COMMISSIONING NOTES

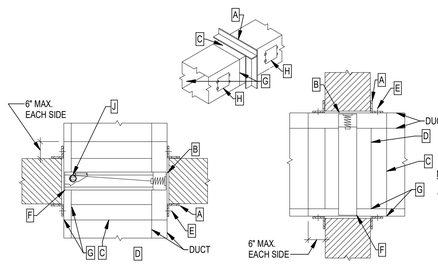
1. THE BUILDING MECHANICAL SYSTEMS SHALL BE COMMISSIONED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE – ENERGY CONSERVATION, SECTION C408 “SYSTEMS COMMISSIONING”.
2. THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER SHALL BE RESPONSIBLE FOR PROVIDING THE SERVICES OF AN APPROVED COMMISSIONING PROVIDER FROM ONE OF THE FOLLOWING PROVIDERS:
   a. H2ENGINEERING
   b. MOSES ENGINEERING
   c. MITCHELL GULLEDGE ENGINEERING
3. MECHANICAL SYSTEM TESTING SHALL ENSURE THAT COMPONENTS, EQUIPMENT, SYSTEMS, AND SYSTEM-TO-SYSTEM INTERFACING RELATIONSHIPS ARE CALIBRATED, ADJUSTED, AND OPERATE IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND MANUFACTURER’S INSTRUCTIONS. TESTING SHALL INCLUDE ALL MODES AND SEQUENCES OF OPERATION, INCLUDING UNDER FULL-LOAD, PART-LOAD, AND EMERGENCY CONDITIONS.
4. A COMMISSIONING PLAN SHALL BE DEVELOPED BY THE COMMISSIONING PROVIDER AND SHALL INCLUDE THE FOLLOWING ITEMS: (1) A NARRATIVE DESCRIPTION OF THE ACTIVITIES THAT WILL BE ACCOMPLISHED DURING EACH PHASE OF COMMISSIONING, INCLUDING THE PERSONNEL INTENDED TO ACCOMPLISH EACH OF THE ACTIVITIES; (2) A LISTING OF THE SPECIFIC EQUIPMENT, APPLIANCES, OR SYSTEMS TO BE TESTED AND A DESCRIPTION OF THE TESTS TO BE PERFORMED; (3) FUNCTIONS TO BE TESTED, INCLUDING BUT NOT LIMITED TO, CALIBRATIONS AND CONTROLS; (4) CONDITIONS UNDER WHICH THE TEST WILL BE PERFORMED, INCLUDING BUT NOT LIMITED TO, AFFIRMING WINTER AND SUMMER DESIGN CONDITIONS AND FULL OUTSIDE AIR CONDITIONS; (5) MEASURABLE CRITERIA FOR PERFORMANCE.
5. PRIOR TO PASSING THE FINAL INSPECTIONS, THE COMMISSIONING PROVIDER SHALL PROVIDE EVIDENCE OF SYSTEMS COMMISSIONING AND COMPLETION. A COMPLETED PRELIMINARY REPORT THE COMMISSIONING TEST PROCEDURES AND RESULTS SHALL BE PROVIDED TO THE OWNER, CERTIFIED BY THE COMMISSIONING PROVIDER. THE REPORT SHALL BE IDENTIFIED AS “PRELIMINARY COMMISSIONING REPORT” AND SHALL IDENTIFY: (1) ITEMIZATION OF DEFICIENCIES FOUND DURING TESTING THAT HAVE NOT BEEN CORRECTED AT THE TIME OF THE REPORT PREPARATION; (2) DEFERRED TESTS THAT CANNOT BE PERFORMED DUE TO CLIMATIC CONDITIONS; AND (3) CLIMATIC CONDITIONS REQUIRED FOR PERFORMANCE OF DEFERRED TESTS. THE PRELIMINARY COMMISSIONING REPORT SHALL BE MADE AVAILABLE TO THE CODE OFFICIAL AT THEIR REQUEST.
6. WITHIN 90 DAYS OF CERTIFICATE OF OCCUPANCY, PROVIDE THE FINAL COMMISSIONING REPORT TO OWNER. THE REPORT SHALL BE IDENTIFIED AS “FINAL COMMISSIONING REPORT” AND SHALL INCLUDE (1) RESULTS OF FUNCTIONAL PERFORMANCE TESTS; (2) DISPOSITION OF DEFICIENCIES FOUND DURING TESTING, INCLUDING DETAILS OF CORRECTIVE MEASURES USED OR PROPOSED; (3) FUNCTIONAL PERFORMANCE TEST PROCEDURES USED DURING THE COMMISSIONING PROCESS, INCLUDING MEASURED CRITERIA FOR TEST ACCEPTANCE, PROVIDED HEREIN FOR REPEATABILITY. EXCEPTION: DEFERRED TESTS WHICH CANNOT BE PERFORMED AT THE TIME OF REPORT PREPARATION FOR CLIMATIC CONDITIONS.
7. HVAC, CONTROLS AND TAB CONTRACTORS SHALL ASSIST WITH COMMISSIONING EFFORTS INCLUDING (NOT LIMITED TO) PERFORMING PRE-TESTING OF FUNCTIONAL PERFORMANCE TEST (TEST CRITERIA PROVIDED BY COMMISSIONING AUTHORITY) PRIOR TO COMMISSIONING AUTHORITY PERFORMING FUNCTION PERFORMANCE TEST VERIFICATION WITH AFOREMENTIONED CONTRACTORS.

DELEGATED DESIGN CALCULATION REQUIREMENTS

1. THESE MECHANICAL SYSTEM ENGINEERING DOCUMENTS REPRESENT THE DESIGN INTENT FOR SUPPORTING AND SECURING THE ROOF-MOUNTED EQUIPMENT BASED ON DESIGN CRITERIA BELOW. THE DELEGATED ENGINEER IS RESPONSIBLE FOR PROVIDING A COMPLETE DESIGN. APPROVED BY THE AUTHORITY HAVING JURISDICTION, TO SUPPORT AND SECURE THE ROOF-MOUNTED EQUIPMENT WITHOUT OBSTRUCTING REQUIRED SERVICE CLEARANCES.

2. DESIGN CRITERIA:
   WIND SPEED: [120] MPH.
   RISK CATEGORY: [II].
   WEIGHT: PER APPROVED SUBMITTALS AND SHOP DRAWINGS.
   DEFLECTION LIMITS: PER MANUFACTURER'S REQUIREMENTS IN APPROVED SUBMITTALS AND SHOP DRAWINGS.

3. DELEGATED ENGINEER SHALL PROVIDE SIGNED AND SEALED DATA TO THE ENGINEER OF RECORD AND AUTHORITY HAVING JURISDICTION INCLUDING THE FOLLOWING AS APPLICABLE, BUT NOT LIMITED TO:
   1). DETAIL FABRICATION AND ASSEMBLY OF SUPPORT STRUCTURE,
   2). DESIGN CALCULATIONS FOR STATIC AND DYNAMIC LOADING DUE TO EQUIPMENT WEIGHT AND OPERATION AND WIND FORCES REQUIRED TO SELECT WIND RESTRAINT,
   3.). SECUREMENT DETAILS WITH ANCHORAGES AND ATTACHMENTS TO STRUCTURE AND TO SUPPORTED EQUIPMENT.



NOTES:

1. CLEARANCE REQUIREMENTS FOR FIRE DAMPER SLEEVES WITHIN OPENING IS BASED ON 1/8" PER FOOT OF WIDTH (OR HEIGHT) UNLESS OTHERWISE STATED IN THE LISTING OF THE ASSEMBLY. THE SLEEVE MAY REST ON THE BOTTOM OF THE OPENING, AND NEED NOT BE CENTERED. (FRACTIONAL DIMENSIONS SHALL BE TAKEN AS THE NEXT LARGER WHOLE FOOT). EXAMPLE: A 30" x 24" FIRE DAMPER SLEEVE IS INSTALLED IN WALL/FLOOR OPENING. THE OPENING SHALL BE 30 3/8" WIDE (1/8"X 3') BY 24 1/4" HIGH (1/8" x 2').

   THE SLEEVE IS RETAINED IN THE WALL/FLOOR BY THE USE OF STEEL RETAINING ANGLES A. THESE MUST OVERLAP THE EDGE OF THE FRAMING BY A MINIMUM OF ANGLES A. THESE MUST OVERLAP THE EDGES OF THE FRAMING BY A MINIMUM OF ONE (1) INCH OVER AND BEYOND ALL MATERIAL IN THE OPENING. THIS MEANS THAT THE MINIMUM WIDTH OF THE RETAINING ANGLE WOULD BE 1 3/8 ". (GOOD PRACTICE CALLS FOR AN ADDITIONAL SAFETY FACTOR BY MAKING THE ANGLE IN THIS CASE 1 1/2" WIDE.

   THE DIMENSIONS REQUIRED FOR THE OPENING SHALL BE THOSE REMAINING AFTER THE OPENING HAS BEEN FRAMED AND THE FIRE RESISTIVE MATERIALS PROVIDED WERE REQUIRED. THE FIRE RESISTIVE MATERIALS SHALL BE EQUAL TO THE REQUIREMENTS FOR FIRE RESISTIVE MATERIALS USED IN THE CONSTRUCTED WALL SO THAT A CONTINUOUS RATING EXISTS AT THE WALL/FLOOR PENETRATION. THE CONTRACTOR ERECTING THE WALL/FLOOR IS RESPONSIBLE FOR PROVIDING THE FIRE RESISTIVE MATERIAL AND CORRECT SIZE OPENINGS TO ACHIEVE THE REQUIRED CLEARANCE.

2. THE FIRE DAMPER MANUFACTURER'S INSTALLATION DETAILS AND INSTRUCTIONS AS TESTED AND APPROVED BY U.L. MUST BE USED IN LIEU OF THE ABOVE DETAILS WHERE APPLICABLE.

A	RETAINING ANGLES: MINIMUM 1 1/2" x 1 1/2" x 0.054 (16 GAUGE). RETAINING ANGLES MUST LAP STRUCTURAL OPENING 1" MINIMUM AND COVER OPENINGS OF CORNERS. CAULK THE EXTERIOR PERIMETER OF FIRE DAMPER RETAINING ANGLES WITH A THIN FILLET OF AN APPROVED CAULKING MATERIAL TO PREVENT THE PASSAGE OF SMOKE AND ALLOW MOVEMENT OF THE ANGLE.
B	CLEARANCE: 1/8" PER LINEAR FOOT IN BOTH DIMENSIONS (SEE NOTE 1 BELOW).
C	STEEL SLEEVE: 14 GAUGE, OR AS ALLOWED BY U.L. STANDARD 555.
D	APPROVED FIRE DAMPER: CURTAIN OR BLADE TYPE.
E	SECURE RETAINING ANGLES TO SLEEVE: ON 8" CENTERS WITH 1/2" LONG WELDS, OR 1/4" BOLTS AND NUTS, OR #10 STEEL SCREWS, OR MINIMUM 3/16" STEEL RIVETS.
F	SECURE FIRE DAMPER TO SLEEVE: ON 8" CENTERS WITH 1/2" LONG WELDS, OR 1/4" BOLTS AND NUTS, OR #10 STEEL SCREWS, OR MINIMUM 3/16" STEEL RIVETS.
G	CONNECT DUCT TO SLEEVE OR FIRE DAMPER: WITH BREAKAWAY CONNECTION.
H	INSTALL HINGED ACCESS DOOR
J	NEGATOR CLOSURE SPRING

!M87.1

A

FIRE DAMPER INSTALLATION

AIR DISTRIBUTION

AxB	RECTANGULAR SHEET METAL DUCT
CØ	ROUND SHEET METAL DUCT
≋	FLEXIBLE RUNOUT DUCT
⊏	ROUND OR RECTANGULAR TAKE-OFF FITTING WITH BALANCING DAMPER - SEE DETAIL A/M501
⊠	SUPPLY AIR DUCTWORK SECTION
⧄	RETURN AIR DUCTWORK SECTION
⧅	EXHAUST AIR DUCTWORK SECTION
⊣	AIR BALANCING DAMPER (MANUAL)
BDD	BACKDRAFT DAMPER
▥	DUCTWORK FLEXIBLE CONNECTION
↻	DUCT ELBOW WITH SINGLE THICKNESS TURNING VANES
← ▥	SIDEWALL REGISTER AND AIR FLOW (CFM)(SEE SCHEDULE FOR SIZES UNLESS NOTED OTHERWISE)
◘ CFM	SQUARE CEILING SA DIFFUSER AND AIR FLOW (CFM)(SEE SCHEDULE FOR SIZES UNLESS NOTED OTHERWISE) SHADED REGION INDICATED SECTORIZING BAFFLE(S)
⧄ CFM	RECTANGULAR CEILING RA REGISTER AND AIR FLOW (CFM)(SEE SCHEDULE FOR SIZES UNLESS NOTED OTHERWISE) WHERE CFM IS NOT INDICATED, PROVIDE STANDARD SIZE FOR CEILING TYPE INDICATED IN SCHEDULE. SEE DETAIL E/M501
⊠ CFM	RECTANGULAR CEILING EA REGISTER AND AIR FLOW (CFM)(SEE SCHEDULE FOR SIZES UNLESS NOTED OTHERWISE) SEE DETAIL E/M501
▬	NEW DUCT
DG	DOOR GRILLE (24"x16", UNO) EQUIVALENT TO AIR LOUVERS MODEL 1500AHR WITH STAINLESS STEEL BIRDSCREEN AND COLOR BY ARCHITECT.

PIPING AND FITTINGS

—C—	CONDENSATE DRAIN PIPING FROM COOLING COIL
—G—	GAS PIPING
—REF—	REFRIGERANT PIPING (ONE LINE REPRESENTS BOTH LIQUID AND GAS LINES)

MEASUREMENTS AND CONTROLS

Ⓣ	THERMOSTAT/TEMPERATURE SENSOR

VENTILATION RATE

	EXHAUST	OUTSIDE AIR	
TYPE OF SPACE	CFM/FT^2	CFM/PERSON	CFM/FT^2
BREAK ROOMS	-	5	0.06
CORRIDOR	-	0	0.06
ELECTRICAL ROOM	-	0	0.06
JANITOR/TRASH	1.0	-	-
OFFICE SPACE	-	5	0.06
PARKING GARAGE	0.75	-	-
SOILED LAUNDRY	-	-	-
TOILET - PUBLIC	50/70	-	-
TOILET - PRIVATE	25/50	-	-
TRANSPORTATION WAITING	-	7.5	0.06

NOTES:
1. VENTILATION RATES FOR SPACES WITH INTERMITTENT OCCUPANCY (PEAK OCCUPANCY LESS THAN THREE HOURS) HAVE BEEN REDUCED ON AVERAGE OCCUPANCY DURING THE OCCUPIED PERIOD, BUT NOT LESS THAN HALF OF THAT REQUIRED DURING PEAK OCCUPANCY.
2. VENTILATION RATES CALCULATED PER REQUIREMENTS OF FLORIDA BUILDING CODE 2017.
3. EXHAUST RATE IS PER WATER CLOSET AND/OR URINAL. HIGHER RATE IS FOR HIGHER USE FACILITIES.

BUILDING PRESSURIZATION - BUILDING A

OUTSIDE AIR SOURCE	CFM	EXHAUST SOURCE	CFM
RTU-A.1	310	EF-A.1	230
TOTAL	310	TOTAL	230
BUILDING PRESSURIZATION			80 (+)

BUILDING PRESSURIZATION - BUILDING B

OUTSIDE AIR SOURCE	CFM	EXHAUST SOURCE	CFM
RTU-B.1	420	EF-B.1	300
TOTAL	420	TOTAL	300
BUILDING PRESSURIZATION			120 (+)

BUILDING PRESSURIZATION - BUILDING C

OUTSIDE AIR SOURCE	CFM	EXHAUST SOURCE	CFM
RTU-C.1	280	EF-C.1	200
TOTAL	280	TOTAL	200
BUILDING PRESSURIZATION			80 (+)

HVAC NOTES

1. INSTALL DUCTWORK, PIPING, ETC. AS HIGH AS POSSIBLE ABOVE CEILING WHILE MAINTAINING ACCESSIBILITY FOR EQUIPMENT AND DEVICES AS APPROPRIATE.
2. COORDINATE LOCATION OF ALL EQUIPMENT, DUCTWORK AND PIPING INSTALLATIONS WITH ELECTRICAL TO PROVIDE THE REQUIRED CLEARANCES AROUND ALL ELECTRICAL PANELS, SWITCHGEAR, ETC.
3. INSTALLATION OF EQUIPMENT, DUCTWORK AND PIPING SHALL PROVIDE CONVENIENT ACCESS FOR REMOVAL OF FILTERS AND FOR MAINTENANCE.
4. DUCT SIZES GIVEN ARE SHEET METAL SIZES.
5. COORDINATE EXACT LOCATIONS OF AIR DISTRIBUTION EQUIPMENT WITH THE CEILING AND THE LIGHTING LAYOUT.
6. THE RETURN AIR FROM INDIVIDUAL ROOMS IS THRU AN ABOVE-CEILING RETURN AIR PLENUM.
7. THE CEILING DIFFUSERS SHALL BE 4-WAY THROW UNLESS OTHERWISE NOTED.
8. PROVIDE NEW AIR FILTERS IN EACH UNIT REQUIRING FILTERS WHEN THE PROJECT IS READY FOR TEST AND BALANCE. DO NOT OPERATE UNITS WITHOUT FILTERS DURING CONSTRUCTION. REPLACE FILTERS DURING CONSTRUCTION ACCORDING TO FILTER MANUFACTURER'S RECOMMENDATIONS. SEAL ALL OPEN ENDS OF DUCT WORK DURING CONSTRUCTION.
9. WHEREVER THE DEPTH OF THE TRUNK DUCT IS LESS THAN THE ROUND RUNOUT DUCT DIAMETER, PROVIDE TRANSITION FITTING OF EQUIVALENT AREA TO THE RUNOUT DUCT.
10. WHERE ROUND DUCT IS INDICATED ON PLANS, USE SPIRAL WOUND DUCTWORK. "SNAPLOCK" DUCTWORK IS NOT ACCEPTABLE.
11. PROVIDE FLEXIBLE DUCT CONNECTIONS AT EACH EQUIPMENT CONNECTION.
12. OUTSIDE AIR INTAKES SHALL NOT BE LOCATED ANY CLOSER THAN 15 FEET FROM ANY EXHAUST OUTLET OR PLUMBING VENT TERMINAL.
13. IT IS RECOMMENDED THAT DUCTWORK BE FABRICATED FROM FIELD MEASUREMENTS TAKEN AS THE BUILDING STRUCTURE AND SPACE COMPETING SYSTEMS ARE PROGRESSIVELY INSTALLED. THE DUCTWORK AS SHOWN ON THE CONSTRUCTION DOCUMENTS IS DIAGRAMMATIC AND DOES NOT NECESSARILY INCLUDE ALL MODIFICATIONS REQUIRED TO AVOID THESE INTERFERENCES. BEFORE FABRICATING ANY DUCTWORK, CHECK THE PHYSICAL CONDITIONS AT THE JOB SITE AND MAKE CHANGES IN CROSS SECTIONS, ROUTING, OFFSETS AND SIMILAR ITEMS WHETHER SPECIFICALLY INDICATED OR NOT. VERIFY THAT SUFFICIENT CLEARANCES ARE AVAILABLE FOR INSTALLING DUCTWORK, PIPING, LIGHT FIXTURES, CEILING SYSTEMS AND TO PROVIDE EQUIPMENT SERVICE. COSTS REQUIRED TO CHANGE DUCTWORK TO FIT THE SPACE AVAILABLE AND AVOID INTERFERENCES CAUSED BY SPACE COMPETING SYSTEMS SHALL BE BORNE BY THE CONTRACTOR. NO ADDITIONAL REMUNERATION WILL BE PAID BY THE OWNER.
14. APPLY EXTERNAL INSULATION TO SINGLE WALL SUPPLY DUCTS, RETURN DUCTS AND OUTSIDE AIR DUCTS PER SPECIFICATIONS. DOUBLE WALL DUCTS AND DUCTS INDICATED ON PLANS TO HAVE INTERNAL DUCT LINER SHALL NOT RECEIVE EXTERNAL INSULATION.
15. PROVIDE VOLUME CONTROL DAMPERS IN SIDE TAKE-OFF FITTINGS TO SUPPLY AIR DIFFUSERS AND EXHAUST AIR AND RETURN AIR GRILLES AND AT EACH DUCT BRANCH SERVING TWO OR MORE AIR TERMINALS, WHETHER SHOWN ON THE DRAWINGS OR NOT.
16. MINIMUM PIPE SIZE FOR COOLING COIL CONDENSATE SHALL BE 3/4". REFER TO SCHEDULE FOR RUNOUT PIPE SIZE TO INDIVIDUAL EQUIPMENT.
17. SECTIONS OF PIPE STORED ON SITE SHALL HAVE EACH OPEN END COVERED AT ALL TIMES EXCEPT WHILE MAKING CONNECTIONS. IF DEBRIS IS FOUND INSIDE PIPE, IT SHALL BE COMPLETELY REMOVED PRIOR TO ASSEMBLY.
18. PROVIDE ACCESS PANEL AT EACH LOCATION WHERE A DAMPER OR OTHER DEVICE REQUIRING SERVICE IS LOCATED ABOVE AN INACCESSIBLE CEILING OR INSIDE A WALL. ACCESS PANELS IN RATED CONSTRUCTION SHALL BEAR UL LABEL. COORDINATE ACCESS PANEL LOCATION WITH ARCHITECT PRIOR TO INSTALLATION.
19. COORDINATE LOUVER AND DEVICE LOCATIONS WITH WALL STRUCTURAL REINFORCEMENT. SEE STRUCTURAL DRAWINGS FOR LOCATION OF LINTELS, BOND BEAMS AND REINFORCING.
20. COORDINATE ALL DUCT TEST WITNESSING WITH LOCAL MECHANICAL INSPECTOR.
21. PRIOR TO FINAL INSPECTION, PROVIDE CERTIFIED TEST & BALANCE REPORT AND OPERATIONS & MAINTENANCE MANUALS TO THE OWNER.
22. DUCT CONSTRUCTION, INCLUDING SHEET METAL THICKNESSES, SEAM AND JOINT CONSTRUCTION, REINFORCEMENTS, AND HANGERS AND SUPPORTS, SHALL COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE DUCT."

