

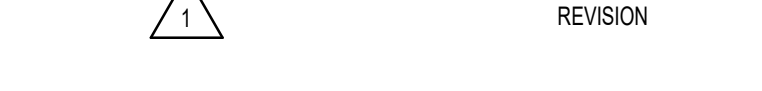
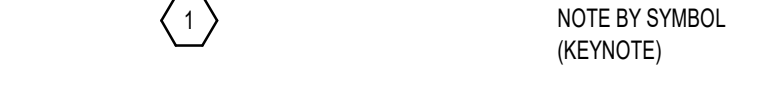
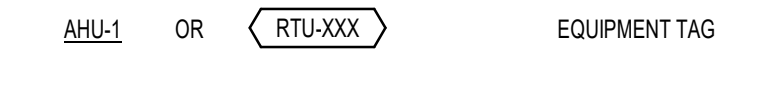
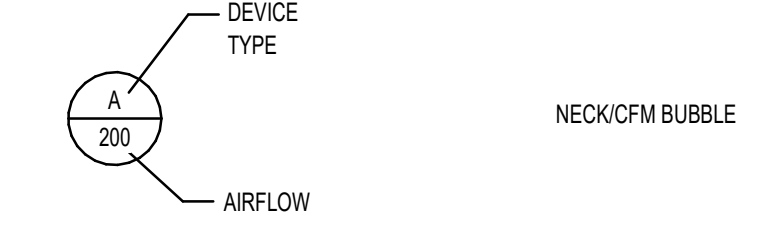
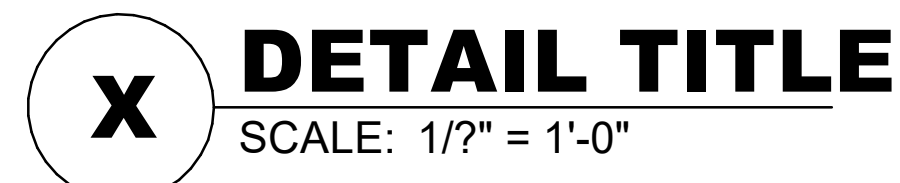
MECHANICAL SYMBOLS ABBREVIATIONS

(SOME SYMBOLS MAY NOT BE USED ON THE DRAWINGS)

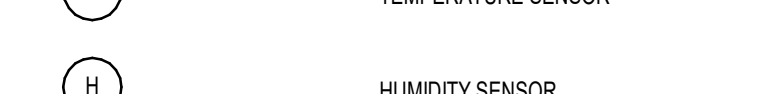
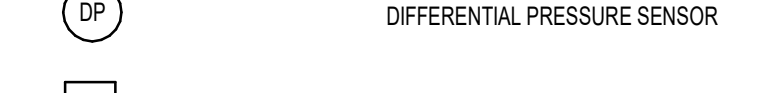
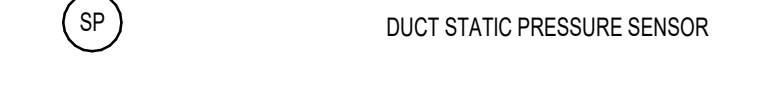
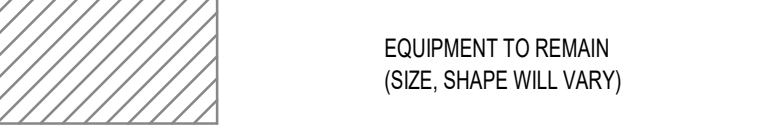
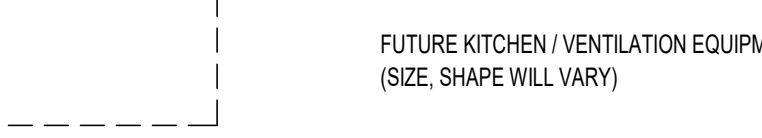
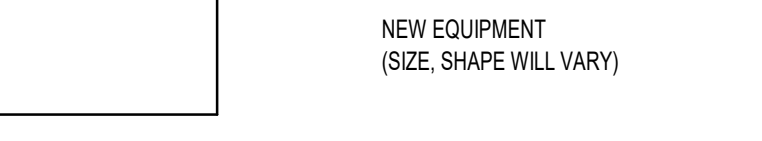
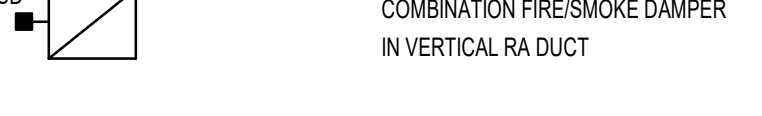
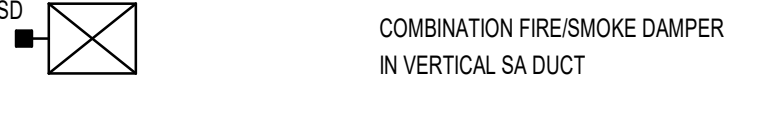
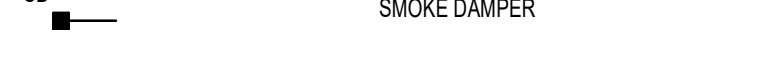
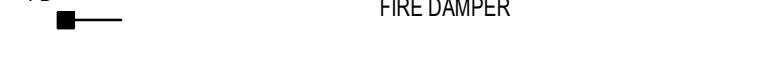
%	PERCENT
ABS	ABSOLUTE
ACC	AIR-COOLED CHILLER
ACU	AIR CONDITIONING UNIT
AD	ACCESS DOOR
AF	AIR FOIL
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
ALT	ALTITUDE
AMB	AMBIENT
AMCA	AIR MOVEMENT AND CONTROL ASSOCIATION
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
ARI	AIR-CONDITIONING AND REFRIGERATION 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	TIME
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
VO	VOLUME DAMPER
VENT	VENTILATION
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VOL	VOLUME
VP	VELOCITY PRESSURE
W	HUMIDITY RATIO OR WATT
W.C.	WATER COLUMN
W.G.	WATER GAUGE
WB	WET BULB
WT	WEIGHT
YR	YEAR

