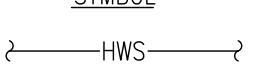
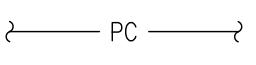
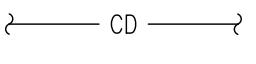
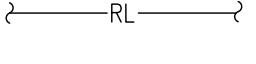
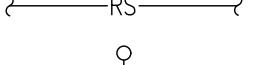
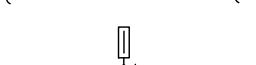
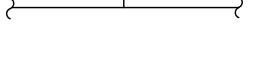
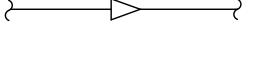
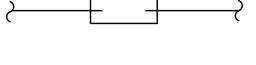
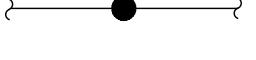
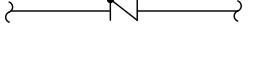
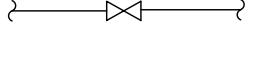
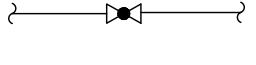
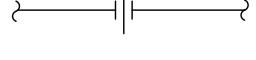
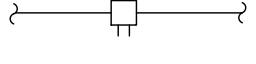
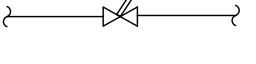
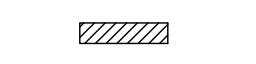
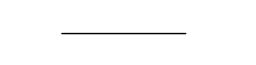
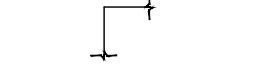
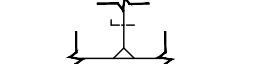
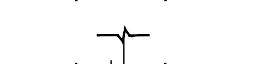
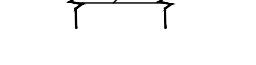
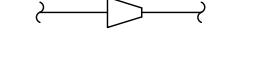
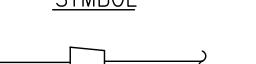
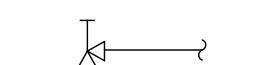
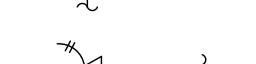
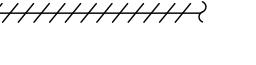
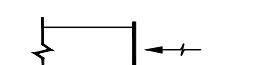
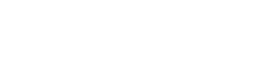
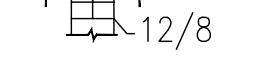


MECHANICAL SYMBOLS		MECHANICAL ABBREVIATIONS		MECHANICAL DEMOLITION NOTES		PROJECT GENERAL NOTES	
                                                                 	<p><b>SYMBOL</b></p> <p><b>DESCRIPTION</b></p> <p><b>SYMBOL</b></p> <p><b>DESCRIPTION</b></p> <p><b>IDENTIFIER</b></p> <p><b>DESCRIPTION</b></p> <p><b>1. SCOPE OF WORK</b></p> <p>A. CONTRACTOR SHALL SUPPLY ALL LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY TO COMPLETE ALL REMOVALS AND RENOVATION WORK AS SHOWN ON THE CONTRACT DRAWINGS AND CALLED FOR IN THE SPECIFICATIONS. THE WORK SHALL INCLUDE BUT IS NOT LIMITED TO THE FOLLOWING:</p> <p>B. DISCONNECT, DEMOLISH, AND REMOVE ALL EXISTING DUCTWORK, PIPING, INSULATION, EQUIPMENT, AND OTHER ASSOCIATED ITEMS.</p> <p>C. CAPPING ALL EXISTING PIPING NOT BEING REUSED (AT THE MAINS). WHERE REMOVAL OF PIPING LEAVES OPEN CONNECTIONS, PROVIDE SCREWED CAPS OR PLUGS OR WELDED CAPS TO CLOSE SUCH CONNECTIONS.</p> <p>D. CAPPING ALL EXISTING DUCTWORK NOT BEING REUSED (AT THE MAINS).</p> <p>E. INSULATE DUCT CAPS AND PIPE CAPS TO MATCH THE EXISTING INSULATION.</p> <p>F. CAPPING ALL OPENINGS CREATED BY THE REMOVAL OF ROOFTOP HVAC EQUIPMENT. PROVIDE INSULATED CURB CAPS FOR ALL REMOVED ROOF FANS, ROOFTOP UNITS, ETC. INSULATED CURB CAPS SHALL BE BRACED FROM BELOW AND SHALL BE CAPABLE OF WITH STANDING LIVE LOAD. PROVIDE NECESSARY FLASHING AND COORDINATE WITH ROOFING CONTRACTOR AND/OR EXISTING ROOF GUARANTEE.</p> <p>G. PROVIDE ADDITIONAL HANGERS AND OTHER SUPPORTS AS REQUIRED BY THE REMOVAL OF EXISTING PIPING AND/OR DUCTWORK. ALL REMAINING PIPING AND/OR DUCTWORK SHALL BE SUPPORTED IN ACCORDANCE WITH THE SPECIFICATIONS.</p> <p>H. REMOVAL OF HVAC EQUIPMENT'S ASSOCIATED CONCRETE PADS.</p> <p><b>2. VERIFICATION OF FIELD CONDITIONS</b></p> <p>A. LOCATION, SIZE, AND DIMENSIONS OF EXISTING EQUIPMENT, PIPING, DUCTWORK, AND ACCESSORIES SHOWN ARE APPROXIMATE. NOT ALL EXISTING PIPING, DUCTWORK AND EQUIPMENT ARE SHOWN ON DRAWINGS.</p> <p>B. CONTRACTOR SHALL VERIFY EXACT LOCATIONS AND DIMENSIONS OF EXISTING EQUIPMENT, PIPING, DUCTWORK AND ACCESSORIES IN FIELD PRIOR TO PREPARATION OF DETAILED SHOP DRAWINGS AND ANY REMOVALS AND RELOCATIONS.</p> <p><b>3. SEQUENCING &amp; SCHEDULING</b></p> <p>A. EXISTING MECHANICAL SYSTEMS NOT RELATED TO NEW CONSTRUCTION SHALL REMAIN IN SERVICE UNLESS OTHERWISE NOTED.</p> <p>B. CONTRACTOR SHALL COORDINATE ALL REQUIRED REMOVAL AND RELOCATIONS OF MECHANICAL SYSTEMS IN THE EXISTING BUILDING, RELATED TO NEW CONSTRUCTION, AS SHOWN ON CONTRACT DRAWINGS.</p> <p>C. PROVIDE RELOCATIONS, REMOVALS AND RE-ROUTING OF ANY EXISTING EQUIPMENT THAT INTERFERES WITH INSTALLATION OF THE NEW EQUIPMENT. COORDINATE IN ADVANCE AND OBTAIN OWNERS APPROVAL FOR THESE RELOCATIONS, EITHER TEMPORARY OR PERMANENT.</p> <p>D. CONTRACTOR TO REMOVE EXISTING PARTITIONS, CEILING TILES AND SUPPORTS AS NECESSARY TO PERFORM REMOVALS AND NEW INSTALLATION IN EXISTING AREAS. REINSTALL EXISTING AND REPLACE THOSE DAMAGED DUE TO THE NEW WORK.</p> <p><b>4. COORDINATION WITH OWNER</b></p> <p>E. THE CONTRACTOR SHALL CAREFULLY INSPECT ALL AREAS INVOLVED WITH REMOVALS AND PROVIDE THE PROPER COORDINATION AND MANPOWER REQUIRED FOR AN EFFICIENT OPERATION WITHOUT INTERFERING WITH THE BUILDING FUNCTION.</p> <p>F. EQUIPMENT AND MATERIALS DESIRED BY THE OWNER SHALL BE DELIVERED BY THE CONTRACTOR TO AN ON-SITE STORAGE LOCATION DESIGNATED BY THE OWNER.</p> <p>G. REMOVED EQUIPMENT AND MATERIALS NOT DESIRED BY THE OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROMPTLY REMOVED FROM THE SITE.</p> <p><b>5. DISPOSAL OF MATERIALS REMOVED</b></p> <p>A. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL DEBRIS RESULTING FROM DEMOLITION WORK AND CONSTRUCTION FOR THIS PROJECT. THIS WILL INCLUDE, BUT NOT BE LIMITED TO PROVISIONS FOR PORTABLE CONTAINERS (DUMPSTERS) AND ALL CARTAGE AND DUMPING FEES.</p> <p>B. THE CONTRACTOR SHALL AT ALL TIMES MAINTAIN ALL AREAS IN AND ABOUT THE WORK IN A NEAT AND SAFE CONDITION. TRASH AND OTHER WASTE RESULTING FROM THE WORK SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR. USE OF THE OWNER'S TRASH RECEPTACLES IS FORBIDDEN FOR DISPOSAL OF ANY REMOVALS, RUBBISH, OR WASTE RESULTING FROM WORK UNDER THIS CONTRACT.</p> <p>C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFE DISPOSAL AT HIS COST IN ACCORDANCE WITH ANY APPLICABLE STATE OR FEDERAL REGULATION.</p> <p>D. REMOVAL AND DISPOSAL OF REFRIGERANT SHALL BE IN ACCORDANCE WITH NJDEP REGULATIONS. THE CONTRACTOR SHALL COMPLY WITH SECTION 608 OF THE CLEAN AIR ACT, WHICH IS AN EPA REGULATION TO LIMIT THE RELEASES OF ENVIRONMENTALLY HARMFUL REFRIGERANTS INTO THE ENVIRONMENT DURING THE MAINTENANCE, SERVICE, REPAIR OR DISPOSAL OF AIR CONDITIONING AND REFRIGERATION EQUIPMENT TO THE "LOWEST ACHIEVABLE LEVEL".</p> <p><b>6. DAMAGES</b></p> <p>A. CONTRACTOR SHALL EXERCISE SPECIAL CARE NOT TO DAMAGE ANY OF THE OWNERS' FACILITIES OR EQUIPMENT WHILE PERFORMING CONSTRUCTION WORK. CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY DAMAGE THAT OCCURS.</p> <p>B. ANY EXISTING OR NEW CONSTRUCTION THAT IS DAMAGED DURING THE COURSE OF THE MECHANICAL WORK SHALL BE RESTORED TO ITS ORIGINAL CONDITION BY THE MECHANICAL CONTRACTOR.</p> <p>C. CONTRACTOR SHALL PROVIDE AND INSTALL NEW INSULATION FOR ALL EXISTING DUCT AND PIPE INSULATION THAT IS DAMAGED DUE TO THE IMPLEMENTATION OF THIS CONTRACT.</p> <p><b>7. CUTTING &amp; PATCHING</b></p> <p>A. CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING AS REQUIRED UNDER THIS CONTRACT, INCLUDING WORK DUE TO EQUIPMENT, PIPING, AND DUCTWORK REMOVALS TO MATCH ADJACENT CONSTRUCTION.</p> <p>B. PATCH AND SEAL OPENINGS WITH APPROVED MATERIALS TO MAINTAIN EXISTING FIRE AND/OR SMOKE RESISTANCE RATINGS OF THE EXISTING STRUCTURE.</p> <p>C. SEAL ROOF AND EXTERIOR WALL OPENINGS WEATHER AND AIR TIGHT.</p> <p>D. PATCH ALL WALL, ROOF AND FLOOR OPENINGS AS NECESSARY DUE TO PIPING, DUCTWORK, OR EQUIPMENT REMOVALS TO MATCH EXISTING ADJACENT CONSTRUCTION.</p> <p><b>8. RESTORING SURFACE FINISHES</b></p> <p>A. WHERE CONCRETE PADS ARE REMOVED OR ATTACHMENTS TO FLOORS, WALLS, AND CEILINGS ARE REMOVED, THE FLOORS, WALLS, AND CEILINGS SHALL BE PATCHED AND FINISHED AS NECESSARY TO PROVIDE A SMOOTH FINISHED SURFACE, INCLUDING PAINT, TO MATCH THE ADJACENT FINISHES OF THE SURROUNDING AREA.</p> <p><b>9. CONTROLS</b></p> <p>A. REMOVE CONTROLS, WHICH DO NOT REMAIN AS PART OF THE BUILDING AUTOMATION SYSTEM, ALL ASSOCIATED ABANDONED WIRING AND CONDUIT, AND ALL ASSOCIATED PNEUMATIC TUBING. THE OWNER WILL INFORM THE CONTRACTOR OF ANY EQUIPMENT, WHICH IS TO BE REMOVED, THAT WILL REMAIN THE PROPERTY OF THE OWNER. ALL OTHER EQUIPMENT, WHICH IS REMOVED, WILL BE DISPOSED OF BY THE CONTRACTOR.</p> <p>B. FOR RENOVATION PROJECTS, THE CONTRACTOR SHALL MAINTAIN THE INTEGRITY, CONTINUITY AND COMMUNICATION OF THE EXISTING ATC OF THE SYSTEM THAT SERVES HVAC EQUIPMENT THAT IS TO REMAIN.</p> <p><b>1. MOTOR CONTROLLERS, MOTOR STARTERS &amp; DISCONNECTS SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR FOR INSTALLATION BY THE ELECTRICAL CONTRACTOR. FOR BOILER ROOMS THE MECHANICAL CONTRACTOR SHALL PROVIDE EMERGENCY BOILER SHUT-DOWN SWITCHES AT EACH BOILER ROOM DOOR AND PROVIDE LOCAL DISCONNECT SWITCHES WITH LOCKABLE COVER AT EACH BOILER.</b></p> <p><b>2. POWER WIRING TO MECHANICAL EQUIPMENT, MOTOR CONTROLLERS AND CONTROL PANELS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. THE MECHANICAL CONTRACTOR SHALL COORDINATE THE POWER REQUIREMENTS OF ALL EQUIPMENT WITH THE ELECTRICAL CONTRACTOR PRIOR TO BID. THE MECHANICAL CONTRACTOR SHALL COORDINATE THE POWER REQUIREMENTS AND QUANTITY OF ALL CONTROLLERS AND END DEVICES WITH THE ELECTRICAL CONTRACTOR PRIOR TO BID. ALLOCATE THE REQUIRED NUMBER OF CIRCUITS AND ASSOCIATED WIRING PER THE ATC SYSTEM REQUIREMENTS. ADDITIONAL COST SHALL BE FOR EQUIPMENT, END DEVICE, AND CONTROL POWER SHALL NOT BE PERMITTED.</b></p> <p><b>3. HVAC CONTROL WIRING SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR.</b></p> <p><b>4. DUCTWORK AND PIPING LAYOUTS ARE SCHEMATIC DIAGRAMS AND ARE INTENDED TO SHOW GENERAL ARRANGEMENT, SIZE AND CAPACITY AND DO NOT INDICATE WHICH PIPE OR DUCT IS ABOVE OR BELOW THE OTHER. ALL OFFSETS ARE NOT NECESSARILY SHOWN. CONTRACTOR SHALL ARRANGE AND COORDINATE THE WORK, FURNISH NECESSARY OFFSETS, VALVES, VENTS, AND FITTINGS TO AVOID CONFLICT WITH OTHER MECHANICAL AND ELECTRICAL SERVICES AND STRUCTURAL AND ARCHITECTURAL ELEMENTS WITHOUT ADDITIONAL COST TO THE OWNER. IF AREAS OF CONFLICT ARE ENCOUNTERED, THE ARCHITECT SHALL BE NOTIFIED AND CONTRACTOR'S RECOMMENDATIONS SHALL BE SUBMITTED TO THE ARCHITECT FOR APPROVAL BEFORE WORK HAS BEGUN.</b></p> <p><b>5. ENTIRE INSTALLATION SHALL COMPLY WITH ALL LOCAL AND STATE CODES AND OTHER AUTHORITIES HAVING JURISDICTION.</b></p> <p><b>6. CONTRACTOR SHALL SECURE AND PAY FOR ALL REQUIRED PERMITS AND SHALL ARRANGE ALL REQUIRED INSPECTIONS.</b></p> <p><b>7. PROPER FIRE PROTECTION MEASURES, SATISFACTORY TO THE LOCAL FIRE DEPARTMENT SHALL BE TAKEN WHEN WELDING OR CUTTING WITH TORCHES OR ELECTRIC ARC.</b></p> <p><b>8. PROVIDE FLEXIBLE CONNECTIONS ON ALL ROTATING EQUIPMENT.</b></p> <p><b>9. CONTRACTOR SHALL PROVIDE ALL NECESSARY MISCELLANEOUS SUPPORTS FOR ALL EQUIPMENT, PIPING, CONDUIT, AND DUCTWORK. SUSPEND FROM SLAB, STEEL, WALL, OR TRUSS WORK.</b></p> <p><b>10. BALANCE AND CERTIFY ALL AIR AND WATER FLOWS AS PER SPECIFICATIONS. REFER TO DRAWINGS FOR CFM REQUIREMENTS.</b></p> <p><b>11. CONTRACTOR SHALL COORDINATE HIS WORK WITH THE WORK OF ALL OTHER TRADES AND THE FIELD CONDITIONS.</b></p> <p><b>12. ALL AIR MOVING DEVICES, INCLUDING BUT NOT LIMITED TO, AIR HANDLING UNITS AND AIR CONDITIONING UNITS MUST COMPLY WITH AMCA STANDARD 210 AND ASHRAE.</b></p> <p><b>13. CONTRACTOR SHALL ENSURE THAT ALL MECHANICAL DEVICES WILL BE INSTALLED IN A LOCATION WHICH AFFORDS ACCESSIBILITY FOR MAINTENANCE AND REPAIR. COORDINATE INSTALLATION AMONG ALL TRADES TO AVOID INTERFERENCE, AND LOCATE EQUIPMENT TO MEET OR EXCEED CLEARANCE RECOMMENDED BY THE MANUFACTURER. PRIOR TO PROJECT COMPLETION, REPRESENTATIVES OF OWNER AND JOHNSON &amp; URBAN, LLC CONSULTING ENGINEERS WILL REVIEW EACH INSTALLATION AND WILL DIRECT CHANGES WHENEVER ACCESS OR SERVICEABILITY IS, IN THEIR OPINION, UNACCEPTABLE.</b></p> <p><b>14. FURNISH LOCAL DISCONNECT SWITCHES FOR ALL ELECTRICALLY DRIVEN HVAC EQUIPMENT. DISCONNECT SWITCH SHALL BE IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.</b></p> <p><b>15. WALL MOUNTED THERMOSTAT LOCATIONS SHALL BE COORDINATED WITH THE OWNER AND ARCHITECT'S FURNITURE PLANS PRIOR TO INSTALLATION.</b></p> <p><b>16. THERMOSTAT WIRING SHALL BE INSTALLED IN CONCEALED SPACE, WALL OR CHASE.</b></p> <p><b>17. ALL MECHANICAL COMPONENTS LOCATED BEHIND WALLS/CHASES/HARD CEILINGS REQUIRING ACCESS SHALL BE PROVIDED WITH METAL ACCESS DOORS AT WALL/CEILING SURFACES. THESE COMPONENTS SHALL INCLUDE BUT NOT BE LIMITED TO VALVES, ACTUATORS, VOLUME DAMPERS, FIRE DAMPERS, SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS. ACCESS DOOR SHALL MATCH FIRE RATING OF WALL/CHASE. COORDINATE FULL REQUIREMENTS WITH ARCHITECT. MINIMUM DOOR SIZE SHALL BE 8x8 FOR HAND/ARM ACCESS AND 16x16 FOR HEAD/ARM ACCESS.</b></p> <p><b>18. ALL INSULATION PROVIDED FOR THE PROJECT MUST MEET A MAXIMUM FLAME SPREAD RATING OF 25 AND SMOKE DEVELOPED OF 50 OR LESS, AS TESTED IN ACCORDANCE WITH ASTM, NFPA &amp; U.L. GUIDELINES.</b></p> <p><b>19. COORDINATION DRAWINGS SHALL BE PREPARED AT A MINIMUM 1/4 SCALE AND SHALL INDICATE ALL TRADES. SUBMIT COORDINATION DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO BEGINNING ANY WORK.</b></p> <p><b>20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREPARATION AND SUBMISSION OF THE NECESSARY FORM-WORK FOR THE PURPOSES OF SECURING SMART-START REBATES FOR THE HVAC EQUIPMENT, MOTORS AND SYSTEMS. CONTRACTOR SHALL INCLUDE THIS WORK AS PART OF THEIR BID.</b></p> <p><b>21. AMERICAN MANUFACTURED PRODUCTS SHALL BE USED WHERE POSSIBLE FOR ALL WORK IN ACCORDANCE WITH IJAC 40A:11-18. CONTRACTOR SHALL VERIFY THAT ALL SUBMITTED EQUIPMENT FOR ALL CONTRACTS FOR COUNTY OR MUNICIPAL WORK OR FOR WORK FOR WHICH IT WILL PAY ANY PART OF THE COST, OR WORK WHICH BY CONTRACT OR ORDINANCE IT WILL ULTIMATELY OWN AND MAINTAIN, THAT ONLY MANUFACTURED PRODUCTS OF THE UNITED STATES, WHEREVER AVAILABLE, BE USED IN SUCH WORK. ANY SUBSTITUTIONS OR BASIS OF DESIGN EQUIPMENT SHALL BE VERIFIED BY CONTRACTOR TO CONFORM TO THE ABOVE NOTED REQUIREMENTS.</b></p> <p><b>22. PROVIDE ALL REQUIRED EQUIPMENT CONTROLLERS, RELAYS, CURRENT SENSORS, SPACE SENSORS, DUCT SENSORS, SWITCHES, DAMPERS, VALVES, ACTUATORS, INTERCONNECTING WIRING, CONDUIT, ENCLOSURES, ETC. FOR A COMPLETE AND OPERATIONAL INSTALLATION. THE MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE EQUIPMENT MANUFACTURERS AND THE ATC VENDOR/CONTRACTOR TO PROVIDE DEVICES AND OPERATIONS THAT ARE INCLUDED AS PART OF THE EQUIPMENT AND THOSE THAT ARE REQUIRED BY THE ATC SYSTEM. IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO PROVIDE A FULLY COORDINATED AND OPERATIONAL CONTROL SYSTEM.</b></p>	<p><b>RESTRAINTS AND VIBRATION ISOLATORS</b></p> <p>AS DESCRIBED BELOW AND IN THE SPECIFICATION, MECHANICAL SYSTEMS SHALL BE INSTALLED WITH WIND &amp; SEISMIC RESTRAINTS AND VIBRATION ISOLATORS TO PREVENT THE TRANSMISSION OF VIBRATION AND MECHANICALLY TRANSMITTED SOUND TO THE BUILDING STRUCTURE. WIND &amp; SEISMIC RESTRAINTS AND VIBRATION ISOLATORS SHALL BE SELECTED IN ACCORDANCE WITH THE SPECIFICATIONS AND ON ACTUAL WEIGHT DISTRIBUTION OF THE EQUIPMENT FURNISHED, SO AS TO PRODUCE REASONABLY UNIFORM DEFLECTION. DEFLECTIONS SHALL BE AS NOTED ON THE EQUIPMENT SHOP DRAWING SUBMITTALS.</p> <p>ALL WIND &amp; SEISMIC RESTRAINTS AND VIBRATION ISOLATORS WILL BE IN STRICT ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE/2021 ASCE7/2016. THE MANUFACTURER OF THE WIND &amp; SEISMIC RESTRAINTS AND VIBRATION CONTROL EQUIPMENT WILL DESIGN AND CALCULATE THE WIND &amp; SEISMIC RESTRAINTS AND VIBRATION ISOLATORS TYPES, SIZES, LOCATIONS, DEFLECTIONS, DEAD LOADS, ANCHORING METHODS, BOLT DIAMETERS, EMBEDMENT AND WELD LENGTHS BASED ON ACTUAL EQUIPMENT BEING INSTALLED.</p>					



A hand-drawn diagram consisting of three concentric circles. The innermost circle contains a vertical line segment with a small cross at its center. To the left of this line is a small oval shape, and to the right is another small oval shape, both oriented horizontally.

