

# IDEA PUBLIC SCHOOLS

## LOWER RGV MECHANICAL UPGRADES

### RIO GRANDE VALLEY, TEXAS

NO. REVISION: BY:

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TEXAS

IDEA PUBLIC SCHOOLS  
LOWER RGV MECHANICAL UPGRADES

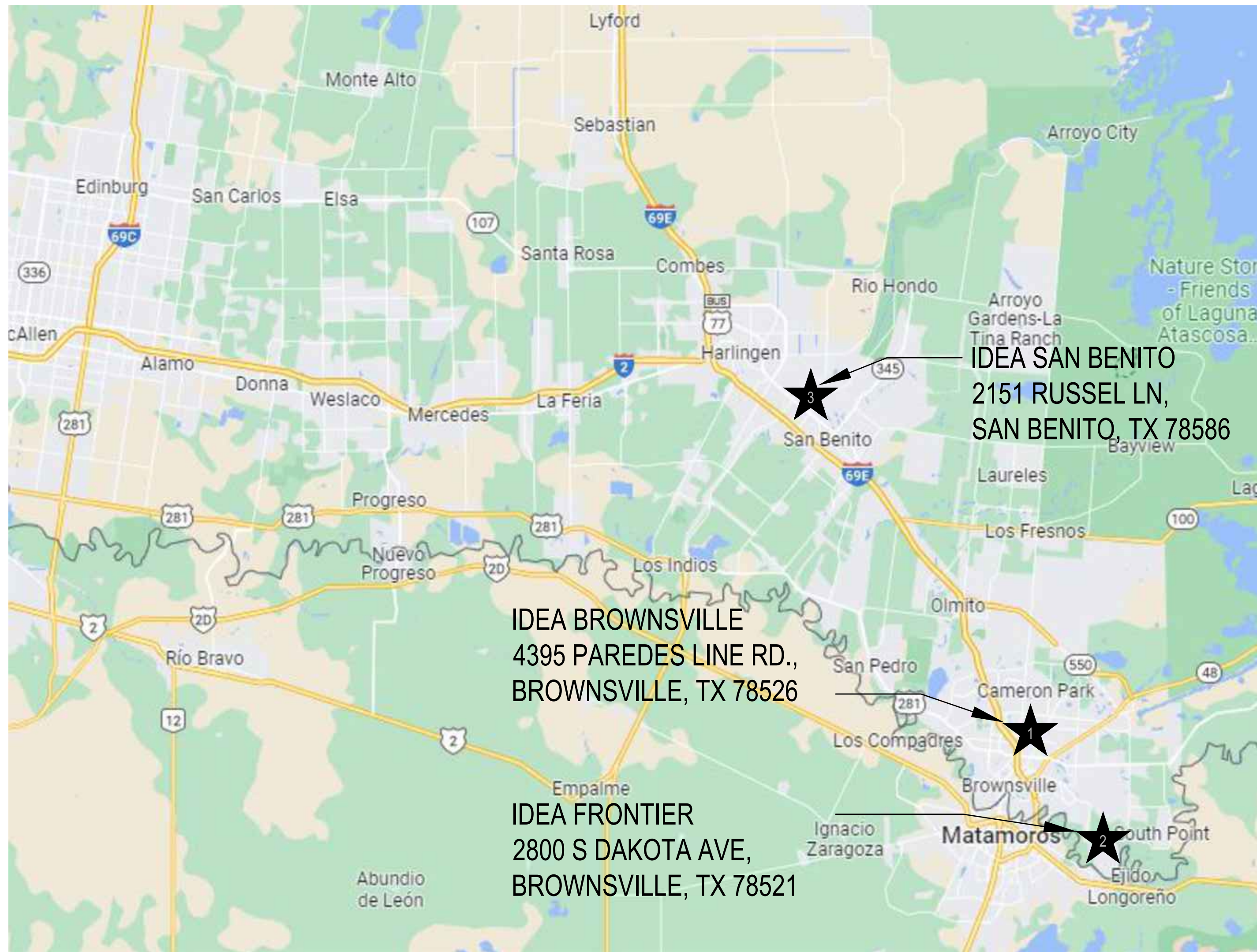
RIO GRANDE VALLEY



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COVER



VICINITY MAP - RIO GRANDE VALLEY



### SCOPE OF WORK:

- A. SCOPE OF WORK: REFER TO DRAWINGS FOR A DETAILED SCOPE OF WORK.
- PROVIDE ALL MATERIALS AND LABOR ASSOCIATED WITH NEW FULLY OPERATIONAL MECHANICAL AND CONTROLS SYSTEMS FOR THE PROJECT "IDEA PUBLIC SCHOOLS, IDEA LOWER VALLEY HVAC IMPROVEMENTS", INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
    - REMOVE LISTED HVAC, ELECTRICAL, AND CONTROLS EQUIPMENT, INCLUDING AIR-COOLED CONDENSING UNITS, SPLIT SYSTEMS, EXHAUST FANS, VAV BOXES, DUCTWORK, AND MISCELLANEOUS EQUIPMENT AND MATERIALS. REMOVE PIPING CONNECTIONS, REFRIGERANT SPECIALTIES, PIPING SUPPORTS, AS INDICATED IN PLANS TO MAKE ROOM FOR NEW EQUIPMENT. EVACUATE REFRIGERANT AND DELIVER TO OWNER.
    - DESIGN INTENT IS TO REMOVE AND REPLACE EXISTING REFRIGERANT PIPING UNLESS NOTED OTHERWISE. FOR PIPING TO BE RETAINED VERIFY THAT THE SIZES ARE APPROPRIATE AND APPROVED BY MANUFACTURER OF HVAC EQUIPMENT, AND REMOVE REFRIGERANT PIPING INSULATION, AND PREPARE PIPING FOR RE-INSULATION AND JACKETING.
    - FOR REPLACED EQUIPMENT ON THE ROOF, REMOVE EXISTING ROOF CURBS, ASSOCIATED MATERIALS, AND ACCESSORIES SUCH AS HANGERS, SUPPORTS, MOUNTING HARDWARE, CONDENSATE DRAIN PIPING, PIPING, CONDUIT AND POWER WIRING, ETC.
    - WHERE INDICATED, SAVE EXISTING POWER AND CONTROL WIRING, CONDUITS, AND CIRCUIT BREAKERS FOR REUSE. VERIFY SIZE AND CONDITION OF CIRCUIT BREAKERS, CONDUITS AND WIRING TO BE REUSED. DEMOLISH ELECTRICAL EQUIPMENT AND OTHER MISCELLANEOUS MATERIALS AS NOTED IN THE DRAWINGS.
    - RETAIN AND REUSE CONTROLS TO EXTENT POSSIBLE. COORDINATE WITH OWNER'S CONTROLS CONTRACTOR TO DISCONNECT AND RECONNECT CONTROLS AS NEEDED. DEMOLISH CONTROLS AS INDICATED AND PROVIDE NEW CONTROLS WHERE NOTED.
    - SAVE EXISTING SMOKE DETECTORS, WIRING AND SAFETIES FOR REUSE. DOCUMENT DEVICES THAT ARE NOT IN WORKING ORDER
    - CLEAR AREA AND PREPARE FOR NEW WORK.
  - NEW WORK: PROVIDE ALL MATERIALS AND LABOR ASSOCIATED WITH NEW FULLY OPERATIONAL MECHANICAL AND CONTROLS SYSTEMS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
    - REPLACE INDICATED HVAC EQUIPMENT SUCH AS AIR-COOLED CONDENSING UNITS, SPLIT SYSTEMS, MINI-SPLIT SYSTEMS, EXHAUST FANS, VAV BOXES, AND RELATED ELECTRICAL, AND CONTROLS.
    - PROVIDE MODIFICATION OF DUCTWORK, REFRIGERANT PIPING, INSULATION, CONTROLS, AND ELECTRICAL SYSTEMS.
    - PROVIDE NEW REFRIGERANT PIPING, PIPING SPECIALTIES, PIPE INSULATION, JACKETING, PIPE SUPPORTS, AND MISCELLANEOUS ACCESSORIES. WHERE EXISTING REFRIGERANT PIPING IS TO BE REUSED, PROVIDE CLEANING AND VACUUMING OF PIPING.
    - FOR ROOF MOUNTED EQUIPMENT, PROVIDE NEW ROOF CURBS, ROOFING WORK, SUPPORT ASSEMBLY, DUCT TRANSITIONS, CONDENSATE DRAIN PIPING, MISCELLANEOUS MATERIALS, UTILITIES AND ACCESSORIES.
    - PROVIDE ALL OTHER ACCESSORIES TO DELIVER A COMPLETE AND OPERATIONAL SYSTEM.
    - TESTING, ADJUSTING, AND BALANCING.
    - CUTTING AND PATCHING AND TOUCHUP PAINTING AS REQUIRED.
    - CONCRETE WORK AS NEEDED.
    - ASSISTANCE WITH COMMISSIONING SERVICES PER SPECIFICATIONS.
    - BUILDING AUTOMATION SYSTEM (BAS): SEE SPECIFICATIONS FOR DETAILS.
      - RETAIN AND REUSE CONTROLS FOR REPLACED SPLIT SYSTEMS, EFS.
      - WHERE NOTED PROVIDE NEW CONTROLS.
    - SHOP DRAWING SUBMITTALS FOR ALL MECHANICAL SYSTEMS INCLUDING BUT NOT LIMITED TO EQUIPMENT, DUCTWORK AND PIPING. THESE INCLUDE COORDINATION DRAWINGS FOR PLACING OF MECHANICAL SYSTEMS IN RELATION TO WORK BY OTHER DISCIPLINES.
    - CONTRACTOR IS RESPONSIBLE FOR PROVIDING WINDSTORM CERTIFICATION INSPECTIONS AND CERTIFICATIONS FOR EXTERIOR MOUNTED EQUIPMENT. CONTRACTOR MUST NOTIFY INSPECTOR PRIOR TO INSTALLING EQUIPMENT, AND APPRISE INSPECTOR OF WORK SCHEDULING INVOLVING EQUIPMENT REQUIRING WIND INSPECTION / CERTIFICATION, SO THAT INSPECTIONS MAY BE CARRIED OUT AT REQUIRED STAGE(S) OF CONSTRUCTION. COST FOR INSPECTION SHALL BE BORNE BY THE CONTRACTOR. INSPECTOR SHALL BE CERTIFIED BY THE TEXAS DEPARTMENT OF INSURANCE (SEE WWW.TDI.STATE.TX.US FOR A LIST OF CERTIFIED INSPECTORS).
    - COORDINATE ELECTRICAL WORK WITH DIV. 26 AS REQUIRED.
    - COORDINATE FIRE ALARM RELATED WORK WITH FIRE ALARM CONTRACTOR. PROVIDE SMOKE DETECTORS, WIRING AND CONTROLS FOR UNITS, 2000 CFM AND LARGER, WHERE NONE EXIST.
  - PAINTING: SEE DIVISION 9 SPECIFICATIONS. PAINT ALL EXPOSED PIPING, DUCTWORK, INSULATION, HANGERS, ACCESSORIES IN INTERIOR EXPOSED AREAS. PAINT EXTERIOR PIPE SUPPORTS. COORDINATE PAINT TYPE, COLOR AND SCOPE OF WORK WITH ARCHITECT.
  - COMMISSIONING: PROVIDE ASSISTANCE WITH COMMISSIONING SERVICES PER SPECIFICATIONS. THIS INCLUDES COMPLETING SYSTEMS READINESS CHECKLISTS, PERFORMING FUNCTIONAL TESTING, PROVIDING OPERATOR TRAINING, ETC.

### DATE OF ISSUE

MAY 24, 2024

### LIST OF DRAWINGS

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ME2.1	MECHANICAL & ELECTRICAL IDEA BROWNSVILLE - BUILDING A	ME5.1	MECHANICAL & ELECTRICAL SCHEDULES
ME2.2	MECHANICAL & ELECTRICAL IDEA BROWNSVILLE - BUILDING B	ME5.2	MECHANICAL & ELECTRICAL SCHEDULES
ME2.3	MECHANICAL & ELECTRICAL IDEA BROWNSVILLE - BUILDING C	ME5.3	MECHANICAL & ELECTRICAL SCHEDULES
ME2.4	MECHANICAL & ELECTRICAL IDEA BROWNSVILLE - PAVILION	ME5.4	MECHANICAL & ELECTRICAL SCHEDULES
ME3.1	MECHANICAL & ELECTRICAL IDEA FRONTIER - BUILDING A	ME6.1	MECHANICAL DETAILS
ME3.2	MECHANICAL & ELECTRICAL IDEA FRONTIER - BUILDING B	ME6.2	MECHANICAL DETAILS
ME3.3	MECHANICAL & ELECTRICAL IDEA FRONTIER - BUILDING C		
ME3.4	MECHANICAL & ELECTRICAL IDEA FRONTIER - BUILDING D		
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ME3.9	MECHANICAL & ELECTRICAL IDEA FRONTIER - PORTABLE		
ME4.1	MECHANICAL & ELECTRICAL IDEA SAN BENITO - BUILDING C		
ME4.2	MECHANICAL & ELECTRICAL IDEA SAN BENITO - BUILDING D		

### EXECUTIVE COMMITTEE

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ED RIVERA	VICE-CHAIR & SECRETARY
ERICH HOLMSTEN	TREASURER

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**EQUIPMENT:**

- 1. EQUIPMENT INSPECTION:
  - a. FIELD VERIFY ALL CONDITIONS AND MEASURE DIMENSIONS WITHIN THE BUILDING PRIOR TO ORDERING EQUIPMENT AND/OR PROCEEDING WITH INSTALLATION.
  - b. ALL EQUIPMENT SHALL BE FACTORY TESTED, AND CONTRACTOR SHALL VERIFY EQUIPMENT CONDITION PRIOR TO INSTALLATION. CONTRACTOR IS RESPONSIBLE FOR EQUIPMENT DAMAGED DURING MOVING AND INSTALLATION.
  - c. EQUIPMENT FOUND DEFECTIVE PRIOR TO FINAL ACCEPTANCE SHALL BE REPLACED AT NO COST TO OWNER.
- 2. EQUIPMENT ACCESS:
  - a. MAKE ALL VALVES ACCESSIBLE, INCLUDING MANUAL SHUTOFF VALVES AND AUTOMATIC VALVES. VALVES SHOULD BE CLOSE TO THE UNIT BEING SERVED AND REACHABLE BY A 5'-6" PERSON STANDING ON THE FLOOR NEARBY, WITHOUT NEED FOR A LADDER. WHERE SHUTOFF VALVES SERVE AN ABOVE-CEILING UNIT ACCESSIBLE ONLY BY LADDER, THE SHUTOFF VALVES SHOULD BE CLOSE ENOUGH TO THE UNIT SO THAT MAINTENANCE PERSONNEL CAN SHUT THE VALVES AND ACCESS THE CONTROL PANEL WITHOUT HAVING TO RELOCATE THE LADDER. WHERE PIPING CONFIGURATION MAKES IT IMPOSSIBLE TO LOCATE SHUTOFF VALVES IN THE MANNER DESCRIBED ABOVE, OBTAIN APPROVAL FROM OWNER AND/OR ENGINEER FOR ALTERNATE LOCATION.
  - b. FOR EQUIPMENT WHICH MAY REQUIRE PERIODIC SERVICING (SUCH AS AIR HANDLERS & VAVs) AND WHICH IS LOCATED ABOVE A SUSPENDED CEILING, CONTRACTOR IS TO PROVIDE A MARKER ON CEILING GRID WHICH CLEARLY INDICATES WHICH CEILING TILE IS TO BE REMOVED TO MOST CONVENIENTLY ACCESS EQUIPMENT SIDE NEEDING SERVICING. THE MARKER IS TO BE ROUND DOT OF HEAVY DUTY COLORED PAPER, WITH DIRECTION INDICATION, WITH ADHESIVE BACKING. OBTAIN ARCHITECT APPROVAL FOR COLOR, SIZE, AND TYPE PRIOR TO INSTALLATION.
  - c. PROVIDE MANUFACTURER RECOMMENDED AND CODE ENFORCED CLEARANCES AROUND EQUIPMENT. MAINTAIN 36" CLEAR IN FRONT OF EFS CONTROLLER, ELECTRIC HEATERS, ETC.
  - d. INSTALL ALL VALVES, CONTROLS, DAMPERS, FANS, ETC. IN ACCESSIBLE LOCATIONS. PROVIDE ADEQUATELY SIZED ACCESS DOORS WHERE REQUIRED.
- 3. EQUIPMENT INSTALLATION:
  - a. PROVIDE SPRING HANGER TYPE VIBRATION ISOLATORS TO SUPPORT SUSPENDED AHUS, FANS AND OTHER POWERED VIBRATING EQUIPMENT. PROVIDE FLEXIBLE DUCT CONNECTORS.
  - b. AFFIX ID TAGS TO ALL MECHANICAL EQUIPMENT PER SPECIFICATIONS.
- 4. EQUIPMENT INSULATION:
  - a. INSULATE ALL SURFACES OF THAT ARE CAPABLE OF BECOMING COLD AND COLLECTING CONDENSATE. THIS INCLUDES SUPPLY DIFFUSERS AND CONNECTING DUCTWORK / TRANSITION PIECES.
- 5. ELECTRICAL:
  - a. CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH ELECTRICAL CONTRACTOR REGARDING EQUIPMENT SIZES AND TYPES OF ELECTRICAL INTERFACE EQUIPMENT REQUIRED.
  - b. DUE TO VARIATIONS IN EQUIPMENT CHARACTERISTICS BY DIFFERENT EQUIPMENT SUPPLIERS, MECHANICAL EQUIPMENT ULTIMATELY PROVIDED MAY DIFFER IN HORSEPOWER OR AMPERAGE REQUIREMENTS FROM THAT SPECIFIED IN THESE DRAWINGS. COORDINATE WITH GENERAL CONTRACTOR PRIOR TO BIDDING, AND PRIOR TO SUBMITTALS AND ORDERING EQUIPMENT, TO ENSURE THAT EQUIPMENT ELECTRICAL REQUIREMENTS ARE CONVEYED TO ELECTRICAL CONTRACTOR. IT IS SOLELY CONTRACTOR'S RESPONSIBILITY TO ENSURE COMPATIBILITY ISSUES ARE COORDINATED.

**DEMOLITION GENERAL NOTES:**

- 1. ALL DEMOLITION WORK SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE CODES INCLUDING THOSE PUBLISHED BY OSHA.
- 2. PROVIDE ALL DEMOLITION WORK REQUIRED FOR THE REMOVAL OF MECHANICAL EQUIPMENT AND ASSOCIATED DEVICES. PROVIDE A COMPLETE AND OPERABLE SYSTEM UPON COMPLETION OF THE PROJECT.
- 3. ALL EXISTING EQUIPMENT REMOVED DURING CONSTRUCTION, THAT IS NOT TO BE REUSED, SHALL BE REMOVED FROM THE JOB SITE AND PROPERLY RETURNED TO THE OWNER, IF DESIRED BY OWNER.
- 4. CONTRACTOR SHALL NOT DAMAGE STRUCTURAL INTEGRITY OF BUILDING ELEMENTS WITHOUT THE EXPRESSED WRITTEN CONSENT OF THE ENGINEER, CONTRACTOR SHALL GAIN CONSENT OF ENGINEER PRIOR TO COMPROMISING INTEGRITY OF STRUCTURAL BEAMS, IN WORK ASSOCIATED WITH BOTH DEMOLITION AND INSTALLATION.
- 5. OWNER MAY WISH TO KEEP DEMOLISHED EQUIPMENT AND MATERIALS. COORDINATE OWNER, AND DISPOSE OF EQUIPMENT AND MATERIALS THAT OWNER DOES NOT RETAIN.

**ABBREVIATIONS**

A	AMPS	ENT.	ENTERING	NO	NORMALLY OPEN
ACCU	AIR COOLED CONDENSING UNIT	EXT.	EXTERNAL OR EXTERIOR	NTS	NOT TO SCALE
ACT	ACTUATOR	FCU	FAN COIL UNIT	OA	OUTSIDE AIR
AFF	ABOVE FINISHED FLOOR	FD	FIRE DAMPER	PH	PHASE
AHU	AIR HANDLING UNIT	FM	FLOW METER	RA	RETURN AIR
B.	BOTTOM	FS	FLOW SWITCH	RAG/RC	RETURN AIR GRILLE
BAS	BUILDING AUTOMATION SYSTEM	FPI	FINS PER INCH	RD	ROOF DRAIN
BOP	BOTTOM OF PIPE	G.	GROUND	RM.	ROOM
BOTT.	BOTTOM	GA.	GAGE	RPZ	REDUCED PRESSURE ZONE
C.	CONDUIT OR COMMON	GALV.	GALVANIZED	SA	SUPPLY AIR
CHR	CHILLED WATER RETURN	GPM	GALLONS PER MINUTE	SD	SUPPLY AIR DIFFUSER
CHS	CHILLED WATER SUPPLY	GRND.	GROUND	SS	STAINLESS STEEL
CHW	CHILLED WATER	HB	HOSE BIBB	SZ	SINGLE ZONE
CHWP	CHILLED WATER PUMP	HP	HORSEPOWER	TAB	TESTING & BALANCING
CR	CONDENSER WATER RETURN	HS	HUMIDITY SENSOR	T.O.L.	TOP OF LOUVER
CS	CONDENSER WATER SUPPLY	HVAC	HEATING, VENTILATION, & AIR CONDITIONING	TS	TEMPERATURE SENSOR
CLG.	CEILING OR COOLING			TSTAT	THERMOSTAT
COMB.	COMBINATION	LVG.	LEAVING	UG	UNDERGROUND
CONC.	CONCRETE	MECH	MECHANICAL	UNO	UNLESS OTHERWISE NOTED
COND.	CONDUIT	MOT. STRTR.	MOTOR STARTER	V	VOLTS
CT	COOLING TOWER	MS	MOTOR STARTER	VAV	VARIABLE AIR VOLUME
CU.	COPPER	MZ	MULTI-ZONE	VFD	VARIABLE FREQUENCY DRIVE
CW	CITY WATER	NC	NORMALLY CLOSED	W	WIRE
DDC	DIRECT DIGITAL CONTROLS				
DMPR.	DAMPER				
DISC.	DISCONNECT				
EAG/EG	EXHAUST AIR GRILLE				
EMS	ENERGY MANAGEMENT SYSTEM				

**COORDINATION:**

- 1. GENERAL:
  - a. CONTRACTOR SHALL REVIEW COMPLETE DOCUMENTS PRIOR TO SUBMITTAL OF PROPOSAL TO GAIN COMPLETE UNDERSTANDING OF PROJECT SCOPE, WORK BY OTHERS, AND MECHANICAL WORK ASSOCIATED WITH OTHER DISCIPLINES.
  - b. IT IS NOT THE INTENT OF THESE DOCUMENTS TO DICTATE WHO MUST DO THE WORK. ALL WORK SHOWN IS THE RESPONSIBILITY OF THE (PRIME) CONTRACTOR. COORDINATE MECHANICAL WITH OTHER TRADES SUCH AS PLUMBING, ELECTRICAL, AND STRUCTURAL WORK. COORDINATE SCHEDULE OF WORK WITH ALL SUB-CONTRACTORS TO ACHIEVE SMOOTH FLOW OF CONSTRUCTION.
  - c. TIME OR MONEY ALLOWANCES WILL NOT BE MADE TO ACCOMMODATE UTILITY CONFLICTS THAT CAN BE REASONABLY RESOLVED BY COORDINATION DURING SHOP DRAWING STAGE.
  - d. PROVIDE COORDINATION DRAWINGS OF REFLECTED CEILING PLAN AND SECTION ABOVE CEILING SHOWING WORK OF ALL AFFECTED TRADES. DO NOT PROCEED WITH FABRICATION WORK UNTIL COORDINATION DRAWINGS HAVE BEEN APPROVED BY A/E.
  - e. CONTRACTOR SHALL NOT PROCEED WITH ANY WORK INVOLVING A CHANGE IN PROJECT SCOPE OR COST WITHOUT FIRST HAVING OBTAINED ENGINEER'S APPROVAL IN WRITING. UNLESS ENGINEER HAS AGREED TO SUCH CHANGE PRIOR TO IT BEING DONE, AND HAS AGREED THAT AN INCREASE IN COST ASSOCIATED WITH SUCH CHANGE IS WARRANTED; CONTRACTOR WILL NOT BE REIMBURSED FOR SUCH CHANGE.
  - f. WORK TO BE DONE UNDER ALLOWANCES BECOMES AN INTEGRAL PART OF THE PROJECT AND RESPONSIBILITY OF CONTRACTOR ONCE ALLOWANCE IS APPROVED.
- 2. SITE:
  - a. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL SITE CONDITIONS IN ORDER TO MAKE ANY NECESSARY ADJUSTMENTS, PRIOR TO ORDERING MATERIALS OR COMMENCING INSTALLATION. CHANGE ORDERS WILL NOT BE APPROVED FOR DIMENSIONAL VERIFICATIONS REQUIRING MINOR ADJUSTMENTS NEEDED TO COMPLETE INSTALLATION.
- 3. SPATIAL COORDINATION:
  - c. COORDINATE ALL WORK WITH OTHER TRADES; COORDINATE SCHEDULE OF WORK WITH ALL SUB-CONTRACTORS TO ACHIEVE SMOOTH FLOW OF CONSTRUCTION.
  - d. SPACES ABOVE CEILING ARE CONGESTED. DESIGN INTENT IS THAT UTILITIES BE INSTALLED TIGHT AGAINST CEILING STRUCTURE TO EXTENT POSSIBLE, WHILE RETAINING ADEQUATE MAINTENANCE ACCESS PER CODES.
  - e. IN CASE OF CONFLICTS, ITEMS SHALL BE ARRANGED ACCORDING TO THE FOLLOWING PRIORITIES: LIGHTING, FIRE PROTECTION, HVAC. PROVIDE OFFSETS/RISES/DROPS REQUIRED TO RESOLVE CONFLICTS WITH OTHER UTILITIES, AND TO ACCOMMODATE ALL UTILITIES ABOVE CEILINGS.
  - f. IN GENERAL, REROUTE SMALLER DUCTS/PIPES THROUGH JOISTS TO RESOLVE CONFLICTS WITH LARGER. PERFORM REROUTING IN MOST EFFICIENT MANNER POSSIBLE, AND IN ACCORDANCE WITH INDUSTRY STANDARDS.
  - g. PROVIDE COORDINATION DRAWINGS OF REFLECTED CEILING PLAN AND SECTION ABOVE CEILING SHOWING WORK OF ALL AFFECTED TRADES. DO NOT PROCEED WITH FABRICATION WORK UNTIL COORDINATION DRAWINGS HAVE BEEN APPROVED BY A/E.
  - h. SEE ELECTRICAL PLANS FOR EXACT LOCATION OF ELECTRICAL PANELS TO AVOID DUCTWORK AND PIPING RUNNING OVER THESE AREAS. COORDINATE WITH ELECTRICAL CONTRACTOR.
  - i. LOCATE AIR DEVICES AS SHOWN. COORDINATE WITH OTHER TRADES TO AVOID CONFLICT AND ADJUST LOCATION IF NEEDED WITHOUT COMPROMISING AIR DEVICES PERFORMANCE.

**GENERAL NOTES:**

- 1. TEST & BALANCE:
  - a. TEST AND BALANCE CONTRACTOR SHALL BE RETAINED BY THE PRIME CONTRACTOR AND NOT UNDER THE MECHANICAL CONTRACTOR. ALL SUB-CONTRACTORS SHALL COORDINATE ACTIVITIES AND ASSIST TEST AND BALANCE CONTRACTOR AS NEEDED.
  - b. TEST & BALANCE TO COORDINATE MINIMUM AND MAXIMUM OUTSIDE AIR DAMPER SETTINGS WITH DDC CONTROLS AND ENGINEER. PROVIDE TIME ALLOTMENT FOR MULTIPLE DAMPER SETTINGS IN SOME CASES.

**CODES & ORDINANCES:**

- 1. GENERAL:
  - a. UNLESS DRAWINGS OR SPECIFICATIONS HAVE MORE STRINGENT REQUIREMENTS, PERFORM ALL WORK PER APPLICABLE VERSION OF INTERNATIONAL BUILDING CODES, AND LOCAL CODES AND ORDINANCES.
  - b. PRIOR TO SUBMITTING PROPOSAL, NOTIFY ENGINEER OF ANY ASPECTS OF DESIGN WHICH ARE THOUGHT TO BE IN NONCOMPLIANCE WITH APPLICABLE CODES.
- 2. PERMITS:
  - a. CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS AND FEES ASSOCIATED WITH PROJECT, INCLUDING FEES FOR INSPECTIONS, APPLICATIONS, AND PROVISION OF NEW SERVICES.
  - b. CONTRACTOR WHO WILL ACTUALLY PERFORM WORK MUST APPLY FOR ALL REQUIRED PERMITS.
- 3. APPROVALS AND INSPECTIONS:
  - a. OBTAIN APPROVAL FROM CITY FIRE DEPARTMENT AND BUILDING AND SAFETY DEPARTMENT PRIOR TO INSTALLATION OF ANY FIRE RELATED ITEMS.
  - b. COORDINATE PRESSURE TESTS, INSPECTIONS AND APPROVAL FOR ALL SYSTEMS WITH PERMITTING OFFICER, OWNER AND ENGINEER.

**INSULATION:**

- 1. FIBERGLASS INSULATION MAY NOT BE USED ON ANY COLD PIPING SURFACES; ONLY CLOSED CELL INSULATION IS ACCEPTABLE.
- 2. PROVIDE INSULATION ON ALL SURFACES CAPABLE OF CREATING CONDENSATION.

**DUCTWORK:**

- 1. DUCTWORK GENERAL:
  - a. DRAWINGS ARE DIAGRAMMATIC IN NATURE. FOR CLARITY SAKE, MOST DUCT OFFSETS/RISES/DROPS ARE NOT SHOWN. WHERE DUCTS PENETRATE WALLS, INSTALL THEM PERPENDICULAR TO WALL.
  - b. RECTANGULAR AND ROUND DUCTWORK SHALL BE GALVANIZED STEEL. SIZES SHOWN ARE INSIDE CLEAR DIMENSION, UNLESS NOTED OTHERWISE.
  - c. VERIFY BOTTOM OF DUCT ELEVATION AND COORDINATE WITH OTHER TRADES.
  - d. CONSTRUCT AND LEAKAGE TEST ALL DUCTWORK BASED ON SPECIFICATIONS AND SMACNA REQUIREMENTS, WHICHEVER IS MORE STRINGENT. COORDINATE PRESSURE CLASSES WITH EQUIPMENT SCHEDULES.
- 2. DUCTWORK INSULATION:
  - a. WRAP ALL OUTSIDE AIR, SUPPLY AND RETURN DUCTWORK UNLESS NOTED OTHERWISE.
  - b. INSULATION ON DUCT SHOULD TO BE PROPERLY TAPED AND MASTICS MUST BE APPLIED ON SEAMS AND JOINTS AND AT ENDS ADJACENT TO DUCT FLANGES AND FITTINGS. FOR DUCT SIDES WITH DIMENSIONS LARGER THAN 18 INCHES, APPLY ADDITIONAL PINS AND CLIPS TO HOLD INSULATION TIGHTLY AGAINST SURFACE AT CROSS BRAING.
- 3. DUCT FITTINGS:
  - a. WHERE RECTANGULAR TEE FITTINGS ARE SHOWN, PROVIDE FITTING WITH ADJUSTABLE DIVIDER SHEET AND TURNING VANES.
  - b. WHERE RECTANGULAR MAIN AND BRANCH CONNECTIONS ARE SHOWN, PROVIDE EXTRACTOR VANES. NOT APPLICABLE TO DUCTWORK DOWNSTREAM OF VAV BOXES.
  - c. PROVIDE TURNING VANES IN ALL ELBOWS PER SPECS.

**ELECTRICAL:**

- 1. ALL ELECTRICAL WORK SHALL BE UNDER THE MASTER ELECTRICIAN WHO PULLED THE PERMIT AND ITS JOURNEYMAN ELECTRICIANS.
- 2. PERFORM ALL WORK PER ADOPTED N.E.C. AND APPLICABLE STATE STANDARDS, UNLESS DRAWINGS OR SPECIFICATIONS HAVE MORE STRINGENT REQUIREMENTS.
- 3. UNLESS NOTED OTHERWISE, MINIMUM POWER CIRCUIT IS TO BE #12 THWN WITH #12 GROUND IN 3/4" CONDUIT, WITH THE EXCEPTION THAT ANY CIRCUIT LONGER THAN 100 FEET SHALL BE MINIMUM #10 AWG WITH #10 GROUND WIRE. CIRCUIT LONGER THAN 200 FEET SHALL BE MINIMUM #8 AWG WITH #10 GROUND WIRE MINIMUM.
- 4. ALL EXISTING ID NAMETAGS AND CIRCUIT IDENTIFICATION MUST BE REVISED TO REFLECT CURRENT CONDITIONS FOR ALL EQUIPMENT WHICH IS NEW, REPLACED, OR DEMOLISHED. REMOVE ID NAMETAGS FOR DEMOLISHED EQUIPMENT. REPLACE EXISTING NAMETAGS WITH NEW FOR REPLACED EQUIPMENT. IF REPLACEMENT EQUIPMENT HAS DIFFERENT NAME TAGS, PROVIDE NEW NAMETAGS FOR ALL NEW EQUIPMENT. ALL CIRCUIT BREAKER DIRECTORIES FOR PANELS IN WHICH NEW WORK TAKES PLACE ARE TO BE REPLACED WITH NEW DIRECTORIES WHICH LIST EXISTING CIRCUITS AND NEW. ALL UNUSED CIRCUITS ARE TO BE MARKED AS "SPARE" IN THE DIRECTORIES. DIRECTORIES ARE TO BE COMPUTER GENERATED; NO HAND WRITTEN DIRECTORIES ARE ACCEPTABLE.
- 5. HAND-WRITTEN CIRCUIT BREAKER DIRECTORIES WILL NOT BE ACCEPTED. DIRECTORIES MUST BE COMPUTER GENERATED AND PRINTED TO REFLECT FINAL INSTALLED CONDITIONS.
- 6. MARK ALL J-BOXES WITH INDELEIBLE INK, INDICATING POWER CIRCUITY INFORMATION. LABEL ALL EQUIPMENT ITEMS PER SPECIFICATIONS.
- 7. ALL EXTERIOR RACEWAYS ABOVE GROUND SHALL BE RIGID GALVANIZED.
- 8. UNDER NO CIRCUMSTANCES SHALL MORE THAN THREE CIRCUITS SHARE THE SAME NEUTRAL, AND SUCH CIRCUITS MUST BE SEPARATE PHASE.
- 9. SINCE ELECTRICAL CHARACTERISTIC OF EQUIPMENT (SUCH AS HORSEPOWER, KW, AMPERAGE, VOLTAGE, ETC.) SUBMITTED MAY DIFFER FROM THOSE SPECIFIED IN DRAWINGS, CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH MECHANICAL AND OTHER CONTRACTORS TO ENSURE COMPATIBILITY BETWEEN ELECTRICAL AND MECHANICAL EQUIPMENT SIZES AND TYPES OF ELECTRICAL INTERFACE EQUIPMENT REQUIRED.
- 10. USE LONG-SWEEPS FOR ALL CHANGES IN DIRECTION ON CONDUIT RUNS.
- 11. ALL INTERIOR RACEWAYS SHALL BE EMT.
- 12. FIELD VERIFY PROJECT SITE EXISTING CONDITIONS AND ELEVATIONS PRIOR TO BEGINNING ANY WORK.
- 13. PHASING AND SEQUENCE OF CONSTRUCTION SHALL BE PER DRAWINGS AND SPECIFICATIONS.
- 14. ALL MATERIALS AND LABOR, WHETHER SPECIFICALLY INDICATED ON PLANS OR NOT, WHICH ARE NECESSARY FOR THE PROPER INSTALLATION AND FUNCTION OF THE SYSTEM SHALL BE FURNISHED BY THIS CONTRACTOR. INCLUDE ALL COSTS OF CHANGES, IF/AS REQUIRED IN BID PROPOSAL.
- 15. ELECTRICAL WIRING SHALL NOT BE SPLICED BELOW GRADE.
- 16. CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS AND FEES ASSOCIATED WITH PROJECT, INCLUDING FEES FOR INSPECTIONS, APPLICATIONS, AND PROVISION OF NEW SERVICES.
- 17. CONTRACTOR WHO WILL ACTUALLY PERFORM WORK MUST APPLY FOR ALL REQUIRED PERMITS.
- 18. NOTIFY ENGINEER OF ANY ASPECTS OF DESIGN WHICH ARE THOUGHT TO BE IN NONCOMPLIANCE WITH APPLICABLE CODES.
- 19. COORDINATE ALL WORK WITH OTHER TRADES; COORDINATE SCHEDULE OF WORK WITH ALL SUB-CONTRACTORS TO ACHIEVE SMOOTH FLOW OF CONSTRUCTION.
- 20. SEAL AROUND ELECTRICAL RACEWAYS AT ALL WALLS AND WALL LOUVER PENETRATIONS WITH FIREPROOF CAULKING. RE. SPECS. PROVIDE FLASHING AROUND PENETRATION, BOTH INSIDE AND OUTSIDE, TO PROVIDE FINISHED LOOK.
- 21. CONTRACTOR SHALL REVIEW COMPLETE DOCUMENTS PRIOR TO SUBMITTAL OF PROPOSAL TO GAIN COMPLETE UNDERSTANDING OF PROJECT SCOPE, WORK BY OTHERS, AND ELECTRICAL WORK ASSOCIATED WITH OTHER DISCIPLINES.
- 22. MAINTAIN MANUFACTURER RECOMMENDED CLEARANCE AROUND ALL EQUIPMENT.
- 23. AFFIX ID TAGS TO ALL DIVISION 26 EQUIPMENT.
- 24. CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH MECHANICAL AND PLUMBING CONTRACTOR REGARDING EQUIPMENT SIZES AND TYPES OF ELECTRICAL INTERFACE EQUIPMENT REQUIRED.
- 25. FIELD VERIFY ALL CONDITIONS AND MEASURE DIMENSIONS WITHIN THE BUILDING PRIOR TO ORDERING EQUIPMENT AND/OR PROCEEDING WITH INSTALLATION.
- 26. ALL EQUIPMENT SHALL BE FACTORY TESTED, AND CONTRACTOR SHALL VERIFY THEIR CONDITION PRIOR TO INSTALLATION. CONTRACTOR IS RESPONSIBLE FOR EQUIPMENT DAMAGED DURING MOVING AND INSTALLATION.
- 27. EQUIPMENT FOUND DEFECTIVE PRIOR TO FINAL ACCEPTANCE SHALL BE REPLACED AT NO COST TO OWNER.
- 28. SLEEVE ALL EXTERIOR WALL PENETRATIONS.
- 29. PRIOR TO ANY DEMOLITION, CONTRACTOR SHALL CONDUCT A DETAILED INSPECTION OF EXISTING CONDITIONS AND COMPARE AGAINST DEMOLITION DRAWINGS. CONTRACTOR SHALL REQUEST CLARIFICATION AS TO THE REMOVAL OF ANY ELECTRICAL COMPONENTS FOUND IN THE FIELD THAT ARE NOT SPECIFICALLY NOTED TO BE DEMOLISHED.
- 30. THE DESIGN INTENT IS TO REUSE TO EXTENT POSSIBLE EXISTING ELECTRICAL AND SAFETY SYSTEMS INCLUDING CIRCUIT BREAKERS, WIRING AND CONDUITS, SAFETY AND OTHER HARD WIRED INTERLOCKS, ETC. EXISTING SYSTEMS TO BE REUSED SHALL BE PROTECTED FROM DAMAGE DURING CONSTRUCTION. SEE PLANS
- 31. PROVIDE ADDITIONAL SPARE MATERIALS DESCRIBED BELOW. PROVIDE PROTECTIVE COVERING FOR STORAGE & IDENTIFIED WITH LABELS DESCRIBING THE CONTENTS. INCLUDE THE INSTALLATION COST, FITTINGS AND SUPPORTS IN THE BASE BID PROPOSAL:
  - A. 100 LINEAR FEET - 1/2"-2#12 & #12G
  - B. 100 LINEAR FEET - 1"-3#6 & #10G
  - C. 50 LINEAR FEET - 1"-3#6 & #10G
  - D. 50 LINEAR FEET - 1.25"-3#3 & #6G
  - E. 50 LINEAR FEET - 1.5"-3#1/0 & #6G

**MECHANICAL SYMBOLS LEGEND**

12x12	DUCT SIZE: FIRST FIGURE IS SIDE SHOWN		THERMOSTAT
(12x12)	BELOW DUCT SIZE: FIRST FIGURE IS SIDE SHOWN		SPACE HUMIDITY SENSOR
	DIRECTION OF FLOW-RETURN		DUCT HUMIDITY SENSOR
	DIRECTION OF FLOW-SUPPLY		SPACE CARBON DIOXIDE SENSOR
			STATIC PRESSURE SENSOR
			DUCT CARBON DIOXIDE SENSOR
	FIRE DAMPER		CHILLED WATER RETURN
	FLEXIBLE DUCT		CHILLED WATER SUPPLY
	EXHAUST AIR GRILLE		CONDENSATE PIPING
	RETURN AIR/TRANSFER AIR GRILLE		BUTTERFLY VALVE
	SUPPLY AIR DIFFUSER		MANUAL VALVE
	SIDE TAP WITH DAMPER		AUTOMATIC VALVE
	BACKDRAFT DAMPER		CHECK VALVE
	AUTO-FLOW REGULATOR		PRESSURE GAUGE & COCK
	DRAIN VALVE		TEMPERATURE SENSOR
	BALL VALVE		THERMOMETER WELL

NO. REVISION: BY:

COPY NO:

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TEXAS

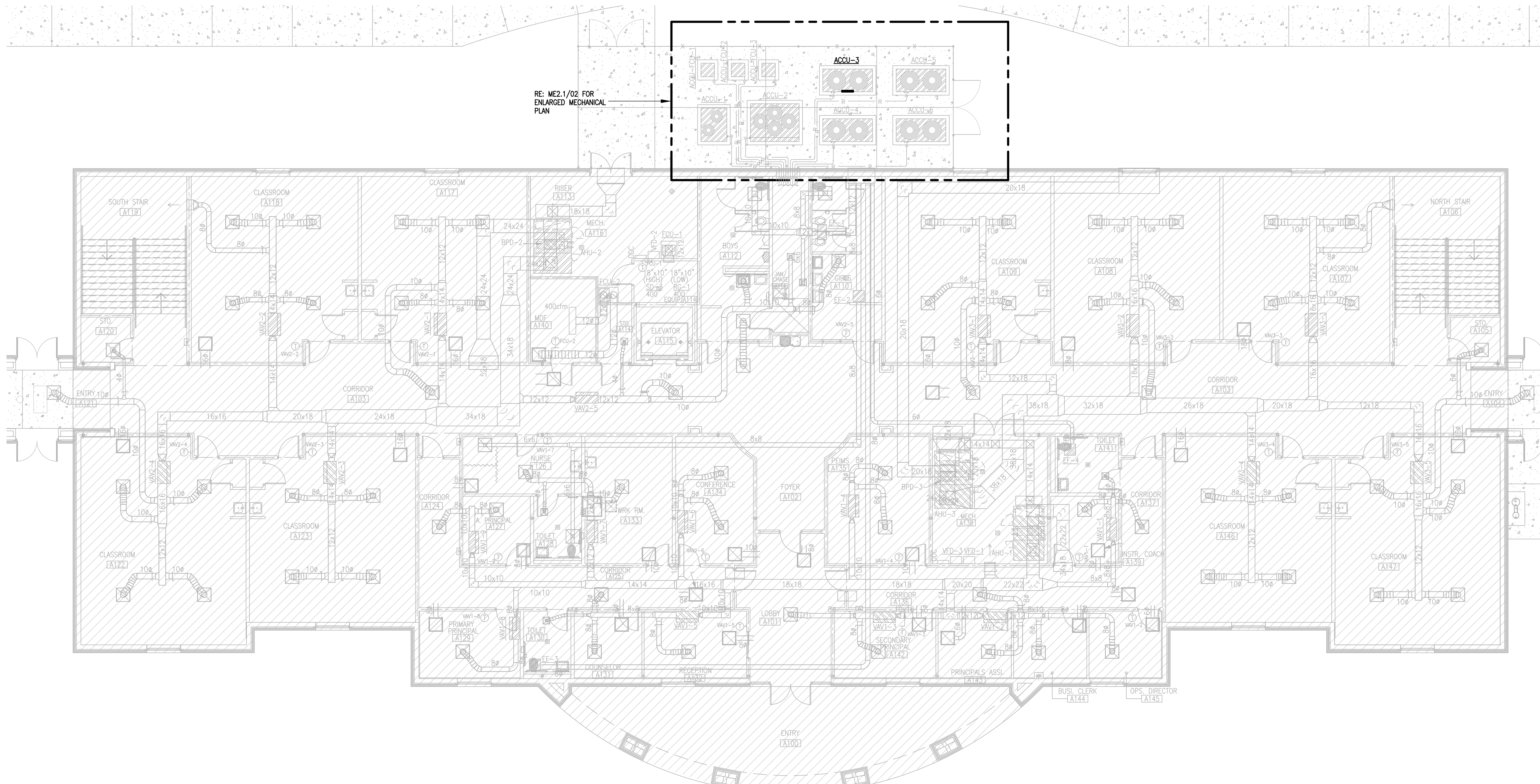
IDEA PUBLIC SCHOOLS  
LOWER RGV MECHANICAL UPGRADES

RIO GRANDE VALLEY



1126 SOUTH COMMERCE ST.  
MARLINGTON, TX  
PHONE: 855-205-3435  
TEXAS REGISTERED  
ENGINEERING FIRM  
E-15098

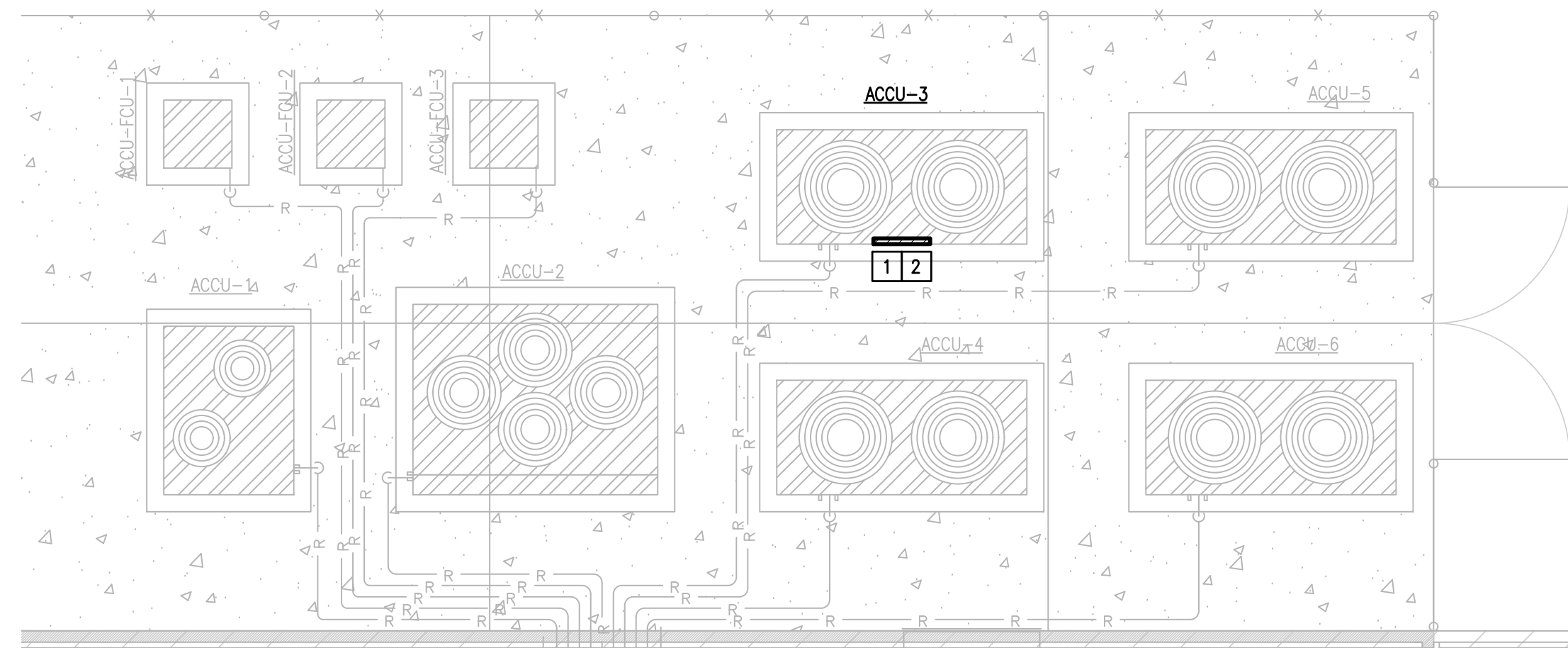
DATE:	MAY 24, 2024
CHECKED BY:	B.B.
DRAWN BY:	D.G.
PROJECT NO.:	23V76
CAD FILE:	
SHEET:	ME1.0



RE: ME2.1/02 FOR ENLARGED MECHANICAL PLAN

IDEA BROWNSVILLE BUILDING A  
01 MECHANICAL & ELECTRICAL FLOOR PLAN

SCALE: 1/8" = 1'-0"



02 ENLARGED MECHANICAL & ELECTRICAL PLAN

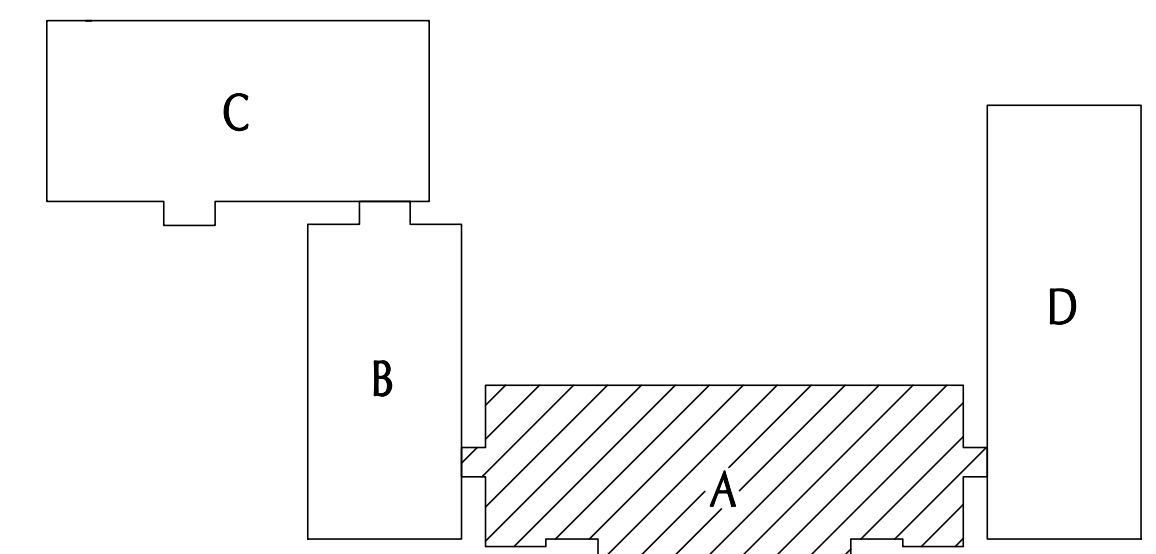
SCALE: 1/4" = 1'-0"



LEGEND	
	EXISTING SUPPLY DIFFUSER TO BE REMAIN
	EXISTING RETURN AIR GRILLE TO REMAIN
	EXISTING DUCTWORK TO REMAIN
	EXISTING EQUIPMENT TO REMAIN
	EXISTING PIPING TO REMAIN
	NEW EQUIPMENT TO BE INSTALLED

MECHANICAL KEYED NOTES:

- REMOVE AND REPLACE EXISTING CARRIER ACCU DAMAGED CONTROL PANEL. PROVIDE NEW CARRIER MODEL NUMBER HK04A031. PROVIDE FULL START-UP, SERVICES FOR THE NEW CONTROL PANEL AND ASSOCIATED EXISTING ACCU AND AHU INCLUDING TROUBLESHOOTING AND DIAGNOSIS SERVICES; REPORT DEFICIENCIES TO THE OWNER AND ENGINEER. OWNER MAY DECIDE TO ADDRESS EXISTING DEFICIENCIES USING THE ALLOWANCE. REPLACEMENT WORK OF THE NEW ACCU CONTROL PANEL SHALL BE PERFORMED BY A CERTIFIED CARRIER TECHNICIAN.
- CONTACT TEXAS AIR PRODUCTS (MANUFACTURER REP) AT PHONE NUMBER 210-495-8100 FOR CARRIER CERTIFIED TECHNICIAN INFORMATION AND FOR CARRIER PARTS PRICING.



KEY PLAN

NO. REVISION: BY:

COPY NO:  
CSP #25-LRMU-0424



TEXAS

IDEA PUBLIC SCHOOLS  
LOWER RGV MECHANICAL UPGRADES

BROWNSVILLE



1128 SOUTH COMMERCE ST.  
HARLINGEN, TX  
PHONE: 361-206-3435  
TEXAS REGISTERED  
ENGINEERING FIRM  
E-15998

DATE: MAY 24, 2024

CHECKED BY: B.B.

DRAWN BY: D.G.

PROJECT NO.: 23V76

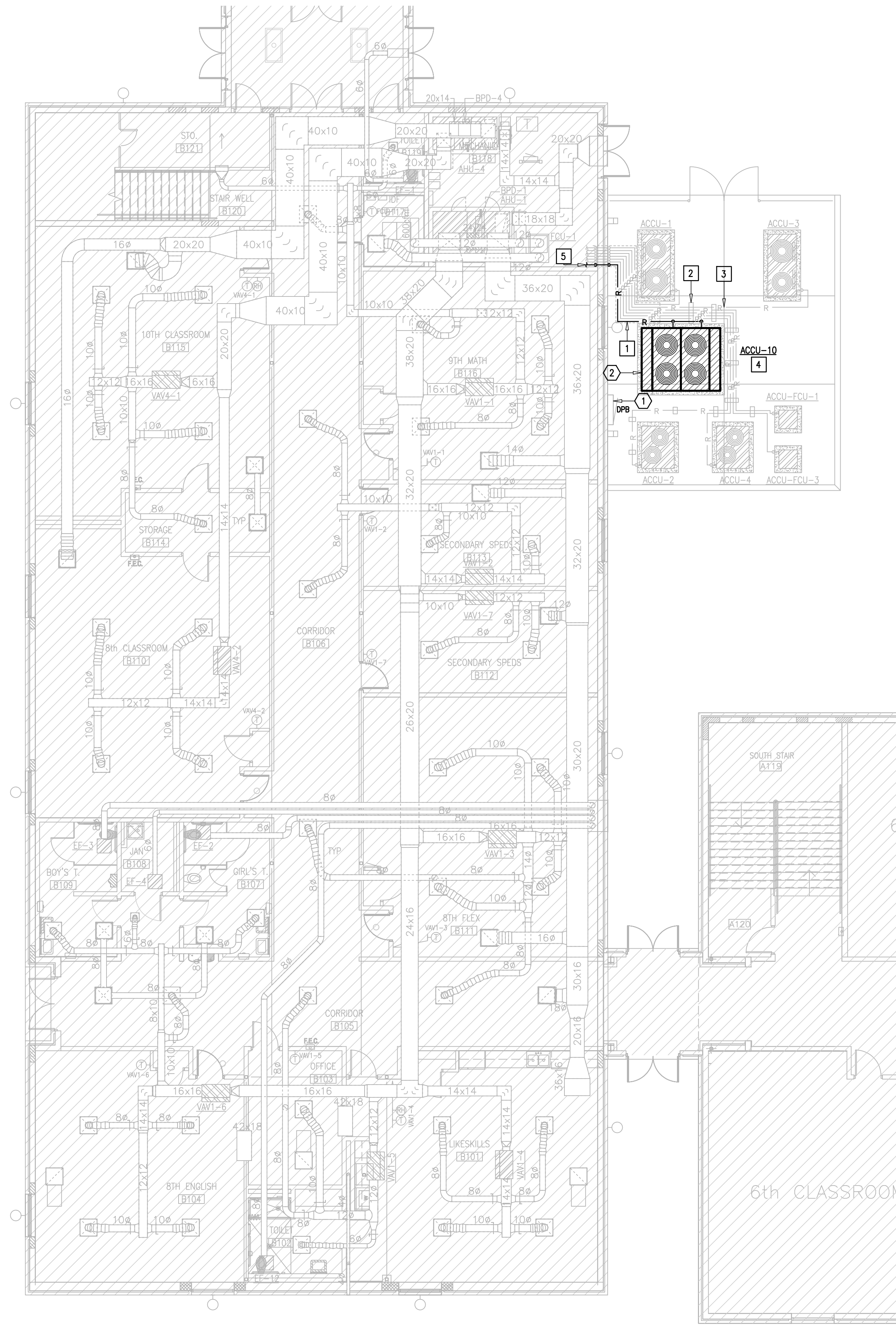
CAD FILE:

SHEET:

ME2.1

**LEGEND**

	EXISTING SUPPLY DIFFUSER TO REMAIN
	EXISTING RETURN AIR GRILLE TO REMAIN
	EXISTING DUCTWORK TO REMAIN
	EXISTING EQUIPMENT TO REMAIN
	NEW EQUIPMENT
	NEW PIPING TO BE INSTALLED
	EXISTING PIPING TO REMAIN

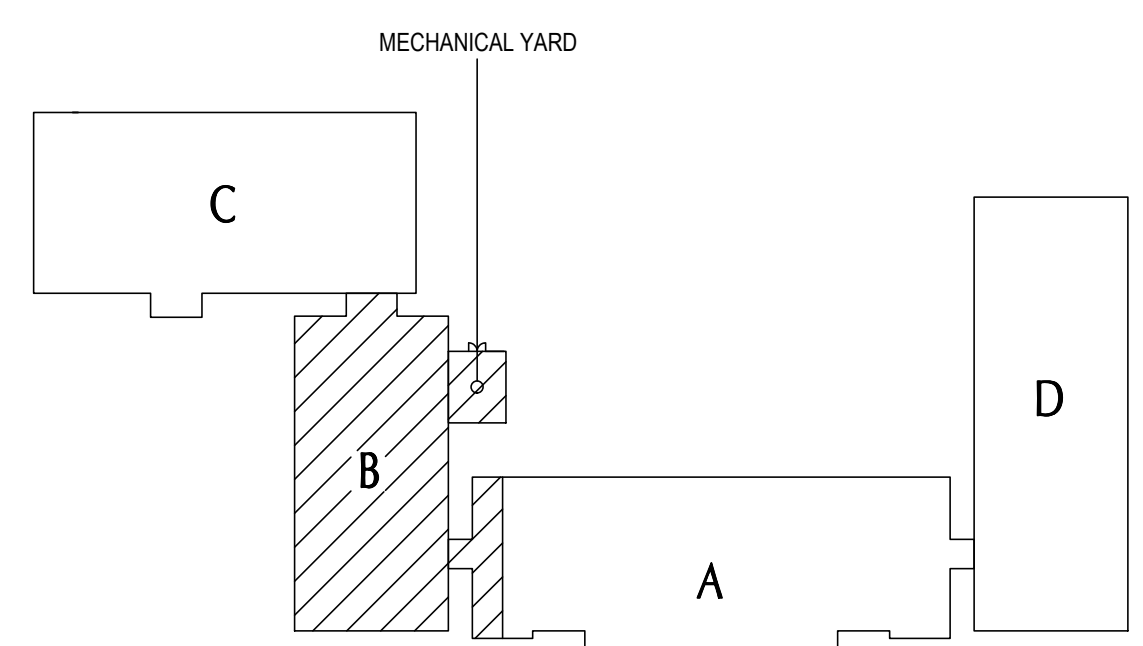


**MECHANICAL KEYED NOTES:**

- 1 DEMOLISH EXISTING REFRIGERANT PIPING. REPLACE IT WITH NEW REFRIGERANT PIPING AND ROUTE TO INDOOR UNIT. COORDINATE ROUTING WITH OTHER TRADES PRIOR TO INSTALLATION. ROUTE INSIDE WALL TO AVOID EXPOSED PIPING WITHIN THE SPACE. (TYPICAL)
- 2 PROVIDE REFRIGERANT LINE SUPPORTS. SEE ASSOCIATED DETAIL. (TYPICAL)
- 3 PROVIDE NEW 1" INSULATION ON ALL REFRIGERANT LINES BOTH NEW AND EXISTING. PROVIDE ALUMINUM JACKET ON EXPOSED REFRIGERANT LINES. SEE SPECIFICATIONS. PROVIDE REFRIGERANT LINE SUPPORTS PER SPECIFICATIONS. SEE ASSOCIATED DETAIL.
- 4 DEMOLISH EXISTING ACCU AND INSTALL NEW AIR COOLED CONDENSING UNIT AND INSULATED REFRIGERANT PIPING PER SPECIFICATIONS. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES AND MOUNT UNIT ON EXISTING CONCRETE PAD. PAD SHALL BE MINIMUM 6" LARGER THAN EQUIPMENT FOOTPRINT ON ALL SIDES. REFRIGERANT PIPING SHOWN IS STRICTLY SCHEMATIC. VERIFY NUMBER OF CIRCUITS AND PIPE SIZES WITH MANUFACTURER'S DATA. BOLT EQUIPMENT DOWN TO EXISTING CONCRETE SLAB. ATTACHMENT SHALL BE CAPABLE OF WITHSTANDING THE LOCAL WIND PRESSURES. PROVIDE START-UP SERVICES. REFER TO SPECIFICATIONS FOR MORE INFORMATION.
- 5 RETAIN EXISTING PENETRATION SLEEVES WHERE POSSIBLE. SEAL AROUND NEW PIPING WITH FIRE PROOF CAULKING. PROVIDE NEW ESCUTCHEON PLATES AND FLASHING AROUND PENETRATION BOTH INSIDE AND OUTSIDE TO PROVIDE FINISHED LOOK WHERE NECESSARY.

**ELECTRICAL KEYED NOTES:**

- 1 APPROXIMATE LOCATION OF EXISTING PANELBOARD SERVING HVAC EQUIPMENT.
- 2 DISCONNECT EXISTING HVAC EQUIPMENT FOR REPLACEMENT. SEE EQUIPMENT CONNECTION SCHEDULE.



**KEY PLAN**

**IDEA BROWNSVILLE BUILDING B  
01 MECHANICAL & ELECTRICAL FLOOR PLAN**  
SCALE: 1/8" = 1'-0"  
NORTH

NO. REVISION: BY:

COPY NO:  
CSP #25-LRMU-0424

TEXAS

**IDEA PUBLIC SCHOOLS  
LOWER RGV MECHANICAL UPGRADES**

BROWNSVILLE

1126 SOUTH COMMERCE ST.  
HARLINGEN, TX  
PHONE: 361-206-3435  
TEXAS REGISTERED  
ENGINEERING FIRM  
E-15998

DATE: MAY 24, 2024  
CHECKED BY: B.B.  
DRAWN BY: D.G.  
PROJECT NO.: 23V76  
CAD FILE:  
SHEET:  
**ME2.2**

**LEGEND**

	EXISTING SUPPLY DIFFUSER TO REMAIN
	EXISTING RETURN AIR GRILLE TO REMAIN
	EXISTING DUCTWORK TO REMAIN
	NEW DUCTWORK TO BE INSTALLED
	EXISTING EQUIPMENT TO REMAIN
	NEW EQUIPMENT TO BE INSTALLED

NO. REVISION: BY:

COPY NO:  
CSP #25-LRMU-0424



TEXAS

**IDEA PUBLIC SCHOOLS  
LOWER RGV MECHANICAL UPGRADES**

BROWNSVILLE



1128 SOUTH COMMERCE ST.  
HARLINGEN, TX  
PHONE: 361-205-3435  
TEXAS REGISTERED  
ENGINEERING FIRM  
E-15998

DATE: MAY 24, 2024

CHECKED BY: B.B.

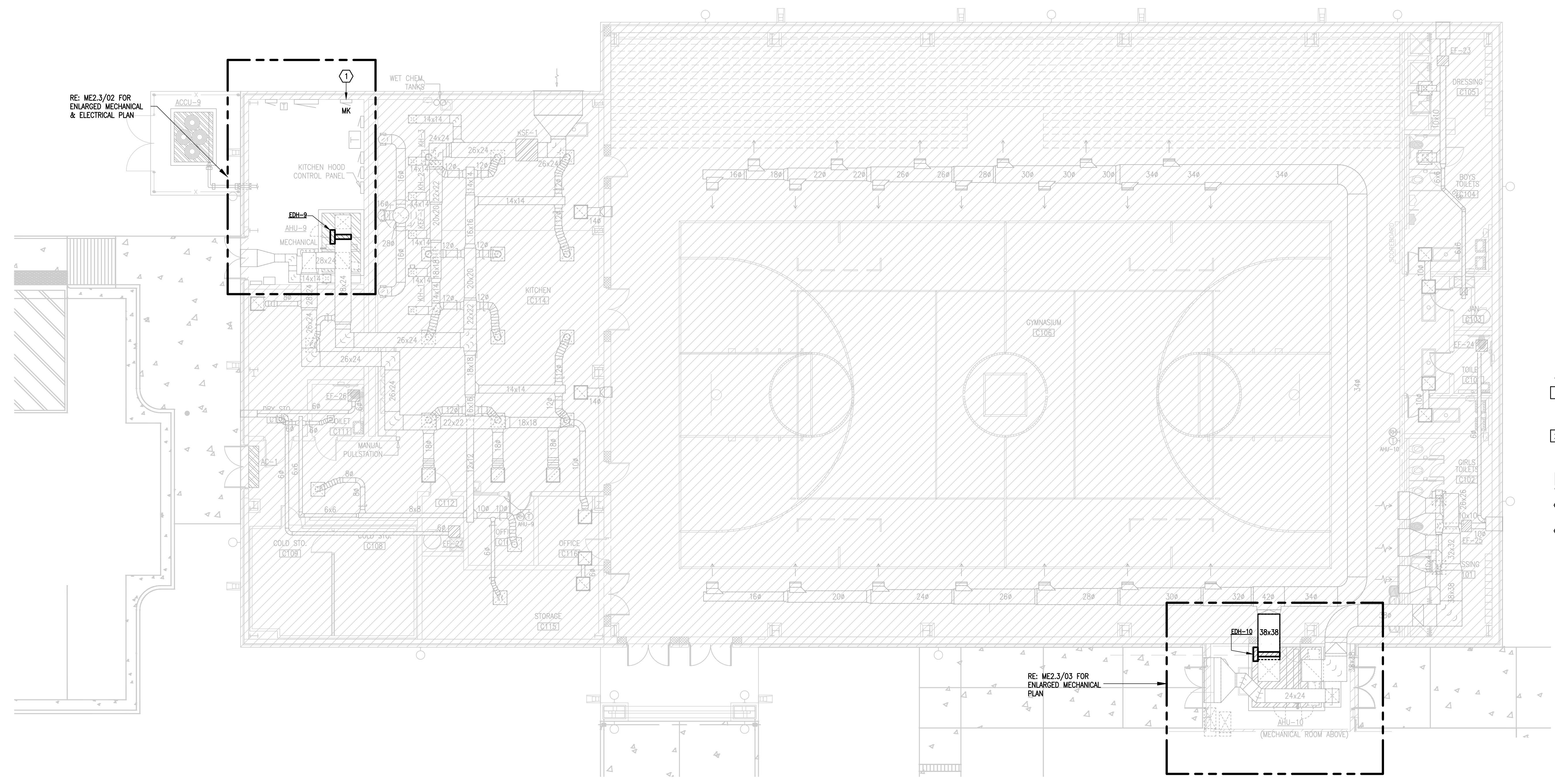
DRAWN BY: D.G.

PROJECT NO.: 23V76

CAD FILE:

SHEET:

**ME2.3**



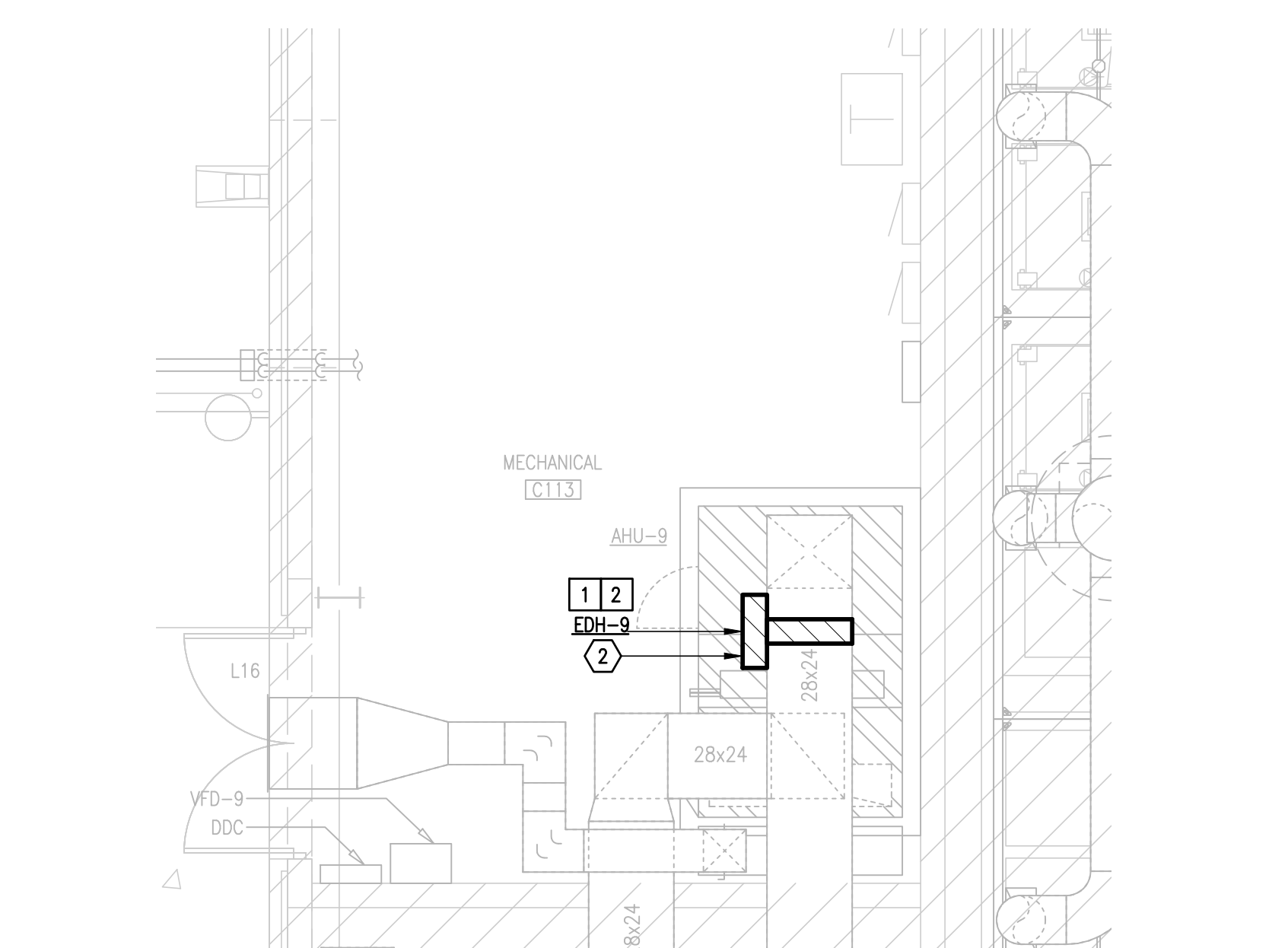
**MECHANICAL KEYED NOTES:**

- 1 DEMOLISH EXISTING ELECTRIC DUCT HEATER. REPLACE IT WITH NEW ELECTRIC DUCT HEATER AT THIS APPROXIMATE LOCATION AS SCHEDULED. REFER TO PROVIDED SCHEDULE ON DESIGNATED SCHEDULE SHEET.
- 2 DEMOLISH SECTION OF DUCTWORK AS REQUIRED TO REMOVE DUCT HEATER. PROVIDE SECTION OF DUCT AS REQUIRED TO INSTALL NEW DUCT HEATER.

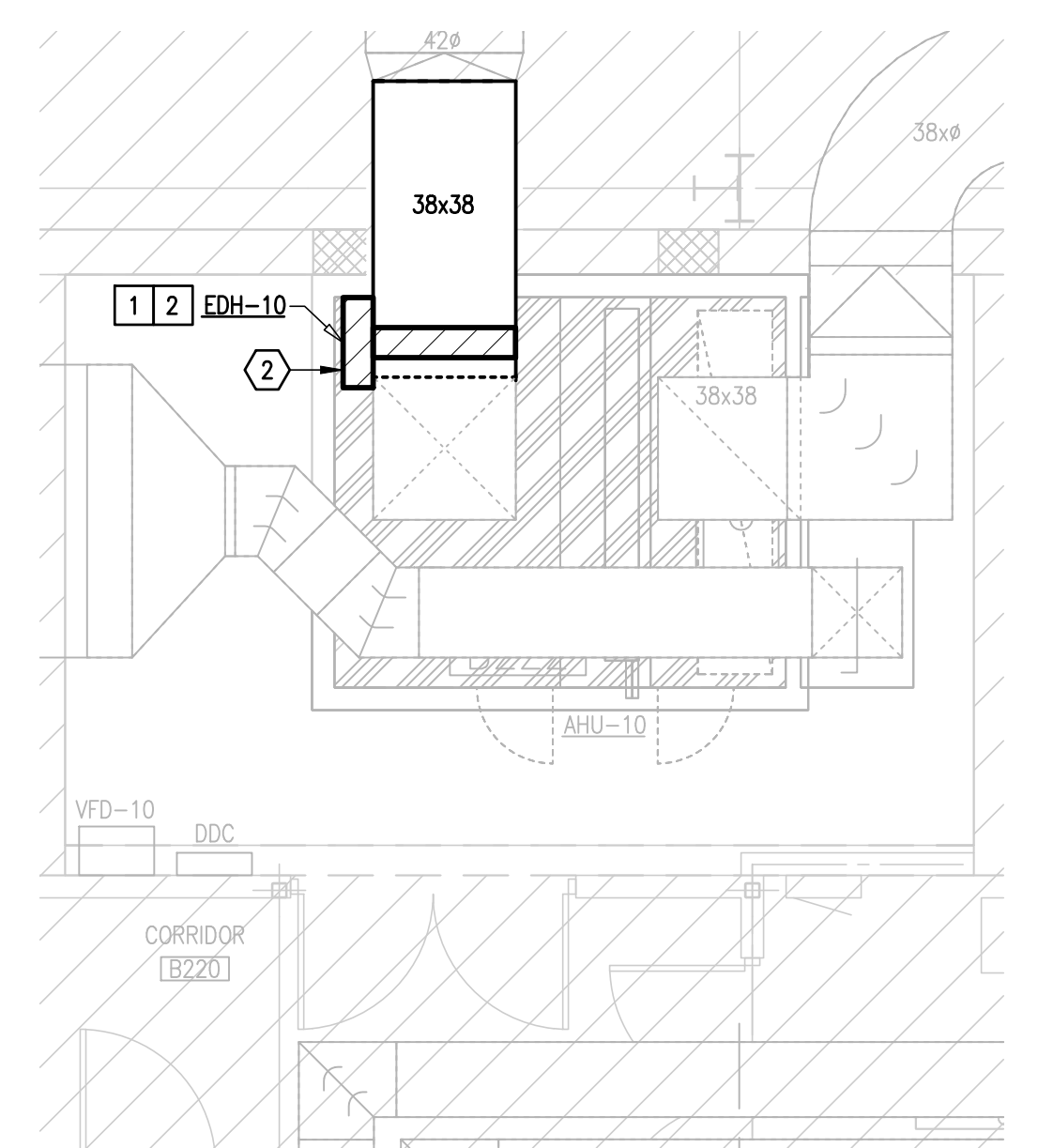
**ELECTRICAL KEYED NOTES:**

- 1 APPROXIMATE LOCATION OF EXISTING PANELBOARD SERVING HVAC EQUIPMENT.
- 2 DISCONNECT EXISTING HVAC EQUIPMENT FOR REPLACEMENT. SEE EQUIPMENT CONNECTION SCHEDULE.

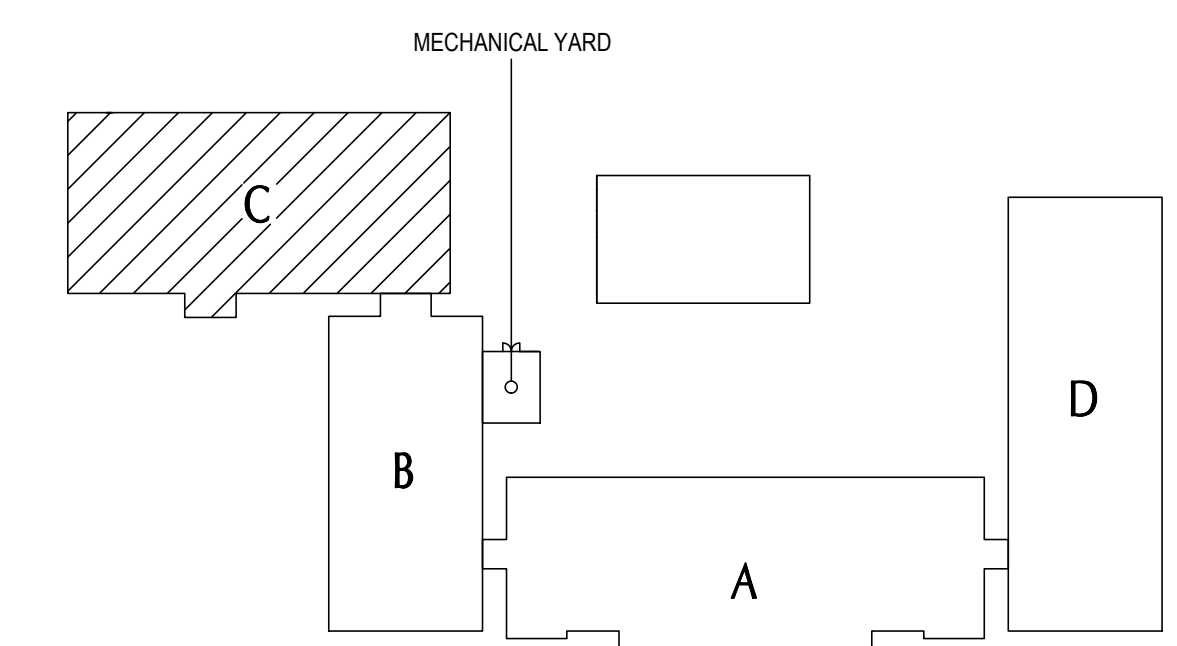
**IDEA BROWNSVILLE BUILDING C  
01 MECHANICAL & ELECTRICAL FLOOR PLAN**  
SCALE : 1/8" = 1'-0"



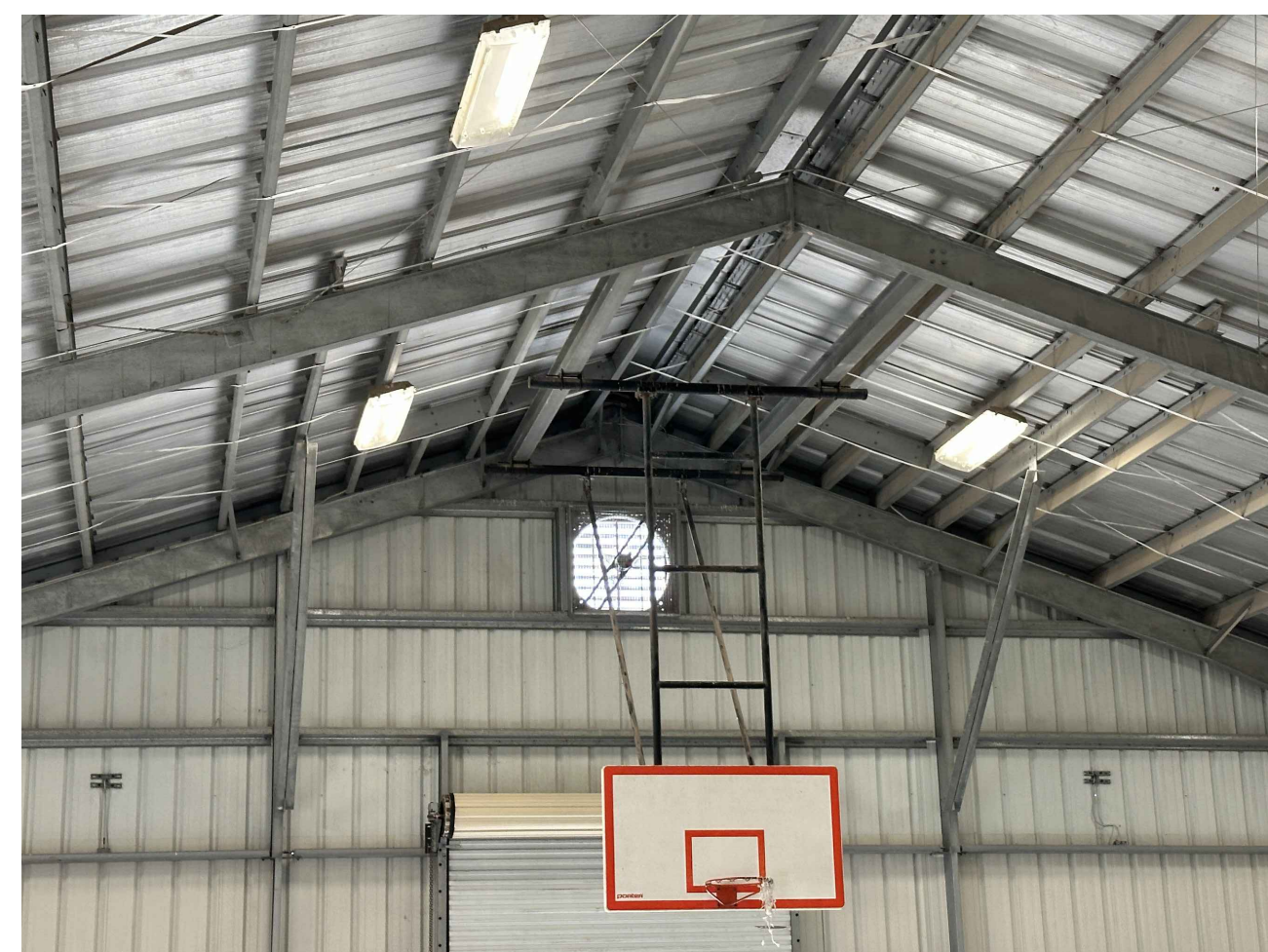
**02 ENLARGED MECHANICAL & ELECTRICAL PLAN**  
SCALE : 1/4" = 1'-0"



