

GENERAL NOTES:

1. ALL EXPOSED RECTANGULAR DUCTWORK SHALL BE INTERNALLY LINED. REFER TO SPECIFICATIONS AND DETAILS FOR MORE INFORMATION.

KEY NOTES: (X)

1. ROOFTOP UNIT, ON A FULL PERIMETER ROOF CURB, PROVIDE WITH CURB ADAPTOR AS REQUIRED. REFER TO MECHANICAL ROOF PLAN.
2. EXISTING SUPPLY AIR DUCT FROM UNIT ON ROOF TO BE REUSED WHERE POSSIBLE. CONTRACTOR SHALL PROVIDE NEW CURB ADAPTOR AND FITTINGS AS REQUIRED FOR CONNECTION. COORDINATE SIZES WITH EXISTING.
3. EXISTING RETURN AIR DUCT FROM UNIT ON ROOF TO BE REUSED WHERE POSSIBLE. CONTRACTOR SHALL PROVIDE A NEW CURB ADAPTOR AND FITTINGS AS REQUIRED FOR CONNECTION. COORDINATE SIZES WITH EXISTING.
4. DUCTWORK LOCATED ABOVE FINISHED CEILING. COORDINATE WITH STRUCTURE. TYPICAL.
5. MAINTAIN NEC CLEARANCE TO ELECTRICAL GEAR, TYPICAL.
6. PROVIDE MANUAL BALANCING DAMPER, TYPICAL.
7. RESTROOM CEILING EXHAUST FAN OPERATED BY LIGHT SWITCH.
8. EXHAUST DUCT UP THRU EXISTING CURB TO GOOSENECK ON ROOF. SEE ROOF PLAN.
9. SLOPE EXHAUST DOWN @ 1/4" PER FT TO DISHWASHER HOOD STAINLESS STEEL EXHAUST. COORDINATE WITH HOOD DISHWASHER HOOD. TYPICAL.
10. MAKE-UP AIR CONNECTIONS TO SUPPLY AIR PLENUM IN FRONT OF HOOD. REFER TO HOOD DRAWINGS SHEETS FOR MORE INFORMATION. TYPICAL.
11. KITCHEN HOOD EXHAUST FAN ON ROOF. REFER TO MECHANICAL ROOF PLAN. REFER TO HOOD DRAWINGS FOR ADDITIONAL INFORMATION.
12. DISHWASHER EXHAUST FAN ON ROOF. REFER TO MECHANICAL ROOF PLAN.
13. KITCHEN HOOD EXHAUST DUCT UP TO FAN ON ROOF. COORDINATE WITH STRUCTURE. DUCT SHALL BE ENCAPSULATED WITH EXHAUST DUCT WRAP AS REQUIRED BY CODE. REFER TO DETAIL ON SHEET M2.1. DUCT SHALL BE 16 GA. EXTERNALLY WELDED LIQUID TIGHT BLACK IRON.
14. KITCHEN EXHAUST HOOD DUCT DOWN AND TRANSITION TO HOOD COLLAR. WELD DUCT TO HOOD COLLAR AS REQUIRED. TYPICAL. REFER TO HOOD DRAWINGS FOR MORE INFORMATION.
15. KITCHEN EXHAUST HOOD FURNISHED BY OWNER, INSTALLED BY MECHANICAL CONTRACTOR. TYPICAL OF 4. REFER TO HOOD DRAWINGS.
16. DISHWASHER EXHAUST DUCT UP TO FAN ON ROOF. DUCTWORK SHALL BE STAINLESS STEEL SEALED LIQUID TIGHT.
17. PERFORATED GRILLE PER DETAIL ON SHEET M2.1. TYPICAL FOR THIS DEVICE.
18. DUCT MOUNTED SMOKE DETECTOR FOR UNIT SHUT DOWN. DETECTOR SHALL ACTIVATE A VISIBLE & AUDIBLE SUPERVISORY SIGNAL @ A CONSTANTLY ATTENDED LOCATION. TYPICAL.
19. EXISTING DUCT WORK AND SIDEWALL GRILLES TO REMAIN INTACT AND BE REUSED. DUCT TO BE CLEANED, PRIMED, AND PAINTED. COORDINATE COLOR WITH OWNER/ARCHITECT.
20. ROOFTOP UNIT SMOKE DETECTOR RESETS, MOUNTED ON WALL.
21. T-STATS FOR REMOTE SENSORS, MOUNT VERTICAL @ 54" A.F.F. IN OFFICE. REFER TO DETAIL ON SHEET. COORDINATE FINAL LOCATION WITH OWNER.
22. PROVIDE THERMOSTAT REMOTE SENSOR ON WALL AT 54" A.F.F. INTERLOCK WITH THERMOSTAT IN OFFICE AREA.
23. MAKE-UP AIR UNIT ON ROOF. REFER TO MECHANICAL ROOF PLAN. INTERLOCK WITH HOOD CONTROLS. REFER TO HOOD DRAWINGS FOR MORE INFORMATION.
24. MAKE-UP AIR DUCT UP TO UNIT ON ROOF, TRANSITION AS INDICATED.
25. PROVIDE AND CONNECT NEW SPIRAL DUCT EQUAL TO AND MATCHING EXISTING. CLEAN, PRIME, AND PAINT PER OWNER/ARCHITECT.
26. EXISTING RETURN AIR PLENUM BOX TO REMAIN AND BE REUSED.
27. PROVIDE COMBINATION TEMPERATURE AND HUMIDITY SENSOR HIGH ON WALL UNLESS NOTED OTHERWISE. INTERLOCK W/ THERMOSTAT IN OFFICE.
28. COMBUSTION AIR VENTING FOR WATER HEATER LOCATED IN MECHANICAL ROOM. REFER TO PLUMBING DRAWINGS.
29. PROVIDE NEW SIDEWALL GRILLE MATCHING IN SIZE, STYLE, AND AIRFLOW, EQUAL TO EXISTING SIDEWALL GRILLES THAT ARE TO REMAIN. MOUNT NEW GRILLES ON SIDE OF DUCT MATCHING EXISTING ORIENTATION TO MAXIMIZE THROW. PRIME AND PAINT ALL NEW GRILLES TO MATCH DUCT.
30. NEW SINGLE GRILLE TO BE MOUNTED ON BOTTOM OF DUCT.
31. PROVIDE AND INSTALL NEW INTERNALLY LINED RETURN AIR PLENUM BOX. CONNECT TO RETURN AIR GRILLES AS INDICATED.
32. PROVIDE AND INSTALL NEW SUPPLY PLENUM. HOLD SUPPLY DUCT HIGH TO ALLOW FOR RETURN TO PASS UNDERNEATH WITHOUT CONFLICT.
33. NEW EXHAUST FAN ON EXISTING CURB. COORDINATE SIZE AND LOCATION OF REQUIRED CURB ADAPTOR.
34. NEW EXHAUST FAN ON NEW CURB.
35. DISHWASHER HOOD EXHAUST CONNECTION. COORDINATE HOOD PROVIDED.
36. SLOPE EXHAUST DOWN @ 1/4" PER FT TO KITCHEN HOOD. TYPICAL.
37. PROVIDE CLEANOUT AT ELBOWS IN GREASE DUCT. PROVIDE SIGN THAT READS "GREASE DUCT CLEANOUT, DO NOT OBSTRUCT".

BRANCH DUCT SIZING CHART

CFM RANGE	BRANCH DUCT SIZE(UNLESS NOTED OTHERWISE)
0 TO 74	6"
75 TO 170	8"
171 TO 300	10"
301 TO 500	12"
501 TO 650	14"
651 TO 750	16"

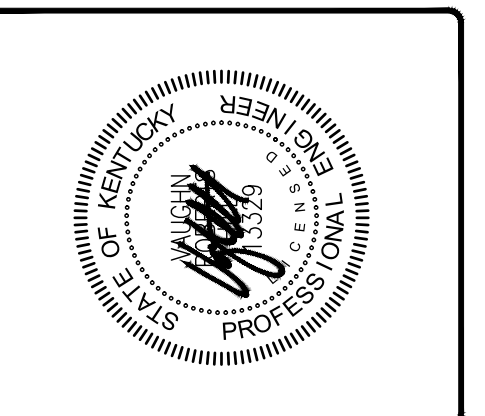
PRIORITY OF CONSTRUCTION SPACE

- THE FOLLOWING IS THE ORDER OF PRIORITY FOR CONSTRUCTION
1. FIRST: DUCTWORK
 2. SECOND: FIRE PROTECTION PIPING
 3. THIRD: ANY PIPING WITH SLOPE REQUIREMENTS
 4. FOURTH: OTHER PIPING
 5. FIFTH: CONDUIT

SCOPE OF WORK & ARCHIVE PLAN NOTE

SCOPE IS TO REMOVE ALL EXISTING KITCHEN EQUIPMENT, HVAC AND FANS AS NOTES ON PLANS. WIRING & CONDUIT RELATED TO THE ITEMS TO ALSO BE REMOVED. OWNER IS INTENDING TO RE-USE ELECTRICAL PANELS AND ADD NEW AS INDICATED.

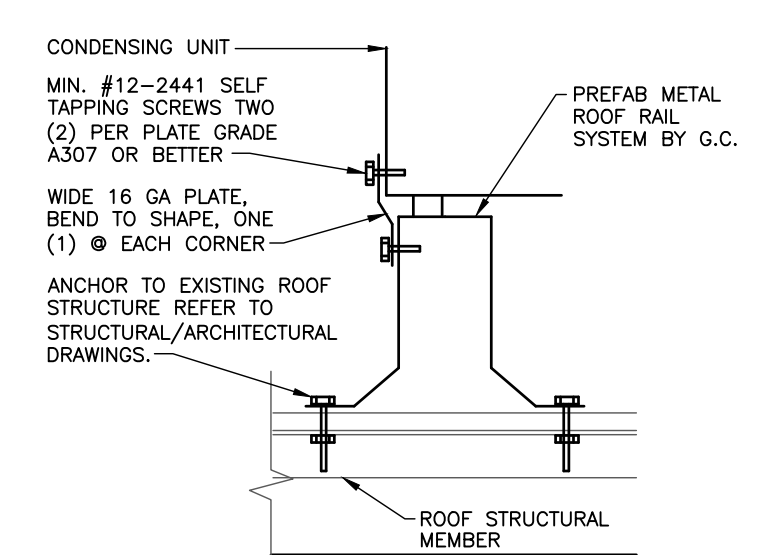
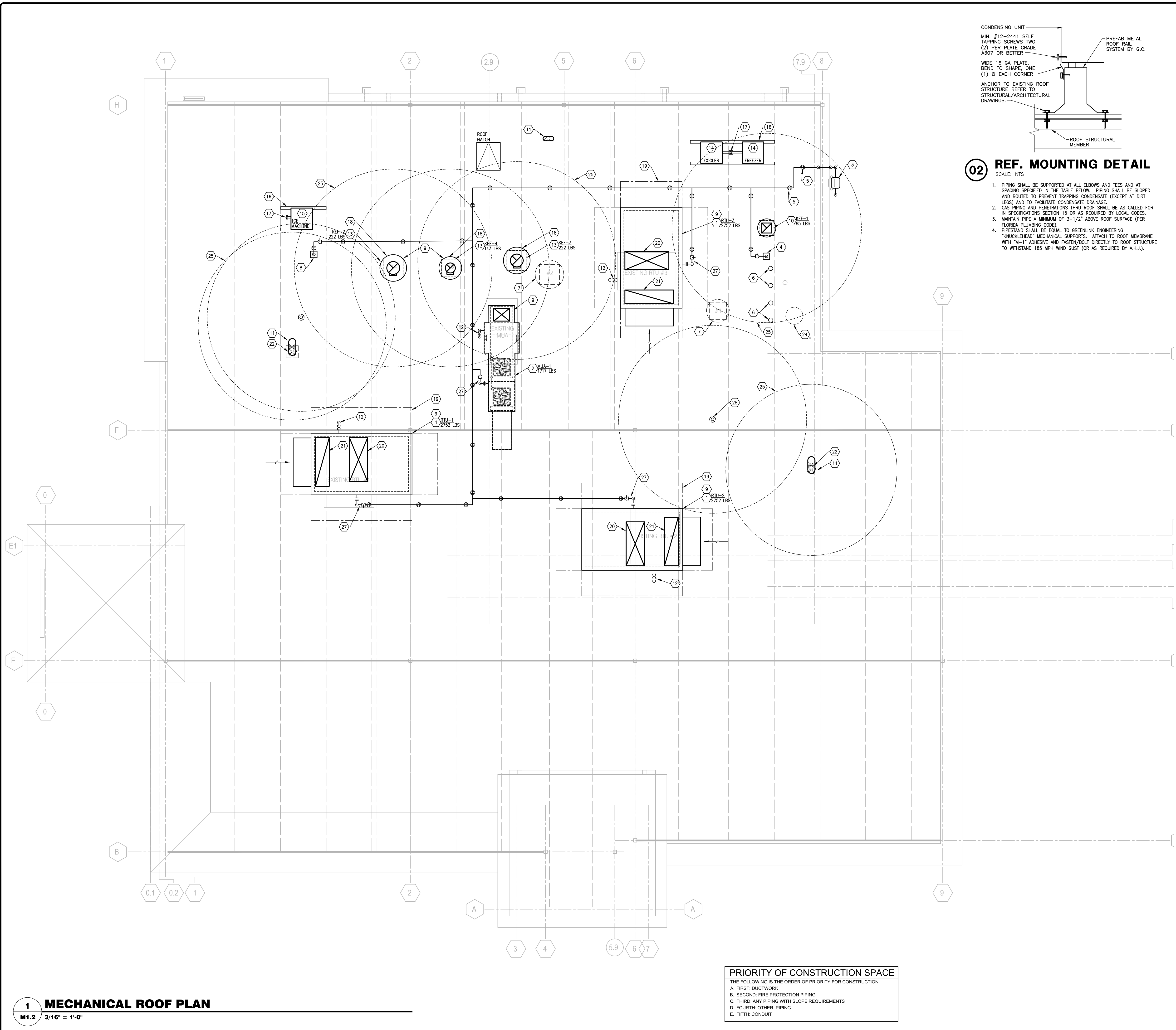
EXISTING INFORMATION INDICATED IS FROM ARCHIVE PLANS FURNISHED BY OWNER. (TILTED KILT AND ITALIANI'S) THIS INFORMATION HAS BEEN VERIFIED BY DESIGN CONSULTANT AS BEST IT CAN BE. SHOULD CONTRACTOR SEE DAMAGED EQUIPMENT, IMMEDIATELY CONTACT ENGINEER AND G.C.



PLAN DATE:	06-20-22
PROJECT NUMBER:	22091
BUILDING TYPE:	TENANT FIT-UP
DRAWN BY:	TRG

LS DESIGN GROUP PLLC	2130 Lexington Road, Suite H
LONNIE SMITH ARCHITECT	Richmond, KY 40475
phone 859.624.3755	
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02 REF. MOUNTING DETAIL
SCALE: NTS

1. PIPING SHALL BE SUPPORTED AT ALL ELBOWS AND TEES AND AT SPACING SPECIFIED IN THE TABLE BELOW. PIPING SHALL BE SLOPED AND ROUTED TO PREVENT TRAPPING CONDENSATE EXCEPT AT DIRT LEGS AND TO FACILITATE CONDENSATE DRAINAGE.
2. GAS PIPING AND PENETRATIONS THRU ROOF SHALL BE AS CALLED FOR IN SPECIFICATIONS SECTION 15 OR AS REQUIRED BY LOCAL CODES (PER FLORIDA PLUMBING CODES).
3. MAINTAIN PIPE A MINIMUM OF 3-1/2" ABOVE ROOF SURFACE (PER FLORIDA PLUMBING CODES).
4. PRESTAND SHALL BE EQUAL TO GREENLINK ENGINEERING "KNUCKLEHEAD" MECHANICAL SUPPORTS. ATTACH TO ROOF MEMBRANE WITH M-11 ADHESIVE AND FASTEN/BOLT DIRECTLY TO ROOF STRUCTURE TO WITHSTAND 185 MPH WIND GUST (OR AS REQUIRED BY A.H.J.).

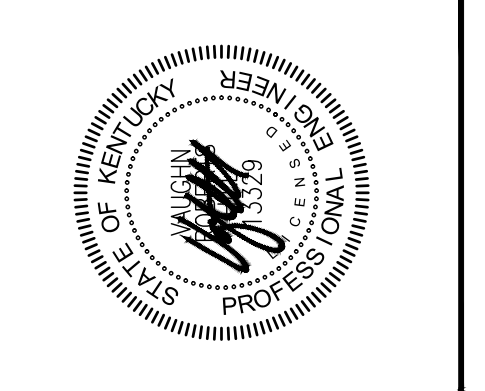
GENERAL NOTES:

- A. VERIFY THAT VENTS THRU ROOF ARE A MINIMUM OF 10'-0" AWAY FROM ALL OUTSIDE AIR INTAKES OF ALL EXISTING AND NEW MECHANICAL EQUIPMENT ON THE ROOF.
- B. COORDINATE WITH STRUCTURE AND ALL MECHANICAL AND ELECTRICAL EQUIPMENT AND PIPING BELOW THE ROOF STRUCTURE.
- C. REFER TO ROOFTOP UNIT SCHEDULE ON SHEET M3.1 FOR ROOFTOP UNIT WEIGHTS.
- D. REFER TO HOOD AND EXHAUST DETAIL DRAWINGS FOR ADDITIONAL INFORMATION.

KEY NOTES:

1. ROOFTOP UNIT WITH FULL PERIMETER CURB. FIELD INSULATE ROOF CURB.
2. MAKEUP AIR UNIT MOUNTED ON A FULL PERIMETER ROOF CURB. FIELD INSULATE ROOF CURB. REFER TO FOOD SERVICE DRAWINGS.
3. GAS METER BELOW. STUB GAS PIPING INTO MECHANICAL ROOM AND RISE UP THRU ROOF. SEE PLUMBING DRAWINGS FOR MORE GAS PIPING INFORMATION.
4. GAS PIPING DOWN THRU ROOF TO WATER HEATERS. SEAL ROOF PENETRATION WEATHERTIGHT PER ROOF SYSTEM REQ'MENTS (TYPICAL). SEE PLUMBING DRAWINGS FOR PIPING DIAGRAM AND PIPE SIZES.
5. TYPICAL PIPE SUPPORT ON ROOF. SEE DETAIL, THIS SHEET FOR PRODUCT AND SPACING INFORMATION.
6. CONCENTRIC GAS VENT FROM WATER HEATER IN MECHANICAL ROOM BELOW. SEE PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
7. EXISTING FAN AND CURB TO BE REMOVED, FRAME-IN OPENING, REPAIR ROOF, AND SEAL WEATHERTIGHT.
8. GAS PIPING DOWN TO COOK LINE. ASSURE THAT ROOF PENETRATION IS WEATHERTIGHT, BY THE PLUMBING CONTRACTOR.
9. NEW FAN OR EQUIPMENT TO UTILIZE EXISTING OPENING AND CURB. COORDINATE EXISTING CURB SIZE WITH NEW EQUIPMENT, ETC., AND PROVIDE CURB ADAPTOR AS REQUIRED. FINAL INSTALLATION SHALL BE WEATHERTIGHT. CURB ADAPTOR TO BE FIELD INSULATED.
10. DISHWASHER EXHAUST FAN, MOUNTED ON A FULL PERIMETER ROOF CURB. FIELD INSULATE CURB. INTERLOCK FAN WITH DISHWASHER CONTROLS. TO BE LOCATED AT SAME LOCATION AS FAN BEING REMOVED.
11. RESTROOM EXHAUST UP THRU ROOF AND TERMINATE WITH FULL SIZE GOOSENECK WITH BIRDCREEN. PENETRATION TO BE WEATHERTIGHT.
12. PROVIDE A VENTED AND TRAPPED CONDENSATE DRAIN, PIPE AND SPILL TO NEAR SCUPPER. FIELD VERIFY SCUPPER LOCATION, TYPICAL.
13. KITCHEN HOOD EXHAUST FAN, MOUNT ON FULL PERIMETER NON-COMBUSTIBLE ROOF CURB. INTERLOCK WITH HOOD CONTROLS. FAN DISCHARGE SHALL BE A MINIMUM OF 2" ABOVE PARAPET.
14. CONDENSING UNIT FOR WALK-IN BOX. FURNISHED WITH THE KITCHEN EQUIPMENT AND INSTALLED BY THE MECHANICAL CONTRACTOR.
15. CONDENSING UNIT FOR ICE MACHINE. FURNISHED WITH THE KITCHEN EQUIPMENT AND INSTALLED BY THE MECHANICAL CONTRACTOR.
16. ROOF RAIL SYSTEM FOR CONDENSING UNIT SUPPORT.
17. REFRIGERANT LINE ROOF PENETRATION.
18. PROVIDE A GREASE CONTAINMENT SYSTEM AT EACH KITCHEN EXHAUST FAN. COORDINATE WITH FOOD SERVICE DRAWINGS FOR EXHAUST FANS BEING FURNISHED.
19. SERVICE CLEARANCE FOR MECHANICAL EQUIPMENT, TYPICAL.
20. SUPPLY AIR DUCT DOWN THROUGH ROOF, REFER TO MECHANICAL PLAN FOR SIZE AND CONTINUATION, TYPICAL.
21. RETURN AIR DUCT DOWN THROUGH ROOF, REFER TO MECHANICAL PLAN FOR SIZE AND CONTINUATION, TYPICAL.
22. PROVIDE INSULATED CURB CAP ON EXISTING CURB WITH PIPE PORTAL TO ACCOMMODATE FULL SIZE EXHAUST DUCT PENETRATION TO GOOSENECK. SEAL WEATHERTIGHT.
23. DISHWASHER EXHAUST DUCT DOWN THROUGH ROOF, REFER TO MECHANICAL PLAN FOR SIZE, CONTINUATION AND ADDITIONAL INFORMATION.
24. EXISTING GAS FIRED UNIT HEATER AND FLUE TO REMAIN.
25. EXHAUST CLEARANCE TO ANY OUTDOOR AIR INTAKE, TYPICAL.
26. SEE PLUMBING SHEETS FOR GAS PIPING CONTINUATION.
27. 7" W.C. GA PIPING WITH SHUTOFF VALVE, DIRT LEG, AND UNION FOR CONNECTION TO UNIT. SEE PLUMBING DRAWINGS FOR PIPING SCHEMATIC AND PIPE SIZES TYPICAL.
28. LOCATION OF 4" VTR. (TYP. 2) SEE SOIL, WASTE AND VENT FLOOR PLAN, SHEET P1.1.

