

ELMSFORD UNION FREE SCHOOL DISTRICT

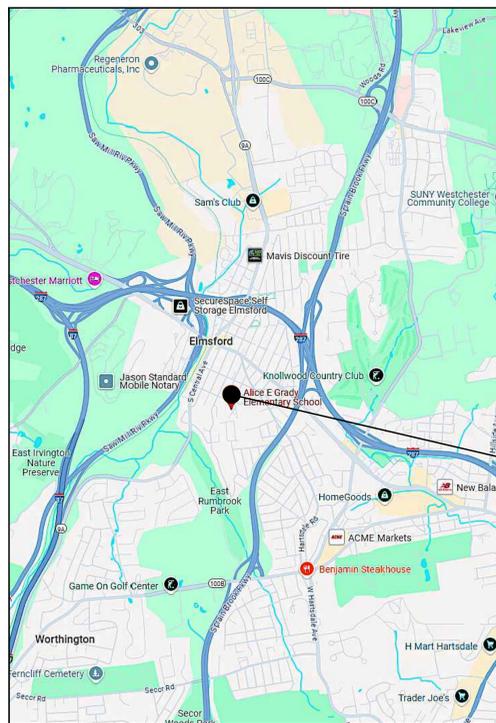
HVAC UPGRADES

at

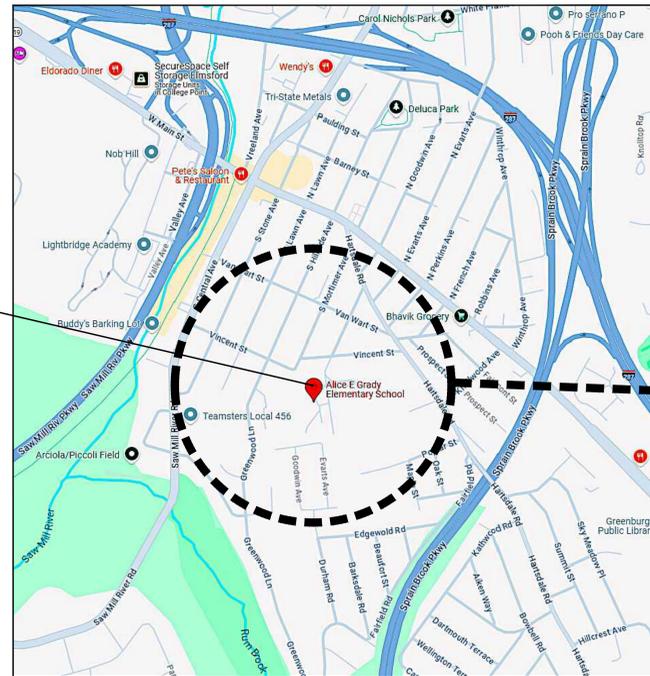
ALICE E. GRADY ELEMENTARY SCHOOL

45 SOUTH GOODWIN AVENUE, ELMSFORD, NY 10523

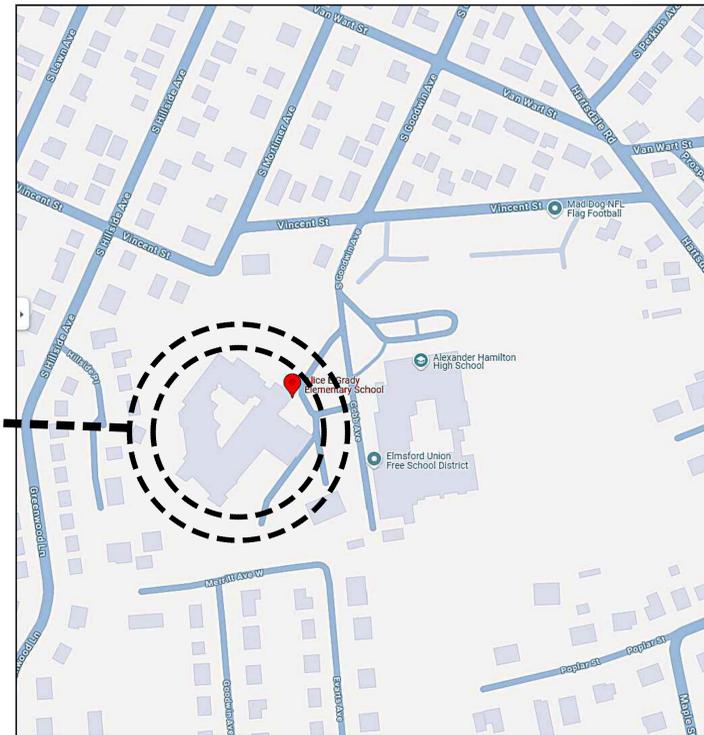
S.E.D. CONTROL NUMBER:
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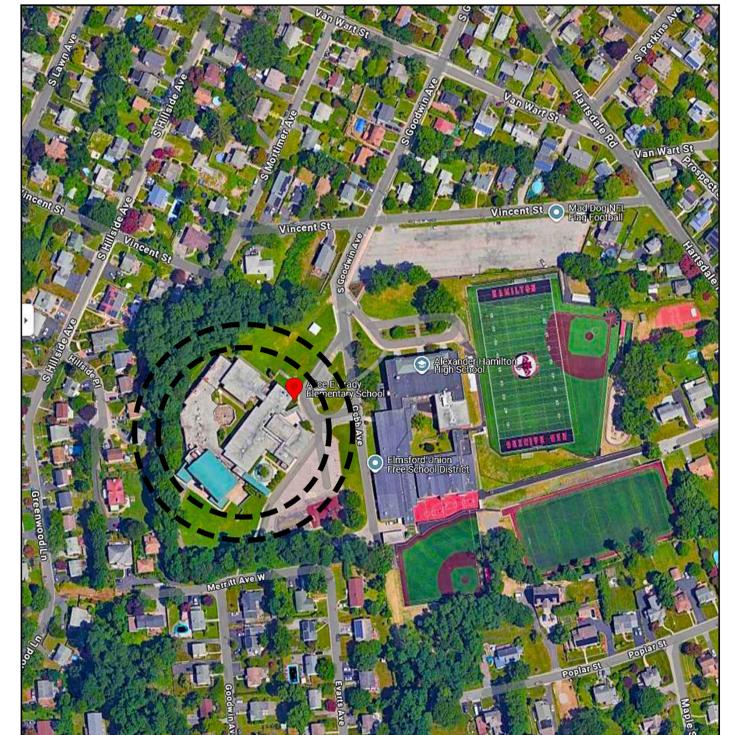
REGIONAL MAP
NOT TO SCALE



VICINITY MAP
NOT TO SCALE



SITE
NOT TO SCALE



AERIAL VIEW
NOT TO SCALE

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**ARCHITECTS
PLANNERS**

45 KNOLLWOOD ROAD ELMSFORD NEW YORK 10523
TEL 914.592.4444 FAX 914.592.1717

WWW.FULLERDANGELO.COM

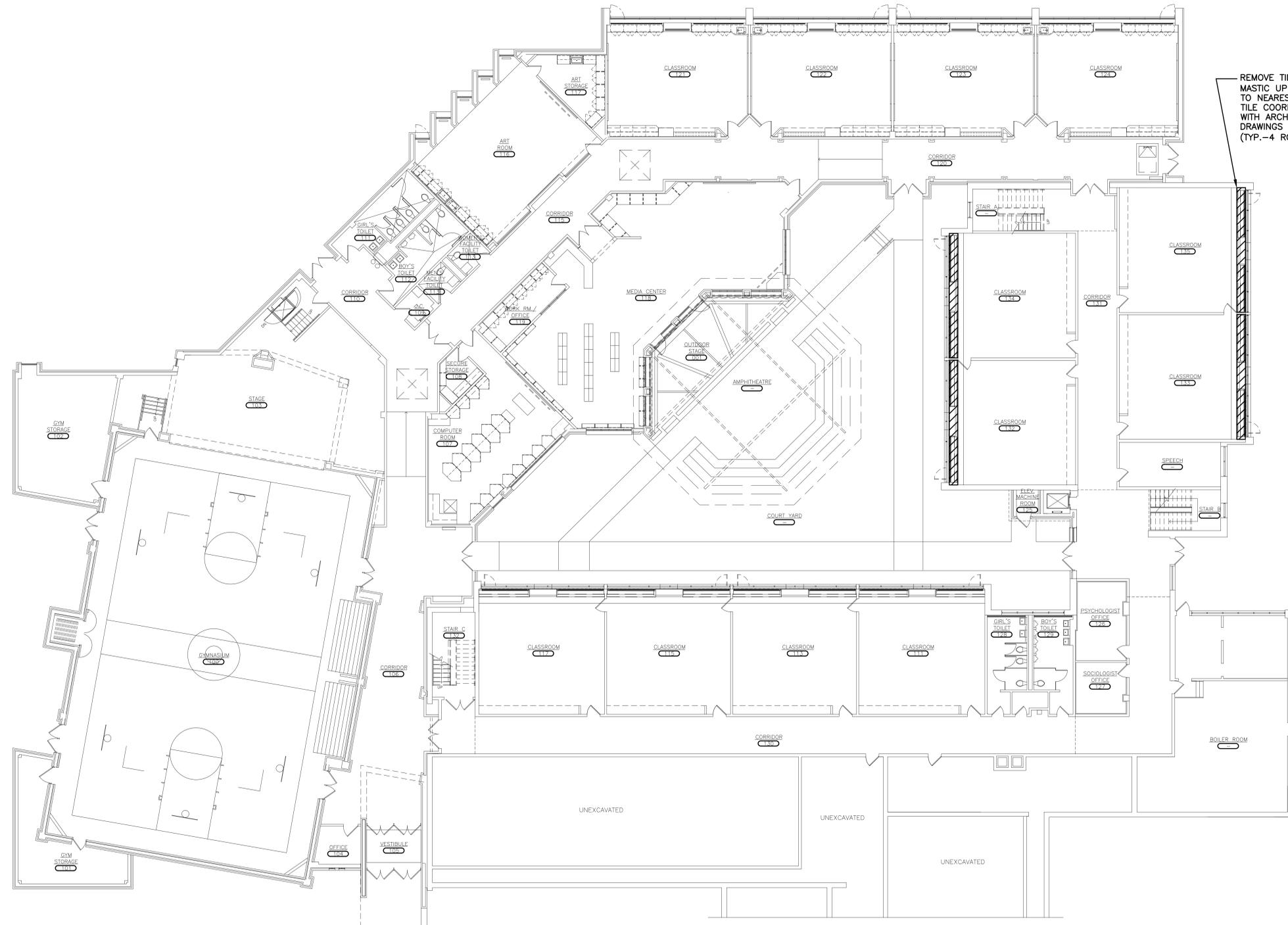
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CONSULTANTS: ENVIRONMENTAL CONSULTING and
MECHANICAL & ELECTRICAL CONSULTANT

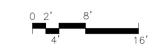
EISENBACH & RUHNKE ENGINEERING, P.C.

FOUR OXFORD CROSSING
SUITE 104
NEW HARTFORD, NY 13413
TEL: 315.735.1916
EMAIL: info@erengpc.com

05-20-2025	BID
12-20-2024	S.E.D.
DATE	ISSUED TO
SCALE	DRAWING NO.
AS NOTED	T-1
DRAWN BY	
F & D	
CHECKED BY	FILE NO.
F & D	24536.00



1 GROUND FLOOR PLAN
SCALE: 3/32" = 1'-0"



HAZARDOUS MATERIALS ABATEMENT - GENERAL NOTES:

- THE FIGURES SHOWN ON THE DRAWINGS ARE INCLUDED HEREIN FOR INFORMATIONAL PURPOSES ONLY AND DO NOT ABSOLVE THE CONTRACTOR FROM THEIR RESPONSIBILITY TO VERIFY ALL MEASUREMENTS PRIOR TO BIDDING. THE ENGINEER DOES NOT STATE THAT THESE MEASUREMENTS ARE COMPLETELY ACCURATE, BUT ARE BASED UPON AVAILABLE DATA.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PLANS AND THE SPECIFICATIONS; 12 NYCRR PART 56 (INDUSTRIAL CODE RULE 56), ANY APPROVED SITE SPECIFIC AND APPLICABLE VARIANCE; 40 CFR 763 SUBPART E (A.H.E.R.A.); 40 CFR 61 SUBPART M (N.E.S.H.A.P.); 29 CFR 1926.1101; AND NY STATE EDUCATION DEPARTMENT (S.E.D.) 8-NYCRR PART 155.5 AND APPLICABLE FEDERAL, STATE AND LOCAL CODES, REGULATIONS AND LAWS.
- THE CONTRACTOR SHALL PROPOSE TO THE ENGINEER THE METHODS USED FOR ABATEMENT, TRANSPORT, AND DISPOSAL OF ALL HAZARDOUS MATERIALS.
- THE BUILDING MAY REMAIN OCCUPIED IN PART DURING THE CONSTRUCTION. WORK MUST BE COORDINATED WITH THE OWNER.
- ALL EMERGENCY EXITS MUST BE MAINTAINED. ALL FIRE SAFETY SYSTEMS (SPRINKLERS, SENSORS, EMERGENCY LIGHTS, AND ALARMS) MUST BE MAINTAINED IN AN OPERATING CONDITION.
- IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PETITION THE NEW YORK STATE DEPARTMENT OF LABOR FOR ANY AND ALL SPECIFIC VARIANCES NECESSARY TO ACCOMPLISH THE WORK OR DESIRED BY THE CONTRACTOR. SPECIFIC VARIANCES ARE SUBJECT TO APPROVAL BY THE OWNER AND ENGINEER.
- NON-FRIABLE ASBESTOS CONTAINING MATERIALS (E.G. CAULKING AND GLAZING) MAY BE TRANSPORTED FROM THE SITE AND DISPOSED OF AS CONSTRUCTION AND DEMOLITION DEBRIS IN ACCORDANCE WITH 6 NYCRR PART 360 AND 364.
- ALL NON-FRIABLE ASBESTOS CONTAINING MATERIALS REMOVED FROM THE SITE AS CONSTRUCTION AND DEMOLITION DEBRIS WASTE MUST NOT BE PROCESSED AT A C&D WASTE CONSOLIDATION FACILITY WHERE THE ACM WILL BE GRINDED OR PROCESSED BY A MEANS THAT MAY MAKE THE ACM FRIABLE REGULATED ASBESTOS CONTAINING MATERIAL (RACM).
- ANY ACM MADE FRIABLE BY THE CONTRACTOR SHALL BE MANAGED AND DISPOSED OF AS RACM.
- FRIABLE ASBESTOS CONTAINING MATERIALS MUST BE HANDLED, TRANSPORTED AND DISPOSED OF AS REGULATED ASBESTOS CONTAINING MATERIALS (RACM). ALL RACM MUST BE MANIFESTED FROM THE SITE USING A REGULATED WASTE MANIFEST (RWM). COPIES OF MANIFEST MUST BE PROVIDED TO OWNERS REPRESENTATIVE AT THE TIME WASTE IS REMOVED FROM SITE. MANIFEST MUST CLEARLY IDENTIFY TYPES OF WASTE AND QUANTITY OF WASTE (I.E. NUMBER OF BAGS, DRUMS) AND WHAT WASTE IS CONTAINED IN THEM.
- ALL LIQUID WASTE MUST BE CONTAINERIZED IN APPROPRIATE CONTAINERS APPROVED BY THE U.S. DEPARTMENT OF TRANSPORTATION (DOT) FOR LIQUID WASTE.
- ALL WASTE MUST BE REMOVED FROM SITE WITHIN 10 DAYS OF JOB COMPLETION. ALL WASTE MANIFESTS SHALL BE SIGNED BY DISPOSAL FACILITY AND RETURNED TO OWNER WITHIN 30 DAYS. DISPOSAL FACILITY SHALL BE THE SAME AS LISTED ON NOTIFICATIONS. ANY DEVIATIONS FROM NOTIFICATION SHALL REQUIRE APPROVAL. WASTE CANNOT BE REMOVED FROM SITE AND MIXED OR TRANSFERRED INTO OTHER WASTE CONTAINERS UNLESS COMPLETED AT A PERMITTED WASTE TRANSFER STATION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL GLUE, NAILS, TAPE, STAPLES, ETC. USED DURING THE ABATEMENT. ANY DAMAGE TO BUILDINGS, OBJECTS, FLOORS, CEILINGS OR WALLS INCLUDING BUT NOT LIMITED TO DAMAGED PAINTED SURFACES WILL BE REPAIRED BY THE CONTRACTOR. DAMAGE TO PAINTED SURFACES WILL BE REPAIRED TO A PAINTABLE CONDITION AND REPAINTED TO MATCH TO THE NEAREST INTERSECTION AS APPROVED BY THE OWNER AND THE ENGINEER.
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- THE OWNER, ENGINEER AND ABATEMENT CONTRACTOR WILL AGREE ON THE LOCATION OF THE PERSONAL AND WASTE DECONTAMINATION ENCLOSURE SYSTEMS, AND WASTE CONTAINER STORAGE AREA.
- SUPPORT AND PROTECT ALL SYSTEMS EXPOSED BY ABATEMENT. SUCH SYSTEMS INCLUDE WITHOUT LIMITATION: HIGH VOLTAGE LINES; LOW VOLTAGE LINES; PNEUMATIC LINES; CABLE TELEVISION LINES AND TELEPHONE LINES.
- ALL EMERGENCY EXITS TO BUILDINGS MUST BE MAINTAINED. FIRE DETECTION, ALARM AND PROTECTION SYSTEMS MUST AS REMAIN ACTIVE AND OPERATIONAL.
- ASBESTOS CAULK ABATEMENT PROJECTS MUST BE NOTIFIED TO NYSJOL IN THE QUANTITY OF SQUARE FEET OR LINEAR FEET AND THE TOTAL NUMBER OF WINDOWS AND DOOR OPENINGS SHALL BE PROVIDED.
- THE ENGINEER THAT SIGNED THIS DOCUMENT CERTIFIES THAT TO THE BEST OF HIS KNOWLEDGE, INFORMATION, AND BELIEF THE PLANS AND SPECIFICATIONS ARE IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE NEW YORK STATE UNIFORM FIRE PREVENTION AND BUILDING CODE, THE STATE ENERGY AND CONSERVATION CONSTRUCTION CODE, CONSTRUCTION STANDARDS OF THE COMMISSIONER OF EDUCATION, NEW YORK STATE DEPARTMENT OF LABOR PART 56 OF TITLE 12 AND THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY ASBESTOS HAZARD EMERGENCY RESPONSE ACT REGULATIONS.
- THE ENGINEER, JACK EISENBACH, IS ACCREDITED BY THE ENVIRONMENTAL PROTECTION AGENCY UNDER THE AHERA REGULATION FOR ASBESTOS PROJECT DESIGNER (ASBESTOS HANDLING CERTIFICATE NUMBER 24-6A1VA-SHAB).

ASBESTOS FLOOR TILE AND MASTIC:

- THIS WORK CONSISTS OF THE REMOVAL AND DISPOSAL OF ASBESTOS CONTAINING FLOOR TILE AND MASTIC FROM THE AREAS INDICATED ON DRAWINGS HM-100 AND HM-101.
- THE REMOVAL SHALL INCLUDE ALL LAYERS OF FLOORING IN THIS AREA TO THE SUBSTRATE. LAYERS OF FLOORING MAY INCLUDE BUT SHALL NOT BE LIMITED TO FLOOR TILE, LINOLEUM, WOOD SUB-FLOORS WITH MASTIC, PATCHING MATERIAL, LEVELING COMPOUND, CARPET, ETC.
- THE MASTIC REMOVAL MAY BE DONE UTILIZING CHEMICAL OR MECHANICAL METHODS (I.E. BEAD BLASTER). IF A BEAD BLASTER IS UTILIZED FOR THE MASTIC REMOVAL, THE ABATEMENT CONTRACTOR SHALL BE KNOWLEDGEABLE IN THE OPERATIONS OF THE BEAD BLASTER AND SHALL LEAVE THE FLOOR IN AS LEVEL CONDITION AS POSSIBLE TO RECEIVE THEIR NEW FINISHES.
- LOW ODOR CHEMICAL REMOVAL AGENTS WILL BE ALLOWED AND ARE SUBJECT TO APPROVAL OF THE OWNER AND ENGINEER. NO PETROLEUM BASED MASTIC REMOVERS WILL BE ALLOWED DUE TO THEIR POTENTIAL TO CREATE RESIDUAL ODORS AND INDOOR AIR QUALITY PROBLEMS. CONTRACTOR SHALL MAINTAIN CONTROL OF THE USE OF ANY CHEMICAL AND SHALL PREVENT IT FROM GOING BEYOND THE LIMITS OF WORK AND GETTING INTO FLOOR WALL JOINTS AND FLOOR SEAMS AND CRACKS. CONTRACTOR SHALL SEAL ALL CRACKS AND SEAMS IN FLOORS PRIOR TO USING MASTIC REMOVAL CHEMICALS TO PREVENT THE CHEMICAL FROM ENTERING THESE LOCATIONS. INDOOR AIR QUALITY PROBLEMS CREATED BY ANY MASTIC REMOVAL CHEMICAL IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL REIMBURSE ANY COST INCURRED BY OWNER DUE TO RELATED INDOOR AIR QUALITY PROBLEMS.
- FLOOR SLABS WILL BE CONSIDERED TO BE CLEAN WHEN FLOOR TILE AND MASTIC RESIDUE HAS BEEN REMOVED FROM THE SUBSTRATE. THE METHOD OF REMOVAL SHALL NOT PRODUCE NOTICEABLE ODOR TO OCCUPANTS OF THE BUILDING; BE VOLATILE; LEAVE A RESIDUAL ODOR; BE TOXIC OR VOID ANY INSTALLATION WARRANTIES OF NEW FLOORING.
- ANY DAMAGE TO THE SUBSTRATE FLOOR FROM ABATEMENT SHALL REQUIRE REPAIR BY THE CONTRACTOR TO A CONDITION ACCEPTABLE TO RECEIVE A NEW FLOOR.

ASBESTOS ABATEMENT LEGEND:



AS PER USA CONGRESS ARCHITECTURAL WORKS COPYRIGHT PROTECTION ACT OF 1990 ALL IDEAS AND DESIGNS INCLUDING DERIVATIVES THEREOF, ALL DRAWINGS AND SPECIFICATIONS CONSTITUTE THE ORIGINAL COPYRIGHT WORK BY FULLER AND D'ANGELO, P.C. (F&D). THE DRAWINGS AND SPECIFICATIONS AS INSTRUMENTS OF SERVICE BY F&D ARE CREATED BY F&D FOR THIS PROJECT ONLY AND REMAIN THE PROPERTY OF F&D. ANY REPRODUCTION WITHOUT THE PRIOR CONSENT OF F&D IS PROHIBITED.

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ARCHITECTS
PLANNERS



S.E.D. CONTROL NUMBERS:
ALICE E GRADY
66-04-09-02-0-001-915
CARL L DIXSON
66-04-09-02-0-004-010
DIXSON ANNEX
66-04-09-02-0-005-005

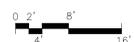
PROJECT: ELMSFORD UNION FREE SCHOOL DISTRICT
ALICE GRADY & DIXSON ROOF
98 SOUTH GOODWIN AVE. ELMSFORD, NY 10523
DRAWING TITLE: GROUND FLOOR PLAN

05-20-2025	BID
DATE	ISSUED TO
SHEET SIZE 30"x42"	DRAWING NO. HM100
DRAWN BY F & D	CHECKED BY F & D
CHECKED BY F & D	FILE NO. 24535.00

PLOT DATE: May 19, 2025 - 2:15pm



1 FIRST FLOOR PLAN
SCALE: 3/32" = 1'-0"



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12. ALL WASTE MUST BE REMOVED FROM SITE WITHIN 10 DAYS OF JOB COMPLETION. ALL WASTE MANIFESTS SHALL BE SIGNED BY DISPOSAL FACILITY AND RETURNED TO OWNER WITHIN 30 DAYS. DISPOSAL FACILITY SHALL BE THE SAME AS LISTED ON NOTIFICATIONS. ANY DEVIATIONS FROM NOTIFICATION SHALL REQUIRE APPROVAL. WASTE CANNOT BE REMOVED FROM SITE AND MIXED OR TRANSFERRED INTO OTHER WASTE CONTAINERS UNLESS COMPLETED AT A PERMITTED WASTE TRANSFER STATION.
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18. ASBESTOS CAULK ABATEMENT PROJECTS MUST BE NOTIFIED TO NYSDDL IN THE QUANTITY OF SQUARE FEET OR LINEAR FEET AND THE TOTAL NUMBER OF WINDOWS AND DOOR OPENINGS SHALL BE PROVIDED.
19. THE ENGINEER THAT SIGNED THIS DOCUMENT CERTIFIES THAT TO THE BEST OF HIS KNOWLEDGE, INFORMATION, AND BELIEF THE PLANS AND SPECIFICATIONS ARE IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE NEW YORK STATE UNIFORM FIRE PREVENTION AND BUILDING CODE, THE STATE ENERGY AND CONSERVATION CONSTRUCTION CODE, CONSTRUCTION STANDARDS OF THE COMMISSIONER OF EDUCATION, NEW YORK STATE DEPARTMENT OF LABOR PART 56 OF TITLE 12 AND THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY ASBESTOS HAZARD EMERGENCY RESPONSE ACT REGULATIONS.
20. THE ENGINEER, JACK EISENBACH, IS ACCREDITED BY THE ENVIRONMENTAL PROTECTION AGENCY UNDER THE AHERA REGULATION FOR ASBESTOS PROJECT DESIGNER (ASBESTOS HANDLING CERTIFICATE NUMBER 24-6A1VA-SHAB).

ASBESTOS FLOOR TILE AND MASTIC:

1. THIS WORK CONSISTS OF THE REMOVAL AND DISPOSAL OF ASBESTOS CONTAINING FLOOR TILE AND MASTIC FROM THE AREAS INDICATED ON DRAWINGS HM-100 AND HM-101.
2. THE REMOVAL SHALL INCLUDE ALL LAYERS OF FLOORING IN THIS AREA TO THE SUBSTRATE. LAYERS OF FLOORING MAY INCLUDE BUT SHALL NOT BE LIMITED TO FLOOR TILE, LINOLEUM, WOOD SUB-FLOORS WITH MASTIC, PATCHING MATERIAL, LEVELING COMPOUND, CARPET, ETC.
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6. ANY DAMAGE TO THE SUBSTRATE FLOOR FROM ABATEMENT SHALL REQUIRE REPAIR BY THE CONTRACTOR TO A CONDITION ACCEPTABLE TO RECEIVE A NEW FLOOR.

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AS PER USA CONGRESS ARCHITECTURAL WORKS COPYRIGHT PROTECTION ACT OF 1990 ALL IDEAS AND DESIGNS INCLUDING DERIVATIVES THEREOF, ALL DRAWINGS AND SPECIFICATIONS CONSTITUTE THE ORIGINAL COPYRIGHT WORK BY FULLER AND D'ANGELO, P.C. (F&D). THE DRAWINGS AND SPECIFICATIONS AS INSTRUMENTS OF SERVICE BY F&D ARE CREATED BY F&D FOR THIS PROJECT ONLY AND REMAIN THE PROPERTY OF F&D. ANY REPRODUCTION WITHOUT THE PRIOR CONSENT OF F&D IS PROHIBITED.

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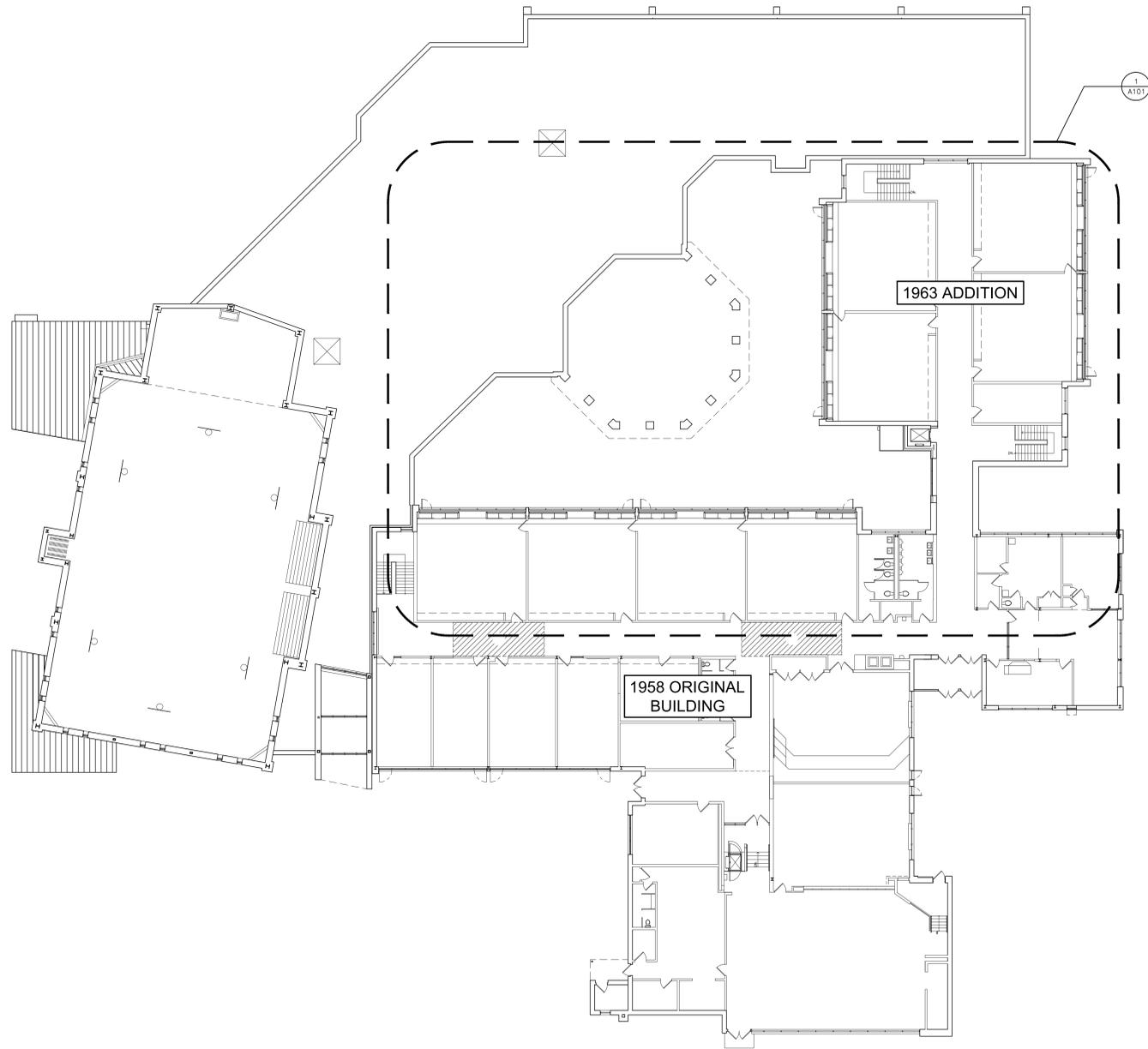


S.E.D. CONTROL NUMBERS:
ALICE E GRADY
66-04-09-02-0-002-015
CARL L DIXSON
66-04-09-02-0-004-010
DIXSON ANNEX
66-04-09-02-0-005-005

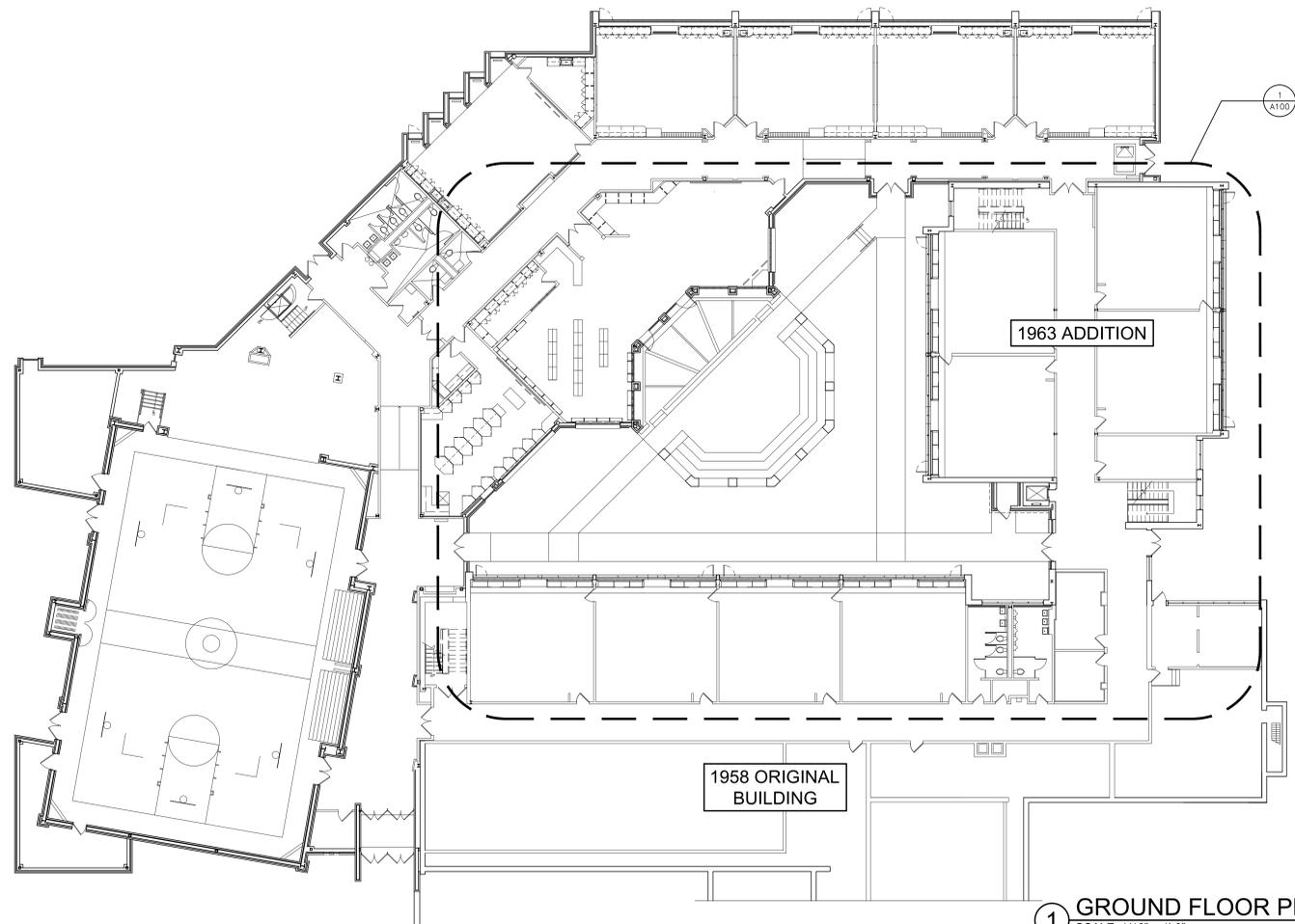
PROJECT:
ELMSFORD UNION FREE SCHOOL DISTRICT
ALICE GRADY & DIXSON ROOF
98 SOUTH GOODWIN AVE. ELMSFORD, NY 10523

DRAWING TITLE:
FIRST FLOOR PLAN

05-20-2025	BID
DATE	ISSUED TO
SHEET SIZE 30"x42"	DRAWING NO. HM101
DRAWN BY F & D	CHECKED BY F & D
CHECKED BY F & D	FILE NO. 24535.00



② FIRST FLOOR PLAN
SCALE: 1/16" = 1'-0"



① GROUND FLOOR PLAN
SCALE: 1/16" = 1'-0"



PLOT DATE: May 20, 2025 - 9:54am

FILE: I:\24536.00 Elmsford HVAC upgrades at Alice Grady\DRAWINGS\CURRENT\1-F&D\24536.00 A... Dwg.dwg

AS PER USA CONGRESS ARCHITECTURAL WORKS COPYRIGHT PROTECTION ACT OF 1990 ALL IDEAS AND DESIGNS INCLUDING DERIVATIVES THEREOF, ALL DRAWINGS AND SPECIFICATIONS CONSTITUTE THE ORIGINAL COPYRIGHT WORK BY FULLER AND D'ANGELO, P.C. (F&D). THE DRAWINGS AND SPECIFICATIONS AS INSTRUMENTS OF SERVICE BY F&D ARE CREATED BY F&D FOR THIS PROJECT ONLY AND REMAIN THE PRODUCT AND PROPERTY OF F&D. ANY REPRODUCTION WITHOUT THE PRIOR CONSENT OF F&D IS PROHIBITED.

ALTERATION OF THESE DOCUMENTS EXCEPT BY A LICENSEE OR REGISTERED PROFESSIONAL ARCHITECT OR ENGINEER OF NEW YORK STATE EDUCATION LAW.

