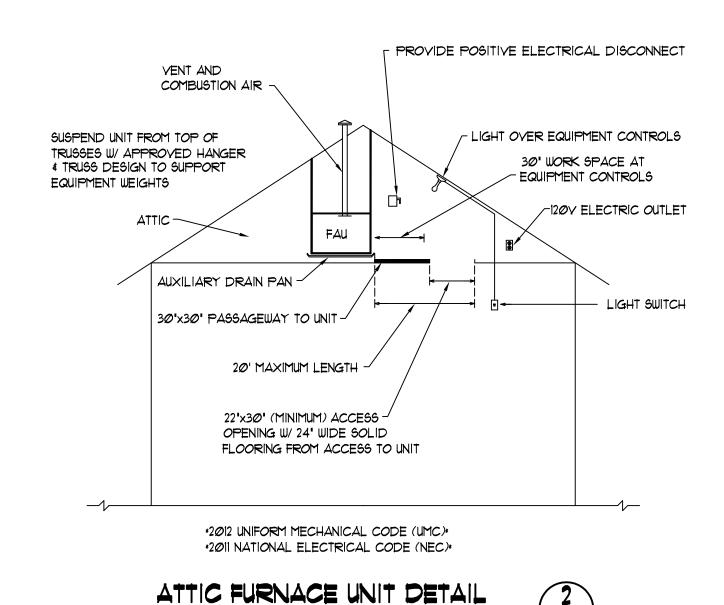
RETURN AIR W/ OA CONNECTION *2012 UNIFORM MECHANICAL CODE AND ASHRAE 62.2 WHOLE-BUILDING VENTILATION CALCULATION: <u>FAU-1/2</u> (2+1)(7.5) = 22.5 CFM (747 SF)(0.01) = 7.5 CFMTOTAL = 30 CFM (5" DUCT) <u>FAU-3/4</u> (2+1)(7.5) = 22.5 CFM (798 SF)(0.01) = 8 CFMTOTAL = 31 CFM (5" DUCT) <u>FAU-5/6</u> (1+1)(7.5) = 15 CFM

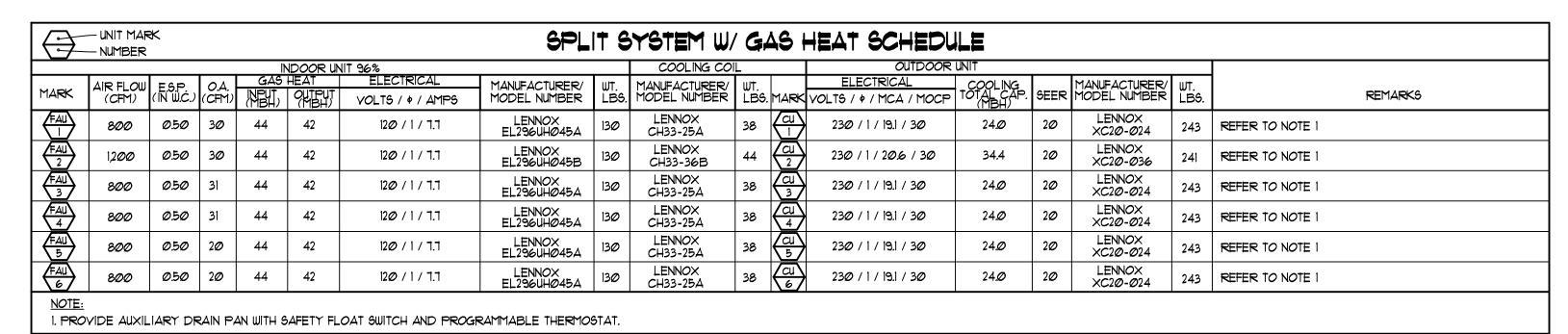
(524 SF)(0.01) = 5 CFM

NO SCALE

TOTAL = 20 CFM (5" + DUCT)