CEILING RETURN OR EXHAUST REGISTERS & GRILLES

SYMBOL	CFM	GRILLE SIZE	RUNOUT DUCT (NOTE 2)
⧄ OR ⊠	0-95	8x8 (NOTE 1)	6x6
	100-195	10x10 (NOTE 1)	8x8
	200-295	12x12 (NOTE 1)	10x8
	300-595	18x18 (NOTE 1)	12x12
	600-695	22x22 (NOTE 1)	12x12
	700-795	24x24 (NOTE 1)	14x12

NOTES:
1. USE 22x22 GRILLE SIZE FOR ALL LAY-IN CEILING APPLICATIONS. USE SIZE INDICATED FOR HARD CEILING APPLICATIONS.
2. WHERE DUCT CONNECTION IS SHOWN, RUNOUT DUCT SHALL BE SIZE SHOWN IN SCHEDULE U.N.O.
3. USE 18x18 GRILLE SIZE AND 12x12 RUNOUT DUCT FOR HARD CEILING APPLICATIONS WHERE SIZE OR AIRFLOW IS NOT INDICATED.
4. USE 12x12 RUN OUT DUCT FOR LAY-IN CEILING APPLICATIONS WHERE AIRFLOW IS NOT INDICATED.

CEILING SUPPLY DIFFUSERS

SYMBOL	CFM	NECK SIZE	MINIMUM - MAXIMUM 1/2 SPACING	FACE DIMENSION	
				HARD CEILING	LAY-IN CEILING
◘	40-80	6"Ø	4' - 5'	12x12	24x24
	85-180	8"Ø	4' - 8'	12x12	24x24
	185-340	10"Ø	8' - 10'	24x24	24x24
	345-500	12"Ø	9' - 10'	24x24	24x24

NOTE:
1. RUNOUT DUCTS TO DIFFUSERS SHALL BE THE SAME SIZE AS THE INDICATED NECK SIZE.

SIDEWALL REGISTERS AND GRILLES

CFM	SUPPLY AIR		RETURN AIR OR EXHAUST AIR	
	REGISTER SIZE	RUNOUT DUCT	REGISTER SIZE	RUNOUT DUCT
0-95	8x6	8x6	8x6	8x6
100-195	10x6	10x6	10x6	10x6
200-295	12x6	12x6	18x6	18x6
300-395	16x6	16x6	24x6	24x6
400-495	18x8	18x8	30x8	30x8

DESIGN CONDITIONS

OUTDOORS			
	SUMMER TEMPERATURES	°Fdb-°Fwb	95-78
	DEHUMIDIFICATION	°Fdb-°Fwb	88-79
	WINTER TEMPERATURE	°Fdb	25
INDOORS			
	OCCUPANCY USAGE		ALL
	SUMMER TEMPERATURES	°Fdb-°Fwb	75-63
	WINTER TEMPERATURE	°Fdb	70

GENERAL NOTES

1. DRAWINGS ARE DIAGRAMMATIC, INDICATIVE OF WORK TO BE FURNISHED AND INSTALLED UNDER THIS CONTRACT. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR DIMENSIONS.
2. FIELD VERIFY DIMENSIONS AND CONDITIONS. IF THE CONTRACTOR IS UNABLE TO INTERPRET THE CONTRACT DOCUMENTS, HE IS RESPONSIBLE TO REQUEST CLARIFICATION IN WRITING TO THE ARCHITECT. IF HE PROCEEDS WITH ANY WORK BEFORE OBTAINING CLARIFICATION, HE SHALL BE HELD RESPONSIBLE FOR DEFICIENCIES ASSOCIATED THEREWITH.
3. BEFORE SUBMITTING FOR THE WORK, EACH BIDDER WILL BE RESPONSIBLE TO EXAMINE THE PREMISES AND SATISFY HIMSELF AS TO THE EXISTING CONDITIONS UNDER WHICH HE WILL BE OBLIGATED TO OPERATE AND COMPLETE THE WORK UNDER THIS CONTRACT. NO ALLOWANCE WILL SUBSEQUENTLY BE MADE IN THIS CONNECTION ON BEHALF OF THE CONTRACTOR FOR ANY ERROR OR OMISSION ON HIS PART.
4. THE CONTRACTOR SHALL PAY FOR INSPECTION PERMITS, CERTIFICATES, CONNECTION FEES, SYSTEM DEMAND CHARGES AND LICENSE FEES IN CONNECTION WITH HIS WORK.
5. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WORK OF SUBCONTRACTORS TO AVOID INTERFERENCES.
6. WORK SHALL COMPLY WITH APPLICABLE O.S.H.A. AND E.P.A. REGULATIONS AND GUIDELINES.
7. ERECT AND MAINTAIN REASONABLE PRECAUTIONS FOR SAFETY AND HEALTH INCLUDING POSTING DANGER SIGNS AND OTHER WARNINGS AGAINST HAZARDS INCLUDING PROMULGATING SAFETY REGULATIONS. PROVIDE SAFETY PRECAUTIONS AND BARRICADES FOR PEDESTRIANS AT CONSTRUCTION VEHICLE ACCESS AND EGRESS LOCATIONS.
8. COORDINATE AND SEQUENCE CONSTRUCTION WORK. SUBMIT A COMPLETELY DETAILED CONSTRUCTION SCHEDULE PRIOR TO PRE-CONSTRUCTION CONFERENCE.
9. THE CONTRACTOR SHALL STRICTLY BE HELD TO THE PROJECT SCHEDULE. HE SHALL PROVIDE SUFFICIENT MANPOWER AND EQUIPMENT TO FULLY MOBILIZE, PROCEED WITH AND COMPLETE THE WORK.
10. THE CONTRACTOR SHALL BE RESTRICTED TO AREAS SPECIFIED BY THE OWNER FOR ON-SITE STORAGE OF CONSTRUCTION MATERIALS. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION AND SECURITY OF EQUIPMENT AND MATERIALS.
11. THE CONTRACTOR SHALL MAINTAIN A CLEAN WORK ENVIRONMENT AT ALL TIMES AND SHALL CLEAN CONSTRUCTION SITE OF DEBRIS AT COMPLETION OF THE JOB AND BEFORE FINAL PAYMENT IS MADE.
12. THE CONTRACTOR SHALL FURNISH "AS-BUILT" DRAWINGS TO THE ARCHITECT AT COMPLETION OF CONSTRUCTION.
13. CONTRACTOR'S USE OF AN APPROVAL STAMP ON DOCUMENTS SUBMITTED AS SHOP DRAWINGS, PRODUCT DATA, SAMPLES AND SIMILAR SUBMITTALS CERTIFIES THAT THE CONTRACTOR HAS COMPLIED WITH THE CONTRACT DOCUMENT REQUIREMENTS RELATED TO "SHOP DRAWINGS, PRODUCT DATA AND SAMPLES".
14. THE CONTRACTOR SHALL NOT BE RELIEVED OF RESPONSIBILITY FOR DEVIATIONS FROM REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE ARCHITECT/ ENGINEER'S APPROVAL OF SHOP DRAWINGS, PRODUCT DATA, SAMPLES OR SIMILAR SUBMITTALS UNLESS THE CONTRACTOR HAS SPECIFICALLY INFORMED THE ARCHITECT/ENGINEER IN WRITING OF SUCH DEVIATION AT THE TIME OF SUBMITTAL AND THE ARCHITECT/ENGINEER HAS GIVEN WRITTEN APPROVAL TO THE SPECIFIC DEVIATION. THE CONTRACTOR SHALL NOT BE RELIEVED OF RESPONSIBILITY FOR ERRORS OR OMISSIONS IN SHOP DRAWINGS, PRODUCT DATA, SAMPLES OR SIMILAR SUBMITTALS BY THE ARCHITECT/ENGINEER'S APPROVAL THEREOF.
15. PRIOR TO INSTALLATION, COORDINATE AND ADJUST THE FINAL LOCATION OF WALL MOUNTED DEVICES AND EQUIPMENT WITH ALL CASEWORK, SHELVING, MARKERBOARDS, BULLETIN BOARDS OR OTHER WALL MOUNTED FURNISHINGS.
16. SUPPORTS AND HANGERS SHALL PRESENT A NEAT, ORDERLY APPEARANCE.
17. ROOF MOUNTED EQUIPMENT SHALL BE SECURED TO STRUCTURE TO RESIST A 120 MPH WIND LOAD.
18. CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF ALL FIRE, SMOKE, AND ACOUSTICAL WALL ASSEMBLIES.
19. CONTRACTOR SHALL FURNISH U.L. APPROVED DRAWINGS FOR EACH TYPE OF FIRE RATED ASSEMBLY PENETRATION BY DUCTS, PIPES OR CONDUITS. THESE DRAWINGS SHALL BE DISPLAYED ON THE JOB SITE AT ALL TIMES DURING CONSTRUCTION. SEE SPECIFICATIONS.
20. CONTRACTOR SHALL GUARANTEE THE WORK AND MATERIALS FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE. THIS GUARANTEE SHALL BE IN ADDITION TO THE WARRANTIES PROVIDED BY MATERIAL SUPPLIERS AND MANUFACTURERS.

APPLICABLE CODES

PERFORM WORK IN ACCORDANCE WITH THE FOLLOWING CODES AND ANY APPLICABLE STATUTES, ORDINANCES, CODES, AND REGULATIONS OF GOVERNMENTAL AUTHORITIES HAVING JURISDICTION.

1. ASHRAE
   a. STANDARD 15 — SAFETY STANDARD FOR REFRIGERATION SYSTEMS - 2019
   b. STANDARD 55 — THERMAL ENVIRONMENTAL CONDITIONS FOR HUMAN OCCUPANCY - 2017
   c. STANDARD 62.1 — VENTILATION STANDARD FOR ACCEPTABLE INDOOR AIR QUALITY - 2019
   d. STANDARD 90.1 — ENERGY STANDARD FOR BUILDINGS EXCEPT LOW RISE RESIDENTIAL BUILDINGS - 2019
2. OCCUPATIONAL SAFETY AND HEALTH REGULATIONS (OSHA).
3. FLORIDA BUILDING CODE, 2023 8th EDITION
   a. BUILDING CODE
   b. ENERGY CONSERVATION CODE
   c. MECHANICAL CODE
   d. PLUMBING CODE
   e. FUEL GAS CODE
   f. ACCESSIBILITY CODE
4. FLORIDA STATUTES
   a. CHAPTER 471 — ENGINEERING
   b. CHAPTER 533.80 — BUILDING CONSTRUCTION STANDARDS; FLORIDA BUILDING CODE - ENFORCEMENT
5. FLORIDA ADMINISTRATIVE CODE
   a. CHAPTER 61G15-34 — RESPONSIBILITY RULES OF PROFESSIONAL ENGINEERS CONCERNING THE DESIGN OF MECHANICAL SYSTEMS
   b. CHAPTER 9B-7 — FLORIDA BUILDING COMMISSION HANDICAPPED ACCESSIBILITY STANDARDS

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AHAP	AS HIGH AS POSSIBLE
AHU	AIR HANDLING UNIT
BDD	BACKDRAFT DAMPER
BHP	BRAKE HORSEPOWER
BTUH	BRITISH THERMAL UNITS PER HOUR
C	CONDENSATE
CFM	CUBIC FEET PER MINUTE
CO	CLEANOUT
DG	DOOR GRILLE (24"x16", UNO)
DN	DOWN
DSSI	DUCTLESS SPLIT SYSTEM INDOOR UNIT
DSSO	DUCTLESS SPLIT SYSTEM OUTDOOR UNIT
EA	EXHAUST AIR
EAG	EXHAUST AIR GRILLE
EF	EXHAUST FAN
°Fdb	DEGREES FAHRENHEIT DRY BULB
°Fwb	DEGREES FAHRENHEIT WET BULB
F	FEET
FPM	FEET PER MINUTE
HP	HORSEPOWER
IN	INCHES
MCA	MINIMUM CIRCUIT AMPACITY
MOCP	MAXIMUM OVERLOAD PROTECTION
N/A	NOT APPLICABLE
OA	OUTSIDE AIR
PT	PRESSURE TREATED
RA	RETURN AIR
RAG	RETURN AIR GRILLE
REF	REFRIGERANT
RPM	REVOLUTIONS PER MINUTE
RTU	ROOF TOP UNIT
SA	SUPPLY AIR
SMS	SHEET METAL SIZE
SP	STATIC PRESSURE
TYP	TYPICAL
UC	DOOR UNDERCUT (3/4", UNO)
UNO	UNLESS NOTED OTHERWISE
WG	WATER GAUGE

DRAWING INDEX

M001	GENERAL NOTES, LEGENDS & SCHEDULES
M002	SCHEDULES
M003	SCHEDULES
M101	THREE BAY FLOOR PLAN - BUILDING A
M102	THREE BAY FLOOR PLAN - BUILDING B
M103	TWO BAY FLOOR PLAN - BUILDING C
M201	THREE BAY ROOF PLAN - BUILDING A
M202	THREE BAY ROOF PLAN - BUILDING B
M203	TWO BAY ROOF PLAN - BUILDING C
M301	SECTIONS
M501	DETAILS
M502	DETAILS
M701	CONTROLS

No:	REVISIONS	DATE	BY

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PROJECT #: 18-26
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LICENSED PROFESSIONAL
Scott T. Craig Jr., P.E.
FL LICENSE NUMBER
#73938

PROJECT NUMBER
144124059
DATE
01/17/2025
1/8" = 1'-0"
DESIGNED BY RDR
DRAWN BY MAW
CHECKED BY STC

GENERAL NOTES, LEGENDS & SCHEDULES

QUICK - TURNAROUND FACILITY
PREPARED FOR
TALLAHASSEE INTERNATIONAL AIRPORT
CITY OF TALLAHASSEE
FLORIDA

SHEET NUMBER
M001

1/16/2025 11:08:29 AM   Autodesk Docs://TLH QTA Buildings/TLH QTA Building_MEP-H2E_2024.rvt

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FIRESTOP SCHEDULE OF THROUGH PENETRATION SYSTEMS. BASIS OF DESIGN: HILTI, INC.

TYPE OF PENETRANT	F-RATING (HR)	CONCRETE FLOORS	CONCRETE OR BLOCK WALLS	GYPSUM WALLS	HILTI PRODUCTS
		BASIS OF DESIGN UL SYSTEM			
CIRCULAR BLANK OPENINGS (0000-0999)	1	F-A-0006, C-AJ-0055, C-AJ-0090	C-AJ-0055, C-AJ-0090	--	CP 680, CP 618, FS-ONE MAX, CFS- BL
	2	F-A-0006, C-AJ-0055, C-AJ-0090	C-AJ-0055, C-AJ-0090	--	
METAL PIPES OR CONDUIT (1000-1999)	1	C-AJ-1226, F-A-1028, F-A-1017	C-AJ-1226, W-J-1067, W-J-1020	W-L-1054, W-L-1058, W-L-1164, W-L-1506	CP 680, FS-ONE MAX, CP 606, CFS-S SIL GG, CFS-D, MINERAL WOOL
	2	C-AJ-1226, F-A-1028, F-A-1017	C-AJ-1226, W-J-1067, W-J-1020, W-J-1248	W-L-1054, W-L-1058, W-L-1164, W-L-1506	
NON-METALLIC PIPE OR CONDUIT (I.E. PVC, CPVC, ABS, FRP, ENT) (2000-2999)	1	F-A-2053, F-A-2025, C-AJ-2109, C-AJ-2098, C-AJ-2271, C-AJ-2167, C-BJ-2021, C-AJ-2342	C-AJ-2109, C-AJ-2098, C-AJ-2167, C-AJ-2371, C-AJ-2342	W-L-2078, W-L-2075, W-L-2128	CP 680, CP 643N, MINERAL WOOL, CP 644, FS-ONE MAX, CFS-S SIL SL, CFS-S SIL CG, CP 648
	2	F-A 2053, F-A 2025, C-AJ-2109, C-AJ-2098, C-AJ-2271, C-AJ-2167, C-BJ-2021, C-AJ-2371, C-AJ-2342	C-AJ-2109, C-AJ-2098, C-AJ-2167, C-AJ-2371, C-AJ-2342	W-L-2078, W-L-2075, W-L-2128	
SINGLE OR BUNDLED CABLES (3000-3999)	1	F-A-3007, C-AJ-3095, C-AJ-3180, C-AJ-3283	W-J-3036, C-AJ-3095, C-AJ-3180, W-J-3060, W-J-3167	W-L-3065, W-L-3111, W-L-3112, W-L-3334, W-L-3414, W-L-3396	CP 680, CP 653, FS-ONE MAX, CP 618, CP 606, CFS-D, CFS-CC
	2	F-A-3007, C-AJ-3095, C-AJ-3334, F-A-3060	W-J-3036, C-AJ-3095, C-AJ-3180, W-J-3060, W-J-3167, W-J-3189	W-L-3065, W-L-3111, W-L-3112, W-L-3334, W-L-3414, W-L-3396	
INSULATED PIPES (5000-5999)	1	F-A 5015, F-A 5017, C-AJ-5090, C-AJ-5091, C-AJ-5090, C-AJ-5048	C-AJ-5090, C-AJ-5091, C-AJ 5061, W-J-5042	W-L-5028, W-L-5029, W-L-5047	CP 680, FS-ONE MAX, MINERAL WOOL
	2	F-A 5015, F-A 5017, C-AJ-5090, C-AJ-5091, C-AJ-5090	C-AJ-5090, C-AJ-5091, C-AJ-5061, W-J-5042	W-L-5028, W-L-5029, W-L-5047	
MECHANICAL DUCTWORK WITHOUT DAMPERS (NON-INSULATED) (7000-7999)	1	C-AJ-7046, C-AJ-7051, C-AJ-7084	C-AJ-7046, C-AJ-7051, W-J-7021, W-J-7022	W-L-7017, W-L-7040, W-L-7042, W-L-7155	CFS-S SIL GG, CP 606, FS-ONE MAX
	2	C-AJ-7046, C-AJ-7051, C-AJ-7085	C-AJ-7046, C-AJ-7051, W-J-7021, W-J-7022	W-L-7040, W-L-7042, W-L-7155	
MECHANICAL DUCTWORK WITHOUT DAMPERS (INSULATED) (7000-7999)	1	N/A**	W-J-7029, W-J-7124	W-L-7059, W-L-7153, W-L-7156, W-L-7151	FS-ONE MAX, MINERAL WOOL
	2	N/A**	W-J-7091, W-J-7112, W-J-7124	W-L-7059, W-L-7153, W-L-7156, W-L-7151	
MIXED PENETRANTS (8000-8999)	1	C-AJ-8099, C-AJ-8056, C-AJ-8143	C-AJ-8099, C-AJ-8056, W-J-8007, C-AJ-8143	W-L-1095, W-L-8013	FS-ONE MAX, CFS-BL, CP 620, CP 618
	2	C-AJ-8099, C-AJ-8056, C-AJ-8143, C-AJ-8252	C-AJ 8099, C-AJ-8056, W-J-8007, C-AJ-8143, C-AJ-8252	W-L-1095, W-L-8013	

NOTES:

1. JOBSITE CONDITIONS OF EACH THROUGH-PENETRATION FIRESTOP SYSTEM MUST MEET ALL DETAILS OF THE UL-CLASSIFIED SYSTEM SELECTED.
2. IF JOBSITE CONDITIONS DO NOT MATCH ANY UL-CLASSIFIED SYSTEMS IN THE SCHEDULES ABOVE, CONTACT FIRESTOP MANUFACTURER FOR ALTERNATIVE SYSTEMS OR ENGINEER JUDGMENT DRAWINGS.
3. WHERE MORE THAN ONE APPLICABLE UL-CLASSIFIED SYSTEM IS LISTED IN THE SCHEDULES, CHOOSE THE UL SYSTEM WHICH IS MOST ECONOMICAL FOR EACH THROUGH-PENETRATION FIRESTOP SYSTEM.
4. COORDINATE WORK WITH OTHER TRADES TO ENSURE THAT PENETRATION OPENING SIZES ARE APPROPRIATE FOR PENETRANT LOCATIONS, AND VICE-VERSA.
5. ALL THROUGH-PENETRATION FIRESTOPS SHALL BE PROVIDED BY ONE MANUFACTURER. APPROVED MANUFACTURES: HILTI, RECTORSEAL, 3M, STL.