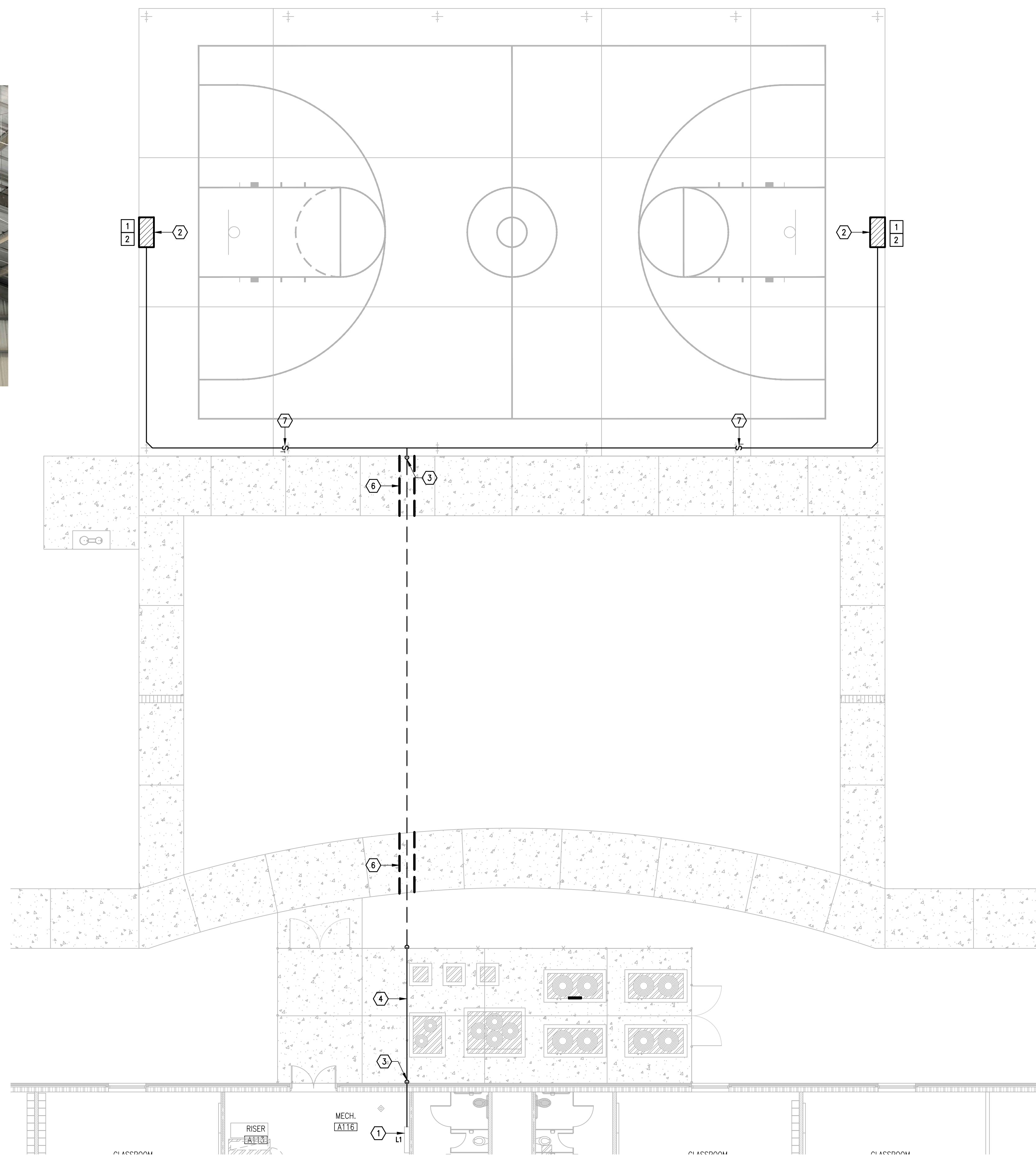
**03 ENLARGED MECHANICAL & ELECTRICAL PLAN**  
SCALE : 1/4" = 1'-0"



**KEY PLAN**



**02 IDEA BROWNSVILLE PAVILION EXISTING EXHAUST FANS**  
NOT TO SCALE



**01 IDEA BROWNSVILLE PAVILION MECHANICAL & ELECTRICAL FLOOR PLAN**  
SCALE: 1/8" = 1'-0"



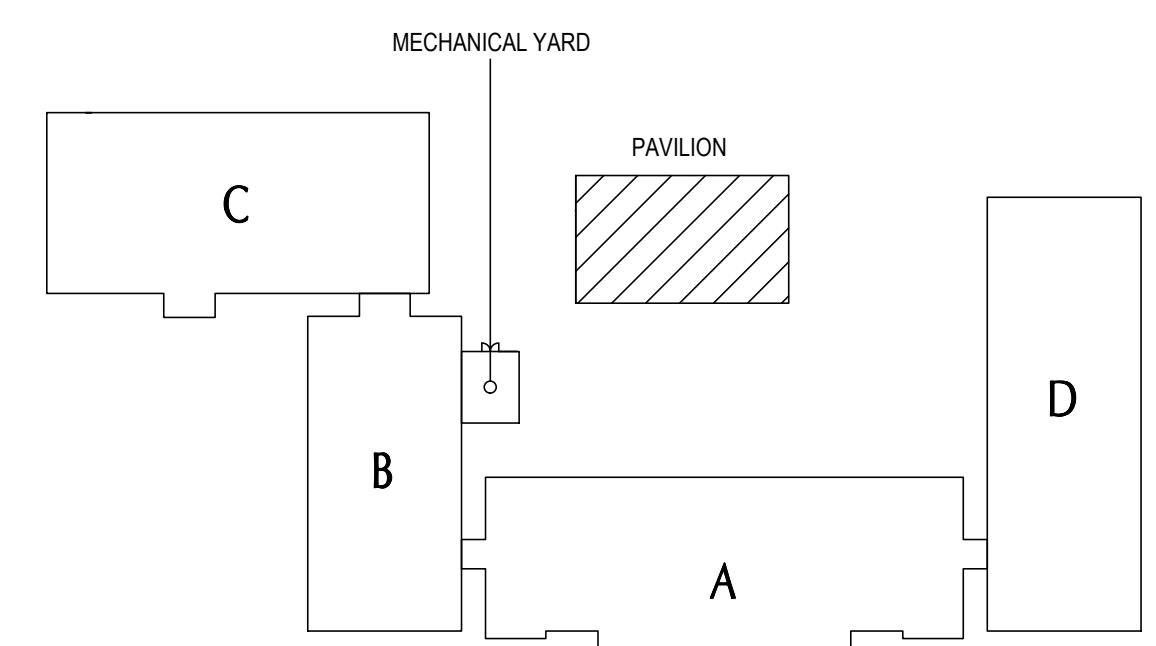
LEGEND	
	EXISTING SUPPLY DIFFUSER TO REMAIN
	EXISTING RETURN AIR GRILLE TO REMAIN
	EXISTING DUCTWORK TO REMAIN
	EXISTING EQUIPMENT TO REMAIN
	NEW EQUIPMENT TO BE INSTALLED

**MECHANICAL KEYED NOTES:**

- 1 DEMOLISH EXISTING EXHAUST FAN. PROVIDE NEW EXHAUST FAN AT THIS APPROXIMATE LOCATION AS SCHEDULED. SEE NEW EXHAUST FAN SCHEDULE AT ASSOCIATED SCHEDULE SHEET.
- 2 RECORD DRAWINGS OF EXISTING EXHAUST FANS WERE NOT AVAILABLE AND MECHANICAL PLANS WERE DEVELOPED ON LIMITED FIELD OBSERVATIONS. CONTRACTOR SHALL CONTACT ETHOS ENGINEERING TO SCHEDULE A SITE VISIT DURING CONSTRUCTION AND PRIOR TO EQUIPMENT SUBMITTAL PHASE FOR FIELD VERIFICATION PURPOSES. ETHOS ENGINEERING MAY ISSUE REVISED CONSTRUCTION DRAWINGS BASED ON SUCH FIELD VERIFICATION. CONTRACTOR SHALL PROVIDE ALL THE NECESSARY EQUIPMENT AND TOOLS FOR ACCESSING THE FANS SUCH AS: MAN-SCISSORS LIFT, STEP-LADDER, EXTENSION-LADDER, ETC. TO REACH AN APPROXIMATE HEIGHT OF 20'. DO NOT ORDER EXHAUST FANS UNTIL ETHOS ENGINEERING HAS ISSUED A CONFIRMED DIRECTIVE.

**ELECTRICAL KEYED NOTES:**

- 1 APPROXIMATE LOCATION OF EXISTING PANELBOARD SERVING HVAC EQUIPMENT.
- 2 DISCONNECT EXISTING HVAC EQUIPMENT FOR REPLACEMENT. SEE EQUIPMENT CONNECTION SCHEDULE.
- 3 RISE UP ALONG EXTERIOR WALL AND PENETRATE EXISTING BUILDING AT AN ACCESSIBLE LOCATION.
- 4 PROVIDE FLOOR MOUNT SUPPORT OVER EXISTING FOUNDATION.
- 5 PROVIDE BORE UNDER EXISTING SIDEWALK.
- 6 SAW CUT EXISTING CONCRETE SIDEWALK. REPAIR TO MATCH EXISTING CONDITIONS.
- 7 PROVIDE THERMAL SWITCH SURFACE MOUNTED TO STEEL COLUMN AT 48" AFF.



**KEY PLAN**

NO. REVISION: BY:

COPY NO:

CSP #25-LRMU-0424

**IDEA PUBLIC SCHOOLS**  
**LOWER RGV MECHANICAL UPGRADES**

BROWNSVILLE

1128 SOUTH COMMERCE ST.  
HARLINGEN, TX  
PHONE: 361-205-3435  
TEXAS REGISTERED  
ENGINEERING FIRM  
E-15998

DATE: MAY 24, 2024

CHECKED BY: B.B.

DRAWN BY: D.G.

PROJECT NO.: 23V76

CAD FILE: -

SHEET: **ME2.4**

LEGEND

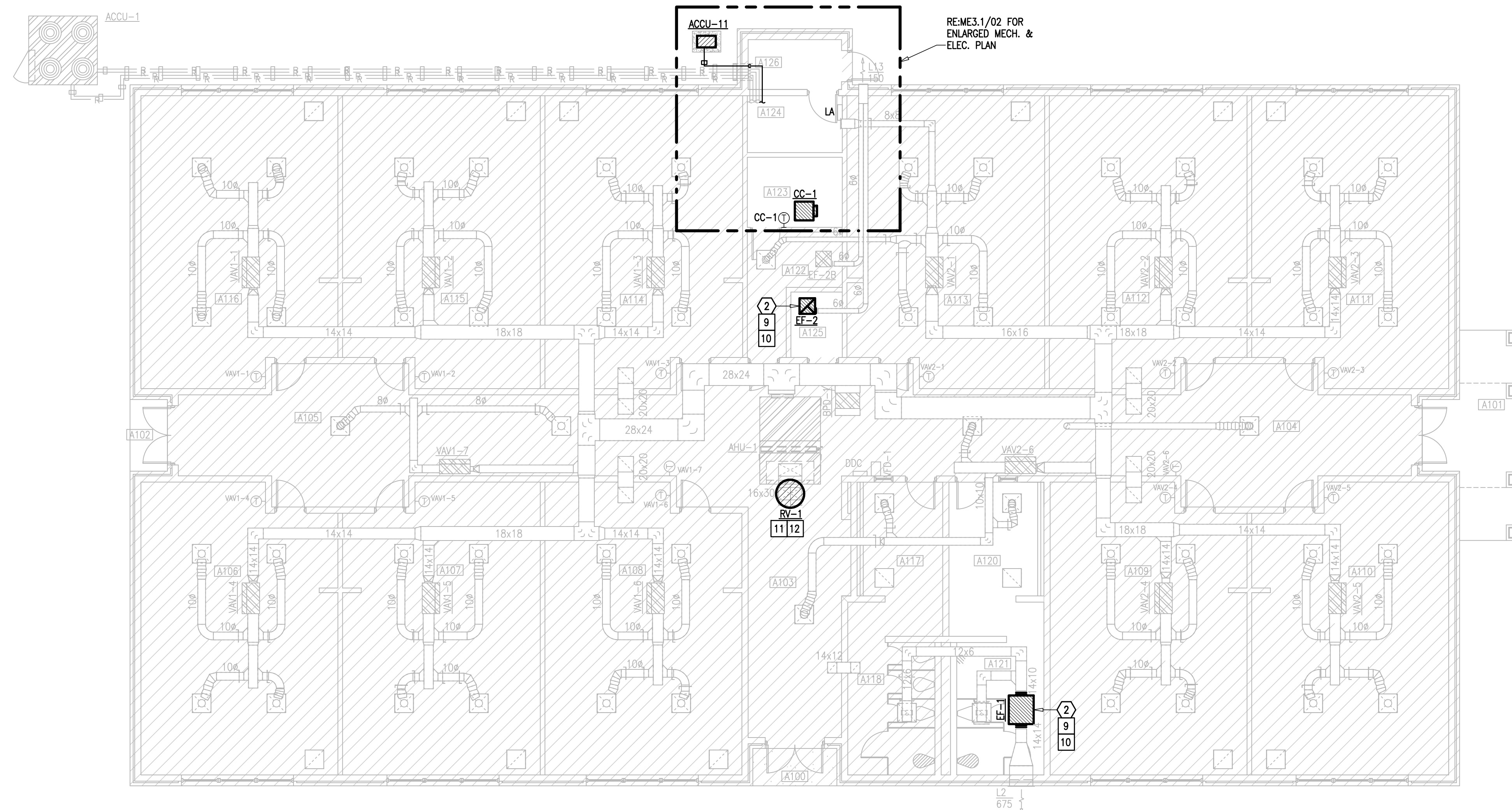
	EXISTING SUPPLY DIFFUSER TO REMAIN
	EXISTING RETURN AIR GRILLE TO REMAIN
	EXISTING DUCTWORK TO REMAIN
	NEW DUCTWORK TO BE INSTALLED
	EXISTING EQUIPMENT TO REMAIN
	NEW EQUIPMENT TO BE INSTALLED
	NEW PIPING TO BE INSTALLED
	EXISTING PIPING TO REMAIN

MECHANICAL KEYED NOTES:

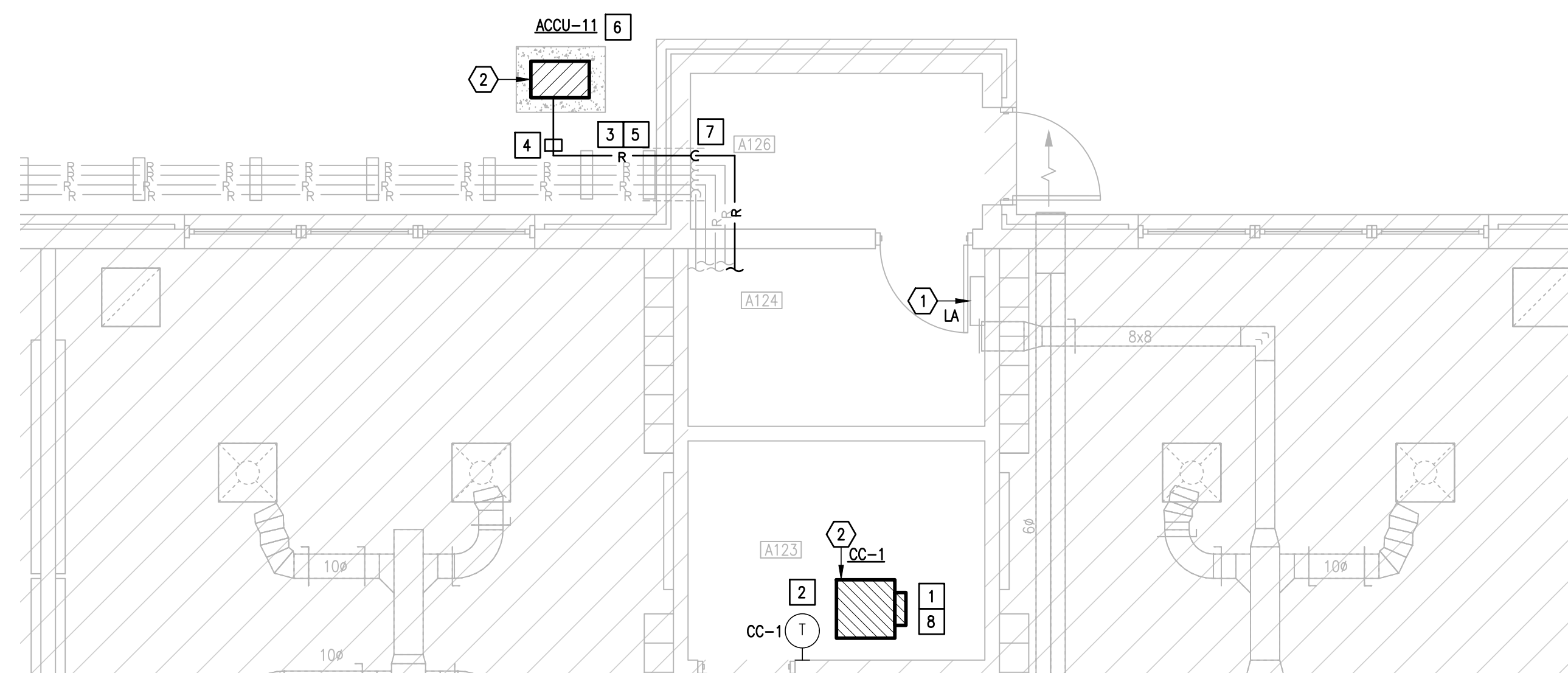
- DEMOLISH EXISTING CASSETTE UNIT. REPLACE IT WITH NEW CASSETTE UNIT AT THIS APPROXIMATE LOCATION. REFER TO PROVIDED SCHEDULE AND SPECIFICATIONS FOR MORE INFORMATION.
- DEMOLISH EXISTING THERMOSTAT. REPLACE IT WITH NEW THERMOSTAT AS SHOWN. MOUNT 48" ABOVE FINISHED FLOOR & COORDINATE WITH ARCHITECT AND OWNER TO MEET ADA REQUIREMENTS. PROVIDE CLEAR LOCKING COVER FOR ALL SENSORS.
- DEMOLISH EXISTING REFRIGERANT PIPING. REPLACE IT WITH NEW REFRIGERANT PIPING AND ROUTE TO INDOOR UNIT. COORDINATE ROUTING WITH OTHER TRADES PRIOR TO INSTALLATION. ROUTE INSIDE WALL TO AVOID EXPOSED PIPING WITHIN THE SPACE. (TYPICAL)
- PROVIDE REFRIGERANT LINE SUPPORTS. SEE ASSOCIATED DETAIL. (TYPICAL)
- PROVIDE NEW 1" INSULATION ON ALL REFRIGERANT LINES BOTH NEW AND EXISTING. PROVIDE ALUMINUM JACKET ON EXPOSED REFRIGERANT LINES. SEE SPECIFICATIONS. PROVIDE REFRIGERANT LINE SUPPORTS PER SPECIFICATIONS. SEE ASSOCIATED DETAIL.
- DEMOLISH EXISTING ACCU AND REPLACE IT WITH NEW AIR COOLED CONDENSING UNIT AND INSULATED REFRIGERANT PIPING AS SHOWN. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES AND MOUNT UNIT ON EXISTING CONCRETE PAD. PAD SHALL BE MINIMUM 6" LARGER THAN EQUIPMENT FOOTPRINT ON ALL SIDES. REFRIGERANT PIPING SHOWN IS STRICTLY SCHEMATIC, VERIFY NUMBER OF CIRCUITS AND PIPE SIZES WITH MANUFACTURER'S DATA. BOLT EQUIPMENT DOWN TO EXISTING CONCRETE SLAB. ATTACHMENT SHALL BE CAPABLE OF WITHSTANDING THE LOCAL WIND PRESSURES.
- RETAIN EXISTING PENETRATION SLEEVES WHERE POSSIBLE. SEAL AROUND NEW PIPING WITH FIRE PROOF CAULKING. PROVIDE NEW ESCUTCHEON PLATES AND FLASHING AROUND PENETRATION BOTH INSIDE AND OUTSIDE TO PROVIDE FINISHED LOOK WHERE NECESSARY.
- RETAIN EXISTING CONDENSATE DRAIN LINE. RECONNECT EXISTING CONDENSATE DRAIN LINE TO NEW CASSETTE UNIT. PROVIDE NEW PIPING CONNECTIONS FROM EXISTING LINES TO UNITS' CONNECTIONS.
- DEMOLISH EXISTING EXHAUST FAN. REPLACE IT WITH NEW EXHAUST FAN AT THIS APPROXIMATE LOCATION. PROVIDE NEW DUCTWORK TRANSITION WHERE NECESSARY. REFER TO PROVIDED SCHEDULE AND TAB SPECIFICATIONS FOR MORE INFORMATION.
- TEMPORARILY REMOVE THE CEILING AROUND THE AREA OF WHERE EXISTING EXHAUST FAN IS TO BE REPLACED. RESTORE THE CEILING BACK TO ITS ORIGINAL CONDITION AFTER REPLACEMENT OF EXHAUST FAN.
- DEMOLISH EXISTING OUTSIDE AIR ROOF VENT AND ASSOCIATED ROOF CURB INCLUDING THE STRUCTURAL FRAMED OPENING. PROVIDE NEW ROOF VENT WITH NEW ROOF CURB AND ROOF REINFORCEMENT AS SHOWN ON DETAILS. CONNECT EXISTING OUTSIDE AIR DUCT TO NEW ROOF VENT. PROVIDE NEW DA TRANSITION DUCTWORK AS REQUIRED AND INSULATE WITH 2" EXTERNAL-WRAP INSULATION. COORDINATE WORK WITH ROOFING CONTRACTOR.
- MECHANICAL PLANS WERE DEVELOPED BASED ON LIMITED FIELD OBSERVATIONS. CONTRACTOR SHALL CONTACT ETHOS ENGINEERING TO SCHEDULE A SITE VISIT DURING CONSTRUCTION AND PRIOR TO EQUIPMENT SUBMITTAL PHASE FOR FIELD VERIFICATION PURPOSES. ETHOS ENGINEERING MAY ISSUE REVISED CONSTRUCTION DRAWINGS BASED ON SUCH FIELD VERIFICATION. CONTRACTOR SHALL PROVIDE ALL THE NECESSARY EQUIPMENT AND TOOLS FOR ACCESSING THE ROOF SUCH AS MAN SCISSORS LIFT, STEP-LADDER, EXTENSION-LADDER, ETC. TO REACH AN APPROXIMATION HEIGHT OF 15'. DO NOT ORDER ROOF VENTS UNTIL ETHOS ENGINEERING HAS ISSUED A CONFIRMED DIRECTIVE.

ELECTRICAL KEYED NOTES:

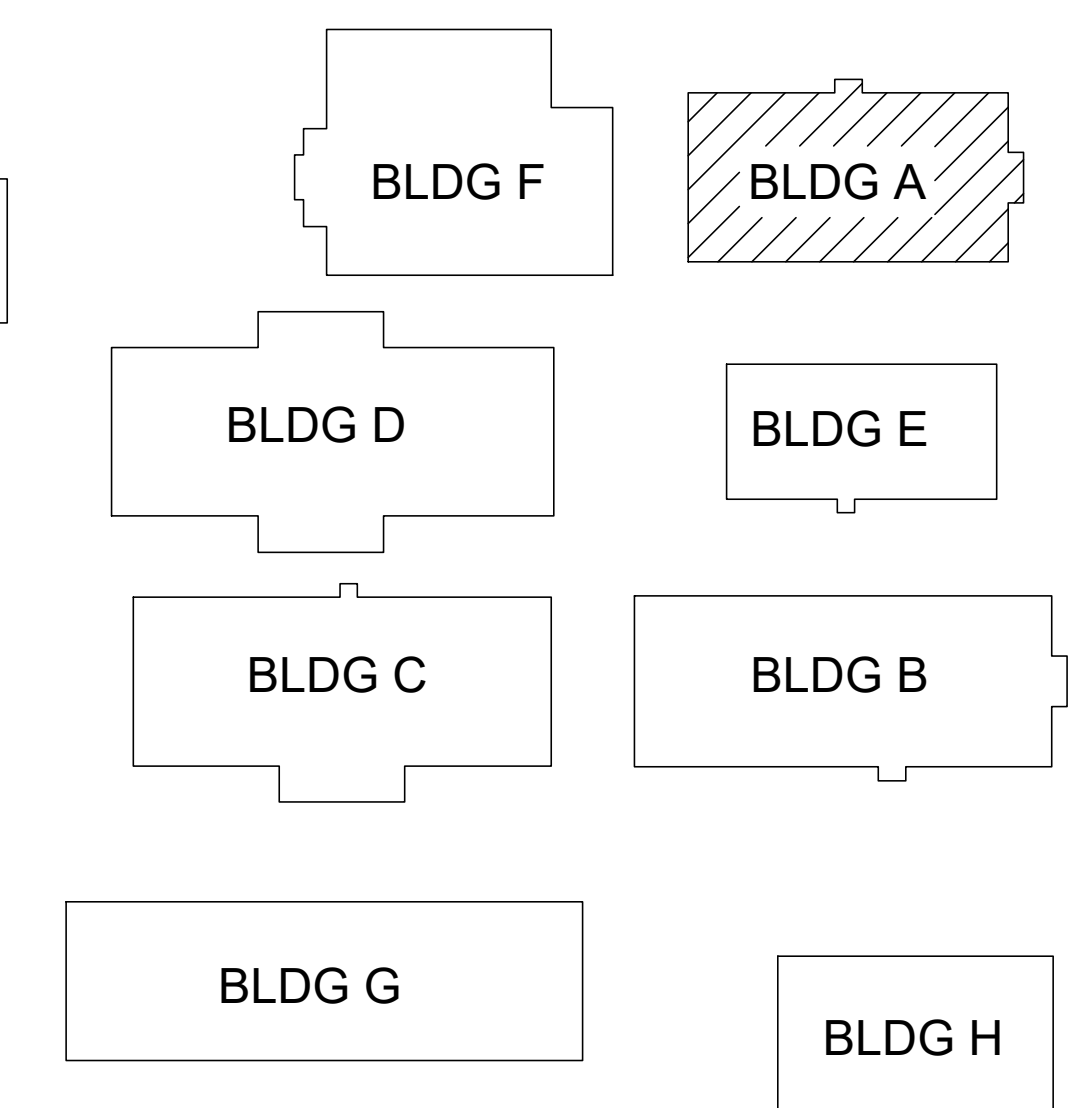
- APPROXIMATE LOCATION OF EXISTING PANELBOARD SERVING HVAC EQUIPMENT.
- DISCONNECT EXISTING HVAC EQUIPMENT FOR REPLACEMENT. SEE EQUIPMENT CONNECTION SCHEDULE.



01 IDEA FRONTIER BUILDING A  
MECHANICAL & ELECTRICAL FLOOR PLAN  
SCALE: 1/8" = 1'-0"  
NORTH



02 ENLARGED MECHANICAL & ELECTRICAL FLOOR PLAN  
SCALE: 1/4" = 1'-0"  
NORTH



KEYPLAN

NO. REVISION: BY:

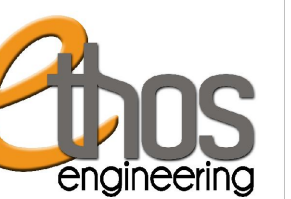
COPY NO:  
CSP #25-LRMU-0424



TEXAS

IDEA PUBLIC SCHOOLS  
LOWER RGV MECHANICAL UPGRADES

FRONTIER



1128 SOUTH COMMERCE ST.  
HARLINGEN, TX  
PHONE: 361-205-3435  
TEXAS REGISTERED  
ENGINEERING FIRM  
E-15998

DATE: MAY 24, 2024

CHECKED BY: B.B.

DRAWN BY: D.G.

PROJECT NO.: 23V76

CAD FILE:

SHEET:

ME3.1

LEGEND

	EXISTING SUPPLY DIFFUSER TO REMAIN
	EXISTING RETURN AIR GRILLE TO REMAIN
	EXISTING DUCTWORK TO REMAIN
	EXISTING EQUIPMENT TO REMAIN
	NEW EQUIPMENT
	NEW PIPING TO BE INSTALLED
	EXISTING PIPING TO REMAIN

NO. REVISION: BY:

COPY NO:  
CSP #25-LRMU-0424



05.24.2024

TEXAS

IDEA PUBLIC SCHOOLS  
LOWER RGV MECHANICAL UPGRADES

FRONTIER



1128 SOUTH COMMERCE ST.  
MCKINNEY, TX  
PHONE: 972-205-2435  
TEXAS REGISTERED  
ENGINEERING FIRM  
E-15998

DATE: MAY 24, 2024

CHECKED BY: B.B.

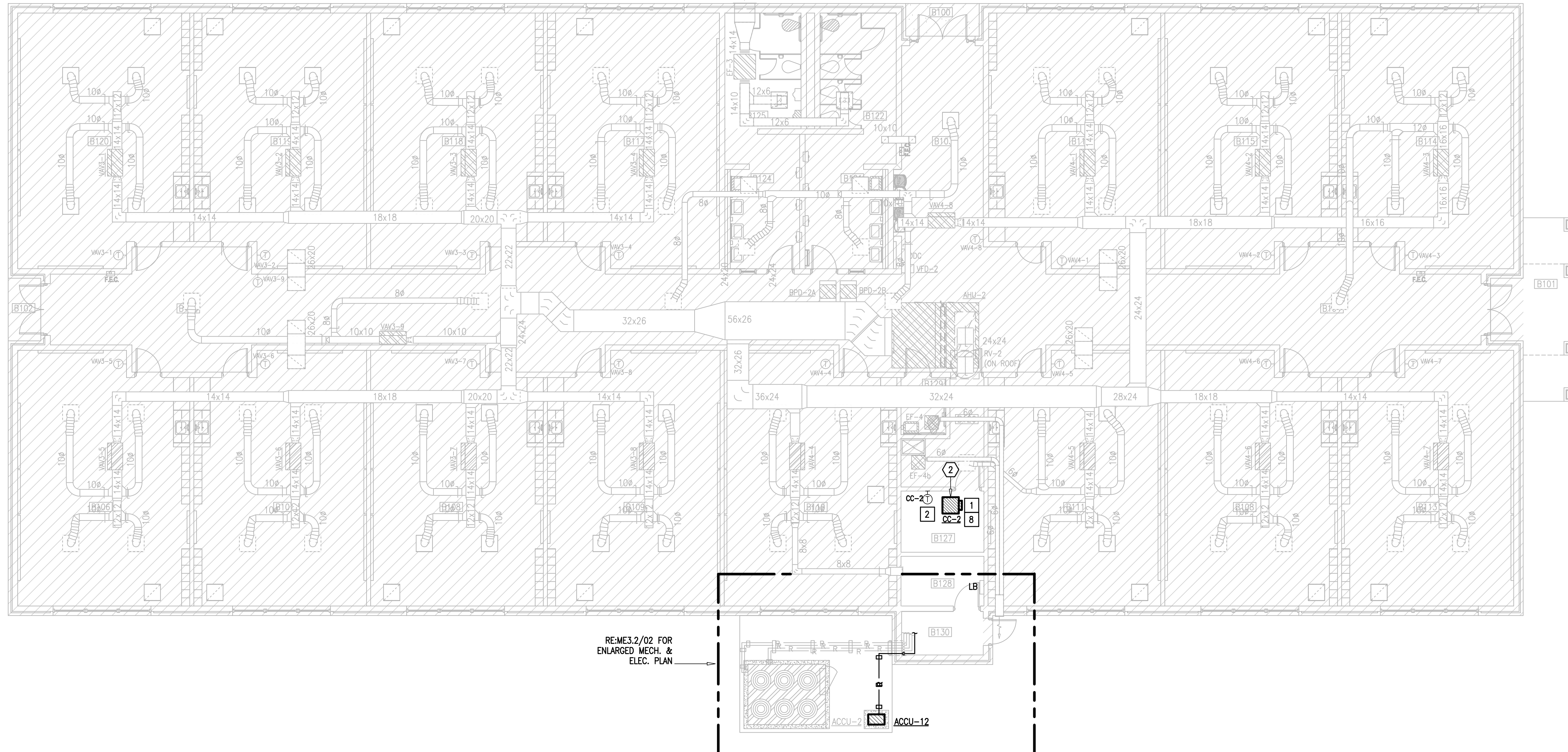
DRAWN BY: D.G.

PROJECT NO.: 23V78

CAD FILE:

SHEET:

ME3.2



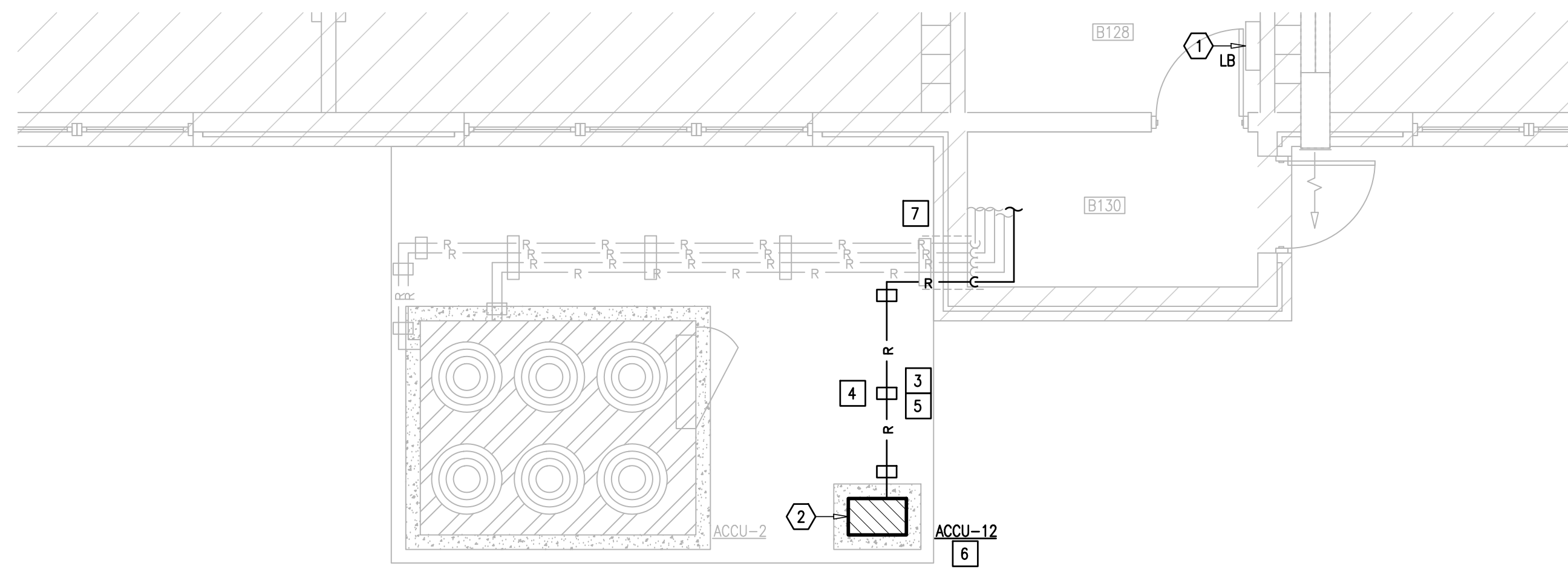
IDEA FRONTIER BUILDING B  
01 MECHANICAL & ELECTRICAL FLOOR PLAN  
SCALE: 1/8" = 1'-0"

MECHANICAL KEYED NOTES:

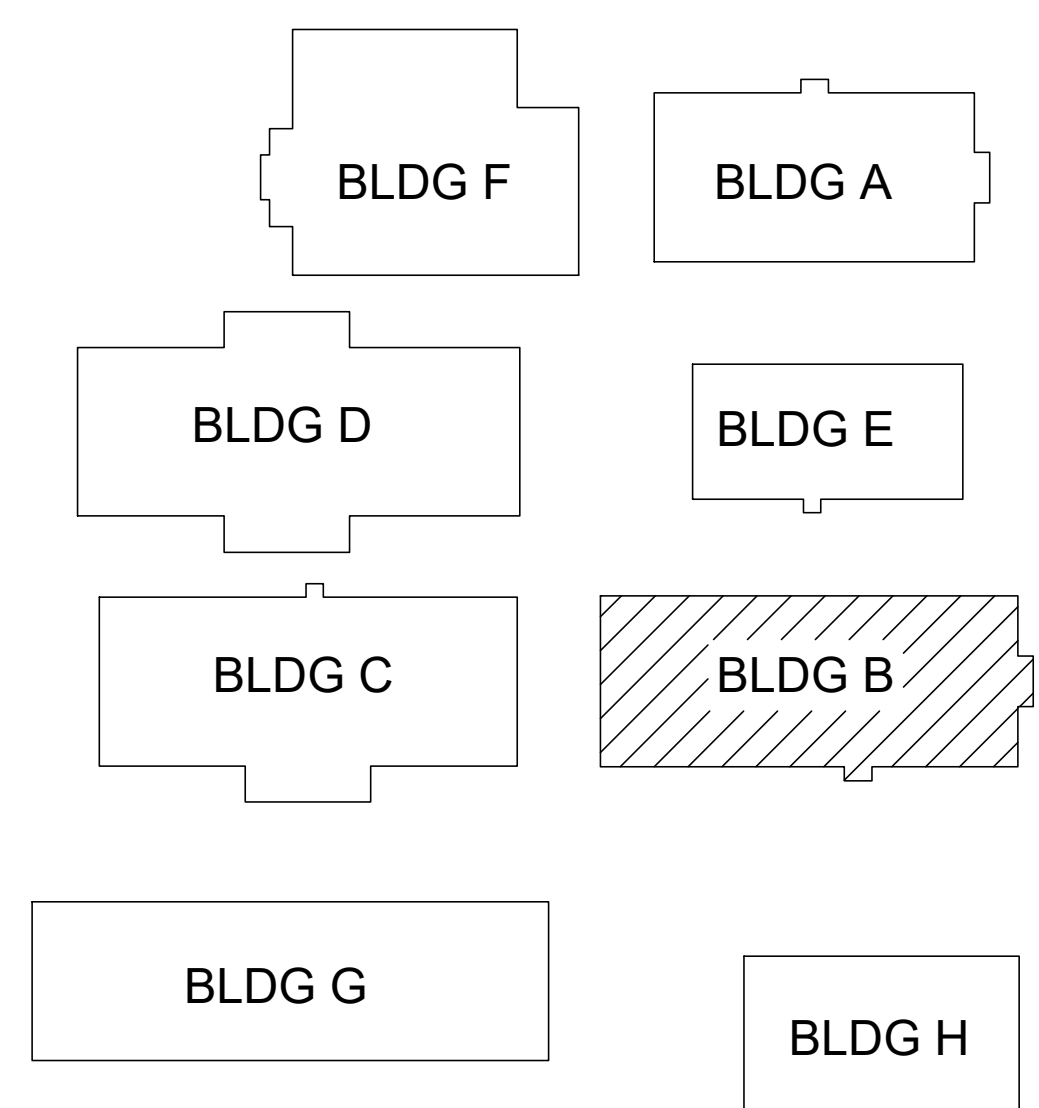
- 1 DEMOLISH EXISTING CASSETTE UNIT. REPLACE IT WITH NEW CASSETTE UNIT AT THIS APPROXIMATE LOCATION. REFER TO PROVIDED SCHEDULE AND SPECIFICATIONS FOR MORE INFORMATION.
- 2 DEMOLISH EXISTING THERMOSTAT. REPLACE IT WITH NEW THERMOSTAT AS SHOWN. MOUNT 48" ABOVE FINISHED FLOOR & COORDINATE WITH ARCHITECT AND OWNER TO MEET ADA REQUIREMENTS. PROVIDE CLEAR LOCKING COVER FOR ALL SENSORS.
- 3 DEMOLISH EXISTING REFRIGERANT PIPING. REPLACE IT WITH NEW REFRIGERANT PIPING AND ROUTE TO INDOOR UNIT. COORDINATE ROUTING WITH OTHER TRADES PRIOR TO INSTALLATION. ROUTE INSIDE WALL TO AVOID EXPOSED PIPING WITHIN THE SPACE. (TYPICAL)
- 4 PROVIDE REFRIGERANT LINE SUPPORTS. SEE ASSOCIATED DETAIL. (TYPICAL)
- 5 PROVIDE NEW 1" INSULATION ON ALL REFRIGERANT LINES BOTH NEW AND EXISTING. PROVIDE ALUMINUM JACKET ON EXPOSED REFRIGERANT LINES. SEE SPECIFICATIONS. PROVIDE REFRIGERANT LINE SUPPORTS PER SPECIFICATIONS. SEE ASSOCIATED DETAIL.
- 6 DEMOLISH EXISTING ACCU AND REPLACE IT WITH NEW AIR COOLED CONDENSING UNIT AND INSULATED REFRIGERANT PIPING PER SPECIFICATIONS. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES AND MOUNT UNIT ON EXISTING CONCRETE PAD. PAD SHALL BE MINIMUM 6" LARGER THAN EQUIPMENT FOOTPRINT ON ALL SIDES. REFRIGERANT PIPING SHOWN IS STRICTLY SCHEMATIC, VERIFY NUMBER OF CIRCUITS AND PIPE SIZES WITH MANUFACTURER'S DATA. BOLT EQUIPMENT DOWN TO EXISTING CONCRETE SLAB. ATTACHMENT SHALL BE CAPABLE OF WITHSTANDING THE LOCAL WIND PRESSURES.
- 7 RETAIN EXISTING PENETRATION SLEEVES WHERE POSSIBLE. SEAL AROUND NEW PIPING WITH FIRE PROOF CAULKING. PROVIDE NEW ESCUTCHEON PLATES AND FLASHING AROUND PENETRATION BOTH INSIDE AND OUTSIDE TO PROVIDE FINISHED LOOK WHERE NECESSARY.
- 8 RETAIN EXISTING CONDENSATE DRAIN LINE. RECONNECT EXISTING CONDENSATE DRAIN LINE TO NEW CASSETTE UNIT. PROVIDE NEW PIPING CONNECTIONS FROM EXISTING LINES TO UNITS' CONNECTIONS.

ELECTRICAL KEYED NOTES:

- 1 APPROXIMATE LOCATION OF EXISTING PANELBOARD SERVING HVAC EQUIPMENT.
- 2 DISCONNECT EXISTING HVAC EQUIPMENT FOR REPLACEMENT. SEE EQUIPMENT CONNECTION SCHEDULE.