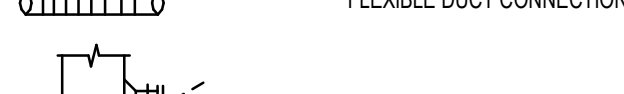
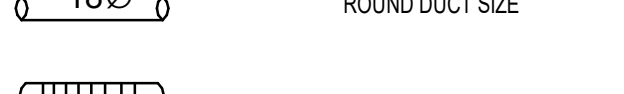
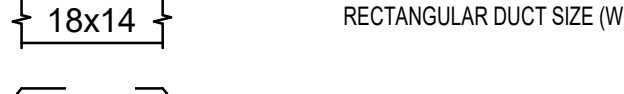
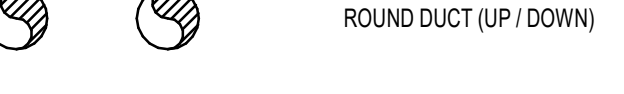
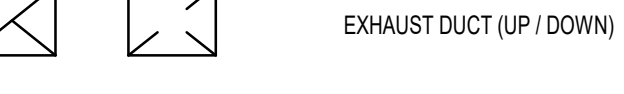
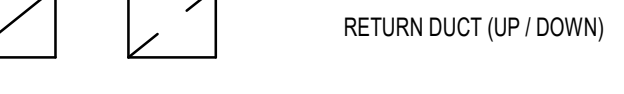
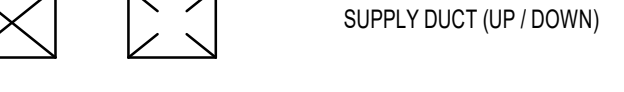
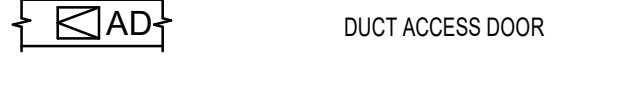
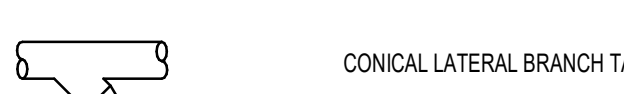
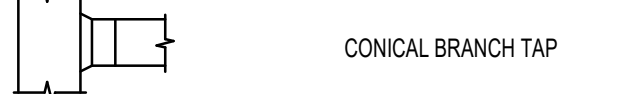
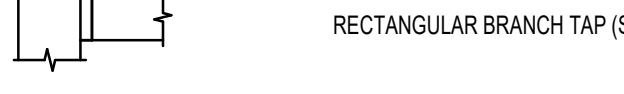
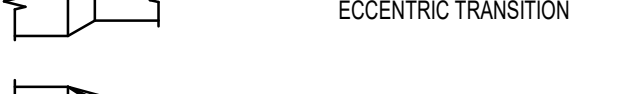
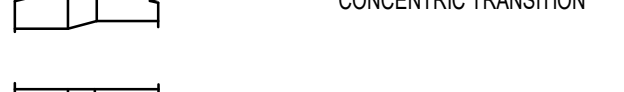
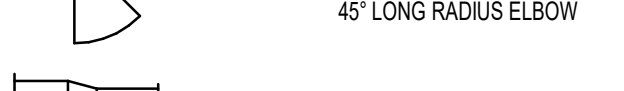
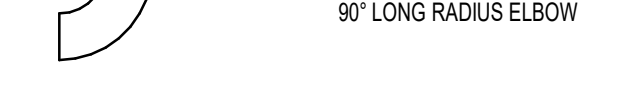
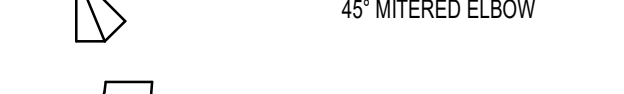
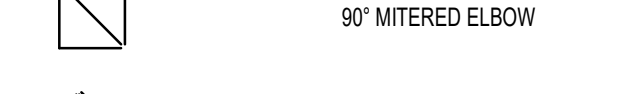
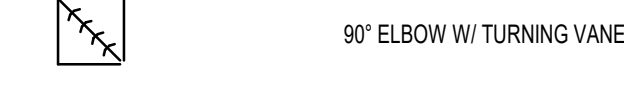
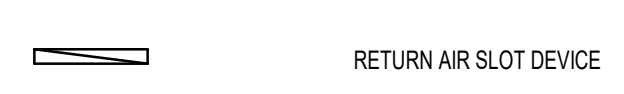
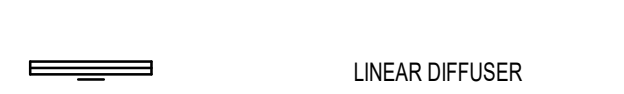
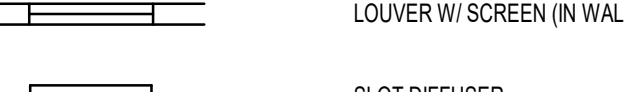
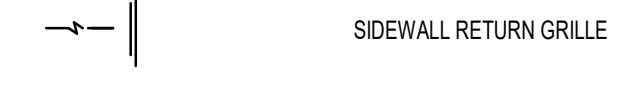
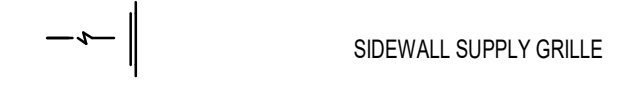
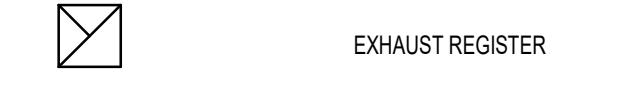
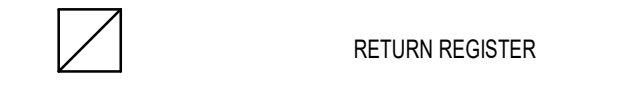
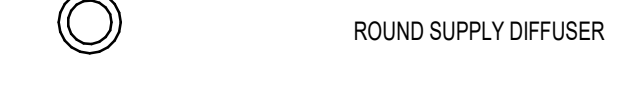
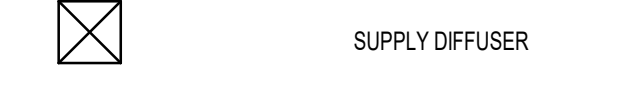
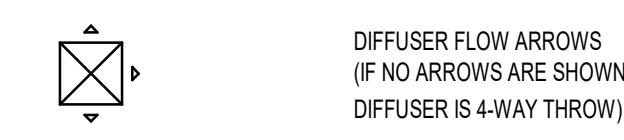
SHEET SYMBOLS



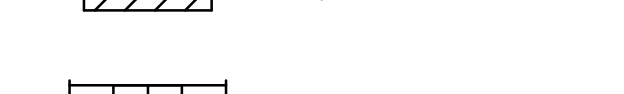
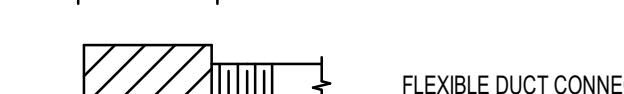
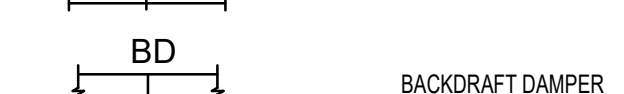
MECHANICAL EQUIPMENT



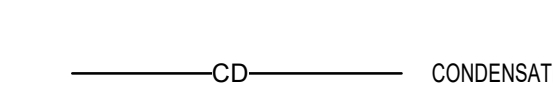
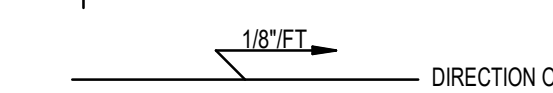
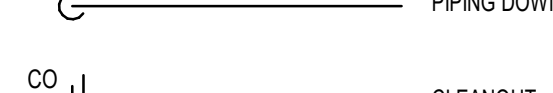
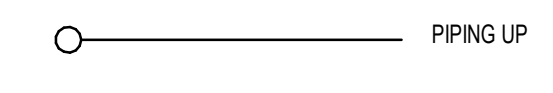
DUCTWORK



DUCTWORK



PIPING SYMBOLS



HVAC DESIGN CRITERIA

ASHRAE FUNDAMENTALS - 2021: SUMMER COOLING DESIGN (0.4%):

WEATHER STATION - COLUMBIA METRO, SC	97.2 °F DRY BULB
ELEVATION: 225'	75.3 °F WET BULB

WINTER HEATING DESIGN (99.6%):

23.5 °F DRY BULB

GENERAL NOTES

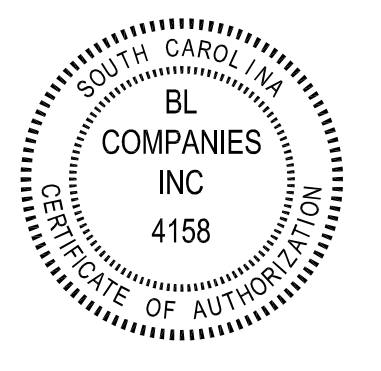
- PERFORM WORK IN ACCORDANCE WITH THE LATEST EDITIONS, REVISIONS, AMENDMENTS OR SUPPLEMENTS OF APPLICABLE STATUTES, ORDINANCES, CODES OR REGULATIONS OF FEDERAL, STATE AND LOCAL AUTHORITIES HAVING JURISDICTION IN EFFECT ON THE DATE BIDS ARE RECEIVED.
- REFER TO SPECIFICATIONS FOR MATERIALS AND METHODS 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 OBJECTONABLE 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.



355 Research Parkway
Meriden, CT 06450
(203) 630-1406
(203) 630-2615 Fax

© 2023 BL COMPANIES, INC. THESE DRAWINGS SHALL NOT BE UTILIZED BY ANY PERSON, FIRM OR CORPORATION WITHOUT THE SPECIFIC WRITTEN PERMISSION OF BL COMPANIES.

PREPARED FOR:



Date	Description
------	-------------

Seal / Signature



WHATABURGER LEXINGTON, SC

Project Name

NEQ PLATT SPRINGS ROAD & SOUTH LAKE DRIVE

Date: 07.21.2023

Project Number

2201914

Description

GENERAL NOTES, SYMBOLS AND ABBREVIATIONS

Scale

NOT TO SCALE

M0.1

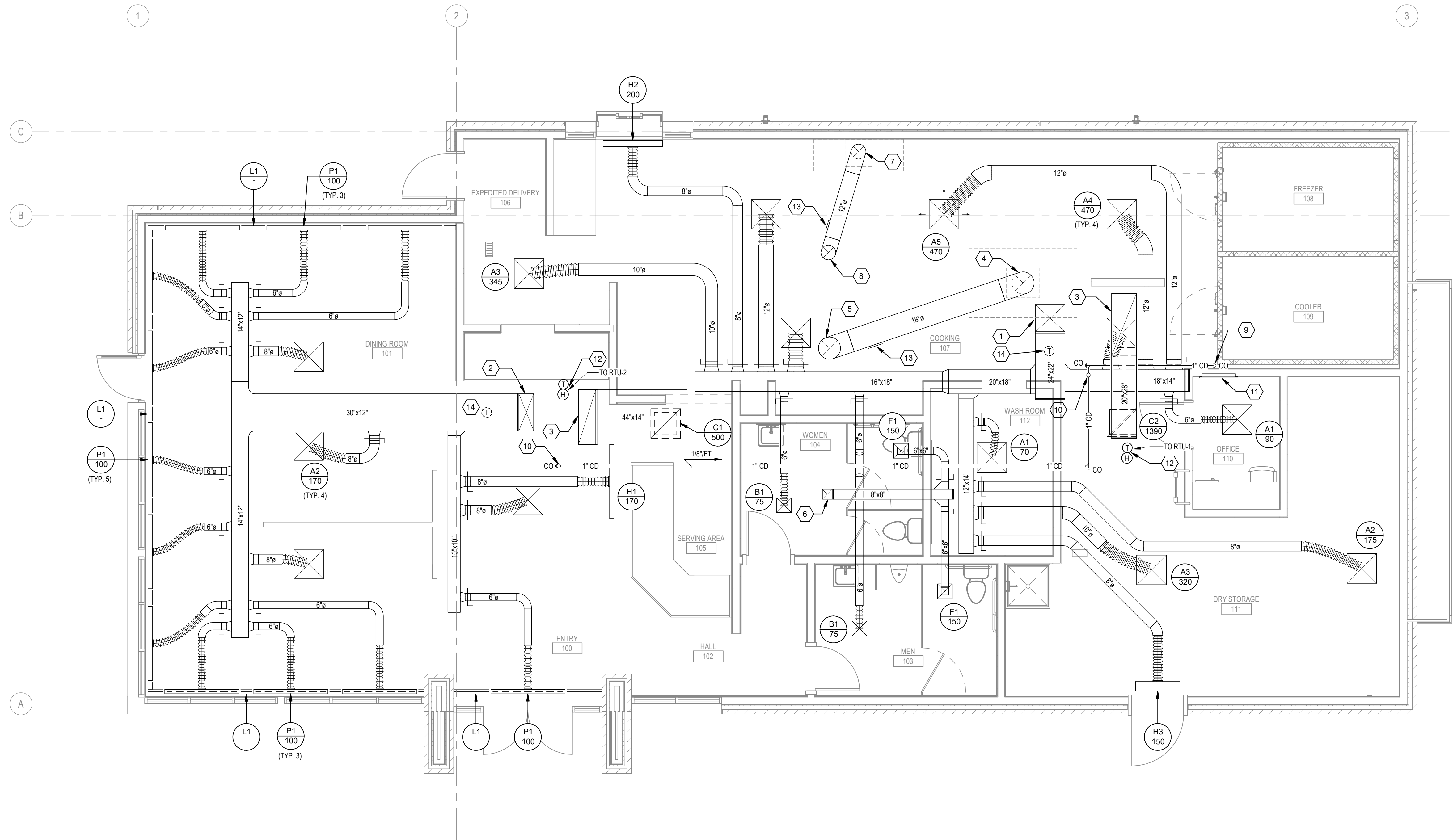
5/26/2023 9:50:07 AM C:\Users\panderson\Documents\2201914_MECH_Central_R22_panderson\B24\NC.vrt

