

GENERAL NOTES

- 1. ALL WORK SHALL CONFORM TO THE LATEST EDITIONS OF THE NEW YORK STATE ENERGY CODE, INTERNATIONAL MECHANICAL CODE, ASHRAE GUIDELINES, SMACNA, COUNTY GUIDELINES, NEC, NATIONAL STANDARD PLUMBING CODE, AND ALL OTHER APPLICABLE CODES, ORDINANCES, ETC. FOR NEW YORK STATE AND THE LOCAL AUTHORITY HAVING JURISDICTION.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE SITE AND FAMILIARIZING HIMSELF WITH THE EXISTING CONDITIONS AND SCOPE OF THE WORK PRIOR TO SUBMITTING BIDS AND COMMENCING WORK, AND INCLUDE ALL SUCH NECESSARY WORK BASED ON THIS SITE FAMILIARIZATION IN THIS BID.
3. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL SAFE WORKING CONDITIONS AND SHALL OBSERVE ALL SAFETY REQUIREMENTS ESTABLISHED BY JURISDICTIONAL AGENCIES AND THE OWNER, WHERE CONFLICTS EXIST, THE MORE STRINGENT REQUIREMENT SHALL APPLY. CARE SHALL BE EXERCISED TO AVOID ENDANGERING PERSONNEL OR STRUCTURES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION METHODS, PROCEDURES AND JOB SITE CONDITIONS INCLUDING SAFETY. CONSTRUCTION SHALL BE PERFORMED IN SUCH A MANNER TO PROTECT WORKMEN, OCCUPANTS AND THE PUBLIC FROM INJURY AND ADJOINING PROPERTY SHALL BE PROTECTED FROM DAMAGE BY USE OF SCAFFOLDING, UNDERPINNING OR OTHER APPROVED METHOD. THE CONTRACTOR SHALL REPAIR ANY AND ALL DAMAGE CAUSED DURING OR RESULTING FROM HIS OPERATIONS IN KIND TO THE SATISFACTION OF THE OWNER AT NO ADDITIONAL COST TO THE OWNER.
5. CONTRACTOR SHALL MAINTAIN THE JOB SITE IN A CLEAN, DEBRIS FREE CONDITION, THE DUST RESULTING FROM REMOVALS SHALL BE CONTROLLED SO AS TO PREVENT ITS SPREAD TO OCCUPIED PORTIONS OF THE BUILDING AND TO AVOID CREATION OF A NUISANCE IN THE SURROUNDING AREA.
6. CONTRACTOR SHALL SECURE AND PAY FOR ALL REQUIRED PERMITS, FEES, APPROVALS, ETC. PRIOR TO COMMENCING WORK AND SHALL SECURE CERTIFICATE OF OCCUPANCY UPON COMPLETION OF WORK.
7. CONTRACTOR SHALL BE RESPONSIBLE TO DISPOSE OF ALL DEMOLISHED MATERIAL OFF SITE IN AN APPROVED MANNER. THE OWNER SHALL BE CONSULTED PRIOR TO DISPOSAL OF ANY SALVAGED OR EXCESS MATERIALS AT THE COMPLETION OF THE PROJECT.
8. UPON COMPLETION OF WORK, ALL EXCESS MATERIAL, DEBRIS, ETC. SHALL BE REMOVED AND THE WORK AREA SHALL BE LEFT CLEAN TO THE OWNER'S SATISFACTION.
9. ALL WORK SHALL BE SCHEDULED IN COMPLIANCE WITH THE OWNER'S REQUIREMENTS FOR THE USE OF THE EXISTING FACILITY.
10. CONTRACTOR SHALL FURNISH ALL EQUIPMENT THAT MAY BE REQUIRED TO PERFORM THE WORK INDICATED IN A SAFE AND ORDERLY MANNER, AND AS NECESSARY FOR A PROPER OPERATIONAL SYSTEM.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR THE RELOCATION AND TEMPORARY SUPPORT OF ANY UTILITIES ENCOUNTERED DURING THE COURSE OF HIS WORK AND TO ENSURE THE OWNER'S FACILITY TO BE OPERATIONAL.
12. CONTRACTOR SHALL REVIEW DRAWINGS AND FIELD VERIFY ALL DIMENSIONS, CONDITIONS AND ELEVATIONS PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES AND ADDRESS ALL QUESTIONS TO ENGINEER PRIOR TO COMMENCING WORK.
13. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING, PATCHING, FILLING AND CLEANING UPON COMPLETION OF WORK AS PER DRAWING A1.00.
14. CONTRACTOR SHALL NOT SCALE DRAWINGS FOR DIMENSIONS, ALL WRITTEN OR DIMENSIONED INFORMATION TAKES PRECEDENCE OVER THE DRAWING.
15. CONTRACTOR SHALL SUBMIT, WHERE REQUIRED BY THE ARCHENGR, SHOP DRAWINGS AND SUBMITTALS FOR APPROVAL PRIOR TO THE START OF FABRICATION OF THOSE ITEMS, THIS INCLUDES ALL EQUIPMENT, SCHEMATIC DUCTWORK AND PIPING LAYOUT, ETC. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL EQUIPMENT ETC WILL FIT (WITH PROPER MAINTENANCE CLEARANCES) AT ALL LOCATIONS. REVIEW OF SHOP DRAWINGS/SUBMITTALS BY THE ARCHENGR DOES NOT RELIEVE THE CONTRACTOR FROM PROVIDING THE CURRENT MODEL NUMBERS, TYPE, & FEATURES OF ALL EQUIPMENTS & MATERIALS.
16. THE CONTRACTOR SHALL PROVIDE THE OWNER AND ENGINEER WITH CERTIFICATES OF INSURANCE PRIOR TO STARTING THE NEW WORK.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SHORING AND BRACING OF EXISTING STRUCTURES AS NEEDED TO COMPLETE THE NEW WORK.
18. ALL MANUFACTURER'S MATERIALS, COMPONENTS, FASTENERS, ASSEMBLIES, ETC. SHALL BE HANDLED AND INSTALLED IN ACCORDANCE TO WITH MANUFACTURERS INSTRUCTIONS AND RECOMMENDATIONS. WHERE BRAND NAMES AND MANUFACTURED PRODUCTS ARE CALLED FOR, APPROVED EQUALS WHICH MEET APPLICABLE STANDARDS AND SPECIFICATIONS MAY BE SUBSTITUTED WITH WRITTEN PERMISSION OF THE ENGINEER AND THE OWNER. WHENEVER BRAND NAMES OR SPECIFIC PRODUCT SYSTEMS ARE INDICATED IT SHALL BE CLEARLY UNDERSTOOD THAT SUCH IDENTIFICATION IS FOR THE PURPOSE OF ILLUSTRATING THE TYPE OF PRODUCT AND DEGREE OF QUALITY DESIRED. SUCH IDENTIFICATION IN NO WAY PRECLUDES THE CONTRACTOR FROM USING PRODUCTS OF OTHER MANUFACTURERS WHICH CAN BE SHOWN IN ADVANCE TO BE OF LIKE AND OF EQUAL OR BETTER QUALITY.
19. ALL CHANGES SHALL BE REQUESTED IN WRITING AND MAY ONLY BE APPROVED IN WRITING BY THE ARCHITECT AND THE OWNER PRIOR TO ANY CHANGES BEING MADE.
20. THE ARCHITECT/ENGINEER HAS THE RIGHT TO REJECT ANY PORTION OF WORK THAT IS POORLY INSTALLED, DOES NOT MEET INDUSTRY STANDARD, UNAUTHORIZED, OR WORK DONE CONTRARY TO THE INTENT OF THE CONTRACT DOCUMENTS. SUCH WORK SHALL BE REPLACED, REPAIRED OR REMOVED AT THE CONTRACTOR'S EXPENSE.
21. MECHANICAL CONTRACTOR SHALL GUARANTEE ALL MECHANICAL WORK AND THE WORK OF HIS SUBCONTRACTORS FOR A PERIOD OF TWO (2) YEARS AFTER RECEIVING FINAL ACCEPTANCE AND IS RESPONSIBLE FOR ALL REPAIR WORK INCLUDING PARTS AND LABOR AS NECESSARY DURING THAT PERIOD AT THE CONTRACTOR'S EXPENSE.
22. IN NO EVENT SHALL STRUCTURAL MEMBERS BE CUT OR DRILLED WITHOUT THE WRITTEN APPROVAL OF A LICENSED STRUCTURAL ENGINEER.
23. CONTRACTOR SHALL PROVIDE SAFE AND SANITARY CONDITIONS WHERE DEMOLITION AND WRECKING OPERATIONS ARE BEING CARRIED ON WORK SHALL BE EXECUTED IN SUCH A MANNER THAT HAZARD FROM FIRE, POSSIBILITY OF INJURY, DANGER TO HEALTH AND CONDITIONS WHICH MAY CONSTITUTE A PUBLIC NUISANCE SHALL BE MINIMIZED.
24. ENGINEER/OWNER MAY ASK THE CONTRACTOR TO PROVIDE DETAILED SHOP DRAWINGS & SUBMITTALS OF ANY/ALL PARTS OF THIS PROJECT WHICH THE ENGINEER/OWNER DEEMS NECESSARY FOR.

HVAC GENERAL NOTES

- 1. PROCURE AND PAY ALL NECESSARY PERMITS AND LICENSES REQUIRED TO CARRY OUT THE WORK SHOWN, OBTAIN AND PAY FOR ALL FEES.
2. COMPLY WITH ALL FEDERAL, STATE AND MUNICIPAL LAWS AND CODES, ORDINANCES, RULES AND REGULATIONS OF HEALTH, PUBLIC OR OTHER AUTHORITIES CONTROLLING OR LIMITING THE METHODS, MATERIALS TO BE USED OR ACTIONS OF THOSE EMPLOYED.
3. GUARANTEE HVAC SYSTEM FOR A PERIOD OF TWO (2) YEARS FROM OWNER'S ACCEPTANCE TO BE FREE FROM DEFECTS AND REPAIR OR REPLACE, AT NO COST TO OWNER, FAILURES OR DEFECTS.
4. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL HIS DEBRIS.
5. BALANCE HVAC SYSTEM TO QUANTITIES INDICATED. CONTRACTOR TO SUBMIT FOUR (4) SETS OF AIR, WATER AND UNIT BALANCING REPORT TO ENGINEER/OWNER PRIOR TO FINAL ACCEPTANCE OF THE SYSTEM.
6. BIDDERS FOR THIS WORK SHALL VISIT THE PREMISES AND CAREFULLY EXAMINE ALL EXISTING CONDITIONS BEFORE SUBMITTING BIDS. NOT ALL EXISTING CONDITIONS HAVE BEEN IDENTIFIED ON DRAWINGS. CONTRACTOR SHALL NOTIFY ENGINEER, OF ALL DISCREPANCIES PRIOR TO SUBMITTING BID.
7. ALL BIDDERS SHALL ALSO FAMILIARIZE THEMSELVES WITH THE MEANS OF ENTRANCE AND EXIT AT THE PROPERTY AND ALL OTHER INFORMATION NECESSARY TO PROPERLY CARRY OUT THE WORK.
8. THE CONTRACTOR SHALL, WITH THE APPROVAL OF THE ENGINEER AND WITHOUT ADDITIONAL COST TO THE OWNER, MAKE ALL NECESSARY CHANGES OR MODIFICATIONS TO LOCATIONS AS MAY BE NECESSARY TO SUIT REQUIREMENTS AND CONDITIONS FOR THE PROPER AND CONVENIENT ACCESSIBLE LOCATIONS OF ALL PARTS OF EACH SYSTEM.
9. SMALL DETAILS ARE NOT USUALLY SHOWN OR SPECIFIED BUT NECESSARY FOR THE PROPER INSTALLATION AND OPERATION OR WORK SHALL BE FURNISHED AND INSTALLED AT NO ADDITIONAL COST.
10. THE CONTRACTOR SHALL NOTE THAT ALL SERVICE CONNECTIONS MAY NOT BE SHOWN IN TRUE POSITIONS. EACH BIDDER IS CAUTIONED, THEREFORE, TO VERIFY SAME WITH FIELD CONDITIONS.
11. CONTRACTOR SHALL CHECK FOR INTERFERENCE AND VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OR INSTALLATION OF PIPING AND DUCTWORK.
12. IF AN ITEM OF EQUIPMENT OTHER THAN THE ITEM(S) SPECIFIED IS APPROVED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ADDITIONAL COST ARISING OUT OF ADDITIONAL OR CHANGED GENERAL CONSTRUCTION AND MECHANICAL WORK REQUIRED TO ACCOMMODATE THE SUBSTITUTED EQUIPMENT.
13. ALL EQUIPMENT INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS DIRECTIONS AND RECOMMENDATIONS.
14. PROVIDE TWO (2) SETS OF SPARE FILTERS FOR THE INSTALLED RTUs, AC UNITS, & OTHER EQUIPMENT.
15. MECHANICAL CONTRACTOR IS RESPONSIBLE TO PROVIDE TWO-YEAR PREVENTIVE & REGULAR MAINTENANCE SERVICE FOR ALL INSTALLED HVAC/MECHANICAL SYSTEM. THIS INCLUDES A MINIMUM OF TWO (2) PERIODIC SERVICE VISITS ANNUALLY TO INSPECT, TEST & CHECK ALL COMPONENTS OF HVAC UNITS AND ANY ADDITIONAL VISITS REQUIRED IF ANY HVAC UNIT FAILS. ALL NECESSARY BELT ALIGNMENTS, PROPER REFRIGERANT CHARGE, PROPER OPERATIONS OF ALL DAMPERS, DDC CONTROLS, ETC. IS INCLUDED IN THIS SCOPE OF WORK. PROVIDE SERVICE REPORT FOR EACH VISIT.
16. PROVIDE FIRE DAMPERS/ACCESS DOORS AT ALL DUCT PENETRATIONS THROUGH CORRIDORS, SLABS AND OTHER RATED PARTITIONS, IRRESPECTIVE OF WHETHER IT IS INDICATED ON THE DRAWINGS OR NOT.
17. PROVIDE FIRE STOPPING AROUND ALL OPENINGS FOR DUCT, PIPING, CONDUIT, ETC. PENETRATIONS THROUGH CORRIDORS, SLABS AND OTHER RATED PARTITIONS.
18. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ALL DEMOLITION AND RESTORATION OF AREAS OF MECHANICAL REMOVALS.
19. CONTRACTOR IS RESPONSIBLE FOR PROVIDING DUMPSTER/CONTAINER SERVICES AND LABOR TO KEEP THE BUILDING FREE OF DEBRIS.
20. CONTRACTOR TO PROVIDE TWO (2) SEPARATE TRAINING SESSIONS (FOUR WEEKS APART) ON PROPER OPERATION & TROUBLESHOOTING OF NEW HVAC SYSTEM & CONTROLS.
21. CONTRACTOR TO NOTE THAT BOTH DWGS. & SPECS. ARE COLLECTIVELY A PART OF BID REQUIREMENTS. IN CASE OF ANY DIFFERENCES BETWEEN VARIOUS DWGS. OR BETWEEN DWGS. & SPECS, THE MOST STRINGENT REQUIREMENT WILL PREVAIL.
22. CONTRACTOR TO SUBMIT FOUR (4) SETS OF OPERATION & MAINTENANCE MANUALS, INCLUDING A SUMMARY SHEET OF ALL EQUIPMENT MANUFACTURERS/MODEL/SERIAL #S, SHOP DRAWINGS SUBMITTALS, WARRANTY INFORMATION, O&M MANUALS, PROJECT INFORMATION, CONTACT DETAILS & AS-BUILT DRAWINGS.
23. CONTRACTOR TO PROVIDE FOUR (4) SETS AND AN ELECTRONIC COPY OF AS-BUILT DRAWINGS OF THE ENTIRE SYSTEM.

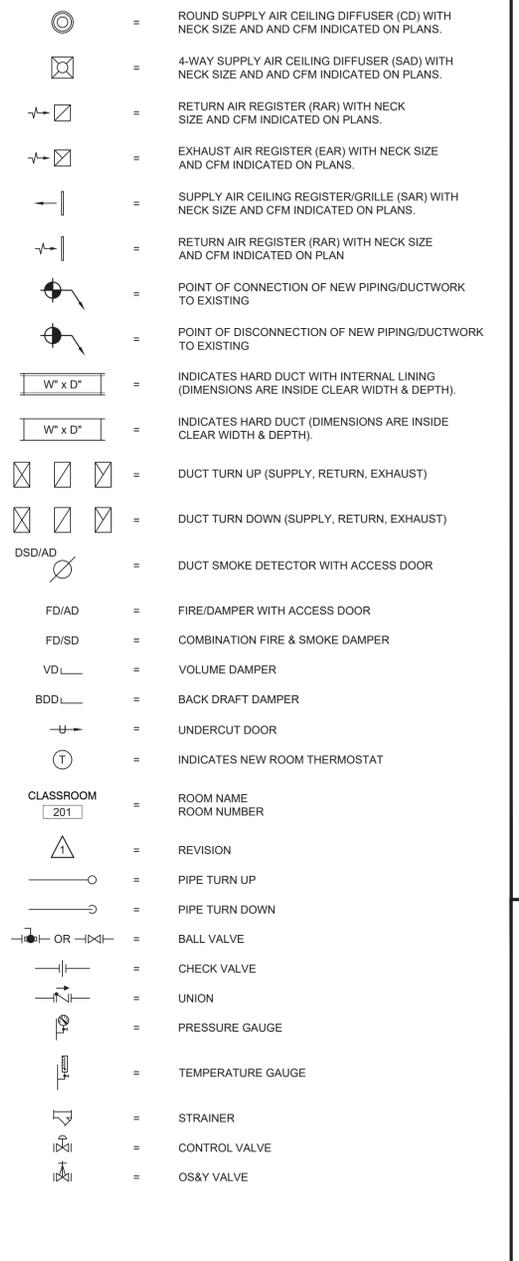
GENERAL CONSTRUCTION NOTES

- 1. REFER TO "MULTIPLE PRIME CONTRACT NOTES" ON DWG. A1.00 & SPECIFICATIONS FOR CONTRACTORS' RESPONSIBILITIES.
2. GC IS RESPONSIBLE TO CORE DRILL ALL WALLS, FLOORS, CEILING, ROOF ETC. FOR ALL PIPE & DUCT PENETRATIONS. SEAL OPENING WITH 2-HOUR FIRE BARRIER CAULK. SEE DRAWINGS FOR APPROXIMATE LOCATIONS OF PIPES, DUCT, ETC.
3. GC TO REFER TO MECHANICAL DRAWINGS FOR PAINTING, FURNISHING AND INSTALLING ACCESS PANELS, CUTOUT LOCATIONS, ETC.
4. EC SHALL BE RESPONSIBLE FOR REMOVING & RELOCATING EXISTING ELECTRICAL, FIRE ALARM DEVICES, ETC. TO ACCOMMODATE INSTALLATION OF NEW HVAC EQUIPMENT, PIPING & DUCTWORK. CHECK IN FIELD.
5. GC SHALL REMOVE EXISTING CEILING TILES AND CEILING GRID TO ACCOMMODATE THE INSTALLATION OF NEW UNITS, PIPING & DUCTWORK. RE-INSTALL ALL CEILING TILES BACK TO MATCH EXISTING. REMOVE & REPLACE ALL DAMAGED TILES & CEILING GRID. CHECK IN FIELD.

HVAC MATERIALS

- EQUIPMENT:
• REFER TO SCHEDULES FOR UNIT MANUFACTURER, SIZE, AND CAPACITY DATA.
DUCTWORK:
• INDOOR AIR DUCTWORK, EXCEPT AS INDICATED BELOW, SHALL BE GALVANIZED STEEL CONSTRUCTION, WEIGHTS AND CONSTRUCTION DETAIL SHALL BE IN ACCORDANCE WITH THE LATEST ASHRAE GUIDE AND/OR SMACNA STANDARDS. MIN. 24 GAUGE DUCTWORK SHALL BE USED FOR THE PROJECT.
• OUTDOOR AIR INTAKE DUCTWORK SHALL BE ALUMINUM CONSTRUCTION CLASS "A" SEALED.
• KITCHEN GENERAL EXHAUST DUCTWORK SHALL BE ALUMINUM CONSTRUCTION, CLASS "A" SEALED.
• KITCHEN HOOD GREASE DUCTWORK SHALL BE DOUBLE WALL, FACTORY BUILT GREASE DUCT, "CAPTIVE AIRE" MODEL DW-3Z OR APPROVED EQUAL.
• ALL ROUND DUCTWORK SHALL BE DOUBLE-WALL SPIRAL DUCTWORK (SOLID W/ 1" THICK 3-LBS DENSITY INSULATION).
• FLEXIBLE DUCTWORK: SHALL NOT EXCEED FOUR (4) FEET IN LENGTH. FOR ANY HORIZONTAL FLEX DUCT BRANCH TO A CEILING DIFFUSER, FURNISH A 90° BRACE TO MAINTAIN A LONG RADIUS ELBOW TO THE DIFFUSER (TITUS MAKE, MODEL "FLEXRIGHT" OR APPROVAL EQUAL MANUFACTURERS).
• FIRE DAMPER: GREENHECK MAKE, MODEL FD-150 TYPE B (BLADE OUT OF AIRSTREAM), 1-1/2 HR RATED (UNLESS OTHERWISE NOTED) UL-555 LABELED DAMPER W/ STANDARD FRAME (OR APPROVED EQUAL). PROVIDE WW/ A RETAINING ANGLE & ACCESS DOOR.
AIR DEVICES:
• CD - TITUS MAKE, MODEL TMS (12"x12" OR 24"x24" MODULE W/ ROUND NECK, STEEL CONSTRUCTION).
• RG - TITUS MAKE, MODEL TMS (12"x12" OR 24"x24" MODULE W/ ROUND NECK, STEEL CONSTRUCTION).
• SR - TITUS MAKE, MODEL 300RS, STEEL CONSTRUCTION.
• SG - TITUS MAKE, MODEL 350RL, STEEL CONSTRUCTION.
• EAR - TITUS MAKE, MODEL 355-R, STEEL CONSTRUCTION.
• EAR1 - TITUS MAKE, MODEL 355-F, ALUM. CONSTRUCTION.
NOTES:
1. ALL CEILING DIFFUSERS LOCATED IN GYPSUM BOARD AND/OR CONCEALED SPLINE CEILINGS SHALL BE PROVIDED WITH FRAME TYPE FOR SURFACE MOUNTING.
2. PROVIDE FACTORY INSTALLED 90° BLANK-OFF PLATE(S) IN ALL 2 AND 3 WAY DIFFUSERS.
3. COLOR OF NEW AIR INLETS & OUTLETS SHALL MATCH THE CEILING COLOR.
4. NC RATING OF ALL Cds SHALL NOT EXCEED 20. NC RATING OF ALL RARs/EARs SHALL NOT EXCEED 22.
PIPING:
• HOT WATER PIPING SHALL BE HARD COPPER TYPE "L" W/ SOLDERED FITTINGS. PROVIDE DIELECTRIC FITTINGS FOR CONNECTION OF DISSIMILAR PIPING.
• REFRIGERANT PIPING SHALL BE HARD COPPER TYPE "K" WITH BRAZED FITTINGS.
• CONDENSATE DRAIN PIPING SHALL BE HARD COPPER TYPE "L" WITH WROUGHT COPPER SOLDERED FITTINGS. REFER TO PLUMBING DRAWINGS.
INSULATION:
• ALL DUCTWORK (SA, RA, OA, ETC.) SHALL BE INSULATED W/ EXTERNAL DUCT INSULATION, UNLESS OTHERWISE NOTED ON DRAWINGS.
• EXTERNAL DUCTWORK INSULATION: NEW DUCTWORK SHALL BE INSULATED WITH A MINIMUM OF R-6 (2" THICK, MIN. 1LB. DENSITY) FIBERGLASS DUCT INSULATION PER THE REQUIREMENTS OF IECC 2015, WITH REINFORCED FOIL FACED FLAME RESISTANT VAPOR BARRIER, ADHERE TO DUCT W/ SEALED LAPS AND TAPED JOINTS.
• INTERNALLY LINED DUCT: 1" THICK, MIN. 2 LB. DENSITY RIGID INSULATION ADHERED TO DUCT. DUCTS WIDER THAN 12" TO HAVE WELDED PINS AND WASHERS. DUCT DIMENSIONS AS INDICATED ARE CLEAR INSIDE DUCT DIMENSIONS.
NOTE:
ALL SUPPLY & RETURN AIR DUCTWORK SHALL BE INTERNALLY LINED FOR A MIN. OF 25' TO AND FROM ANY RTU.
• DUCT INSULATION NOTE: PROVIDE A MINIMUM 6" OVERLAP WHERE INTERNAL INSULATION ENDS AND EXTERNAL INSULATION BEGINS.
• FRESH AIR INTAKE AND EXPOSED DUCT: 1" THICK, MIN. 2 LB. DENSITY RIGID FIBERGLASS DUCT INSULATION WITH FOIL FACING VAPOR BARRIER FASTENED WITH WELDED CLIPS, CEMENTED JOINTS WITH ALUMINUM TAPE.
• ALL EXTERIOR INSTALLED DUCTWORK SHALL BE MIN. 18 GAUGE ALUMINUM CONSTRUCTION AND PROVIDE WITH BOTH 2" THICK, 8LB. DENSITY ACUSTICAL LINING, MIN R8.7 WITH IAQ LINER AS WELL AS EXTERNAL INSULATION (MIN. 1.5" THICK AND 8 LB DENSITY). MIN. R-6.5 EXTERNAL INSULATION SHALL BE SLOPED (MIN. 1/4" PER FOOT) ON ALL UPWARD FACING HORIZONTAL SURFACES TO EFFECTIVELY DRAIN WATER OFF THE DUCTWORK. ALL DUCT CONNECTION JOINTS ETC. SHALL BE ALUMINUM. DUCTWORK SHALL BE CLASS "A" SEALED AS PER SMACNA. PROVIDE SOLVENT BASED OUTDOOR DUCT SEALANT, RESISTANT TO UV LIGHT, UL 734 LISTED, WATER RESISTANCE AS PER SMACNA. PROVIDE 2MM THICK ALUMINIZED FACED LOADED LUMP VINYL SHEET LAGGING WRAPPED AROUND THE DUCT AND FASTED WITH ADHESIVE TAPED AND BANDS FOR A WEATHER TIGHT CONSTRUCTION WHICH MEETS CLASS 1 REQUIREMENTS FOR SMOKE DEVELOPMENT AND FLAME SPREAD RATING. (TYPICAL FOR ALL OUTDOOR DUCTWORK ON THIS PROJECT)
• HEATING PIPING INSULATION: REFER TO SPEC. SECTION FOR PIPE INSULATION REQUIREMENTS.
• INTERIOR REFRIGERANT SUCTION & HOT GAS BYPASS PIPING SHALL BE INSULATED WITH 1" THICK FLEXIBLE ELASTOMERIC INSULATION (AP ARMAFLEX BLACK LAPSEAL OR APPROVED EQUAL).
• EXTERIOR REFRIGERANT SUCTION, LIQUID & HOT GAS BYPASS PIPING SHALL BE INSULATED WITH 1" THICK FLEXIBLE ELASTOMERIC INSULATION (AP ARMAFLEX BLACK LAPSEAL OR APPROVED EQUAL) & BE PROVIDED WITH MIN. 30 MIL PVC FIELD APPLIED JACKETS.
• CONDENSATE DRAIN PIPING SHALL BE INSULATED WITH 1" THICK FLEXIBLE ELASTOMERIC INSULATION (AP ARMAFLEX BLACK LAPSEAL OR APPROVED EQUAL). REFER TO PLUMBING DRAWINGS.

