

**GENERAL:**

- LOCATE, CUT AND FRAME ROOF OPENINGS AS SHOWN FOR ALL HVAC EQUIPMENT AND EXHAUST FANS.
- IT IS VERY IMPORTANT THAT ACCURATE MEASUREMENTS ARE USED WHEN LOCATING EXHAUST FAN ROOF OPENINGS TO ENSURE THAT NO ADDITIONAL OFF-SETS ARE REQUIRED IN THE EXHAUST DUCTWORK. COORDINATE ROOF OPENINGS WITH THE KITCHEN EQUIPMENT.
- PROVIDE ANY FRAMING REQUIRED FOR DIFFUSER INSTALLATION IN HARD CEILING.

**HVAC:**

- INSTALLATION SHALL CONFORM TO THE ENERGY CONSERVATION DESIGN MANUAL STANDARDS FOR NEW NONRESIDENTIAL BUILDINGS.
- ALL WORK AND MATERIALS SHALL COMPLY WITH GOVERNING CODES, SAFETY ORDERS AND REGULATIONS.
- OBTAIN AND PAY FOR ALL NECESSARY PERMITS, FEES AND INSPECTIONS REQUIRED BY GOVERNING AUTHORITIES.
- E.C. SHALL PROVIDE CONDUIT FOR LINE AND LOW VOLTAGE WIRING, LINE VOLTAGE WIRING SWITCHES, AND FINAL CONNECTIONS.
- M.C. SHALL PROVIDE 24V CONTROL WIRING AND FINAL CONNECTIONS. ANY EQUIPMENT THAT IS SUBSTITUTED SHALL FIT IN THE SPACE PROVIDED WITH ADEQUATE ROOM FOR SERVICING, INCLUDING SUBSTITUTE EQUIPMENT NAMED IN THE SPECIFICATIONS. SUBMIT A 1/4" SCALE DRAWING OF ALL EQUIPMENT SUBSTITUTED FOR APPROVAL PRIOR TO INSTALLATION, INCLUDING, BUT NOT LIMITED TO, STRUCTURAL AND ARCHITECTURAL IMPACT, CLEARANCE REQUIREMENTS AND UTILITY REQUIREMENTS.
- FOR INSTALLATION OF RECHARGEABLE REFRIGERANT LINES FROM ICE MACHINE TO CONDENSER ON ROOF, SEE SCOPE OF WORK.
- HVAC UNITS SHALL BE MOUNTED LEVEL ON ROOF CURBS.
- ALL SUPPLY / RETURN DUCTWORK SHALL BE EXTERNALLY INSULATED.
- ALL SUPPLY / RETURN DUCTS SHALL BE RIGID, WITH THE EXCEPTION OF THE LAST 5'-0", WHICH MAY BE FLEX.
- SMOKE DETECTOR SHALL BE INSTALLED IN THE RETURN AIR DUCT, PRIOR TO ANY OUTSIDE AIR CONNECTIONS, AND SHALL DEACTIVATE ROOFTOP UNIT UPON SENSING SMOKE. INCLUDE SMOKE DETECTOR IN THE SUPPLY AIR DUCT ONLY IF REQUIRED BY LOCAL CODE.
- ALL HOOD EXHAUST DUCTS SHALL BE RIGID 16 GA MINIMUM, WELDED DUCT. GRIND ALL WELDS SMOOTH. PROVIDE 3M FIRE BARRIER DUCT WRAP FOR ALL HOOD EXHAUST DUCTS. SEE 15/M4.0.
- ALL BRANCH DUCTS FEEDING INDIVIDUAL DIFFUSERS SHALL HAVE DAMPERS AT TAKEOFFS FOR AIR BALANCING. PROVIDE ACCESS PANELS TO DAMPERS. SEE 8/M4.0.
- ALL UTILITY PIPING FOR RTUS SHALL RUN UP THROUGH ROOF INSIDE EACH UNIT'S ROOF CURB.
- ALL OUTSIDE AIR INTAKES SHALL BE A MINIMUM OF 10'-0" FROM EXHAUST FANS AND / OR VENTS.
- SEE 8/M1.0 AND SCOPE OF WORK FOR DESCRIPTION OF HVAC PACKAGE TO BE PURCHASED THROUGH YUM! BRANDS NATIONAL CONTRACT.
- FINAL HVAC SYSTEM TESTING AND BALANCING SHALL BE PERFORMED BY INDEPENDENT AGENT ORDERED BY THE OWNER AND COORDINATED BY THE G.C. A RE-TEST IS MANDATORY FOR A FALSE START (I.E. NO POWER UPON AGENT'S ARRIVAL, EQUIPMENT NOT WIRED, ETC.) AND SHALL BE A COST INCURRED BY THE G.C. IN THE EVENT A SYSTEM / STORE RECEIVES A GRADE OF 5 OR BELOW AS A RESULT OF THE HVAC SYSTEM PERFORMANCE OR OPERATIONAL DEFICIENCIES, OWNER WILL REQUEST A RE-TEST AND THE COST FOR SAME SHALL BE ALSO INCURRED BY THE GENERAL CONTRACTOR.
- THERMOSTAT & REMOTE WALL MOUNTED TEMPERATURE AND CEILING MOUNTED HUMIDITY SENSOR PROVIDED AND INSTALLED BY M.C.

**GENERAL NOTES 10**

SYMBOL & ABBREV.	DESCRIPTION
	SA/SUP SUPPLY AIR (RISE/DROP)
	RA/RET RETURN AIR DUCT (RISE/DROP)
	EA/EXH EXHAUST AIR DUCT (RISE/DROP)
	CD/SR CEILING DIFFUSER/SUPPLY REGISTER (ARROWHEAD REPRESENTS NUMBER OF THROW)
	RR/RG RETURN REGISTER/GRILLE
	ER/EG EXHAUST REGISTER/GRILLE
	RECTANGULAR DUCT ELBOW WITH TURNING VANES
	MVD MANUAL VOLUME DAMPER
	FD FIRE DAMPER
	(L) DUCT LINING (1" THICK UNLESS OTHERWISE NOTED)
	FLEX FLEXIBLE DUCT (14'-0 MAXIMUM)
	T-STAT PROGRAMMABLE THERMOSTAT, PROVIDED WITH TRANE PACKAGE.
	TS THERMOSTAT SENSOR (REMOTE), PROVIDED WITH TRANE PACKAGE.
	H HUMIDITY SENSOR (REMOTE), PROVIDED WITH TRANE PACKAGE.
	D CONDENSATE DRAIN
	Ø DIA. DIAMETER
	DL DOOR LOUVER
	UC DOOR UNDERCUT (3/4" MINIMUM)
	(X-X) 0000 MECHANICAL EQUIPMENT DESIGNATION
	R RESET SMOKE DETECTOR RESET
	DL DOUBLE LINE DUCT SHOE TAP BRANCH TAKEOFF WITH VOLUME DAMPER

**MECHANICAL SYMBOLS 12**

SYMBOL & ABBREV.	DESCRIPTION
A/C, AC	AIR CONDITIONING
BDD	BACK DRAFT DAMPER
CB	CIRCUIT BREAKER
CLG.	CEILING
CONN.	CONNECT/CONNECTION
CONT.	CONTINUATION
CONTR	CONTRACTOR
CFM	CUBIC FEET PER MINUTE
DET.	DETAIL
DISC.	DISCONNECT
DTR	DOWN THRU ROOF
EF	EXHAUST FAN
(E)	EXISTING
GA.	GAGE/GAUGE
GC	GENERAL CONTRACTOR
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING
MFR.	MANUFACTURER
MECH.	MECHANICAL
(N)	NEW
OA/OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
S/S	STAINLESS STEEL
TYP.	TYPICAL
UON	UNLESS OTHERWISE NOTED
UTR	UP THRU ROOF

**MECHANICAL SYMBOLS 12**

XX-XXX MARK	AREA SERVED	FAN DATA						COOLING CAPACITY			HEATING CAPACITY			UNIT ELECT DATA			MAX UNIT WEIGHT (LBS)	MANUFACTURER AND MODEL NUMBER	REMARKS
		SUPPLY CFM	MIN O.A. CFM	ESP	HP	RPM	NOM TONS	MIN CAP (MBH) TOT/SEN	EER	INPUT (MBH)	OUTPUT (MBH)	STAGES	AFUE	VOLTS/PH	MCA	MOPD			
RTU-1	DINING	2400	900	0.69"	2.75	972	7.5	84.5/88.5	12.6	120	96	2	80	208/3	42	50	1227	TRANE YHC092	SEE NOTES 1-5
RTU-2	KITCHEN	4000	600	0.74"	3	589	12.5	131.1/93.7	12.1	150	120	2	80	208/3	67	80	2457	TRANE YHD150	SEE NOTES 1-5

**SCHEDULE NOTES:**

- LISTED CAPACITY IS THE STANDARD UNITS NET COOLING CAPACITY AT MIXED AIR CONDITIONS AND 102.2°F AMBIENT. OUTDOOR DESIGN CONDITION, SUMMER 97.2°F & 75.3°F WB, WINTER 23.5°F. THERMOSTAT SHALL BE PROGRAMMED FOR 73°F IN SUMMER AND 68°F IN WINTER WITH 2°F ADJ. FUNCTION UP OR DOWN. THE UNOCCUPIED TEMP SHALL BE SET TO THE STORE SCHEDULE AND 60°F MINIMUM.
- SPECIFIED RTUS ARE DOWN DISCHARGE PACKAGED GAS / ELECTRIC ROOFTOP UNITS WITH MINIMUM 2-STAGE COOLING. INCLUDES THROUGH THE ROOF CURB POWER, GAS & CONDENSATE DRAIN. GAS PIPING SHALL BE FACTORY PIPED WITH SHUT-OFF OUTSIDE OF UNIT.
- SPECIFIED UNIT INCLUDES HINGED ACCESS DOORS, 2" PLEATED FILTERS, LOW AMBIENT CONTROL TO 0 DEG. F., MODULATING ECONOMIZER (REFERENCE ENTHALPY) CIRCUIT BREAKER WITH SINGLE POINT WIRING, HAIL GUARD, AND FACTORY FABRICATED, KNOCK DOWN ROOF CURB.
- ENHANCED DEHUMIDIFICATION OPTION IS REQUIRED FOR BOTH RTUS. HUMIDITY SENSOR TO BE MOUNTED ON THE CEILING NEAR THE RETURN. THIS OPTION IS REQUIRED FOR DESIGN WET BULB TEMPERATURE 74 DEG. F AND ABOVE.
- THERMOSTAT AND REMOTE SENSOR PROVIDED AND INSTALLED BY M.C. THERMOSTAT TO BE HONEYWELL T7300 PROGRAMMABLE ZONE THERMOSTAT W/ REMOTE SENSOR.