MECHANICAL KEY NOTES

- 1 24"x22" SUPPLY DUCT UP TO RTU-1. PROVIDE DUCT TRANSITION AS REQUIRED TO MATCH UNIT CONNECTION SIZE.
- 2 30"x12" SUPPLY DUCT UP TO RTU-2. PROVIDE DUCT TRANSITION AS REQUIRED TO MATCH UNIT CONNECTION SIZE.
- 3 FULL SIZE RETURN DUCT UP TO RTU. PROVIDE DUCT SIZE AS REQUIRED TO MATCH UNIT CONNECTION SIZE.
- 4 CONNECT KITCHEN EXHAUST HOOD ABOVE GRILL UP TO KEF-1 WITH 18" DIA. PRE-FABRICATED UL 1978 LISTED AND LABELED GREASE DUCT (DURAVENT DIS1 OR EQUAL). PROVIDE TRANSITIONS ABOVE CEILING AS REQUIRED.
- 5 18" EXHAUST DUCT UP TO KEF-1 ON ROOF. RE: A2/M5.1
- 6 8"x8" EXHAUST DUCT UP TO EF-1 ON ROOF. RE: A1/M5.1
- 7 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 TRANSITIONS ABOVE CEILING AS REQUIRED.
- 8 12" EXHAUST DUCT UP TO KEF-2 ON ROOF. RE: A2/M5.1
- 9 CONDENSATE DOWN TO FLOOR. TERMINATE CONDENSATE AT FLOOR DRAIN.
- 10 FULLY INSULATED COPPER CONDENSATE PIPE UP THROUGH ROOF. RE: C1/M5.1
- 11 THE EMERSON SITE SUPERVISOR DISPLAY AND CONTROLLER PANEL SHALL BE MOUNTED AND INSTALLED FLUSH IN THE MANAGER'S OFFICE AT 5' AFF TO CENTER.
- 12 TEMPERATURE AND HUMIDITY SENSORS "T" AND "H" TO BE CEILING MOUNTED AND TIED INTO THE BUILDING CONTROL SYSTEM.
- 13 LISTED GREASE DUCT ACCESS DOOR ASSEMBLY. INSTALL ON SIDE OF DUCT.
- 14 SUPPLY AIR DUCT MOUNTED TEMPERATURE SENSOR. INSTALL ON BOTTOM OF DUCT.

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, E.C. AND GC. REFERENCE M0.1 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. A THIRD PARTY SHALL BE HIRED BY THE OWNER AS PART OF THIS PROJECT TO PROVIDE/PERFORM 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 ECONOMIZER 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.

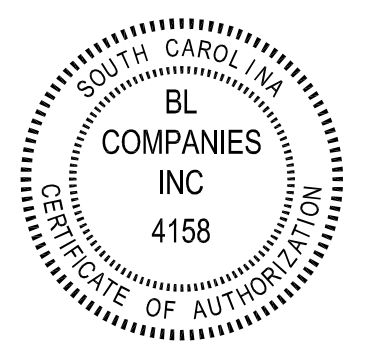


A1 MECHANICAL FLOOR PLAN - LEVEL 1
1/4" = 1'-0"



© 2023 BL COMPANIES, INC. THESE DRAWINGS SHALL NOT BE UTILIZED BY ANY PERSON, FIRM OR CORPORATION WITHOUT THE SPECIFIC WRITTEN PERMISSION OF BL COMPANIES.

PREPARED FOR:



Date	Description
------	-------------

Seal / Signature

Michael W. Belski
MICHAEL W. BELSKI
No. 37505
PROFESSIONAL ENGINEER
STATE OF SOUTH CAROLINA

WHATABURGER LEXINGTON, SC
Project Name
NEQ PLATT SPRINGS ROAD & SOUTH LAKE DRIVE
Date: 07.21.2023

Project Number
2201914
Description
MECHANICAL FLOOR PLAN

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

M1.1

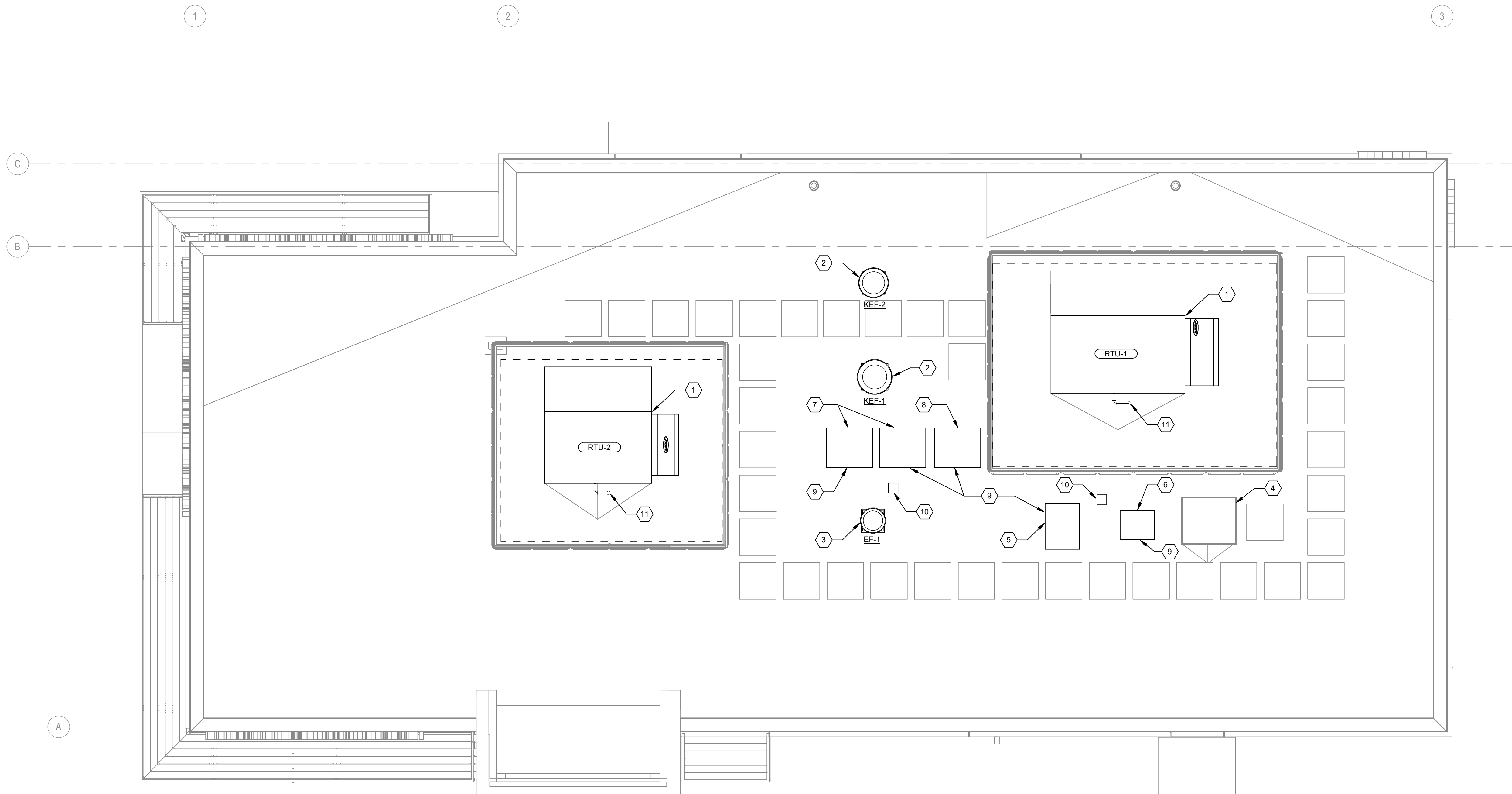
5/26/2023 9:50:08 AM C:\Users\janderson\Documents\201914_MECH_Central_R22_penderson824\NC.rvt

