



CERTIFICATE OF COMPLIANCE  
Project Name: Shake Shack Del Amo Report Page: (Page 1 of 12)  
Project Address: 3525 West Carson St #VCO8 Date Prepared: 9/10/2021

**A. GENERAL INFORMATION**

01 Project Location City	Torrance	04 Total Conditioned Floor Area	1030
02 Climate Zone	6	05 Total Unconditioned Floor Area	0
03 Occupancy Types Within Project		06 # of Stories (Habitable Above Grade)	1
<input type="checkbox"/> Office (B)	<input checked="" type="checkbox"/> Retail (M)	<input type="checkbox"/> Non-refrigerated Warehouse (S)	
<input type="checkbox"/> Hotel/ Motel Guest Rooms (R-1)	<input type="checkbox"/> School (E)	<input type="checkbox"/> Healthcare Facility (I)	
<input type="checkbox"/> High-Rise Residential (R-2/R-3)	<input type="checkbox"/> Relocatable Class Bldg (E)	<input type="checkbox"/> Other (write in)	See Table J

**B. PROJECT SCOPE**  
This table includes mechanical systems or components that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.5, or §141.0(b)2, for alterations.

01	02	03
Air System(s)	Wet System Components	Dry System Components
<input checked="" type="checkbox"/> Heating Air System	<input type="checkbox"/> Water Economizer	<input type="checkbox"/> Air Economizer
<input checked="" type="checkbox"/> Cooling Air System	<input type="checkbox"/> Pumps	<input type="checkbox"/> Electric Resistance Heat
Mechanical Controls	<input type="checkbox"/> System Piping	<input checked="" type="checkbox"/> Fan Systems
<input checked="" type="checkbox"/> Mechanical Controls (existing to remain, altered or new)	<input type="checkbox"/> Cooling Towers	<input checked="" type="checkbox"/> Ductwork (existing to remain, altered or new)
	<input type="checkbox"/> Chillers	<input checked="" type="checkbox"/> Ventilation
	<input type="checkbox"/> Boilers	<input type="checkbox"/> Zonal Systems/ Terminal Boxes

Registration Number: Registration Date/Time: Registration Provider: Energysoft  
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**F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)**  
Dry System Equipment Efficiency (other than Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP))

01	02	03	04	05	06	07	08	09
Name or Item Tag	Size Category (Btu/h)	Rating Condition (%)	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency
Kitchen/FOH/BOH	<65,000		HSPF	8.2	10	SEER	13.0	16.1
Storage/Manager's Office	<65,000		HSPF	8.2	10.8	SEER	13.0	19.6

**G. PUMPS**  
This section does not apply to this project.

**H. FAN SYSTEMS & AIR ECONOMIZERS**  
This table is used to demonstrate compliance with prescriptive requirements found in §140.4(c), §140.4(e) and §140.4(m) for fan systems. Fan systems serving only process loads are exempt from these requirements and do not need to be included in Table H.

System Name	Kitchen/FOH/BOH	Economizer <sup>1</sup>	NA: <=54 kBtu/h cooling	Economizer Controls	Designed per §140.4(e) and (m)	System Fan Type	Constant Volume	
01	02	03	04	05	06	07	08	
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit <sup>2</sup>	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B	Device	Design Airflow through Device (CFM)
SF	Supply	1	1400	BHP	0			
Total System Design Supply Airflow (CFM):			1400	Total System Design (BHP):	0	Maximum System Fan Power (BHP):		1.32

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**J. VENTILATION AND INDOOR AIR QUALITY**

Space Name or Item Tag	Occupancy Type <sup>4</sup>	Conditioned Floor Area (ft <sup>2</sup> )	# of Shower heads/ toilets	# of people <sup>5</sup>	Required Min OA CFM	Required Min CFM	Provided per Design CFM	DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3 <sup>6</sup>
Storage	Cafeteria/ fastfood dining	445			222.5	0	0	DCV NA: Not required per §120.1(d)3 Occ Sensor NA: Not required space type
17	Total System Required Min OA CFM				222	18	Ventilation for this System Complexes?	Yes

<sup>1</sup> FOOTNOTES: System CFM should include both mechanical and natural ventilation for the zone/system  
<sup>2</sup> Air filtration requirements apply to the following three system types per §120.1(c)1A: space conditioning systems utilizing ducts to supply air to occupiable space; supply-only ventilation systems providing outside air to occupiable space; supply side of balanced ventilation systems including heat recovery and energy recovery ventilation systems providing outside air to occupiable space.  
<sup>3</sup> Uniform Mechanical Code may have more stringent ventilation requirements; the most stringent code requirement takes precedence.  
<sup>4</sup> See Standards Tables 120.1-A and 120.1-B.  
<sup>5</sup> For lecture halls with fixed seating, the expected number of occupants shall be determined in accordance with the California Building Code.  
<sup>6</sup> §120.2(c)3 requires systems serving rooms that are required by §130.1(c) to have lighting occupancy sensing controls to also have occupancy sensing zone controls for ventilation. Examples of spaces which require lighting occupancy sensors include offices 250ft<sup>2</sup> or smaller, multipurpose rooms less than 1,000ft<sup>2</sup>, classrooms, conference rooms, restrooms, aisles and open areas in warehouses, library book stack aisles, corridors, stairwells, parking garages, and loading and unloading zones, unless excepted by §130.1(c).

**K. TERMINAL BOX CONTROLS**  
This section does not apply to this project.

**L. DISTRIBUTION (DUCTWORK AND PIPING)**  
This table is used to show compliance with mandatory pipe insulation requirements found in §140.3 and prescriptive requirements found in §140.4(f) for duct leakage testing.

**Duct Leakage Sealing**

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**C. COMPLIANCE RESULTS**  
Table C will indicate if the project data input into the compliance document is compliant with mechanical requirements. This table is not editable by the user. If this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D, or the table indicated as not compliant for guidance.

01	02	03	04	05	06	07	08	09							
System Summary §110.1, §110.2, §140.4	AND	Pumps §140.4(i)	AND	Fans/Economizers §140.4(c), §140.4(e)	AND	System Controls §110.2, §120.2, §140.4(f)	AND	Ventilation §120.1	AND	Terminal Box Controls §140.4(d)	AND	Distribution §120.3, §140.4(i)	AND	Cooling Towers §110.2(e)2	Compliance Results
(See Table F)	(See Table G)	(See Table H)	(See Table I)	(See Table J)	(See Table K)	(See Table L)	(See Table M)								COMPLIES
Mandatory Measures Compliance (See Table Q for Details)															

**D. EXCEPTIONAL CONDITIONS**  
This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

**E. ADDITIONAL REMARKS**  
This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

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**H. FAN SYSTEMS & AIR ECONOMIZERS**

System Name	Storage/Manager's Office	Economizer <sup>1</sup>	NA: <=54 kBtu/h cooling	Economizer Controls	Designed per §140.4(e) and (m)	System Fan Type	Constant Volume	
01	02	03	04	05	06	07	08	
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit <sup>2</sup>	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B	Device	Design Airflow through Device (CFM)
SF	Supply	1	600	BHP	0			
Total System Design Supply Airflow (CFM):			600	Total System Design (BHP):	0	Maximum System Fan Power (BHP):		0.56

<sup>1</sup> FOOTNOTES: Computer room economizers must meet requirements of §140.3(a) and will be documented on the NRCC-PRC-E document.  
<sup>2</sup> The unit used for HP must be consistent for all fans within a system.

**I. SYSTEM CONTROLS**  
This table is used to demonstrate compliance with mandatory controls in §110.2 and §120.2 and prescriptive controls in §140.4(f) and (n) or requirements in §141.0(b)2E for altered space conditioning systems.

01	02	03	04	05	06	07	08	09
System Name	System Zoning	Conditioned Floor Area Being Served (ft <sup>2</sup> )	Thermostats §110.2(b) & (c) <sup>1</sup> , §120.2(a) or §141.0(b)2E	Shut-Off Controls §120.2(e)	Isolation Zone Controls §120.2(g)	Demand Response §110.12 and §120.2(b)	Supply Air Temp. Reset §140.4(f)	Window Interlocks per §140.4(n)
Kitchen/FOH/BOH	Single zone	<= 25,000 ft <sup>2</sup>	Setback	Auto Timer Switch	4 Hour Timer	EMCS	Included	Provided
Storage/Manager's Office	Single zone	<= 25,000 ft <sup>2</sup>	Setback	Auto Timer Switch	4 Hour Timer	EMCS	Included	Provided

<sup>1</sup> FOOTNOTES: Gravity gas wall heaters, gravity floor heaters, gravity room heaters, non-central electric heaters, fireplaces or decorative gas appliances, wood stoves are not required to have setback thermostats.  
\*Notes: Controls with a <sup>1</sup> require a note in the space below explaining how compliance is achieved. EX: system 1: SA Temp Reset: Exempt because zones compliant with §140.4(f); EXCEPTION 1 to §140.4(f)

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**L. DISTRIBUTION (DUCTWORK AND PIPING)**

The answers to the questions below apply to the following duct systems:		Kitchen/FOH/BOH	Duct leakage testing triggered for these systems?	No
11	No	The scope of the project includes only duct systems serving healthcare facilities		
12	Yes	Duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system.		
13	Yes	The space conditioning system serves less than 5,000 ft <sup>2</sup> of conditioned floor area.		
14	No	The combined surface area of the ducts in the following locations is more than 25% of the total surface area of the entire duct system: <input type="checkbox"/> Outdoors <input type="checkbox"/> In a space directly under a roof that has a U-factor greater than the u-factor of the ceiling, or if the roof does not meet the requirements of §140.3(a)1B, or if the roof has fixed vents or openings to the outside/ unconditioned spaces <input type="checkbox"/> In an unconditioned crawl space <input type="checkbox"/> In other unconditioned spaces		
15		The scope of the project includes extending an existing duct system, which is constructed, insulated or sealed with asbestos.		
16		The scope of the project includes an existing duct system that is documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Reference Nonresidential Appendix NA2.		
17	Yes	Duct system shall be sealed in accordance with the California Mechanical Code		

The answers to the questions below apply to the following duct systems:		Storage/Manager's Office	Duct leakage testing triggered for these systems?	No
11	No	The scope of the project includes only duct systems serving healthcare facilities		
12	Yes	Duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system.		
13	Yes	The space conditioning system serves less than 5,000 ft <sup>2</sup> of conditioned floor area.		
14	No	The combined surface area of the ducts in the following locations is more than 25% of the total surface area of the entire duct system: <input type="checkbox"/> Outdoors <input type="checkbox"/> In a space directly under a roof that has a U-factor greater than the u-factor of the ceiling, or if the roof does not meet the requirements of §140.3(a)1B, or if the roof has fixed vents or openings to the outside/ unconditioned spaces <input type="checkbox"/> In an unconditioned crawl space <input type="checkbox"/> In other unconditioned spaces		
15		The scope of the project includes extending an existing duct system, which is constructed, insulated or sealed with asbestos.		
16		The scope of the project includes an existing duct system that is documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Reference Nonresidential Appendix NA2.		
17	Yes	Duct system shall be sealed in accordance with the California Mechanical Code		

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**F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)**  
This table is used to demonstrate compliance for mechanical equipment with mandatory requirements found in §110.1 and §110.2(a) and prescriptive requirements found in §140.4(a), §140.4(b) and §140.4(i) or §141.0(b)2, for alterations.

01	02	03	04	05	06	07	08	09	10	11
Name or Item Tag	Equipment Category per Tables 110.2	Equipment Type per Tables 110.2 / Title 20	Smallest Size Available <sup>1</sup> §140.4(a)	Equipment Sizing per Mechanical Schedule (kBtu/h) §140.4 (a&b)			Compliance Results			
				Heating Output <sup>2,3</sup>		Cooling Output <sup>2,4</sup>				
				Per Design (kBtu/h)	Rated (kBtu/h)	Supp. Heating Output (kBtu/h)	Sensible Per Design (kBtu/h)	Rated (kBtu/h)	Total Heating Load (kBtu/h)	Total Sensible Cooling Load (kBtu/h)
Kitchen/FOH/BOH	Unitary Heat Pumps	Air-cooled, split (3 phase)	NA: Load Controls	32.82	45	0	44.17	42	147.96	141.88
Storage/Manager's Office	Unitary Heat Pumps	Air-cooled, split (3 phase)	NA: Load Controls	18.96	26	0	24.81	24	19.94	29.6

<sup>1</sup> FOOTNOTES: Equipment shall be the smallest size, within the available options of the desired equipment line, necessary to meet the design heating and cooling loads of the building per §140.4(a). Healthcare facilities are exempt.  
<sup>2</sup> It is common practice to show rated output capacity on the equipment schedule. Sensible cooling output comes from specification sheet tables.  
<sup>3</sup> If equipment is heating only, leave cooling output and load blank. If equipment is cooling only, leave heating output and load blank.  
<sup>4</sup> Authority Having Jurisdiction may ask for load calculations used for compliance per §140.4(b).

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**J. VENTILATION AND INDOOR AIR QUALITY**

This table is used to demonstrate compliance with mandatory ventilation requirements in §120.1 and §120.2(c)3B for all nonresidential, high-rise residential and hotel/motel occupancies. For alterations, only ventilation systems being altered within the scope of the permit application need to be documented in this table. In lieu of this table, the required outdoor ventilation rates and airflow may be shown on the plans or the calculations can be presented in a spreadsheet.

01	02	03	04	05	06	07	08
	<input type="checkbox"/>	Check the box if the project is showing ventilation calculations on the plans, or attaching the calculations instead of completing this table.					
	<input checked="" type="checkbox"/>	Check this box if the project included Nonresidential or Hotel/Motel spaces					
	<input type="checkbox"/>	Check this box if the project included new or altered high-rise residential dwelling units.					
	<input type="checkbox"/>	Check the box if the project is using natural ventilation in any nonresidential or hotel/motel spaces to meet required ventilation rates per §120.1(c)2.					

**Nonresidential and Hotel/ Motel Ventilation Systems**

System Name	Kitchen/FOH/BOH	System Design OA CFM Airflow <sup>1</sup>	292	System Design Transfer Air CFM	0	Air Filtration per §120.1(c) and §141.0(b)2 <sup>2</sup>		
08	09	10	11	12	13	14	15	16
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3 <sup>3</sup>	Conditioned Floor Area (ft <sup>2</sup> )	# of Shower heads/ toilets	# of people <sup>5</sup>	Required Min OA CFM	Provided per Design CFM	Exh. Vert per §120.1(c)4	DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3 <sup>6</sup>
Kitchen	Cafeteria/ fastfood dining	585			292.5	0	2385	DCV NA: Not required per §120.1(d)3 Occ Sensor NA: Not required space type
17	Total System Required Min OA CFM				292	18	Ventilation for this System Complexes?	Yes

System Name	Storage/Manager's Office	System Design OA CFM Airflow <sup>1</sup>	222	System Design Transfer Air CFM	0	Air Filtration per §120.1(c) and §141.0(b)2 <sup>2</sup>		
08	09	10	11	12	13	14	15	16
System Name	Storage/Manager's Office	System Design OA CFM Airflow <sup>1</sup>	222	System Design Transfer Air CFM	0	Air Filtration per §120.1(c) and §141.0(b)2 <sup>2</sup>		
08	09	10	11	12	13	14	15	16

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**M. COOLING TOWERS**  
This section does not apply to this project.

**N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION**

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019\_compliance\_documents/Nonresidential\_Documents/NRCL/

Yes	No	Field Inspector
<input checked="" type="radio"/>	<input type="radio"/>	Form/Title
		Pass
		Fail

NRCL-MCH-01-E - Must be submitted for all buildings

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DEL AMO FASHION CENTER  
3525 WEST CARSON ST. #VCO8  
TORRANCE, CA 90503

# Gensler

500 South Figueroa Street  
Los Angeles, California 90071  
United States  
Contact: Christopher Mark Conolly, AIA  
Tel 213.227.3600  
Fax 213.227.3601

SATELLITE OFFICE:  
400 N Ashley Drive  
Tampa, FL 33602  
United States  
Contact: Sarah Joubert, AIA  
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Contact:  
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# TGRWA

7176 Quabbin Road  
Wilton Anderson, LLC  
Structural Engineers  
600 WEST VAN BUREN  
SUITE 900  
CHICAGO, IL 60607  
Tel 312.341.0055  
Fax 312.341.9966

Contact:  
Matthew Anderson  
Tel 312.878.7528

Date	Description
01/28/2022	ISSUE FOR CONSTRUCTION

Seal / Signature



Project Name  
**SHAKE SHACK**

Project Number  
**SHK-21-004**

Description  
**MECHANICAL T-24 FORMS**

Scale

# M002



STATE OF CALIFORNIA
Mechanical Systems
CERTIFICATE OF COMPLIANCE
Project Name: Shake Shack Del Amo
Project Address: 3525 West Carson St #VC08
Date Prepared: 9/10/2021

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
I certify that this Certificate of Compliance documentation is accurate and complete.
Documentation Author Name: Elyse Johnson
Signature Date: 9/10/21
Company: Infrastructure Factor Consulting, Inc.
Address: 2361 Rosecrans Ave Ste 368
City/State/Zip: El Segundo CA 90245

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).

Responsible Designer Name: Othon Estrada Jr.
Date Signed: 2021-09-10
Company: Infrastructure Factor Consulting, Inc.
Address: 2361 Rosecrans Ave Ste 368
City/State/Zip: El Segundo CA 90245

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STATE OF CALIFORNIA
Domestic Water Heating System
CERTIFICATE OF COMPLIANCE
Project Name: Shake Shack Del Amo
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Table with 6 columns: 01, 02, 03, 04, 05, 06. Rows include Name or Item Tag, Equipment Type, Volume (gal), Max GPM / First Hour Rating (FHR), Rated Uniform Energy Factor (UEF), and Minimum Required Uniform Energy Factor (UEF).

Table with 6 columns: 01, 02, 03, 04, 05, 06. Rows include Name or Item Tag, Equipment Type, Volume (gal), Max GPM / First Hour Rating (FHR), Rated Uniform Energy Factor (UEF), and Minimum Required Uniform Energy Factor (UEF).

Table with 2 columns: Item Tag, Requirement. Rows include 18, 19, 20 with specific insulation and piping requirements.

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STATE OF CALIFORNIA
Domestic Water Heating System
CERTIFICATE OF COMPLIANCE
Project Name: Shake Shack Del Amo
Project Address: 3525 West Carson St #VC08
Date Prepared: 9/10/2021

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
I certify that this Certificate of Compliance documentation is accurate and complete.
Documentation Author Name: Elyse Johnson
Signature Date: 9/10/21
Company: Infrastructure Factor Consulting, Inc.
Address: 2361 Rosecrans Ave Ste 368
City/State/Zip: El Segundo CA 90245

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).

Responsible Designer Name: Othon Estrada Jr.
Date Signed: 2021-09-10
Company: Infrastructure Factor Consulting, Inc.
Address: 2361 Rosecrans Ave Ste 368
City/State/Zip: El Segundo CA 90245

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STATE OF CALIFORNIA
Mechanical Systems
CERTIFICATE OF COMPLIANCE
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Table with 4 columns: Yes, No, Form/Title, Field Inspector (Pass/Fail). Rows include NRCA-MCH-15-A Thermal Energy Storage (TES) System Acceptance, NRCA-MCH-16-A Supply Air Temperature Reset Controls, NRCA-MCH-17-A Condenser Water Temperature Reset Controls, etc.

P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION
I certify that this Certificate of Compliance documentation is accurate and complete.
These documents must be completed by a HERS Rater and provided to the building inspector during construction. The final documents must be created by a HERS Provider's registry, but drafts can be found online at https://www.energy.ca.gov/title24/2019standards/2019\_compliance\_documents/Nonresidential\_Documents/NRCV/

Table with 4 columns: Yes, No, Form/Title, Field Inspector (Pass/Fail). Rows include NRCV-MCH-04-H Duct Leakage Test, NRCV-MCH-24 Enclosure Air Leakage Worksheet, NRCV-MCH-27 High-rise Residential, NRCV-MCH-32 Local Mechanical Exhaust.

Table with 2 columns: 01, 02. Rows include Compliance with Mandatory Measures documented through MCH, Mandatory Measures Note Block.

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STATE OF CALIFORNIA
Domestic Water Heating System
CERTIFICATE OF COMPLIANCE
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Date Prepared: 9/10/2021

Table with 4 columns: 01, 02, 03, 04. Rows include Domestic Hot Water Equipment, Distribution Systems, Controls, Compliance Results.

D. EXCEPTIONAL CONDITIONS
This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS
This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

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STATE OF CALIFORNIA
Domestic Water Heating System
CERTIFICATE OF COMPLIANCE
Project Name: Shake Shack Del Amo
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Date Prepared: 9/10/2021

L. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION
I certify that this Certificate of Compliance documentation is accurate and complete.
Additional Remarks: These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019\_compliance\_documents/Nonresidential\_Documents/NRCV/

I. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE
There are no Certificates of Acceptance applicable to service water heating requirements.

K. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION
I certify that this Certificate of Compliance documentation is accurate and complete.
Additional Remarks: These documents must be completed by a HERS Rater and provided to the building inspector during construction. The final documents must be created by a HERS Provider's registry, but drafts can be found online at https://www.energy.ca.gov/title24/2019standards/2019\_compliance\_documents/Nonresidential\_Documents/NRCV/

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
Registration Date/Time: Report Version: 2019.1.003
Registration Provider: Energysoft
Report Generated: 2021-09-10 11:29:43

STATE OF CALIFORNIA
Mechanical Systems
CERTIFICATE OF COMPLIANCE
Project Name: Shake Shack Del Amo
Project Address: 3525 West Carson St #VC08
Date Prepared: 9/10/2021

O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE
I certify that this Certificate of Compliance documentation is accurate and complete.
Additional Remarks: These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019\_compliance\_documents/Nonresidential\_Documents/NRCV/

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
Registration Date/Time: Report Version: 2019.1.003
Registration Provider: Energysoft
Report Generated: 2021-09-10 11:29:43

STATE OF CALIFORNIA
Domestic Water Heating System
CERTIFICATE OF COMPLIANCE
Project Name: Shake Shack Del Amo
Project Address: 3525 West Carson St #VC08
Date Prepared: 9/10/2021

A. GENERAL INFORMATION
01 Project Location (City): Torrance
02 Climate Zone: 6
03 Occupancy Types Within Project (select all that apply): Nonresidential, State Building, Healthcare Facility, Other (Write In)
B. PROJECT SCOPE
My project consists of (check all that apply): New system (DHW system being installed for the first time in newly constructed building), System Alteration (equipment, distribution or controls)

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
Registration Date/Time: Report Version: 2019.1.003
Registration Provider: Energysoft
Report Generated: 2021-09-10 11:29:43

STATE OF CALIFORNIA
Domestic Water Heating System
CERTIFICATE OF COMPLIANCE
Project Name: Shake Shack Del Amo
Project Address: 3525 West Carson St #VC08
Date Prepared: 9/10/2021

G. DOMESTIC HOT WATER DISTRIBUTION SYSTEM
TABLE 120.3-A PIPE INSULATION THICKNESS
Fluid Temperature Range (°F), Conductivity Range (Btu-in per hour per ft² per °F), Insulation Mean Rating Temp (°F), Nominal Pipe Diameter (in)

H. DOMESTIC HOT WATER CONTROLS
This table is used to demonstrate compliance with control requirements in §110.3 for all occupancies. For high-rise residential and hotel/motel occupancies, compliance is also demonstrated with requirements in §150.1(c)(3).

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
Registration Date/Time: Report Version: 2019.1.003
Registration Provider: Energysoft
Report Generated: 2021-09-10 11:29:43

STATE OF CALIFORNIA  
**Process Systems**  
 NRC-PRC-E CALIFORNIA ENERGY COMMISSION

**CERTIFICATE OF COMPLIANCE**  
 NRC-PRC-E  
 This document demonstrates compliance for process systems that are within the scope of the permit application and are regulated by mandatory requirements in §120.6, or prescriptive requirements in §140.9. This compliance document is used for newly constructed, addition and alteration projects.

Project Name: SHK 21-004 Report Page: (Page 1 of 6)  
 Project Address: Date Prepared: 2021-09-13T11:55:30-04:00

**A. GENERAL INFORMATION**

01 Project Location (City): Torrance 04 Total Conditioned Floor Area: 1030  
 02 Climate Zone: 6 05 Total Unconditioned Floor Area: 0  
 03 Occupancy Types Within Project: 06 # of Stories (Habitable Above Grade): 1  
 Office  Retail  Non-refrigerated Warehouse  
 Hotel/ Motel  School  Healthcare Facility  
 High-Rise Residential  Relocatable Class Bldg  Other (write in):

**B. PROJECT SCOPE**  
 This table includes process systems that are within the scope of the permit application and are demonstrating compliance with mandatory requirements in §120.6, or prescriptive requirements in §140.9.  
 My project consists of: (check all that apply):

01 02  
 Refrigerated Spaces <3,000 Ft<sup>3</sup> Total (no Title 24, P16 requirements)  Elevator Lighting & Ventilation Controls (mandatory §120.6(f))  
 Refrigerated Spaces >=3,000 Ft<sup>3</sup> Total (mandatory §120.6(a))  Escalator & Moving Walkway Speed Controls (mandatory §120.6(g))  
 Fossil Stores <8,000 Ft<sup>3</sup> (mandatory §120.6(b))  Computer Rooms >20 W/ Ft<sup>2</sup> Power Density (prescriptive §140.9(b))<sup>1</sup>  
 Enclosed Parking Garage Exhaust >=10,000 CFM (mandatory §120.6(c))  Commercial Kitchen Ventilation/Exhaust (prescriptive §140.9(b))<sup>1</sup>  
 Newly Installed Process Boilers (mandatory §120.6(d))  Laboratory Exhaust/Factory Exhaust & Fume Hood (prescriptive §140.9(c))<sup>1</sup>  
 Compressed Air Systems Combined HP >=25 (mandatory §120.6(e))

<sup>1</sup> FOOTNOTES: These building features can comply using the performance method. If using the performance method for these features, compliance should be demonstrated on the NRC-PRF-E.

Registration Number: Registration Date/Time: Registration Provider: Energy Code Ace  
 CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance Report Version: 2019.1.003 Report Generated: 2021-09-13 08:55:31  
 Schema Version: rev 20200601

STATE OF CALIFORNIA  
**Process Systems**  
 NRC-PRC-E CALIFORNIA ENERGY COMMISSION

**CERTIFICATE OF COMPLIANCE**  
 NRC-PRC-E  
 This document demonstrates compliance for process systems that are within the scope of the permit application and are regulated by mandatory requirements in §120.6, or prescriptive requirements in §140.9. This compliance document is used for newly constructed, addition and alteration projects.

Project Name: SHK 21-004 Report Page: (Page 4 of 6)  
 Project Address: Date Prepared: 2021-09-13T11:55:30-04:00

**N. COMMERCIAL KITCHEN EXHAUST AND VENTILATION**  
 This table contains all new and replacement hoods being installed within the scope of the permit application. Table N is used to demonstrate compliance with prescriptive requirements found in §140.9(b).  
 FOOTNOTES: Type II hoods do not have a max hood exhaust air rate per §140.9(b)(1)(B).

**O. LABORATORY AND FACTORY EXHAUST AND FUME HOODS**  
 This section does not apply to this project.

**P. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION**  
 Selections have been made based on information provided in this document. If any selection have been changed by permit applicant, an explanation should be included in Table E.  
 Additional Remarks: These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019\_compliance\_documents/Nonresidential\_Documents/NRC/

Yes	No	Form/Title	Field Inspector		
			Pass	Fail	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	NRC-PRC-01-E - Covered Process	false	<input type="checkbox"/>	<input type="checkbox"/>

Registration Number: Registration Date/Time: Registration Provider: Energy Code Ace  
 CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance Report Version: 2019.1.003 Report Generated: 2021-09-13 08:55:31  
 Schema Version: rev 20200601

STATE OF CALIFORNIA  
**Process Systems**  
 NRC-PRC-E CALIFORNIA ENERGY COMMISSION

**CERTIFICATE OF COMPLIANCE**  
 NRC-PRC-E  
 This document demonstrates compliance for process systems that are within the scope of the permit application and are regulated by mandatory requirements in §120.6, or prescriptive requirements in §140.9. This compliance document is used for newly constructed, addition and alteration projects.

Project Name: SHK 21-004 Report Page: (Page 2 of 6)  
 Project Address: Date Prepared: 2021-09-13T11:55:30-04:00

**C. COMPLIANCE RESULTS**  
 Results in this table are automatically calculated from data input and calculations in Tables F through O. Note: If any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table D. Exceptional Conditions for guidance or see applicable Table referenced below.

01	02	03	04	05	06	07	08	09	10	11
Refrigerated Warehouse/ Space §120.6(a) (See Table F)	Commercial Refrigeration §120.6(b) (See Table G)	Parking Garage Exhaust §120.6(c) (See Table H)	Process Boilers §120.6(d) (See Table I)	Compressed Air Systems §120.6(e) (See Table J)	Elevators §120.6(f) (See Table K)	Escalators & Moving Walkways §120.6(g) (See Table L)	Computer Rooms §140.9(a) (See Table M)	Commercial Kitchens §140.9(b) (See Table N)	Laboratory/Factory Exhaust §140.9(c) (See Table O)	Compliance Results
								Yes		COMPLIES

**D. EXCEPTIONAL CONDITIONS**  
 This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

**E. ADDITIONAL REMARKS**  
 This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

**F. REFRIGERATED WAREHOUSES/SPACES**  
 This section does not apply to this project.

**G. COMMERCIAL REFRIGERATION**  
 This section does not apply to this project.

**H. ENCLOSED PARKING GARAGE EXHAUST**  
 This section does not apply to this project.

**I. PROCESS BOILER**  
 This section does not apply to this project.

**J. COMPRESSED AIR SYSTEMS**  
 This section does not apply to this project.

Registration Number: Registration Date/Time: Registration Provider: Energy Code Ace  
 CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance Report Version: 2019.1.003 Report Generated: 2021-09-13 08:55:31  
 Schema Version: rev 20200601

STATE OF CALIFORNIA  
**Process Systems**  
 NRC-PRC-E CALIFORNIA ENERGY COMMISSION

**CERTIFICATE OF COMPLIANCE**  
 NRC-PRC-E  
 This document demonstrates compliance for process systems that are within the scope of the permit application and are regulated by mandatory requirements in §120.6, or prescriptive requirements in §140.9. This compliance document is used for newly constructed, addition and alteration projects.