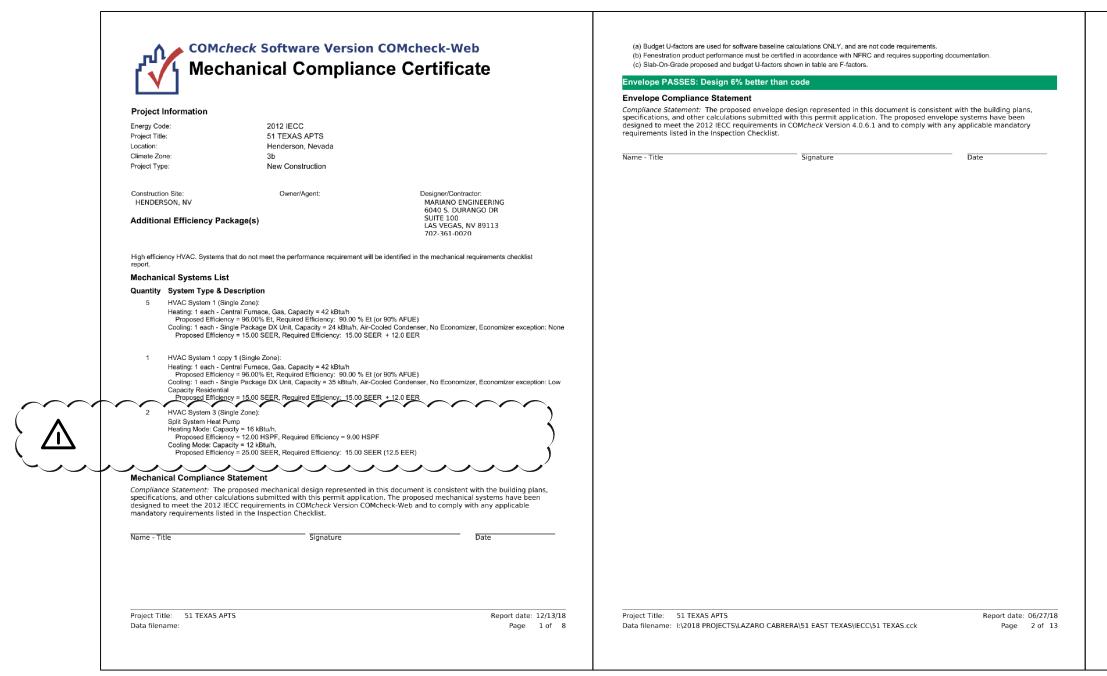


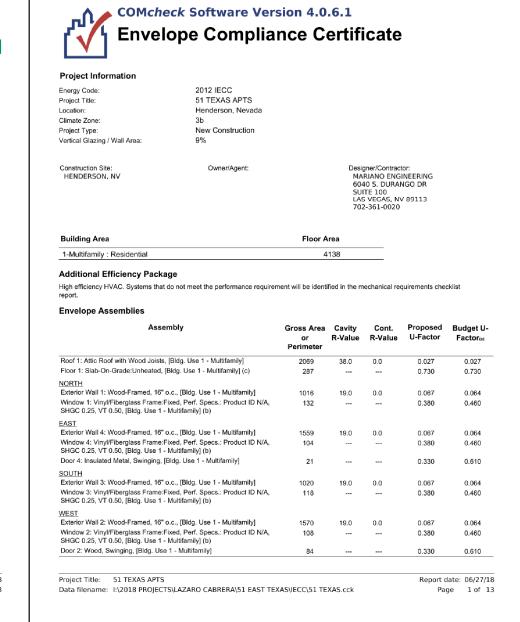
M-001



| | | | | | ESS SPLIT SYSTEM UNIT SCHEDULE (FIRE RISER) | | | | | | | | | | |
|------|----------------|---------------|--|---------------------------|---|---|--|---------------------------------------|---|------|-------------------------------|------|--------|---|----------------|
| MARK | AIR FLOW (CFM) | 0,A. (CFM) | DOOR UNIT ELECTRICAL VOLTS / \$ / MCA / MOCP | OPER. WEIGHT (LBS.) | ELECTRIC HEAT (KW) | MANUFACTURER/ MODEL NUMBER (OR EQUAL) | MARK | ELECTRICAL VOLTS / \$ / MCA / MOCP | OOR UNIT COOLING TOTAL CAP. BTUH | SEER | HEATING TOTAL CAP. BTUH | HSPF | WEIGHT | MANUFACTURER/ MODEL NUMBER (OR EQUAL) | REMARKS |
| | 419 | | 208-230 / 1 / - | 24 | | FUJITSU ASUI2RLS | 0u\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | 208-230 / 1 / 10 / 15 | 12,000 | 25 | 16,000 | 12 | 88 | FUJITSU AOUI2RLS | REFER TO NOTES |

| UNIT MARK NUMBER | | | | | | exhaust fan schedule | | | | | | | |
|------------------|---------------|-----------------|--------|-----|-----------|----------------------|-------------|-------------|-------|---------------|------|---|--|
| | MANUFACTURER | | | | S.P IN | | MAX | ELECTRICAL | | WEIGHT | | | |
| MARK | AND MODEL # | TYPE | DRIVE | CFM | W.G. | FAN RPM | SONES | V / PH / HZ | - | CONTROLLED BY | | REMARKS | |
| EF 1 | BROAN XB8Ø | CABINET CEILING | DIRECT | 80 | Ø.15 | | <i>0</i> .3 | 120/1/60 | Ø.3 A | SWITCH | 12.5 | PROVIDE BACKDRAFT DAMPER, ROOF CAP OR WALL CAP W/ BIRD SCREEN AND VENT TO EXTERIOR | |
| l | | | I | | | | | | | | | | |





(816) 761-7476 • FAX (816) 765-8955

CEILING PENETRATIONS

Ceiling penetrations should be located between adjacent truss and RC or Furring channels. If required, a maximum of one RC or Furring channel may be cut or notched to enable proper damper location. The clearance between the damper assembly, and the

FASTENERS

Support Angle to Damper: minimum of two #8 sheet metal screws, 3/16" (4) tubular rivets, tack or spot-welds per angle.

