



1 MECHANICAL ROOF PLAN
SCALE 1/8" = 1'-0"

15010. MECHANICAL GENERAL
REFERENCE: ALL PORTIONS OF GENERAL CONDITIONS APPLY TO MECHANICAL AND PLUMBING WORK.
GUARANTEES: PROVIDE WRITTEN ONE YEAR GUARANTEE FOR ALL SYSTEMS AND EQUIPMENT. COMPRESSORS SHALL BE GUARANTEED FOR FIVE YEARS.
CODES: COMPLY WITH NATIONAL, STATE AND CITY CODES AND OTHER APPLICABLE STANDARDS. ALL PORTIONS OF THE INTERNATIONAL ENERGY CONSERVATION CODE (IECC) MUST BE COMPLIED WITH.
SUPERVISION: PROVIDE SUPERVISOR IN FIELD FOR EACH PHASE OF WORK.
COORDINATION: COORDINATE ALL WORK WITH OTHER TRADES. PROVIDE MECHANICAL AND PLUMBING EQUIPMENT WITH ELECTRICAL CHARACTERISTICS COMPATIBLE WITH THAT SHOWN ON THE ELECTRICAL DRAWINGS AND DESCRIBED IN THE ELECTRICAL DIVISION OF THE SPECIFICATIONS. THE ENGINEER RESERVES THE RIGHT TO MOVE SERVICES AS REQUIRED TO COORDINATE THE WORK, AT NO COST TO THE OWNER.
SHOP DRAWINGS AND SUBMITTAL DATA: FIVE COPIES OF ALL EQUIPMENT AND MATERIALS TO BE FURNISHED, INCLUDING DUCTWORK AND EQUIPMENT CHANGES, AS REQUIRED. SUBMITTED ITEMS THAT DEVIATE FROM THE DRAWINGS AND SPECIFICATIONS, SHALL BE HIGHLIGHTED IN YELLOW FOR EASY DISTINCTION. MARK ALL ITEMS AND SHOW THAT THEY COMPLY WITH THE IECC. ONE COPY SHALL BE SENT TO THE ENGINEER FOR THEIR FILE. THE ENGINEER SHALL ISSUE A LETTER SHOWING THE ACTION TAKEN ON THE SUBMITTAL. THE LETTER SHALL BE COPIED AND ATTACHED TO THE SUBMITTAL, BY THE CONTRACTOR, AND DISTRIBUTED AS REQUIRED.
RECORD DATA: OBTAIN, AT CONTRACTOR'S EXPENSE, A SET OF BLUE LINE PRINTS AND KEEP THESE ON THE JOB SITE DURING CONSTRUCTION. DURING CONSTRUCTION, MARK ON THESE PRINTS ANY CHANGES THAT ARE MADE, NOTING PARTICULARLY LOCATIONS OF THOSE ITEMS THAT WILL NEED TO BE FOR SERVICING. FURNISH ONE SET OF SHOP DRAWINGS AND MAINTENANCE MANUALS IN BROCHURE FORM FOR OWNER'S FILE. GIVE ALL BROCHURES TO THE OWNER AT COMPLETION OF WORK.
PERMITS, FEES: SECURE AND PAY FOR ALL FEES AND CHARGES FOR THE WORK. FURNISH CERTIFICATES OF ACCEPTANCE AT COMPLETION OF THE JOB FROM CITY.

