

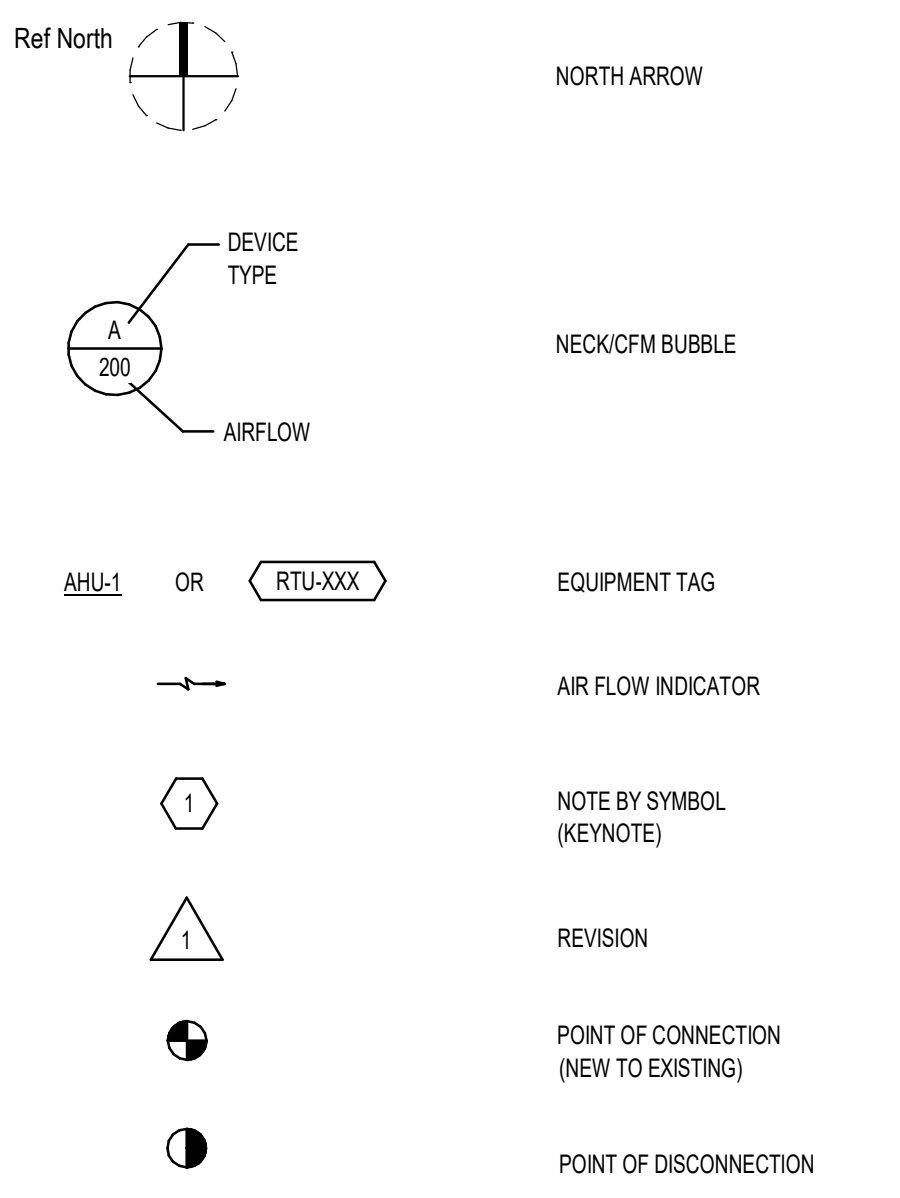
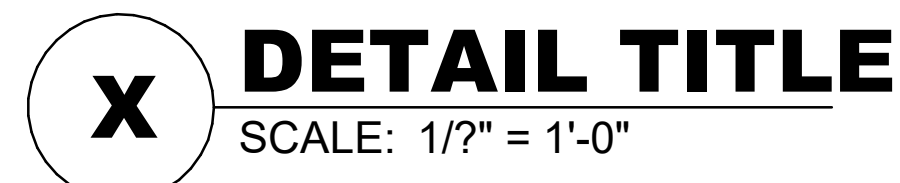
MECHANICAL SYMBOLS ABBREVIATIONS

(SOME SYMBOLS MAY NOT BE USED ON THE DRAWINGS)

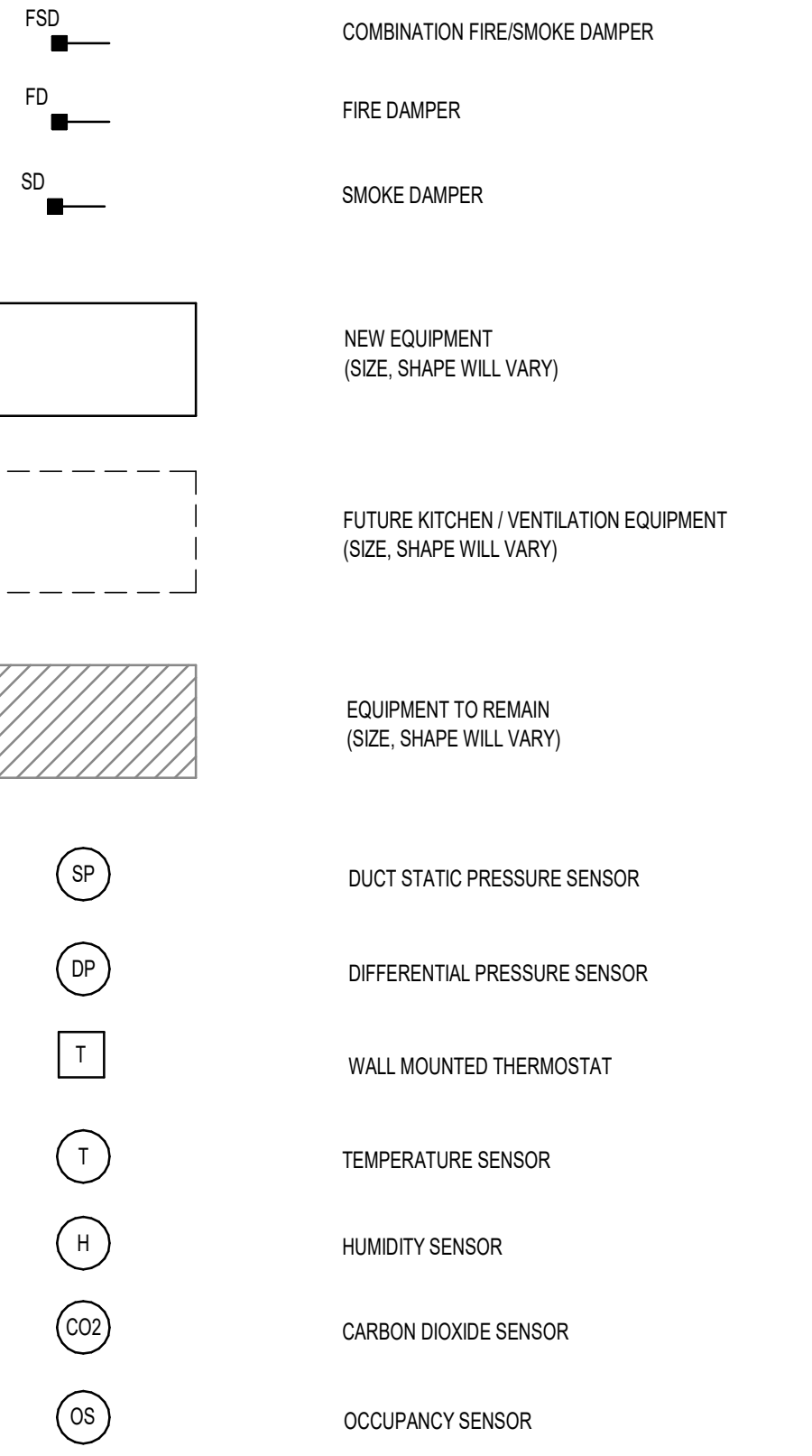
%	PERCENT
ABS	ABSOLUTE
ACC	AIR-COOLED CHILLER
ACU	AIR CONDITIONING UNIT
AD	ACCESS DOOR
AF	AIR FOIL
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
ALT	ALTITUDE
AMB	AMBIENT
AMCA	AIR MOVEMENT AND CONTROL ASSOCIATION
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
ARI	AIR-CONDITIONING AND REFRIGERATION INSTITUTE
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION, AND AIR-CONDITIONING ENGINEERS
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS
AVG	AVERAGE
B	BOILER
BD	BACKDRAFT DAMPER
BG	BELOW GRADE
BEMCS	BUILDING ENERGY MANAGEMENT AND CONTROL SYSTEM
BHP	BRAKE HORSEPOWER
BI	BACKWARD INCLINED
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
CD	COLD DECK
CF	CUBIC FEET
CFM	CUBIC FEET PER MINUTE
CHET	CHILLED WATER EXPANSION TANK
CMPR	COMPRESSOR
COND	CONDENSER
CRAC	COMPUTER ROOM AIR CONDITIONER
CT	COOLING TOWER
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CU IN	CUBIC INCH
dB	DECIBEL
DB	DRY BULB
DCP	DISTRIBUTED CONTROL PANEL
DEG	DEGREE
DIA	DIAMETER
DWG	DRAWING
DX	DIRECT-EXPANSION
EAT	ENTERING AIR TEMPERATURE
EDH	ELECTRIC DUCT HEATER
EF	EXHAUST FAN
EFF	EFFICIENCY
EL	ELEVATION
ENT	ENTERING
ESP	EXTERNAL STATIC PRESSURE
EXP	EXPANSION
F	FAHRENHEIT
FA	FACE AREA
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FH	FUME HOOD
FLEX	FLEXIBLE
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FRP	FIBERGLASS REINFORCED PIPE
FS	FLOW SWITCH
FSD	COMBINATION FIRE-SMOKE DAMPER
FT	FEET OR FOOT
FTU	FAN TERMINAL UNIT
GA	GAUGE OR GAGE
GAL	GALLONS
GALV	GALLVANIZED
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GRAINS
H	ENTHALPY
HD	HEAD
HD	HOT DECK
HG	HEAT GAIN OR MERCURY
HGT	HEIGHT
HP	HORSEPOWER
HPS	HIGH PRESSURE STEAM
HR	HOUR
HTHW	HIGH TEMPERATURE HEATING WATER
HVAC	HEATING/VENTILATING/AIR-CONDITIONING
HVU	HEATING AND VENTILATING UNIT
HWR	HEATING HOT WATER RETURN
HWS	HEATING HOT WATER SUPPLY
HZ	FREQUENCY
ID	INSIDE DIAMETER
IPS	INTERNATIONAL PIPE STANDARD
ips	IRON PIPE SIZE
K	THERMAL CONDUCTIVITY
KH	KITCHEN HOOD
KW	KILOWATT

LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LF	LINEAR FEET
LG	LENGTH
LPS	LOW PRESSURE STEAM
LTHW	LOW TEMPERATURE HOT WATER
LWT	LEAVING WATER TEMPERATURE
MCA	MINIMUM CIRCUIT AMPACITY
MOCP	MAXIMUM OVERCURRENT PROTECTION
MAX	MAXIMUM
MBH	BTU PER HOUR (THOUSAND)
MIN	MINIMUM
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
NA	NOT APPLICABLE
NC	NOISE CRITERIA
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OBD	OPOSED BLADE DAMPER
OD	OUTSIDE DIAMETER
PD	PUMPED DISCHARGE
PBD	PARALLEL BLADE DAMPER
PH	PHASE (ELECTRICAL)
PPM	PARTS PER MILLION
PRESS	PRESSURE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIA	PSI ABSOLUTE
PSIG	PSI GAGE
R	RANKINE
R-22	REFRIGERANT (NUMBER INDICATES TYPE)
RA	RETURN AIR
RAF	RELIEF AIR FAN
RECIRC	RECIRCULATE
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SC	SHADING COEFFICIENT
SCFM	CUBIC FEET PER MINUTE-STANDARD CONDITIONS
SD	SMOKE DAMPER
SEC	SECOND
SF	SQUARE FEET
SG	SPECIFIC GRAVITY
SHG	SENSIBLE HEAT GAIN
SHR	SENSIBLE HEAT RATIO
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SQ	SQUARE
SSD	SUB-SOIL DRAINAGE
STD	STANDARD
SUCT	SUCTION
T	TEMPERATURE SENSOR
TD	TEMPERATURE DIFFERENCE
TEMP	TEMPERATURE
TOC	TOP OF CONCRETE
TOD	TOP OF DUCT
TONS	TONS OF REFRIGERATION
TOP	TOP OF PIPE
TOS	TOP OF STEEL
TSP	TOTAL STATIC PRESSURE
T-STAT	THERMOSTAT
TU	TERMINAL UNIT
TYP	TYPICAL
U	HEAT TRANSFER COEFFICIENT
UH	UNIT HEATER
UF	UNDER FLOOR
V	VOLT
VA	VOLT AMPERE
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VENT	VENTILATION
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VOL	VOLUME
VLP	VELOCITY PRESSURE
W	HUMIDITY RATIO OR WATT
W.C.	WATER COLUMN
W.G.	WATER GAUGE
WB	WET BULB
WT	WEIGHT
YR	YEAR

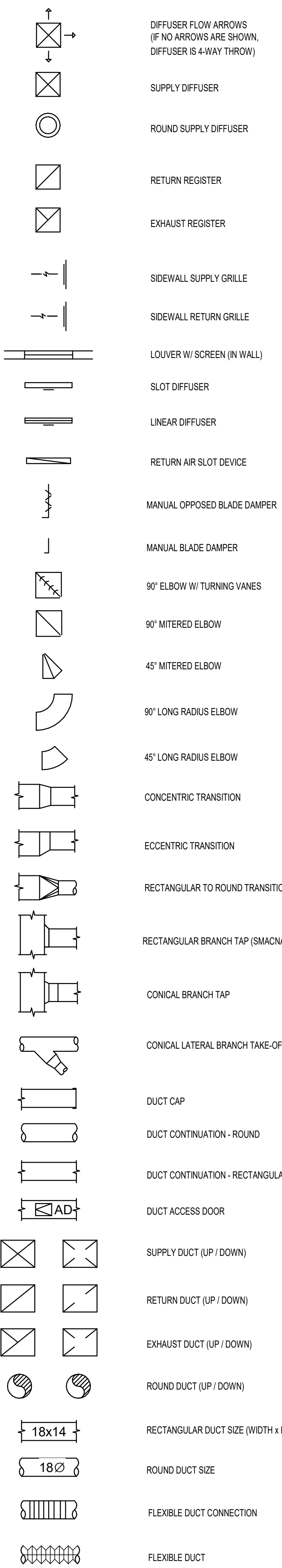
SHEET SYMBOLS



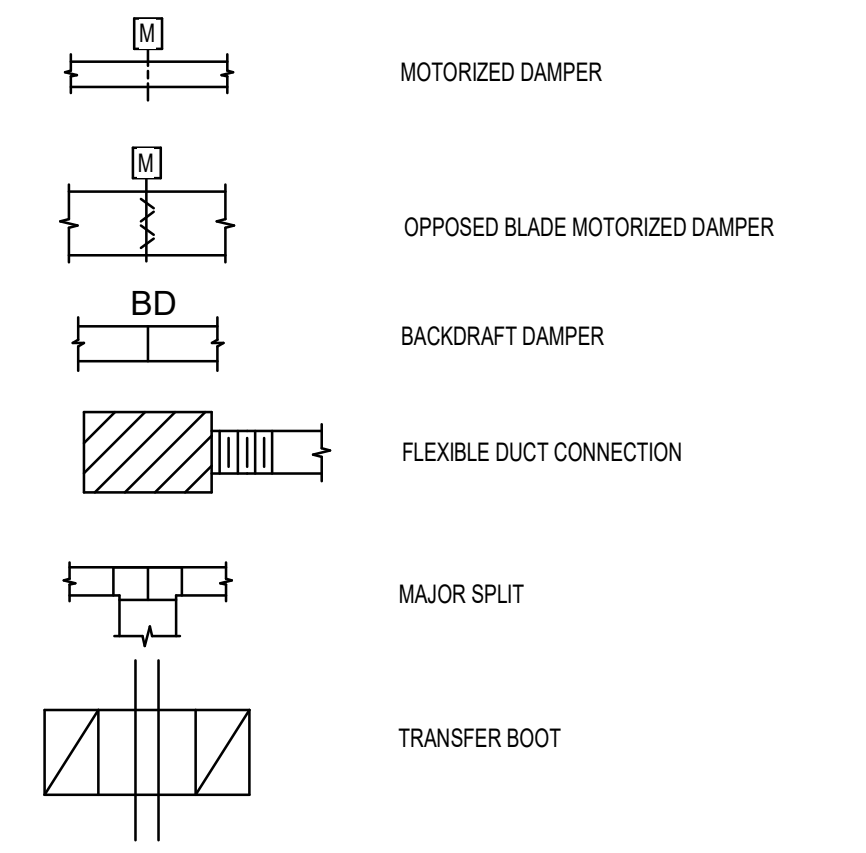
MECHANICAL EQUIPMENT



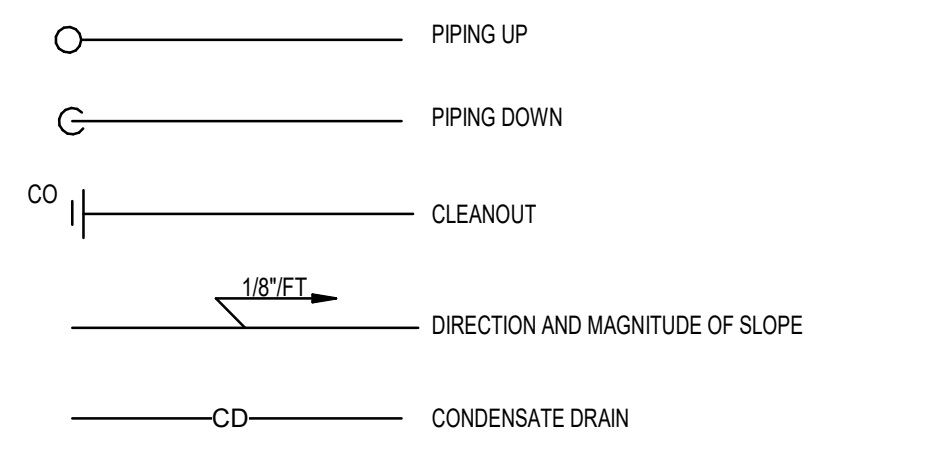
DUCTWORK



DUCTWORK



PIPING SYMBOLS



HVAC DESIGN CRITERIA

<u>ASHRAE FUNDAMENTALS - 2021:</u>	<u>SUMMER COOLING DESIGN (0.4%):</u>
WEATHER STATION - JOHNSTON, NC	95.0 °F DRY BULB
ELEVATION: 165'	80.7 °F WET BULB
<u>WINTER HEATING DESIGN (99.6%):</u>	
19.3 °F DRY BULB	

GENERAL NOTES

- PERFORM WORK IN ACCORDANCE WITH THE LATEST EDITIONS, REVISIONS, AMENDMENTS OR SUPPLEMENTS OF APPLICABLE STATUTES, ORDINANCES, CODES OR REGULATIONS OF FEDERAL, STATE AND LOCAL AUTHORITIES HAVING JURISDICTION IN EFFECT ON THE DATE BIDS ARE RECEIVED.
- PROVIDE ALL SYSTEMS AS COMPLETE WITH ALL REQUIRED ACCESSORIES FOR CODE COMPLIANCE.
- REFER TO SPECIFICATIONS FOR MATERIALS AND METHODS FOR CONSTRUCTION.
- DUCTWORK SIZES SHOWN ARE FREE AIR STREAM DIMENSIONS.
- INSTALL DUCTWORK AND PIPING TO PROVIDE THE MAXIMUM POSSIBLE CLEAR HEIGHT UNDERNEATH. (BETWEEN STRUCTURE OR CEILING AND TOP OF DUCT).
- WHERE APPROVAL CODES HAVE BEEN ESTABLISHED BY OSHA, UNDERWRITER'S LABORATORY, AMERICAN CODES, ANSI, ASME, ASA, ASHRAE, ASTM, ARI, NEL, NFPA, SMACNA, OR THE STATE FIRE INSURANCE REGULATORY BODY, FOLLOW THESE STANDARDS WHETHER OR NOT INDICATED ON THE DRAWINGS AND SPECIFICATIONS.
- PROVIDE THE ENTIRE SYSTEM AND ITS COMPONENT ITEMS OF EQUIPMENT IN OPERATING CONDITION FREE OF OBJECTIONABLE VIBRATION OR NOISE.
- COORDINATE WORK SO THAT INTERFERENCES BETWEEN PIPING, DUCTWORK, EQUIPMENT, PLUMBING WORK, ELECTRICAL WORK, AND BUILDING STRUCTURE WILL BE AVOIDED.
- FURNISH ACCESS DOORS FOR INSTALLATION IN WALLS AND CEILINGS WHERE ACCESS IS REQUIRED TO CONCEALED MECHANICAL EQUIPMENT, VALVES, DAMPERS, CONTROLS AND OTHER DEVICES.
- COORDINATE THE EXACT LOCATION OF DRAIN AND MECHANICAL EQUIPMENT LOCATIONS WITH MECHANICAL, ARCHITECTURAL, AND STRUCTURAL DRAWINGS PRIOR TO INSTALLATION.
- RECTANGULAR ELBOWS SHALL BE LONG-RADIUS ELBOWS UNLESS OTHERWISE SHOWN OR NOTED. SUPPLY AIR STANDARD NON-RADIUS 90° ELBOWS SHALL HAVE TURNING VANES.