MECHANICAL KEY NOTES

- 1 ROOFTOP HVAC UNIT MOUNTED ON PRE-FABRICATED CURB, RE: C5M5.1
- 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 ROOF ACCESS HATCH, RE: ARCHITECTURE.
- 5 KITCHEN FREEZER CONDENSING UNIT MOUNTED ON ROOFTOP; FURNISHED BY OWNER.
- 6 KITCHEN REFRIGERATOR CONDENSING UNIT MOUNTED ON ROOFTOP; FURNISHED BY OWNER.
- 7 KITCHEN ICEMAKER CONDENSING UNIT MOUNTED ON ROOFTOP; FURNISHED BY OWNER.
- 8 KITCHEN MULTIPLEX CONDENSING UNIT MOUNTED ON ROOFTOP; FURNISHED BY OWNER.
- 9 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.
- 10 REFRIGERATION PIPING ROOF PENETRATION, RE: C1M5.1
- 11 ROUTE CONDENSATE LINE DOWN THROUGH ROOF, RE: A1M1.1 FOR CONTINUATION AND RE: C1M5.1 FOR DETAIL.

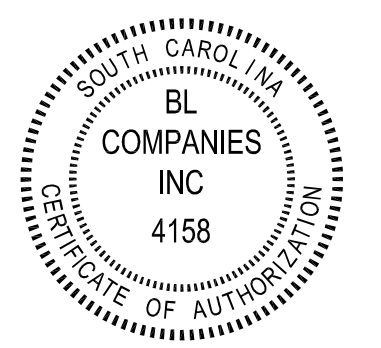
MECHANICAL GENERAL NOTES

- 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. A THIRD PARTY SHALL BE HIRED BY THE OWNER AS PART OF THIS PROJECT TO PROVIDE/PERFORM 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 ECONOMIZER 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.



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

PREPARED FOR:



Date	Description
------	-------------

Seal / Signature



WHATABURGER LEXINGTON, SC

Project Name

NEQ PLATT SPRINGS ROAD & SOUTH LAKE DRIVE

Date: 07.21.2023

Project Number

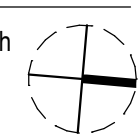
2201914

Description

MECHANICAL ROOF PLAN

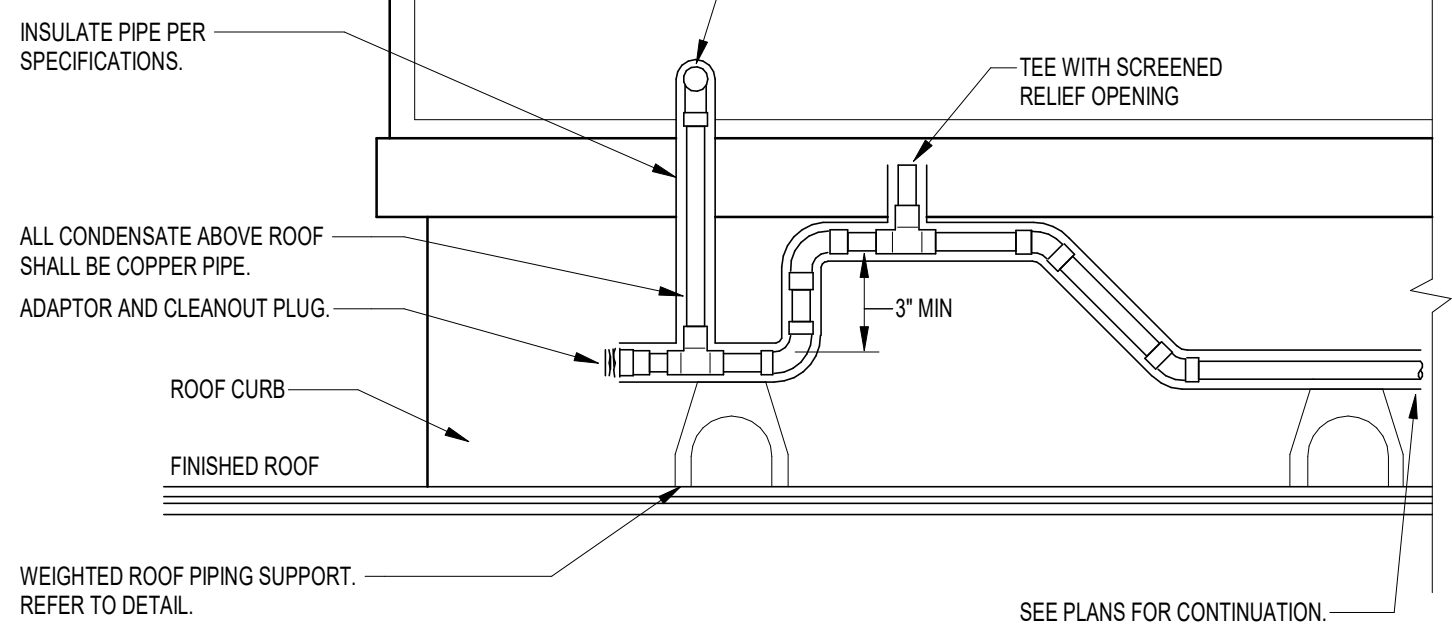
Scale

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

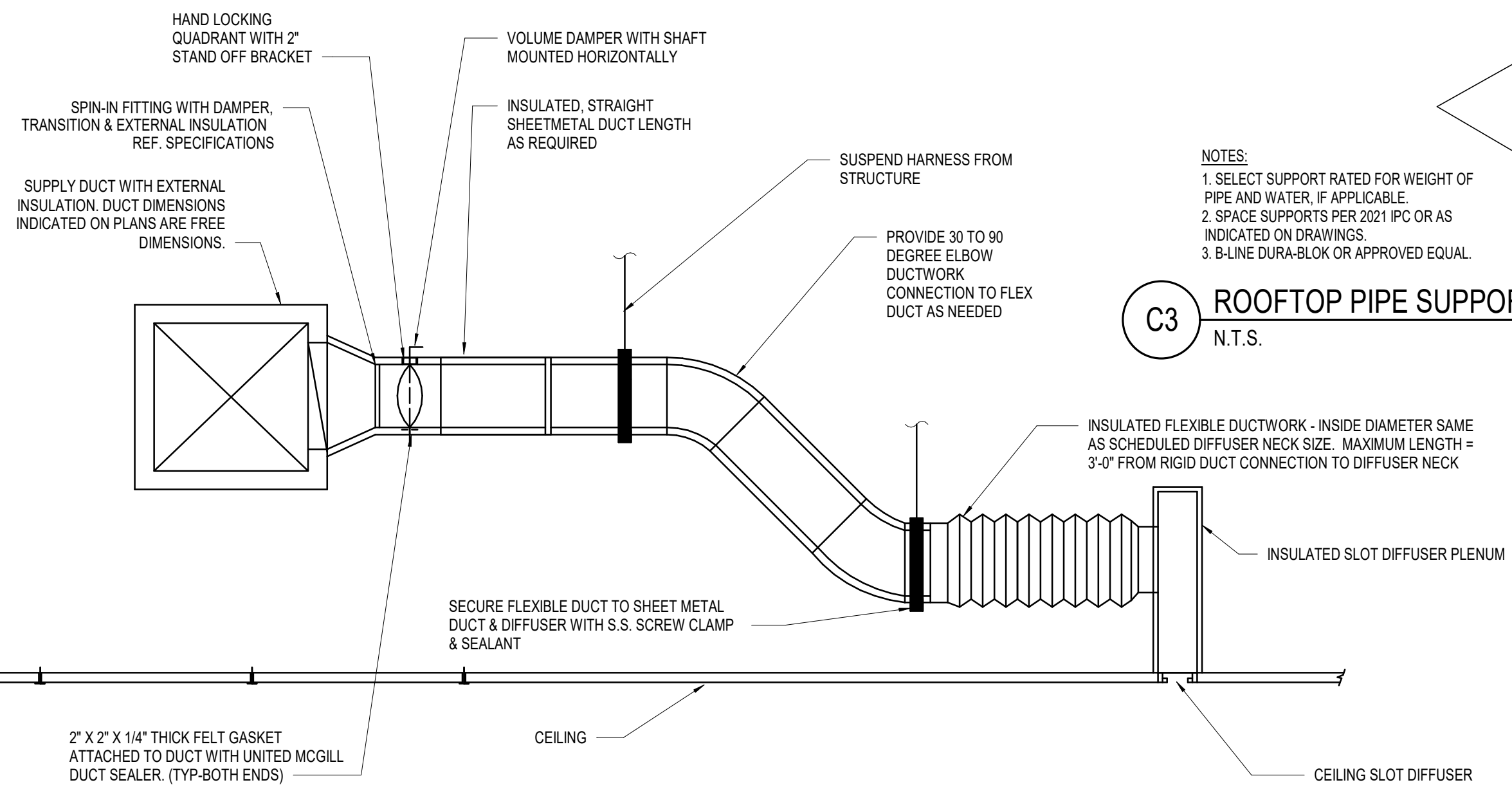


M2.1

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



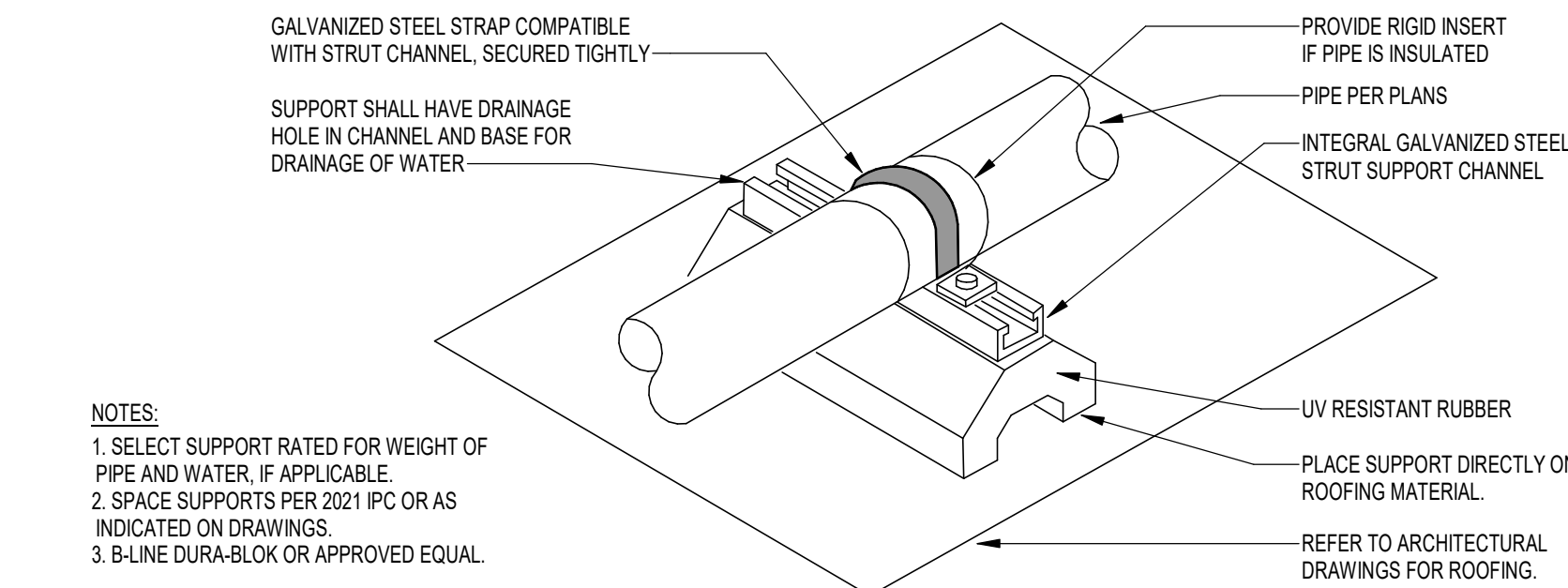
C1 RTU CONDENSATE DRAIN DETAIL
N.T.S.



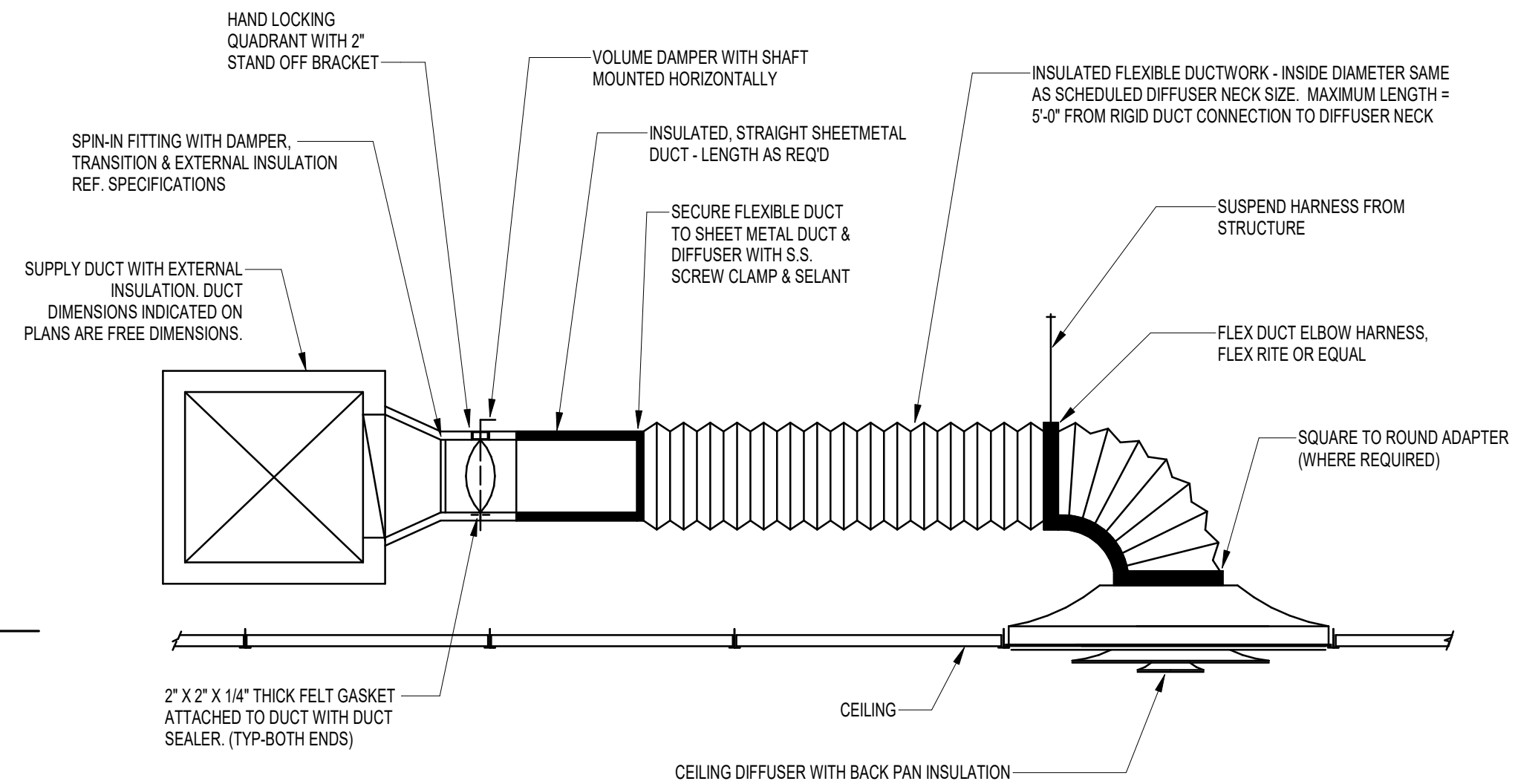
C3 ROOFTOP PIPE SUPPORT DETAIL
N.T.S.

C4 PIPE SUPPORT ROLLER STAND
N.T.S.

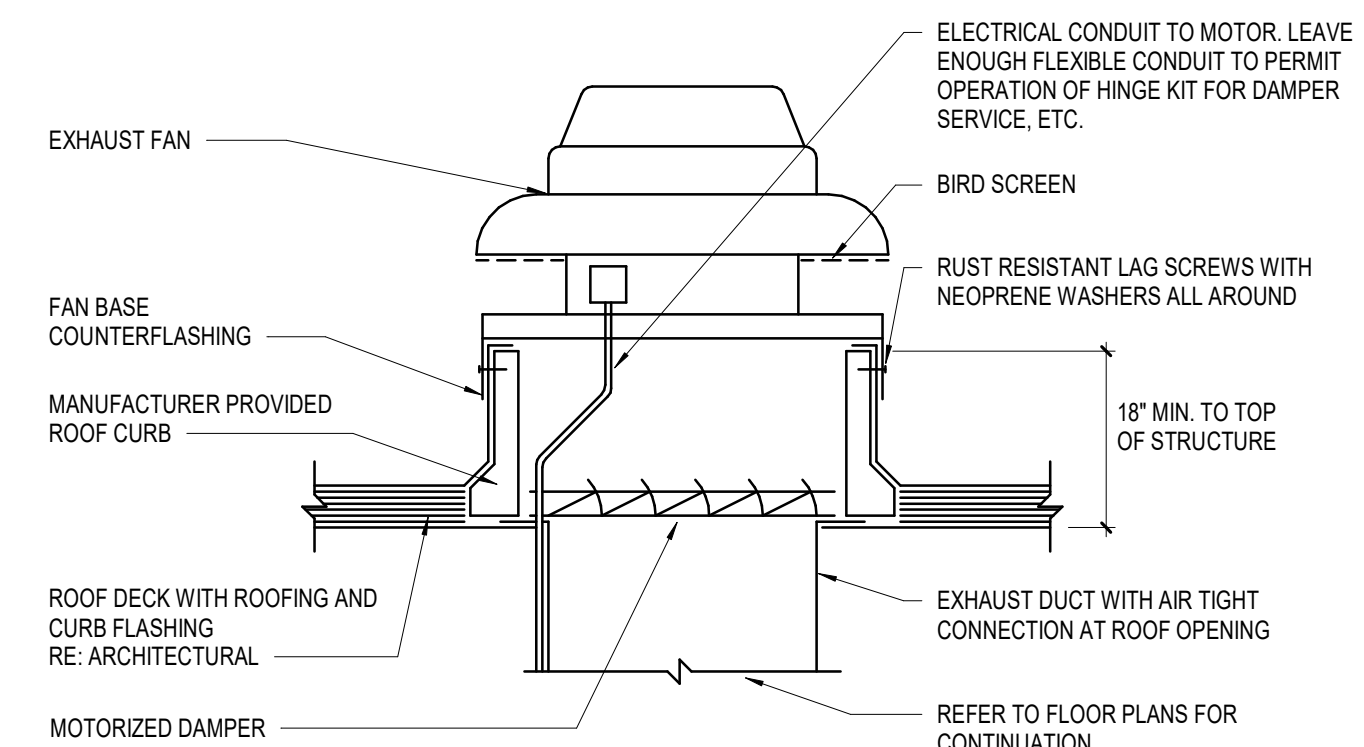
C2 PIPING THROUGH ROOF DETAIL
N.T.S.