02 ENLARGED MECHANICAL & ELECTRICAL FLOOR PLAN  
SCALE: 1/4" = 1'-0"

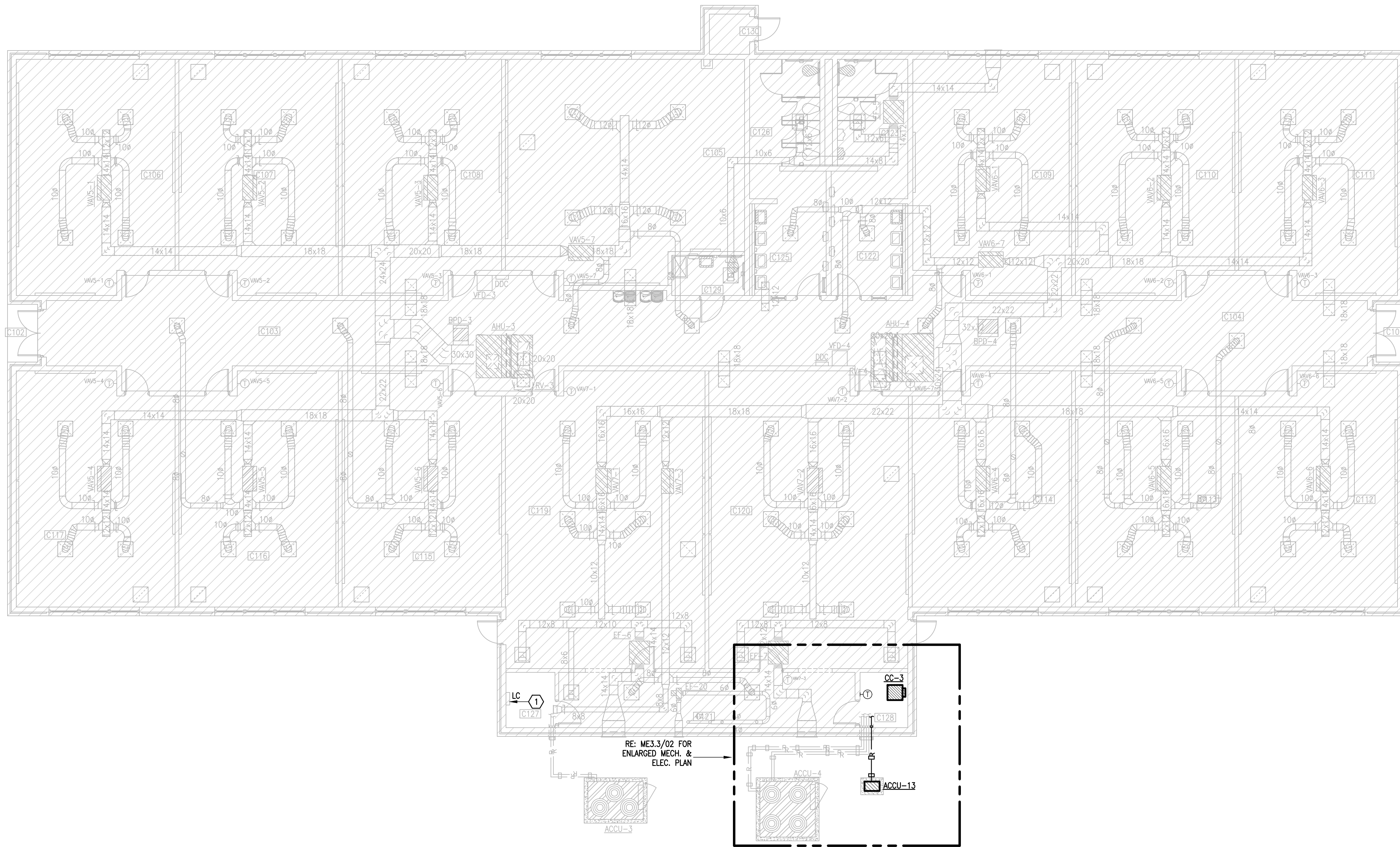


KEYPLAN

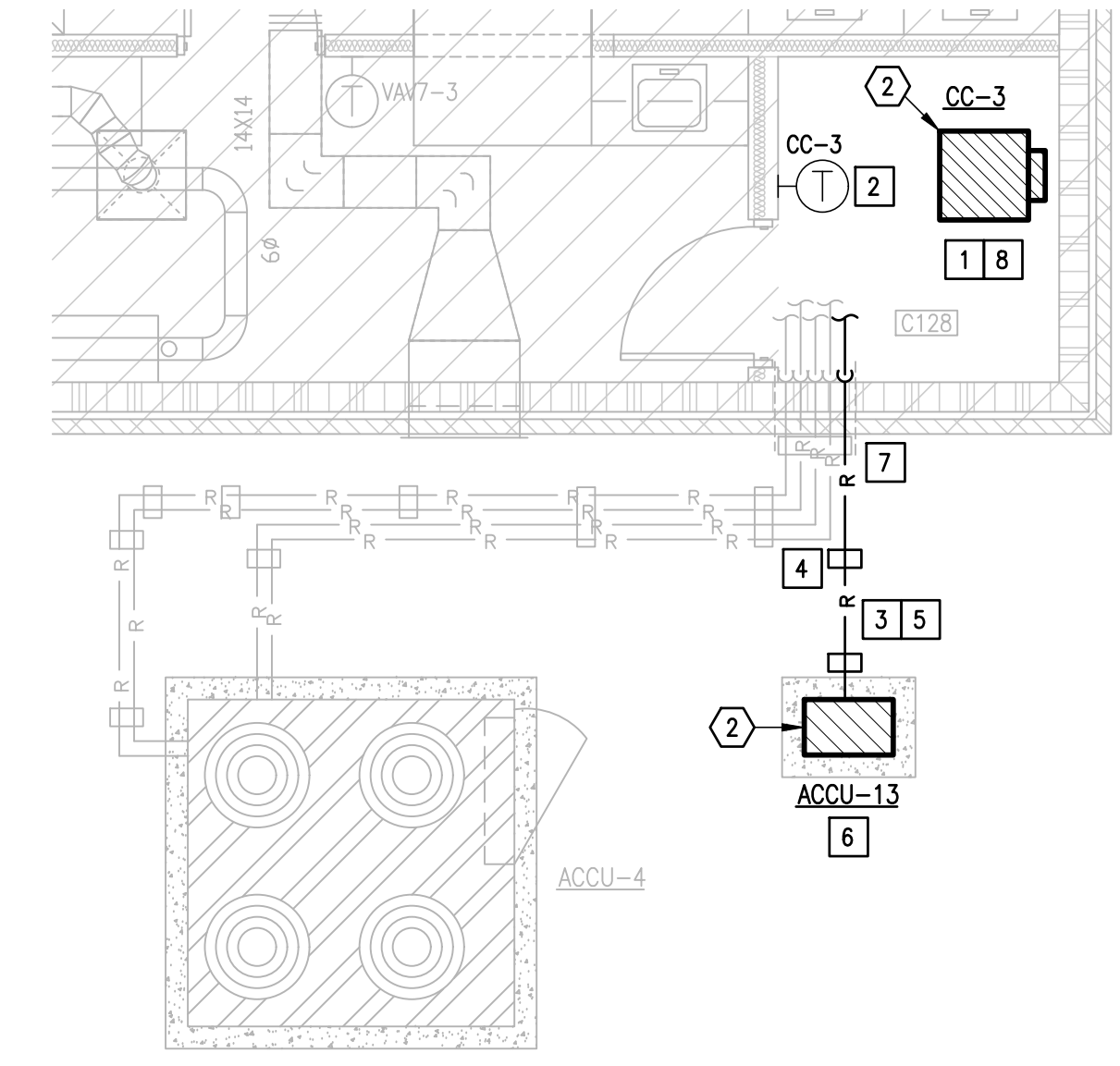


LEGEND

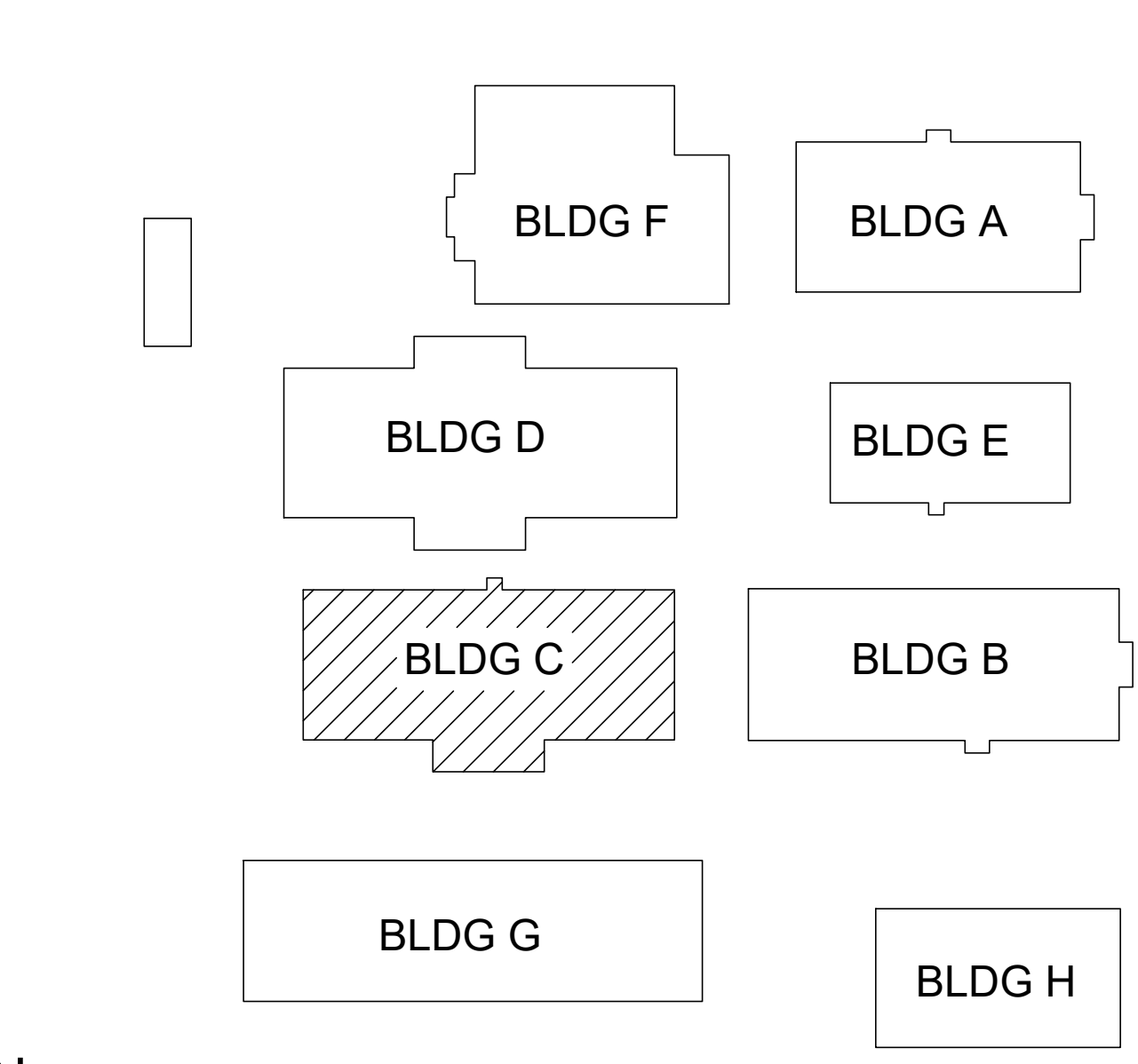
	EXISTING SUPPLY DIFFUSER TO REMAIN
	EXISTING RETURN AIR GRILLE TO REMAIN
	EXISTING DUCTWORK TO REMAIN
	EXISTING EQUIPMENT TO REMAIN
	NEW EQUIPMENT TO BE INSTALLED
	NEW PIPING TO BE INSTALLED
	EXISTING PIPING TO REMAIN



01 IDEA FRONTIER BUILDING C  
MECHANICAL & ELECTRICAL FLOOR PLAN  
SCALE: 1/8" = 1'-0"



02 ENLARGED MECHANICAL & ELECTRICAL FLOOR PLAN  
SCALE: 1/4" = 1'-0"



KEYPLAN

MECHANICAL KEYED NOTES:

- 1 DEMOLISH EXISTING CASSETTE UNIT. REPLACE IT WITH NEW CASSETTE UNIT AT THIS APPROXIMATE LOCATION. REFER TO PROVIDED SCHEDULE AND SPECIFICATIONS FOR MORE INFORMATION.
- 2 DEMOLISH EXISTING THERMOSTAT. REPLACE IT WITH NEW THERMOSTAT AS SHOWN. MOUNT 48" ABOVE FINISHED FLOOR & COORDINATE WITH ARCHITECT AND OWNER TO MEET ADA REQUIREMENTS. PROVIDE CLEAR LOCKING COVER FOR ALL SENSORS.
- 3 DEMOLISH EXISTING REFRIGERANT PIPING. REPLACE IT WITH NEW REFRIGERANT PIPING AND ROUTE TO INDOOR UNIT. COORDINATE ROUTING WITH OTHER TRADES PRIOR TO INSTALLATION. ROUTE INSIDE WALL TO AVOID EXPOSED PIPING WITHIN THE SPACE. (TYPICAL)
- 4 PROVIDE REFRIGERANT LINE SUPPORTS. SEE ASSOCIATED DETAIL. (TYPICAL)
- 5 PROVIDE NEW 1" INSULATION ON ALL REFRIGERANT LINES BOTH NEW AND EXISTING. PROVIDE ALUMINUM JACKET ON EXPOSED REFRIGERANT LINES. SEE SPECIFICATIONS. PROVIDE REFRIGERANT LINE SUPPORTS PER SPECIFICATIONS. SEE ASSOCIATED DETAIL.
- 6 DEMOLISH EXISTING ACCU AND REPLACE IT WITH NEW AIR COOLED CONDENSING UNIT AND INSULATED REFRIGERANT PIPING PER SPECIFICATIONS. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES AND MOUNT UNIT ON EXISTING CONCRETE PAD. PAD SHALL BE MINIMUM 6" LARGER THAN EQUIPMENT FOOTPRINT ON ALL SIDES. REFRIGERANT PIPING SHOWN IS STRICTLY SCHEMATIC, VERIFY NUMBER OF CIRCUITS AND PIPE SIZES WITH MANUFACTURER'S DATA. BOLT EQUIPMENT DOWN TO EXISTING CONCRETE SLAB. ATTACHMENT SHALL BE CAPABLE OF WITHSTANDING THE LOCAL WIND PRESSURES.
- 7 RETAIN EXISTING PENETRATION SLEEVES WHERE POSSIBLE. SEAL AROUND NEW PIPING WITH FIRE PROOF CAULKING. PROVIDE NEW ESCUTCHEON PLATES AND FLASHING AROUND PENETRATION BOTH INSIDE AND OUTSIDE TO PROVIDE FINISHED LOOK WHERE NECESSARY.
- 8 RETAIN EXISTING CONDENSATE DRAIN LINE. RECONNECT EXISTING CONDENSATE DRAIN LINE TO NEW CASSETTE UNIT. PROVIDE NEW PIPING CONNECTIONS FROM EXISTING LINES TO UNITS' CONNECTIONS.

ELECTRICAL KEYED NOTES:

- 1 APPROXIMATE LOCATION OF EXISTING PANELBOARD SERVING HVAC EQUIPMENT.
- 2 DISCONNECT EXISTING HVAC EQUIPMENT FOR REPLACEMENT. SEE EQUIPMENT CONNECTION SCHEDULE.

NO. REVISION: BY:

COPY NO:

CSP #25-LRMU-0424

05.24.2024

IDEA PUBLIC SCHOOLS  
LOWER RGV MECHANICAL UPGRADES

FRONTIER

1126 SOUTH COMMERCE ST.  
HARLINGEN, TX  
PHONE: 361-205-3435  
TEXAS REGISTERED  
ENGINEERING FIRM  
E-15998

DATE: MAY 24, 2024

CHECKED BY: B.B.

DRAWN BY: D.G.

PROJECT NO.: 23V76

CAD FILE: ME3.3

SHEET: ME3.3

LEGEND

	EXISTING SUPPLY DIFFUSER TO REMAIN
	EXISTING RETURN AIR GRILLE TO REMAIN
	EXISTING DUCTWORK TO REMAIN
	EXISTING EQUIPMENT TO REMAIN
	NEW EQUIPMENT TO BE INSTALLED
	NEW PIPING TO BE INSTALLED
	EXISTING PIPING TO REMAIN

NO. REVISION: BY:

COPY NO:  
CSP #25-LRMU-0424



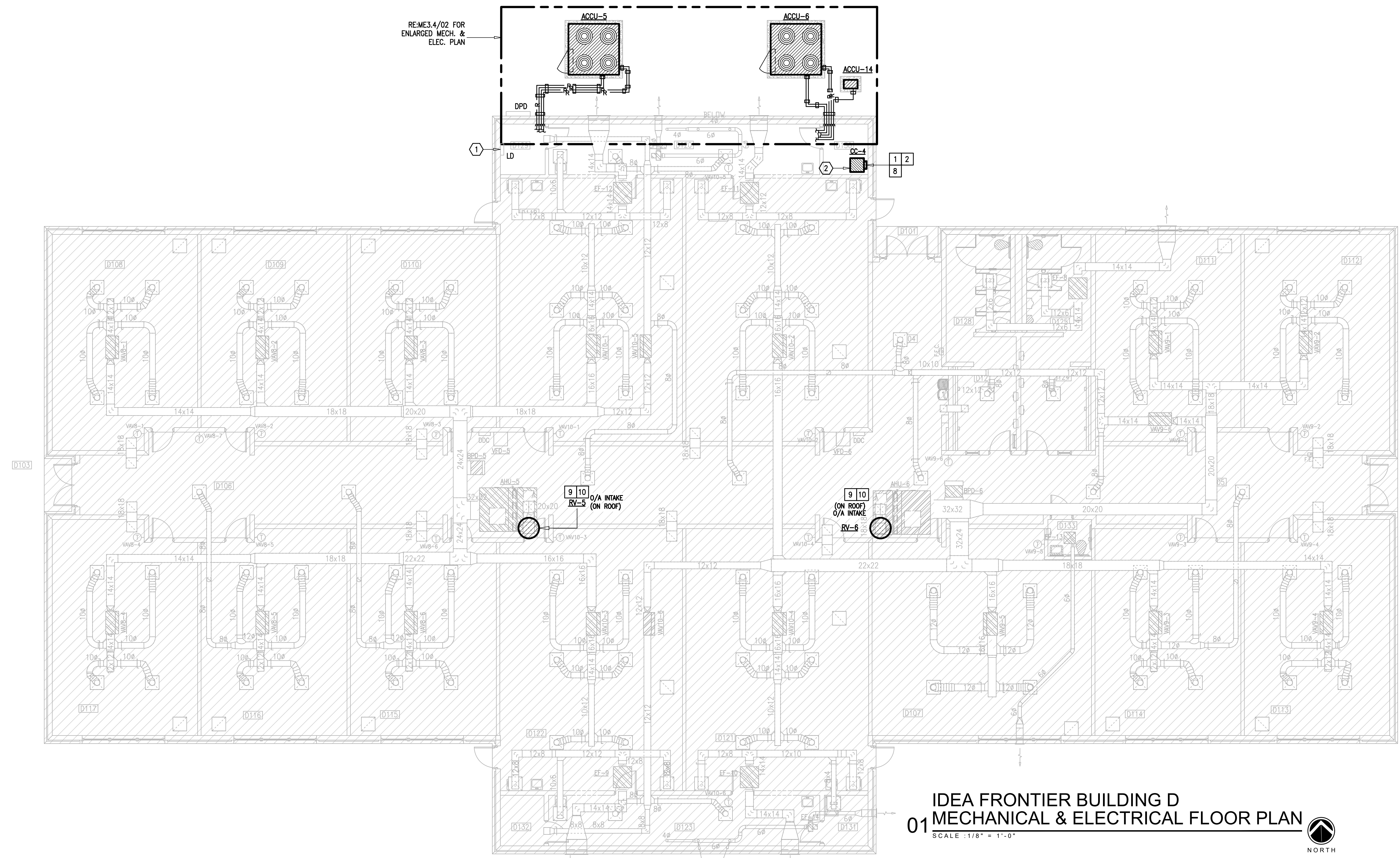
TEXAS

MECHANICAL KEYED NOTES:

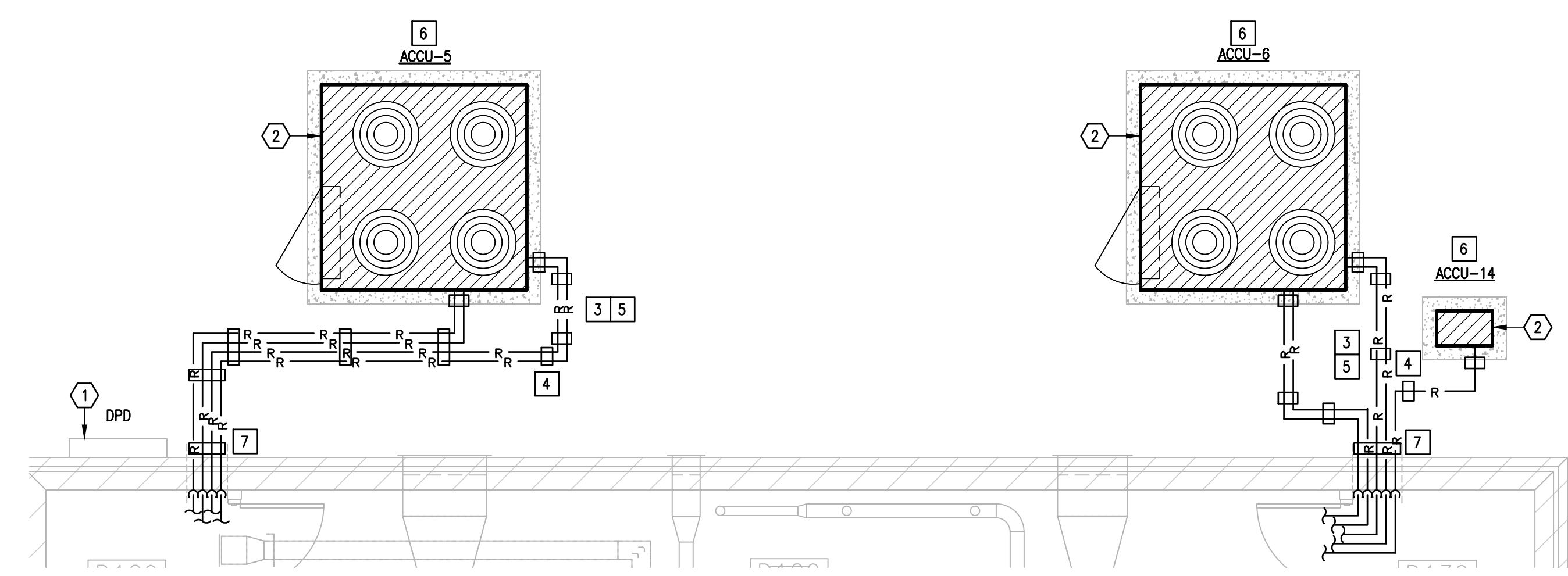
- DEMOLISH EXISTING CASSETTE UNIT. REPLACE IT WITH NEW CASSETTE UNIT AT THIS APPROXIMATE LOCATION. REFER TO PROVIDED SCHEDULE AND SPECIFICATIONS FOR MORE INFORMATION.
- DEMOLISH EXISTING THERMOSTAT. REPLACE IT WITH NEW THERMOSTAT AS SHOWN. MOUNT 48" ABOVE FINISHED FLOOR & COORDINATE WITH ARCHITECT AND OWNER TO MEET ADA REQUIREMENTS. PROVIDE CLEAR LOCKING COVER FOR ALL SENSORS.
- DEMOLISH EXISTING REFRIGERANT PIPING. REPLACE IT WITH NEW REFRIGERANT PIPING AND ROUTE TO INDOOR UNIT. COORDINATE ROUTING WITH OTHER TRADES PRIOR TO INSTALLATION. ROUTE INSIDE WALL TO AVOID EXPOSED PIPING WITHIN THE SPACE. (TYPICAL)
- PROVIDE REFRIGERANT LINE SUPPORTS. SEE ASSOCIATED DETAIL. (TYPICAL)
- PROVIDE NEW 1" INSULATION ON ALL REFRIGERANT LINES BOTH NEW AND EXISTING. PROVIDE ALUMINUM JACKET ON EXPOSED REFRIGERANT LINES. SEE SPECIFICATIONS. PROVIDE REFRIGERANT LINE SUPPORTS PER SPECIFICATIONS. SEE ASSOCIATED DETAIL.
- DEMOLISH EXISTING ACCU AND REPLACE IT WITH NEW AIR COOLED CONDENSING UNIT AND INSULATED REFRIGERANT PIPING AS SHOWN. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES AND MOUNT UNIT ON EXISTING CONCRETE PAD. PAD SHALL BE MINIMUM 6" LARGER THAN EQUIPMENT FOOTPRINT ON ALL SIDES. REFRIGERANT PIPING SHOWN IS STRICTLY SCHEMATIC, VERIFY NUMBER OF CIRCUITS AND PIPE SIZES WITH MANUFACTURER'S DATA. BOLT EQUIPMENT DOWN TO EXISTING CONCRETE SLAB. ATTACHMENT SHALL BE CAPABLE OF WITHSTANDING THE LOCAL WIND PRESSURES.
- RETAIN EXISTING PENETRATION SLEEVES WHERE POSSIBLE. SEAL AROUND NEW PIPING WITH FIRE PROOF CAULKING. PROVIDE NEW ESCUTCHEON PLATES AND FLASHING AROUND PENETRATION BOTH INSIDE AND OUTSIDE TO PROVIDE FINISHED LOOK WHERE NECESSARY.
- RETAIN EXISTING CONDENSATE DRAIN LINE. RECONNECT EXISTING CONDENSATE DRAIN LINE TO NEW CASSETTE UNIT. PROVIDE NEW PIPING CONNECTIONS FROM EXISTING LINES TO UNITS' CONNECTIONS.
- DEMOLISH EXISTING OUTSIDE AIR ROOF VENT AND ASSOCIATED ROOF CURB INCLUDING THE STRUCTURAL FRAMED OPENING. PROVIDE NEW ROOF VENT WITH NEW ROOF CURB AND ROOF REINFORCEMENT AS SHOWN ON DETAILS. CONNECT EXISTING OUTSIDE AIR DUCT TO NEW ROOF VENT. PROVIDE NEW OA TRANSITION DUCTWORK AS REQUIRED AND INSULATE WITH 2" EXTERNAL-WRAP INSULATION. COORDINATE WORK WITH ROOFING CONTRACTOR.
- MECHANICAL PLANS WERE DEVELOPED BASED ON LIMITED FIELD OBSERVATIONS. CONTRACTOR SHALL CONTACT ETHOS ENGINEERING TO SCHEDULE A SITE VISIT DURING CONSTRUCTION AND PRIOR TO EQUIPMENT SUBMITTAL PHASE FOR FIELD VERIFICATION PURPOSES. ETHOS ENGINEERING MAY ISSUE REVISED CONSTRUCTION DRAWINGS BASED ON SUCH FIELD VERIFICATION. CONTRACTOR SHALL PROVIDE ALL THE NECESSARY EQUIPMENT AND TOOLS FOR ACCESSING THE ROOF SUCH AS MAN SCISSORS LIFT, STEP-LADDER, EXTENSION-LADDER, ETC. TO REACH AN APPROXIMATION HEIGHT OF 15'. DO NOT ORDER ROOF VENTS UNTIL ETHOS ENGINEERING HAS ISSUED A CONFIRMED DIRECTIVE.

ELECTRICAL KEYED NOTES:

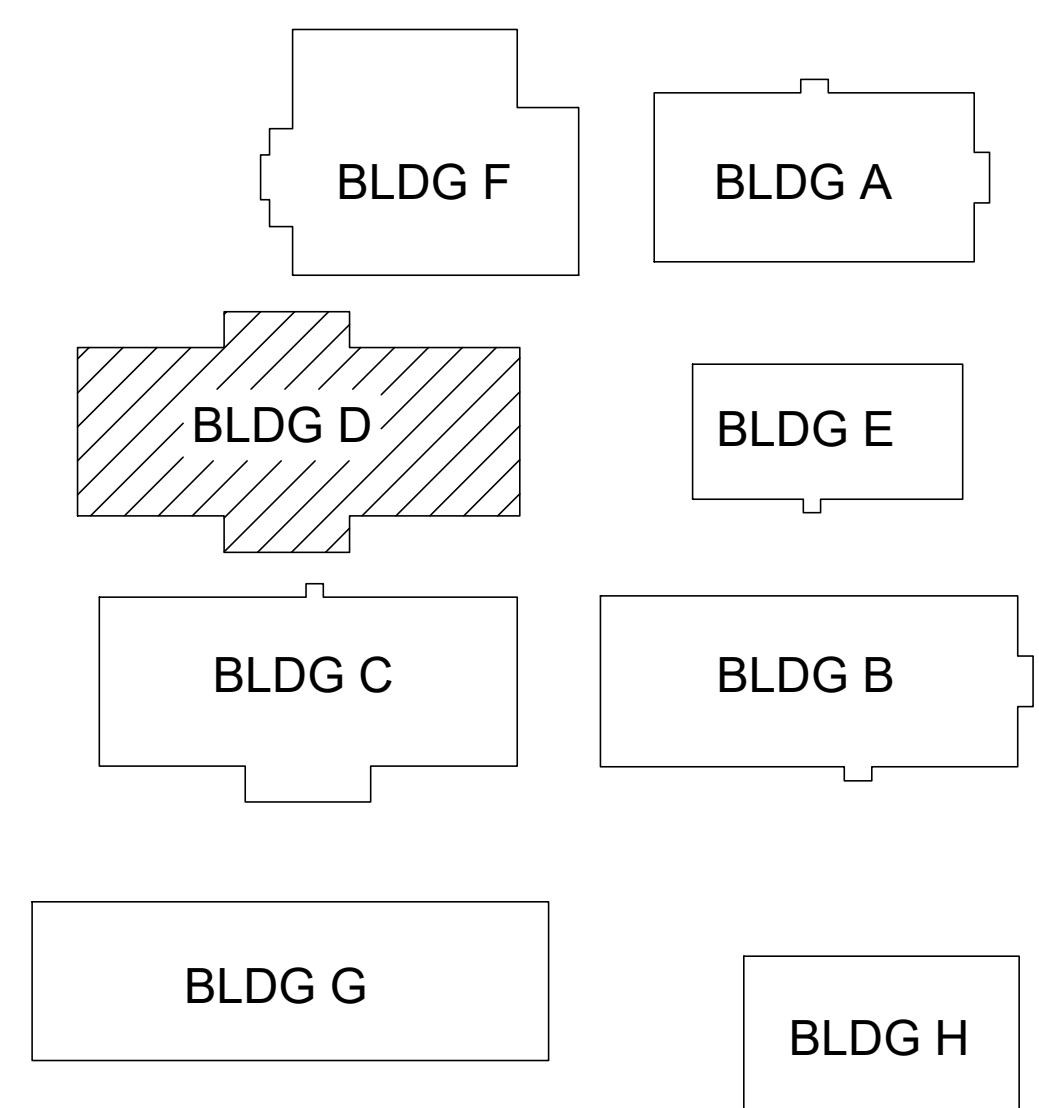
- APPROXIMATE LOCATION OF EXISTING PANELBOARD SERVING HVAC EQUIPMENT.
- DISCONNECT EXISTING HVAC EQUIPMENT FOR REPLACEMENT. SEE EQUIPMENT CONNECTION SCHEDULE.



01 IDEA FRONTIER BUILDING D  
MECHANICAL & ELECTRICAL FLOOR PLAN  
SCALE : 1/8" = 1'-0"  
NORTH



02 ENLARGED MECHANICAL & ELECTRICAL FLOOR PLAN  
SCALE : 1/4" = 1'-0"  
NORTH



KEYPLAN

IDEA PUBLIC SCHOOLS  
LOWER RGV MECHANICAL UPGRADES

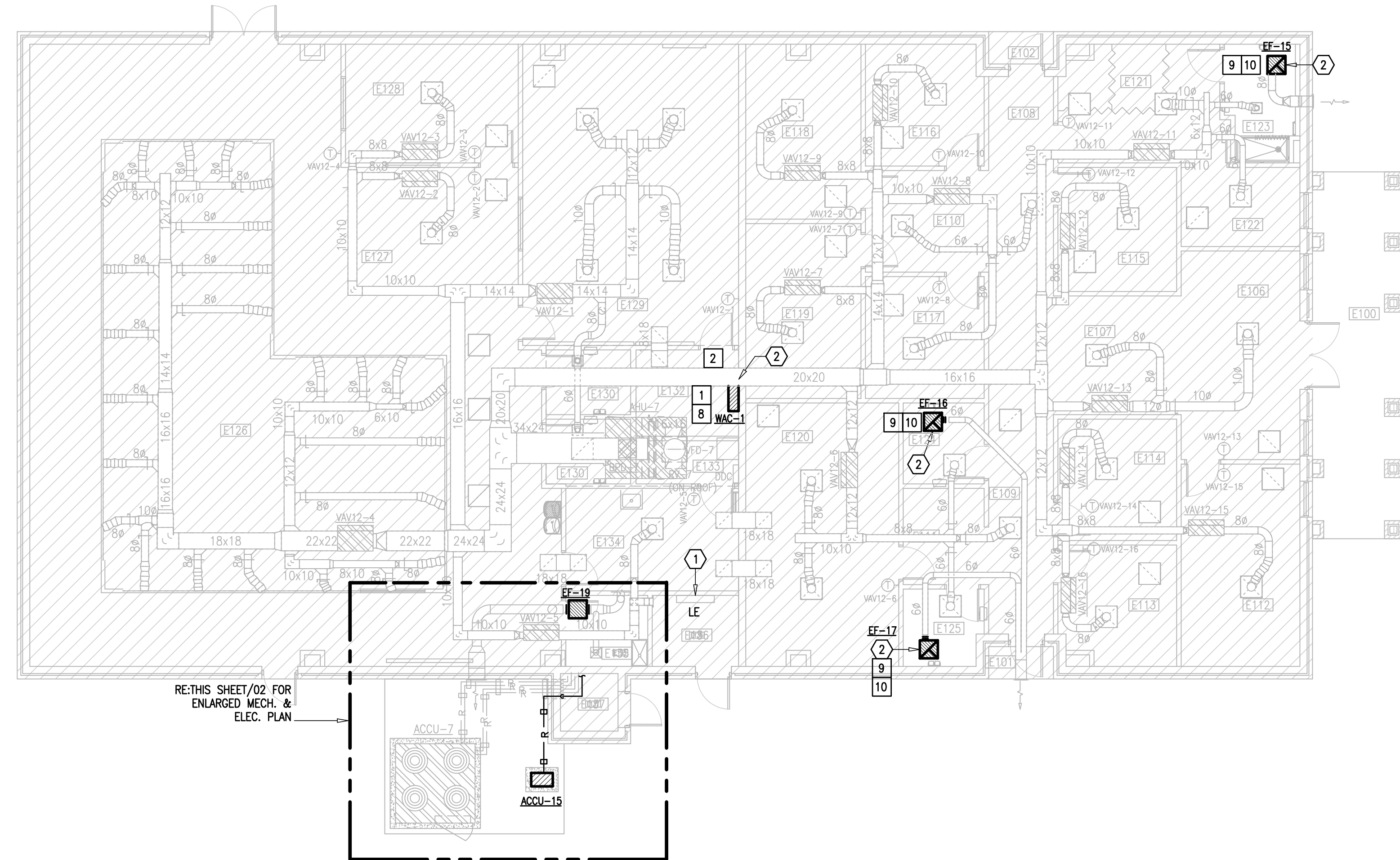
FRONTIER



DATE: MAY 24, 2024  
CHECKED BY: B.B.  
DRAWN BY: D.G.  
PROJECT NO.: 23V78  
CAD FILE:  
SHEET:  
ME3.4

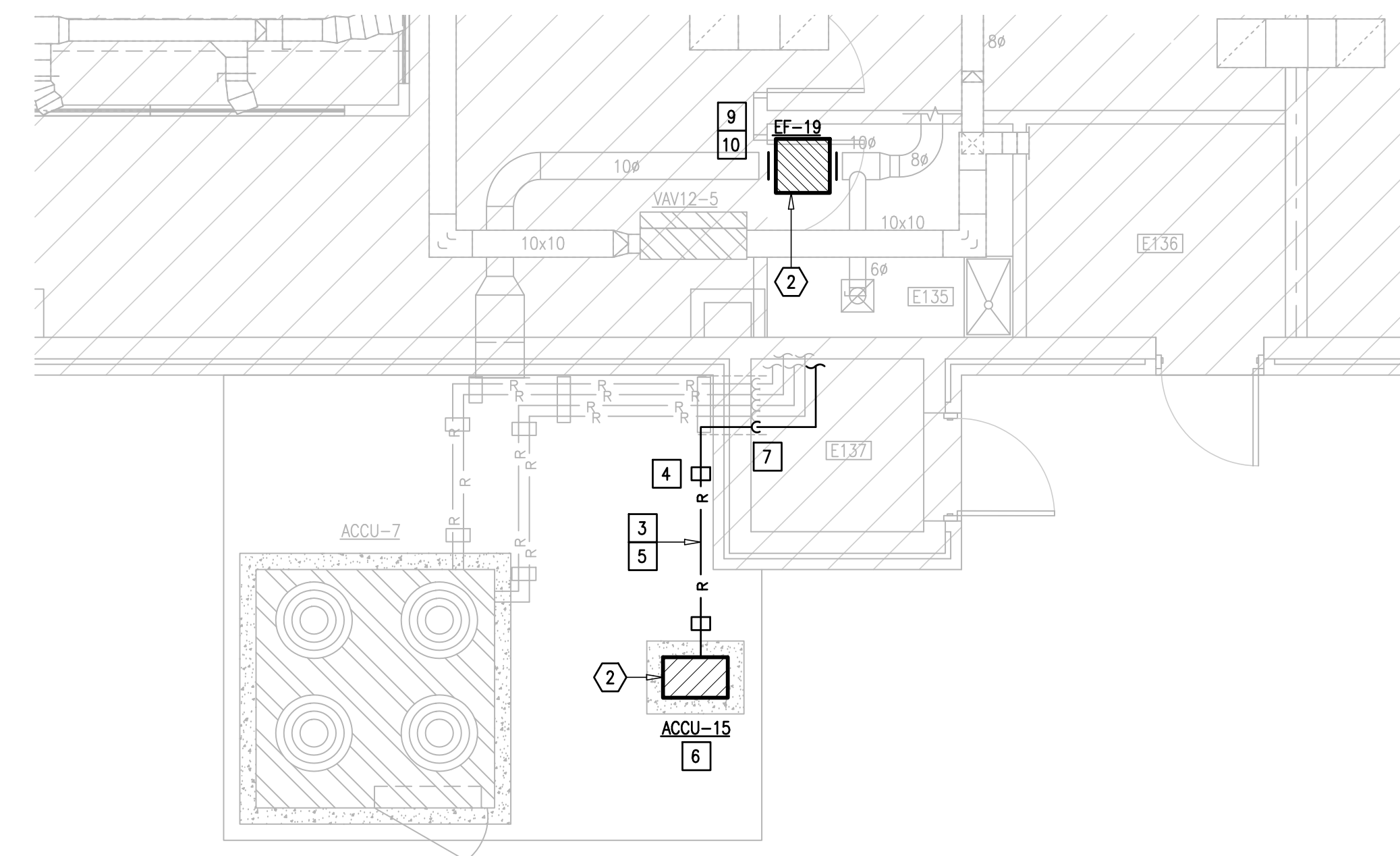
LEGEND

	EXISTING SUPPLY DIFFUSER TO BE REMAIN
	EXISTING RETURN AIR GRILLE TO BE REMAIN
	EXISTING DUCTWORK TO BE REMAIN
	NEW DUCTWORK TO BE INSTALLED
	EXISTING EQUIPMENT TO BE REMAIN
	NEW EQUIPMENT TO BE INSTALLED
	NEW PIPING TO BE INSTALLED
	EXISTING PIPING TO BE REMAIN



RE THIS SHEET /02 FOR ENLARGED MECH. & ELEC. PLAN

01 IDEA FRONTIER BUILDING E MECHANICAL & ELECTRICAL FLOOR PLAN  
SCALE : 1/8" = 1'-0"



02 ENLARGED MECHANICAL & ELECTRICAL FLOOR PLAN  
SCALE : 1/4" = 1'-0"

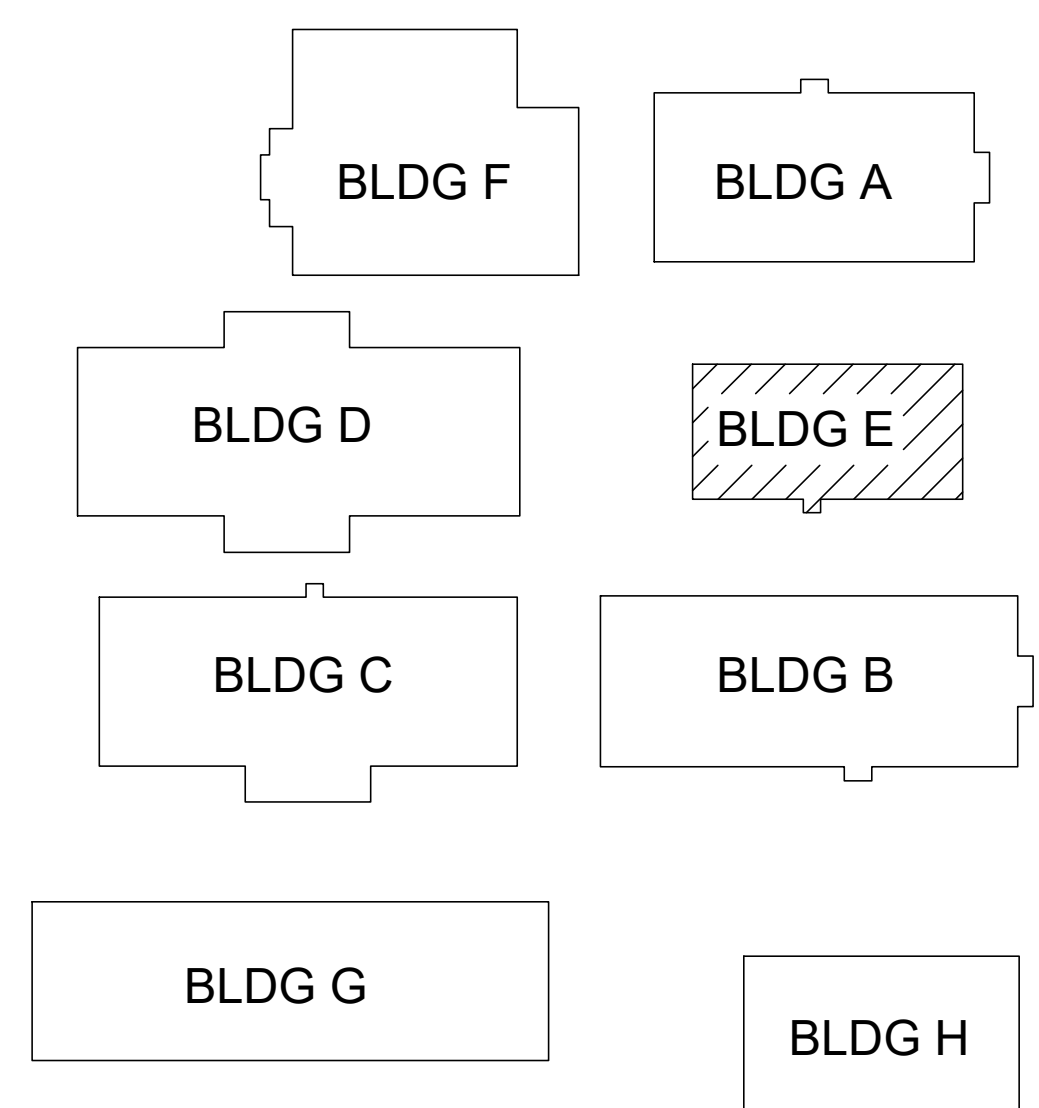


MECHANICAL KEYED NOTES:

- DEMOLISH EXISTING WAC UNIT. REPLACE IT WITH NEW WAC UNIT AT THIS APPROXIMATE LOCATION. REFER TO PROVIDED SCHEDULE AND SPECIFICATIONS FOR MORE INFORMATION.
- DEMOLISH EXISTING THERMOSTAT. REPLACE IT WITH NEW THERMOSTAT AS SHOWN. MOUNT 48" ABOVE FINISHED FLOOR & COORDINATE WITH ARCHITECT AND OWNER TO MEET ADA REQUIREMENTS. PROVIDE CLEAR LOCKING COVER FOR ALL SENSORS.
- DEMOLISH EXISTING REFRIGERANT PIPING. PROVIDE NEW REFRIGERANT PIPING. AND ROUTE TO INDOOR UNIT. COORDINATE ROUTING WITH OTHER TRADES PRIOR TO INSTALLATION. ROUTE INSIDE WALL TO AVOID EXPOSED PIPING WITHIN THE SPACE. (TYPICAL)
- PROVIDE REFRIGERANT LINE SUPPORTS. SEE ASSOCIATED DETAIL. (TYPICAL)
- PROVIDE NEW 1" INSULATION ON ALL REFRIGERANT LINES BOTH NEW AND EXISTING. PROVIDE ALUMINUM JACKET ON EXPOSED REFRIGERANT LINES. SEE SPECIFICATIONS. PROVIDE REFRIGERANT LINE SUPPORTS PER SPECIFICATIONS. SEE ASSOCIATED DETAIL.
- DEMOLISH EXISTING ACCU AND INSTALL NEW AIR COOLED CONDENSING UNIT AND INSULATED REFRIGERANT PIPING PER SPECIFICATIONS. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES AND MOUNT UNIT ON EXISTING CONCRETE PAD. PAD SHALL BE MINIMUM 6" LARGER THAN EQUIPMENT FOOTPRINT ON ALL SIDES. REFRIGERANT PIPING SHOWN IS STRICTLY SCHEMATIC. VERIFY NUMBER OF CIRCUITS AND PIPE SIZES WITH MANUFACTURER'S DATA. BOLT EQUIPMENT DOWN TO EXISTING CONCRETE SLAB. ATTACHMENT SHALL BE CAPABLE OF WITHSTANDING THE LOCAL WIND PRESSURES.
- RETAIN EXISTING SLEEVE PENETRATION SLEEVES WHERE POSSIBLE. SEAL AROUND NEW PIPING WITH FIRE PROOF CAULKING. PROVIDE NEW ESCUTCHEON PLATES AND FLASHING AROUND PENETRATION BOTH INSIDE AND OUTSIDE TO PROVIDE FINISHED LOOK WHERE NECESSARY.
- RETAIN EXISTING CONDENSATE DRAIN LINE. RECONNECT EXISTING CONDENSATE DRAIN LINE TO NEW CASSETTE UNIT. PROVIDE NEW PIPING CONNECTIONS FROM EXISTING LINES TO UNITS' CONNECTIONS.
- DEMOLISH EXISTING EXHAUST FAN. REPLACE IT WITH NEW EXHAUST FAN AT THIS APPROXIMATE LOCATION. PROVIDE NEW DUCTWORK TRANSITION WHERE NECESSARY. REFER TO PROVIDED SCHEDULE AND TAB SPECIFICATIONS FOR MORE INFORMATION.
- TEMPORARILY REMOVE THE CEILING AROUND THE AREA OF WHERE EXISTING EXHAUST FAN IS TO BE REPLACED. RESTORE THE CEILING BACK TO ITS ORIGINAL CONDITION AFTER REPLACEMENT OF EXHAUST FAN.