<u>DRAWING TITLE</u>	
<b>MECHANICAL NOTES, SYMBOLS &amp; ABBREVIATIONS</b>	
(NOT FOR CONSTRUCTION )	
<u>SCALE</u>  <b>AS SHOWN</b>	<u>DRAWN BY</u>  <b>EL</b>
<u>DATE</u>  <b>07/25/2024</b>	<u>SHEET NO</u>
<u>PROJECT NUMBER</u>  <b>2023015</b>	<b>M001</b>



## MECHANICAL GENERAL NOTES

HVAC DESIGN CRITERIA		<p>PROTECTED WITH APPROVED FIRESTOP SYSTEMS THAT COMPLY WITH ASTM E 814 AND UL 1479 AS MANUFACTURED BY HILTI, 3M (FIRE PROTECTION PRODUCTS DIVISION), JOHNS MANVILLE, OR APPROVED EQUAL. COMPLY WITH THE INSTALLATION REQUIREMENTS ESTABLISHED BY THE QUALIFIED TESTING AND INSPECTING AGENCY.</p> <p>26. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.</p> <p>27. ALL MOUNTING HARDWARE AND SUPPORTS SHALL BE GALVANIZED.</p>													
1. APPLICABLE CODES AND REFERENCES:		<p>A. INTERNATIONAL BUILDING CODE, 2021 – LATEST ADOPTED NEW JERSEY EDITION.            B. INTERNATIONAL MECHANICAL CODE, 2021 – LATEST ADOPTED NEW JERSEY EDITION.            C. INTERNATIONAL FUEL GAS CODE, 2021 – LATEST ADOPTED NEW JERSEY EDITION.            D. ASHRAE 90.1, 2019 – LATEST ADOPTED NEW JERSEY EDITION.            E. NATIONAL STANDARD PLUMBING CODE, 2021.            F. NFPA No. 90A – AIR CONDITIONING AND VENTILATING SYSTEMS.            G. ASHRAE HANDBOOKS – AMERICAN SOCIETY OF HEATING, REFRIGERATION, AND AIR CONDITIONING ENGINEERS.            H. UNIFORM CONSTRUCTION CODE OF NEW JERSEY.</p>													
2. SUMMER OUTDOOR DESIGN CONDITIONS (1.0% FOR NEWARK, NJ PER ASHRAE 90.1 – 2019):		<p>A. DRY BULB: 91 DEG. F.            B. WET BULB: 74 DEG. F.</p>													
3. SUMMER INDOOR DESIGN CONDITIONS:		<p>A. DRY BULB: 75 DEG. F. (+/- 2 DEG. F.)            B. RELATIVE HUMIDITY: 50%</p>													
4. WINTER OUTDOOR DESIGN CONDITIONS (1.0% FOR NEWARK, NJ PER ASHRAE 90.1 – 2019):		<p>A. DRY BULB: 11 DEG. F.</p>													
5. WINTER INDOOR DESIGN CONDITIONS:		<p>A. DRY BULB: 70 DEG. F. (+/- 2 DEG. F.)            B. RELATIVE HUMIDITY: NO MINIMUM HUMIDITY CONTROL PROVIDED</p>													
6. VENTILATION:		<p>A. OUTSIDE AIR VENTILATION DESIGN AIR QUANTITIES WILL BE AS REQUIRED BY THE INTERNATIONAL MECHANICAL CODE, 2021 – LATEST ADOPTED NEW JERSEY EDITION.</p>													
7. FILTRATION:		<p>A. MINIMUM MERV 13 FILTER MEDIA.</p>													
BASIC MECHANICAL MATERIALS & METHODS															
1. THE CONTRACTOR SHALL FURNISH ALL EQUIPMENT AND MATERIALS AS INDICATED ON THE CONTRACT DRAWINGS AND THESE SPECIFICATIONS.															
2. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST ADOPTED EDITIONS OF THE UNIFORM CONSTRUCTION CODE OF NEW JERSEY, IBC, NFPA, ASHRAE, AND ALL OTHER APPLICABLE CODES.															
3. ALL NEW EQUIPMENT AND MATERIAL SHALL BE FREE OF DEFECTS AND SHALL PERFORM AS INTENDED, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL MAJOR MANUFACTURED ITEMS REQUIRED ON THIS PROJECT. SHEET METAL SHOP DRAWINGS SHALL BE SUBMITTED MINIMUM 1/4" SCALE. SHOP DRAWINGS SHALL ILLUSTRATE COORDINATION OF ALL TRADES INVOLVED IN THE PROJECT. SHOP DRAWINGS SHALL BE COMPLETE IN ALL RESPECTS, INCORPORATING AND IDENTIFYING ALL INFORMATION REQUIRED FOR THE EVALUATION OF THE PROPOSED MECHANICAL EQUIPMENT AND SYSTEM'S COMPLIANCE WITH THE CONTRACT DOCUMENTS. PARTIAL, INCOMPLETE OR ILLEGIBLE SUBMISSIONS WILL BE RETURNED TO THE CONTRACTOR WITHOUT REVIEW FOR RESUBMITTAL.															
4. THE CONTRACTOR SHALL VISIT THE SITE AND INSPECT THE EXISTING INSTALLATION PRIOR TO SUBMITTING A PROPOSAL FOR WORK. HE SHALL INVESTIGATE ALL CONDITIONS AND DIMENSIONS AND INCLUDE IN HIS PRICE THE COST FOR OVERCOMING ALL DIFFICULTIES DUE TO FIELD CONDITIONS. NO PART OF THE WORK SHALL BEGIN BEFORE EXISTING CONDITIONS ARE CAREFULLY CHECKED AND ALL DISCREPANCIES ARE REPORTED TO THE ARCHITECT OR ENGINEER.															
5. THE CONTRACTOR SHALL PAY ALL FEES AND OBTAIN ALL PERMITS REQUIRED FOR CONSTRUCTION AND SHALL ARRANGE ALL REQUIRED INSPECTIONS.															
6. ALL WORK SHALL BE DONE DURING NORMAL WORKING HOURS UNLESS OTHERWISE REQUESTED BY OWNER.															
7. THE DRAWINGS DO NOT INDICATE ALL EQUIPMENT, PIPING, DUCTWORK AND CONDUIT LOCATED WITHIN THE SPACE OR ABOVE THE CEILING. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES PRIOR TO FABRICATION OF PIPING AND DUCTWORK AND INSTALLATION OF EQUIPMENT. THE CONTRACTOR SHALL, AT NO ADDITIONAL EXPENSE TO THE OWNER, MAKE ANY REQUIRED CHANGES AS A RESULT OF A FAILURE TO COORDINATE HIS WORK WITH ALL TRADES.															
8. SEE THE ARCHITECT'S REFLECTED CEILING PLAN FOR FINAL LOCATION OF CEILING DIFFUSERS, RETURN AIR GRILLES, LIGHT FIXTURES AND SPRINKLER HEADS.															
9. ALL APPLIANCES REGULATED BY THE INTERNATIONAL MECHANICAL CODE SHALL BE LISTED AND LABELED FOR THE APPLICATION IN WHICH THEY ARE INSTALLED AND USED															
10. THE CONTRACTOR SHALL FURNISH THE QUALIFIED PERSONNEL, SUPPLIERS, EQUIPMENT REQUIRED TO MAKE ALL NECESSARY TESTS AND VERIFICATION OF EQUIPMENT PERFORMANCE AND CONTROLS. ELECTRICAL POWER, WATER AND FUEL CONSUMPTION FOR TESTING SHALL BE FROM THE OWNER'S SUPPLY.															
11. CONTRACTOR SHALL PROVIDE ALL NECESSARY MISCELLANEOUS STEEL FOR THE SUPPORT OF ALL EQUIPMENT SUSPENDED FROM SLAB OR STEEL. CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING CEILING JOISTS, ETC. PRIOR TO SUSPENDING EQUIPMENT. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL, SHOP DRAWINGS AND DETAILS, INDICATING THE PROPOSED EQUIPMENT, PIPING AND DUCT SUPPORTING METHODS PRIOR TO INSTALLATION.															
12. DAMAGE TO BUILDING AND EQUIPMENT, WHICH IS TO REMAIN, RESULTING FROM DEMOLITION SHALL BE REPAINTED, REPAIRED AND/OR REPLACED BY THE CONTRACTOR.															
13. CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING AS REQUIRED UNDER THIS CONTRACT, INCLUDING WORK FOR ROOF AND WALL PENETRATIONS OF PIPING AND DUCTWORK, CORE DRILLING FLOOR SLABS FOR THE PENETRATION OF DUCT AND PIPE RISERS, AND DUE TO EQUIPMENT, PIPING, AND DUCTWORK REMOVALS. SEAL OPENINGS WITH APPROVED MATERIALS TO MAINTAIN EXISTING FIRE RESISTANCE RATINGS OF STRUCTURE. SEAL ROOF AND EXTERIOR WALL OPENINGS WEATHER AND AIR TIGHT.															
14. PATCH ALL WALL, ROOF AND FLOOR OPENINGS AS NECESSARY DUE TO PIPING, DUCTWORK OR EQUIPMENT REMOVALS TO MATCH EXISTING ADJACENT CONSTRUCTION. PAINT WALLS AND CEILINGS TO MATCH ADJACENT EXISTING FINISHES.															
15. EQUIPMENT MANUFACTURERS NAMES AND MODEL NUMBERS ARE SHOWN FOR THE BASIS OF DESIGN. THE EQUIPMENT HAS BEEN SELECTED BY THE ENGINEER FOR CONFORMANCE TO VARIOUS CRITERIA SUCH AS, CAPACITIES, ELECTRICAL CRITERIA, STANDARD FEATURES, ETC. SUBSTITUTION OF ANY EQUIPMENT SHALL NOT BE ALLOWED UNLESS APPROVED BY THE ENGINEER. ALL COSTS RESULTING FROM SELECTION OF OTHER THAN SPECIFIED EQUIPMENT SHALL BE BORNE BY THE CONTRACTOR, INCLUDING BUT NOT LIMITED TO, WORK AFFECTING OTHER CONTRACTORS, OWNER, OR DESIGN, INCLUDING REVISING SUPPORTS AND STRUCTURES, ELECTRICAL PROVISIONS AND CONTROLS.															
16. UNLESS OTHERWISE NOTED ON THE DRAWINGS, ALL MECHANICAL EQUIPMENT SHALL BE MOUNTED ON OR SUSPENDED FROM VIBRATION ISOLATORS TO PREVENT THE TRANSMISSION OF SOUND TO THE BUILDING STRUCTURE. VIBRATION ISOLATORS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS, LOCAL SEISMIC CODES AND ON ACTUAL WEIGHT DISTRIBUTION OF THE EQUIPMENT FURNISHED. DEFLECTIONS SHALL BE AS NOTED ON THE EQUIPMENT SHOP DRAWINGS.															
17. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH REPRODUCIBLE "AS-BUILT" DRAWINGS AND FOUR (4) COPIES OF AN OPERATING AND MAINTENANCE MANUAL AT THE CONCLUSION OF THE JOB.															
18. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A ONE (1) YEAR WRITTEN GUARANTEE OF ALL WORK (LABOR AND MATERIALS) AND A FIVE (5) YEAR WARRANTY ON THE COMPRESSORS, STARTING FROM THE DATE OF THE OWNER ACCEPTANCE.															
19. ALL AUTOMATIC TEMPERATURE CONTROL WIRING SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.															
20. THE MECHANICAL CONTRACTOR SHALL FURNISH ALL LOCAL POWER DISCONNECT SWITCHES FOR ALL HVAC EQUIPMENT. FOR BOILER ROOMS THE MECHANICAL CONTRACTOR SHALL PROVIDE EMERGENCY BOILER SHUT-DOWN SWITCHES AT EACH BOILER ROOM DOOR AND PROVIDE LOCAL DISCONNECT SWITCHES WITH LOCKABLE COVER AT EACH BOILER. THE MECHANICAL CONTRACTOR SHALL COORDINATE THE ELECTRICAL REQUIREMENTS OF HIS WORK WITH THE GENERAL AND ELECTRICAL CONTRACTORS PRIOR TO SUBMISSION OF BIDS.															
21. UNLESS OTHERWISE SPECIFIED, ALL MOTORS 1/4 H.P. AND ABOVE SHALL BE 3 PHASE AND MOTORS UNDER 1/4 H.P. SHALL BE SINGLE PHASE. ALL MOTORS SHALL MEET MINIMUM EFFICIENCIES AS OUTLINED BY ASHRAE/ IECSA STANDARD 90.1-2016 "ENERGY EFFICIENT DESIGN OF NEW BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS".															
22. HVAC CONTRACTOR IS RESPONSIBLE FOR SUPPLYING ALL MOTOR STARTERS ASSOCIATED WITH HIS WORK. PROVIDE COMBINATION STARTER/DISCONNECTS WHEN EQUIPMENT IS NOT IN SIGHT OF ELECTRIC PANEL SERVING SAME. ALL STARTERS SHALL HAVE "HAND-OFF-AUTO" SELECTION SWITCHES WITH INDICATOR LIGHTS AND 120V HOLDING COILS. COORDINATE STARTER REQUIREMENTS WITH THE ATC CONTRACTOR.															
23. ELECTRICAL CONTRACTOR SHALL PROVIDE DUCT MOUNTED SMOKE DETECTORS (SUPPLY & RETURN) TO BE INSTALLED BY THE MECHANICAL CONTRACTOR AND WIRED BY THE ELECTRICAL CONTRACTOR. DUCT MOUNTED SMOKE DETECTORS SHALL BE PRESENT IN THE MAIN RETURN DUCT FOR ALL AIR HANDLING UNITS SUPPLYING AIR QUANTITIES GREATER THAN OR EQUAL TO 2,000 CFM. DETECTORS SHALL BE PROVIDED IN BOTH SUPPLY AND RETURN MAINS IF THE SYSTEM IS GREATER THAN 15,000 CFM OR AN AIR HANDLING SYSTEM, WHICH EXHAUSTS GREATER THAN 50% OF THE SUPPLY AIR.															
24. THE MECHANICAL CONTRACTOR SHALL PROVIDE CARBON MONOXIDE (CO) DETECTION AND ALARM SYSTEM IN ROOMS OR SPACES THAT CONTAIN FUEL-BURNING APPLIANCES OR ROOMS OR SPACES THAT ARE SERVED BY															

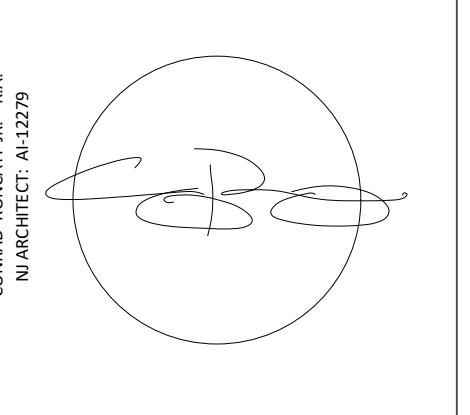


REV. NO.	DATE	DESCRIPTION
		Johnson & Urban, LLC One Executive Drive, Suite 1100 Fort Lee, New Jersey 07024 201-564-3448 Fax: 201-564-3448 frontdesk@architecture.com Mark E. Long, P.E. Suzanne M. Urban, S.E.C.E. N.J. Project # 24067 N.J. License # A-12279 N.J. Registration # 046-08320 Certi. of Accuracy # 046-08320 1732-722-1500 1732-722-1515

**J**  
Architecture  
One Executive Drive  
Fort Lee, New Jersey 07024  
201-564-3448  
Fax: 201-564-3448  
frontdesk@architecture.com  
■■■ architecture  
■■■ interior design  
■■■ planning

# Architecture

PROPOSED RESIDENTIAL DEVELOPMENT (BUILDING E)  
VILLAGE SCHOOL COMMONS  
511 DURIE AVENUE, CLOSTER, NEW JERSEY  
BLOCK 316, LOT 9



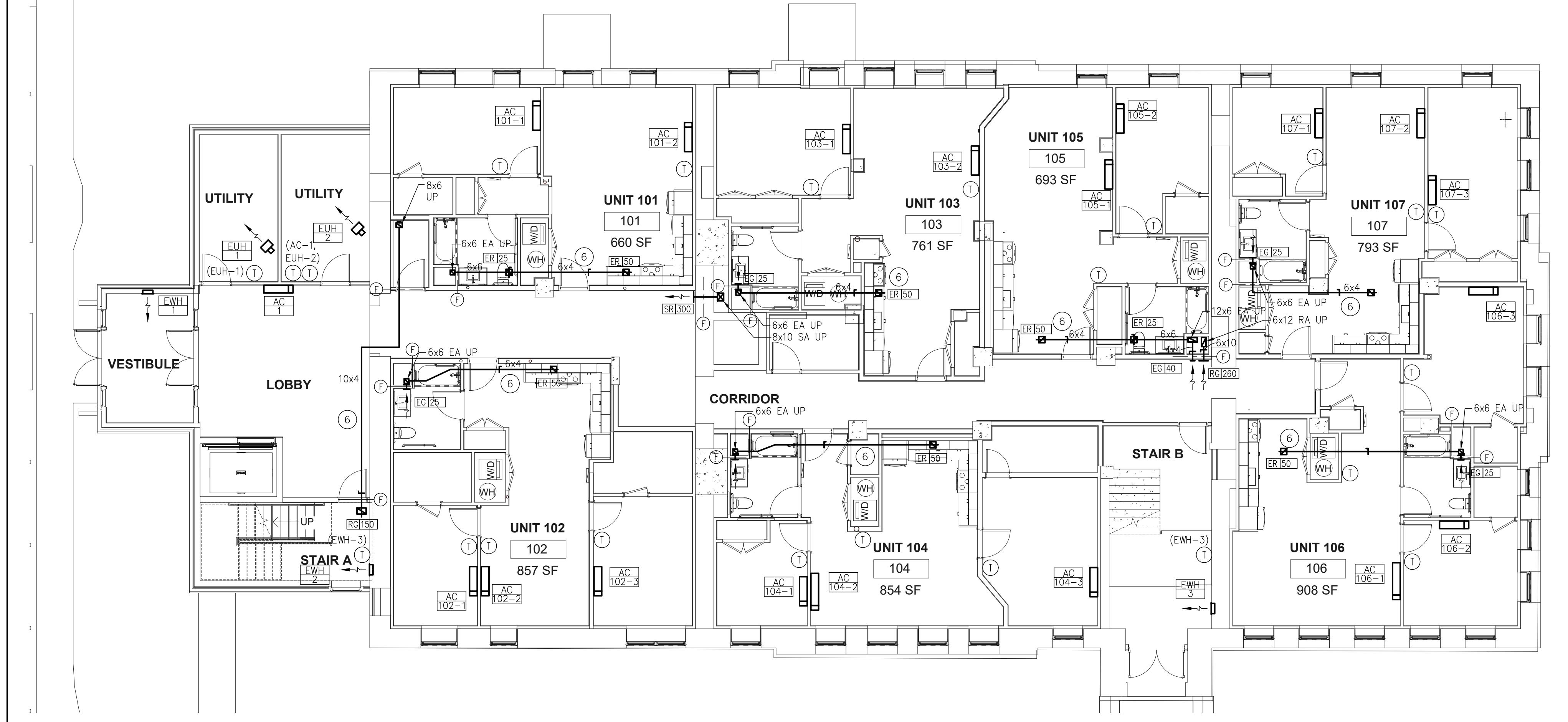
DRAWING TITLE	
MECHANICAL FIRST FLOOR PLANS	
(NOT FOR CONSTRUCTION)	
SCALE AS SHOWN	DRAWN BY EL
DATE 07/25/2024	SHEET NO.
PROJECT NUMBER 2023015	M101

## GENERAL NOTES

- Coordinate final location of condensing units in field. Maximum length and number of elbows shall be strictly followed per manufacturer's recommendations.
- The exact mounting heights and locations of all HVAC equipment shall be field verified and coordinated with all other mechanical, electrical, architectural and structural systems.
- Verify all equipment voltages with the electrical contractor prior to ordering equipment.
- Provide disconnect switches for all HVAC equipment including weatherproof disconnect as required.
- Provide phase loss protection for all poly-phase motor devices.
- The final location of air devices must be coordinated with the reflected ceiling plan and all other mechanical, fire protection, architectural, and structural systems.
- Provide flexible connections at all duct connections to vibrating equipment. These connections shall be installed in close proximity to such equipment.
- Locate mechanical equipment so all serviceable parts are accessible. Coordinate location with ductwork, piping, the work of other trades, building structural elements, etc. so that the manufacturer's and code required clearances are met or exceeded.
- Coordinate elevation of the wall mounted grilles and registers with the architect.
- Unless otherwise noted, all supply and return ductwork 15 ft upstream and downstream of AHU shall be internally lined with 1" thick acoustical duct liner.
- Provide all cooling coils with overflow detection sensor, to shut-down unit and provide a signal.
- Final location of thermostats and sensors to be coordinated in field with architect or owner.

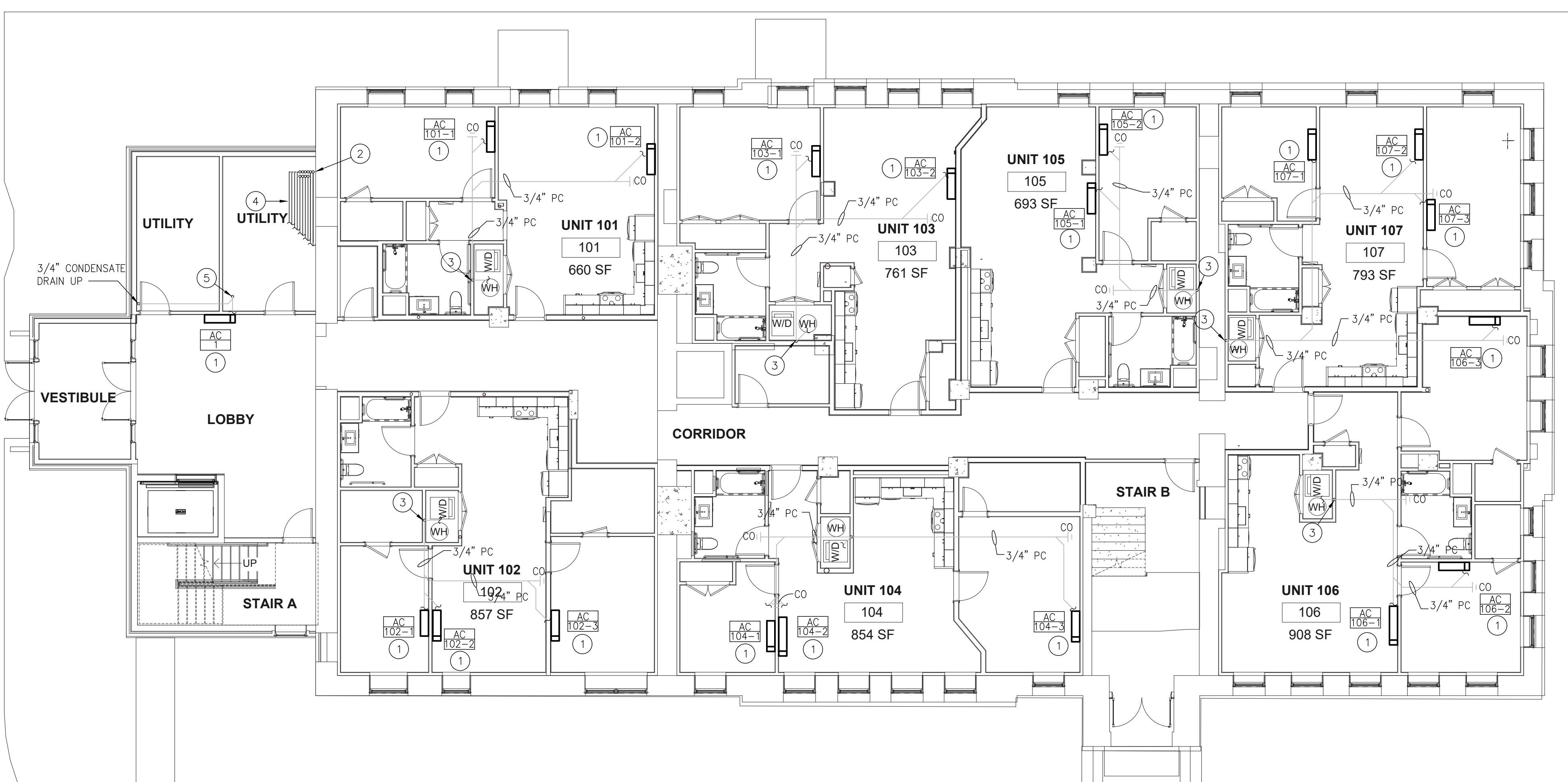
## NEW WORK KEY NOTES (①, ②, ETC.)

- Field verify proposed location of wall-mounted AC unit before installation. Offset location of unit as required. Extend refrigerant to unit and 3/4" condensate drain to AC unit's condensate pump. Provide Sauermann's mini condensate removal pump model SI-30. Pump to be wired via AC unit. All piping to be concealed behind walls or enclosures. Enclosures shall be similar to Sterling Models JDVA for horizontal runs and PCV-53 for vertical runs. Field verify required heights and lengths. Enclosure shall be continuous. Enclosure color shall be selected by the architect. Paint as directed. Pitch condensate drain 1/8" for every 1 ft of length. Route pumped condensate pipe concealed in first floor ceiling space as high as possible. Drop to floor drain washer/dryer closet.
- Extend refrigerant piping serving the first floor up thru amenity space. Offset location as required to clear any structural, plumbing, or electrical components as required. Refer to piping diagram for size & quantity. Size and install piping in strict accordance with manufacturer's recommendations. Maintain maximum length and number of elbows allowed. Provide wall mounted pipe supports. All piping to be concealed in enclosure. Enclosures shall be similar to Sterling Models JDVA for horizontal runs and PCV-53 for vertical runs. Field verify required heights and lengths. Enclosure shall be continuous. Enclosure color shall be selected by the architect. Paint as directed.
- Run 3/4" pumped condensate concealed in first floor ceiling. Drop in W/D closet, extend pipe and spill into floor drain. Field verify exact location; offset as required.
- Extend first floor refrigerant pipe to each corresponding AC unit. Run refrigerant pipe concealed in first floor ceiling tight to underside of second floor. Offset any structural components as required. Refer to piping diagram for size & quantity. Size and install piping in strict accordance with manufacturer's recommendations. Maintain maximum length and number of elbows allowed.
- Extend 3/4" condensate drain from FCU-1, CAC-1 and AC-1 and spill into mop sink. Field verify exact routing.
- Run duct concealed in soffit. Refer to architectural drawings for more information.



1 MECHANICAL FIRST FLOOR PLAN - DUCTWORK

SCALE  
1/8"=1'-0"



2 MECHANICAL FIRST FLOOR PLAN - PIPING

SCALE  
1/8"=1'-0"

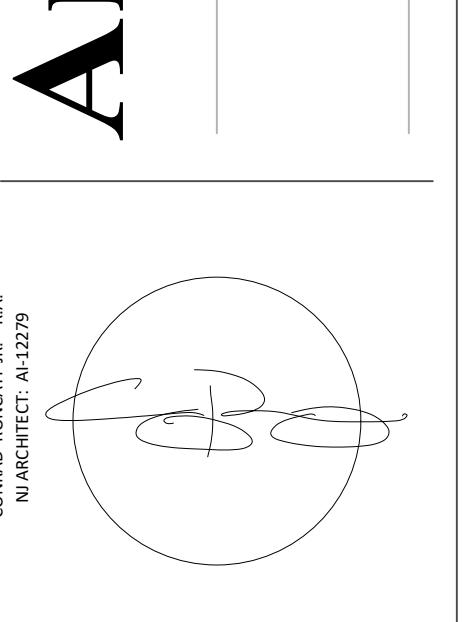


REV. NO.	DATE	DESCRIPTION
J&J	Johnson & Urban, LLC Mark E. Long, RA, SPC N.J. State Lisc. #045-00000 201 Main Street, Suite 1100 Fort Lee, New Jersey 07024 Tel: 201-346-3448 Fax: 201-346-3448 E-mail: frontdesk@architectura.com	

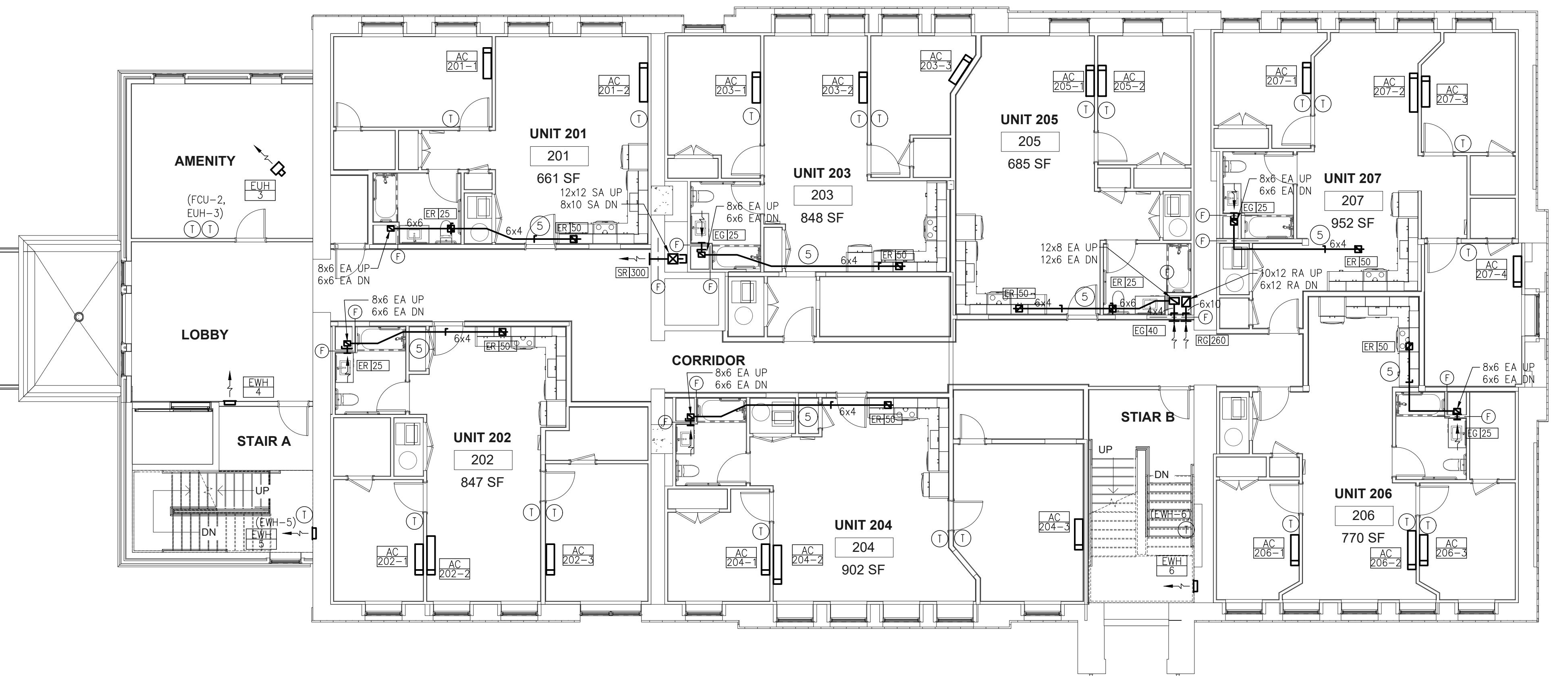
**J&J**  
Johnson & Urban, LLC  
Mark E. Long, RA, SPC  
N.J. State Lisc. #045-00000  
201 Main Street, Suite 1100  
Fort Lee, New Jersey 07024  
Tel: 201-346-3448  
Fax: 201-346-3448  
E-mail: frontdesk@architectura.com  
architecture  
interior design  
planning