Project Name: SHK 21-004 Report Page: (Page 5 of 6)  
 Project Address: Date Prepared: 2021-09-13T11:55:30-04:00

**Q. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE**  
 Selections have been made based on information provided in this document. If any selection have been changed by permit applicant, an explanation should be included in Table E.  
 Additional Remarks: These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/atttcp/providers.html

Yes	No	Form/Title	Systems/Spaces To Be Field Verified	Field Inspector	
				Pass	Fail
<input type="checkbox"/>	<input checked="" type="checkbox"/>	NRC-PRC-01-F Compressed Air Systems	false	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	NRC-PRC-02-F Kitchen Exhaust	false	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	NRC-PRC-03-F Garage Exhaust	false	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	NRC-PRC-04-F Refrigerated Warehouses - Evaporator Fan Motor Controls	false	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	NRC-PRC-05-F Refrigerated Warehouses - Evaporative Condenser Controls	false	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	NRC-PRC-06-F Refrigerated Warehouses - Air Cooled Condenser Controls	false	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	NRC-PRC-16-F Refrigerated Warehouses - Adiabatic Condenser Controls	false	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	NRC-PRC-07-F Refrigerated Warehouses - Variable Speed Compressor	false	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	NRC-PRC-08-F Refrigerated Warehouses - Electric Resistance Underlab Heating System	false	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	NRC-PRC-12-F Elevator Lighting & Ventilation Controls	false	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	NRC-PRC-13-F Escalators & Moving Walkways Speed Controls	false	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	NRC-PRC-14-F Lab Exhaust Ventilation Systems	false	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	NRC-PRC-15-F Fume Hood Automatic Sash Closure Systems	false	<input type="checkbox"/>	<input type="checkbox"/>

Registration Number: Registration Date/Time: Registration Provider: Energy Code Ace  
 CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance Report Version: 2019.1.003 Report Generated: 2021-09-13 08:55:31  
 Schema Version: rev 20200601

STATE OF CALIFORNIA  
**Process Systems**  
 NRC-PRC-E CALIFORNIA ENERGY COMMISSION

**CERTIFICATE OF COMPLIANCE**  
 NRC-PRC-E  
 This document demonstrates compliance for process systems that are within the scope of the permit application and are regulated by mandatory requirements in §120.6, or prescriptive requirements in §140.9. This compliance document is used for newly constructed, addition and alteration projects.

Project Name: SHK 21-004 Report Page: (Page 3 of 6)  
 Project Address: Date Prepared: 2021-09-13T11:55:30-04:00

**K. ELEVATOR LIGHTING AND VENTILATION**  
 This section does not apply to this project.

**L. ESCALATORS AND MOVING WALKWAYS SPEED CONTROLS**  
 This section does not apply to this project.

**M. COMPUTER ROOM SYSTEM SUMMARY**  
 This section does not apply to this project.

**N. COMMERCIAL KITCHEN EXHAUST AND VENTILATION**  
 This table contains all new and replacement hoods being installed within the scope of the permit application. Table N is used to demonstrate compliance with prescriptive requirements found in §140.9(b).

**Kitchen Ventilation §140.9(b)(2)**

01	02	03	04	05	06	07	08	
Existing kitchen hoods not being replaced as part of an addition or alteration (do not need to meet requirements)		<b>Requirements</b>						
		Replacement Air to Hood Compliance Method §140.9(b)(1)(A)						
		Not providing replacement air directly to the hood(s)						
		Mechanically cooled or heated makeup air delivered to any space with a kitchen hood is designed per 140.9(b)(2)(A) to not exceed the greater of: The supply flow required to meet the space heating and cooling load						
		Location that is supplying transfer air:						
		The kitchen/dining facility has a total Type I and Type II kitchen hood exhaust airflow > 5000 cfm and is designed to have one of the following per 140.9(b)(2)(B): Demand ventilation system(s) on at least 75% of the exhaust air per 140.9(b)(2)(B)						
<b>Kitchen Exhaust: Airflow Rate §140.9(b)(1)(B)</b>								
01	02	03	04	05	06	07	08	
Kitchen Name or Item Tag	Kitchen	Compliance Method per §140.9(b)(1)(B)	NA: Kitchen/dining facility has a total Type I and Type II kitchen hood exhaust airflow rate <= 5,000 cfm	05	06	07	08	
Name or Item Tag	Hood Type <sup>1</sup>	Hood Style	Hood Length (ft)	Equipment Duty	Design Hood Exhaust Rate CFM	Max Hood Exhaust Rate Allowed CFM		
KEH-1, KEH-2	Type I				2385			

Registration Number: Registration Date/Time: Registration Provider: Energy Code Ace  
 CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance Report Version: 2019.1.003 Report Generated: 2021-09-13 08:55:31  
 Schema Version: rev 20200601

STATE OF CALIFORNIA  
**Process Systems**  
 NRC-PRC-E CALIFORNIA ENERGY COMMISSION

**CERTIFICATE OF COMPLIANCE**  
 NRC-PRC-E  
 This document demonstrates compliance for process systems that are within the scope of the permit application and are regulated by mandatory requirements in §120.6, or prescriptive requirements in §140.9. This compliance document is used for newly constructed, addition and alteration projects.

Project Name: SHK 21-004 Report Page: (Page 6 of 6)  
 Project Address: Date Prepared: 2021-09-13T11:55:30-04:00

**DOCUMENTATION AUTHOR'S DECLARATION STATEMENT**  
 I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Elyse Johnson  
 Signature Date: 9/10/21  
 Signature: *Elyse Johnson*

Company: Infrastructure Factor  
 Address: 2361 Rosecrans Ave Ste 368  
 City/State/Zip: El Segundo CA 90245  
 CEAA/HERS Certification Identification (if applicable):  
 Phone: 310-725-1500

**RESPONSIBLE PERSON'S DECLARATION STATEMENT**  
 I certify the following under penalty of perjury, under the laws of the State of California:  
 1. The information provided on this Certificate of Compliance is true and correct.  
 2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).  
 3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.  
 4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.  
 5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available to the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the building permit(s) issued for the building owner at occupancy.

Responsible Designer Name: Othon Estrada Jr.  
 Signature: *Othon Estrada Jr.*  
 Date Signed: 9/13/21  
 Company: Infrastructure Factor  
 Address: 2361 Rosecrans Ave Ste 368  
 City/State/Zip: El Segundo CA 90245  
 License: M36244  
 Phone: 310-725-1500

Registration Number: Registration Date/Time: Registration Provider: Energy Code Ace  
 CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance Report Version: 2019.1.003 Report Generated: 2021-09-13 08:55:31  
 Schema Version: rev 20200601



DEL AMO FASHION CENTER  
 3525 WEST CARSON ST. #VC08  
 TORRANCE, CA 90503

# Gensler

500 South Figueroa Street  
 Los Angeles, California 90071  
 United States  
 Contact:  
 Christopher Mark Conolly, AIA  
 Tel 213.227.3600  
 Fax 213.227.3601

SATELLITE OFFICE:  
 400 N Ashley Drive  
 Suite C400  
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2361 ROSECRANS AVENUE  
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 Yusef Yasarania  
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505 COLLINS ST  
 PO BOX 3505  
 SOUTH ATTLEBORO  
 MA 02703  
 Tel 508.399.6000  
 Fax 508.761.3620

Contact:  
 Michael Henderson  
 Tel 508.399.2392



7176 Quabbin Road  
 Wilson Andrews, LLC  
 Structural Engineers  
 600 WEST VAN BUREN  
 SUITE 900  
 CHICAGO, IL 60607  
 Tel 312.341.0055  
 Fax 312.341.9966

Contact:  
 Matthew Anderson  
 Tel 312.878.7528

Date	Description
01/28/2022	ISSUE FOR CONSTRUCTION

Seal / Signature



Project Name  
**SHAKE SHACK**

Project Number  
**SHK-21-004**

Description  
**MECHANICAL T-24 FORMS**

Scale

# M004

**Gensler**

500 South Figueroa Street  
Los Angeles, California 90071  
United States  
Contact:  
Christopher Mark Conolly, AIA  
Tel 213.243.8755

SATELLITE OFFICE:  
400 N Ashley Drive  
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United States  
Contact:  
Sarah Joubert, AIA  
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2361 ROSECRAVENS AVENUE  
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600 WEST VAN BUREN  
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CHICAGO, IL 60607  
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Fax 312.341.9966  
Contact:  
Matthew Anderson  
Tel 312.878.7528

**DEMOLITION KEY NOTES**

1. DISCONNECT AND DEMOLISH EXISTING KITCHEN EXHAUST HOOD WITH ASSOCIATED EXHAUST/KITCHENS SUPPLY FAN DUCTWORK AND KITCHEN SYSTEM THERMOSTAT AND CONTROLS.
1. DEMOLISH EXISTING EA DUCT UP TO (E) THERMAL EXHAUST FAN (PRV-7) ON ROOF. CAP DUCT AT ROOF.
1. EXISTING THERMOSTAT TO REMAIN IN PLACE.
1. DEMOLISH EXISTING FAN COIL UNIT, REFRIGERANT LINES, CONDENSATE PIPING, AND ASSOCIATED THERMOSTAT.
1. DEMOLISH DUCTWORK AND AIR DEVICES AS SHOWN.
1. DEMOLISH EXHAUST GRILLE. PREPARE DUCTWORK FOR USE IN REMODEL.

**GENERAL NOTES**

Date	Description
01/28/2022	ISSUE FOR CONSTRUCTION

Seal / Signature



**Project Name**  
SHAKE SHACK

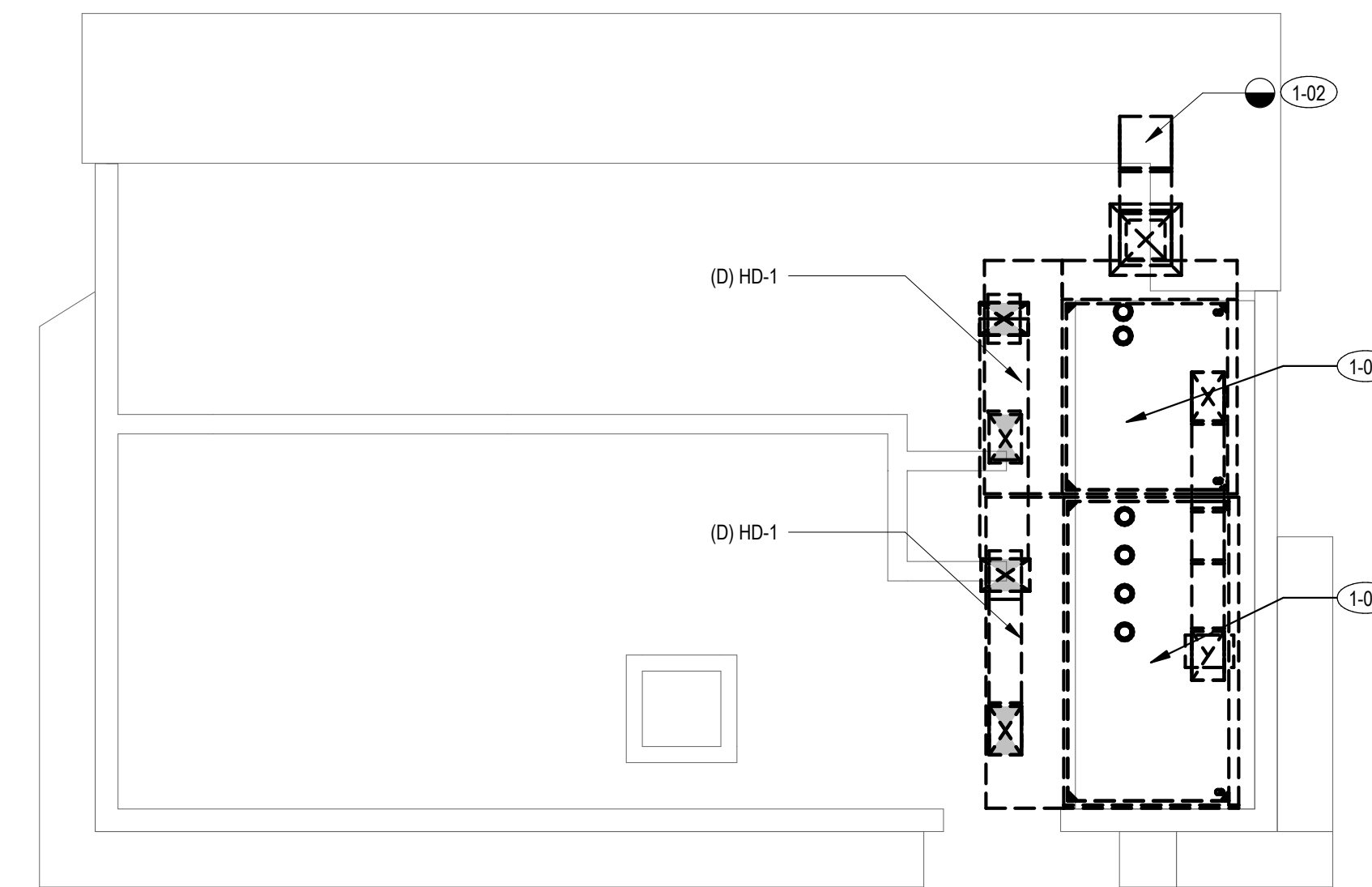
**Project Number**  
SHK-21-004

**Description**  
MECHANICAL OVERALL DEMOLITION  
1ST FLOOR PLAN

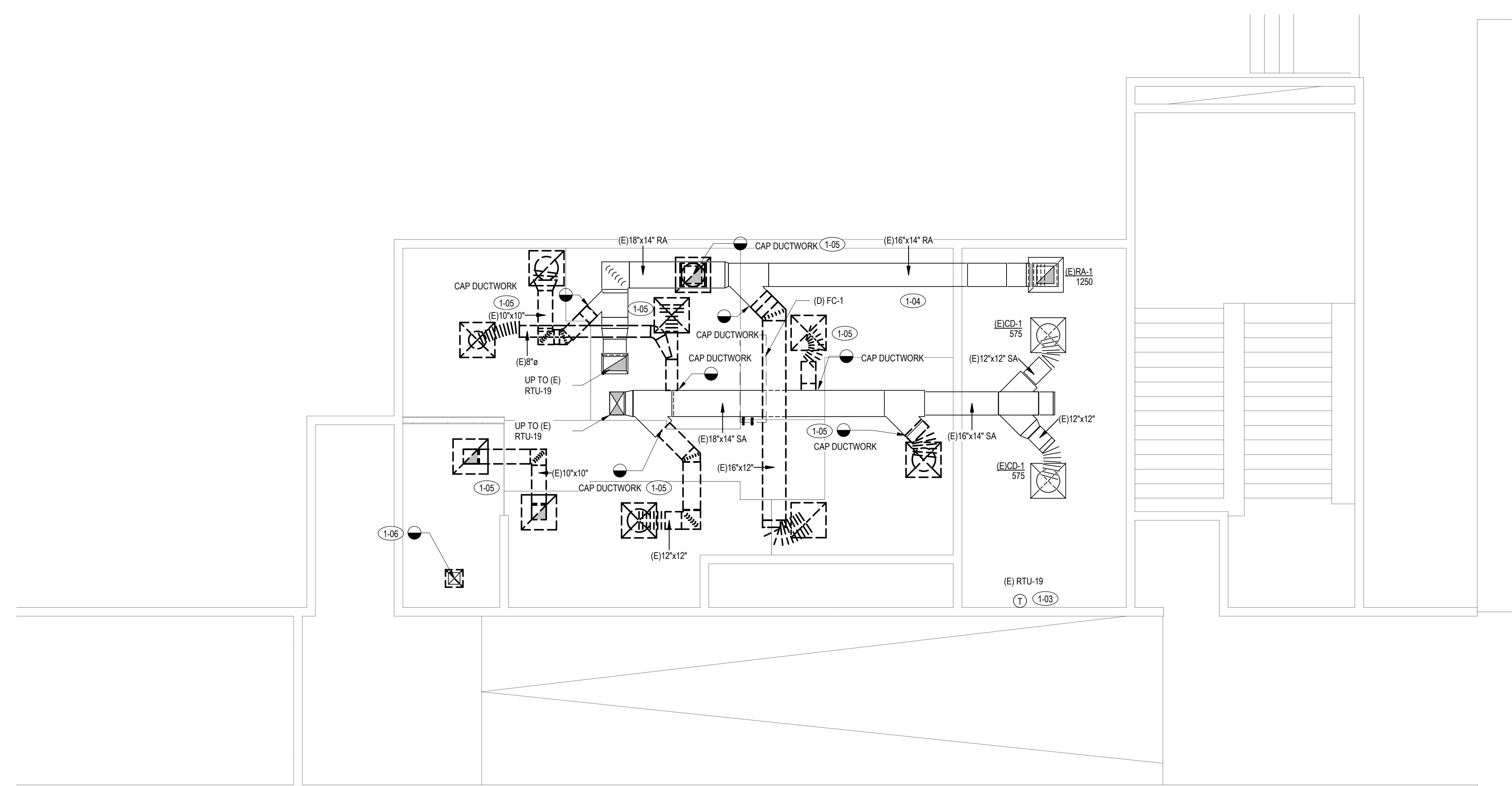
**KEY PLAN**

**Scale**  
1/4" = 1'-0"

**M111**



**2 MECHANICAL 1ST FLOOR DEMOLITION - KITCHEN**  
SCALE: 1/4" = 1'-0"



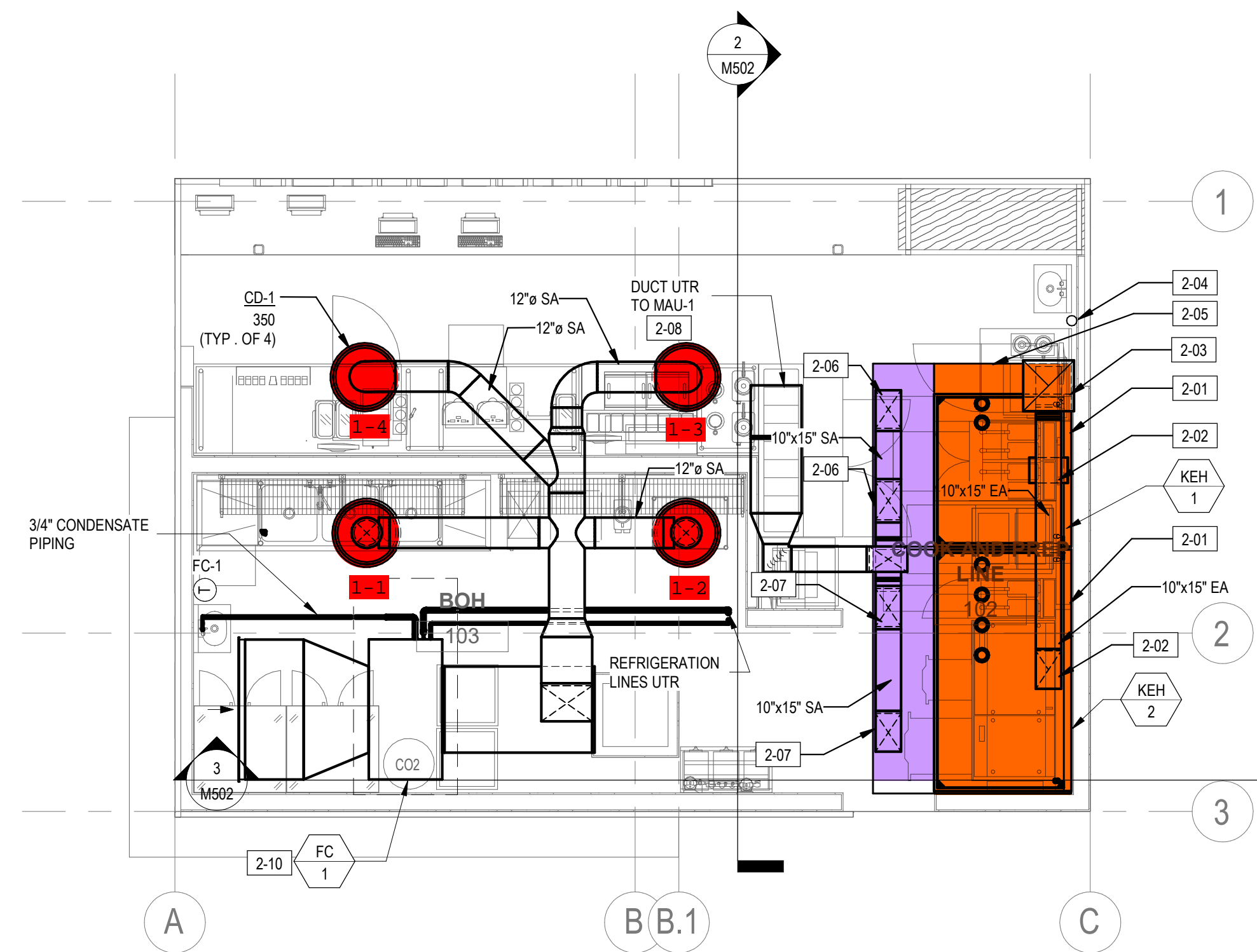
**1 MECHANICAL 1ST FLOOR DEMOLITION - STORAGE**  
SCALE: 1/4" = 1'-0"

**RENOVATION KEY NOTES**

- 2-01 KITCHEN HOOD AND HOOD FIRE SUPPRESSION CABINET FURNISHED BY CAPTIVEAIRE AND INSTALLED BY CONTRACTOR. REFER TO KITCHEN EQUIPMENT DRAWINGS FOR ADDITIONAL INFORMATION. HOOD FIRE ALARM CONNECTION INSTALLED BY FIRE ALARM CONTRACTOR. COORDINATE EQUIPMENT FIRE PROTECTION REQUIREMENTS WITH THE FIRE PROTECTION CONTRACTORS PRIOR TO INSTALLATION.
- 2-02 PROVIDE 18X10 TYPE 1 GREASE DUCT DROP TO CONNECT TO EXHAUST RISER WITH DAMPER AT HOOD. USE MANUFACTURER PROVIDED BALANCING DAMPERS TO BALANCE AIRFLOW TO INDICATED ON THE HOOD MANUFACTURER DRAWINGS.
- 2-03 PROVIDE TYPE 1 GREASE EXHAUST DUCT FROM KITCHEN EXHAUST HOOD TO KITCHEN EXHAUST FAN. TRANSITION 10X15 GREASE DUCT AS REQUIRED TO CONNECT TO NEW EXHAUST FAN KEF-1 ON ROOF. GREASE DUCT TO BE WRAPPED WITH FIRE WRAP TO MAINTAIN 0" CLEARANCE TO COMBUSTIBLE.
- 2-04 INSTALL HOOD FIRE SUPPRESSION MANUAL PULL STATION. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH FIRE MARSHALL AND LOCAL CODE REQUIREMENTS.
- 2-05 KITCHEN HOOD AND HOOD FIRE SUPPRESSION CABINET FURNISHED BY CAPTIVEAIRE AND INSTALLED BY CONTRACTOR. REFER TO KITCHEN EQUIPMENT DRAWINGS FOR ADDITIONAL INFORMATION. HOOD FIRE ALARM CONNECTION INSTALLED BY FIRE ALARM CONTRACTOR. COORDINATE EQUIPMENT FIRE PROTECTION REQUIREMENTS WITH THE FIRE PROTECTION CONTRACTORS PRIOR TO INSTALLATION.
- 2-06 PROVIDE 24X10 SUPPLY DUCT DROP TO CONNECT TO MAKEUP AIR SUPPLY RISER WITH DAMPER AT HOOD. BALANCE EACH CONNECTION TO AIRFLOW INDICATED ON THE HOOD MANUFACTURER DRAWINGS.
- 2-07 PROVIDE 28X18 SUPPLY DUCT DROP TO CONNECT TO MAKEUP AIR SUPPLY RISER WITH DAMPER AT HOOD. BALANCE EACH CONNECTION TO AIRFLOW INDICATED ON THE HOOD MANUFACTURER DRAWINGS.
- 2-08 MAKEUP AIR DUCT ROUTED UP TO MAU-1 ON ROOF. INSULATE ALL DUCTWORK FROM HOOD TO FAN AS INDICATED IN SPECIFICATIONS.
- 2-09 MOUNT REMOTE TEMPERATURE SENSOR AT 48" ABOVE FINISHED FLOOR. COORDINATE WITH ARCHITECT FOR EXACT LOCATION.
- 2-10 PROVIDE NEW FAN COIL UNIT, DUCTWORK, DIFFUSERS, AND MANUFACTURER THERMOSTAT. PIPING SHALL BE RUN FROM FAN COIL TO CONDENSING UNIT ON THE ROOF.
- 2-11 PROVIDE NEW FAN COIL UNIT, DUCTWORK, DIFFUSERS, AND MANUFACTURER THERMOSTAT. PIPING SHALL BE RUN FROM FAN COIL TO CONDENSING UNIT ON THE ROOF. USE EXISTING ROOF PENETRATIONS TO RUN NEW PIPING.
- 2-12 PATCH DUCTWORK INSULATION TO MEET T24 STANDARDS.
- 2-13 PROVIDE NEW EXHAUST FAN AND CONNECT TO EXISTING DUCTWORK UP TO ROOF.

**GENERAL NOTES**

- 1. WHERE ENCLOSURES ARE NOT REQUIRED, HOODS, GREASE REMOVAL DEVICES, EXHAUST FANS, AND DUCTS SHALL HAVE A CLEARANCE OF NOT LESS THAN 18 INCHES TO COMBUSTIBLE MATERIAL, 3 INCHES TO LIMITED-COMBUSTIBLE MATERIAL, AND 0 INCHES TO NONCOMBUSTIBLE MATERIAL PER 2019 CMC SECTION 507.4



**2 MECHANICAL 1ST FLOOR REMODEL - KITCHEN**  
SCALE: 1/4" = 1'-0"

Date	Description
01/28/2022	ISSUE FOR CONSTRUCTION

Seal / Signature



**Project Name**  
SHAKE SHACK

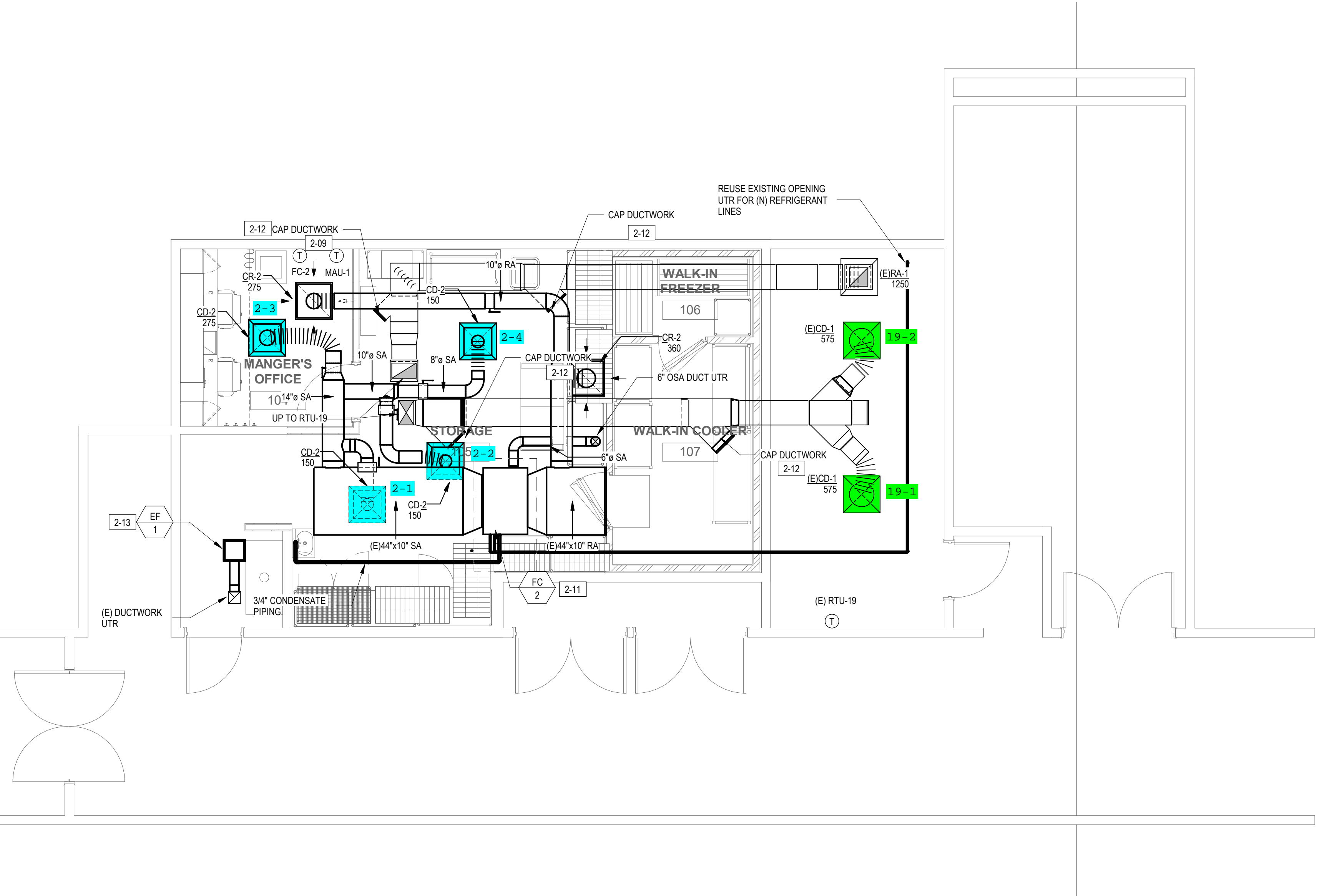
**Project Number**  
SHK-21-004

**Description**  
MECHANICAL OVERALL REMODEL  
1ST FLOOR PLAN

**Scale**  
1/4" = 1'-0" Ref North

**M112**

**1 MECHANICAL 1ST FLOOR REMODEL - STORAGE**  
SCALE: 1/4" = 1'-0"



**1 MECHANICAL 1ST FLOOR REMODEL - STORAGE**  
SCALE: 1/4" = 1'-0"

**DEMOLITION KEY NOTES**

- 1-09 DISCONNECT AND ABANDON IN PLACE (E) THERMAL EXHAUST FAN (PRV-7);
- 1-11 DEMOLISH EXHAUST FAN.



