

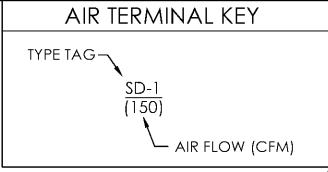
| GENERAL NOTES (NOT ALL APPLY) | |
|-------------------------------|--|
| 1. | ALL MECHANICAL SHALL BE BRACED OR ANCHORED TO RESIST A HORIZONTAL FORCE ACTING IN ANY DIRECTION. WHERE ANCHORAGE DETAILS ARE NOT SHOWN ON THE DRAWINGS, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT, MECHANICAL ENGINEER AND THE ARCHITECT. |
| 2. | ALL ENVIRONMENTAL AIR DUCTS SHALL DISCHARGE A MINIMUM OF 3' FROM OPENINGS TO STRUCTURE PER IMC. |
| 3. | CONTRACTOR SHALL THOROUGHLY EXAMINE PREMISES AND OBSERVE ALL CONDITIONS AND CIRCUMSTANCES UNDER WHICH THE WORK SHALL BE PERFORMED. NO ALLOWANCES WILL BE MADE FOR ERRORS OR NEGLIGENCE IN THIS RESPECT. |
| 4. | THERMOSTAT SHALL BE INSTALLED BETWEEN 36" AND 48" ABOVE FINISHED FLOOR. ALL THERMOSTATS SHALL BE PROVIDED WITH CLEAR VANDAL PROOF LOCKING COVER. |
| 5. | ALL PIPES AND DUCTS SHALL BE SUPPORTED AND BRACED PER "SMACNA" GUIDELINES OSHPD PRE-APPROVED |
| 6. | THE CONTRACTOR SHALL FULLY COORDINATE ALL WORK WITH OTHER TRADES TO ASSURE ALL WORK CAN BE PROPERLY INSTALLED WITHOUT INTERFERENCE OR DELAY. |
| 7. | CLEAN UP ALL WASTE AND DEBRIS AT THE END OF EACH WORKING DAY AND AT THE COMPLETION OF THE JOB. |
| 8. | ALL SPECIFIED EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION. |
| 9. | PROVIDE ONE YEAR WARRANTY FOR ALL WORKMANSHIP AND MATERIALS AFTER THE DATE OF FINAL ACCEPTANCE. |
| 10. | PRIOR TO STARTING WORK, SUBMIT SHOP DRAWINGS FOR ALL MECHANICAL EQUIPMENT & DUCTWORK PER SPECIFICATIONS. |
| 11. | UPON COMPLETION OF WORK, THE CONTRACTOR SHALL HAVE ALL AIR SYSTEMS BALANCED AS SCHEDULED AND ON SPECIFICATIONS. ACCEPTANCE OF THE ALTERNATE EQUIPMENT WILL BE BASED ON EVALUATION BY THE DESIGN ENGINEER OF CAPACITY, PERFORMANCE, EFFICIENCY, SIZE (FOOTPRINT AND HEIGHT), WEIGHT, PRESSURE LOSS, NOISE LEVEL, AND MINIMAL PIPING AND ELECTRICAL CHANGES. |
| 12. | DUCT SIZES SHOWN ON DRAWINGS ARE IN INCHES (CLEAR INSIDE DIMENSIONS) AND REPRESENT THE FREE OR UNOBSTRUCTED AREA REQUIRED ON THE INSIDE OF THE DUCT. |
| 13. | ALL DUCTWORK SHALL BE GALVANIZED STEEL PER SMACNA GUIDELINES UNLESS NOTED OTHERWISE. |
| 14. | MAXIMUM LENGTH OF RUN OF FLEXIBLE DUCT SHALL NOT EXCEED 5FT. |
| 15. | RUN ALL DUCTWORK AND PIPING AS HIGH AS POSSIBLE UNLESS OTHERWISE NOTED. PIPING SHALL BE ABOVE DUCTWORK. |
| 16. | CONTRACTOR SHALL PROVIDE EXTERNAL TRAPS FOR CONDENSATE DRAIN LINES FOR ALL COOLING COILS. |
| 17. | DESIGN OF THE MAJOR HVAC EQUIPMENT IS BASED ON MANUFACTURER AS SCHEDULED. OTHER MANUFACTURERS MAY BE SUBSTITUTED IF THEIR EQUIPMENT IS SIGNIFICANTLY EQUAL TO THE EQUIPMENT SHOWN IN THESE DRAWINGS/AS SCHEDULED AND ON SPECIFICATIONS. ACCEPTANCE OF THE ALTERNATE EQUIPMENT WILL BE BASED ON EVALUATION BY THE DESIGN ENGINEER OF CAPACITY, PERFORMANCE, EFFICIENCY, SIZE (FOOTPRINT AND HEIGHT), WEIGHT, PRESSURE LOSS, NOISE LEVEL, AND MINIMAL PIPING AND ELECTRICAL CHANGES. |
