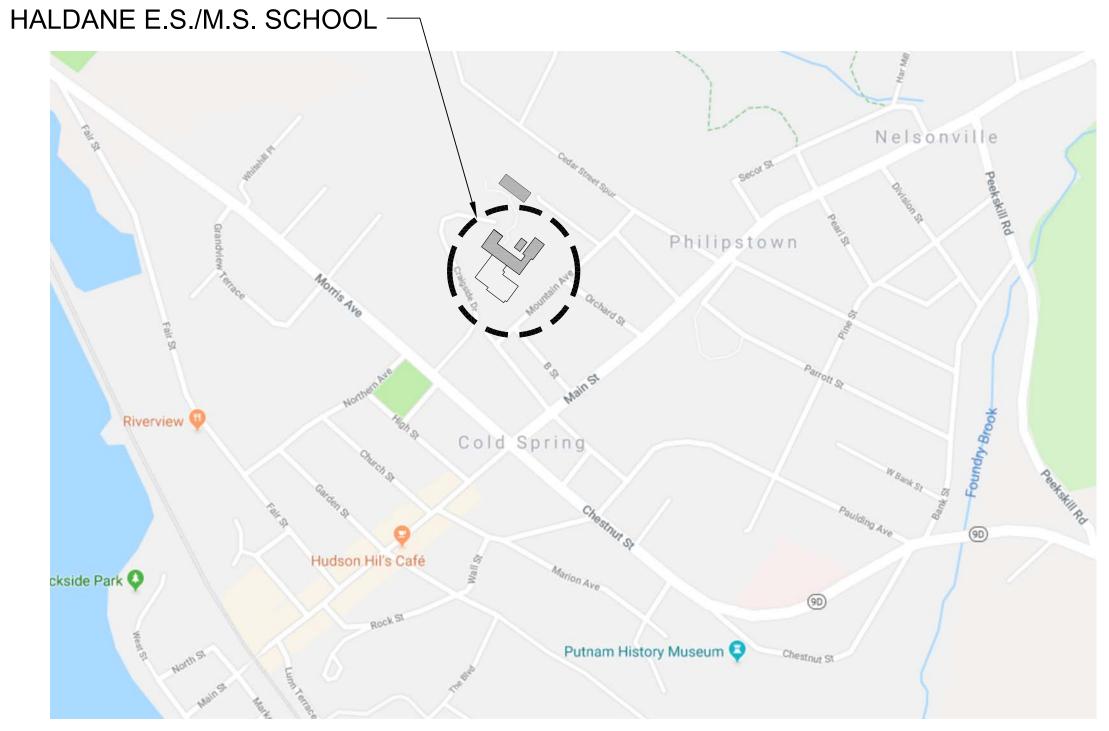
HALDANE CENTRAL SCHOOL DISTRICT MECHANICAL UPGRADE AND RELATED WORK PACKAGE NO. 2

15 CRAIGSIDE DRIVE, COLD SPRING, NY 10516 S.E.D. PROJECT # MAIN BUILDING 48-04-01-04-0-001-023





VICINITY / SITE MAP NOT TO SCALE

LIST OF DRAWINGS

TITLE SHEET, LOCATION MAP & LIST OF DRAWINGS. ABBREVIATIONS, MATERIALS, GRAPHIC LEGEND & GENERAL NOTES

HALDANE E.S. GROUND FLOOR PLAN HALDANE E.S. FIRST FLOOR PLAN HALDANE E.S. ROOF PLAN & ROOF DETAILS

GROUND & FIRST FLOOR REMOVAL REFLECTED CEILING PLANS GROUND & FIRST FLOOR REFLECTED CEILING PLANS

CEILING DETAILS & MISCELLANEOUS DETAILS

ABBREVIATION AND SYMBOLS CAFETERIA HALLWAY DEMOLITION PLAN MD100 MUSIC & BAND ROOM DEMOLITION PLANS NURSE & MAIN OFFICE DEMOLITION PLANS ROOF DEMOLITION PLANS

CAFETERIA HALLWAY NEW WORK PLAN MUSIC & BAND ROOM NEW WORK PLANS NURSE & MAIN OFFICE NEW WORK PLANS ROOF NEW WORK PLANS SCHEDULES & DETAILS

CONTROL SCHEMATICS ABBREVIATION AND SYMBOLS CAFETERIA HALLWAY DEMOLITION PLAN MUSIC & BAND ROOM DEMOLITION PLANS

MUSIC & BAND ROOM NEW WORK PLANS NURSE & MAIN OFFICE NEW WORK PLANS SCHEDULES & DETAILS

ABBREVIATION AND SYMBOLS BASEMENT FLOOR PLAN SCHEDULES & DETAILS

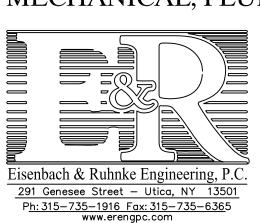


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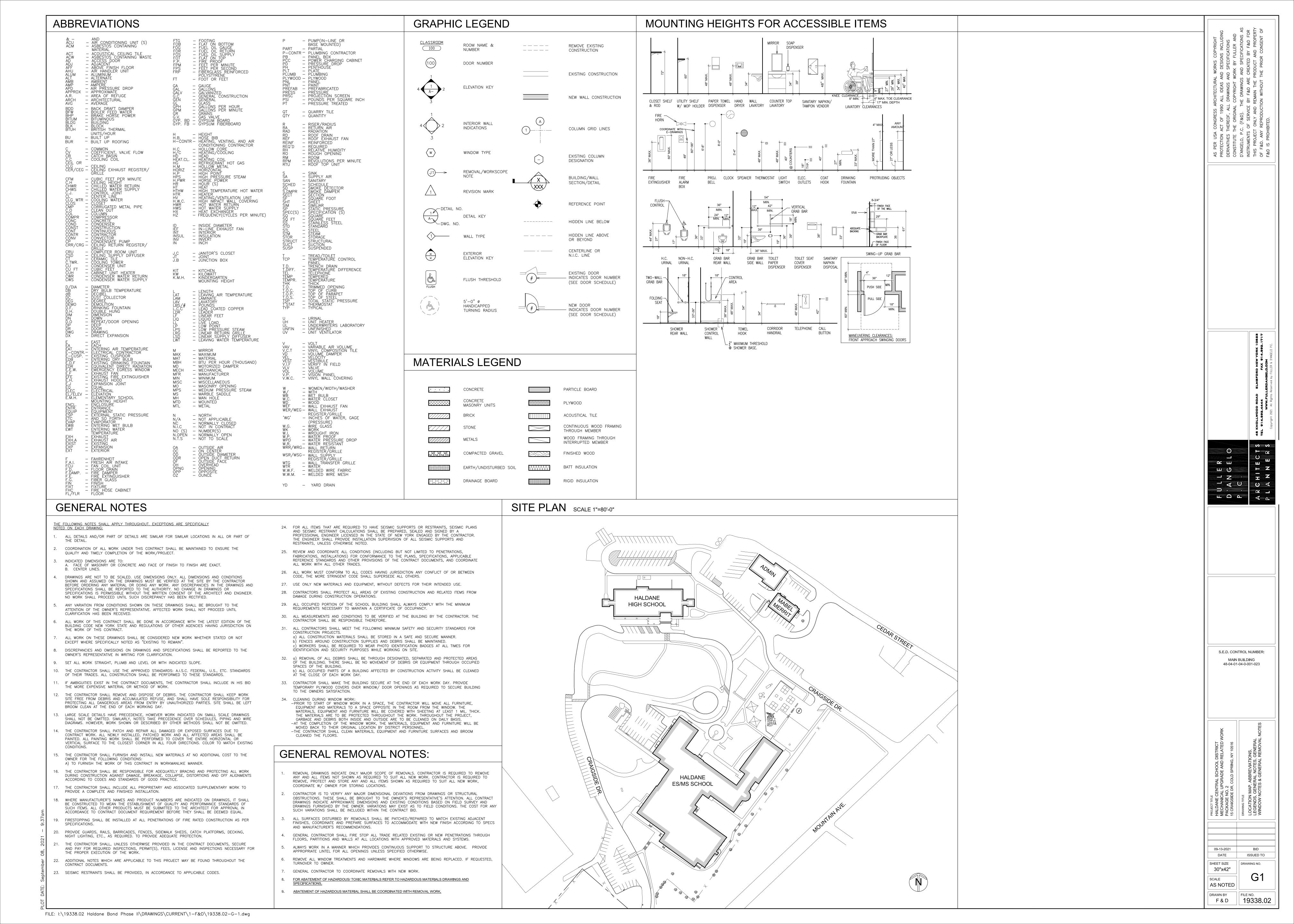
45 knollwood road Elmsford new york 10523 FAX 914.592.1717 TEL 914.592.4444 WWW.FULLERDANGELO.COM

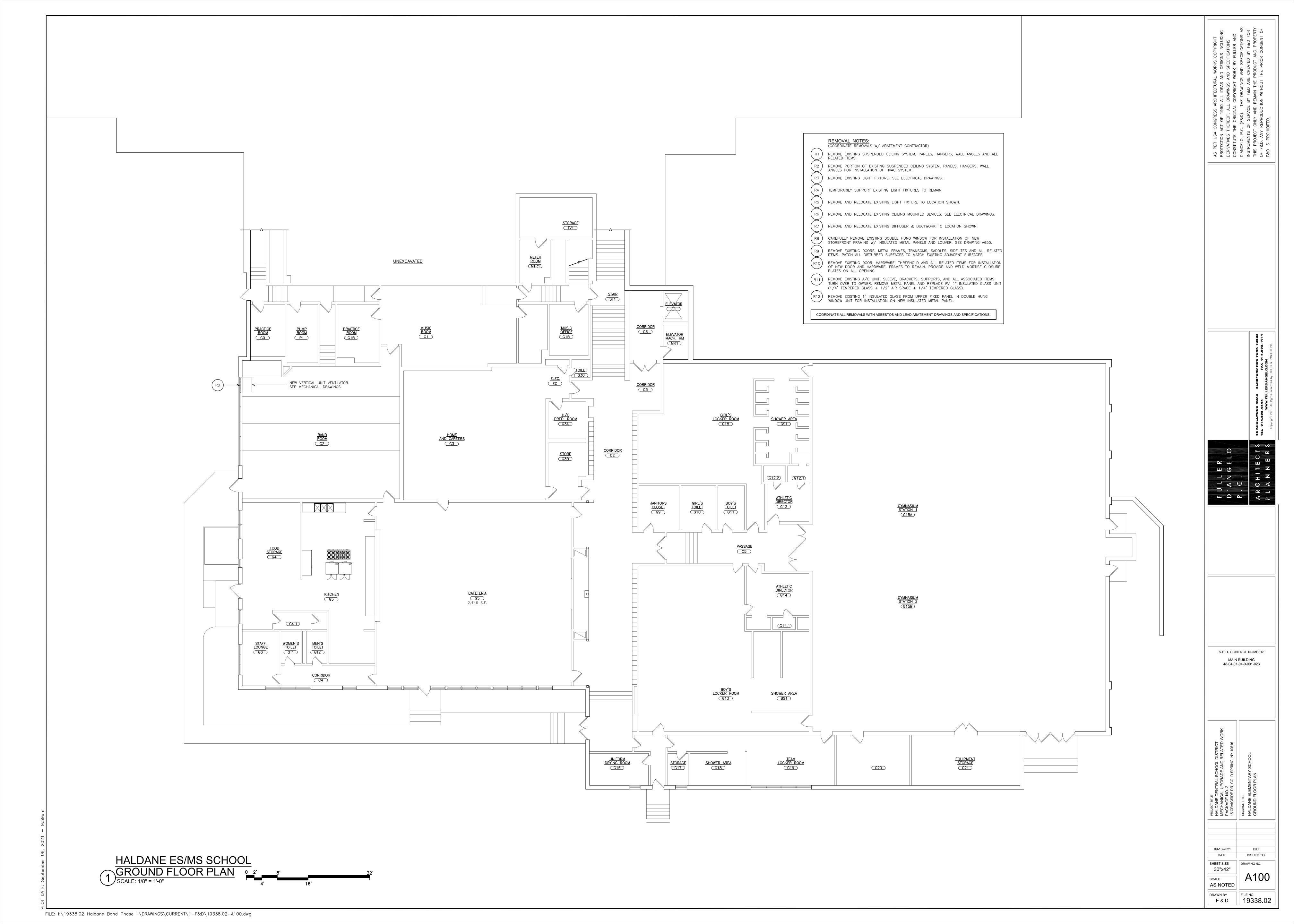
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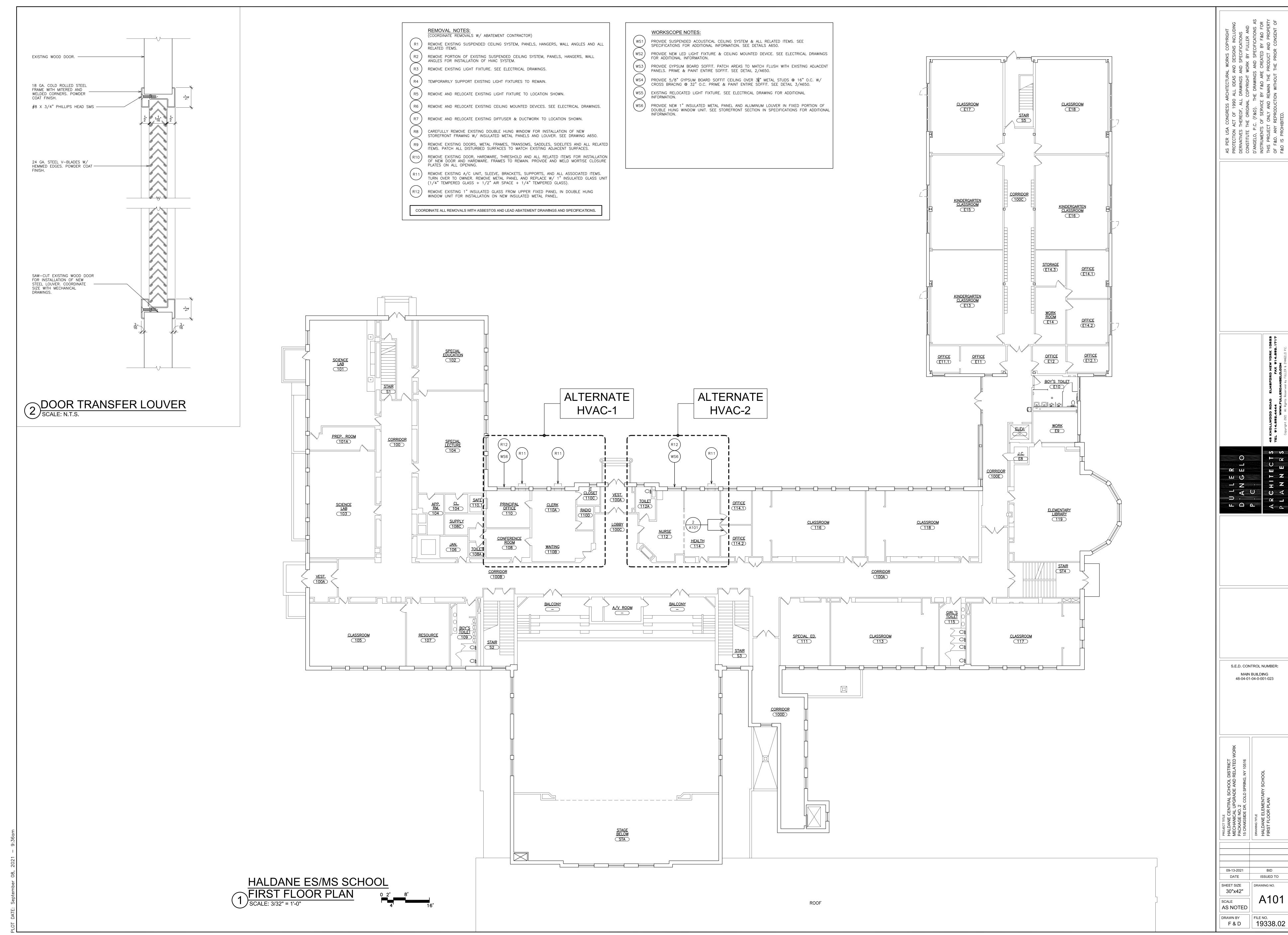
MECHANICAL, PLUMBING AND ELECTRICAL:

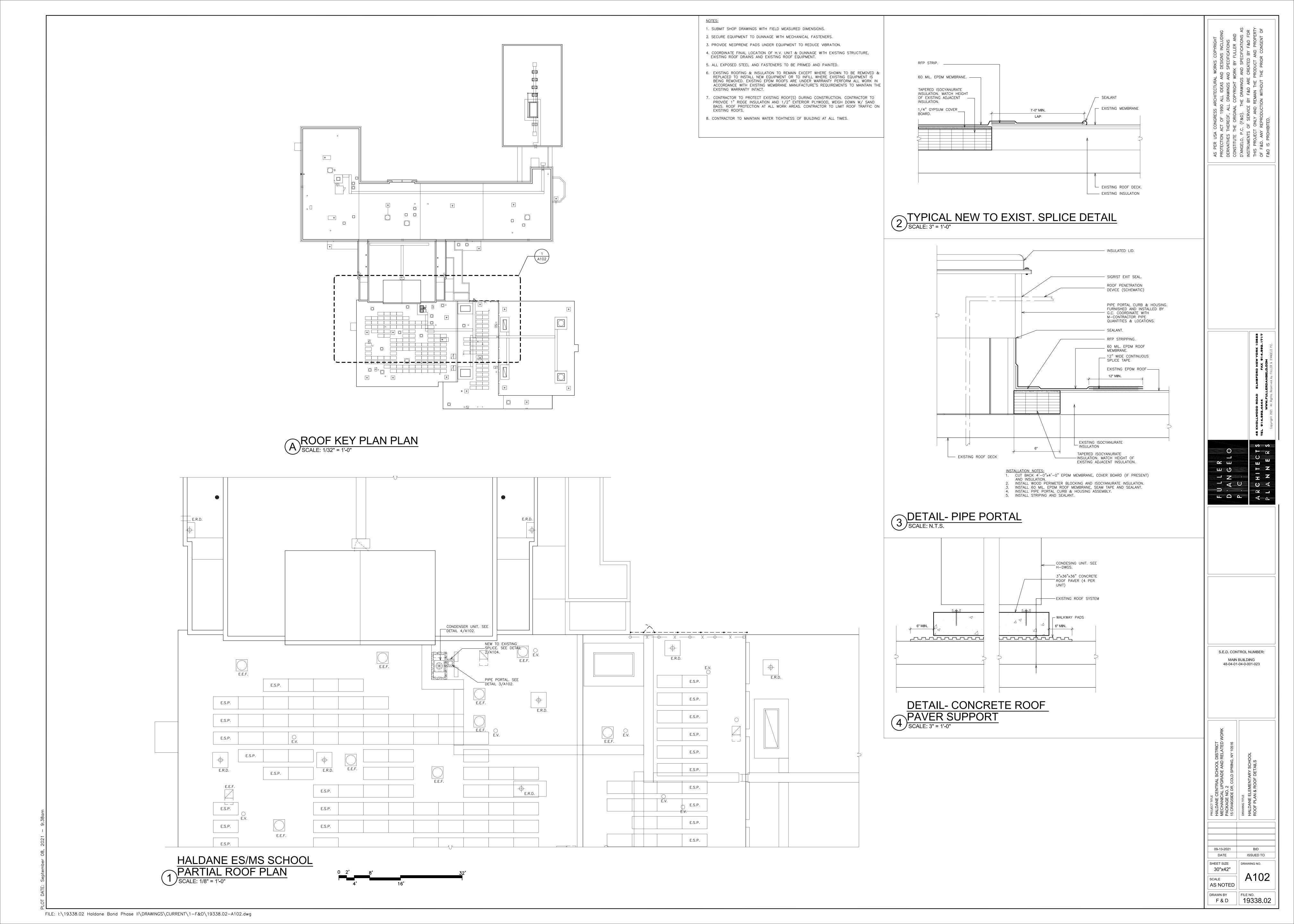


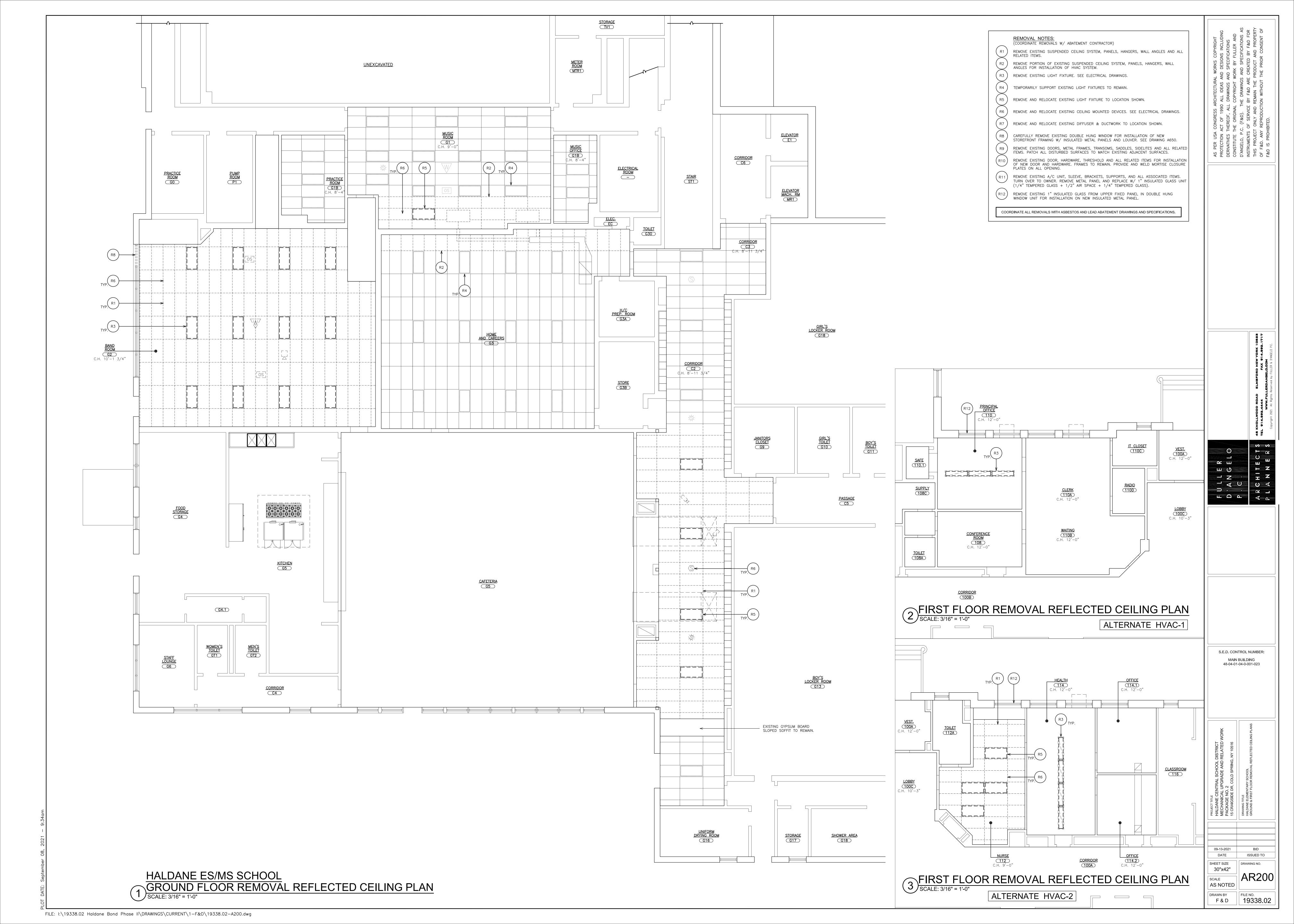
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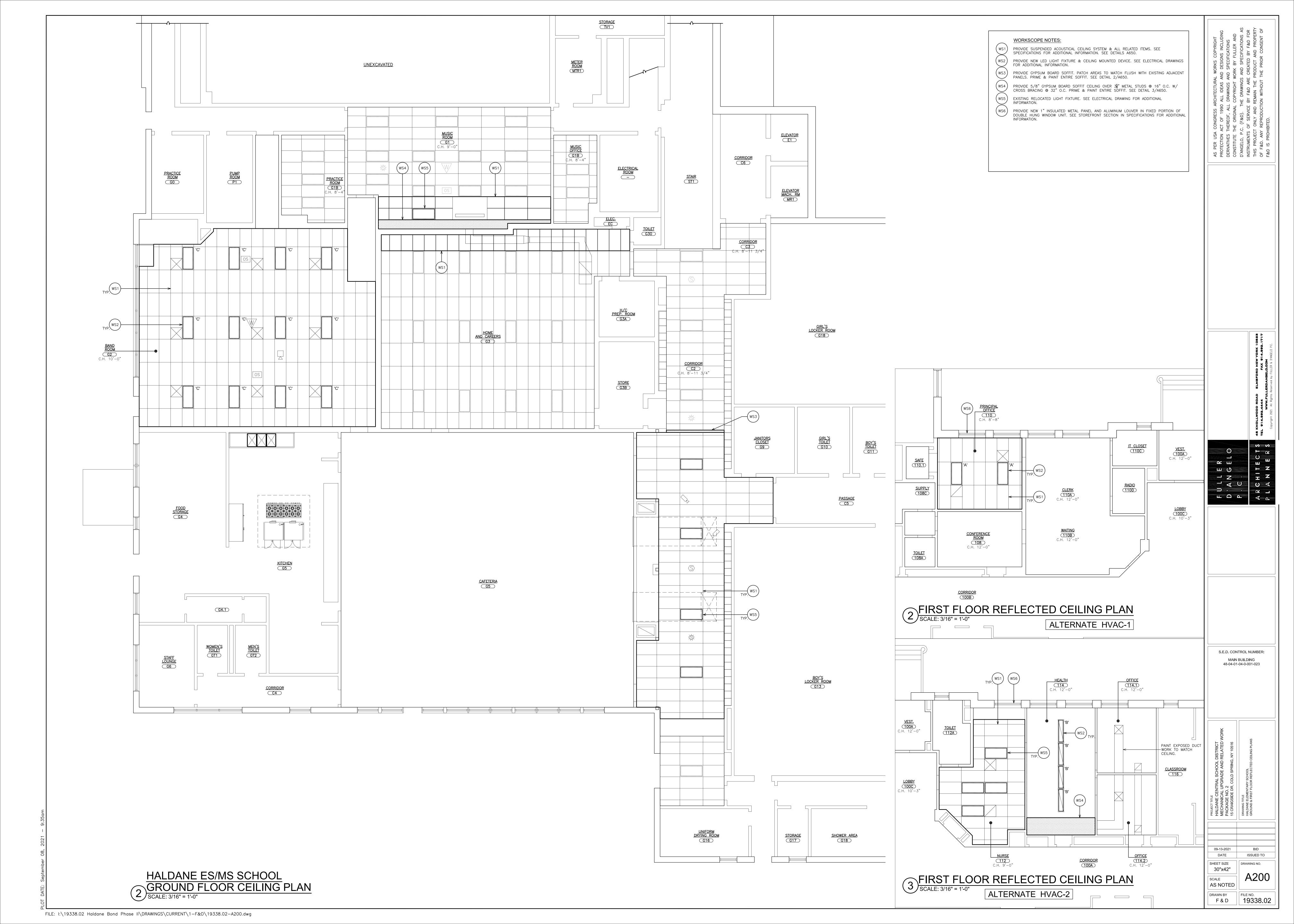


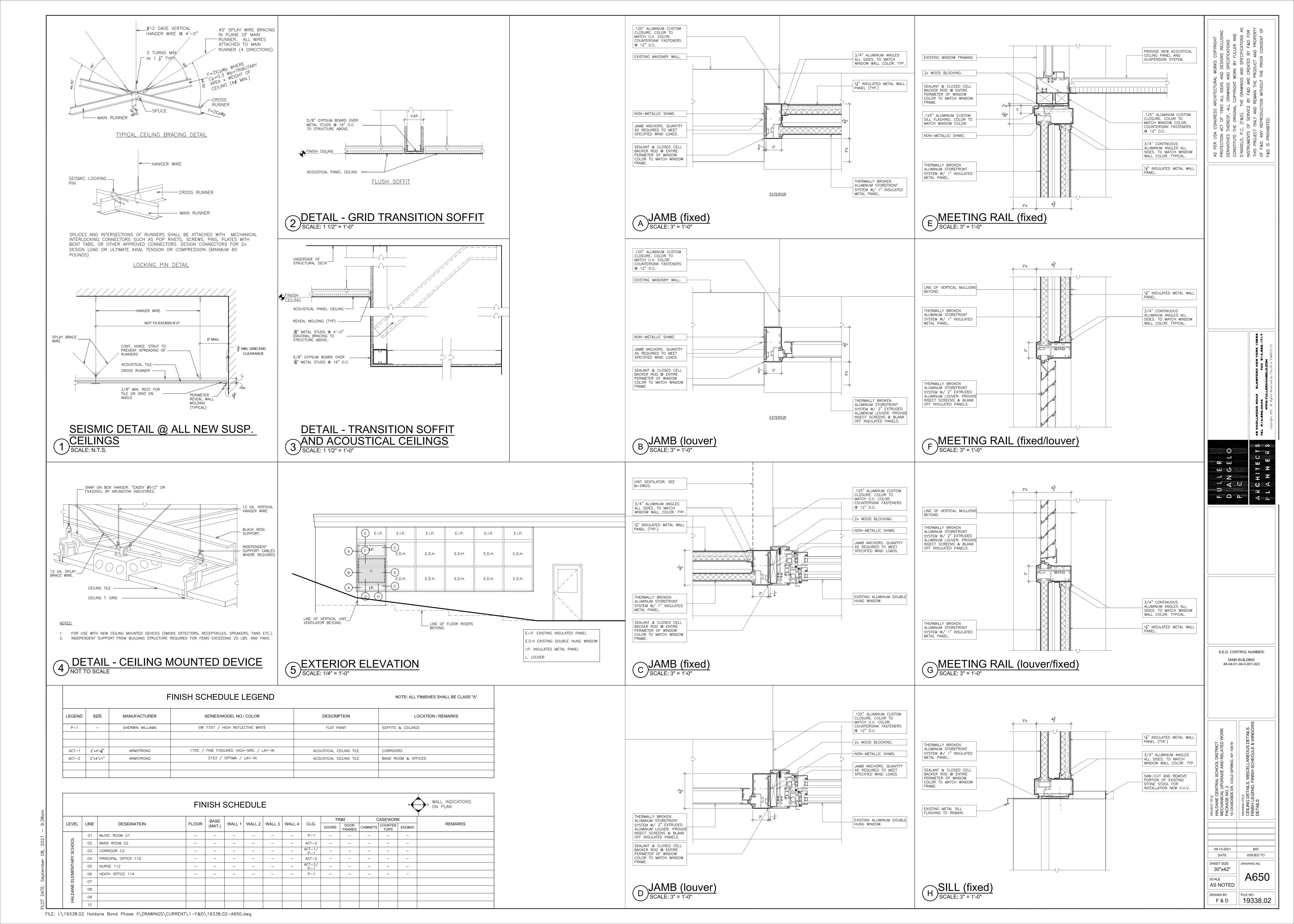












MECHANICAL GENERAL NOTES:

1. ALL HVAC WORK SHALL BE INSTALLED IN ACCORDANCE WITH 2018 INTERNATIONAL MECHANICAL, FIRE, PLUMBING, FUEL GAS CODE AND BUILDING CODE, NYS ENERGY CONSERVATION CONSTRUCTION CODE, ALL LOCAL CODES AND GENERALLY ACCEPTED STANDARDS.