ELECTRICAL KEYED NOTES:

- APPROXIMATE LOCATION OF EXISTING PANELBOARD SERVING HVAC EQUIPMENT.
- DISCONNECT EXISTING HVAC EQUIPMENT FOR REPLACEMENT. SEE EQUIPMENT CONNECTION SCHEDULE.



KEYPLAN

NO. REVISION: BY:

COPY NO:

CSP #25-LRMU-0424

IDEA PUBLIC SCHOOLS LOWER RGV MECHANICAL UPGRADES

FRONTIER

1128 SOUTH COMMERCE ST.  
HARLINGEN, TX  
PHONE: 361-205-2435  
TEXAS REGISTERED  
ENGINEERING FIRM  
E-15998

DATE: MAY 24, 2024  
CHECKED BY: B.B.  
DRAWN BY: D.G.  
PROJECT NO.: 23V76  
CAD FILE:  
SHEET:

ME3.5

LEGEND

	EXISTING SUPPLY DIFFUSER TO REMAIN
	EXISTING RETURN AIR GRILLE TO REMAIN
	EXISTING DUCTWORK TO REMAIN
	NEW DUCTWORK TO BE INSTALLED
	EXISTING EQUIPMENT TO REMAIN
	NEW EQUIPMENT TO BE INSTALLED
	NEW PIPING TO BE INSTALLED
	EXISTING PIPING TO REMAIN

NO. REVISION: BY:

COPY NO:  
CSP #25-LRMU-0424



TEXAS

IDEA PUBLIC SCHOOLS  
LOWER RGV MECHANICAL UPGRADES

FRONTIER



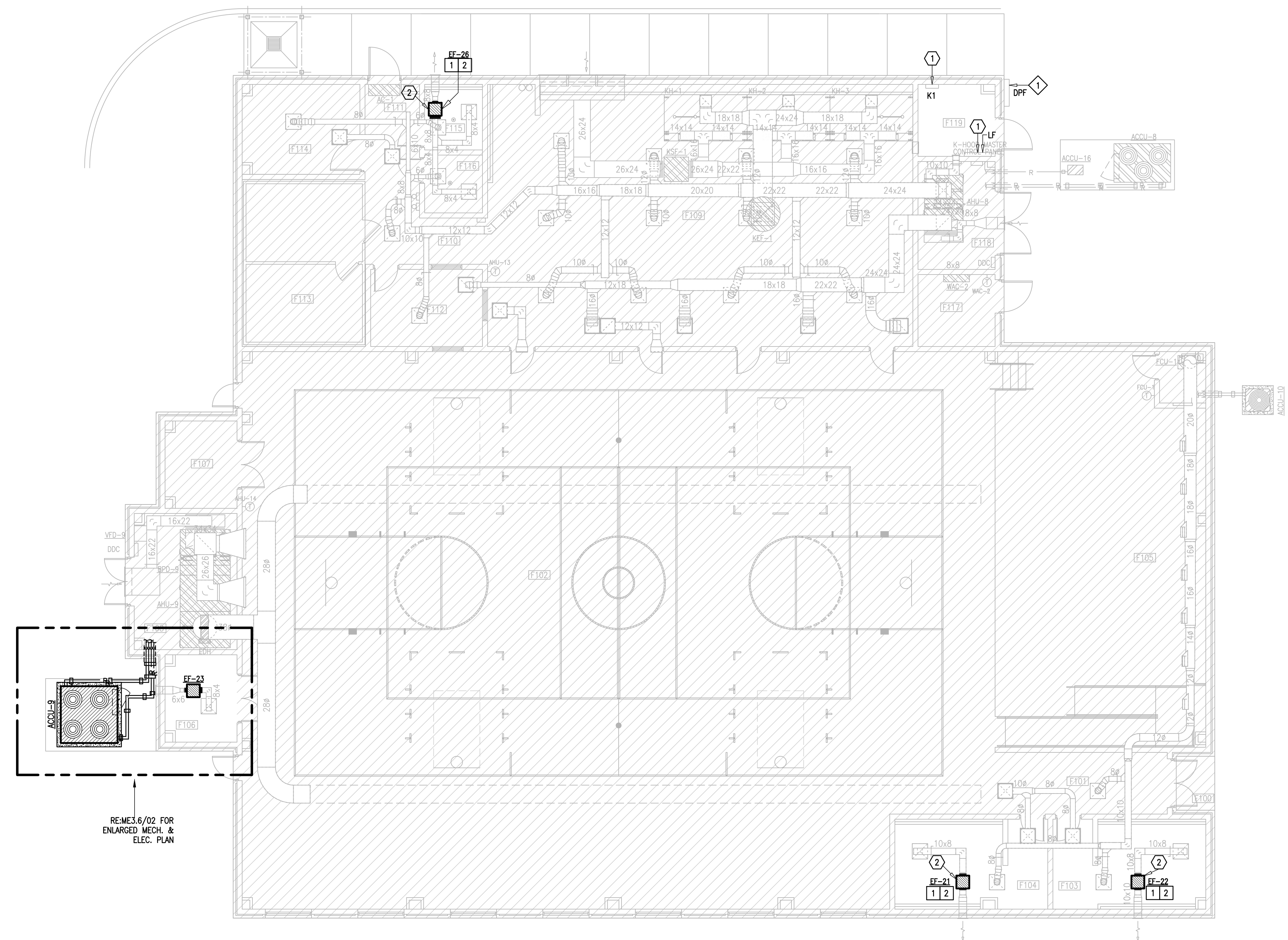
DATE: MAY 24, 2024  
CHECKED BY: B.B.  
DRAWN BY: D.G.  
PROJECT NO.: 23V78  
CAD FILE:  
SHEET:  
**ME3.6**

ALTERNATE #1  
MECHANICAL KEYED NOTES:

- DEMOLISH EXISTING REFRIGERANT PIPING. REPLACE IT WITH NEW REFRIGERANT PIPING AND ROUTE TO INDOOR UNIT. COORDINATE ROUTING WITH OTHER TRADES PRIOR TO INSTALLATION. ROUTE INSIDE WALL TO AVOID EXPOSED PIPING WITHIN THE SPACE. (TYPICAL)
- PROVIDE REFRIGERANT LINE SUPPORTS. SEE ASSOCIATED DETAIL. (TYPICAL)
- PROVIDE NEW 1" INSULATION ON ALL REFRIGERANT LINES BOTH NEW AND EXISTING. PROVIDE ALUMINUM JACKET ON EXPOSED REFRIGERANT LINES. SEE SPECIFICATIONS. PROVIDE REFRIGERANT LINE SUPPORTS PER SPECIFICATIONS. SEE ASSOCIATED DETAIL.
- DEMOLISH EXISTING ACCU AND REPLACE IT WITH NEW AIR COOLED CONDENSING UNIT AND INSULATED REFRIGERANT PIPING PER SPECIFICATIONS. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES AND PROVIDE NEW 4" TALL HOUSEKEEPING CONCRETE PAD FOR NEW EQUIPMENT. PAD SHALL BE MINIMUM 6" LARGER THAN EQUIPMENT FOOTPRINT ON ALL SIDES. REFRIGERANT PIPING SHOWN IS STRICTLY SCHEMATIC. VERIFY NUMBER OF CIRCUITS AND PIPE SIZES WITH MANUFACTURER'S DATA. BOLT EQUIPMENT DOWN TO EXISTING CONCRETE SLAB. ATTACHMENT SHALL BE CAPABLE OF WITHSTANDING THE LOCAL WIND PRESSURES.
- RETAIN EXISTING PENETRATION SLEEVES WHERE POSSIBLE. SEAL AROUND NEW PIPING WITH FIRE PROOF CAULKING. PROVIDE NEW ESCUTCHEON PLATES AND FLASHING AROUND PENETRATION BOTH INSIDE AND OUTSIDE TO PROVIDE FINISHED LOOK WHERE NECESSARY.
- RETAIN EXISTING CONDENSATE DRAIN LINE. RECONNECT EXISTING CONDENSATE DRAIN LINE TO NEW CASSETTE UNIT. PROVIDE NEW PIPING CONNECTIONS FROM EXISTING LINES TO UNITS' CONNECTIONS.

ALTERNATE #1  
ELECTRICAL NEW KEYED NOTES:

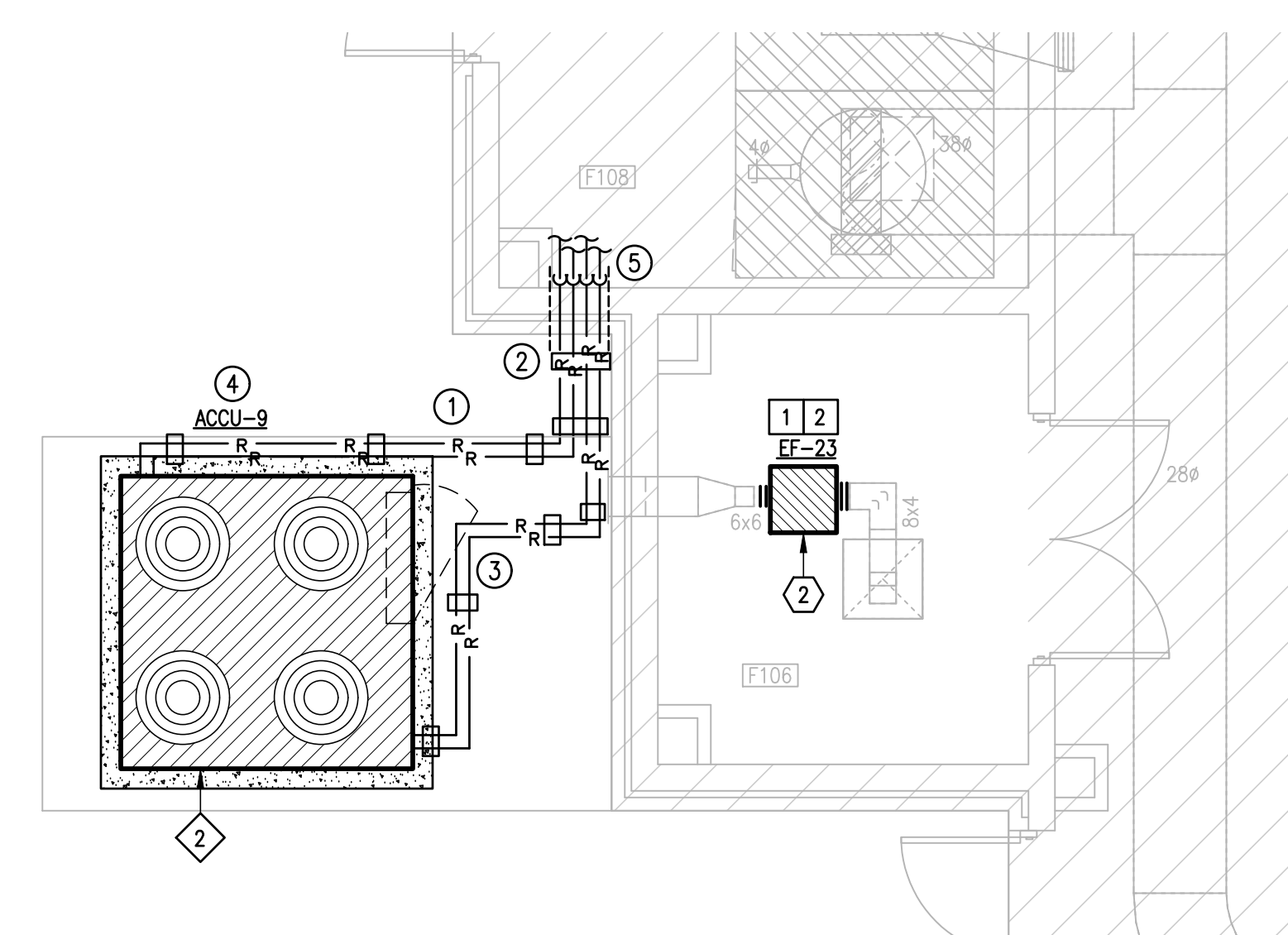
- APPROXIMATE LOCATION OF EXISTING PANELBOARD SERVING HVAC EQUIPMENT.
- DISCONNECT EXISTING HVAC EQUIPMENT FOR REPLACEMENT. SEE EQUIPMENT CONNECTION SCHEDULE.



RE:ME3.6/02 FOR ENLARGED MECH. & ELEC. PLAN

IDEA FRONTIER BUILDING F  
MECHANICAL & ELECTRICAL FLOOR PLAN

SCALE: 1/8" = 1'-0"



02 ENLARGED MECHANICAL & ELECTRICAL FLOOR PLAN

SCALE: 1/4" = 1'-0"

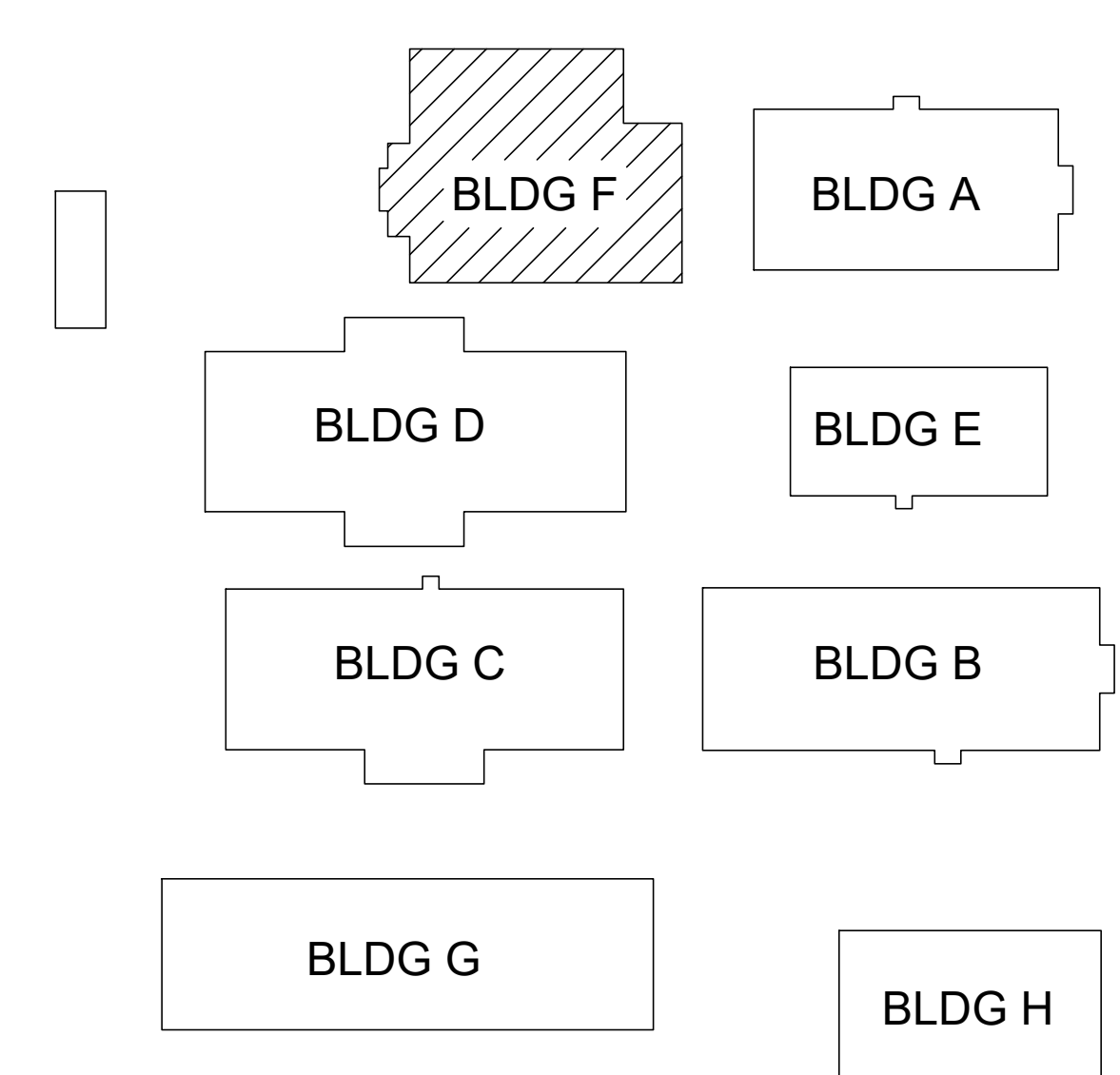


BASE BID  
MECHANICAL KEYED NOTES:

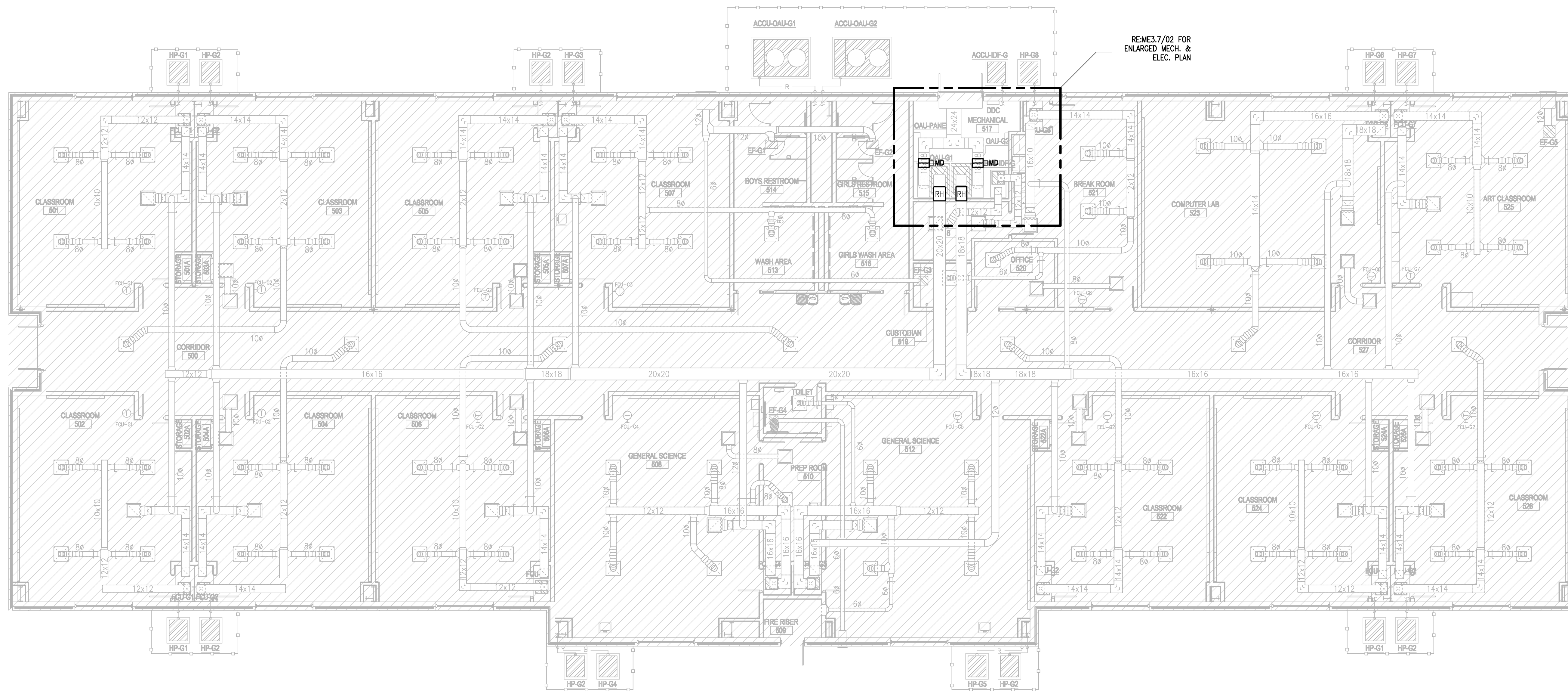
- DEMOLISH EXISTING EXHAUST FAN. REPLACE IT WITH NEW EXHAUST FAN AT THIS APPROXIMATE LOCATION. PROVIDE NEW DUCTWORK TRANSITION WHERE NECESSARY. REFER TO PROVIDED SCHEDULE AND TAB SPECIFICATIONS FOR MORE INFORMATION.
- TEMPORARILY REMOVE THE CEILING AROUND THE AREA OF WHERE EXISTING EXHAUST FAN IS TO BE REPLACED. RESTORE THE CEILING BACK TO ITS ORIGINAL CONDITION AFTER REPLACEMENT OF EXHAUST FAN.

BASE BID  
ELECTRICAL KEYED NOTES:

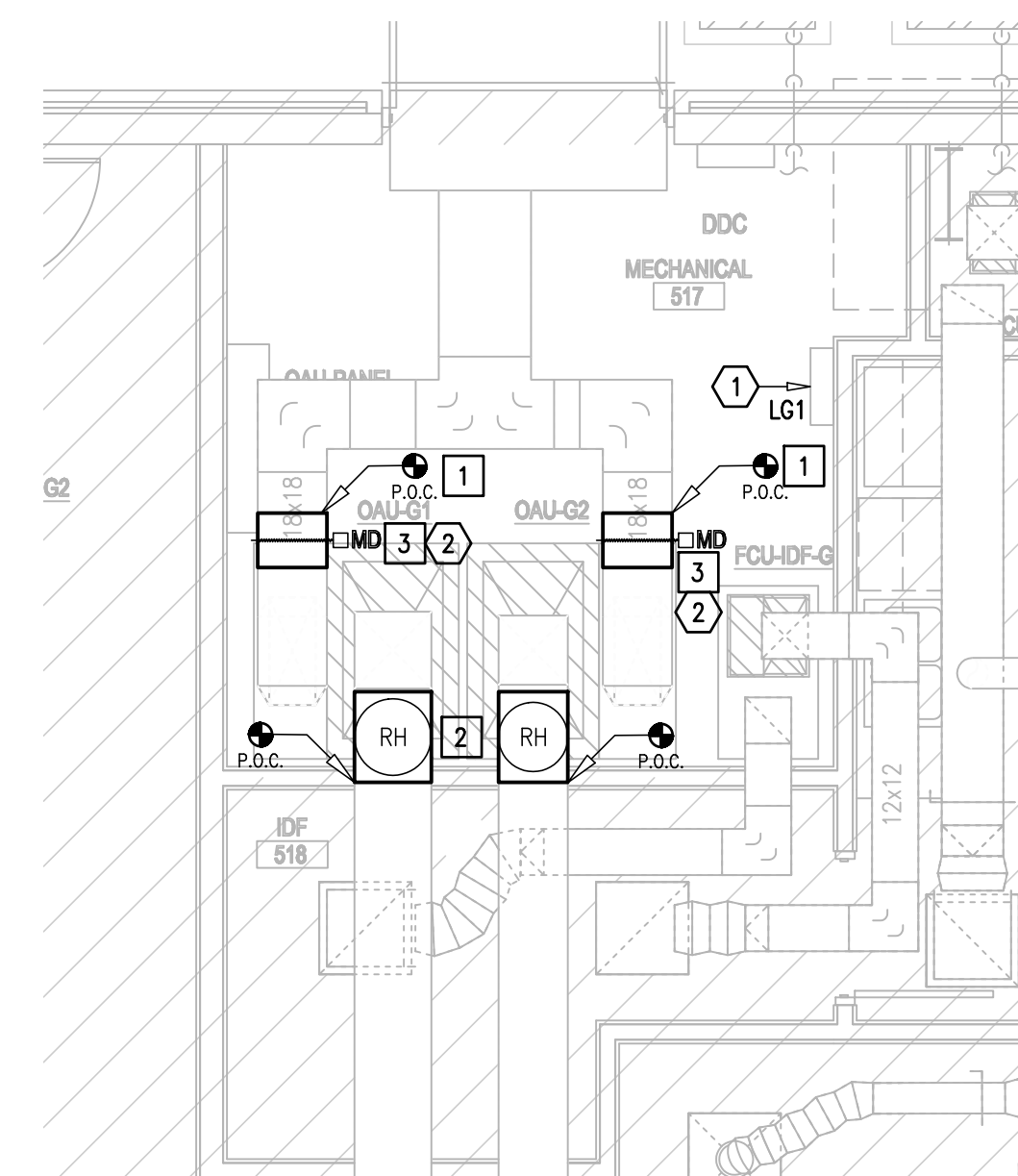
- APPROXIMATE LOCATION OF EXISTING PANELBOARD SERVING HVAC EQUIPMENT.
- DISCONNECT EXISTING HVAC EQUIPMENT FOR REPLACEMENT. SEE EQUIPMENT CONNECTION SCHEDULE.



KEYPLAN



**01 IDEA FRONTIER BUILDING G  
MECHANICAL & ELECTRICAL FLOOR PLAN**  
SCALE: 1/8" = 1'-0"



**02 ENLARGED MECHANICAL & ELECTRICAL FLOOR PLAN**  
SCALE: 1/4" = 1'-0"



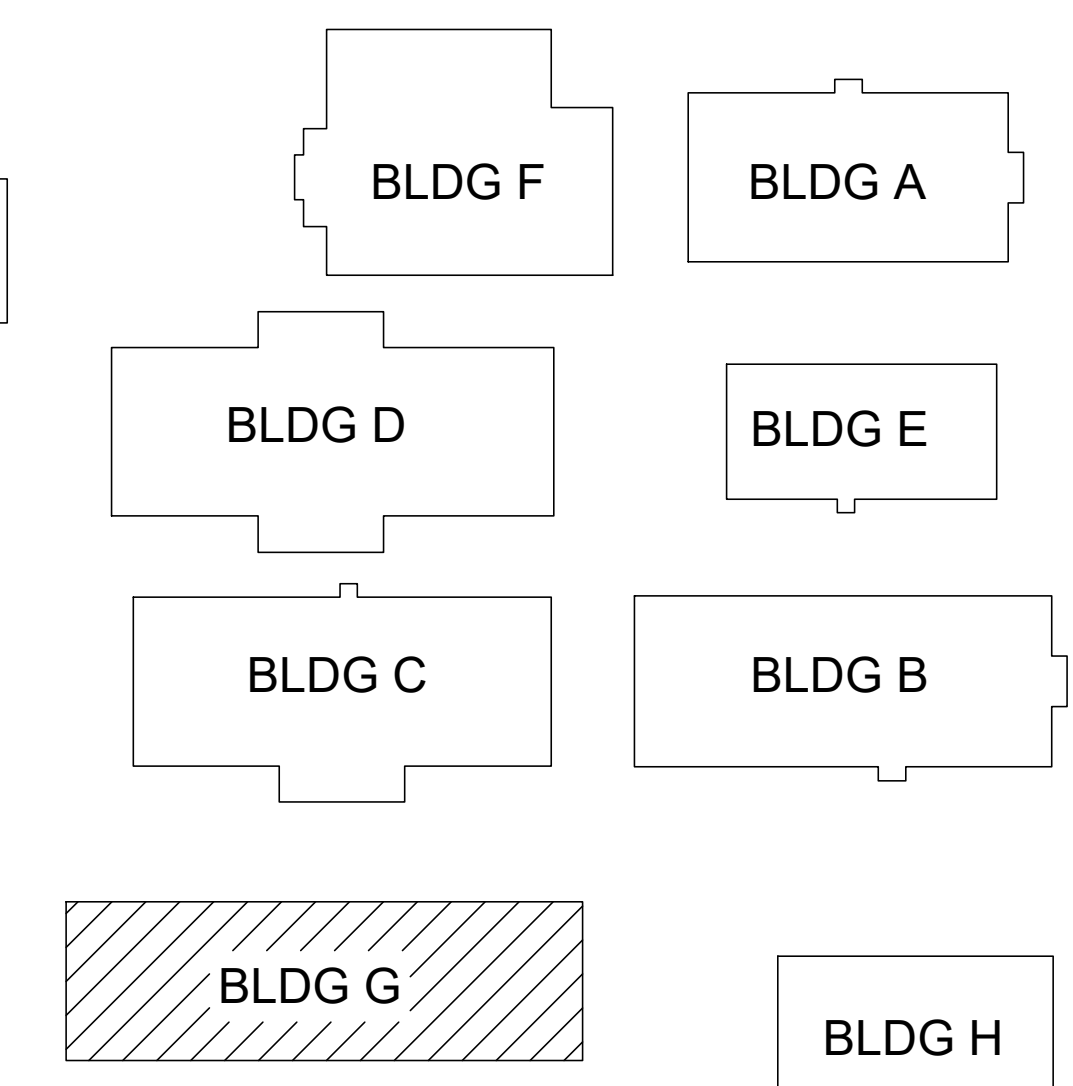
LEGEND	
	EXISTING SUPPLY DIFFUSER TO REMAIN
	EXISTING RETURN AIR GRILLE TO REMAIN
	EXISTING DUCTWORK TO REMAIN
	NEW DUCTWORK TO BE INSTALLED
	EXISTING EQUIPMENT TO REMAIN
	NEW EQUIPMENT TO BE INSTALLED
	EXISTING PIPING TO REMAIN
	NEW MOTORIZED DAMPERS TO BE INSTALLED
	RELATIVE HUMIDITY SENSOR

**MECHANICAL KEYED NOTES:**

- 1 DEMOLISH PORTION OF EXISTING OUTSIDE AIR DUCTWORK AS SHOWN AT THIS APPROXIMATE LOCATION. PREPARE FOR INSTALLATION OF NEW MOTORIZED DAMPERS AND CONNECT NEW DUCTWORK INTO EXISTING DUCTWORK. COORDINATE WORK WITH JCI.
- 2 DEMOLISH PORTION OF EXISTING DUCTWORK AS SHOWN AT THIS APPROXIMATE LOCATION. INSTALL RELATIVE HUMIDITY SENSORS AND CONNECT NEW DUCTWORK INTO EXISTING DUCTWORK. COORDINATE WORK WITH JCI.
- 3 PROVIDE AN ULTRA-LOW LEAKAGE MOTORIZED DAMPER AND ACTUATOR ON THE OA INTAKE AS SHOWN. INTERLOCK OA DAMPER CONTROLS WITH AHU FAN MOTOR AND DDC SEQUENCES ASSOCIATED WITH DISCHARGE AIR DENPOINT. REFER TO SEQUENCE OF OPERATIONS FOR MORE INFORMATION. COORDINATE WORK WITH JCI.

**ELECTRICAL KEYED NOTES:**

- 1 APPROXIMATE LOCATION OF EXISTING PANELBOARD TO SERVE NEW HVAC EQUIPMENT.
- 2 CONNECT MOTORIZED DAMPER TO EXISTING PANELBOARD; BRANCH CIRCUIT: 1/2" - 2#12 & #12. PROVIDE A 20A/1P BREAKER IN AVAILABLE SPACE.



KEYPLAN

NO. REVISION: BY:

COPY NO:  
CSP #25-LRM-0424



TEXAS

IDEA PUBLIC SCHOOLS  
LOWER RGV MECHANICAL UPGRADES

FRONTIER



1126 SOUTH COMMERCE ST.  
HARLINGEN, TX  
PHONE: 361-205-3435  
TEXAS REGISTERED  
ENGINEERING FIRM  
E-15998

DATE: MAY 24, 2024

CHECKED BY: B.B.

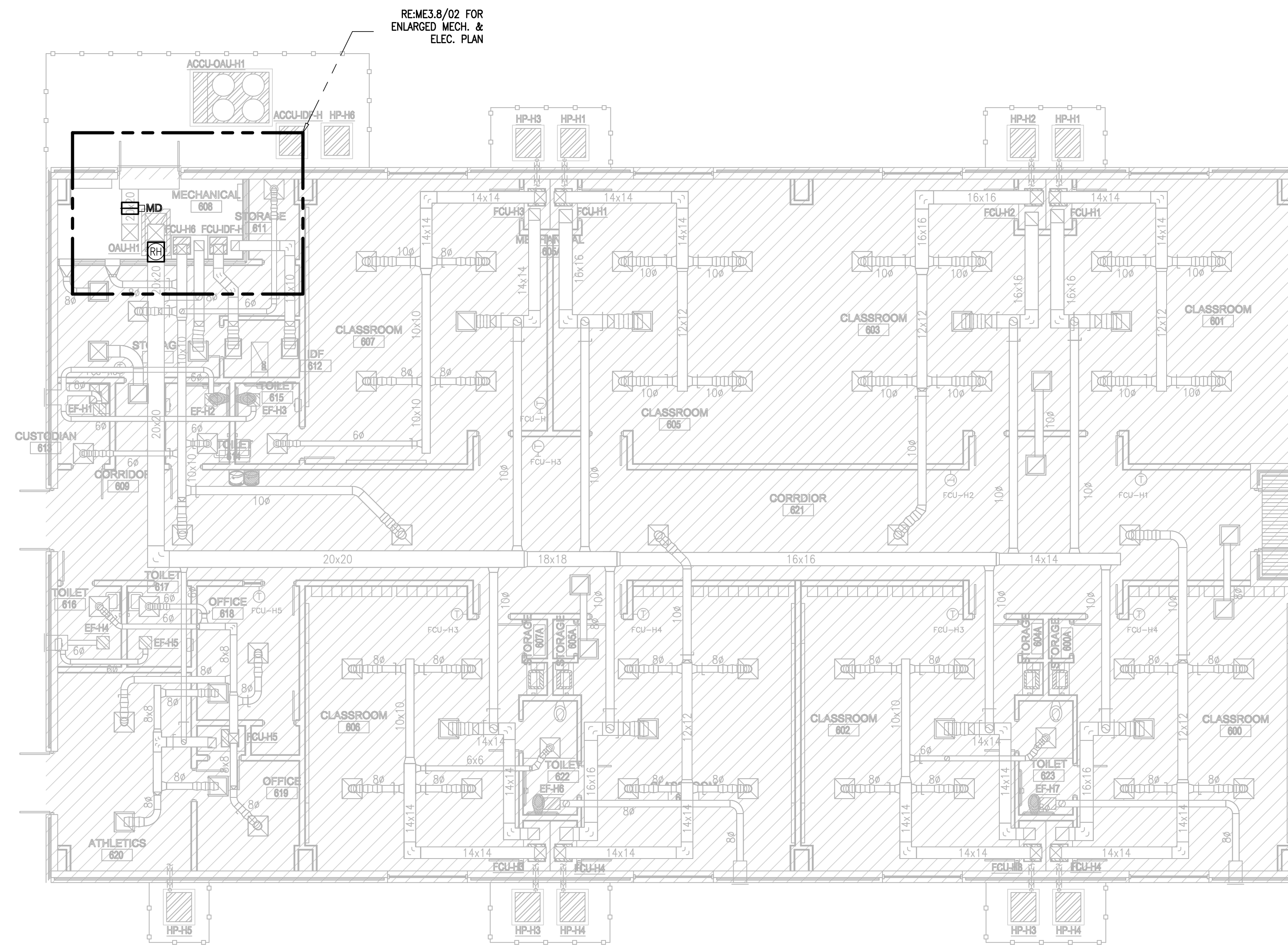
DRAWN BY: D.G.