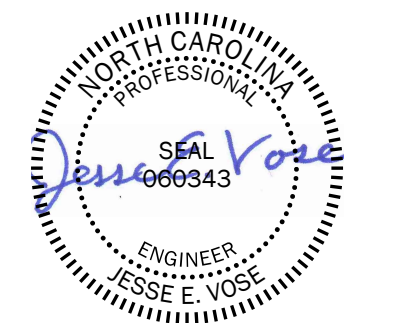
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Prototype Version
03.31.2025 2025 Q1 PT22S Prototype Release

Date	Description
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Seal / Signature



Project Name: WHATABURGER GARNER, NC
LICENSE EXPIRES 12/31/2025

Date: XX.XX.2025

Project Number: 2301792

Description: GENERAL NOTES, SYMBOLS AND ABBREVIATIONS

Scale: NOT TO SCALE

M0.1

REFRIGERATION CALCULATIONS PER ASHRAE 15/34-2022, TABLE 4-2:					
AREA SERVED	ICE MAKERS	FREEZER 108	COOLER 109	RTU-1 (KITCHEN)	RTU-2 (DINING)
REFRIGERANT TYPE	404A	448A	448A	454B	454B
REFRIGERANT CLASSIFICATION	A1	A1	A1	A2L	A2L
SYSTEM CLASSIFICATION	DIRECT SYSTEM, HIGH PROBABILITY	DIRECT SYSTEM, HIGH PROBABILITY	DIRECT SYSTEM, HIGH PROBABILITY	DIRECT SYSTEM, HIGH PROBABILITY	DIRECT SYSTEM, HIGH PROBABILITY
MAX REFRIG. QTY (LBS./1000 CU. FT.)	31	24	24	3.1	3.1
SPACE VOLUME (CU. FT.)	10772	698	698	10772	8126
MAX. SYSTEM REFRIG. (LBS.)	347.5	16.75	16.75	33.4	25.2
PROPOSED SYSTEM REFRIG. (LBS.)	43.5 (14.5UNIT)	14.3	11.6	28.5	28.5
NOTES	1.3	1.3	1.3	2.3	2.3

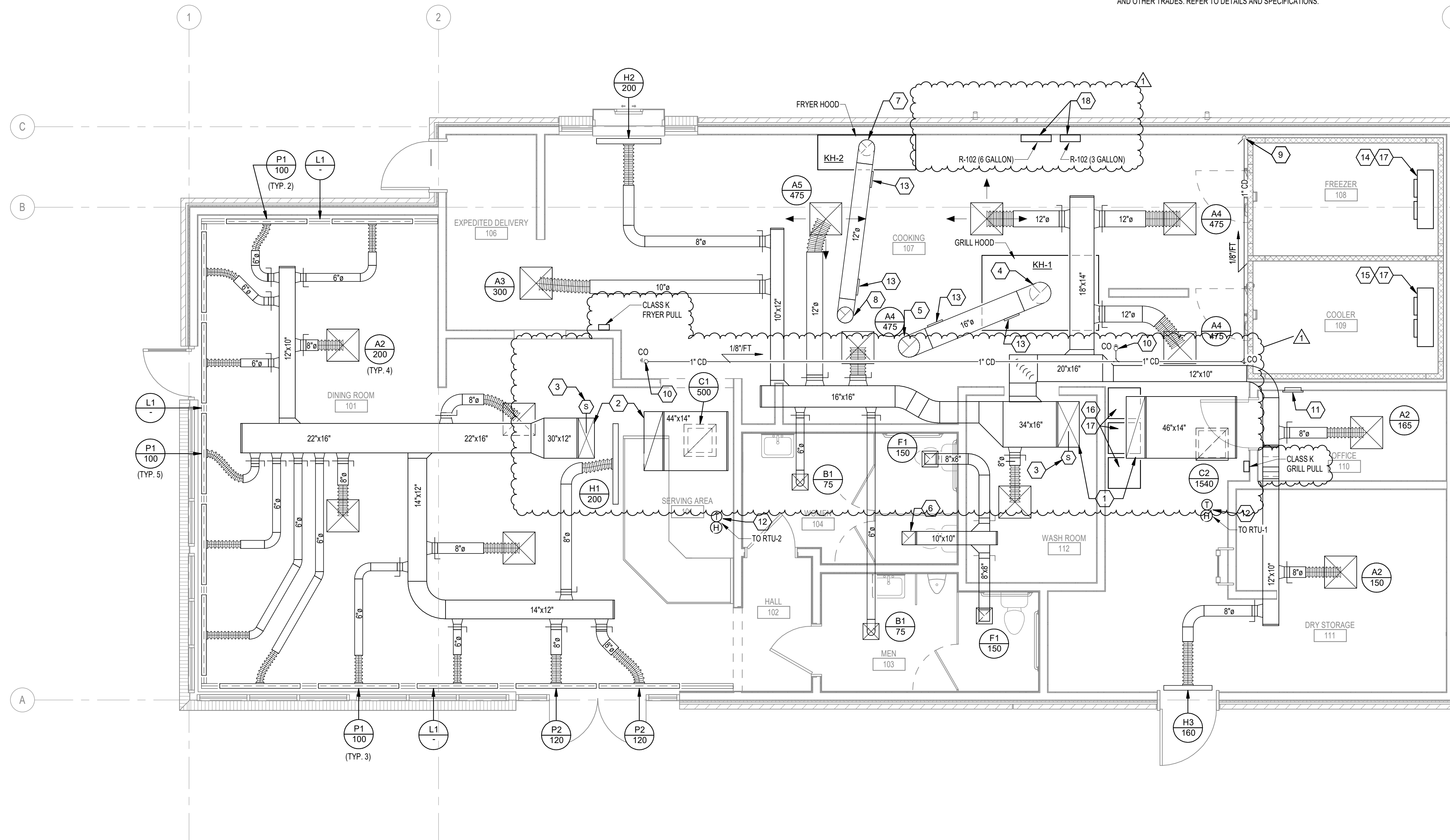
- NOTES:
- PROPOSED REFRIGERANT VOLUME IS BASED ON A MAXIMUM LINE LENGTH OF 50 FEET. FINAL SIZING OF REFRIGERANT LINES AND DETERMINATION OF REFRIGERANT VOLUME IS THE RESPONSIBILITY OF THE EQUIPMENT SUPPLIER.
 - PROPOSED REFRIGERANT VOLUME IS BASED ON THE FACTORY PROVIDED CHARGE OF THE LARGEST REFRIGERANT CIRCUIT WITHIN THE UNIT. ACTUAL SITE CHARGE MAY DIFFER.
 - INSTALLED REFRIGERANT CHARGE SHALL COMPLY WITH ASHRAE 34 REQUIREMENTS AND SHALL NOT EXCEED THE MAXIMUM AMOUNT SPECIFIED IN THE TABLE ABOVE. EQUIPMENT SUPPLIER AND MECHANICAL CONTRACTOR SHALL COMPLY WITH THESE REQUIREMENTS AND SHALL ADVISE ENGINEER AND GC IF UNABLE TO COMPLY.

MECHANICAL KEY NOTES

- 24"x22" SUPPLY DUCT AND 44"x16" RETURN DUCT UP TO RTU-1. PROVIDE DUCT TRANSITIONS TO MATCH UNIT CONNECTION SIZE.
- 30"x12" SUPPLY DUCT AND 44"x14" RETURN DUCT UP TO RTU-2. PROVIDE DUCT TRANSITIONS TO MATCH UNIT CONNECTION SIZE.
- DUCT MOUNTED SUPPLY AIR SMOKE DETECTOR, FURNISHED BY RTU MANUFACTURER, INSTALLED IN DUCT BY MC, AND WIRED BY FA CONTRACTOR.
- CONNECT KITCHEN EXHAUST HOOD ABOVE GRILL UP TO KEF-1 WITH 16" DIA. PRE-FABRICATED UL 1978 LISTED AND LABELED GREASE DUCT (DURAVENT DIS1 OR EQUAL). PROVIDE TRANSITION ABOVE CEILING TO MATCH HOOD CONNECTION SIZE. CONNECT TO HOOD VIA MANUFACTURER'S UL METHOD FOR GREASE AND SMOKE TIGHT JOINT. INSTALL ACCORDING TO MANUFACTURER'S DIRECTIONS FOR NFPA 96 COMPLIANCE.
- 16" GREASE EXHAUST DUCT UP TO KEF-1 ON ROOF, RE: A2M5.1
- 10"x10" EXHAUST DUCT UP TO EF-1 ON ROOF, RE: A1M5.1
- CONNECT KITCHEN EXHAUST HOOD ABOVE FRYER UP TO KEF-2 WITH 12" DIA. PRE-FABRICATED UL 1978 LISTED AND LABELED GREASE DUCT (DURAVENT DIS1 OR EQUAL). PROVIDE TRANSITION ABOVE CEILING TO MATCH HOOD CONNECTION SIZE. CONNECT TO HOOD VIA MANUFACTURER'S UL METHOD FOR GREASE AND SMOKE TIGHT JOINT. INSTALL ACCORDING TO MANUFACTURER'S DIRECTIONS FOR NFPA 96 COMPLIANCE.
- 12" GREASE EXHAUST DUCT UP TO KEF-2 ON ROOF, RE: A2M5.1
- 1" CONDENSATE DOWN TO FLOOR. TERMINATE CONDENSATE AT FLOOR SINK WITH 1" AIR GAP.
- FULLY INSULATED 1" COPPER CONDENSATE PIPE UP THROUGH ROOF, RE: C4M5.1
- THE PILOT RDM SYSTEM CONTROLLER PANEL SHALL BE MOUNTED AND INSTALLED FLUSH IN THE MANAGER'S OFFICE AT 5' AFF TO CENTER. COORDINATE FINAL LOCATION OF PANEL WITH OWNER AND GC.
- TEMPERATURE AND HUMIDITY SENSORS "T" AND "H" TO BE CEILING MOUNTED AND TIED INTO THE BUILDING CONTROL SYSTEM.
- LISTED GREASE DUCT ACCESS DOOR ASSEMBLY (DIS1-0A0L26 OR EQUAL). INSTALL ON SIDE OF DUCT.
- KITCHEN FREEZER EVAPORATOR UNIT. FURNISHED BY OWNER, INSTALLED BY MC IN COORDINATION WITH GC.
- KITCHEN COOLER EVAPORATOR UNIT. FURNISHED BY OWNER, INSTALLED BY MC IN COORDINATION WITH GC.
- KITCHEN ICEMAKER EVAPORATOR UNIT. FURNISHED BY OWNER, INSTALLED BY MC IN COORDINATION WITH GC.
- MECHANICAL CONTRACTOR TO PROVIDE EQUIPMENT SUPPORTS, REFRIGERANT LINES, AND COMPLETE EQUIPMENT INSTALLATION. COORDINATE EXACT LOCATION OF EQUIPMENT ON-SITE AND ROUTE REFRIGERANT PIPING THROUGH ROOF PENETRATION. COORDINATE PIPING AND UNIT INSTALLATION REQUIREMENTS AND STARTUP WITH KITCHEN EQUIPMENT MANUFACTURER AND GC.
- REMOTE ANSUL SYSTEM MOUNTED ON WALL. CONFIRM FINAL LOCATION OF STATION WITH OWNER, ARCHITECT, AND OTHER TRADES. REFER TO DETAILS AND SPECIFICATIONS.

MECHANICAL GENERAL NOTES

- REFER TO M0.1 FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS.
- SMOKE DETECTORS SHALL BE PROVIDED AND INSTALLED BY THE RTU MANUFACTURER IN THE SUPPLY AND RETURN SIDES OF RTU. COORDINATE INSTALLATION AND CONNECTION OF SMOKE DETECTORS WITH FA CONTRACTOR, EC, AND GC. REFERENCE M6.1 FOR RTU SCHEDULE ACTIVATION OF SMOKE DETECTORS SHALL SHUT DOWN RTU AND ACTIVATE THE AUDIBLE AND VISUAL SIGNAL PROVIDED.
- PROVIDE NECESSARY ACCESS AND CLEARANCES AROUND ALL EQUIPMENT ACCORDING TO MANUFACTURER'S RECOMMENDATION.
- MAINTAIN A MINIMUM DISTANCE OF 10'-0" BETWEEN ALL ROOF MOUNTED EQUIPMENT AND EDGE OF ROOF WITH THE EXCEPTION OF EQUIPMENT LOCATED BEHIND AN ARCHITECTURAL GUARD (MINIMUM 42" HIGH) OR PROVIDED WITH AN APPROVED FALL ARREST ANCHORAGE CONNECTOR DEVICE.
- MAINTAIN A MINIMUM DISTANCE OF 10'-0" BETWEEN MECHANICAL AIR INTAKES AND ALL MECHANICAL EXHAUSTS OR PLUMBING VENTS.
- AN APPROVED AGENCY SHALL BE HIRED BY THE OWNER AS PART OF THIS PROJECT TO PROVIDE A COMMISSIONING PLAN THAT INCLUDES THE FOLLOWING ITEMS:
 - A NARRATIVE DESCRIPTION OF THE ACTIVITIES THAT WILL BE ACCOMPLISHED DURING EACH PHASE OF COMMISSIONING, INCLUDING THE PERSONNEL INTENDED TO ACCOMPLISH EACH OF THE ACTIVITIES.
 - A LISTING OF THE SPECIFIC EQUIPMENT, APPLIANCES OR SYSTEMS TO BE TESTED AND A DESCRIPTION OF THE TESTS TO BE PERFORMED.
 - FUNCTIONS TO BE TESTED INCLUDING, BUT NOT LIMITED TO, CALIBRATIONS AND ECONOMICIZER CONTROLS.
 - CONDITIONS UNDER WHICH THE TEST WILL BE PERFORMED. TESTING SHALL AFFIRM WINTER AND SUMMER DESIGN CONDITIONS AND FULL OUTSIDE AIR CONDITIONS.
 - MEASURABLE CRITERIA FOR PERFORMANCE.
- KITCHEN HOODS, ANSUL FIRE SUPPRESSION SYSTEM AND HOOD CONTROLS SHALL BE OWNER-FURNISHED AND CONTRACTOR-INSTALLED. COORDINATE WITH GC.
- FINAL LOCATION OF ALL TEMPERATURE AND HUMIDITY SENSORS TO BE COORDINATED IN FIELD. LOCATE SENSORS SUCH THAT THEY ARE ACCESSIBLE, PROTECTED, AND IN AN AREA OF UNOBSTRUCTED AIR CIRCULATION.
- ALL TESTS AND BALANCES TO BE PERFORMED BY A THIRD PARTY - NOT BY MEP SUBCONTRACTOR.
- PRIOR TO BEGINNING WORK, COORDINATE COMPLETE INSTALLATION OF ALL ROOFTOP EQUIPMENT AND ACCESSORIES WITH GC AND OTHER TRADES.
- VERIFY RTUS ARE LEVEL AND CONDENSATE IS DRAINING PROPERLY.



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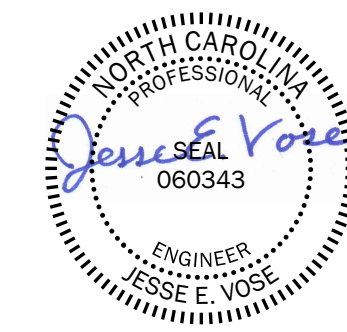
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Prototype Version
03.31.2025 2025 Q1 PT22S Prototype Release

Date	Description
1 10.24.2025	MECH. EQUIP. AND SITE UPDATE

Seal / Signature



Project Name
WHATABURGER GARNER, NC

Date: XX.XX.2025

Project Number
2301792

Description
MECHANICAL FLOOR PLAN

Scale
As indicated Ref North

M1.1

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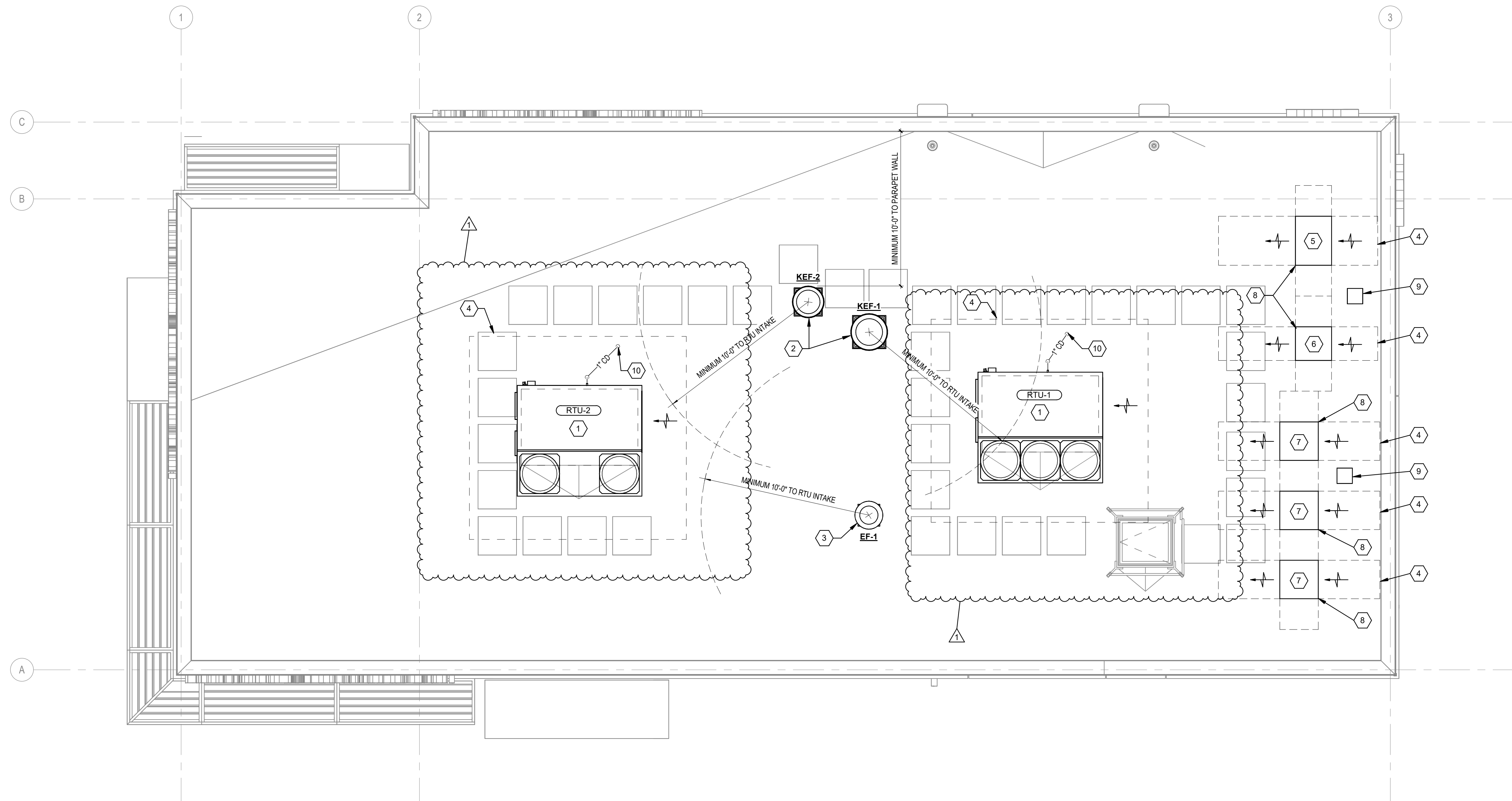
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MECHANICAL KEY NOTES

- 1 ROOFTOP HVAC UNIT MOUNTED ON PRE-FABRICATED CURB, RE: C3M5.1
- 2 CENTRIFUGAL UPBLAST GREASE HOOD EXHAUST FAN MOUNTED ON MANUFACTURER PROVIDED ROOF CURB, RE: A2M5.1
- 3 CENTRIFUGAL DOWNBLAST EXHAUST FAN MOUNTED ON MANUFACTURER PROVIDED ROOF CURB, RE: A1M5.1
- 4 REQUIRED UNIT CLEARANCE PER BOB MANUFACTURER. COORDINATE EXACT CLEARANCE REQUIREMENTS WITH INSTALLED EQUIPMENT.
- 5 KITCHEN FREEZER CONDENSING UNIT MOUNTED ON ROOFTOP. FURNISHED BY OWNER. INSTALLED BY MC IN COORDINATION WITH GC. PROVIDE R448A REFRIGERANT, 3/8" LIQUID LINE AND 7/8" SUCTION LINE BETWEEN INDOOR AND OUTDOOR UNIT PER EQUIPMENT MFR.
- 6 KITCHEN COOLER CONDENSING UNIT MOUNTED ON ROOFTOP. FURNISHED BY OWNER. INSTALLED BY MC IN COORDINATION WITH GC. PROVIDE R448A REFRIGERANT, 3/8" LIQUID LINE AND 5/8" SUCTION LINE BETWEEN INDOOR AND OUTDOOR UNIT PER EQUIPMENT MFR.
- 7 KITCHEN ICEMAKER CONDENSING UNIT MOUNTED ON ROOFTOP. FURNISHED BY OWNER. INSTALLED BY MC IN COORDINATION WITH GC. PROVIDE R404A REFRIGERANT, 3/8" LIQUID LINE AND 7/8" SUCTION LINE BETWEEN INDOOR AND OUTDOOR UNIT PER EQUIPMENT MFR.
- 8 MECHANICAL CONTRACTOR TO PROVIDE EQUIPMENT SUPPORTS, REFRIGERANT LINES, AND COMPLETE EQUIPMENT INSTALLATION. COORDINATE EXACT LOCATION OF EQUIPMENT ON-SITE AND ROUTE REFRIGERANT PIPING THROUGH ROOF PENETRATION. COORDINATE PIPING AND UNIT INSTALLATION REQUIREMENTS AND STARTUP WITH KITCHEN EQUIPMENT MANUFACTURER AND GC.
- 9 REFRIGERATION PIPING ROOF PENETRATION, RE: C4M5.1
- 10 ROUTE CONDENSATE LINE DOWN THROUGH ROOF. RE: A1M1.1 FOR CONTINUATION AND RE: C4M5.1 FOR DETAIL.