Ford's GARAGE
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2
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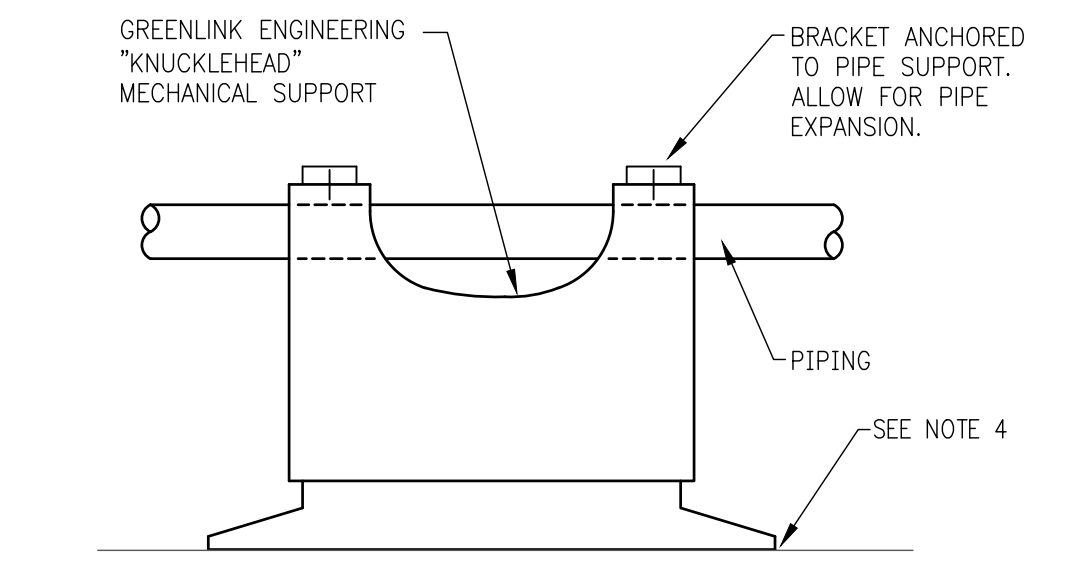
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1 MECHANICAL ROOF PLAN
M1.2 3/16" = 1'-0"

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THE FOLLOWING IS THE ORDER OF PRIORITY FOR CONSTRUCTION
A. FIRST: DUCTWORK
B. SECOND: FIRE PROTECTION PIPING
C. THIRD: ANY PIPING WITH SLOPE REQUIREMENTS
D. FOURTH: OTHER PIPING
E. FIFTH: CONDUIT

PIPE SIZE	MODEL NO.	MAX. SPACING
3/4"	Standard	6'
1"	Standard	7'
1 1/2"	Large	8'
1 1/2"	Large	9'
2"	Large	10'
2 1/2"	Large	12'
3"	Large	13'

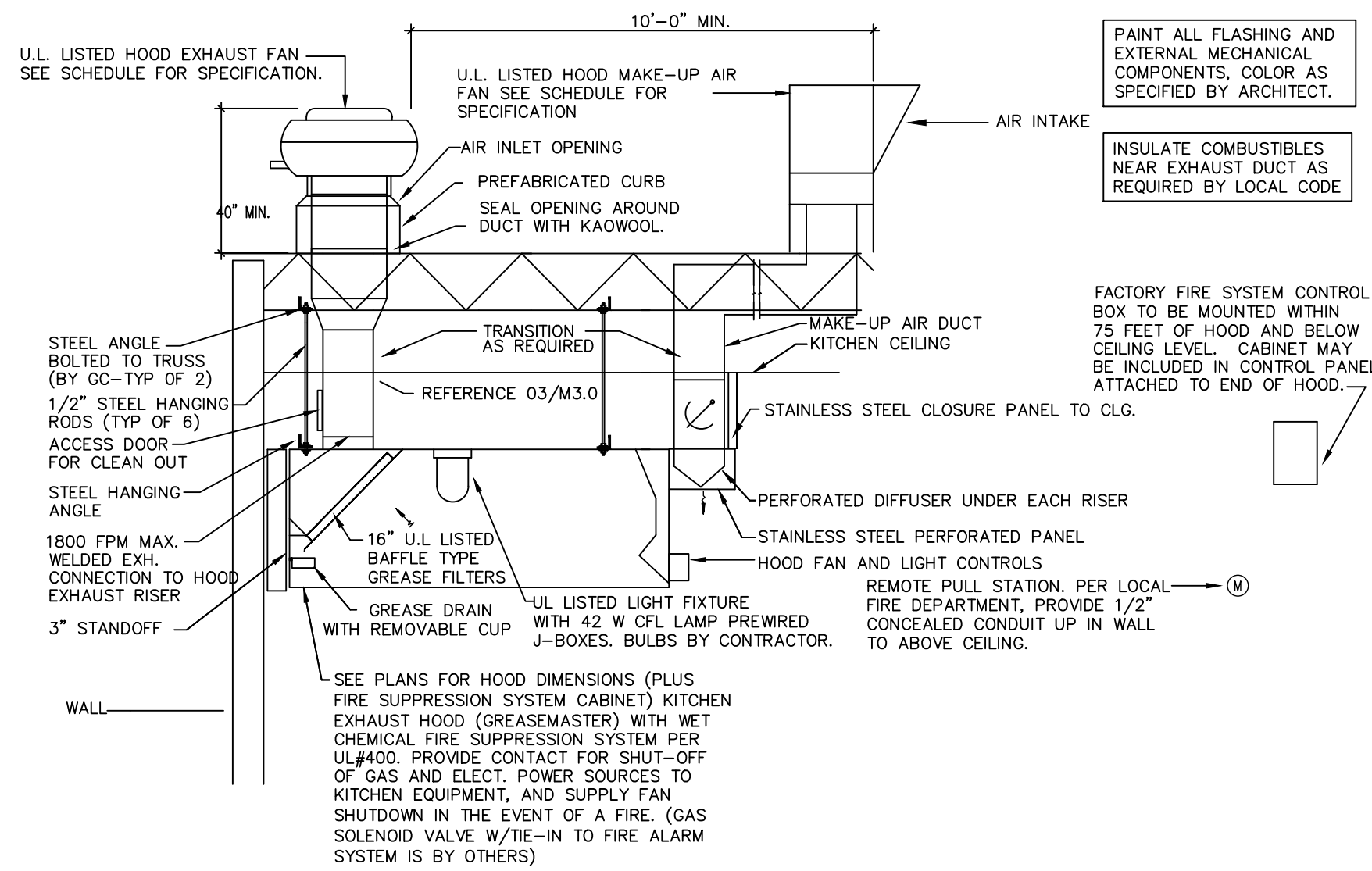


03 ROOF PIPING SUPPORT DETAIL

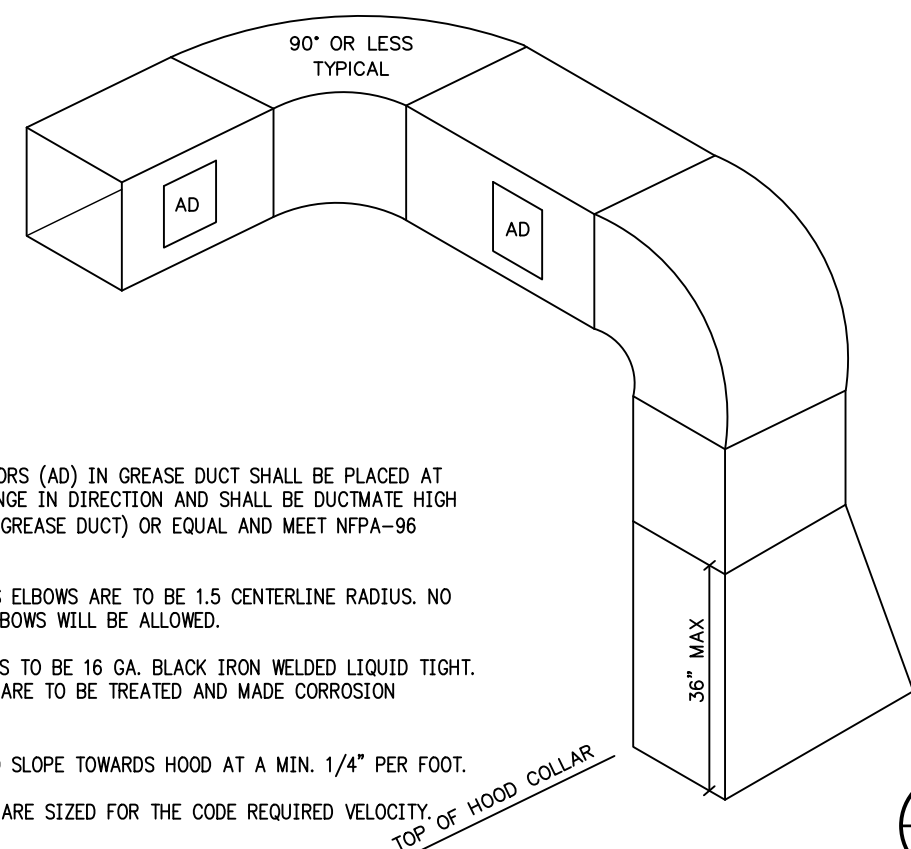
SCALE: NTS

MECHANICAL ROOF PLAN

M1.2



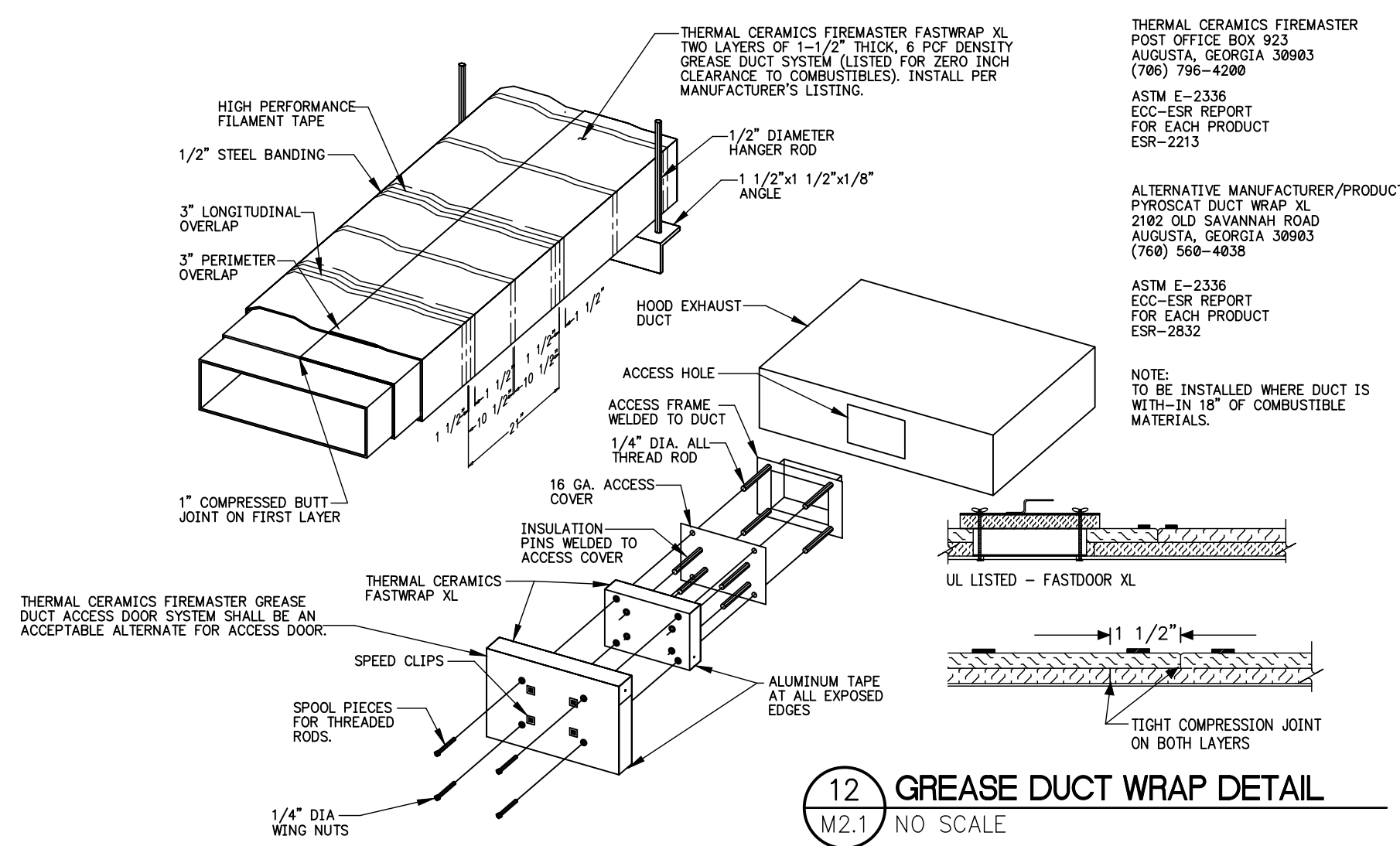
1 KITCHEN HOOD SCHEMATIC DETAIL
M2.1 NO SCALE



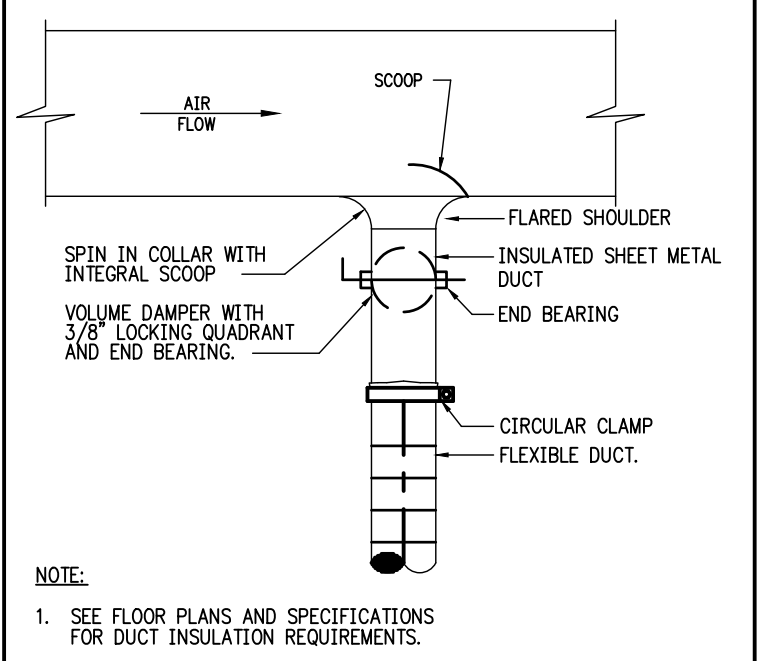
NOTES:

- ACCESS DOORS (AD) IN GREASE DUCT SHALL BE PLACED AT EVERY CHANGE IN DIRECTION AND SHALL BE DUCTWAVE HIGH TOP FOR GREASE DUCT) OR EQUAL AND MEET NFPA-96 STANDARDS.
- ALL RADIUS ELBOWS ARE TO BE 1.5 CENTERLINE RADIUS. NO MITERED ELBOWS WILL BE ALLOWED.
- ALL DUCT IS TO BE 16 GA. BLACK IRON WELDED LIQUID TIGHT. ALL WELDS ARE TO BE TREATED AND MADE CORROSION RESISTANT.
- DUCT IS TO SLOPE TOWARDS HOOD AT A MIN. 1/4" PER FOOT.
- ALL DUCTS ARE SIZED FOR THE CODE REQUIRED VELOCITY TOP OF HOOD COLLAR

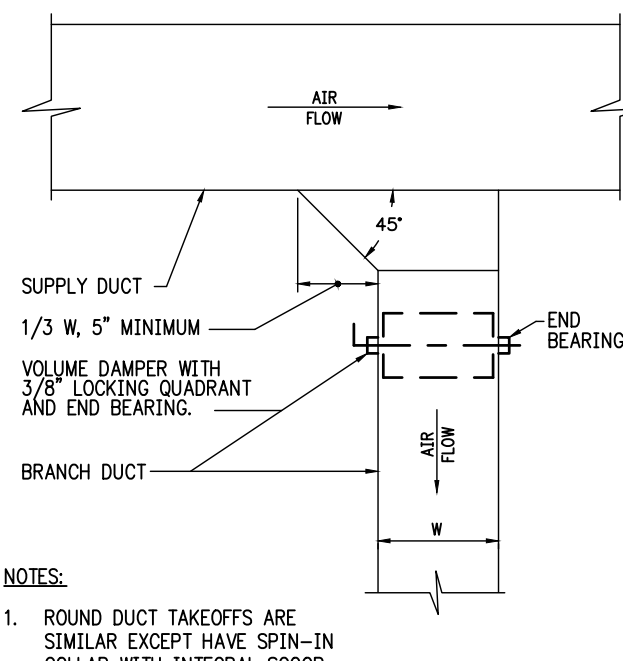
7 GREASE DUCT DETAIL
M2.1 NO SCALE



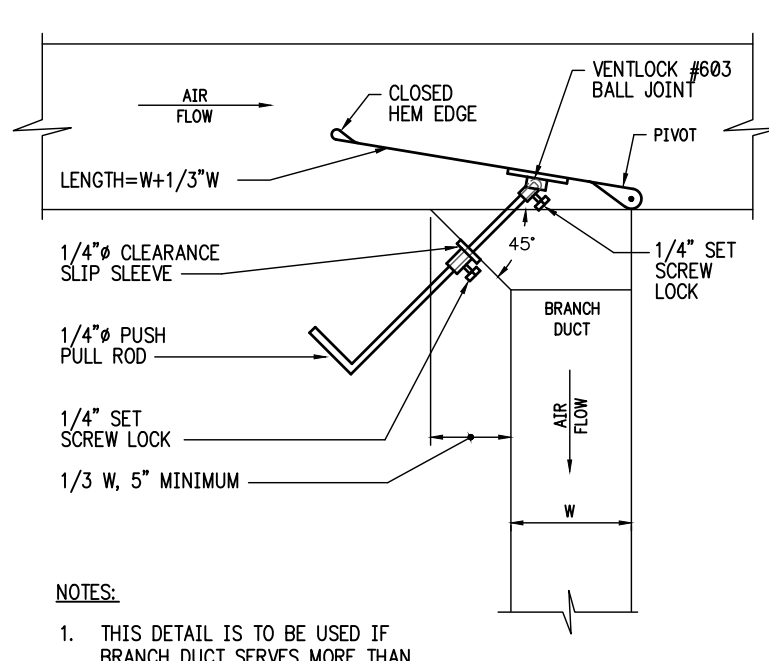
12 GREASE DUCT WRAP DETAIL
M2.1 NO SCALE