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**GENERAL NOTES**

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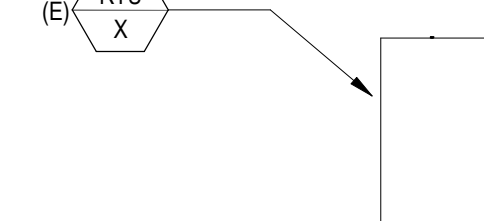
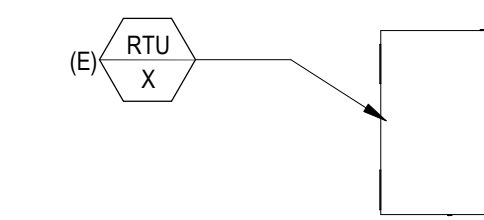
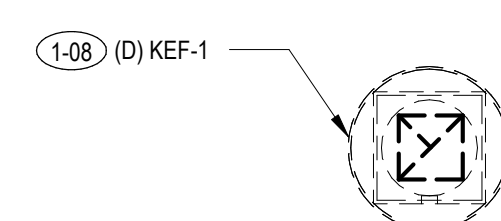
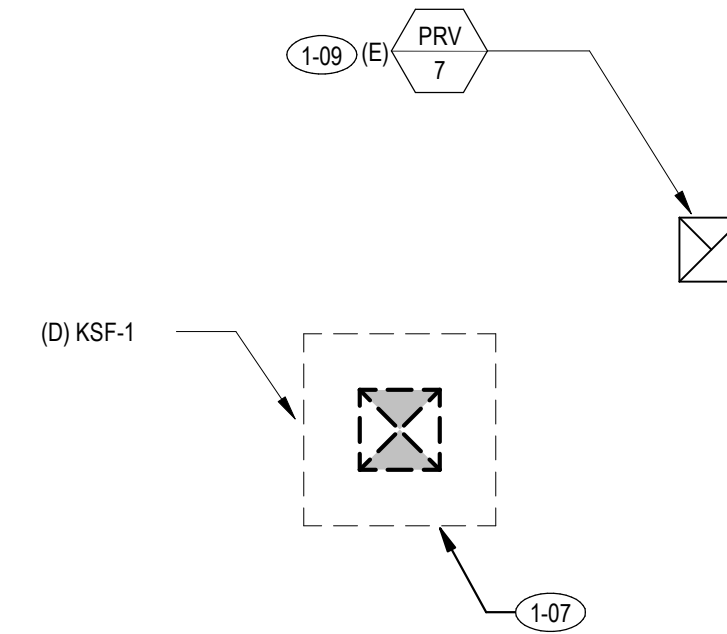
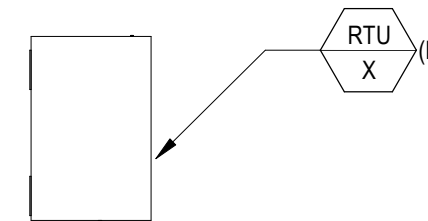
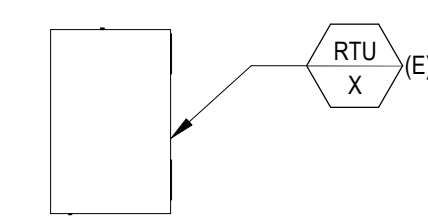
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**SHAKE SHACK**

Project Number  
**SHK-21-004**

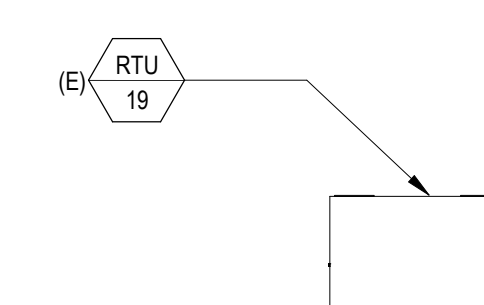
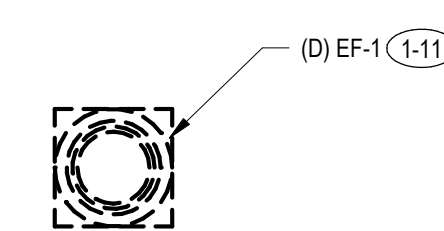
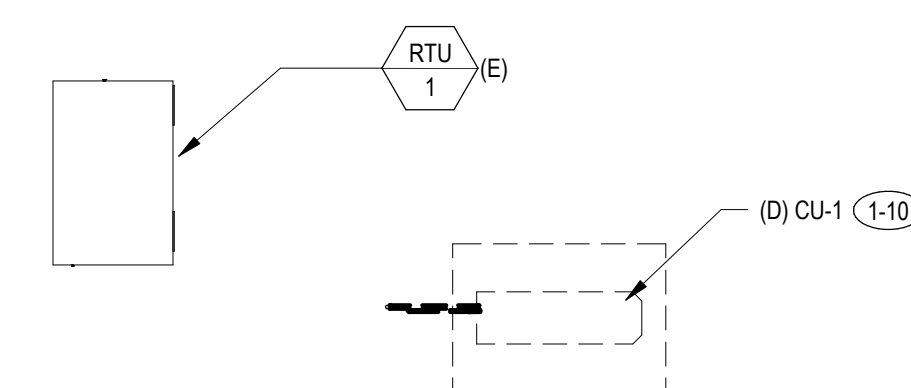
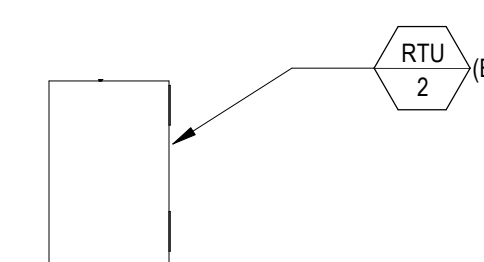
Description  
**MECHANICAL DEMOLITION ROOF PLAN**

Scale  
1/4" = 1'-0"

**M121**



**2 MECHANICAL ROOF DEMOLITION - KITCHEN**  
SCALE: 1/4" = 1'-0"



**1 MECHANICAL ROOF DEMOLITION - STORAGE**  
SCALE: 1/4" = 1'-0"

**RENOVATION KEY NOTES**

- 2-14 MAKEUP AIR UNIT FURNISHED BY CAPTIVEAIRE AND INSTALLED BY MECHANICAL CONTRACTOR. MOUNT MAKEUP AIR UNIT WITH CALDYN CDB 2 VIBRATION ISOLATORS ON PLATFORM. COORDINATE PLATFORM REQUIREMENTS WITH STRUCTURAL AND ARCHITECTURAL DRAWINGS.
- 2-15 KITCHEN HOOD EXHAUST FAN FURNISHED BY CAPTIVEAIRE AND INSTALLED BY MECHANICAL CONTRACTOR. INSTALL PER MANUFACTURER'S RECOMMENDATION.
- 2-16 EXISTING THERMAL EXHAUST FAN SERVING THE KIOSK TO REMAIN. REFER TO DEMO PLAN.
- 2-17 CUSTARD MACHINE CONDENSING UNITS TO BE PROVIDED BY VENDOR. INSTALLED PER MANUFACTURER'S RECOMMENDATION. REFER TO KITCHEN EQUIPMENT SCHEDULE #161 FOR SPECIFICATIONS.
- 2-18 PROVIDE NEW CONDENSING UNIT ON PLATFORM. FOR PLATFORM CONSTRUCTION SEE ARCHITECTURAL DRAWINGS.
- 2-19 PROVIDE GOOSENECK WITH SCREEN.
- 2-22 REFRIGERANT PIPING ROUTED DOWN TO NEW FAN COIL IN THE STORAGE ROOM. USE THE SAME EXISTING ROUTING. FIELD COORDINATE EXACT PIPE ROUTING.

**GENERAL NOTES**

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SHAKE SHACK

Project Number

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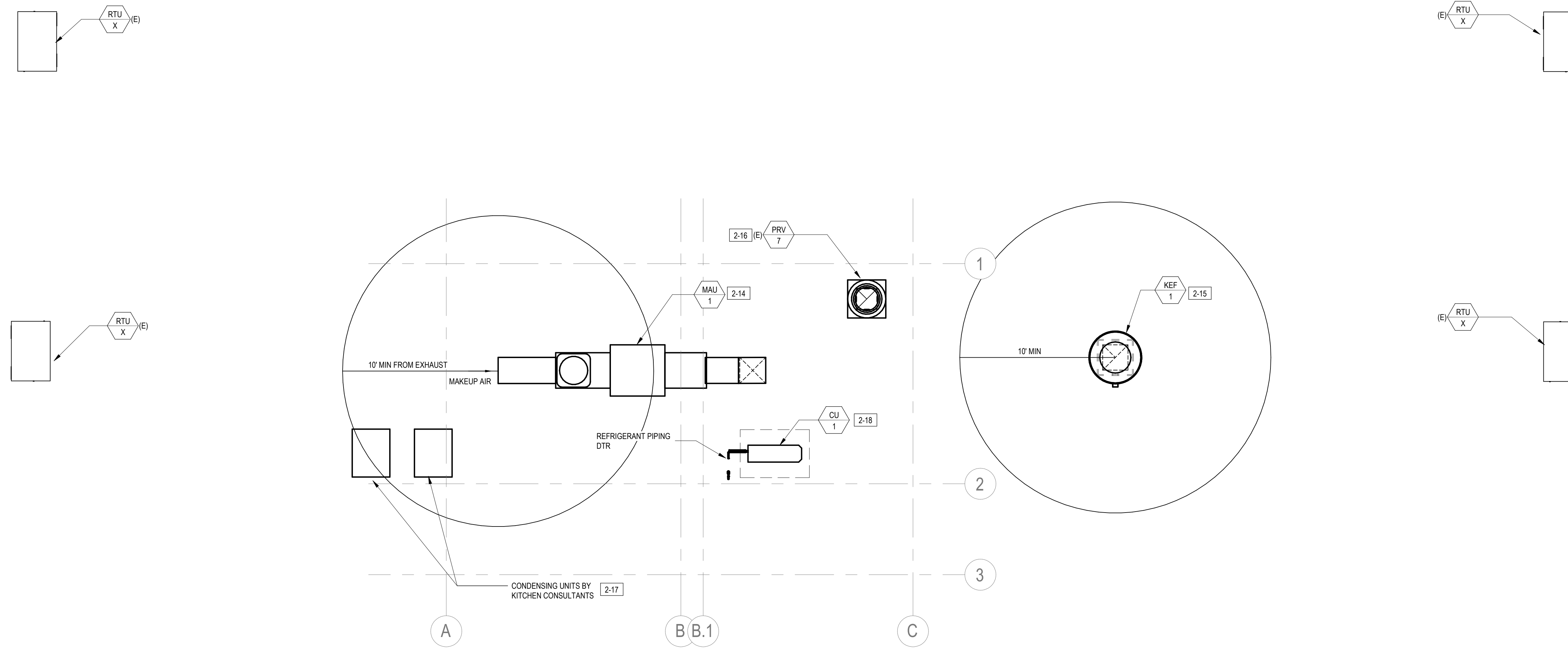
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MECHANICAL REMODEL ROOF PLAN

Scale

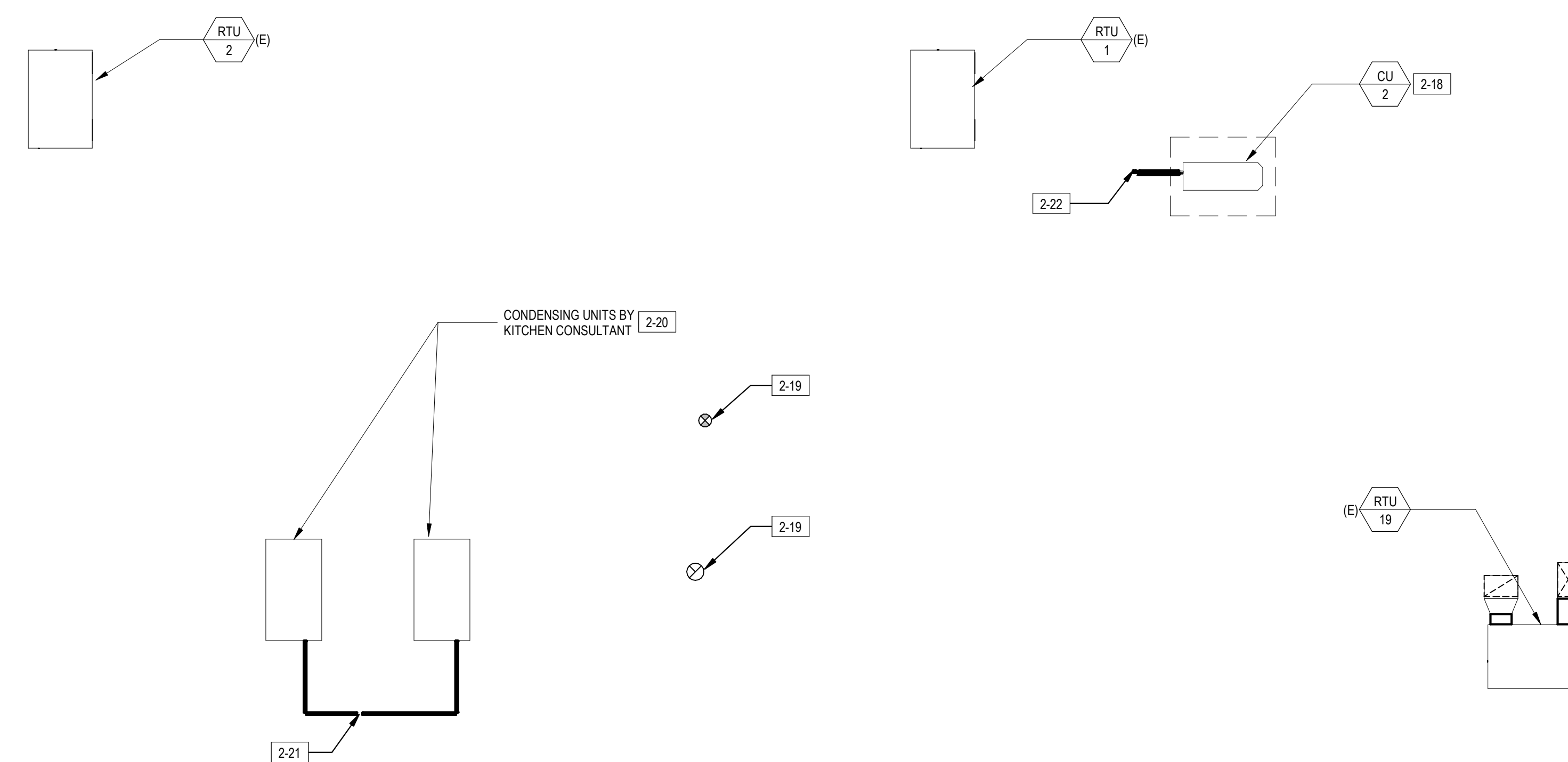
1/4" = 1'-0"

**M122**



**2 MECHANICAL ROOF REMODEL - KITCHEN**

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



**1 MECHANICAL ROOF REMODEL - STORAGE**

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

Date	Description
01/28/2022	ISSUE FOR CONSTRUCTION

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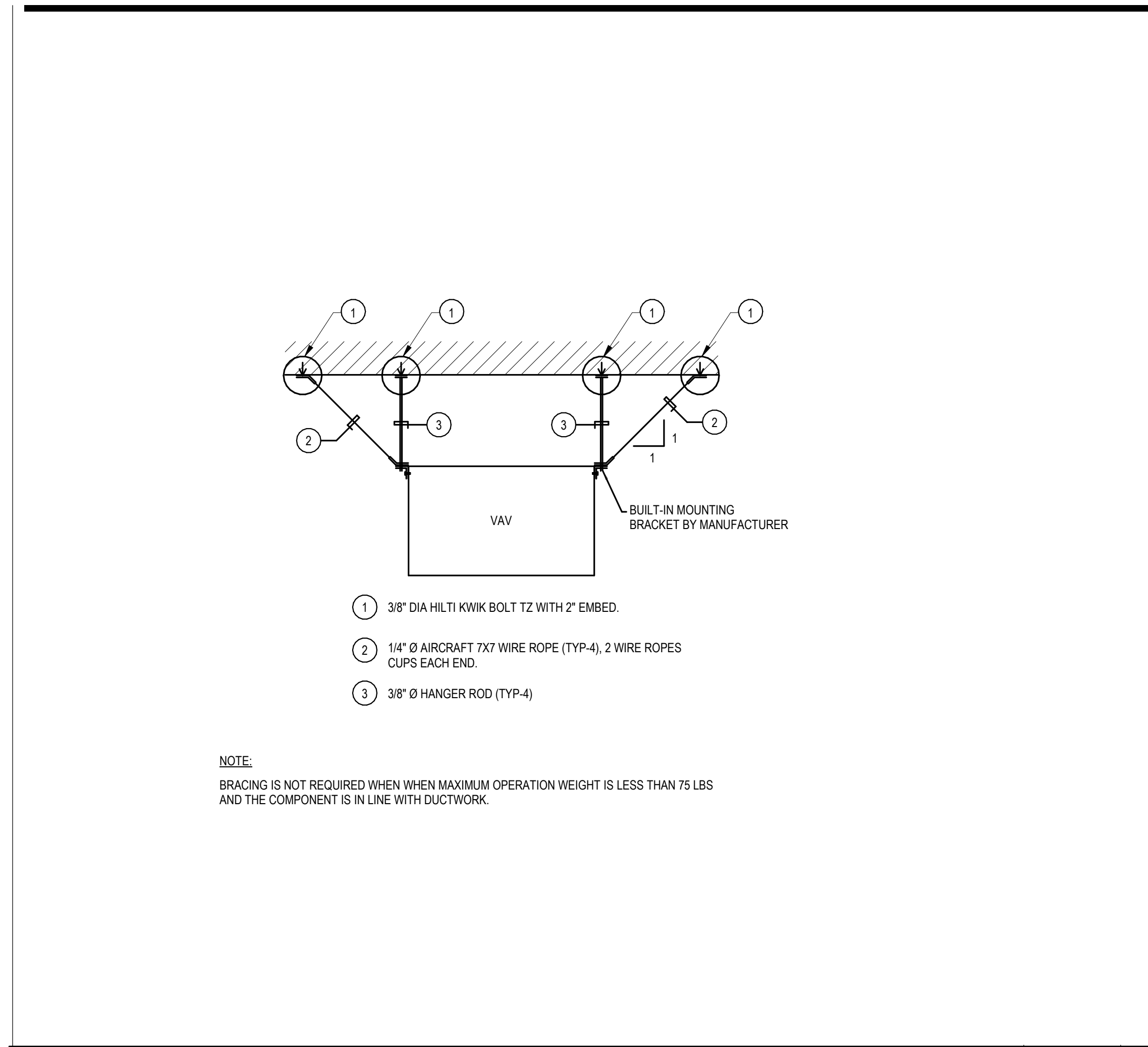
**Project Name**  
SHAKE SHACK

**Project Number**  
SHK-21-004

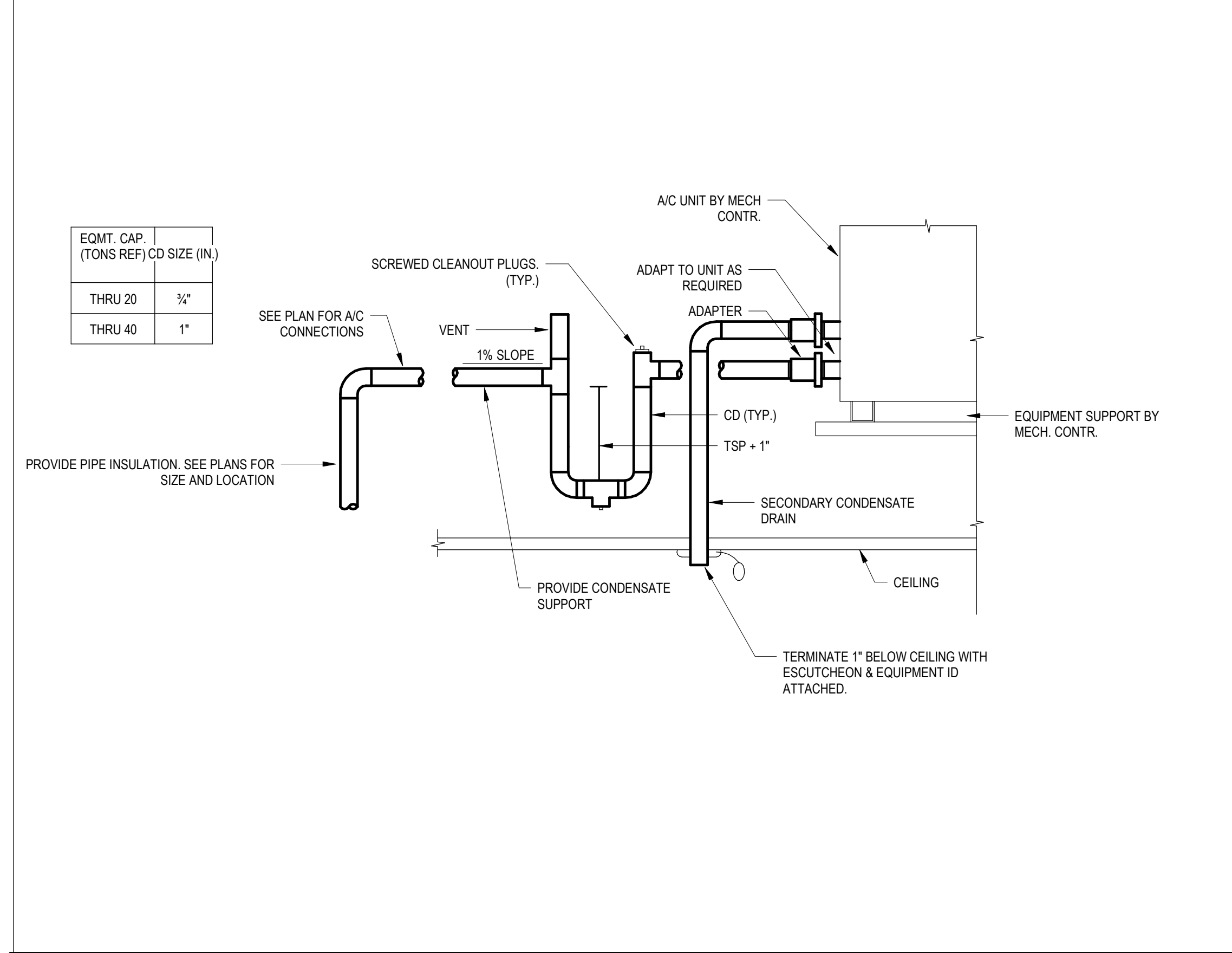
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MECHANICAL DETAILS