MECHANICAL GENERAL NOTES

- A. REFER TO M0.1 FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS.
- B. SMOKE DETECTORS SHALL BE PROVIDED AND INSTALLED BY THE RTU MANUFACTURER IN THE SUPPLY AND RETURN SIDES OF RTU. COORDINATE INSTALLATION AND CONNECTION OF SMOKE DETECTORS WITH FA CONTRACTOR, EC, AND GC. REFERENCE M6.1 FOR RTU SCHEDULE ACTIVATION OF SMOKE DETECTORS SHALL SHUT DOWN RTU AND ACTIVATE THE AUDIBLE AND VISUAL SIGNAL PROVIDED.
- C. PROVIDE NECESSARY ACCESS AND CLEARANCES AROUND ALL EQUIPMENT ACCORDING TO MANUFACTURER'S RECOMMENDATION.
- D. MAINTAIN A MINIMUM DISTANCE OF 10'-0" BETWEEN ALL ROOF MOUNTED EQUIPMENT AND EDGE OF ROOF WITH THE EXCEPTION OF EQUIPMENT LOCATED BEHIND AN ARCHITECTURAL GUARD (MINIMUM 42" HIGH) OR PROVIDED WITH AN APPROVED FALL ARREST ANCHORAGE CONNECTOR DEVICE.
- E. MAINTAIN A MINIMUM DISTANCE OF 10'-0" BETWEEN MECHANICAL AIR INTAKES AND ALL MECHANICAL EXHAUSTS OR PLUMBING VENTS.
- F. AN APPROVED AGENCY SHALL BE HIRED BY THE OWNER AS PART OF THIS PROJECT TO PROVIDE A COMMISSIONING PLAN THAT INCLUDES THE FOLLOWING ITEMS:
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 - FUNCTIONS TO BE TESTED INCLUDING, BUT NOT LIMITED TO, CALIBRATIONS AND ECONOMICIZER CONTROLS.
 - CONDITIONS UNDER WHICH THE TEST WILL BE PERFORMED. TESTING SHALL AFFIRM WINTER AND SUMMER DESIGN CONDITIONS AND FULL OUTSIDE AIR CONDITIONS.
 - MEASURABLE CRITERIA FOR PERFORMANCE.
- G. KITCHEN HOODS, ANSUL FIRE SUPPRESSION SYSTEM AND HOOD CONTROLS SHALL BE OWNER-FURNISHED AND CONTRACTOR-INSTALLED. COORDINATE WITH GC.
- H. FINAL LOCATION OF ALL TEMPERATURE AND HUMIDITY SENSORS TO BE COORDINATED IN FIELD. LOCATE SENSORS SUCH THAT THEY ARE ACCESSIBLE, PROTECTED, AND IN AN AREA OF UNOBSTRUCTED AIR CIRCULATION.
- I. ALL TESTS AND BALANCES TO BE PERFORMED BY A THIRD PARTY - NOT BY MEP SUBCONTRACTOR.
- J. PRIOR TO BEGINNING WORK, COORDINATE COMPLETE INSTALLATION OF ALL ROOFTOP EQUIPMENT AND ACCESSORIES WITH GC AND OTHER TRADES.
- K. VERIFY RTUS ARE LEVEL AND CONDENSATE IS DRAINING PROPERLY.



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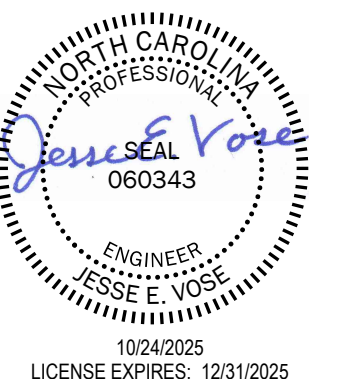
Prototype Version

03.31.2025 2025 Q1 PT22S Prototype Release

△ Date Description

1 10.24.2025 MECH. EQUIP. AND SITE UPDATE

Seal / Signature



10/24/2025
LICENSE EXPIRES: 12/31/2025

Project Name

WHATABURGER GARNER, NC

Date: XX.XX.2025

Project Number

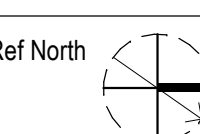
2301792

Description

MECHANICAL ROOF PLAN

Scale

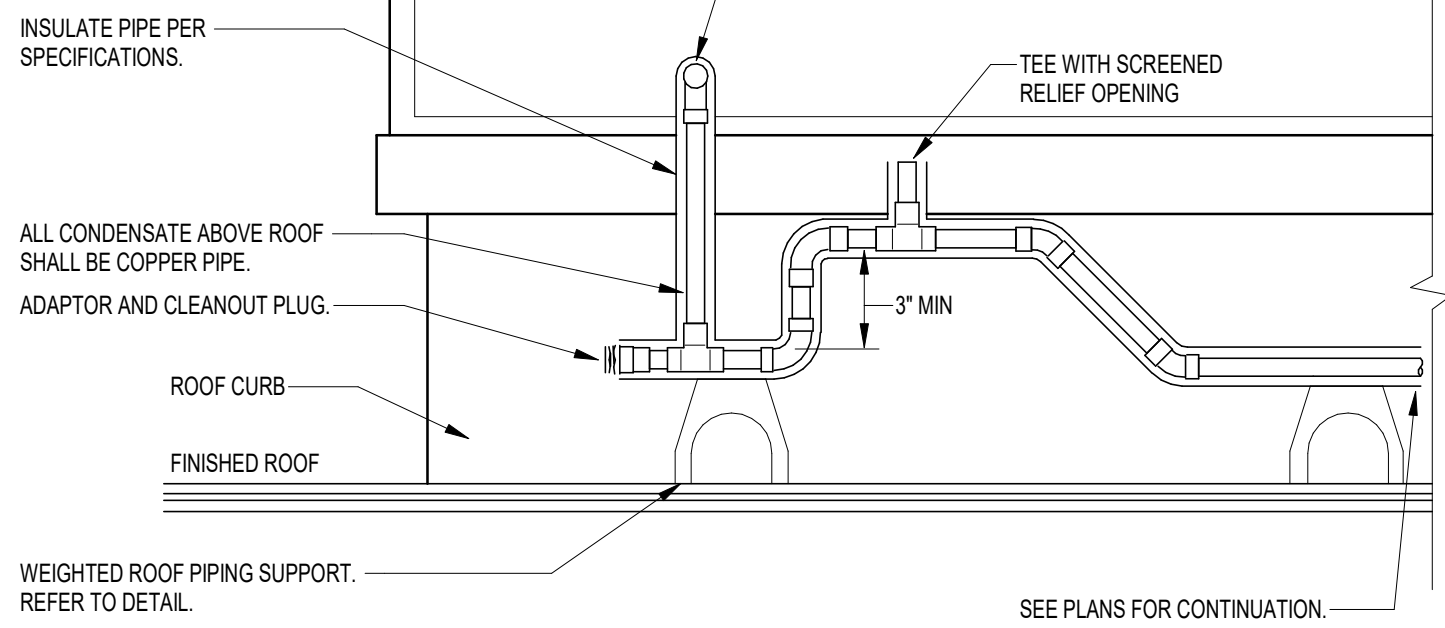
1/4" = 1'-0"



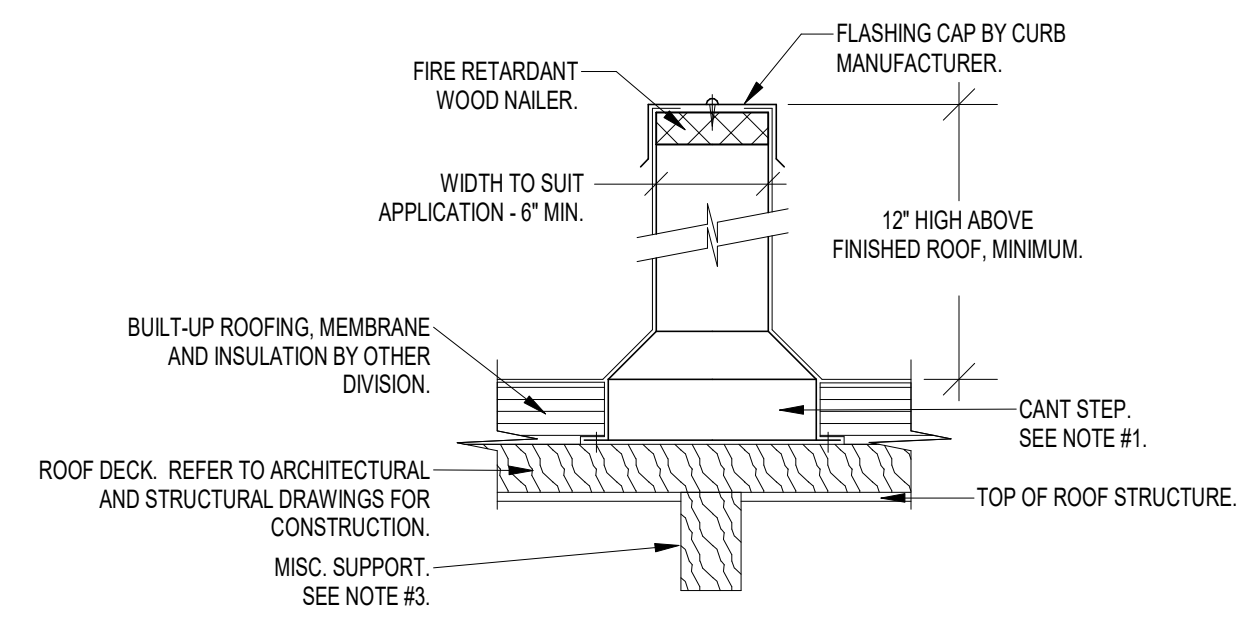
M2.1

M1 MECHANICAL ROOF PLAN
1/4" = 1'-0"

TONS	DRAIN SIZE
UP TO 40	1"
UP TO 90	1-1/4"
UP TO 125	1-1/2"

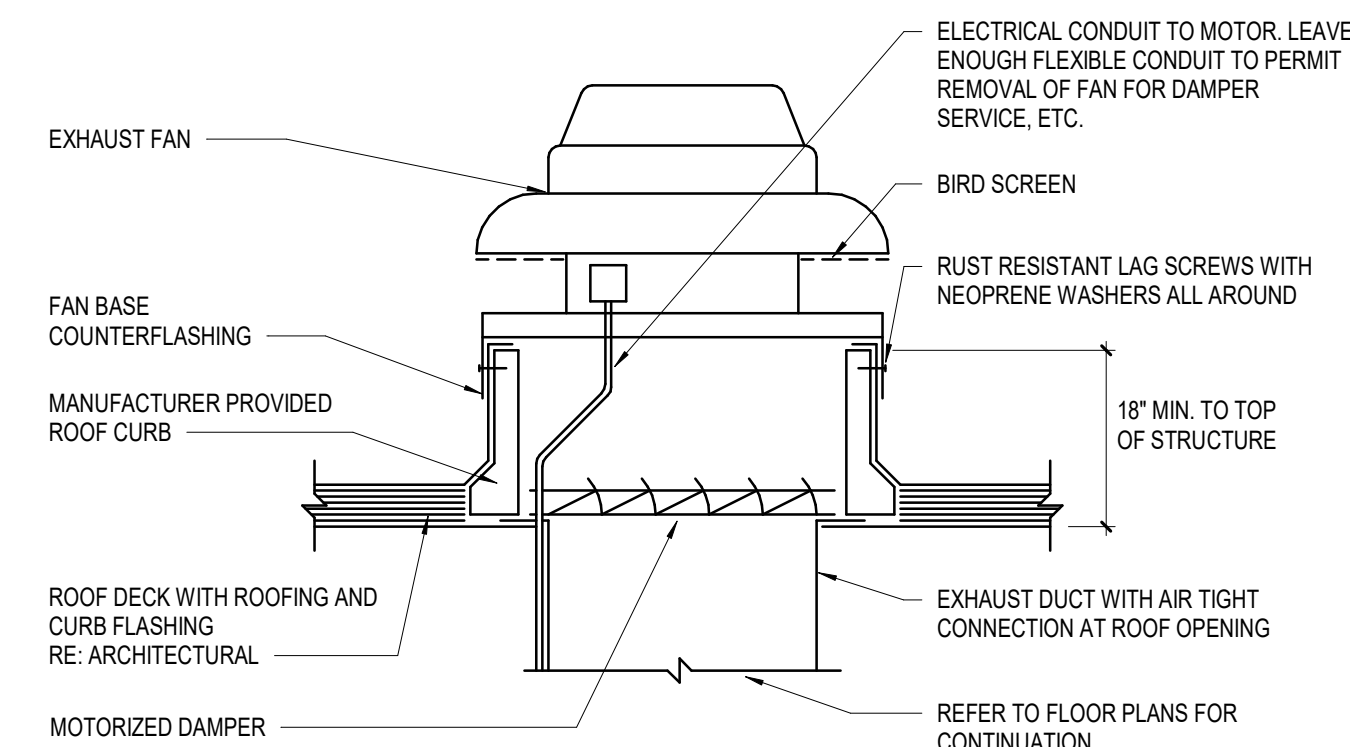


C1 RTU CONDENSATE DRAIN DETAIL
N.T.S.



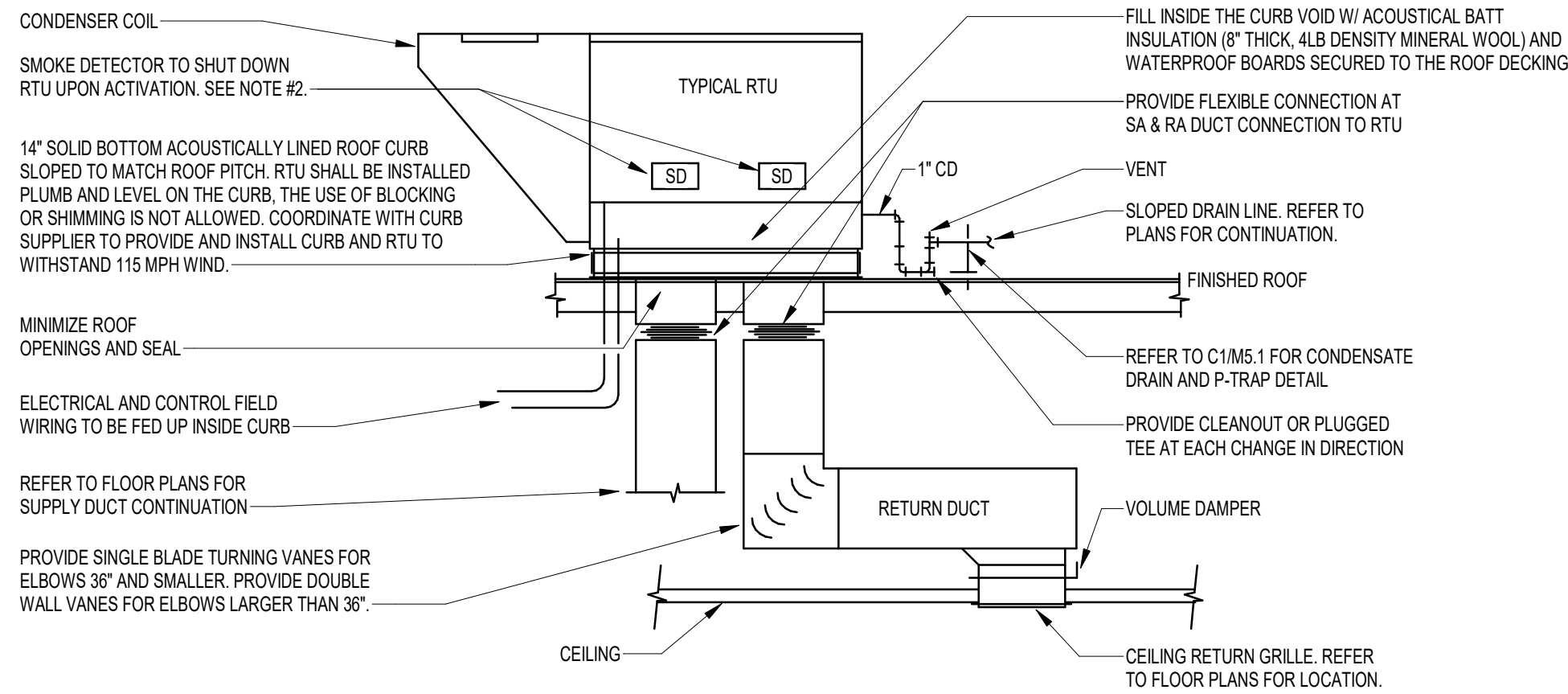
- NOTES:
- THE RAISED CANT STEP HEIGHT SHALL BE COORDINATED WITH THICKNESS OF ROOF INSULATION ON ARCHITECTURAL DRAWINGS AND WITH THE ROOFING CONTRACTOR. SECURE RAIL TO THE ROOF DECK WITH LOAD RATED, RUST RESISTANT FASTENERS.
 - THE RAIL SHALL BE DESIGNED AND FABRICATED TO THOROUGHLY SUPPORT ITS RESPECTIVE COMPONENT. AS A MINIMUM, RAILS SHALL BE FABRICATED OF 18 GAUGE GALVANIZED STEEL WITH BUILT-UP CANT, MONOLITHIC CONSTRUCTION WITH INTEGRAL BASE PLATE AND CONTINUOUS MITERED AND WELDED CORNER SEAMS, WITH FACTORY INSTALLED FIRE RETARDANT WOOD NAILER. EACH RAIL SHALL INCLUDE A MATCHING 18 GAUGE GALVANIZED STEEL COUNTERFLASHING CAP WITH INTEGRAL DRIP EDGE, ALL CORNERS MITERED AND WELDED, AND SCREWS FOR ATTACHMENT. EQUIPMENT CURBS OVER 3 FEET LONG SHALL INCORPORATE 14 GAUGE INTERNAL GUSSET REINFORCING. SECURELY FASTEN TO ROOF DECK AND INSTALL IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. WHEN THE UNIT IS TO BE INSTALLED ON A PITCHED ROOF, COORDINATE WITH THE RAIL MANUFACTURER TO PROVIDE A PITCHED RAIL TO MATCH THE PITCH OF THE ROOF. THE EQUIPMENT/PIPING/DUCTWORK SHALL BE INSTALLED LEVEL AND PLUMB.
 - THE MECH. CONTRACTOR SHALL COORDINATE THE ORIENTATION OF THE EQUIP. RAILS TO SPAN A MINIMUM OF TWO ROOF BEAMS/JOISTS BELOW. PROVIDE MISC. FRAMING TO CONTINUOUSLY SUPPORT THE RAILS FROM BELOW.
 - REFER TO THE KITCHEN EQUIPMENT MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR THE MOUNTING REQUIREMENTS TO DETERMINE THE FINAL LOCATION OF THE EQUIPMENT SUPPORT RAILS AND THEIR LENGTH. SECURE EQUIPMENT AS RECOMMENDED BY MANUFACTURER.

C2 ROOFTOP CONDENSING UNIT SUPPORT RAILS
N.T.S.