PROJECT NO.: 23V76

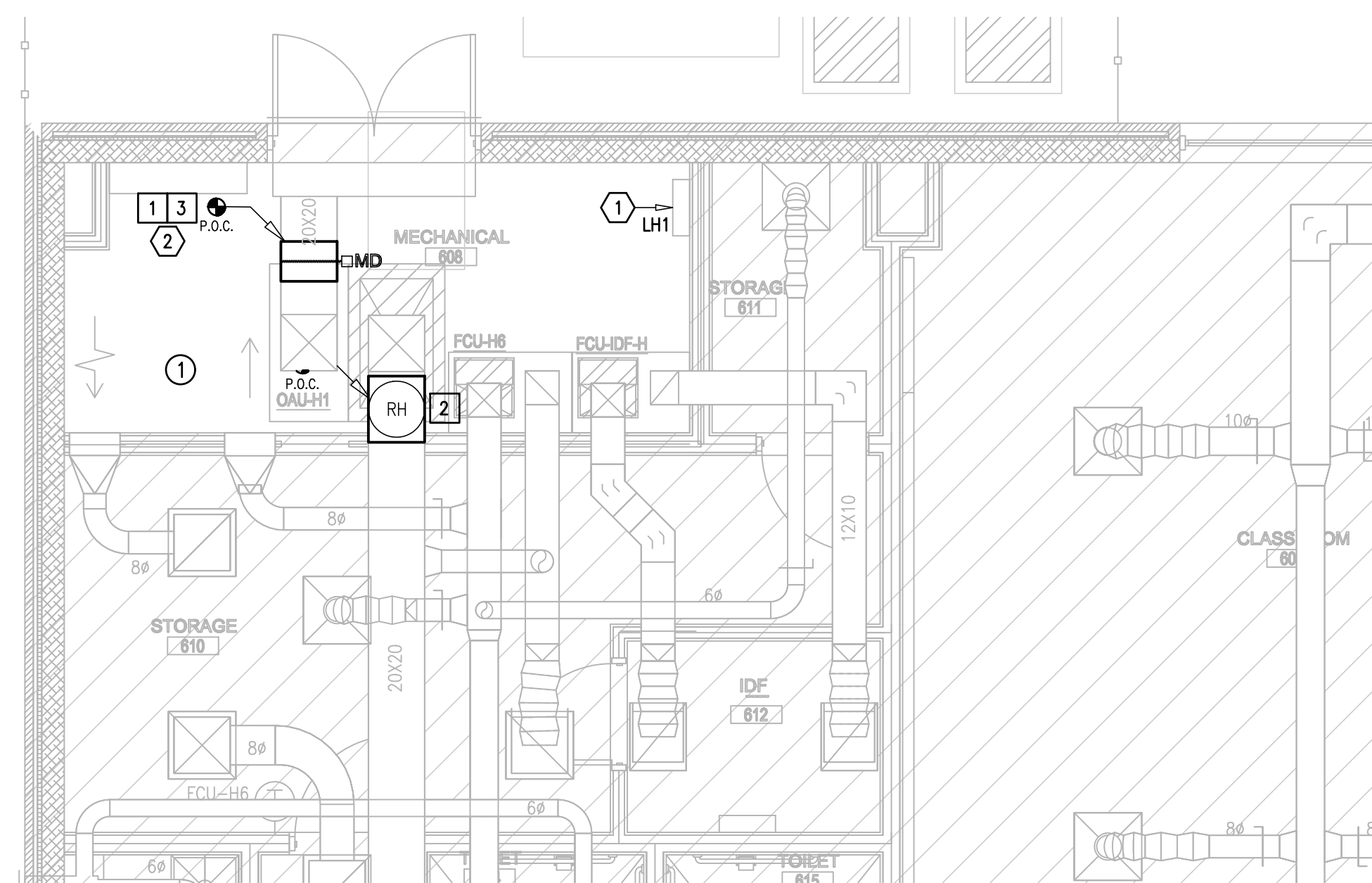
CAD FILE:

SHEET:

ME3.7



**01 IDEA FRONTIER BUILDING H  
MECHANICAL & ELECTRICAL FLOOR PLAN**  
SCALE: 1/8" = 1'-0"



**02 ENLARGED MECHANICAL & ELECTRICAL FLOOR PLAN**  
SCALE: 1/4" = 1'-0"



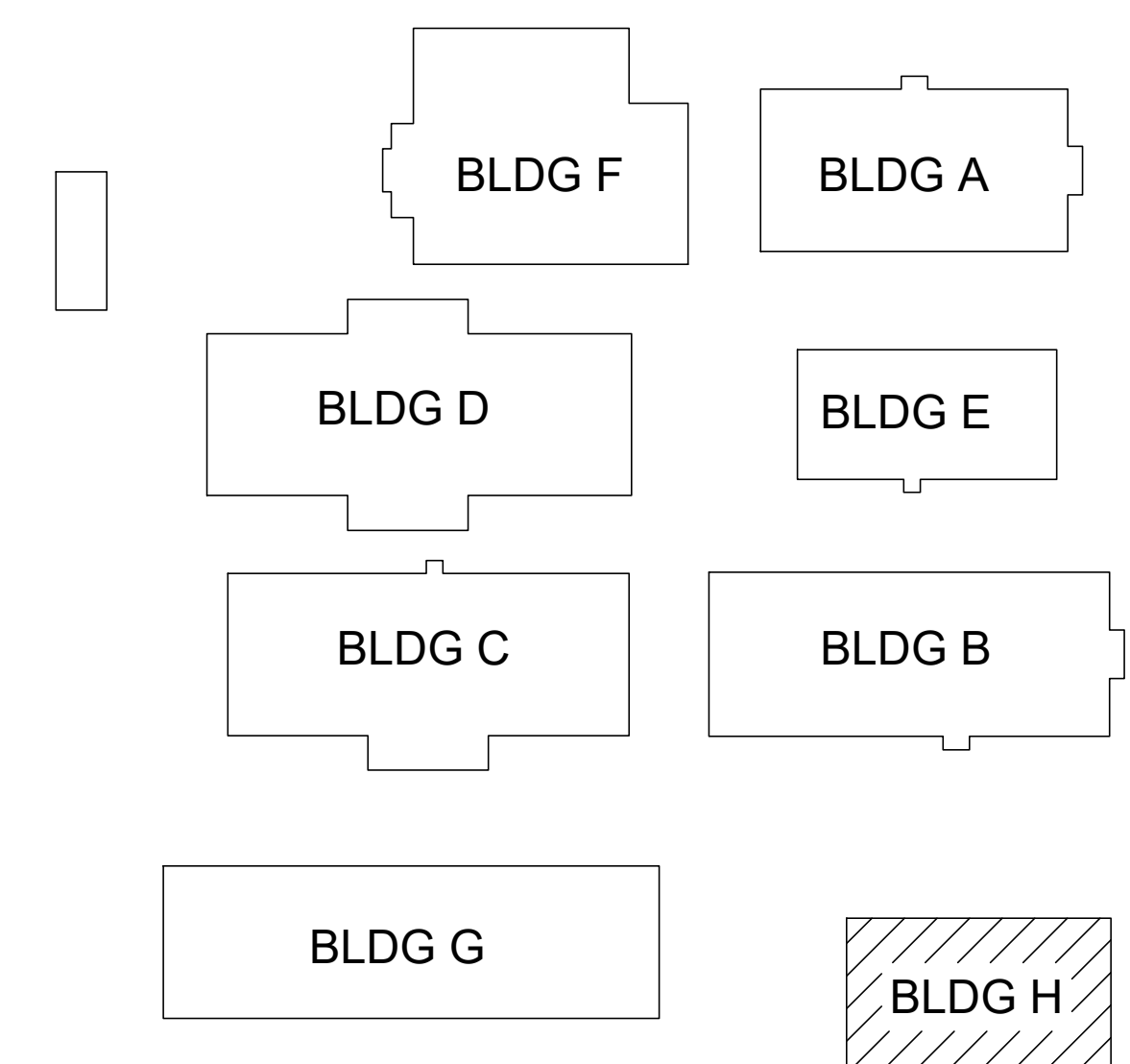
LEGEND	
	EXISTING SUPPLY DIFFUSER TO REMAIN
	EXISTING RETURN AIR GRILLE TO REMAIN
	EXISTING DUCTWORK TO REMAIN
	NEW DUCTWORK TO BE INSTALLED
	EXISTING EQUIPMENT TO REMAIN
	NEW EQUIPMENT TO BE INSTALLED
	EXISTING PIPING TO REMAIN
	NEW MOTORIZED DAMPERS TO BE INSTALLED
	RELATIVE HUMIDITY SENSOR

**MECHANICAL KEYED NOTES:**

- 1 DEMOLISH PORTION OF EXISTING OUTSIDE AIR DUCTWORK AS SHOWN AT THIS APPROXIMATE LOCATION. PREPARE FOR INSTALLATION OF NEW MOTORIZED DAMPERS AND CONNECT NEW DUCTWORK INTO EXISTING DUCTWORK. COORDINATE WORK WITH JCI.
- 2 DEMOLISH PORTION OF EXISTING DUCTWORK AS SHOWN AT THIS APPROXIMATE LOCATION. INSTALL RELATIVE HUMIDITY SENSORS AND CONNECT NEW DUCTWORK INTO EXISTING DUCTWORK. COORDINATE WORK WITH JCI.
- 3 PROVIDE AN ULTRA-LOW LEAKAGE MOTORIZED DAMPER AND ACTUATOR ON THE OA INTAKE AS SHOWN. INTERLOCK OA DAMPER CONTROLS WITH AHU FAN MOTOR AND DDC SEQUENCES ASSOCIATED WITH DISCHARGE AIR DENPOINT. REFER TO SEQUENCE OF OPERATIONS FOR MORE INFORMATION. COORDINATE WORK WITH JCI.

**ELECTRICAL KEYED NOTES:**

- 1 APPROXIMATE LOCATION OF EXISTING PANELBOARD TO SERVING HVAC EQUIPMENT.
- 2 CONNECT MOTORIZED DAMPER TO EXISTING PANELBOARD; BRANCH CIRCUIT: 1/2" - 2#12 & #12. PROVIDE A 20A/1P BREAKER IN AVAILABLE SPACE.



KEYPLAN

NO. REVISION: BY:

COPY NO:  
CSP #25-LRMU-0424



TEXAS

IDEA PUBLIC SCHOOLS  
LOWER RGV MECHANICAL UPGRADES

FRONTIER



1128 SOUTH COMMERCE ST.  
HARLINGEN, TX  
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TEXAS REGISTERED  
ENGINEERING FIRM  
E-15998

DATE: MAY 24, 2024

CHECKED BY: B.B.

DRAWN BY: D.G.

PROJECT NO.: 23V76

CAD FILE:

SHEET:

ME3.8

**LEGEND**

	EXISTING SUPPLY DIFFUSER TO REMAIN
	EXISTING RETURN AIR GRILLE TO REMAIN
	EXISTING 6x6 DUCTWORK TO REMAIN
	NEW 6x6 DUCTWORK TO BE INSTALLED
	EXISTING EQUIPMENT TO REMAIN
	NEW EQUIPMENT TO BE INSTALLED

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TEXAS

**IDEA PUBLIC SCHOOLS  
LOWER RGV MECHANICAL UPGRADES**

FRONTIER



DATE: MAY 24, 2024

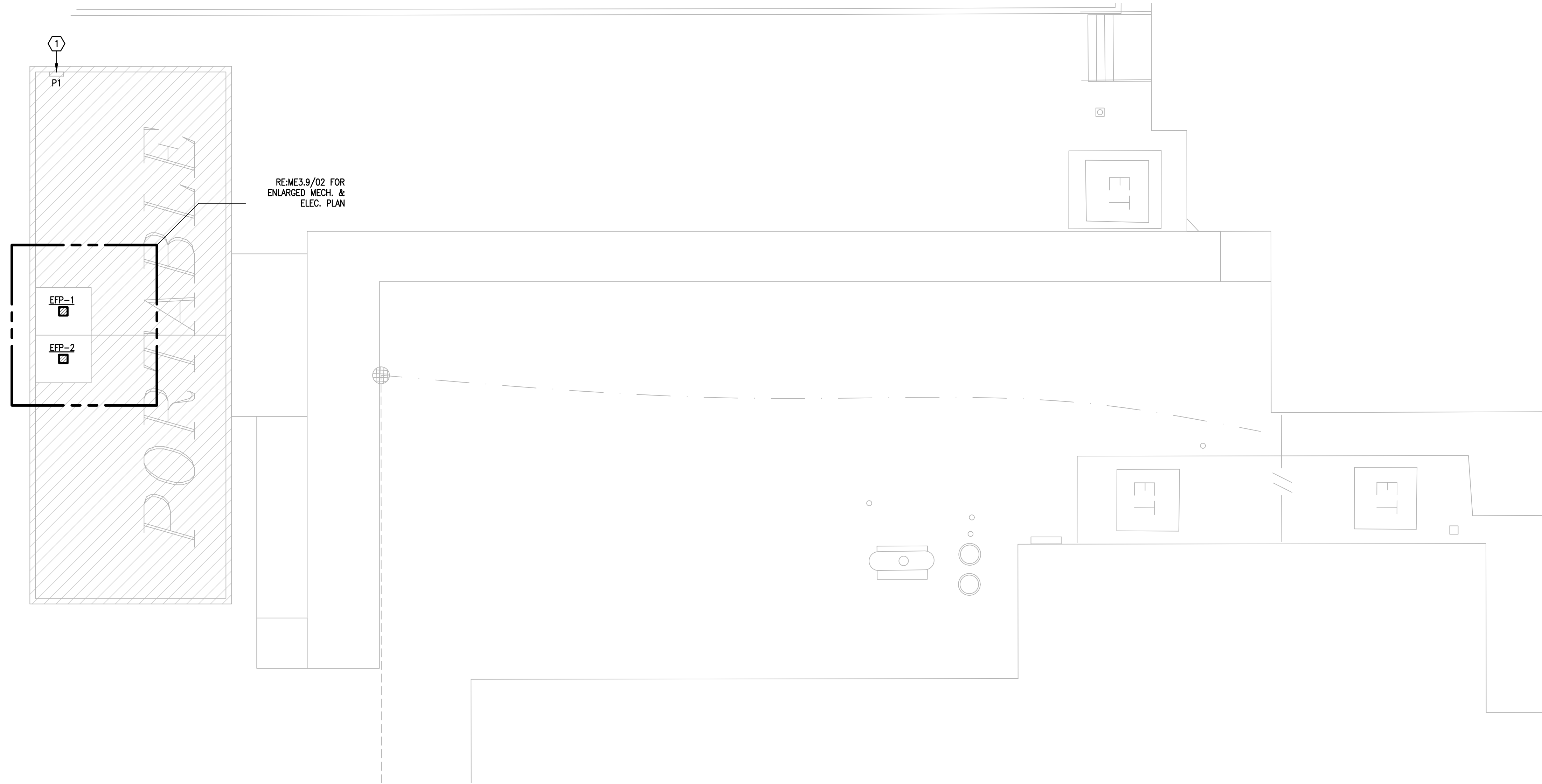
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PROJECT NO.: 23V78

CAD FILE: SHEET:

**ME3.9**



**01 IDEA FRONTIER PORTABLE  
MECHANICAL & ELECTRICAL FLOOR PLAN**  
SCALE: 1/8" = 1'-0"

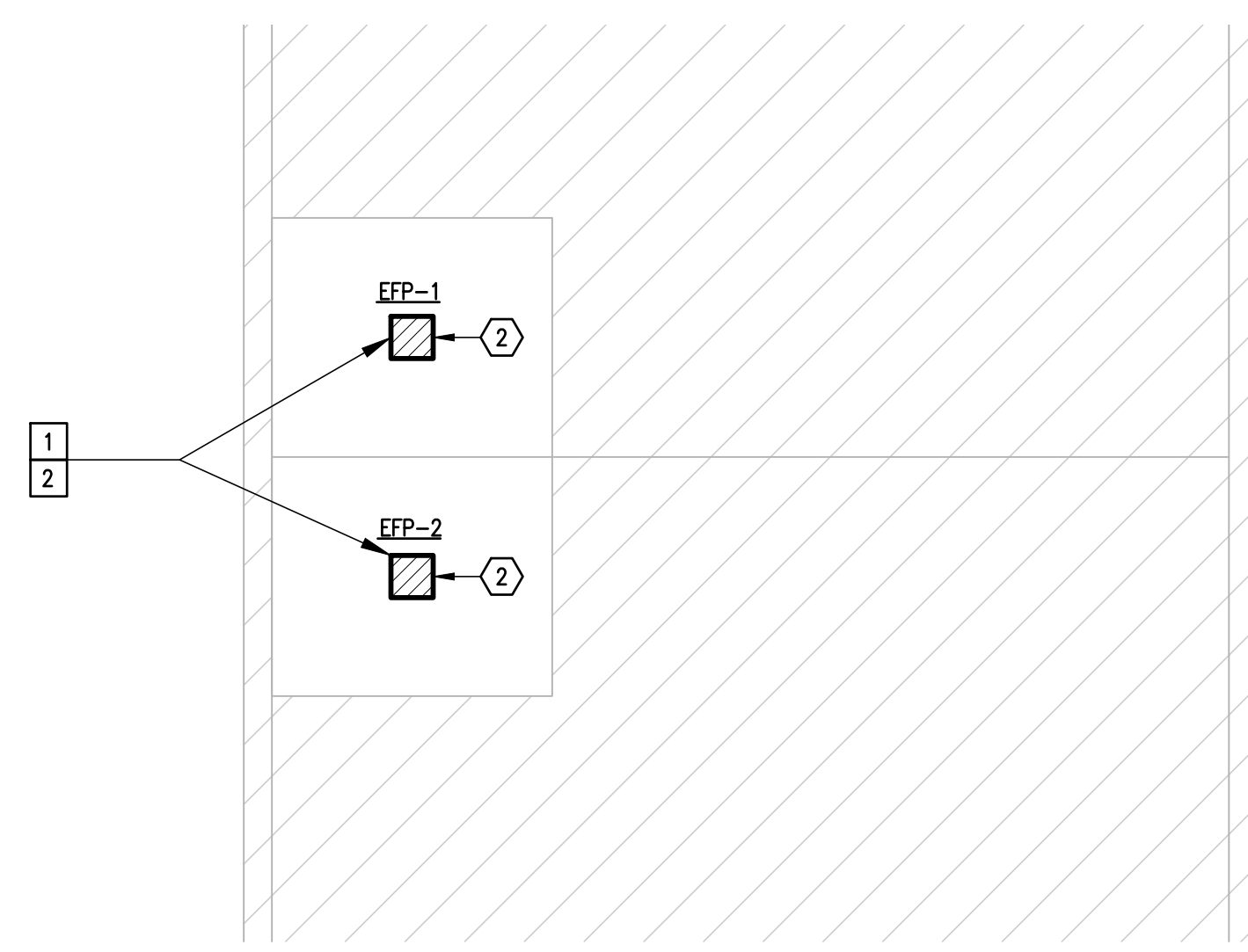


**MECHANICAL KEYED NOTES:**

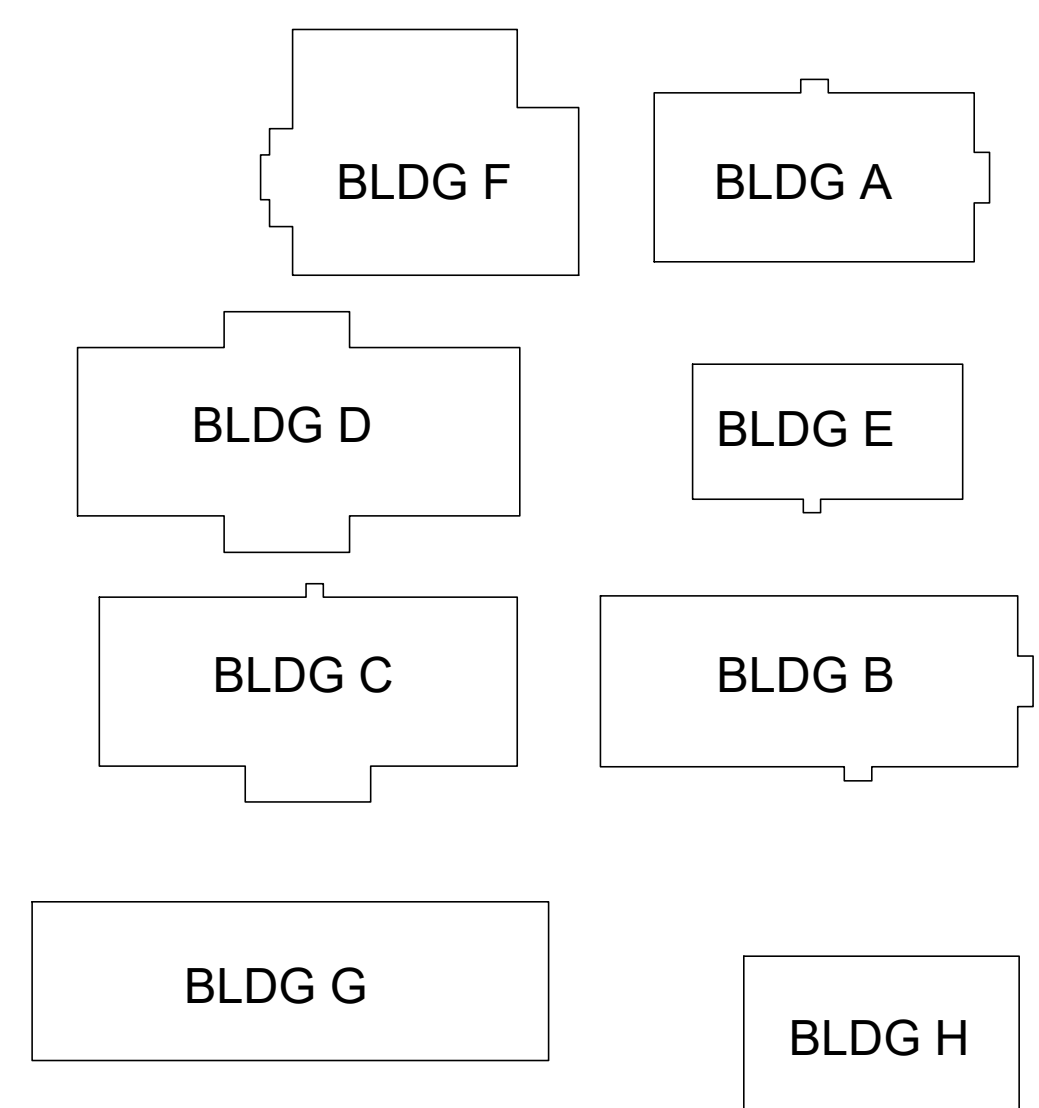
- 1 DEMOLISH EXISTING EXHAUST FAN. REPLACE IT WITH NEW EXHAUST FAN AT THIS APPROXIMATE LOCATION. PROVIDE NEW DUCTWORK TRANSITION WHERE NECESSARY. REFER TO PROVIDED SCHEDULE AND TAB SPECIFICATIONS FOR MORE INFORMATION.
- 2 TEMPORARILY REMOVE THE CEILING AROUND THE AREA OF WHERE EXISTING EXHAUST FAN IS TO BE REPLACED. RESTORE THE CEILING BACK TO ITS ORIGINAL CONDITION AFTER REPLACEMENT OF EXHAUST FAN.

**ELECTRICAL KEYED NOTES:**

- 1 APPROXIMATE LOCATION OF EXISTING PANELBOARD TO SERVING HVAC EQUIPMENT.
- 2 DISCONNECT EXISTING HVAC EQUIPMENT FOR REPLACEMENT. SEE EQUIPMENT CONNECTION SCHEDULE.



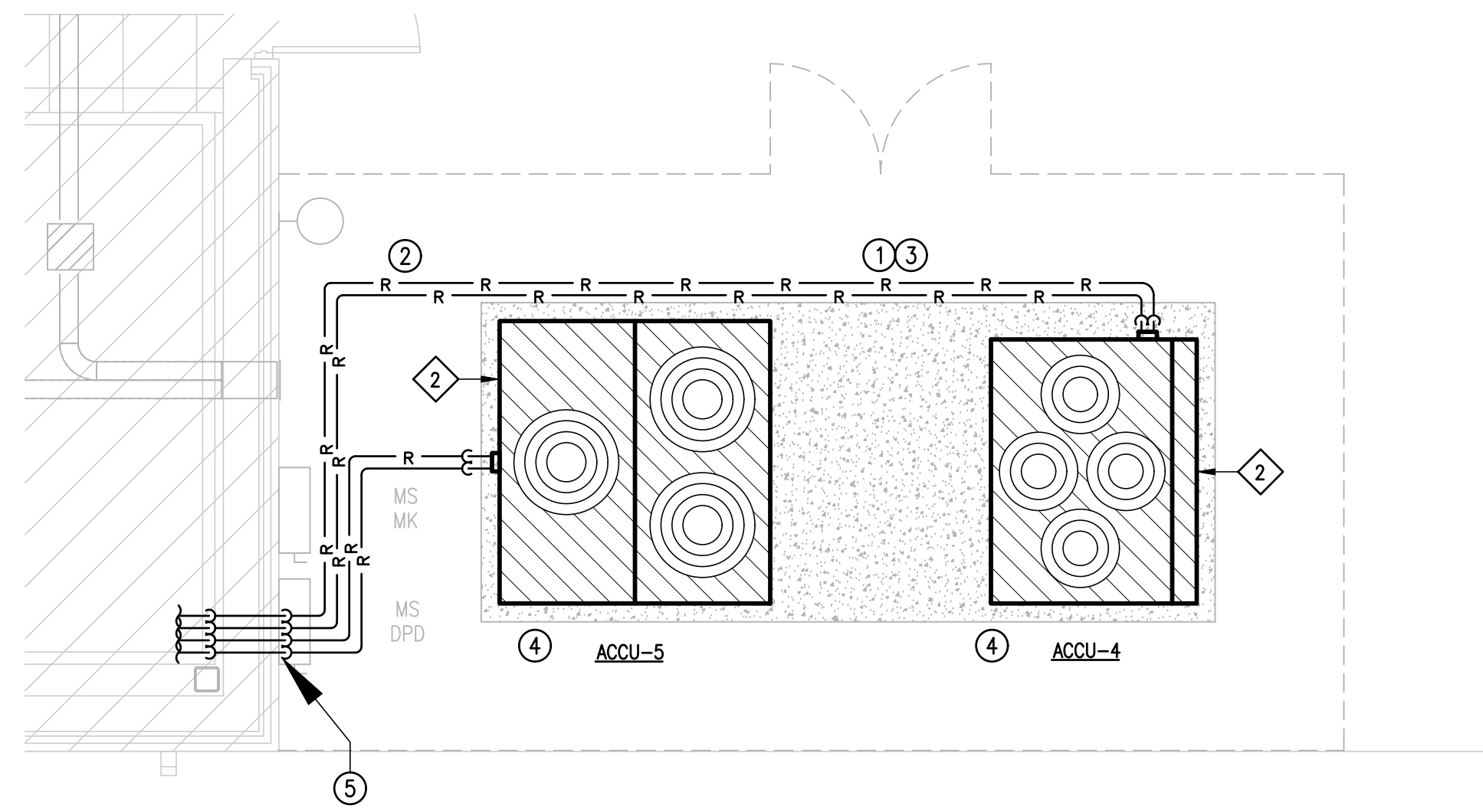
**02 ENLARGED MECHANICAL & ELECTRICAL FLOOR PLAN**  
SCALE: 1/4" = 1'-0"



KEYPLAN

LEGEND

	EXISTING SUPPLY DIFFUSER TO REMAIN
	EXISTING RETURN AIR GRILLE TO REMAIN
	EXISTING DUCTWORK TO REMAIN
	EXISTING EQUIPMENT TO REMAIN
	NEW EQUIPMENT TO BE INSTALLED
	NEW PIPING TO BE INSTALLED
	EXISTING PIPING TO REMAIN



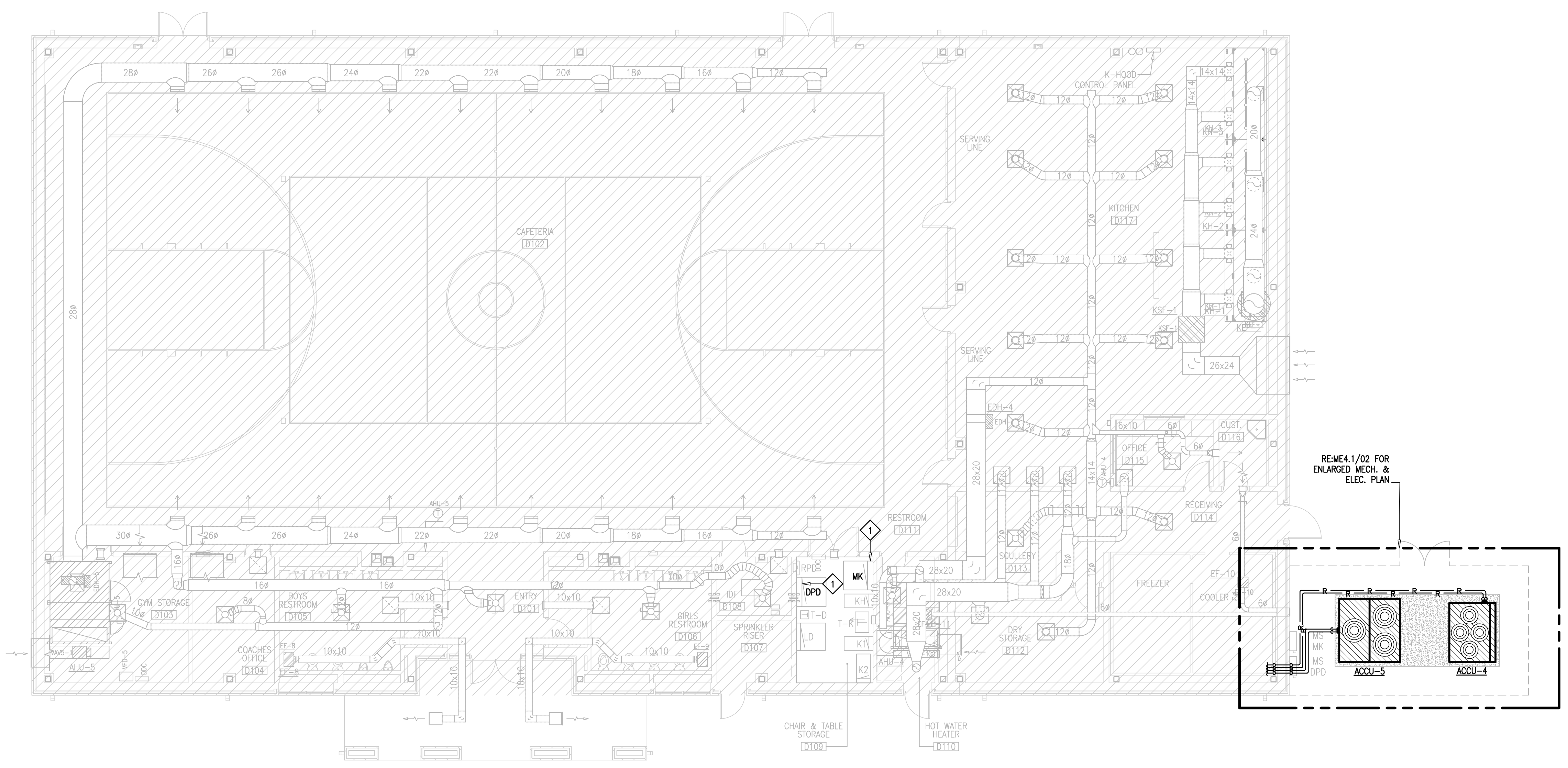
02 ENLARGED MECHANICAL & ELECTRICAL FLOOR PLAN  
SCALE: 1/4" = 1'-0" NORTH

ALTERNATE #2  
MECHANICAL KEYED NOTES:

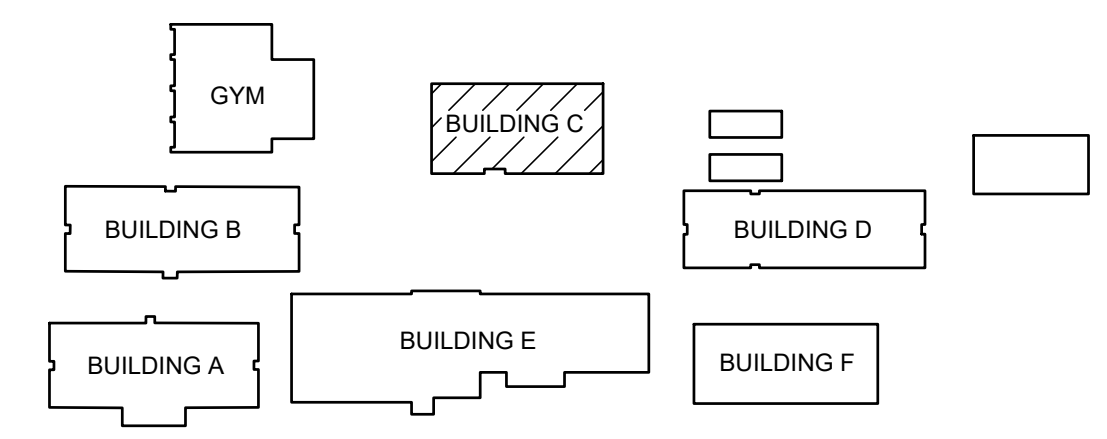
- DEMOLISH EXISTING REFRIGERANT PIPING. REPLACE IT WITH NEW REFRIGERANT PIPING AND ROUTE TO INDOOR UNIT. COORDINATE ROUTING WITH OTHER TRADES PRIOR TO INSTALLATION. ROUTE INSIDE WALL TO AVOID EXPOSED PIPING WITHIN THE SPACE. (TYPICAL)
- DEMOLISH AND PROVIDE NEW REFRIGERANT LINE SUPPORTS. SEE ASSOCIATED DETAIL. (TYPICAL)
- PROVIDE NEW 1" INSULATION ON ALL REFRIGERANT LINES BOTH NEW AND EXISTING. PROVIDE ALUMINUM JACKET ON EXPOSED REFRIGERANT LINES. SEE SPECIFICATIONS. PROVIDE REFRIGERANT LINE SUPPORTS PER SPECIFICATIONS. SEE ASSOCIATED DETAIL.
- DEMOLISH EXISTING ACCU AND INSTALL NEW AIR COOLED CONDENSING UNIT AND INSULATED REFRIGERANT PIPING PER SPECIFICATIONS. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES AND MOUNT UNIT ON EXISTING CONCRETE PAD. PAD SHALL BE MINIMUM 6" LARGER THAN EQUIPMENT FOOTPRINT ON ALL SIDES. REFRIGERANT PIPING SHOWN IS STRICTLY SCHEMATIC. VERIFY NUMBER OF CIRCUITS AND PIPE SIZES WITH MANUFACTURER'S DATA. BOLT EQUIPMENT DOWN TO EXISTING CONCRETE SLAB. ATTACHMENT SHALL BE CAPABLE OF WITHSTANDING THE LOCAL WIND PRESSURES.
- RETAIN EXISTING PENETRATION SLEEVES WHERE POSSIBLE. SEAL AROUND NEW PIPING WITH FIRE PROOF CAULKING. PROVIDE NEW ESCUTCHEON PLATES AND FLASHING AROUND PENETRATION BOTH INSIDE AND OUTSIDE TO PROVIDE FINISHED LOOK WHERE NECESSARY.

ALTERNATE #2  
ELECTRICAL KEYED NOTES:

- APPROXIMATE LOCATION OF EXISTING PANELBOARD SERVING HVAC EQUIPMENT.
- DISCONNECT EXISTING HVAC EQUIPMENT FOR REPLACEMENT. SEE EQUIPMENT CONNECTION SCHEDULE.



01 IDEA SAN BENITO BUILDING C  
MECHANICAL & ELECTRICAL PLAN  
SCALE: 1/8" = 1'-0" NORTH



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TEXAS

IDEA PUBLIC SCHOOLS  
LOWER RGV MECHANICAL UPGRADES

SAN BENITO

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DATE: MAY 24, 2024  
CHECKED BY: B.B.  
DRAWN BY: D.G.  
PROJECT NO.: 23V76  
CAD FILE:  
SHEET:  
**ME4.1**



**ELECTRICAL KEYED NOTES:**

- 1 APPROXIMATE LOCATION OF EXISTING PANELBOARD SERVING HVAC EQUIPMENT.
- 2 DISCONNECT EXISTING HVAC EQUIPMENT FOR REPLACEMENT. SEE EQUIPMENT CONNECTION SCHEDULE.

**MECHANICAL KEYED NOTES:**

- 1 DEMOLISH EXISTING REFRIGERANT PIPING. REPLACE IT WITH NEW REFRIGERANT PIPING AND ROUTE TO INDOOR UNIT. COORDINATE ROUTING WITH OTHER TRADES PRIOR TO INSTALLATION. ROUTE INSIDE WALL TO AVOID EXPOSED PIPING WITHIN THE SPACE. (TYPICAL)
- 2 DEMOLISH AND PROVIDE NEW REFRIGERANT LINE SUPPORTS. SEE ASSOCIATED DETAIL. (TYPICAL)
- 3 PROVIDE NEW 1" INSULATION ON ALL REFRIGERANT LINES BOTH NEW AND EXISTING. PROVIDE ALUMINUM JACKET ON EXPOSED REFRIGERANT LINES. SEE SPECIFICATIONS. PROVIDE REFRIGERANT LINE SUPPORTS PER SPECIFICATIONS. SEE ASSOCIATED DETAIL.
- 4 DEMOLISH EXISTING ACCU AND REPLACE IT WITH NEW AIR COOLED CONDENSING UNIT AND INSULATED REFRIGERANT PIPING PER SPECIFICATIONS. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES AND PROVIDE NEW 4" TALL HOUSEKEEPING CONCRETE PAD FOR NEW EQUIPMENT. PAD SHALL BE MINIMUM 6" LARGER THAN EQUIPMENT FOOTPRINT ON ALL SIDES. REFRIGERANT PIPING SHOWN IS STRICTLY SCHEMATIC, VERIFY NUMBER OF CIRCUITS AND PIPE SIZES WITH MANUFACTURER'S DATA. BOLT EQUIPMENT DOWN TO EXISTING CONCRETE SLAB. ATTACHMENT SHALL BE CAPABLE OF WITHSTANDING THE LOCAL WIND PRESSURES.
- 5 RETAIN EXISTING PENETRATION SLEEVES WHERE POSSIBLE. SEAL AROUND NEW PIPING WITH FIRE PROOF CAULKING. PROVIDE NEW ESCUTCHEON PLATES AND FLASHING AROUND PENETRATION BOTH INSIDE AND OUTSIDE TO PROVIDE FINISHED LOOK WHERE NECESSARY.

**LEGEND**

	EXISTING SUPPLY DIFFUSER TO REMAIN
	EXISTING RETURN AIR GRILLE TO REMAIN
	EXISTING DUCTWORK TO REMAIN
	EXISTING EQUIPMENT TO REMAIN
	NEW EQUIPMENT TO BE INSTALLED
	NEW PIPING TO BE INSTALLED
	EXISTING PIPING TO REMAIN

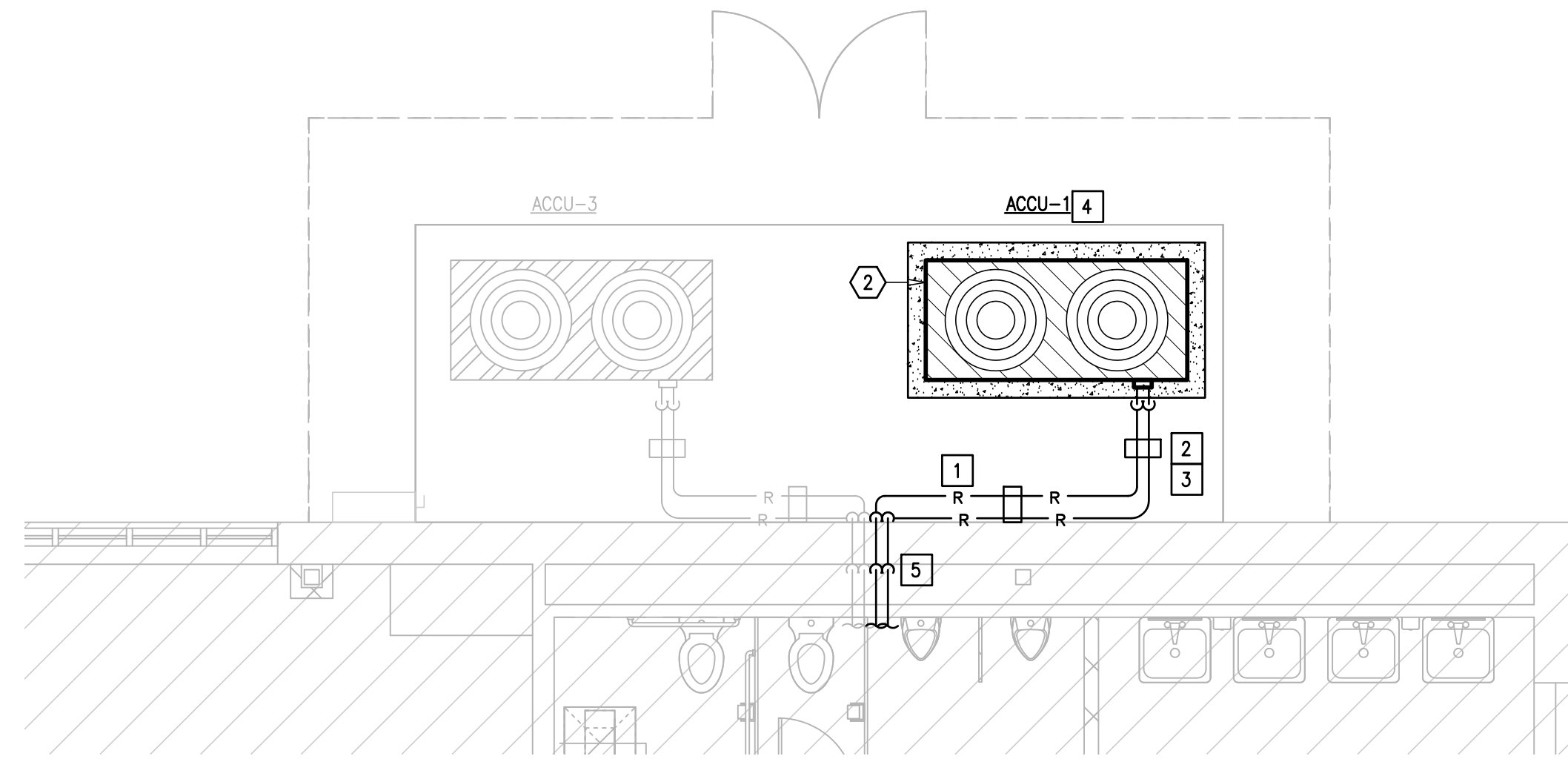
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CSP #25-LRMU-0424

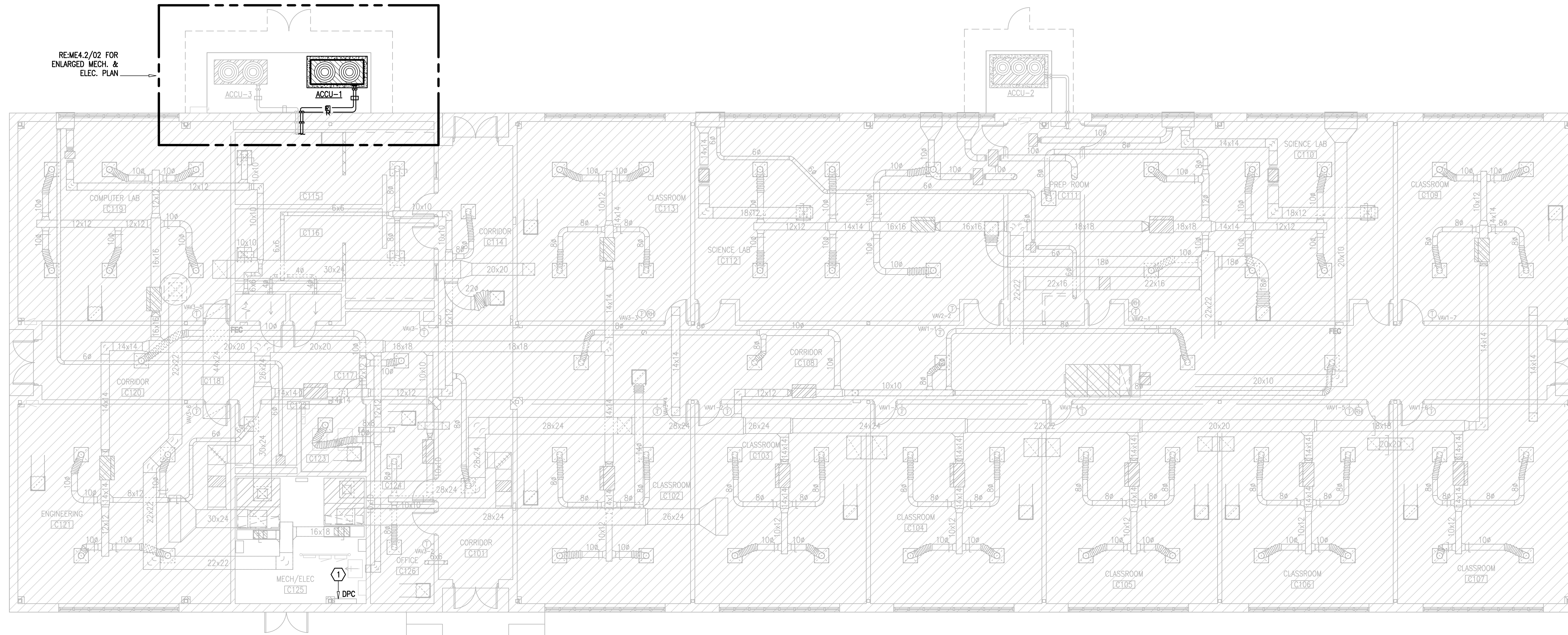


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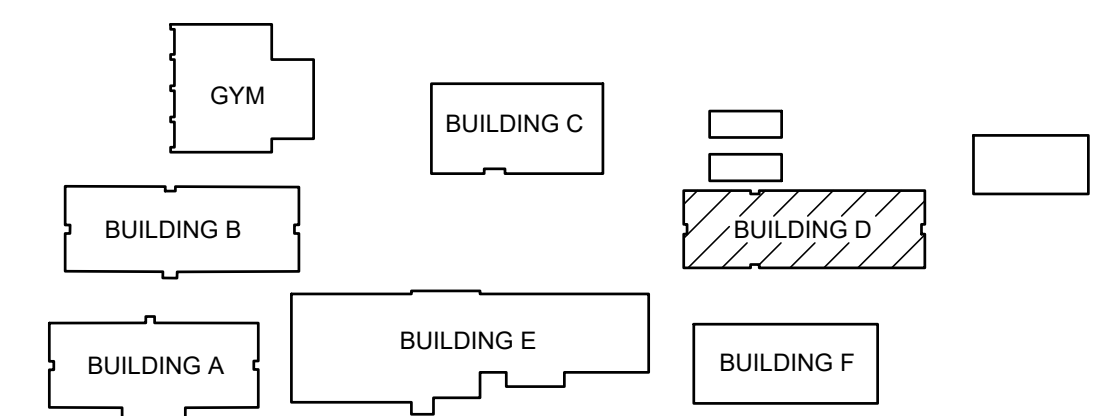
TEXAS



**02 ENLARGED MECHANICAL & ELECTRICAL FLOOR PLAN**  
SCALE: 1/8" = 1'-0"



**01 IDEA SAN BENITO BUILDING D MECHANICAL & ELECTRICAL FLOOR PLAN**  
SCALE: 1/8" = 1'-0"



IDEA PUBLIC SCHOOLS  
LOWER RGV MECHANICAL UPGRADES

SAN BENITO



1126 SOUTH COMMERCE ST.  
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ENGINEERING FIRM  
E-15998

DATE: MAY 24, 2024

CHECKED BY: B.B.

