

SHEET NUMBER	SHEET NAME
M001	MECHANICAL ABBREVIATIONS & SYMBOLS
M101	MECHANICAL FLOOR PLAN
M102	MECHANICAL REFRIGERATION PIPING AND LAYOUT PLAN
M150	MECHANICAL ROOF PLAN
M501	MECHANICAL DETAILS
M502	MECHANICAL DETAILS
M590	MECHANICAL SPECIFICATIONS
M591	MECHANICAL SPECIFICATIONS
M592	MECHANICAL SPECIFICATIONS
M601	MECHANICAL SCHEDULES
M701	CAPTIVEAIRE DRAWINGS
M702	CAPTIVEAIRE DRAWINGS
M703	CAPTIVEAIRE DRAWINGS
M704	CAPTIVEAIRE DRAWINGS
M705	CAPTIVEAIRE DRAWINGS
M706	CAPTIVEAIRE DRAWINGS
M707	CAPTIVEAIRE DRAWINGS
M708	CAPTIVEAIRE DRAWINGS
M709	CAPTIVEAIRE DRAWINGS
M710	CAPTIVEAIRE DRAWINGS
M711	CAPTIVEAIRE DRAWINGS
M712	CAPTIVEAIRE DRAWINGS
M713	CAPTIVEAIRE DRAWINGS

RESPONSIBILITY MATRIX							
THIS SCHEDULE IS PROVIDED FOR QUICK REFERENCE ONLY. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL WORK DESCRIBED IN THE CONSTRUCTION DOCUMENTS. CONFLICTS BETWEEN THIS SCHEDULE AND THE REST OF THE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION PRIOR TO BEGINNING WORK.							
DESCRIPTION	FURNISHED			INSTALLED			REMARKS
	GENERAL CONTRACTOR	OWNER	LANDLORD	GENERAL CONTRACTOR	OWNER	LANDLORD	
<b>DIVISION 23: HEATING, VENTILATING, AND AIR CONDITIONING</b>							
<b>23.1 HVAC DUCTWORK AND PIPING IDENTIFICATION</b>							
23.1.1 HVAC DUCTWORK SYSTEM IDENTIFICATION	X			X			
23.1.2 PIPING SYSTEM IDENTIFICATION	X			X			
23.1.3 UTILITY SHUT OFF IDENTIFICATION IN KITCHEN	X			X			
23.1.4 VALVE TAGS AND CHART	X			X			
23.1.5 HVAC DAMPER IDENTIFICATION	X			X			
<b>23.2 ROOF CURBS</b>							
23.2.1 EXHAUST FAN CURBS	X			X			GENERAL CONTRACTOR SCOPE OF WORK TO INCLUDE RIGGING, CURBS, AND ACCESSORIES
23.2.2 ROOFTOP UNIT CURBS	X			X			GENERAL CONTRACTOR SCOPE OF WORK TO INCLUDE RIGGING, CURBS, AND ACCESSORIES
23.2.3 CONDENSING UNIT CURBS	X			X			GENERAL CONTRACTOR SCOPE OF WORK TO INCLUDE RIGGING, CURBS, AND ACCESSORIES
23.2.4 MAKE UP AIR AND DOAS UNIT CURBS		X		X			GENERAL CONTRACTOR SCOPE OF WORK TO INCLUDE RIGGING, CURBS, AND ACCESSORIES
23.2.5 KITCHEN EXHAUST FAN CURBS		X		X			GENERAL CONTRACTOR SCOPE OF WORK TO INCLUDE RIGGING, CURBS, AND ACCESSORIES
<b>23.3 HVAC DUCTWORK SYSTEM COMPONENTS</b>							
23.3.1 HVAC DUCTWORK	X			X			
23.3.2 INSULATION AND FIRE WRAP	X			X			GENERAL CONTRACTOR SCOPE OF WORK TO INCLUDE TENANT FIT OUT FROM LANDLORD POINT OF CONNECTION
23.3.3 DAMPERS	X			X			
23.3.4 SMOKE DETECTORS	X			X			
23.3.5 SUPPLY, RETURN, AND EXHAUST GRILLS AND REGISTERS	X			X			
<b>23.4 MECHANICAL PIPING SYSTEM COMPONENTS</b>							
23.4.1 WALK-IN COOLER AND FREEZER REFRIGERATION		X			X		WALK-IN COOLER AND FREEZER SUPPLIED BY VENDOR NO. 27. GENERAL CONTRACTOR SCOPE OF WORK TO INCLUDE PIPING INSTALLATION AND FINAL CONNECTION
23.4.2 REFRIGERATION FOR OTHER HVAC EQUIPMENT	X			X			
23.4.3 CHILLED WATER	X			X			
23.4.4 CONDENSER WATER	X			X			
23.4.5 HEATING HOT WATER	X			X			
23.4.6 VALVES AND ACCESSORIES (E.G. AIR VENTS)	X			X			
<b>23.5 HVAC EQUIPMENT</b>							
23.5.1 SUPPLY FAN	X			X			
23.5.2 TOILET EXHAUST FAN	X			X			
23.5.3 KITCHEN EXHAUST FAN		X		X			SUPPLIED BY VENDOR NO. 26
23.5.4 DUCTED AND NON-DUCTED HEATING AND COOLING UNITS	X			X			
23.5.5 MAKE UP AIR AND DOAS UNITS		X		X			SUPPLIED BY VENDOR NO. 26
23.5.6 ELECTRIC PATIO HEATERS	X			X			
23.5.7 HVAC CONDENSING UNITS	X			X			
23.5.8 REFRIGERATION CONDENSING UNITS		X		X			
23.5.9 RGF PHI SYSTEM	X			X			GENERAL CONTRACTOR TO PURCHASE FROM VENDOR NO. 12. VENDOR SUBSTITUTION IS NOT PERMITTED
<b>23.6 KITCHEN EXHAUST WITH FIRE SUPPRESSION SYSTEM</b>							
23.6.1 HOOD CONTROL PANEL		X		X			SUPPLIED BY VENDOR NO. 26
23.6.2 KITCHEN EXHAUST HOOD		X		X			SUPPLIED BY VENDOR NO. 26
23.6.3 STRUCTURAL SUPPORT	X			X			
23.6.4 ELECTRICAL AND CONTROL WIRING	X			X			
<b>23.6.5 ANSUL SYSTEM</b>							
23.6.6 ANSUL WIRING AND UTILITIES CONNECTION	X			X			SUPPLIED BY VENDOR NO. 26. GENERAL CONTRACTOR TO COORDINATE AND FACILITATE SYSTEM SIGN-OFF
23.6.7 ANSUL GAS VALVE		X		X			SUPPLIED BY VENDOR NO. 26
<b>23.7 COMMISSIONING ACTIVITIES</b>							
23.7.1 GREASE EXHAUST WATER LEAKAGE TEST	X			X			GENERAL CONTRACTOR TO PURCHASE FROM VENDOR NO. 10. VENDOR SUBSTITUTION IS NOT PERMITTED
23.7.2 TESTING AIR BALANCE (TAB) REPORT	X			X			GENERAL CONTRACTOR TO PURCHASE FROM VENDOR NO. 12. VENDOR SUBSTITUTION IS NOT PERMITTED

SUBMITTAL MATRIX						
GENERAL CONTRACTORS TO ALSO REVIEW ARCHITECTURAL SPECIFICATIONS AS NOTED IN PLANS IN PLAN SECTION 700 OF THE ARCHITECTURAL PACKAGE FOR REQUIRED SUBMITTALS THAT MIGHT NOT BE LISTED BELOW.						
SUBMITTAL DESCRIPTION	Required Review (Business Days)	Architect or Record Shop	Physical Sample Required	Submittal for Record Only	Submittal for Record Only	Submittal for Record Only
Anchor Bolts Shops	5	X			X	
ATAS-Detailed Shop DWGS(Submitted by Owner Vendor to Owner/AOR prior to const.)	5	X			X	
Concrete Mix Design	5	X			X	
Construction Prefunctional Checklists	5	X			X	
Decorative Metal Shop Drawings	5	X			X	
Diffusers, Grills & Registers	5	X			X	
Doors, Frames & Hardware	7	X			X	
Ductwork Layout (if there are significant changes in field)	5	X			X	
Electrical Distribution Equipment	5	X			X	
Elevator & Vertical Transportation Shop Drawings	5	X			X	
Epoxy Floor	5	X			X	
Fire Alarm Shop Drawings & Device Cut Sheets	5	X			X	
Fire Sprinkler Shop Drawings, Hydraulic Calculations & Device Cut Sheets	5	X			X	
HVAC Equipment(if Carrier - Submitted by Owner Vendor to Owner/AOR prior to const.)	5	X			X	
Light Fixtures(Submitted by Owner Vendor to Owner/AOR prior to construction)	5	X			X	
MEP Tests, Start-Up, and Programming Reports	5	X			X	
Millwork - Material Submittals (if differs from spec)	5	X	X	X		
Millwork - Shop Drawings (custom items & design features only)	5	X				
Restroom Partitions	5	X			X	
Plumbing Fixtures	5	X			X	
Rolling Shop Drawings	5	X			X	
Rebar	5	X			X	
Stair Shop Drawings	5	X			X	
Structural Steel Shop Drawings	7	X			X	
Storefront - product data Submittal (if different from specified)	5	X				
Storefront - Shop Drawings	5	X				
Tile (if differs from spec)	5	X			X	
Window Film	5	X				

SYMBOLS	
SYMBOL	DESCRIPTION
	THERMOSTAT
	REMOTE SENSOR
	SUPPLY DIFFUSER
	RETURN OR EXHAUST GRILLE
	SUPPLY OR FRESH AIR DUCT (SA OR FA)
	RETURN OR EXHAUST AIR DUCT (RA OR EA)
	RECTANGULAR DUCT (FIRST FIGURE IS SIDE SHOWN)
	ROUND DUCT
	VOLUME DAMPER (ELEV AND PLAN)
	TURNING VANES
	SUPPLY REGISTER OR GRILLE (R OR G)
	RETURN REGISTER OR GRILLE (R OR G)
	FRESH AIR INTAKE (FA)
	SQUARE CEILING DIFFUSER (SUPPLY)
	FAN COIL UNIT AND MARK
	MOTORIZED DAMPER
	REFRIGERANT LIQUID LINE
	REFRIGERANT SUCTION LINE

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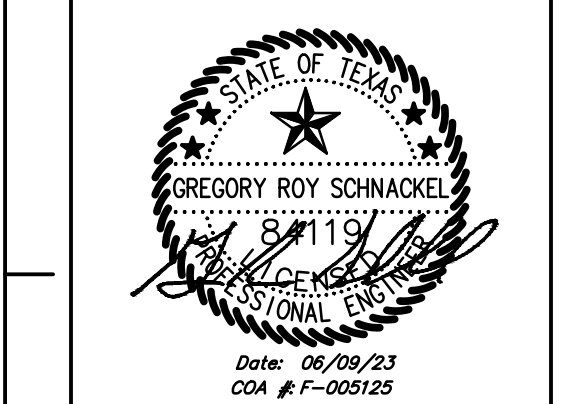
CONSULTANT LOGO:  
  
**Schnackel**  
 engineers,  
 800-581-0963  
 www.schnackel.com  
 88.2088.22066

STORE NO:  
**TX 1483**

**SHAKE SHACK**  
 1805 EAST ARCHITECTURE BLVD  
 CEDAR PARK, TX 78613

REVISION		
NO.	DATE	DESCRIPTION
1	04/21/2023	REVISION 1
2	06/09/2023	REVISION 2

STATUS:  
**IFC SET**



FIELD VERIFICATION:  
 The contractor shall verify all figured dimensions and location at the project site and notify Zebra Projects, Inc. of any dimensional errors, or omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