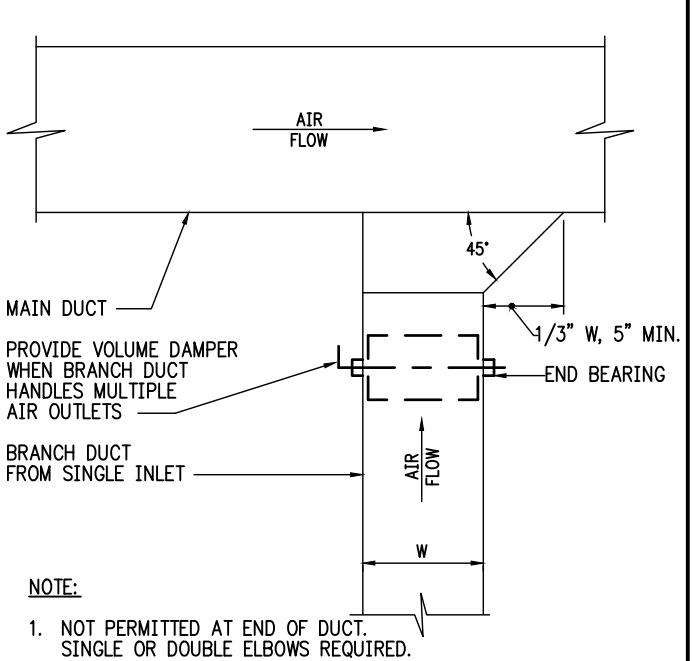
2 ROUND DUCT DETAIL
M2.1 NO SCALE



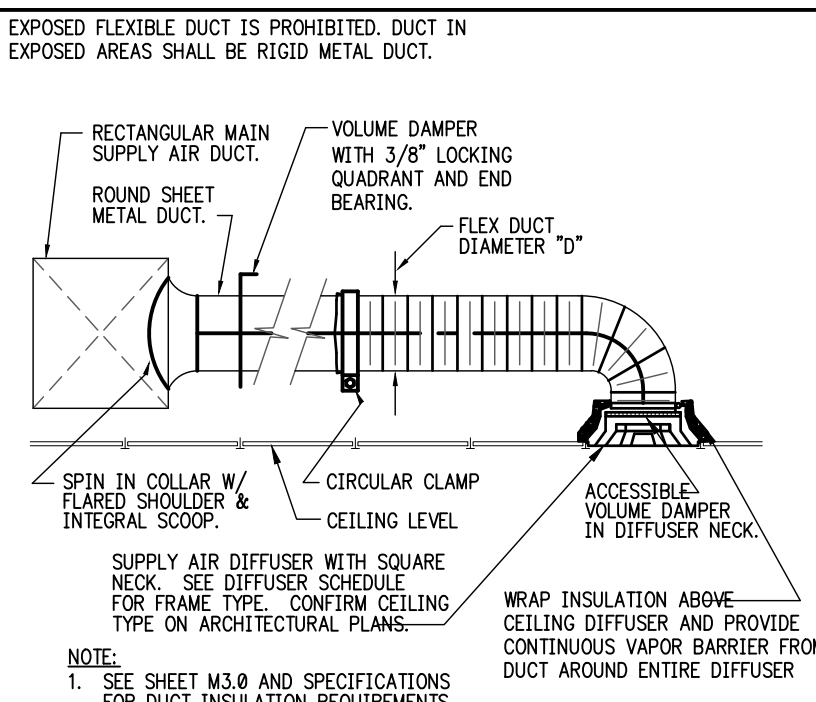
3 SQUARE DUCT DETAIL
M2.1 NO SCALE



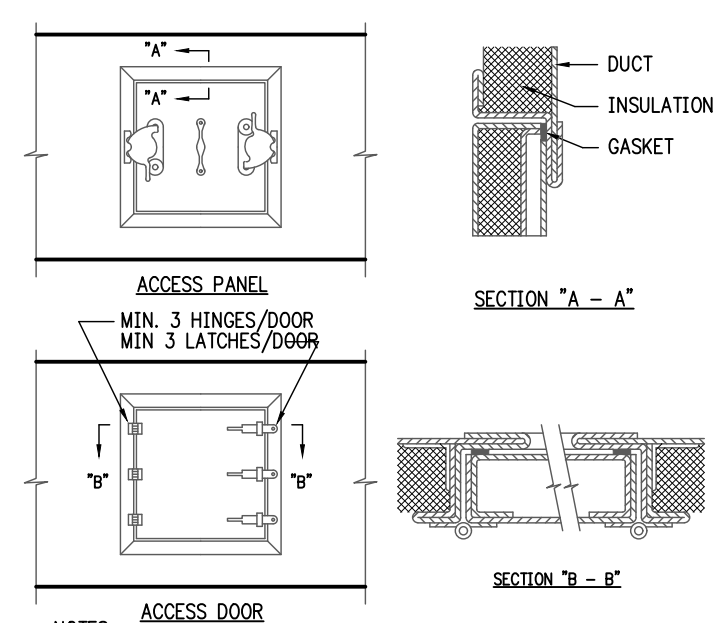
4 RECTANGULAR SUPPLY DUCT W/ CLINCH COLLAR
M2.1 NO SCALE



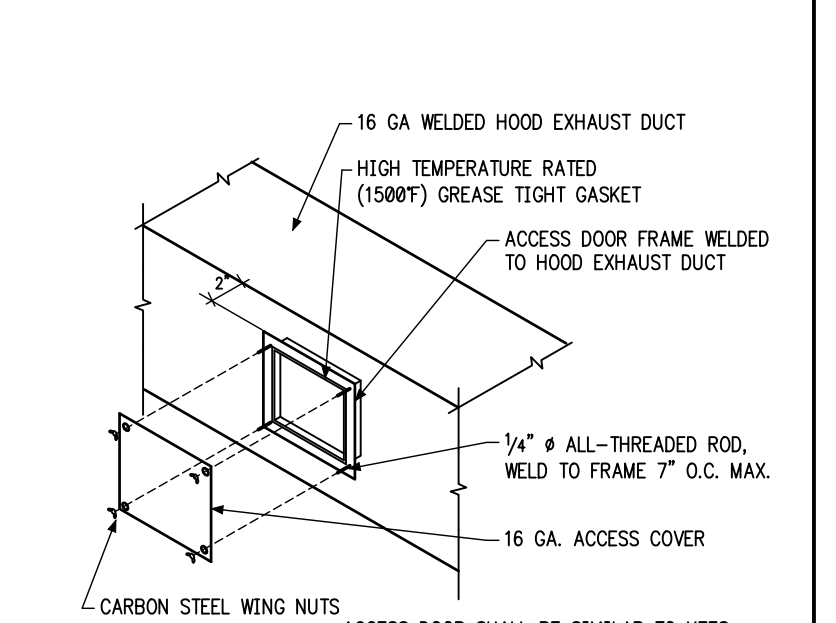
5 RECTANGULAR RETURN / DUCT W/ CLINCH COLLAR
M2.1 NO SCALE



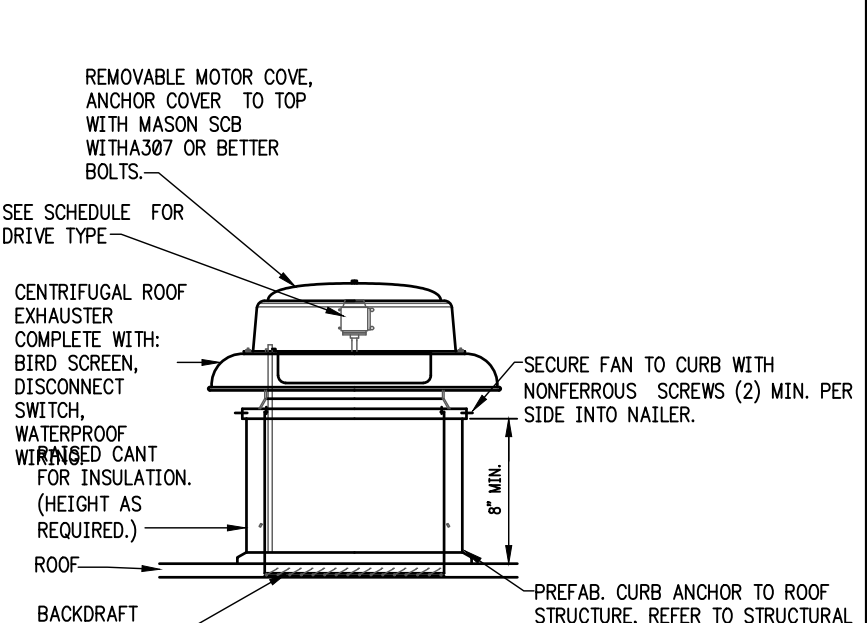
6 SUPPLY AIR DIFFUSER DETAIL
M2.1 NO SCALE



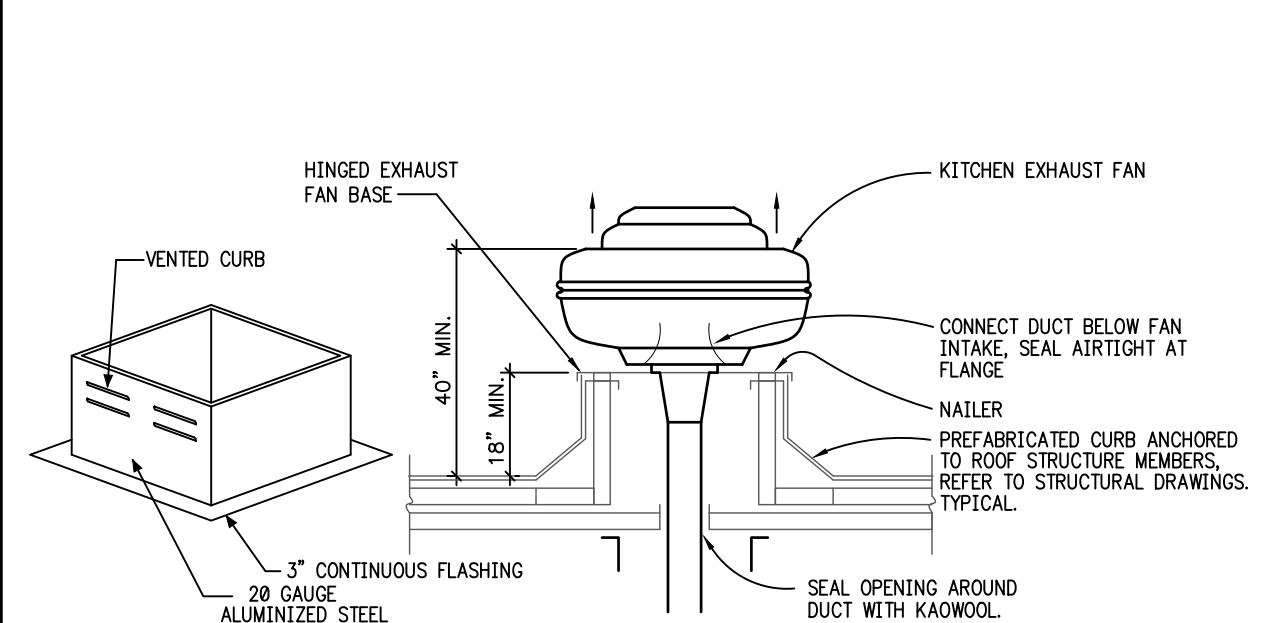
8 ACCESS DOOR AND PANEL
M2.1 NO SCALE



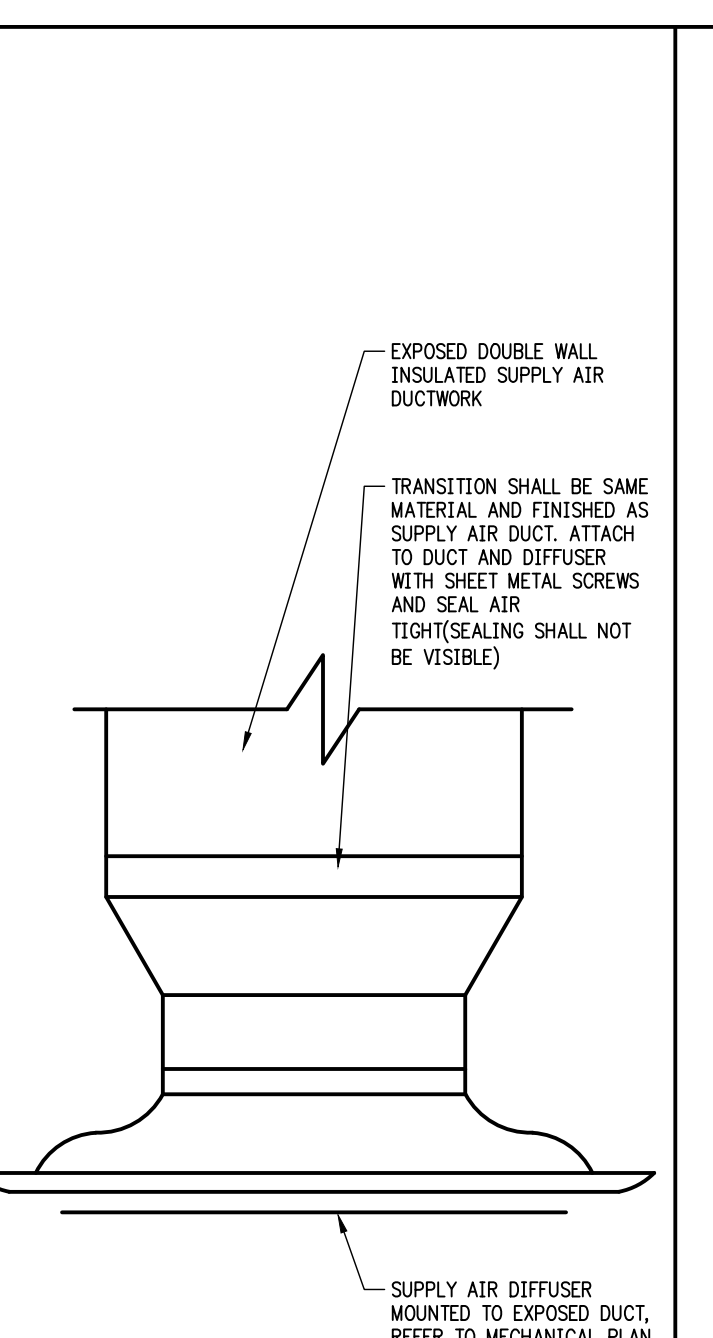
9 HOOD EXHAUST DUCT CLEANOUT
M2.1 NO SCALE



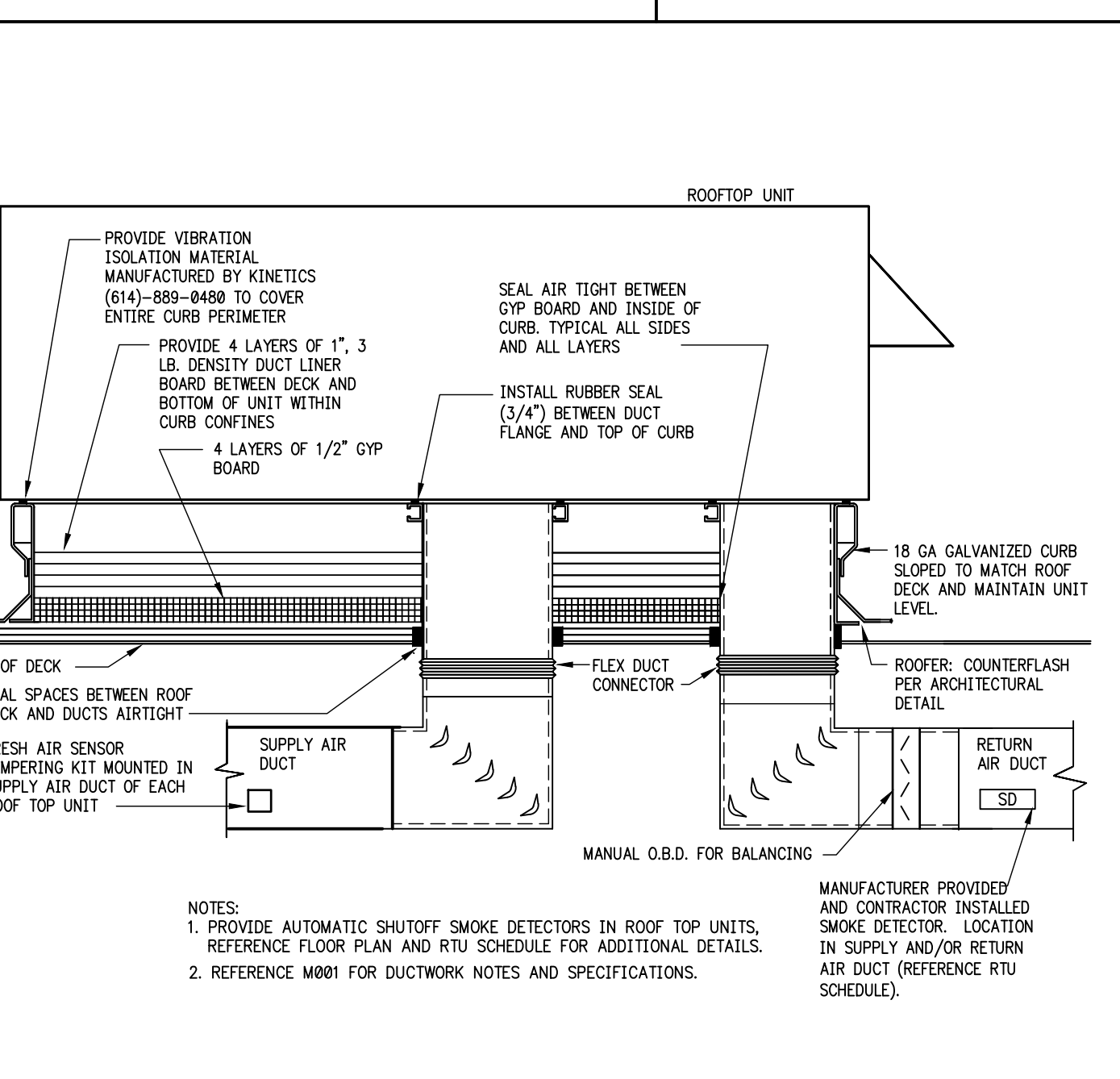
10 CENTRIFUGAL ROOF EXHAUSTER
M2.1 NO SCALE



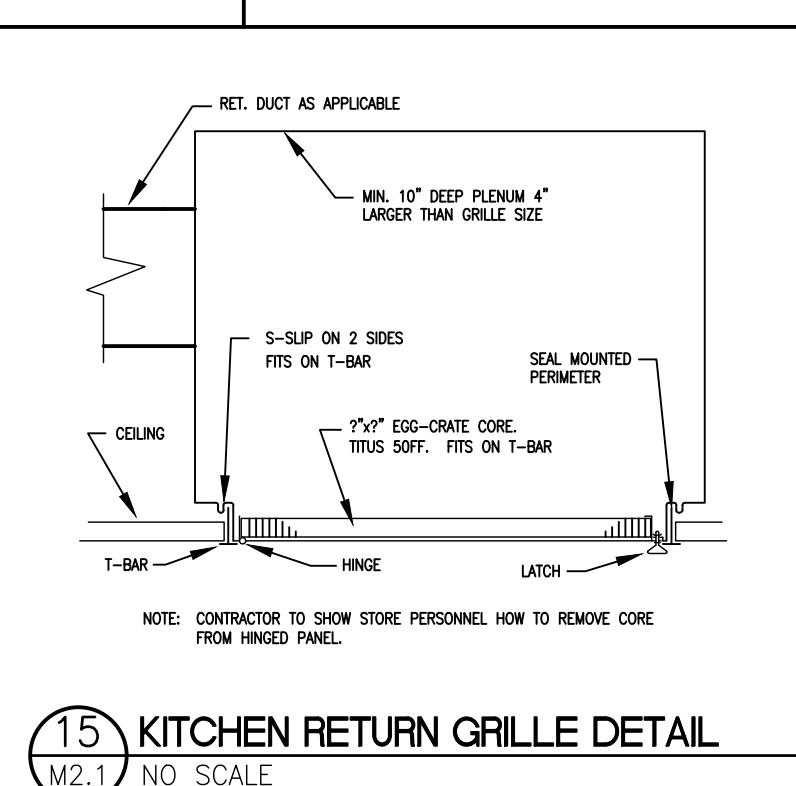
11 KITCHEN HOOD EXHAUST FAN
M2.1 NO SCALE



