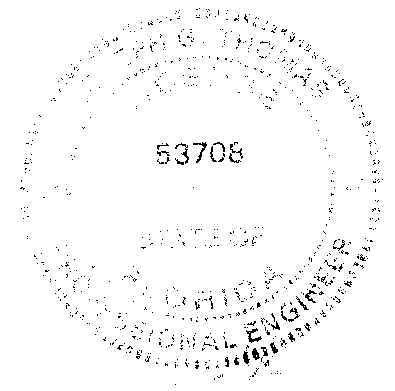




**SEAL**

I HEREBY CERTIFY THAT THESE DRAWINGS HAVE BEEN PREPARED UNDER MY DIRECT SUPERVISION AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF THEY COMPLY WITH THE BUILDING CODES AND ORDINANCES OF LARGO, FL.



DATE: 07/25/2025  
EXPIRATION DATE: 02/28/2027

Digitally signed by Joseph G. Thomas  
DN: cn=Joseph G. Thomas, c=US, email=jthomas@sevan.com, ou=Engineering, o=Sevan Design Solutions, P.C., st=Florida, serial=53706, version=1  
Date: 2025.07.25 07:48:05 -0500

REV	DESCRIPTION	DATE
	ISSUED FOR PERMIT	02/04/2025
1	CITY OF LARGO COMMENTS	04/16/2025
3	DRAWING CLARIFICATIONS	07/25/2025
	ISSUED FOR CONSTRUCTION	07/25/2025

**GENERAL NOTES**

- A. REFER TO M0.1 FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS.
- B. EXISTING ROOFTOP HVAC UNITS ARE NOTED TO BE INSTALLED WITH SMOKE DETECTORS. CONTRACTOR TO FIELD VERIFY EXISTING INSTALLATION AND THAT SMOKE DETECTORS ARE IN PROPER OPERATING CONDITION. NOTIFY OWNER/G.C. OF ANY DEFICIENCIES.
- C. EXISTING ROOFTOP HVAC UNITS TEMPERATURE CONTROLS ARE EXISTING TO REMAIN. CONTRACTOR TO VERIFY TEMPERATURE CONTROLS ARE OPERATING PROPERLY. NOTIFY OWNER/G.C. OF ANY DEFICIENCIES.
- D. KITCHEN HOODS, ANSUL FIRE SUPPRESSION SYSTEM AND HOOD CONTROLS SHALL BE OWNER-FURNISHED AND CONTRACTOR-INSTALLED.
- E. ALL TESTS AND BALANCES TO BE PERFORMED BY A THIRD PARTY - NOT BY MEP SUBCONTRACTOR.

**KEYNOTES**

- 1 CONNECT KITCHEN EXHAUST HOOD ABOVE GRILL UP TO KEF-1 WITH 16" DIA. PRE-FABRICATED UL 1978 LISTED AND LABELED GREASE DUCT. PROVIDE TRANSITIONS ABOVE CEILING AS REQUIRED.
- 2 16" EXHAUST DUCT UP TO KEF-1 ON ROOF, RE: A1/M2.1
- 3 CONNECT KITCHEN EXHAUST HOOD ABOVE FRYER UP TO KEF-2 WITH 12" DIA. PRE-FABRICATED UL 1978 LISTED AND LABELED GREASE DUCT. PROVIDE TRANSITIONS ABOVE CEILING AS REQUIRED.
- 4 12" EXHAUST DUCT UP TO KEF-2 ON ROOF, RE: A1/M2.1
- 5 CONNECT NEW 12" SUPPLY AIR DUCT BRUNCH TO EXISTING MAIN AIR DUCT.

**TEST AND BALANCE NOTE**

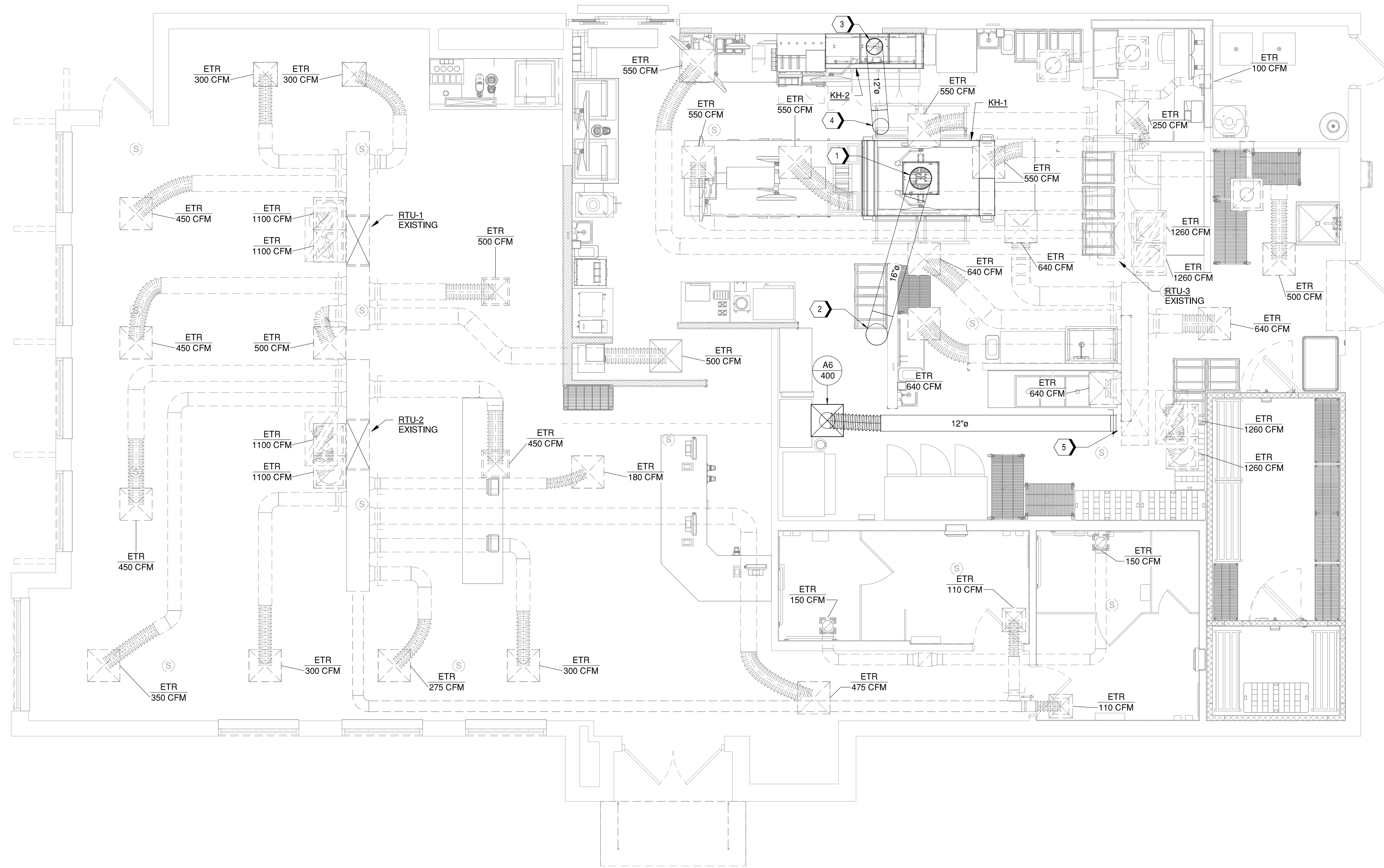
NEW AND EXISTING HVAC SYSTEMS AND EXHAUST SYSTEMS SHALL BE TESTED AND BALANCED TO AIRFLOW CAPACITIES SHOWN ON THESE DRAWINGS. HEATING AND COOLING CAPACITIES SHALL MATCH DATAPLATE INFORMATION. NOTIFY OWNER/G.C. OF ANY DEFICIENCY.

**GREASE DUCT NOTES**

- 1. GREASE DUCT SERVING TYPE I HOODS SHALL BE FACTORY BUILT DOUBLE WALL COMMERCIAL GREASE DUCTS LISTED AND LABELED IN ACCORDANCE WITH UL 1978 AND INSTALLED IN ACCORDANCE WITH THE IMC SECTION 304.1. GREASE DUCT SHALL BE LISTED GOT 0" CLEARANCE TO COMBUSTIBLES.  
OR  
GREASE DUCT SERVING TYPE I HOODS SHALL BE CONSTRUCTED OF STEEL HAVING A MINIMUM THICKNESS OF 0.0575" (16 GA.) OR STAINLESS STEEL NOT LESS THAN 0.0450" (18 GA.). GREASE DUCTS SHALL BE CONTINUOUSLY COVERED ON ALL SIDES WITH A LISTED AND LABELED FIELD APPLIED GREASE DUCT ENCLOSURE MATERIAL, SYSTEM, PRODUCT OR METHOD OF CONSTRUCTION SPECIFICALLY EVALUATED FOR SUCH PURPOSE IN ACCORDANCE WITH ASTM E2336 TO PROVIDE 0" CLEARANCE TO COMBUSTIBLES IN ACCORDANCE WITH THE LISTING OF SUCH MATERIAL, SYSTEM, PRODUCT OR METHOD.
- 2. GREASE DUCT SYSTEM INSTALLED SHALL BE REVIEWED AND APPROVED BY THE AHJ PRIOR TO INSTALLATION.