SUBSTITUTIONS: NO SUBSTITUTIONS SHALL BE MADE WITHOUT PRIOR APPROVAL FROM THE ARCHITECT.
CUTTING AND PATCHING: CUTTING TO BE BY THIS SECTION, WITH PATCHING AND FURRING BY GENERAL CONTRACTOR. PATCHING REQUIRED AFTER COMPLETION OF WORK SHALL BE PAID FOR BY CONTRACTOR.
CLEANING UP: CLEAN AND TOUCHUP PAINT ALL EQUIPMENT AT COMPLETION OF WORK. PROTECT ALL EQUIPMENT FROM DAMAGE DURING CONSTRUCTION. PROVIDE NAME PLATES ON ALL EQUIPMENT.
TESTS: TESTS ALL PIPING SYSTEMS PER LOCAL CODE. STERILIZE ALL NEW WATER PIPING PER HEALTH DEPARTMENT REQUIREMENTS. TEST REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS. TEST ALL EQUIPMENT AND PROVE PERFORMANCE RESULTS TO ARCHITECT. MODIFY DRIVES, BALANCE ALL AIR AS SHOWN ON THE DRAWINGS. AFTER OWNER HAS OCCUPIED AND IS USING THE BUILDING, MAKE ADDITIONAL INSPECTIONS OF THE SYSTEM. CORRECT ANY OWNER'S OBSERVED TEMPERATURE IMBALANCES. CHECK CORRECT OPERATION OF EQUIPMENT AND
VERIFY BY LETTER TO THE ARCHITECT, ON EACH TRIP, LIST IN THE LETTER CORRECTIONS MADE. AT THE SEASON OPPOSITES THAT OF STARTUP, INSPECT AND VERIFY CORRECT OPERATION OF ALL SYSTEMS. TESTS ALL TEST DATA TO ARCHITECT. INSTRUCT OWNER FOR ONE DAY IN OPERATION OF ALL SYSTEMS. FILTERS SHALL BE CLEAN WHEN SYSTEMS ARE ACCEPTED BY THE OWNER.
EXCAVATING AND BACK FILLING: EXCAVATE TO PROVIDE MINIMUM 2 FEET COVER OVER ALL PIPING AND CONDUIT. BACK FILL TO ORIGINAL COMPACTION. SAW-CUT EXISTING FINISH MATCHING ORIGINAL CONDITIONS.
NOISE AND VIBRATION: ALL EQUIPMENT SHALL OPERATE WITH MINIMUM OF NOISE AND VIBRATION. CONTRACTORS TO RECTIFY OBJECTIONABLE CONDITIONS.
TEMPORARY SERVICES: FURNISH TEMPORARY UTILITY AS REQUIRED FOR NEW CONSTRUCTION.

EQUIPMENT CONNECTIONS: PROVIDE ALL MATERIAL AND LABOR FOR CONNECTING OF ALL EQUIPMENT FURNISHED IN OTHER SECTIONS OR BY OWNER. FIELD CHECK EXISTING EQUIPMENT, DIMENSIONS, AND ROUGHING-IN. FURNISH ALL VALVES, DRAIN PIPING, TRAPS, ETC., AS REQUIRED TO INSTALL THE EQUIPMENT.
FLOOR DRAINS: FINAL LOCATION WILL BE DETERMINED BY EQUIPMENT LAYOUT AND LOCATION MUST BE FIELD APPROVED. PROVIDE TRAP PRIMERS TO ALL FLOOR DRAINS.
EXAMINATION OF SITE: THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE JOB SITE AND CONFIRMING THE LOCATION OF EXISTING CONDITIONS BEFORE BIDDING. IF EXISTING CONDITIONS REQUIRE MODIFICATION DUE TO ELEVATION, OBSTRUCTION, SIZE, ETC., THE CONTRACTOR WILL ADVISE IN WRITING BEFORE BEGINNING CONSTRUCTION.
END OF SECTION 15010
15020 MECHANICAL
PROVIDE ALL LABOR AND MATERIALS FOR COMPLETE MECHANICAL SYSTEMS. SYSTEMS MUST COMPLY WITH IECC.
PLATES: PROVIDE CHROME PLATED PLATES OVER ALL PIPES THROUGH WALLS, FLOORS, AND CEILINGS. PROVIDE GALVANIZED PIPE SLEEVES FOR ALL LINES THROUGH WALLS, FLOORS, AND ROOFS. SLEEVES IN OUTSIDE WALLS AND ROOF SHALL BE WATER TIGHT. SLEEVES THROUGH WALLS ABOVE CEILINGS SHALL BE AIR TIGHT.
PIPING: PIPE HANDLING MATERIALS TO BE GALVANIZED. SEPARATE COPPER PIPE WITH INSULATING TAPE. PROVIDE MAXIMUM HEADROOM AND CLEARANCES FOR ACCESS.
DRAIN LINES SHALL BE PROVIDED FOR EACH AIR HANDLING UNIT. DRAINS TYPE "L" COPPER, OR SCHEDULE 40 GALVANIZED STEEL. JOINTS FOR COPPER PIPE SHALL BE SILVER SOLDER. USE MALLEABLE FITTINGS FOR SCREWED JOINTS FOR STEEL PIPES 2.5" AND SMALLER. USE WELDED JOINTS FOR 3" AND LARGER PIPE.