**Scale**  
NTS

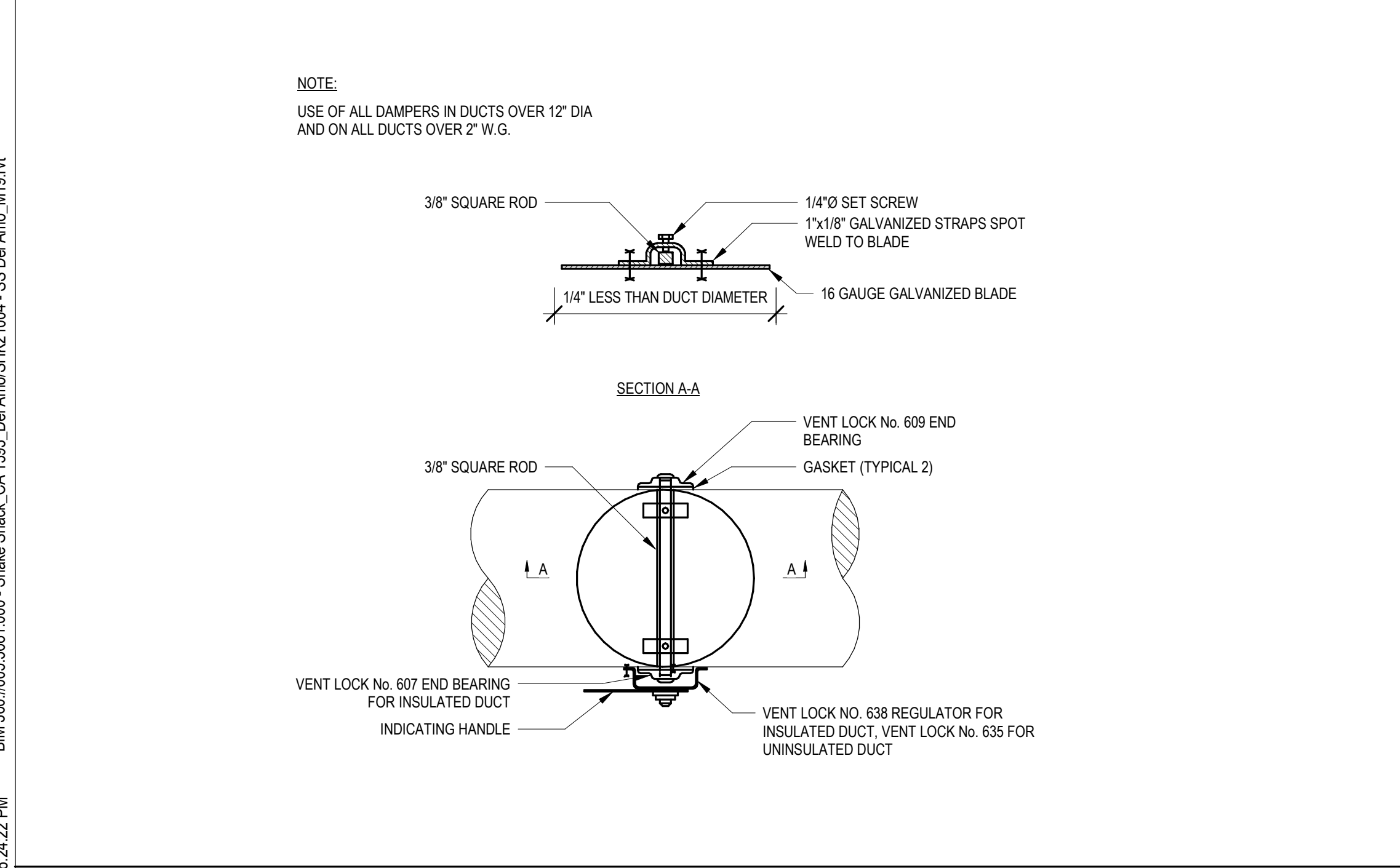
**M501**



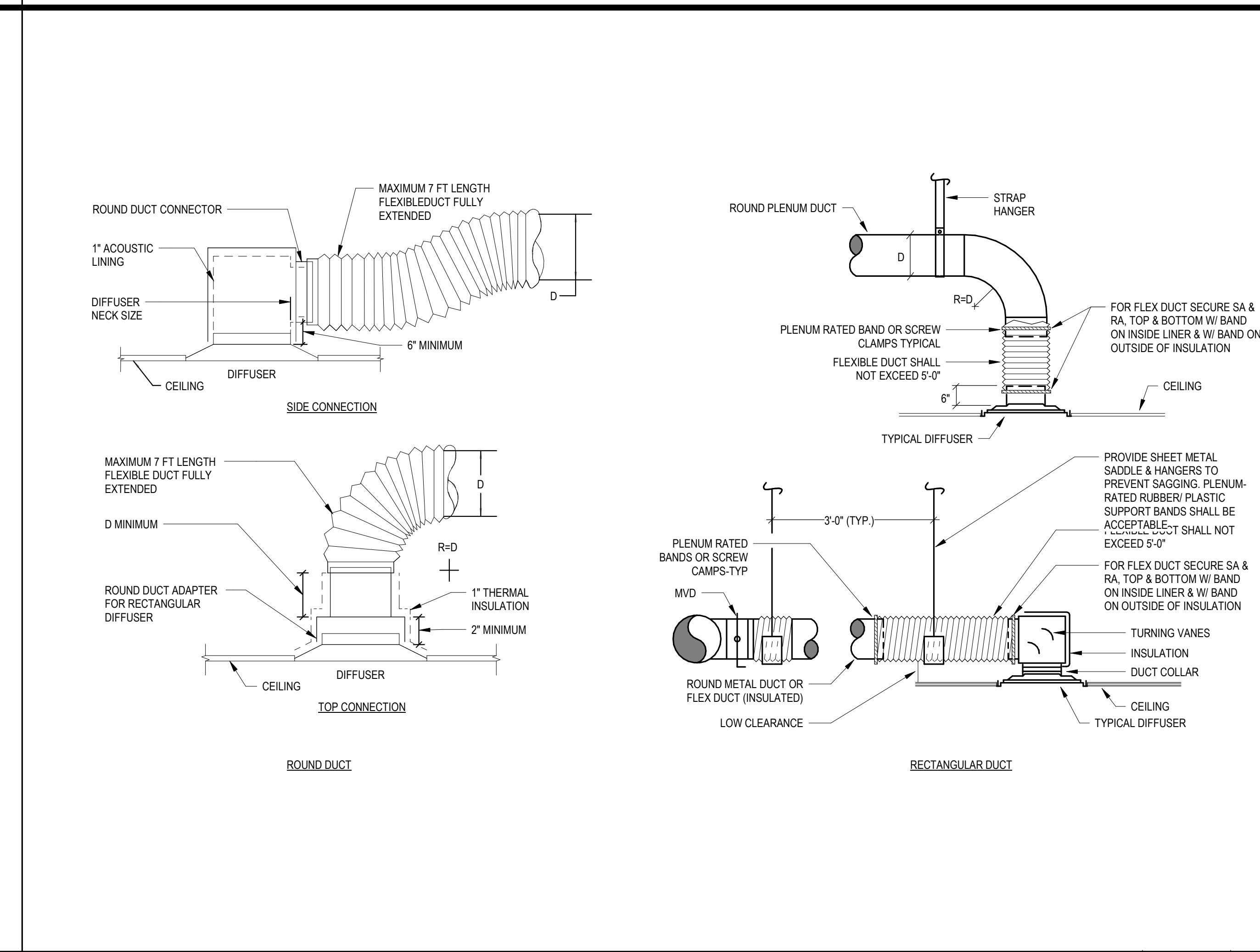
**VAV BOX MOUNTING** SCALE: NTS 9



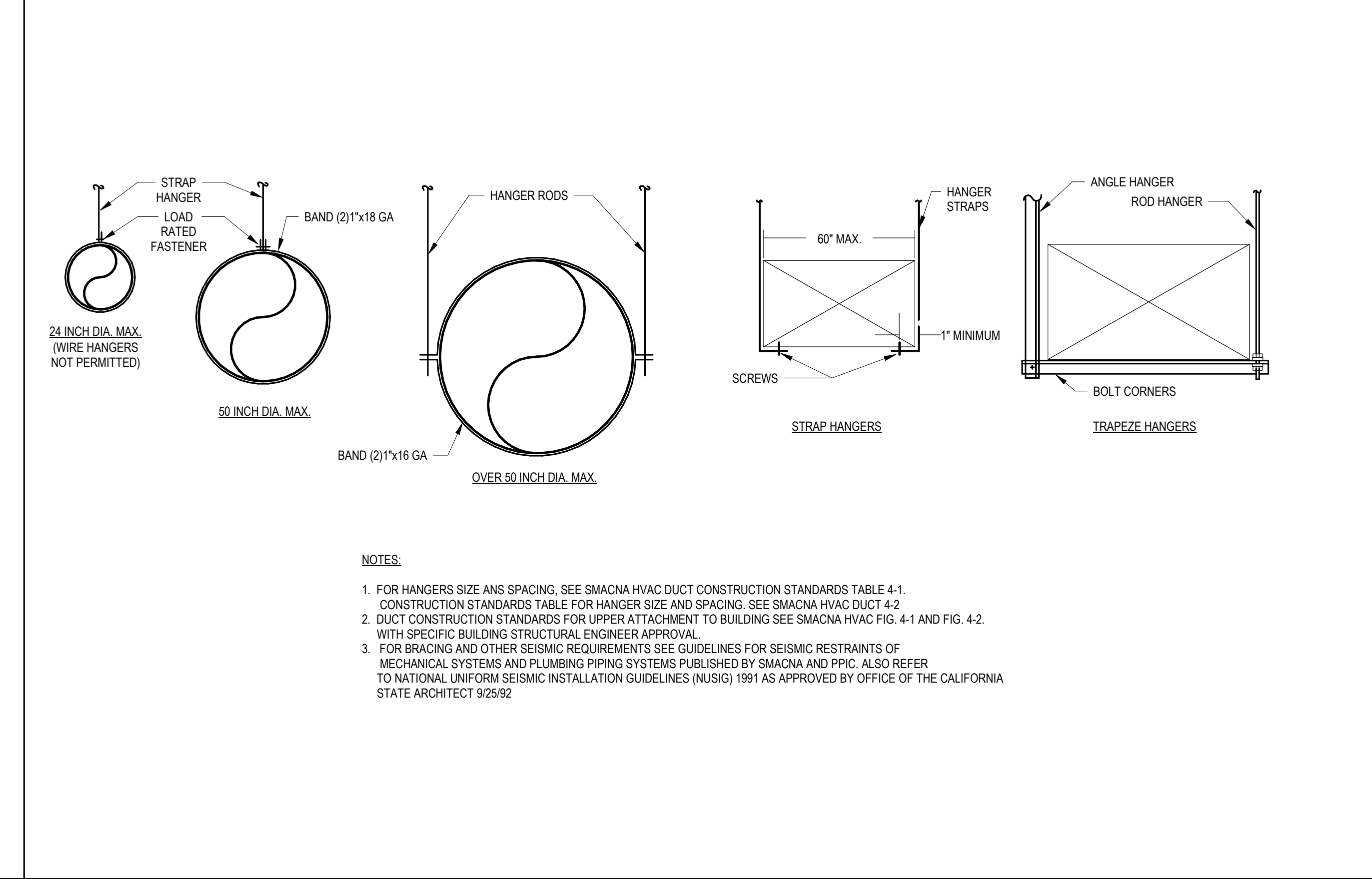
**FAN COIL CONDENSATE DRAIN DETAIL** SCALE: NTS 8



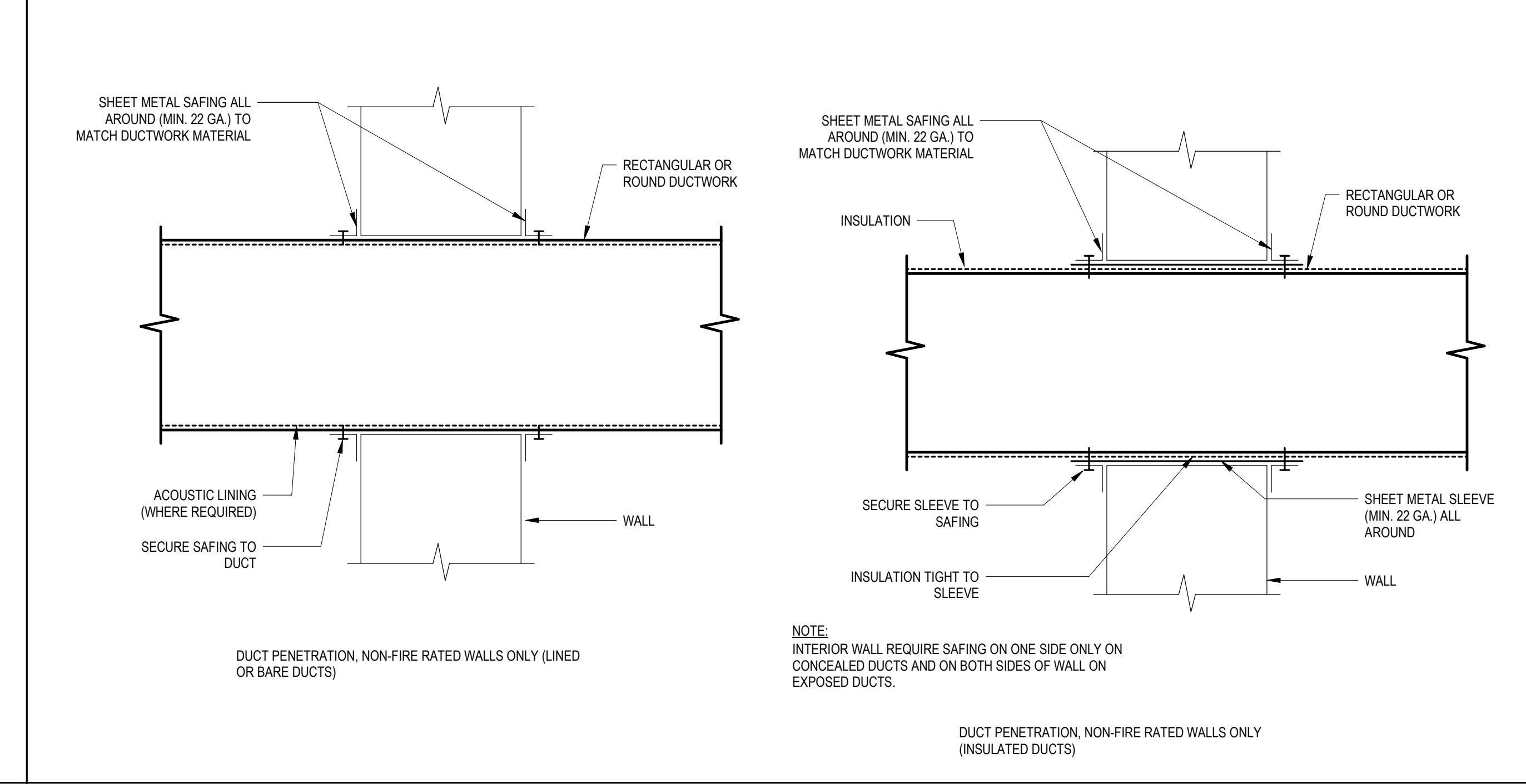
**ROUND VOLUME DAMPER** SCALE: NTS 7



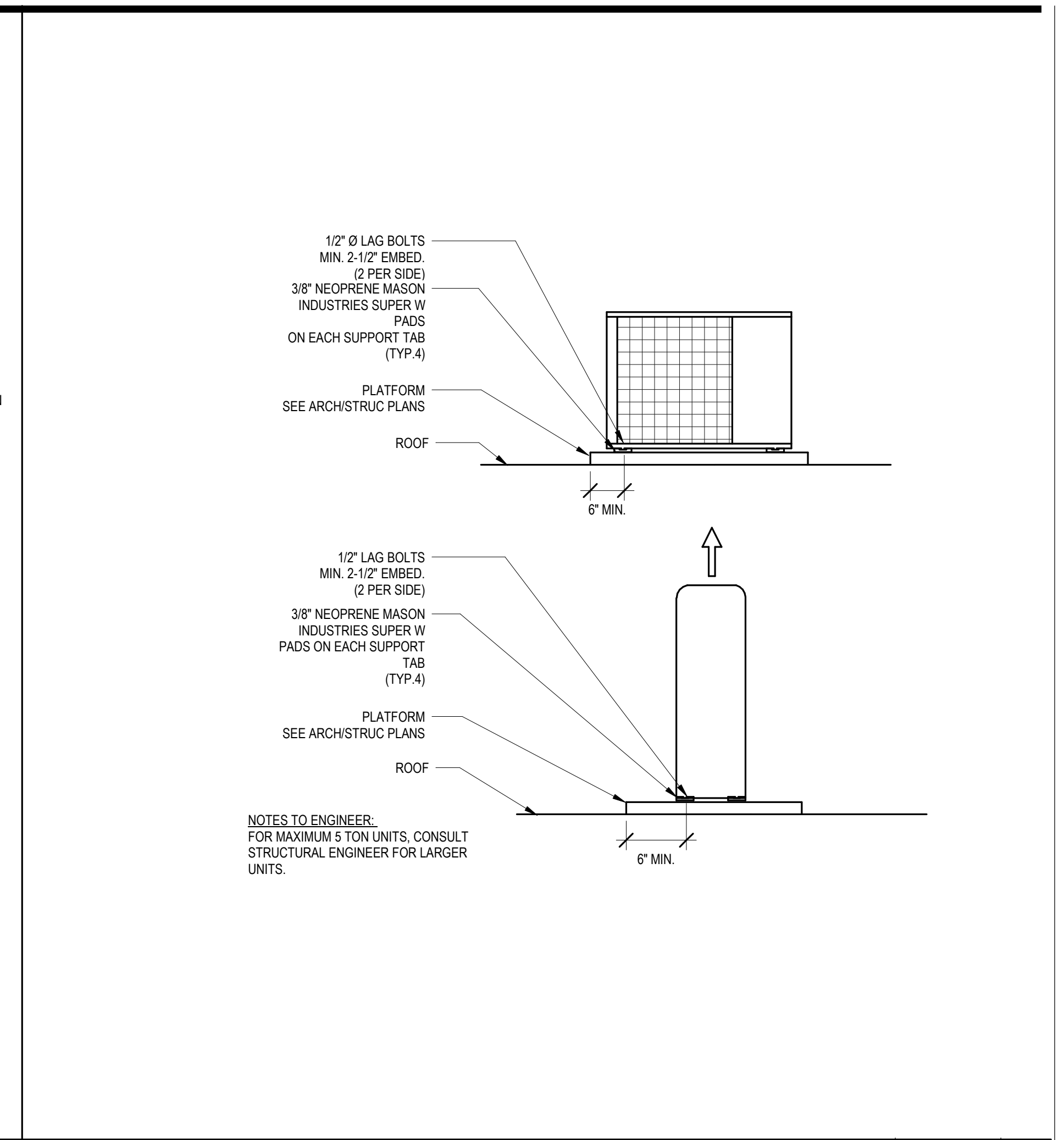
**DIFFUSER CONNECTION DETAIL** SCALE: NTS 6



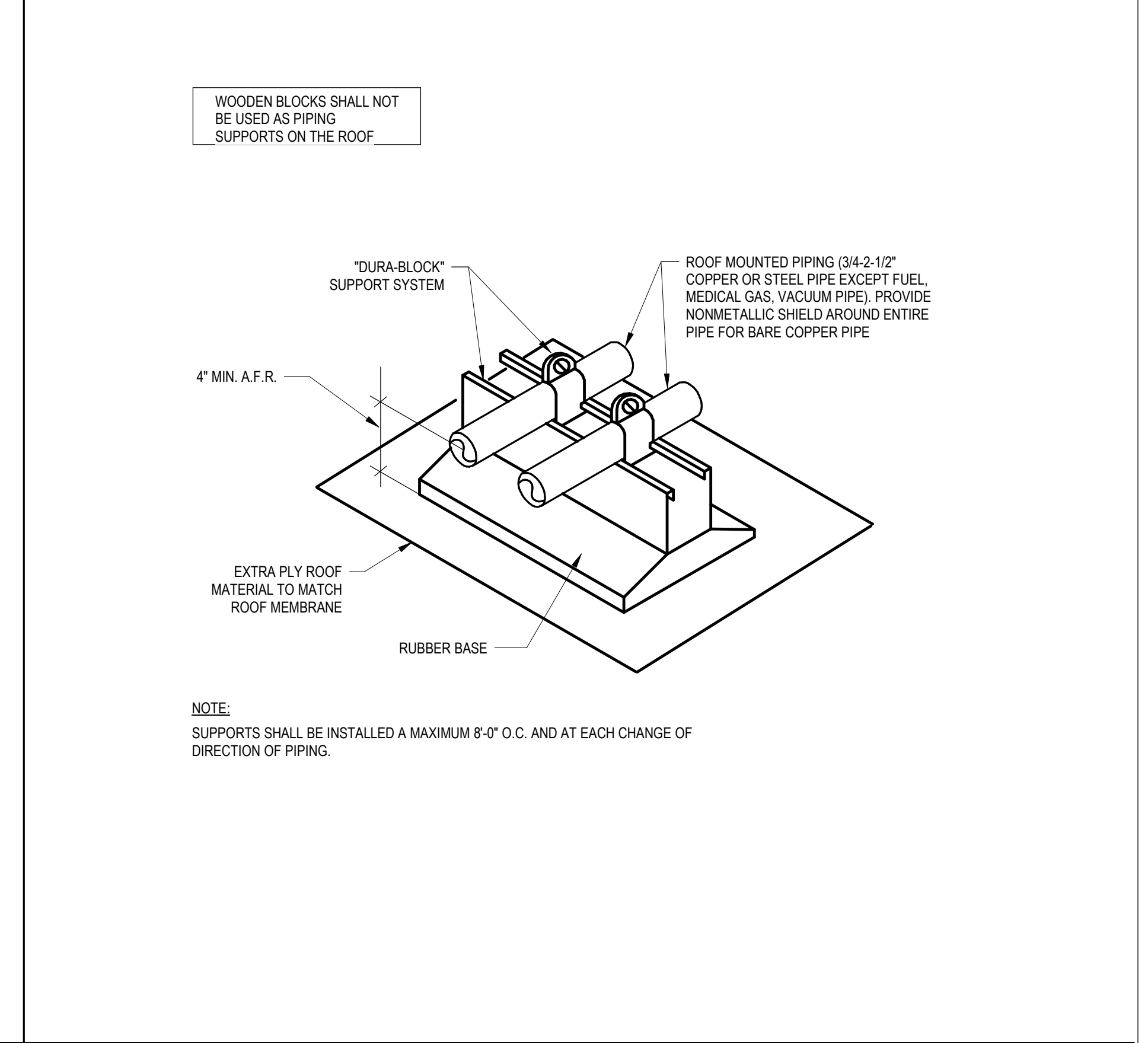
**HORIZONTAL DUCT SUPPORT DETAIL** SCALE: NTS 5



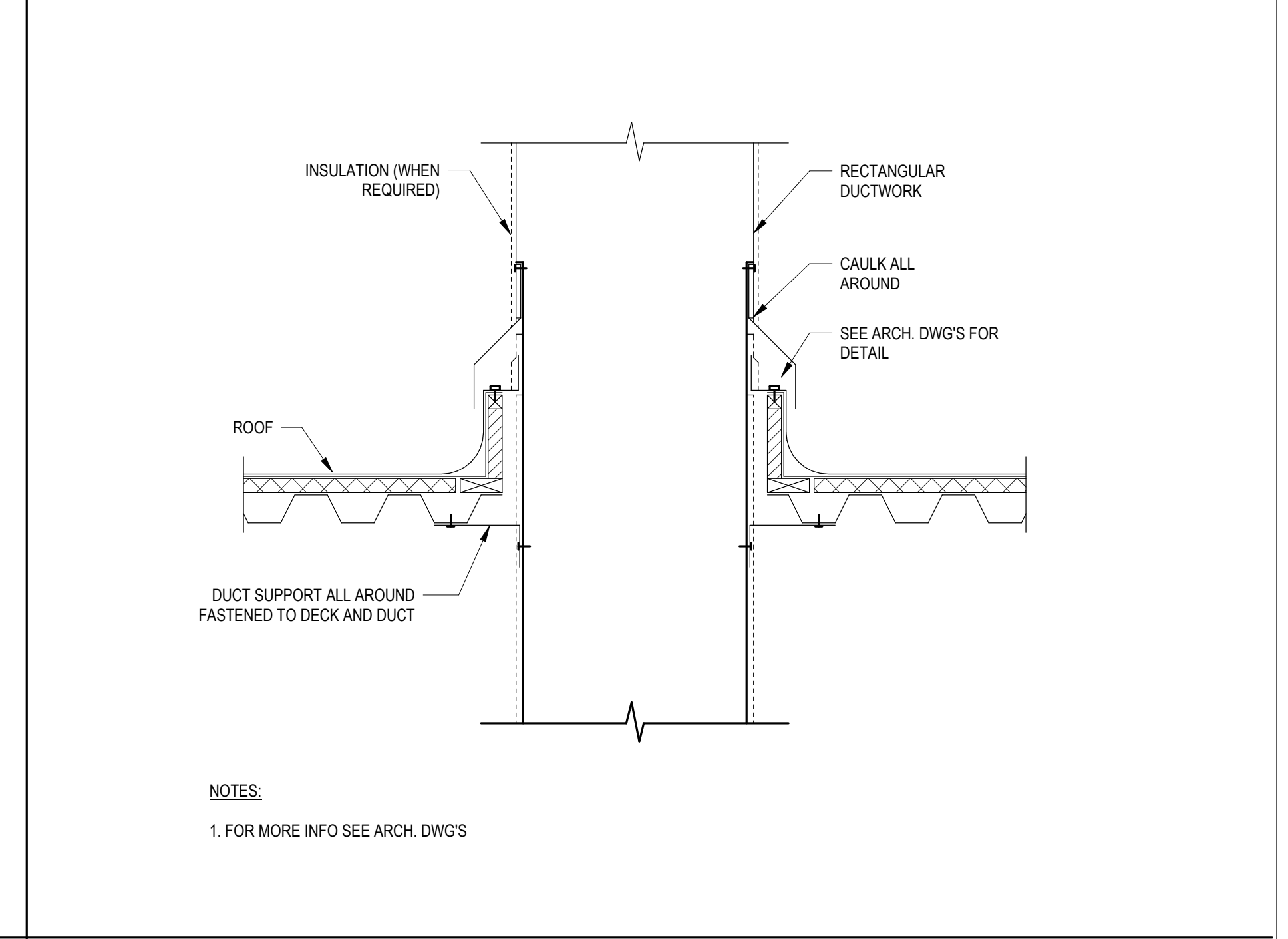
**DUCT WALL PENETRATION** SCALE: NTS 4



**CONDENSING UNIT DETAIL** SCALE: NTS 3



**ROOF PIPE SUPPORT** SCALE: NTS 2



**DUCT PENETRATION THRU ROOF** SCALE: NTS 1

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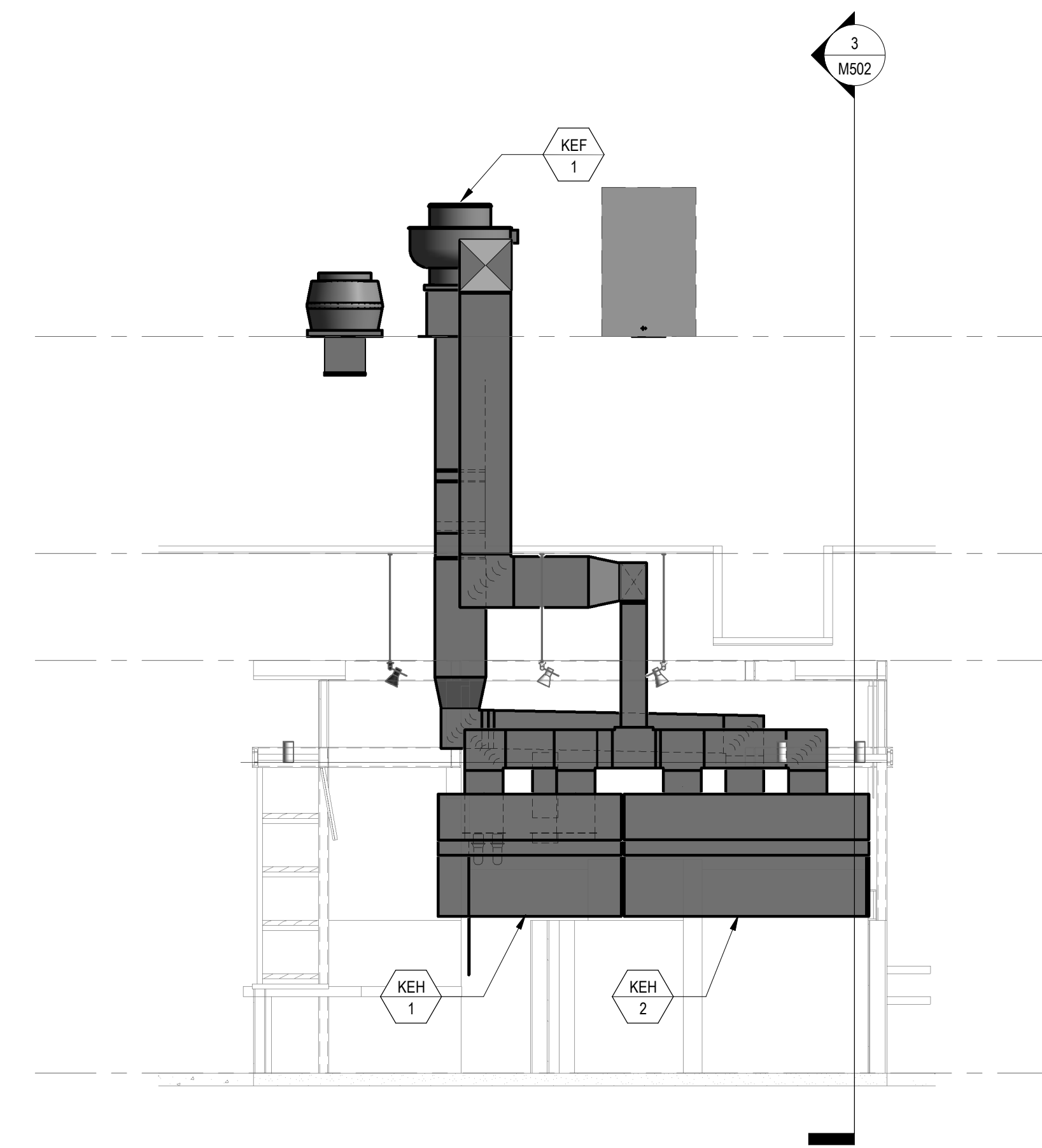


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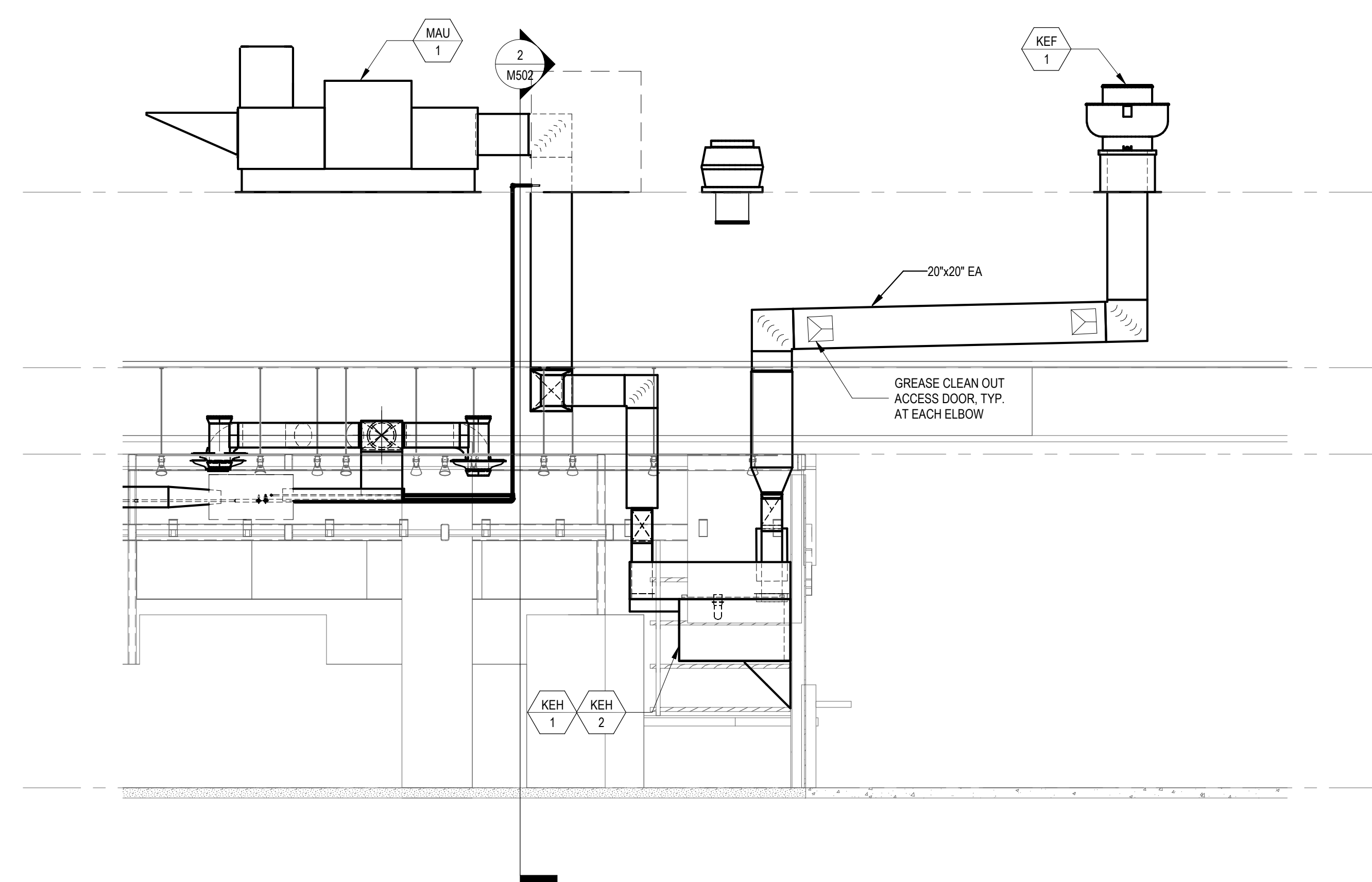
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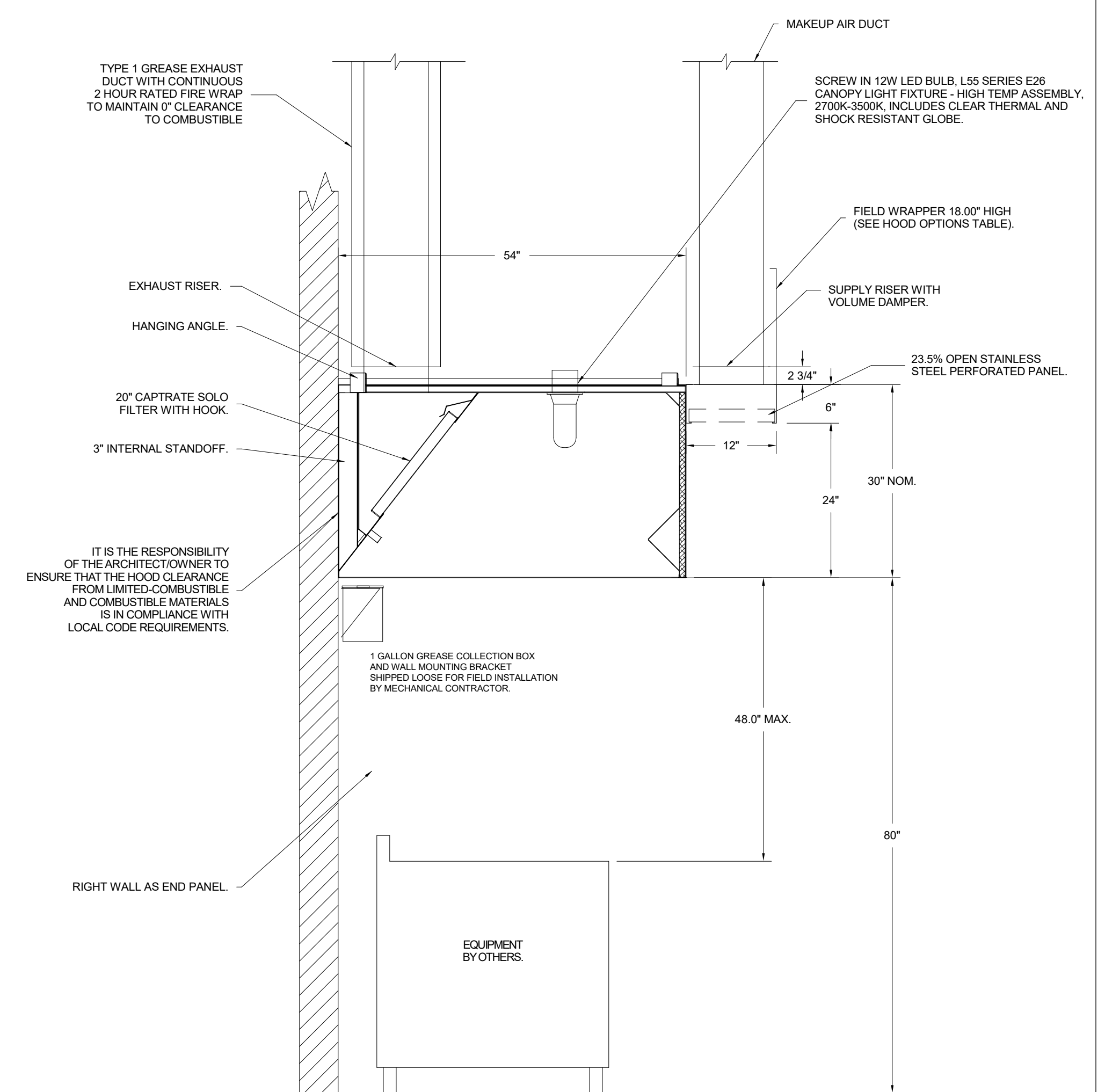
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**KITCHEN HOOD FRONT VIEW ELEVATION** SCALE: 1/4" = 1'-0" **2**