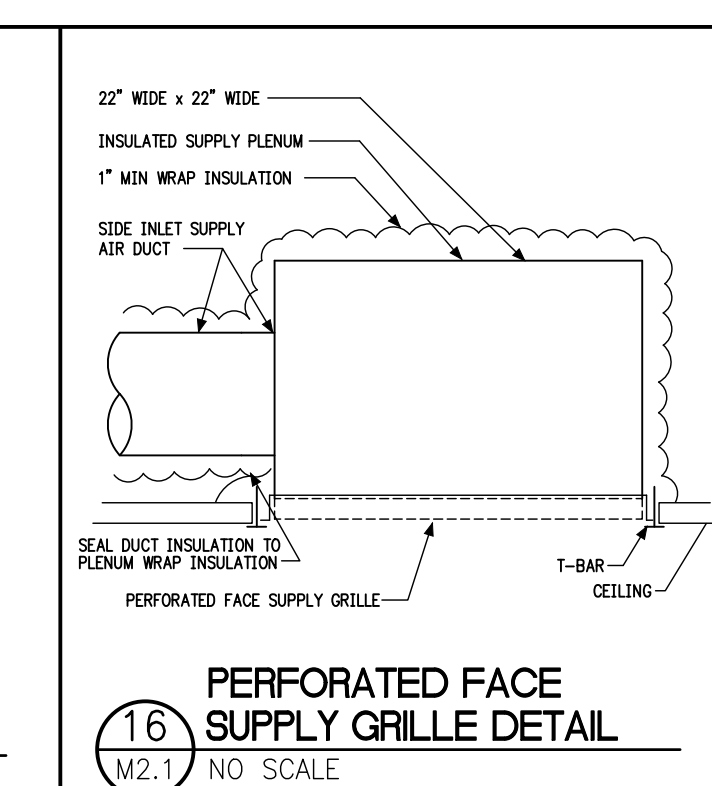
13 DUCT MOUNTED DIFFUSER
M2.1 NO SCALE



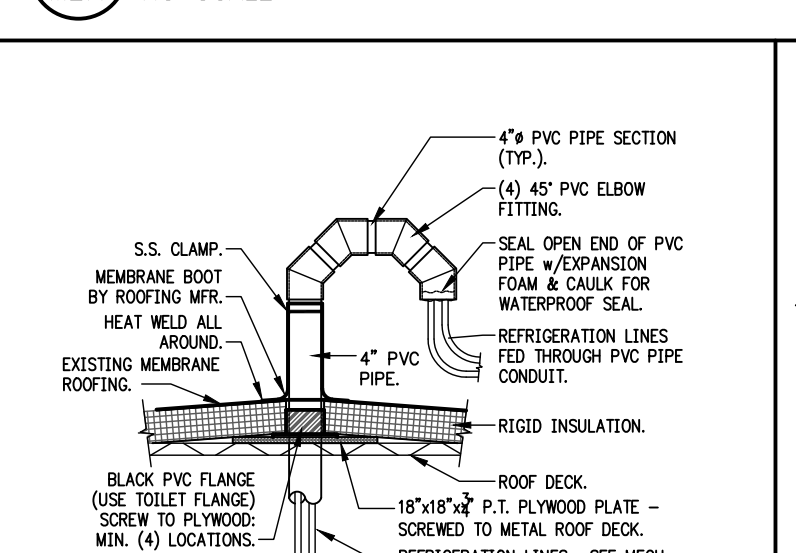
14 ROOFTOP UNIT DETAIL
M2.1 NO SCALE



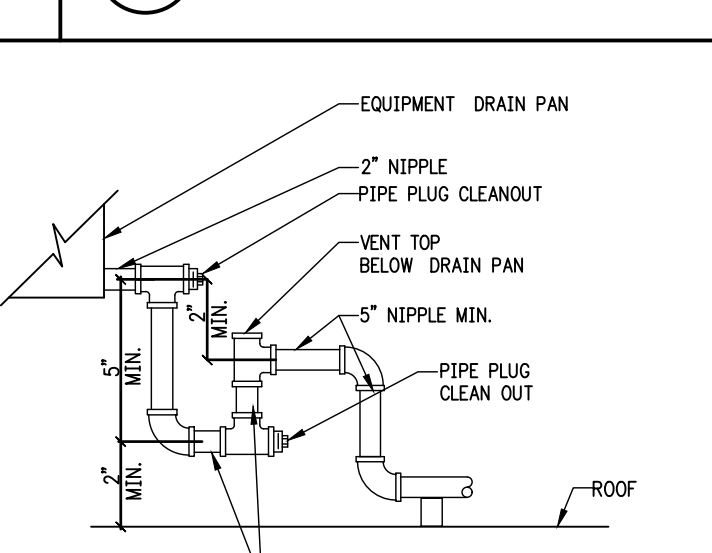
15 KITCHEN RETURN GRILLE DETAIL
M2.1 NO SCALE



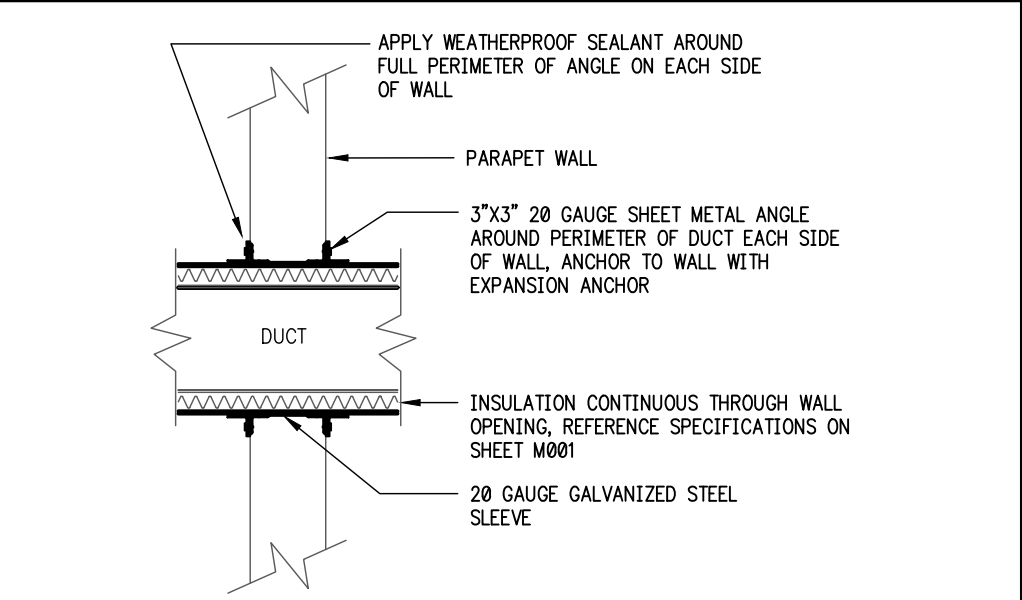
16 PERFORATED FACE SUPPLY GRILLE DETAIL
M2.1 NO SCALE



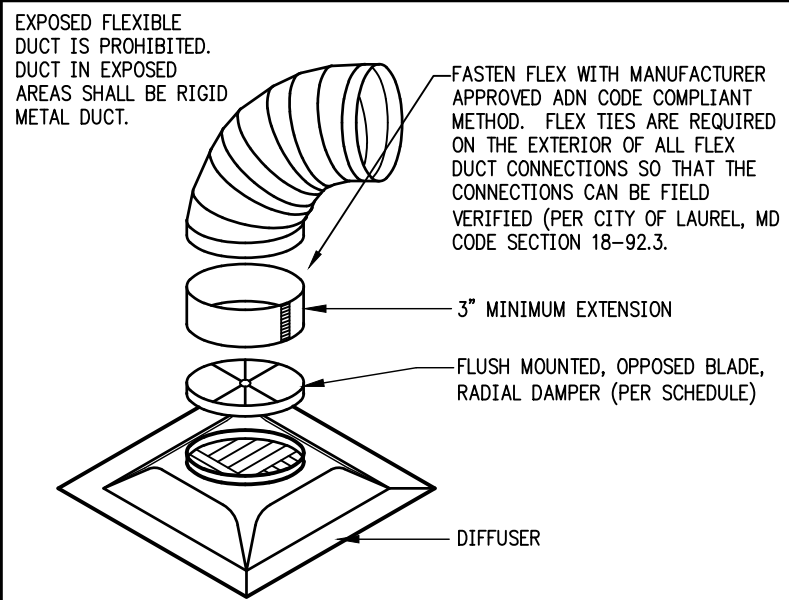
17 TYP. REFG. PIPE ROOF DETAIL
M2.1 NO SCALE



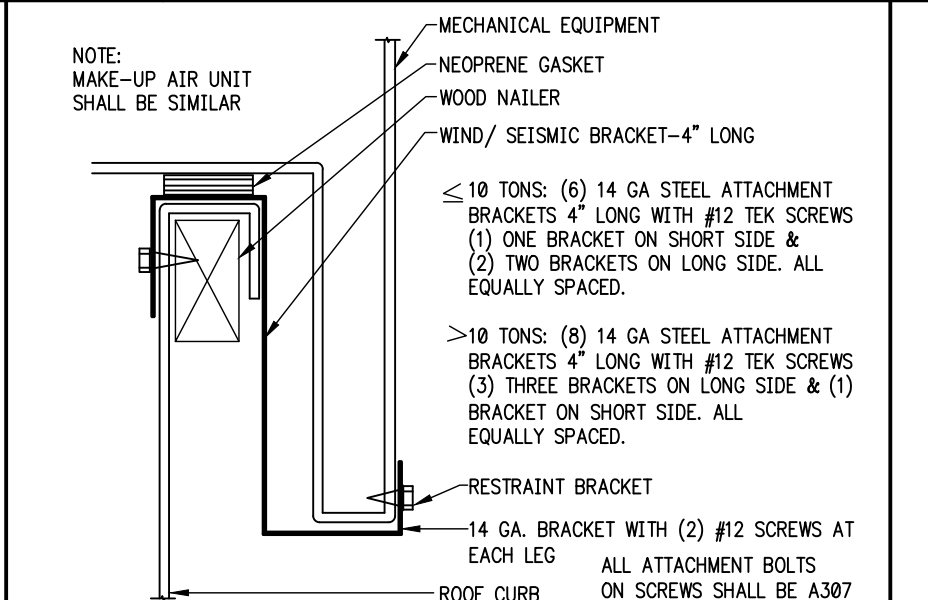
18 CONDENSATE PIPING
M2.1 NO SCALE



19 DUCT PENETRATION (INTERIOR)
M2.1 NO SCALE



20 FLEX DUCT DETAIL
M2.1 NO SCALE



21 ROOF MOUNTED EQUIPMENT
M2.1 NO SCALE

Ford's GARAGE
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STATE OF KENTUCKY
REGISTERED PROFESSIONAL ENGINEER
No. 10000
The Roberts Group

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MECHANICAL DETAILS
M2.1

MECHANICAL SYMBOL LEGEND

	CONDENSATE DRAIN PIPING
	AUXILIARY DRAIN PIPING
	PIPING DOWN
	PIPING UP -OR- PIPING UP & DOWN
	CAP ON END OF PIPE
	VOLUME DAMPER
	FIRE DAMPER (FUSIBLE LINK)
	SMOKE DAMPER
	SMOKE/FIRE DAMPER
	MOTORIZED DAMPER
	DUCT DIMENSION, CLEAR INSIDE
	LINED DUCTWORK
	RECTANGULAR ELBOW WITH TURNING VANES
	90 DEGREE ELBOW DOWN
	90 DEGREE ELBOW UP
	DUCT SIZE TRANSITION
	DIFFUSER OF TYPE & CFM INDICATED
	BLANK OFF AIR FLOW IN THIS DIRECTION
	DIFFUSER WITH INTEGRAL DAMPER
	RETURN/EXHAUST GRILLE
	FLEXIBLE DUCT CONNECTION
	RETURN/EXHAUST AIR DUCT RISER
	SUPPLY DUCT RISER
	UNDERCUT DOOR 1/2" FOR EXHAUST/MAKE-UP
	BACKDRAFT DAMPER
	CARBON MONOXIDE DETECTOR
	CARBON DIOXIDE DETECTOR
	OUTSIDE AIR FLOW MEASUREMENT
	SMOKE DETECTOR
	THERMOSTAT
	REMOTE TEMPERATURE SENSOR
	REMOTE TEMPERATURE/HUMIDITY SENSOR
	ANSUL SYSTEM REMOTE PULL STATION
	REMOTE TEST/RESET
	SPLITTER DAMPER

NOTE: NOT ALL SYMBOLS MAY APPEAR ON PLANS.

MECHANICAL GENERAL NOTES

- ALL RECTANGULAR, ROUND AND FLEXIBLE DUCTS SHALL BE SIZED AS SHOWN ON THESE DRAWINGS. MINIMUM INTERNAL DIMENSIONS ARE GIVEN.
- ALL SUPPLY, RETURN AND OUTSIDE AIR DUCTS ARE SIZED FOR AIR VOLUME AND STATIC PRESSURE DROP WITHOUT INTERIOR INSULATION. SHOULD INTERIOR INSULATION BE USED, THE CONTRACTOR SHALL INCREASE THE DUCT SIZE ACCORDINGLY.
- ALL SUPPLY, RETURN AND OUTSIDE AIR DUCTS SHALL BE INSULATED. EXTERIOR INSULATION SHALL BE USED FOR CONCEALED DUCTWORK. INSULATION SHALL BE 2" THICK 1/4" POUND PER CUBIC FOOT DENSITY OR APPROVED EQUAL (R=6.0 INSTALLED). ALL EXPOSED DUCTWORK SHALL BE INTERNALLY INSULATED UNLESS NOTED OTHERWISE.
- ALL FLEXIBLE ROUND DUCT SHALL BE SIMILAR TO ATCO UPC #036, CLASS 1, UL 181, FIBERGLASS SCRAM REINFORCED, METALIZED POLYESTER OUTER JACKET, R=6.0.
- ALL FLEXIBLE DUCTS SHALL BE CONNECTED TO TRUNK OR BRANCH DUCTS WITH A MINIMUM OF THREE SHEET METAL SCREWS AT EACH CONNECTION AND TAPED TO PROVIDE AN AIR TIGHT SEAL.
- FLEX DUCT HANGER STRIPS SHALL BE 2" x 16 GAUGE MINIMUM @ 3'-0" INTERVAL.
- THE MAXIMUM ALLOWABLE LENGTH OF FLEXIBLE DUCT SHALL BE 6'-0" (ABOVE ACCESSIBLE CEILING ONLY).
- INSTALL TURNING VANES IN ALL 90° DUCT ELBOWS AND AT ALL DUCT TEES.
- INSTALL ADJUSTABLE AIR VOLUME EXTRACTORS AT ALL BRANCH TO MAIN DUCT CONNECTIONS.
- HOOD FIRE PROTECTION SYSTEMS SHALL BE BY A LICENSED FIRE PROTECTION CONTRACTOR (SEE KITCHEN HOOD GENERAL NOTES).
- ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED ACCORDING TO REFERENCED MECHANICAL CODE AND SMACNA STANDARDS.
- MANUFACTURER'S MINIMUM CLEARANCE RECOMMENDATIONS SHALL BE MAINTAINED ON ALL EQUIPMENT AND DUCTWORK.
- THE CONTRACTOR SHALL CAREFULLY COORDINATE THE LOCATION OF ALL DUCTS, GRILLES, DIFFUSERS, ETC., WITH THE CEILING GRIDS AND THE PLUMBING AND FRAMING CONTRACTORS.
- ALL KITCHEN RETURN AIR GRILLES SHALL BE EASILY REMOVABLE FOR CLEANING.
- ALL CONTROL WIRING SHALL BE BY THE HVAC CONTRACTOR. CONTROL WIRING SHALL BE SHEILED ABOVE TO PREVENT ANY ELECTRICAL INTERFERENCE.
- ALL POWER WIRING SHALL BE BY THE ELECTRICAL CONTRACTOR.
- EXHAUST FANS SHALL BE FURNISHED WITH BROSCREWS, BACKDRAFT OR MOTORIZED DAMPERS AND DISCONNECTS WHERE APPLICABLE AND ACCORDING TO THE SCHEDULE.
- OWNER TO FURNISH BALANCING OF MECHANICAL SYSTEMS (BY 3RD PARTY). AIR BALANCE CONTRACTOR SHALL FURNISH A COPY OF THE AIR BALANCE REPORT TO THE BUILDING DEPARTMENT.
- THE CONTRACTOR SHALL CAREFULLY COORDINATE ALL THERMOSTAT LOCATIONS WITH INTERIOR FINISHES.
- THE CONTRACTOR SHALL COORDINATE FULLY WITH ALL OTHER TRADES.
- THE CONTRACTOR SHALL SUPPLY ELECTRONIC COPIES OF SHOP DRAWINGS TO COMPLETELY IDENTIFY THE QUALITY OF MATERIALS AND/OR EQUIPMENT INTENDED FOR INSTALLATION. THERE WILL BE NO DRAW UNITS. SHOP DRAWINGS HAVE BEEN SUBMITTED AND REVIEWED BY ARCHITECT/ENGINEER.
- THE SUBMISSION OF A BID OR PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT THE CONTRACTOR HAS FAMILIARIZED HIM/HERSELF WITH THE PLANS AND BUILDING SITE. CLAIMS MADE SUBSEQUENT TO THE PROPOSAL FOR MATERIALS AND/OR LABOR DUE TO DIFFICULTIES ENCOUNTERED WILL NOT BE RECOGNIZED, UNLESS THESE DIFFICULTIES COULD NOT HAVE BEEN FORESEEN EVEN THOUGH PROPER EXAMINATION HAD BEEN MADE.
- ALL ROUND TAKE-OFFS FROM RECTANGULAR DUCTS SHALL BE A DAMPERS EXPRESS COMMERCIAL AIR TITE SPIN IN MODEL ATCS2 W/ DAMPER OR APPROVED EQUAL.
- DEFINITIONS: "FURNISH" SHALL MEAN TO PURCHASE AND LOCATE AN ITEM ON THE JOBSITE. "INSTALL" SHALL MEAN TO PHYSICALLY INSTALL AN ITEM, AND TO CONNECT ALL REQUIRED SERVICES TO MAKE THAT ITEM FULLY FUNCTIONAL. "PROVIDE" SHALL MEAN TO BOTH FURNISH AND INSTALL AN ITEM.
- PROVIDE ACCESS OPENINGS TO ALL FIRE DAMPERS, EACH ACCESS OPENING TO MAINTAIN FIRE DAMPERS SHALL BE IDENTIFIED WITH A LABEL. THE SIGN SHALL HAVE LETTERS (1/2) INCH HIGH READING FIRE DAMPER.
- AIR DUCT SYSTEM SMOKE DETECTORS SHALL BE ACCESSIBLE FOR CLEANING AND SHALL BE MOUNTED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. ACCESS DOORS OR PANELS SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 90A, STANDARD FOR THE INSTALLATION OF AIR CONDITIONING AND VENTILATING SYSTEMS". THE LOCATION OF ALL DETECTORS IN AIR DUCT SYSTEMS SHALL BE PERMANENTLY AND CLEARLY IDENTIFIED AND RECORDED. DUCT MOUNTED SMOKE DETECTORS SHALL BE BY THE FIRE ALARM CONTRACTOR WHERE NOT FURNISHED WITH EQUIPMENT.
- ALL EXHAUST DUCTWORK FOR THE HOOD SHALL BE PER 2018 INTERNATIONAL MECHANICAL CODE (IMC), M.I.A. DUCT SHALL BE PER THE LATEST EDITION OF SMACNA WITH FOL. WRAP INSULATION.
- ALL ROOF CURBS FOR FANS, ETC. SHALL BE A MINIMUM OF 12" HIGH. KITCHEN HOOD FAN CURBS MAY NEED TO BE HIGHER TO MAINTAIN CORRECT DISCHARGE HEIGHT OF FAN PER THE REFERENCED MECHANICAL CODE.
- DISHWASHER EXHAUST DUCT SHALL BE WATERTIGHT, STAINLESS STEEL WITH WELDED SEAMS AND JOINTS.
- SHEAVE & PULLEY COMBINATION FOR ALL R.T.U.'S SHALL BE SIZED FOR DESIGN FAN R.P.M.
- ALL KITCHEN HOOD EXHAUST DUCTWORK WELDS SHALL COMPLY WITH THE LATEST APPLICABLE AWS STANDARDS.
- PROPERLY SECURE ALL FANS TO CURBS & DUCTWORK. PROVIDE NECESSARY GASKET ON CURBS TO PREVENT WATER PENETRATION.
- PROVIDE PAINTED (3" H) IDENTIFICATION ON ALL R.T.U.'S, FANS & CONDENSING UNITS. IDENTIFICATION SHALL INCLUDE DEVICE NUMBER AND AREA SERVED (I.E. RTU-1 KITCHEN).
- KITCHEN HOOD FIRE SUPPRESSION CONTRACTOR MUST SUBMIT PLANS AND OBTAIN PERMIT FROM FIRE MARSHALL. FIRE INSPECTOR TO WITNESS TEST PRIOR TO CERTIFICATE OF OCCUPANCY.
- UNITS SHALL BE CLEANED, ALL SCRATCHES SHALL BE PAINTED OVER WITH FACTORY PAINT TO MATCH UNIT. ALL CONDENSER COILS SHALL BE COMBED OUT, AND ALL PANELS AND SCREWS SHALL BE REINSTALLED AT COMPLETION OF THE PROJECT.
- EACH SUPPLY AIR OUTLET SHALL BE EQUIPPED WITH A MEANS FOR AIR BALANCING IN ACCORDANCE WITH THE MECHANICAL CODE.
- HVAC TEST AND BALANCE REPORT SHALL BE A THIRD PARTY CERTIFIED AIR BALANCE CONTRACTOR. EITHER NATIONAL ENVIRONMENTAL BALANCING BUREAU(NABB) OR ASSOCIATED AIR BALANCE COUNCIL(AABB), CERTIFIED AIR BALANCE REPORTS SHALL BE SUBMITTED TO THE BUILDING OFFICIAL. ARCHITECT AND ENGINEER REPORTS SHALL BE ON FORMS DESIGNATED BY THE BALANCING ORGANIZATION.