SYMBOLS



ABBREVIATIONS

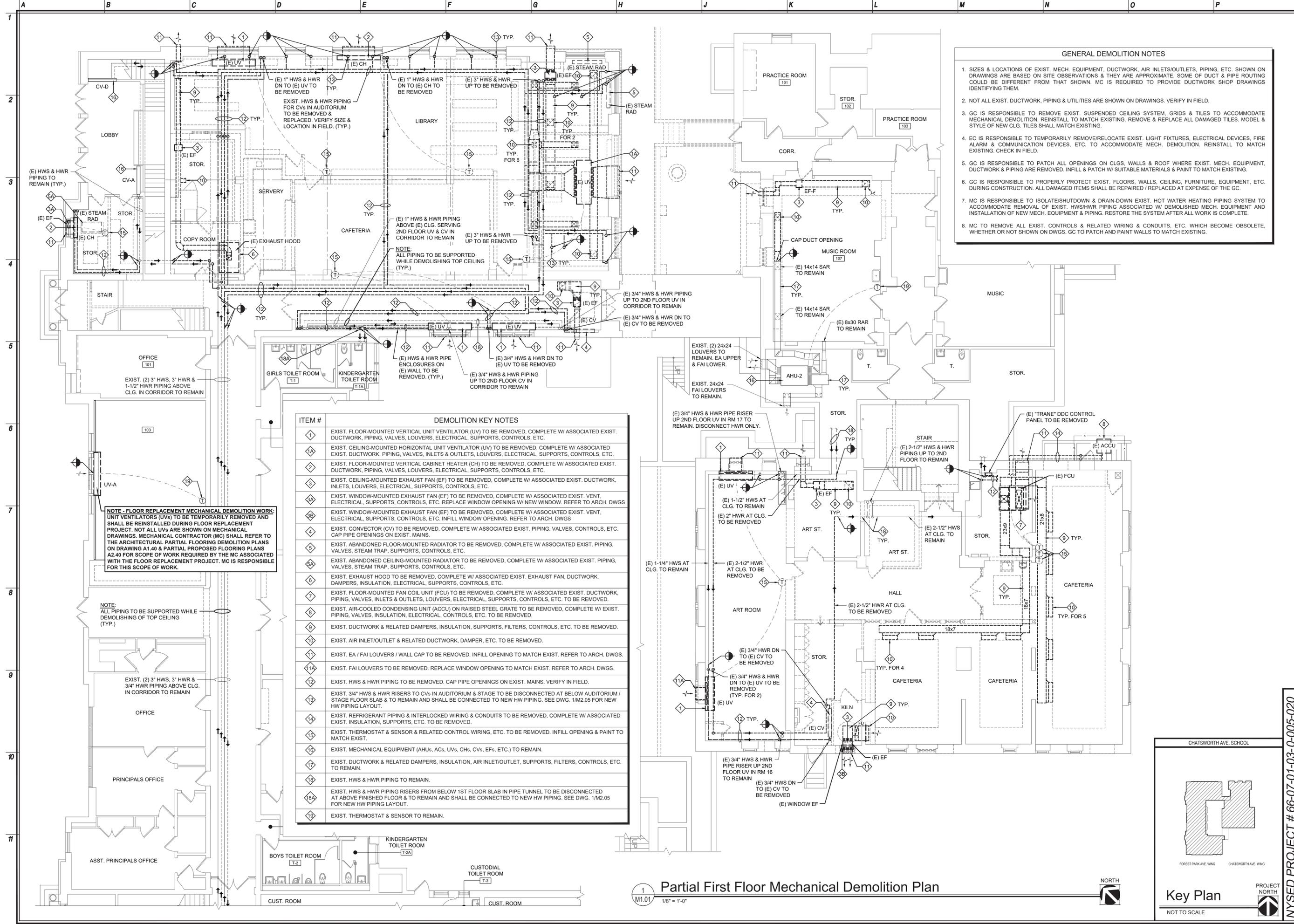
Table listing abbreviations for HVAC and general construction terms. Includes: & = AND, @ = AT, phi = DIAMETER OR ROUND, (E) = EXISTING, (N) = NEW, AC = AIR CONDITIONING UNIT, ACC = AIR COOLED CONDENSING UNIT, AD = ACCESS DOOR, ADD'L = ADDITIONAL, AFF = ABOVE FINISHED FLOOR, ALC = AUTOMATED LOGIC CONTROL, ALT = ALTERNATE, ALUM = ALUMINUM, AS = AIR SEPARATOR, BDD = BACK DRAFT DAMPER, BLDG = BUILDING, BMS = BUILDING MANAGEMENT SYSTEM, CD = CEILING DIFFUSER, CFM = CUBIC FEET PER MINUTE, OLG = CEILING, CO = CLEANOUT, CP = CONDENSATE DRAIN PUMP, CV = CONVECTOR, DDC = DIRECT DIGITAL CONTROL, DIA = DIAMETER, DN = DOWN, DSD = DUCT SMOKE DETECTOR, DWG = DRAWING, EA = EXHAUST AIR, EAR = EXHAUST AIR REGISTER, EAT = ENTERING AIR TEMPERATURE, EC = ELECTRICAL CONTRACTOR, EF = EXHAUST FAN, ET = EXPANSION TANK, EXIST = EXISTING, EWT = ENTERING WATER TEMPERATURE, FAI = FRESH AIR INTAKE, FC = FLEXIBLE CONNECTION, FCU = FAN COIL UNIT, FD = FIRE DAMPER, FLR = FLOOR, FR = FIN TUBE RADIATION/BASEBOARD, GC = GENERAL CONTRACTOR, HTP = HEAT TRANSFER PACKAGE HEAT/VENTILATION/AIR CONDITIONING, HVAC = HEAT/VENTILATION/AIR CONDITIONING, HWH = HOT WATER HEATER, IAQ = INDOOR AIR QUALITY, ID = INSIDE DIAMETER (DIM), IN = INCH, INFO = INFORMATION, KC = KITCHEN CONTRACTOR, KMA = KITCHEN MAKEUP AIR, KX = KITCHEN EXHAUST, LAT = LEAVING AIR TEMPERATURE, LDB = LEAVING DRY BULB, LSD = LINEAR SLOT DIFFUSER, LWB = LEAVING WET BULB, LWT = LEAVING WATER TEMPERATURE, MAX = MAXIMUM, MC = MECHANICAL CONTRACTOR, MECH = MECHANICAL, MFR = MANUFACTURER, MIN = MINIMUM, NK = NECK SIZE, NTS = NOT TO SCALE, OA = OUTSIDE AIR, OD = OUTSIDE DIAMETER, PC = PLUMBING CONTRACTOR, RA = RETURN AIR, RAG = RETURN AIR GRILLE, RAR = RETURN AIR REGISTER, RG = RETURN GRILLE, RM = ROOM, RTU = ROOFTOP HVAC UNIT, RV = ROOF VENT, SA = SUPPLY AIR, SAD = SUPPLY AIR DIFFUSER, SAR = SUPPLY AIR REGISTER, SD = SMOKE DAMPER, SPEC = SPECIFICATION, SR = SUPPLY AIR SIDE REGISTER, SS = STAINLESS STEEL, TG = TRANSFER AIR GRILLE, TYP = TYPICAL, UH = UNIT HEATER, UV = UNIT VENTILATOR, VD = VOLUME DAMPER, VFD = VARIABLE FREQUENCY DRIVE, VIF = VERIFY IN FIELD, VR = VARIABLE REFRIGERANT FLOW, W/ = WITH, WMS = WIRE MESH SCREEN.

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MECHANICAL NOTES
2019 BOND REFERENDUM
CHATSWORTH AVENUE ELEMENTARY SCHOOL
MAMARONECK UNION FREE SCHOOL DISTRICT
CHATSWORTH AVENUE, LARCHMONT, NY 10538

NYSed PROJECT # 66-07-01-03-0-005-020
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**GENERAL DEMOLITION NOTES**

- SIZES & LOCATIONS OF EXIST. MECH. EQUIPMENT, DUCTWORK, AIR INLETS/OUTLETS, PIPING, ETC. SHOWN ON DRAWINGS ARE BASED ON SITE OBSERVATIONS & THEY ARE APPROXIMATE. SOME OF DUCT & PIPE ROUTING COULD BE DIFFERENT FROM THAT SHOWN. MC IS REQUIRED TO PROVIDE DUCTWORK SHOP DRAWINGS IDENTIFYING THEM.
- NOT ALL EXIST. DUCTWORK, PIPING & UTILITIES ARE SHOWN ON DRAWINGS. VERIFY IN FIELD.
- GC IS RESPONSIBLE TO REMOVE EXIST. SUSPENDED CEILING SYSTEM, GRIDS & TILES TO ACCOMMODATE MECHANICAL DEMOLITION. REINSTALL TO MATCH EXISTING. REMOVE & REPLACE ALL DAMAGED TILES. MODEL & STYLE OF NEW CLG. TILES SHALL MATCH EXISTING.
- EC IS RESPONSIBLE TO TEMPORARILY REMOVE/RELOCATE EXIST. LIGHT FIXTURES, ELECTRICAL DEVICES, FIRE ALARM & COMMUNICATION DEVICES, ETC. TO ACCOMMODATE MECH. DEMOLITION. REINSTALL TO MATCH EXISTING. CHECK IN FIELD.
- GC IS RESPONSIBLE TO PATCH ALL OPENINGS ON CLGS, WALLS & ROOF WHERE EXIST. MECH. EQUIPMENT, DUCTWORK & PIPING ARE REMOVED. INFILL & PATCH W/ SUITABLE MATERIALS & PAINT TO MATCH EXISTING.
- GC IS RESPONSIBLE TO PROPERLY PROTECT EXIST. FLOORS, WALLS, CEILING, FURNITURE, EQUIPMENT, ETC. DURING CONSTRUCTION. ALL DAMAGED ITEMS SHALL BE REPAIRED / REPLACED AT EXPENSE OF THE GC.
- MC IS RESPONSIBLE TO ISOLATE/SHUTDOWN & DRAIN-DOWN EXIST. HOT WATER HEATING PIPING SYSTEM TO ACCOMMODATE REMOVAL OF EXIST. HWS/HWR PIPING ASSOCIATED W/ DEMOLISHED MECH. EQUIPMENT AND INSTALLATION OF NEW MECH. EQUIPMENT & PIPING. RESTORE THE SYSTEM AFTER ALL WORK IS COMPLETE.
- MC TO REMOVE ALL EXIST. CONTROLS & RELATED WIRING & CONDUITS, ETC. WHICH BECOME OBSOLETE, WHETHER OR NOT SHOWN ON DWGS. GC TO PATCH AND PAINT WALLS TO MATCH EXISTING.

ITEM #	DEMOLITION KEY NOTES
1	EXIST. FLOOR-MOUNTED VERTICAL UNIT VENTILATOR (UV) TO BE REMOVED, COMPLETE W/ ASSOCIATED EXIST. DUCTWORK, PIPING, VALVES, LOUVERS, ELECTRICAL, SUPPORTS, CONTROLS, ETC.
2	EXIST. CEILING-MOUNTED HORIZONTAL UNIT VENTILATOR (UV) TO BE REMOVED, COMPLETE W/ ASSOCIATED EXIST. DUCTWORK, PIPING, VALVES, INLETS & OUTLETS, LOUVERS, ELECTRICAL, SUPPORTS, CONTROLS, ETC.
3	EXIST. FLOOR-MOUNTED VERTICAL CABINET HEATER (CH) TO BE REMOVED, COMPLETE W/ ASSOCIATED EXIST. DUCTWORK, PIPING, VALVES, LOUVERS, ELECTRICAL, SUPPORTS, CONTROLS, ETC.
4	EXIST. CEILING-MOUNTED EXHAUST FAN (EF) TO BE REMOVED, COMPLETE W/ ASSOCIATED EXIST. DUCTWORK, INLETS, LOUVERS, ELECTRICAL, SUPPORTS, CONTROLS, ETC.
5	EXIST. WINDOW-MOUNTED EXHAUST FAN (EF) TO BE REMOVED, COMPLETE W/ ASSOCIATED EXIST. VENT. ELECTRICAL, SUPPORTS, CONTROLS, ETC. REPLACE WINDOW OPENING W/ NEW WINDOW. REFER TO ARCH. DWGS
6	EXIST. WINDOW-MOUNTED EXHAUST FAN (EF) TO BE REMOVED, COMPLETE W/ ASSOCIATED EXIST. VENT. ELECTRICAL, SUPPORTS, CONTROLS, ETC. INFILL WINDOW OPENING. REFER TO ARCH. DWGS
7	EXIST. CONVECTOR (CV) TO BE REMOVED, COMPLETE W/ ASSOCIATED EXIST. PIPING, VALVES, CONTROLS, ETC. CAP PIPE OPENINGS ON EXIST. MAINS.
8	EXIST. ABANDONED FLOOR-MOUNTED RADIATOR TO BE REMOVED, COMPLETE W/ ASSOCIATED EXIST. PIPING, VALVES, STEAM TRAP, SUPPORTS, CONTROLS, ETC.
9	EXIST. ABANDONED CEILING-MOUNTED RADIATOR TO BE REMOVED, COMPLETE W/ ASSOCIATED EXIST. PIPING, VALVES, STEAM TRAP, SUPPORTS, CONTROLS, ETC.
10	EXIST. EXHAUST HOOD TO BE REMOVED, COMPLETE W/ ASSOCIATED EXIST. EXHAUST FAN, DUCTWORK, DAMPERS, INSULATION, ELECTRICAL, SUPPORTS, CONTROLS, ETC.
11	EXIST. FLOOR-MOUNTED FAN COIL UNIT (FCU) TO BE REMOVED, COMPLETE W/ ASSOCIATED EXIST. DUCTWORK, PIPING, VALVES, INLETS & OUTLETS, LOUVERS, ELECTRICAL, SUPPORTS, CONTROLS, ETC. TO BE REMOVED.
12	EXIST. AIR-COOLED CONDENSING UNIT (ACCU) ON RAISED STEEL GRATE TO BE REMOVED, COMPLETE W/ EXIST. PIPING, VALVES, INSULATION, ELECTRICAL, CONTROLS, ETC. TO BE REMOVED.
13	EXIST. DUCTWORK & RELATED DAMPERS, INSULATION, SUPPORTS, FILTERS, CONTROLS, ETC. TO BE REMOVED.
14	EXIST. AIR INLET/OUTLET & RELATED DUCTWORK, DAMPER, ETC. TO BE REMOVED.
15	EXIST. EA / FAI LOUVERS / WALL CAP TO BE REMOVED. INFILL OPENING TO MATCH EXIST. REFER TO ARCH. DWGS.
16	EXIST. FAI LOUVERS TO BE REMOVED. REPLACE WINDOW OPENING TO MATCH EXIST. REFER TO ARCH. DWGS.
17	EXIST. HWS & HWR PIPING TO BE REMOVED. CAP PIPE OPENINGS ON EXIST. MAINS. VERIFY IN FIELD.
18	EXIST. 3/4" HWS & HWR RISERS TO CVs IN AUDITORIUM & STAGE TO BE DISCONNECTED AT BELOW AUDITORIUM / STAGE FLOOR SLAB & TO REMAIN AND SHALL BE CONNECTED TO NEW HW PIPING. SEE DWG. 1/M2.05 FOR NEW HW PIPING LAYOUT.
19	EXIST. REFRIGERANT PIPING & INTERLOCKED WIRING & CONDUITS TO BE REMOVED, COMPLETE W/ ASSOCIATED EXIST. INSULATION, SUPPORTS, ETC. TO BE REMOVED.
20	EXIST. THERMOSTAT & SENSOR & RELATED CONTROL WIRING, ETC. TO BE REMOVED. INFILL OPENING & PAINT TO MATCH EXIST.
21	EXIST. MECHANICAL EQUIPMENT (AHUs, ACs, UVs, Chs, Cvs, Efs, Etc.) TO REMAIN.
22	EXIST. DUCTWORK & RELATED DAMPERS, INSULATION, AIR INLET/OUTLET, SUPPORTS, FILTERS, CONTROLS, ETC. TO REMAIN.
23	EXIST. HWS & HWR PIPING TO REMAIN.
24	EXIST. HWS & HWR PIPING RISERS FROM BELOW 1ST FLOOR SLAB IN PIPE TUNNEL TO BE DISCONNECTED AT ABOVE FINISHED FLOOR & TO REMAIN AND SHALL BE CONNECTED TO NEW HW PIPING. SEE DWG. 1/M2.05 FOR NEW HW PIPING LAYOUT.
25	EXIST. THERMOSTAT & SENSOR TO REMAIN.

**NOTE - FLOOR REPLACEMENT MECHANICAL DEMOLITION WORK:** UNIT VENTILATORS (UVs) TO BE TEMPORARILY REMOVED AND SHALL BE REINSTALLED DURING FLOOR REPLACEMENT PROJECT. NOT ALL UVs ARE SHOWN ON MECHANICAL DRAWINGS. MECHANICAL CONTRACTOR (MC) SHALL REFER TO THE ARCHITECTURAL PARTIAL FLOORING DEMOLITION PLANS ON DRAWING A1.40 & PARTIAL PROPOSED FLOORING PLANS A2.40 FOR SCOPE OF WORK REQUIRED BY THE MC ASSOCIATED WITH THE FLOOR REPLACEMENT PROJECT. MC IS RESPONSIBLE FOR THIS SCOPE OF WORK.

**NOTE:** ALL PIPING TO BE SUPPORTED WHILE DEMOLISHING OF TOP CEILING (TYP.)

EXIST. (2) 3" HWS, 3" HWR & 3/4" HWR PIPING ABOVE CLG. IN CORRIDOR TO REMAIN

Date: 1/10/20  
Checked: MAM  
Drawn: JM

**MICHAEL J. MCGOVERN, R.A.**  
REGISTERED ARCHITECT  
License No. 022257-1

**Revisions:**  
ISSUE TO BID 1/23/20

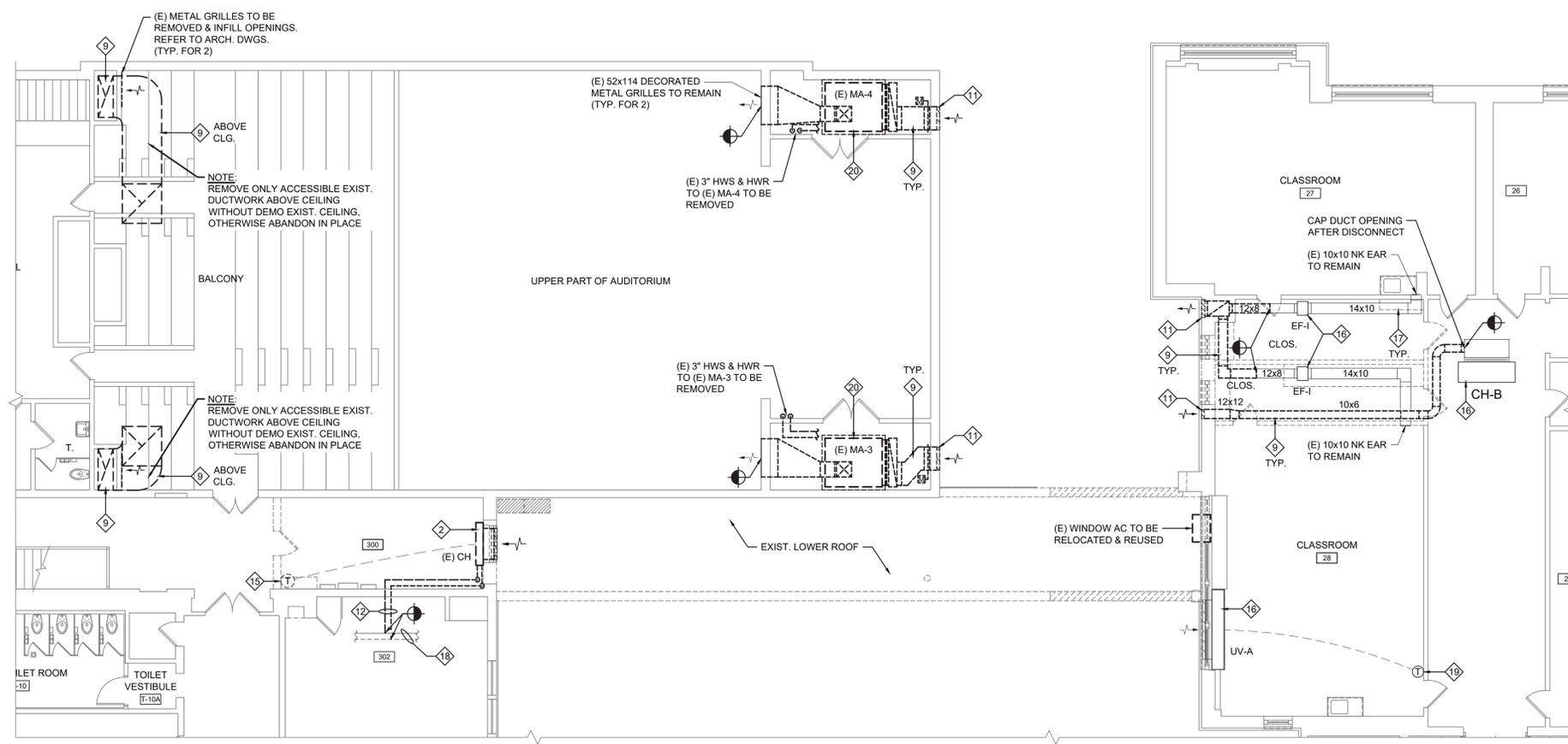
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252 MAIN STREET, GOSHEN, NEW YORK 10924 (845)815-0350

**NYSED PROJECT # 66-07-01-03-0-005-020**  
FIRST FLOOR MECHANICAL DEMOLITION PLAN  
2019 BOND REFERENDUM  
CHATSORTH AVENUE ELEMENTARY SCHOOL  
MAMARONECK UNION FREE SCHOOL DISTRICT  
CHATSORTH AVENUE, LARCHMONT, NY 10538

Job No. 4.1092.72.03  
Rev. No. 10927203M201

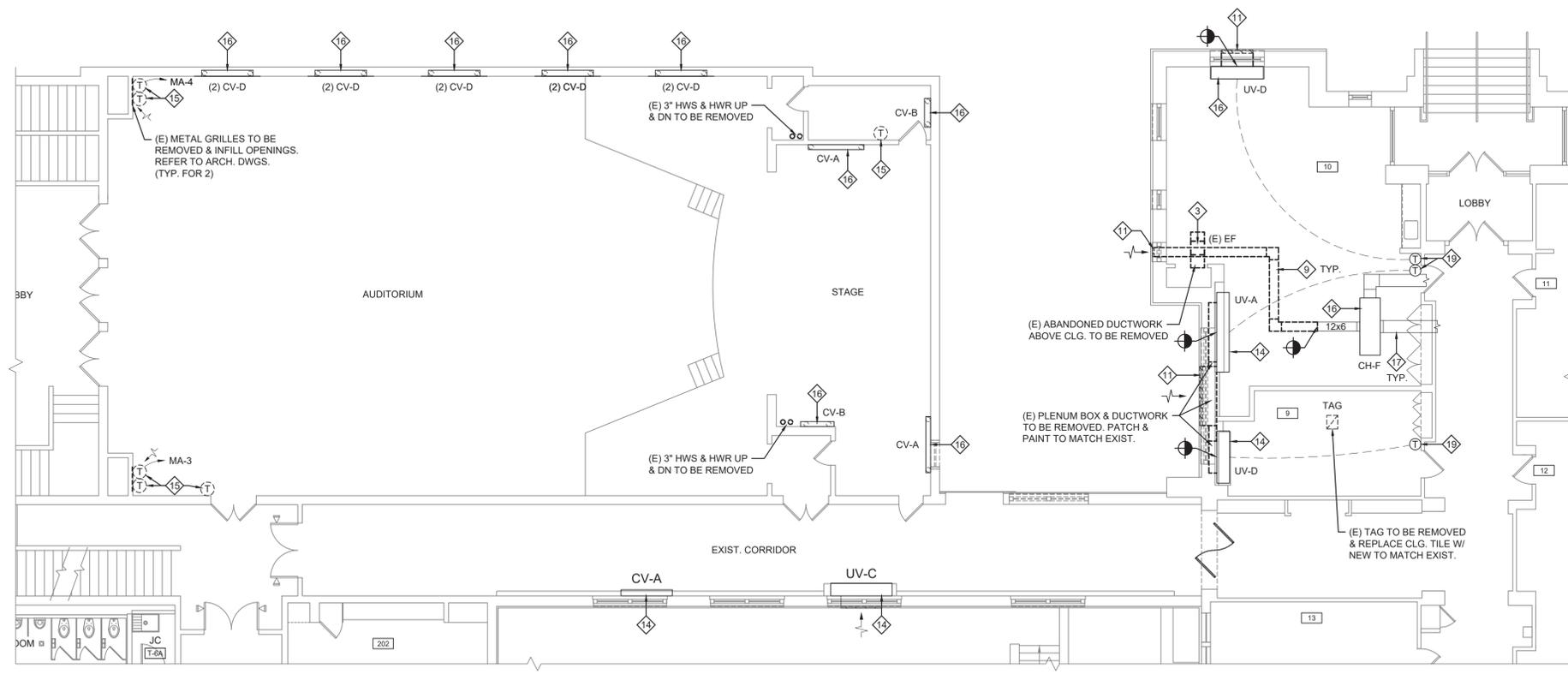
**M1.01**



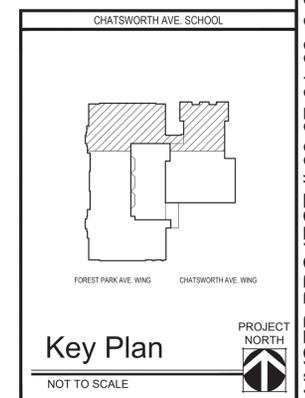
ITEM #	DEMOLITION KEY NOTES
2	EXIST. FLOOR-MOUNTED VERTICAL CABINET HEATER (CH) TO BE REMOVED, COMPLETE W/ ASSOCIATED EXIST. DUCTWORK, PIPING, VALVES, LOUVERS, ELECTRICAL, SUPPORTS, CONTROLS, ETC.
3	EXIST. CEILING-MOUNTED EXHAUST FAN (EF) TO BE REMOVED, COMPLETE W/ ASSOCIATED EXIST. DUCTWORK, INLETS, LOUVERS, ELECTRICAL, SUPPORTS, CONTROLS, ETC.
9	EXIST. DUCTWORK & RELATED DAMPERS, INSULATION, SUPPORTS, FILTERS, CONTROLS, ETC. TO BE REMOVED.
11	EXIST. EA / FAI LOUVERS / WALL CAP TO BE REMOVED. INFILL OPENING TO MATCH EXIST. REFER TO ARCH. DWGS.
12	EXIST. HWS & HWR PIPING TO BE REMOVED. CAP PIPE OPENINGS ON EXIST. MAINS. VERIFY IN FIELD.
15	EXIST. THERMOSTAT & SENSOR & RELATED CONTROL WIRING, ETC. TO BE REMOVED. INFILL OPENING & PAINT TO MATCH EXIST.
16	EXIST. MECHANICAL EQUIPMENT (AHUs, ACs, UVs, CHs, CVs, EFs, ETC.) TO REMAIN.
17	EXIST. DUCTWORK & RELATED DAMPERS, INSULATION, AIR INLET/OUTLET, SUPPORTS, FILTERS, CONTROLS, ETC. TO REMAIN.
18	EXIST. HWS & HWR PIPING TO REMAIN.
18A	EXIST. HWS & HWR PIPING RISER UP ABOVE 1ST FLOOR CLG., IN PIPE ENCLOSURE AND PIPING RISER DN BELOW 1ST FLOOR SLAB TO REMAIN.
19	EXIST. THERMOSTAT & SENSOR TO REMAIN.
20	EXIST. FLOOR-MOUNTED MAKEUP AIR (MA) UNIT TO BE REMOVED, COMPLETE W/ ASSOCIATED EXIST. DUCTWORK, PIPING, VALVES, LOUVERS, CONCRETE PAD, ELECTRICAL, SUPPORTS, CONTROLS, ETC.