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D'ANGELO
P.C.**
**ARCHITECTS
PLANNERS**

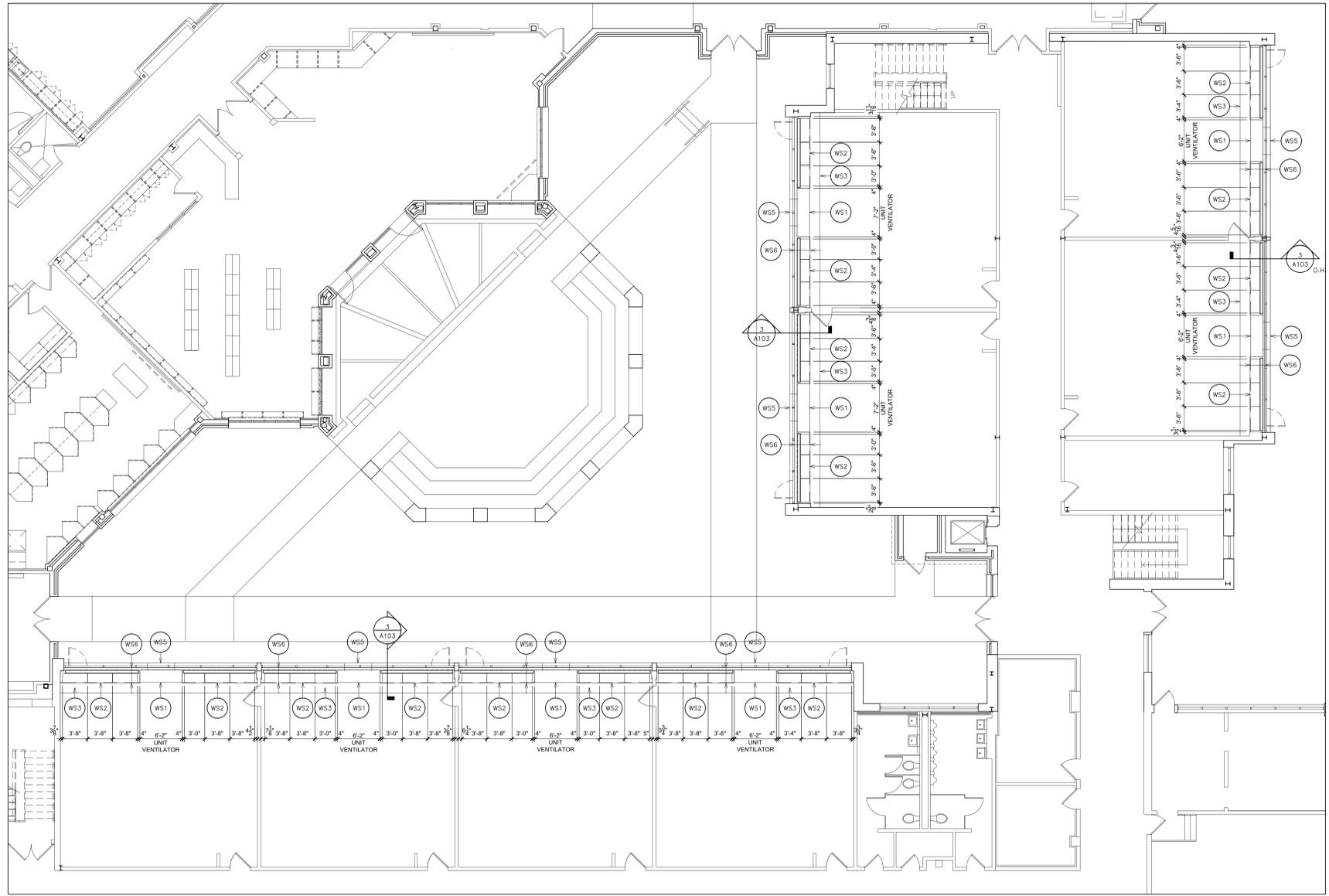
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S.E.D. CONTROL NUMBER:
66-04-09-02-0-002-014

PROJECT TITLE:
**ELMSFORD UNION FREE SCHOOL DISTRICT
HVAC UPGRADES
ALICE E. GRADY ELEMENTARY SCHOOL**
45 SOUTH GOODMAN AVENUE, ELMSFORD, NY 10523

DRAWING TITLE:
OVERALL FLOOR PLANS

05-20-2025	BID
12-20-2024	S.E.D.
DATE	ISSUED TO
SHEET SIZE 30"x42"	DRAWING NO. A10
DRAWN BY F & D	CHECKED BY F & D
FILE NO. 24536.00	



NEW WORK - PARTIAL GROUND FLOOR PLAN
 ② SCALE: 1/8" = 1'-0"

WORKSCOPE NOTES - REMOVALS:

COORDINATE ALL REMOVALS WITH ASBESTOS DRAWINGS & SPECIFICATIONS, TYPICAL.

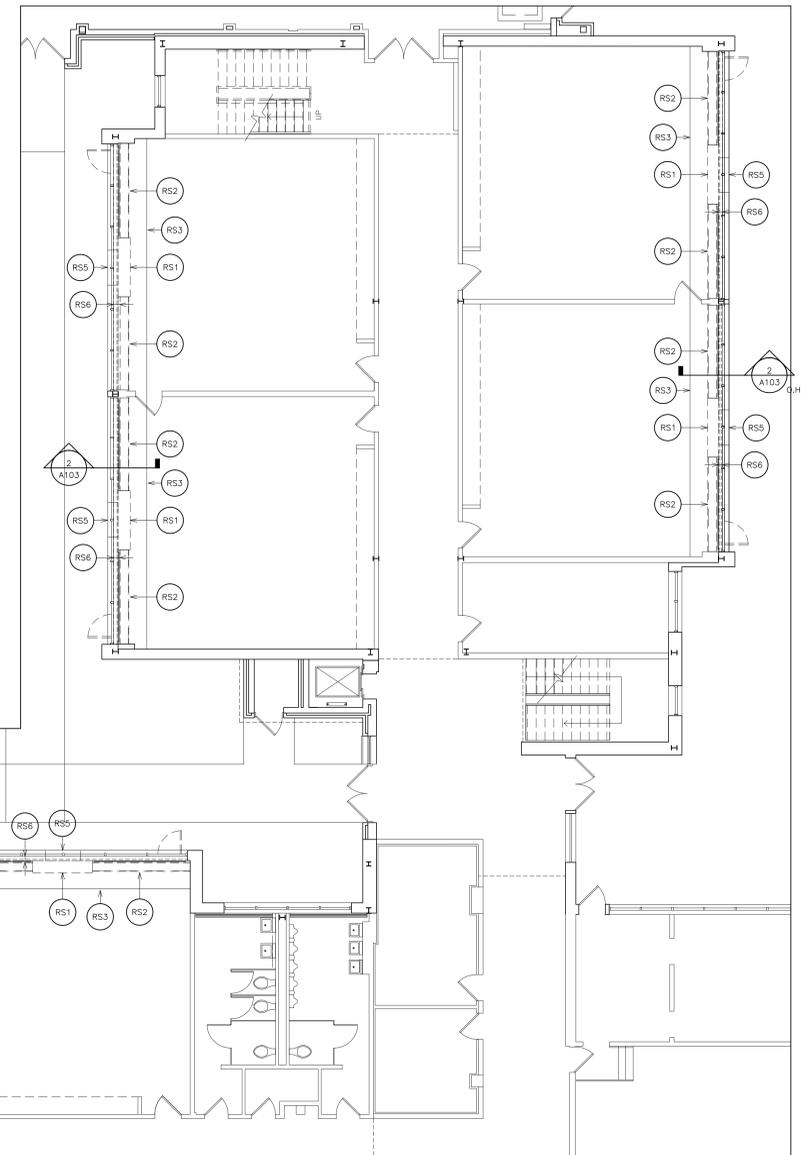
- RS1 EXISTING UNIT VENTILATOR TO BE REMOVED BY M-CONTR.
- RS2 REMOVE EXISTING METAL SHELVING UNITS IN THEIR ENTIRETY. CLEAN AND PREPARE ALL EXISTING SURFACES THAT ARE TO REMAIN TO RECEIVE NEW SHELVING UNITS. PROVIDE TEMPORARY FIN TUBE ENCLOSURE AS PROTECTION UNTIL NEW SHELVING IS INSTALLED. TEMPORARY ENCLOSURE SHALL GO FROM CLASSROOM WALL TO UNIT VENTILATOR AND BE MADE w/ 1/2" PLYWOOD OVER 3/8" METAL STUDS EQUALLY SPACED @ 2'-0" O.C.
- RS3 REMOVE ~2'-0" OF EXISTING FLOOR TILE & ASSOCIATED WALL BASE, AS REQUIRED TO ACCOMPLISH NEW WORK AND TO NEAREST FULL TILE EDGE. CLEAN ALL RESIDUAL ADHESIVES AND PREPARE SLAB /WALL FOR NEW TILE /BASE. SEE ASBESTOS SPECIFICATIONS AND DRAWINGS FOR REQUIREMENTS.
- RS4 EXISTING FIN TUBE RADIATION TO BE MODIFIED BY M-CONTR.
- RS5 SCRAPE, WIRE BRUSH & PAINT EXISTING LINTELS, FROM THE INSIDE, PRIOR TO INSTALLATION OF NEW METAL SLEEVE BY M-CONTR., TYPICAL. REFER TO SPECIFICATIONS.
- RS6 REMOVE 1x1 SNAP TRIM AND REMOVE INTERIOR WINDOW SILL. REMOVE ANY LEVELING MATERIALS & ALL ADHESIVE MATERIALS, IN PREPARATION FOR NEW COUNTERTOP. USE CARE NOT TO DISTURB OR DAMAGE EXISTING THROUGH-WALL FLASHING THAT IS TO REMAIN.
- RS7 REMOVE 2X2 CEILING IN AREA INDICATED FOR M-CONTR. REMOVE TO NEAREST FULL TILE. DIMENSIONS AND LOCATION ARE TO BE COORDINATED W/ M-CONTR. REMOVALS ARE TO BE COORDINATED W/ E-CONTR.

GENERAL NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS.
2. PATCH, REPAIR AND FINISH ALL SURFACES, EITHER EXPOSED OR DISTURBED BY CONSTRUCTION. FINISH FLUSH WITH ADJACENT CONSTRUCTION AND MATCH EXISTING FINISHES IN MATERIAL, COLOR & SHEEN.
3. PROVIDE PRE-FINISHED BRASS METAL PIPE-CHASE ENCLOSURE, FROM COUNTER TOP TO ABOVE CEILING. COORDINATE SIZE & LOCATION WITH M-CONTR. ALL EXPOSED EDGES ARE TO BE DE-BURRED AND EASED. REVIEW PROPOSED ENCLOSURE WITH ARCHITECT PRIOR TO INSTALLATION. COLOR TO BE PICKED BY ARCHITECT FROM MANUFACTURERS STANDARD COLORS. TYPICAL.

WORKSCOPE NOTES - NEW:

- WS1 NEW UNIT VENTILATOR TO BE INSTALLED BY M-CONTR. (NOT SHOWN)
- WS2 INSTALL NEW UNIT SHELVING, REFER TO FLOOR PLANS, DETAIL 3/A103 & SPECIFICATIONS.
- WS3 CLEAN & PREPARE FLOOR THEN INSTALL NEW FLOOR TILE, COLOR AS CHOSEN FROM MANUFACTURERS STANDARD COLORS, REFER TO SPECIFICATIONS.
- WS4 EXISTING FIN TUBE RADIATION IS TO BE MODIFIED BY M-CONTR. REFER TO MECHANICAL DRAWINGS. M-CONTR IS RESPONSIBLE FOR THE 'FIN TUBE CHASE' CONSTRUCTION.
- WS5 RESTORE OR PATCH ALL DAMAGED OR DISTURBED FLASHING PRIOR TO SETTING NEW COUNTER-TOP. PROVIDE NEW SOLID-SURFACE COUNTER-TOP AND NEW 1x1 SNAP TRIM. REFER TO SPECIFICATIONS & DETAILS 1, 2 (EXIST) & 3 (NEW) /A103
- WS6 RESTORE CEILING SYSTEM ALONG WITH ADJACENT SURFACES AND PROVIDE NEW CEILING COMPONENTS FOR A COMPLETE INSTALLATION, INCLUDING BUT NOT LIMITED TO GRID, ACOUSTICAL CEILING TILES, EDGE MOLDING AND WIRE. REFER TO CEILING DETAILS ON DRAWING A103 AND SPECIFICATIONS.



REMOVALS - PARTIAL GROUND FLOOR PLAN
 ① SCALE: 1/8" = 1'-0"

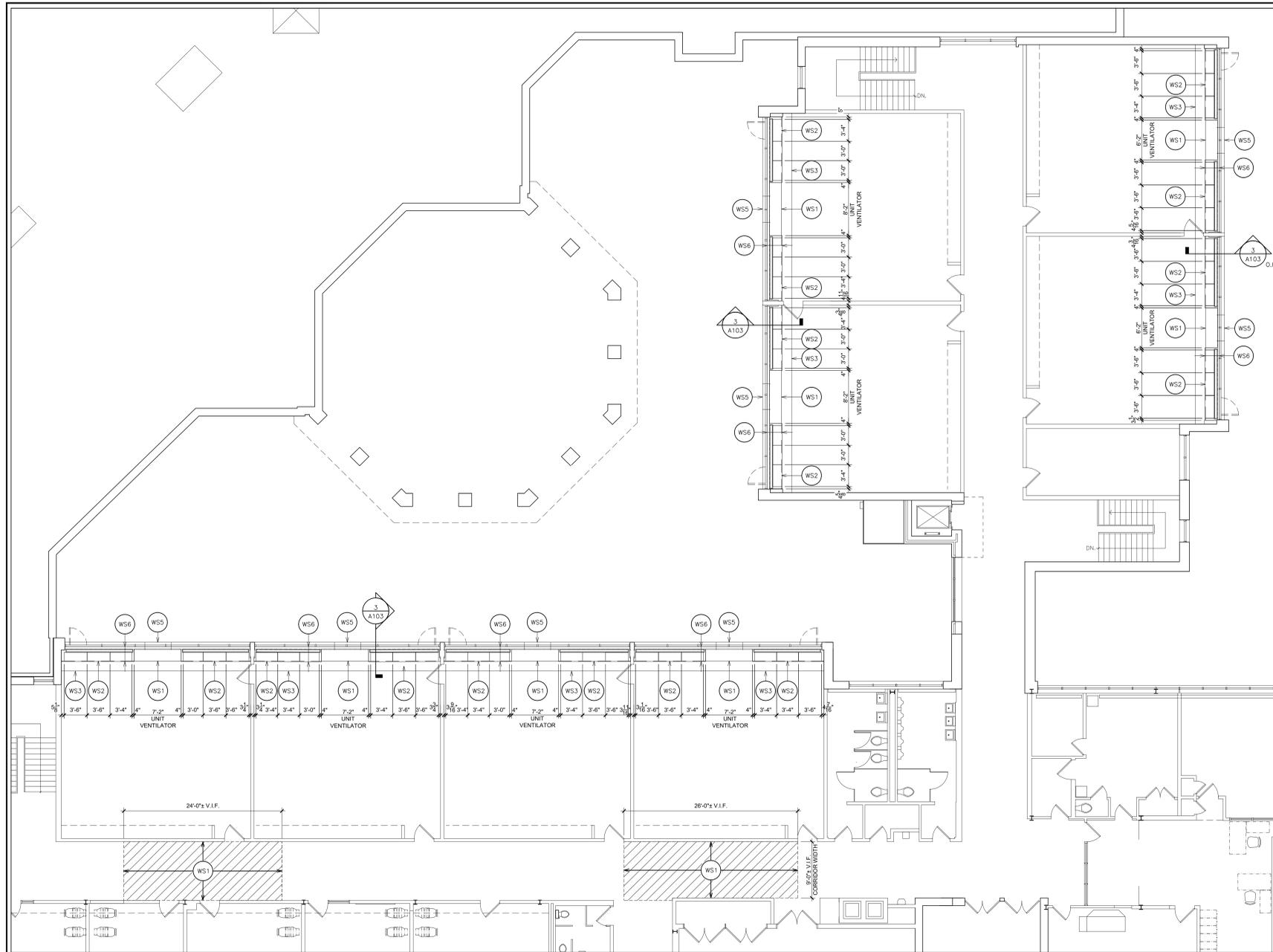
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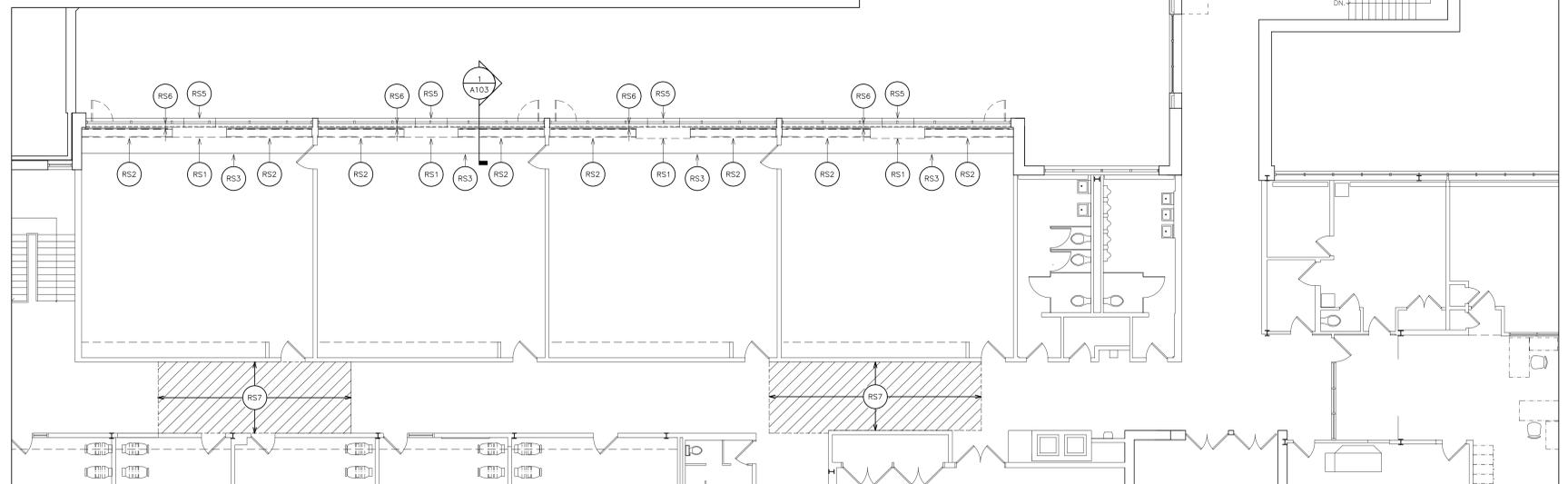
S.E.D. CONTROL NUMBER:
 66-04-09-02-0-002-014

PROJECT: ELMSFORD UNION FREE SCHOOL DISTRICT
HVAC UPGRADES
 ALICE E. GRADY ELEMENTARY SCHOOL
 45 SOUTH GOODMAN AVENUE, ELMSFORD, NY 10523
 DRAWING TITLE: PARTIAL GROUND FLOOR PLAN

05-20-2025	BID
12-20-2024	S.E.D.
DATE	ISSUED TO
SHEET SIZE 30"x42"	DRAWING NO. A100
DRAWN BY F & D	CHECKED BY F & D
FILE NO. 24536.00	



**NEW WORK - PARTIAL
FIRST FLOOR PLAN**
SCALE: 1/8" = 1'-0"



**REMOVALS - PARTIAL
FIRST FLOOR PLAN**
SCALE: 1/8" = 1'-0"

WORKSCOPE NOTES - REMOVALS:

COORDINATE ALL REMOVALS WITH ASBESTOS DRAWINGS & SPECIFICATIONS, TYPICAL.

- RS1 EXISTING UNIT VENTILATOR TO BE REMOVED BY M-CONTR.
- RS2 REMOVE EXISTING METAL SHELVING UNITS IN THEIR ENTIRETY. CLEAN AND PREPARE ALL EXISTING SURFACES THAT ARE TO REMAIN TO RECEIVE NEW SHELVING UNITS. PROVIDE TEMPORARY FIN TUBE ENCLOSURE AS PROTECTION UNTIL NEW SHELVING IS INSTALLED. TEMPORARY ENCLOSURE SHALL GO FROM CLASSROOM WALL TO UNIT VENTILATOR AND BE MADE w/ 1/2" PLYWOOD OVER 3/8" METAL STUDS EQUALLY SPACED @ 2'-0" O.C.
- RS3 REMOVE ~2'-0"± OF EXISTING FLOOR TILE & ASSOCIATED WALL BASE, AS REQUIRED TO ACCOMPLISH NEW WORK AND TO NEAREST FULL TILE EDGE. CLEAN ALL RESIDUAL ADHESIVES AND PREPARE SLAB /WALL FOR NEW TILE /BASE. SEE ASBESTOS SPECIFICATIONS AND DRAWINGS FOR REQUIREMENTS.
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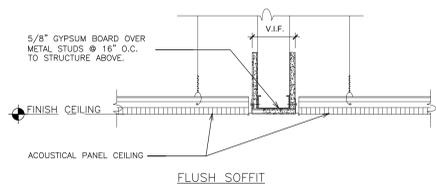
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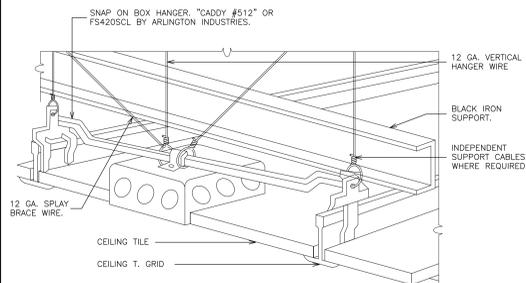
S.E.D. CONTROL NUMBER:
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PROJECT: ELMSFORD UNION FREE SCHOOL DISTRICT
HVAC UPGRADES
 ALICE E. GRADY ELEMENTARY SCHOOL
 45 SOUTH LODOWN AVENUE, ELMSFORD, NY 10523
 DRAWING TITLE: PARTIAL FIRST FLOOR PLAN

05-20-2025	BID
12-20-2024	S.E.D.
DATE	ISSUED TO
SHEET SIZE 30"x42"	DRAWING NO. A101
DRAWN BY F & D	FILE NO. 24536.00
CHECKED BY F & D	



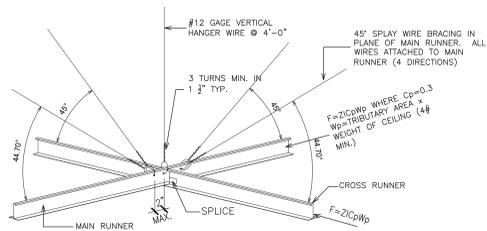
8 DETAIL - GRID TRANSITION SOFFIT
SCALE: 1 1/2" = 1'-0"



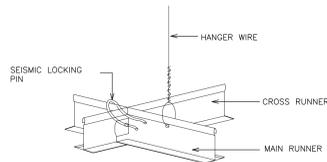
NOTES:

- FOR USE WITH NEW CEILING MOUNTED DEVICES (SMOKE DETECTORS, RECEPTACLES, SPEAKERS, FANS ETC.).
- INDEPENDENT SUPPORT FROM BUILDING STRUCTURE REQUIRED FOR ITEMS EXCEEDING 20 LBS. AND FANS.

7 DETAIL - CEILING MOUNTED DEVICE
NOT TO SCALE

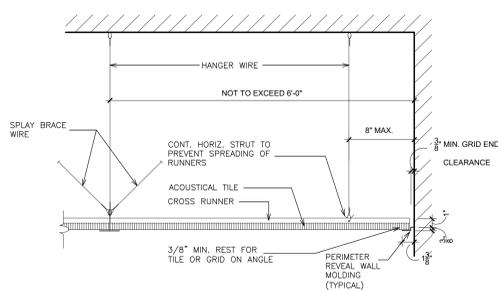


TYPICAL CEILING BRACING DETAIL



SPLICES AND INTERSECTIONS OF RUNNERS SHALL BE ATTACHED WITH MECHANICAL INTERLOCKING CONNECTORS SUCH AS POP RIVETS, SCREWS, PINS, PLATES WITH BENT TABS, OR OTHER APPROVED CONNECTORS. DESIGN CONNECTORS FOR 2x DESIGN LOAD OR ULTIMATE AXIAL TENSION OR COMPRESSION (MINIMUM 60 POUNDS)

LOCKING PIN DETAIL



4 SEISMIC DETAIL @ ALL NEW SUSP. CEILINGS
SCALE: N.T.S.

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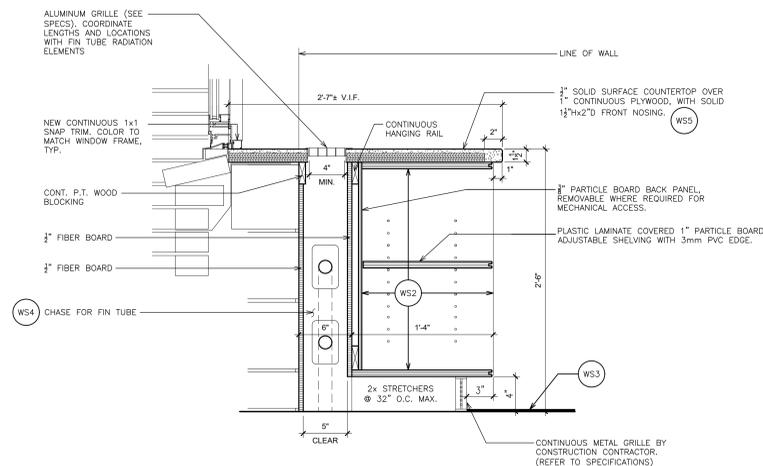
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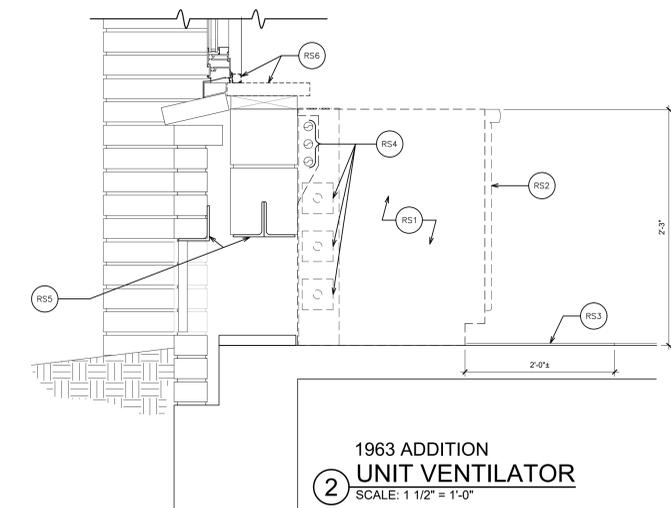
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COORDINATE ALL REMOVALS WITH ASBESTOS DRAWINGS & SPECIFICATIONS, TYPICAL.

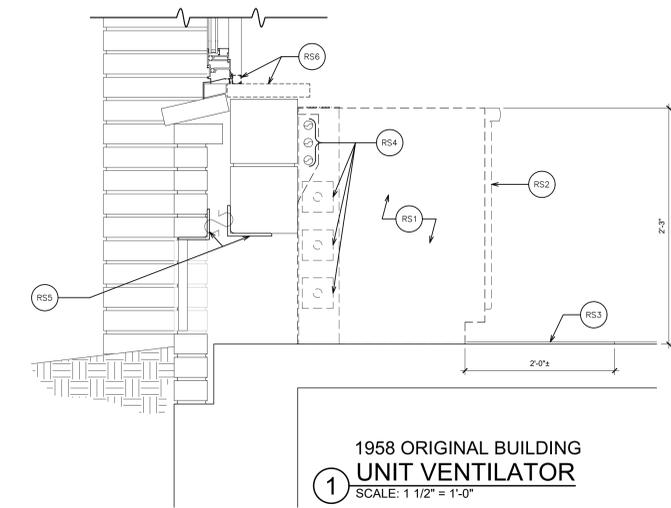
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3 TYPICAL SHELVING UNIT
SCALE: 1 1/2" = 1'-0"



2 1963 ADDITION UNIT VENTILATOR
SCALE: 1 1/2" = 1'-0"



1 1958 ORIGINAL BUILDING UNIT VENTILATOR
SCALE: 1 1/2" = 1'-0"



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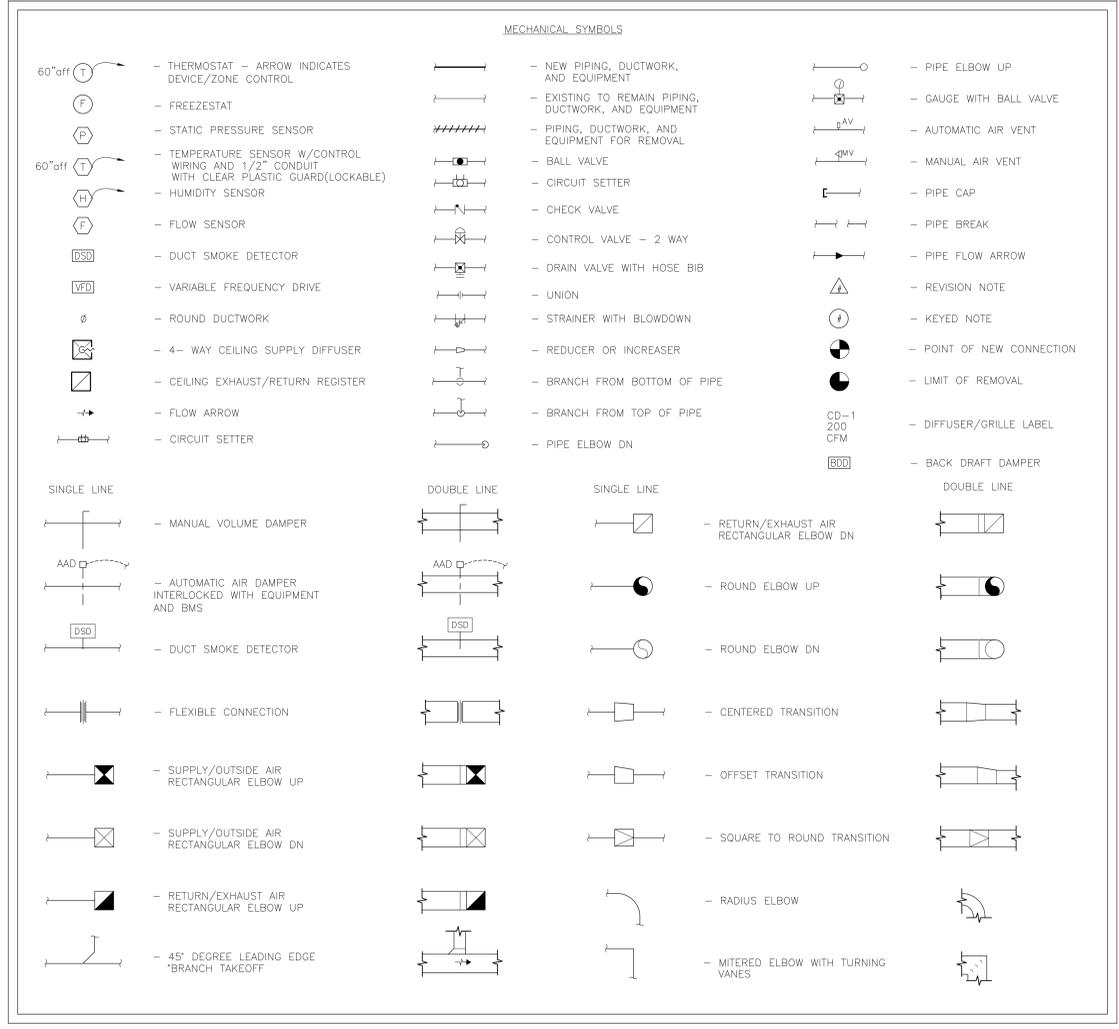
S.E.D. CONTROL NUMBER:
66-04-09-02-0-002-014

PROJECT: ELMSFORD UNION FREE SCHOOL DISTRICT
HVAC UPGRADES
ALICE E. GRADY ELEMENTARY SCHOOL
45 SOUTH LORRAINE AVENUE, ELMSFORD, NY 10523
DRAWING TITLE: DETAILS

05-20-2025	BID
12-20-2024	S.E.D.
DATE	ISSUED TO
SHEET SIZE 30"x42"	DRAWING NO. A103
DRAWN BY F & D	CHECKED BY F & D
FILE NO. 24536.00	

MECHANICAL GENERAL NOTES:

- DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. IT IS NOT INTENDED TO SPECIFY OR SHOW EVERY OFFSET, FITTING OR COMPONENT. HOWEVER, CONTRACT DOCUMENTS REQUIRE COMPONENTS AND MATERIALS WHETHER OR NOT INDICATED OR SPECIFICALLY SPECIFIED TO MAKE THE SYSTEMS BEING INSTALLED COMPLETE, CODE COMPLIANT, TESTED AND OPERATIONAL.
- CONTRACTOR SHALL FIELD VERIFY ALL LOCATIONS, DIMENSIONS AND ELEVATIONS PRIOR TO CONSTRUCTION.
- ALL MATERIALS, EQUIPMENT, METHODS OF INSTALLATION, REMOVALS AND DISPOSAL SHALL BE IN ACCORDANCE WITH THE STANDARDS, REGULATIONS, CODES, ORDINANCES, AND LAWS OF LOCAL, STATE, AND FEDERAL GOVERNMENTS, AND OTHER AUTHORITIES THAT HAVE LAWFUL JURISDICTION.
- PERFORM WORK, PROVIDE MATERIALS AND EQUIPMENT FOR SYSTEMS SHOWN, SPECIFIED AND DESCRIBED ON DRAWINGS. COMPLETELY COORDINATE ALL TRADES OF THIS CONTRACT AND PROVIDE COMPLETE AND FULLY FUNCTIONAL INSTALLATION. ALL WORK IN THIS SET TO BE COMPLETED UNDER THIS CONTRACT, UNLESS OTHERWISE INDICATED.
- PROTECT ALL EXISTING AND NEW BUILDING ELEMENTS (INSTALLED BY OTHER CONTRACTS) FROM DAMAGE. CONTRACTOR SHALL RESTORE ALL DAMAGED ELEMENTS TO ORIGINAL OR BETTER CONDITION.
- WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL PRESENT NEAT, RECTILINEAR APPEARANCE WHEN COMPLETED. MAINTAIN MAXIMUM HEAD ROOM AT ALL TIMES. DO NOT RUN PIPES, DUCTS, AND CONDUIT EXPOSED UNLESS SHOWN AND NOTED TO BE EXPOSED ON DRAWINGS.
- MATERIALS AND EQUIPMENT SHALL BE NEW AND INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. MAINTAIN MANUFACTURER'S EQUIPMENT CLEARANCES.
- CONTRACTOR IS RESPONSIBLE FOR ALL WORK RELATED TO ISOLATING, SHUTTING DOWN, DRAINING, FILLING AND TESTING SYSTEMS TO ALLOW FOR COMPLETION OF WORK. INTERRUPTIONS TO EXISTING SERVICES AND SYSTEMS SHALL BE AS SHORT AS POSSIBLE AND AT A TIME AND DURATION APPROVED BY THE OWNER AND UTILITY AS APPLICABLE. INCLUDE ALL PREMIUM TIME ASSOCIATED WITH INTERRUPTIONS. ALL SYSTEM INTERRUPTIONS SHALL BE SCHEDULED WITH OWNER, UTILITY AND COORDINATED WITH OTHER TRADE WORK.
- ALL EQUIPMENT PIPING, WIRING, INSULATION ETC. INSTALLED IN HVAC AIR PLENUM SPACES SHALL MEET CODE REQUIREMENTS FOR SMOKE AND COMBUSTIBILITY.
- SEAL ALL PENETRATIONS THROUGH FIRE RATED WALLS, PARTITIONS AND FLOORS WITH UL RATED MATERIALS/METHODS EQUIVALENT TO FIRE RATING OF ASSEMBLY.
- COORDINATE ALL WALL/FOUNDATION PENETRATIONS WITH GENERAL CONTRACT AND SEAL WEATHERTIGHT. PROVIDE STAINLESS STEEL ESCUTCHEON PLATE/TRIM RING FOR EACH ABOVE GRADE PENETRATION (BOTH SIDES).
- PROVIDE PROPER ACCESS TO EQUIPMENT THAT REQUIRES INSPECTION, REPLACEMENT OR REPAIR. ACCESS PANELS/DOORS SHALL BE A MINIMUM OF 12"x12", UNLESS OTHERWISE NOTED.
- DO NOT SUPPORT EQUIPMENT FROM SUSPENDED CEILINGS. ALL SUPPORT SHALL BE FROM BUILDING STRUCTURE OR FROM CEILING SUSPENSION SYSTEM WHICH HAS BEEN REINFORCED. SUPPORTS SHALL BE SELECTED AND INSTALLED TO PROVIDE A VIBRATION FREE INSTALLATION.
- CLEANING DURING MECHANICAL WORK: THE MECHANICAL ROOM AND ROOMS WHERE WORK WILL BE DONE TO MINIMIZE DISTURBANCE IN THE BUILDINGS. WORKERS ARE TO USE PATHWAYS AND FACILITIES AGREED UPON WITH THE DISTRICT DESIGNER IN WRITING. THE AREA OUTSIDE THE BUILDING WHERE CUTTING WELDING OR STORAGE IS ALLOWED IS TO BE FENCED AT ALL TIMES. THE CONTRACTOR WILL ON A DAILY BASIS CLEAN THE GROUNDS AND THE BUILDING OF ANY DEBRIS OR GARBAGE GENERATED BY THEIR WORK.
- PROTECT EXISTING SURFACES AND EQUIPMENT NOT MARKED FOR REMOVAL OR MODIFICATION. CONTRACTOR RESPONSIBLE FOR REPAIR OF EXISTING SURFACES AND/OR EQUIPMENT TO THE APPROVAL OF THE OWNER.
- EACH CONTRACTOR RESPONSIBLE FOR RETURNING WALLS, CEILINGS AND SURFACES THEY DISTURB THAT ARE NOT SCHEDULED FOR REPLACEMENT BACK TO ORIGINAL CONDITIONS.
- MEANS AND METHODS OF CONSTRUCTION MEANS THE LABOR, MATERIALS, TEMPORARY STRUCTURES, TOOLS, PLANT, AND CONSTRUCTION EQUIPMENT, AND THE MANNER AND TIME OF THEIR USE, NECESSARY TO ACCOMPLISH THE RESULT INTENDED BY THIS CONTRACT, AND ALL JOB RELATED SAFETY STANDARDS SUCH AS OSHA AND DOSH (DEPARTMENT OF OCCUPATIONAL SAFETY AND HEALTH). CONTRACTOR IS RESPONSIBLE TO ADHERE TO OSHA REGULATIONS REGARDING STEEL ERECTION ITEMS SPECIFICALLY ADDRESSED IN THE LATEST OSHA REGULATIONS.
- DISCREPANCIES: IN CASE OF DISCREPANCIES BETWEEN THE GENERAL NOTES, SPECIFICATIONS, PLANS/DETAILS OR REFERENCE STANDARDS, THE ENGINEER SHALL DETERMINE WHICH SHALL GOVERN. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK. SHOULD ANY DISCREPANCY BE FOUND IN THE CONTRACT DOCUMENTS, THE CONTRACTOR WILL BE DEEMED TO HAVE INCLUDED IN THE PRICE THE MOST EXPENSIVE WAY OF COMPLETING THE WORK, UNLESS PRIOR TO THE SUBMISSION OF THE PRICE, THE CONTRACTOR ASKS FOR A DECISION FROM THE ENGINEER AS TO WHICH SHALL GOVERN. ACCORDINGLY, ANY CONFLICT IN OR BETWEEN THE CONTRACT DOCUMENTS SHALL NOT BE A BASIS FOR ADJUSTMENT IN THE CONTRACT PRICE.