FANS SCHEDULE

DESIGNATION		EF-A.1,B.1	EF-C.1	EF-C.2,C.7	EF-A.2, A.8, B.2, B.8	EF-A.3, B.3, C.3	EF-A.4, B.4, C.4	EF-A.5, B.5, C.5	EF-A.6, B.6, C.6	EF-A.7, B.7	F-A.1, 2, 3; F-B.1, 2, 3; F-C.1,2
SERVICE		CLASS 1 OR 2 EXHAUST	CLASS 1 OR 2 EXHAUST	CLASS 1 OR 2 EXHAUST	CLASS 1 OR 2 EXHAUST	CLASS 1 OR 2 EXHAUST	CLASS 1 OR 2 EXHAUST	CLASS 1 OR 2 EXHAUST	CLASS 1 OR 2 EXHAUST	CLASS 1 OR 2 EXHAUST	CLASS 1 OR 2 TRANSFER
MOUNTING METHOD		ROOF	ROOF	ROOF	ROOF	ROOF	ROOF	ROOF	CEILING	ROOF	WALL
FAN TYPE		CENTRIFUGAL UPBLAST	CENTRIFUGAL UPBLAST	CENTRIFUGAL UPBLAST	CENTRIFUGAL UPBLAST	CENTRIFUGAL UPBLAST	CENTRIFUGAL UPBLAST	CENTRIFUGAL UPBLAST	CENTRIFUGAL CABINET	CENTRIFUGAL UPBLAST	PROPELLER
AIR FLOW	CFM	230	110	2,400	3,500	3,400	2,430	1,000	150	1,660	N/A
STATIC PRESSURE	IN.	0.3	0.3	0.5	0.5	0.3	0.3	0.5	0.3	0.3	N/A
FAN SPEED	RPM	1,545	1,342	1,170	620	1,140	434	1,073	1,400	756	1,296
FAN DRIVE		DIRECT	DIRECT	DIRECT	BELT	DIRECT	BELT	DIRECT	DIRECT	BELT	DIRECT
MOTOR SPEED	RPM	1,725	1,725	1,200	1,725	931	931	1,000	--	1,391	1,725
MOTOR POWER	HP or W	1/15 HP	1/15 HP	1 HP	3/4 HP	1/2 HP	1/4 HP	1/4 HP	47 W	1/4 HP	1/3 HP
ELECTRICAL CHARACTERISTICS	V / PH	120 / 1	120 / 1	208 / 3	208 / 3	208 / 3	120 / 1	120 / 1	120 / 1	120 / 1	120 / 1
WEIGHT	LBS.	38	38	102	130	116	117	61	17	68	32
NOISE LEVEL		2.4 SONES	2.4 SONES	11.1 SONES	9.6 SONES	7.4 SONES	5.7 SONES	6.3 SONES	1.5 SONES	8.1 SONES	8.3 SONES
NOTES		1, 2, 3, 4, 7, 9, 39	1, 2, 3, 4, 7, 39	1, 2, 3, 4, 7, 39	1, 2, 3, 4, 7, 9, 39	1, 2, 3, 4, 7, 39	1, 3, 4, 6, 7, 9, 40	1, 2, 3, 4, 7, 40	1, 2, 4, 11, 20, 21	1, 2, 3, 4, 7, 9, 40	37, 38
MANUFACTURER		GREENHECK	GREENHECK	GREENHECK	GREENHECK	GREENHECK	GREENHECK	GREENHECK	GREENHECK	GREENHECK	BIG ASS
MODEL NUMBER		CUE-070-VG	CUE-070-VG	CUE-180-VG	CUBE 220	CUBE-180	CUBE-240	CUE-140-VG	SP-A190	CUBE-160	AIR EYE
DETAIL REFERENCE		C/M501	C/M501	C/M501	C/M501	C/M501	C/M501	C/M501	B/M501	C/M501	1,2,3/M301

NOTES:

1 PROVIDE PRE-WIRED DISCONNECT SWITCH, FACTORY MOUNTED FOR 3/4 HP MOTOR AND LOWER. ELECTRICAL TO PROVIDE DISCONNECT SWITCH FOR 1 HP MOTOR AND LARGER.
2 PROVIDE SOLID STATE SPEED CONTROLLER, FACTORY MOUNTED.
3 PROVIDE BIRD SCREEN.
4 PROVIDE BACKDRAFT DAMPER, GRAVITY OPERATED.
7 PROVIDE PRE-FABRICATED INSULATED ROOF CURB, 12-INCH HIGH WITH DAMPER TRAY, SLOPED TO MATCH ROOF SLOPE.
9 PROVIDE TIE-DOWN EYELETS.
11 PROVIDE RUBBER-IN-SHEAR ISOLATORS.
20 PROVIDE WHITE, ALUMINUM INLET GRILLE.
21 PROVIDE TIME DELAY SWITCH, INSTANT ON WITH LIGHTS AND 10-MINUTE TIME DELAY OFF. WIRED BY DIV 26 CONTRACTOR.
37 PROVIDE 20" DIAMETER FAN.
38 PROVIDE MANUFACTURER'S SPECIFIED WALL MOUNTING KIT AND 12'-0" CORDED VARIABLE SPEED CONTROLLER.
39 FAN SHALL BE CONTROLLED BY STAND-ALONE TIME CONTROLLER. REFER TO DETAIL A/M701. TIMECLOCK(S) SHALL BE PROVIDED BY DIVISION 26. SCHEDULE FAN TO ENABLE/DISABLE PER OWNER SCHEDULE.
40 FAN SHALL BE CONTROLLED BY A LINE VOLTAGE THERMOSTAT SET TO 85 DEGREES F (ADJ). ONCE ACTIVATED THE FAN SHALL OPERATE UNTIL SPACE TEMPERATURE HAS DROPPED BELOW SETPOINT +/- A DEADBAND (2 DEGREES, ADJ)

DUCTLESS SPLIT SYSTEMS

INDOOR UNIT DESIGNATION	DSSI-A.1	DSSI-A.2	DSSI-A.3	DSSI-B.1	DSSI-B.2	DSSI-B.3	DSSI-C.1	DSSI-C.2	DSSI-C.3
OUTDOOR UNIT DESIGNATION	DSSO-A.1	DSSO-A.2	DSSO-A.3	DSSO-B.1	DSSO-B.2	DSSO-B.3	DSSO-C.1	DSSO-C.2	DSSO-C.3
SCHEDULED TYPE	A	B	A	A	B	A	A	B	A
DESCRIPTION	COOLING ONLY	HEAT PUMP	COOLING ONLY	COOLING ONLY	HEAT PUMP	COOLING ONLY	COOLING ONLY	COOLING ONLY	COOLING ONLY
FAN SPEED	MEDIUM	MEDIUM	MEDIUM	MEDIUM	MEDIUM	MEDIUM	MEDIUM	MEDIUM	MEDIUM
NOTES	1, 2	1, 2	1, 2	1, 2	1, 2	1, 2	1, 2	1, 2	1, 2

NOTES:

1 PROVIDE ELECTRONIC PROGRAMMABLE THERMOSTAT
2 PROVIDE WIRELESS PROGRAMMABLE THERMOSTAT

DUCTLESS SPLIT SYSTEM TYPES

TYPE		A	B
DESCRIPTION		COOLING ONLY	HEAT PUMP
PERFORMANCE - (NOTES 1 & 2)			
NOMINAL CAPACITY	TONS	2	2
TOTAL COOLING CAPACITY	BTUH	21,200	21,200
SENSIBLE COOLING CAPACITY	BTUH	15,760	15,760
HEATING CAPACITY @ 47 °F	BTUH	N/A	24,000
HEATING CAPACITY @ 17 °F	BTUH	N/A	14,400
AIR FLOW RATE (HIGH - LOW)	CFM	713 - 512	713 - 512
SEER	BTU / W-HR	18.0	18.0
HSPF	BTU / W-HR	N/A	9.0
INDOOR UNIT DATA			
FILTERS		1" WASHABLE	1" WASHABLE
CONDENSATE DRAIN SIZE	IN.	3/4	3/4
WEIGHT	LBS.	27	27
OUTDOOR UNIT DATA			
COMPRESSOR TYPE		INVERTER	INVERTER
ELECTRICAL CHARACTERISTICS	V / PH	208 / 1	208 / 1
MINIMUM CIRCUIT AMPACITY	AMPS	18.3	18.3
MAXIMUM OVERLOAD PROTECTION	AMPS	20	20
WEIGHT	LBS.	108	108
REFRIGERANT TYPE		R410A	R410A
MANUFACTURER		DAIKIN	DAIKIN
MODEL NUMBER (INDOOR UNIT)		FTK24NMVJU	FTX24NMVJU
MODEL NUMBER (OUTDOOR UNIT)		RK24NMVJU	RX24NMVJU
DETAIL REFERENCE		A,B/M502; G/M501	A,B/M502; G/M501

NOTES:

1 COOLING CAPACITY RATED @ 95 °F AMBIENT, 80°Fdb / 67°Fwb ENTERING AIR TEMPERATURE.
2 HEATING CAPACITY RATED @ 47 °Fdb / 43°Fwb AMBIENT, 70°Fdb ENTERING AIR TEMPERATURE.
3 UNIT SHALL BE CAPABLE OF OPERATION FOR AMBIENT TEMPERATURES DOWN TO 14°F
4 REFRIGERANT PIPING SHALL BE SIZED BY MANUFACTURER.
5 INDOOR UNIT RECEIVES POWER FROM OUTDOOR UNIT. PROVIDE FIELD SUPPLIED INTERCONNECTED WIRING PER MANUFACTURER'S INSTRUCTIONS.

CABINET UNIT HEATER SCHEDULE

DESIGNATION		UH-A.1	UH-B.1	UH-C.1
CAPACITY	KW	3.0	3.0	3.0
NUMBER OF STAGES	#	1	1	1
AIR QUANTITY	CFM	160	160	160
AIR TEMPERATURE RISE	°F	60	60	60
ELECTRICAL CHARACTERISTICS	V / PH	208 / 1	208 / 1	208 / 1
FULL LOAD CURRENT	AMPS	14.43	14.43	14.43
BUILT-IN CONTACTOR		YES	YES	YES
BUILT-IN TRANSFORMER		YES	YES	YES
MOUNTING HEIGHT (A.F.F.)	FT / IN	0 / 2	0 / 2	0 / 2
MANUFACTURER (BASIS OF DESIGN)		REZNOR	REZNOR	REZNOR
MODEL NUMBER		EMC (SIZE 3)	EMC (SIZE 3)	EMC (SIZE 3)

NOTES:

1 PROVIDE UNITS WITH MOUNTING HARDWARE.
2 PROVIDE UNITS WITH FACTORY WIRED DISCONNECT SWITCH.
3 PROVIDE UNITS WITH CONTROL TRANSFORMERS AS REQUIRED.
6 PROVIDE UNITS WITH MANUFACTURER'S SPECIFIED, TAMPER-PROOF, BUILT-IN THERMOSTATS, SET TO MAINTAIN 68 DEGREES F.
7 PROVIDE FRONT COVER KEY LOCK.
8 PROVIDE HEAVY DUTY 16 GAUGE STEEL GRILLE.
9 VERIFY SURFACE, SEMI-RECESSED OR RECESSED MOUNTING WITH ARCHITECT PRIOR TO ORDERING EQUIPMENT.

RADIANT TUBE HEATER SCHEDULE

DESIGNATION		RH-A.1, 2, 3; RH-B.1, 2, 3; RH-C.1,2
INPUT	BTUH	100,000
FUEL		NATURAL GAS
TUBE LENGTH	FT	30
TUBE CONFIGURATION		STRAIGHT
ELECTRICAL CHARACTERISTICS	V / PH	120 / 1
GAS INLET SIZE	IN.	1/2"
MANUFACTURER		ROBERTS GORDON
MODEL		CTH2V
DETAIL REFERENCE		C, F, G/M502

NOTES:

1 PROVIDE STAINLESS STEEL PROTECTIVE GRILLE ON STAINLESS STEEL REFLECTOR.
2 PROVIDE REFLECTOR SIDE EXTENSIONS.
3 PROVIDE FLEXIBLE STAINLESS STEEL GAS LINE WITH SHUT-OFF COCK FOR ALL HEATERS.
4 PROVIDE STAINLESS STEEL VENTING AND INTAKE ACCESSORIES AS INDICATED ON PLANS AND PER MANUFACTURER'S RECOMMENDATIONS.
5 PROVIDE LINE VOLTAGE THERMOSTATS. PROVIDE MANUFACTURER'S RECOMMENDED WATER PROOF THERMOSTATS FOR CARWASH HEATERS (SEE FLOOR PLANS).
6 SET REFLECTOR AT 0 DEGREES (DIRECTLY DOWNWARD).
7 PROVIDE RADIANT HEATER RATED FOR USE IN HARSH/CORROSIVE ENVIRONMENTS.

INDIRECT GAS FIRED UNIT HEATER SCHEDULE

DESIGNATION		UH-C.2,3,4,6	UH-A.7, UH-B.7, UH-C.5	UH-A.2,3,4,5,6,8 UH-B.2,3,4,5,6,8
GAS FIRED HEATING DATA				
TYPE OF FUEL		NATURAL GAS	NATURAL GAS	NATURAL GAS
INPUT HEATING CAPACITY	MBTUH	45	105	30
OUTPUT HEATING CAPACITY	MBTUH	37.4	87.2	24.6
AIR TEMPERATURE RISE	°F	55	60	50
GAS PIPE CONNECTION	IN.	1/2	1/2	1/2
FAN DATA				
DISCHARGE AIR VOLUME	CFM	630	1345	460
FAN MOTOR HORSEPOWER	HP	0.06	0.25	0.06
ELECTRICAL CHARACTERISTICS	V / PH	120 / 1	120 / 1	120 / 1
MAXIMUM OVERLOAD PROTECTION	AMPS	15	15	15
UNIT WEIGHT	LBS.	65	105	60
MANUFACTURER		REZNOR	REZNOR	REZNOR
MODEL NUMBER		UDZ 45	UDZ 100	UDZ 30
DETAIL REFERENCE		A,D/M503	A,D/M503	A,D/M503

NOTES:

1 PROVIDE HIGH AND LOW GAS PRESSURE SWITCHES.
2 PROVIDE MANUAL SHUTOFF VALVES.
3 PROVIDE CATEGORY III FLUE VENT PIPE AND VENT CAP TERMINATION.
4 INSTALL UNIT, ALL CONNECTIONS, AND ACCESSORIES ACCORDING TO MANUFACTURER'S REQUIREMENTS.

NATURAL VENTILATION RATE

TYPE OF SPACE	FLOOR AREA (SF)	OPENABLE AREA MINIMUM (SF)	OPENABLE AREA ACTUAL (SF)
STORAGE / W&D ROOM 111, 211, AND 209	207.3	8.29	21.00

NOTE: NATURAL VENTILATION CALCULATED PER REQUIREMENTS OF FLORIDA BUILDING CODE - MECHANICAL 2023, BASED ON MINIMUM OPENABLE AREA TO THE OUTDOORS OF 4% OF FLOOR AREA.

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LICENSED PROFESSIONAL
Scott T. Craig Jr., P.E.
FL LICENSE NUMBER #73938

PROJECT NUMBER 144124059
DATE 01/17/2025
1/8" = 1'-0"
DESIGNED BY RDR
DRAWN BY MAW
CHECKED BY STC

SCHEDULES

QUICK - TURNAROUND FACILITY
PREPARED FOR
TALLAHASSEE INTERNATIONAL AIRPORT
CITY OF TALLAHASSEE FLORIDA

SHEET NUMBER
M002

1/16/2025 11:08:30 AM Autodesk Docs://TLH QTA Buildings/TLH QTA Building_MEP-H2E_2024.rvt
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PACKAGED AC UNIT WITH GAS HEAT SCHEDULE

DESIGNATION			RTU-A.1	RTU-B.1	RTU-C.1
AIR QUANTITIES					
	SUPPLY AIR	CFM	2,400	2,400	1,600
	OUTSIDE AIR	CFM	310	310	170
HEAT LOSSES AND GAINS					
	TOTAL HEAT LOSS	BTUH	33,500	33,500	24,100
	SENSIBLE HEAT GAIN	BTUH	59,009	59,009	39,811
	TOTAL HEAT GAIN	BTUH	71,961	71,961	47,217
AIR TEMPERATURES					
	COOLING COIL ENTERING	°Fdb - °Fwb	77.8 - 64.3	77.8 - 64.3	77.3 - 63.9
	COOLING COIL LEAVING	°Fdb - °Fwb	54.3 - 53.9	54.3 - 53.9	53.5 - 53.5
	HEATING COIL ENTERING AND LEAVING	°Fdb - °Fdb	60.0 - 84.9	60.0 - 84.9	60.0 - 97.3
EVAPORATOR SECTION					
	EXT. STATIC PRESSURE (INCLUDE FILTER)	IN.	2	2	2
	FAN MOTOR HORSEPOWER	HP	3	3	2
CONDENSER SECTION					
	NUMBER OF COMPRESSORS (MODULATING)	#	1	1	1
GAS FIRED HEAT SECTION					
	TYPE OF FUEL		NATURAL GAS	NATURAL GAS	NATURAL GAS
	INPUT RATING	BTUH	80,000	80,000	80,000
	NET HEATING CAPACITY	BTUH	64,800	64,800	64,800
	AIR TEMPERATURE RISE	°F	25	25	37
UNIT ELECTRICAL CHARACTERISTICS		V / PH	460 / 3	460 / 3	460 / 3
MINIMUM AMPACITY / MAXIMUM OVERLOAD PROTECTION		AMPS / AMPS	19.9 / 25	19.9 / 25	16.9 / 25
UNIT WEIGHT			1,105	1,105	927
REFRIGERANT TYPE			R32	R32	R32
IEER / EER			20.1 / 10.7	20.1 / 10.7	25.3 / 13.1
MANUFACTURER			DAIKIN	DAIKIN	DAIKIN
MODEL NUMBER			DPSC06B	DPSC06B	DPSC04B
DETAILS			J/M501, E/M502	J/M501, E/M502	J/M501, E/M502
NOTES:			1,2,3,4,5,6,7,8	1,2,3,4,5,6,7,8	1,2,3,4,5,6,7

NOTES:

1 PROVIDE WITH COMBINATION SPACE TEMPERATURE AND HUMIDITY SENSOR.
2 PROVIDE WITH MODULATING HOT GAS REHEAT.
3 PROVIDE SUPPLY FAN(S) AND CONDENSER FAN(S) WITH ELECTRICALLY COMMUTATED MOTORS.
4 PROVIDE COMPRESSORS WITH INVERTER DUTY MODULATING CONTROL.
5 PROVIDE WITH MODULATING GAS HEATING (5:1 TURN DOWN).
6 PROVIDE WITH BAROMETRIC RELIEF SET TO OPEN AT 0.1" WG.
7 PROVIDE WITH FACTORY CONTROLS FOR THE SINGLE ZONE VAV CONTROL AND THE FOLLOWING OPERATIONS:
HEAD PRESSURE CONTROL - UNIT CONTROLLER SHALL MONITOR THE CONDENSER HEAD PRESSURE AS REQUIRED TO MAINTAIN HEAD PRESSURE AND THE AND THE COMPRESSOR OPERATING ENVELOPE TO AVOID HIGH PRESSURE TRIPS ON LOAD DAYS.
COMPRESSOR ENVELOPE CONTROL - UNIT CONTROLLER SHALL MONITOR SUCTION AND DISCHARGE PRESSURE AND TEMPERATURE CONDITIONS, AND MODULATE THE COMPRESSOR, CONDENSER HEAD PRESSURE, AND ELECTRONIC EXPANSION VALVE AS REQUIRED.
CHANGE OVER - UNIT CONTROLLER, BASED ON HEATING/COOLING CHANGE OVER SETPOINTS, SHALL CHANGE BETWEEN COOLING, FAN ONLY, OR HEATING MODES.
SUPPLY FAN - UNIT CONTROLLER SHALL MODULATE THE FAN BETWEEN MIN/MAX SETPOINTS BASED ON THE DIFFERENCE BETWEEN SPACE TEMPERATURE AND THE DESIRED SETPOINT.
OUTSIDE AIR DAMPER - SUPPLY FAN ON / DAMPER OPEN; SUPPLY FAN OFF / DAMPER CLOSED. THE UNIT CONTROLLER SHALL PROPORTIONALLY MODULATE THE OUTSIDE AIR DAMPERS OPEN AND CLOSED AS THE SUPPLY FAN SPEED CHANGES TO PROVIDE A CONSTANT VOLUME OF FRESH OUTSIDE AIR.
COOLING - UNIT CONTROLLER SHALL MODULATE THE VARIABLE SPEED COMPRESSOR(S) AS REQUIRED TO MAIN THE DISCHARGE AIR SETPOINT
MODULATING HOT HAS REHEAT - FULLY MODULATING, WITH LEAVING COIL TEMP SENSOR AND DISCHARGE AIR TEMP SENSOR; DEHUMIDIFICATION - WHEN THE SPACE RH RISES ABOVE DEHUMIDIFICATION SETPOINT (55% ADJ), MODULATE THE COMPRESSOR(S) TO MAINTAIN THE LEAVING COOLING SETPOINT AND THE REHEAT COIL TO MAINTAIN THE SUPPLY AIR REHEAT SETPOINT. SUPPLY AIR REHEAT SETPOINT SHALL BE RESET BASED ON A CALL FOR COOLING AND DEHUMIDIFICATION OR DEHUMIDIFICATION ONLY. UPON A CALL FOR COOLING AND DEHUMIDIFICATION, REHEAT SETPOINT = COOLING DISCHARGE AIR SETPOINT. UPON A CALL FOR DEHUMIDIFICATION ONLY, REHEAT SETPOINT SHALL BE LINEARLY RESET BETWEEN MIN/MAX SETPOINTS (ADJ). RESET SHALL BE PER COOLING AND HEATING SETPOINTS.
GAS REHEAT - MODULATING 5:1 TURNDOWN. UPON A CALL FOR HEATING, UNIT CONTROLLER SHALL MODULATE THE FURNACE AS REQUIRED TO MAINTAIN THE DESIRED SPACE TEMPERATURE.
8 PROVIDE WITH FACTORY CONTROLS FOR DUAL ENTHALPY (OUTSIDE AIR VS RETURN AIR) ECONOMIZER OPERATION.

GRAVITY VENTILATOR SCHEDULE

DESIGNATION			GV-A.1,2	GV-B.1,2	GV-C.1,2
	MAX AIRFLOW	CFM	300	300	300
	THROAT SIZE	IN. X IN.	8 X 8	8 X 8	8 X 8
	HOOD DIAMETER	IN. X IN.	27 X 22	27 X 22	27 X 22
	CURB CAP	IN. X IN.	14 X 14	14 X 14	14 X 14
	WEIGTH	LBS.	50	50	50
MANUFACTURER			GREENHECK	GREENHECK	GREENHECK
MODEL NUMBER			FGR-8x8	FGR-8x8	FGR-8x8

NOTES:

1 PROVIDE PREFABRICATED ROOF CURB WITH WELDED CAP CORNERS AND DAMPER TRAY.
2 PROVIDE BACKDRAFT DAMPER.
3 PROVIDE ALUMINUM BIRD SCREEN.
4 REFER TO DETAIL F/M501.