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SHEET NAME:  
**MECHANICAL ABBREVIATIONS & SYMBOLS**

DATE: 04/21/2023 PROJECT NO: 35985

DRAWN: RAS SCALE: AS NOTED

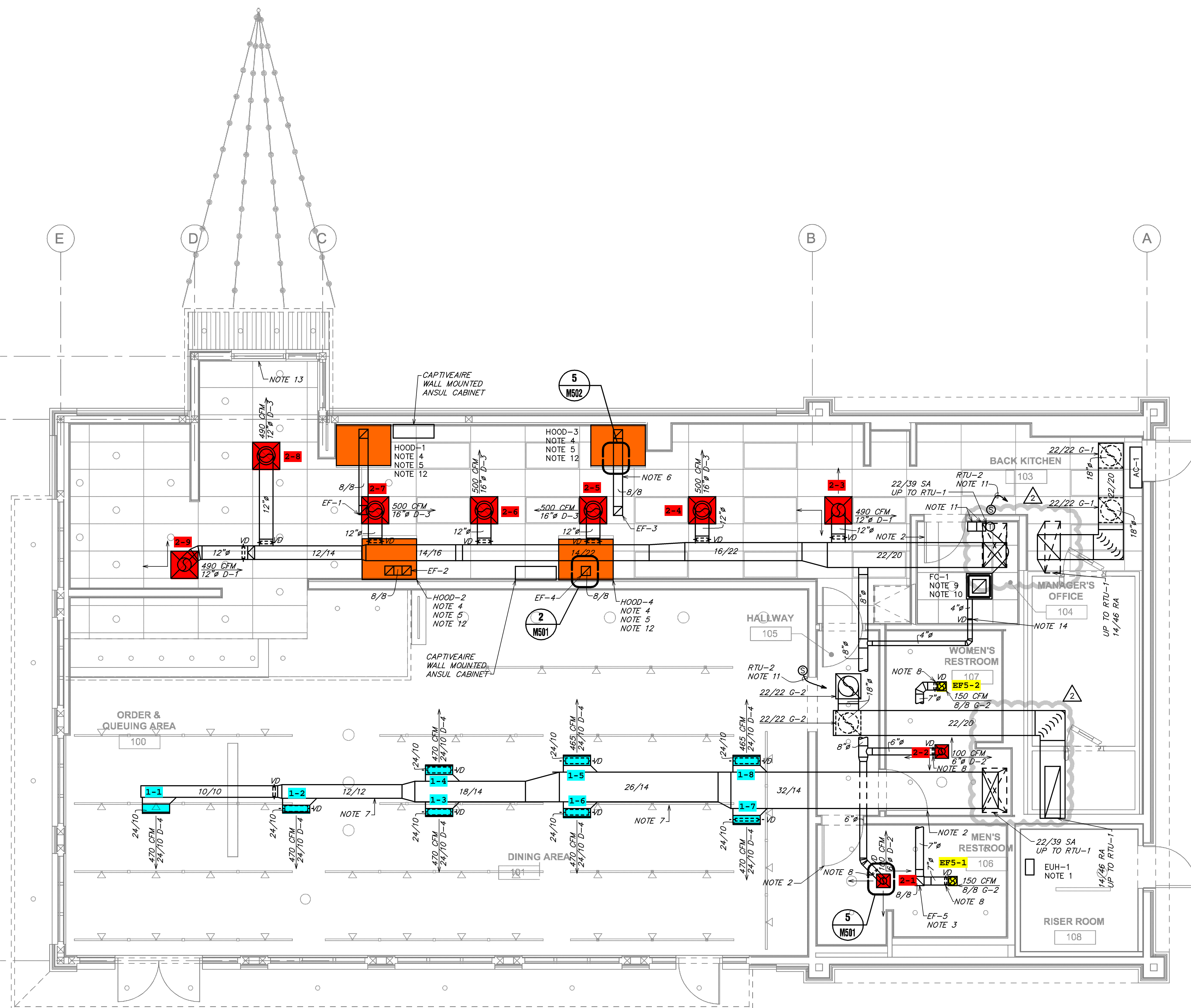
SHEET NO:  
**M001**

**GENERAL NOTES:**

- A. EXISTING CONDITIONS ARE BASED ON RECORD DRAWINGS PROVIDED BY THE OWNER. CONTRACTOR SHALL ADJUST TO ACTUAL FIELD CONDITIONS AT NO ADDITIONAL EXPENSE TO THE PROJECT.
- B. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF ALL EXISTING CONDITIONS PRIOR TO SUBMITTING THE BID. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR ANY EXTRAS DUE TO THE CONTRACTOR'S FAILURE TO VISIT THE PROJECT SITE PRIOR TO SUBMITTING THE BID. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER FOR RESOLUTION.
- C. ALL CONTRACTORS SHALL REVIEW A COMPLETE SET OF CONSTRUCTION DOCUMENTS. CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH DEMOLITION WORK PRIOR TO BIDDING AND START OF WORK. CONTRACTOR IS RESPONSIBLE TO DEMOLISH ALL EXISTING AS REQUIRED FOR INSTALLATION/CONSTRUCTION OF NEW WORK.
- D. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH ALL APPLICABLE GOVERNMENT AND LOCAL CODES.
- E. MECHANICAL CONTRACTOR SHALL FIELD COORDINATE WITH ELECTRICAL CONTRACTOR FOR ALL POWER REQUIREMENTS.
- F. ALL CONTRACTORS SHALL REVIEW A COMPLETE SET OF CONSTRUCTION DOCUMENTS AND COOPERATE WITH THE OTHER TRADES SO THAT THE INSTALLATION OF ALL EQUIPMENT MAY BE PROPERLY COORDINATED.
- G. ALL EQUIPMENT FURNISHED SHALL FIT THE SPACE AVAILABLE WITH CONNECTIONS IN THE REQUIRED LOCATIONS AND WITH ADEQUATE SPACE FOR OPERATING AND SERVICING. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND INDICATE THE INTENT OF THE INSTALLATION WHILE THE SPECIFICATIONS AND EQUIPMENT LIST DENOTE THE TYPE AND QUALITY OF MATERIAL AND WORKMANSHIP TO BE USED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENTS. WHERE A CONFLICT EXISTS BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, THE HIGHER AND/OR MORE COSTLY STANDARD WILL APPLY. THE CONTRACTOR SHALL PROMPTLY NOTIFY THE ENGINEER WHOSE DECISION SHALL BE FINAL. NO ALLOWANCE WILL BE MADE SUBSEQUENTLY IN THIS REGARD ON BEHALF OF THE CONTRACTOR AFTER AWARD OF THE CONTRACT.
- H. COORDINATE DUCT ROUTING AND HEIGHTS WITH GENERAL CONTRACTOR. VERIFY ALL CLEARANCES BEFORE STARTING WORK.
- I. THE CONTRACTOR SHALL INSTALL ALL PIPING, DUCTWORK AND EQUIPMENT AS REQUIRED TO CONFORM TO THE STRUCTURE, AVOID OBSTRUCTIONS, PRESERVE CEILING HEIGHTS AND HEADROOM AND MAKE ALL EQUIPMENT REQUIRING MAINTENANCE OR REPAIR ACCESSIBLE.
- J. ALL DUCT CONNECTIONS TO HVAC EQUIPMENT MUST BE MADE WITH FLEXIBLE CONNECTORS.
- K. DO NOT ATTACH ANYTHING TO DECK ABOVE. ATTACH TO STRUCTURE (I.E. BEAMS, JOISTS) ONLY. DUCT HANGERS SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODE. ALL CONNECTIONS TO JOISTS SHALL BE MADE AT THE TOP CORNER.
- L. ALL DUCT DIMENSIONS INDICATED ARE CLEAR INSIDE DIMENSIONS. ALL SUPPLY AND UNTEMPERED OUTDOOR AIR DUCTWORK SHALL BE LINED WITH 1" ACOUSTICAL DUCT LINER OR WRAPPED WITH 1-1/2" THICK FIRE RETARDANT FIBERGLASS WITH A REINFORCED ALUMINUM FOIL JACKET AND SHALL BE APPROVED FOR USE BY SMOKE AND HEAT RETURN AIR TRANSFER DUCTS AND RETURN DUCTWORK WITHIN 10 FEET OF THE UNIT FAN SHALL BE LINED WITH 1" ACOUSTICAL DUCT LINER.
- M. ALL SUPPLY AND UNTEMPERED OUTDOOR AIR DUCTWORK VISIBLE TO THE PUBLIC SHALL BE INTERNALLY LINED AND PAINTED TO MATCH THE SURROUNDING AREA. DUCT WRAP INSULATION IS NOT PERMITTED IN THESE AREAS.
- N. ALL EXPOSED DUCTWORK SHALL BE INSTALLED TIGHT TO THE BOTTOM OF THE STRUCTURE.
- O. PROVIDE REMOTE VOLUME DAMPER MANUFACTURED BY YOUNG REGULATOR OR UNITED ENERTECH FOR DAMPERS LOCATED ABOVE INACCESSIBLE CEILINGS. LOCATE CONTROLLER ABOVE ACCESSIBLE CEILING LOCATION.
- P. REFRIGERANT PIPING SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL ACCESSORIES AS REQUIRED BY MANUFACTURER FOR COMPLETE WORKING SYSTEM INCLUDING ANY ACCESSORIES ASSOCIATED WITH LONG LENGTH APPLICATIONS WHERE APPLICABLE.
- Q. TENANT'S CONTRACTOR SHALL BE RESPONSIBLE FOR THE FIELD VERIFICATION OF ALL UTILITY RUNS AND/OR OTHER IMPROVEMENTS LOCATED ON THE PREMISES PRIOR TO BIDDING. CONTRACTOR SHALL BE RESPONSIBLE FOR THE RELOCATION OF, DAMAGE TO, REPAIR OF ANY EXISTING UTILITY RUNS AND/OR IMPROVEMENTS WHICH ARE DAMAGED AS A RESULT OF TENANT'S WORK IN OR AROUND THE PREMISES.
- R. ALL GREASE EXHAUST DUCTWORK SHALL BE PROVIDED WITH 3" FOIL FACED THERMAL-CERAMIC INSULATION FOR GREASE DUCTS. INSULATION SHALL MEET NFPA 96 AND ASHRAE REQUIREMENTS.
- S. GREASE DUCT LEAKAGE TESTING MUST BE PERFORMED PRIOR TO CONCEALMENT OF THE DUCTWORK.
- T. MECHANICAL CONTRACTOR SHALL PROVIDE TENANT WITH A WRITTEN ONE (1) YEAR MANUFACTURER'S WARRANTY ON ALL HVAC EQUIPMENT PROVIDED AND / OR INSTALLED. THE WARRANTY SHALL INCLUDE ALL LABOR, MATERIALS AND THREE (3) ROUTINE SERVICES INCLUDING FILTER CHANGES DURING A ONE (1) YEAR PERIOD.
- U. AT THE COMPLETION OF CONSTRUCTION AN NEBB, AABC OR TABB CERTIFIED AIR BALANCE REPORT SHALL BE SUBMITTED TO THE ENGINEER AND LANDLORD. PRIOR TO SCHEDULING BALANCING, COORDINATE WITH LANDLORD'S FIELD REPRESENTATIVE FOR THE VENDOR LISTED BELOW. IF APPROVED, THE BALANCING SHALL BE COMPLETED BY NATION TAB. CONTACT WILL TURNBOURNE AT WILL.TURNBOURNE@NATIONTAB.COM OR 314-854-6244.

**HVAC NOTES:**

1. ELECTRIC UNIT HEATERS ARE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. REFERENCE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.
2. CONTRACTOR SHALL UNDERCUT DOOR 3/4"
3. PROVIDE GREASE EXHAUST AIR DUCT UP TO EF-5 ON ROOF.
4. NEW CAPTIVEAIRE GREASE EXHAUST HOOD TO BE FURNISHED BY OWNER FOR INSTALLATION BY THE MECHANICAL CONTRACTOR. SEE CAPTIVEAIRE SHEETS W01 THROUGH W13 FOR ADDITIONAL INFORMATION. BALANCE HOOD EXHAUST AS NOTED ON CAPTIVEAIRE SHEETS. VERIFY ALL MANUFACTURER AND CODE REQUIRED CLEARANCES ARE MAINTAINED. NOTIFY ARCHITECT IF ANY CONFLICTS OCCUR. TRANSITION FROM HOOD EXHAUST COLLAR AS INDICATED ON PLANS AND EXTEND 8/8 KITCHEN HOOD GREASE EXHAUST DUCTWORK UP TO CORRESPONDING GREASE EXHAUST FAN ON ROOF. SEE SHEET M50 FOR CONTINUATION. GREASE DUCT SHALL BE WRAPPED WITH TWO (2) LAYERS OF THERMAL CERAMICS FAST WRAP XL, 1 1/2" THICK WITH 3" PERIMETER AND LONGITUDINAL OVERLAPS OR EQUIVALENT U.L.L. LISTED GREASE DUCT WRAP FOR ZERO CLEARANCE TO COMBUSTIBLES. REFER TO SHEET M502, DETAIL 5, FOR ADDITIONAL INFORMATION. TYPICAL.
5. PROVIDE CLEANOUTS ON GREASE DUCTWORK AS REQUIRED BY CODE. REFERENCE SHEET M501, DETAIL 2 FOR ADDITIONAL INFORMATION. TYPICAL OF GREASE EXHAUST DUCTWORK.
6. DUCTWORK TO BE INSTALLED AS HIGH AS CONDITIONS ALLOW. COORDINATE ROUTING AND MOUNTING HEIGHT WITH LIGHTING FIXTURES. NOTIFY THE ARCHITECTS OF ANY CONFLICTS AND COORDINATE WITH THE CONSTRUCTION MANAGER.
7. PROVIDE REMOTE VOLUME DAMPER AS INDICATED ON PLANS. REFERENCE SHEET M501, DETAIL 5, FOR ADDITIONAL INFORMATION. TYPICAL OF DIFFUSERS/GRILLES INSTALLED IN O.P.P. BOARD CEILINGS.
8. PROVIDE NEW FC UNIT AS NOTED ON PLANS AND AS SCHEDULED ON SHEET M601.
9. LINES SHALL BE SIZED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. PROVIDE ALL ACCESSORIES AS REQUIRED BY MANUFACTURER FOR COMPLETE WORKING SYSTEM, INCLUDING ANY ACCESSORIES ASSOCIATED WITH LONG LENGTH APPLICATIONS WHERE APPLICABLE.
10. COORDINATE WITH CAPTIVEAIRE ON REMOTE SENSOR CONFIGURATION AND COMFORT CONTROLS PACKAGE. COMFORT CONTROLS PACKAGE THAT IS TO BE INSTALLED IN THE OFFICE. VERIFY CONTROLS ARE A FULLY DIGITAL 7 DAY PROGRAMMABLE THERMOSTAT WITH REMOTE SENSING CAPABILITIES, AUTO CHANGE OVER AND AUTO SET BACK. MOUNT SENSOR AND CONTROLS AT 48" ABOVE FINISHED FLOOR. UNITS SERVING THE SAME TEMPERATURE ZONE SHALL BE INTERLOCKED TO PREVENT SIMULTANEOUS HEATING AND COOLING. LOCATE REMOTE TEMPERATURE SENSORS AS INDICATED ON PLAN. COORDINATE LOCATION WITH CONSTRUCTION MANAGER AND WALL GRAPHICS LAYOUT. REFERENCE CAPTIVEAIRE SHEETS FOR ADDITIONAL INFORMATION.
11. HOOD MANUFACTURER TO PROVIDE A "KIT" TO FASTEN THE BOTTOM FLANGE OF THE HOOD TO THE WALL, WITH ONE FASTENER PER STUD WALL. SIL-BOND RTV 4500 ALUMINUM SILICONE SEALANT OR APPROVED SIMILAR, TO BE APPLIED BY GENERAL CONTRACTOR / HOOD INSTALLER FOR ANY REMAINING SMALL GAPS. HOOD FASTENING "KIT" DETAIL TO BE INCLUDED IN MANUFACTURER DRAWINGS. REFERENCE SHEET M501, DETAIL 14, FOR ADDITIONAL INFORMATION.
12. AIR CURTAIN FOR SERVICE THRU WINDOW IS INTEGRAL TO THE WINDOW. REFER TO ARCHITECTURAL SHEETS FOR ADDITIONAL INFORMATION.
13. BALANCE DAMPER TO PROVIDE 30 CFM.