**GREASE DUCT CALCULATIONS**

KH-1	KEF-1	1995 CFM 16"Ø GREASE DUCT 1.4 SQ. FT. AREA 1429 FT/MIN VELOCITY
KH-2	KEF-2	1216 CFM 12"Ø GREASE DUCT 0.8 SQ. FT. AREA 1548 FT/MIN VELOCITY



**A1 MECHANICAL FLOOR PLAN**  
1/4" = 1'-0"

**WHATABURGER #1646**  
10150 ULMRETON ROAD  
LARGO, FL 33771



Project No.: 1646  
Client Project No.:  
Drawing Title: **MECHANICAL FLOOR PLAN**  
Date: 07/25/2025 Phase: IFC  
Designed: DG Drawing No.:  
Drawn: DG  
Checked: JT **M1.1**

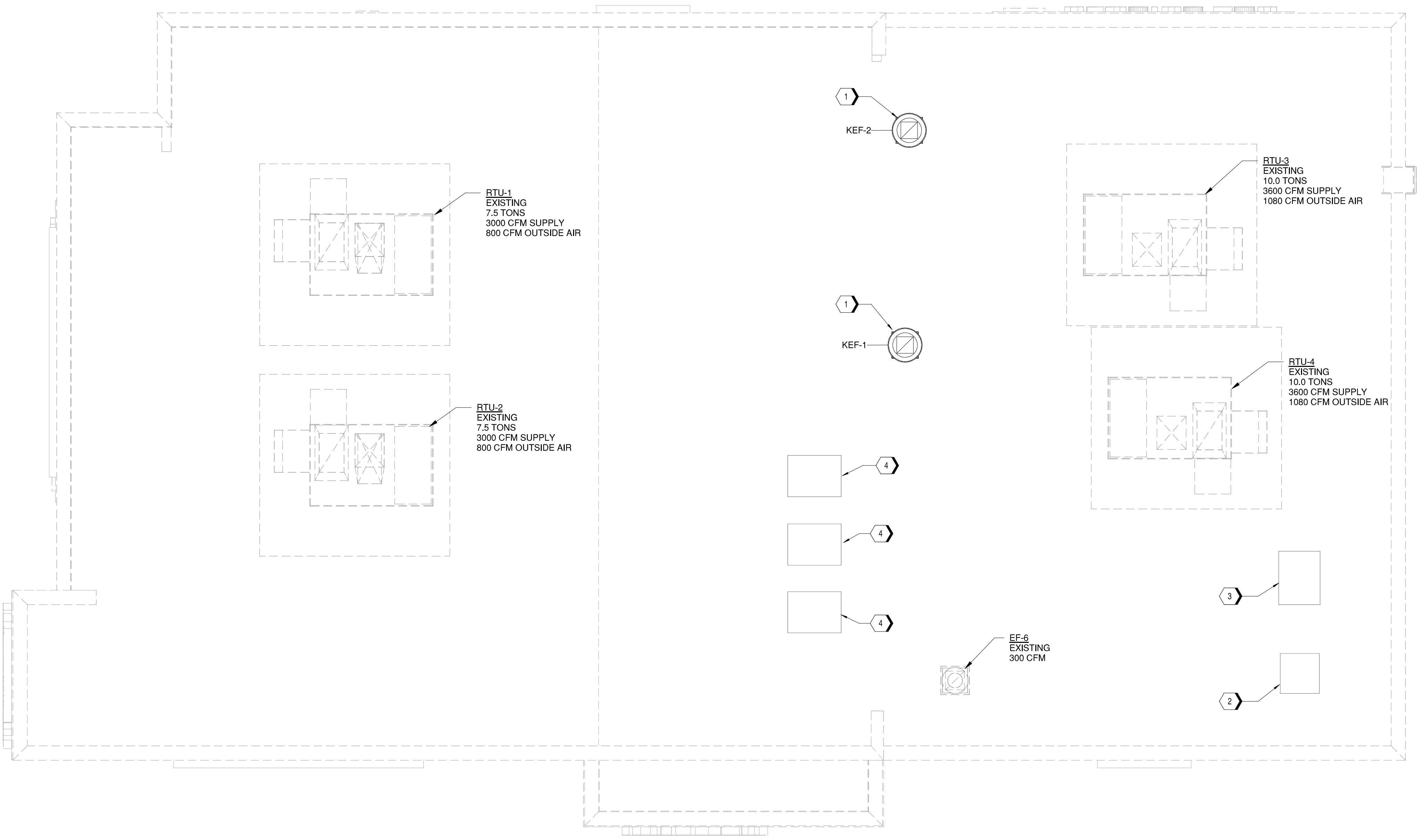
1 2 3 4 5

D

C

B

A



**A1 MECHANICAL ROOF PLAN**  
1/4" = 1'-0"

**GENERAL NOTES**

- A. REFER TO M0.1 FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS.
- B. EXISTING ROOFTOP HVAC UNITS ARE NOTED TO BE INSTALLED WITH SMOKE DETECTORS. CONTRACTOR TO FIELD VERIFY EXISTING INSTALLATION AND THAT SMOKE DETECTORS ARE IN PROPER OPERATING CONDITION. NOTIFY OWNER/G.C. OF ANY DEFICIENCIES.
- C. EXISTING ROOFTOP HVAC UNITS TEMPERATURE CONTROLS ARE EXISTING TO REMAIN. CONTRACTOR TO VERIFY TEMPERATURE CONTROLS ARE OPERATING PROPERLY. NOTIFY OWNER/G.C. OF ANY DEFICIENCIES.
- D. KITCHEN HOODS, ANSUL FIRE SUPPRESSION SYSTEM AND HOOD CONTROLS SHALL BE OWNER - FURNISHED AND CONTRACTOR-INSTALLED.
- E. ALL TESTS AND BALANCES TO BE PERFORMED BY A THIRD PARTY - NOT BY MEP SUBCONTRACTOR.

**KEYNOTES**

- 1 NEW CENTRIFUGAL UPBLAST GREASE HOOD EXHAUST FAN MOUNTED ON EXISTING ROOF CURB, RE: A2/M5.1
- 2 KITCHEN FREEZER CONDENSING UNIT MOUNTED ON ROOFTOP; FURNISHED BY OWNER, COORDINATE EXACT LOCATION ON SITE AND ROUTE REFRIGERATION (BY OTHERS), CONDENSING UNIT SUPPORT SHALL BE BY MIAMI-TECH AND COMPLY WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE.
- 3 KITCHEN REFRIGERATOR CONDENSING UNIT MOUNTED ON ROOFTOP; FURNISHED BY OWNER, COORDINATE EXACT LOCATION ON SITE AND ROUTE REFRIGERATION PIPING THROUGH ROOF PENETRATION (BY OTHERS), CONDENSING UNIT SUPPORT SHALL BE BY MIAMI-TECH AND COMPLY WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE.
- 4 KITCHEN ICEMAKER CONDENSING UNIT MOUNTED ON ROOFTOP; FURNISHED BY OWNER, COORDINATE EXACT LOCATION ON SITE AND ROUTE REFRIGERATION PIPING THROUGH ROOF PENETRATION (BY OTHERS), CONDENSING UNIT SUPPORT SHALL BE BY MIAMI-TECH AND COMPLY WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE.

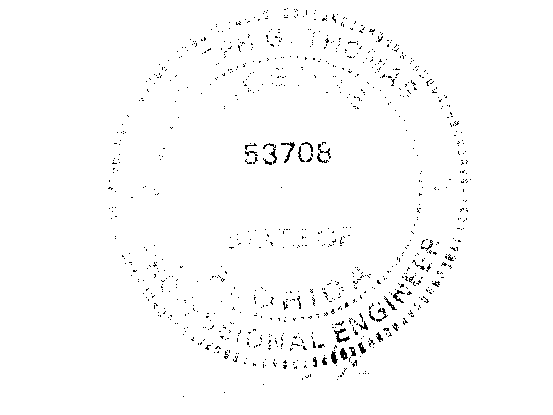
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EXPIRATION DATE: 02/28/2027

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DN: cn=Joseph G. Thomas, o=Sevan  
c=US, email=jthomas@sevan.com, ou=Engineering  
Date: 2025.07.25 07:48:23-0500'

Joseph G. Thomas

REV	DESCRIPTION	DATE
1	ISSUED FOR PERMIT	02/04/2025
3	DRAWING CLARIFICATIONS	07/25/2025
	ISSUED FOR CONSTRUCTION	07/25/2025

**WHATABURGER #1646**  
10150 ULMRETON ROAD  
LARGO, FL 33771

**WHATABURGER**

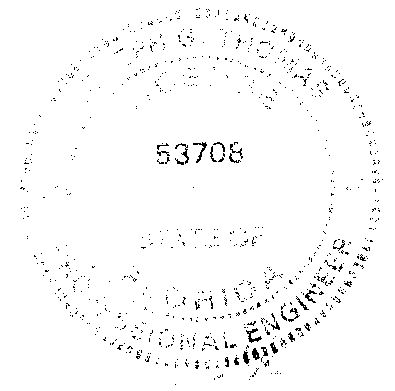
Project No.: 1646  
Client Project No.:  
Drawing Title:  
**MECHANICAL ROOF PLAN**

Date: 07/25/2025 Phase: IFC  
Designed: DG Drawing No.:  
Drawn: DG  
Checked: JT **M2.1**