| 18. | ALL COSTS REQUIRED FOR A SUBSTITUTION SHALL BE BORNE BY THE CONTRACTOR, INCLUDING BUT NOT LIMITED TO: • MODIFICATIONS OF PIPING AND ELECTRICAL CONNECTIONS • COSTS FOR ADDITIONAL REVIEW TIME REQUIRED OF THE DESIGN ENGINEER TO EVALUATE THE SUBSTITUTION |
| 19. | IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE THE SUBSTITUTED EQUIPMENT FIT WITHIN THE SPACE LIMITATIONS SET ASIDE FOR THE DESIGNED EQUIPMENT. |
| 20. | ALL EXPOSED DUCTWORK WITHIN AIR CONDITIONED SPACE SHALL RIGID SHEET METAL (SPIRAL) DUCTWORK. |
| 21. | CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND SHALL ARRANGE FOR ALL INSPECTIONS AS REQUIRED. |
| 22. | ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST APPLICABLE CODES AND REGULATIONS AND OTHER AUTHORITIES HAVING JURISDICTION. |
| 23. | ALL MECHANICAL WORK SHALL COMPLY WITH IMC 2012. |
| 24. | ALL SUPPLY & RETURN DUCTWORK SHALL BE INSULATED PER IECC 2012 REQUIREMENT. |
| 25. | PROVIDE VOLUME DAMPERS AT EACH BRANCH TAKE-OFF FROM MAIN SUPPLY, RETURN, AND EXHAUST DUCT SERVING EACH AIR DEVICE. |
| 26. | CONTRACTOR SHALL FURNISH AND INSTALL DUCT AND PIPE SUPPORT AND BRACING PER SMACNA REQUIREMENT. |
| 27. | MAINTAIN CLEAR ACCESS TO SERVICE EQUIPMENT AND OTHER ACCESSORIES REQUIRING SERVICE, VISUAL INSPECTION OR HAND OPERATION. WHERE INDICATED OR REQUIRED, PROVIDE ACCESS PANELS OF THE TYPE SELECTED TO SUIT MATERIALS IN WHICH INSTALLED. |
| 28. | SUBMIT ALL MECHANICAL EQUIPMENT AND ACCESSORIES; AIR HANDLING FIXTURE, DUCTWORK, PIPING, ETC. FOR APPROVAL PRIOR TO PURCHASE OR FABRICATION. |
| 29. | CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL DUCTWORK AND PIPING SYSTEMS PRIOR TO FABRICATION AND INSTALLATION. SHOP DRAWINGS SHALL BE COMPLETELY COORDINATED BY GENERAL & MECHANICAL CONTRACTORS WITH ALL TRADES INDICATING ALL: LIGHT FIXTURES, SPRINKLER HEADS, SPRINKLER MAINS, BEAMS, SPEAKERS, ETC. |
| 30. | SHOP DRAWINGS SHALL INDICATE DUCT SIZES. |
| 31. | CONTRACTOR SHALL PROVIDE AND INDICATE ON SHOP DRAWINGS ALL VOLUME CONTROL DAMPERS, FIRE DAMPERS, COMBINATION SMOKE/FIRE IF REQUIRED, MOTOR OPERATED DAMPERS AND RESPECTIVE ACCESS DOORS (IN DUCTS AND CEILINGS). |
| 32. | CONTRACTOR SHALL PROVIDE REPRODUCIBLE AS-BUILT DRAWINGS AND AIR BALANCE REPORTS FROM AN INDEPENDENT BALANCE CONTRACTOR. |
| 33. | PROVIDE MINIMUM DUCT RADIUS ON ELBOWS AT 1-1/2 TIMES DUCT SIZE. |
| 34. | ALL SUPPLY & RETURN DUCTWORK SHALL BE INSULATED OR LINED PER LOCAL CODES (U.N.O.). |
| 35. | PROVIDE THROAT WITH PROPORTIONAL SPLIT AND TURNING VANES ON TEE TRANSITIONS. (BULLHEAD TEE'S WILL NOT BE PERMITTED.) |
| 36. | DUCT LINER SHALL BE ADHERED WITH 100% COVERAGE WITH FIRE RESISTANT ADHESIVE AND MECHANICAL FASTENERS PER S.M.A. ALL EXPOSED EDGES SHALL BE HEAVILY COATED WITH FIRE RESISTANT ADHESIVE. |