**1 MECHANICAL FLOOR PLAN**  
 SCALE: 1/4" = 1'-0"

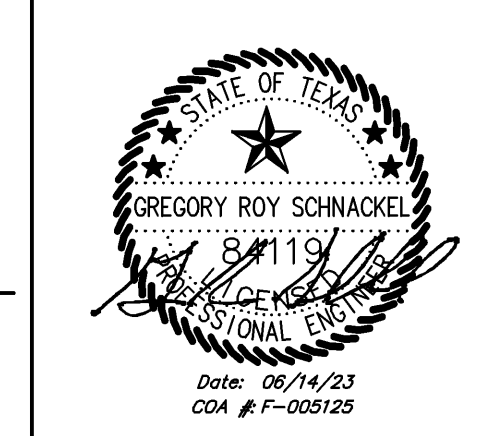
STORE NO:  
 TX 1483

**SHAKE SHACK**  
 1986 EAST WATKINS BLVD  
 CECILIA PARK, TX 75083

**REVISION**

NO.	DATE	DESCRIPTION
1	04/21/2023	REVISION 1
2	06/05/2023	REVISION 2

STATUS:  
 IFC SET



**FIELD VERIFICATION:**  
 The contractor shall verify all field dimensions and conditions of the project site and notify Zebra Projects, Inc. of any discrepancies, errors, or omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

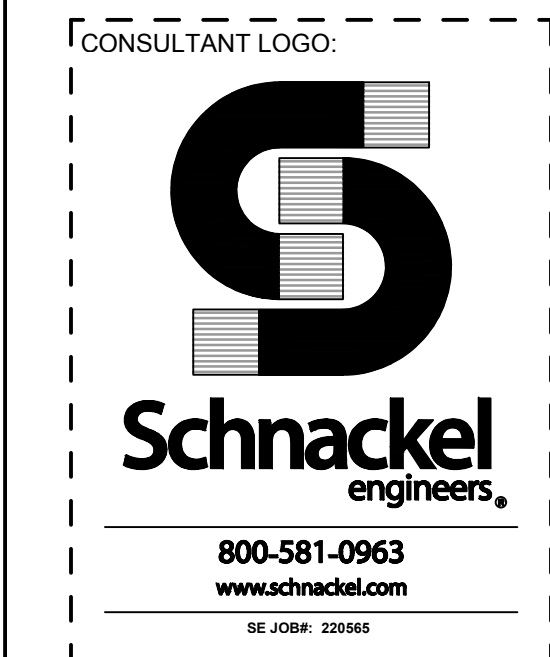
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SHEET NAME:  
**MECHANICAL FLOOR PLAN**

DATE: 04/21/2023 PROJECT NO: 35985

DRAWN: RAS SCALE: AS NOTED

SHEET NO:  
**M101**

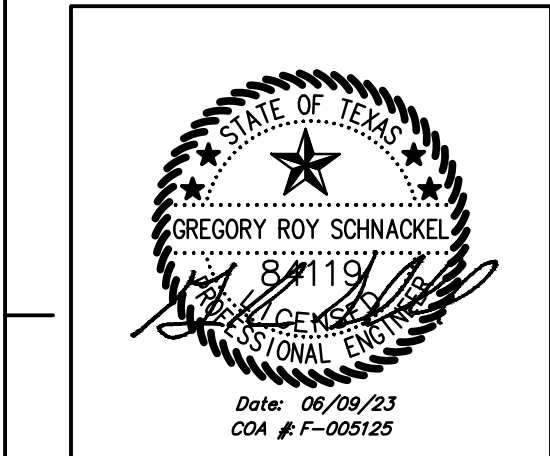


STORE NO: TX 1483



REVISION	
NO.	DESCRIPTION
1	04/21/2023 REVISION 1
2	06/09/2023 REVISION 2

STATUS: IFC SET



FIELD VERIFICATION:  
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SHEET NAME:  
**MECHANICAL REFRIGERATION PIPING AND LAYOUT PLAN**

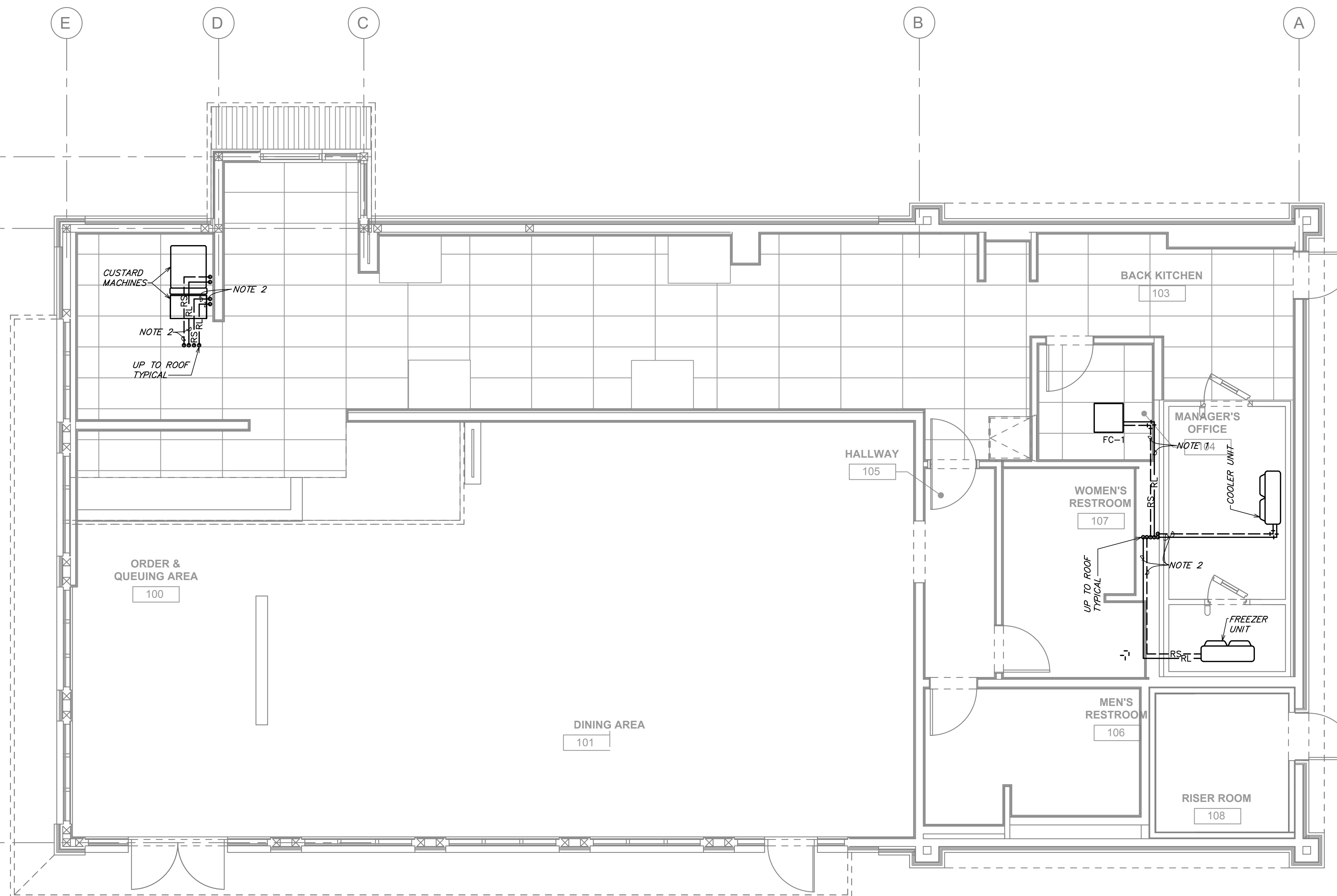
DATE: 04/21/2023 PROJECT NO: 35985

DRAWN: RAS SCALE: AS NOTED

SHEET NO:  
**M102**

- GENERAL NOTES:**
- EXISTING CONDITIONS ARE BASED ON RECORD DRAWINGS PROVIDED BY THE OWNER. CONTRACTOR SHALL ADJUST TO ACTUAL FIELD CONDITIONS AT NO ADDITIONAL EXPENSE TO THE PROJECT.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF ALL EXISTING CONDITIONS PRIOR TO SUBMITTING THE BID. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR ANY EXTRAS DUE TO THE CONTRACTOR'S FAILURE TO VISIT THE PROJECT SITE PRIOR TO SUBMITTING THE BID. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER FOR RESOLUTION.
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  - ALL DUCT CONNECTIONS TO HVAC EQUIPMENT MUST BE MADE WITH FLEXIBLE CONNECTORS.
  - DO NOT ATTACH ANYTHING TO DECK ABOVE. ATTACH TO STRUCTURE (I.e., BEAMS, JOISTS) ONLY. DUST HANDERS SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODE. ALL CONNECTIONS TO JOISTS SHALL BE MADE AT THE TOP COR.
  - ALL DUCT DIMENSIONS INDICATED ARE CLEAR INSIDE DIMENSIONS. ALL SUPPLY AND UNTEMPERED OUTDOOR AIR DUCTWORK SHALL BE LINED WITH 1" ACOUSTICAL DUCT LINER OR WRAPPED WITH 1-1/2" THICK FIRE RETARDANT FIBERGLASS WITH A REINFORCED ALUMINUM FOIL JACKET AND SHALL BE APPROVED FOR USE BY SHAWM AND WALSH. RETURN AIR TRANSFER DUCTS AND RETURN DUCTWORK WITHIN TO FEET OF THE UNIT FAN SHALL BE LINED WITH 1" ACOUSTICAL DUCT LINER.
  - ALL SUPPLY AND UNTEMPERED OUTDOOR AIR DUCTWORK VISIBLE TO THE PUBLIC SHALL BE INTERNALLY LINED AND PAINTED TO MATCH THE SURROUNDING AREA. DUCT WRAP INSULATION IS NOT PERMITTED IN THESE AREAS.
  - ALL EXPOSED DUCTWORK SHALL BE INSTALLED TIGHT TO THE BOTTOM OF THE STRUCTURE.
  - PROVIDE REMOTE VOLUME DAMPER CONTROL MANUFACTURED BY YOUNG REGULATOR OR UNITED ENERTECH FOR DAMPERS LOCATED ABOVE INACCESSIBLE CEILINGS. LOCATE CONTROLLER ABOVE ACCESSIBLE CEILING LOCATION.
  - REFRIGERANT PIPING SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL ACCESSORIES AS REQUIRED BY MANUFACTURER FOR COMPLETE WORKING SYSTEM, INCLUDING ANY ACCESSORIES ASSOCIATED WITH LONG LENGTH APPLICATIONS WHERE APPLICABLE.
  - TENANT'S CONTRACTOR SHALL BE RESPONSIBLE FOR THE FIELD VERIFICATION OF ALL UTILITY RUNS AND/OR OTHER IMPROVEMENTS LOCATED ON THE PREMISES PRIOR TO BIDDING. TENANT'S CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ALL COSTS RELATING TO THE RELOCATION OF, DAMAGE TO, REPAIR OF ANY EXISTING UTILITY RUNS AND/OR IMPROVEMENTS WHICH ARE DAMAGED AS A RESULT OF TENANT'S WORK IN OR AROUND THE PREMISES.
  - ALL GREASE EXHAUST DUCTWORK SHALL BE PROVIDED WITH 3" FOIL FACED THERMAL-CERAMIC INSULATION FOR GREASE DUCTS. INSULATION SHALL MEET NFPA 98 AND ASTM E 2338 REQUIREMENTS.
  - GREASE DUCT LEAKAGE TESTING MUST BE PERFORMED PRIOR TO CONCEALMENT OF THE DUCTWORK.
  - MECHANICAL CONTRACTOR SHALL PROVIDE TENANT WITH A WRITTEN ONE (1) YEAR MANUFACTURER'S WARRANTY ON ALL HVAC EQUIPMENT PROVIDED AND / OR INSTALLED. THE WARRANTY SHALL INCLUDE ALL LABOR, MATERIALS AND THREE (3) ROUTINE SERVICES INCLUDING FILTER CHANGES DURING A ONE (1) YEAR PERIOD.
  - AT THE COMPLETION OF CONSTRUCTION AN NEBS, AABC OR TABB CERTIFIED AIR BALANCE REPORT SHALL BE SUBMITTED TO THE ENGINEER AND LANDLORD. PRIOR TO SCHEDULING BALANCING, COORDINATE WITH LANDLORD'S FIELD REPRESENTATIVE FOR THE VENDOR LISTED BELOW. IF APPROVED, THE BALANCING SHALL BE COMPLETED BY NATION TAB. CONTACT WILL TURNBOURH AT WILL@NATIONALTAB.COM OR 314-954-6244.


- HVAC NOTES:**
- PROVIDE REFRIGERANT LINES FROM ASH-1 ON ROOF TO FC-1 IN KITCHEN OFFICE [104] AS NOTED ON PLANS. LINES SHALL BE SIZED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. PROVIDE ALL ACCESSORIES AS REQUIRED BY MANUFACTURER FOR COMPLETE WORKING SYSTEM, INCLUDING ANY ACCESSORIES ASSOCIATED WITH LONG LENGTH APPLICATIONS WHERE APPLICABLE. ADJUST ROUTING AS NECESSARY IN FIELD FOR ANY OBSTACLES. COORDINATE EXACT LOCATION AND ROUTING WITH CONSTRUCTION MANAGER.
  - PROVIDE REFRIGERANT LINES FROM CONDENSING UNIT ON ROOF TO KITCHEN EQUIPMENT AS NOTED ON PLANS. LINES SHALL BE SIZED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. PROVIDE ALL ACCESSORIES AS REQUIRED BY MANUFACTURER FOR COMPLETE WORKING SYSTEM, INCLUDING ANY ACCESSORIES ASSOCIATED WITH LONG LENGTH APPLICATIONS WHERE APPLICABLE. ADJUST ROUTING AS NECESSARY IN FIELD FOR ANY OBSTACLES. COORDINATE EXACT LOCATION AND ROUTING WITH CONSTRUCTION MANAGER.



1 MECHANICAL REFRIGERANT PIPING LAYOUT PLAN  
SCALE: 1/4" = 1'-0"



CONSULTANT LOGO:



**Schnackel**  
engineers

800-581-0963  
www.schnackel.com  
12.2008 23585

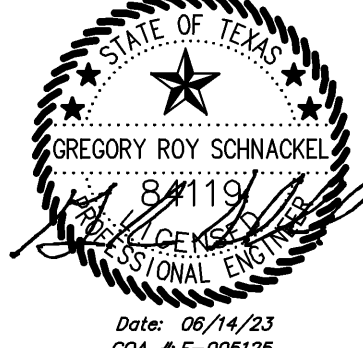
STORE NO:  
TX 1483

SHAKE SHACK

1985 EAST WATKINSON BLVD  
CELESTINE PARK, TX 79813

REVISION	
NO.	DESCRIPTION
1	04/21/2023 REVISION 1
2	06/09/2023 REVISION 2

STATUS:  
IFC SET



Gregory Roy Schnackel  
Professional Engineer  
State of Texas  
No. 84119  
Date: 06/14/23  
COA # F-005125

FIELD VERIFICATION:  
The contractor shall verify all field dimensions and conditions at the project site and notify Zebra Projects, Inc. of any discrepancies, errors, or omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

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SHEET NAME:  
MECHANICAL ROOF PLAN