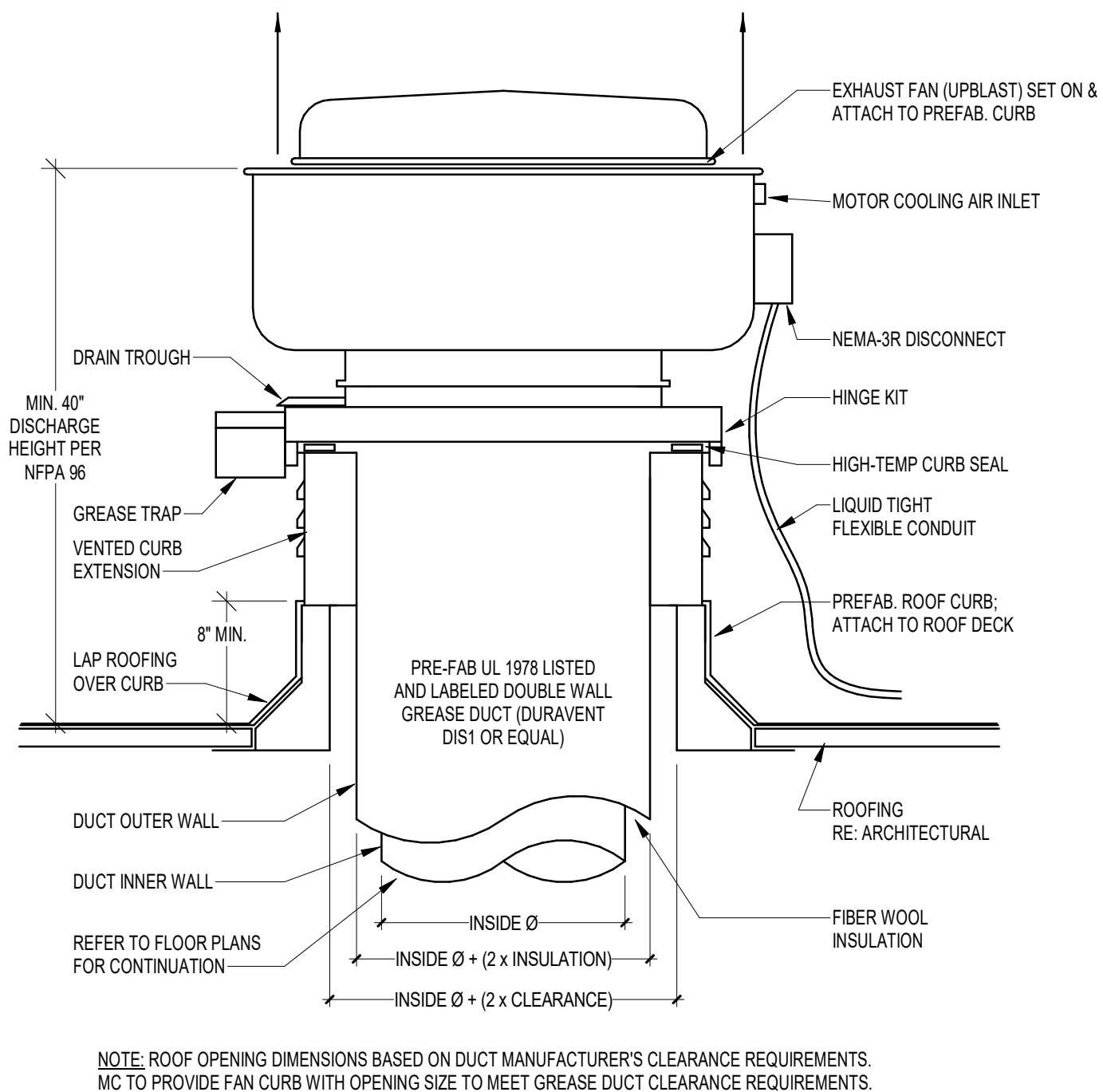
C5 ROOFTOP HVAC UNIT DETAIL
N.T.S.



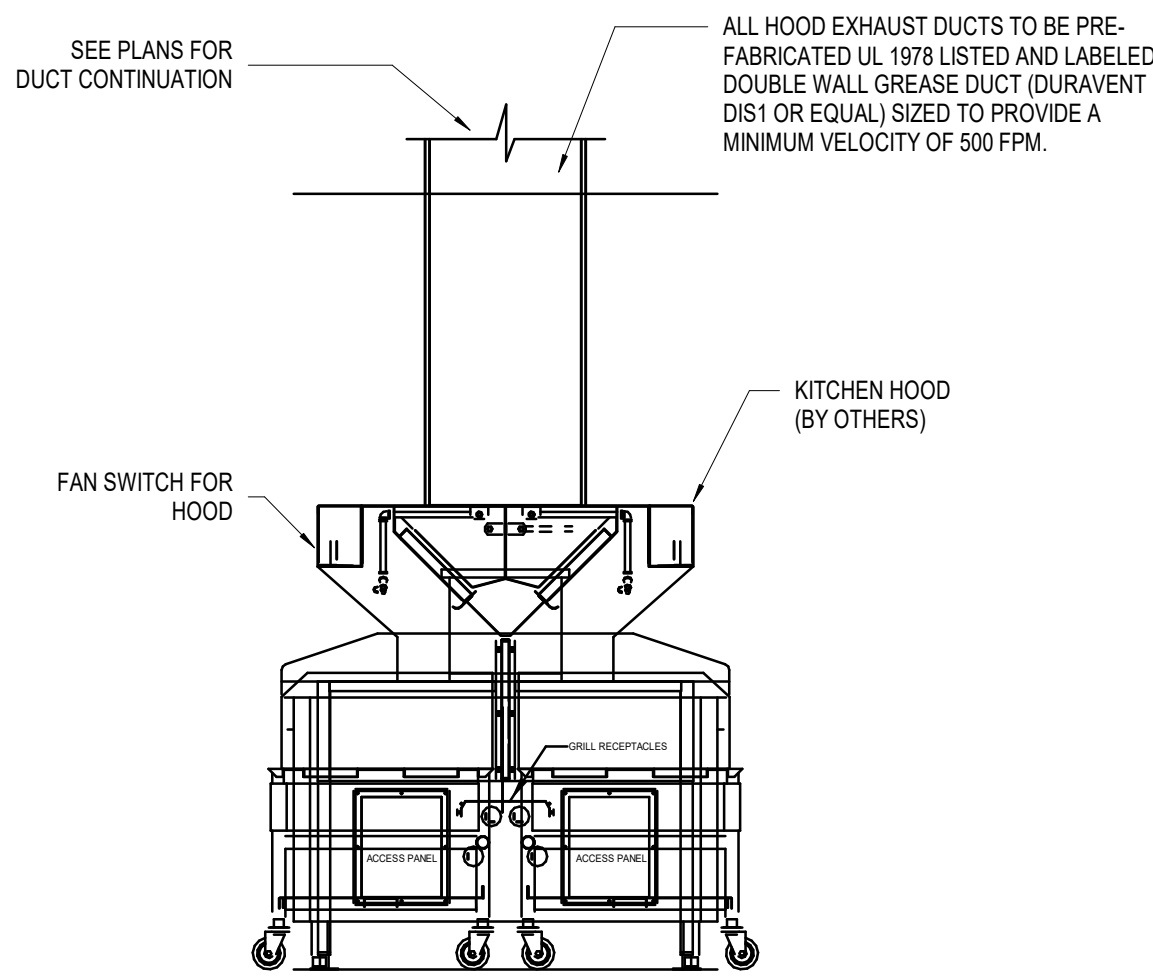
B1 PLENUM SLOT DIFFUSER DETAIL
N.T.S.