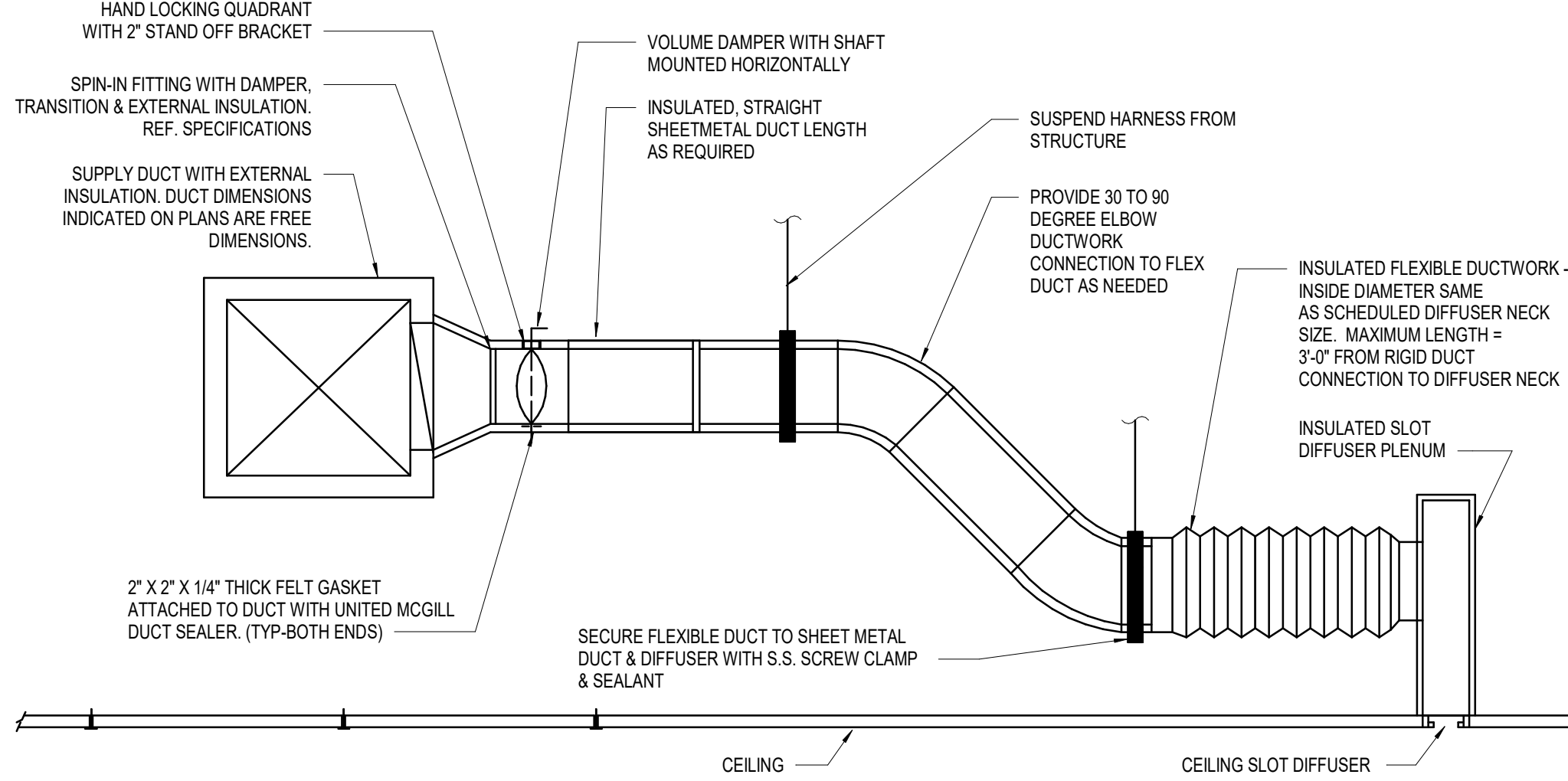
- NOTES:
- COORDINATE FINAL DIMENSIONS WITH ROOF INSTALLER.
 - THE FAN SHALL BE MOUNTED PLUMB AND LEVEL ON THE ROOF CURB. THE USE OF BLOCKING OR SHIMMING UNDER THE ROOF CURB IS NOT ACCEPTABLE. THE MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE CURB MANUFACTURER TO COMPENSATE FOR ANY ROOF PITCH.
 - PROVIDE ALL COMPONENTS REQUIRED TO INSTALL AND SECURE THE ROOF CURB AND EXHAUST FAN IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

A1 ROOF MOUNTED EXHAUST FAN AND CURB DETAIL
N.T.S.



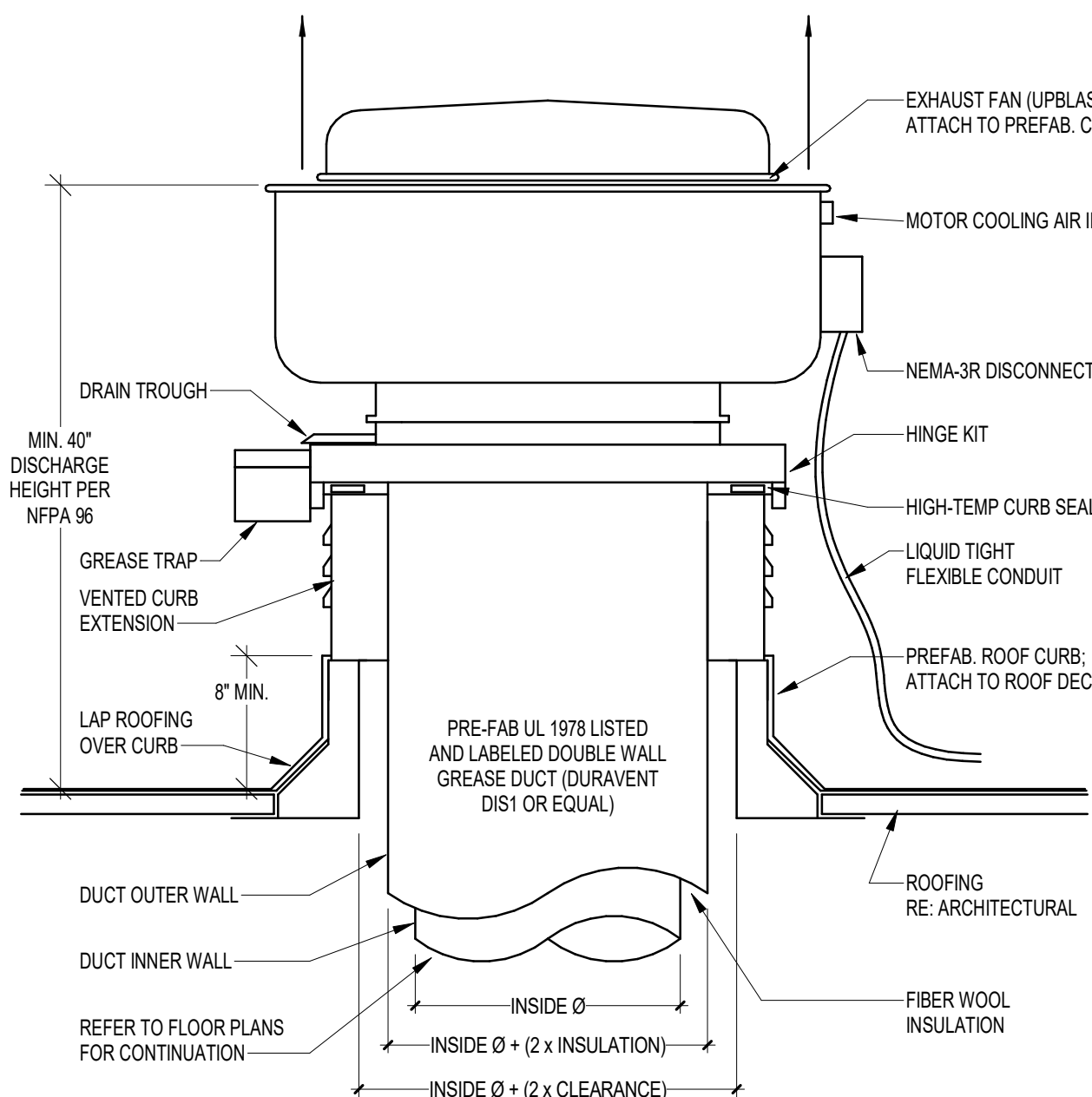
- NOTES:
- DIMENSIONS OF CURB DIFFER FROM DIMENSIONS OF UNIT DUE TO THE SLOPED CONDENSER COIL.
 - SMOKE DETECTORS SHALL BE PROVIDED AND INSTALLED BY THE RTU MANUFACTURER IN THE SUPPLY AND RETURN SIDES OF RTU. COORDINATE INSTALLATION AND CONNECTION OF SMOKE DETECTORS WITH FA CONTRACTOR, EC, AND GC. REFERENCE M6.1 FOR RTU SCHEDULE. ACTIVATION OF SMOKE DETECTORS SHALL SHUT DOWN RTU AND ACTIVATE THE AUDIBLE AND VISUAL SIGNAL PROVIDED.

C3 ROOFTOP HVAC UNIT DETAIL
N.T.S.



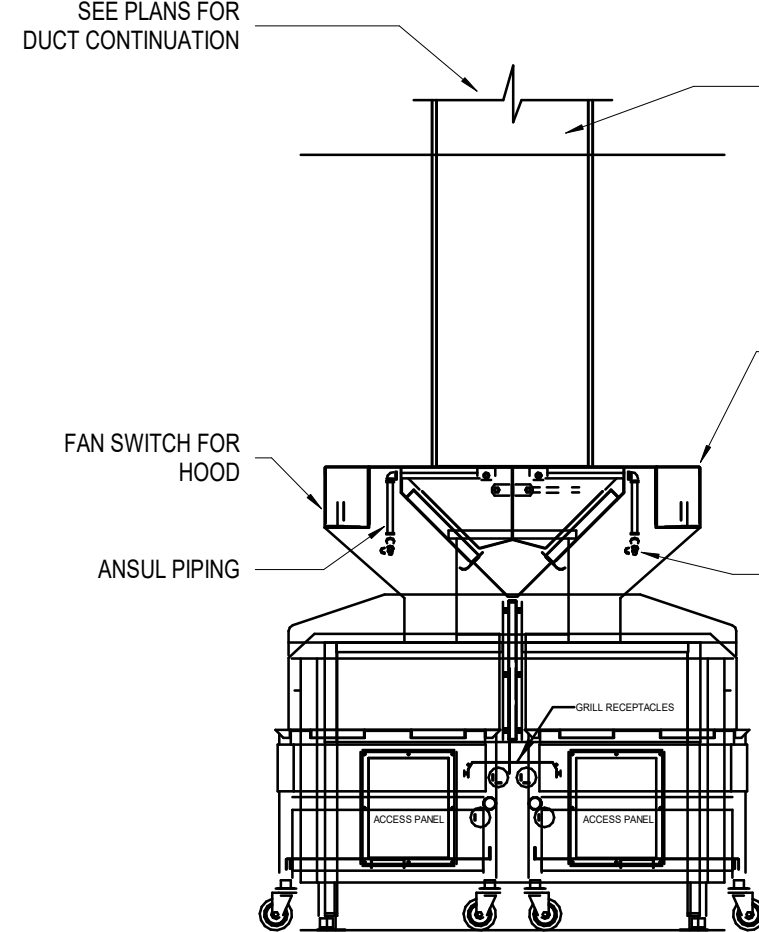
NOTE: INSTALL FLEXIBLE DUCTWORK SUPPORTS AT ALL ROUND NECK OUTLETS/INLETS UNLESS OTHERWISE NOTED ON DRAWINGS.

B1 PLENUM SLOT DIFFUSER DETAIL
N.T.S.

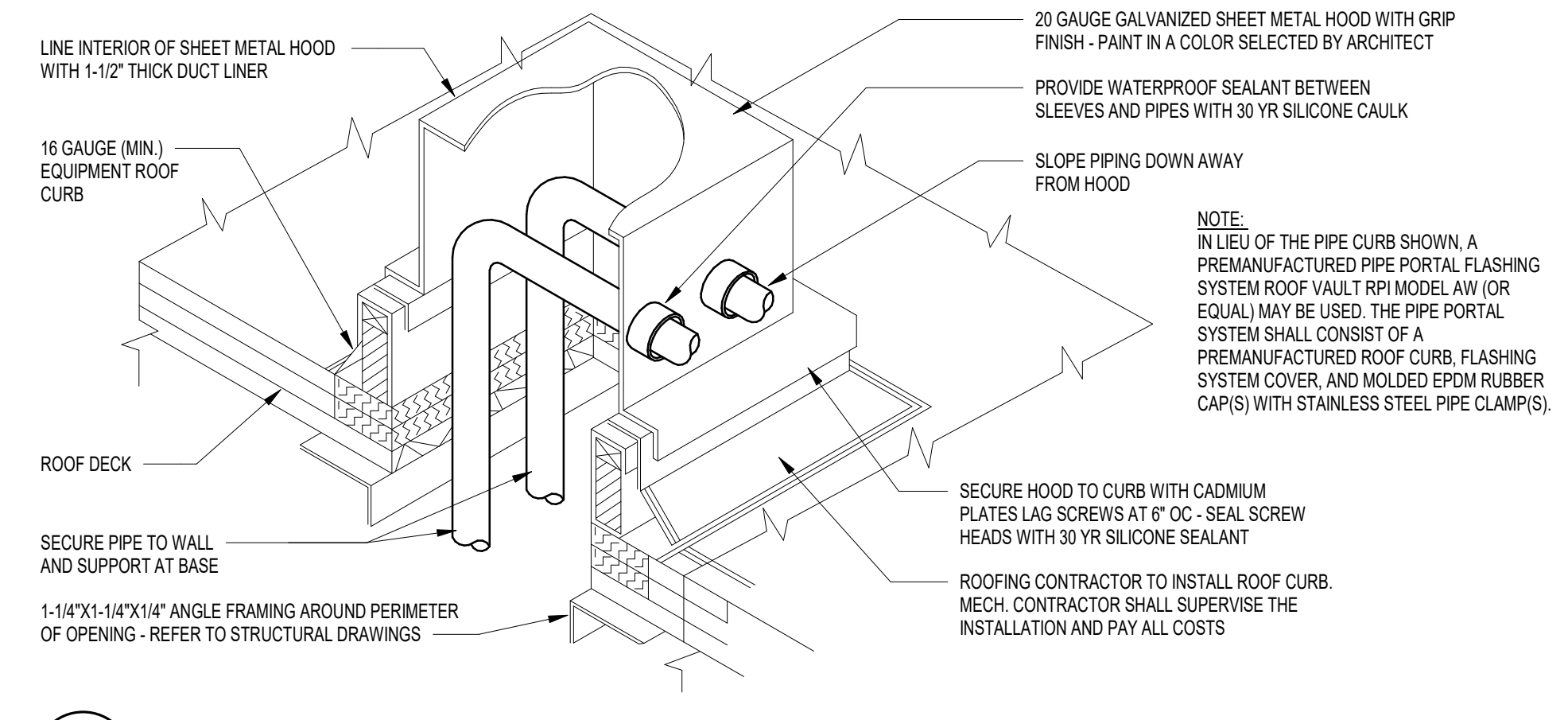


NOTE: ROOF OPENING DIMENSIONS BASED ON DUCT MANUFACTURER'S CLEARANCE REQUIREMENTS. MC TO PROVIDE FAN CURB WITH OPENING SIZE TO MEET GREASE DUCT CLEARANCE REQUIREMENTS.

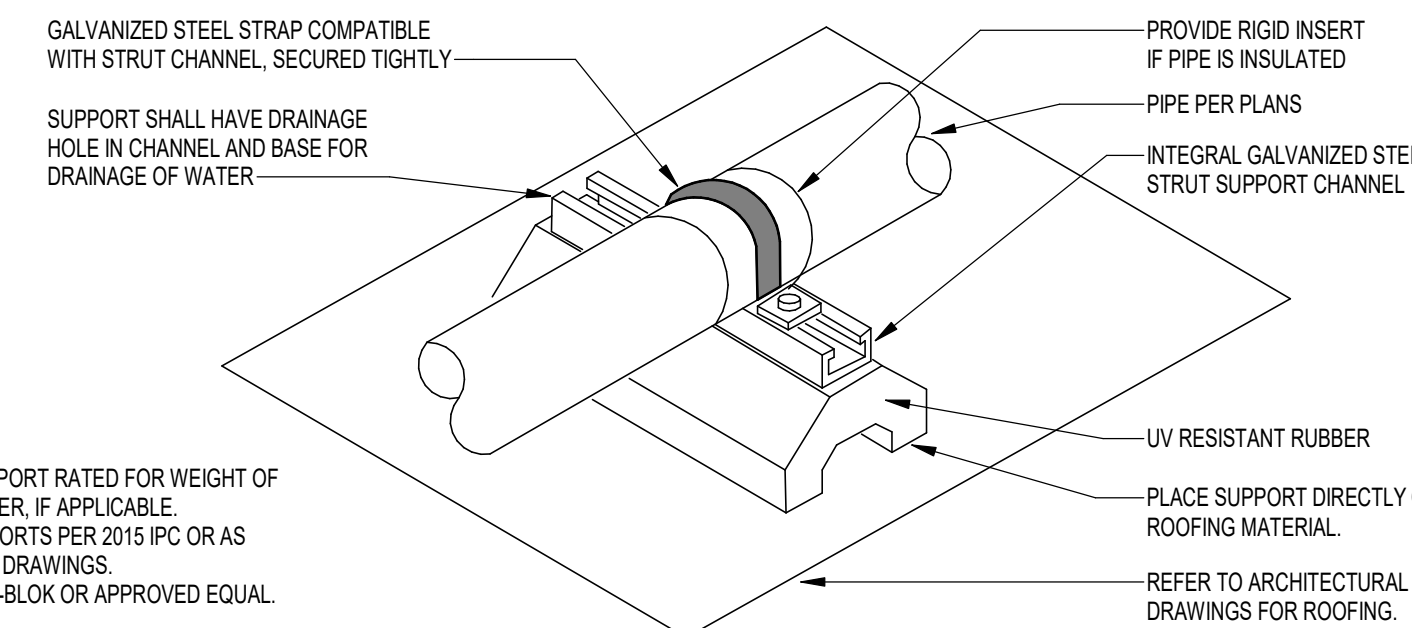
A2 ROOFTOP GREASE EXHAUST FAN DETAIL
N.T.S.



A3 LOW PROFILE HOOD DETAIL
N.T.S.

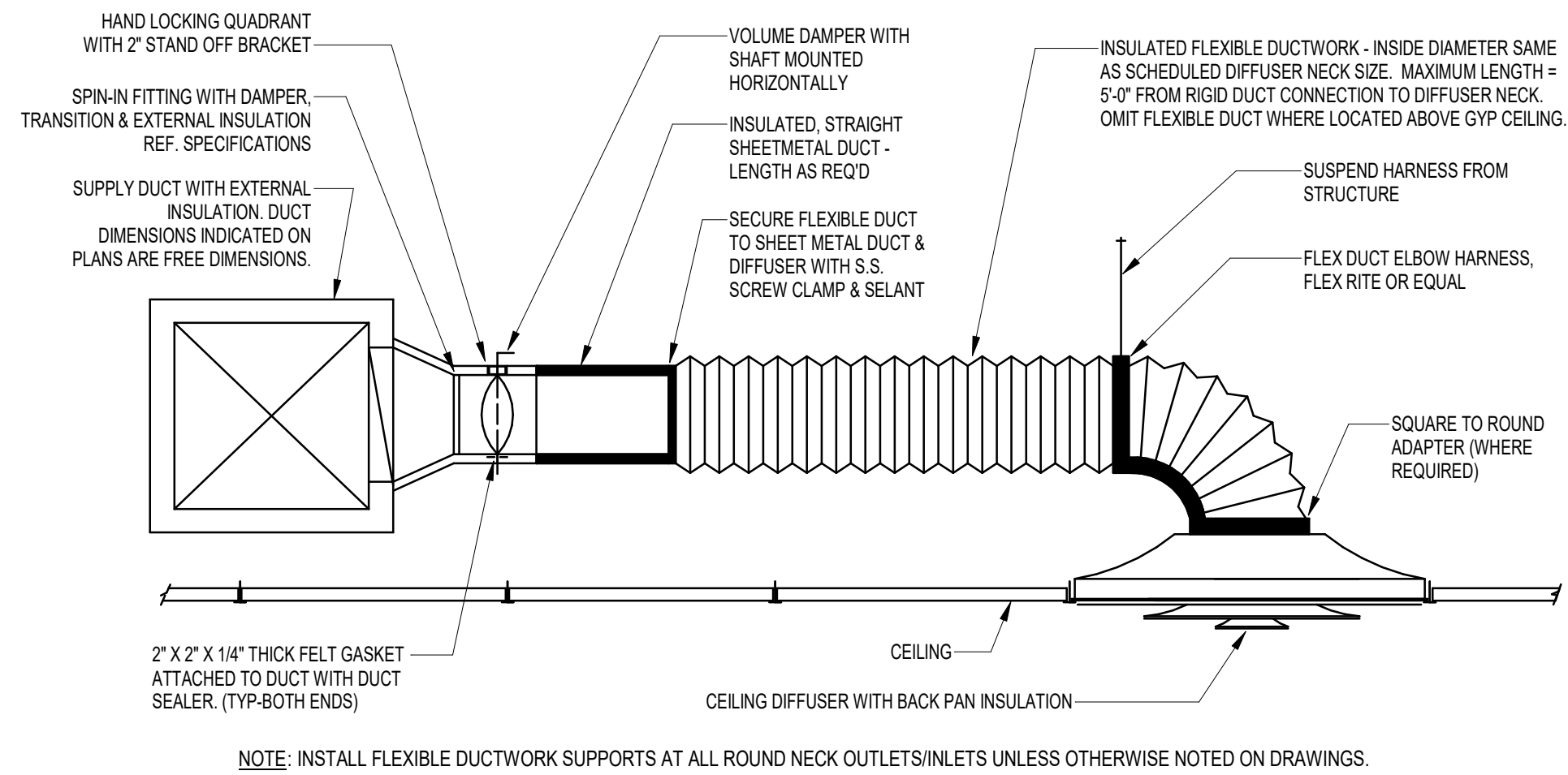


C4 PIPING THROUGH ROOF DETAIL
N.T.S.