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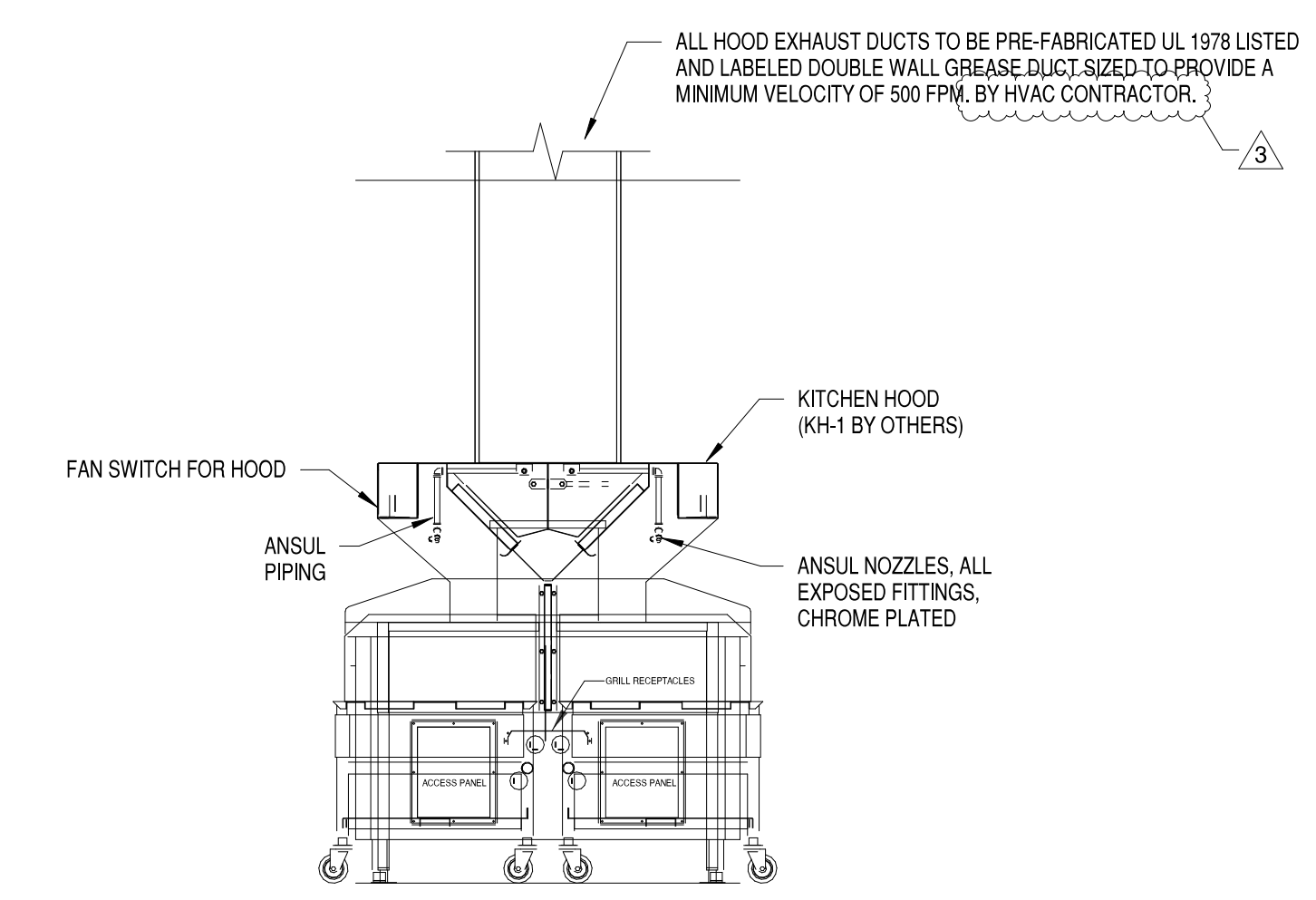
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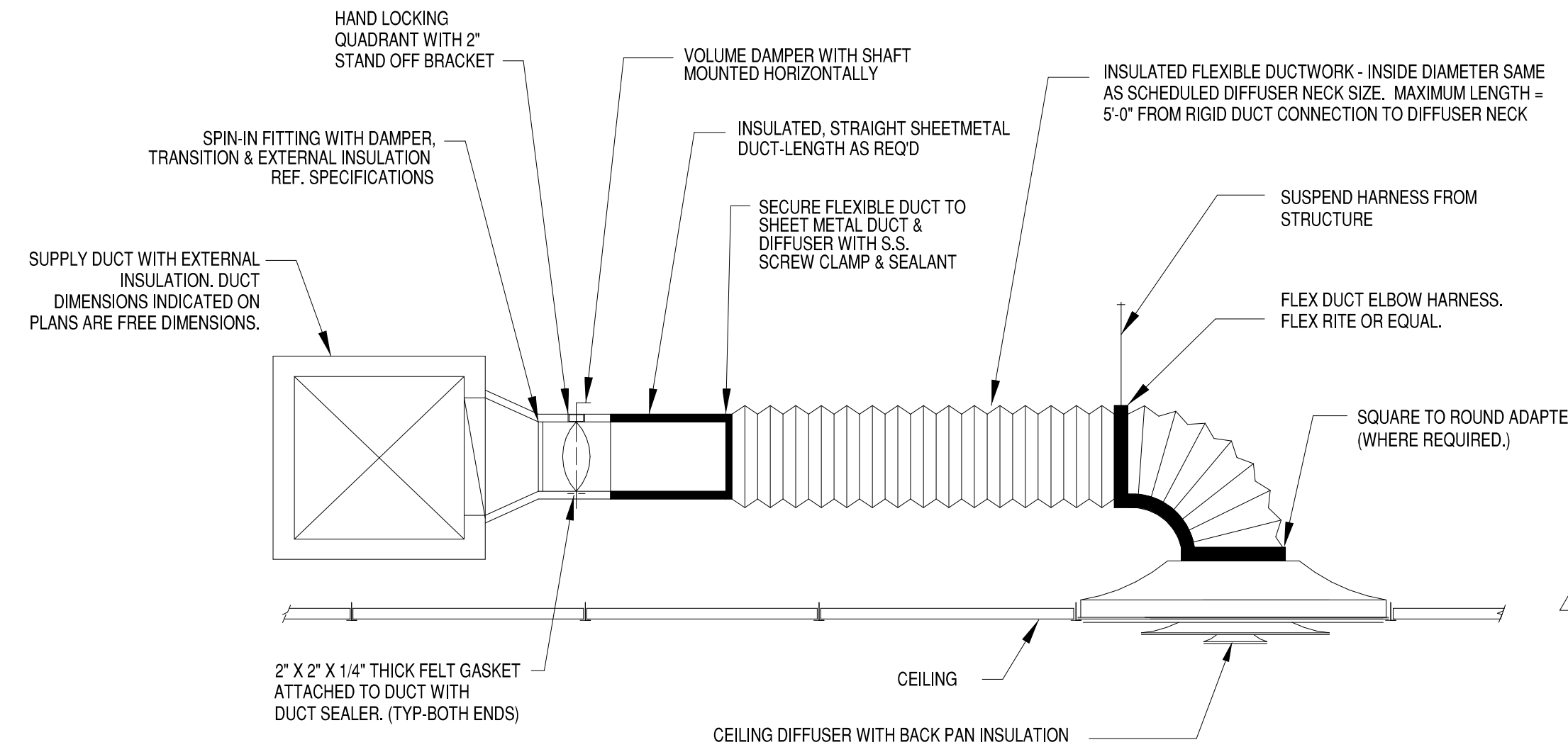
DATE: 07/25/2025  
EXPIRATION DATE: 02/28/2027

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DN: cn=Joseph G. Thomas, o=Sevan  
Engineering Inc., email=J.Thomas@sevan.com,  
c=US  
Reason: I am approving this document  
Date: 2025.07.25 07:48:40-0500

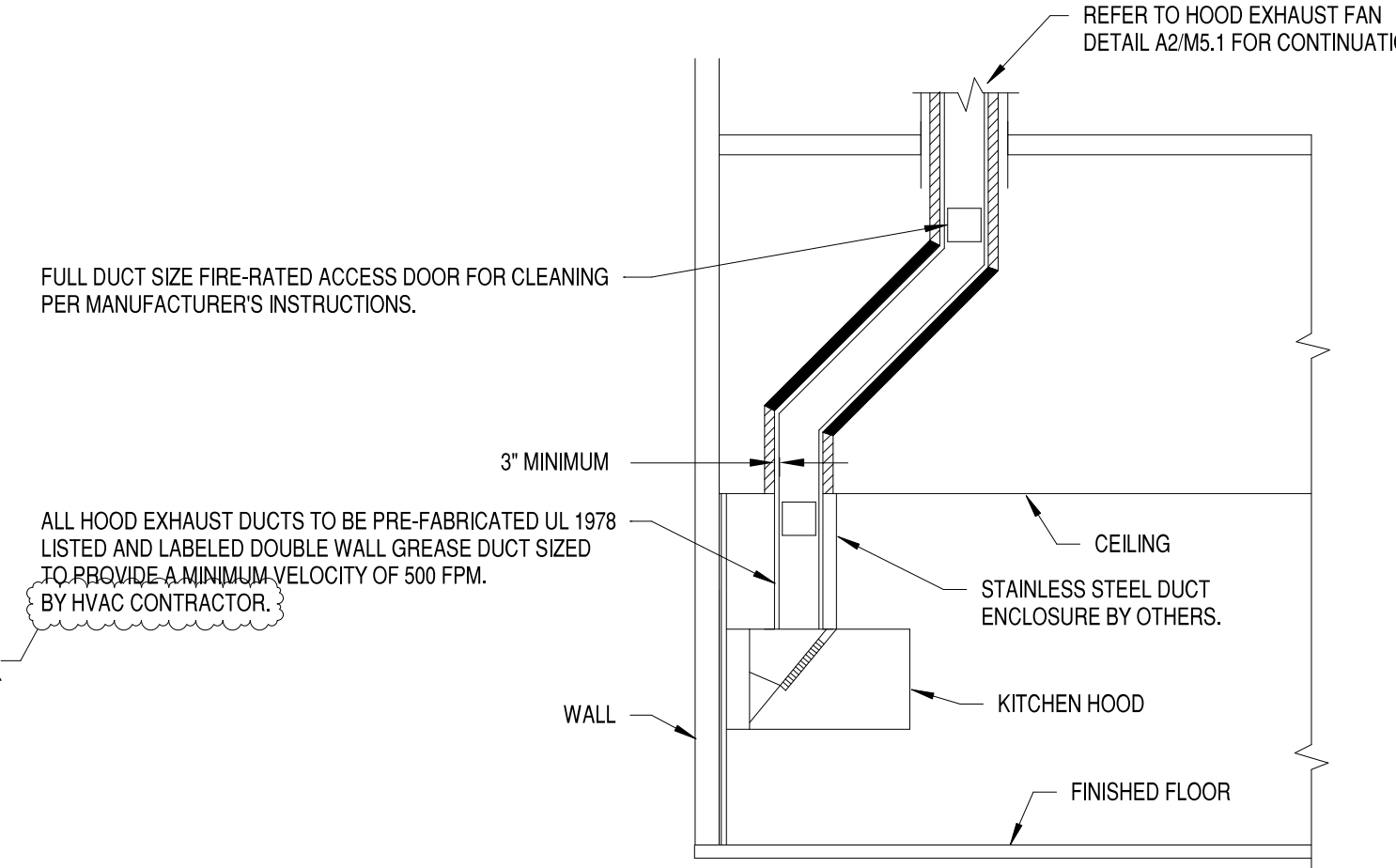
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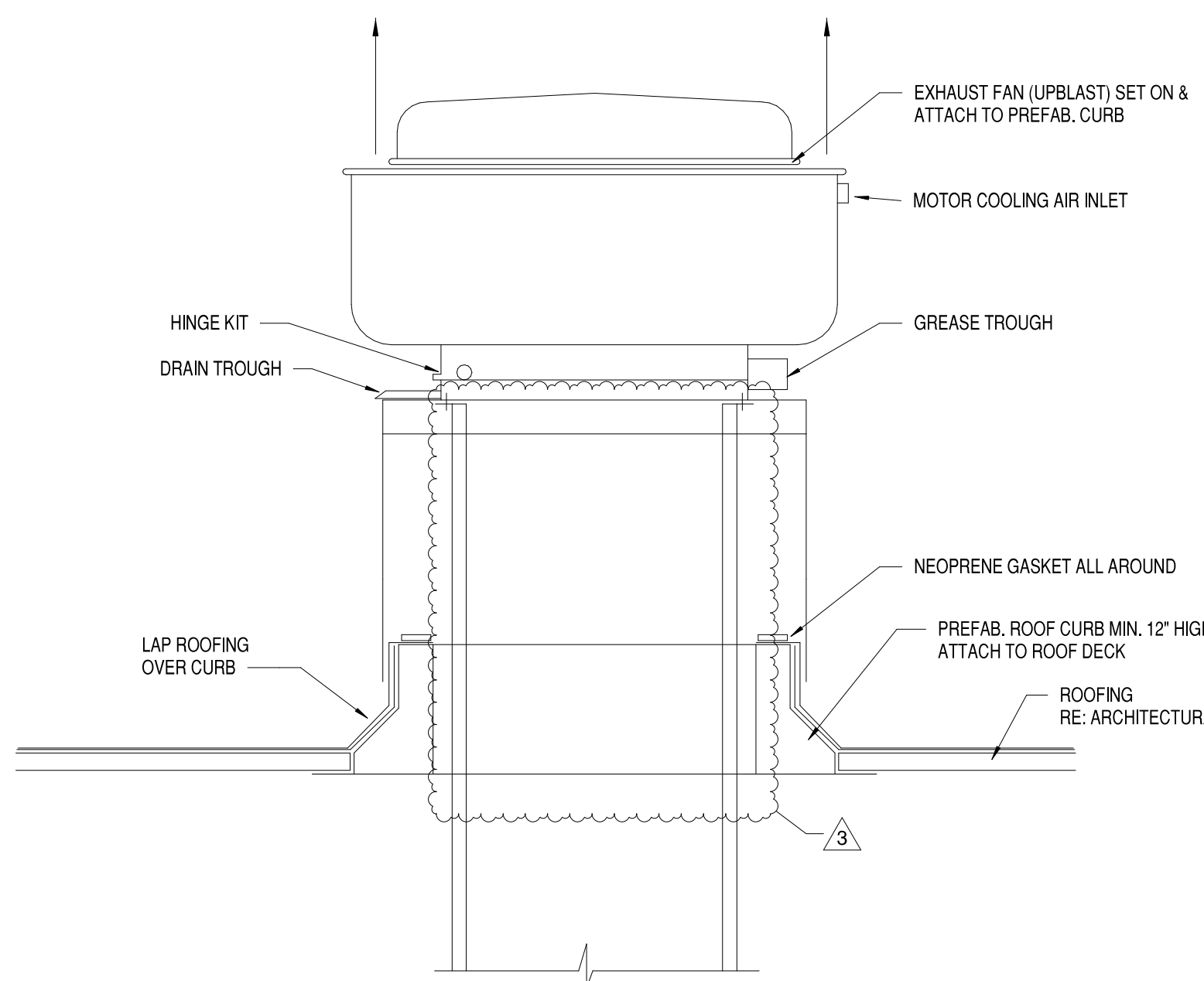
**C3** LOW PROFILE HOOD DETAIL  
N.T.S.