| 37. | ALL REFRIGERANT SUCTION AND LIQUID PIPING SHALL BE INSULATED WITH 3/4" PREFORMED FIBERGLASS WITH 0.55 FACTOR (R-10.0 @ 75 F MEAN TEMP.) UNLESS SPECIFIED OTHERWISE. INSULATION SHALL BE ARMSTRONG ARMAFLEX OR AN APPROVED EQUAL. WHEN THERE IS PROTECT INSULATION EXPOSED TO OUTSIDE, APPLY INSULATION PER MANUFACTURER'S DIRECTION. |
| 38. | IF REQUIRED, SMOKE DETECTORS SHALL BE PROVIDED BY EQUIPMENT MANUFACTURER AT FACTORY INSTALLATION. WHEN UNAVAILABLE THRU MFR. CONTRACTOR SHALL INSTALL SMOKE DETECTORS IN DUCTS IN THE RETURN AIR DUCT, UPD, NEAR THE CEILING LINE, UPSTREAM OF ANY BRANCH TAKE-OFFS. |
| 39. | FABRICATE, INSTALL, SEAL AND INSULATE ALL DUCTWORK IN STRICT CONFORMANCE WITH THE REQUIREMENTS OF THE IMC 2012. |
| 40. | EXACT LOCATIONS OF ALL CEILING DIFFUSERS, REGISTERS, AND GRILLES SHALL BE COORDINATED WITH LIGHTING AND SPRINKLER HEADS (IF APPLICABLE). DRAWINGS SHALL BE USED ONLY FOR GENERAL DUCT ROUTING AND AIR DISTRIBUTION. |
| 41. | ALL WORK SHALL BE PERFORMED IN A CLEAN AND WORKMANLIKE MANNER. |
| 42. | NO PIPING, EQUIPMENT, ETC. SHALL BE REMOVED, DISCONNECTED OR SHUT DOWN WITHOUT PRIOR REVIEW WITH THE OWNER AND/OR ENGINEER TO CONFIRM THAT SITE SERVICES WILL NOT BE AFFECTED. IF ANY AREAS NOT WITHIN THE SCOPE OF WORK ARE AFFECTED BY ANY SHUTDOWN, REMOVAL OR DISCONNECTION, SUFFICIENT ADVANCE NOTICE MUST BE GIVEN TO THE OWNER INDICATING WHICH AREAS WILL BE AFFECTED, WHEN THE PROPOSED SHUTDOWN WILL OCCUR, AND FOR HOW LONG AND PERIOD OF TIME. |
| 43. | FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO PROCEEDING WITH ANY WORK. WHERE DISCREPANCIES OCCUR BETWEEN THESE DOCUMENTS AND EXISTING CONDITIONS, THE DISCREPANCY SHALL BE REPORTED TO THE OWNER AND/OR ENGINEER FOR EXPEDITING AND RESOLVE. |
| 44. | DO NOT SCALE THIS DRAWING FOR EXACT DIMENSIONS. VERIFY ALL FIGURES, CONDITIONS, AND DIMENSIONS AT THE JOB SITE. |
| 45. | THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFEKEEPING OF HIS OWN PROPERTY ON THE JOB SITE. OWNER ASSUMES NO RESPONSIBILITY FOR PROTECTION OF PROPERTY AGAINST FIRE, THEFT AND ENVIRONMENTAL CONDITIONS. |
| 46. | WHERE USED, THE TERM "PROVIDE" SHALL MEAN "FURNISH AND INSTALL". |
| 47. | SUBMISSION OF A PROPOSAL DIRECTLY OR INDIRECTLY IN CONNECTION WITH THIS WORK SHALL IMPLY THAT THE BIDDER HAS EXAMINED THE JOB SITE UNDER WHICH HE WILL BE OBLIGATED TO OPERATE SHOULD HE BE AWARDED THE WORK UNDER THIS CONTRACT. NO EXTRA CHARGE WILL BE ALLOWED FOR FAILURE OF ANY BIDDER TO EXAMINE THE SITE PRIOR TO BID. |
| 48. | ALL DUCTWORK AND CEILING, WALL OR ROOF PENETRATIONS SHALL BE COORDINATED WITH STRUCTURAL JOISTS AND BEAMS. PROVIDE OFFSETS IN PIPES AND DUCTS TO AVOID CUTTING OF BEAMS AND JOISTS. |
| 49. | CONTRACTOR SHALL PROVIDE LABOR TO RECEIVE, UNLOAD, STORE, PROTECT AND TRANSFER TO POINT OF INSTALLATION, OWNER FURNISHED ITEMS. |