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

HVAC ABBREVIATIONS	
AAD	AUTOMATIC AIR DAMPER
ACCU	AIR COOLED CONDENSING UNIT
AD	ACCESS DOOR
AHU	AIR HANDLING UNIT
AMP	AMPERAGE
BDD	BACKDRAFT DAMPER
BHP	BRAKE HORSEPOWER
BMS	BUILDING MANAGEMENT SYSTEM
BTU	BRITISH THERMAL UNIT
CFM	CUBIC FEET PER MINUTE
CH	CABINET HEATER
CLG	CEILING
C	CONDENSATE
DB	DRYBULB TEMPERATURE
DDC	DIRECT DIGITAL CONTROL (SYSTEM)
DEG	DEGREE
DIA	DIAMETER
DN	DOWN
DP	DEWPOINT TEMPERATURE
DX	DIRECT EXPANSION
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EF	EXHAUST FAN
EFF	EFFICIENCY
EG	EXHAUST GRILLE
ESP	EXTERNAL STATIC PRESSURE
EXH	EXHAUST
F	FAHRENHEIT
FD	FIRE DAMPER
FF	FINAL FILTER
FLR	FLOOR
FSM	FEET PER MINUTE
FSTAT	FREEZESTAT
FT	FEET
FT HD	FEET OF HEAD
FT WG	FEET OF WATER GAUGE
FV	FACE VELOCITY
G	GAS
GAL	GALLON
GPM	GALLONS PER MINUTE
HD	HEAD
HP	HORSEPOWER
L	LOUVER
MAT	MIXED AIR TEMPERATURE
MAU	MAKE-UP AIR UNIT
MBH	1,000 BTU/HR
MCA	MINIMUM BRANCH CIRCUIT AMPACITY
MD	MOTORIZED DAMPER
OA	OUTSIDE AIR
OAI	OUTSIDE AIR INTAKE
PD	PRESSURE DROP
R	REMOVE
RA	RETURN AIR
RL	REFRIGERANT LIQUID
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
S	SATISFACTORY
SAT	SUPPLY AIR TEMPERATURE
SEN	SENSIBLE HEAT
SG	SPECIFIC GRAVITY
SP	STATIC PRESSURE
TAB	TESTING, ADJUSTING, BALANCE
TSTAT	THERMOSTAT
TYP	TYPICAL
UC	UNDER CUT
VD	VOLUME DAMPER
WB	WETBULB
WG	WATER GAUGE
AT	TEMPERATURE DIFFERENCE
IC	IRRIGATION CONTRACTOR

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S.E.D. CONTROL NUMBER:
66-04-09-02-0-002-014

PROJECT: ELMSFORD UNION FREE SCHOOL DISTRICT
HVAC UPGRADES
ALICE E. GRADY ELEMENTARY SCHOOL
48 SOUTH GOODMAN AVENUE, ELMSFORD, NY 10523

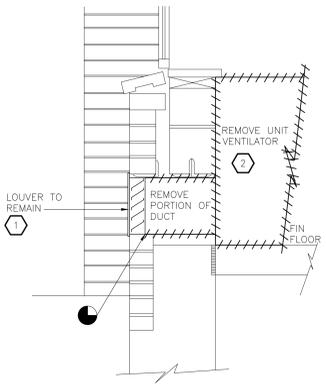
DRAWING TITLE:
ABBREVIATIONS
AND SYMBOLS

05-20-2025 BID
DATE ISSUED TO

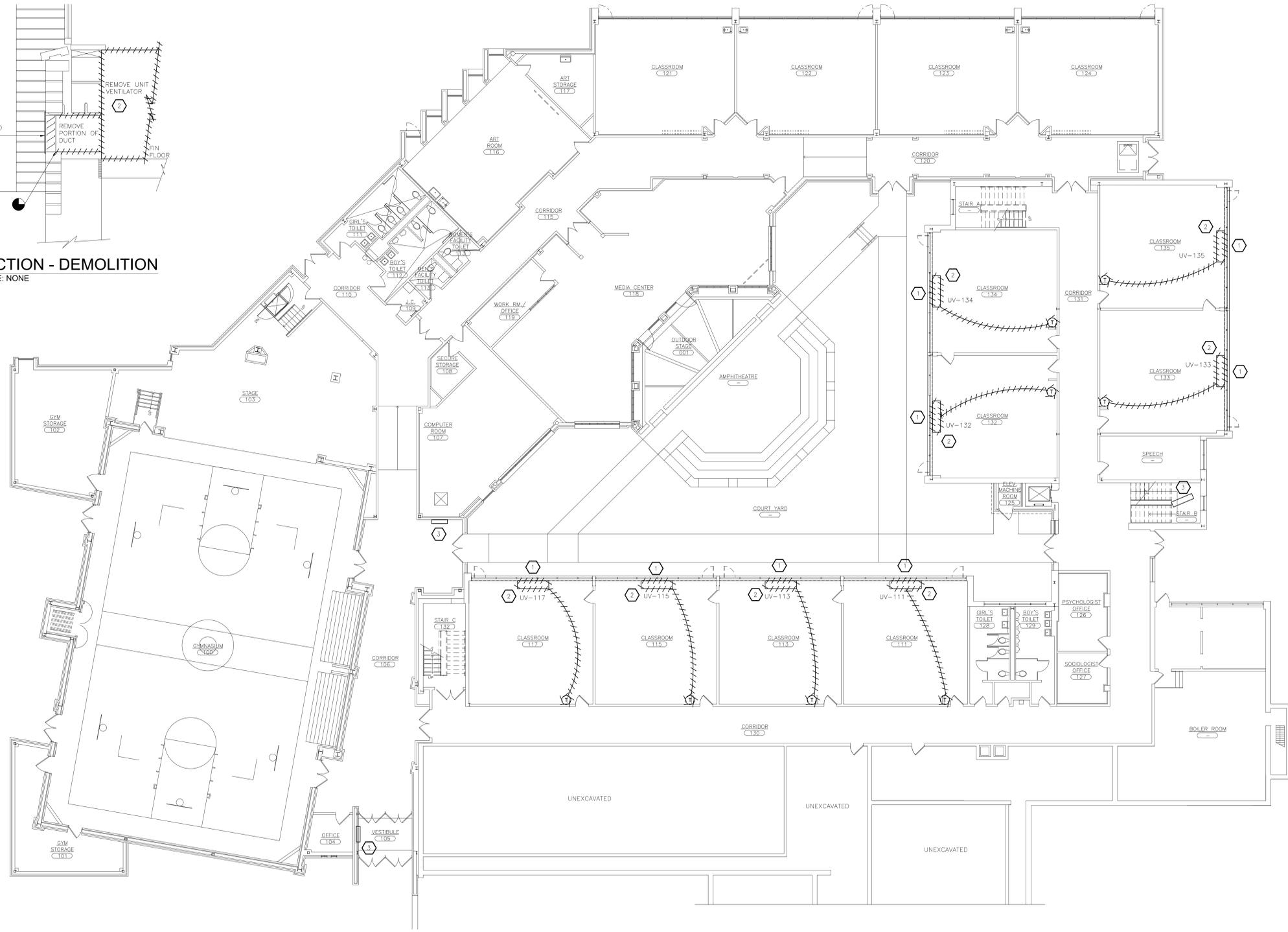
SHEET SIZE: 30"x42"
DRAWING NO: **M001**

DRAWN BY: E & R
CHECKED BY: F & D

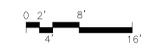
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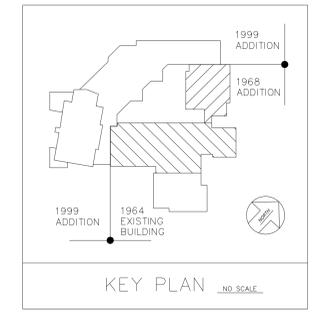
2 SECTION - DEMOLITION
SCALE: NONE



1 GROUND FLOOR PLAN - DEMOLITION
SCALE: 3/32" = 1'-0"



- KEYED NOTES - DEMOLITION:**
- 1 REMOVE INTAKE DUCTWORK/ DUCT SLEEVES, EXISTING INTAKE LOUVER TO REMAIN.
 - 2 REMOVE EXISTING FLOOR MOUNTED UNIT VENTILATOR AND ASSOCIATED. CUT BACK EXISTING PIPING SERVICING UNIT. REMOVE VALVES AND ASSOCIATED CALLED FOR REPLACEMENT ON DETAIL LOCATED ON M-500. CUT BACK PORTION OF EXISTING FIN TUBE RADIATION AND COVER AS NECESSARY. DISCONNECT EXISTING PNEUMATIC CONTROLS AND CAP. PROVIDE ALL ALTERATIONS NECESSARY TO PREPARE FOR NEW UNIT, SEE M-101.
 - 3 REMOVE PNEUMATIC CONTROLS FROM UNIT AND CAP COMPLETELY. PREPARE FOR NEW WORK.



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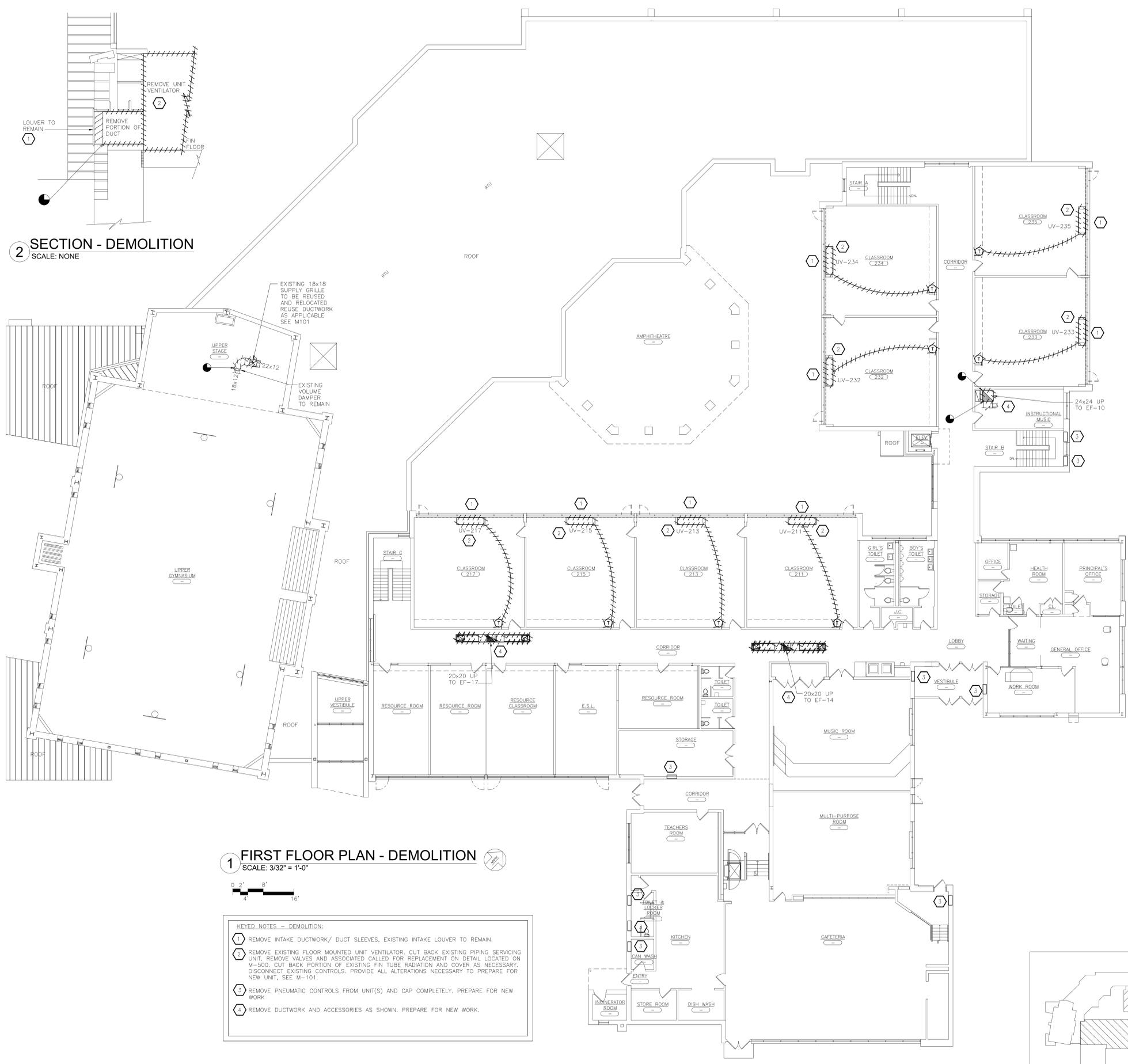
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S.E.D. CONTROL NUMBER:
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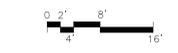
PROJECT: ELMSFORD UNION FREE SCHOOL DISTRICT
HVAC UPGRADES
 ALICE E. GRADY ELEMENTARY SCHOOL
 48 SOUTH LODOWN AVENUE, ELMSFORD, NY 10523
 DRAWING TITLE: GROUND FLOOR PLAN - DEMOLITION

05-20-2025	BID
DATE	ISSUED TO
SHEET SIZE 30"x42"	DRAWING NO. MD100
DRAWN BY E & R	CHECKED BY F & D
CHECKED BY F & D	FILE NO. 24536.00

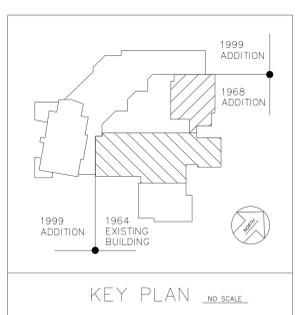


2 SECTION - DEMOLITION
SCALE: NONE

1 FIRST FLOOR PLAN - DEMOLITION
SCALE: 3/32" = 1'-0"



- KEYED NOTES - DEMOLITION:**
- 1 REMOVE INTAKE DUCTWORK/ DUCT SLEEVES, EXISTING INTAKE LOUVER TO REMAIN.
 - 2 REMOVE EXISTING FLOOR MOUNTED UNIT VENTILATOR; CUT BACK EXISTING PIPING SERVING UNIT; REMOVE VALVES AND ASSOCIATED CALLED FOR REPLACEMENT ON DETAIL LOCATED ON M-500. CUT BACK PORTION OF EXISTING FIN TUBE RADIATION AND COVER AS NECESSARY. DISCONNECT EXISTING CONTROLS. PROVIDE ALL ALTERATIONS NECESSARY TO PREPARE FOR NEW UNIT. SEE M-101.
 - 3 REMOVE PNEUMATIC CONTROLS FROM UNIT(S) AND CAP COMPLETELY. PREPARE FOR NEW WORK.
 - 4 REMOVE DUCTWORK AND ACCESSORIES AS SHOWN. PREPARE FOR NEW WORK.



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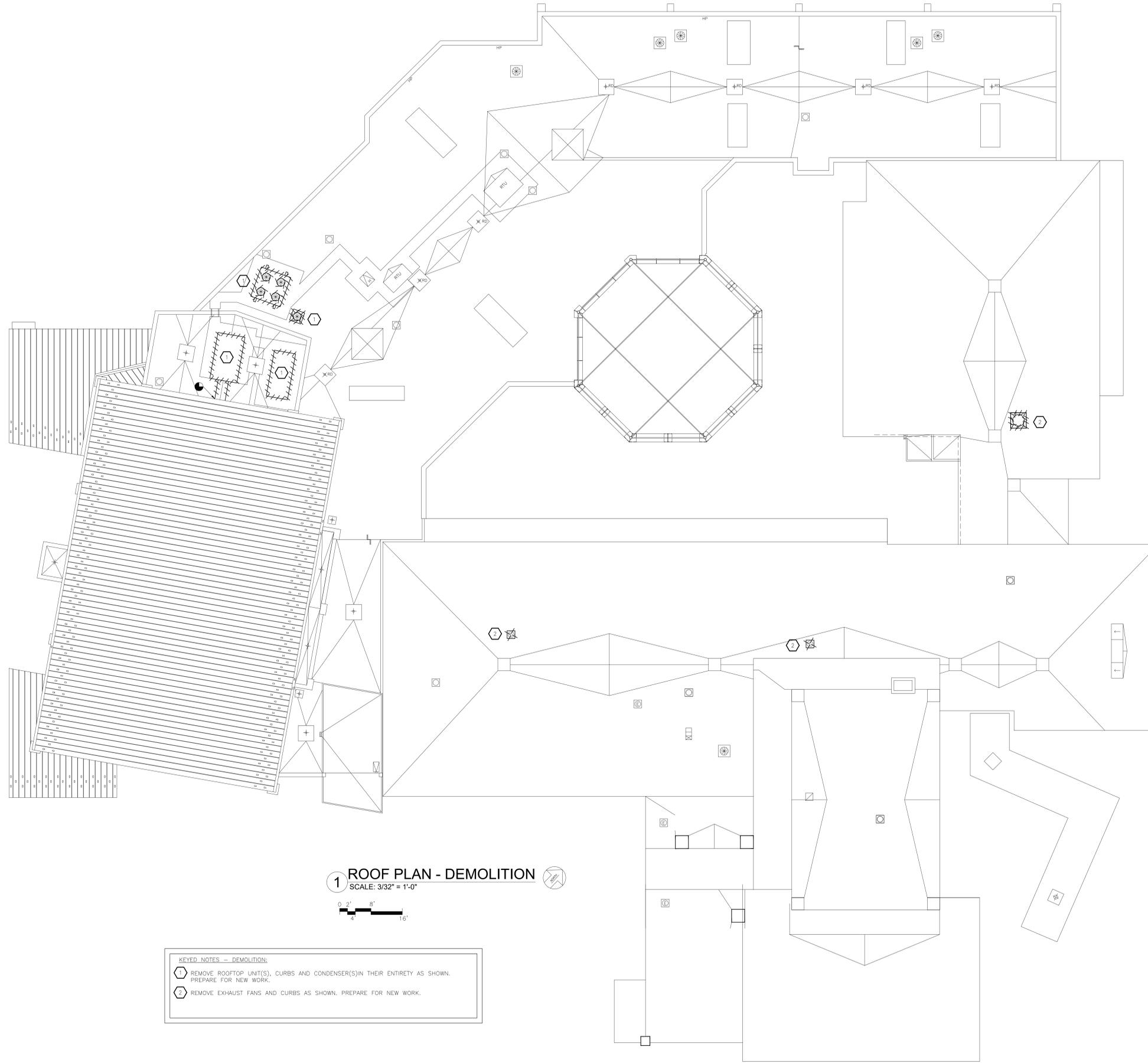
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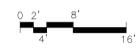
S.E.D. CONTROL NUMBER:
66-04-09-02-0-002-014

PROJECT: ELMSFORD UNION FREE SCHOOL DISTRICT
HVAC UPGRADES
 ALICE E. GRADY ELEMENTARY SCHOOL
 48 SOUTH LINDSEY AVENUE, ELMSFORD, NY 10523
 DRAWING TITLE: FIRST FLOOR PLAN - DEMOLITION

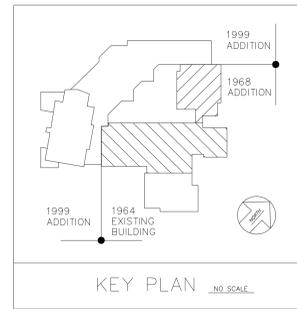
05-20-2025	BID
DATE	ISSUED TO
SHEET SIZE 30"x42"	DRAWING NO. MD101
DRAWN BY E & R	CHECKED BY F & D
CHECKED BY F & D	FILE NO. 24536.00



1 ROOF PLAN - DEMOLITION
 SCALE: 3/32" = 1'-0"



- KEYED NOTES — DEMOLITION:**
- ① REMOVE ROOFTOP UNIT(S), CURBS AND CONDENSER(S) IN THEIR ENTIRETY AS SHOWN. PREPARE FOR NEW WORK.
 - ② REMOVE EXHAUST FANS AND CURBS AS SHOWN. PREPARE FOR NEW WORK.



PLOT DATE: May 19, 2025 — 1:58pm

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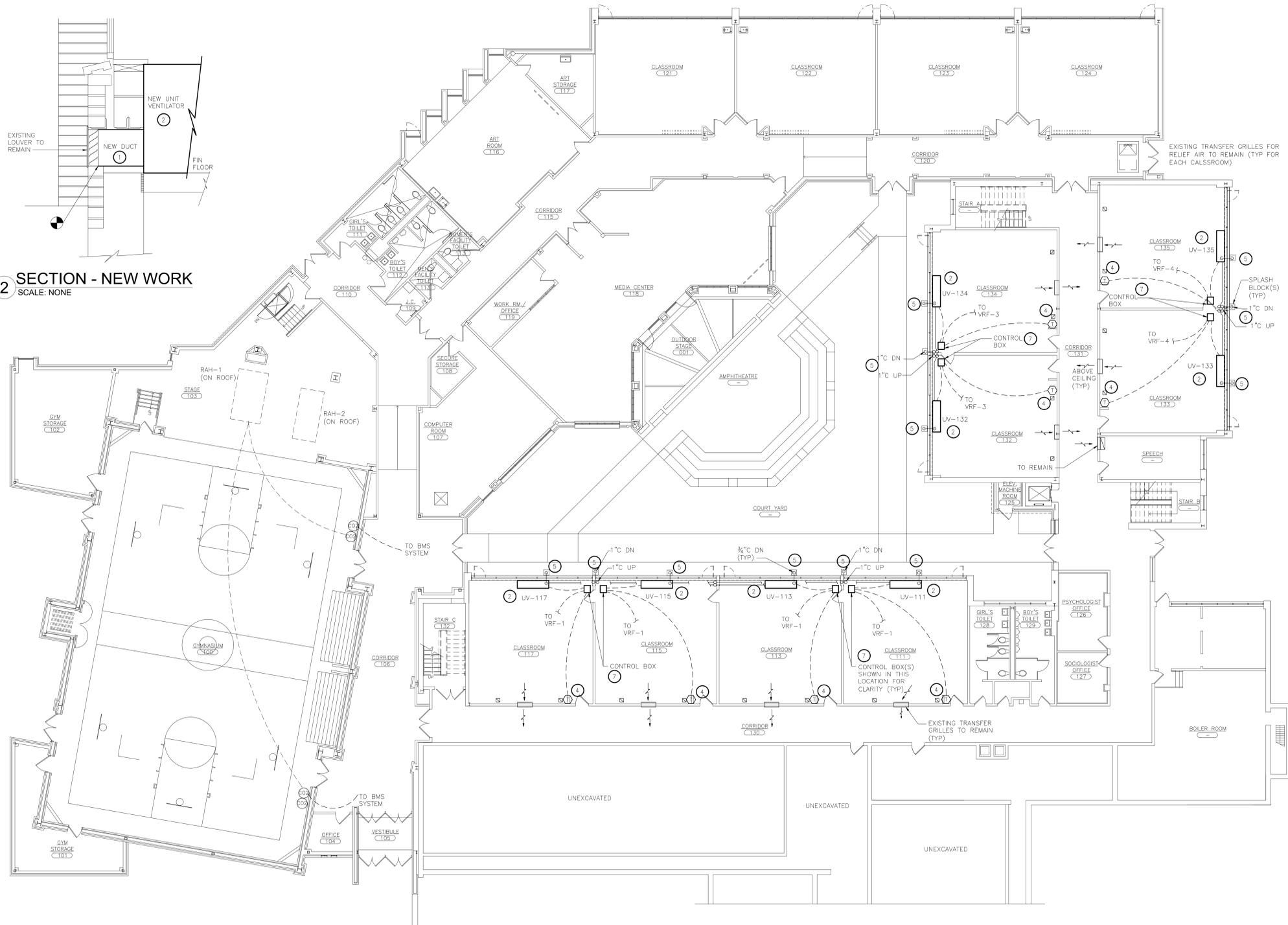
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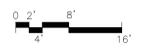
PROJECT:
 ELMSFORD UNION FREE SCHOOL DISTRICT
HVAC UPGRADES
 ALICE E. GRADY ELEMENTARY SCHOOL
 48 SOUTH GOODWIN AVENUE, ELMSFORD, NY 10523
 DRAWING TITLE:
ROOF PLAN - DEMOLITION

DATE	ISSUED TO
05-20-2025	BID
SHEET SIZE	DRAWING NO.
30"x42"	MD102
DRAWN BY	CHECKED BY
E & R	F & D
FILE NO.	
24536.00	

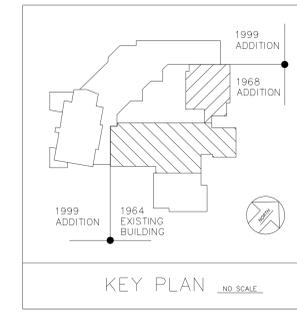


2 SECTION - NEW WORK
SCALE: NONE

1 GROUND FLOOR PLAN - NEW WORK
SCALE: 3/32" = 1'-0"



- KEYED NOTES - NEW WORK:**
- 1 PROVIDE INTAKE SLEEVE THROUGH WALL AND CONNECT TO EXISTING INTAKE LOUVER. PROPERLY SUPPORT SLEEVE, CAULK GAPS, AND SEAL AROUND SLEEVE AND INTAKE LOUVER TO MAKE WEATHERTIGHT.
 - 2 PROVIDE NEW FLOOR MOUNTED UNIT VENTILATORS. (SEE SCHEDULE ON M-500). PROVIDE AND CONNECT NEW INSULATED REFRIGERATION PIPING TO THEIR RESPECTIVE UNIT(S). PROVIDE PIPING WITH NEW VALVES AND ASSOCIATED TO CONNECT EXISTING HOT WATER PIPING TO NEW UNIT. (SEE DETAIL 2/M501 FOR ADDITIONAL VALVING) PROVIDE UNIT WITH CONDENSATE DRAIN PAN BELOW UNIT COILS AND CONNECT TO CONDENSATE PIPING. PROVIDE NEW CONTROLS TO MAKE COMPATIBLE WITH NEW UNITS. FIELD VERIFY COIL CONNECTION SIDES BEFORE ORDERING MATERIALS AND EQUIPMENT. REUSE ELECTRICAL CIRCUITS. PROVIDE POWER TO UV'S VRF CONTROLS AND ASSOCIATED.
 - 3 ALL NEW EQUIPMENT TO BE CONNECTED TO AND MONITORED BY THE BMS. COORDINATE WITH DISTRICT CONTROLS VENDOR.
 - 4 PROVIDE NEW WIRED TEMPERATURE SENSOR, CONNECT TO SPECIFIED NEW UNIT AND TO BMS. PROVIDE CONTROL WIRING, WIRE MOLDING, CONDUIT, AND ASSOCIATED TO MATCH EXISTING. PROVIDE BMS CONTROL WIRING. VERIFY IN FIELD FOR ROUTING.
 - 5 PROVIDE COPPER CONDENSATE PIPING TO THE EXTERIOR. SEE DETAIL 4/M501 FOR MORE INFORMATION. MAKE PENETRATIONS TO EXTERIOR WEATHERTIGHT. PROVIDE SPLASHBLOCKS SLOPED AWAY FROM FOUNDATION.
 - 6 PROVIDE AND SUPPORT SHEET METAL PIPE CHASES FOR REFRIGERANT AND/OR CONDENSATE LINES. MATCH ADJACENT FIN TUBE COVER MATERIALS AND COLORS. FIELD VERIFY DIMENSIONS.
 - 7 LOCATE CONTROL BOX(S) WITHIN THE UNIT(S) (UV'S) (TYP) AND PER MANUFACTURERS RECOMMENDATIONS.



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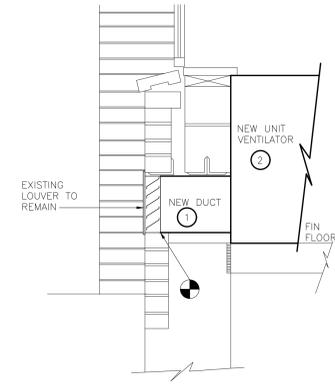
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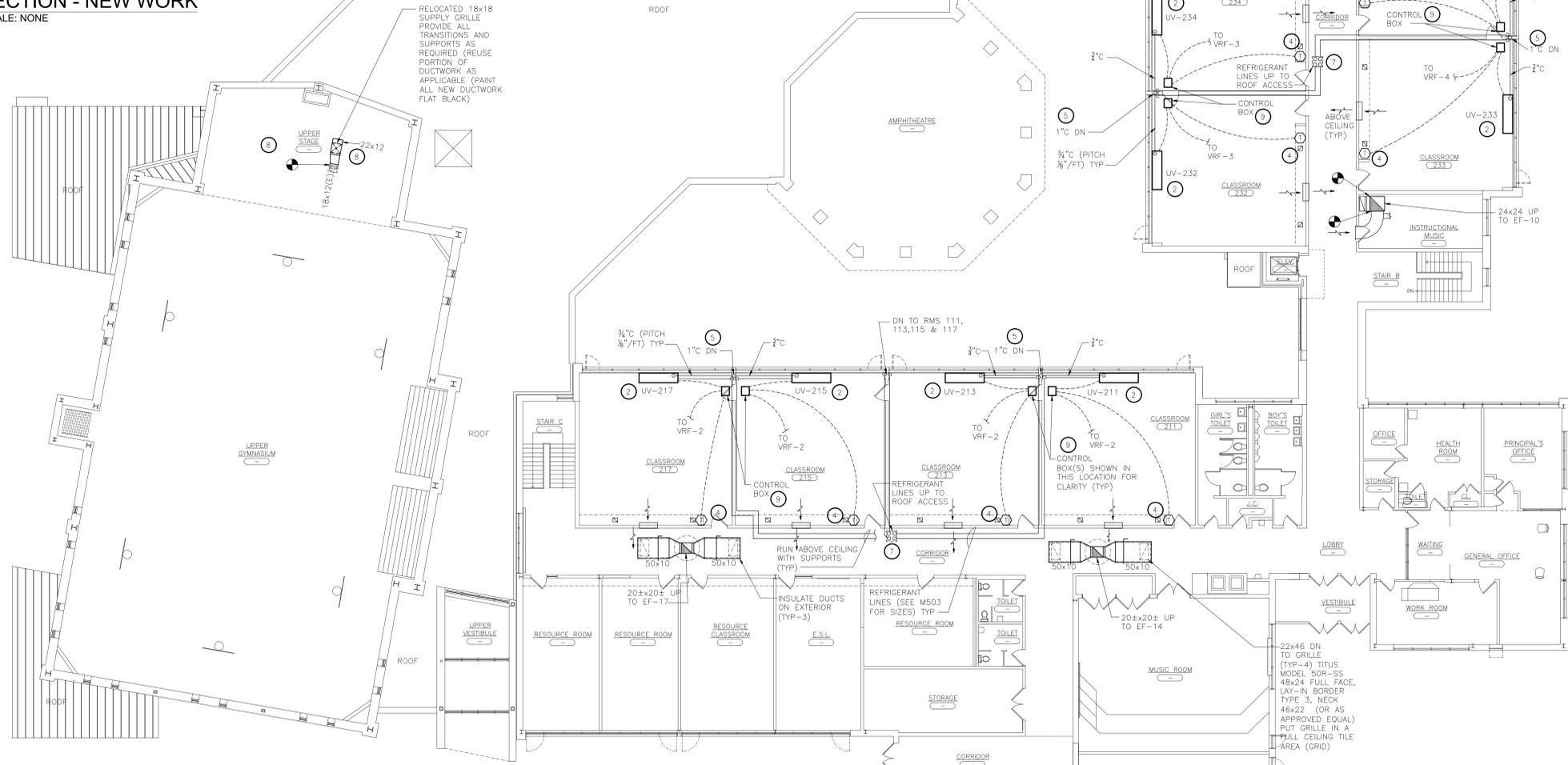
S.E.D. CONTROL NUMBER:
66-04-09-02-0-002-014

PROJECT: ELMSFORD UNION FREE SCHOOL DISTRICT
HVAC UPGRADES
 ALICE E. GRADY ELEMENTARY SCHOOL
 48 SOUTH GOVERNOR AVENUE, ELMSFORD, NY 10523
 DRAWING TITLE: GROUND FLOOR PLAN - NEW WORK

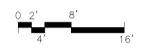
DATE: 05-20-2025	BID
SHEET SIZE: 30"x42"	ISSUED TO
DRAWN BY: E & R	M100
CHECKED BY: F & D	FILE NO: 24536.00



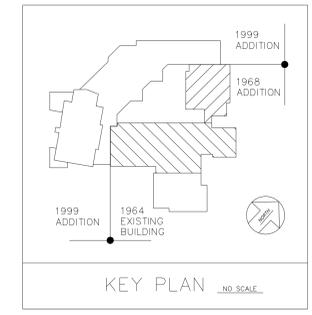
2 SECTION - NEW WORK
SCALE: NONE



1 FIRST FLOOR PLAN - NEW WORK
SCALE: 3/32" = 1'-0"



- KEYED NOTES - NEW WORK:**
- 1 PROVIDE INTAKE SLEEVE THROUGH WALL AND CONNECT TO EXISTING INTAKE LOUVER. PROPERLY SUPPORT SLEEVE, CAULK GAPS, AND SEAL AROUND SLEEVE AND INTAKE LOUVER TO MAKE WEATHERTIGHT.
 - 2 PROVIDE NEW FLOOR MOUNTED UNIT VENTILATORS. (SEE SCHEDULE ON M-500). PROVIDE AND CONNECT NEW INSULATED REFRIGERATION PIPING TO THEIR RESPECTIVE UNIT(S). PROVIDE PIPING WITH NEW VALVES AND ASSOCIATED TO CONNECT EXISTING HOT WATER PIPING TO NEW UNIT. (SEE DETAIL 2/M501 FOR ADDITIONAL VALVING) PROVIDE UNIT WITH CONDENSATE DRAIN PAN BELOW UNIT COILS AND CONNECT TO CONDENSATE PIPING. PROVIDE NEW CONTROLS TO MAKE COMPATIBLE WITH NEW UNITS. FIELD VERIFY COIL CONNECTION SIDES BEFORE ORDERING MATERIALS AND EQUIPMENT. REUSE ELECTRICAL CIRCUITS. PROVIDE POWER TO UV'S VRF CONTROLS AND ASSOCIATED.
 - 3 ALL NEW EQUIPMENT TO BE CONNECTED TO AND MONITORED/CONTROLLED BY THE BMS. COORDINATE WITH DISTRICT CONTROLS VENDOR.
 - 4 PROVIDE NEW WIRED TEMPERATURE SENSOR, CONNECT TO SPECIFIED NEW UNIT AND TO BMS. PROVIDE CONTROL WIRING, WIRE MOLDING, CONDUIT, AND ASSOCIATED TO MATCH EXISTING. PROVIDE BMS CONTROL WIRING. VERIFY IN FIELD FOR ROUTING.
 - 5 PROVIDE COPPER CONDENSATE PIPING TO THE EXTERIOR. SEE DETAIL 4/M501 FOR MORE INFORMATION. MAKE PENETRATIONS TO EXTERIOR WEATHERTIGHT. PROVIDE SPLASHBLOCKS SLOPED AWAY FROM FOUNDATION.
 - 6 PROVIDE AND SUPPORT SHEET METAL PIPE CHASES FOR REFRIGERANT AND/OR CONDENSATE LINES. MATCH ADJACENT FIN TUBE COVER MATERIALS AND COLORS. FIELD VERIFY DIMENSIONS.
 - 7 PROVIDE REFRIGERANT LINES (INSULATED) TO THEIR RESPECTIVE UNITS. PROVIDE ALL SUPPORTS REQUIRED. SEE M503 FOR MORE INFORMATION. COORDINATE PORTAL LOCATION WITH ARCH DRAWINGS.
 - 8 PROVIDE FAN SHUTDOWN RELAYS AND ALL APPURTENANCES FOR (2) ROOFTOP UNITS AND CONNECT TO BMS WITH ALL ACCESSORIES.
 - 9 LOCATE CONTROL BOX(S) WITHIN THE REQUIRED DISTANCE FROM THE UV'S (TYP) PER MANUFACTURERS RECOMMENDATIONS.