- GENERAL DEMOLITION NOTES**
- SIZES & LOCATIONS OF EXIST. MECH. EQUIPMENT, DUCTWORK, AIR INLETS/OUTLETS, PIPING, ETC. SHOWN ON DRAWINGS ARE BASED ON SITE OBSERVATIONS & THEY ARE APPROXIMATE. SOME OF DUCT & PIPE ROUTING COULD BE DIFFERENT FROM THAT SHOWN. MC IS REQUIRED TO PROVIDE DUCTWORK SHOP DRAWINGS IDENTIFYING THEM.
  - NOT ALL EXIST. DUCTWORK, PIPING & UTILITIES ARE SHOWN ON DRAWINGS. VERIFY IN FIELD.
  - GC IS RESPONSIBLE TO REMOVE EXIST. SUSPENDED CEILING SYSTEM, GRIDS & TILES TO ACCOMMODATE MECHANICAL DEMOLITION. REINSTALL TO MATCH EXISTING. REMOVE & REPLACE ALL DAMAGED TILES. MODEL & STYLE OF NEW CLG. TILES SHALL MATCH EXISTING.
  - EC IS RESPONSIBLE TO TEMPORARILY REMOVE/RELOCATE EXIST. LIGHT FIXTURES, ELECTRICAL DEVICES, FIRE ALARM & COMMUNICATION DEVICES, ETC. TO ACCOMMODATE MECH. DEMOLITION. REINSTALL TO MATCH EXISTING. CHECK IN FIELD.
  - GC IS RESPONSIBLE TO PATCH ALL OPENINGS ON CLGS, WALLS & ROOF WHERE EXIST. MECH. EQUIPMENT, DUCTWORK & PIPING ARE REMOVED. INFILL & PATCH W/ SUITABLE MATERIALS & PAINT TO MATCH EXISTING.
  - GC IS RESPONSIBLE TO PROPERLY PROTECT EXIST. FLOORS, WALLS, CEILING, FURNITURE, EQUIPMENT, ETC. DURING CONSTRUCTION. ALL DAMAGED ITEMS SHALL BE REPAIRED / REPLACED AT EXPENSE OF THE GC.
  - MC IS RESPONSIBLE TO ISOLATE/SHUTDOWN & DRAIN-DOWN EXIST. HOT WATER HEATING PIPING SYSTEM TO ACCOMMODATE REMOVAL OF EXIST. HWS/HWR PIPING ASSOCIATED W/ DEMOLISHED MECH. EQUIPMENT AND INSTALLATION OF NEW MECH. EQUIPMENT & PIPING. RESTORE THE SYSTEM AFTER ALL WORK IS COMPLETE.
  - MC TO REMOVE ALL EXIST. CONTROLS & RELATED WIRING & CONDUITS, ETC. WHICH BECOME OBSOLETE, WHETHER OR NOT SHOWN ON DWGS. GC TO PATCH AND PAINT WALLS TO MATCH EXISTING.

**2 Partial Third Floor Mechanical Demolition Plan**  
 M1.02 1/8" = 1'-0" NORTH



**1 Partial Second Floor Mechanical Demolition Plan**  
 M1.02 1/8" = 1'-0" NORTH



Date: 1/10/20  
 Checked: MAM  
 Drawn: JM

**MICHAEL J. MCGOVERN, P.A.**  
 LICENSE NO. 022257-1  
 REGISTERED ARCHITECT

**Revisions:**  
 ISSUE TO BID 1/23/20

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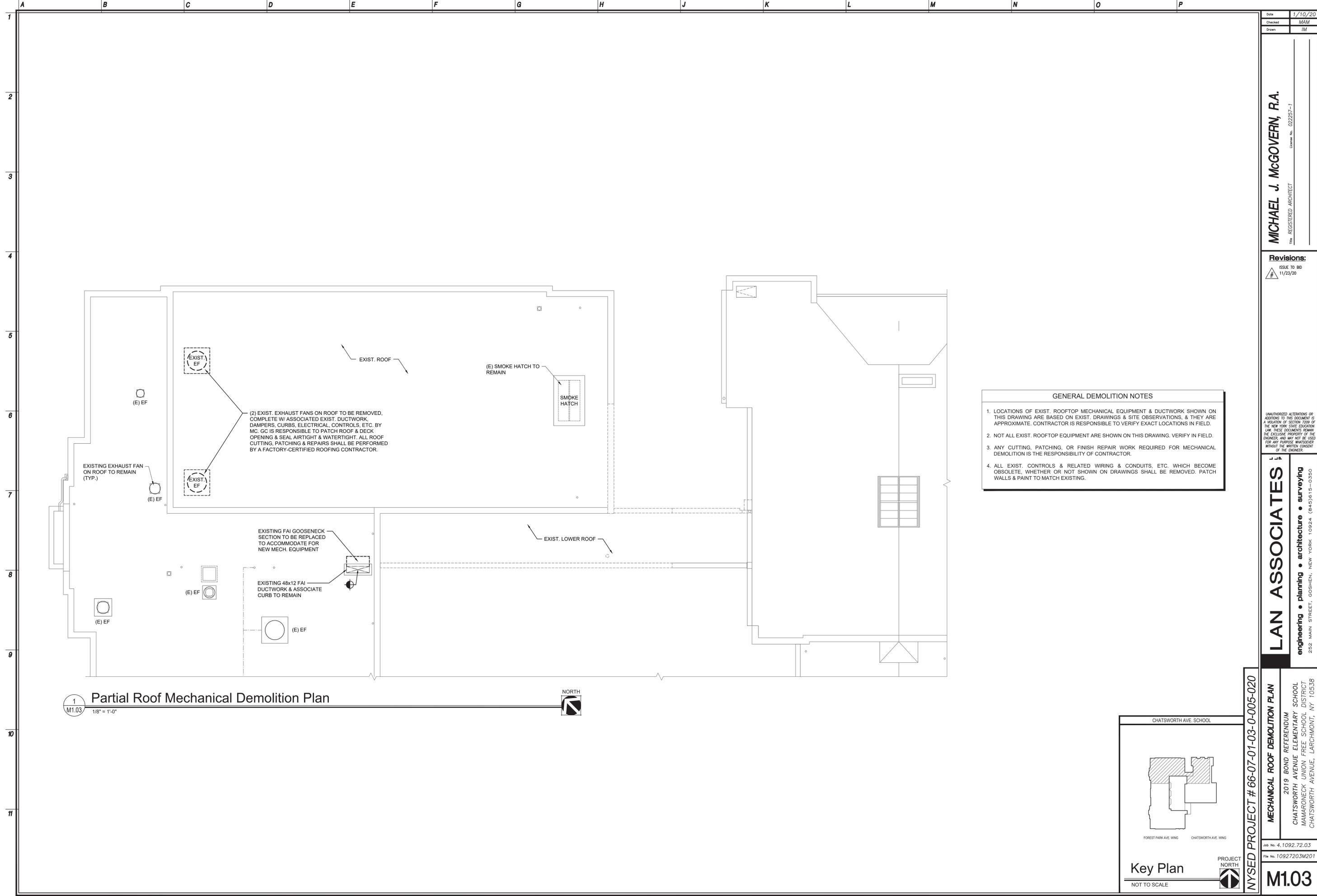
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**MECHANICAL DEMOLITION PLANS**  
 2019 BOND REFERENDUM  
 CHATSWORTH AVENUE ELEMENTARY SCHOOL  
 MAMARONECK UNION FREE SCHOOL DISTRICT  
 CHATSWORTH AVENUE, LARCHMONT, NY 10538

Job No. 4.1092.72.03  
 File No. 10927203M201

**M1.02**

**NYSED PROJECT # 66-07-01-03-0-005-020**



Date 1/10/20  
Checked MAM  
Drawn JM

**MICHAEL J. MCGOVERN, R.A.**  
The REGISTERED ARCHITECT  
License No. 022257-1

**Revisions:**

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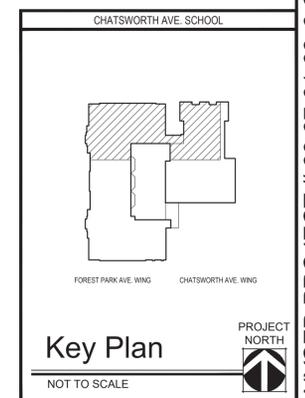
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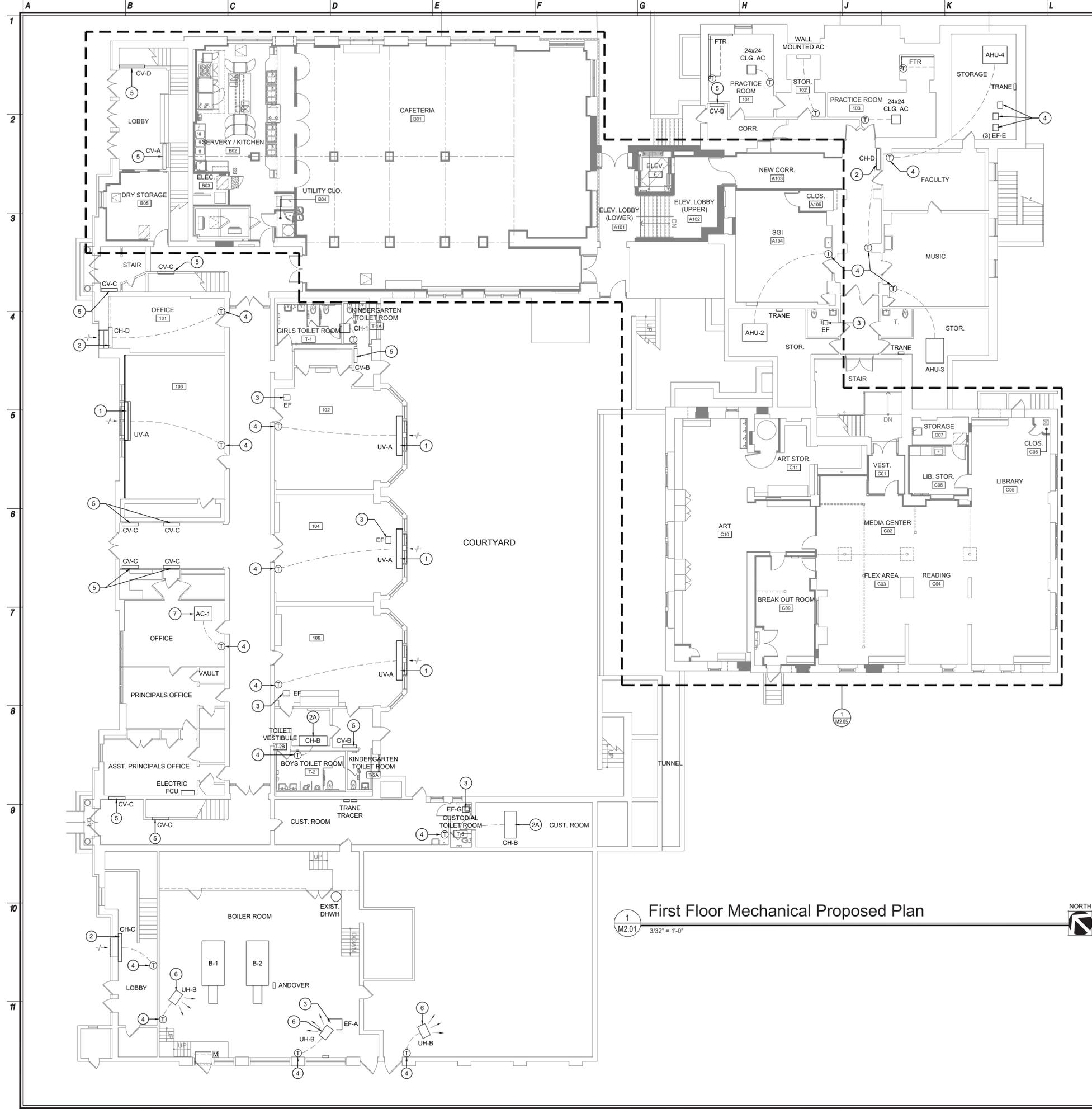
**NYS ED PROJECT # 66-07-01-03-0-005-020**

**MECHANICAL ROOF DEMOLITION PLAN**  
2019 BOND REFERENDUM  
CHATSWORTH AVENUE ELEMENTARY SCHOOL  
MAMARONECK UNION FREE SCHOOL DISTRICT  
CHATSWORTH AVENUE, LARCHMONT, NY 10538

Job No. 4.1092.72.03  
File No. 10927203M201

**M1.03**





ITEM #	CONSTRUCTION KEY NOTES
1	EXISTING FLOOR-MOUNTED VERTICAL UNIT VENTILATOR (UV) TO REMAIN. REPLACE EXISTING CONTROLS & 3-WAY VALVE WITH NEW 3-WAY VALVE & "ANDOVER" DDC CONTROL. FURNISH & INSTALL NEW DDC CONTROLS & TIE INTO EXISTING BMS.
2	EXISTING FLOOR-MOUNTED VERTICAL CABINET HEATER (CH) TO REMAIN. REPLACE EXISTING CONTROLS & 3-WAY VALVE WITH NEW 3-WAY VALVE & "ANDOVER" DDC CONTROL. FURNISH & INSTALL NEW DDC CONTROLS & TIE INTO EXISTING BMS.
2A	EXISTING CEILING-MOUNTED HORIZONTAL CABINET HEATER (CH) TO REMAIN. REPLACE EXISTING CONTROLS & 3-WAY VALVE WITH NEW 3-WAY VALVE & "ANDOVER" DDC CONTROL. FURNISH & INSTALL NEW DDC CONTROLS & TIE INTO EXISTING BMS.
3	EXISTING CEILING-MOUNTED EXHAUST FAN (EF) TO REMAIN. REPLACE EXISTING CONTROLS WITH NEW "ANDOVER" DDC CONTROLS & TIE INTO EXISTING BMS. INTERLOCK WITH RESPECTIVE UNIT(S) FOR OPERATION.
4	REPLACE EXISTING THERMOSTAT WITH NEW "ANDOVER" DDC THERMOSTAT. TIE NEW THERMOSTAT TO RESPECTIVE UNIT(S) FOR OPERATION. TIE INTO EXISTING BMS.
5	EXISTING CONVECTOR (CV) TO REMAIN. REPLACE EXISTING CONTROL VALVE WITH NEW "ANDOVER" DDC CONTROL VALVE & TIE INTO EXISTING BMS. PROVIDE NEW "ANDOVER" DDC CONTROL VALVE TO EXISTING CV WITHOUT CONTROL VALVE & TIE INTO EXISTING BMS.
6	EXISTING CEILING-MOUNTED UNIT HEATER (UH) TO REMAIN. REPLACE EXISTING CONTROLS WITH NEW "ANDOVER" DDC CONTROLS & TIE INTO EXISTING BMS.
7	EXISTING CEILING-MOUNTED MECHANICAL EQUIPMENT ABOVE CEILING TO REMAIN. REPLACE EXISTING CONTROLS WITH NEW "ANDOVER" DDC CONTROL. FURNISH & INSTALL NEW DDC CONTROLS & TIE INTO EXISTING BMS.

- GENERAL INSTALLATION NOTES**
- LOCATIONS OF EXISTING MECHANICAL EQUIPMENT, ETC. SHOWN ON DRAWINGS ARE BASED ON EXISTING DRAWINGS AND SITE OBSERVATIONS AND THEY ARE APPROXIMATE. NOT ALL EXISTING EQUIPMENT, ETC. ARE SHOWN ON DRAWINGS. CONTRACTOR IS RESPONSIBLE TO VERIFY EXACT LOCATIONS IN FIELD.
  - GENERAL CONTRACTOR IS RESPONSIBLE TO REMOVE EXISTING CEILING TILES, LIGHTING, FIRE ALARM DEVICES, ETC. TO ACCOMMODATE INSTALLATION OF NEW CONTROLS AND WIRING ABOVE CEILING REINSTALL TO MATCH EXISTING. ALL DAMAGED ITEMS SHALL BE REMOVED AND REPLACED.
  - TO ACCESS EXISTING CONTROL VALVE AND ACTUATORS INSIDE OF EXISTING UNIT VENTILATORS, CONTRACTOR IS REQUIRED TO REMOVE EXISTING PIPING, VALVES, COMPONENTS, ETC. AND REINSTALL THEM AFTER NEW WORK IS COMPLETE.
  - MECHANICAL CONTRACTOR IS RESPONSIBLE TO DRAIN-DOWN EXISTING HEATING HOT WATER SYSTEM TO ACCOMMODATE REPLACEMENT OF EXISTING CONTROL VALVES, ETC. RESTORE THE SYSTEMS AFTER ALL WORK IS COMPLETE.
  - PROVIDE NEW INSULATION ON ALL DISTURBED PIPING/INSULATION AND NEW PIPING/VALVES.
  - ALL EXISTING ABANDONED PNEUMATIC THERMOSTATS (NOT ALL SHOWN) AND AIR TUBING THAT ARE ACCESSIBLE (ABOVE CEILING, EXPOSED IN SPACES, NEAR EXISTING MECHANICAL EQUIPMENT, TO/FROM EXISTING PNEUMATIC CONTROL PANELS, ETC.) SHALL BE REMOVED IN ENTIRETY. EXISTING PNEUMATIC AIR TUBING THAT ARE NOT ACCESSIBLE (IN WALLS/CHASES, ABOVE HARD CEILING, ETC.) SHALL BE ABANDONED IN PLACE. GENERAL CONTRACTOR TO PATCH AND PAINT OPENINGS TO MATCH EXISTING WHERE THERMOSTATS AND ACCESSIBLE AIR TUBING ARE REMOVED. CHECK IN FIELD.
  - IF NEW DDC THERMOSTATS DO NOT COVER EXISTING WALL OPENINGS. PROVIDE S.S. PLATE TO COVER EACH OPENING. CHECK IN FIELD.
  - ALL NEW CONTROL VALVES, DAMPER ACTUATORS, THERMOSTATS, SPACE SENSORS, ETC. CALLED OUT ON CONSTRUCTION KEY NOTES SHALL BE DDC TYPE. ALL NEW CONTROL VALVES SHALL BE MODULATING TYPE. REFER TO DDC DIAGRAMS ON DWG. M6.04 AND SPEC. FOR DETAILED DDC WORK REQUIREMENTS.
  - PROVIDE LOCKABLE TAMPER-PROOF ENCLOSURES FOR ALL NEW DDC THERMOSTATS IN AREAS REFERRED BY STUDENTS (CLASSROOMS, LOBBIES, STUDENT TOILETS, AUDITORIUM, CAFETERIA, GYM, MEDIA CENTER, ETC.). VERIFY IN FIELD AND CONFIRM LOCATIONS WITH OWNER.
  - ALL NEW WIRING SHALL BE RUN CONCEALED ABOVE EXISTING SUSPENDED CEILING. ALL NEW EXPOSED WIRING SHALL BE RUN CONCEALED IN WIREMOLD (COLOR TO BE SELECTED BY OWNER).
  - ALL LOW VOLTAGE CABLES SHALL BE PLENUM RATED.
  - ROOM NAMES/NUMBERS SHOWN ON DRAWINGS ARE FOR REFERENCE ONLY AND THEY MAY VARY IN FIELD.

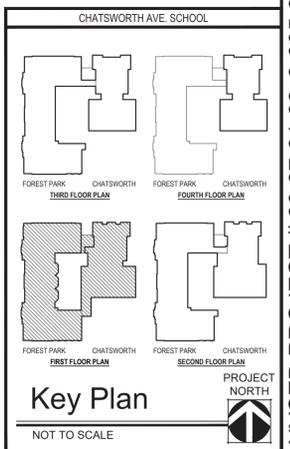
1 M2.01 3/32" = 1'-0" NORTH

**MICHAEL J. MCGOVERN, P.E.**  
 REGISTERED ARCHITECT  
 License No. 022237-1

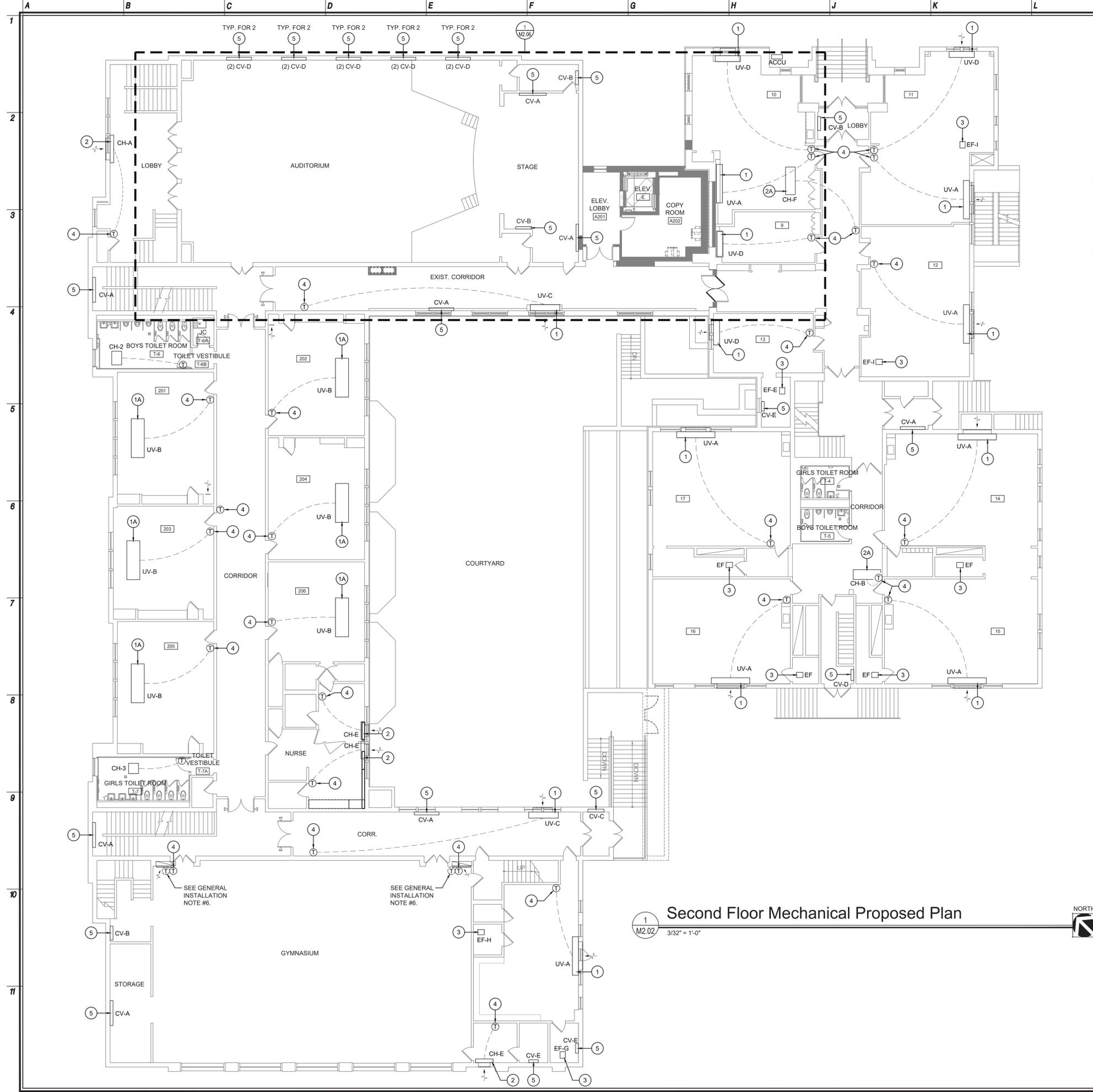
**Revisions:**  
 ISSUE TO BID 11/23/20

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**NYSED PROJECT # 66-07-01-03-0-005-020**  
**FIRST FLOOR MECHANICAL PLAN**  
 2019 BOND REFERENDUM  
 CHATSWORTH AVENUE ELEMENTARY SCHOOL  
 MAMARONECK UNION FREE SCHOOL DISTRICT  
 CHATSWORTH AVENUE, LARCHMONT, NY 10538  
 Job No. 4.1092.72.03  
 File No. 10927203M201  
**M2.01**



1 M2.02 3/32" = 1'-0"

ITEM #	CONSTRUCTION KEY NOTES
1	EXISTING FLOOR-MOUNTED VERTICAL UNIT VENTILATOR (UV) TO REMAIN. REPLACE EXISTING CONTROLS & 3-WAY VALVE WITH NEW 3-WAY VALVE & "ANDOVER" DDC CONTROL. FURNISH & INSTALL NEW DDC CONTROLS & TIE INTO EXISTING BMS.
1A	EXISTING CEILING-MOUNTED HORIZONTAL UNIT VENTILATOR (UV) TO REMAIN. REPLACE EXISTING CONTROLS & 3-WAY VALVE WITH NEW 3-WAY VALVE & "ANDOVER" DDC CONTROL. FURNISH & INSTALL NEW DDC CONTROLS & TIE INTO EXISTING BMS.
2	EXISTING FLOOR-MOUNTED VERTICAL CABINET HEATER (CH) TO REMAIN. REPLACE EXISTING CONTROLS & 3-WAY VALVE WITH NEW 3-WAY VALVE & "ANDOVER" DDC CONTROL. FURNISH & INSTALL NEW DDC CONTROLS & TIE INTO EXISTING BMS.
2A	EXISTING CEILING-MOUNTED HORIZONTAL CABINET HEATER (CH) TO REMAIN. REPLACE EXISTING CONTROLS & 3-WAY VALVE WITH NEW 3-WAY VALVE & "ANDOVER" DDC CONTROL. FURNISH & INSTALL NEW DDC CONTROLS & TIE INTO EXISTING BMS.
3	EXISTING CEILING-MOUNTED EXHAUST FAN (EF) TO REMAIN. REPLACE EXISTING CONTROLS WITH NEW "ANDOVER" DDC CONTROLS & TIE INTO EXISTING BMS. INTERLOCK WITH RESPECTIVE UNIT(S) FOR OPERATION.
4	REPLACE EXISTING THERMOSTAT WITH NEW "ANDOVER" DDC THERMOSTAT. TIE THE NEW THERMOSTAT TO RESPECTIVE UNIT(S) FOR OPERATION. TIE INTO EXISTING BMS.
5	EXISTING CONVECTOR (CV) TO REMAIN. REPLACE EXISTING CONTROL VALVE WITH NEW "ANDOVER" DDC CONTROL VALVE & TIE INTO EXISTING BMS. PROVIDE NEW "ANDOVER" DDC CONTROL VALVE TO EXISTING CV WITHOUT CONTROL VALVE & TIE INTO EXISTING BMS.