**KITCHEN HOOD SIDE VIEW ELEVATION** SCALE: 1/4" = 1'-0" **3**



**KITCHEN HOOD DIMENSIONS** SCALE: NTS **1**

Seal / Signature



Project Name

**SHAKE SHACK**

Project Number

**SHK-21-004**

Description

**MECHANICAL ELEVATIONS**

Scale

As indicated

**M502**



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**AIR BALANCE TABLE (FOH, KITCHEN, BOH)**

	HVAC SUPPLY (CFM)	HVAC RETURN (CFM)	HVAC OSA (CFM)	HOOD OSA (CFM)	HOOD EXHAUST (CFM)	GENERAL EXHAUST (CFM)	AREA SERVED
FC-1	1600	-	-	-	-	-	FOH, KITCHEN, BOH
MAU-1	1908	-	-	1908	-	-	KITCHEN HOOD
KEF-1	-	-	-	-	2385	-	KITCHEN HOOD
TOTAL	3508	-	-	1908	2385	-	-

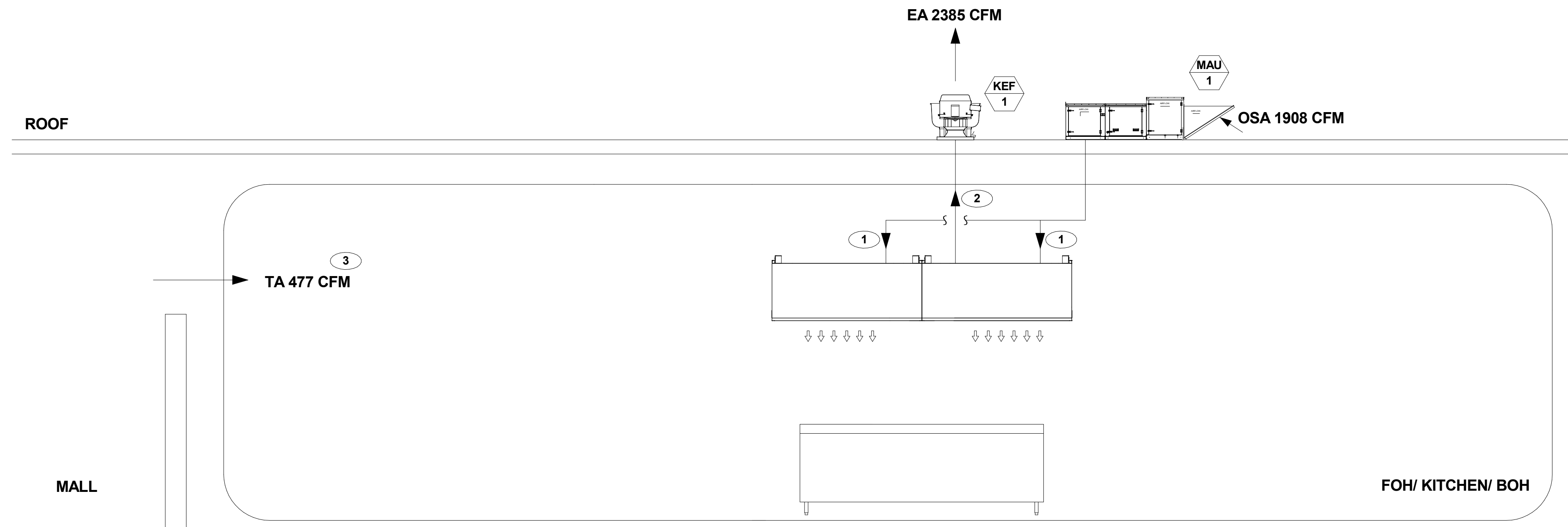
NOTE:

1) FOH, KITCHEN, BOH ARE ALL PART OF ONE OPEN ZONE.

2) SHAKE SHACK FOH, KITCHEN AND BOH ARE IN A KIOSK OPEN TO THE DEL AMO MALL.

TOTAL PRESSURIZATION DIFFERENCE = -477

NOTE: AIR WILL TRANSFER INTO THE KIOSK FROM THE SURROUNDING MALL.



KEYNOTES:

1. MAKE UP AIR TO SUPPLY KITCHEN HOOD.
2. KITCHEN HOOD EXHAUST.
3. TRANSFER AIR TO KITCHEN FROM ADJACENT SPACE.

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SHAKE SHACK

Project Number

SHK-21-004

Description

MECHANICAL AIRFLOW DIAGRAMS

Scale

NTS

**M601**

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Description

CONTROLS

Scale

NTS

# M602

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### FOH, KITCHEN AND BOH

#### MAU-1

- MAKE-UP UNIT SUPPLY AIR FAN SHALL BE ENERGIZED AND THE OUTSIDE AIR DAMPER SHALL OPEN 100% WHEN EXHAUST FAN KEF-1 IS ENERGIZED.
- MAKE-UP UNIT SUPPLY AIR FAN SHALL BE DE-ENERGIZED BY ANY KITCHEN EXHAUST HOOD FIRE EXTINGUISHING SYSTEM, OR SMOKE DETECTOR ALARMS.
- DX COOLING SHALL ENABLE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE BETWEEN 75 DEG-F (ADJ.) AND 60 DEG-F (ADJ.).

#### KITCHEN EXHAUST FAN (KEF-1)

- KEF-1 SHALL BE ENERGIZED BY CONTACTORS IN HOOD CONTROL PANEL. COORDINATE INSTALLATION WITH ELECTRICAL CONTRACTOR.
- INTERLOCK THE MAKEUP AIR UNIT WITH KEF-1 SO THE MAKEUP AIR UNIT SUPPLY AIR FAN IS ENERGIZED WHEN THE EXHAUST FANS ARE ENERGIZED.
- UPON ALARM FROM KITCHEN EXHAUST HOOD FIRE EXTINGUISHING SYSTEM, EXHAUST FANS SHALL CONTINUE TO RUN.
- NORMAL TEMPERATURE TEST: EXHAUST FAN SHALL OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300 DEG-F UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

#### KITCHEN EXHAUST HOODS (KEH-1 AND KEH-2)

- THE ELECTRICAL PACKAGE, TYPICALLY FP, IS DESIGNED TO THERMOSTATICALLY ACTIVATE THE EXHAUST FAN FOR AN EXHAUST HOOD WHENEVER ELEVATED TEMPERATURES ARE SENSED IN THE EXHAUST SYSTEM. THIS OPTION WILL MEET THE REQUIREMENTS OF BY PROVIDING A THERMOSTAT(S) MOUNTED IN THE DUCT OR HOOD RISER TO SENSE INCREASED EXHAUST TEMPERATURES.
- CONTROLS SHALL BE LISTED BY ETL (UL 508A). THE CONTROL ENCLOSURE SHALL BE NEMA 1 RATED AND LISTED FOR INSTALLATION INSIDE OF THE EXHAUST HOOD UTILITY CABINET. THE CONTROL ENCLOSURE MAY BE CONSTRUCTED OF STAINLESS STEEL OR PAINTED STEEL.
- TEMPERATURE PROBES(S) LOCATED IN THE DUCT RISER SHALL BE CONSTRUCTED OF STAINLESS STEEL.
- A ROOM TEMPERATURE SENSOR IS ALSO PROVIDED FOR FIELD INSTALLATION IN THE KITCHEN SPACE IN ORDER TO START THE FAN(S) BASED ON THE TEMPERATURE DIFFERENTIAL BETWEEN THE ROOM AND THE EXHAUST AIR IN THE DUCT, RATHER THAN FIXED SET-POINTS. THE SYSTEM IS FACTORY PRE-SET TO ACTIVATE THE FANS AT 10 DEG-F ABOVE THE ROOM TEMPERATURE.
- ONCE THE DUCT TEMPERATURE REACHES THE ACTIVATION POINT, THE EXHAUST FANS WILL BE ACTIVATED. THE CONTROLS ALSO PROVIDE HYSTERESIS TO PREVENT CYCLING OF THE FANS AFTER THE COOKING APPLIANCES HAVE BEEN TURNED OFF AND THE HEAT IN THE EXHAUST SYSTEM IS REDUCED. THE HYSTERESIS IS FACTORY SET 2 DEGREES AND WILL KEEP THE EXHAUST RUNNING UNTIL THE TEMPERATURE FALLS 2 DEGREES BELOW THE ACTIVATION SET POINT. A HYSTERESIS TIMER ALSO EXISTS TO KEEP THE FANS RUNNING FOR AT LEAST 30 MIN AFTER BEING ACTIVATED BY THE TEMPERATURE RISE.
- THE ACTIVATION AND HYSTERESIS SETTINGS MAY BE FIELD ADJUSTED ON THE BOARD LCD INTERFACE LOCATED INSIDE THE CONTROL ENCLOSURE TO MEET APPLICATION NEEDS. THE PANEL IS FACTORY CONFIGURED TO SHUT DOWN SUPPLY FANS, TURN ON THE EXHAUST FANS AND TURN OFF THE HOOD LIGHTS IN A FIRE CONDITION.

#### FC-1/CU-1

- FC UNIT SHALL BE COMPLETE WITH A 7-DAY PROGRAMMABLE THERMOSTAT. THERMOSTAT SCHEDULE SHALL FOLLOW OCCUPANCY SCHEDULE OF DEL AMO MALL.
- TEMP SHALL BE 70F MIN. AND 74F MAX (ADJ.)

### STORAGE AND MANAGER'S OFFICE

#### (E) RTU-19

- DURING OCCUPIED HOURS, UNITS SUPPLY FANS SHALL RUN CONTINUOUSLY AND OUTDOOR AIR DAMPER AND RETURN AIR DAMPER SET TO MINIMUM POSITION TO MAINTAIN MINIMUM VENTILATION
- TEMPERATURE SETPOINTS AND OCCUPIED HOURS ARE SET AT THE BMS AND SHALL BE PER OWNER STANDARDS.

#### FC-2/CU-2

- FC UNIT SHALL BE COMPLETE WITH A 7-DAY PROGRAMMABLE THERMOSTAT.
- 
- TEMP SHALL BE 70F MIN. AND 74F MAX (ADJ.)

SEQUENCE OF OPERATION

SCALE  
NTS

1

SPECIFICATION TABLE OF CONTENTS

SECTION 23050 - COMMON WORK RESULTS FOR HVAC
SECTION 23059 - HANGERS AND SUPPORTS
SECTION 23063 - IDENTIFICATION
SECTION 23069 - TESTING, ADJUSTING, AND BALANCING FOR HVAC
SECTION 23070 - HVAC INSULATION
SECTION 23080 - COMMISSIONING
SECTION 23200 - REFRIGERANT PIPING
SECTION 23313 - METAL DUCTS
SECTION 23330 - AIR DUCT ACCESSORIES
SECTION 23373 - DIFFUSERS, REGISTERS AND GRILLES

SECTION 23050 - COMMON WORK RESULTS FOR HVAC

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS, AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

1.2 SCOPE OF WORK

A. PROVIDE LABOR, INCLUDING FIELD ERECTION AND SUPERVISION, MATERIALS, EQUIPMENT AND ANCHORS, AND COORDINATE, PROCURE, FABRICATE, DELIVER, ERECT OR INSTALL, INTERFACE WITH EXISTING WORK, START, DEBUG AND TEST ALL SYSTEMS AS NECESSARY TO PROVIDE THE OWNER WITH A COMPLETE OPERATING FACILITY IN CONFORMANCE WITH THE CONTRACT DOCUMENTS AND IN CONFORMANCE WITH REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION.

B. THE WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

- 1. DEMOLITION AND REMOVAL OF MECHANICAL WORK.
2. DUCTWORK AND AIR OUTLETS.
3. AIR-CONDITIONING AND EXHAUST SYSTEMS.
4. KITCHEN HOOD AND EXHAUST SYSTEMS.
5. MAKEUP AIR SYSTEMS.
6. THERMAL INSULATION.
7. COORDINATION WITH OTHER TRADES FOR LOCATION OF DUCTWORK AND TO INFORM THE GENERAL CONTRACTOR (VIA DIMENSIONAL DRAWINGS) OF THE EXACT SIZE AND LOCATION OF ALL ROOF AND WALL OPENINGS.
8. MISCELLANEOUS STEEL, WORK SUPPORTS AND HANGERS AND CUTTING AND PATCHING OF ROOF, WALLS AND PARTITIONS.
9. RECORD DRAWINGS.
10. CONTROL.
11. TESTING, ADJUSTING, AND BALANCING.

C. RELATED WORK INCLUDED IN THIS SECTION AND IN OTHER SECTIONS

- 1. GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL WORK DESCRIBED IN THE CONSTRUCTION DOCUMENTS.
2. REFER TO THE RESPONSIBILITY MATRIX FOR ADDITIONAL INFORMATION.

1.3 QUALITY ASSURANCE

- A. CODES AND STANDARDS.
1. IN ADDITION TO THE REQUIREMENTS OF ALL GOVERNING CODES, ORDINANCES AND AGENCIES, CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES AND STANDARDS:
2. STATE OF CALIFORNIA ADMINISTRATIVE CODE.
3. HEALTH AND SAFETY CODE, STATE OF CALIFORNIA.
4. TITLE 24, CALIFORNIA CODES OF REGULATIONS
a. PART 1: 2019 CALIFORNIA ADMINISTRATIVE CODE
b. PART 2: 2019 CALIFORNIA BUILDING CODE
c. PART 3: 2019 CALIFORNIA ELECTRICAL CODE
d. PART 4: 2019 CALIFORNIA MECHANICAL CODE
e. PART 5: 2019 CALIFORNIA PLUMBING CODE
f. PART 6: 2019 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARD
g. PART 9: 2019 CALIFORNIA FIRE CODE.

1.4 SUBMITTALS

A. PROVIDE FOUR (4) COPIES OF SUBMITTAL MATERIAL WITH DESCRIPTIVE DATA FOR ALL PRODUCTS AND MATERIALS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING, PRIOR TO INSTALLATION. ALL SUBMITTALS SHALL BE HOLDING TO INDICATE SPECIFIC PRODUCTS OR MATERIALS BEING USED. ALLOW MIN 5 DAYS FOR ENGINEER TO REVIEW SUBMITTALS.

- 1. COORDINATED LAYOUT PLANS, SHOWING WORK OF ALL TRADES, INCLUDING BUT NOT LIMITED TO DUCTWORK, HVAC, REFRIGERANT, PLUMBING, FIRE PROTECTION PIPING, ELECTRICAL CONDUITS AND BUS DUCTS, EQUIPMENT. DRAWINGS SHALL BE 1/4 SCALE.
2. DUCTWORK ACCESSORIES.
3. DUCTWORK TYPICAL CONSTRUCTION.
4. DUCT SEALING.
5. REFRIGERANT PIPING.
6. DAMPERS.
7. DIFFUSERS, GRILLES AND REGISTERS.
8. CERTIFIED ACOUSTICAL TEST PERFORMANCE DATA FOR DIFFUSERS, REGISTERS, GRILLES AND TERMINAL AIR UNITS.
9. AIR AND WATER TEST AND BALANCE.
10. COMPLETE FORMS PROPOSED FOR USE IN COMPLYING AND RECORDING TEST AND BALANCE DATA.
11. CONTROL DEVICES AND SYSTEMS.
12. CONTROL, SEQUENCE AND SYSTEM DRAWINGS.
13. FIRE PROTECTION SYSTEM LAYOUTS IN CODE COMPLIANCE.
14. VIBRATION ISOLATION.
15. ONE SET OF AS-BUILT REPRODUCIBLE DRAWINGS.

B. PROVIDE 1 COPY OF APPROVED SUBMITTALS TO THE OFFICE OF THE BUILDING ENGINEER.

1.5 PRODUCT SUBSTITUTIONS

- A. THE CONTRACTOR SHALL CERTIFY THE FOLLOWING ITEMS ARE CORRECT WHEN USING SUBSTITUTED PRODUCTS OTHER THAN THOSE SCHEDULED OR SHOWN ON THE DRAWINGS AS A BASIS OF DESIGN.
1. THE PROPOSED SUBSTITUTION DOES NOT AFFECT DIMENSIONS SHOWN ON DRAWINGS.
2. THE CONTRACTOR SHALL PAY FOR CHANGES TO BUILDING DESIGN, INCLUDING ENGINEERING DESIGN, DETAILING, STRUCTURAL, SUPPORTS, AND CONSTRUCTION COSTS CAUSED BY PROPOSED SUBSTITUTION.
3. THE PROPOSED SUBSTITUTION HAS NO ADVERSE EFFECT ON OTHER TRADES, CONSTRUCTION SCHEDULE, OR SPECIFIED WARRANTY REQUIREMENTS.
4. MAINTENANCE AND SERVICE PARTS AVAILABLE LOCALLY ARE READILY OBTAINABLE FOR THE PROPOSED SUBSTITUTE.
B. THE CONTRACTOR FURTHER CERTIFIES THAT THE APPEARANCE, AND QUALITY OF PROPOSED SUBSTITUTION ARE EQUIVALENT OR SUPERIOR TO SPECIFIED ITEM.
C. THE CONTRACTOR AGREES THAT THE TERMS AND CONDITIONS FOR THE SUBSTITUTED PRODUCT THAT ARE FOUND IN THE CONTRACT DOCUMENTS APPLY TO THIS PROPOSED SUBSTITUTION.

1.6 MAINTENANCE MANUALS AND AS-BUILT DRAWINGS

- A. PROVIDE FOUR (4) COPIES OF OPERATING AND MAINTENANCE MANUAL FOR OWNERS USE FOR EACH TYPE OF EQUIPMENT. EACH ITEM SHALL BE CROSS-REFERENCED AND NUMBERED WITH AS-BUILT DRAWING DESCRIPTIONS.
B. SOFT COPY OF AS-BUILT DRAWINGS ON AUTOCAD AND PDF AND ONE SET OF HARD COPY SHALL BE DELIVERED TO OWNER.

1.7 GUARANTEES

A. GUARANTEE: ALL MATERIALS, APPARATUS AND WORKMANSHIP INSTALLED UNDER THIS SECTION SHALL BE UNCONDITIONALLY GUARANTEED FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF WORK BY THE OWNER AGAINST FAILURE DUE TO FAULTY MATERIAL OR WORKMANSHIP. THE CONTRACTOR SHALL CORRECT DEFECTS AT NO ADDITIONAL COST TO THE OWNER. LABOR AND REPLACEMENT OF PARTS TO BE ACCOMPLISHED AT NO COST TO OWNER.

1.8 SEISMIC SUPPORT

A. CONTRACTOR SHALL SUPPORT AND BRACE ALL NEW HVAC, PLUMBING AND FIRE PROTECTION SYSTEMS IN ACCORDANCE WITH REQUIREMENTS SPECIFIED.

1.9 PRODUCT HANDLING

- A. PROTECTION: PROTECT MATERIALS AND EQUIPMENT FROM DAMAGE DURING SHIPPING, STORAGE AND HANDLING. REMOVE FROM THE SITE ANY WET OR DAMAGED DUCT LINER OR INSULATION.
B. STORAGE: WHERE POSSIBLE, STORE MATERIALS AND EQUIPMENT INSIDE AND PROTECT FROM THE WEATHER. WHERE NECESSARY TO STORE OUTSIDE, STORE ABOVE GRADE AND ENCLOSE WITH WATERPROOF WRAPPING.
C. REPLACEMENT: IN THE EVENT OF DAMAGE, IMMEDIATELY REPAIR ALL DAMAGED AND DEFECTIVE WORK TO THE APPROVAL OF THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.

1.10 CONTRACT DRAWINGS

A. CONTRACT DRAWINGS FOR MECHANICAL WORK ARE DIAGRAMMATIC, INTENDED TO CONVEY THE SCOPE OF THE WORK AND INDICATE GENERAL ARRANGEMENT OF EQUIPMENT AND OUTLETS. PIPING AND APPROXIMATE SIZES AND LOCATIONS OF EQUIPMENT AND OUTLETS DO NOT SCALE DRAWINGS FOR MEASUREMENTS.

B. CONSULT KITCHEN, MECHANICAL, PLUMBING, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL CONTRACT DRAWINGS AND SPECIFICATIONS TO BECOME FAMILIAR WITH ALL CONDITIONS AFFECTING THE WORK. COORDINATE INTERCONNECTING WORK WITH OTHER TRADES AFFECTED, AND VERIFY ALL SPACES IN WHICH THE WORK WILL BE INSTALLED.

C. WHERE JOB CONDITIONS REQUIRE REASONABLE CHANGES IN ORDER TO COORDINATE INSTALLATION WITH OTHER TRADES, THESE CHANGES SHALL BE MADE WITHOUT EXTRA COST TO THE OWNER.

1.11 DEMOLITION

A. PROTECT ADJACENT MATERIALS INCLUDING TO REMAIN, INSTALL AND MAINTAIN DUST AND NOISE BARRIERS TO KEEP DIRT, DUST, AND NOISE FROM BEING TRANSMITTED TO ADJACENT AREAS. REMOVE PROTECTION AND BARRIERS AFTER DEMOLITION OPERATIONS ARE COMPLETE.

B. LOCATE, IDENTIFY, AND PROTECT MECHANICAL SERVICES PASSING THROUGH DEMOLITION AREA AND SERVING OTHER AREAS OUTSIDE THE DEMOLITION LIMITS. MAINTAIN SERVICES TO AREAS OUTSIDE DEMOLITION LIMITS, WHEN SERVICES MUST BE INTERRUPTED, INSTALL TEMPORARY SERVICES FOR AFFECTED AREAS.

C. MATERIALS AND EQUIPMENT TO BE SALVAGED: REMOVE, DEMOLITE, AND DISCONNECT EXISTING MECHANICAL MATERIALS AND EQUIPMENT INDICATED TO BE REMOVED AND SALVAGED, AND DELIVER MATERIALS AND EQUIPMENT TO THE OWNER.

D. REPAIR OR REPLACE EQUIPMENT OR MATERIALS DAMAGED DURING DEMOLITION TO SATISFACTION OF OWNERS DESIGNATED REPRESENTATIVE.

1.12 INTERRUPTION OF EXISTING UTILITY SERVICE

A. COORDINATE THE SHUT-OFF AND DISCONNECTION OF UTILITY SERVICES WITH THE OWNER AND THE UTILITY COMPANY.

B. NOTIFY THE OWNERS REPRESENTATIVE OWNERS PROJECT REPRESENTATIVE AT LEAST 5 DAYS PRIOR TO COMMENCING DEMOLITION OPERATIONS.

1.14 SCHEDULING

A. SUBMIT SCHEDULES INDICATING PROPOSED METHODS AND SEQUENCE OF OPERATIONS FOR DEMOLITION PRIOR TO COMMENCEMENT OF WORK. INCLUDE COORDINATION FOR SHUT-OFF OF UTILITY SERVICES AND DETAILS FOR DUST AND NOISE CONTROL.

B. COORDINATE SEQUENCING WITH CONSTRUCTION PHASING AND OWNER OCCUPANCY.

1.15 MAINTENANCE OF EXISTING UTILITY SERVICES

A. UNINTERRUPTED NORMAL USE OF THE EXISTING FACILITIES MUST BE MAINTAINED DURING THE TIME REQUIRED TO PERFORM THE COMPLETE INSTALLATION OF THE WORK INDICATED IN THE CONTRACT DOCUMENTS. IT IS MANDATORY THAT THE EXISTING BUILDINGS BE MAINTAINED IN SERVICE.

B. INVESTIGATE EXISTING CONDITIONS AND THE LOCATION OF ALL EXISTING EQUIPMENT AND THE LOCATION OF ALL EXISTING SERVICES BEFORE STARTING.

C. IF A SERVICE IS DISTURBED, IMMEDIATELY WITHOUT REGARD FOR WORKING HOURS, PLACE THE SERVICE BACK INTO OPERATION.

D. SUFFICIENT ADVANCE NOTICE SHALL BE GIVEN TO THE OWNER AND ITS PERMISSION OBTAINED PRIOR TO INTERRUPTION OF SERVICE. IT SHOULD BE ASSUMED THAT DISRUPTION OF UTILITIES AND SERVICES WILL BE DONE AT OTHER THAN NORMAL WORKING HOURS. NO ADDITIONAL OR EXTRA PAYMENT WILL BE AUTHORIZED TO COMPLY WITH THESE REQUIREMENTS.

E. REPAIR, REPLACE AND MAINTAIN IN SERVICE ANY UTILITIES, FACILITIES, OR SERVICES UNDERGROUND, OVERGROUND, INTERIOR OR EXTERIOR, DAMAGED, BROKEN OR OTHERWISE RENDERED INOPERATIVE DURING THE COURSE OF CONSTRUCTION IN THE EXISTING BUILDING.

F. ALL OPERINGS MUST BE SECURELY COVERED, OR OTHERWISE PROTECTED, TO PREVENT INJURY DUE TO CARELESSLY OR UNOBSERVEDLY DROPPED TOOLS OR MATERIALS, DIRT, DIRT, OR ANY FOREIGN MATTER. DAMAGED WORK SHALL BE REPAIRED OR REPLACED UNTIL WORK IS FULLY AND FINALLY ACCEPTED.

G. PROTECT HEATING EQUIPMENT AND ALL SIMILAR ITEMS OF EQUIPMENT FROM DIRT, GRIME, PLASTER, PAINT AND WATER DURING ALL PHASES OF CONSTRUCTION. THIS PROTECTION SHALL BE PROVIDED BY COVERINGS WITH TRANSPARENT PLASTIC SHEETING.

H. MAKE ALL CONNECTIONS TO EXISTING SYSTEM PIPING AND EQUIPMENT SYSTEMS DURING DESIGNATED PERIODS UPON APPROVAL OF THE OWNER AND AT NO INCREASE IN THE CONTRACT SUM.

I. DO NOT INTERRUPT EXISTING UTILITIES UTILIZED BY THE OWNER, EXCEPT AS APPROVED BY THE OWNER. INTERRUPTIONS MUST BE SCHEDULED TO SUIT THE OWNERS REQUIREMENTS.

J. VERIFY ALL EXISTING WORK, WHERE EXISTING CONNECTIONS ARE PARTIAL, PROVIDE ALL NECESSARY MATERIALS, LABOR AND EQUIPMENT REQUIRED TO FINISH EXISTING WORK. IN ADDITION, MAINTAIN INTEGRITY OF ALL EXISTING SYSTEMS, RECTIFY ANY CONTAMINATION, DEGRADATION OF CLEANLINESS OR DAMAGE TO THE EXISTING SYSTEMS TO THE SATISFACTION OF THE OWNER.

1.16 INSTALLATION OF THE WORK

A. THE CONTRACT DRAWINGS INDICATE THE GENERAL ARRANGEMENTS FOR THE HVAC, KITCHEN, PLUMBING, AND FIRE PROTECTION SYSTEMS.

B. DRAWINGS ARE DIAGRAMMATIC AND DO NOT INDICATE NECESSARY OFFSETS, OBSTRUCTIONS OR STRUCTURAL CONDITIONS.

C. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL THE WORK IN SUCH A MANNER THAT IT WILL BE AT THE HIGHEST ELEVATION POSSIBLE, CONFORM TO THE STRUCTURE, AVOID OBSTRUCTIONS, MAINTAIN HEADROOM, LEAVE ADEQUATE CLEARANCES FOR LIGHT FIXTURES, RETURN AIR PATHWAYS, MAINTENANCE AND REPAIRS, AND PROVIDE CLEARANCE AND ACCESS AS REQUIRED BY CODES. NOTHING SHALL BE INSTALLED BELOW CEILING LEVEL, WITHOUT ARCHITECT'S WRITTEN CONSENT.

D. ABOVE ITEMS TO BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER. A. PROCEED AS RAPIDLY AS THE BUILDING CONSTRUCTION WILL PERMIT.

E. THOROUGHLY CLEAN ITEMS BEFORE INSTALLATION, CAP OPENINGS TO EXCLUDE DIRT UNTIL FINAL CONNECTIONS HAVE BEEN MADE.

F. CUT MATERIALS ACCURATELY, WORK WITH CARE WITHOUT SPRINGING OR FORCING, PROPERLY CLEAR WINDOWS, DOORS AND OTHER OPENINGS. EXCESSIVE CUTTING OR OTHER WEAKENING OF THE BUILDING STRUCTURE WILL NOT BE PERMITTED.