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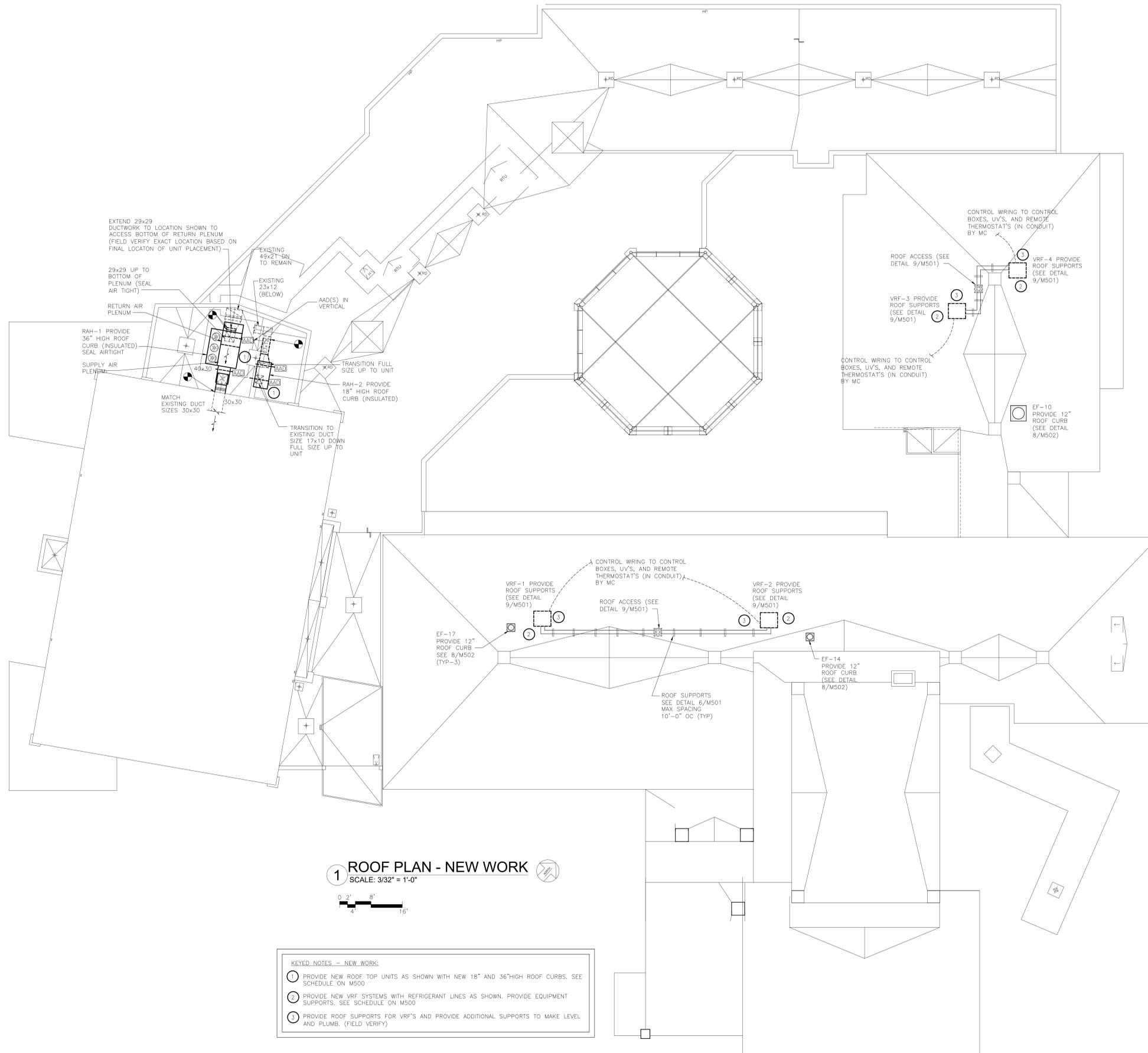
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S.E.D. CONTROL NUMBER:
66-04-09-02-0-002-014

PROJECT: ELMSFORD UNION FREE SCHOOL DISTRICT
HVAC UPGRADES
 ALICE E. GRADY ELEMENTARY SCHOOL
 46 SOUTH GOVERNOR AVENUE, ELMSFORD, NY 10523
 DRAWING TITLE: FIRST FLOOR PLAN - NEW WORK

DATE	ISSUED TO
05-20-2025	BID
SHEET SIZE	DRAWING NO.
30"x42"	M101
DRAWN BY	FILE NO.
E & R	24536.00
CHECKED BY	
F & D	

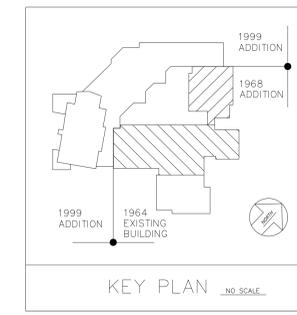


1 ROOF PLAN - NEW WORK

SCALE: 3/32" = 1'-0"



- KEYED NOTES - NEW WORK**
- 1 PROVIDE NEW ROOF TOP UNITS AS SHOWN WITH NEW 18" AND 36" HIGH ROOF CURBS. SEE SCHEDULE ON M500
 - 2 PROVIDE NEW VRF SYSTEMS WITH REFRIGERANT LINES AS SHOWN. PROVIDE EQUIPMENT SUPPORTS. SEE SCHEDULE ON M500
 - 3 PROVIDE ROOF SUPPORTS FOR VRF'S AND PROVIDE ADDITIONAL SUPPORTS TO MAKE LEVEL AND PLUMB. (FIELD VERIFY)



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S.E.D. CONTROL NUMBER:
66-04-09-02-0-002-014

PROJECT:
ELMSFORD UNION FREE SCHOOL DISTRICT
HVAC UPGRADES
ALICE E. GRADY ELEMENTARY SCHOOL
48 SOUTH LINDSEY AVENUE, ELMSFORD, NY 10523

DRAWING TITLE:
ROOF PLAN - NEW WORK

DATE: 05-20-2025
SHEET SIZE: 30"x42"
DRAWN BY: E & R
CHECKED BY: F & D

BID
ISSUED TO
DRAWING NO.: **M102**
FILE NO.: 24536.00

ROOFTOP UNIT SCHEDULE

MARK	SERVICE	MODEL NO. (A.A.N OR APPROVED EQUAL)	CFM	MIN/MAX O.A. CFM	TYPE	COOLING										HEATING										ELECTRICAL										REMARKS
						TEMPERATURE (°F)					CAPACITY					ENT. WATER (°F)	LVG. WATER (°F)	EER	TYPE	TEMPERATURE (°F)			ENT. FLUID (°F)	LVG. FLUID (°F)	V/PH/HZ	MCA (A)	MOP (A)	FACTORY DISC.	VFD	GFCI OUTLET	ECONOM IZER					
						ENT. AIR	LVG. AIR	DD	AMB	TONS	MBH	DB	WB	DB	WB					DB/WB	NOM.	TOTAL										SENS.	GPM	DB	DB	
RAH-1	GYM 100	RNA-030-C-A-3-CAB09-J0EU00-00-QACAM-000-0000-ABLSL-DC-000	9000	1000/6000/9000	R-454B	88	71	63	60	95/75	30	360	278	-	-	-	12.5	HOT WATER	26.8	94	706	45	200	170	208/3/60	205	250	YES	YES	YES	YES	SEE NOTES 1,2,3				
RAH-2	STAGE 103	RNA-006-A-A-8-CA0A-J0A000-00-00A1-E00-00000-0000-DC-C80	2000	500/2000	R-454B	80	65	59	56	95/75	6	63.1	48.8	-	-	-	12.5	HOT WATER	56.3	88	70.1	7	200	170	208/3/60	48	70	YES	YES	YES	YES	SEE NOTES 1,2,3				

NOTE 1: PROVIDE ADJUSTABLE MOTORIZED DAMPERS AS SHOWN ON THE MECHANICAL DRAWINGS, AND INTERLOCK WITH THEIR RESPECTIVE UNIT.
 NOTE 2: INSTALL UNIT(S) ACCORDING TO MANUFACTURER RECOMMENDATIONS.
 NOTE 3: PROVIDE DUCT SMOKE DETECTORS AND ALL APPURTENANCES AND CONNECT TO EXISTING F/A SYSTEMS (PANELS) AS REQUIRED

OUTDOOR AIR DESIGN REQUIREMENTS

EQUIPMENT MARK(S)	ROOM	ROOM TYPE	GROSS FLOOR AREA	OCCUPANTS /1000 FT2	CFM /PERSON	ZONE POPULATION PZ	CFM/SQ FT RA	NET OCCUPIABLE FLOOR AREA AZ	Vbz	Ez	MAX. O.A. (CFM) VOZ	NOTES
UV-111	111	CLASSROOM	830	25	10	21	0.12	700	294	0.9	325	
UV-113	113	CLASSROOM	830	25	10	21	0.12	700	294	0.9	325	
UV-115	115	CLASSROOM	830	25	10	21	0.12	700	294	0.9	325	
UV-117	117	CLASSROOM	830	25	10	21	0.12	700	294	0.9	325	
UV-132	132	CLASSROOM	840	25	10	21	0.12	700	294	0.9	325	
UV-133	133	CLASSROOM	840	25	10	21	0.12	700	294	0.9	325	
UV-134	134	CLASSROOM	840	25	10	21	0.12	700	294	0.9	325	
UV-135	135	CLASSROOM	840	25	10	21	0.12	700	294	0.9	325	
UV-211	211	CLASSROOM	830	25	10	21	0.12	700	294	0.9	325	
UV-213	213	CLASSROOM	830	25	10	21	0.12	700	294	0.9	325	
UV-215	215	CLASSROOM	830	25	10	21	0.12	700	294	0.9	325	
UV-217	217	CLASSROOM	830	25	10	21	0.12	700	294	0.9	325	
UV-232	232	CLASSROOM	840	25	10	21	0.12	700	294	0.9	325	
UV-233	233	CLASSROOM	840	25	10	21	0.12	700	294	0.9	325	
UV-234	234	CLASSROOM	840	25	10	21	0.12	700	294	0.9	325	
UV-235	235	CLASSROOM	840	25	10	21	0.12	700	294	0.9	325	
RAH-1	GYM 100		5845	7	20	40	0.18	5500	1790	1.0	1790	
RAH-2	STAGE 103		1585	70	7	110	0.06	1300	848	1.0	850	

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

OCCUPANCY CLASSIFICATION DERIVED FROM NYSMC TABLE 403.3.1.1
 RP=OUTDOOR AIRFLOW RATE PER PERSON (NYSMC TABLE 403.3.1.1)
 PZ=QTY. OF OCCUPANTS IN SPACE
 RA=OUTDOOR AIRFLOW RATE PER UNIT AREA (NYSMC TABLE 403.3.1.1)
 AZ=OCCUPIABLE FLOOR AREA
 VBZ=REQUIRED OUTDOOR AIRFLOW RATE IN BREATHING ZONE
 EZ=ZONE AIR DISTRIBUTION EFFECTIVENESS (NYSMC TABLE 403.3.1.1.2)
 VOZ=ZONE OUTDOOR AIRFLOW RATE
 VBZ=(RP*PZ)+(RA*AZ) VOZ=VBZ/EZ

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

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

VRF SCHEDULE

MARK	SERVICE	BRAND/MODEL NO. (HITACHI OR APPROVED EQUAL)	DESIGNATION	CAPACITY (TONS)	COOLING DB (F)	HEATING DB (F)	TOTAL UNIT (MBH) COOLING/HEATING	EER (AHR)	REFRIG.	CONNECTIONS			UNIT ELECTRICAL DATA			REMARKS
										L	G		VOLTAGE	MOPD	MCA	
VRF-1	SEE M100, M101	HVAHP120B32S	OUTDOOR UNIT 1	10	95	47	114/129	12.5	R410A	SEE M503	SEE M503	208/3PH	50	42A	SEE NOTES 1,2,3,4,5	
VRF-2	SEE M100, M101	HVAHP120B32S	OUTDOOR UNIT 2	10	95	47	114/129	12.5	R410A	SEE M503	SEE M503	208/3PH	50	42A	SEE NOTES 1,2,3,4,5	
VRF-3	SEE M100, M101	HVAHP192B32S	OUTDOOR UNIT 3	16	95	47	184/206	21.1	R410A	SEE M503	SEE M503	208/3PH	90	68A	SEE NOTES 1,2,3,4,5	
VRF-4	SEE M100, M101	HVAHP120B32S	OUTDOOR UNIT 4	10	95	47	114/129	12.5	R410A	SEE M503	SEE M503	208/3PH	50	42A	SEE NOTES 1,2,3,4,5	

NOTE 1: MAINTAIN REQUIRED AND RECOMMENDED CLEARANCES FOR UNIT DURING PLACEMENT. INSTALL AND CHARGE UNIT ACCORDING TO MANUFACTURER RECOMMENDATIONS.
 NOTE 2: PROVIDE WEATHERPROOF PAD FOR UNIT AND 24" CURB.
 NOTE 3: PROVIDE REFRIGERANT SUCTION AND LIQUID LINES. PROVIDE INSULATION, SUPPORT, AND ENCLOSURES AS NOTED. PROVIDE ALL PIPING ENCLOSURES, WIRING ENCLOSURES, AND PENETRATIONS.
 NOTE 4: MAINTAIN MINIMUM OF 10"-0" FROM ROOF EDGE AND AIR INTAKES WHEN PLACING UNIT. COORDINATE ALL TRADES BEFORE PLACEMENT.
 NOTE 5: PROVIDE PIPING PORTAL(S) TO HOUSE ALL PENETRATIONS ASSOCIATED WITH UNIT(S).

UNIT VENTILATOR SCHEDULE

MARK	SERVICE	MAGIC-AIRE / MODEL (OR APPROVED EQUAL)	TYPE	TOTAL CFM	O/A MAX	DX COOLING COIL						HEATING COIL						MOTOR (ECM)				ELECTRICAL				MARK	NOTES
						EAT (F)	MBH	EDB (F)	EWB (F)	LDB (F)	LWB (F)	ROWS	BTU	ROWS	GPM	EDB (F)	LDB (F)	EWB (F)	LWB (F)	HP	VOLTAGE	FLA	MCA	MOP			
GROUND FLOOR																											
UV-111	CLASSROOM 111	MAUVF321FFB513A0K1EA6AAA5H	VERTICAL	1000	300	95	2.9	80	67	59.6	57.9	3	56.250	2	3	50	100	180	140	1/3	208/1/60	2.6	3.2	15	UV-111	1,2,3,4	
UV-113	CLASSROOM 113	MAUVF321FFB513A0K1EA6AAA5H	VERTICAL	1000	300	95	2.9	80	67	59.6	57.9	3	56.250	2	3	50	100	180	140	1/3	208/1/60	2.6	3.2	15	UV-113	1,2,3,4	
UV-115	CLASSROOM 115	MAUVF321FFB513A0K1EA6AAA5H	VERTICAL	1000	300	95	2.9	80	67	59.6	57.9	3	56.250	2	3	50	100	180	140	1/3	208/1/60	2.6	3.2	15	UV-115	1,2,3,4	
UV-117	CLASSROOM 117	MAUVF321FFB513A0K1EA6AAA5H	VERTICAL	1000	300	95	2.9	80	67	59.6	57.9	3	56.250	2	3	50	100	180	140	1/3	208/1/60	2.6	3.2	15	UV-117	1,2,3,4	
UV-132	CLASSROOM 132	MAUVF321FFB513A0K1EA6AAA5H	VERTICAL	1250	300	95	3.6	80	67	59.4	57.9	3	66.285	2	3	50	100	180	140	1/2	208/1/60	3.3	4.1	15	UV-132	1,2,3,4	
UV-133	CLASSROOM 133	MAUVF321FFB513A0K1EA6AAA5H	VERTICAL	1000	300	95	2.9	80	67	59.6	57.9	3	56.250	2	3	50	100	180	140	1/3	208/1/60	2.6	3.2	15	UV-133	1,2,3,4	
UV-134	CLASSROOM 134	MAUVF411FFB513A0K1DA6AAA5H	VERTICAL	1250	300	95	3.6	80	67	59.4	57.9	3	66.285	2	3	50	100	180	140	1/2	208/1/60	3.3	4.1	15	UV-134	1,2,3,4	
UV-135	CLASSROOM 135	MAUVF321FFB513A0K1EA6AAA5H	VERTICAL	1000	300	95	2.9	80	67	59.6	57.9	3	56.250	2	3	50	100	180	140	1/3	208/1/60	2.6	3.2	15	UV-135	1,2,3,4	
FIRST FLOOR																											
UV-211	CLASSROOM 211	MAUVF411FFB513A0K1DA6AAA5H	VERTICAL	1250	300	95	3.6	80	67	59.4	57.9	3	66.285	2	3	50	100	180	140	1/2	208/1/60	3.3	4.1	15	UV-211	1,2,3,4	
UV-213	CLASSROOM 213	MAUVF411FFB513A0K1DA6AAA5H	VERTICAL	1250	300	95	3.6	80	67	59.4	57.9	3	66.285	2	3	50	100	180	140	1/2	208/1/60	3.3	4.1	15	UV-213	1,2,3,4	
UV-215	CLASSROOM 215	MAUVF411FFB513A0K1DA6AAA5H	VERTICAL	1250	300	95	3.6	80	67	59.4	57.9	3	66.285	2	3	50	100	180	140	1/2	208/1/60	3.3	4.1	15	UV-215	1,2,3,4	
UV-217	CLASSROOM 217	MAUVF411FFB513A0K1DA6AAA5H	VERTICAL	1250	300	95	3.6	80	67	59.4	57.9	3	66.285	2	3	50	100	180	140	1/2	208/1/60	3.3	4.1	15	UV-217	1,2,3,4	
UV-232	CLASSROOM 232	MAUVF511FFB523A0K1DA6AAA5H	VERTICAL	1500	300	95	4.4	80	67	59.7	57.6	3	79.240	2	3	50	100	180	140	1/2	208/1/60	3.3	4.1	15	UV-232	1,2,3,4	
UV-233	CLASSROOM 233	MAUVF321FFB513A0K1EA6AAA5H	VERTICAL	1000	300	95	2.9	80	67	59.6	57.9	3	56.250	2	3	50	100	180	140	1/3	208/1/60	2.6	3.2	15	UV-233	1,2,3,4	
UV-243	CLASSROOM 234	MAUVF511FFB523A0K1DA6AAA5H	VERTICAL	1500	300	95	4.4	80	67	59.7	57.6	3	79.240	2	3	50	100	180	140	1/2	208/1/60	3.3	4.1	15	UV-243	1,2,3,4	
UV-235	CLASSROOM 235	MAUVF321FFB513A0K1EA6AAA5H	VERTICAL	1000	300	95	2.9	80	67	59.6	57.9	3	56.250	2	3	50	100	180	140	1/3	208/1/60	2.6	3.2	15	UV-235	1,2,3,4	

NOTE 1: DAMPERS CONTROLLING OUTDOOR AIR INTAKE VOLUME TO BE MOTORIZED AND INTERLOCKED WITH THEIR RESPECTIVE UNIT.
 NOTE 2: CONNECT NEW UNIT VENTILATOR TO EXISTING INTAKE LOUVER. PROVIDE NEW INSULATED SLEEVE AND SEAL CONNECTIONS TO BE WATER TIGHT. PROVIDE NECESSARY MODIFICATIONS NEEDED FOR NEW CONNECTION.
 NOTE 3: PROVIDE ALL VALVING, FITTINGS, ELBOWS, BALANCING VALVES ETC. AS SHOWN ON DETAIL 2/M500
 NOTE 4: PROVIDE ACCU COMPATIBLE UNITS, WHICH INCLUDE ACCU ELECTRONIC EXPANSION VALVE KITS, ACCU COMMUNICATION BOXES, ETC. PROVIDE 12" MINIMUM EXTENDED UTILITY CABINET FROM SAME MANUFACTURER TO MATCH NEW UVV CABINET. HOUSE EEV AND CONTROLS IN UTILITY CABINET.

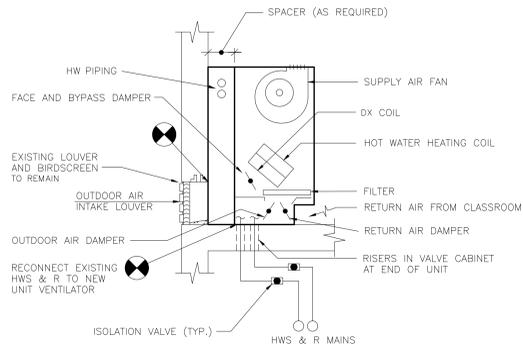
INSULATION SCHEDULE

TYPE	EQUIPMENT OR SYSTEM SERVED	INSULATION CLASS (a)			JACKETING CLASS (b)			THICKNESS (IN)					DUCTWORK
		INTERIOR CONCEALED	INTERIOR EXPOSED	EXTERIOR	INTERIOR GENERAL	EQUIPMENT ROOMS	EXTERIOR	<1"	1"-<1 1/2"	1 1/2"- <4"	4" - <8"	≥8" & UP	
A	RS, RL	FE	FE	FE	0	0	4	0.5	1.5	1.5	1.5	1.5	
B	DCW, COOLING COIL CONDENSATE	FE	FE	FE	0	0	4	0.5	0.5	1.0	1.0	1.0	
C	HWS, HWR	FG	FG	UR	1	1	6	1.5	1.5	2	2	2	
D	DUCTWORK	FG (d)	FG (e)	UR (e)	2	2	12	2	2	2	2	2	1.5(g)

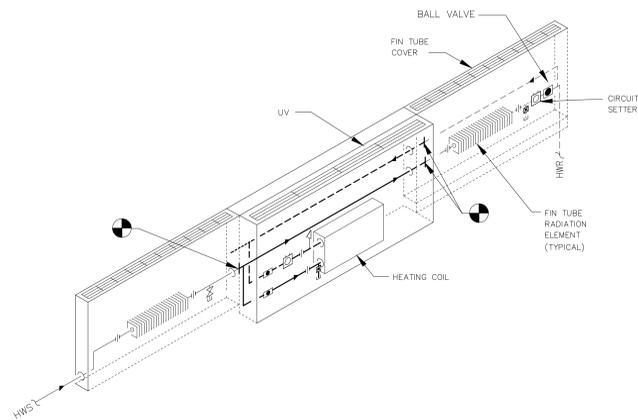
(a) FG -- FIBROUS GLASS (b) 0 -- NONE 1 -- ALL SERVICE (c) SUPPLY AIR (d) RIGID BOARD (e) EXCEPT SUPPLY AIR WITHIN CONDITIONED SPACE
 FE -- FLEXIBLE ELASTOMERIC 2 -- ALUMINUM FOIL 3 -- CANVAS (d) OUTSIDE AIR (d) BLANKET (g) INSULATE EXHAUST AIR 15'-0" FROM EXTERIOR
 UR -- URETHANE 4 -- POLYVINYL CHLORIDE 5 -- STAINLESS STEEL MIXED AIR (g) PENETRATION
 OS -- CALCIUM SILICATE 6 -- ALUMINUM 7 -- EPDM RETURN AIR (i) TWO LAYERS, 3 IN TOTAL
 FR -- FIRE RATED

EXHAUST FAN SCHEDULE

UNIT NO.	LOCATION /SERVICE	FAN TYPE	AIR FLOW CFM	STATIC PRESS. (IN WG)	MAX. RPM	HP/WATTS	VOLT/PHASE	MODEL	MFG	REMARKS
EF 10	CORR EXHAUST	ROOF	4325	.75	1028	1.5 HP	208/60/3	G-200	GREENHECK	(1)(2)(3)(4)(5)(6)
EF 14	1ST FLOOR CORR EXH	ROOF								

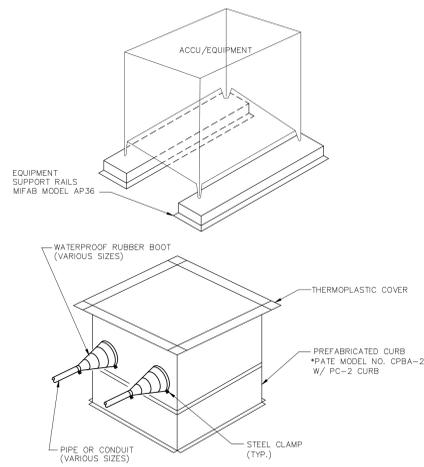


7 VERTICAL UNIT VENTILATOR DETAIL
SCALE: NONE

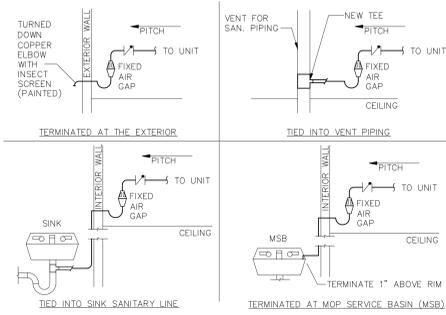


- NOTES:
1. LOCATE CONTROL VALVES, SHUTOFF VALVES, AND CIRCUIT SETTERS SO THAT THEY ARE EASILY ACCESSIBLE FOR INSPECTION AND MAINTENANCE. PROVIDE ACCESS DOORS IN APPROPRIATE LOCATIONS WHERE INSTALLATION REQUIRES VALVES AND/OR CIRCUIT SETTERS TO BE CONCEALED.
 2. WHEN FIN TUBE RADIATION IS INSTALLED IN CLASSROOMS WITH UNIT VENTILATORS, VALVES ARE LOCATED BEHIND OPEN SHELVING OR FIN TUBE ENCLOSURE AS APPLICABLE.
 3. PROVIDE ENCLOSURES AS REQUIRED TO CONCEAL REFRIGERANT LINES.
 4. MODIFY FIN-TUBE ENCLOSERS AS REQUIRED TO PERMIT NEW UV INSTALLATIONS. REUSE/MODIFY END CAPS AS APPLICABLE.
 5. PNEUMATIC LINES FEEDING EXISTING WALL HUNG THERMOSTAT MUST BE PLUGGED AND THERMOSTATS REMOVED

8 TYPICAL CLASSROOM UNIT VENT W/FR PIPING DETAIL
SCALE: NONE

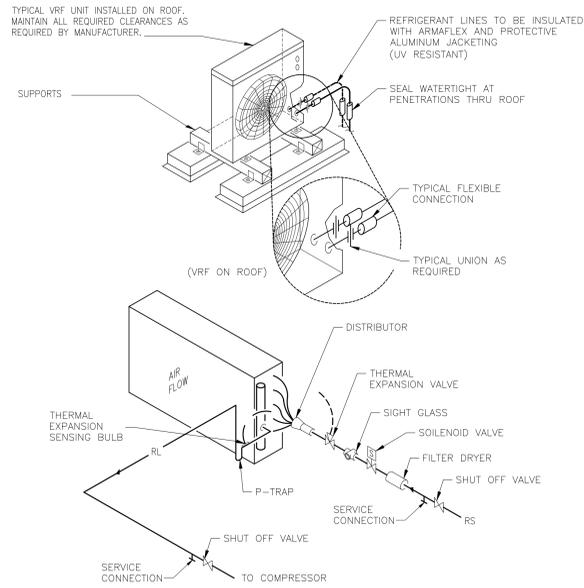


NOTE: SEAL ALL PENETRATIONS WATERTIGHT
9 PIPE/CONDUIT CURB ASSEMBLY DETAILS
SCALE: NONE



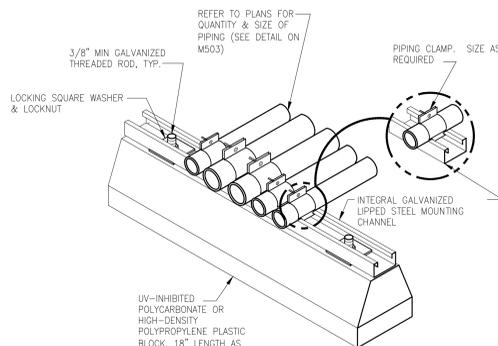
- NOTE:
RUN CONDENSATE PIPING WITH TRAP AND VENT FROM ALL EVAPORATOR COILS TO LOCATION SPECIFIED. PROVIDE INSULATION AND SUPPORT. SIZE TO BE 3/4" UNLESS OTHERWISE SPECIFIED.
PIPING AT WALL PENETRATIONS TO BE SLEEVED. CHANGEOVER FROM PVC TO COPPER FOR EXTERIOR TERMINATION TO BEGIN BEFORE EXTERIOR WALL PENETRATION.
(TYPICAL FROM ALL EVAPORATORS/ DX COILS)
SEE M DWGS FOR LOCATIONS

4 CONDENSATE LINE CONNECTION DETAIL
SCALE: NONE

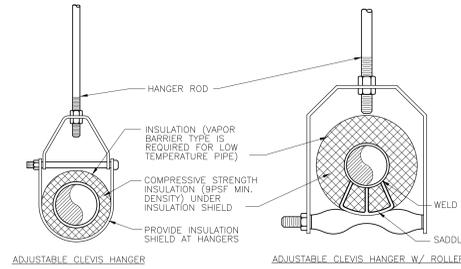


- NOTES:
1. INSTALL PER MANUFACTURERS' RECOMMENDATIONS.
 2. PROVIDE ENCLOSURES AS REQUIRED TO CONCEAL REFRIGERANT LINES.
 3. THE DISTANCE BETWEEN THE UNIT OR DEVICE WITH HEAT EXCHANGER AND THE EXPANSION VALVE BOX FOR THE PIPING LENGTH MUST BE 16.4 FT (5M) OR LESS. BE CERTAIN THE ELEVATION DIFFERENCE BETWEEN THE UNIT OR DEVICE WITH HEAT EXCHANGER AND THE EXPANSION VALVE BOX DOES NOT EXCEED 6.6 FT (2M).
 4. THE INSTALLATION DISTANCE BETWEEN THE DX-KIT AND THE UV SHOULD BE AS SHORT AS POSSIBLE

5 PIPING CONNECTIONS AT DIRECT EXPANSION COOLING COIL
SCALE: NONE

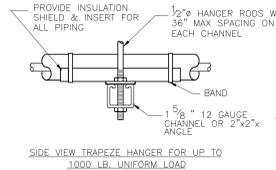


6 PIPING ROOF SUPPORT DETAIL
SCALE: NONE

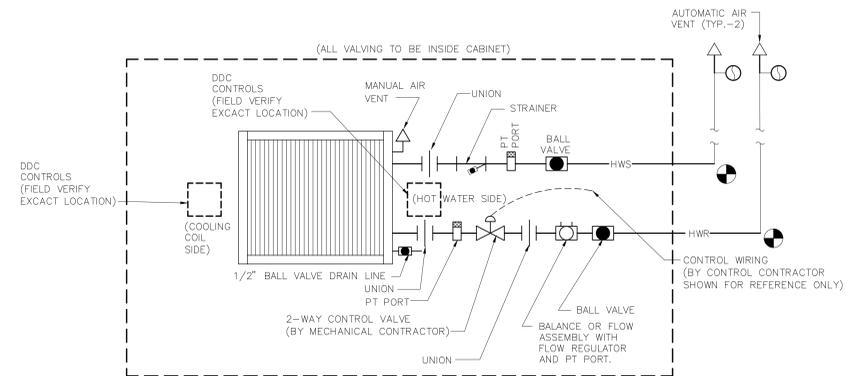


MAXIMUM PIPE/TUBING SUPPORT SPACING						
SIZE IN.	THRU 3/4	1	1 1/4	1 1/2	2	2 1/2
PIPE FT.	6	6	6	6	6	6
TUBING FT.	6	6	6	6	6	6

NOTE:
1. FOR TRAPEZE HANGER TAKE SPACING OF SMALLEST SIZE ON TRAPEZE.

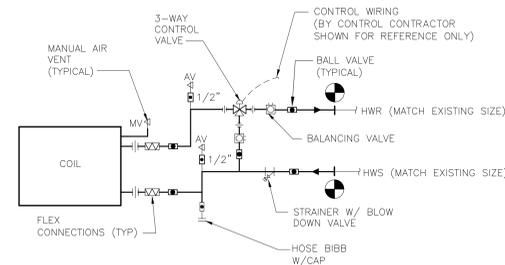


1 PIPE SUPPORT DETAIL
SCALE: NONE



- NOTES:
1. LOCATE CONTROL VALVES, SHUTOFF VALVES, AND CIRCUIT SETTERS SO THAT THEY ARE EASILY ACCESSIBLE FOR INSPECTION AND MAINTENANCE. PROVIDE ACCESS DOORS IN APPROPRIATE LOCATIONS WHERE INSTALLATION REQUIRES VALVES AND/OR CIRCUIT SETTERS TO BE CONCEALED.
 2. WHEN FIN TUBE RADIATION IS INSTALLED IN CLASSROOMS WITH UNIT VENTILATORS, VALVES ARE LOCATED BEHIND OPEN SHELVING, UV CABINET, OR FIN TUBE ENCLOSURE AS APPLICABLE.
 3. PROVIDE SHEET METAL ENCLOSURES AS REQUIRED TO CONCEAL REFRIGERANT LINES.
 4. PROVIDE AIR VENTS AT ALL HIGH POINTS IN PIPING SYSTEM.
 5. PROVIDE ALL NEW VALVES AND ASSOCIATED SHOWN.
 6. INSULATE HWS AND HWR PIPING. SEE SPECIFICATIONS
 7. PROVIDE A 3/2" - 2 WAY CONTROL VALVE IS THE MINIMUM SIZE FOR ALL NEW UNIT VENTILATORS. THE FINAL BALANCING GPM WILL BE THROUGH THE CIRCUIT SETTER.
 8. NEW LOCATIONS OF DDC CONTROLS LOCATION MAY VARY BASED ON FIELD CONDITIONS (CONTROLS ON THIS DETAIL ARE SHOWN FOR REFERENCE ONLY)

2 UNIT VENTILATOR, FAN COIL UNIT, HYDRONIC PTAC HOT WATER COIL DETAIL
SCALE: NONE



- NOTES:
1. SUPPORT PIPES FROM STRUCTURE OR FLOOR STANCHION AS APPLICABLE.
 2. COILS MOUNTED IN DUCTS TO BE PROVIDED WITH ACCESS PANELS UPSTREAM OF THE COIL.
 3. PIPE COIL TO ALLOW REMOVAL OF COIL WITHOUT REMOVING PIPING BEYOND UNIONS OR FLANGES.
 4. FOR UNITS PROVIDED WITH OTHER THAN ONE COIL, PROVIDE FLOW BALANCER, FLANGES, FLEXIBLE CONNECTOR, DRAINS, AND AIR VENTS FOR EACH COIL.
 5. COOLING COILS' SIMILAR

(ROOFTOP UNITS)
3 COIL PIPING DETAIL 3 WAY VALVE
SCALE: NONE

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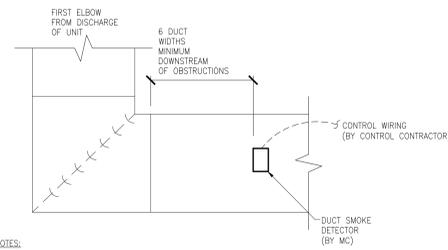
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P.C.
ARCHITECTS
PLANNERS**



S.E.D. CONTROL NUMBER:
66-04-09-02-0-002-014

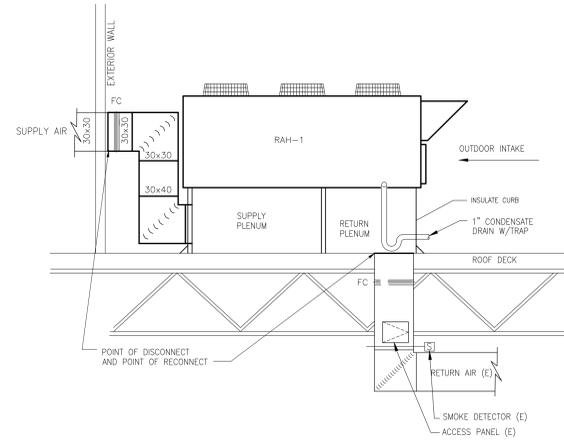
PROJECT:
ELMSFORD UNION FREE SCHOOL DISTRICT
HVAC UPGRADES
ALICE E. GRADY ELEMENTARY SCHOOL
48 SOUTH LODWYN AVENUE, ELMSFORD, NY 10523
DRAWING TITLE:
DETAILS

DATE: 05-20-2025
ISSUED TO: BID
SHEET SIZE: 30"x42"
DRAWING NO.: M501
DRAWN BY: E & R
CHECKED BY: F & D
FILE NO.: 24536.00



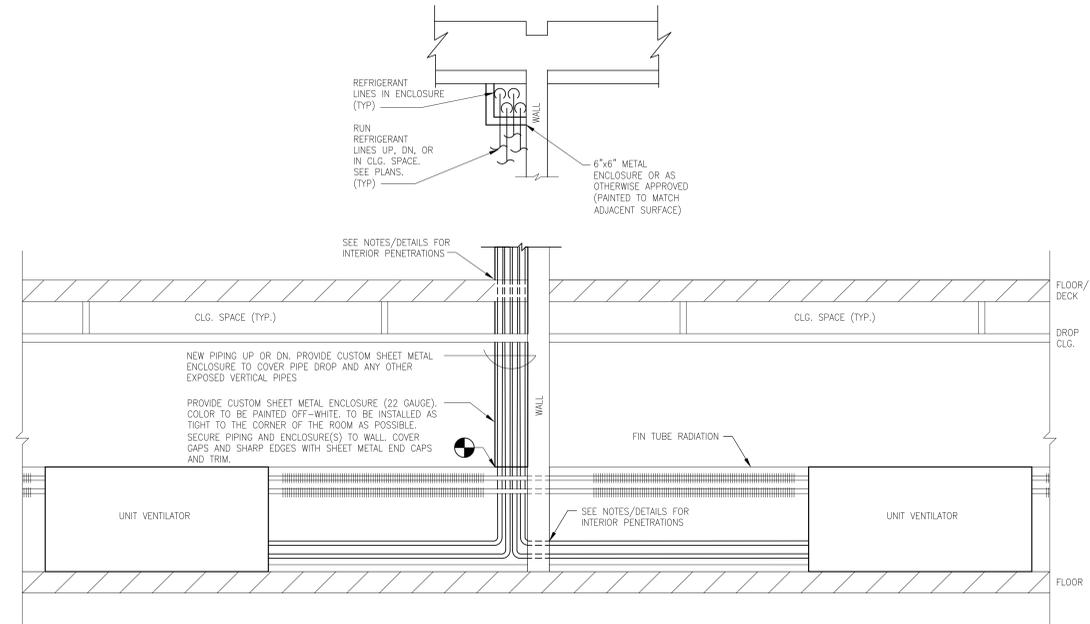
NOTES:
1. DETECTORS SHALL BE FURNISHED/WIRED BY ELECTRICAL CONTRACTOR AND INSTALLED BY MC CONTRACTOR.