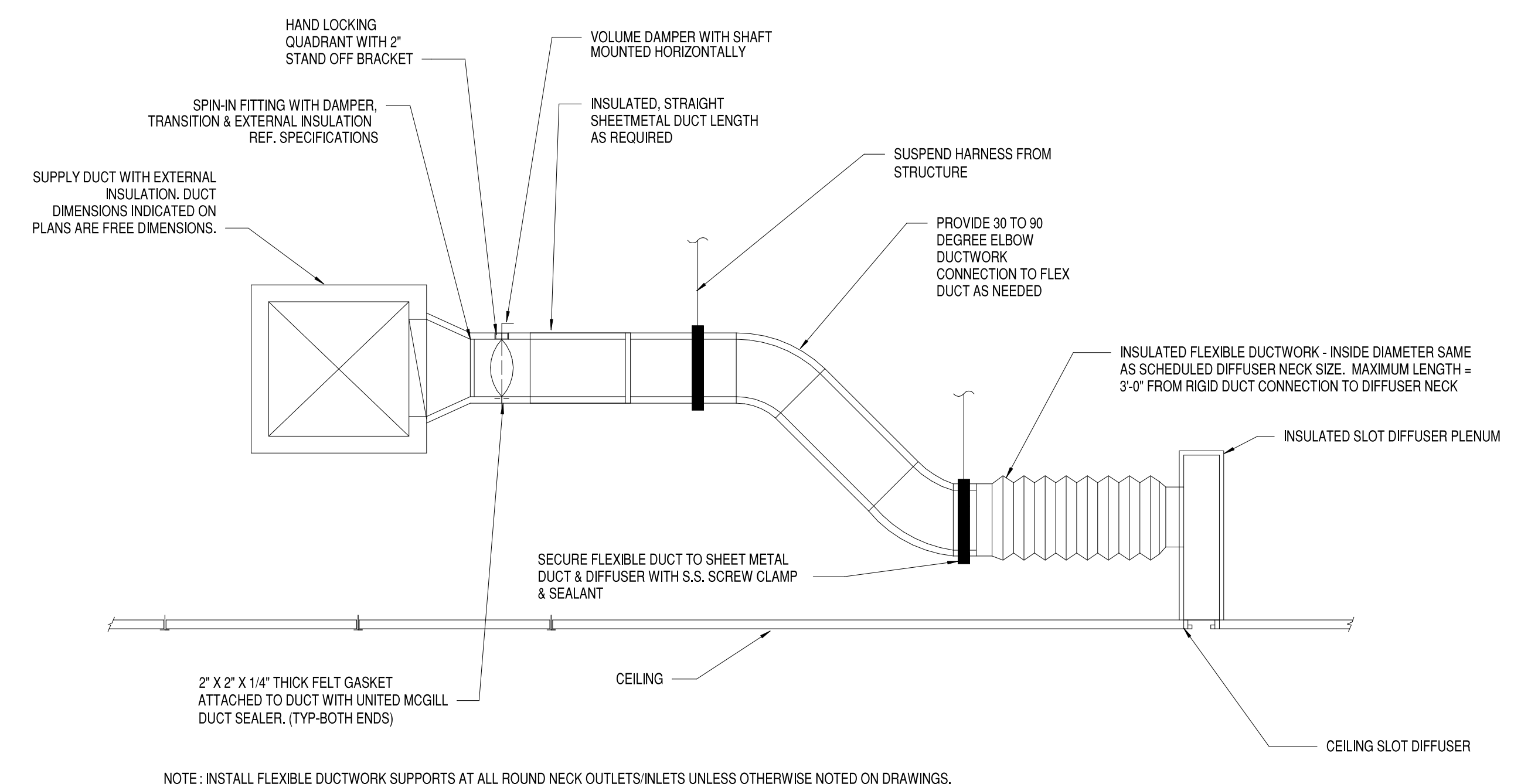
**B2** DIFFUSER CONNECTION DETAIL  
N.T.S.