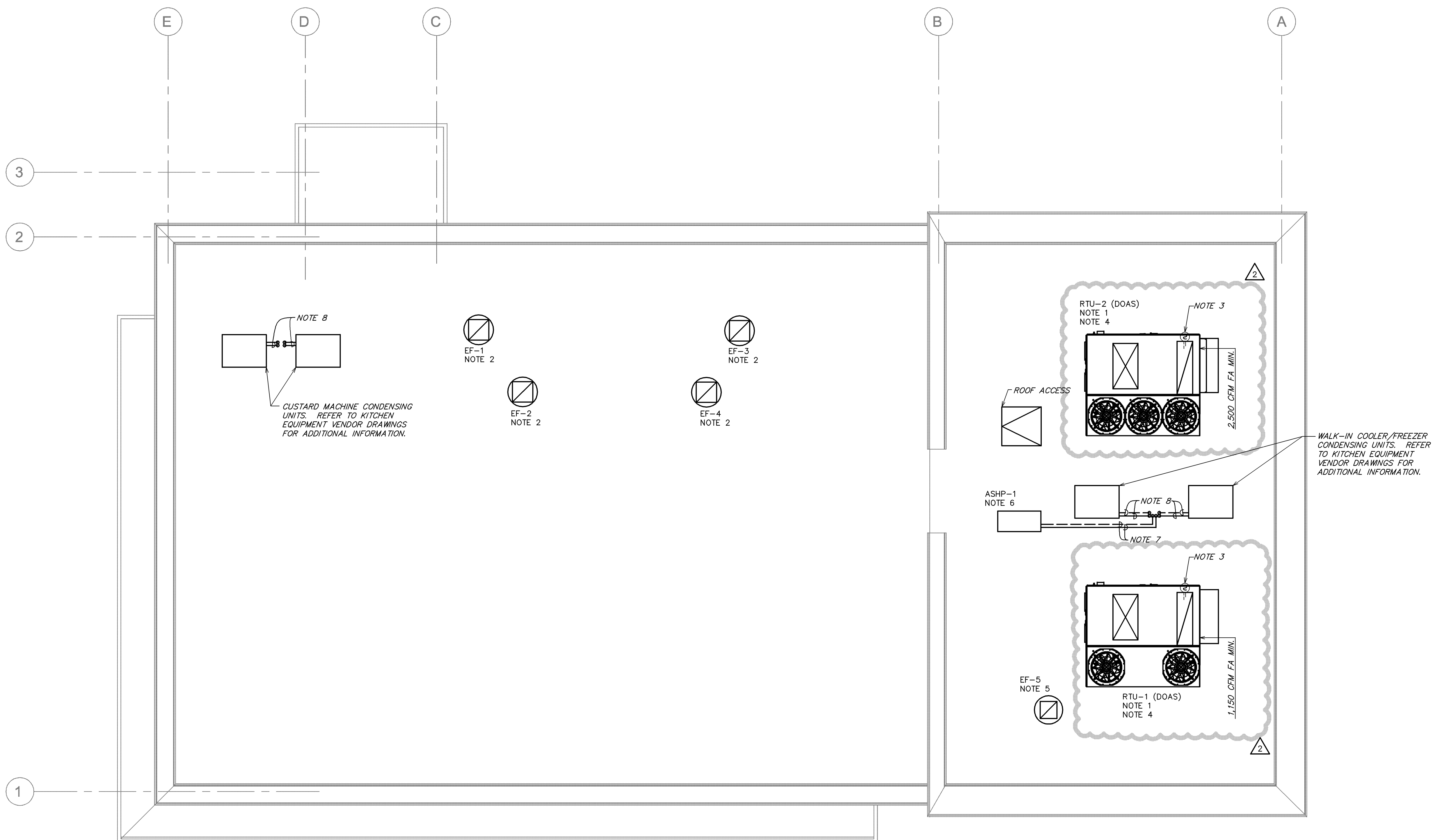
DATE: 04/21/2023 PROJECT NO: 35985

DRAWN: RAS SCALE: AS NOTED

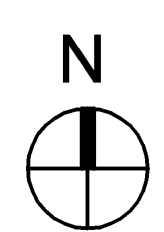
SHEET NO:  
M150

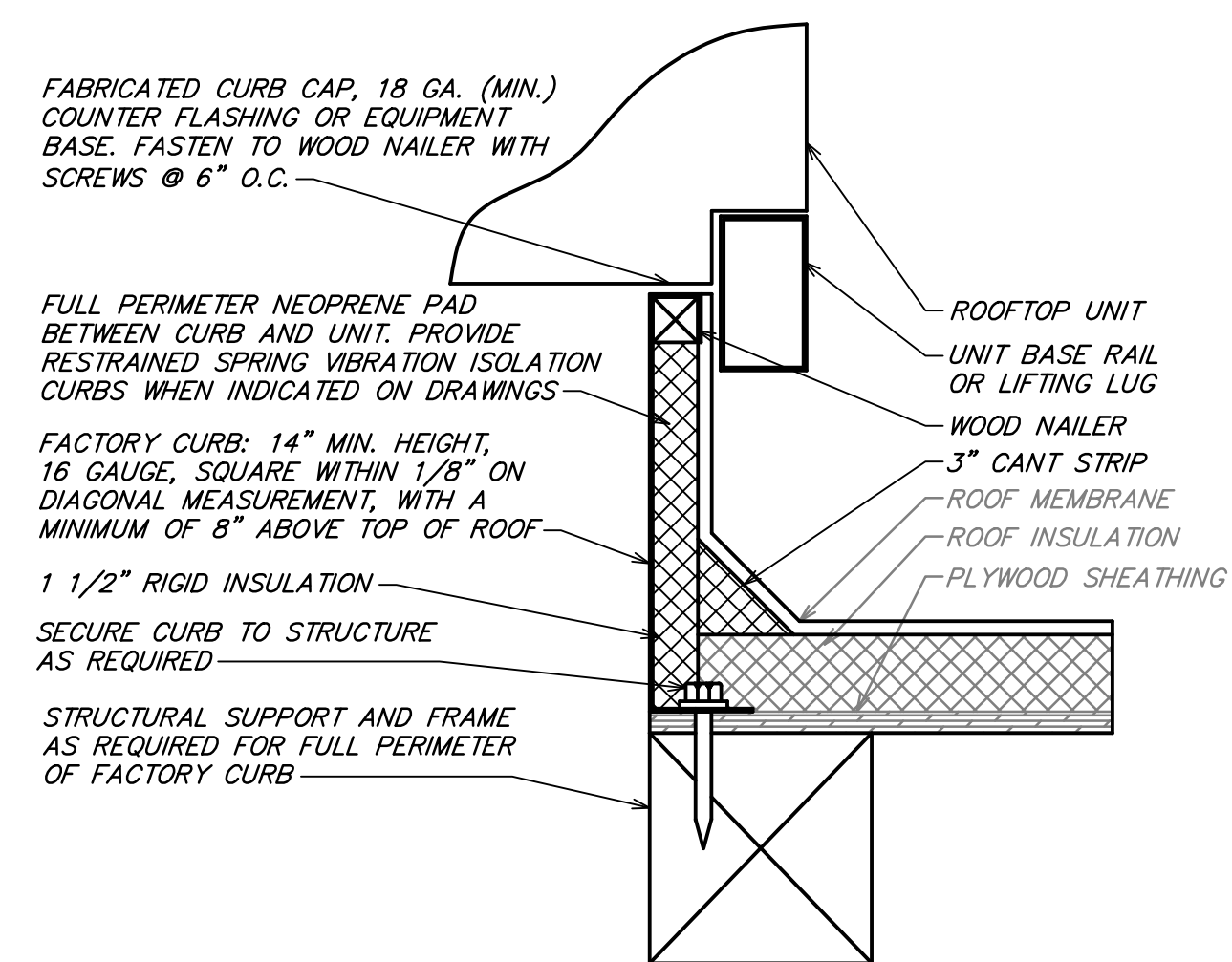
- GENERAL NOTES:**
- EXISTING CONDITIONS ARE BASED ON RECORD DRAWINGS PROVIDED BY THE OWNER. CONTRACTOR SHALL ADJUST TO ACTUAL FIELD CONDITIONS AT NO ADDITIONAL EXPENSE TO THE PROJECT.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF ALL EXISTING CONDITIONS PRIOR TO SUBMITTING THE BID. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR ANY EXTRAS DUE TO THE CONTRACTOR'S FAILURE TO VISIT THE PROJECT SITE PRIOR TO SUBMITTING THE BID. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER FOR RESOLUTION.
  - ALL CONTRACTORS SHALL REVIEW A COMPLETE SET OF CONSTRUCTION DOCUMENTS. CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH DEMOLITION WORK PRIOR TO BIDDING AND START OF WORK. CONTRACTOR IS RESPONSIBLE TO DEMOLISH ALL EXISTING AS REQUIRED FOR INSTALLATION/CONSTRUCTION OF NEW WORK.
  - ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH ALL APPLICABLE GOVERNMENT AND LOCAL CODES.
  - MECHANICAL CONTRACTOR SHALL FIELD COORDINATE WITH ELECTRICAL CONTRACTOR FOR ALL POWER REQUIREMENTS.
  - ALL CONTRACTORS SHALL REVIEW A COMPLETE SET OF CONSTRUCTION DOCUMENTS AND COOPERATE WITH THE OTHER TRADES SO THAT THE INSTALLATION OF ALL EQUIPMENT MAY BE PROPERLY COORDINATED.
  - ALL EQUIPMENT FURNISHED SHALL FIT THE SPACE AVAILABLE WITH CONNECTIONS IN THE REQUIRED LOCATIONS AND WITH ADEQUATE SPACE FOR OPERATING AND SERVICING. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND INDICATE THE INTENT OF THE INSTALLATION WHILE THE SPECIFICATIONS AND EQUIPMENT LIST DENOTE THE TYPE AND QUALITY OF MATERIAL AND WORKMANSHIP TO BE USED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENTS. WHERE A CONFLICT EXISTS BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, THE HIGHER AND/OR MORE COSTLY STANDARD WILL APPLY. THE CONTRACTOR SHALL PROMPTLY NOTIFY THE ENGINEER WHOSE DECISION SHALL BE FINAL. NO ALLOWANCE WILL BE MADE SUBSEQUENTLY IN THIS REGARD ON BEHALF OF THE CONTRACTOR AFTER AWARD OF THE CONTRACT.
  - COORDINATE DUCT ROUTING AND HEIGHTS WITH GENERAL CONTRACTOR. VERIFY ALL CLEARANCES BEFORE STARTING WORK.
  - THE CONTRACTOR SHALL INSTALL ALL PIPING, DUCTWORK AND EQUIPMENT AS REQUIRED TO CONFORM TO THE STRUCTURE, AVOID OBSTRUCTIONS, PRESERVE CEILING HEIGHTS AND HEADROOM AND MAKE ALL EQUIPMENT REQUIRING MAINTENANCE OR REPAIR ACCESSIBLE. THE ENGINEER FOR RESOLUTION.
  - ALL DUCT CONNECTIONS TO HVAC EQUIPMENT MUST BE MADE WITH FLEXIBLE CONNECTORS.
  - DO NOT ATTACH ANYTHING TO DECK ABOVE. ATTACH TO STRUCTURE (I.E. BEAMS, JOISTS) ONLY. DUCT HANGERS SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODE. ALL CONNECTIONS TO JOISTS SHALL BE MADE AT THE TOP CORNER.
  - ALL DUCT DIMENSIONS INDICATED ARE CLEAR INSIDE DIMENSIONS. ALL SUPPLY AND UNTEMPERED OUTDOOR AIR DUCTWORK SHALL BE LINED WITH 1" ACOUSTICAL DUCT LINER OR WRAPPED WITH 1-1/2" THICK FIRE RETARDANT FIBERGLASS WITH A REINFORCED ALUMINUM FOIL JACKET AND SHALL BE APPROVED FOR USE BY SMOGON AND MAINTAIN RETURN DUCTS AND RETURN DUCTWORK WITHIN 10 FEET OF THE UNIT FAN SHALL BE LINED WITH 1" ACOUSTICAL DUCT LINER.
  - ALL SUPPLY AND UNTEMPERED OUTDOOR AIR DUCTWORK VISIBLE TO THE PUBLIC SHALL BE INTERNALLY LINED AND PAINTED TO MATCH THE SURROUNDING AREA. DUCT WRAP INSULATION IS NOT PERMITTED IN THESE AREAS.
  - ALL EXPOSED DUCTWORK SHALL BE INSTALLED TIGHT TO THE BOTTOM OF THE STRUCTURE.
  - PROVIDE REMOTE VOLUME DAMPER MANUFACTURED BY YOUNG REGULATOR OR UNITED ENERTECH FOR DAMPERS LOCATED ABOVE INACCESSIBLE CEILING.
  - LOCATE CONTROLLER ABOVE ACCESSIBLE CEILING LOCATION.
  - REFRIGERANT PIPING SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL ACCESSORIES AS REQUIRED BY MANUFACTURER FOR COMPLETE WORKING SYSTEM, INCLUDING ANY ACCESSORIES ASSOCIATED WITH LONG LENGTH APPLICATIONS WHERE APPLICABLE.
  - TENANT'S CONTRACTOR SHALL BE RESPONSIBLE FOR THE FIELD VERIFICATION OF ALL UTILITY RUNS AND/OR OTHER IMPROVEMENTS LOCATED ON THE PREMISES PRIOR TO BIDDING. TENANT'S CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ALL COSTS RELATING TO THE RELOCATION OF, DAMAGE TO, REPAIR OF ANY EXISTING UTILITY RUNS AND/OR IMPROVEMENTS WHICH ARE DAMAGED AS A RESULT OF TENANT'S WORK IN OR AROUND THE PREMISES.
  - ALL GREASE EXHAUST DUCTWORK SHALL BE PROVIDED WITH 3" FOIL FACED THERMAL-CERAMIC INSULATION FOR GREASE DUCTS. INSULATION SHALL MEET NFPA 96 AND ASTM E 2335 REQUIREMENTS.
  - GREASE DUCT LEAKAGE TESTING MUST BE PERFORMED PRIOR TO CONCEALMENT OF THE DUCTWORK.
  - MECHANICAL CONTRACTOR SHALL PROVIDE TENANT WITH A WRITTEN ONE (1) YEAR MANUFACTURER'S WARRANTY ON ALL HVAC EQUIPMENT PROVIDED AND / OR INSTALLED. THE WARRANTY SHALL INCLUDE ALL LABOR, MATERIALS AND THREE (3) ROUTINE SERVICES INCLUDING FILTER CHANGES DURING A ONE (1) YEAR PERIOD.
  - AT THE COMPLETION OF CONSTRUCTION AN NEBB, AABC OR TABB CERTIFIED AIR BALANCE REPORT SHALL BE SUBMITTED TO THE ENGINEER AND LANDLORD. PRIOR TO SCHEDULING BALANCING, COORDINATE WITH LANDLORD'S FIELD REPRESENTATIVE FOR THE VENDOR LISTED BELOW. IF APPROVED, THE BALANCING SHALL BE COMPLETED BY NATION TAB. CONTACT WILL TURNBOURNE AT WILL@NATIONTAB.COM OR 314-854-6244.