DUCTWORK NOTES

- SHEET METAL WORK**
- EXCEPT AS OTHERWISE SHOWN OR NOTED, ALL SUPPLY AND RETURN AIR DUCTWORK AND OTHER SHEET METAL WORK SHALL BE 26 GA GALVANIZED SHEET STEEL AND SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF SMACNA (SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, INC.), DUCT CONSTRUCTION STANDARDS.
 - ALL DUCTWORK SHALL BE SEALED TO COMPLY WITH THE LATEST EDITION OF THE REFERENCED ENERGY CONSERVATION AND MECHANICAL CODES. PRESSURE CLASSIFICATION 2 IN. W.G., SEAL CLASS B (REFERENCE SMACNA FOR SEAL CLASS DETAILS).
 - DUCTWORK IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISERS OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF DUCTWORK TO AVOID OBSTRUCTIONS. EXACT LOCATIONS ARE SUBJECT TO APPROVAL OF ARCHITECT. COORDINATION WITH OTHER TRADES IS REQUIRED.
 - ALL DUCT SIZES SHOWN ARE INSIDE. FREE AREA DIMENSIONS REQUIRED FOR PROPER AIRFLOW UNLESS SPECIFICALLY INDICATED. ALL DUCT TRANSITIONS SHALL BE SMOOTH AND GRADUAL WITH MAXIMUM DIVERGENT ANGLE OF 15°.
 - PROVIDE INTERNAL INSULATION FOR EXPOSED SUPPLY AND RETURN AIR DUCTWORK. INSTALLED INSULATION SHALL BE 1.5 LB/CU. FT. DENSITY, MINIMUM VALUE SHALL BE R-4.2 DUCT LINER; 1" THICK COATED WITH A BLACK PIGMENTED FIRE-RESISTANT COATING ON THE AIRSTREAM SIDE.
 - ALL SHEET METAL DUCTWORK WITH 10" OF AIR HANDLING UNIT SHALL BE LINED WITH DUCT LINER. APPLY LINER IN ACCORDANCE WITH MANUFACTURER'S AND SMACNA RECOMMENDATIONS. ALL TRANSVERSE EDGES, OR ANY EDGES EXPOSED TO AIRFLOW SHALL BE COATED WITH AN APPROVED DUCT LINER COATING MATERIAL, SUCH AS JOHNS MANVILLE SUPERFLO PRODUCTS. JOINTS SHALL BE NEATLY BUTTED AND THERE SHALL BE NO INTERRUPTIONS OR GAPS.
 - EXPOSED DUCT AND FITTINGS SHALL BE SIMILAR TO MCGILL AIR FLOW UNIT CASKET SELF SEALING WITH PAINT GRP. CONTRACTOR SHALL NOT USE MASTIC SEALANT AT JOINTS.
 - PROVIDE TURNING VANES IN ALL SQUARE ELBOWS OF SUPPLY DUCTWORK.
 - ALL FLEXIBLE DUCTWORK SHALL BE STRETCHED AND SUSPENDED IN ACCORDANCE WITH LOCAL CODE. SUPPORT EVERY 3' WITH 2" WIDE GALVANIZED STEEL BANDS (MAX. SAG 3/8" BETWEEN SUPPORTS). MAXIMUM LENGTH OF DUCT SHALL BE SIX (6) FEET.
 - ALL DUCTWORK SHALL BE INSTALLED AS HIGH AS POSSIBLE AND TIGHT TO STRUCTURE, UNLESS NOTED OTHERWISE.
 - COORDINATE BRANCH DUCT LOCATIONS WITH TRUSS WEBS AND ROOF SKEW POSTS.
 - SUPPORT ALL DUCTWORK FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER. BRANCH DUCTWORK SHALL BE SUPPORTED BY METAL FASTENING OR SUPPORTS FOR EQUIPMENT. FURNISH ADDITIONAL FRAMING.
 - PROVIDE VOLUME DAMPER AT CONNECTION OF DIFFUSER BRANCH INCLUDING THOSE CONNECTING TO THE BOTTOM OF MAIN TRUNK.
 - NO FLEXIBLE DUCTWORK SHALL BE ALLOWED ABOVE INACCESSIBLE CEILING OR EXPOSED AREAS.

GREASE DUCT TESTING

PERFORM THE FOLLOWING TESTS PER THE MECHANICAL CODE:

506.3.2.5 GREASE DUCT TESTS – PRIOR TO THE USE OR CONCEALMENT OF ANY PORTION OF A GREASE DUCT SYSTEM, A LEAKAGE TEST SHALL BE PERFORMED. DUCTS SHALL BE CONSIDERED TO BE CONCEALED WHERE INSTALLED IN SHAFTS OR COVERED BY CEILINGING OR WRAPS THAT PREVENT THE DUCTWORK FROM BEING VISUALLY INSPECTED ON ALL SIDES. THE PERMIT HOLDER SHALL BE RESPONSIBLE TO PROVIDE THE NECESSARY EQUIPMENT AND PERFORM THE GREASE DUCT LEAKAGE TEST. A LIGHT TEST SHALL BE PERFORMED TO DETERMINE THAT ALL WELDED AND BRAZED JOINTS ARE LEAK TIGHT.

A LIGHT TEST SHALL BE PERFORMED BY PASSING A LAMP HAVING A POWER RATING OF NOT LESS THAN 100 WATTS THROUGH THE ENTIRE SECTION OF DUCTWORK TO BE TESTED. THE LAMP SHALL BE OPENED SO AS TO EMIT LIGHT EQUALLY IN ALL DIRECTIONS PERPENDICULAR TO THE DUCT WALLS. A TEST SHALL BE PERFORMED FOR THE ENTIRE DUCT SYSTEM, INCLUDING THE HOOD-TO-DUCT CONNECTION. THE DUCT WORK SHALL BE PERMITTED TO BE TESTED IN SECTIONS, PROVIDED THAT EVERY JOINT IS TESTED. FOR LISTED FACTORY-BUILT GREASE DUCTS, THIS TEST SHALL BE LIMITED TO JOINTS ASSEMBLED IN THE FIELD AND SHALL EXCLUDE FACTORY WELDS.

507.6 PERFORMANCE TEST – A PERFORMANCE TEST SHALL BE CONDUCTED UPON COMPLETION AND BEFORE FINAL APPROVAL OF THE INSTALLATION OF A VENTILATION SYSTEM SERVING COMMERCIAL COOKING APPLIANCES. THE TEST SHALL VERIFY THE RATE OF EXHAUST AIRFLOW REQUIRED BY SECTION 507.1.3. MAKEUP AIRFLOW IS REQUIRED BY SECTION 508 AND PROPER OPERATION AS SPECIFIED IN THIS CHAPTER. THE PERMIT HOLDER SHALL FURNISH THE NECESSARY TEST EQUIPMENT AND DEVICES REQUIRED TO PERFORM THE TESTS.

507.6.1 CAPTURE AND CONTAINMENT TEST – THE PERMIT HOLDER SHALL VERIFY CAPTURE AND CONTAINMENT PERFORMANCE OF THE EXHAUST SYSTEM. THIS FIELD TEST SHALL BE CONDUCTED WITH ALL APPLIANCES UNDER THE HOOD AT OPERATING TEMPERATURES, WITH ALL SOURCES OF OUTDOOR AIR PROVIDING MAKEUP AIR FOR THE HOOD OPERATING AND WITH ALL SOURCES OF RECIRCULATED AIR PROVIDING CONDITIONING FOR THE SPACE IN WHICH THE HOOD IS LOCATED. OPERATING, CAPTURE AND CONTAINMENT SHALL BE VERIFIED VISUALLY BY OBSERVING SMOKE OR STEAM PRODUCED BY ACTUAL OR SIMULATED COOKING, SUCH AS WITH SMOKE CANDLES, SMOKE PUFFERS, ETC.

KITCHEN HOOD GENERAL NOTES

- KITCHEN HOOD AND FIRE SUPPRESSION INFORMATION IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. KITCHEN EQUIPMENT SUPPLIER TO PROVIDE KITCHEN HOODS, FIRE SUPPRESSION SYSTEMS, KITCHEN HOOD EXHAUST AND SUPPLY FANS. GENERAL CONTRACTOR IS RESPONSIBLE FOR INSTALLING SUPPLIED KITCHEN EQUIPMENT. COORDINATE WITH KITCHEN EQUIPMENT SUPPLIER.
- ROOM SENSOR INSTALLATION:**
A ROOM TEMPERATURE SENSOR IS PROVIDED WITH THE HOOD STARTER PANEL. INSTALL IN A SAFE LOCATION, FREE OF INFLUENCE FROM EXTERNAL HEAT SOURCES. LOCATION SHALL BE INDICATIVE OF THE AVERAGE KITCHEN TEMPERATURE AWAY FROM APPLIANCES. THIS SENSOR SHALL BE WIRED BACK TO THE HOOD STARTER PACKAGE AS SHOWN ON THE STARTER PACKAGE WIRING DIAGRAM IN THE HOOD DRAWINGS, WITH WIRE PROVIDED WITH THE STARTER PACKAGE.
- DUCT SENSOR INSTALLATION:**
ONE DUCT SENSOR IS FURNISHED PER HOOD EXHAUST RISER. THE SENSORS ARE SHIPPED FACTORY INSTALLED IN FACTORY ASSEMBLED HOOD RISERS. A 2-WIRE PLENUM RATED THERMISTOR CABLE (18 GAUGE TYPICAL), RUN IN CONDUIT, SHOULD BE USED TO WIRE THE SENSORS BACK TO THE CONTROLLER AND LANDED ON CONNECTOR J10 AS INDICATED ON THE INSTALLATION SCHEMATIC IN THE HOOD DRAWINGS. PLENUM WIRE IS TYPICALLY SUPPLIED WITH THE STARTER PACKAGE.
- KITCHEN HOOD FIRE SUPPRESSION:**
KITCHEN HOOD FIRE SUPPRESSION INSTALLATION PROVIDED BY ECOM-AIR. THE HOOD FIRE SUPPRESSION SHOP DRAWINGS SUBMIT THE HOOD FIRE SUPPRESSION SHOP DRAWINGS SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT FOR APPROVAL & PERMIT PRIOR TO INSTALLATION AS REQUIRED.
- SYSTEM DESCRIPTION:** PROVIDE A PRE-ENGINEERED, WET CHEMICAL, CARTRIDGE OPERATED TYPE FIRE SUPPRESSION SYSTEM. IT SHALL BE A FIXED NOZZLE AGENT DISTRIBUTION NETWORK, AND SHALL BE UL LISTED. (UL-300). THE SYSTEM SHALL BE CAPABLE OF AUTOMATIC DETECTION AND REMOTE ACTUATION. THE SYSTEM SHALL BE IN ACCORDANCE WITH NFPA 96 AND AUTHORITY HAVING JURISDICTION. DISCHARGE NOZZLES WILL PROVIDE COVERAGE OF, BUT NOT LIMITED TO, THE HOOD AREA & EXHAUST DUCT. FURNISH ELECTRIC OPERATED SHUT OFF VALVE.
- COORDINATE GAS VALVE AND SHUNT TRIP INSTALLATION WITH PLUMBING AND ELECTRICAL DESIGN AND INSTALLATION.

MECHANICAL SPECIFICATIONS

- BASIC MECHANICAL REQUIREMENTS – 150100**
- GENERAL: THE CONTRACTOR IN THIS SPECIFICATION SHALL BE CONSIDERED TO MEAN A LICENSED CONTRACTOR IN THE MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION TRADES. LICENSES SHALL BE CURRENT AND VALIDATED BY THE STATE OR LOCAL MUNICIPALITY HAVING JURISDICTION IN THE EXECUTION OF THE TRADE ON THIS PROJECT.
 - CONTRACTOR SHALL SUBMIT MANUFACTURER'S CATALOG DATA FOR EACH MANUFACTURED ITEM. SUBMITTAL SHALL INCLUDE SUFFICIENT INFORMATION TO SHOW COMPLIANCE WITH CONTRACT DOCUMENT REQUIREMENTS. MARK CATALOG DATA TO INDICATE SPECIFIC ITEM WITH APPLICABLE DATA HIGHLIGHTED.
 - CONTRACTOR SHALL SUBMIT "AS-BUILT" DRAWINGS AT THE COMPLETION OF PROJECT. DRAWINGS SHALL RECORD DIFFERENCES BETWEEN MECHANICAL WORK AS INSTALLED AND SHOWN IN CONTRACT DOCUMENTS.
 - CONTRACTOR SHALL SUBMIT AN "OPERATION AND MAINTENANCE MANUAL" (OMM) AT THE COMPLETION OF THE PROJECT. THE MANUAL SHALL CONTAIN COPIES OF ALL WARRANTIES REQUIRED IN DIVISION 15, MANUFACTURER'S PRINTED OPERATING PROCEDURES FOR NORMAL AND EMERGENCY CONDITIONS, MAINTENANCE PROCEDURES FOR ROUTINE PREVENTION MAINTENANCE AND TROUBLE SHOOTING AND COMPLETE Nomenclature AND COMMERCIAL NUMBERS OF REPLACEMENT PARTS.
 - CONTRACTOR SHALL VERIFY FAN LOCATIONS FOR ROUGH-INS WITH FIELD MEASUREMENTS AND WITH THE REQUIREMENTS OF THE ACTUAL EQUIPMENT TO BE CONNECTED.
 - SEQUENCE, COORDINATE AND INTEGRATE THE VARIOUS ELEMENTS OF MECHANICAL SYSTEMS, MATERIALS AND EQUIPMENT. PERFORM CUTTING AND PATCHING FOR MECHANICAL SYSTEMS AS REQUIRED FOR INSTALLATION, SEAL EXTERIOR OPENINGS WEATHERTIGHT.
- MECHANICAL INSULATION – 152500**
- GENERAL:
 - FURNISH AND INSTALL INSULATION FOR DUCTWORK AND PIPING AS DESCRIBED IN CONTRACT DOCUMENTS. SUBMIT PRODUCT DATA FOR EACH TYPE OF MECHANICAL INSULATION FOR THE DATA FOR EACH TYPE OF MECHANICAL INSULATION FOR THE PROJECT, IDENTIFYING R-VALUE, THICKNESS, AND ACCESSORIES.
 - INSULATION SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DEVELOPED RATING OF 50 OR LESS.
 - SCHEDULE INSULATION APPLICATION AFTER DUCT OR PIPING TESTS HAVE BEEN COMPLETED.
 - PRODUCTS:
 - CLASS FIBER: INORGANIC GLASS FIBERS, BONDED WITH A THERMOSETTING RESIN.
 - BLANKET: MINIMUM 2" THICK WITH ALUMINUM FOL SCRM KRAFT FACING AND 1 LB/CU. FT. DENSITY. OWENS-CORNING FRC.
 - PREFORMED PIPE INSULATION: 1" THICK WITH REINFORCED ALL SERVICE VAPOR RETARDER JACKETING OWENS-CORNING FIBERGLASS ASA.
 - DUCT LINER: 1-1/2" THICK COATED WITH A BLACK PIGMENTED FIRE-RESISTANT COATING ON THE AIRSTREAM SIDE AND 1-1/2 LB/CU. FT. DENSITY.
 - OWENS-CORNING.
 - OTHER APPROVED MANUFACTURERS: CERTAUNED, KNAUF, AND JOHNS MANVILLE.
 - EXECUTION:
 - SELECT ACCESSORIES COMPATIBLE WITH MATERIALS SUITABLE FOR THE SERVICE THAT DO NOT CORRODE, SOFTEN OR OTHERWISE ATTACK THE INSULATION OR JACKET INSULATION SHALL BE DESIGNED, MANUFACTURED AND TESTED IN ACCORDANCE WITH UL REQUIREMENTS AND HAVE THE UL LABEL. UNITS SHALL CARRY A 5-YEAR WARRANTY ON COMPRESSORS, A 10-YEAR WARRANTY ON HEAT EXCHANGERS, AND A 1-YEAR WARRANTY ON ALL OTHER PARTS.
 - FIELD INSTALLED ACCESSORIES INCLUDE MOTORIZED OUTSIDE AIR DAMPER, AND ANTI-RECYCLE THUR.
 - EXECUTION:
 - VERIFY UNITS PER MANUFACTURER'S INSTRUCTIONS IN LOCATIONS SHOWN ON PLANS.
 - SEQUENCE OF OPERATIONS – SEE SEQUENCE OF OPERATION, THIS SHEET.
- POWER VENTILATORS – 158000**
- GENERAL:
 - INSTALL POWER VENTILATORS AS DESCRIBED IN CONTRACT DOCUMENTS.
 - PRODUCTS:
 - AS SCHEDULED ON DRAWINGS. OTHER APPROVED MANUFACTURERS INCLUDE BRON, CARNES, GREENHECK, AND PENN.
 - CEILING MOUNTED EXHAUST FANS SHALL BE ACoustically INSULATED WITH A SOUND LEVEL RATING OF 4.0 SONES MAXIMUM. PROVIDE EXHAUST GRILLE, SHATTERPROOF BACK DRAFT DAMPER, WALL CAP AND RUBBER – IN SHEAR VIBRATION ISOLATORS.
 - EXECUTION:
 - INSTALL FANS LEVEL AND PLUMB, IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. SECURE UNITS TO STRUCTURE OR CURB.
 - CHECK EXHAUST FANS FOR ANYTHING THAT WILL AFFECT ITS OPERATION AND TAKE CORRECTIVE ACTION BEFORE START-UP.
- METAL DUCTWORK – 159000**
- GENERAL:
 - FURNISH AND INSTALL RECTANGULAR AND ROUND METAL DUCTS AND PLENUMS FOR HVAC SYSTEMS PER THE CONTRACT DOCUMENTS.
 - FURNISH AND INSTALL DUCT LINER IN ALL RETURN AIR DUCTWORK. MAINTAIN AIR WAY DIMENSIONS ON DRAWINGS.
 - COMPLY WITH NFPA 90A, STANDARD FOR THE INSTALLATION OF AIR CONDITIONING AND VENTILATING SYSTEM."
 - PRODUCTS:
 - FABRICATE DUCTS OF LOCK FORMING QUALITY, ASTM A 527, COATING DESIGNATION G90, IN CONFORMANCE WITH ALL SMACNA STANDARDS. PROVIDE MILL PHOSPHATIZED FINISH FOR EXHAUST DUCTS. PROVIDE MILL GALVANIZED FINISH FOR SUPPLY DUCTS AND SEAMS WITH EQUAL DUCT SEAL OR EQUAL.
 - DUCT SIZE 152500 FOR DUCT LINER SPECIFICATION.
 - VOLUME DAMPERS IN MAIN AND BRANCH DUCTS SHALL BE FACTORY FABRICATED MULTIPLE OPPOSED BLADE DESIGN WITH STANDARD LEADAGE. RATING, LOCKING QUADRANT AS MANUFACTURED BY AIR CONTROL PRODUCTS TCO-08 OR EQUAL.
 - REFERENCE DETAILS FOR RECTANGULAR AND ROUND DUCT HANGERS.
 - PROVIDE TURNING VANES IN ALL SUPPLY ELBOWS. TURNING VANES SHALL BE SINGLE BLADE VANES WITH TRAILING EDGE, 1-1/4" WIDE VANE DIAL.
 - FLEXIBLE DUCTS SHALL COMPLY WITH UL 181, CLASS 1, FACTORY- FABRICATED, INSULATED ROUND DUCT WITH AN OUTER GLASS-REINFORCED SILVER MYLAR JACKET ENCLOSING 1-1/2" THICK CLASS FIBER INSULATION AROUND A CONTINUOUS INNER LINER. REINFORCEMENT SHALL BE A STEEL-WIRE HELIX ENCAPSULATED IN THE POLYETHYLENE FILM INNER LINER. DUCT SHALL BE ATCO RUBBER PRODUCTS MODEL UPC #36, AS MANUFACTURED BY ATCO RUBBER PRODUCTS, INC., 7101 ATCO DRIVE, FT. WORTH, TEXAS, 76119, 1-800-477-5028, OR APPROVED EQUAL. ALL JOINTS AND CONNECTIONS SHALL BE MADE WITH 9/16" WIDE POSTIVE LOCKING STEEL STRAPS.
 - MAXIMUM FLEXIBLE DUCT RUN TO BE 6'-0" (ABOVE ACCESSIBLE CEILING ONLY).
 - GREASE DUCTS SERVING TYPE I HOODS SHALL BE CONSTRUCTED OF STEEL NOT LESS THAN 18 GAGE IN THICKNESS. JOINTS SHALL BE WELDED OR BRAZED MADE TO BE LIQUID TIGHT. GREASE DUCTS SHALL BE WRAPPED WITH INSULATION FOR A 0" CLEARANCE TO COMBUSTIBLES.
 - CLEANOUTS FOR GREASE DUCT SHALL BE PROVIDED EVERY 12 FEET AND AT EACH CHANGE IN DIRECTION.
 - SUPPORTS FOR GREASE DUCT SHALL BE OF NON-COMBUSTIBLE MATERIAL, DESIGNED TO SUPPORT THE WEIGHT OF THE DUCT AND PRODUCT, AND NOT NEAR THE DUCT WRAP.
 - ALL TURNS IN GREASE DUCT SHALL BE ACHIEVED WITH THE USE OF A 1.5 RADIUS/WIDTH SMOOTH RADIUS ELBOW. REFERENCE DETAILS.
 - COORDINATE EXACT LOCATION OF SUPPLY AIR DUCTWORK IN THE KITCHEN AREA WITH ALL THREAD SUPPORTS FROM HOODS.
 - DUCTS SERVING TYPE II HOODS (DISHWASHER EXHAUST) SHALL BE CONSTRUCTED OF TYPE 304 STAINLESS STEEL WITH FINISH TO MATCH KITCHEN EQUIPMENT AND DISHWASHER HOOD. WELD AND FLANGE SEAMS AND JOINTS.
 - EXECUTION:
 - CONSTRUCT AND INSTALL EACH DUCT SYSTEM FOR THE SPECIFIC DUCT PRESSURE CLASSIFICATION INDICATED. INSTALL DUCTS CLOSE TO WALLS, OVERHEAD CONSTRUCTION, COLUMNS, AND OTHER PERMANENT ELEMENTS OF THE BUILDING.
 - ADJUST VOLUME CONTROL DAMPERS AS REQUIRED BY THE TESTING AND BALANCING PROCEDURES. VACUUM DUCT SYSTEMS PRIOR TO FINAL ACCEPTANCE.
 - ALL SUPPORTS FOR FLEXIBLE DUCT SHALL INCORPORATE A 1" WIDE BAND CLAMP. SUPPORT SYSTEM MUST NOT DAMAGE NEW DUCT OR CAUSE OUT OF ROUND SHAPE.
 - INSTALL ONLY RIGID METAL DUCTWORK WHERE IT IS EXPOSED TO VIEW.
- AIR OUTLETS AND INLETS – 159500**
- GENERAL:
 - INSTALL CEILING AIR DIFFUSERS AND GRILLES AS DESCRIBED IN CONTRACT DOCUMENTS. AIR OUTLETS AND INLETS SHALL COMPLY WITH AIR 650 STANDARD.
 - PRODUCTS:
 - AS SCHEDULED ON DRAWINGS. ALL DIFFUSERS SHALL HAVE BORDER STYLES COMPATIBLE WITH ADJACENT CEILING SYSTEMS.
 - EXECUTION

HVAC UNIT SPECIFICATIONS

UNITS FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR. ALL UNITS SHALL BE SINGLE PACKAGE TYPE, COMBINATION AIR TO AIR COOLING AND GAS HEATING. EACH UNIT SHALL BE MOUNTED ON A FULL PERIMETER ROOF CURB. FILTERS IN ALL HVAC UNITS SHALL BE 2" THICK THROWAWAY TYPE. FURNISH FIELD INSTALLED MOTORIZED DAMPER. UNITS SHALL BE INSTALLED ON MOUNTING CURB WITH ALL DUCTWORK PENETRATING INSIDE PERIMETER OF CURB. UNITS SHALL BE FURNISHED WITH INTEGRAL STARTERS.