**DESIGNER NOTES:**

- TACO BELL CORPORATE RTU UNITS BASIS OF DESIGN IS TRANE. LENNOX MAY BE USED AS FRANCHISE OPTION. M.C. AND G.C. REQUIRED TO COORDINATE CHANGES IF LENNOX IS SELECTED.

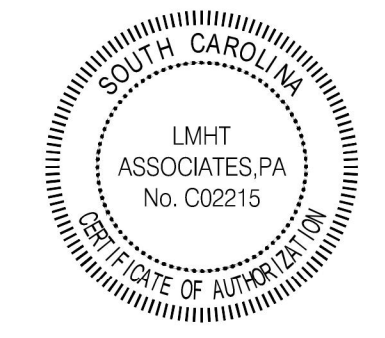
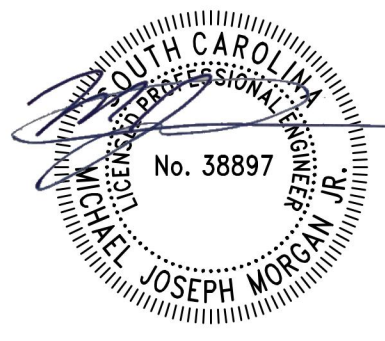
**HVAC UNIT SCHEDULE 1**

XX-XXX MARK	CFM	SP	RPM	HP	ELECT	STARTER	DISC	BDD	BDD SCREEN	V-BELT	D-DR	MANUFACTURER AND MODEL NUMBER	REMARKS
EF-1	1050	0.9	1344	0.50	120/1	-	X	-	-	-	X	STRATOVENT #SVDU50HFA	SEE NOTES 1,3,5,6,7,8,10
EF-2	150	0.25	1095	0.166	120/1	-	X	X	X	-	X	STRATOVENT #SVDRI10HFA	SEE NOTES 2,4,7,8,9,10,11

**REMARKS:**

- UL 762 LISTED (GREASE)
- UL705 LISTED (HEAT OR STEAM)
- FLAT ROOF CURB 19.5" X 19.5" X 26"H, VENTED
- FLAT ROOF CURB 17.5" X 17.5" X 19"H
- GREASE CUP WITH DRAIN
- FACTORY ATTACHED HINGES
- WEATHERPROOF PRE-WIRED DISCONNECT SWITCH
- PROVIDE PRE-WIRED SOLID STATE SPEED CONTROLLER
- GRAVITY BACKDRAFT DAMPER
- PROVIDED BY OWNER WITH HOOD PACKAGE
- PROVIDE WITH DAMPER TRAY

4.1.22



**SUPPLY AND EXHAUST FAN SCHEDULE 2**

XX-XXX MARK	QUANTITY	NECK SIZE	DIFFUSER FACE OR CEILING GRID SIZE	TYPE			(NO.) & AIR PATTERN	MOUNTING			DUTY		MATERIAL		MANUFACTURER	MODEL NUMBER	REMARKS
				DIFFUSER	REGISTER	GRILL		LAY-IN	SURFACE	SUPPLY	RETURN	EXHAUST	ALUMINUM	STEEL			
S-1	-	PER PLAN	24x24	X			4W	X	X	X			X		METALAIRE	5000	FRN SQR TO RND ADAPTER
S-2	-	PER PLAN	14x14	X			4W		X	X				X	METALAIRE	5000	FRN SQR TO RND ADAPTER, (1) LAY-IN MOUNT
S-3	-	PER PLAN	24x24	X			VERT	X		X					HART & COOLEY	RZMCDST	PLASTIC MODULAR CORE
R-1	-	PER PLAN	24x24			X	NO DIREC	X			X		X		METALAIRE	RH	HINGED / FULLY REMOVABLE FACE, FACE ADJ. OBD WHERE REQUIRED
E-1	-	8x8	12X12			X	NO DIREC	X				X	X		METALAIRE	CC5	FACE ADJ. OBD WHERE REQUIRED.

**NOTES:**

- SEE HVAC PLAN FOR DIFFUSER QUANTITIES.
- DIFFUSERS IN SURFACE MOUNTED CEILINGS SHALL BE PROVIDED WITH OPPOSED BLADE DAMPERS. SEE ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
- FURNISH DIFFUSERS WITH INSULATED TOPS.
- SUPPLY AND RETURN DIFFUSERS THROUGHOUT WILL BE WHITE.
- PROVIDE SQUARE TO ROUND TRANSITION FROM DUCT SHOWN ON PLAN TO DIFFUSER AS REQUIRED.

**AIR DEVICE SCHEDULE 3**

ITEM	OA	RA	SA	EA	PRESSURE
EF-1	--	--	--	1050	-1050
EF-2	-	--	--	150	-150
RTU-1	900	1500	2400	--	+900
RTU-2	600	3400	4000	--	+600
TOTAL	1500	4900	6400	1200	+300

**NOTE:**

THE OUTSIDE PERCENTAGE OF TOTAL SUPPLY AIR IS 30.0% F

**REVIEWED** BY RTU-2  
By Marty Taylor at 8:03 am, Jun 07, 2022

**AIR BALANCE SCHEDULE CFM 4**

**REFER TO SCOPE OF WORK 15700-1 HVAC FOR TEST & BALANCE & COMMISSIONING REQUIREMENTS WHICH WILL BE SUPPLIED BY THE OWNER AND COORDINATED BY THE GC.**

FOR COMPLETE INFORMATION AND PRICING ON THE TRANE HVAC PACKAGE CONTACT MARTY CUSICK, THE YUM! BRANDS ACCOUNT EXECUTIVE AT TRANE NATIONAL ACCOUNTS. TOLL-FREE PHONE: (866) YUM-HVAC or (866) 986-4822. FAX: (502) 499-7870. EMAIL: mjcusick@trane.com

TACO BELL HAS A NATIONAL HVAC AGREEMENT WITH LENNOX NATIONAL ACCOUNTS. FOR QUOTES & TECHNICAL SPECIFICATIONS CONTACT BY EMAIL AT YUM!@LENNOXIND.COM OR 800-367-6285. ACCOUNT MANAGER BRAD SMITH.

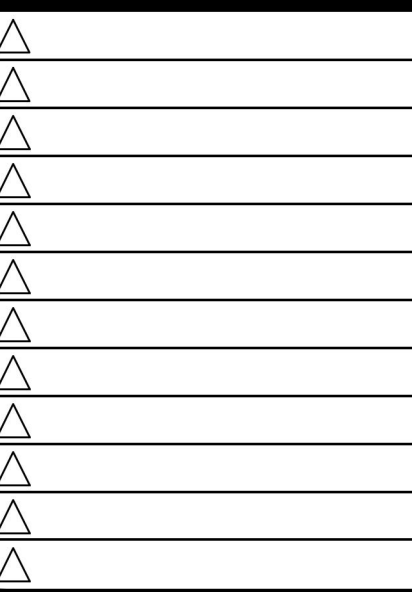
TRANE AND LENNOX HAVE AGREED TO SUPPLY AN HVAC PACKAGE CONSISTING OF THE ROOF-TOP UNITS, CURBS, THERMOSTATS, TEMPERATURE SENSORS (REMOTE), AND HUMIDITY SENSORS (REMOTE). RTUS AS SPECIFIED INCLUDE AN UNPOWERED CONVENIENCE OUTLET (SEE ELECTRICAL) AND AN HACR CIRCUIT BREAKER WHICH PROVIDES UNIT DISCONNECT. TRANE AND YORK ALSO HAVE AVAILABLE OPTION PACKAGES WHICH INCLUDE SMOKE DETECTORS AND ANNUNCIATORS, ECONOMIZERS, AND RTU VARIATIONS SUCH AS HIGH-EFFICIENCY MODELS.

FOR HVAC TEST AND BALANCE, GC TO SCHEDULE WITH TACO BELL'S PREFERRED VENDOR PER SCOPE OF WORK SHEETS.

BE PREPARED AT TIME OF ORDER OR QUOTE REQUEST TO PROVIDE ALL PROJECT DETAILS REGARDING SPECIFICATIONS AND QUANTITIES AS SITE SPECIFIC DESIGN MAY NOT MATCH NATIONAL DESIGN.

SEE THE SCOPE OF WORK SHEETS FOR ADDITIONAL INFORMATION.

**TRANE PACKAGE N.T.S. 8**



CONTRACT DATE: 03.31.22  
BUILDING TYPE: ENDEAVOR 2.0  
PLAN VERSION: SEPTEMBER 2021  
SITE NUMBER: 457957  
STORE NUMBER: xxxxx

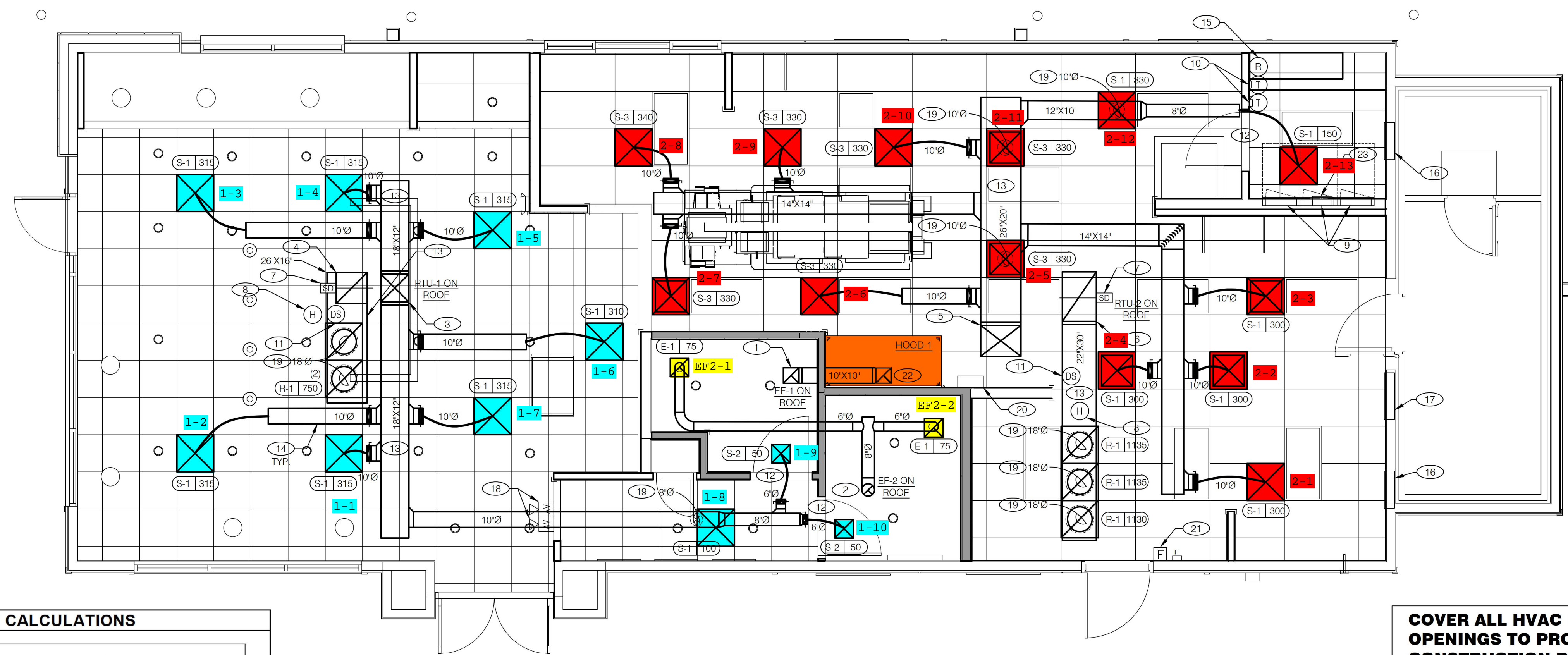
TACO BELL  
1064 S LAKE DRIVE  
LEXINGTON, SC 29150