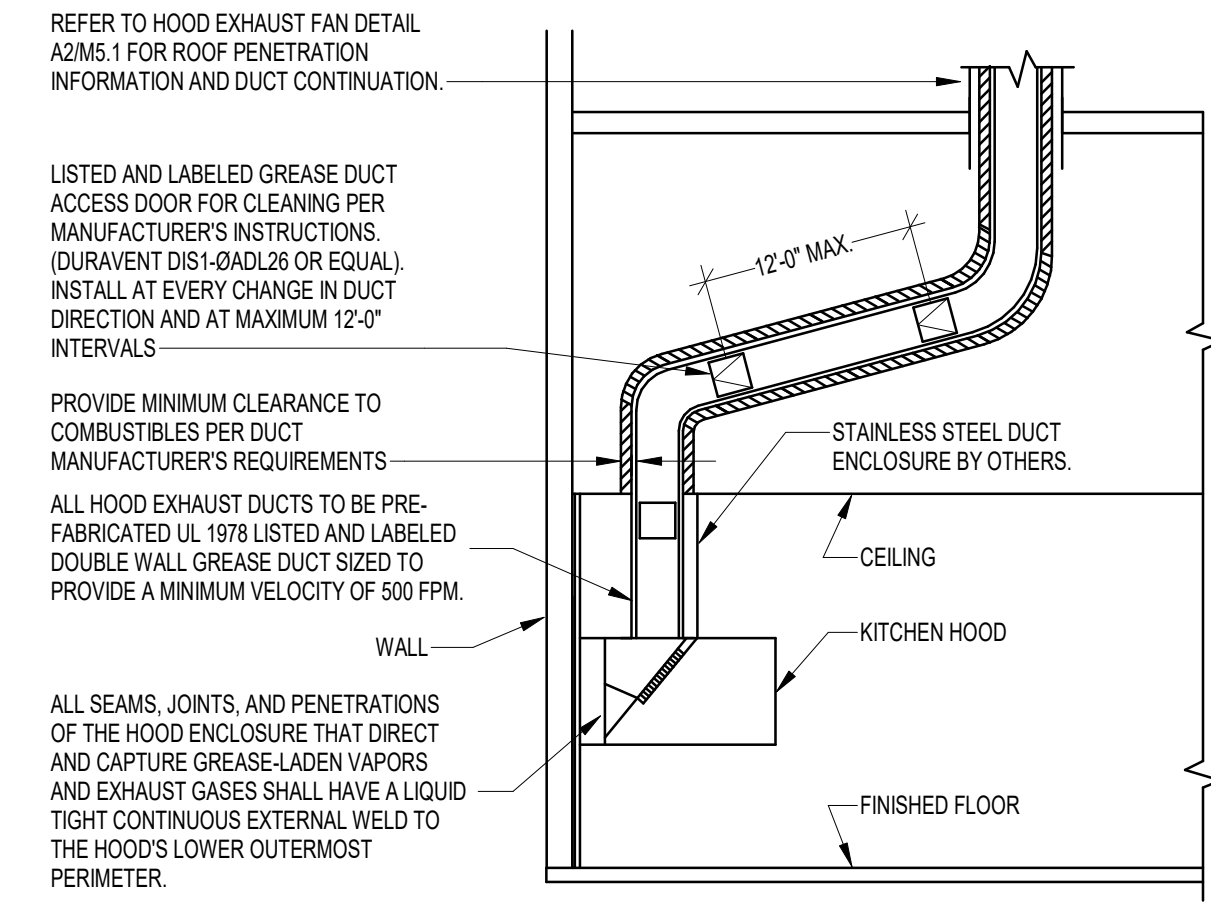
- NOTES:
- SELECT SUPPORT RATED FOR WEIGHT OF PIPE AND WATER, IF APPLICABLE.
 - SPACE SUPPORTS PER 2015 IPC OR AS INDICATED ON DRAWINGS.
 - B-LINE DURA-BLOK OR APPROVED EQUAL.

C5 ROOFTOP PIPE SUPPORT DETAIL
N.T.S.



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

B2 DIFFUSER CONNECTION DETAIL
N.T.S.



A4 HOOD EXHAUST DUCT DETAIL
N.T.S.

PREPARED FOR:



355 Research Parkway
Merriden, CT 06450
(203) 630-1469
(203) 630-2615 Fax
NC FIRM LICENSE NO. C-4082

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Prototype Version

03.31.2025 2025 Q1 PT22S Prototype Release

Date Description

Seal / Signature



5/21/2025
LICENSE EXPIRES 12/31/2025

Project Name

WHATABURGER GARNER, NC

Date: XX.XX.2025

Project Number

2301792

Description

MECHANICAL DETAILS

Scale

NOT TO SCALE

M5.1

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ROOFTOP UNIT SCHEDULE

MARK	MANUFACTURER	MODEL	AREA SERVED	SUPPLY FAN				COOLING SECTION					HEATING SECTION					ELECTRICAL				FILTER TYPE	WEIGHT INCL. CURB (LBS)	NOTES								
				TOTAL SUPPLY CFM	OUTSIDE AIR CFM	RETURN AIR CFM	ESP (\"WG)	HP	TYPE	REFRIG. TYPE	AMBIENT (\"F) DB/WB	TOTAL OUTPUT (MBH)	SENS. OUTPUT (MBH)	MAT (\"F) DB/WB	LAT (\"F) DB/WB	IEER / ISMRE2	HOT GAS REHEAT (MBH)	TYPE	AMBIENT (\"F) DB	INPUT (MBH)	OUTPUT (MBH)				STAGES	GAS PRESS. MIN / MAX (\" WC)	MAT (\"F) DB	LAT (\"F) DB	VOLTS	PH	MCA	MOP
RTU-1	CAPTIVEAIRE	CAS-HVAC31-300-20-20T	KITCHEN	3650	2117	1533	1.0	5.0	DX	R-454B	95.0807	256.1	137.1	86.673.8	52.052.0	18.277.9	129.6	NAT. GAS	19.0	267.1	216.3	6.1	7.0/14.0	40.0	90.0	208	3	85.6	100	2\" MERV 8	2679	ALL
RTU-2	CAPTIVEAIRE	CAS-HVAC31-200-15-15T	DINING	2240	1747	493	1.0	2.0	DX	R-454B	95.0807	204.5	100.3	90.677.2	49.449.4	18.818.3	129.6	NAT. GAS	19.0	196.7	159.3	6.1	7.0/14.0	30.0	90.0	208	3	57.3	60	2\" MERV 8	2477	ALL

NOTES:

- PROVIDE WITH PREMIUM EFFICIENCY MOTORS IN ACCORDANCE WITH NEMA MG-1. PROVIDE SUPPLY FAN VFD.
- PROVIDE WITH FACTORY INSTALLED RETURN AIR SMOKE DETECTOR AND FIELD INSTALLED SUPPLY AIR SMOKE DETECTOR TO SHUT DOWN UNIT UPON SMOKE DETECTION. COORDINATE CONNECTIONS TO FIRE ALARM SYSTEM WITH FA CONTRACTOR AND GC.
- PROVIDE WITH TERMINAL STRIP FOR FIELD INSTALLED CONTROLS.
- UNITS TO BE 2\" DOUBLE WALL R-13 CONSTRUCTION WITH 2500-HOUR SALT SPRAY RESISTANT PAINT.
- UNIT TO HAVE MODULATING HOT GAS REHEAT WITH SPACE DEWPOINT CONTROL. INTAKE AND DISCHARGE TEMPERATURE SENSORS SHALL BE FACTORY INSTALLED. PROVIDE FIRESTAT AND FREEZE/STAT.
- PROVIDE FACTORY INSTALLED HAIL GUARDS.
- PROVIDE VARIABLE SPEED COMPRESSORS, ECM CONDENSING FANS, ELECTRONIC EXPANSION VALVE, REFRIGERANT LEAK DETECTION, AND HIGH-LOW REFRIGERATION PRESSURE MONITORING.
- PROVIDE STAINLESS STEEL DRAIN PAN AND FACTORY MOUNTED AND WIRED CONDENSATE FLOW SWITCH.
- PROVIDE LOW LEAKAGE ECONOMIZER WITH DIFFERENTIAL ENTHALPY CONTROL, BAROMETRIC RELIEF DAMPER, AND FAULT DETECTION AND DIAGNOSTIC.
- PROVIDE STAINLESS STEEL GAS HEAT EXCHANGER WITH MODULATING CONTROL AND PRESSURE GAUGE.
- PROVIDE FACTORY NON-FUSED DISCONNECT SWITCH. RECEPTACLE TO BE PROVIDED BY ELECTRICAL. COORDINATE WITH EC.
- DOWN DISCHARGE AND DOWN RETURN. PROVIDE 14\" HIGH INSULATED, SOLID BOTTOM CURB FOR PITCHED ROOF. MECHANICAL CONTRACTOR TO FIELD CUT SUPPLY AND RETURN OPENINGS AS REQUIRED.
- PROVIDED CLOGGED FILTER SWITCH AND LOUVERED OUTDOOR AIR INTAKE WITH METAL MESH FILTERS.
- CAPTIVEAIRE UNITS PROVIDED BY WHATABURGER. FACTORY STARTUP IS INCLUDED. CONTACT BRADLEY CANNAN @ 210-647-7244 OR bradley.cannan@captivaire.com TO COORDINATE STARTUP.

HVAC KITCHEN HOOD SCHEDULE

MARK	MANUFACTURER	MODEL	DESCRIPTION	EXHAUST VENT DIAMETER	EXHAUST AIRFLOW (CFM)	TYPE
KH-1	H&K DALLAS INC.	CUSTOM	8\" DOUBLE SIDED GRILL HOOD	16\"	1994	TYPE I
KH-2	H&K DALLAS INC.	CUSTOM	10-BASKET FRYER HOOD	12\"	1216	TYPE I

NOTES:

- EQUIPMENT MANUFACTURER SHALL PROVIDE ALL HANGING MATERIALS FOR KITCHEN HOOD.

EXHAUST FAN SCHEDULE

MARK	MANUFACTURER	MODEL	TYPE	AIRFLOW (CFM)	ESP (\"WG)	RPM	BHP	HP	DRIVE TYPE	VOLTS	PH	WEIGHT (LBS.)	NOTES
EF-1	GREENHECK	G-080-VG	ROOF-MOUNTED CENTRIFUGAL DOWNBLAST	300	0.5	1679	0.07	0.1	DIRECT	120 V	1	66	1,2,3
KEF-1	GREENHECK	CLUE-140-VG	ROOF-MOUNTED CENTRIFUGAL UPBLAST	1984	1.0	1554	0.64	1.0	DIRECT	208 V	1	146	3,4,5,6
KEF-2	GREENHECK	CLUE-120-VG	ROOF-MOUNTED CENTRIFUGAL UPBLAST	1216	0.75	1449	0.25	0.5	DIRECT	208 V	1	112	3,4,5,6

NOTES:

- PROVIDE INSULATED 18\" HIGH ROOF CURB WITH DAMPER TRAY AND MOTORIZED DAMPER WITH END SWITCHES AND SPRING RETURN ACTUATOR. CURB PITCH TO MATCH ROOF.
- PROVIDE ALUMINUM BIRD SCREEN.
- PROVIDE WITH INTEGRAL DISCONNECT SWITCH NEMA-3R.
- PROVIDE GREASE BOX.
- PROVIDE INSULATED 14\" HIGH ROOF CURB WITH VENTED CURB EXTENSION (MINIMUM 14\" HIGH TO PROVIDE 40\" DISCHARGE HEIGHT ABOVE ROOF) AND HIGH TEMPERATURE CURB SEAL. CURB PITCH TO MATCH ROOF.
- PROVIDE HINGED ACCESS KIT.

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
1800 - 2300	20

NOTES:

- ALL FLEX DUCT SHALL BE SIZED IN ACCORDANCE WITH FLEX DUCT SCHEDULE. PROVIDE RIGID REDUCER AT NECK OF AIR DEVICE TO TRANSITION FROM FLEX DUCT SIZE TO DIFFUSER INLET CONNECTION SIZE. FLEX DUCT LENGTH NOT TO EXCEED 5 FT.

AIR DEVICE SCHEDULE

MARK	MANUFACTURER	MODEL	FACE SIZE (IN.)	NECK SIZE (IN.)	MAX NC	PATTERN	MOUNTING	SLOT LENGTH	SLOT WIDTH	SLOT QTY	SYSTEM CLASS.	COMMENTS
A2	TITUS	TMS	24x24	8	30	4-WAY	LAY-IN	-	-	-	SUPPLY AIR	1
A3	TITUS	TMS	24x24	10	30	4-WAY	LAY-IN	-	-	-	SUPPLY AIR	1
A4	TITUS	TMS	24x24	12	30	4-WAY	LAY-IN	-	-	-	SUPPLY AIR	1
A5	TITUS	TMS	24x24	12	30	3-WAY	LAY-IN	-	-	-	SUPPLY AIR	1
B1	TITUS	TMS	12x12	6	30	4-WAY	FLANGE	-	-	-	SUPPLY AIR	1,2
C1	TITUS	350FL1	22x22	18x18	30	-	FLANGE	-	-	-	RETURN AIR	2,5
C2	TITUS	350FL1	24x24	20x20	30	-	LAY-IN	-	-	-	RETURN AIR	5
F1	TITUS	50F	12x12	8x8	30	-	FLANGE	-	-	-	EXHAUST AIR	2
H1	TITUS	TBD0-80	60x4	8	30	1-WAY	FLANGE	60	1	2	SUPPLY AIR	3
H2	TITUS	TBD0-80	48x4	8	30	1-WAY	FLANGE	48	1	2	SUPPLY AIR	3
H3	TITUS	TBD0-30	36x3-1/2	8	30	1-WAY	FLANGE	36	3/4	2	SUPPLY AIR	3
L1	TITUS	FL-15-JT	SEE PLANS	-	30	1-WAY	FLANGE	CONTINUOUS	1-1/2	1	SUPPLY AIR	4
P1	TITUS	FBPI	60x3-1/2	6	30	-	FLANGE	60	-	-	SUPPLY AIR	3
P2	TITUS	FBPI	60x3-1/2	8	30	-	FLANGE	60	-	-	SUPPLY AIR	3

NOTES:

- PROVIDE MOLDED INSULATION BLANKET (R-6).
- PROVIDE PLASTER FRAME FOR MOUNTING IN GYP. CEILING.
- PROVIDE INSULATED PLENUM.
- CONTINUOUS LINEAR SLOT DIFFUSER TO BE INSTALLED IN GYP. CEILING. PROVIDE INSULATED SUPPLY AIR PLENUMS AS SCHEDULED FOR A COMPLETE SYSTEM. PROVIDE BLANK-OFFS FOR UNUSED PORTIONS OF DIFFUSER.
- PROVIDE 1\" MERV-5 FILTER.

2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS MECHANICAL DESIGN (PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone

winter dry bulb: 19.0°F
summer dry bulb: 95.0°F

Interior design conditions

winter dry bulb: 70°F
summer dry bulb: 75°F
relative humidity: 50%

Building heating load: 375.6 MBH

Building cooling load: 460.6 MBH

Mechanical Spacing Conditioning System

Unitary description of unit: packaged RTUs
heating efficiency: 80%
cooling efficiency: 7.9 to 8.3 ISMRE2, 18.2 to 18.8 IEER
size category of unit: 15 to 20 tons

Chiller size category. If oversized, state reason.: Not Applicable

Chiller size category. If oversized, state reason.: Not Applicable

List equipment efficiencies: See Above

COMcheck Software Version COMcheckWeb Mechanical Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title: Whataburger - GARNER
Location: Garner, North Carolina
Climate Zone: 4a
Project Type: New Construction

Construction Site: NWC NC HWY 42 W & Old Drug Store Road, Garner, North Carolina 27529
Owner/Agent: Whataburger
Designer/Contractor: BL Companies, Inc., 355 Research Parkway, Meriden, Connecticut 06450

Additional Efficiency Package(s)
Reduced interior lighting power. Requirements are implicitly enforced within interior lighting allowance calculations.

Mechanical Systems List
Quantity System Type & Description

- RTU-1 (Single Zone):
Heating: 1 each - Central Furnace, Gas, Capacity = 216 kBtu/h
Proposed Efficiency = 80.00% Et, Required Efficiency: 80.00 % Et or 80% AFUE
Cooling: 1 each - Single Package DX Unit, Capacity = 256 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 12.50 EER, Required Efficiency = 9.80 EER
Proposed Part Load Efficiency = 18.20 IEER, Required Part Load Efficiency = 11.40 IEER
Fan System: FAN SYSTEM 1 -- Compliance (Motor nameplate HP and fan efficiency method) : Passes
Fans:
FAN 1 Supply, Constant Volume, 3650 CFM, 5.0 motor nameplate hp, 0.0 fan efficiency grade, 0.0 total fan efficiency, 0.0 design fan efficiency, fan exception: Part of code listed equipment
- RTU-2 (Single Zone):
Heating: 1 each - Central Furnace, Gas, Capacity = 196 kBtu/h
Proposed Efficiency = 80.00% Et, Required Efficiency: 80.00 % Et or 80% AFUE
Cooling: 1 each - Single Package DX Unit, Capacity = 204 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 13.10 EER, Required Efficiency = 10.80 EER
Proposed Part Load Efficiency = 18.80 IEER, Required Part Load Efficiency = 12.20 IEER
Fan System: FAN SYSTEM 2 -- Compliance (Motor nameplate HP and fan efficiency method) : Passes
Fans:
FAN 2 Supply, Constant Volume, 2240 CFM, 2.0 motor nameplate hp, 0.0 fan efficiency grade, 0.0 total fan efficiency, 0.0 design fan efficiency, fan exception: Part of code listed equipment
- GWH-1:
Gas Storage Water Heater, Capacity: 50 gallons, Input Rating: 100 kBtu/h w/ Circulation Pump
Proposed Efficiency: 96.00 % Et, Required Efficiency: 80.00 % Et

Mechanical Compliance Statement
Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Philip Anderson - Project Engineer
Signature: *Philip Anderson* Date: 10/23/2025

Project Title: Whataburger - GARNER
Data filename: Report date: 10/23/25
Page 1 of 10

AIR BALANCE AND VENTILATION CALCULATION:

TOTAL OUTSIDE AIR INTAKE = 3850 CFM
TOTAL GREASE HOOD EXHAUST = 3210 CFM
TOTAL RESTROOM EXHAUST = 300 CFM

OUTSIDE AIRFLOW - (GREASE HOOD EXHAUST AIRFLOW + RESTROOM EXHAUST AIRFLOW) = NET POSITIVE AIRFLOW
3850 CFM - (3210 + 300) = 340 CFM

BALANCE REPORT TO BE PROVIDED TO INSPECTOR, OWNER, AND ARCHITECT/ENGINEER FOR REVIEW AND APPROVAL.