2. HVAC CONTRACTOR SHALL PROVIDE ALL EQUIPMENT, PIPING, VALVES, ACCESS DOORS, HANGERS, FITTINGS AND MISCELLANEOUS COMPONENTS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER THE HVAC SYSTEMS COMPLETE, OPERABLE, AND IN ACCORDANCE WITH APPLICABLE CODES AND GENERALLY ACCEPTED INDUSTRY STANDARDS.

3. HVAC CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FULLY COORDINATED WITH ELECTRICAL, AND PLUMBING TRADES FOR ENGINEERS REVIEW. SUBMIT.

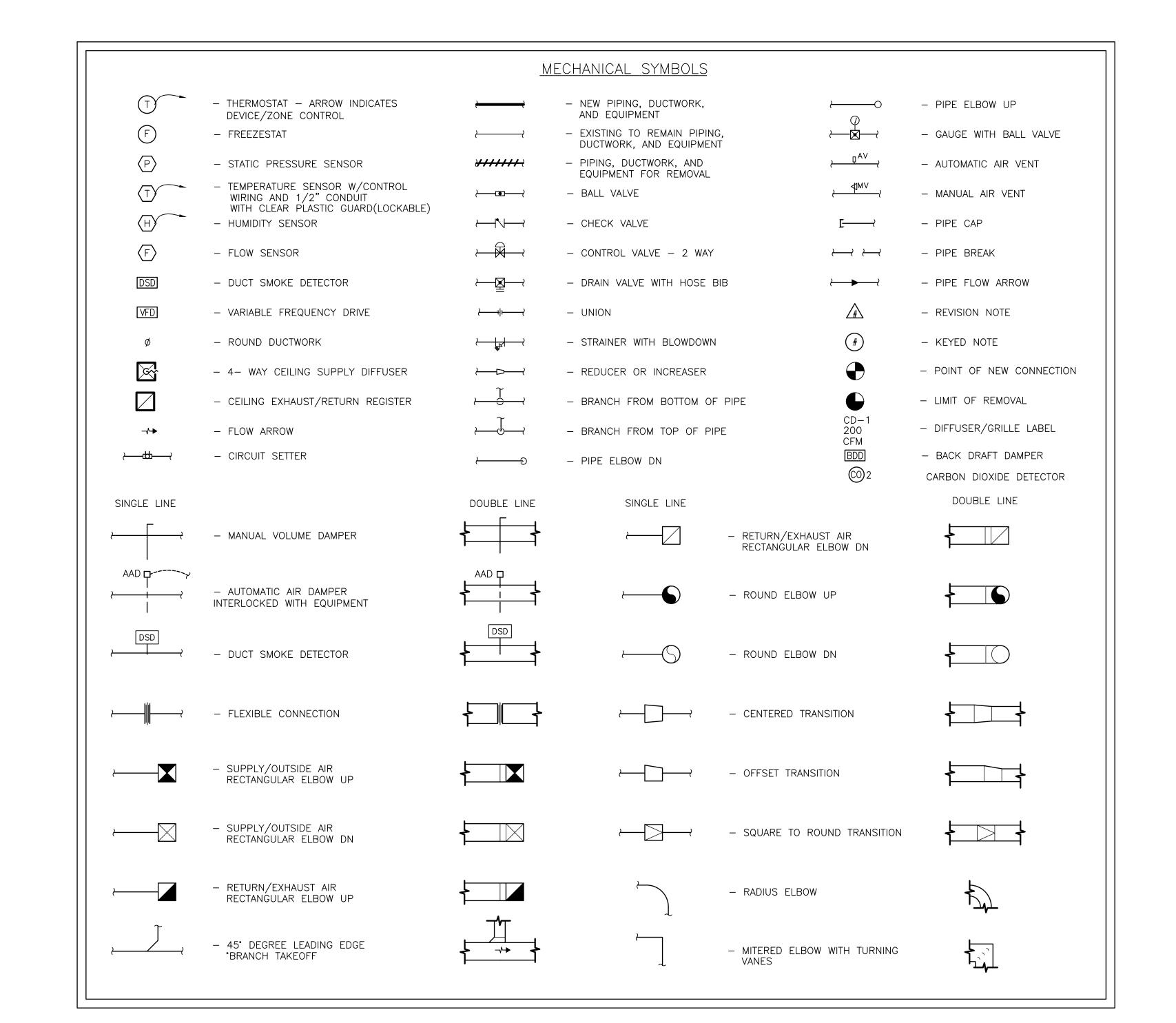
4. HVAC CONTRACTOR SHALL SFAL AROUND ALL PIPE AND DUCT PENETRATIONS THROUGH FIRE

4. HVAC CONTRACTOR SHALL SEAL AROUND ALL PIPE AND DUCT PENETRATIONS THROUGH FIRE RATED WALLS, FLOORS AND CEILINGS WITH HILTI INTUMESCENT FIRE STOP MATERIALS TO MAINTAIN FIRE AND SMOKE RATINGS. DUCTS PENETRATING FIRE RATED WALLS, FLOORS AND CEILINGS SHALL BE INSTALLED WITH FIRE DAMPERS AND ACCESS DOORS WHETHER SPECIFICALLY SHOWN ON THE DRAWINGS OR NOT. PROVIDE FIRE STOP SEALANT ON ALL EXISTING PIPING AND DUCTWORK PENETRATING NEW FIRE RATED WALLS CONSTRUCTED AS PART OF THE PROJECT.

- 5. HVAC CONTRACTOR SHALL NOT DRILL OR CUT ANY STRUCTURAL MEMBERS WITHOUT PERMISSION OF ENGINEER.
- 6. ALL EQUIPMENT SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
- 7. HVAC CONTRACTOR SHALL FURNISH AND INSTALL ALL CONTROL WIRING (24V) FOR SYSTEMS SHOWN ON HVAC DRAWINGS AND DESCRIBED IN HVAC SPECIFICATIONS, INCLUDING ALL RELAYS, TRANSFORMERS, CONDUIT, JUNCTION BOXES, CONDUCTORS, THERMOSTATS, APPURTENANCES AND ALL NECESSARY EQUIPMENT TO MAKE SYSTEMS COMPLETE AND OPERABLE.
- 8. HVAC CONTRACTOR SHALL PAY FOR ALL PERMITS AND INSPECTION FEES REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION.
- 9. ALL DUCTWORK SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH SHEET METAL AND AIR CONDITIONING HVAC CONTRACTORS NATIONAL ASSOCIATION (SMACNA) DUCT STANDARDS. PROVIDE RADIUS TURNS OR TURNING VANES ON ALL CHANGES IN DIRECTION IN ACCORDANCE WITH SMACNA STANDARDS.
- 10. ALL CONTROL WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (N.E.C.) AND ALL LOCAL CODES. ALL CONDUCTORS SHALL BE COPPER WITH THHN INSULATION IN EMT CONDUIT. 120V/1 MINIMUM CONDUCTOR SIZE #12. 24V MINIMUM CONDUCTOR SIZE #18. MINIMUM CONDUIT SIZE SHALL BE $\frac{3}{4}$ ". CONDUIT INSTALLED OUTDOORS SHALL BE GALVANIZED.
- 11. ALL DUCTWORK SHALL BE FABRICATED WITH MINIMUM 26 GAGE GALVANIZED STEEL INCLUDING ROUND DUCTS.
- 12. FINAL LOCATIONS OF ALL THERMOSTATS AND SENSORS SHALL BE APPROVED BY OWNER PRIOR TO INSTALLATION, COORDINATE IN FIELD.
- 13. HVAC CONTRACTOR SHALL PROVIDE ACCESS DOORS FOR ALL VALVES AND DUCT ACCESSORIES CONCEALED IN WALLS/CEILINGS. ACCESS DOORS SHALL HAVE APPROPRIATE FIRE RATING TO MAINTAIN INTEGRITY OF WALL/CEILING. TURN OVER ACCESS DOORS TO GENERAL CONTRACTOR FOR INSTALLATION.
- 14. HVAC CONTRACTOR SHALL COORDINATE FINAL LOCATIONS OF ALL PIPING IN FINISHED AREAS TO ENSURE CONCEALMENT OF ALL PIPING IN WALLS, FLOORS AND CEILINGS.
- 15. HVAC CONTRACTOR SHALL FURNISH AND INSTALL VALVE TAGS, PIPE LABELS, DUCT LABELS AND EQUIPMENT LABELS. LOG ALL TAGS AND LABELS IN A 3-RING BINDER WITH LOCATION, DESCRIPTION AND FUNCTION. SEE SPECIFICATIONS FOR MORE INFORMATION.
- 16. HVAG CONTRACTOR SHALL PROVIDE ALL AIR AND HYDRONIC BALANCING FOR ALL NEW HVAC SYSTEMS. PROVIDE ALL NECESSARY MOTOR, DRIVE, BELT CHANGES AND ETC. SEE SPECIFICATIONS FOR BALANCE PROCEDURES AND ADDITIONAL REQUIREMENTS. CONTRACTOR SHALL COMFORT BALANCE ALL HVAC SYSTEMS TO THE SATISFACTION OF ENGINEER.
- 17. HVAC CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SUPPLEMENTAL STRUCTURAL STEEL SUPPORT ASSOCIATED WITH NEW HVAC EQUIPMENT HUNG OR SUPPORTED FROM OR ON THE BUILDING STRUCTURE. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO STEEL FABRICATION AND INSTALLATION OF EQUIPMENT.
- 18. HVAC CONTRACTOR SHALL INSTRUCT GREEN CHIMNEYS SCHOOL KEY PERSONNEL ON OPERATION OF ALL HVAC SYSTEMS. SET ALL THERMOSTATS TO TEMPERATURES AND SCHEDULES AS DIRECTED BY GREEN CHIMNEYS SCHOOL.
- 19. HVAC CONTRACTOR SHALL INCLUDE IN BID ALL MATERIALS, RIGGING AND LABOR REQUIRED FOR THE COMPLETE AND PROPER INSTALLATION OF THE MECHANICAL SYSTEM.
- 20. HVAC CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO THE BEGINNING OF WORK, AND COORDINATE WORK ALL OTHER TRADES.

21. PROVIDE ALL PIPE OPENINGS THROUGH WALLS WITH PIPE SLEEVES.

- 22. HVAC CONTRACTOR SHALL SCHEDULE ALL SHUT-DOWNS OF EXISTING BASE BUILDING EQUIPMENT/SYSTEMS WITH GREEN CHIMNEYS SCHOOL AS REQUIRED FOR PERFORMING WORK. NOTICE SHALL BE GIVEN NO LESS THAN (5) FIVE BUSINESS DAYS PRIOR REQUIRED SHUT-DOWN. SHUT-DOWNS SHALL NOT BE PERFORMED WITHOUT APPROVAL FROM GREEN CHIMNEYS SCHOOL.
- 23. BEFORE DISPOSING OF REMOVED EQUIPMENT, VERIFY WITH GREEN CHIMNEYS SCHOOL WHAT ITEMS ARE TO BE TURNED OVER TO SCHOOL DISTRICT AND KEPT FOR STOCK.
- 24. UNLESS OTHERWISE NOTED CEILING REMOVAL, TEMPORARY PROTECTION, AND REPLACEMENT AS REQUIRED PERFORMING SCOPE OF WORK SHALL BE BY THIS CONTRACTOR. CEILING TILES DAMAGED AS A RESULT OF THIS CONTRACTOR'S WORK SHALL BE REPLACED AT NO ADDITIONAL COST TO THE SCHOOL.
- 25. ALL MOTOR STARTERS AND DISCONNECT SWITCHES FOR HVAC EQUIPMENT SHALL BE FURNISHED BY THE HVAC CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR, UNLESS OTHERWISE NOTED. DISCONNECT SWITCHES FURNISHED BY THE HVAC CONTRACTOR FOR HVAC EQUIPMENT SHALL BE HEAVY DUTY TYPE AND SHALL BE NEMA 3R WHEN LOCATED OUTSIDE.
- 26. CONTRACTOR SHALL BE RESPONSIBLE FOR DRAINING AND REFILLING EXISTING HYDRONIC AND DOMESTIC WATER SYSTEMS AS REQUIRED FOR COMPLETION OF WORK.
- 27. CONTRACTOR SHALL GUARANTEE ALL WORKMANSHIP AND MATERIAL INSTALLED UNDER THIS CONTRACT FREE FROM DEFECTS FOR A PERIOD OF ONE (I) YEAR FROM DATE OF SUBSTANTIAL COMPLETION AND ACCEPTANCE BY THE OWNER AND AGREES TO REPLACE DEFECTIVE WORK (INCLUDING ALL REQUIRED LABOR AND MATERIAL) AT NO ADDITIONAL COST TO OWNER DURING THE GUARANTEE PERIOD.
- 28. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING START—UP OF ALL NEW EQUIPMENT, CONTROLS, AND ETC. TO ENSURE CORRECT OPERATION OF INSTALLED DEVICES.
- 29. CONTRACTOR SHALL PROVIDE OWNER WITH CATALOG DATA, OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS, AND RECORD (AS—BUILT) DRAWINGS OF ALL COMPLETED WORK.
- 30. ALL NEW HOLES IN WALLS AND FLOORS SHALL BE CORE DRILLED BY THIS CONTRACTOR. PRIOR TO CORE DRILLING FLOORS, RADAR SCAN FLOOR SLABS. USE CAUTION WHEN GORE DRILLING TO AVOID DAMAGE TO EXISTING EQUIPMENT, SYSTEMS, STRUCTURE AND ETC. ANY ITEMS DAMAGED AS A RESULT OF CORE DRILLING SHALL BE REPAIRED BY THIS CONTRACTOR AT NO ADDITIONAL COST TO SCHOOL DISTRICT.
- 31. LOW VOLTAGE CONTROL WIRING AND CONDUIT INDICATED TO BE REMOVED SHALL BE COMPLETELY REMOVED BACK TO SOURCE WHEN POSSIBLE. FOR INACCESSIBLE LOCATIONS WIRING AND CONDUIT SHALL BE SAFELY ISOLATED ON BOTH ENDS.
- 32. CONTRACTOR SHALL HIRE GREEN CHIMNEYS APPROVED ROOFING CONTRACTOR FOR ALL PATCHING, WATERPROOFING AND FLASHING OF ALL HVAC WORK. ANY ROOFING WORK SHALL NOT VOID NEW OR EXISTING ROOF WARRANTEES.
- 33. CONTRACTOR SHALL PROVIDE ACCESS DOORS FOR ALL VALVES AND DUCTS CONCEALED IN WALLS/ CEILINGS. ACCESS DOORS SHALL HAVE APPROPRIATE FIRE RATING TO MAINTAIN INTEGRITY OF WALL/ CEILING. PROVIDE TWO (2) COATS OF FINISHED PAINT. COLOR AS DIRECTED BY ENGINEER.
- 34. CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING, PATCHING AND PAINTING ASSOCIATED WITH HVAC WORK. PATCH OPENINGS/ AREAS WITH SIMILAR MATERIALS AND RESTORE TO ORIGINAL FIRE/SMOKE RATING AND STRUCTURAL INTEGRITY. SEE SPECIFICATIONS AND GENERAL CONDITIONS FOR ACCEPTABLE PROCEDURES, MATERIALS AND STANDARDS.
- 35. HEALTH, SAFETY AND CRITICAL OPERATING EQUIPMENT SHALL NOT BE COMPROMISED WITHOUT SCHOOLS NOTIFICATION AND SCHEDULED SHUTDOWN DURING OFF HOURS AS TEMPORARY OPERATIONAL PLAN IS IMPLEMENTED AND MAINTAINED.
- 36. ALL PIPING SUPPORTS AND HANGERS EXPOSED TO OUTDOOR ELEMENTS SHALL BE GALVANIZED
- 37. CONTRACTOR SHALL INSULATE ALL DUCTWORK RUN OUTSIDE OF THE BUILDING ENVELOPE WITH FIBERGLASS BOARD INSULATION MINIMUM R-VALUE (12.0) WITH VAPOR PROOF JACKET AND TAPED JOINTS. DUCTS RUN WITHIN THE BUILDING SHALL HAVE A MINIMUM R-VALUE (8.0) FIBERGLASS INSULATION WITH VAPOR JACKET AND TAPED JOINTS.
- 38. CONTRACTOR TO PROVIDE NECESSARY MODIFICATIONS TO EXISTING MECHANICAL, PLUMBING, ELECTRICAL, ETC. TO ACCOMPLISH NEW WORK AND TO PROVIDE A PROPERLY FUNCTIONING SYSTEM. VERIFY IN FIELD.



NOTE: CLEANING DURING MECHANICAL WORK: THE MECHANICAL ROOM
AND ROOMS WHERE WORK WILL BE DONE TO MINIMIZE DISTURBANCE
IN THE BUILDINGS. WORKERS ARE TO USE PATHWAYS AND FACILITIES
AGREED UPON WITH THE DISTRICT DESIGNEE IN WRITING.
THE AREA OUTSIDE THE BUILDING WHERE CUTTING WELDING OR
STORAGE IS ALLOWED IS TO BE FENCED AT ALL TIMES.
THE CONTRACTOR WILL ON A DAILY BASIS CLEAN THE GROUNDS
AND THE BUILDING OF ANY DEBRIS OR GARBAGE GENERATED BY

THEIR WORK.

AUTOMATIC AIR DAMPER AIR COOLED CONDENSING UNIT ACCESS DOOR AIR HANDLING UNIT **AMPERAGE** BACKDRAFT DAMPER BRAKE HORSEPOWER BUILDING MANAGEMENT SYSTEM BRITISH THERMAL UNIT CUBIC FEET PER MINUTE CFM CABINET HEATER CLG CEILING CONDENSATE DRYBULB TEMPERATURE DDC DIRECT DIGITAL CONTROL (SYSTEM) DEG DEGREE DIAMETER DOWN DEWPOINT TEMPERATURE DIRECT EXPANSION EXHAUST AIR ENTERING AIR TEMPERATURE EXHAUST FAN EFFICIENCY EXHAUST GRILLE ESP EXTERNAL STATIC PRESSURE EXHAUST FAHRENHEIT FIRE DAMPER FINAL FILTER FLR FLOOR FEET PER MINUTE FSTAT FREEZESTAT FEET FT HD FEET OF HEAD FT WG FEET OF WATER GAUGE FACE VELOCITY GAS GALLON GALLONS PER MINUTE HEAD HORSEPOWER MIXED AIR TEMPERATURE MAKE-UP AIR UNIT 1,000 BTU/HR MINIMUM BRANCH CIRCUIT AMPACITY OUTSIDE AIR OUTSIDE AIR INTAKE PRESSURE DROP REMOVE RETURN AIR REFRIGERANT LIQUID REVOLUTIONS PER MINUTE REFRIGERANT SUCTION SATISFACTORY SUPPLY AIR TEMPERATURE SEN SENSIBLE HEAT SPECIFIC GRAVITY STATIC PRESSURE TAB TESTING, ADJUSTING, BALANCE TSTAT THERMOSTAT TYPICAL VOLUME DAMPER WETBULB WATER GAUGE HEAT PUMP TEMPERATURE DIFFERENCE

HVAC ABBREVIATIONS

HVAC REMOVAL: NOTES

- THE SCOPE OF REMOVAL SHOWN ON "REMOVALS" DRAWING IS DIAGRAMMATIC ONLY AND INDICATES THE INTENT OF THE WORK TO BE PERFORMED AND NOT THE COMPLETE SCOPE OF DEMOLITION AND/OR REMOVAL WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE OR RELOCATE ANY RELATED MECHANICAL DEVICES/ITEMS EVEN IF NOT SPECIFICALLY INDICATED TO BE REMOVED ON THESE DRAWINGS IN ORDER TO ACCOMODATE NEW WORK.
- 2. EQUIPMENT/ITEMS SHOWN CROSS HATCHED ON DRAWINGS ARE ITEMS TO BE REMOVED. ANY DEVICES/ITEMS REMOVED SHALL INCLUDE (BUT SHALL NOT BE LIMITED TO) THE REMOVAL OF ALL ASSOCIATED PIPING, CONTROLS, ETC. THAT ARE NOT INCORPORATED IN THE NEW LAYOUT. THE CONTRACTOR SHALL PERFORM ALL WORK REQUIRED TO INSURE CONTINUITY OF SERVICE TO EXISTING REMAINING EQUIPMENT. NO EXTRAS RELATING TO THE SCOPE OF WORK DESCRIBED WILL BE ALLOWED.
- EQUIPMENT, PIPING, ETC. REQUIRED TO RECONNECT SHALL BE INSTALLED CONCEALED WITHIN THE SUSPENDED CEILINGS, PARTITIONS AND/OR WALLS, FLOORS. NO SURFACE MOUNTED OR EXPOSED EQUIPMENT, PIPING, ETC., SHALL BE PERMITTED, UNLESS SPECIFICALLY INDICATED.
- ALL ITEMS TO BE REMOVED SHALL BE REVIEWED WITH THE OWNER PRIOR TO REMOVAL. OWNER SHALL HAVE FIRST SALVAGE RIGHTS. ITEMS THE OWNER WISHES TO KEEP SHALL BE REMOVED WITH CARE AND STORED AS DIRECTED BY OWNER. ITEMS THE OWNER DOES NOT WISH TO KEEP SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.

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S.E.D. CONTROL NUMBER:

MAIN BUILDING

48-04-01-04-0-001-023

HIGH SCHOOL ANNEX

48-04-01-04-0-016-007

MECHANICAL UPGRADE AND RELATED WORK PACKAGE NO. 2
15 CRAIGSIDE DR, COLD SPRING, NY 10516
DRAWING TITLE
ABBREVIATIONS
AND SYMBOLS

09/13/2021 BID
DATE ISSUED TO

SHEET SIZE
30"x42"

SCALE
AS NOTED

BID
DRAWING NO.

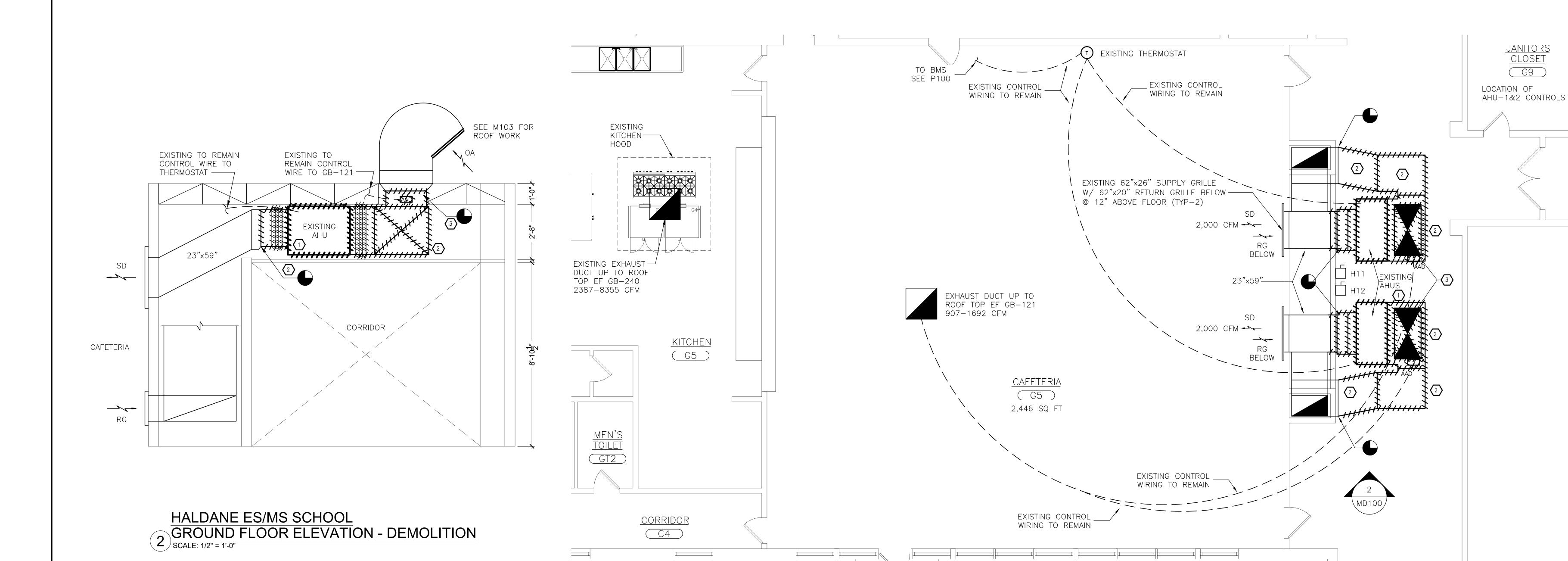
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FILE NO.

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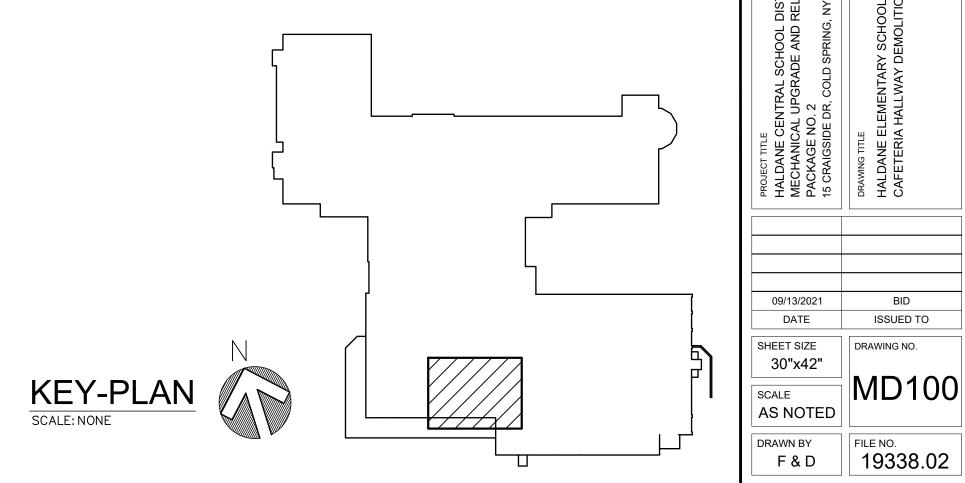
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HALDANE ES/MS SCHOOL GROUND FLOOR PLAN - DEMOLITION 1 SCALE: 1/4" = 1'-0"

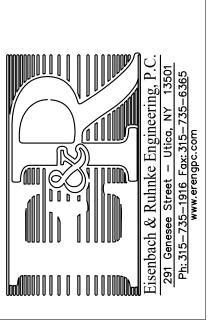
KEYED NOTES - DEMOLITION

- REMOVE 2 AIR HANDLING UNITS AND ASSOCIATED SUPPORTS, DAMPERS, CONTROLS AND NECESSARY HW PIPING ABOVE EXISTING DROP CEILING. THERMOSTAT, PORTION OF CONRTOL WIRING AND CONTROLS FOR INTERCONNECTION TO GB-121 SHALL BE DISCONNECTED AND REUSED.
- 2 REMOVE PORTION OF EXISTING DUCTWORK. DISCONNECT AT THE POINTS SHOWN. REMOVE PORTION OF DUCTWORK CONNECTING TO ROOF MOUNTED OUTSIDE AIR INTAKE.



JANITORS CLOSET

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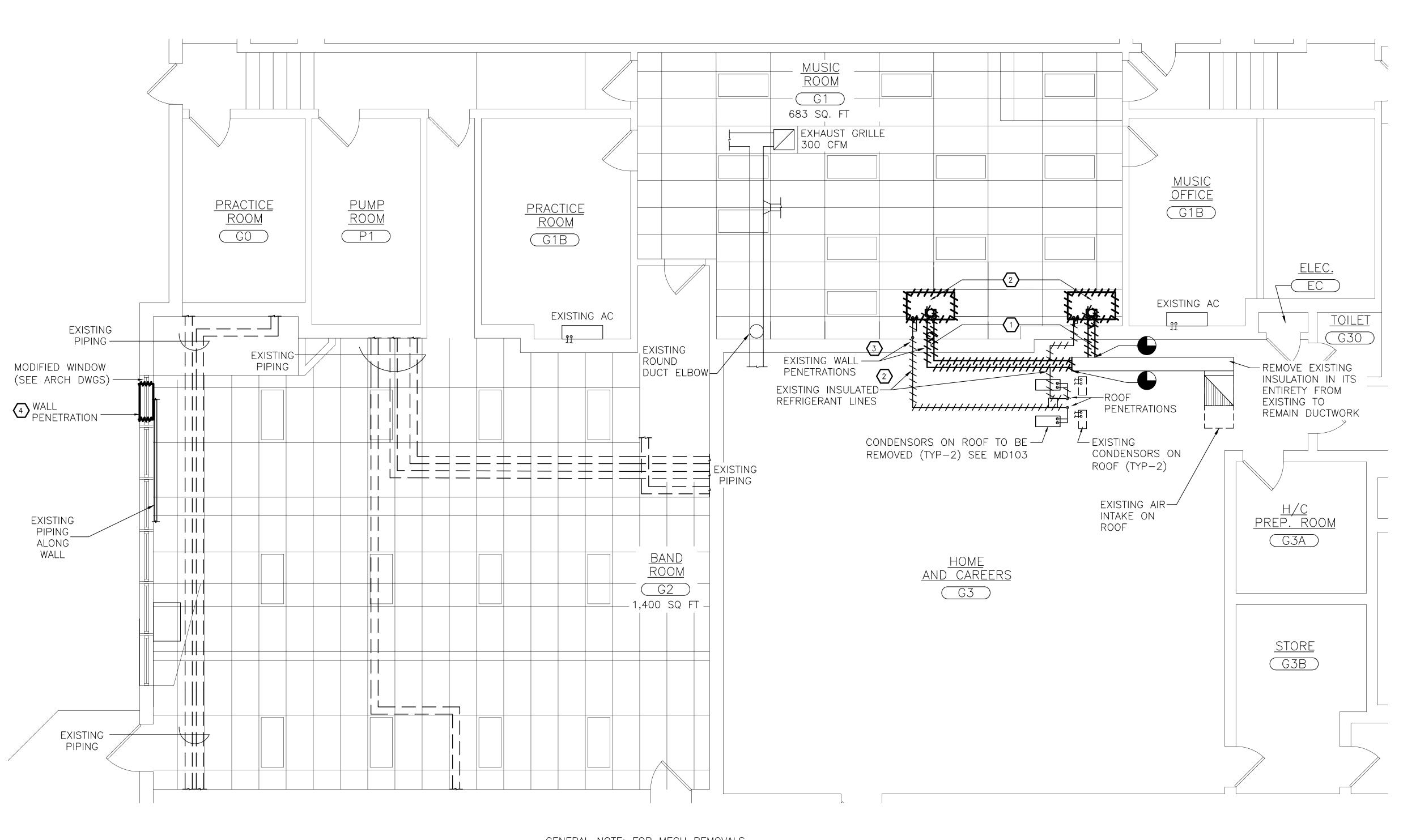






S.E.D. CONTROL NUMBER: MAIN BUILDING 48-04-01-04-0-001-023 HIGH SCHOOL ANNEX 48-04-01-04-0-016-007

HALDANE CENTRAL SCHOOL DISTRICT MECHANICAL UPGRADE AND RELATED WORK PACKAGE NO. 2 15 CRAIGSIDE DR, COLD SPRING, NY 10516	DRAWING TITLE HALDANE ELEMENTARY SCHOOL CAFETERIA HALLWAY DEMOLITION
09/13/2021	BID
DATE	ISSUED TO
SHEET SIZE	DRAWING NO.





