

SIGNATURE DATE: 09/26/2025

**H & B**  
HOSS & BROWN ENGINEERS  
15902 Midland Drive  
Shawnee, Kansas 66217  
913.362.9090 | mail@h-b.com  
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North Carolina Certificate of Authority #C-3583

**QuikTrip No. 1076**  
116 CLANTON ROAD  
CHARLOTTE, NORTH CAROLINA



|           |            |
|-----------|------------|
| PROTOTYPE | Fryer      |
| DIVISION  | Carolina   |
| VERSION   | GEN3       |
| DATE      | 06-18-2025 |

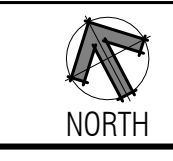
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SHEET TITLE:  
MECHANICAL DUCTWORK CEILING PLAN - DEMO

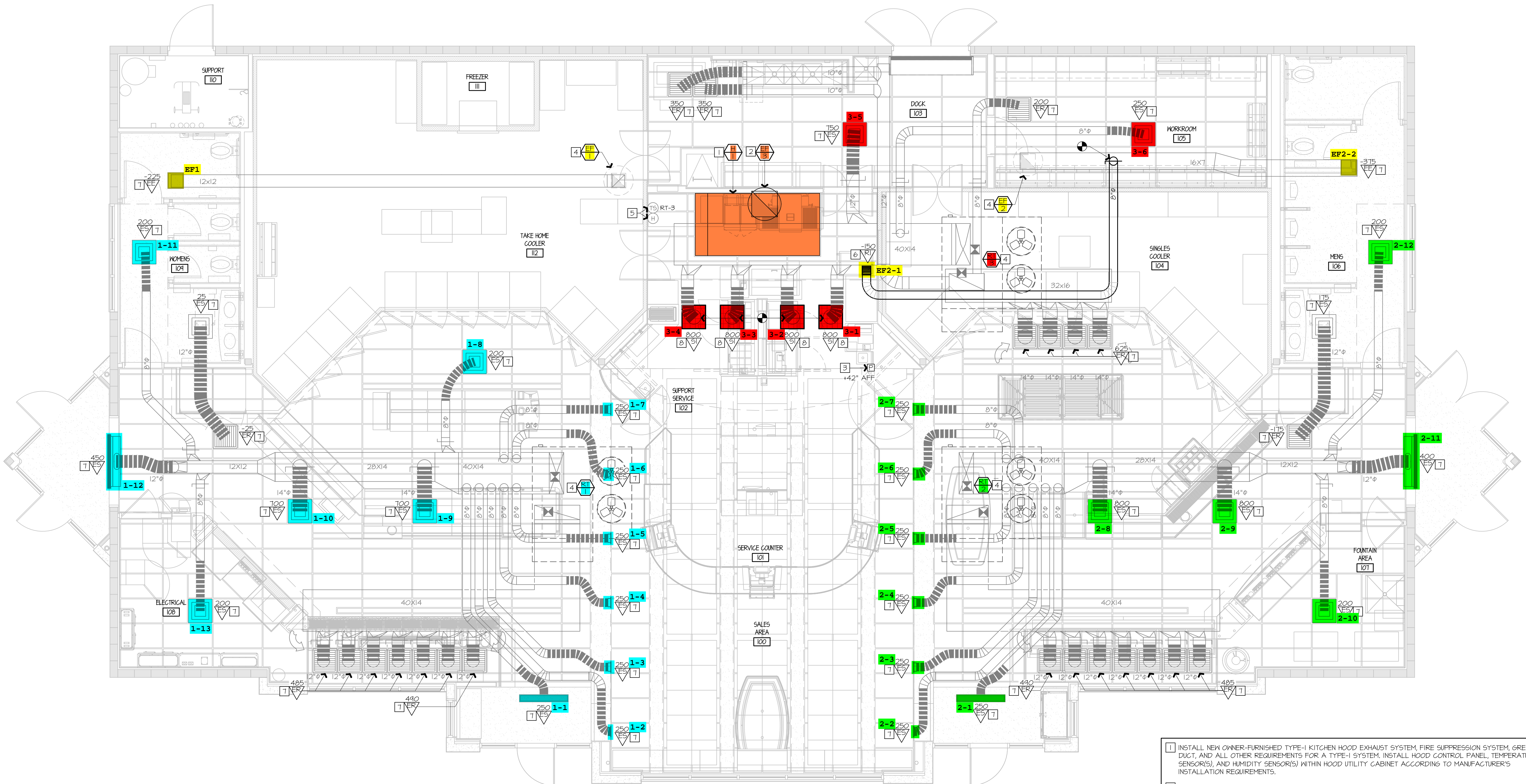
SHEET NUMBER:  
M101

- 1 REMOVE KITCHEN HOOD SYSTEM AND ALL ASSOCIATED GREASE DUCT BETWEEN HOOD AND EXHAUST FAN ON ROOF. REMOVE HOOD SUPPLY PLENUM DUCT BACK TO RTU SUPPLY MAIN AND CAP AND PATCH AS REQUIRED. RE: M102.
- 2 REMOVE ROOF MOUNTED EXHAUST FAN AND ALL ASSOCIATED DUCT WORK.
- 3 EXISTING TEMPERATURE SENSOR AND HUMIDITY SENSOR SERVING KITCHEN RTU TO REMAIN, SHOWN FOR REFERENCE.
- 4 EXISTING ROOF EQUIPMENT TO REMAIN, SHOWN FOR REFERENCE.
- 5 REMOVE DIFFUSER/GRILLE AND MAINTAIN EXISTING DUCT WORK FOR NEW WORK.

**A1** MECHANICAL DUCTWORK CEILING PLAN - DEMO



**A13** PLAN NOTES



- 1 INSTALL NEW OWNER-FURNISHED TYPE-I KITCHEN HOOD EXHAUST SYSTEM, FIRE SUPPRESSION SYSTEM, GREASE DUCT, AND ALL OTHER REQUIREMENTS FOR A TYPE-I SYSTEM. INSTALL HOOD CONTROL PANEL, TEMPERATURE SENSOR(S), AND HUMIDITY SENSOR(S) WITHIN HOOD UTILITY CABINET ACCORDING TO MANUFACTURER'S INSTALLATION REQUIREMENTS.
- 2 INSTALL NEW OWNER-FURNISHED ROOF-MOUNTED EXHAUST FAN. INSTALL 12" GREASE DUCT TO ROOF MOUNTED FAN. EXTEND HOOD COLLAR. BALANCE TO AIRFLOW RATE SCHEDULED ON M601. COORDINATE WITH ELECTRICAL CONTRACTOR FOR FAN CONTROLS BETWEEN HOOD AND FAN. RE: QT INSTALL DRAWINGS AND HOOD MANUFACTURER'S INSTRUCTIONS.
- 3 INSTALL OWNER-FURNISHED HOOD SUPPRESSION PUSH STATION PER MANUFACTURER'S INSTALLATION REQUIREMENTS. RE: F4-E501 FOR ELEVATION.
- 4 EXISTING ROOF EQUIPMENT TO REMAIN, SHOWN FOR REFERENCE. RE: 61-M601 TO RE-BALANCE AIRFLOWS AS REQUIRED.
- 5 EXISTING TEMPERATURE SENSOR AND HUMIDITY SENSOR SERVING KITCHEN RTU TO REMAIN, SHOWN FOR REFERENCE.
- 6 PROVIDE EXHAUST GRILLE ABOVE COMBI OVENS AND PROVIDE DUCT AS SHOWN TO TAP INTO EXISTING RESTROOM EXHAUST DUCT. RE: 61-M601 FOR MORE INFORMATION.
- 7 RE-BALANCE EXISTING DIFFUSER/GRILLE TO AIRFLOW SHOWN ON PLAN. RE: M601.
- 8 PROVIDE DIFFUSER/GRILLE AS SCHEDULED AND RECONNECT TO EXISTING DUCT MAINTAINED DURING DEMOLITION. RE-BALANCE TO AIRFLOW SHOWN ON PLAN. RE: M601.

NEIL P. BARTLEY  
 ENGINEER  
 SEAL 04893  
 NORTH CAROLINA

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QUICKTRIP CORPORATION  
 116 CLANTON ROAD  
 CHARLOTTE, NORTH CAROLINA 28203  
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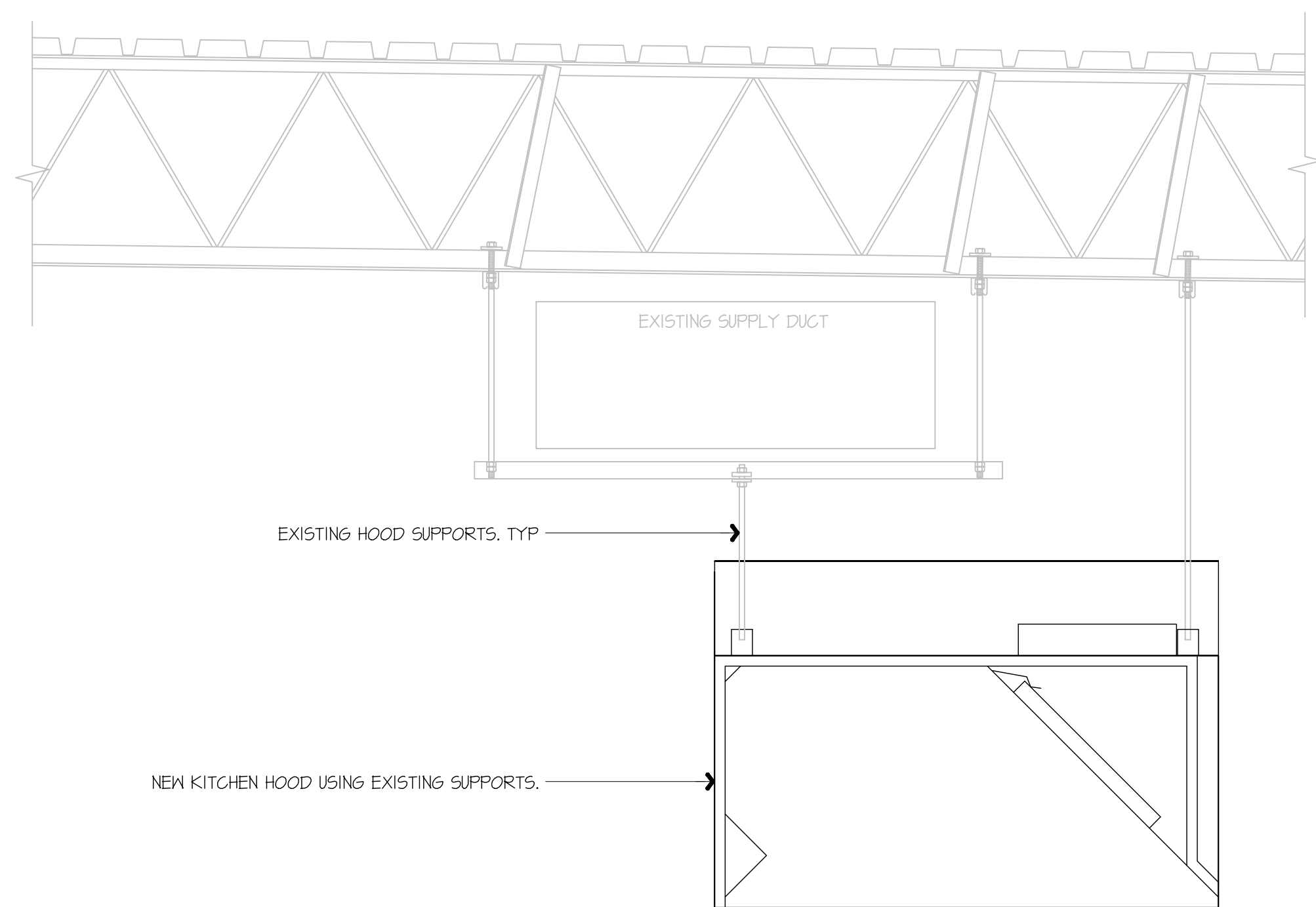
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| PROTOTYPE | Fryer      |
| DIVISION  | Carolina   |
| VERSION   | GEN3       |
| DATE      | 06-18-2025 |

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ORIGINAL ISSUE DATE: 09/26/2025