6 DUCTWORK SMOKE DETECTOR INSTALLATION
SCALE: NONE



NOTE: DUCTWORK SHOWN FOR REFERENCE ONLY. MODIFY DUCT LAYOUT BASED ON FINAL UNIT MANUFACTURERS RECOMMENDATIONS.

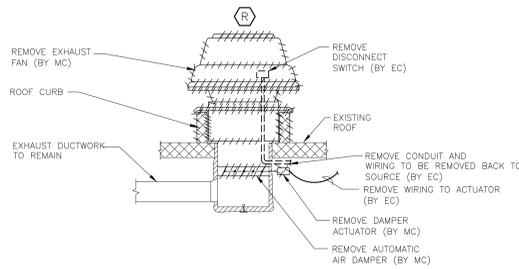
5 ROOF TOP UNIT DETAIL
SCALE: NONE



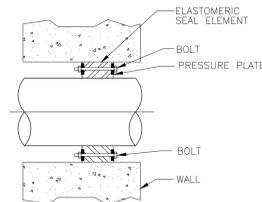
1 CUSTOM PIPING ENCLOSURE DETAIL (TYPICAL)
SCALE: NONE

NEW WORK NOTES:

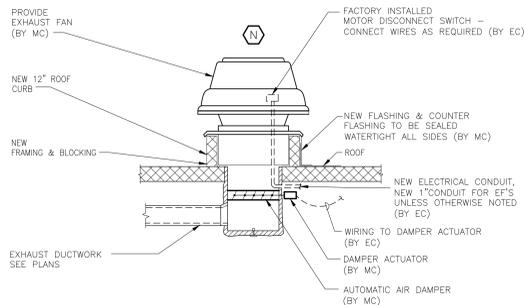
SEE MANUFACTURER INSTALLATION RECOMMENDATIONS. ACTUAL PIPING PATHS WILL VARY. SEE DRAWINGS FOR INTENT. VERIFY COIL CONNECTION SIDES BEFORE ORDERING EQUIPMENT.



7 ROOF EXHAUST FAN - REMOVALS
SCALE: NONE



4 EXTERIOR WALL PIPE PENETRATION DETAIL
SCALE: NONE



8 ROOF EXHAUST FAN - NEW WORK
SCALE: NONE

NEW WORK NOTES:
-PROVIDE NEW AUTOMATIC AIR DAMPERS AS SHOWN.

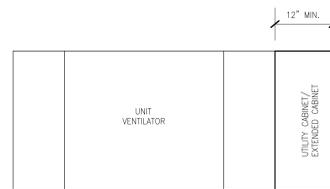
LEGEND
(APPLIES ONLY TO THIS SHEET)

- (R) REMOVE EXHAUST FAN (BY MC) SEE DETAILS 7 & 8 FOR ADDITIONAL INFORMATION
- (N) PROVIDE NEW EF- (BY MC). SEE DETAILS 7 & 8 FOR ADDITIONAL INFORMATION
- (A) ROOF AREA DESIGNATION
- E — ELECTRICAL CONDUIT
- (#) KEYED NOTES
- (EC) ELECTRICAL CONTRACTOR
- (MC) MECHANICAL CONTRACTOR
- (RC) ROOFING CONTRACTOR
- (CC) CONTROLS CONTRACTOR

3 UNIT VENTILATOR EXTENDED CABINET
SCALE: NONE

NEW WORK NOTES:

UTILITY/ EXTENDED CABINET TO MATCH UNIT VENTILATOR CABINET HEIGHT, DEPTH, COLOR, APPEARANCE AND MANUFACTURER. COIL CONNECTION SIDE TO BE VERIFIED IN FIELD BEFORE ORDERING EQUIPMENT. MAKE ALL ALTERATIONS TO FIN TUBE AND COVERS AS NECESSARY. UTILITY CABINET TO HOUSE VRF CONTROL BOX AND VRF ELECTRONIC EXPANSION VALVE.



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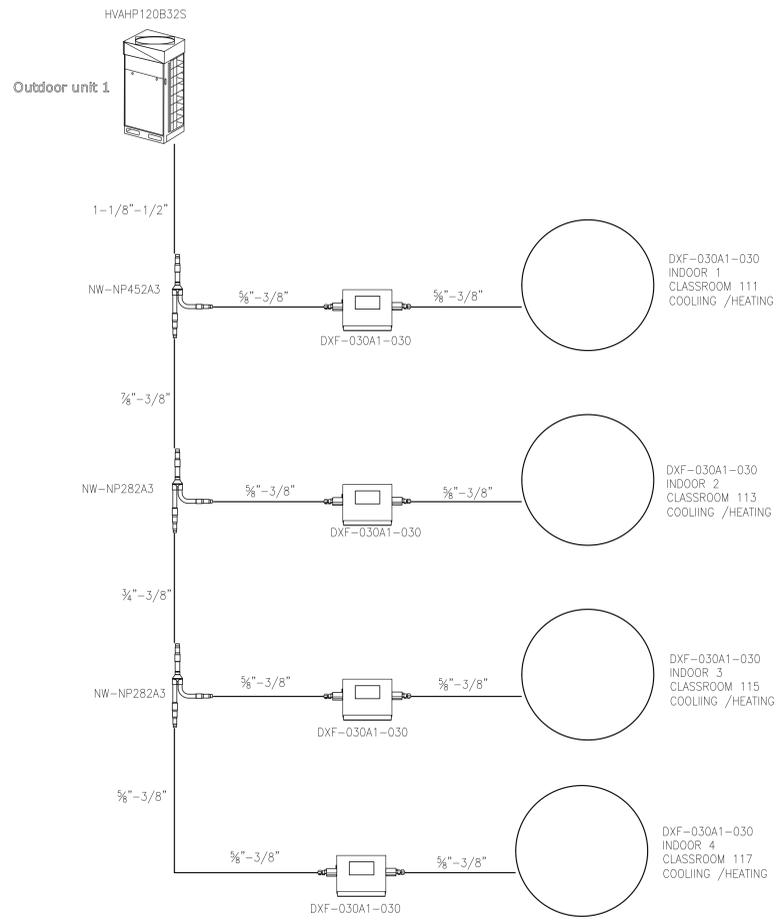
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PLANNERS**



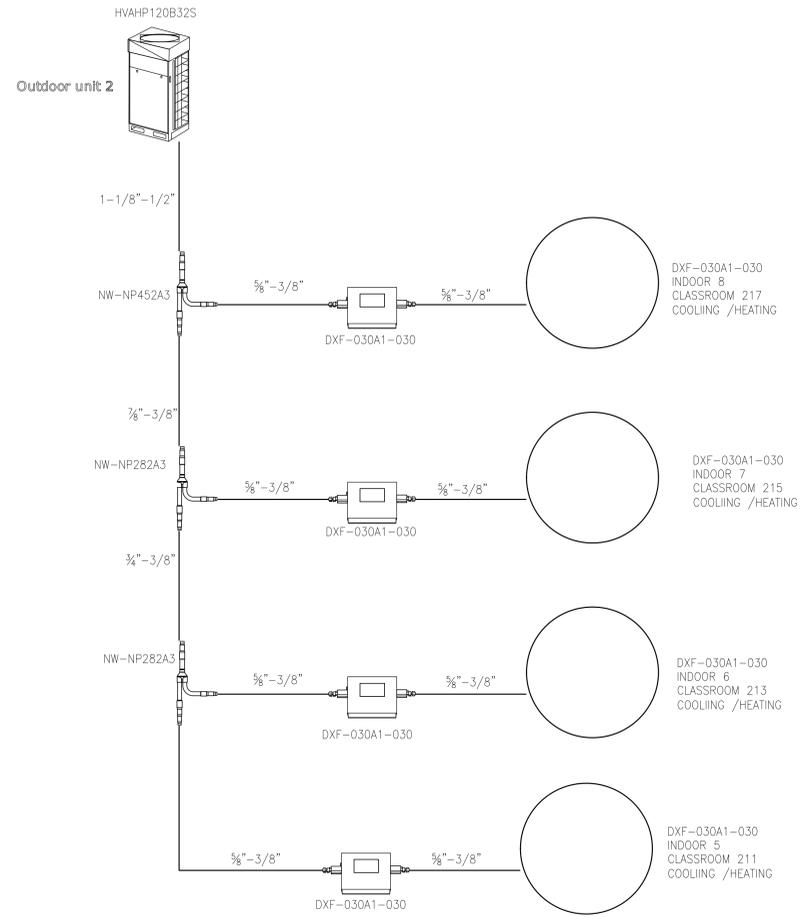
S.E.D. CONTROL NUMBER:
66-04-09-02-0-002-014

PROJECT:
ELMSFORD UNION FREE SCHOOL DISTRICT
HVAC UPGRADES
ALICE E. GRADY ELEMENTARY SCHOOL
46 SOUTH LODWYN AVENUE, ELMSFORD, NY 10523
DRAWING TITLE:
DETAILS

DATE: 05-20-2025
SHEET SIZE: 30"x42"
DRAWN BY: E & R
CHECKED BY: F & D
BID
ISSUED TO
DRAWING NO.
M502
FILE NO.
24536.00

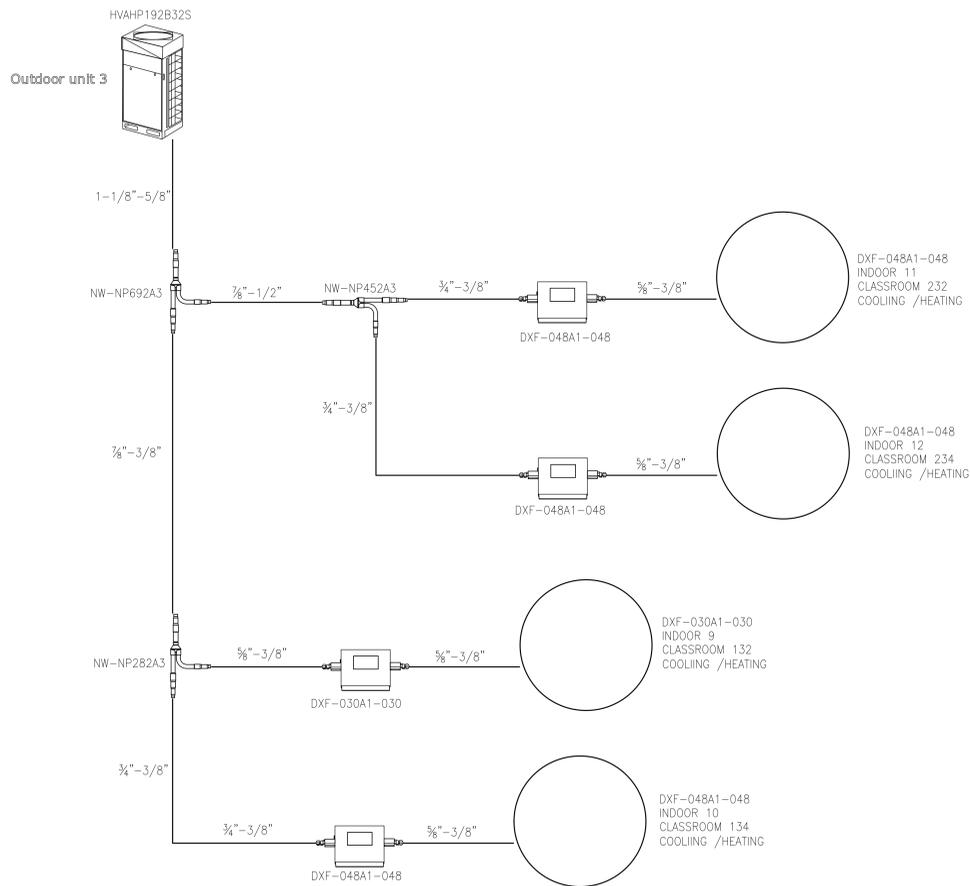


1 VRF-1 ONE LINE DIAGRAM
SCALE: NONE

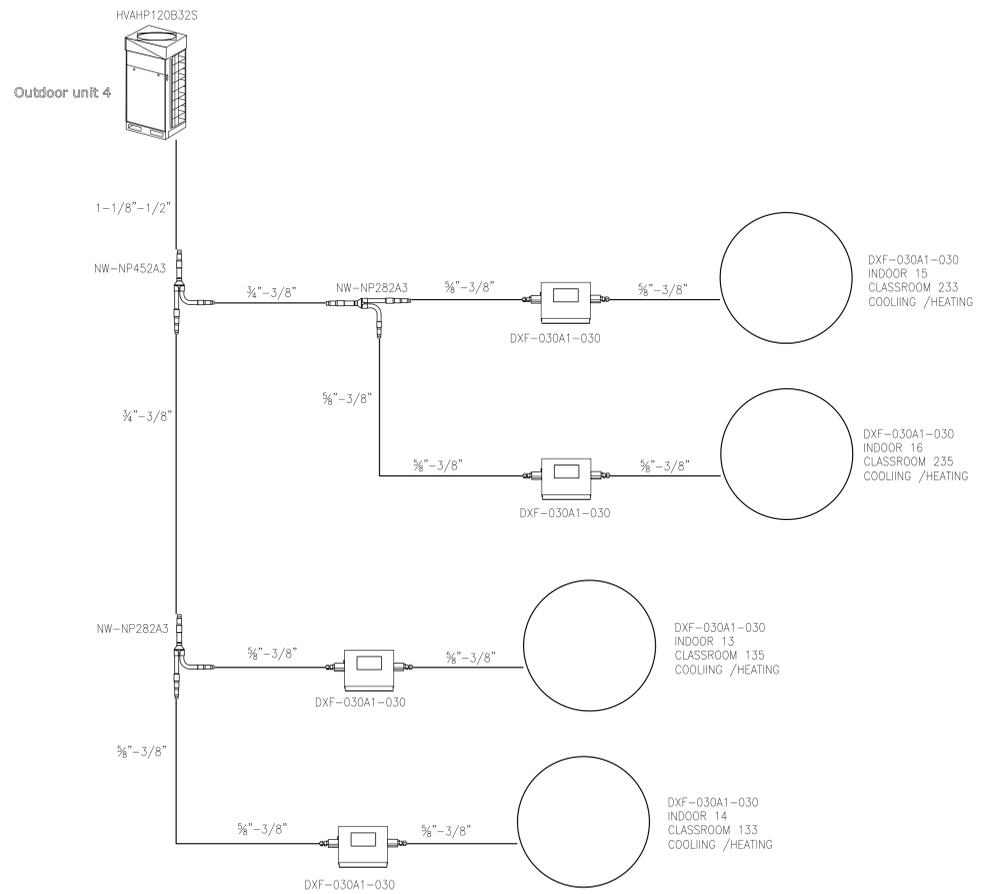


2 VRF-2 ONE LINE DIAGRAM
SCALE: NONE

Legend	
2 Pipe	—
3 Pipe	- - -



3 VRF-3 ONE LINE DIAGRAM
SCALE: NONE



4 VRF-4 ONE LINE DIAGRAM
SCALE: NONE

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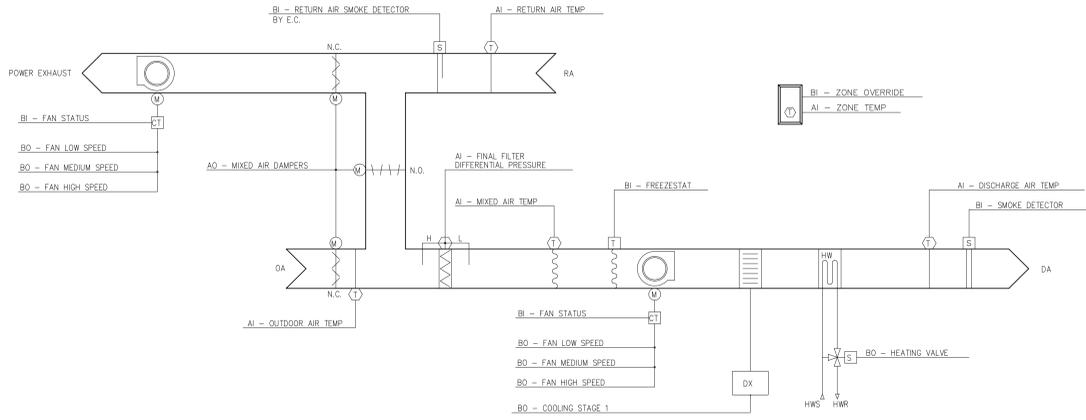


S.E.D. CONTROL NUMBER:
66-04-09-02-0-002-014

PROJECT:
ELMSFORD UNION FREE SCHOOL DISTRICT
HVAC UPGRADES
ALICE E. GRADY ELEMENTARY SCHOOL
45 SOUTH GOODMAN AVENUE, ELMSFORD, NY 10523

DRAWING TITLE:
DETAILS

DATE	ISSUED TO
05-20-2025	BID
SHEET SIZE	DRAWING NO.
30"x42"	M503
DRAWN BY	
E & R	
CHECKED BY	FILE NO.
F & D	24536.00



ROOF TOP UNIT W/ DX COOLING - RTU
 RUN CONDITIONS - SCHEDULED:
 THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:

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

ALARMS SHALL BE PROVIDED AS FOLLOWS:

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

DISCHARGE AIR TEMPERATURE:
 THE CONTROLLER SHALL MONITOR THE DISCHARGE AIR TEMPERATURE.
 ALARMS AND UNIT SHUTDOWN SHALL OCCUR WITH DETECTION OF:
 HIGH DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS GREATER THAN 120°F (ADJ.).
 LOW DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS LESS THAN 40°F (ADJ.).
 COIL AND UNIT PROTECTION MEASURES TO REMAIN IN EFFECT.

TEMPERATURE PROTECTION

- ACTIVATED WHEN THE SUPPLY AIR TEMPERATURE (SAT) RISES ABOVE THE HIGH CUTOFF TEMPERATURE (IMMEDIATE) OR DROPS BELOW THE LOW CUTOFF TEMPERATURE (FOR 10 MINUTES) BOTH OF WHICH ARE USER ADJUSTABLE. THIS MODE SHUTS OFF THE UNIT (WITH A 3 MINUTE FAN OFF DELAY) UNTIL THE MODE IS CANCELLED.
- THIS MODE IS CANCELLED WHEN THE SAT DROPS TO DEGREES BELOW THE HIGH CUTOFF TEMPERATURE SETPOINT OR RISES TO DEGREES ABOVE THE LOW TEMP CUTOFF TEMPERATURE SETPOINT, OR WHEN THE UNIT CHANGES BACK INTO OCCUPIED OPERATION.

OCCUPIED MODE INITIATION
 BACNET COMMAND

SCHEDULING

- INTERNAL 7 DAYS SCHEDULE WITH 2 START/STOP EVENTS PER DAY (ADJ.).
- SCHEDULING OF UP TO 14 HOLIDAY PERIODS PER YEAR (ADJ.).

DAYLIGHT SAVINGS TIME CONFIGURATION.

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

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

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

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

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

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

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

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

HOT WATER VALVE AND COIL PROTECTION

- SUPPLY FAN ON:

IF THE SUPPLY AIR TEMPERATURE (SAT) FALLS BELOW THE LOW SAT CUTOFF SETPOINT FOR 1 MINUTE, THE HOT WATER VALVE WILL MOVE TO A USER-ADJUSTABLE HOT WATER VALVE PROTECTION POSITION SETPOINT

IF THE SAT RISES BACK ABOVE THE LOW SAT CUTOFF BY 5°F, THE VALVE WILL RETURN TO ITS NORMAL POSITION

IF THE SAT REMAINS BELOW THE LOW SAT CUTOFF FOR 10 MINUTES, THE UNIT WILL SHUT DOWN AND A LOW SAT CUTOFF ALARM WILL BE GENERATED

IF THE SAT RISES BACK ABOVE THE LOW SAT CUTOFF BY 5°F THE ALARM WILL CLEAR AND THE UNIT WILL ATTEMPT TO RESTART AND RESUME NORMAL OPERATION

IF THE OAT RISES ABOVE THE LOW AMBIENT SETPOINT, THE VALVE WILL RETURN TO ITS NORMAL POSITION.

IF THIS PROTECTION SEQUENCE IS NOT UTILIZED, THE HOT WATER VALVE IS CLOSED WHEN NOT BEING USED FOR HEATING.

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

IF OPTIMAL START UP IS AVAILABLE THE OUTSIDE AIR DAMPER SHALL CLOSE AND THE RETURN AIR DAMPER SHALL OPEN.

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

THE OUTSIDE AIR DAMPERS SHALL CLOSE WHEN THE FREEZESTAT IS ACTIVATED.

FILTER HOURS:
 THE CONTROLLER SHALL MONITOR THE FAN RUNTIME.
 ALARMS SHALL BE PROVIDED AS FOLLOWS:
 CHANGE REQUIRED: FILTER HAS BEEN IN USE FOR MORE THAN 2200 HRS

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

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

ENVIRONMENTAL INDEX:
 WHEN THE ZONE IS OCCUPIED, THE CONTROLLER WILL MONITOR THE DEVIATION OF THE ZONE TEMPERATURE FROM THE HEATING OR COOLING SETPOINT AND CALCULATE A 0 - 100% ENVIRONMENTAL INDEX WHICH GIVES AN INDICATION OF HOW WELL THE ZONE IS MAINTAINING COMFORT. PERCENTAGE OF TIME SINCE OCCUPANCY BEGAN THAT THE ENVIRONMENTAL INDEX WAS 70% OR HIGHER.

VENTILATION MODE

- THIS MODE IS GENERATED ANYTIME THERE IS NO DEMAND FOR HEATING OR COOLING. THE FAN WILL OPERATE AT THE MINIMUM VEIN SPEED (USER ADJ.).

ECONOMIZER OPERATION

- ENABLED WHEN OUTDOOR AIR (OA) DRYBULB, WETBULB, OR DEWPOINT TEMPERATURE FALLS BELOW THE ECONOMIZER ENABLE SETPOINT BY 1° AND THE OA TEMPERATURE IS AT LEAST 5° BELOW THE RETURN AIR TEMPERATURE (IF A RETURN AIR TEMPERATURE SENSOR IS BEING USED).
- ECONOMIZER OPERATION IS DISABLED WHEN THE OA TEMPERATURE RISES 1° ABOVE THE ECONOMIZER ENABLE SETPOINT OR IF THE OA TEMPERATURE RISES 1° ABOVE THE RETURN AIR TEMPERATURE (IF AVAILABLE).
- WETBULB OR DEWPOINT OPERATION REQUIRES AN OUTDOOR HUMIDITY SENSOR.
- ECONOMIZER ACTS AS FIRST STAGE OF COOLING AND CONTROLS TO THE ACTIVE SUPPLY AIR COOLING SETPOINT. IF THE ECONOMIZER REACHES 100% AND THE SUPPLY AIR TEMPERATURE IS STILL ABOVE SETPOINT, MECHANICAL COOLING IS ALLOWED TO STAGE UP WHILE THE ECONOMIZER IS HELD AT THE FULL OPEN POSITION.
- AN ECONOMIZER MINIMUM POSITION SHALL BE CONFIGURED IN THE CONTROLLER.
- ECONOMIZER DAMPER IS CLOSED DURING UNOCCUPIED MODE, EXCEPT WHEN UNOCCUPIED FREE COOLING IS USED DURING NIGHT SETBACK OPERATION.
- UNIT CONTROLS SHALL HAVE THE MECHANICAL COOLING CAPACITY CONTROL INTERLOCKED WITH THE AIR ECONOMIZER CONTROLS SUCH THAT THE OUTDOOR AIR DAMPER IS AT THE 100-PERCENT OPEN POSITION WHEN MECHANICAL COOLING IS ON AND THE OUTDOOR AIR DAMPER DOES NOT BEGIN TO CLOSE TO PREVENT COIL FREEZING DUE TO MINIMUM COMPRESSOR RUN TIME UNTIL THE LEAVING AIR TEMPERATURE IS LESS THAN 45°F (7°C).
- DIRECT EXPANSION (DX) UNITS THAT CONTROL 75,000 BTU/H (22 KW) OR GREATER OF RATED CAPACITY OF THE CAPACITY OF THE MECHANICAL COOLING DIRECTLY BASED ON OCCUPIED SPACE TEMPERATURE SHALL HAVE NOT FEWER THAN TWO STAGES OF MECHANICAL COOLING CAPACITY. FOR MODULATING AIRFLOW UNITS: FOR MORE THAN OR EQUAL TO 65,000 BTU/H BUT LESS THAN 240,000 BTU/H, MIN COOLING STAGES IS 3 AND MIN DISPLACEMENT OF COMPRESSOR IS 35%, AND FOR MORE THAN 240,000 BTU/H, MIN COOLING STAGES IS 4 AND MIN DISPLACEMENT OF COMPRESSOR IS 25%.

ALARM DETECTION AND REPORTING

- UNIT TO CONTINUOUSLY PERFORM SELF-DIAGNOSTICS DURING NORMAL OPERATIONS TO DETERMINE IF ANY OPERATING FAILURES HAVE OCCURRED.
- THESE FAILURES (ALARMS) WILL BE SHOWN ON THE CONTROLLER'S DISPLAY AND SHALL BE RELATED TO THE BACNET CONTROL CENTER.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- FAN RUNTIME EXCEEDED: FAN STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).
- ANY SENSOR FAILURE
- ECONOMIZER OFF WHEN CALLED ON
- ECONOMIZER ON WHEN CALLED OFF
- DAMPERS NOT MODULATING WHEN CALLED
- EXCESS OUTDOOR AIR
- HIGH/LOW DISCHARGE TEMPERATURE DETECTED
- UNIT PROTECTION SHUTDOWN INITIATED
- UNIT SHUTDOWN SMOKE DETECTED
- UNIT SHUTDOWN FIRE ALARM DETECTED
- COIL/UNIT PROTECTION INITIATED
- EMERGENCY SHUTDOWN

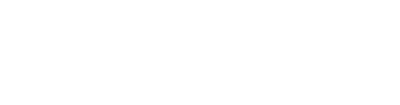
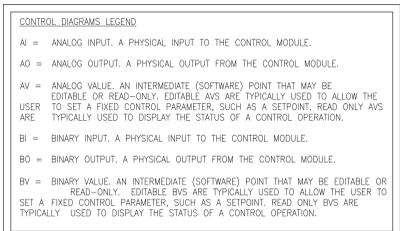
CONTROLLER SHALL BE CAPABLE OF MANUALLY INITIATING EACH OPERATING MODE SO THAT OPERATION OF COMPRESSORS, ECONOMIZERS, FANS, AND THE HEATING SYSTEM CAN BE INDEPENDENTLY TESTED AND VERIFIED.

NORMAL OPERATION SYSTEM STATUS INDICATIONS:

- FREE COOLING AVAILABLE
- ECONOMIZER ENABLED
- COMPRESSOR ENABLED
- HEATING ENABLED
- MIXED AIR LOW LIMIT CYCLE ACTIVE
- DEFROST MODE ENABLED (HEAT PUMPS)
- ECONOMIZER OFF OUTSIDE AIR HIGH/LOW LIMIT
- VALUES OF EACH INTEGRATED SENSOR

CLASSROOM EF- INTERLOCKED WITH UV-

EXHAUST FAN CONTROL SCHEMATIC



COMPRESSOR CAPACITY CONTROL
 OUTDOOR UNIT TO MONITOR SENSORS ON SYSTEM TO MAINTAIN STABLE CAPACITY REGARDLESS OF VARYING LOADS AS FOLLOWS:

COOLING:
 THE LOW PRESSURE EQUIVALENT SATURATION TEMPERATURES (EVAPORATION TEMPERATURE = TE) CLOSE TO TARGET VALUE BASED ON THE PRESSURE DETECTED BY LOW PRESSURE SENSOR OF THE OUTDOOR UNIT (PE).

TARGET INDOOR EVAPORATING/ LOW PRESSURE ABOUT 43°F @ 139 PSI

HEATING:
 PRESSURE DETECTED BY HIGH-PRESSURE SENSOR CONTROL (PC), COMPRESSOR CAPACITY IS CONTROLLED TO PUT THE HIGH PRESSURE EQUIVALENT SATURATION TEMPERATURE (CONDENSING TEMPERATURE = TO) CLOSE TO TARGET VALUE.

TARGET INDOOR CONDENSING/ HI PRESSURE ABOUT 115°F @ 406 PSI

OUTDOOR FAN CONTROL

COOLING:
 OUTDOOR FAN CONTROL ADJUST AIR FLOW RATE TO KEEP CONDENSING TEMPERATURE AT OR ABOVE 34°C.
 COMPRESSOR OFF: FAN OFF = STEP 0
 COMPRESSOR ON: FAN ON = STEP 1

HEATING:
 DURING COMPRESSOR OPERATION, OUTDOOR FAN CONTROL SET DEFAULT NOMINAL AIR FLOW RATE = STEP 7.
 COMPRESSOR OFF: FAN OFF = STEP 0
 OUTDOOR AIR TEMPERATURE BELOW 25°C: FAN OFF = STEP 0
 OUTDOOR AIR TEMPERATURE ABOVE 27°C: FAN STEP 1 = HEATING MODE IS DISABLED, LOW AIR FLOW RATE TO ENABLE TO MEASURE CORRECT OUTDOOR AIR TEMPERATURE (EFFECT SUNSHINE)

COMPRESSOR ON:
 PRESSURE-EQUALIZATION, PRIOR TO COMPRESSOR OPERATION, OUTDOOR CONTROL SET FAN SPEED AT STEP 4.

NORMAL OPERATION:
 WHEN SUCTION AND DISCHARGE PRESSURE ARE IN NORMAL RANGE, NOMINAL AIR FLOW RATE IS STEP 7.
 WHEN SUCTION PRESSURE AND DISCHARGE DROP WHILE MAIN EXPANSION VALVE OPENS GRADUALLY, HIGH AIR FLOW RATE IS SET = STEP 8.
 DEFROST: OUTDOOR FAN STOPS DURING DEFROST CYCLE OF OUTDOOR HEAT-EXCHANGER.

MULTI VRF UNIT OPERATION SEQUENCE

MASTER-SLAVE:
 SET 1: "MASTER UNIT": THIS SYSTEM WILL SWITCH SEVERAL SYSTEMS BETWEEN COOLING/HEATING/FAN-ONLY.

SET 2: "SLAVE UNIT": THE SYSTEM WILL RECEIVE THE OPERATION FROM A SYSTEM SET AS "MASTER COOL/HEAT" WITH SAME "COOL/HEAT" ADDRESS (SET 2-1)

LEAD LAG AND LEAD ROTATION:
 OUTDOOR UNIT ROTATION CHANGES THE OPERATING PRIORITY OF OUTDOOR UNITS. THE ROTATION FUNCTION TO KEEP COMPRESSOR(S) FROM BEING STOPPED FOR AN EXTENDED PERIOD OR AT CONSTANT LOADING, AND PREVENTING UNBALANCED OIL LEVEL.

TIMING OF OUTDOOR UNIT ROTATION:
 AFTER OIL RETURN OPERATION.
 AFTER DEFROSTING OPERATION (HEATING ONLY).
 AT STARTING CONTROL.
 WHEN ANY OF OUTDOOR UNIT STOPS FOR A PERIOD OF 20 MINUTES OR MORE.

EXHAUST FAN: EF-10, EF-14, EF-17

RUN CONDITIONS INTERLOCKED:
 THE FAN(S) EF- SHALL BE INTERLOCKED WITH UV- TO RUN WHENEVER UV- RUNS UNLESS SHUTDOWN ON SAFETIES.

FAN:
 THE FAN SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME

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

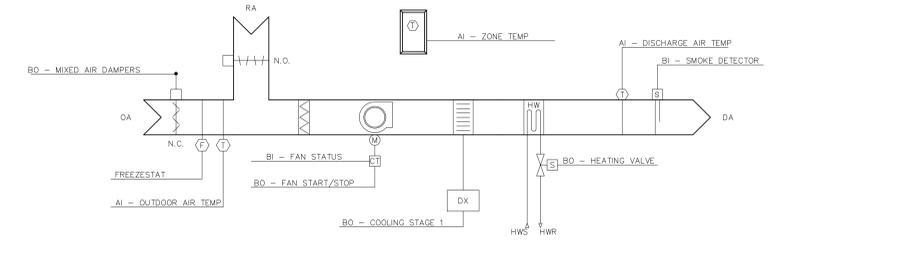
CLASSROOM EF- INTERLOCKED WITH UV-

EXHAUST FAN CONTROL SCHEMATIC



CLASSROOM EF- INTERLOCKED WITH UV-

EXHAUST FAN CONTROL SCHEMATIC



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

OCCUPIED MODE: THE UNIT SHALL MAINTAIN

- 75 DEG F (ADJ.) COOLING SETPOINT
- 70 DEG F (ADJ.) HEATING SETPOINT.

UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN

- 85 DEG F (ADJ.) COOLING SETPOINT.
- 55 DEG F (ADJ.) HEATING SETPOINT.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

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

DISCHARGE AIR TEMPERATURE:
 THE CONTROLLER SHALL MONITOR THE DISCHARGE AIR TEMPERATURE AND, ON RISING TEMPERATURE, LIMIT THE HEATING AS FOLLOWS:

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

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

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

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

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

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

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

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

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 AND THE ZONE TEMPERATURE IS ABOVE COOLING SETPOINT.
 AND THE FAN IS ON.

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

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

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

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

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

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

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

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

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

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 AND THE ZONE TEMPERATURE IS ABOVE COOLING SETPOINT.
 AND THE FAN IS ON.

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

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

THE OUTSIDE AIR DAMPERS SHALL CLOSE WHEN THE FREEZESTAT IS ACTIVATED.

IF OPTIMAL START UP IS AVAILABLE THE OUTSIDE AIR DAMPER SHALL CLOSE AND THE RETURN AIR DAMPER SHALL OPEN.

