

6.6.22

NC ENGINEERING LICENSE
C-1369

CONTRACT DATE: 06-03-2022
BUILDING TYPE: END. MED 40
PLAN VERSION: SEPT 2021
SITE NUMBER: 315870
STORE NUMBER:

TACO BELL
5116 NC 87 South
Fayetteville, NC 28306



ENDEAVOR 2.0

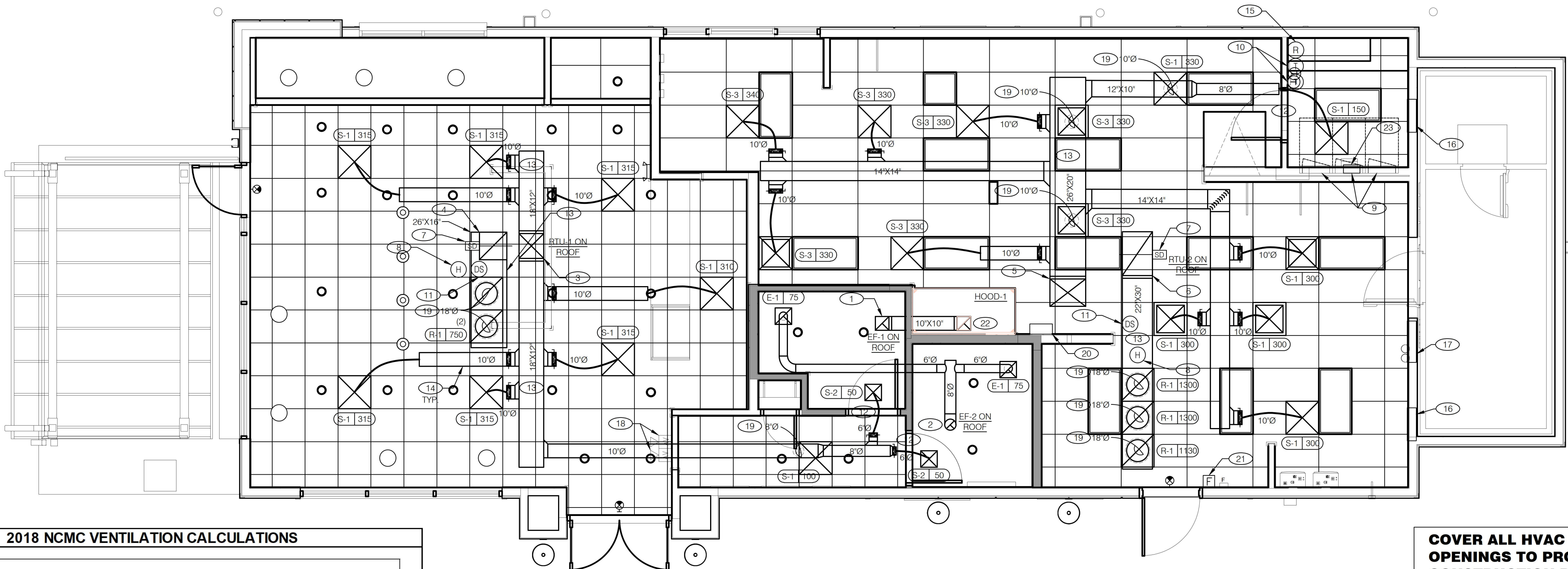
**DUCT AND
DIFFUSER
PLAN**

M2.0

F
E
D
C
B
A

A

B



**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 NCMC 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 ² (TABLE 403.3) | |
| $A_z = 750$ FT ² | |
| $V_{bz} = 435$ 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 ² (TABLE 403.3) | |
| $A_z = 73$ FT ² | |
| $V_{bz} = 4$ 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 NCMC EXHAUST CALCULATIONS

| KITCHEN | |
|-----------------------|---|
| * SECTION 403.3 | 0.7 CFM/FT ² (TABLE 403.3) |
| 970 FT ² | |
| EXHAUST RATE= | 679 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 NCMC 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 NCMC CALCS | 544 | 549 | 900 | - | - |
| ENTRY LOBBY | RTU-1 | SEE 2018 NCMC CALCS | 5 | | | - | - |
| KITCHEN | RTU-2 | SEE 2018 NCMC CALCS | - | - | 600 | 679 | 1,050 |
| MEN'S/WOMEN'S TOILET | RTU-2 | SEE 2018 NCMC CALCS | - | - | TRANSFER | 140 | 150 |
| TOTALS | | | | 549 | 1,500 | 819 | 1,200 |

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

- 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 GRILLES. 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.

NOT USED

F

GENERAL NOTES

E

KEY NOTES

B