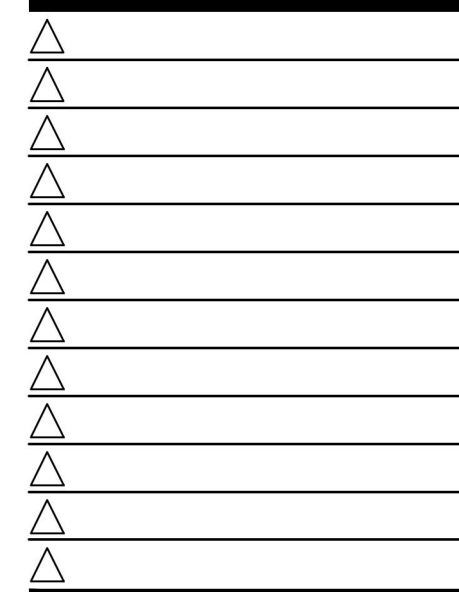
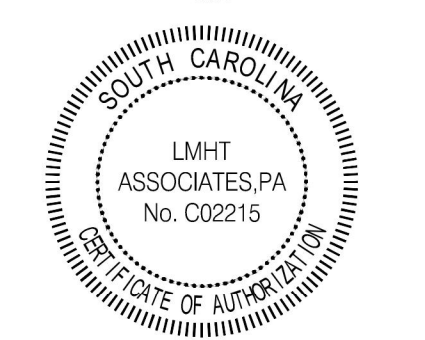
ENDEAVOR 2.0

**MECHANICAL SCHEDULES AND NOTES**

**M1.0**



4.1.22



CONTRACT DATE: 03.31.22  
 BUILDING TYPE: ENDEAVOR 2.0  
 PLAN VERSION: SEPTEMBER 2021  
 SITE NUMBER: 457957  
 STORE NUMBER: xxxxx

TACO BELL  
 1064 S LAKE DRIVE  
 LEXINGTON, SC 29150



ENDEAVOR 2.0

**DUCT AND DIFFUSER PLAN**  
**M2.0**

**COVER ALL HVAC DUCT SYSTEM OPENINGS TO PROTECT FROM CONSTRUCTION DUST AND DEBRIS UNTIL CONSTRUCTION IS COMPLETE. IF THE HVAC SYSTEM IS OPERATED BEFORE CONSTRUCTION IS COMPLETE, PROVIDE MERV8 FILTERS AT ALL AIR INTAKES INSIDE THE BUILDING.**

**2018 SCMC VENTILATION CALCULATIONS**

**DINING AREA**

\* SECTION 403.3.1.1 - EQUATION 4-1  $V_{bz} = R_p P_z + R_a A_z$

$R_p = 7.5$  CFM/PERSON (TABLE 403.3)  
 $P_z = 40$  PEOPLE (SEATS)  
 $R_a = 0.18$  CFM/FT<sup>2</sup> (TABLE 403.3)  
 $A_z = 750$  FT<sup>2</sup>

$V_{bz} = 435$  CFM MIN. OUTDOOR AIRFLOW AT THE BREATHING ZONE

\* SECTION 6.2.2.3 - EQUATION 6-2  $V_{oz} = V_{bz} / E_z$

$V_{bz} = 435$  CFM MIN. OUTDOOR AIRFLOW AT THE BREATHING ZONE  
 $E_z = 0.80$  ZONE AIR DISTRIBUTION EFFECTIVENESS (TABLE 403.3.1.2)

$V_{oz} = 544$  CFM MIN. ZONE OUTDOOR AIRFLOW

**CORRIDOR**

\* SECTION 403.3.1.1 - EQUATION 4-1  $V_{bz} = R_p P_z + R_a A_z$

$R_p = 0$  CFM/PERSON (TABLE 403.3)  
 $P_z = 0$  PEOPLE  
 $R_a = 0.06$  CFM/FT<sup>2</sup> (TABLE 403.3)  
 $A_z = 73$  FT<sup>2</sup>

$V_{bz} = 4$  CFM MIN. OUTDOOR AIRFLOW AT THE BREATHING ZONE

\* SECTION 6.2.2.3 - EQUATION 6-2  $V_{oz} = V_{bz} / E_z$

$V_{bz} = 4$  CFM MIN. OUTDOOR AIRFLOW AT THE BREATHING ZONE  
 $E_z = 0.80$  ZONE AIR DISTRIBUTION EFFECTIVENESS (TABLE 403.3.1.2)

$V_{oz} = 5$  CFM MIN. ZONE OUTDOOR AIRFLOW

**2018 SCMC EXHAUST CALCULATIONS**

**KITCHEN**

\* SECTION 403.3

$0.7$  CFM/FT<sup>2</sup> (TABLE 403.3)  
 $992$  FT<sup>2</sup>

EXHAUST RATE = **687** CFM MIN. REQUIRED EXHAUST RATE

**TOILETS**

\* SECTION 403.3

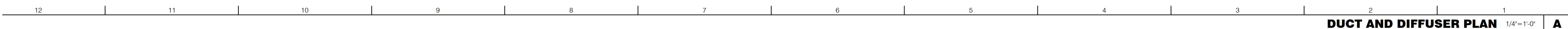
$70$  CFM/UNIT (TABLE 403.3)  
 $2$  UNITS

EXHAUST RATE = **140** CFM MIN. REQUIRED EXHAUST RATE

**2018 SCMC VENTILATION SCHEDULE**

AREA	UNIT	VENT./EXHAUST REQ'D.	MIN. REQUIRED VENT. (CFM)	TOTAL REQ. VENT. (CFM)	PROVIDED VENT. (CFM)	MIN. REQUIRED EXHAUST (CFM)	PROVIDED EXHAUST (CFM)
DINING ROOM	RTU-1	SEE 2018 SCMC CALCS	544	549	900	-	-
ENTRY LOBBY		SEE 2018 SCMC CALCS	5	-	-	-	-
KITCHEN		SEE 2018 SCMC CALCS	-	-	600	687	1,050
MEN'S/WOMEN'S TOILET	RTU-2	SEE 2018 SCMC CALCS	-	-	TRANSFER	140	150
<b>TOTALS</b>				<b>549</b>	<b>1,500</b>	<b>827</b>	<b>1,200</b>

**DUCT AND DIFFUSER PLAN** 1/4"=1'-0" **A**



- GENERAL NOTES**
- DINING ROOM LIGHT FIXTURE LOCATIONS ARE CRITICAL. COORDINATE DUCTWORK LOCATIONS SO AS NOT TO CONFLICT WITH LIGHT FIXTURE LOCATIONS.
  - THERMOSTATS SHALL BE PROGRAMMABLE THERMOSTAT WITH SUBBASE, REMOTE TEMPERATURE SENSOR, AND REMOTE HUMIDITY SENSOR.
  - HUMIDITY SENSORS SHALL BE CEILING MOUNTED NEAR RETURN GRILLES.
  - COORDINATE DUCTWORK LOCATIONS WITH LIGHTING AND STRUCTURAL.
  - SEE DETAIL 16/M4.0 FOR TYPICAL DUCTWORK DETAILS.