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

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

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

FILTER HOURS:
 THE CONTROLLER SHALL MONITOR THE FAN RUNTIME.
 ALARMS SHALL BE PROVIDED AS FOLLOWS:

CHANGE REQUIRED: FILTER HAS BEEN IN USE FOR MORE THAN 2200 HRS (ADJ.).

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

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

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

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

FLOAT SWITCH:
 A FLOAT SWITCH TO DEACTIVATE THE UNIT WHEN READING HIGH LEVELS OF CONDENSATE IN THE DRAIN PAN.

ALARM DETECTION AND REPORTING

- UNIT TO CONTINUOUSLY PERFORM SELF-DIAGNOSTICS DURING NORMAL OPERATIONS TO DETERMINE IF ANY OPERATING FAILURES HAVE OCCURRED.
- THESE FAILURES (ALARMS) WILL BE SHOWN ON THE CONTROLLER'S DISPLAY AND SHALL BE RELATED TO THE BACNET CONTROL CENTER.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- FAN RUNTIME EXCEEDED: FAN STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).
- ANY SENSOR FAILURE
- DAMPERS NOT MODULATING WHEN CALLED
- EXCESS OUTDOOR AIR
- HIGH/LOW DISCHARGE TEMPERATURE DETECTED
- UNIT PROTECTION SHUTDOWN INITIATED
- COIL/UNIT PROTECTION INITIATED
- EMERGENCY SHUTDOWN

CONTROLLER SHALL BE CAPABLE OF MANUALLY INITIATING EACH OPERATING MODE SO THAT OPERATION OF COMPRESSORS, ECONOMIZERS, FANS, AND THE HEATING SYSTEM CAN BE INDEPENDENTLY TESTED AND VERIFIED.

NORMAL OPERATION SYSTEM STATUS INDICATIONS:

- FREE COOLING AVAILABLE
- HEATING ENABLED
- COOLING ENABLED
- MIXED AIR LOW LIMIT CYCLE ACTIVE
- VALUES OF EACH INTEGRATED SENSOR

1 TYPICAL UNIT VENTILATOR CONTROL SCHEMATIC

SCALE: NONE

3 OUTDOOR VRF UNIT CONTROL SCHEMATIC

SCALE: NONE

4 ROOFTOP UNIT (HW HEATING AND DX COOLING) CONTROL SCHEMATIC

SCALE: NONE

5 EXHAUST FAN CONTROL SCHEMATIC

SCALE: NONE

2 INDOOR/OUTDOOR ELECTRONIC EXPANSION VALVES CONTROL SCHEMATIC

SCALE: NONE

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S.E.D. CONTROL NUMBER:
 66-04-09-02-002-014

ELMSFORD UNION FREE SCHOOL DISTRICT
 HVAC UPGRADES
 ALICE E. GRADY ELEMENTARY SCHOOL
 46 EASTWOOD AVENUE, ELMSFORD, NY 10523

DRAWING TITLE
 CONTROL SCHEMATICS

05-20-2025 BID

SHEET SIZE 30"x42" DRAWING NO. M700

DRAWN BY E & R FILE NO. 24536.00

GENERAL SYMBOLS:

- KEYED NOTE
HEAVY LINE-WEIGHT INDICATES TO PROVIDE DEVICES/EQUIPMENT AS NEW
HEAVY LINE-WEIGHT WITH HASH MARKS INDICATES DEVICES/EQUIPMENT TO BE REMOVED
INDICATES CONNECTION TO EXISTING
INDICATES POINT OF DISCONNECT
('E') NEXT TO LIGHT LINE-WEIGHT INDICATES EXISTING DEVICES/EQUIPMENT TO REMAIN
('ER') NEXT TO LIGHT LINE-WEIGHT INDICATES EXISTING DEVICES/EQUIPMENT TO BE REMOVED AND RELOCATED. REFER TO DEFINITIONS FOR INFORMATION
('RE') NEXT TO LIGHT LINE-WEIGHT INDICATES EXISTING DEVICES/EQUIPMENT TO BE REINSTALLED. REFER TO DEFINITIONS FOR INFORMATION

- REMOVALS (EQUIPMENT, CONDUIT, WIRING, ETC.)
EXISTING TO REMAIN
NEW WORK

POWER SYMBOLS:

- DUPLEX RECEPTACLE
QUAD RECEPTACLE
SPECIAL RECEPTACLE (NEMA CONFIGURATION AS INDICATED)
MOTOR CONNECTION (REFER TO EQUIPMENT CONTROL SCHEDULE)
ELECTRICAL CONNECTION
CONTACTOR
JUNCTION BOX
DISCONNECT SWITCH (NON-FUSED)
DISCONNECT SWITCH (FUSED)
PUSH BUTTON
EM - INDICATES EMERGENCY SHUT-OFF
MANUAL MOTOR STARTER
COMBINATION MAGNETIC MOTOR STARTER
VARIABLE FREQUENCY DRIVE
208V PANELBOARD (RECESSED)
208V PANELBOARD (SURFACE)
SIGNAL PHASE CIRCUIT FEEDER
3 PHASE CIRCUIT FEEDER

SYMBOLS LIST

TELEPHONE/DATA SYMBOLS:

- DATA RACK
COMMUNICATIONS OUTLET
#D - INDICATES NUMBER OF DATA JACKS
#T - INDICATES NUMBER OF TELEPHONE JACKS
WAP - WIRELESS ACCESS POINT
PRES - INDICATES PRESENTATION STATION OUTLET
PROJ - INDICATES PROJECTOR STATION OUTLET

ONE-LINE SYMBOLS:

- CIRCUIT BREAKER
FUSE
FUSED DISCONNECT SWITCH
GROUND
PANELBOARD

FIRE ALARM SYMBOLS:

- AUDIO/VISUAL SIGNALING DEVICE. NUMBER DENOTES CANDELA RATING.
VISUAL SIGNALING DEVICE. NUMBER DENOTES CANDELA RATING.
PULL STATION
SMOKE DETECTOR. R SUBSCRIPT; PROVIDE ACCESSORY EQUIPMENT/WIRING/PROGRAMMING FOR ELEVATOR RECALL AND SHUNT TRIP.
HEAT DETECTOR
CONTROL MODULE
MONITOR MODULE
DUCT SMOKE DETECTOR
REMOTE TEST STATION
MAGNETIC DOOR HOLDER
TAMPER SWITCH
FIRE DOOR RELEASE
FLOW SWITCH
FAN SHUT-DOWN
FIRE ALARM CONTROL PANEL
FIRE ALARM ANNUCIATOR PANEL
CARBON MONOXIDE DETECTOR (ELECTROCHEMICAL STYLE) (SYSTEM SENSOR C01224TR OR EQUAL) (INSTALL PER MANUFACTURERS RECOMMEND. AND PER NFPA 720)
CARBON DIOXIDE DETECTOR
GAS DETECTOR

SPECIAL SYSTEMS SYMBOLS:

- AC SYSTEM CONTROL PANEL
AC SYSTEM MASTER CONTROL STATION
CARD READER
DOOR CONTACT
ELECTRIC DOOR STRIKE
REQUEST TO EXIT
INTERCOM STATION
CLOCK (NO DESIGNATION DENOTES CLASSROOM CLOCK)
C1 - DENOTES SINGLE FACE HALLWAY CLOCK.
C2 - DENOTES DUAL FACE HALLWAY CLOCK.
PUBLIC ADDRESS SPEAKER (CEILING)
PUBLIC ADDRESS SPEAKER (WALL)
PUBLIC ADDRESS HORN SPEAKER (WALL)
CEILING MOUNTED CCTV CAMERA
WALL MOUNTED CCTV CAMERA

LIGHTING SYMBOLS:

- (REFER TO LIGHT FIXTURE SCHEDULE)
LIGHT SWITCH
a,b,c - INDICATES SWITCH LEG
D - DIMMER SWITCH
K - KEYS
3 - 3-WAY
4 - 4-WAY
OCCUPANCY SENSOR
C# - INDICATES CEILING SENSOR TYPE (REFER TO OCCUPANCY SENSOR SCHEDULE)
W# - INDICATES WALL SENSOR TYPE (REFER TO OCCUPANCY SENSOR SCHEDULE)
CEILING-MOUNTED EXIT LIGHT. HATCH MARKS INDICATES ILLUMINATED FACE. ARROW INDICATES DIRECTION OF TRAVEL.
WALL-MOUNTED EXIT LIGHT. HATCH MARKS INDICATES ILLUMINATED FACE. ARROW INDICATES DIRECTION OF TRAVEL.
DUAL HEAD WALL-MOUNTED EMERGENCY BATTERY PACK LUMINAIRE.
SINGLE HEAD WALL-MOUNTED EMERGENCY BATTERY PACK LUMINAIRE.
2'x4' CEILING MOUNTED LIGHT FIXTURE, F# INDICATES TYPE.
2'x2' CEILING MOUNTED LIGHT FIXTURE, F# INDICATES TYPE.
1'x4' CEILING MOUNTED LIGHT FIXTURE, F# INDICATES TYPE.
CEILING MOUNTED DOWNLIGHT FIXTURE, F# INDICATES TYPE.
4' WALL MOUNTED LIGHT FIXTURE, F# INDICATES TYPE.
WALL MOUNTED FIXTURE, F# INDICATES TYPE.

GENERAL DEMOLITION NOTES:

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

GENERAL NEW WORK NOTES:

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

CONTRACTORS' COORDINATION NOTE:

ALL CONTRACTORS ARE REQUIRED TO REVIEW THE CONTRACT DRAWINGS FOR ALL TRADES AND DETERMINE NECESSARY COORDINATION BETWEEN TRADES PRIOR TO BIDDING. ANY DISCREPANCIES, COMMENTS, OR QUESTIONS ARE TO BE SUBMITTED TO THE ENGINEER BY RFI.

DAMAGE DURING SCHEDULED WORK

- CONTRACTORS NOT TO DAMAGE EXISTING WALLS THAT ARE TO REMAIN. THIS INCLUDES WALLS WHERE ONLY A PORTION OR SIDE OF THE WALL IS TO REMAIN AND THE OTHER SIDE OF WALLS IS TO BE MODIFIED OR REPLACED. CONTRACTOR IS RESPONSIBLE FOR REPAIR TO DAMAGE WALLS AND TO ANY PORTION OF WALLS THAT ARE EXISTING TO REMAIN, EVEN IF NOT SPECIFICALLY MARKED AS SUCH.
CONTRACTOR IS RESPONSIBLE FOR REPAIR TO DAMAGE HARD CEILINGS/DROP CEILING TILES AND TO ANY PORTION OF CEILINGS THAT ARE EXISTING TO REMAIN, EVEN IF NOT SPECIFICALLY MARKED AS SUCH

BIDDING NOTE:

UNLESS OTHERWISE SPECIFIED, THE ELECTRICAL CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL WORK INDICATED ON THE ELECTRICAL DRAWINGS.

ABBREVIATIONS

- EXISTING
AMPERE
NON-FUSED
EXTERIOR
ABOVE COUNTER
NOT IN CONTRACT
FIRE ALARM
ABOVE FINISHED FLOOR
NIGHT LIGHT
NOT TO SCALE
FLOOR
AIR HANDLING UNIT
ON CENTER
FULL LOAD AMPS
AUDIO/VISUAL
POLE
FLUORESCENT
AMERICAN WIRE GAUGE
PANEL
GENERAL CONTRACTOR
AT UNIT
PRIMARY
GROUND FAULT CIRCUIT BREAKER
SECONDARY
CONDUIT
GROUND
SWITCH
CIRCUIT BREAKER
HORSEPOWER
TELEPHONE
CIRCUIT
HEATING VENTILATION & AIR CONDITIONING
TELEVISION
CEILING
TYPICAL
DEMOLISH/DEMOLITION
KILOWATT AMPS
UNDERGROUND ELECTRIC
DETAIL
KILOWATTS
UNLESS NOTED OTHERWISE
DRAWING
LIGHTING
EACH
MECHANICAL CONTRACTOR
ELECTRICAL CONTRACTOR
MINIMUM CIRCUIT AMPS
WIRE GUARD
EXHAUST FAN
MAIN CIRCUIT BREAKER
WEATHERPROOF
EMERGENCY
MAIN DISTRIBUTION PANEL
TRANSFORMER
ELECTRICAL CONTRACTOR
MECHANICAL CONTRACTOR
PLUMBING CONTRACTOR
WINDOW AIR CONDITIONER

NOTE: ABBREVIATIONS MAY OR MAY NOT USE PERIODS, EXAMPLE A.F.F. OR AFF

FIRE ALARM NOTES:

- CONTRACTOR SHALL VERIFY AND COORDINATE WITH THE BUILDING FIRE ALARM MAINTENANCE VENDOR FOR TYPE OF FIRE ALARM DEVICES TO BE USED.
CONTRACTOR SHALL BE RESPONSIBLE TO RETAIN AND COORDINATE THE BUILDING FIRE ALARM MAINTENANCE VENDOR FOR PROGRAMMING AND FINAL CONNECTIONS. CONTRACTOR SHALL INCLUDE PROGRAMMING AND FINAL CONNECTION COSTS IN THEIR BID.
FIRE ALARM WIRING DIAGRAMS SHOWN ARE GENERAL ARRANGEMENTS ONLY. OBTAINED PRIOR TO THE COMMENCEMENT OF THE WORK. ALL PERMIT COSTS AND INSPECTION FEES SHALL BE INCLUDED AS PART OF THIS CONTRACT.
PERMITS AND APPROVALS NECESSARY FOR INSTALLATION OF WORK SHALL BE OBTAINED PRIOR TO THE COMMENCEMENT OF THE WORK. ALL PERMIT COSTS AND INSPECTION FEES SHALL BE INCLUDED AS PART OF THIS CONTRACT.
CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN AND PROTECT FIRE ALARM NOTIFICATION DEVICES, SMOKE DETECTORS AND OTHER FIRE ALARM SAFETY DEVICES IN OPERATION AT ALL TIMES. IF ANY PORTION OF FIRE ALARM SYSTEM IS DISABLED, NOTIFY BUILDING CUSTODIAN IMMEDIATELY.
IN AREAS WHERE DUST AND DIRT WILL BE AIRBOURNE DURING DEMOLITION AND CONSTRUCTION THE CONTRACTOR SHALL PROVIDE PLASTIC WRAPOVER SMOKE DETECTORS AND THEN REMOVE ONCE SPACE IS CLEAN IF A FIRE ALARM DEVICE IS LOCATED ON A WALL OR CEILING TO BE REMOVED, UNLESS OTHERWISE INDICATED THE DEVICE SHALL BE REMOVED AND STORED. ONCE CONSTRUCTION IS COMPLETE THE DEVICE SHALL BE REINSTALLED IN ITS ORIGINAL LOCATION OR AS CLOSE TO ITS ORIGINAL LOCATION AS FEASIBLE. REUSE EXISTING WIRING IF POSSIBLE, PROVIDE NEW WIRING IF NECESSARY.
UNLESS DIRECTED OTHERWISE BY FIRE ALARM SYSTEM MANUFACTURER FIRE ALARM DEVICE WIRING SHALL BE AS FOLLOWS (FOR BIDDING PURPOSES ONLY)
SIGNAL WIRING - #14 AWG TWISTED/SHIELDED
BELL WIRING - #14 AWG TWISTED CABLE
STROBE WIRING - #14 AWG TWISTED CABLE
THE WIRING SHALL HAVE THE FOLLOWING CHARACTERISTICS:
A. A MINIMUM TEMPERATURE RATING 150° C
B. A MINIMUM AVERAGE INSULATION THICKNESS OF 15 MILS
C. A MINIMUM AVERAGE JACKET THICKNESS OF 25 MILS
D. THE COLOR OF THE CABLE SHALL BE RED
E. THE CABLE SHALL BE A TYPE FPLP (PLENUM TYPE) WHEN CONDUIT IS USED, TO PURCHASING USE. THE CABLE SHALL BE VISIBLY MARKED EXTERNALLY THAT IT MEETS THE ABOVE REQUIREMENTS AND IS LISTED BY U.L. CONFIRM WIRING TYPE AND QUANTITY WITH FIRE ALARM SYSTEM MANUFACTURER PRIOR.
PROVIDE MC FIRE ALARM CABLE WITH RED STRIPE AS MANUFACTURED BY AFC SERIES 1800 WHEN CABLE IS CONCEALED OR ABOVE HUNG CEILING. WHEN FIRE ALARM CABLE IS RUN EXPOSED IN FINISHED AREAS, CABLE SHALL RUN IN WIREMOLD V-700. WHEN FIRE ALARM CABLE IS RUN EXPOSED IN UNFINISHED AREAS, PROVIDE PLENUM RATED CABLE IN MIN. 3/4" CONDUIT.
STROBES SHALL HAVE A MINIMUM LIGHT OUTPUT OF 75 CANDELA AND A FLASH RATE OF 1-3 HZ.
SHUTDOWN OF HVAC SYSTEM EQUIPMENT (NOT LIMITED TO, ROOF TOP, 10 EXHAUST FANS, ETC.) OF 1000 CFM OR GREATER, SHALL BE PERFORMED VIA A RELAY INTERFACE SYSTEM. SEND SIGNAL TO BUILDING AUTOMATED TEMPERATURE CONTROL (ATC) SYSTEM INDICATING SHUTDOWN HAS OCCURRED. EQUIPMENT RESTART SHALL BE BY BUILDING ATC SYSTEM UPON FIRE ALARM RESET TO NORMAL MODE. RESTART OF EQUIPMENT SHALL BE SEQUENTIAL.
AFTER THE SYSTEM MODIFICATIONS ARE COMPLETE TEST ALL COMPONENTS IN ACCORDANCE WITH SEQUENCE OF OPERATION PRIOR TO FIRE DEPARTMENT INSPECTION.
A CARBON MONOXIDE DETECTORS SHALL BE PROVIDED IN ALL BOILER ROOMS. ACTIVATION INITIATE A SUPERVISORY SIGNAL AT THE FIRE ALARM CONTROL PANEL AND ANNUCIATOR PANEL WHEN 70 PPM ARE REACHED WITHIN 60-240 MINUTES OR 150 PPM ARE REACHED WITHIN 10-50 PER UL 2034.

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S.E.D. CONTROL NUMBER: 06-04-09-02-0-002-014

PROJECT: HVAC UPGRADES ALICE E. GRADY ELEMENTARY SCHOOL 48 SOUTH COOKSON AVENUE, ELMSFORD, NY 10523
DRAWING TITLE: ABBREVIATIONS AND SYMBOLS

DATE: 05-20-2025 BID
ISSUED TO:
SHEET SIZE: 30"x42" DRAWING NO: E001
DRAWN BY: E & R
CHECKED BY: F & D FILE NO: 24536.00

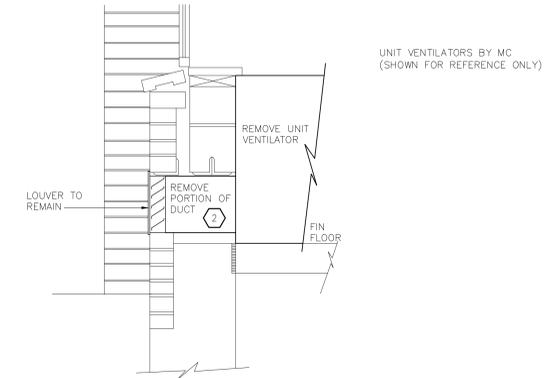
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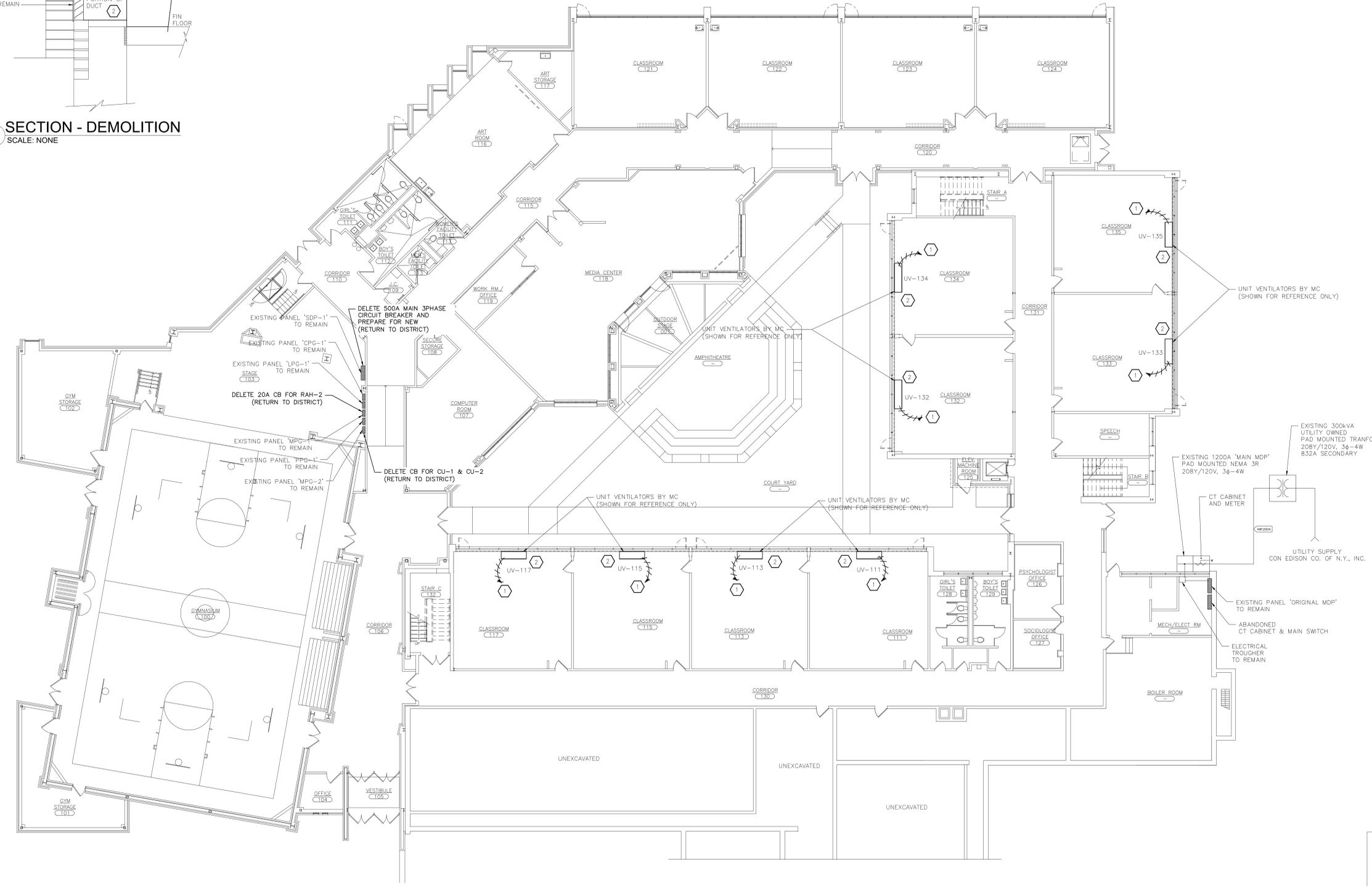


S.E.D. CONTROL NUMBER:
 66-04-09-02-0-002-014

PROJECT: ELMSFORD UNION FREE SCHOOL DISTRICT
HVAC UPGRADES
 ALICE E. GRADY ELEMENTARY SCHOOL
 48 SOUTH GOODMAN AVENUE, ELMSFORD, NY 10523
 DRAWING TITLE: GROUND FLOOR PLAN DEMOLITION
 DATE: 05-20-2025 BID
 SHEET SIZE: 30"x42" DRAWING NO.: ED100
 DRAWN BY: E & R
 CHECKED BY: F & D FILE NO.: 24536.00



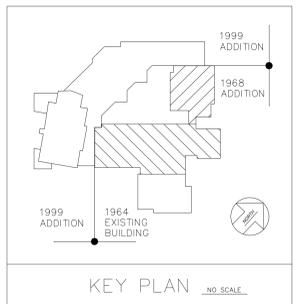
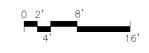
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 SCALE: NONE



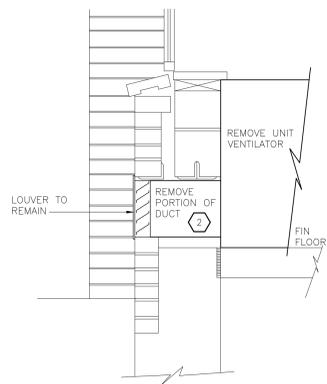
KEYED NOTES - DEMOLITION:

- ① DISCONNECT UNIT VENTILATOR POWER. REMOVE DISCONNECTS, WIRE, AND CONDUIT BACK TO SOURCE. PREPARE FOR NEW WORK.
- ② DISCONNECT FIRE ALARM DEVICES AND PREPARE FOR NEW WORK.

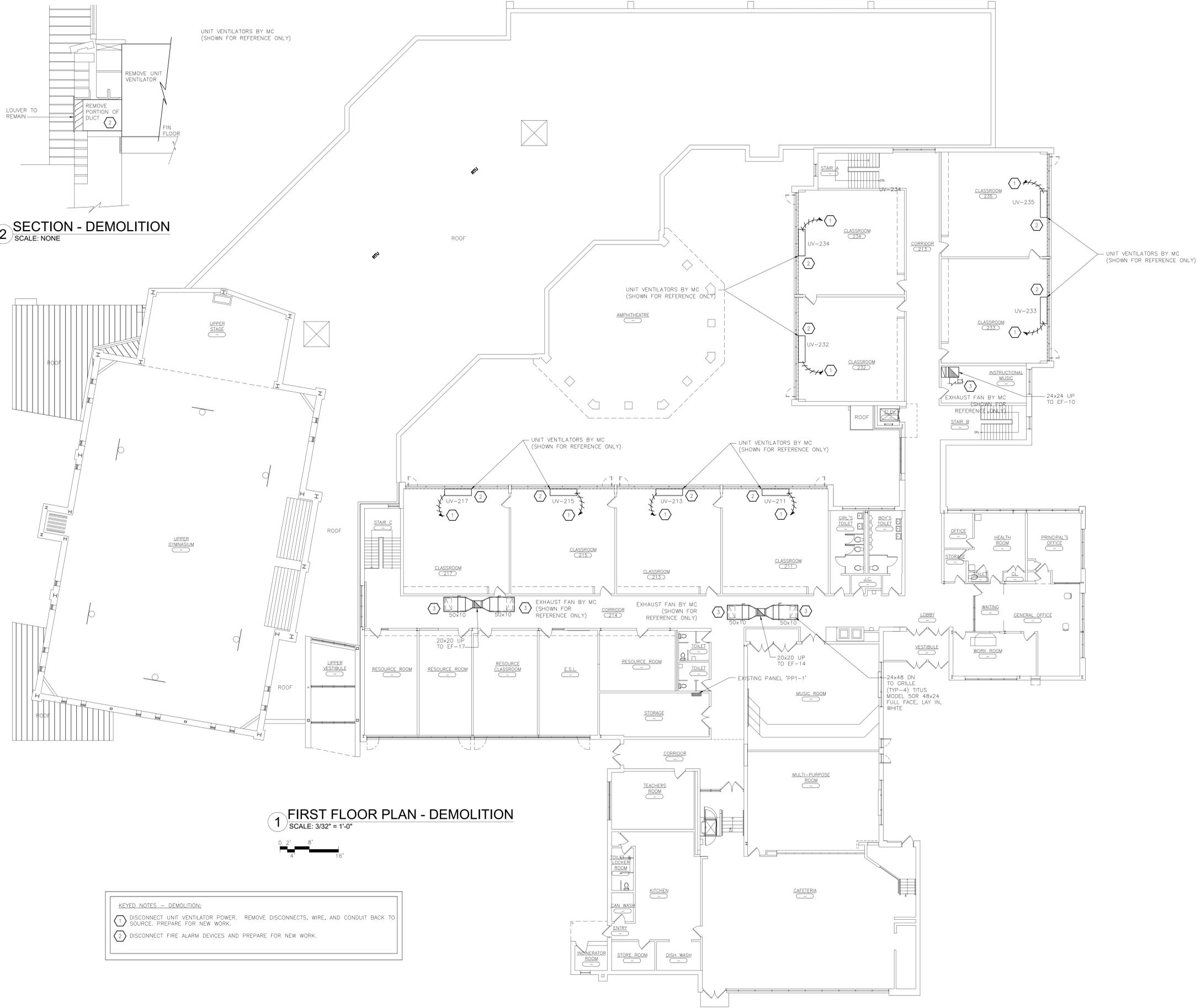
1 GROUND FLOOR PLAN - DEMOLITION
 SCALE: 3/32" = 1'-0"



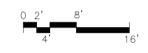
PLOT DATE: May 19, 2025 - 2:07pm



2 SECTION - DEMOLITION
SCALE: NONE

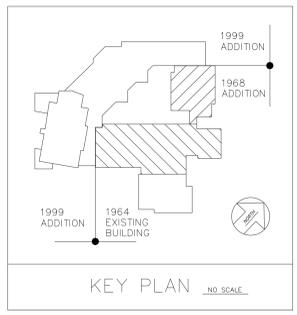


1 FIRST FLOOR PLAN - DEMOLITION
SCALE: 3/32" = 1'-0"



KEYED NOTES - DEMOLITION:

- ① DISCONNECT UNIT VENTILATOR POWER. REMOVE DISCONNECTS, WIRE, AND CONDUIT BACK TO SOURCE. PREPARE FOR NEW WORK.
- ② DISCONNECT FIRE ALARM DEVICES AND PREPARE FOR NEW WORK.



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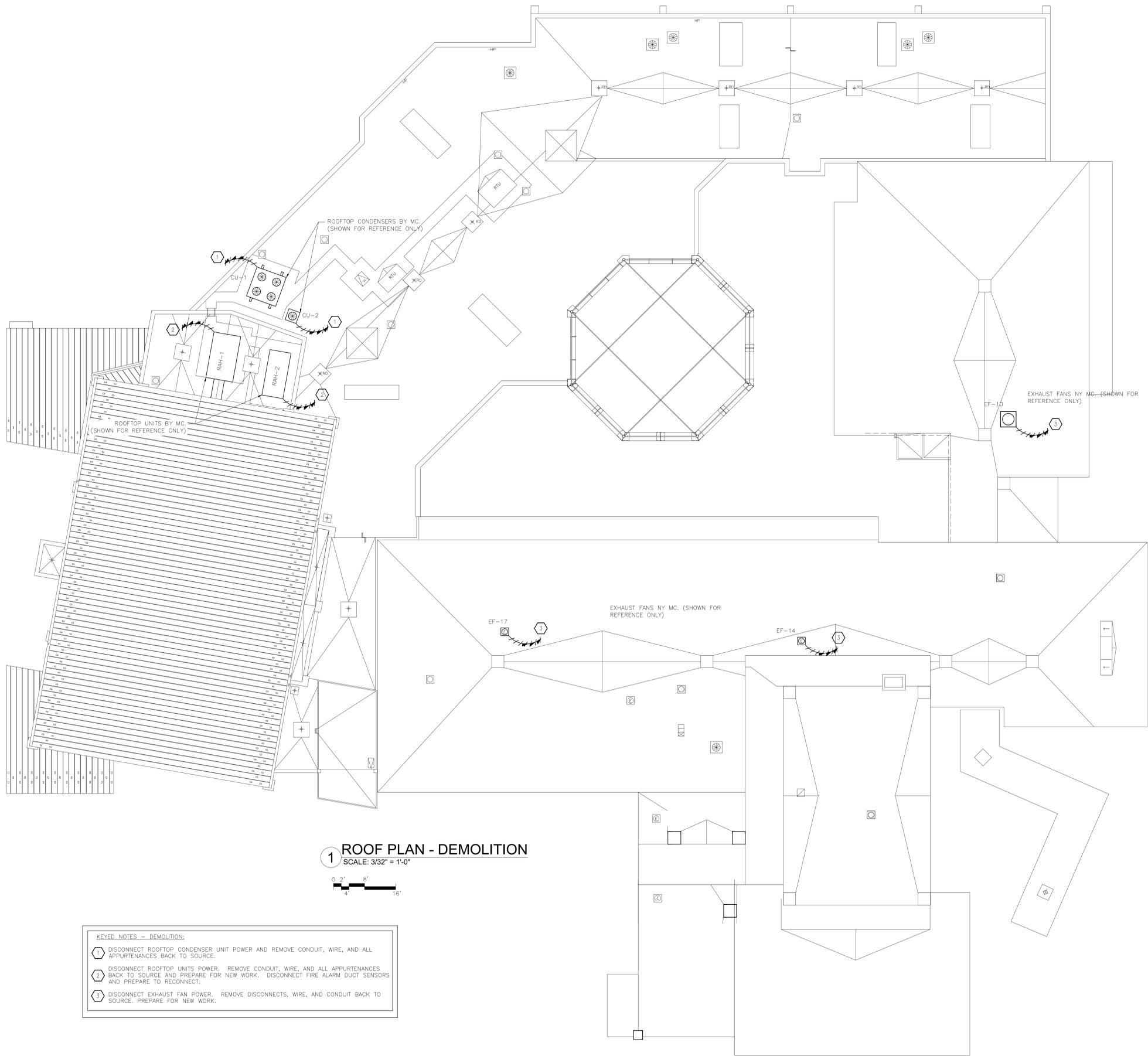
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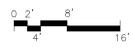
S.E.D. CONTROL NUMBER:
66-04-09-02-0-002-014

PROJECT: ELMSFORD UNION FREE SCHOOL DISTRICT
HVAC UPGRADES
 ALICE E. GRADY ELEMENTARY SCHOOL
 48 SOUTH LINDSEY AVENUE, ELMSFORD, NY 10523
 DRAWING TITLE: FIRST FLOOR PLAN DEMOLITION

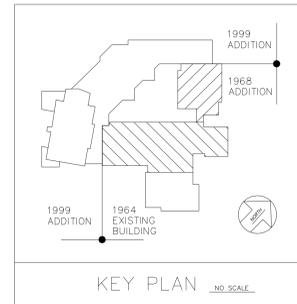
05-20-2025	BID
DATE	ISSUED TO
SHEET SIZE 30"x42"	DRAWING NO. ED101
DRAWN BY E & R	CHECKED BY F & D
FILE NO. 24536.00	



1 ROOF PLAN - DEMOLITION
 SCALE: 3/32" = 1'-0"



- KEYED NOTES — DEMOLITION:**
- 1 DISCONNECT ROOFTOP CONDENSER UNIT POWER AND REMOVE CONDUIT, WIRE, AND ALL APPURTENANCES BACK TO SOURCE.
 - 2 DISCONNECT ROOFTOP UNITS POWER. REMOVE CONDUIT, WIRE, AND ALL APPURTENANCES BACK TO SOURCE AND PREPARE FOR NEW WORK. DISCONNECT FIRE ALARM DUCT SENSORS AND PREPARE TO RECONNECT.
 - 3 DISCONNECT EXHAUST FAN POWER. REMOVE DISCONNECTS, WIRE, AND CONDUIT BACK TO SOURCE. PREPARE FOR NEW WORK.