- HVAC NOTES:**
- NEW CAPTIVEAIRE RTU TO BE FURNISHED BY OWNER FOR INSTALLATION BY MECHANICAL CONTRACTOR. SEE CAPTIVEAIRE SHEETS M701 THROUGH M709 FOR ADDITIONAL INFORMATION. FIELD VERIFY EXACT LOCATION.
  - NEW CAPTIVEAIRE GREASE EXHAUST FAN TO BE FURNISHED BY OWNER FOR INSTALLATION BY MECHANICAL CONTRACTOR. SEE CAPTIVEAIRE SHEETS M701 THROUGH M709 FOR ADDITIONAL INFORMATION. CONTRACTOR SHALL FIELD VERIFY THAT THE LOCATION SHOWN IS A MINIMUM OF 10'-0" FROM ANY OUTDOOR AIR INTAKE.
  - DUCT SMOKE DETECTOR ON RETURN SIDE DUCT AND SHUTDOWN RELAY SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR FOR INSTALLATION BY THE MECHANICAL CONTRACTOR. ALL WIRING SHALL BE BY THE ELECTRICAL CONTRACTOR. IF THE BUILDING HAS A FIRE ALARM SYSTEM, THESE DEVICES WILL NEED TO BE CONNECTED TO THE FAC AND CAN BE ADDRESSED ON THE FIRE ALARM SUBMITTAL.
  - RFC ENVIRONMENTAL GROUP, INC. AIR PURIFICATION SYSTEM TO BE PROVIDED BY RTAB. REFER TO RESPONSIBILITY MATRIX ON SHEET M001 FOR ADDITIONAL INFORMATION, SHEET M001 FOR SCHEDULE, AND SHEET M002 FOR SPECIFICATIONS.
  - PROVIDE NEW EXHAUST FAN AS NOTED ON PLANS AND SCHEDULED ON SHEET M001. THE CONTRACTOR SHALL FIELD VERIFY THAT THE LOCATION SHOWN IS A MINIMUM OF 10'-0" FROM ANY OUTDOOR AIR INTAKE.
  - PROVIDE ASHP AS NOTED ON PLANS AND SCHEDULED ON SHEET M001.
  - PROVIDE REFRIGERANT LINES FROM ASHP-1 ON ROOF TO FC-1 IN ROOM 104. LINES SHALL BE SIZED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. PROVIDE ALL ACCESSORIES AS REQUIRED BY MANUFACTURER FOR COMPLETE WORKING SYSTEM, INCLUDING ANY ACCESSORIES ASSOCIATED WITH LONG LENGTH APPLICATIONS WHERE APPLICABLE.
  - PROVIDE REFRIGERANT LINES FROM KITCHEN EQUIPMENT CONDENSING UNITS ON ROOF TO UNITS IN THE KITCHEN SPACE AS INDICATED ON THE KITCHEN DRAWINGS. LINES SHALL BE SIZED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. PROVIDE ALL ACCESSORIES AS REQUIRED BY MANUFACTURER FOR COMPLETE WORKING SYSTEM, INCLUDING ANY ACCESSORIES ASSOCIATED WITH LONG LENGTH APPLICATIONS WHERE APPLICABLE.



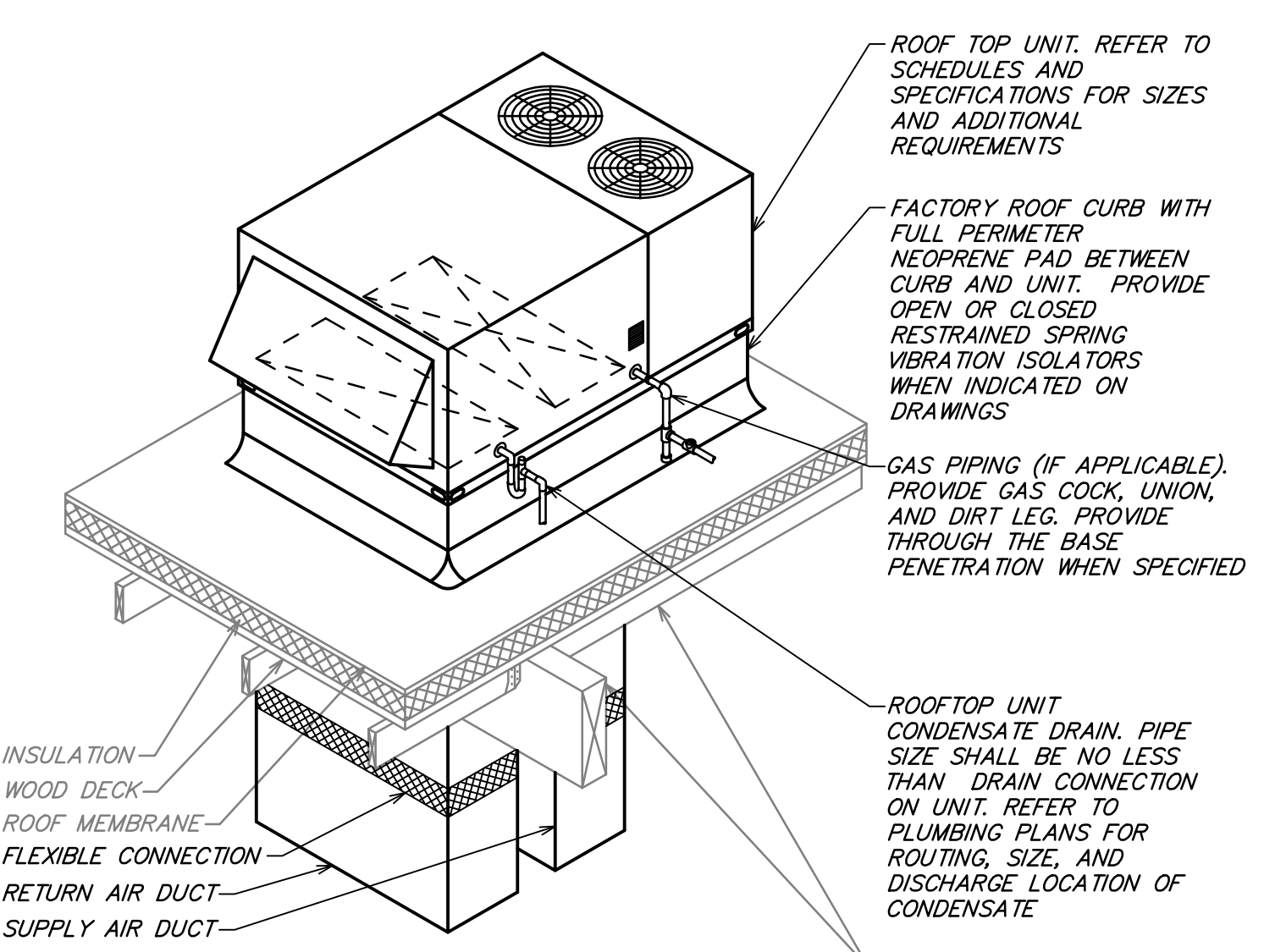
1 MECHANICAL ROOF PLAN  
SCALE: 1/4" = 1'-0"





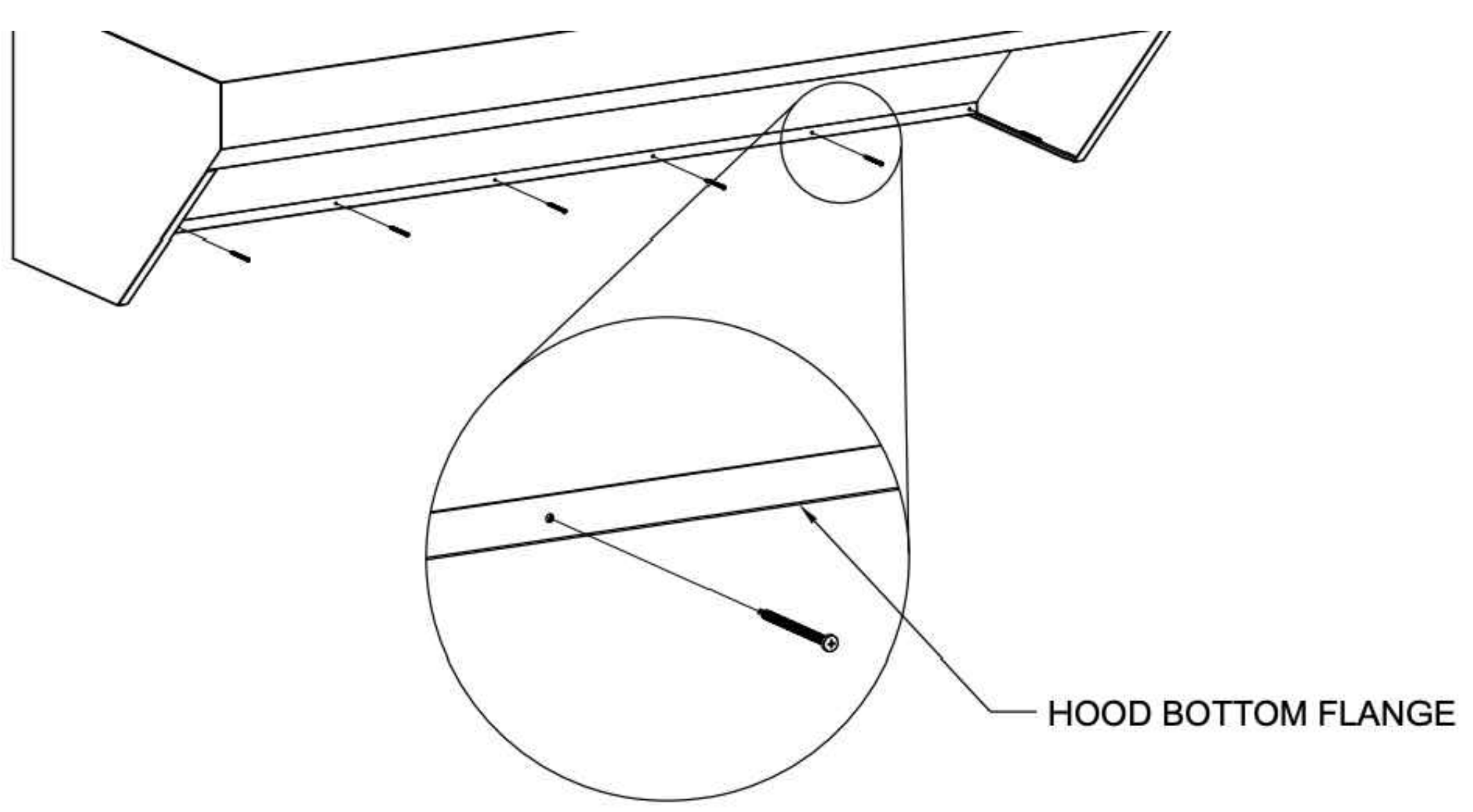
**NOTES:**  
 1. CUT AND PATCH EXISTING ROOFING AS REQUIRED FOR NEW CURB INSTALLATION.  
 2. CURB SHALL BE SHIMMED LEVEL. PROVIDE TAPERED ROOF CURB IF REQUIRED.  
 3. SECURELY INSTALL CURB TO ROOF STRUCTURE; USE FASTENERS AS REQUIRED BY ROOF CONSTRUCTION.

**12** ROOF CURB DETAIL  
NOT TO SCALE

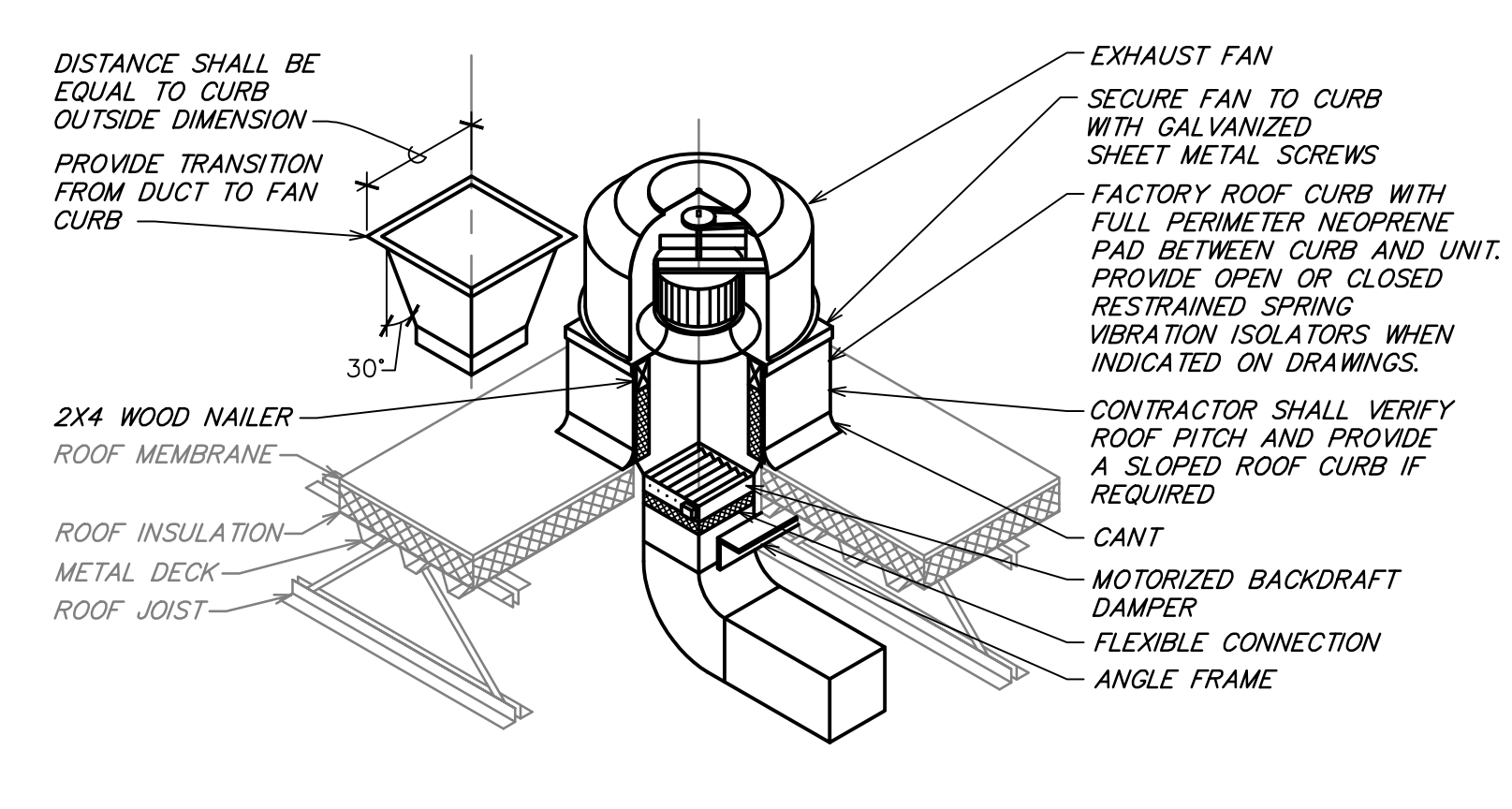


**NOTES:**  
 1. PROVIDE THROUGH CURB ELECTRICAL CONNECTIONS. NO ROOF PENETRATIONS OF ELECTRICAL CONDUITS WILL BE ACCEPTABLE.  
 2. DUCT SMOKE DETECTOR SHALL BE MOUNTED AND INSTALLED PER LOCAL CODES.