| LINEAR SLOT DIFFUSER SCHEDULE | | | | | | |
|-------------------------------|--------------|--------|-----|------------|------------|--------------|
| TAG | MANUFACTURER | MODEL | CFM | # OF SLOTS | SLOT WIDTH | TOTAL LENGTH |
| LSD-1 | PRICE | SDS100 | 200 | 1 | 1" | 60" |
| LR-1 | PRICE | SDR100 | 400 | 2 | 1" | 60" |

- NOTES:
- PROVIDE WITH CONCEALED PLASTER FRAME MOUNTINGS
 - PROVIDE WITH FACTORY PLENUM.

| AIR DEVICE SCHEDULE | | | | | |
|---------------------|-------------|-------|-----------|-----------|------|
| ITEM | MANUFACTURE | MODEL | FACE SIZE | NECK SIZE | TAG |
| SUPPLY DIFFUSER | PRICE | SCD | 24"X24" | 8"Ø | SD-1 |
| | | | 12"X12" | 6"Ø | SD-2 |
| RETURN GRILLE | PRICE | 80 | 24"X24" | - | RG-1 |
| | | | 12"X12" | - | RG-2 |

- NOTES:
- REFER TO PLANS FOR INDIVIDUAL GRILLE CFM NOTED ON TERMINAL TAG.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING COLOR WITH CLIENT PRIOR TO PURCHASE.
 - TITUS AND KRUEGER ACCEPTABLE AS EQUALS.
 - PROVIDE ROUND TO SQUARE ADAPTORS AS NEEDED.



| FAN SCHEDULE | | | | | | | | | |
|--------------|----------|--------------------------|--------------------|-------------------|----------------------|-----|-------|----|-------|
| TAGS | QUANTITY | MANUFACTURE MODEL NUMBER | DESIGN AIRFLOW CFM | DESIGN ESP IN H2O | FAN MOTOR HP (WATTS) | RPM | POW V | Ø | WT LB |
| EF-1 | 1 | GREENHECK SP-110-VG | 100 | 0.37 | | 940 | 1 | 10 | 12 |