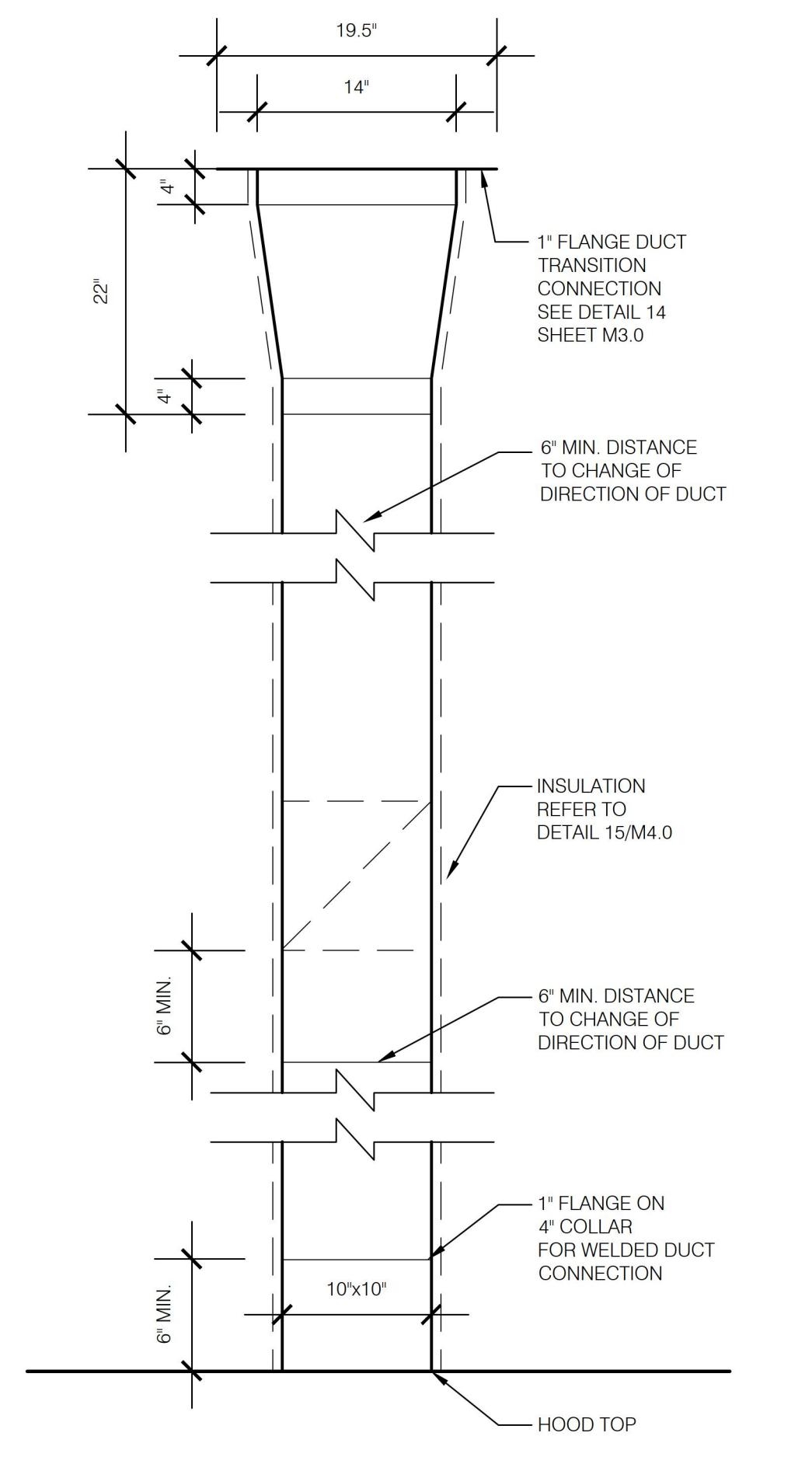
- 10"x10" GREASE EXHAUST AIR DUCT UP THROUGH ROOF TO EF-1. SEE HOOD DETAILS ON M3.0. SEE DETAIL 15 ON SHEET M4.0 FOR FIRE PROTECTION OF DUCT WORK. SEE DETAIL 18 ON SHEET M4.0 FOR EXHAUST DUCT TRANSITION.
- 8"Ø EXHAUST AIR DUCT UP THROUGH ROOF TO EF-2.
- 18"x18" SUPPLY AIR DUCT UP. CONNECT TO SUPPLY AIR PLENUM AT ROOFTOP UNIT RTU-1.
- 20"x20" RETURN AIR DUCT UP. CONNECT TO RETURN AIR PLENUM AT ROOFTOP UNIT RTU-1.
- 26"x20" SUPPLY AIR DUCT UP. CONNECT TO SUPPLY AIR PLENUM AT ROOFTOP UNIT RTU-2.
- 22"x30" RETURN AIR DUCT UP. CONNECT TO RETURN AIR PLENUM AT ROOFTOP UNIT RTU-2.
- FURNISH AND INSTALL SMOKE DETECTOR IN THE RETURN AIR DUCT, IN ACCORDANCE WITH LOCAL CODES. DUCT SMOKE DETECTOR WIRED BY ELECTRICAL CONTRACTOR, SEE SHEET E3.2.
- CEILING HUMIDITY SENSORS (REMOTE). VERIFY EXACT LOCATION.
- NO DUCT SHALL BE ROUTED OVER ELECTRICAL PANELS.
- LOCATE THERMOSTAT CONTROLS ON WALL IN OFFICE AT 48" A.F.F. COORD. LOCATION WITH LIGHT SWITCHES.
- MOUNT REMOTE TEMPERATURE SENSOR IN RETURN DUCT.
- UNDERCUT DOORS MIN. 3/4" FOR MAKE-UP AIR.

- RUN DUCTWORK BETWEEN TRUSSES AS HIGH AS POSSIBLE.
- RUN DUCT THROUGH OPEN WEBBING OF ROOF JOISTS (WHERE POSSIBLE). COORDINATE WITH TRUSS DESIGN PRIOR TO DUCTWORK FABRICATION.
- NEW SMOKE DETECTOR RESET SWITCH WITH KEY. MFR. IS "SYSTEM SENSOR" MODEL # RT5151 KEY. MOUNT NEXT TO THERMOSTATS @ 48" A.F.F. - INSTALL PER MFR. SPECIFICATIONS.
- AIR TRANSFER GRILLS. SEE SECTION "C" ON SHEET A5.1.
- ACCESS OPENING TO SPACE ABOVE WALK-IN. SEE SHEET A7.1.
- PROVIDE AUDIBLE/VISIBLE ALARM DEVICES IN APPROVED LOCATION TO SIGNAL DUCT DETECTOR ACTIVATION. MOUNT AT 6'-6" A.F.F. M.C. AND E.C. SHALL TEST AND VERIFY THE SMOKE DETECTION SYSTEM WORKS PROPERLY AND MEETS ALL LOCAL AND STATE CODE REQUIREMENTS.
- TAP OFF BOTTOM OF DUCT AND CONNECT TO DIFFUSER OR GRILLE. PROVIDE BALANCING DAMPER IN BRANCH DUCT IF ACCESSIBLE, OTHERWISE PROVIDE FACE ADJUSTABLE BALANCING DAMPER IN DIFFUSER OR GRILLE.
- M.C. SHALL INSTALL HOOD ANSUL CABINET AT CEILING WHERE SHOWN.
- M.C. SHALL INSTALL MANUAL FIRE PULL AT 48" A.F.F. AT LOCATION SHOWN. ENSURE FIRE PULL IS LOCATED BETWEEN 10 AND 20 FEET FROM COOKING EQUIPMENT WHICH IT SERVES OR IS LOCATED AS DIRECTED BY LOCAL INSPECTOR. M.C. SHALL LABEL (FOR EASY IDENTIFICATION) THE FIRE PULL FOR CORRESPONDING HOOD NUMBER SHOWN ON PLAN.
- 10"x10" EXHAUST AIR DUCT DOWN AND TRANSITION TO FIELD CUT EXHAUST CONNECTION AT HOOD.

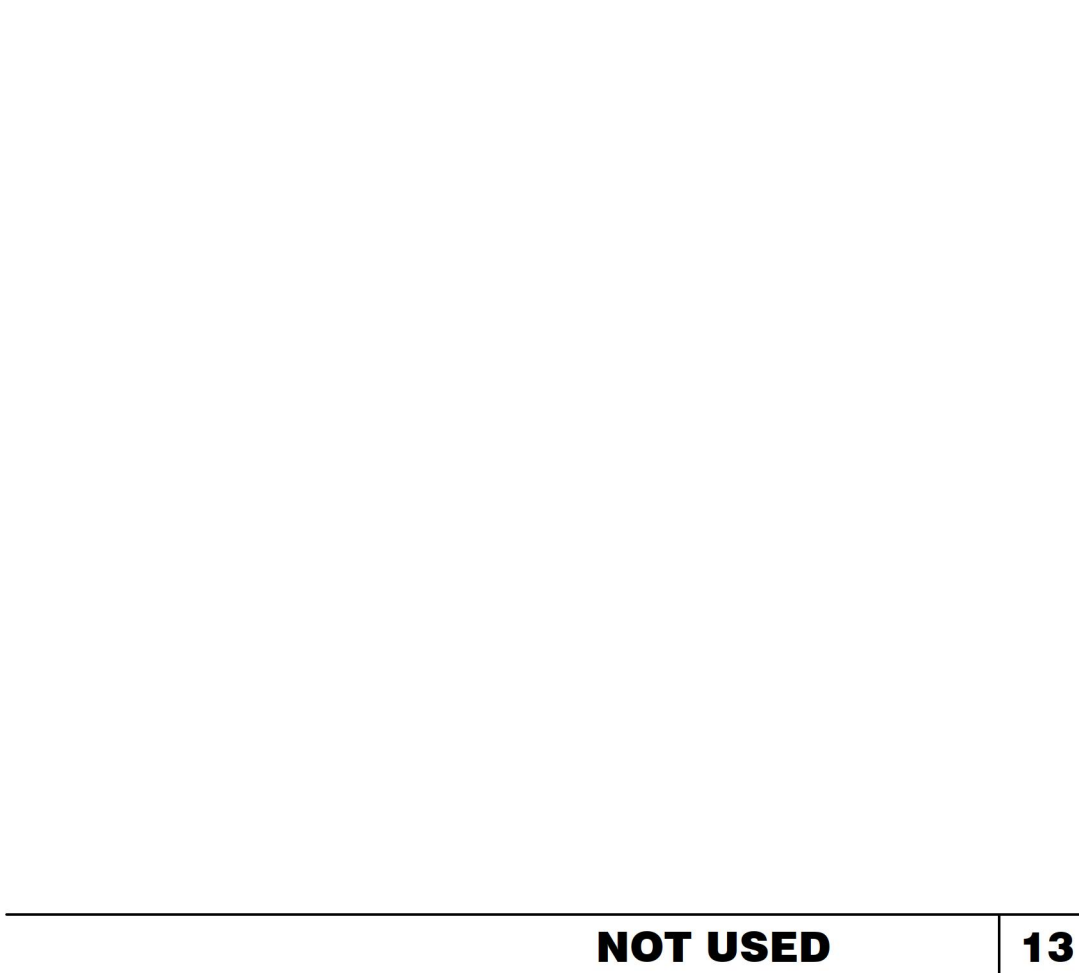
- M.C. SHALL INSTALL HOOD CONTROL PANEL AT CEILING WHERE SHOWN. COORDINATE WITH E.C.