# Architectura

PROPOSED RESIDENTIAL DEVELOPMENT (BUILDING E)  
VILLAGE SCHOOL COMMONS  
511 DURIE AVENUE, CLOSTER, NEW JERSEY  
BLOCK 1316 LOT 9

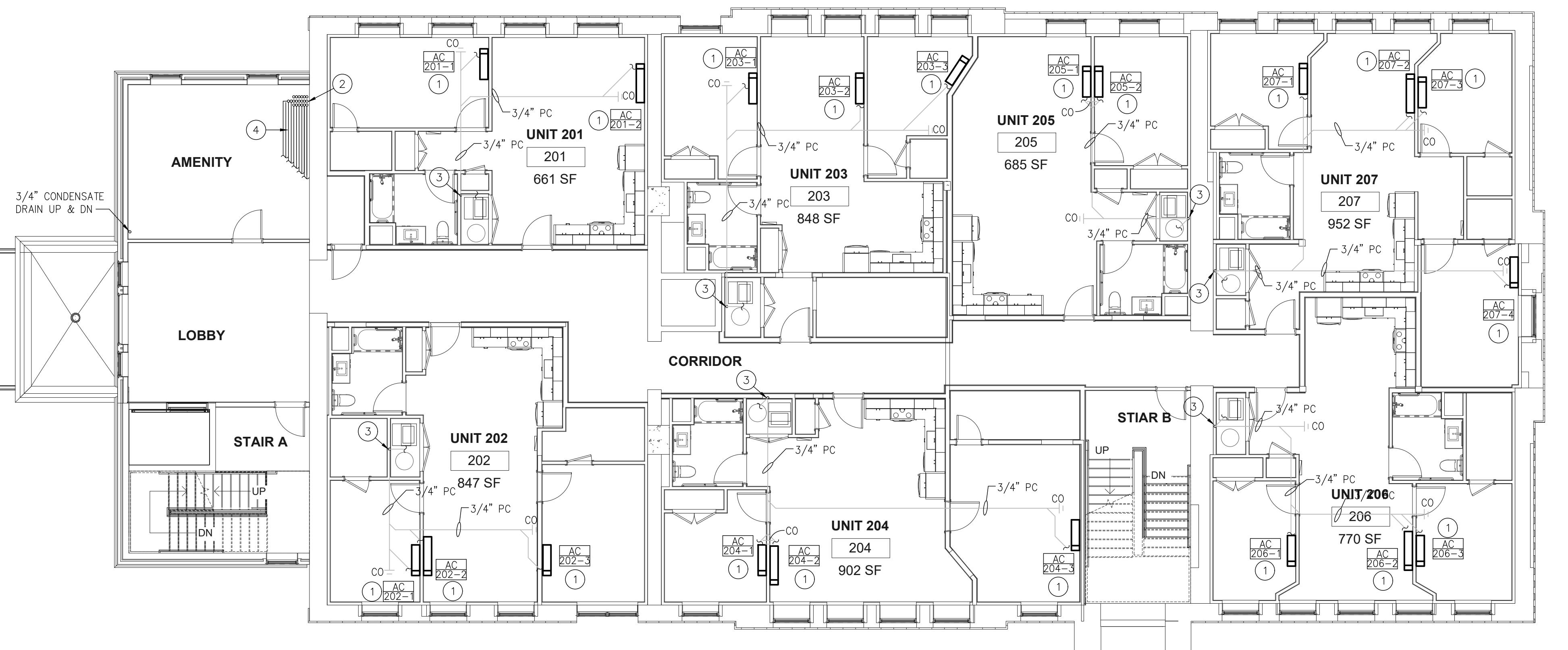


DRAWING TITLE	
<b>MECHANICAL SECOND FLOOR PLANS</b>	
(NOT FOR CONSTRUCTION )	
SCALE AS SHOWN	DRAWN BY EL
DATE 07/25/2024	SHEET NO.
PROJECT NUMBER 2023015	M102



1 MECHANICAL SECOND FLOOR PLAN - DUCTWORK

SCALE  
1/8"=1'-0"

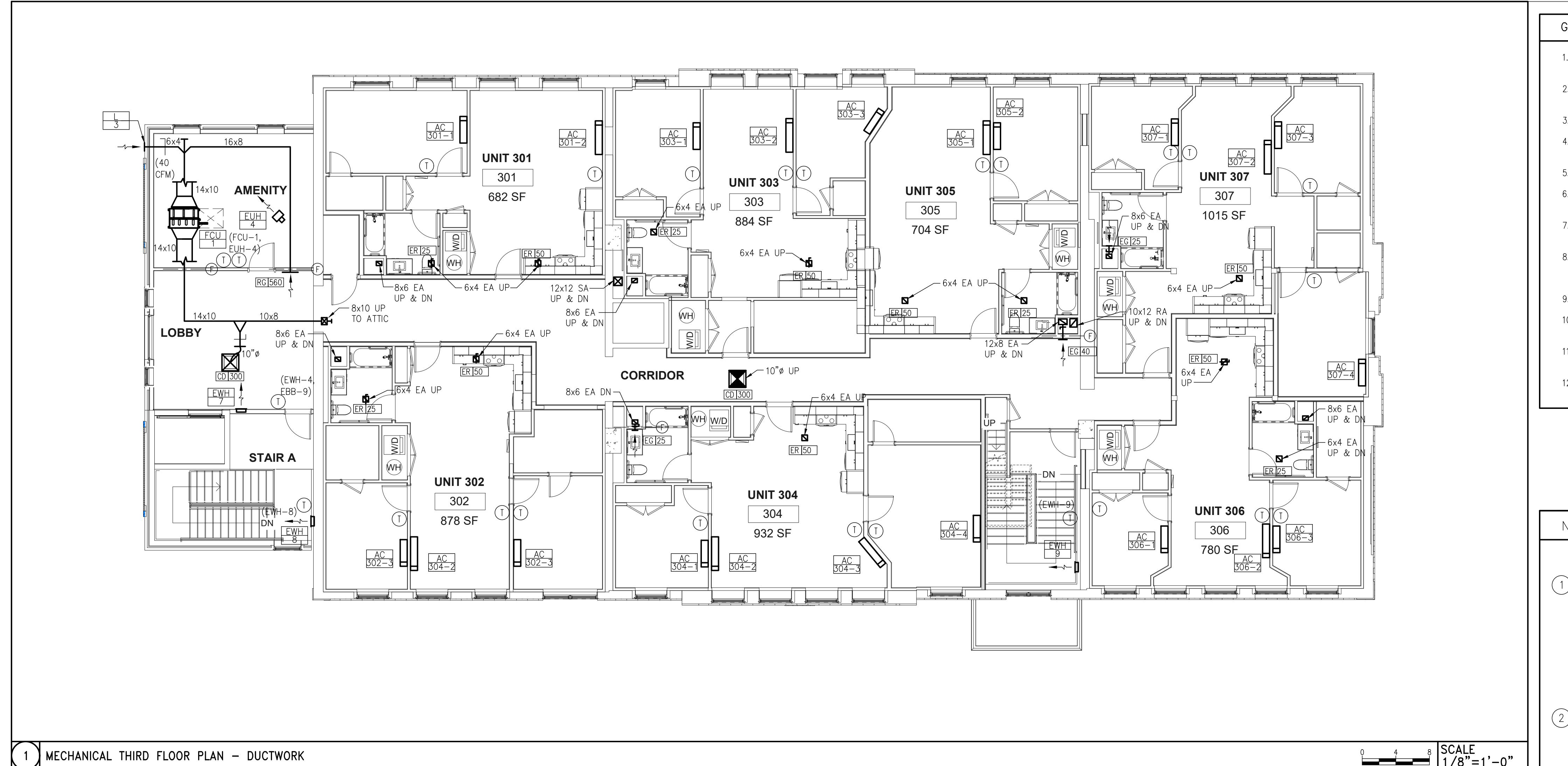


## GENERAL NOTES

- Coordinate final location of condensing units in field. Maximum length and number of elbows shall be strictly followed per manufacturer's recommendations.
- The exact mounting heights and locations of all HVAC equipment shall be field verified and coordinated with all other mechanical, electrical, architectural and structural systems.
- Verify all equipment voltages with the electrical contractor prior to ordering equipment.
- Provide disconnect switches for all HVAC equipment including weatherproof disconnect as required.
- Provide phase loss protection for all poly-phase motor devices.
- The final location of air devices must be coordinated with the reflected ceiling plan and all other mechanical, electrical, fire protection, architectural, and structural systems.
- Provide flexible connections at all duct connections to vibrating equipment. These connections shall be installed in close proximity to such equipment.
- Locate mechanical equipment so all serviceable parts are accessible. Coordinate location with ductwork, piping, the work of other trades, building structural elements, etc. so that the manufacturer's and code required clearances are met or exceeded.
- Coordinate elevation of the wall mounted grilles and registers with the architect.
- Unless otherwise noted, all supply and return ductwork 15 ft upstream and downstream of AHU shall be internally lined with 1" thick acoustical duct liner.
- Provide all cooling coils with overflow detection sensor, to shut-down unit and provide a signal.
- Final location of thermostats and sensors to be coordinated in field with architect or owner.

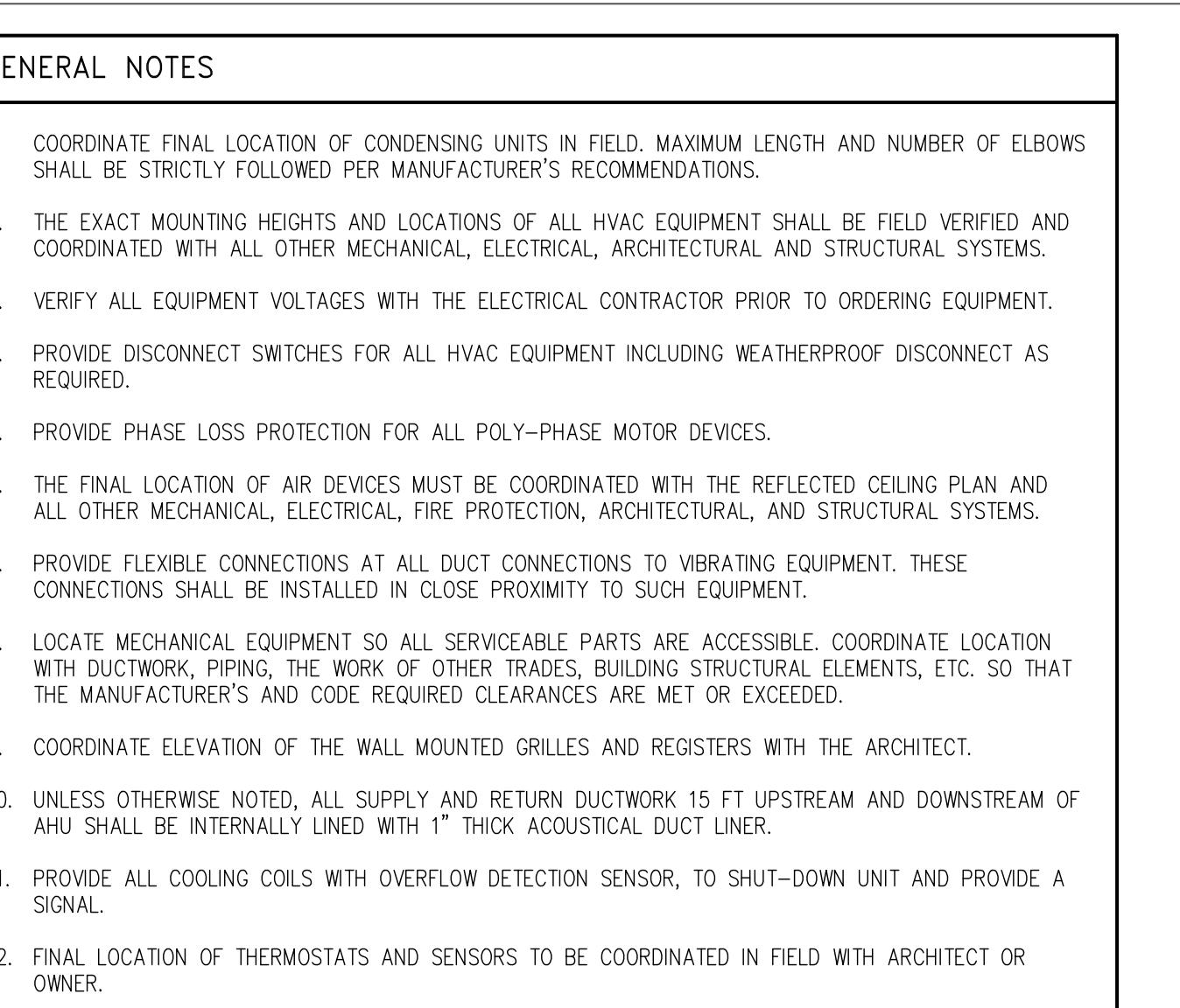
## NEW WORK KEY NOTES ( ①, ②, ETC.)

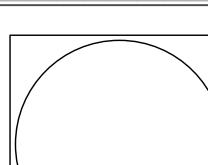
- Field verify proposed location of wall-mounted AC unit before installation. Offset location of unit as required. Extend refrigerant to unit and 3/4" condensate drain to AC unit's condensate pump. Provide Sauermann's mini condensate removal pump model SI-30. Pump to be wired via AC unit. All piping to be concealed behind walls or enclosures. Enclosures shall be similar to Sterling models JDVA for horizontal runs and PCV-53 for vertical runs. Field verify required heights and lengths. Enclosure shall be continuous. Enclosure color shall be selected by the architect. Paint as directed. Pitch condensate drain 1/8" for every 1 ft of length. Route pumped condensate pipe concealed in second floor ceiling space as high as possible. Drop to floor drain in washer/dryer closet.
- Extend refrigerant piping serving the first floor DN thru amenity space. Offset location as required to clear any structural, plumbing, or electrical components as required. Refer to piping diagram for size & quantity, size and install piping in strict accordance with manufacturer's recommendations. Maintain maximum length and number of elbows allowed. Provide wall mounted pipe supports. All piping to be concealed in enclosure. Enclosures shall be similar to Sterling models JDVA for horizontal runs and PCV-53 for vertical runs. Field verify required heights and lengths. Enclosure shall be continuous. Enclosure color shall be selected by the architect. Paint as directed.
- Run 3/4" pumped condensate concealed in second floor ceiling. Drop in w/d closet, extend pipe and spill into floor drain. Field verify exact location, offset as required.
- Extend second floor refrigerant pipe to each corresponding AC unit. Run refrigerant pipe concealed in second floor ceiling tight to underside of third floor. Offset any structural components as required. Refer to piping diagram for size & quantity, size and install piping in strict accordance with manufacturer's recommendations. Maintain maximum length and number of elbows allowed.
- Run duct concealed in soffit. Refer to architectural drawings for more information.



1 MECHANICAL THIRD FLOOR PLAN – DUCTWORK

SCALE  
1/8" = 1'-0"



	<b>Mark E. Lonergan, P.E.</b> <small>NJ License #24CE04074900</small>
<small>e 34</small> <small>07722</small> <small>24-067</small>	<b>Johnson &amp; Urban, LLC</b> <b>Consulting Engineers</b> <small>Certificate of Authorization: 24G2B1533200</small>

**J**o  
C o  
Certified

**U**

ite LL100  
Executive Drive  
ew Jersey 07024  
Fax 201-364-1418  
architectura.com

295 State Route 34  
Colts Neck, NJ 07722  
t 732.772.1500  
f 732.772.1515

J&U Project # 24-067

■ ■ ■

hitecture  
erior design  
llanning

**lectura**  
100  
ive Drive  
ersey 07024  
201-364-1418  
[lectura.com](http://lectura.com)

# La S

# CTU ■ COMMON DEVELOPMENT (BUILDING ENERGY) NEW JERSEY 9

RESIDENTIAL DEVELOPMENT  
SCHOOL OF  
E AVENUE, CLOSTER  
BLOCK 1316 LOT

# PROPOSED RE VILLAGE 511 DURI

A

A large circle contains several smaller, overlapping circles and ovals, suggesting a complex system or network.

The diagram consists of two horizontal black lines. The upper line is slightly curved downwards in the middle, forming a concave parabola-like shape. The lower line is perfectly straight.

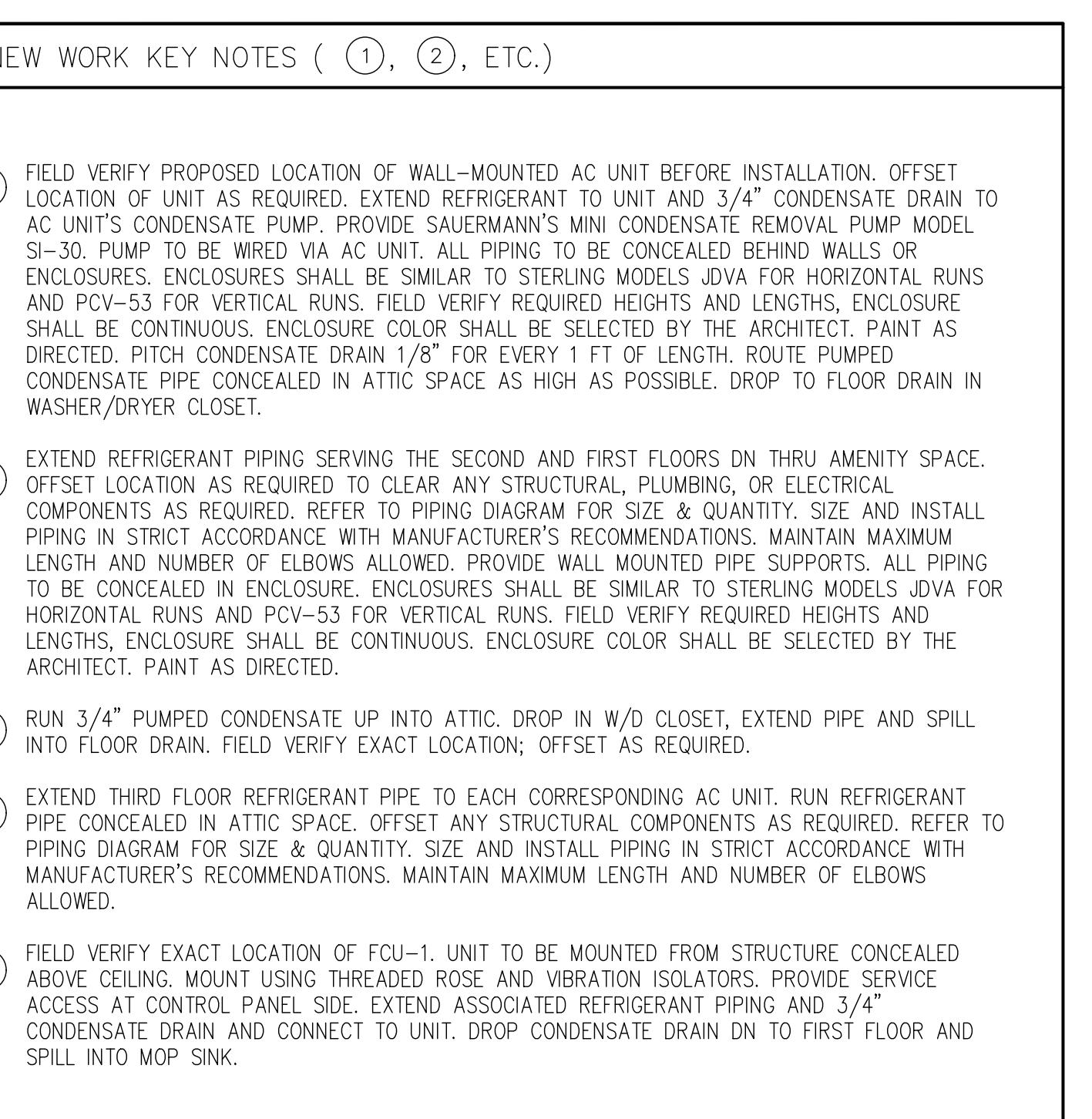
DRAWING TITLE

---

**MECHANICAL  
THIRD FLOOR PLANS**

(NOT FOR CONSTRUCTION )	
SCALE	DRAWN BY
AS SHOWN	EL
DATE	SHEET NO
07/25/2024	

07/25/2024	
PROJECT NUMBER	M103
2023015	



This architectural floor plan illustrates a building section with several residential units and a central corridor. The units are labeled as follows:

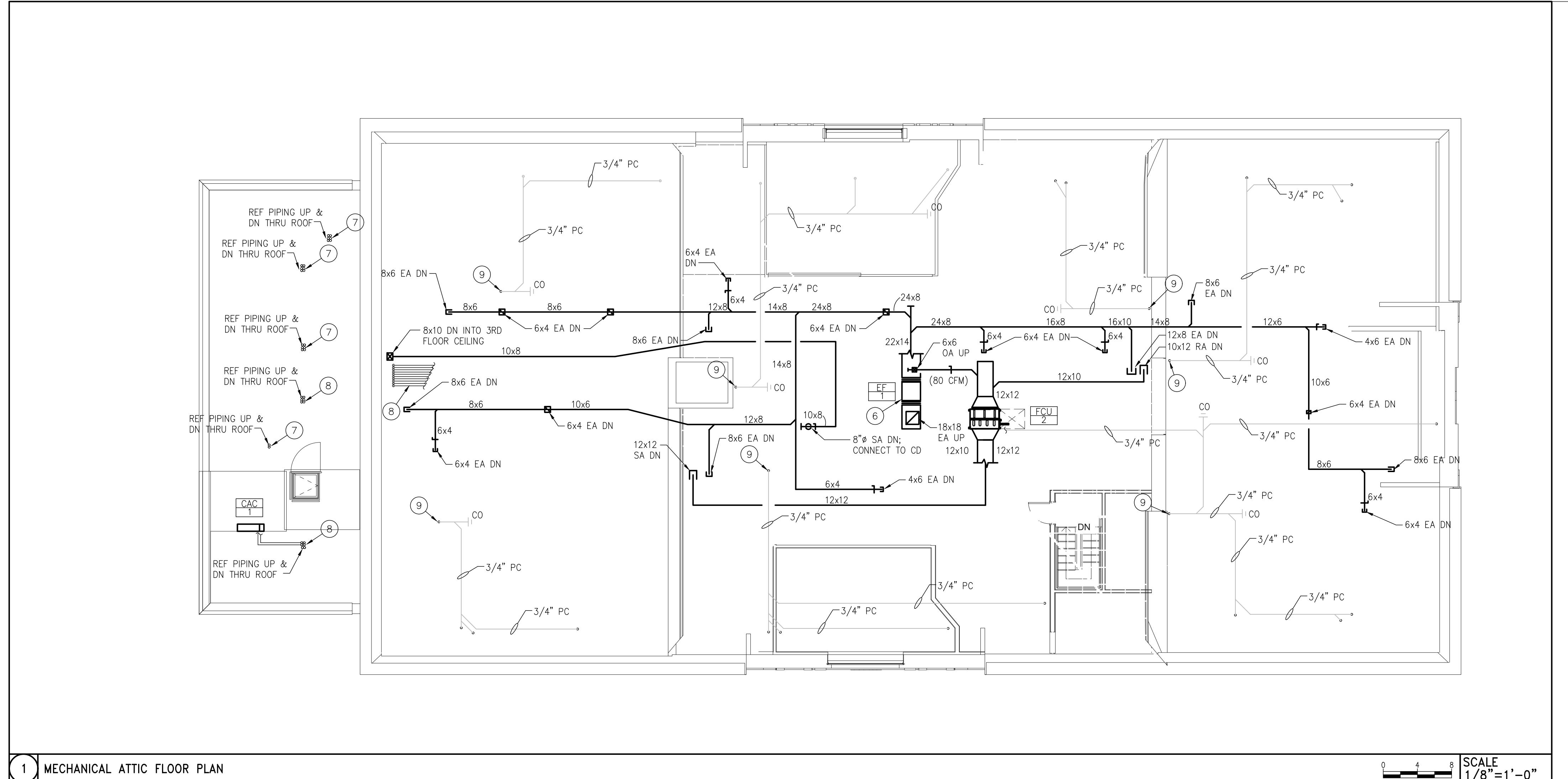
- UNIT 301**: 301, 682 SF. Features an AMENITY room with an FCU and multiple roof access points.
- UNIT 302**: 302, 878 SF. Located at the bottom left.
- UNIT 303**: 303, 884 SF. Located in the middle left.
- UNIT 304**: 304, 932 SF. Located in the middle right.
- UNIT 305**: 305, 704 SF. Located in the top center.
- UNIT 306**: 306, 780 SF. Located at the bottom right.
- UNIT 307**: 307, 1015 SF. Located at the top right.

The central area includes a **CORRIDOR** and a **STAIR A**. Various piping and HVAC components are shown throughout the plan, including:

- REF PIPING UP THRU ROOF labels indicate ductwork or piping runs extending from the exterior through the roof.
- AC units are labeled with identifiers such as AC 301-1, AC 301-2, AC 303-1, AC 303-2, AC 305-1, AC 307-1, AC 307-2, AC 307-3, AC 307-4, AC 302-3, AC 304-1, AC 304-2, AC 304-3, AC 306-1, AC 306-2, and AC 306-3.
- W/D (Washer/Dryer) and WH (Water Heater) symbols are placed in several units.
- Staircase access is indicated by arrows labeled "UP" and "DN".
- Unit sizes are provided for each apartment: 682 SF, 878 SF, 884 SF, 932 SF, 704 SF, 780 SF, and 1015 SF.
- Labels like CO, PC, and DN are used to denote specific pipe types or connections.