SHEET TITLE:  
 MECHANICAL DUCTWORK CEILING PLAN - NEW

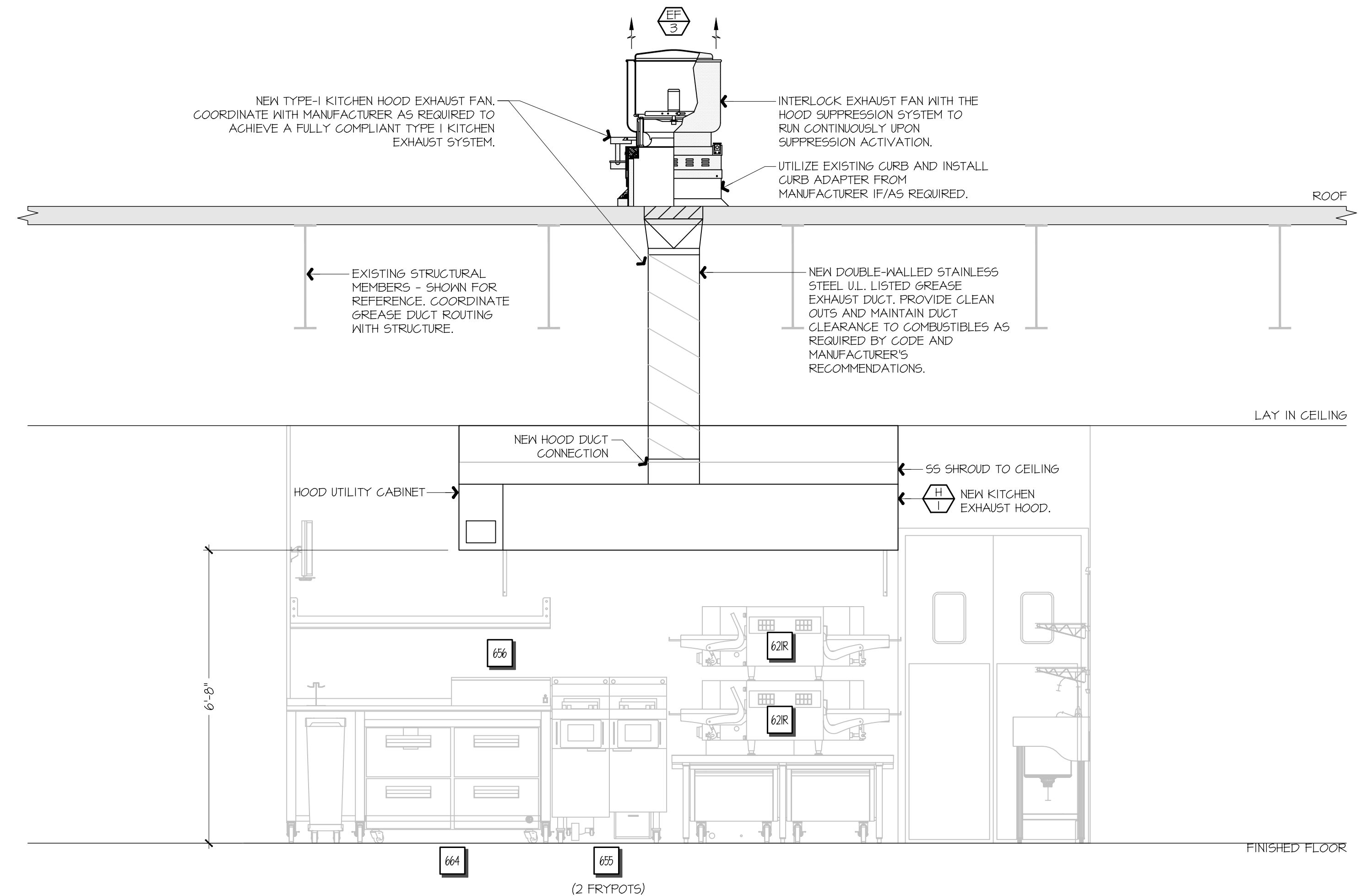
SHEET NUMBER:  
**M102**



**F1** KITCHEN EXHAUST HOOD SUPPORT DETAIL

NOT TO SCALE

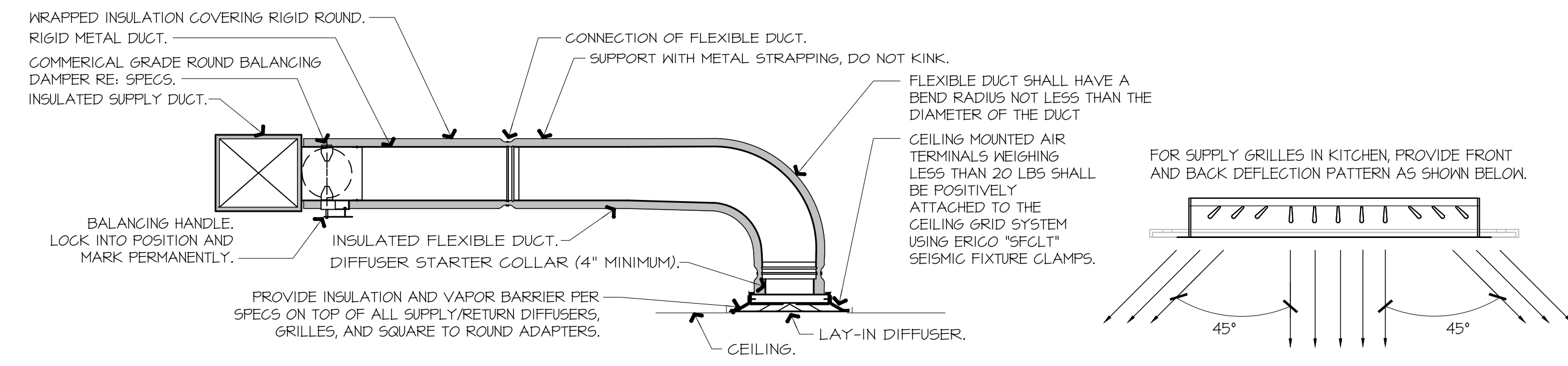
**GENERAL NOTES:**  
 KITCHEN EXHAUST HOOD SHALL BE TYPE-I RATED FOR MEDIUM DUTY COOKING APPLIANCES THAT PRODUCE GREASE OR SMOKE AS A RESULT OF THE COOKING PROCESS. HOOD SHALL BE PROVIDED WITH AUTOMATIC FIRE SUPPRESSION SYSTEM INTERLOCKED WITH EQUIPMENT SHUTDOWN CONTROLS. HOOD SHALL BE PROVIDED WITH UL 1046 GREASE FILTERS. HOOD SHALL BE LISTED IN ACCORDANCE WITH UL10. HOOD SHALL BE LISTED AND LABELED FOR 0" CLEARANCE REQUIREMENTS TO COMBUSTIBLES.  
 HEAT AND MOISTURE LOADS FOR APPLIANCES THAT DO NOT PRODUCE GREASE OR SMOKE AS A RESULT OF THE COOKING PROCESS AND ARE NOT LOCATED UNDER THE HOOD, HAVE BEEN INCORPORATED INTO THE HVAC SYSTEM CAPACITY SERVING THE KITCHEN.  
 ALL OVENS NOT LOCATED UNDERNEATH A HOOD ARE UL1010 LISTED FOR VENTLESS OPERATION.  
**SEQUENCE OF OPERATION:**  
 THE FOLLOWING KITCHEN EQUIPMENT SHALL BE INTERLOCKED WITH CURRENT TRANSFORMERS THAT AUTOMATICALLY ACTIVATE THE HOOD EXHAUST FAN UPON THE KITCHEN EQUIPMENT BEING ENERGIZED: [621] PIZZA OVENS, [648] COMBI OVENS, [647] STEAM DRAWER, [655] FRYER, [656] FRY HOLDING STATION.  
 AS HOOD EXHAUST FAN ENERGIZES, RTU'S SHALL MODULATE OUTSIDE AIR TO MAINTAIN BUILDING PRESSURIZATION. RE: M601.  
 HEAT SENSORS SHALL BE PROVIDED WITHIN HOOD CANOPY FOR TEMPERATURE AND HUMIDITY MONITORING. RE: MANUFACTURER DRAWINGS.  
 UPON ACTIVATION OF THE FIRE SUPPRESSION SYSTEM, ALL EQUIPMENT LOCATED UNDER THE HOOD SHALL BE SHUTDOWN VIA CONTACTORS LOCATED WITHIN THE HOOD UTILITY CABINET, AND RTU SERVING KITCHEN SPACE SHALL BE AUTOMATICALLY SHUTDOWN. RE: A13-E601.



**F9** FSC REAR WALL ELEVATION - NEW

1/2" = 1'-0"

A1-M102

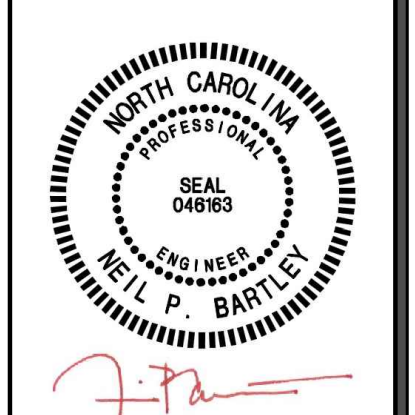


**NOTES:**  
 1. PROVIDE AT FLEXIBLE DUCT CONNECTION METAL OR "PANDUIT" DRAMBAND ON THE INTERIOR FLEXIBLE DUCT HELIX. SECURE THE INSULATION OVER THE DRAMBAND WITH AN ADDITIONAL DRAMBAND.  
 2. PROVIDE BEADING ON ROUND METAL DUCT 12" OR LARGER IN DIAMETER.  
 3. PROVIDE MINIMUM 4" COLLARS FOR ATTACHMENT OF THE FLEX DUCT TO ROUND DUCT, DAMPERS AND DIFFUSERS.  
 4. BAND RIGID ROUND DUCT INSULATION TO DUCT AND PROVIDE FIBER REINFORCED FOIL BACKED TAPE FOR INSULATION OVERLAP.

**A9** DIFFUSER CONNECTION DETAIL

NOT TO SCALE

**A1** NOT USED



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ORIGINAL ISSUE DATE: 09/26/2025

SHEET TITLE:  
 MECHANICAL SECTIONS & DETAILS

SHEET NUMBER:  
**M501**

**HOOD INFORMATION - JOB#7284466**

| HOOD NO | TAG | MODEL     | MANUFACTURER | LENGTH | MAX COOKING TEMP | TYPE | APPLIANCE DUTY | DESIGN CFM/FT | TOTAL EXH CFM |
|---------|-----|-----------|--------------|--------|------------------|------|----------------|---------------|---------------|
| 1       |     | 6030 ND-2 | CAPTIVEAIRE  | 9' 0"  | 450 DEG          | I    | MEDIUM         | 150           | 1350          |

| EXHAUST PLENUM |      |        |         |      |      |         |    |                      |            | HOOD CONFIG |  |
|----------------|------|--------|---------|------|------|---------|----|----------------------|------------|-------------|--|
| WIDTH          | LENG | HEIGHT | RISE(R) | DIA  | CFM  | VEL     | SP | HOOD CONSTRUCTION    | END TO END | ROW         |  |
|                |      | 4"     | 12"     | 1350 | 1718 | -0.540" |    | 430 95 WHERE EXPOSED | ALONE      | ALONE       |  |

| HOOD INFORMATION |     |                      |     |        |        |                        |     |                |            | HOOD CONFIG                    |          |             |         |                   |            |         |
|------------------|-----|----------------------|-----|--------|--------|------------------------|-----|----------------|------------|--------------------------------|----------|-------------|---------|-------------------|------------|---------|
| HOOD NO          | TAG | TYPE                 | QTY | HEIGHT | LENGTH | EFFICIENCY @ 7 MICRONS | QTY | TYPE           | WIRE GUARD | AVERAGE FOOT CANDLES @ 36" AFF | LOCATION | SIZE        | TYPE    | HOOD CONSTRUCTION | END TO END | ROW     |
| 1                |     | CAPTRATE SOLO FILTER | 6   | 20"    | 16"    | 85% SEE FILTER SPEC    | 6   | RECESSED ROUND | NO         | 66                             | LEFT     | 12"x60"x30" | TANK FS | 4.0               | DCV-1011   | I LIGHT |

| HOOD OPTIONS |     | OPTION  |
|--------------|-----|---|
| HOOD NO      | TAG |   |
| 1            |     | FIELD WRAPPER 11.00" HIGH FRONT, LEFT, RIGHT, RIGHT END STANDOFF (FINISHED) 1" WIDE 60" LONG INSULATED. INSULATION FOR TOP OF HOOD. INSULATION FOR BACK OF HOOD. SENSOR-CV. |

**FIRE SYSTEM INFORMATION - JOB#7284466**

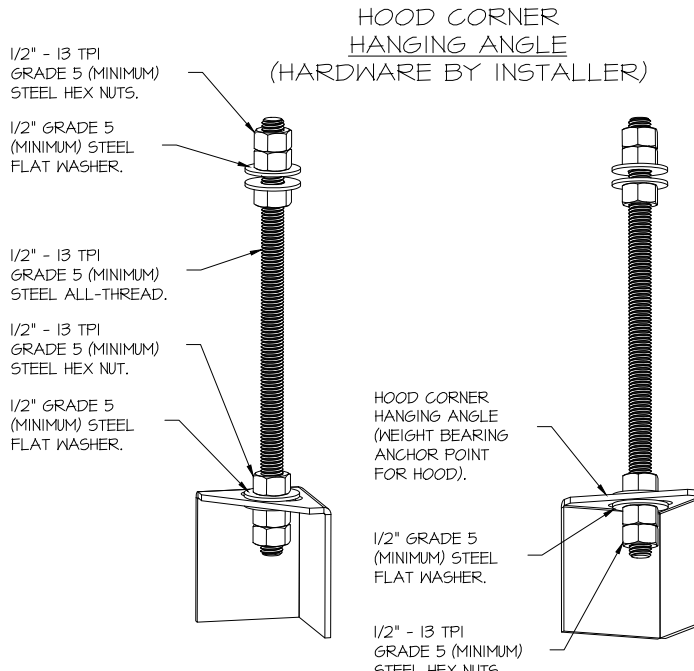
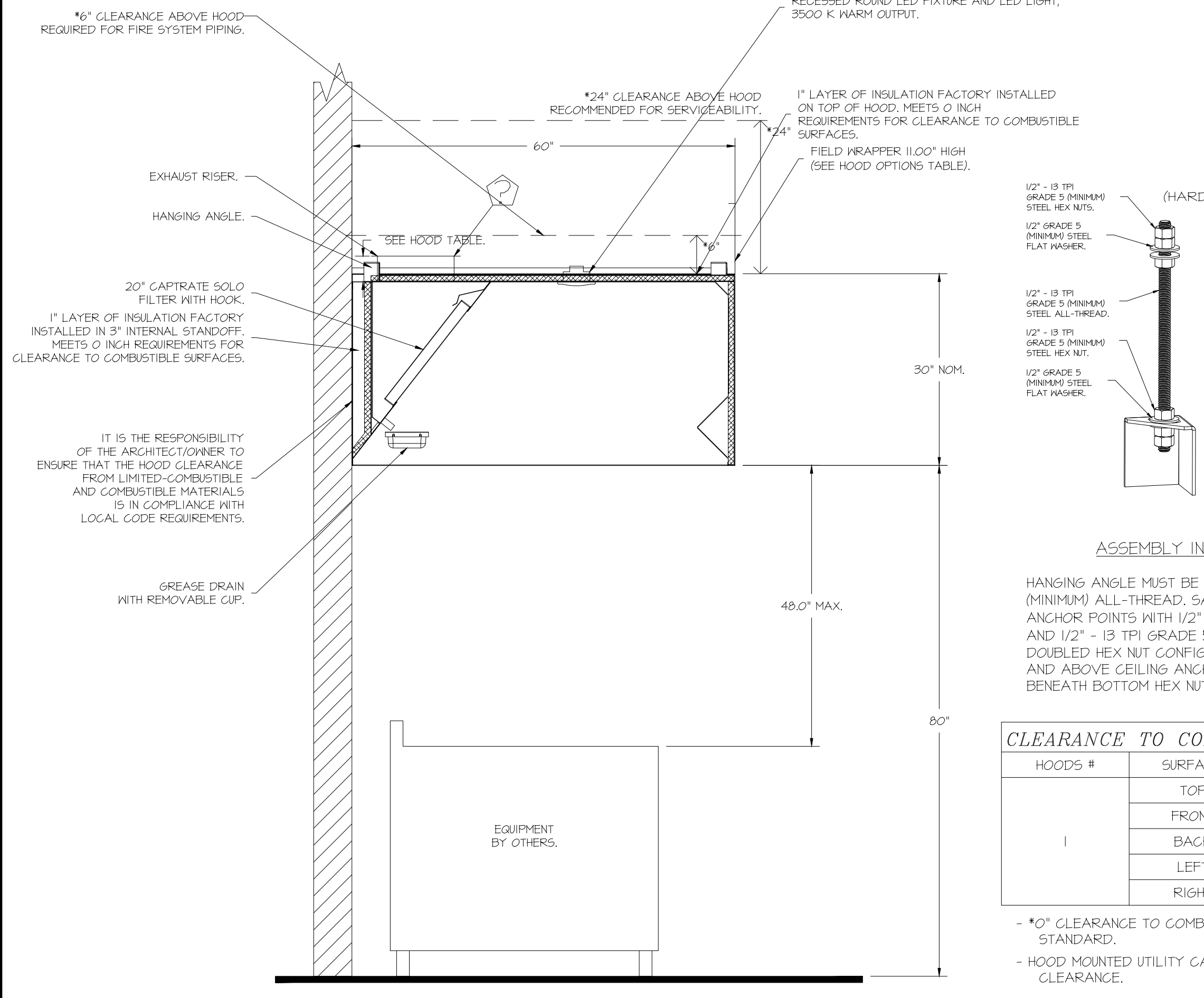
| FIRE SYSTEM NO | TAG | TYPE    | SIZE | MAX FP | DESIGN FP | INSTALLATION                   |
|----------------|-----|---------|------|--------|-----------|--------------------------------|
| 1              |     | TANK FS | 4.0  | 20     | 20        | FIRE CABINET LEFT LEFT, HOOD I |