**REVIEWED**  
 By Marty Taylor at 8:04 am, Jun 07, 2022

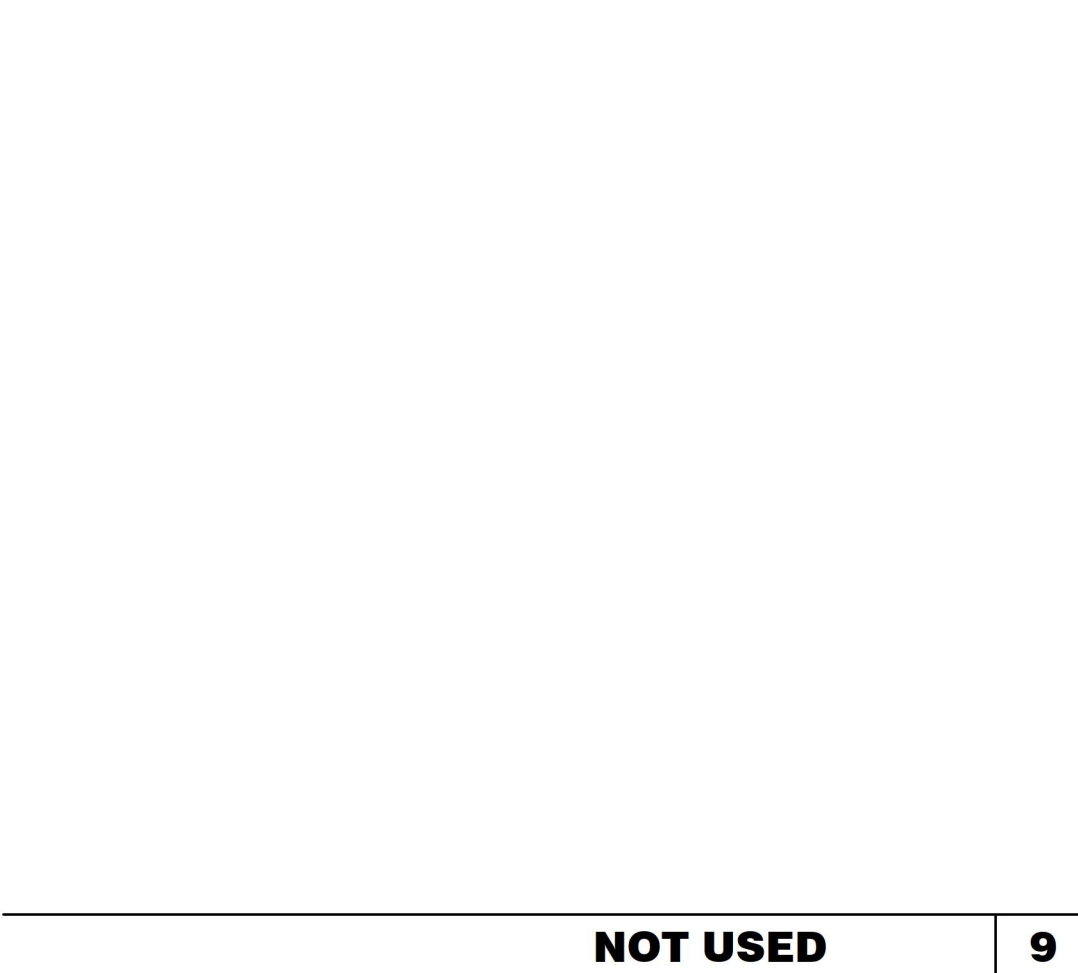




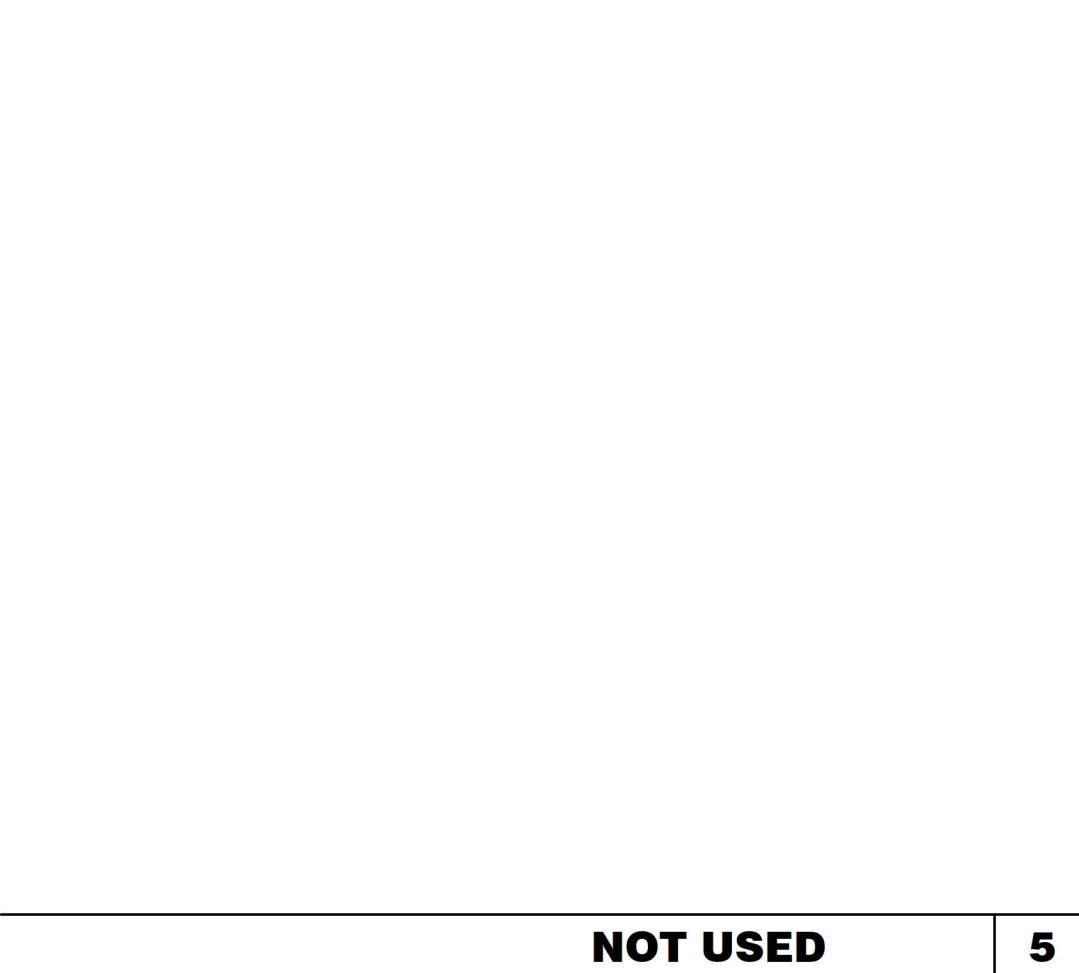
**TB HOOD DUCT TRANSITION** N.T.S. **18**



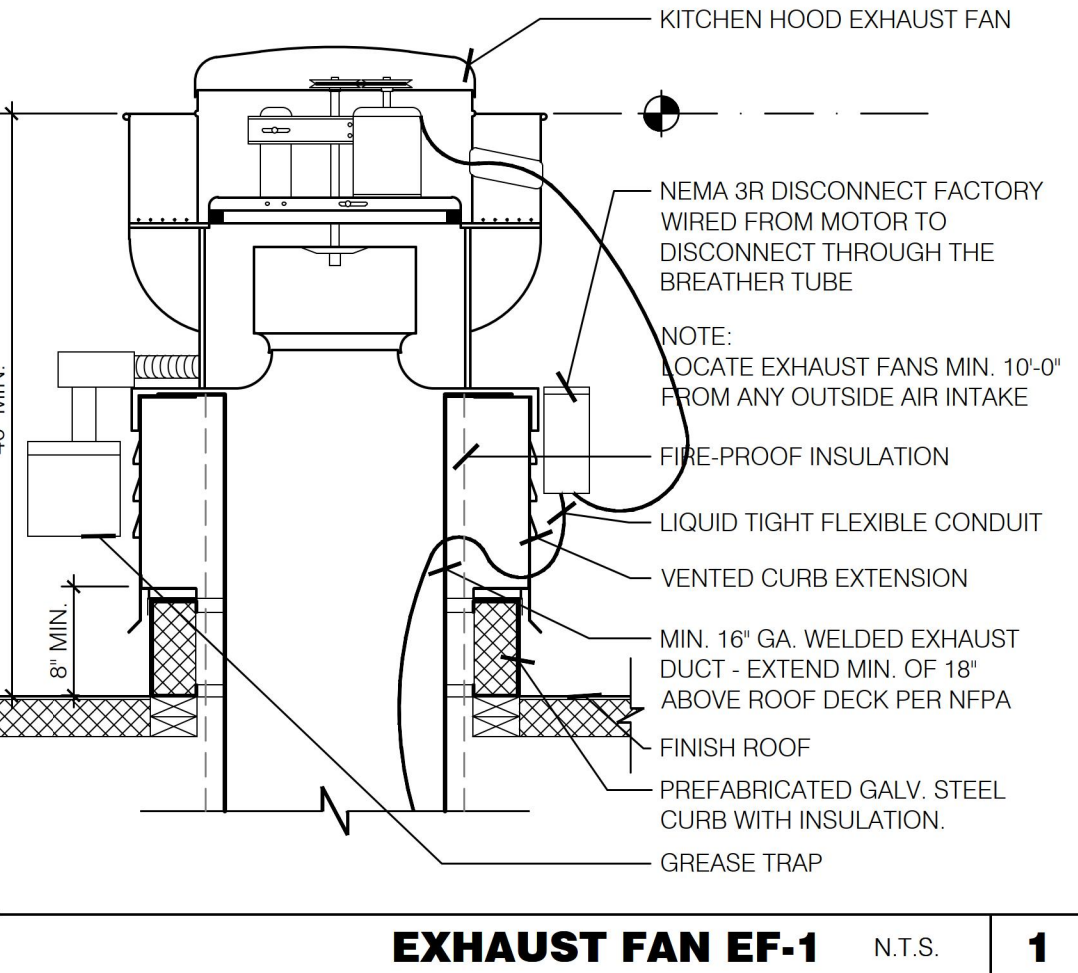
**BOLT CONNECTION TO HOOD** N.T.S. **14**