DRAWN BY: D.G.

PROJECT NO.: 23V78

CAD FILE:

SHEET:

**ME4.2**

LEGEND

	EXISTING SUPPLY DIFFUSER TO REMAIN
	EXISTING RETURN AIR GRILLE TO REMAIN
	EXISTING DUCTWORK TO REMAIN
	EXISTING EQUIPMENT TO REMAIN
	NEW EQUIPMENT
	NEW PIPING TO BE INSTALLED
	EXISTING PIPING TO REMAIN

NO. REVISION: BY:

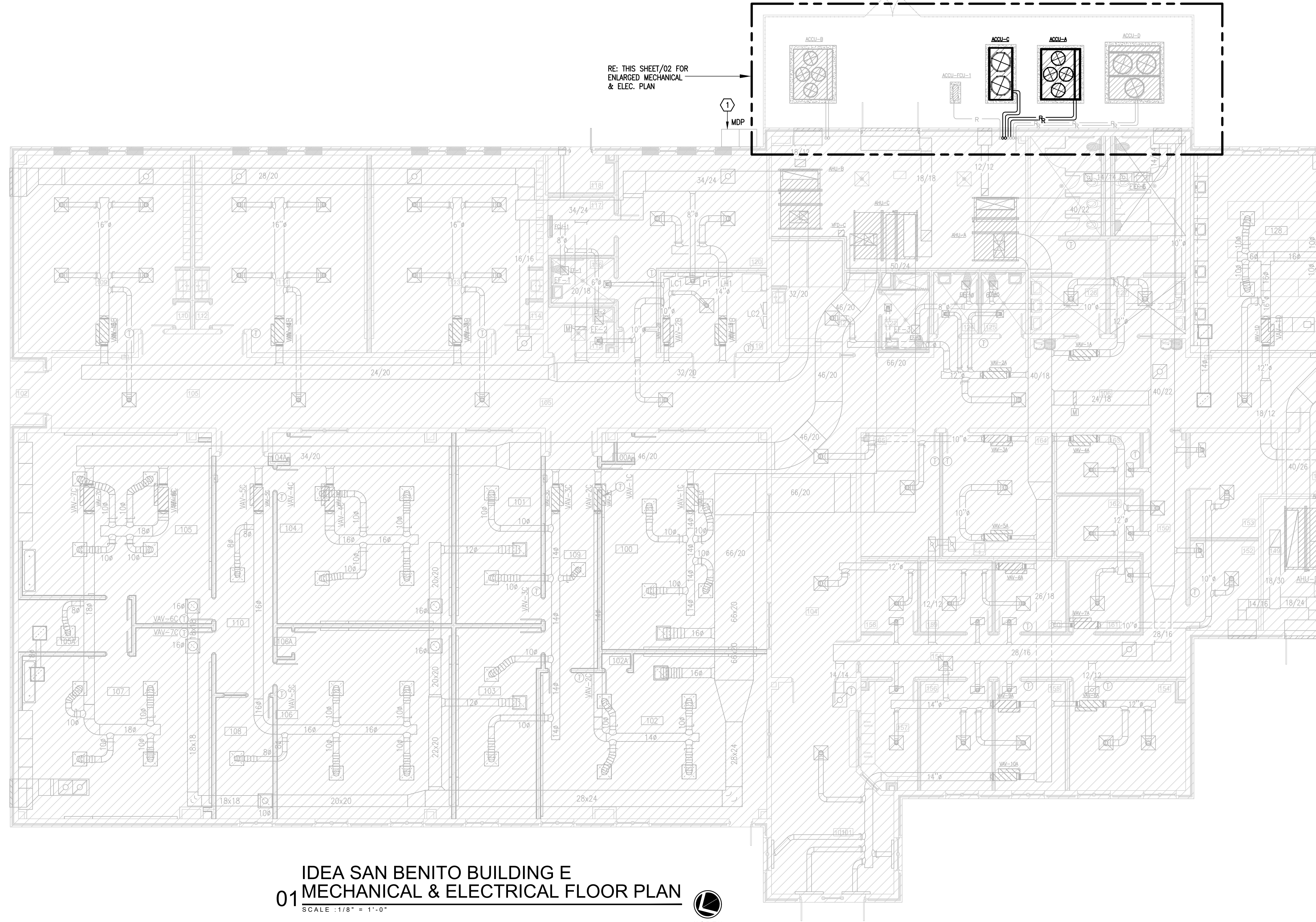
COPY NO:  
CSP #25-LRMU-0424



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RE: THIS SHEET/02 FOR ENLARGED MECHANICAL & ELEC. PLAN

1 MDP



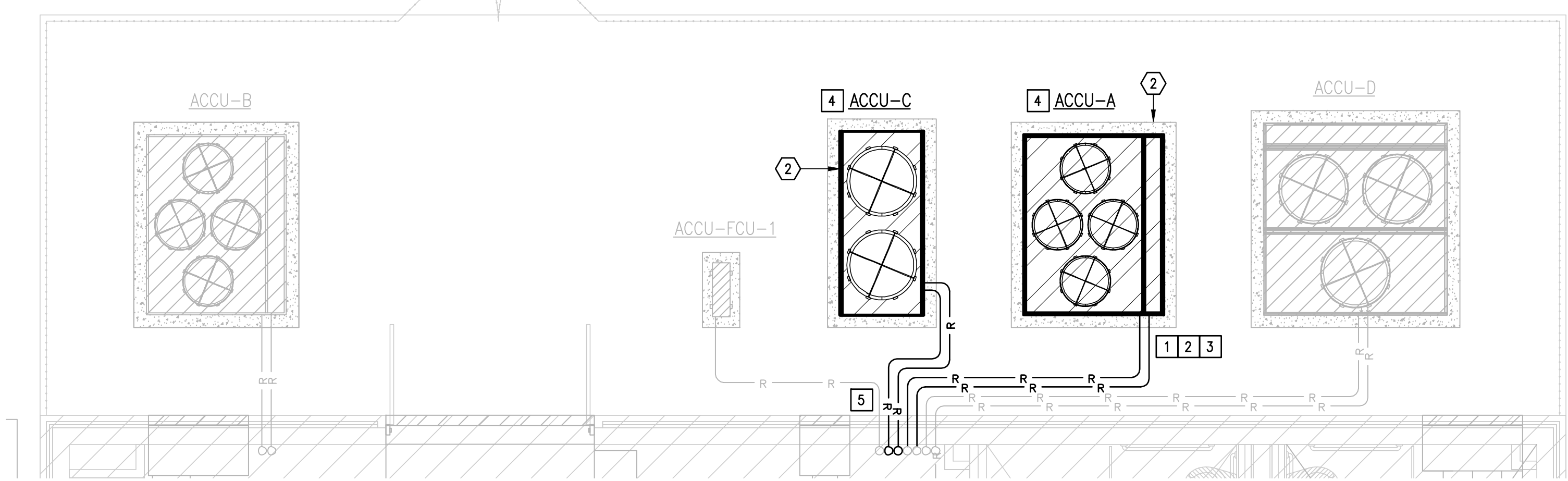
01 IDEA SAN BENITO BUILDING E  
MECHANICAL & ELECTRICAL FLOOR PLAN  
SCALE: 1/8" = 1'-0"  
NORTH

MECHANICAL KEYED NOTES:

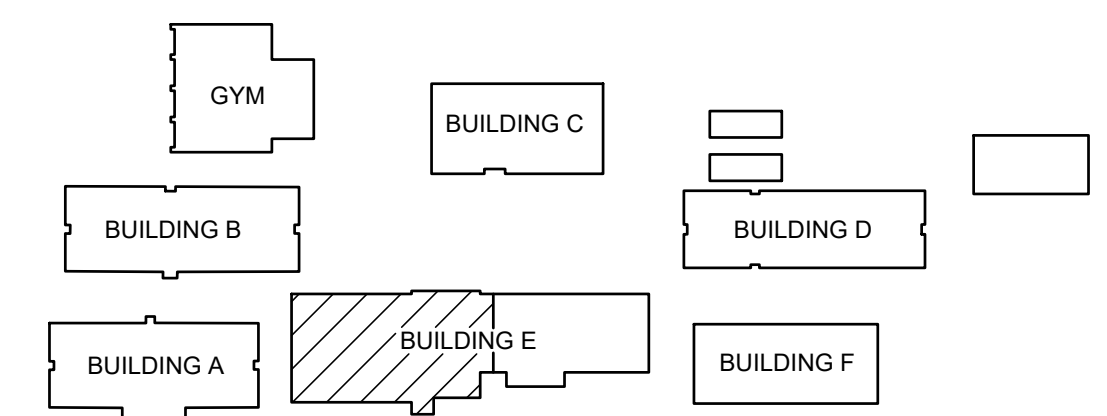
- 1 DEMOLISH EXISTING REFRIGERANT PIPING. REPLACE IT WITH NEW REFRIGERANT PIPING AND ROUTE TO INDOOR UNIT. COORDINATE ROUTING WITH OTHER TRADES PRIOR TO INSTALLATION. ROUTE INSIDE WALL TO AVOID EXPOSED PIPING WITHIN THE SPACE. (TYPICAL)
- 2 PROVIDE NEW REFRIGERANT LINE SUPPORTS. SEE ASSOCIATED DETAIL. (TYPICAL)
- 3 PROVIDE NEW 1" INSULATION ON ALL REFRIGERANT LINES BOTH NEW AND EXISTING. PROVIDE ALUMINUM JACKET ON EXPOSED REFRIGERANT LINES. SEE SPECIFICATIONS. PROVIDE REFRIGERANT LINE SUPPORTS PER SPECIFICATIONS. SEE ASSOCIATED DETAIL.
- 4 DEMOLISH EXISTING ACCU AND INSTALL NEW AIR COOLED CONDENSING UNIT AND INSULATED REFRIGERANT PIPING PER SPECIFICATIONS. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES AND MOUNT UNIT ON EXISTING CONCRETE PAD. PAD SHALL BE MINIMUM 6" LARGER THAN EQUIPMENT FOOTPRINT ON ALL SIDES; EXTEND CONCRETE PAD AS NECESSARY. REFRIGERANT PIPING SHOWN IS STRICTLY SCHEMATIC. VERIFY NUMBER OF CIRCUITS AND PIPE SIZES WITH MANUFACTURER'S DATA. BOLT EQUIPMENT DOWN TO EXISTING CONCRETE SLAB. ATTACHMENT SHALL BE CAPABLE OF WITHSTANDING THE LOCAL WIND PRESSURES.
- 5 RETAIN EXISTING PENETRATION SLEEVES WHERE POSSIBLE. SEAL AROUND NEW PIPING WITH FIRE PROOF CAULKING. PROVIDE NEW ESCUTCHEON PLATES AND FLASHING AROUND PENETRATION BOTH INSIDE AND OUTSIDE TO PROVIDE FINISHED LOOK WHERE NECESSARY.

ELECTRICAL KEYED NOTES:

- 1 APPROXIMATE LOCATION OF EXISTING PANELBOARD SERVING HVAC EQUIPMENT.
- 2 DISCONNECT EXISTING HVAC EQUIPMENT FOR REPLACEMENT. SEE EQUIPMENT CONNECTION SCHEDULE.



02 ENLARGED MECHANICAL & ELECTRICAL FLOOR PLAN  
SCALE: 1/4" = 1'-0"  
NORTH



IDEA PUBLIC SCHOOLS  
LOWER RGV MECHANICAL UPGRADES

SAN BENITO



1128 SOUTH COMMERCE ST.  
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PHONE: 361-206-3435  
TEXAS REGISTERED  
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E-15998

DATE: MAY 24, 2024

CHECKED BY: B.B.

DRAWN BY: D.G.

PROJECT NO.: 23V78

CAD FILE:  
SHEET:

ME4.3

**IDEA BROWNSVILLE BUILDING A - EXISTING ACCU SCHEDULE (BASE BID)**

MARK	SERVING	EXISTING MANUFACTURER	EXISTING MODEL NUMBER	EXISTING SERIAL NUMBER	TOTAL BTUH	COND DB	ELECTRICAL V-PH-HZ	EER AT ARI	STEPS OF CAPACITY	EXISTING MCA	EXISTING MOCP	EXISTING WEIGHT (LBS.)	NOTES
ACCU-3	AHU-3	CARRIER	38APD02765A28024	1012Q44490	299,992	100	460-3-60	11	22	47.7	60	1130	ALL

- NOTES:
1. ALL MODEL NUMBERS HAVE BEEN FIELD VERIFIED AT THE TIME THESE CONSTRUCTION DOCUMENTS WERE COMPILED. ANY CHANGES MADE IN THE FIELD AFTER RELEASE OF THESE DOCUMENTS AND PRIOR TO CONSTRUCTION NEED TO BE REPORTED TO THE ENGINEER OF RECORD PRIOR TO ANY WORK BEING DONE FOR ASSOCIATED CHANGE.
  2. LISTED EQUIPMENT ON SCHEDULE IS FOR SERVICE REFERENCE ONLY.

**IDEA BROWNSVILLE BUILDING B - ACCU SCHEDULE (BASE BID)**

MARK	SERVING	EXISTING MANUFACTURER	EXISTING MODEL NUMBER	EXISTING SERIAL NUMBER	TOTAL BTUH	COND DB	ELECTRICAL V-PH-HZ	EER / IEER AT ARI	STEPS OF CAPACITY	MCA	MOCP	WEIGHT (LBS.)	NOTES	MANUFACTURER	MODEL NUMBER
ACCU-10	AHU-10	CARRIER	38APD0706JA18030	0513Q78477	781,700	95	460-3-60	11 / 15.9	55	129.5	150	2751	ALL	CARRIER	38APD07063-30080

- NOTES:
1. MANUFACTURER AND MODEL NUMBER LISTED ARE "OR APPROVED EQUAL". SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS AND SUBSTITUTION PROCEDURES.
  2. EER SHALL EXCEED IECC MINIMUM EFFICIENCY AT DESIGN CONDITIONS.
  3. PROVIDE CONDENSER COIL HAIL GUARDS, E-COATED COILS, AND LOW AMBIENT CONTROL.
  4. PROVIDE BACNET INTERFACE.
  5. SAFETY DISCONNECT TO BE PROVIDED BY DIV. 26.
  6. INSULATE REFRIGERANT LINES AS PER SPECIFICATIONS. PROVIDE UV RESISTANT PAINTED JACKETING AROUND INSULATION FOR ALL EXTERIOR EXPOSED LINES.
  7. PROVIDE FACTORY INSTALLED HOT GAS BYPASS. PROVIDE THERMOSTAT TO PROVIDE 2 STAGES OF MODULATION PER CONDENSING UNIT. PROVIDE ALL NEW REFRIGERANT SPECIALTIES, EXPANSION VALVES, ETC.
  8. PROVIDE EVAPORATOR DEFROST CONTROLLER FOR MINIMUM CIRCUIT.

**IDEA BROWNSVILLE BUILDING C - ELECTRIC DUCT HEATER SCHEDULE (BASE BID)**

MARK	HEATER TYPE	EXISTING MANUF/ MODEL	DUCT SIZE (IN)	UNIT SERVING	UNIT TOTAL CFM	UNIT HEATING CFM	ELECTRIC HEAT INPUT (KW)	ELECTRIC HEAT STEPS	ELECTRICAL V-PH-HZ	NOTES	MANUFACTURER	MODEL NUMBER
EDH-9	DUCT MOUNTED	REDD-1/3HF95	28 X 24	AHU-9 (KITCHEN)	6,100	3,050	25	SCR	480-3-60	ALL	WARREN	CBK
EDH-10	DUCT MOUNTED	REDD-1/3HF95	38 X 38	AHU-10 (GYM/CAFÉ)	16,500	8,250	95	SCR	480-3-60	ALL	WARREN	CBK

- NOTES:
1. MANUFACTURER AND MODEL NUMBER LISTED ARE "OR APPROVED EQUAL".
  2. PROVIDE AIR PRESSURE SWITCH, MAGNETIC CONTACTORS, HI LIMIT CONTROL, PRIMARY AND SECONDARY OVER CURRENT PROTECTION (FUSES), DOOR INTERLOCKED DISCONNECT SWITCH.
  3. DIV. 26 TO PROVIDE SAFETY DISCONNECT (SEPARATED FROM AHU FAN).
  4. MINIMUM CFM SHALL BE 30% OF TOTAL FLOW.
  5. HEATER SIZED FOR 50% OF TOTAL FLOW.

**IDEA FRONTIER - ROOF VENT SCHEDULE**

MARK	SERVING	OUTSIDE AIR (CFM)	SQ. ROOF OPENING W X D (IN.)	THROAT AREA (SQ. FT.)	CFM @ 500 FPM	WEIGHT (LBS.)	MANUFACTURER & MODEL NUMBER	NOTES
RV-1	AHU-1	3550	36 X 36	3.341	3960	105	COOK 24 PR	ALL
RV-5	AHU-5	2875	32 X 32	2.292	2655	80	COOK 20 PR	ALL
RV-6	AHU-6	2800	32 X 32	2.292	2655	80	COOK 20 PR	ALL

- NOTES:
1. DESCRIPTION: SPUN ALUMINUM GRAVITY INTAKE ROOF MOUNTED VENTILATOR.
  2. PROVIDE INTAKE WITH BIRDSCREEN AND INSECT SCREEN.

**IDEA BROWNSVILLE PAVILLION - EXHAUST FAN SCHEDULE (BASE BID)**

MARK	SERVING	TYPE	ELECTRICAL V-PH-HZ	DRIVE	CFM	INPUT WATTS	MOTOR HP	RPM	E.S.P. IN. H2O	SOUND IN SONES	WEIGHT (LBS)	CONTROL NOTES	NOTES	MANUFACTURER	MODEL NUMBER
EF-1	PAVILLION	WALL MOUNTED	208-3-60	DIRECT	14,529	-	2	1140	0.2	37.0	714.0	A	ALL	COOK	EWD
EF-2	PAVILLION	WALL MOUNTED	208-3-60	DIRECT	14,529	-	2	1140	0.2	37.0	714.0	A	ALL	COOK	EWD

- NOTES:
1. PROVIDE FACTORY MOUNTED DISCONNECT.
  2. MANUFACTURER AND MODEL NUMBER LISTED ARE "OR APPROVED EQUAL." REFER TO SPECIFICATIONS.
  3. PROVIDE OSHA MOTOR AND BELT GUARD.
  4. PROVIDE INSULATED HOUSING FOR SOUND ATTENUATION.
  5. PROVIDE SPRING TYPE VIBRATION ISOLATORS FOR SUSPENDED INLINE TYPE FANS.

CONTROL NOTES:  
A. CONNECT TO EXISTING DDC SYSTEM. RECREATE EXISTING CONTROL POINTS AND SCHEDULING WITH NEW EQUIPMENT.

**EQUIPMENT CONNECTION SCHEDULE:**

DESIGN	HP/KW	EXISTING MOCP	NEW MCA	NEW MOCP	VOLTAGE	EXISTING MEANS OF DISCONNECT	NEW MEANS OF DISCONNECT	EXISTING BRANCH CIRCUIT (75' COPPER)	NEW BRANCH CIRCUIT (75' COPPER)	EXISTING POWER SOURCE
<b>IDEA BROWNSVILLE BUILDING B (BASE BID)</b>										
ACCU-10	-	150	129.5	1) 150	480V/3PHASE	CIRCUIT BREAKER WITHIN SIGHT.	RETAIN EXISTING.	1.5" - 3#1/0 & #6G	RETAIN EXISTING.	DPB
<b>IDEA BROWNSVILLE BUILDING C (BASE BID)</b>										
EDH-9	25 KW	50	37.6	1) 50	480V/3PHASE	60A, 3PNF, 600V, NEMA 1	RETAIN EXISTING.	3/4" - 3#8 & #10G	RETAIN EXISTING.	MK
EDH-10	95 KW	150	142.8	1) 150	480V/3PHASE	200A, 3PNF, 600V, NEMA 1	RETAIN EXISTING.	1.5" - 3#1/0 & #6G	RETAIN EXISTING.	DPB
<b>IDEA BROWNSVILLE PAVILLION (BASE BID)</b>										
EF-1	2 HP	20	9.3	2) 20	208V/3PHASE	TOGGLE SWITCH.	3) THERMAL SWITCH.	REMOVE	1/2" - 3#12 & #12G	L1
EF-2	2 HP	20	9.3	2) 20	208V/3PHASE	TOGGLE SWITCH.	3) THERMAL SWITCH.	REMOVE	1/2" - 3#12 & #12G	L1

- NOTES:
- 1) RETAIN AND REUSE EXISTING CIRCUIT BREAKER.
  - 2) PROVIDE A NEW UL LISTED UNIT FROM EXISTING PANELBOARD MANUFACTURER (EATON CUTLER HAMMER).
  - 3) PROVIDE 30A, 240V, 3P, HUBBELL MODEL NO. HBL1379D.

GENERAL NOTES:  
A) PROVIDE A NEMA 3R J-BOX TO SPLICE AND EXTEND EXISTING BRANCH CIRCUIT TO NEW POINT OF CONNECTION IF EXISTING DOES NOT REACH.

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CSP #25-LRMU-0424



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**IDEA PUBLIC SCHOOLS  
LOWER RGV MECHANICAL UPGRADES**

RIO GRANDE VALLEY



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E-15998

DATE: MAY 24, 2024

CHECKED BY: B.B.

DRAWN BY: D.G.

PROJECT NO.: 23V76

CAD FILE:  
SHEET:

**ME5.1**

**IDEA FRONTIER BUILDING A - EXHAUST FAN SCHEDULE (BASE BID)**

MARK	SERVING	TYPE	ELECTRICAL V-PH-HZ	DRIVE	CFM	INPUT WATTS	MOTOR HP	RPM	E.S.P. IN. H2O	SOUND IN SONES	WEIGHT (LBS)	CONTROL NOTES	NOTES	MANUFACTURER	MODEL NUMBER
EF-1	HALLWAY RESTROOMS	SUSPENDED IN-LINE	120-1-60	DIRECT	675	-	1/2	919	0.34	3.7	55.0	A	ALL	GREENHECK	SQ-120-VG
EF-2	STAFF RESTROOM	CEILING MOUNTED	120-1-60	DIRECT	75	-	1/15	1572	0.32	4.6	47.0	A	ALL	GREENHECK	SP-B110-ES

NOTES:

1. PROVIDE FACTORY MOUNTED DISCONNECT.
2. MANUFACTURER AND MODEL NUMBER LISTED ARE "OR APPROVED EQUAL." REFER TO SPECIFICATIONS.
3. PROVIDE OSHA MOTOR AND BELT GUARD.
4. PROVIDE AUTOMATIC BELT TENSIONER.
5. PROVIDE INSULATED HOUSING FOR SOUND ATTENUATION.
6. PROVIDE SPRING TYPE VIBRATION ISOLATORS FOR SUSPENDED INLINE TYPE FANS.

CONTROL NOTES:

A. CONNECT TO EXISTING DDC SYSTEM. RECREATE EXISTING CONTROL POINTS AND SCHEDULING WITH NEW EQUIPMENT.

**IDEA FRONTIER BUILDING A - MINI-SPLIT CONDENSER SCHEDULE (BASE BID)**

MARK	SERVING	EXISTING MANUFACTURER	EXISTING MODEL NUMBER	TOTAL COOLING (BTU/H)	COND DB	ELECTRICAL V-PH-HZ	SEER2	COMPR TYPE	MCA	MOC	WEIGHT (LBS)	NOTES	MANUFACTURER	MODEL NUMBER
ACCU-11	CC-1	EMI AMERICA SERIES	S1CA2	12,000	95	208-1-60	19.5	INVERTER DRIVEN TWIN ROTARY	7.8	15	64	ALL	DAIKIN	RX12WVVJU

NOTES:

1. ELECTRICAL CONTRACTOR TO PROVIDE SINGLE CIRCUIT POWER FROM SERVICE TO OUTDOOR UNIT AND WIRE TO INDOOR UNIT.
2. PROVIDE CONDENSER COIL CORROSION PROTECTION.
3. INSTALL UNIT ON EXISTING CONCRETE PAD. EXTEND CONCRETE PAD AS NECESSARY TO ACCOMMODATE FOR NEW EQUIPMENT.
4. PROVIDE INSULATION FOR BOTH LIQUID AND SUCTION LINES.
5. INSTALL PER MANUFACTURERS INSTRUCTIONS AND PIPING RECOMMENDATIONS.
6. 1 YEAR PARTS WARRANTY AND 10 YEAR COMPRESSOR PARTS LIMITED WARRANTY.

**IDEA FRONTIER BUILDING A - MINI-SPLIT CASSETTE UNIT SCHEDULE (BASE BID)**

MARK	SERVED BY	EXISTING MANUFACTURER	EXISTING MODEL NUMBER	LOCATION	MIN CFM	MAX CFM	ELECTRICAL V-PH-HZ	COOLING		WEIGHT (LBS)	NOTES	MANUFACTURER	MODEL NUMBER
								TOTAL (BTU/H)	EAT DBWB				
CC-1	ACCU-11	EMI AMERICA SERIES	CACA12	A123	268	406	208-1-60	12,000	80/67	45	ALL	DAIKIN	FFQ12W2VJU

NOTES:

1. MANUFACTURER AND MODEL NUMBER LISTED ARE "OR APPROVED EQUAL." SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS AND SUBSTITUTION PROCEDURES.
2. PROVIDE INVERTER DRIVEN COMPRESSOR FOR IMPROVED HUMIDITY CONTROL.
3. PROVIDE WALL MOUNTED AND WIRED 7-DAY PROGRAMMABLE T-STAT IN LIEU OF WIRELESS REMOTE.
4. ELECTRICAL CONTRACTOR TO PROVIDE SINGLE CIRCUIT POWER FROM SERVICE TO OUTDOOR UNIT AND WIRE TO INDOOR UNIT.

**IDEA FRONTIER BUILDING B - MINI-SPLIT CONDENSER SCHEDULE (BASE BID)**

MARK	SERVING	EXISTING MANUFACTURER	EXISTING MODEL NUMBER	TOTAL COOLING (BTU/H)	COND DB	ELECTRICAL V-PH-HZ	SEER2	COMPR TYPE	MCA	MOC	WEIGHT (LBS)	NOTES	MANUFACTURER	MODEL NUMBER
ACCU-12	CC-2	EMI AMERICA SERIES	S1CA2	12,000	95	208-1-60	19.5	INVERTER DRIVEN TWIN ROTARY	7.8	15	64	ALL	DAIKIN	RX12WVVJU

NOTES:

1. ELECTRICAL CONTRACTOR TO PROVIDE SINGLE CIRCUIT POWER FROM SERVICE TO OUTDOOR UNIT AND WIRE TO INDOOR UNIT.
2. PROVIDE CONDENSER COIL CORROSION PROTECTION.
3. INSTALL UNIT ON EXISTING CONCRETE PAD. EXTEND CONCRETE PAD AS NECESSARY TO ACCOMMODATE FOR NEW EQUIPMENT.
4. PROVIDE INSULATION FOR BOTH LIQUID AND SUCTION LINES.
5. INSTALL PER MANUFACTURERS INSTRUCTIONS AND PIPING RECOMMENDATIONS.
6. 1 YEAR PARTS WARRANTY AND 10 YEAR COMPRESSOR PARTS LIMITED WARRANTY.

**IDEA FRONTIER BUILDING B - MINI-SPLIT CASSETTE UNIT SCHEDULE (BASE BID)**

MARK	SERVED BY	EXISTING MANUFACTURER	EXISTING MODEL NUMBER	LOCATION	MIN CFM	MAX CFM	ELECTRICAL V-PH-HZ	COOLING		WEIGHT (LBS)	NOTES	MANUFACTURER	MODEL NUMBER
								TOTAL (BTU/H)	EAT DBWB				
CC-2	ACCU-12	EMI AMERICA SERIES	CACA12	A123	268	406	208-1-60	12,000	80/67	45	ALL	DAIKIN	FFQ12W2VJU

NOTES:

1. MANUFACTURER AND MODEL NUMBER LISTED ARE "OR APPROVED EQUAL." SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS AND SUBSTITUTION PROCEDURES.
2. PROVIDE INVERTER DRIVEN COMPRESSOR FOR IMPROVED HUMIDITY CONTROL.
3. PROVIDE WALL MOUNTED AND WIRED 7-DAY PROGRAMMABLE T-STAT IN LIEU OF WIRELESS REMOTE.
4. ELECTRICAL CONTRACTOR TO PROVIDE SINGLE CIRCUIT POWER FROM SERVICE TO OUTDOOR UNIT AND WIRE TO INDOOR UNIT.

**IDEA FRONTIER - ROOF VENT SCHEDULE**

MARK	SERVING	OUTSIDE AIR (CFM)	SQ. ROOF OPENING W X D (IN.)	THROAT AREA (SQ. FT.)	CFM @ 500 FPM	WEIGHT (LBS.)	MANUFACTURER & MODEL NUMBER	NOTES
RV-1	AHU-1	3550	36 X 36	3.341	3960	105	COOK 24 PR	ALL
RV-5	AHU-5	2875	32 X 32	2.292	2655	80	COOK 20 PR	ALL
RV-6	AHU-6	2800	32 X 32	2.292	2655	80	COOK 20 PR	ALL

NOTES:

1. DESCRIPTION: SPUN ALUMINUM GRAVITY INTAKE ROOF MOUNTED VENTILATOR.
2. PROVIDE INTAKE WITH BIRDSCREEN AND INSECT SCREEN.

**IDEA FRONTIER BUILDING C - MINI-SPLIT CONDENSER SCHEDULE (BASE BID)**

MARK	SERVING	EXISTING MANUFACTURER	EXISTING MODEL NUMBER	TOTAL COOLING (BTU/H)	COND DB	ELECTRICAL V-PH-HZ	SEER2	COMPR TYPE	MCA	MOC	WEIGHT (LBS)	NOTES	MANUFACTURER	MODEL NUMBER
ACCU-13	CC-3	MIRAGE	CMC121T	12,000	95	208/230-1-60	19.5	INVERTER DRIVEN TWIN ROTARY	7.8	15	64	ALL	DAIKIN	RX12WVVJU

NOTES:

1. ELECTRICAL CONTRACTOR TO PROVIDE SINGLE CIRCUIT POWER FROM SERVICE TO OUTDOOR UNIT AND WIRE TO INDOOR UNIT.
2. PROVIDE CONDENSER COIL CORROSION PROTECTION.
3. INSTALL UNIT ON EXISTING CONCRETE PAD. EXTEND CONCRETE PAD AS NECESSARY TO ACCOMMODATE FOR NEW EQUIPMENT.
4. PROVIDE INSULATION FOR BOTH LIQUID AND SUCTION LINES.
5. INSTALL PER MANUFACTURERS INSTRUCTIONS AND PIPING RECOMMENDATIONS.
6. 1 YEAR PARTS WARRANTY AND 10 YEAR COMPRESSOR PARTS LIMITED WARRANTY.

**IDEA FRONTIER BUILDING C - MINI-SPLIT CASSETTE UNIT SCHEDULE (BASE BID)**

MARK	SERVED BY	EXISTING MANUFACTURER	EXISTING MODEL NUMBER	LOCATION	MIN CFM	MAX CFM	ELECTRICAL V-PH-HZ	COOLING		WEIGHT (LBS)	NOTES	MANUFACTURER	MODEL NUMBER
								TOTAL (BTU/H)	EAT DBWB				
CC-3	ACCU-13	EMI AMERICA SERIES	CACA12	C128	268	406	208-1-60	12,000	80/67	45	ALL	DAIKIN	FFQ12W2VJU

NOTES:

1. MANUFACTURER AND MODEL NUMBER LISTED ARE "OR APPROVED EQUAL." SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS AND SUBSTITUTION PROCEDURES.
2. PROVIDE INVERTER DRIVEN COMPRESSOR FOR IMPROVED HUMIDITY CONTROL.
3. PROVIDE WALL MOUNTED AND WIRED 7-DAY PROGRAMMABLE T-STAT IN LIEU OF WIRELESS REMOTE.
4. ELECTRICAL CONTRACTOR TO PROVIDE SINGLE CIRCUIT POWER FROM SERVICE TO OUTDOOR UNIT AND WIRE TO INDOOR UNIT.

**IDEA FRONTIER PORTABLE - EXHAUST FAN SCHEDULE (BASE BID)**

MARK	SERVING	TYPE	ELECTRICAL V-PH-HZ	DRIVE	CFM	INPUT WATTS	AMPS	E.S.P. IN. H2O	SOUND IN SONES	CONTROL NOTES	NOTES	MANUFACTURER	MODEL NUMBER
EF-P1	PORTABLE RESTROOM	CEILING MOUNTED	120-1-60	DIRECT	50	-	1.6	0.1	2.5	A	ALL	BROAN	678
EF-P2	PORTABLE RESTROOM	CEILING MOUNTED	120-1-60	DIRECT	50	-	1.6	0.1	2.5	A	ALL	BROAN	678

NOTES:

1. PROVIDE FACTORY MOUNTED DISCONNECT.
2. MANUFACTURER AND MODEL NUMBER LISTED ARE "OR APPROVED EQUAL." REFER TO SPECIFICATIONS.
3. PROVIDE OSHA MOTOR AND BELT GUARD.
4. PROVIDE AUTOMATIC BELT TENSIONER.
5. PROVIDE INSULATED HOUSING FOR SOUND ATTENUATION.

CONTROL NOTES:

A. CONNECT TO EXISTING DDC SYSTEM. RECREATE EXISTING CONTROL POINTS AND SCHEDULING WITH NEW EQUIPMENT.

**EQUIPMENT CONNECTION SCHEDULE:**

DESIGN	HP/KW	EXISTING MOC	NEW MCA	NEW MOC	VOLTAGE	EXISTING MEANS OF DISCONNECT	NEW MEANS OF DISCONNECT	EXISTING BRANCH CIRCUIT (75' COPPER)	NEW BRANCH CIRCUIT (75' COPPER)	EXISTING POWER SOURCE
<b>IDEA FRONTIER BUILDING A (BASE BID)</b>										
EF-1	1/2 HP	20	12.2	1) 20	120V/1PHASE	CONNECT ABOVE CEILING, INTERLOCKING BY HVAC CONTROLS	RETAIN EXISTING.	1/2" - 2#12 & #12G	RETAIN EXISTING.	LA
EF-2	1/15 HP	20	-	1) 20	120V/1PHASE	CONNECT AT CEILING, INTERLOCKING BY HVAC CONTROLS	RETAIN EXISTING.	1/2" - 2#12 & #12G	RETAIN EXISTING.	LA
ACCU-11	-	15	7.8	1)15	208V/1PHASE	30A, 2PNF, 240V, NEMA 4X SS	RETAIN EXISTING.	1/2" - 2#12 & #12G	RETAIN EXISTING.	LA
CC-1	-	15	-	1) 15	208V/1PHASE	30A, 2PNF, 240V, NEMA 1	RETAIN EXISTING.	1/2" - 2#12 & #12G	RETAIN EXISTING.	LA
<b>IDEA FRONTIER BUILDING B (BASE BID)</b>										
ACCU-12	-	15	7.8	1) 15	208V/1PHASE	30A, 2PNF, 240V, NEMA 4X SS	RETAIN EXISTING.	1/2" - 2#12 & #12G	RETAIN EXISTING.	LB
CC-2	-	15	-	1) 15	208V/1PHASE	30A, 2PNF, 240V, NEMA 1	RETAIN EXISTING.	1/2" - 2#12 & #12G	RETAIN EXISTING.	LB
<b>IDEA FRONTIER BUILDING C (BASE BID)</b>										
ACCU-13	-	15	7.8	1) 15	208V/1PHASE	30A, 2PNF, 240V, NEMA 4X SS	RETAIN EXISTING.	1/2" - 2#12 & #12G	RETAIN EXISTING.	LC
CC-3	-	15	-	1) 15	208V/1PHASE	30A, 2PNF, 240V, NEMA 1	RETAIN EXISTING.	1/2" - 2#12 & #12G	RETAIN EXISTING.	LC
<b>IDEA FRONTIER PORTABLE BUILDING (BASE BID)</b>										
EF-P1	-	20	1.6	1) 20	120V/1PHASE	TOGGLE SWITCH.	RETAIN EXISTING.	1/2" - 2#12 & #12G	RETAIN EXISTING.	P1
EF-P2	-	20	1.6	1) 20	120V/1PHASE	TOGGLE SWITCH.	RETAIN EXISTING.	1/2" - 2#12 & #12G	RETAIN EXISTING.	P1

NOTES:

- 1) RETAIN AND REUSE EXISTING CIRCUIT BREAKER.

GENERAL NOTES:

A) PROVIDE A NEMA 3R J-BOX TO SPLICE AND EXTEND EXISTING BRANCH CIRCUIT TO NEW POINT OF CONNECTION IF EXISTING DOES NOT REACH.



1126 SOUTH COMMERCE ST.  
HARLINGEN, TX  
PHONE: 361-205-3435  
TEXAS REGISTERED  
ENGINEERING FIRM  
E-15998





TEXAS

IDEA PUBLIC SCHOOLS  
LOWER RGV MECHANICAL UPGRADES

RIO GRANDE VALLEY



1128 SOUTH COMMERCE ST.  
HARLINGEN, TX  
PHONE: 361-205-2435  
TEXAS REGISTERED  
ENGINEERING FIRM  
E-15998

DATE: MAY 24, 2024

CHECKED BY: B.B.

DRAWN BY: D.G.