**B4** HOOD EXHAUST DUCT DETAIL  
N.T.S.



**A2** ROOFTOP GREASE EXHAUST FAN DETAIL  
N.T.S.



**A3** PLENUM SLOT DIFFUSER DETAIL  
N.T.S.

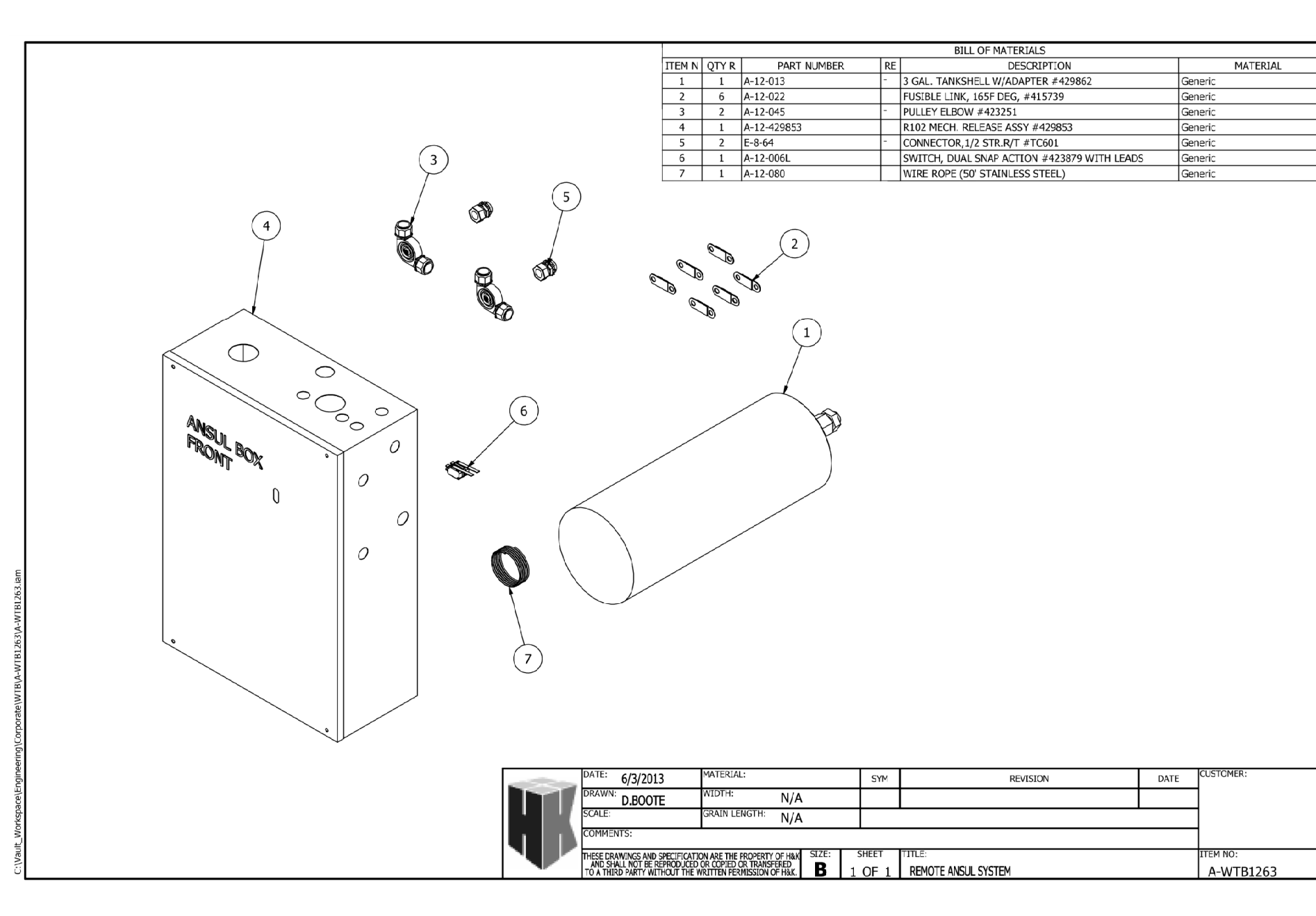
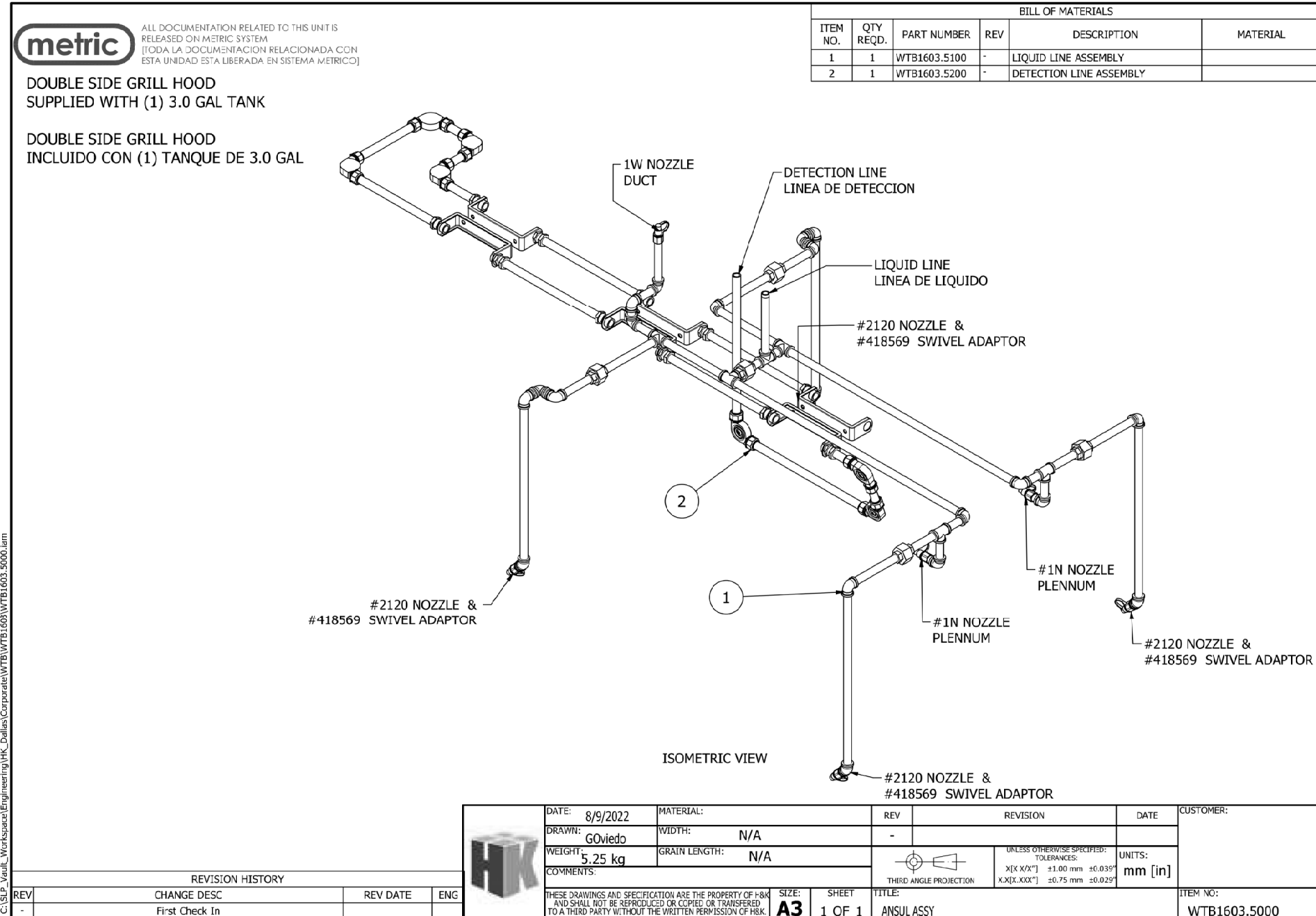
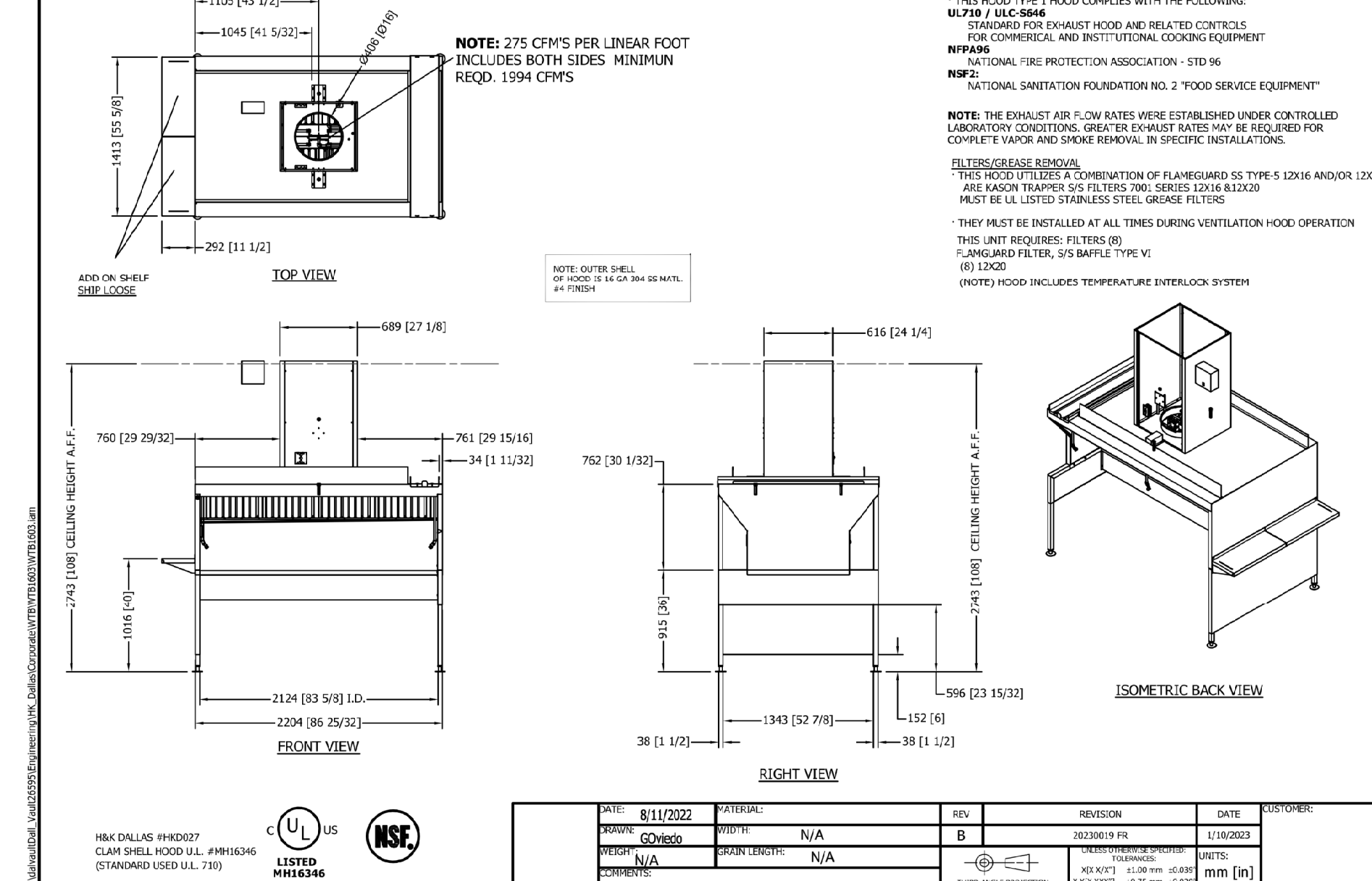
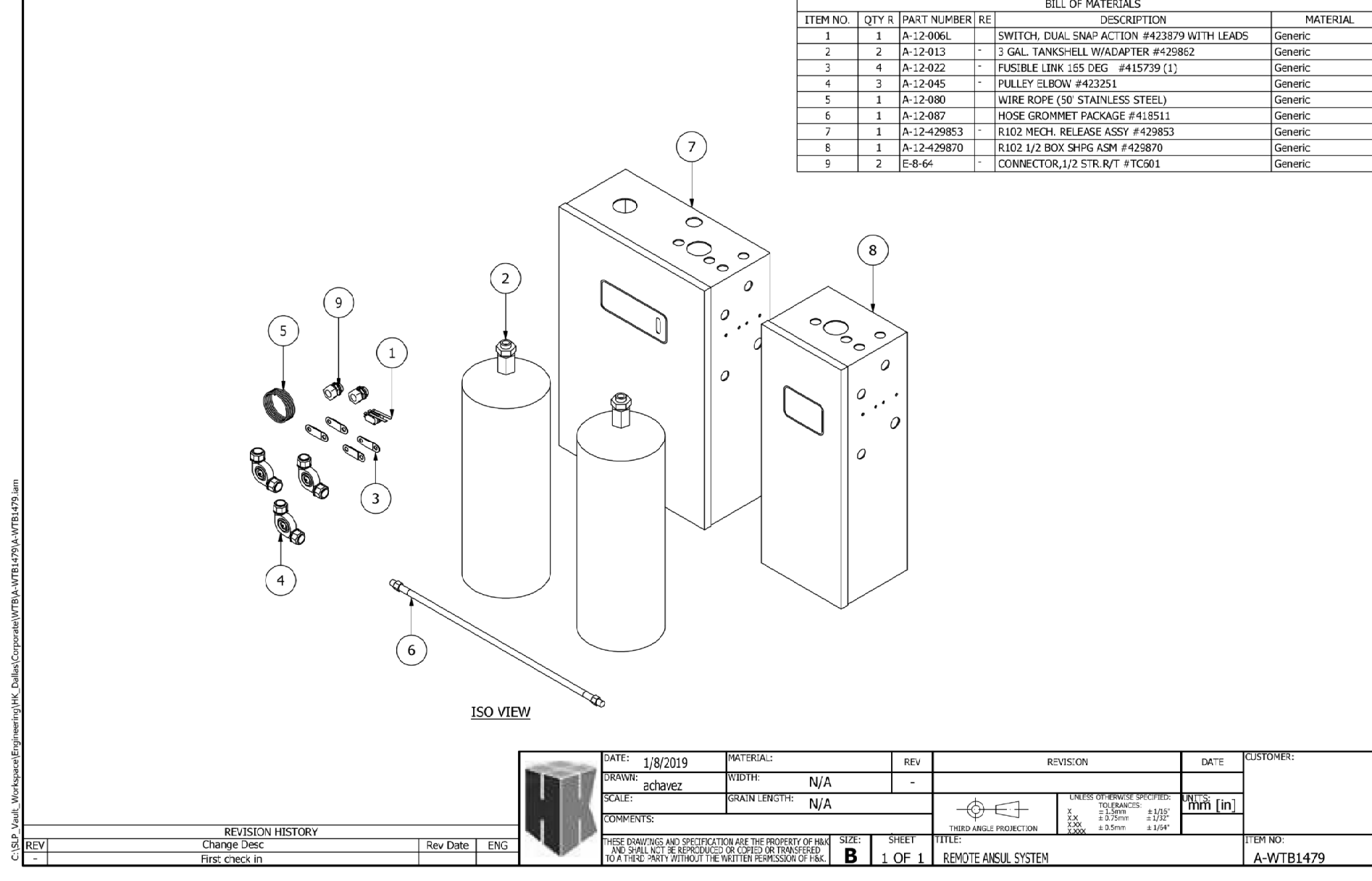