No:	REVISIONS	DATE	BY

Kimley»Horn
2615 CENTENNIAL BOULEVARD, SUITE 102
TALLAHASSEE, FL 32308
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Florida Registry #2485

H2 ENGINEERING

LICENSED PROFESSIONAL
Scott T. Craig Jr., P.E.
FL LICENSE NUMBER
#73938

PROJECT NUMBER 144124059
DATE 01/17/2025
1/8" = 1'-0"
DESIGNED BY RDR
DRAWN BY MAW
CHECKED BY STC

SCHEDULES

QUICK - TURNAROUND FACILITY
PREPARED FOR
TALLAHASSEE INTERNATIONAL AIRPORT
CITY OF TALLAHASSEE
FLORIDA

SHEET NUMBER
M003

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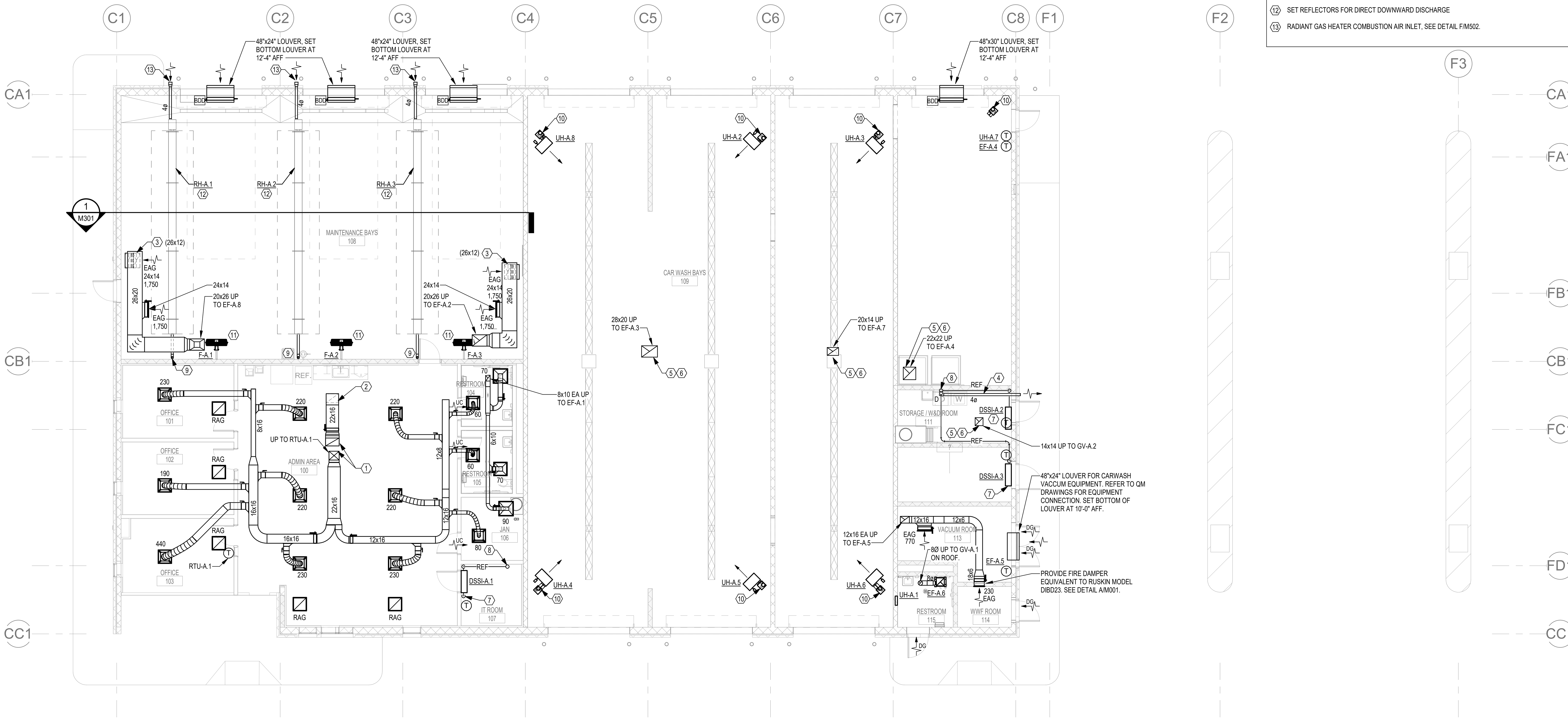
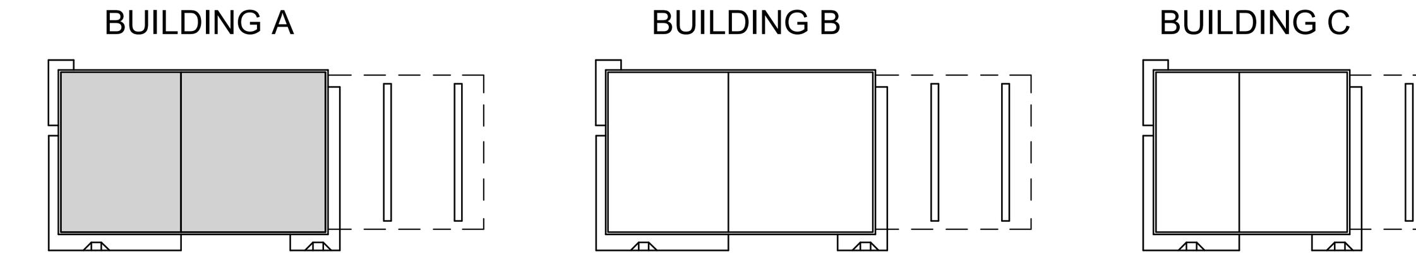
HVAC FLOOR PLAN - BUILDING A

1 — 1/8" = 1'-0"



CONSTRUCTION KEYNOTES

1. DROP DUCTWORK DOWN AS REQUIRED TO SET BOTTOM OF DUCTWORK AT 24" ABOVE CEILING.
2. PROVIDE RETURN DUCTWORK WITH ELBOW UP AS INDICATED.
3. DROP EXHAUST DUCTWORK DOWN TO 18" AFF.
4. 4" DRYER VENT UP TO 10-6" AFF AND THRU EXTERIOR WALL AS INDICATED. PROVIDE ALUMINUM WALL CAP WITH BACKDRAFT DAMPER AT TERMINATION, SEIHO MODEL CFXC 4 OR APPROVED EQUAL. SEE DETAIL D/M501.
5. EXTEND FULL-SIZE 304 STAINLESS STEEL DUCT DOWN TO 18" BELOW STRUCTURE.
6. PROVIDE STAINLESS STEEL EXPANDED BIRD SCREEN MESH OVER OPENING.
7. ROUTE CONDENSATE PIPING NEATLY DOWN WALL TO HUB DRAIN. REFER TO PLUMBING DRAWINGS FOR HUB DRAIN LOCATION. SECURE CONDENSATE PIPING TO WALL.
8. REFRIGERANT PIPING UP TO ROOF MOUNTED CONDENSING UNIT.
9. SINGLE EXHAUST VENT UP THROUGH ROOF, SEE DETAIL C/M502.
10. COMBINATION FLUE/VENT THRU ROOF. SEE DETAIL J/M503.
11. SET MINIMUM ELEVATION AT 8'-4" AFF.
12. SET REFLECTORS FOR DIRECT DOWNWARD DISCHARGE
13. RADIANT GAS HEATER COMBUSTION AIR INLET, SEE DETAIL F/M502.



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TALLAHASSEE, FL 32308 PHONE: 850-553-3500
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Florida Registry #2485

H2 ENGINEERING

LICENSED PROFESSIONAL
Scott T. Craig Jr., P.E.
FL LICENSE NUMBER #73938

PROJECT NUMBER	144124059
DATE	01/17/2025
SCALE	1/8" = 1'-0"
DESIGNED BY	RDR
DRAWN BY	MAW
CHECKED BY	STC

THREE BAY FLOOR PLAN - BUILDING A

QUICK - TURNAROUND FACILITY
PREPARED FOR
TALLAHASSEE INTERNATIONAL AIRPORT
CITY OF TALLAHASSEE — FLORIDA

SHEET NUMBER
M101

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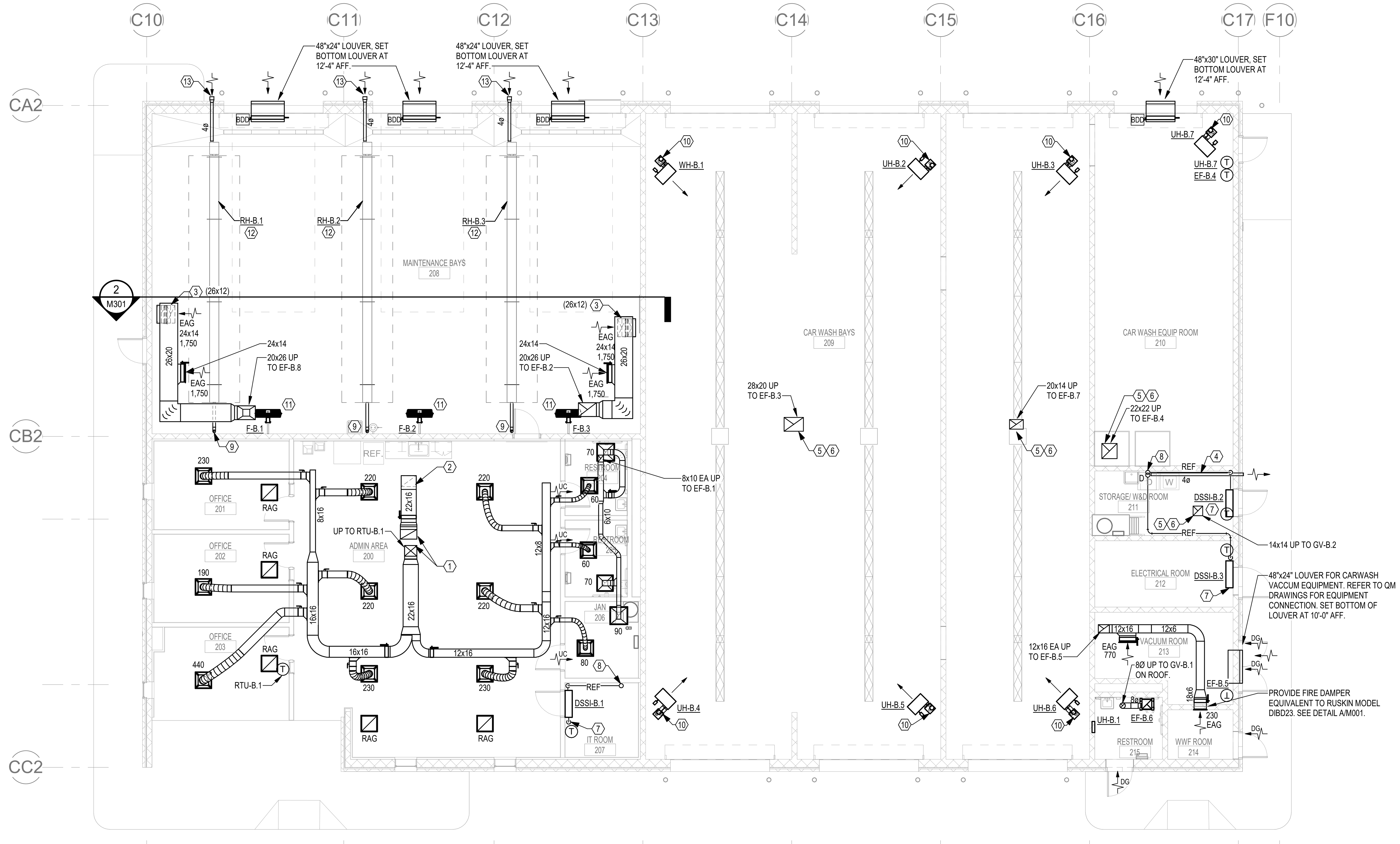

1 1/8" = 1'-0" **HVAC FLOOR PLAN - BUILDING B**

CONSTRUCTION KEYNOTES

1. DROP DUCTWORK DOWN AS REQUIRED TO SET BOTTOM OF DUCTWORK AT 24" ABOVE CEILING.
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8. REFRIGERANT PIPING UP TO ROOF MOUNTED CONDENSING UNIT.
9. SINGLE EXHAUST VENT UP THROUGH ROOF, SEE DETAIL C/M502.
10. COMBINATION FLUE/VENT THRU ROOF. SEE DETAIL J/M503.
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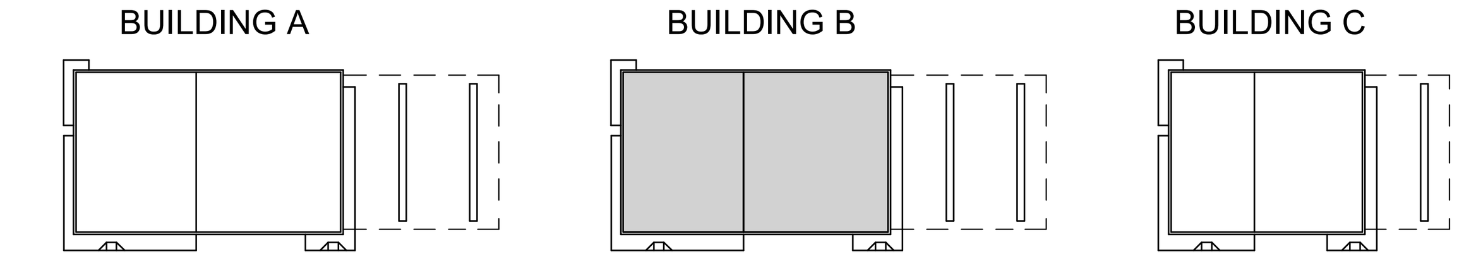
13. RADIANT GAS HEATER COMBUSTION AIR INLET, SEE DETAIL F/M502.



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Scott T. Craig Jr., P.E.
FL LICENSE NUMBER
#73938

PROJECT NUMBER	144124059
DATE	01/17/2025
SCALE	1/8" = 1'-0"
DESIGNED BY	RDR
DRAWN BY	MAW
CHECKED BY	STC

THREE BAY FLOOR PLAN - BUILDING B

QUICK - TURNAROUND FACILITY
PREPARED FOR
TALLAHASSEE INTERNATIONAL AIRPORT
CITY OF TALLAHASSEE
FLORIDA

SHEET NUMBER
M102

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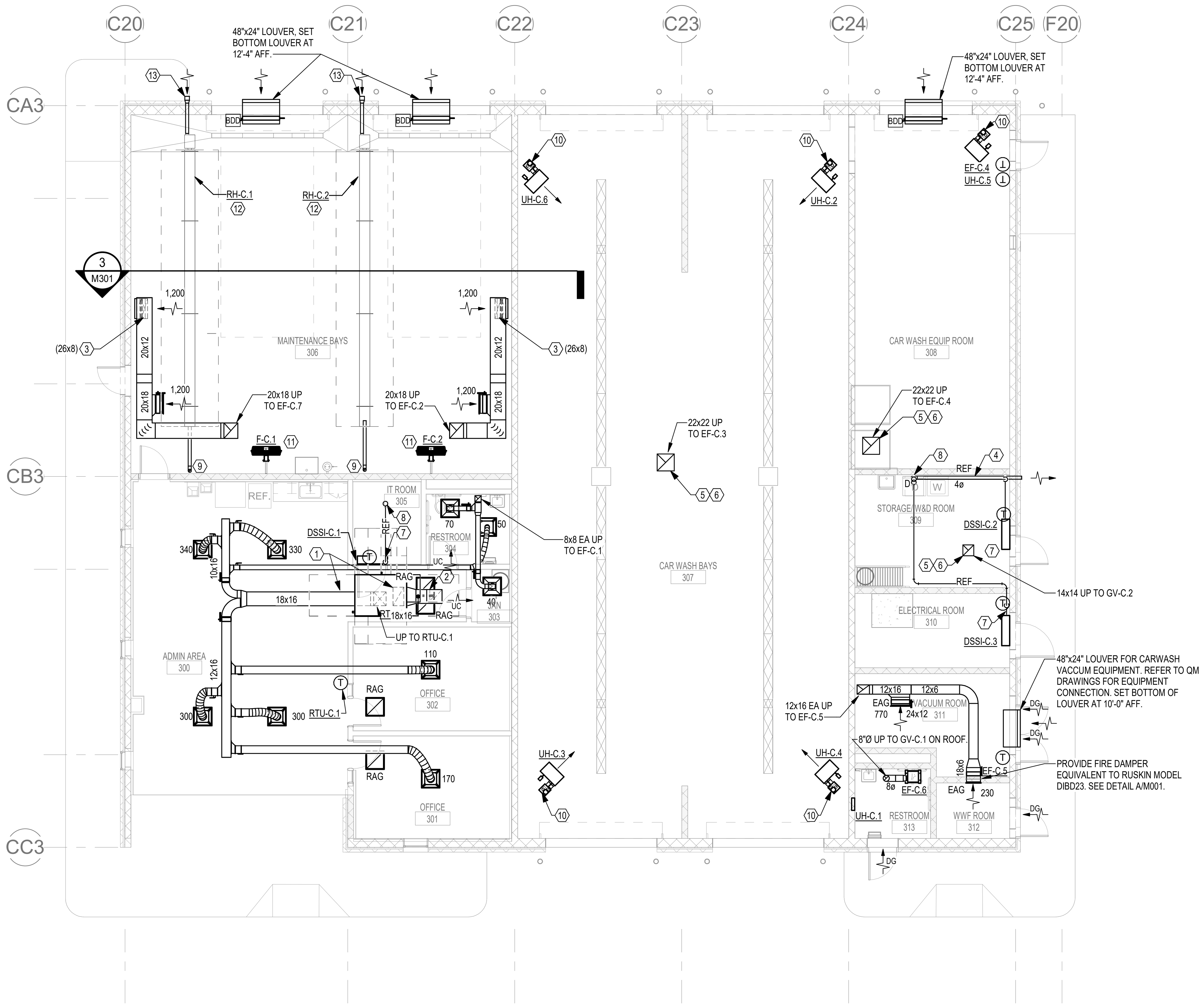
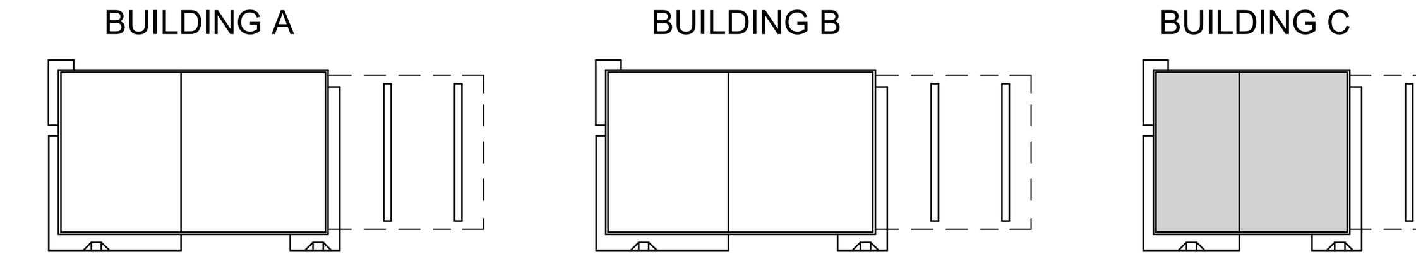


1 1/8" = 1'-0" **HVAC FLOOR PLAN - BUILDING C**



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Scott T. Craig Jr., P.E.
FL LICENSE NUMBER
#73938

PROJECT NUMBER	144124059
DATE	01/17/2025
SCALE	1/8" = 1'-0"
DESIGNED BY	RDR
DRAWN BY	MAW
CHECKED BY	STC

TWO BAY FLOOR PLAN - BUILDING C

QUICK - TURNAROUND FACILITY
PREPARED FOR
TALLAHASSEE INTERNATIONAL AIRPORT
CITY OF TALLAHASSEE FLORIDA

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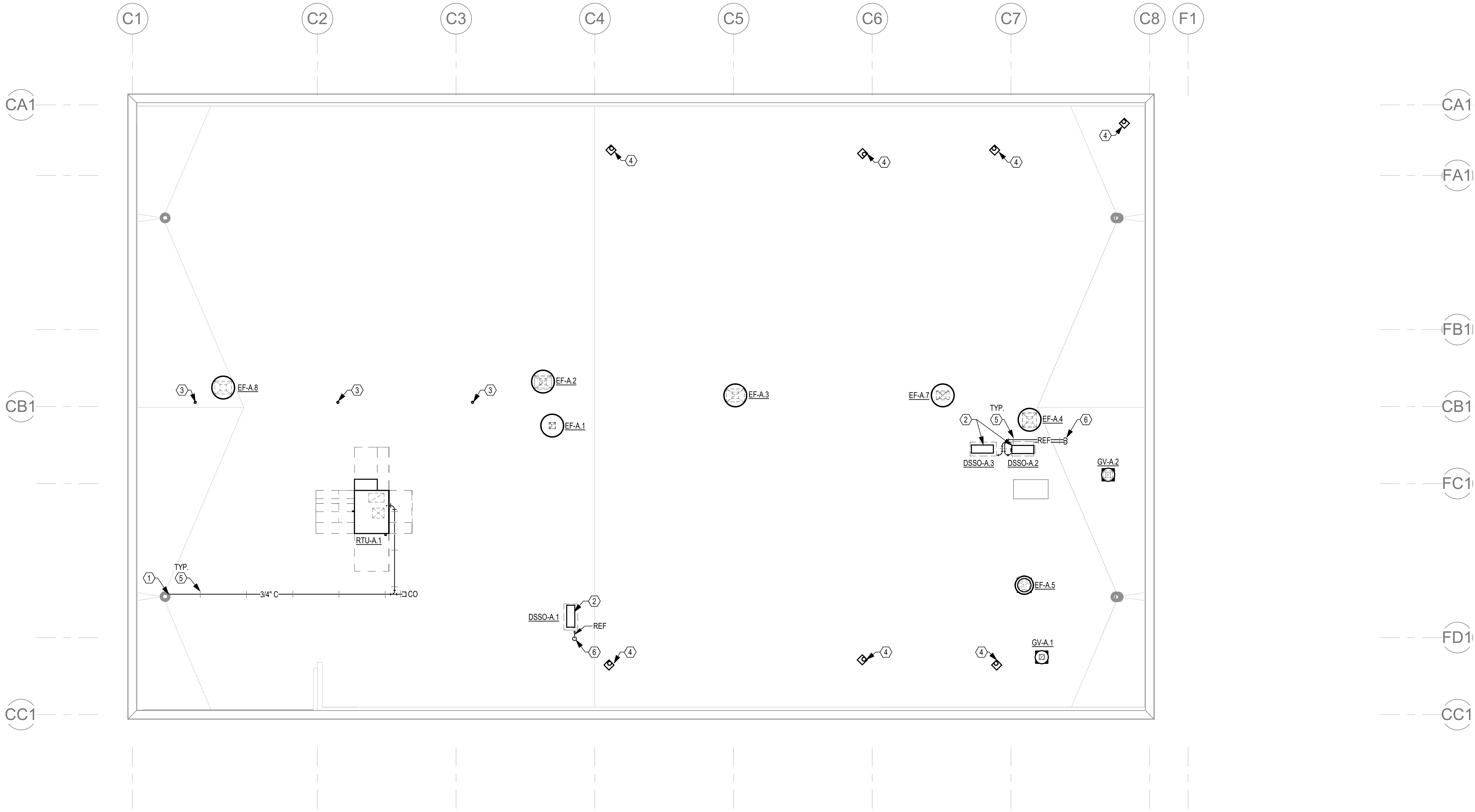
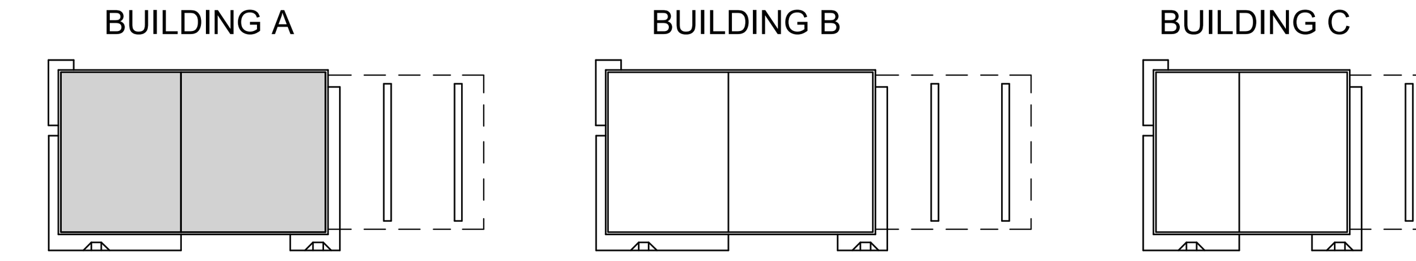
CONSTRUCTION KEYNOTES

1. MAINTAIN 1% SLOPE AWAY FROM RTU, AND ROUTE CONDENSATE PIPING TO ROOF DRAIN. SEE DETAIL E/M502.
2. CONDENSING UNIT ON ROOF. SEE DETAIL G/M501.
3. RADIANT HEATER EXHAUST VENT UP THROUGH ROOF. SEE DETAIL C/M502.
4. COMBINATION FLUE/VENT THRU ROOF. SEE DETAIL C/M503.
5. PROVIDE ROOF PIPE SUPPORT EQUIVALENT TO PORTABLE PIPE HANGERS MODEL SS8-C AND SECURE PIPING TO SUPPORT PER MANUFACTURER'S RECOMMENDATIONS.
6. ROUTE REFRIGERANT PIPING DOWN TO/FROM BELOW. SEE DETAIL B/M502.