**FIRE SYSTEM PARTS LIST KEY**

| FIRE SYSTEM NO | TAG | KEY NUMBER - PART DESCRIPTION   | QTY BY FACTORY | QTY BY DIST |
|----------------|-----|---|----------------|-------------|
| 0              | 0   | TANK FIRE SUPPRESSION POST-DISCHARGE PROCEDURE UTILITY CABINET LABEL SHEET.   | 1              | 0           |
| 0              | 0   | TANK FIRE SUPPRESSION MAINTENANCE GUIDE UTILITY CABINET LABEL SHEET.  | 1              | 0           |
| 0              | 0   | 12-F28021-32144-01-360 DUCT FIRE THERMOSTAT WITH 12 FOOT WIRE LEADS. NO. CLOSE ON TEMP RISE AT 360°F. (A0094B10).                               | 1              | 0           |
| 0              | 0   | 32-00002 QUIK SEAL - 1/2" (UL)  | 1              | 0           |
| 0              | 0   | 442K422 1/2" X 1/4" BRASS REDUCING BUSHING.   | 1              | 0           |
| 0              | 0   | 78525 1/2" 40 PRO-PRESS ELBOW WITH 1/2" ANPT FEMALE CONNECTION, VIEGA.  | 1              | 0           |
| 0              | 0   | 78680 1/2" X 1/2" PRO-PRESS TEE X 1/2" ANPT FEMALE CONNECTION, VIEGA.   | 1              | 0           |
| 0              | 0   | 81-30001-001 TANK - PRESSURIZED TANK USED FOR TANK FIRE SUPPRESSION.  | 1              | 0           |
| 0              | 0   | 81-30003-001 PRIMARY ACTUATOR KIT (PAK) - ACTUATOR AND RELEASE SOLENOID ASSEMBLY, ONE NEEDED PER FIRE SYSTEM SUPERVISED, TANK FIRE SUPPRESSION. | 1              | 0           |
| 0              | 0   | 81-30003-001 DIN CONNECTOR, GANFIELD PART #5,560-201-EUOA, TANK FIRE SUPPRESSION, SUBMERSIBLE SOLENOID CONNECTION (SEE VENDOR 30371).           | 1              | 0           |
| 0              | 0   | 81-30003-001 HARDWARE, SVA BOLTS, TANK FIRE SUPPRESSION.  | 4              | 0           |
| 0              | 0   | 4055459C PRO PRESS 1/2 PRESS X PRESS 90 ELBOW LD.   | 4              | 0           |
| 0              | 0   | 401200C PRO PRESS PC611 1/2 PRESS TEE LD.   | 4              | 0           |
| 0              | 0   | 48644A15 HARDWARE, DATANLOCK LOCKING BRACKET SQUARE NUTS 5/16" ZINC, TANK FIRE SUPPRESSION.   | 2              | 0           |
| 0              | 0   | A0024593 JUNCTION BOX FOR MANUAL PULL STATION, 15" DEEP BACK BOX, RED COLOR.  | 1              | 0           |
| 0              | 0   | A31484 1/4" NPT SCHROEDER VALVE AND CAP, JB INDUSTRIES, 1/4" FLARE X 1/4" MPT HALF UNION, USED ON TANK SERVICE PORT.                            | 1              | 0           |
| 0              | 0   | B145 3/8" BLACK IRON 90 ELL.  | 2              | 0           |
| 0              | 0   | DATANLOCK DISCHARGE ADAPTER TANK LOCKING PLATE FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.                    | 1              | 0           |
| 0              | 0   | TANK STRAP TANK STRAP - USED FOR TANK FIRE SUPPRESSION.   | 3              | 0           |
| 0              | 0   | TFS-UC1 TANK BRACKET TANK BRACKET FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.                                 | 1              | 0           |
| 0              | 0   | PK-283952-000 DISCHARGE ADAPTER, TANK FIRE SUPPRESSION.   | 1              | 0           |
| 16             | 16  | 14210 1/2" X 3/8" NPT MALE ADAPTER, VIEGA.  | 5              | 0           |
| 16             | 16  | OL-F NOZZLE - TANK PROTECTION APPLIANCE COVERAGE NOZZLE (INCLUDES METAL BLOW OFF CAP, LANTARD, USED WITH CHROME-PLATED PIPE).                   | 5              | 0           |
| 26             | 26  | 05A-3/8 QUIK SEAL - 3/8" (UL)   | 5              | 0           |
| 34             | 34  | A0034918 2-WIRE SINGLE ACTION MANUAL ACTUATION DEVICE (PUSH/PULL STATION) WITH PROTECTIVE COVER, ONE (1) NORMALLY OPEN CONTACT, RED COLOR.      | 1              | 0           |

**CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH**

NSF NFFPA #96 NSF E.T.L. LISTED 3054804-001 TO UL 710 & ULCT10 STANDARDS



**ASSEMBLY INSTRUCTIONS**

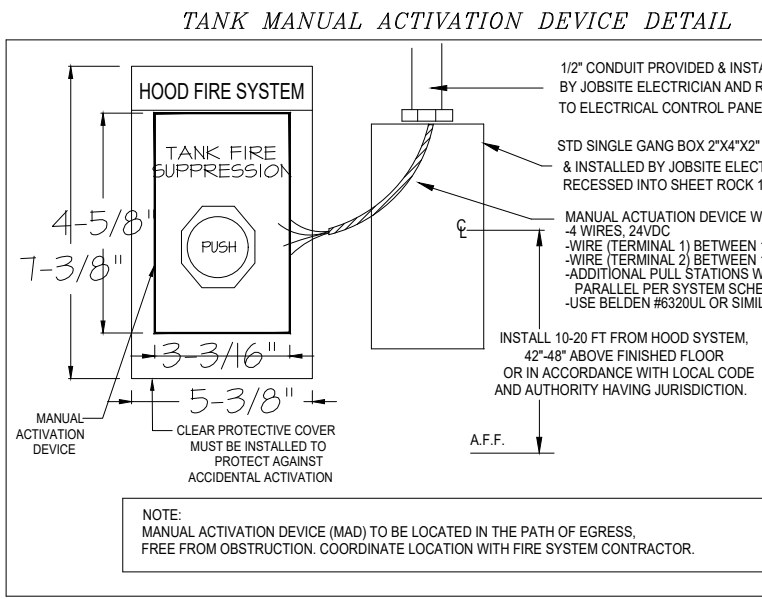
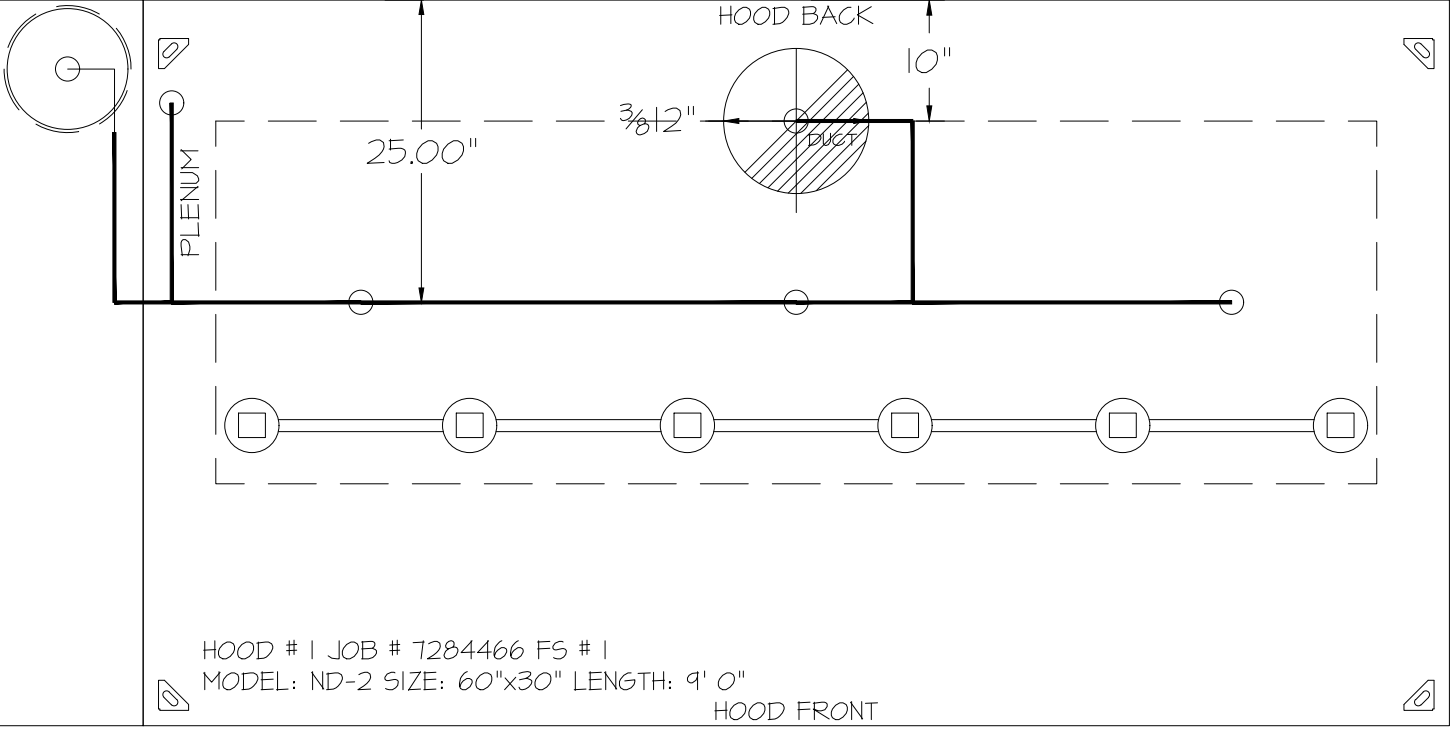
HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD, SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION BENEATH HOOD HANGING ANGLES AND ABOVE CEILING ANCHORS. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.

**CLEARANCE TO COMBUSTIBLES**

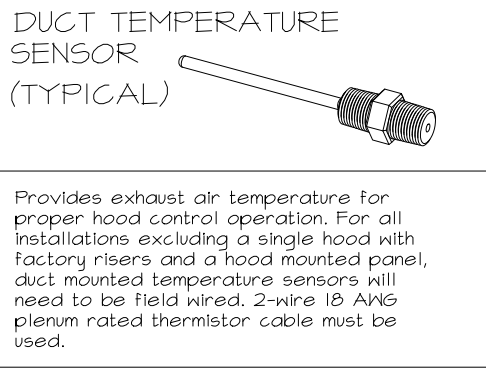
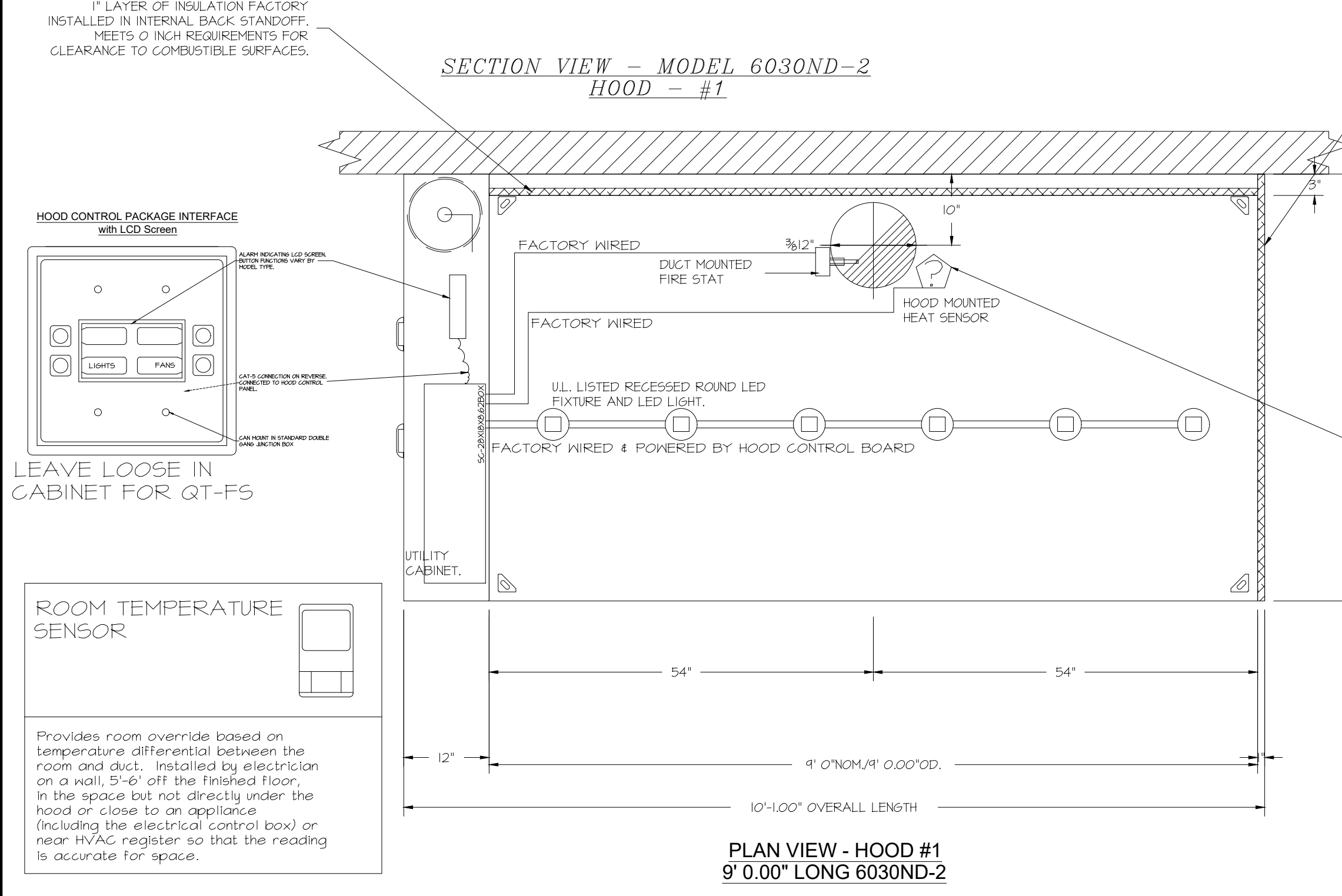
| HOODS # | SURFACE | *CLEARANCE |
|---------|---------|------------|
| 1       | TOP     | 0"         |
| 1       | FRONT   | 0"         |
| 1       | BACK    | 0"         |
| 1       | LEFT    | 0"         |
| 1       | RIGHT   | 0"         |

\*0" CLEARANCE TO COMBUSTIBLES CONFORMS TO UL710 STANDARD.  
- HOOD MOUNTED UTILITY CABINETS REQUIRE 36" SERVICE CLEARANCE.

FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.



- NOTES**
- FIELD PIPE DROPS AS SHOWN
  - PIPING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS.
  - FIELD INSTALLED DROPS: FACTORY WILL PROVIDE QTY 2 60IN LONG PIECES OF CHROME PLATED PIPING SHIPPED LOOSE TO BE FIELD-INSTALLED.
  - SHIP LOOSE DROPS: FACTORY WILL PROVIDE THE EXACT CHROME PIPE LENGTH NEEDED SHIPPED LOOSE TO BE FIELD-INSTALLED.
  - RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVING, SALVANGERS, ETC.
  - OVERLAPPING COVERAGE SHALL NOT BE USED ON ANY APPLIANCE WITH AN OBSTRUCTION.
  - IF APPLICABLE, EXTENDED FIRE-PIPED DROPS ARE SHIPPED LOOSE.
  - FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.
  - APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE SIZE, NOT THE OVERALL APPLIANCE SIZE.
  - THIS PRE-ENGINEERED FIRE SYSTEM COMPLIES WITH UL 300 REQUIREMENTS.
  - OL-F NOZZLE PART NUMBER REPLACES 3070-3/8H-10-SS
  - JOB #: 7284466
  - JOB NAME: QT - 63 NEW STORE PKG GOING FORWARD (DW) (450F).
  - SYSTEM SIZE: TANK-SP-1 DESIGN FP: 20, MAXIMUM FP: 20, HOOD # 1 1" 0.00" LONG x 60" WIDE x 30" HIGH, RISER # 1 SIZE: 12" DIA, HOOD # 1 METAL BLOW-OFF CAPS INCLUDED.
  - HEAVY-DUTY APPLIANCES (RATED 600%F) WILL REQUIRE AN ADDITIONAL DOWNSTREAM FIRESTAT IN THE EVENT THAT THE DUCTWORK CONTAINS ANY HORIZONTAL RUNS OVER 25 FT IN LENGTH.
  - MEDIUM TO LIGHT-DUTY APPLIANCES (RATED 450%F) WILL NOT REQUIRE ANY ADDITIONAL DOWNSTREAM DETECTION.



**AGENT DISTRIBUTION PIPING LIMITATIONS**

| PIPE SECTION                                | MAX PIPE LENGTH (FT) |
|---|----------------------|
| MAX SUPPLY LINE TO FIRST OVERLAPPING NOZZLE | 42                   |
| OVERLAPPING NOZZLE APPLIANCE BRANCH         | 10                   |
| DEDICATED NOZZLE APPLIANCE BRANCH           | 10                   |

- LEGEND - FIRE CABINET TANK SYSTEM**
- 4 GALLON TANK.
  - PRIMARY ACTUATOR RELEASE.
  - SECONDARY ACTUATOR RELEASE.
  - PRESSURE SUPERVISION SWITCH.
  - PRIMARY HOSE ASSEMBLY.
  - SECONDARY HOSE ASSEMBLY.
  - REMOTE MANUAL ACTUATION DEVICE.

**REVISIONS**

| NO. | DESCRIPTION | DATE |
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**CAPTIVEAIRE**

Tulsa Office  
12101 East 51st Street, Suite 101A, Tulsa, OK, 74146 PHONE: (918) 258-0251 FAX: 9182275947 EMAIL: reg@captivaire.com



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SHEET TITLE:  
**MECHANICAL HOOD DETAILS**

SHEET NUMBER:  
**M510**

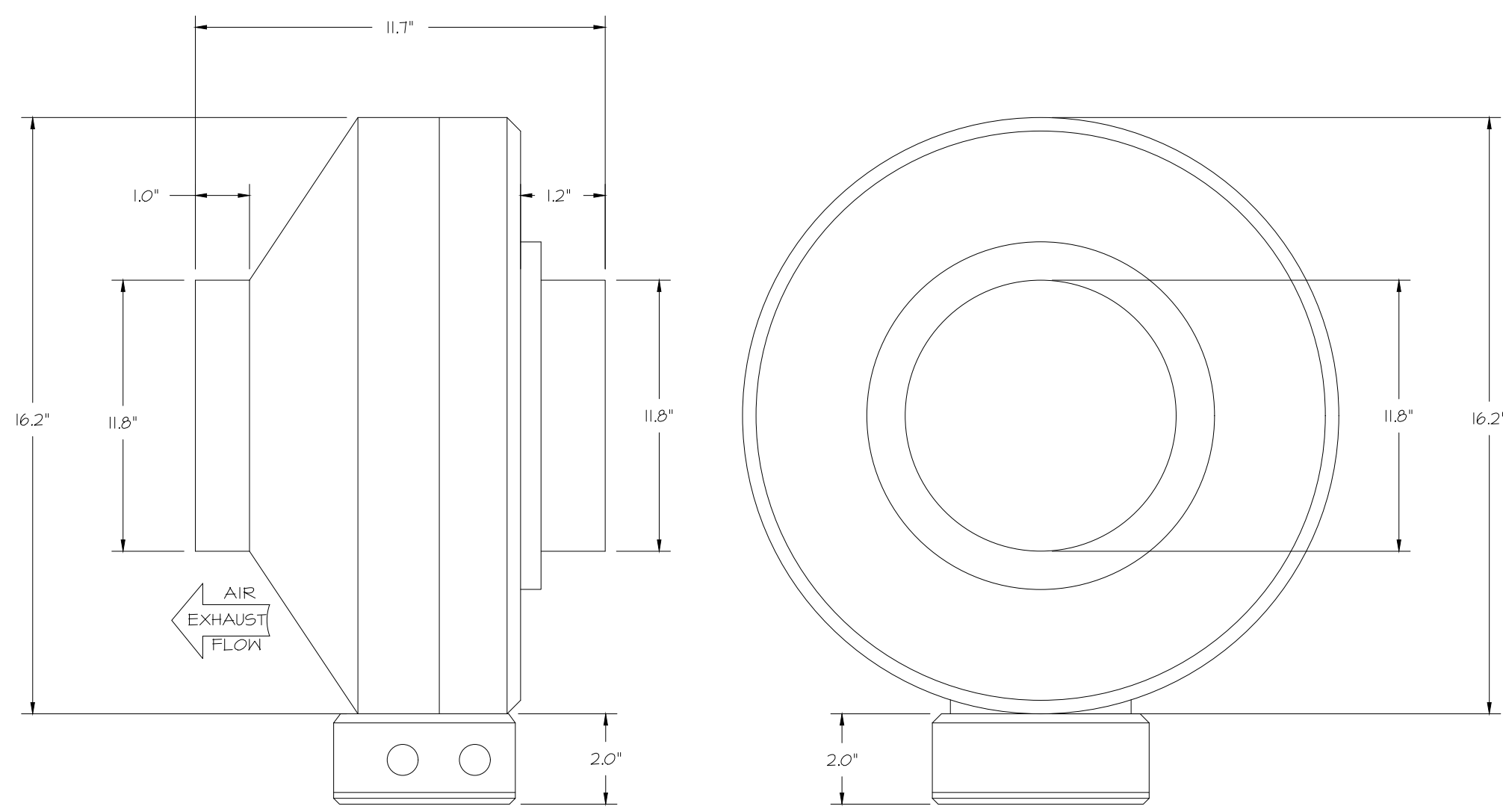
QT - 63 New Store Pkg Going Forward (DW) (450F)  
Various Locations,  
Tulsa, OK, 74136