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

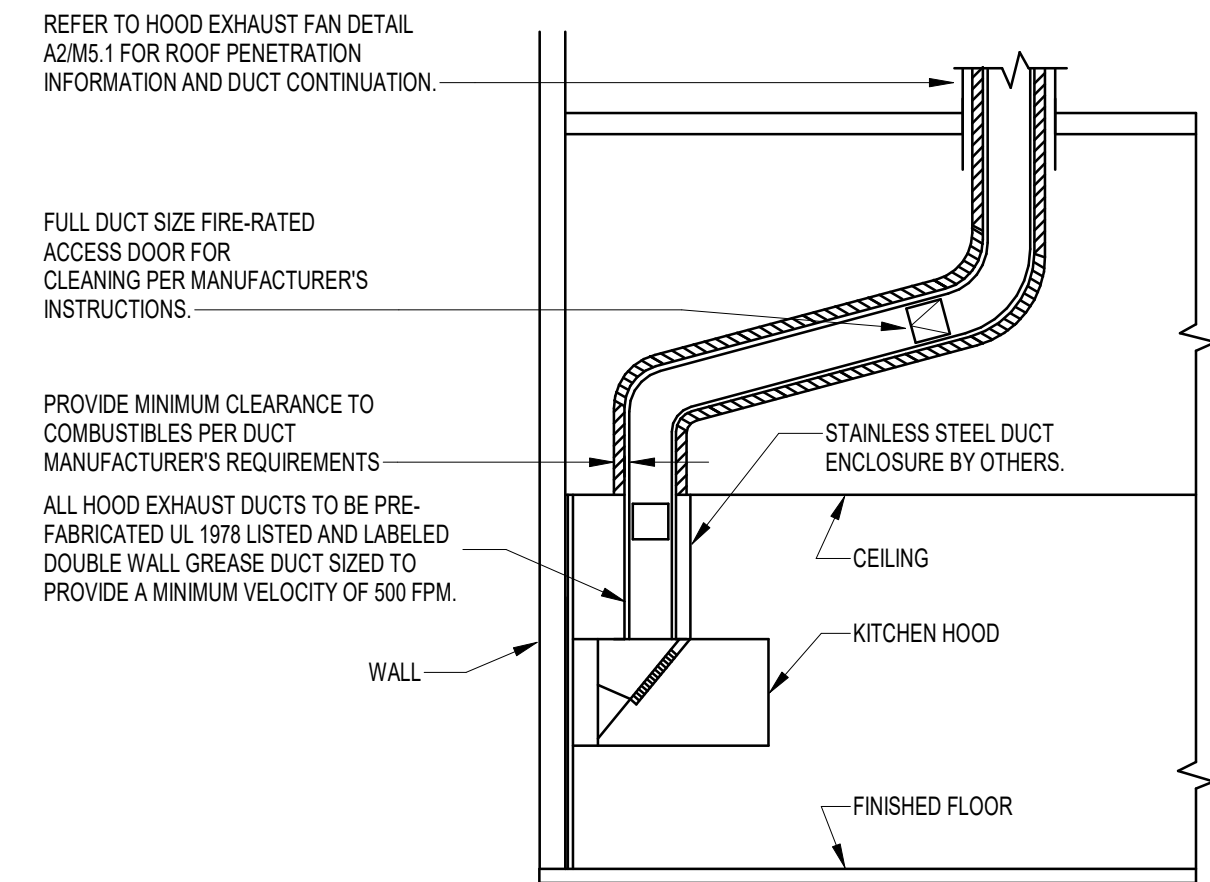


A2 ROOFTOP GREASE EXHAUST FAN DETAIL
N.T.S.

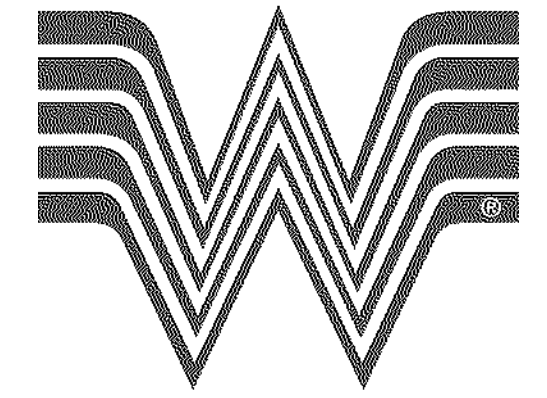


A3 LOW PROFILE HOOD DETAIL
N.T.S.

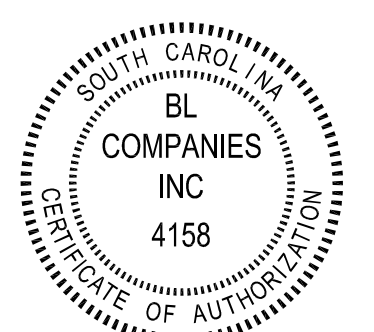
B2 DIFFUSER CONNECTION DETAIL
N.T.S.



A4 HOOD EXHAUST DUCT DETAIL
N.T.S.



WHATABURGER



△ Date Description

Seal / Signature



WHATABURGER LEXINGTON, SC

Project Name
NEQ PLATT SPRINGS ROAD &
SOUTH LAKE DRIVE
Date: 07.21.2023

Project Number

2201914

Description

MECHANICAL DETAILS

Scale

NOT TO SCALE

M5.1

ROOFTOP UNIT SCHEDULE																																
MARK	MANUFACTURER	MODEL	AREA SERVED	OA CFM	SUPPLY FAN				COOLING SECTION							HEATING SECTION						ELECTRICAL				FILTER TYPE	WEIGHT (LBS)	NOTES				
					CFM	ESP (\"WG)	RPM	HP	TYPE	REFRIG. TYPE	AMBIENT (\"F) DB/WB	TOTAL OUTPUT (MBH)	SENS. OUTPUT (MBH)	EAT (\"F) DB/WB	LAT (\"F) DB/WB	EER / IEER	HOT GAS REHEAT (MBH)	TYPE	AMBIENT (\"F) DB/WB	INPUT (MBH)	OUTPUT (MBH)	STAGES	GAS PRESS. MIN / MAX (\" WC)	EAT (\"F) DB/WB	LAT (\"F) DB/WB				VOLTS	PH	MCA	MOP
RTU-1	AAON	RN-020-8-0-GB04-349	KITCHEN	2460	3850	0.75	860	3.0	DX	R-410A	97.2/75.3	237.77	138.32	88.82/73.50	54.20/53.68	12.1/11.7.5	76.0	NAT. GAS	23.5/20.0	270.0	218.7	3:1	3.5/10.5	40.3/37.4	92.8/80.8	208	3	99	125	2\" MERV 8	2534	ALL
RTU-2	AAON	RN-013-8-0-GB04-3F9	DINING	1550	2050	0.5	1034	1.0	DX	R-410A	97.2/75.3	152.13	84.21	91.54/75.19	51.43/50.99	11.9/11.7.6	46.0	NAT. GAS	23.5/20.0	195.0	156.0	3:1	3.5/10.5	34.8/33.6	105.2/84.5	208	3	65	80	2\" MERV 8	1930	ALL

NOTES:

- PROVIDE WITH PREMIUM EFFICIENCY MOTORS IN ACCORDANCE WITH NEMA MG-1.
- PROVIDE WITH SUPPLY AND RETURN SMOKE DETECTORS TO SHUT DOWN UNIT UPON SMOKE DETECTION. COORDINATE CONNECTION TO FIRE ALARM SYSTEM WITH FA CONTRACTOR AND GC.
- PROVIDE WITH TERMINAL STRIP FOR FIELD INSTALLED CONTROLS.
- UNITS TO BE 2\" DOUBLE WALL R-3 CONSTRUCTION WITH 2500-HOUR SALT SPRAY RESISTANT PAINT.
- UNIT TO HAVE MODULATING HOT GAS REHEAT AND MODULATE HEAT CONTROL. MECHANICAL CONTRACTOR RESPONSIBLE FOR INSTALLING (2) FACTORY PROVIDED SUPPLY AIR TEMPERATURE SENSORS.
- PROVIDE FACTORY INSTALLED HAIL GUARDS.
- PROVIDE 6-ROW DX COIL AND STAINLESS STEEL DRAIN PAN.
- PROVIDE FACTORY MOUNTED AND WIRED CONDENSATE FLOW SWITCH.
- PROVIDE ULTRA-LOW LEAKAGE ECONOMIZER WITH BAROMETRIC RELIEF DAMPER, AND FAULT DETECTION AND DIAGNOSTIC.
- PROVIDE STAINLESS STEEL GAS HEAT EXCHANGER WITH MODULATING CONTROL.
- PROVIDE FACTORY POWERED GFCI CONVENIENCE OUTLET AND NON-FUSED DISCONNECT.
- PROVIDE 14\" HIGH INSULATED, SOLID BOTTOM CURB FOR PITCHED ROOF. MECHANICAL CONTRACTOR TO FIELD CUT SUPPLY AND RETURN OPENINGS AS REQUIRED.
- AAON UNITS PROVIDED BY WHATABURGER. FACTORY STARTUP IS INCLUDED. CONTACT AARON HUMPHRIES @ 210-954-6657 OR aaron.humphries@texasairsystems.com TO COORDINATE STARTUP.

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 NOT TO EXCEED 5 FT.