Support Angle to Truss: minimum of #8 x 3/4" long screw or #6 penny nail 1" long (25).

Grill/Diffuser frame to damper: minimum of two #8 x 11/4" (32)

Retaining Angle to Plaster Flange or Sub-frame: minimum of #8 x 11½* (32) mm. screws through the ceiling material and into the plaster flange or sub-frame. One screw per side required on units 10° (254) long and under, and two screws per side on units above 10° (254) long. Round units maximum of 3 screws required.

Make sure fasteners do not interfere with the damper opera-

SEE COMPLETE MARKING ON PRODUCT

California State Fire Marshal Listing No. 3226-0245:0123

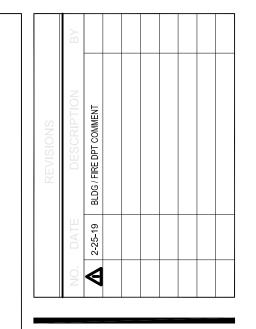
MECHANICAL SPECIFICATIONS

- HYAC SYSTEM INSTALLATION(S) SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES AND ORDINANCES. IF CONFLICTS ARE FOUND BETWEEN CODE REQUIREMENTS, THE MORE STRINGENT SHALL COMPLY. IF CONFLICTS ARE FOUND BETWEEN THE CODE REQUIREMENTS AND THE HYAC PLANS, THE CODE SHALL TAKE PRECEDENCE.
- 2. ALL DUCTS SHALL BE INSTALLED PER THE UNIFORM MECHANICAL CODE.
- 3. ALL DUCTS PENETRATING FIRE SEPARATIONS SHALL BE INSTALLED PER CODE (I.E.: FIRE DAMPERS, UL-LISTED PENETRATIONS, ETC.)
- 4. PROVIDE ATTIC ACCESS(ES), ATTIC LIGHT(S), COMBUSTION AIR, AND VENTING TO GAS APPLIANCES AS REQUIRED BY CODE.
- 5. HVAC SYSTEM EQUIPMENT SHALL BE INSTALLED, PER MANUFACTURERS RECOMMENDATIONS AND REQUIREMENTS.
- 6. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL BUILDING CONDITIONS FOR THE HYAC SYSTEM INSTALLATION. MECHANICAL PLANS AND SYSTEM DESIGN ARE BASED ON SPECIFIC ARCHITECTURAL PLANS. ARCHITECTURAL CHANGES OR MODIFICATIONS MAY RESULT IN SYSTEM PROBLEMS AND/OR CONFLICTS. CONTRACTOR SHALL IMMEDIATELY NOTIFY BUILDER OF THESE PROBLEMS AND/OR CONFLICTS FOR REVIEW AND RESOLUTION.
- LINE RECTANGULAR SUPPLY AND RETURN AIR DUCT PLENUMS, UNLESS OTHERWISE INDICATED, WITH R-8 DUCT LINER. LINER TO BE ATTACHED TO DUCT USING CODE APPROVED ADHESIVE AND/OR MECHANICAL FASTENERS.
- 8. ALL ROUND SUPPLY AND RETURN AIR DUCT TO BE INSULATED WITH LOW DENSITY, FOIL-FACED WRAP (MINIMUM R-8.0), UNLESS OTHERWISE ALLOWED BY CODE.
- 9. ALL FLEXIBLE DUCT SHALL BE INSULATED (MINIMUM R-8), UNLESS OTHERWISE ALLOWED BY CODE, WITH PLASTIC VAPOR BARRIER AT THE INTERIOR AND EXTERIOR STEEL WIRE COIL REINFORCEMENTS. BAND CLAMP AND TAPE SEAL ALL JOINTS TO MAINTAIN VAPOR BARRIER INTEGRITY. FLEXIBLE DUCT AND DUCT SYSTEMS SHALL COMPLY WITH UL-181.
- 10. ALL RECTANGULAR SUPPLY AND RETURN AIR DUCT TO BE INSULATED WITH DUCT WRAP WITH A YAPOR-PROOF JACKET OF ALUMINUM FOIL OR OTHER APPROVED UL-LABELED FOIL TYPE (MINIMUM R-8), UNLESS OTHERWISE ALLOWED BY CODE. ALL JOINTS AND LAPS TO BE SECURED WITH STAPLES AND COVERED WITH APPROVED METALLIC DUCT TAPE
- 11. EXHAUST DUCT SHALL NOT BE INSULATED.
- 12. INSTALL AND SUPPORT FLEXIBLE DUCT TO PREVENT SAGGING AND PINCHING. KEEP DUCT LENGTHS TO A MINIMUM (PER THE DRAWINGS).