DATE: 4/29/2025  
DWG.#: 7284466  
DRAWN BY: RJH-80  
SCALE: 3/4" = 1'-0"  
MASTER DRAWING

SHEET NO.  
1



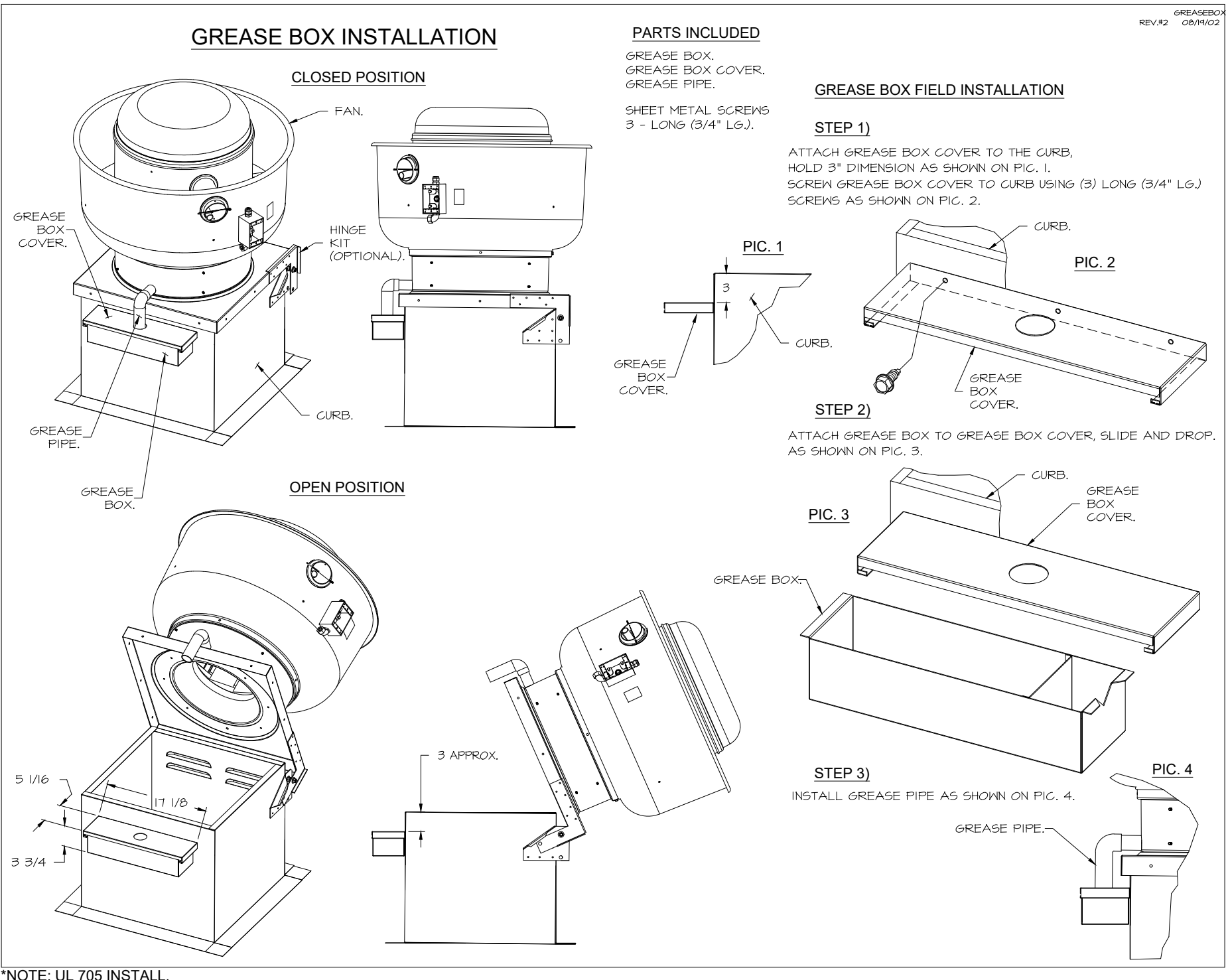
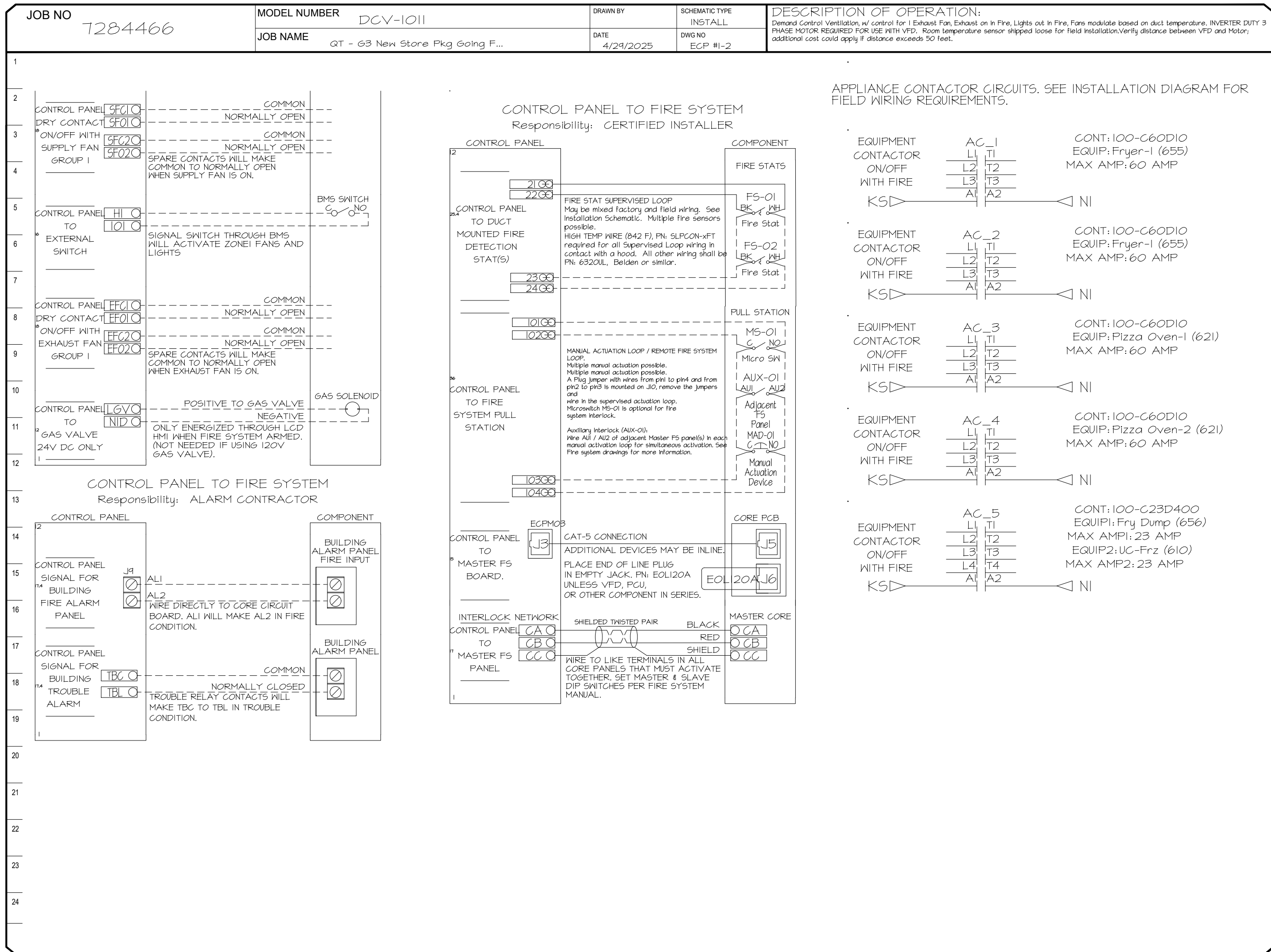
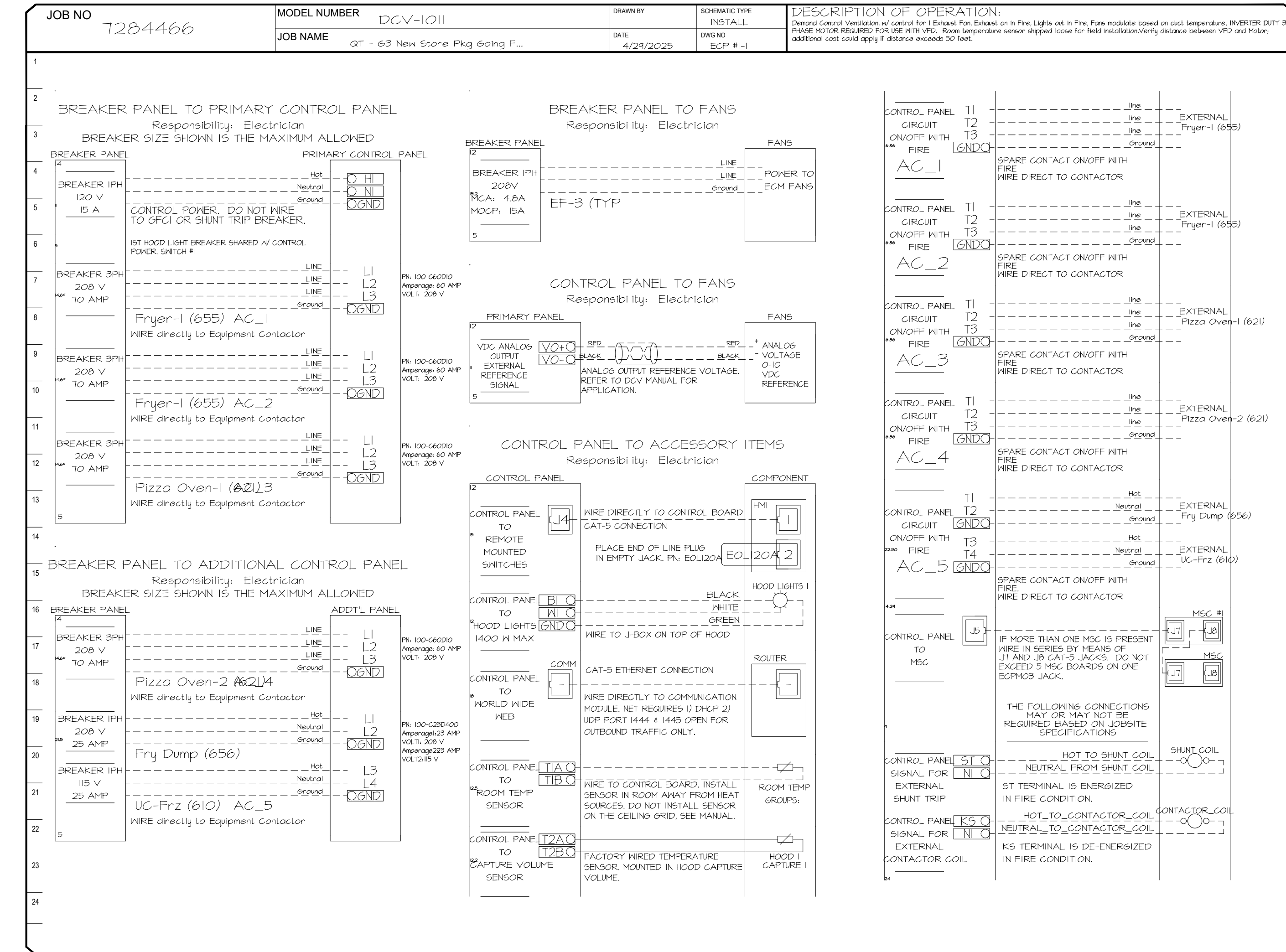
FAN #4 DFA-300-GA - EXHAUST FAN (VF-1 - G02 FAN)



- FEATURES:**
- 20 GA. GALVANIZED STEEL HOUSING.
  - STANDARD 4" - 12" ROUND DUCT CONNECTIONS.
  - EASILY ACCESSIBLE J-BOX.
  - UL507 LISTED.
  - EXTREMELY QUIET OPERATION.
- OPTIONS:**
- FAN CONTROL - 3 AMP WHITE SPEED CONTROL FOR CFA CEILING FAN.
  - 2 YEAR PARTS WARRANTY.

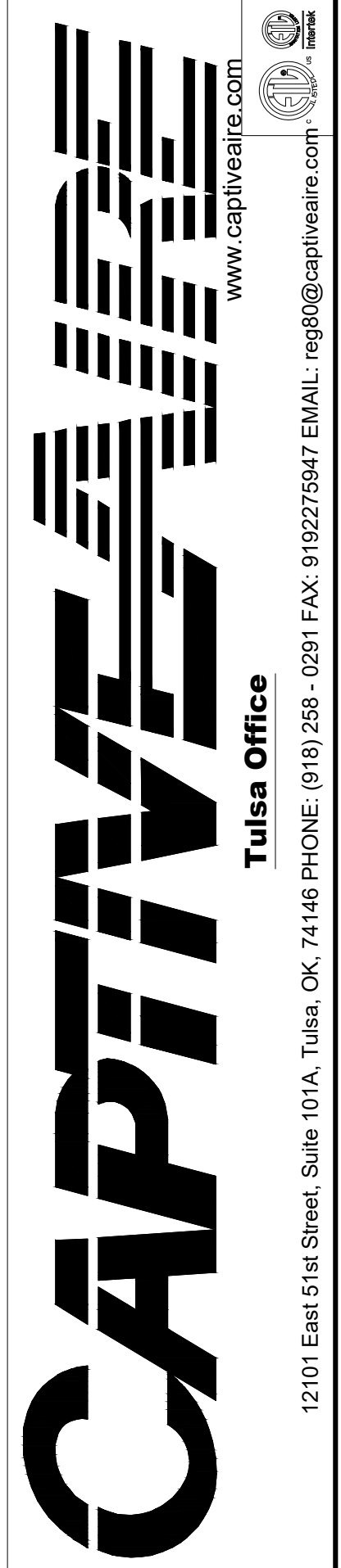
**ELECTRICAL PACKAGE - JOB#7284466**

| NO | TAG        | PACKAGE # | LOCATION             | SWITCHES              |                  | OPTION             | FANS CONTROLLED |         |    |       |     |     |
|----|------------|-----------|----------------------|-----------------------|------------------|--------------------|-----------------|---------|----|-------|-----|-----|
|    |            |           |                      | LOCATION              | QUANTITY         |                    | FAN TAG         | TYPE    | HP | VOLT  | FLA |     |
| 1  | TYPE I ECP | DCV-1011  | UTILITY CABINET LEFT | SHIP LOOSE W/ PREWIRE | 1 LIGHT<br>1 FAN | SMART CONTROLS DCV | EF-3 (TYPE I)   | EXHAUST | 1  | 0.500 | 208 | 3.8 |



**REVISIONS**

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SIGNATURE DATE: 09/26/2025

**H & B**  
**HOSS & BROWN** ENGINEERS

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North Carolina Certificate of Authority #C-3583

**QuikTrip No. 1076**

116 CLANTON ROAD  
CHARLOTTE, NORTH CAROLINA

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|           |            |
|-----------|------------|
| PROTOTYPE | Fryer      |
| DIVISION  | Carolina   |
| VERSION   | GEN3       |
| DATE      | 06-18-2025 |

| REV | DATE | DESCRIPTION |
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|     |      |             |
|     |      |             |

at - 63 New Store Pkg Going Forward (DW) (450F)

Various Locations,  
Tulsa, OK, 74136

DATE: 4/29/2025

DWG.#: 7284466

DRAWN BY: RJB-80

SCALE: 3/4" = 1'-0"

MASTER DRAWING

SHEET TITLE:  
MECHANICAL HOOD  
DETAILS

SHEET NUMBER:  
M512

SHEET NO.  
3

**DUCTWORK #1 PARTS - JOB#7284466 DOUBLE WALL OFFSET**

| TAG          | PART #                   | CFM  | GPM | ZONE | COVEREDBY | SP      | WEIGHT | VELOCITY | QTY | DESCRIPTION  |
|--------------|--------------------------|------|-----|------|-----------|---------|--------|----------|-----|--|
| HI-EI        | DWI6DWRISER-2R-5         | 1350 |     |      |           | -0.54   | 7.31   | 0.00     | 1   | DOUBLE WALL RISER COVER - USED ON 12" INNER RISER, 4" LONG - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER RISER SHELL ASSEMBLY. INCLUDES INSULATION & SINGLE V CLAMPS FOR INNER & OUTER CONNECTIONS.   |
| P1           | DWI230DWASY-2R-5         | 1350 |     |      |           | -0.0387 | 14.16  | 1718.87  | 1   | DOUBLE WALL DUCT - 12" INNER 30 DUCT - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL.   |
| SYSTEM AT P1 |                          |      |     |      |           |         |        |          |     |  |
| P2           | DWI24TDWAJD-2R-5         | 1350 |     |      |           | -0.0128 | 83.19  | 1718.87  | 1   | DOUBLE WALL ADJUSTABLE DUCT - 12" INNER DUCT - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL. MIN LENGTH = 11" / MAX LENGTH = 48.5" / ADJUSTMENT = 30.5" / ADJUSTABLE SECTION MAY NEED TO BE CUT. INCLUDES SINGLE AND DOUBLE WALL "V" CLAMPS. |
| SYSTEM AT P2 |                          |      |     |      |           |         |        |          |     |  |
| P3           | DWI230DWASY-2R-5         | 1350 |     |      |           | -0.0442 | 14.16  | 1718.87  | 1   | DOUBLE WALL DUCT - 12" INNER 30 DUCT - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL.   |
| SYSTEM AT P3 |                          |      |     |      |           |         |        |          |     |  |
| P4           | DWI24TDWAJD-2R-5         | 1350 |     |      |           | -0.0169 | 83.19  | 1718.87  | 1   | DOUBLE WALL ADJUSTABLE DUCT - 12" INNER DUCT - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL. MIN LENGTH = 11" / MAX LENGTH = 48.5" / ADJUSTMENT = 30.5" / ADJUSTABLE SECTION MAY NEED TO BE CUT. INCLUDES SINGLE AND DOUBLE WALL "V" CLAMPS. |
| SYSTEM AT P4 |                          |      |     |      |           |         |        |          |     |  |
| P5           | DWI24DWRNDADP2ASY13-2R-5 | 1350 |     |      |           | -0.0122 | 21.94  | 1718.87  | 1   | DOUBLE WALL DUCT - 12" X 14" RND2RND ADAPTER - 13" TALL - 2 LAYERS REDUCED CLEARANCE - 16" X 16" STAINLESS STEEL OUTER SHELL. STANDARD ADAPTER.  |
| SYSTEM AT P5 |                          |      |     |      |           |         |        |          |     |  |
| P6           | DW2314TP                 | 1350 |     |      |           |         | 8.44   | 1262.85  | 1   | DUCT TO CURB TRANSITION, 23" CURB TO 14" DUCT, 16 GA ALUMINIZED. USED ON BDUI5, DU75 & 85.   |
| RC1          | DWI6DWRISER-2R-5         |      |     |      |           |         | 7.31   |          | 1   | DOUBLE WALL RISER COVER - USED ON 12" INNER RISER, 4" LONG - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER RISER SHELL ASSEMBLY. INCLUDES INSULATION & SINGLE V CLAMPS FOR INNER & OUTER CONNECTIONS.   |
|              | 3M-2000PLUS              |      |     |      |           |         | 0.80   |          | 2   | DUCT - 3M FIRE BARRIER 2000 PLUS SILICONE - USED AS SEALANT TO SEAL DUCT JOINTS.   |
| TOTAL WEIGHT |                          |      |     |      |           |         | 241.35 |          |     |  |