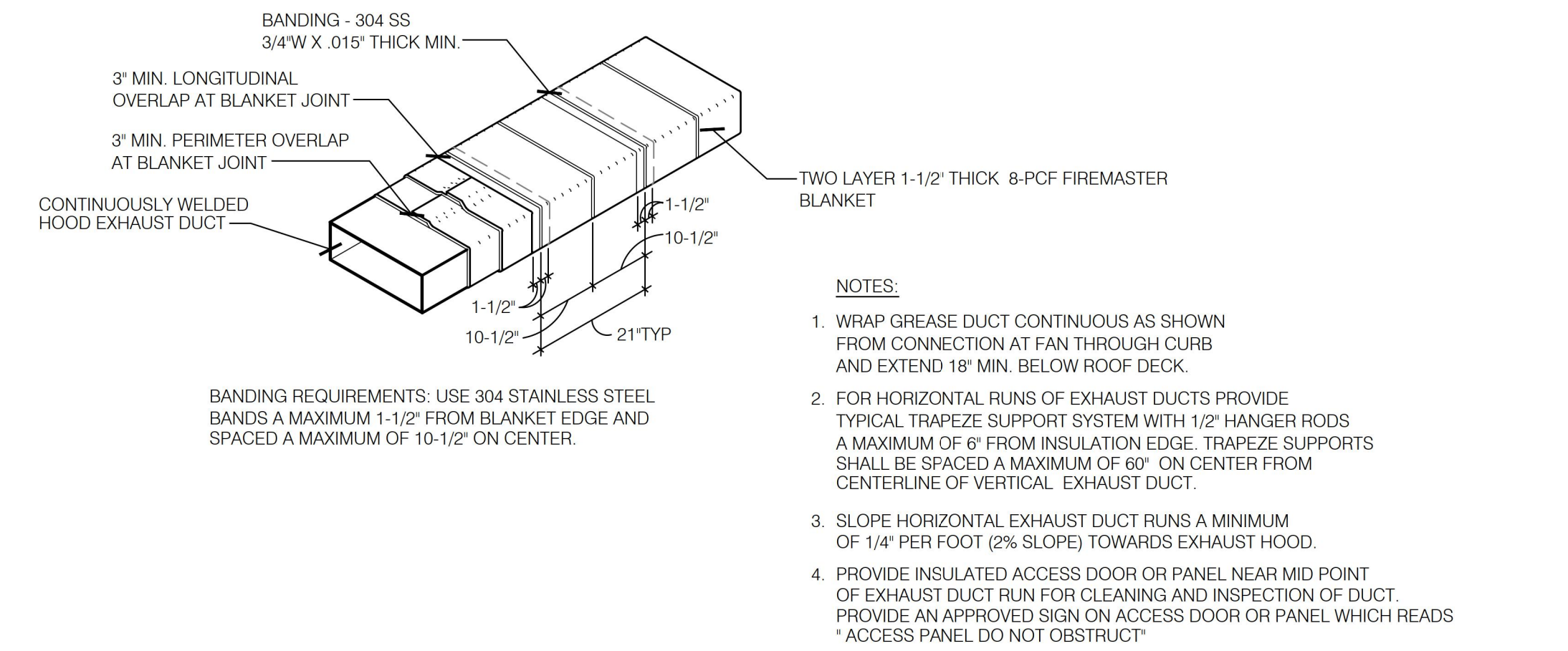
**DUCT SUPPORT DETAIL** N.T.S. **6**



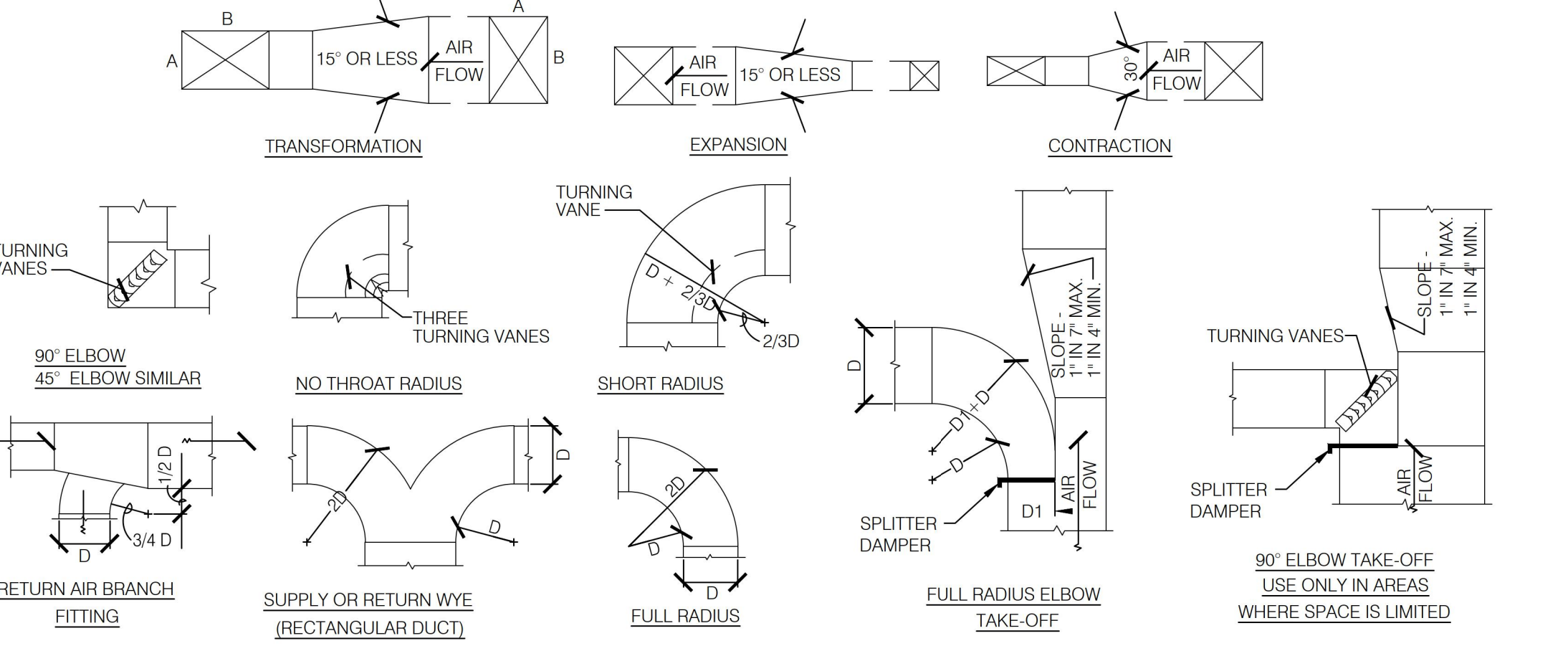
**EXHAUST FAN EF-1** N.T.S. **1**



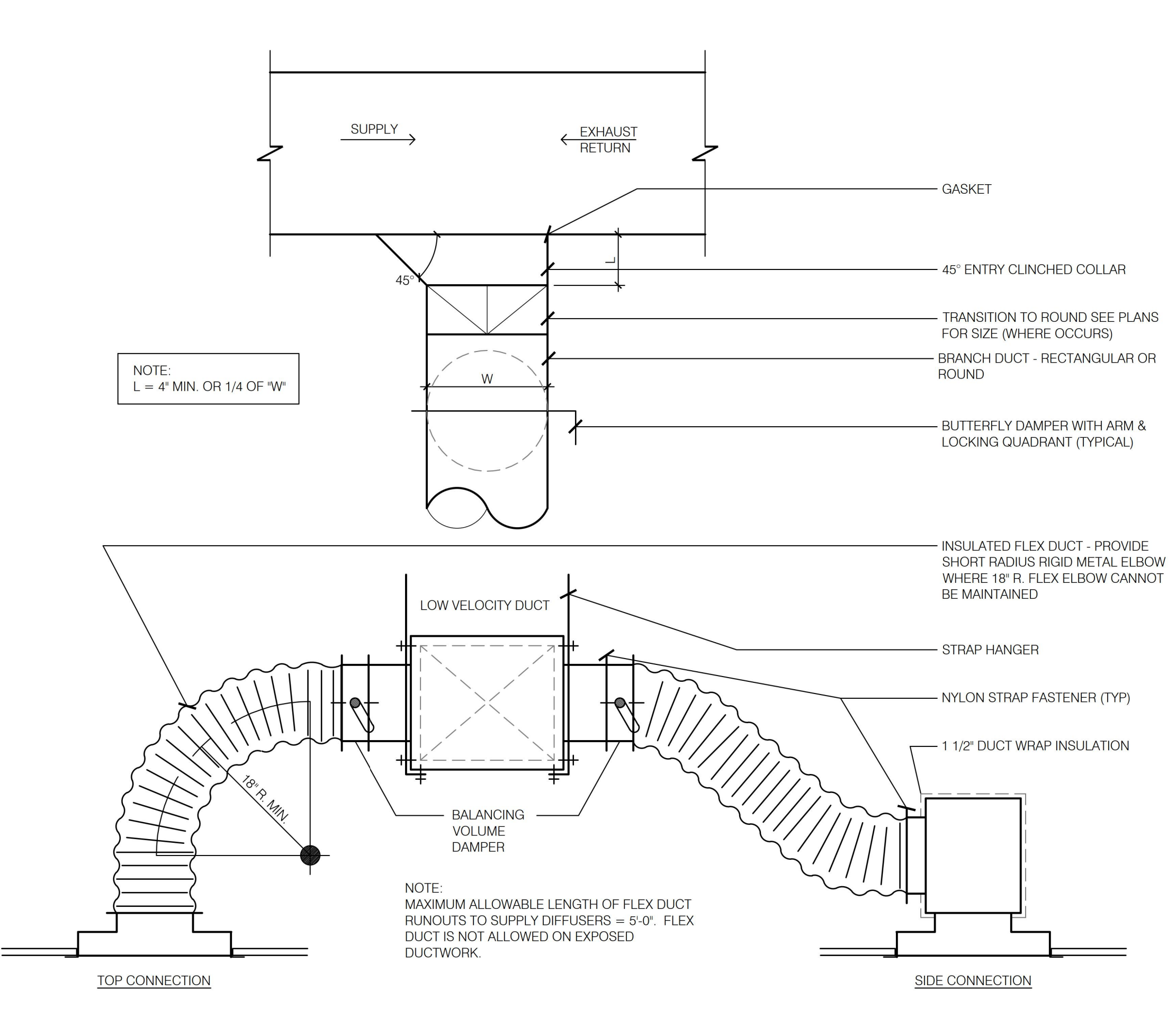
**RESTROOM FAN (EF-2)** N.T.S. **2**



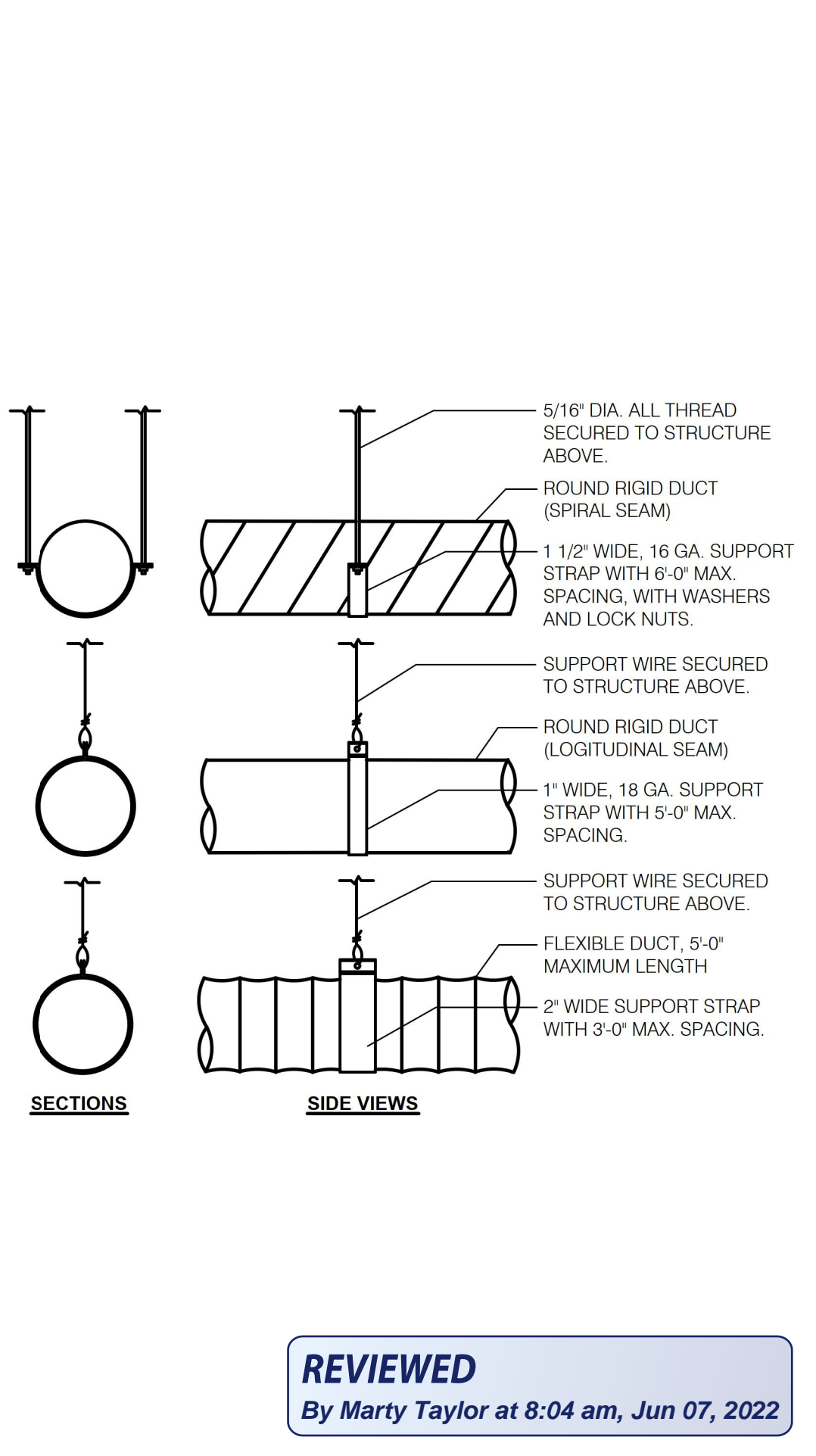
**KITCHEN HOOD EXHAUST DUCT SYSTEM DETAIL** N.T.S. **15**