1 1/8" = 1'-0" **HVAC ROOF PLAN - BUILDING A**



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Scott T. Craig Jr., P.E.
FL LICENSE NUMBER
#73938

PROJECT NUMBER	144124059
DATE	01/17/2025
SCALE	1/8" = 1'-0"
DESIGNED BY	RDR
DRAWN BY	MAW
CHECKED BY	STC

THREE BAY ROOF PLAN - BUILDING A

QUICK - TURNAROUND FACILITY
PREPARED FOR
TALLAHASSEE INTERNATIONAL AIRPORT
CITY OF TALLAHASSEE
FLORIDA

SHEET NUMBER
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CONSTRUCTION KEYNOTES

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5. PROVIDE ROOF PIPE SUPPORT EQUIVALENT TO PORTABLE PIPE HANGERS MODEL SS8-C AND SECURE PIPING TO SUPPORT PER MANUFACTURER'S RECOMMENDATIONS.
6. ROUTE REFRIGERANT PIPING DOWN TO/FROM BELOW. SEE DETAIL B/M502.

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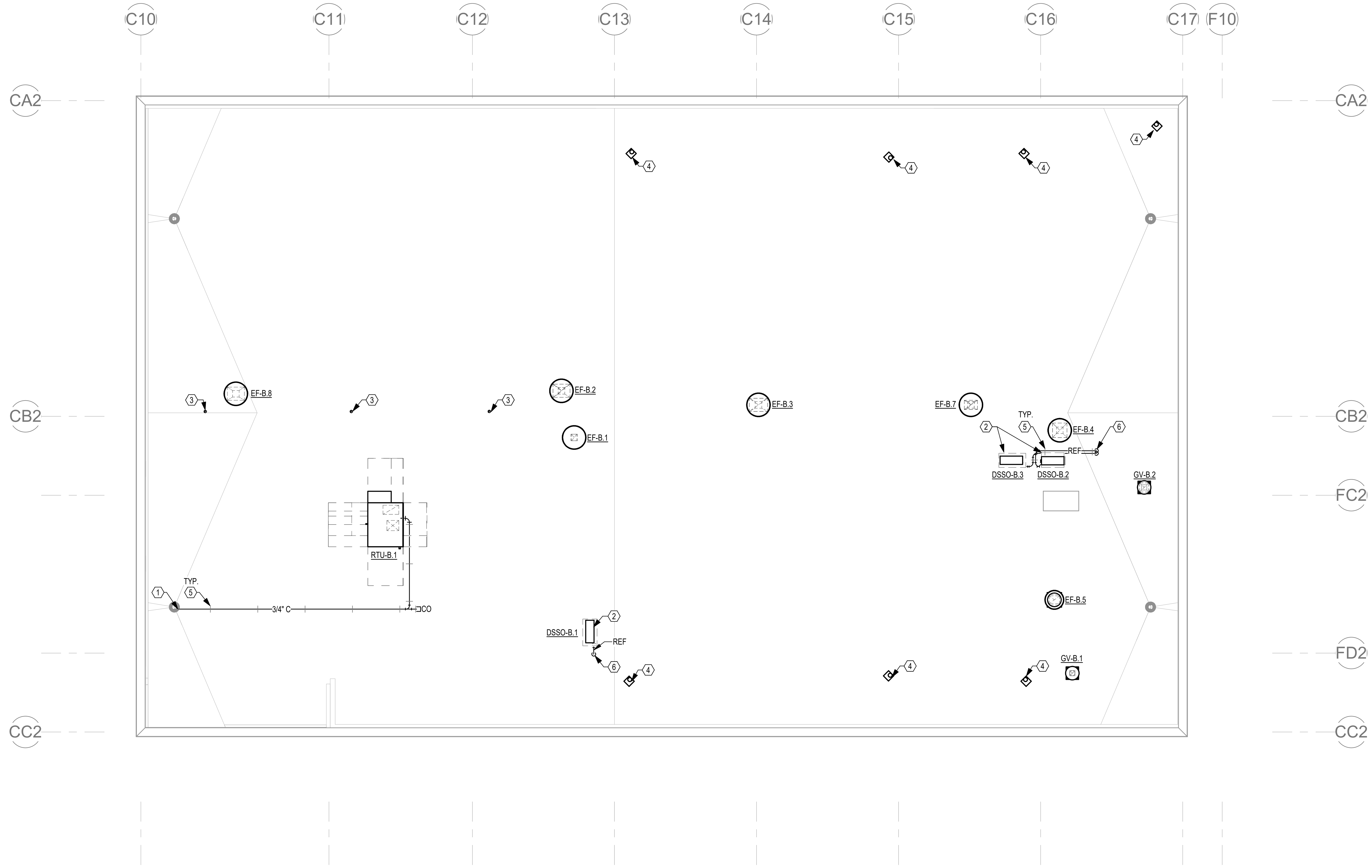
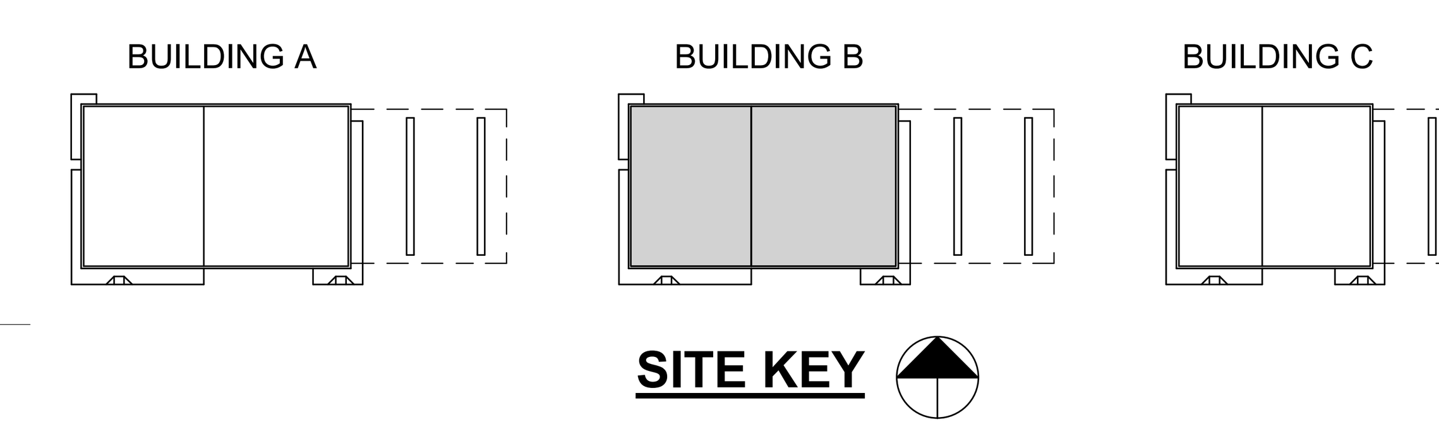


1 1/8" = 1'-0" **HVAC ROOF PLAN - BUILDING B**



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FL LICENSE NUMBER
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PROJECT NUMBER 144124059
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THREE BAY ROOF PLAN - BUILDING B

QUICK - TURNAROUND FACILITY
PREPARED FOR
TALLAHASSEE INTERNATIONAL AIRPORT
CITY OF TALLAHASSEE FLORIDA

SHEET NUMBER
M202

CONSTRUCTION KEYNOTES

1. MAINTAIN 1% SLOPE AWAY FROM RTU, AND ROUTE CONDENSATE PIPING TO ROOF DRAIN. SEE DETAIL E/M502.
2. CONDENSING UNIT ON ROOF. SEE DETAIL G/M501.
3. RADIANT HEATER EXHAUST VENT UP THROUGH ROOF. SEE DETAIL C/M502.
4. COMBINATION FLUE/VENT THRU ROOF. SEE DETAIL C/M503.
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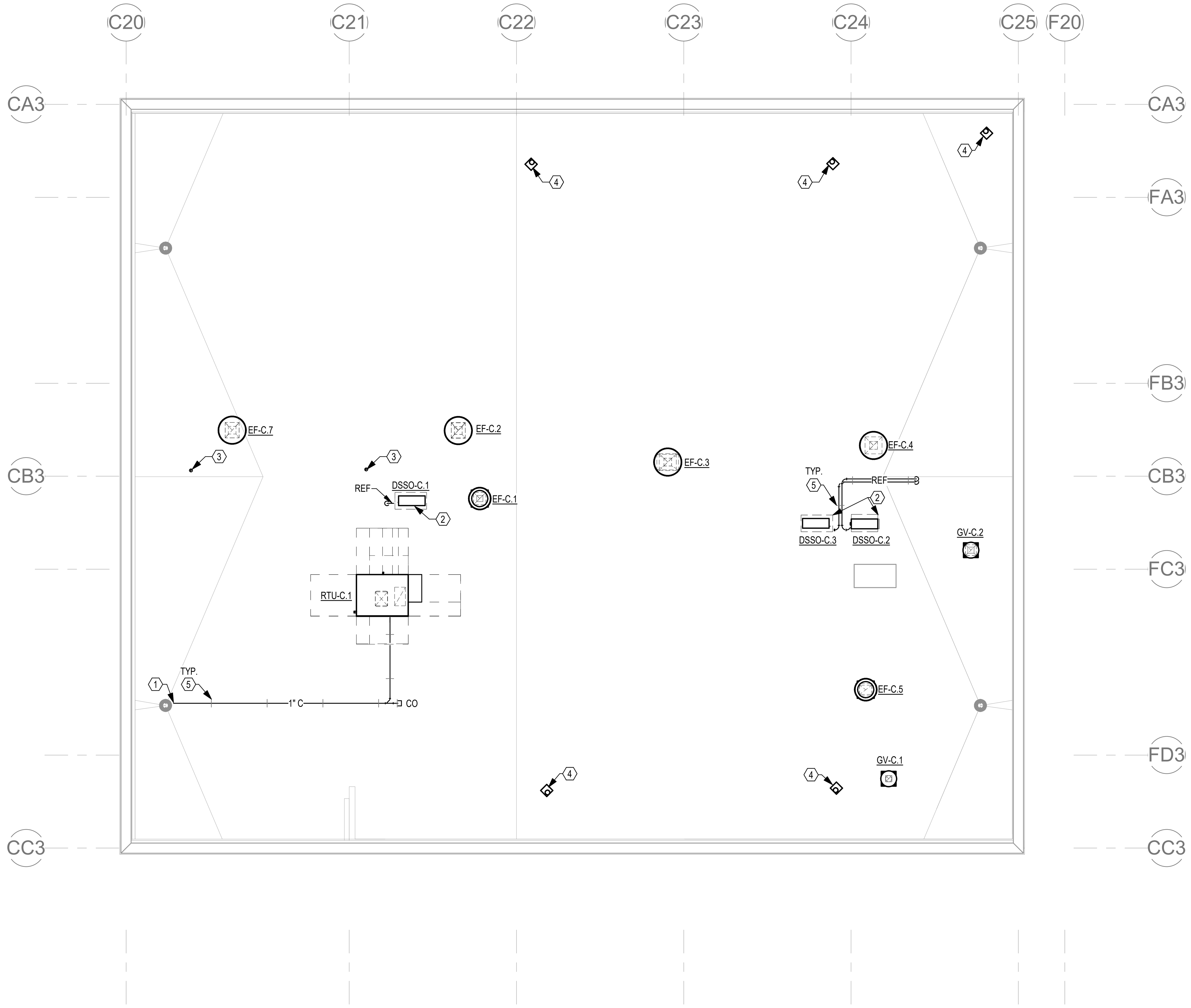
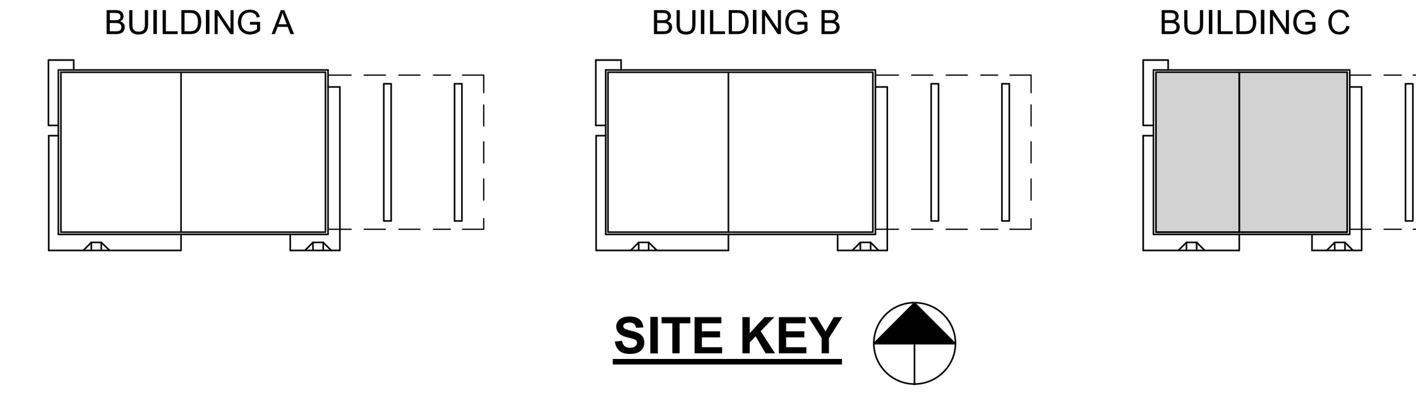


1 1/8" = 1'-0" **HVAC ROOF PLAN - BUILDING C**



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PROJECT NUMBER 144124059
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TWO BAY ROOF PLAN - BUILDING C

QUICK - TURNAROUND FACILITY
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CITY OF TALLAHASSEE FLORIDA

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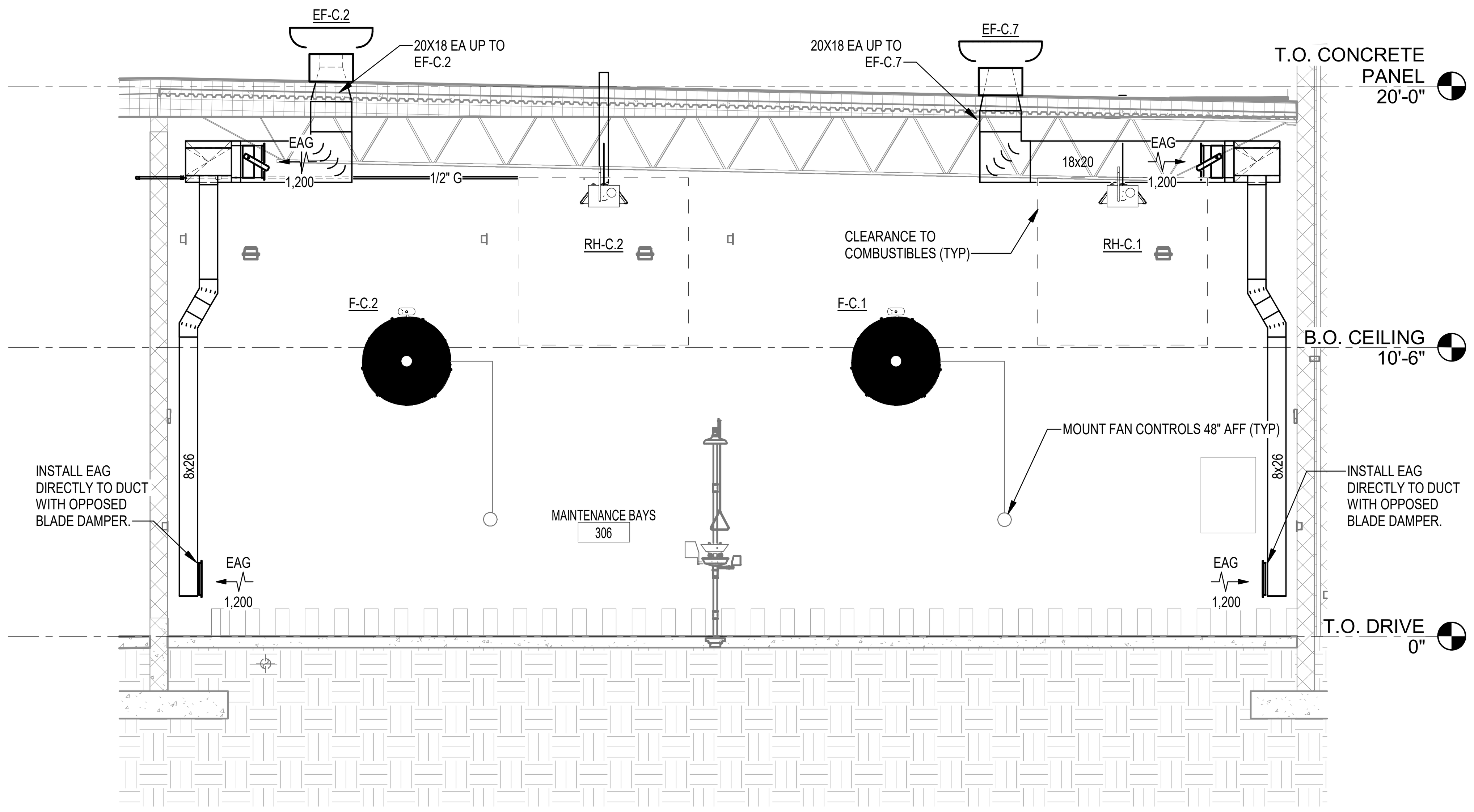
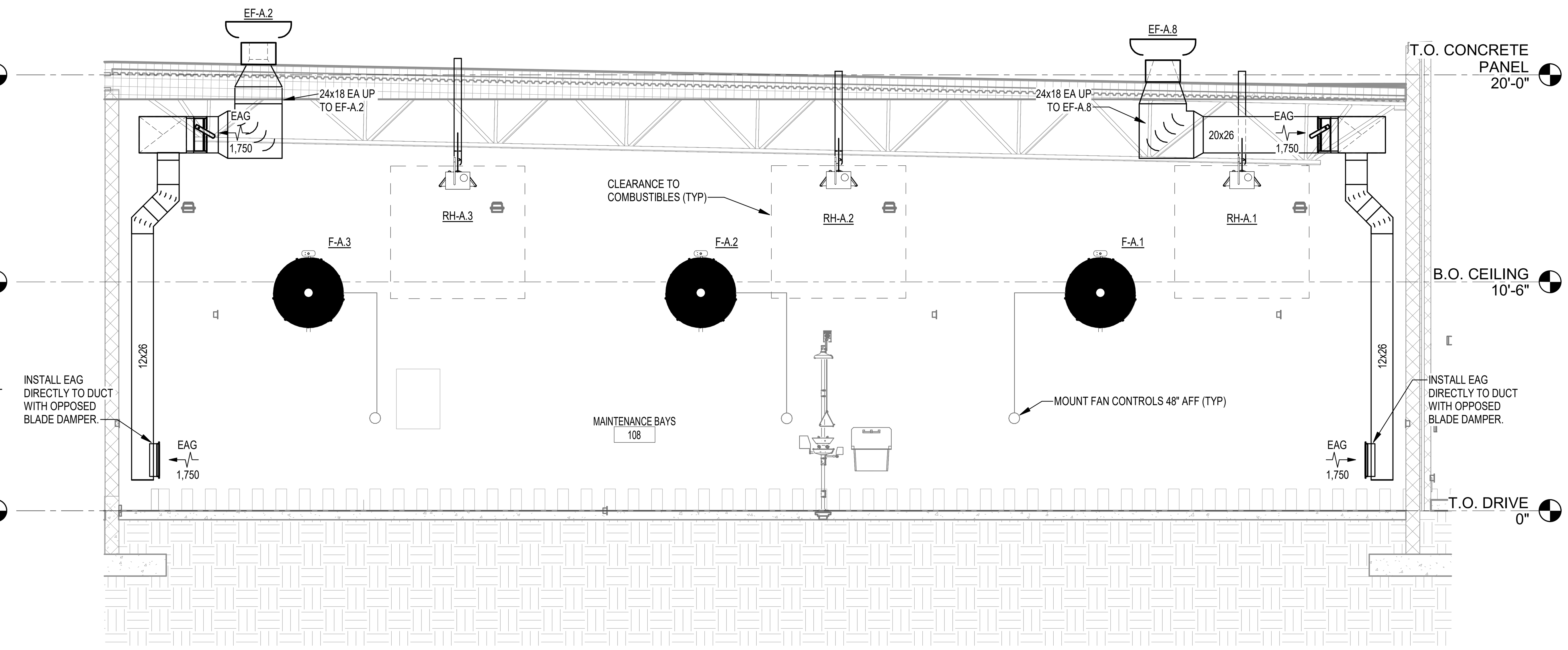
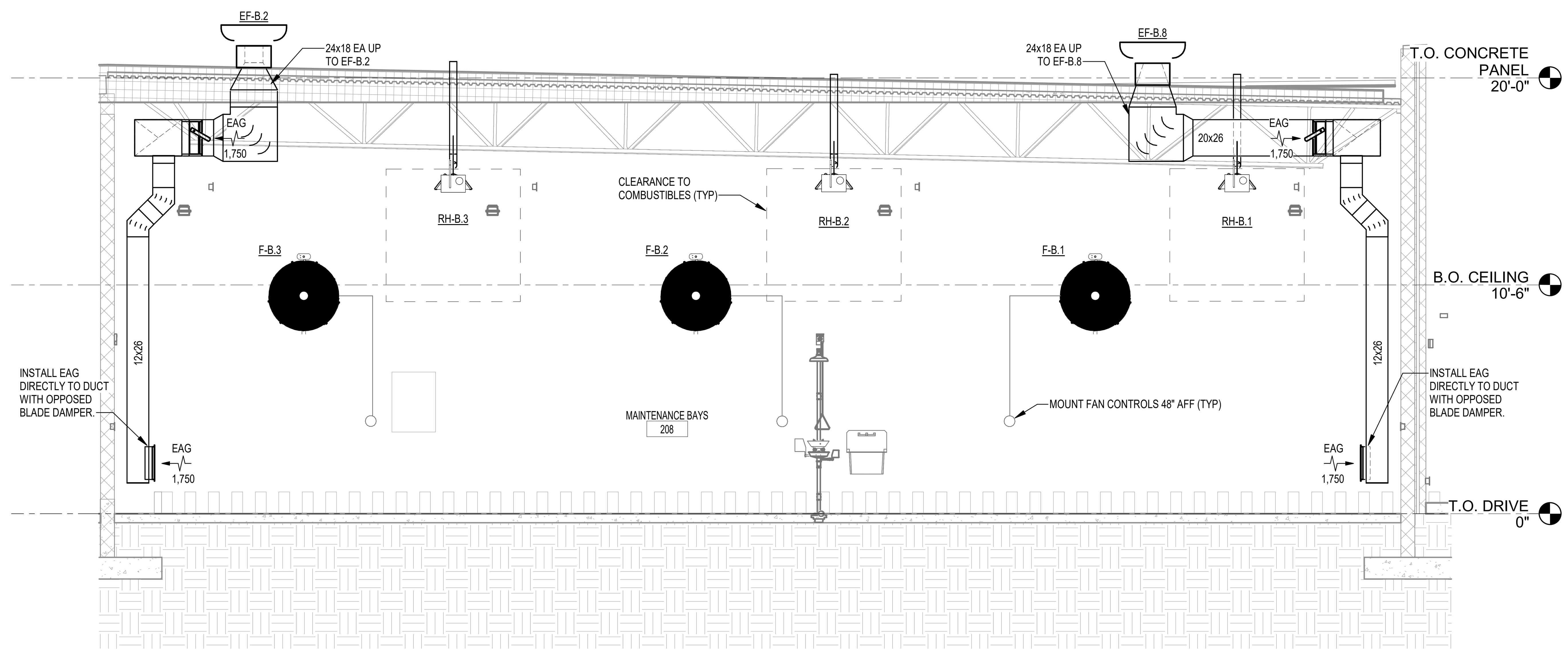