**DOUBLE WALL FACTORY BUILT DUCTWORK**

- ALL DUCTWORK IS REQUIRED TO BE INSTALLED WITH THE MAXIMUM SUPPORT SPACING LISTED BELOW.
- FOR A COMPLETE LIST OF APPROVED SUPPORT METHODS, SEE THE ENTIRE INSTALLATION AND OPERATION MANUAL.
- DUCTWORK SHALL SLOPE NOT LESS THAN 1/16" PER LINEAR FOOT TOWARDS THE HOOD OR AN APPROVED GREASE COLLECTION RESERVOIR.
- WHERE HORIZONTAL DUCTS EXCEED 75 FEET IN LENGTH, THE SLOPE SHALL NOT BE LESS THAN 3/16" PER LINEAR FOOT.

| HORIZONTAL    |                      |
|---------------|----------------------|
| DUCT DIAMETER | SUPPORT SPACING (FT) |
| 5"            | 7'                   |
| 6"            | 7'                   |
| 7"            | 7'                   |
| 8"            | 7'                   |
| 10"           | 7'                   |
| 12"           | 7'                   |
| 14"           | 7'                   |
| 16"           | 7'                   |
| 18"           | 5'                   |
| 20"           | 5'                   |
| 22"           | 5'                   |
| 24"           | 5'                   |
| 26"           | 5'                   |
| 28"           | 5'                   |
| 30"           | 5'                   |
| 32"           | 5'                   |
| 34"           | 5'                   |
| 36"           | 5'                   |

| VERTICAL            |                   |                   |                    |
|---------------------|-------------------|-------------------|--------------------|
| TYPE                | WALL SUPPORT (FT) | CURB SUPPORT (FT) | FLOOR SUPPORT (FT) |
| 2R & 2R HT (5"-16") | 20'               | 24'               | 24'                |
| 2R (18")            | 18'               | 24'               | 24'                |
| 3R & 3Z (5"-24")    | 10'               | 24'               | 24'                |
| 3Z (26" -36")       | 10'               | 20'               | 20'                |

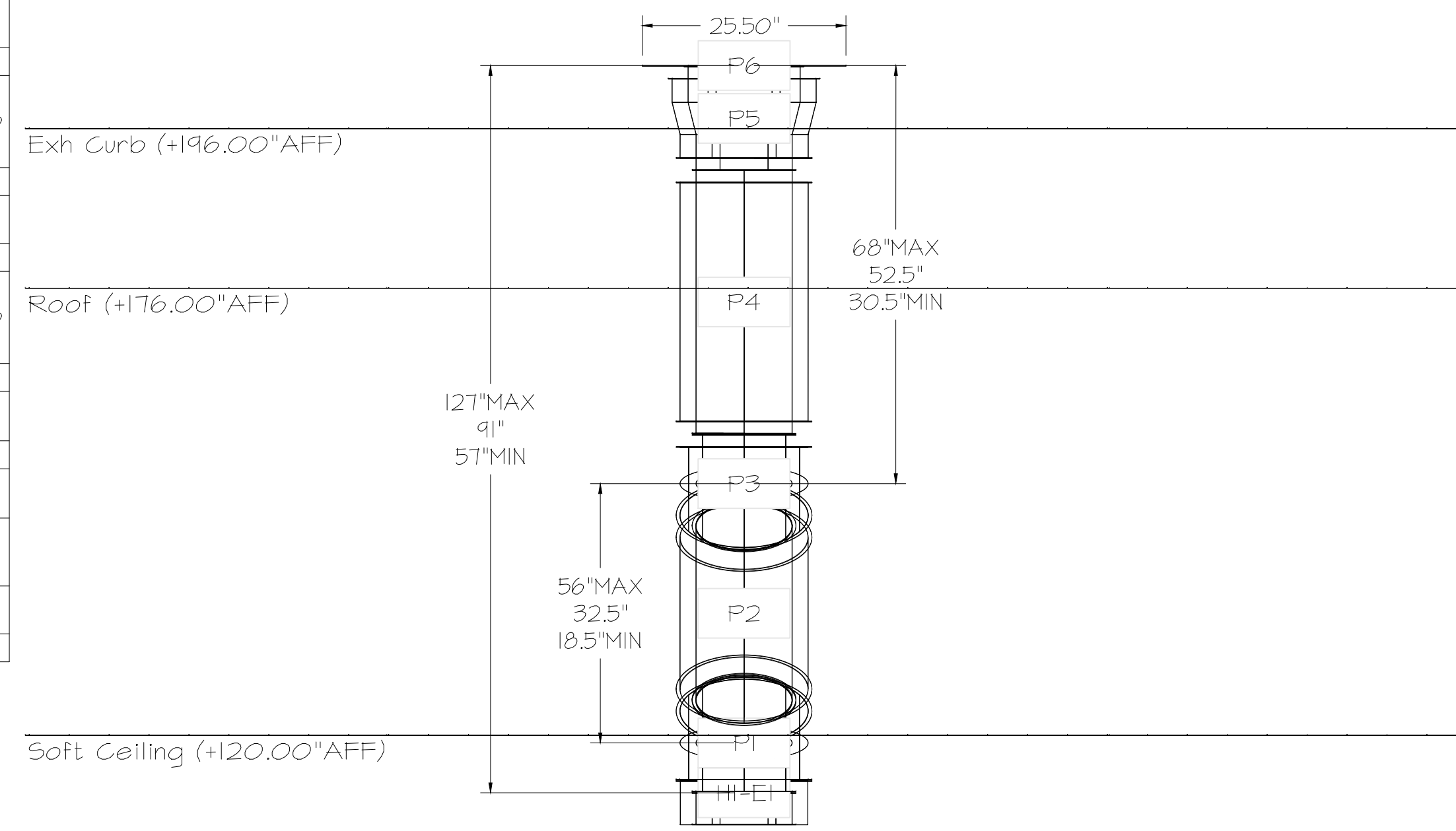
**Double Wall Grease Duct Specification**

Furnish double wall, factory built grease duct for use with Type I kitchen hoods, which conforms to the requirements of NFPA-96. Products shall be ETL listed to UL-1978 and UL-2221 for venting air and grease vapors from commercial cooking operation. Models DW-2R, 3R and 3Z are used for grease duct applications when installed in accordance with these instructions and National Fire Protection Association "NFPA 96"; Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations. Double wall grease ducts are listed for a continuous internal temperature of 500 degrees F and intermittent temperatures of 2000 degrees F. The duct sections shall be constructed of an inner duct wall and an outer wall with insulation in between. The inner duct wall shall be constructed of .036 inch thick, 430 type stainless steel and be available in diameters 8" through 24". The outer wall shall be constructed of stainless steel at a minimum of .024 inch thickness. The duct, based on model number, shall include layers of Super Wool 60T Plus insulation between the inner and outer wall. Grease duct joints shall be held together by means of formed V clamps and sealed with 3M Fire Barrier 2000+. The duct wall assembly shall be tested and listed at 3/4" or zero inch clearance, according to classifications.

**Classifications and Clearances**

UL 2221: Standard for Fire Resistive Grease Duct Enclosure Assemblies. Chapter 7 of this standard references a test labeled Internal Fire Test. Section 7.1.1 references two installation conditions, Condition A and Condition B. Condition A represents all installation condition except for installation within non-ventilated combustible enclosures. Condition B represents installation within a non-ventilated combustible enclosure. Model DW-2R is classified under UL2221 (Test of Fire Resistive Duct Enclosure Assemblies) as an alternate to 2-Hr. Fire resistive shaft enclosures with a reduced clearance to combustibles (sizes 8" to 16" diameter). Model 2R is listed in accordance with the requirements for duct enclosure Condition B.

**DUCTWORK #1 FRONT VIEW OFFSET**



Floor (+0.00\"AFF)

DO NOT LEAK TEST USING SMOKE BOMBS CONTAINING CHLORINES/CHLORIDES. CONSULT WITH CAPTIVEAIRE FOR PROPER LEAK TESTING METHODS.

| REVISIONS   |      |
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| DESCRIPTION | DATE |
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**CAPTIVEAIRE**  
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SIGNATURE DATE: 09/26/2025

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**QuikTrip No. 1076**

116 CLANTON ROAD  
CHARLOTTE, NORTH CAROLINA

**QT**

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|           |            |
|-----------|------------|
| PROTOTYPE | Fryer      |
| DIVISION  | Carolina   |
| VERSION   | GEN3       |
| DATE      | 06-18-2025 |

QT - 63 New Store Pkg Going Forward (DW) (450F)  
Various Locations,  
Tulsa, OK, 74136

DATE: 4/29/2025

DWG.#:  
7284466

DRAWN BY: R.JH-80

SCALE:  
3/4" = 1'-0"

MASTER DRAWING

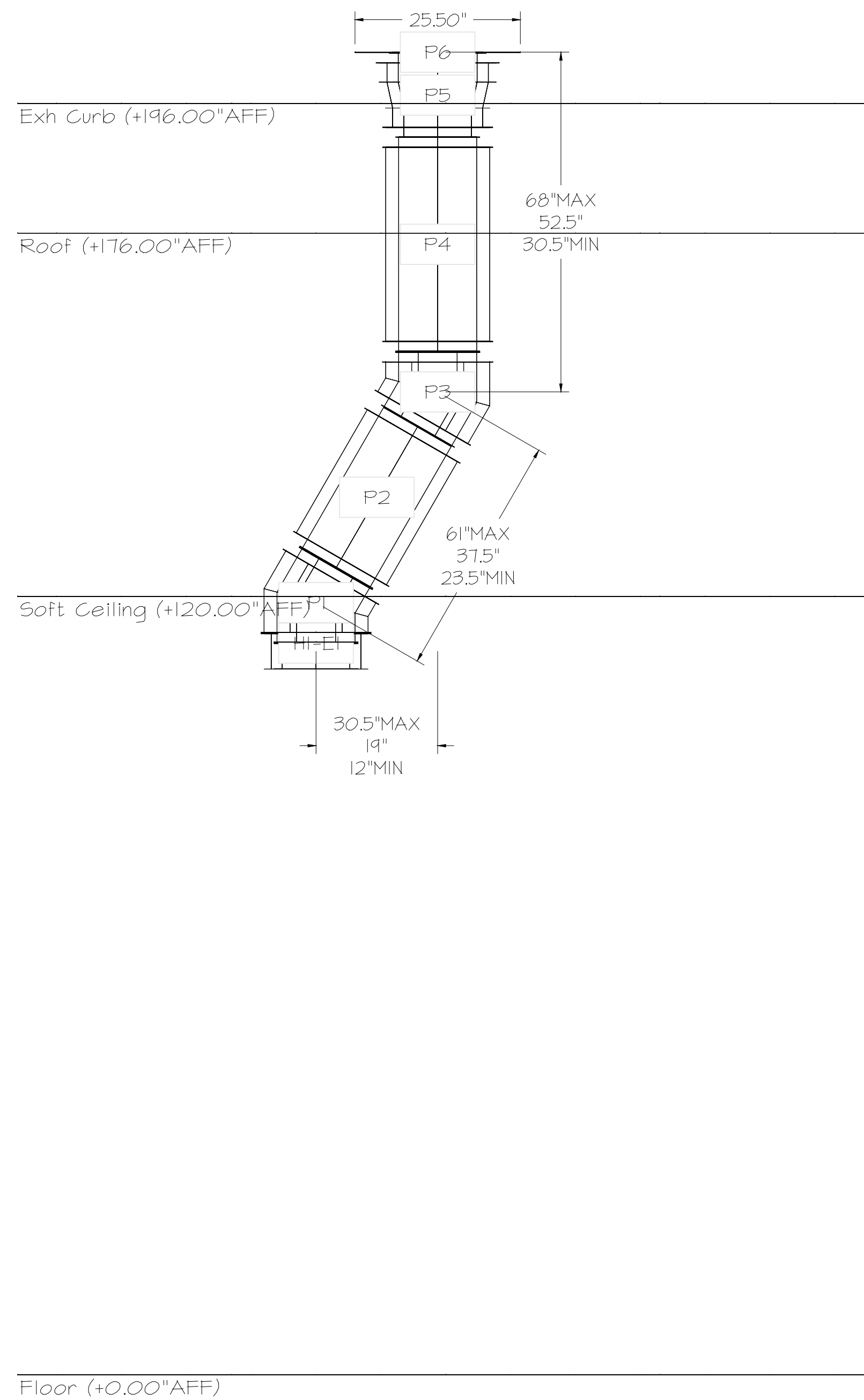
SHEET NO.  
4

| REV | DATE | DESCRIPTION |
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SHEET TITLE:  
MECHANICAL HOOD  
DETAILS