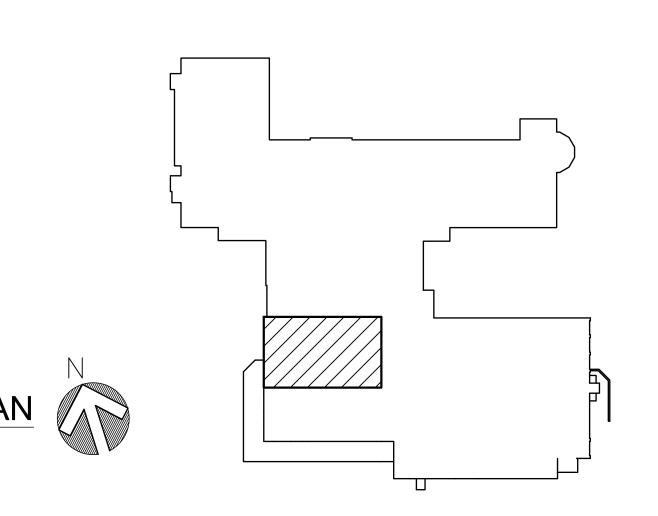
KEYED NOTES - DEMOLITION

REMOVE PORTION OF EXISTING OUTSIDE AIR DUCTWORK AND ALL INSULATION. PREPARE FOR NEW WORK.

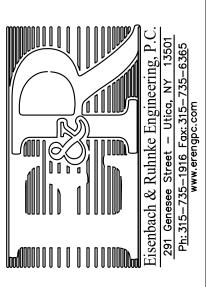
REMOVE TWO (2) EXISTING UNIT VENTILATORS INCLUDING REFRIGERANT LINES, MOUNTS, HANGERS AND ASSOCIATED. ELECTRICAL REMOVALS ARE PART OF ELECTRICAL

CUT AND MODIFY EXISTING WALL PENETRATIONS TO ACCEPT NEW DUCTWORK AND REFRIGERANT LINES. SEE NEW WORK PLAN AND NOTES.

SAW CUT WALL TO PROVIDE NEW SLEEVE. SEE NEW WORK PLAN AND NOTES.

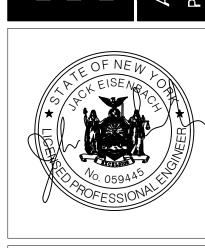


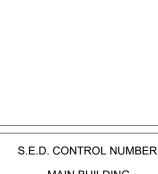
AS PER USA CONGRESS ARCHITECTURAL WORK PROTECTION ACT OF 1990 ALL IDEAS AND DES DERIVATIVES THEREOF, ALL DRAWINGS AND SPECONSTITUTE THE ORIGINAL COPYRIGHT WORK B D'ANGELO, P.C. (F&D). THE DRAWINGS AND SINSTRUMENTS OF SERVICE BY F&D ARE CREAT THIS PROJECT ONLY AND REMAIN THE PRODUC OF F&D. ANY REPRODUCTION WITHOUT THE PRESENT OF SERVICE BY F&D ARE CREAT THIS PROJECT ONLY AND REMAIN THE PRODUCTION WITHOUT THE PRESENT OF F&D IS PROHIBITED.







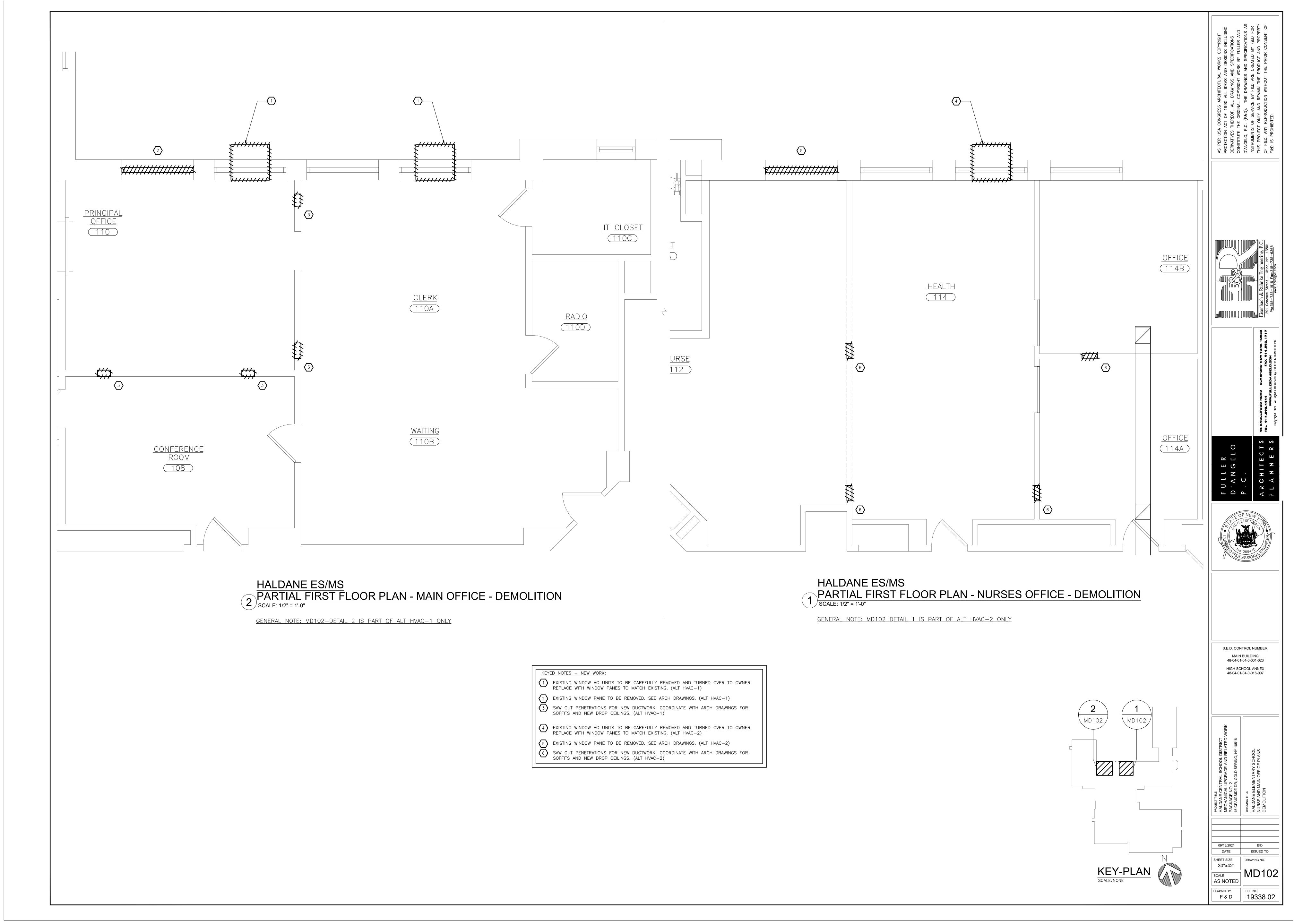


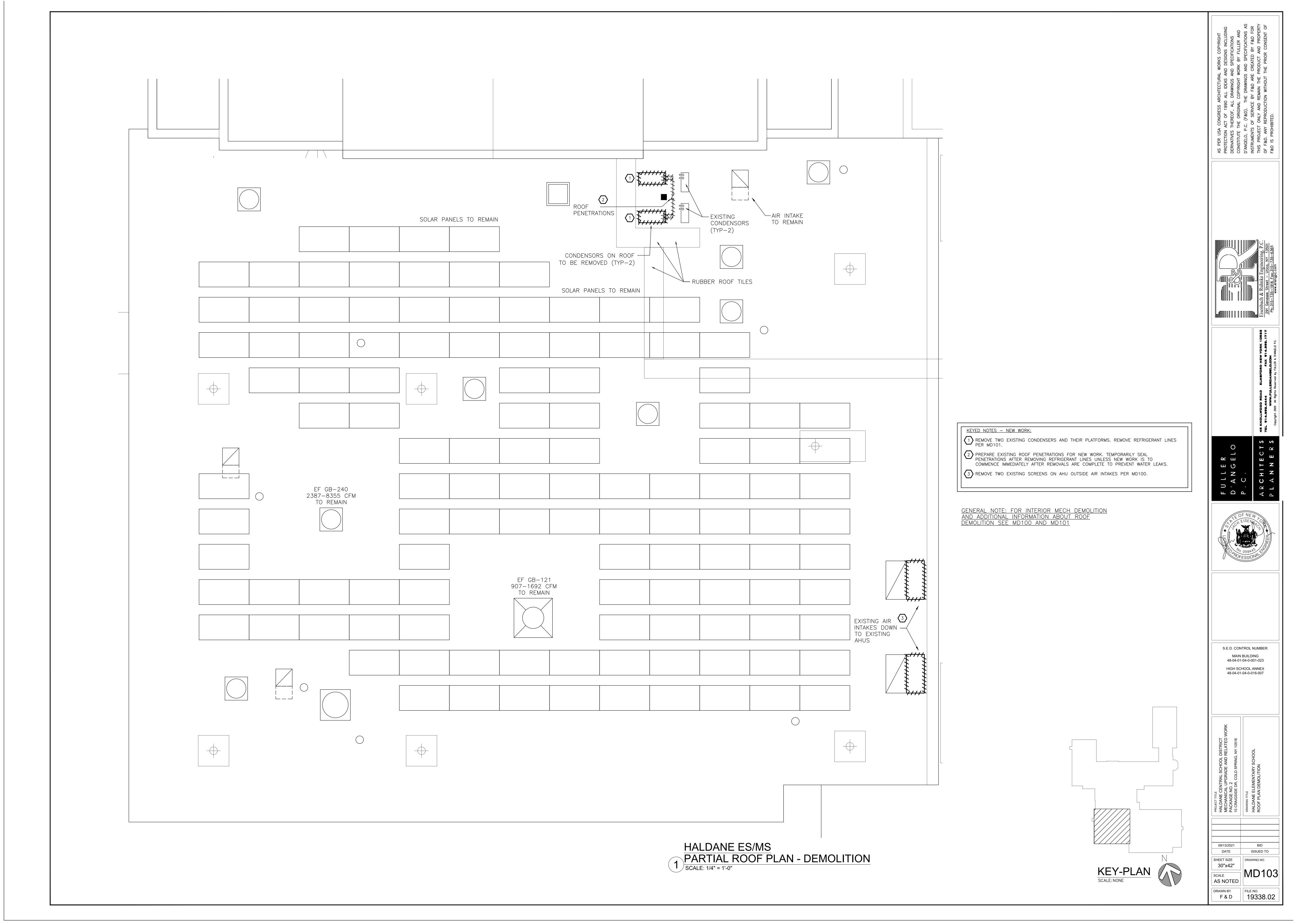


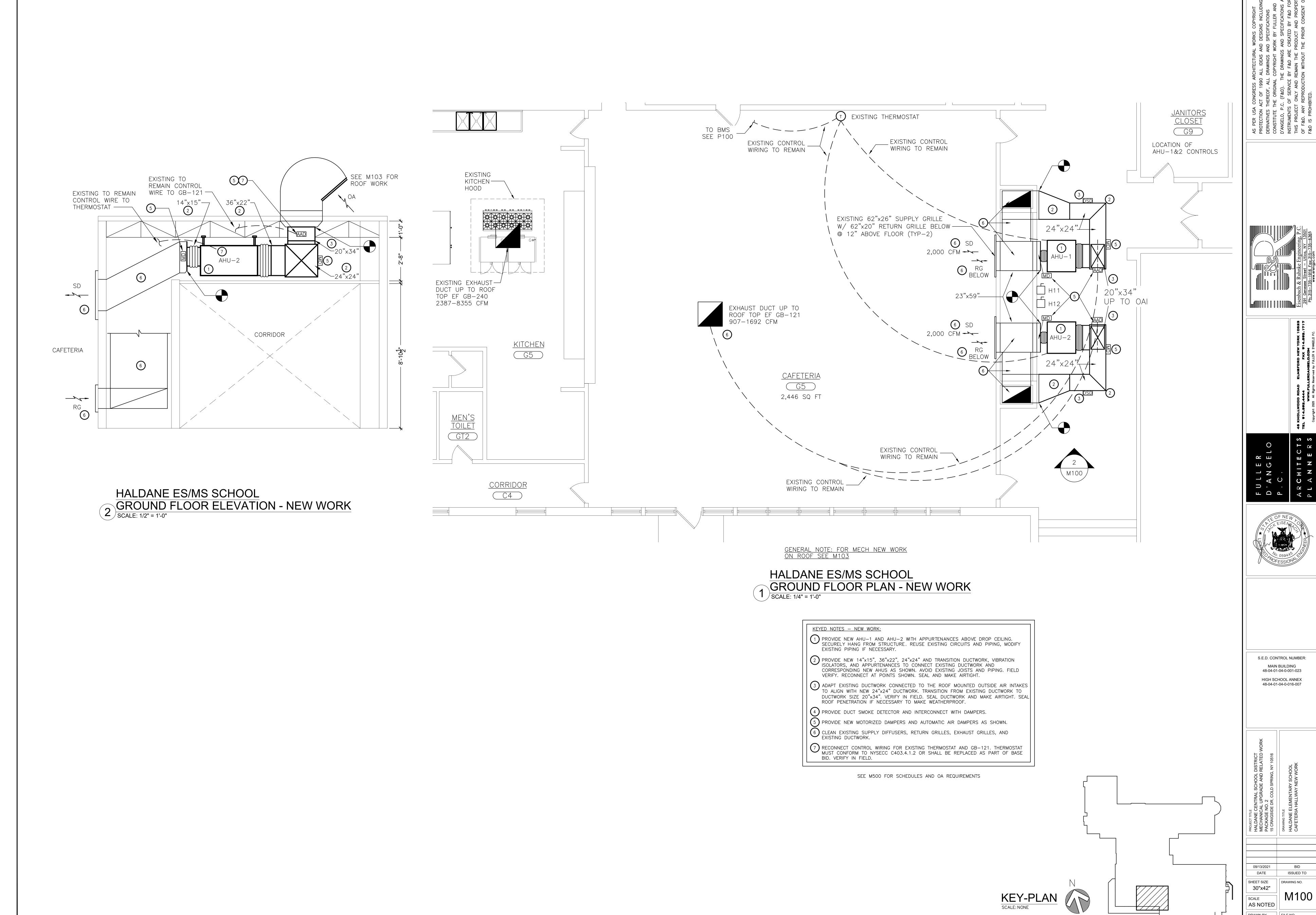
S.E.D. CONTROL NUMBE
MAIN BUILDING 48-04-01-04-0-001-023
HIGH SCHOOL ANNEX 48-04-01-04-0-016-007

PROJECT TITLE HALDANE CENTRAL SCHOOL DISTRICT MECHANICAL UPGRADE AND RELATED WORK PACKAGE NO. 2 15 CRAIGSIDE DR, COLD SPRING, NY 10516	DRAWING TITLE HALDANE ELEMENTARY SCHOOL MUSIC AND BAND ROOM DEMOLITION
09/13/2021	BID
DATE	ISSUED TO
SHEET SIZE 30"x42"	DRAWING NO.
SCALE AS NOTED	MD101

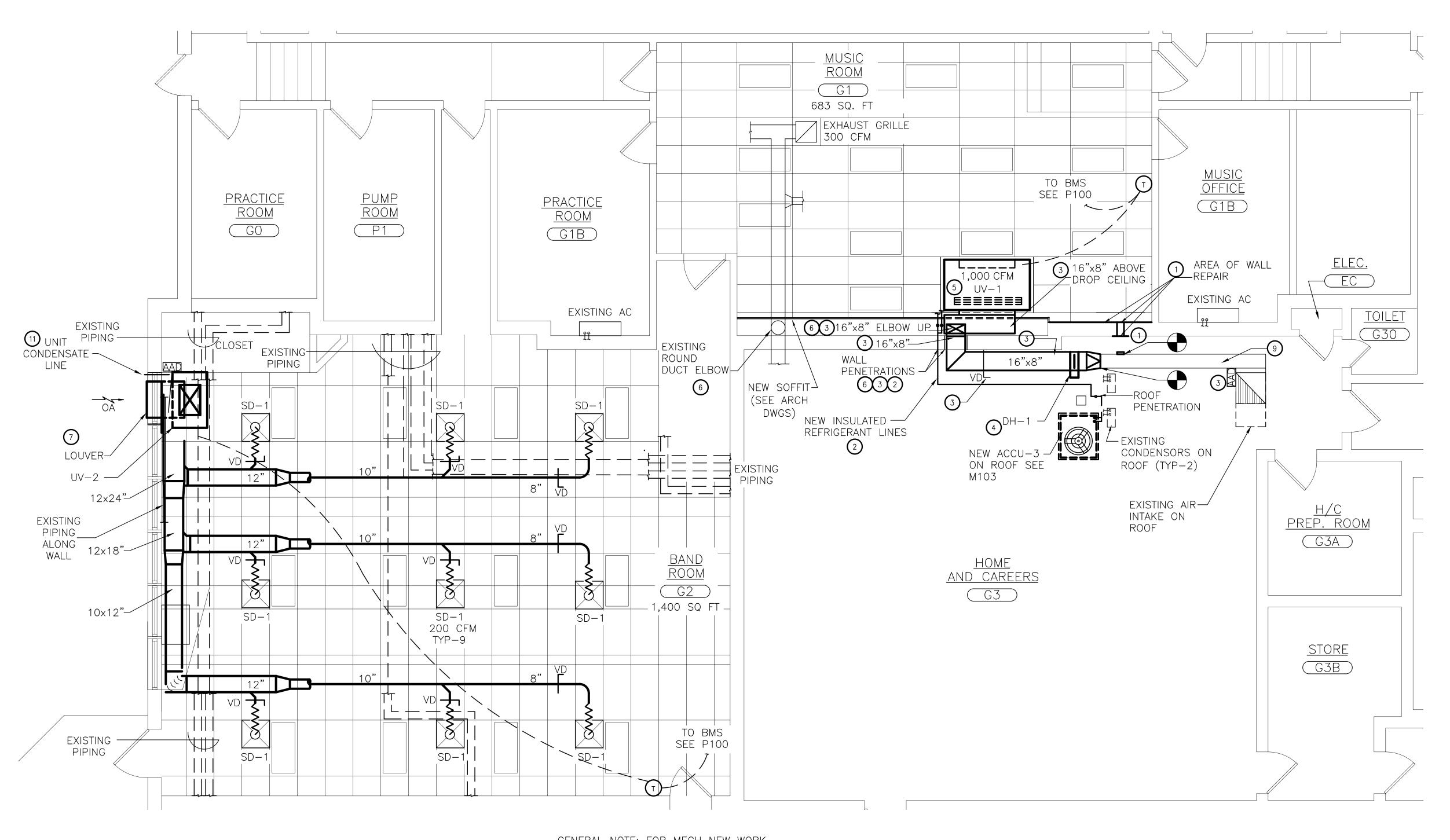
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F & D FILE NO. 19338.02

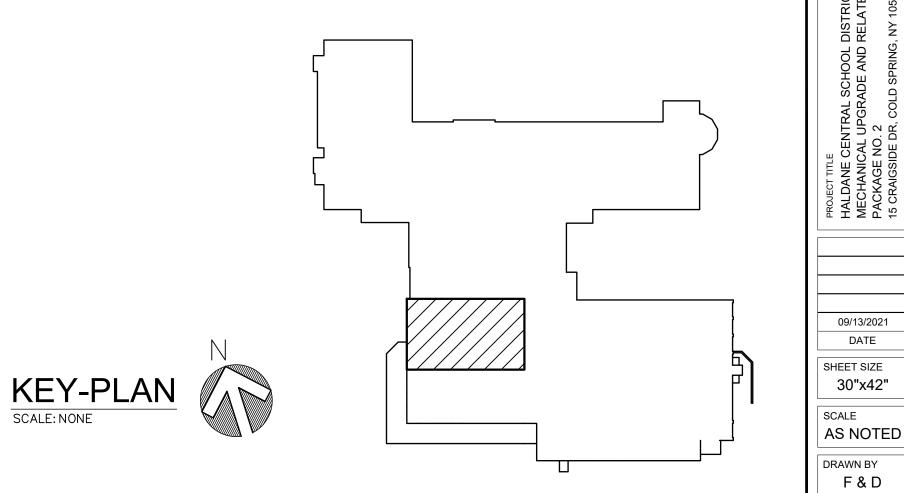


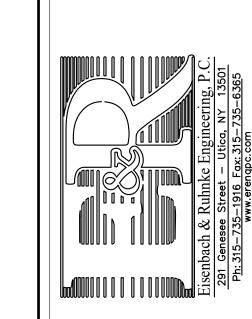
GENERAL NOTE: FOR MECH NEW WORK ON ROOF SEE M103

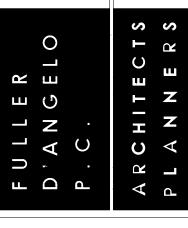
HALDANE ES/MS SCHOOL GROUND FLOOR PLAN - NEW WORK SCALE: 1/4" = 1'-0"

KEYED NOTES - NEW WORK: CAP EXISTING DUCT AND CONNECT AT POINT SHOWN. SEAL DUCT AND MAKE AIRTIGHT. PROVIDE FIRE PROOFING WHERE REQUIRED. SPACKLE AND PAINT WALL TO PROVIDE, SUPPORT AND FEED INSULATED REFRIGERANT LINES FROM NEW ACCU-1 (SEE DRAWING M103) THROUGH EXISTING ROOF PENETRATION AND WALL PENETRATION. MODIFY PENETRATION IF NECESSARY. ROOF PENETRATION SHALL BE WEATHER PROOF. PROVIDE FIRE STOPPING AT WALL PENETRATION. 3 PROVIDE NEW INSULATED 16"x8" DUCT, VOLUME DAMPER, MOTORIZED DAMPER, AND DUCT INSULATION. USE MODIFIED WALL PENETRATION TO FIT INSULATED 16"x8" DUCT. PROVIDE FIRE STOPPING TO WALL PENETRATION. SEAL DUCTWORK AND MAKE AIRTIGHT. SECURELY HANG DUCTWORK FROM STRUCTURE. PROVIDE AND SUPPORT ELECTRIC DUCT HEATER DH-1. SEAL IN DUCTWORK AND MAKE AIR TIGHT. 5 PROVIDE NEW UV-1 TO BE FLUSH WITH DROP CEILING. SECURELY HANG FROM STRUCTURE USING FRAMING AND THREADED RODS. 6 WALL PENETRATIONS, DUCTWORK ELBOWS, REFRIGERANT LINES, AND ASSOCIATED, SHALL BE HIDDEN AND HOUSED BY A NEW SOFFIT. COORDINATE WITH ARCH DRAWINGS. PROVIDE UV-2, WALL SLEEVE AND LOUVER. POSITION UV-2 TO ALLOW ACCESS TO CLOSET AND TO ALLOW EXISTING HW PIPING TO RUN BEHIND UV-2 AND UNDER WALL SLEEVE. PROVIDE INSULATION TO ANY HW PIPING LOCATED BEHIND THE UNIT. VERIFY 8 PROVIDE NEW INSULATED DUCTWORK, LOUVERS, THREADED ROD HANGERS AND NINE (9) SD-1 DIFFUSERS AS SHOWN. POSITION AND MANEUVER DUCTWORK THROUGH ÈXÍSTING OPEN WEB JOISTS AND AVOID EXISTING DUCTWORK AND PIPING ABOVE CEILING. CONTRACTOR TO RELOCATE CROSS BRACING AS REQUIRED. EXISTING PIPING SHOWN FOR REFERENCE ONLY. VERIFY IN FIELD. PROVIDE NEW INSULATION TO EXISTING TO REMAIN DUCTWORK. CLEAN EXISTING TO REMAIN DUCTWORK. PROVIDE TWO NEW THERMOSTATS TO CONFORM TO TO NYSECC C403.4.1.2. PROVIDE 1" COPPER CONDENSATE LINE TO THE EXTERIOR. MAKE PENETRATION TO EXTERIOR WEATHERTIGHT. PROVIDE SPLASH BLOCK FLUSH WITH GRADE.

SEE M500 FOR SCHEDULES AND OA REQUIREMENTS









S.E.D. CONTROL NUMBER:

MAIN BUILDING

48-04-01-04-0-001-023

HIGH SCHOOL ANNEX

48-04-01-04-0-016-007

PROJECT TITLE
HALDANE CENTRAL SCHOOL DISTRICT
MECHANICAL UPGRADE AND RELATED WORK
PACKAGE NO. 2
15 CRAIGSIDE DR, COLD SPRING, NY 10516

DRAWING TITLE
HALDANE ELEMENTARY SCHOOL
MUSIC AND BAND ROOM NEW WORK

09/13/2021 BID
DATE ISSUED TO

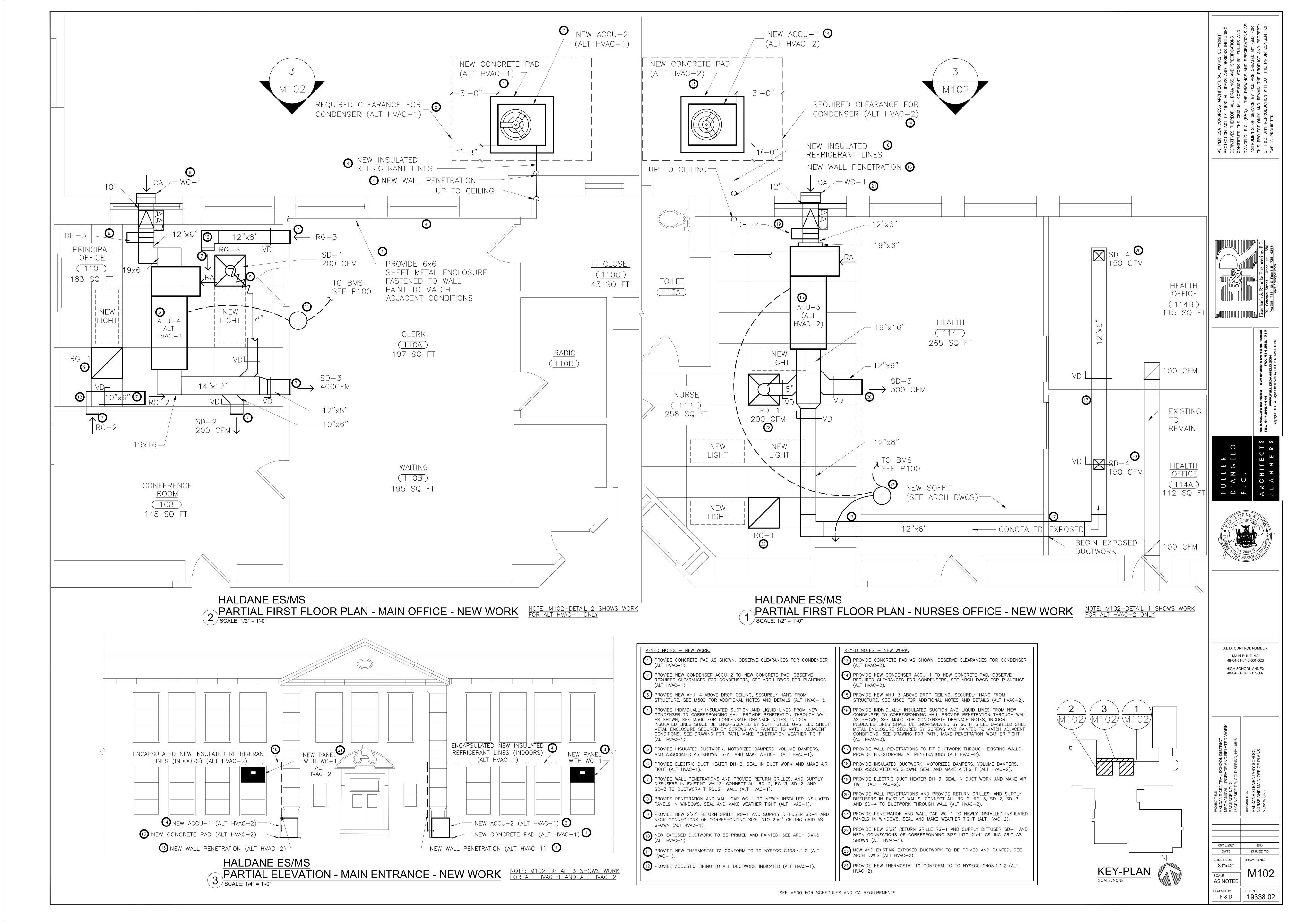
SHEET SIZE
30"x42"

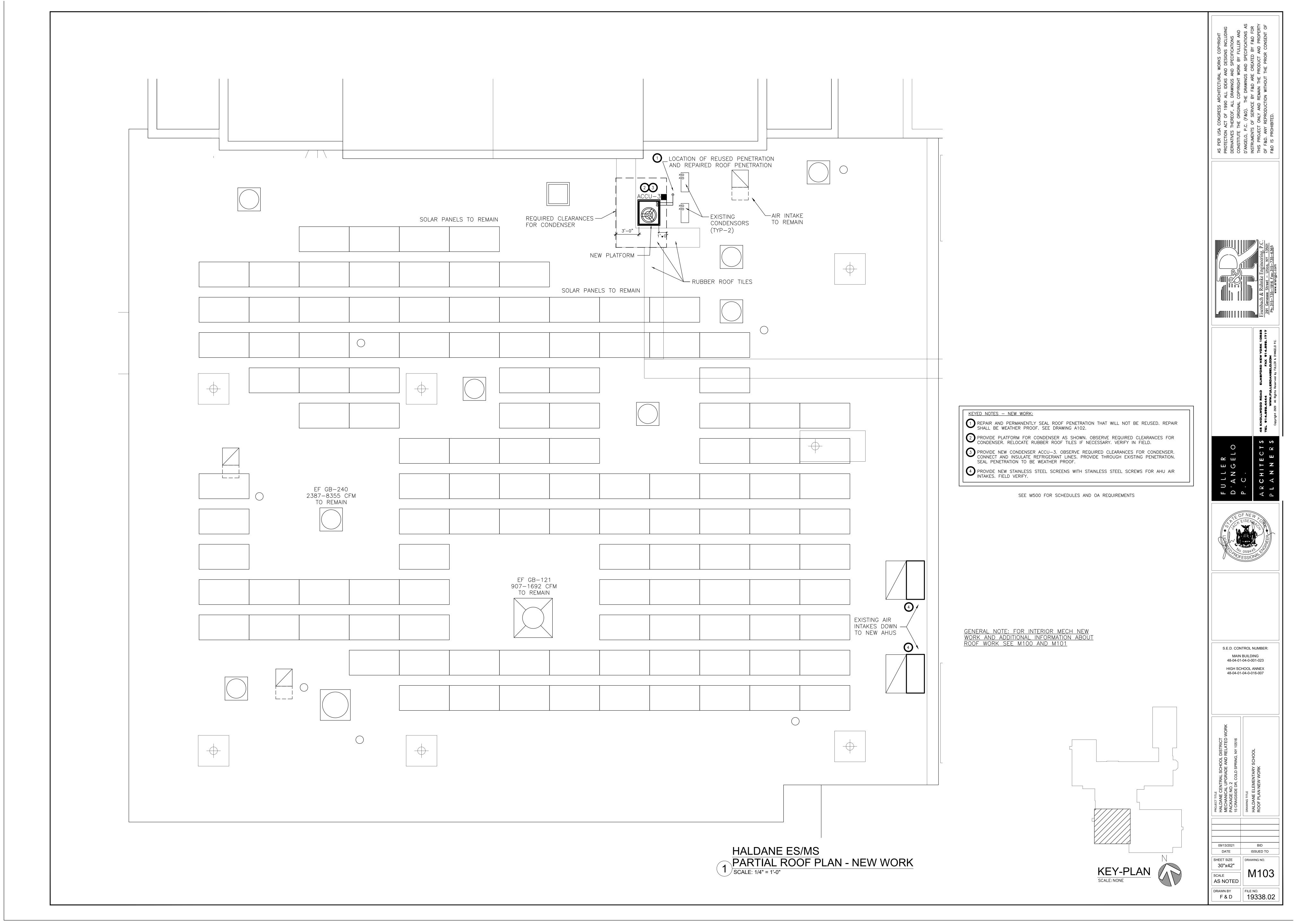
SCALE
AS NOTED

DRAWN BY

FILE NO.