VENTILATION CALCULATION PER NCMC 2018, TABLE 403.3.1.1:

HVAC UNIT	AREA SERVED	CLASSIFICATION	OCCUPANT LOAD	REQUIRED VENTILATION	O.A./E.A. REQUIRED (CFM)	O.A./E.A. DESIGN (CFM)	REMARKS
RTU-1	EXPEDITED DELIVERY 106	KITCHENS (COOKING)	1 (69 SQFT)	7.5 CFM / PERSON 0.12 CFM / SQFT	16	173	
	COOKING 107	KITCHENS (COOKING)	14 (699 SQFT)	7.5 CFM / PERSON 0.12 CFM / SQFT	189	1532	
	OFFICE 110	OFFICE SPACES	1 (63 SQFT)	5 CFM / PERSON 0.06 CFM / SQFT	9	52	
	DRY STORAGE 111	STORAGE ROOMS	0 (339 SQFT)	0 CFM / PERSON 0.12 CFM / SQFT	41	179	
	WASH ROOM 112	KITCHENS (COOKING)	2 (95 SQFT)	7.5 CFM / PERSON 0.12 CFM / SQFT	27	87	
RTU-2	MEN 103 / WOMEN 104	TOILET ROOMS (PUBLIC)	0 (195 SQFT)	0 CFM / PERSON 0 CFM / SQFT	0	87	
	CALCULATED OUTSIDE AIR FOR SYSTEM TOTAL				282	2110	OA ADDED FOR KITCHEN EXHAUST MAKEUP
	ENTRY 100 / HALL 102	CORRIDOR	0 (115 SQFT)	0 CFM / PERSON 0.06 CFM / SQFT	7	186	
	DINING ROOM 101	CAFETERIA, FAST FOOD	66 (655 SQFT)	7.5 CFM / PERSON 0.18 CFM / SQFT	613	1389	
EF-1	SERVING AREA 105	RECEPTION AREAS	3 (88 SQFT)	5 CFM / PERSON 0.06 CFM / SQFT	21	155	
	CALCULATED OUTSIDE AIR FOR SYSTEM TOTAL				641	1740	OA ADDED FOR KITCHEN EXHAUST MAKEUP
	CALCULATED EXHAUST AIR FOR SYSTEM TOTAL				280	300	
KEF-1, KEF-2	TOTAL KITCHEN AREAS	KITCHENS (COOKING)	863 SQFT	0.7 CFM / SQFT	604	3210	EA ADDED FOR GREASE HOOD OPERATION
	CALCULATED EXHAUST AIR FOR SYSTEM TOTAL				604	3210	

PREPARED FOR:



**Architecture
Engineering
Environmental
Land Surveying
Companies**

355 Research Parkway
Meriden, CT 06450
(203) 630-1400
(203) 630-2615 Fax
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Prototype Version

03.31.2025 2025 Q1 PT22S Prototype Release

Date Description

1 10.24.2025 MECH. EQUIP. AND SITE UPDATE

Seal / Signature



Project Name

WHATABURGER GARNER, NC

Date: XX.XX.2025

Project Number

2301792

Description

MECHANICAL SCHEDULES

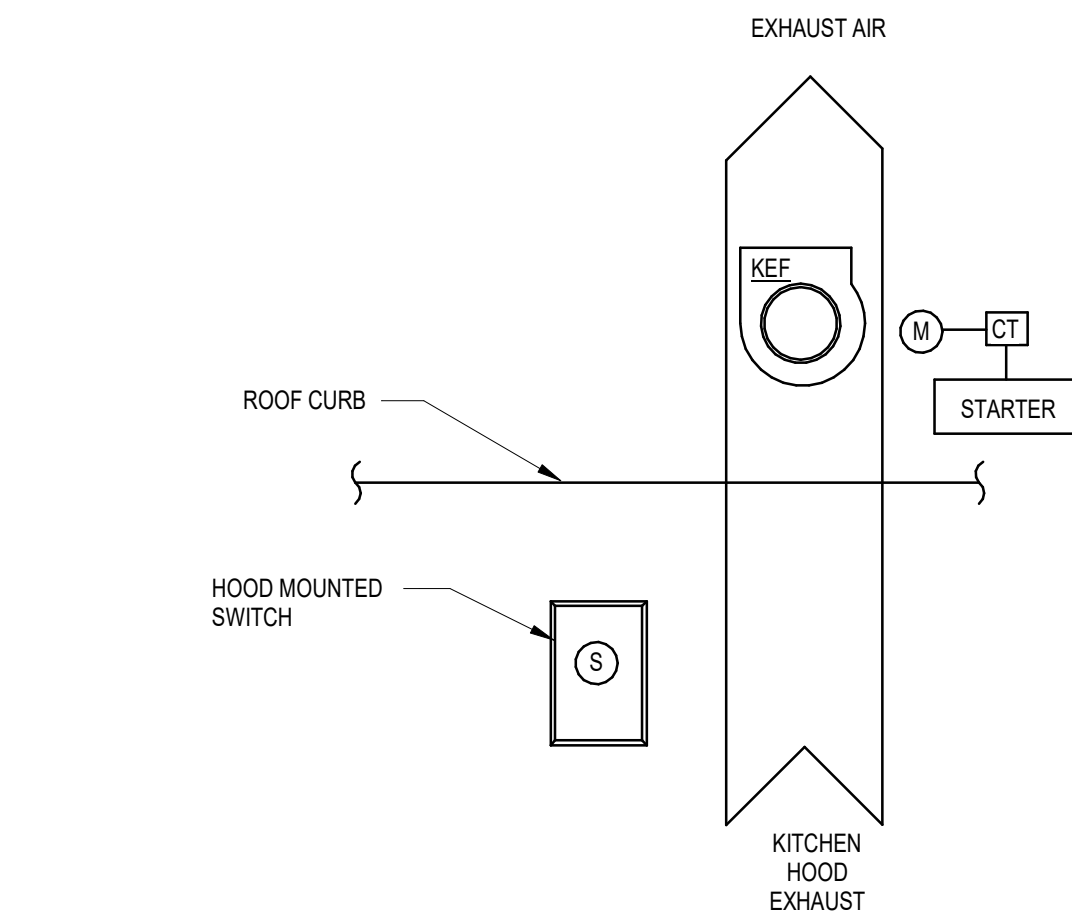
Scale

NOT TO SCALE

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		



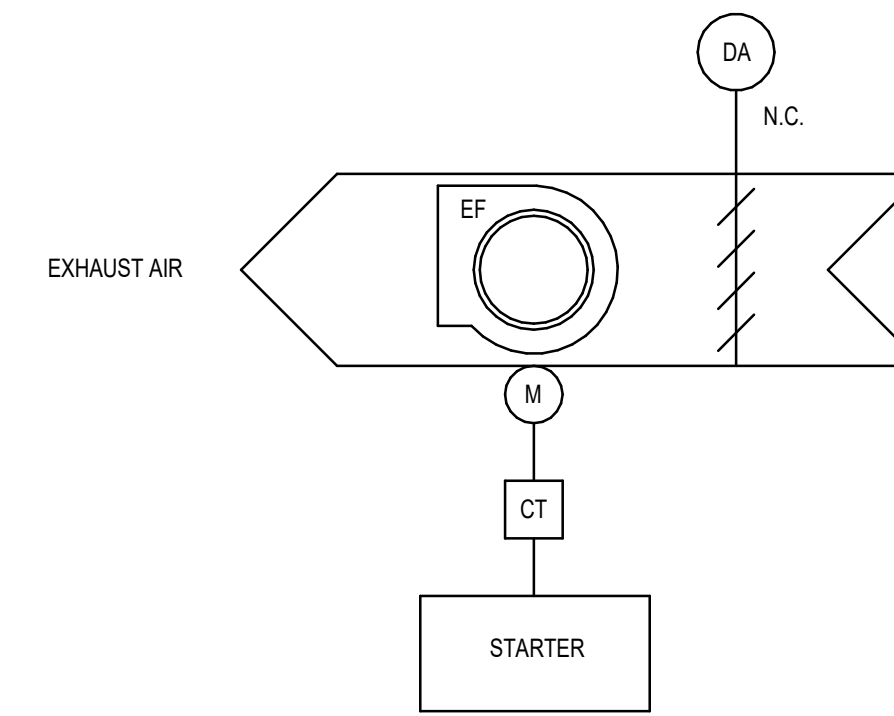
SEQUENCE OF OPERATION

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.

B1 KITCHEN HOOD EXHAUST FAN CONTROL DIAGRAM
N.T.S.

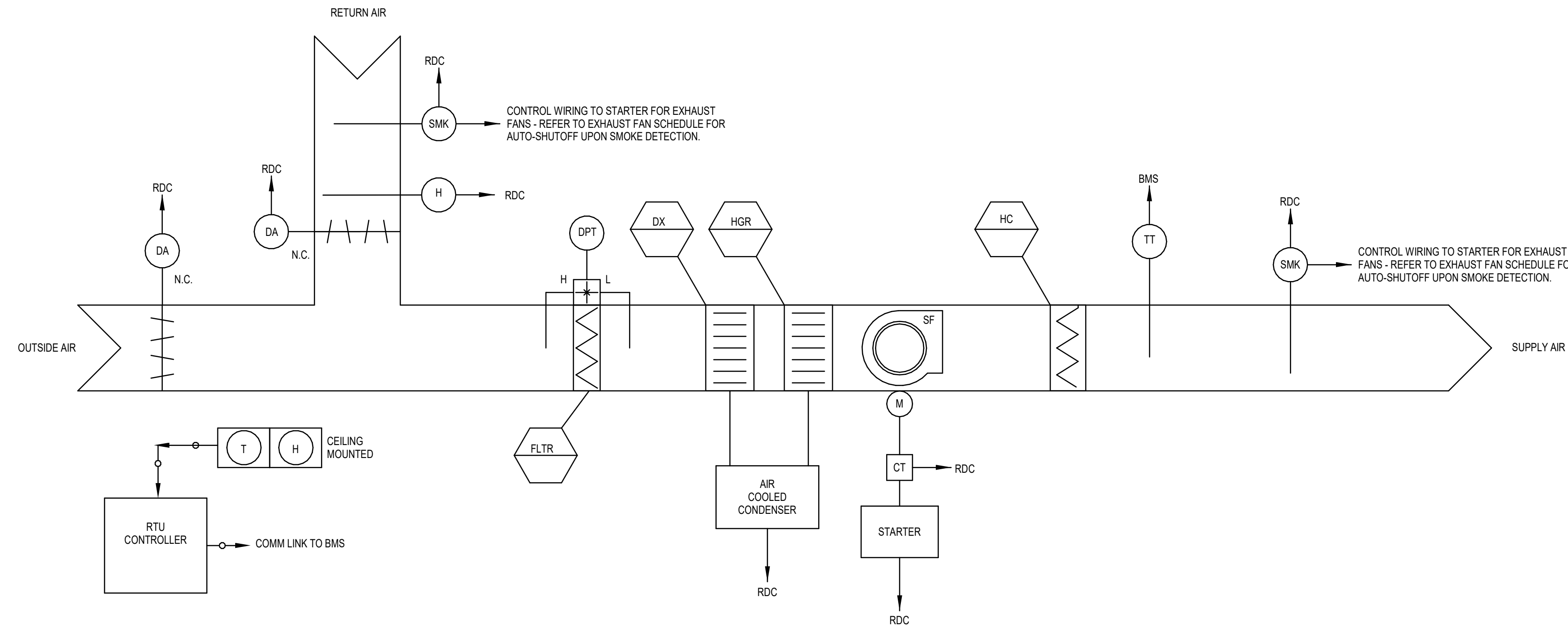


SEQUENCE OF OPERATION

OPERATING CONDITIONS:
THE GENERAL EXHAUST FAN SHALL BE INTERLOCKED WITH THE 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.

B2 GENERAL EXHAUST FAN CONTROL DIAGRAM
N.T.S.



SEQUENCE OF OPERATION

OPERATING CONDITION - CONTINUOUS 24/7 (INTERLOCKED WITH KITCHEN EXHAUST)

THE PILOT RTU CONTROLLER (RDC) SHALL PERFORM ALL CONTROL, SAFETY AND INTERLOCKS AS DESCRIBED IN THE SEQUENCE OF OPERATION. THE BMS SHALL MONITOR THE RTU DDC CONTROLLER VIA BMS PROTOCOL COMMUNICATION AND/OR COMBINATION OF DISCRETE INPUT/OUTPUT POINTS. THE BMS SHALL OPERATE THE UNIT CONTINUOUS 24/7. WHEN THE UNIT IS DE-ENERGIZED BY THE BMS, THE FAN SHALL SHUT DOWN, THE OA DAMPER SHALL CLOSE. THE REFRIGERATION SYSTEM SHALL ALSO BE DE-ENERGIZED AND THE HEATING SYSTEM LOCKED OUT OF HEATING MODE.

THE BMS SHALL BE PROGRAMMED SO THAT THE HEATING AND COOLING SYSTEMS SHALL NEVER OPERATE SIMULTANEOUSLY.

TEMPERATURE CONTROL
OCCUPIED MODE - THE BMS WILL MAINTAIN THE FOLLOWING SPACE TEMPERATURE SETPOINTS:
• COOLING: 75°F, 55% RH (ADJUSTABLE)
• HEATING: 70°F (ADJUSTABLE)

SETBACK MODE - THE BMS WILL MAINTAIN THE FOLLOWING SPACE TEMPERATURE SETPOINTS:
• COOLING: 85°F (ADJUSTABLE) (ADJUST TO 80°F 1-HR PRIOR TO OCCUPANCY)
• HEATING: 80°F (ADJUSTABLE) (ADJUST TO 85°F 1-HR PRIOR TO OCCUPANCY)

THERE SHALL BE A DEADBAND OF +/- 5°F ON ALL TEMPERATURE CONTROL.

HUMIDITY CONTROL
IF THE RELATIVE HUMIDITY OF THE RETURN AIR EXCEEDS 60% (ADJUSTABLE) AND THERE IS NO CALL FOR COOLING IN THE SPACE, THE RDC SHALL ENABLE DEHUMIDIFICATION MODE OF THE RTU BASED ON ITS OWN INTERNAL CONTROLS UTILIZING HOT GAS REHEAT.

SEQUENCE OF OPERATION (CONTINUED)

ECONOMIZER OPERATION
BASED ON THE RTU INTERNAL DIFFERENTIAL ENTHALPY CONTROLS, THE RDC SHALL VARY THE OUTSIDE AIR DAMPER POSITION, BASED ON CALL FOR COOLING IN THE SPACE. THERE SHALL BE ONE FAN SPEED. THE RDC SHALL LOAD AND UNLOAD COMPRESSORS BASED ON THE UNIT INTERNAL CONTROLS TO CONDITION OR DEHUMIDIFY THE SPACE AS NEEDED.

UNIT SHUTDOWN
UNIT SHALL BE DE-ENERGIZED UPON DETECTION OF SMOKE IN UNIT OR BUILDING FIRE ALARM.

ALARMS
THE BMS SHALL MONITOR ALL SAFETIES ON THE REFRIGERATION SYSTEM AND THE HEATING SYSTEM THROUGH THE RDC COMMUNICATION PROTOCOL. ALL ABNORMAL CONDITIONS SHALL BE ALARMED AT THE BMS.

A. **FILTERS:**
THE RDC SHALL MONITOR THE STATIC PRESSURE DROP ACROSS THE FILTER BANK AND ALARM ON HIGH STATIC PRESSURE DROP. A DIFFERENTIAL PRESSURE SWITCH ACROSS THE FILTER SHALL INITIATE FILTER ALARM WHEN THE PRESSURE DROP ACROSS THE FILTER REACHES THE SETPOINT OF 1.0 INCHES W.C. (ADJUSTABLE).

B. **FIRE/SMOKE CONTROL:**
UPON ACTIVATION OF A DUCT SMOKE DETECTOR, THE BMS SHALL RECEIVE AN ALARM.

C. **GENERAL ALARM:**
ANY TROUBLE ALARM OR FAULT WITHIN THE UNIT ONBOARD CONTROLS WILL GENERATE A GENERAL ALARM TO THE BMS.

A1 PACKAGED ROOFTOP UNIT CONTROLS DIAGRAM
N.T.S.

PREPARED FOR:



355 Research Parkway
Meriden, CT 06450
(203) 630-1400
(203) 630-2815 Fax
NC FIRM LICENSE NO. C-4082

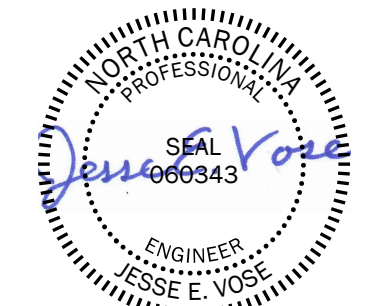
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Prototype Version

03.31.2025 2025 Q1 PT22S Prototype Release

Date	Description
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Seal / Signature



5/21/2025
LICENSE EXPIRES 12/31/2025

Project Name

WHATABURGER GARNER, NC

Date: XX.XX.2025

Project Number

2301792

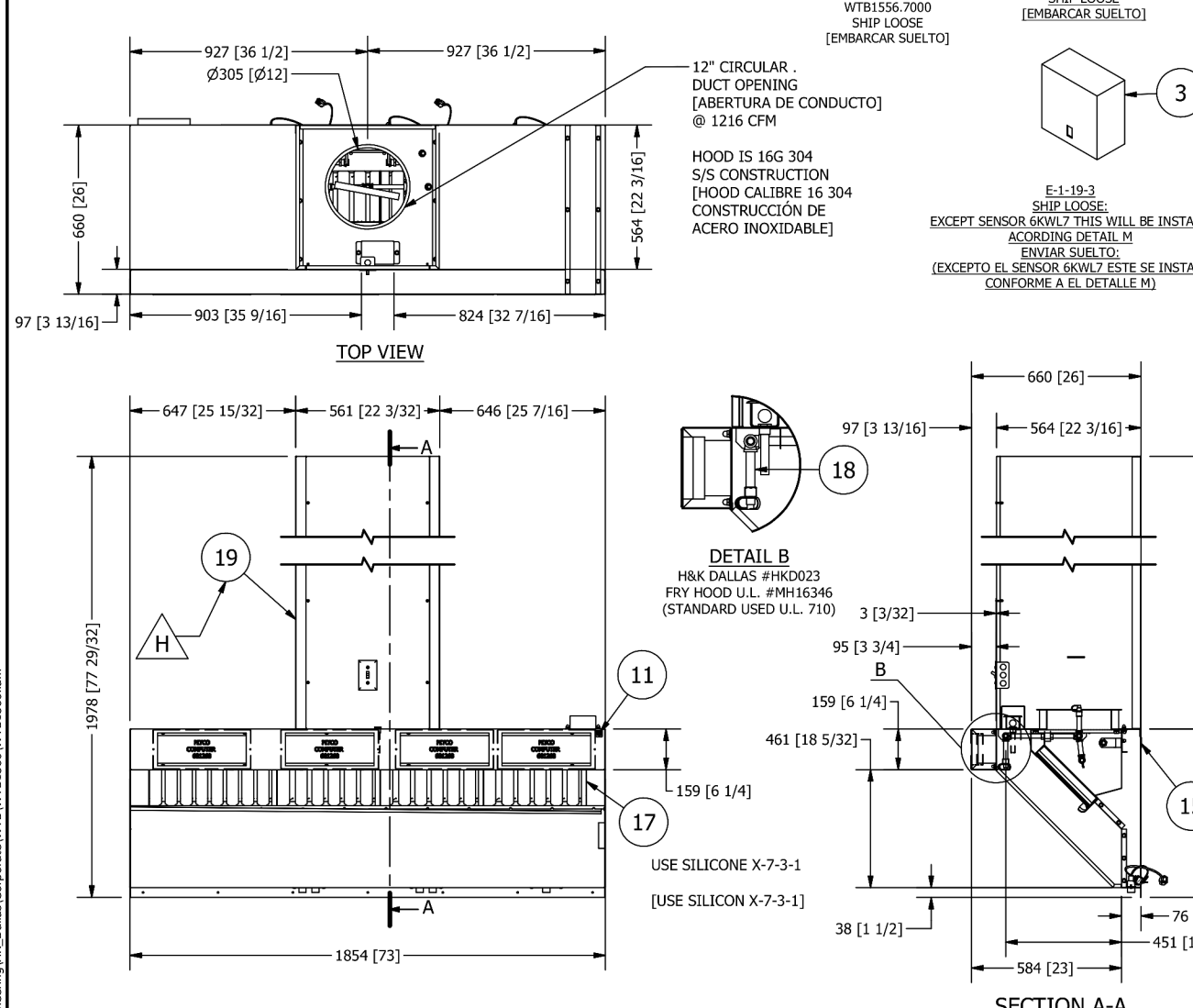
Description

MECHANICAL CONTROLS

Scale

NOT TO SCALE

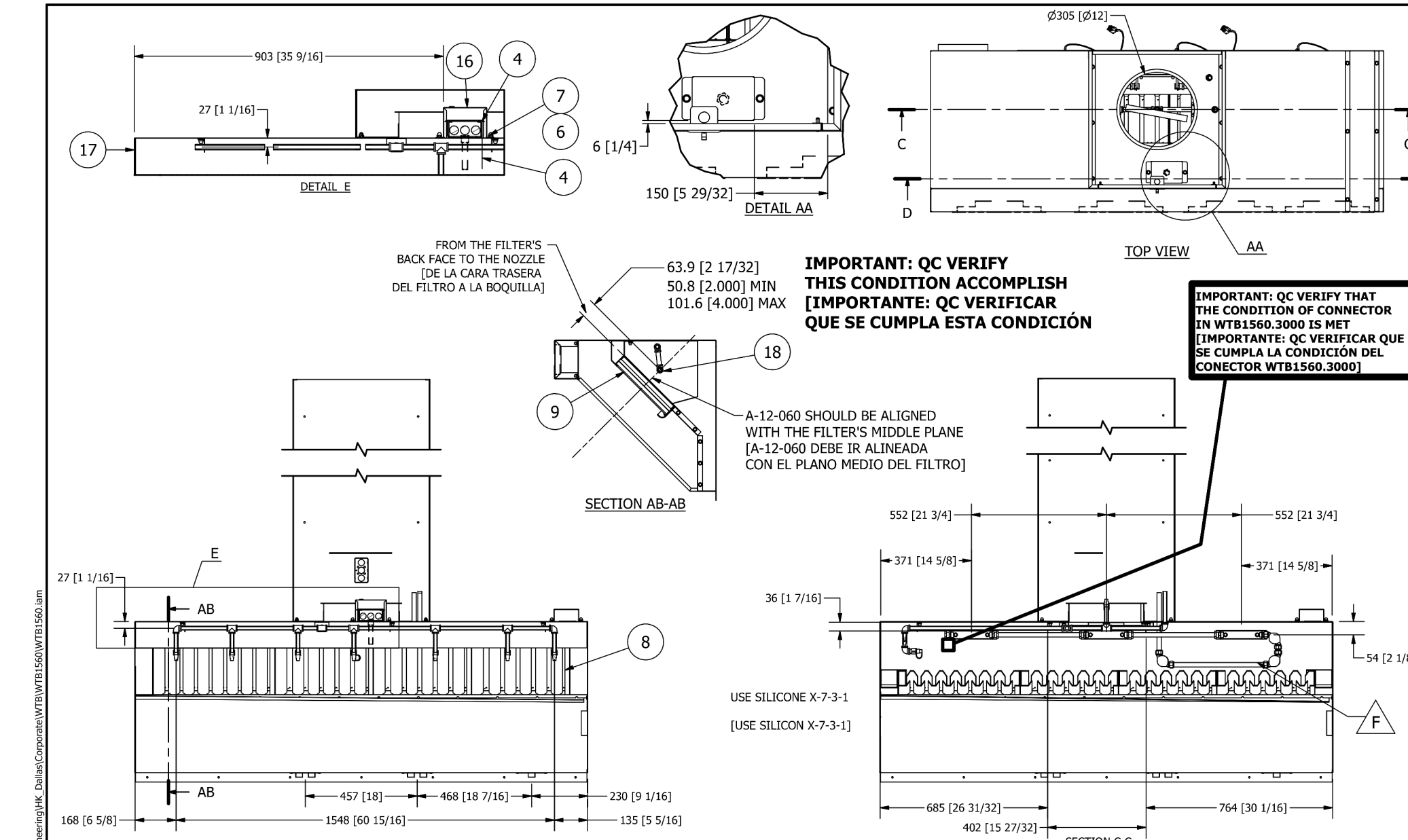
M7.1



ITEM NO.	QTY	UNIT	PART NUMBER	REV	DESCRIPTION	MATERIAL
1	1	COVER BLANK	60.204 (2)	1	COVER BLANK, 30.204 (2) #30131	Generic
2	1	TRANSVERSE SYSTEM (SENSOR)	60.204 (2)	1	TRANSVERSE SYSTEM (SENSOR)	Generic
3	1	ROOF FLG	60.204 (2)	1	ROOF FLG, 60.204 (2)	Generic
4	1	WIRE	60.204 (2)	1	WIRE	Generic
5	1	WIRE	60.204 (2)	1	WIRE	Generic
6	1	WIRE	60.204 (2)	1	WIRE	Generic
7	1	WIRE	60.204 (2)	1	WIRE	Generic
8	1	WIRE	60.204 (2)	1	WIRE	Generic
9	1	WIRE	60.204 (2)	1	WIRE	Generic
10	1	WIRE	60.204 (2)	1	WIRE	Generic
11	1	WIRE	60.204 (2)	1	WIRE	Generic
12	1	WIRE	60.204 (2)	1	WIRE	Generic
13	1	WIRE	60.204 (2)	1	WIRE	Generic
14	1	WIRE	60.204 (2)	1	WIRE	Generic
15	1	WIRE	60.204 (2)	1	WIRE	Generic
16	1	WIRE	60.204 (2)	1	WIRE	Generic
17	1	WIRE	60.204 (2)	1	WIRE	Generic
18	1	WIRE	60.204 (2)	1	WIRE	Generic
19	1	WIRE	60.204 (2)	1	WIRE	Generic