EXHAUST FAN SCHEDULE														
MARK	MANUFACTURER	MODEL	TYPE	AIRFLOW (CFM)	TSP (\"WG)	RPM	BHP	HP	DRIVE TYPE	VOLTS	PH	WEIGHT (LBS.)	NOTES	
EF-1	GREENHECK	G-080-VG	ROOF-MOUNTED CENTRIFUGAL DOWNBLAST	300	0.50	1680	0.07	0.10	DIRECT	120	1	44	1.2.3	
KEF-1	GREENHECK	CUE-120-VG	ROOF-MOUNTED CENTRIFUGAL UPBLAST	1995	1.00	1517	0.64	1.00	DIRECT	208	1	135	3.4.5.6	
KEF-2	GREENHECK	CUE-140-VG	ROOF-MOUNTED CENTRIFUGAL UPBLAST	1215	0.75	1415	0.25	0.50	DIRECT	208	1	111	3.4.5.6	

NOTES:

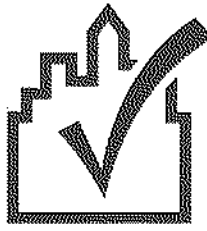
- PROVIDE INSULATED 18\" HIGH ROOF CURB WITH DAMPER TRAY AND MOTORIZED DAMPER WITH END SWITCHES AND SPRING RETURN ACTUATOR.
- PROVIDE ALUMINUM BIRD SCREEN.
- PROVIDE WITH INTEGRAL DISCONNECT SWITCH NEMA-3R.
- PROVIDE GREASE BOX.
- PROVIDE INSULATED AND VENTED 24\" HIGH ROOF CURB AND HIGH TEMPERATURE CURB SEAL.
- PROVIDE HINGED ACCESS KIT.

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	
A1	TITUS	TMS	24x24	6	30	4-WAY	LAY-IN	-	-	-	SUPPLY AIR	1	
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	350FLF1	24x24	18x18	30	-	FLANGE	-	-	-	RETURN AIR	2	
C2	TITUS	350FLF1	24x24	20x20	30	-	LAY-IN	-	-	-	RETURN AIR	2	
F1	TITUS	50F	12x12	6x6	30	-	FLANGE	-	-	-	EXHAUST AIR	2	
H1	TITUS	TBD0-30	60x3-1/2	8	30	2-WAY	FLANGE	60	3/4	2	SUPPLY AIR	3	
H2	TITUS	TBD0-80	48x5	8	30	2-WAY	FLANGE	48	1-1/2	2	SUPPLY AIR	3	
H3	TITUS	TBD0-80	36x7-1/2	8	30	2-WAY	FLANGE	36	1-1/2	3	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	60 X 3-1/2	6	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.

AIR BALANCE AND VENTILATION CALCULATION:							
TOTAL OUTSIDE AIR INTAKE = 4010 CFM							
TOTAL GREASE HOOD EXHAUST = 3210 CFM TOTAL RESTROOM EXHAUST = 300 CFM							
OUTSIDE AIRFLOW - (GREASE HOOD EXHAUST AIRFLOW + RESTROOM EXHAUST AIRFLOW) = NET POSITIVE AIRFLOW							
4010 CFM - (3210 + 300) = 500 CFM							
BALANCE REPORT TO BE PROVIDED TO INSPECTOR, OWNER, AND ARCHITECT/ENGINEER FOR REVIEW AND APPROVAL.							
VENTILATION CALCULATION PER IMC 2021, 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)	2 (73 SQFT)	7.5 CFM / PERSON 0.12 CFM / SQFT	24	220	
	COOKING 107	KITCHENS (COOKING)	15 (745 SQFT)	7.5 CFM / PERSON 0.12 CFM / SQFT	202	1629	
	OFFICE 110	OFFICE SPACES	1 (63 SQFT)	5 CFM / PERSON 0.06 CFM / SQFT	8	57	
	DRY STORAGE 111	STORAGE ROOMS	0 (458 SQFT)	0 CFM / PERSON 0.12 CFM / SQFT	55	412	
	WASH ROOM 112	KITCHENS (COOKING)	2 (83 SQFT)	7.5 CFM / PERSON 0.12 CFM / SQFT	26	45	
CALCULATED OUTSIDE AIR FOR SYSTEM TOTAL					315	2460	OA ADDED FOR EXHAUST MAKEUP
RTU-2	ENTRY 100 / HALL 102	CORRIDOR	0 (147 SQFT)	0 CFM / PERSON 0.06 CFM / SQFT	9	75	
	DINING ROOM 101	CAFETERIA, FAST FOOD	88 (882 SQFT)	7.5 CFM / PERSON 0.18 CFM / SQFT	819	1346	
	SERVING AREA 105	RECEPTION AREAS	3 (94 SQFT)	5 CFM / PERSON 0.06 CFM / SQFT	21	128	
CALCULATED OUTSIDE AIR FOR SYSTEM TOTAL					849	1550	OA ADDED FOR EXHAUST MAKEUP
EF-1	MEN 103	TOILET ROOMS (CONTINUOUS)	2 W.C.	50 CFM / W.C.	100	150	
	WOMEN 104	TOILET ROOMS (CONTINUOUS)	2 W.C.	50 CFM / W.C.	100	150	
CALCULATED EXHAUST AIR FOR SYSTEM TOTAL					200	300	
KEF-1, KEF-2	TOTAL KITCHEN AREAS	KITCHENS (COOKING)	911 SQFT	0.7 CFM / SQFT	638	3210	
	CALCULATED EXHAUST AIR FOR SYSTEM TOTAL					638	3210

 COMcheck Software Version 4.1.5.1
Mechanical Compliance Certificate

Section 1: Project Information

Energy Code: 2009 IECC
Project Title: Whataburger
Project Type: New Construction

Construction Site: Platt Springs & S. Lake Dr. Lexington, SC
Owner/Agent: Whataburger
Designer/Contractor: BL Companies, Inc. 355 Research Pkwy Meriden, CT 06452 (203) 630-1406

Section 2: General Information

Building Location (for weather data): Lexington, South Carolina
Climate Zone: 3a

Section 3: Mechanical Systems List

Quantity System Type & Description

- RTU-1 (Single Zone):
Heating: 1 each - Central Furnace, Gas, Capacity = 270 kBtu/h
Proposed Efficiency = 81.00% Ec, Required Efficiency: 80.00 % Ec
Cooling: 1 each - Single Package DX Unit, Capacity = 238 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 12.10 EER, Required Efficiency: 10.80 EER
Fan System: FAN SYSTEM 1 | RTU-1 -- Compliance (Motor nameplate HP method) : Passes
Fans:
FAN 1 Supply, Constant Volume, 3850 CFM, 3.0 motor nameplate hp
- RTU-2 (Single Zone):
Heating: 1 each - Central Furnace, Gas, Capacity = 195 kBtu/h
Proposed Efficiency = 80.00% Et, Required Efficiency: 80.00 % Et (or 78% AFUE)
Cooling: 1 each - Single Package DX Unit, Capacity = 152 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 11.90 EER, Required Efficiency: 10.80 EER
Fan System: FAN SYSTEM 2 | RTU-2 -- Compliance (Motor nameplate HP method) : Passes
Fans:
FAN 2 Supply, Constant Volume, 2050 CFM, 1.0 motor nameplate hp

Section 4: Requirements Checklist

Requirements Specific To: RTU-1 :

- Equipment minimum efficiency: Central Furnace (Gas): 80.00 % Ec
- Equipment minimum efficiency: Single Package Unit: 10.80 EER
- Integrated economizer is required for this location and system.
- Cooling system provides a means to relieve excess outdoor air during economizer operation.
- Hot gas bypass prohibited unless system has multiple steps of unloading or continuous capacity modulation
- Hot gas bypass limited to 50% of total cooling capacity

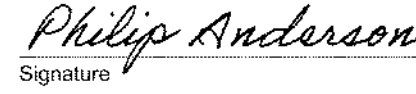
Requirements Specific To: RTU-2 :

- Equipment minimum efficiency: Central Furnace (Gas): 80.00 % Et (or 78% AFUE)
- Equipment minimum efficiency: Single Package Unit: 10.80 EER
- Integrated economizer is required for this location and system.
- Cooling system provides a means to relieve excess outdoor air during economizer operation.
- Hot gas bypass prohibited unless system has multiple steps of unloading or continuous capacity modulation
- Hot gas bypass limited to 50% of total cooling capacity

Section 5: 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 2009 IECC requirements in COMcheck Version 4.1.5.1 and to comply with the mandatory requirements in the Requirements Checklist.

Philip Anderson - Project Engineer I
Name - Title

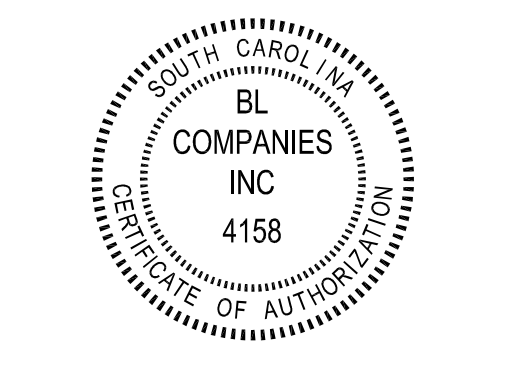

Signature

05/09/2023
Date



355 Research Parkway
Meriden, CT 06450
(203) 630-1406
(203) 630-2615 Fax

© 2023 BL COMPANIES, INC. THESE DRAWINGS SHALL NOT BE UTILIZED BY ANY PERSON, FIRM OR CORPORATION WITHOUT THE SPECIFIC WRITTEN PERMISSION OF BL COMPANIES.



△ Date Description

Seal / Signature



WHATABURGER LEXINGTON, SC

Project Name
NEQ PLATT SPRINGS ROAD & SOUTH LAKE DRIVE
Date: 07.21.2023

Project Number
2201914

Description
MECHANICAL SCHEDULES

Scale
NOT TO SCALE

M6.1