19338.02





OA DESIGN CRITERIA HALDANE ELEMENTARY/MIDDLE SCHOOL

AHU-1 & AHU-2 - CAFETERIA CAFETERIA OCCUPANT DENSITY = 100/1000 SQUARE FEET RP=7.5 CFM/PERSON PZ=172 PEOPLE (POSTED MAX OCCUPANCY) RA=0.18 CFM/SQ.FT. AZ=2450 SQ.FT. VBZ=1731 CFM EZ=0.9 (SEE NOTE) VOZ=1923 CFM	NOTE: RETURN GRILLE IS LOCATED BETWEEN "FLOOR" (EZ=1.0) AND "CEILING" (EZ=0.8) AND THEREFORE DOES NOT MEET EITHER DESCRIPTION. AN AVERAGED EZ VALUE OF 0.9 WILL BE USED. SEE AIR DISTRIBUTION NOTES BELOW. * TOTAL OA SUPPLIED BY ONE INDIVIDUAL AHU OR BY
MIN TOTAL OUTSIDE AIR REQUIRED - 1,923 CFM*	BOTH AHUS COLLECTIVELY.
AHU-3 NURSE'S OFFICE NURSE'S OFFICE OCCUPANT DENSITY = 10/1000 SQ. FT. RP=5 CFM/PERSON PZ=6 PEOPLE RA=0.18 CFM/SQ.FT. AZ=530 SQ.FT. VBZ=125.4 CFM EZ=1.0 (CEILING SUPPLY OF COOL AIR) VOZ=126 CFM PARTIAL OUTSIDE AIR REQUIRED - 126 CFM	WORK IS PART OF ALT HVAC-2 ONLY
HEALTH OFFICE 114A OCCUPANT DENSITY = 5/1000 SQ. FT. RP=5 CFM/PERSON PZ=1 PERSON RA=0.06 CFM/SQ.FT. AZ=115 SQ.FT. VBZ=11.9 CFM EZ=1.0 (CEILING SUPPLY OF COOL AIR) VOZ=12 CFM PARTIAL OUTSIDE AIR REQUIRED - 12 CFM	
HEALTH OFFICE 114B OCCUPANT DENSITY = 5/1000 SQ. FT. RP=5 CFM/PERSON PZ=1 PERSON RA=0.06 CFM/SQ.FT. AZ=125 SQ.FT. VBZ=12.5 CFM EZ=1.0 (CEILING SUPPLY OF COOL AIR) VOZ=13 CFM PARTIAL OUTSIDE AIR REQUIRED - 13 CFM MIN OUTSIDE AIR REQUIRED - 151 CFM	
AHU-4 MAIN OFFICE MAIN OFF./ WAITING AREA OCC. DENSITY = 30/1000 SQ. FT.	WORK IS PART OF ALT HVAC-1 ONLY
RP=5 CFM/PERSON	

AHU-4 MAIN OFFICE	WORK IS PART OF ALT HVAC-1 ONLY
MAIN OFF./ WAITING AREA OCC. DENSITY = 30/1000 SQ. FT.	ALI HVAC-I UNLI
RP=5 CFM/PERSON PZ=18 PEOPLE	
RA=0.06 CFM/SQ.FT.	
AZ=600 SQ.FT.	
VBZ=126 CFM	
EZ=1.0 (CEILING SUPPLY OF COOL AIR) VOZ=126 CFM PARTIAL OUTSIDE AIR REQUIRED — 126 CFM	
PRINCIPAL'S OFFICE OCCUPANT DENSITY = 5/1000 SQ. FT.	
RP=5 CFM/PERSON	
PZ=1 PERSON	
RA=0.06 CFM/SQ.FT.	
AZ=200 SQ.FT. VBZ=17 CFM	
EZ=1.0 (CEILING SUPPLY OF COOL AIR)	
VOZ=17 CFM PARTIAL OUTSIDÉ AIR REQUIRED — 17 CFM	
CONFERENCE ROOM OCCUPANT DENSITY = 50/1000 SQ. FT.	
RP=5 CFM/PERSON	
PZ=8 PERSON RA=0.06 CFM/SQ.FT.	
AZ=150 SQ.FT.	
VBZ=49 CFM	
EZ=1.0 (CEILING SUPPLY OF COOL AIR)	
VOZ=49 CFM PARTIAL OUTSIDE AIR REQUIRED — 49 CFM MIN OUTSIDE AIR REQUIRED COOLING — 192 CFM	
UV-1 MUSIC ROOM	
MUSIC ROOM OCCUPANCY DENSITY = 35/1000 SQ. FT. RP=10 CFM/PERSON	
INI - TO GIMI/FENSON	

UV-1 MUSIC ROOM	
MUSIC ROOM OCCUPANCY DENSITY = 35/1000 SQ. FT.	
RP=10 CFM/PERSON	
PZ=25 PEOPLE	
RA=0.06 CFM/SQ.FT.	
AZ=715 SQ.FT.	
VBZ=292.9 CFM	
EZ=1.0 (CEILING SUPPLY OF COOL AIR)	
VOZ=293 CFM MIN OUTSIDE AIR REQUIRED COOLING— 293 CFM	
UV-2 BAND ROOM	NOTE: RETURN GRILLE IS

ND ROOM OCC. DENSITY = 35/1000 SQ. FT. T. USED AS CONF. RM OCC. DENSITY = 50/1000 SQ. FT. =10 CFM/PERSON =48 PEOPLE =0.06 CFM/SQ.FT. =1350 SQ.FT. Z=561 CFM PZ=68 PEOPLE AZ=1350 SQ.FT. VBZ=421 CFM =0.9 (HEATING, 1.0 COOLING) (EZ=1.0) AND "CEILII (EZ=0.8) AND THERE DOES NOT MEET EITH DESCRIPTION. AN AVE EZ VALUE OF 0.9 WILL USED. SEE AIR DISTRIBUTION. NOTES BELOW.			
BAND ROOM OCC. DENSITY = 35/1000 SQ. FT. ALT. USED AS CONF. RM OCC. DENSITY = 50/1000 SQ. FT.	LOCATED BETWEEN "FLOOR" (EZ=1.0) AND "CEILING" (EZ=0.8) AND THEREFORE		
PZ=48 PEOPLE PZ=68 PEOPLE RA=0.06 CFM/SQ.FT. RA=0.06 CFM/SQ.FT. AZ=1350 SQ.FT. AZ=1350 SQ.FT.	DOES NOT MEET EITHER DESCRIPTION. AN AVERAGED EZ VALUE OF 0.9 WILL BE USED. SEE AIR DISTRIBUTION		

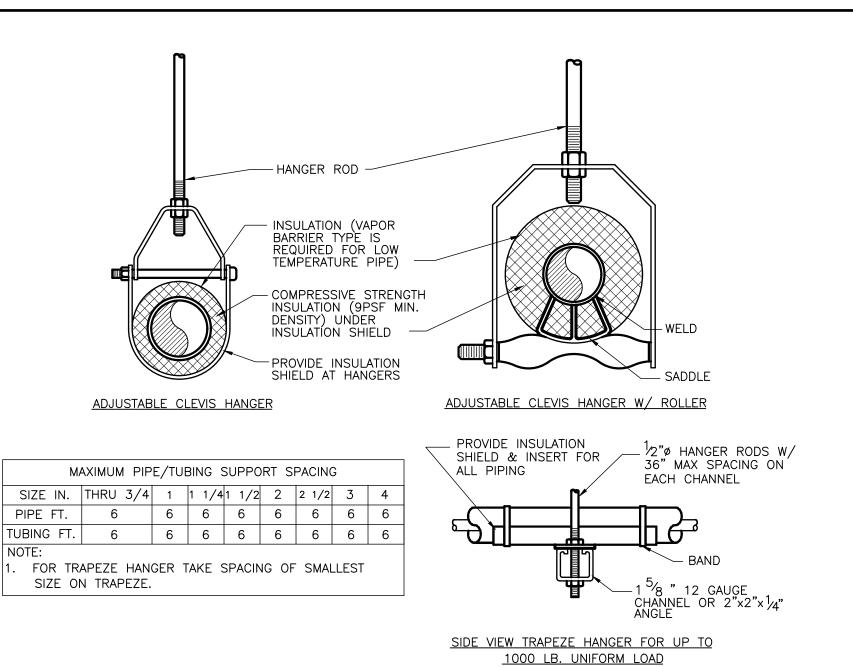
OCCUPANCY CLASSIFICATION DERIVED FROM NYSMC TABLE 403.3.1.1 RP=OUTDOOR AIRFLOW RATE PER PERSON (NYSMC TABLE 403.3.1.1) PZ=QTY. OF OCCUPANTS IN SPACE RA=OUTDOOR AIRFLOW RATE PER UNIT AREA (NYSMC TABLE 403.3.1.1) AZ=OCCUPIABLE FLOOR AREA VBZ=REQUIRED OUTDOOR AIRFLOW RATE IN BREATHING ZONE EZ=ZONE AIR DISTRIBUTION EFFECTIVENESS (NYSMC TABLE 403.3.1.1.1.2)

VOZ=ZONE OUTDOOR AIRFLOW RATE VBZ = (RPxPZ) + (RAxAZ)

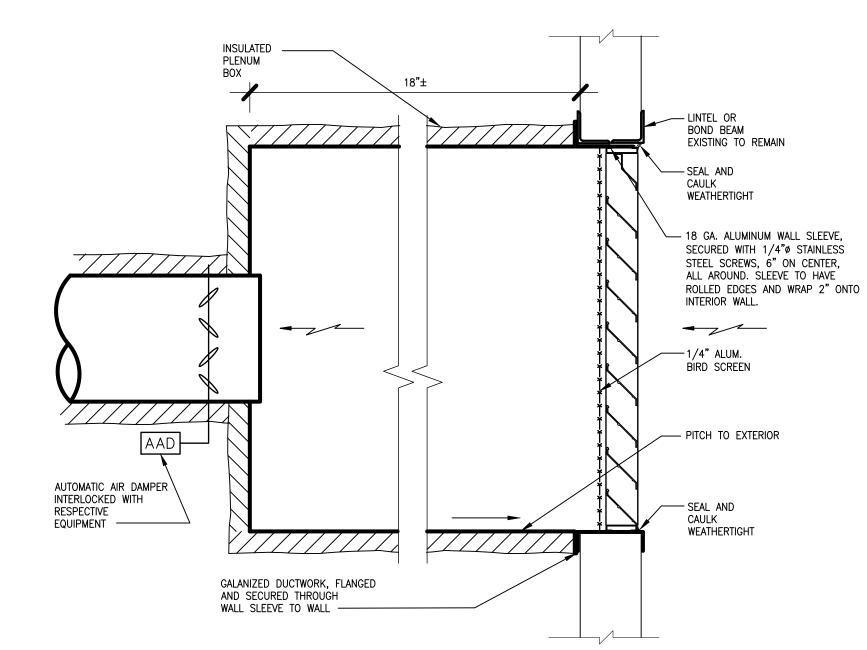
NYSMC TABLE 403.3.1.1.1.2 ZONE AIR DISTRIBUTION EFFECTIVENESS a,b,c,d	
AIR DISTRIBUTION CONFIGURATION	EZ
CEILING OR FLOOR SUPPLY OF COOL AIR	1.0(e)
CEILING OR FLOOR SUPPLY OF WARM AIR AND FLOOR RETURN	1.0
CEILING SUPPLY OF WARM AIR AND CEILING RETURN	0.8(f)
FLOOR SUPPLY OF WARM AIR AND CEILING RETURN	0.7
MAKEUP AIR DRAWN IN ON THE OPPOSITE SIDE OF THE ROOM FROM THE EXHAUST OR RETURN	0.8
MAKEUP AIR DRAWN IN NEAR TO THE EXHAUST OR RETURN LOCATION	0.5

- "COOL AIR" IS AIR COOLER THAN SPACE TEMPERATURE.
- "WARM AIR" IS AIR WARMER THAN SPACE TEMPERATURE "CEILING" INCLUDES ANY POINT ABOVE THE BREATHING ZONE.
- "FLOOR" INCLUDES ANY POINT BELOW THE BREATHING ZONE ZONE AIR DISTRIBUTION EFFECTIVENESS OF 1.2 SHALL BE PERMITTED FOR SYSTEMS WITH A FLOOR SUPPLY OF COOL AIR AND CEILING RETURN, PROVIDED THAT LOW-VELOCITY DISPLACEMENT VENTILATION
- ACHIEVES UNIDIRECTIONAL FLOW AND THERMAL STRATIFICATION. f. ZONE AIR DISTRIBUTION EFFECTIVENESS OF 1.0 SHALL BE PERMITTED FOR SYSTEMS WITH A CEILING SUPPLY OF WARM AIR, PROVIDED THAT SUPPLY AIR TEMPERATURE IS LESS THAN 15°F ABOVE SPACE TEMPERATURE AND PROVIDED THAT THE 150-FOOT-PER-MINUTE SUPPLY AIR JET REACHES TO WITHIN 4-1/2 FEET OF FLOOR LEVEL.

NYSED EZ CLASSIFICATION NOTE: "FLOOR" REFERS TO THE AREA LOCATED 0-3 INCHES AFF. "CEILING" REFERS TO THE AREA LOCATED 72 INCHES AFF AND ABOVE. THOSE LOCATED BETWEEN 3 INCHES AND 72 INCHES AFF ARE NOTED ABOVE.

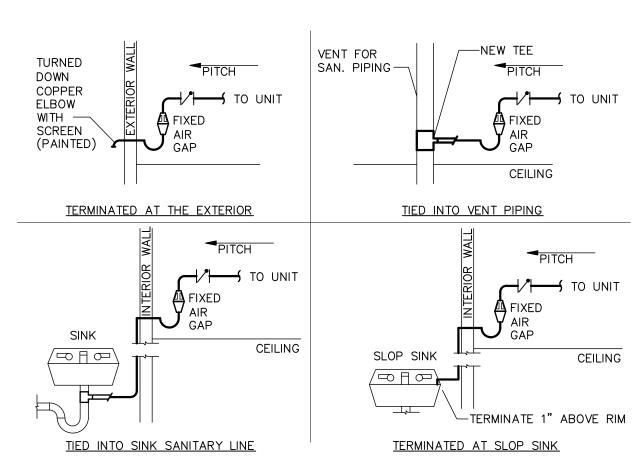


PIPE SUPPORT DETAIL SCALE: NONE



1. ALL HARDWARE SHALL BE CORROSION RESISTANT AND HAVE FINISH TO MATCH ADJACENT SURFACE WHERE EXPOSED TO VIEW.

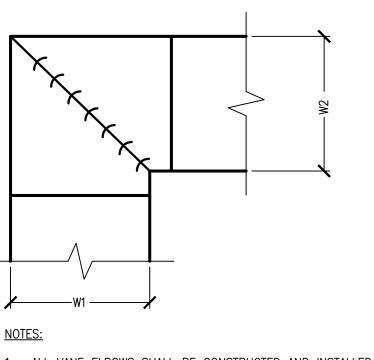
2. PROVIDE LOUVER NOTED ON ARCH DRAWINGS OR APPROVED EQUAL. MUST ALLOW PROPER OUTDOOR AIR AND RELIEF AIR FLOW. LOUVER DETAIL



RUN 34" CONDENSATE PIPING WITH TRAP AND VENT FROM ALL DX COILS TO LOCATION SPECIFIED. PROVIDE INSULATION AND SUPPORT (TYPICAL FROM ALL DX COILS)
SEE M DWGS FOR LOCATIONS

CONDENSATE LINE 5 INSTALLATION SCALE: NONE

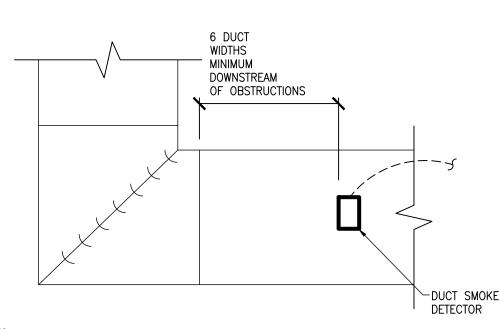
COORDINATION NOTE: . COORDINATION- IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL AND MECHANICAL CONTRACTORS THE HVAC CONTRACTOR SHALL TAKE THE LEAD IN THE COORDINATION EFFORT AND PRODUCE THE COORDINATION DRAWINGS. COORDINATION DRAWINGS SHALL BE SUBMITTED FOR APPROVAL TO THE ENGINEER PRIOR TO STARTING ANY WORK. CEILING SPACE IS VERY LIMITED AND DUCTWORK/PIPING INSTALLATION AND LOCATION IS CRITIAL. THE PURPOSE OF THESE DRAWINGS IS TO COORDINATE THE LOCATIONS OF ALL PIPING, DUCTWORK, AND ASSOCIATED ELECTRICAL EQUIPMENT. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED AND LOCATED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC). MECHANICAL EQUIPMENT CANNOT INFILTRATE THE ELECTRICAL EQUIPMENTS WORKING CLEARANCE AND WORKING SPACE, NOR CAN IT BE INSTALLED DIRECTLY ABOVE OR BELOW TO THE STRUCTURE, AS IDENTIFIED WITHIN THE NEC. ARTICLE 110 -"REQUIREMENTS FOR ELECTRICAL INSTALLATION". THIS COORDINATION IS REQUIRED FOR ALL PHASES OF THIS PROJECT, FAILURE TO FOLLOW THIS PROCEDURE DOES NOT RELIEVE THE CONTRACTOR FROM THE DUTIES AND WILL NOT CONSTITUTE A REASON FOR A CHANGE ORDER.



- 1. ALL VANE ELBOWS SHALL BE CONSTRUCTED AND INSTALLED AS DETAILED BY SMACNA.
- 2. WHEN W1 DOES NOT EQUAL W2 VANE SHALL BE SINGLE THICKNESS VANE TYPE REGARDLESS OF W DIMENSION.
- 3. ALL SINGLE THICKNESS VANES SHALL HAVE A 2" RADIUS,
- 4. WHEN W1 EQUALS W2 AND W1 IS GREATER THAN 20" VANES SHALL BE DOUBLE VANES TYPE.

1½" MAXIMUM SPACE BETWEEN VANES AND A ¾" TRAILING

DUCTWORK SQUARE VANE ELBOWS DETAIL



1. DETECTORS SHALL BE FURNISHED/WIRED BY ELECTRICAL CONTRACTOR AND INSTALLED BY HVAC CONTRACTOR.

DUCTWORK SMOKE 4 DETECTOR INSTALLATION SCALE: NONE

				IN	SULATION	SCHEDU	LE						
INSULATION CLASS (a) JACKETING CLASS (b) THICKNESS (IN)										SS (IN)			
TYPE	EQUIPMENT OR SYSTEM SERVED	· · ·			JACKETING CLASS (D)			NOMINAL PIPE SIZE (IN)			DUCTWORK		
		INTERIOR CONCEALED	INTERIOR EXPOSED	EXTERIOR	INTERIOR GENERAL	EQUIPMENT ROOMS	EXTERIOR	<1"	1"-<11"	1½"- <4"	4 "- <8"	≥8" & UP	(c)
A	RS, RL	FE	FE	FE	0	0	4	0.5	1.5	1.5	1.5	1.5	
В	DCW, COOLING COIL CONDENSATE	FE			0			0.5	0.5	1.0	1.0	1.0	
	Bon, Gooding Gold Goldens, III		FE			4		0.5	0.5	1.0	1.0	1.0	3
		FG			1			1.5	1.5	2	2	2	
С	HWS, HWR		FG		1	1		1.5	1.5	2	2	2	
				UR			6	1.5	1.5	2	2	2	
		FG (d)			2								1.5(g)
D	DUCTWORK		FG (e)		2	2							2 (f)(g)
<u> </u>				UR(e)			3						2 (i)
Е	BOILER BREECHING		CS			4(i)				2	2	2	
(a [°]	FG FIBROUS GLASS FE FLEXIBLE ELASTOMERIC UR URETHANE		1	0 – – NONE 1 – – ALL SERV 2 – – ALUMINUM			SUPPLY AIR OUTSIDE AIR MIXED AIR			(f)	EXCEPT SUP	PPLY AIR WITHIN	N CONDITIONED SPACE
CS - CALCIUM SILICATE 3 - CANVAS RETURN AIR (g) INSULATE EXHAUST AIR 15'-0" FROM FROM FROM FROM FROM FROM FROM FROM				'-0" FROM EXTERIOR									

ALL INSULATION TO COMPLY WITH 2015 NYS ENERGY CONSERVATION CONSTRUCTION CODE

	RETURN GRILLE, SUPPLY DIFFUSER, AND WALL CAP SCHEDULE									
QTY	MARK	SERVICE	MODEL	SIZE	MATERIAL	MANUFACTURER FINISH	NOTES			
	RG-1	RETURN	TITUS 300 RL	24"x24"	STEEL	WHITE	1,2,3,5,7			
	RG-2	RETURN	TITUS 350 RL	10"x6"	STEEL	WHITE	3,4,5,8			
	RG-3	RETURN	TITUS 350 RL	12"x8"	STEEL	WHITE	3,4,5,8			
	SD-1	SUPPLY	TITUS TMS	24"x24"	STEEL	WHITE	1,2,3,5,7			
	SD-2	SUPPLY	TITUS 300 RL	10"x6"	STEEL	WHITE	3,4,5,8			
	SD-3	SUPPLY	TITUS 300 RL	12"x8"	STEEL	WHITE	3,4,5,8			
	SD-4	SUPPLY	TITUS TDC	8"x8"	STEEL	WHITE	3,4,5,8			
	WC-1	OUTSIDE AIR INTAKE	BROAN 610FA	10" ROUND	ALUMINUM	NATURAL	3,4,5,6			

(d) BLANKET

(e) RIGID BOARD

(i) TWO LAYERS, 3 IN TOTAL

NOTE 1: PROVIDE APPROPRIATE SIZED NECK TO CONNECT TO NEW DUCT. SEAL AND MAKE CONNECTIONS AIR TIGHT.

5 – – STAINLESS STEEL

6 - - ALUMINUM

7 — — EPDM

NOTE 2: PROVIDE GRILLE OR DIFFUSER TO FIT IN A FULL SPACE IN DROP CEILING GRID. NOTE 3: PROVIDE DAMPERS AS NECESSARY TO AID IN AIR BALANCING.

NOTE 4: CONNECT TO NEW DUCT THROUGH WALL. SEAL DUCT CONNECTIONS AND MAKE AIR TIGHT. SEAL AREA AROUND EXTERIOR WALL PENETRATIONS TO MAKE FLUSH AND WEATHERTIGHT.

NOTE 5: PROVIDE MODEL INDICATED OR APPROVED EQUAL. SUBMIT PROPOSED MODELS TO ENGINEER FOR APPROVAL NOTE 6: CONNECT TO 10" ROUND DUCT. MUST INCLUDE MESH SCREEN.

NOTE 7: LAY IN T-BAR GRID TYPE. FRAME TO REST ON GRID. NOTE 8: TYPE TO SCREW INTO EXPOSED DUCT OR DUCT FLANGE AT WALL PENETRATIONS.

				UNIT VEN	TILATOR	UNIT VENTILATOR SCHEDULE													
QTY	MARK	SERVICE	MODEL	NOMINAL AIR FLOW (CFM)	COOLING (BTU)	HEATING (BTU)	SUPPLY/RETURN/ OUTSIDE AIR CONFIGURATION	FILTERS	POWER (HP)	VOLTS/HERTZ/PHASE	NOTES								
1	UV-1	MUSIC ROOM (COOLING)	MAGIC AIRE UHF3	1000	28650		BOTTOM/BOTTOM/REAR	MERV-8	1/3	208/60/1	1,2,3,4,5								
1	111/-2	BAND ROOM (HEATING & COOLING)	MODINE CMP60	1800	57000	54000	TOD /EDONT /DEAD	MED\/_13	3/1	208/60/3	3.6								

NOTE 1: SECURELY HANG FROM STRUCTURE USING STEEL THREADED RODS AND FRAMING. MUST INSTALL UNIT TO ALLOW FOR MAINTENANCE CLEARANCES AND FILTER CHANGES.

NOTE 2: INSTALL UNIT FLUSH WITH BOTTOM OF DROP CEILING

NOTE 3: PROVIDE DAMPERS AS NECESSARY TO AID IN AIR BALANCING. NOTE 4: MERV-13 FILTER(S) MAY BE USED AT THE OWNER'S DISCRETION, NO OFFICIAL TEST DATA IS AVAILABLE TO ASSURE PERFORMANCE ON THIS UNIT.

NOTE 5: PROVIDE CONDENSATE DRAIN PUMP AND HARDWIRE TO THE UNIT. PROVIDE INSULATED 3/4" POLY CONDENSATE LINE TO RUN ABOVE DROP CEILING. PITCH LINE AND DISCHARGE TO

A NEARBY VENT LINE IN ROOM G3. NOTE 6: PROVIDE MERV—13 FILTER, ECONOMIZER W/OA DAMPER, DUCT SHROUD, AND "STUDY PACKAGE" CASE—INSULATION OPTIONS

	AIR HANDLING UNIT SCHEDULE														
QTY	MARK	SERVICE	MODEL	NOMINAL CAPACITY	TYPE	VOLTS/HERTZ/PHASE/HP	FILTERS	ASSOCIATED EQUIPMENT	NOTES						
1	AHU-1	CAFETERIA (HEATING)	MAGIC AIRE HCA20	2000 CFM	HOT WATER	208V/60/1/1.0	MERV-13		1,2						
1	AHU-2	CAFETERIA (HEATING)	MAGIC AIRE HCA20	2000 CFM	HOT WATER	208V/60/1/1.0	MERV-13		1,2						
1	AHU-3 (ALT HVAC-2)	NURSE'S OFFICE (COOLING)	AAON H3-ARB	800 CFM	DX COIL	208V/60/1/1.0	MERV-13	CONDENSER ACCU-1	1,2,3,5						
1	AHU-4 (ALT HVAC-1)	MAIN OFFICE (COOLING)	AAON H3-ARB	800 CFM	DX COIL	208V/60/1/1.0	MERV-13	CONDENSER ACCU-2	1,2,3,4						

NOTE 1: SECURELY HANG FROM STRUCTURE USING STEEL THREADED RODS AND FRAMING. MUST INSTALL UNIT TO ALLOW FOR MAINTENANCE CLEARANCES AND FILTER CHANGES.

NOTE 2: PROVIDE RETURN AIR DUCT SMOKE DETECTOR AND TIE INTO UNIT POWER FEED AND AIR INTAKE DAMPERS.

NOTE 3: PROVIDE CONDENSATE DRAIN PAN AND SECONDARY DRAIN PAN. PROVIDE CONDENSATE DRAIN PUMP AND HARDWIRE TO THE UNIT. NOTE 4: PROVIDE INSULATED 3/4" POLY CONDENSATE LINE TO RUN ABOVE DROP CEILINGS. PITCH LINE AND DISCHARGE INTO SLOP SINK IN ROOM 106, ALLOW FOR 1 INCH AIR GAP.