SHEET NUMBER:  
M513

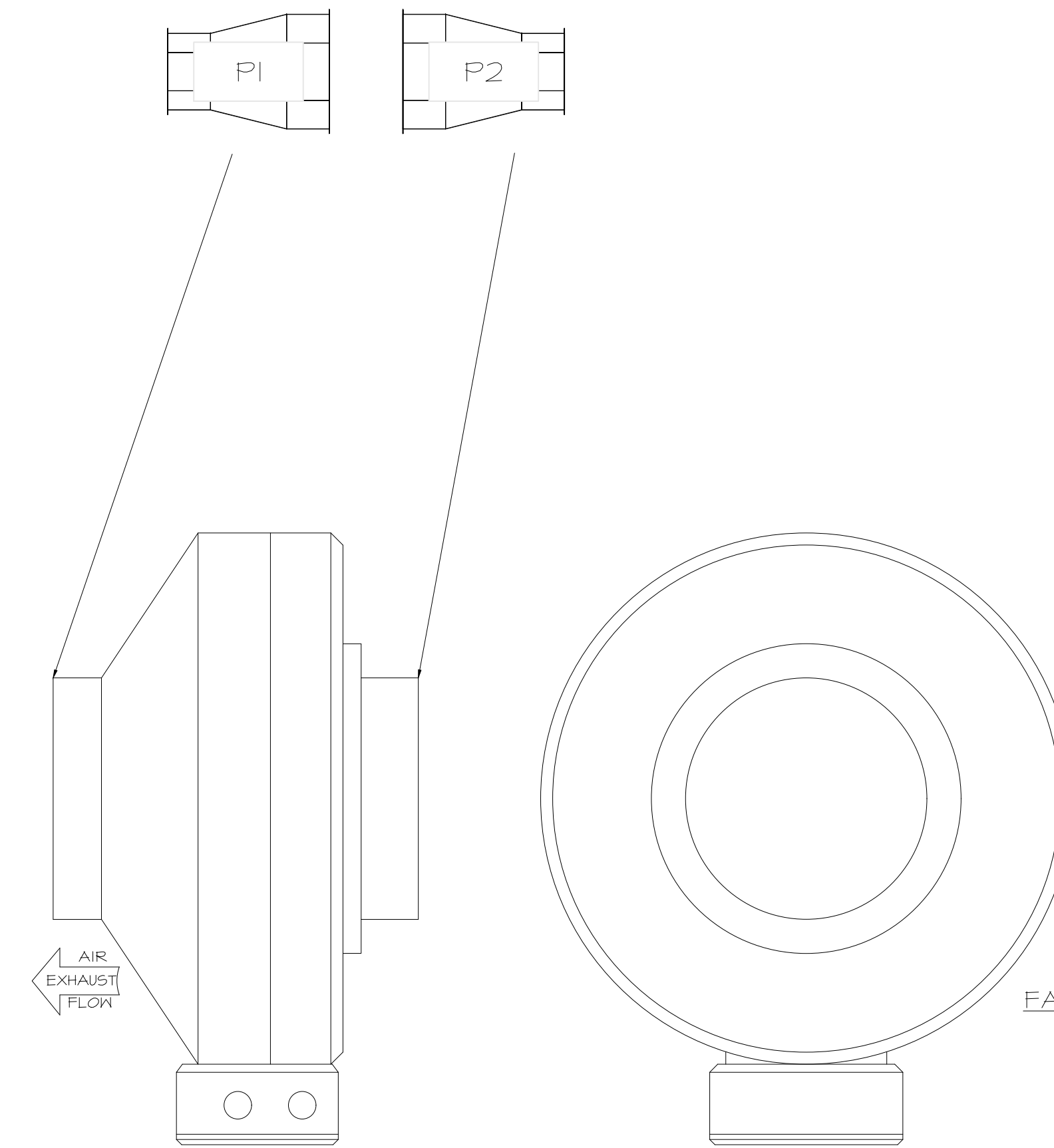
DUCTWORK #1 SIDE VIEW  
OFFSET



DUCTWORK #2 PARTS - JOB#7284466

| TAG          | PART #      | CFM | GPM | ZONE | COVEREDBY | SP | WEIGHT | VELOCITY | QTY | DESCRIPTION  |
|--------------|-------------|-----|-----|------|-----------|----|--------|----------|-----|--|
| P1           | DW0812ADPIT |     |     |      |           |    | 6.74   |          | 1   | SINGLE WALL DUCT ADAPTER, 8" DUCT DIA TO 12" DUCT DIA, ASSEMBLY - 430 STAINLESS STEEL. |
| P2           | DW0812ADPIT |     |     |      |           |    | 6.74   |          | 1   | SINGLE WALL DUCT ADAPTER, 8" DUCT DIA TO 12" DUCT DIA, ASSEMBLY - 430 STAINLESS STEEL. |
| TOTAL WEIGHT |             |     |     |      |           |    | 13.48  |          |     |  |

DUCTWORK #2 FRONT VIEW



FAN #4 DFA-300-CA - EXHAUST FAN (VF-1 - CO2 FAN)

SYSTEM DESIGN VERIFICATION (SDV)

IF ORDERED, CAS SERVICE WILL PERFORM A SYSTEM DESIGN VERIFICATION (SDV) ONCE ALL EQUIPMENT HAS HAD A COMPLETE START UP PER THE OPERATION AND INSTALLATION MANUAL. TYPICALLY, THE SDV WILL BE PERFORMED AFTER ALL INSPECTIONS ARE COMPLETE.

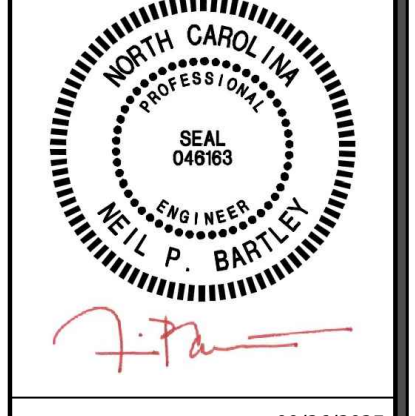
ANY FIELD RELATED DISCREPANCIES THAT ARE DISCOVERED DURING THE SDV WILL BE BROUGHT TO THE ATTENTION OF THE GENERAL CONTRACTOR AND CORRESPONDING TRADES ON SITE. THESE ISSUES WILL BE DOCUMENTED AND FORWARDED TO THE APPROPRIATE SALES OFFICE. IF CAS SERVICE HAS TO RESOLVE A DISCREPANCY THAT IS A FIELD ISSUE, THE GENERAL CONTRACTOR WILL BE NOTIFIED AND BILLED FOR THE WORK. SHOULD A RETURN TRIP BE REQUIRED DUE TO ANY FIELD RELATED DISCREPANCY THAT CANNOT BE RESOLVED DURING THE SDV, THERE WILL BE ADDITIONAL TRIP CHARGES.

DURING THE SDV, CAS SERVICE WILL ADDRESS ANY DISCREPANCY THAT IS THE FAULT OF THE MANUFACTURER, SHOULD A RETURN TRIP BE REQUIRED, THE GENERAL CONTRACTOR AND APPROPRIATE SALES OFFICE WILL BE NOTIFIED. THERE WILL BE NO ADDITIONAL CHARGES FOR MANUFACTURER DISCREPANCIES.

REVISIONS

| NO. | DESCRIPTION | DATE |
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**CAPTIVE**  
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| DIVISION  | Carolina   |
| VERSION   | GEN3       |
| DATE      | 06-18-2025 |

| REV | DATE | DESCRIPTION |
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SHEET TITLE:  
MECHANICAL HOOD  
DETAILS

SHEET NUMBER:  
**M514**

QT - 63 New Store Pkg Going Forward (DW) (450F)  
Various Locations,  
Tulsa, OK, 74136

DATE: 4/29/2025

DWG.#:  
7284466

DRAWN BY: R-JH-80

SCALE:  
3/4" = 1'-0"

MASTER DRAWING

SHEET NO.  
5

ORIGINAL ISSUE DATE: 09/26/2025

| HOOD / EXHAUST FAN SCHEDULE |              |            |             |             |                   |         |             |         |       |
|-----------------------------|--------------|------------|-------------|-------------|-------------------|---------|-------------|---------|-------|
| SYMBOL                      | MANUFACTURER | MODEL      | SIZE        | CFM OFF/MAX | MISC.             | LIGHTS  | FIRE SYSTEM | WEIGHT  | NOTES |
| H-1                         | CAPTIVEAIRE  | 6030ND-2-F | (9) 60"X30" | 0 / 1350    | 12"Ø EXHAUST C.XN | (6) LED | YES         | 861 LBS | I-10  |
| EF-3                        | CAPTIVEAIRE  | DUSOHPA    | 1/2 HP      | 0 / 1350    | DIRECT-DRIVE      | -       | -           | 74 LBS  | IJ2   |

**NOTES:**

- HOODS, FANS, AND ACCESSORIES SHALL BE MANUFACTURER-FURNISHED, CONTRACTOR-INSTALLED.
- HOOD SHALL BE 430 STAINLESS STEEL.
- HOOD SHALL BE FURNISHED WITH FAN INDICATOR AND LIGHTSWITCH MOUNTED ON FRONT PANEL.
- MANUFACTURER FURNISHED UL LISTED STAINLESS STEEL DUCT KIT AND ALL REQUIRED CONNECTION ACCESSORIES FOR FIELD-INSTALLATION FROM HOOD TO FAN.
- HOOD SHALL HAVE RIGHT AND LEFT QUARTER END PANELS, AND FRONT, LEFT, AND RIGHT STAINLESS STEEL FIELD WRAPPER.
- HOOD SHALL BE FURNISHED WITH UL 1046 LISTED GREASE FILTERS.
- HOOD SHALL BE FURNISHED WITH DUCT MOUNTED HEAT SENSORS AND AUTOMATIC FAN CONTROLS MOUNTED IN HOOD UTILITY CABINET.
- SYSTEM SHALL BE CAPABLE OF MODULATING FAN AS SCHEDULED, AND INTERLOCKED WITH BUILDING HVAC SYSTEM FOR BUILDING PRESSURIZATION.
- EQUIPMENT SHUT DOWN CONTACTORS ARE FACTORY-FURNISHED WITHIN HOOD UTILITY CABINET.
- HOOD SHALL BE LISTED AND LABELED FOR 0" CLEARANCE REQUIREMENTS TO COMBUSTIBLES.
- FAN SHALL BE FURNISHED WITH VENTED AND HINGED CURB, GREASE BOX, AND DISCONNECT.
- VARIABLE SPEED CONTROLLER PRE-MOUNTED IN FAN HOUSING. SPEED CONTROLLER SHALL BE MANUALLY ADJUSTED BY TEST AND BALANCE CONTRACTOR.

| GRILLE, REGISTER, & DIFFUSER SCHEDULE |              |       |         |           |           |  |       |
|---------------------------------------|--------------|-------|---------|-----------|-----------|--|-------|
| SYMBOL                                | MANUFACTURER | MODEL | SERVICE | FACE SIZE | NECK SIZE | DESCRIPTION                                | NOTES |
| RI                                    | TITUS        | 35ORL | EXHAUST | 8" X 8"   | -         | 3/4" 35° BLADE TRANSFER GRILLE, ALL WHITE. | I2    |
| SI                                    | TITUS        | 300FS | SUPPLY  | 22" X 22" | -         | DOUBLE DEFLECTION GRILLE, ALL WHITE.       | I3    |

**NOTES:**

- PROVIDE TRIM RINGS FOR ALL DIFFUSERS OR GRILLES IN GYP. BOARD CEILING.
- PROVIDE PLASTER FRAME IN HARD CEILING.
- PROVIDE BORDER TYPE 1 WITH NO SCREEN HOLES.

**GENERAL NOTES (APPLY TO ALL THE ABOVE):**

- GRILLES, REGISTERS, AND DIFFUSERS SHALL BE CONTRACTOR-FURNISHED, CONTRACTOR-INSTALLED.
- MAXIMUM NG. OF 30 FOR ALL GRILLES, REGISTERS, AND DIFFUSERS.
- FOUR-WAY THROW PATTERN FOR SQUARE DIFFUSERS UNLESS SHOWN OTHERWISE.
- PROVIDE SQUARE-TO-ROUND ADAPTER ON ALL GRILLES AND DIFFUSERS AS REQUIRED PER THE DRAWINGS.
- PROVIDE NON-ASBESTOS THERMAL INSULATING BLANKETS WITH VAPOR BARRIER FOR ALL SUPPLY DIFFUSERS AND RETURN GRILLES.
- RE: THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- RE: DRAWINGS FOR FURTHER INSTALLATION AND APPLICATION DETAILS.

| EXHAUST FAN CONTROL SETTINGS |                 |                           |                       | RTU 1, 2, 3 O/A CONTROL SETTINGS |                 |                                |  |
|------------------------------|-----------------|---------------------------|-----------------------|----------------------------------|-----------------|--------------------------------|--|
| CONDITION                    | EXHAUST FAN CFM | PERCENTAGE OF MAX EXHAUST | CONTROL VOLTAGE Vdc * | CONTROL VOLTAGE Vdc *            | OUTSIDE AIR CFM | O/A DAMPER POSITION **         |  |
| HOOD OFF                     | 0               | 0.0%                      | 0                     | 0                                | 420             | 0 / (FAN% X SUPPLY AIRFLOW)    |  |
| HOOD ON                      | 1350            | 100.0%                    | 10                    | 5                                | 810             | 1350 / (FAN% X SUPPLY AIRFLOW) |  |

\* CONTROL VOLTAGE SIGNAL RECEIVED FROM HOOD CONTROL PANEL \*\* O/A CFM / (SUPPLY FAN% X SUPPLY AIRFLOW)

| AIR BALANCE & PRESSURIZATION SCHEDULE |        |                |                 |                |
|---------------------------------------|--------|----------------|-----------------|----------------|
|                                       | SA CFM | HOOD ON RA CFM | HOOD OFF OA CFM | HOOD ON OA CFM |
| RT-1 OUTSIDE AIR                      | 4200   | 3400           | 350             | 800            |
| RT-2 OUTSIDE AIR                      | 4200   | 3400           | 350             | 800            |
| RT-3 OUTSIDE AIR                      | 4200   | 3400           | 350             | 800            |
| EF-1 WOMENS EXHAUST                   | 0      | 0              | -225            | -225           |
| EF-2 MENS EXHAUST                     | 0      | 0              | -525            | -525           |
| EF-3 KITCHEN EXHAUST HOOD             | 0      | 0              | 0               | -1350          |
|                                       | 12600  | 10200          | 300             | 300            |

NEW SUPPLY DIFFUSER WITH CFM AMOUNT, NEW RETURN OR EXHAUST GRILLE WITH TYPE AND CFM AMOUNT.

RELOCATED SUPPLY DIFFUSER WITH CFM AMOUNT, RELOCATED RETURN OR EXHAUST GRILLE WITH TYPE AND CFM AMOUNT.

EXISTING SUPPLY DIFFUSER WITH CFM AMOUNT, EXISTING RETURN GRILLE WITH CFM AMOUNT.

REMOVED SUPPLY DIFFUSER WITH CFM AMOUNT, REMOVED RETURN GRILLE WITH CFM AMOUNT.

RECTANGULAR DUCTWORK WIDTH INCHES X DEPTH INCHES

TAKE-OFF WITH GASKET AND DAMPER 45° OR 90° AS SHOWN ON PLAN FLEXDUCT RUNOUT

ELEWON WITH TURNING VANES

ROOF-MOUNTED EXHAUST FAN

ROOFTOP UNIT (HIDDEN OUTLINE REPRESENTS SERVICE CLEARANCE)

TEMPERATURE SENSOR

HUMIDITY SENSOR

DUCT SMOKE DETECTOR

INTERIOR ELEVATION TAG

CONNECT TO EXISTING

DISCONNECT FROM EXISTING

HOOD SUPPRESSION PUSH STATION

**H & B ENGINEERS**  
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**QuikTrip No. 1076**

116 CLANTON ROAD  
CHARLOTTE, NORTH CAROLINA

**G1 MECHANICAL SCHEDULES**

**G13 MECHANICAL SYMBOLS LEGEND**

**MECHANICAL SYSTEM SECTION 230000**

THE WORK INCLUDES INSTALLATION OF THE HVAC SYSTEM AND PROVIDING NEW DUCTWORK, DIFFUSERS AND GRILLES, INSULATION, CONTROLS, AND EQUIPMENT NECESSARY FOR A COMPLETE FUNCTIONING SYSTEM. HVAC SYSTEM INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:

HEATING, VENTILATION, AND AIR CONDITIONING (HVAC) UNITS.  
SUPPLY AND RETURN DUCTWORK SYSTEM WITH GRILLES, DIFFUSERS, FILTERS, AND DAMPERS.  
CONTROL SYSTEM INCLUDING LOW VOLTAGE WIRING AND CONDUIT.  
DUCT, PIPING, AND EQUIPMENT INSULATION, WHERE INDICATED HEREIN.  
ROOF CURBS AND FLASHING OF ROOF PENETRATIONS FOR EQUIPMENT NOTED.