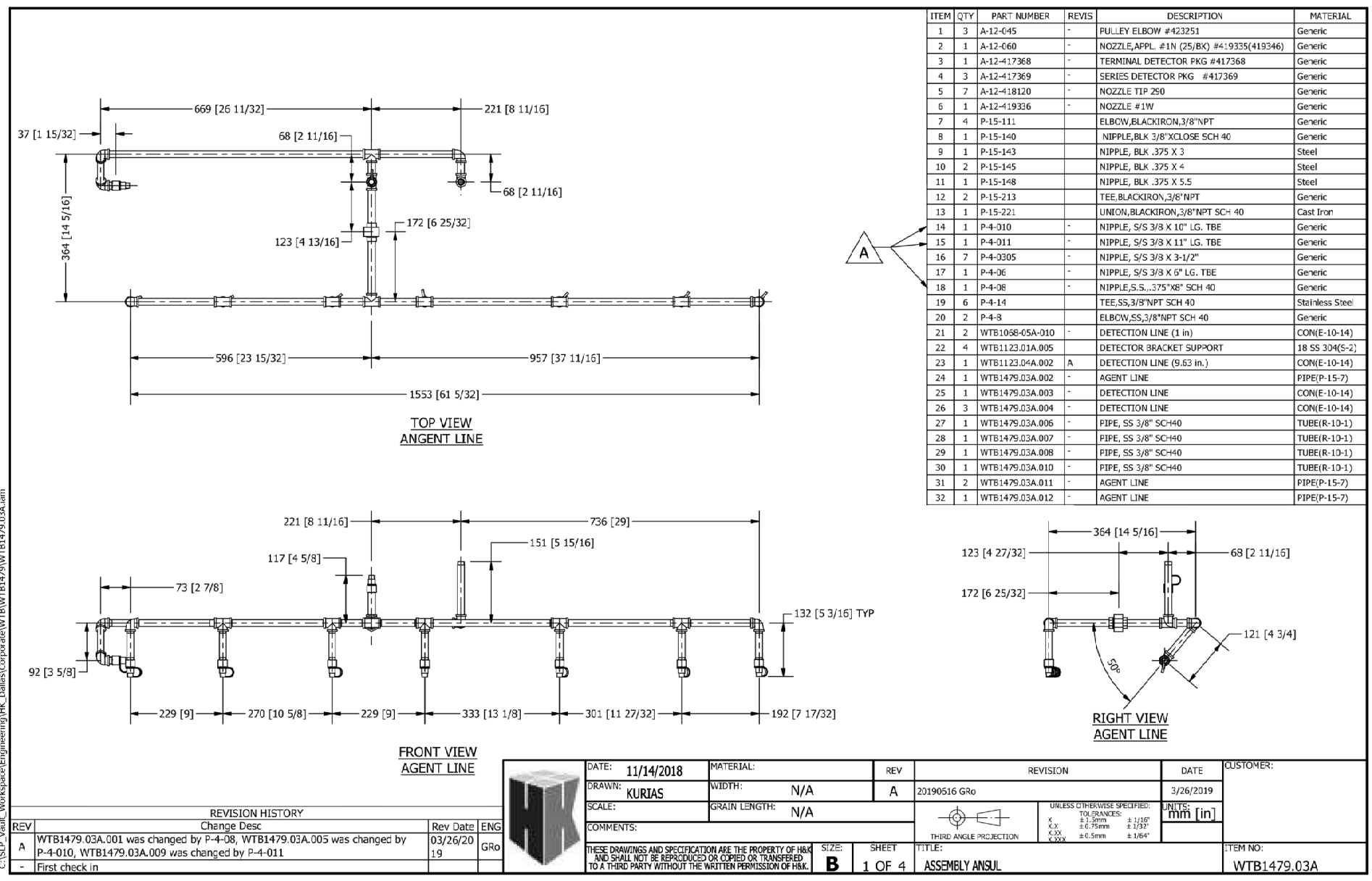
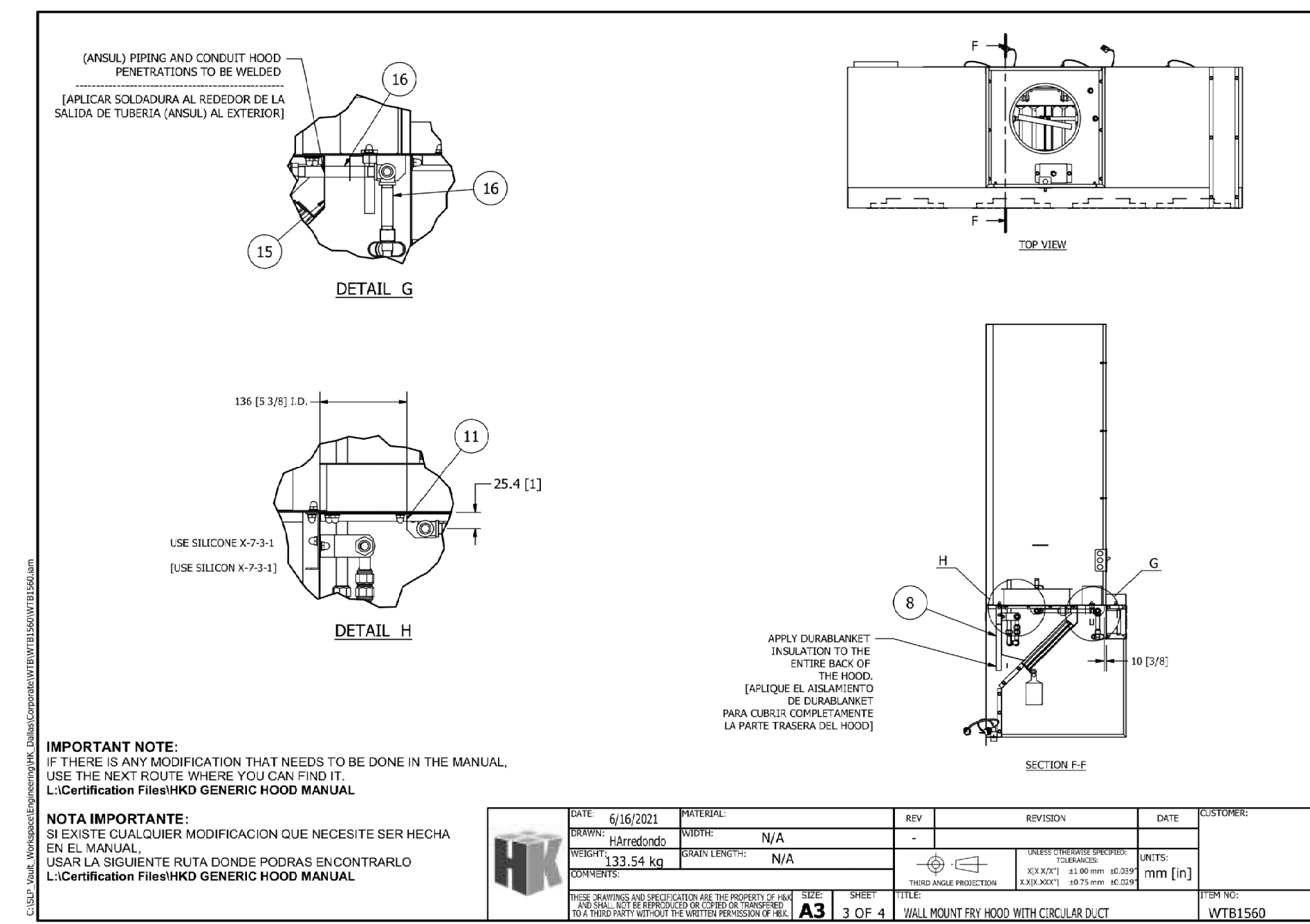
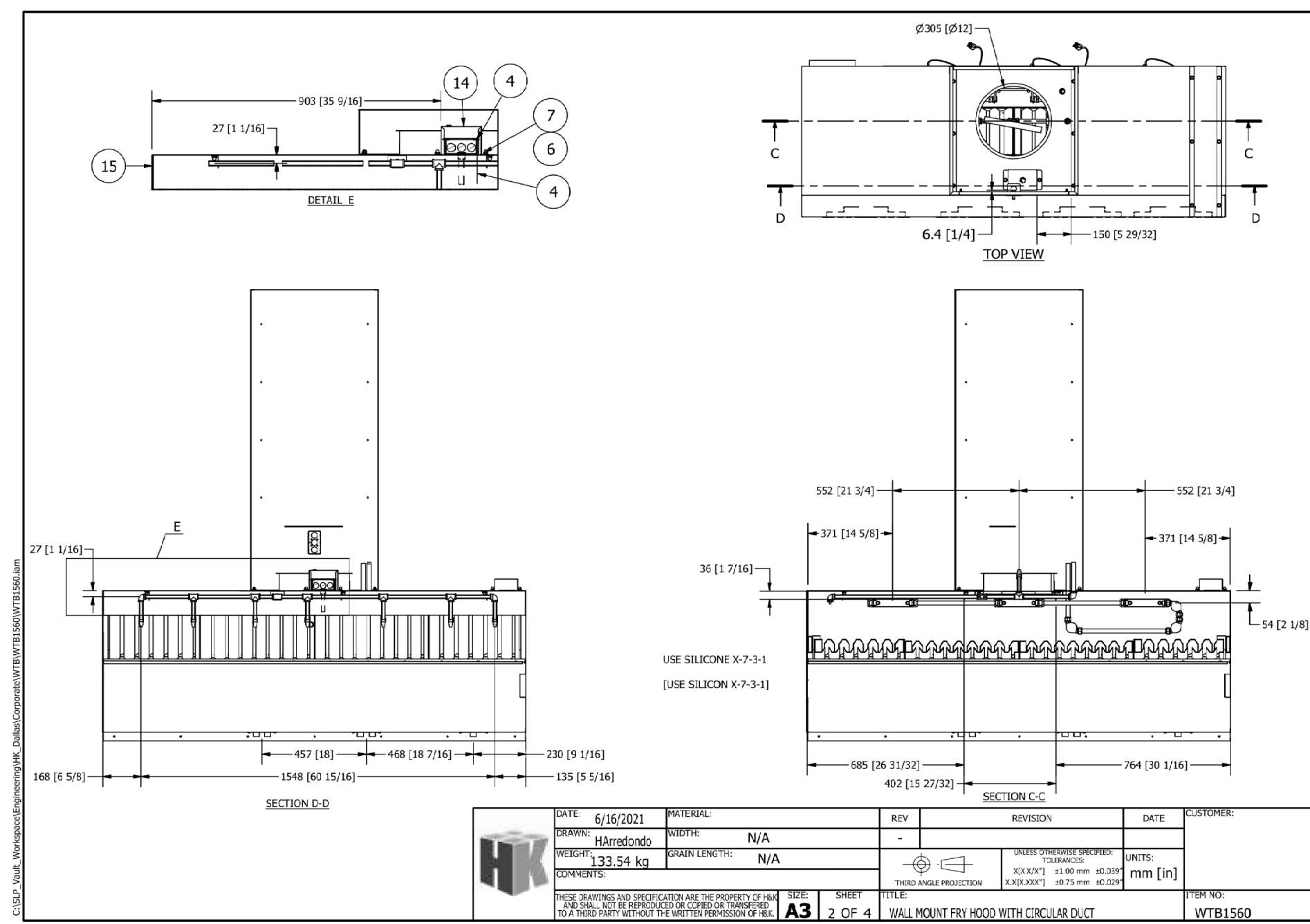
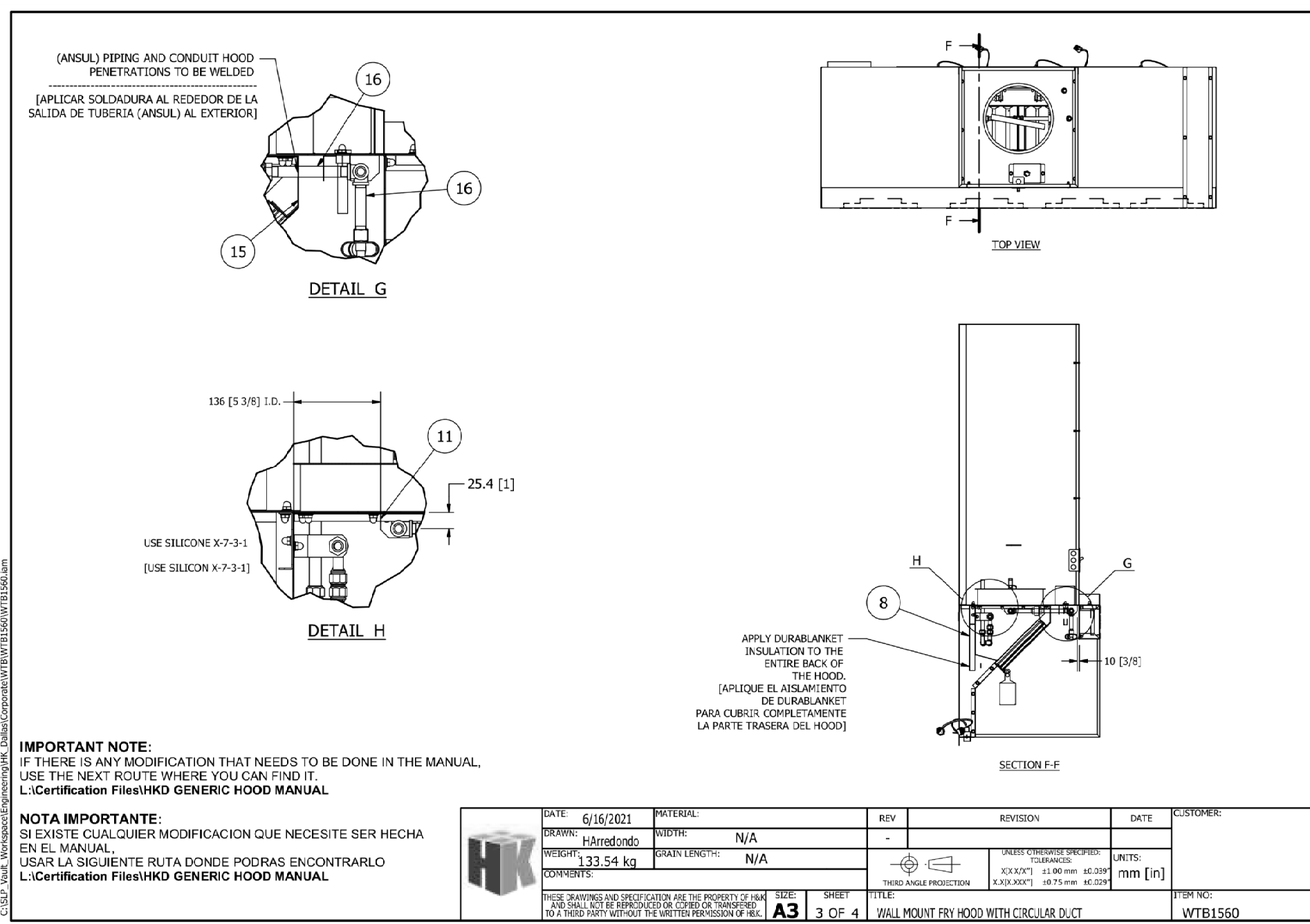
NOTE: INSTALL FLEXIBLE DUCTWORK SUPPORTS AT ALL ROUND NECK OUTLETS/INLETS UNLESS OTHERWISE NOTED ON DRAWINGS.