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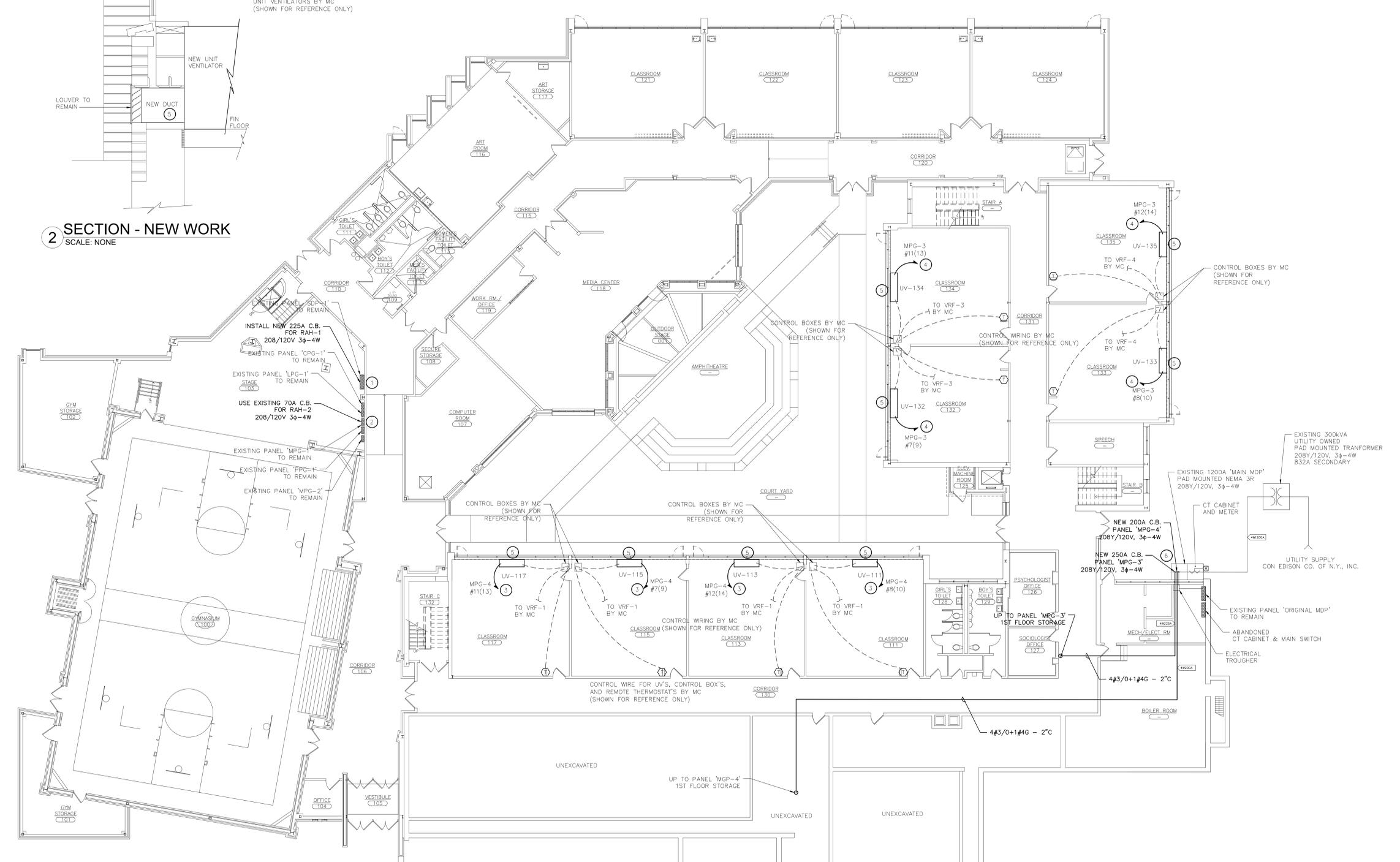
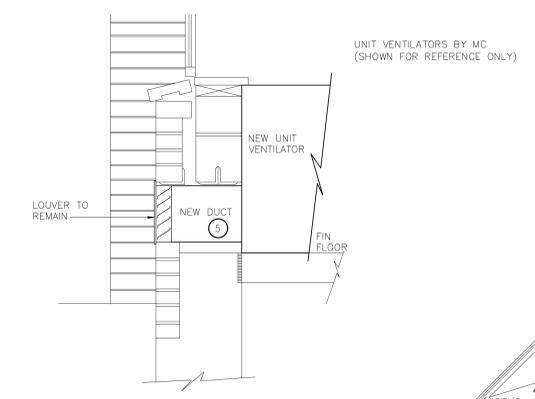


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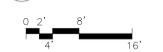
PROJECT: ELMSFORD UNION FREE SCHOOL DISTRICT
HVAC UPGRADES
 ALICE E. GRADY ELEMENTARY SCHOOL
 48 SOUTH GOODMAN AVENUE, ELMSFORD, NY 10523
 DRAWING TITLE: ROOF PLAN DEMOLITION

05-20-2025	BID
DATE	ISSUED TO
SHEET SIZE 30"x42"	DRAWING NO. ED102
DRAWN BY E & R	CHECKED BY F & D
	FILE NO. 24536.00

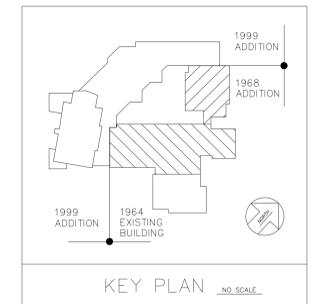
2 SECTION - NEW WORK
SCALE: NONE



1 GROUND FLOOR PLAN - NEW WORK
SCALE: 3/32" = 1'-0"



- KEYED NOTES - NEW WORK:**
- 1 PROVIDE NEW 600A MAIN CB TO MATCH PANEL FRAME. PANEL WAS PREVIOUSLY SIZED FOR 600A AND IS FEED FROM 'MAIN MDP' WITH 2 SETS OF 4#500MCM+1#1G-3"C EACH. RETURN EXISTING 500A CB TO OWNER. PROVIDE AND INSTALL NEW
 - 2 USE EXISTING 70A CB IN PANEL 'MPG-1' #7(9,11) AND LABEL FOR NEW RAH-2. PROVIDE AND INSTALL NEW DISCONNECT AT UNIT. WIRING AND CONDUIT TO ROOFTOP UNIT AND MAKE FINAL CONNECTION TO UNIT - EXTERIOR DISCONNECT SHALL BE NEMA 3R WEATHER RATED, AND NOT MOUNTED HIGHER THAN 6' FROM ROOF AND READILY ACCESSIBLE WITHOUT THE AID OF A LADDER. EXTERIOR CONDUIT SHALL BE WEATHER RATED AND PROPERLY SECURED WITH MECHANICAL FASTENERS. ZIP TIES AND/OR ELECTRICAL TAPE ARE NOT PERMITTED TO SECURE CONDUIT OR WIRING.
 - 3 PROVIDE AND INSTALL NEW DISCONNECT SWITCH INSIDE UNIT VENTILATOR FOR 20A MAX. CAPACITY. PROVIDE AND INSTALL NEW WIRING (3#10+1#12G-2"C) AND CONDUIT BACK TO NEW PANEL 'MPG-4' TO CIRCUIT AS INDICATED ON DRAWING. PROVIDE AND INSTALL 208V/1Φ/60HZ - 15A CB FOR EACH UNIT AND LABEL CIRCUIT NO. AND PANEL AT UNIT. CLEARLY LABEL UNITS ON EACH PANEL DIRECTORY.
 - 4 PROVIDE AND INSTALL NEW DISCONNECT SWITCH INSIDE UNIT VENTILATOR FOR 20A MAX. CAPACITY. PROVIDE AND INSTALL NEW WIRING (3#10+1#12G-2"C) AND CONDUIT BACK TO NEW PANEL 'MPG-3' TO CIRCUIT AS INDICATED ON DRAWING. PROVIDE AND INSTALL 208V/1Φ/60HZ - 15A CB FOR EACH UNIT AND LABEL CIRCUIT NO. AND PANEL AT UNIT. CLEARLY LABEL UNITS ON EACH PANEL DIRECTORY.
 - 5 MC SHALL PROVIDE AND INSTALL NEW FIRE ALARM DUCT SMOKE DETECTORS, EC SHALL PROVIDE AND INSTALL FIRE ALARM WIRING, AND CONNECT TO EXISTING FIRE ALARM SYSTEM. WIRE SIZED PER MANUFACTURE SPECIFICATIONS.
 - 6 PROVIDE AND INSTALL NEW CB TO MATCH EXISTING 'MAIN MDP' EQUIPMENT MANUFACTURER FOR SUBPANELS AS INDICATED ON DRAWING. COORDINATE ANY SHUT-DOWNS OR TIE-INS WITH OWNER AND UTILITY PROVIDER.



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S.E.D. CONTROL NUMBER:
66-04-09-02-0-002-014

PROJECT: ELMSFORD UNION FREE SCHOOL DISTRICT HVAC UPGRADES AULICE E. GRADY ELEMENTARY SCHOOL 48 SOUTH GOODMAN AVENUE, ELMSFORD, NY 10523	DRAWING TITLE: GROUND FLOOR PLAN NEW WORK
DATE: 05-20-2025	ISSUED TO: BID
SHEET SIZE: 30"x42"	DRAWING NO.:
DRAWN BY: E & R	E100
CHECKED BY: F & D	FILE NO.:
	24536.00

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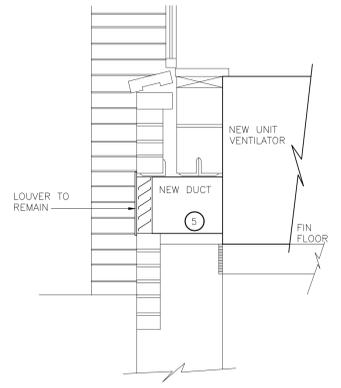
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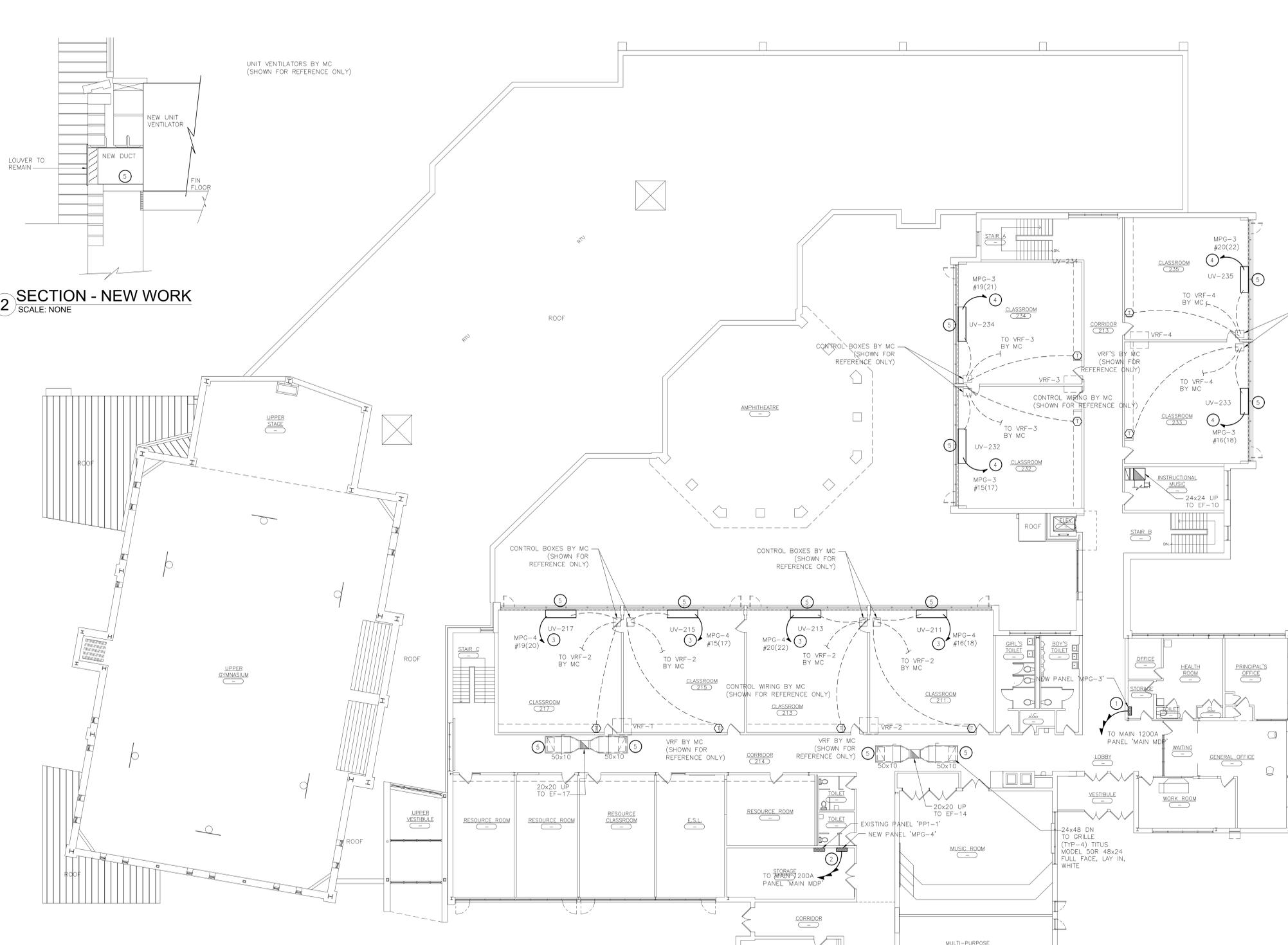
S.E.D. CONTROL NUMBER:
 66-04-09-02-0-002-014

PROJECT: ELMSFORD UNION FREE SCHOOL DISTRICT
 HVAC UPGRADES
 ALICE E. GRADY ELEMENTARY SCHOOL
 48 SOUTH LODWYCK AVENUE, ELMSFORD, NY 10523
 DRAWING TITLE: FIRST FLOOR PLAN - NEW WORK

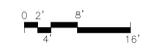
DATE: 05-20-2025
 SHEET SIZE: 30"x42"
 DRAWN BY: E & R
 CHECKED BY: F & D
 BID TO: ISSUED TO:
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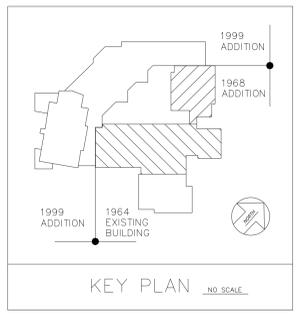
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 SCALE: NONE

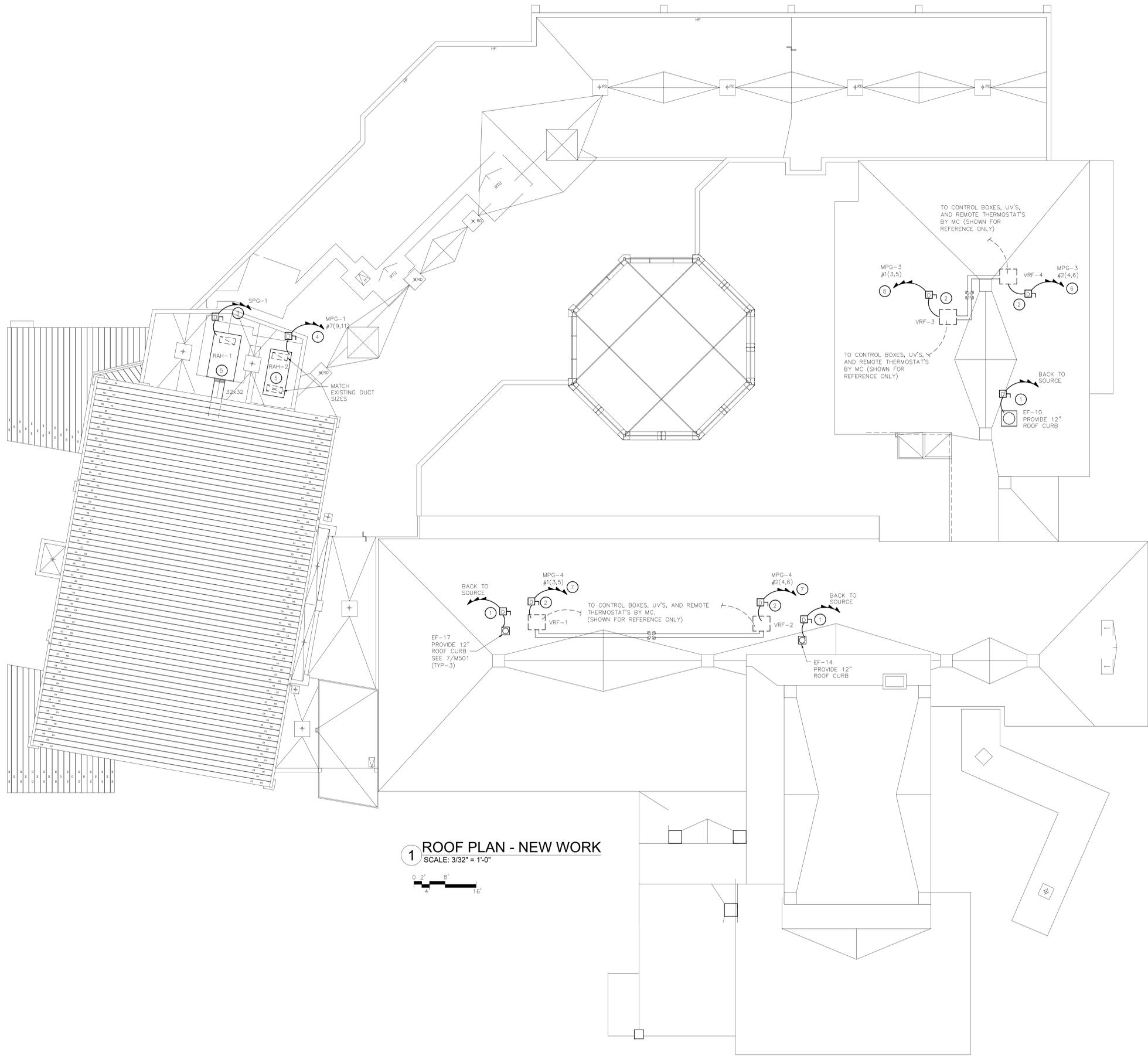


1 FIRST FLOOR PLAN - NEW WORK
 SCALE: 3/32" = 1'-0"

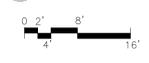


- KEYED NOTES - NEW WORK:
- 1 PROVIDE AND INSTALL NEW SURFACE MOUNT PANEL 'MPG-3', WITH 225A MAIN BREAKER, 208/120V, 3ø-4W LOCATED IN THE STORAGE ROOM ON THE 1ST FLOOR OF THE 1968 ADDITION ADJACENT TO THE LOBBY AS INDICATED ON THE DRAWING.
 - 2 PROVIDE AND INSTALL NEW SURFACE MOUNT PANEL 'MPG-4', WITH 200A MAIN BREAKER, 208/120V, 3ø-4W LOCATED IN THE STORAGE ROOM ON THE 1ST FLOOR OF THE 1964 ORIGINAL SCHOOL BEHIND THE STAFF BATHROOMS AS INDICATED ON THE DRAWING.
 - 3 PROVIDE AND INSTALL NEW DISCONNECT SWITCH INSIDE UNIT VENTILATOR FOR 20A MAX. CAPACITY. PROVIDE AND INSTALL NEW WIRING (3#10+1#12G-3"Ø) AND CONDUIT BACK TO NEW PANEL 'MPG-4' TO CIRCUIT AS INDICATED ON DRAWING. PROVIDE AND INSTALL 208V/14/60HZ - 15A CB FOR EACH UNIT AND LABEL CIRCUIT NO. AND PANEL AT UNIT, CLEARLY LABEL UNITS ON EACH PANEL DIRECTORY.
 - 4 PROVIDE AND INSTALL NEW DISCONNECT SWITCH INSIDE UNIT VENTILATOR FOR 20A MAX. CAPACITY. PROVIDE AND INSTALL NEW WIRING (3#10+1#12G-3"Ø) AND CONDUIT BACK TO NEW PANEL 'MPG-3' TO CIRCUIT AS INDICATED ON DRAWING. PROVIDE AND INSTALL 208V/14/60HZ - 15A CB FOR EACH UNIT AND LABEL CIRCUIT NO. AND PANEL AT UNIT, CLEARLY LABEL UNITS ON EACH PANEL DIRECTORY.
 - 5 MC SHALL PROVIDE AND INSTALL NEW FIRE ALARM DUCT SMOKE DETECTORS. EC SHALL PROVIDE AND INSTALL FIRE ALARM WIRING, AND CONNECT TO EXISTING FIRE ALARM SYSTEM. WIRE SIZED PER MANUFACTURE SPECIFICATIONS.

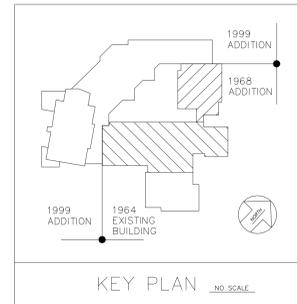




1 ROOF PLAN - NEW WORK
SCALE: 3/32" = 1'-0"



- KEYED NOTES - NEW WORK:**
- PROVIDE AND INSTALL NEW NEMA 3R DISCONNECT SWITCH AT EXHAUST FAN (EF) FOR 25A MAX. CAPACITY. PROVIDE AND INSTALL NEW WIRING (4#10+1#10G-2°C) AND CONDUIT BACK TO EXISTING PANEL. PROVIDE AND INSTALL NEW 25A CB TO MATCH EXISTING PANEL MANUFACTURER. NOTIFY ENGINEER OF ANY CONFLICT. LABEL CIRCUIT NO. AND PANEL AT EF. CLEARLY LABEL EF ON PANEL DIRECTORY.
 - PROVIDE AND INSTALL NEW NEMA 3R DISCONNECT SWITCH AT VRF. IF FACTORY INSTALLED DISCONNECT IS PROVIDED AND ACCESSIBLE FROM ROOF THEN PROVIDE DEDUCT FOR DIFFERENCE. EXTERIOR DISCONNECT SHALL BE NEMA 3R WEATHER RATED, AND NOT MOUNTED HIGHER THAN 6' FROM ROOF AND READILY ACCESSIBLE WITHOUT THE AID OF A LADDER. PROVIDE NEW WIRING AND CONDUIT TO ROOFTOP RAH-1 (4#3/0+1#4G-2°C) TO PANEL "SPG-1" AND MAKE FINAL CONNECTION. EXTERIOR CONDUIT SHALL BE WEATHER RATED AND PROPERLY SECURED WITH MECHANICAL FASTENERS. ZIP TIES AND/OR ELECTRICAL TAPE ARE NOT PERMITTED TO SECURE CONDUIT OR WIRING.
 - PROVIDE AND INSTALL NEW DISCONNECT AT UNIT, IF FACTORY INSTALLED DISCONNECT IS PROVIDED AND ACCESSIBLE FROM ROOF THEN PROVIDE DEDUCT FOR DIFFERENCE. EXTERIOR DISCONNECT SHALL BE NEMA 3R WEATHER RATED, AND NOT MOUNTED HIGHER THAN 6' FROM ROOF AND READILY ACCESSIBLE WITHOUT THE AID OF A LADDER. PROVIDE NEW WIRING AND CONDUIT TO ROOFTOP RAH-2 (4#6+1#6G-1°C) TO EXISTING PANEL "MPG-1" #7(9,11), LABEL FOR NEW RAH-2 AND MAKE FINAL CONNECTION. EXTERIOR CONDUIT SHALL BE WEATHER RATED AND PROPERLY SECURED WITH MECHANICAL FASTENERS. ZIP TIES AND/OR ELECTRICAL TAPE ARE NOT PERMITTED TO SECURE CONDUIT OR WIRING.
 - PROVIDE AND INSTALL NEW DISCONNECT AT UNIT, IF FACTORY INSTALLED DISCONNECT IS PROVIDED AND ACCESSIBLE FROM ROOF THEN PROVIDE DEDUCT FOR DIFFERENCE. EXTERIOR DISCONNECT SHALL BE NEMA 3R WEATHER RATED, AND NOT MOUNTED HIGHER THAN 6' FROM ROOF AND READILY ACCESSIBLE WITHOUT THE AID OF A LADDER. PROVIDE NEW WIRING AND CONDUIT TO ROOFTOP RAH-2 (4#6+1#6G-1°C) TO EXISTING PANEL "MPG-1" #7(9,11), LABEL FOR NEW RAH-2 AND MAKE FINAL CONNECTION. EXTERIOR CONDUIT SHALL BE WEATHER RATED AND PROPERLY SECURED WITH MECHANICAL FASTENERS. ZIP TIES AND/OR ELECTRICAL TAPE ARE NOT PERMITTED TO SECURE CONDUIT OR WIRING.
 - MC SHALL PROVIDE AND INSTALL NEW FIRE ALARM DUCT SMOKE DETECTORS. EC SHALL PROVIDE AND INSTALL FIRE ALARM WIRING, AND CONNECT TO EXISTING FIRE ALARM SYSTEM. WIRE SIZED PER MANUFACTURE SPECIFICATIONS.
 - PROVIDE AND INSTALL NEW WIRING (4#6+1#10G-1°C) AND CONDUIT BACK TO NEW PANEL "MPG-3" TO CIRCUITS AS INDICATED ON DRAWING. PROVIDE AND INSTALL 208V/3ø/60HZ - 50A CB FOR EACH UNIT AND LABEL CIRCUIT NO. AND PANEL AT UNIT, CLEARLY LABEL UNITS ON EACH PANEL DIRECTORY.
 - PROVIDE AND INSTALL NEW WIRING (4#6+1#10G-1°C) AND CONDUIT BACK TO NEW PANEL "MPG-4" TO CIRCUITS AS INDICATED ON DRAWING. PROVIDE AND INSTALL 208V/3ø/60HZ - 50A CB FOR EACH UNIT AND LABEL CIRCUIT NO. AND PANEL AT UNIT, CLEARLY LABEL UNITS ON EACH PANEL DIRECTORY.
 - PROVIDE AND INSTALL NEW WIRING (4#4+1#8G-1°C) AND CONDUIT BACK TO NEW PANEL "MPG-3" TO CIRCUITS AS INDICATED ON DRAWING. PROVIDE AND INSTALL 208V/3ø/60HZ - 90A CB FOR THE UNIT AND LABEL CIRCUIT NO. AND PANEL AT UNIT, CLEARLY LABEL UNITS ON EACH PANEL DIRECTORY.



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**FULLER
D'ANGELO
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ARCHITECTS
PLANNERS



S.E.D. CONTROL NUMBER:
66-04-09-02-0-002-014

PROJECT: ELMSFORD UNION FREE SCHOOL DISTRICT
HVAC UPGRADES
 ALICE E. GRADY ELEMENTARY SCHOOL
 48 SOUTH COSSWA WAY, ELMSFORD, NY 10523
 DRAWING TITLE: ROOF PLAN NEW WORK

DATE: 05-20-2025
 SHEET SIZE: 30"x42"
 DRAWN BY: E & R
 CHECKED BY: F & D
 BID ISSUED TO:
 DRAWING NO.: **E102**
 FILE NO.: 24536.00

MARK	SERVICE	MODEL NO. (AON OR APPROVED EQUAL)	CFM	MIN/MAX O.A. CFM	TYPE	COOLING										HEATING										ELECTRICAL					REMARKS			
						TEMPERATURE (°F)					CAPACITY					ENT. WATER (°F)	LVG. WATER (°F)	EER	TEMPERATURE (°F)			CAPACITY MBH			ENT. FLUID (°F)	LVG. FLUID (°F)	ECONOMIZER	V/PH/HZ	MCA (A)	MOPD (A)		FACTORY DISC.	VFD	GFO OUTLET
						ENT. AIR DB	LVG. AIR WB	OD AMB DB/WB	TONS NOM.	MBH TOTAL	SENS.	GPM	ENT. AIR DB	LVG. AIR WB	TOTAL				GPM	ENT. FLUID (°F)	LVG. FLUID (°F)													
RAH-1	GYM 100	RNA-030-C-A-3-GAB0B-JOEU0-00-DAGAM-00-00000-ABLBL-DC-000	9000	1000/6000	R-454B	88	71	63	60	95/75	30	360	278	-	-	-	12.5	HOT WATER	26.8	94	706	45	200	170	YES	208/3/60	205	250	YES	YES	YES	SEE NOTES 1,2,3		
RAH-2	STAGE 103	RNA-006-A-A-8-GAAGA-JOAG0-00-OACAH-E00-00000-00000-DC-CB0	2000	500/2000	R-454B	80	65	59	56	95/75	6	63.1	48.8	-	-	-	12.5	HOT WATER	56.3	88	70.1	7	200	170	YES	208/3/60	48	70	YES	YES	YES	SEE NOTES 1,2,3		

NOTE 1: PROVIDE ADJUSTABLE MOTORIZED DAMPERS AS SHOWN ON THE MECHANICAL DRAWINGS, AND INTERLOCK WITH THEIR RESPECTIVE UNIT.
 NOTE 2: INSTALL UNIT(S) ACCORDING TO MANUFACTURER RECOMMENDATIONS.
 NOTE 3: PROVIDE DUCT SMOKE DETECTORS AND ALL APPURTENANCES (BY MC), WIRING AND FINAL CONNECTION TO EXISTING F/A SYSTEMS (PANELS) AS REQUIRED (BY EC).

BY ELECTRICAL CONTRACTOR (EC)
 ALL OTHER WORK BY MC

MARK	SERVICE	MAGIC-AIRE / MODEL (OR APPROVED EQUAL)	TYPE	TOTAL CFM	O/A MAX	DX COOLING COIL										HEATING COIL										MOTOR (ECM)		ELECTRICAL				MARK	NOTES		
						TEMPERATURE (°F)					CAPACITY					ENT. WATER (°F)	LVG. WATER (°F)	EER	TEMPERATURE (°F)			CAPACITY MBH			ENT. FLUID (°F)	LVG. FLUID (°F)	ECONOMIZER	V/PH/HZ	MCA (A)	MOPD (A)	FACTORY DISC.			VFD	GFO OUTLET
						ENT. AIR DB	LVG. AIR WB	OD AMB DB/WB	TONS NOM.	MBH TOTAL	SENS.	GPM	ENT. AIR DB	LVG. AIR WB	TOTAL				GPM	ENT. FLUID (°F)	LVG. FLUID (°F)														
GROUND FLOOR																																			
UV-111	CLASSROOM 111	MAUVF321FFB513A0K1EA6AAA5H	VERTICAL	1000	300	95	2.9	80	67	59.6	57.9	3	56,250	2	3	50	100	180	140	1/3	208/1/60	2.6	3.2	15A	UV-111	1,2,3,4,5,6									
UV-113	CLASSROOM 113	MAUVF321FFB513A0K1EA6AAA5H	VERTICAL	1000	300	95	2.9	80	67	59.6	57.9	3	56,250	2	3	50	100	180	140	1/3	208/1/60	2.6	3.2	15A	UV-113	1,2,3,4,5,6									
UV-115	CLASSROOM 115	MAUVF321FFB513A0K1EA6AAA5H	VERTICAL	1000	300	95	2.9	80	67	59.6	57.9	3	56,250	2	3	50	100	180	140	1/3	208/1/60	2.6	3.2	15A	UV-115	1,2,3,4,5,6									
UV-117	CLASSROOM 117	MAUVF321FFB513A0K1EA6AAA5H	VERTICAL	1000	300	95	2.9	80	67	59.6	57.9	3	56,250	2	3	50	100	180	140	1/3	208/1/60	2.6	3.2	15A	UV-117	1,2,3,4,5,6									
UV-132	CLASSROOM 132	MAUVF321FFB513A0K1EA6AAA5H	VERTICAL	1250	300	95	3.6	80	67	59.4	57.9	3	66,285	2	3	50	100	180	140	1/2	208/1/60	3.3	4.1	15A	UV-132	1,2,3,4,5,6									
UV-133	CLASSROOM 133	MAUVF321FFB513A0K1EA6AAA5H	VERTICAL	1000	300	95	2.9	80	67	59.6	57.9	3	56,250	2	3	50	100	180	140	1/3	208/1/60	2.6	3.2	15A	UV-133	1,2,3,4,5,6									
UV-134	CLASSROOM 134	MAUVF411FFB513A0K1DA6AAA5H	VERTICAL	1250	300	95	3.6	80	67	59.4	57.9	3	66,285	2	3	50	100	180	140	1/2	208/1/60	3.3	4.1	15A	UV-134	1,2,3,4,5,6									
UV-135	CLASSROOM 135	MAUVF321FFB513A0K1EA6AAA5H	VERTICAL	1000	300	95	2.9	80	67	59.6	57.9	3	56,250	2	3	50	100	180	140	1/3	208/1/60	2.6	3.2	15A	UV-135	1,2,3,4,5,6									
FIRST FLOOR																																			
UV-211	CLASSROOM 211	MAUVF411FFB513A0K1DA6AAA5H	VERTICAL	1250	300	95	3.6	80	67	59.4	57.9	3	66,285	2	3	50	100	180	140	1/2	208/1/60	3.3	4.1	15A	UV-211	1,2,3,4,5,6									
UV-213	CLASSROOM 213	MAUVF411FFB513A0K1DA6AAA5H	VERTICAL	1250	300	95	3.6	80	67	59.4	57.9	3	66,285	2	3	50	100	180	140	1/2	208/1/60	3.3	4.1	15A	UV-213	1,2,3,4,5,6									
UV-215	CLASSROOM 215	MAUVF411FFB513A0K1DA6AAA5H	VERTICAL	1250	300	95	3.6	80	67	59.4	57.9	3	66,285	2	3	50	100	180	140	1/2	208/1/60	3.3	4.1	15A	UV-215	1,2,3,4,5,6									
UV-217	CLASSROOM 217	MAUVF411FFB513A0K1DA6AAA5H	VERTICAL	1250	300	95	3.6	80	67	59.4	57.9	3	66,285	2	3	50	100	180	140	1/2	208/1/60	3.3	4.1	15A	UV-217	1,2,3,4,5,6									
UV-232	CLASSROOM 232	MAUVF511FFB523A0K1DA6AAA5H	VERTICAL	1500	300	95	4.4	80	67	59.7	57.6	3	79,240	2	3	50	100	180	140	1/2	208/1/60	3.3	4.1	15A	UV-232	1,2,3,4,5,6									
UV-233	CLASSROOM 233	MAUVF321FFB513A0K1EA6AAA5H	VERTICAL	1000	300	95	2.9	80	67	59.6	57.9	3	56,250	2	3	50	100	180	140	1/3	208/1/60	2.6	3.2	15A	UV-233	1,2,3,4,5,6									
UV-243	CLASSROOM 234	MAUVF511FFB523A0K1DA6AAA5H	VERTICAL	1500	300	95	4.4	80	67	59.7	57.6	3	79,240	2	3	50	100	180	140	1/2	208/1/60	3.3	4.1	15A	UV-243	1,2,3,4,5,6									
UV-235	CLASSROOM 235	MAUVF321FFB513A0K1EA6AAA5H	VERTICAL	1000	300	95	2.9	80	67	59.6	57.9	3	56,250	2	3	50	100	180	140	1/3	208/1/60	2.6	3.2	15A	UV-235	1,2,3,4,5,6									

NOTE 1: DAMPERS CONTROLLING OUTDOOR AIR INTAKE VOLUME TO BE MOTORIZED AND INTERLOCKED WITH THEIR RESPECTIVE UNIT.
 NOTE 2: CONNECT NEW UNIT VENTILATOR TO EXISTING INTAKE LOUVER. PROVIDE NEW INSULATED SLEEVE AND SEAL CONNECTIONS TO BE WATER TIGHT. PROVIDE NECESSARY MODIFICATIONS NEEDED FOR NEW CONNECTION.
 NOTE 3: PROVIDE ALL VALVING, FITTINGS, ELBOWS, BALANCING VALVES ETC. AS SHOWN ON DETAIL 2/M500.
 NOTE 4: PROVIDE ACCU COMPATIBLE UNITS, WHICH INCLUDE ACCU ELECTRONIC EXPANSION VALVE KITS, ACCU COMMUNICATION BOXES, ETC. PROVIDE 12" MINIMUM EXTENDED UTILITY CABINET FROM SAME MANUFACTURER TO MATCH NEW UV CABINET. HOUSE EEV AND CONTROLS IN UTILITY CABINET.
 NOTE 5: EC SHALL PROVIDE AND INSTALL NEMA 3R DISCONNECT SWITCH, CONDUIT, WIRING,SUPPORTS AND MAKE FINAL CONNECTION FOR POWER. ALL OTHER WORK ON THIS SCHEDULE BY MC.
 NOTE 6: EC SHALL PROVIDE AND INSTALL FIRE ALARM DEVICE WIRING AND MAKE CONNECTION TO EXISTING FACP. MC SHALL PROVIDE AND INSTALL FIRE ALARM DEVICES.

BY ELECTRICAL CONTRACTOR (EC)
 ALL OTHER WORK BY MC

VRF SCHEDULE

MARK	SERVICE	BRAND/MODEL NO. (HITACHI OR APPROVED EQUAL)	DESIGNATION	CAPACITY (TONS)	COOLING/HEATING DB (°F)	TOTAL UNIT (MBH) COOLING/HEATING	EER AHRI	REFRIG.	CONNECTIONS		UNIT ELECTRICAL DATA			REMARKS
									L	G	VOLTAGE	MCA	MOPD	
VRF-1	SEE M100, M101	HVAHP120B32S	OUTDOOR UNIT 1	10	95 47	114/129	12.5	R410A	SEE M503	SEE M503	208/3PH	42	50A	SEE NOTES 1,2,3,4,5,6,7
VRF-2	SEE M100, M101	HVAHP120B32S	OUTDOOR UNIT 2	10	95 47	114/129	12.5	R410A	SEE M503	SEE M503	208/3PH	42	50A	SEE NOTES 1,2,3,4,5,6,7
VRF-3	SEE M100, M101	HVAHP192B32S	OUTDOOR UNIT 3	16	95 47	184/206	21.1	R410A	SEE M503	SEE M503	208/3PH	68	90A	SEE NOTES 1,2,3,4,5,6,7
VRF-4	SEE M100, M101	HVAHP120B32S	OUTDOOR UNIT 4	10	95 47	114/129	12.5	R410A	SEE M503	SEE M503	208/3PH	42	50A	SEE NOTES 1,2,3,4,5,6,7

NOTE 1: MAINTAIN REQUIRED AND RECOMMENDED CLEARANCES FOR UNIT DURING PLACEMENT. INSTALL AND CHARGE UNIT ACCORDING TO MANUFACTURER RECOMMENDATIONS.
 NOTE 2: PROVIDE WEATHERPROOF PAD FOR UNIT AND 24" CURB.
 NOTE 3: PROVIDE REFRIGERANT SUCTION AND LIQUID LINES. PROVIDE INSULATION, SUPPORT, AND ENCLOSURES AS NOTED. PROVIDE ALL PIPING ENCLOSURES, WIRING ENCLOSURES, AND PENETRATIONS.
 NOTE 4: MAINTAIN MINIMUM OF 10"-0" FROM ROOF EDGE AND AIR INTAKES WHEN PLACING UNIT. COORDINATE ALL TRADES BEFORE PLACEMENT.
 NOTE 5: PROVIDE PIPING PORTAL(S) TO HOUSE ALL PENETRATIONS ASSOCIATED WITH UNIT(S).
 NOTE 6: EC SHALL PROVIDE AND INSTALL NEMA 3R DISCONNECT SWITCH, CONDUIT, WIRING,SUPPORTS AND MAKE FINAL CONNECTION FOR POWER. ALL OTHER WORK ON THIS SCHEDULE BY MC.
 NOTE 7: EC SHALL PROVIDE AND INSTALL FIRE ALARM DEVICE WIRING AND MAKE CONNECTION TO EXISTING FACP. MC SHALL PROVIDE AND INSTALL FIRE ALARM DEVICES.