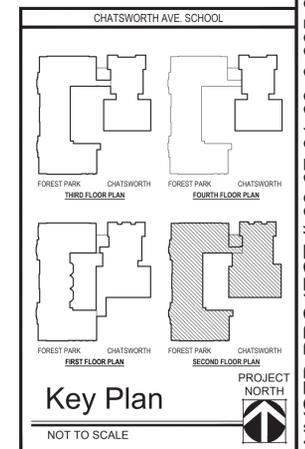
- GENERAL INSTALLATION NOTES**
- LOCATIONS OF EXISTING MECHANICAL EQUIPMENT, ETC. SHOWN ON DRAWINGS ARE BASED ON EXISTING DRAWINGS AND SITE OBSERVATIONS AND THEY ARE APPROXIMATE. NOT ALL EXISTING EQUIPMENT, ETC. ARE SHOWN ON DRAWINGS. CONTRACTOR IS RESPONSIBLE TO VERIFY EXACT LOCATIONS IN FIELD.
  - GENERAL CONTRACTOR IS RESPONSIBLE TO REMOVE EXISTING CEILING TILES, LIGHTING, FIRE ALARM DEVICES, ETC. TO ACCOMMODATE INSTALLATION OF NEW CONTROLS AND WIRING ABOVE CEILING REINSTALL TO MATCH EXISTING. ALL DAMAGED ITEMS SHALL BE REMOVED AND REPLACED.
  - TO ACCESS EXISTING CONTROL VALVE AND ACTUATORS INSIDE OF EXISTING UNIT VENTILATORS, CONTRACTOR IS REQUIRED TO REMOVE EXISTING PIPING, VALVES, COMPONENTS, ETC. AND REINSTALL THEM AFTER NEW WORK IS COMPLETE.
  - MECHANICAL CONTRACTOR IS RESPONSIBLE TO DRAIN-DOWN EXISTING HEATING HOT WATER SYSTEM TO ACCOMMODATE REPLACEMENT OF EXISTING CONTROL VALVES, ETC. RESTORE THE SYSTEMS AFTER ALL WORK IS COMPLETE.
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  - ALL EXISTING ABANDONED PNEUMATIC THERMOSTATS (NOT ALL SHOWN) AND AIR TUBING THAT ARE ACCESSIBLE (ABOVE CEILING, EXPOSED IN SPACES, NEAR EXISTING MECHANICAL EQUIPMENT, TO/FROM EXISTING PNEUMATIC CONTROL PANELS, ETC.) SHALL BE REMOVED IN ENTIRETY. EXISTING PNEUMATIC AIR TUBING THAT ARE NOT ACCESSIBLE (IN WALLS/CHASES, ABOVE HARD CEILING, ETC.) SHALL BE ABANDONED IN PLACE. GENERAL CONTRACTOR TO PATCH AND PAINT OPENINGS TO MATCH EXISTING WHERE THERMOSTATS AND ACCESSIBLE AIR TUBING ARE REMOVED. CHECK IN FIELD.
  - IF NEW DDC THERMOSTATS DO NOT COVER EXISTING WALL OPENINGS, PROVIDE S.S. PLATE TO COVER EACH OPENING. CHECK IN FIELD.
  - ALL NEW CONTROL VALVES, DAMPER ACTUATORS, THERMOSTATS, SPACE SENSORS, ETC. CALLED OUT ON CONSTRUCTION KEY NOTES SHALL BE DDC TYPE. ALL NEW CONTROL VALVES SHALL BE MODULATING TYPE. REFER TO DDC DIAGRAMS ON DWG. M6.04 AND SPEC. FOR DETAILED DDC WORK REQUIREMENTS.
  - PROVIDE LOCKABLE TAMPER-PROOF ENCLOSURES FOR ALL NEW DDC THERMOSTATS IN AREAS ACCESSED BY STUDENTS (CLASSROOMS, CORRIDORS, LOBBIES, STUDENT TOILETS, AUDITORIUM, CAFETERIA, GYM, MEDIA CENTER, ETC.). VERIFY IN FIELD AND CONFIRM LOCATIONS WITH OWNER.
  - ALL NEW WIRING SHALL BE RUN CONCEALED ABOVE EXISTING SUSPENDED CEILING. ALL NEW EXPOSED WIRING SHALL BE RUN CONCEALED IN WIREMOLD (COLOR TO BE SELECTED BY OWNER).
  - ALL LOW VOLTAGE CABLES SHALL BE PLENUM RATED.
  - ROOM NAMES/NUMBERS SHOWN ON DRAWINGS ARE FOR REFERENCE ONLY AND THEY MAY VARY IN FIELD.

Date: 1/10/20  
 Checked: MAM  
 Drawn: JM  
**MICHAEL J. MCGOVERN, P.A.**  
 THE REGISTERED ARCHITECT  
 License No. 022257-1

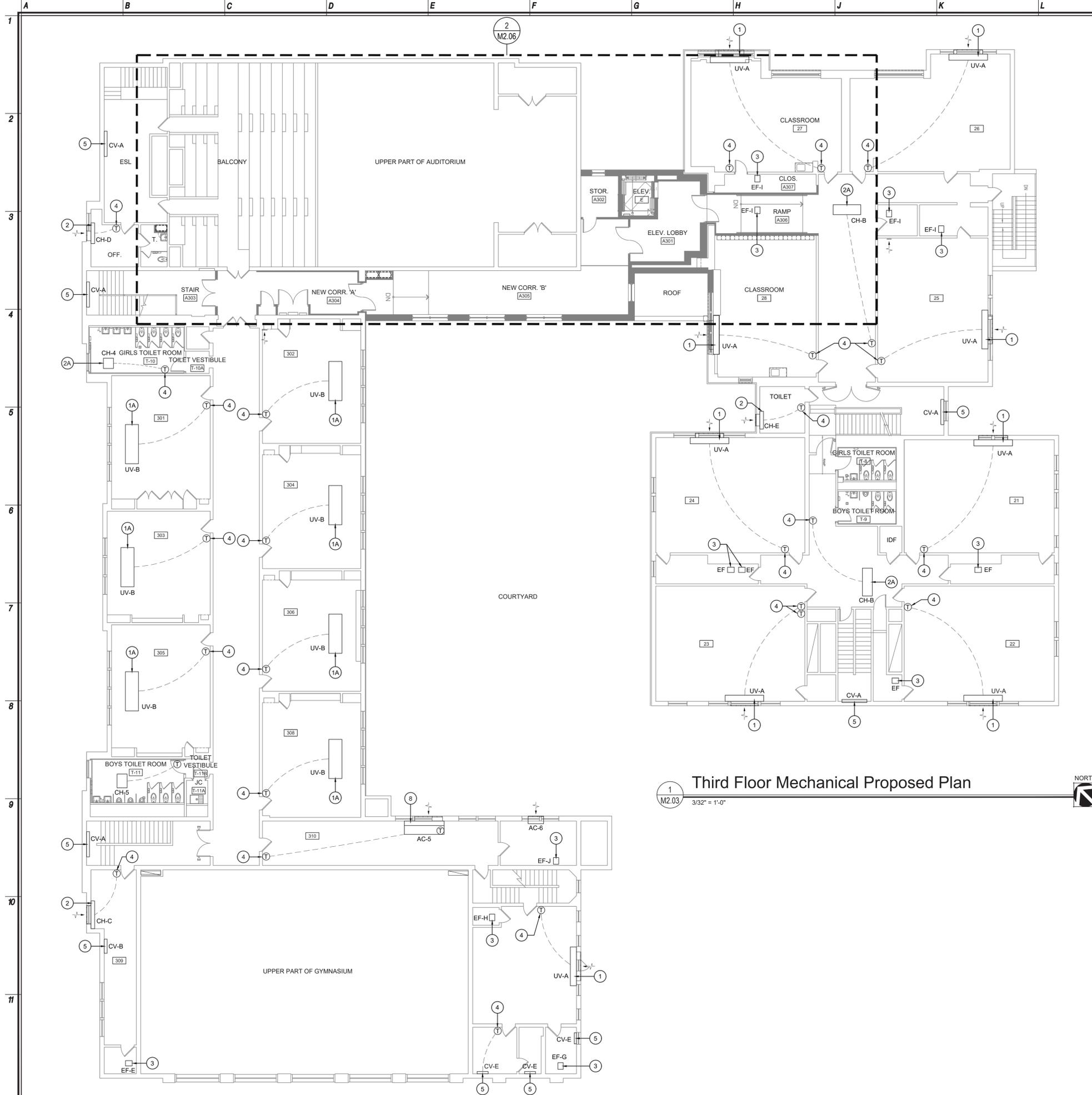
**Revisions:**  
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**NYSED PROJECT # 66-07-01-03-0-005-020**  
**SECOND FLOOR MECHANICAL PLAN**  
 2019 BOND REFERENDUM  
 CHATSWORTH AVENUE ELEMENTARY SCHOOL  
 MAMARONECK UNION FREE SCHOOL DISTRICT  
 CHATSWORTH AVENUE, LARCHMONT, NY 10538  
 Job No. 4.1092.72.03  
 File No. 10927203M201  
**M2.02**



1  
M2.03  
3/32" = 1'-0"  
NORTH

ITEM #	CONSTRUCTION KEY NOTES
1	EXISTING FLOOR-MOUNTED VERTICAL UNIT VENTILATOR (UV) TO REMAIN. REPLACE EXISTING CONTROLS & 3-WAY VALVE WITH NEW 3-WAY VALVE & "ANDOVER" DDC CONTROL. FURNISH & INSTALL NEW DDC CONTROLS & TIE INTO EXISTING BMS.
1A	EXISTING CEILING-MOUNTED HORIZONTAL UNIT VENTILATOR (UV) TO REMAIN. REPLACE EXISTING CONTROLS & 3-WAY VALVE WITH NEW 3-WAY VALVE & "ANDOVER" DDC CONTROL. FURNISH & INSTALL NEW DDC CONTROLS & TIE INTO EXISTING BMS.
2	EXISTING FLOOR-MOUNTED VERTICAL CABINET HEATER (CH) TO REMAIN. REPLACE EXISTING CONTROLS & 3-WAY VALVE WITH NEW 3-WAY VALVE & "ANDOVER" DDC CONTROL. FURNISH & INSTALL NEW DDC CONTROLS & TIE INTO EXISTING BMS.
2A	EXISTING CEILING-MOUNTED HORIZONTAL CABINET HEATER (CH) TO REMAIN. REPLACE EXISTING CONTROLS & 3-WAY VALVE WITH NEW 3-WAY VALVE & "ANDOVER" DDC CONTROL. FURNISH & INSTALL NEW DDC CONTROLS & TIE INTO EXISTING BMS.
3	EXISTING CEILING-MOUNTED EXHAUST FAN (EF) TO REMAIN. REPLACE EXISTING CONTROLS WITH NEW "ANDOVER" DDC CONTROLS & TIE INTO EXISTING BMS. INTERLOCK WITH RESPECTIVE UNIT(S) FOR OPERATION.
4	REPLACE EXISTING THERMOSTAT WITH NEW "ANDOVER" DDC THERMOSTAT. TIE NEW THERMOSTAT TO RESPECTIVE UNIT(S) FOR OPERATION. TIE INTO EXISTING BMS.
5	EXISTING CONVECTOR (CV) TO REMAIN. REPLACE EXISTING CONTROL VALVE WITH NEW "ANDOVER" DDC CONTROL VALVE & TIE INTO EXISTING BMS. PROVIDE NEW "ANDOVER" DDC CONTROL VALVE TO EXISTING CV WITHOUT CONTROL VALVE & TIE INTO EXISTING BMS.
8	EXISTING FLOOR-MOUNTED SELF-CONTAINED HVAC MECHANICAL EQUIPMENT TO REMAIN. REPLACE EXISTING CONTROLS WITH NEW "ANDOVER" DDC CONTROLS. FURNISH & INSTALL NEW DDC CONTROLS & TIE INTO EXISTING BMS.

- GENERAL INSTALLATION NOTES**
- LOCATIONS OF EXISTING MECHANICAL EQUIPMENT, ETC. SHOWN ON DRAWINGS ARE BASED ON EXISTING DRAWINGS AND SITE OBSERVATIONS AND THEY ARE APPROXIMATE. NOT ALL EXISTING EQUIPMENT, ETC. ARE SHOWN ON DRAWINGS. CONTRACTOR IS RESPONSIBLE TO VERIFY EXACT LOCATIONS IN FIELD.
  - GENERAL CONTRACTOR IS RESPONSIBLE TO REMOVE EXISTING CEILING TILES, LIGHTING, FIRE ALARM DEVICES, ETC. TO ACCOMMODATE INSTALLATION OF NEW CONTROLS AND WIRING ABOVE CEILING REINSTALL TO MATCH EXISTING. ALL DAMAGED ITEMS SHALL BE REMOVED AND REPLACED.
  - TO ACCESS EXISTING CONTROL VALVE AND ACTUATORS INSIDE OF EXISTING UNIT VENTILATORS, CONTRACTOR IS REQUIRED TO REMOVE EXISTING PIPING, VALVES, COMPONENTS, ETC. AND REINSTALL THEM AFTER NEW WORK IS COMPLETE.
  - MECHANICAL CONTRACTOR IS RESPONSIBLE TO DRAIN-DOWN EXISTING HEATING HOT WATER SYSTEM TO ACCOMMODATE REPLACEMENT OF EXISTING CONTROL VALVES, ETC. RESTORE THE SYSTEMS AFTER ALL WORK IS COMPLETE.
  - PROVIDE NEW INSULATION ON ALL DISTURBED PIPING/INSULATION AND NEW PIPING/VALVES.
  - ALL EXISTING ABANDONED PNEUMATIC THERMOSTATS (NOT ALL SHOWN) AND AIR TUBING THAT ARE ACCESSIBLE (ABOVE CEILING, EXPOSED IN SPACES, NEAR EXISTING MECHANICAL EQUIPMENT, TOP FROM EXISTING PNEUMATIC CONTROL PANELS, ETC.) SHALL BE REMOVED IN ENTIRETY. EXISTING PNEUMATIC AIR TUBING THAT ARE NOT ACCESSIBLE (IN WALLS/CHASES, ABOVE HARD CEILING, ETC.) SHALL BE ABANDONED IN PLACE. GENERAL CONTRACTOR TO PATCH AND PAINT OPENINGS TO MATCH EXISTING WHERE THERMOSTATS AND ACCESSIBLE AIR TUBING ARE REMOVED. CHECK IN FIELD.
  - IF NEW DDC THERMOSTATS DO NOT COVER EXISTING WALL OPENINGS. PROVIDE S.S. PLATE TO COVER EACH OPENING. CHECK IN FIELD.
  - ALL NEW CONTROL VALVES, DAMPER ACTUATORS, THERMOSTATS, SPACE SENSORS, ETC. CALLED OUT ON CONSTRUCTION KEY NOTES SHALL BE DDC TYPE. ALL NEW CONTROL VALVES SHALL BE MODULATING TYPE. REFER TO DDC DIAGRAMS ON DWG. M6.04 AND SPEC. FOR DETAILED DDC WORK REQUIREMENTS.
  - PROVIDE LOCKABLE TAMPER-PROOF ENCLOSURES FOR ALL NEW DDC THERMOSTATS IN AREAS ACCESSED BY STUDENTS (CLASSROOMS, CORRIDORS, LOBBIES, STUDENT TOILETS, AUDITORIUM, CAFETERIA, GYM, MEDIA CENTER, ETC.). VERIFY IN FIELD AND CONFIRM LOCATIONS WITH OWNER.
  - ALL NEW WIRING SHALL BE RUN CONCEALED ABOVE EXISTING SUSPENDED CEILING. ALL NEW EXPOSED WIRING SHALL BE RUN CONCEALED IN WIREMOLD (COLOR TO BE SELECTED BY OWNER).
  - ALL LOW VOLTAGE CABLES SHALL BE PLENUM RATED.
  - ROOM NAMES/NUMBERS SHOWN ON DRAWINGS ARE FOR REFERENCE ONLY AND THEY MAY VARY IN FIELD.

Date: 1/10/20  
 Checked: MAM  
 Drawn: IM

**MICHAEL J. MCGOVERN, R.A.**  
 THE REGISTERED ARCHITECT  
 License No. 022257-1

**Revisions:**  
 ISSUE TO BID 1/23/20

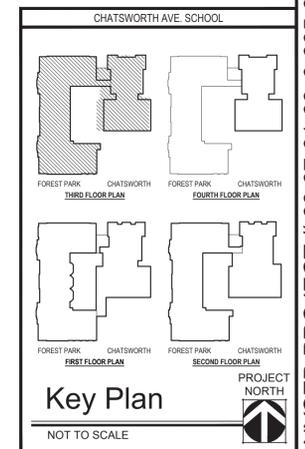
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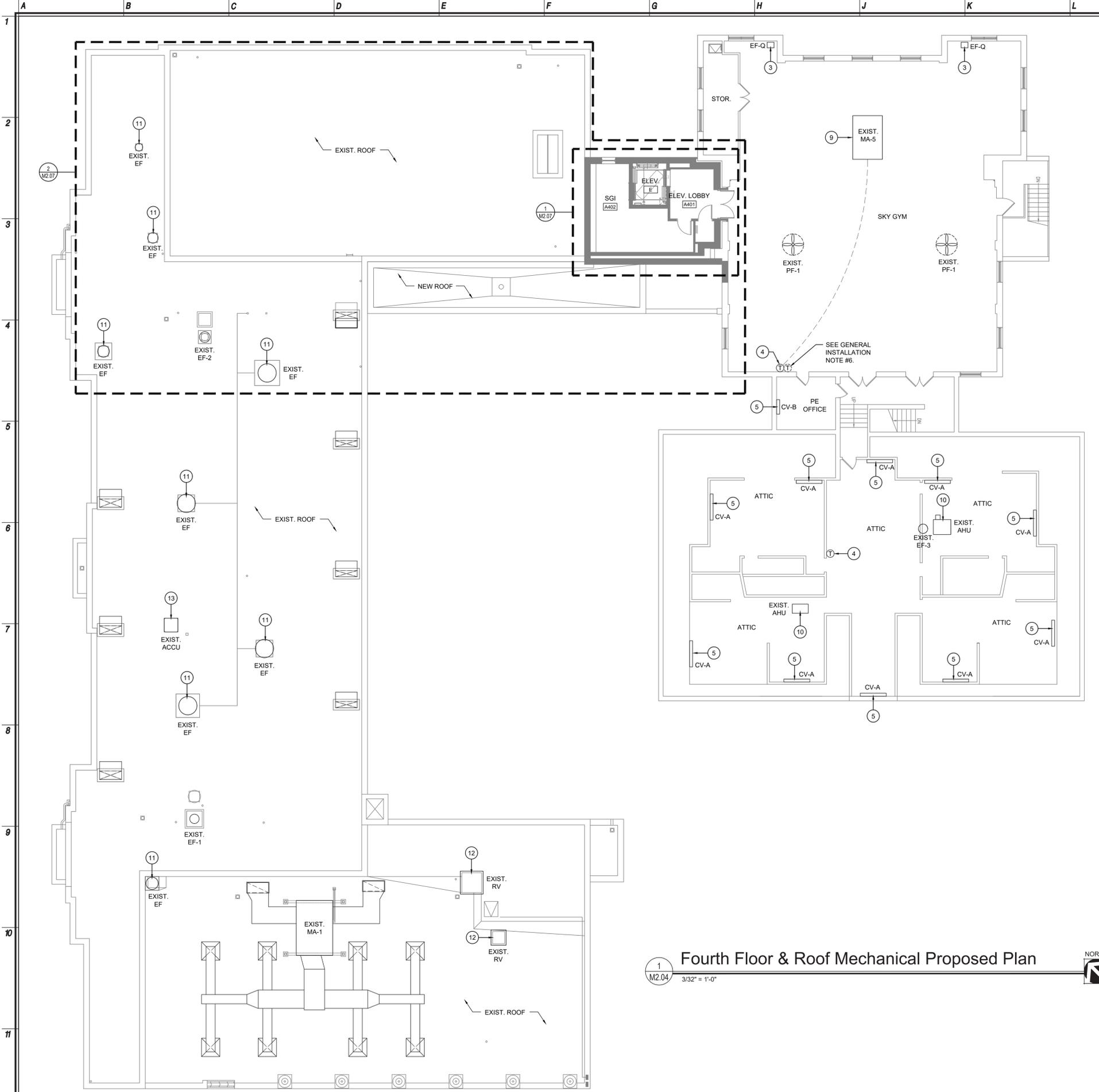
**THIRD FLOOR MECHANICAL PLAN**  
 2019 BOND REFERENDUM  
 CHATSWORTH AVENUE ELEMENTARY SCHOOL  
 MAMARONECK UNION FREE SCHOOL DISTRICT  
 CHATSWORTH AVENUE, LARCHMONT, NY 10538

Job No. 4.1092.72.03  
 File No. 10927203M201

**M2.03**



NYSED PROJECT # 66-07-01-03-0-005-020



ITEM #	CONSTRUCTION KEY NOTES
1	EXISTING FLOOR-MOUNTED VERTICAL UNIT VENTILATOR (UV) TO REMAIN. REPLACE EXISTING CONTROLS & 3-WAY VALVE WITH NEW 3-WAY VALVE & "ANDOVER" DDC CONTROL. FURNISH & INSTALL NEW DDC CONTROLS & TIE INTO EXISTING BMS.
1A	EXISTING CEILING-MOUNTED HORIZONTAL UNIT VENTILATOR (UV) TO REMAIN. REPLACE EXISTING CONTROLS & 3-WAY VALVE WITH NEW 3-WAY VALVE & "ANDOVER" DDC CONTROL. FURNISH & INSTALL NEW DDC CONTROLS & TIE INTO EXISTING BMS.
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2A	EXISTING CEILING-MOUNTED HORIZONTAL CABINET HEATER (CH) TO REMAIN. REPLACE EXISTING CONTROLS & 3-WAY VALVE WITH NEW 3-WAY VALVE & "ANDOVER" DDC CONTROL. FURNISH & INSTALL NEW DDC CONTROLS & TIE INTO EXISTING BMS.
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4	REPLACE EXISTING THERMOSTAT WITH NEW "ANDOVER" DDC THERMOSTAT. TIE NEW THERMOSTAT TO RESPECTIVE UNIT(S) FOR OPERATION. TIE INTO EXISTING BMS.
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9	EXISTING CEILING-MOUNTED MECHANICAL EQUIPMENT TO REMAIN. REPLACE EXISTING CONTROLS WITH NEW "ANDOVER" DDC CONTROLS. FURNISH & INSTALL NEW DDC CONTROLS & TIE INTO EXISTING BMS.
10	EXISTING FLOOR-MOUNTED MECHANICAL EQUIPMENT IN ATTIC TO REMAIN. PROVIDE NEW "ANDOVER" DDC CONTROLS. FURNISH & INSTALL NEW DDC CONTROLS & TIE INTO EXISTING BMS.
11	EXISTING EXHAUST FAN (EF) ON ROOF TO REMAIN. REPLACE EXISTING CONTROLS WITH NEW "ANDOVER" DDC CONTROL. FURNISH & INSTALL NEW DDC CONTROLS & TIE INTO EXISTING BMS.
12	EXISTING ROOF INTAKE/RELIEF VENT (RV) TO REMAIN. REPLACE EXISTING CONTROLS WITH NEW "ANDOVER" DDC CONTROLS. FURNISH & INSTALL NEW DDC CONTROLS & TIE INTO EXISTING BMS.
13	EXISTING AIR-COOLED CONDENSING UNIT (ACCU) TO REMAIN. PROVIDE NEW "ANDOVER" DDC CONTROLS. FURNISH & INSTALL NEW DDC CONTROLS & TIE INTO EXISTING BMS.

- GENERAL INSTALLATION NOTES**
- LOCATIONS OF EXISTING MECHANICAL EQUIPMENT, ETC. SHOWN ON DRAWINGS ARE BASED ON EXISTING DRAWINGS AND SITE OBSERVATIONS AND THEY ARE APPROXIMATE. NOT ALL EXISTING EQUIPMENT, ETC. ARE SHOWN ON DRAWINGS. CONTRACTOR IS RESPONSIBLE TO VERIFY EXACT LOCATIONS IN FIELD.
  - GENERAL CONTRACTOR IS RESPONSIBLE TO REMOVE EXISTING CEILING TILES, LIGHTING, FIRE ALARM DEVICES, ETC. TO ACCOMMODATE INSTALLATION OF NEW CONTROLS AND WIRING ABOVE CEILING REINSTALL TO MATCH EXISTING. ALL DAMAGED ITEMS SHALL BE REMOVED AND REPLACED.
  - TO ACCESS EXISTING CONTROL VALVE AND ACTUATORS INSIDE OF EXISTING UNIT VENTILATORS, CONTRACTOR IS REQUIRED TO REMOVE EXISTING PIPING, VALVES, COMPONENTS, ETC. AND REINSTALL THEM AFTER NEW WORK IS COMPLETE.
  - MECHANICAL CONTRACTOR IS RESPONSIBLE TO DRAIN-DOWN EXISTING HEATING HOT WATER SYSTEM TO ACCOMMODATE REPLACEMENT OF EXISTING CONTROL VALVES, ETC. RESTORE THE SYSTEMS AFTER ALL WORK IS COMPLETE.
  - PROVIDE NEW INSULATION ON ALL DISTURBED PIPING/INSULATION AND NEW PIPING/VALVES.
  - ALL EXISTING ABANDONED PNEUMATIC THERMOSTATS (NOT ALL SHOWN) AND AIR TUBING THAT ARE ACCESSIBLE (ABOVE CEILING, EXPOSED IN SPACES, NEAR EXISTING MECHANICAL EQUIPMENT, TO/FROM EXISTING PNEUMATIC CONTROL PANELS, ETC.) SHALL BE REMOVED IN ENTIRETY. EXISTING PNEUMATIC AIR TUBING THAT ARE NOT ACCESSIBLE (IN WALLS/CHASES, ABOVE HARD CEILING, ETC.) SHALL BE ABANDONED IN PLACE. GENERAL CONTRACTOR TO PATCH AND PAINT OPENINGS TO MATCH EXISTING WHERE THERMOSTATS AND ACCESSIBLE AIR TUBING ARE REMOVED. CHECK IN FIELD.
  - IF NEW DDC THERMOSTATS DO NOT COVER EXISTING WALL OPENINGS. PROVIDE S.S. PLATE TO COVER EACH OPENING. CHECK IN FIELD.
  - ALL NEW CONTROL VALVES, DAMPER ACTUATORS, THERMOSTATS, SPACE SENSORS, ETC. CALLED OUT ON CONSTRUCTION KEY NOTES SHALL BE DDC TYPE. ALL NEW CONTROL VALVES SHALL BE MODULATING TYPE. REFER TO DDC DIAGRAMS ON DWG. M6.04 AND SPEC. FOR DETAILED DDC WORK REQUIREMENTS.
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  - ALL NEW WIRING SHALL BE RUN CONCEALED ABOVE EXISTING SUSPENDED CEILING. ALL NEW EXPOSED WIRING SHALL BE RUN CONCEALED IN WIREMOLD (COLOR TO BE SELECTED BY OWNER).
  - ALL LOW VOLTAGE CABLES SHALL BE PLENUM RATED.
  - ROOM NAMES/NUMBERS SHOWN ON DRAWINGS ARE FOR REFERENCE ONLY AND THEY MAY VARY IN FIELD.