2

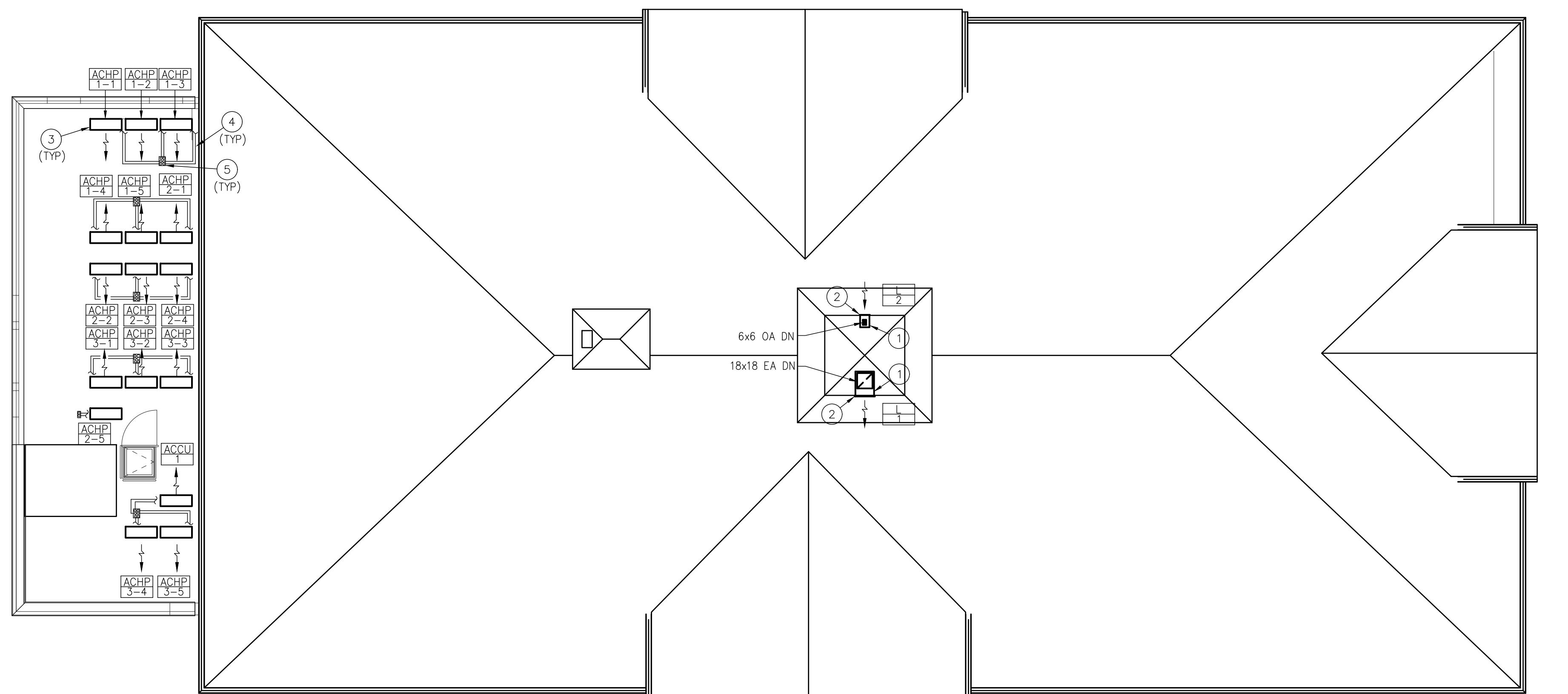
**2 MECHANICAL THIRD FLOOR PLAN - PIPING**



## 1 MECHANICAL ATTIC FLOOR PLAN

## GENERAL NOTES

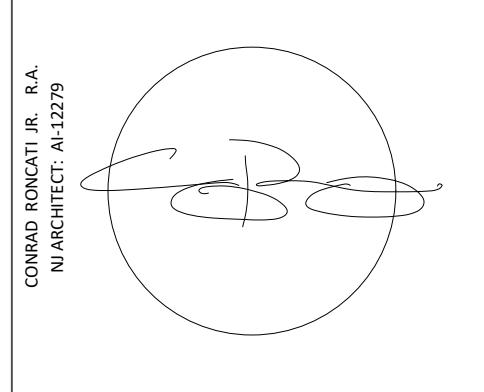
1. COORDINATE FINAL LOCATION OF CONDENSING UNITS IN FIELD. MAXIMUM LENGTH AND NUMBER OF ELBOWS SHALL BE STRICTLY FOLLOWED PER MANUFACTURER'S RECOMMENDATIONS.
2. THE EXACT MOUNTING HEIGHTS AND LOCATIONS OF ALL HVAC EQUIPMENT SHALL BE FIELD VERIFIED AND COORDINATED WITH ALL OTHER MECHANICAL, ELECTRICAL, ARCHITECTURAL AND STRUCTURAL SYSTEMS.
3. VERIFY ALL EQUIPMENT VOLTAGES WITH THE ELECTRICAL CONTRACTOR PRIOR TO ORDERING EQUIPMENT.
4. PROVIDE DISCONNECT SWITCHES FOR ALL HVAC EQUIPMENT INCLUDING WEATHERPROOF DISCONNECT AS REQUIRED.
5. PROVIDE PHASE LOSS PROTECTION FOR ALL POLY-PHASE MOTOR DEVICES.
6. THE FINAL LOCATION OF AIR DEVICES MUST BE COORDINATED WITH THE REFLECTED CEILING PLAN AND ALL OTHER MECHANICAL, ELECTRICAL, FIRE PROTECTION, ARCHITECTURAL, AND STRUCTURAL SYSTEMS.
7. PROVIDE FLEXIBLE CONNECTIONS AT ALL DUCT CONNECTIONS TO VIBRATING EQUIPMENT. THESE CONNECTIONS SHALL BE INSTALLED IN CLOSE PROXIMITY TO SUCH EQUIPMENT.
8. LOCATE MECHANICAL EQUIPMENT SO ALL SERVICEABLE PARTS ARE ACCESSIBLE. COORDINATE LOCATION WITH DUCTWORK, PIPING, THE WORK OF OTHER TRADES, BUILDING STRUCTURAL ELEMENTS, ETC. SO THAT THE MANUFACTURER'S AND CODE REQUIRED CLEARANCES ARE MET OR EXCEEDED.
9. COORDINATE ELEVATION OF THE WALL MOUNTED GRILLES AND REGISTERS WITH THE ARCHITECT.
10. UNLESS OTHERWISE NOTED, ALL SUPPLY AND RETURN DUCTWORK 15 FT UPSTREAM AND DOWNSTREAM OF AHU SHALL BE INTERNALLY LINED WITH 1" THICK ACOUSTICAL DUCT LINER.
11. PROVIDE ALL COOLING COILS WITH OVERFLOW DETECTION SENSOR, TO SHUT-DOWN UNIT AND PROVIDE A SIGNAL.
12. FINAL LOCATION OF THERMOSTATS AND SENSORS TO BE COORDINATED IN FIELD WITH ARCHITECT OR OWNER.



## 2 MECHANICAL ROOF PLAN

## NEW WORK KEY NOTES ( ①, ②, ETC.)

- ① PROVIDE DOUBLE-WALL FULLY INSULATED PLENUM AND CONNECT TO EXHAUST DUCTWORK AND LOUVER. REFER TO LOUVER DETAIL FOR MORE INFORMATION.
- ② LOUVER TO BE MOUNTED IN EXISTING OPENING AT EXTERIOR WALL OF BUILDING. PROVIDE METAL PANELS AND BLANK-OFF REMAINING OF OPENING AROUND THE LOUVER WEATHER TIGHT. CONSTRUCTION TO BE WEATHERPROOF. REFER TO ARCHITECTURAL DRAWINGS FOR MORE INFORMATION.
- ③ FURNISH AND INSTALL ALL CONDENSING UNITS ON AN EQUIPMENT RAILS ON NEW ROOF. EQUIPMENT RAILS SHALL BE SECURED TO BUILDING STRUCTURE. TOP OF RAILS SHALL BE A MINIMUM OF 18" ABOVE FINISHED ROOF SURFACE. UNIT SHALL BE SECURED TO RAILS IN ACCORDANCE WITH MANUFACTURE'S RECOMMENDATIONS TO WITHSTAND WIND LOADING FORCES. REFER TO ARCHITECTURAL AND STRUCTURAL PLANS FOR DETAILS.
- ④ AC REFRIGERANT PIPING ROUTED ABOVE ROOF. FURNISH AND INSTALL INSULATED COPPER TYPE ACR REFRIGERANT PIPING. PIPING SHALL BE SIZED AND ROUTED PER MANUFACTURER'S RECOMMENDATIONS. CONNECT REFRIGERANT PIPING TO CONDENSING UNIT PER MANUFACTURER'S WRITTEN INSTRUCTIONS. PROVIDE METAL LINESET ENCLOSURE, RD SERIES, FOR REFRIGERANT PIPING. BOTTOM OF LINESET ENCLOSURE SHALL A MINIMUM OF 18 INCHES FROM FINISHED ROOF. PROVIDE PROTECTIVE PVC INSULATION JACKET TO ALL EXPOSED REFRIGERANT LINESETS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- ⑤ AC REFRIGERANT PIPING DOWN THROUGH ROOF. FURNISH AND INSTALL ROOF CURBS WITH PIPE PORTAL CAP SIMILAR TO PATE MFR. CURB CAP SHALL BE PROVIDED WITH APPROPRIATE NUMBER OF PIPE SEALS TO ACCOMMODATE REFRIGERANT PIPING, ELECTRICAL POWER AND CONTROL CONDUITS. DO NOT PASS MORE THAN (1) PIPE THROUGH EACH NIPPLE TO FACILITATE PROPER SEALING.
- ⑥ SUSPEND IN-LINE EXHAUST FAN FROM ATTIC STRUCTURE. PROVIDE HANGER RODS AND VIBRATION ISOLATORS. CONNECT TO EXHAUST DUCTWORK WITH FLEXIBLE CONNECTORS.
- ⑦ EXTEND REFRIGERANT PIPING SERVING THE SECOND AND FIRST FLOORS DN THRU ROOF AND INTO THE AMENITY SPACE . OFFSET ANY EXISTING STRUCTURAL COMPONENTS AS REQUIRED. REFER TO PIPING DIAGRAM FOR SIZE & QUANTITY. SIZE AND INSTALL PIPING IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. MAINTAIN MAXIMUM LENGTH AND NUMBER OF ELBOWS ALLOWED.
- ⑧ EXTEND REFRIGERANT PIPING SERVING THE THIRD FLOOR DN THRU ROOF INTO THIRD FLOOR CEILING RUN TIGHT TO UNDERSIDE OF ROOF. ROUTE PIPE UP INTO THE ATTIC WHERE POSSIBLE THEN DROP DN TO FEED AC UNIT. FIELD VERIFY EXACT ROUTING. OFFSET ANY EXISTING STRUCTURAL COMPONENTS AS REQUIRED. REFER TO PIPING DIAGRAM FOR SIZE & QUANTITY. SIZE AND INSTALL PIPING IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. MAINTAIN MAXIMUM LENGTH AND NUMBER OF ELBOWS ALLOWED.
- ⑨ EXTEND AND ROUTE THIRD FLOOR PUMPED CONDENSATE PIPING IN ATTIC. DROP IN UNIT'S W/D CLOSET. FIELD VERIFY EXACT LOCATION. PITCH PIPE AND EXTEND TO EACH AC UNIT'S CONDENSATE PUMP.
- ⑩ FIELD COORDINATE LOCATION OF WALL-MOUNTED AC UNIT WITH ELEVATOR EQUIPMENT. OFFSET LOCATION OF UNIT AS REQUIRED. EXTEND REFRIGERANT TO UNIT AND 3/4" CONDENSATE DRAIN TO AC UNIT'S CONDENSATE PUMP. PROVIDE SAUERMANN'S MINI CONDENSATE REMOVAL PUMP MODEL SI-30. PUMP TO BE WIRED VIA AC UNIT. ALL PIPING TO BE CONCEALED BEHIND WALLS OR ENCLOSURES. ENCLOSURES SHALL BE SIMILAR TO STERLING MODELS JDVA FOR HORIZONTAL RUNS AND PCV-53 FOR VERTICAL RUNS. FIELD VERIFY REQUIRED HEIGHTS AND LENGTHS, ENCLOSURE SHALL BE CONTINUOUS. ENCLOSURE COLOR SHALL BE SELECTED BY THE ARCHITECT. PAINT AS DIRECTED. PITCH CONDENSATE DRAIN 1/8" FOR EVERY 1 FT OF LENGTH. DROP TO FLOOR BELOW AND ROUTE TO AMENITY SPACE.



<u>DRAWING TITLE</u>	
<b>MECHANICAL ATTIC &amp; ROOF PLANS</b>	
(NOT FOR CONSTRUCTION )	
<u>SCALE</u>	<u>DRAWN BY</u>
<u>AS SHOWN</u>	<u>EL</u>
<u>DATE</u>	<u>SHEET NO</u>
07/25/2024	
<u>PROJECT NUMBER</u>	
<b>2023015</b>	
<b>M104</b>	

## VARIABLE REFRIGERANT VOLUME - AC UNITS SCHEDULE

UNIT ID	AREA SERVED	MODEL	INDOOR TYPE	NOMINAL SIZE (TON)	FAN DATA		COOLING DATA		HEATING DATA		PHYSICAL DATA		ELECTRICAL DATA		SYSTEM	NOTES	
					AIRFLOW (CFM)	SUPPLY (MBH)	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	ENT AIR (DB/WB)	TOTAL CAPACITY (MBH)	ENT AIR (DB)	DIM (WxHxD)	WEIGHT (LBS)	POWER (V/PH/Hz)	MCA (AMPS)		
AC-101-1	UNIT 101 BEDROOM	FXAQ07PVJU	WALL MOUNTED	0.6	260	7.5	6	80/67	8.7	68	31.3x11.4x9.3	30	208/1/60	0.3	15.0	ACHP-1-1	1 THRU 6
AC-101-2	UNIT 101 LIVING ROOM	FXAQ09PVJU	WALL MOUNTED	0.8	280	9.5	7	80/67	11.1	68	31.3x11.4x9.3	30	208/1/60	0.3	15.0	ACHP-1-1	1 THRU 6
AC-102-1	UNIT 102 BEDROOM	FXAQ07PVJU	WALL MOUNTED	0.6	260	7.5	6	80/67	8.7	68	31.3x11.4x9.3	30	208/1/60	0.3	15.0	ACHP-1-3	1 THRU 6
AC-102-2	UNIT 102 LIVING ROOM	FXAQ09PVJU	WALL MOUNTED	0.8	280	9.5	7	80/67	11.1	68	31.3x11.4x9.3	30	208/1/60	0.3	15.0	ACHP-1-3	1 THRU 6
AC-102-3	UNIT 102 BEDROOM	FXAQ07PVJU	WALL MOUNTED	0.6	260	7.5	6	80/67	8.7	68	31.3x11.4x9.3	30	208/1/60	0.3	15.0	ACHP-1-3	1 THRU 6
AC-103-1	UNIT 103 BEDROOM	FXAQ07PVJU	WALL MOUNTED	0.6	260	7.5	6	80/67	8.7	68	31.3x11.4x9.3	30	208/1/60	0.3	15.0	ACHP-1-1	1 THRU 6
AC-103-2	UNIT 103 LIVING ROOM	FXAQ12PVJU	WALL MOUNTED	1.0	290	12	8.7	80/67	14	68	31.3x11.4x9.3	30	208/1/60	0.4	15.0	ACHP-1-1	1 THRU 6
AC-104-1	UNIT 104 BEDROOM	FXAQ07PVJU	WALL MOUNTED	0.6	260	7.5	6	80/67	8.7	68	31.3x11.4x9.3	30	208/1/60	0.3	15.0	ACHP-1-3	1 THRU 6
AC-104-2	UNIT 104 LIVING ROOM	FXAQ18PVJU	WALL MOUNTED	1.5	500	18	13.4	80/67	21	68	41.3x11.4x9.3	35	208/1/60	0.4	15.0	ACHP-1-3	1 THRU 6
AC-104-3	UNIT 104 BEDROOM	FXAQ07PVJU	WALL MOUNTED	0.6	260	7.5	6	80/67	8.7	68	31.3x11.4x9.3	30	208/1/60	0.3	15.0	ACHP-1-3	1 THRU 6
AC-105-1	UNIT 105 LIVING ROOM	FXAQ12PVJU	WALL MOUNTED	1.0	290	12	8.7	80/67	14	68	31.3x11.4x9.3	30	208/1/60	0.4	15.0	ACHP-1-2	1 THRU 6
AC-105-2	UNIT 105 BEDROOM	FXAQ07PVJU	WALL MOUNTED	0.6	260	7.5	6	80/67	8.7	68	31.3x11.4x9.3	30	208/1/60	0.3	15.0	ACHP-1-2	1 THRU 6
AC-106-1	UNIT 106 LIVING ROOM	FXAQ18PVJU	WALL MOUNTED	1.5	500	18	13.4	80/67	21	68	41.3x11.4x9.3	35	208/1/60	0.4	15.0	ACHP-1-4	1 THRU 6
AC-106-2	UNIT 106 BEDROOM	FXAQ09PVJU	WALL MOUNTED	0.6	260	7.5	6	80/67	8.7	68	31.3x11.4x9.3	30	208/1/60	0.3	15.0	ACHP-1-4	1 THRU 6
AC-106-3	UNIT 106 BEDROOM	FXAQ09PVJU	WALL MOUNTED	0.6	260	7.5	6	80/67	8.7	68	31.3x11.4x9.3	30	208/1/60	0.3	15.0	ACHP-1-4	1 THRU 6
AC-107-1	UNIT 107 BEDROOM	FXAQ07PVJU	WALL MOUNTED	0.6	260	7.5	6	80/67	8.7	68	31.3x11.4x9.3	30	208/1/60	0.3	15.0	ACHP-1-2	1 THRU 6
AC-107-2	UNIT 107 LIVING ROOM	FXAQ09PVJU	WALL MOUNTED	0.8	280	9.5	7	80/67	11.1	68	31.3x11.4x9.3	30	208/1/60	0.3	15.0	ACHP-1-2	1 THRU 6
AC-107-3	UNIT 107 BEDROOM	FXAQ09PVJU	WALL MOUNTED	0.8	280	9.5	7	80/67	11.1	68	31.3x11.4x9.3	30	208/1/60	0.3	15.0	ACHP-1-2	1 THRU 6
AC-1	LOBBY	FXAQ12PVJU	WALL MOUNTED	1.0	290	12	8.7	80/67	14	68	31.3x11.4x9.3	30	208/1/60	0.4	15.0	ACHP-1-5	1 THRU 6
FCU-1	CORRIDORS	FXSQ18TBVJU	MSP CEILING DUCTED	1.5	600	18	13.3	80/67	20.8	68	39.4x9.6x31.5	80	208/1/60	1.6	15.0	ACHP-1-5	1 THRU 6
FCU-2	CORRIDORS	FXSQ18TBVJU	MSP CEILING DUCTED	1.5	600	18	13.3	80/67	20.8	68	39.4x9.6x31.5	80	208/1/60	1.6	15.0	ACHP-1-5	1 THRU 6
AC-201-1	UNIT 201 BEDROOM	FXAQ09PVJU	WALL MOUNTED	0.8	280	9.5	7	80/67	11.1	68	31.3x11.4x9.3	30	208/1/60	0.3	15.0	ACHP-2-1	1 THRU 6
AC-201-2	UNIT 201 LIVING ROOM	FXAQ18PVJU	WALL MOUNTED	1.5	500	18	13.4	80/67	21	68	41.3x11.4x9.3	35	208/1/60	0.4	15.0	ACHP-2-1	1 THRU 6
AC-202-1	UNIT 202 BEDROOM	FXAQ07PVJU	WALL MOUNTED	0.6	260	7.5	6	80/67	8.7	68	31.3x11.4x9.3	30	208/1/60	0.3	15.0	ACHP-2-3	1 THRU 6
AC-202-2	UNIT 202 LIVING ROOM	FXAQ18PVJU	WALL MOUNTED	1.5	500	18	13.4	80/67	21	68	41.3x11.4x9.3	35	208/1/60	0.4	15.0	ACHP-2-3	1 THRU 6
AC-202-3	UNIT 202 BEDROOM	FXAQ12PVJU	WALL MOUNTED	1.0	290	12	8.7	80/67	14	68	31.3x11.4x9.3	30	208/1/60	0.4	15.0	ACHP-2-3	1 THRU 6
AC-203-1	UNIT 203 BEDROOM	FXAQ07PVJU	WALL MOUNTED	0.6	260	7.5	6	80/67	8.7	68	31.3x11.4x9.3	30	208/1/60	0.3	15.0	ACHP-2-1	1 THRU 6
AC-203-2	UNIT 203 LIVING ROOM	FXAQ12PVJU	WALL MOUNTED	1.0	290	12	8.7	80/67	14	68	31.3x11.4x9.3	30	208/1/60	0.4	15.0	ACHP-2-1	1 THRU 6
AC-203-3	UNIT 203 BEDROOM	FXAQ07PVJU	WALL MOUNTED	0.6	260	7.5	6	80/67	8.7	68	31.3x11.4x9.3	30	208/1/60	0.3	15.0	ACHP-2-1	1 THRU 6
AC-204-1	UNIT 204 BEDROOM	FXAQ07PVJU	WALL MOUNTED	0.6	260	7.5	6	80/67	8.7	68	31.3x11.4x9.3	30	208/1/60	0.3	15.0	ACHP-2-4	1 THRU 6
AC-204-2	UNIT 204 LIVING ROOM	FXAQ24PVJU	WALL MOUNTED	2.0	635	24	17	80/67	27.5	68	41.4x11.4x9.3	35	208/1/60	0.6	15.0	ACHP-2-4	1 THRU 6
AC-204-3	UNIT 204 BEDROOM	FXAQ09PVJU	WALL MOUNTED	0.8	280	9.5	7	80/67	11.1	68	31.3x11.4x9.3	30	208/1/60	0.3	15.0	ACHP-2-4	1 THRU 6
AC-205-1	UNIT 205 LIVING ROOM	FXAQ12PVJU	WALL MOUNTED	1.0	290	12	8.7	80/67	14	68	31.3x11.4x9.3	30	208/1/60	0.4	15.0	ACHP-2-2	1 THRU 6
AC-205-2	UNIT 205 BEDROOM	FXAQ07PVJU	WALL MOUNTED	0.6	260	7.5	6	80/67	8.7	68	31.3x11.4x9.3	30	208/1/60	0.3	15.0	ACHP-2-2	1 THRU 6
AC-206-1	UNIT 206 BEDROOM	FXAQ07PVJU	WALL MOUNTED	0.6	260	7.5	6	80/67	8.7	68	31.3x11.4x9.3	30	208/1/60	0.3	15.0	ACHP-2-5	1 THRU 6
AC-206-2	UNIT 206 LIVING ROOM	FXAQ24PVJU	WALL MOUNTED	2.0	635	24	17	80/67	27.5	68	41.4x11.4x9.3	35	208/1/60	0.6	15.0	ACHP-2-5	1 THRU 6
AC-206-3	UNIT 206 BEDROOM	FXAQ09PVJU	WALL MOUNTED	0.8	280	9.5	7	80/67	11.1	68	31.3x11.4x9.3	30	208/1/60	0.3	15.0	ACHP-2-5</	



REV. NO.	DATE	DESCRIPTION
Johnson & Urban, LLC 100 Main Street, Suite 1100 One Executive Drive Fort Lee, New Jersey 07024 Tel: 201-346-1400 Fax: 201-346-1418 ■■■ architecture interior design planning		
Mark E. Loring, P.E. N.J. State License No. 34-2030 201-644-2324 Cell Phone: 201-772-5150 Project # 24-0467 JULY 2024		

## Architectura

■ ■ ■ PROPOSED RESIDENTIAL DEVELOPMENT (BUILDING E)  
■ ■ ■ VILLAGE SCHOOL COMMONS  
■ ■ ■ 511 DIURIE AVENUE, CLOSTER, NEW JERSEY  
■ ■ ■ BLOCK 3136 LOT 9

ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE THE ORIGINAL AND PUBLISHED OR UNPUBLISHED WORK OF THE ARCHITECT, ARCHITECTURA, THEY MAY NOT BE DUPLICATED, USED, TRANSFORMED OR DISTRIBUTED FOR ANY REASON WITHOUT THE EXPRESSED WRITTEN PERMISSION OF THE ARCHITECT.

### AIR COOLED HEAT PUMP UNIT SCHEDULE

UNIT NO.	MODEL NO.	NOMINAL TONS	COOLING			HEATING			ELECTRICAL CHARACTERISTICS			PHYSICAL DATA		NOTES
			CAPACITY (MBH)	AMBIENT AIR (DB)	EER	CAPACITY (MBH)	ENT AIR (DB)	HSPF	V/PH/HZ	MCA (AMPS)	MOPC (AMPS)	DIM (WxHxD)	WEIGHT (LBS)	
ACHP-1-1	RXTQ48TBVJUA	4	48	95	10.3	38	10	8.5	208/1/60	29.1	35	37x39x12.6	200	1 THRU 13
ACHP-1-2	RXTQ48TBVJUA	4	48	95	10.3	38	10	8.5	208/1/60	29.1	35	37x39x12.6	200	1 THRU 13
ACHP-1-3	RXTQ60TBVJUA	5	60	95	9.8	48	10	8.5	208/1/60	29.1	35	35.4x53x12.6	250	1 THRU 13
ACHP-1-4	RXTQ48TBVJUA	4	48	95	10.3	38	10	8.5	208/1/60	29.1	35	37x39x12.6	200	1 THRU 13
ACHP-1-5	RXTQ48TBVJUA	4	48	95	10.3	38	10	8.5	208/1/60	29.1	35	37x39x12.6	200	1 THRU 13
ACHP-2-1	RXTQ60TBVJUA	5	60	95	9.8	48	10	8.5	208/1/60	29.1	35	35.4x53x12.6	250	1 THRU 13
ACHP-2-2	RXTQ60TBVJUA	5	60	95	9.8	48	10	8.5	208/1/60	29.1	35	35.4x53x12.6	250	1 THRU 13
ACHP-2-3	RXTQ48TBVJUA	4	48	95	10.3	38	10	8.5	208/1/60	29.1	35	37x39x12.6	200	1 THRU 13
ACHP-2-4	RXTQ48TBVJUA	4	48	95	10.3	38	10	8.5	208/1/60	29.1	35	37x39x12.6	200	1 THRU 13
ACHP-2-5	RXTQ48TBVJUA	4	48	95	10.3	38	10	8.5	208/1/60	29.1	35	37x39x12.6	200	1 THRU 13
ACHP-3-1	RXTQ60TBVJUA	5	60	95	9.8	48	10	8.5	208/1/60	29.1	35	35.4x53x12.6	250	1 THRU 13
ACHP-3-2	RXTQ60TBVJUA	5	60	95	9.8	48	10	8.5	208/1/60	29.1	35	35.4x53x12.6	250	1 THRU 13
ACHP-3-3	RXTQ48TBVJUA	4	48	95	10.3	38	10	8.5	208/1/60	29.1	35	37x39x12.6	200	1 THRU 13
ACHP-3-4	RXTQ60TBVJUA	5	60	95	9.8	48	10	8.5	208/1/60	29.1	35	35.4x53x12.6	250	1 THRU 13
ACHP-3-5	RXTQ48TBVJUA	4	48	95	10.3	38	10	8.5	208/1/60	29.1	35	37x39x12.6	200	1 THRU 13

#### NOTES:

1. UNIT SELECTION IS BASED ON DAIKIN - MANUFACTURER MUST BE CERTIFIED, LISTED, AND LABELED PER AHRI 1230.
2. UNIT SHALL BE CONFIGURED FOR HEAT PUMP OPERATION.
3. INSTALLING CONTRACTOR MUST HAVE SUCCESSFULLY COMPLETED MANUFACTURERS CERTIFIED INSTALLATION CLASS WITHIN PAST 36 MONTHS.
4. PROVIDE SYSTEMS SERVING MULTIPLE APARTMENTS WITH DAIKIN'S POWER PROPORTIONAL DISTRIBUTION FOR INDIVIDUAL UNIT'S POWER CONSUMPTION MONITORING.
5. SYSTEM SHALL BE PROVIDED WITH I-TOUCH MANAGER CONTROLLER WITH WEB BASED SOFTWARE.
6. FURNISH UNIT WITH ALL REQUIRED BRANCH JOINTS AND HEADERS FOR REFRIGERANT PIPING CONNECTIONS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. INSTALL REFRIGERANT & CONTROL WIRING PER MANUFACTURER'S INSTRUCTIONS.
7. PROVIDE NON-FUSED DISCONNECT SWITCHES.
8. REFRIGERANT PIPING SHALL BE SIZED BASED ON THE ACTUAL LINE LENGTH AND THE MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL REQUIRED PIPING SPECIALTIES.
9. INTERLOCK UNIT CONTROLS WITH THEIR RESPECTIVE INDOOR UNITS AND ATC SYSTEM GATEWAY.
10. FURNISH UNIT WITH MANUFACTURER'S STANDARD 10-YEAR WARRANTY ON PARTS AND COMPRESSORS.
11. FURNISH AND INSTALL UNIT ON 18" HIGH EQUIPMENT RAILS WITH VIBRATION ISOLATORS. SECURE UNIT TO RAILS AND SECURE RAILS TO ROOF PER MANUFACTURER'S RECOMMENDATIONS.
12. FURNISH UNIT WITH FACTORY INSTALLED COIL GUARDS.
13. INSTALL UNIT SUCH THAT MANUFACTURER MINIMUM CLEARANCES ARE MAINTAINED.

