E. WHEEL SUMMER		T.E. WHEEL WINTER		WHEEL EFF.	COOLING COIL		H.G. REHEAT CAPACITY MBH	BUILDING SUPPLY		NATURAL GAS FIRED HEAT		ELECTRICAL		M.O.P (AMPS)	MANUFACTURER			
	CFM	ESP	FAN HP	CFM	ESP	FAN HP	E.A.T. (db/wb)	CAPACITY MBH	E.A.T. (db/wb)	CAPACITY MBH		L.A.T. (db/wb)	E.A.T. (db/wb)		CAPACITY MBH	L.A.T. (db/wb)	E.A.T. (db)	L.A.T. (db)	MBH INPUT	VOLTS			PHASE		
VAU-1	5400	2.5"	7.5	4590	2.5"	5.0	95/78	209	80.8/68.0	20	212	54.4	81	80.8/68	362	45.1/44.6	184	70/56	54.4	95.6	300	480	3	90	TRANE-KCC HORIZON W/ SA&RA VFD.
VAU-2																									
VAU-3																									
VAU-4																									

- NOTE 1-BASIS OF DESIGN IS TRANE(KCC) OR ALTERNATE BID BY GREENHECK RVE (SEE BID FORM). ANY ADDITIONAL REQUIREMENTS ELECTRICALLY, STRUCTURALLY, DIMENSIONALLY OR OTHERWISE TO USE OTHER PRIOR APPROVED MANUFACTURERS ARE THE RESPONSIBILITY OF THIS CONTRACTOR.
- NOTE 2-UNIT SHALL BE PROVIDED WITH SINGLE POINT POWER, VARIABLE SPEED DRIVE BYPASS AND DRIVER COORDINATED WITH SIEMENS CONTROL SYSTEM. PROVIDE UNITS WITH AIRFLOW MONITORING STATIONS.
- NOTE 3-UNIT SHALL BE PROVIDED WITH 120V GFI CONVENIENCE OUTLET WITH IN-USE COVER PER NEC.
- NOTE 4-UNIT SHALL BE CAPABLE OF PROVIDING SUPPLY AIR CONDITIONS (DRY BULB AND WET BULB) AT DESIGN CONDITIONS DURING PART LOAD OPERATION WITHOUT THE USE OF AUXILIARY HEAT IN THE FORM OF GAS OR ELECTRIC REHEAT. PART LOAD SHALL BE ADDRESSED RUNNING A SEPARATE SIMULATION UTILIZING 89T89/84.379 AS THE ENTERING OUTSIDE AIR CONDITION TO DEMONSTRATE PART LOAD PERFORMANCE. GAS AND OR ELECTRIC STRIP REHEAT WILL NOT BE PERMITTED AS A FORM OF REHEAT TO ACHIEVE ACCEPTABLE DESIGN OUTSIDE AIR SUPPLY CONDITIONS DURING PART LOAD SITUATIONS.
- NOTE 5-UNIT SHALL BE PROVIDED WITH SEACOAST COATINGS FOR CONDENSER AND COOLING COILS.
- NOTE 6-CONTROLS CONTRACTOR SHALL PROVIDE CARBON DIOXIDE SENSORS IN THE RETURN AIR DUCT OF EACH VAU AND MODULATE UNIT RECIRCULATION AIR DAMPER TO MAINTAIN 1000 PPM CO2 LEVELS (ADJUSTABLE).



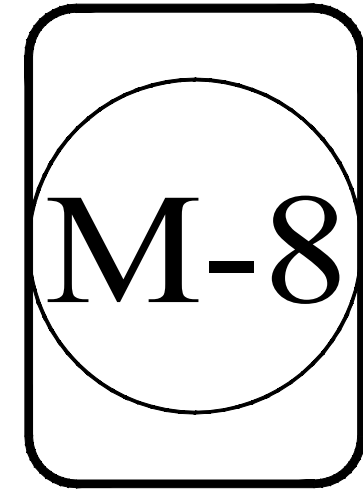
**OWENS AND ASSOCIATES, INC.**  
CONSULTING ENGINEERS

Owens and Associates Inc.,  
inc. consulting engineers  
Mt. Pleasant, South Carolina

project:  
**MECHANICAL TO RENOVATIONS TO RIVERSIDE ELEMENTARY SCHOOL**

REVISIONS

project: 2108  
date: 9-9-2021



Owens and Associates, Incorporated \* Consulting Engineers \* 1007 Lake Hunter Circle \* Mt. Pleasant, South Carolina 29464 \* Telephone: (843) 849-6457 \* Facsimile: (843) 849-6551