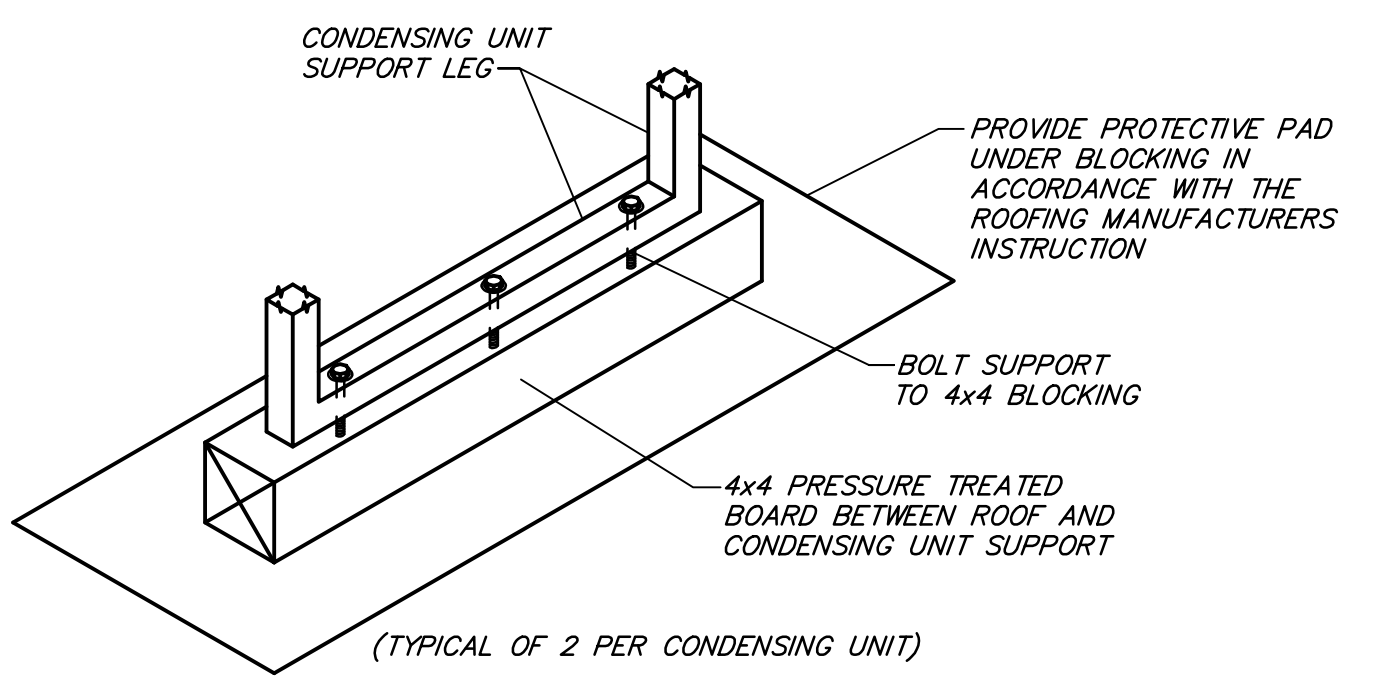
**13** TYPICAL ROOF TOP UNIT DETAIL  
NOT TO SCALE



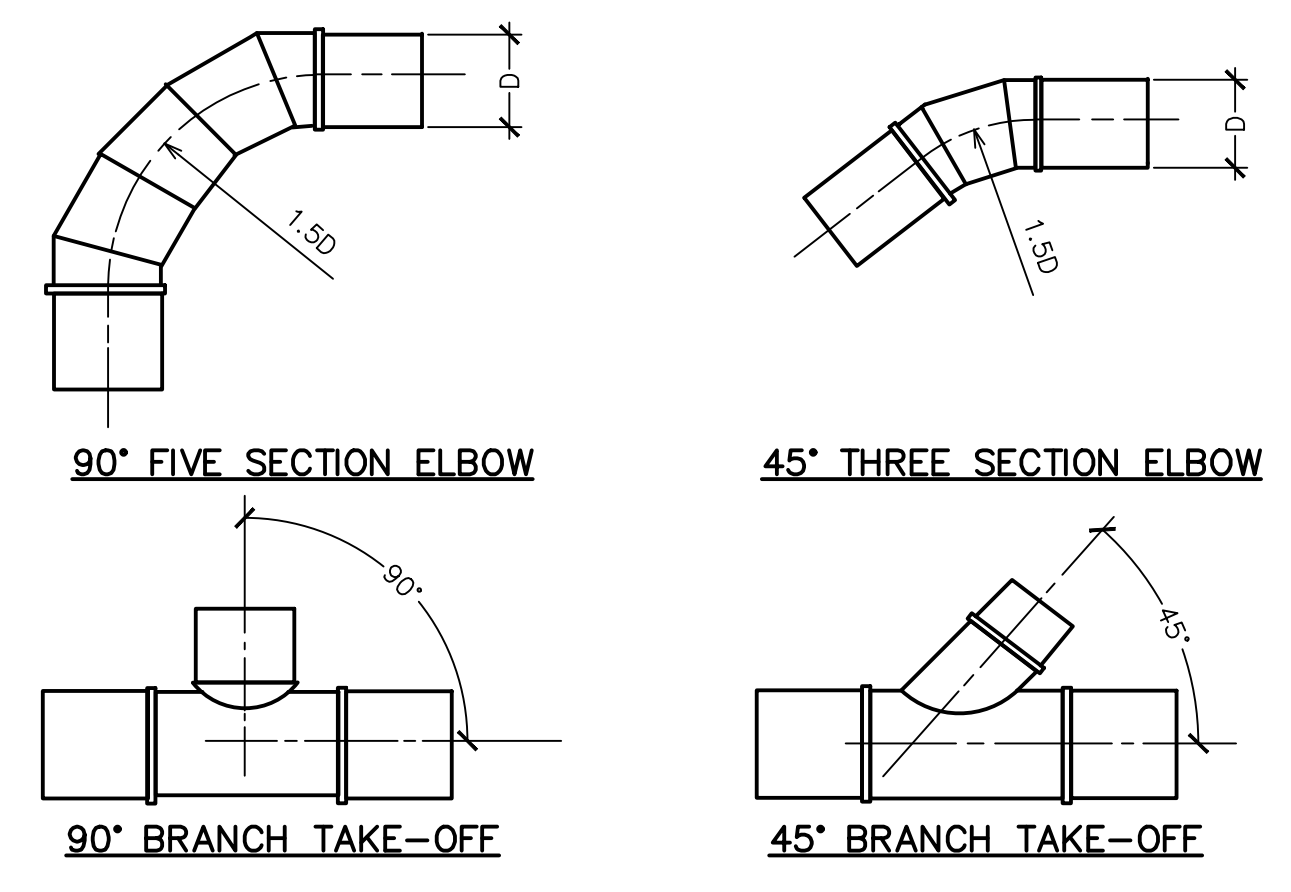
**14** HOOD FASTENING DETAIL  
NOT TO SCALE



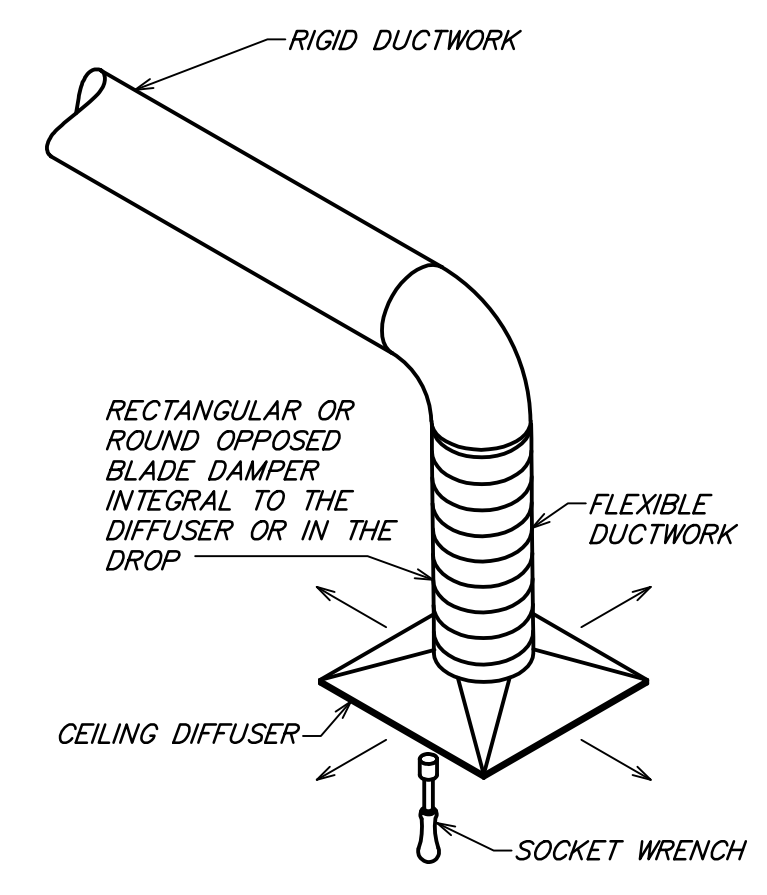
**9** ROOF EXHAUST FAN DETAIL  
NOT TO SCALE



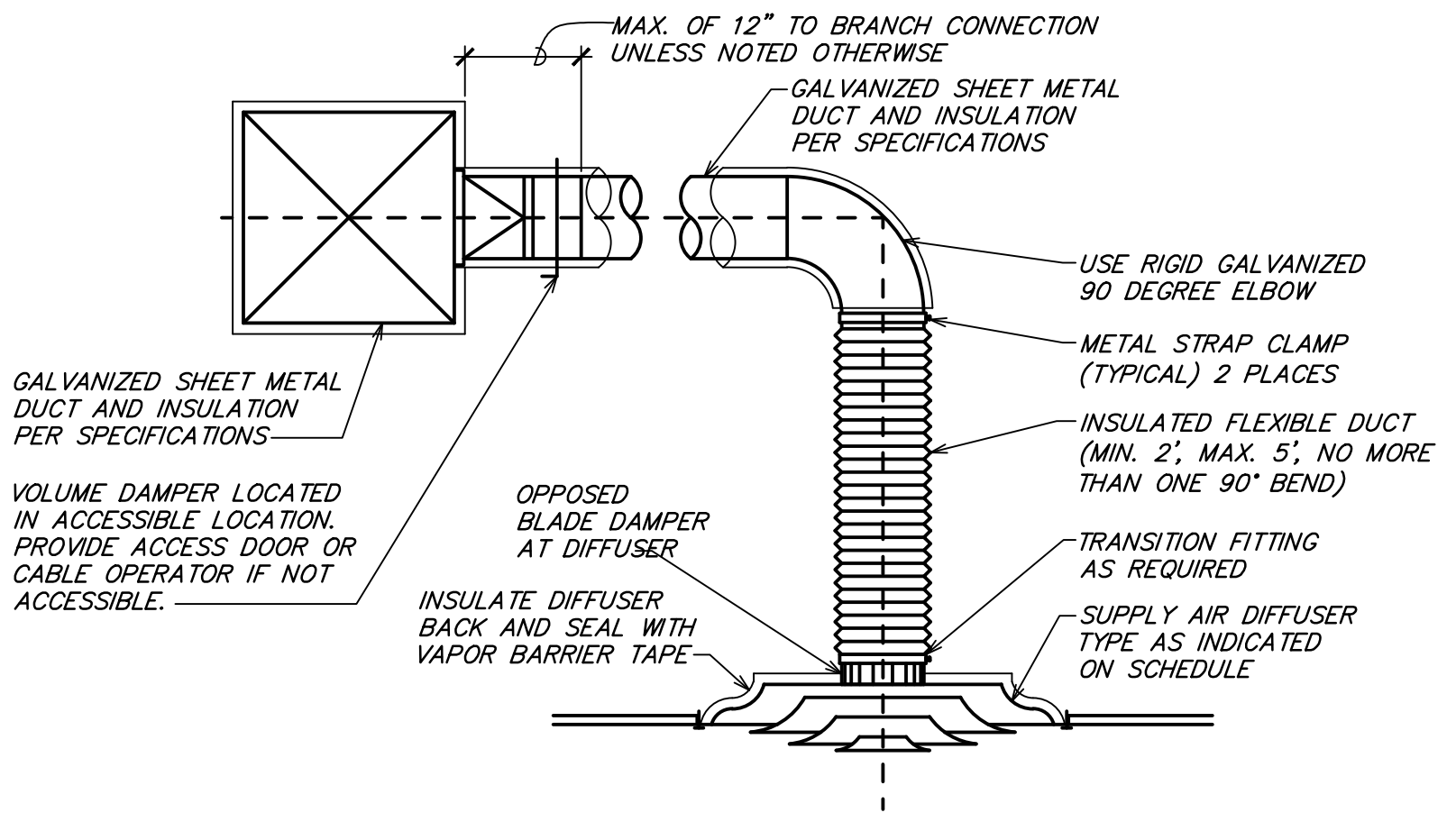
**10** CONDENSING UNIT SUPPORT DETAIL  
NOT TO SCALE



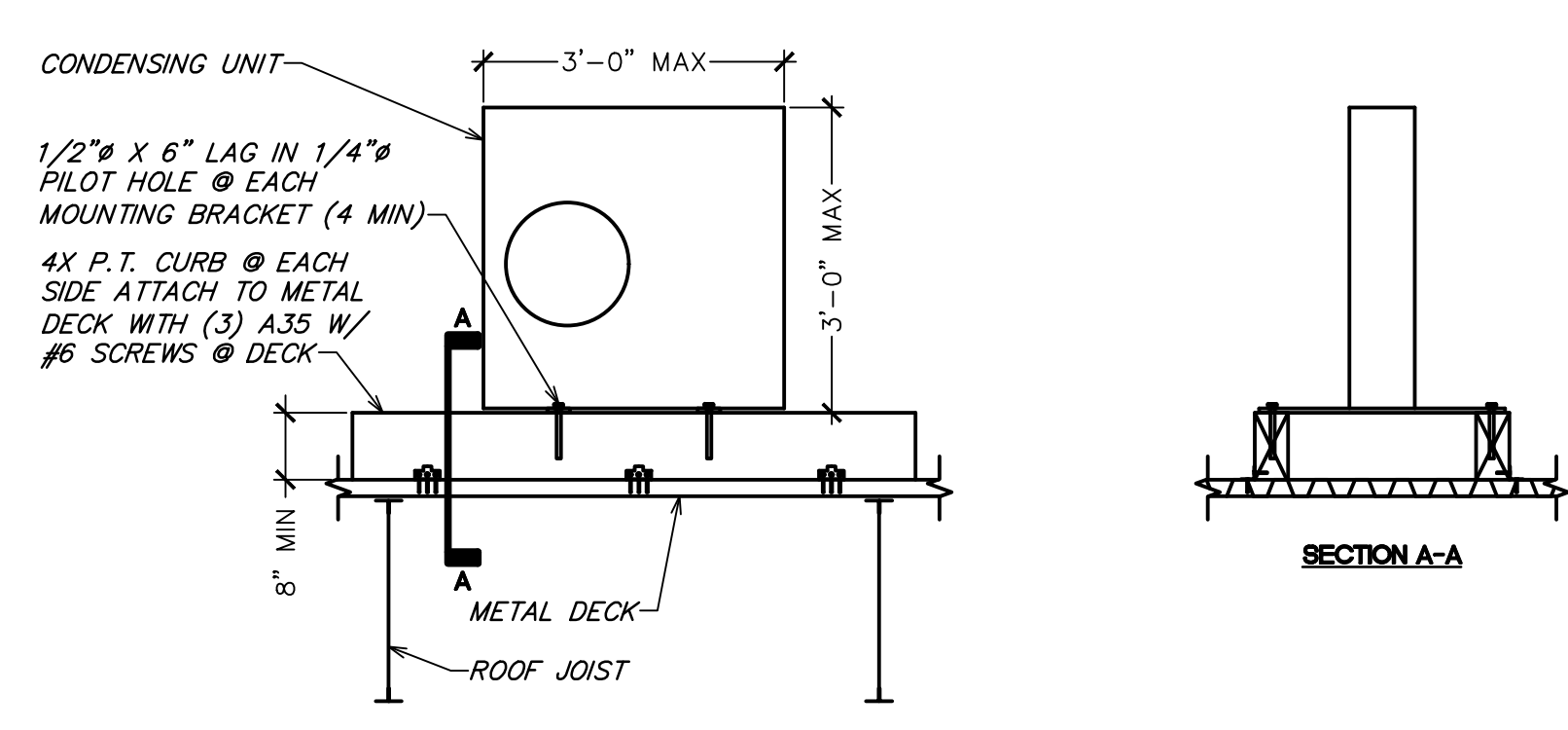
**11** TYPICAL ROUND DUCT FITTINGS  
NOT TO SCALE