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**WHATABURGER #1646**  
10150 ULMRETON ROAD  
LARGO, FL 33771



Project No.: 1646  
Client Project No.:  
Drawing Title: **MECHANICAL DETAILS**  
Date: 07/25/2025 Phase: IFC  
Designed: DG Drawing No.:  
Drawn: DG  
Checked: JT **M5.1**



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 Downers Grove, IL 60515  
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53706

DATE: 07/25/2025  
 EXPIRATION DATE: 02/28/2027

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 DN: cn=Joseph G. Thomas, o=Sevan Design Solutions, ou=Engineering, email=jthomas@sevan.com, c=US  
 Date: 2025.07.25 07:46:57 -0500

Joseph G. Thomas

REV	DESCRIPTION	DATE
1	CITY OF LARGO COMMENTS	04/16/2025
3	DRAWING CLARIFICATIONS	07/25/2025
	ISSUED FOR CONSTRUCTION	07/25/2025

**WHATABURGER #1646**  
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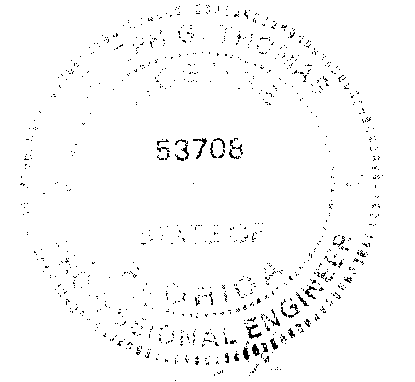


Project No.: 1646  
 Client Project No.:  
 Drawing Title:  
**MECHANICAL HOOD DETAILS**

Date: 07/25/2025 Phase: IFC  
 Designed: DG Drawing No.:  
 Drawn: DG  
 Checked: JT **M5.2**

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DN: cn=Joseph G. Thomas, o=How  
Engineers Inc., email=JGThomas@howengineers.com, ou=Wood Dale, st=Illinois, c=US  
Reason: I am approving this document.  
Date: 2025.07.25 07:47:12-0500

REV	DESCRIPTION	DATE
	ISSUED FOR PERMIT	02/04/2025
3	DRAWING CLARIFICATIONS	07/25/2025
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**FLEX DUCT SCHEDULE**

CFM RANGE	SIZE (DIAMETER) *
< 50	5
51 - 100	6
101 - 250	8
251 - 400	10
401 - 650	12
651 - 900	14
901 - 1300	16
1301 - 1800	18
1801 - 2300	20

\* ALL FLEX DUCT SHALL BE SIZED IN ACCORDANCE W/ FLEX DUCT SCHEDULE. PROVIDE RIGID REDUCER AT NECK OF AIR DEVICE, VAV INLET DUCT, ETC. TO TRANSITION FROM FLEX DUCT SIZE TO DIFFUSER INLET AND/OR EQUIPMENT CONNECTION SIZE. FLEX DUCT NOT TO EXCEED 5ft.

**EXHAUST FAN SCHEDULE**

TAG	TYPE	Manufacturer	Manufacturer Model Name	AIR FLOW (CFM)	E.S.P. (IN WG)	MOTOR RPM	FAN RPM	BHP	MOTOR HP	VOLTAGE	PHASE	WEIGHT (LBS)	NOTES
KEF-1	ROOF-MOUNTED CENTRIFUGAL UPBLAST	GREENHECK	CUE-140-VG	1995	1.00	1550	1517	0.00	0.75	0	1	0	
KEF-2	ROOF-MOUNTED CENTRIFUGAL UPBLAST	GREENHECK	CUE-120-VG	1216	0.75	1725	1415	0.00	0.50	0	1	0	

NOTES:  
1. PROVIDE INSULATED 12" ROOF CURB.  
2. PROVIDE WITH INTEGRAL DISCONNECT SWITCH.  
3. PROVIDE GREASE BOX.  
4. PROVIDE INSULATED AND VENTED 26" SQUARE ROOF CURB.  
5. PROVIDE INSULATED AND VENTED 22" SQUARE ROOF CURB.  
6. PROVIDE HINGED ACCESS KIT.

**AIR DEVICE SCHEDULE**

Type Mark	MANUFACTURER	MODEL	Max Flow (CFM)	FACE SIZE (IN)	NECK SIZE (IN)	MAX NC	PATTERN	SLOT LENGTH (IN)	SLOT WIDTH (IN)	SLOT QTY	SYSTEM CLASSIFICATION	COMMENTS
A6	TITUS	TMS	600	24 X 24	12	30	4-WAY				SUPPLY AIR	1

NOTES:  
1. PROVIDE BACK PAN INSULATION.  
2. PROVIDE PLASTER FRAME FOR MOUNTING IN GYP. CEILING.  
3. PROVIDE INSULATED PLENUM.  
4. CONTINUOUS LINEAR SLOT DIFFUSER TO BE INSTALLED IN GYP. CEILING. PROVIDE INSULATED SUPPLY AIR PLENUMS AS SCHEDULED FOR A COMPLETE SYSTEM.