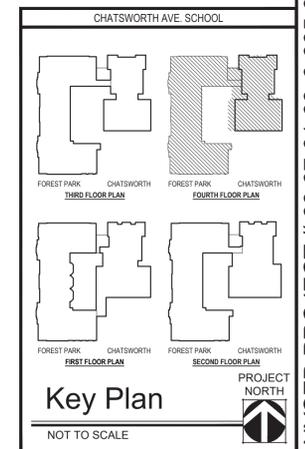
1 M2.04 3/32" = 1'-0"

Date: 1/10/20  
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**MICHAEL J. MCGOVERN, P.A.**  
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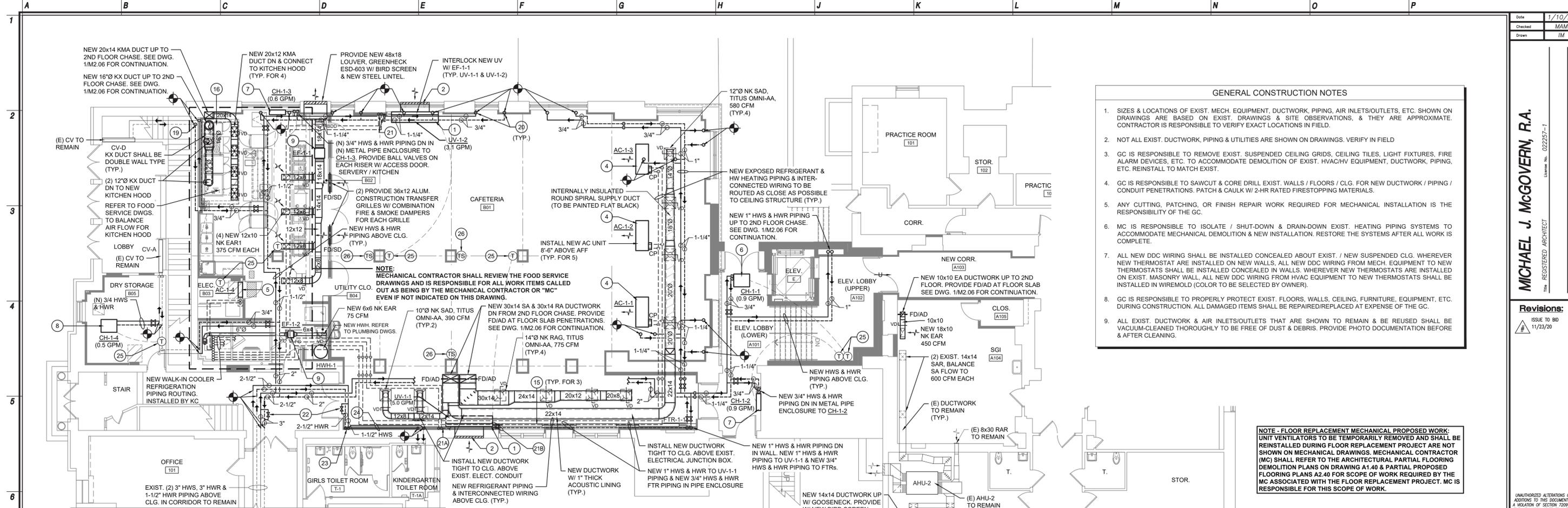
**Revisions:**  
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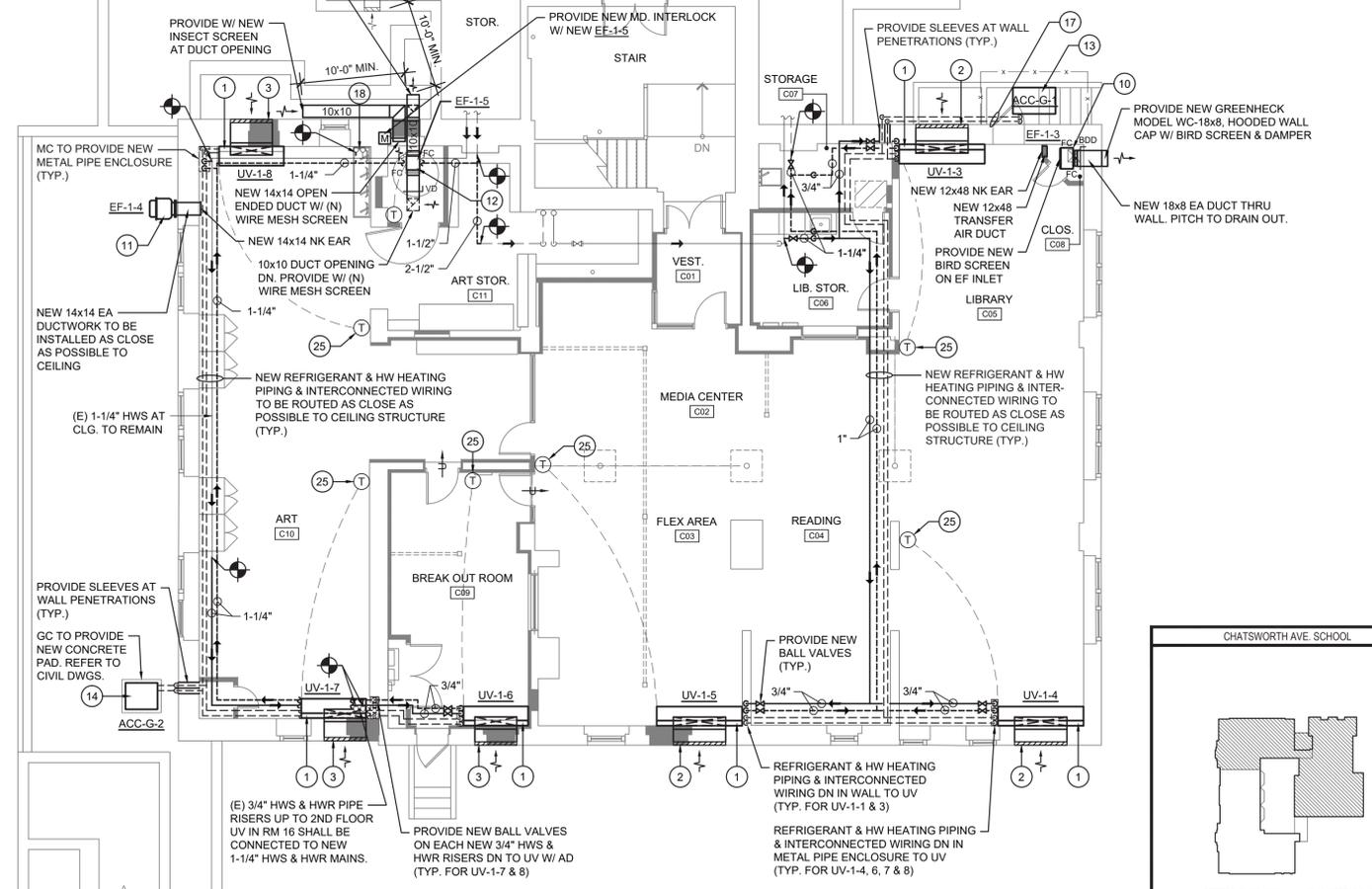
**NYSED PROJECT # 66-07-01-03-0-005-020**  
**FOURTH FLOOR & ROOF MECH. PLAN**  
 2019 BOND REFERENDUM  
 CHATSWORTH AVENUE ELEMENTARY SCHOOL  
 MAMARONECK UNION FREE SCHOOL DISTRICT  
 CHATSWORTH AVENUE, LARCHMONT, NY 10538  
 Job No. 4.1092.72.03  
 File No. 10927203M201  
**M2.04**



- ### GENERAL CONSTRUCTION NOTES
- SIZES & LOCATIONS OF EXIST. MECH. EQUIPMENT, DUCTWORK, PIPING, AIR INLETS/OUTLETS, ETC. SHOWN ON DRAWINGS ARE BASED ON EXIST. DRAWINGS & SITE OBSERVATIONS, & THEY ARE APPROXIMATE. CONTRACTOR IS RESPONSIBLE TO VERIFY EXACT LOCATIONS IN FIELD.
  - NOT ALL EXIST. DUCTWORK, PIPING & UTILITIES ARE SHOWN ON DRAWINGS. VERIFY IN FIELD.
  - GC IS RESPONSIBLE TO REMOVE EXIST. SUSPENDED CEILING GRIDS, CEILING TILES, LIGHT FIXTURES, FIRE ALARM DEVICES, ETC. TO ACCOMMODATE DEMOLITION OF EXIST. HVAC/HV EQUIPMENT, DUCTWORK, PIPING, ETC. REINSTALL TO MATCH EXIST.
  - GC IS RESPONSIBLE TO SAWCUT & CORE DRILL EXIST. WALLS / FLOORS / CLG. FOR NEW DUCTWORK / PIPING / CONDUIT PENETRATIONS. PATCH & CAULK W/ 2-HR RATED FIRESTOPPING MATERIALS.
  - ANY CUTTING, PATCHING, OR FINISH REPAIR WORK REQUIRED FOR MECHANICAL INSTALLATION IS THE RESPONSIBILITY OF THE GC.
  - MC IS RESPONSIBLE TO ISOLATE / SHUT-DOWN & DRAIN-DOWN EXIST. HEATING PIPING SYSTEMS TO ACCOMMODATE MECHANICAL DEMOLITION & NEW INSTALLATION. RESTORE THE SYSTEMS AFTER ALL WORK IS COMPLETE.
  - ALL NEW DDC WIRING SHALL BE INSTALLED CONCEALED ABOVE EXIST. / NEW SUSPENDED CLG. WHEREVER NEW THERMOSTATS ARE INSTALLED ON NEW WALLS, ALL NEW DDC WIRING FROM MECH. EQUIPMENT TO NEW THERMOSTATS SHALL BE INSTALLED CONCEALED IN WALLS. WHEREVER NEW THERMOSTATS ARE INSTALLED ON EXIST. MASONRY WALL, ALL NEW DDC WIRING FROM HVAC EQUIPMENT TO NEW THERMOSTATS SHALL BE INSTALLED IN WIREMOLD (COLOR TO BE SELECTED BY OWNER).
  - GC IS RESPONSIBLE TO PROPERLY PROTECT EXIST. FLOORS, WALLS, CEILING, FURNITURE, EQUIPMENT, ETC. DURING CONSTRUCTION. ALL DAMAGED ITEMS SHALL BE REPAIRED/REPLACED AT EXPENSE OF THE GC.
  - ALL EXIST. DUCTWORK & AIR INLETS/OUTLETS THAT ARE SHOWN TO REMAIN & BE REUSED SHALL BE VACUUM-CLEANED THOROUGHLY TO BE FREE OF DUST & DEBRIS. PROVIDE PHOTO DOCUMENTATION BEFORE & AFTER CLEANING.

**NOTE - FLOOR REPLACEMENT MECHANICAL PROPOSED WORK:**  
 UNIT VENTILATORS TO BE TEMPORARILY REMOVED AND SHALL BE REINSTALLED DURING FLOOR REPLACEMENT PROJECT ARE NOT SHOWN ON MECHANICAL DRAWINGS. MECHANICAL CONTRACTOR (MC) SHALL REFER TO THE ARCHITECTURAL PARTIAL FLOORING DEMOLITION PLANS ON DRAWING A1.40 & PARTIAL PROPOSED FLOORING PLANS A2.40 FOR SCOPE OF WORK REQUIRED BY THE MC ASSOCIATED WITH THE FLOOR REPLACEMENT PROJECT. MC IS RESPONSIBLE FOR THIS SCOPE OF WORK.

ITEM #	CONSTRUCTION KEY NOTES
1	PROVIDE & INSTALL NEW FLOOR-MOUNTED VERTICAL UNIT VENTILATOR (UV) OF SIZE & CAPACITIES SCHEDULED, COMPLETE W/ FALSEBACK, OA PLENUM, FAI DUCTWORK & LOUVER, DAMPERS, PIPING, VALVES, SUPPORTS, ELECTRICAL, CONTROLS, CONDENSATE DRAIN PUMP & ALL ASSOCIATED APPURTENANCES.
2	PROVIDE NEW 60"x12", GREENHECK ESD-403, FAI LOUVERS W/ NEW INSECT SCREEN & STEEL LINTEL. BALANCE OA FLOW TO AS SCHEDULED. INSTALLED BY DIV. 23. REFER TO STRUCTURAL DWGS FOR STEEL LINTEL DETAILS.
3	PROVIDE NEW 48"x10" FAI LOUVERS PROVIDED BY UNIT VENTILATOR MFR. W/ NEW STEEL LINTEL. BALANCE OA FLOW TO AS SCHEDULED. INSTALLED BY DIV. 23. REFER TO STRUCTURAL DWGS FOR STEEL LINTEL DETAILS.
4	PROVIDE & INSTALL NEW VRF CEILING-HUNG HORIZONTAL TYPE DUCTLESS SPLIT AC HEAT PUMP UNIT OF SIZE & CAPACITIES SCHEDULED, COMPLETE W/ ALL REFRIGERANT PIPING, VALVES, SUPPORTS, ELECTRICAL, CONTROLS, CONDENSATE DRAIN PUMP & ALL ASSOCIATED APPURTENANCES.
5	PROVIDE & INSTALL NEW WALL-MOUNTED TYPE DUCTLESS SPLIT AC UNIT OF SIZE & CAPACITIES SCHEDULED, COMPLETE W/ ALL REFRIGERANT PIPING, VALVES, SUPPORTS, ELECTRICAL, CONTROLS, CONDENSATE DRAIN PUMP & ALL ASSOCIATED APPURTENANCES.
6	PROVIDE & INSTALL NEW CEILING-RECESSED HORIZONTAL TYPE CABINET HEATER (CH) OF SIZE & CAPACITIES SCHEDULED, COMPLETE W/ HW PIPING, VALVES, SUPPORTS, ELECTRICAL, CONTROLS & ALL ASSOCIATED APPURTENANCES.
7	PROVIDE & INSTALL NEW FLOOR-MOUNTED VERTICAL TYPE CABINET HEATER (CH) OF SIZE & CAPACITIES SCHEDULED, COMPLETE W/ HW PIPING, VALVES, SUPPORTS, ELECTRICAL, CONTROLS & ALL ASSOCIATED APPURTENANCES.
8	PROVIDE & INSTALL NEW CEILING-HUNG HORIZONTAL TYPE CABINET HEATER (CH) OF SIZE & CAPACITIES SCHEDULED, COMPLETE W/ HW PIPING, VALVES, SUPPORTS, ELECTRICAL, CONTROLS & ALL ASSOCIATED APPURTENANCES.
9	PROVIDE & INSTALL NEW EXHAUST FAN (EF) OF SIZE & CAPACITIES SCHEDULED ABOVE CEILING, COMPLETE W/ DUCTWORK, DAMPERS, SUPPORTS, ELECTRICAL, CONTROLS & ALL ASSOCIATED APPURTENANCES.
10	PROVIDE & INSTALL NEW CEILING-HUNG EXHAUST FAN (EF) OF SIZE & CAPACITIES SCHEDULED, COMPLETE W/ DUCTWORK, DAMPERS, SUPPORTS, ELECTRICAL, CONTROLS & ALL ASSOCIATED APPURTENANCES. PROVIDE NEW BIRD SCREEN ON INLET & BALANCE EA FLOW TO 975 CFM.
11	PROVIDE & INSTALL NEW SIDEWALL-MOUNTED EXHAUST FAN (EF) OF SIZE & CAPACITIES SCHEDULED, COMPLETE W/ DUCTWORK, DAMPERS, SUPPORTS, ELECTRICAL, CONTROLS & ALL ASSOCIATED APPURTENANCES. BALANCE EA FLOW TO 1,000 CFM.
12	PROVIDE & INSTALL NEW CEILING-HUNG EXHAUST FAN (EF) OF SIZE & CAPACITIES SCHEDULED, COMPLETE W/ DUCTWORK, DAMPERS, SUPPORTS, ELECTRICAL, CONTROLS & ALL ASSOCIATED APPURTENANCES. INTERLOCK W/ ASSOCIATED MOTORIZED DAMPER & BALANCE EA FLOW TO 500 CFM.
13	PROVIDE & INSTALL NEW VRF AIR-COOLED CONDENSING (ACC) UNIT OF SIZE & CAPACITIES SCHEDULED ON NEW VIBRATION ISOLATION PAD SECURED TO RAISED STEEL GRATING, COMPLETE W/ ALL REFRIGERANT PIPING, VALVES, SUPPORTS, ELECTRICAL, CONTROLS & ALL ASSOCIATED APPURTENANCES.
14	PROVIDE & INSTALL NEW VRF AIR-COOLED CONDENSING (ACC) UNIT OF SIZE & CAPACITIES SCHEDULED ON NEW CONCRETE PAD, COMPLETE W/ ALL REFRIGERANT PIPING, VALVES, SUPPORTS, ELECTRICAL, CONTROLS & ALL ASSOCIATED APPURTENANCES.
15	PROVIDE & INSTALL NEW WALL-MOUNTED FIN-TUBE RADIATIONS (FTRs) OF SIZE & CAPACITIES SCHEDULED EVENLY SPACED ALONG ENTIRE WALL, COMPLETE W/ HW PIPING, VALVES, SUPPORTS, PIPING ENCLOSURES, FULL BACK PLATES, CONTROLS & ALL ASSOCIATED APPURTENANCES.
16	NEW KITCHEN HOOD TO BE PROVIDED & INSTALLED BY KC. MC RESPONSIBLE TO PROVIDE & INSTALL NEW DUCTWORK TO NEW KITCHEN HOOD.
17	NEW REFRIGERANT PIPING & INTERCONNECTED WIRING SHALL BE SECURELY MOUNTED ON WALL.
18	EXIST. 3/4" HWR PIPE RISER UP TO 2ND FLOOR UV IN RM 17 SHALL BE CONNECTED TO NEW 1-1/4" HWR MAIN.
19	NEW 3/4" HWS & HWR DN IN WALL SHALL BE CONNECTED TO EXIST. 3/4" HWS & HWR TO CV IN LOBBY.
20	EXIST. 3/4" HWS & HWR RISERS TO CVs IN AUDITORIUM & STAGE TO SHALL BE CONNECTED TO NEW 3/4" HWS & HWR PIPING.
21	NEW REFRIGERANT & 3/4" HWS & HWR PIPING & INTERCONNECTED WIRING DN IN WALL TO UV-1-2. PROVIDE NEW BALL VALVES ON EACH NEW 3/4" HWS & HWR RISERS DN TO UV-1-1 WITH ACCESS DOOR.
21A	NEW REFRIGERANT PIPING & INTERCONNECTED WIRING DN IN WALL TO UV-1-1.
21B	NEW 1" HWS & HWR PIPING IN PIPE ENCLOSURE TO UV-1-1. PROVIDE NEW BALL VALVES ON EACH PIPING WITH ACCESS DOOR.
22	PROVIDE NEW MODULATING CONTROL VALVES.
23	NEW 2-1/2" HWS & 1-1/2" HWR DN IN WALL.
24	NEW 1-1/2" HWS & 2-1/2" HWR IN WALL SHALL BE CONNECTED TO (E) 1-1/2" HWS & 2-1/2" HWR ABOVE FLOOR SLAB TO (E) HWS & HWR PIPING IN (E) PIPE TUNNEL.
25	PROVIDE NEW DDC THERMOSTATS W/ LOCKABLE ENCLOSURES. INSTALL TO MEET ADA REQUIREMENTS.
26	PROVIDE NEW HONEYWELL TR21 ROOM AVERAGING TEMPERATURE SENSOR. SENSORS TO BE INTERLOCKED WITH AC-1-1 THRU AC-1-3 (TYP. FOR 3).



**Partial First Floor Mechanical Proposed Plan**

18" = 1'-0"

1  
M2.05

NORTH

KEY PLAN

NOT TO SCALE

Date: 1/10/20  
 Checked: MAM  
 Drawn: IM

**Revisions:**  
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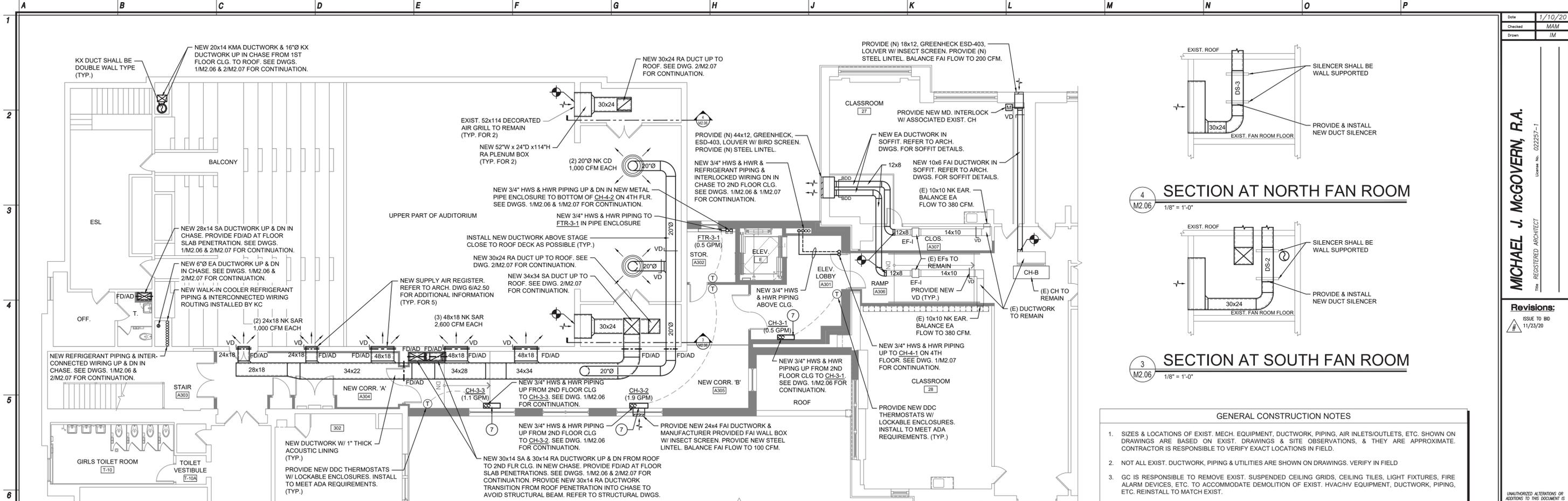
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**PROJECT # 66-07-01-03-0-005-020**

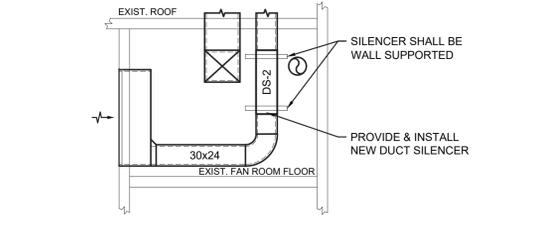
**FIRST FLOOR MECHANICAL PROPOSED PLAN**  
 2019 BOND REFERENDUM  
 CHATSWORTH AVENUE ELEMENTARY SCHOOL  
 MAMARONECK UNION FREE SCHOOL DISTRICT  
 CHATSWORTH AVENUE, LARCHMONT, NY 10538

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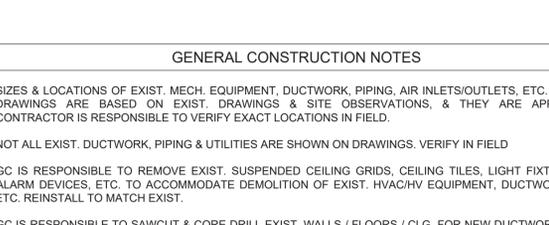
**M2.05**



**SECTION AT NORTH FAN ROOM**  
 1/8" = 1'-0"

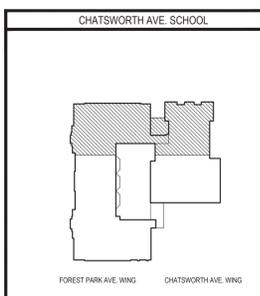
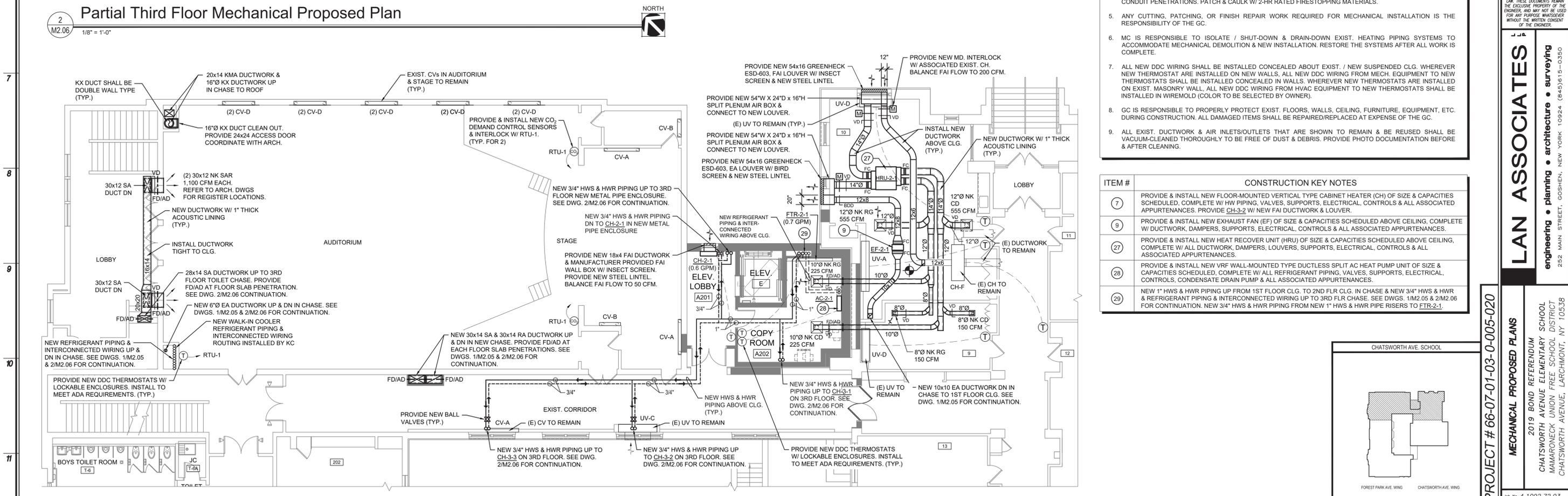