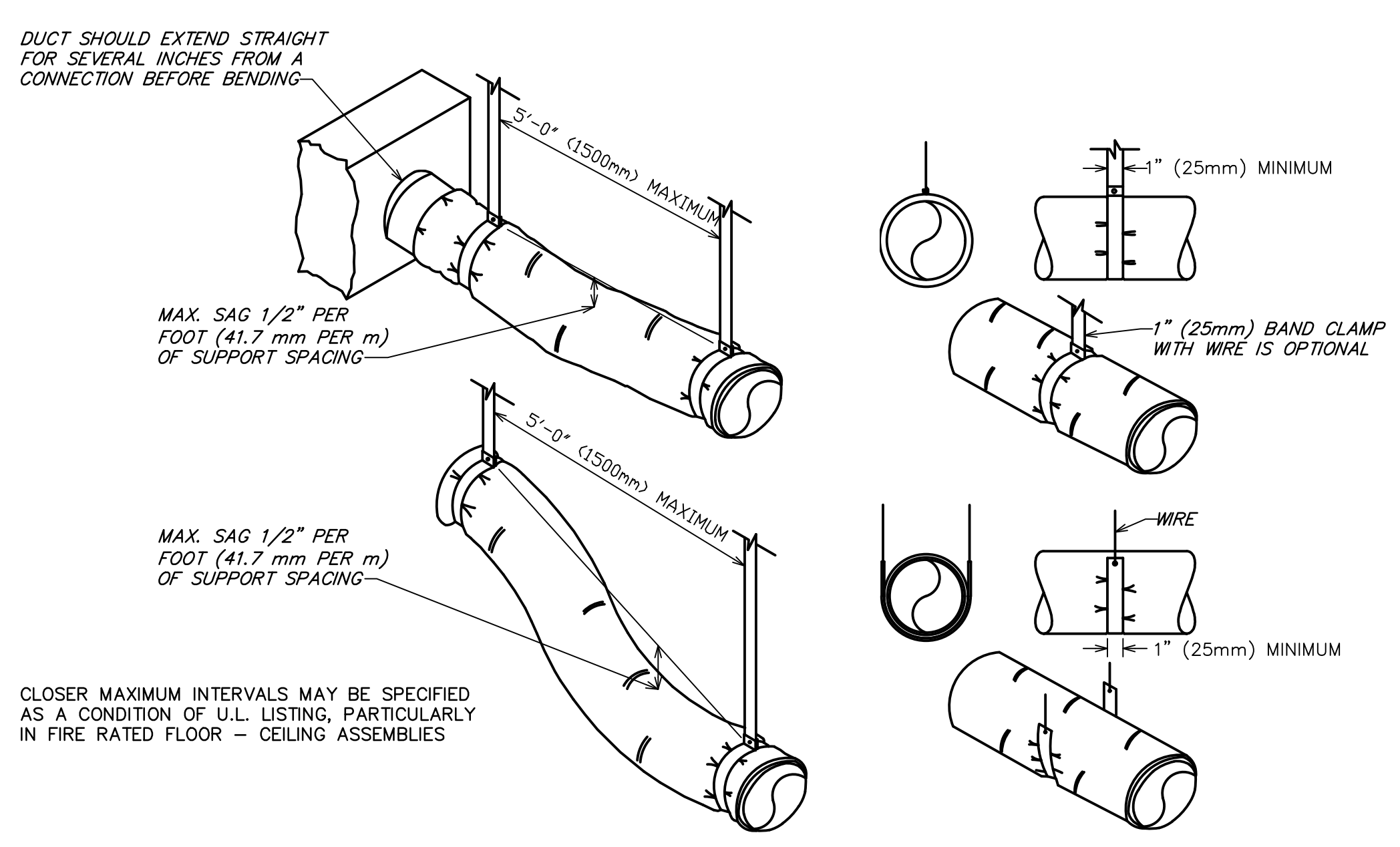
**5** REMOTE VOLUME DAMPER CONTROLLER  
NOT TO SCALE



**1** TYPICAL DIFFUSER CONNECTION  
NOT TO SCALE



**6** CONDENSING UNIT ANCHOR DETAIL (METAL)  
NOT TO SCALE

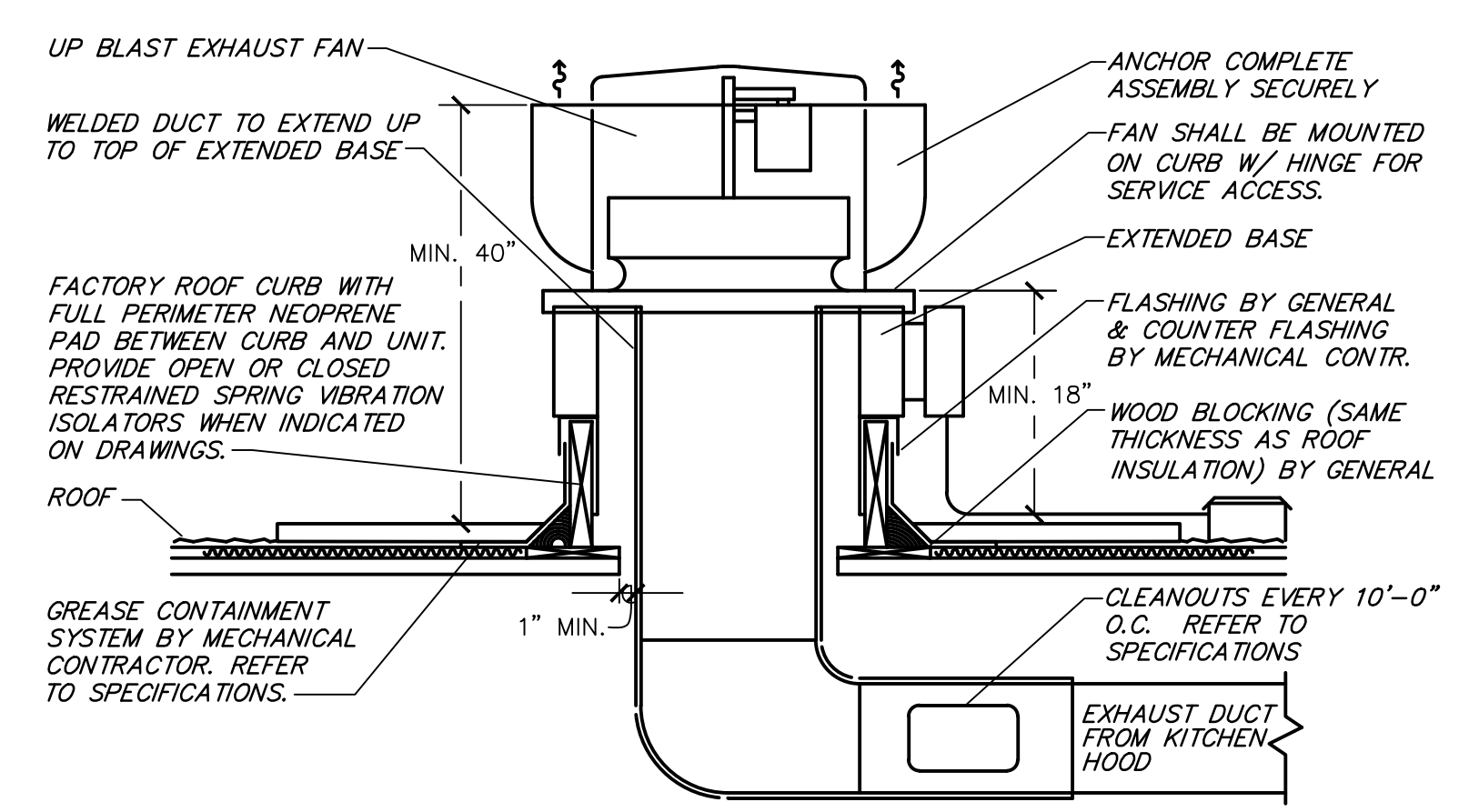


**7** FLEXIBLE DUCT SUPPORTS  
NOT TO SCALE

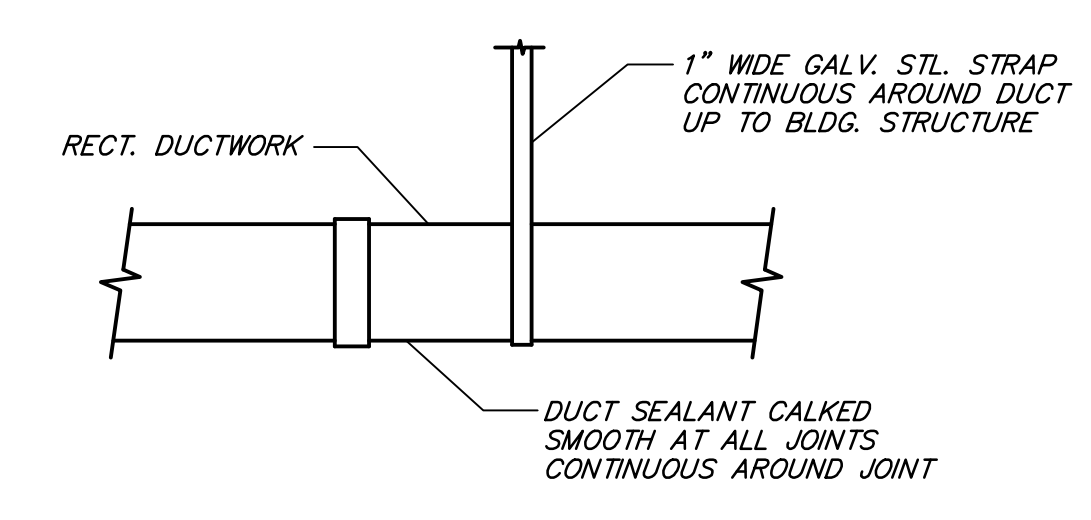
DIA.	WIRE DIA.	ROD	STRAP
10\"/>			

**NOTES:**  
 1. STRAPS ARE GALVANIZED STEEL; RODS ARE UNCOATED OR GALVANIZED STEEL; WIRE IS BLACK ANNEALED, BRIGHT BASIC OR GALVANIZED STEEL. ALL ARE ALTERNATIVES.  
 2. TABLE ALLOWS FOR CONVENTIONAL WALL THICKNESS, AND JOINT SYSTEMS PLUS ONE LB/SF OF INSULATION WEIGHT. IF HEAVIER DUCTS ARE TO BE INSTALLED, ADJUST HANGER SIZES TO BE WITHIN THEIR LOAD LIMITS.

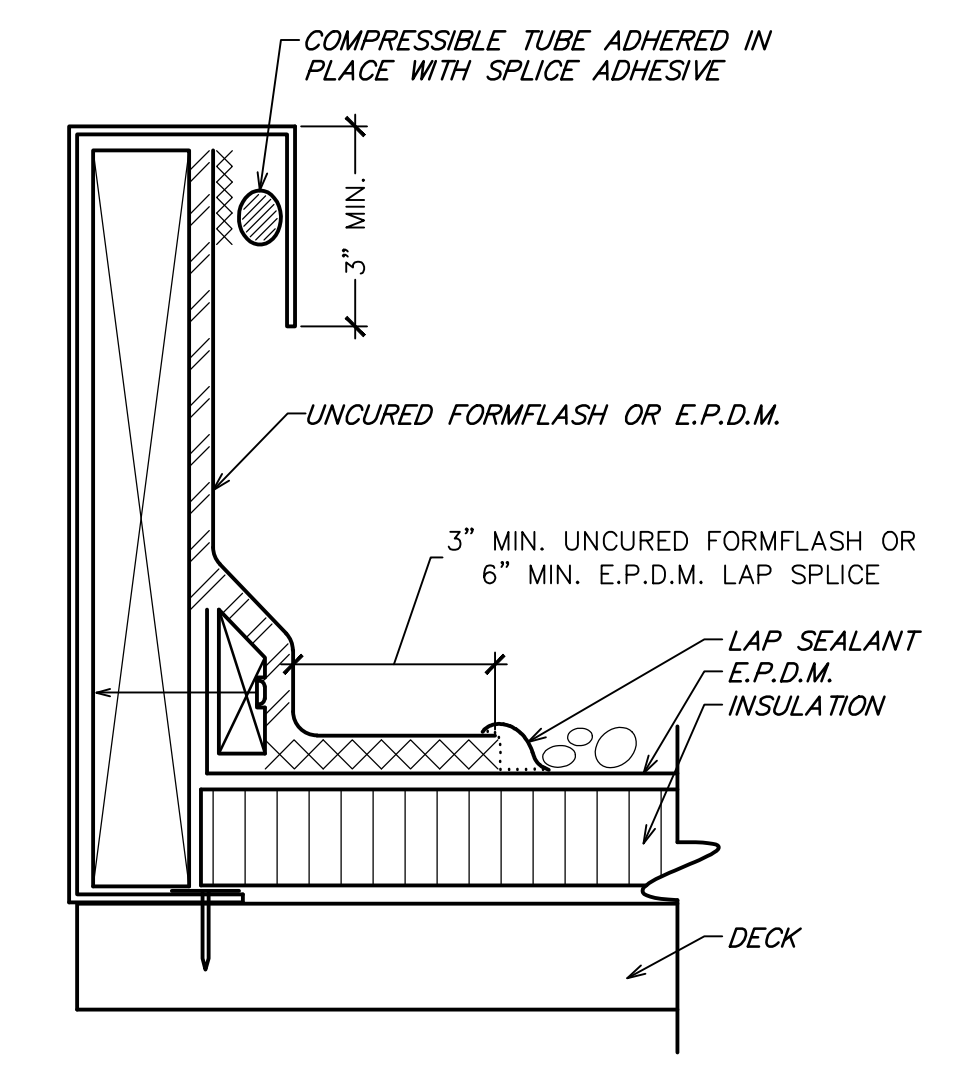
**8** ROUND DUCT HANGER TABLE  
NOT TO SCALE