**AIR BALANCE AND VENTILATION CALCULATION:**

TOTAL OUTSIDE AIR INTAKE = 3760 CFM  
TOTAL GREASE HOOD EXHAUST = 3211 CFM  
TOTAL RESTROOM EXHAUST = 300 CFM  
OUTSIDE AIRFLOW - (GREASE HOOD EXHAUST AIRFLOW + RESTROOM EXHAUST AIRFLOW) = NET POSITIVE AIRFLOW  
3760 CFM - (3211 + 300) = 249 CFM  
2023 FLORIDA MECHANICAL CODE VENTILATION AIRFLOW REQUIRED = 1281 CFM

**WHATABURGER #1646**  
10150 ULMRETON ROAD  
LARGO, FL 33771



Project No.: 1646

Client Project No.:

Drawing Title:

**MECHANICAL SCHEDULES**

Date: 07/25/2025

Phase: IFC

Designed: DG

Drawing No.:

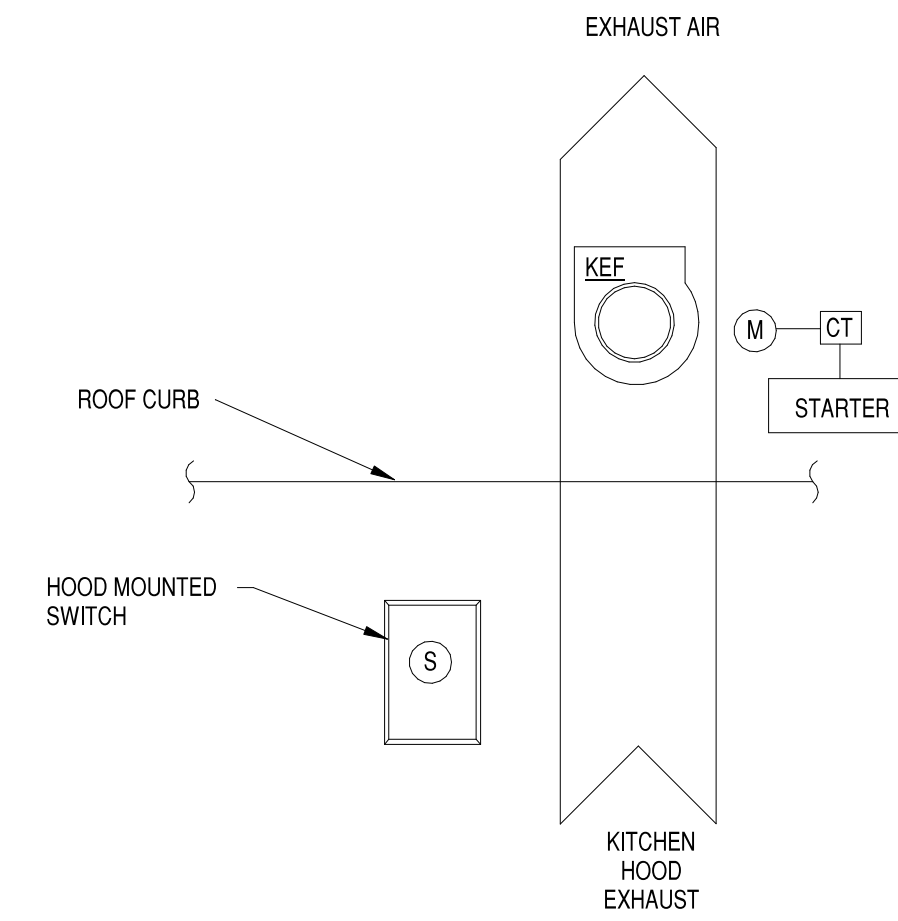
Drawn: DG

Checked: JT

**M6.1**

# CONTROL SYMBOLS

AE	ANALYZER ELEMENT	CO	CARBON MONOXIDE SENSOR
DDC	DIRECT DIGITAL CONTROL	←	COMMUNICATION SIGNAL
BMS	BUILDING MANAGEMENT SYSTEM	HPS	HIGH STATIC PRESSURE SENSOR
RDC	ROOFTOP UNIT DDC CONTROLLER	DA	DAMPER ACTUATOR
FACP	FIRE ALARM CONTROL PANEL	CV	CONTROL VALVE
DPI	DIFFERENTIAL PRESSURE INDICATOR	DX	DX COOLING COIL
DPS	DIFFERENTIAL PRESSURE SWITCH	HC	NATURAL GAS HEATING COIL
DPT	DIFFERENTIAL PRESSURE TRANSMITTER	HGR	HOT GAS REHEAT
EDH	ELECTRIC DUCT HEATER	SF	SUPPLY AIR FAN
EF	EXHAUST FAN		
FE	FLOW ELEMENT		
FLTR	FILTER		
FS	FLOW SWITCH		
H	HUMIDISTAT		
HL	HIGH TEMPERATURE LIMIT SWITCH		
M	MOTOR		
PCV	PRESSURE CONTROL VALVE		
PT	PRESSURE TRANSMITTER		
SMK	SMOKE DETECTOR		
T	TEMPERATURE SENSOR		
TCV	TEMPERATURE CONTROL VALVE		
TSL	LOW LIMIT THERMOSTAT (FREEZESTAT)		
TT	TEMPERATURE TRANSMITTER		
VFD	VARIABLE FREQUENCY DRIVE		
STARTER	MOTOR STARTER (PROVIDE CONTROL RELAY)		
CT	CURRENT TRANSDUCER		
OS	OCCUPANCY SENSOR		



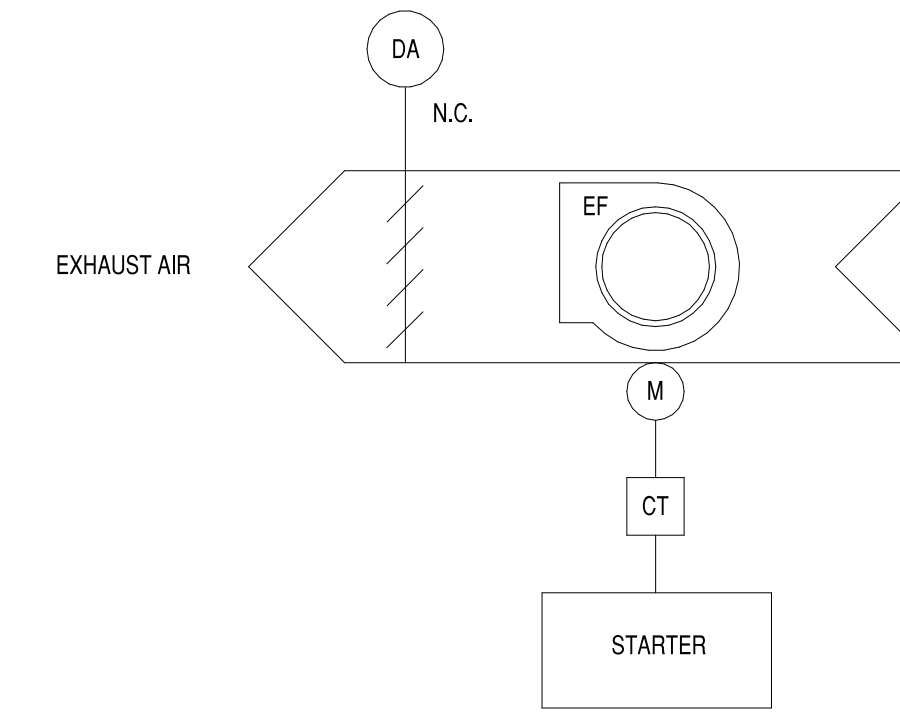
## SEQUENCE OF OPERATION

**OPERATING CONDITIONS - CONTINUOUS 24/7:**  
THE KITCHEN HOOD EXHAUST FAN SHALL RUN CONTINUOUSLY WHEN THE KITCHEN HOOD MOUNTED SWITCH IS ON.

**INTEGRATED ANSUL FIRE SUPPRESSION SYSTEM**  
UPON ACTIVATION OF THE INTEGRATED ANSUL FIRE SUPPRESSION SYSTEM DURING NORMAL KITCHEN OPERATION, THE KITCHEN HOOD EXHAUST FAN SHALL REMAIN ENERGIZED.

**FIRE/SMOKE CONTROL:**  
UPON SENSING DUCT SMOKE, THE KITCHEN EXHAUST FAN SHALL BE CYCLED OFF. FAN STATUS SHALL BE REPORTED TO THE BAS.

**C3 KITCHEN EXHAUST CONTROLS**  
N.T.S.



## SEQUENCE OF OPERATION

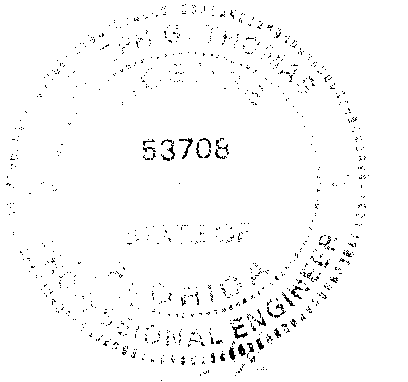
**OPERATING CONDITIONS:**  
THE GENERAL EXHAUST FAN SHALL BE INTERLOCKED WITH RESTROOM OCCUPANCY SENSORS. THE EXHAUST FAN SHUTOFF DAMPER SHALL BE INTERLOCKED WITH THE EXHAUST FAN TO OPEN WHEN THE FAN IS ENERGIZED AND CLOSE WHEN THE FAN IS DE-ENERGIZED.

**ALARMS:**  
ALARMS SHALL BE PROVIDED AS FOLLOWS:  
1. FAN FAILURE: FAN COMMANDED ON BUT STATUS IS OFF.  
2. FAN IN HAND: FAN COMMANDED OFF BUT STATUS IS ON.  
3. FAN BELT FAILURE: MOTOR AMPERAGE READS ZERO AS MEASURED BY CURRENT TRANSDUCER.

**C4 GENERAL EXHAUST CONTROLS**  
N.T.S.

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**WHATABURGER #1646**  
10150 ULMRETON ROAD  
LARGO, FL 33771



Project No.: 1646

Client Project No.:

Drawing Title:

**MECHANICAL CONTROLS**

Date: 07/25/2025 Phase: IFC

Designed: DG Drawing No.:

Drawn: DG

Checked: JT **M7.1**