CONDENSER SCHEDULE														
MARK	SERVICE	MODEL	NOMINAL CAPACITY	REFRIGERANT	VOLTS/HERTZ/PHASE	NOTES								
ACCU-1 (ALT HVAC-2)	NURSE'S OFFICE AHU-3	AAON CB-B-024	24000 BTU (2 TON)	R410A	208/60/1	1,2,3,4,5								
ACCU-2 (ALT HVAC-1)	MAIN OFFICE AHU-4	AAON CB-B-024	24000 BTU (2 TON)	R410A	208/60/1	1,2,3,4,5								
ACCU-3	MUSIC ROOM UV-1	AAON CB-B-036	36000 BTU (3 TON)	R410A	208/60/1	2,3,4,5								
	ACCU-1 (ALT HVAC-2) ACCU-2 (ALT HVAC-1)	ACCU-1 (ALT HVAC-2) NURSE'S OFFICE AHU-3 ACCU-2 (ALT HVAC-1) MAIN OFFICE AHU-4	MARK SERVICE MODEL ACCU-1 (ALT HVAC-2) NURSE'S OFFICE AHU-3 AAON CB-B-024 ACCU-2 (ALT HVAC-1) MAIN OFFICE AHU-4 AAON CB-B-024	MARK SERVICE MODEL NOMINAL CAPACITY ACCU-1 (ALT HVAC-2) NURSE'S OFFICE AHU-3 AAON CB-B-024 24000 BTU (2 TON) ACCU-2 (ALT HVAC-1) MAIN OFFICE AHU-4 AAON CB-B-024 24000 BTU (2 TON)	MARK SERVICE MODEL NOMINAL CAPACITY REFRIGERANT ACCU-1 (ALT HVAC-2) NURSE'S OFFICE AHU-3 AAON CB-B-024 24000 BTU (2 TON) R410A ACCU-2 (ALT HVAC-1) MAIN OFFICE AHU-4 AAON CB-B-024 24000 BTU (2 TON) R410A	MARK SERVICE MODEL NOMINAL CAPACITY REFRIGERANT VOLTS/HERTZ/PHASE ACCU-1 (ALT HVAC-2) NURSE'S OFFICE AHU-3 AAON CB-B-024 24000 BTU (2 TON) R410A 208/60/1 ACCU-2 (ALT HVAC-1) MAIN OFFICE AHU-4 AAON CB-B-024 24000 BTU (2 TON) R410A 208/60/1								

NOTE 5: PROVIDE INSULATED 3/4" POLY CONDENSATE LINE TO RUN ABOVE DROP CEILINGS. PITCH LINE AND TIE INTO SANITARY OR VENT PIPING FOR SINK IN NURSE'S BATHROOM 112A.

NOTE 1: GC SHALL PROVIDE PLANTINGS OR FENCING AROUND UNIT. COORDINATE WITH DISTRICT.

NOTE 2: OBSERVE REQUIRED AND RECOMMENDED CLEARANCES FOR UNIT DURING PLACEMENT.

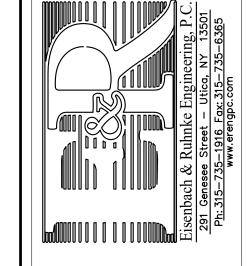
NOTE 3: PROVIDE WEATHERPROOF PAD FOR UNIT.

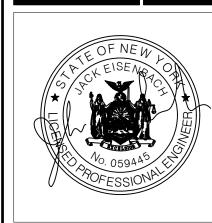
NOTE 4: PROVIDE REFRIGERANT SUCTION AND REFRIGERANT LIQUID LINES. PROVIDE INSULATION FOR THESE LINES.

NOTE 5: INSTALL AND CHARGE UNIT ACCORDING TO MANUFACTURER RECOMMENDATIONS.

	DUCT HEATER SCHEDULE														
QTY	MARK	SERVICE	MODEL	KW	DUCT SIZE (IN)	CALCULATED OA REQUIREMENT (CFM)	VOLTS/HERTZ/PHASE	NOTES							
1	DH-1	MUSIC ROOM UV-1	RENEW AIRE EK	4	16x8	293	208/60/3	1							
1	DH-2 (ALT HVAC-1)	MAIN OFFICE AHU-4	RENEW AIRE EK	4	12x6	192	208/60/3	1							
1	DH-3 (ALT HVAC-2)	NURSE'S OFFICE AHU-3	RENEW AIRE EK	4	12x6	151	208/60/3	1							

NOTE 1: INSTALL UNIT ACCORDING TO MANUFACTURER RECOMMENDATIONS.

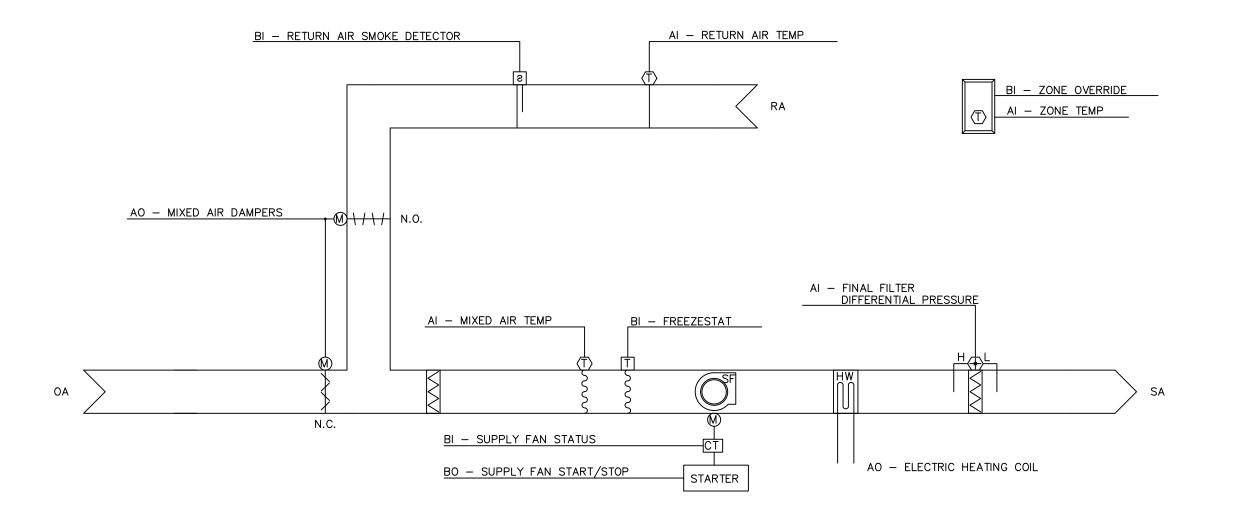




S.E.D. CONTROL NUMBER: MAIN BUILDING 48-04-01-04-0-001-023 HIGH SCHOOL ANNEX 48-04-01-04-0-016-007

H	SC
09/13/2021	BID
DATE	ISSUED TO
SHEET SIZE	DRAWING NO.
30"x42"	
SCALE	M500
AS NOTED	
DRAWN BY	FILE NO.

19338.02



RUN CONDITIONS - SCHEDULED: THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING OCCUPIED MODE: THE UNIT SHALL MAINTAIN 75 DEG. F (ADJ.) COOLING SETPOINT

70 DEG. F (ADJ.) HEATING SETPOINT. UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN 80 DEG. F (ADJ.) COOLING SETPOINT.

65 DEG. F (ADJ.) HEATING SETPOINT.

ALARMS SHALL BE PROVIDED AS FOLLOWS: HIGH ZONE TEMP: IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.). LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

ZONE OPTIMAL START: THE UNIT SHALL USE AN OPTIMAL START ALGORITHM FOR MORNING START-UP. THIS ALGORITHM SHALL MINIMIZE THE UNOCCUPIED WARM-UP OR COOL-DOWN PERIOD WHILE STILL ACHIEVING COMFORT CONDITIONS BY THE START OF SCHEDULED OCCUPIED PERIOD.

ZONE UNOCCUPIED OVERRIDE A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT INTO AN OCCUPIED MODE FOR AN ADJUSTABLE PERIOD OF TIME. AT THE EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE

THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A FREEZESTAT

RETURN AIR SMOKE DETECTION: THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A RETURN AIR SMOKE DETECTOR STATUS.

THE SUPPLY FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN, UNLESS SHUTDOWN ON SAFETIES. TO PREVENT SHORT CYCLING, THE SUPPLY FAN SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

ALARMS SHALL BE PROVIDED AS FOLLOWS: SUPPLY FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF. SUPPLY FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON. SUPPLY FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

HEATING COIL:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND MODULATE THE ELECTRIC HEATING COIL TO MAINTAIN ITS HEATING SET POINT.

THE HEATING SHALL BE ENABLED WHENEVER: OUTSIDE AIR TEMPERATURE IS LESS THAN 65 DEG.F (ADJ.). AND THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT.

AND THE SUPPLY FAN STATUS IS ON. THE HEATING COIL SHALL OPEN WHENEVER THE FREEZESTAT (IF PRESENT) IS ON.

THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND MODULATE THE ECONOMIZER DAMPERS IN SEQUENCE TO MAINTAIN A SETPOINT 2 DEG. F LESS THAN THE ZONE COOLING SETPOINT. THE OUTSIDE AIR DAMPERS SHALL MAINTAIN A MINIMUM ADJUSTABLE POSITION OF 20% (ADJ.) OPEN WHENEVER OCCUPIED.

THE ECONOMIZER SHALL BE ENABLED WHENEVER: OUTSIDE AIR TEMPERATURE IS LESS THAN 65 DEG. F (ADJ.).
AND THE OUTSIDE AIR TEMPERATURE IS LESS THAN THE RETURN AIR TEMPERATURE. AND THE SUPPLY FAN STATUS IS ON.

THE ECONOMIZER SHALL CLOSE WHENEVER: MIXED AIR TEMPERATURE DROPS FROM 45 DEG. F TO 40 DEG. F (ADJ.). OR ON LOSS OF SUPPLY FAN STATUS. OR THE FREEZESTAT (IF PRESENT) IS ON.

THE OUTSIDE AND EXHAUST AIR DAMPERS SHALL CLOSE AND THE RETURN AIR DAMPER SHALL OPEN WHEN THE UNIT IS OFF. IF OPTIMAL START UP IS AVAILABLE, THE MIXED AIR DAMPER SHALL OPERATE AS DESCRIBED IN THE OCCUPIED MODE EXCEPT THAT THE OUTSIDE AIR DAMPER SHALL MODULATE TO FULLY CLOSED.

MINIMUM OUTSIDE AIR VENTILATION - FIXED PERCENTAGE: THE OUTSIDE AIR DAMPERS SHALL MAINTAIN A MINIMUM POSITION (ADJ.) DURING BUILDING

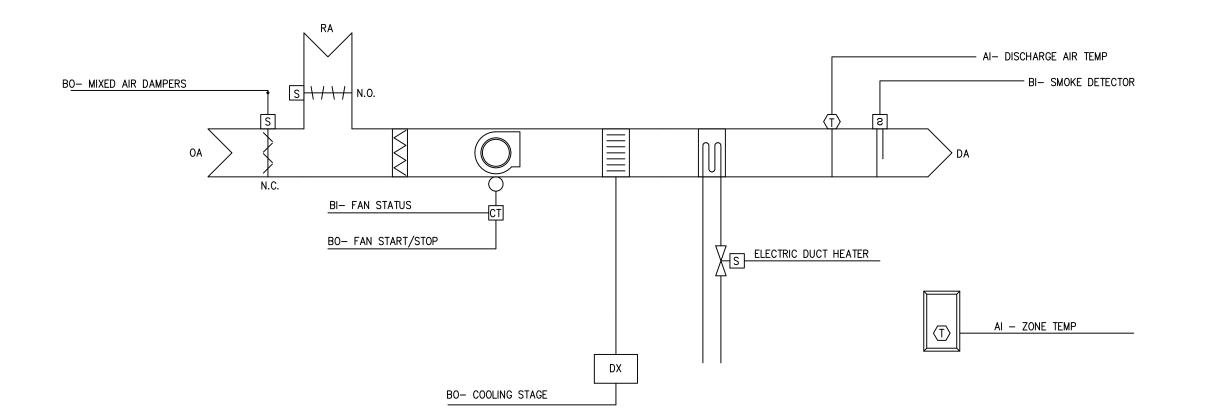
OCCUPIED HOURS AND BE CLOSED DURING UNOCCUPIED HOURS. FINAL FILTER DIFFERENTIAL PRESSURE MONITOR: THE CONTROLLER SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE FINAL FILTER.

ALARMS SHALL BE PROVIDED AS FOLLOWS: FINAL FILTER CHANGE REQUIRED: FINAL FILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

MIXED AIR TEMPERATURE: THE CONTROLLER SHALL MONITOR THE MIXED AIR TEMPERATURE AND USE AS REQUIRED FOR ECONOMIZER CONTROL (IF PRESENT) OR PREHEATING CONTROL (IF PRESENT).

ALARMS SHALL BE PROVIDED AS FOLLOWS: HIGH MIXED AIR TEMP: IF THE MIXED AIR TEMPERATURE IS GREATER THAN 90 DEG. F (ADJ.). LOWMIXED AIR TEMP: IF THE MIXED AIR TEMPERATURE IS LESS THAN 45 DEG. F (ADJ.).

AIR HANDLING UNIT CONTROL SCHEMATIC



3 UNIT VENTILATOR CONTROL SCHEMATIC SCALE: NONE

UNIT VENTILATOR

RUN CONDITIONS - SCHEDULED: THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING

OCCUPIED MODE: THE UNIT SHALL MAINTAIN 74 DEG F (ADJ.) COOLING SETPOINT 70 DEG F (ADJ.) HEATING SETPOINT. UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN

55 DEG F (ADJ.) HEATING SETPOINT. ALARMS SHALL BE PROVIDED AS FOLLOWS:

85 DEG F (ADJ.) COOLING SETPOINT.

HIGH ZONE TEMP: IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.). LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

THE UNIT SHALL USE AN OPTIMAL START ALGORITHM FOR MORNING START-UP. THIS ALGORITHM SHALL MINIMIZE THE UNOCCUPIED WARM-UP OR COOL-DOWN PERIOD WHILE STILL ACHIEVING COMFORT CONDITIONS BY THE START OF SCHEDULED OCCUPIED PERIOD.

THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A SMOKE DETECTOR

THE FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN, UNLESS SHUTDOWN ON

THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND STAGE THE COOLING TO MAINTAIN ITS COOLING SETPOINT. TO PREVENT SHORT CYCLING, THE STAGE SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME. THE COOLING SHALL BÉ ENABLED WHENEVER:

OUTSIDE AIR TEMPERATURE IS GREATER THAN 60 DEG F (ADJ.). AND THE ZONE TEMPERATURE IS ABOVE COOLING SETPOINT. AND THE FAN IS ON.

OUTSIDE AIR TEMPERATURE IS LESS THAN 65 DEG F (ADJ.).

THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND OPEN THE HEATING COIL VALVE TO MAINTAIN ITS HEATING SETPOINT. THE HEATING SHALL BE ENABLED WHENEVER:

AND THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT.

THE HEATING COIL SHALL START WHENEVER THE FREEZESTAT (IF PRESENT) IS ON.

HEATING — HIGH DISCHARGE AIR TEMPERATURE LIMIT: THE CONTROLLER SHALL MEASURE THE DISCHARGE AIR TEMPERATURE AND, ON RISING TEMPERATURE, LIMIT THE HEATING AS FOLLOWS:

AS THE DISCHARGE AIR TEMPERATURE RISES FROM 90 DEG F TO 120 F (ADJ.), THE CONTROLLER SHALL LIMIT THE HEATING OUTPUT FROM 100% TO 0% (ADJ.).

THE OUTSIDE AIR DAMPER SHALL OPEN TO PROVIDE A FIXED PERCENTAGE OUTSIDE AIR VENTILATION ANYTIME THE UNIT IS OCCUPIED AND SHALL CLOSE ANYTIME THE UNIT STOPS. THE DAMPER OPEN POSITION SHALL BE SET DURING TESTING AND BALANCING. THE MIXED AIR DAMPERS SHALL CLOSE 1SEC (ADJ.) AFTER THE FAN STOPS. IF OPTIMAL START UP IS AVAILABLE THE OUTSIDE AIR DAMPER SHALL CLOSE AND THE RETURN AIR DAMPER SHALL OPEN.

MINIMUM OUTSIDE AIR VENTILATION - FIXED PERCENTAGE: THE OUTSIDE AIR DAMPERS SHALL MAINTAIN A MINIMUM POSITION (ADJ.) DURING BUILDING OCCUPIED HOURS AND BE CLOSED DURING UNOCCUPIED HOURS.

THE CONTROLLER SHALL MONITOR THE FAN RUNTIME.

ALARMS SHALL BE PROVIDED AS FOLLOWS: FILTER CHANGE REQUIRED: FILTER HAS BEEN IN USE FOR MORE THAN 2200 HRS (ADJ.).

THE CONTROLLER SHALL MONITOR THE DISCHARGE AIR TEMPERATURE. ALARMS SHALL BE PROVIDED AS FOLLOWS:

HIGH DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS GREATER THAN 120 LOW DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS LESS THAN 40 DEG F

THE CONTROLLER SHALL MONITOR THE FAN STATUS. ALARMS SHALL BE PROVIDED AS FOLLOWS:

> FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF. FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON. FAN RUNTIME EXCEEDED: FAN STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

B. ZONE SETPOINT ADJUST: 1. THE OCCUPANT SHALL BE ABLE TO ADJUST THE ZONE TEMPERATURE HEATING AND COOLING SETPOINTS AT THE ZONE SENSOR.

1. THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE

HEAT PUMP SEQUENCE OF OPERATION:

A. RUN CONDITIONS — SCHEDULED:

FOLLOWING MODES:

C. ZONE UNOCCUPIED OVERRIDE: 1. A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT THE SCHEDULE AND PLACE THE UNIT INTO AN UNOCCUPIED MODE FOR AN ADJUSTABLE PERIOD OF TIME. AT THE EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN

1. THE FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN, UNLESS SHUTDOWN

E. HEATING AND COOLING - 1 COMPRESSOR STAGE:

30 - REVERSING VALVE

BO - COMPRESSOR STAGE 1

BI - FAN STATUS

BO - FAN START/STOP

a. OCCUPIED MODE: THE UNIT SHALL MAINTAIN

· A 74 DEG. F (ADJ.) COOLING SETPOINT

· A 70 DEG. F (ADJ.) HEATING SETPOINT

· A 85 DEG. F (ADJ.) COOLING SETPOINT

A 60 DEG. F (ADJ.) HEATING SETPOINT

b. UNOCCUPIED MODE: THE UNIT SHALL MAINTAIN

1. THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND CYCLE THE COMPRESSOR TO MAINTAIN ITS SETPOINT. TO PREVENT SHORT CYCLING, THE STAGE SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME. THE COMPRESSOR SHALL RUN SUBJECT TO ITS OWN INTERNAL SAFETIES AND CONTROLS.

2. HEATING SHALL BE ENABLED WHENEVER: · OUTSIDE AIR IS LESS THAN 65 DEG. F (ADJ.). AND THE FAN IS ON.

AND THE REVERSING VALVE IS IN HEAT MODE. 3. COOLING SHALL BE ENABLED WHENEVER: OUTSIDE AIR TEMPERATURE IS GREATER THAN 60 DEG. F. (ADJ.). AND THE FAN IS ON.

AND THE REVERSING VALVE IS IN COOL MODE. 4. ON MODE CHANGE, THE COMPRESSOR SHALL BE DISABLED AND REMAIN OFF UNTIL AFTER THE REVERSING VALVE HAS CHANGED POSITION.

BI - ZONE OVERRIDE

AI - ZONE SETPOINT ADJUST.

AI - ZONE TEMP.

F. FILTER HOURS:

AI - DISCHARGE AIR TEMP.

1. THE CONTROLLER SHALL MONITOR THE FAN RUNTIME.

G. DISCHARGE AIR TEMPERATURE: 1. THE CONTROLLER SHALL MONITOR THE DISCHARGE AIR TEMPERATURE.

1. THE CONTROLLER SHALL MONITOR THE FAN STATUS.

I. ALARMS SHALL BE PROVIDED AS FOLLOWS:

1. HIGH ZONE TEMPERATURE: IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.). 2. LOW ZONE TEMPERATURE: IF THE ZONE TEMPERATURE IS LESS THEN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

3. FILTER CHANGE REQUIRED: FILTER HAS BEEN IN USER FOR MORE THAN 2200 HRS. 4. HIGH DISCHARGE AIR TEMPERATURE: IF THE DISCHARGE AIR TEMPERATURE IS GREATER

THAN 120 DEG. F (ADJ.). 5. LOW DISCHARGE AIR TEMPERATURE: IF THE DISCHARGE AIR TEMPERATURE IS LESS THAN 40 DEG. F (ADJ.). FAN FAILURE.

UNIT VENTILATOR/HEAT PUMP CONTROL SCHEMATIC

CONTROL DIAGRAMS LEGEND

AI = ANALOG INPUT. A PHYSICAL INPUT TO THE CONTROL MODULE.

AO = ANALOG OUTPUT. A PHYSICAL OUTPUT FROM THE CONTROL MODULE.

AV = ANALOG VALUE. AN INTERMEDIATE (SOFTWARE) POINT THAT MAY BE EDITABLE OR READ-ONLY. EDITABLÈ AVS ARE TYPICALLY USED TO ALLOW THE

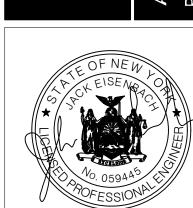
USER TO SET A FIXED CONTROL PARAMETER, SUCH AS A SETPOINT. READ ONLY AVS

ARE TYPICALLY USED TO DISPLAY THE STATUS OF A CONTROL OPERATION. BI = BINARY INPUT. A PHYSICAL INPUT TO THE CONTROL MODULE.

BO = BINARY OUTPUT. A PHYSICAL OUTPUT FROM THE CONTROL MODULE.

BV = BINARY VALUE. AN INTERMEDIATE (SOFTWARE) POINT THAT MAY BE EDITABLE OR READ-ONLY. EDITABLE BVS ARE TYPICALLY USED TO ALLOW THE USER TO SET A FIXED CONTROL PARAMETER, SUCH AS A SETPOINT. READ ONLY BVS ARE TYPICALLY USED TO DISPLAY THE STATUS OF A CONTROL OPERATION.

R E



S.E.D. CONTROL NUMBER: MAIN BUILDING 48-04-01-04-0-001-023 HIGH SCHOOL ANNEX 48-04-01-04-0-016-007

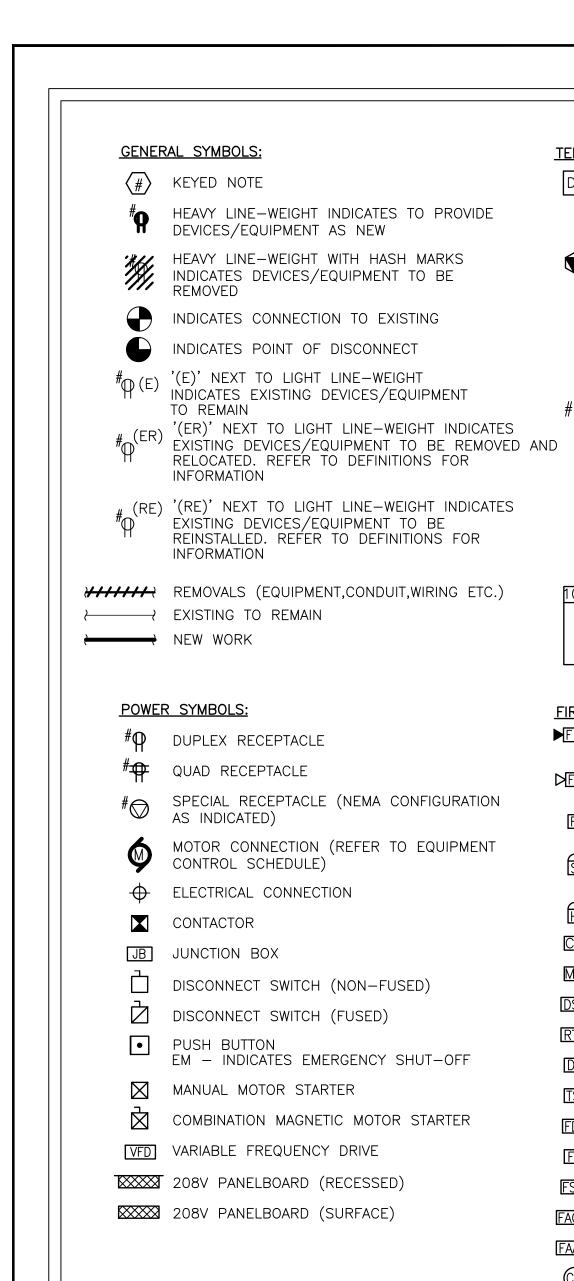
PROJECT TITLE
HALDANE CENTRAL SCHOOL DISTRICT
MECHANICAL UPGRADE AND RELATED WORK
PACKAGE NO. 2
15 CRAIGSIDE DR, COLD SPRING, NY 10516
DRAWING TITLE
CONTROL SCHEMATICS

# I S U &	ä O
09/13/2021	BID
DATE	ISSUED TO
SHEET SIZE	DRAWING NO.
30"x42"	
SCALE	M501
AS NOTED	

FILE NO.

19338.02

DRAWN BY



SYMBOLS LIST SPECIAL SYSTEMS SYMBOLS: ACCP AC SYSTEM CONTROL PANEL TELEPHONE/DATA SYMBOLS COMMUNICATIONS OUTLET CR CARD READER #D — INDICATES NUMBER OF DATA (DC) DOOR CONTACT Γ - INDICATES NUMBER OF TELEPHONE JACKS ELECTRIC DOOR STRIKE WAP - WIRELESS ACCESS POINT

DR DATA RACK

ONE-LINE SYMBOLS:

e∏e FUSE

⊥ GROUND

FIRE ALARM SYMBOLS:

F PULL STATION

H HEAT DETECTOR

CM CONTROL MODULE

MM MONITOR MODULE

TS TAMPER SWITCH

FS FLOW SWITCH

FSD FAN SHUT-DOWN

GD GAS DETECTOR

FDR FIRE DOOR RELEASE

DSD DUCT SMOKE DETECTOR

RTS REMOTE TEST STATION

DH MAGNETIC DOOR HOLDER

FACP FIRE ALARM CONTROL PANEL

AND PER NFPA 720)

©2 CARBON DIOXIDE DETECTOR

FAAP FIRE ALARM ANNUNCIATOR PANEL

CARBON MONOXIDE DETECTOR

(SYSTEM SENSOR CO1224TR OR EQUAL)

(INSTALL PER MANUFACTURERS RECOMMEND.

ELECTROCHEMICAL STYLE)

"" CIRCUIT BREAKER

FUSED DISCONNECT SWITCH

PANELBOARD

³⁰ DENOTES CANDELA RATING.

VISUAL SIGNALING DEVICE. NUMBER 30 DENOTES CANDELA RATING.

AUDIO/VISUAL SIGNALING DEVICE. NUMBER

SMOKE DETECTOR. R SUBSCRIPT: PROVIDE

SR ACCESSORY EQUIPMENT/WIRING/PROGRAMMING

FOR ELEVATOR RECALL AND SHUNT TRIP.

PRES - INDICATES PRESENTATION

STATION OUTLET

ACMS AC SYSTEM MASTER CONTROL STATION REX REQUEST TO EXIT PROJ - INDICATES PROJECTOR STATION IC INTERCOM STATION CLOCK (NO DESIGNATION DENOTES

CLASSROOM CLOCK). C1 — DENOTES SINGLE FACE HALLWAY CLOCK. C2 - DENOTES DUAL FACE HALLWAY CLOCK. S PUBLIC ADDRESS SPEAKER (CEILING)

PUBLIC ADDRESS SPEAKER (WALL) HSA PUBLIC ADDRESS HORN SPEAKER (WALL) CEILING MOUNTED CCTV CAMERA

WALL MOUNTED CCTV CAMERA

LIGHTING SYMBOLS: (REFER TO LIGHT FIXTURE SCHEDULE) LIGHT SWITCH a,b,c - INDICATES SWITCH LEG D - DIMMER SWITCH -KEYED 3 — 3—WAY 4 - 4 - WAYOCCUPANCY SENSOR

C# - INDICATES CEILING SENSOR TYPE (REFER TO OCCUPANCY SENSOR SCHEDULE) W# - INDICATES WALL SENSOR TYPE (REFER TO OCCUPANCY SENSOR SCHEDULE).

CEILING-MOUNTED EXIT LIGHT. HATCH MARKS INDICATES ILLUMINATED FACE, ARROW INDICATES DIRECTION OF TRAVEL. WALL-MOUNTED EXIT LIGHT. HATCH MARKS INDICATES ILLUMINATED FACE, ARROW

X# INDICATES DIRECTION OF TRAVEL. DUAL HEAD WALL-MOUNTED EMERGENCY BATTERY PACK LUMINAIRE.

SINGLE HEAD WALL-MOUNTED EMERGENCY BATTERY PACK LUMINAIRE. __ 2'x4' CEILING MOUNTED LIGHT FIXTURE, F# • INDICATES TYPE. F# 2'x2' CEILING MOUNTED LIGHT FIXTURE, F#

o INDICATES TYPE. <u>f#</u>__ 1'x4' ceiling mounted light fixture, f# INDICATES TYPE. F# CEILING MOUNTED DOWNLIGHT FIXTURE, F# Ö INDICATES TYPE.

_ 4' WALL MOUNTED LIGHT FIXTURE, F# INDICATES TYPE.

F# WALL MOUNTED FIXTURE, F# INDICATES TYPE.