**2** KITCHEN HOOD EXHAUST FAN  
NOT TO SCALE



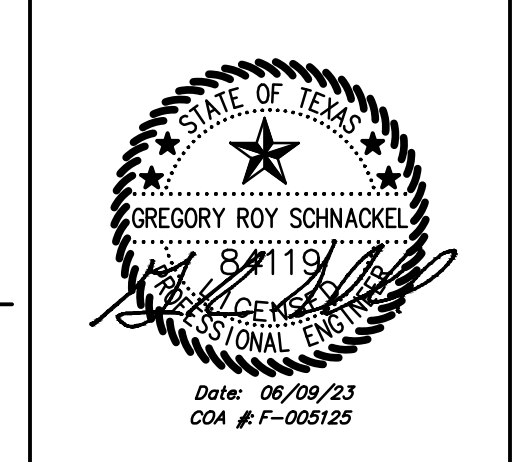
**3** EXPOSED RECTANGULAR DUCT SUPPORT DETAIL  
NOT TO SCALE



**4** CURB FLASHING DETAIL  
NOT TO SCALE

REVISION	
NO.	DESCRIPTION
1	04/21/2023 REVISION 1
2	06/09/2023 REVISION 2

STATUS: IFC SET



FIELD VERIFICATION:  
 The contractor shall verify all figured dimensions and location at the project site and notify Zebra Projects, Inc. of any dimensional errors, or omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.  
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SHEET NAME: MECHANICAL DETAILS

DATE: 04/21/2023 PROJECT NO: 35985

DRAWN: RAS SCALE: AS NOTED

SHEET NO: M501









ROOM #	NAME	Az AREA (FT <sup>2</sup> )	TABLE 403.3.1.1 OCCUPANCY CATEGORY	TABLE 403.3.1.1 PEOPLE OA (CFM/PERF)	TABLE 403.3.1.1 Ra AREA OA (CFM/FT <sup>2</sup> )	TABLE 403.3.1.1 OCCUPANT DENSITY (#/1000 FT <sup>2</sup> )	Pz (#)	Rp (#)	Ra (#)	Rb (#)	Rc (#)	Rd (#)	Rf (#)	Rg (#)	Rh (#)	Ri (#)	Rj (#)	Rk (#)	Rl (#)	Rm (#)	Rn (#)	Ro (#)	Rp (#)	Rq (#)	Rr (#)	Rs (#)	Rt (#)	Ru (#)	Rv (#)	Rw (#)	Rx (#)	Ry (#)	Rz (#)	INTERPOLATED TABLE 403.3.1.1.2.3.2
101	DINING	1,348	DINING ROOMS	7.5	0.18	70	95	713	243	955	0.80	1184	3750	3750	0.318	0.83																		

### 1 OUTSIDE AIR CALCULATIONS

**Air System Sizing Summary for BLOCK LOAD**

Project Name: 220565hvac\_for\_FA\_20221011134444      10/11/2022  
 Prepared by: Schnackel Engineers, Inc      -FA/Final      01:52PM

---

**Air System Information**

Air System Name ..... **BLOCK LOAD**      Number of zones ..... **1**  
 Equipment Class ..... **PKG ROOF**      Floor Area ..... **2973.0** ft<sup>2</sup>  
 Air System Type ..... **SZCAV**      Location ..... **Austin, Texas**

---

**Sizing Calculation Information**

Zone and Space Sizing Method:

Zone CFM ..... **Peak zone sensible load**      Calculation Months ..... **Jan to Dec**  
 Space CFM ..... **Individual peak space loads**      Sizing Data ..... **Calculated**

---

**Central Cooling Coil Sizing Data**

Total coil load	20.7	Tons	Load occurs at	Aug 1500
Total coil load	247.9	MBH	OA DB / WB	98.0 / 74.0 °F
Sensible coil load	195.6	MBH	Entering DB / WB	80.5 / 66.0 °F
Coil CFM at Aug 1500	7725	CFM	Leaving DB / WB	56.6 / 55.2 °F
Max block CFM	7725	CFM	Coil ADP	53.9 °F
Sum of peak zone CFM	7725	CFM	Bypass Factor	0.100
Sensible heat ratio	0.789		Resulting RH	51 %
ft <sup>3</sup> /Ton	143.9		Design supply temp.	55.0 °F
BTU/(hr-ft <sup>2</sup> )	83.4		Zone T-stat Check	1 of 1 OK
Water flow @ 10.0 °F rise	N/A		Max zone temperature deviation	0.0 °F

---

**Central Heating Coil Sizing Data**

Max coil load	191.5	MBH	Load occurs at	Des Htg
Coil CFM at Des Htg	7725	CFM	BTU/(hr-ft <sup>2</sup> )	64.4
Max coil CFM	7725	CFM	Ent. DB / Lvg DB	62.2 / 85.7 °F
Water flow @ 20.0 °F drop	N/A			

---

**Supply Fan Sizing Data**

Actual max CFM	7725	CFM	Fan motor BHP	1.27	BHP
Standard CFM	7554	CFM	Fan motor kW	1.01	kW
Actual max CFM/ft <sup>2</sup>	2.60	CFM/ft <sup>2</sup>	Fan static	0.60	in wg

### 2 LOAD CALCULATIONS

SETPOINT/CONTROL	RTU-1 DINING			RTU-2 KITCHEN			FC-1 OFFICE		
	RTU-1	RTU-2	FC-1	RTU-1	RTU-2	FC-1	RTU-1	RTU-2	FC-1
*SETPOINTS*									
COOLING - OCCUPIED SETPOINT	75 F	75 F	75 F						
COOLING - UNOCCUPIED SETPOINT	80 F	80 F	80 F						
HEATING - OCCUPIED SETPOINT	70 F	70 F	70 F						
HEATING - UNOCCUPIED SETPOINT	60 F	60 F	60 F						
ECONOMIZER UPPER LIMIT SETPOINT	65 F	65 F	NA						
*ACCESSORIES*									
HVAC SYSTEM OCCUPIED/UNOCCUPIED MODE - PROGRAMMABLE THERMOSTAT	YES	YES	YES						
REMOTE TEMPERATURE SENSOR	YES	YES	NO						
MOTORIZED OUTDOOR AIR DAMPER	YES	YES	YES						
INTEGRATED ECONOMIZER	YES	YES	NO						
ECONOMIZER FAULT DETECTION	YES	YES	NO						
BAROMETRIC RELIEF	NO	NO	NO						
POWERED EXHAUST RELIEF	YES	YES	NO						
DEHUMIDIFICATION (HOT GAS REHEAT)	YES	YES	NO						
*SUPPLY FAN*									
ON DURING OCCUPIED MODE	YES	YES	YES						
VARIABLE VOLUME - MODULATE FAN SPEED	YES	YES	YES						
*SAFETIES AND INTERLOCKS*									
RETURN AIR SMOKE DETECTOR	YES	YES	NO						
LOW LIMIT FREEZE STAT	YES	YES	YES						
FIRE ALARM CONTROL PANEL INTERLOCK	YES	YES	YES						
KITCHEN EXHAUST SYSTEM INTERLOCK	YES	YES	YES						

EQUIPMENT TAG	SUPPLY		OUTDOOR		RETURN		EXHAUST		OA/SA	REMARKS
	CFM	CFM	CFM	CFM	CFM	CFM	CFM			
RTU-1	3,750	1,150	2,600						31%	
RTU-2	3,700	2,500	1,200						68%	
FC-1	350	0	350						0%	
EF-1				700						
EF-2				700						
EF-3				700						
EF-4				700						
EF-5				300						
TOTAL	7,800	3,650	4,150	3,100						
RESULTING BUILDING PRESSURIZATION = 550 CFM										
PRESSURIZATION PERCENTAGE = 7.1 %										

CARRIER EQUIPMENT SHALL BE OBTAINED THROUGH SHAKE SHACK NATIONAL ACCOUNT. CONTACT CARRIER CORPORATION FOR PROPOSALS:  
 KEN REVILLA  
 CARRIER RETAIL STRATEGIC ACCOUNTS  
 EMAIL: KEN.REVILLA@CARRIER.COM  
 PHONE: (954) 218-0070

MARK	LENGTH (IN)	AIRFLOW (CFM)	HEATER			FANS			ELECTRICAL			MANUFACTURER	MODEL NUMBER	REMARKS
			IN (KW)	OUT (MBH)	TEMP RISE (F)	QTY	HP	CIRCUIT (QTY)	VOLT	PH				
AC-1	36.0	1,379	NA	NA	NA	1	1/2	1	115	1	MARS	STD236-1U	1,2	

MARK	SEN (MBH)	TOT (MBH)	COOL (TON)	IN (MBH)	OUT (MBH)	SUPPLY AIR (CFM)	EXT. S.P. (IN)	ELECTRICAL			WEIGHT (LBS)	SEER /EER	MODEL NUMBER	REMARKS	
								FAN BHP	VOLT	PH					
RTU-1	-	-	-	-	-	-	-	-	-	-	-	-	-	CAPTIVEAIRE	1-2
RTU-2	-	-	-	-	-	-	-	-	-	-	-	-	-	CAPTIVEAIRE	1-2

COOLING CAPACITIES ARE BASED ON AHRI STANDARD 210/240 OR 340/360: 80F DB/ 67F WB INDOOR ENTERING AIR TEMPERATURE, 95F DB AIR ENTERING OUTDOOR FAN. SCHEDULED UNIT MAY DIFFER FROM AHRI STANDARD CFM.  
 1. PROVIDE EQUIPMENT WITH SCOR GREATER THAN THE AVAILABLE FAULT CURRENT AT THE EQUIPMENT OR UPSTREAM PANELBOARD. REFER TO THE ELECTRICAL ONE LINE DIAGRAM AND PANEL SCHEDULES FOR AVAILABLE FAULT CURRENT AT UPSTREAM PANELBOARD.  
 2. REFERENCE CAPTIVEAIRE DRAWINGS FOR ADDITIONAL INFORMATION.

MARK	SERVICE	LOCATION	CEILING TYPE	MOUNTING TYPE	MANUFACTURER	MODEL NUMBER	REMARKS
D-1	SUPPLY	CEILING	AC TILE	LAY-IN	TITUS	TMS XX 24x24 3 26	1,2,6
D-2	SUPPLY	CEILING	GYP. BOARD	LAY-IN	TITUS	OMNI XX 12x12 3 26	1,2,4,6
D-3	SUPPLY	CEILING	AC TILE	LAY-IN	TITUS	PAR XX 24x24 3 26	1,2,6
D-4	SUPPLY	DUCT	NA	SURFACE	TITUS	300RL X X 1 26	1,5-7
G-1	RETURN	CEILING	AC TILE	LAY-IN	TITUS	50F X X 3 26	1,3,5-7
G-2	VARIES	CEILING	GYP. BOARD	SURFACE	TITUS	50F X X 1 26	1,3,5-7

REMARKS:  
 1. TITUS IS THE BASE OF DESIGN. KRUEGER, PRICE, NAILOR, CARNES ARE EQUAL. NO EXCEPTIONS.  
 2. SEE PLAN FOR NECK SIZE.  
 3. PROVIDE 1/2" X 1/2" X 1" CORE.  
 4. PROVIDE WITH MODEL TRM FRAME.  
 5. SEE PLAN FOR SIZE.  
 6. DIFFUSERS SHALL BE FINISHED TO MATCH CEILING/WALL EXPOSED DUCT COLOR. COORDINATE WITH ARCHITECT.  
 7. PROVIDE DIFFUSERS AND GRILLES WITH NO EXPOSED MOUNTING SCREWS.

MARK	LOCATION	SERVES	NOMINAL COOL (TONS)	HEATING AT 47F (MBH)	ELECTRICAL			SEER /EER	HSPF /COP	MANUFACTURER	MODEL NUMBER	REMARKS	
					VOLT	PH	MCA						
ASHP-1	ROOF	FC-1	3/4	10.0	208	1	15.0	15	205/130	108/233	CARRIER	38MARB009	1

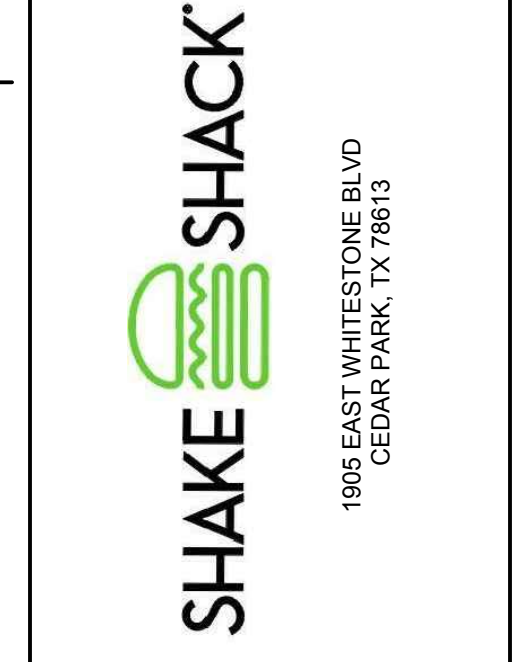
MARK	NOMINAL (TONS)	TOT (MBH)	SEN (MBH)	HEATING (MBH)	SUPPLY AIR (CFM)	FAN (WATT)	ELECTRICAL			SEER /EER	CARRIER MODEL NUMBER	REMARKS	
							VOLT	PH	MCA				
FC-1	3/4	11.73	8.79	10.00	350	45	208	1	0.2	N/A	205/130	40MBC009	1,2

MARK	LOCATION	SERVICE	AIRFLOW (CFM)	EXTERNAL STATIC (IN H2O)	MOTOR DATA			RPM	MANUFACTURER	MODEL NUMBER	REMARKS	
					SONES	FAN (HP)	VOLT PH					
EF-1	ROOF	HOOD 1	-	-	-	-	-	-	CAPTIVEAIRE	-	4	
EF-2	ROOF	HOOD 2	-	-	-	-	-	-	CAPTIVEAIRE	-	4	
EF-3	ROOF	HOOD 3	-	-	-	-	-	-	CAPTIVEAIRE	-	4	
EF-4	ROOF	HOOD 4	-	-	-	-	-	-	CAPTIVEAIRE	-	4	
EF-5	ROOF	RESTROOMS	300	0.50	7.2	1/8	115	1	1,550	GREENHECK	G-095-D	1-3

UNIT NO.	PLACEMENT	PHI CELL MODEL #	UV/CELL SIZE	RANGE	INDOOR PPM TARGET	SIZE	TRANSFORMER	POWER	IN-VOLT	OUT-VOLT	MCA	WEIGHT (LBS.)
RTU-2	BLOWER CABINET	PHI-PKG14-24V	14"	3,000-8000 CFM	< 0.02 PPM	2.25"W x 19.5"L x 1.75"D	SHIP LOOSE	11W	115 VAC	24 VAC	0.50A	2 LBS



STORE NO: TX 1483



DATE	DESCRIPTION
04/21/2023	REVISION 1
06/09/2023	REVISION 2

STATUS: IFC SET



FIELD VERIFICATION:  
 The contractor shall verify all figured dimensions and location at the project site and notify Zebra Projects, Inc. of any dimensional errors, or omissions or discrepancies before beginning or fabricating any work. Do not make these changes.  
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SHEET NAME: MECHANICAL SCHEDULES

DATE: 04/21/2023 PROJECT NO: 35885

DRAWN: RAS SCALE: AS NOTED

SHEET NO: M601