### RECESSED ELECTRIC WALL HEATER

UNIT ID	MFG	MODEL	MOUNT	LOCATION	AIRFLOW (CFM)	TOTAL BTU	ELECTRICAL DATA			PHYSICAL DATA			NOTES
							POWER (AMPS)	KW (AMPS)	AMPS (AMPS)	HEIGHT (IN)	WIDTH (IN)	DEPTH (IN)	
EWH-1	DAYTON	2HAC4	RECESSED IN WALL	VESTIBULE	100	6824	208.1	2	9.6	20	15	5.25	1 TO 2
EWH-2	DAYTON	2HAD9	RECESSED IN WALL	1ST FLOOR STAIR A	100	5118	120.1	1.5	12.5	18.25	14.25	4	1 TO 2
EWH-3	DAYTON	2HAD9	RECESSED IN WALL	1ST FLOOR STAIR B	100	5118	120.1	1.5	12.5	18.25	14.25	4	1 TO 2
EWH-4	DAYTON	2HAD9	RECESSED IN WALL	2ND FLOOR LOBBY	100	5118	120.1	1.5	12.5	18.25	14.25	4	1 TO 2
EWH-5	DAYTON	2HAC4	RECESSED IN WALL	2ND FLOOR STAIR A	100	5118	120.1	1.5	12.5	18.25	14.25	4	1 TO 2
EWH-6	DAYTON	2HAD9	RECESSED IN WALL	2ND FLOOR STAIR B	100	5118	120.1	1.5	12.5	18.25	14.25	4	1 TO 2
EWH-7	DAYTON	2HAD9	RECESSED IN WALL	3RD FLOOR LOBBY	100	5118	120.1	1.5	12.5	18.25	14.25	4	1 TO 2
EWH-8	DAYTON	2HAD9	RECESSED IN WALL	3RD FLOOR STAIR A	100	5118	120.1	1.5	12.5	18.25	14.25	4	1 TO 2
EWH-9	DAYTON	2HAD9	RECESSED IN WALL	3RD FLOOR STAIR B	100	5118	120.1	1.5	12.5	18.25	14.25	4	1 TO 2

#### NOTES

1. EQUIPMENT TO INCLUDE: TAMPER PROOF 2-POLE THERMOSTAT. ARCHITECT TO SELECT COLOR.
2. PROVIDE WALL BRACKETS AND SURFACE MOUNTING FRAME.
3. PROVIDE INTEGRAL THERMOSTAT AND OVERCURRENT PROTECTION SWITCH.

### SUSPENDED ELECTRIC UNIT HEATER

UNIT ID	MFG	MODEL	MOUNT	LOCATION	AIRFLOW (CFM)	TOTAL BTU	ELECTRICAL DATA			PHYSICAL DATA			NOTES
							POWER (AMPS)	KW (AMPS)	AMPS (AMPS)	HEIGHT (IN)	WIDTH (IN)	DEPTH (IN)	
EUH-1	DAYTON	804T10	CEILING SUSPENDED	FIRST FLOOR UTILITY	350	10200	208.1	3	12.5	16	14	8-1/2	1 TO 3
EUH-2	DAYTON	804T10	CEILING SUSPENDED	FIRST FLOOR UTILITY	350	10200	208.1	3	12.5	16	14	8-1/2	1 TO 3
EUH-3	DAYTON	804T09	CEILING SUSPENDED	2ND FLOOR AMENITY	350	10200	208.1	3	14.5	16	14	8-1/2	1 TO 3
EUH-4	DAYTON	804T17	CEILING SUSPENDED	3RD FLOOR AMENITY	350	17000	208.1	5	18.0	16	14	8-1/2	1 TO 3

#### NOTES

1. EQUIPMENT TO INCLUDE: TAMPER PROOF 2-POLE THERMOSTAT. ARCHITECT TO SELECT COLOR.
2. UNITS TO BE HUNG FROM BUILDING STRUCTURE. PROVIDE THREADED RODS AND VIBRATION ISOLATORS.
3. REFER TO FLOOR PLAN FOR THERMOSTAT LOCATION.

### INLINE EXHAUST FAN SCHEDULE

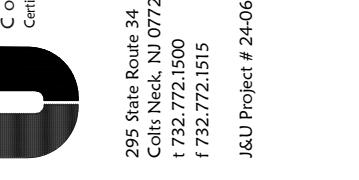
UNIT ID	LOCATION	MODEL NO.	EXHAUST FAN				ELECTRICAL			DIM (LxWxH) IN.	WEIGHT (LBS)	NOTES
EXHAUST (CFM)	ESP (IN.W.G.)											



REV. NO.	DATE	DESCRIPTION

Johnson & Urban, LLC  
Architects • Engineers • Interior Designers  
201-646-1400 • Fax 201-646-1418  
frontdesk@architectura.com  
■ ■ ■ architecture interior design planning

Mark E. Loring, P.E.  
N.J. State P.E. #012279  
N.J. State S.E.C. #00000000



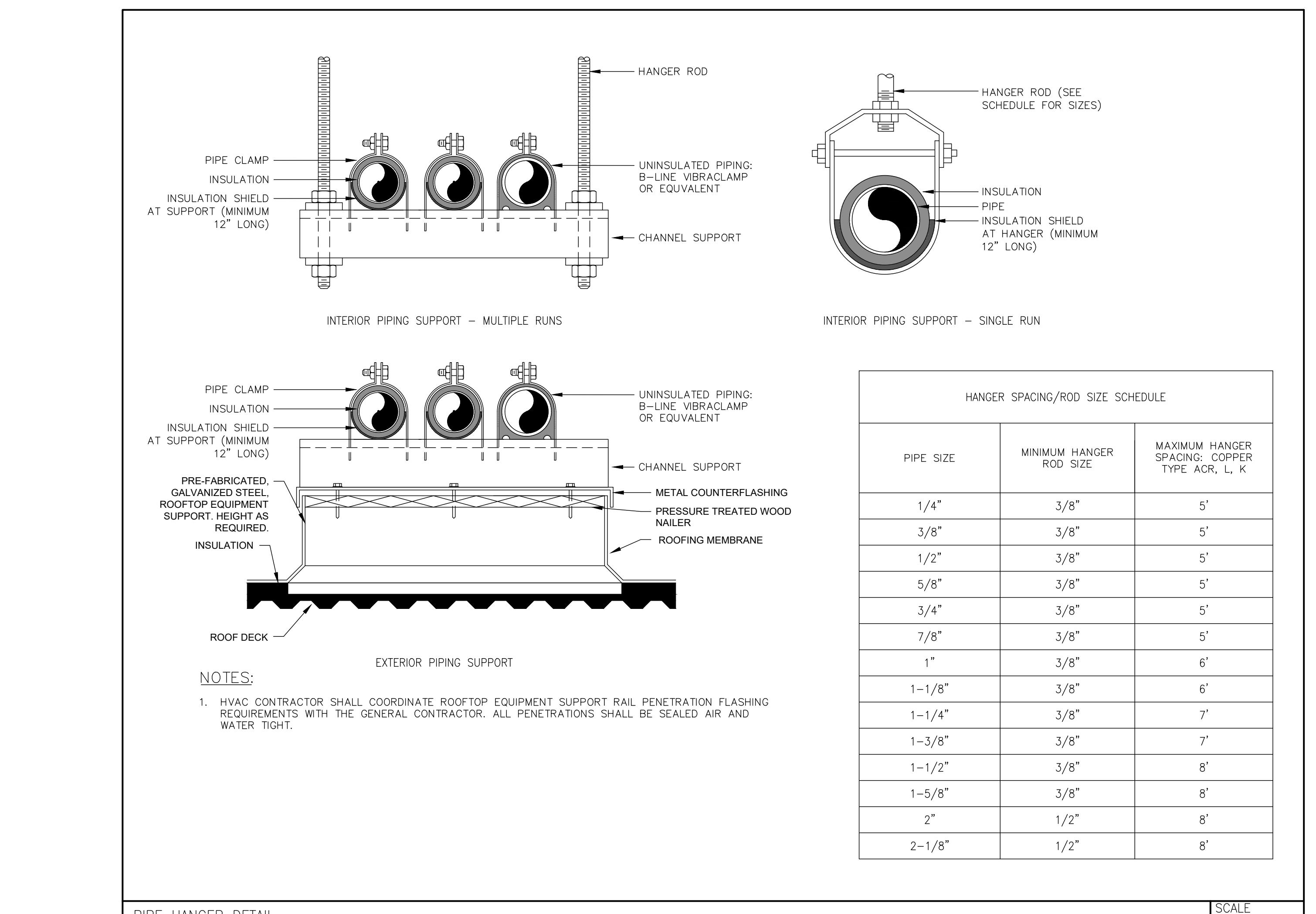
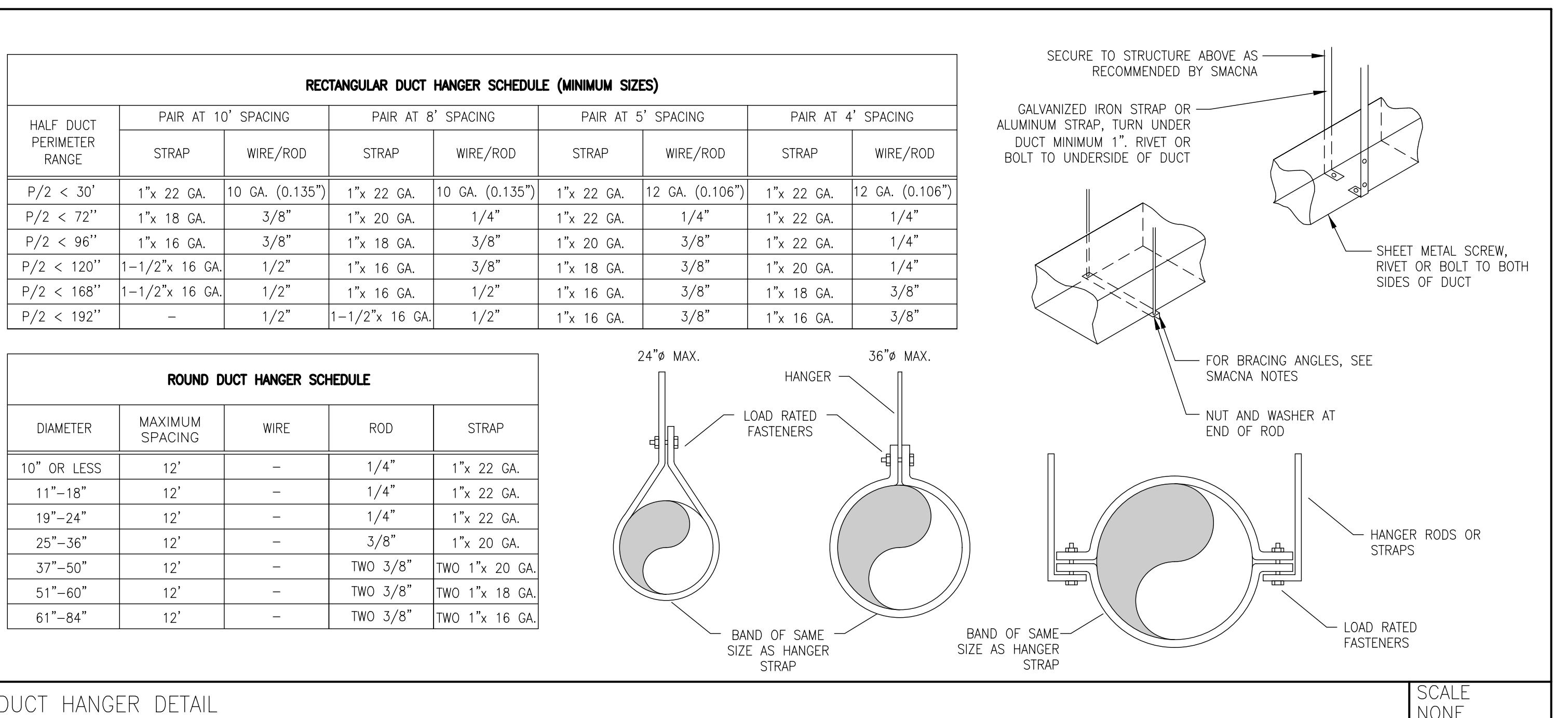
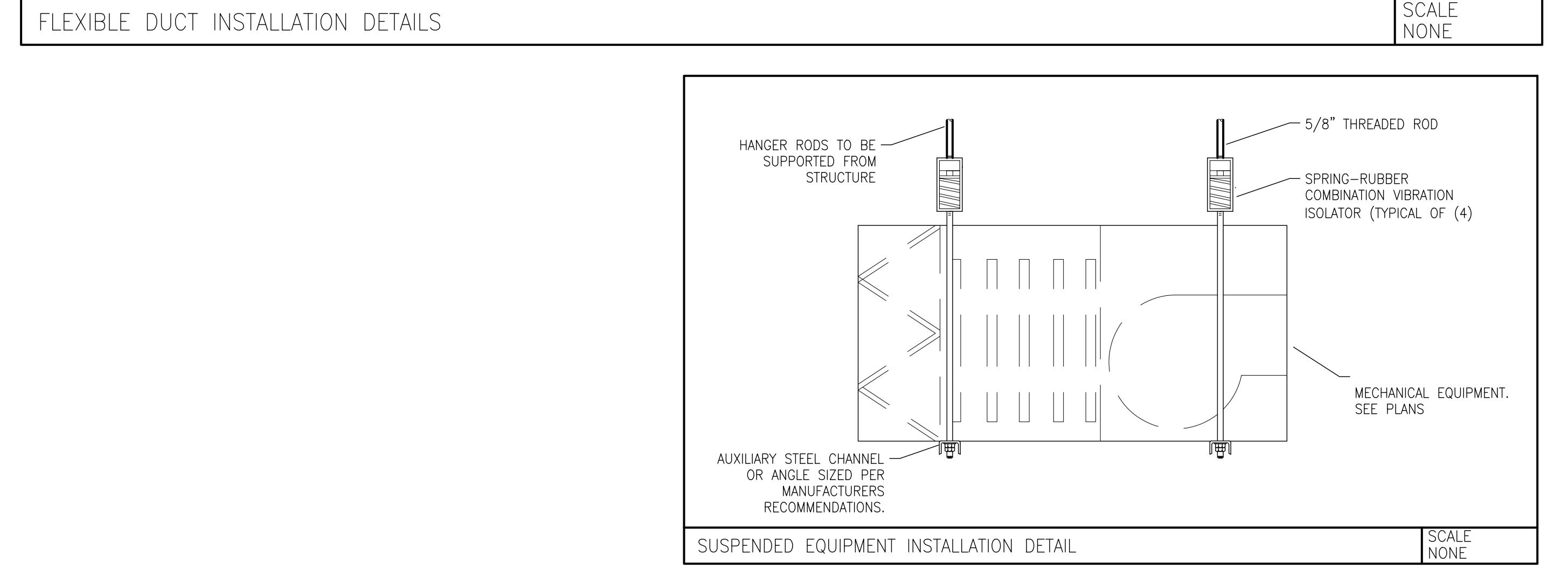
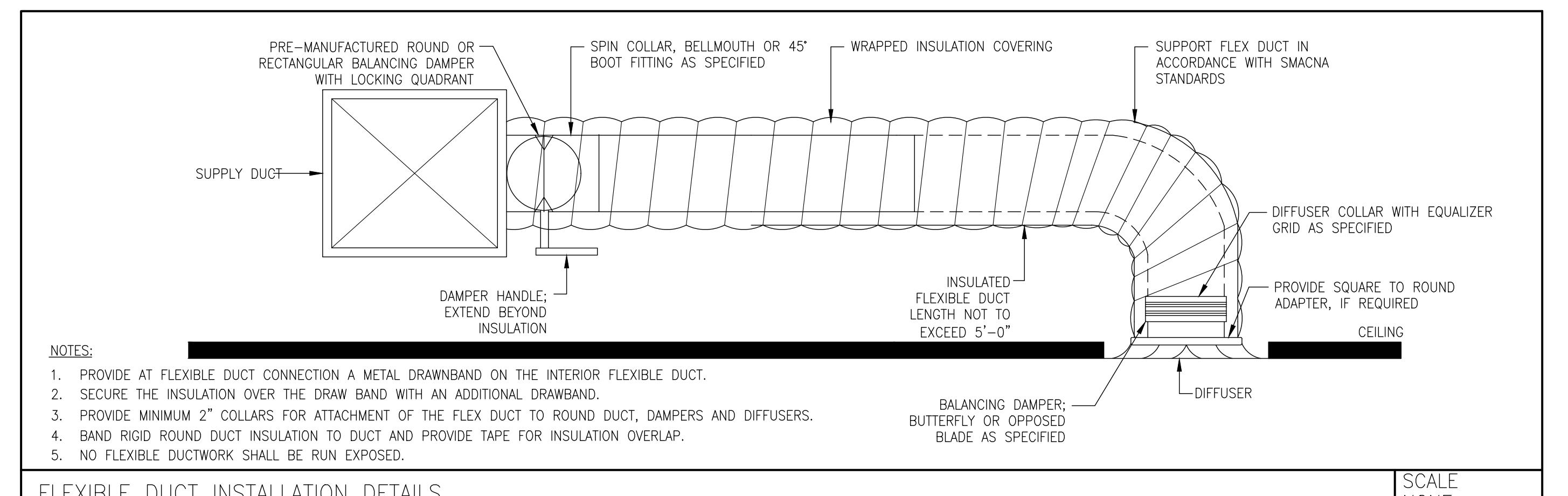
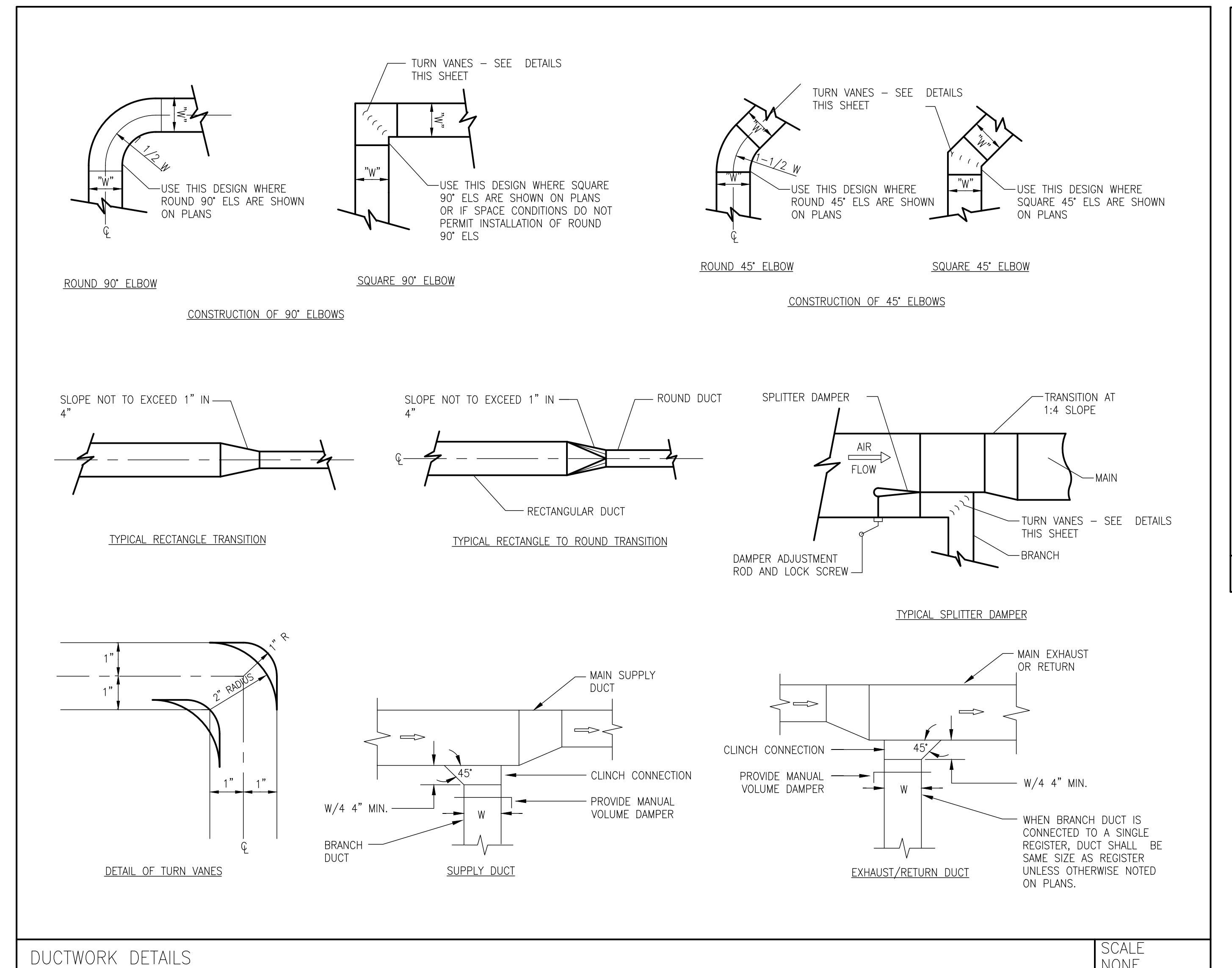
# Architectura

PROPOSED RESIDENTIAL DEVELOPMENT (BUILDING E)  
VILLAGE SCHOOL COMMONS  
511 DURIE AVENUE, CLOSTER, NEW JERSEY  
BLOCK 1316 LOT 9

CONRAD RONCATI, R.A.  
N.J. ARCHITECT: A-12279

DRAWING TITLE  
**MECHANICAL DETAILS**  
(NOT FOR CONSTRUCTION)

SCALE AS SHOWN	DRAWN BY
DATE 07/25/2024	SHEET NO.
PROJECT NUMBER 2023015	M301



**HANGER SPACING/ROD SIZE SCHEDULE**

PIPE SIZE	MINIMUM HANGER ROD SIZE	MAXIMUM HANGER SPACING: COPPER TYPE ACR, L, K
1/4"	3/8"	5'
3/8"	3/8"	5'
1/2"	3/8"	5'
5/8"	3/8"	5'
3/4"	3/8"	5'
7/8"	3/8"	5'
1"	3/8"	6'
1-1/8"	3/8"	6'
1-1/4"	3/8"	7'
1-3/8"	3/8"	7'
1-1/2"	3/8"	8'
1-5/8"	3/8"	8'
2"	1/2"	8'
2-1/8"	1/2"	8'

**PIPE HANGER DETAIL**





REV. NO.	DATE	DESCRIPTION
		Johnson & Urban, LLC One Executive Drive Fort Lee, New Jersey 07024 201-346-1400 fax 201-346-1418 frontdesk@architecture.com ■ ■ architecture interior design planning

Mark E. Loring, P.E.  
N.J. State P.E. Reg. #012279  
201-644-2324  
Cell Phone: 201-772-1500  
IAC Project # 24-067

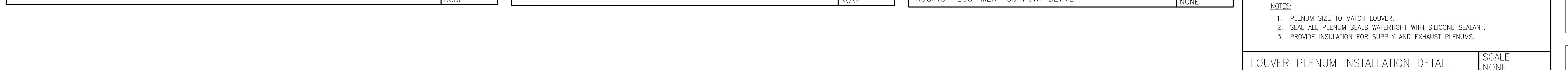
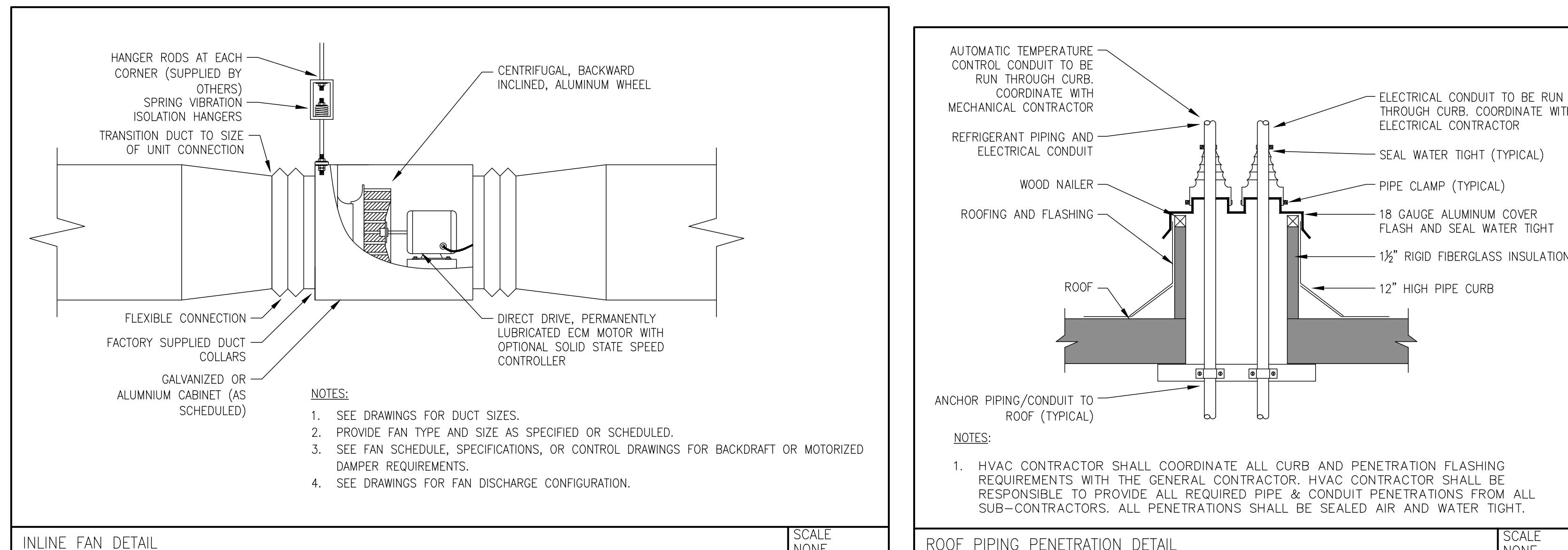
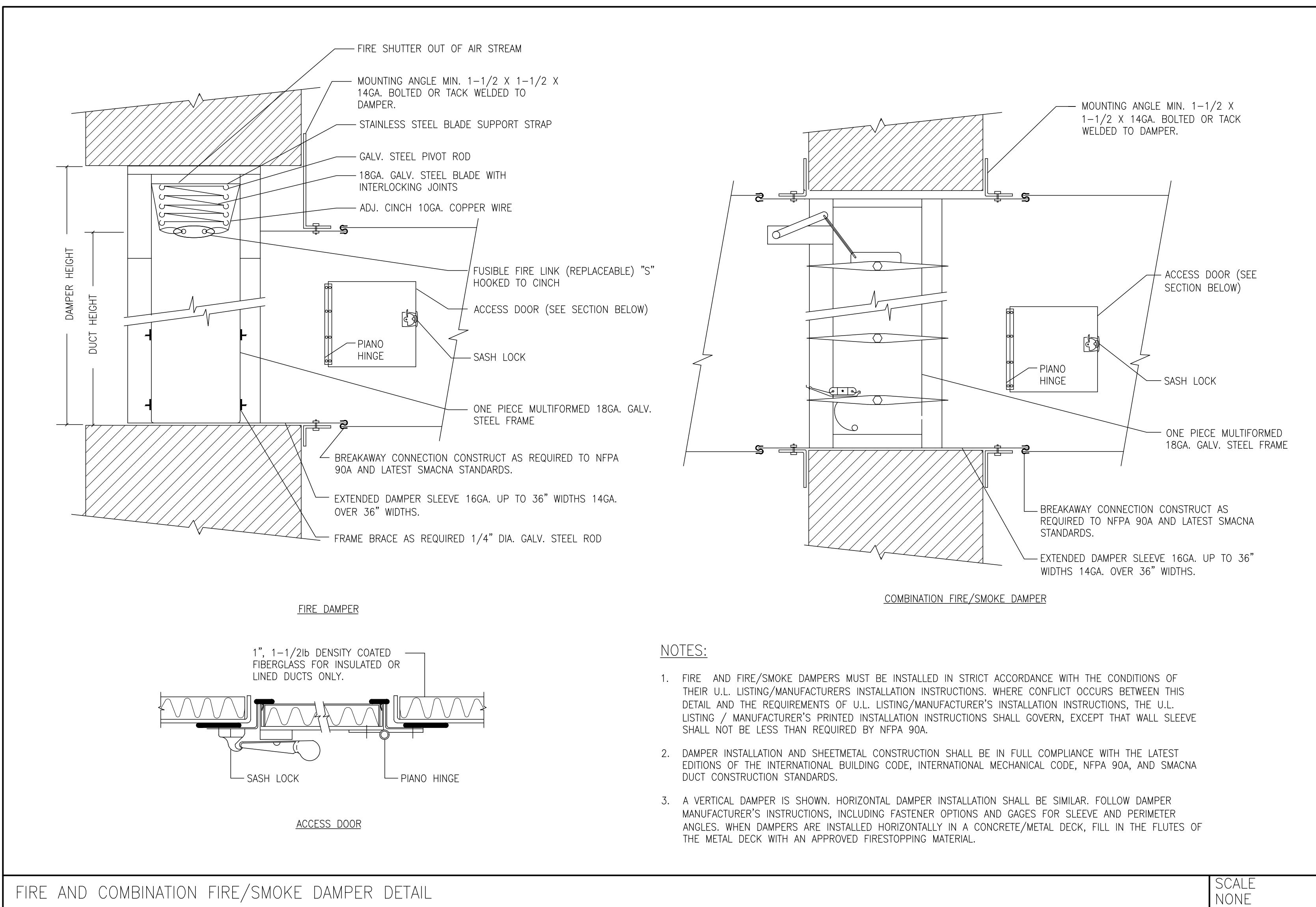
# Architecture