**SECTION AT SOUTH FAN ROOM**  
 1/8" = 1'-0"



- GENERAL CONSTRUCTION NOTES**
- SIZES & LOCATIONS OF EXIST. MECH. EQUIPMENT, DUCTWORK, PIPING, AIR INLETS/OUTLETS, ETC. SHOWN ON DRAWINGS ARE BASED ON EXIST. DRAWINGS & SITE OBSERVATIONS, & THEY ARE APPROXIMATE. CONTRACTOR IS RESPONSIBLE TO VERIFY EXACT LOCATIONS IN FIELD.
  - NOT ALL EXIST. DUCTWORK, PIPING & UTILITIES ARE SHOWN ON DRAWINGS. VERIFY IN FIELD
  - GC IS RESPONSIBLE TO REMOVE EXIST. SUSPENDED CEILING GRIDS, CEILING TILES, LIGHT FIXTURES, FIRE ALARM DEVICES, ETC. TO ACCOMMODATE DEMOLITION OF EXIST. HVAC/HV EQUIPMENT, DUCTWORK, PIPING, ETC. REINSTALL TO MATCH EXIST.
  - GC IS RESPONSIBLE TO SAWCUT & CORE DRILL EXIST. WALLS / FLOORS / CLG. FOR NEW DUCTWORK / PIPING / CONDUIT PENETRATIONS. PATCH & CAULK W/ 2-HR RATED FIRESTOPPING MATERIALS.
  - ANY CUTTING, PATCHING, OR FINISH REPAIR WORK REQUIRED FOR MECHANICAL INSTALLATION IS THE RESPONSIBILITY OF THE GC.
  - MC IS RESPONSIBLE TO ISOLATE / SHUT-DOWN & DRAIN-DOWN EXIST. HEATING PIPING SYSTEMS TO ACCOMMODATE MECHANICAL DEMOLITION & NEW INSTALLATION. RESTORE THE SYSTEMS AFTER ALL WORK IS COMPLETE.
  - ALL NEW DDC WIRING SHALL BE INSTALLED CONCEALED ABOUT EXIST. / NEW SUSPENDED CLG. WHEREVER NEW THERMOSTAT ARE INSTALLED ON NEW WALLS, ALL NEW DDC WIRING FROM MECH. EQUIPMENT TO NEW THERMOSTATS SHALL BE INSTALLED CONCEALED IN WALLS. WHEREVER NEW THERMOSTATS ARE INSTALLED ON EXIST. MASONRY WALL. ALL NEW DDC WIRING FROM HVAC EQUIPMENT TO NEW THERMOSTATS SHALL BE INSTALLED IN WIREMOLD (COLOR TO BE SELECTED BY OWNER).
  - GC IS RESPONSIBLE TO PROPERLY PROTECT EXIST. FLOORS, WALLS, CEILING, FURNITURE, EQUIPMENT, ETC. DURING CONSTRUCTION. ALL DAMAGED ITEMS SHALL BE REPAIRED/REPLACED AT EXPENSE OF THE GC.
  - ALL EXIST. DUCTWORK & AIR INLETS/OUTLETS THAT ARE SHOWN TO REMAIN & BE REUSED SHALL BE VACUUM-CLEANED THOROUGHLY TO BE FREE OF DUST & DEBRIS. PROVIDE PHOTO DOCUMENTATION BEFORE & AFTER CLEANING.

ITEM #	CONSTRUCTION KEY NOTES
7	PROVIDE & INSTALL NEW FLOOR-MOUNTED VERTICAL TYPE CABINET HEATER (CH) OF SIZE & CAPACITIES SCHEDULED. COMPLETE W/ HW PIPING, VALVES, SUPPORTS, ELECTRICAL, CONTROLS & ALL ASSOCIATED APPURTENANCES. PROVIDE CH-3-2 W/ NEW FAI DUCTWORK & LOUVER.
9	PROVIDE & INSTALL NEW EXHAUST FAN (EF) OF SIZE & CAPACITIES SCHEDULED ABOVE CEILING. COMPLETE W/ DUCTWORK, DAMPERS, SUPPORTS, ELECTRICAL, CONTROLS & ALL ASSOCIATED APPURTENANCES.
27	PROVIDE & INSTALL NEW HEAT RECOVER UNIT (HRU) OF SIZE & CAPACITIES SCHEDULED ABOVE CEILING. COMPLETE W/ ALL DUCTWORK, DAMPERS, SUPPORTS, ELECTRICAL, CONTROLS & ALL ASSOCIATED APPURTENANCES.
28	PROVIDE & INSTALL NEW VRF WALL-MOUNTED TYPE DUCTLESS SPLIT AC HEAT PUMP UNIT OF SIZE & CAPACITIES SCHEDULED. COMPLETE W/ ALL REFRIGERANT PIPING, VALVES, SUPPORTS, ELECTRICAL, CONTROLS, CONDENSATE DRAIN PUMP & ALL ASSOCIATED APPURTENANCES.
29	NEW 1" HWS & HWR PIPING UP FROM 1ST FLOOR CLG. TO 2ND FLR CLG. IN CHASE & NEW 3/4" HWS & HWR & REFRIGERANT PIPING & INTERCONNECTED WIRING UP TO 3RD FLR CHASE. SEE DWGS. 1/M2.05 & 2/M2.06 FOR CONTINUATION. NEW 3/4" HWS & HWR PIPING FROM NEW 1" HWS & HWR PIPE RISERS TO FTR-2-1.



Date: 1/10/20  
 Checked: MAM  
 Drawn: IM

**MICHAEL J. MCGOVERN, P.E.**  
 REGISTERED ARCHITECT  
 License No. 02227-1

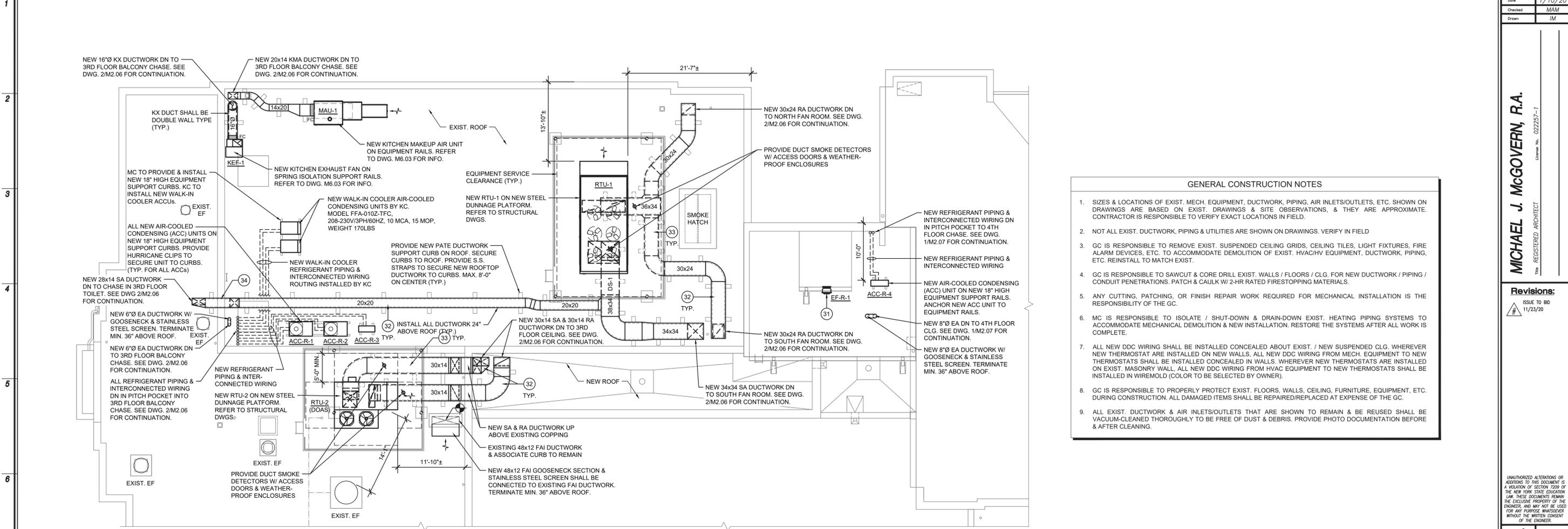
**Revisions:**  
 ISSUE TO BO 1/12/20

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**MECHANICAL PROPOSED PLANS**  
 2019 BOND REFERENDUM  
 CHATSWORTH AVENUE ELEMENTARY SCHOOL  
 MAMARONECK UNION FREE SCHOOL DISTRICT  
 CHATSWORTH AVENUE, LARCHMONT, NY 10538

PROJECT # 66-07-01-03-0-005-020  
 Job No. 4.1092.72.03  
 File No. 10927203M201

**M2.06**



- ### GENERAL CONSTRUCTION NOTES
- SIZES & LOCATIONS OF EXIST. MECH. EQUIPMENT, DUCTWORK, PIPING, AIR INLETS/OUTLETS, ETC. SHOWN ON DRAWINGS ARE BASED ON EXIST. DRAWINGS & SITE OBSERVATIONS, & THEY ARE APPROXIMATE. CONTRACTOR IS RESPONSIBLE TO VERIFY EXACT LOCATIONS IN FIELD.
  - NOT ALL EXIST. DUCTWORK, PIPING & UTILITIES ARE SHOWN ON DRAWINGS. VERIFY IN FIELD.
  - GC IS RESPONSIBLE TO REMOVE EXIST. SUSPENDED CEILING GRIDS, CEILING TILES, LIGHT FIXTURES, FIRE ALARM DEVICES, ETC. TO ACCOMMODATE DEMOLITION OF EXIST. HVAC/HV EQUIPMENT, DUCTWORK, PIPING, ETC. REINSTALL TO MATCH EXIST.
  - GC IS RESPONSIBLE TO SAWCUT & CORE DRILL EXIST. WALLS / FLOORS / CLG. FOR NEW DUCTWORK / PIPING / CONDUIT PENETRATIONS. PATCH & CAULK W/ 2-HR RATED FIRESTOPPING MATERIALS.
  - ANY CUTTING, PATCHING, OR FINISH REPAIR WORK REQUIRED FOR MECHANICAL INSTALLATION IS THE RESPONSIBILITY OF THE GC.
  - MC IS RESPONSIBLE TO ISOLATE / SHUT-DOWN & DRAIN-DOWN EXIST. HEATING PIPING SYSTEMS TO ACCOMMODATE MECHANICAL DEMOLITION & NEW INSTALLATION. RESTORE THE SYSTEMS AFTER ALL WORK IS COMPLETE.
  - ALL NEW DDC WIRING SHALL BE INSTALLED CONCEALED ABOUT EXIST. / NEW SUSPENDED CLG. WHEREVER NEW THERMOSTAT ARE INSTALLED ON NEW WALLS, ALL NEW DDC WIRING FROM MECH. EQUIPMENT TO NEW THERMOSTATS SHALL BE INSTALLED CONCEALED IN WALLS. WHEREVER NEW THERMOSTATS ARE INSTALLED ON EXIST. MASONRY WALL, ALL NEW DDC WIRING FROM HVAC EQUIPMENT TO NEW THERMOSTATS SHALL BE INSTALLED IN WIREMOLD (COLOR TO BE SELECTED BY OWNER).
  - GC IS RESPONSIBLE TO PROPERLY PROTECT EXIST. FLOORS, WALLS, CEILING, FURNITURE, EQUIPMENT, ETC. DURING CONSTRUCTION. ALL DAMAGED ITEMS SHALL BE REPAIRED/REPLACED AT EXPENSE OF THE GC.
  - ALL EXIST. DUCTWORK & AIR INLETS/OUTLETS THAT ARE SHOWN TO REMAIN & BE REUSED SHALL BE VACUUM-CLEANED THOROUGHLY TO BE FREE OF DUST & DEBRIS. PROVIDE PHOTO DOCUMENTATION BEFORE & AFTER CLEANING.

**MICHAEL J. MCGOVERN, P.E.**  
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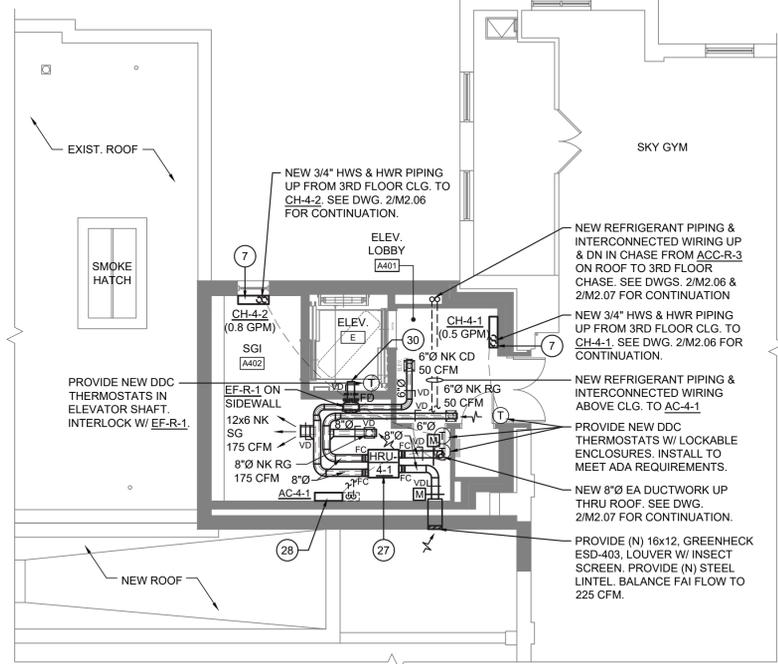
**Revisions:**  
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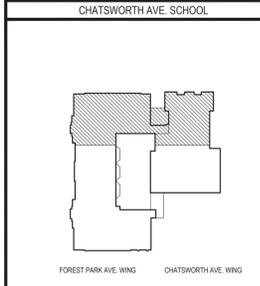
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**2 Partial Roof Mechanical Proposed Plan**  
 1/8" = 1'-0" NORTH

ITEM #	CONSTRUCTION KEY NOTES
7	PROVIDE & INSTALL NEW FLOOR-MOUNTED VERTICAL TYPE CABINET HEATER (CH) OF SIZE & CAPACITIES SCHEDULED, COMPLETE W/ HW PIPING, VALVES, SUPPORTS, ELECTRICAL, CONTROLS & ALL ASSOCIATED APPURTENANCES.
27	PROVIDE & INSTALL NEW HEAT RECOVER UNIT (HRU) OF SIZE & CAPACITIES SCHEDULED ABOVE CEILING, COMPLETE W/ ALL DUCTWORK, DAMPERS, LOUVERS, SUPPORTS, ELECTRICAL, CONTROLS & ALL ASSOCIATED APPURTENANCES.
28	PROVIDE & INSTALL NEW VRF WALL-MOUNTED TYPE DUCTLESS SPLIT AC HEAT PUMP UNIT OF SIZE & CAPACITIES SCHEDULED, COMPLETE W/ ALL REFRIGERANT PIPING, VALVES, SUPPORTS, ELECTRICAL, CONTROLS, CONDENSATE DRAIN PUMP & ALL ASSOCIATED APPURTENANCES.
30	NEW 8x8 OPEN ENDED EA DUCTWORK IN ELEVATOR SHAFT. BALANCE EA FLOW TO 300 CFM.
31	PROVIDE & INSTALL NEW SIDEWALL-MOUNTED EXHAUST FAN (EF) OF SIZE & CAPACITIES SCHEDULED, COMPLETE W/ DUCTWORK, DAMPERS, SUPPORTS, ELECTRICAL, CONTROLS & ALL ASSOCIATED APPURTENANCES. BALANCE EA FLOW TO 300 CFM. SEE DWG. 1/M2.07 FOR DUCT CONTINUATION.
32	ALL EXTERIOR INSTALLED DUCTWORK SHALL BE ALUMINUM CONSTRUCTION AND PROVIDED WITH BOTH 2" THICK, 8LB. DENSITY ACOUSTIC LINING MIN. R-8.7 WITH IAQ LINER AS WELL AS EXTERNAL INSULATION (MIN. 1.5" THICK AND 8 LB DENSITY), MIN. R-6.5 EXTERNAL INSULATION SHALL BE SLOPED (MIN. 1/4" PER FOOT) ON ALL UPWARD FACING HORIZONTAL SURFACES TO EFFECTIVELY DRAIN WATER OFF OF THE DUCTWORK. ALL DUCT CONNECTION JOINTS ETC SHALL BE ALUMINUM. DUCTWORK SHALL BE CLASS "A" SEALED AS PER SMACNA. PROVIDE SOLVENT BASED OUTDOOR DUCT SEALANT, RESISTANT TO UV LIGHT, UL 734 LISTED, WATER RESISTANT AS PER SMACNA. PROVIDE 2MM THICK ALUMINIZED FACED LOADED LIMP VINYL SHEET LAGGING WRAPPED AROUND THE DUCT AND FASTENED WITH ADHESIVE TAPE AND BANDS FOR A WATER TIGHT CONSTRUCTION WHICH MEETS CLASS 1 REQUIREMENTS FOR SMOKE DEVELOPMENT AND FLAME SPREAD RATINGS. OUTDOOR DUCTWORK ON THIS PROJECT. (TYPICAL FOR ALL)
33	NEW DUCTWORK BELOW NEW STEEL DUNNAGE PLATFORM.
34	NEW SA DUCTWORK UP ABOVE EXISTING COPPING



**1 Partial Fourth Floor Mechanical Proposed Plan**  
 1/8" = 1'-0" NORTH



**Key Plan**  
 NOT TO SCALE

**NYSED PROJECT # 66-07-01-03-0-005-020**

**MECHANICAL PROPOSED PLANS**  
 2019 BOND REFERENDUM  
 CHATSWORTH AVENUE ELEMENTARY SCHOOL  
 MAMARONECK UNION FREE SCHOOL DISTRICT  
 CHATSWORTH AVENUE, LARCHMONT, NY 10538  
 Job No. 4.1092.72.03  
 File No. 10927203M201  
**M2.07**

PACKAGED ROOFTOP GAS FIRED HV/HVAC W/ HEAT RECOVERY WHEEL UNIT SCHEDULE

TAG NO.	AREAS SERVED	MANUFACTURER	MODEL NO.	SUPPLY (CFM)	MIN. O.A. (CFM)	MAX. O.A. (CFM)	SUPPLY FAN DATA				EXHAUST FAN DATA				DX COOLING				GAS HEATING				ENERGY RECOVERY WHEEL				COMPRESSOR	CONDENSER		APPROX. UNIT DIMENSIONS (L x W x H) (IN)	APPROX. UNIT WT. (LBS)	ELECTRICAL DATA		EFFICIENCY		REFRIGERANT TYPE	REMARKS										
							EXT. SP (IN)	QTY	BHP	MHP	VFD	EXT. SP (IN)	QTY	BHP	MHP	VFD	COOLING (TMBH)	COOLING (SMBH)	EADB (°F)	EAWB (°F)	LADB (°F)	LAWB (°F)	INPUT (MBH)	OUTPUT (MBH)	EAT (°F)	LAT (°F)		COOLING				HEATING		NO.	RLA			NO.	HP (AMPS)	V/PH/Hz	MCA	MOP	EER	IEER			
																												EADB (°F)	EAWB (°F)			LADB (°F)	LAWB (°F)												EADB (°F)	LADB (°F)	LAWB (°F)
RTU-1	EXIST. AUDITORIUM & STAGE	AAON	RN-050-8-0-EA09-DB	14,000	1,200	6,000	2.75	2.0	7.4	10.0	YES	2.0	0.75	3.0	5.0	YES	575.9	534.8	78.0	65.1	50.6	50.4	810.0	648.0	60.1	103.0	95.0	75.0	78.0	65.0	0.0	47.0	44.4	6"-10.5" WC.	4	48.1 EA.	6	3/4 EA.	203 x 100 x 102	7,500	208/3/60	321	350	11.0	12.7	R-410A	SEE NOTES.
RTU-2 (DOAS)	CAFETERIA B01	DAIKIN	DPS007A	3,100	3,100	3,100	1.50	1.0	2.0	4.0	NO	1.5	1	2.0	4.0	NO	95.8	76.7	80.0	67.0	57.4	57.3	320.0	256.0	14.0	109.1	95.0	75.0	75.0	62.0	0.0	70.0	50.0	7"-14" WC.	2	11.9/8.6	2	(4 EA.)	111 x 96.5 x 56.8	2,600	208/3/60	42.7	50	12.1	--	R-410A	SEE NOTES.

NOTES:  
 1. ALL UNITS SHALL BE PROVIDED W/ MODULATING GAS HEAT CONTROL.  
 2. ALL MOTORS SHALL BE PREMIUM EFFICIENCY TYPE.  
 3. ALL UNITS SHALL BE PROVIDED W/ SINGLE POINT POWER CONNECTION.  
 4. PROVIDE CONDENSER FAN COIL GUARDS, NON-FUSED DISCONNECT SWITCH, & GFI CONVENIENCE OUTLET FOR EACH UNIT.  
 5. ALL UNITS SHALL BE PROVIDED W/ SPRING VIBRATION ISOLATION RAILS.  
 6. PROVIDE PROGRAMMABLE THERMOSTATS W/ LCD SCREEN & DDC CONTROLS FOR ALL UNITS. CONNECT UNIT TO A NEW BMS WITH WEB-BASED ACCESS.  
 7. RTU-1 & 2 SHALL BE PROVIDED W/ DUAL ENTHALPY 100% MODULATING POWER EXHAUST ECONOMIZER FANS, CONTROLS & DAMPERS.  
 8. RTU-1 & 2 SHALL BE PROVIDED W/ 2" MERV 13 FILTERS & (2) SETS OF SPARE FILTERS OF ALL TYPES.  
 9. PROVIDE SPARE SET OF INSTALLED ENERGY RECOVERY WHEEL MEDIA FOR EACH UNIT.  
 10. PROVIDE W/S.S. FLUE VENT EXTENSIONS FOR EACH UNIT.  
 11. ELECTRICAL SUBCONTRACTOR TO PROVIDE A DUCT SMOKE DETECTOR IN MAIN RETURN AND SUPPLY AIR DUCT FOR RTU. INTERLOCK RTU WITH FIRE ALARM SYSTEM. RTU SHALL BE SHUT DOWN UPON ACTIVATION OF FIRE ALARM SYSTEM.  
 12. PROVIDE TWO-YEARS PART & LABOR WARRANTY FROM THE MANUFACTURER.  
 13. RTU-1 SHALL HAVE A POWER EXHAUST FAN. MODULATE BOTH SUPPLY AND RETURN AIRFLOW PROPORTIONATELY TO MAINTAIN CONSTANT DIFFERENCE BETWEEN S.A. & R.A.  
 14. UNIT TO BE TIED INTO (N) ANDOVER BUILDING MANAGEMENT SYSTEM (BMS).

UNIT VENTILATOR WITH HOT WATER HEATING / DX COOLING SCHEDULE

TAG NO.	AREA SERVED	SUPPLY CFM	OUTSIDE AIR (CFM)	DX COOLING				HOT WATER HEATING				ELECTRICAL DATA				MODEL & MANUFACTURER	DIMENSIONS (W x D x H) (IN.)	REFRIGERANT	REMARKS					
				TOTAL (MBH)	SENS. (MBH)	EADB (°F)	EAWB (°F)	LADB (°F)	LAWB (°F)	INPUT (MBH)	EAT (°F)	LAT (°F)	EWT (°F)	LWT (°F)	FLOW RATE (GPM)					WPD (FT)	V/PH/Hz	MCA	MOP	
UV-1-1	CAFETERIA B01	1,500	450	53.7	40.3	80.0	67.0	54.3	54.3	50.0	70	110	180	160	5.0	6.4	208/1/60	3.9	15	UAVV9S15	DAIKIN	98 x 21.88 x 30.13	R-410A	SEE NOTES BELOW.
UV-1-2	CAFETERIA B01	1,500	450	53.7	40.3	80.0	67.0	54.3	54.3	31.0	70	110	180	160	3.1	6.4	208/1/60	3.9	15	UAVV9S15	DAIKIN	98 x 21.88 x 30.13	R-410A	SEE NOTES BELOW.
UV-1-3 THRU 5	MEDIA CENTER C02 / LIBRARY C05	1,500	325	53.7	40.3	79.3	66.2	54.3	54.3	31.0	70	110	180	160	3.1	6.4	208/1/60	3.9	15	UAVV9S15	DAIKIN	98 x 21.88 x 30.13	R-410A	SEE NOTES BELOW.
UV-1-6	BREAK OUT ROOM C09	500	180	14.1	10.5	82.2	68.7	56.0	56.0	23.0	70	110	180	160	2.3	5.2	208/1/60	3.9	15	UAVV9S10	DAIKIN	74 x 21.88 x 30.13	R-410A	SEE NOTES BELOW.
UV-1-7 & 8	ART ROOM C10	1,000	370	33.0	24.8	82.4	68.7	56.0	56.0	23.0	70	110	180	160	2.3	5.2	208/1/60	3.9	15	UAVV9S10	DAIKIN	74 x 21.88 x 30.13	R-410A	SEE NOTES BELOW.

NOTES:  
 1. PROVIDE WITH HOT WATER HEATING COIL. 4-5/8" FALSEBACK (DAIKIN ARRANGEMENT AK WITH INSULATED OA PLENUM), 3-WAY MODULATING CONTROL VALVE PACKAGE & REMOTE THERMOSTAT W/ LOCKABLE COVER, ASHRAE CYCLE II CONTROLS, COLOR TO BE SELECTED BY OWNER. PROVIDE DRAFTSTOP WINDOW DOWNDRAFT PROTECTIONS FROM UV TO WALL ON BOTH SIDES OF UV.  
 2. INTERLOCK WITH SPLIT AIR COOLED CONDENSING UNIT.  
 3. INTERLOCK UV-1-1 & UV-1-2 WITH EF-1-1.  
 4. CONTRACTOR TO BALANCE OUTSIDE AIR FLOW & SUPPLY AIR FLOW TO QUANTITIES INDICATED ABOVE. PROVIDE BALANCING REPORT FOR REVIEW.  
 5. CONTRACTOR TO REPLACE FILTERS AFTER COMPLETION OF PROJECT AND PRIOR TO OCCUPANCY. IN ADDITION, CONTRACTOR TO PROVIDE AN ADDITIONAL SET OF FILTERS FOR ALL UNITS.  
 6. ALL THERMOSTATS SHALL BE INSTALLED IN A TAMPER PROOF ENCLOSURE.  
 7. INTERNAL AUTOMATIC TEMPERATURE CONTROLS SHALL BE PROVIDED BY ATC CONTRACTOR. THE ATC CONTRACTOR SHALL SHIP THE DDC CONTROLS FOR ALL UNITS TO THE UNIT MANUFACTURER FOR FACTORY MOUNTING. THE ATC CONTRACTOR SHALL PROVIDE, MOUNT AND WIRE ALL EXTERNAL COMPONENTS. UNIT SHALL BE TIED INTO NEW ANDOVER BUILDING MANAGEMENT SYSTEM (BMS). REFER TO ATC DIAGRAMS AND SPECIFICATIONS.  
 8. UV-1-6, 1-7, & 1-8 SHALL BE PROVIDED WITH 48"x10" FACTORY FAI LOUVERS. UV-1-1 THRU UV-1-5 WILL BE INSTALLED WITH 60"x12" GREENHECK ESD-403 LOUVERS.