- NOTES:
- INTERLOCK FAN WITH LIGHT SWITCH.
 - COORDINATE INSTALLATION WITH ELECTRICAL DIVISION PRIOR TO INSTALLATION.
 - BACKDRAFT DAMPER INTEGRAL TO UNIT.

| CFM | FLEX DUCT (INCHES) | ROUND DUCT (INCHES) | RECTANGULAR DUCT (INCHES) | | | | | |
|--------------|--------------------|---------------------|---------------------------|-------|-------|--------|--------|--------|
| | | | W IS DUCT WIDTH | | | | | |
| | | | W x 4 | W x 6 | W x 8 | W x 10 | W x 12 | W x 14 |
| UP TO 120 | 6 | 8 | 6 | X | X | X | X | |
| 121 TO 150 | 8 | 10 | 8 | X | X | X | X | |
| 151 TO 240 | 8 | 16 | 10 | 8 | X | X | X | |
| 240 TO 320 | 10 | X | 12 | 10 | X | X | X | |
| 321 TO 420 | 12 | 10 | X | 16 | 12 | 10 | X | |
| 421 TO 500 | 14 | 12 | X | X | 14 | 10 | X | |
| 501 TO 660 | 14 | 12 | X | M | 16 | 12 | X | |
| 661 TO 850 | 16 | 14 | X | X | 20 | 14 | X | |
| 851 TO 1000 | 16 | 14 | X | X | 22 | 16 | X | |
| 1001 TO 1200 | X | 16 | X | X | 26 | 20 | 16 | |
| 1201 TO 1400 | X | 16 | X | X | 30 | 24 | 16 | |
| 1401 TO 1700 | X | X | X | X | 34 | 26 | 18 | |
| 1701 TO 2200 | X | X | X | X | X | 32 | 24 | |
| 2201 TO 2600 | X | X | X | X | X | 36 | 28 | |
| 2601 TO 3000 | X | X | X | X | X | X | 34 | |

| DUCT AND SYMBOLS (NOT ALL USED) | |
|---------------------------------|----------------------------|
| | DUCT BREAKLINE |
| | NEW DUCTWORK (SOLID LINE) |
| | DUCTWORK TO BE REMOVED |
| | SUPPLY RISER UP & DOWN |
| | RETURN RISER UP & DOWN |
| | EXHAUST RISER UP & DOWN |
| | SUPPLY AIR DUCT |
| | RETURN AIR DUCT |
| | EXHAUST AIR DUCT |
| | BATHROOM EXHAUST |
| | OUTSIDE AIR DUCT |
| | EXISTING DUCT |
| | COMBUSTION INTAKE AND FLUE |
| | REFRIGERANT LINE |
| | CONDENSATE DRAIN |
| | FIRE DAMPER IN DUCT |
| | ZONE BOUNDARY |

| SHEET INDEX | |
|--------------|---------------------------|
| SHEET NUMBER | SHEET TITLE |
| M0.0 | MECHANICAL FRONT SHEET |
| M1.0 | MECHANICAL 1ST FLOOR PLAN |
| M2.0 | MECHANICAL 2ND FLOOR PLAN |
| M3.0 | MECHANICAL DETAILS |

elder consulting
 Christian Elder, P.E.
 gelder@elder-engineer.com
 423.309.1377
 Mechanical, Electrical, and
 Plumbing Design
 Services
 P.O. Box 4489
 Chattanooga, TN 37405

ART ECH
 ARCHITECTURE
 & INTERIORS

1410 COWART STREET
 CHATTANOOGA, TN 37408
 423.268.4619

ROCK POINT BANK

401 Chestnut Street Chattanooga, Tennessee



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JOB NO. 20-011 | DWN KP | CK'D OGE
M0.0
 MECHANICAL
 FRONT SHEET