Suite 1100  
One Executive Drive  
Fort Lee, New Jersey 07024  
201-346-1400 fax 201-346-1418  
frontdesk@architecture.com

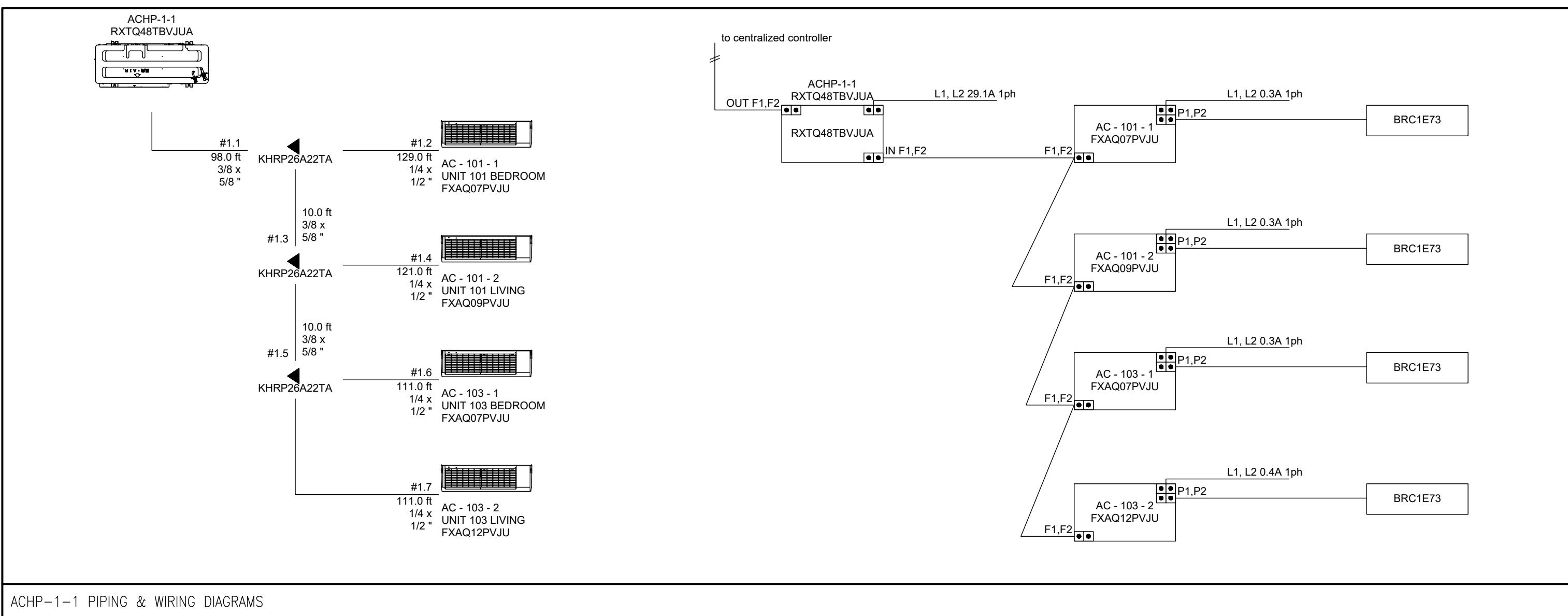
■ ■ architecture  
interior design  
planning

PROPOSED RESIDENTIAL DEVELOPMENT (BUILDING E)  
VILLAGE SCHOOL COMMONS  
511 DURIE AVENUE, CLOSTER, NEW JERSEY  
BLOCK 316 LOT 9

ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE THE ORIGINAL AND PUBLISHED OR UNPUBLISHED WORK OF THE ARCHITECT, ARCHITECTURE, INC. THEY MAY NOT BE DUPLICATED, USED, TRANSFORMED OR DISTRIBUTED FOR ANY REASON WITHOUT THE EXPRESSED WRITTEN PERMISSION OF THE ARCHITECT.

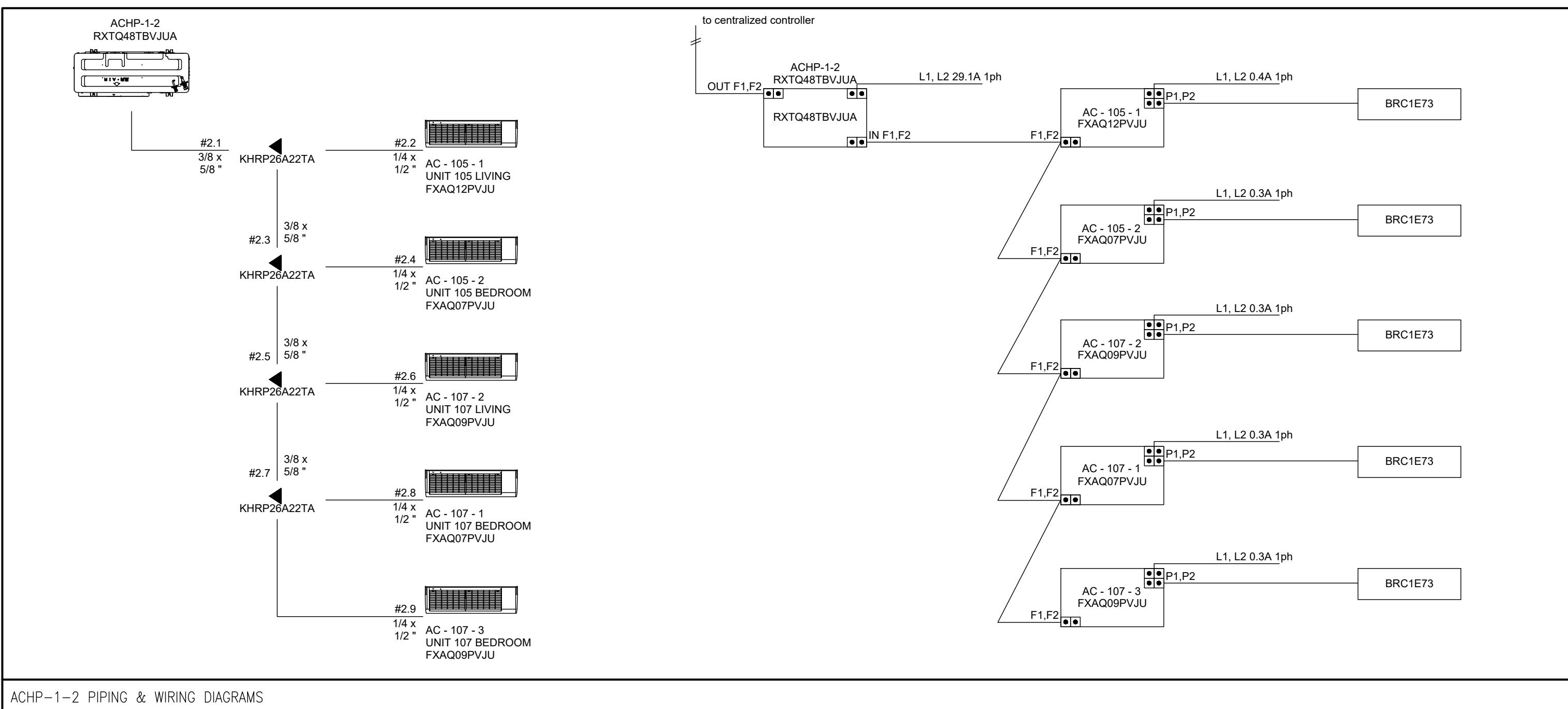


MECHANICAL DETAILS	
(NOT FOR CONSTRUCTION )	
SCALE	DRAWN BY
AS SHOWN	EL
DATE	
07/25/2024	
PROJECT NUMBER	
2023015	M302

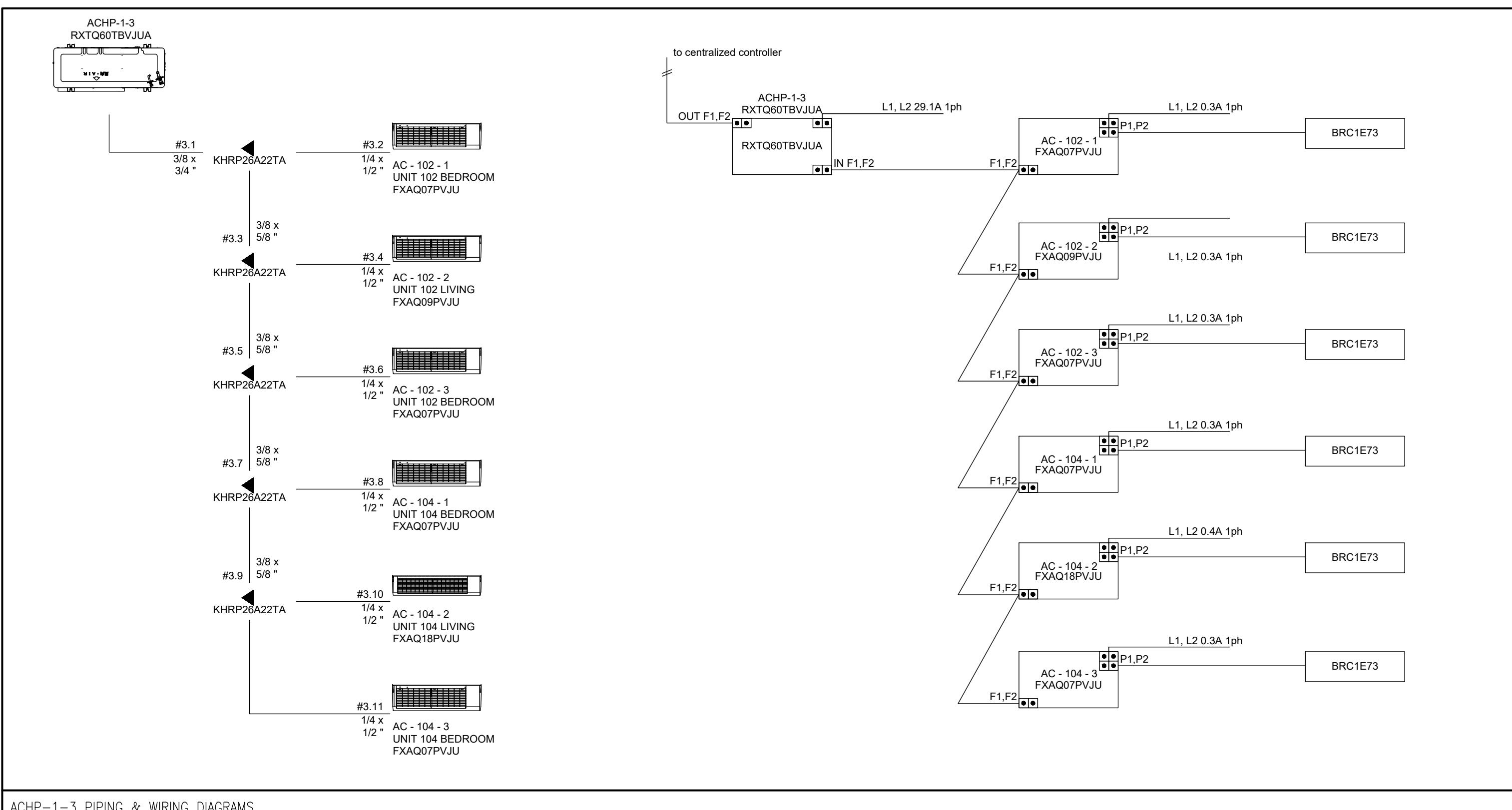


VRV PIPING & WIRING GENERAL NOTE

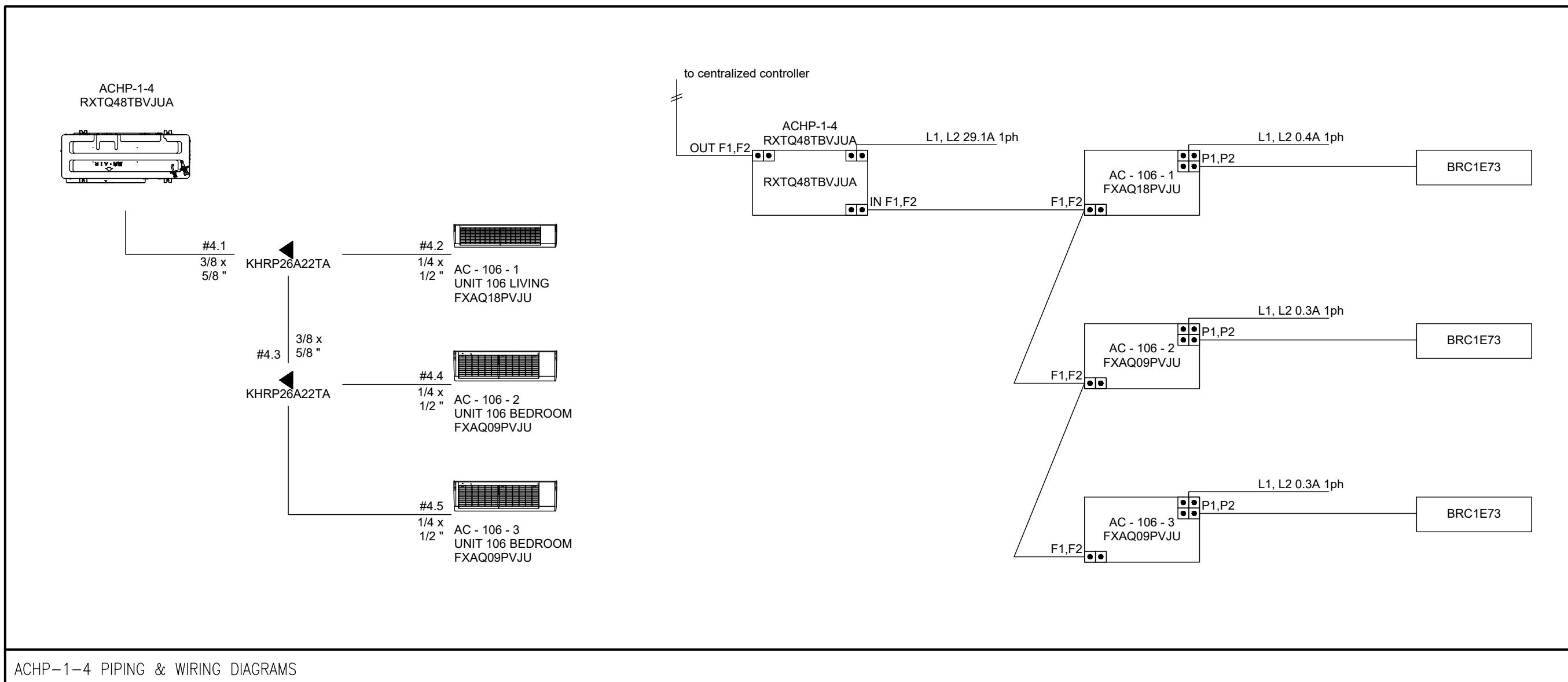
PROVIDE ALL REFRIGERANT PIPING AND ACCESSORIES BETWEEN ALL OUTDOOR AND INDOOR UNITS. INSTALL, SIZE, CHARGE, AND INSULATE REFRIGERANT PIPING AS DIRECTED BY MANUFACTURER'S WRITTEN INSTALLATION MANUAL. PROVIDE ALL POWER AND CONTROL WIRING AS DIRECTED BY MANUFACTURE'S WRITTEN INSTALLATION MANUAL. INCREASE PIPE SIZES AND PROVIDE ADDITIONAL REFRIGERANT CHARGE AS REQUIRED TO ACCOMMODATE FIELD CONDITIONS. CONTRACTOR SHALL FIELD VERIFY FINAL PIPE ROUTING AND LENGTHS.



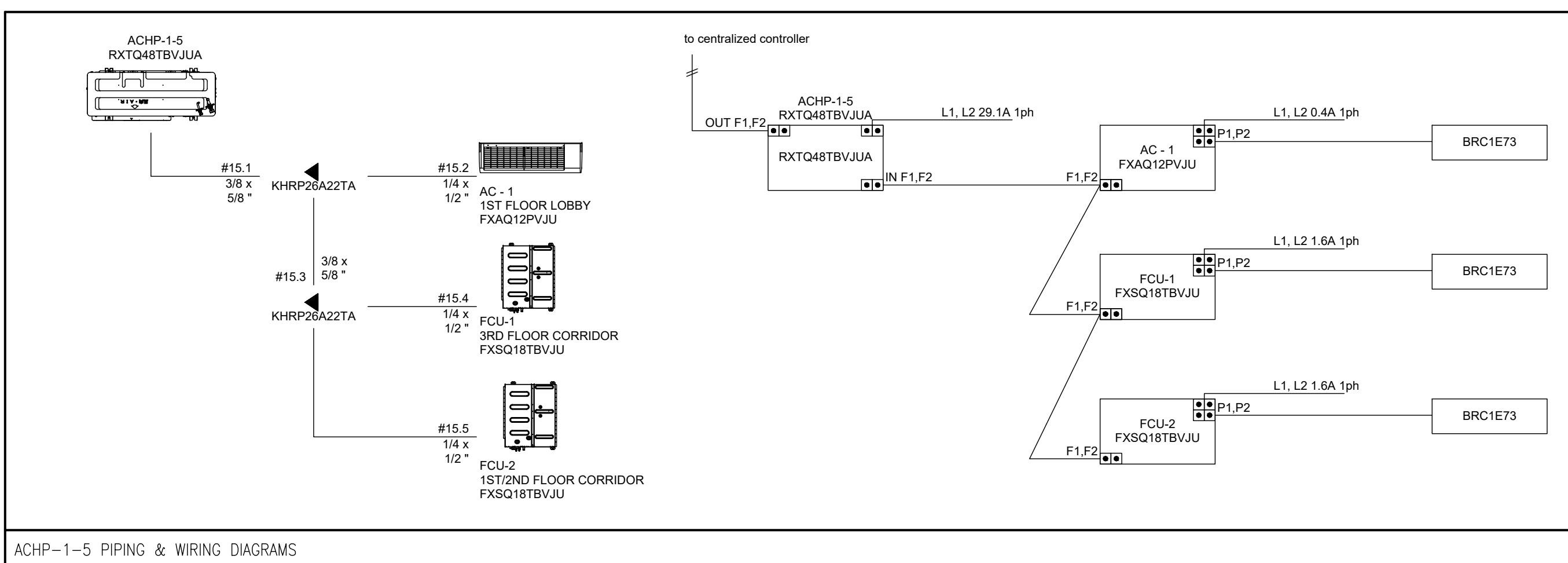
ACHP-1-2 PIPING & WIRING DIAGRAMS



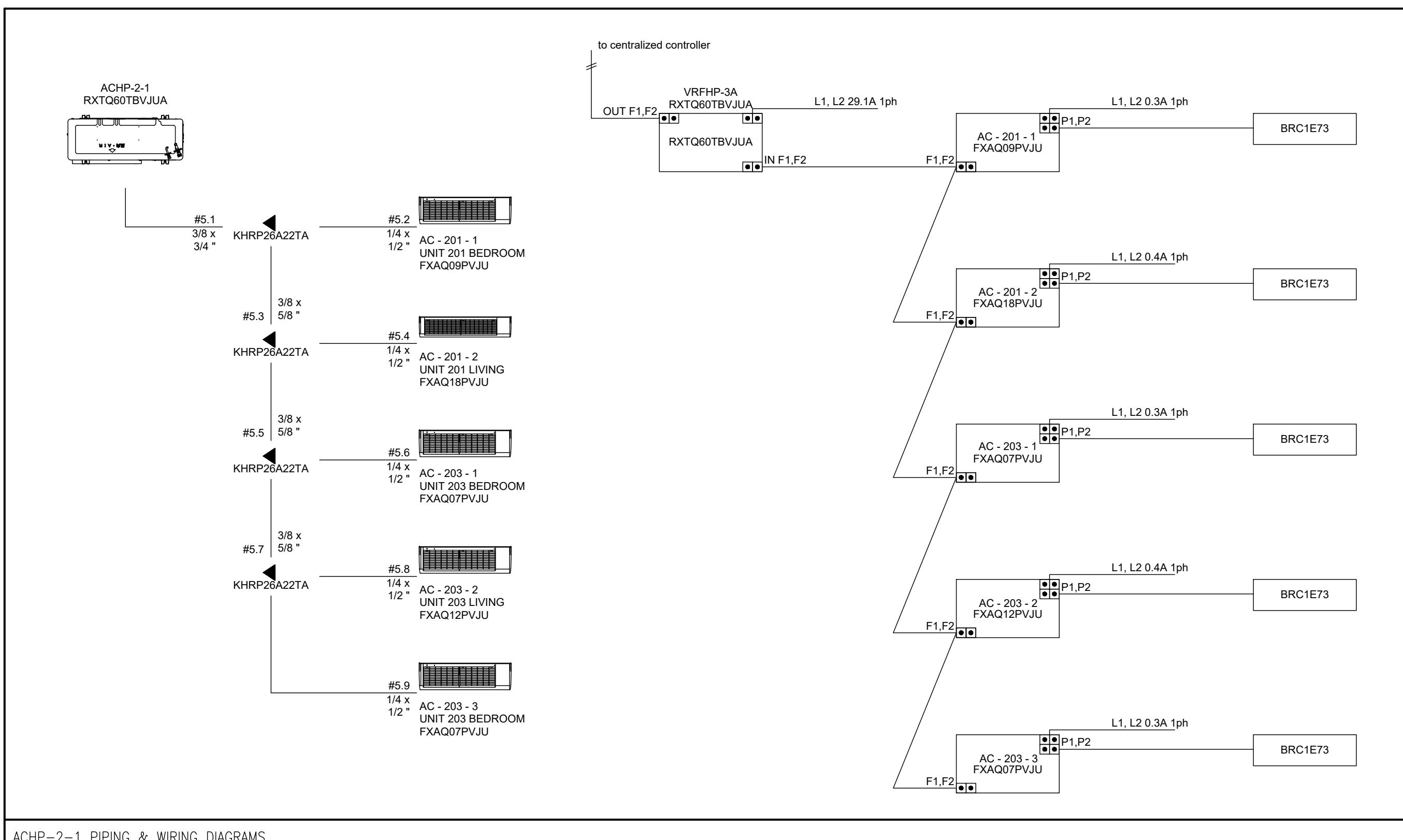
ASME T-35 PINING & WIRING DIAGRAMS



ACHP-1-4 PIPING & WIRING DIAGRAMS



ACHP-1-5 PIPING & WIRING DIAGRAMS



## ASME 2 PIPING & WIRING DIAGRAMS

# Architecture

---

## ■ ■ ■

PROPOSED RESIDENTIAL DEVELOPMENT (BUILDING E)  
VILLAGE SCHOOL COMMONS

suite LL100  
One Executive Drive  
Fort Lee, New Jersey 07024  
201-346-1400 fax 201-364-1418  
[frontdesk@architecture.com](mailto:frontdesk@architecture.com)

■ ■ ■ architecture

---

# Architecture

## • • •

PROPOSED RESIDENTIAL DEVELOPMENT (BUILDING E)

# VILLAGE SCHOOL COMMONS

511 DUKE AVENUE, CLOSTER, NEW JERSEY

1

4

1

DRAWING TITLE	
<b>MECHANICAL VRF PIPING AND WIRING DIAGRAMS</b>	
(NOT FOR CONSTRUCTION )	
SCALE	DRAWN BY
AS SHOWN	EL
DATE	SHEET NO
07/25/2024	
PROJECT NUMBER	
2023015	<b>M401</b>





REV. NO.	DATE	DESCRIPTION
		Johnson & Urban, LLC Architects & Engineers 100 Morris Avenue, Suite 200 Newark, NJ 07105 Tel: 973.627.1500 Fax: 973.627.1505 E-mail: info@johnsonurban.com Mark E. Loring, S.E., P.E. Principal-in-Charge N.J. Project # 24-067

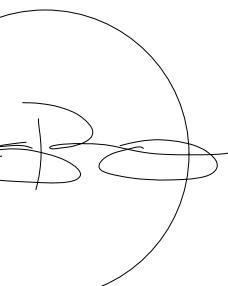
**J** Johnson & Urban, LLC  
Architects & Engineers

201-646-1400, Fax: 201-646-1418  
Front Desk: 201-646-1418  
JUL Project # 24-067

# Architecture

PROPOSED RESIDENTIAL DEVELOPMENT (BUILDING E)  
VILLAGE SCHOOL COMMONS  
511 DURIE AVENUE, CLOSTER, NEW JERSEY  
BLOCK 316 LOT 9