PROJECT NO.: 23V76

CAD FILE: -

SHEET:

ME5.4

**IDEA SAN BENITO BUILDING C - ACCU SCHEDULE (ALTERNATE #2)**

MARK	SERVING	EXISTING MANUFACTURER	EXISTING MODEL NUMBER	EXISTING SERIAL NUMBER	TOTAL BTUH	NOMINAL TONS	COND DB	ELECTRICAL V-PH-HZ	EER / IEER AT ARI	NUMBER OF CIRCUITS	FAN FLA	MCA	MOCPP	WEIGHT (LBS.)	NOTES	MANUFACTURER	MODEL NUMBER
ACCU-4	AHU-4	CARRIER	38AUZB25A0P6A0A0A0	4410U32754	223,100	20	100	460-3-60	11 / 13.6	1	4	40.8	50	978	ALL	CARRIER	38AUZB25A0C6-0A0A0
ACCU-5	AHU-5	CARRIER	38APSO4065A18024	4210Q40771	420,984	40	100	460-3-60	11.5 / 15.3	1	3	85	100	2147	ALL	CARRIER	38APSO4063-30080

NOTES:

1. MANUFACTURER AND MODEL NUMBER LISTED ARE "OR APPROVED EQUAL". SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS AND SUBSTITUTION PROCEDURES.
2. EER SHALL EXCEED IECC MINIMUM EFFICIENCY AT DESIGN CONDITIONS.
3. PROVIDE CONDENSER COIL HAIL GUARDS, E-COATED COILS, AND LOW AMBIENT CONTROL.
4. PROVIDE DIGITAL SCROLL COMPRESSOR OR MULTI-STAGE COMPRESSOR.
5. SAFETY DISCONNECT TO BE PROVIDED BY DIV. 26.
6. INSULATE REFRIGERANT LINES AS PER SPECIFICATIONS. PROVIDE UV RESISTANT PAINTED JACKETING AROUND INSULATION FOR ALL EXTERIOR EXPOSED LINES.
7. MOUNT ON 4" CONCRETE HOUSEKEEPING PAD AND MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES. BOLT CONDENSING UNIT DOWN TO CONCRETE PAD.
8. PROVIDE FACTORY INSTALLED APR VALVE. PROVIDE THERMOSTAT TO PROVIDE 2 STAGES OF MODULATION PER CONDENSING UNIT.
9. PROVIDE STAINLESS STEEL COIL CASING AND DRAIN PAN.
10. UNIT SHALL BE R-13 DOUBLE WALL SEALED PANEL.

**IDEA SAN BENITO BUILDING D - ACCU SCHEDULE (BASE BID)**

MARK	SERVING	EXISTING MANUFACTURER	EXISTING MODEL NUMBER	EXISTING SERIAL NUMBER	TOTAL BTUH	NOMINAL TONS	COND DB	ELECTRICAL V-PH-HZ	EER / IEER AT ARI	NUMBER OF CIRCUITS	FAN FLA	MCA	MOCPP	WEIGHT (LBS.)	NOTES	MANUFACTURER	MODEL NUMBER
ACCU-1	AHU-1	CARRIER	38APSO2565A18024	4216Q40761	284,000	25	95	460-3-60	11 / 10.7	2	2	48.5	60	1077	ALL	CARRIER	38APSO2565-1G020

NOTES:

1. MANUFACTURER AND MODEL NUMBER LISTED ARE "OR APPROVED EQUAL". SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS AND SUBSTITUTION PROCEDURES.
2. EER SHALL EXCEED IECC MINIMUM EFFICIENCY AT DESIGN CONDITIONS.
3. PROVIDE CONDENSER COIL HAIL GUARDS, E-COATED COILS, AND LOW AMBIENT CONTROL.
4. PROVIDE DIGITAL SCROLL COMPRESSOR OR MULTI-STAGE COMPRESSOR.
5. SAFETY DISCONNECT TO BE PROVIDED BY DIV. 26.
6. INSULATE REFRIGERANT LINES AS PER SPECIFICATIONS. PROVIDE UV RESISTANT PAINTED JACKETING AROUND INSULATION FOR ALL EXTERIOR EXPOSED LINES.
7. MOUNT ON EXISTING CONCRETE HOUSEKEEPING PAD AND MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES. BOLT CONDENSING UNIT DOWN TO CONCRETE PAD.
8. PROVIDE THERMOSTAT TO PROVIDE 2 STAGES OF MODULATION PER CONDENSING UNIT.

**IDEA SAN BENITO BUILDING E - ACCU SCHEDULE (BASE BID)**

MARK	SERVING	EXISTING MANUFACTURER	EXISTING MODEL NUMBER	EXISTING SERIAL NUMBER	TOTAL BTUH	NOMINAL TONS	COND DB	ELECTRICAL V-PH-HZ	EER / IEER AT ARI	NUMBER OF CIRCUITS	FAN FLA	MCA	MOCPP	WEIGHT (LBS.)	NOTES	MANUFACTURER	MODEL NUMBER
ACCU-A	AHU-A	CARRIER	38AUDB25A0P6A0A0C0	112U06651	236	20	95	460-3-60	10.6 / 13.5	2	4	36.4	50	978	ALL	CARRIER	38AUDU25A0P6-0A0C0
ACCU-C	AHU-C	CARRIER	38APD0306DA18120	0712Q44345	370	30	95	460-3-60	10.8 / 14.8	2	2	66.3	90	1264	ALL	CARRIER	38APD0306D-1G124

NOTES:

1. MANUFACTURER AND MODEL NUMBER LISTED ARE "OR APPROVED EQUAL". SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS AND SUBSTITUTION PROCEDURES.
2. EER SHALL EXCEED IECC MINIMUM EFFICIENCY AT DESIGN CONDITIONS.
3. PROVIDE CONDENSER COIL HAIL GUARDS, E-COATED COILS, AND LOW AMBIENT CONTROL.
4. PROVIDE DIGITAL SCROLL COMPRESSOR OR MULTI-STAGE COMPRESSOR.
5. SAFETY DISCONNECT TO BE PROVIDED BY DIV. 26.
6. INSULATE REFRIGERANT LINES AS PER SPECIFICATIONS. PROVIDE UV RESISTANT PAINTED JACKETING AROUND INSULATION FOR ALL EXTERIOR EXPOSED LINES.
7. MOUNT ON EXISTING CONCRETE HOUSEKEEPING PAD AND MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES. BOLT CONDENSING UNIT DOWN TO CONCRETE PAD.
8. PROVIDE THERMOSTAT TO PROVIDE 2 STAGES OF MODULATION PER CONDENSING UNIT.

**EQUIPMENT CONNECTION SCHEDULE:**

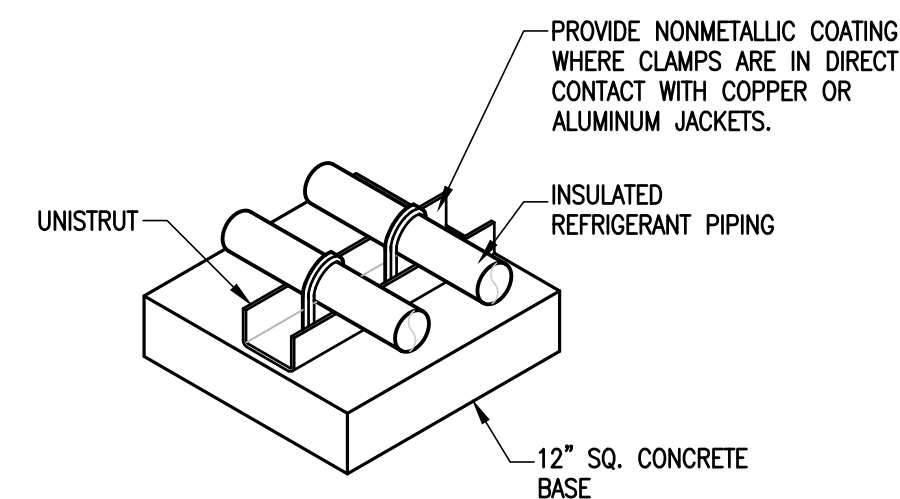
DESIGN	HP/KW	EXISTING MOCPP	NEW MCA	NEW MOCPP	VOLTAGE	EXISTING MEANS OF DISCONNECT	NEW MEANS OF DISCONNECT	EXISTING BRANCH CIRCUIT (75' COPPER)	NEW BRANCH CIRCUIT (75' COPPER)	EXISTING POWER SOURCE
<b>IDEA SAN BENITO BUILDING C - ALTERNATE #2</b>										
ACCU-4	-	50	40.8	50	480V/3PHASE	60A, 3P3F, 60AF, 600V, NEMA 3R	RETAIN EXISTING.	1" - 3#8 & #10G	RETAIN EXISTING.	MK
ACCU-5	-	100	85	100	480V/3PHASE	100A, 3P3F, 60AF, 600V, NEMA 3R	RETAIN EXISTING.	1.25" - 3#3 & #6G	RETAIN EXISTING.	DPD
<b>IDEA SAN BENITO BUILDING D (BASE BID)</b>										
ACCU-1	-	60	48.5	60	480V/3PHASE	60A, 3PNF, 600V, NEMA 3R	RETAIN EXISTING.	3/4" - 3#6 & #10G	RETAIN EXISTING.	DPC
<b>IDEA SAN BENITO BUILDING E (BASE BID)</b>										
ACCU-C	-	90	66.3	90	480V/3PHASE	CIRCUIT BREAKER WITHIN SIGHT.	RETAIN EXISTING.	1.25" - 3#3 & #8G	1) EXTEND EXISTING	MDP
ACCU-A	-	50	36.4	50	480V/3PHASE	CIRCUIT BREAKER WITHIN SIGHT.	RETAIN EXISTING.	3/4" - 3#8 & #10G	1) EXTEND EXISTING	MDP

NOTES:

- 1) RETAIN AND REUSE EXISTING CIRCUIT BREAKER.

GENERAL NOTES:

- A) PROVIDE A NEMA 3R J-BOX TO SPLICE AND EXTEND EXISTING BRANCH CIRCUIT TO NEW POINT OF CONNECTION IF EXISTING DOES NOT REACH.

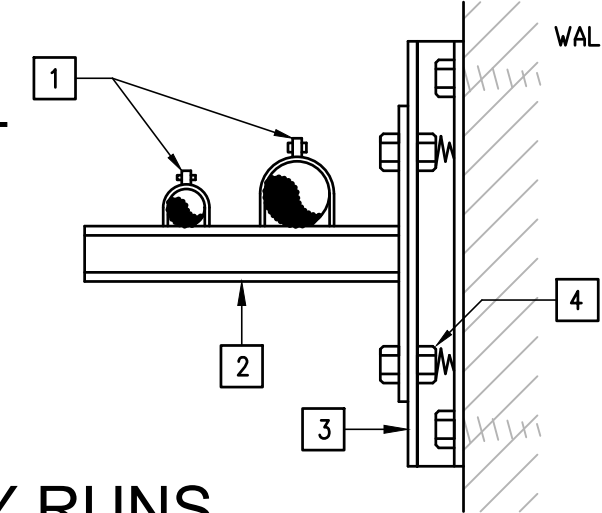


REFRIGERANT PIPING  
01 SUPPORT DETAIL

SCALE: NOT TO SCALE

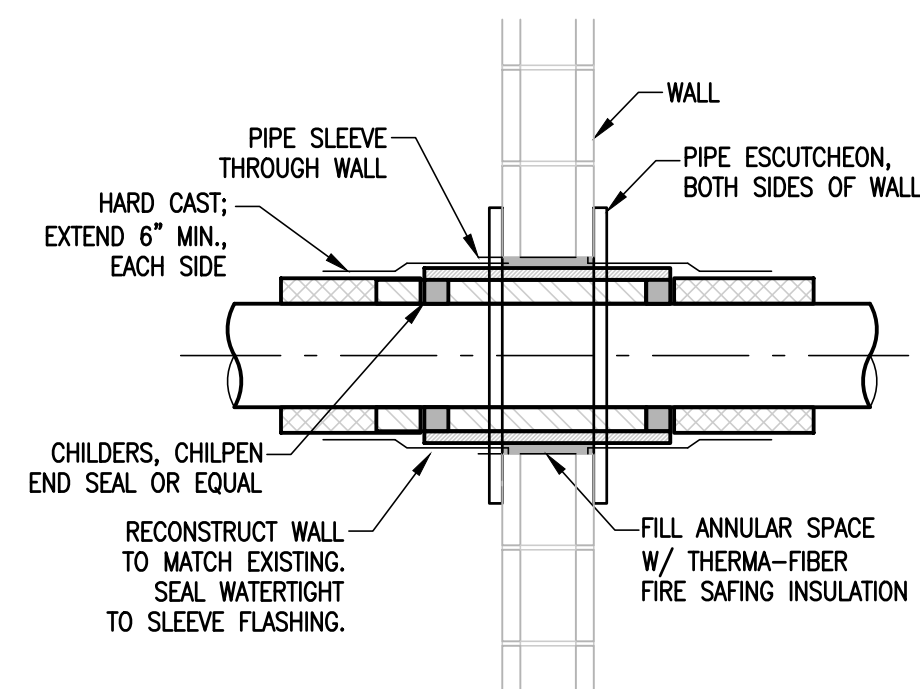
KEYED NOTES:

- 1 PROVIDE CONDUIT CLAMPS.
- 2 PROVIDE GALVANIZED UNISTRUT WALL BRACKET.
- 3 PROVIDE RAMSET OR BOLT GALVANIZED UNISTRUT TO WALL.
- 4 PROVIDE SELF HOLDING CLAMPING NUT WITH SPRING.



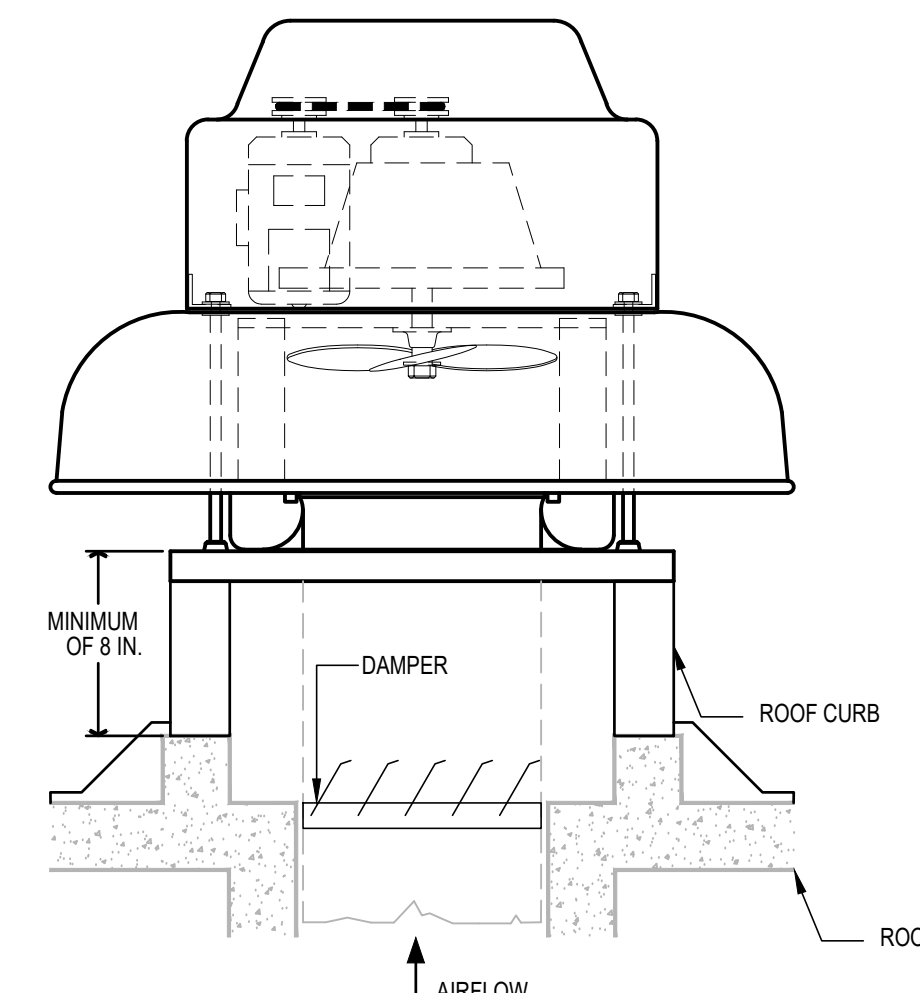
RACEWAY RUNS  
02 SUPPORT DETAIL

SCALE: NOT TO SCALE



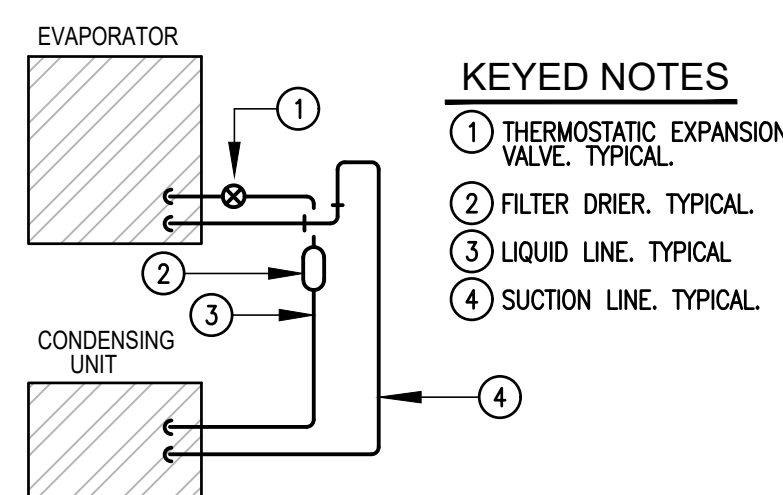
03 PIPE PENETRATION DETAIL

SCALE: NOT TO SCALE



04 EXHAUST FAN ON ROOF DETAIL

SCALE: NOT TO SCALE

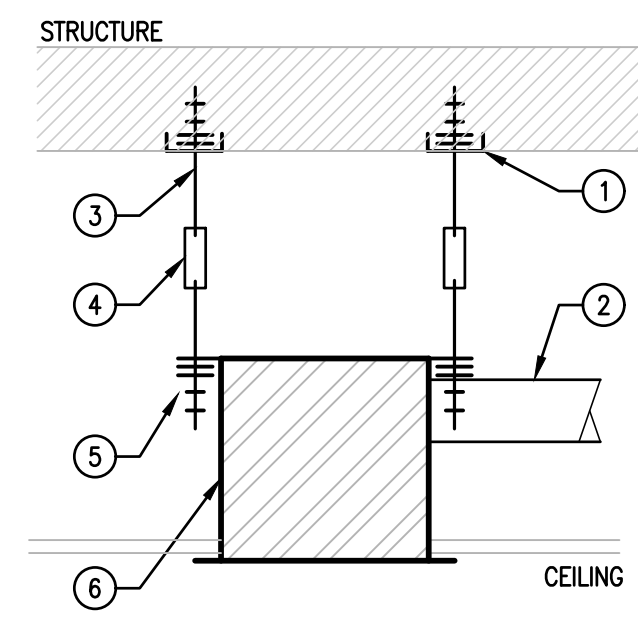


- KEYED NOTES:
- 1 THERMOSTATIC EXPANSION VALVE, TYPICAL.
  - 2 FILTER DRIER, TYPICAL.
  - 3 LIQUID LINE, TYPICAL.
  - 4 SUCTION LINE, TYPICAL.

NOTE: SIZE REFRIGERANT PIPING PER MFR. RECOMMENDATION.

REFRIGERANT PIPING  
05 DETAIL

SCALE: NOT TO SCALE

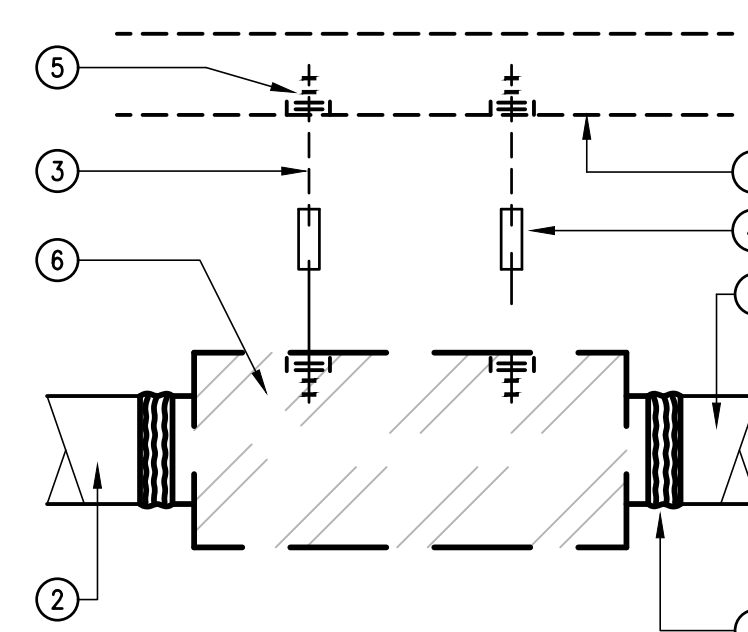


KEYED NOTES:

- 1 UNISTRUT STRUCTURAL CHANNEL - SECURE TO STRUCTURE.
- 2 EXHAUST DUCT. SEE PLAN.
- 3 GALVANIZED ALL THREADED ROD.
- 4 VIBRATION ISOLATORS.
- 5 HEX NUTS AND WASHERS (TYP.)
- 6 CEILING EXHAUST FAN AS SCHEDULED.

CEILING EXHAUST FAN  
06 FAN MOUNTING DETAIL

SCALE: NOT TO SCALE

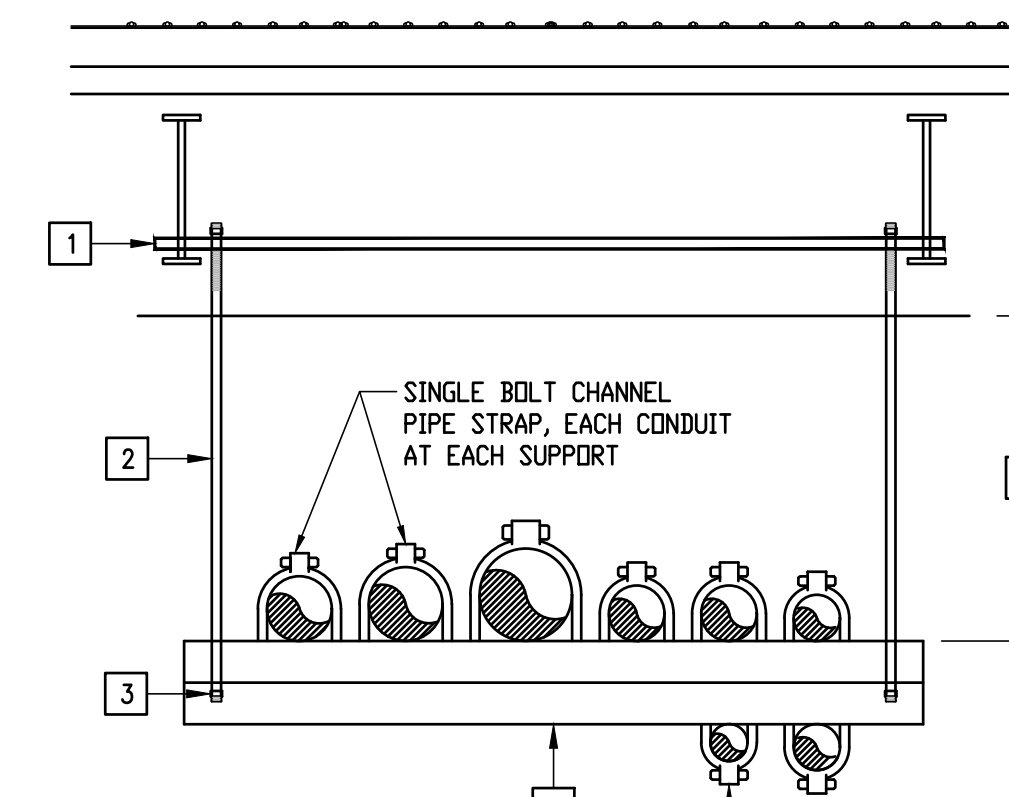


KEYED NOTES:

- 1 UNISTRUT STRUCTURAL CHANNEL - SECURE TO STRUCTURE.
- 2 EXHAUST DUCT. SEE PLAN.
- 3 GALVANIZED ALL THREADED ROD.
- 4 VIBRATION ISOLATORS.
- 5 HEX NUTS AND WASHERS (TYP.)
- 6 INLINE EXHAUST FAN AS SCHEDULED.
- 7 FLEXIBLE CONNECTION.

07 INLINE EXHAUST FAN DETAIL

SCALE: NOT TO SCALE

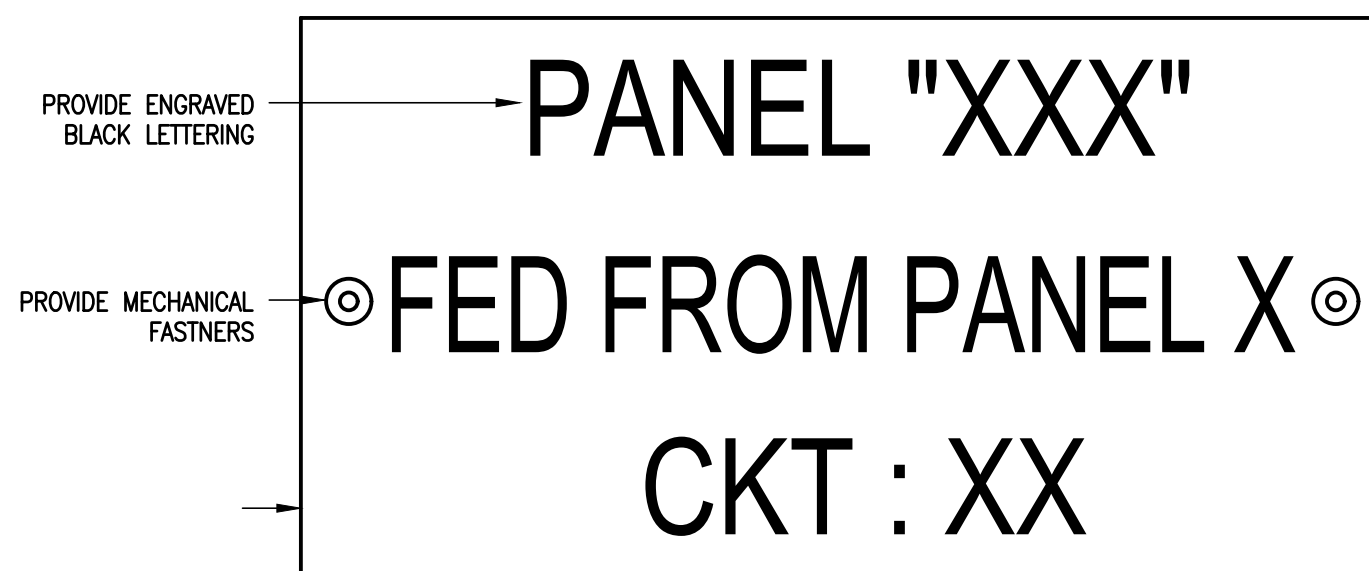


KEYED NOTES:

- 1 PROVIDE UNISTRUT STRUCTURAL CHANNEL SECURED TO JOIST AT BOTH ENDS.
- 2 PROVIDE 1/2" GALVANIZED ROD MINIMUM.
- 3 PROVIDE LOCKNUT.
- 4 PROVIDE GALVANIZED UNISTRUT 8"-0" O/C MAXIMUM.
- 5 0'-1" MAXIMUM SIZE ON BOTTOM OF UNISTRUT.
- 6 VARIES.

HORIZONTAL RACEWAYS  
08 SUPPORT DETAIL

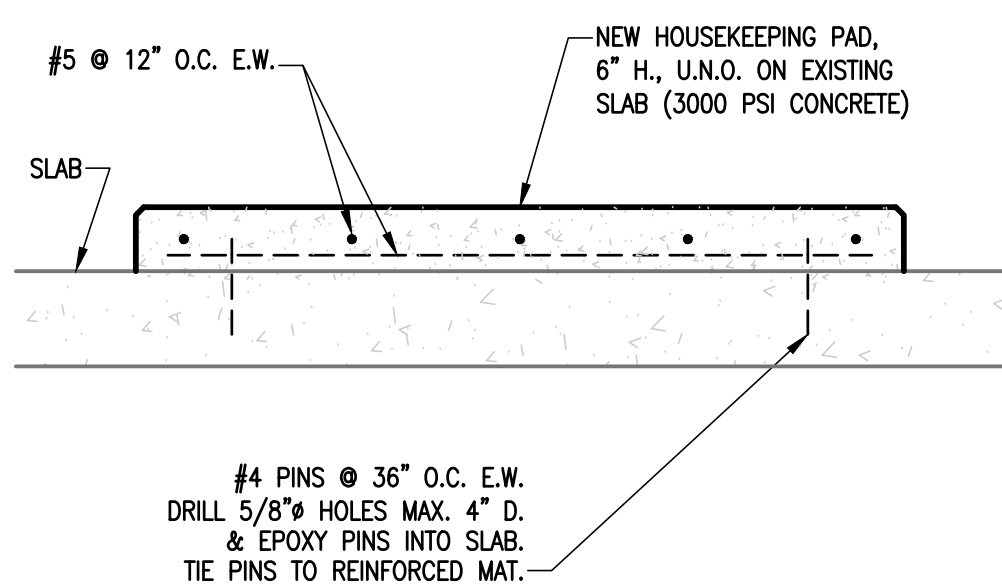
SCALE: NOT TO SCALE



EQUIPMENT IDENTIFICATION LABEL  
09 DETAIL

SCALE: NOT TO SCALE

NOTE: ATTACH NAMEPLATES TO ALL ELECTRICAL GEAR AS NOTED ON SECTION 260553.



NEW HOUSEKEEPING PAD ON EXISTING SLAB  
10

SCALE: NOT TO SCALE

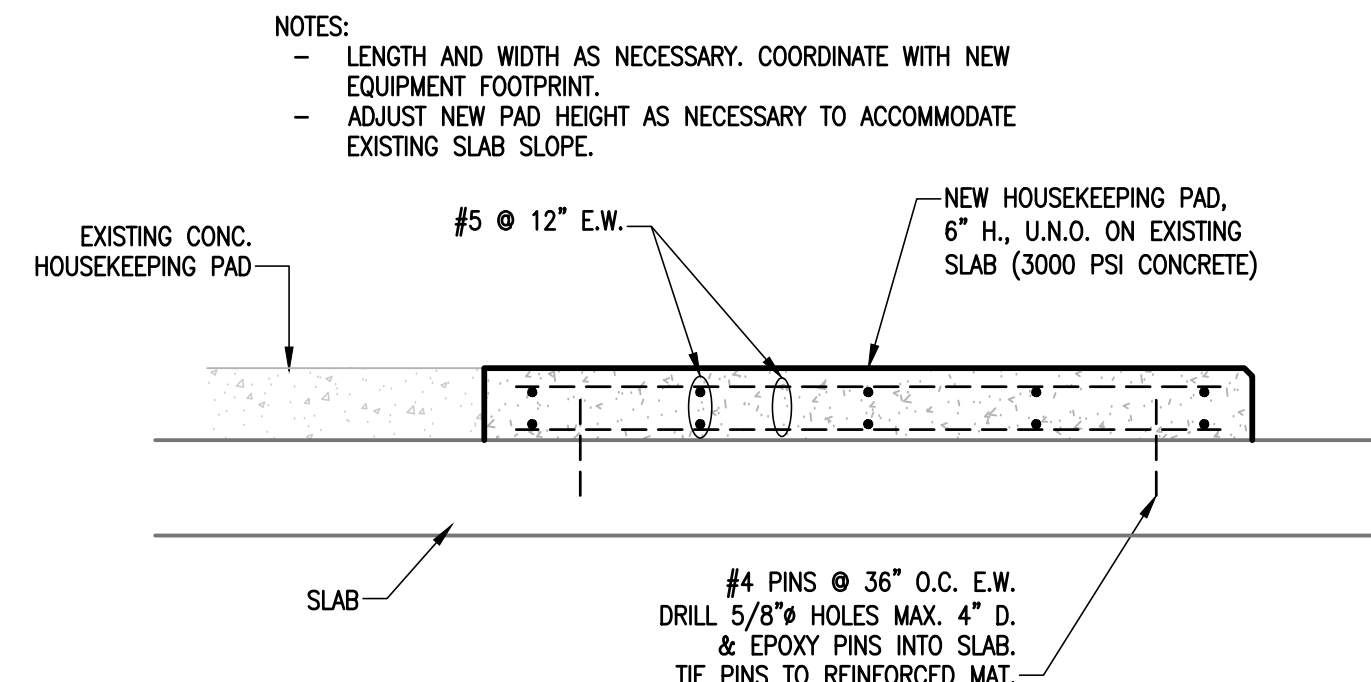


KEYED NOTES:

- 1 PROVIDE ROOF SUPPORT BLOCK PIPE PIER MODEL NO. PP30 EVERY 10'-0".
- 2 EXISTING ROOF.
- 3 PROVIDE RACEWAYS AS SPECIFIED.

FLOOR MOUNTED RACEWAYS SUPPORT  
11 DETAIL

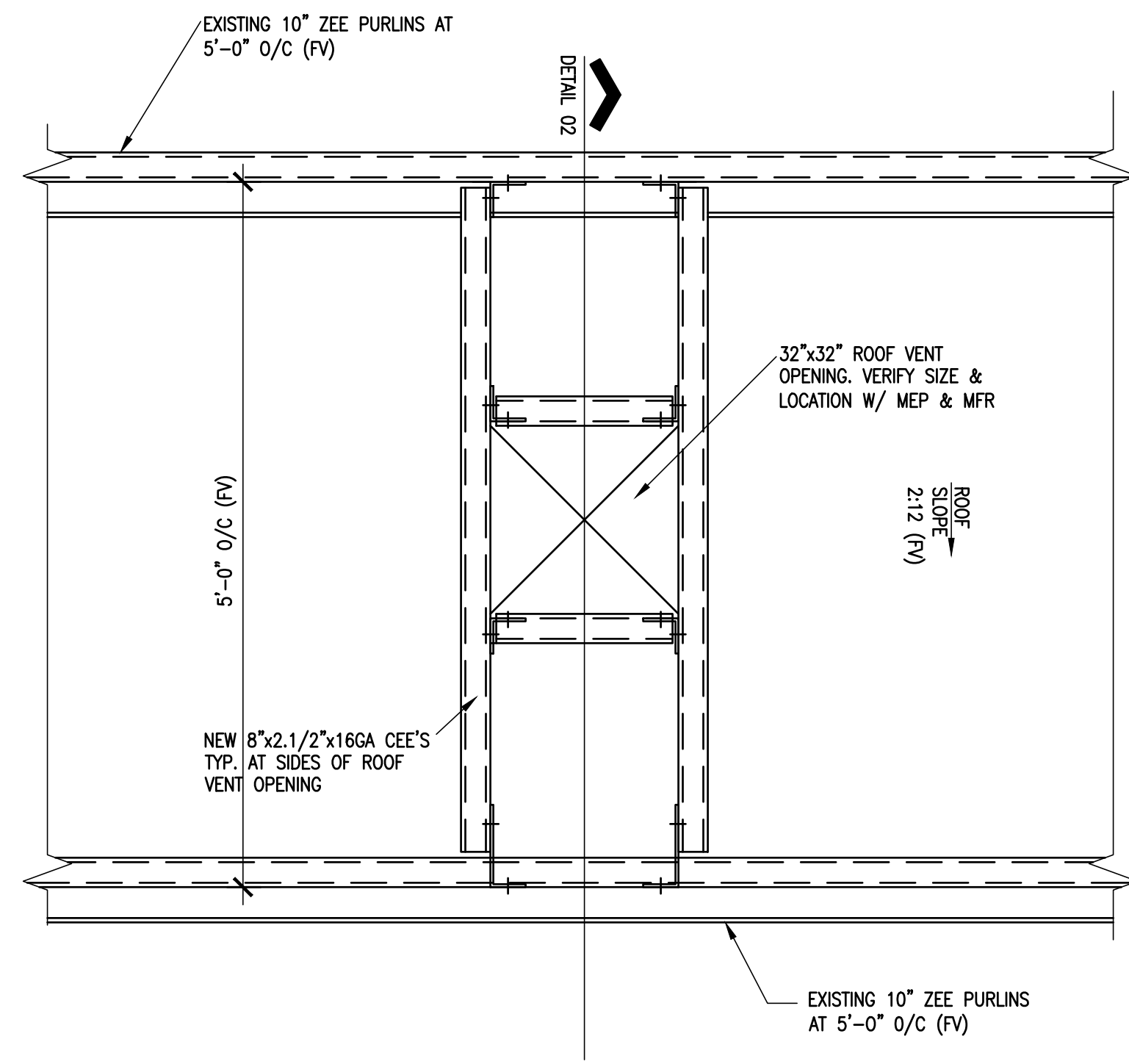
SCALE: NOT TO SCALE



HOUSEKEEPING PAD EXTENSION  
12 DETAIL

SCALE: NOT TO SCALE

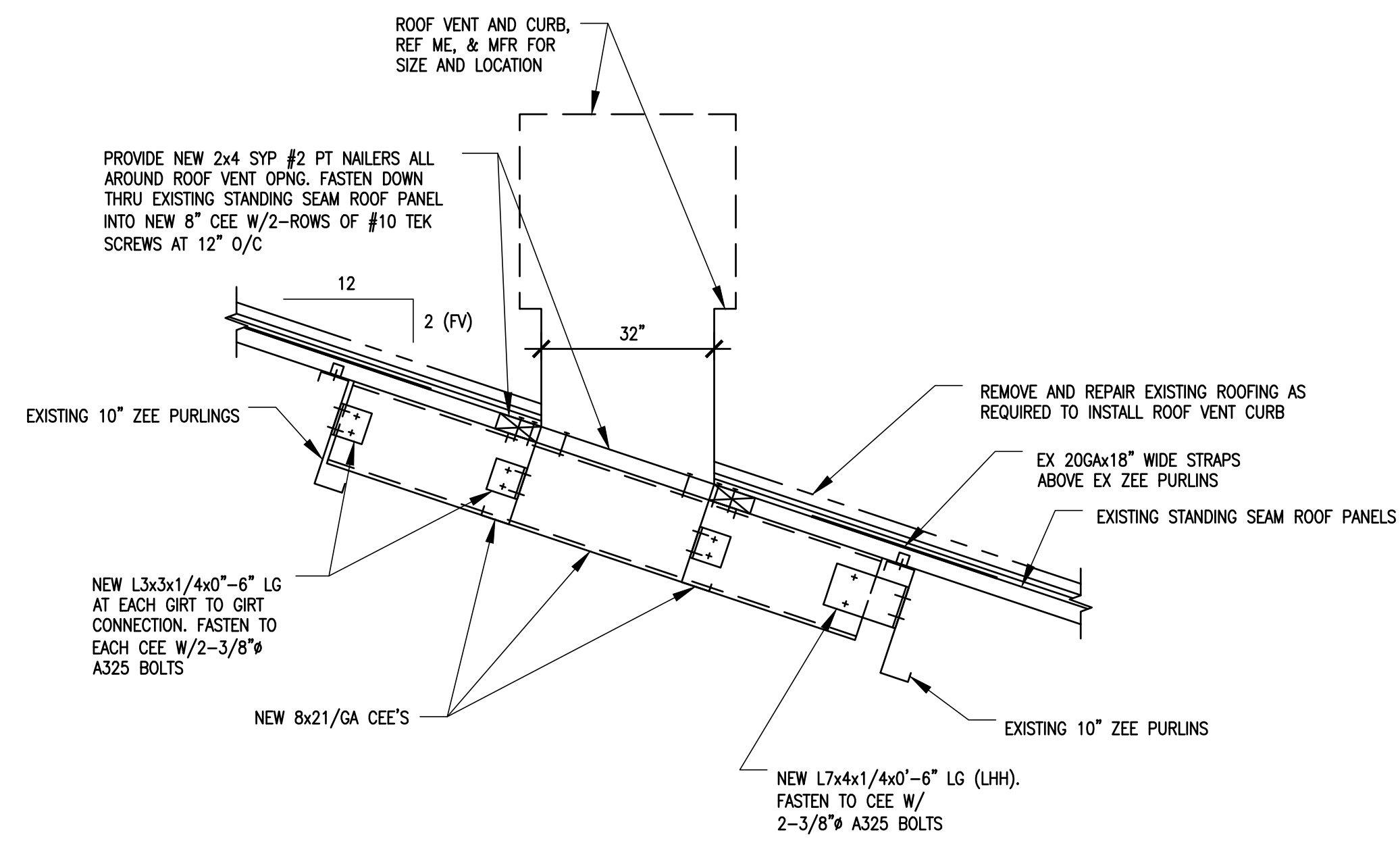
- NOTES:
- LENGTH AND WIDTH AS NECESSARY. COORDINATE WITH NEW EQUIPMENT FOOTPRINT.
  - ADJUST NEW PAD HEIGHT AS NECESSARY TO ACCOMMODATE EXISTING SLAB SLOPE.



NOTES

- CONTRACTOR SHALL VERIFY LOCATION AND SPACING OF EXISTING STANDING SEAM PANEL RIBS.

**01** ROOF VENT SUPPORT FRAMING DETAIL  
SCALE : NOT TO SCALE



**02** ROOF VENT SUPPORT DETAIL  
SCALE : NOT TO SCALE

NO. REVISION: BY:

COPY NO:

CSP #25-LRMU-0424



TEXAS

IDEA PUBLIC SCHOOLS  
LOWER RGV MECHANICAL UPGRADES

RIO GRANDE VALLEY



1128 SOUTH COMMERCE ST.  
HARLINGEN, TX  
PHONE: 361-205-2435  
TEXAS REGISTERED  
ENGINEERING FIRM  
E-15998

DATE: MAY 24, 2024

CHECKED BY: B.B.

DRAWN BY: D.G.

PROJECT NO.: 23V76

CAD FILE:

SHEET:

ME6.2