3 M301 MAINTENANCE BAY - BUILDING C
1/4" = 1'-0"

1 M301 MAINTENANCE BAY - BUILDING A
1/4" = 1'-0"



2 M301 MAINTENANCE BAY - BUILDING B
1/4" = 1'-0"

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TALLAHASSEE, FL 32308
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H2 ENGINEERING

LICENSED PROFESSIONAL
Scott T. Craig Jr., P.E.
FL LICENSE NUMBER
#73938

PROJECT NUMBER 144124059
DATE 01/17/2025
1/4" = 1'-0"
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DRAWN BY MAW
CHECKED BY STC

SECTIONS

QUICK - TURNAROUND FACILITY
PREPARED FOR
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CITY OF TALLAHASSEE FLORIDA

SHEET NUMBER
M301

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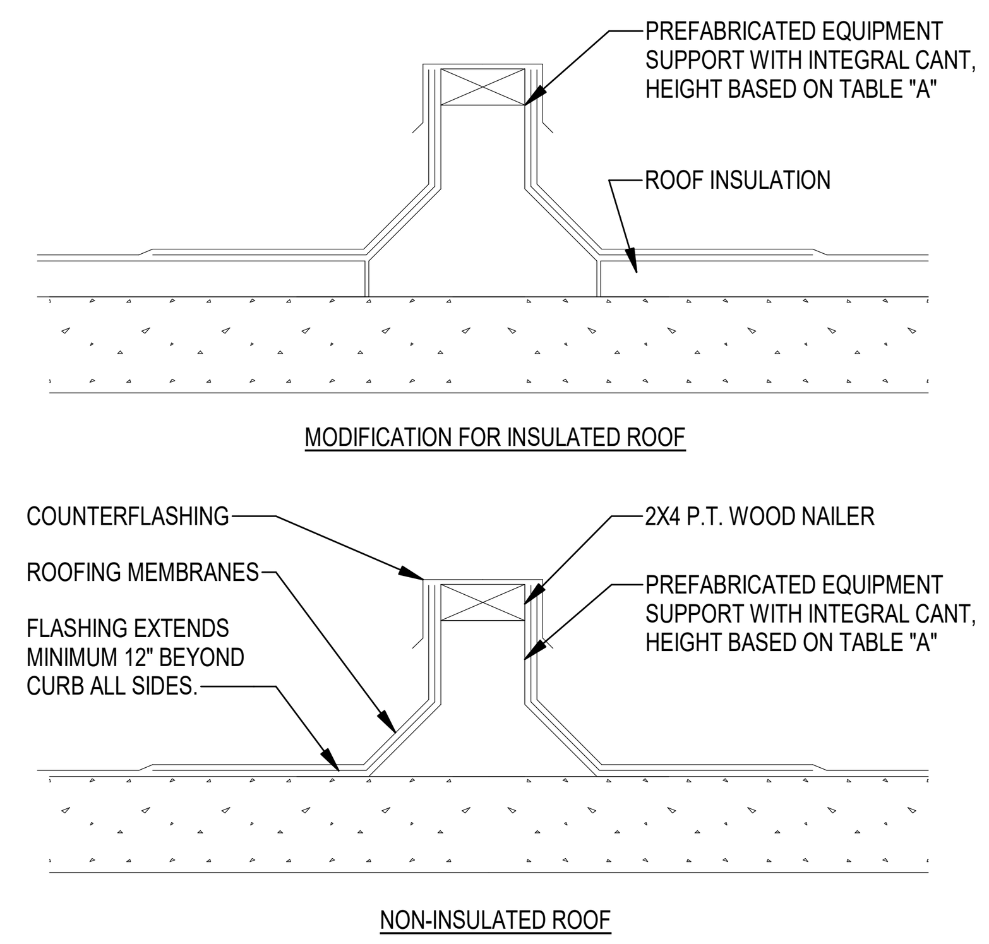


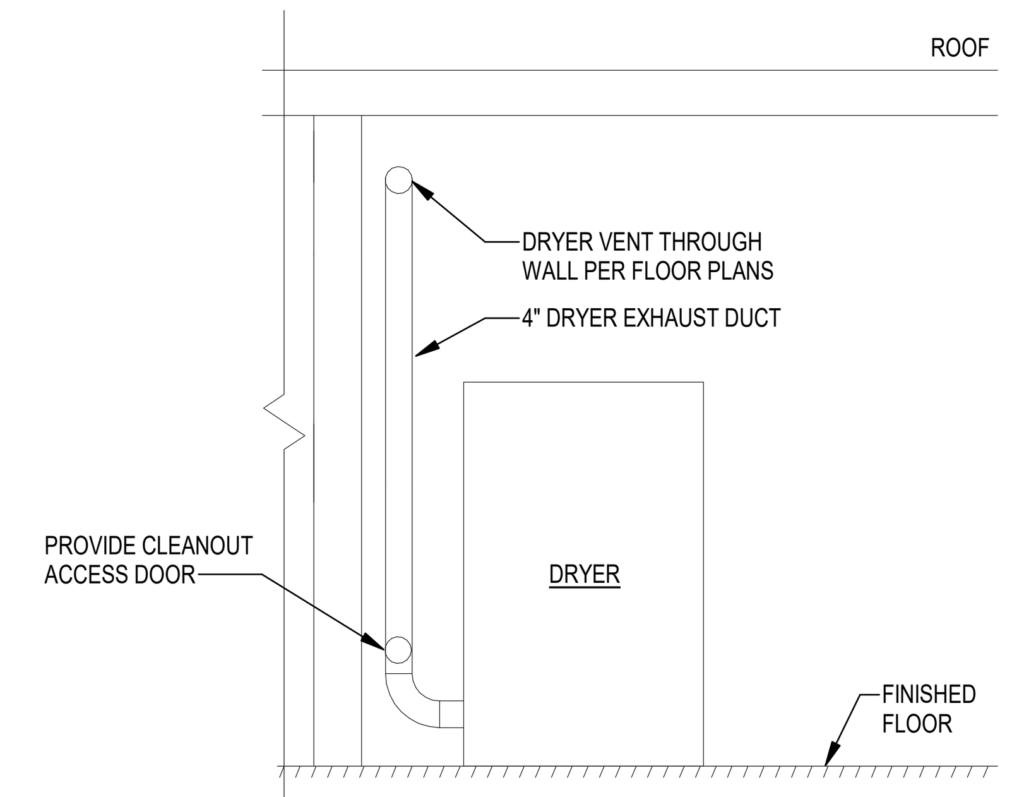
MODIFICATION FOR INSULATED ROOF

NON-INSULATED ROOF

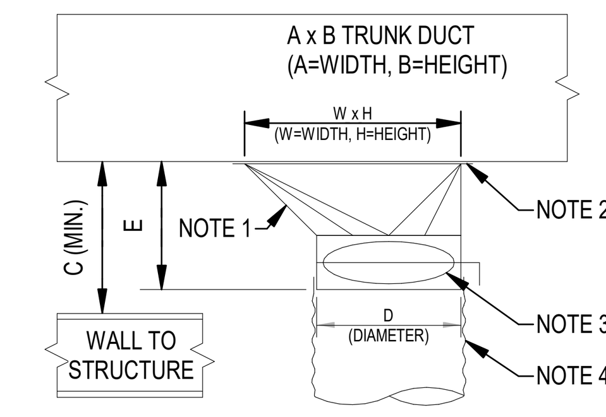
NOTES:

1. SECURE EQUIPMENT SUPPORT TO ROOF WITH SHEETMETAL SCREWS, LAG BOLTS OR OTHER METHOD CONSISTENT WITH ROOF CONSTRUCTION.
2. SECURE COUNTERFLASHING TO WOOD NAILING STRIP WITH 3/8" CADMIUM PLATED LAG BOLTS ON 12" MAX. CENTERS.

G ROOFTOP EQUIPMENT SUPPORT



D DRYER EXHAUST

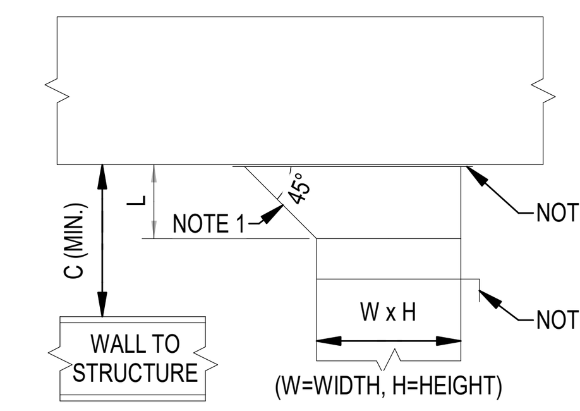


ROUND DUCT

D	E (NOTE 5)	WxH (NOTE 5)	TRUNK DUCT HEIGHT (B MIN.)	C	
				NO FIRE DAMPER	WITH FIRE DAMPER
6	8.5	12 x 6	8	9	12
8	8.5	12 x 6	8	9	12
10	9.5	16 x 6.75	10	10	13
12	10.5	18 x 8.5	12	11	14
14	10.5	20 x 9.5	12	11	14
16	12	24 x 12	14	13	16

DIMENSIONS BASED ON CROWN PRODUCTS CO., INC.

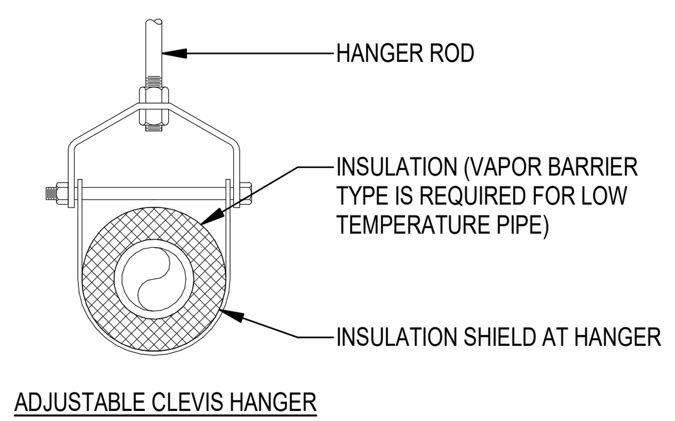
NOTES:
1. 45° ENTRY.
2. 1" WIDE FLANGE WITH GASKET SEAL AROUND ENTIRE PERIMETER.
3. PROVIDE MANUAL BALANCING DAMPER. OPERATOR SHALL PENETRATE INSULATION.
4. USE ROUND TYPE TAKE-OFF FOR SUPPLY AIR TO NOT MORE THAN ONE TERMINAL.



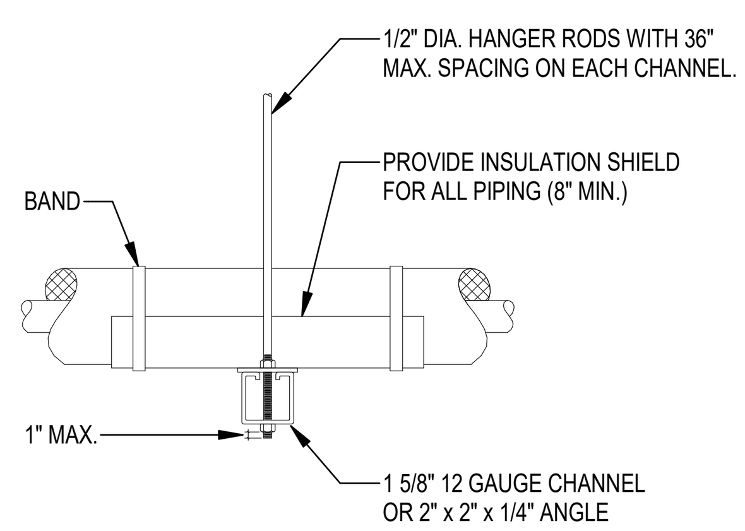
L = W/4 (4"MIN.)
H = B-2 (MAX.)
C = L+4 (WITH FIRE DAMPER)
C = L+2 (WITHOUT FIRE DAMPER)

RECTANGULAR DUCT

A TYPICAL DUCT TAKE-OFF FITTINGS



ADJUSTABLE CLEVIS HANGER



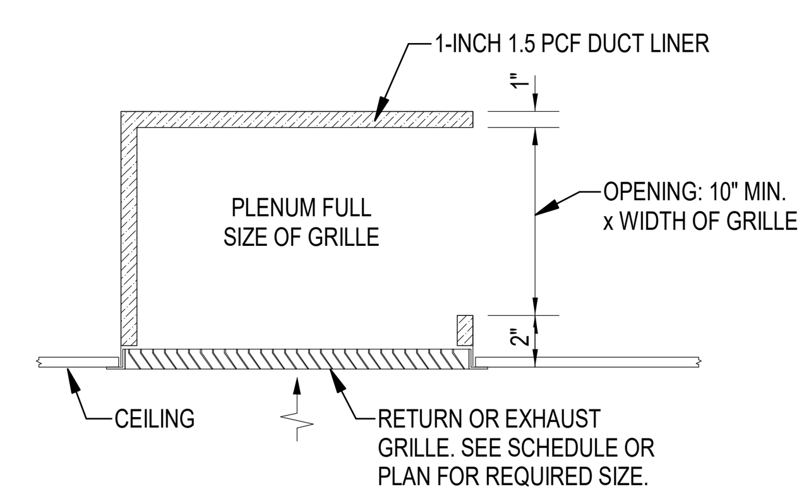
SIDE VIEW

TRAPEZE HANGER FOR UP TO 1000 LB. UNIFORM LOAD

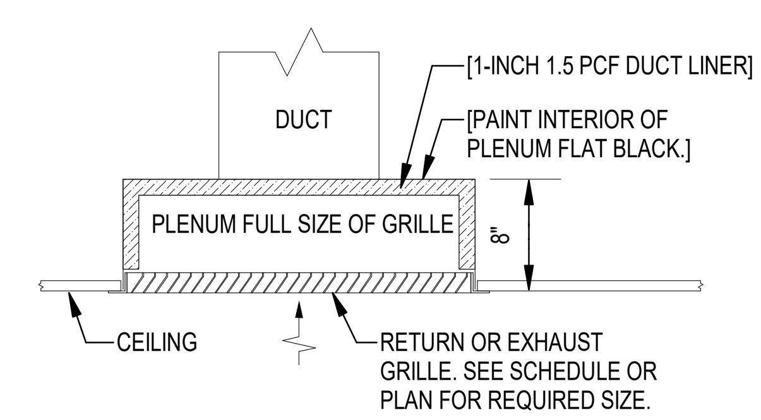
NOTES:

1. SEE SPECIFICATIONS FOR SPACING OF HANGERS.

H TYPICAL PIPE HANGERS



PLENUM RETURN GRILLES

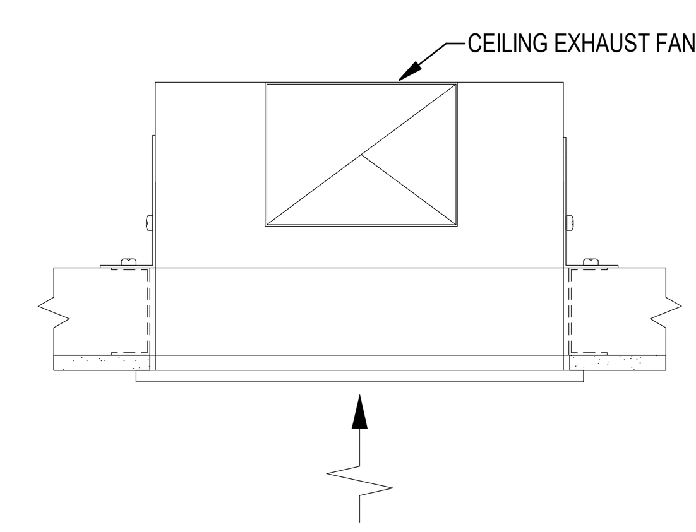


TOP ENTRY

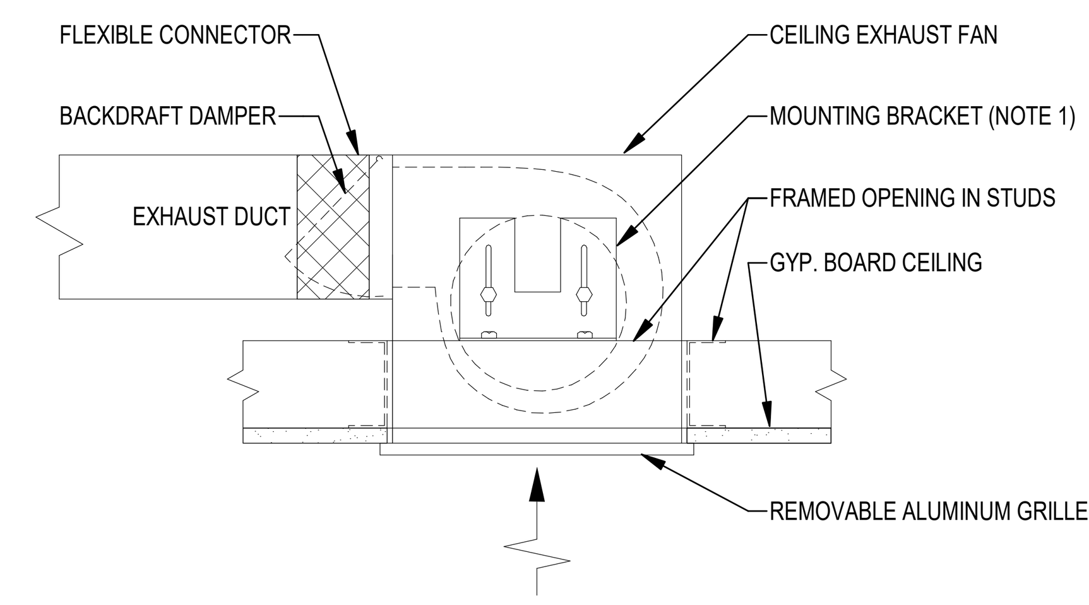
NOTES:

1. INSTALL BLADES OF GRILLE SO SIGHT LINE INTO PLENUM IS OBSCURED FROM ROOM.
2. PROVIDE APPROPRIATE MOUNTING HARDWARE FOR GRILLE TO ACCOMMODATE CEILING TYPE.