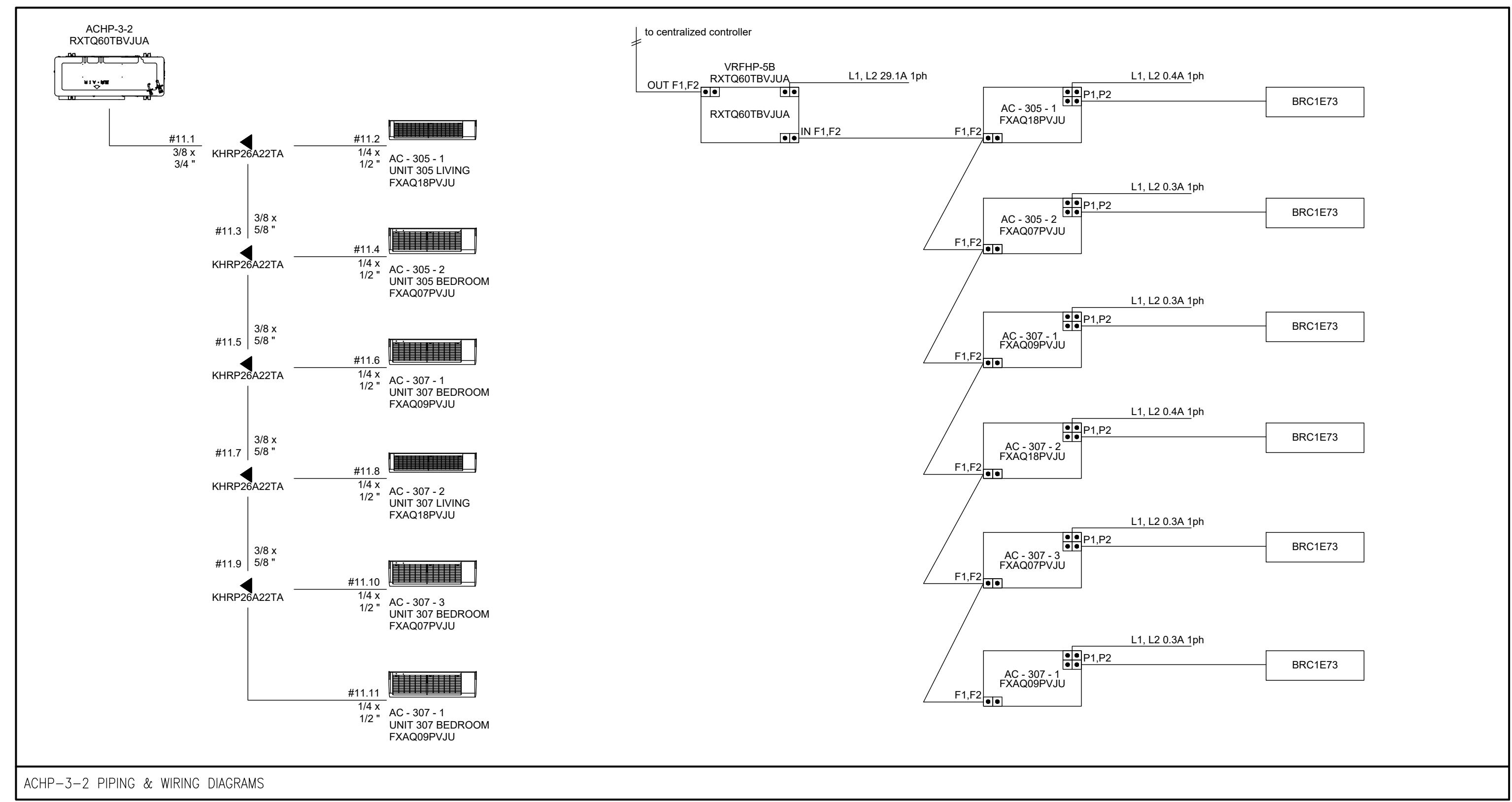
CONRAD RONCATI, R.A.  
NJ ARCHITECT - A-12279



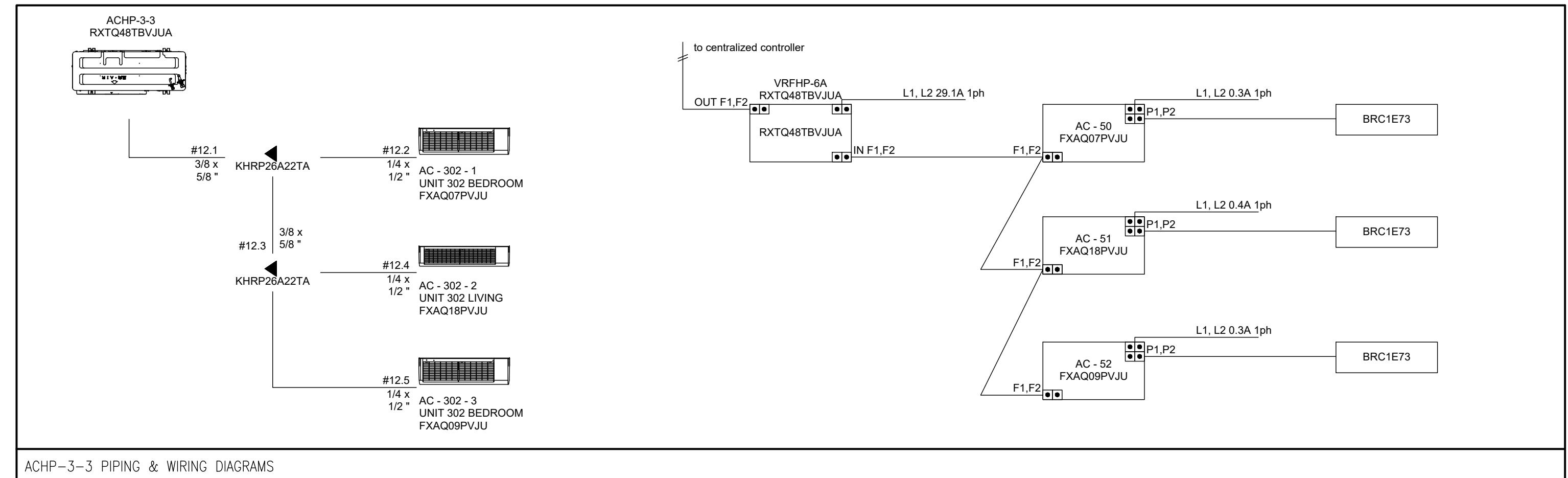
DRAWING TITLE	
MECHANICAL VRF PIPING AND WIRING DIAGRAMS	
(NOT FOR CONSTRUCTION)	
SCALE AS SHOWN	DRAWN BY EL
DATE 07/25/2024	SHEET NO.
PROJECT NUMBER 2023015	M403

**VRV PIPING & WIRING GENERAL NOTE**

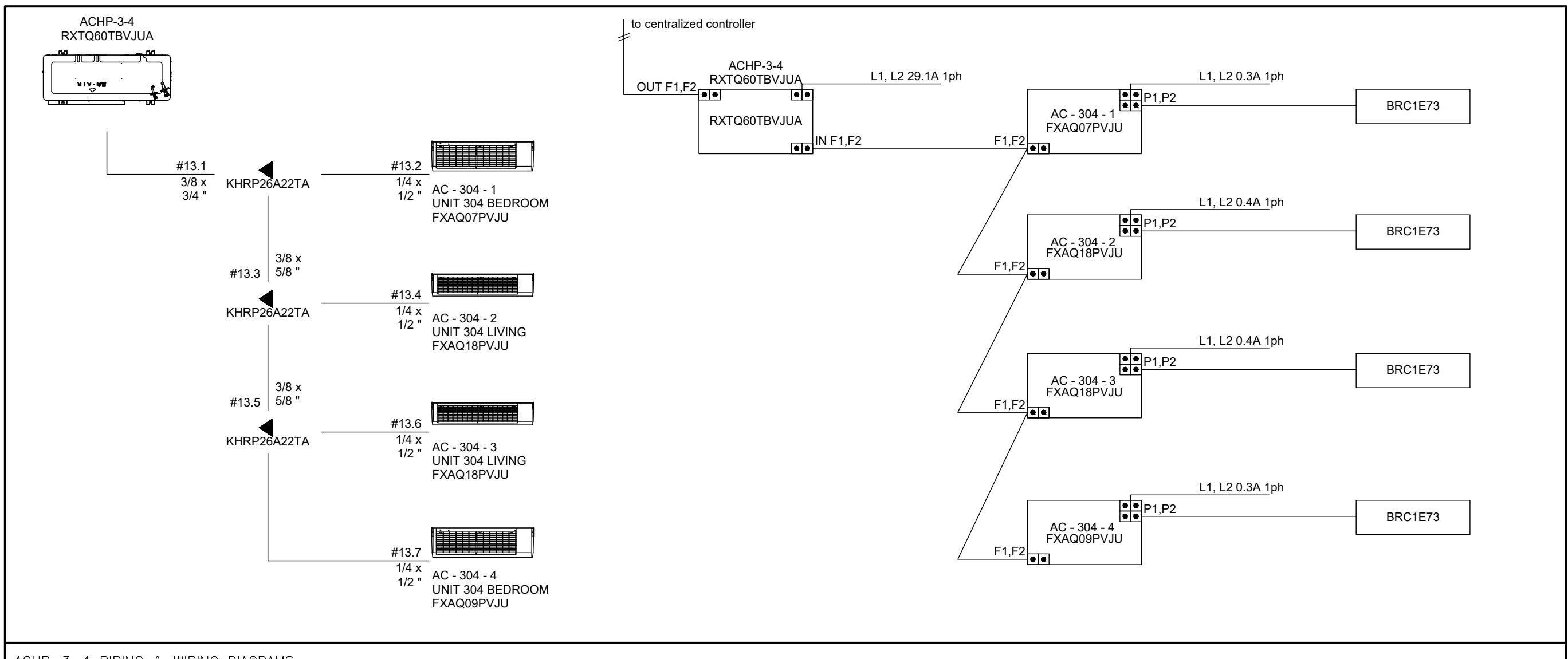
PROVIDE ALL REFRIGERANT PIPING AND ACCESSORIES BETWEEN ALL OUTDOOR AND INDOOR UNITS. INSTALL, SIZE, CHARGE, AND INSULATE REFRIGERANT PIPING AS DIRECTED BY MANUFACTURER'S WRITTEN INSTALLATION MANUAL. PROVIDE ALL POWER AND CONTROL WIRING AS DIRECTED BY MANUFACTURER'S WRITTEN INSTALLATION MANUAL. INCREASE PIPE SIZES AND PROVIDE ADDITIONAL REFRIGERANT CHARGE AS REQUIRED TO ACCOMMODATE FIELD CONDITIONS. CONTRACTOR SHALL FIELD VERIFY FINAL PIPE ROUTING AND LENGTHS.



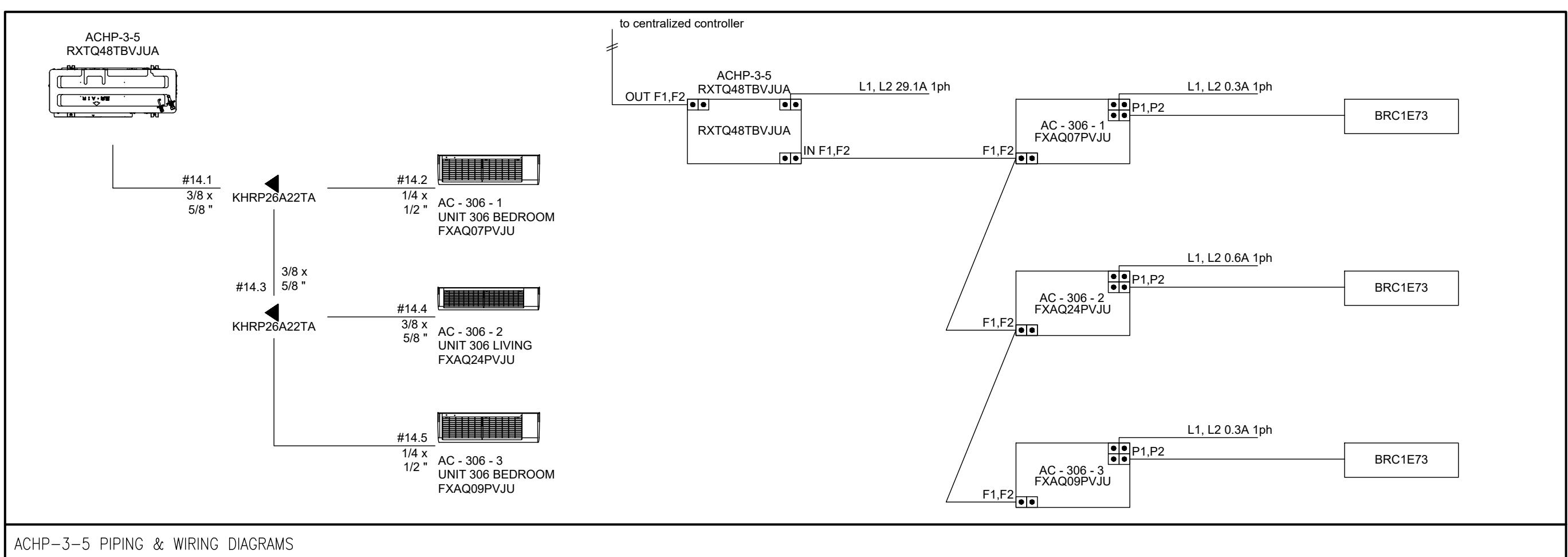
ACHP-3-2 PIPING & WIRING DIAGRAMS



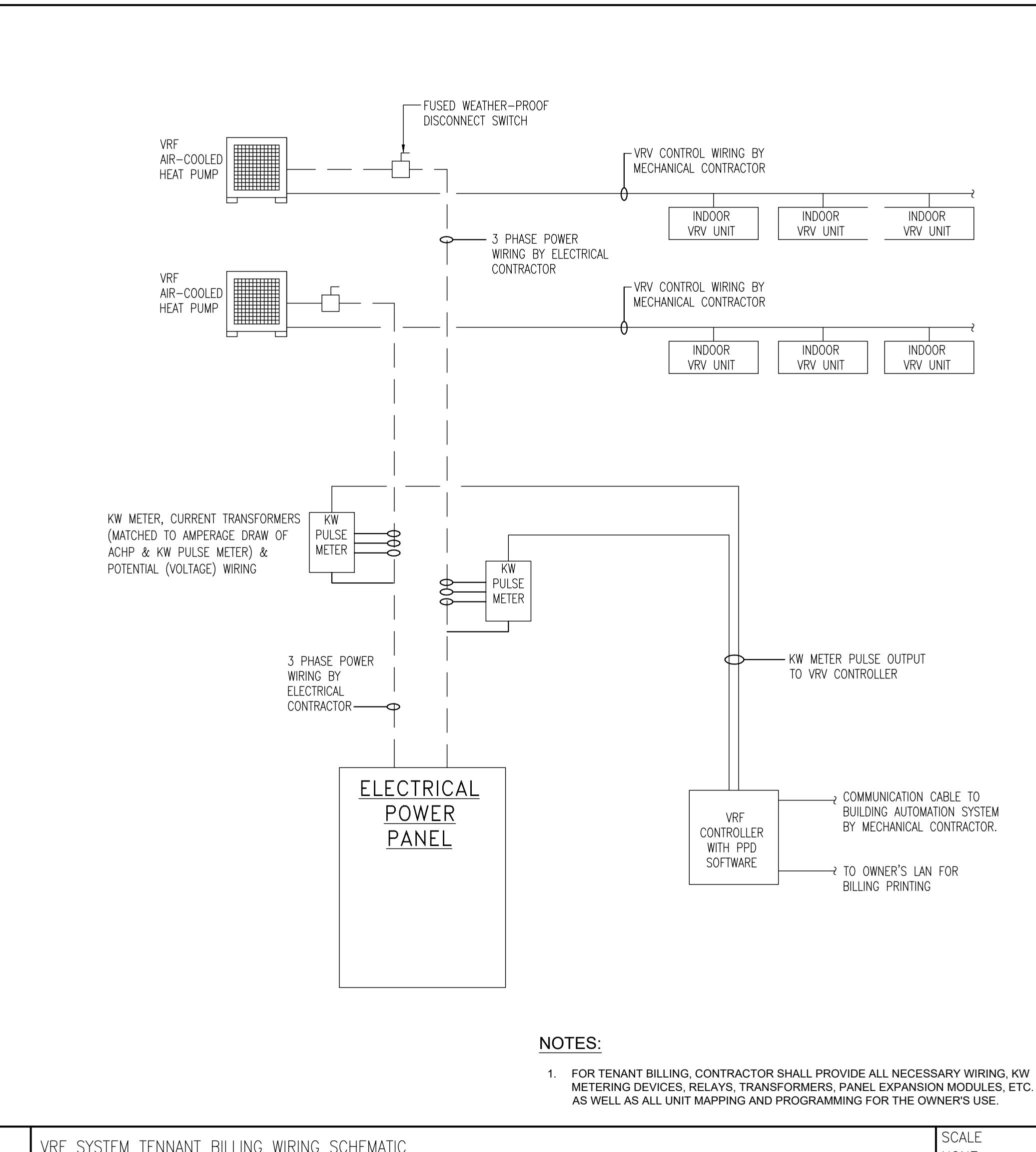
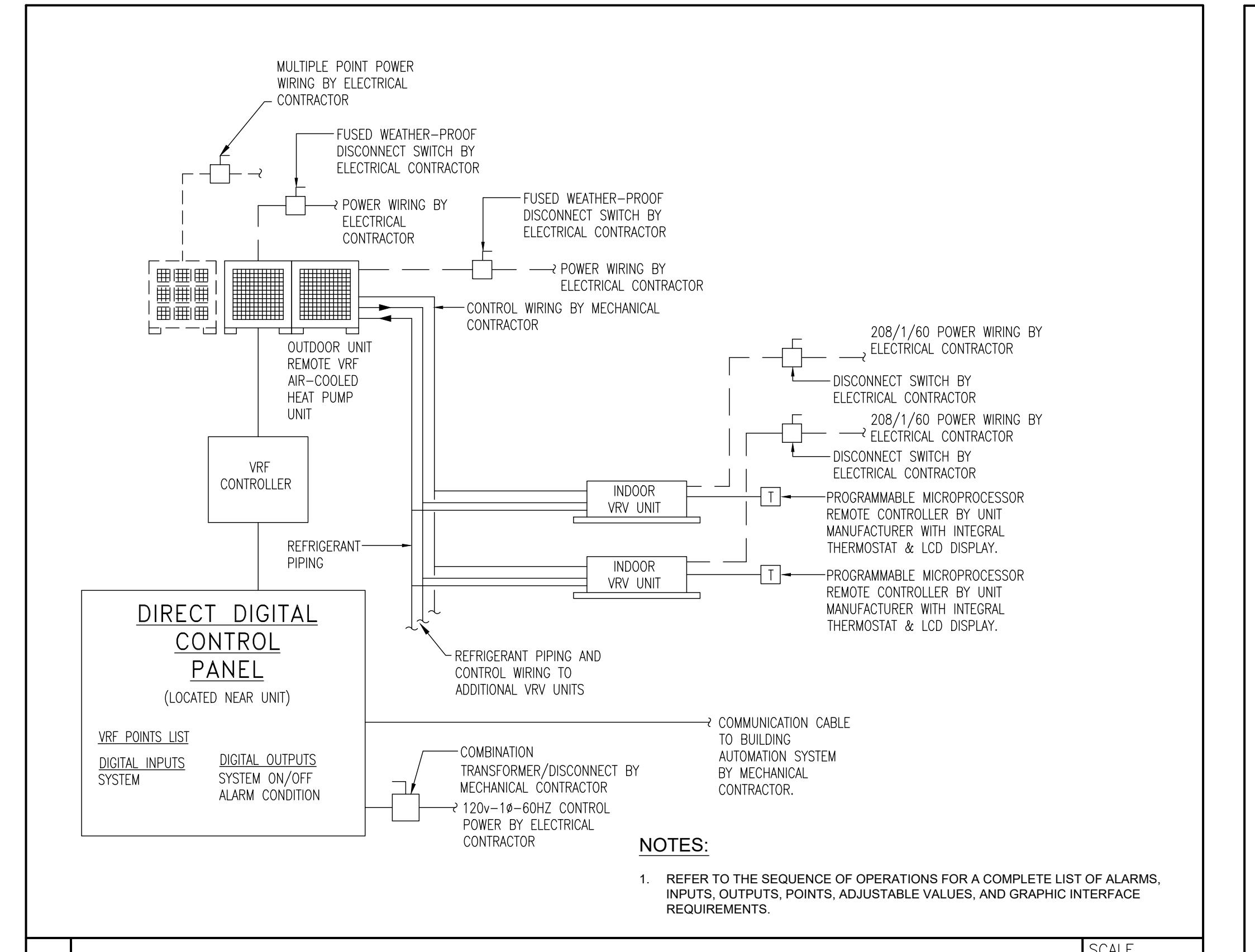
ACHP-3-3 PIPING & WIRING DIAGRAMS



ACHP-3-4 PIPING & WIRING DIAGRAMS



ACHP-3-5 PIPING & WIRING DIAGRAMS



RF & SPLIT SYSTEM – SEQUENCE OF OPERATION

## GENERAL

ALL VRV AND SPLIT SYSTEM COMPONENTS SHALL BE EQUIPPED WITH INTEGRAL CONTROLS. ALL COMPONENTS OF THE SYSTEMS SHALL BE INTEGRATED INTO THE ATC SYSTEM VIA A BACNET GATEWAY. THE ATC CONTRACTOR SHALL MAP AVAILABLE POINTS THROUGH THE GATEWAY TO THE ATC SYSTEM. THE SYSTEMS SHALL HAVE THE ABILITY TO BE SCHEDULED, MONITORED, AND CONTROLLED THROUGH THE ATC SYSTEM. COORDINATE AVAILABLE POINTS AND CONTROL FUNCTIONS WITH THE SYSTEMS MANUFACTURER.

FOR TENANT BILLING, CONTRACTOR SHALL PROVIDE ALL NECESSARY WIRING, KW METERING DEVICES, RELAYS, TRANSFORMERS, PANEL EXPANSION MODULES, ETC. AS WELL AS ALL UNIT MAPPING AND PROGRAMMING FOR THE OWNER'S USE.

## UNOCCUPIED MODE

WHEN THE SYSTEM IS IN THE UNOCCUPIED MODE, THE INDOOR UNIT SUPPLY FAN WILL BE OFF. THE SPACE CONTROLLER SHALL CYCLE THE SUPPLY FAN AND DX COOLING/HEATING TO MAINTAIN A MAXIMUM SPACE TEMPERATURE OF 85°F AND A MINIMUM SPACE TEMPERATURE OF 60°F (ADJ).

## OCCUPIED MODE

THE SPACE CONTROLLER SHALL OPERATE THE SUPPLY FAN AND DX COOLING/HEATING TO MAINTAIN A SUMMER MODE SPACE TEMPERATURE OF 75°F AND A WINTER MODE SPACE TEMPERATURE OF 70°F (ADJ).

WHEN THE SYSTEM IS IN THE OCCUPIED MODE, THE INDOOR UNIT SUPPLY FAN WILL OPERATE ACCORDING TO THE FOLLOWING:

- WHERE OUTDOOR AIR IS DIRECTLY DUCTED TO THE INDOOR UNIT RETURN OR OUTDOOR AIR DUCT KNOCKOUT CONNECTION - SUPPLY FAN SHALL OPERATE CONTINUOUSLY.
- WHERE OUTDOOR AIR IS DIRECTLY SUPPLIED TO THE CONDITIONED SPACE AND IS NOT SUPPLIED THROUGH THE INDOOR UNIT - SUPPLY FAN SHALL CYCLE.

## DRAIN PAN OVERFLOW PROTECTION

INSTALL CONDENSATE LEVEL SENSOR IN ALL DRAIN PANS. THE CONTROL SYSTEM SHALL MONITOR THE SENSOR AND WHENEVER IT DETECTS A HIGH LEVEL CONDITION THE CONTROLS SHALL DISABLE THE UNIT AND GENERATE AN ALARM.

## FILTER STATUS

A MAINTENANCE TIMER SHALL BE INCORPORATED INTO THE SYSTEM TO SIGNAL A FILTER CHANGE AFTER A CONFIGURABLE NUMBER OF FAN RUN HOURS. PROVIDE THIS FOR ALL UNITS.

## BMS INTERFACE

AT THE FRONT END WORKSTATION, THE FOLLOWING AVAILABLE MONITORING POINTS SHALL BE MAPPED FROM THE SYSTEMS FOR EACH PIECE OF EQUIPMENT. PROVIDE A DYNAMIC COMPUTERIZED GRAPHICAL REPRESENTATION OF THE UNIT AND COMPONENTS. REFER TO THE SYSTEM MANUFACTURER'S BACNET INTERFACE DESIGN GUIDE FOR FURTHER DESCRIPTION AND CONFIGURATION OF AVAILABLE POINTS. THE USER SHALL BE CAPABLE OF VIEWING SETPOINTS AND OPERATIONAL CONDITIONS OF THE FOLLOWING:

- INDOOR UNIT ALARM
- ROOM TEMPERATURE
- MALFUNCTION CODE
- THERMO-ON STATUS
- COMPRESSOR STATUS
- INDOOR FAN STATUS

AT THE FRONT END WORKSTATION, THE FOLLOWING AVAILABLE OPERATION, CONFIGURATION, AND MONITORING POINTS SHALL BE MAPPED FROM THE SYSTEMS FOR EACH PIECE OF EQUIPMENT. PROVIDE A DYNAMIC COMPUTERIZED GRAPHICAL REPRESENTATION OF THE UNIT AND COMPONENTS. REFER TO THE SYSTEM MANUFACTURER'S BACNET INTERFACE DESIGN GUIDE FOR FURTHER DESCRIPTION AND CONFIGURATION OF AVAILABLE POINTS. THE USER SHALL BE CAPABLE OF VIEWING AND ADJUSTING SETPOINTS AND OPERATIONAL CONDITIONS OF THE FOLLOWING::

- INDOOR UNIT ON/OFF
- OPERATION MODE
- SETPOINT SETTING
- FILTER SIGN AND RESET
- REMOTE CONTROLLER PERMIT/PROHIBIT
- FAN SPEED SETTING
- FORCED SYSTEM STOP
- FORCED THERMO-OFF

AUTOMATIC TEMPERATURE CONTROL (ATC) GENERAL NOTES

1. THE AUTOMATIC TEMPERATURE CONTROL (ATC) SYSTEM SHALL BE A NETWORK OF STAND ALONE BACNET DIRECT DIGITAL CONTROL (DDC) PANELS FOR AUTOMATIC UNATTENDED OPERATION OF THE NEW HVAC EQUIPMENT.
2. THE ATC SYSTEM SHALL BE INSTALLED BY COMPETENT MECHANICS REGULARLY EMPLOYED BY THE CONTROL SYSTEM MANUFACTURER OR AN APPROVED AUTHORIZED AGENT WITH FULL RESPONSIBILITY FOR PROPER OPERATION OF THE CONTROL SYSTEM INCLUDING DEBUGGING AND PROPER CALIBRATION OF EACH COMPONENT IN THE ENTIRE SYSTEM.
3. ATC CONTRACTOR SHALL THOROUGHLY EXAMINE ALL PROJECT CONTRACT DOCUMENTS AND INSPECT THE SITE, IF APPLICABLE, FOR CONTROL DEVICE AND EQUIPMENT LOCATIONS TO VERIFY THAT EQUIPMENT CAN BE INSTALLED AS SHOWN.
4. ALL EQUIPMENT, INSTALLATION, RACEWAYS, CONTROL AND INTERLOCK WIRING, SHALL COMPLY WITH ACCEPTABLE INDUSTRY STANDARDS FOR PERFORMANCE, RELIABILITY, AND COMPATIBILITY AND SHALL BE EXECUTED IN STRICT ADHERENCE WITH NATIONAL AND LOCAL ELECTRICAL CODES.
5. ALL EQUIPMENT SHALL BE PROVIDED WITH A HAND-AUTO-OFF SWITCH. ALL SAFETY DEVICES SHALL BE WIRED SO THEY STOP THE MOTOR WITH THE HAND-OFF-AUTO SWITCH IN THE HAND AS WELL AS THE AUTO POSITION. THIS WILL NORMALLY MEAN BREAKING THE COMMON WIRE FROM THE HAND-OFF-AUTO SWITCH TO THE STARTER'S HOLDING COIL THROUGH THE SAFETY DEVICES.