DUCT INSULATION: ALL DUCTWORK SHALL BE INSULATED AND VAPOR SEALED. EXTERNAL INSULATION SHALL COMPLY WITH IECC, AND BE A MINIMUM OF 2" THICK, WITH A VAPOR BARRIER APPLIED OVER JOINTS. INSULATE OUTER CORES OF DIFFUSES (EXTERNALLY). INSULATION SHALL BE APPLIED PER MANUFACTURER'S RECOMMENDATIONS. 1" ACOUSTICAL LINER SHALL BE INSTALLED IN FIRST 15 FEET OF ALL DUCTWORK ENTERING AND LEAVING EQUIPMENT, AS A MINIMUM.
PIPE INSULATION: INSULATE CONDENSATE DRAIN AND REFRIGERANT SUCTION PIPE WITH ARMAFLEX. SYSTEMS MUST COMPLY WITH IECC. EXPOSED INSULATION OUTSIDE SHALL HAVE A WATERPROOF PAINT APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. INSTALL ALL INSULATION PER MANUFACTURER RECOMMENDATION.
DUCTWORK: ALL DUCTWORK MATERIALS SHALL BE GALVANIZED STEEL. GAUGES, BRACING, AND SUPPORTS SHALL BE PER SMACNA MANUAL. PLENUMS SHALL BE 18-GAUGE. PROVIDE AIRFOIL TYPE TURNING VANES AT ALL CHANGES IN DIRECTION. EXTRACTORS SHALL HAVE EXTRACTORS. PAINT FLAT BLACK BEHIND GRILLES. CROSS-BREAK ALL DUCTS 12 INCHES AND WIDER. DUCT DIMENSIONS SHOWN ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS. SUBMIT SHOP DRAWINGS AND CHANGES TO PLAN LAYOUTS. FLEXIBLE DUCTWORK CONNECTIONS SHALL BE PROVIDED FOR ALL FAN UNIT CONNECTIONS. VENTGLASS FABRIC, 4" WIDE. SUPPORT DUCTS A MAXIMUM OF 6 FEET ON CENTERS WITH 1" X 26 GAUGE HANGERS. SECURE SUPPORTS WITH A SHEET METAL SCREW ON BOTTOM, AND 1/2" CENTERS ON SIDES. DAMPERS SHALL HAVE FELT EDGES AND BE 16 GAUGE. PROVIDE LOCKING QUADRANTS FOR DAMPERS. PROVIDE CONCEALED REGULATORS FOR EXTRACTORS ON BRANCH DUCTS, ON TAKEOFFS TO THE CEILING DIFFUSES. FLEXIBLE DUCTS SHALL BE PRE INSULATED, FLOEMASTER TYPE BM OR EQUAL, AND A MAXIMUM OF 4 FEET LONG. THE USE OF FLEX DUCT FOR RETURN AIR WILL NOT BE ALLOWED. RECEIVING/PROCESSING ROOM SHALL RECEIVE FLEXIBLE FABRIC DUCT, MFG. DUCT SOX, FABRIC OPTION POLY TEX, MODEL OPTION HIGH THROW. (CONTACT DENNIS WILSON 815-219-9920)
MOTORS: SHALL BE AN NEMA STANDARDS HIGH EFFICIENCY MOTOR, OPERATING NON OVERLOADED.

MOTOR CONTROLS: FURNISHED BY ELECTRICAL CONTRACTOR. THIS CONTRACTOR SHALL FURNISH THERMAL OVERLOADS, STARTERS, RELAYS AND EXTRA CONTACTS FOR INTERLOCKING.
ELECTRICAL: CONTRACTORS SHALL COORDINATE ELECTRICAL CHARACTERISTICS WITH ELECTRICAL CONTRACTOR. THIS CONTRACTOR SHALL FURNISH ALL CONTROL INSTRUMENTS AND WIRING DIAGRAMS SHOWING TERMINAL IDENTIFICATION NUMBERS.
ROOFTOP A/C UNIT: GAS HEATING, ELECTRIC COOLING UNIT MAKE FOR MOUNTING EXPOSED TO WEATHER. UNITS SHALL HAVE ECONOMIZERS AND MUST COMPLY WITH IECC. UNITS SHALL BE DESIGNED TO OPERATE AT AMBIENT TEMPERATURES OF 105° F. ARI RATED, AND AGA APPROVED. CASING SHALL BE LEAK PROOF, GALVANIZED STEEL, ACRYLIC EPOXY FINISH OR BONDZERIZED AND COATED WITH BAKED ENAMEL. MOUNT UNITS ON FACTORY ROOF CURBS WITH ALL DUCT CONNECTIONS INSIDE THE CURB. PROVIDE ACCESS PANELS. INSULATE INTERIOR OF CASING WITH 1" THICK MATTE FACED GLASS FIBER. HERMETIC COMPRESSORS WITH INDEPENDENT REFRIGERATION CIRCUITS. MOUNT COMPRESSORS ON VIBRATION ISOLATORS AND PROVIDE FACTORY-INSTALLED SERVICE VALVES, CRANKCASE HEATERS, LIQUID LINE SIGHT GLASS, FILTER-DRIER, EXPANSION VALVES, LOW AND HIGH PRESSURE CUTOUTS, OVERLOAD PROTECTION, AND ANTI SHORT CYCLING CONTROL. COILS TO HAVE COPPER TUBES WITH ALUMINUM COIL, AND MINIMUM 1" CONDENSATE DRAIN FROM EVAPORATOR DRAIN PANS. EVAPORATOR FAN TO BE CENTRIFUGAL TYPE WITH GALVANIZED STEEL HOUSING AND ADJUSTABLE PITCH PULLEY-BELT DRIVE. DIRECT DRIVE PROPELLER CONDENSER FANS WITH GUARD. A 24V TRANSFORMER. LOW-VOLTAGE CONNECTIONS SHALL BE POINT-TO-POINT ON TERMINAL BOARD. REFERENCE SPECIFICATIONS FOR FILTERS. CONTACT YORK NATIONAL ACCOUNTS FOR MORE INFORMATION. JOI CONTROLS (YORK) DAN BILANCIA 405-419-6537.
FILTERS: PROVIDE 2" FILTERS BY AMERICAN AIR FILTERS CO. USE PLEATED, DISPOSABLE TYPE, AND INSTALL IN ALL AIR HANDLING UNITS.