E RETURN OR EXHAUST CEILING GRILLE



FRONT VIEW

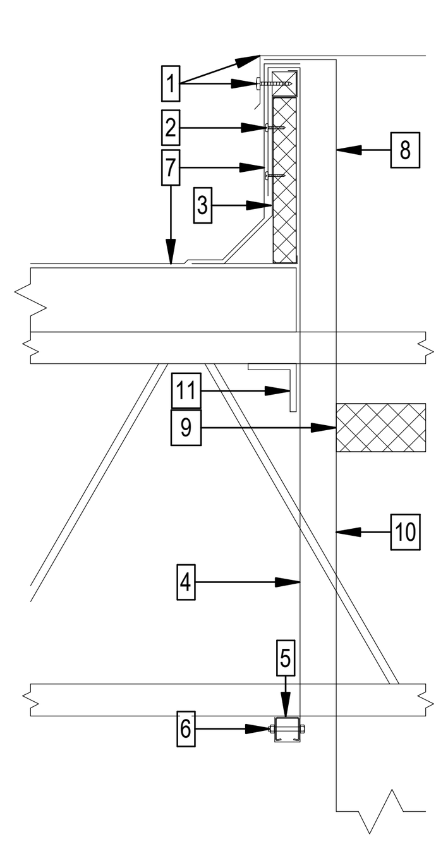


SIDE VIEW

NOTES:

1. SUPPORT CEILING FAN LOCATED ABOVE LAY-IN CEILING FROM THE BUILDING STRUCTURE, INDEPENDENT OF CEILING.

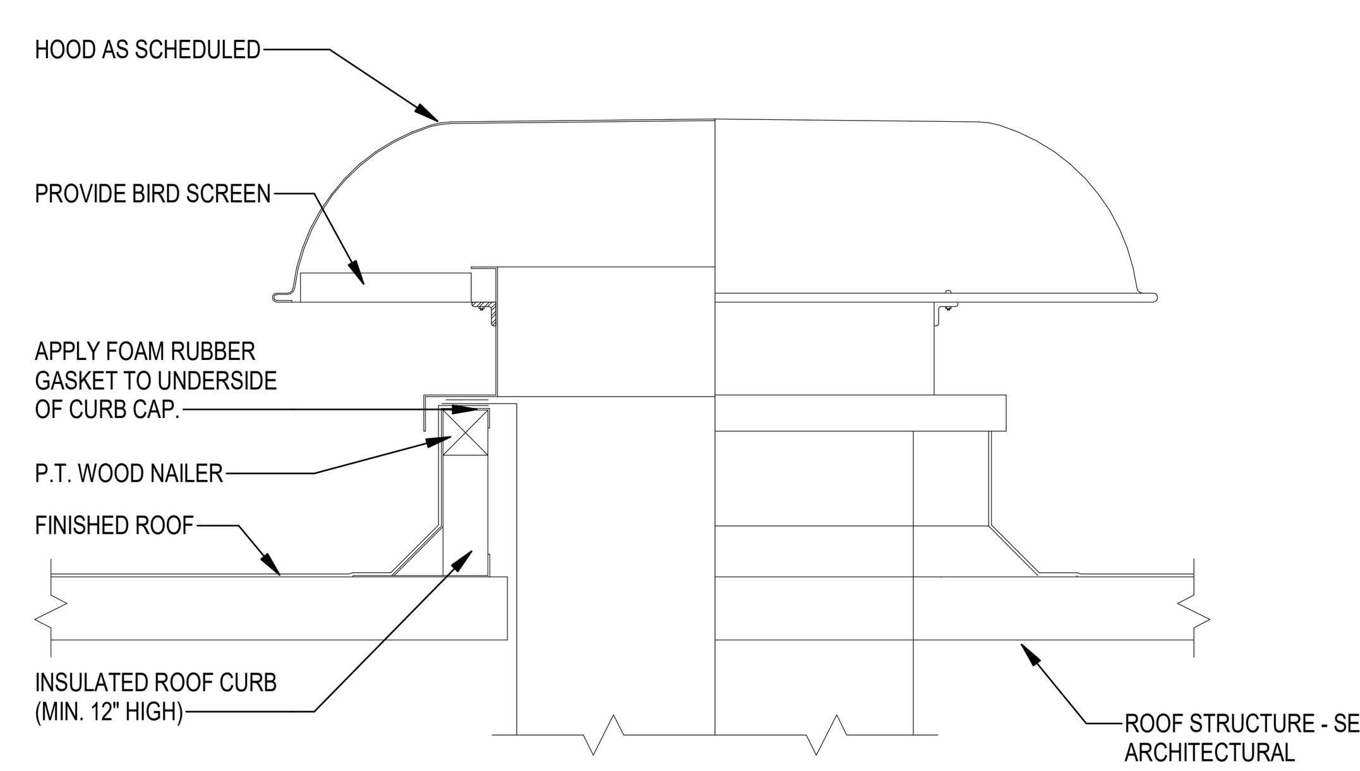
B CEILING EXHAUST FAN



KEY NOTES: (THIS DETAIL ONLY)

1. SECURE EQUIPMENT OR CURB CAP TO ROOF CURB WITH LAG BOLTS @ 12" O.C. ALL AROUND. CAULK BOLTS WITH SILICONE. APPLY CONTINUOUS FOAM RUBBER GASKET TO UNDERSIDE OF CURB CAP.
2. WRAP STRAP OVER TOP OF CURB AND ATTACH TO OUTSIDE OF CURB WITH FOUR STAINLESS STEEL SHEET METAL SCREWS.
3. PREFABRICATED INSULATED ROOF CURB WITH PRESSURE TREATED WOOD NAILER AND INTEGRAL CANT, MIN. 12" HIGH (SEE SPECIFICATIONS). PROVIDE RAISED CANT MODEL FOR INSULATED ROOF.
4. GALVANIZED STEEL STRAPS ON TWO OPPOSITE SIDES - SIMPSON "STRONG-TIE" CMSTC16, OR EQUAL.
5. UNISTRUT BOLTED TO ROOF STRUCTURE (SPAN AT LEAST TWO BAR JOISTS)
6. WRAP STRAP AROUND THREE SIDES OF UNISTRUT AND FASTEN WITH 1/4" STAINLESS STEEL BOLT, WASHER, LOCK WASHER AND NUT.
7. ROOF MEMBRANE SHALL TURN UP ON OUTSIDE OF ROOF CURB AND COVER THE TIE-DOWN STRAPS. FASTEN TO WOOD NAILER AT TOP OF CURB.
8. PROVIDE DUCT (WHERE INDICATED ON PLANS) WITH FLANGE ATTACHED TO TOP OF ROOF CURB. ALLOW SPACE FOR DUCT INSULATION, IF REQUIRED.
9. FLEXIBLE DUCT CONNECTION
10. SUPPORT LOWER SECTION OF DUCT FROM ROOF STRUCTURE.
11. 3"x 3"x ¼" GALVANIZED STEEL ANGLES WELDED TO ROOF STRUCTURE (SPAN AT LEAST TWO BAR JOISTS). PROVIDE ON EACH SIDE PERPENDICULAR TO BAR JOISTS.

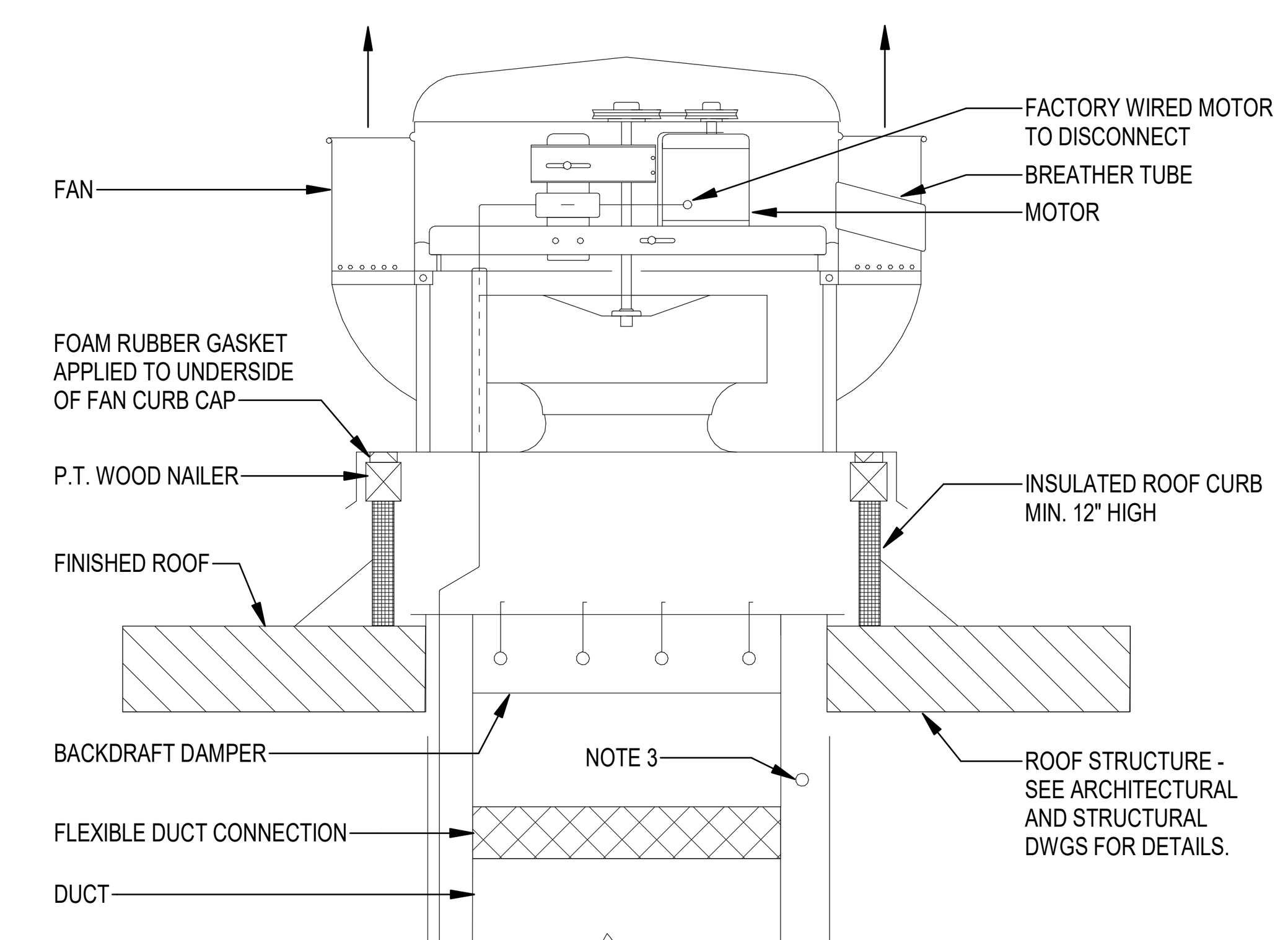
J ROOF CURB AND TIE DOWN



NOTES:

1. SECURE HOOD TO ROOF CURB WITH SHEET METAL SCREWS @ 12" O.C. ALL AROUND.
2. SECURE CURB TO ROOF WITH SHEET METAL SCREWS, LAG BOLTS OR OTHER METHOD CONSISTENT WITH ROOF CONSTRUCTION AND AS NECESSARY TO MEET REQUIRED WIND LOADING.
3. SEE DETAIL J/M501 FOR ROOF CURB TIE-DOWN.

F GRAVITY ROOF VENTILATOR



NOTES:

1. SECURE FAN TO CURB AS NECESSARY TO MEET CODE REQUIRED WIND LOADING.
2. SECURE CURB TO ROOF WITH SHEET METAL SCREWS, LAG BOLTS OR OTHER METHOD CONSISTENT WITH ROOF CONSTRUCTION AND AS NECESSARY TO MEET CODE REQUIRED WIND LOADING.
3. MINIMUM 1 1/4" CLEARANCE FOR ELECTRICAL CONDUIT.
4. SEE DETAIL J/M501 FOR ROOF CURB TIE-DOWN.

C UPBLAST ROOF EXHAUST FAN

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PROJECT #: 18-26
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LICENSED PROFESSIONAL
Scott T. Craig Jr., P.E.
FL LICENSE NUMBER
#73938

PROJECT NUMBER 144124059
DATE 01/17/2025
1/8" = 1'-0"
DESIGNED BY RDR
DRAWN BY MAW
CHECKED BY STC

DETAILS

QUICK - TURNAROUND FACILITY
PREPARED FOR
TALLAHASSEE INTERNATIONAL AIRPORT
CITY OF TALLAHASSEE
FLORIDA

SHEET NUMBER
M501

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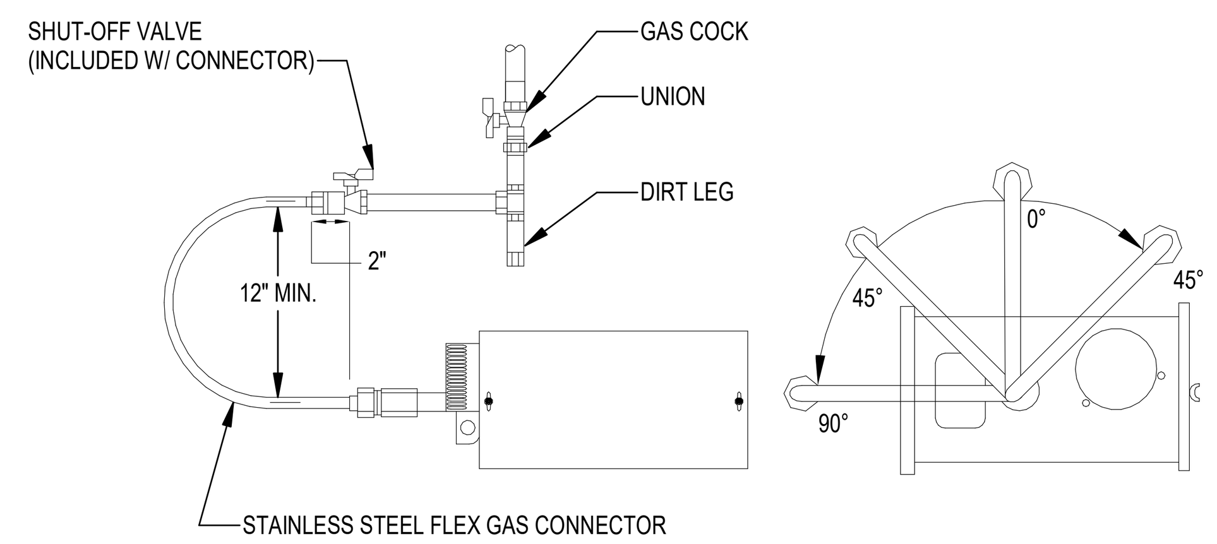
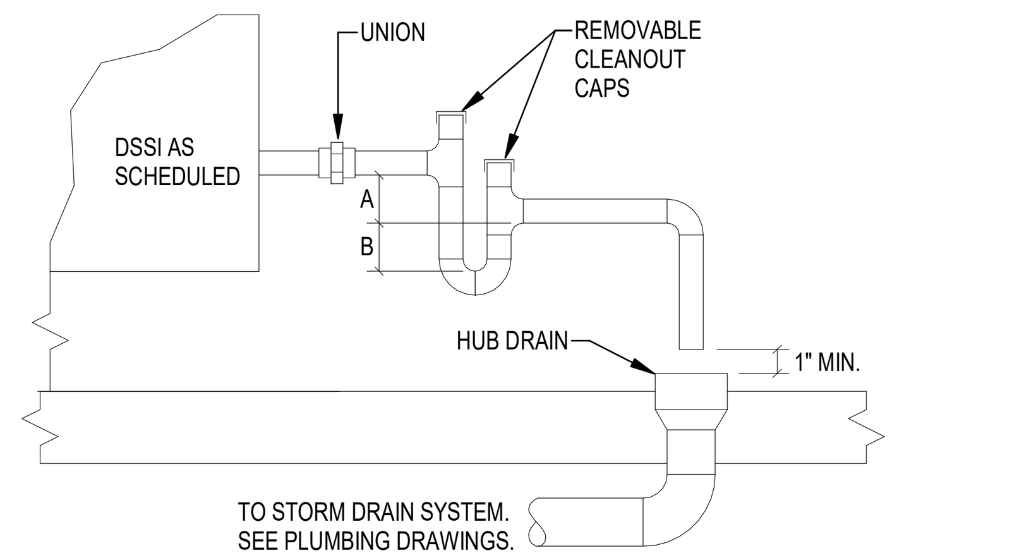


NOTES:

1. GAS PIPE WORK MUST BE INSTALLED AND TESTED IN ACCORDANCE WITH UNITED STATES ANSI Z 223.1/NFPA 54 LATEST ADDITION.
2. INSTALL THE STAINLESS STEEL FLEX GAS CONNECTOR AS SHOWN. THE FLEX GAS CONNECTOR ACCOMMODATES EXPANSION ON THE HEATING SYSTEM AND ALLOWS FOR EASY INSTALLATION AND SERVICE OF THE BURNER. ROBERTS GORDON P/N 91412200.
3. SHUT OFF VALVE MUST BE PARALLEL TO BURNER INLET. THE 2" DISPLACEMENT SHOWN IS FOR THE COLD CONDITION. THIS DISPLACEMENT MAY REDUCE WHEN THE SYSTEM IS FIRED.

G GAS FIRED RADIANT TUBE HEATER CONNECTION



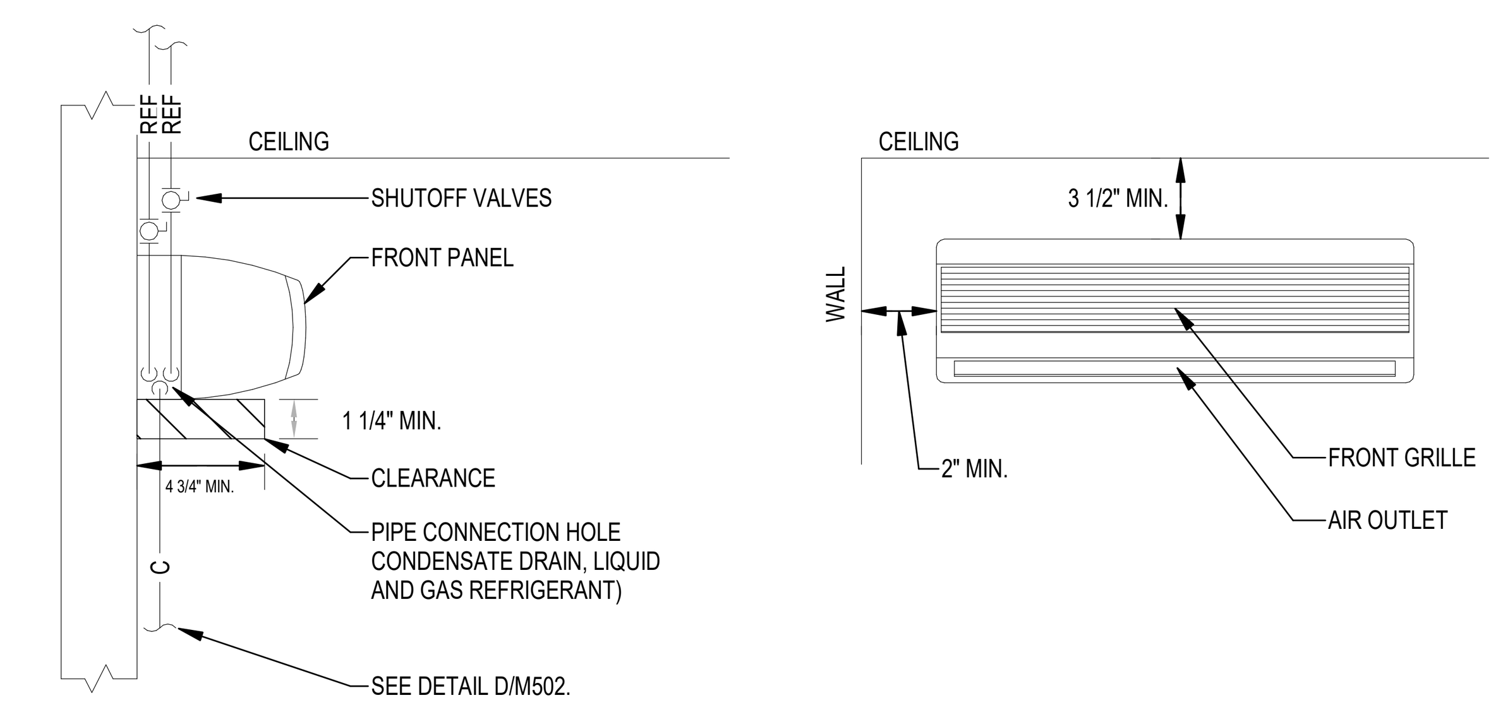
NOTES:

1. DRAIN LINE SHALL BE AT LEAST THE SAME SIZE AS THE CONNECTION ON THE DRAIN PAN (1" MIN.)
2. DRAIN LINE SHALL SLOPE 1/8" PER FOOT (MIN.)
3. SEE SPECIFICATIONS FOR PIPE AND INSULATION MATERIALS.

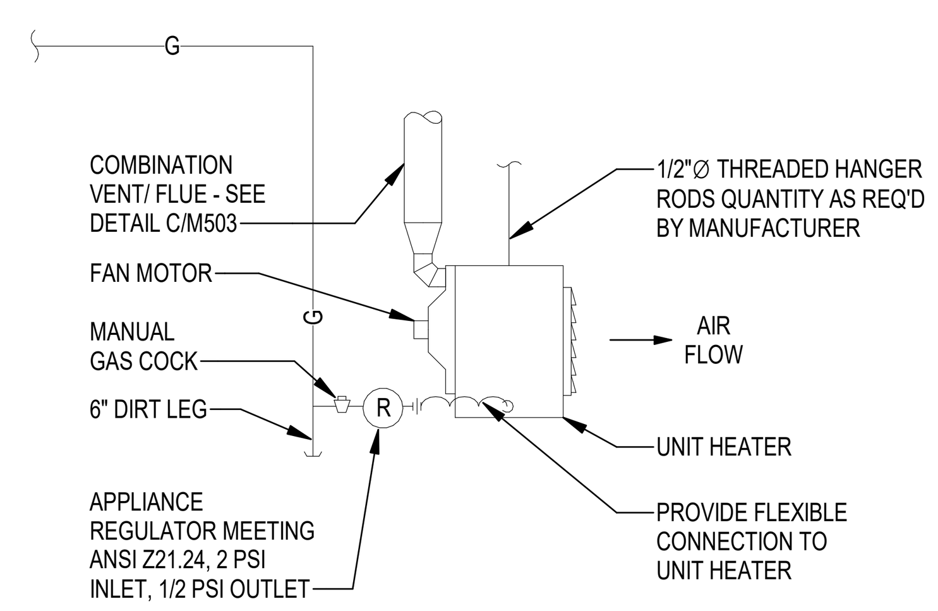
UNIT TYPE	A	B
DRAW-THRU	X PLUS 2"	X
BLOW-THRU	1" MIN.	2X