HEAT RECOVERY UNIT VENTILATOR SCHEDULE

TAG NO.	AREA SERVED	SUPPLY AIR (CFM)	EXHAUST AIR (CFM)	ELECTRICAL DATA V - PH - HZ		MCA	MOP	MODEL & MANUFACTURER	DIMENSIONS (L x W x H) (IN.)	APPROX. WEIGHT (LBS.)	REMARKS
				V	PH/Hz						
HURU-2-1	EXIST. CLASSROOMS 9 & 10 & COPY ROOM A202	930	930	208 - 1 - 60	8.1	15	VAM1200GVJU	DAIKIN	64 x 48 x 30	350	SEE NOTES.
HURU-4-1	SGI A402	225	225	208 - 1 - 60	1.6	15	VAM300GVJU	DAIKIN	35 x 32 x 12	75	SEE NOTES.

NOTES:  
 1. PROVIDE FUSED DISCONNECT SWITCH.  
 2. ALL MOTORS SHALL BE PREMIUM EFFICIENCY TYPE.  
 3. BAROMETRIC OUTDOOR AIR DAMPER.  
 4. UNIT TO BE TIED INTO NEW ANDOVER BUILDING MANAGEMENT SYSTEM (BMS).

HOT WATER CABINET HEATER SCHEDULE

TAG NO.	AREA SERVED	S.A. CFM	O.A. CFM	HOT WATER HEATING			HP	ELECTRICAL DATA V - PH - HZ	FLA	MOP	MODEL & MANUFACTURER	DIMENSIONS (L x W x H) (IN)	APPROX. UNIT WEIGHT (LBS)	REMARKS		
				MBH	EWT (°F)	LWT (°F)									GPM	
CH-1-1	ELEV. LOBBY (LOWER) A101	240	-	9.4	180	160	0.9	0.22	208 - 1 - 60	3.1	15	FFB8-020	TRANE	30 x 36 x 10	97	HORIZONTAL RECESSED CH. SEE NOTES.
CH-1-2	ELEV. LOBBY (LOWER) A101	220	-	9.4	180	160	0.9	0.22	208 - 1 - 60	3.1	15	FFB8-020	TRANE	34 x 10 x 25	97	SEE NOTES.
CH-1-3	SERVERY / KITCHEN B02	220	-	6.2	180	160	0.6	0.22	208 - 1 - 60	3.1	15	FFB8-020	TRANE	34 x 10 x 25	97	SEE NOTES.
CH-1-4	DRY STORAGE B05	220	-	5.0	180	160	0.5	0.22	208 - 1 - 60	3.1	15	FFJB-020	TRANE	34 x 25 x 10	97	SEE NOTES.
CH-2-1	ELEV. LOBBY A201	220	50	5.6	180	160	0.6	0.22	208 - 1 - 60	3.1	15	FFB8-020	TRANE	34 x 10 x 25	97	SEE NOTES.
CH-3-1	ELEV. LOBBY A301	220	-	5.0	180	160	0.5	0.22	208 - 1 - 60	3.1	15	FFB8-020	TRANE	34 x 10 x 25	97	SEE NOTES.
CH-3-2	NEW CORR. 'B' A305	280	100	18.7	180	160	1.9	0.22	208 - 1 - 60	3.1	15	FFB8-040	TRANE	34 x 10 x 25	125	SEE NOTES.
CH-3-3	NEW CORR. 'B' A305	280	-	10.6	180	160	1.1	0.22	208 - 1 - 60	3.1	15	FFB8-030	TRANE	34 x 10 x 25	97	SEE NOTES.
CH-4-1	ELEV. LOBBY A401	220	-	5.0	180	160	0.5	0.22	208 - 1 - 60	3.1	15	FFB8-020	TRANE	34 x 10 x 25	97	SEE NOTES.
CH-4-2	SGI A402	220	-	7.7	180	160	0.8	0.22	208 - 1 - 60	3.1	15	FFB8-020	TRANE	34 x 10 x 25	97	SEE NOTES.

NOTES:  
 1. PROVIDE W/ HW HEATING COIL, FACTORY INSTALLED DELUXE PIPING PACKAGE OPTION #F W/ 2-WAY MODULATING CONTROL VALVE FOR EACH UNIT.  
 2. PROVIDE W/ ECM MOTOR, FILTERS, KEYLOCK PANEL & ACCESS DOOR, & DISCONNECT SWITCH FOR EACH UNIT.  
 3. PROVIDE W/ BOTTOM STAMPED INLET & OUTLET LOUVERS FOR CEILING-HUNG HORIZONTAL UNITS.  
 4. PROVIDE W/ FRONT BAR GRILLE INLET & TOP BAR GRILLE OUTLET FOR FLOOR-MOUNTED VERTICAL UNITS.  
 5. PROVIDE W/ MANUFACTURER PROVIDED FAI WALL BOX W/ INSECT SCREEN FOR CH-2-1 & CH-3-2.  
 6. UNIT COLOR TO BE SELECTED BY OWNER. PROVIDE COLOR CHART.  
 7. EACH UNIT TO BE TIED INTO NEW ANDOVER BUILDING MANAGEMENT SYSTEM (BMS).

OUTDOOR AIR COOLED CONDENSING UNIT SCHEDULE

TAG NO.	LOCATION	AREA SERVED	UNIT SERVED	COOLING (TMBH)	HEATING (TMBH)	AMBIENT TEMP (°F)	ELECTRICAL DATA V/PH/Hz	MCA	MOP	IEER	EER	MODEL & MANUFACTURER	DIMENSIONS (W x H x D) (IN)	APPROX. WEIGHT (LBS)	REMARKS	
																RECOND. DATA V/PH/Hz
ACC-G-1	GRADE	MEDIA CENTER C02 / LIBRARY C05	UV-1-3 THRU 5	144	-	95	208/3/60	55.1	60	24.8	11.5	RXYQ144TATAJU	DAIKIN	48.9 x 66.7 x 30.2	700	2-STAGE CONDENSING UNIT, PROVIDE "PATE" EQUIPMENT SUPPORTS, DISCONNECT SWITCH, GFI CONVENIENCE OUTLET.
ACC-G-2	GRADE	ART ROOM C10	UV-1-6 THRU 8	90	-	95	208/3/60	27.6	35	25.9	12.7	RXYQ72TATJU	DAIKIN	36.7 x 66.7 x 30.2	450	2-STAGE CONDENSING UNIT, PROVIDE "PATE" EQUIPMENT SUPPORTS, DISCONNECT SWITCH, GFI CONVENIENCE OUTLET.
ACC-R-1	ROOF	CAFETERIA B01	AC-1-1 THRU 3	108.8	102.0	95	208/3/60	36.3	45	25.4	12.4	RXYQ120TATJU	DAIKIN	48.9 x 66.7 x 30.2	530	SEE NOTE(S) BELOW
ACC-R-2	ROOF	CAFETERIA B01	UV-1-1 & UV-1-2	95.6	92.5	95	208/3/60	36.3	45	27.3	14.3	RXYQ96TATJU	DAIKIN	48.9 x 66.7 x 30.2	530	SEE NOTE(S) BELOW
ACC-R-3	ROOF	ELEC. B03	AC-1-4	31.4	-	95	208/1/60	17	20	17.5	10	FTX30NVJU	DAIKIN	34.2 x 28.9 x 12.6	40	SEE NOTE(S) BELOW
ACC-R-4	ROOF	COPY ROOM A202 & SGI A402	AC-2-1 & AC-4-1	36	39.8	95	208/1/60	16.5	25	18	12	RXTQ36TAVJ9	DAIKIN	37.0 x 39.0 x 12.6	175	SEE NOTE(S) BELOW

NOTES:  
 PROVIDE WITH LOW AMBIENT CONTROL TO 0°F. INTERLOCK WITH RESPECTIVE AC UNITS. ELECTRICAL SUBCONTRACTOR SHALL FURNISH & INSTALL NEMA 3R DISCONNECT SWITCH & GFI CONVENIENCE OUTLET FOR EACH UNIT. REFER TO ELECTRICAL DRAWINGS. PROVIDE VIBRATION ISOLATION PADS FOR ACC-G-1 AND SECURE UNIT TO STEEL GRADING.

VENTILATION INDEX

UNIT SERVED	ROOM NAME & NUMBER	OCCUPANCY CLASSIFICATION	FLOOR AREA (SQ. FT.)	REQ'D O.A. PER SQ. FT.	REQ'D OCCUPANCY DENSITY PER 1,000 FT <sup>2</sup>	OCCUPANCY BASED ON DENSITY	VENTILATION OCCUPANCY	REQ'D O.A. PER PERSON	REQ'D O.A. FOR OCCUPANCY	TOTAL REQ'D O.A. (CFM)	ZONE AIR DISTRIBUTION EFFECTIVENESS	ZONE MIN. O.A. REQ'D (CFM)	ACTUAL O.A. (CFM)	EXHAUST AIR E.A. (CFM)	REMARKS
FIRST FLOOR															
	ELEV. LOBBY (LOWER) A101	CORRIDORS	256	0.06	15	-	-	-	-	15	1.0	15	-	-	SEE NOTE #1.
	ELEV. LOBBY (UPPER) A102	CORRIDORS	183	0.06	11	-	-	-	-	11	1.0	11	-	-	SEE NOTE #1.
	EXIST. CH	NEW CORR. A103 & EXIST. CORRIDOR	505	0.06	30	-	-	-	-	30	1.0	30	200	-	SEE NOTE #2.
	RTU-2	CAFETERIA B01	CAFETERIA, FAST FOOD	3,508	0.18	631	100	351	351	2,633	0.8	3,080	3,100	800	SEE NOTE #3.
	MAU-1	SERVERY / KITCHEN B02	KITCHENS (COOKING)	778	0.7	545	-	-	-	545	1.0	545	-	600	SEE NOTE #4.
		DRY STORAGE B05	STORAGE ROOMS	206	0.12	33	-	-	-	33	1.0	33	-	-	SEE NOTE #5.
	UV-1-3 THRU 5	MEDIA CENTER C02, FLEX AREA C03, READING C04 & LIBRARY C05	MEDIA CENTER	2,271	0.12	273	25	57	57	570	0.9	936	975	-	
	UV-1-6	BREAK OUT ROOM C09	CLASSROOMS (AGE 9 PLUS)	324	0.12	39	35	11	11	110	0.9	165	180	-	
	UV-1-7 & UV-1-8	ART C10	ART CLASSROOM	1,052	0.18	189	20	21	21	210	0.9	444	740	740	
	UV-1-7 & UV-1-8	ART STOR. C11	STORAGE ROOMS	272	0.12	33	-	-	-	33	1.0	33	35	-	SEE NOTE #5.

SECOND FLOOR																
	RTU-1	EXIST. AUDITORIUM & STAGE	AUDITORIUMS	5,589	0.06	335	150	839	839	5	4,195	4,530	0.8	5,663	6,000	
	HURU-2-1	EXIST. ROOM 9	CLASSROOMS (AGE 9 PLUS)	240	0.12	29	35	8	8	80	109	0.8	136	150		
	HURU-2-1	EXIST. ROOM 10	CLASSROOMS (AGE 9 PLUS)	829	0.12	99	35	29	29	290	389	0.8	487	555		
	CH-2-1	ELEV. LOBBY A201	CORRIDORS	139	0.06	8	-	-	-	8	0.9	9	50	-		
	HURU-2-1	COPY ROOM A202	COPY, PRINTING ROOMS	247	0.06	14	4	1	1	5	5	19	0.8	25	225	SEE NOTE #6.

THIRD FLOOR															
	CH-3-2	ELEV. LOBBY A301	CORRIDORS	231	0.06	14	-	-	-	14	1.0	14	25	-	

**EXHAUST FAN SCHEDULE**

(GREENHECK AS STANDARD)

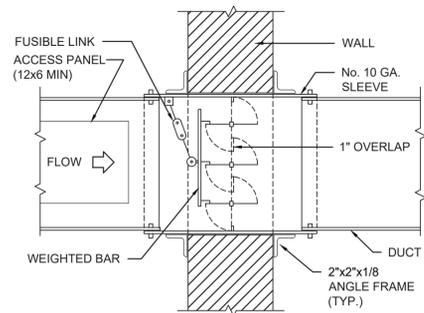
TAG NO.	AREA SERVED	CFM	SP. (IN)	BHP	MHP	RPM	ELECTRICAL DATA V/PH/Hz	DIMENSIONS (L x W x H) (IN)	APPROX. WT. (LBS)	MODEL & MANUFACTURER	SONES	REMARKS
EF-1-1	SERVRY / KITCHEN B02	600/1,500	0.5	0.30	3/4	1,349	120/1/60	21 x 21 x 21	59	SQ-130-VG GREENHECK	9.2	W/ VIBRATION ISOLATORS, VARI-GREEN EC MOTOR, DISCONNECT SWITCH, VARI-GREEN TRANSFORMER 84-277VAC TO 24 VDC, VARI-GREEN TWO-SPEED CONTROL & BACK DRAFT DAMPER. UNIT TO BE TIED INTO NEW ANDOVER BUILDING MANAGEMENT SYSTEM (BMS). FOR CONTROLS REFER TO SEQUENCE OF OPERATIONS 230993 SECTION 1.13.
EF-1-2	UTILITY CLO. B04	75	0.5	0.03	49 WATTS	900	120/1/60	14 x 12 x 11	23	CSP-A200 GREENHECK	2.2	W/ VIBRATION ISOLATORS, VARI-GREEN EC MOTOR, DISCONNECT SWITCH, VARI-GREEN TRANSFORMER & BACK DRAFT DAMPER.
EF-1-3	MEDIA CENTER C02 & LIBRARY C05	975	0.25	0.29	1/3	1,120	120/1/60	14 x 24 x 15	49	CSP-A1050-VG GREENHECK	1.3	W/ VIBRATION ISOLATORS, VARI-GREEN EC MOTOR, DISCONNECT SWITCH, VARI-GREEN TRANSFORMER & BACK DRAFT DAMPER.
EF-1-4	ART 06	1000	0.125	0.1	0.25	1250	120/1/60	25"Ø x 30	44	CUE-101-VG GREENHECK	8.0	WALL MOUNTED VARI-GREEN EC MOTOR, DISCONNECT SWITCH, VARI-GREEN TRANSFORMER & BACK DRAFT DAMPER.
EF-1-5	KILN ROOM / ART STORAGE C11	500	0.5	0.11	1/6	1,586	120/1/60	16 x 15 x 15	47	SQ-095-VG GREENHECK	8.3	W/ VIBRATION ISOLATORS, VARI-GREEN EC MOTOR, DISCONNECT SWITCH, VARI-GREEN TRANSFORMER & BACK DRAFT DAMPER.
EF-2-1	SGI A104	450	0.5	0.12	1/3	1,284	120/1/60	24 x 12 x 12	39	CSP-A700-VG GREENHECK	1.3	W/ VIBRATION ISOLATORS, VARI-GREEN EC MOTOR, DISCONNECT SWITCH, VARI-GREEN TRANSFORMER & BACK DRAFT DAMPER.
EF-R-1	ROOF SIDEWALL	300	0.25	0.04	0.07	1,644	120/1/60	20"Ø x 15	22	CUE-070-VG GREENHECK	5.6	WALL MOUNTED, VARI-GREEN EC MOTOR, DISCONNECT SWITCH, VARI-GREEN TRANSFORMER 84-277VAC TO 24 VDC & BACK DRAFT DAMPER, PROVIDE THERMOSTAT IN ELEVATOR SHAFT AND SET FOR 80°F ADJUSTABLE. FAN TO BE TIED INTO NEW ANDOVER BUILDING MANAGEMENT SYSTEM (BMS).

**HOT WATER FINNED TUBE RADIATION SCHEDULE**

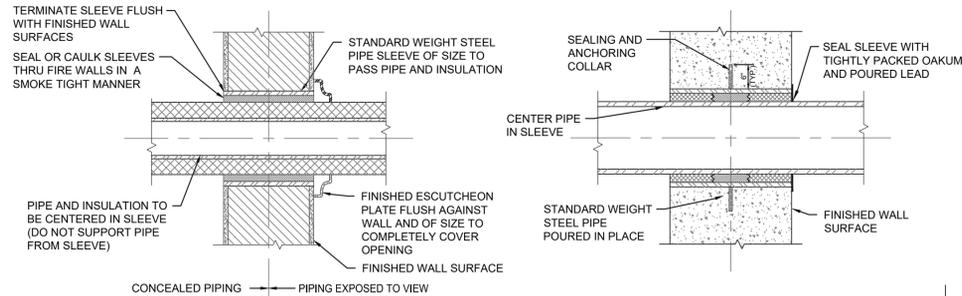
(STERLING AS STANDARD)

TAG NO.	LOCATION	TUBE SIZE	FIN PER FT.	ACTIVE ELEMENT LENGTH	BTU/HR-FT	HOT WATER HEATING				MODEL & MANUFACTURER	REMARKS
						MBH	EWT (°F)	LWT (°F)	GPM		
FTR-1-1	CAFETERIA B01	3/4"	50	(3) 7'-0"	1,200	8.4 EA.	180	160	0.8 EA.	JVB-T24 STERLING	PROVIDE W/ WATER BRACKETS W/ HANGERS. SEE NOTES BELOW.
FTR-2-1	COPY ROOM A202	3/4"	50	6'-0"	1,200	7.2	180	160	0.7	JVB-T24 STERLING	PROVIDE W/ WATER BRACKETS W/ HANGERS. SEE NOTES BELOW.
FTR-3-1	STOR. A302	3/4"	50	4'-0"	1,200	4.8	180	160	0.5	JVB-T24 STERLING	PROVIDE W/ WATER BRACKETS W/ HANGERS. SEE NOTES BELOW.

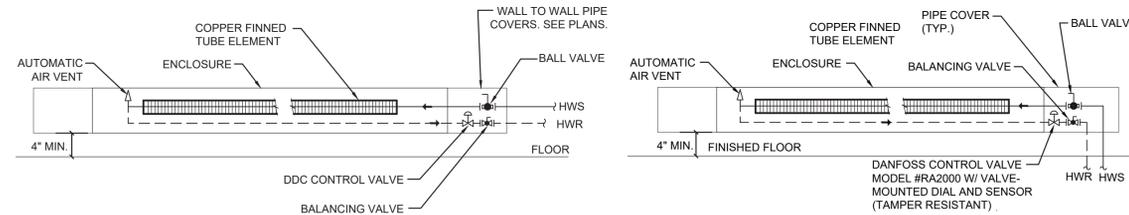
- NOTES:**
- ALL FTRs SHALL BE 24" H x 5-5/16" D. THE LENGTH INDICATED IN ABOVE SCHEDULE IS ACTIVE FINNED TUBE LENGTH. THE OVERALL LENGTH OF COVERS (ENCLOSURES) SHALL BE WALL TO WALL OR AS INDICATED ON FLOOR PLANS.
  - PROVIDE W/ MIN. 14 GAUGE GALVANIZED STEEL FRONT COVER, 18 GA. FULL HEIGHT BACK PANEL, AIR VENT, CORNER PIECES, SPLICE PLATES, END CAPS, VALVE ENCLOSURE COVER & WALL TO WALL COVER, WATER BRACKETS & TAMPER RESISTANT DAMPERS.
  - DDC CONTRACTOR SHALL PROVIDE CONTROL VALVES & FIELD-WIRE INTERLOCKS WITH RESPECTIVE AC UNIT. CONNECT TO NEW ANDOVER BMS.
  - PROVIDE DANFOSS CONTROL VALVE W/ UNIT MOUNTED DIAL-CONTROL FOR EACH FTR FOR FTR-3-1 AND 2-1.
  - UNIT COLOR SHALL BE SELECTED BY OWNER & PROVIDE A COLOR CHART.



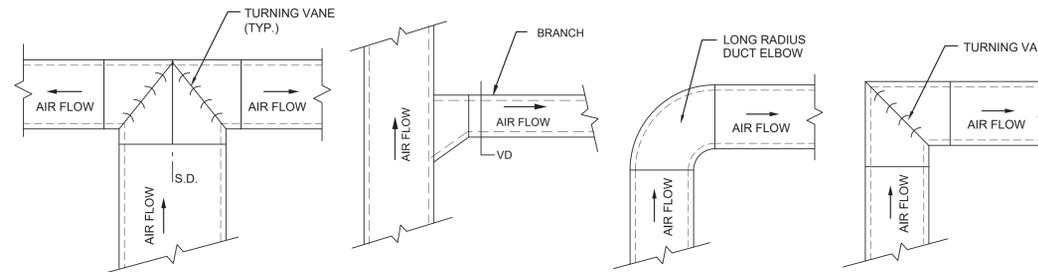
**FIRE DAMPER IN WALL**  
NOT TO SCALE



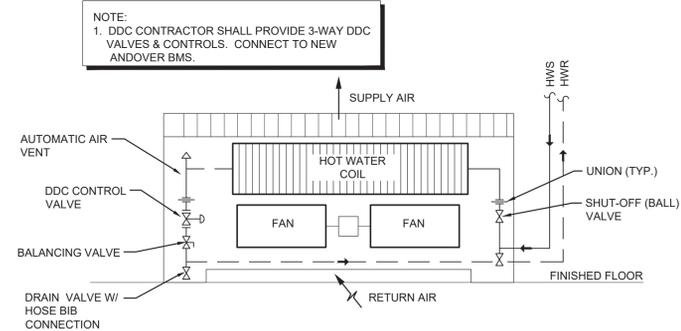
**PIPE SLEEVES THRU WALL DETAILS**  
NOT TO SCALE



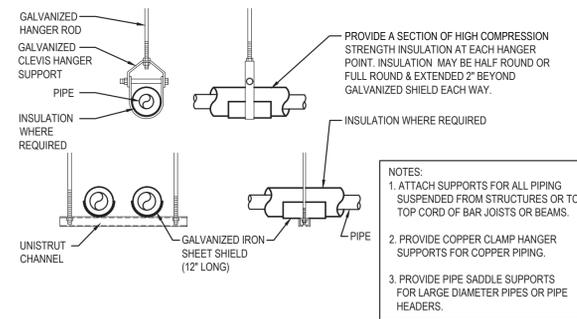
**HOT WATER FTR PIPING W/ TWO TYPES OF CONTROL VALVES DETAIL**  
NOT TO SCALE



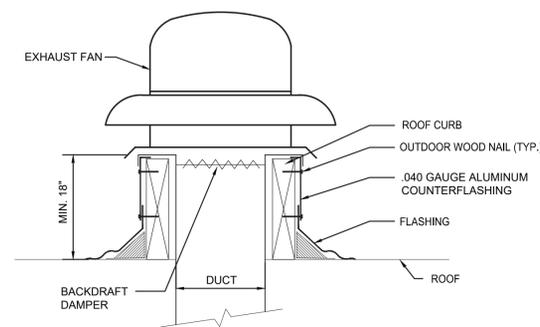
**DUCT TAKE-OFF & TURN DETAIL**  
NOT TO SCALE



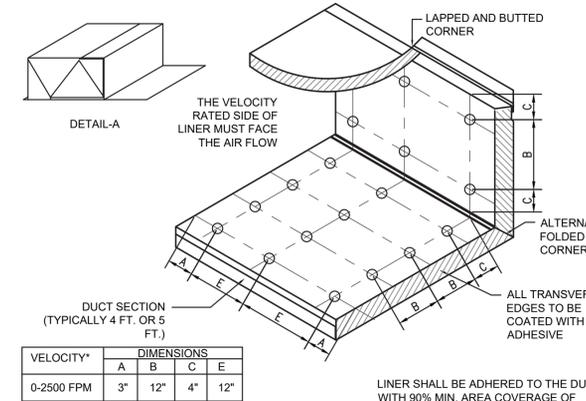
**HOT WATER CABINET HEATER PIPING DETAIL**  
NOT TO SCALE



**PIPE SUPPORT HANGERS**  
NOT TO SCALE



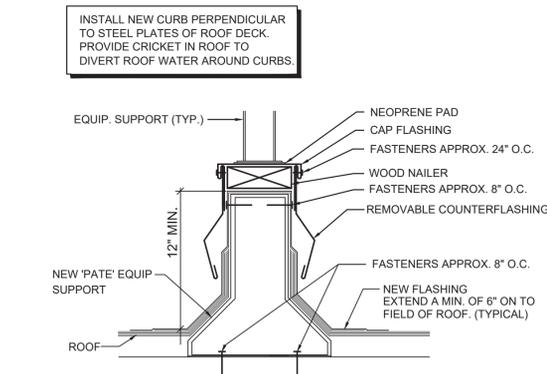
**ROOF EXHAUST FAN DETAIL**  
NOT TO SCALE



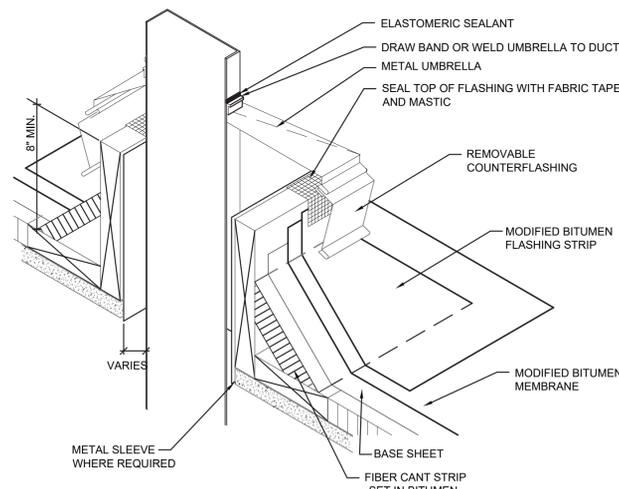
**DUCT LINER INSULATION DETAIL**  
NOT TO SCALE

VELOCITY*	DIMENSIONS			
	A	B	C	E
0-2500 FPM	3"	12"	4"	12"