SEQUENCE OF OPERATION

- THE MECHANICAL CONTRACTOR SHALL FURNISH ALL REQUIRED COMPONENTS FOR THE FOLLOWING SEQUENCES OF OPERATION FOR EACH HVAC UNIT. DISCONNECTS SHALL BE FURNISHED AND INSTALLED BY THE UNIT MANUFACTURER.
- UNIT SHALL BE STARTED AND STOPPED THROUGH ITS RESPECTIVE THERMOSTAT AND REMOTE TEMPERATURE SENSORS.
 - THERMOSTATS W/ REMOTE TEMPERATURE/ HUMIDITY SENSORS SHALL ENERGIZE COOLING, HEATING AND DEHUMIDIFICATION SYSTEMS TO MAINTAIN DESIRED SPACE TEMPERATURE AND HUMIDITY.
 - PROVIDE SMOKE DETECTOR IN THE RETURN AIR SIDE OF EACH UNIT, IN THE AIR STREAM AHEAD OF ALL FANS, COILS, ETC. WHICH SHALL COMPLETELY SHUT DOWN THE UNIT WHEN SMOKE IS DETECTED. PROVIDE REMOTE TESTING, PER THE REFERENCED BUILDING & MECHANICAL CODES.
 - M.C. SHALL HOLD (3) TRAINING SESSIONS (SUMMER & WINTER) WITH STORE MANAGER TO INSURE THEIR KNOWLEDGE OF PROPERLY USING THE CONTROLS.

CONTROLS

- PROVIDE DIGITAL, 7-DAY PROGRAMMABLE THERMOSTATS W/ 4 MODES PER DAY, 5 DEG. F. DEADBAND. PROVIDE COMBINATION TEMPERATURE/ HUMIDITY REMOTE SENSORS IN SPACE (WALL PLATE STYLE). THERMOSTATS & SENSORS SHALL BE FURNISHED BY CONTRACTOR. THERMOSTATS TO HAVE SET POINT OVERLAP RESTRICTIONS.
 - SMOKE DUCT DETECTORS: SHALL BE FACTORY INSTALLED AND WIRED BY ROOFTOP UNIT MANUFACTURER. CONTRACTOR TO LOCATE PER CODE REQUIREMENT. PROVIDE W/ REMOTE TEST/ RESET SWITCHES. SYSTEM SENSOR MODEL SSK451 THESE WOULD BE SHIPPED LOOSE AS PART OF THE ROOFTOP UNIT PACKAGE. THE SSK451 PROVIDES THE TEST/ RESET SWITCH, AUDIBLE SIGNAL, & POWER TROUBLE/ ALARM LED'S IN ONE PACKAGE. ONE PER DUCT DETECTOR REQUIRED. THE OWNER'S ALARM CONTRACTOR SHALL BE RESPONSIBLE TO MOUNT THE RESET SWITCH & TO CONNECT SIGNAL WIRE FOR SAME. REMOTE TEST/ RESET SWITCHES SHALL BE MOUNTED IN A POSITION MEETING THE REQUIREMENTS OF THE OWNER, & NOT MORE THAN 8' FROM THE FLOOR.
 - THERMOSTATS SHALL PROVIDE CONSTANT FAN DURING OCCUPIED PERIODS AND INTERMITTENT FAN DURING UNOCCUPIED PERIODS. ALL POWER WIRING SHALL BE BY THE ELECTRICAL CONTRACTOR.
 - ALL CONTROL WIRING BY M.C..
 - PROVIDE PHENOLIC LABEL ON ALL T-STATS & REMOTE SENSORS.
 - THE TYPICAL I KITCHEN HOODS ARE PROVIDED WITH THERMAL SENSORS THAT WILL AUTOMATICALLY ENERGIZE THE EXHAUST FAN & MAKE-UP AIR UNITS. THE HOOD SYSTEM SHALL BE ELECTRICALLY INTERLOCKED WITH HOOD CONTROLS TO ENERGIZE FANS, MAKE-UP AIR UNIT & FAN-ON OPERATION OF ROOF TOP UNITS BY AN INTERLOCK SWITCH. MAKE-UP AIR UNIT AND ROOFTOP UNITS SHALL SHUT DOWN UPON ACTIVATION OF THE HOOD FIRE SUPPRESSION SYSTEM.

ROOM SENSOR INSTALLATION:
A ROOM TEMPERATURE SENSOR IS PROVIDED WITH THE HOOD STARTER PANEL. IT SHOULD BE INSTALLED IN A SAFE LOCATION, FREE OF INFLUENCE FROM EXTERNAL HEAT SOURCES. IT SHOULD BE INDICATIVE OF THE AVERAGE KITCHEN TEMPERATURE AWAY FROM APPLIANCES. THIS SENSOR MUST BE WIRED BACK TO THE HOOD STARTER PACKAGE AS SHOWN ON THE STARTER PACKAGE WIRING DIAGRAM. WITH WIRE PROVIDED WITH THE STARTER PACKAGE.

DUCT SENSOR INSTALLATION:
THE HOOD STARTER TYPICALLY CONSISTS OF ONE DUCT SENSOR PER HOOD EXHAUST RISER. THESE SENSORS ARE TYPICALLY SHIPPED FACTORY INSTALLED IN FACTORY ASSEMBLED HOOD RISERS. A 2-WIRE PLENUM RATED THERMISTOR CABLE (18 GAUGE TYPICAL), RUN IN CONDUIT, SHOULD BE USED TO WIRE THE SENSORS BACK TO THE CONTROLLER AND LANDED ON CONNECTOR J10 AS INDICATED ON THE INSTALLATION SCHEMATIC. PLENUM WIRE IS TYPICALLY SUPPLIED WITH THE STARTER PACKAGE.

KITCHEN HOOD FIRE PROTECTION

KITCHEN HOOD FIRE PROTECTION SHALL BE AS INDICATED ON HOOD FIRE PROTECTION PLAN AND INTERLOCKED WITH THE EMERGENCY GAS VALVE IN THE LINE FEEDING THE GAS COOKING EQUIPMENT. THE EMERGENCY GAS VALVE SHALL FLOW TO EQUIPMENT UPON ACTIVATION OF THE HOOD FIRE PROTECTION SYSTEM.

O & M MANUALS

THE CONTRACTOR SHALL PROVIDE OPERATIONS AND MAINTENANCE MANUALS TO THE OWNER WITH-IN 90 DAYS OF SYSTEM ACCEPTANCE.

COMMISSIONING PLAN

- PROVIDE A COMMISSIONING PLAN DEVELOPED BY AN APPROVED AGENCY PER IECC C408.2.1 AND SHALL INCLUDE THE FOLLOWING:
- 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. AT A MINIMUM, TESTING SHALL AVOID WINTER AND SUMMER DESIGN CONDITIONS AND FULL OUTSIDE AIR CONDITIONS.
 - MEASURABLE CRITERIA FOR PERFORMANCE.

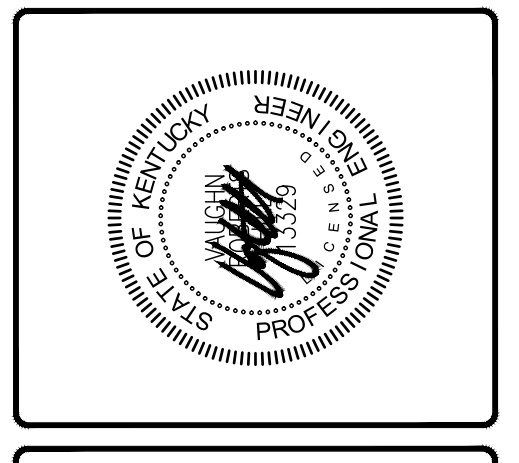
PRELIMINARY COMMISSIONING REPORT

- PROVIDE A PRELIMINARY COMMISSIONING REPORT SHALL BE COMPLETED AND CERTIFIED BY AN APPROVED AGENCY PER IECC C408.2.4 AND SHALL INCLUDE THE FOLLOWING:
- ITEMIZATION OF DEFICIENCIES FOUND DURING TESTING REQUIRED BY IECC SECTION C408 SYSTEM COMMISSIONING THAT HAVE NOT BEEN CORRECTED AT THE TIME OF REPORT PREPARATION.
 - DEFERRED TESTS THAT CANNOT BE PERFORMED AT THE TIME OF REPORT PREPARATION DUE TO CLIMATE CONDITIONS.
 - CLIMATIC CONDITIONS REQUIRED FOR PERFORMANCE OF THE DEFERRED TESTS.

FINAL COMMISSIONING REPORT

- PROVIDE A FINAL COMMISSIONING REPORT SHALL BE COMPLETED AND CERTIFIED BY AN APPROVED AGENCY PER IECC C408.2.5 WHICH SHALL BE DELIVERED TO THE OWNER AND SHALL INCLUDE THE FOLLOWING:
- RESULTS OF FUNCTIONAL PERFORMANCE TESTS.
 - DISPOSITION OF DEFICIENCIES FOUND DURING TESTING, INCLUDING DETAILS OF CORRECTIVE MEASURES USED OR PROPOSED.
 - FUNCTIONAL PERFORMANCE TEST PROCEDURES USED DURING THE COMMISSIONING PROCESS, INCLUDING MEASURABLE CRITERIA FOR TEST ACCEPTANCE, PROVIDED HEREIN FOR REPEATABILITY.
- THE EXCEPTION WILL BE DEFERRED TESTS WHICH CANNOT BE PERFORMED AT THE TIME OF THE REPORT PREPARATION DUE TO CLIMATE CONDITIONS.

Stonks GARAGE
PRIME BURGERS | CRAFT BEER
4911 HOUSTON ROAD
FLORENCE, KY 41042



The Roberts Group PC
930C Southland Drive - Lexington, KY 40503
659-276-2006 | 659-276-2901 | Fax: 659-276-2006

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PLAN DATE:	06-20-22
PROJECT NUMBER:	22091
BUILDING TYPE:	TENANT FIT-UP
DRAWN BY:	TRG

LS DESIGN GROUP PLLC
LONNIE SMITH ARCHITECT
phone 659.624.3755
fax 659.624.3745
12130 Lexington Road, Suite H
Richmond, KY 40475

MECHANICAL NOTES
M4.1

HOOD INFORMATION - JOB#5382644

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX CEILING TEMP	TYPE	APPLIANCE RVTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM (DISKS)				TOTAL SUPPLY CFM	HOOD CONSTRUCTION	HOOD END TO END ROW	
										WIDTH	LENGTH	DIA	VEL				
1	KS12 (Dish)	5430 VHB-G-ND	CAPTIVEAIRE	8' 0"	700 DEG	II	N/A	100	800	4"	10"	400	733	-0.040"	0	304 SS	ALONE
2	KS14 (Main left)	6030 ND-2-PSP-F	CAPTIVEAIRE	13' 3"	600 DEG	I	HEAVY	242	3200	4"	18"	3200	1811	-1.064"	2475	430 SS	LEFT
3	KS14 (Main right)	6030 ND-2-PSP-F	CAPTIVEAIRE	12' 0"	600 DEG	I	HEAVY	242	2900	4"	18"	2900	1641	-0.890"	2425	430 SS	RIGHT
4	KS19 (Prep)	6030 ND-2	CAPTIVEAIRE	8' 0"	600 DEG	I	HEAVY	197	1575	4"	14"	1575	1473	-0.524"	0	430 SS	ALONE

HOOD INFORMATION

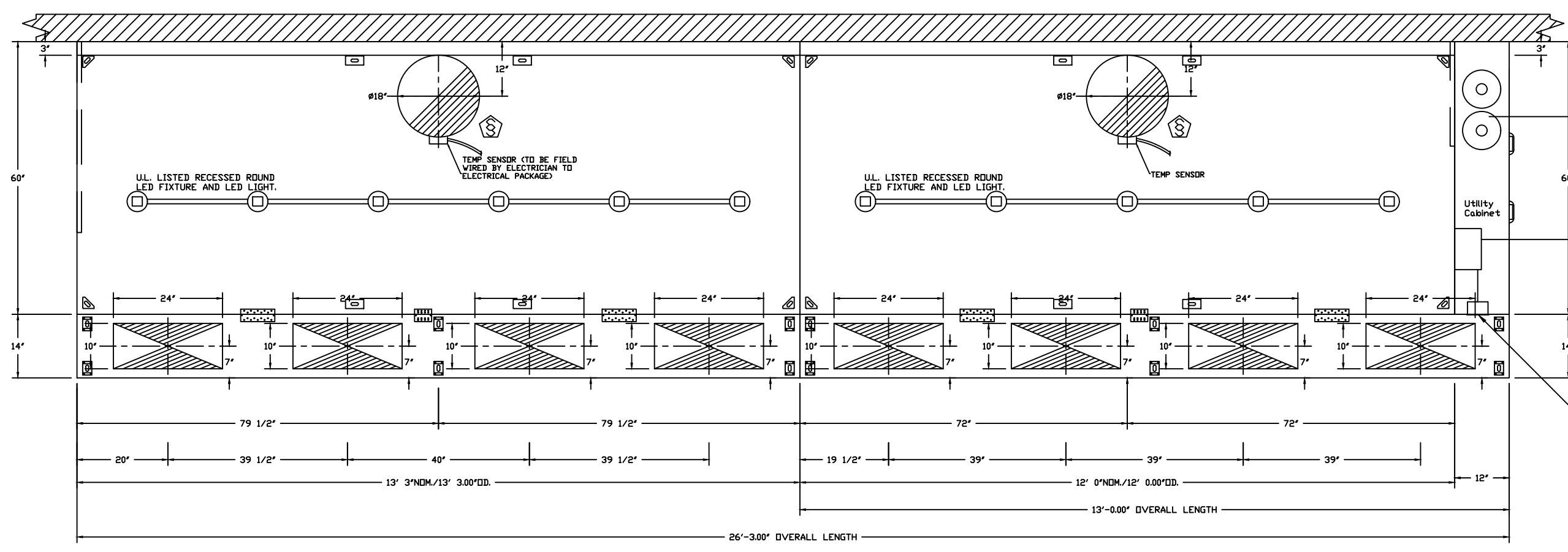
HOOD NO	TAG	TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	QTY	WIRE GUARD	LOCATION	SIZE	UTILITY CABINET(S)			FIRE SYSTEM	HOOD HANGING WEIGHT		
											TYPE	SIZE	MIDEL #				
1	KS12 (Dish)						0							NO	331 LBS		
2	KS14 (Main left)	CAPTRATE SOLID FILTER	10	20"	16"	85% SEE FILTER SPEC	6	RECESSED ROUND	ND					YES	869 LBS		
3	KS14 (Main right)	CAPTRATE SOLID FILTER	9	20"	16"	85% SEE FILTER SPEC	5	RECESSED ROUND	ND	RIGHT	18"x60"x30"	TANK FS	4.0/4.0	DCV-3111	1 LIGHT 1 FAN	YES	1084 LBS
4	KS19 (Prep)	CAPTRATE SOLID FILTER	5	20"	16"	85% SEE FILTER SPEC	3	RECESSED ROUND	ND	LEFT	18"x60"x30"				YES	611 LBS	

PERFORATED SUPPLY PLENUM(S)

HOOD NO	TAG	POS	LENGTH	WIDTH	HEIGHT	TYPE	DISKS			
							WIDTH	LENG	DIA	CFM
2	KS14 (Main left)	Front	159"	14"	6"	MUA	10"	24"	618	0.250"
							10"	24"	618	0.250"
3	KS14 (Main right)	Front	156"	14"	6"	MUA	10"	24"	618	0.250"
							10"	24"	618	0.250"

HOOD OPTIONS

HOOD NO	TAG	FIELD WRAPPER	FRONT, LEFT, RIGHT	OPTION
2	KS14 (Main left)	FIELD WRAPPER 18.00" HIGH	FRONT, LEFT.	
3	KS14 (Main right)	LEFT WIDE VERTICAL END PANEL	42" TOP WIDTH, 36" BOTTOM WIDTH, 80" HIGH	INSULATED 430 SS
		RIGHT WIDE VERTICAL END PANEL	42" TOP WIDTH, 36" BOTTOM WIDTH, 80" HIGH	INSULATED 430 SS
4	KS19 (Prep)	FIELD WRAPPER 18.00" HIGH	FRONT, LEFT, RIGHT.	
		LEFT QUARTER END PANEL	23" TOP WIDTH, 0" BOTTOM WIDTH, 23" HIGH	430 SS