WHERE X=STATIC PRESSURE IN PAN

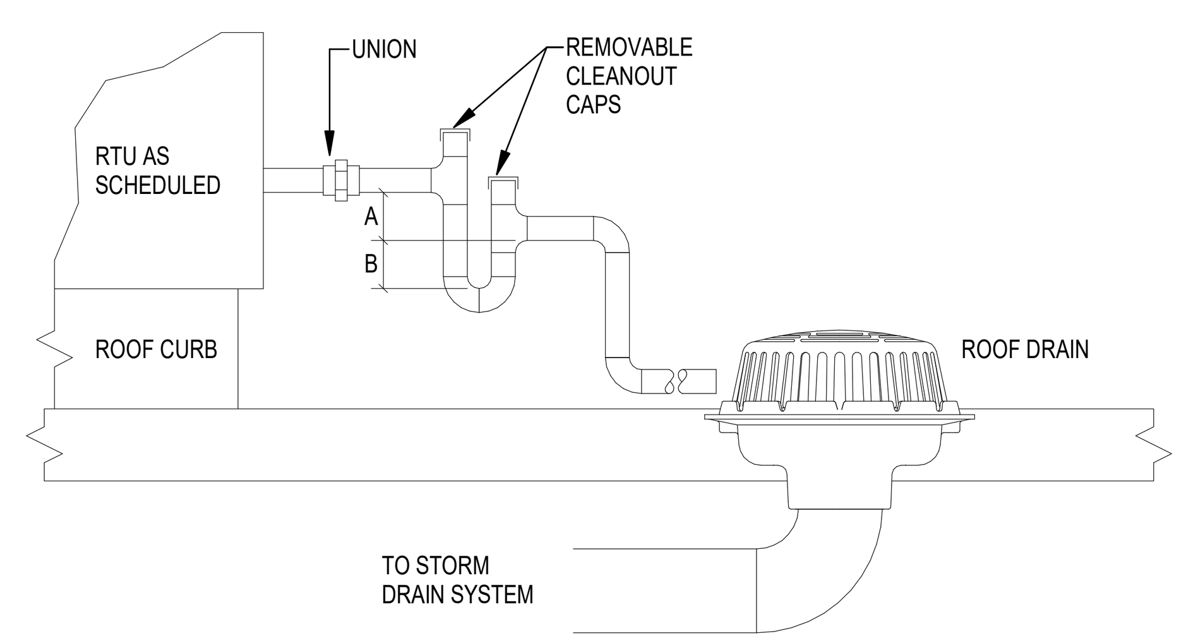
D CONDENSATE DRAIN - SPLIT SYSTEM



A DUCTLESS - WALL MOUNTED INDOOR UNIT



H GAS FIRED UNIT HEATER



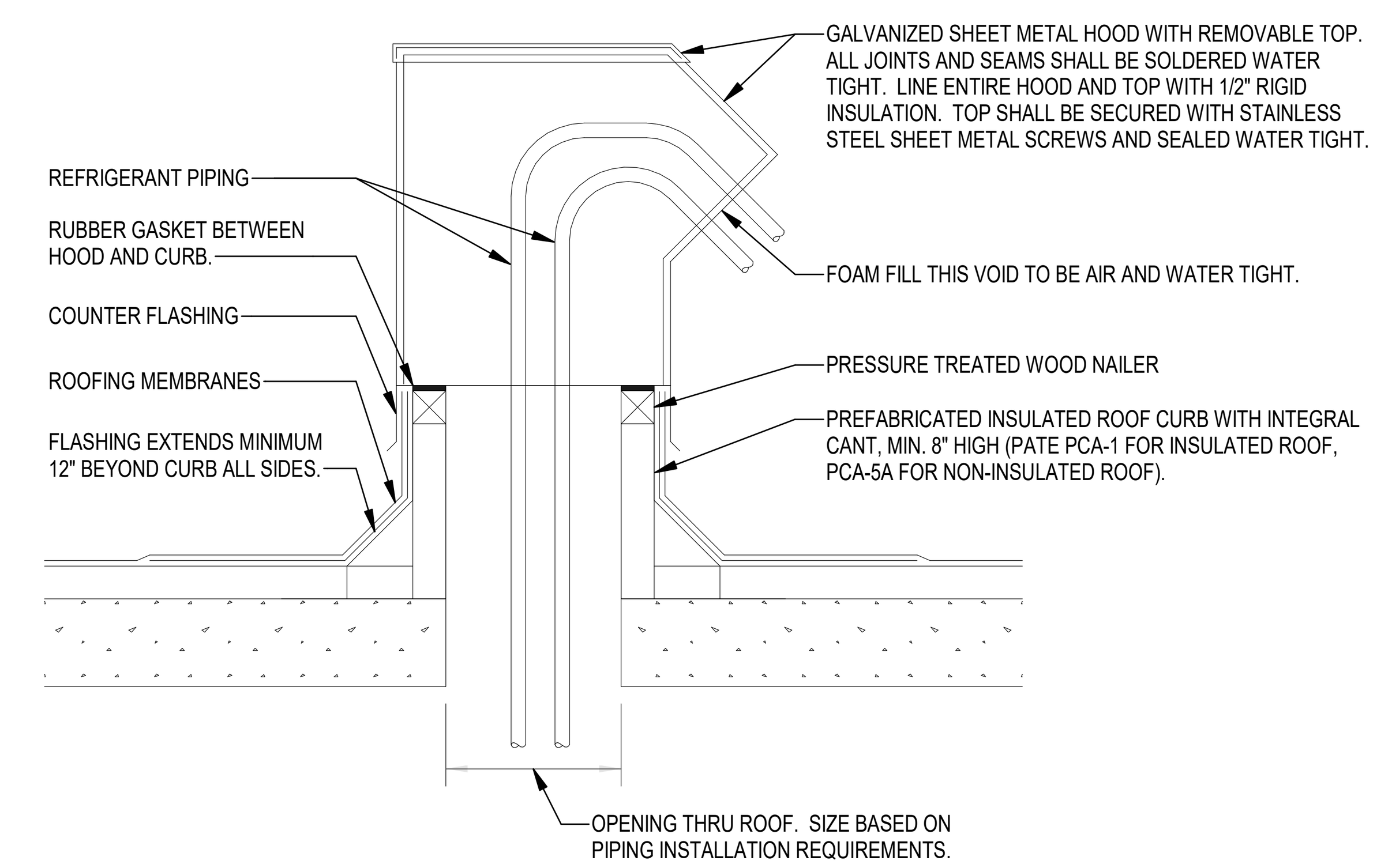
NOTES:

1. DRAIN LINE SHALL BE AT LEAST THE SAME SIZE AS THE CONNECTION ON THE DRAIN PAN (1" MIN.)
2. DRAIN LINE SHALL SLOPE 1/8" PER FOOT (MIN.)
3. SEE SPECIFICATIONS FOR PIPE AND INSULATION MATERIALS.

UNIT TYPE	A	B
DRAW-THRU	X PLUS 2"	X
BLOW-THRU	1" MIN.	2X

WHERE X=STATIC PRESSURE IN PAN

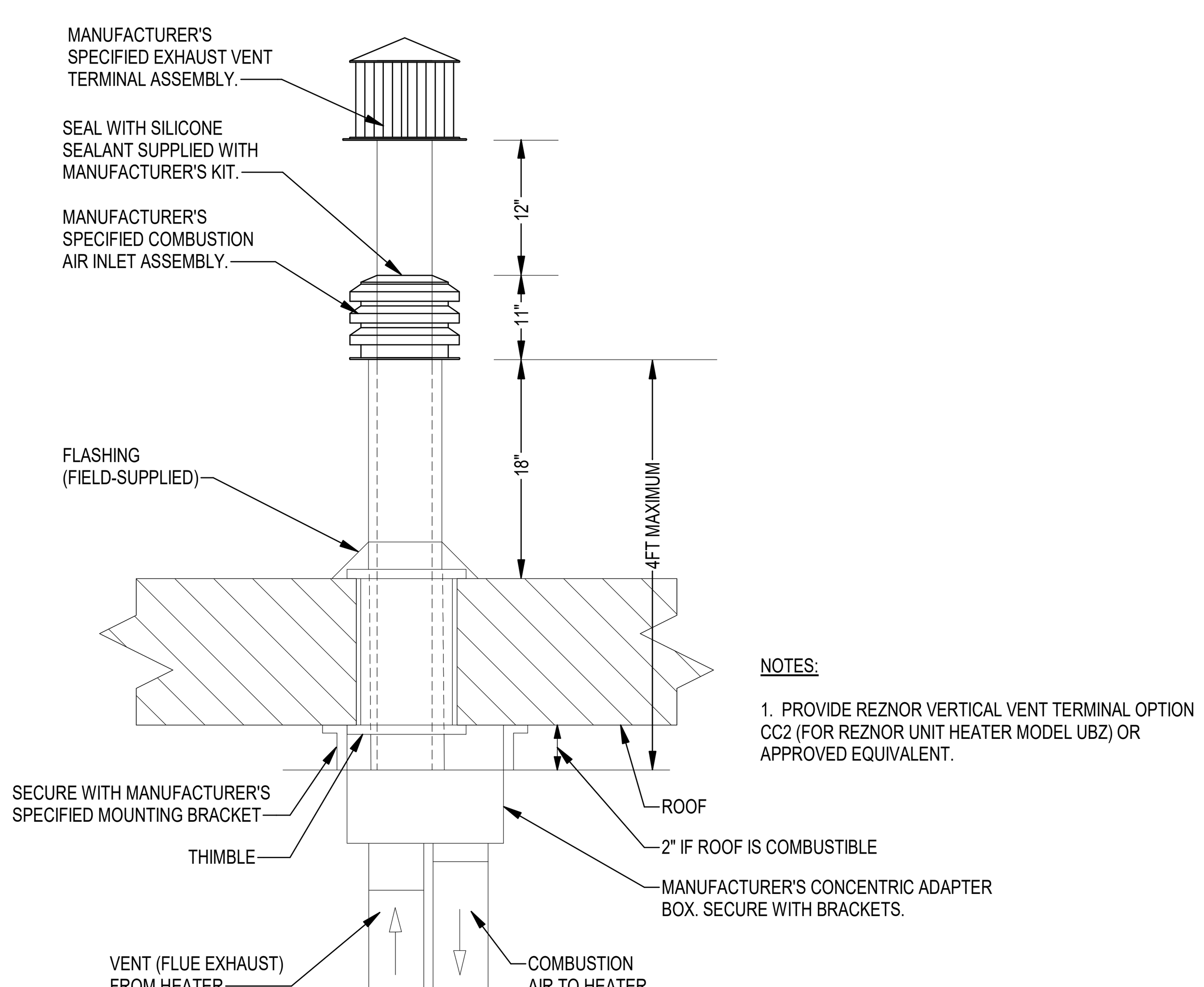
E CONDENSATE DRAIN - RTU



NOTES:

1. SECURE CURB TO ROOF WITH SHEETMETAL SCREWS, LAG BOLTS OR OTHER METHOD CONSISTENT WITH ROOF CONSTRUCTION.
2. SECURE COVER TO WOOD NAILING STRIP WITH 3/8" CADMIUM PLATED LAG BOLTS ON 12" MAX. CENTERS.
3. PROVIDE CONTINUOUS FOAM RUBBER GASKET APPLIED TO UNDERSIDE OF CURB CAP.

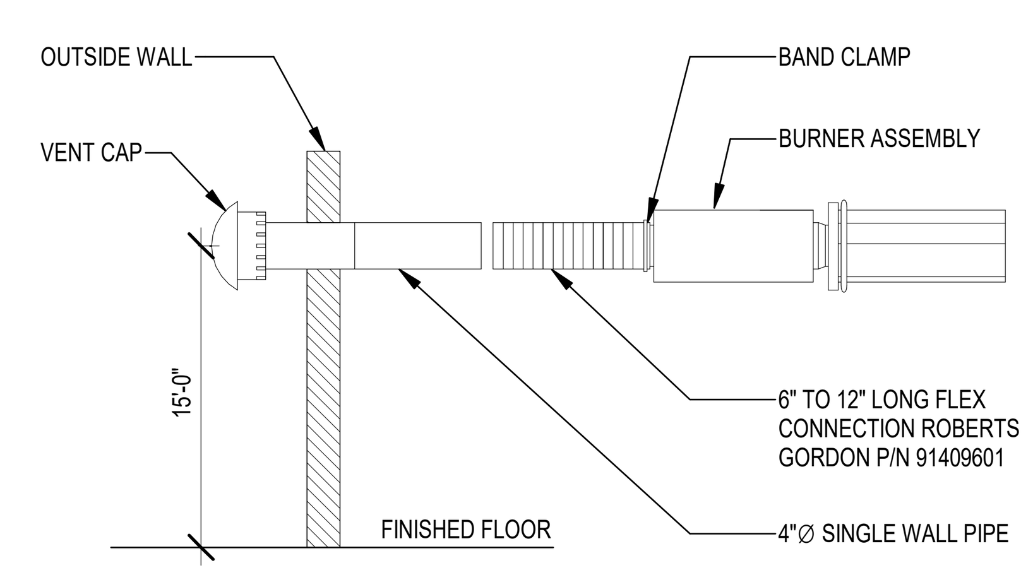
B REFRIGERANT PIPING HOOD DETAIL



NOTES:

1. PROVIDE REZNOR VERTICAL VENT TERMINAL OPTION CC2 (FOR REZNOR UNIT HEATER MODEL UBZ) OR APPROVED EQUIVALENT.

J VERTICAL VENT TERMINAL/COMBUSTION AIR INLET ASSEMBLY

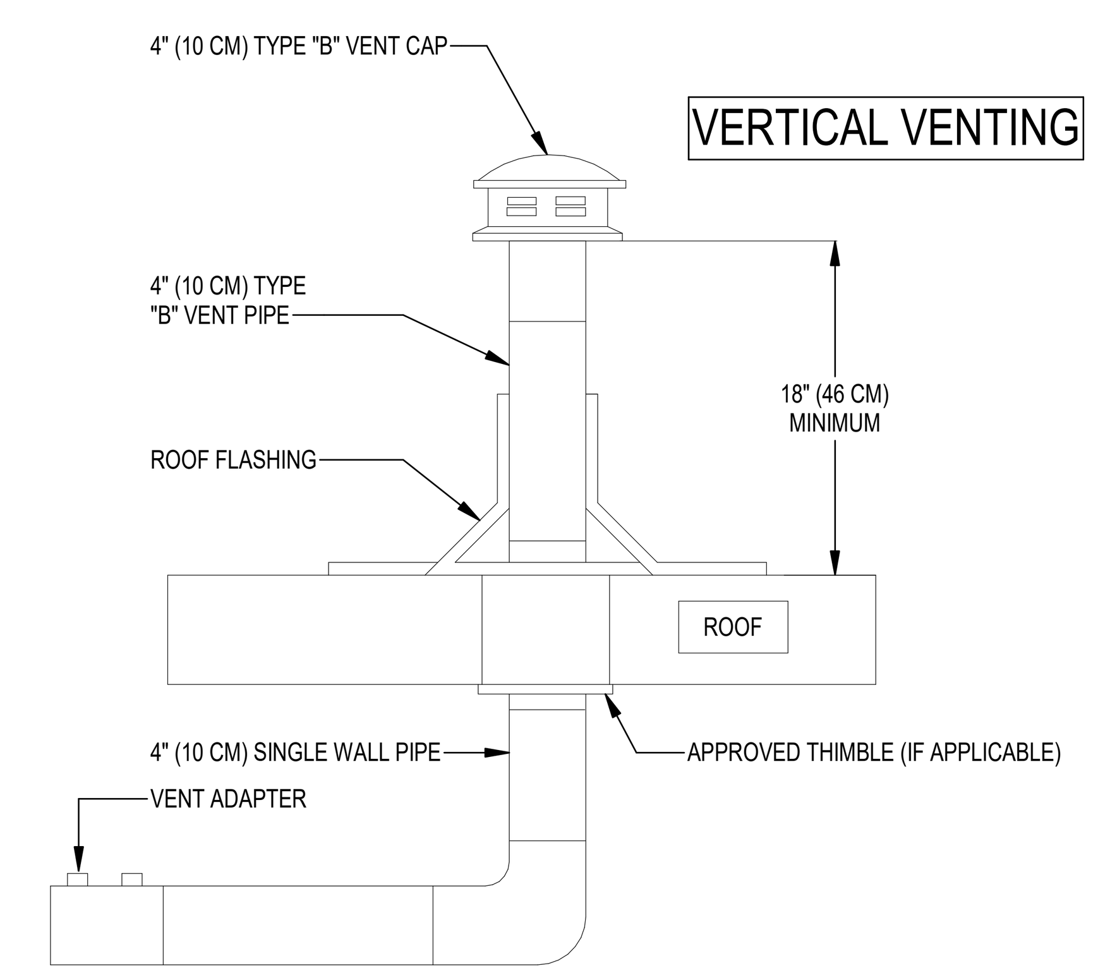


NOTES:

A. FOR AN OUTSIDE AIR SUPPLY, SINGLE WALL DUCT MUST BE ATTACHED TO THE HEATER (SEE DETAILS ABOVE AND INSTALLATION, OPERATION AND SERVICE MANUAL FOR REQUIRED SIZES). THE DUCT MAY BE UP TO 45 FT. MAXIMUM LENGTH OR 2 FT. MINIMUM LENGTH WITH NO MORE THAN 2 ELBOWS.
B. WHEN HEATER LENGTHS BEYOND MINIMUM HEATER LENGTHS ARE USED, THEY DIRECTLY EFFECT MAXIMUM COMBUSTION AIR DUCT AND HEATER VENT LENGTHS. REFER TO INSTALLATION, OPERATION AND SERVICE MANUAL FOR REQUIREMENTS.
C. THE OUTSIDE AIR TERMINAL MUST BE SECURELY FASTENED TO THE OUTSIDE WALL.
D. FOR THE OUTSIDE AIR TERMINAL, USE 4" METALBESTOS (RG P/N 90502300) FOR CTH3-80 OR EQUIVALENT.
E. THIS DETAIL IS SCHEMATIC AND GENERALLY INDICATES REQUIRED SCOPE. ALL MANUFACTURERS REQUIREMENTS MUST BE FOLLOWED.

F RADIANT TUBE HEATER COMBUSTION AIR INTAKE

VERTICAL VENTING



NOTES:

A. REFER TO INSTALLATION, OPERATION AND SERVICE MANUAL FOR PROPER DESIGN.
B. TYPE "B" VENT MATERIALS MUST BE USED OUTDOORS.
C. AN INSULATING THIMBLE (P/N 90505600) IS REQUIRED TO PASS THROUGH COMBUSTIBLE STRUCTURES.
D. 4" (10 CM) O.D VENT PIPE, MAXIMUM 45 FT. (13.7M) IN LENGTH MAY BE USED AS SHOWN ABOVE WITH AN APPROVED VENT CAP (P/N 90502300). NOTE: CONDENSATE MAY DEVELOP WHEN LONG VENT PIPES ARE USED. IT IS RECOMMENDED THAT THE PIPE LENGTH SHOULD BE LESS THAN 20' (6M).
E. WHEN HEATER EXTENSION PACKAGES ARE USED, THEY DIRECTLY EFFECT MAXIMUM VENT LENGTH. REFER TO INSTALLATION, OPERATION AND SERVICE MANUAL FOR REQUIREMENTS.

C RADIANT TUBE HEATER VENTING - SINGLE STACK

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LICENSED PROFESSIONAL
Scott T. Craig Jr., P.E.
FL LICENSE NUMBER
#73938

PROJECT NUMBER 144124059
DATE 01/17/2025
1/8" = 1'-0"
DESIGNED BY RDR
DRAWN BY MAW
CHECKED BY STC

DETAILS

QUICK - TURNAROUND FACILITY
PREPARED FOR
TALLAHASSEE INTERNATIONAL AIRPORT
CITY OF TALLAHASSEE
FLORIDA

SHEET NUMBER
M502

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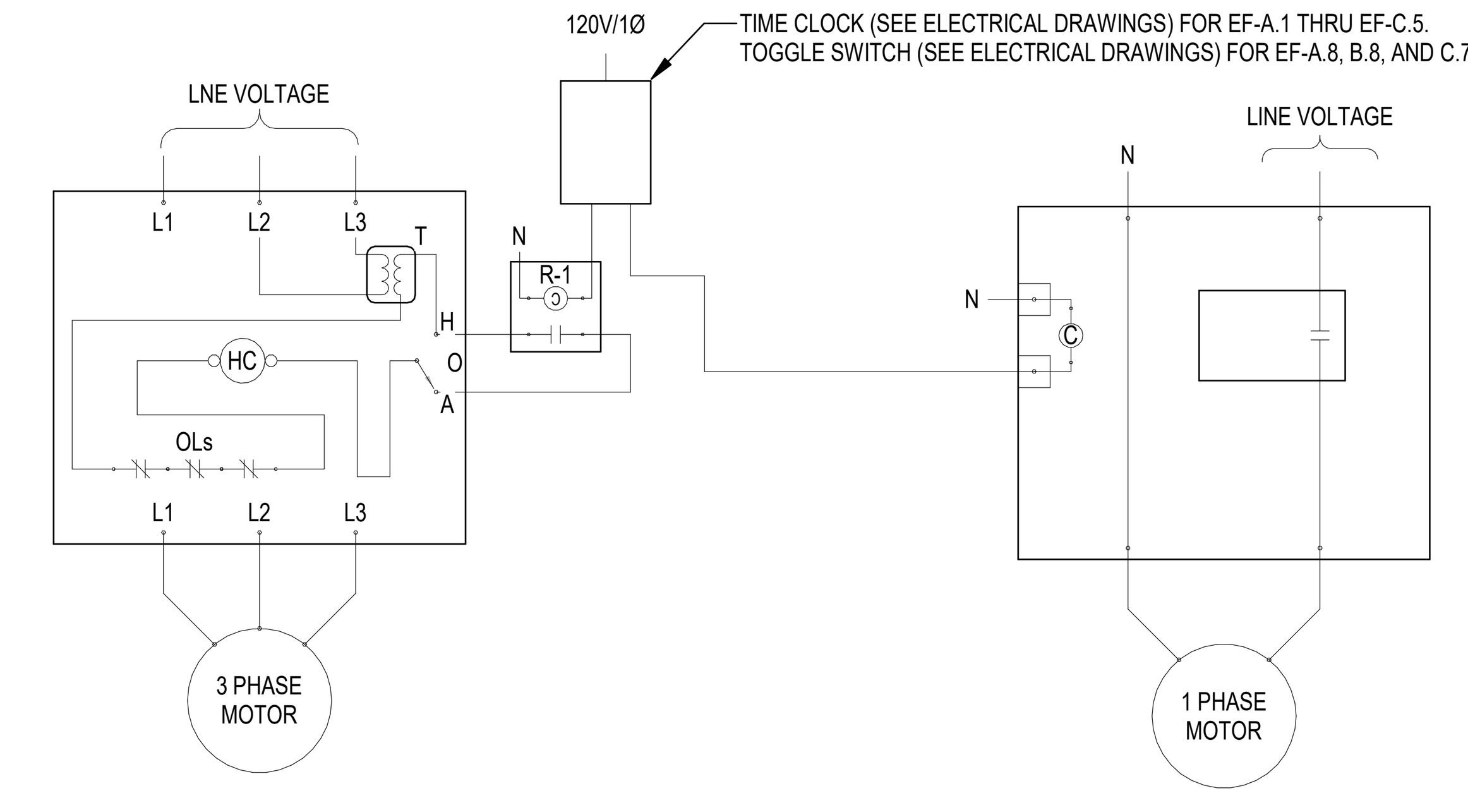

NOTES:

1. FIELD VERIFY ALL WIRING TERMINATIONS.
2. FIELD VERIFY ALL CONNECTIONS.
3. MOTOR STARTER AND ELECTRICAL POWER CONNECTIONS TO MOTOR STARTER AND MOTOR PROVIDED BY DIVISION 26.
4. CONTROL COMPONENTS AND ASSOCIATED WIRING PROVIDED BY DIVISION 25.

A EXHAUST FAN CONTROLS

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CONTROLS

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CITY OF TALLAHASSEE
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