**TYPICAL DUCTWORK DETAILS** N.T.S. **16**

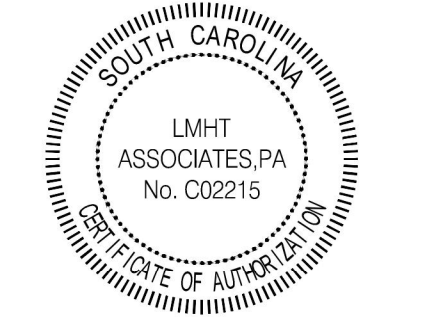
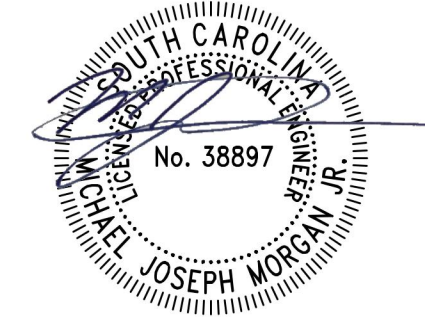


**CEILING DIFFUSER CONNECTIONS** N.T.S. **8**



**DUCT SUPPORT DETAIL** N.T.S. **4**

4.1.2.2



Revision table with columns for revision number and description.

CONTRACT DATE: 03.31.22  
BUILDING TYPE: ENDEAVOR 2.0  
PLAN VERSION: SEPTEMBER 2021  
SITE NUMBER: 457957  
STORE NUMBER: xxxxx

**TACO BELL**  
1064 S LAKE DRIVE  
LEXINGTON, SC 29150



**ENDEAVOR 2.0**

**MECHANICAL AND HOOD DETAILS**

**M4.0**

**REVIEWED**  
By Marty Taylor at 8:04 am, Jun 07, 2022

# HVAC SEQUENCE OF OPERATIONS

M.C. SHALL SET THERMOSTAT 'OCCUPIED' AND 'UNOCCUPIED' MODES TO OWNER'S OPERATION SCHEDULE. EVAPORATOR FANS SHALL BE SET TO "ON" UNDER NORMAL CONDITIONS. RTU-1, WHEN ACTIVATED BY THE "OCCUPIED" SWITCH (INTERIOR OVERRIDE SWITCH) LOCATED ON THE CONTROL PANEL, SHALL FORCE EVAPORATOR FANS TO RUN.

## NORMAL OPERATION (OCCUPIED):

EF-1; EVAPORATOR FANS, AND ECONOMIZERS (IF APPLICABLE) ON RTU-1 SHALL OPERATE CONTINUOUSLY UPON ACTIVATION OF THE "OCCUPIED" SWITCH. NORMALLY OPEN CONTACTS FOR THIS ARE INCLUDED INTERNALLY IN THE CONTROL BOX. SEE DETAILS THIS SHEET AND SHEET E6.0.

THE TEMPERATURE SCHEDULE SET POINTS SHALL BE SPECIFIC FOR EACH RTU AND SHALL BE FIELD ADJUSTABLE.  
SPACE TEMPERATURE SET POINTS: RTU-1: 73F COOLING, 68F HEATING

SPACE HUMIDITY SET POINTS: RTU-1: 50% RH

EF-2 SHALL BE CONTROLLED BY THE DINING ROOM LIGHTING CIRCUIT.

EVAPORATOR FANS, AND ECONOMIZERS (IF APPLICABLE) ON RTU-2 SHALL BE SET TO OWNER'S OPERATION SCHEDULE.

THE TEMPERATURE SCHEDULE SET POINTS SHALL BE SPECIFIC FOR EACH RTU AND SHALL BE FIELD ADJUSTABLE.  
SPACE TEMPERATURE SET POINTS: RTU-2: 73F COOLING, 68F HEATING

SPACE HUMIDITY SET POINTS: RTU-2: 50% RH

ALL RTU'S COOLING/HEATING SWITCH/OVER SHALL BE AUTOMATIC BASED ON THE SPACE DEMAND. EVAPORATOR FANS SHALL BE SET TO RUN CONTINUOUSLY(ON) DURING "OCCUPIED" PERIODS. OUTSIDE AIR INTAKE ON ECONOMIZERS OR DAMPERS SHALL BE IN MINIMUM OPEN POSITION TO DELIVER CFM'S INDICATED IN AIR BALANCE SCHEDULE ON SHEET M1.0 OR SHALL FOLLOW THE ECONOMIZER OPERATION DESCRIBED BELOW.

UPON DEACTIVATION OF THE "OCCUPIED" SWITCH THE KITCHEN AND DINING ROOM LIGHTS, EF-1 AND EF-2, EVAPORATOR FANS AND ECONOMIZERS ON RTU-1 AND RTU-2 SHALL START TIME DELAYED OFF (SUBJECT TO HOODSTAT AND/OR ZONESENSOR OVERRIDE).

## ECONOMIZER OPERATION (IF APPLICABLE):

THE RTU'S EQUIPPED WITH ECONOMIZERS (SEE UNITS SCHEDULE ON SHEET M1.0) SHALL UTILIZE "FREE COOLING" AS THE FIRST STAGE OF COOLING. WHEN OUTDOOR AIR ENTHALPY IS LOWER THAN THE MIXED AIR ENTHALPY, OUTSIDE AIR INTAKE DAMPERS SHALL MODULATE FROM MIN. TO MAX. OPEN POSITION AND SPACE RETURN AIR DAMPERS SHALL MODULATE FROM MAX. TO MIN. RELIEF DAMPERS SHALL BE CONTROLLED RESPECTIVELY VIA INTEGRAL RTU CONTROL. IF THE OUTSIDE AIR ALONE CANNOT SATISFY THE SPACE COOLING DEMAND, THE COMPRESSORS SHALL BE ENERGIZED IN STAGES. WHEN OUTDOOR AIR ENTHALPY IS HIGHER THAN MIXED AIR ENTHALPY, OR WHEN THE LOW LIMIT SENSOR LOCATED IN DISCHARGE AIR REACHES ITS SET POINT (55F -ADJ.), THEN OUTDOOR AIR AND RETURN AIR DAMPERS SHALL BE SET TO DELIVER MINIMUM O.A. CFM'S INDICATED IN THE AIR BALANCE SCHEDULE.

## NIGHT SETBACK OPERATION (UNOCCUPIED):

SPACE TEMPERATURE SET POINTS: RTU-1 AND RTU-2: 85F COOLING, 60F HEATING.

ALL RTU'S EVAPORATOR FANS, COMPRESSORS AND HEATER SHALL RUN ON DEMAND ONLY.(AUTO) ANY MOTORIZED OUTSIDE AIR DAMPERS SHALL BE IN CLOSED POSITION. M.C. SHALL VERIFY REQUIREMENT FOR AUTOMATIC SETBACK CONTROL WITH LOCAL AUTHORITIES AND COORDINATE WITH EQUIPMENT SUPPLIER.

## FIRE PROTECTION GLOBAL SHUTDOWN:

IF LOCAL CODE OFFICIAL REQUIRES GLOBAL SHUTDOWN OF ALL RTU'S UPON SMOKE DETECTION IN ANY RTU DUCTWORK, THE MECHANICAL CONTRACTOR SHALL PROVIDE A RELAY IN EACH RTU TIED TO THE STAND ALONE SMOKE ALARM SMOKE DETECTION SYSTEM TO SHUT DOWN ALL RTU'S SIMULTANEOUSLY.

## HOOD:

THE INTERIOR OVERRIDE SWITCH SHOULD BE TURNED ON BY THE MANAGER UPON ARRIVAL. WHEN FINISHED FOR THE DAY, THE MANAGER SHOULD TURN THE INTERIOR OVERRIDE SWITCH OFF AND TIME DELAYED OFF (SUBJECT TO HOODSTAT AND/OR ZONESENSOR OVERRIDE) COMMENCES.

AUTOMATIC BACK-UP OPERATION: WHEN THE HOOD TEMPERATURES ARE GREATER THAN 15 DEGREES ABOVE THE ROOM TEMPERATURE (AS MEASURED BY DUCT STAT IN HOOD RISER AND COMPARED TO BASE ROOM SENSOR TEMPERATURE), ALL FAN LIGHTS WILL BE FORCED ON IF NOT PREVIOUSLY ON BY OTHER MEANS (SWITCH).

FAN/LIGHTS WILL REMAIN ON AS LONG AS EITHER OF THE FOLLOWING CONDITIONS EXIST 1) "OCCUPIED" SWITCH IS IN THE "ON" POSITION, OR 2) AUTOMATIC OPERATION I.E. HOOD TEMPERATURES ARE GREATER THAN 15 DEGREES ABOVE ROOM TEMPERATURE.