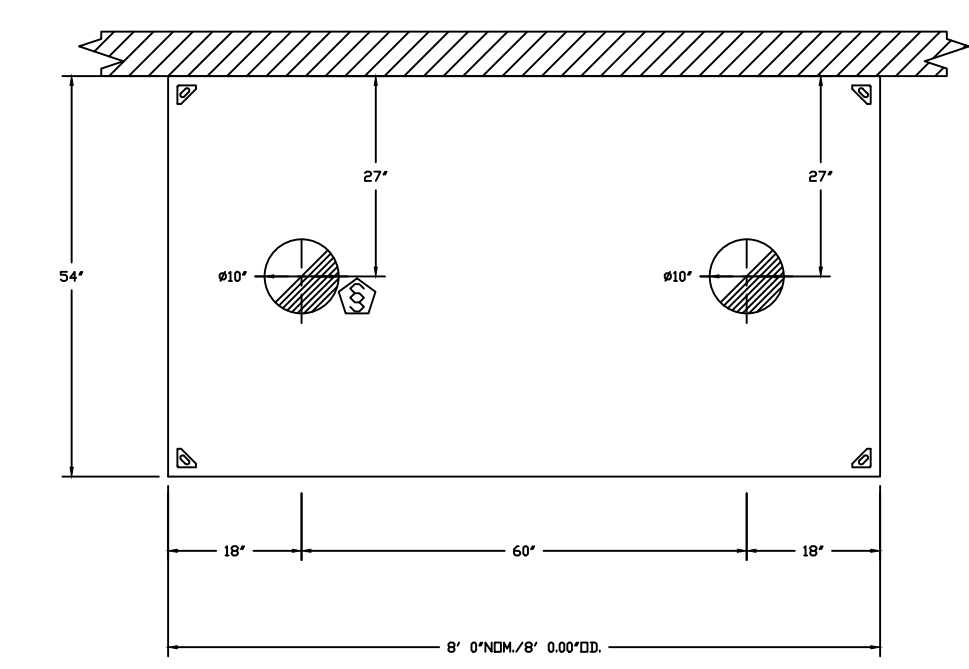


PLAN VIEW - HOOD #2 (KS14 (Main left))
13'-3.00\"/>

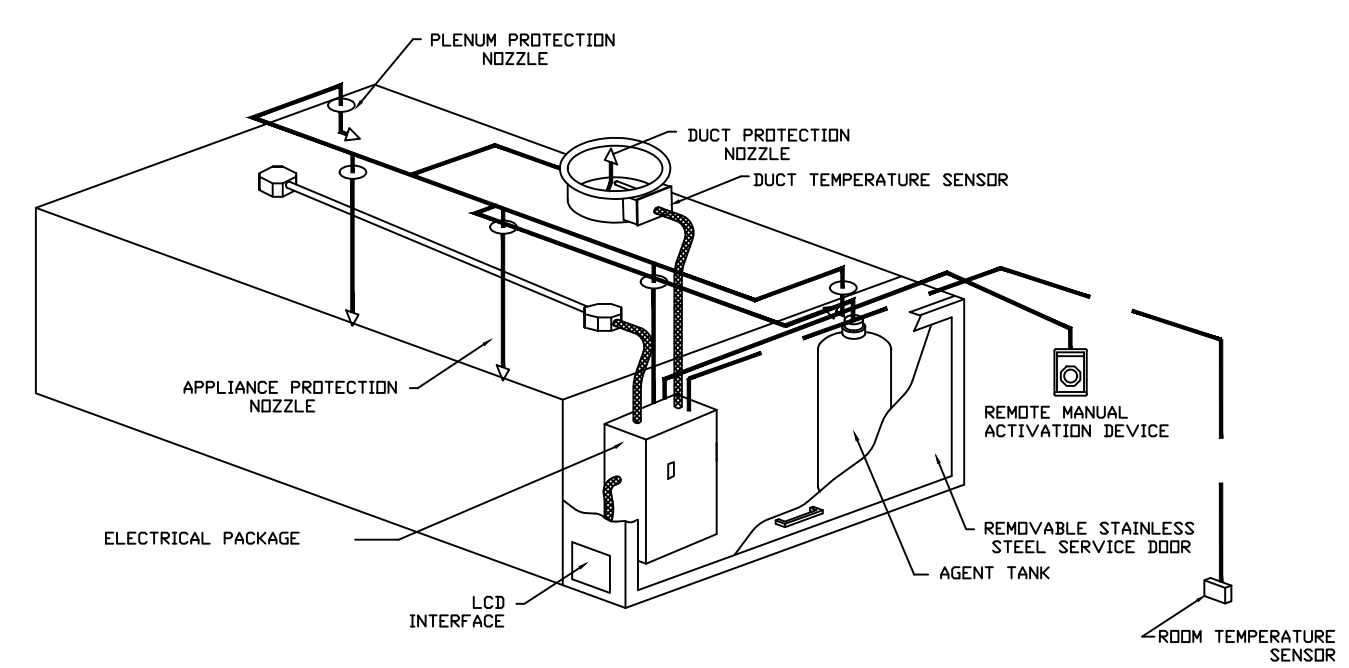
PLAN VIEW - HOOD #3 (KS14 (Main right))
12'-0.00\"/>



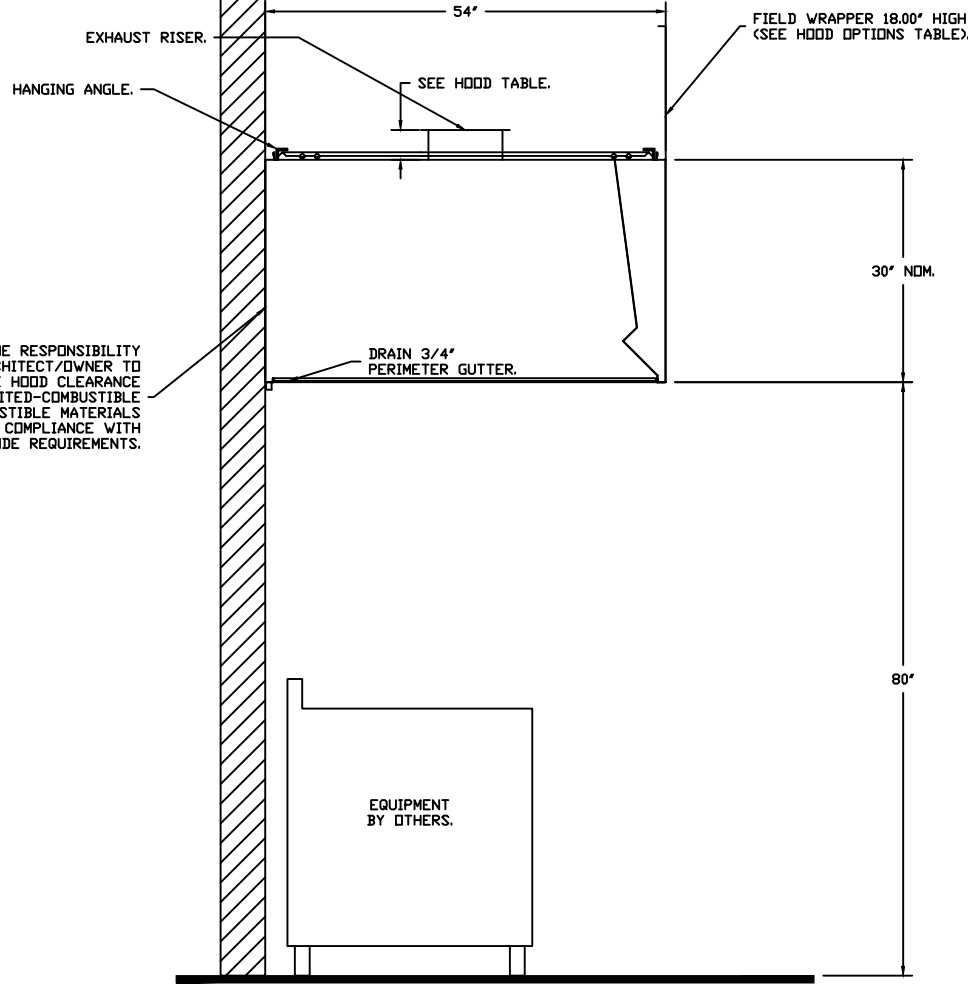
TOUCH-SCREEN USER INTERFACE



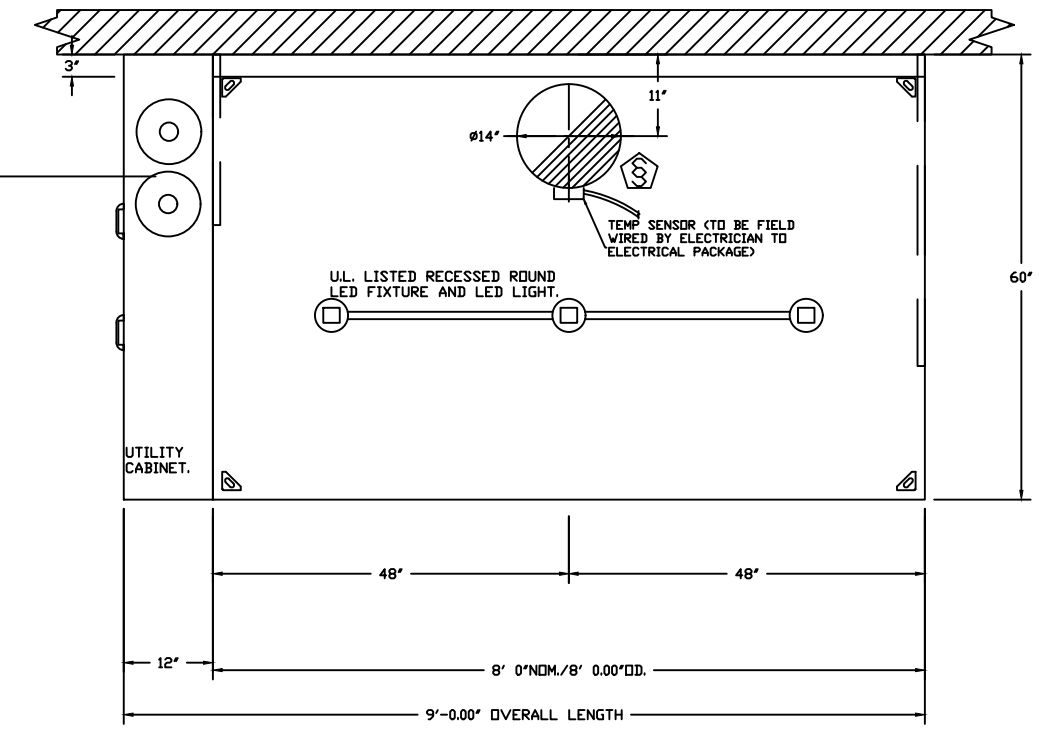
PLAN VIEW - HOOD #1 (KS12 (Dish))
8'-0.00\"/>



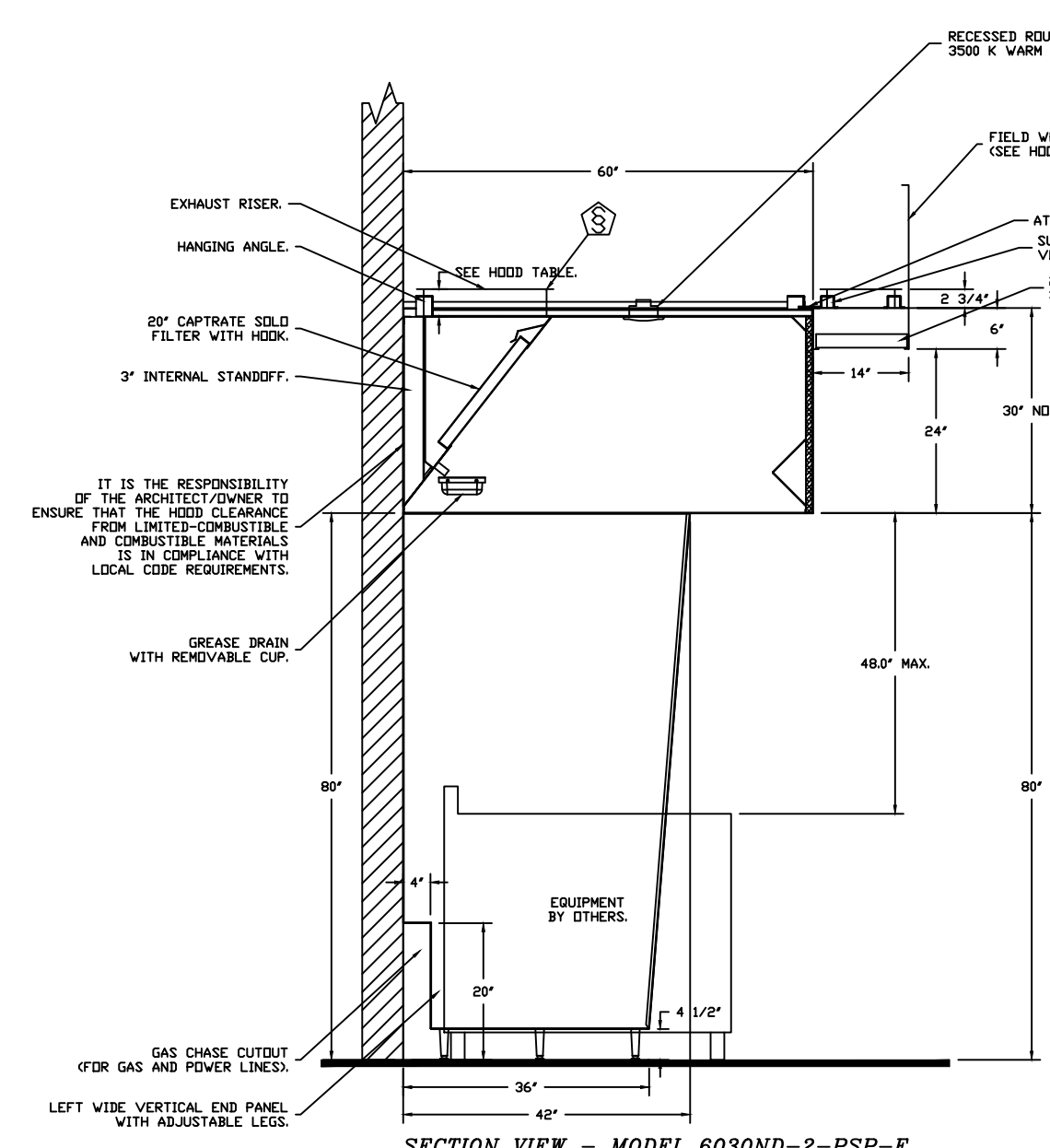
TYPICAL UL-300 FIRE SYSTEM LAYOUT
TYPICAL HOOD CONTROL PANEL INSTALLATION



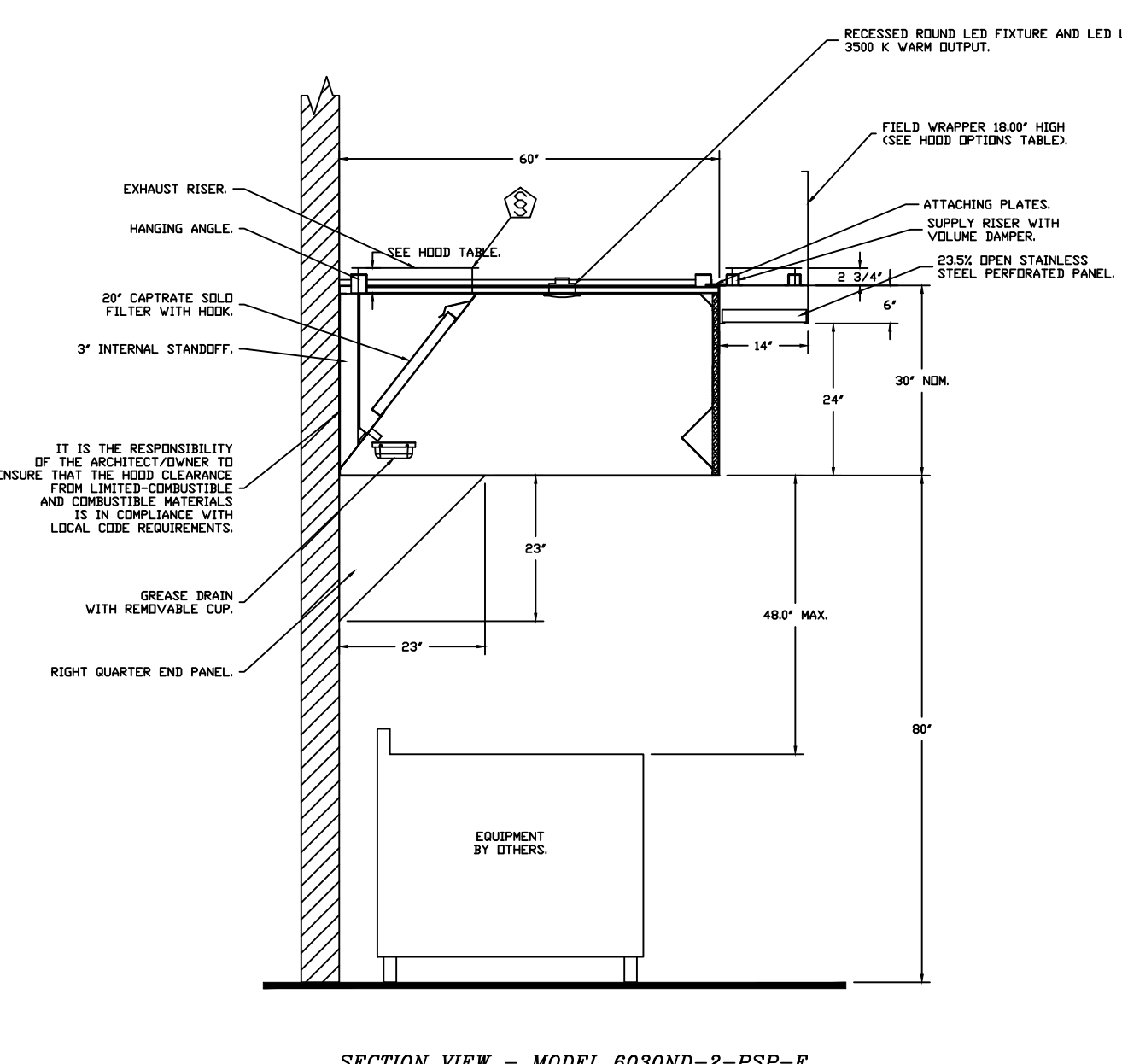
SECTION VIEW - MODEL 5430VHB-G-ND
HOOD - #1 (KS12 (Dish))



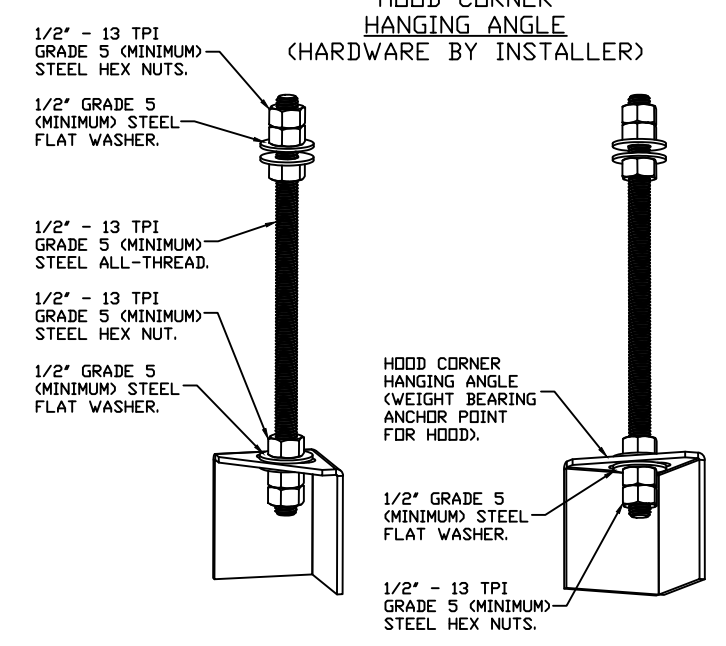
PLAN VIEW - HOOD #4 (KS19 (Prep))
9'-0.00\"/>



SECTION VIEW - MODEL 6030ND-2-PSP-F
HOOD - #2 (KS14 (Main left))

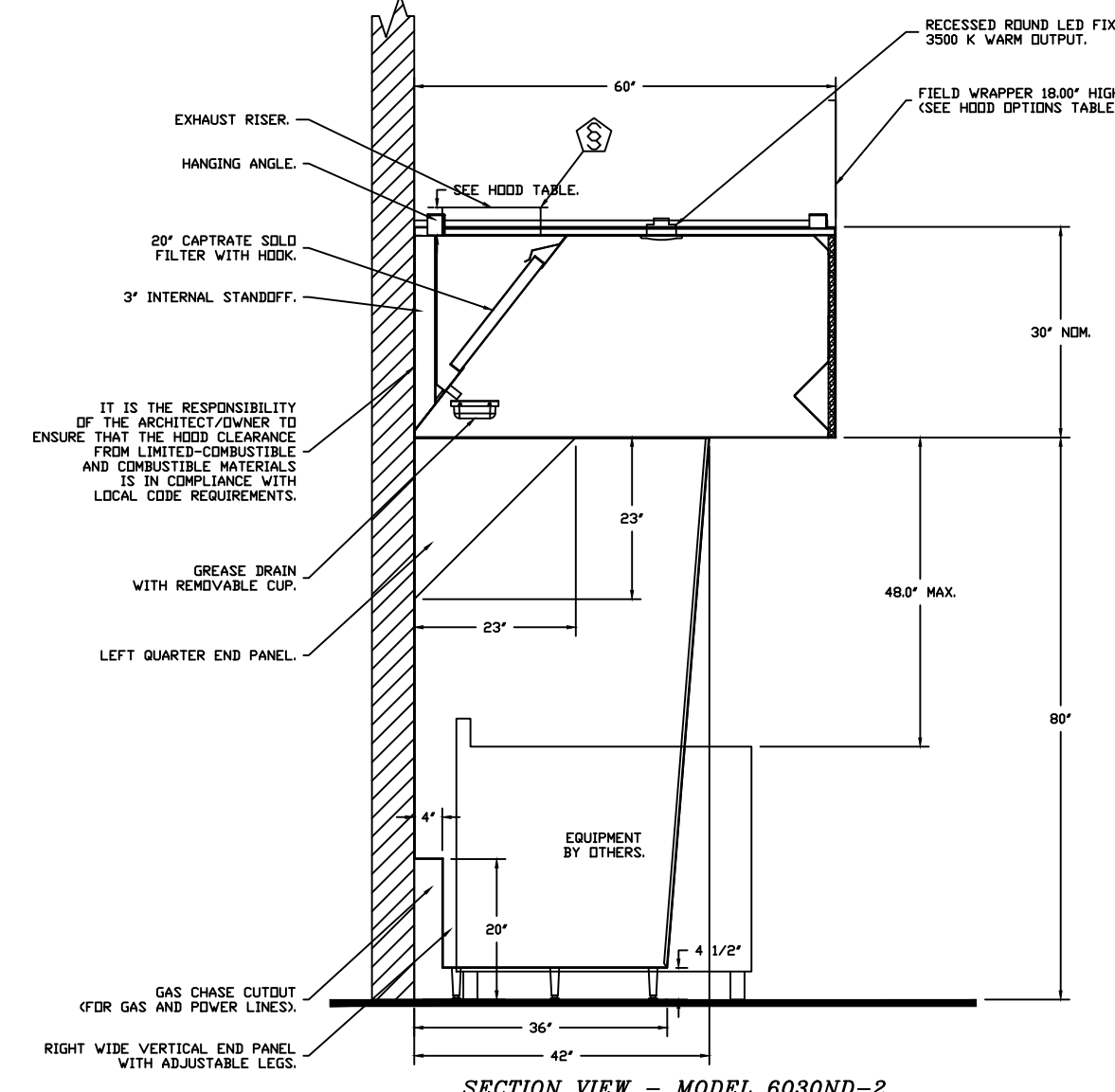


SECTION VIEW - MODEL 6030ND-2-PSP-F
HOOD - #3 (KS14 (Main right))