EQUIPMENT INDICATED ON THE DRAWINGS OR AS REQUIRED FOR A COMPLETE INSTALLATION, SUCH AS ROOFTOP UNITS, DUCTWORK, HOODS, EXHAUST FANS, SUPPLY AND RETURN DIFFUSERS, ETC., SHALL BE PROVIDED WITHIN THE SCOPE OF WORK OF THIS SECTION.

COMPLY WITH ALL LAWS APPLYING TO MECHANICAL INSTALLATIONS IN EFFECT. ALL MATERIALS USED SHALL BE NEW AND SHALL CONFORM TO THE STANDARDS ESTABLISHED BY LOCAL CODES AND SMACNA.

WARRANTY: PROVIDE LABOR AND MATERIALS TO REPAIR OR REPLACE DEFECTIVE PARTS AND MATERIALS AS REQUIRED FOR ONE YEAR AFTER SUBSTANTIAL COMPLETION OR OWNER ACCEPTANCE OF THE COMPLETED PROJECT. PROVIDE A SEPARATE LINE ITEM DEDUCT AMOUNT ON THE PROPOSAL FORM TO DELETE WARRANTY SERVICE, AT THE OWNER'S OPTION.

DRAWINGS FOR HVAC WORK ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT, AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENTS. REFER TO MANUFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS AS REQUIRED. PROVIDE ALL DUCTWORK, CONNECTIONS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY TO FACILITATE THE SYSTEM FUNCTIONING AS INDICATED BY THE DESIGN AND THE EQUIPMENT INDICATED. THE WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES OR ORDINANCES AND SUBJECT TO INSPECTION.

COORDINATE WITH THE WORK OF OTHER SECTIONS, EQUIPMENT FURNISHED BY OTHERS, AND WITH THE CONSTRAINTS OF THE EXISTING CONDITIONS OF THE PROJECT SITES.

CONTRACTOR SHALL INSTALL ONE SET OF NEW FILTERS AT THE END OF CONSTRUCTION, WHEN QUIKTRIP TAKES OCCUPANCY OF THE BUILDING.

SHEET METAL DUCTWORK: SHEET METAL FABRICATED AND INSTALLED TO CONFORM TO THE 2005 EDITION OF "HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE" OF THE SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION. SHEET METAL SHALL BE GALVANIZED SHEET STEEL OF LOCK-FORMING QUALITY, ASTM A-525, UNLESS OTHERWISE NOTED. DUCT DIMENSIONS ON DRAWINGS ARE INTERNAL AIRWAY DIMENSIONS. DUCT REINFORCEMENT SHALL BE SUITABLE FOR 1" AND -1" INCH STATIC PRESSURE.

ALL UNISTRUT USED FOR SUPPORT SHALL BE PRIMED STEEL SHOP PAINTED. CONNECTIONS TO WALLS OR FLOORS SHALL BE AIRTIGHT WITH ANGLE IRON AND CAULKING. SEAL ALL DUCT SEAMS, TRANSVERSE AND LONGITUDINAL, AIRTIGHT WITH UNITED SHEET METAL "DUCT SEALER" TO SMACNA CLASS 'B'. PROVIDE TURNING VANES AT ALL ELBOWS OR OFFSETS EXCEEDING 45°.

TRAPEZE DUCT HANGERS: MINIMUM 1"X2"X1/8" 18 GAUGE CHANNELS WITH 1" X18 GAUGE STRAPS TO STRUCTURAL SUPPORT ABOVE.

DUCT WRAP/AS-J INSULATION (ON ALL RIGID ROUND AND RECTANGULAR SUPPLY AIR DUCTWORK): PROVIDE 2" THICK (MIN R-6) FIBERGLASS AS-J DUCT WRAP WITH VAPOR SEAL ON ALL RIGID ROUND DUCTWORK ABOVE THE CEILING. CONFORM TO SPEC ASTM C 1290.

RIGID ROUND GALVANIZED DUCT SHALL BE SPIRAL OR SNAP LOCK GALVANIZED SHEET METAL COMPLYING WITH SMACNA.

FLEX DUCT: PROVIDE FACTORY ASSEMBLED CLASS 1 AIR DUCT (UL 181) WITH 1" THICK 1 PCF (MIN R-5) FIBERGLASS INSULATION AND REINFORCED OUTER PROTECTIVE COVER/VAPOR BARRIER. FLEX DUCT SHALL MEET NFPA 40A WITH FLAME SPREAD UNDER 25, SMOKE DEVELOPED UNDER 50, AND SHALL BE RATED FOR 2" W.G. PRESSURE AND 0 TO 250 DEGREE FAHRENHEIT. PROVIDE STAINLESS STEEL ADJUSTABLE CLAMPING DEVICES, SCREW OPERATED. USE TWIST-LOCK CONICAL TAP COLLARS AT CONNECTIONS INTO SHEET METAL DUCTWORK. DO NOT EXCEED SIX (6) FEET IN LENGTH FOR ANY FLEX DUCT. REFER TO DETAILS FOR ADDITIONAL REQUIREMENTS. FLEXIBLE DUCTWORK SHALL BE SERIES 70 BY ATCO, OR EQUIVALENT.

ROUND BALANCING DAMPERS: FABRICATED OF SAME MATERIAL AS DUCT, TWO METAL GAUGES HEAVIER THAN DUCT. MOUNT ON 3/8" SQUARE ROD WITH SAA SLOT POSITION INDICATOR. PIVOT BEARING, LOCKING POSITION REGULATOR, YOUNG REGULATOR CO., SERIES 443. REGULATOR SHALL BE POSITIONED WITH SHEET METAL BRACKET BEYOND DUCT COVERING.

CEILING DIFFUSERS/RETURNS: PROVIDE SUPPLY DIFFUSERS AND DAMPER IN SIZES, CAPACITIES, MATERIALS, AND PATTERN INDICATED ON THE DRAWINGS.

ACCESS PANELS: PROVIDE HINGED ACCESS PANELS IN DUCTWORK WHERE REQUIRED FOR ACCESS TO EQUIPMENT. PROVIDE INSULATED ACCESS DOORS IN INSULATED DUCTWORK.

AUTOMATIC TEMPERATURE CONTROL: ENTIRE BUILDING IS SERVED BY A BUILDING ENERGY MANAGEMENT SYSTEM REFERRED TO AS 'EMS'. SYSTEM WILL INCLUDE THERMOSTATIC AND HUMIDITY CONTROL FOR HVAC ROOFTOP UNITS.

**HVAC TEST AND BALANCING AND CRITERIA:**

CONTRACTOR SHALL FIRST VERIFY THAT THE SYSTEM MATCHES THE CONSTRUCTION DOCUMENTS FOR LOCATIONS OF ALL DIFFUSERS, GRILLES, ROOFTOP UNITS, EXHAUST FAN, THERMOSTATS, TEMPERATURE SENSORS, HUMIDISTATS, SMOKE DETECTORS, TEST UNITS, AND ANNUNCIATORS, MAKE VISUAL OBSERVATIONS OF INSTALLATION SUCH AS ROOFTOP UNITS INSTALLED LEVEL AND COMPLETE, CLEAN FILTERS, GOOD REFRIGERANT CHARGE, ADEQUATE CONDENSATE DRAINAGE, ETC. VERIFY THAT ALL DUCTS ARE CONNECTED (NONE HAVE COME LOOSE AND ARE BLOWING AIR INTO THE PLENUM), NO KINKED FLEX-DUCT, ALL DUCTS WELL INSULATED AND NO GAPS EXIST THAT COULD CREATE A SOURCE FOR CONDENSATION, PARTICULARLY ON TOP OF DIFFUSERS. INDICATE DIRECTION THAT STOREFRONT FACES. (PROVIDE A NORTH ARROW ON PLAN). ANY DISCREPANCIES SHALL BE MARKED ON A DRAWING TO BE PRESENTED TO THE OWNER'S REPRESENTATIVE ALONG WITH THE FINAL REPORT.

MINOR REPAIR WORK, SUCH AS LOOSE FLEX CONNECTIONS, REPLACEMENT BELTS, ETC., SHALL BE PERFORMED BY THE TEST AND BALANCE CONTRACTOR PRIOR TO AIR BALANCING. MAJOR REPAIR WORK SHALL BE REPORTED TO THE QUIKTRIP REPRESENTATIVE AND NEGOTIATED PRIOR TO WORK BEING DONE. INSTALL ALL NEW FILTERS.

ADJUST EACH PIECE OF HVAC EQUIPMENT AS REQUIRED TO ASSURE PROPER BALANCE AND OPERATION. FOLLOW NEBS AND ASHRAE STANDARDS. BALANCE ALL SYSTEMS TO WITHIN 5% OF AIR VOLUMES INDICATED OR PROPORTIONALLY PER THE DRAWING TO ACHIEVE A SLIGHTLY POSITIVE BUILDING PRESSURIZATION OF +0.05"WC. TEST AND VERIFY PROPER ECONOMIZER AND GRAVITY RELIEF VENT OPERATION. CHECK RESTROOM PRESSURIZATION AND VERIFY THAT AN ADEQUATE TRANSFER AIR PATH EXISTS, ELIMINATE NOISE AND VIBRATION, AND ASSURE PROPER FUNCTION OF ALL CONTROLS, MAINTENANCE OF TEMPERATURE AND HUMIDITY WHERE APPLICABLE, AND OVERALL OPERATION. FINAL BALANCED POSITIONS SHALL BE MARKED ON EACH DAMPER WITH A PERMANENT MARKER.

AUTOMATIC TEMPERATURE & HUMIDITY CONTROL: EACH ROOFTOP UNIT SHALL BE CONTROLLED BY THE BUILDING ENERGY MANAGEMENT SYSTEM BY OTHERS. EMS LOCATED IN THE LOW-VOLTAGE CABINET, TEMPERATURE AND/OR HUMIDITY SENSORS IN THE SPACE. SET OUTSIDE AIR DAMPER TO MINIMUM POSITION DURING OCCUPIED MODE. ALL PROGRAMMING SHALL BE THROUGH THE EMS BY OTHERS. VERIFY THAT ROOFTOP UNITS EQUIPPED WITH DEHUMIDIFICATION (HOT GAS REHEAT) ARE WIRED, FUNCTIONAL, AND SET. ALL WIRING SHALL BE IN CONDUIT.

CONTRACTOR SHALL PRESENT A FINAL DRAWING AND CERTIFIED BALANCE REPORT TO THE QT REPRESENTATIVE THAT CONTAINS ALL ACTUAL DIFFUSER AND GRILLE LOCATIONS WITH AIR QUANTITIES SHOWN FOR EACH DEVICE, EXHAUST AND OUTSIDE AIR QUANTITIES, SUPPLY AIR TEMPERATURE, FAN RPM, MOTOR CURRENTS, MAIN DUCT STATIC PRESSURE, AND DUCT TEMPERATURES, INDOOR/OUTDOOR PRESSURE DIFFERENTIAL, AND ROOFTOP UNIT(S) MAKE AND MODEL NUMBER.

CONTRACTOR TO OBTAIN COPY OF 'QT TEST AND BALANCE REPORT FORM' FROM QT REP FOR REPORTING PURPOSES.

- REFER TO THE SPECIFICATIONS, DETAILS, AND SCHEDULES FOR ADDITIONAL REQUIREMENTS NOT SHOWN ON THE PLAN.
- ALL TEMPERATURE CONTROL WIRING SHALL BE TAPPAN OR BELDEN CABLE BY THE EMS INSTALLER AND SHALL MEET NATIONAL ELECTRIC CODE REQUIREMENTS. SEE ROOFTOP UNIT SCHEDULE FOR ADDITIONAL REQUIREMENTS. CONCEAL ALL WIRING IN HALL CAVITIES OR ABOVE CEILING.
- MECHANICAL CONTRACTOR SHALL REMOVE AND REPLACE FILTERS FOR ALL EXISTING ROOFTOP UNITS AT THE END OF PROJECT CONSTRUCTION.
- CONTRACTOR SHALL FIELD REVIEW AND VERIFY EXISTING CONDITIONS AS APPLICABLE AND COORDINATE WITH OTHER TRADES.
- TRANSITION AS REQUIRED FROM BRANCH DUCT TO DIFFUSER NECK. COORDINATE BETWEEN PLANS AND SCHEDULES.
- DUCTWORK DIMENSIONS ARE CLEAR INSIDE DIMENSIONS.
- FLEXIBLE DUCTWORK SHALL BE LIMITED TO NO MORE THAN 6' IN LENGTH.
- HOLD TOP OF DUCTWORK INSULATION TO UNDERSIDE OF STRUCTURE WHEREVER POSSIBLE.
- ALL BRANCH DUCTS SHALL HAVE BALANCING DAMPERS INSTALLED AS INDICATED ON DRAWINGS. HANDLE SHALL BE BOTH ACCESSIBLE AND CAPABLE OF OPENING AND CLOSING FULLY. REFER TO DIFFUSER CONNECTION DETAIL.
- FINAL LOCATION OF TEMPERATURE CONTROLS SHALL BE FIELD-VERIFIED BY OWNER AT JOB SITE.
- MECHANICAL CONTRACTOR SHALL CLEAN ALL CONDENSERS AFTER CONSTRUCTION HAS BEEN COMPLETED.
- ALL DUCTWORK SHALL RECEIVE DUCT WRAP INSULATION PER SPECIFICATIONS. LINED DUCTWORK IS NOT ACCEPTABLE.

PROTOTYPE Fryer

DIVISION Carolina

VERSION GEN3

DATE 06-18-2025

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SHEET TITLE:  
MECHANICAL SCHEDULES, SPECIFICATIONS, AND SYMBOLS

SHEET NUMBER:  
**M601**

**A1 MECHANICAL DUCTWORK SPECIFICATIONS**

**A13 GENERAL NOTES**