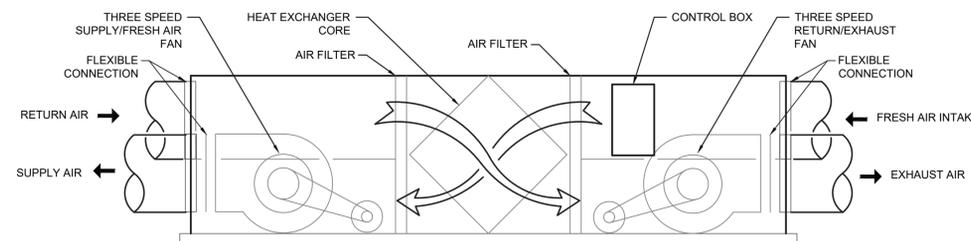
LINER SHALL BE ADHERED TO THE DUCT WITH 90% MIN. AREA COVERAGE OF ADHESIVE



**EQUIPMENT SUPPORT DETAIL**  
NOT TO SCALE



**DUCT PENETRATION ROOF CURB DETAIL**  
NOT TO SCALE



**LOW PROFILE HEAT RECOVERY UNIT DETAIL**  
NOT TO SCALE

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 REGISTERED ARCHITECT  
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**MECHANICAL DETAILS**  
 2019 BOND REFERENDUM  
 CHATSWORTH AVENUE ELEMENTARY SCHOOL  
 MAMARONECK UNION FREE SCHOOL DISTRICT  
 CHATSWORTH AVENUE, LARCHMONT, NY 10538  
 Job No. 4.1092.72.03  
 File No. 10927203M601  
**M6.02**

NYS ED PROJECT # 66-07-01-03-0-005-020

EXHAUST FAN INFORMATION - Job#4110057

FAN UNIT NO.	TAG	FAN UNIT MODEL #	MIN/MAX CFM/LF	MIN CFM	MAX CFM	ESP.	RPM	H.P.	B.H.P.	Ø	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS.)	SONES
1	KEF-1	USB18DD-RM	150/200	1988	2600	1.750	1285	1.500	1.2170	3	208	6.6	1333 FPM	395	18.5

MAU FAN INFORMATION - Job#4110057

FAN UNIT NO.	TAG	FAN UNIT MODEL #	BLOWER	HOUSING	MIN CFM	MAX CFM	ESP.	RPM	H.P.	B.H.P.	Ø	VOLT	FLA	MCA	MOCP	WEIGHT (LBS.)	SONES
2	MAU-1	A2-IBT-200-20D	20MF-2-MOD	A2-IBT-200	1540	2150	0.750	1153	2.000	0.9400	3	208	8.3	10.4A	15A	1025	9.6

GAS FIRED MAKE-UP AIR UNIT(S)

FAN UNIT NO.	TAG	INPUT BTUs	OUTPUT BTUs	TEMP. RISE	REQUIRED INPUT GAS PRESSURE	GAS TYPE	BURNER EFFICIENCY(%)
2	MAU-1	200000	160000	69 deg F	7 in. w.c. - 14 in. w.c.	Natural	80

FAN OPTIONS

FAN UNIT NO.	TAG	OPTION (Qty. - Descr.)		
1	KEF-1	1 - Utility Set Grease Cup		
		1 - B118 - 24" Discharge Extension.		
		1 - BI - Discharge Orientation Vertical Upper Left - CW Inlet Side.		
		1 - B118 - Inlet Connection Standard 20" Flanged Grease Duct.		
2	MAU-1	1 - Utility Set - Spring Vibration Isolators - B118 / Equivalent Sized Utility Set - Indoor/Outdoor use.		
		1 - Motorized Backdraft Damper for A2-1 Housing		
		1 - Inlet Pressure Gauge, 0-35"		
		1 - Manifold Pressure Gauge, 0 to 10" wc, 1 Furnace		
		1 - Frezestat		
		1 - Standard Electrical Connection (main and control panel) for Standing Power - Single Module. If a Non-DCV Prewire is used on the IBT Heater, the #28, #47, "NS", "MA", or "E2" Option Prewire must be selected. Do not provide supply starter in prewire.		
		1 - IBT Size 1 & 2 Side Discharge		
		1 - Separate 120V Wiring Package (Required and used only for DCV or Prewire with VFD) - Three Phase Only		

CURB ASSEMBLIES

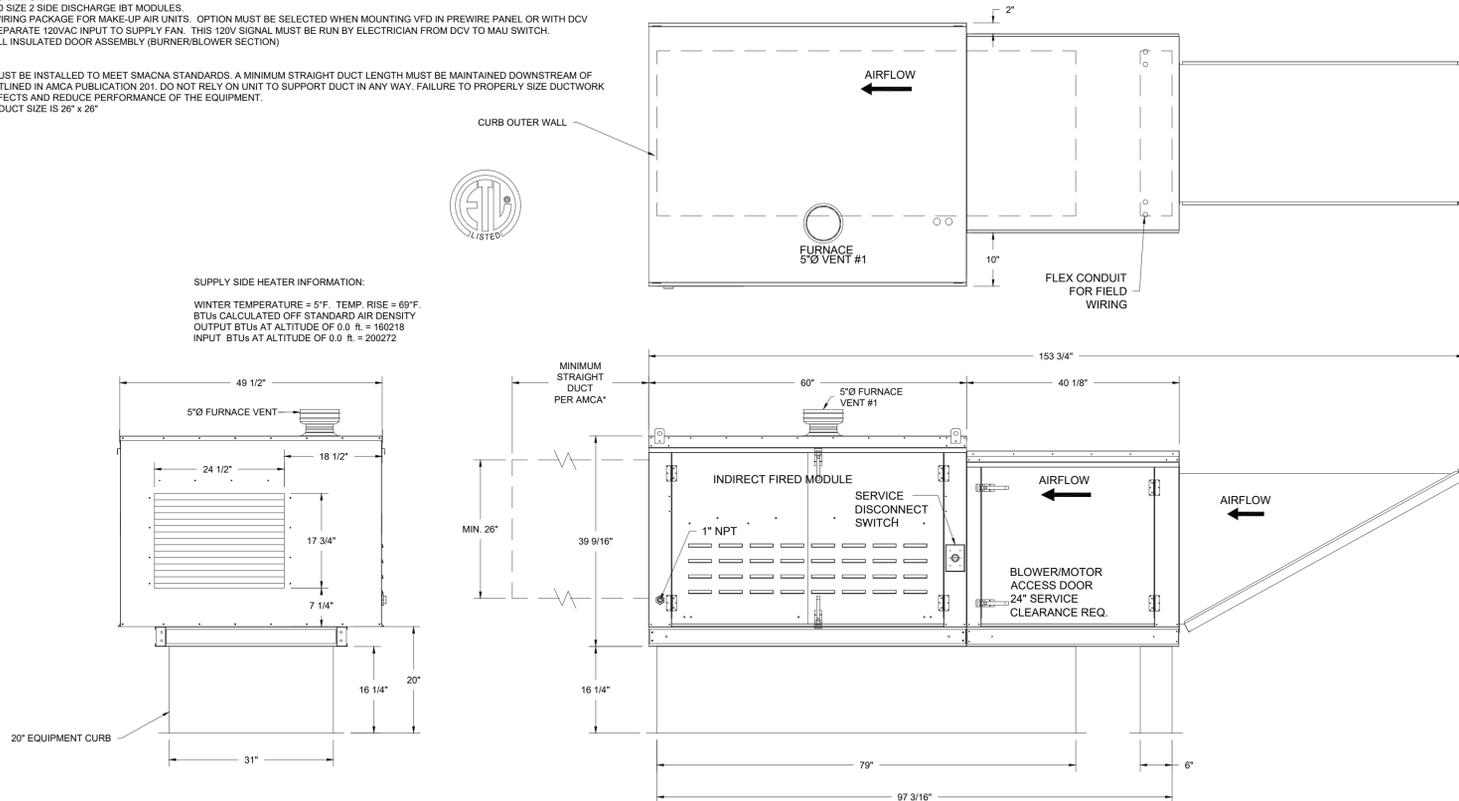
NO.	ON FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	KEF-1	25 LBS	Rail	4.000"W x 48.000"L x 10.000"H Comes as a set of 2.
2	# 2	MAU-1	107 LBS	Curb	31.000"W x 79.000"L x 20.000"H Insulated
	# 2			Rail	6.000"W x 31.000"L x 20.000"H

- FAN #2 A2-IBT-200-20D - MAKEUP AIR UNIT WITH HEATER (MAU-1)
- INDIRECT BENT TUBE GAS FIRED HEATER WITH 20" DIRECT DRIVE FAN, 1 FURNACE, ELECTRONIC FULL MODULATION, CONSTANT 80% EFFICIENCY, AND 6:1 MAX TURNDOWN FOR NG, (5:1 MAX TURNDOWN FOR LP). STAINLESS STEEL BURNER AND HEAT EXCHANGER.
  - INTAKE HOOD WITH EZ FILTERS
  - SIDE DISCHARGE - AIR FLOW RIGHT -> LEFT
  - MOTORIZED BACK DRAFT DAMPER 22.75" X 24" FOR SIZE 2 STANDARD & MODULAR HEATER UNITS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, LOW LEAKAGE, LF120S ACTUATOR INCLUDED
  - GAS PRESSURE GAUGE, 0-35", 2.5" DIAMETER, 1/4" THREAD SIZE
  - GAS PRESSURE GAUGE, 0 TO +10 INCHES WC, 2.5" DIAMETER, 1/8" THREAD SIZE, REAR THREAD
  - FREESTAT FACTORY SET AT 35" AND 10 MINUTES
  - SEPARATE 120V ELECTRICAL CONNECTION FOR ALL IBT HEATERS WITH 1 MODULE FOR STANDING POWER. 120V MUST BE RUN BY ELECTRICIAN FROM BUILDING PANEL TO MAU SWITCH
  - USED WITH SIZE 1 AND SIZE 2 SIDE DISCHARGE IBT MODULES
  - SEPARATE 120VAC WIRING PACKAGE FOR MAKE-UP AIR UNITS. OPTION MUST BE SELECTED WHEN MOUNTING VFD IN PREWIRE PANEL OR WITH DCV PACKAGE. PROVIDES SEPARATE 120VAC INPUT TO SUPPLY FAN. THIS 120V SIGNAL MUST BE RUN BY ELECTRICIAN FROM DCV TO MAU SWITCH.
  - HINGED DOUBLE WALL INSULATED DOOR ASSEMBLY (BURNER/BLOWER SECTION)
  - IBT - US Patent 677119 B2

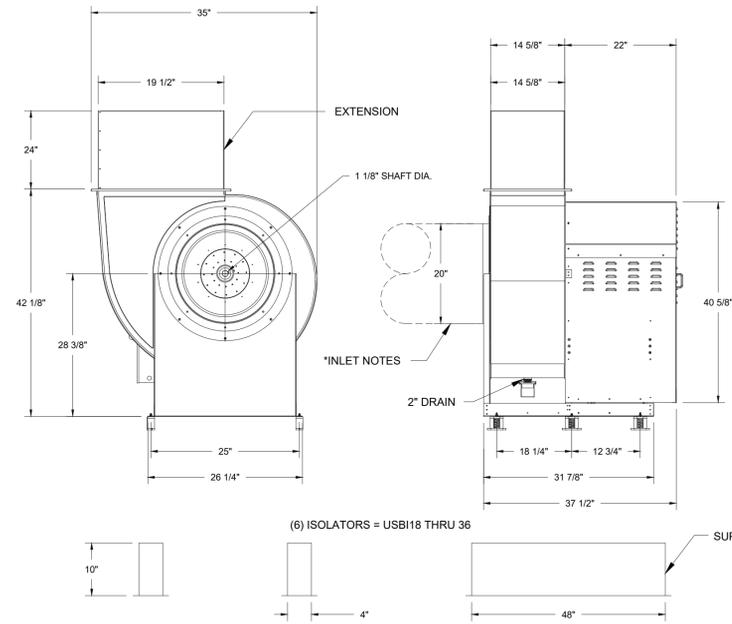
\*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT. SUGGESTED STRAIGHT DUCT SIZE IS 26" X 26"

SUPPLY SIDE HEATER INFORMATION:

WINTER TEMPERATURE = 5°F. TEMP. RISE = 69°F.  
BTUs CALCULATED OFF STANDARD AIR DENSITY  
OUTPUT BTUs AT ALTITUDE OF 0.0 ft. = 160218  
INPUT BTUs AT ALTITUDE OF 0.0 ft. = 200272



FAN #1 USB18DD-RM - EXHAUST FAN (KEF-1)



FEATURES:

- ROOF MOUNTED FANS
- UL705
- UL762 AND ILC-S645 (RESTAURANT MODEL)
- HIGH HEAT OPERATION DIRECT DRIVE 350°F (176°C)
- HIGH HEAT OPERATION BELT DRIVE 350°F (176°C)
- HEAT SLINGER
- WEATHERPROOF DISCONNECT
- GREASE CLASSIFICATION TESTING
- 2" DRAIN
- MOTOR WEATHER COVER
- FULLY SEALED SCROLL HOUSING
- SCROLL ACCESS DOOR
- FLANGE 1 1/4" - 11 THRU 20.
- FLANGE 2" - 24 THRU 36.

OPTIONS

- UTILITY SET GREASE CUP.
- B118 - 24" DISCHARGE EXTENSION.
- BI - DISCHARGE ORIENTATION VERTICAL UPPER LEFT - CW INLET SIDE.
- B118 - INLET CONNECTION STANDARD 20" FLANGED GREASE DUCT.
- UTILITY SET - SPRING VIBRATION ISOLATORS - B118 / EQUIVALENT SIZED UTILITY SET - INDOOR/OUTDOOR USE.

NORMAL TEMPERATURE TEST DIRECT DRIVE EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 350°F (176°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

\* INLET NOTES: LENGTH OF THE STRAIGHT DUCT ON THE INLET TO BE 3 TIMES THE EQUIVALENT DUCT DIAMETER BEFORE CONNECTING TO ANY FITTINGS SUCH AS ELBOWS TO AVOID SYSTEM EFFECT.

DATE: 1/10/20  
CHECKED: IM/MAM  
DRAWN: IM/MAM

**MICHAEL J. MCGOVERN, P.E.**  
REGISTERED ARCHITECT  
LICENSE NO. 022257-1

**Revisions:**  
# 1 ISSUE TO BO 1/23/20

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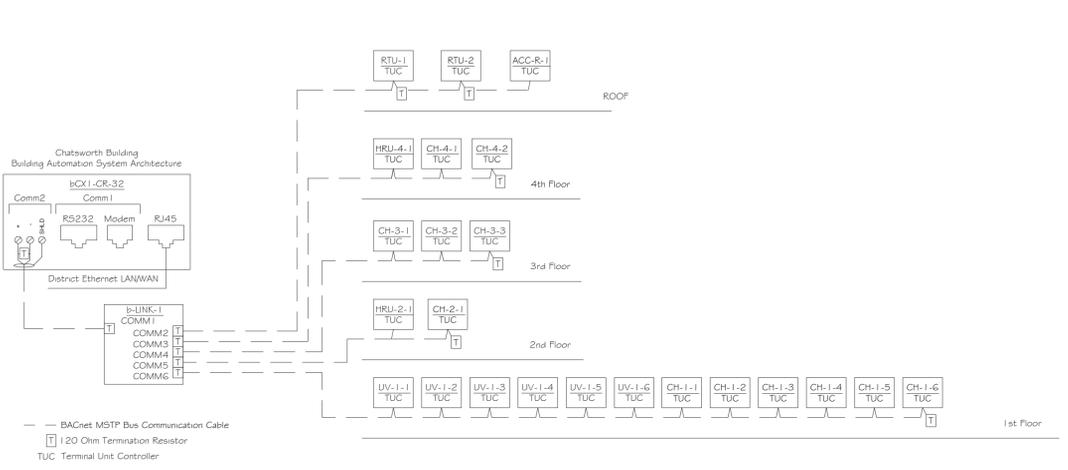
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**NYSED PROJECT # 66-07-01-03-0-005-020**  
KITCHEN HOOD EXHAUST FAN & MAKEUP AIR UNIT SCHEDULES & DETAILS  
2019 BOND REFERENDUM  
CHATSWORTH AVENUE ELEMENTARY SCHOOL  
MAMARONECK UNION FREE SCHOOL DISTRICT  
CHATSWORTH AVENUE, LARCHMONT, NY 10538

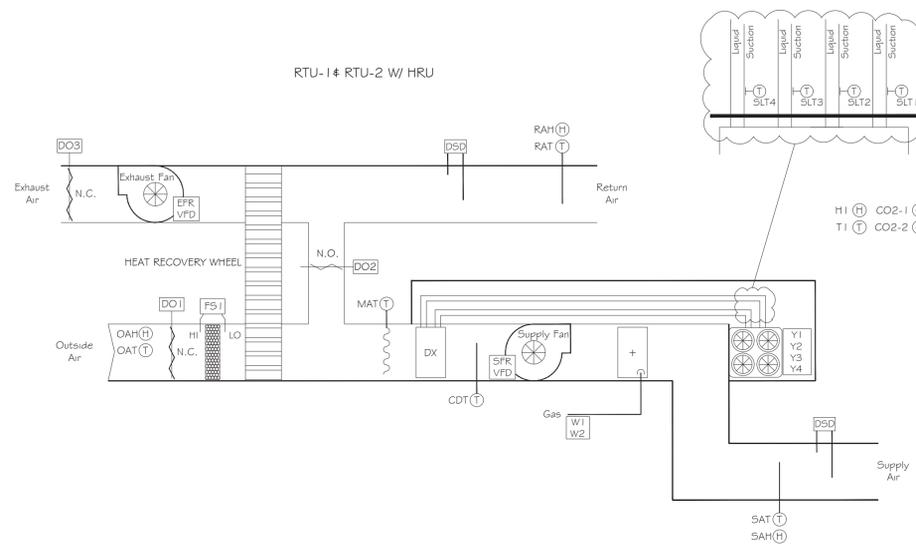
Job No. 4.1092.72.03  
File No. 10927203M601

**M6.03**

Date 1/10/20  
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Drawn IM/MAM  
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REGISTERED ARCHITECT  
License No. 022237-1

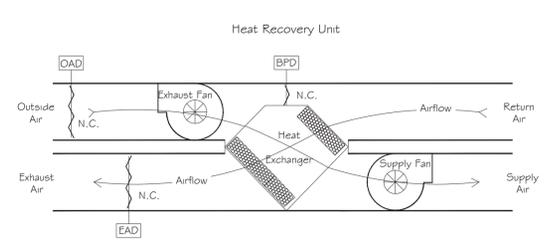


1 **BAS SYSTEM ARCHITECTURE - CHATSWORTH BUILDING**  
NOT TO SCALE



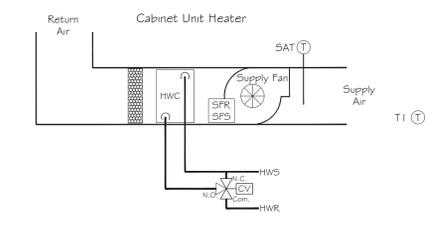
2 **ROOFTOP UNIT FLOW DIAGRAM**  
NOT TO SCALE

Sym	Point Description	Point Type
CDT	DX Coil discharge air temp sensor	AI
CO2-1	Room CO2 transmitter 1	AI
CO2-2	Room CO2 transmitter 2	AI
DO1	Outside air damper actuator	AO
DO2	Return air damper actuator	AO
DO3	Exhaust air damper actuator	AO
DSDR	Duct smoke detector return	DI
DSDS	Duct smoke detector supply	DI
EFR	Power exh. fan start/stop control relay	DO
EFS	Power exh. fan run status	DI
FS1	Filter DP switch	DI
H1	Space humidity transmitter	AI
MAT	Mixed air temperature sensor	AI
OAH	Outside air humidity transmitter	AI
OAT	Outside air temperature sensor	AI
RAH	Return air humidity transmitter	AI
RAT	Return air temperature sensor	AI
SAH	Supply air humidity transmitter	AI
SAT	Supply air temperature sensor	AI
SFR	Supply fan start/stop control relay	DO
SFS	Supply fan run status	DI
SLT1	DX CLG suction line temp sensor stage 1	AI
SLT2	DX CLG suction line temp sensor stage 2	AI
SLT3	DX CLG suction line temp sensor stage 3	AI
SLT4	DX CLG suction line temp sensor stage 4	AI
T1	Space temperature sensor	AI
W1	Gas fired heating coil stage 1	DO
W2	Gas fired heating coil stage 2	DO
Y1	DX cooling control relay stage 1	DO
Y2	DX cooling control relay stage 2	DO
Y3	DX cooling control relay stage 3	DO
Y4	DX cooling control relay stage 4	DO



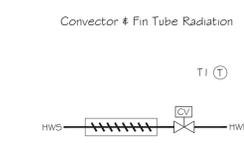
3 **HRU FLOW DIAGRAM**  
NOT TO SCALE

Sym	Point Description	Point Type
BPD	HX Bypass damper	AO
EAD	Exhaust air damper	DO
EAT	Exhaust air temperature sensor	AI
OAD	Outside air damper	DO
OAT	Outside air temperature sensor	AI
RAT	Return air temperature sensor	AI
SAT	Supply air temperature sensor	AI
SFR	Supply fan start/stop control relay	DO
SFS	Supply fan run status	DI
T1	Space temperature sensor	AI



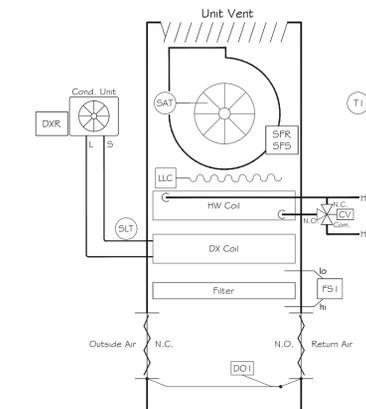
4 **CUH FLOW DIAGRAM**  
NOT TO SCALE

Sym	Point Description	Point Type
CV	Hot water 3-way control valve	AO
SAT	Supply air temperature sensor	AI
SFR	Supply fan start/stop control relay	DO
SFS	Supply fan run status	DI
T1	Space temperature sensor	AI



5 **FTR FLOW DIAGRAM**  
NOT TO SCALE

Sym	Point Description	Point Type
CV	Hot water 2-way control valve	DO
T1	Space temperature sensor	AI



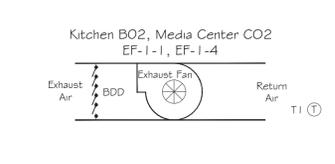
6 **UV FLOW DIAGRAM**  
NOT TO SCALE

Sym	Point Description	Point Type
CV	Hot water 3-way control valve	AO
DO1	Outside/Return air damper cntrl signal	AO
DXR	DX cooling start/stop control relay	DO
FS1	Filter DP switch	DI
LLC	Low limit thermostat	DI
SAT	Supply air temperature sensor	AI
SFR	Supply fan start/stop control relay	DO
SFS	Supply fan run status	DI
SLT	Suction line temperature sensor	AI
T1	Space temperature sensor	AI

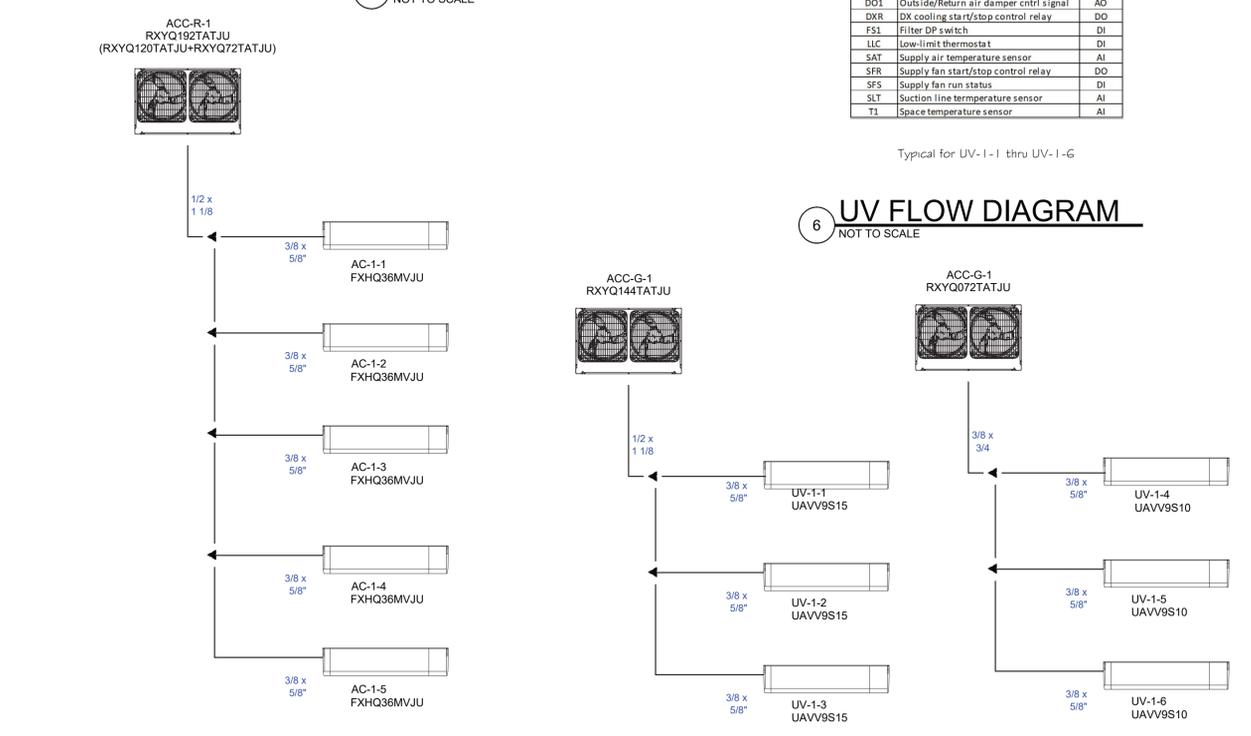
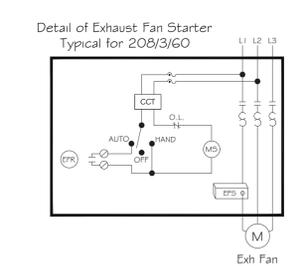


7 **EXHAUST FAN FLOW DIAGRAMS**  
NOT TO SCALE

Sym	Point Description	Point Type
EFR	Exhaust fan start/stop control relay	DO
EFS	Exhaust fan run status current sensor	DI
T1	Space temperature sensor	AI



Sym	Point Description	Point Type
EFR	Exhaust fan start/stop control relay	DO
EFS	Exhaust fan run status current sensor	DI
T1	Space temperature sensor	AI



8 **VRF SYSTEM PIPING SCHEMATIC DIAGRAM**  
NOT TO SCALE

Revisions:  
ISSUE TO BLD  
11/23/20

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**NYSED PROJECT # 66-07-01-03-0-005-020**  
DDC CONTROL & PIPING DIAGRAMS  
2019 BOND REFERENDUM  
CHATSWORTH AVENUE ELEMENTARY SCHOOL  
MAMARONECK UNION FREE SCHOOL DISTRICT  
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