- 13. PROVIDE FLEXIBLE DUCT CONNECTIONS AT ALL AIR MOVEMENT EQUIPMENT AND WHEN INDICATED, ATTIC MOUNTED A/C EQUIPMENT.
- 14. PROVIDE VIBRATION ISOLATION FOR ALL ROOF MOUNTED A/C
- EQUIPMENT AND WHEN INDICATED, ATTIC MOUNTED A/C EQUIPMENT. 15. RUN 3/4" CONDENSATE LINE FROM THE COOLING COIL(S) TO BUILDING EXTERIOR AUXILIARY CONDENSATE DRAIN TO TERMINATE AT ENTRY, ABOVE
- EXTERIOR DOOR OR WINDOW. IDENTIFY AUXILIARY DRAIN TERMINATION(S) AND ADVISE BUILDING OWNER THAT WATER DRIPPING FROM THESE FROM THESE LOCATIONS MAY INDICATE CLOGGED MAIN DRAIN(S).
- 16. INSULATE ALL SUCTION LINES WITH MINIMUM OF 3/4" ELASTOMERIC FOAM ARMAFLEX (OR EQUAL). TREAT ALL EXPOSED LINES WITH ARMAFLEX FINISH (OR EQUAL).
- 17. TEST AND BALANCE SYSTEM AIR FLOWS TO EACH DUCT, GRILLE AND REGISTER TO CONFORM TO THOSE SPECIFIED ON THE HYAC PLANS.
- 18. DUCTWORK HAS BEEN SIZED WITH EQUAL FRICTION FROM SUPPLY PLENUM THROUGH ALL DUCTING INCLUDING FRICTION LOSS AT DIFFUSERS. TOTAL FRICTION LOSS AT EACH DIFFUSER TERMINATION PLUS OR MINUS 0.02" W.C.
- 19. DUCTWORK SHALL BE HANGED AND/OR SUPPORTED IN ACCORDANCE WITH SMACNA AND THE 2012 UMC.
- 20. PROVIDE SEISMIC SUPPORTS FOR DUCTWORK WHERE THE DUCTS ARE SUSPENDED FROM HANGERS MORE THAN 12' IN LENGTH OR IF THE DUCTWORK HAS A CROSS SECTIONAL AREA OF 6 SQ. FT. OR GREATER. SEISMIC SUPPORTS TO BE VERIFIED BY STRUCTURAL ENGINEER.
- COMPONENTS THAT ARE INSTALLED IN-LINE WITH THE DUCT SYSTEM AND HAVE AN OPERATING WEIGHT GREATER THAN 15 LBS., SHALL BE SUPPORTED AND LATERALLY BRACED INDEPENDENT OF THE DUCT SYSTEM. LATERAL BRACING TO BE VERIFIED BY STRUCTURAL ENGINEER.
- 22. MECHANICAL AND LIGHT FIXTURES WEIGHING 20 LBS BUT NOT MORE THAN 56 LBS. MUST HAVE TWO 12 GAGE WIRES CONNECTING THEM TO THE CEILING SYSTEM HANGERS OR THE STRUCTURE ABOVE.
- 23. MECHANICAL AND LIGHT FIXTURES WEIGHING MORE THAN 56 LBS. MUST BE
- INDEPENDENTLY SUPPORTED DIRECTLY FROM THE STRUCTURE ABOVE.

| 4. | SUPPLY | AND RETURN | AIR GRILL | ES SHALL | BE TRUAIR | E OR EQUAL. |
|----|--------|-------------|-----------|----------|------------|-------------|
| | RETURN | AIR GRILLES | SHALL BE | BAR TYPE | E ONLY, NO | STAMP FACE. |

| | MECHANICAL SHEET INDEX |
|------------------|--|
| SHEET NUMBER: | SHEET NAME: |
| M-001 | SPECIFICATIONS, DETAILS, SCHEDULES, SYMBOL LEGEND & IECC |
| M-101 | FIRST FLOOR - MECHANICAL PLAN |
| M-1Ø2 | SECOND FLOOR - MECHANICAL PLAN |

| <u>5</u> | MBOL | LEGEND |
|-----------|------------|----------------------|
| SYMBOL | ABBR. | DESCRIPTION |
| \square | 5 A | SUPPLY AIR |
| | RA | RETURN AIR |
| | EF | EXHAUST FAN |
| T | TSTAT | THERMOSTAT |
| | (E) | EXISTING |
| | MVD | MANUAL VOLUME DAMPER |





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www.designopa.com



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FINAL NOT FOR **BLDG DEPT**

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