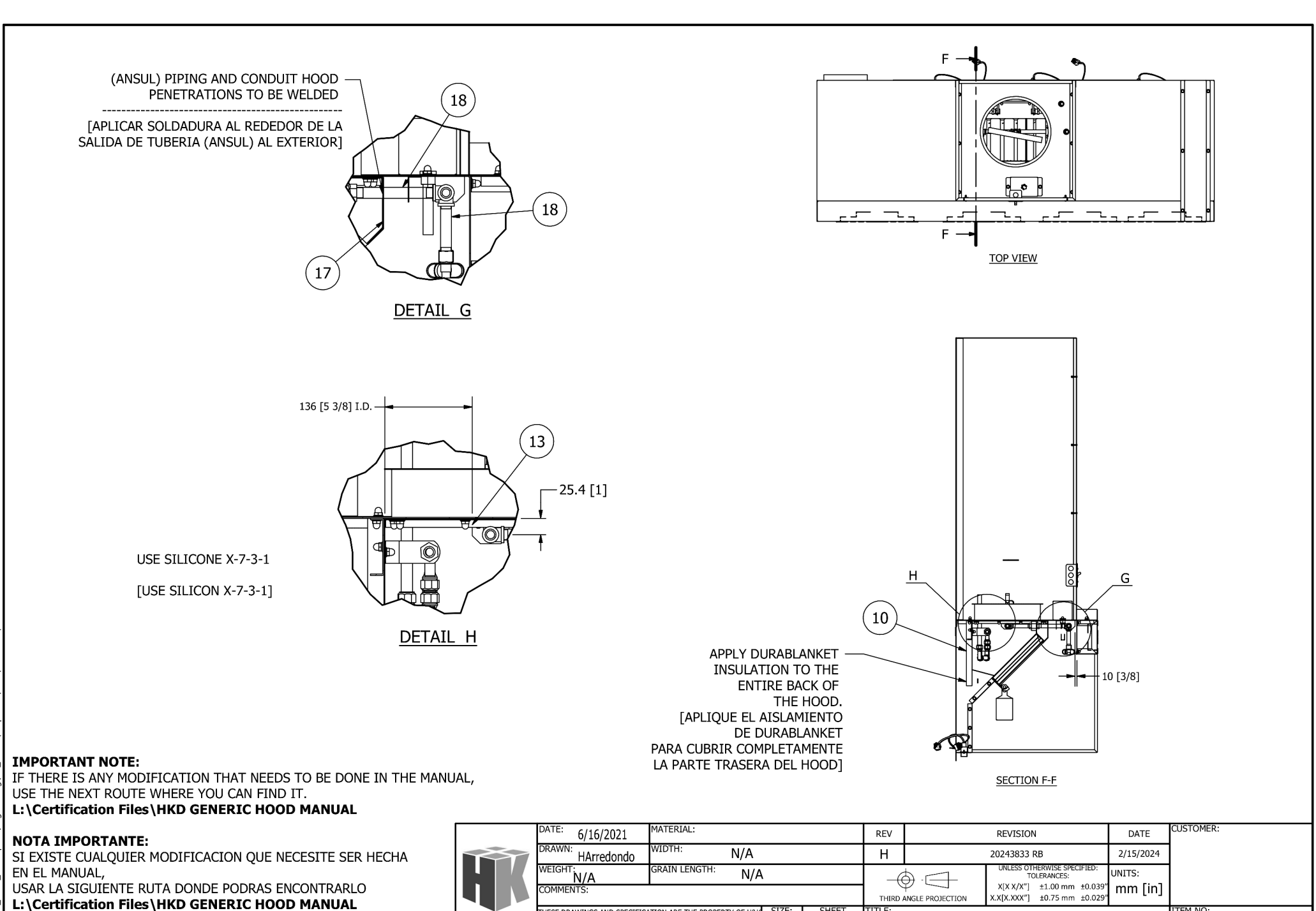
DATE	REVISION	DATE	DESCRIPTION
6/16/2021	H	20240813 RB	2/15/2024

DATE	REVISION	DATE	DESCRIPTION
6/16/2021	H	20240813 RB	2/15/2024



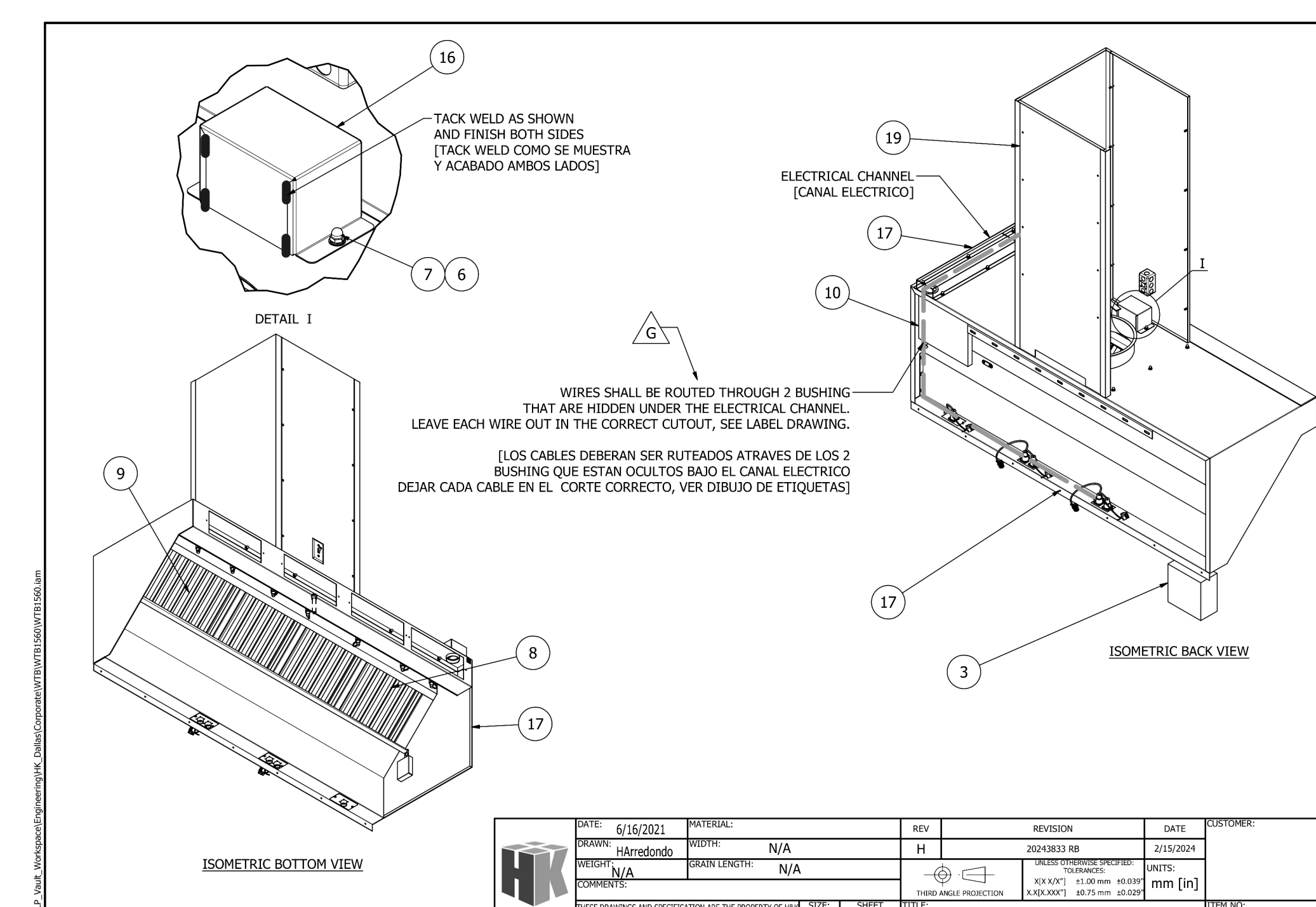
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DATE	REVISION	DATE	DESCRIPTION
6/16/2021	H	20240813 RB	2/15/2024



H&K International
P.O. Box 180729 Dallas, Texas 75218, Telephone (214) 818-3500 FAX (214) 818-3502

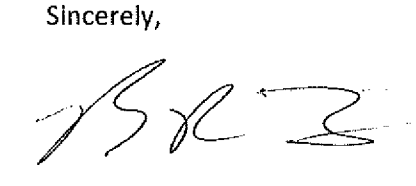
July 20th, 2022

To Whom It May Concern,

H+K Hoods comply with IMC Section 506.5.4 and 507.2.6 for zero clearance to combustible and non-combustible walls.

Should you have any questions, please contact me.

Sincerely,

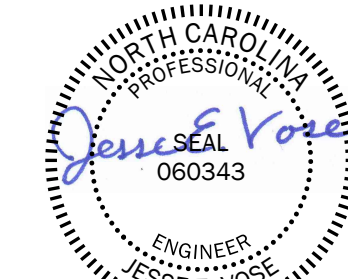


Bryan Tonn
Director of Engineering, H+K International, Inc.
2200 Skyline Drive
Mesquite, TX 75149
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Bryan.tonn@hki.com

Prototype Version
03.31.2025 2025 Q1 PT22S Prototype Release

Date	Description
10.24.2025	MECH. EQUIP. AND SITE UPDATE

Seal / Signature



Project Name
WHATABURGER GARNER, NC

Date: XX.XX.2025

Project Number
2301792

Description
HOOD DRAWINGS

Scale
NOT TO SCALE

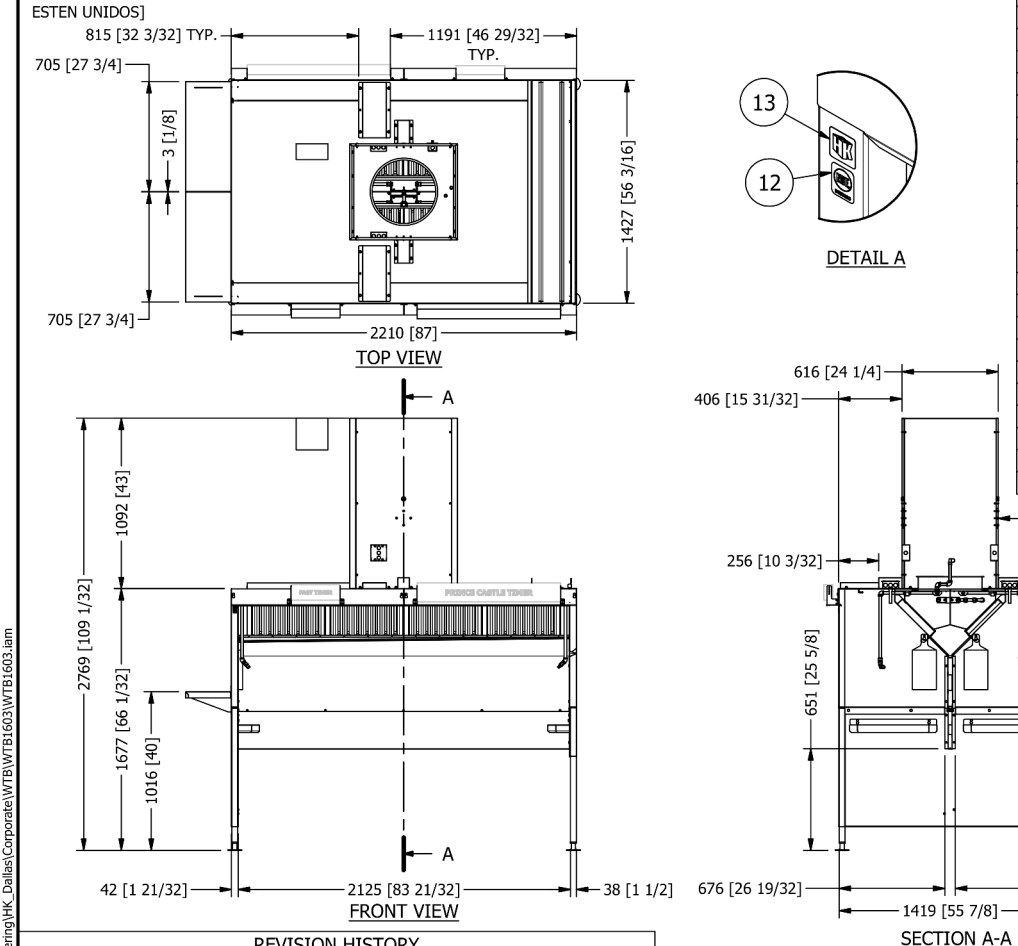
M8.1

FOR REFERENCE ONLY
HOODS ARE TO BE PROVIDED BY OWNER. HOOD AND DUCT TO BE INSTALLED BY MECHANICAL CONTRACTOR. COMPLETE ANSUL SYSTEM TO BE PROVIDED BY CERTIFIED FIRE SUPPRESSION INSTALLER, REFER TO KITCHEN DRAWINGS FOR ADDITIONAL INFORMATION.

metric ALL DOCUMENTATION RELATED TO THIS SET IS AVAILABLE ON METRIC'S WEBSITE. VISIT LA DOCUMENTACION RELACIONADA CON ESTE CONJUNTO DE DISEÑOS EN EL SITIO WEB DE METRIC. **NOTA IMPORTANTE: POR FAVOR COMPROBE QUE TODAS LAS PARTES ESTAN COLOCADAS CORRECTAMENTE.**

IMPORTANT NOTE: PLEASE CHECK THAT ALL 3 BOX ARE PLACED CORRECTLY. **NOTA IMPORTANTE:** POR FAVOR COMPROBE QUE TODAS LAS PARTES ESTAN COLOCADAS CORRECTAMENTE. **MEETS TYPE 1 HOOD REQUIREMENTS**