AIR DEVICES: KRUEGER, CARNES, TITUS, OR METALARE. ALL DEVICES SHALL BE ALUMINUM. CEILING MOUNTED OUTLETS SHALL BE OFF-WHITE. OTHER OUTLETS SHALL BE PRIME COATED SUITABLE FOR PAINTING ON THE JOB. SEE SCHEDULES ON PLANS.
EXHAUST FANS: ROOF MOUNTED TYPE AS SHOWN ON THE DRAWINGS, SPUN DIRECT DRIVE, BIRD SCREENS, BUGLAR BARS, AND LINED GRAVITY DAMPER. PROVIDE FACTORY CURBS FOR ALL ROOF MOUNTED FANS. REFER TO ARCH DWG FOR ROOF PITCH.
CONTROLS: CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN A COMPLETE BMS SYSTEM. IT SHALL BE INSTALLED AND FULLY WIRED BY NOVAR CONTROL CORPORATION, THROUGH NOVAR'S PROJECT MANAGEMENT GROUP. THE HVAC CONTRACTOR SHALL PROVIDE TEMPORARY THERMOSTATS FOR EACH HVAC UNIT TO ALLOW TESTING AND OPERATION PRIOR TO BMS INSTALLATION.
TENANTS REQUIRES THE MECHANICAL CONTRACTOR TO PURCHASE THE TENANT NOVAR PACKAGE, WHICH INCLUDES CONTROL EQUIPMENT, DESIGN AND PROGRAMMING SERVICES, INSTALLATION AND START UP FROM NOVAR.
REFER TO MARSHALLS GUIDELINES AND SPECIFICATIONS.
END OF SECTION 15020
SEE PLUMBING PLAN FOR PLUMBING SPECIFICATIONS.

MECHANICAL GENERAL NOTES:

- UPON COMPLETION OF THE INSTALLATION OF THE AIR SYSTEM COMPONENTS, THE SUPPLY, RETURN, EXHAUST AND OUTSIDE AIR VOLUME FOR EACH AIR HANDLING UNIT, SUPPLY FAN, AND EXHAUST FAN; AND THE SUPPLY, EXHAUST OR RETURN AIR VOLUME FOR EACH AIR DISTRIBUTION DEVICE SHALL BE ADJUSTED TO WITHIN 5% OF DESIGN AIR FLOW.
- RE: SPECIFICATIONS, SHEET M1.2, FOR DUCTWORK/PIPING INSULATION REQUIREMENTS.
- SUPPLY AND RETURN DUCTWORK SHALL BE EXTERNALLY INSULATED. NEW DUCTWORK SHALL NOT BE INTERNALLY LINED (EXCEPT AT INTERNAL ACOUSTIC LINING AT EQUIPMENT, RE: DETAILS). BACKSIDES OF SUPPLY AIR GRILLES SHALL ALSO BE INSULATED.
- ALL ROOFTOP UNITS SHALL BE EQUIPPED WITH DUCT SMOKE DETECTORS IN SUPPLY AND RETURN.
- ALL NEW DUCTWORK SHALL BE INSULATED SHEETMETAL EXTERNALLY WRAPPED INSULATION TO MEET OR EXCEED IECC REQUIREMENTS.

2 MECHANICAL SPECIFICATIONS
SCALE: NTS

3 MECHANICAL GENERAL NOTES
SCALE: NTS