BY ELECTRICAL CONTRACTOR (EC)
 ALL OTHER WORK BY MC

EXHAUST FAN SCHEDULE

UNIT NO.	LOCATION /SERVICE	FAN TYPE	AIR FLOW CFM	STATIC PRESS. (IN WG.)	MAX. RPM	MODEL	MFG	HP/WATTS	VOLT/PHASE	FLA	MOPD	REMARKS
EF 10	CORR EXHAUST	ROOF	4325	.75	1028	G-200	GREENHECK	1.5 HP	208/3	6.6	20A	(1)(2)(3)(4)(5)(6)
EF 14	1ST FLOOR CORR EXH	ROOF	4270	.75	1028	G-200	GREENHECK	1.5 HP	208/3	6.6	20A	(1)(2)(3)(4)(5)(6)
EF 17	1ST FLOOR CORR EXH	ROOF	4270	.75	1028	G-200	GREENHECK	1.5 HP	208/3	6.6	20A	(1)(2)(3)(4)(5)(6)

REMARKS:
 1. PROVIDE VIBRATION ISOLATORS. PROVIDE NEW 18" HIGH INSULATED ROOF CURB.
 2. PROVIDE "VARI-SPEED" CONTROLS. MOUNT INTERNALLY.
 3. SECURE FAN TO ROOF CURB WITH STAINLESS STEEL FASTENERS 8" O.C. AROUND PERIMETER.
 4. MOTORIZED DAMPER AND ACTUATOR. ALL ASSOCIATED CONTROLS, AND SUPPORTS (BY MC). WIRING, CONDUIT, AND CONDUIT SUPPORTS (BY EC) FOR COMPLETE SYSTEM.
 5. CONNECT TO RIMS WITH ALL APPURTENANCES.
 6. PROVIDE DUCT SMOKE DETECTORS AND ALL APPURTENANCES (BY MC), WIRING AND FINAL CONNECTION TO EXISTING F/A SYSTEMS (PANELS) AS REQUIRED (BY EC).

BY ELECTRICAL CONTRACTOR (EC)
 ALL OTHER WORK BY MC

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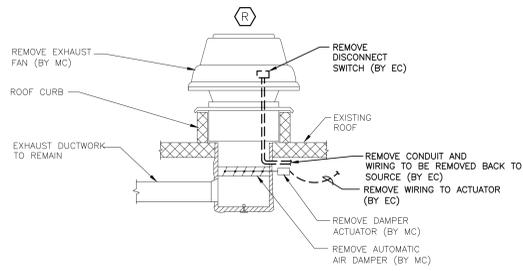
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S.E.D. CONTROL NUMBER:
 66-04-09-02-0-002-014

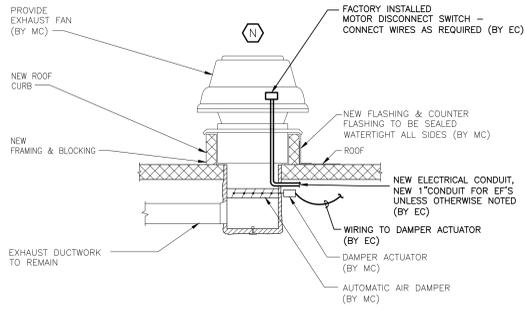
PROJECT: ELMSFORD UNION FREE SCHOOL DISTRICT
 HVAC UPGRADES
 ALICE E. GRADY ELEMENTARY SCHOOL
 48 SOUTH DOORWAY AVENUE, ELMSFORD, NY 10523
 DRAWING TITLE: SCHEDULES

DATE: 05-20-2025
 SHEET SIZE: 30"x42"
 DRAWN BY: E & R
 CHECKED BY: F & D
 BID ISSUED TO: E500
 FILE NO.: 24536.00



1 ROOF EXHAUST FAN - REMOVALS

SCALE: NONE

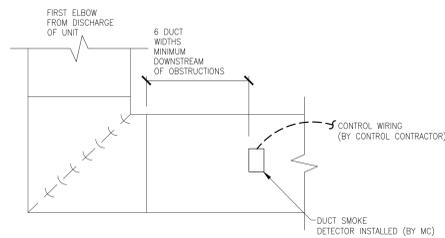


2 ROOF EXHAUST FAN - NEW WORK

SCALE: NONE

NEW WORK NOTES:

- PROVIDE NEW AUTOMATIC AIR DAMPERS AS SHOWN (BY MC).
- PROVIDE NEW CONTROLS AND TIE INTO NEW BMS (BY MC).
- PROVIDE NEW WIRING AND CONDUIT BACK TO PANEL (BY EC).
- NEW DUCT SMOKE DETECTORS TIED INTO FACP (BY EC).
- NEW AUTOMATIC AIR DAMPERS TO BE WIRED (BY EC).



NOTES:

- DETECTORS SHALL BE WIRED AND CONNECTED TO FACP BY EC, PROVIDED AND INSTALLED BY MC CONTRACTOR.

3 DUCTWORK SMOKE DETECTOR INSTALLATION

SCALE: NONE

LEGEND

(APPLIES ONLY TO THIS SHEET)

- | | | | |
|-----|---|------|-----------------------|
| (R) | REMOVE EXHAUST FAN (BY MC). SEE DETAILS 1 & 2 FOR ADDITIONAL INFORMATION. | (#) | KEYED NOTES |
| (N) | PROVIDE NEW EF- (BY MC). SEE DETAILS 1 & 2 FOR ADDITIONAL INFORMATION. | (EC) | ELECTRICAL CONTRACTOR |
| (A) | ROOF AREA DESIGNATION. | (MC) | MECHANICAL CONTRACTOR |
| | | (RC) | ROOFING CONTRACTOR |
| | | (CC) | CONTROLS CONTRACTOR |

1 EXISTING PANEL SCHEDULE

PANEL NO. SDP-1		SECTION		W 4		G		-SURFACE MTD. IN NEMA 1 ENCL. -PROVIDE EQUIPMENT GRD. BUS					
VOLTS 208Y/120V		PH 3		MIN. 600A		INTERRUPTING RATING 22,000A		SYMM.					
CKT NO	TRIP AMPS	EQUIPMENT	WIRE	CND	LOAD	PHASE A B C	LOAD	CND	WIRE	EQUIPMENT	TRIP AMPS	CKT NO	
1	3P										3P	2	
3		PNL 'MPG-1'	4#3/0+1#6G	2"	59950		52600	2"	4#3/0+1#6G	PNL 'LPG-1'		4	
5	250										200	6	
7	3P										3P	8	
9		PNL 'MPG-2'	4#250+1#4G	2 1/2"	75000		12900	2 1/2"	4#4+1#8G	PNL 'PPG-1'		10	
11	125										80	12	
13	3P										3P	14	
15		RAH -1	4#2/0+1#6G	1 1/2"	73860					SPARE		16	
17	250											18	
TOTAL POWER _____ X _____ % DEM=				TOTAL VA BY PHASE				TOTAL DEMAND TOTAL LOAD				x 1.26 SPARE= _____ AMPS	

4 NEW PANEL SCHEDULE

FEED FROM 'MAIN MDP'

PANEL NO. MPG-3		SECTION		W 4		G		-SURFACE MOUNTED IN NEMA 1 ENCL. -PROVIDE ISOLATED & EQUIP. GRD. BUS					
VOLTS 208Y/120V		PH 3		MIN. 225A		INTERRUPTING RATING 10,000		SYMM.					
CKT NO	TRIP AMPS	EQUIPMENT	WIRE	CND	LOAD	PHASE A B C	LOAD	CND	WIRE	EQUIPMENT	TRIP AMPS	CKT NO	
1	3P										3P	2	
3		VRF 3	4#4+1#8G	1 1/2"	24,500		15,130	1"	4#6+1#10G	VRF 4		4	
5	90										60	6	
7	2P	UV-132	3#12+1#12G	3/4"	1,080		1,080	3/4"	3#12+1#12G	UV-133	2P	8	
9	15										15	10	
11	2P	UV-134	3#12+1#12G	3/4"	1,080		1,080	3/4"	3#12+1#12G	UV-135	2P	12	
13	15										15	14	
15	2P	UV-232	3#12+1#12G	3/4"	1,080		1,080	3/4"	3#12+1#12G	UV-233	2P	16	
17	15										15	18	
19	2P	UV-234	3#12+1#12G	3/4"	1,080		1,080	3/4"	3#12+1#12G	UV-235	2P	20	
21	15										15	22	
23		SPARE								SPARE		24	
25		SPARE								SPARE		26	
27		SPARE								SPARE		28	
29		SPARE								SPARE		30	
TOTAL POWER _____ X _____ % DEM=				TOTAL VA BY PHASE				TOTAL DEMAND TOTAL LOAD				x 1.26 SPARE= _____ AMPS	

5 NEW PANEL SCHEDULE

FEED FROM 'MAIN MDP'

PANEL NO. MPG-4		SECTION		W 4		G		-SURFACE MOUNTED IN NEMA 1 ENCL. -PROVIDE ISOLATED & EQUIP. GRD. BUS					
VOLTS 208Y/120V		PH 3		MIN. 200A		INTERRUPTING RATING 10,000		SYMM.					
CKT NO	TRIP AMPS	EQUIPMENT	WIRE	CND	LOAD	PHASE A B C	LOAD	CND	WIRE	EQUIPMENT	TRIP AMPS	CKT NO	
1	3P										3P	2	
3		VRF 1	4#6+1#10G	1"	15,130		15,130	1"	4#6+1#10G	VRF 2		4	
5	60										60	6	
7	2P	UV-115	3#12+1#12G	3/4"	1,080		1,080	3/4"	3#12+1#12G	UV-111	2P	8	
9	15										15	10	
11	2P	UV-117	3#12+1#12G	3/4"	1,080		1,080	3/4"	3#12+1#12G	UV-113	2P	12	
13	15										15	14	
15	2P	UV-215	3#12+1#12G	3/4"	1,080		1,080	3/4"	3#12+1#12G	UV-211	2P	16	
17	15										15	18	
19	2P	UV-217	3#12+1#12G	3/4"	1,080		1,080	3/4"	3#12+1#12G	UV-213	2P	20	
21	15										15	22	
23		SPARE								SPARE		24	
25		SPARE								SPARE		26	
27		SPARE								SPARE		28	
29		SPARE								SPARE		30	
TOTAL POWER _____ X _____ % DEM=				TOTAL VA BY PHASE				TOTAL DEMAND TOTAL LOAD				x 1.26 SPARE= _____ AMPS	

4 PANEL SCHEDULES

SCALE: NONE

EXISTING PANEL SCHEDULE

PANEL NO. MPG-1		SECTION		W 4		G		-SURFACE MTD. IN NEMA 1 ENCL. -PROVIDE EQUIPMENT GRD. BUS					
VOLTS 208Y/120V		PH 3		MIN. 250A		INTERRUPTING RATING 10,000A		SYMM.					
CKT NO	TRIP AMPS	EQUIPMENT	WIRE	CND	LOAD	PHASE A B C	LOAD	CND	WIRE	EQUIPMENT	TRIP AMPS	CKT NO	
1	20	BATH RM DRYER								BATH RM DRYER	20	2	
3	20	BATH RM DRYER								BATH RM DRYER	20	4	
5	20	CABINET HEATERS								W.C.	20	6	
7	3P									UV-A RM 121, 122	20	8	
9		RAH - 2	4#6+1#8G	2"						UV-A RM 123, 124	20	10	
11	70									UV-D RM 117	20	12	
13	3P									EF-1	20	14	
15		RT -1								EF-2	20	16	
17	40									EF-3	20	18	
19	3P									EF-4	20	20	
21		RT - 2								EF-5	20	22	
23	60									EF-6	20	24	
25	3P									EF-7	20	26	
27										EF-8	20	28	
29	20									EF-9	20	30	
31	3P									SPARE	20	32	
33		GYM FOLDING PART.								SPARE	20	34	
35	20									SPARE	20	36	
37	2P	CU-A								CU-A	2P	38	
39	30										30	40	
41		SPARE								SPARE		42	
TOTAL POWER _____ X _____ % DEM=				TOTAL VA BY PHASE				TOTAL DEMAND TOTAL LOAD				x 1.26 SPARE= _____ AMPS	

KEYED NOTES - NEW WORK:

- PROVIDE NEW 600A MAIN CB TO MATCH PANEL FRAME MANUFACTURER AND MODEL. PANEL WAS PREVIOUSLY SIZED FOR 600A AND IS FED FROM 'MAIN MDP' WITH 2 SETS OF 4#500CMH+1#10-3TC EACH. RETURN EXISTING 500A CB TO OWNER. PROVIDE AND INSTALL NEW 250A CB #12(15,17) TO MATCH PANEL FRAME MANUFACTURER AND MODEL FOR NEW ROOFTOP 'RAH-1'. PROVIDE AND INSTALL NEW WIRE AND CONDUIT AS SPECIFIED ON PANEL SCHEDULE. SEE DRAWINGS ED100, ED101, AND ED102 FOR RELATED DEMOLITION WORK. SEE DRAWINGS E100, E101, AND E102 FOR RELATED NEW WORK.
- USE EXISTING 70A CB IN PANEL 'MPG-1' #7(9,11) AND LABEL FOR NEW ROOFTOP 'RAH-2'. PROVIDE AND INSTALL NEW WIRE AND CONDUIT AS SPECIFIED ON PANEL SCHEDULE. SEE DRAWINGS ED100, ED101, AND ED102 FOR RELATED DEMOLITION WORK. SEE DRAWINGS E100, E101, AND E102 FOR RELATED NEW WORK.
- DISCONNECT AND REMOVE EXISTING WIRE, CONDUIT AND RELATED FROM PANEL TO EXISTING 'RAH-2'. LABEL 20A CB #25(27,29) AS SPARE OR REMOVE AND RETURN TO OWNER. SEE DRAWINGS ED100, ED101, AND ED102 FOR RELATED DEMOLITION WORK.
- PROVIDE AND INSTALL NEW PANEL 'MPG-3', 225A - 208Y/3#60HZ, 4 WIRE. SURFACE MOUNT EATON PANEL MODEL NO. CH30B325L OR EQUIVALENT. SEE DRAWINGS E100, E101, AND E102 FOR RELATED NEW WORK. WIRE AND CONDUIT SIZED AS INDICATED ON PANEL SCHEDULE.
- PROVIDE AND INSTALL NEW PANEL 'MPG-4', 200A - 208Y/3#60HZ, 4 WIRE. SURFACE MOUNT EATON PANEL MODEL NO. CH30B320L OR EQUIVALENT. SEE DRAWINGS E100, E101, AND E102 FOR RELATED NEW WORK. WIRE AND CONDUIT SIZED AS INDICATED ON PANEL SCHEDULE.

PANEL SCHEDULE NOTES:

- REMOVE EXISTING BREAKER AND TURN OVER TO DISTRICT
- PROVIDE GROUND FAULT TYPE BREAKER. TYPE AND STYLE TO MATCH PANEL.
- USE PREVIOUSLY INSTALLED BREAKER, VERIFY GROUND FAULT TYPE.
- DISCONNECT CIRCUIT FROM USE. TURN OFF AND RE-LABEL BREAKER TO "SPARE"

GENERAL NOTES:

- PERMANENTLY LABEL THE PANEL MARK AND CIRCUIT NUMBER ON ALL MECHANICAL EQUIPMENT.
- ALL ELECTRICAL WORK TO BE NEC 2023 COMPLIANT.
- EC SHALL SIZE WIRE FOR ALL BRANCH CIRCUITS TO MEET NEC 2023 REQUIREMENTS.
- FIELD VERIFY ALL BRANCH CIRCUITS FROM RESPECTIVE PANEL TO EQUIPMENT OR FIXTURE FOR NEW WORK, SIZE TO MEET VOLTAGE DROP REQUIREMENTS.

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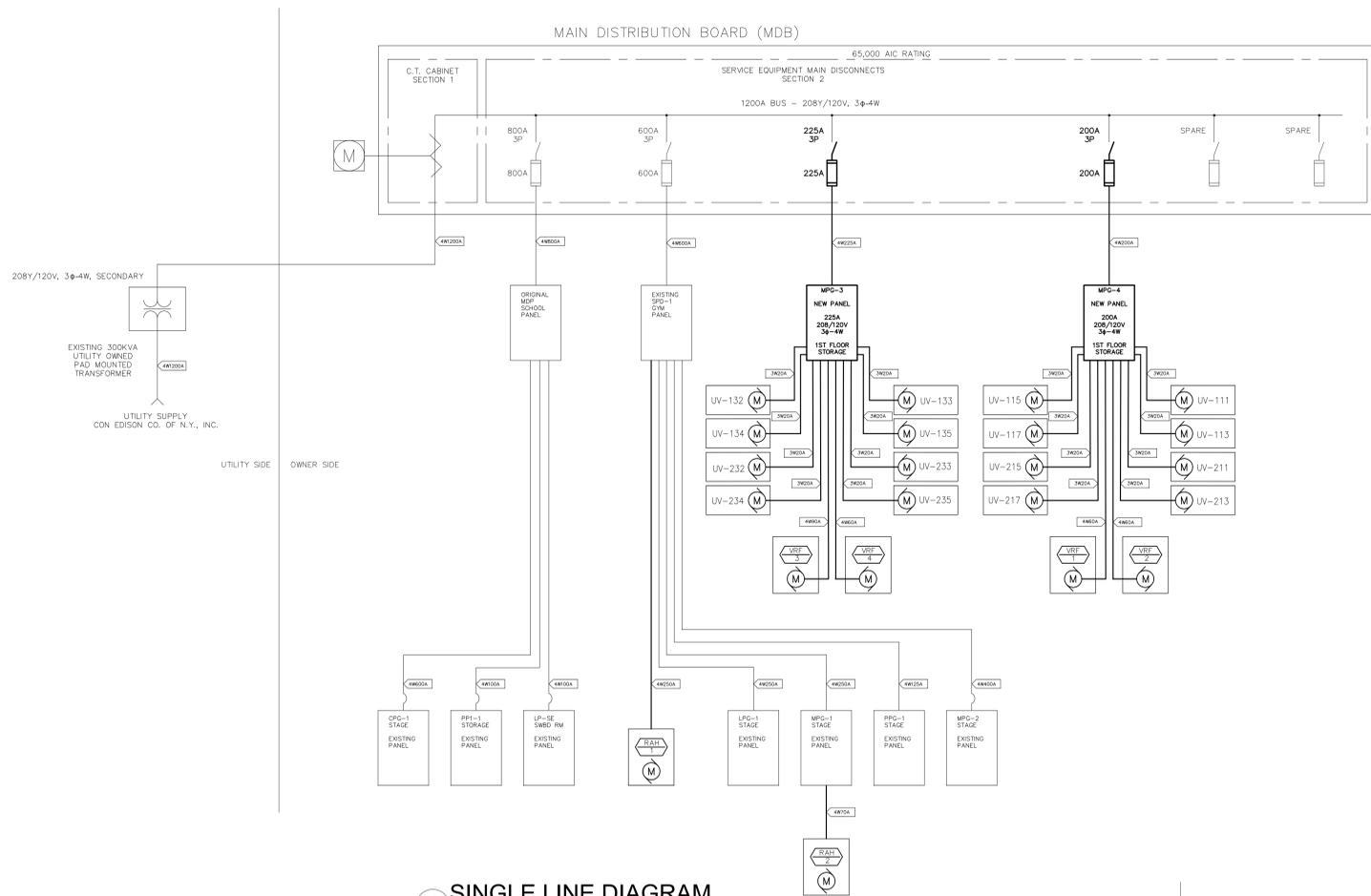
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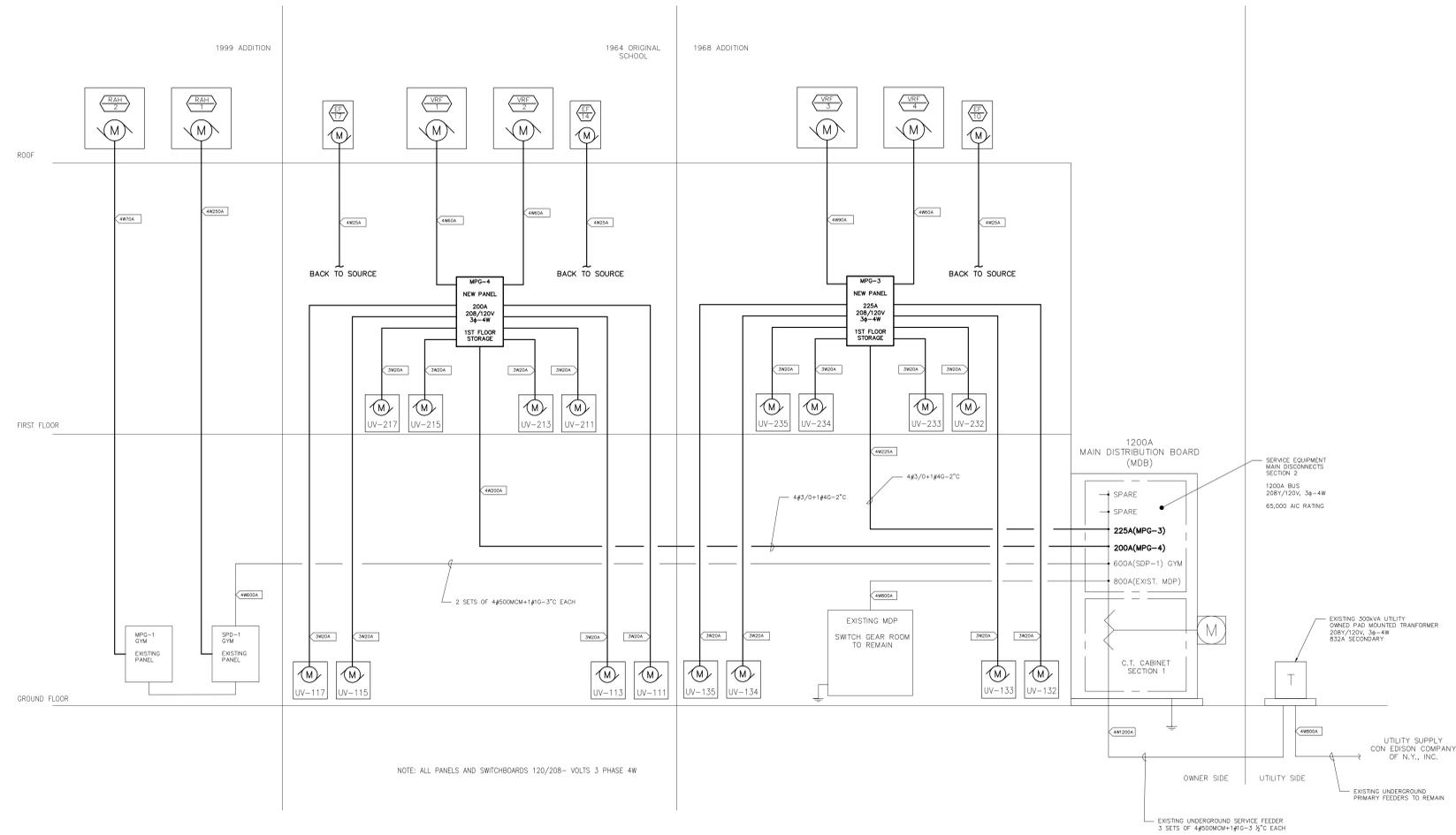
S.E.D. CONTROL NUMBER:
66-04-09-02-0-002-014

PROJECT: ELMSFORD UNION FREE SCHOOL DISTRICT
 HVAC UPGRADES
 ALICE E. GRADY ELEMENTARY SCHOOL
 46 SOUTH GOODMAN AVENUE, ELMSFORD, NY 10523
 DRAWING TITLE: DETAILS & PANEL SCHEDULES

DATE: 05-20-2025
 SHEET SIZE: 30"x42"
 DRAWN BY: E & R
 CHECKED BY: F & D
 BID: ISSUED TO
 DRAWING NO: E501
 FILE NO: 24536.00



1 SINGLE LINE DIAGRAM
SCALE: NONE



2 RISER DIAGRAM
SCALE: NONE

- NOTES:
1. EC SHALL PERFORM ALL WORK IN ACCORDANCE WITH NEC 2023 CODE.
 2. EC TO VERIFY ALL VOLTAGES AND DISTANCES PRIOR TO MODIFICATION OR INSTALLATION OF EQUIPMENT. WIRE SHALL BE SIZED FOR THE AMPERAGE, VOLTAGE, VOLTAGE DROP AND DISTANCE OF THE EQUIPMENT SPECIFIED IS SCHEDULES ON DRAWING E500, SINGLE LINE OR RISER DIAGRAMS ON THIS DRAWING.
 3. EC SHALL PROVIDE A MINIMUM OF 2 WEEKS NOTICE TO OWNER PRIOR TO SCHEDULED SHUTDOWN. ALL SHUTDOWNS AND TIE INS TO BE PERFORMED ON PREMIUM TIME AND COORDINATED WITH THE OWNER.
 4. EC SHALL REMOVE ALL WIRE, CONDUIT, AND DEVICES FOR EXISTING EQUIPMENT. WIRE, CONDUIT AND BOXES NOT TO BE ABANDONED IN PLACE.
 5. EC SHALL LABEL ALL NEW WORK, PANELS, CIRCUITS AND EQUIPMENT TO CLEARLY IDENTIFY EQUIPMENT, LOADS, AND CIRCUIT NUMBERS.
 6. EC SHALL COORDINATE WITH ALL OTHER TRADES FOR DISCONNECTS, RECONNECTS, OR NEW EQUIPMENT CONNECTIONS.



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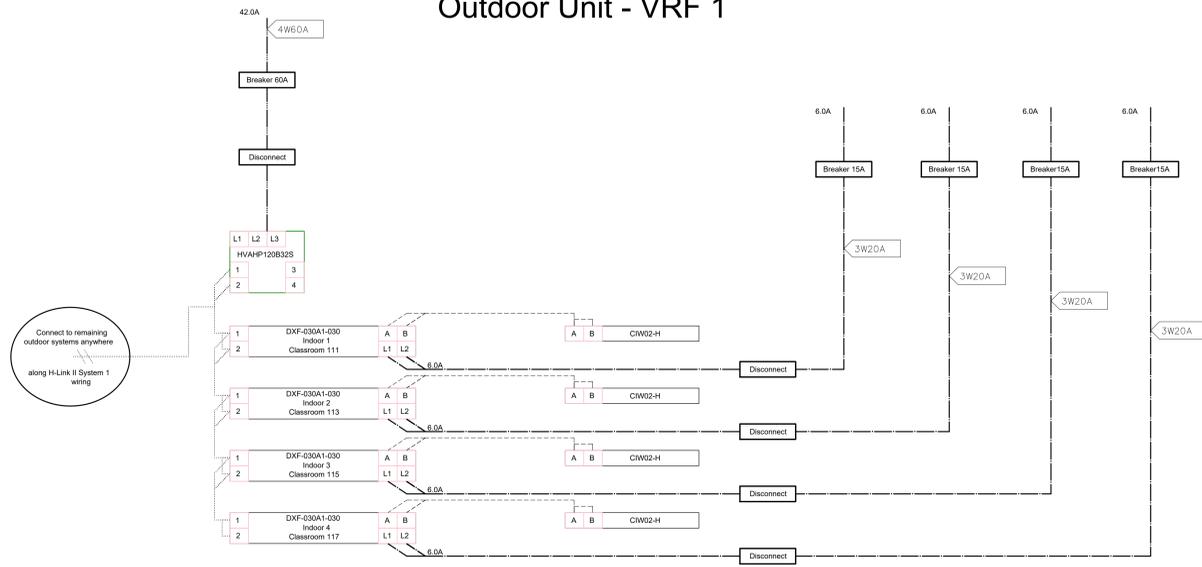
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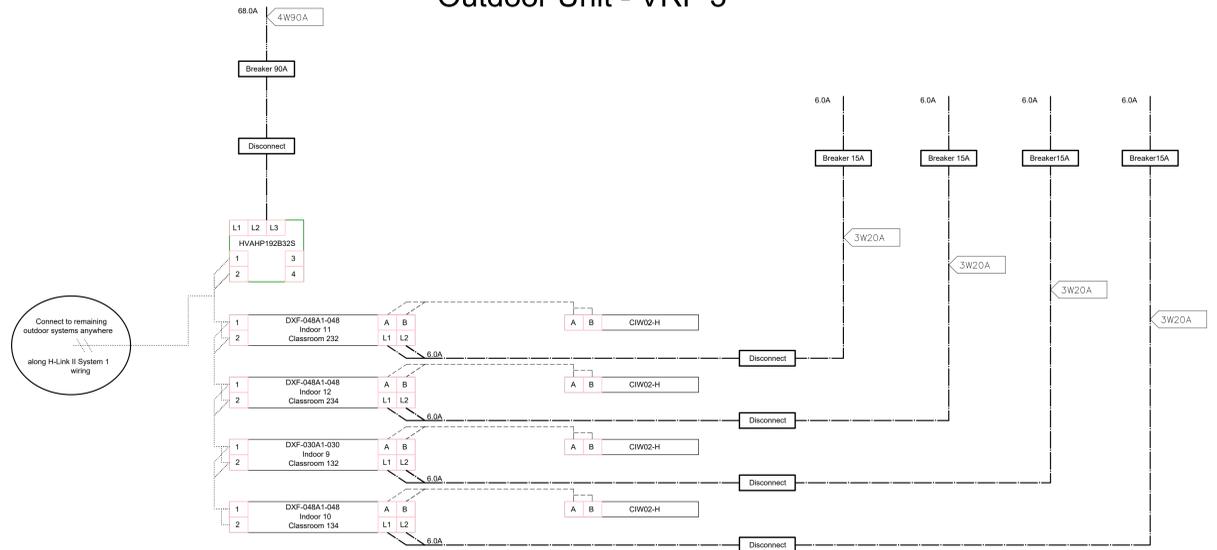
DATE	05-20-2025	BID
ISSUED TO		
SHEET SIZE	30"x42"	DRAWING NO.
DRAWN BY	E & R	E502
CHECKED BY	F & D	FILE NO.
		24536.00

Legend
Single Phase (BY EC)
Three Phase (BY EC)
24 VAC (BY EC)
H-Link (BY MC)
Controller Wiring (BY MC)

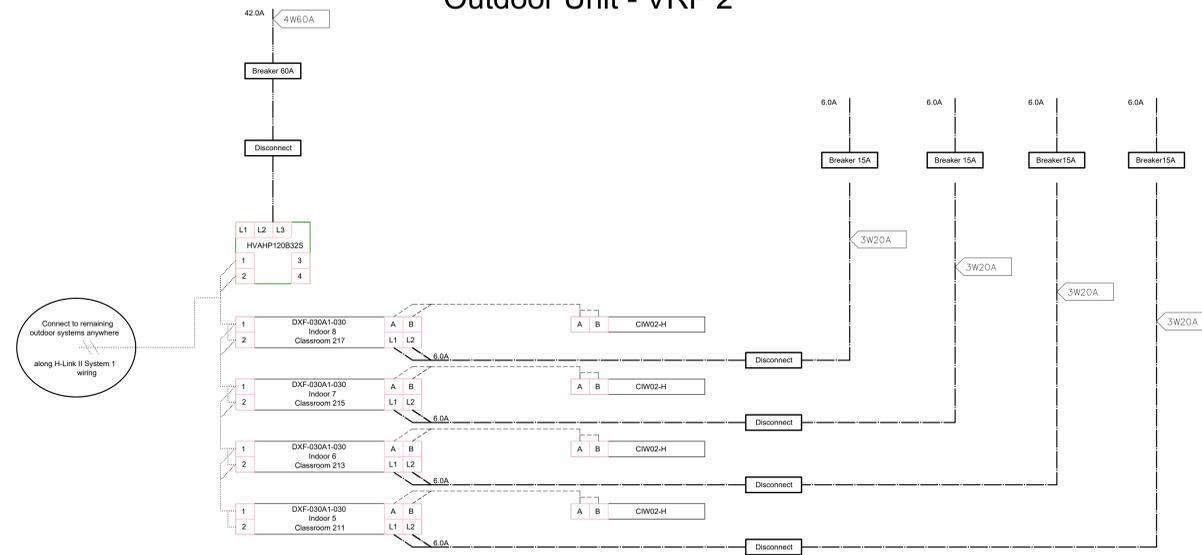
Outdoor Unit - VRF 1



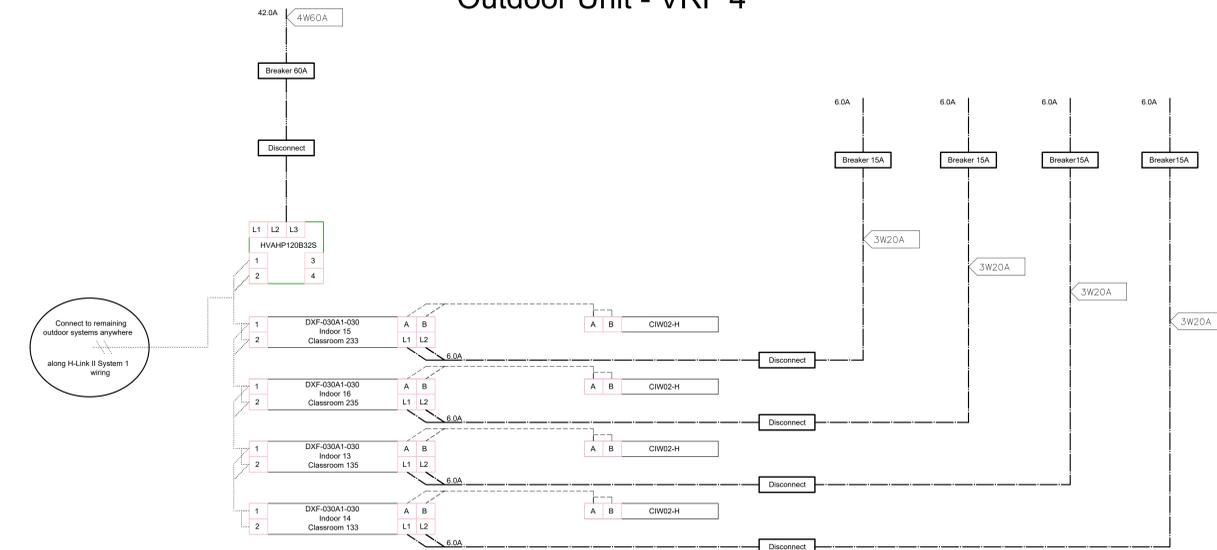
Outdoor Unit - VRF 3



Outdoor Unit - VRF 2



Outdoor Unit - VRF 4



NOTES:

1. EC SHALL PERFORM ALL WORK IN ACCORDANCE WITH NEC 2023 CODE.
2. EC TO VERIFY ALL VOLTAGES AND DISTANCES PRIOR TO MODIFICATION OR INSTALLATION OF EQUIPMENT. WIRE SHALL BE SIZED FOR THE AMPERAGE, VOLTAGE, VOLTAGE DROP AND DISTANCE OF THE EQUIPMENT SPECIFIED IN SCHEDULES ON DRAWING E500, AND SINGLE LINE OR RISER DIAGRAMS ON DRAWING E502.
3. EC IS RESPONSIBLE FOR TO PROVIDE POWER TO DISCONNECT SWITCHES, CIRCUIT BREAKERS, VRF'S AND UNIT VENTILATORS.
4. MC SHALL PROVIDE AND INSTALL NEW FIRE ALARM DEVICES. EC SHALL PROVIDE AND INSTALL WIRING AND CONNECT TO EXISTING FIRE ALARM SYSTEM. MC IS RESPONSIBLE FOR ALL CONTROLS FOR HVAC SYSTEMS.
5. EC SHALL COORDINATE WITH ALL OTHER TRADES FOR DISCONNECTS, RECONNECTS, OR NEW EQUIPMENT CONNECTIONS.

1 HVAC POWER & CONTROL DETAIL

SCALE: NONE

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 DRAWING TITLE: HVAC POWER & CONTROL DETAIL

05-20-2025	BID
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SHEET SIZE 30"x42"	DRAWING NO. E505
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