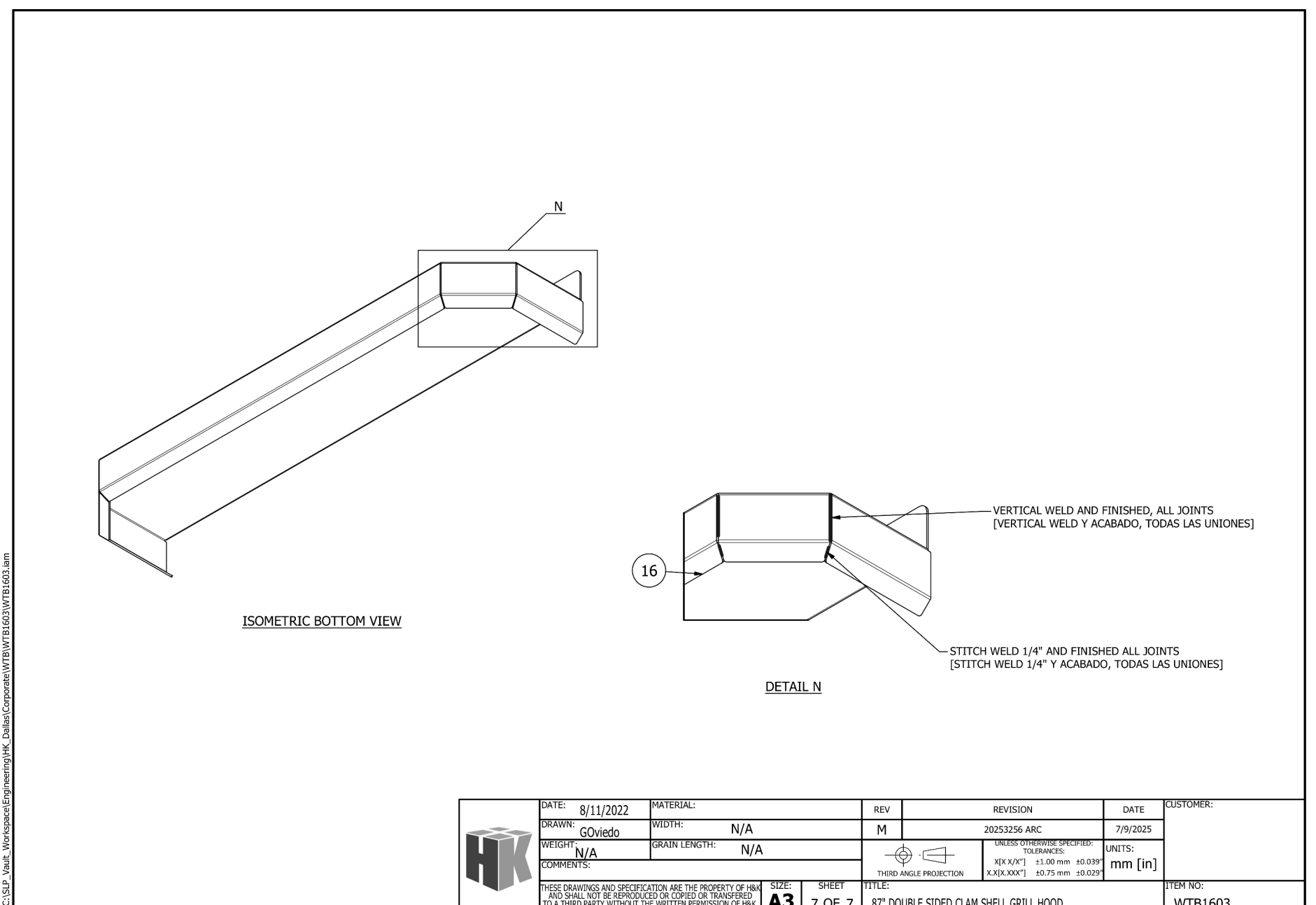
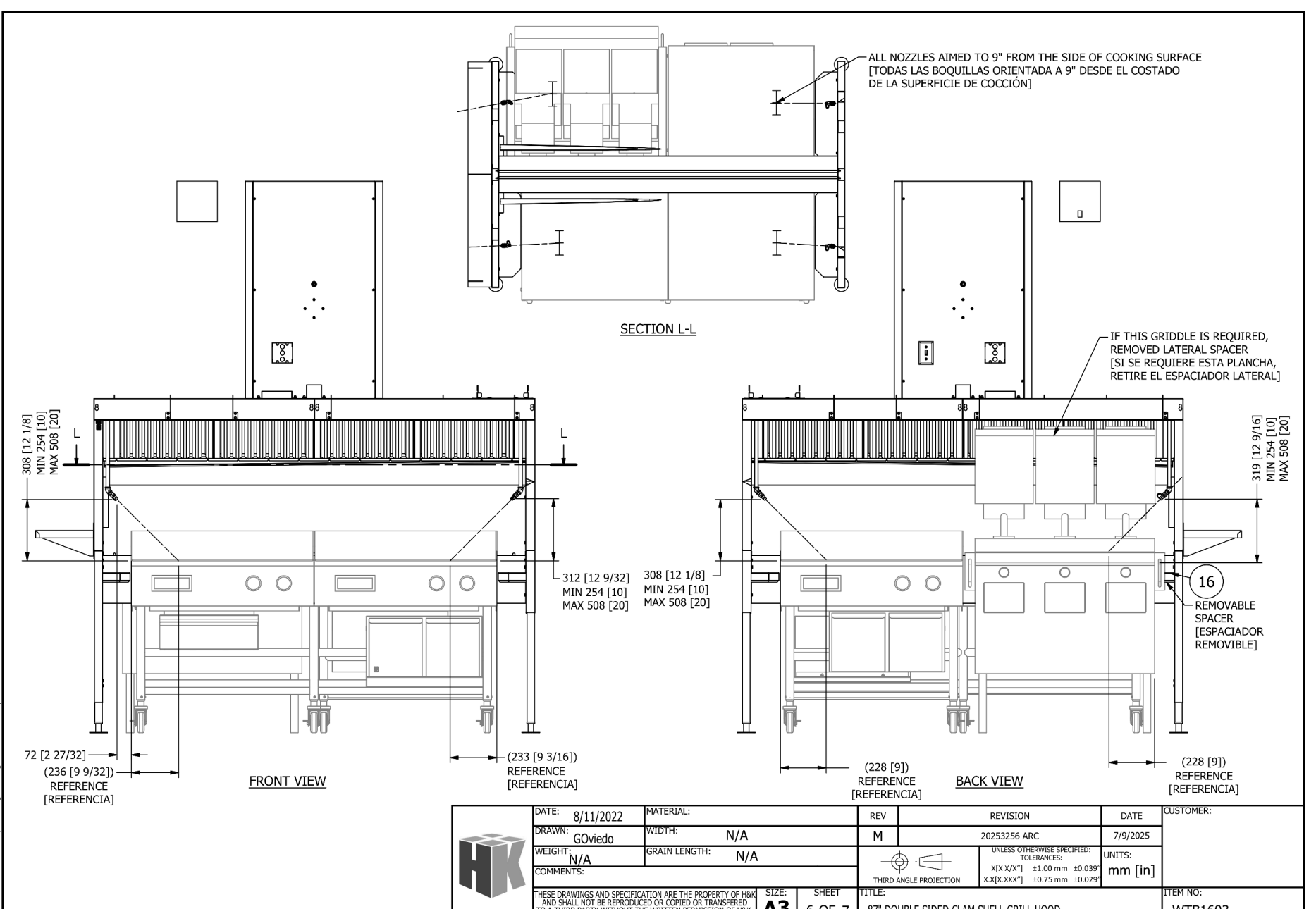
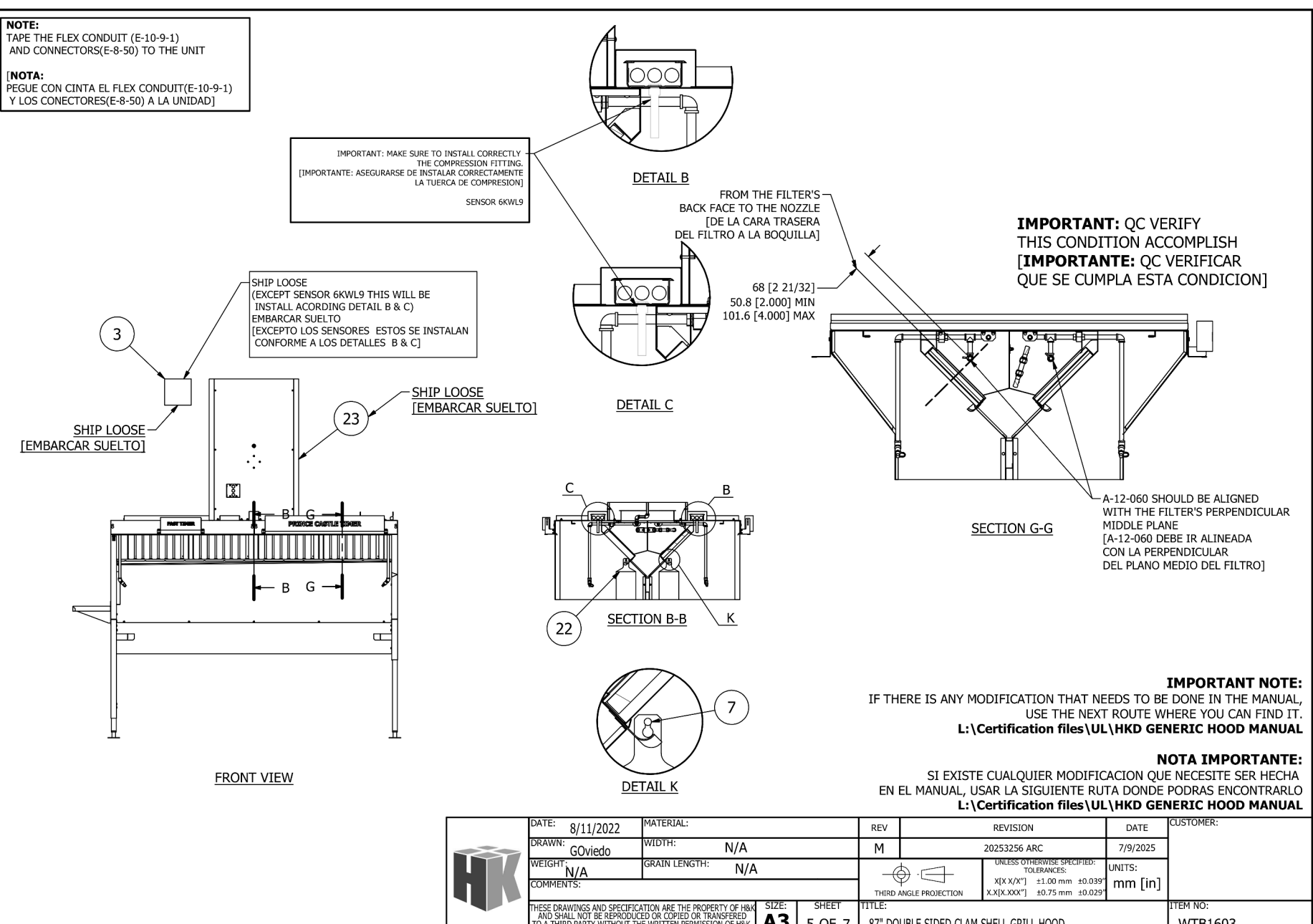
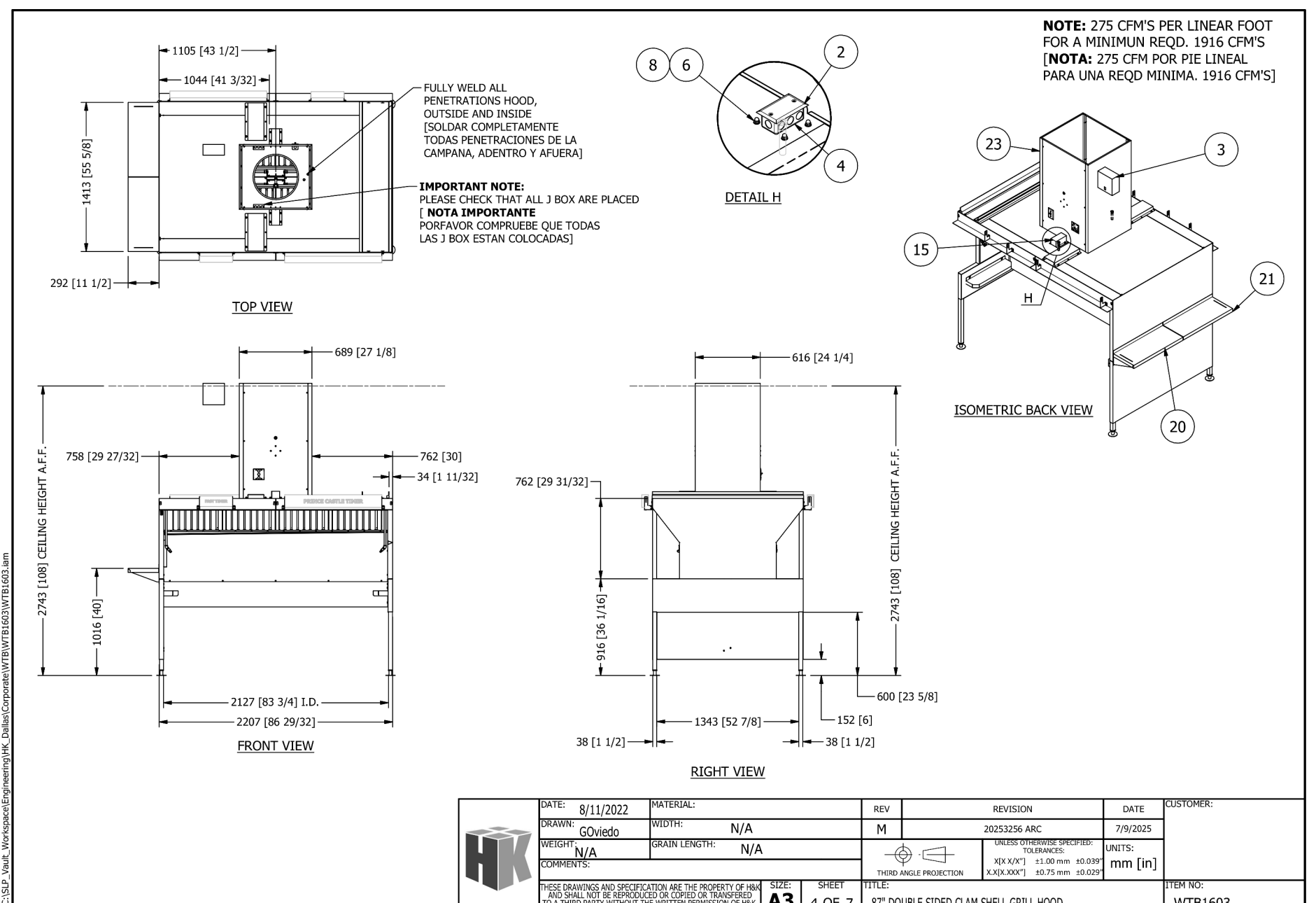
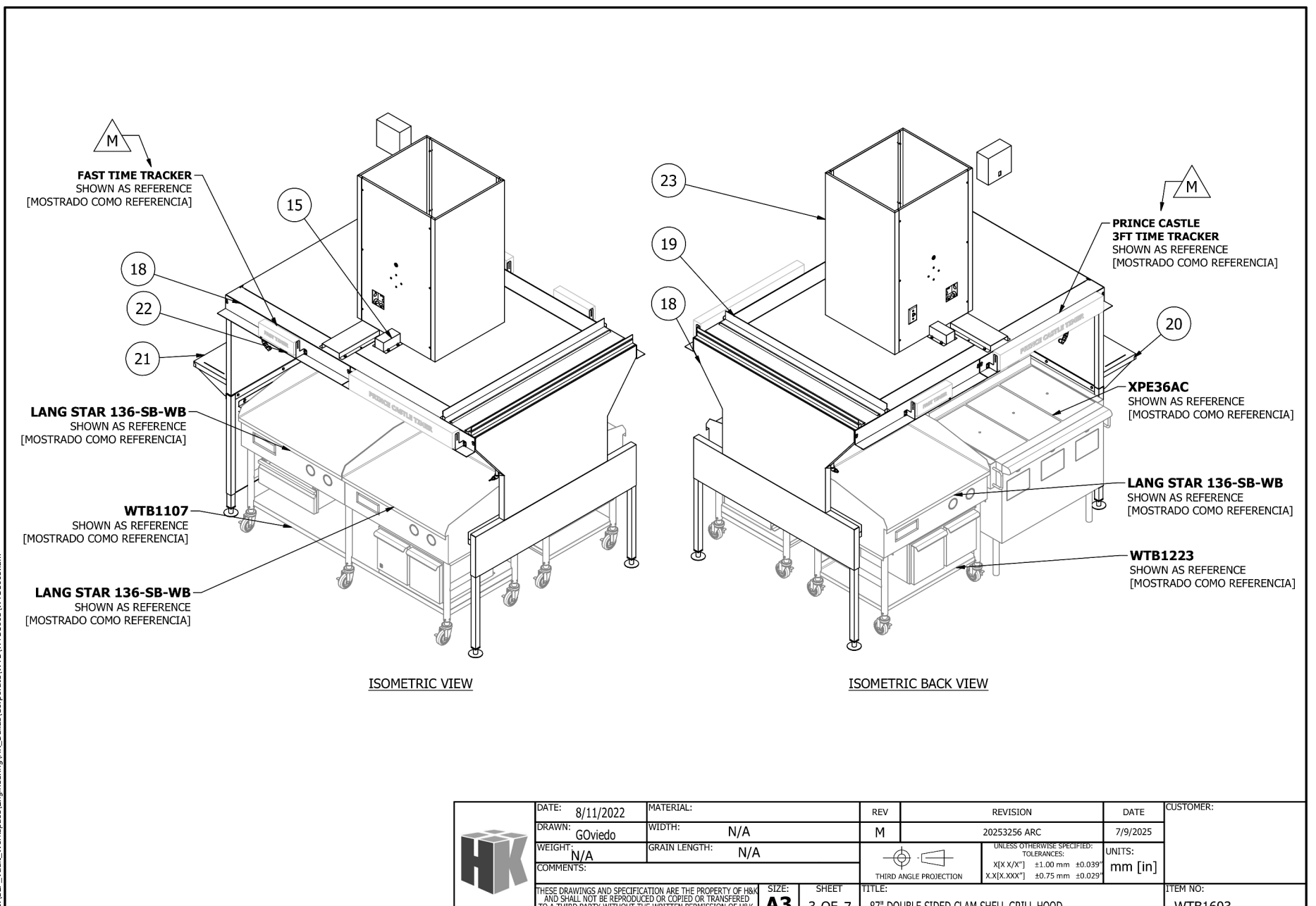
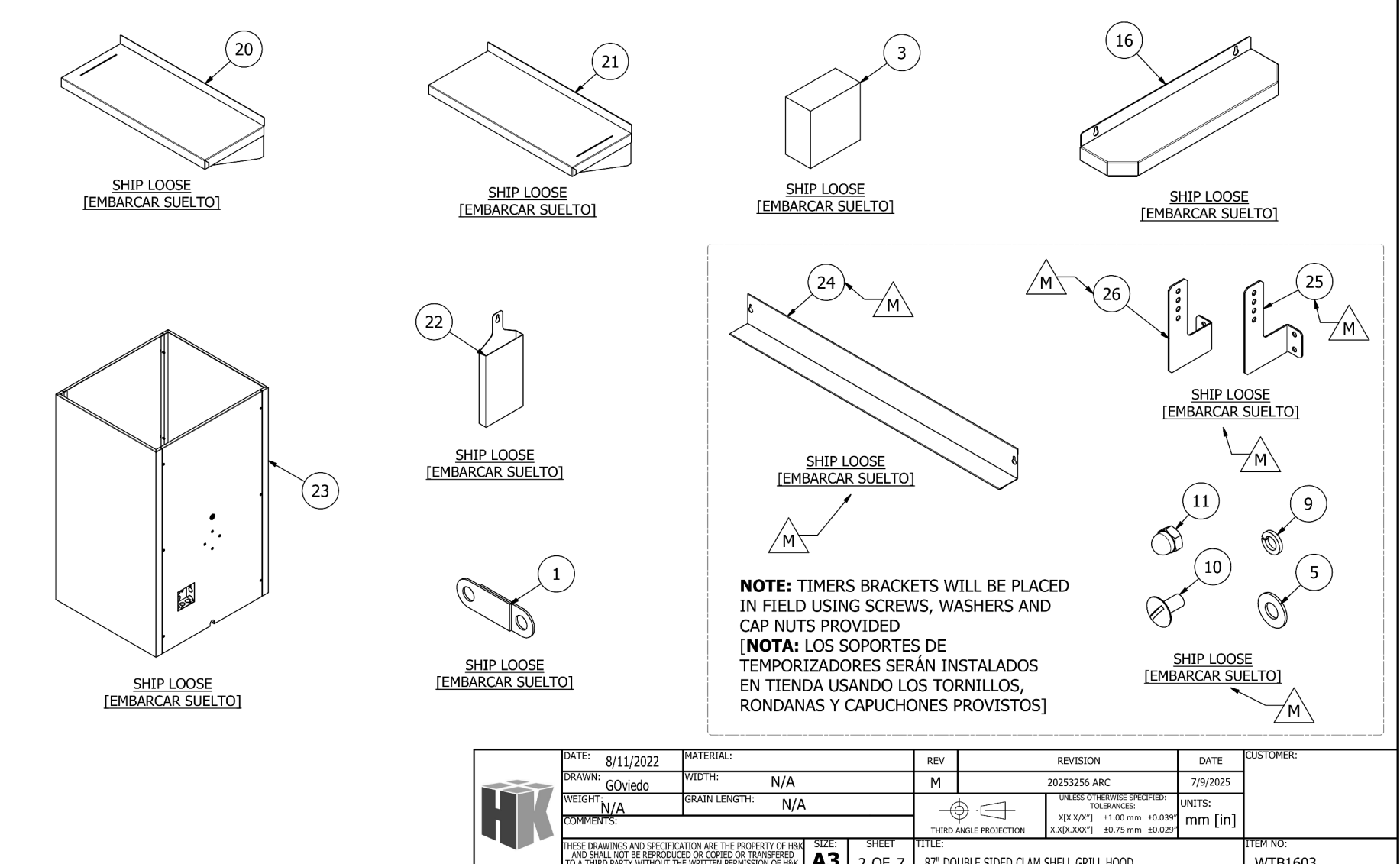
ITEM NO.	QTY	PART NUMBER	REV	DESCRIPTION	MATERIAL
1	6	A-12-003	-	FLEXIBLE LIN. (25/28K) 36GF DEG. #415745	Generic
2	2	E-1-17	-	COVER BLANK, 36,204 1/2 #9711	Generic
3	1	E-1-194	-	TEMPERATURE INTERLOCK SYSTEM (2-SENSOR)	Generic
4	2	E-2-12	-	J-HOOK #5.402 1/8X1-7/8	Generic
5	16	E-3-11	-	WASHER PLAT 5/16 X 1/2	Generic
6	36	F-3-33	-	FLUSH NUT CAP PAN PLTD TYPE KD 10-24	Generic
7	2	F-11-26	-	T10001 HONEY LAY HD.S.S. 1/4X1/2"	Generic
8	36	F-13-1	-	POSSID STUCKS CO WELD 3/16 X 1/2"	Generic
9	16	G-1-500	-	PH0402 WASHER SPRING SS BLANK	Generic
10	16	G-1-501	-	PH1201 WASHER SPRING SS BLANK	Generic
11	16	G-1-502	-	PH1202 WASHER SPRING SS BLANK	Generic
12	1	H-1-27-8	-	LAMP, LED 10W 120V	Generic
13	16	H-2-11-1	-	CL CLAMP, HD 30001 HDK LOOD 1/2X1/2" X 1/2X1/2" 5/16	Generic
14	1	H-HK0200-HK0205-EM	-	GENERIC HOOD MANUAL	Generic
15	2	WTR1603-002	-	SENSOR COVER	16 SS 304 (S-3)
16	4	WTR1603-004	-	REMOVABLE HOSE SPACER	16 SS 304 (S-3)
17	2	WTR1603-005	-	TIMBER WIRE ROUFGING CHANNEL	16 SS 304 (S-3)
18	1	WTR1603-000	-	HOOD BODY ASSY	16 SS 304 (S-3)
19	1	WTR1603-000	-	ASSY SLIDE TRAY	16 SS 304 (S-3)
20	1	WTR1603-000	-	LEFT GRILL SCRAPER SHELF	16 SS 304 (S-3)
21	1	WTR1603-000	-	RIGHT GRILL SCRAPER SHELF	16 SS 304 (S-3)
22	2	WTR1603-000	-	GREASE CATCH PAN	16 SS 304 (S-3)
23	1	WTR1603-000	-	ACQUILA Y PASCIA	16 SS 304 (S-3)
24	4	WTR1603-001	-	TIMBER BASE	16 SS 304 (S-3)
25	4	WTR1603-002	-	L BRACKET RH	16 SS 304 (S-3)
26	4	WTR1603-003	-	L BRACKET LH	16 SS 304 (S-3)



REV	Change Desc	Rev Date	Eng
1	Removed WTR1603-0100, updated & added WTR1603-001, WTR1603-002 & WTR1603-003 to general assembly, updated ship loose notes	7/19/25	ARC
2	WTR1603-0100 was added, WTR1603-003 deleted & WTR1603-1000 was update	7/1/25	JS
3		4/25/25	HT

DATE	REVISION	DATE	DESCRIPTION
8/11/2022	M	20230204-ARC	2/9/2023

SHIP LOOSE [EMBARCAR SUELTO]



FOR REFERENCE ONLY
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PREPARED FOR:

WHATABURGER

Architecture
Engineering
Environmental
Land Surveying
Companies

355 Research Parkway
Meriden, CT 06450
(203) 630-1400
(203) 630-2615 Fax
NC FIRM LICENSE NO. C-4082

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Prototype Version

03.31.2025 2025 Q1 PT22S Prototype Release

Date	Description
1 10.24.2025	MECH. EQUIP. AND SITE UPDATE

Seal / Signature

Project Name
WHATABURGER GARNER, NC

Date: XX.XX.2025

Project Number
2301792

Description
HOOD DRAWINGS

Scale
NOT TO SCALE

M8.2