ASSEMBLY INSTRUCTIONS

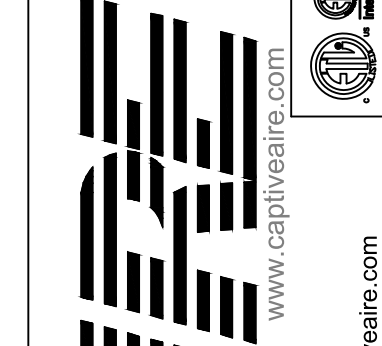
HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION BENEATH HOOD HANGING ANGLES AND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



SECTION VIEW - MODEL 6030ND-2
HOOD - #4 (KS19 (Prep))

REVISIONS

NO	DESCRIPTION	DATE
1	Revised DWG's	6/1/22

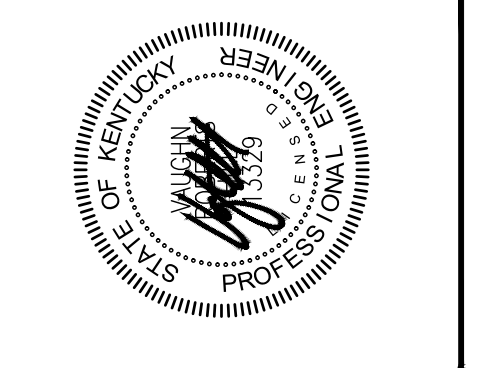


CAPTIVE

Ford's Garage - Florence, KY
4911 Houston Rd,
Florence, KY, 41042

DATE: 3/7/2022
DWG.#: 5362644
DRAWN BY: Dan Luddy
SCALE: 1/2" = 1'-0"
MASTER DRAWING

SHEET NO. 1



The Roberts Group
PSC
930 C Southland Drive - Lexington, KY 40503
859-276-2066 | 859-276-2901 Facsimile

PLAN DATE:	06-20-22
PROJECT NUMBER:	22091
BUILDING TYPE:	TENANT FIT-UP
DRAWN BY:	TRG

DATE:	3/7/2022
DWG.#:	5362644
DRAWN BY:	Dan Luddy
SCALE:	1/2" = 1'-0"
MASTER DRAWING	

LS DESIGN GROUP PLLC
LONNIE SMITH ARCHITECT
phone 859.624.3755
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2130 Lexington Road, Suite H
Richmond, KY 40475

HOODS AND EXHAUST DETAILS
M5.1

GREASE DUCT & CHIMNEY SPECIFICATIONS:
 PROVIDE GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW"
 ROUND 20 GAUGE 430 STAINLESS STEEL DUCTWORK. MODEL "DW"
 IS LISTED TO UL-1978 AND IS INSTALLED USING "V" CLAMP LOCKING
 CONNECTIONS SEALED WITH 3M FIRE BARRIER 2000 PLUS. MODEL "DW"
 DOES NOT REQUIRE WELDING PROVIDING IT HAS BEEN INSTALLED PER
 THE MANUFACTURER'S INSTALLATION GUIDE.
 PROVIDE RATED ACCESS DOORS AT EVERY CHANGE IN DIRECTION AND EVERY 12' ON CENTER.
 PER MANUFACTURER'S LISTING MODEL "DW" HORIZONTAL RUNS LESS THAN 75 FT. CAN BE
 SLOPED 1/16" PER 12", HORIZONTAL RUNS MORE THAN 75 FT. CAN BE SLOPED 3/16" PER 12".
 DUCT SHOULD BE SLOPED AS MUCH AS POSSIBLE TO REDUCE THE CHANCE OF GREASE
 ACCUMULATION IN HORIZONTAL RUNS.

IF THE DUCT OR CHIMNEY IS WITHIN 18 INCHES OF COMBUSTIBLE MATERIAL, PROVIDE
 UL-2221 OR UL-103 HT LISTED DOUBLE WALL GREASE DUCT OR DOUBLE WALL CHIMNEY
 EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW- 2R, 2R TYPE HT, 3R, OR 3Z" ROUND 20 GAUGE
 430 STAINLESS INNER DUCT INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL.

CAPTIVEAIRE SYSTEMS RECOMMENDS THE USE
 OF LISTED, PRE-FABRICATED ROUND GREASE
 EXHAUST DUCT TO REDUCE STATIC PRESSURE
 IN THE SYSTEM, MINIMIZE INSTALLATION AND
 INSPECTION TIMES, AND ENSURE DUCT IS
 LIQUID TIGHT

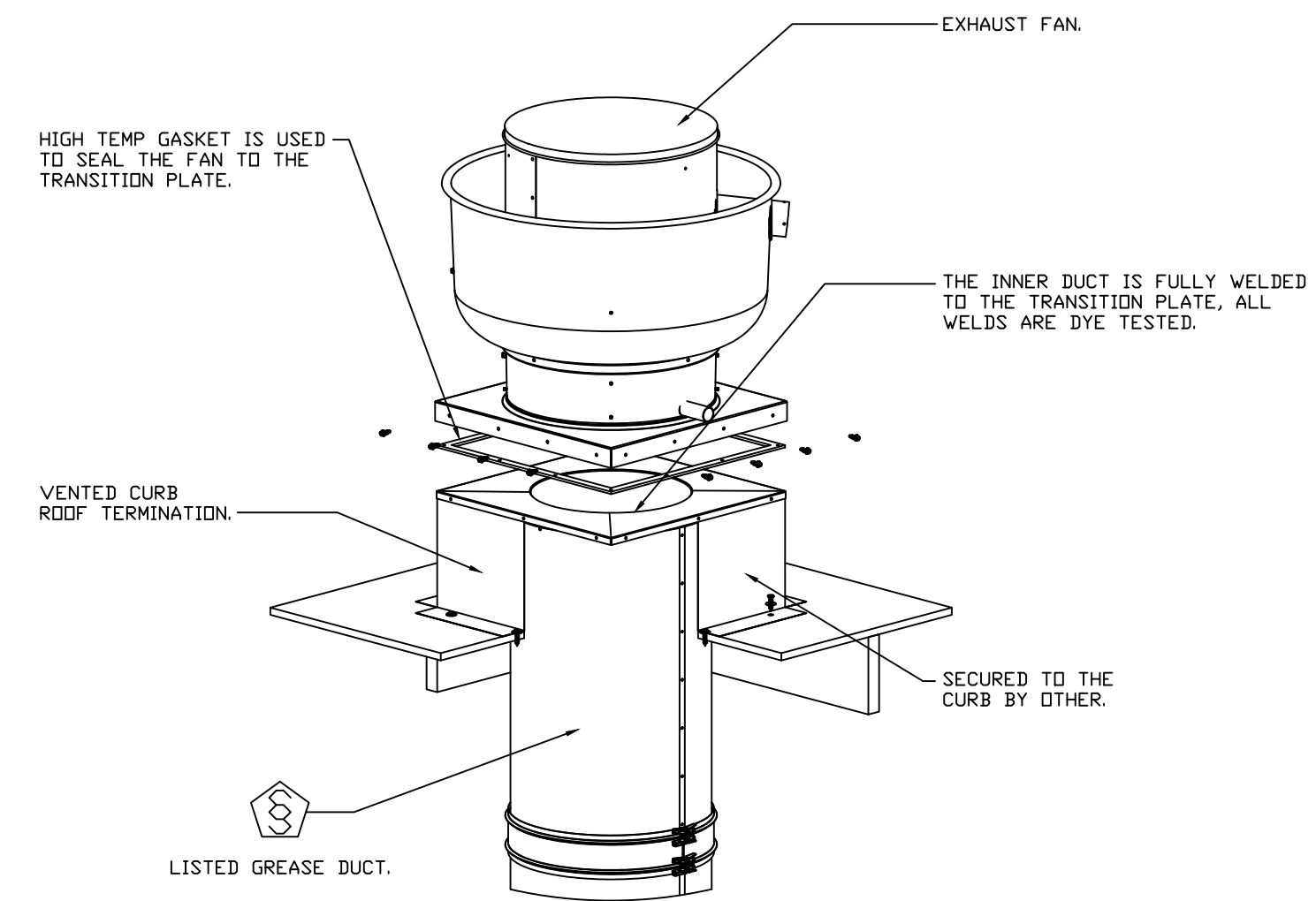
HVAC DISTRIBUTION NOTE
 HIGH VELOCITY DIFFUSERS OR HVAC RETURNS
 SHOULD NOT BE PLACED WITHIN TEN (10) FEET
 OF THE EXHAUST HOOD. PERFORATED
 DIFFUSERS ARE RECOMMENDED.

SYSTEM DESIGN VERIFICATION (SDV)

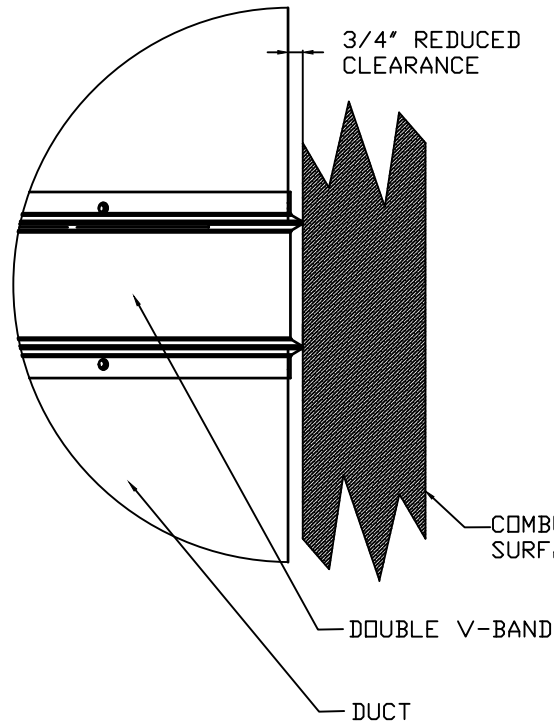
IF ORDERED, CAS SERVICE WILL PERFORM A SYSTEM DESIGN VERIFICATION (SDV) ONCE ALL
 EQUIPMENT HAS HAD A COMPLETE START UP PER THE OPERATION AND INSTALLATION MANUAL.
 TYPICALLY, THE SDV WILL BE PERFORMED AFTER ALL INSPECTIONS ARE COMPLETE.

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.

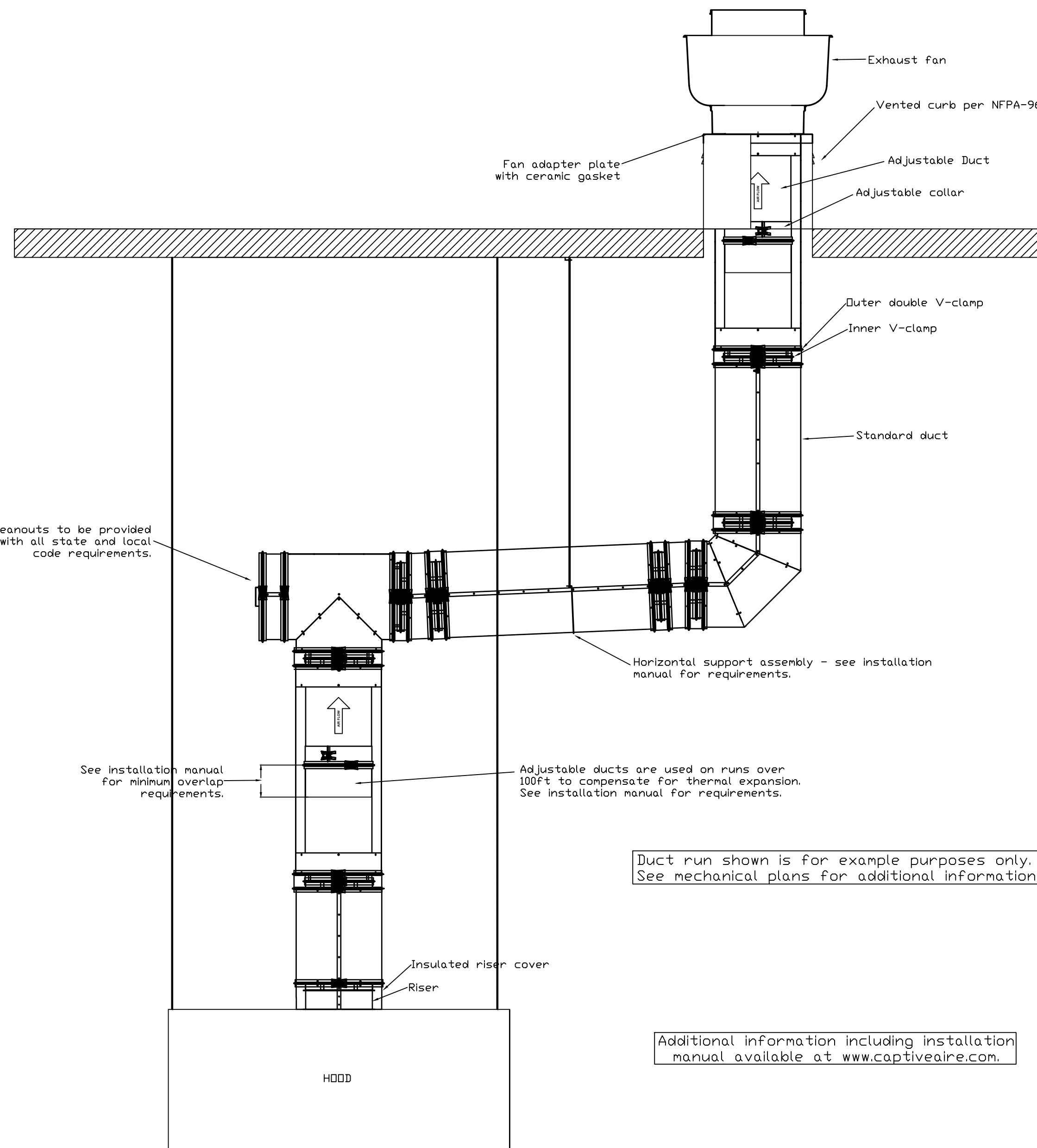


**REDUCED CLEARANCE
 DETAIL**



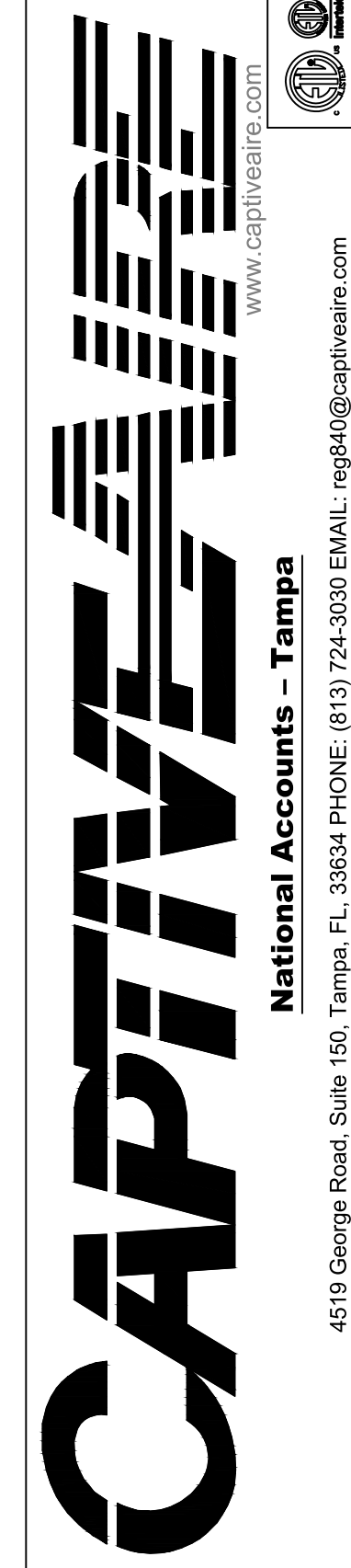
FACTORY BUILT DOUBLE WALL GREASE DUCT MODEL DW-2R SPECIFICATION
 FURNISH DOUBLE WALL, FACTORY BUILT GREASE DUCT FOR USE WITH TYPE I KITCHEN
 HOODS WHICH CONFORMS TO THE REQUIREMENTS OF NFPA-96. PRODUCTS SHALL BE ETL
 LISTED TO UL-1978 AND UL-2221 FOR VENTING AIR AND GREASE VAPORS FROM
 COMMERCIAL COOKING OPERATION. TESTING HAS BEEN EXTENDED TO RECORDED ASTM E2334
 AND ACID DUE TO SIMILAR TESTING CRITERIA. MODELS DW-2R, 2R AND 3Z ARE USED FOR
 GREASE DUCT APPLICATIONS. WHEN INSTALLED IN ACCORDANCE WITH THESE INSTRUCTIONS
 AND 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
 20 GA. THICK, 430 TYPE STAINLESS STEEL AND BE AVAILABLE IN DIMENSIONS 8"
 THROUGH 36". THE OUTER WALL SHALL BE CONSTRUCTED OF STAINLESS STEEL AT A
 MINIMUM OF 20 GA THICKNESS. THE DUCT BASED ON HOUL NUMBER SHALL INCLUDE
 LAYERS OF SUPER WOOL 607 PLUS INSULATION BETWEEN THE INNER AND OUTER WALL.
 GREASE DUCT JOINTS SHALL BE HELD TOGETHER BY MEANS OF FORMER V CLAMPS AND
 SEALED WITH 3M FIRE BARRIER 2000+. THE DUCT WALL ASSEMBLY SHALL BE TESTED 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 7.11
 REFERENCES TWO INSTALLATION CONDITIONS, CONDITION A AND CONDITION B. CONDITION A
 REPRESENTS ALL INSTALLATION CONDITIONS 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 AS AN ALTERNATE TO 2-HR FIRE RESISTIVE
 CHIMNEY ENCLOSURES WITH A REDUCED CLEARANCE TO COMBUSTIBLES ODDS BY 10"
 DIMENSION. MODEL 2R IS LISTED IN ACCORDANCE WITH THE REQUIREMENTS FOR DUCT
 ENCLOSURE, CONDITION B.
 MODEL DW-2R 3/4" CLEARANCE TO COMBUSTIBLES FROM THE SURFACE OF THE DUCT OUTER
 SHELL. ZERO INCH CLEARANCE FROM COMBUSTIBLES FROM THE TIP OF THE OUTER V
 BAND.
 DOUBLE WALL GREASE DUCT SHALL BE INSTALLED IN ACCORDANCE WITH THE
 MANUFACTURER'S "INSTALLATION, OPERATION AND MAINTENANCE MANUAL," ETL LISTING,
 STATE AND LOCAL CODES. FANS SHALL BE SUPPORTED INDEPENDENTLY FROM THE GREASE
 DUCT SECTIONS. PROTECT GREASE DUCT FROM TWISTING OR MOVEMENT CAUSED BY FAN
 TORQUE OR VIBRATION.
CERTIFICATIONS:
 THE DW-2R SERIES HAS BEEN CERTIFIED BY ITS. THIS CERTIFICATION MARK INDICATES
 THAT THE PRODUCT HAS BEEN TESTED TO AND HAS MET THE MINIMUM REQUIREMENTS OF A
 WIDELY RECOGNIZED CONSENSUS U.S. AND CANADIAN PRODUCTS SAFETY STANDARD. THAT
 THE MANUFACTURING SITE HAS BEEN AUDITED AND THAT THE APPLICANT HAS AGREED TO A
 PROGRAM OF PERIODIC FACTORY FOLLOW-UP INSPECTIONS TO VERIFY CONTINUED
 COMPLIANCE.

2R



REVISIONS

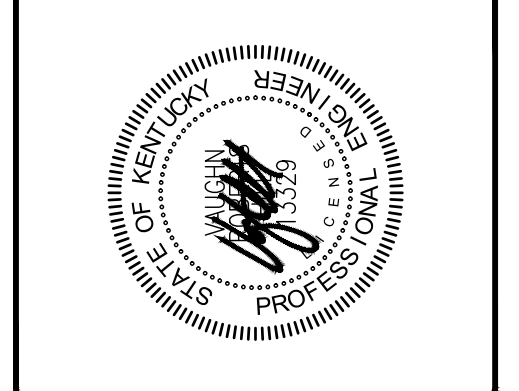
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Ford's Garage - Florence, KY
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PLAN DATE: 06-20-22
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LONNIE SMITH ARCHITECT
 phone 859.624.3755
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 12130 Lexington Road, Suite H
 Richmond, KY 40475

**HOODS AND
 EXHAUST
 DETAILS**
M5.5