G. MANUFACTURERS DRAWINGS AND INSTRUCTIONS SHALL BE FOLLOWED IN ALL CASES WHERE THE MAKERS OF DEVICES AND EQUIPMENT FURNISH DIRECTIONS OR DETAILS NOT SHOWN ON THE DRAWINGS OR DESCRIBED IN THE SPECIFICATIONS.

H. DRAWINGS ARE NOT INTENDED TO BE SCALED, BUT SHALL BE FOLLOWED WITH SUFFICIENT ACCURACY TO COORDINATE WITH OTHER WORK AND STRUCTURAL LIMITATIONS.

I. SEISMIC DESIGN: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ANCHORS, SUPPORTS AND CONNECTIONS OF MECHANICAL WORK TO THE BUILDING STRUCTURE TO PREVENT DAMAGE AS A RESULT OF AN EARTHQUAKE, INCLUDING MANUFACTURED EQUIPMENT, THE CONNECTION AND INTEGRITY OF SHOP FABRICATED AND FIELD FABRICATED MATERIALS AND EQUIPMENT. ALL SUPPORTS, EQUIPMENT AND CONNECTIONS THERE TO SHALL BE DESIGNED TO CONFORM TO REQUIREMENTS OF THE CALIFORNIA ADMINISTRATIVE CODE, OR OTHER GOVERNING CODES.

J. ALL WORK SHALL BE PROPERLY SUPPORTED FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER, INDEPENDENT OF THE CEILING SUPPORT SYSTEM, WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT DIRECT FASTENING OF SUPPORTS, FURNISH ADDITIONAL FRAMING.

K. ALL EQUIPMENT SHALL BE SECURELY FASTENED TO BUILDING CONSTRUCTION WITH APPROVED SUPPORTS.

L. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF DIFFUSERS, GRILLES, REGISTERS, AND THERMOSTATS (IF DEPICTED). IF THERMOSTATS ARE NOT DEPICTED SPECIFICALLY ON ARCHITECT'S DRAWINGS, OBTAIN ARCHITECT'S APPROVAL FOR LOCATIONS PRIOR TO INSTALLATION.

M. COORDINATE THE WORK OF THIS SECTION WITH THE WORK OF OTHER SECTIONS IN AMPLIE TIME FOR PROPER INSTALLATION AND CONNECTION.

1.19 ELECTRICAL

A. GENERAL:

- 1. ALL ELECTRICAL MATERIAL, EQUIPMENT, AND APPARATUS SPECIFIED HEREIN SHALL CONFORM TO THE REQUIREMENTS OF DIVISION 26. REFER TO THE RESPONSIBILITY MATRIX FOR ADDITIONAL INFORMATION.
2. PROVIDE ALL MOTORS FOR EQUIPMENT SPECIFIED HEREIN. PROVIDE MOTOR STARTERS, CONTROLS, RELAYS, AND OTHER ELECTRICAL APPARATUS AND WIRING WHICH ARE REQUIRED FOR THE OPERATION OF THE EQUIPMENT SPECIFIED HEREIN.
3. SET AND SIGN ALL MOTORS AND DRIVERS ON EQUIPMENT SPECIFIED HEREIN.
4. SPECIFIC ELECTRICAL REQUIREMENTS (I.E., HORSEPOWER AND ELECTRICAL CHARACTERISTICS) FOR MECHANICAL EQUIPMENT ARE SCHEDULED ON THE DRAWINGS.

B. QUALITY ASSURANCE.
1. ELECTRICAL COMPONENTS AND MATERIALS SHALL BE UL OR ETL LISTED AND ALSO AS SUITABLE FOR LOCATION AND USE - NO EXCEPTIONS.

C. STARTERS AND ELECTRICAL DEVICES.

1. MOTOR STARTER CHARACTERISTICS.
a. ENCLOSURES: NEMA 1, GENERAL PURPOSE ENCLOSURES WITH PADLOCK EARS, EXCEPT IN WET LOCATIONS SHALL BE NEMA 3R WITH CONDUIT HUBS.
b. TYPE AND SIZE OF STARTER SHALL BE AS RECOMMENDED BY MOTOR MANUFACTURER AND THE DRIVEN EQUIPMENT MANUFACTURER FOR APPLICABLE PROTECTION AND START-UP CONDITION.

2. MANUAL SWITCHES SHALL HAVE PULL LIGHTS AND ALL REQUIRED SWITCH POSITIONS FOR MULTI SPEED MOTORS, OVERLOAD PROTECTION, MELTING ALLOY OR METALLIC TIE THERMAL OVERLOAD RELAYS, SIZED ACCORDING TO ACTUAL OPERATING CURRENT (FIELD MEASURED).

3. MAGNETIC STARTERS.
a. HEAVY DUTY, OIL RESISTANT, HAND-OFF-AUTO (H/OA), OR AS INDICATED, AND PILOT LIGHTS, PROPERLY ARRANGED FOR SINGLE SPEED OR MULTI SPEED OPERATION (FIELD MEASURED).
b. TRIP FREE THERMAL OVERLOAD RELAYS, EACH PHASE, SIZED ACCORDING TO ACTUAL OPERATING CURRENT (FIELD MEASURED).

c. INTERLOCKS, PNEUMATIC SWITCHES AND SIMILAR DEVICES AS REQUIRED FOR COORDINATION WITH CONTROL REQUIREMENTS OF DIVISION 23 CONTROLS SECTIONS.
d. BUILT IN PRIMARY AND SECONDARY FUSED CONTROL CIRCUIT TRANSFORMER, SUPPLIED FROM LOAD SIDE OF EQUIPMENT DISCONNECT.
e. EXTERNALLY OPERATED MANUAL RESET.
f. UNDER VOLTAGE RELEASE OR PROTECTION FOR ALL MOTORS OVER 20 HP.

4. MOTOR CONNECTIONS: LIQUID TIGHT, FLEXIBLE CONDUIT, EXCEPT WHERE PLUG IN ELECTRICAL CORDS ARE SPECIFICALLY INDICATED.

D. LOW VOLTAGE CONTROL WIRING.
1. GENERAL: 1/4 GAUGE, TYPE THHN, COLOR CODED, INSTALLED IN CONDUIT.
2. MANUFACTURER: GENERAL CABLE CORP., ALCAN CABLE, AMERICAN INSULATED WIRE CORP., SENATOR WIRE AND CABLE CO., OR SOUTH WIRE CO.

E. DISCONNECT SWITCHES:
1. FUSIBLE SWITCHES: FOR EQUIPMENT 12 HP OR LARGER, PROVIDE FUSED, EACH PHASE; HEAVY DUTY OVERLOAD, SPRING LOADED QUICK MAKE, QUICK BREAK MECHANISM, DEAT FRONT LINE SIDE SHEILD, SOLDERLESS LUGS SUITABLE FOR COPPER OR ALUMINUM CONDUCTORS; SPRING REINFORCED FUSE CLIPS, ELECTRICALLY LOCKED, AND CARRYING PARTS; HINGED DOORS, OPERATING LEVER ARRANGED FOR LOCKING IN THE "OPEN" POSITION; ARC QUENCHERS, CAPACITY AND CHARACTERISTICS AS INDICATED.
2. NON FUSIBLE SWITCHES: FOR EQUIPMENT LESS THAN 12 HORSEPOWER, SWITCH SHALL BE HORSEPOWER RATED, TOGGLE SWITCH TYPE WITH THERMAL OVERLOAD QUANTITY OF POLES AND VOLTAGE RATING AS REQUIRED.

PART 2 - EXECUTION

2.1 GENERAL

A. WORKMANSHIP SHALL BE PERFORMED BY LICENSED JOURNEYMEN OR MASTER MECHANICS AND SHALL RESULT IN AN INSTALLATION CONSISTENT WITH THE BEST PRACTICES OF TRADES.

B. INSTALL WORK UNIFORM LEVEL AND PLUMB, IN RELATIONSHIP TO LINES OF BUILDING, DO NOT INSTALL ANY DIAGONAL OR OTHERWISE IRREGULAR WORK UNLESS SO INDICATED ON DRAWINGS OR APPROVED BY ARCHITECT.

C. FOLLOW MANUFACTURERS DIRECTIONS AND RECOMMENDATIONS IN ALL CASES WHERE THE MANUFACTURERS OR ARTICLES USED ON THIS CONTRACT FURNISH DIRECTIONS COVERING POINTS NOT SHOWN ON THE DRAWINGS OR COVERED IN THESE SPECIFICATIONS.

2.3 INSTALLATION

A. COORDINATE THE WORK BETWEEN THE VARIOUS MECHANICAL SECTIONS AND WITH THE WORK SPECIFIED UNDER OTHER DIVISIONS. IF ANY COOPERATIVE WORK MUST BE ALTERED DUE TO LACK OF PROPER SUPERVISION OR FAILURE TO MAKE PROPER AND TIMELY PROVISIONS, THE ALTERATIONS SHALL BE MADE TO THE SATISFACTION OF THE ENGINEER AND AT THE CONTRACTOR'S COST. COORDINATE WALL AND CEILING WORK WITH THE GENERAL CONTRACTOR. COORDINATE SUBCONTRACTORS IN LOCATING CEILING AIR OUTLETS, WALL REGISTERS, ETC.

B. INSPECT ALL MATERIAL, EQUIPMENT, AND APPARATUS UPON DELIVERY AND DO NOT INSTALL ANY DAMAGED OR DEFECTED MATERIALS.

2.4 ELECTRICAL REQUIREMENTS

A. MECHANICAL CONTRACTOR SHALL COORDINATE WITH DIVISION 26 WORK TO PROVIDE COMPLETE SYSTEMS AS REQUIRED TO OPERATE ALL MECHANICAL DEVICES INSTALLED UNDER THIS DIVISION OF WORK.

B. INSTALLATION OF ELECTRICAL CONNECTIONS: FURNISH, INSTALL, AND WIRE (EXCEPT AS MAY BE OTHERWISE INDICATED) ALL HEATING, VENTILATING, AIR CONDITIONING, PLUMBING AND FIRE PROTECTION, ETC., MOTORS AND CONTROLS IN ACCORDANCE WITH THE FOLLOWING SCHEDULED AND IN ACCORDANCE WITH EQUIPMENT MANUFACTURERS WRITTEN INSTRUCTIONS AND WITH RECOGNIZED INDUSTRY PRACTICES AND CONVENTIONS.

C. DIVISION 23 HAS RESPONSIBILITIES FOR ELECTRIFICALLY POWERED OR CONTROLLED MECHANICAL EQUIPMENT WHICH IS SPECIFIED IN DIVISION 23 SPECIFICATIONS OR SCHEDULED ON DIVISION 23 DRAWINGS, THE SPECIFIC DIVISION OR RESPONSIBILITIES BETWEEN DIVISION 23 AND 26 FOR FURNISHING OR WIRING THIS EQUIPMENT IS AS FOLLOWS:

1. DIVISION 26 MECHANICAL RESPONSIBILITIES.
a. MOTORS: FURNISH AND INSTALL ALL MOTORS NECESSARY FOR MECHANICAL EQUIPMENT.
b. DISCONNECTS: PROVIDE THE DISCONNECTS WHICH ARE PART OF FACTORY WIRING DIVISION 23 EQUIPMENT. FACTORY WIRING TO INCLUDE WIRING BETWEEN MOTOR AND DISCONNECT OR COMBINATION STARTER/DISCONNECT.

c. CONTROLS: DIVISION 23 CONTRACTOR (INCLUDING THE TEMPERATURE CONTROLS SUBCONTRACTOR) IS RESPONSIBLE FOR THE FOLLOWING EQUIPMENT IN ITS ENTIRETY, THIS EQUIPMENT INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:
1) CONTROL RELAYS NECESSARY FOR CONTROLLING DIVISION 23 EQUIPMENT.
2) CONTROL TRANSFORMERS NECESSARY FOR PROVIDING POWER TO CONTROLS FOR DIVISION 23 EQUIPMENT.
3) LINE VOLTAGE THERMOSTATS.
4) LOW OR NON-LOAD VOLTAGE CONTROL COMPONENTS.

5) REMOTE BUILT IN THERMAL OVERLOAD PROTECTION.
6) NON-LIFE SAFETY RELATED VALVE OR DAMPER ACTUATORS.
7) FLOAT SWITCHES.
8) SOLENOID VALVES, EP AND PE SWITCHES.
9) REFRIGERATION CONTROLS. DIVISION 26 PROVIDES POWER TO REFRIGERATION PANELS.
10) PNEUMATIC THERMOSTATS.

d. FIRE AND LIFE SAFETY EQUIPMENT:
1) FIRE/SMOKE DAMPERS: DIVISION 23 IS RESPONSIBLE FOR PROVIDING AND PHYSICALLY INSTALLING THE DAMPERS AND FOR INSTALLING ANY REQUIRED CONTROL INTERFACE WIRING TO DIVISION 23 CONTROLS.
a) WHERE FIRE/SMOKE DAMPERS ARE PART OF AN INTEGRATED SMOKE CONTROL SYSTEM, DIVISION 23 IS RESPONSIBLE FOR PROVIDING DAMPERS WITH NECESSARY END SWITCHES FOR PROOF OF CLOSURE.
b) WHERE THESE DAMPERS ARE NOT PART OF AN INTEGRATED AREA WIDE SMOKE DETECTION SYSTEM, DIVISION 23 IS RESPONSIBLE FOR PROVIDING EACH FIRE/SMOKE DAMPER WITH A DEDICATED DUCT DETECTOR INSTALLED PER THE REQUIREMENTS OF THE BUILDING CODE. IF NOT INTEGRAL WITH THE DAMPER ASSEMBLY, THE DETECTOR IS TO BE INSTALLED BY DIV. 23 BUT WIRED FOR DAMPER CONTROL BY DIV. 26.

2) FIRE SPRINKLER SYSTEM: DIVISION 23 IS RESPONSIBLE FOR PROVIDING NECESSARY CONTROLS INCLUDING FLOW SWITCHES AND ALARM BELLS.
3) SPECIALIZED FIRE SUPPRESSION SYSTEMS: DIVISION 23 IS RESPONSIBLE FOR PROVIDING NECESSARY SYSTEM CONTROLS AND ANY REQUIRED CONTROL INTERFACE WIRING TO THESE CONTROLS. DIVISION 26 IS RESPONSIBLE FOR BRINGING POWER TO POINT OF CONNECTION WITH THE SYSTEM.

D. DIVISION 26 HAS RESPONSIBILITIES FOR ELECTRICALLY POWERED OR TAGGED AND TEMPORARILY SECURED TO THE UNIT, OR TURNED OVER TO THE OWNER.

OR WIRING THIS EQUIPMENT IS AS FOLLOWS:

- 1. DIVISION 26 ELECTRICAL RESPONSIBILITIES.
2. MOTORS: PROVIDE THE POWER WIRING FOR THE MOTORS.
3. DISCONNECTS: PROVIDE ALL DISCONNECTS NECESSARY FOR DIVISION 23 MECHANICAL EQUIPMENT WHICH ARE NOT PROVIDED AS PART OF FACTORY WIRED DIVISION 23 EQUIPMENT. PROVIDE POWER WIRING TO ALL DISCONNECTS. IN ADDITION, PROVIDE POWER WIRING BETWEEN MOTOR AND DISCONNECT WHEN THE DISCONNECT IS NOT FACTORY INSTALLED. SEE ALSO VARIABLE FREQUENCY DRIVE ABOVE FOR SPECIAL WIRING REQUIREMENTS.
a. CONTROLS: DIVISION 26 CONTRACTOR IS RESPONSIBLE FOR PROVIDING POWER TO CONTROL PANELS AND CONTROL CIRCUIT OUTLETS.

b. FIRE AND LIFE SAFETY EQUIPMENT:
1) FIRE/SMOKE DAMPERS: DIVISION 26 IS RESPONSIBLE FOR POWER WIRING TO THE DAMPER AND AS FOLLOWS:
a) WHERE THESE DAMPERS ARE PART OF AN INTEGRATED SMOKE CONTROL SYSTEM, DIVISION 26 IS RESPONSIBLE FOR PROVIDING THE DETECTORS AND FOR ALL FIRE DETECTION SYSTEM WIRING NECESSARY TO INTEGRATE DAMPERS AND RELATED END SWITCHES INTO THE SYSTEM.
b) WHERE THESE DAMPERS ARE NOT PART OF AN INTEGRATED AREA WIDE SMOKE DETECTION SYSTEM, DIVISION 23 IS RESPONSIBLE FOR PROVIDING EACH FIRE/SMOKE DAMPER WITH A DEDICATED DUCT DETECTOR INSTALLED PER THE REQUIREMENTS OF THE BUILDING CODE. (SEE SECTION 19880). IF NOT INTEGRAL WITH THE DAMPER ASSEMBLY, THE DETECTOR IS TO BE INSTALLED BY DIV. 23 BUT WIRED FOR DAMPER CONTROL BY DIV. 26.

2) FIRE SPRINKLER SYSTEM: DIVISION 26 IS RESPONSIBLE FOR PROVIDING POWER WIRING TO FIRE PROTECTION CONTROLS INCLUDING FLOW SWITCHES AND ALARM BELLS.
3) SPECIALIZED FIRE SUPPRESSION SYSTEMS: DIVISION 26 IS RESPONSIBLE FOR PROVIDING POWER WIRING TO SUPPRESSION SYSTEM AND ITS CONTROLS.

4. COORDINATE WITH OTHER WORK, INCLUDING WIRERES CABLES, RACEWAY AND WIRING INSTALLATION, AS NECESSARY TO PROPERLY INTERFACE INSTALLATION OF ELECTRICAL CONNECTIONS FOR EQUIPMENT WITH OTHER WORK.

5. CONNECT ELECTRICAL POWER SUPPLY CONDUCTORS TO EQUIPMENT CONDUCTORS IN ACCORDANCE WITH EQUIPMENT MANUFACTURERS WRITTEN INSTRUCTIONS AND WIRING DIAGRAMS. MATE AND MATCH CONDUCTORS OF ELECTRICAL CONNECTIONS WITH CONTROL EQUIPMENT BETWEEN ELECTRICAL POWER SUPPLIES AND INSTALLED EQUIPMENT.

6. MAINTAIN EXISTING ELECTRICAL SERVICE AND FEEDERS TO OCCUPIED AREAS AND OPERATIONAL FACILITIES, UNLESS OTHERWISE INDICATED, OR WHEN AUTHORIZED OTHERWISE BY THE OWNER, OR ARCHITECT/ENGINEER, PROVIDE TEMPORARY SERVICE DURING INTERRUPTIONS TO EXISTING FACILITIES. WHEN NECESSARY, SCHEDULE MOMENTARY OUTAGES FOR REPAIRING EXISTING WIRING SYSTEMS WITH NEW WIRING SYSTEMS, WHEN THAT "CUTTING-OVER" HAS BEEN SUCCESSFULLY ACCOMPLISHED, REMOVE, RELOCATE, OR ABANDON EXISTING WIRING AS INDICATED.

7. COVER SPLICES WITH ELECTRICAL INSULATING MATERIAL, EQUIVALENT TO, OR GREATER INSULATION RESISTIVITY RATING, THAN ELECTRICAL INSULATION RATING OF THOSE CONDUCTORS BEING SPLICED.

8. PREPARE CABLES AND WIRES BY CUTTING AND STRIPPING COVERING ARMOR, JACKET, AND INSULATION PROPERLY TO ENSURE UNIFORM AND NEAT APPEARANCE WHERE CABLES AND WIRES ARE TERMINATED. EXERCISE CARE TO AVOID CUTTING THROUGH TAPES OR OTHER PROTECTIVE COVERINGS. CONDUCTORS ALSO AVOID "RINGING" COPPER CONDUCTORS WHILE SKINNING WIRE.

E. MOTORS AND MOTOR CONTROL EQUIPMENT: CONFORM TO THE STANDARDS OF THE NEMA EQUIP MOTORS WITH MAGNETIC OR MANUAL LINE STARTERS WITH OVERLOAD PROTECTION. MOTOR STARTERS AND LINE VOLTAGE CONTROLS SHALL BE INSTALLED UNDER ELECTRICAL SECTION BUT LOCATED AND COORDINATED AS REQUIRED UNDER THIS SECTION OF THE WORK. STARTERS SHALL BE COMBINATION TYPE WITH NON-FUSIBLE DISCONNECT SWITCHES. ALL SINGLE PHASE FRACTIONAL HORSEPOWER MOTORS SHALL HAVE BUILT IN OVERLOAD PROTECTION.

F. HANGERS AND SUPPORTS TO BE DESIGNED AND INSTALLED PER SMACNA GUIDELINES.

G. ASSURE ADEQUATE SUPPORT FOR PIPE AND CONTENTS.
1. PROVIDE RIGID INSULATION SECTION AT ALL HANGER SUPPORTS.
2. PROVIDE SEISMIC RESTRAINTS TO MEET LOCAL CODES.
3. PREVENT VIBRATION OR SWAYING.
1. PROVIDE SLEEVING FOR ALL PIPING THAT PENETRATES FLOOR SLABS.
2. PROVIDE FOR EXPANSION AND CONTRACTION.
3. SUPPORTS OF WIRE, ROPE, WOOD, CHAIN, STRAP PERFORATED BAR OR ANY OTHER MAKE/SHIFT DEVICE NOT PERMITTED.

4. COMPLY WITH APPLICABLE REQUIREMENTS AT ANSI B31.1.0 AND B31.2 FOR PIPING.
5. SUPPORT PIPING INDEPENDENTLY SO THAT EQUIPMENT IS NOT STRESSED BY PIPING WEIGHT OF EXPANSION.
6. HANGERS AND SUPPORTS SHALL HAVE MINIMUM SAFETY FACTOR OF THREE (3), BASED ON ULTIMATE TENSILE OR COMPRESSIVE STRENGTH, AS APPLICABLE OF MATERIAL USED.

1. PRIME COAT EXPOSED STEEL, HANGERS AND SUPPORTS, HANGERS AND SUPPORTS LOCATED IN CRAWL SPACES, PIPES SHAFTS AND SUSPENDED CEILING SPACES ARE NOT CONSIDERED EXPOSED.
2. HORIZONTAL PIPING, EXCEPT AS NOTED.
a) BOTTOM OF DUCT.
b) UPPER AND LOWER SIDES OF DUCTS.
c) NOT MORE THAN 12 INCHES ON CENTER.

3. TRAPEZE HANGERS.
a. NOT PERMITTED FOR FIRE AND SPRINKLER PIPING.
b. GUIDE INDIVIDUAL PIPES OR TRAPEZES WITH 1/4 INCH 1/4-20 OR SUPERSTRUT 702 PIPE CLAMP. INSTALL THERMAL HANGER SHIELD AT EACH SUPPORT POINT.

4. UNSUPPORTED COPPER TUBING.
a. WHEREVER ANY PIPE REQUIRES SOUND AND VIBRATION ISOLATION.
5. MISCELLANEOUS STEEL: PROVIDE MISCELLANEOUS STEEL, MEMBERS, BEAMS, BRACKETS, ETC., FOR SUPPORT OF WORK IN THIS DIVISION UNLESS SPECIFICALLY INCLUDED IN OTHER DIVISIONS.
6. PIPE SUPPORT SPACING: PER CALIFORNIA MECHANICAL CODE.

B. DUCT HANGERS AND SUPPORTS
1. GENERAL.
a. SUPPORT HORIZONTAL DUCTS WITH HANGERS OF SIZE AND SPACING AS INDICATED IN PERTINENT SMACNA DUCT CONSTRUCTION STANDARDS, SHALL AROUND ALL SCREWS.
b. PROVIDE SEISMIC CONSTRAINTS TO MEET LOCAL CODES.

2. HORIZONTAL DUCT SUPPORTS:
a. INSTALL HANGERS AT EACH CHANGE IN DIRECTION OF DUCT.
b. STRAP HANGERS.
1) EXTEND STRAP DOWN BOTH SIDES OF DUCTS.
2) TURN UNDER BOTTOM ONE INCH MINIMUM.
3) METAL SCREW HANGERS TO:
a) BOTTOM OF DUCT.
b) UPPER AND LOWER SIDES OF DUCTS.
c) NOT MORE THAN 12 INCHES ON CENTER.

3. RECTANGULAR DUCT SUPPORT SPACING:
a. HORIZONTAL DUCTS: 10'
b. VERTICAL DUCTS: 12'
c. TRAPEZE DUCTS: 8'
4. ROUND DUCT SUPPORT SPACING:
a. HORIZONTAL DUCTS (40" DIAMETER): 10'
b. VERTICAL DUCTS: 12'
c. TRAPEZE DUCTS: 8'

C. HVAC EQUIPMENT
1. GENERAL.
a. ALL FANS SHALL BE MOUNTED ON SPRING VIBRATION ISOLATORS.
b. COORDINATE LOCATION OF ALL EQUIPMENT WITH BUILDING OWNER.

D. ATTACHMENT TO STRUCTURE:
1. STEEL BEAM ANCHORS.
a. APPROVED BEAM OR CHANNEL CLIPS.
b. DO NOT CUT OR WELD TO STRUCTURAL STEEL WITHOUT WRITTEN APPROVAL OF OWNER.
c. OTHER METHODS AS DETAILED ON DRAWINGS.

2. STUD WALL SIDE-WALL SUPPORTS:
a. TOGGLE BOLTS.
b. STUDS WELDED TO STRUCTURAL STUDS.
c. LAG SCREWS INTO WOOD BACKING.
d. OTHER METHODS.

3. SUPPORT SPREADERS.
a. INSTALLED SPREADERS SPANNING BETWEEN STRUCTURAL MEMBERS WHEN HANGERS FALL BETWEEN THEM, AND HANGER LOAD IS TOO GREAT FOR SLAB OR DECK ATTACHMENT.
b. SPREADERS MAY BE ONE OF METHODS LISTED BELOW, OR COMBINATION OF BOTH AS REQUIRED.
1) FABRICATED FROM STRUCTURAL CHANNEL END FITTINGS BOLTED OR WELDED, SECURE TO STRUCTURAL MEMBERS AS REQUIRED BY CONSTRUCTION AND AS APPROVED BY STRUCTURAL ENGINEER.

2) FORMED CHANNELS WITH FITTINGS, SIMILAR TO SUPERSTRUT; SUBMIT MANUFACTURERS CALCULATIONS FOR INSTALLATION.

SECTION 23053 - IDENTIFICATION

A. AN IDENTIFICATION LABEL SHALL BE PROVIDED FOR THE FOLLOWING TYPES OF EQUIPMENT:
1. ROOF TOP UNITS.
2. EXHAUST FANS.
3. MAKEUP AIR UNITS.
4. SPLIT SYSTEMS.
5. CONDENSING UNITS.
6. KITCHEN HOOD AND EXHAUST SYSTEMS.

B. IDENTIFICATION LABELS SHALL BE BY SETON, OR EQUIVALENT. PROVIDE LABELS & FLOW ARROWS ON ALL DUCT AND PIPING @ 10' INTERVALS.

C. TEMPERATURE CONTROL PANELS SHALL BE IDENTIFIED WITH ENGRAVED PHENOLIC NAMEPLATES AND EACH CONTROL COMPONENT SHALL BE IDENTIFIED WITH ITS SET

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**EXISTING HEAT PUMP ROOFTOP UNIT SCHEDULE**

ITEM	ITEM NO.	MANUFACTURER	MODEL	AREA SERVED	SUPPLY FAN				OSA (CFM)	COOLING				HEATING		ELECTRICAL					REF.	WT. (LBS)	REMARKS
					CFM	E.S.P. (IN. WG.)	FAN RPM	FAN BHP		NOM. TOTAL (TONS)	TOTAL (MBH)	EAT (DB/WB)	SEER/ EER	OUTPUT (MBH)	HSPF (47F)	V	PH	HZ	MCA	MOCP			
RTU	19	CARRIER	50HCA05	STORAGE	1600	1.0	900	0.54	-	4	47.0	80F/67F	15.8/12.8	23.8/46.0	8.1	460	3	60	14	15	R-410A	580	MANUFACTURED IN 2013

**SPLIT SYSTEM HEAT PUMP UNIT SCHEDULE**

ITEM	ITEM NO.	MANUFACTURER	MODEL	AREA SERVED	CFM / OSA CFM	REF.	COOLING CAPACITY BTU/HR	EER	SEER	HEATING CAPACITY BTU/HR	HSPF	COP (47F)	V, PH, HZ	MCA	MOCP	WT. (LBS)	REMARKS
FC	1	DAIKIN	PEAD-A42AA7	KITCHEN / BOH	1400 / 0	R-410A	42,000	-	-	45,000			208-1-60	3.5	-	91	1, 2, 3
CU	1	MITSUBISHI	PUZ-A42NKA7	KITCHEN / BOH	-	R-410A	42,000	10.7	16.1	45,000	10.0	4.0	208-1-60	25.0	31	214	
FC	2	DAIKIN	PEAD-A30AA7	MANAGER'S OFFICE	725 / 90	R-410A	30,000	-	-	34,000			208-1-60	2.73	-	69	1, 2, 3
CU	2	MITSUBISHI	PUZ-A30NHA7	MANAGER'S OFFICE	-	R-410A	30,000	10.0	19.1	34,000	9.5	3.41	208-1-60	19.0	26.0	151	

**NOTES:**

1. PROVIDE WITH 7-DAY PROGRAMMABLE THERMOSTAT AND FILTER BOX BY MANUFACTURER.
2. INCLUDE 208V CONDENSATE PUMP. PUMP POWERED SEPARATELY.
3. INDOOR UNIT POWERED BY OUTDOOR UNIT

**EXHAUST FAN SCHEDULE**

ITEM	ITEM NO.	MANUFACTURER	MODEL	AREA SERVED	SUPPLY FAN						ELECTRICAL					WT. (LBS.)	REMARKS
					CFM	ESP	TYPE	DRIVE	RPM	HP	V	PH	HZ	FLA			
EF	1	GREENHECK	SP-A110	STORAGE	100	0.2	CEILING	DIRECT	950	0.01	115	1	60	0.19	17	1	

**NOTES:**

1. PROVIDE WITH PLASTIC GRILLE.

**KITCHEN EXHAUST FAN SCHEDULE**

ITEM	ITEM NO.	MANUFACTURER	MODEL	AREA SERVED	SUPPLY FAN						ELECTRICAL					WT. (LBS.)	REMARKS
					CFM	ESP	TYPE	DRIVE	RPM	HP	V	PH	HZ	FLA			
KEF	1	CAPTIVEAIRE	DU180HFA	KITCHEN HOOD	2385	2.0	UPBLAST	DIRECT	1361	3.0	230	3	60	9.5	186	1, 2	

**NOTES:**

1. PROVIDE WITH FACTORY VENTED CURB, GREASE BOX, ECM WIRING PACKAGE, AND FAN BASE CERAMIC SEAL.
2. SEE M805 FOR FIELD WIRING.