GENERAL DEMOLITION NOTES

- DEMOLITION DRAWINGS ARE BASED ON FIELD OBSERVATION. REPORT ANY CONFLICTS TO THE ENGINEER BEFORE DISTURBING EXISTING EQUIPMENT.
- 2. BEGINNING OF DEMOLITION MEANS THE CONTRACTOR ACCEPTS ALL EXISTING CONDITIONS
- VERIFY SCOPE OF WORK: CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO SUBMITTING A BID TO DETERMINE THE SCOPE OF THE WORK, AND TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS THAT WILL AFFECT THEIR WORK AND, THEREFORE, THEIR BID.
- 4. UNLESS NOTED OTHERWISE, EXISTING ELECTRICAL EQUIPMENT SHOWN ON THESE PLANS ARE A PART OF CONTRACT TO MAINTAIN DRAWING CLARITY NOT ALL EXISTING ELECTRICAL EQUIPMENT HAS BEEN SHOWN. FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ARCHITECT/ ENGINEER OF ANY CONFLICTS.
- 5. UNLESS NOTED OTHERWISE, REMOVE ALL ELECTRICAL ITEMS SHOWN ON THESE PLANS AS INDICATED BY CROSS HATCHED LINES AND/OR KEYED NOTES.
- 6. UNLESS NOTED OTHERWISE, DEMOLITION OF ELECTRICAL EQUIPMENT/DEVICES INCLUDES REMOVAL OF CIRCUITRY BACK TO ASSOCIATED SOURCE/PANEL. THIS INCLUDES REMOVAL OF THE DEVICE, WIRING, CONDUIT, BOXES, CONTROL DEVICES, ETC.
- WHERE POSSIBLE, EXISTING CONDUITS/RACEWAYS (ASSOCIATED WITH REMOVED EQUIPMENT AND WIRING) MAY BE RE-USED FOR NEW CIRCUITING. EXISTING CONDUITS/RACEWAYS MUST BE IN GOOD CONDITION, AND IN COMPLIANCE WITH NEC/SPECIFICATION REQUIREMENTS. NOTIFY ENGINEER PRIOR TO REUSING.
- 8. EXISTING CIRCUIT BREAKERS ASSOCIATED WITH ELECTRICAL EQUIPMENT SCHEDULED FOR DEMOLITION SHALL REMAIN FOR SPARES UNLESS REMOVAL IS REQUIRED TO MAKE ADDITIONAL SPACE (IN EXISTING PANELBOARDS) FOR NEW
- CIRCUIT BREAKERS. MAINTAIN THE ELECTRICAL INTEGRITY OF ALL EXISTING BRANCH CIRCUITS INTERRUPTED BY REMOVAL WORK. PROVIDE ALL WIRING, CONDUIT, AND HARDWARE REQUIRED TO MAINTAIN CONTINUITY OF ELECTRICAL EQUIPMENT REMAINING ON
- EXISTING BRANCH CIRCUITS NOT BEING COMPLETELY REMOVED OR OUTSIDE WORK THE WORK AREA. 10. UNLESS NOTED OTHERWISE, REMOVE EXISTING ELECTRICAL DEVICES, AND ASSOCIATED CIRCUITRY, LOCATED ON OR IN
- WALLS SCHEDULED FOR REMOVAL. REFER TO ARCHITECTURAL DRAWINGS FOR DEMOLITION COORDINATION. 11. UNLESS NOTED OTHERWISE, REMOVE EXISTING ELECTRICAL DEVICES, AND ASSOCIATED CIRCUITRY, LOCATED ON OR IN CEILINGS SCHEDULED FOR REMOVAL. TO MAINTAIN DRAWING CLARITY, EXISTING CEILINGS SCHEDULED FOR DEMOLITION
- HAVE NOT BEEN IDENTIFIED ON THIS DRAWING. REFER TO ARCHITECTURAL DRAWINGS FOR DEMOLITION COORDINATION. 12. WHERE REMOVALS OCCUR ON SERVICES THAT ARE TO REMAIN IN OPERATION, CAP OR OTHERWISE TERMINATE THE REMAINING SERVICES BENEATH FINISHED SURFACES.
- 13. ALL CONDUITS STUBBED THRU FLOOR SERVING ITEMS TO BE REMOVED, AND NOT SHOWN OR REQUIRED TO BE REUSED, SHALL BE CUT OFF FLUSH, SLAB LEVEL WITH CONCRETE.
- 14. PORTIONS OF FEEDERS RISERS WHICH REQUIRE REMOVAL DUE TO DEMOLITION WORK, BUT WHICH ARE REQUIRED TO REMAIN ENERGIZED, SHALL BE CUT AT ACCESSIBLE LOCATIONS, REROUTED AND RECONNECTED. EXTEND EXISTING FEEDERS AS REQUIRED. MATCH EXISTING FEEDERS IN CONDUCTOR SIZE (AMPACITY RATING), RACEWAY SIZE, ETC.
- 15. CAREFULLY REMOVE, PROTECT AND STORE ALL EQUIPMENT TO BE REUSED IN A SAFE PLACE UNTIL READY FOR REINSTALLATION. CLEAN MATERIALS BEFORE REINSTALLATION AND ENSURE EQUIPMENT IS STILL FULLY OPERATIONAL.
- 16. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL OR RELOCATION OF ITEMS, NOT SHOWN ON THESE DRAWINGS TO ACCOMMODATE THE RENOVATIONS. CONTRACTOR SHALL INCLUDE, IN BASE BID, AN ALLOWANCE FOR UNFORESEEN CONDITIONS WHEN CONCEALED WORK IS EXPOSED. CLAIMS FOR ADDITIONAL DEMOLITION WORK WILL NOT BE ACCEPTED EXCEPT FOR CERTAIN CASES CONSIDERED JUSTIFIABLE BY THE ARCHITECT/ENGINEER.
- 17. REMOVE EXISTING WIRING AND CONDUITS FROM WATER HEATERS (4) TO THIER NEAREST DISCONNECT. REUSE EXISTING CIRCUITS FOR THE 2 NEW WATER HEATERS. SEE P100 FOR REFERENCE ONLY.

FIRE ALARM NOTES:

- CONTRACTOR SHALL VERIFY AND COORDIANTE WITH THE BUILDING FIRE ALARM MAINTENANCE VENDOR FOR TYPE OF FIRE ALARM DEVICES TO BE USED.
- CONTRACTOR SHALL BE RESPONSIBLE TO RETAIN AND COORDINATE THE BUILDING FIRE ALARM MAINTENANCE VENDOR FOR PROGRAMMING AND FINAL CONNECTIONS. CONTRACTOR SHALL INCLUDE PROGRAMMING AND FINAL CONNECTION COSTS IN THEIR
- FIRE ALARM WIRING DIAGRAMS SHOWN ARE GENERAL ARRANGEMENTS ONLY. OBTAINED PRIOR TO THE COMMENCEMENT OF THE WORK. ALL PERMIT COSTS AND INSPECTION FEES SHALL BE INCLUDED AS PART OF THIS CONTRACT.
- 4. PERMITS AND APPROVALS NECESSARY FOR INSTALLATION OF WORK SHALL BE OBTAINED PRIOR TO THE COMMENCEMENT OF THE WORK. ALL PERMIT COSTS AND INSPECTION FEES SHALL BE INCLUDED AS PART OF THIS CONTRACT.
- CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN AND PROTECT FIRE ALARM NOTIFICATION DEVICES, SMOKE DETECTORS AND OTHER FIRE ALARM SAFETY DEVICES IN OPERATION AT ALL TIMES. IF ANY PORTION OF FIRE ALARM SYSTEM IS DISABLED, NOTIFY BUILDING CUSTODIAN IMMEDIATELY.
- 6. IN AREAS WHERE DUST AND DIRT WILL BE AIRBOURNE DURING DEMOLITION AND CONSTRUCTION THE CONTRACTOR SHALL PROVIDE PLASTIC WRAPOVER SMOKE DETECTORS AND THEN REMOVE ONCE SPACE IS CLEAN.IF A FIRE ALARM DEVICE IS LOCATED ON A WALL OR CEILING TO BE REMOVED, UNLESS OTHERWISE INDICATED THE DEVICE SHALL BE REMOVED AND STORED. ONCE CONSTRUCTION IS COMPLETE THE DEVICE SHALL BE REINSTALLED IN IT'S ORIGINAL LOCATION OR AS CLOSE TO 'ITS ORIGINAL LOCATION AS FEASIBLE. REUSE EXISTING WIRING IF POSSIBLE, PROVIDE NEW WIRING IF NECESSARY.
- 7. UNLESS DIRECTED OTHERWISE BY FIRE ALARM SYSTEM MANUFACTURER FIRE ALARM DEVICE WIRING SHALL BE AS FOLLOWS (FOR BIDDING PURPOSES ONLY) SIGNAL WIRING - #14 AWG TWISTED/SHIELDED BELL WIRING - #14 AWG TWISTED CABLE
- STROBE WIRING #14 TWISTED CABLE THE WIRING SHALL HAVE THE FOLLOWING CHARACTERISTICS:
- A. A MINIMUM TEMPERATURE RATING 150° C B. A MINIMUM AVERAGE INSULATION THICKNESS OF 15 MILS
- C. A MINIMUM AVERAGE JACKET THICKNESS OF 25 MILS D. THE COLOR OF THE CABLE SHALL BE RED

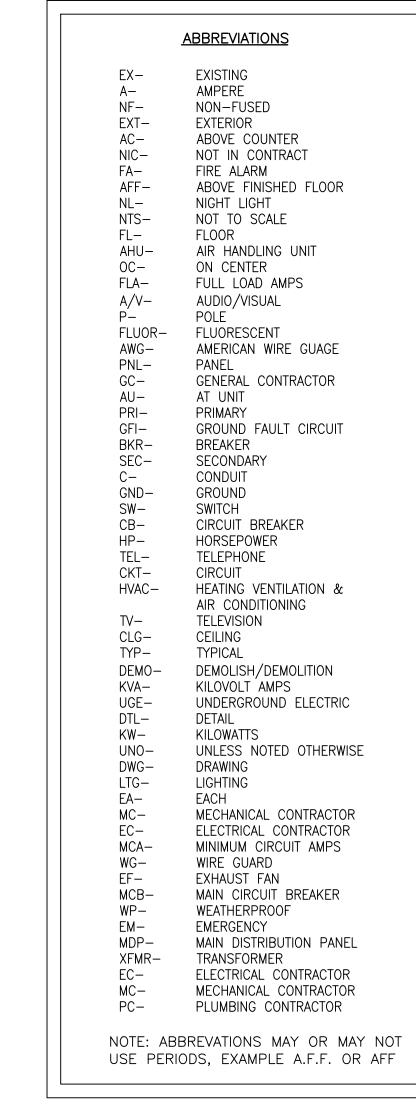
AREAS, PROVIDE PLENUM RATED CABLE IN MIN. $\frac{3}{4}$ " CONDUIT.

FLASH9.RATE OF 1-3 HZ.

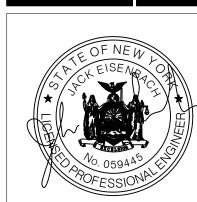
- E. THE CABLE SHALL BE A TYPE FPLP (PLENUM TYPE) WHEN CONDUIT IS USED. TO PURCHASING F. THE CABLE SHALL BE VISIBLY MARKED EXTERNALLY THAT IT MEETS THE ABOVE REQUIREMENTS AND IS LISTED BY U.L.CONFIRM WIRING TYPE AND QUANTITY WITH FIRE ALARM SYSTEM MANUFACTURER PRIOR.
- 8. PROVIDE MC FIRE ALARM CABLE WITH RED STRIPE AS MANUFACTURED BY AFC SERIES 1800 WHEN CABLE IS CONCEALED OR ABOVE HUNG CEILING. WHEN FIRE ALARM CABLE IS RUN EXPOSED IN FINISHED AREAS, CABLE SHALL RUN IN WIREMOLD V-700. WHEN FIRE ALARM CABLE IS RUN EXPOSED IN UNFINISHED
- 9. STROBES SHALL HAVE A MINIMUM LIGHT OUTPUT OF 75 CANDELA AND A
- 10. SHUTDOWN OF HVAC SYSTEM EQUIPMENT (NOT LIMITED TO, ROOF TOP, 10. EXHAUST FANS, ETC.) OF 1000 CFM OR GREATER, SHALL BE PERFORMED VIA A RELAY INTERFACE SYSTEM. SEND SIGNAL TO BUILDING AUTOMATED TEMPERATURE CONTROL (ATC) SYSTEM INDICATING SHUTDOWN HAS OCCURED. EQUIPMENT RESTART SHALL BE BY BUILDING 'ATC' SYSTEM UPON FIRE ALARM RESET TO NORMAL MODE. RESTART OF EQUIPMENT SHALL BE SEQUENTIAL.
- 11. AFTER THE SYSTEM MODIFICATIONS ARE COMPLETE TEST ALL COMPONETS IN ACCORDANCE WITH SEQUENCE OF OPERATION PRIOR TO FIRE DEPARTMENT INSPECTION.
- 12. A CARBON MONOXIDE DETECTORS SHALL BE PROVIDED IN ALL BOILER ROOMS. ACTIVATION INITIATE A SUPERVISORY SIGNAL AT THE FIRE ALARM CONTROL PANEL AND ANNUNCIATOR PANEL WHEN 70 PPM ARE REACHED WITHIN 60-240 MINUTES OR 150 PPM ARE REACHED WITHIN 10-50 PER UL 2034.

GENERAL NEW WORK NOTES:

- 1. UNLESS NOTED AS EXISTING OR PROVIDED BY OTHERS, CONTRACTOR SHALL PROVIDE ALL MATERIALS SHOWN ON DRAWINGS. ALL MATERIALS PROVIDED SHALL BE NEW, UNUSED CONDITION.
- 2. ALL WORK PERFORMED UNDER THIS CONTRACT SHALL BE PROVIDED WITH MINIMUM DISRUPTION TO THE BUILDING SYSTEMS AND STAFF. CONTINUOUS OPERATION OF THE BUILDING SYSTEMS, OUTSIDE OF WORK AREA, SHALL BE MAINTAINED THROUGHOUT THE ENTIRE PROJECT. TEMPORARY SHUTDOWN OF SYSTEMS SHALL ONLY BE ALLOWED WITH WRITTEN CONSENT OF THE OWNER. EXISTING ALARM AND EMERGENCY SYSTEMS SHALL NOT BE DISRUPTED AT ANY TIME DURING THE PROJECT.
- REMOVE & REINSTALL EXISTING CONSTRUCTION (CEILINGS, LIGHTING, ELECTRICAL EQUIPMENT, FIRE ALARM DEVICES, FURNISHINGS, ETC.) AS NECESSARY TO COMPLETE THE REMOVALS & RENOVATION WORK REQUIRED BY THE DRAWINGS & SPECIFICATIONS. REPLACE ANY ITEMS DAMAGED BY OR DUE TO THIS REMOVAL & REINSTALLATION WITH NEW ITEMS TO MATCH EXISTING. (APPLIES TO AREAS WITHIN & OUTSIDE OF THE PROJECT AREA)
- 4. IN AREAS WHERE CEILING IS BEING REMOVED, EXISTING CONDUITS AND CABLING WHICH ARE NOT INDEPENDENTLY SUPPORTED ABOVE THE CEILING SHALL BE INDEPENDENTLY SUPPORTED FROM THE STRUCTURE ABOVE USING SPECIFIC
- SURFACE MOUNT ALL WIRING DEVICES, LIGHTING CONTROLS, TELECOMMUNICATION DEVICES, FIRE ALARM DEVICES, ETC. LOCATED ON EXISTING MASONRY WALLS. PROVIDE SURFACE MOUNTED BOXES, RACEWAYS, WIREMOLD, ETC. PER SPECIFICATIONS.
- 6. COVERS ASSOCIATED WITH JUNCTION AND PULL BOXES SHALL BE READILY ACCESSIBLE
- PROVIDE PULL BOXES WHERE REQUIRED BY CODE AND WHERE NECESSARY FOR CONDUCTOR INSTALLATION. PROVIDE PULL BOXES EVERY 100' FOR ALL EMPTY RACEWAY RUNS. PRIOR TO INSTALLATION OF PULL BOXES, COORDINATE WITH OTHER TRADES.
- 8. PROVIDE SEPARATE RACEWAYS AND BOXES FOR CONDUCTORS OF NORMAL AND EMERGENCY CIRCUITS.
- 9. DO NOT COMBINE MORE THAN THREE PHASE CONDUCTORS, THREE NEUTRAL CONDUCTORS PLUS THREE GROUND CONDUCTORS, IN ANY ONE BRANCH CIRCUIT CONDUIT, UNLESS OTHERWISE INDICATED ON DRAWINGS.
- 10. THE USE OF NON-METTALLIC SURFACE RACEWAY OR EXPOSED NON-METTALLIC RACEWAY IN ASSEMBLY SPACES AND MEANS OF EGRESS AREAS IS PROHIBITED.
- 11. THE USE OF SHARED NEUTRALS IN LIGHTING AND RECEPTACLE BRANCH CIRCUITS IS PROHIBITED. PROVIDE SEPARATE NEUTRAL AND GROUND FOR EVERY CIRCUIT
- 12. PROTECT EXISTING SURFACES. 13. WALK-THRU WITH OWNER REPRESENTATIVE AND VERIFY ALL ELECTRICAL DEVICE LOCATIONS PRIOR TO INSTALLATION.
- 14. INSTALL ALL CIRCUITRY PARALLEL OR PERPENDICULAR TO WALLS, FLOOR, AND CEILING.
- 15. REFER TO ELECTRICAL EQUIPMENT AND CONTROL SCHEDULE FOR HVAC/PLUMBING EQUIPMENT CIRCUITRY, CONTROLS & ADDITIONAL INFORMATION.
- 16. TO MAINTAIN DRAWING CLARITY, MOTOR CONTROL DEVICES, FOR HVAC/PLUMBING EQUIPMENT, HAVE NOT BEEN SHOWN. REFER TO ELECTRICAL EQUIPMENT & CONTROL SCHEDULE FOR TYPES OF MOTOR CONTROL DEVICES REQUIRED, LOCATIONS WHERE CONTROL DEVICES ARE SCHEDULED FOR INSTALLATION, AND ADDITIONAL INFORMATION.
- 17. COORDINATE LOCATIONS AND MOUNTING HEIGHTS OF ELECTRICAL EQUIPMENT/DEVICES WITH ARCHITECTURAL PLANS, ELEVATIONS, FURNITURE LAYOUTS, AND WITH OTHER DIVISIONS PRIOR TO INSTALLATION. CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT COST TO OWNER.
- 18. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL SUPPORT HARDWARE FOR SECURELY FASTENING THE ELECTRICAL CONTROL DEVICES AND ENCLOSURES TO THE BUILDING STRUCTURE. THE REQUIRED HARDWARE INCLUDES BUT IS NOT LIMITED TO, INTERMEDIATE STEEL ANGLE, UNISTRUCT, FASTENERS, JOISTS CLAMPS, ETC. MOUNT STARTERS, VFD'S, DISCONNECTS, RELAYS, AND OTHER ELECTRICAL CONTROL DEVICES AND ENCLOSURES AT LOCATION(S) INDICATED IN ELECTRIC EQUIPMENT & CONTROL SCHEDULE(S). ALLOW MAINTENANCE ACCESS AND SERVICE SPACE AT EACH LOCATION.
- 19. WHERE NEW CIRCUIT BREAKERS ARE REQUIRED FOR INSTALLATION IN EXISTING ELECTRICAL PANELS, CONTRACTOR SHALL PROVIDE CIRCUIT BREAKERS WHICH ARE COMPATIBLE WITH EXISTING ELECTRICAL PANELS. MATCH FRAME SIZES, KIAC RATINGS, ETC.
- 20. UPON COMPLETION OF THIS PROJECT, THE CONTRACTOR SHALL PROVIDE COMPLETE, TYPE-WRITTEN, AND UP-TO-DATE PANELBOARD DIRECTORIES FOR ALL PANELBOARDS (NEW AND EXISTING) AFFECTED BY THIS PROJECT. PROVIDE OWNER WITH TWO COPIES OF UPDATED PANELBOARD CIRCUIT BREAKER DIRECTORIES.
- 21. EACH RECEPTACLE, SWITCH AND JUNCTION BOX, PROVIDED, OR ALTERED, UNDER THIS CONTRACT, SHALL BE LABELED WITH THE CORRESPONDING POWER PANEL NAME AND CIRCUIT BREAKER NUMBER. ALL LABELING SHALL BE TYPEWRITTEN USING A LABEL MAKER AND SHALL BE PERMANENTLY AFFIXED TO EACH FACEPLATE. HANDWRITTEN LABELS WILL NOT BE ACCEPTED. PRIOR TO START OF LABELING, MEET WITH OWNER TO DETERMINE LABELING SCHEME TO BE UTILIZED. PROVIDE LABELING TO MEET OWNER REQUIREMENTS.
- 22. ALL ITEMS THAT REQUIRE ACCESS. SUCH AS FOR OPERATING, CLEANING, SERVICING, MAINTENANCE, AND CALIBRATION. SHALL BE EASILY AND SAFELY ACCESSIBLE BY PERSONS STANDING AT FLOOR LEVEL, OR STANDING ON PERMANENT PLATFORMS, WITHOUT THE USE OF PORTABLE LADDERS. EXAMPLES OF THESE ITEMS INCLUDE, BUT ARE NOT LIMITED TO: ALL TYPES OF SWITCHES, PANELBOARDS, OCCUPANCY SENSORS, CONTROL DEVICES, ETC.. PRIOR TO COMMENCING INSTALLATION WORK, REFER CONFLICTS BETWEEN THIS REQUIREMENT AND CONTRACT DRAWINGS TO OWNER FOR RESOLUTION.
- 23. CLEANING DURING ELECTRICAL WORK: THE MECHANICAL ROOM AND ROOMS WHERE WORK WILL BE DONE TO MINIMIZE DISTURBANCE IN THE BUILDINGS. WORKERS ARE TO USE PATHWAYS AND FACILITIES AGREED UPON WITH THE DISTRICT DESIGNEE IN WRITING. THE AREA OUTSIDE THE BUILDING WHERE CUTTING WELDING OR STORAGE IS ALLOWED IS TO BE FENCED AT ALL TIMES. THE CONTRACTOR WILL ON A DAILY BASIS CLEAN THE GROUNDS AND THE BUILDING OF ANY DEBRIS OR GARBAGE GENERATED BY THEIR WORK.
- 24. CONTRACTOR TO PROVIDE NECESSARY MODIFICATIONS TO EXISTING ELECTRICAL TO ACCOMPLISH NEW WORK AND TO PROVIDE A PROPERLY FUNCTIONING SYSTEM. VERIFY IN FIELD.



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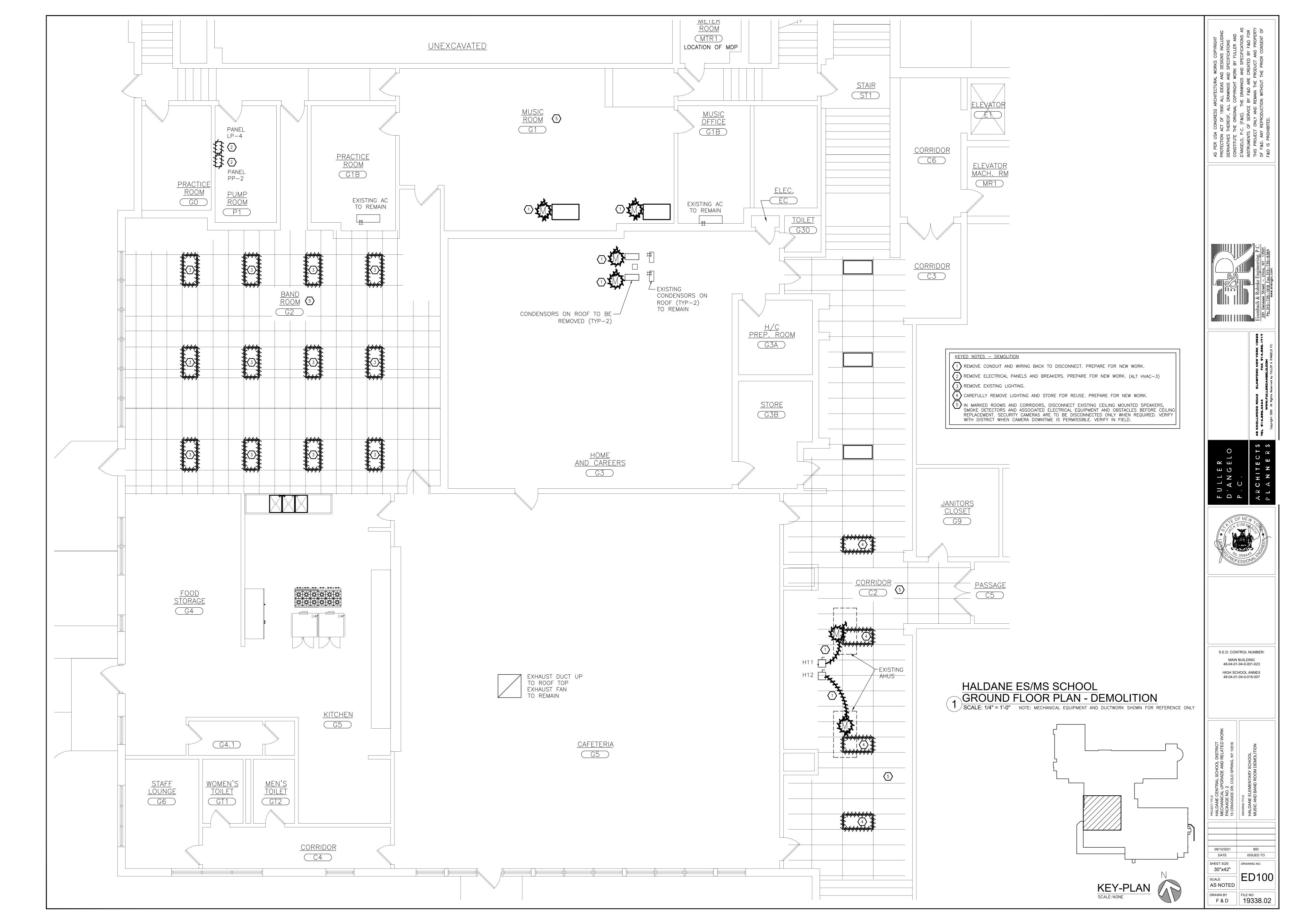
S.E.D. CONTROL NUMBER: MAIN BUILDING 48-04-01-04-0-001-023 HIGH SCHOOL ANNEX 48-04-01-04-0-016-007

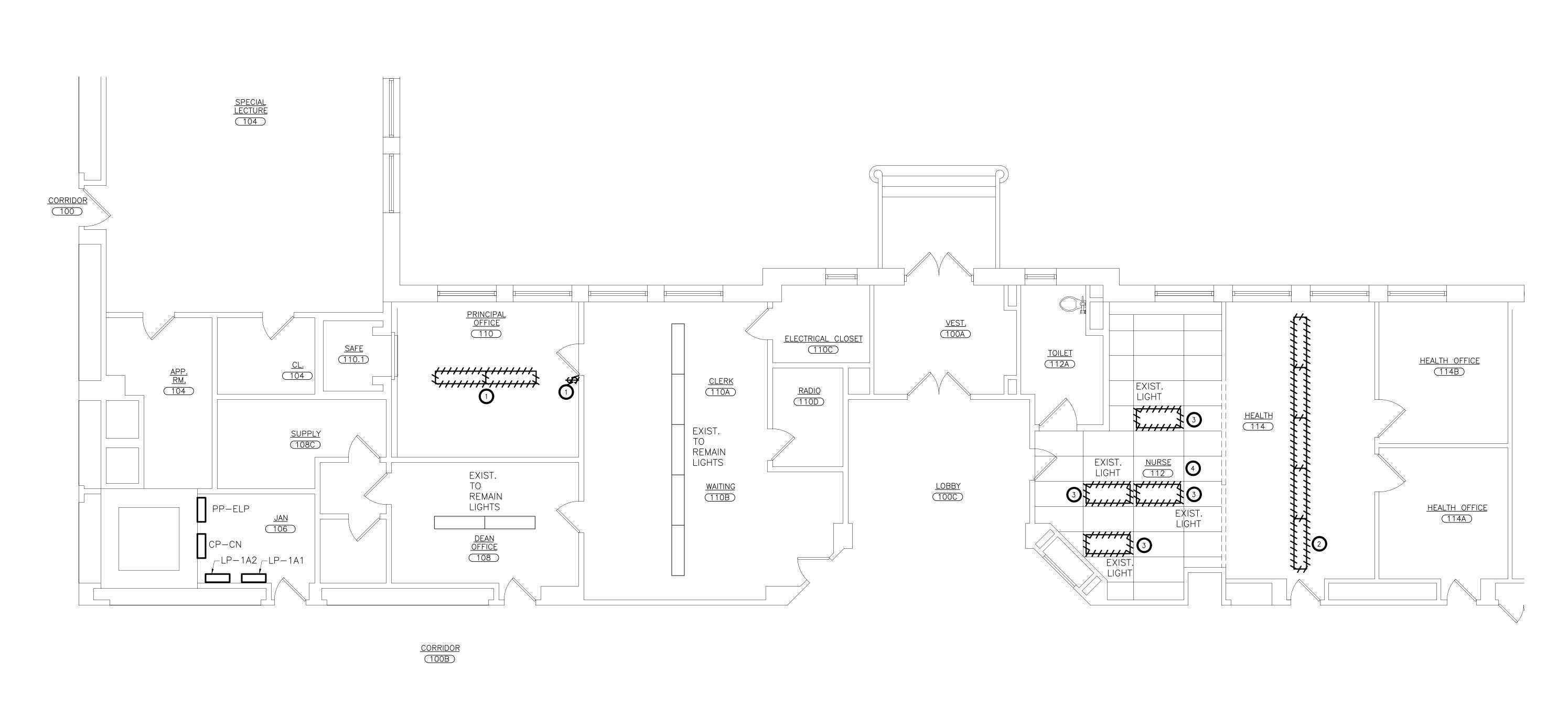
09/13/2021 DATE ISSUED TO SHEET SIZE DRAWING NO. 30"x42" SCALE AS NOTED

FILE NO

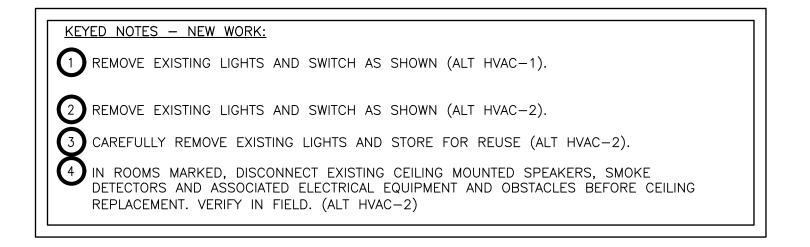
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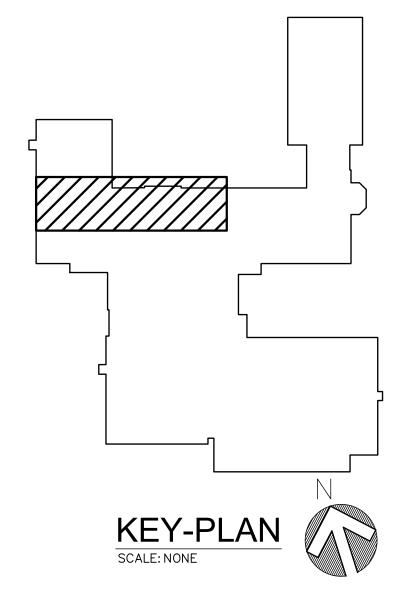
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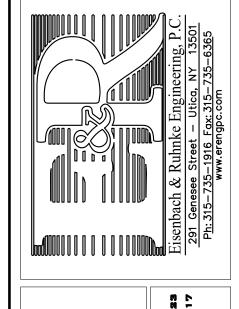


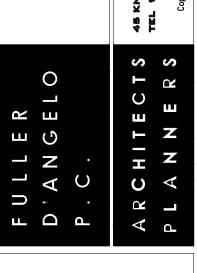
HALDANE ES/MS PARTIAL FIRST FLOOR PLAN - MAIN OFFICE AND NURSES OFFICE - DEMOLITION SCALE: 1/4" = 1'-0"





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S.E.D. CONTROL NUMBER:

MAIN BUILDING
48-04-01-04-0-001-023

HIGH SCHOOL ANNEX
48-04-01-04-0-016-007

HALDANE CENTRAL SCHOOL DISTRICT
MECHANICAL UPGRADE AND RELATED WORK
PACKAGE NO. 2
15 CRAIGSIDE DR, COLD SPRING, NY 10516

DRAWING TITLE
HALDANE ELEMENTARY SCHOOL
NURSE AND MAIN OFFICE PLANS
DEMOLITION

09/13/2021 BID
DATE ISSUED TO

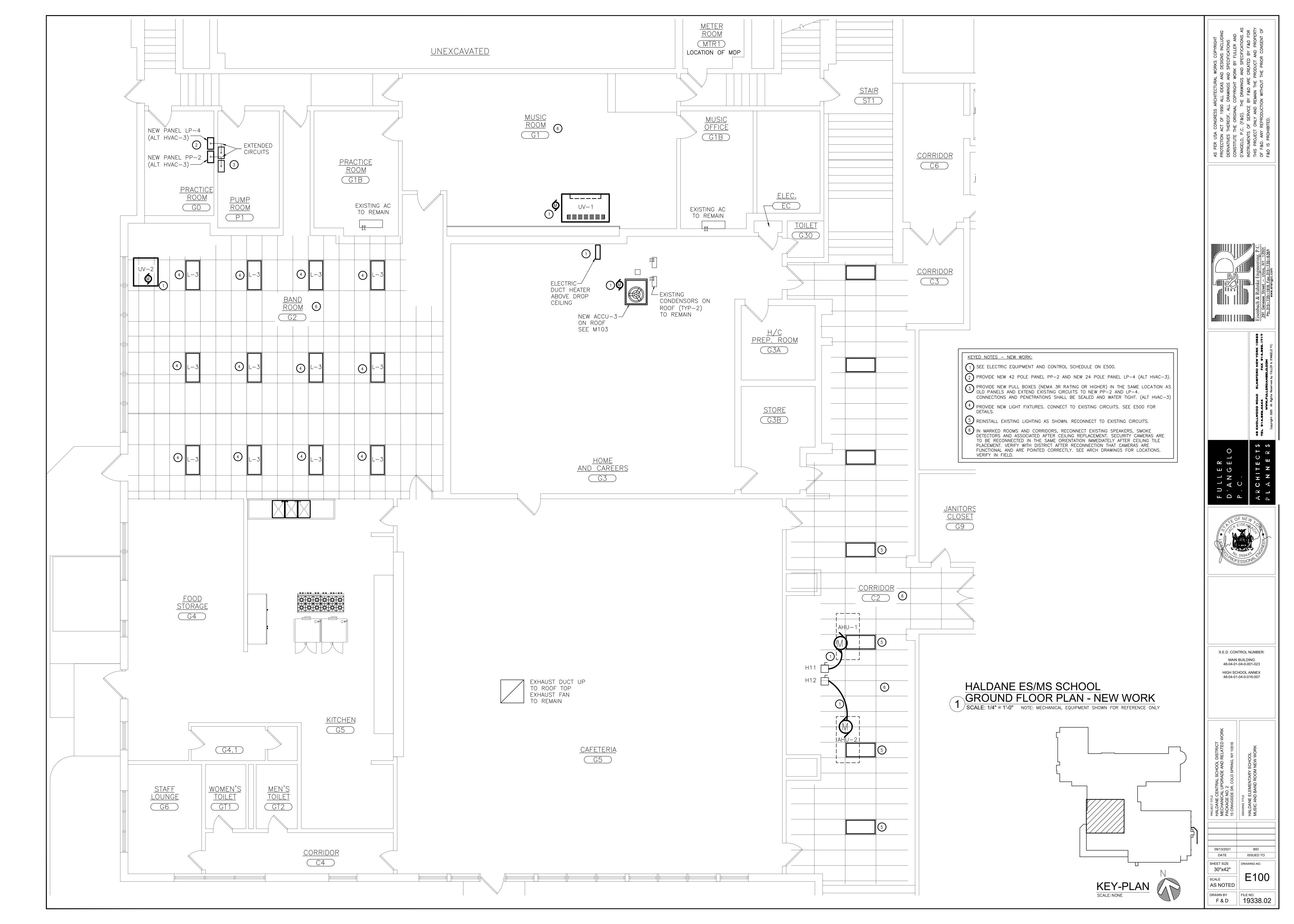
SHEET SIZE
30"x42"

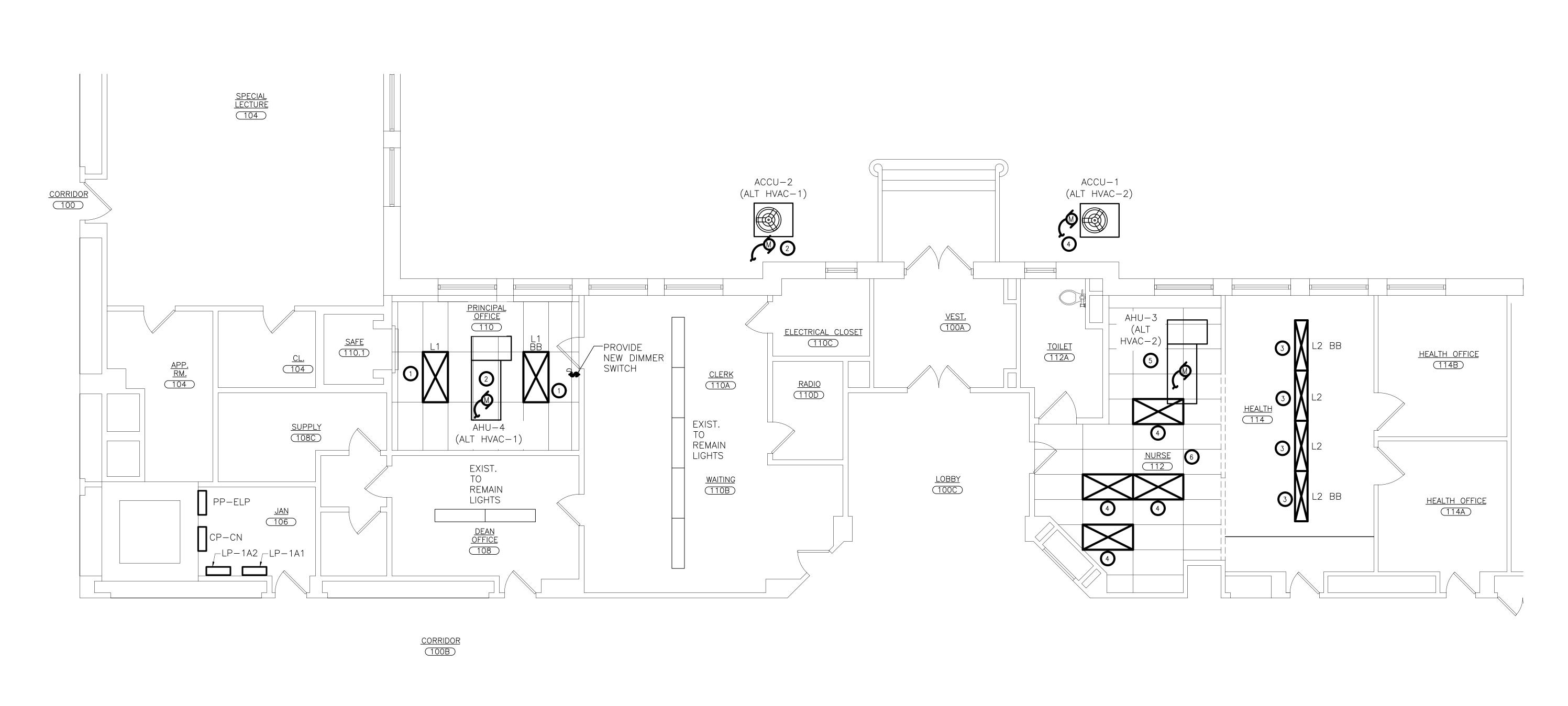
SCALE
AS NOTED

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F & D

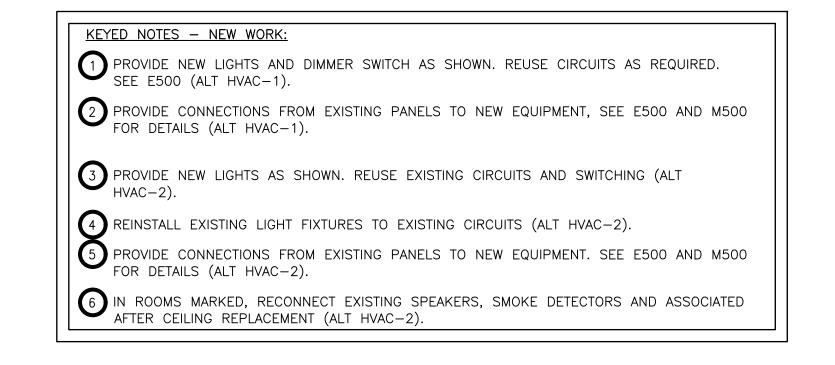
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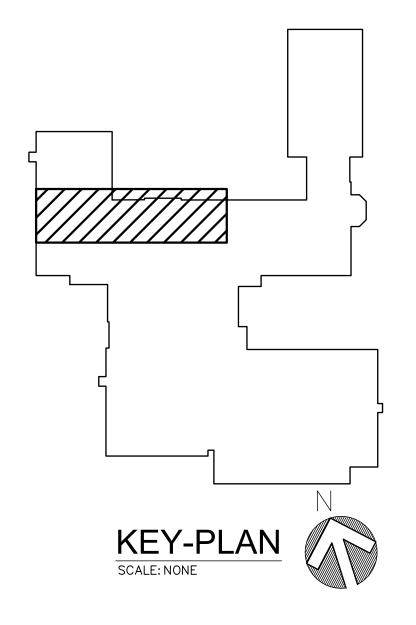
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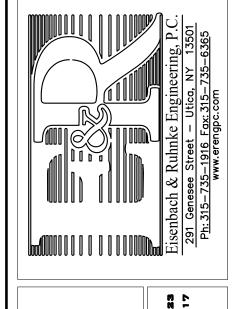


HALDANE ES/MS PARTIAL FIRST FLOOR PLAN - MAIN OFFICE AND NURSES OFFICE - NEW WORK SCALE: 1/2" = 1'-0"





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S.E.D. CONTROL NUMBER:

MAIN BUILDING
48-04-01-04-0-001-023

HIGH SCHOOL ANNEX
48-04-01-04-0-016-007

HALDANE CENTRAL SCHOOL DISTRICT MECHANICAL UPGRADE AND RELATED WORK PACKAGE NO. 2 15 CRAIGSIDE DR, COLD SPRING, NY 10516	DRAWING TITLE HALDANE ELEMENTARY SCHOOL NURSE AND MAIN OFFICE PLANS NEW WORK

09/13/2021 BID
DATE ISSUED TO

SHEET SIZE
30"x42"

SCALE
AS NOTED

DRAWN BY
F & D

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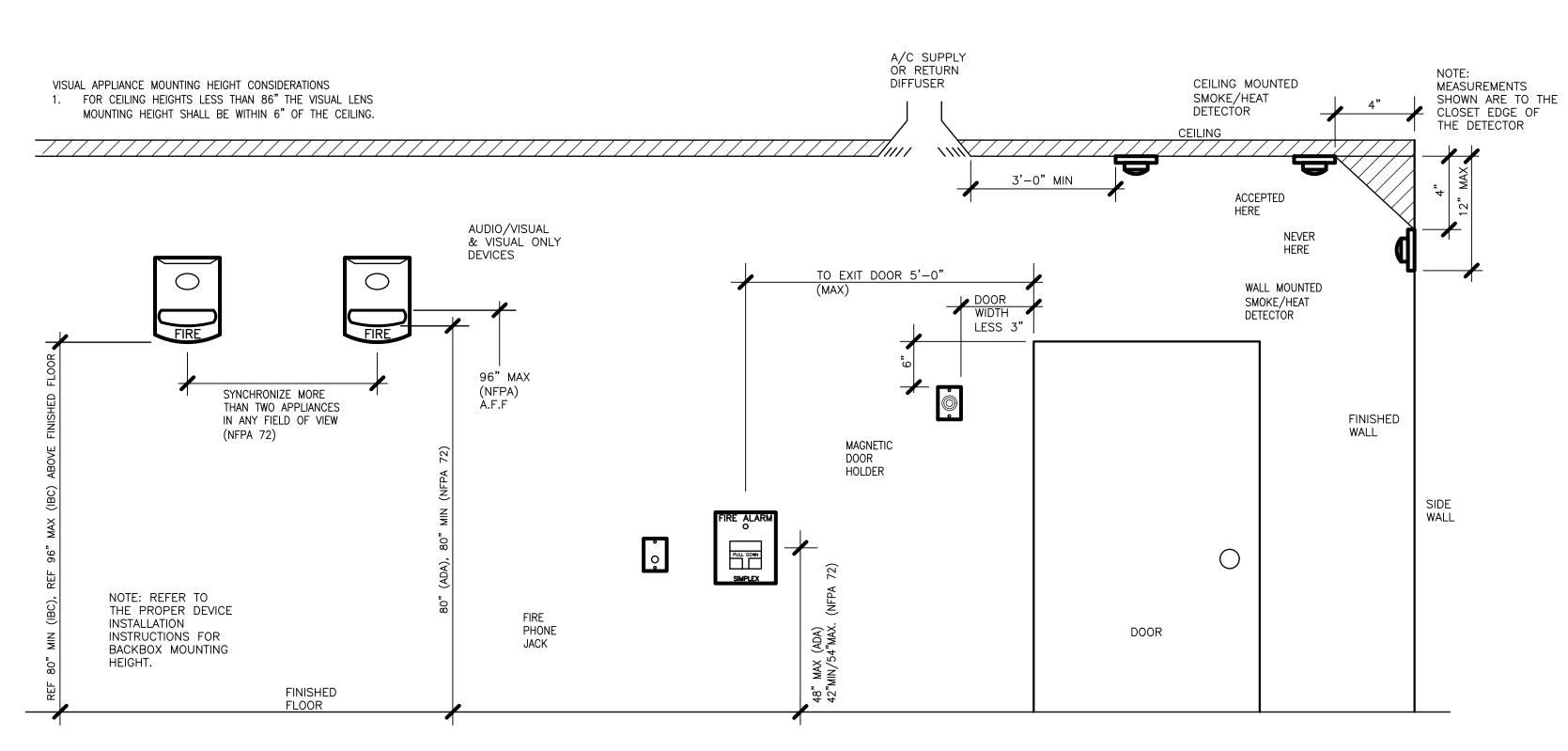
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COORDINATION NOTE: 1. COORDINATION- IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL AND MECHANICAL CONTRACTORS TO COORIDNATE THEIR WORK. THE HVAC CONTRACTOR SHALL TAKE THE LEAD IN THE COORDINATION EFFORT AND PRODUCE THE COORDINATION DRAWINGS. COORDINATION DRAWINGS SHALL BE SUBMITTED FOR APPROVAL TO THE ENGINEER PRIOR TO STARTING ANY WORK. CEILING SPACE IS VERY LIMITED AND DUCTWORK/PIPING INSTALLATION AND LOCATION IS CRITIAL. THE PURPOSE OF THESE DRAWINGS IS TO COORDINATE THE LOCATIONS OF ALL PIPING, DUCTWORK, AND ASSOCIATED ELECTRICAL EQUIPMENT. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED AND LOCATED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC). MECHANICAL EQUIPMENT CANNOT INFILTRATE THE ELECTRICAL EQUIPMENTS WORKING CLEARANCE AND WORKING SPACE, NOR CAN IT BE INSTALLED DIRECTLY ABOVE OR BELOW TO THE STRUCTURE, AS IDENTIFIED WITHIN THE NEC, ARTICLE 110 -"REQUIREMENTS FOR ELECTRICAL INSTALLATION". THIS COORDINATION IS REQUIRED FOR ALL PHASES OF THIS PROJECT. FAILURE TO FOLLOW THIS PROCEDURE DOES NOT RELIEVE THE CONTRACTOR FROM THE DUTIES AND WILL NOT CONSTITUTE A REASON FOR A CHANGE ORDER.

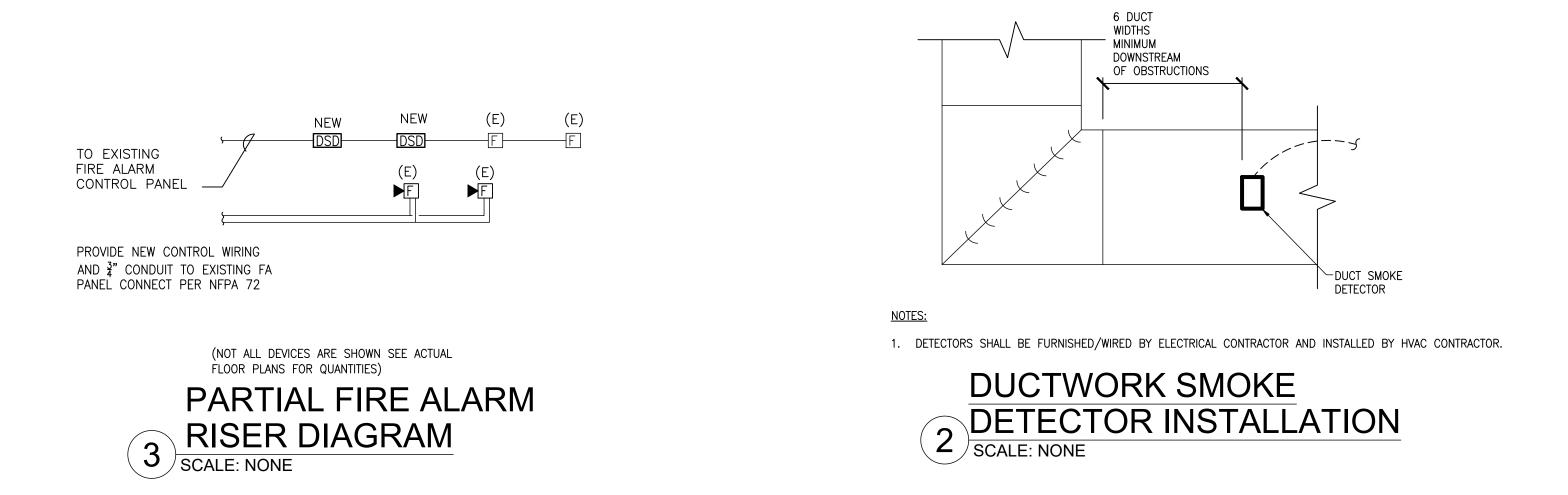
EQUIPMENT					SUPPL	.Y							CONTROLLE	R DEVICE TYPE 8	& ACCESSORIES	(UNO, PROVIDED	BY ELECTRICAL	CONTRACTOR)							
DESIGNATION	DESCRIPTION	ROOM LOCATION	SIZE	VOLT PHAS	GE/ PANEL/ /60 CENTER	CONTROL	CIRCUIT NUMBER	BREAKER SIZE	POWER WIR PANEL TO UNIT		POWER WIRING FROM CONTROL UNIT TO EQUIPMENT	GROUND WIRE (SIZED PER NEC)	PACKAGED CONTROL UNIT (BY	VARIABLE FREQUENCY DRIVE	CONTROL STARTER	NON-FUSED DISCONNECT SWITCH	CONTROL DEVICE INSTALL	DUCT SMOKE DETECTOR	DUCT SMOKE DETECTOR	FIRE ALARM FAN	DISCONNECT	SWITCH		NOTES	
			HP KW	FLA					WIRE	COND.	WIRE COND.		OTHERS)	(VFD)			LOCATION	(SUPPLY)	(RETURN)	SHUTDOWN	FRAME	FUSE	LOCATION		
WH-1	WATER HEATER	BOILER RM	FRAC	6 120	1P REUSE	EXIST	REUSE EXIST	20	2-#12	<u>3</u> "	BUILT-IN	#12					AU				60	Х	BUILT-IN	1,2,3	
WH-2	WATER HEATER	BOILER RM	FRAC	6 120	1P REUSE	EXIST	REUSE EXIST	20	2-#12	<u>3</u> "	BUILT-IN	#12					AU				60	Х	BUILT-IN	1,2,3	
AHU-1	AIR HANDLING UNIT	CORRIDOR NEAR CAFE	1	9.4 208	/1P REUSE	EXIST	REUSE EXIST		REUSE EXIS	T REUSE EXI	IST								YES					1,2,3	
AHU-2	AIR HANDLING UNIT	CORRIDOR NEAR CAFE	1	9.4 208	/1P REUSE	EXIST	REUSE EXIST		REUSE EXIS	T REUSE EXI	IST								YES					1,2,3	
AHU-3	AIR HANDLING UNIT (ALT HVAC-2)	NURSE RM 112	1.1	3 208	/3P CP-CN			20	2-#12	<u>3</u> "	BUILT-IN	#12					AU				60		BUILT-IN	1,2	ALT HVAC-
AHU-4	AIR HANDLING UNIT (ALT HVAC-1)	PRINC. ROOM 110	1.1	3 208	/3P CP-CN			20	2-#12	<u>3</u> "	BUILT-IN	#12					AU				60		BUILT-IN	1,2	ALT HVAC-
ACCU-1	ACCU (ALT HVAC-2)	EXTERIOR	FRAC	9 208	/3P CP-CN			30	2-#12	<u>3</u> "	BUILT-IN	#12					AU				60		BUILT-IN	1,2	ALT HVAC-
ACCU-2	ACCU (ALT HVAC-1)	EXTERIOR	FRAC	9 208	/3P CP-CN			30	2-#12	<u>3</u> "	BUILT-IN	#12					AU				60		BUILT-IN	1,2	ALT HVAC-
ACCU-3	ACCU	ROOF	FRAC	18 208	/1P REUSE	EXIST	REUSE EXIST		REUSE EXIS	T REUSE EXI	IST													1,2,3	
UV-1	UNIT VENTILATOR	MUSIC RM G1	FRAC	2.6 208	/1P REUSE	EXIST	REUSE EXIST		REUSE EXIS	T REUSE EXI	IST								YES					1,2,3	
UV-2	UNIT VENTILATOR	BAND RM G2	FRAC	2.6 208	/3P PP2				2-#12	3" 4	BUILT-IN	#12							YES					1,2	
DCP-1	CIRC PUMP	BOILER RM	FRAC	3 115	/1P REUSE	EXIST	REUSE EXIST		REUSE EXIS	T REUSE EXI	IST													1,2,3	
DCP-2	CIRC PUMP	BOILER RM	FRAC	3 115	/1P REUSE	EXIST	REUSE EXIST		REUSE EXIS	T REUSE EXI	IST													1,2,3	
DH-1	DUCT HEATER (ALT HVAC-2)	NURSE RM 112	4	15 208	/3P CP-CN			30	3-#10	<u>3</u> "		#10												1,2	ALT HVAC-
DH-2	DUCT HEATER (ALT HVAC-1)	PRINC. ROOM 110	4	15 208	/3P CP-CN			30	3-#10	<u>3</u> "		#10												1,2	ALT HVAC-
DH-3	DUCT HEATER	HOME/CAREERS G3	4	15 208	/3P REUSE	EXIST		30	3-#10	3"		#10												1,2	

AU- AT UNIT N/A NOT APPLICABLE

- ALT HVAC-3 NOTE: THE EXISTING ELECTRICAL PANELS LP-4 AND PP-2 ARE TO BE REMOVED IN PUMP RM P1. THE NEW PANELS. (FIELD VERIFY) 1. INSTALL PER MANUFACTURERS RECOMMENDATIONS
- 2. VERIFY ALL MOTOR SIZES BEFORE ORDERING ANY CONTROL DEVICES.
- 3. REMOVE PORTION OF EXISTING CIRCUIT BACK TO DISCONNECT SWITCH AND PROVIDE NEW AS SCHEDULED. (REUSE EXISTING CIRCUITS) 4. ALTERNATE (ALT) WORK IS AS NOTED. ALL OTHER WORK LISTED TO BE PART OF BASE BID.



NOTE: NOT ALL DEVICES MAY BE USED. (SHOWN FOR REFERENCE ONLY) 1 DEVICE LOCATION DETAIL (REINSTALLATIONS)
SCALE: NONE



			LIGHT FIX	TURE SCH	EDULE		
TYPE	DESCRIPTION	LAMPS	VOLTAGE/DRIVER	MOUNTING	DESIGN BASIS	ACCEPT. MFR'S.	REMARKS AND MODEL
L1 🔀	2x4 FLAT PANEL (DIMMABLE)	LED 3500K	120-277	T-BAR	WILLIAMS AT1 2'X4' 80CRI 3500K CCT 4000 LM	OR APPROVED EQUAL	"TYPE A" AT1-24-L40-835-D- DIM-UNV
L1 BB	2×4 FLAT PANEL (DIMMABLE)	LED 3500K	120-277	T-BAR	WILLIAMS AT1 2'X4' 80CRI 3500K CCT 4000 LM	OR APPROVED EQUAL	"TYPE A" AT1-24-L40-835-D- EM/10WLP-DIM-UNV
L2	1x4 FLAT PANEL	LED 3500K	120-277	SURFACE	WILLIAMS ASM 4' 80CRI 3500K CCT 5000 JOINER UNIT	OR APPROVED EQUAL	"TYPE B" ASM-4-L50-835- S-J-A-UNV
L2 BB	1x4 FLAT PANEL	LED 3500K	120-277	SURFACE	WILLIAMS ASM 4' 80CRI 3500K CCT 5000 JOINER UNIT	OR APPROVED EQUAL	"TYPE B" ASM-4-L50-835- S-J-A-EM/10WLP-UN
L3 🔀	2x4 FLAT PANEL (DIMMABLE)	LED 3500K	120-277	T-BAR	WILLIAMS AT1 2'X4' 80CRI 3500K CCT 7000 LM	OR APPROVED EQUAL	"TYPE C" AT1-24-L70-835-D- DIM-UNV
L3 BB	2x4 FLAT PANEL (DIMMABLE)	LED 3500K	120-277	T-BAR	WILLIAMS AT1 2'X4' 80CRI 3500K CCT 7000 LM	OR APPROVED EQUAL	"TYPE C" AT1-24-L70-835-D- EM/10WLP-DIM-UNV

BB- BATTERY BACKUP

PROPOSED PANEL (ALT HVAC-3)

	_ ID: L /120V	.P#4 3 PHASE 4 WIRE 100A MLO, 24 POLE 22KAIC		P#4 JM		LOCATION: SEE	PLAN	
NOTES	CIR. No.	CIRCUIT DESCRIPTION	BKR.	ø	BKR.	CIRCUIT DESCRIPTION	CIR. No.	NOTES
	1	MATCH EXISTING	20A	Α	20A	MATCH EXISTING	2	
	3	MATCH EXISTING	20A	В	20A	MATCH EXISTING	4	
	5	MATCH EXISTING	20A	С	20A	MATCH EXISTING	6	
	7	MATCH EXISTING	20A	Α	20A	MATCH EXISTING	8	
	9	MATCH EXISTING	20A	В	20A	MATCH EXISTING	10	
	11	MATCH EXISTING	20A	С	20A	MATCH EXISTING	12	
	13	MATCH EXISTING	20A	Α	20A	MATCH EXISTING	14	
	15	MATCH EXISTING	20A	В	20A	MATCH EXISTING	16	
	17	SPARE	20A	С	20A	SPARE	18	
	19	SPARE	20A	Α	20A	SPARE	20	
	21	SPARE	20A	В	20A	SPARE	22	
	23	SPARE	20A	С	20A	SPARE	24	

PROVIDE SQUARE D, TYPE NQ PANELBOARD, OR AS APPROVED
THE CONTRACTOR MAY RE—ARRANGE CIRCUIT BREAKERS AS REQUIRED TO SUIT FIELD CONDITIONS TO ALLOW EXISTING CONDUCTORS TO BE
RE—USED. SPLICING OF CONDUCTORS SHALL BE PERMITTED IN PANELBOARDS. ALL SPLICES SHALL BE MADE IN ACCEPTED JUNCTION BOXES OR WIREWAYS.

3. THE CONTRACTOR SHALL VERIFY ALL LOADS AND PROVIDE AN UPDATED, TYPED, PANELBOARD DIRECTORY

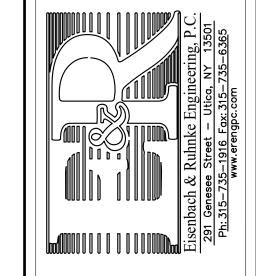
PROPOSED PANEL (ALT HVAC-3)

	L ID: F /120V	PP#2 3 PHASE 4 WIRE 225A MLO, 42 POLE 2		P#2 JM		LOCATIO	N: SEE PLAN	
NOTES	CIR. No.	CIRCUIT DESCRIPTION	BKR.		BKR.	CIRCUIT DESCRIPTION	CIR. No.	NOTES
	1	MATCH EXISTING	20A	Α	20A	MATCH EXISTING	2	
	3	MATCH EXISTING	20A	В	20A	MATCH EXISTING	4	
	5	MATCH EXISTING	20A	С	20A	MATCH EXISTING	6	
	7	MATCH EXISTING	20A	Α	20A	MATCH EXISTING	8	
	9	MATCH EXISTING	20A	В	20A	MATCH EXISTING	10	
	11	MATCH EXISTING	20A	С	20A	MATCH EXISTING	12	
	13	MATCH EXISTING	20A	Α	20A	MATCH EXISTING	14	
	15	MATCH EXISTING	20A	В	20A	MATCH EXISTING	16	
	17	MATCH EXISTING	20A	С	20A	MATCH EXISTING	18	
	19	MATCH EXISTING	20A	Α	20A	MATCH EXISTING	20	
	21	MATCH EXISTING	20A	В	20A	MATCH EXISTING	22	
	23	MATCH EXISTING	20A	С	20A	MATCH EXISTING	24	
	25	MATCH EXISTING	20A	Α	20A	MATCH EXISTING	26	
	27	MATCH EXISTING	20A	В	20A	MATCH EXISTING	28	
	29	MATCH EXISTING	20A	С	20A	MATCH EXISTING	30	
	31	MATCH EXISTING	20A	Α	20A	MATCH EXISTING	32	
	33	SPARE	20A	В	20A	SPARE	34	
	35	SPARE	20A	С	20A	SPARE	36	
	37	SPARE	20A	Α	20A	SPARE	38	
	39	SPARE	20A	В	20A	SPARE	40	
	41	SPARE	20A	С	20A	SPARE	42	1

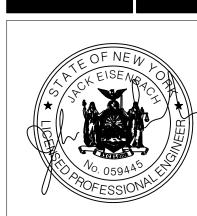
1. PROVIDE SQUARE D, TYPE NQ PANELBOARD, OR AS APPROVED

- THE CONTRACTOR MAY RE-ARRANGE CIRCUIT BREAKERS AS REQUIRED TO SUIT FIELD CONDITIONS TO ALLOW EXISTING CONDUCTORS TO BE
- RE-USED. SPLICING OF CONDUCTORS SHALL BE PERMITTED IN PANELBOARDS. ALL SPLICES SHALL BE MADE IN ACCEPTED JUNCTION BOXES OR WIREWAYS.