6. THE ATC CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY PROGRAMMING AND COORDINATION WITH EQUIPMENT MANUFACTURERS TO ACCOMMODATE THE NEW MECHANICAL EQUIPMENT. PROVIDE COLOR, ON SCREEN GRAPHICS SHOWING ALL AVAILABLE CONTROL INPUTS, EQUIPMENT STATUS, AND ADJUSTABLE SETTINGS.
7. THE ATC CONTACTOR SHALL PROVIDE ALL REQUIRED PROGRAMMING AND SCHEDULING OF THE ATC SYSTEM. COORDINATE EQUIPMENT SCHEDULES, OPERATING CHARACTERISTICS, ETC. WITH THE BUILDING OWNER.
8. THE CONTROL SYSTEM SHALL INCLUDE REMOTE WEB-BASED ACCESS AND LOCAL COMPUTER DISPLAYS LOCATED IN THE FACILITY MANAGEMENT OFFICE. GRAPHICS PACKAGE SHALL SHOW FLOOR PLAN AND EQUIPMENT SCHEMATICS WITH COLOR-CODED INDICATION SHOWING ALARM/WARNING. ALL DESIGN VALUES THAT ARE USER-ADJUSTABLE, EXCEPT FOR ROOM SET POINT, SHALL BE HARD CODED TO DISPLAY ON SCREEN ALLOWING FOR EASY REFERENCE TO MANUALLY INPUT BACK TO DEFAULT VALUES. WORKSTATION TO INCLUDE: 32" LED SCREEN, KEYBOARD, MOUSE AND PRINTER.

9. SECURED OFFSITE REAL-TIME BACKUP SHALL BE PROVIDED FOR ALL PROGRAMMING, FUNCTIONS AND SETPOINTS TO ENABLE REMOTE OPERATION IN THE EVENT OF LOCAL FAILURE OF THE HOST COMPUTER.

10. THE OWNER SHALL BE PROVIDED WITH FULL OWNERSHIP AND ACCESS TO THE ATC SYSTEM AT COMPLETION OF PROJECT. THIS SHALL INCLUDE ALL SOFTWARE, PROGRAMMING INTERFACE, PASSWORDS AND PROGRAMMING DISK. NOTE NO PART OF THE SYSTEM SHALL BE LICENSED OR CONTROLLED BY THE ATC CONTRACTOR.
11. THE SYSTEM DESIGN SHALL INCLUDE THE CAPACITY TO SUPPORT 15% ADDITIONAL POINTS.
12. ACCESS SHALL BE PROVIDED AT A MINIMUM OF FOUR LEVELS. RECOMMEND THE FOLLOWING: LEVEL 4-ONLY READ ACCESS, LEVEL 3-OCCUPIED/UNOCCUPIED AND ROOM TEMPERATURE RANGES, LEVEL 2-FULL USER INPUT CHANGES, LEVEL 1-PROGRAMMING. COORDINATE EXACT REQUIREMENTS WITH SCHOOL PERSONNEL.
13. PROVIDE ALL REQUIRED EQUIPMENT CONTROLLERS, RELAYS, CURRENT SENSORS, SPACE SENSORS, DUCT SENSORS, SWITCHES, DAMPERS, VALVES, ACTUATORS, INTERCONNECTING WIRING, CONDUIT, ENCLOSURES, ETC. FOR A COMPLETE AND OPERATIONAL INSTALLATION.
14. THE CONTROL SEQUENCES DESCRIBE ALL NECESSARY EQUIPMENT OPERATION INCLUDING THOSE OPERATIONS THAT ARE PROVIDED BY THE HVAC EQUIPMENT MANUFACTURERS AND THOSE AS PART OF THE CENTRAL CONTROL SYSTEM. REFER TO INDIVIDUAL EQUIPMENT SPECIFICATIONS FOR DEVICES PROVIDED BY THE HVAC EQUIPMENT MANUFACTURERS. IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO PROVIDE A FULLY COORDINATED AND OPERATIONAL CONTROL SYSTEM.

15. WHERE THE ATC IS INTERFACING WITH AN UNIT'S INTERNAL CONTROLLER THE ATC CONTRACTOR SHALL CONFIRM THAT THE UNIT WILL BE ABLE TO OPERATE AS REQUIRED IN THE SEQUENCE AND SUBMIT THE MANUFACTURER'S LITERATURE (SEQUENCE AND COMPONENT DIAGRAM) WITH THE ATC SHOP DRAWING AND O&M MANUALS. THE CONTRACTOR SHALL PROVIDE LISTING OF ALL AVAILABLE BACNET POINTS FOR EACH PIECE OF MECHANICAL EQUIPMENT. THE LISTING WILL BE USED BY THE OWNER TO INDICATE WHICH DATA POINTS SHALL BE REPORTED AT THE BMS FRONT END. ANY DEVICES NOT INCLUDED AS PART OF FACTORY INSTALLED COMPONENTS SHALL BE PROVIDED/INSTALLED BY ATC.
16. ATC CONTRACTOR SHALL SUBMIT FOUR (4) COPIES OF ENGINEERED SHOP DRAWINGS AND MANUFACTURER'S SPECIFICATION DATA SHEETS FOR ALL HARDWARE AND SOFTWARE TO BE PROVIDED. NO WORK SHALL BEGIN ON ANY SEGMENT OF THIS PROJECT UNTIL THE ENGINEER AND OWNER HAVE REVIEWED THE SUBMITTALS FOR CONFORMITY WITH THE PLANS AND SPECIFICATIONS.

17. ALL THERMOSTATS LOCATED IN COMMON/PUBLIC SPACES, WHETHER PROVIDED BY THE HVAC EQUIPMENT MANUFACTURER OR THE CONTROLS MANUFACTURER SHALL BE PROVIDED WITH MATCHING LOCKING METAL COVERS BY THE CONTROLS MANUFACTURER IN ORDER TO PREVENT UNAUTHORIZED TAMPERING AND VANDALISM.

18. ALL ZONE EQUIPMENT (I.E. FCU, VAV, SINGLE ZONE ERU, RTU) TO BE PROVIDED WITH LOCAL ADJUSTABLE THERMOSTAT. DEVICE TO INCLUDE WARMER/COLDER SLIDER, ATC ADJUSTED ALLOWABLE SETPOINT RANGES AND OVERRIDE BUTTON.

19. WHERE NOTED ON PLANS 24V CONTROL DEVICES SHALL BE POWERED FROM TRANSFORMERS INSTALLED WITHIN THE ATC CONTROL PANEL.

20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL 120V AND 24V POWER NEEDS FOR CONTROL DEVICES. ALL ATC POWER TO BE CONNECTED TO EMERGENCY CIRCUITS (WHERE APPLICABLE)

21. ALL EXPOSED CONTROL WIRING LOCATED IN UNFINISHED SPACE (MECHANICAL ROOMS), WITHIN WALL CAVITIES OR ABOVE INACCESSIBLE CEILING (DRYWALL CEILING) SHALL BE INSTALLED IN APPROPRIATELY SIZED E.M.T.

22. WIRING LOCATED ABOVE ACCESSIBLE CEILING TO BE SUPPORTED FROM CABLE TRAY OR J-HOOKS. WIRING SHALL NOT BE SUPPORTED FROM CEILING STRUCTURE. NO WIRING SHALL BE INSTALLED IN WIREMOLD UNLESS SPECIFICALLY NOTED ON PLANS OR APPROVED BY OWNER/ARCHITECT AT SPECIFIC LOCATIONS

23. ALL POWER WIRING SHALL BE INSTALLED IN APPROPRIATELY SIZED E.M.T. INSTALLATION OF ALL ELECTRICAL DEVICES AND WIRING SHALL FOLLOW WIRING METHODS SPECIFIED ON THE ELECTRICAL CONTRACT DRAWINGS AND SPECIFICATIONS.

24. MECHANICAL CONTRACT WORK WILL INCLUDE ALL CONTROL WIRING. POWER SUPPLY WIRING TO ALL ACTUATORS (VALVES, DAMPERS, ETC.), INCLUDING LOW VOLTAGE TRANSFORMERS, SHALL BE PROVIDED AS PART OF THE MECHANICAL CONTRACT.

25. INSTALL ALL EQUIPMENT IN READILY ACCESSIBLE LOCATIONS.

26. WHERE CLASS 2 WIRES ARE IN CONCEALED AND ACCESSIBLE LOCATIONS INCLUDING CEILING RETURN AIR PLENUMS, APPROVED CABLES, NOT IN RACEWAY MAY BE USED, PROVIDED THAT:
  - CIRCUITS MEET NEC CLASS 2 (CURRENT LIMITED) REQUIREMENTS. LOW-VOLTAGE POWER CIRCUITS SHALL BE SUB-FUSED WHEN REQUIRED TO MEET CLASS 2 CURRENT LIMIT;
  - ALL CABLES SHALL BE UL LISTED FOR APPLICATION, I.E. CABLES USED IN CEILING PLENUMS SHALL BE UL LISTED SPECIFICALLY FOR THAT PURPOSE.

28. INSTALL WIRING IN SLEEVES WHERE IT PASSES THROUGH WALLS AND FLOORS. MAINTAIN FIRE RATING AT ALL PENETRATIONS IN ACCORDANCE WITH SPECIFICATIONS AND LOCAL CODES. SLEEVES SHALL HAVE NYLON RINGS AT EACH END TO PROTECT WIRING JACKET.

29. WHERE WIRING IS RUN IN EXPOSED RACEWAYS, SUCH AS IN MECHANICAL EQUIPMENT ROOMS, WIRING SHALL BE IN EMT, RUN PARALLEL TO THE SURFACE OR PERPENDICULAR TO IT. CONTROL WIRING IN WET OR EXTERIOR LOCATIONS SHALL BE IN WEATHERPROOF EMT

30. SHOP DRAWINGS SHALL BE COMPLETE WITH POINT-TO-POINT TERMINATION WIRING DIAGRAMS, SYSTEM SEQUENCES OF OPERATION, AND ALL SYSTEM HARDWARE AND MODEL NUMBER TECHNICAL DATA SHEETS.

31. PROJECT RECORD DOCUMENTS: UPON COMPLETION OF THE INSTALLATION, SUBMIT THREE (3) COPIES OF PROJECT DRAWINGS AND OPERATING & MAINTENANCE (O&M) MANUALS. THESE SHALL BE THE 'AS-BUILT' VERSIONS OF THE APPROVED SUBMITTAL SHOP DRAWINGS AND THE PRODUCT DATA LITERATURE.

32. ATC COMPONENTS AND LABOR FURNISHED BY THIS SECTION SHALL BE WARRANTED TO BE FREE FROM DEFECTS FOR A PERIOD OF TWELVE MONTHS AFTER SUBSTANTIAL COMPLETION. BAS FAILURES DURING THE WARRANTY PERIOD SHALL BE ADJUSTED, REPAIRED, OR REPLACED AT NO CHARGE TO THE OWNER.

33. UPON NOTIFICATION OF THE OWNER'S REQUEST FOR WARRANTY SERVICE, THE BAS MANUFACTURER MUST ATTEMPT TO RECTIFY THE PROBLEM VIA TELEPHONE, WITHIN (8) HOURS OF NOTIFICATION. IF UNABLE TO RESOLVE VIA TELEPHONE, THE BAS MANUFACTURER SHALL RESPOND TO THE SITE WITHIN (24) HOURS OF THE ORIGINAL CALL AT NO CHARGE, DURING THE WARRANTY PERIOD.

34. ALL PRODUCTS USED FOR THIS INSTALLATION SHALL BE THE LATEST VERSION OFFERED BY THE MANUFACTURER AND REPLACEMENT PARTS SHALL BE AVAILABLE FOR AT LEAST 5 YEARS AFTER COMPLETION OF THIS CONTRACT.

35. PROVIDE TWO SESSIONS OF (8) HOURS OF ON-SITE TRAINING, WHICH SHALL BE COMPLETED WITHIN 30 DAYS OF PROJECT COMPLETION. THE OBJECTIVE IS TO ALLOW OWNER DESIGNATED PERSONNEL TO RECEIVE HANDS-ON TRAINING IN ORDER TO PROFICIENTLY OPERATE THE SYSTEM. EACH SESSION SHALL BE VIDEOTAPED AND COPIES SHALL BE SUBMITTED TO THE DISTRICT ON A DVD OR OTHER MEDIA AS REQUESTED BY THE OWNER.

36. CONTROL SYSTEM SHALL NOT BE DEEMED ACCEPTED AS MEETING THE REQUIREMENTS OF COMPLETION, UNTIL ALL SYSTEMS HAVE BEEN SHOWN TO PERFORM, TO THE SATISFACTION OF BOTH THE ENGINEER AND OWNER. ANY TEST THAT CANNOT BE PERFORMED DUE TO CIRCUMSTANCES BEYOND THE CONTROL OF THE ATC CONTRACTOR MAY BE EXEMPT FROM THE COMPLETION REQUIREMENTS ONLY IF PERMITTED, IN WRITING, BY THE OWNER. SUCH TESTS SHALL THEN BE PERFORMED AS PART OF THE WARRANTY.

---

# Architecture

■ ■ ■

PROPOSED RESIDENTIAL DEVELOPMENT (BUILDING E)

## VILLAGE SCHOOL COMMONS

511 DURIE AVENUE, CLOSTER, NEW JERSEY  
BLOCK 1316, LOT 9

# **VILLAGE SCHOOL COMMONS**

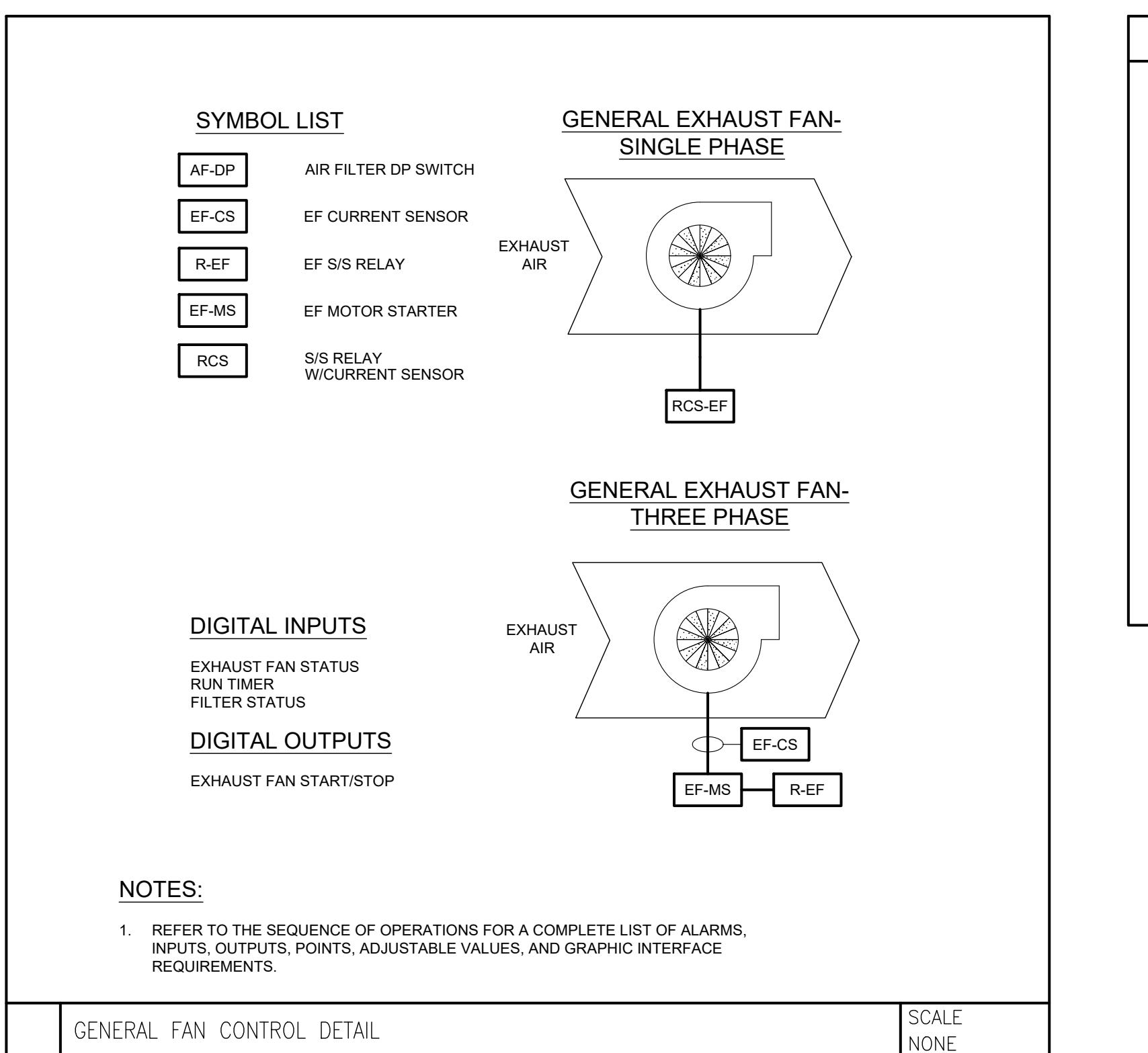
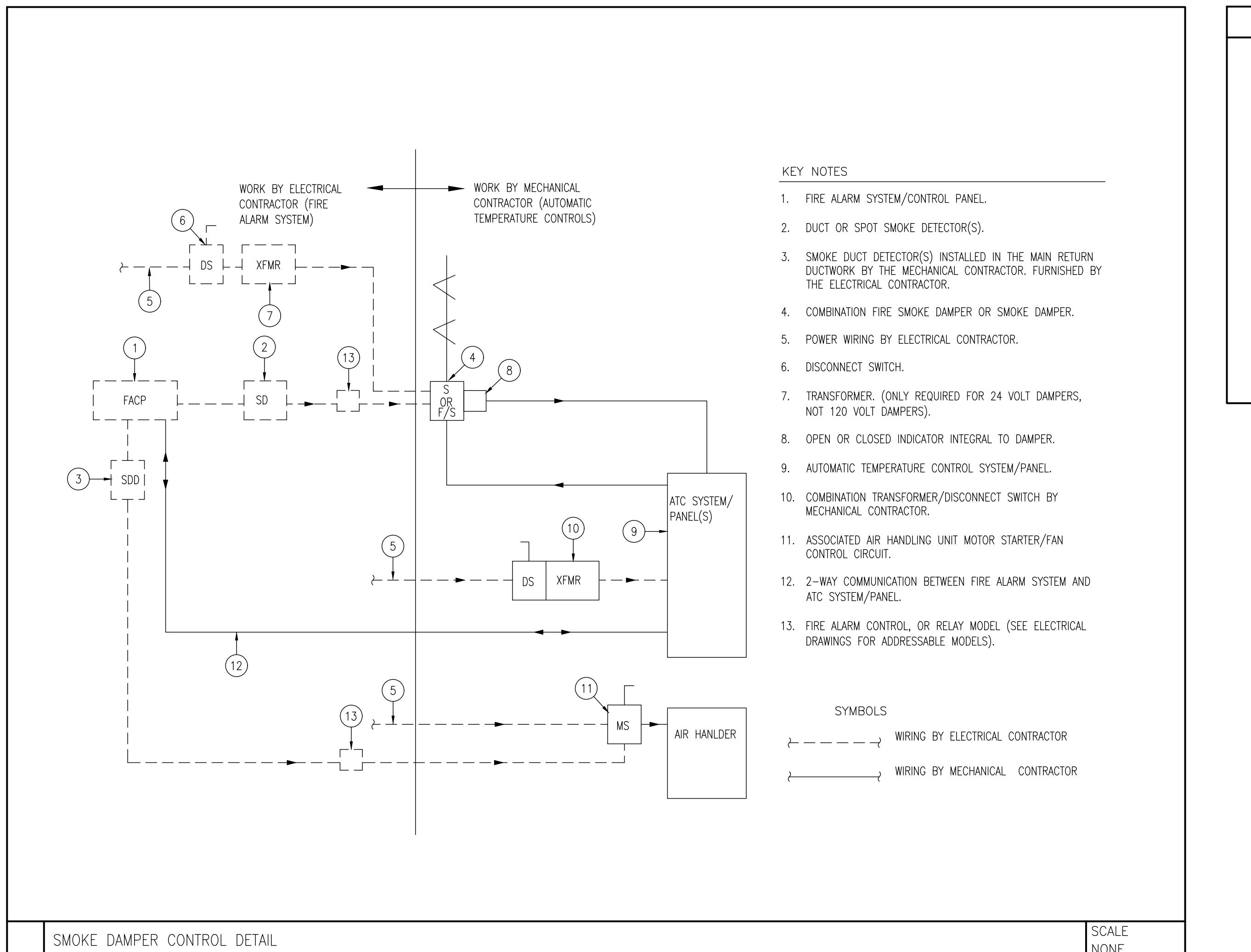
511 DURIE AVENUE, CLOSTER, NEW JERSEY  
BLOCK 13216, LOT 9

PROPOSED RESIDENTIAL DEVELOPMENT (BUILDING E)



A hand-drawn diagram consisting of three circles. A large circle is positioned at the top. Below it, two smaller circles overlap; the left one is oriented vertically and the right one is oriented horizontally. A horizontal line connects the centers of these two smaller circles.

TITLE	
<b>Mechanical Control Details &amp; Notes</b>	
DRAWN BY	
EL	
SHEET NO	
M501	
W/N	2024
NUMBER	
015	



DAMPER – SEQUENCE OF OPERATION

MCHANICAL CONTRACTOR SHALL PROVIDE SMOKE DAMPERS PACKAGED WITH AN ACTUATOR AND END SWITCH, THE DAMPERS SHALL BE MORMALLY CLOSED/POWERED OPEN. THE DAMPER ACTUATOR SHALL BE INTERFACED WITH BOTH THE BMS AND THE FIRE ALARM L PANEL.

AN ASSOCIATED FAN SYSTEM IS TO BE ENERGIZED THE DAMPER SHALL BE SIGNALLED TO OPEN VIA THE BMS. WHEN PROVEN VIA A UNIT MOUNTED END SWITCH, THE FAN SHALL BE ALLOWED TO ENERGIZE. WHEN THE FAN SYSTEM IS NOT OPERATING THE DAMPER SHALL BE CLOSED.

THE LOCAL DUCT SMOKE DETECTOR (PROVIDED BY FAC, INSTALLED BY MC) IS IN ALARM THE ASSOCIATED SMOKE DAMPER SHALL BE SIGNALLED CLOSED BY THE FACP. REFER TO ELECTRICAL DRAWINGS FOR FURTHER DETAILS. THE ATC CONTRACTOR SHALL COORDINATE THESE SIGNALS WITH THE FAC TO SHUT DOWN THE RESPECTIVE FAN SYSTEM ON ALARM CONDITION. AS A SECONDARY MEANS OF SHUTTING DOWN THE FAN SYSTEM SHALL BE DE-ENERGIZED WHEN THE DAMPER IS SHOWN IN THE CLOSED POSITION.

DUCT DETECTORS SHALL BE INSTALLED WITHIN 5 FEET OF THE DAMPER. WHERE ONE OF BELOW CONDITIONS APPLIES THE DETECTOR TYPE MAY BE CHANGED AS NOTED:

WHERE THE DAMPER IS INSTALLED ABOVE A SMOKE BARRIER DOOR, THE DOOR DETECTOR MAY ACTIVATE THE DEVICE.

WHERE THE DAMPER IS PROTECTING AN UNDUCTED WALL OPENING A SPOT DETECTOR INSTALLED WITH 5FT OF THE DUCT IS ACCEPTABLE.

WHERE THE DAMPER IS INSTALLED IN A CORRIDOR WALL A CODE-COMPLIANT CORRIDOR SMOKE DETECTION SYSTEM WITH SPOT DETECTORS MAY BE USED.

IF A CODE-COMPLIANT TOTAL-COVERAGE SMOKE DETECTION SYSTEM IS PROVIDED THE DAMPERS CAN BE CONTROLLED BY THAT SYSTEM.

A detailed black and white line drawing of a classical column capital. The capital features a flared base with vertical fluting and a decorative top with volutes and a band of geometric or foliate patterns.

**Architectura**

suite LL100  
One Executive Drive  
Fort Lee, New Jersey 07024  
201-346-1400 fax 201-364-1418  
[frontdesk@architectura.com](mailto:frontdesk@architectura.com)

■ ■ ■  
architecture  
interior design  
planning

295 State Route 34  
Colts Neck, NJ 07722  
t 732.772.1500  
f 732.772.1515

J&U Project # 24-067

Mark E. Lonergan, P.E.  
NJ License #24GE04078800

C o n s u l t i n g   E n g i n e e r s  
Certificate of Authorization: 24CA815200

# architectura

■ ■ ■

PROPOSED RESIDENTIAL DEVELOPMENT (BUILDING E)

## VILLAGE SCHOOL COMMONS

511 DURIE AVENUE, CLOSTER, NEW JERSEY  
BLOCK 1316 LOT 9

ERAL & TOILET EXHAUST FAN – SEQUENCE OF OPERATION

RAL

RAL AND TOILET EXHAUST FANS SHALL BE CONTROLLED, SCHEDULED AND MONITORED THROUGH THE ATC SYSTEM AS DESCRIBED BELOW. PROVIDE ALL ITEMS DESCRIBED FOR EACH FAN.

RAL AND TOILET EXHAUST FANS SHALL BE ASSOCIATED WITH THE HVAC UNIT SERVING THE SPACE. WHEN THE HVAC UNIT IS OPERATING IN THE OCCUPIED MODE, THE EXHAUST FAN SHALL BE ENERGIZED AND RUN CONTINUOUSLY. WHEN THE HVAC UNIT IS UNOCCUPIED MODE, THE EXHAUST FAN SHALL BE DE-ENERGIZED.

OPERATION SHALL BE MONITORED THROUGH A CURRENT SENSOR. FAN STATUS SHALL BE ANNUNCIATED AT THE HOST COMPUTER.

INTERFACE

ARM SHALL BE GENERATED AT THE FRONT END WORKSTATION UPON:

FAN FAILURE

THE FRONT END WORKSTATION, PROVIDE A DYNAMIC COMPUTERIZED GRAPHICAL REPRESENTATION OF THE UNIT AND COMPONENTS. THE USER SHALL BE CAPABLE OF VIEWING AND ADJUSTING SETPOINTS AND OPERATIONAL CONDITIONS OF THE WING:

EXHAUST FAN STATUS

FAN START/STOP

WING TITLE	
<b>MECHANICAL CONTROL DETAILS &amp; NOTES</b>	
NOT FOR CONSTRUCTION )	
LE	DRAWN BY
SHOWN	EL
E	SHEET NO
/25/2024	
JECT NUMBER	<b>M502</b>
023015	