**DX COOLING/HEAT PUMP MAKEUP AIR UNIT SCHEDULE**

ITEM	ITEM NO.	MANUFACTURER	MODEL	AREA SERVED	CFM	E.S.P. (IN. WG.)	SUPPLY FAN				DX COOLING										FILTER EFF. (%)	WT. (LBS)	REMARKS					
							FAN RPM	FAN BHP	HP	ELECTRICAL					ELECTRICAL													
							V	PH	FLA	MCA	MOCP	EDB (°F)	EWB (°F)	LDB (°F)	LWB (°F)	CAPACITY MBH	SEER	V	PH	RLA	MCA	MOCP						
MAU	1	CAPTIVEAIRE	A1-15D-MPU	KITCHEN	1908	1.0	2094	1.425	2.0	230	1	6.1	7.7	15	82.0	64.0	72.3	59.9	23.9	14	230	1	16.2	20	30	MERV-13	969	1, 2, 3, 4, 5, 6

**NOTES:**

1. PROVIDE WITH CASLINK BUILDING MONITORING SYSTEM FOR FUTURE CONNECTION.
2. PROVIDE WITH INLET AND MANIFOLD PRESSURE GAUGES.
3. PROVIDE WITH MOTORIZED BACKDRAFT DAMPER.
4. PROVIDE WITH FAN VFD.
5. PROVIDE WITH RIGID CURB. COORDINATE CURB REQUIREMENTS WITH MANUFACTURER.
6. SEE M806 AND M807 FOR FIELD WIRING.

**KITCHEN EXHAUST HOOD SCHEDULE**

ITEM	ITEM NO.	MANUFACTURER	MODEL	LENGTH X WIDTH	EXHAUST COLLAR				SUPPLY COLLAR				HOOD CONSTRUCTION	FIRE SYSTEM	FIRE SYSTEM PIPING	WT. (LBS)	REMARKS
					CFM	LENGTH	WIDTH	ESP	CFM	LENGTH	WIDTH	ESP					
KEH	1	CAPTIVEAIRE	5430 ND-2-PSP-F	5'-0" X 4'-6"	1000	9"	10"	-0.479"	800	72"	12"	0.114	430 SS	ANSUL R102	YES	545	1, 2, 3
KEH	2	CAPTIVEAIRE	5430 ND-2-PSP-F	7'-11" X 4'-6"	1385	13"	10"	-0.525"	1108	96"	12"	0.143	430 SS	ANSUL R102	YES	500	1, 2, 3

**NOTES:**

1. INSTALLED PER MANUFACTURER'S RECOMMENDATION.
2. PROVIDE WITH UL APPROVED MANUAL AIR VOLUME DAMPER ON EXHAUST COLLAR BY HOOD MANUFACTURER.
3. SEE M801-M804 FOR ADDITIONAL REQUIREMENTS AND FIELD WIRING.

**DUCT SIZING CHART**

AIRFLOW (CFM)	SIZE (IN)
0-189	10X6 OR 6"
190-299	10X6 OR 8"
300 TO 429	14X6 OR 10"
430 TO 599	16X8 OR 12"
600 TO 799	20X8 OR 14"
800 TO 999	24X10 OR 16"
1000 TO 1199	30X10 OR 18"
1200 TO 1450	30X12 OR 20"

FOR COMMERCIAL KITCHEN EXHAUST DUCT, AIR VELOCITY SHALL NOT BE LESS THAN 500 FPM AND NOT EXCEED 2500 FPM.

**AIR DISTRIBUTION SCHEDULE**

MARK NO.	MANUFACTURE MODEL NUMBER	NECK SIZE (IN)	CFM RANGE	MAX NC LEVEL	REMARKS
CD-1	PRICE RCD	6"	60-100	30	NOTE 1,2
	PRICE RCD	8"	101-200	30	NOTE 1,2
	PRICE RCD	10"	201-330	30	NOTE 1,2
	PRICE RCD	12"	331-470	30	NOTE 1,2
	PRICE RCD	14"	471-635	30	NOTE 1,2
CR-1	PRICE 80SR	6"	60-100	30	NOTE 1,2
	PRICE 80SR	8"	101-200	30	NOTE 1,2
	PRICE 80SR	10"	201-375	30	NOTE 1,2
	PRICE 80SR	12"	376-500	30	NOTE 1,2
	PRICE 80SR	14"	500-750	30	NOTE 1,2
CD-2	PRICE 530	8X6"	60-100	30	NOTE 1,2,3
	PRICE 510	10X8"	101-185	30	NOTE 1,2,3
	PRICE 510	10X10"	186-240	30	NOTE 1,2,3
	PRICE 510	12X12"	241-350	30	NOTE 1,2,3
	PRICE 530	18X12"	400-530	30	NOTE 1,2

**NOTES:**

1. FURNISH WITH OFF-WHITE BAKED ENAMEL FINISH UON. COORDINATE EXACT FINISHES WITH ARCH.
2. PROVIDE OPTIONAL INSULATION ON SUPPLY DIFFUSERS. OMIT INSULATION ON RETURN DIFFUSERS.
3. PROVIDE LAY IN TYPE 24X24 BORDER, OTHERWISE COORDINATE BORDER TYPE WITH ARCH. PRIOR TO ORDERING.

Date	Description
01/28/2022	ISSUE FOR CONSTRUCTION

Seal / Signature



Project Name

SHAKE SHACK

Project Number

SHK-21-004

Description

MECHANICAL SCHEDULES

Scale

**M701**

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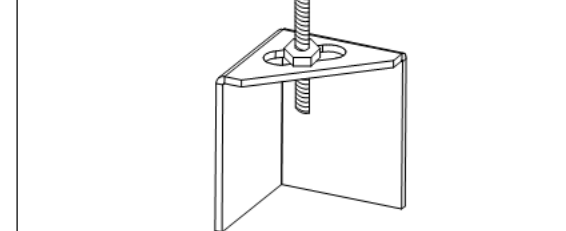
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HOOD AND HATS TO BE SUPPLIED BY INSTALLING CONTRACTOR  
HANGING ANGLE IS PRE-FABRICATED AT FACTORY

EXHAUST CFM = LENGTH OF HOOD x CFM/LENGTH (LOAD)  
SUPPLY CFM = EXHAUST CFM x PROVISIONAL REQUIRED  
TOTAL DUCT AREA (IN. x IN.) = 144 x (CFM / FPM)<sup>2</sup>

**CALCULATIONS UTILIZED**

CAPTIVE-AIRE HOODS BUILT IN COMPLIANCE WITH:

ETL LISTED UNDER ETL File number 3054804-001/002	UL LISTED UNDER ETL File number 3054804-001/002	Intertek LISTED UNDER ETL File number 3054804-001/002

**BUILDING CODES**

CAPTIVE-AIRE HOODS HAVE OPTIONAL CLEARANCE REDUCTION SYSTEMS AVAILABLE AS FOLLOWS:

MATERIAL	CLEARANCE REDUCTION SYSTEM
NON-COMBUSTIBLE	NONE REQUIRED
LIMITED-COMBUSTIBLE	2" UNINSULATED STANDOFF
COMBUSTIBLE	4" UNINSULATED STANDOFF

**CLEARANCE TO COMBUSTIBLES**

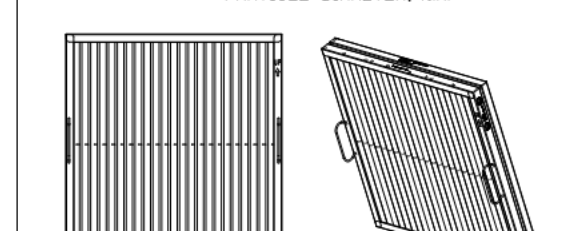
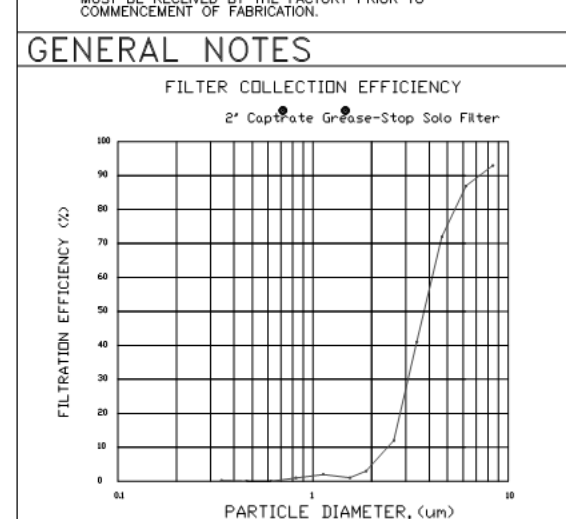
**INSTALLATION**

- ALL ELECTRICAL "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY ELECTRICAL CONTRACTORS.
- ALL PLUMBING "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY PLUMBING CONTRACTORS.
- WIRING BRACKETS LOCATED AND WELDED AS SHOWN ON PLANS. ALL OTHER BRACKETS INSTALLED PROVIDED BY INSTALLING CONTRACTORS.
- ALL CONNECTIONS FROM CAPTIVE-AIRE HOOD FOR MECHANICAL FANS.
- COOKING EQUIPMENT TO SHUT OFF IN EVENT OF FIRE.
- EXHAUST FANS TO TURN ON IN EVENT OF FIRE.
- ALL LEAK TESTS SHALL BE PERFORMED BY CAPTIVE-AIRE AND FACTORY REPAIRS. INTERCONNECTIONS BETWEEN HOODS AND TO BRACKETS ARE BY ELECTRICAL CONTRACTOR.
- WARRANTY FOR LEAK TESTS BY INSTALLING CONTRACTORS.
- SEMI-RESTAURANTS ARE RESPONSIBILITY OF INSTALLING CONTRACTORS.
- INSTALLING CONTRACTORS ASSUME ALL RELATED RESPONSIBILITY FOR INSPECTION OF OPERATIONAL, ACoustic, INTEGRATION, AND ADMINISTRATION OF CODE REQUIREMENTS IN EFFECT PRIOR TO ANY RELEASE FOR PRODUCTION OF EQUIPMENT SHOWN.

**GENERAL NOTES**

1. KITCHEN HOODS MUST BE BALANCED WITH KITCHEN TO OPERATE AT POSITIVE WITH RESPECT TO AMBIENT PRESSURE.

2. KITCHEN HOODS MUST BE BALANCED WITH KITCHEN TO OPERATE AT POSITIVE WITH RESPECT TO AMBIENT PRESSURE.



**FILTER DETAIL**

CaptiveAire Capturate Solo Filter  
ETL Listed Grease Extracting Filter  
Made From 430 Stainless Steel

**HOOD INFORMATION - JOB#5043059**

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM (FEET)				TOTAL SUPPLY CFM	HOOD CONSTRUCTION	HOOD CONFIG		
										WIDTH	LENGTH	HEIGHT	DIAMETER			VEL	SP	END TO END
1	LEFT	5430	CAPTIVEAIRE	5' 0"	600 DEG	I	HEAVY	200	1000	10'	9'	4'	1000	1600	-0.479"	430 SS WHERE EXPOSED	LEFT	ALDNE
2	RIGHT	5430	CAPTIVEAIRE	7' 11"	600 DEG	I	HEAVY	175	1385	10'	13'	4'	1385	1534	-0.525"	430 SS WHERE EXPOSED	RIGHT	ALDNE

**HOOD INFORMATION**

HOOD NO	TAG	TYPE	FILTER(S)			EFFICIENCY @ 7 MICRONS	QTY	LIGHT(S)			WIRE GUARD	LOCATION	SIZE	UTILITY CABINET(S)			FIRE SYSTEM	HOOD SYSTEM HANGING	WEIGHT
			QTY	HEIGHT	LENGTH			TYPE	SIZE	ELECTRICAL MODEL #				SWITCHES QUANTITY	FIRE SYSTEM PIPING				
1	LEFT	CAPTURATE SOLD FILTER	3	20"	16"	85% SEE FILTER SPEC	2	SCREW IN 12W LED	'ND	LEFT	12"x54"x30"	ANSUL R102	3.0/3.0/3.0	SC-31110MA	1 LIGHT 1 FAN	YES	545 LBS		
2	RIGHT	CAPTURATE SOLD FILTER	5	20"	16"	85% SEE FILTER SPEC	4	SCREW IN 12W LED	'ND							YES	500 LBS		

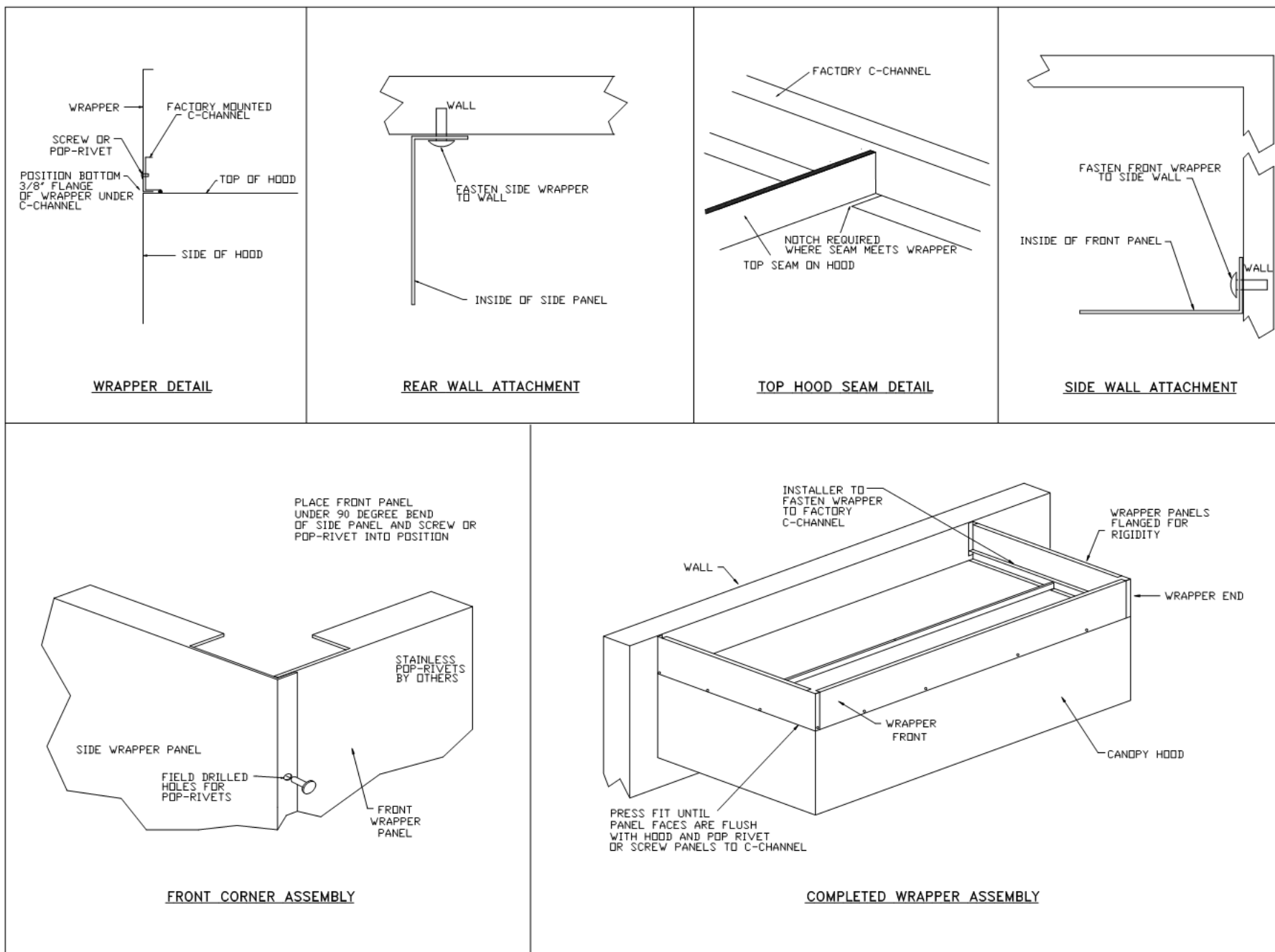
**HOOD OPTIONS**

HOOD NO	TAG	OPTION
1	LEFT	FIELD WRAPPER 18.00" HIGH FRONT, LEFT. LEFT QUARTER END PANEL 23" TOP WIDTH, 0" BOTTOM WIDTH, 23" HIGH 430 SS. BALANCE DAMPERS. RISER SENSOR INSTALL 6IN PLEN. FIELD WRAPPER 18.00" HIGH FRONT, RIGHT. RIGHT END STANDOFF (IF FINISHED) 1" WIDE 54" LONG INSULATED. BALANCE DAMPERS. RIGHT WALL AS END PANEL.
2	RIGHT	FIELD WRAPPER 18.00" HIGH FRONT, RIGHT. RIGHT END STANDOFF (IF FINISHED) 1" WIDE 54" LONG INSULATED. BALANCE DAMPERS. RIGHT WALL AS END PANEL.

**PERFORATED SUPPLY PLENUM(S)**

HOOD NO	TAG	PDS	LENGTH	WIDTH	HEIGHT	TYPE	RESER(S)		
							WIDTH	LENGTH	CFM
1	LEFT	Front	72"	12"	6"	MJA	8"	24"	400 @ 0.114"
						MJA	8"	24"	400 @ 0.114"
2	RIGHT	Front	96"	12"	6"	MJA	10"	28"	554 @ 0.143"
						MJA	10"	28"	554 @ 0.143"

FOR QUESTIONS, CALL THE EASTERN PA SALES OFFICE  
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PHONE: (215) 826-5023, (267) 504-4126  
reg108@captiveaire.com



**REVISIONS**

NO	DESCRIPTION	DATE

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Shake Shack - Del Amo Mall (R1)  
TORRANCE, CA, 90503

DATE: 8/17/2021  
DWG.#: 5043059  
DRAWN BY: EB-108  
SCALE:  
MASTER DRAWING  
SHEET NO. 1

Date	Description
01/28/2022	ISSUE FOR CONSTRUCTION

Seal / Signature



Project Name  
**SHAKE SHACK**

Project Number  
**SHK-21-004**

Description  
**CAPTIVEAIRE DRAWINGS**

Scale  
NTS

**M801**

**Gensler**

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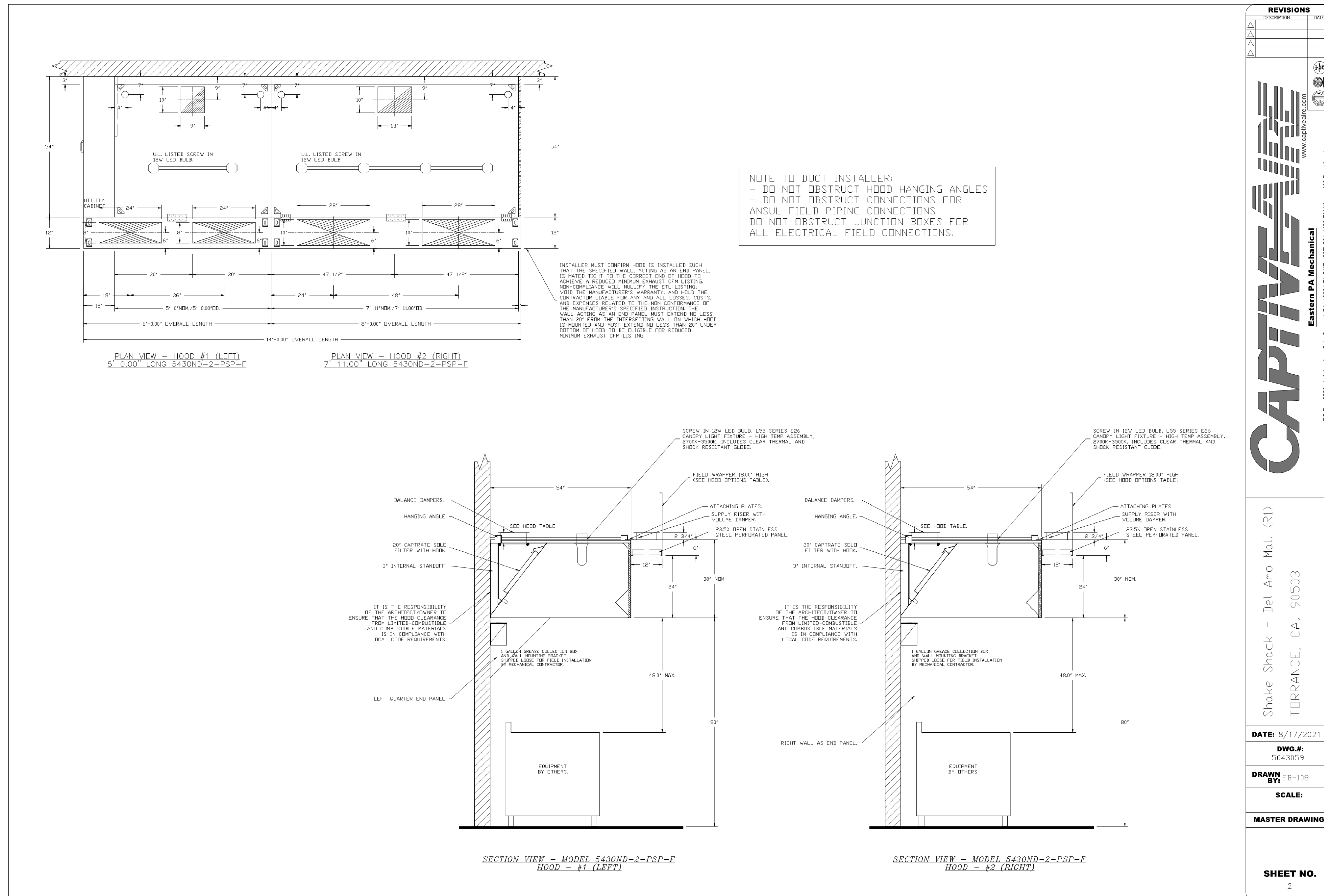
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Shake Shack - Del Amo Mall (R1)  
TORRANCE, CA, 90503

DATE: 8/17/2021  
DWG.#: 5043059  
DRAWN BY: EB-108  
SCALE:  
MASTER DRAWING

SHEET NO. 2

Date	Description
10/28/2022	ISSUE FOR CONSTRUCTION

Seal / Signature



Project Name  
**SHAKE SHACK**

Project Number  
**SHK-21-004**

Description  
**CAPTIVEAIRE DRAWINGS**

Scale  
NTS

**M802**

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**FIRE SYSTEM INFORMATION - JOB#5018646**

FIRE SYSTEM NO	TAG	TYPE	SIZE	FLDW POINTS	INSTALLATION	
					SYSTEM	LOCATION ON HOOD
1		ANSUL R102	3.0/3.0/3.0	30	FIRE CABINET LEFT	LEFT, HOOD 1

GAS VALVE(S)					
FIRE SYSTEM NO	TAG	TYPE	SIZE	SUPPLIED BY	
1		MECHANICAL	VERIFY	CAPTIVEAIRE SYSTEMS	

**NOTES**

- FIELD PIPE DROPS AS SHOWN
- SLEEVING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS.
- RELOCATE NOZZLES IF FLDW PATTERN IS BLOCKED BY SHELVING, SALAMANDERS, ETC.
- MAXIMUM 9 ELBOWS IN SUPPLY LINE
- MINIMUM 72 INCHES OF AGENT LINE FROM TANK TO FIRST NOZZLE COVERING A RANGE FRYER, OR WOK TO REFLECT GENERAL PIPING REQUIREMENTS.
- IF APPLICABLE, PRE-PIPED CHARBROILER DROPS ARE SHIPPED LOOSE.
- FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.
- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE SIZE, NOT THE OVERALL APPLIANCE SIZE.
- THIS FIRE SYSTEM COMPLIES WITH UL 300 REQUIREMENTS.

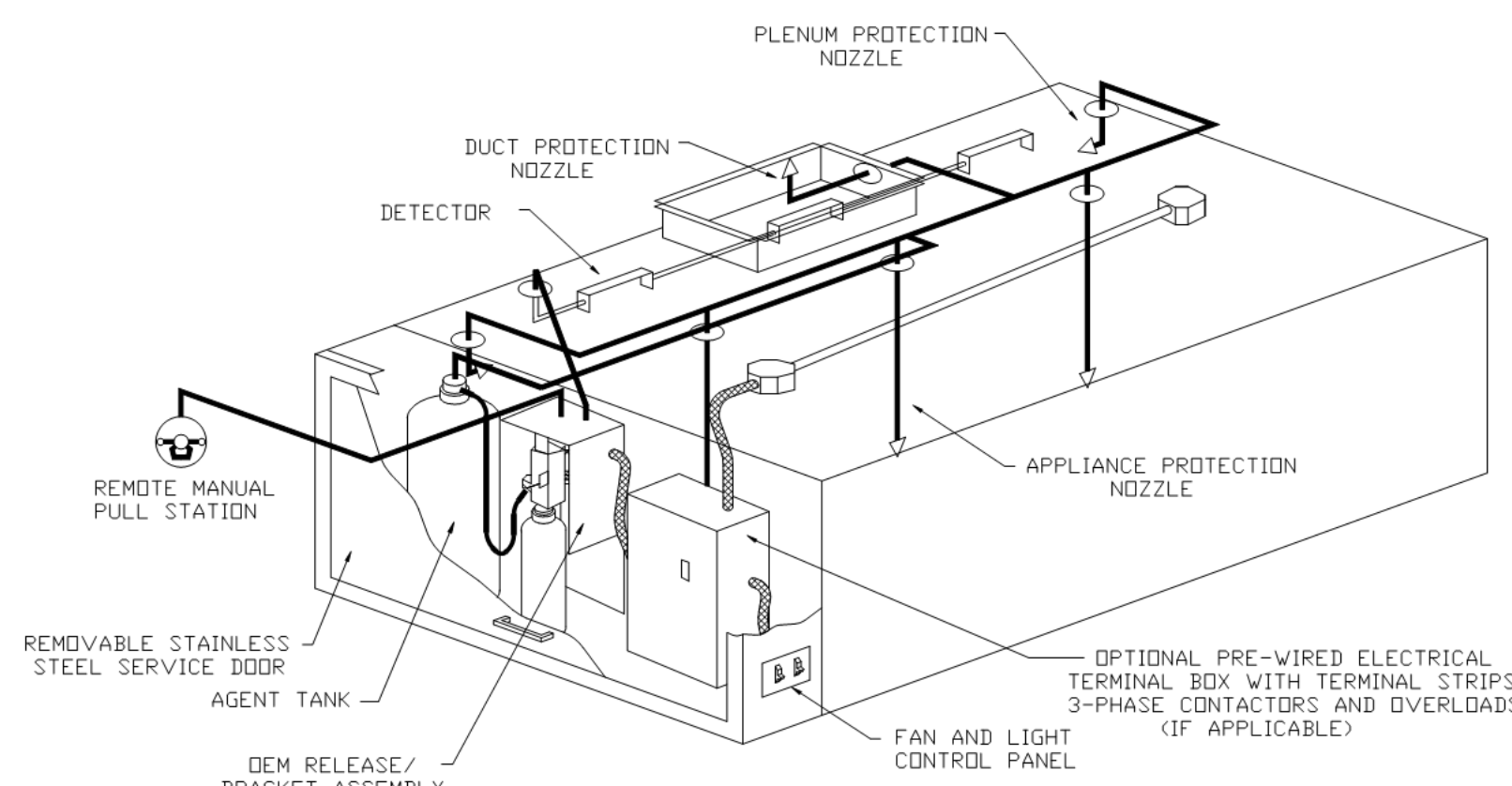
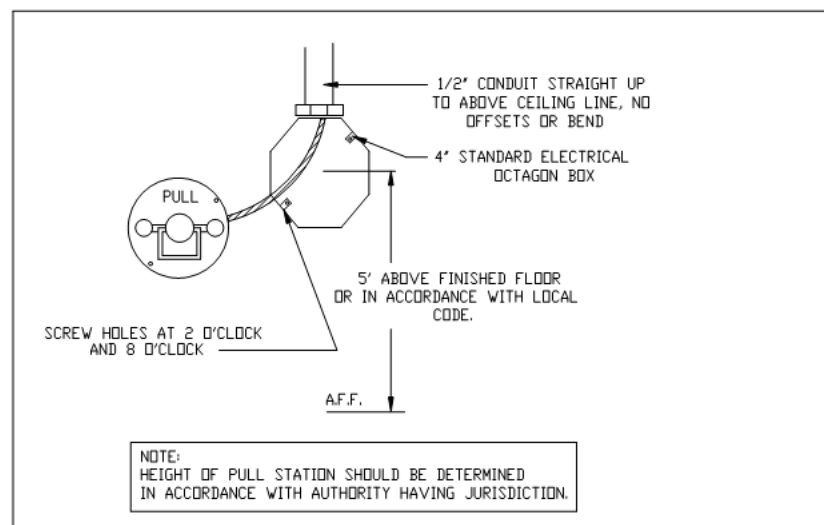
JOB #: 5018646  
 JOB NAME: SHAKE SHACK - DEL AMO MALL.

SYSTEM SIZE: ANSUL-3.0/3.0/3.0 TOTAL FP REQUIRED: 30.  
 HOOD # 1 5' 0.00' LONG x 54" WIDE x 30" HIGH.  
 RISER # 1 SIZE: 10" x 9".  
 HOOD # 1 METAL BLOW-OFF CAPS INCLUDED.  
 HOOD # 2 7' 11.00' LONG x 54" WIDE x 30" HIGH.  
 RISER # 1 SIZE: 10" x 13".  
 HOOD # 2 METAL BLOW-OFF CAPS INCLUDED.