 3. THE CONTRACTOR SHALL VERIFY ALL LOADS AND PROVIDE AN UPDATED, TYPED, PANELBOARD DIRECTORY







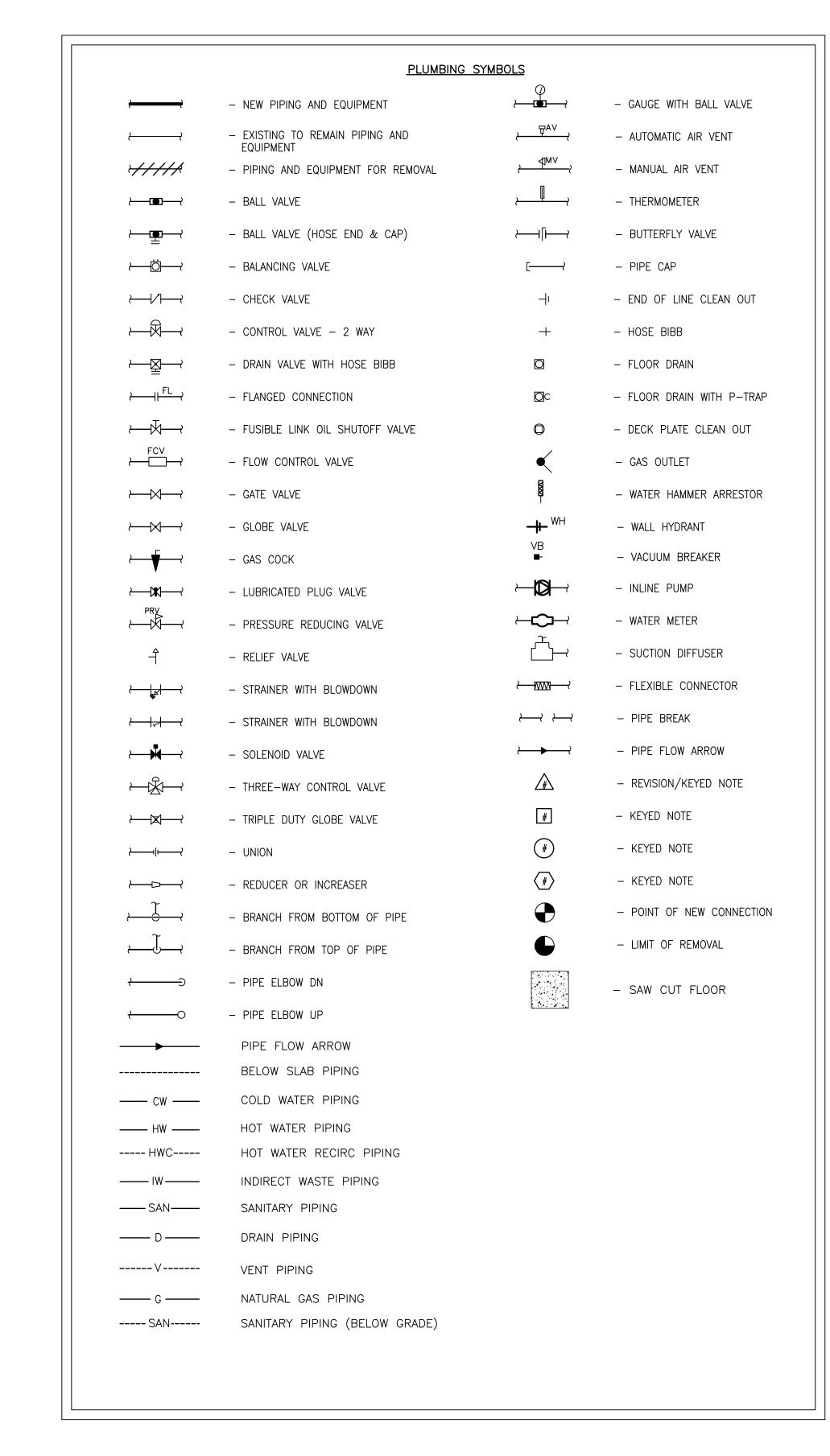
S.E.D. CONTROL NUMBER: MAIN BUILDING 48-04-01-04-0-001-023 HIGH SCHOOL ANNEX 48-04-01-04-0-016-007

09/13/2021 DATE ISSUED TO SHEET SIZE DRAWING NO. 30"x42" SCALE AS NOTED DRAWN BY FILE NO.

19338.02

F & D

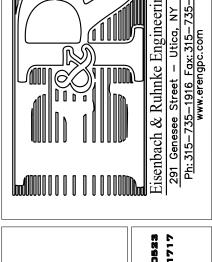
	PLUMBING ABBREVIA		
A/E	ARCHITECT / ENGINEER	HW	INDIRECT WASTE
AD	AREA DRAIN	IWH	INSTANTANEOUS WATER HEATER
AD	ACCESS DOOR	KW	KILOWATT
ADA	AMERICANS WITH DISABILITIES ACT	LAV	LAVATORY
4FF	ABOVE FINISH FLOOR	М	METER
AFG	ABOVE FINISHED GRADE	MC	MECHANICAL CONTRACTOR
ΔHJ	AUTHORITY HAVING JURISDICTION	MBH	1000 BTUH
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	МН	MANHOLE
4P	ACCESS PANEL	NC	NORMALLY CLOSED
" ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION	NG	NATURAL GAS
	& AIR CONDITIONING ENGINEERS	NIC	NOT IN CONTRACT
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	NOM	NOMINAL
ASPE	AMERICAN SOCIETY OF PLUMBING	NPW	NON POTABLE WATER
131 L	ENGINEERS	NTS	NOT TO SCALE
AWWA	AMERICAN WATERWORKS ASSOCIATION	02	OXYGEN
		OD	OUTSIDE DIAMETER
3FG	BELOW FINISHED GRADE	OSHA	OCCUPATIONAL SAFETY AND HEALTH
3HP	BREAK HORSEPOWER	OSHA	
30R	BASE OF RISER	Р	ADMINISTRATION DI IMP
BTU	BRITISH THERMAL UNIT		PUMP DULIMBING CONTRACTOR
BTUH	BRITISH THERMAL UNIT PER HOUR	PC	PLUMBING CONTRACTOR
	CELSIUS	PD	PUMP DISCHARGE
CA	COMBUSTION AIR	PDI	PLUMBING AND DRAINAGE INSTITUTE
CA	COMPRESSED AIR	PF	PLUMBING FIXTURE
CGA	COMPRESSED GAS ASSOCIATION	PG	PRESSURE GAGE
Cl	CAST IRON	PPM	PARTS PER MILLION
00	CLEANOUT	PRS	PRESSURE REDUCING STATION
002	CARBON DIOXIDE	PRV	PRESSURE REDUCING VALVE
COND	CONDENSATE	PSI	POUNDS PER SQUARE INCH
CP CP	CIRCULATING PUMP	PSIA	POUNDS PER SQUARE INCH ATMOSPHERE
CPVC	CHLORINATED POLYVINYL CHLORIDE	PSIG	POUNDS PER SQUARE INCH GAUGE
CU	COPPER	PVC	POLYVINYL CHLORIDE
CW	COLD WATER (DOMESTIC)	RD	ROOF DRAIN
)	DRAIN	RL	RAIN LEADER
) DIA	DIAMETER	RO	REVERSE OSMOSIS WATER
)FU	DRAINAGE FIXTURE UNIT	RPZ	REDUCED PRESSURE ZONE BACKFLOW
)N	DOWN		PREVENTER
DN DPCO	DECK PLATE CLEANOUT	SAN	SANITARY SEWER
		SMACNA	SHEET METAL AND AIR CONDITIONING
)WG	DRAWING	•	CONTRACTORS NATIONAL ASSOCIATION
)WH	DOMESTIC WATER HEATER	SCFM	STANDARD CUBIC FOOT/MINUTE
)WV	DRAIN WASTE VENT	SCW	SOFTENED COLD WATER
<u>-</u> .	ELECTRICAL CONTRACTOR	SCW SP	
EL	ELEVATION		SUMP PUMP
ET	EXPANSION TANK	SQFT	SQUARE FEET
EWC	ELECTRIC WATER COOLER	SS	STAINLESS STEEL
EXIST	EXISTING	ST	STORM SEWER
-	FAHRENHEIT	T&P	TEMPERATURE & PRESSURE (RELIEF VALVE)
D	FLOOR DRAIN	TD	TRENCH DRAIN
FU	FIXTURE UNITS	TDH	TOTAL DYNAMIC HEAD
∇	FLUSH VALVE	TEMP	TEMPERATURE/TEMPORARY
}	NATURAL GAS	TMV	THERMOSTATIC MIXING VALVE
GAL	GALLON	TP	TRAP PRIMER
SALV	GALVANIZED	TSTAT	THERMOSTAT
GC	GENERAL CONTRACTOR	TW	TEMPERED WATER
GPH	GALLONS PER HOUR	TYP	TYPICAL
3PM	GALLONS PER MINUTE	UC	UNDERCUT
1&CW	HOT AND COLD WATER	UH	UNIT HEATER
I B	HOSE BIBB	UL	UNDERWRITERS LABORATORY
iC	HEATING & HVAC CONTRACTOR	UPC	UNIFORM PLUMBING CODE
HD	HUB DRAIN		
1P	HORSEPOWER	UR V	URINAL
ir IS	HAND SINK	VD	VENT
		VB	VACUUM BREAKER
HW	HOT WATER (DOMESTIC)	VTR	VENT THROUGH ROOF
NV	INVERT	WC	WATER CLOSET
		WCO	WALL CLEANOUT
		WH	WALL HYDRANT
		WHA	WATER HAMMER ARRESTER
		WSFU	WATER SUPPLY FIXTURE UNIT
			EXHAUST AIR

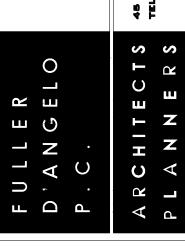


GENERAL PLUMBING NOTES:

- DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. IT IS NOT INTENDED TO SPECIFY OR SHOW EVERY OFFSET, FITTING OR COMPONENT; HOWEVER, CONTRACT DOCUMENTS REQUIRE COMPONENTS AND MATERIALS WHETHER OR NOT INDICATED OR SPECIFICALLY SPECIFIED TO MAKE THE SYSTEMS BEING INSTALLED
- CONTRACTOR SHALL FIELD VERIFY ALL LOCATIONS,
- ALL MATERIALS, EQUIPMENT, METHODS OF INSTALLATION, REMOVALS AND DISPOSAL SHALL BE IN ACCORDANCE WITH THE STANDARDS, REGULATIONS, CODES, ORDINANCES, AND LAWS OF LOCAL, STATE, AND FEDERAL GOVERNMENTS, AND OTHER AUTHORITIES THAT HAVE LAWFUL JURISDICTION.
- SYSTEMS SHOWN, SPECIFIED AND DESCRIBED ON DRAWINGS. COMPLETELY COORDINATE ALL TRADES OF THIS CONTRACT AND PROVIDE COMPLETE AND FULLY COMPLETED UNDER THIS CONTRACT, UNLESS OTHERWISE INDICATED.
- PROTECT ALL EXISTING AND NEW BUILDING ELEMENTS FROM DAMAGE. CONTRACTOR SHALL RESTORE ALL DAMAGED ELEMENTS TO ORIGINAL OR BETTER CONDITION.
- WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL PRESENT NEAT, RECTILINEAR APPEARANCE WHEN COMPLETED. MAINTAIN MAXIMUM HEAD ROOM AT ALL TIMES. DO NOT RUN PIPES, DUCTS, AND CONDUIT EXPOSED UNLESS SHOWN AND NOTED TO BE EXPOSED ON DRAWINGS.
- ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND CLEARANCES.
- 8. CONTRACTOR IS RESPONSIBLE FOR ALL WORK RELATED TO ISOLATING, SHUTTING DOWN, DRAINING, FILLING AND TESTING SYSTEMS TO ALLOW FOR COMPLETION OF WORK. INTERRUPTIONS TO EXISTING SERVICES AND SYSTEMS SHALL BE AS SHORT AS POSSIBLE AND AT A TIME AND DURATION APPROVED BY THE OWNER AND UTILITY AS APPLICABLE. INCLUDE ALL PREMIUM TIME ASSOCIATED WITH INTERRUPTIONS. ALL SYSTEM INTERRUPTIONS SHALL BE SCHEDULED WITH OWNER, UTILITY AND COORDINATED WITH OTHER TRADE WORK.
- INSTALLED IN HVAC AIR PLENUM SPACES SHALL MEET CODE REQUIREMENTS FOR SMOKE AND COMBUSTIBILITY.
- 10. SEAL ALL PENETRATIONS THROUGH FIRE RATED WALLS, PARTITIONS AND FLOORS WITH UL RATED MATERIALS/METHODS EQUIVALENT TO FIRE RATING OF ASSEMBLY.
- 11. PROVIDE PROPER ACCESS TO EQUIPMENT THAT REQUIRES INSPECTION, REPLACEMENT OR REPAIR. ACCESS PANELS/DOORS SHALL BE A MINIMUM OF 12"X12",
- 12. DO NOT SUPPORT EQUIPMENT FROM SUSPENDED CEILINGS. ALL SUPPORT SHALL BE FROM BUILDING STRUCTURE OR FROM CEILING SUSPENSION SYSTEM WHICH HAS BEEN REINFORCED. SUPPORTS SHALL BE SELECTED AND INSTALLED TO PROVIDE A VIBRATION FREE INSTALLATION.
- 13. PLUMBING CONTRACTOR IS RESPONSIBLE FOR JETTING/SNAKING ALL SANITARY WASTE LINES (ALL FLOOR DRAINS) SHOWN ON THE DRAWINGS TO BE FULLY OPERATIONAL.
- 14. CLEANING DURING PLUMBING WORK: THE MECHANICAL ROOM AND ROOMS WHERE WORK WILL BE DONE TO MINIMIZE DISTURBANCE IN THE BUILDINGS. WORKERS ARE TO USE PATHWAYS AND FACILITIES AGREED UPON WITH THE DISTRICT DESIGNEE IN WRITING. THE AREA OUTSIDE THE BUILDING WHERE CUTTING, WELDING OR STORAGE IS ALLOWED IS TO BE FENCED AT ALL TIMES. THE CONTRACTOR WILL ON A DAILY BASIS CLEAN THE GROUNDS AND THE BUILDING OF ANY DEBRIS OR GARBAGE GENERATED BY THEIR WORK.
- 15. CONTRACTOR TO PROVIDE NECESSARY MODIFICATIONS TO EXISTING PLUMBING TO ACCOMPLISH NEW WORK AND TO PROVIDE A PROPERLY FUNCTIONING SYSTEM. VERIFY IN

- COMPLETE, CODE COMPLIANT, TESTED AND OPERATIONAL.
- DIMENSIONS AND ELEVATIONS PRIOR TO CONSTRUCTION.
- PERFORM WORK, PROVIDE MATERIALS AND EQUIPMENT FOR FUNCTIONAL INSTALLATION. ALL WORK IN THIS SET TO BE
- MATERIALS AND EQUIPMENT SHALL BE NEW AND INSTALLED RECOMMENDATIONS. MAINTAIN MANUFACTURER'S EQUIPMENT
- 9. ALL EQUIPMENT PIPING, WIRING, INSULATION ETC.
- UNLESS OTHERWISE NOTED.



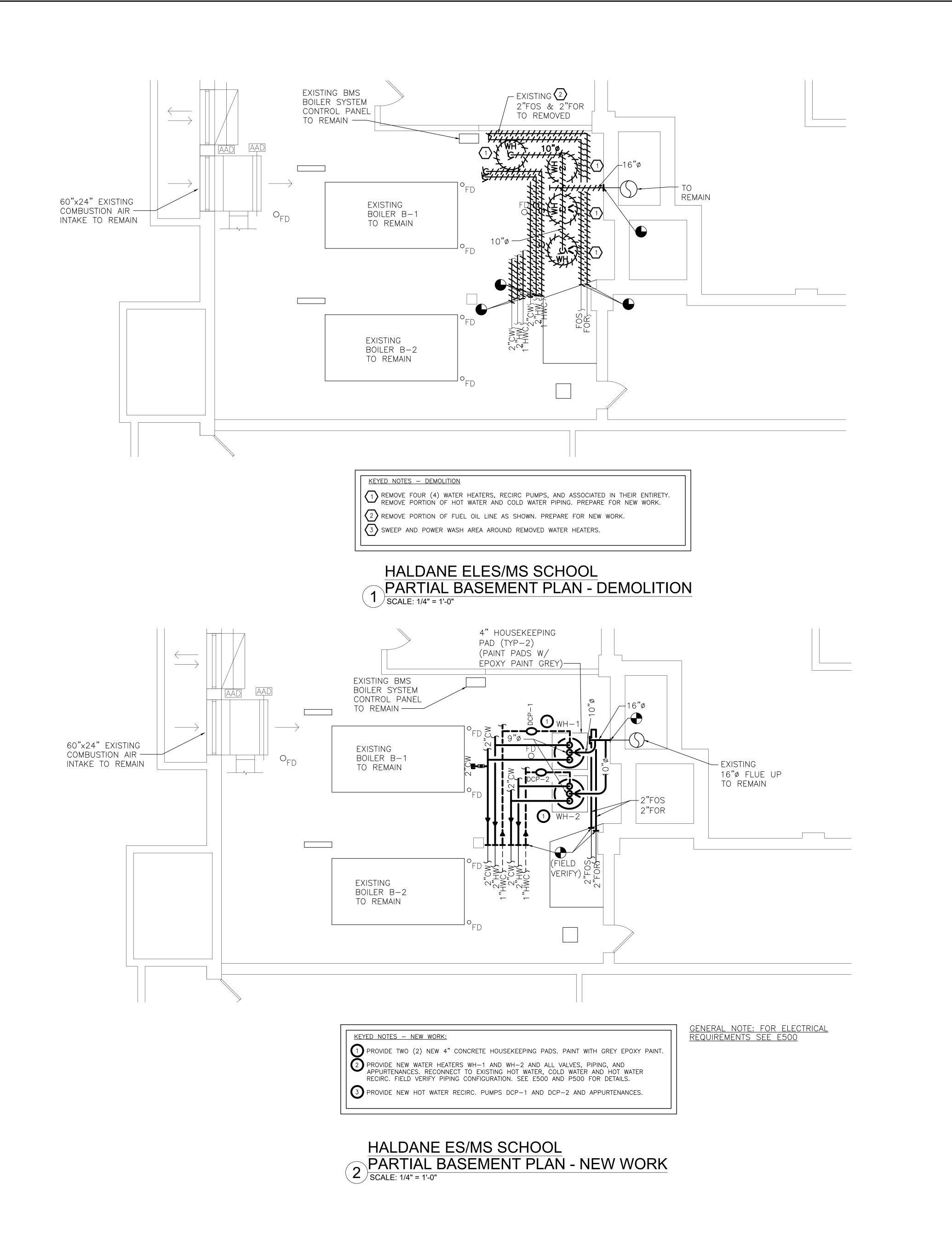




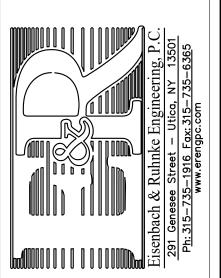
S.E.D. CONTROL NUMBER: MAIN BUILDING 48-04-01-04-0-001-023 HIGH SCHOOL ANNEX 48-04-01-04-0-016-007

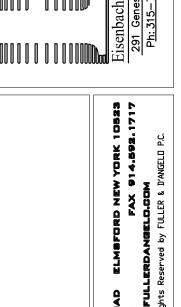
MECHANICAL UPGRADE AND RELATED WORK PACKAGE NO. 2 15 CRAIGSIDE DR, COLD SPRING, NY 10516	ABBREVIATIONS AND SYMBOLS

1
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2
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S.E.D. CONTROL NUMBER:

MAIN BUILDING
48-04-01-04-0-001-023

HIGH SCHOOL ANNEX
48-04-01-04-0-016-007

PROJECT TITLE HALDANE CENTRAL SCHOOL DISTRICT MECHANICAL UPGRADE AND RELATED WORK PACKAGE NO. 2 15 CRAIGSIDE DR, COLD SPRING, NY 10516	DRAWING TITLE HALDANE ELEMENTARY SCHOOL BASEMENT FLOOR PLAN

09/13/2021 BID
DATE ISSUED TO

SHEET SIZE
30"x42"

SCALE
AS NOTED

DRAWN BY
F & D

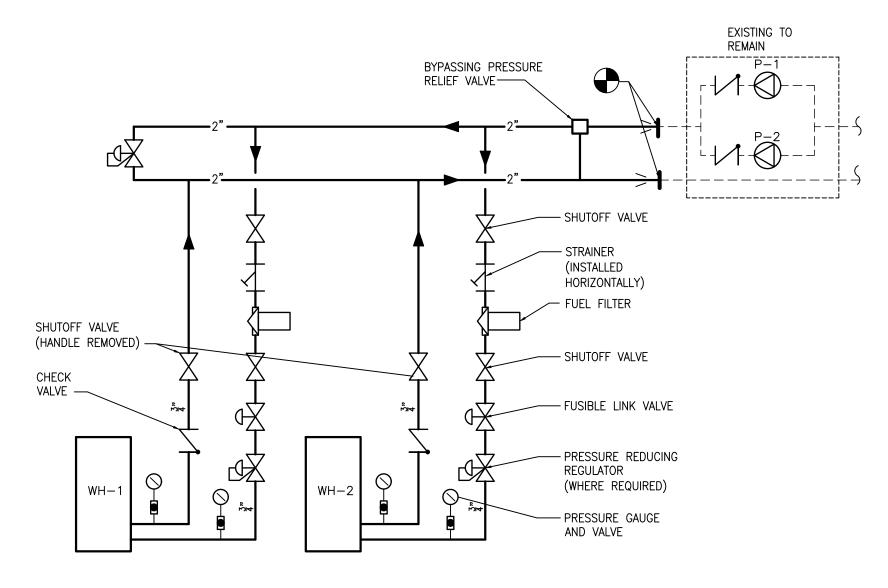
FILE NO.
19338.02

KEY-PLAN

SCALE: NONE

	ADJUSTABL	E CL		ANGER		HANGER NSULAT ARRIER EQUIRE EMPER SULAT ENSITY ISULAT ROVIDE HIELD	ION (\\ TYPE D FOF ATURE SSIVE ION (9) UND ION SH	/APOR IS LOW PIPE STREN PIPSF N ER HIELD	NGTH MIN.		JUSTAR	BLE CI	LEVIS	HAN	GER 1	N/ RG	 	ÆLD ADDLE R	<u>-</u>		
MA	XIMUM PIPE/		NG SUF	PPORT S	SPACII	NG			7	— P S A	ROVIDI HIELD LL PIF	E INSU & INS PING	JLATI SERT	ON FOR		<u>1</u> 3	/2"ø 36" №	HANG MAX S	SER RO SPACIN	DDS W, IG ON	/
SIZE IN.	THRU 3/4	1		1 1/2		2 1/2	3	4	1					ſΥ		_	_, , 01 1	. 51171			
PIPE FT.	6	6	6	6	6	6	6	6	1	_	$\overleftarrow{\mathcal{T}}$	Π		┨├) _			
TUBING FT.	6	6	6	6	6	6	6	6		ه	ĹĠ		_				<u>ك</u> ــــــ	5_6			
NOTE: 1. FOR TRAPE SIZE ON TI	EZE HANGER RAPEZE.	TAK	E SPAC	CING OF	SMAI	LLEST						_				—1 ⁵ / CH: AN		— BAI 2 GAI EL OR	ND UGE R 2"x2	"× ¹ ⁄4"	
										<u>SII</u>	DE VIE	<u>W TRA</u> 1000			NGER DRM L		UP -	<u>10</u>			

3 PIPE SUPPORT DETAIL SCALE: NONE



NOTE: INSTALL OIL PIPING PER MANUFACTURERS RECOMMENDATIONS

WATER HEATER FUEL OIL DIAGRAM

SCALE: NONE

INSULATION SCHEDULE														
		INICI	II ATION OLASS	· (a)	JACKETING CLASS (b)				THICKNESS (IN)					
TYPE	EQUIPMENT OR	INSULATION CLASS (a)			JAC	NOMINAL PIPE SIZE (IN)								
	SYSTEM SERVED	INTERIOR CONCEALED	INTERIOR EXPOSED	EXTERIOR	INTERIOR GENERAL	EQUIPMENT ROOMS	EXTERIOR	<1"	1"-<11"	1½"- <4"	4 "- <8"	≥8 & ∪		
								0.5	0.5	4.0	1.0	1.0		
A	DCW, COOLING COIL				0			0.5	0.5	1.0	1.0	1.0		
	CONDENSATE		FE			0		0.5	0.5	1.0	1.0	1.0		
	B DHW/ DHWR	FG			1			1.5	1.5	2	2	2		
В			FG			1		1.5	1.5	2	2	2		
С	IW, SAN, CW EXTERIOR			FG			2	1.5	1.5	1.5	1.5	1.5		
				\										
(a)	FG FIBROUS GLASS		(b) 0 – – NO	DNE									
FE — — FLEXIBLE ELASTOMERIC				1 — — AL	1 — — ALL SERVICE (d) BLANKET									
UR — URETHANE 2				2 P	2 POLYVINYL CHLORIDE									
CS — — CALCIUM SILICATE					3 CANVAS (e) RIGID BOARD									

4 - - POLYVINYL CHLORIDE

ALL INSULATION TO COMPLY WITH 2015 NYS ENERGY CONSERVATION CONSTRUCTION CODE

FR — — FIRE RATED

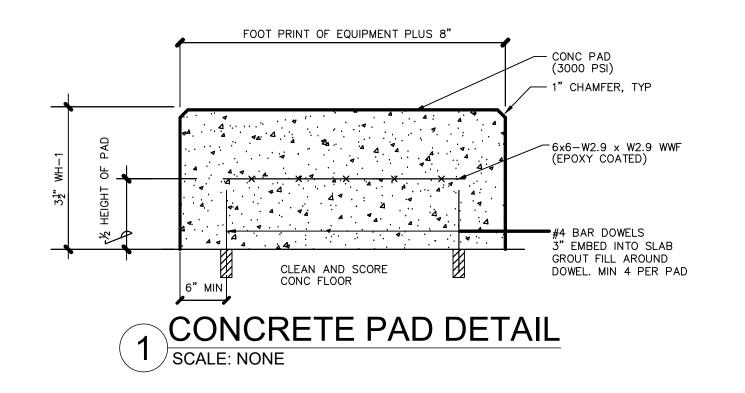
PUMP SCHEDULE									
NO LOCATION		CED/IOE		HEAD FT		MO ⁻	ΓOR	DECION MAKE	
NO.	NO. LOCATION	SERVICE	GPM	WATER	HP	VOLTAGE	PHASE	FLA	DESIGN MAKE
DCP-1	MECHANICAL ROOM	KITCHEN	2	25	1/6	115	1	3	BELL & GOSSETT ECOCIRC XL 36-45
DCP-2	MECHANICAL ROOM	BUILDING	2	25	1/6	115	1	3	BELL & GOSSETT ECOCIRC XL 36-45

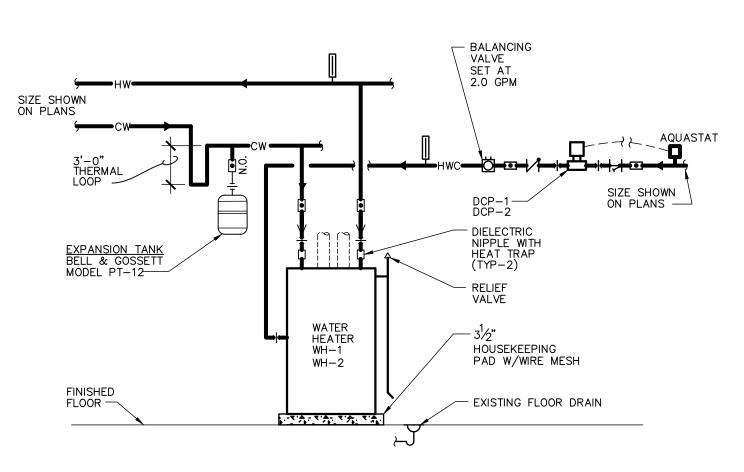
NOTE 1: PROVIDE DCP-1 & DCP-2, STAINLESS STEEL, LEAD FREE MODEL AND AUTOMATIC TIMER AND AQUASTAT.

NOTE 2: CONTRACTOR TO REBALANCE EXISTING CIRCUIT SETTERS TO 2 GPM. FIELD VERIFY LOCATIONS WITH DISTRICT REPRESENTATIVE.

NOTE 3: CONTRACTOR TO TEST FOR REASONABLE WARM-WATER DELIVERY TIME TO WARM-WATER FAUCETS FARTHEST FROM THE HOT WATER TANKS WITH DISTRICT REPRESENTATIVE. ADJUST RPM TO SATISFY A REASONABLE WARM-WATER DELIVERY TIME.

WATER HEATER SCHEDULE									
NO.	SERVING	TYPE	KW	MBH INPUT	GAL.	GALLONS/ HOUR RECOVERY	TEMP RISE DEG F	VENT / INTAKE	DESIGN MAKE
WH-1	KITCHEN	FUEL OIL		415	91	443	90	9ӯ/9ӯ	BOCK 361E
WH-2	BUILDING	FUEL OIL		415	91	443	90	9"Ø/9"Ø	BOCK 361E



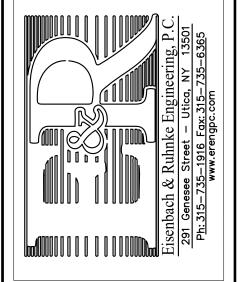


(WH-1 & WH-2) PIPING CONNECTION

AT WATER HEATER DETAIL

SCALE: NONE

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S.E.D. CONTROL NUMBER:

MAIN BUILDING
48-04-01-04-0-001-023

HIGH SCHOOL ANNEX
48-04-01-04-0-016-007

PROJECT TITLE
HALDANE CENTRAL SCHOOL DISTRICT
MECHANICAL UPGRADE AND RELATED WORK
PACKAGE NO. 2
15 CRAIGSIDE DR, COLD SPRING, NY 10516
DRAWING TITLE
SCHEDULES AND DETAILS

09/13/2021	BID
DATE	ISSUED TO
SHEET SIZE	DRAWING NO.
30"x42"	
SCALE	P500
AS NOTED	
DRAWN BY	FILE NO.
F&D	19338.02
L	-