# Installation, Start Up and Pre-Commissioning Checklist

= Responsible Party  
Initial When Completed

## PROCESS

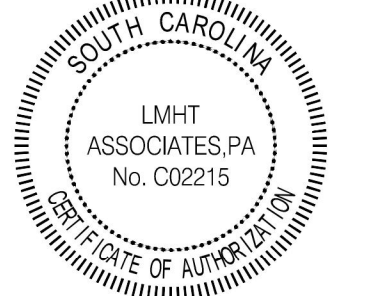
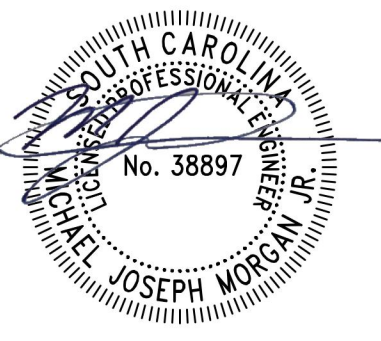
Standard Unit Reflex Reference #	GC - General Contractor	EC - Electrical Contractor	MC-Mechanical Contractor	PC-Plumbing Contractor	AB-Air Balance Agency	Remarks
1						<b>Package Units</b>
X X 2						Reference and abide to all instructions in manufacturers Installation, Startup, Operation and Maintenance literature
X X 3						Units are set level
X X 4						Unit and plenums align to each other
X X 5						Units and plenums are properly sealed to each other
X X 6						All loose shipped components are relocated and installed per manufacturers instructions
X X 7						a) economizer eyebrow, skirts and mist eliminator installed
X X 8						b) economizer dampers and linkage installed and operable
X X 9						c) economizer wiring connected and completed
X X 10						d) relief damper or power exhauster installed and operable
X X 11						e) smoke detectors and sample tubes relocated and installed per manufacturers instructions
X X 12						Utilities are installed and ON to the units
X X 13						a) power on and breakers sized to unit rating
X X 14						b) phases correct
X X 15						c) gas on
X X 16						d) gas gooseneck or pipe capacity meets or exceeds unit capacity
X X 17						e) condensate line is piped per plan
X X 18						f) condensate vent is on leaving side of trap
X X 19						Discharge Temperature Limit potentiometer is set to the 9 o'clock position
X X 20						No thermostat, smoke detector, remote enunciator or any other wiring runs through the plenums
X X 21						Manufacturers start up procedure has been followed and all units evaporator fan operates through all fan stages per manufacturers
X X 22						Manufacturers start up procedure has been followed and all units cycle through all heating stages per manufacturers instructions
X X 23						Manufacturers start up procedure has been followed and all units cycle through all cooling stages per manufacturers instructions
X X 24						Manufacturers start up procedure has been followed and all units cycle through all economizer stages per manufacturers instructions
25						
26						
27						
28						<b>Ductwork</b>
X X 29						All ductwork and registers are installed per plan
X X 30						All starters and or take offs are radiused per plan.
X X 31						Ductwork from the exhaust register over production line to EF-2 fan base is 100% rigid per plan
X X 32						Balance dampers are in sleeves on axles with locking quadrant, not located in any starter collars, "T"s or "Y"s and located per plan
X X 33						Balance damper handles are flagged to identify their location
34						
35						
36						<b>Economizer</b>
X X 37						All mechanical components related to the economizer have been installed
X X 38						"Blank off" plate under economizer eyebrow has been installed
X X 39						Barometric relief damper operates freely
X X 40						Input sensors for the Economizer have been properly located and connected to the Economizer
X X 41						Economizer has been tested to perform "Free" cooling when ambient conditions are below 55 degrees
X X 42						Mechanical cooling stages on when Economizer cooling is not available
X X 43						Mechanical cooling stages on with the Economizer cooling when
X X 44						Economizer damper positions to minimum damper position when set
45						
46						
47						<b>Smoke Detectors</b>
X X 48						Smoke detector option has been included in package unit
X X 49						Return side smoke detector has been relocated from its shipping position to the factory provided installation location in the return section of the package unit
X X 50						All smoke detector sample tubes are properly located per manufacturers design
X X 51						The return smoke detector in each unit has been tested for unit shutdown
X X 52						The supply smoke detector in each unit has been tested for unit shutdown
53						
54						<b>Remote Smoke Detector Enunciators and Resets</b>
X X 55						A remote smoke detector enunciator and reset has been installed in the managers office for each package unit
X X 56						RTU 1 return side smoke detector alarm sets off the visual and audible
X X 57						After triggering RTU 1 return side smoke detector alarm, resetting the remote smoke detector reset for RTU 1 returns RTU 1 to normal operation
X X 58						RTU 1 return side smoke detector alarm sets off the visual and audible remote enunciator alarms and shuts down RTU 1
X X 59						After triggering RTU 1 return side smoke detector alarm, resetting the remote smoke detector reset for RTU 1 returns RTU 1 to normal operation
X X 60						RTU 2 return side smoke detector alarm sets off the visual and audible remote enunciator alarms and shuts down RTU 2
X X 61						After triggering RTU 2 return side smoke detector alarm, resetting the remote smoke detector reset for RTU 2 returns RTU 2 to normal operation
X X 62						RTU 2 return side smoke detector alarm sets off the visual and audible remote enunciator alarms and shuts down RTU 2
X X 63						After triggering RTU 2 return side smoke detector alarm, resetting the remote smoke detector reset for RTU 2 returns RTU 2 to normal operation
64						
65						
66						
67						
68						

# Installation, Start Up and Pre-Commissioning Checklist

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Initial When Completed

## PROCESS

Standard Unit Reflex Reference #	GC - General Contractor	EC - Electrical Contractor	MC-Mechanical Contractor	PC-Plumbing Contractor	AB-Air Balance Agency	Remarks
69						<b>Zonesensor</b>
X X 70						Baysens 135 Zonesensor is installed
X X 71						Zonesensor to unit wiring is landed on proper terminals per detail
X X 72						Remote sensor wiring is landed on proper terminals (8 and 9) of Zonesensor per detail
X X 73						Jumper on back of Zonesensor is configured for remote sensor
X X 74						Zonesensor is set up for eFlex operation
X X 75						a)Fahrenheit selected
X X 76						b)Whole degrees selected
X X 77						c) Dual Setpoint selected
X X 78						d)Heat/Cool/Auto/Off selected
X X 79						e)Occupancy (Timed Override) Disabled
X X 80						Zonesensor is programmed to Taco Bell parameters
81						
82						<b>Thermostat</b>
X X 83						Thermostats are wired to package units per thermostat and unit wiring diagrams
X X 84						Package units equipped with two stage cooling have each cooling stage individually wired and controled from their thermostat.
X X 85						Package units equipped with two stage heating have each heating stage individually wired and controled from their thermostat.
X X 86						Thermostats are wired to Interlock Control Box per Detail on plan sheet E-6
X X 87						Thermostats are programmed to Taco Bell parameters
88						<b>Hoodstat</b>
X X 89						Hoodstat has been installed in duct or hood per plan
X X 90						Hoodstat is wired to terminals 1 and 2 of the Interlock Control Box
X X 91						Hoodstat microswitch closes at 85 degrees
92						
93						
94						<b>Interlock</b>
X X 95						Unswitched power is provided to H=HOT and N=Neutral terminals in the Control Box
X X 96						Hoodstat wires are landed on terminals 1 and 2 of the Control Box
X X 97						Terminal 16 of Control Box is wired to terminal 11 of RTU 1 RTRM (J6)
X X 98						Terminal 17 of Control Box is wired to terminal 12 of RTU 1 RTRM (J6)
X X 99						Terminal 19 of Control Box is wired to terminal 11 of RTU 2 RTRM (J6)
X X 100						Terminal 20 of Control Box is wired to terminal 12 of RTU 2 RTRM (J6)
X X 101						"Occupied" switch is installed so that it is "Hot" when switch is in "Unoccupied or OFF" position and landed on terminal 7 of the Control Box
X X 102						"Occupied" switch in "ON" position activates Kitchen Lights, EF-1, RTU 1 and "Occupied" switch in "OFF" position turns off Kitchen Lights, Dining Room lights, EF-2 and starts time delayed off of EF-1 and RTU 1 &2 evaporator fans (subject to Hoodstat and or Zonesensor override)
104						
105						
106						
107						<b>Ansul Shutdown</b>
X X 108						Metal jumper clip on EPO terminals 5 and 6 of RTU 2 LTB 1 has been removed
X X 109						Terminals 5 and 6 of RTU 2 LTB 1 are wired to "Closed when Coked"
X X 110						Upon activation of the fire suppression system discharge (microswitch opens) RTU 2 immediately shuts off
111						
112						
113						
114						<b>Lighting</b>
X X 115						A 3 way switch, installed as a single switch and open in the UP throw position, has been installed as an "Occupied" switch in the managers office
X X 116						Up position of "Occupied" switch activates kitchen lighting via Control Box
X X 117						Up position of "Occupied" switch provides power, via the Control Box, to the Dining Room light switch in the managers office
X X 118						Photocell is wired to the Greengate Box per detail
X X 119						Exterior lights are wired to the Greengate Box per detail
X X 120						Sign lights are wired to the Greengate Box per detail
X X 121						Greengate Box is programmed to Taco Bell parameters
X X 122						Manual override of Greengate box activates lighting circuits
123						
124						
125						
126						
127						<b>Air Balance Supplement</b>
X X 128						Balancing performed in accordance to ASHRAE Standard 111-2008, NEBB, TABB or AABC standards
X X 129						Perform full fan speed adjustments after exhaust fan adjustments and supply air distribution adjustments have been made
X X 130						Perform outside air adjustment after all other balance adjustments are complete
X X 131						Perform outside air adjustment at full evaporator fan speed operating point
X X 132						Perform outside air adjustment at medium fan speed operating point
X X 133						Perform outside air adjustment at low fan speed operating point
X X 134						Verify lobby doors closures have been adjusted for ADA compliance
X X 135						Verify lobby doors closure operation during full economizer function of both package units and note result in air balance report
X X 136						Verify pressure relief system operation in full economizer operation
X X 137						Adjust power exhauster "ON" and "OFF" positions to mitigate door closure issues. Note if no power exhauster is available.
X X 138						Provide copy of air balance report to Commissioning Agent
139						
140						
141						
142						



CONTRACT DATE: 03.31.22  
BUILDING TYPE: ENDEAVOR 2.0  
PLAN VERSION: SEPTEMBER 2021  
SITE NUMBER: 457957  
STORE NUMBER: xxxxx

TACO BELL  
1064 S LAKE DRIVE  
LEXINGTON, SC 29150



ENDEAVOR 2.0  
INSTALLATION  
START-UP  
PRE-COMM  
CHECK LIST

M5.0

REVIEWED  
By Marty Taylor at 8:04 am, Jun 07, 2022