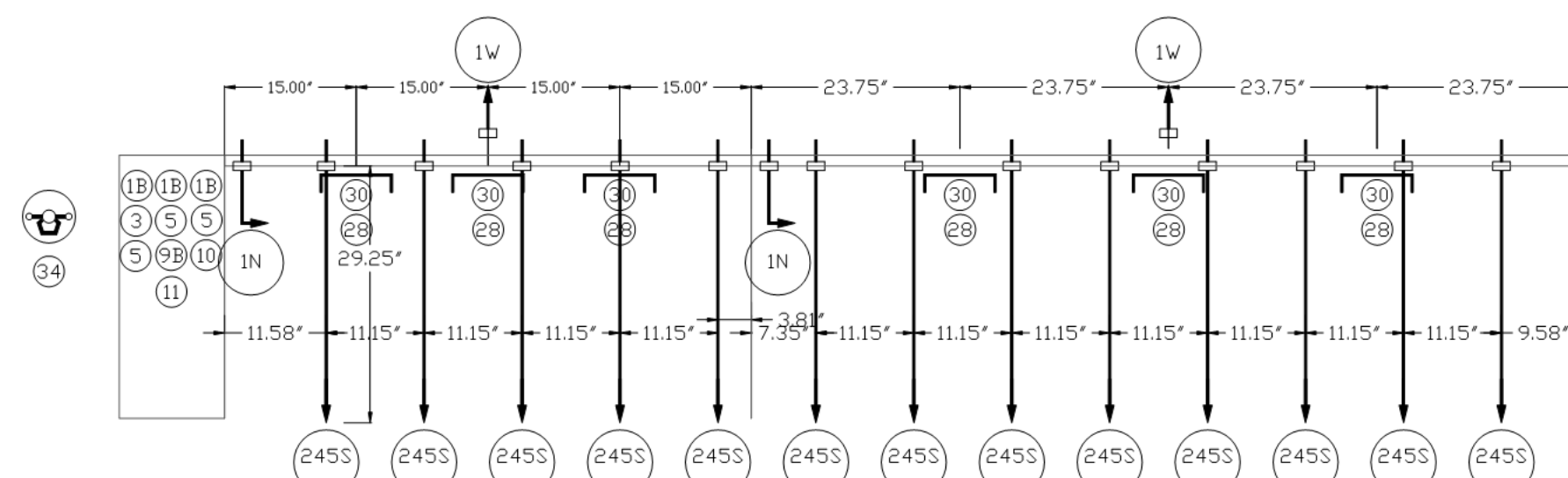
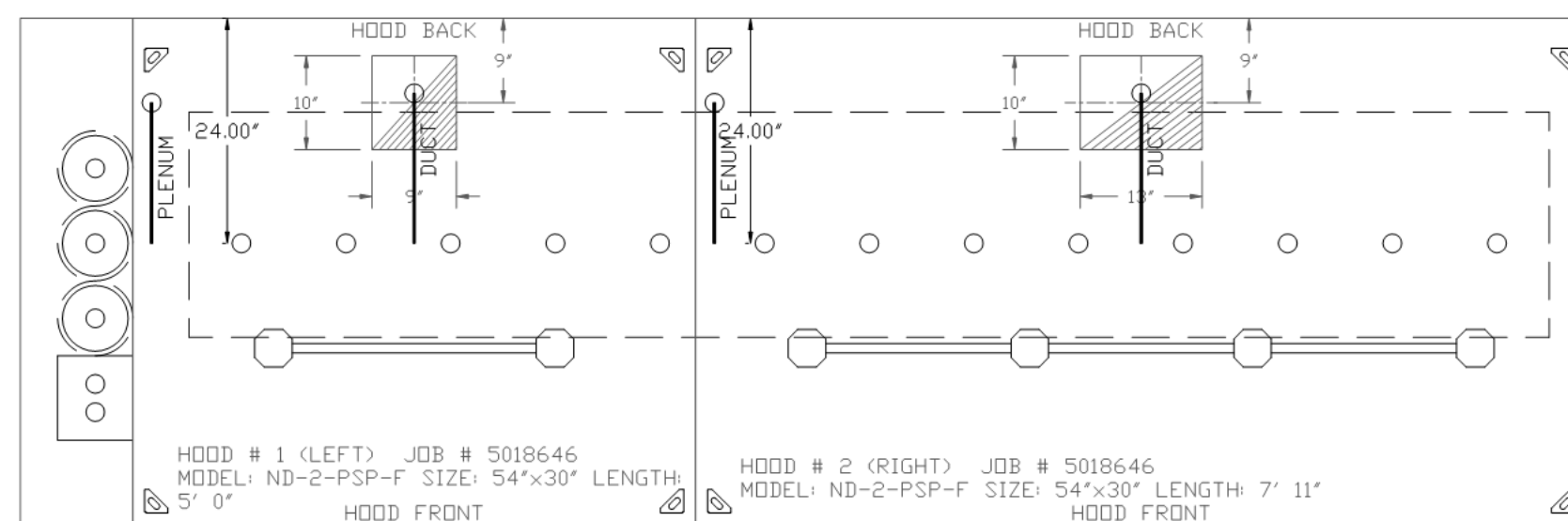
**LEGEND - FIRE CABINET ANSUL SYSTEM**

- 1A 1.5 GALLON TANK.
- 1B 3 GALLON TANK.
- 2 DEM AUTOMAN RELEASE.
- 3 DEM REGULATED RELEASE.
- 4 DEM REGULATED ACTUATOR.
- 5 ANSULEX LIQUID AGENT (3 GAL.).
- 6 ANSULEX LIQUID AGENT (1.5 GAL.).
- 7 CARTRIDGE (101-20).
- 8 CARTRIDGE (101-10).
- 9 CARTRIDGE (101-30).
- 9A CARTRIDGE (LT-A-101-30).
- 9B DOUBLE TANK CARTRIDGE.
- 10 TEST LINK.
- 11 DOUBLE MICROSWITCH.
- 12 HOSE ASSEMBLY.
- 1100 DUCT NOZZLE (430913).
- 2W DUCT NOZZLE (419337).
- 1W NOZZLE ASSEMBLY (419336).
- 1F NOZZLE ASSEMBLY (419333).
- 1N NOZZLE ASSEMBLY (419335).
- 1/2N NOZZLE ASSEMBLY (419334).
- 3N NOZZLE ASSEMBLY (419338).
- 245 NOZZLE ASSEMBLY (419340).
- 230 NOZZLE ASSEMBLY (419339).
- 2120 NOZZLE ASSEMBLY (419343).
- 290 NOZZLE ASSEMBLY (419342).
- 260 NOZZLE ASSEMBLY (419341).
- 28 DETECTOR BRACKET.
- 29 LDW TEMP FUSIBLE LINK.
- 30 HIGH TEMP FUSIBLE LINK.
- MGV MECHANICAL GAS VALVE.
- EGV ELECTRICAL GAS VALVE.
- 34 REMOTE MANUAL PULL STATION.
- S SWIVEL ADAPTOR.

**ANSUL PULL STATION DETAIL**



TYPICAL ANSUL R-102 SYSTEM LAYOUT



ANSUL LICENSING  
 CHECK FOR  
 HIGH PROXIMITY  
 #3000 L 754000 B

REVISIONS	
DESCRIPTION	DATE

**CAPTIVEAIRE**

Eastern PA Mechanical  
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 PHONE: (807) 934-1106 EMAIL: info@captivaire.com

Shake Shack - Del Amo Mall (R1)  
 TORRANCE, CA, 90503

**DATE:** 8/17/2021  
**DWG.#:** 5043059  
**DRAWN BY:** EB-108  
**SCALE:**  
**MASTER DRAWING**  
**SHEET NO.**  
 3

Date	Description
01/28/2022	ISSUE FOR CONSTRUCTION

Seal / Signature



**Project Name**  
 SHAKE SHACK

**Project Number**  
 SHK-21-004

**Description**  
 CAPTIVEAIRE DRAWINGS

**Scale**  
 NTS

2/1/2022 6:40:32 PM B:\1380\_1005\_3581\000 - Shake Shack\_CA\_1380\_Del Amo SHK21004 - SS Del Amo\_M804

SECTION VIEW

1.5" I.P.S. GREASE DRAIN TO BE CAPPED OFF WITH 1.5"NPT CAP ON EACH OUTER END OF HOODS

2" Distance from edge of the hood

1 GALLON GREASE COLLECTION BOX AND WALL MOUNTING BRACKET SHIPPED LOOSE FOR FIELD INSTALLATION BY MECHANICAL CONTRACTOR.

EQUIPMENT BY OTHERS

3 TO 4 INCHES FROM BOTTOM OF THE HOOD

2 INCHES FROM THE EDGE OF THE HOOD

1/8" THRU x6 \*

RIGHT OR LEFT SIDE OF HOOD

\* Mounting hardware not included  
\*\*Must be mounted to stud or wall anchor

Left & Right hand Grease Cup Install

1.5" I.P.S. GREASE DRAIN TO BE CAPPED OFF WITH 1.5"NPT CAP ON EACH OUTER END OF HOODS

One Gallon Grease Cup Installation

Instructions below outline single, or dual, one gallon grease cup installation for ND-2 hood models.

The one gallon grease cup comes as an assembly of stainless steel wall mounting bracket and one gallon cup. The mounting bracket should be installed 2" from the edge of the containment plenum and 3"-4" below the bottom of the hood.

Piping from the hood grease drain should route to the opening of the grease cup, but not into the cup, otherwise the cup will not be able to be removed and emptied.

90° AND 6" PIPE NIPPLE (A0008526, WWDRAINNIPPLE)

45° EL.BOW (A0008529, WWDRAINELBOW)

PIPE SUPPORT (A0012405, WWDRAINCLAMP)

Support the bottom of the drain pipe using 1.5" adjustable pipe support. Do not allow drain pipe to drop into the grease cup, otherwise cup will catch when removing and cleaning the grease cup.

Gallon Grease Cup Assembly

1 GALLON GREASE COLLECTION BOX AND WALL MOUNTING BRACKET SHIPPED LOOSE FOR FIELD INSTALLATION BY MECHANICAL CONTRACTOR.

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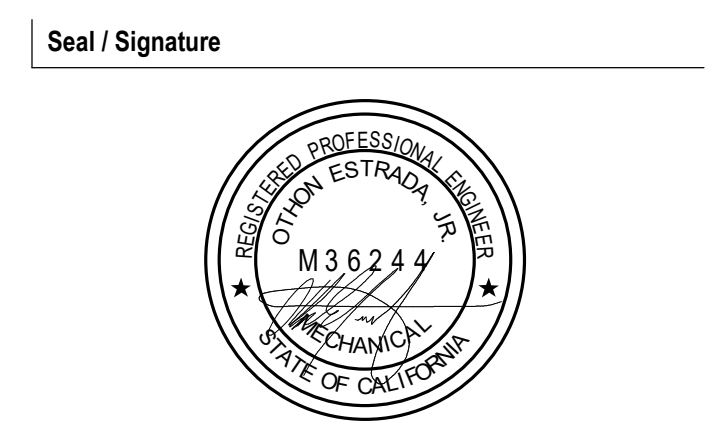
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Shake Shack - Del Amo Mall (R1)  
TORRANCE, CA, 90503

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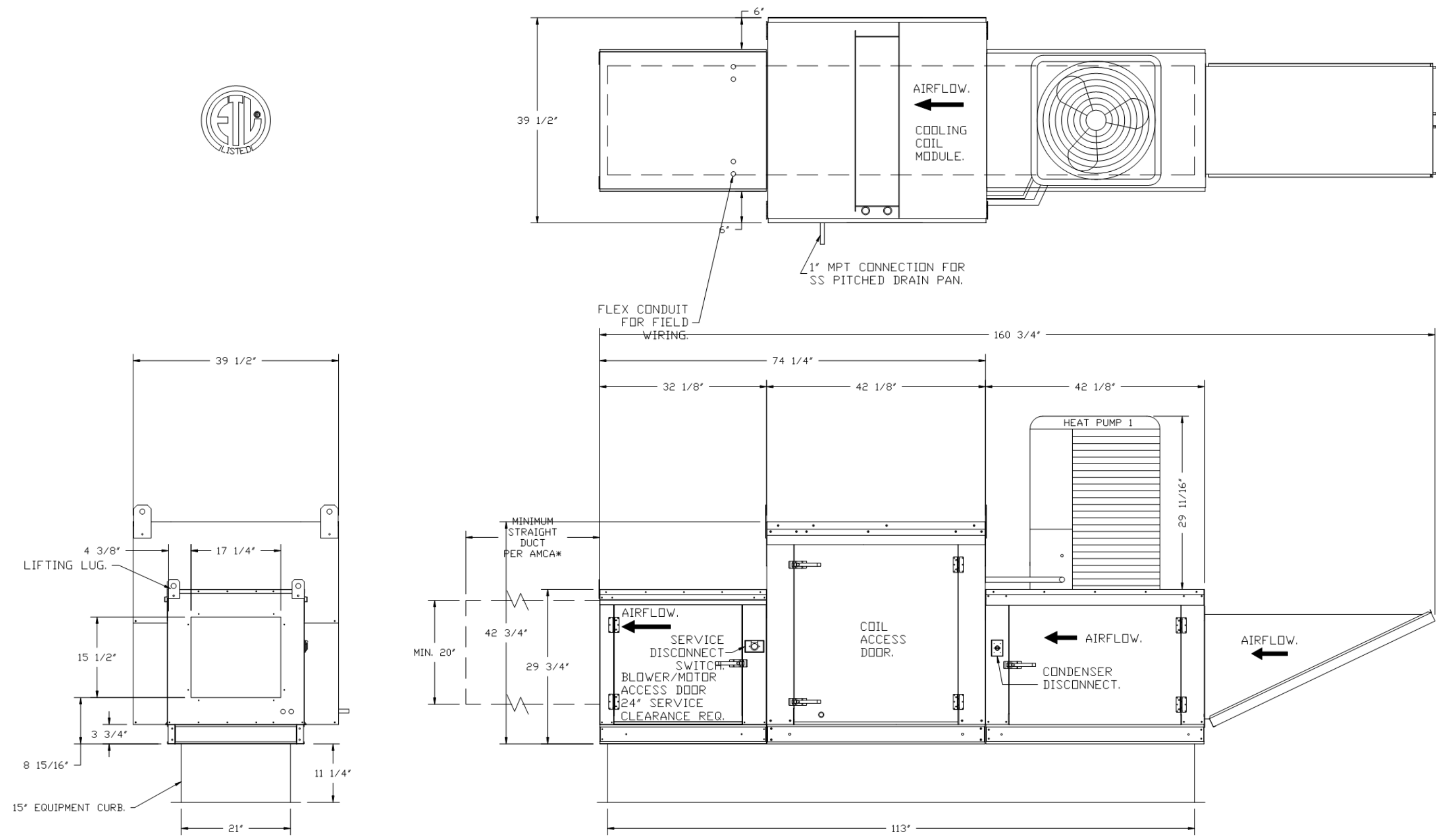
Description  
**CAPTIVEAIRE DRAWINGS**

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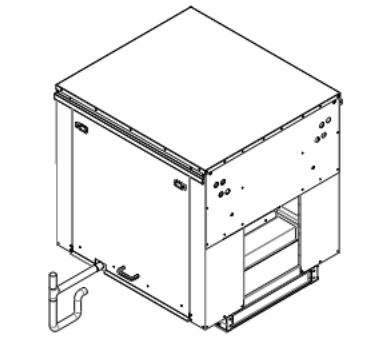


- FAN 82 41-150-MFU - SUPPLY FAN (MASH-1)
1. SUPPLY UNIT WITH 15" MIXED FLOW DIRECT DRIVE FAN IN SIZE #1 HOUSING.
  2. INTAKE NOZZLE WITH 15" FILTER.
  3. SIDE DISCHARGE - AIR FLOW RIGHT -> LEFT.
  4. 3 TON SINGLE CIRCUIT MODULAR PACKAGED COOLING OPTION WITH HEAT PUMP FOR SIZE 1 MODULAR PACKAGED UNIT. INCLUDES HEAT PUMP, DX COIL, FILTER/DRYER KIT, HARD START KIT, THERMAL EXPANSION VALVE, R450A REFRIGERANT, AND REFRIGERANT PIPING (1/2" TO 1/8" CPVC) WHEN ORDERED WITH IMPROVED AIRFLOW CONDENSERS. ACCESS AND COIL PIPING WILL REMAIN IN STANDARD POSITION. DRAIN AND SLEDS WILL MOVE TO THE OPPOSITE SIDE. ANY OTHER CHANGE WILL REQUIRE COIL CONDENSERS REQUIRE SEPARATE 120V, 1 PHASE POWER SUPPLY UNLESS ORDERED WITH SINGLE POINT CONNECTION COIL + RECOIL.
  5. INSULATED BLOWER HOUSING SIZES 1-2 COMMERCIAL MODULAR.
  6. CONTROL PACKAGE FOR MOD PACKAGE UNIT HEAT PUMP UNIT. INCLUDES AIRFLOW PROVING SWITCH, RTULINK-ACHP BOARD AND TERMINAL BLOCKS.
  7. SIZE 1 MOISTURE ELIMINATOR OPTION FOR DX COILS, HPUS AND CHILLED WATER COILS - ALLOWS COOLING COIL FACE VELOCITY TO INCREASE TO 650 FPM. INCREASES COOLING COIL MAX CFM TO 3650 CFM.
  8. SUPPORT SHELL FOR SIZE 1 MODULAR PACKAGE UNIT. INCLUDES CONTROL VESTIBULE. INCLUDES CONDENSER SUPPORTS. DOES NOT INCLUDE RETURN AIR OR INLET AIR DAMPER.
  9. MODIFIED BACK DRAFT DAMPER BY 4 1/2" FOR SIZE 1 UNTEMPERED UNITS w/EXTENDED SHAFT. STANDARD GALVANIZED CONSTRUCTION. JAW REAR FLANGE. LOW LEAKAGE. TRIPROD ACTUATOR INCLUDED.
  10. SEPARATE LOWVAC WIRING PACKAGE MAKE-UP AIR UNITS. OPTION MUST BE SELECTED WHEN MOUNTING VFD IN PREWIRE PANEL OR WITH DELV PACKAGE. PROVIDES SEPARATE 120VAC INPUT TO SUPPLY FAN. THIS 120V SIGNAL MUST BE RUN BY ELECTRICIAN FROM DCV TO MUA SWITCH.
  11. HINGED DOUBLE WALL INSULATED DOOR ASSEMBLY (BLOWER/BLOWER/MFU SECTION).
  12. 2 YEAR PARTS WARRANTY.

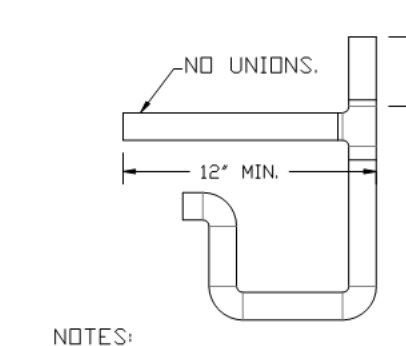
NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN ANCA PUBLICATION 801. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES, FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRAMATICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT. SUGGESTED STRAIGHT DUCT SIZE IS 20" x 20".



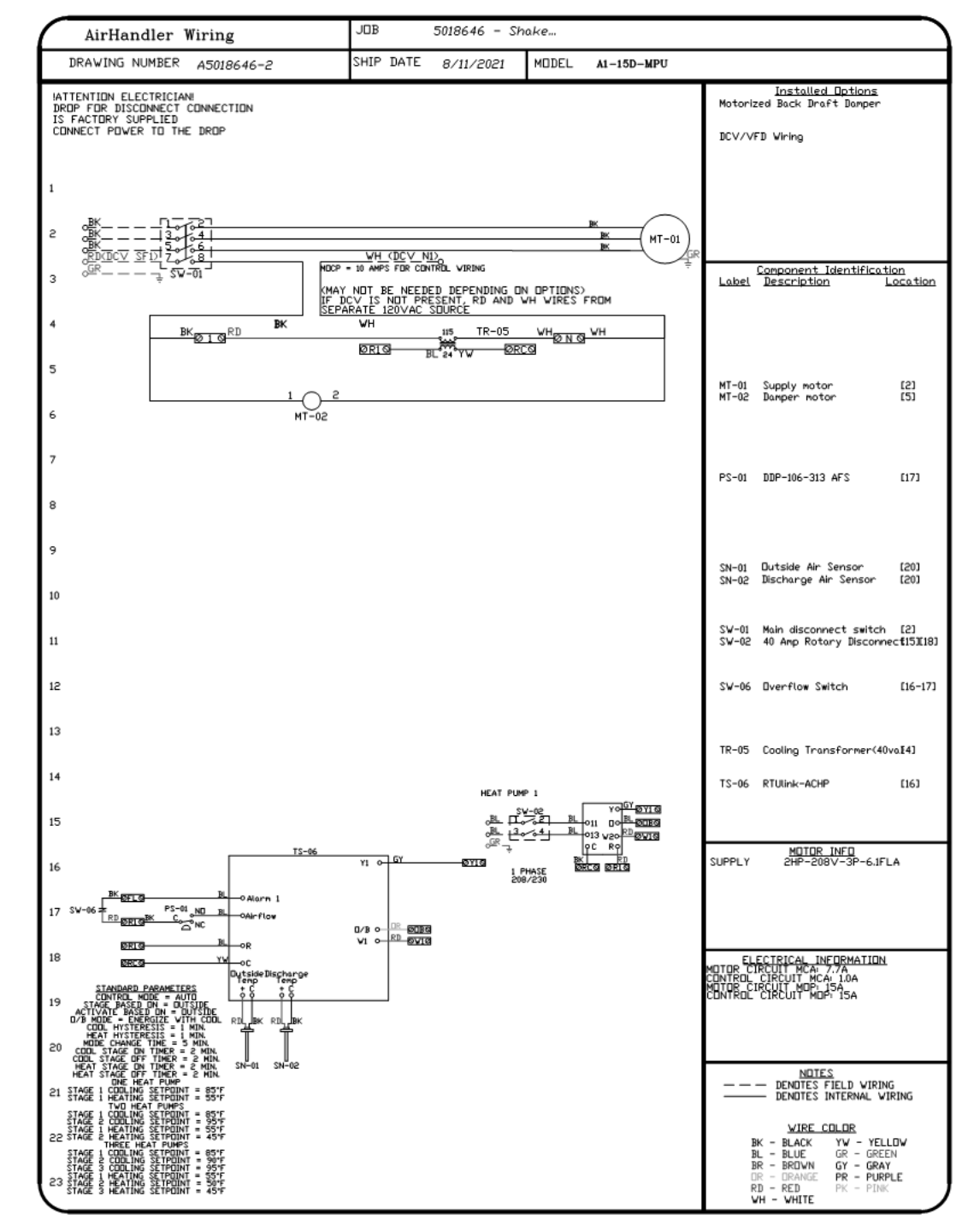
TYPICAL DRAIN TRAP INSTALL



RECOMMENDED COOLING COIL DRAIN TRAP CONFIGURATION



NOTES:  
 1) 1/2" DIAMETER PVC PIPE ONLY.  
 2) USE ONLY LOW PROFILE COUPLINGS.  
 3) ADD CLEAN OUT AS SHOWN.



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DESCRIPTION	DATE

**CAPTIVE**  
Eastern PA Mechanical

Shake Shack - Del Amo Mall (R1)  
TORRANCE, CA, 90503

DATE: 8/17/2021  
 DWG.#: 5043059  
 DRAWN BY: EB-108  
 SCALE:  
 MASTER DRAWING

**SHEET NO.**  
6

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Project Name  
**SHAKE SHACK**

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**SHK-21-004**

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**CAPTIVEAIRE DRAWINGS**

Scale  
 NTS

**M806**



**Gensler**

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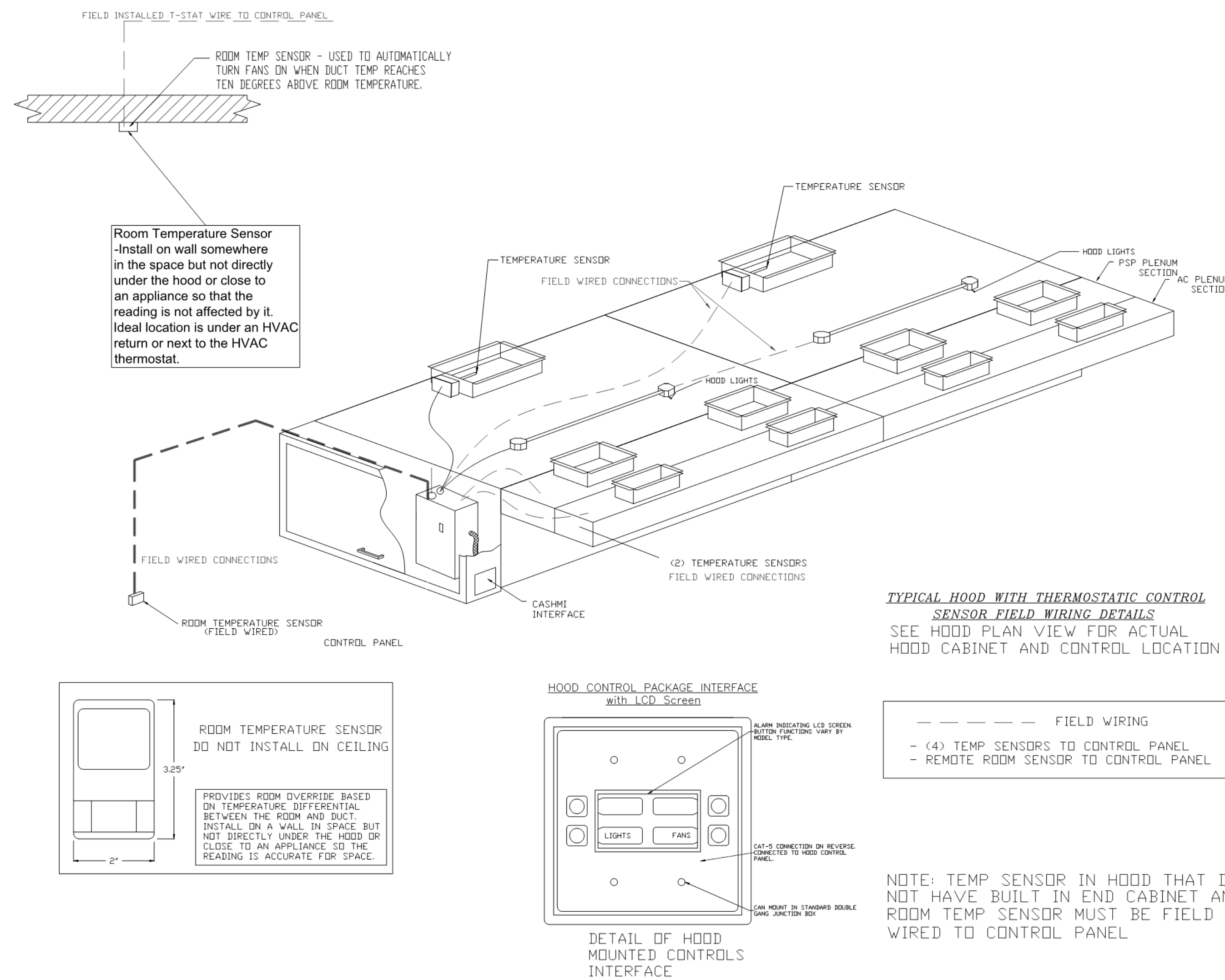
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CHICAGO, IL 60607  
Tel 312.341.0055  
Fax 312.341.9966  
Contact:  
Matthew Anderson  
Tel 312.878.7528

System Design Verification (SDV)

If ordered, CAS Service will perform a System Design Verification (SDV) once all equipment has had a complete start up per the Operation and Installation Manual. Typically, the SDV will be performed after all inspections are complete.

Any field related discrepancies that are discovered during the SDV will be brought to the attention of the general contractor and corresponding trades on site. These issues will be documented and forwarded to the appropriate sales office. If CAS Service has to resolve a discrepancy that is a field issue, the general contractor will be notified and billed for the work. Should a return trip be required due to any field related discrepancy that cannot be resolved during the SDV, there will be additional trip charges.

During the SDV, CAS Service will address any discrepancy that is the fault of the manufacturer. Should a return trip be required, the general contractor and appropriate sales office will be notified. There will be no additional charges for manufacturer discrepancies.



**SC- Specification:**

The Electrical Package, typically FP, is designed to thermostatically activate the exhaust fans for an exhaust hood whenever elevated temperatures are sensed in the exhaust system. This option will meet the requirements of IMC 507.2.1.1 by providing a thermostat(s) mounted in the duct or hood riser to sense increased exhaust temperatures. Controls shall be listed by ETL (UL 508A). The control enclosure shall be NEMA 1 rated and listed for installation inside of the exhaust hood utility cabinet. The control enclosure may be constructed of stainless steel or painted steel.

Temperature probes(s) located in the duct riser shall be constructed of Stainless Steel. A room temperature sensor is also provided for field installation in the kitchen space in order to start the fan(s) based on the temperature differential between the room and the exhaust air in the duct, rather than fixed set-points. The system is factory pre-set to activate the fans at 10 deg F° above the room temperature.

Once the duct temperature reaches the activation point, the exhaust fans will be activated. The controls also provide hysteresis to prevent cycling of the fans after the cooking appliances have been turned off and the heat in the exhaust system is reduced. The hysteresis is factory set 2 degrees and will keep the exhaust running until the temperature falls 2 degrees below the activation set point. A hysteresis timer also exists to keep the fans running for at least 30 min after being activated by the temperature rise.

The activation and hysteresis settings may be field adjusted on the board LCD interface located inside the control enclosure to meet application needs. The panel is factory configured to shut down supply fans, turn on the exhaust fans and turn off the hood lights in a fire condition.

REVISIONS	
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**CAPTIVE**

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TORRANCE, CA, 90503

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Project Name  
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Project Number  
**SHK-21-004**

Description  
**CAPTIVEAIRE DRAWINGS**

Scale  
NTS

**M808**